

Action Technology (Shenzhen) Co., Ltd.

7" DROPDOWN LCD MONITOR AND DVD Player

Model Number: MMD70

Prepared for : Action Technology (Shenzhen) Co., Ltd.
Baosheng Industrial Building., Laodong Cun,
Xixiang, Bao`an District, Shen Zhen

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

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Report Number : ACS-F06553
Date of Test : Oct.29, 2006
Date of Report : Nov.22, 2006

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APPENDIX I

(13 pages)

TEST REPORT DECLARATION

Applicant : Action Technology (Shenzhen) Co., Ltd.
 Manufacturer : Action Technology (Shenzhen) Co., Ltd.
 EUT Description : 7" DROPDOWN LCD MONITOR AND DVD Player

(A) MODEL NO. : MMD70

(B) SERIAL NO. : N/A

(C) POWER SUPPLY : DC 12V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2006

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.

This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : Oct.29, 2006

Prepared by : Selina Liu
 Selina Liu / Assistant

Reviewer : Sean Xing
 Sean Xing / Assistant Manager

EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: Ken Lu 11/30/06

Approved & Authorized Signer : Ken Lu
 Ken Lu / Deputy Manager

Name of the Representative of the Responsible Party : _____

Signature : _____

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
Radiated Emission Test	FCC Part 15: 2006 ANSI C63.4-2003	Part C Limit	PASS
Band edges measurement	FCC Part 15: 2006 ANSI C63.4-2003	Part C Limit	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description : 7" DROPDOWN LCD MONITOR AND DVD Player

Model Number : MMD70

Applicant : Action Technology (Shenzhen) Co., Ltd.
Baosheng Industrial Building., Laodong Cun,
Xixiang, Bao`an District, Shen Zhen

Manufacturer : Action Technology (Shenzhen) Co., Ltd.
Baosheng Industrial Building., Laodong Cun,
Xixiang, Bao`an District, Shen Zhen

AV IN Cable : Shielded, Detachable; 1.5m

AV Out Cable : Shielded, Detachable; 1.5m

Date of Test : Oct.29, 2006

2.2. Tested Supporting System Details

2.2.1. HEADPHONE

EMC CODE : ACS-EMC-EP02

M/N : OV880V

Manufacturer : OVANN

Data Cable : Shielded, Undetachabled, 4.0m

BSMI ID : N/A

2.3. Test Facility

Site Description

- 3m Anechoic Chamber : Jun. 13, 2006 File on Federal
Communication Commission
Registration Number: 90454
- 3m & 10m Anechoic Chamber : Mar.15, 2004 File on Federal
Communication Commission
Registration Number: 794232
- EMC Lab. : Accredited by DATech, German
Registration Number: DAT-P-091/99-01
Feb. 02, 2006
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Apr. 01, 2006

2.4. Test Uncertainty

No.	Item	Uncertainty	Remark
1.	Uncertainty for Conducted Emission Test	1.22dB	
2.	Uncertainty for Radiated Emission Test	3.14dB	3m Chamber
3.	Uncertainty for Radiated Emission Test	3.18dB	10m Chamber
4.	Uncertainty for Power Clamp Test	1.38dB	

3. RADIATED EMISSION TEST

3.1. Test Equipment

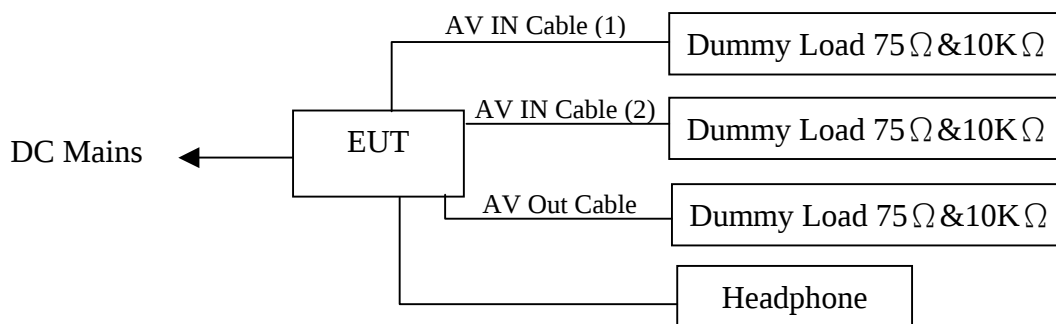
The following test equipments are used during the radiated emission Test :

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Spectrum	HP	85422E	3625A00181	May 15, 06	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 15, 06	1 Year
3.	Amplifier	HP	8447D	2944A07794	Sep. 12, 06	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Jan. 11, 06	1 Year
5.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Jul. 30, 06	1/2 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jul. 30, 06	1/2 Year
7.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Jul. 30, 06	1/2 Year
8.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jul. 30, 06	1/2 Year
9.	Coaxial Switch	Anritsu	MP59B	M73989	Jul. 30, 06	1/2 Year

3.2. Block Diagram of Test Setup

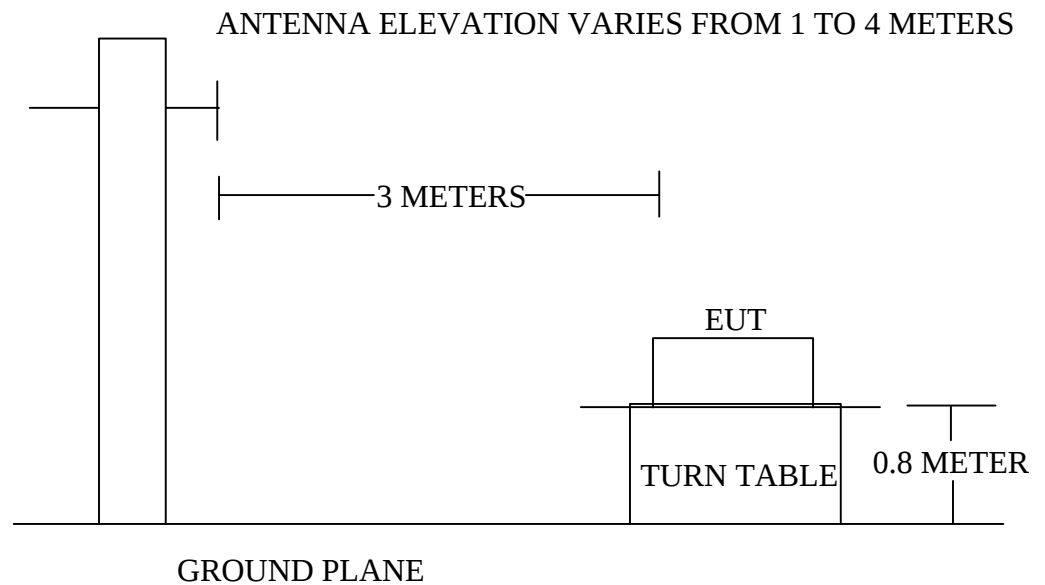
3.2.1. Block Diagram of connection between EUT and simulators



(EUT: 7" DROPDOWN LCD MONITOR AND DVD Player)

3.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



3.3. Radiated Emission Limit 30~1000MHz

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

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
 - (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.

3.4. 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.

3.4.1. 7" DROPDOWN LCD MONITOR AND DVD Player (EUT)

Model Number	:	MMD70
Serial Number	:	N/A
Manufacturer	:	Action Technology (Shenzhen) Co., Ltd.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2..

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

3.6. 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 attached in Appendix I.

3.7. Radiated Emission Test Results

PASS.

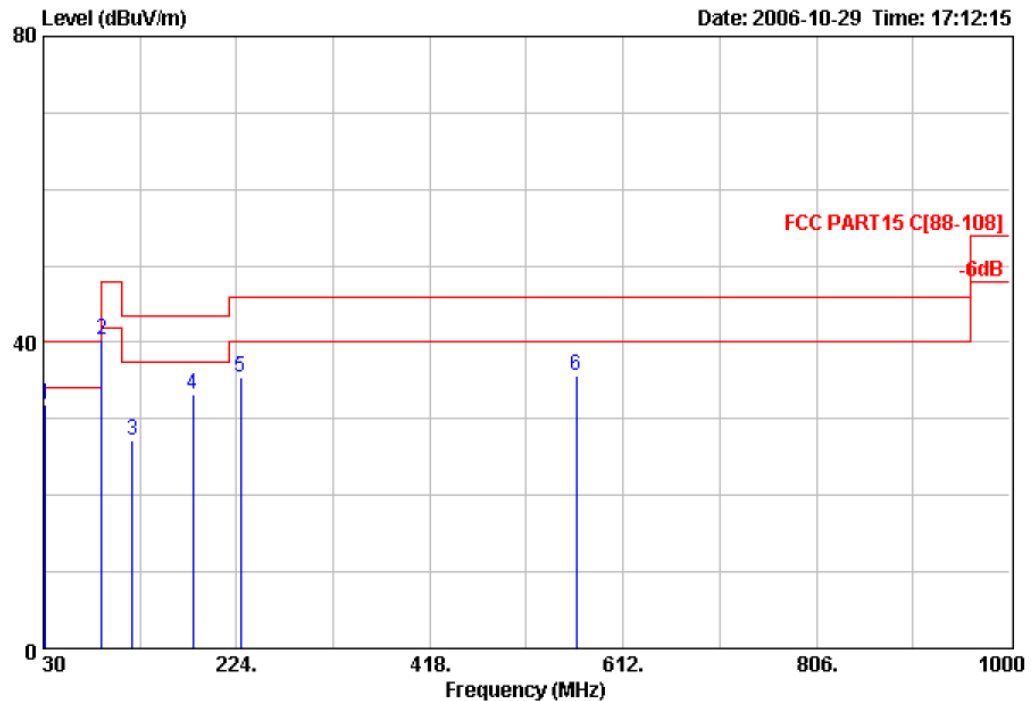
The frequency range from 30MHz to 1000MHz is investigated.
Please see the following pages.



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Data: 13

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR HORIZONTAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jamy
Comment : Temp:23°C Humi:53%
Memo : FM 88.3MHz

	Freq	Level	Over	Limit	Read	Antenna	Cable	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	
1	31.94	31.88	-8.12	40.00	12.19	18.71	0.98	
2	88.30	40.25	-7.75	48.00	29.46	8.81	1.98	
3	119.24	27.08	-16.42	43.50	13.01	11.71	2.36	
4	180.35	33.15	-10.35	43.50	20.85	9.39	2.91	
5	227.88	35.33	-10.67	46.00	21.18	10.75	3.40	
6	565.44	35.70	-10.30	46.00	10.91	19.12	5.67	

Remark: 1. All readings are Quasi-Peak values.

2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

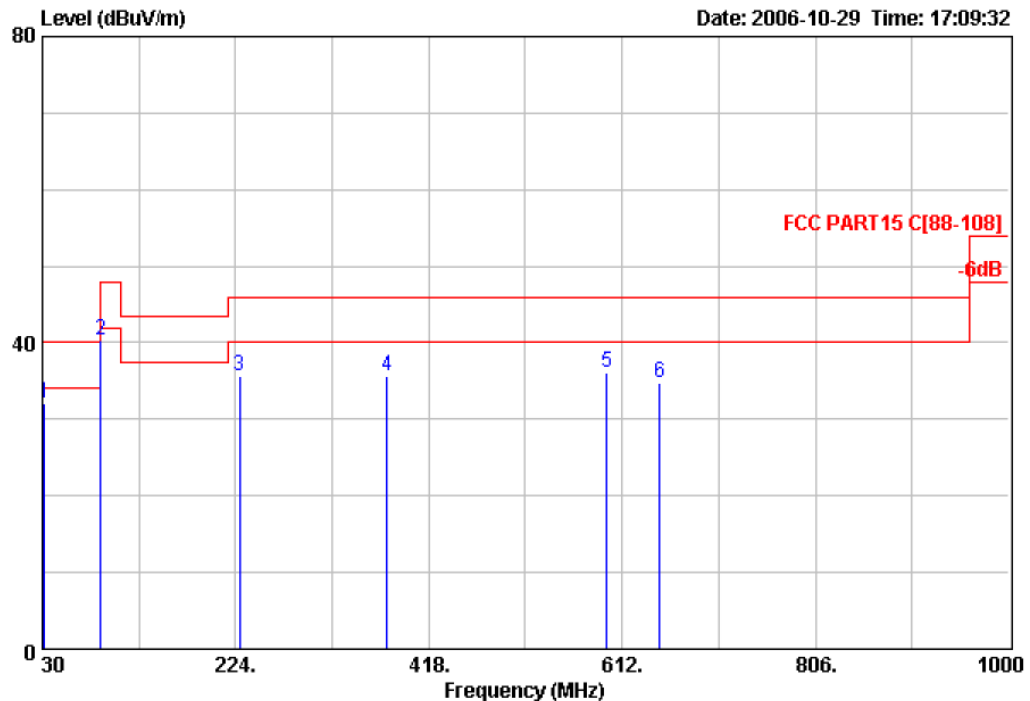


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Data: 12

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Date: 2006-10-29 Time: 17:09:32



Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR VERTICAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jany
Comment : Temp:23°C Humi:53%
Memo : FM 88.3MHz

	Freq	Level	Over	Limit	Read	Antenna	Cable	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB	
1	31.94	32.00	-8.00	40.00	12.31	18.71	0.98	
2	88.29	40.32	-7.68	48.00	29.53	8.81	1.98	
3	227.88	35.64	-10.36	46.00	21.49	10.75	3.40	
4	376.29	35.76	-10.24	46.00	15.48	15.75	4.53	
5	596.48	36.17	-9.83	46.00	10.80	19.63	5.74	
6	649.83	34.75	-11.25	46.00	8.39	20.39	5.97	

Remark: 1. All readings are Quasi-Peak values.

2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

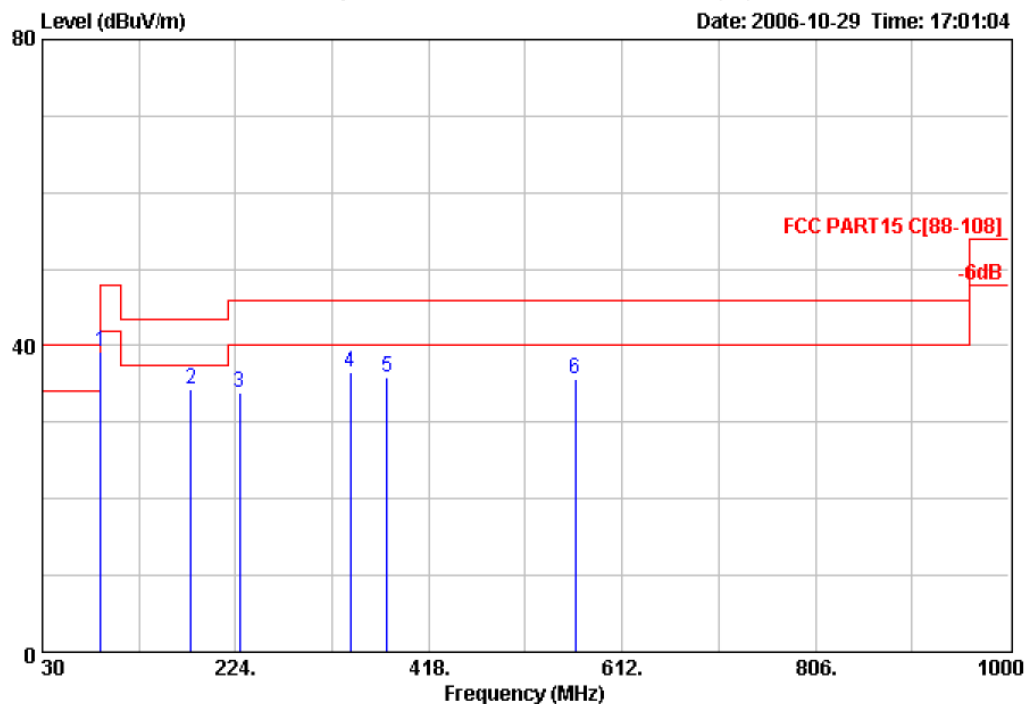


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Data: 10

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)

Date: 2006-10-29 Time: 17:01:04



Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR HORIZONTAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jany
Comment : Temp:23°C Humi:53%
Memo : FM 88.5MHz

	Freq	Level	Over	Limit	Read	Antenna	Cable	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB	
1	88.50	39.33	-8.67	48.00	28.50	8.85	1.98	
2	179.38	34.26	-9.24	43.50	21.96	9.44	2.86	
3	227.88	33.93	-12.07	46.00	19.78	10.75	3.40	
4	339.43	36.45	-9.55	46.00	17.23	14.90	4.32	
5	376.29	35.83	-10.17	46.00	15.55	15.75	4.53	
6	565.44	35.59	-10.41	46.00	10.80	19.12	5.67	

Remark: 1. All readings are Quasi-Peak values.

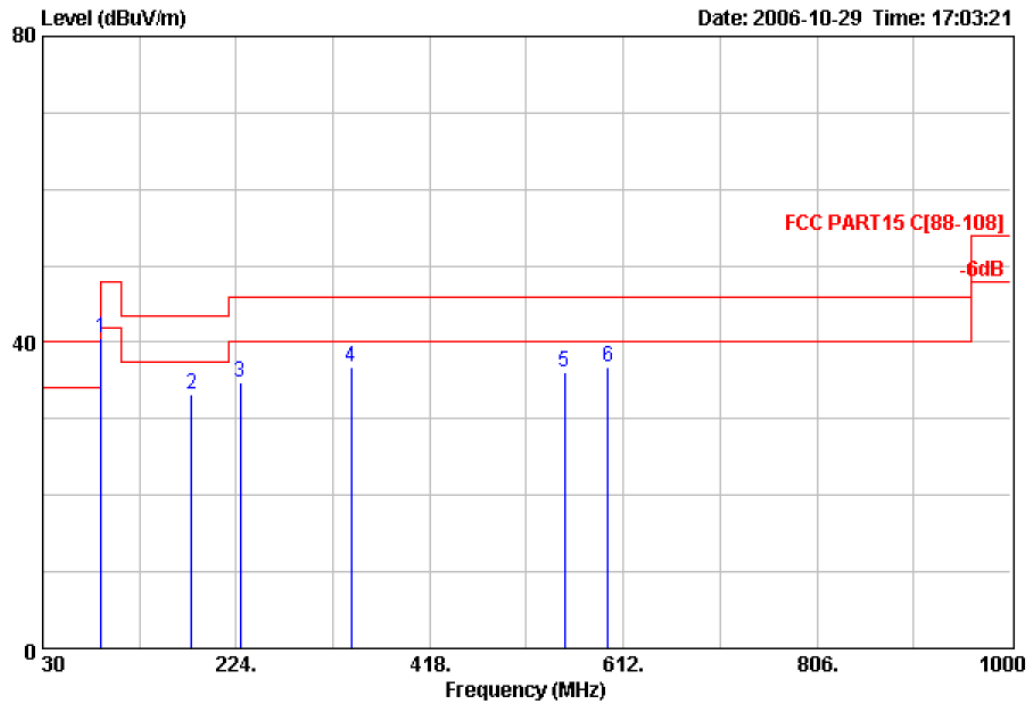
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading



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Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR VERTICAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jany
Comment : Temp:23°C Humi:53%
Memo : FM 88.5MHz

	Freq	Level	Over	Limit	ReadAntenna	Cable	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB
1	88.50	40.53	-7.47	48.00	29.70	8.85	1.98
2	179.38	33.21	-10.29	43.50	20.91	9.44	2.86
3	227.88	34.86	-11.14	46.00	20.71	10.75	3.40
4	339.43	36.72	-9.28	46.00	17.50	14.90	4.32
5	552.83	36.17	-9.83	46.00	11.66	18.93	5.58
6	596.48	36.81	-9.19	46.00	11.44	19.63	5.74

Remark: 1. All readings are Quasi-Peak values.

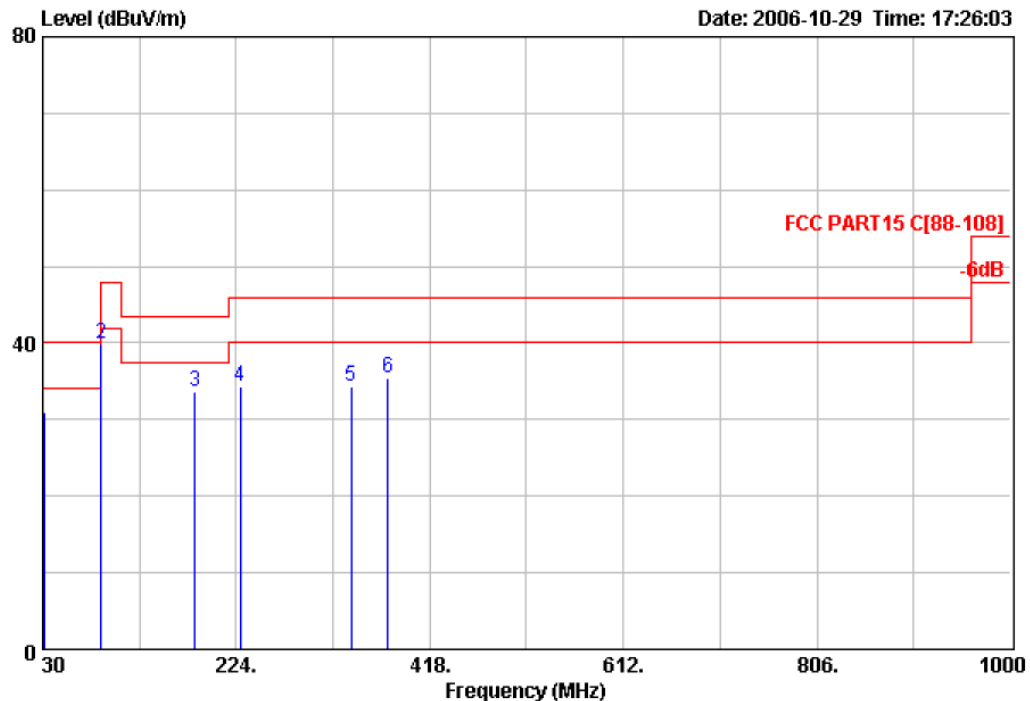
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading



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Data: 15

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR HORIZONTAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jany
Comment : Temp:23°C Humi:53%
Memo : FM 88.7MHz

	Freq	Level	Over	Limit	ReadAntenna	Cable	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB
1	30.97	30.99	-9.01	40.00	10.64	19.31	1.04
2	88.69	39.97	-8.03	48.00	29.15	8.85	1.97
3	182.29	33.56	-9.94	43.50	21.19	9.35	3.02
4	227.88	34.27	-11.73	46.00	20.12	10.75	3.40
5	339.43	34.32	-11.68	46.00	15.10	14.90	4.32
6	376.29	35.53	-10.47	46.00	15.25	15.75	4.53

Remark: 1. All readings are Quasi-Peak values.

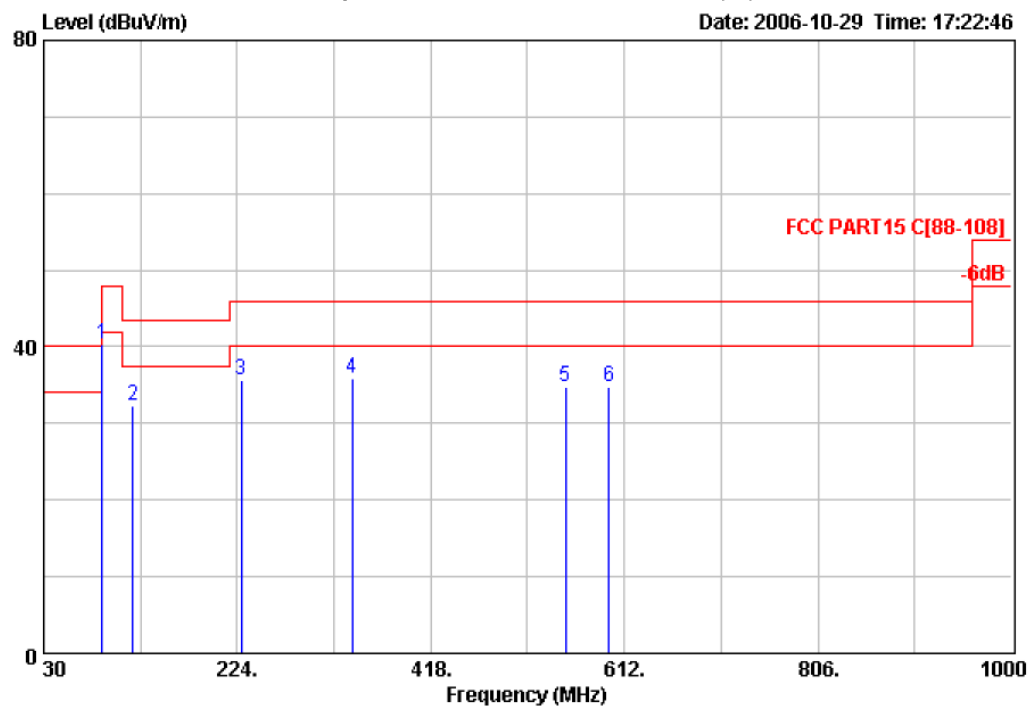
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading



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Data: 14

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



Site : 3# Chamber Radiation
Condition : FCC PART15 C[88-108] 3m 2598FACTOR VERTICAL
EUT : 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N : MMD70
OP Condition : TX MODE
Test Spec : DC12V
Test Engineer : Jany
Comment : Temp:23°C Humi:53%
Memo : FM 88.7MHz

	Freq	Level	Over	Limit	ReadAntenna	Cable	
	MHz	dBuV/m	Limit	Line	Level	Loss	Remark
			dB	dBuV/m	dBuV	dB/m	dB
1	88.71	40.25	-7.75	48.00	29.43	8.85	1.97
2	119.24	32.37	-11.13	43.50	18.30	11.71	2.36
3	227.88	35.71	-10.29	46.00	21.56	10.75	3.40
4	339.43	35.87	-10.13	46.00	16.65	14.90	4.32
5	552.83	34.75	-11.25	46.00	10.24	18.93	5.58
6	596.48	34.71	-11.29	46.00	9.34	19.63	5.74

Remark: 1. All readings are Quasi-Peak values.

2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

4. BANDWIDTH TEST

4.1. 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	Agilent	E4407B	MY41440292	May 15, 06	1 Year
2.	Antenna	Schaffner	CBL6111C	2598	Jun. 05, 05	1.5 Year

4.2. Test Standard

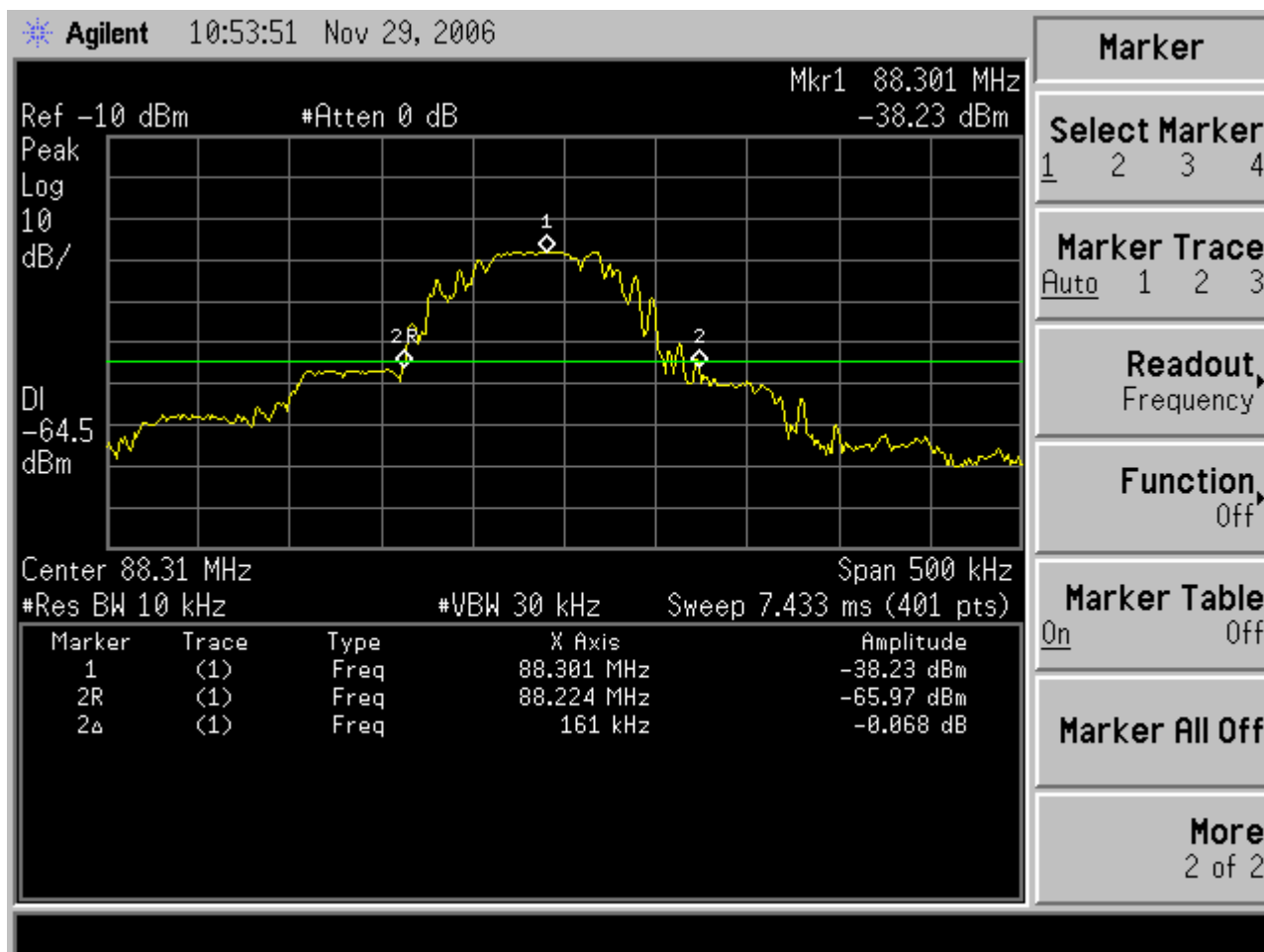
The test completeness FCC 15C (239).

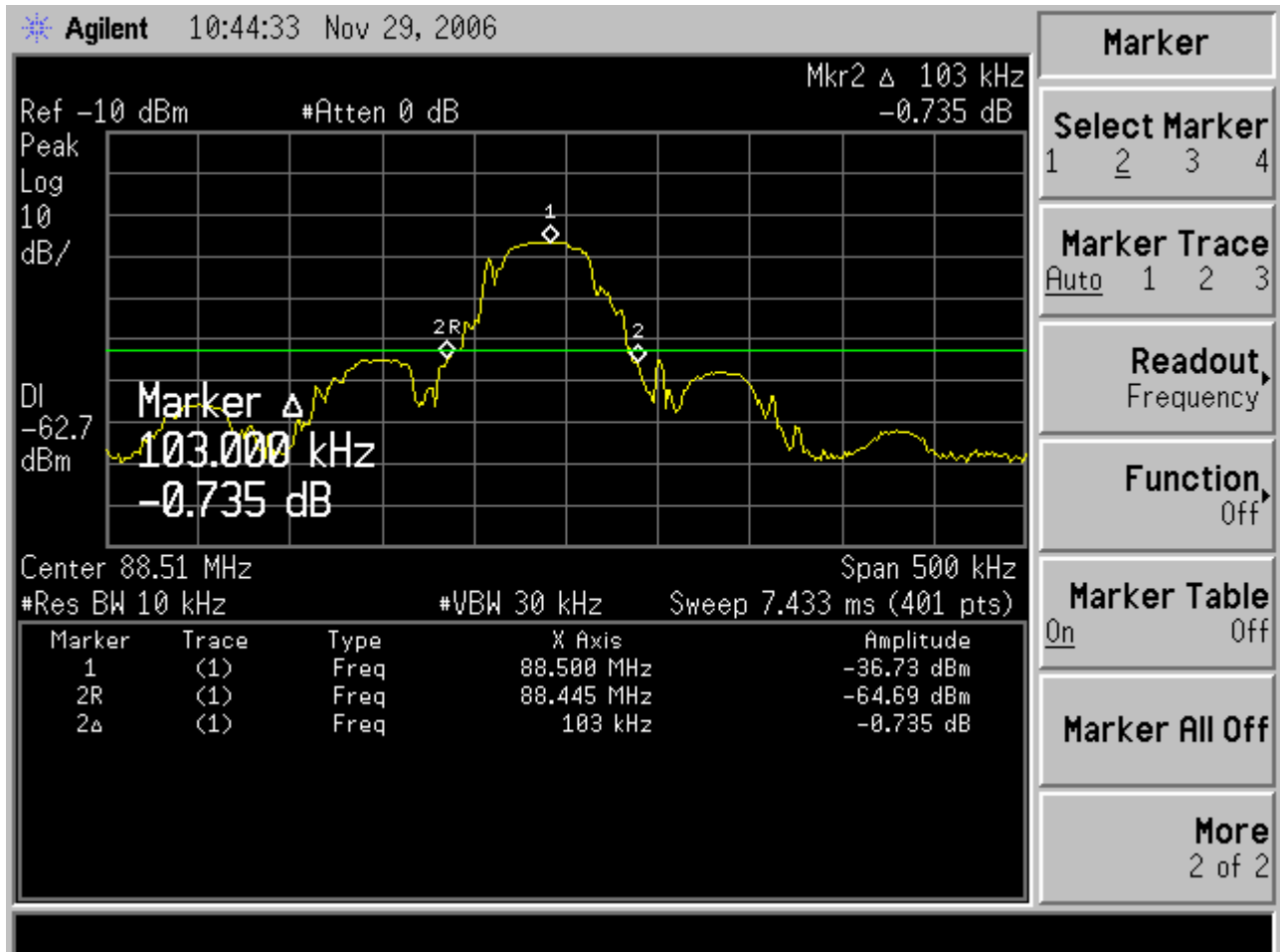
4.3. Bandwidth Limit

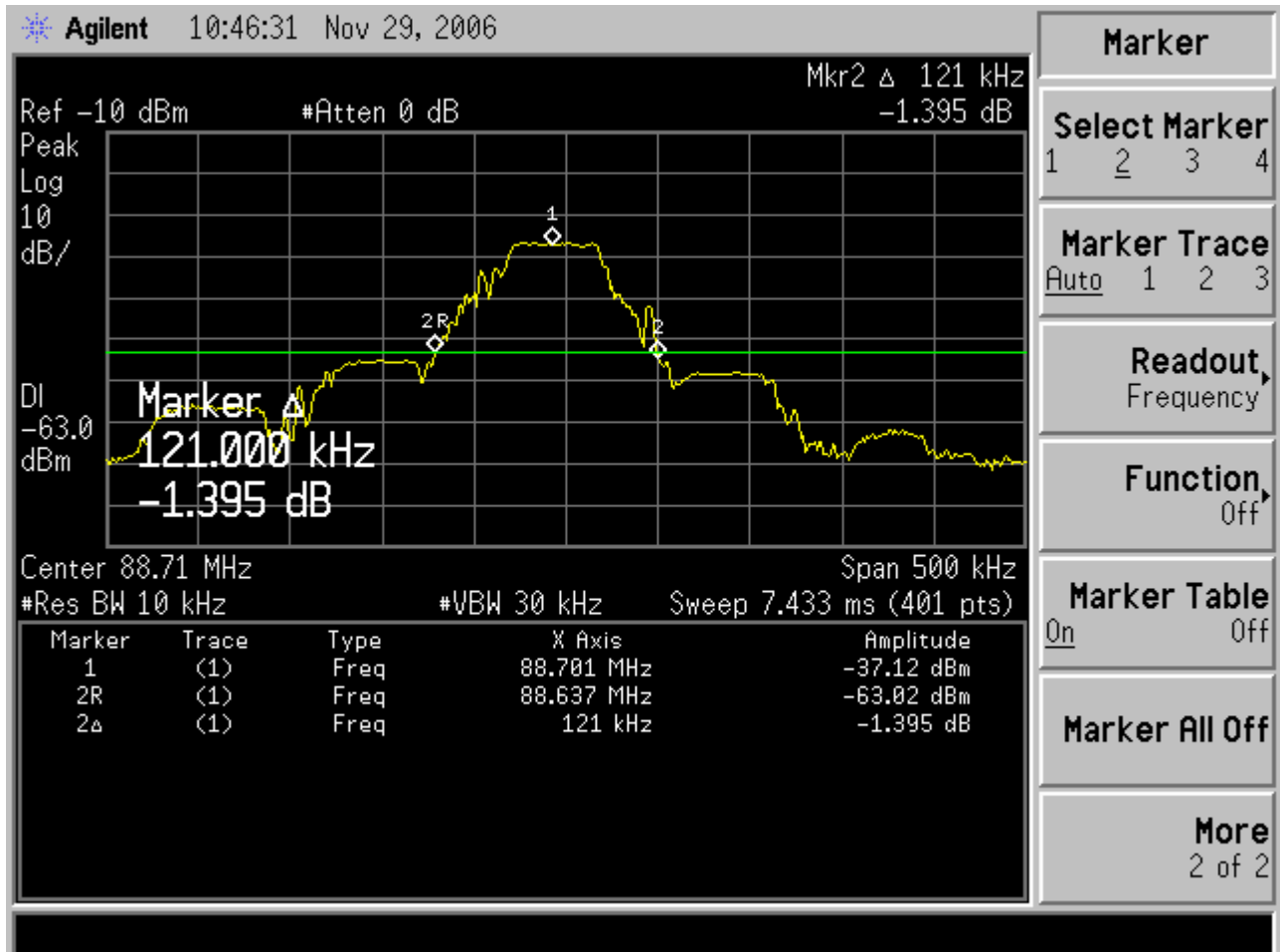
200kHz wide centered on the operation frequency.

4.4. Test Procedure

PASS.







5. DEVIATION TO TEST SPECIFICATIONS

[NONE]

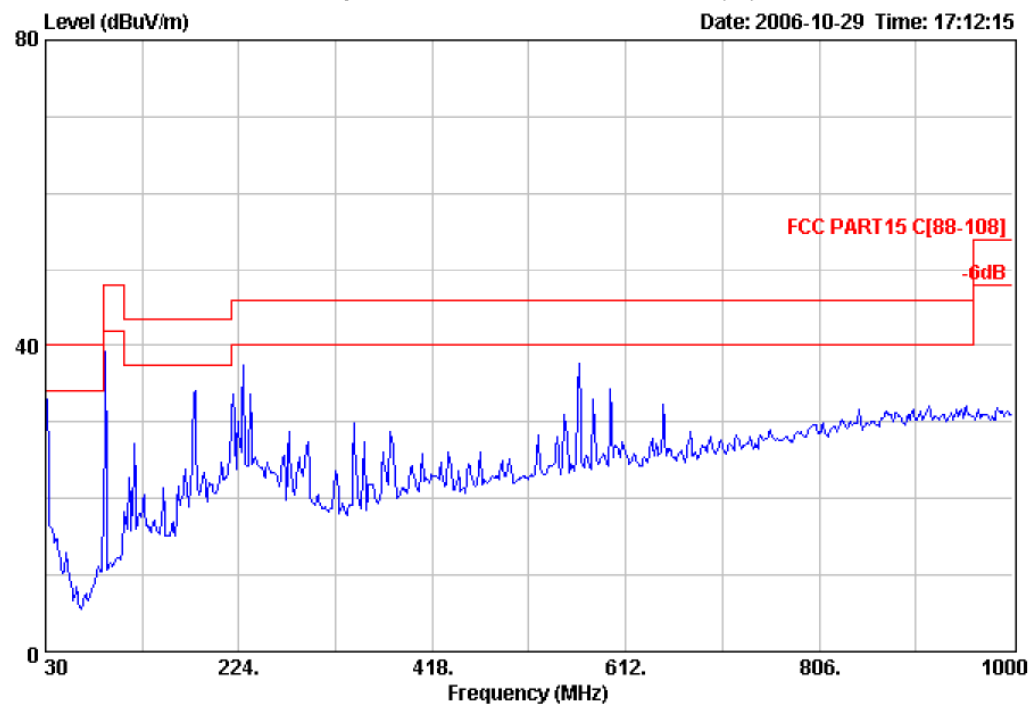
APPENDIX I



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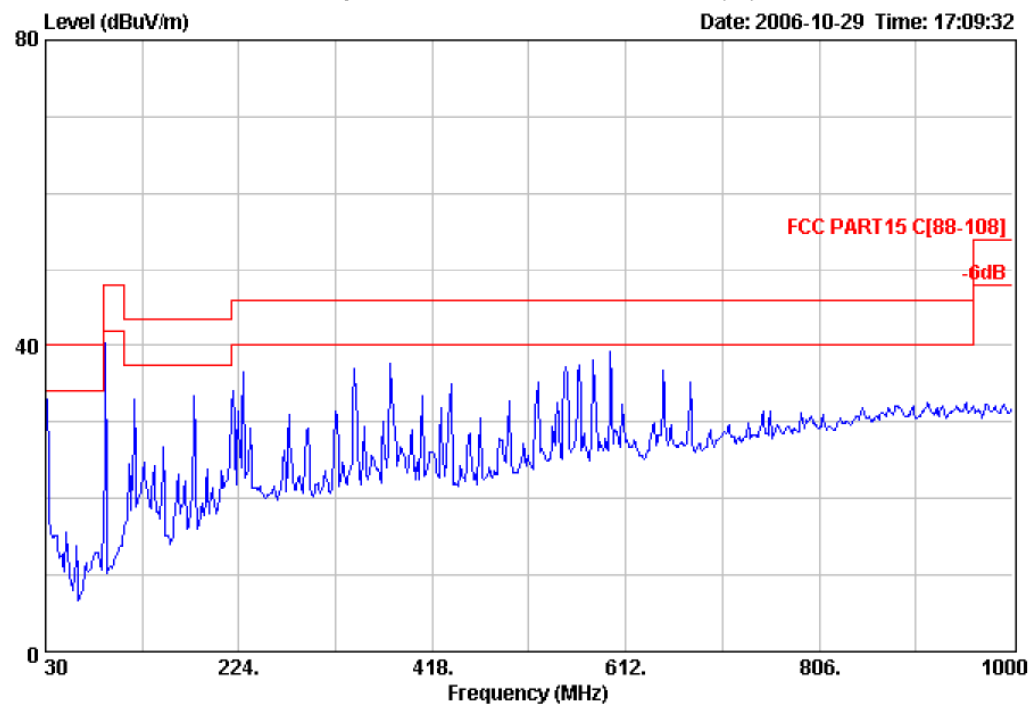
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Condition	: FCC PART15 C[88-108] 3m 2598FACTOR HORIZONTAL
EUT	: 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.3MHz



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Data: 4

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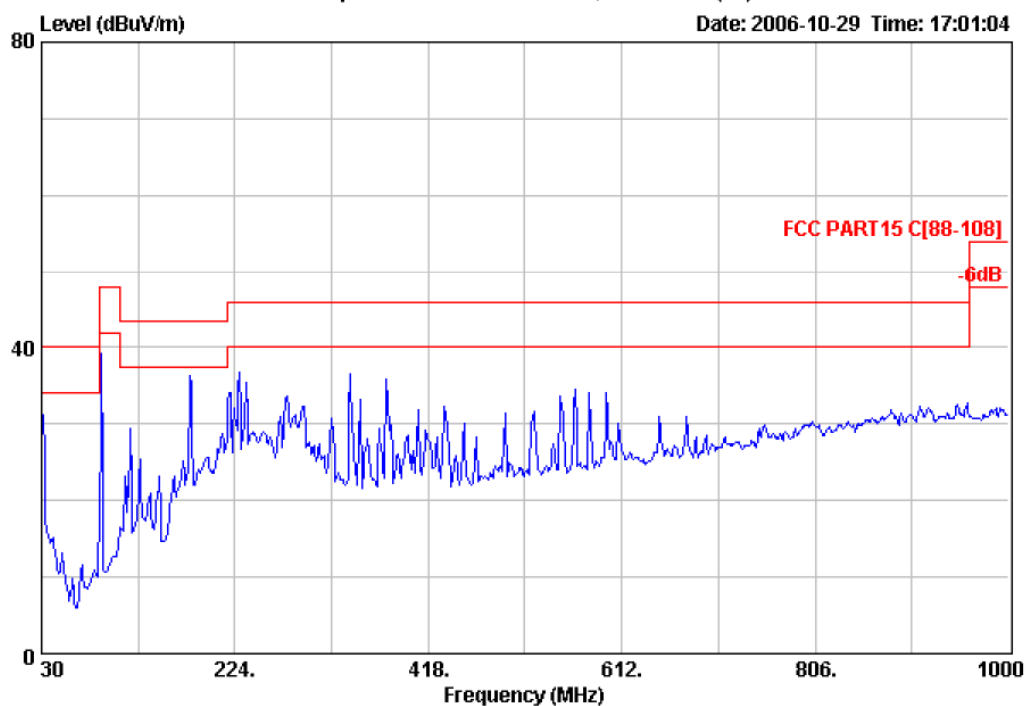
Site	: 3# Chamber Radiation
Condition	: FCC PART15 C[88-108] 3m 2598FACTOR VERTICAL
EUT	: 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.3MHz



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Data: 1

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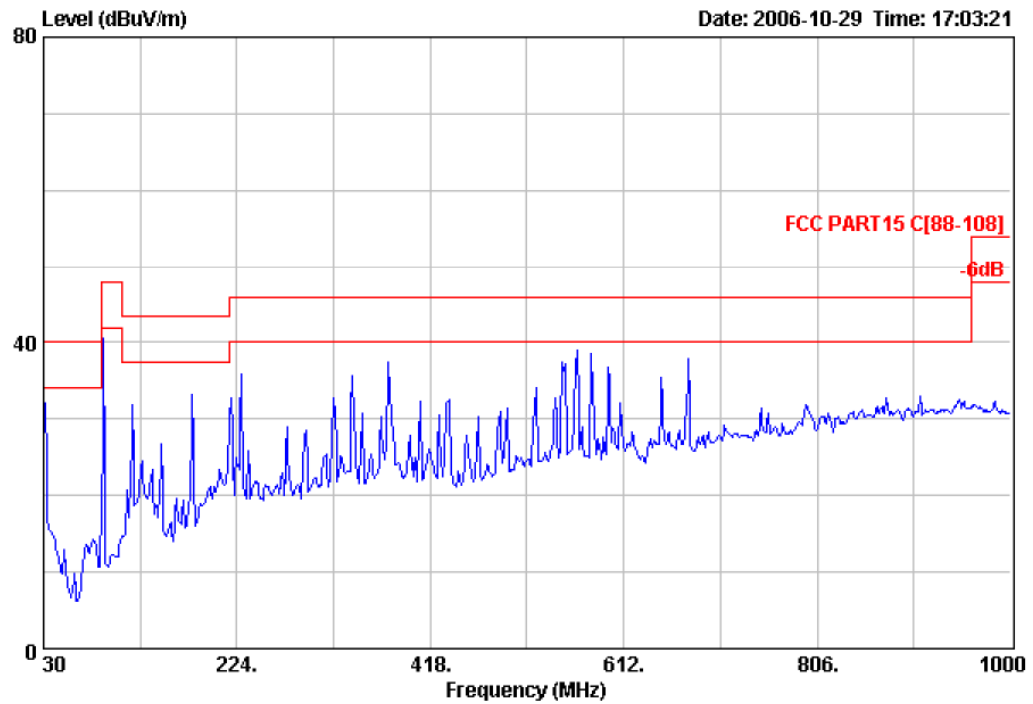
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Condition	: FCC PART15 C(88-108) 3m 2598FACTOR HORIZONTAL
EUT	: 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.5MHz



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Data: 2

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



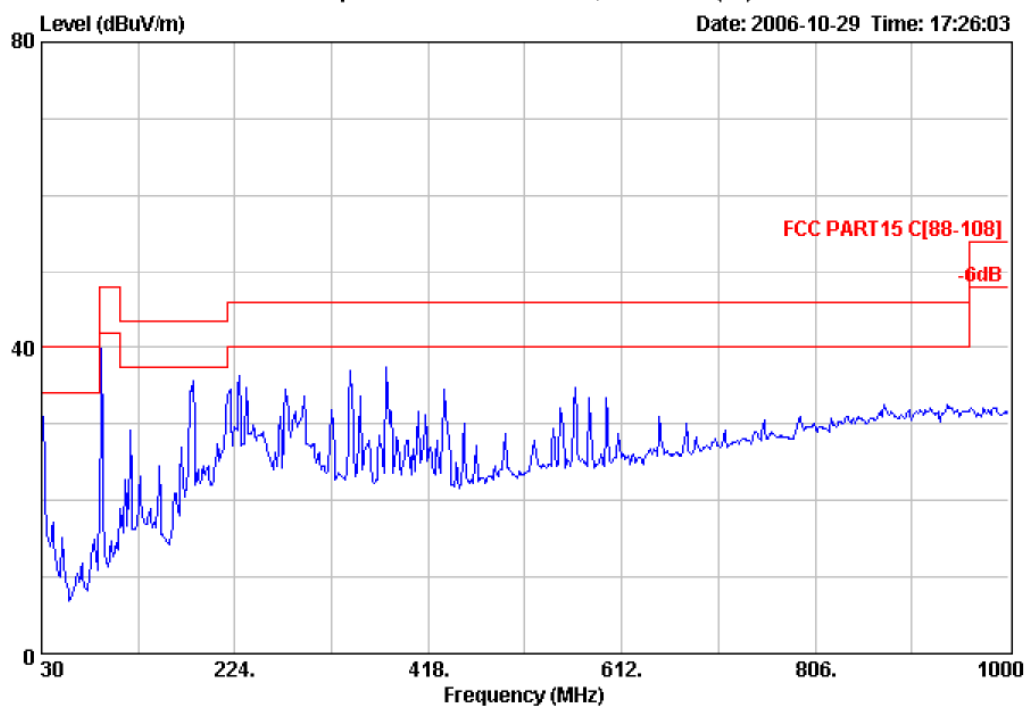
Site	: 3# Chamber Radiation
Condition	: FCC PART15 C(88-108) 3m 2598FACTOR VERTICAL
EUT	: 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.5MHz



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Data: 8

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



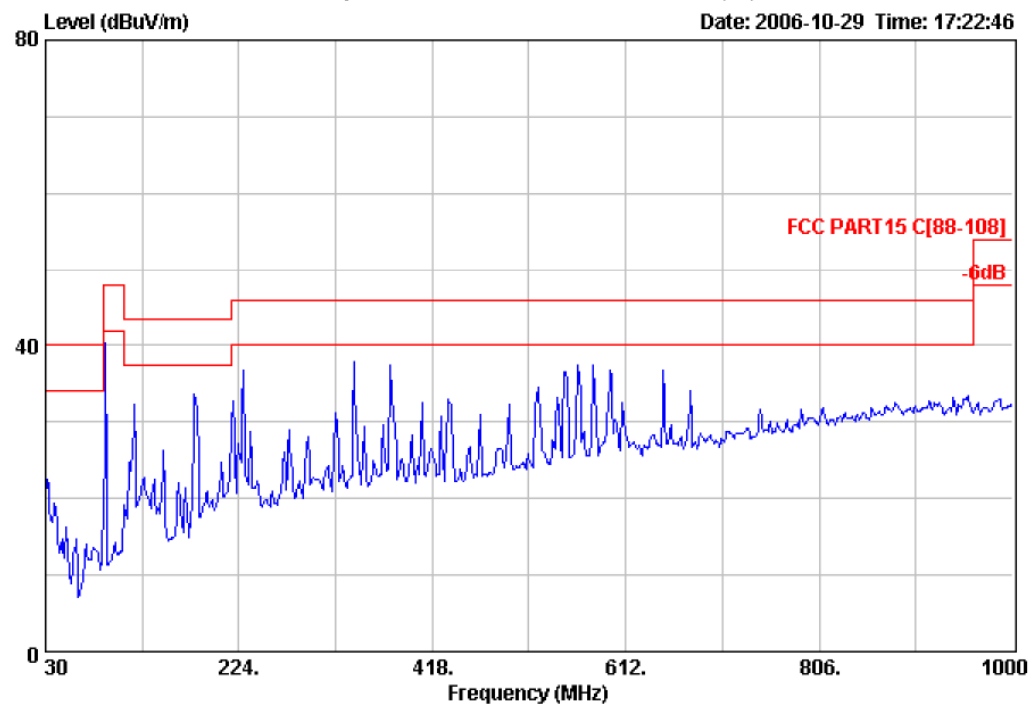
Site	: 3# Chamber Radiation
Condition	: FCC PART15 C[88-108] 3m 2598FACTOR HORIZONTAL
EUT	: 7"DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.7MHz



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<http://www.audix.com.cn>

Data: 7

File: D:\2006 Report Data\A\ACTION\ACS6Q1175-1.EMI (15)



Site	: 3# Chamber Radiation
Condition	: FCC PART15 C(88-108) 3m 2598FACTOR VERTICAL
EUT	: 7" DROP DOWN LCD MONITOR & DVD PLAYER
M/N	: MMD70
OP Condition	: TX MODE
Test Spec	: DC12V
Test Engineer	: Jamy
Comment	: Temp:23°C Humi:53%
Memo	: FM 88.7MHz