



# FCC PART 15B, CLASS B

## MEASUREMENT AND TEST REPORT

For

### NEW POS Technology Limited

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**FCC ID: WALNEW7110**

<b>Report Type:</b> Original Report	<b>Product Type:</b> EFT-POS
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<b>Report Number:</b> <u>RSZ120726003-00A</u>	
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\* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk “★”

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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *NEW POS Technology Limited*'s product, model number: *NEW7110 (FCC ID: WALNEW7110)* or the "EUT" in this report was an *EFT-POS*, which was measured approximately: 23.0 cm (L) x 10.2 cm (W) x 7.3 cm (H), rated input voltage: DC 12V from adapter. The highest frequency generated in the device is 400 MHz.

Adapter information: Switching power supply

Model: CPS036A120300

Input: 100-240V~ 50/60Hz 1.0A

Output: 12V DC, 3A

*\* All measurement and test data in this report was gathered from production sample serial number: 71001947 (Assigned by Applicant). The EUT was received on 2012-07-26.*

### Objective

This report is prepared on behalf of *NEW POS Technology Limited* in accordance with Part 2- Subpart J, Part 15- Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15 Class B.

### Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS and Part 15.225 DXX submissions with FCC ID: WALNEW7110

### Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in a typical fashion.

Test mode 1: Running with printer

Test mode 2: Communicating with RJ11 port

Test mode 3: Communicating with RJ45 port

### Equipment Modifications

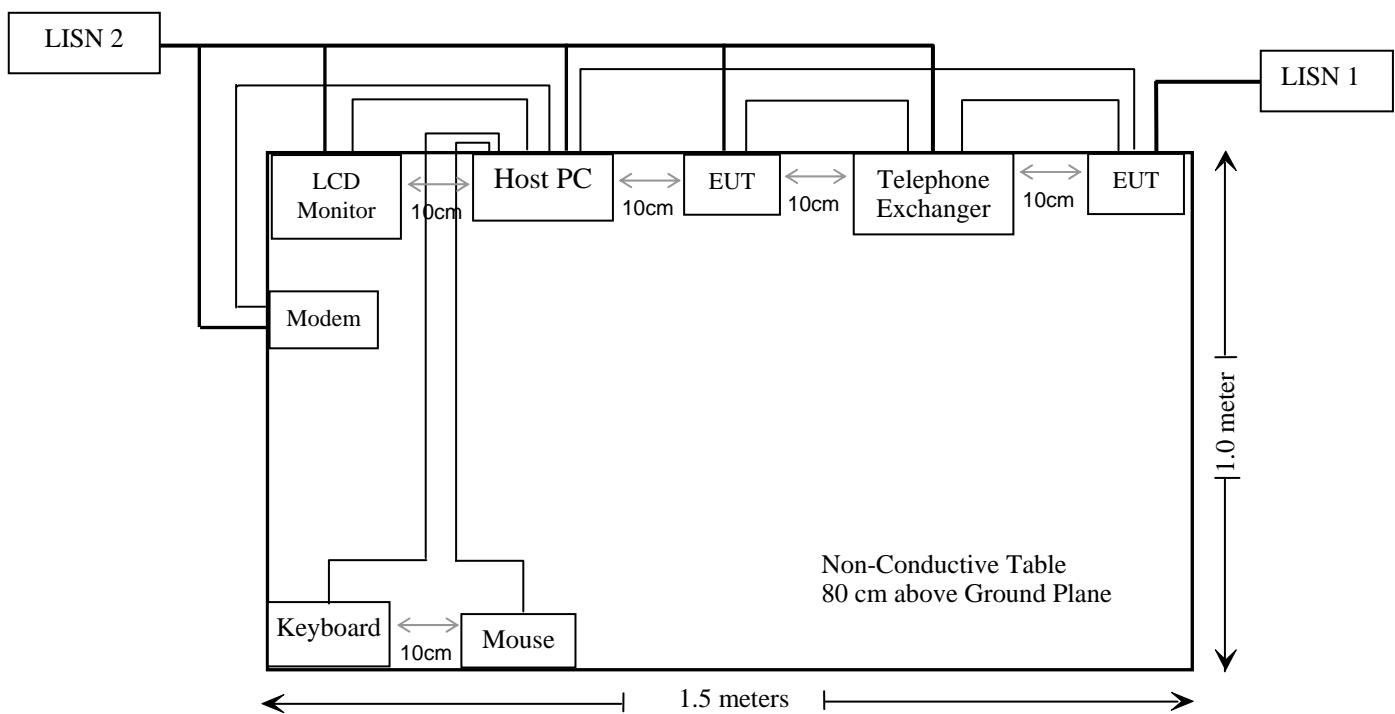
No modification was made to the EUT tested.

### Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	PC	VOSTRO 220S	127BP2X
DELL	Keyboard	L100	CNORH656658907BL04TY
DELL	Mouse	MOC5UO	G1B0096D
DELL	LCD Monitor	E178WFPC	CN-OWY564-64180-7C4-2SQH
ECOM	Modem	5600bps	N/A
One Ke	Program-control Telephone Exchanger	TC-108H	N/A

### External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielded Detachable K/B Cable	1.5	Host PC	Keyboard
Shielded Detachable Mouse Cable	1.5	Host PC	Mouse
Shielded Detachable Serial Cable	1.2	Host PC	Modem
Shielded Detachable VGA Cable	1.5	Host PC	LCD Monitor
Shielded Detachable RJ45 Cable	1.8	RJ45 Port of EUT	Modem
Shielded Detachable RJ11 Cable	1.8	RJ11 Port of EUT	Modem

**Block Diagram of Test Setup**

**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

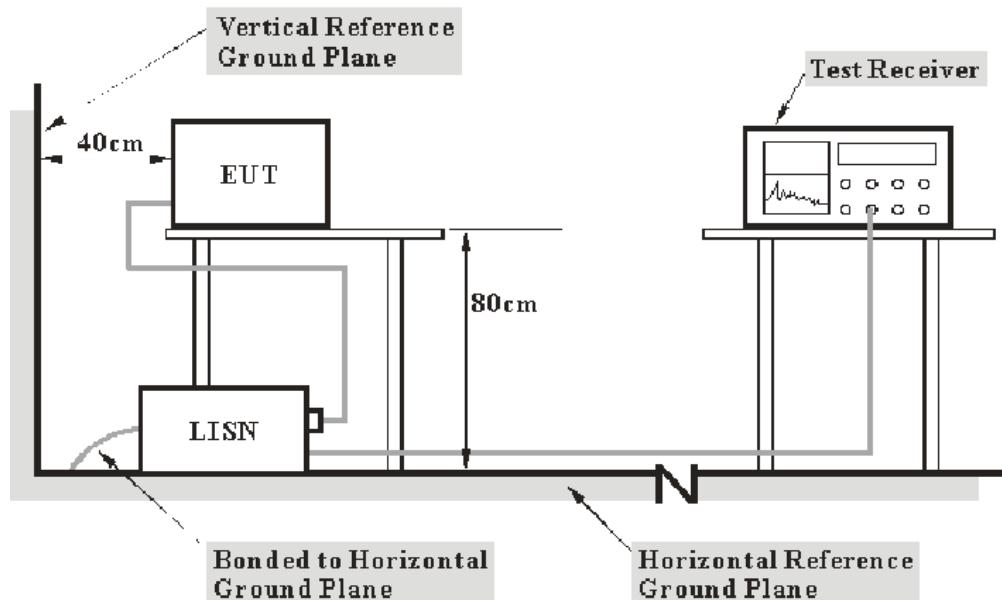
## FCC §15.107 – AC LINE CONDUCTED EMISSIONS

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 2.4 dB.(k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for all the test data recorded in the report.

### EUT Setup



**Note:**

1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The spacing between the peripherals was 10 cm.

The host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

<b><u>Frequency Range</u></b>	<b><u>IF B/W</u></b>
150 kHz – 30 MHz	9 kHz

## Test Equipment List and Details

<b>Manufacturer</b>	<b>Description</b>	<b>Model</b>	<b>Serial Number</b>	<b>Calibration Date</b>	<b>Calibration Due Date</b>
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2011-11-24	2012-11-23
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-11-17	2012-11-16
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A
Rohde & Schwarz	Attenuator	ESH3Z2	DE25985	2012-07-08	2013-07-07

\* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

During the conducted emission test, the host PC was connected to the outlet of the first LISN, and the other relevant equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

**16.16 dB at 0.435 MHz in the Line conducted mode**

## Test Data

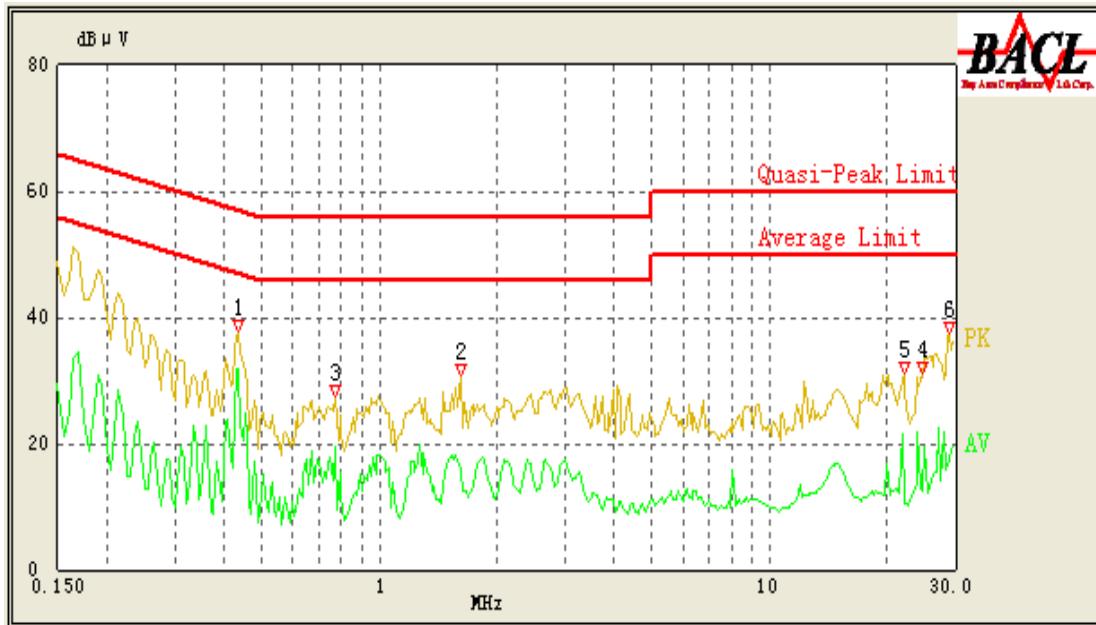
### Environmental Conditions

<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	48 %
<b>ATM Pressure:</b>	100.0 kPa

*The testing was performed by Sula Huang on 2012-09-04.*

EUT operation mode: Test Mode 1 (Worst case)

AC 120V/60 Hz, Line:



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
0.435	31.70	10.25	47.86	16.16	Ave.
0.435	35.80	10.25	57.86	22.06	QP
0.770	19.36	10.20	46.00	26.64	Ave.
22.015	21.54	12.35	50.00	28.46	Ave.
1.615	15.87	10.19	46.00	30.13	Ave.
29.165	18.71	11.16	50.00	31.29	Ave.
0.770	24.62	10.20	56.00	31.38	QP
22.090	25.06	12.34	60.00	34.94	QP
24.300	13.11	12.11	50.00	36.89	Ave.
28.945	22.42	11.20	60.00	37.58	QP
1.625	17.02	10.19	56.00	38.98	QP
24.580	17.47	12.08	60.00	42.53	QP

## AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
0.435	31.45	10.25	47.86	16.41	Ave.
0.165	47.01	10.24	65.57	18.56	QP
0.435	35.00	10.25	57.86	22.86	QP
0.165	31.13	10.24	55.57	24.44	Ave.
0.770	17.47	10.20	46.00	28.53	Ave.
1.610	16.15	10.19	46.00	29.85	Ave.
1.610	23.54	10.19	56.00	32.46	QP
0.770	22.41	10.20	56.00	33.59	QP
20.000	16.22	12.57	50.00	33.78	Ave.
19.970	20.40	12.56	60.00	39.60	QP
8.030	8.57	10.41	50.00	41.43	Ave.
8.150	12.83	10.42	60.00	47.17	QP

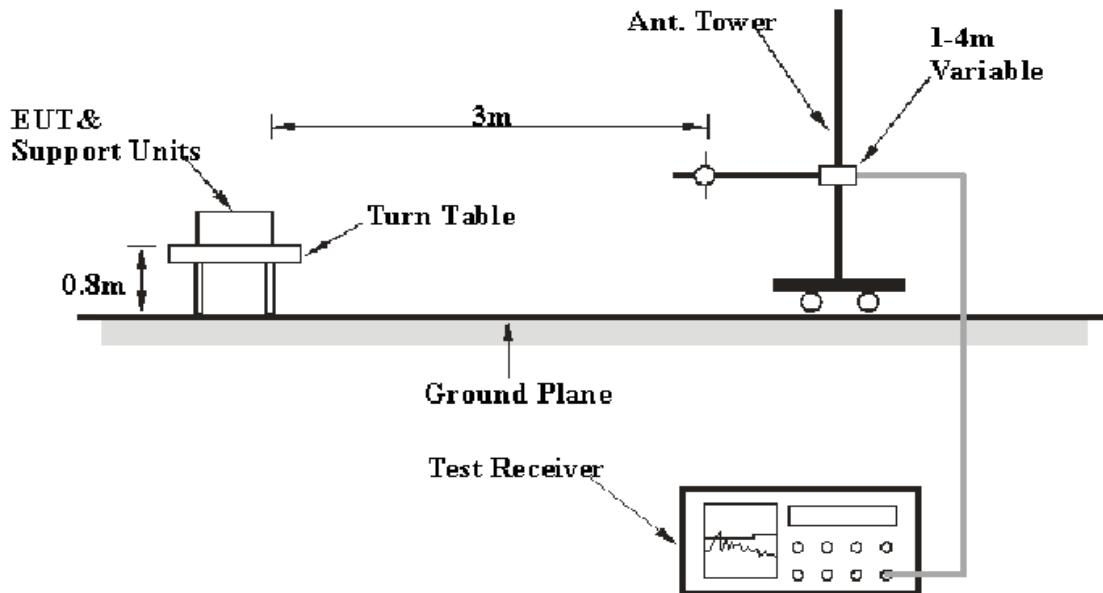
## FCC §15.109 - RADIATED EMISSIONS

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB. (k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for all the test data recorded in the report.

### EUT Setup



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The system was investigated from 30 MHz to 2000 MHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

<b>Frequency Range</b>	<b>RBW</b>	<b>Video B/W</b>	<b>Detector</b>
30 MHz – 1000 MHz	120 kHz	300 kHz	QP
Above 1 GHz	1 MHz	3 MHz	PK
Above 1 GHz	1 MHz	10 Hz	Ave.

## Test Procedure

During the radiated emissions test, the host PC and all the other relevant equipments were connected to AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01057	2011-11-24	2012-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2012-11-27
Mini-Circuits	Amplifier	ZVA-213+	N/A	2011-11-24	2012-11-23
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2012-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp (Shenzhen). attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Results Summary

According to the data in the following table, the worst margin reading is below:

**1.6 dB at 396.314550 MHz in the Horizontal polarization**

## Test Data

### Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Gardon Zhang on 2012-08-30

EUT operation mode: Test mode 3 (Worst case)

### 30 MHz – 2 GHz:

Frequency (MHz)	Detector (PK/QP/Ave.)	Corrected Amplitude (dB $\mu$ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (degree)	Correction Factor (dB)	Limit (dB $\mu$ V/m)	Margin (dB)
396.314550	QP	44.4	100.0	H	61.0	-12.0	46.0	1.6*
224.995200	QP	44.1	158.0	H	155.0	-16.4	46.0	1.9*
286.211150	QP	42.7	111.0	H	185.0	-14.2	46.0	3.3*
242.187505	QP	41.7	187.0	V	139.0	-15.8	46.0	4.3
187.090150	QP	38.2	99.0	V	225.0	-16.1	43.5	5.3
264.255000	QP	40.2	285.0	V	351.0	-14.81	46.0	5.8

Note:

- 1) Corrected Amplitude = Meter Reading + Correction Factor
- 2) Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain  
The corrected factor has been input into the transducer of the test software.
- 3) Margin = Limit – Corrected Amplitude

\*\*\*\*\* END OF REPORT \*\*\*\*\*