FCC RF EXPOSURE REPORT

FCC ID: KA2IRLX1870A1

Project No.	:	2005H044
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	:	May 25, 2020
Date of Test	:	May 25, 2020~Jul. 02, 2020
Issued Date	:	Jul. 20, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2020052550 for EUT; SH2020052550-1/ SH20200609295-2 for adapter.
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	Jul. 20, 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)
1	N/A	N/A	PCB	N/A	3
2	N/A	N/A	PCB	N/A	3

Note:

(1) Antenna Gain=3 dBi. 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) Beamforming gain: 3dB.

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

For 5G:

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) Antenna Gain=3 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = $G_{Ant.}$ +10log(N)dBi, that is Directional gain=3+10log(2)dBi=6.01; So,the UNII-1,UNII-3 output power limit is 30-6.01+6=29.99, The UNII-1 power spectral density limit is 17-6.01+6=16.99, the UNII-3 power spectral density limit is 30-6.01+6=29.99.

(2) Beamforming gain:3dB.

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:

Non-Beamforming

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	398.1072	0.26120	1	Complies

Beamforming

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	398.1072	0.26120	1	Complies

For 5GHz :

Non-Beamforming

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	3.99020	30	1000.0000	0.65610	1	Complies

Beamforming

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	3.99020	30	1000.0000	0.65610	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
0.26120	0.65610	0.9173	1	Complies

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

End of Test Report