RF EXPOSURE REPORT

REPORT NO.:	SA131015E06
MODEL NO.:	FD130
FCC ID:	MQT-FD130
RECEIVED:	Dec. 14, 2012
TESTED:	Jan. 08, 2013 and Oct. 31 to Nov. 13, 2013
ISSUED:	Nov. 22, 2013
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
SA131015E06	Original release	Nov. 22, 2013

1. CERTIFICATION

PRODUCT:	Terminal
BRAND NAME:	First Data
MODEL NO.:	FD130
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	XAC AUTOMATION CORP.
TESTED DATE:	Jan. 08, 2013 and Oct. 31 to Nov. 13, 2013
STANDARDS:	FCC Part 2 (Section 2.1091)
	FCC OET Bulletin 65, Supplement C (01-01)
	IEEE C95.1

The above equipment (Model: FD130) 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:** *Nov. 22, 2013*
(Elsie Hsu, Specialist)

APPROVED BY : _____ , **DATE:** *Nov. 22, 2013*
(May Chen, Manager)

2. EVALUATION RESULT

Following FCC KDB 447498 D01 "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

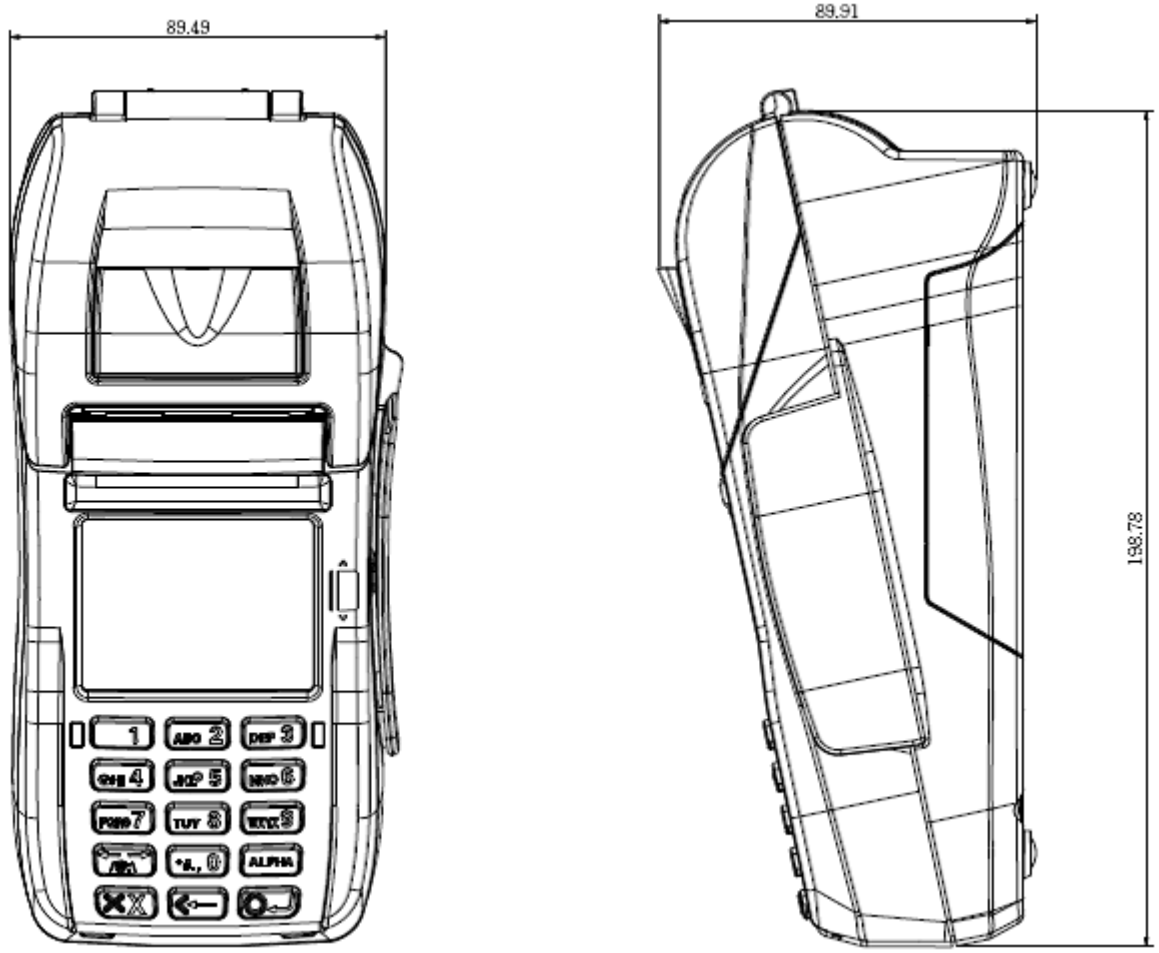
3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by [1 + log(100/f(MHz))] for test separation distances > 50 mm and < 200 mm.
b) The threshold determined by the equation 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.

3. SAR TEST EXCLUSION THRESHOLDS

3.1 SAR TEST EXCLUSION THRESHOLDS – WIFI

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)



WiFi Power table

Mode	Frequency (MHz)	Peak Conducted power (dBm)	Average Conducted power (dBm)
11b	2412	15.07	12.95
	2437	15.14	13.05
	2462	15.24	13.21
11g	2412	21.13	13.19
	2437	21.05	13.29
	2462	20.85	13.10
11n-HT20	2412	20.74	13.24
	2437	20.52	13.13
	2462	20.73	13.31
11n-HT40	2412	20.12	13.09
	2437	20.07	13.13
	2462	20.14	13.27

Maximum Average power for WiFi Mode:

Mode	Frequency (MHz)	Peak Conducted power (dBm)	Average Conducted power (dBm)	Average Conducted power (mW)
11g	2437	21.05	13.29	21.33

SAR Test Exclusion Thresholds

Frequency (MHz)	Max. Power (mW)*1	Min. test separation distance (mm)	SAR test exclusion power thresholds *2 (mW)	Result
2437	21.33	5	24	Pass

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

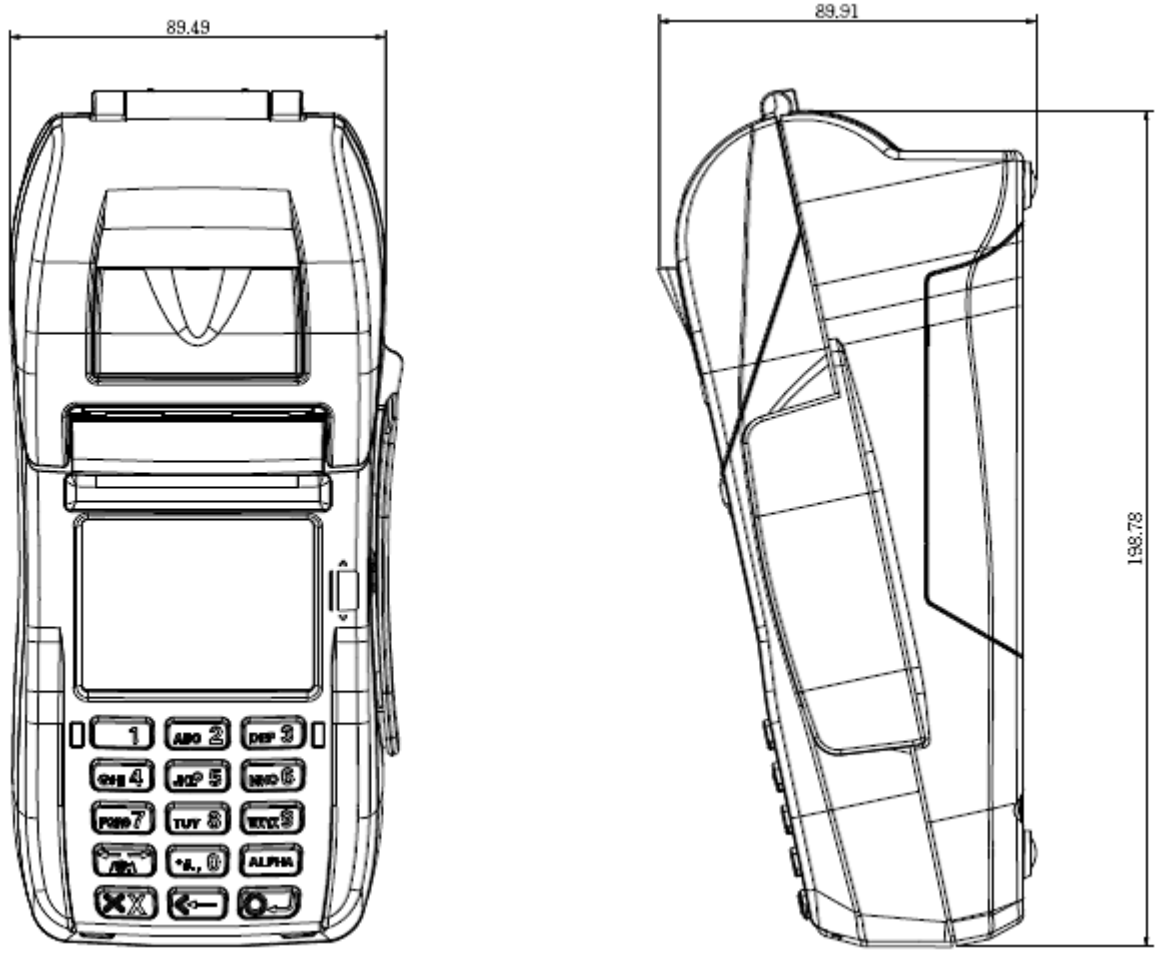
Conclusion

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

3.2 SAR TEST EXCLUSION THRESHOLDS – RFID

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)



Power table

Mode	Frequency (MHz)	Electric field (dBuV/m) @10m	EIRP (dBm)
RFID	13.56	61.14	-23.66

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 10 meters: EIRP[dBm] = E[dBμV/m] – 84.8

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	0.004365	≤ 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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