

FCC RF EXPOSURE REPORT

FCC ID: KA2IR819A1

Project No. : 1605C069A
Equipment : Wireless AC750 Dual Band Router
Model : DIR-819
Applicant : D-LINK Corporation
Address : 17595 Mt. Herrmann, Fountain Valley, California, United States
According: : FCC Guidelines for Human Exposure IEEE C95.1

B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

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

2.4G WIFI

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Length
1		RF21C00633A	Dipole	N/A	5	150mm
2		RF21C00633A	Dipole	N/A	5	100mm

Note:

- (1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

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

Note: ANT 1 for 1TX was found to be the worst case and recorded.

5G WIFI

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Length
1		AG-011400-0517	Dipole	N/A	5	100mm

TEST RESULTS

2.4G WIFI

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B MODE /CH01, CH06, CH11_ANT 1		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	22.21	166.3413	0.10470089	1	Complies
5	3.1623	23.62	230.1442	0.14486063	1	Complies
5	3.1623	23.59	228.5599	0.14386342	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G MODE /CH01, CH06, CH11_ANT 1		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	22.84	192.3092	0.12104598	1	Complies
5	3.1623	26.76	474.2420	0.29850415	1	Complies
5	3.1623	22.92	195.8845	0.12329639	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode_CH01/06/11_ANT 1+ANT 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	24.74	297.8516	0.18747802	1	Complies
5	3.1623	26.21	417.8304	0.26299674	1	Complies
5	3.1623	25.04	319.1538	0.20088632	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode_CH03/06/09_Total		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	26.24	420.7266	0.26481975	1	Complies
5	3.1623	26.51	447.7133	0.28180609	1	Complies
5	3.1623	26.23	419.7590	0.26421068	1	Complies

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EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A Mode / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.26	53.2108	0.03349272	1	Complies
5	3.1623	17.79	60.1174	0.03783993	1	Complies
5	3.1623	17.97	62.6614	0.03944122	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.89	61.5177	0.03872134	1	Complies
5	3.1623	17.87	61.2350	0.03854343	1	Complies
5	3.1623	17.84	60.8135	0.03827810	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode / CH38, CH46		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.59	57.4116	0.03613686	1	Complies
5	3.1623	17.73	59.2925	0.03732075	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 Mode / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.92	61.9441	0.03898974	1	Complies
5	3.1623	17.97	62.6614	0.03944122	1	Complies
5	3.1623	17.88	61.3762	0.03863228	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 Mode / CH38, CH46		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.56	57.0164	0.03588809	1	Complies
5	3.1623	17.66	58.3445	0.03672403	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 Mode / CH42		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	15.77	37.7572	0.02376569	1	Complies

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EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A Mode / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	18.52	71.1214	0.04476621	1	Complies
5	3.1623	18.50	70.7946	0.04456053	1	Complies
5	3.1623	18.46	70.1455	0.04415200	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	18.24	66.6807	0.04197110	1	Complies
5	3.1623	18.34	68.2339	0.04294873	1	Complies
5	3.1623	18.31	67.7642	0.04265308	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode / CH151, CH159		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.92	61.9441	0.03898974	1	Complies
5	3.1623	17.97	62.6614	0.03944122	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 Mode / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	18.21	66.2217	0.04168217	1	Complies
5	3.1623	18.11	64.7143	0.04073337	1	Complies
5	3.1623	18.20	66.0693	0.04158631	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 Mode / CH151, CH159		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.94	62.2300	0.03916971	1	Complies
5	3.1623	18.17	65.6145	0.04130003	1	Complies

EUT:	Wireless AC750 Dual Band Router	Model Name :	DIR-819
Temperature:	24 °C	Relative Humidity:	52%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 Mode / CH155		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5	3.1623	17.79	60.1174	0.03783993	1	Complies

For 2.4G+5G simultaneous transmission MPE:

$$0.2985/1+0.0448/1=0.3433<1$$

Note: the calculated distance is 20 cm.