

# **FCC RF EXPOSURE REPORT**

**FCC ID: RWO-RZ370251**

**Project No. : 1712C246**  
**Equipment : Gaming Router**  
**Model : RZ37-0251**  
**Applicant : Razer Inc.**  
**Address : 201 3rd Street, Suite 900, San Francisco,CA**  
**94103,USA**

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

## **B T L I N C .**

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## 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 WLAN 2.4G

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.23
2	<b>LYNwave</b>	N/A	Internal Antenna	N/A	1.77

Table for Filed Antenna WLAN 5G B3+B4

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	
					UNII-2C	UNII-3
3	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.43	3.45
4	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.90	3.92

Table for Filed Antenna WLAN 5G B1+B2

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
5	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.27
6	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.05
7	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.47
8	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.86

Table for Filed Antenna LE

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
9	<b>LYNwave</b>	N/A	Internal Antenna	N/A	3.33

## TEST RESULTS

EUT :	Gaming Router	Model Name :	RZ37-0251
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		

### 2.4G WIFI

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.23	2.1038	28.56	717.7943	0.13359	1	Complies

### 5G Band UNII-1 (Non Beamforming)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.86	2.4322	27.48	559.7576	0.27099	1	Complies

### 5G Band UNII-1 (Beamforming)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
7.73	5.9293	27.29	535.7967	0.28104	1	Complies

### 5G Band UNII-2A (Non Beamforming)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.86	2.4322	23.04	201.3724	0.09749	1	Complies

### 5G Band UNII-2A (Beamforming)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
7.73	5.9293	22.25	167.8804	0.08806	1	Complies

**5G Band UNII-2C (Non Beamforming)**

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.92	2.4660	23.43	220.2926	0.10813	1	Complies

**5G Band UNII-2C (Beamforming)**

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.63	4.6026	23.33	215.2782	0.08765	1	Complies

**5G Band UNII-3 (Non Beamforming)**

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.92	2.4660	28.13	650.1297	0.31912	1	Complies

**5G Band UNII-3 (Beamforming)**

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
6.65	4.6238	28.08	642.6877	0.26289	1	Complies

**LE**

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3.33	2.1528	-1.72	0.6730	0.00013	1	Complies

**For 2.4G+5G simultaneous transmission MPE:**

**Non Beamforming:**

$$0.30057/1+0.27099/1+0.31912/1+0.00029/1=0.89097$$

**Beamforming:**

$$0.13359/1+0.28104/1+0.26289/1+0.00013/1=0.67765$$

Note: the calculated distance is 30 cm for beamforming mode, 20 cm for non beamforming mode.