RF Exposure Report

Report No.: SA141112E01A R1

FCC ID: MQT-XCE200WU

Test Model: xCE-200WU-UH

Series Model: xCE-200WU-U

Received Date: Dec. 29, 2014

Test Date: Jan. 27, 2015

Issued Date: Apr. 10, 2015

Applicant: XAC AUTOMATION CORP.

Address: 4F, No. 30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL PARK,HSINCHU,TAIWAN

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

Lab Address: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (1): No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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Table of Contents

Release Control Record **3**

1 Certificate of Conformity **4**

2 RF Exposure **5**

2.1 Limits for Maximum Permissible Exposure (MPE) 5
2.2 MPE Calculation Formula 5
2.3 Classification 5
2.4 Antenna Gain 5

3 Calculation Result of Maximum Conducted Power **6**

Release Control Record

Issue No.	Description	Date Issued
SA141112E01A	Original release.	Feb. 16, 2015
SA141112E01A R1	1. Added the model names. 2. Modified the antenna model name and gain.	Apr. 10, 2015

1 Certificate of Conformity

Product: Terminal

Brand: XAC

Test Model: xCE-200WU-UH

Series Model: xCE-200WU-U

Sample Status: ENGINEERING SAMPLE

Applicant: XAC AUTOMATION CORP.

Test Date: Jan. 27, 2015

Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D03
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 : Phoenix Huang, **Date:** Apr. 10, 2015
Phoenix Huang / Specialist

Approved by : _____, **Date:** Apr. 10, 2015
May Chen / 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**.

2.4 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

GSM / WCDMA Antenna Spec.					
Brand	Model No.	Antenna Type	Antenna Connector	Gain(dBi)	Frequency (MHz)
Ethertronics Inc.	T-000084-01	FPCB	NA	0.14	850
				2.57	1900
WLAN / Bluetooth Antenna Spec.					
Brand	Model No.	Antenna Type	Antenna Connector	Gain(dBi)	Frequency (MHz)
ACX	AT8010-E2R9HAA	Chip	NA	2.5	2400-2500

3 Calculation Result of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	224.388	2.5	20	0.07938	1

For Bluetooth: (BT2.1_EDR)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	5.689	2.5	20	0.00201	1

For Bluetooth: (BT4.0_LE)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	5.794	2.5	20	0.00205	1

For WWAN(2G/3G):

Frequency Band (MHz)	Max Power		Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
	dBm	mW				
826.4-846.6	32.5	1778.28	0.14	20	0.36537	0.56
1850.2-1909.8	28.91	778	2.57	20	0.27971	1

Conclusion:

All of the WLAN, Bluetooth and WWAN(2G/3G) technology can transmit simultaneously, the formula of calculated the MPE is:

$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \ldots\ldots$etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.07938 / 1 + 0.00205 / 1 + 0.36537 / 0.56 = 0.734, which is less than "1".

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