RF Exposure Report

Report No.:	SABEOE-WTW-P21110648
FCC ID:	MQT-C150SE
Test Model:	xNFC_C150SE
Received Date:	2021/11/18
Test Date:	2021/12/6
Issued Date:	2022/1/12
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:	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
SABEOE-WTW-P21110648	Original release.	2022/1/12

1 Certificate of Conformity

Product:	Contactless Reader
Brand:	XAC
Test Model:	xNFC_C150SE
Sample Status:	Engineering Sample
Applicant:	XAC AUTOMATION CORP.
Test Date:	2021/12/6
Standards:	FCC Part 2 (Section 2.1091) 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:** 2022/1/12

Claire Kuan / Specialist

Approved by : _____ , **Date:** 2022/1/12

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 20 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Brand	Model No.	Antenna Net Gain(dBi)	Frequency Range (MHz)	Antenna Type	Connector Type
XAC	PCB ENIG ANT BOARD (RFID) C150S (ROHS)	5	13.56	PCB (2 Layer)	NA

2.5 Calculation Result

The EUT have three type for power provided as following table:

Test Mode	Description
Type A	Power from USB cable
Type B	Power from Y Cable(To RS232 & USB/DC Jack)
Type C	Power from Customized Cable to Y Cable(RS232 & USB/DC Jack)

Type	Evaluation Frequency (MHz)	Max Avg. Power (dBm)	Max Avg. Power (mW)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
Type A	13.56	-10.91	0.0811	20	0.0000161	0.97893	PASS
Type B	13.56	-10.88	0.08166	20	0.0000162	0.97893	PASS
Type C	13.56	-10.76	0.08395	20	0.0000167	0.97893	PASS

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. This power include tune up tolerance range that specified in tune up power table.
3. Calculate the EIRP from the radiated field strength:
   (i) EIRP (dBm) = Radiated field strength (dBuV/m) + 20*Log(d) −104.7
   (ii) d is the measurement distance, in m
   (iii) EIRP = 84.4 + 20*Log(3) −104.7 = -10.76 dBm

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