FCC RF EXPOSURE REPORT

FCC ID: KA2IRX3260A1

Project No.	:	2102H003
Equipment	:	AX3200 Mesh Wi-Fi 6 Router
Brand Name	:	D-Link
Test Model	:	DIR-X3260
Series Model	:	N/A
Applicant	:	D-Link Corporation
Address	:	14420 Myford Road Suite 100 Irvine California United States 92606
Manufacturer	:	D-Link Corporation
Address	:	14420 Myford Road Suite 100 Irvine California United States 92606
Date of Receipt	:	Mar. 10, 2021
Date of Test	:	Mar. 10, 2021~Apr. 14, 2021
Issued Date	:	May. 27, 2021
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2021020931 for radiation; SH2021020932 for conducted; SH2021020930-3 for adapter.
Standard(s)	:	FCC Part 2.1091 FCC Title 47 Part 2.1091 KDB 447498 D01 General RF exposure guidance v06

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.	May. 27, 2021

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 BLE

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	3.2

Note: The antenna gain provided by the manufacturer

For 2.4G

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	Dipole	N/A	4.75
2	N/A	N/A	Dipole	N/A	4.75
3	N/A	N/A	Dipole	N/A	4.75
4	N/A	N/A	Dipole	N/A	4.67

Note:

1.This EUT supports Beamforming and CDD, all antennas have the same gain, any transmit signals are correlated with each other, so

1) Beamforming:

Directional gain = $10\log[(10^{G1/20}+10^{G2/20+....}+10^{GN/20})^2/N_{ANT}]$dBi,

that is Directional gain=$10\log[(10^{G1/20}+10^{G2/20+....}+10^{GN/20})^2/N_{ANT}]$dBi =10.75;

So output power limit is 30-10.75+6=25.25, the power spectral density limit is 8-10.75+6=3.25.

2) CDD:

For power spectral density measurements,

Directional gain = $10\log[(10^{G1/20}+10^{G2/20+....}+10^{GN/20})^2/N_{ANT}]$dBi,

that is Directional gain=$10\log[(10^{G1/20}+10^{G2/20+....}+10^{GN/20})^2/N_{ANT}]$dBi =10.75;

So power spectral density limit is 8-10.75+6=3.25.

For power meansurements, Directional gain =$G_{ANT\ MAX.}$+Array Gain, Array Gain=0dB($N_{ANT}\le4$),

so the Directional gain=4.75.

2.The antenna gain provided by the manufacturer.

Operating Mode / TX Mode	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 1+2+3+4
IEEE 802.11b	✓	✓	✓	✓	✗
IEEE 802.11g	✓	✓	✓	✓	✗
IEEE 802.11n (HT20)	✓	✓	✓	✓	✓
IEEE 802.11n (HT40)	✓	✓	✓	✓	✓

For 5G

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	Dipole	N/A	4.96
2	N/A	N/A	Dipole	N/A	4.96
3	N/A	N/A	Dipole	N/A	4.96
4	N/A	N/A	Dipole	N/A	4.92

Note:

1.This EUT supports Beamforming and CDD, all antennas have unequal gains, any transmit signals are correlated with each other, so

1) Beamforming:

Directional gain = $10\log[(10^{G1/20}+10^{G2/20}+….+10^{GN/20})^2/N_{ANT}]$dBi,

that is Directional gain=$10\log[(10^{G1/20}+10^{G2/20}+….+10^{GN/20})^2/N_{ANT}]$dBi =10.97;

Then, the UNII-1, UNII-3 output power limit is 30-10.97+6=25.03, the UNII-2A,UNII-2C output power limit is 24-10.97+6=19.03. The UNII-1 power spectral density limit is 17-10.97+6=12.03,UNII-2A,UNII-2C power spectral density limit is 11-10.97+6=6.03, the UNII-3 power spectral density limit is 30-10.97+6=25.03.

2) CDD:

For power spectral density measurements, the Directional gain=$10\log[(10^{G1/20}+10^{G2/20}+….+10^{GN/20})^2/N_{ANT}]$dBi,

that is Directional gain=$10\log[(10^{G1/20}+10^{G2/20}+….+10^{GN/20})^2/N_{ANT}]$dBi =10.97;

Then, the UNII-1 power spectral density limited is 17-10.97+6=12.03, UNII-2A,UNII-2C power spectral density limit is 11-10.97+6=6.03, the UNII-3 power spectral density limit is 30-10.97+6=25.03.

For power meansurements, Directional gain= $G_{ANT\ MAX.}$+Array Gain.Array Gain=0dB(N_{ANT}≤4), so the Directional gain=4.96.

2.The antenna gain and beamforming gain are provided by the manufacturer.

Operating Mode / TX Mode	Ant.1	Ant.2	Ant.3	Ant.4	Ant.1+ Ant.2+ Ant.3+ Ant.4
IEEE 802.11a	✓	✓	✓	✓	-
IEEE 802.11n (HT20)	✓	✓	✓	✓	✓
IEEE 802.11n (HT40)	✓	✓	✓	✓	✓
IEEE 802.11ac(VHT20)	✓	✓	✓	✓	✓
IEEE 802.11ac(VHT40)	✓	✓	✓	✓	✓
IEEE 802.11ac(VHT80)	✓	✓	✓	✓	✓
IEEE 802.11ac(VHT80+80)	✓	✓	✓	✓	✓
IEEE 802.11ax(HE20)	✓	✓	✓	✓	✓
IEEE 802.11ax(HE40)	✓	✓	✓	✓	✓
IEEE 802.11ax(HE80)	✓	✓	✓	✓	✓
IEEE 802.11ax(HE80+80)	✓	✓	✓	✓	✓

2. TEST RESULTS

For BLE

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
3.2	2.08930	16	39.8107	0.00735400	1	Complies

For 2.4GHz:

Beamforming

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
10.75	11.8850	25	316.2278	0.33231200	1	Complies

CDD：

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
4.75	2.9854	28	630.9573	0.16655200	1	Complies

For 5GHz :

Beamforming

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
10.97	12.5026	25	316.2278	0.34958000	1	Complies

CDD：

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
4.96	3.1333	30	1000.0000	0.27704400	1	Complies

For the max simultaneous transmission MPE:

2.4G+5G+BLE

Power Density (S) (mW/cm^2) 2.4GHz	Power Density (S) (mW/cm^2) 5GHz	Power Density (S) (mW/cm^2) BLE	Total	Limit of Power Density (S) (mW/cm^2)	Test Result
0.33231200	0.34958000	0.00735400	0.689246	1	Complies

Note: The calculated distance is 30 cm.
Output power including tune up tolerance.

End of Test Report