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47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091**

RF EXPOSURE REPORT

For

2.4 GHz Wi-Fi PoE Gateway

Model: G2

Trade Name: MIMOSA NETWORKS

Issued to

**Mimosa Networks, Inc.
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Issued by

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Testing Laboratory
1309

Revision History

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TABLE OF CONTENTS

1. LIMIT 4

2. EUT SPECIFICATION..... 4

3. TEST RESULTS..... 5

4. MAXIMUM PERMISSIBLE EXPOSURE 6

1. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

2. EUT SPECIFICATION

Product	2.4 GHz Wi-Fi PoE Gateway
Model	G2
Model Discrepancy	N/A
Trade Name	MIMOSA NETWORKS
Frequency band (Operating)	<input checked="" type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz 802.11n HT40: 2.422GHz ~ 2.452GHz <input type="checkbox"/> Others
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna Specification	LITE-ON / WR300-Mi / PCB Antenna Antenna 1: 2.0 dBi Antenna 2: 2.4 dBi 2.4GHz: Antenna Gain : 2.4 dBi (Numeric gain: 1.74) Worst 2.4GHz: Directional gain = 2.4 dBi +10log (2) = 5.41 dBi (Numeric gain: 3.48)
Maximum Average output power	IEEE 802.11b Mode: 25.24 dBm (334.195 mW) IEEE 802.11g Mode: 24.41 dBm (276.058 mW) IEEE 802.11n HT 20 Mode: 24.01 dBm (251.768 mW) IEEE 802.11n HT 40 Mode: 18.33 dBm (68.077 mW)
Maximum Tune up Power	IEEE 802.11b Mode: 27.00 dBm (501.187 mW) IEEE 802.11g Mode: 26.00 dBm (398.107 mW) IEEE 802.11n HT 20 Mode: 26.00 dBm (398.107 mW) IEEE 802.11n HT 40 Mode: 20.00 dBm (100.000 mW)
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

3. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

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

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

4. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where $P =$ Power in mW

$G =$ Numeric antenna gain

$S =$ Power density in mW / cm²

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	501.187	3.48	20	0.3471	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	398.107	3.48	20	0.2757	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	398.107	3.48	20	0.2757	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	100.000	3.48	20	0.0693	1