RF EXPOSURE REPORT

REPORT NO.:	SA140704E05
MODEL NO.:	xCE-25-C
FCC ID:	MQT-E25C
RECEIVED:	July 04, 2014
TESTED:	July 29, 2014
ISSUED:	Aug. 16, 2014
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.

This report should not be used by the client to claim product certification, approval, or endorsement by any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140704E05	Original release	Aug. 16, 2014

1. CERTIFICATION

PRODUCT:	PINPAD
BRAND NAME:	XAC
MODEL NO.:	xCE-25-C
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	XAC AUTOMATION CORP.
TESTED:	July 29, 2014
STANDARDS:	FCC Part 2 (Section 2.1091) KDB 447498 D03 IEEE C95.1

The above equipment (Model: xCE-25-C) 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:** *Aug. 16, 2014*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Aug. 16, 2014*
(May Chen, Manager)

2. EVALUATION RESULT

2.1 SAR TEST EXCLUSION THRESHOLDS

Following FCC KDB 447498 D03 "General SAR test exclusion guidance"

The corresponding SAR Exclusion Threshold condition, listed below:

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR where
- Ø f(GHz) is the RF channel transmit frequency in GHz
- Ø Power and distance are rounded to the nearest mW and mm before calculation
- Ø The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

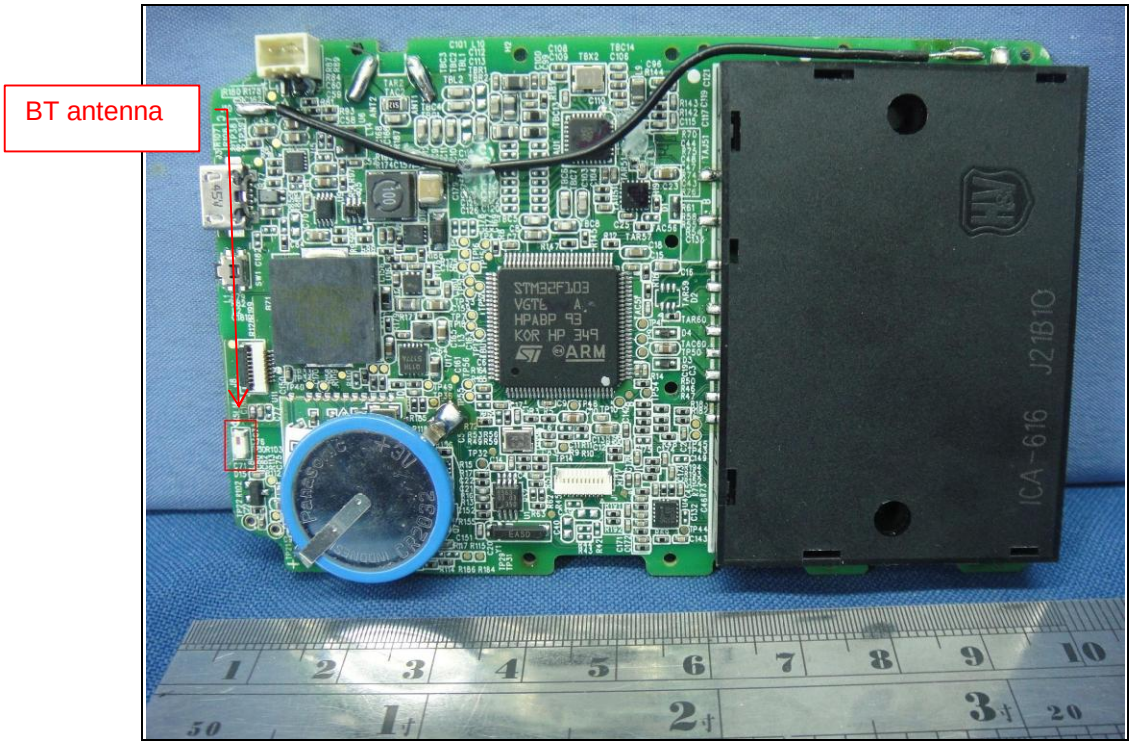
2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100MHz to 1500 MHz
b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by [1 + log(100/f(MHz))] for test separation distances > 50 mm and < 200 mm.
b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by ½ for test separation distances ≤ 50 mm.
c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

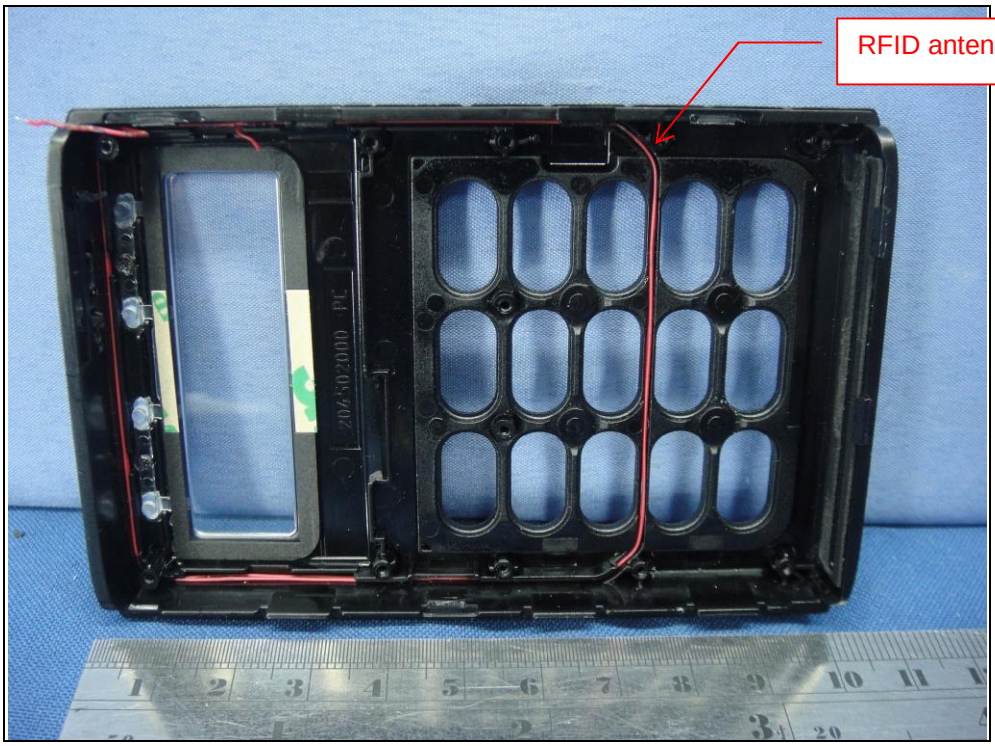
2.2 Smallest Distance From The Antenna And Radiating Structures Or Outer Surface Of The Device

The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. (See below figure)

BT antenna



RFID antenna



2.3 BLUETOOTH MODE

Maximum measured transmitter power:

Frequency (GHz)	Max. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value(NOTE 2)	10-g extremity SAR test exclusion thresholds	Result
2.402 ~ 2.480	1.531	5	0.482	7.5	Pass

NOTE: 1. The antenna type is Chip printed antenna with 1.5dBi gain.

2. Calculate SAR test exclusion thresholds from condition “1” formulas.

Conclusion

Since average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

2.4 RFID MODE

Power Table

Mode	Frequency (MHz)	Electric field (dBuV/m) @3m	EIRP (dBm)
RFID	13.56	69.77	-25.43

Field strength is then converted to EIRP as follows:
(i) EIRP = ((E*d)^2) / 30
where:

E is the field strength in V/m;
d is the measurement distance in meters;
EIRP is the equivalent isotropically radiated power in watts.
(ii) Working in dB units, the above equation is equivalent to: EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77

(iii) Or, if d is 3 meters: EIRP[dBm] = E[dBμV/m] – 95.2

SAR Test Exclusion Thresholds

Frequency (MHz)	Max. Power (mW)*[1]	Min. test separation distance (mm)	SAR test exclusion power thresholds *[2] (mW)	Result
13.56	0.002864	≤ 50 mm	593	Pass

*[1] Max. power obtained from maximum EIRP.
*[2] Calculate SAR test exclusion thresholds from " 3) " formulas. (base on 10-g extremity SAR exclusion thresholds)

Conclusion

Since maximum EIRP is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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