RF Exposure Report

Report No.:	SA171116C13
FCC ID:	2AIHD2024
Test Model:	010-2024
Received Date:	Nov. 03, 2017
Test Date:	Nov. 03 ~ Nov. 20, 2017
Issued Date:	Nov. 21, 2017
Applicant:	SAMSARA NETWORKS INC
Address:	444 De Haro Street, San Francisco, California, United States, 94107
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA171116C13	Original release.	Nov. 21, 2017

1 Certificate of Conformity

Product:	AG24
Brand:	SAMSARA
Test Model:	010-2024
Sample Status:	Engineering sample
Applicant:	SAMSARA NETWORKS INC
Test Date:	Nov. 03 ~ Nov. 20, 2017
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Celine Chou , **Date:** Nov. 21, 2017

Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Nov. 21, 2017

Ken Liu / Senior Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Tune up Power

For WLAN and BT LE:

Function	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	2412-2462	17.82	3.80	20	0.029	1
BT LE	2402-2480	9.67	3.80	20	0.004	1

For WWAN: (Base on WWAN module report (model no.: M14Q2FG-1, brand name: WNC, FCC ID: NKRM18Q2))

Function	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 2	1852.4-1907.6	24.13	4.50	20	0.145	1
WCDMA Band 5	826.4-846.6	24.44	4.70	20	0.163	0.550
LTE Band 2	1850.7-1909.3	23.07	4.50	20	0.114	1
LTE Band 4	1710.7-1754.3	23.77	3.50	20	0.106	1
LTE Band 5	824.7-848.3	23.43	4.70	20	0.129	0.549
LTE Band 12	699.7-715.3	23.50	4.30	20	0.120	0.466

2.4GHz and BT LE technology cannot transmit simultaneously.

2.4GHz and WWAN or BT LE and WWAN technology can transmit simultaneously.

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN + WWAN = 0.029 / 1 + 0.163 / 0.550 = 0.325
2. BT LE + WWAN = 0.004 / 1 + 0.163 / 0.550 = 0.300

Therefore the maximum calculations of above situations are less than the “1” limit.

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