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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

802.11b/g/n WiFi Module

Model: SA9800-A1

Data Applies To : SA9800-C1

Trade Name: SAVITECH

Issued for

Savitech corp.

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TAF
Testing Laboratory
0240

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	08/04/2015	Initial Issue	ALL	Gloria Chang

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1. <u>LIMIT</u>

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. <u>EUT SPECIFICATION</u>

EUT	802.11b/g/n WiFi Module
Model	SA9800-A1
Data Applies To	SA9800-C1
Identify Number	T150707S03
Frequency band (Operating)	☒ Bluetooth 2.1 + EDR / 4.0: 2402 ~ 2480 MHz 　802.11b/g/n HT20: 2.412GHz ~ 2.462GHz 　802.11n HT40: 2.422GHz ~ 2.452GHz 　802.11a/n HT20: 5.180GHz ~ 5.320GHz / 5.500 ~ 5.825GHz 　802.11n HT40: 5.190GHz ~ 5.310GHz / 5.510 ~ 5.795GHz 　802.11ac VHT80: 5.210GHz ~ 5.290GHz / 5.530 ~ 5.775GHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	2.4GHz:　Antenna Gain :　3.14 dBi (Numeric gain 2.06)
Maximum output power	IEEE 802.11b Mode:　　　24.27 dBm　(267.301 mW) IEEE 802.11g Mode:　　　25.42 dBm　(348.337 mW) IEEE 802.11n HT 20 Mode: 25.13 dBm　(325.837 mW) IEEE 802.11n HT 40 Mode: 22.83 dBm　(191.867 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

3. <u>TEST RESULTS</u>

No non-compliance noted.

<u>Calculation</u>

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

Where   E = Field strength in Volts / meter
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in watts / meter

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 (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

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

Where   d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

4. <u>MAXIMUM PERMISSIBLE EXPOSURE</u>

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 / cm^2

IEEE 802.11b mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
2437	267.301	2.06	20	0.1096	1

IEEE 802.11g mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
2437	348.337	2.06	20	0.1428	1

IEEE 802.11n HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
2437	325.837	2.06	20	0.1336	1

IEEE 802.11n HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
2437	191.867	2.06	20	0.0787	1