



FCC PART 15B

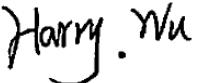
TEST REPORT

For

Loctek Visual Technology Corp.

588# Qihang south road, binhai industrial zone administrative committee, yinzhou district, Ningbo, Zhejiang, China

FCC ID: 2ABVP-DLB502-SP

Report Type: Original Report	Product Type: PC sound bar bracket
Test Engineer: <u>Jone Lv</u> 	
Report Number: <u>R2SH140630053-00</u>	
Report Date: <u>2014-09-03</u>	
Reviewed By: Harry Wu EMC Leader	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Loctek Visual Technology Corp.*.'s product, model *DLB502-SP* (FCC ID: 2ABVP-DLB502-SP) (or the "EUT") in this report is a *PC sound bar bracket*, which was measured approximately: 5 cm (L) x 4 cm (W) x 29cm (H), rated input voltage: DC5V from system. The highest operating frequency is 12MHz.

Note: The model DLB502-SP, D5S are electrically identical, except their model names, we select model DLB502-SP 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: 140630053. (Assigned by BACL. Dongguan). The EUT was received on 2014-07-02.*

Objective

This report is prepared on behalf of *Loctek Visual Technology Corp.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communications Commission's rules.

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

Related Submittal(s)/Grant(s)

No related grant(s).

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 Communications 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.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

No software was used in the test.

Equipment Modifications

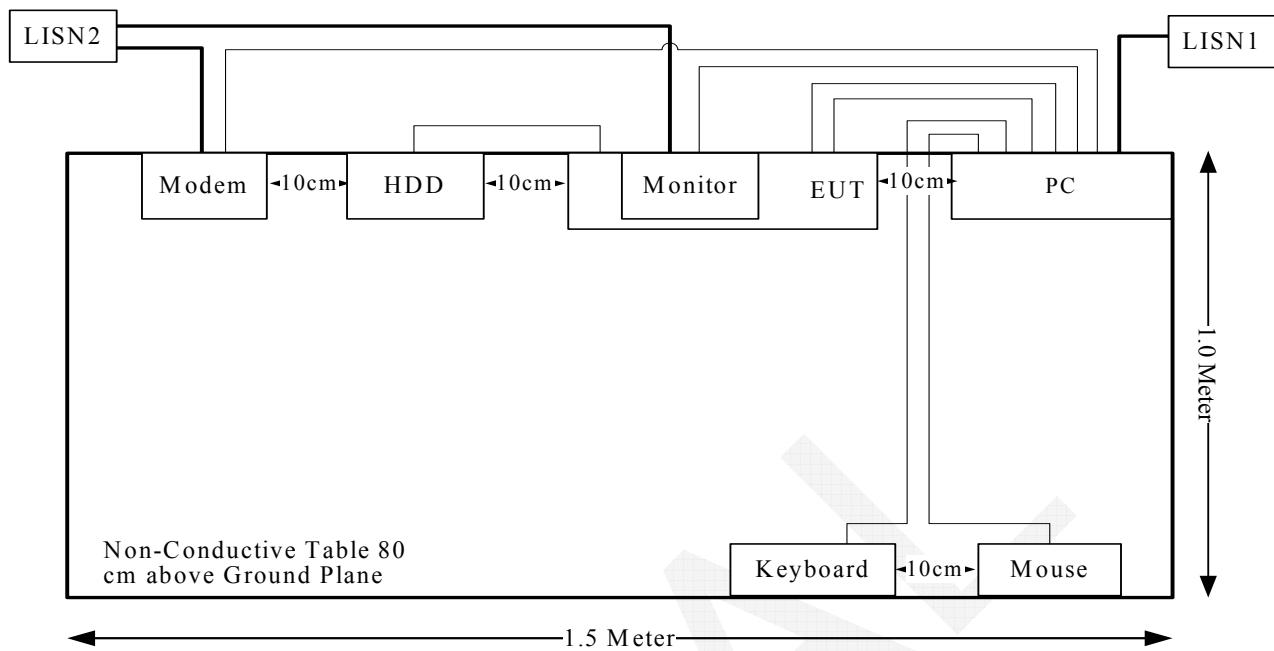
No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HP	PC	N/A	N/A
SAMSUNG	Monitor	N/A	N/A
SAST	Modem	AEM-2100	090200213
DELL	Keyboard	SK-8115	CN-0DJ313-716716-05A-0DSO
DELL	Mouse	M-UV69a	265986-002
TOSHIBA	HDD	DTP105	248HS1Z1SRE8

External Cable

Cable Description	Length (m)	From / Port	To
Shielded Detachable Serial Cable	1.5	Serial Port of PC	Modem
Shielded Detachable VGA Cable	1.8	VGA Port of PC	Monitor
Shielded Detachable USB Cable	1.8	USB Port of PC	Mouse
Shielded Detachable USB Cable	2.0	USB Port of PC	Keyboard
Shielded Detachable USB Cable	1.0	USB Port of PC	EUT
Shielded Detachable USB Cable	1.0	USB Port of PC	EUT
Shielded Detachable USB Cable	0.5	USB Port of EUT	HDD

Block Diagram of Test Setup

SUMMARY OF TEST RESULTS

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

FINAL

FCC §15.107 – 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:

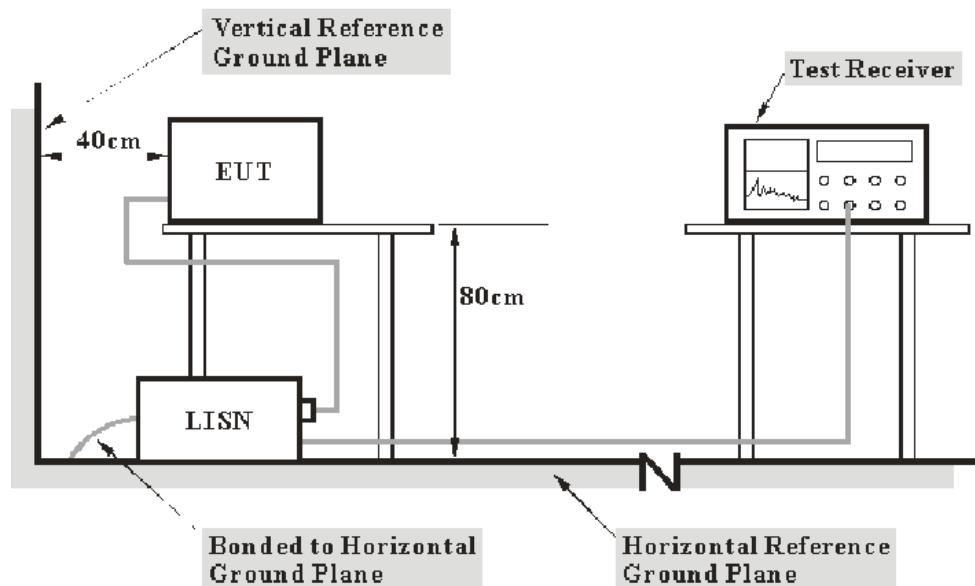
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}}_{\text{r}})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}}_{\text{r}})$, exceeds 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 15.107 Class B limits.

The 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:

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

Test Procedure

During the conducted emission test, the PC 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 Receiver	ESCS 30	830245/006	2013-11-20	2014-11-20
R&S	L.I.S.N	ESH3-Z5	843331/015	2013-09-25	2014-09-25
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-01-22	2015-01-22
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, 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 15.107, with the worst margin reading of:

15.3 dB at 0.465037MHz in the **Neutral** conducted mode

Test Data

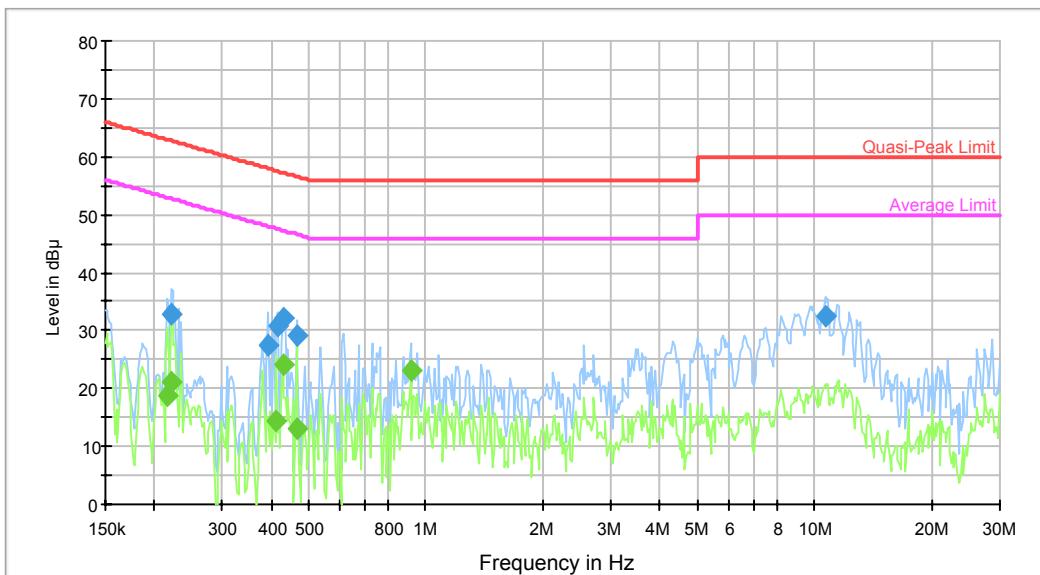
Environmental Conditions

Temperature:	29.3°C
Relative Humidity:	63%
ATM Pressure:	99.9 kPa

The testing was performed by Jone Lv on 2014-07-03.

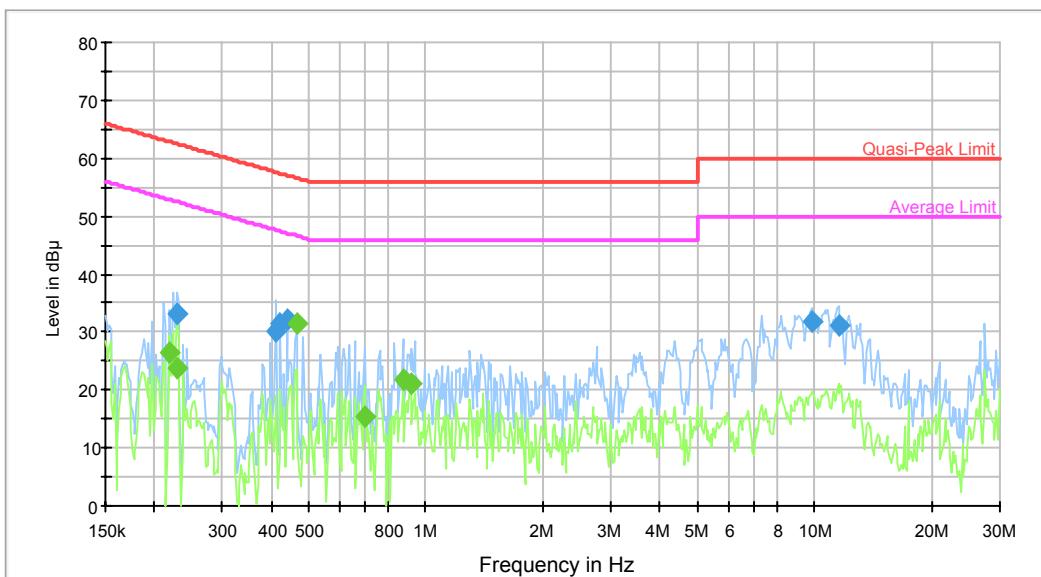
Test mode: On

AC 120V/60Hz, Line:



Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.221645	32.9	9.000	L1	10.7	29.9	62.8	Passed
0.393383	27.4	9.000	L1	10.6	30.6	58.0	Passed
0.415949	30.8	9.000	L1	10.6	26.7	57.5	Passed
0.429420	32.0	9.000	L1	10.5	25.2	57.3	Passed
0.465037	29.0	9.000	L1	10.5	27.6	56.6	Passed
10.653105	32.4	9.000	L1	10.7	27.6	60.0	Passed

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.216409	18.9	9.000	L1	10.7	34.1	53.0	Passed
0.221645	21.1	9.000	L1	10.7	31.7	52.8	Passed
0.412647	14.4	9.000	L1	10.6	33.1	47.6	Passed
0.429420	24.0	9.000	L1	10.5	23.2	47.3	Passed
0.465037	12.9	9.000	L1	10.5	33.7	46.6	Passed
0.915445	23.1	9.000	L1	10.5	22.9	46.0	Passed

AC 120V/60Hz, Neutral:

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.228823	33.1	9.000	N	11.3	29.4	62.5	Passed
0.412647	30.2	9.000	N	10.8	27.4	57.6	Passed
0.422630	31.4	9.000	N	10.7	26.0	57.4	Passed
0.439808	32.1	9.000	N	10.6	25.0	57.1	Passed
9.837187	31.7	9.000	N	10.7	28.3	60.0	Passed
11.536699	31.3	9.000	N	10.6	28.7	60.0	Passed

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.219886	26.3	9.000	N	11.3	26.5	52.8	Passed
0.228823	23.9	9.000	N	11.3	28.6	52.5	Passed
0.465037	31.3	9.000	N	10.5	15.3	46.6	Passed
0.698191	15.5	9.000	N	10.6	30.5	46.0	Passed
0.872708	21.9	9.000	N	10.6	24.1	46.0	Passed
0.915445	21.0	9.000	N	10.6	25.0	46.0	Passed

FCC §15.109 - RADIATED 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_{cispr} of Table 2, 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 $(U_{\text{lab}} - U_{\text{cispr}})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cispr}})$, 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

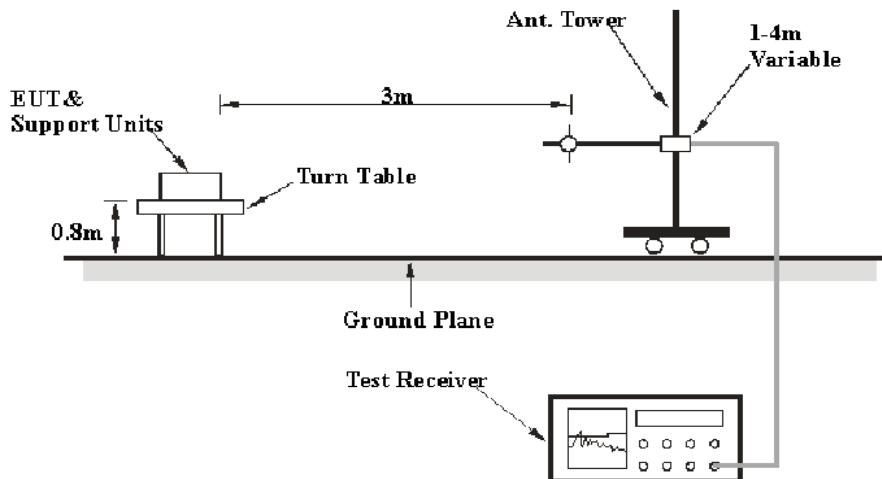
6G~18GHz: 5.23 dB

Table 2 – Values of U_{cispr}

Measurement	U_{cispr}
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

Below 1 GHz:



The radiated emission(below 1GHz) tests was performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2003. 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 PC connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 1GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP

Test Procedure

For the radiated emissions test, the PC was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

The data was recorded in Quasi-peak detection mode for 30 MHz to 1 GHz.

Corrected Amplitude & Margin Calculation

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

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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 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 Receiver	ESCI	100224	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-1	2011-09-06	2014-09-05
HP	Amplifier	8447E	2434A02181	2013-09-06	2014-09-06
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
ETS-Lindgren	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2014-02-19	2015-02-19
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, 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 §15.109, Class B, with the worst margin reading of:

3.20 dB at 314.2100 MHz in the Horizontal polarization

Test Data

Environmental Conditions

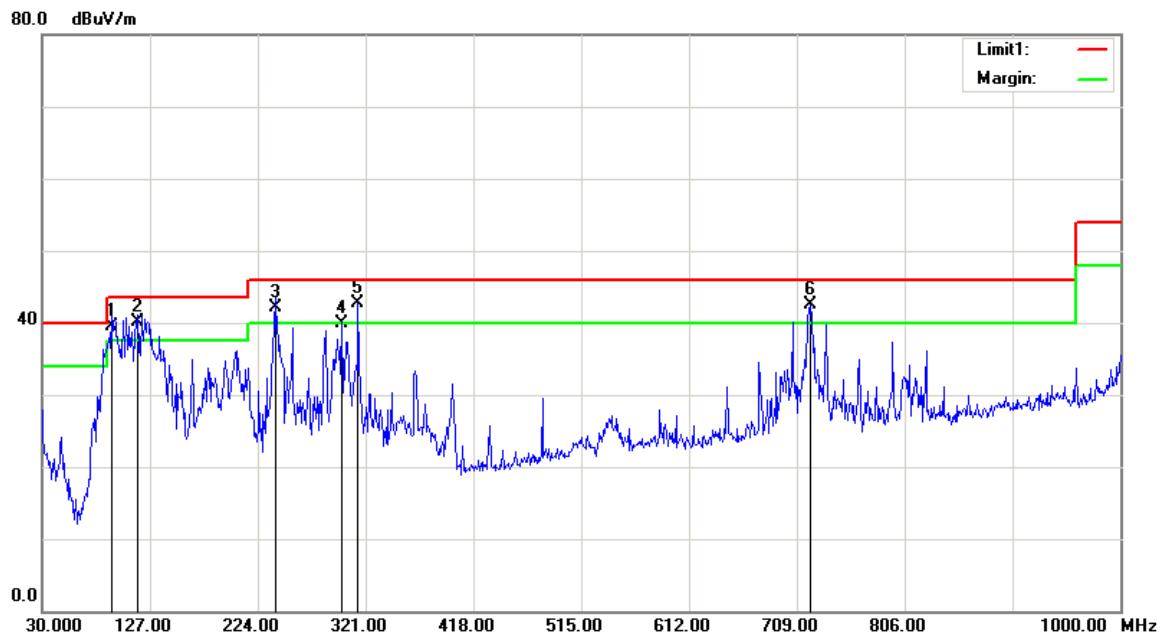
Temperature:	28.3 °C
Relative Humidity:	56 %
ATM Pressure:	100.4 kPa

The testing was performed by Jone Lv on 2014-09-01.

Test mode: On

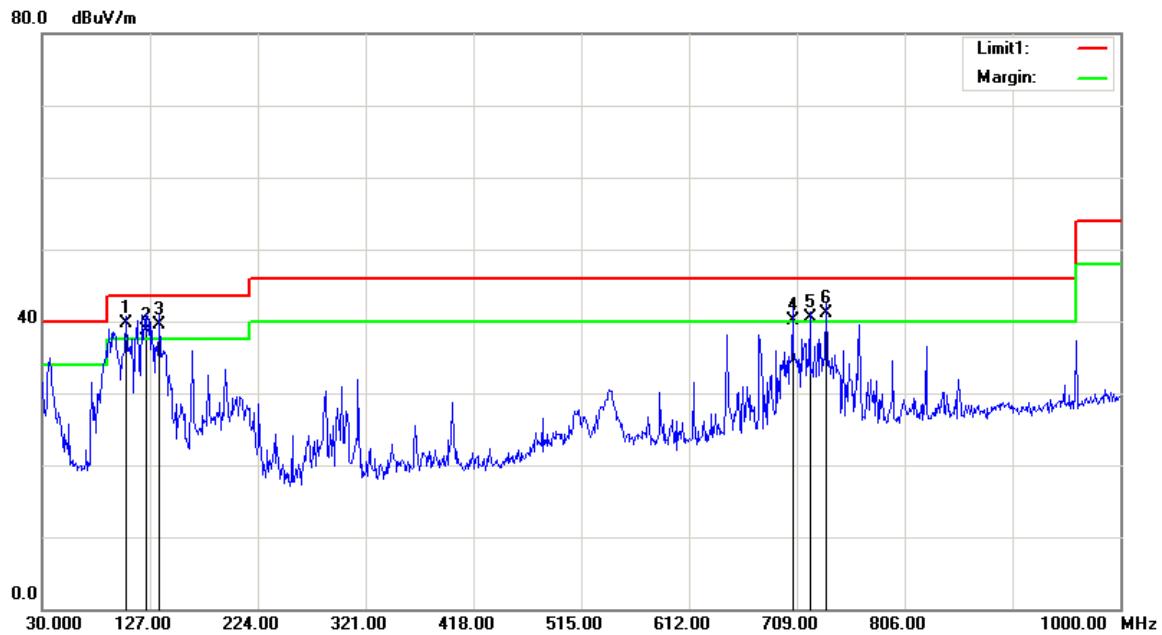
1)Below 1GHz:

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
92.0800	51.25	QP	-11.65	39.60	43.50	3.90*
116.3300	46.22	QP	-6.02	40.20	43.50	3.30*
239.5200	49.44	QP	-7.34	42.10	46.00	3.90*
299.6600	45.35	QP	-5.35	40.00	46.00	6.00*
314.2100	47.76	QP	-4.96	42.80	46.00	3.20*
721.6100	40.57	QP	1.93	42.50	46.00	3.50*

*Within measurement uncertainty!

Vertical:

Frequency (MHz)	Receiver Reading (dBuV)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
105.6600	47.72	QP	-7.92	39.80	43.50	3.70*
124.0900	44.23	QP	-5.53	38.70	43.50	4.80*
135.7300	45.73	QP	-6.13	39.60	43.50	3.90*
705.1200	38.71	QP	1.39	40.10	46.00	5.90*
720.6400	38.60	QP	1.90	40.50	46.00	5.50*
735.1900	39.26	QP	1.94	41.20	46.00	4.80*

*Within measurement uncertainty!

DECLARATION OF SIMILARITY

Loctek Visual Technology Corp.

Add: 588# Qihang south road, binhai industrial zone administrative committee, yinzhou district, Ningbo, Zhejiang, China

Tel: 0574-55339542

Fax: 0574-55339569

DECLARATION OF SIMILARITY

Date : July 1, 2014

To:

Bay Area Compliance Laboratories Corp. (Dongguan)
No.69 Pulong Village Puxinhu Industry Zone Tangxia,
Dongguan, China
<http://www.baclcorp.com>

Dear Sir or Madam:

We, Loctek Visual Technology Corp., hereby declare that product: PC sound bar bracket, model: DLB502-SP and D5S are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics.

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

They are the same product, and just have the different model name, the rest are the same.

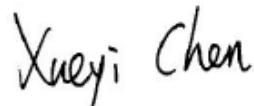
Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature:

Name: Xueyi Chen

Title: Engineer



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