






**IEEE C95.1 2005
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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

Smart Home Gateway

Model Name	Trade Mark
NA301-ZBxxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-" for marketing purpose)	
G150-ZBxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-" for marketing purpose)	
VeraEdge-ZBxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-" for marketing purpose)	
F2-ZB	
	

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	2016/07/27	Initial Issue	ALL	Angel Cheng

TABLE OF CONTENTS

1. LIMIT 4

2. EUT SPECIFICATION 4

3. TEST RESULTS 6

4. MAXIMUM PERMISSIBLE EXPOSURE 7

<p>Maximum Average output power</p>	<p>IEEE 802.11b Mode: 19.40 dBm (87.096 mW) IEEE 802.11g Mode: 21.88 dBm (154.170 mW) IEEE 802.11n HT 20 Mode: 21.48 dBm (140.605 mW) IEEE 802.11n HT 40 Mode: 16.23 dBm (41.976 mW) Zigbee: 16.01 dBm (39.902 mW)</p>
<p>Maximum Tune up Power</p>	<p>IEEE 802.11b Mode: 21.00 dBm (125.893 mW) IEEE 802.11g Mode: 23.00 dBm (199.526 mW) IEEE 802.11n HT 20 Mode: 23.00 dBm (199.526 mW) IEEE 802.11n HT 40 Mode: 18.00 dBm (63.096 mW) Zigbee: 18.00 dBm (63.096 mW)</p>
<p>Evaluation applied</p>	<p><input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A</p>

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:

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

Changing to units of mW and cm, using:

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

$$d (cm) = d(m) / 100$$

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	125.893	4.44	20	0.1112	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	199.526	4.44	20	0.1763	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	199.526	4.44	20	0.1763	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	63.096	4.44	20	0.0557	1

Zigbee:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
Mid	2440	63.096	3.1	20	0.0389	1