

Radio Exposure Evaluation Report

FCC ID : KA2R04A1

Equipment : N300 Wi-Fi AI Router with 3 antennas, N300 Wi-Fi AI Router

Brand Name : D-Link

Model Name : R04, R03

Applicant : D-Link Corporation
No. 289, Xinhua 3rd Road, Neihu District, Taipei 11494, Taiwan

Manufacturer : D-Link Corporation
No. 289, Xinhua 3rd Road, Neihu District, Taipei 11494, Taiwan

Standard : 47 CFR FCC Part 2 Subpart J, section 2.1091

The product was received on Aug. 05, 2021, and testing was started from Aug. 19, 2021 and completed on Aug. 27, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR FCC Part 2 Subpart J, section 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. Hsinhua Laboratory
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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Photographs of EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FA180524	01	Initial issue of report	Sep. 30, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
None.

Reviewed by: Sam Tsai

Report Producer: Michelle Tsai

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2 Antenna Information

Sample 1

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	RFlink	RF21C6564A	Dipole	N/A	5.5
2	RFlink	RF21C6565A	Dipole	N/A	5.5

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (2TX/2RX)

Ant. 1~2 could transmit/receive simultaneously.

Sample 2

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	RFlink	RF21C6564A	Dipole	N/A	5.5
2	RFlink	RF21C6565A	Dipole	N/A	5.5
3	RFlink	RF21C6563A	Dipole	N/A	5.5

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (2TX/3RX)

Ant. 1~2 could transmit simultaneously.

Ant. 1~3 could receive simultaneously.

1.3 Table for Multiple Listing

Sample No.	Equipment Name	Model Name	Antenna
1	N300 Wi-Fi AI Router	R03	2 antennas
2	N300 Wi-Fi AI Router with 3 antennas	R04	3 antennas

From the above models, model: R04 was selected as representative model for the conducted test.



1.4 Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory		
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.) TEL: 886-3-327-3456 FAX: 886-3-327-0973
Test site Designation No. TW3785 with FCC.		
<input type="checkbox"/>	Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: 886-3-318-0787 FAX: 886-3-318-0287
Test site Designation No. TW0008 with FCC.		
Subcontractor : Sporton International Inc. Hsinchu Laboratory		
<input type="checkbox"/>	Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085
Test site Designation No. TW0006 with FCC.		

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	5.50	20.96	26.46	0.50	26.96	0.49659	20	0.09879	1.00000
2.4G;D1D	5.50	24.28	29.78	0.50	30.28	1.06660	20	0.21219	1.00000

————THE END————