

## RF Exposure Report

**Report No.:** SA190610E05

**FCC ID:** 2AFDI-ITCOQ835S

**Test Model:** Open-Q 835  $\mu$ SOM

**Received Date:** June 10, 2019

**Test Date:** Sep. 10, 2019

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

**Applicant:** Intrinsic 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,  
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**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  $\mu$ SOM

**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 <sup>2</sup> )	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 <sup>2</sup> )*	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<sup>2</sup>

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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
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:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 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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