



FCC PART 15C

TEST REPORT

For

ProcessingPoint, Inc.

2796 Loker Avenue, Suite 111, Carlsbad, California 92010, USA

FCC ID: SPL-UATTENDRFID

Report Type: Original Report	Product Type: uAttend Account
Test Engineer: <u>Leon Chen</u> 	
Report Number: <u>R2DG130318014-00</u>	
Report Date: <u>2013-08-31</u>	
Reviewed By: Ivan Cao RF Leader	
Test Laboratory: Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn	

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk “★” (Rev.2)
This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EUT EXERCISE SOFTWARE	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL CABLE.....	5
BLOCK DIAGRAM OF TEST SETUP	5
SUMMARY OF TEST RESULTS.....	6
FCC§15.203 - ANTENNA REQUIREMENT.....	7
APPLICABLE STANDARD	7
ANTENNA CONNECTED CONSTRUCTION	7
FCC §15.207 – AC LINE CONDUCTED EMISSIONS.....	8
MEASUREMENT UNCERTAINTY	8
EUT SETUP	8
EMI TEST RECEIVER SETUP.....	9
TEST PROCEDURE	9
CORRECTED AMPLITUDE & MARGIN CALCULATION	9
TEST EQUIPMENT LIST AND DETAILS.....	10
TEST RESULTS SUMMARY	10
TEST DATA	10
§15.205 & §15.209 - RADIATED EMISSIONS TEST	13
APPLICABLE STANDARD	13
MEASUREMENT UNCERTAINTY	13
EUT SETUP	14
EMI TEST RECEIVER SETUP.....	14
CORRECTED AMPLITUDE & MARGIN CALCULATION	14
TEST EQUIPMENT LIST AND DETAILS.....	15
TEST RESULTS SUMMARY	15
TEST DATA	15
DECLARATION OF SIMILARITY	17

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *ProcessingPoint, Inc.*.'s product, model number: *CB1500 (FCC ID: SPL-UATTENDRFID)* or ("EUT") in this report is a *uAttend Account* (*called as uAttend CB1500 & uAttend CB1000 by manufacturer*), which was measured approximately: 18.5 cm (L) x 14.0 cm (W) x 4.5cm (H), rated input voltage: DC 12.0 V from adapter.

Adapter information: Shenzhen KeZhen Electronic co., Ltd

Model: KZ1201000

Input: 100-240Vac, 50/60Hz, 0.5A Max

Output: 12Vdc, 1A

Note: The serial product model CB1500, CB1000, all the models are electrically similar, only differences are the model name, appearance, color and keyboard, we select model CB1500 for the testing in this report, which was explained in the attached declaration letter.

**All measurement and test data in this report was gathered from production sample serial number: 130318014 (Assigned by Dongguan BACL). The EUT was received on 2013-03-22.*

Objective

This Type approval report is prepared on behalf of *ProcessingPoint, Inc.* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The objective is to determine the compliance of the EUT with FCC rules, section 15.203, 15.205, 15.207, and 15.209.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) 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 February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. 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. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).



The current scope of accreditations can be found at <http://ts.nist.gov/standards/scopes/5000690.htm>

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a test mode.

EUT Exercise Software

No software was performed under test.

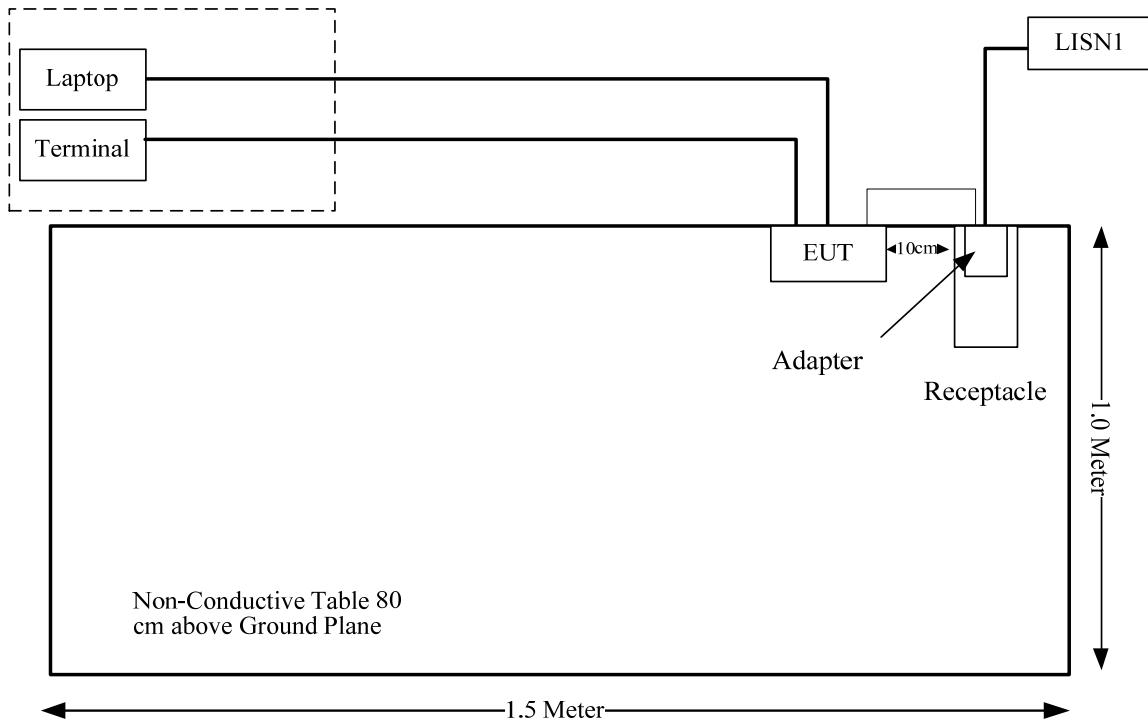
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017

External Cable

Cable Description	Length (m)	From	To
Un-shielded detachable RJ45 Cable	10	Laptop	EUT
Shielded Detachable Serial Cable	3	EUT	Terminal

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207	AC Line Conducted Emission	Compliance
§15.209 §15.205	Radiated Emission Test	Compliance

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

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 shall be considered sufficient to comply with the provisions of this section.

Antenna Connected Construction

This EUT has an integrated antenna arrangement which fulfills the requirement of this section, and please refers to the internal photos.

Result: Compliance.

FCC §15.207 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to $U_{\text{cisp}}_{\text{r}}$ of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than $U_{\text{cisp}}_{\text{r}}$ of Table 1, then:

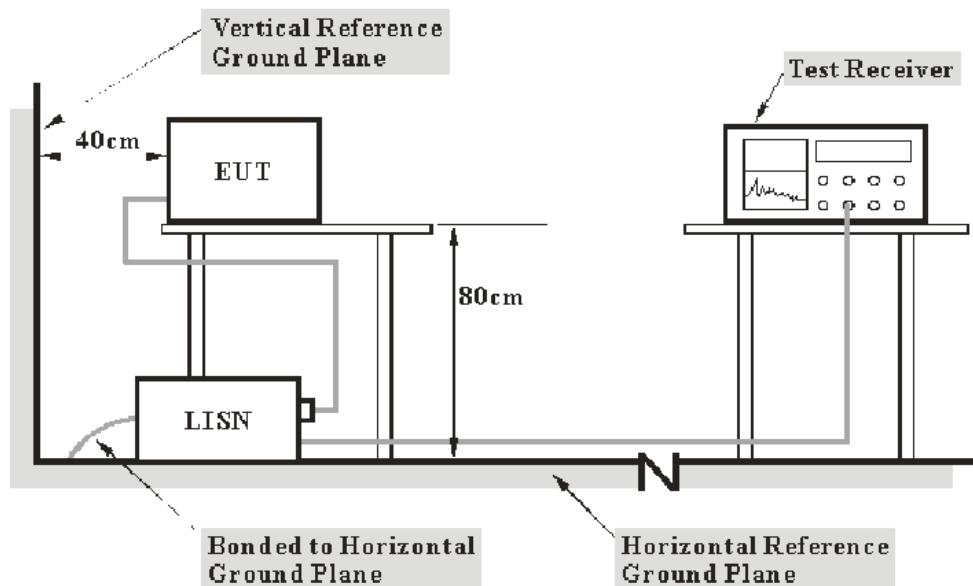
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}}_{\text{r}})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}}_{\text{r}})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of $U_{\text{cisp}}_{\text{r}}$

Measurement	$U_{\text{cisp}}_{\text{r}}$
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

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 C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The adapter 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:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support 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.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$
$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

The “Margin” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECIEVER	ESCS 30	830245/006	2013-1-10	2014-1-9
R&S	L.I.S.N	ESH3-Z5	843331/015	2012-9-17	2013-9-16
R&S	L.I.S.N	ESH3-Z5	100113	2012-11-29	2013-11-28

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the [FCC Part 15.207](#), with the worst margin reading of:

5.02 dB at 13.785 MHz in the **Neutral** conducted mode

Test Data**Environmental Conditions**

Temperature:	27.4 C
Relative Humidity:	65 %
ATM Pressure:	99.6kPa

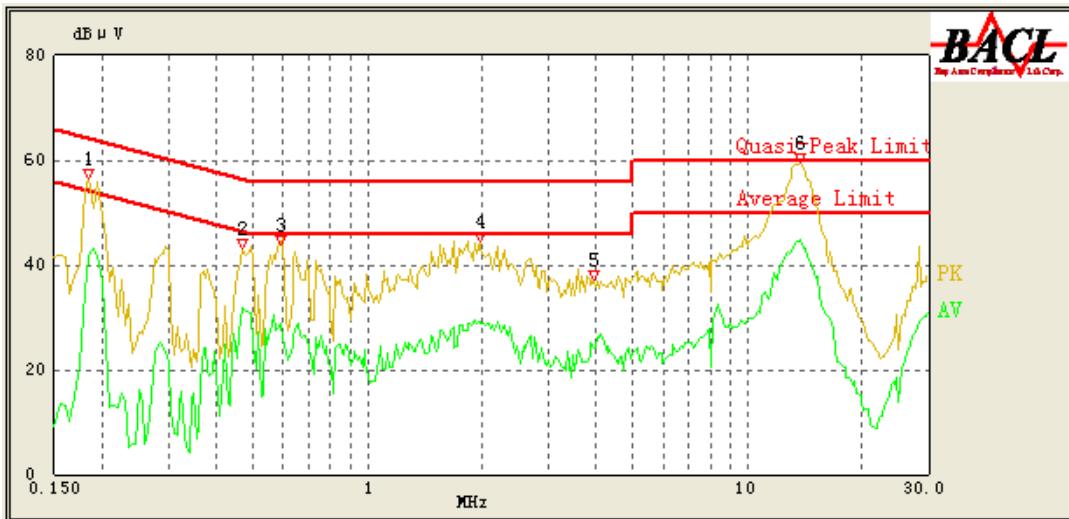
* The testing was performed by Leon Chen on 2013-08-19.

Test mode: Transmitting

120 V, 60 Hz, Line:



Frequency (MHz)	Cord. Reading (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/AV/QP)
0.185	49.94	1.00	65.00	15.06	QP
0.185	41.18	1.00	55.00	13.82	AV
0.640	43.74	0.47	56.00	12.26	QP
0.640	30.66	0.47	46.00	15.34	AV
0.890	37.83	0.37	56.00	18.17	QP
0.885	27.86	0.37	46.00	18.14	AV
1.875	36.20	0.35	56.00	19.80	QP
1.875	28.44	0.35	46.00	17.56	AV
8.095	35.25	0.72	60.00	24.75	QP
8.110	31.98	0.73	50.00	18.02	AV
13.345	50.59	1.42	60.00	9.41	QP
13.215	43.35	1.39	50.00	6.65	AV

120 V, 60 Hz, Neutral:

Frequency (MHz)	Cord. Reading (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/AV/QP)
0.185	53.05	1.66	65.00	11.95	QP
0.185	41.93	1.66	55.00	13.07	AV
0.470	38.45	0.63	56.86	18.41	QP
0.470	31.89	0.63	46.86	14.97	AV
0.590	40.11	0.49	56.00	15.89	QP
0.590	28.88	0.49	46.00	17.12	AV
1.985	37.94	0.27	56.00	18.06	QP
1.985	29.28	0.27	46.00	16.72	AV
3.940	25.74	0.35	56.00	30.26	QP
3.940	24.26	0.35	46.00	21.74	AV
13.785	52.07	1.01	60.00	7.93	QP
13.785	44.98	1.01	50.00	5.02	AV

§15.205 & §15.209 - RADIATED EMISSIONS TEST

Applicable Standard

FCC §15.209, (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

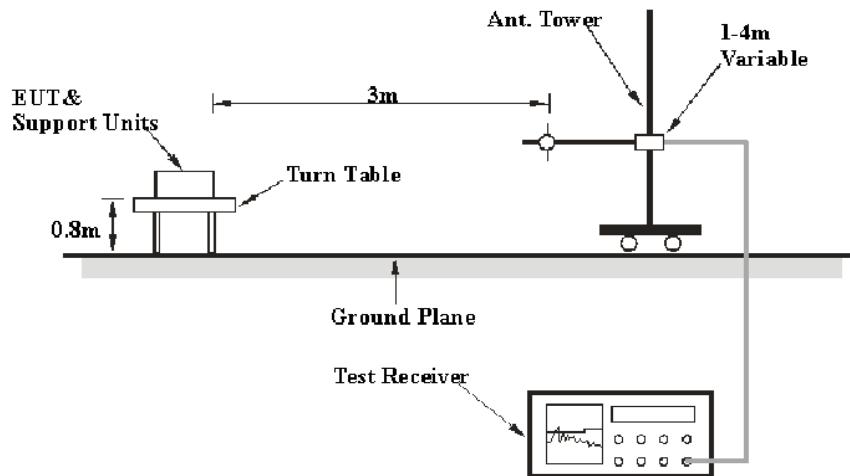
1G~6GHz: 4.45 dB

6G~18GHz: 5.23 dB

Table 1 – Values of U_{cisp}

Measurement	U_{cisp}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup



The radiated emission tests were performed in the 3-meter chamber a test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part Subpart C limits.

The spacing between the peripherals was 10 cm.

The EUT was connected to 120V AC power source.

EMI Test Receiver Setup

According to FCC Rules, 47 CFR 15.33, the EUT emissions were investigated up to 1000 MHz.

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

Frequency Range	RBW	Video B/W	Detector
9kHz – 150 kHz	300 Hz	1 kHz	QP
150KHz – 30 MHz	10 kHz	30 kHz	QP
30MHz – 1000 MHz	100 kHz	300 kHz	QP

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corr. Ampl.}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2012-9-6	2015-9-5
HP	HP AMPLIFIER	8447E	2434A02181	N/A	N/A
The Electro-Mechanics Company	Passive Loop Antenna	6512	9706-1206	2012-11-30	2015-11-29

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209 with the worst margin reading of:

4.33 dB at 338.460 MHz in the Horizontal polarization

Test Data

Environmental Conditions

Temperature:	23.5 C
Relative Humidity:	58 %
ATM Pressure:	99.6kPa

* The testing was performed by Leon Chen on 2013-08-19.

Test mode: Transmitting

1) Spurious Emissions (9 kHz~30 MHz):

Frequency (MHz)	Receiver		Factor (dB(1/m))	Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude @ 3m (dB μ V/m)	Limit @ 3m (dB μ V/m)	Margin (dB)
(MHz)	Reading (dB μ V)	Detector (PK/QP/AV)						
0.125	41.06	AV	64.75	0.02	20.98	84.85	105.67	20.82
0.145	33.08	QP	63.83	0.02	20.78	76.15	104.38	28.23
0.776	30.65	QP	48.41	0.02	20.78	58.30	69.81	11.51

2) Spurious Emissions (30 MHz ~1 GHz):

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Detector	Polar	Factor					
MHz	dB μ V	PK/QP/AV	H/V	dB(1/m)	dB	dB	dB μ V/m	dB μ V/m	dB
338.460	46.3	QP	H	14.80	2.19	21.62	41.67	46.00	4.33*
338.460	38.5	QP	V	14.80	2.19	21.62	33.87	46.00	12.13
474.260	33.8	QP	H	17.94	2.64	21.96	32.42	46.00	13.58
474.260	32.4	QP	V	17.94	2.64	21.96	31.02	46.00	14.98

*Within measurement uncertainty!

DECLARATION OF SIMILARITY

ProcessingPoint, Inc.
Add: 2796 Loker Avenue, Suite 111 Carlsbad, California 92010, USA
Tel: (800)518-8925-1004 Fax: (760)-448-6315

DECLARATION OF SIMILARITY

Date: 2013-9-10

To:
Bay Area Compliance Laboratories Corp.
Add: 69# Pulongcun, Puxinhu Industrial Zone Tangxia Town,
Dongguan, Guangdong, China
Tel: +86 769 86858888 Fax: +86 769 86858891

Dear Sir or Madam:

We, ProcessingPoint, Inc. , hereby declare that product: uAttend CB1500 & uAttend CB1000, model: CB1000 is electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics as model name: CB1500 of products that was tested by BACL, the results of which are featured in BACL project: R2DG130318014.

A description of the differences between the tested model and those that are declared similar areas follows:

The 2 models have different appearance, color and the model: CB1000 is Resistive keyboard, the other model CB1500 is Capacitive keyboard.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature:
Andrew Newby
Chief Operating Officer

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