

APPLICATION FOR CERTIFICATION

On Behalf of

Action Electronics Co Ltd

DVD Player with 10.2" LCD Monitor

Brand Name	Model Number
Audiovox	VOD100
Advent	ADV30
Jensen	JMV102
Axion	ODM71001

FCC ID. : ATI9R3VOD100

Prepared for : Action Electronics Co Ltd
No. 198, Chung Yuan Road Chung Li Ind Zone, Taiwan

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F08310
Date of Test : Jun.19~25, 2008
Date of Report : Jul.03, 2008

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TEST REPORT CERTIFICATION

Applicant : Action Electronics Co Ltd
 Manufacturer : Action Industries (M) SDN BHD
 EUT Description : DVD Player with 10.2" LCD Monitor
 FCC ID : ATI9R3VOD100

(A) MODEL NO. & BRAND NAME :	Brand Name	Model Number
	Audiovox	VOD100
	Advent	ADV30
	Jensen	JMV102
	Axion	ODM71001

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

Test Procedure Used:
 FCC Rules and Regulations Part 15 Subpart C 2007

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 : Jun.19th 25, 2008

Prepared by : YoYo Wang
 YoYo Wang / Assistant

Reviewer : Jamy Yu
 Jamy Yu / Senior Engineer



信華科技(深圳)有限公司
 Audix Technology (Shenzhen) Co., Ltd.
 EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: Ken Lu

Approved & Authorized Signer : Ken Lu
 Ken Lu / Deputy 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	Limits	Results
Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2003	Part C Limit	N/A
Radiated Emission Test	FCC Part 15: 15.239 ANSI C63.4: 2003	Part C Limit	PASS
Bandwidth Test	FCC Part 15: 15.239	Part C Limit	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	:	Brand Name	Model Number	
		Audiovox	VOD100	
		Advent	ADV30	
		Jensen	JMV102	
		Axion	ODM71001	
		Only the Brand Name and Model Number are different.		
FCC ID	:	ATI9R3VOD100		
Operating Frequency	:	88.1MHz to 91.1MHz		
Applicant	:	Action Electronics Co Ltd No. 198, Chung Yuan Road Chung Li Ind Zone, Taiwan		
Manufacturer	:	Action Industries (M) SDN BHD 2480, Tingkat Perusahaan Enam, Prai Free Trade Zone, 13600, Perai, Penang, Malaysia.		
Date of Test	:	Jun.19~25, 2008		
Date of Receipt	:	Jun.18, 2008		
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 : Jun. 13, 2006 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
Dec. 20, 2007
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Apr.01, 2007

2.3. Test Uncertainty

No.	Item	MU	Remark
1.	Uncertainty for Conducted Emission Test	2.02dB	
2.	Uncertainty for Radiation Emission test in 3m chamber	3.44 dB	Polarize: V
		3.96 dB	Polarize: H
3.	Uncertainty for Radiation Emission test in 10m chamber	3.46 dB	Distance: 10m Polarize: V
		3.82 dB	Distance: 10m Polarize: H
		3.64 dB	Distance: 3m Polarize: V
		4.02 dB	Distance: 3m Polarize: H

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

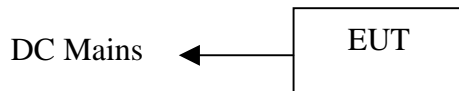
4.1. Test Equipment

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

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Jun 09,08	1/2 Year
2.	EMI Spectrum	Agilent	E7403A	MY42000106	May 10, 08	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 10, 08	1 Year
4.	Amplifier	HP	8447D	2648A04738	Jan 09, 08	1/2 Year
5.	Bilog Antenna	Schaffner	CBL6112D	25237	Feb 21, 08	1 Year
6.	RF Cable	JINGCHENG	KLMR400	3# Chamber No.1	Jan 09, 08	1/2 Year
7.	RF Cable	JINGCHENG	JBY400	3# Chamber No.2	Jan 09, 08	1/2 Year
8.	RF Cable	JINGCHENG	JBY400	3# Chamber No.3	Jan 09, 08	1/2 Year
9.	RF Cable	JINGCHENG	JBY400	3# Chamber No.4	Jan 09, 08	1/2 Year
10.	Coaxial Switch	Anritsu	MP59B	M73989	Jan 09, 08	1/2 Year

4.2. Block Diagram of Test Setup

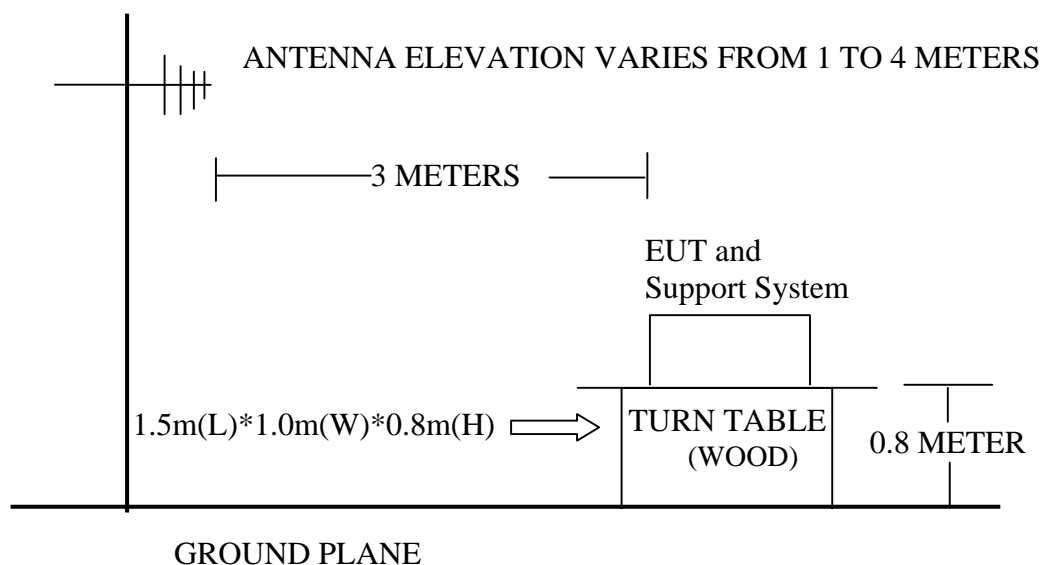
4.2.1. Block Diagram of connection between EUT and simulators



(EUT: DVD Player with 10.2" LCD Monitor)

4.2.2. In Anechoic Chamber Test Setup Diagram

ANTENNA TOWER



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 : VOD100
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 ESVS20) 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

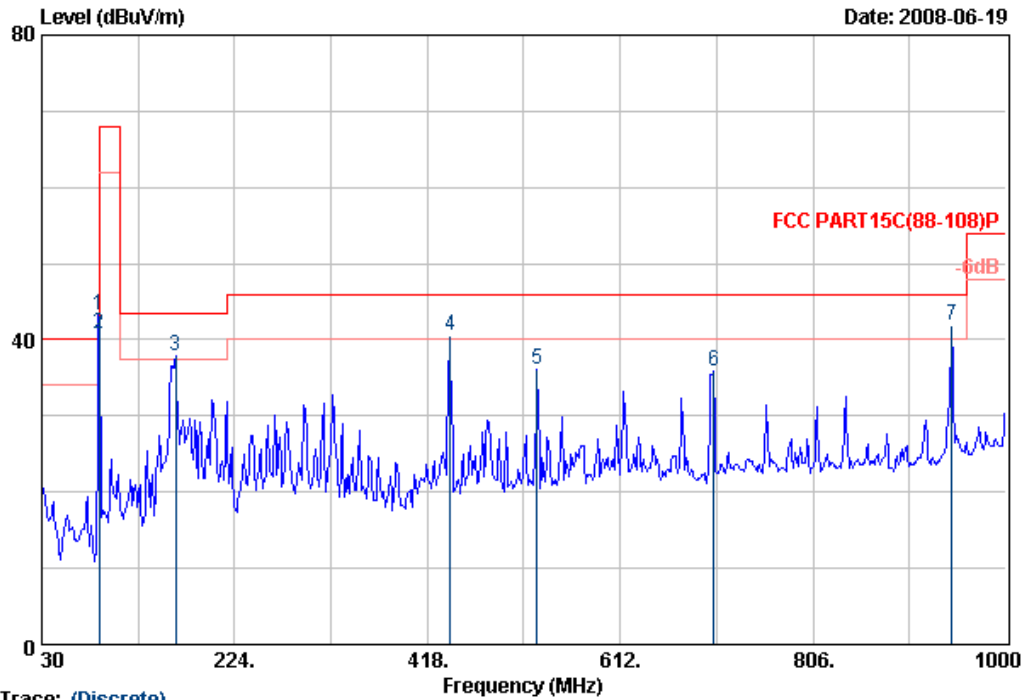
PASS.

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: 1 File: D:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)



Trace: (Discrete)
 Site no. : 3# Chamber Radiation Data no. : 1
 Dis. / Ant. : 3m CBL6112D Ant. pol. : HORIZONTAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2'' LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 88.1MHz
 Memo : M/N:VOD 100

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark	
				Level (dBuV/m)	Limits (dBuV/m)			
1	88.10	8.97	0.74	33.60	44.31	68.00	24.69	Peak
2	88.10	8.97	0.74	31.05	42.76	48.00	7.24	Average
3	164.83	9.83	0.99	27.06	37.88	43.50	5.62	QP
4	441.28	16.78	1.69	22.13	40.60	46.00	5.40	QP
5	528.58	17.92	1.84	16.34	36.10	46.00	9.90	QP
6	706.09	18.68	2.24	15.00	35.92	46.00	10.08	QP
7	945.68	21.02	2.62	18.21	41.85	46.00	4.15	QP

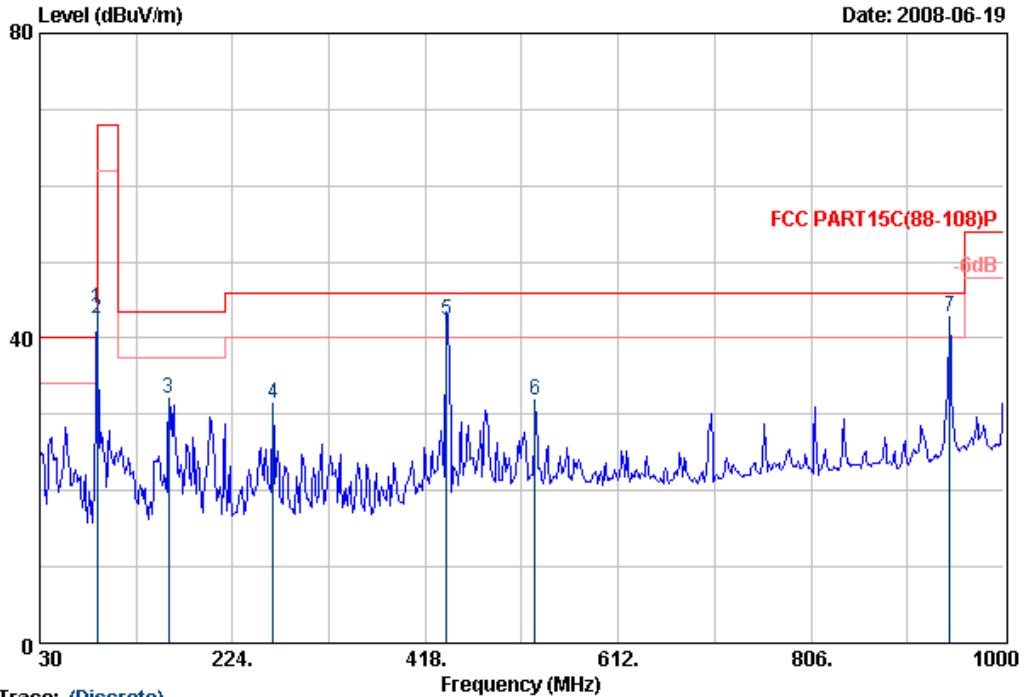
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 2 File: D:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)

Date: 2008-06-19



Trace: (Discrete)

Site no. : 3# Chamber Radiation Data no. : 2
 Dis. / Ant. : 3m CBL6112D Ant. pol. : VERTICAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2'' LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 88.1MHz
 Memo : M/N:VOD 100

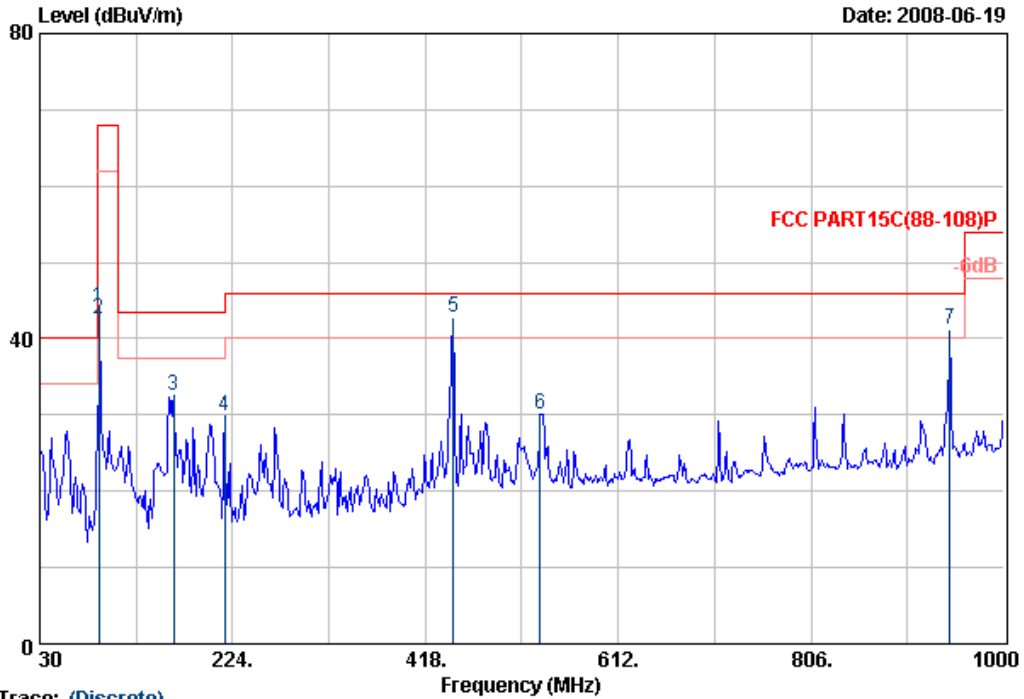
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission			Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)		
1	88.10	8.97	0.74	34.17	45.88	68.00	24.12	Peak
2	88.10	8.97	0.74	32.85	43.56	48.00	5.44	Average
3	159.98	10.01	0.95	21.02	31.98	43.50	11.52	QP
4	264.74	12.92	1.27	17.21	31.40	46.00	14.60	QP
5	439.34	16.79	1.68	23.97	42.44	46.00	3.56	QP
6	528.58	17.92	1.84	12.10	31.86	46.00	14.14	QP
7	945.68	21.02	2.62	19.04	42.68	46.00	3.32	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:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)



Trace: (Discrete)
 Site no. : 3# Chamber Radiation Data no. : 4
 Dis. / Ant. : 3m CBL6112D Ant. pol. : HORIZONTAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2'' LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 89.5MHz
 Memo : M/N:VOD 100

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	89.50	9.30	0.74	34.17	46.21	68.00	23.79	Peak
2	89.50	9.30	0.74	32.45	43.49	48.00	5.51	Average
3	164.83	9.83	0.99	21.61	32.43	43.50	11.07	QP
4	216.24	9.11	1.07	19.77	29.95	46.00	16.05	QP
5	446.13	16.77	1.66	24.40	42.83	46.00	3.17	QP
6	533.43	17.98	1.87	10.27	30.12	46.00	15.88	QP
7	945.68	21.02	2.62	17.56	41.20	46.00	4.80	QP

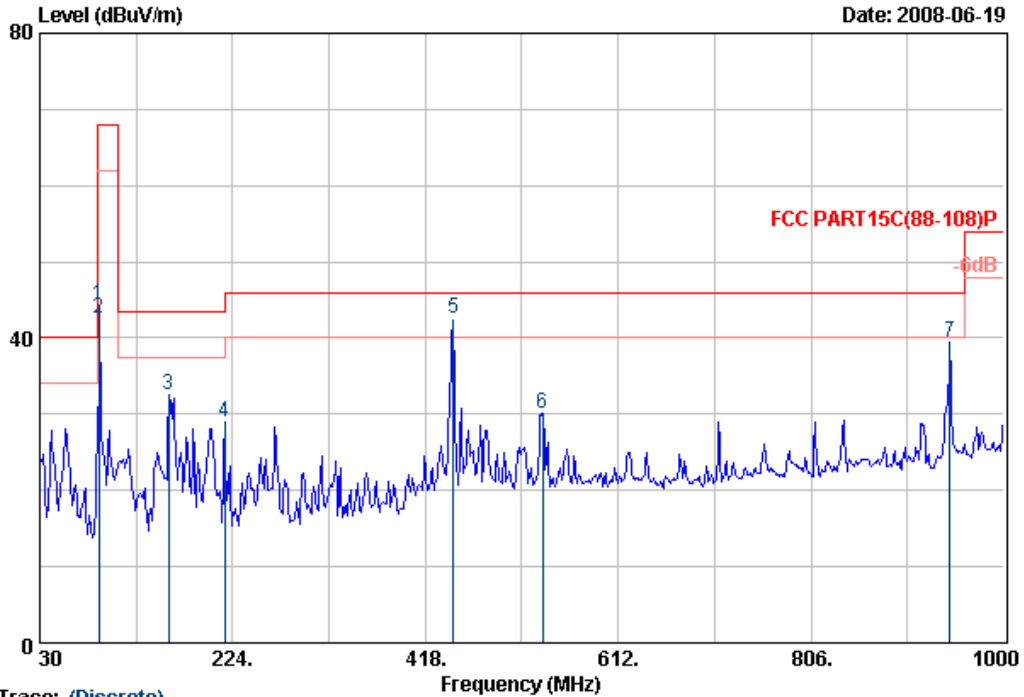
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 3 File: D:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)

Date: 2008-06-19



Trace: (Discrete)

Site no. : 3# Chamber Radiation Data no. : 3
 Dis. / Ant. : 3m CBL6112D Ant. pol. : VERTICAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2'' LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 89.5MHz
 Memo : M/N:VOD 100

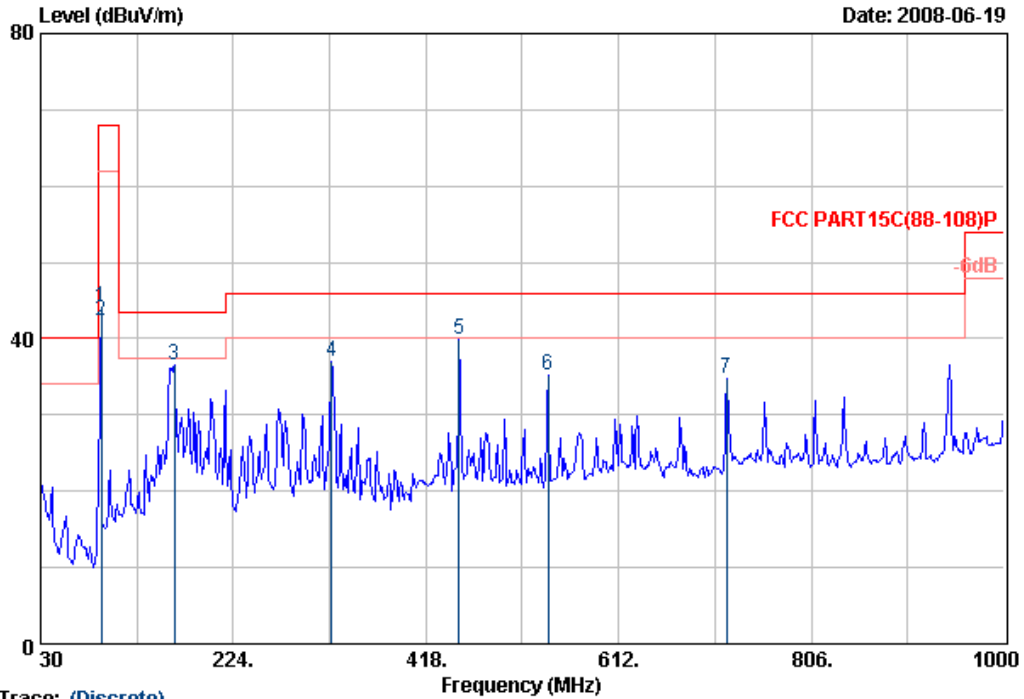
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1	89.50	9.30	0.74	34.22	45.26	68.00	23.74	Peak
2	89.50	9.30	0.74	32.49	43.53	48.00	5.47	Average
3	159.98	10.01	0.95	21.59	32.55	43.50	10.95	QP
4	216.24	9.11	1.07	18.85	29.03	46.00	16.97	QP
5	446.13	16.77	1.66	24.08	42.51	46.00	3.49	QP
6	536.34	18.01	1.87	10.18	30.06	46.00	15.94	QP
7	945.68	21.02	2.62	15.89	39.53	46.00	6.47	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:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)



Trace: (Discrete)

Site no. : 3# Chamber Radiation Data no. : 6
 Dis. / Ant. : 3m CBL6112D Ant. pol. : HORIZONTAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2'' LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 91.1MHz
 Memo : M/N:VOD 100

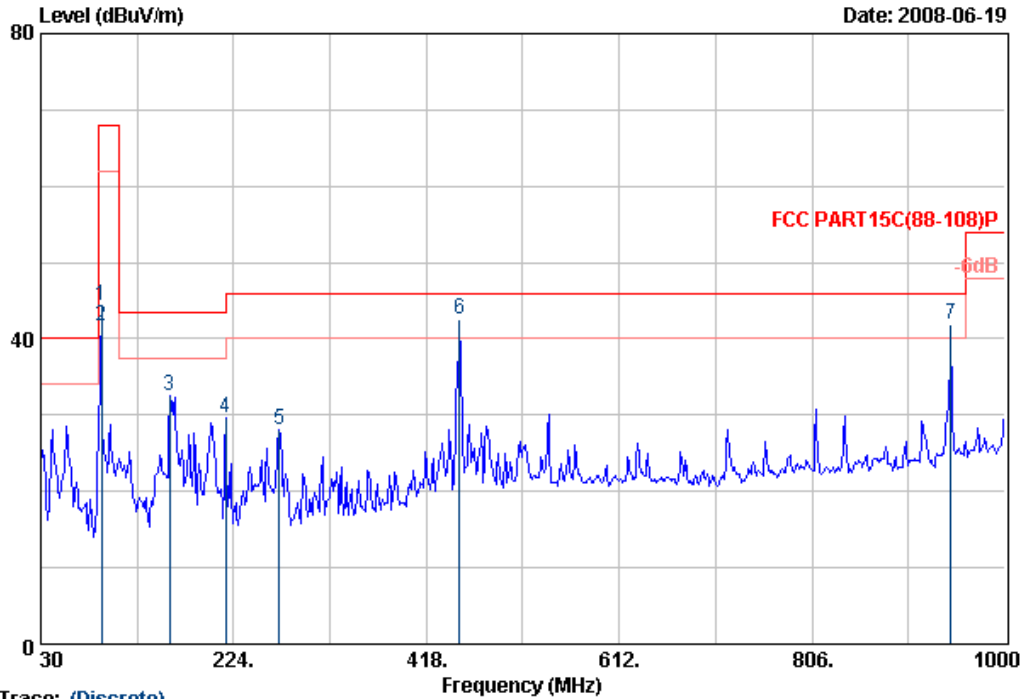
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	91.10	9.53	0.73	33.93	44.19	68.00	23.81	Peak
2	91.10	9.53	0.73	31.98	42.24	48.00	5.76	Average
3	164.83	9.83	0.99	25.67	36.49	43.50	7.01	QP
4	322.94	14.02	1.38	21.60	37.00	46.00	9.00	QP
5	450.98	16.79	1.69	21.48	39.96	46.00	6.04	QP
6	541.19	18.09	1.85	15.37	35.31	46.00	10.69	QP
7	720.64	18.89	2.29	13.64	34.82	46.00	11.18	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:\2008 Report Data\A\ACTION\ACS8Q570.EMI (38)



Trace: (Discrete)

Site no. : 3# Chamber Radiation Data no. : 5
 Dis. / Ant. : 3m CBL6112D Ant. pol. : VERTICAL
 Limit : FCC PART15C(88-108)P
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Power
 EUT : DVD Player with 10.2" LCD Monitor
 Power Rating : DC 12V
 Test Mode : Tx 91.1MHz
 Memo : M/N:VOD 100

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	91.10	9.53	0.73	34.00	46.26	68.00	23.74	Peak
2	91.10	9.53	0.73	31.48	44.74	48.00	6.26	Average
3	159.98	10.01	0.95	21.49	32.45	43.50	11.05	QP
4	216.24	9.11	1.07	19.48	29.66	46.00	16.34	QP
5	269.59	13.05	1.25	13.77	28.07	46.00	17.93	QP
6	450.98	16.79	1.69	24.01	42.49	46.00	3.51	QP
7	945.68	21.02	2.62	18.26	41.90	46.00	4.10	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,10, 08	1 Year
2	Attenuator	Agilent	8491B	MY39262165	May,28, 08	1 Year
3	Bilog Antenna	Schaffner	CBL6112D	25238	Feb,21, 08	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX 102	2861812	May,28, 08	1Year
5	RF Cable	Hubersuhner	SUCOFLEX 102	28862212	May,28, 08	1 Year

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

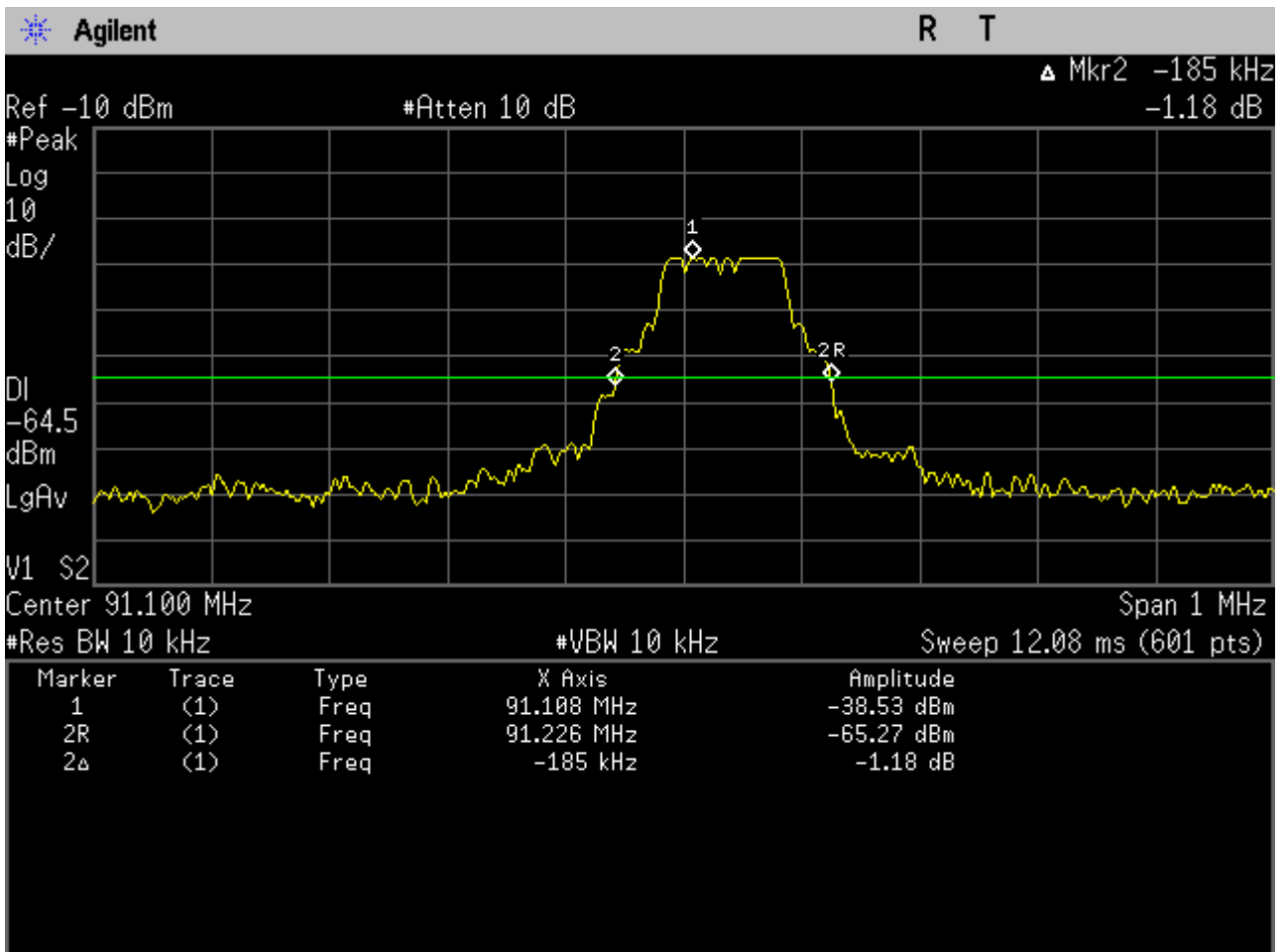
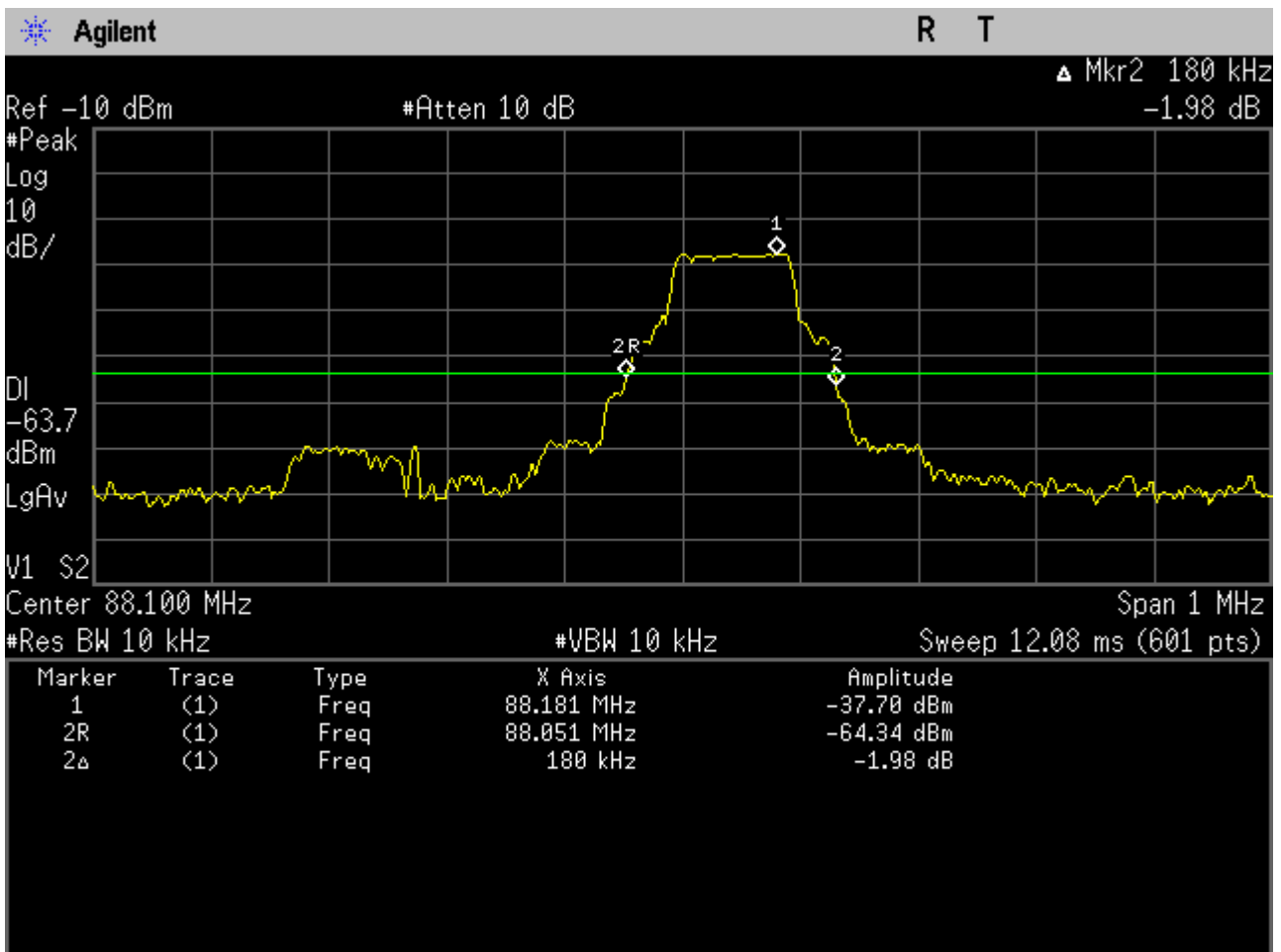
200kHz wide centered on the operation frequency.

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]