

RF Exposure Report

Report No.: SA140522E04B

FCC ID: MQT-XCE200T3G

Test Model: xCE-200T.3G

Series Model: xCE_E200T.3G

Received Date: July 06, 2016

Test Date: Aug. 13 to 15, 2016

Issued Date: Aug. 31, 2016

Applicant: XAC AUTOMATION CORP.

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PARK,HSINCHU,TAIWAN

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
SA140522E04B	Original release.	Aug. 31, 2016

1 Certificate of Conformity

Product: Terminal

Brand: XAC

Test Model: xCE-200T.3G

Series Model: xCE_E200T.3G

Sample Status: ENGINEERING SAMPLE

Applicant: XAC AUTOMATION CORP.

Test Date: Aug. 13 to 15, 2016

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 : Midoli Peng , **Date:** Aug. 31, 2016
Midoli Peng / Specialist

Approved by : May Chen , **Date:** Aug. 31, 2016
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/cm²

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

WLAN, Bluetooth					
Brand	Model	Antenna Gain (dBi)	Frequency range (GHz to GHz)	Antenna Type	Connector Type
ACX	AT3216-T2R4PAA	1.5	2.4~2.4835	Chip	NA
WWAN					
Brand	Model	Antenna Gain (dBi)	Frequency range	Antenna Type	Connector Type
INPAQ	WA-F-P5-02-011	FDD I :4.2 FDD II: 3.9 FDD V: 0.82 FDD VIII: 0.23 GSM1800: 3.68	GSM850 / FDD V (824-849 MHz) FDD I (1920-1980 MHz) GSM1800 (1710~1785 MHz) GSM1900 / FDD II (1850-1910 MHz) GSM900 / FDD VIII (880-915 MHz)	PCB	RFI-PEX MHF

2.5 Calculation Result of Maximum Conducted Power

WLAN

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	178.649	1.5	20	0.05020	1

BT-EDR

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	9.931	1.5	20	0.00279	1

BT-LE

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	3.105	1.5	20	0.00087	1

WWAN

Frequency Band (MHz)	Time average power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	472 ^(Note)	0.82	20	0.11342	0.5659

Note

Operation Mode	Antenna Gain (dBi)	The Worst Case			Total Peak. Power Output		Time average power (mW)	Power Density (mW/cm ²)	
		Mode	Channel Number	Freq. (MHz)	dBm	mW		Value	Limit
850 band	0.82	GPRS	251	848.8	32.76	1888	472	0.11342	0.5659
1900 band	3.99	GPRS	661	1880	28.62	727.78	181.945	0.09071	1

Note: Calculations for RF Exposure compliance in the cellular and PCS bands are base on the maximum source based time-average power obtained from 2-Slot GPRS operation. The resulting duty cycle factor is 2/8, or 6.02dB.

Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$WLAN + BT + WWAN = 0.05020/1 + 0.00279/1 + 0.11342/0.5659 = 0.25343$$

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

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