

FCC RF EXPOSURE REPORT

FCC ID: KA2WR920VA1-1

Project No. : 1901H008A
Equipment : CPE
Model Name : DWR-920V
Series Model : N/A
Applicant : D-Link Corporation
Address : No.289, Xinhua 3rd Rd., Neihu District, Taipei
11494, Taiwan

According: : FCC Guidelines for Human Exposure IEEE
C95.1 & FCC Part 2.1091

B T L I N C .

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Certificate # 5123. 03

. GENERAL SUMMARY

Equipment : CPE
Brand Name : D-Link
Test Model : DWR-920V
Series Model : N/A
Applicant : D-Link Corporation
Manufacturer : D-Link Corporation
Address : No.289, Xinhua 3rd Rd., Neihu District, Taipei 11494, Taiwan
Date of Test : Mar. 19, 2019~Apr. 18, 2019
Test Sample : Engineering Sample No.: B190301797
Standards : 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.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-5-1901H008A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

. 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 2.4GHz

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	1
2	N/A	N/A	PCB	N/A	1

Note:

This EUT supports MIMO 2X2, any transmit signals are correlated with each other. Then, Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi. So,

- (1) For Non Beamforming function, Directional gain = $10\log[(10^{3.14/20} + 10^{3.40/20})^2 / 2]$ dBi = 4.01. The output power limit is 30-4.01+6=31.99, the power density limit is 17-4.01+6=18.99.
- (2) For Beamforming function, Beamforming Gain: 2dBi. So, Directional gain = 1+2=3dBi. Then, the output power limit is 30-3+6=33, the power density limit is 17-3+6=20.

The worst case for 1TX/2TX as follow:

Operating Mode TX Mode	1TX	2TX
802.11b	V (ANT 2)	-
802.11g	V (ANT 2)	-
802.11n(20 MHz)	-	V (ANT 1+ANT 2)
802.11n(40 MHz)	-	V (ANT 1+ANT 2)

For LTE Band 2

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	External	N/A	4.1.

For LTE Band 5

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	External	N/A	-0.83

For LTE Band 4

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	External	N/A	2.73

For LTE Band 12

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	External	N/A	-0.81

For LTE Band 41

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-4

For LTE Band 66

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	External	N/A	2.45

For WCDMA Band II

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-4

For WCDMA Band V

Ant.	Brand	P/N	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-4

. TEST RESULTS

For 2.4GHz Non-Beamforming

Directional gain (dBi)	Directional 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
4.01	2.5177	23.45	221.3095	0.11090	1	Complies

For 2.4GHz with Beamforming

Directional gain (dBi)	Directional 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
3.00	1.9953	22.65	184.0772	0.07311	1	Complies

For LTE Band 2

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
26.64	461.3176	0.09182	1	Complies

For LTE Band 4

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
25.42	348.3373	0.06933	1	Complies

For LTE Band 66

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
25.61	363.9150	0.07244	1	Complies

For LTE Band 41

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
18.87	77.0903	0.01534	1	Complies

For LTE Band 5

ERP=EIRP-2.15

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
19.82	95.9401	0.01910	1	Complies

For LTE Band 12

ERP=EIRP-2.15

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
21.87	153.8155	0.03062	1	Complies

For WCDMA Band II

ERP=EIRP-2.15

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
20.25	105.9254	0.13241	1	Complies

For WCDMA Band V

ERP=EIRP-2.15

Max EIRP (dBm)	Max EIRP (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
18.71	74.302	0.09288	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4G	WCDMA	LTE			
0.11090	0.13241		0.24331	1	Complies
0.11090		0.09182	0.20272	1	Complies

Note: the calculated distance is 20 cm.

End of Test Report