RF Exposure Report

Report No.:	SA190610E05
FCC ID:	2AFDI-ITCOQ835S
Test Model:	Open-Q 835 µSOM
Received Date:	June 10, 2019
Test Date:	Sep. 10, 2019
Issued Date:	Oct. 14, 2019
Applicant:	Intrinsyc Technologies Corporation
Address:	885 Dunsmuir Street #300 Vancouver BC V6C 1N5 Canada
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA190610E05	Original release.	Oct. 14, 2019

1 Certificate of Conformity

Product:	Intrinsyc Open-Q 835 uSOM
Brand:	Intrinsyc Technologies Corporation
Test Model:	Open-Q 835 µSOM
Sample Status:	ENGINEERING SAMPLE
Applicant:	Intrinsyc Technologies Corporation
Test Date:	Sep. 10, 2019
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.3-2002

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 : _____ , **Date:** Oct. 14, 2019

Claire Kuan / Specialist

Approved by : _____ , **Date:** Oct. 14, 2019

Clark Lin / Technical 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				
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

f = Frequency in MHz ; *Plane-wave equivalent power density

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**.

2.4 Antenna Gain

No.	Chain	Brand	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain0	Taoglas	FXP830.07.0100C	3.32 6.11	2.4 ~ 2.5 4.9 ~ 5.8	Dipole Antenna	Ipex MHF	100
2	Chain2	Taoglas	FXP830.07.0100C	3.32 6.11	2.4 ~ 2.5 4.9 ~ 5.8	Dipole Antenna	Ipex MHF	100

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN 2.4GHz	2437	618.782	6.33	20	0.52877	1
WLAN 5GHz (U-NII-1)	5230	48.648	9.12	20	0.07903	1
WLAN 5GHz (U-NII-2A)	5320	118.757	9.12	20	0.19292	1
WLAN 5GHz (U-NII-2C)	5500	119.509	9.12	20	0.19415	1
WLAN 5GHz (U-NII-3)	5825	124.319	9.12	20	0.20196	1
Bluetooth (BT-EDR)	2480	16.749	3.32	20	0.00716	1
Bluetooth (BT-LE)	2402	2.761	3.32	20	0.00118	1

NOTE:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz: Directional gain = 3.32dBi + 10log(2) = 6.33dBi
   5GHz: Directional gain = 6.11dBi + 10log(2) = 9.12dBi

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + Bluetooth = 0.52877 / 1 + 0.00716 / 1 = 0.53593

WLAN 5GHz + Bluetooth = 0.20196 / 1 + 0.00716 / 1 = 0.20912

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

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