

# FCC REPORT

**Applicant:** PAX Technology Limited

**Address of Applicant:** Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

**Equipment Under Test (EUT)**

**Product Name:** Countertop Payment Terminal

**Model No.:** A80

**Trade mark:** PAX

**FCC ID:** V5PA80SMBW

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.225

**Date of sample receipt:** 21 Oct., 2021

**Date of Test:** 22 Oct., to 01 Dec., 2021

**Date of report issue:** 13 Dec., 2021

**Test Result:** PASS\*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

**2 Version**

Version No.	Date	Description
00	01 Dec., 2021	Original
01	13 Dec., 2021	Update manufacturer address.

Tested by: Mike.ou  
Test Engineer

Date: 13 Dec., 2021

Reviewed by: Winner Zhang  
Project Engineer

Date: 13 Dec., 2021

### 3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS.....	3
4 TEST SUMMARY.....	4
5 GENERAL INFORMATION.....	5
5.1 CLIENT INFORMATION.....	5
5.2 GENERAL DESCRIPTION OF E.U.T.....	5
5.3 TEST MODE .....	5
5.4 DESCRIPTION OF SUPPORT UNITS.....	5
5.5 MEASUREMENT UNCERTAINTY.....	6
5.6 ADDITIONS TO, DEVIATIONS, OR EXCLUSIONS FROM THE METHOD.....	6
5.7 LABORATORY FACILITY.....	6
5.8 LABORATORY LOCATION .....	6
5.9 TEST INSTRUMENTS LIST.....	7
6 TEST RESULTS AND MEASUREMENT DATA.....	8
6.1 ANTENNA REQUIREMENT .....	8
6.2 RADIATED EMISSION .....	9
6.3 20DB BANDWIDTH.....	16
6.4 FREQUENCY TOLERANCE.....	18
6.5 CONDUCTED EMISSION .....	20
7 TEST SETUP PHOTOS.....	23
8 EUT CONSTRUCTIONAL DETAILS .....	25

## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
Field strength of the fundamental signal	15.225 (a)	Pass
Spurious emissions	15.225(d)& 15.209	Pass
20dB Bandwidth	15.215(c)	Pass
Frequency tolerance	15.225 (e)	Pass
Conducted Emission	15.207	Pass

*Remark:*

1. Pass: The EUT complies with the essential requirements in the standard.  
2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).

<b>Test Method:</b>	ANSI C63.4-2014 ANSI C63.10-2013
---------------------	-------------------------------------

## 5 General Information

### 5.1 Client Information

Applicant:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong
Manufacturer:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address:	401 and 402, Building 3, Shenzhen Software Park, Nanshan District, Shenzhen City, Guangdong Province, P.R.C

### 5.2 General Description of E.U.T.

Product Name:	Countertop Payment Terminal
Model No.:	A80
Operation Frequency:	13.56MHz
Channel numbers:	1
Modulation type:	ASK
Antenna Type:	Internal Antenna
AC adapter:	Adapter 1: Model No.: G024A090100ZZUD Input: AC100-240V, 50/60Hz 0.8A Max Output: DC 9.0V, 1.0A Adapter 2: Model No.: ADS-18SG-09-2 09009G Input: AC100-240V, 50/60Hz 0.6A Max Output: DC 9.0V, 1.0A Adapter 3: Model No.: SW-0396A Input: AC100-240V, 50/60Hz 0.5A Max Output: DC 9.0V, 1.0A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	There are two kinds of EUT, one with modem, the other without. Choose to test the EUT with modem.

### 5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation					
<b>Pre-Test Mode:</b>						
JYT has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:						
Axis	X	Y	Z			
Field Strength(dBuV/m)	68.36	69.16	67.53			
<b>Final Test Mode:</b>						
According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup": Y axis (see the test setup photo).						

### 5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
N/A	N/A	N/A	N/A	N/A

## 5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 150KHz) for V-AMN	3.11 dB
Conducted Emission (150kHz ~ 30MHz) for V-AMN	2.62 dB
Conducted Emission (150kHz ~ 30MHz) for AAN	3.54 dB
Radiated Emission (9kHz ~ 30MHz electric field) for 3m SAC	3.13 dB
Radiated Emission (9kHz ~ 30MHz magnetic field) for 3m SAC	3.13 dB
Radiated Emission (30MHz ~ 1GHz) for 3m SAC	4.45 dB

## 5.6 Additions to, deviations from, or exclusions from the method

No

## 5.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

## 5.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://www.ccis-cb.com>

## 5.9 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
3m SAC	ETS	RFD-100	Q1984	04-14-2021	04-13-2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-044	03-07-2021	03-06-2022
BiConiLog Antenna	SCHWARZBECK	VULB9163	9163-1246	03-07-2021	03-06-2022
Biconical Antenna	SCHWARZBECK	VUBA 9117	9117#359	06-17-2021	06-17-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	912D-916	03-07-2021	03-06-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1067	04-02-2021	04-01-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1068	04-02-2021	04-01-2022
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Keysight	N9010B	MY60240202	10-27-2021	10-26-2022
Low Pre-amplifier	SCHWARZBECK	BBV9743B	00305	03-07-2021	03-06-2022
High Pre-amplifier	SKET	LNPA_0118G-50	MF280208233	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-NN-8M	JYT3M-1	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-18G-NN-8M	JYT3M-2	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-BB-5M	JYT3M-3	03-07-2021	03-06-2022
Cable	Bost	JYT3M-40G-SS-8M	JYT3M-4	04-02-2021	04-01-2022
EMI Test Software	Tonscend	TS+	Version:3.0.0.1		

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI 3	101189	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ENV432	101602	04-06-2021	04-05-2022
LISN	Rohde & Schwarz	ESH3-Z5	843862/010	06-18-2020	06-17-2022
RF Switch	TOP PRECISION	RSU0301	N/A	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-NN-2M	JYTCE-1	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-BN-3M	JYTCE-2	03-03-2021	03-02-2022
EMI Test Software	AUDIX	E3	Version: 6.110919b		

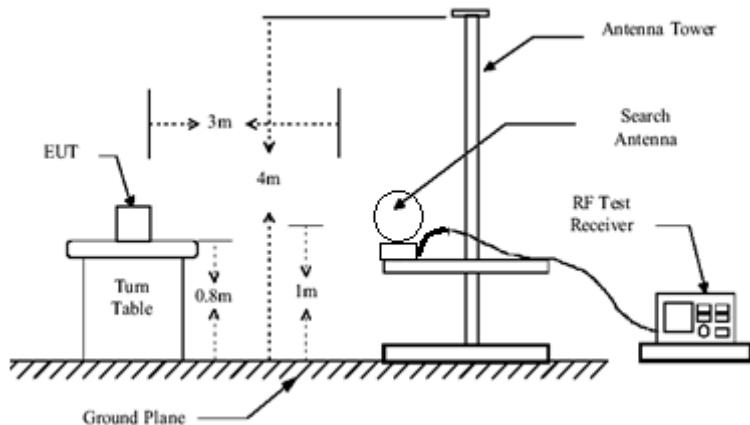
## 6 Test results and Measurement Data

### 6.1 Antenna requirement

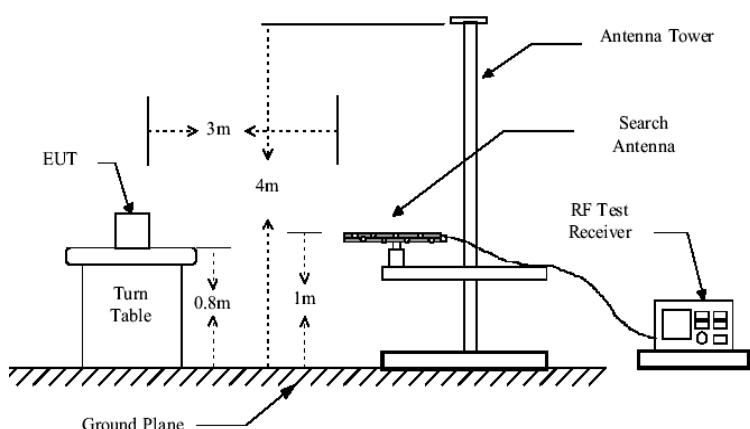
<b>Standard requirement:</b>	FCC Part15 C Section 15.203
15.203 requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
<b>E.U.T Antenna:</b>	
	The EUT make use of an Internal Antenna

## 6.2 Radiated Emission

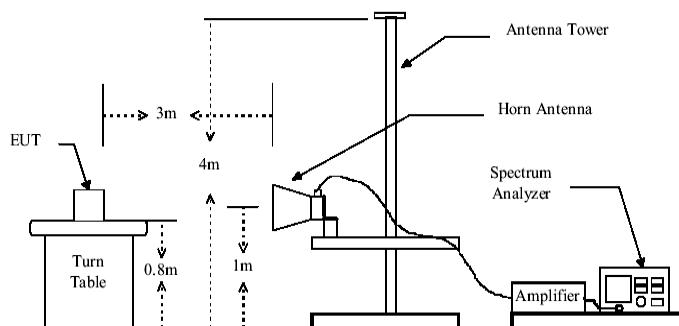
Test Requirement:	FCC Part15 C Section 15.225(a) and 15.209								
Test Frequency Range:	9 kHz to 1000MHz								
Test site:	Measurement Distance: 3m(Semi-Anechoic Chamber)								
Receiver setup:	Frequency	Detector	RBW	VBW	Remark				
	9kHz-150kHz	Quasi-peak	200Hz	600Hz	Quasi-peak Value				
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value				
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value				
	Above 1GHz	Peak	1MHz	3MHz	Peak Value				
Limit: (Field strength of the fundamental signal)	Frequency	Limit (uV/m @30m)		Limit (dBuV/m @3m)					
	13.553MHz-13.567MHz	15848		124.0					
	13.410MHz-13.553MHz & 13.567MHz-13.710MHz	334		90.5					
	13.110MHz-13.410MHz & 13.710MHz-14.010MHz	106		80.5					
	Remark: Per FCC part 15.31, when performing measurements at a distance which is closer than specified, the field strength results shall be extrapolated to the specified distance by using the square of an inverse linear distance extrapolation factor (i.e., 40 dB/decade) in conjunction with the slant-range distance defined in §15.3(hh) of this part.								
Limit: (Spurious Emissions)	Frequency (MHz)	Limit (uV/m @3m)		Distance (m)					
	0.009-0.490	2400/F(kHz)		300					
	0.490-1.705	24000/F(kHz)		30					
	1.705-30	30		30					
	30-88	100		3					
	88-216	150		3					
	216-960	200		3					
	Above 1GHz	500		3					
Test Procedure:	<ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol>								
Test setup:	9kHz-30MHz								



30MHz-1GHz



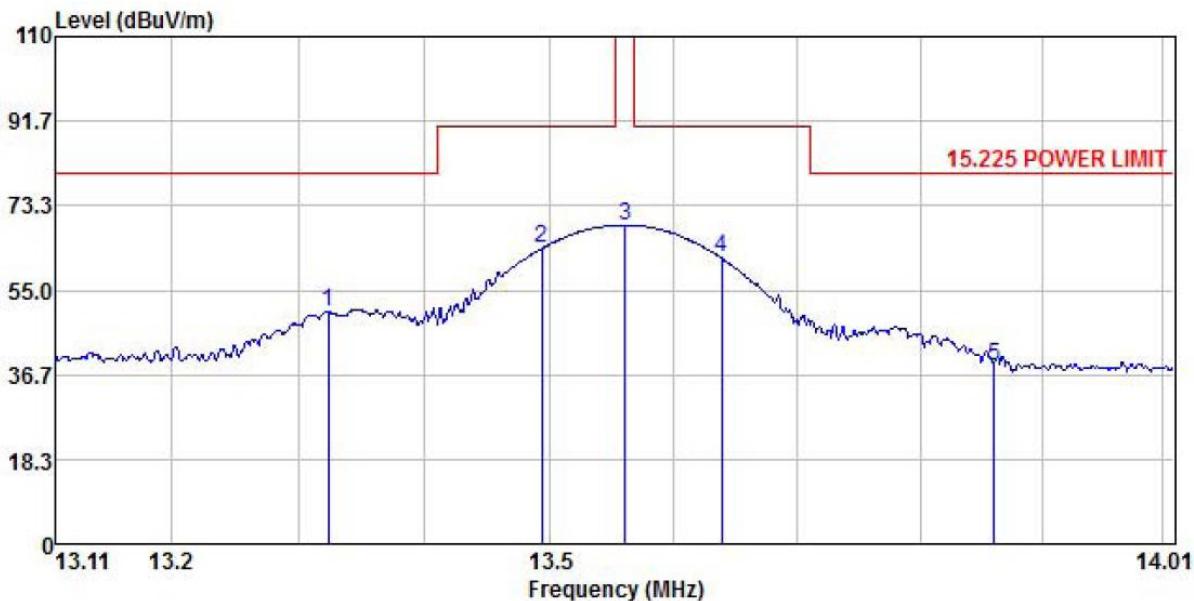
Above 1GHz



Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

**Measurement Data:****Field Strength of fundamental signal:**

<b>Product Name:</b>	Countertop Payment Terminal	<b>Product Model:</b>	A80
<b>Test By:</b>	Mike	<b>Test mode:</b>	NFC Tx mode
<b>Test Voltage:</b>	AC 120/60Hz	<b>Environment:</b>	Temp: 24°C Huni: 57%



Freq	Read	Antenna	Cable	Preamp	Limit	Line	Over	Remark
	MHz	Level	Factor	Loss				
1	13.323	30.18	19.63	0.40	0.00	50.21	80.50	-30.29
2	13.493	43.98	19.61	0.41	0.00	64.00	90.50	-26.50
3	13.561	49.16	19.59	0.41	0.00	69.16	124.00	-54.84
4	13.638	41.94	19.57	0.42	0.00	61.93	90.50	-28.57
5	13.861	18.54	19.52	0.43	0.00	38.49	80.50	-42.01

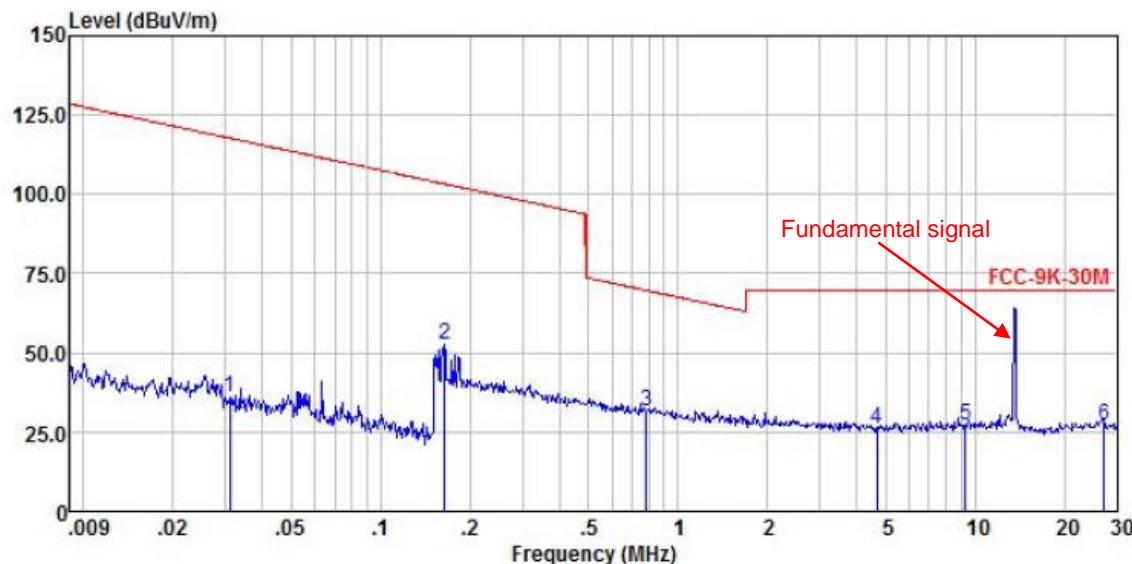
**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

## Spurious Emissions:

Test frequency range: 9 kHz- 30 MHz

Product Name:	Countertop Payment Terminal	Product Model:	A80
Test By:	Mike	Test mode:	NCF Tx mode
Test Frequency:	9 kHz- 30 MHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%

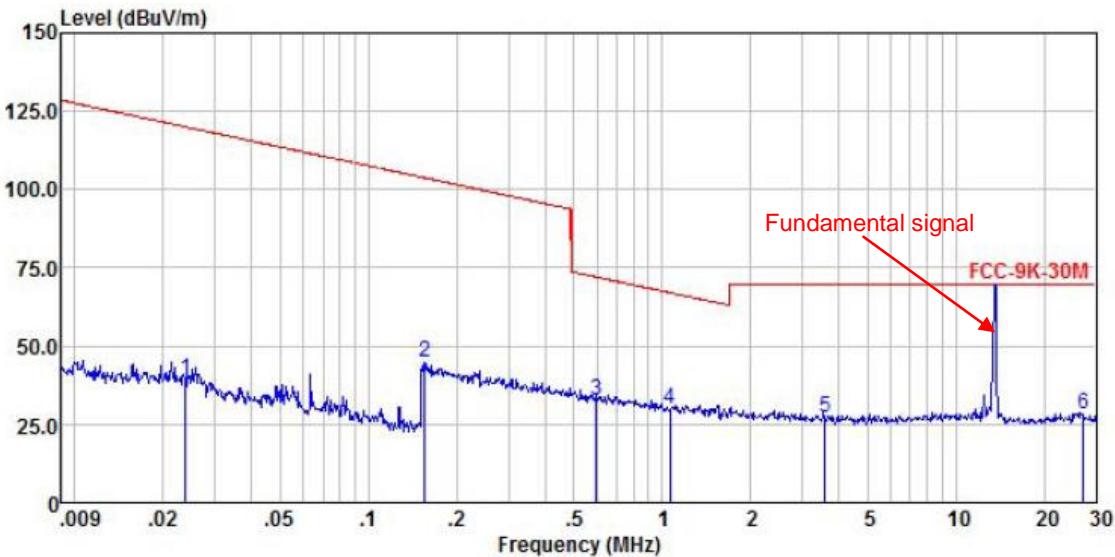


Freq	Read	Antenna	Cable	Preamp	Limit	Over	Line	Limit	Remark
	Freq	Level	Antenna Factor	Cable Loss					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	0.031	15.92	20.23	0.02	0.00	36.17	117.72	-81.55	Peak
2	0.164	32.48	20.24	0.03	0.00	52.75	103.31	-50.56	Peak
3	0.786	10.59	20.60	0.09	0.00	31.28	69.71	-38.43	Peak
4	4.681	5.60	20.14	0.28	0.00	26.02	69.50	-43.48	Peak
5	9.329	6.47	20.28	0.35	0.00	27.10	69.50	-42.40	Peak
6	27.217	6.73	19.57	0.61	0.00	26.91	69.50	-42.59	Peak

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

<b>Product Name:</b>	Countertop Payment Terminal	<b>Product Model:</b>	A80
<b>Test By:</b>	Mike	<b>Test mode:</b>	NFC Tx mode
<b>Test Frequency:</b>	9 kHz- 30 MHz	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	AC 120/60Hz	<b>Environment:</b>	Temp: 24°C Huni: 57%



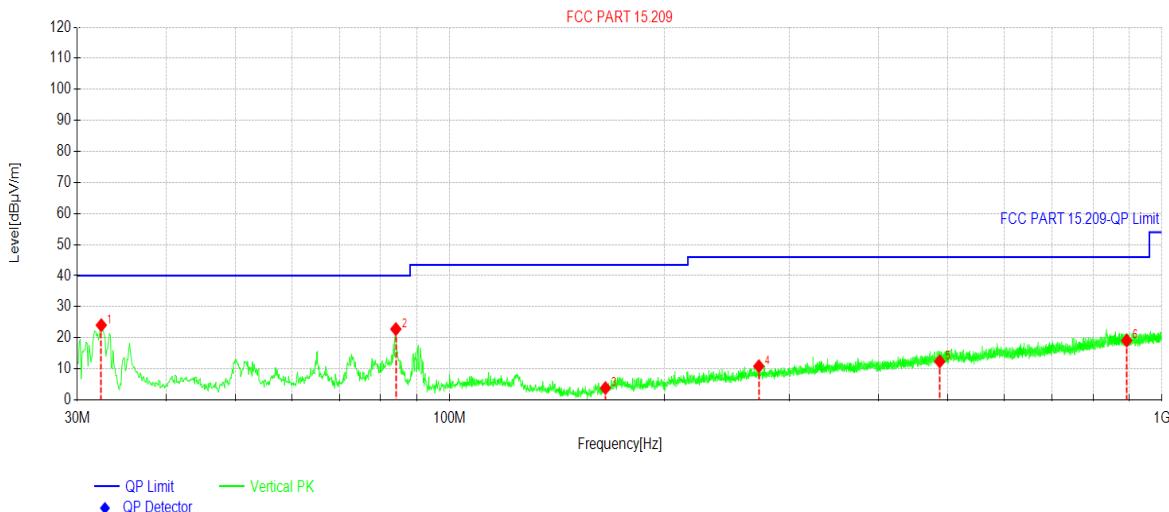
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	
	Level	Factor	Loss	Factor				Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.024	19.00	20.26	0.01	0.00	39.27	120.05	-80.78 Peak
2	0.155	24.31	20.22	0.03	0.00	44.56	103.81	-59.25 Peak
3	0.596	12.02	20.72	0.09	0.00	32.83	72.10	-39.27 Peak
4	1.061	9.45	20.49	0.17	0.00	30.11	67.11	-37.00 Peak
5	3.582	6.39	20.30	0.25	0.00	26.94	69.50	-42.56 Peak
6	27.217	7.81	19.57	0.61	0.00	27.99	69.50	-41.51 Peak

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

Test frequency range: 30MHz-1000MHz

Product Name:	Countertop Payment Terminal	Product Model:	A80
Test By:	Mike	Test mode:	NFC Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%

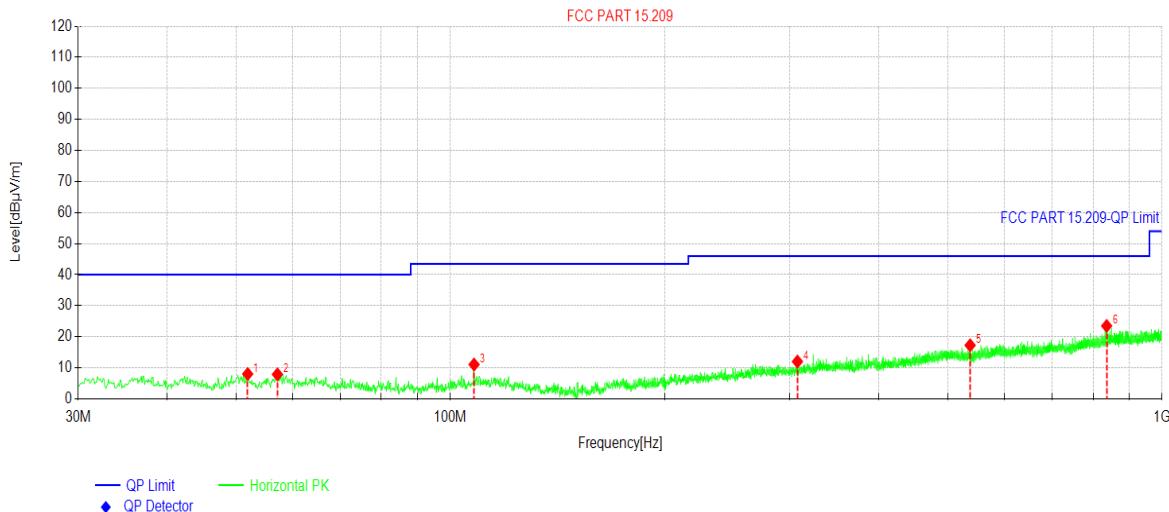


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	32.4252	41.97	24.06	-17.91	40.00	15.94	PK	Vertical
2	84.0344	42.35	22.79	-19.56	40.00	17.21	PK	Vertical
3	165.425	22.81	3.81	-19.00	43.50	39.69	PK	Vertical
4	271.651	25.54	10.83	-14.71	46.00	35.17	PK	Vertical
5	487.497	22.27	12.38	-9.89	46.00	33.62	PK	Vertical
6	892.222	23.11	19.11	-4.00	46.00	26.89	PK	Vertical

## Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

<b>Product Name:</b>	Countertop Payment Terminal	<b>Product Model:</b>	A80
<b>Test By:</b>	Mike	<b>Test mode:</b>	NFC Tx mode
<b>Test Frequency:</b>	30 MHz ~ 1 GHz	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	AC 120/60Hz	<b>Environment:</b>	Temp: 24°C Huni: 57%

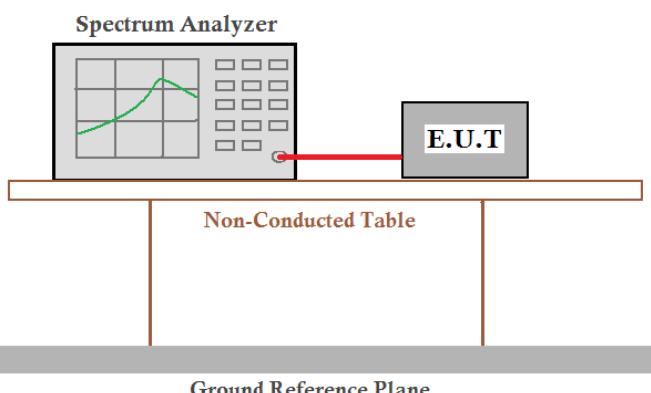


Suspected Data List								
NO.	Freq. [MHz]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Factor [dB]	Limit [dB $\mu$ V/m]	Margin [dB]	Trace	Polarity
1	51.9242	25.08	8.03	-17.05	40.00	31.97	PK	Horizontal
2	57.1627	24.94	7.89	-17.05	40.00	32.11	PK	Horizontal
3	107.995	29.13	11.07	-18.06	43.50	32.43	PK	Horizontal
4	307.447	26.05	12.02	-14.03	46.00	33.98	PK	Horizontal
5	537.457	26.80	17.25	-9.55	46.00	28.75	PK	Horizontal
6	835.956	28.05	23.49	-4.56	46.00	22.51	PK	Horizontal

## Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

### 6.3 20dB Bandwidth

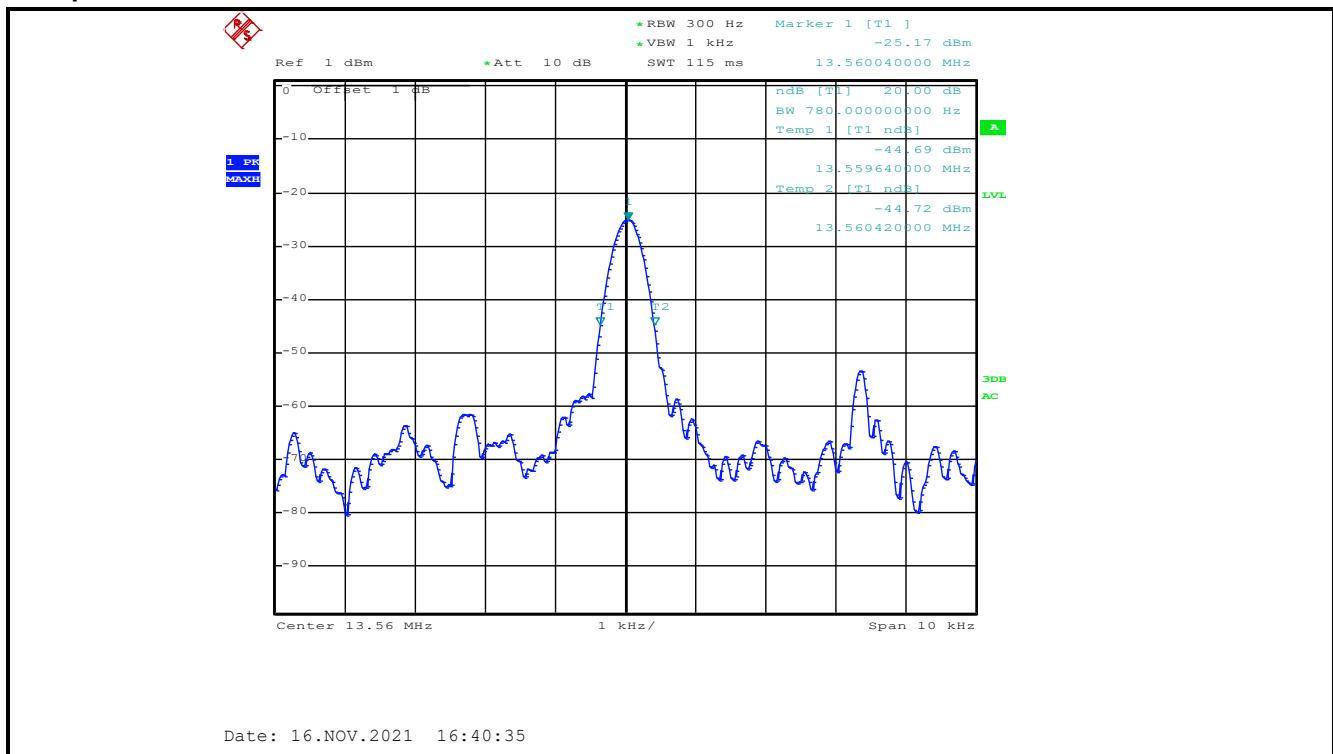
Test Requirement:	FCC Part15 C Section 15.215 (c)
Receiver setup:	RBW=300Hz, VBW=1KHz, detector: Peak
Limit:	The fundamental emission be kept within at least the central 80% of the permitted band
Test Procedure:	<ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set the EUT to proper test channel.</li> <li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li> <li>4. Read 20dB bandwidth.</li> </ol>
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

#### Measurement Data

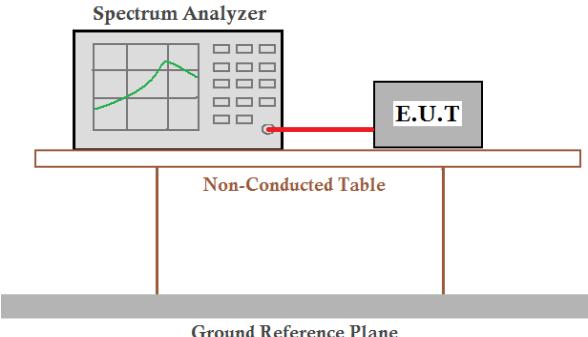
20dB bandwidth (kHz)	Limit (kHz)	Results
0.780	11.2	Pass

*Note: For 13.56MHz, permitted Band is 14 kHz, so the Limit is 11.2 kHz.*

Test plot as follows:



## 6.4 Frequency Tolerance

Test Requirement:	FCC Part15 C Section 15.225 (e)
Receiver setup:	RBW=200Hz, VBW=300Hz, span=14kHz, detector: Peak
Limit:	$\pm 0.01\%$ of the operating frequency
Test mode:	Transmitting mode
Test Procedure:	<p><b>Frequency stability V.S. Temperature measurement</b></p> <ol style="list-style-type: none"> <li>1. The equipment under test was powered by a fresh battery.</li> <li>2. RF output was connected to spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to -20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol> <p><b>Frequency stability V.S. Voltage measurement</b></p> <ol style="list-style-type: none"> <li>1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> </ol> <p>Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</p>
Test setup:	 <p>The diagram illustrates the test setup. A 'Spectrum Analyzer' is connected to the 'E.U.T.' (Equipment Under Test) via a feed-through attenuator. The entire setup is placed on a 'Non-Conducted Table', which sits above a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

**Measurement Data:****a) Frequency stability V.S. Temperature measurement**

Voltage (Vac)	Temperature (°C)	Frequency Tolerance (Hz)	Frequency Error (%)	Limit (%)	Results
120.0	-20	40	0.000295	±0.01	Pass
	-10	35	0.000258	±0.01	Pass
	0	38	0.000280	±0.01	Pass
	+10	36	0.000265	±0.01	Pass
	+20	37	0.000273	±0.01	Pass
	+30	39	0.000288	±0.01	Pass
	+40	38	0.000280	±0.01	Pass
	+50	37	0.000273	±0.01	Pass

**b) Frequency stability V.S. Voltage measurement**

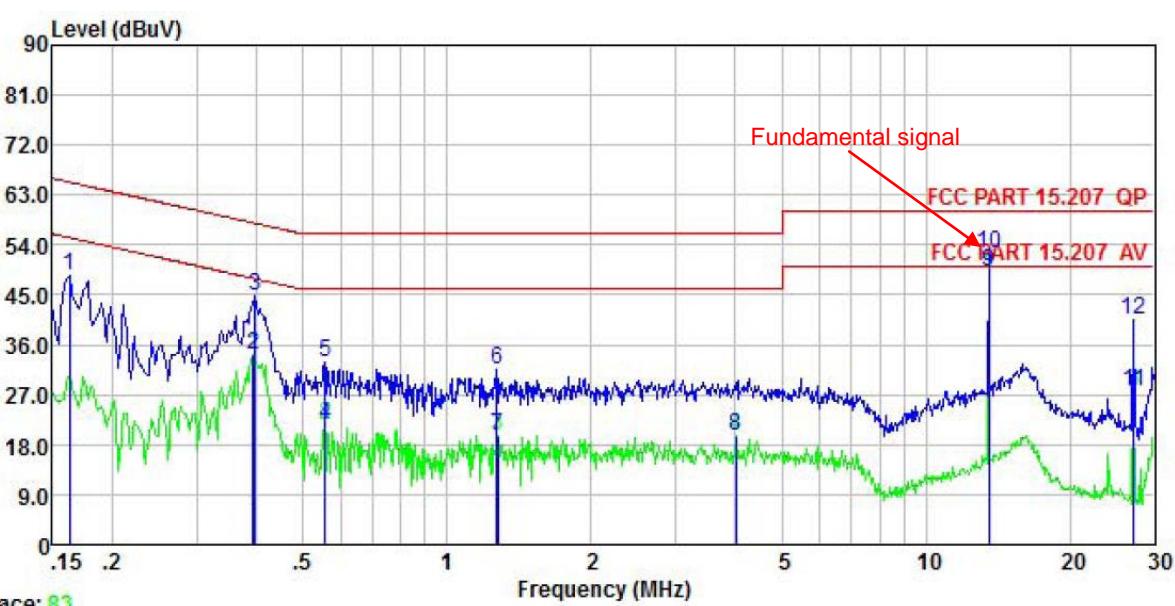
Temperature (°C)	Voltage (Vac)	Frequency Tolerance (MHz)	Frequency Error (%)	Limit (%)	Results
25.0	100	39	0.000288	±0.01	Pass
	120	36	0.000265	±0.01	Pass
	240	38	0.000280	±0.01	Pass

## 6.5 Conducted Emission

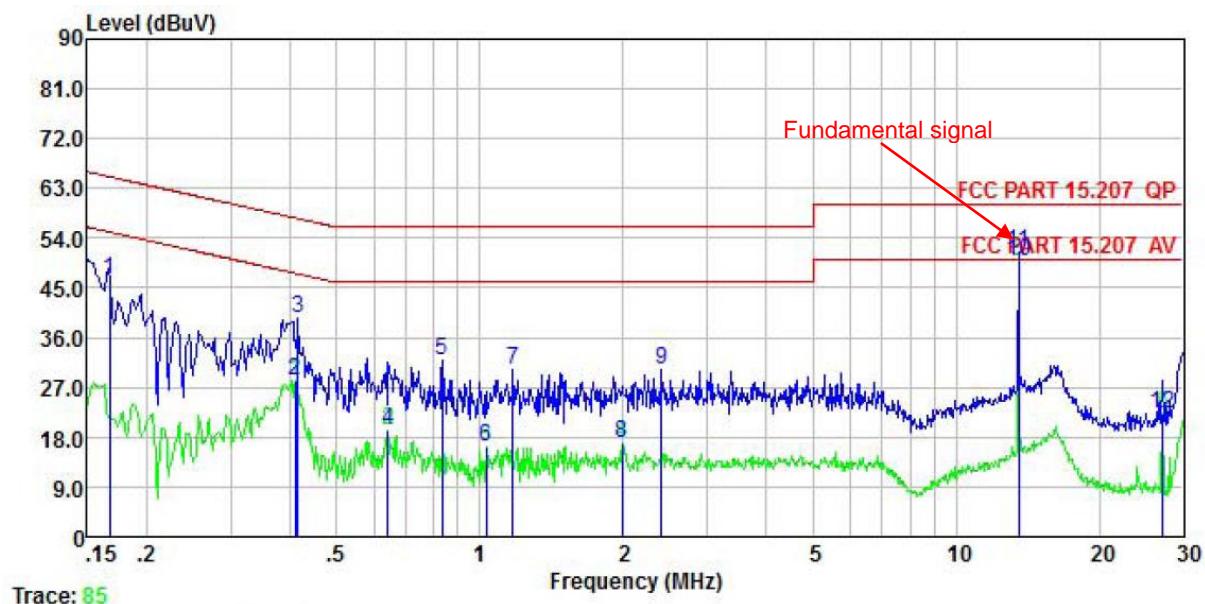
Test Requirement:	FCC Part15 B Section 15.207		
Test Frequency Range:	150kHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dB $\mu$ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	0.5-30	60	50
* Decreases with the logarithm of the frequency.			
Test setup:	<p>Reference Plane</p> <p>LISN</p> <p>40cm</p> <p>80cm</p> <p>AUX Equipment</p> <p>E.U.T.</p> <p>Test table/Insulation plane</p> <p>EMI Receiver</p> <p>Filter</p> <p>AC power</p> <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>		
Test procedure	<ol style="list-style-type: none"> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provide a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</li> </ol>		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass(pre-scan adapter 1, adapter 2 and adapter 3, found adapter 2 was worse case mode, only reflects the worst mode)		

## Measurement Data:

Adapter 2:

Product name:	Countertop Payment Terminal		Product model:	A80																																																																																																																															
Test by:	Mike		Test mode:	NFC Tx mode																																																																																																																															
Test frequency:	150 kHz ~ 30 MHz		Phase:	Line																																																																																																																															
Test voltage:	AC 120 V/60 Hz		Environment:	Temp: 22.5°C Huni: 55%																																																																																																																															
 <p>Level (dBuV)</p> <p>Frequency (MHz)</p> <p>Trace: 83</p>																																																																																																																																			
<table border="1"> <thead> <tr> <th>Freq</th> <th>Read Level</th> <th>LISN Factor</th> <th>Aux Factor</th> <th>Cable Loss</th> <th>Level</th> <th>Limit Line</th> <th>Over Limit</th> <th>Remark</th> </tr> <tr> <th>MHz</th> <th>dBuV</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dBuV</th> <th>dBuV</th> <th>dB</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>0.162</td><td>38.37</td><td>10.22</td><td>0.00</td><td>0.01</td><td>48.60</td><td>65.34</td><td>-16.74 QP</td></tr> <tr><td>2</td><td>0.393</td><td>23.83</td><td>10.28</td><td>0.00</td><td>0.04</td><td>34.15</td><td>47.99</td><td>-13.84 Average</td></tr> <tr><td>3</td><td>0.398</td><td>34.49</td><td>10.28</td><td>0.00</td><td>0.04</td><td>44.81</td><td>57.90</td><td>-13.09 QP</td></tr> <tr><td>4</td><td>0.555</td><td>11.42</td><td>10.29</td><td>0.00</td><td>0.02</td><td>21.73</td><td>46.00</td><td>-24.27 Average</td></tr> <tr><td>5</td><td>0.555</td><td>22.49</td><td>10.29</td><td>0.00</td><td>0.02</td><td>32.80</td><td>56.00</td><td>-23.20 QP</td></tr> <tr><td>6</td><td>1.269</td><td>21.07</td><td>10.32</td><td>0.00</td><td>0.10</td><td>31.49</td><td>56.00</td><td>-24.51 QP</td></tr> <tr><td>7</td><td>1.276</td><td>9.31</td><td>10.32</td><td>0.00</td><td>0.11</td><td>19.74</td><td>46.00</td><td>-26.26 Average</td></tr> <tr><td>8</td><td>4.006</td><td>9.27</td><td>10.39</td><td>0.00</td><td>0.08</td><td>19.74</td><td>46.00</td><td>-26.26 Average</td></tr> <tr><td>9</td><td>13.551</td><td>38.46</td><td>10.73</td><td>0.00</td><td>0.12</td><td>49.31</td><td>50.00</td><td>-0.69 Average</td></tr> <tr><td>10</td><td>13.551</td><td>41.51</td><td>10.73</td><td>0.00</td><td>0.12</td><td>52.36</td><td>60.00</td><td>-7.64 QP</td></tr> <tr><td>11</td><td>27.127</td><td>16.25</td><td>10.99</td><td>0.00</td><td>0.20</td><td>27.44</td><td>50.00</td><td>-22.56 Average</td></tr> <tr><td>12</td><td>27.127</td><td>29.32</td><td>10.99</td><td>0.00</td><td>0.20</td><td>40.51</td><td>60.00</td><td>-19.49 QP</td></tr> </tbody> </table>						Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB		1	0.162	38.37	10.22	0.00	0.01	48.60	65.34	-16.74 QP	2	0.393	23.83	10.28	0.00	0.04	34.15	47.99	-13.84 Average	3	0.398	34.49	10.28	0.00	0.04	44.81	57.90	-13.09 QP	4	0.555	11.42	10.29	0.00	0.02	21.73	46.00	-24.27 Average	5	0.555	22.49	10.29	0.00	0.02	32.80	56.00	-23.20 QP	6	1.269	21.07	10.32	0.00	0.10	31.49	56.00	-24.51 QP	7	1.276	9.31	10.32	0.00	0.11	19.74	46.00	-26.26 Average	8	4.006	9.27	10.39	0.00	0.08	19.74	46.00	-26.26 Average	9	13.551	38.46	10.73	0.00	0.12	49.31	50.00	-0.69 Average	10	13.551	41.51	10.73	0.00	0.12	52.36	60.00	-7.64 QP	11	27.127	16.25	10.99	0.00	0.20	27.44	50.00	-22.56 Average	12	27.127	29.32	10.99	0.00	0.20	40.51	60.00	-19.49 QP
Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark																																																																																																																											
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB																																																																																																																												
1	0.162	38.37	10.22	0.00	0.01	48.60	65.34	-16.74 QP																																																																																																																											
2	0.393	23.83	10.28	0.00	0.04	34.15	47.99	-13.84 Average																																																																																																																											
3	0.398	34.49	10.28	0.00	0.04	44.81	57.90	-13.09 QP																																																																																																																											
4	0.555	11.42	10.29	0.00	0.02	21.73	46.00	-24.27 Average																																																																																																																											
5	0.555	22.49	10.29	0.00	0.02	32.80	56.00	-23.20 QP																																																																																																																											
6	1.269	21.07	10.32	0.00	0.10	31.49	56.00	-24.51 QP																																																																																																																											
7	1.276	9.31	10.32	0.00	0.11	19.74	46.00	-26.26 Average																																																																																																																											
8	4.006	9.27	10.39	0.00	0.08	19.74	46.00	-26.26 Average																																																																																																																											
9	13.551	38.46	10.73	0.00	0.12	49.31	50.00	-0.69 Average																																																																																																																											
10	13.551	41.51	10.73	0.00	0.12	52.36	60.00	-7.64 QP																																																																																																																											
11	27.127	16.25	10.99	0.00	0.20	27.44	50.00	-22.56 Average																																																																																																																											
12	27.127	29.32	10.99	0.00	0.20	40.51	60.00	-19.49 QP																																																																																																																											
<p>Notes:</p> <ol style="list-style-type: none"> <li>An initial pre-scan was performed on the line and neutral lines with peak detector.</li> <li>Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.</li> <li>Final Level = Receiver Read level + LISN Factor + Cable Loss.</li> </ol>																																																																																																																																			

Product name:	Countertop Payment Terminal	Product model:	A80
Test by:	Mike	Test mode:	NFC Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%



Freq MHz	Read Level dBuV	LISN Factor	Aux Factor	Cable Loss	Level dB	Limit Line dBuV	Over Line dB	Over Limit Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.167	36.15	10.20	0.00	0.01	46.36	65.12	-18.76 QP
2	0.410	17.99	10.27	0.00	0.04	28.30	47.64	-19.34 Average
3	0.415	29.16	10.27	0.00	0.04	39.47	57.55	-18.08 QP
4	0.641	8.98	10.29	0.00	0.02	19.29	46.00	-26.71 Average
5	0.835	21.68	10.30	0.00	0.03	32.01	56.00	-23.99 QP
6	1.032	5.75	10.31	0.00	0.06	16.12	46.00	-29.88 Average
7	1.172	19.70	10.31	0.00	0.09	30.10	56.00	-25.90 QP
8	1.991	6.31	10.32	0.00	0.21	16.84	46.00	-29.16 Average
9	2.409	19.72	10.33	0.00	0.15	30.20	56.00	-25.80 QP
10	13.551	38.94	10.69	0.00	0.12	49.75	50.00	-0.25 Average
11	13.551	40.73	10.69	0.00	0.12	51.54	60.00	-8.46 QP
12	27.127	11.13	10.90	0.00	0.20	22.23	50.00	-27.77 Average

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

## **8 EUT Constructional Details**

Reference to the EUT Photos.

-----End of report-----