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RF Exposure Report

Report No.: RF140813E03B

FCC ID: MQT-TP72HUB2

Test Model: TP72-HUB2

Received Date: Dec. 23, 2015

Test Date: Apr. 14 to June 07, 2016

Issued Date: June 24, 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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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



A D T

Release Control Record

Issue No.	Description	Date Issued
RF140813E03B	Original release.	June 24, 2016

1 Certificate of Conformity

Product: HUB

Brand: XAC

Test Model: TP72-HUB2

Sample Status: ENGINEERING SAMPLE

Applicant: XAC AUTOMATION CORP

Test Date: Apr. 14 to June 07, 2016

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

ANSI/ 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 :



Date:

June 24, 2016

Wendy Wu / Specialist

Approved by :



Date:

June 24, 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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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

For WLAN					
Brand	Model No.	Antenna Type	Antenna Connector	Gain(dBi)	Frequency range (MHz to MHz)
Walsin Technology Corporation	RFANT8010080A3T	Chip	NA	2	2400~2500
For Bluetooth					
Brand	Model No.	Antenna Type	Antenna Connector	Gain(dBi)	Frequency range (MHz to MHz)
ACX	AT3216-T24PAA	Chip	NA	1.5	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	69.183	2	20	0.02181	1

For BT-EDR

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	2.825	1.5	20	0.00079	1

For BT-LE

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	2.748	1.5	20	0.00077	1

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

$WLAN\ 2.4GHz + BT-EDR = 0.02181 / 1 + 0.00079 / 1 = 0.0226$

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

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