

APPLICATION FOR CERTIFICATION
On Behalf of

Action Industries (M) SDN BHD

DVD Player with 10.2" LCD Monitor

Brand Name	Model Number
Audiovox	VOD10
Advent	ADV10
Axion	ODM81003

Prepared for : Action Industries (M) SDN BHD
2480, Tingkat Perusahaan Enam, Prai Free Trade Zone,
13600, Perai, Penang, Malaysia.

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F09225
Date of Test : Oct.23~28, 2009
Date of Report : Oct.29, 2009

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TEST REPORT CERTIFICATION

Applicant : Action Industries (M) SDN BHD
 Manufacturer : Action Industries (M) SDN BHD
 EUT Description : DVD Player with 10.2" LCD Monitor

(A) MODEL NO. & BRAND NAME :	Brand Name	Model Number
	Audiovox	VOD10
	Advent	ADV10
	Axion	ODM81003

(B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 12V, 1.5A
 (D) TEST VOLTAGE : DC 12V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2008

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

Date of Test : Oct.23~ 28, 2009

Prepared by :

Edie Huang

 Edie Huang / Assistant

Reviewer :

Jamy Yu

 Jamy Yu / Supervisor

Approved & Authorized Signer :

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 Audix Technology (Shenzhen) Co., Ltd.
 EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: *Ken Lu* 11/3 09

Ken Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2003	N/A
Radiated Emission Test	FCC Part 15: 15.239 ANSI C63.4: 2003	PASS
Bandwidth Test	FCC Part 15: 15.239	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description : DVD Player with 10.2" LCD Monitor

Model Number :	Brand Name	Model Number
	Audiovox	VOD10
	Advent	ADV10
	Axion	ODM81003

Only the Brand Name and Model Number are different.

FCC ID : ATI9R3VOD100

Operating Frequency : 88.1MHz to 91.1MHz

Applicant : Action Industries (M) SDN BHD
2480, Tingkat Perusahaan Enam, Prai Free Trade Zone,
13600, Perai, Penang, Malaysia.

Manufacturer : Action Industries (M) SDN BHD
2480, Tingkat Perusahaan Enam, Prai Free Trade Zone,
13600, Perai, Penang, Malaysia.

Date of Test : Oct.23~28, 2009

Date of Receipt : Oct.22, 2009

Sample Type : Prototype production

2.2. Test Facility

Site Description

- Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China
- 3m Anechoic Chamber : Mar.31, 2009 File on Federal
Communication Commission
Registration Number: 90454
- 3m & 10m Anechoic Chamber : Jan. 31, 2007 File on Federal
Communication Commission
Registration Number: 794232
- EMC Lab. : Accredited by DATech, German
Registration Number: DAT-P-091/99-01
Feb. 02, 2009
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Apr. 01, 2009

2.3. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	3.78 dB (Polarize: V)
	4.20 dB (Polarize: H)
Uncertainty for Bandwidth test	1×10^{-9}
Uncertainty for DC power test	0.042 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (f) of FCC Part 15C 15.207, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

4. RADIATED EMISSION TEST

4.1. Test Equipment

The following test equipments are used during the radiated emission Test :

4.1.1. For Anechoic Chamber

Frequency rang: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,08	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 09	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 09	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 09	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Nov.10, 08	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 09	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 09	1 Year

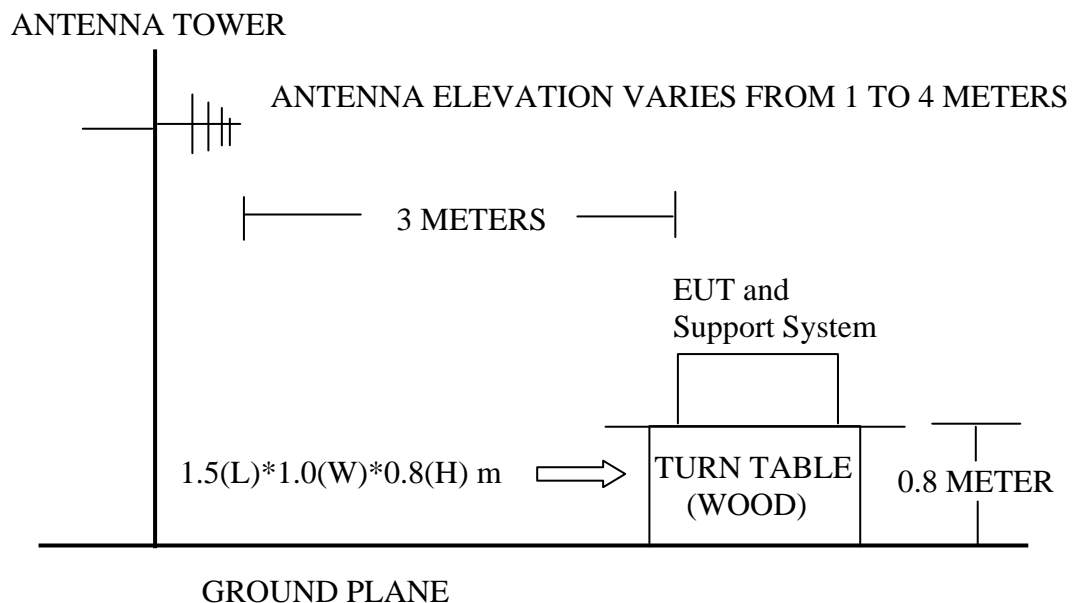
4.2. Block Diagram of Test Setup

4.2.1. Block Diagram of connection between EUT and simulators



(EUT: DVD Player with 10.2" LCD Monitor)

4.2.2. Anechoic Chamber Setup Diagram



4.3. Radiated Emission Limit 30~1000MHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 108	3	250(Av), 2500(Peak)	48.0(Av), 68.0(Peak)
108 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. DVD Player with 10.2" LCD Monitor (EUT)

Model Number : VOD10
Serial Number : N/A

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2. Let the EUT work in test modes (Tx Mode) and test it.

4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission Test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The frequency range from 30MHz to 1000MHz are checked.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on Section 4.7.

4.7. Radiated Emission Test Results

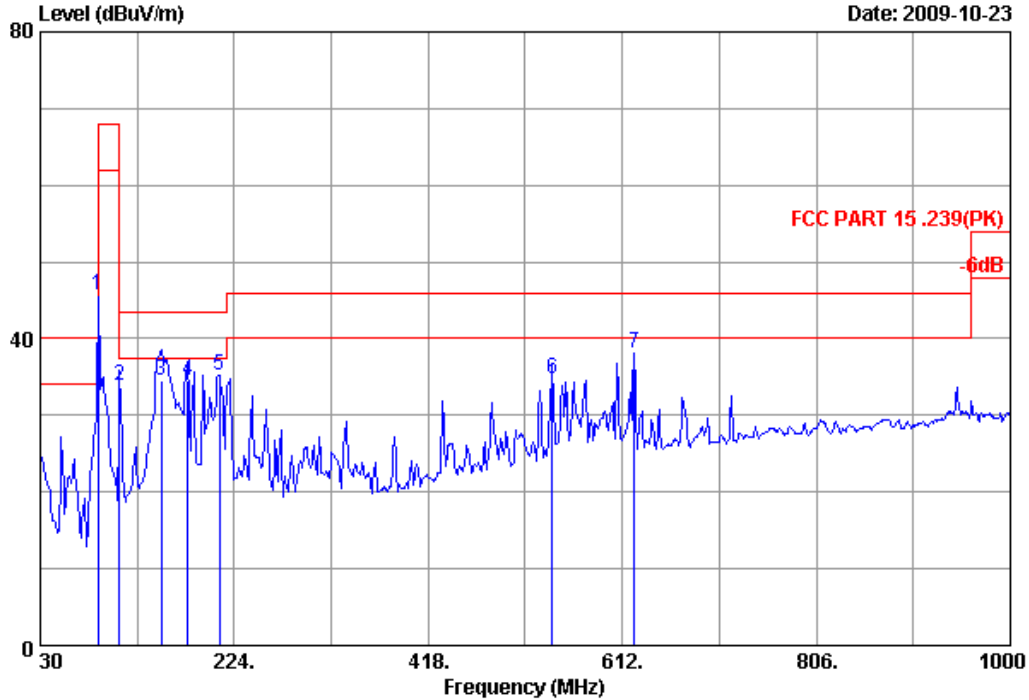
PASS.

For all the fundamental emission 88.1MHz, 89.5MHz and 91.1MHz are peak measured and comply with average limit, So, Average levels are deemed to comply with average limit.



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Data: 3 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 3
 Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 .239(PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : 88.1MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	88.100	8.69	0.85	36.17	45.71	68.00	22.29	Peak
2	109.540	11.22	0.94	21.62	33.78	43.50	9.72	QP
3	151.250	11.48	1.10	21.98	34.56	43.50	8.94	QP
4	177.440	9.55	1.21	23.75	34.51	43.50	8.99	QP
5	209.450	10.12	1.37	23.82	35.31	43.50	8.19	QP
6	542.160	18.32	2.35	14.17	34.84	46.00	11.16	QP
7	623.640	19.85	2.57	15.62	38.04	46.00	7.96	QP

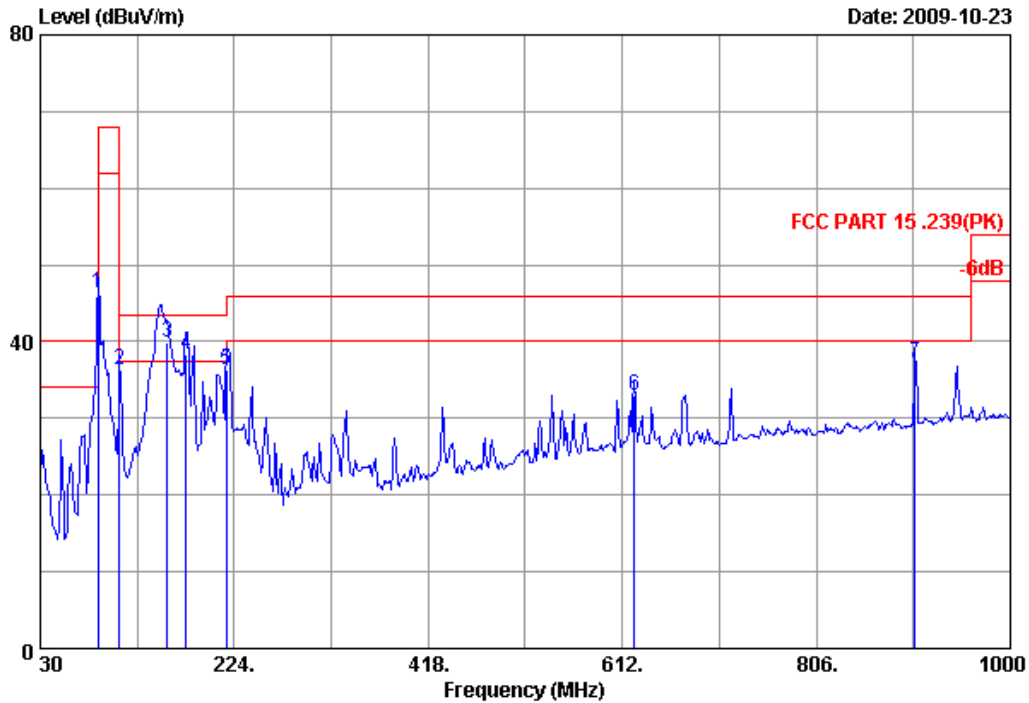
Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 4 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 4
 Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 .239(PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : 88.1MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	88.100	8.69	0.85	36.80	46.34	68.00	21.66	Peak
2	109.540	11.22	0.94	24.26	36.42	43.50	7.08	QP
3	157.270	11.12	1.12	27.60	39.84	43.50	3.66	QP
4	175.500	9.64	1.20	27.42	38.26	43.50	5.24	QP
5	216.240	9.98	1.41	24.89	36.28	46.00	9.72	QP
6	623.640	19.85	2.57	10.56	32.98	46.00	13.02	QP
7	904.940	22.70	3.19	11.38	37.27	46.00	8.73	QP

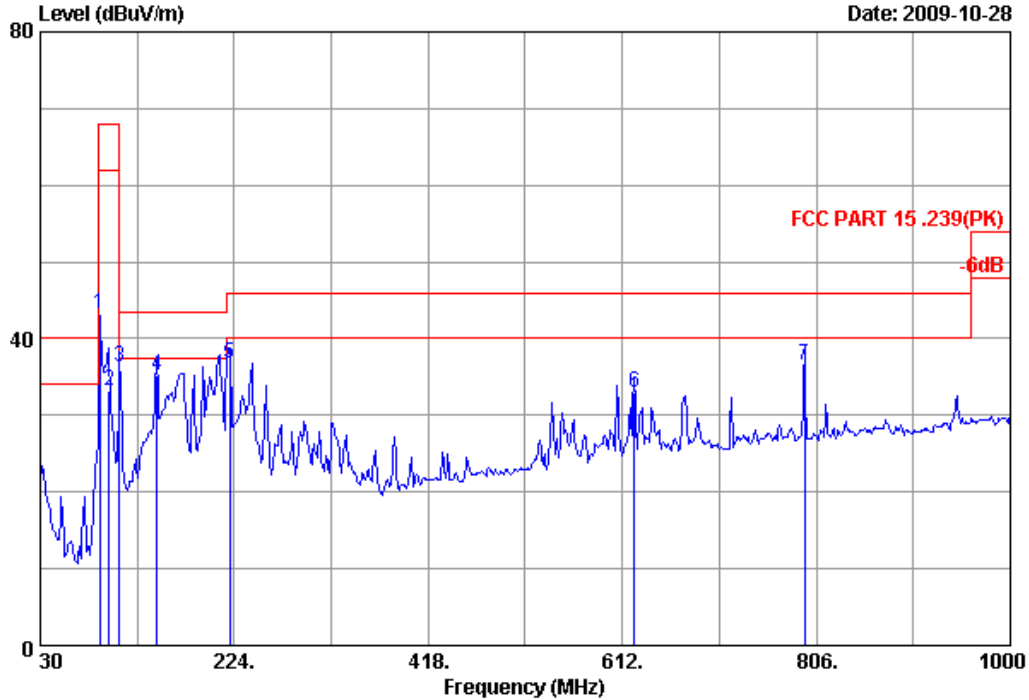
Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 5 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 5
 Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 .239(PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : 89.5MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	89.500	8.80	0.85	33.55	43.20	68.00	24.80	Peak
2	98.500	10.11	0.89	22.26	33.26	68.00	34.74	QP
3	109.540	11.22	0.94	24.27	36.43	43.50	7.07	QP
4	146.400	11.70	1.08	22.48	35.26	43.50	8.24	QP
5	219.150	10.08	1.44	25.34	36.86	46.00	9.14	QP
6	623.640	19.85	2.57	10.46	32.88	46.00	13.12	QP
7	794.360	21.71	3.04	11.78	36.53	46.00	9.47	QP

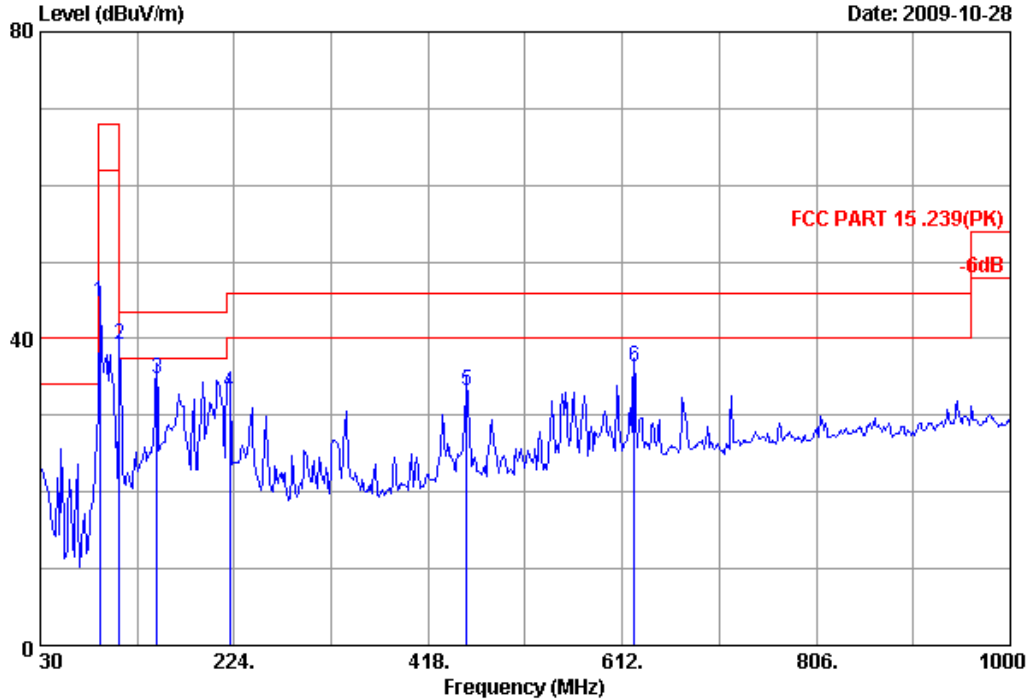
Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 6 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 6
 Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 .239 (PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : 89.5MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	89.500	8.80	0.85	35.19	44.84	68.00	23.16	Peak
2	109.540	11.22	0.94	27.08	39.24	43.50	4.26	QP
3	146.400	11.70	1.08	21.94	34.72	43.50	8.78	QP
4	219.150	10.08	1.44	21.53	33.05	46.00	12.95	QP
5	456.800	17.23	2.11	13.89	33.23	46.00	12.77	QP
6	623.640	19.85	2.57	13.99	36.41	46.00	9.59	QP

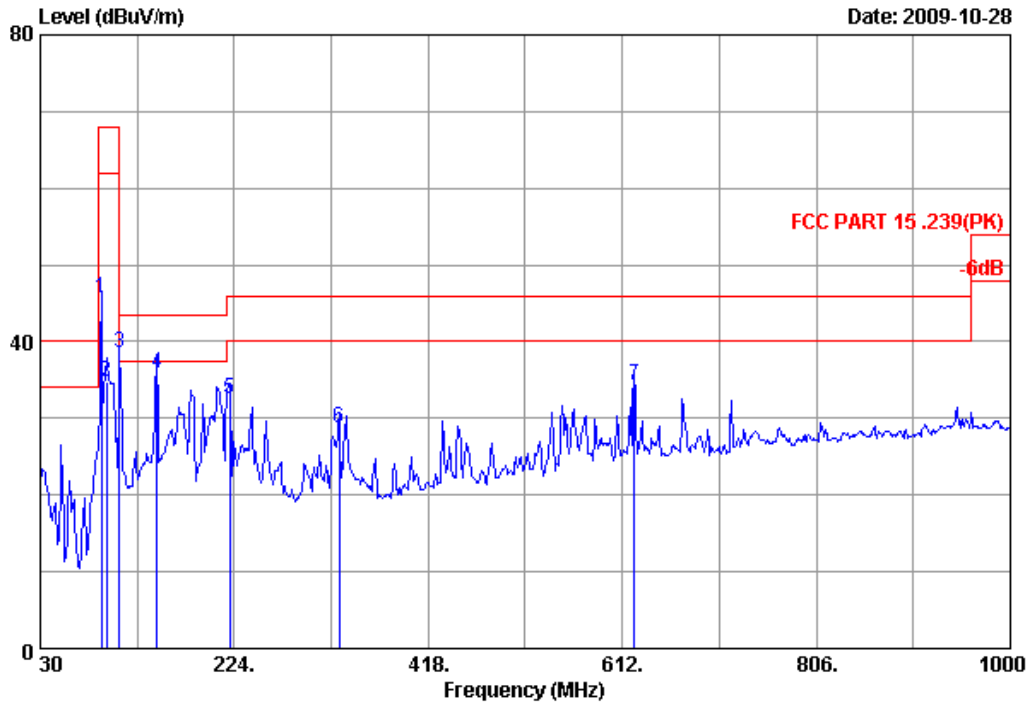
Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 7 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 7
 Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 .239(PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : Tx 91.1MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	91.100	9.05	0.86	35.78	45.69	68.00	22.31	Peak
2	95.960	9.74	0.88	24.21	34.83	68.00	33.17	QP
3	109.540	11.22	0.94	26.36	38.52	43.50	4.98	QP
4	146.400	11.70	1.08	23.02	35.80	43.50	7.70	QP
5	219.150	10.08	1.44	21.02	32.54	46.00	13.46	QP
6	328.760	14.28	1.79	12.67	28.74	46.00	17.26	QP
7	623.640	19.85	2.57	11.82	34.24	46.00	11.76	QP

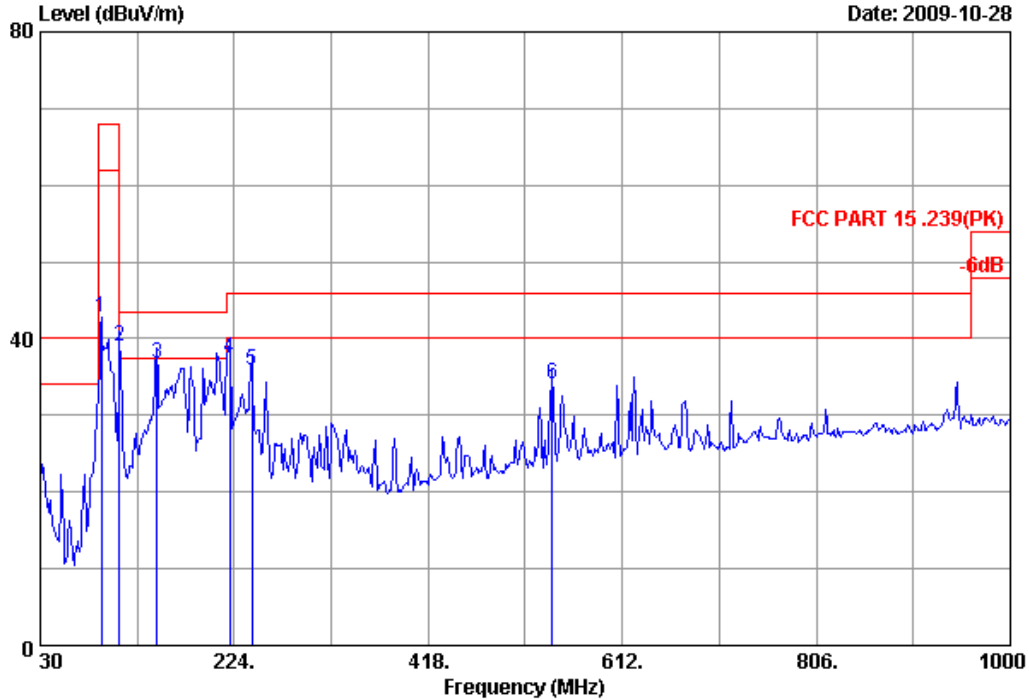
Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 8 File: D:\2009 Report Data\A\ACTION\ACS9Q1507.EM6 (8)



Site no. : RF Chamber Data no. : 8
 Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 .239(PK)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : DVD Player with 10.2"LCD Monitor
 Power Rating : DC 12V
 Test mode : Tx 91.1MHz
 Memo : M/N:VOD10

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	91.100	9.05	0.86	32.77	42.68	68.00	25.32	Peak
2	109.540	11.22	0.94	26.87	39.03	43.50	4.47	QP
3	146.400	11.70	1.08	23.95	36.73	43.50	6.77	QP
4	219.150	10.08	1.44	25.89	37.41	46.00	8.59	QP
5	241.460	11.80	1.58	22.60	35.98	46.00	10.02	QP
6	542.160	18.32	2.35	13.35	34.02	46.00	11.98	QP

Remarks:

1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. BANDWIDTH TEST

5.1. Test Equipment

The following test equipments are used during the bandwidth test:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1Year

5.2. Block Diagram of Test Setup



(EUT: DVD Player with 10.2" LCD Monitor)

5.3. Test Standard

The test completeness FCC 15C (15.239).

5.4. Limit

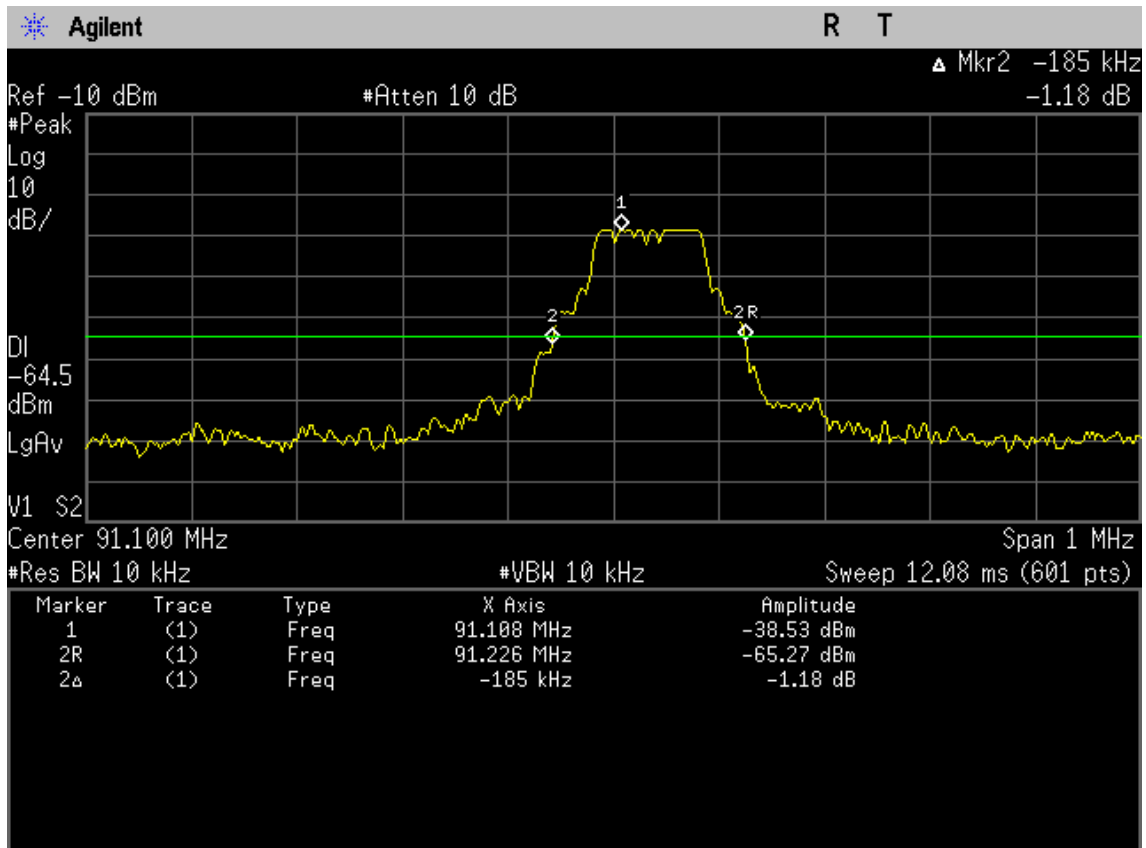
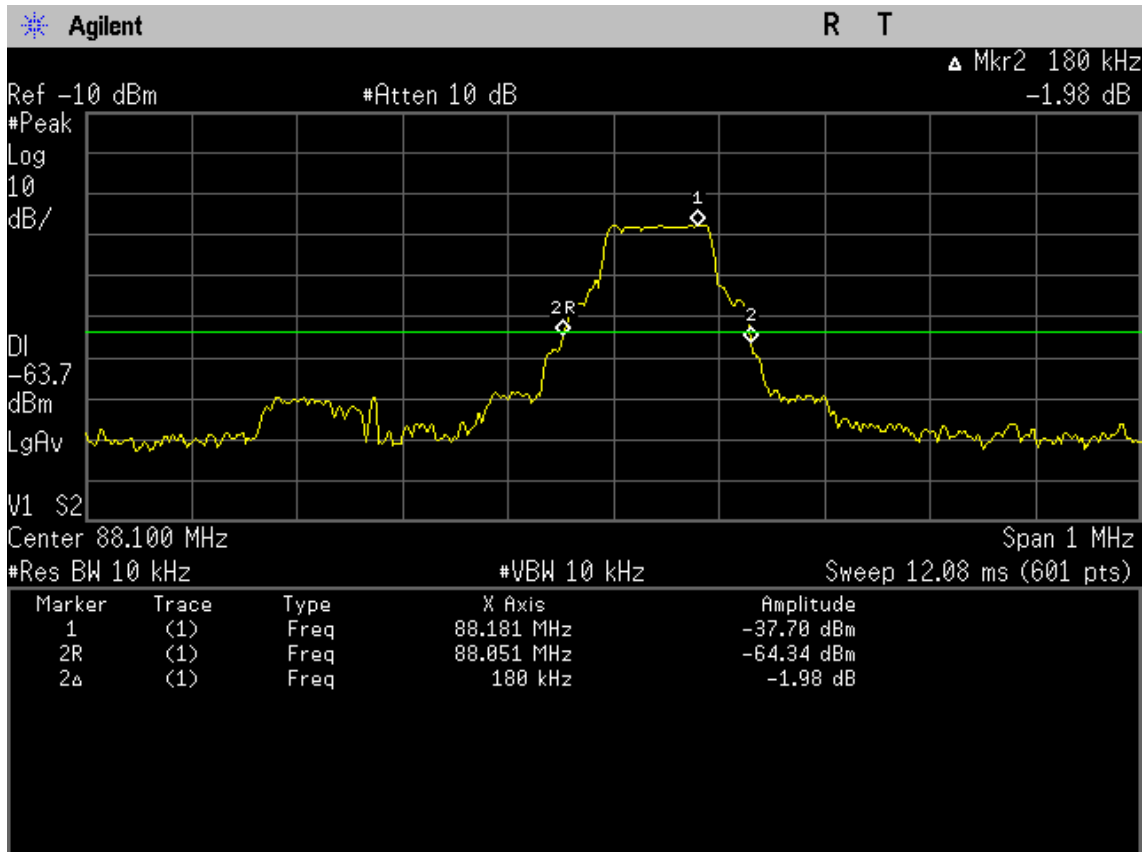
200kHz wide centered on the operation frequency.

5.5. Test Signal

Jazz music played with EUT's DVD Player

5.6. Test Results

PASS. (The testing data please refer to the following page.)



6. DEVIATION TO TEST SPECIFICATIONS

[NONE]