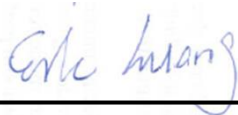


RF Exposure Evaluation Report

APPLICANT : Samsara Networks
EQUIPMENT : VG34
BRAND NAME : SAMSARA
MODEL NAME : 010-0034
MARKETING NAME : VG34
FCC ID : 2AIHD0034
STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



Table of Contents

1. ADMINISTRATION DATA 4

 1.1. Testing Laboratory 4

2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) 5

3. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS 6

4. RF EXPOSURE LIMIT INTRODUCTION 7

5. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION 8

 5.1. Standalone Power Density Calculation 8

 5.2. Collocated Power Density Calculation..... 8



1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	Samsara Networks
Address	201 Potrero Avenue, San Francisco, CA 94103

Manufacturer	
Company Name	Samsara Networks
Address	201 Potrero Avenue, San Francisco, CA 94103



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	VG34
Brand Name	SAMSARA
Model Name	010-0034
Marketing Name	VG34
FCC ID	2AIHD0034
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	802.11b/g/n HT20/HT40 Bluetooth LE
HW Version	1.0
SW Version	1.0
EUT Stage	Production Unit

WWAN Module Information	
Product Name	WNC
Model No.	WNC
FCC ID	NKRM18Q2
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM
Remark: The WWAN module is also integrated into this host to do Sim-Tx analysis.	



3. Maximum RF average output power among production units

Mode	Average power(dBm)
WCDMA Band II	24.5
WCDMA Band V	24.5
LTE Band 2	24.0
LTE Band 4	24.0
LTE Band 5	23.5
LTE Band 12	23.5

Mode / Band	Average Power (dBm)
	LE
2.4 GHz Bluetooth	9.0

Band / Mode	IEEE 802.11 Average Power (dBm)			
	11b	11g	HT20	HT40
2.4GHz Band	22.0	20.5	20.5	17.0



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Table with 10 columns: Band, Frequency (MHz), Antenna Gain (dBi), Maximum Power (dBm), Maximum EIRP (dBm), Maximum EIRP (W), Average EIRP (mW), Power Density at 20cm (mW/cm^2), Limit (mW/cm^2), Power Density / Limit. Rows include WCDMA Band 2, WCDMA Band 5, LTE Band 2, LTE Band 4, LTE Band 5, LTE Band 12, 2.4GHz WLAN, and Bluetooth.

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.

5.2. Collocated Power Density Calculation

Table with 4 columns: WLAN Power Density / Limit, Bluetooth Power Density / Limit, WWAN Power Density / Limit, and the summation of (Power Density / Limit) of WWAN+WLAN+Bluetooth. Values are 0.072, 0.004, 0.124, and 0.200 respectively.

Note:

- 1. Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN + Bluetooth.
2. Considering the WWAN module collocation with the WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.