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Technical Compliance Statement

No. ACS-E11304

The following products have been tested by us with the listed standards and found in compliance with the council EMC directive 2004/108/EC. It is demonstrative for the compliance with this EMC Directive.

Submitter : TPV Electronics (FuJian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province,
P.R. China

Product : LCD Monitor

Brand Name	Model No.
NEC	L230UH

Test Standards :

EN 55022: 2006+A1: 2007 AS/NZS CISPR 22: 2009	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	
EN 61000-3-2:2006+A1:2009+A2:2009	Electromagnetic compatibility(EMC) Part 3 :Limits Section 2 : Limits for harmonic current emissions (equipment input current $\leq$ 16A per phase)	
EN 61000-3-3:2008	Electromagnetic compatibility(EMC) Part 3 :Limits Section 3 : Limits of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current $\leq$ 16A	
EN55024: 1998+A1: 2001+ A2: 2003	Information technology equipment-Immunity characteristics limits and methods of measurement	
	IEC 61000-4-2: 2008	Electrostatic discharge
	IEC 61000-4-3: 2006+A1:2007	RF Field Strength susceptibility
	IEC 61000-4-4: 2004+Cor 1:2006+Cor 2:2007	Electrical Fast transients
	IEC 61000-4-5: 2005	Surge
	IEC 61000-4-6: 2003+A1: 2004+A2: 2006	Conducted Susceptibility
	IEC 61000-4-8: 2009	Magnetic field immunity
	IEC 61000-4-11: 2004	Dips / Voltage Interruption Variation

Stamp only for EMC Dept Report

Signature: *Ken Lu* 4/14/11



Ken Lu
Manager
Date : Apr.14, 2011

The statement is based on a single evaluation of one sample of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo.

EMC TEST REPORT

for

TPV Electronics (FuJian) Co., Ltd.

LCD Monitor

Brand Name	Model No.
NEC	L230UH

Prepared for : TPV Electronics (FuJian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province,
P.R. China

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-E11304
Date of Test : Mar.19~22, 2011
Date of Report : Apr.12, 2011

TABLE OF CONTENTS

Description	Page
Test Report Verification.....	6
1. SUMMARY OF STANDARDS AND RESULTS	7
1.1. Description of Standards and Results	7
2. GENERAL INFORMATION.....	8
2.1. Description of Device (EUT).....	8
2.2. Tested Supporting System Details	9
2.3. Block Diagram of connection between EUT and simulators.....	10
2.4. Test Facility	11
2.5. Measurement Uncertainty	11
3. CONDUCTED DISTURBANCE AT MAINS TERMINALS TEST	12
3.1. Test Equipment	12
3.2. Block Diagram of Test Setup.....	12
3.3. Test Standard	12
3.4. Power Line Conducted Disturbance at Mains Terminals Limit.....	12
3.5. EUT Configuration on Test	12
3.6. Operating Condition of EUT	13
3.7. Test Procedure	13
3.8. Conducted Disturbance at Mains Terminals Test Results	14
4. RADIATED DISTURBANCE TEST.....	31
4.1. Test Equipments.....	31
4.2. Block Diagram of Test Setup.....	32
4.3. Test Standard	33
4.4. Radiated Disturbance Limit	33
4.5. EUT Configuration on Test	33
4.6. Operating Condition of EUT	33
4.7. Test Procedure	33
4.8. Radiated Disturbance Test Results.....	34
5. HARMONIC CURRENT TEST	67
5.1. Test Equipments.....	67
5.2. Block Diagram of Test Setup.....	67
5.3. Test Standard	67
5.4. Limits of Harmonic Current.....	67
5.5. EUT Configuration on Test	67
5.6. Operating Condition of EUT	67
5.7. Test Procedure	67
5.8. Test Results.....	68
6. VOLTAGE FLUCTUATIONS & FLICKER TEST.....	71
6.1. Test Equipment	71
6.2. Block Diagram of Test Setup.....	71
6.3. Test Standard	71
6.4. Limits of Voltage Fluctuation and Flick	71
6.5. EUT Configuration on Test	71
6.6. Operating Condition of EUT	71
6.7. Test Procedure	71
6.8. Test Results.....	71
7. IMMUNITY PERFORMANCE CRITERIA.....	73
8. ELECTROSTATIC DISCHARGE IMMUNITY TEST	74
8.1. Test Equipments.....	74

8.2.	Block Diagram of Test Setup	74
8.3.	Test Standard	74
8.4.	Severity Levels and Performance Criterion	74
8.5.	EUT Configuration	74
8.6.	Operating Condition of EUT	74
8.7.	Test Procedure	75
8.8.	Test Results	75
9.	RF FIELD STRENGTH SUSCEPTIBILITY TEST	77
9.1.	Test Equipments	77
9.2.	Block Diagram of Test Setup	77
9.3.	Test Standard	77
9.4.	Test Severity Level and Performance Criterion	77
9.5.	EUT Configuration	77
9.6.	Operating Condition of EUT	77
9.7.	Test Procedure	78
9.8.	Test Results	78
10.	ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST	80
10.1.	Test Equipments	80
10.2.	Block Diagram of Test Setup	80
10.3.	Test Standard	80
10.4.	Severity Levels and Performance Criterion	80
10.5.	EUT Configuration	80
10.6.	Operating Condition of EUT	80
10.7.	Test Procedure	81
10.8.	Test Results	81
11.	SURGE TEST	83
11.1.	Test Equipments	83
11.2.	Block Diagram of Test Setup	83
11.3.	Test Standard	83
11.4.	Severity Levels and Performance Criterion	83
11.5.	EUT Configuration	83
11.6.	Operating Condition of EUT	83
11.7.	Test Procedure	83
11.8.	Test Results	83
12.	INJECTED CURRENTS SUSCEPTIBILITY TEST	85
12.1.	Test Equipments	85
12.2.	Block Diagram of Test Setup	85
12.3.	Test Standard	85
12.4.	Severity Levels and Performance Criterion	85
12.5.	EUT Configuration	85
12.6.	Operating Condition of EUT	86
12.7.	Test Procedure	86
12.8.	Test Results	86
13.	MAGNETIC FIELD IMMUNITY TEST	88
13.1.	Test Equipments	88
13.2.	Block Diagram of Test Setup	88
13.3.	Test Standard	88
13.4.	Severity Levels and Performance Criterion	88
13.5.	EUT Configuration on Test	88
13.6.	Operating Condition of EUT	88
13.7.	Test Procedure	88
13.8.	Test Results	88
14.	VOLTAGE DIPS AND INTERRUPTIONS TEST	90
14.1.	Test Equipment	90
14.2.	Block Diagram of Test Setup	90
14.3.	Test Standard	90

14.4.	Severity Levels and Performance Criterion	90
14.5.	EUT Configuration	90
14.6.	Operating Condition of EUT	90
14.7.	Test Procedure	90
14.8.	Test Results	90
15.	PHOTOGRAPHS	92
15.1.	Photos of Power Line Conducted Emission Test.....	92
15.2.	Photos of Radiated Emission Test (In Anechoic Chamber).....	93
15.3.	Photo of Harmonic / Flicker Test.....	95
15.4.	Photos of Electrostatic Discharge Immunity Test.....	96
15.5.	Photo of RF Strength Susceptibility Test.....	97
15.6.	Photo of Electrical Fast Transient/Burst Immunity Test.....	97
15.7.	Photo of Surge Test.....	98
15.8.	Photo of Injected Currents Susceptibility Test	98
15.9.	Photo of Magnetic Field Test.....	99
15.10.	Photo of Voltage Dips and interruptions test.....	99

TEST REPORT VERIFICATION

Applicant : TPV Electronics (FuJian) Co., Ltd.

EUT Description : LCD Monitor

(A) MODEL NO. &
BRAND NAME :

Brand Name	Model No.
NEC	L230UH

(B) SERIAL NO. : N/A

(C) POWER SUPPLY : AC 100V-240V, 50/60Hz

(D) TEST VOLTAGE : DC 19V Adapter Input AC 230V/50Hz

Measurement Standard Used:

AS/NZS CISPR 22: 2009, EN 55022: 2006+A1: 2007 (Class B)
EN 61000-3-2: 2006+A1:2009+A2:2009, EN 61000-3-3:2008
EN 55024: 1998+A1: 2001+A2: 2003
(IEC 61000-4-2:2008, IEC 61000-4-3:2006+A1:2007,
IEC 61000-4-4:2004+Cor 1:2006+Cor 2:2007, IEC 61000-4-5: 2005,
IEC 61000-4-6:2003+A1: 2004+A2: 2006, IEC 61000-4-8:2009, IEC 61000-4-11:2004)

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. 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 test. Also, this report shows that the EUT is technically compliant with the EN 55022, EN 61000-3-2, EN 61000-3-3 and EN 55024 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 : Mar.19~22, 2011 Report of date: Apr.12, 2011

Prepared by : Sarah Liu Reviewer by : Jack Zhong
Sarah Liu / Assistant Jack Zhong / Assistant Manager

Approved & Authorized Signer :



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	Remark	
Conducted disturbance at mains terminals	EN 55022:2006+A1: 2007	PASS	Meets Class B Minimum passing margin is 13.99dB at 0.26940MHz	
Conducted disturbance at telecommunication port	EN 55022:2006+A1: 2007	N/A	N/A	
Radiated disturbance (30-1000MHz)	EN 55022:2006+A1: 2007	PASS	Meets Class B Minimum passing margin is 4.63dB at 159.010MHz	
Radiated disturbance (1-6GHz)	EN 55022:2006+A1: 2007	PASS	Meets Class B Minimum passing margin is 8.72dB at 1312.660MHz	
Harmonic current emissions	EN 61000-3-2:2006+A1: 2009+A2:2009	PASS	Meets the Class D requirement	
Voltage fluctuations & flicker	EN 61000-3-3:2008	PASS	Meets the requirement	
IMMUNITY (EN 55024:1998+A1:2001+A2:2003)				
Description of Test Item	Basic Standard	Results	Performance Criteria	Observation Criteria
Electrostatic discharge (ESD)	IEC 61000-4-2:2008	PASS	B	A
Radio-frequency,Continuous radiated disturbance	IEC 61000-4-3:2006+A1: 2007	PASS	A	A
Electrical fast transient (EFT)	IEC 61000-4-4: 2004+ Cor 1:2006+Cor 2: 2007	PASS	B	A
Surge (Input a.c. power port)	IEC 61000-4-5:2005	PASS	B	A
Surge(Telecommunication port)		N/A	N/A	N/A
Radio-frequency,Continuous conducted disturbance	IEC 61000-4-6:2003+A1: 2004 +A2: 2006	PASS	A	A
Power frequency magnetic field	IEC 61000-4-8:2009	PASS	A	A
Voltage dips, >95% reduction	IEC 61000-4-11:2004	PASS	B	A
Voltage dips, 30% reduction		PASS	C	A
Voltage interruptions		PASS	C	B
N/A is an abbreviation for Not Applicable.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

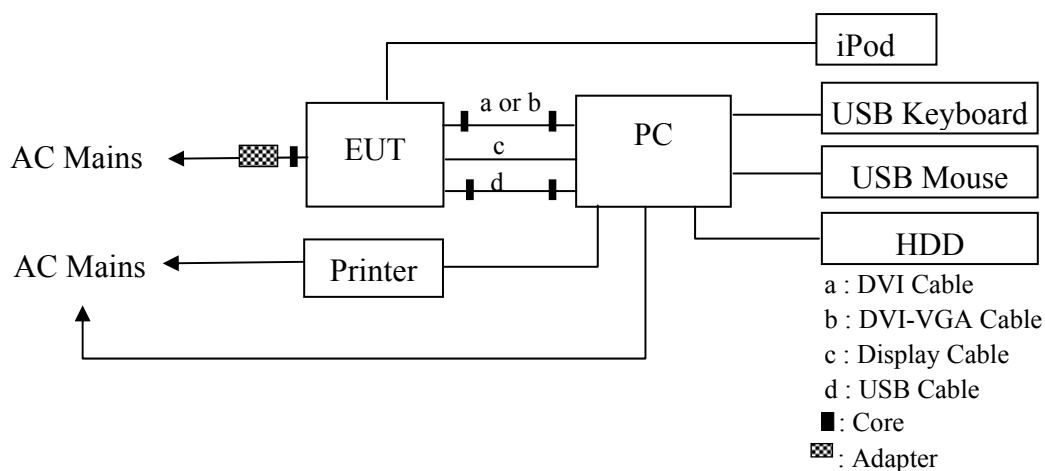
Description	:	LCD Monitor					
Model Number & Brand Name	:	<table><tr><td>Brand Name</td><td>Model No.</td></tr><tr><td>NEC</td><td>L230UH</td></tr></table>	Brand Name	Model No.	NEC	L230UH	
Brand Name	Model No.						
NEC	L230UH						
Applicant	:	TPV Electronics (FuJian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R. China					
Max Resolution	:	1920*1080@60Hz					
Max Work Frequency	:	148.5MHz					
Panel	:	Manufacturer : SAMSUNG; M/N: LTM230HP07					
Power Adapter	:	Manufacturer: NEC , M/N: ADP-40ED Cable: Shielded, Undetachable, 1.8m(with one core) Power Cord: Unshielded, Detachable, 1.8m (3pins)					
Power Cord #1	:	Unshielded, Detachable, 1.8m (2 pin With ground)					
Power Cord #2	:	Unshielded, Detachable, 1.5m (2 pin With ground)					
DVI-VGA Cable #1	:	Shielded, Detachable, 1.8m (Bonded two ferrite cores)					
DVI-VGA Cable #2	:	Shielded, Detachable, 1.5m (Bonded two ferrite cores)					
DVI Cable #1	:	Shielded, Detachable, 1.8m (Bonded two ferrite cores)					
DVI Cable #2	:	Shielded, Detachable, 1.5m (Bonded two ferrite cores)					
Display Cable #1	:	Shielded, Detachable, 1.8m					
Display Cable #2	:	Shielded, Detachable, 1.5m					
USB Cable	:	Shielded, Detachable, 1.8m (Bonded two ferrite cores)					
Date of Test	:	Mar.19~22, 2011					
Date of Receipt	:	Mar.18, 2011					
Sample Type	:	Prototype production					

2.2. Tested Supporting System Details

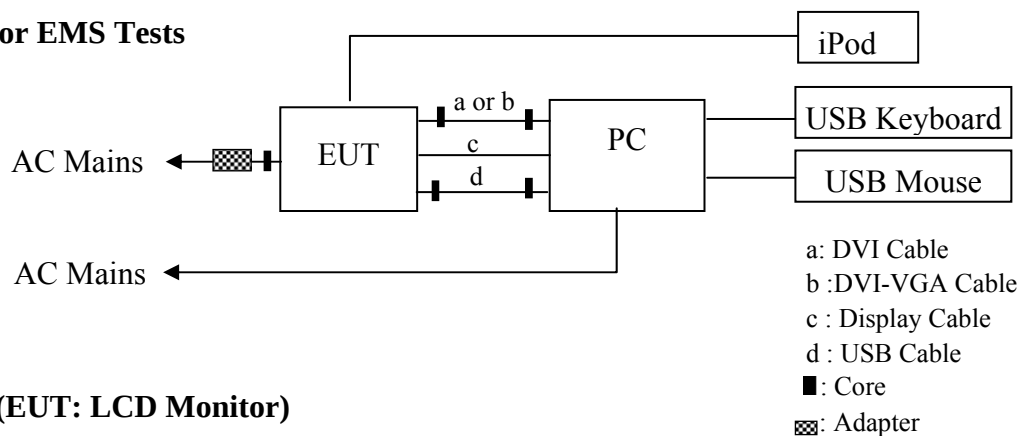
No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type
1.	Personal Computer	Test PC P	DELL	Studio 540	124XK2X	☒ FCC DoC ☒ BSMI ID:R33002
		Power Cord: Unshielded, Detachable, 1.8m Display Card: HD3450 (DVI+VGA+HDMI)				
2.	USB Keyboard	ACS-EMC- K01R	DELL	SK-8115	CN-ODJ313-7161 6-711-0J73	☒ FCC DoC ☒ BSMI ID:T3A002
		Power Cord: shielded, Undetachable, 2.0m				
3.	USB Mouse	ACS-EMC-M01R	DELL	M056UO	512022645	☒ FCC DoC ☒ BSMI ID: R41108
		USB Cable: shielded, Detachable, 1.8m				
4.	Printer	ACS-EMC-PT04	HP	C9079A	-	☐ FCC ID ☒ BSMI ID :R33001
		USB Cable: shielded, Detachable, 1.5m Power Cord: Unshielded, Detachabled, 1.8m Power Adaptor: HP, 0957-2119, DC Cable: Unshielded, Detachabled, 1.5m				
5.	HDD	ACS-EMC-HDD01	Terasys	F12-UF	A0100215-53900 18	☒ FCC DoC ☒ BSMI ID: 4912A022
		USB Cable: shielded, Detachable, 1.0m				
6.	iPod nano	ACS-EMC-IP01	APPLE	A1199	YM706MLDVQ5	☒ FCC DoC ☒ BSMI ID: R33057
		Data Cable: Shielded, Detachabled, 1.0m				

2.3. Block Diagram of connection between EUT and simulators

For EMI Tests



For EMS Tests



(EUT: LCD Monitor)

2.4. 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	:	Dec.30,2009 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 Mar.31, 2012

2.5. Measurement Uncertainty

(95% confidence levels, k=2)

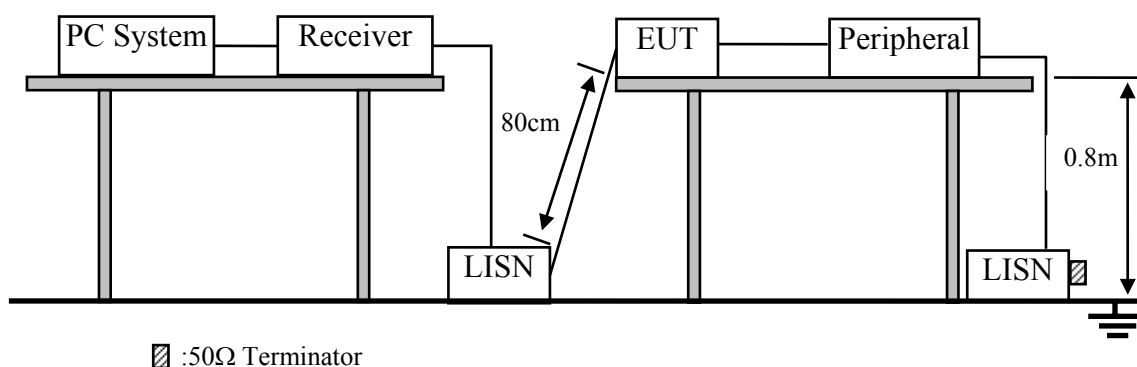
Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 2 Conduction	3.48 dB
Uncertainty for Radiation Emission test in 10m chamber (Distance: 10m)	4.86 dB (30~200MHz, Polarize: H)
	4.98dB (30~200MHz, Polarize: V)
	4.98dB (200M~1GHz, Polarize: H)
	4.98dB (200M~1GHz, Polarize: V)
Uncertainty for Radiation Emission test in 10m chamber (1GHz-18GHz)	3.12 dB (Distance: 3m Polarize: V)
	3.74 dB (Distance: 3m Polarize: H)
Uncertainty for SVSWR in 10m Chamber	2.42 dB (Distance: 3m Polarize: V)
	2.44 dB (Distance: 3m Polarize: H)
Uncertainty for Flicker test	0.26%
Uncertainty for Harmonic test	3.6%
Uncertainty for C/S Test	1.36dB (Using CDN test)
	3.20 (Using EM clamp test)
Uncertainty for R/S Test	1.73 dB (80MHz~200MHz)
	1.72 dB(200MHz~1000MHz)
Uncertainty for test site temperature and humidity	0.3°C
	2%

3. CONDUCTED DISTURBANCE AT MAINS TERMINALS TEST

3.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESCI	100843	Nov.05, 10	1 Year
2	L.I.S.N.#1	Rohde & Schwarz	ENV4200	100041	May.08, 10	1 Year
3	L.I.S.N.#2	Kyoritsu	KNW-407	8-1628-5	May.08, 10	1 Year
4	Terminator	Hubersuhner	50Ω	No. 2	May.08, 10	1 Year
5	RF Cable	Fujikura	3D-2W	LISN Cable 2#	May.08, 10	1 Year
6	Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.08, 10	1 Year
7	Coaxial Switch	Anritsu	MP59B	6200298346	May.08, 10	1 Year
8	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100340	May.08, 10	1 Year

3.2. Block Diagram of Test Setup



3.3. Test Standard

EN55022: 2006+A1: 2007, Class B

3.4. Power Line Conducted Disturbance at Mains Terminals Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.5. EUT Configuration on Test

The following equipments are installed on Conducted Emission Test to meet EN 55022 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5.1. LCD Monitor (EUT)

Model Number : L230UH

Serial Number : N/A

3.5.2. Support Equipment : As Tested Supporting System Detail, in Section 2.2.

3.6. Operating Condition of EUT

- 3.6.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.6.2. Turned on the power of all equipment.
- 3.6.3. PC system ran the Self-test program “EMC TEST. exe” by windows XP and sent “H” Character to LCD Monitor (EUT) through DVI/ Display card, the Screen of EUT displayed and filled with “H” pattern (font size of character "H" is 10; character color is black, background color is white).
- 3.6.4. The PC system was reading data from USB2.0 storage media and then writing data into USB2.0 storage media.
- 3.6.5. The other peripheral devices were driven and operated in turn during all testing.

3.7. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to EN 55022 Class B on conducted Disturbance test.

The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked. The test results are reported and test results for Conducted Disturbance Test on Section 3.8.

3.8. Conducted Disturbance at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test modes were tested and selected (mode 3 & 6 & 9&10&11) to read Q.P values and average values, all the test results are listed in next pages.

EUT: LCD Monitor

Model No. : L230UH

Test Date: Mar.19, 2011

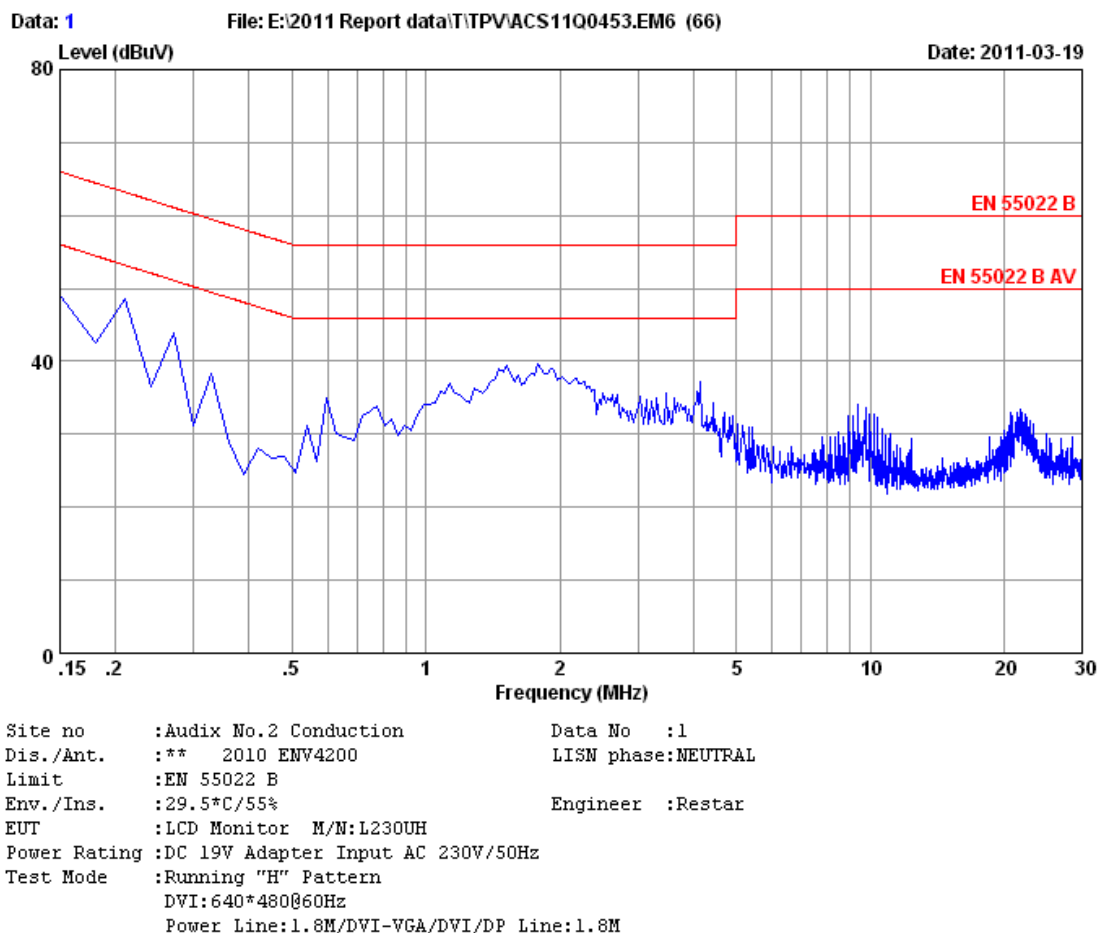
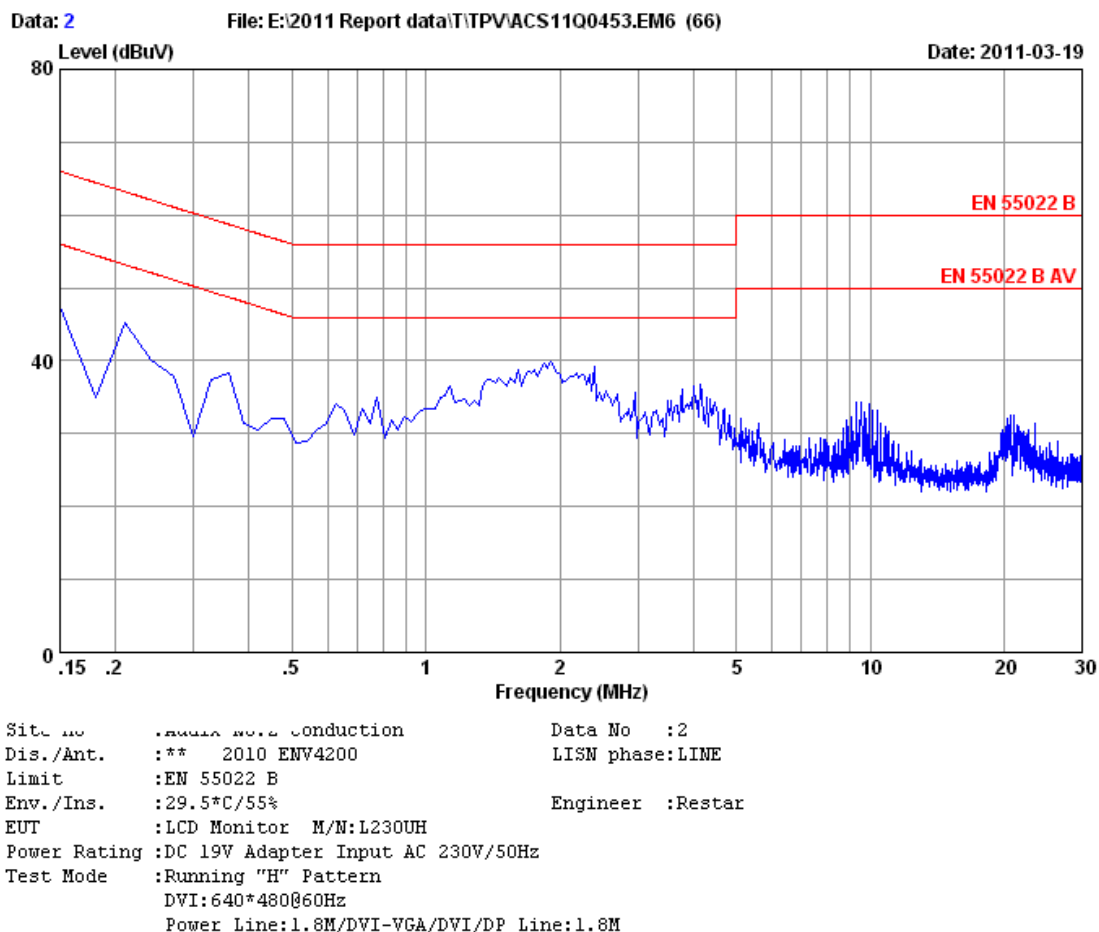
Temperature: 29.5℃

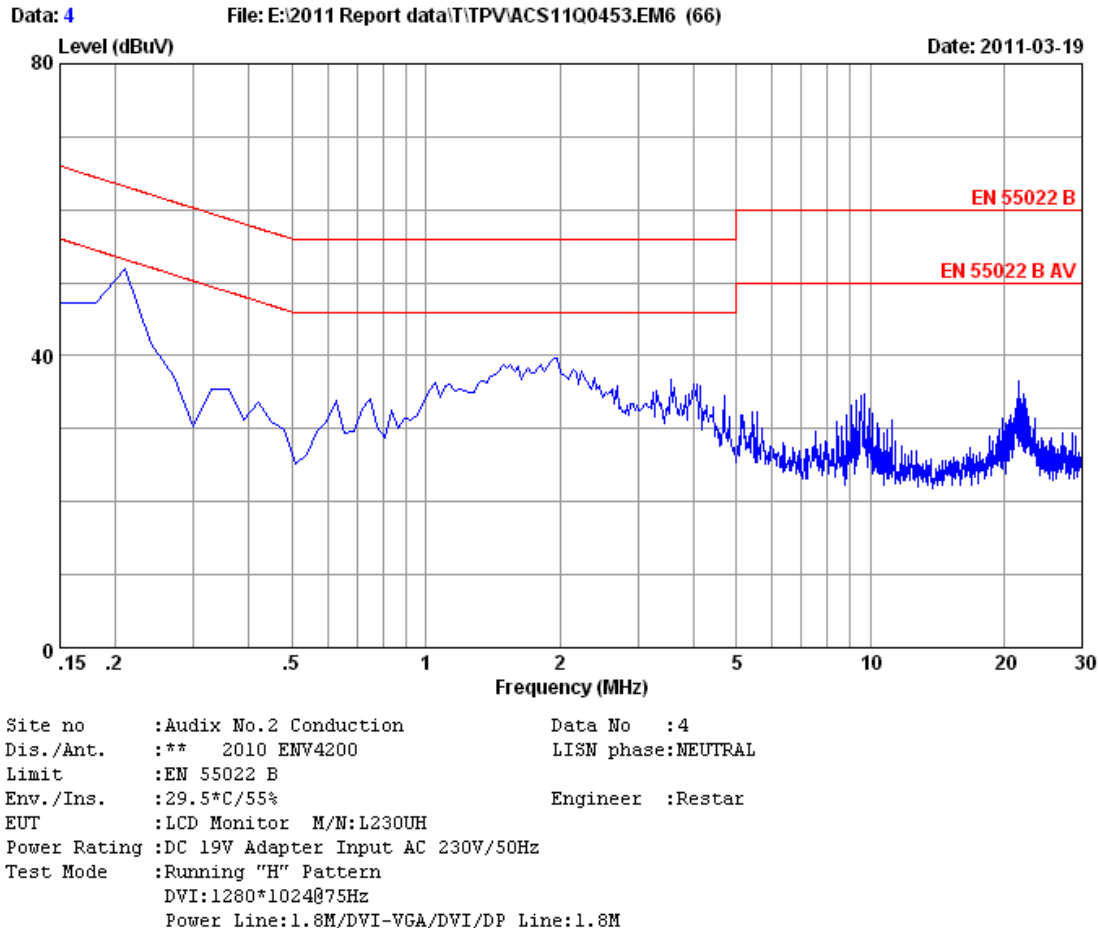
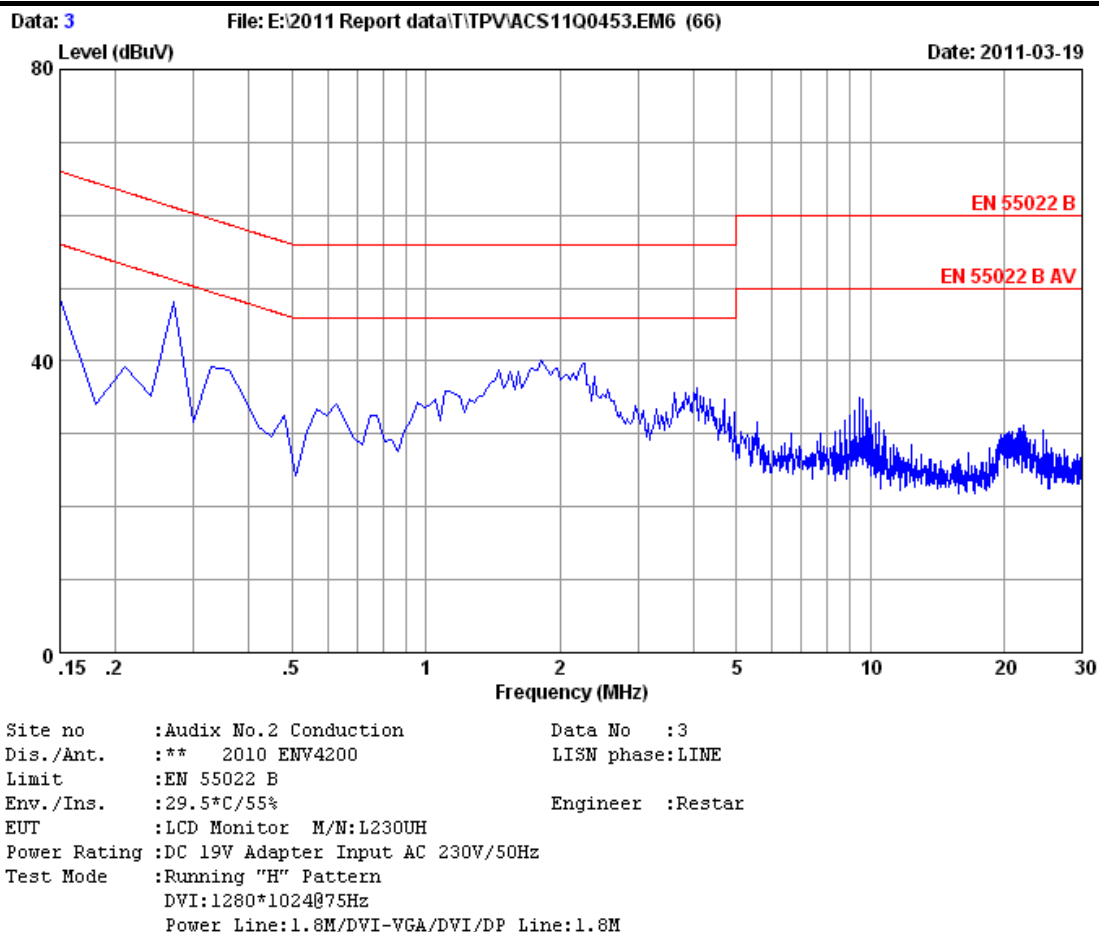
Humidity: 55%

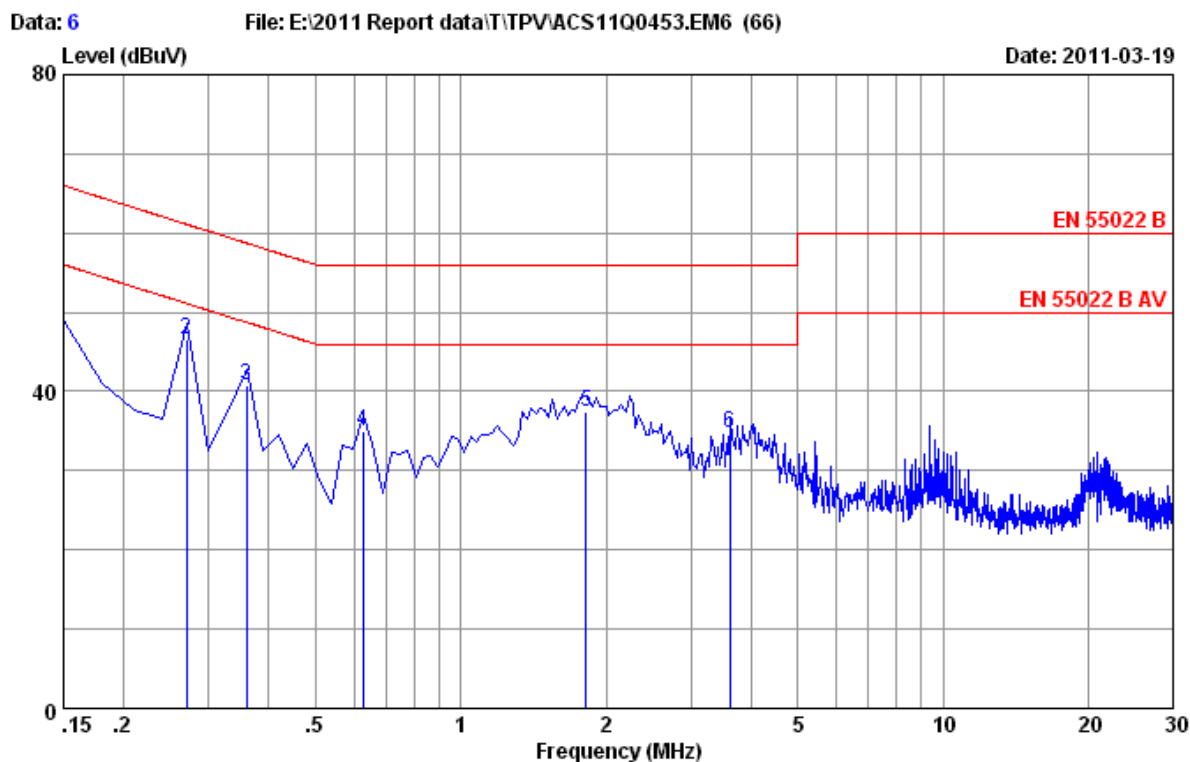
The details of test modes are as follows :

No.	Panel	Cable Lenght	Input Port	Resolution & Frequency	Reference Test Data No.	
					Line	Neutral
1.	Horizontal	1.8m	DVI	640*480/60Hz	#2	#1
2.				1280*1024/75Hz	#3	#4
3.				1920*1080/60Hz	#6	#5
4.			Display	640*480/60Hz	#11	#12
5.				1280*1024/75Hz	#10	#9
6.				1920*1080/60Hz	#8	#7
7.			DVI -VGA	640*480/60Hz	#14	#13
8.				1280*1024/75Hz	#15	#16
9. ※				1920*1080/60Hz	#18	#17
10.		1.5m	DVI -VGA	1920*1080/60Hz	#21	#22
11.	Vertical	1.8m	DVI -VGA	1080*1920/60Hz	#19	#20

(※ Worst test mode)



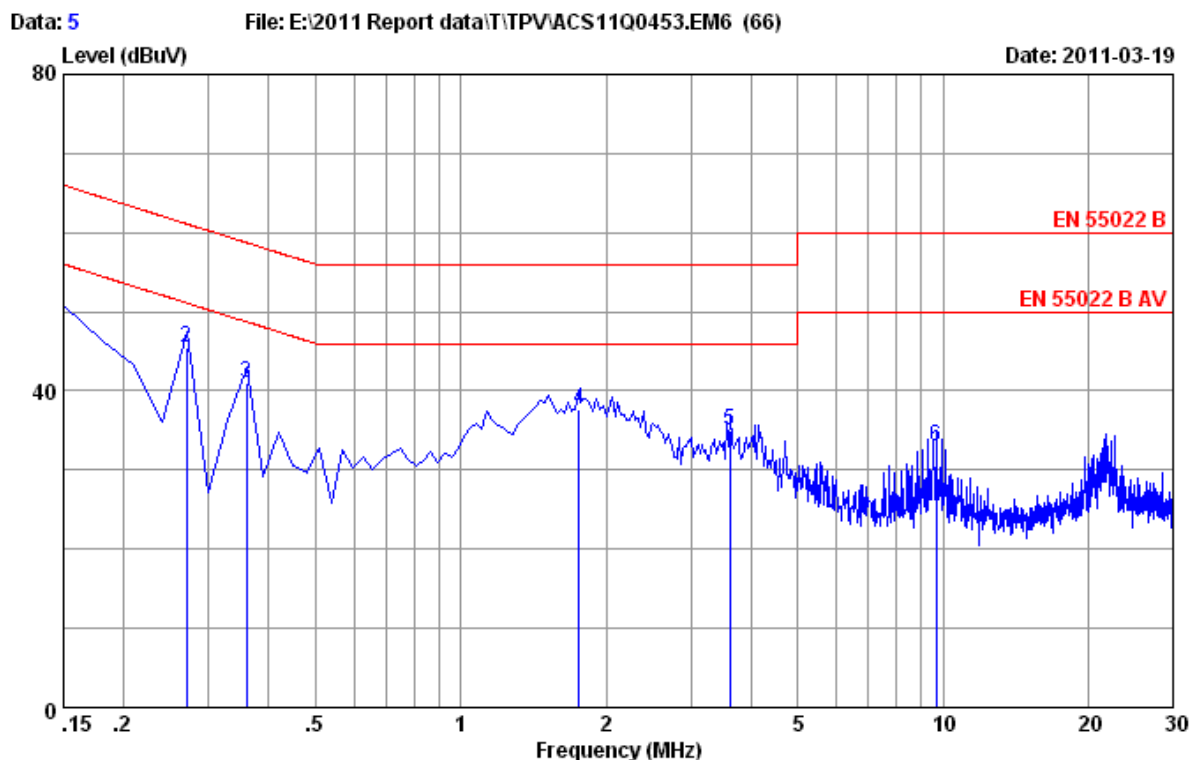




Site no :Audix No.2 Conduction Data No :6
 Dis./Ant. **: 2010 ENV4200 LISN phase:LINE
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.11	9.87	27.13	47.11	66.00	18.89	QP
2	0.26940	10.15	9.87	26.49	46.51	61.14	14.63	QP
3	0.35895	10.17	9.88	20.75	40.80	58.75	17.95	QP
4	0.62760	10.13	9.88	14.98	34.99	56.00	21.01	QP
5	1.822	10.20	9.93	17.36	37.49	56.00	18.51	QP
6	3.613	10.22	9.97	14.65	34.84	56.00	21.16	QP

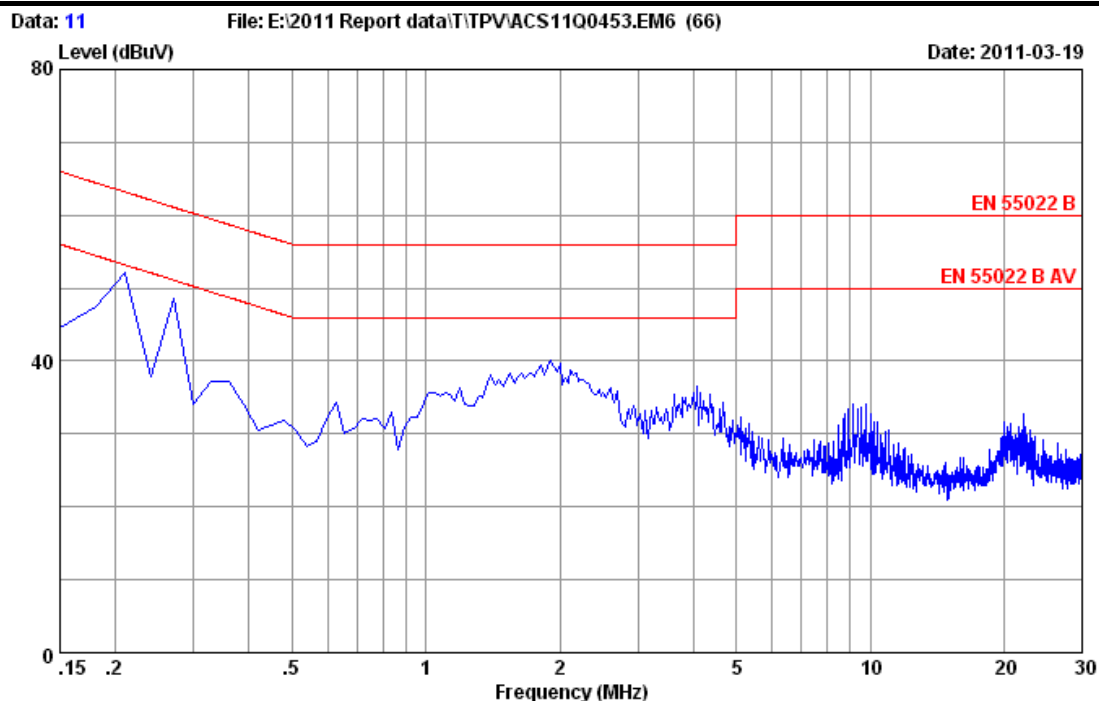
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



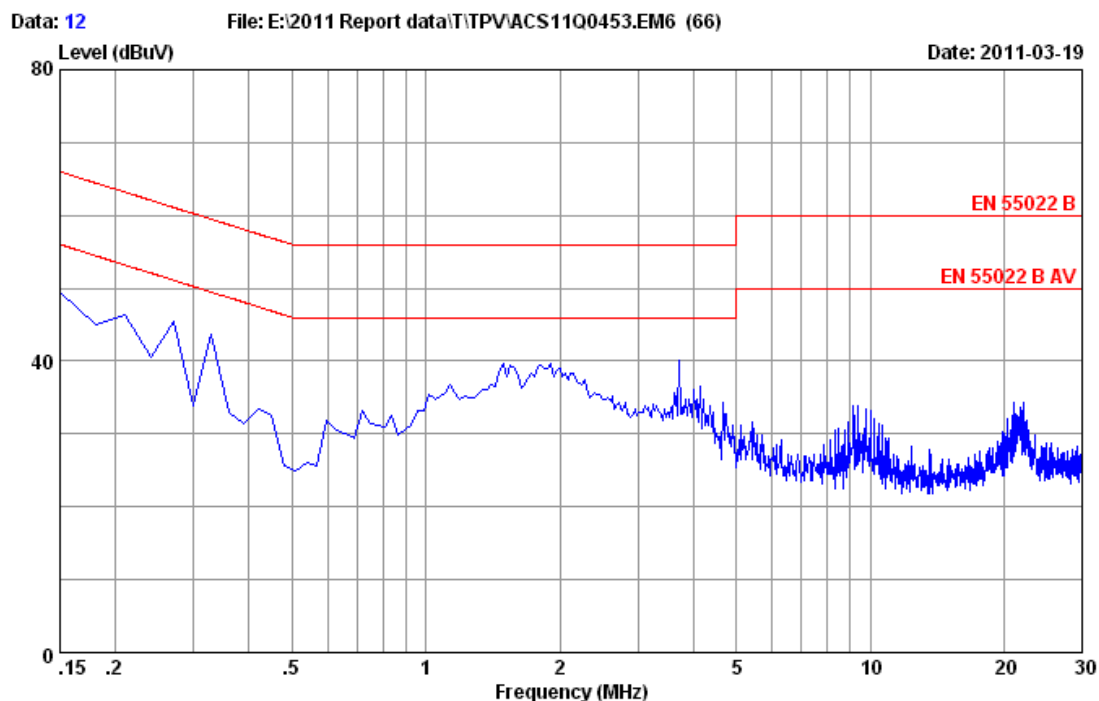
Site no :Audix No.2 Conduction Data No :5
 Dis./Ant. : ** 2010 ENV4200 LISN phase:NEUTRAL
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.22	9.87	28.79	48.88	66.00	17.12	QP
2	0.26940	10.18	9.87	25.41	45.46	61.14	15.68	QP
3	0.35895	10.19	9.88	20.93	41.00	58.75	17.75	QP
4	1.762	10.29	9.93	17.37	37.59	56.00	18.41	QP
5	3.613	10.28	9.97	14.78	35.03	56.00	20.97	QP
6	9.702	10.34	10.18	12.51	33.03	60.00	26.97	QP

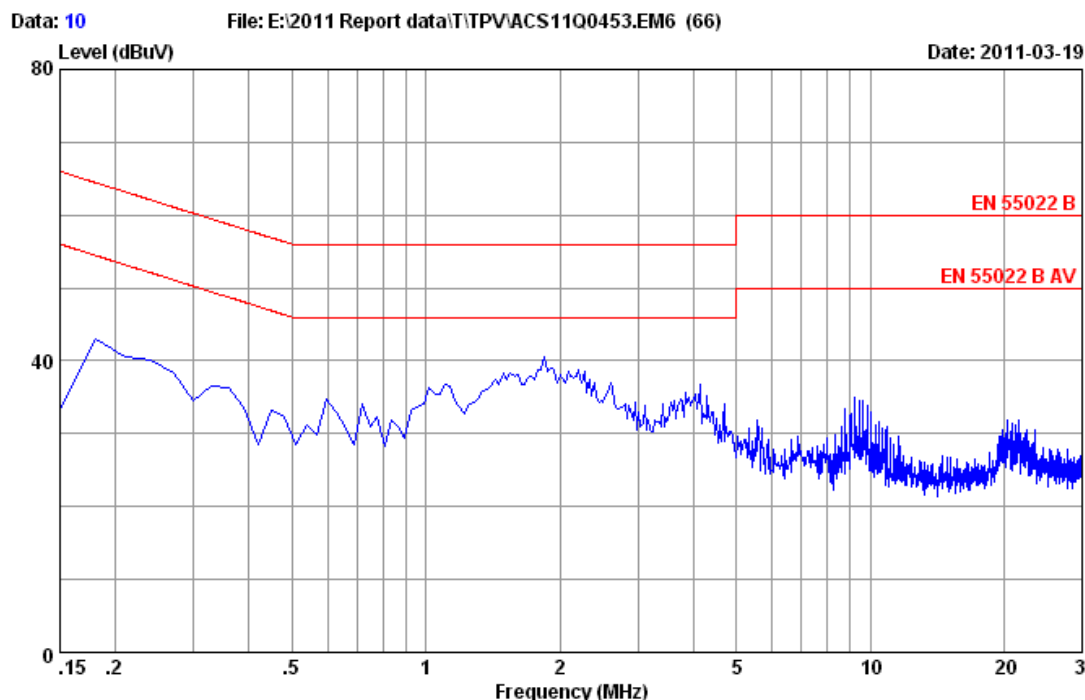
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



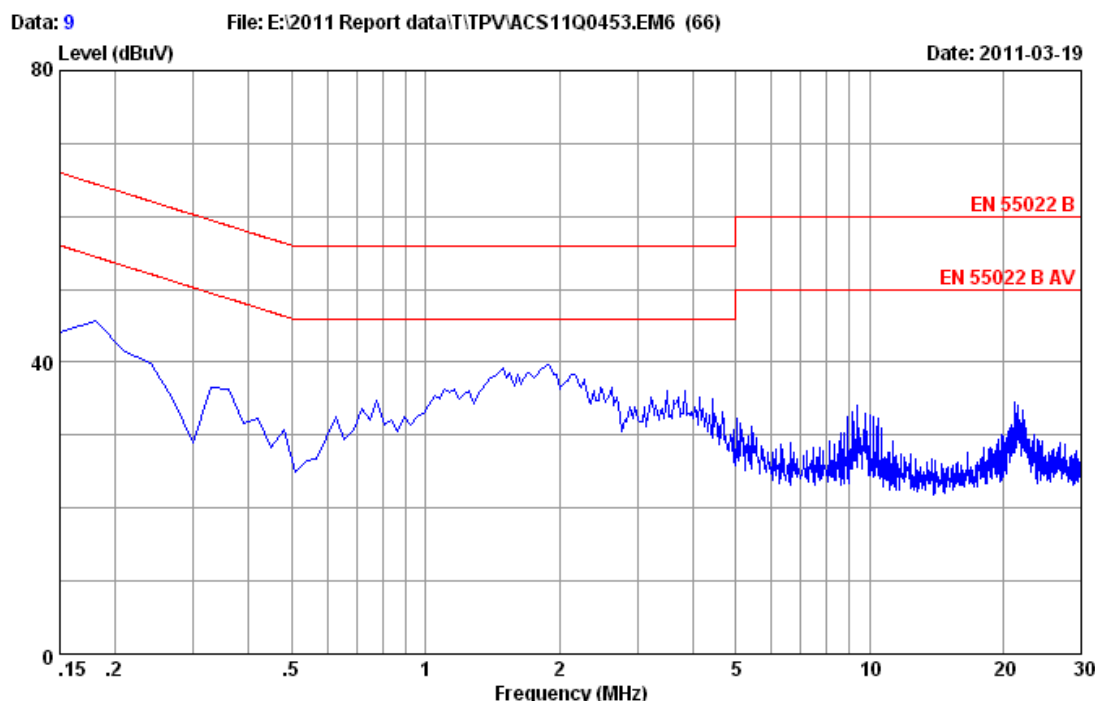
Site no : Audix No.2 Conduction Data No : 11
 Dis./Ant. : ** 2010 ENV4200 LISN phase: LINE
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 Display: 640*480@60Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M



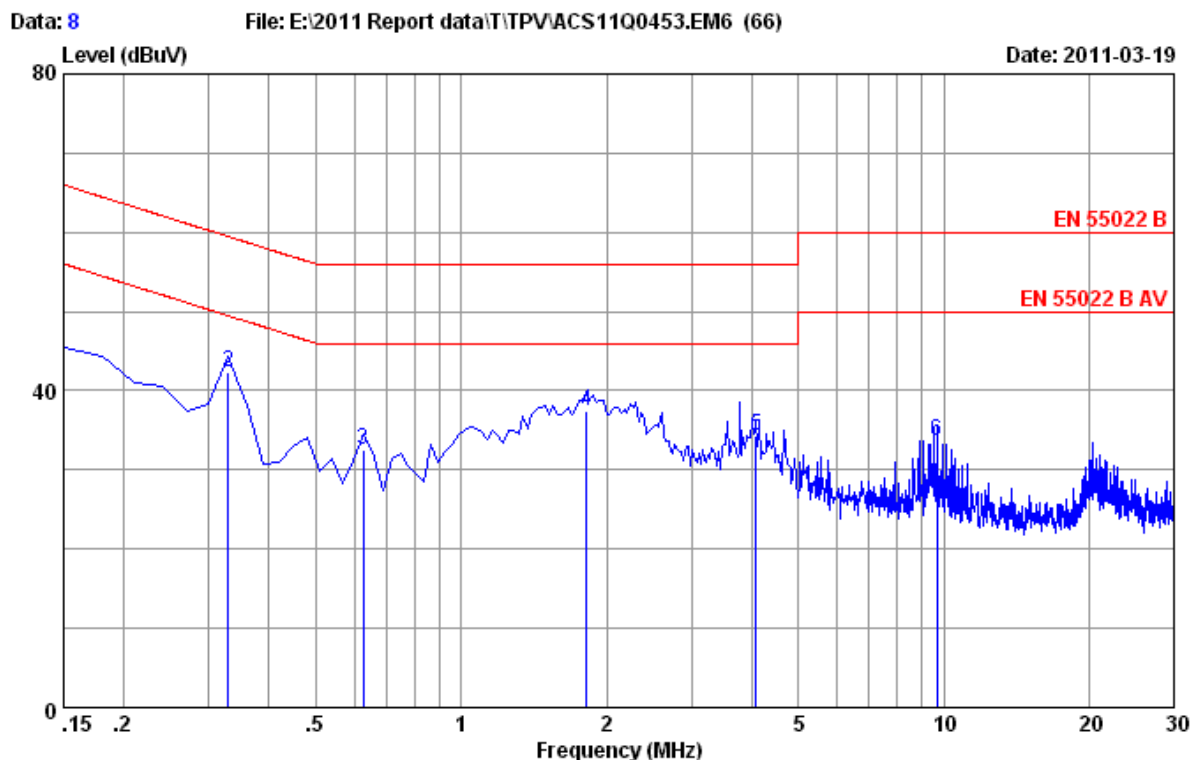
Site no : Audix No.2 Conduction Data No : 12
 Dis./Ant. : ** 2010 ENV4200 LISN phase: NEUTRAL
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 Display: 640*480@60Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M



Site no : Audix No.2 Conduction Data No : 10
 Dis./Ant. : ** 2010 ENV4200 LISN phase: LINE
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 Display: 1280*1024@75Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M



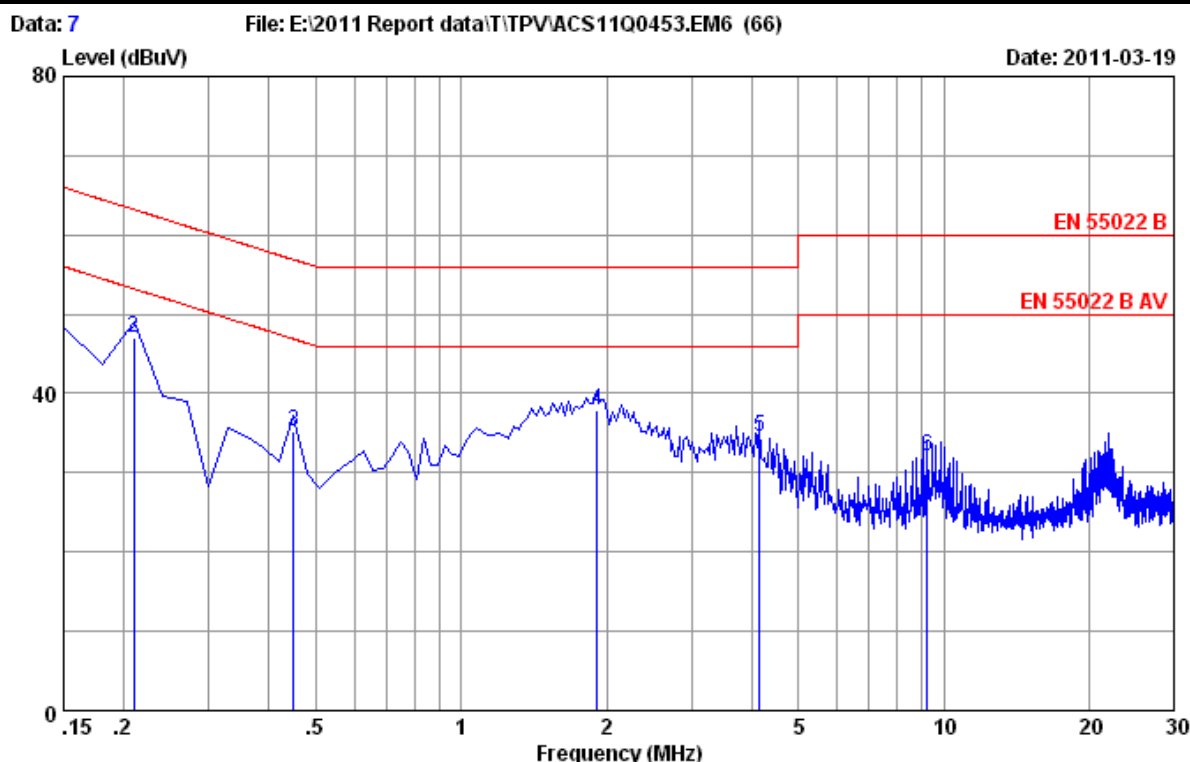
Site no : Audix No.2 Conduction Data No : 9
 Dis./Ant. : ** 2010 ENV4200 LISN phase: NEUTRAL
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 Display: 1280*1024@75Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M



Site no :Audix No.2 Conduction Data No :8
 Dis./Ant. :** 2010 ENV4200 LISN phase:LINE
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.11	9.87	23.48	43.46	66.00	22.54	QP
2	0.32910	10.16	9.88	22.28	42.32	59.47	17.15	QP
3	0.62760	10.13	9.88	12.48	32.49	56.00	23.51	QP
4	1.822	10.20	9.93	17.34	37.47	56.00	18.53	QP
5	4.090	10.22	9.98	14.19	34.39	56.00	21.61	QP
6	9.702	10.37	10.18	13.05	33.60	60.00	26.40	QP

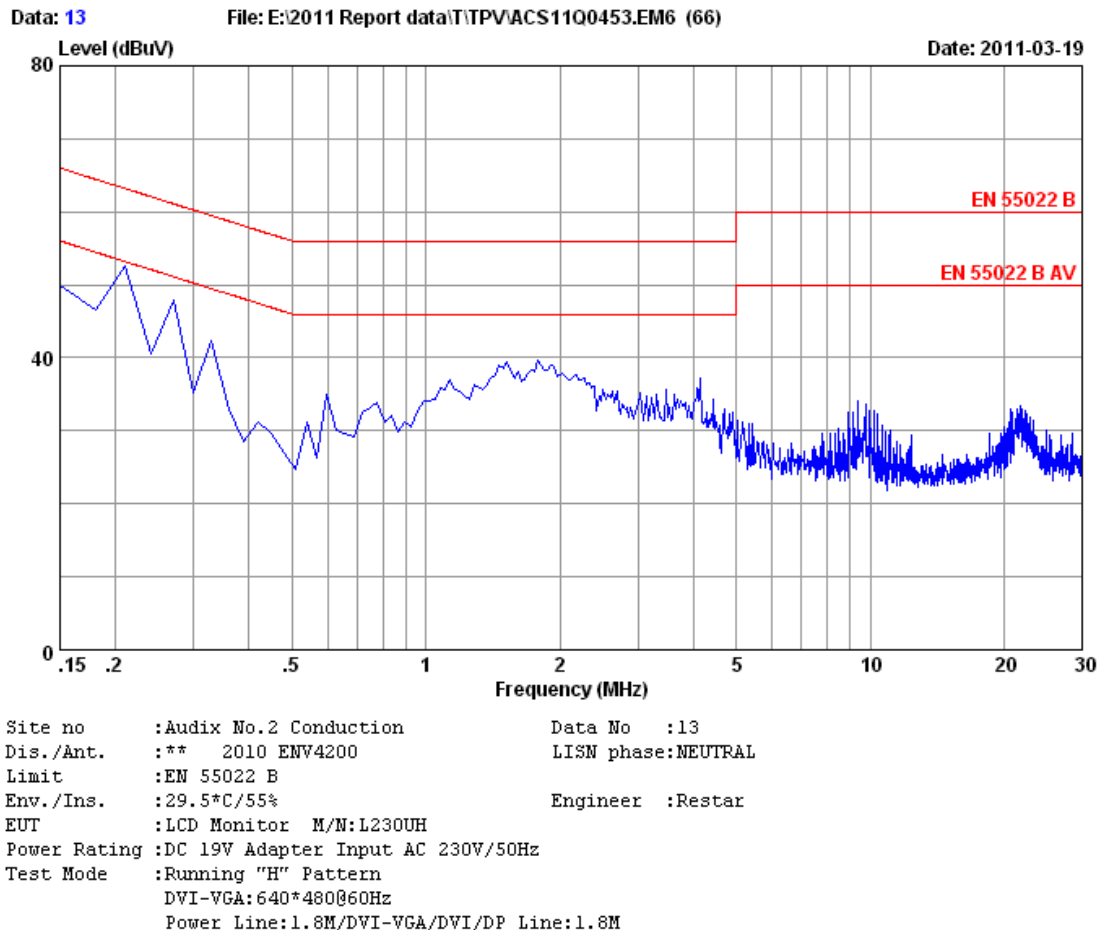
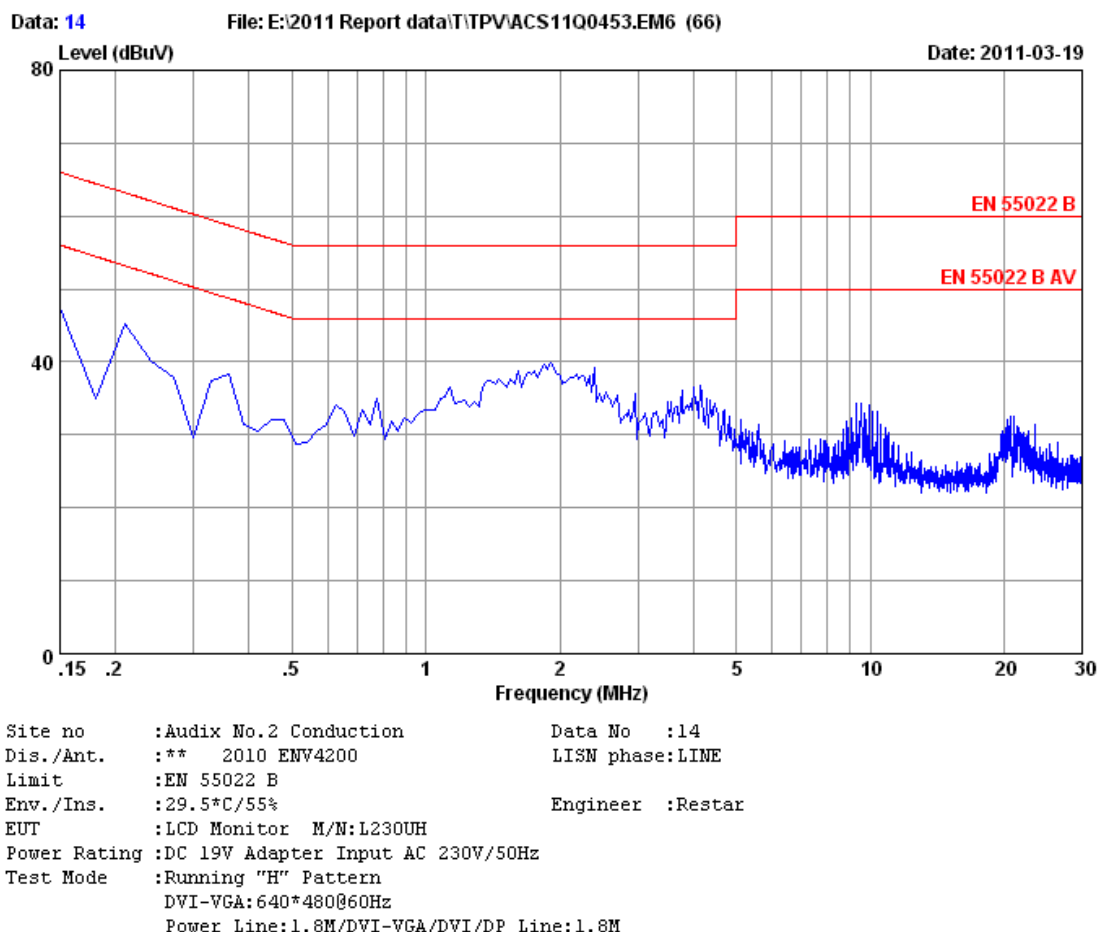
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

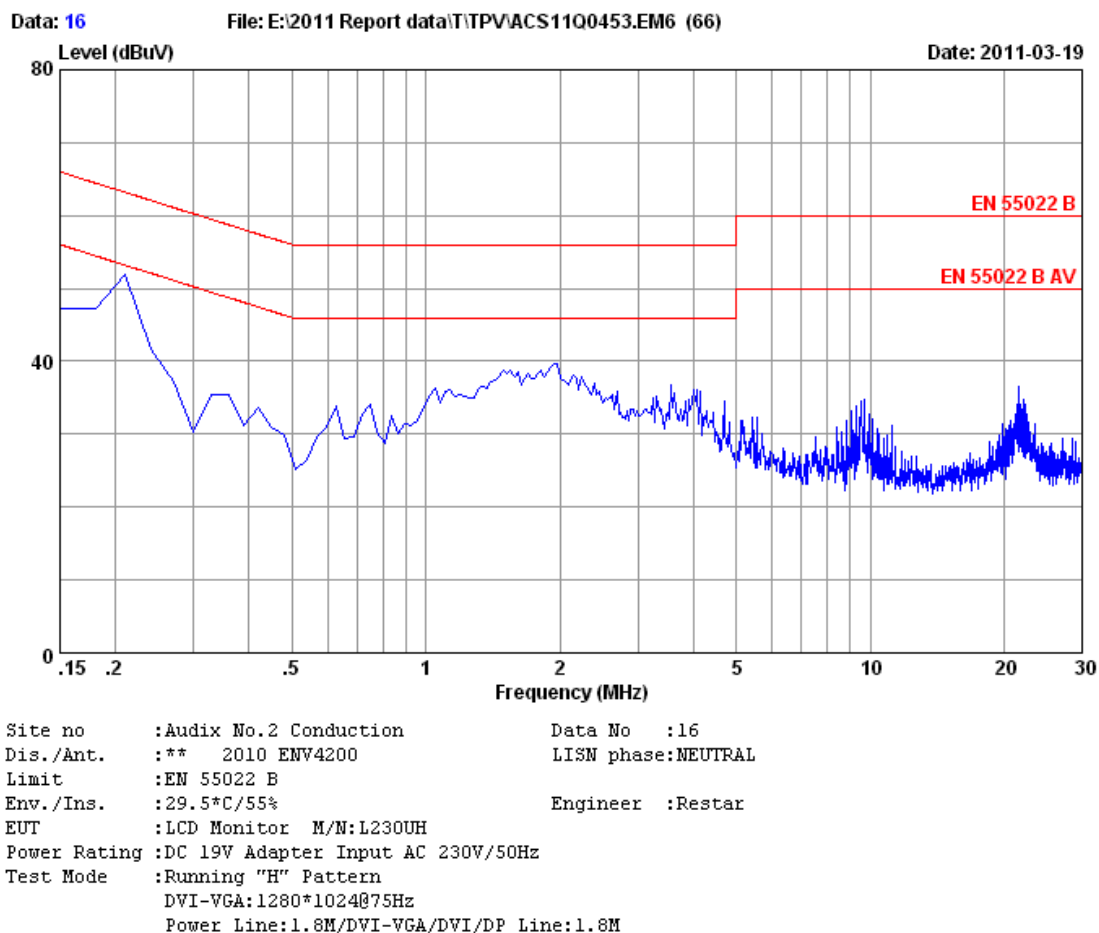
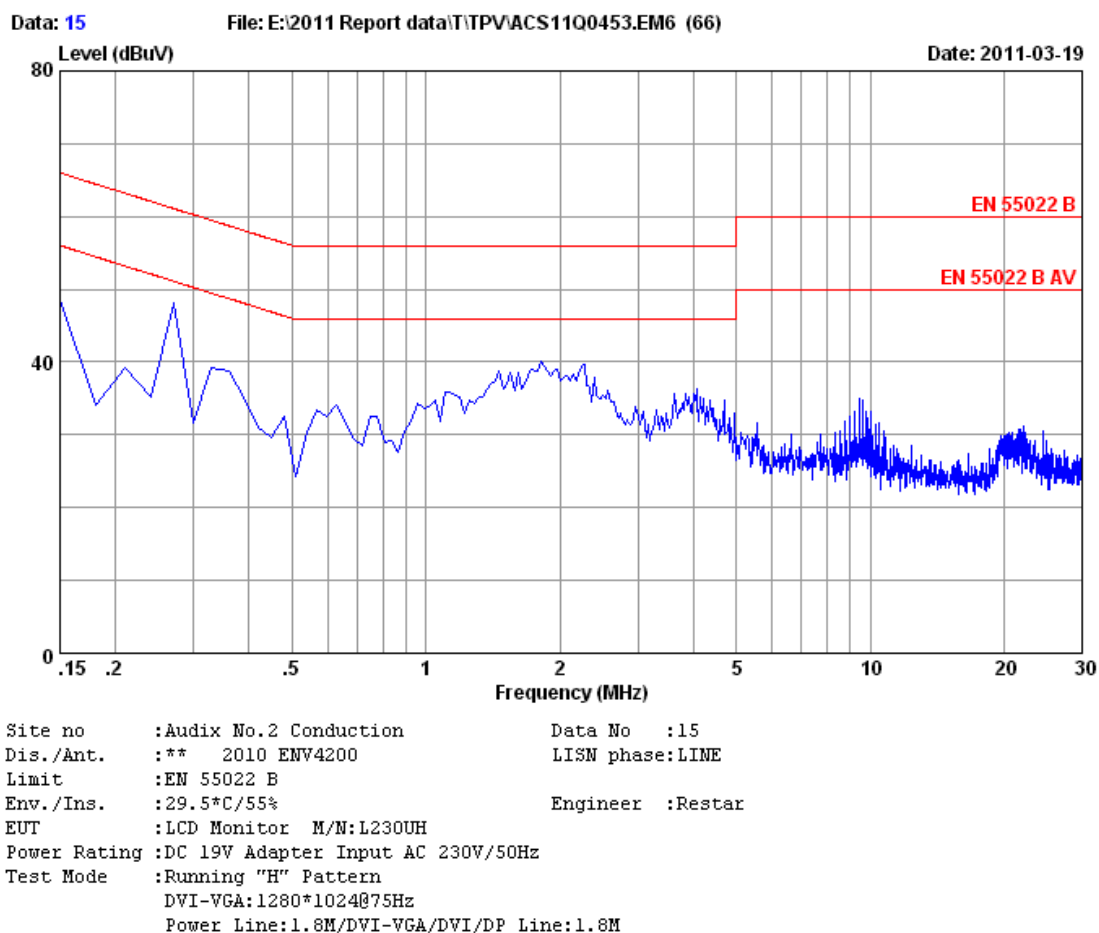


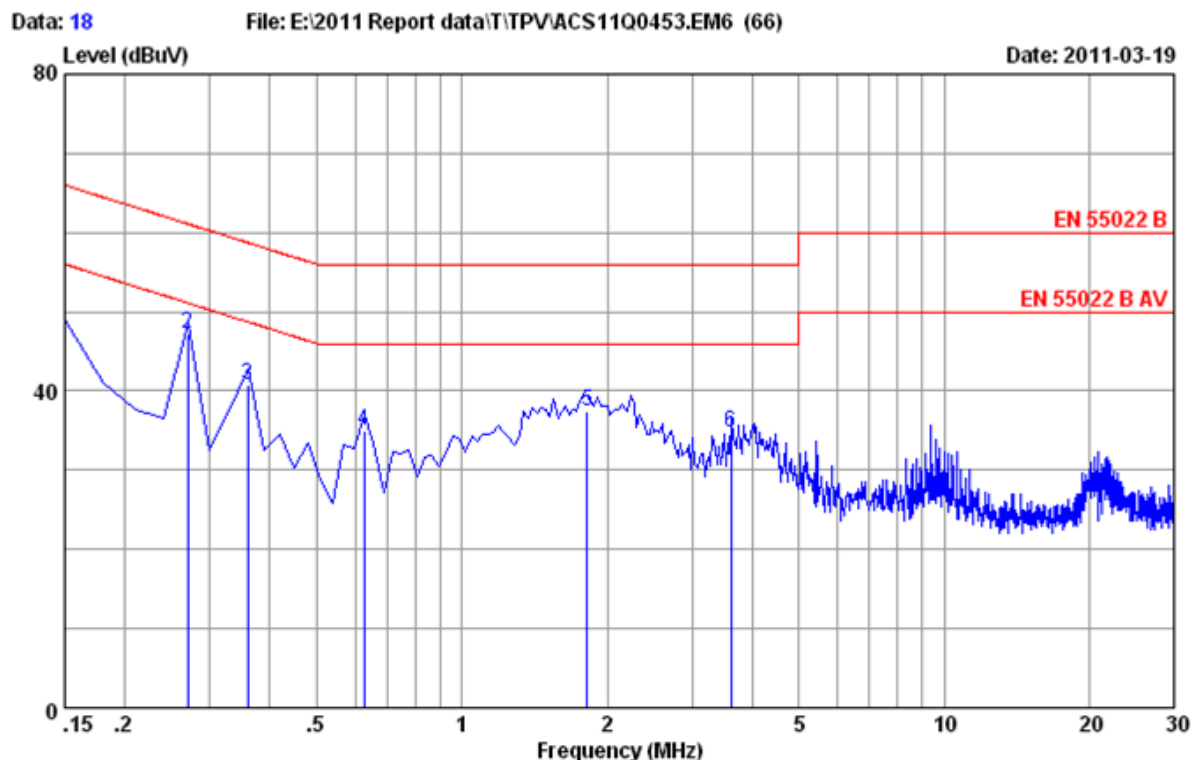
Site no :Audix No.2 Conduction Data No :7
 Dis./Ant. **: 2010 ENV4200 LISN phase:NEUTRAL
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.22	9.87	26.16	46.25	66.00	19.75	QP
2	0.20970	10.18	9.87	26.93	46.98	63.22	16.24	QP
3	0.44850	10.19	9.88	15.17	35.24	56.90	21.66	QP
4	1.911	10.30	9.93	17.64	37.87	56.00	18.13	QP
5	4.150	10.28	9.98	14.34	34.60	56.00	21.40	QP
6	9.254	10.33	10.17	11.59	32.09	60.00	27.91	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



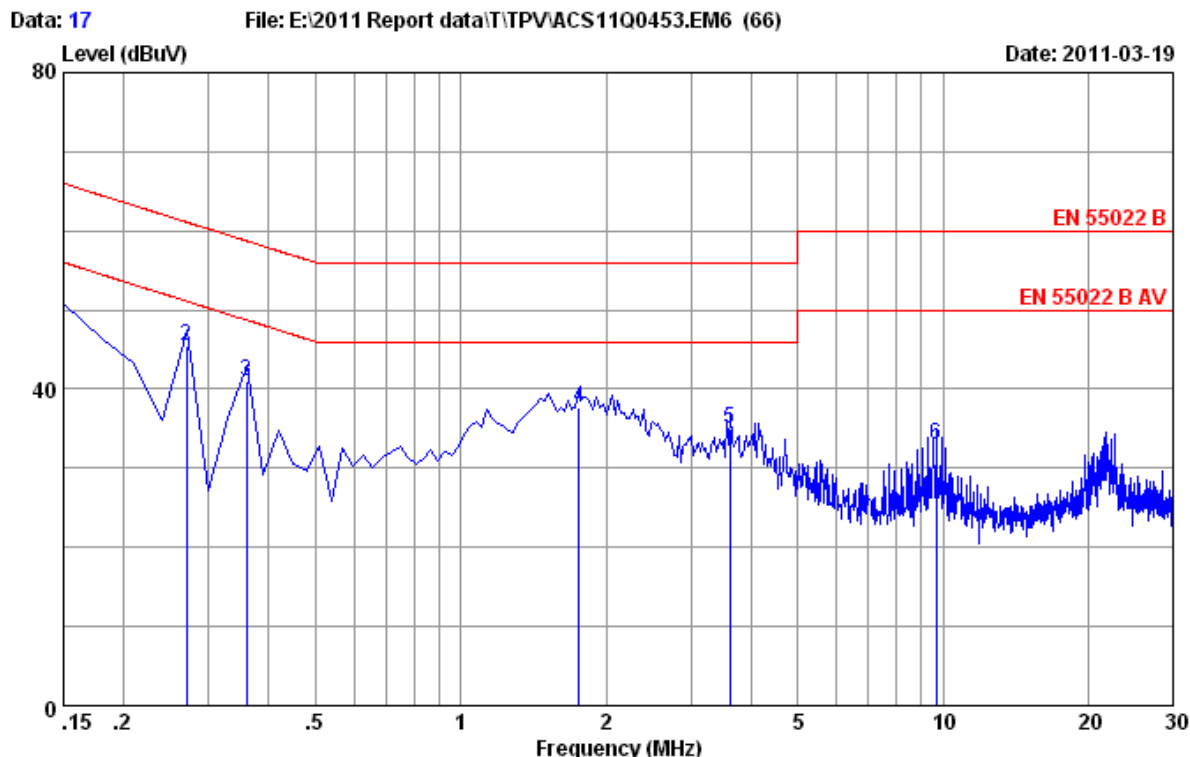




Site no : Audix No.2 Conduction Data No : 18
 Dis./Ant. : ** 2010 ENV4200 LISN phase: LINE
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 DVI-VGA: 1920*1080@60Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.11	9.87	27.13	47.11	66.00	18.89	QP
2	0.26940	10.15	9.87	27.13	47.15	61.14	13.99	QP
3	0.35895	10.17	9.88	20.75	40.80	58.75	17.95	QP
4	0.62760	10.13	9.88	14.98	34.99	56.00	21.01	QP
5	1.822	10.20	9.93	17.36	37.49	56.00	18.51	QP
6	3.613	10.22	9.97	14.65	34.84	56.00	21.16	QP

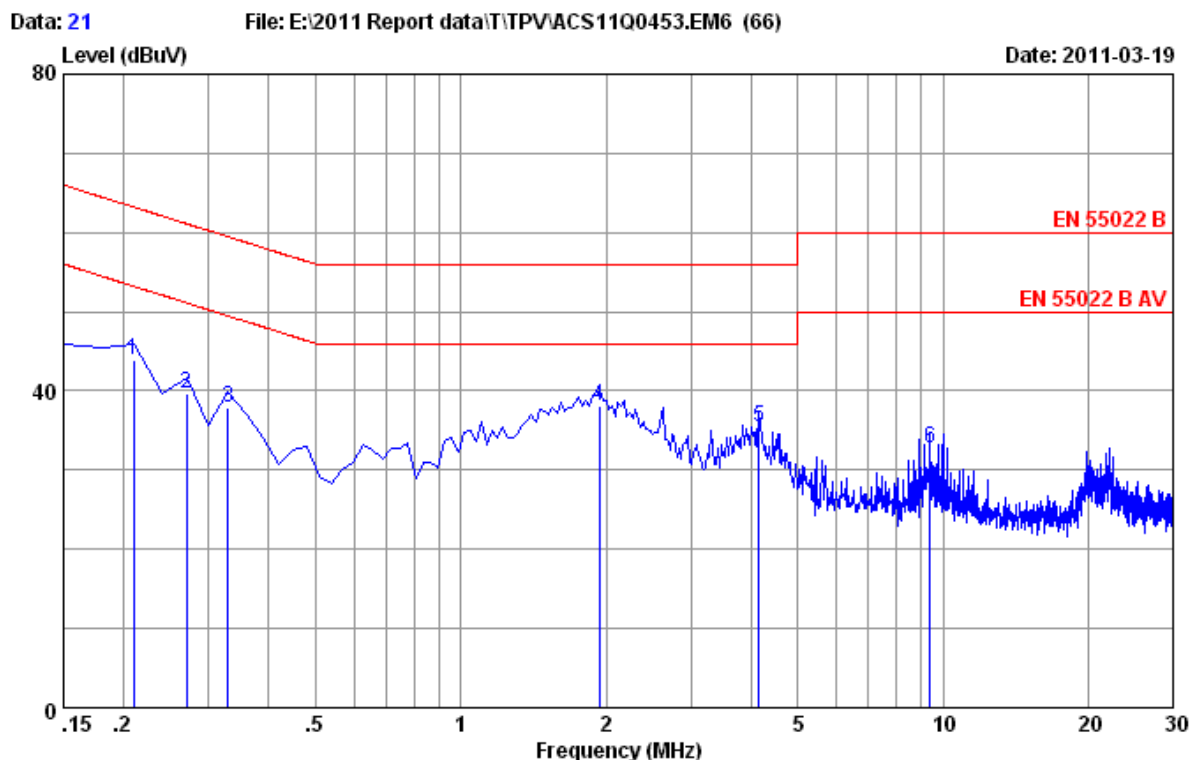
Remarks: 1. Emission Level = LISN Factor + Cable Loss (Include 10dB pulse limit) + Reading.
 2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :Audix No.2 Conduction Data No :17
 Dis./Ant. :** 2010 ENV4200 LISN phase:NEUTRAL
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	10.22	9.87	28.79	48.88	66.00	17.12	QP
2	0.26940	10.18	9.87	25.41	45.46	61.14	15.68	QP
3	0.35895	10.19	9.88	20.93	41.00	58.75	17.75	QP
4	1.762	10.29	9.93	17.37	37.59	56.00	18.41	QP
5	3.613	10.28	9.97	14.78	35.03	56.00	20.97	QP
6	9.702	10.34	10.18	12.51	33.03	60.00	26.97	QP

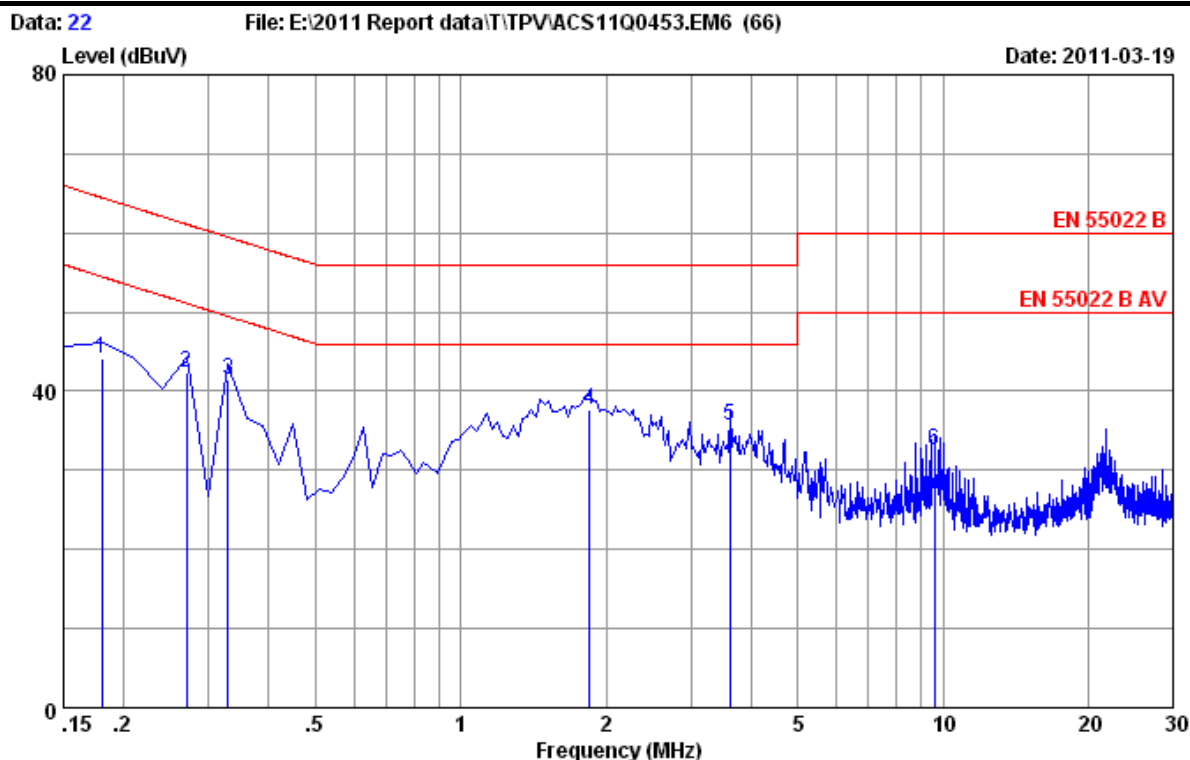
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



Site no :Audix No.2 Conduction Data No :21
 Dis./Ant. :** 2010 ENV4200 LISN phase:LINE
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.5M/DVI-VGA/DVI/DP Line:1.5M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.20970	10.14	9.87	23.88	43.89	63.22	19.33	QP
2	0.26940	10.15	9.87	19.64	39.66	61.14	21.48	QP
3	0.32910	10.16	9.88	17.76	37.80	59.47	21.67	QP
4	1.941	10.20	9.93	17.87	38.00	56.00	18.00	QP
5	4.150	10.22	9.98	15.14	35.34	56.00	20.66	QP
6	9.404	10.37	10.17	12.27	32.81	60.00	27.19	QP

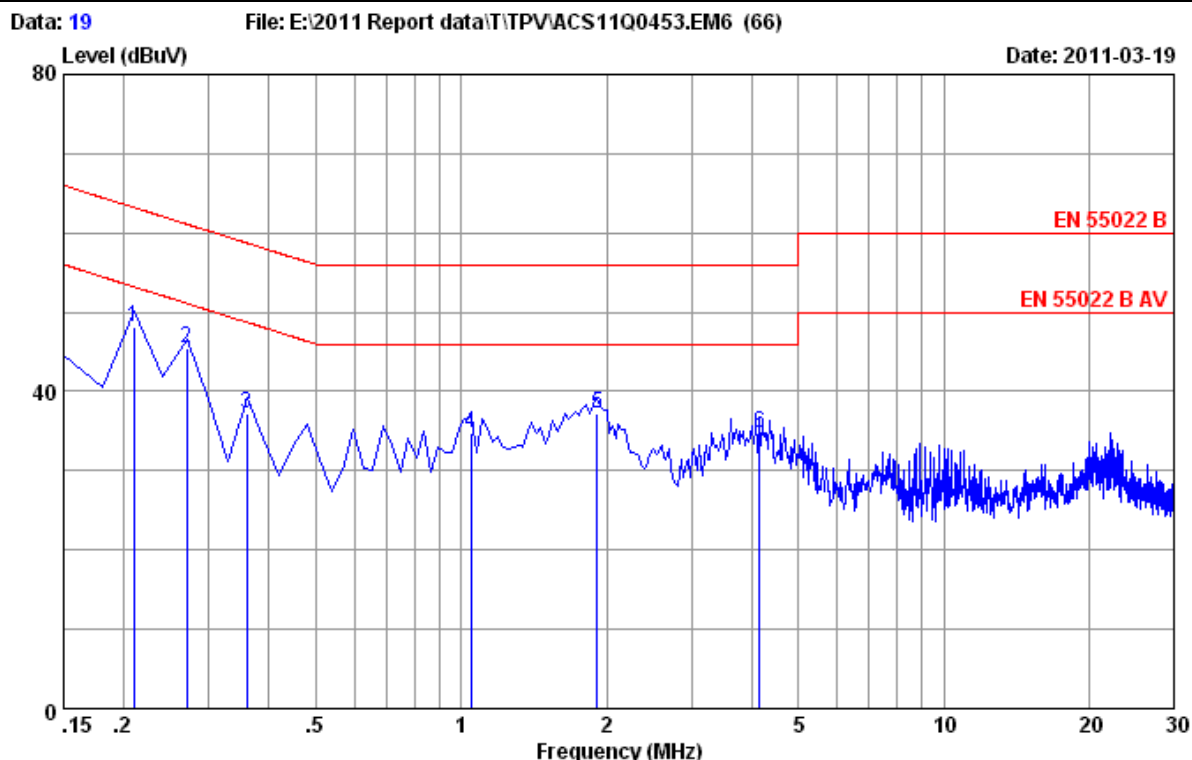
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



Site no : Audix No.2 Conduction Data No : 22
 Dis./Ant. : ** 2010 ENV4200 LISN phase: NEUTRAL
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 DVI-VGA: 1920*1080@60Hz
 Power Line: 1.5M/DVI-VGA/DVI/DP Line: 1.5M

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.17985	10.19	9.87	24.14	44.20	64.49	20.29	QP
2	0.26940	10.18	9.87	22.24	42.29	61.14	18.85	QP
3	0.32910	10.19	9.88	21.30	41.37	59.47	18.10	QP
4	1.851	10.29	9.93	17.43	37.65	56.00	18.35	QP
5	3.613	10.28	9.97	15.45	35.70	56.00	20.30	QP
6	9.612	10.34	10.18	11.90	32.42	60.00	27.58	QP

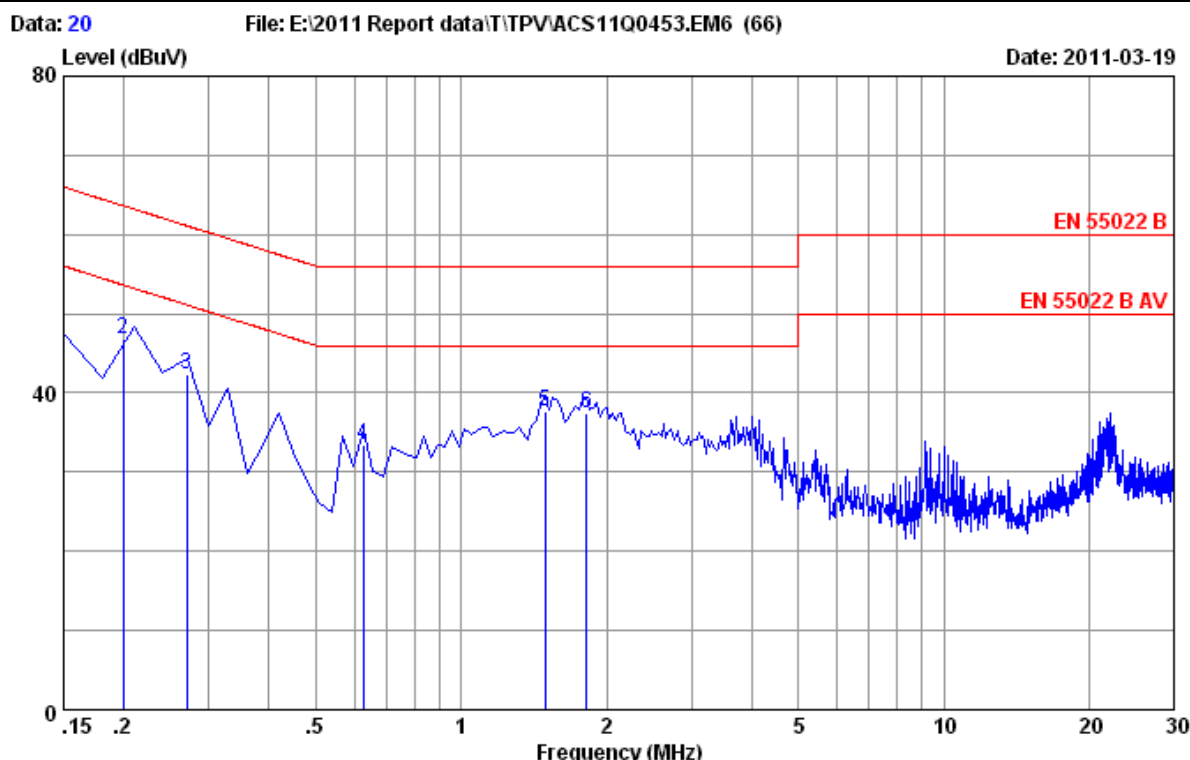
Remarks: 1. Emission Level = LISN Factor + Cable Loss (Include 10dB pulse limit) + Reading.
 2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no : Audix No.2 Conduction Data No : 19
 Dis./Ant. : ** 2010 ENV4200 LISN phase: LINE
 Limit : EN 55022 B
 Env./Ins. : 29.5°C/55% Engineer : Restar
 EUT : LCD Monitor M/N: L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running "H" Pattern
 DVI-VGA: 1080*1920@60Hz
 Power Line: 1.8M/DVI-VGA/DVI/DP Line: 1.8M
 Panel is Vertical

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.20970	10.14	9.87	28.18	48.19	63.22	15.03	QP
2	0.26940	10.15	9.87	25.54	45.56	61.14	15.58	QP
3	0.35895	10.17	9.88	17.20	37.25	58.75	21.50	QP
4	1.046	10.19	9.89	14.62	34.70	56.00	21.30	QP
5	1.911	10.20	9.93	17.08	37.21	56.00	18.79	QP
6	4.150	10.22	9.98	14.51	34.71	56.00	21.29	QP

Remarks: 1. Emission Level = LISN Factor + Cable Loss (Include 10dB pulse limit) + Reading.
 2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :Audix No.2 Conduction Data No :20
 Dis./Ant. :** 2010 ENV4200 LISN phase:NEUTRAL
 Limit :EN 55022 B
 Env./Ins. :29.5°C/55% Engineer :Restar
 EUT :LCD Monitor M/N:L230UH
 Power Rating :DC 19V Adapter Input AC 230V/50Hz
 Test Mode :Running "H" Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel is Vertical

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV)	Limits (dBUV)	Margin (dB)	Remark
1	0.15000	10.22	9.87	25.43	45.52	66.00	20.48	QP
2	0.19900	10.18	9.87	26.80	46.85	63.65	16.80	QP
3	0.26940	10.18	9.87	22.39	42.44	61.14	18.70	QP
4	0.62760	10.16	9.88	13.39	33.43	56.00	22.57	QP
5	1.493	10.27	9.91	17.56	37.74	56.00	18.26	QP
6	1.822	10.29	9.93	17.22	37.44	56.00	18.56	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

4. RADIATED DISTURBANCE TEST

4.1. Test Equipments

4.1.1. For frequency range 30MHz~1000MHz (At Anechoic Chamber)

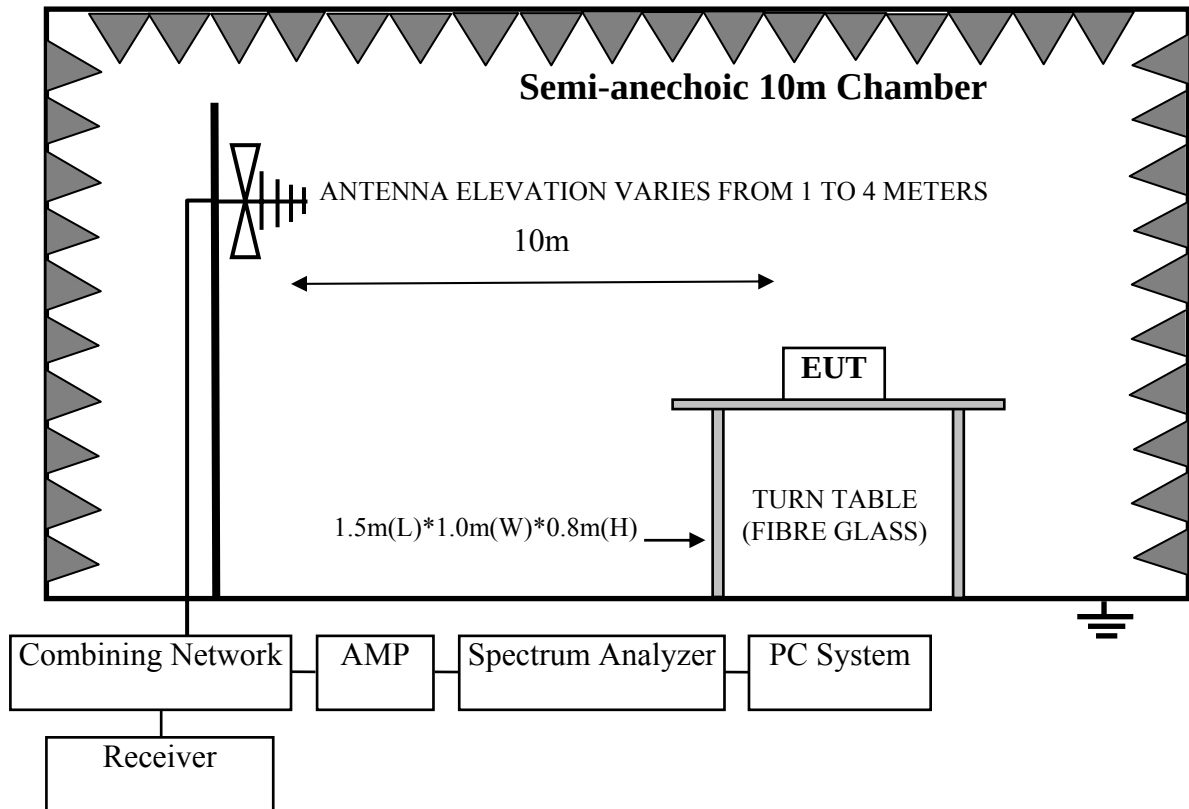
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	10m Chamber	AUDIX	N/A	N/A	Dec.05,10	1 Year
2	EMC Analyzer	Agilent	E7405A	MY42000131	May.08, 10	1 Year
3	EMC Analyzer	Agilent	E7405A	MY45116588	May.08, 10	1 Year
4	Test Receiver	Rohde & Schwarz	ESCI	100842	May.08, 10	1 Year
5	Amplifier	Agilent	8447D	2944A10684	May.08, 10	1 Year
6	Amplifier	Agilent	8447D	2944A11140	May.08, 10	1 Year
7	Bilog Antenna	Schaffner	CBL6112D	25238	Mar.27, 10	1.5 Year
8	Bilog Antenna	Schaffner	CBL6112D	25237	Mar.27, 10	1.5 Year
9	RF Cable	MIYAZAKI	8D-FB	10m Chamber No.1	May.08, 10	1 Year
10	RF Cable	MIYAZAKI	8D-FB	10m Chamber No.2	May.08, 10	1 Year
11	Coaxial Switch	Anritsu	MP59B	6200766906	May.08, 10	1 Year
12	Coaxial Switch	Anritsu	MP59B	6200766905	May.08, 10	1 Year
13	Coaxial Switch	Anritsu	MP59B	6200313662	May.08, 10	1 Year

4.1.2. For frequency range 1GHz~6GHz (At Anechoic Chamber)

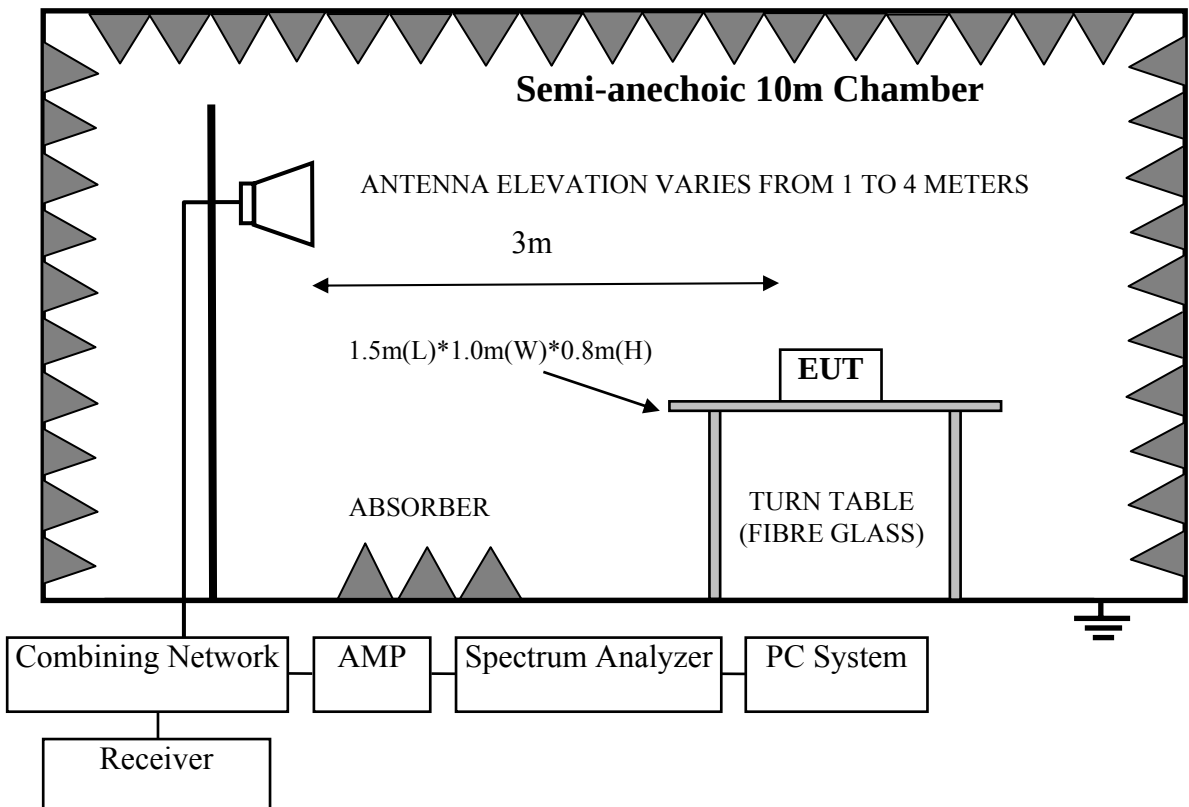
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E7405A	MY45116588	May.08, 10	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3	Amplifier	Agilent	8449B	3008A00863	May.08, 10	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 10	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 10	1 Year

4.2. Block Diagram of Test Setup

4.2.1. In Anechoic Chamber Test Setup Diagram for 30MHz~1000MHz



4.2.2. In Anechoic (10m) Chamber Test Setup Diagram for 1-6GHz



4.3. Test Standard

EN55022: 2006+A1: 2007, Class B

4.4. Radiated Disturbance Limit

All emanations from a Class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 230	10	30
230 ~ 1000	10	37
1000~3000	3	70(Peak) 50(Average)
3000~6000	3	74(Peak) 54(Average)

- Note:
- (1) Emission level = Antenna Factor + Cable Loss + Reading
Emission level = Antenna Factor -Amp Factor +Cable Loss + Reading
(above 1000MHz)
 - (2) The lower limit shall apply at the transition frequencies.
 - (3) Distance refers to the distance in meters between the test instrument antenna and the closed point of any part of the E.U.T.

4.5. EUT Configuration on Test

The configurations of EUT are listed in Section 3.5.

4.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 4.2.

4.7. Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m & 10m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all the interface cables were changed according to EN 55022 Class B on Radiated Disturbance test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCI) is 120 kHz.

The resolution bandwidth of the Agilent Spectrum Analyzer E7405A was set at 1MHz. (For above 1GHz)

The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values.

The frequency range from 1GHz to 6GHz was checked and all final readings of measurement were with Peak and Average detector, measurement distance was 3m at semi-anechoic chamber. The portion of the test volume that was obstructed by absorber placed on the floor (30cm maximum).

Finally, selected operating situations at Anechoic Chamber measurement, all the test results are listed in section 4.8.

4.8. Radiated Disturbance Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

EUT: LCD Monitor Model No. : L230UH

The EUT with the following test modes were tested and selected (mode 3 & 6 & 9& 10& 11) to read Q.P values, all the test results are listed in next pages.

Test Date: Mar.22, 2011 Temperature: 24℃ Humidity: 56%

The details of test modes are as follows :

No.	Panel	Cable Lenght	Input Port	Resolution & Frequency	Reference Test Data No.	
					Horizontal	Vertical
1.	Horizontal	1.8m	DVI	640*480/60Hz	#58	#57
2.				1280*1024/75Hz	#60	#59
3.				1920*1080/60Hz	#62	#61
4.			Display	640*480/60Hz	#52	#51
5.				1280*1024/75Hz	#54	#53
6.				1920*1080/60Hz	#56	#55
7.			DVI-VGA	640*480/60Hz	#50	#49
8.				1280*1024/75Hz	#48	#47
9. ※				1920*1080/60Hz	#46	#45
10.	Vertical	1.5m	DVI-VGA	1920*1080/60Hz	#66	#65
11.		1.8m	DVI-VGA	1080*1920/60Hz	#64	#63

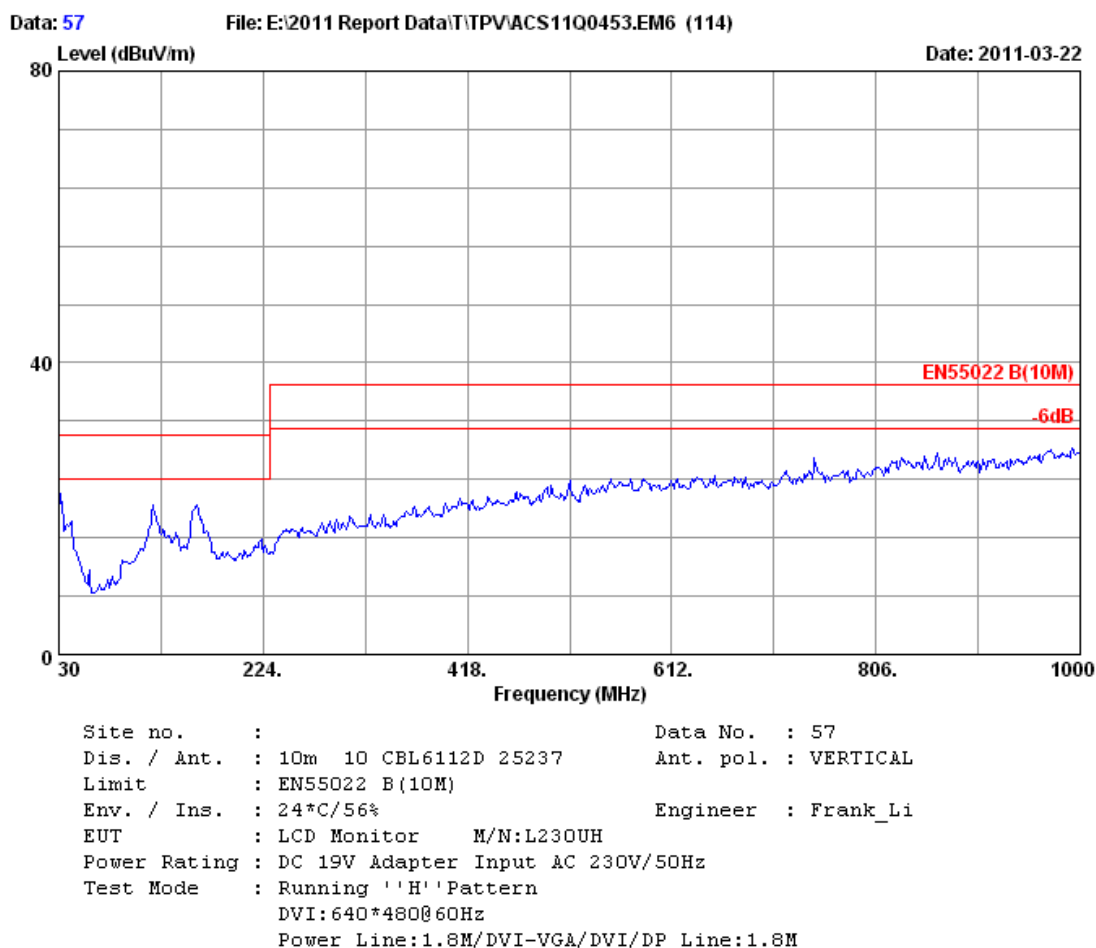
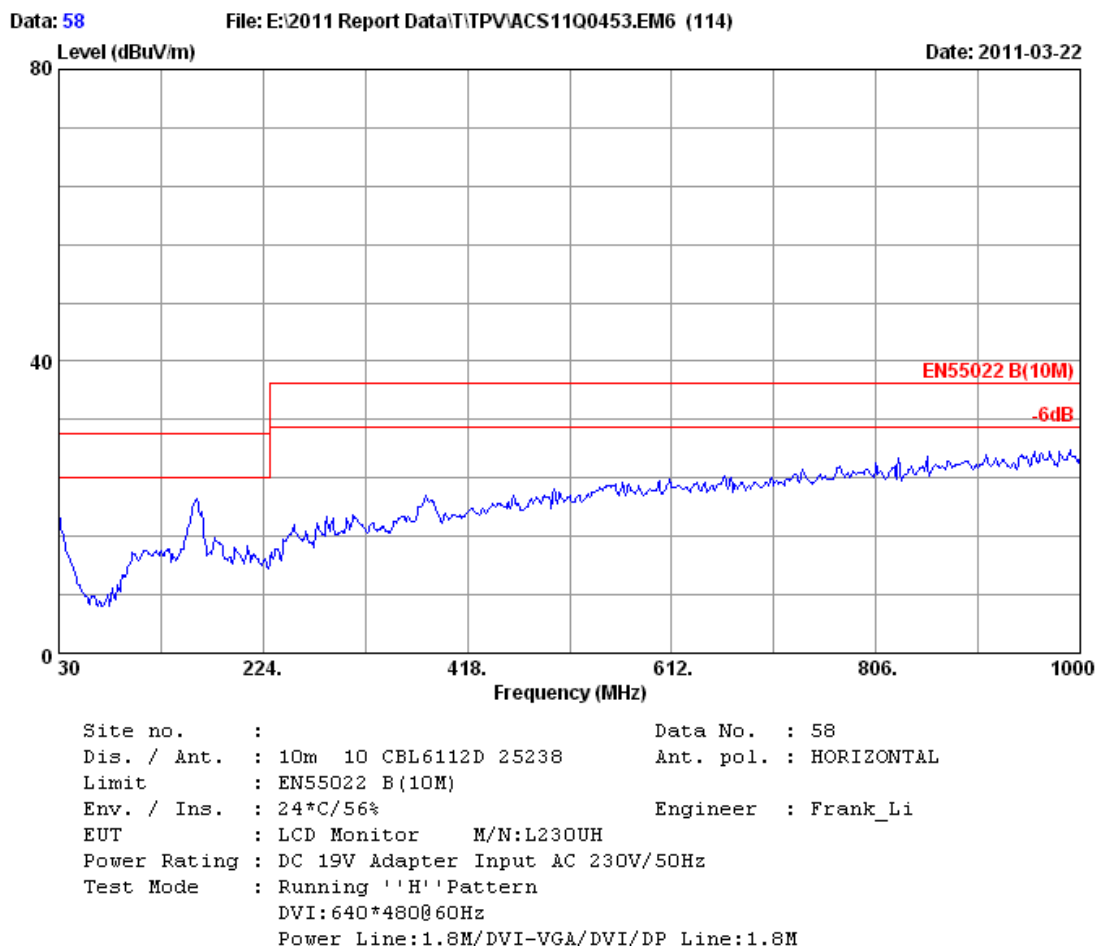
(※ Worst test mode)

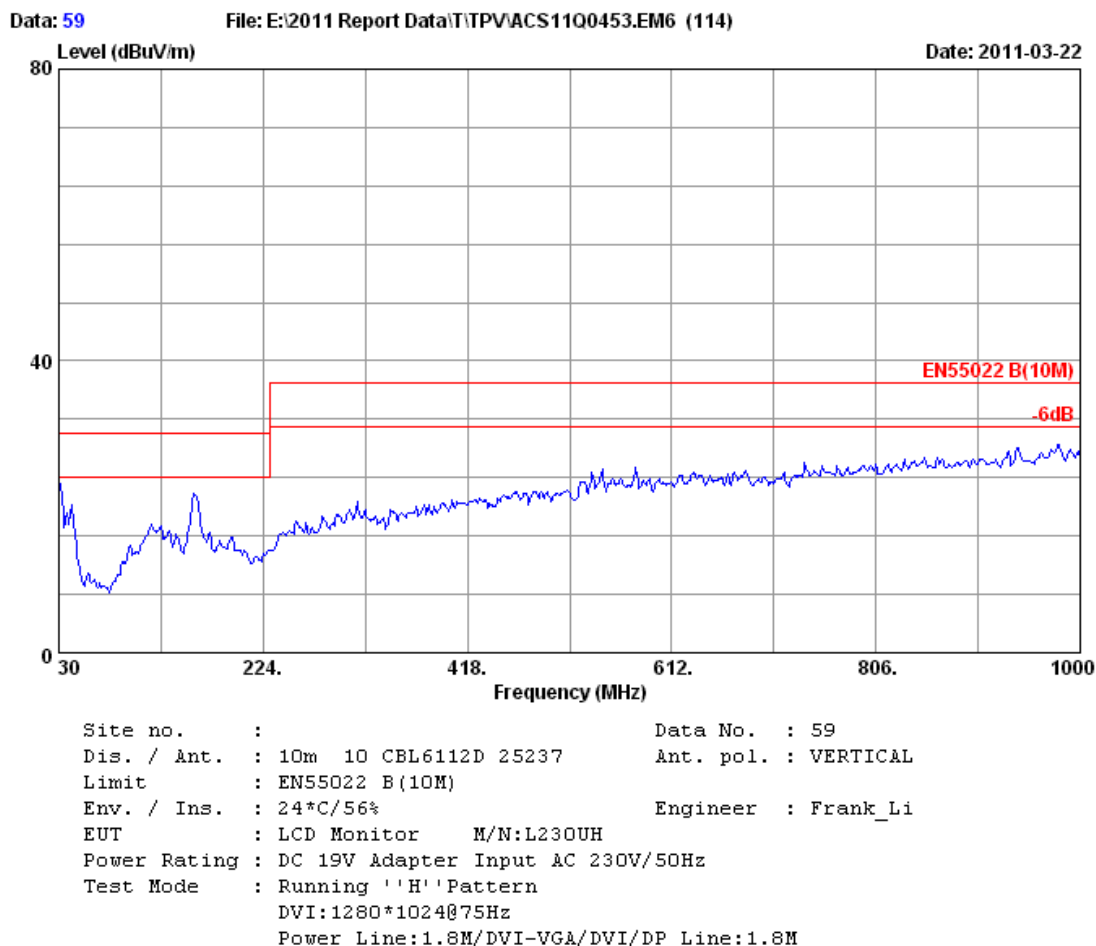
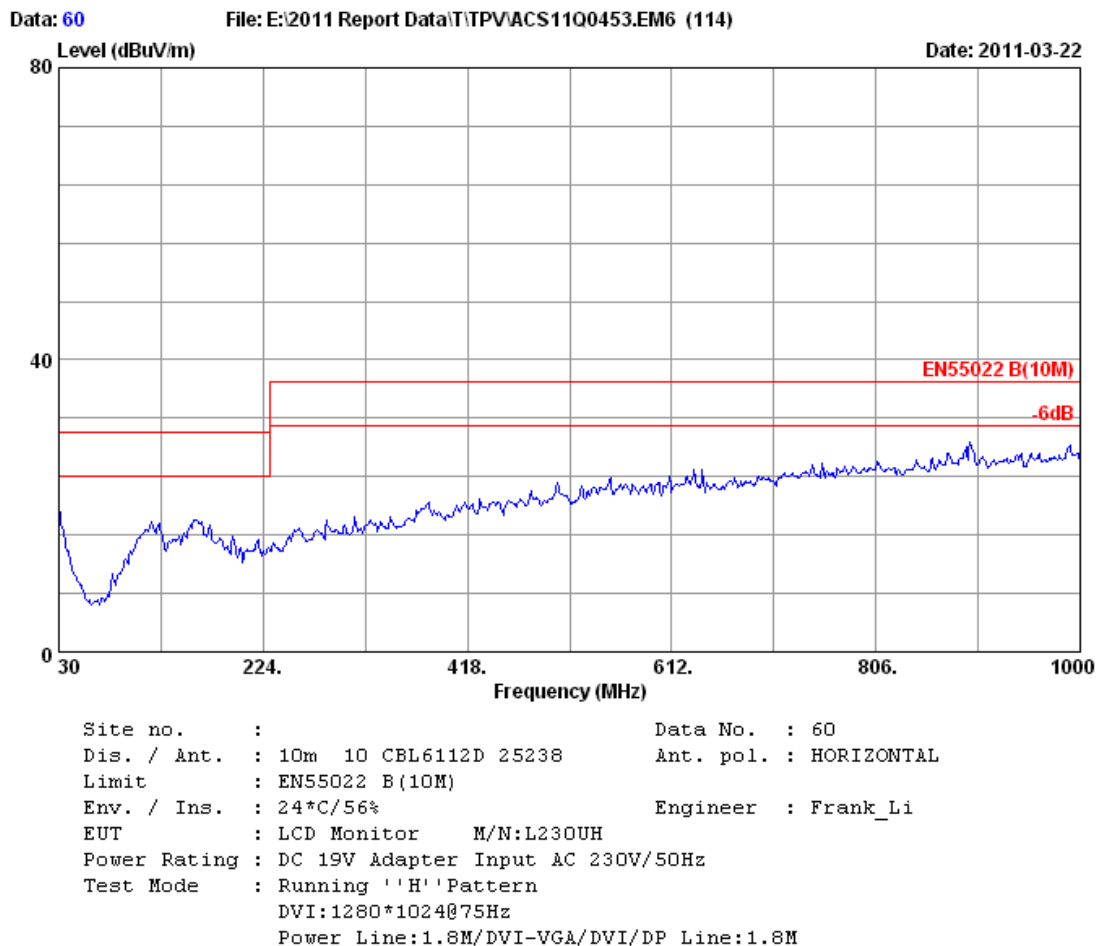
For frequency range 1GHz~6GHz

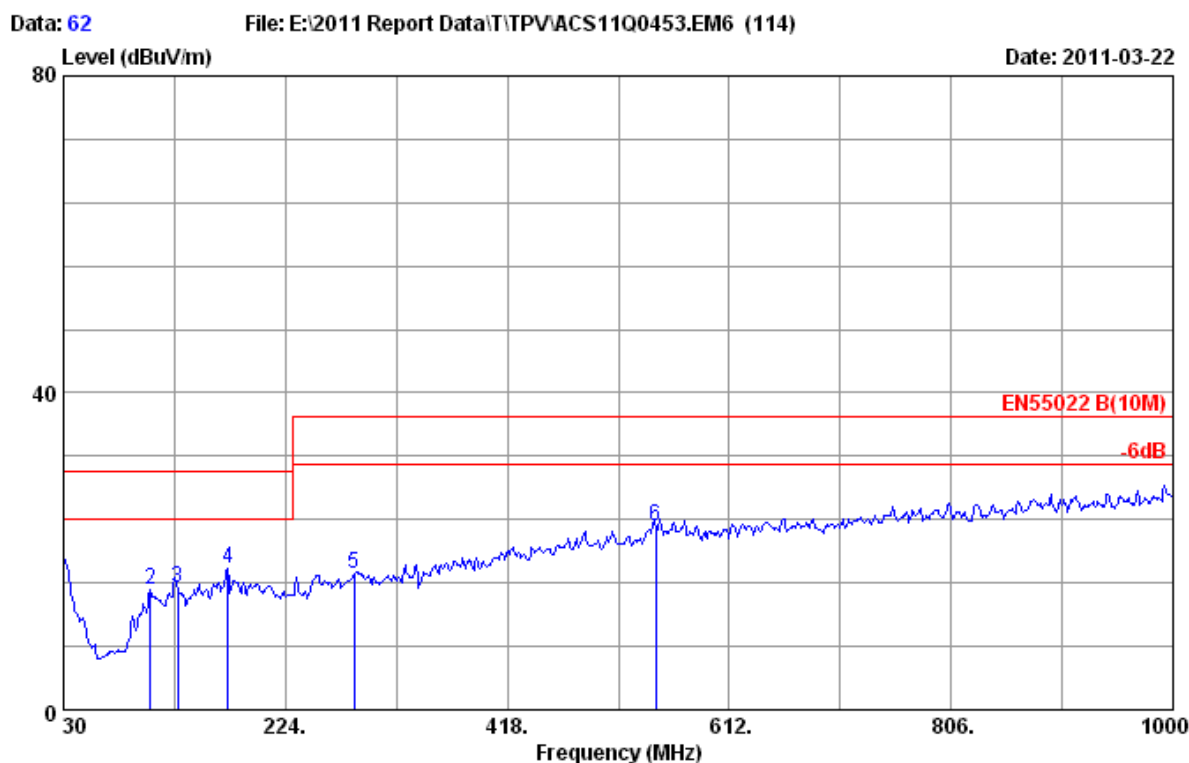
The EUT with below test mode were measured within Anechoic Chamber and the test results listed in next pages

Test Date: Mar.22, 2011 Temperature: 24℃ Humidity: 56%

No.	Panel	Cable Lenght	Input Port	Resolution & Frequency	Reference Test Data No.	
					Horizontal	Vertical
1.	Horizontal	1.8m	DVI	1920*1080/60Hz	#87, #88	#89, #90
2.		1.8m	Display	1920*1080/60Hz	#83, #84	#85, #86
3.		1.8m	DVI-VGA	1920*1080/60Hz	#91, #92	#93, #94
4.	Vertical	1.8m	DVI-VGA	1080*1920/60Hz	#95, #96	#97, #98



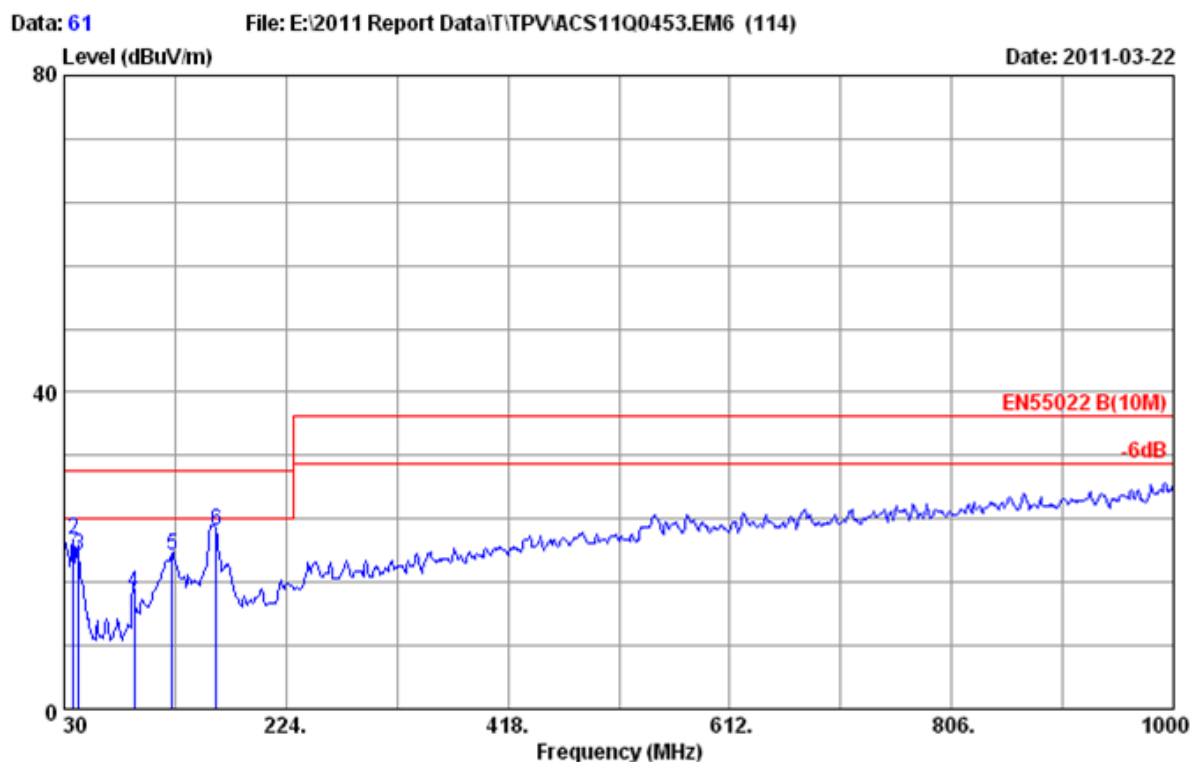




Site no. : Data No. : 62
 Dis. / Ant. : 10m 10 CBL6112D 25238 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running ''H''Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.00	0.75	0.37	20.12	30.00	9.88	QP
2	105.660	11.46	1.49	2.21	15.16	30.00	14.84	QP
3	129.910	11.60	1.69	2.10	15.39	30.00	14.61	QP
4	173.560	9.48	2.04	6.41	17.93	30.00	12.07	QP
5	284.140	12.88	2.93	1.36	17.17	37.00	19.83	QP
6	547.980	18.72	4.41	0.02	23.15	37.00	13.85	QP

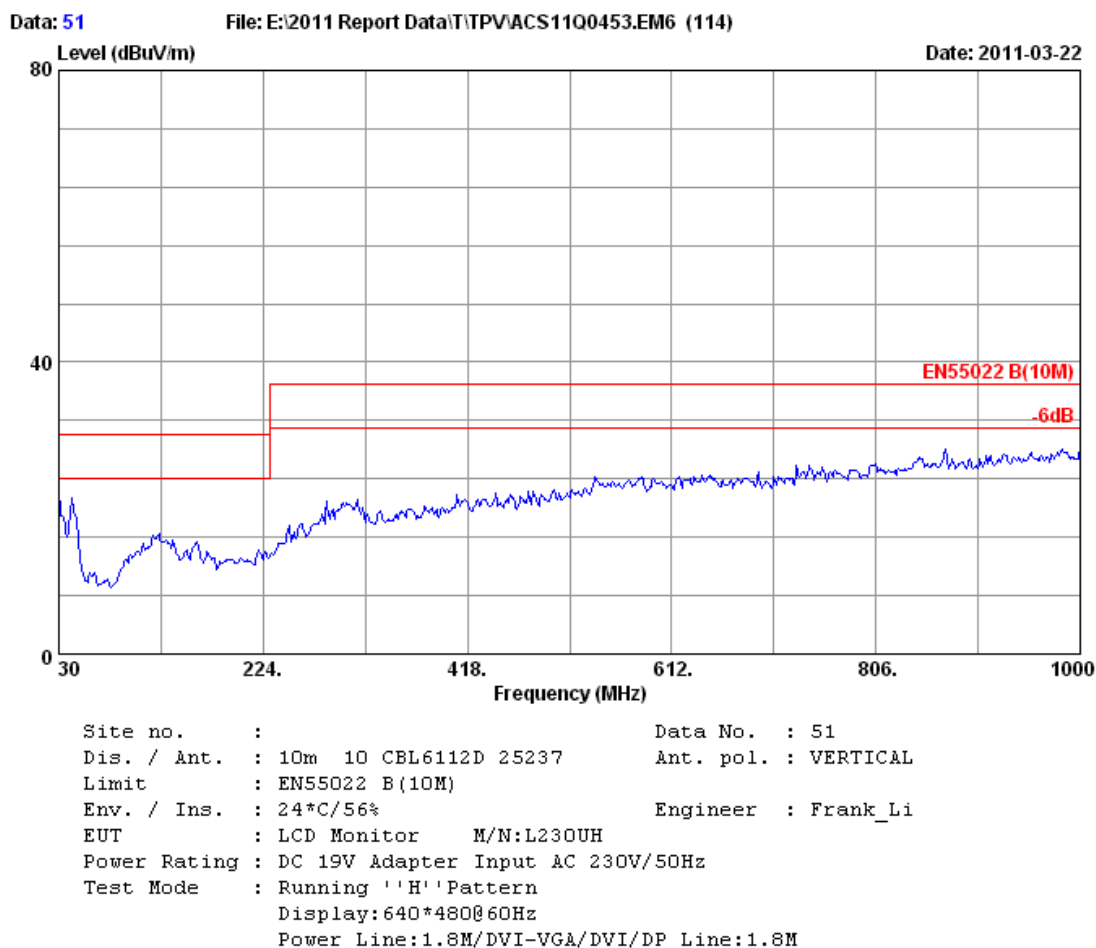
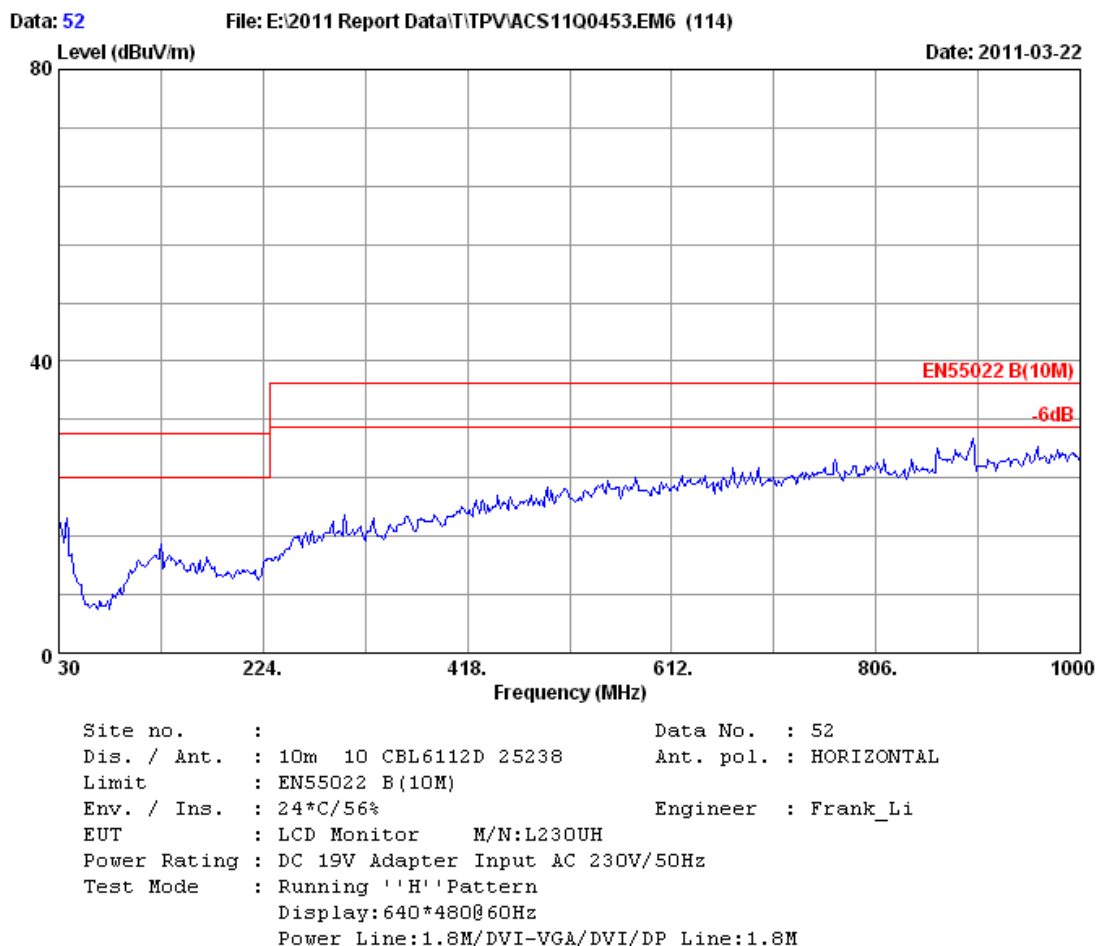
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

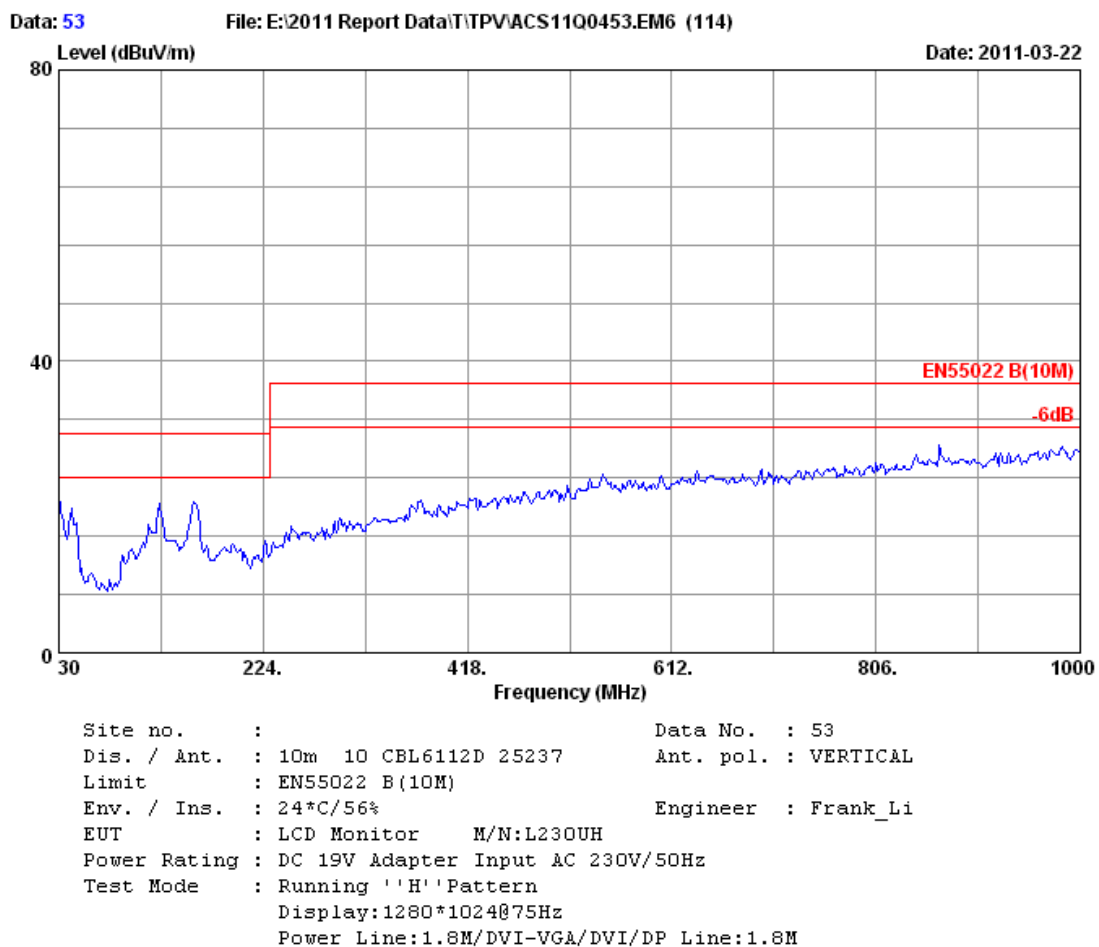
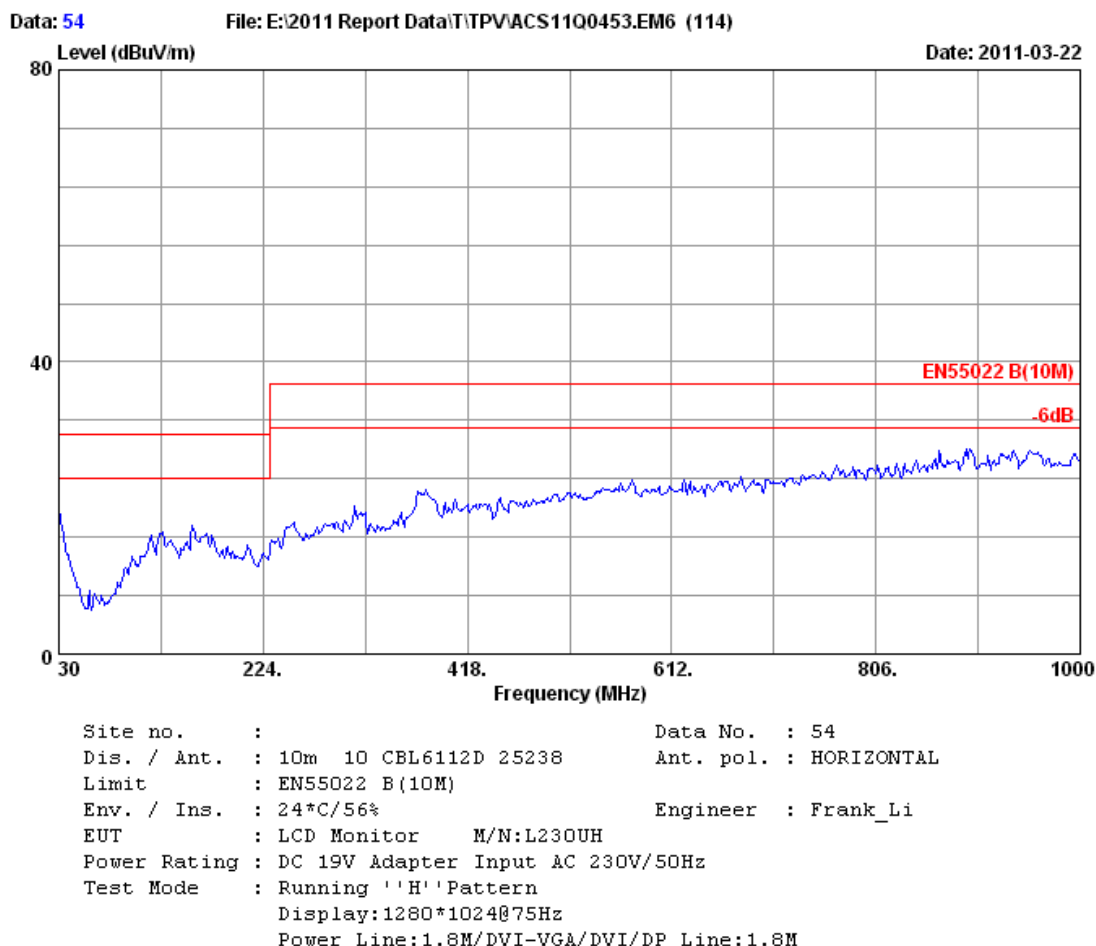


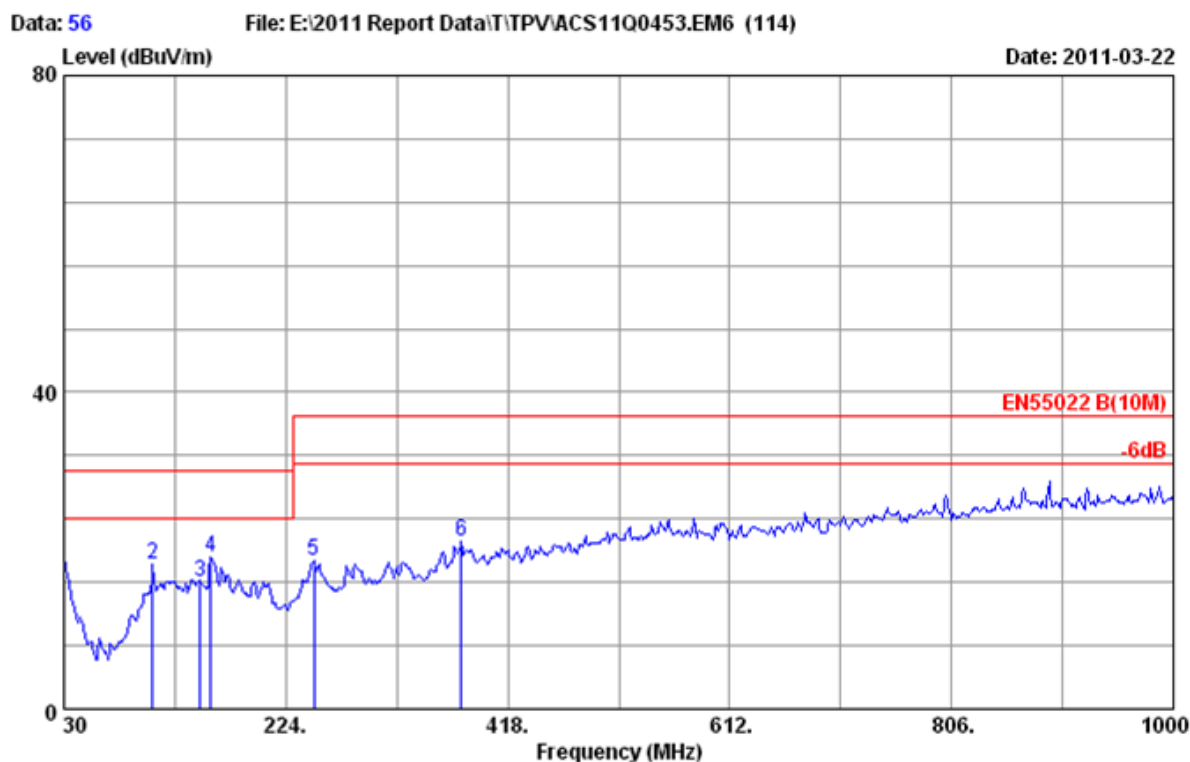
Site no. : Data No. : 61
 Dis. / Ant. : 10m 10 CBL6112D 25237 Ant. pol. : VERTICAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running ''H''Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.10	0.56	1.66	21.32	30.00	8.68	QP
2	37.760	13.62	0.62	7.05	21.29	30.00	8.71	QP
3	42.610	11.20	0.65	7.55	19.40	30.00	10.60	QP
4	91.110	9.28	1.03	4.44	14.75	30.00	15.25	QP
5	124.090	12.50	1.28	5.70	19.48	30.00	10.52	QP
6	162.890	9.95	1.50	11.02	22.47	30.00	7.53	QP

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



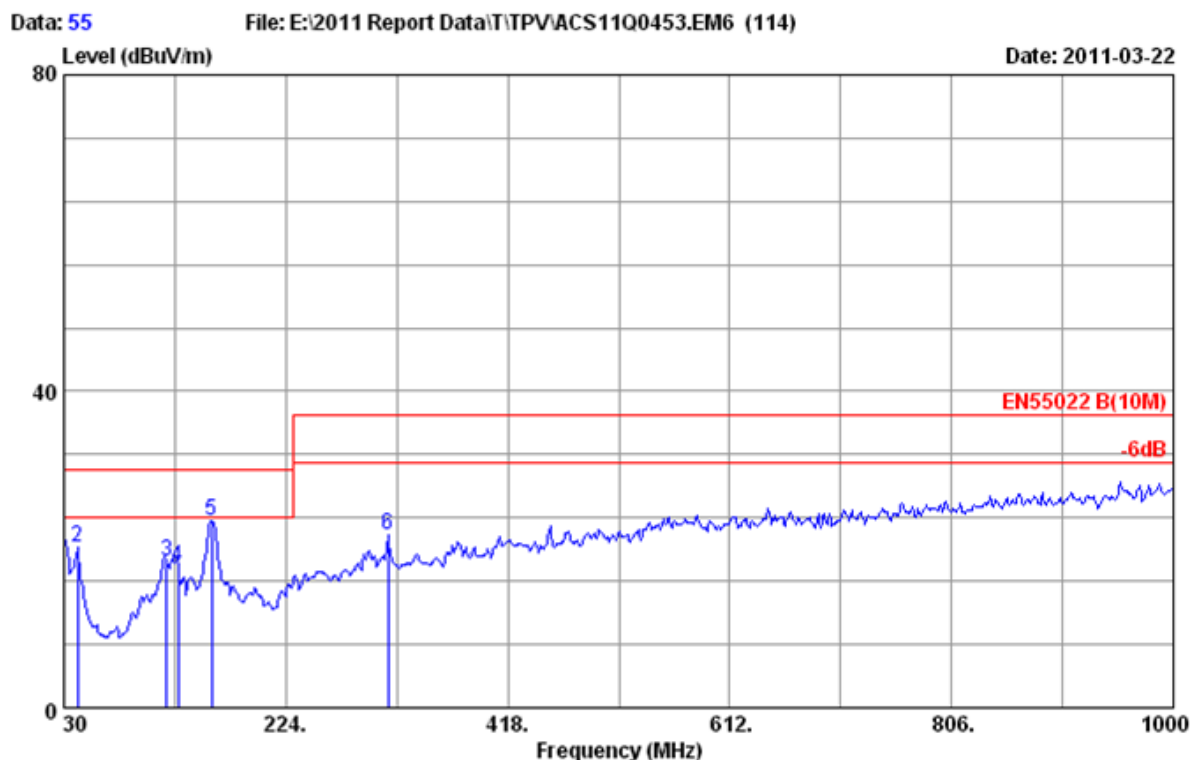




Site no. : Data No. : 56
 Dis. / Ant. : 10m 10 CBL6112D 25238 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.00	0.75	0.21	19.96	30.00	10.04	QP
2	107.600	11.58	1.50	5.23	18.31	30.00	11.69	QP
3	149.310	10.44	1.85	3.84	16.13	30.00	13.87	QP
4	158.040	10.18	1.92	6.97	19.07	30.00	10.93	QP
5	248.250	12.12	2.64	3.93	18.69	37.00	18.31	QP
6	377.260	14.84	3.54	2.79	21.17	37.00	15.83	QP

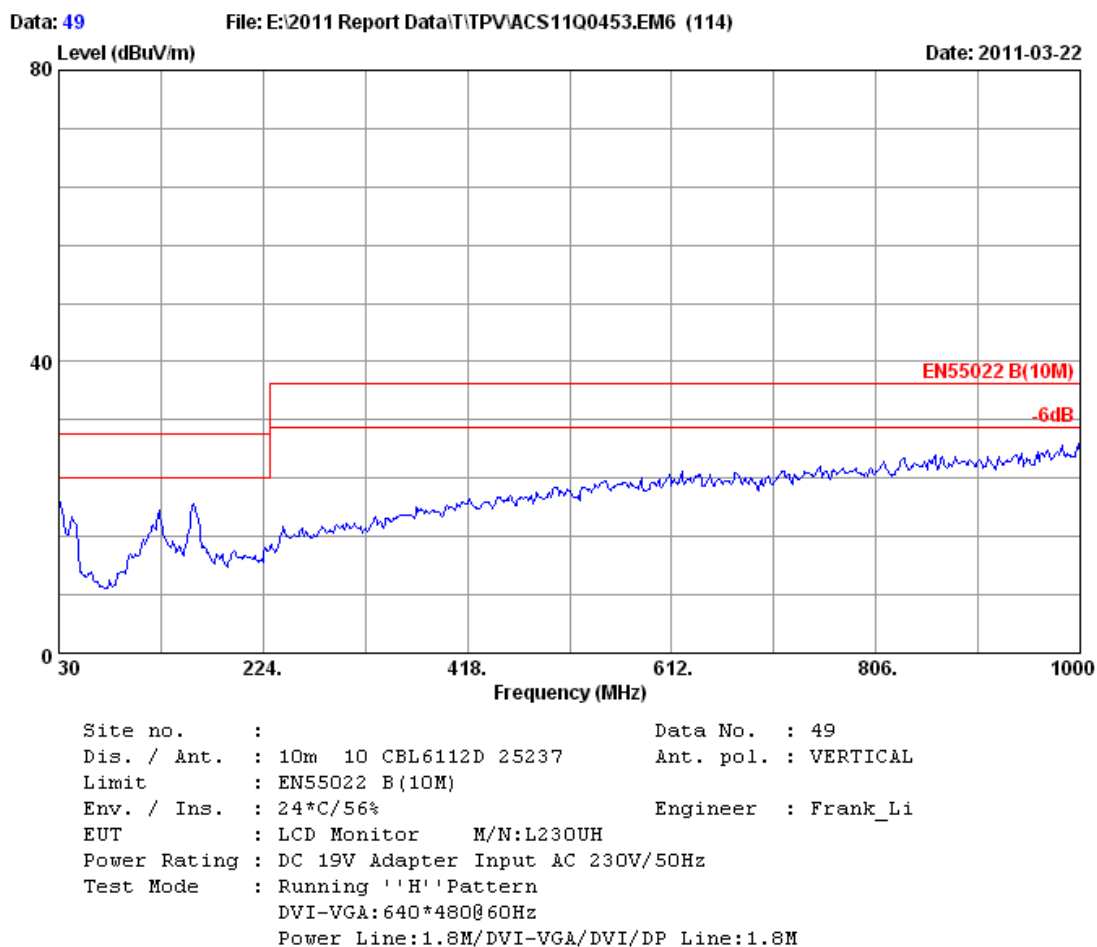
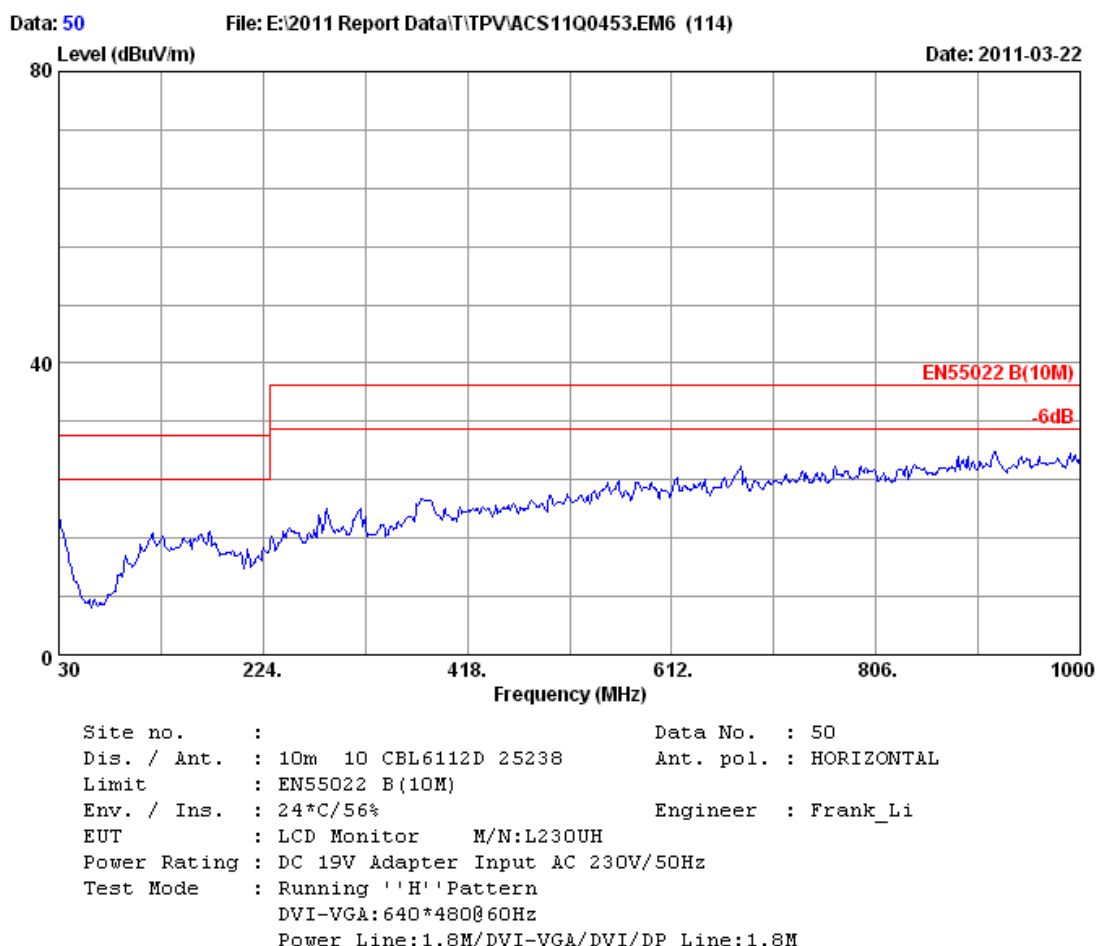
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

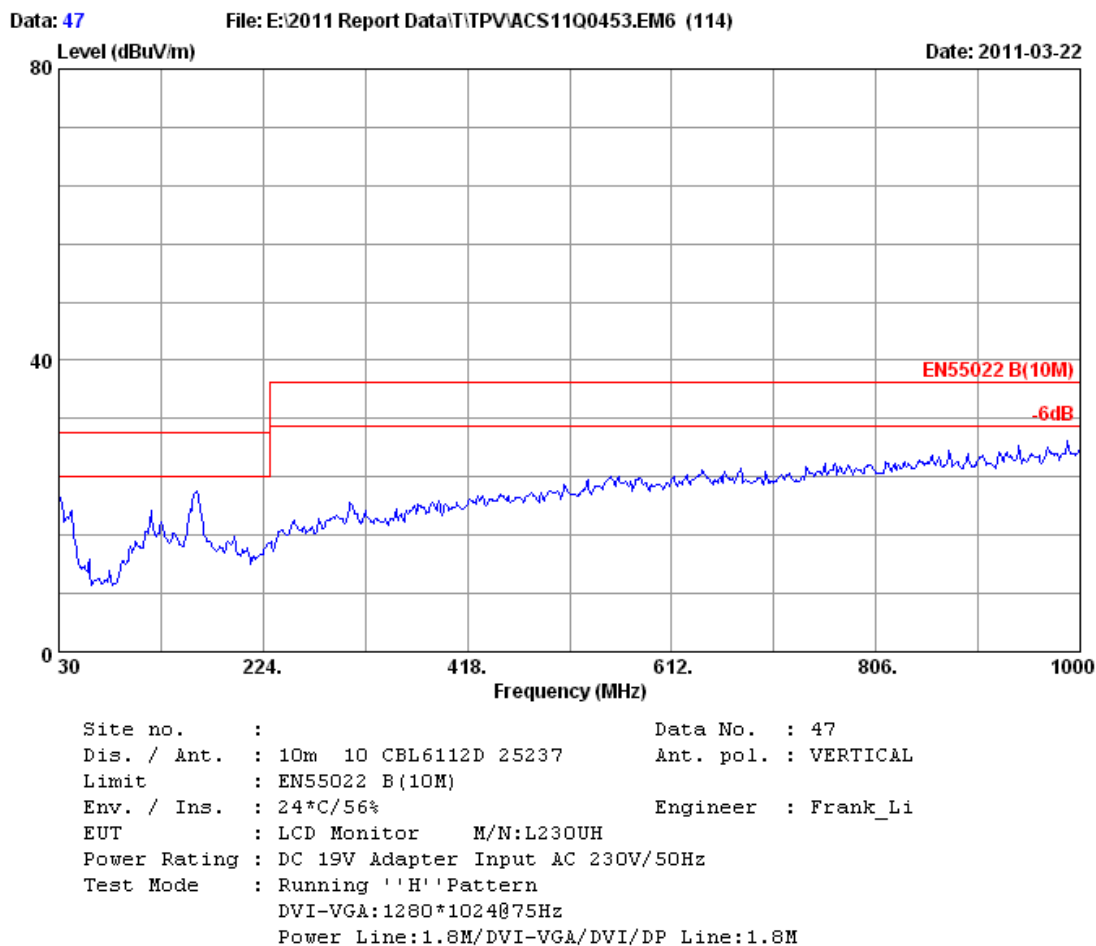
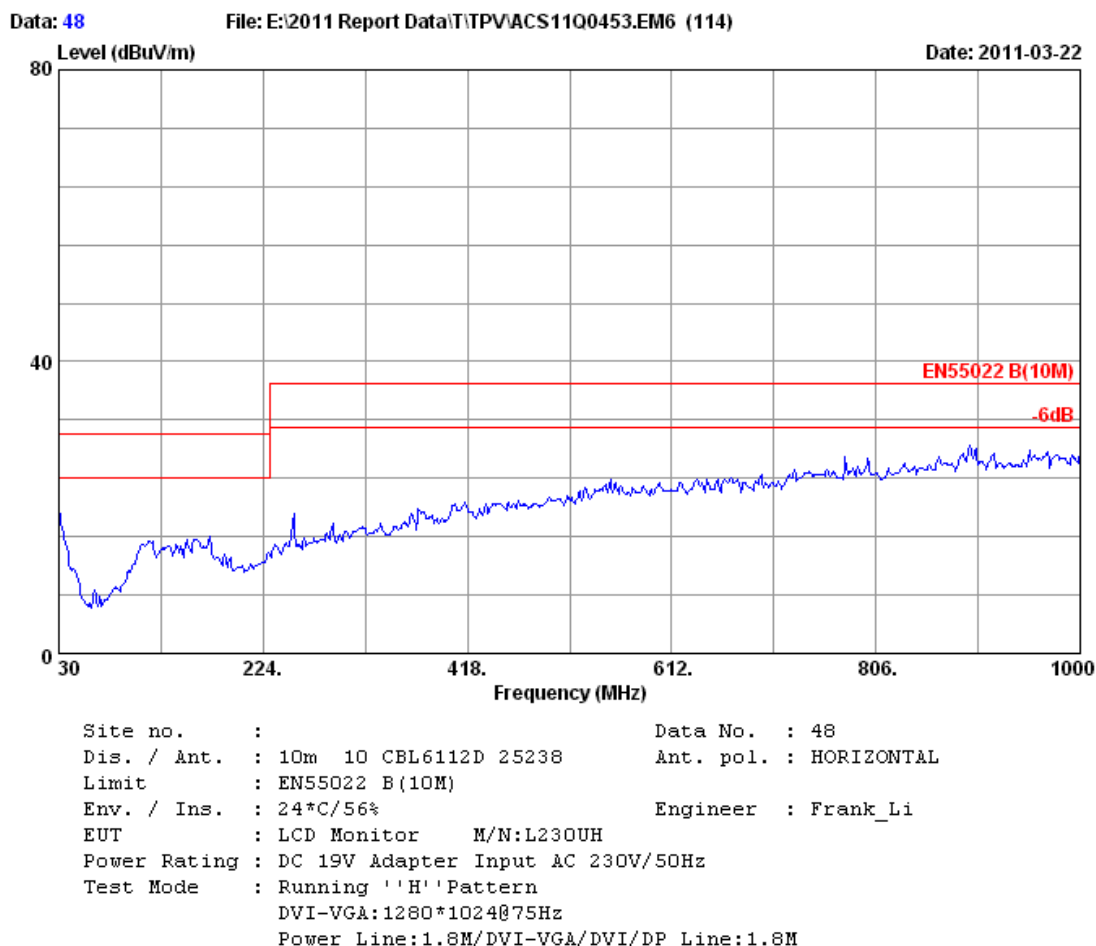


Site no. : Data No. : 55
 Dis. / Ant. : 10m 10 CBL6112D 25237 Ant. pol. : VERTICAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.10	0.56	1.33	20.99	30.00	9.01	QP
2	41.640	11.57	0.65	8.16	20.38	30.00	9.62	QP
3	120.210	12.50	1.25	4.69	18.44	30.00	11.56	QP
4	129.910	12.30	1.32	4.22	17.84	30.00	12.16	QP
5	159.010	10.12	1.48	11.92	23.52	30.00	6.48	QP
6	313.240	13.44	2.27	6.14	21.85	37.00	15.15	QP

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

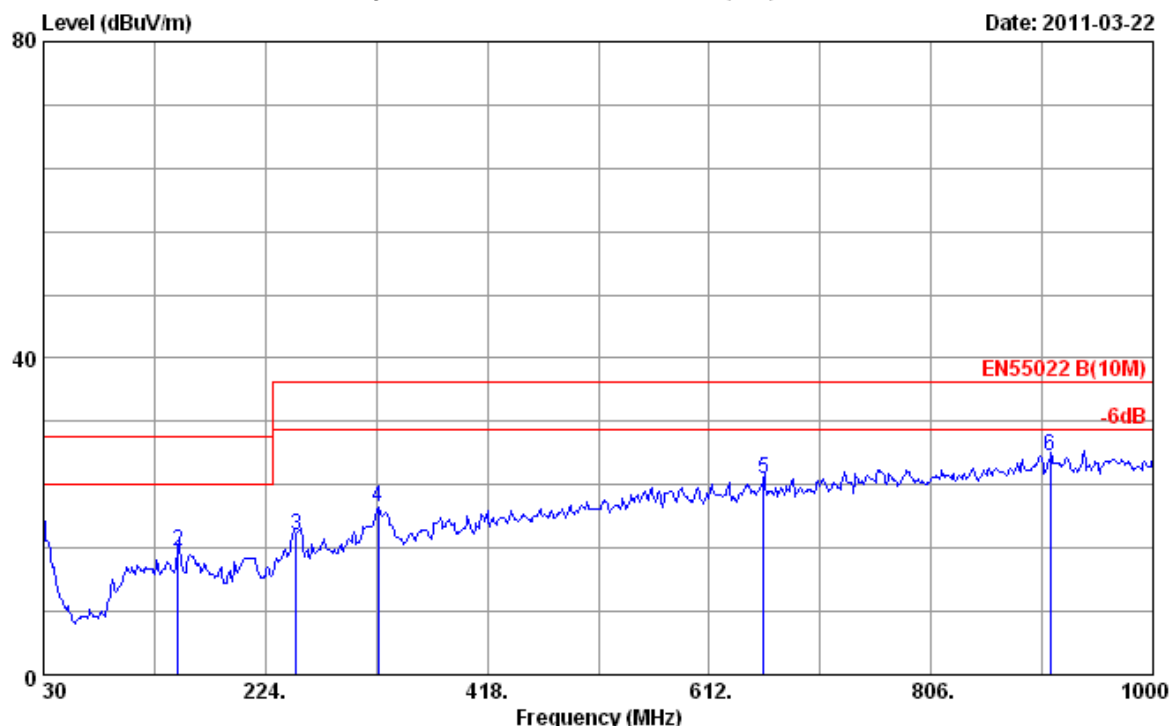




Data: 46

File: E:\2011 Report Data\T\TPV\ACS1100453.EM6 (114)

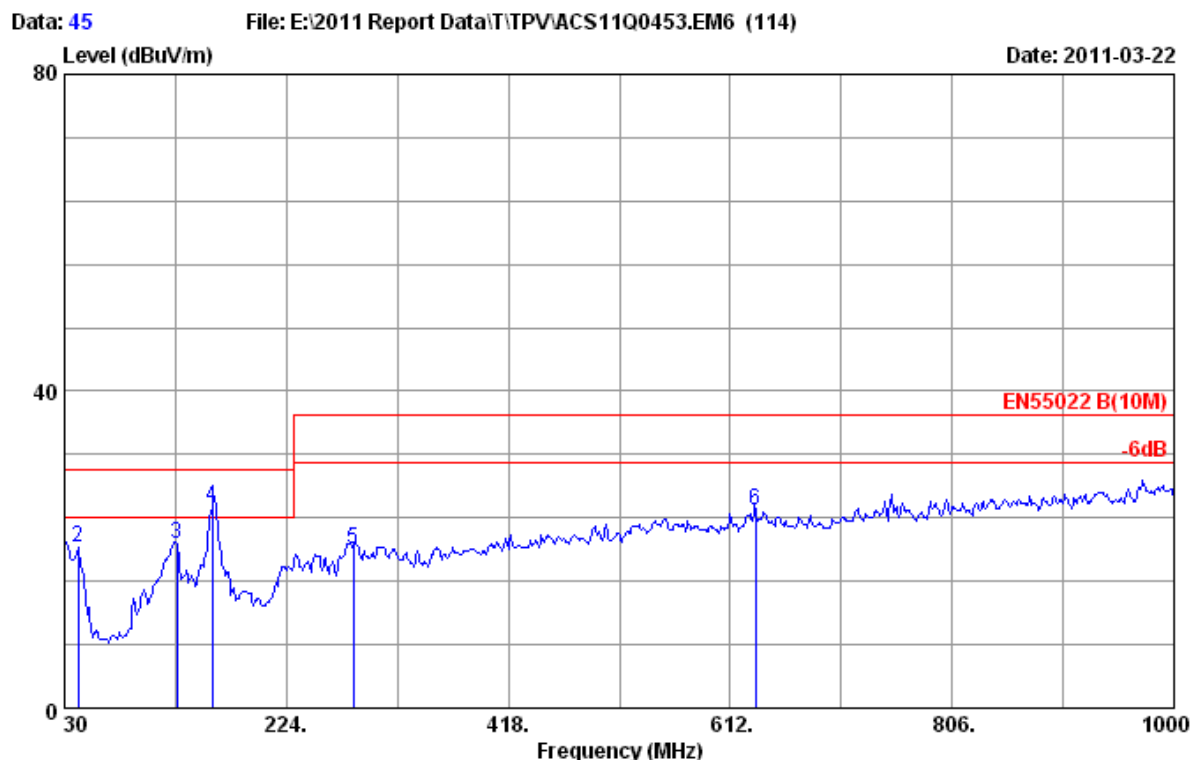
Date: 2011-03-22



Site no. : Data No. : 46
 Dis. / Ant. : 10m 10 CBL6112D 25238 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.00	0.75	0.74	20.49	30.00	9.51	QP
2	147.370	10.48	1.84	3.30	15.62	30.00	14.38	QP
3	251.160	12.38	2.67	2.63	17.68	37.00	19.32	QP
4	322.940	13.70	3.20	4.16	21.06	37.00	15.94	QP
5	659.530	18.80	4.94	1.03	24.77	37.00	12.23	QP
6	909.790	20.50	6.00	1.10	27.60	37.00	9.40	QP

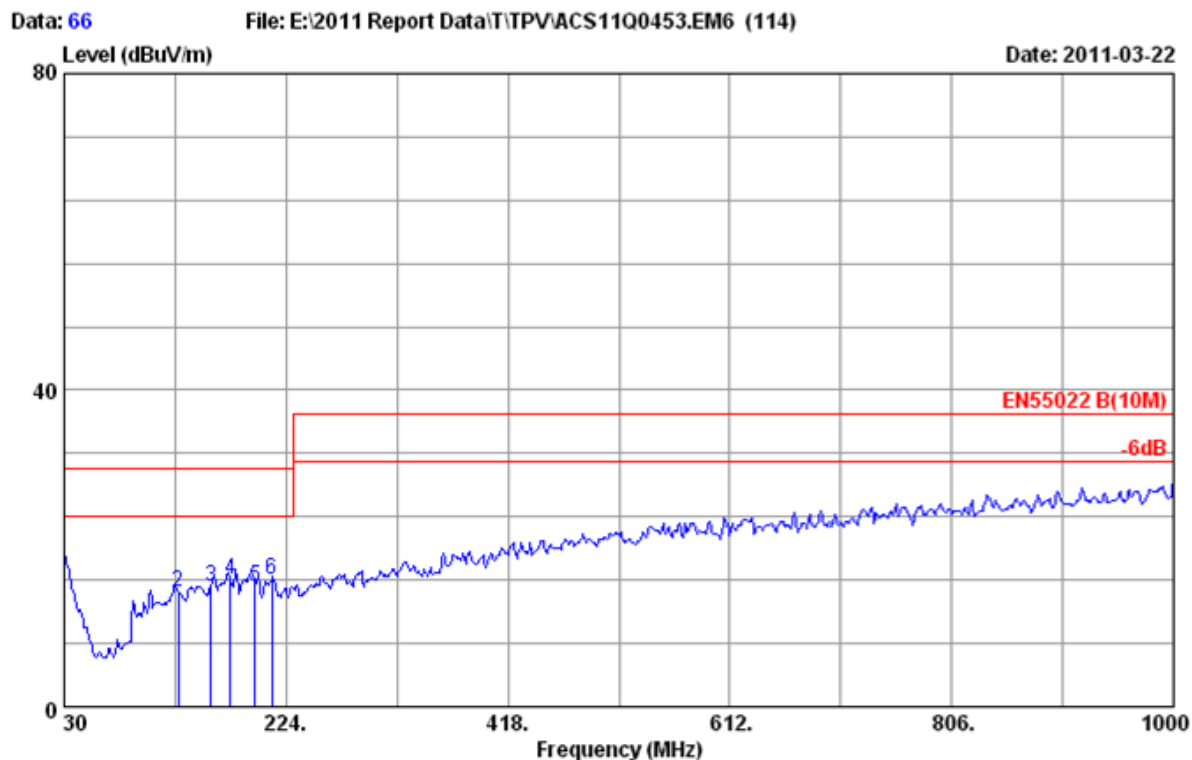
- Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. The worst emission was detected at 909.790MHz with corrected signal level of 27.60dBμV/m (Limit is 37.00dBμV/m) when the antenna was at horizontal polarization and at 2.1m high and the turn table was at 154°.
 4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.



Site no. : Data No. : 45
 Dis. / Ant. : 10m 10 CBL6112D 25237 Ant. pol. : VERTICAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.10	0.56	1.44	21.10	30.00	8.90	QP
2	41.640	11.57	0.65	8.01	20.23	30.00	9.77	QP
3	127.970	12.38	1.30	7.13	20.81	30.00	9.19	QP
4	159.010	10.12	1.48	13.77	25.37	30.00	4.63	QP
5	282.200	12.84	2.09	5.09	20.02	37.00	16.98	QP
6	634.310	19.00	3.42	2.54	24.96	37.00	12.04	QP

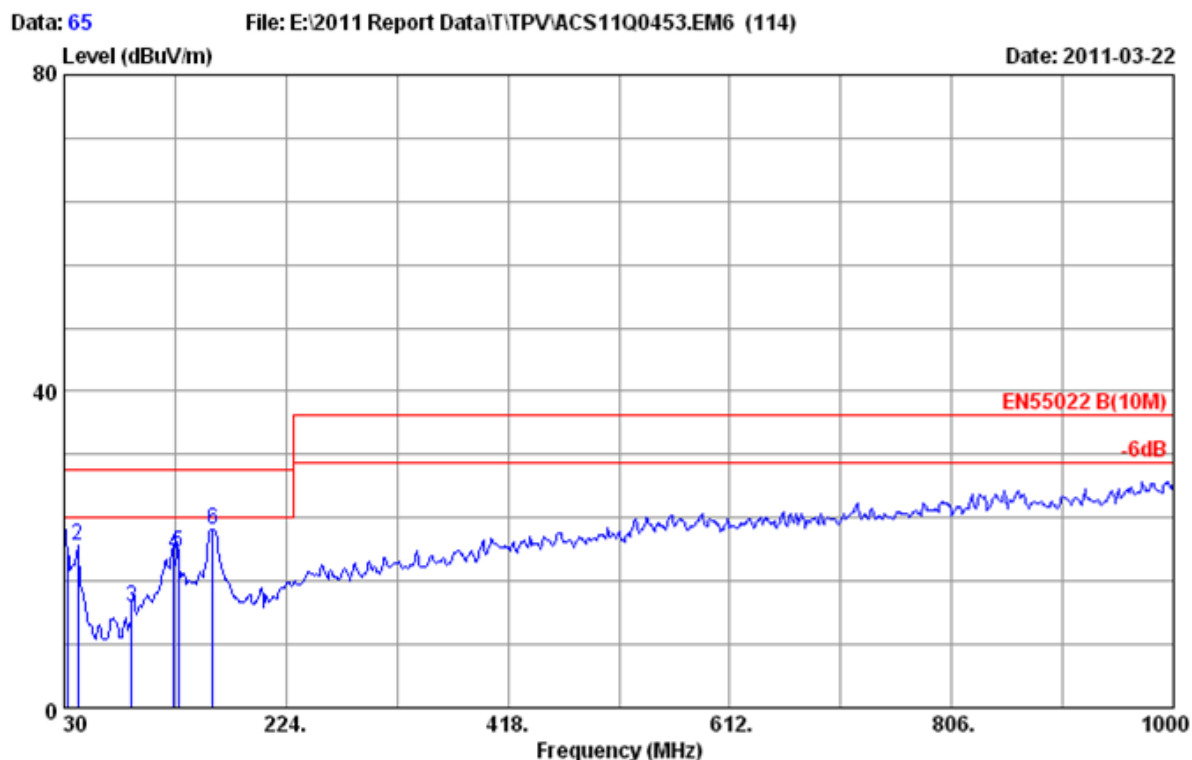
- Remarks:
1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. The worst emission was detected at 159.010MHz with corrected signal level of 25.37dBμV/m (Limit is 30.00dBμV/m) when the antenna was at vertical polarization and at 1.0m high and the turn table was at 332°.
 4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.



Site no. : Data No. : 66
 Dis. / Ant. : 10m 10 CBL6112D 25238 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.5M/DVI-VGA/DVI/DP Line:1.5M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m)	Limits (dBuV/m)	Magin (dB)	Remark
1	30.000	19.00	0.75	0.63	20.38	30.00	9.62	QP
2	129.910	11.60	1.69	1.15	14.44	30.00	15.56	QP
3	158.040	10.18	1.92	2.98	15.08	30.00	14.92	QP
4	175.500	9.40	2.06	4.63	16.09	30.00	13.91	QP
5	196.840	9.28	2.23	3.61	15.12	30.00	14.88	QP
6	211.390	8.94	2.34	4.79	16.07	30.00	13.93	QP

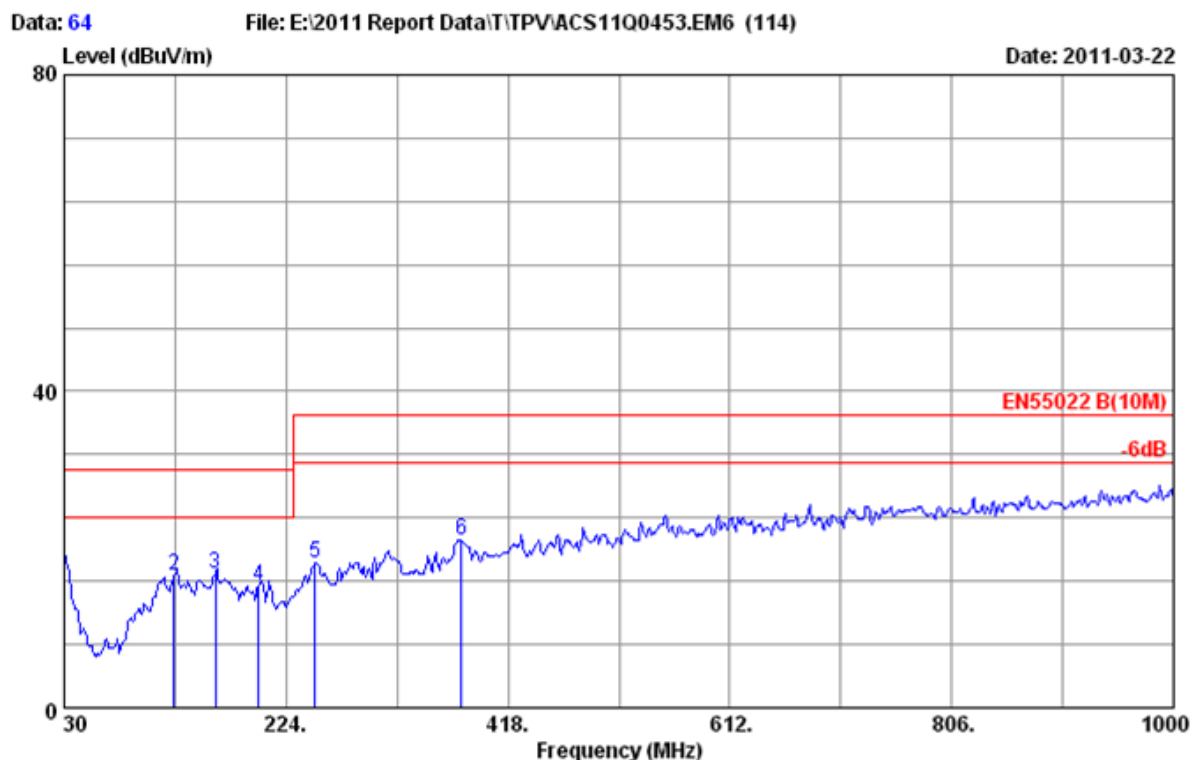
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Data No. : 65
 Dis. / Ant. : 10m 10 CBL6112D 25237 Ant. pol. : VERTICAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.5M/DVI-VGA/DVI/DP Line:1.5M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	32.910	17.00	0.58	2.32	19.90	30.00	10.10	QP
2	41.640	11.57	0.65	8.28	20.50	30.00	9.50	QP
3	89.170	8.74	1.01	3.04	12.79	30.00	17.21	QP
4	126.030	12.46	1.29	5.53	19.28	30.00	10.72	QP
5	129.910	12.30	1.32	5.93	19.55	30.00	10.45	QP
6	159.980	10.10	1.49	10.97	22.56	30.00	7.44	QP

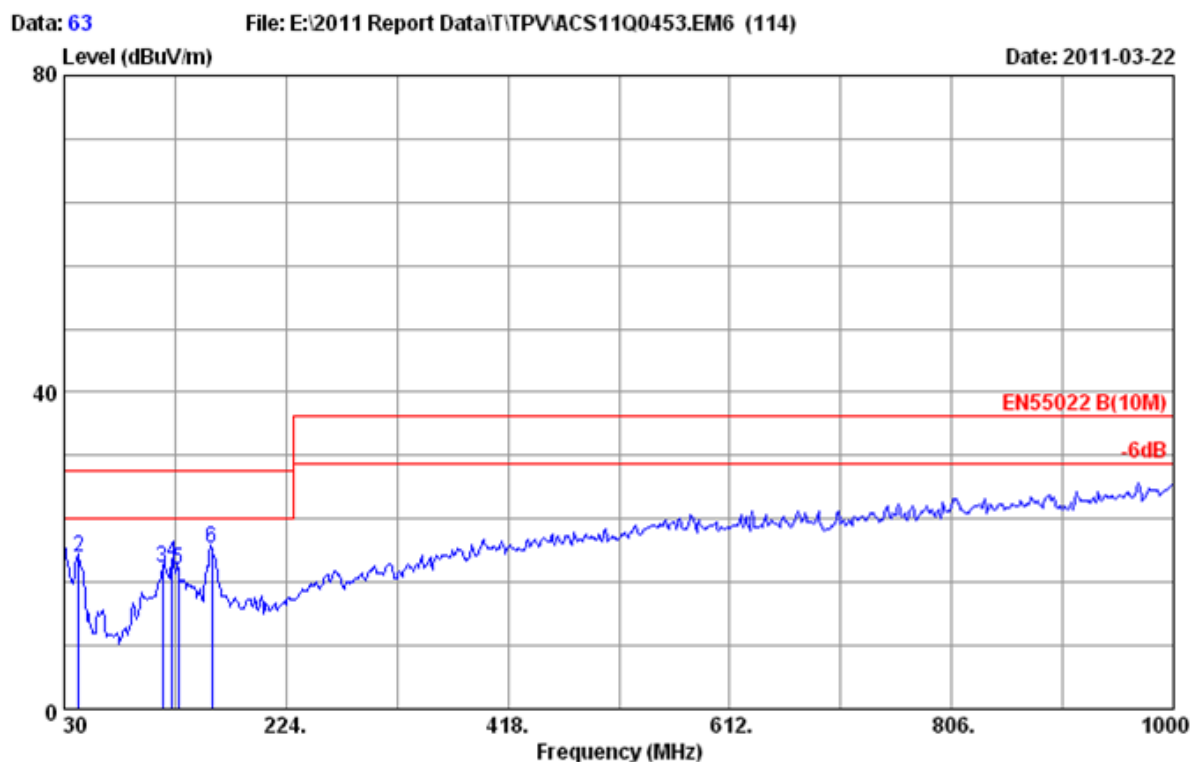
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Data No. : 64
 Dis. / Ant. : 10m 10 CBL6112D 25238 Ant. pol. : HORIZONTAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel Is Vertical

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.00	0.75	0.91	20.66	30.00	9.34	QP
2	126.030	12.16	1.66	2.85	16.67	30.00	13.33	QP
3	161.920	10.03	1.95	4.98	16.96	30.00	13.04	QP
4	199.750	9.40	2.25	3.79	15.44	30.00	14.56	QP
5	249.220	12.21	2.65	3.36	18.22	37.00	18.78	QP
6	377.260	14.84	3.54	2.69	21.07	37.00	15.93	QP

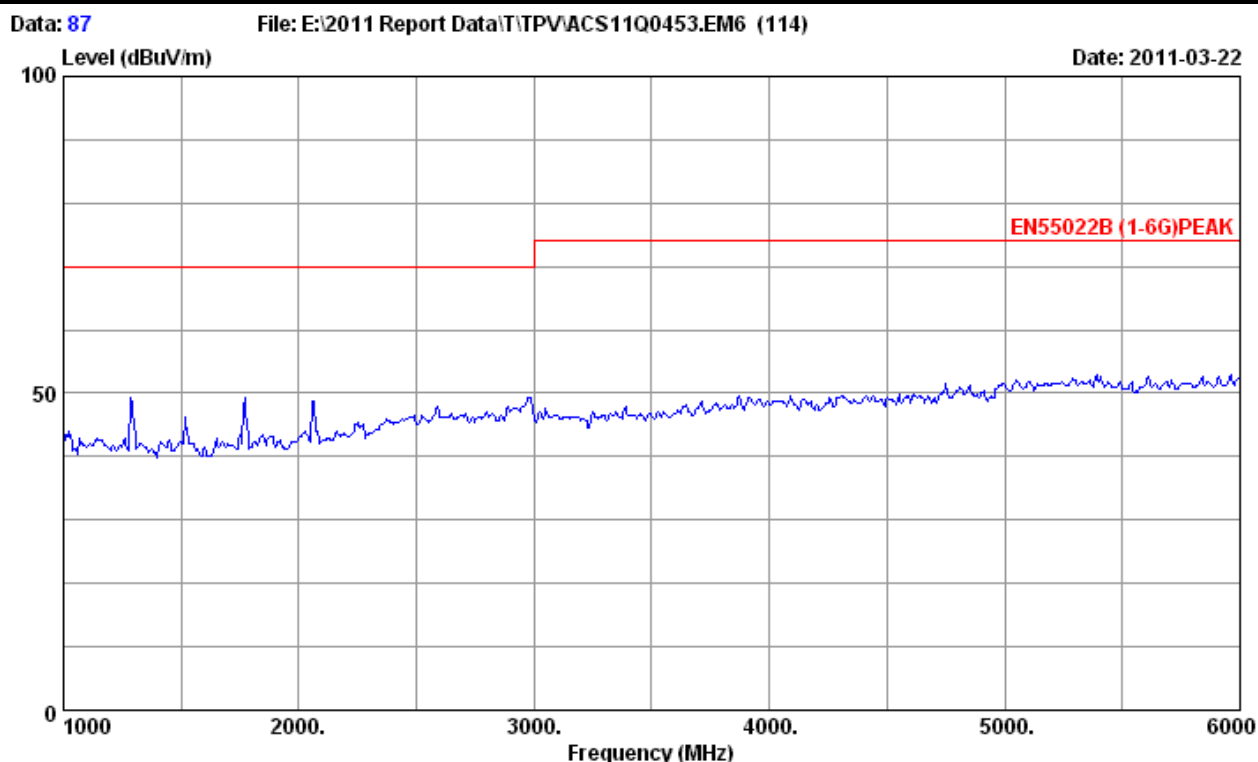
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Data No. : 63
 Dis. / Ant. : 10m 10 CBL6112D 25237 Ant. pol. : VERTICAL
 Limit : EN55022 B(10M)
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel Is Vertical

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.10	0.56	1.26	20.92	30.00	9.08	QP
2	42.610	11.20	0.65	7.26	19.11	30.00	10.89	QP
3	116.330	12.32	1.23	4.32	17.87	30.00	12.13	QP
4	124.090	12.50	1.28	4.61	18.39	30.00	11.61	QP
5	129.910	12.30	1.32	4.02	17.64	30.00	12.36	QP
6	159.010	10.12	1.48	8.75	20.35	30.00	9.65	QP

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

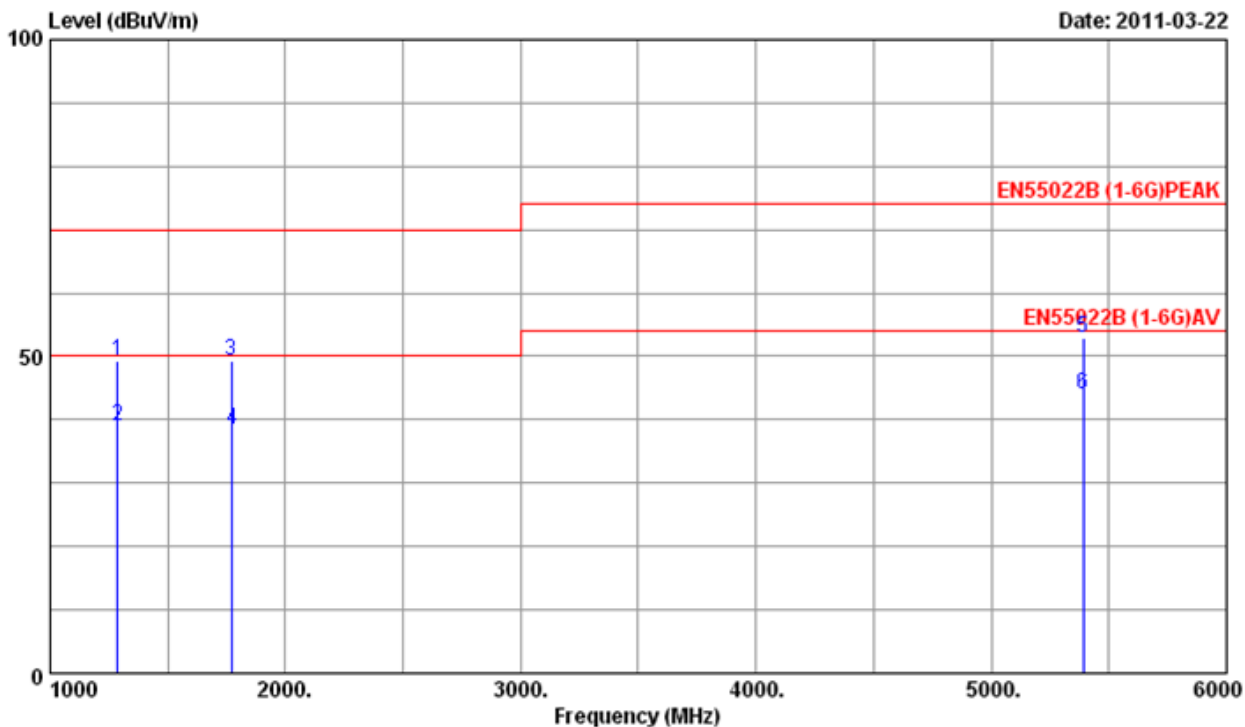


Site no. : 10m Chamber Test Site Data No. : 87
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 88

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

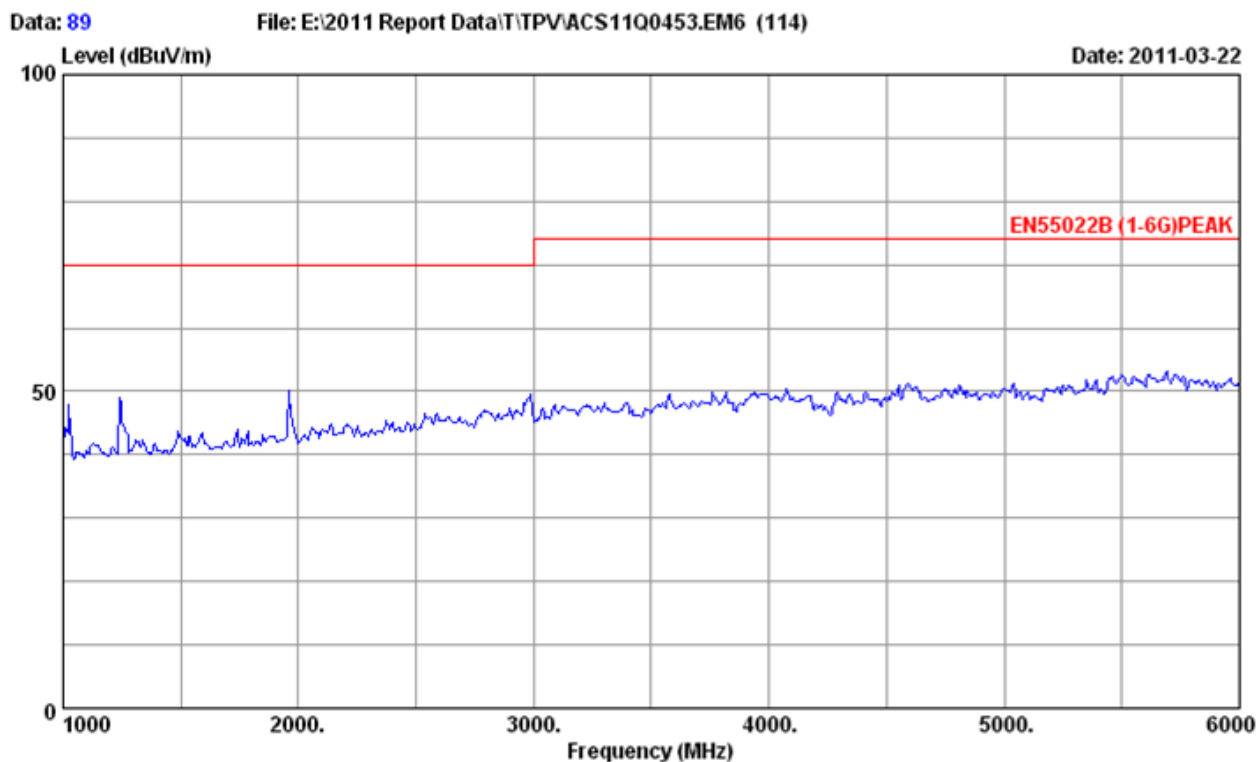
Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 88
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1285.044	25.28	4.35	34.66	54.45	49.42	70.00	20.58	Peak
2	1287.250	25.28	4.35	34.66	43.90	38.87	50.00	11.13	Average
3	1770.006	25.79	5.02	34.08	52.61	49.34	70.00	20.66	Peak
4	1772.552	25.79	5.02	34.08	41.61	38.34	50.00	11.66	Average
5	5390.041	35.21	8.57	34.08	43.21	52.91	74.00	21.09	Peak
6	5391.520	35.21	8.57	34.08	34.21	43.91	54.00	10.09	Average

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

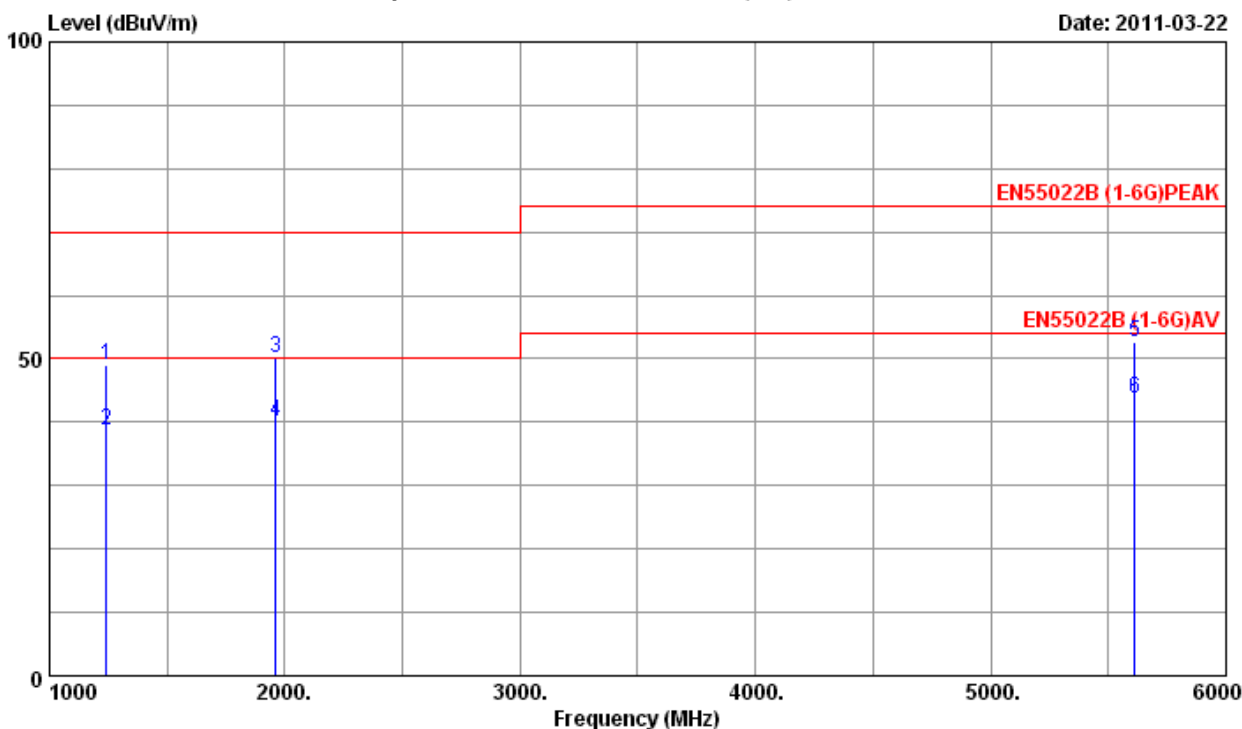


Site no. : 10m Chamber Test Site Data No. : 89
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 90

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 90
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

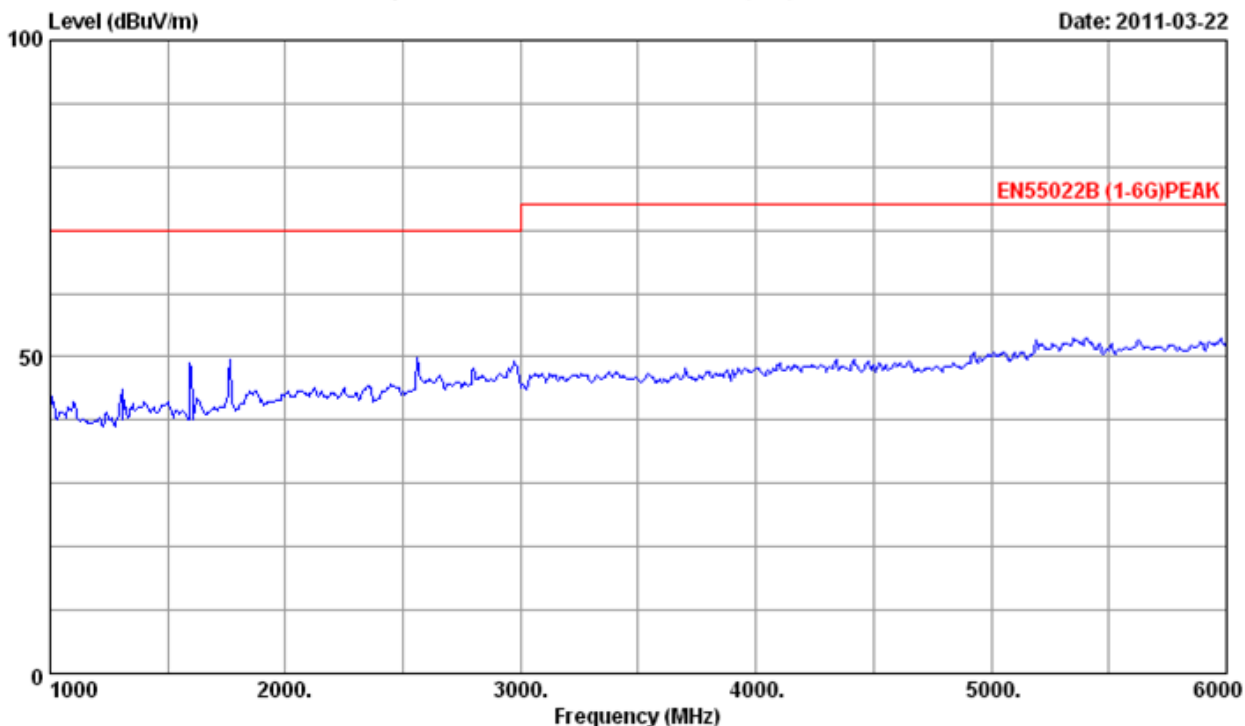
		Ant.	Cable	Amp	Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1240.414	25.30	4.28	34.72	54.13	48.99	70.00	21.01	Peak
2	1243.260	25.30	4.30	34.69	43.91	38.82	50.00	11.18	Average
3	1960.144	26.19	5.26	33.83	52.55	50.17	70.00	19.83	Peak
4	1962.630	26.23	5.29	33.83	42.54	40.23	50.00	9.77	Average
5	5610.440	35.54	8.75	34.17	42.62	52.74	74.00	21.26	Peak
6	5612.663	35.54	8.75	34.17	33.62	43.74	54.00	10.26	Average

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

Data: 83

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

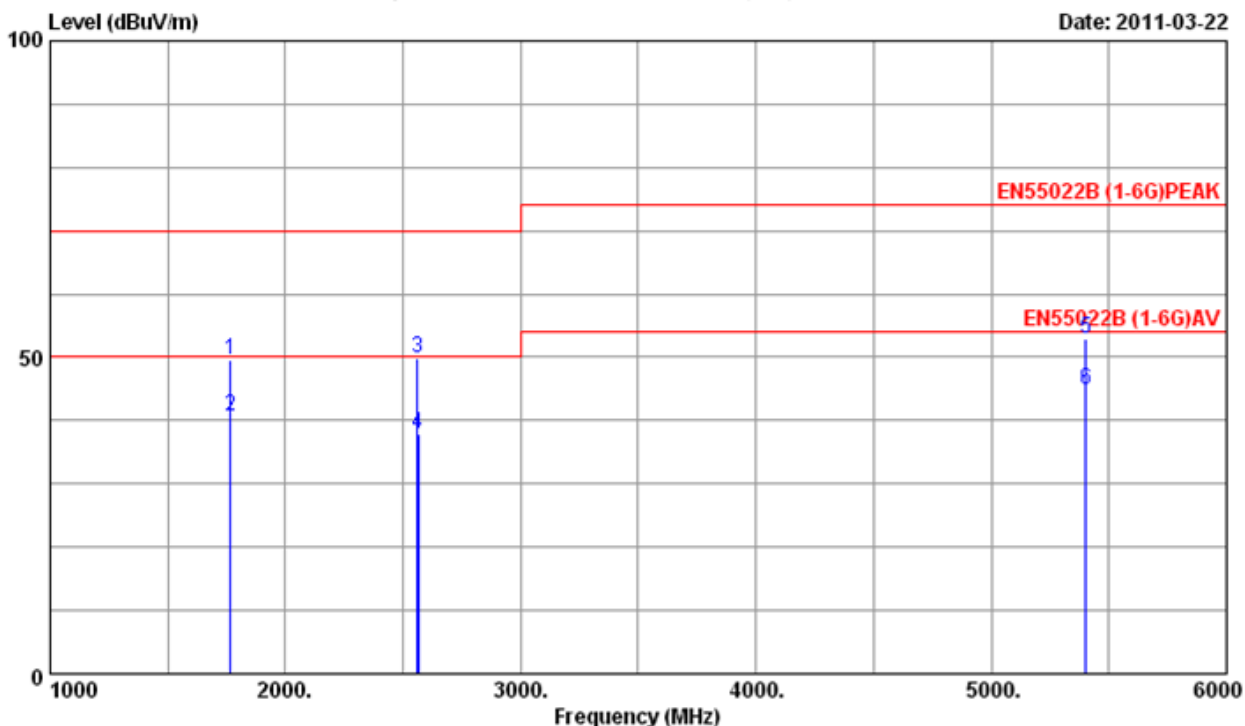


Site no. : 10m Chamber Test Site Data No. : 83
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 84

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 84
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

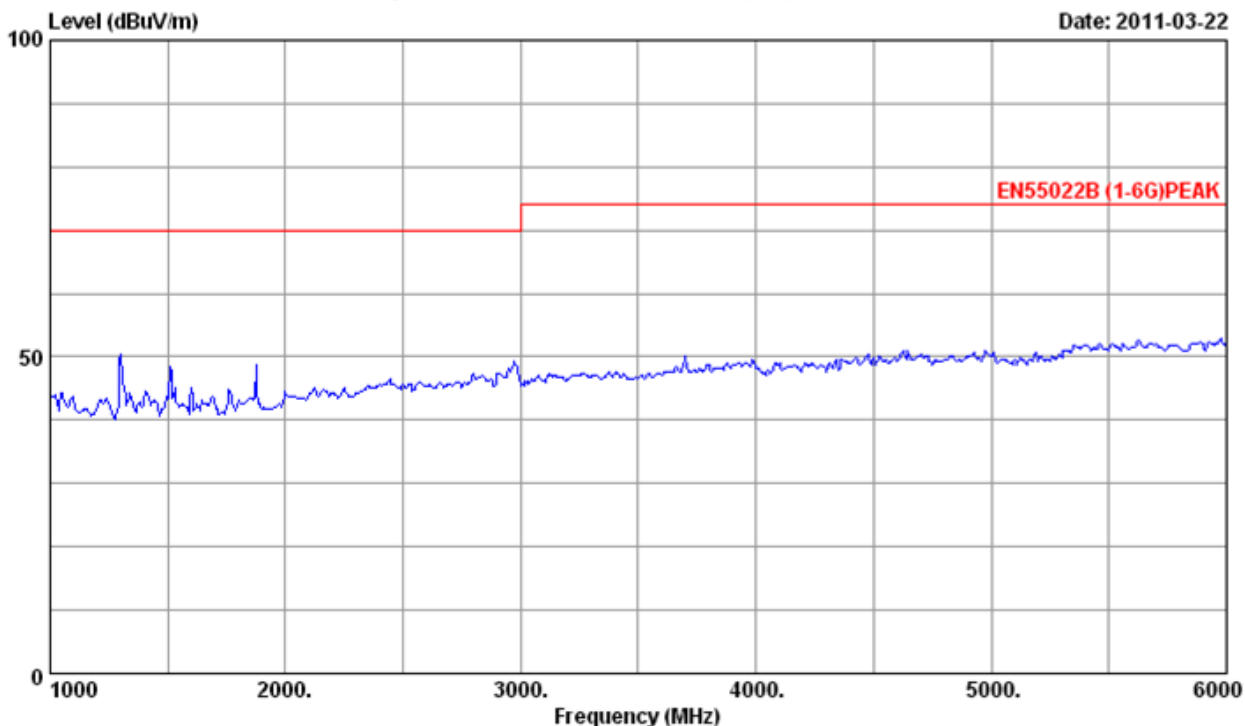
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1765.044	25.79	5.02	34.08	52.92	49.65	70.00	20.35	Peak
2	1767.250	25.79	5.02	34.08	43.92	40.65	50.00	9.35	Average
3	2560.144	29.51	6.10	33.74	47.95	49.82	70.00	20.18	Peak
4	2563.260	29.51	6.10	33.74	35.95	37.82	50.00	12.18	Average
5	5400.444	35.24	8.58	34.09	43.21	52.94	74.00	21.06	Peak
6	5402.630	35.24	8.58	34.09	35.21	44.94	54.00	9.06	Average

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

Data: 85

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

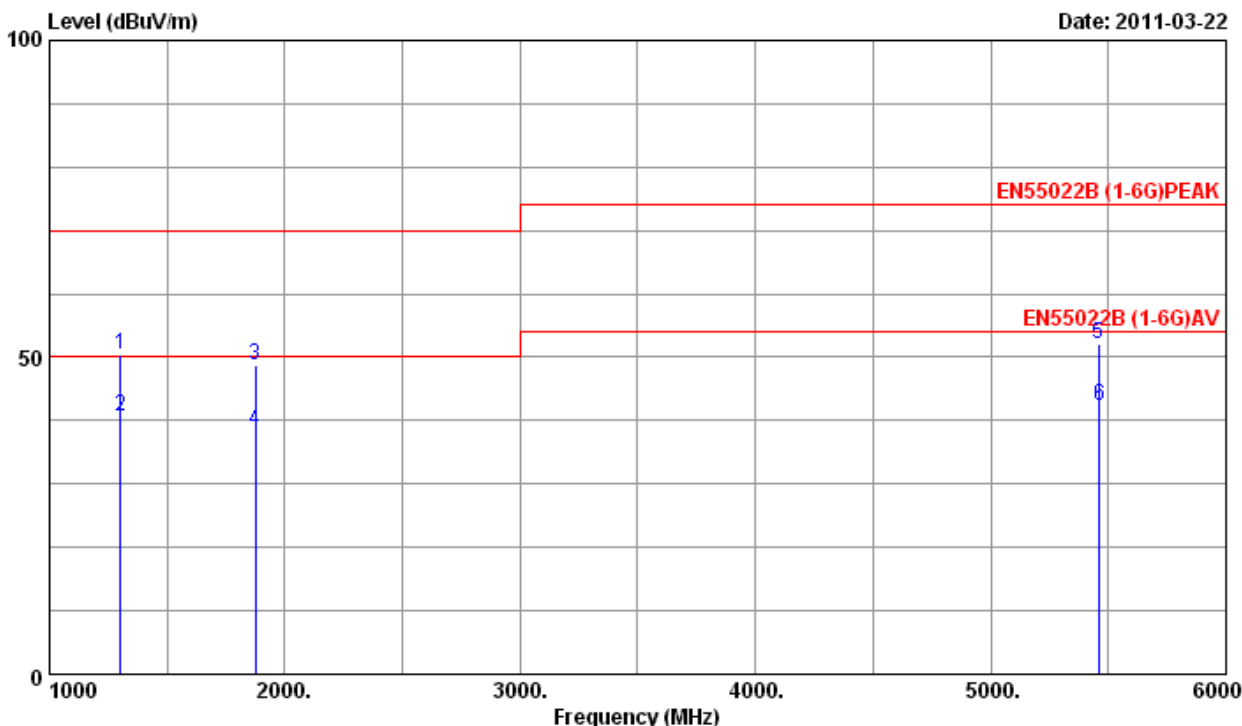


Site no. : 10m Chamber Test Site Data No. : 85
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 86

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 86
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 Display:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

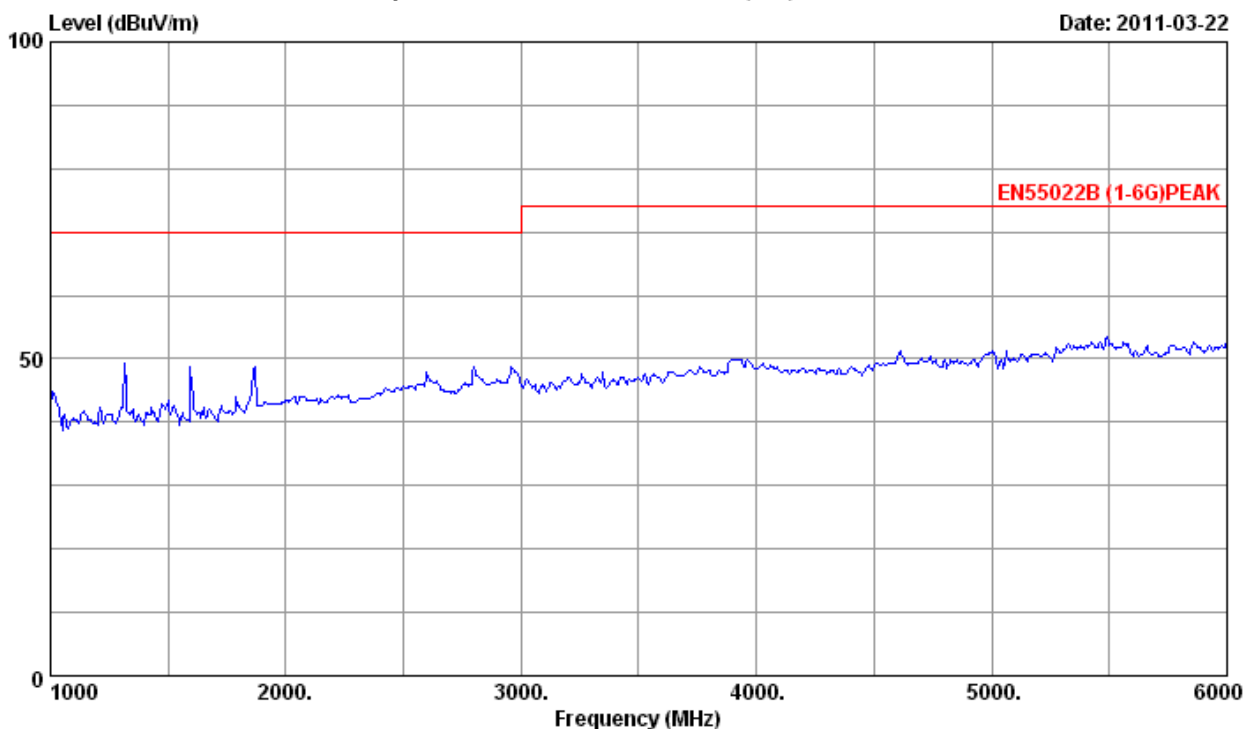
	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1	1300.044	25.28	4.38	34.63	55.51	50.54	70.00	19.46	Peak
2	1303.250	25.28	4.38	34.63	45.51	40.54	50.00	9.46	Average
3	1875.104	26.01	5.17	33.95	51.42	48.65	70.00	21.35	Peak
4	1876.250	26.04	5.17	33.95	41.09	38.35	50.00	11.65	Average
5	5460.045	35.32	8.63	34.11	42.35	52.19	74.00	21.81	Peak
6	5462.566	35.35	8.63	34.11	32.35	42.22	54.00	11.78	Average

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

Data: 91

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

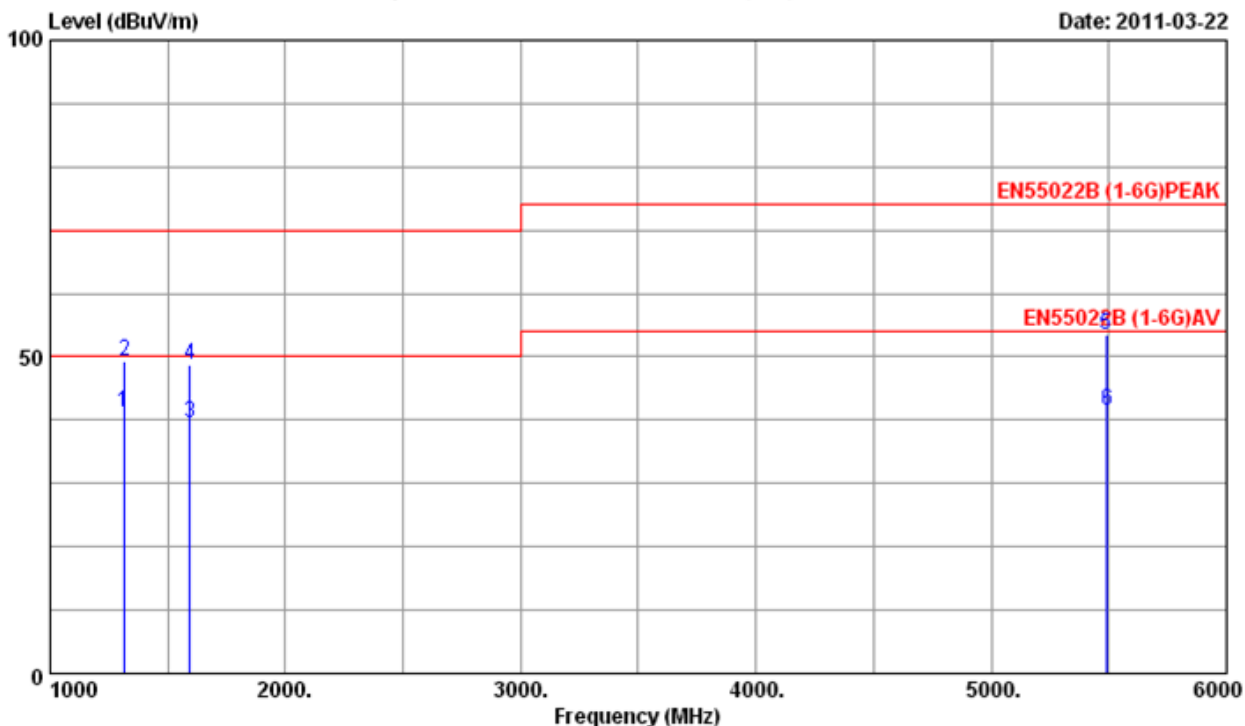


Site no. : 10m Chamber Test Site Data No. : 91
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 92

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 92
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

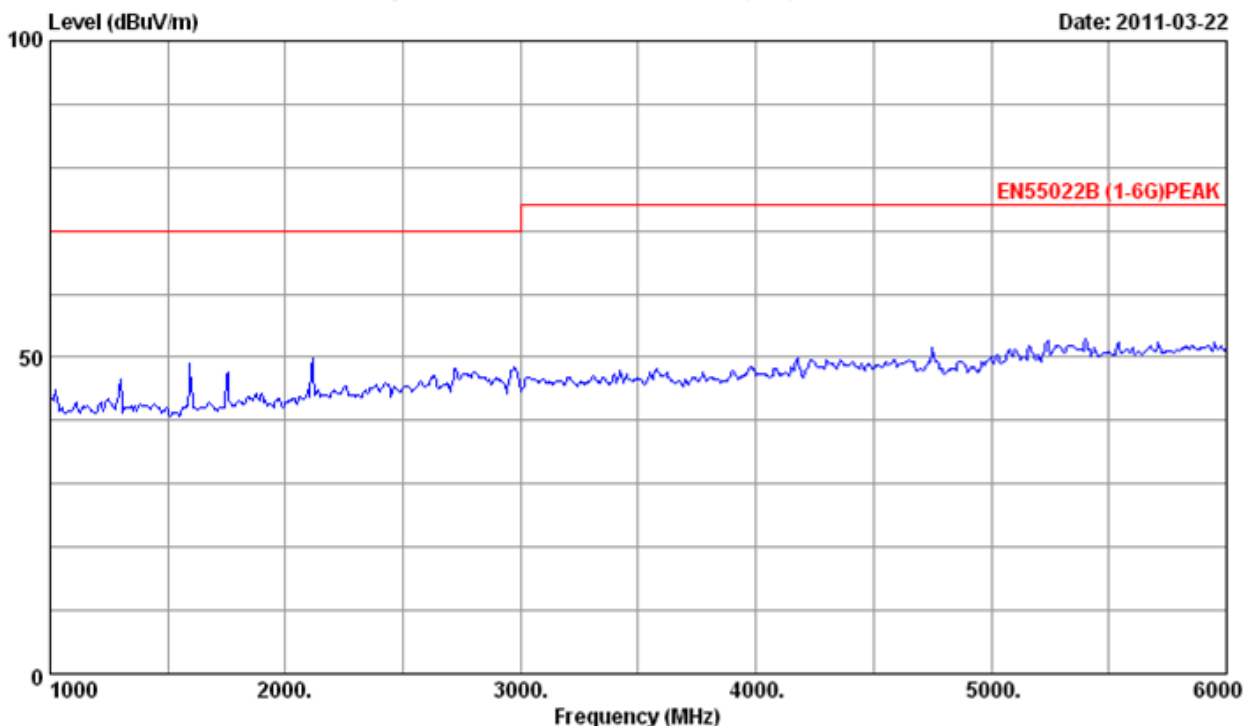
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1312.660	25.28	4.38	34.63	46.25	41.28	50.00	8.72	Average
2	1315.144	25.27	4.40	34.63	54.26	49.30	70.00	20.70	Peak
3	1592.663	25.42	4.77	34.29	43.74	39.64	50.00	10.36	Average
4	1595.140	25.42	4.77	34.29	52.74	48.64	70.00	21.36	Peak
5	5490.055	35.37	8.65	34.12	43.58	53.48	74.00	20.52	Peak
6	5492.660	35.37	8.65	34.12	31.58	41.48	54.00	12.52	Average

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

Data: 93

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

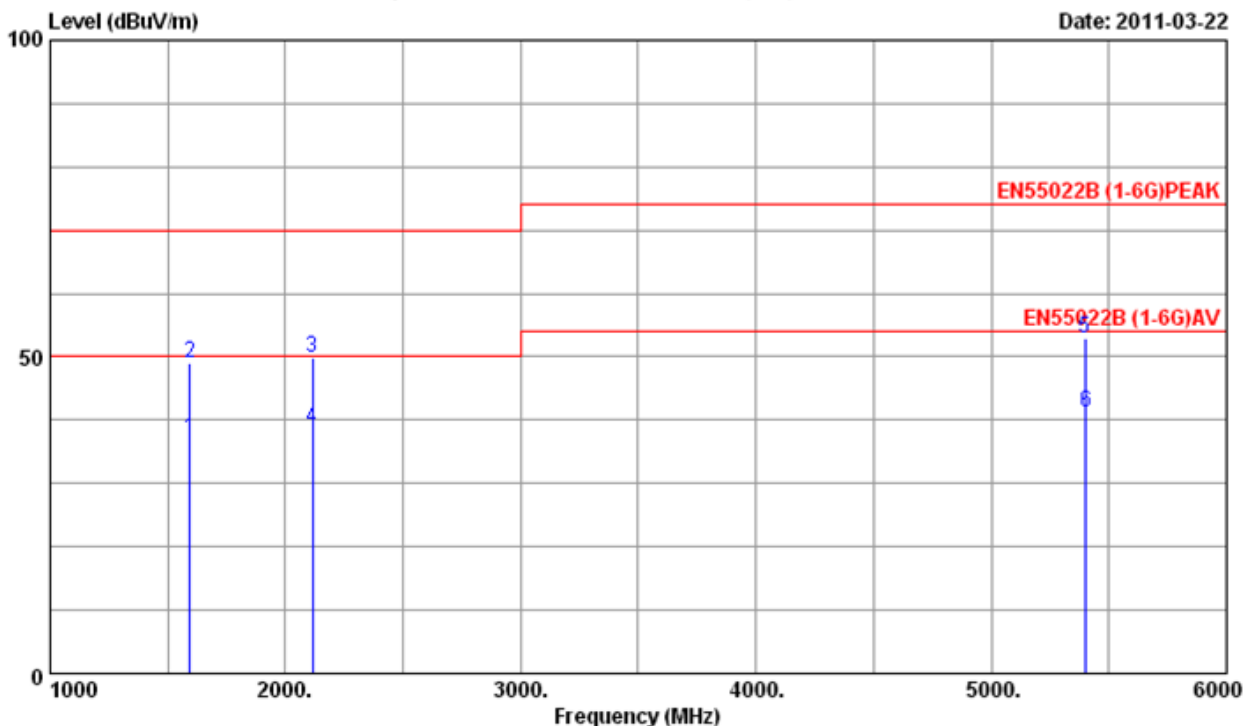


Site no. : 10m Chamber Test Site Data No. : 93
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

Data: 94

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 94
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1920*1080@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M

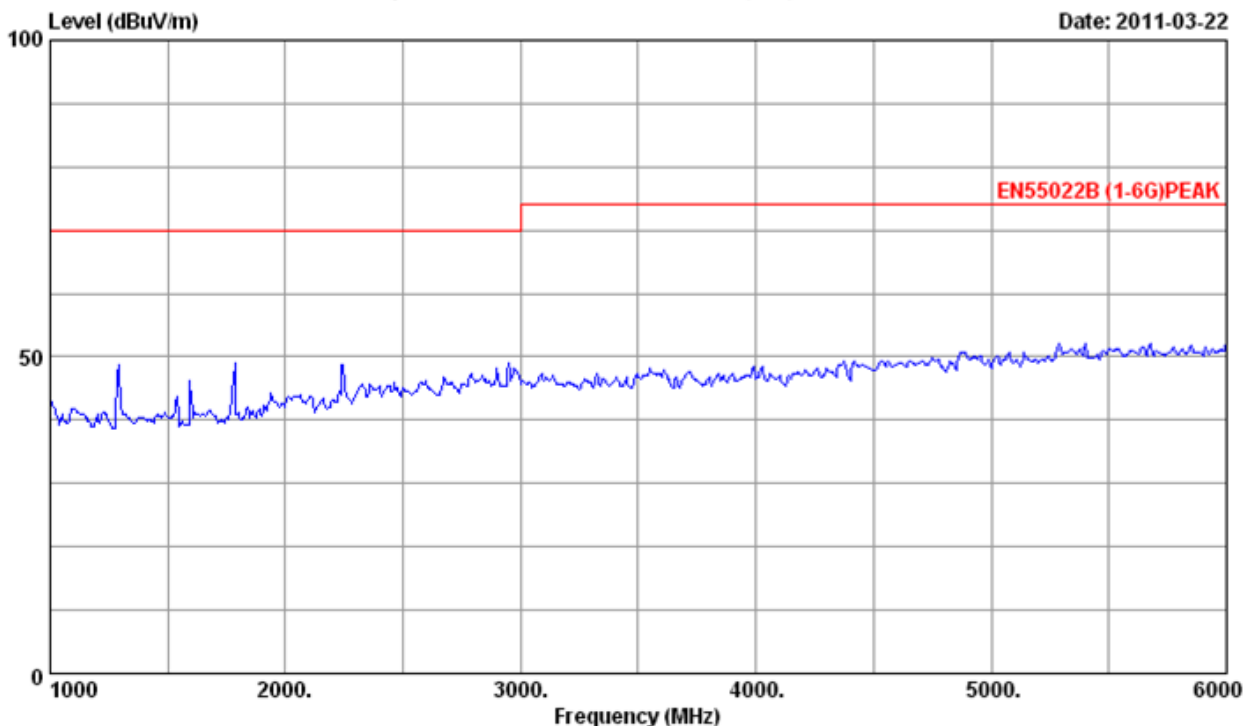
	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1593.250	25.42	4.77	34.29	41.23	37.13	50.00	12.87	Average
2	1595.141	25.42	4.77	34.29	53.23	49.13	70.00	20.87	Peak
3	2115.400	27.02	5.48	33.79	51.07	49.78	70.00	20.22	Peak
4	2116.250	27.02	5.48	33.79	40.07	38.78	50.00	11.22	Average
5	5400.114	35.24	8.58	34.09	43.20	52.93	74.00	21.07	Peak
6	5402.600	35.24	8.58	34.09	31.50	41.23	54.00	12.77	Average

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

Data: 95

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

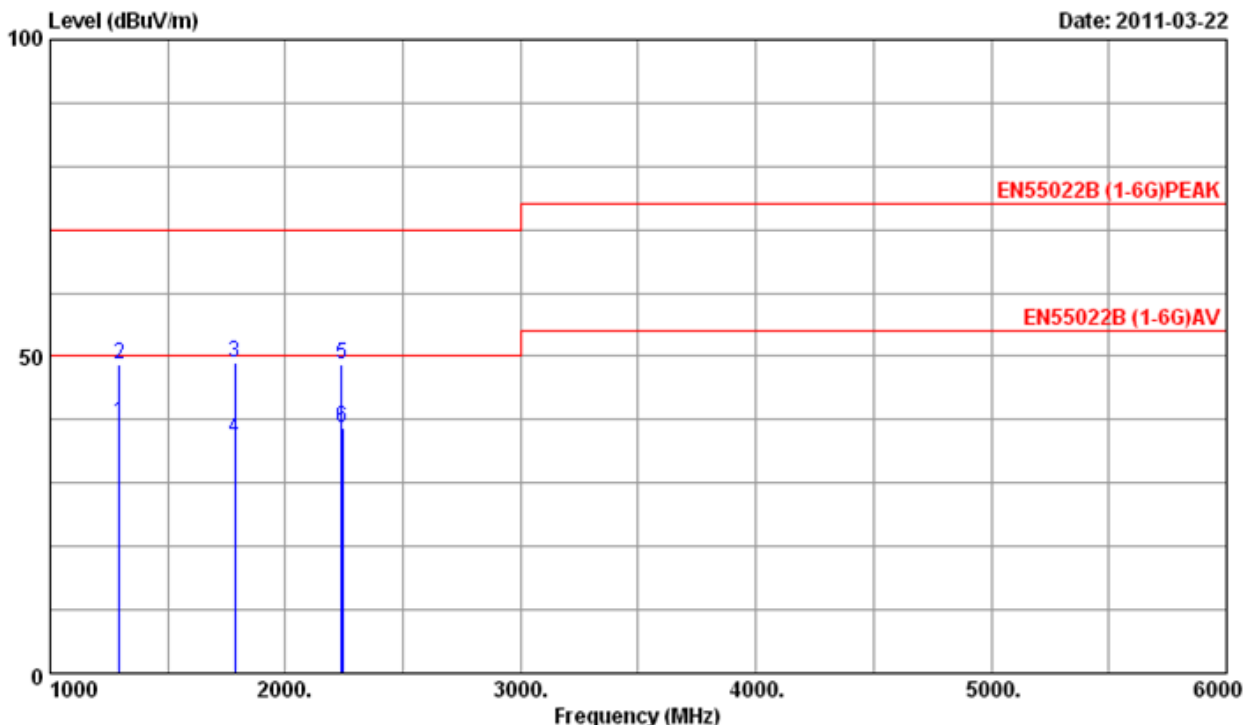


Site no. : 10m Chamber Test Site Data No. : 95
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G)PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel In Vertical

Data: 96

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 96
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : HORIZONTAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel In Vertical

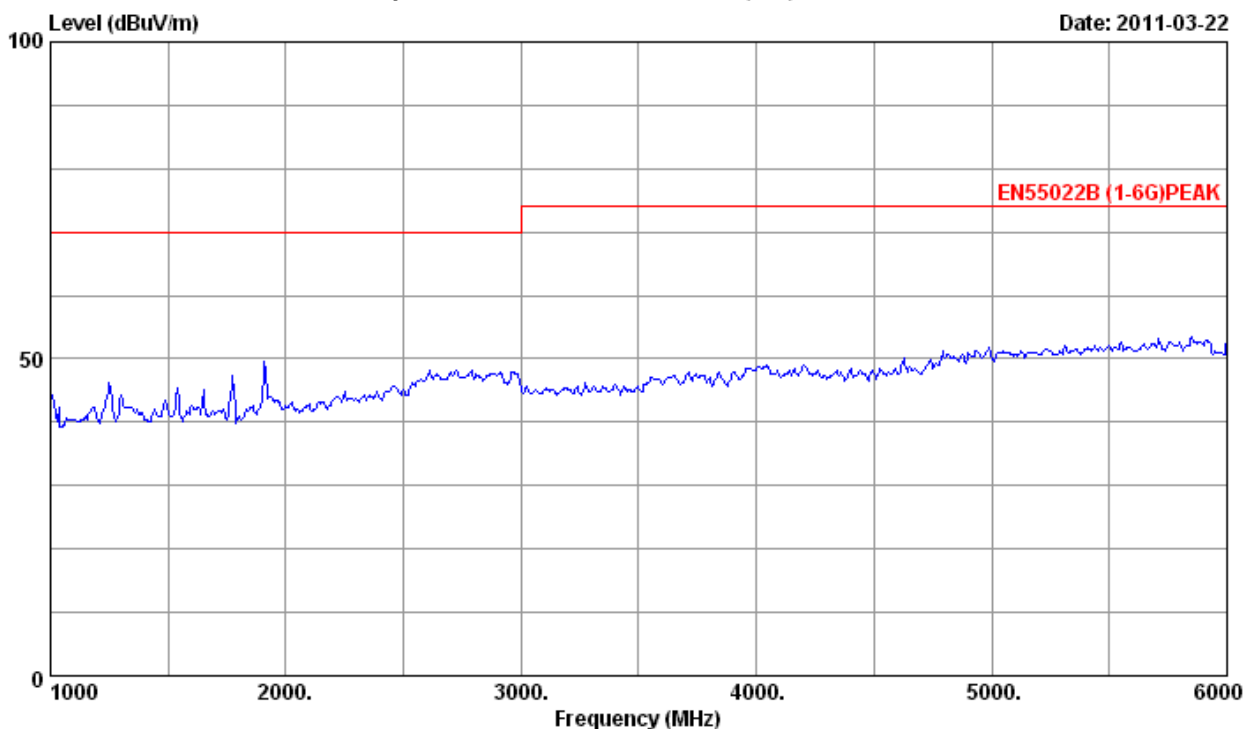
	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1293.260	25.28	4.35	34.63	44.51	39.51	50.00	10.49	Average
2	1295.440	25.28	4.35	34.63	53.73	48.73	70.00	21.27	Peak
3	1785.146	25.82	5.04	34.05	52.28	49.09	70.00	20.91	Peak
4	1785.450	25.82	5.04	34.05	40.28	37.09	50.00	12.91	Average
5	2240.450	27.75	5.66	33.77	49.18	48.82	70.00	21.18	Peak
6	2242.630	27.75	5.66	33.77	39.18	38.82	50.00	11.18	Average

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

Data: 97

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22

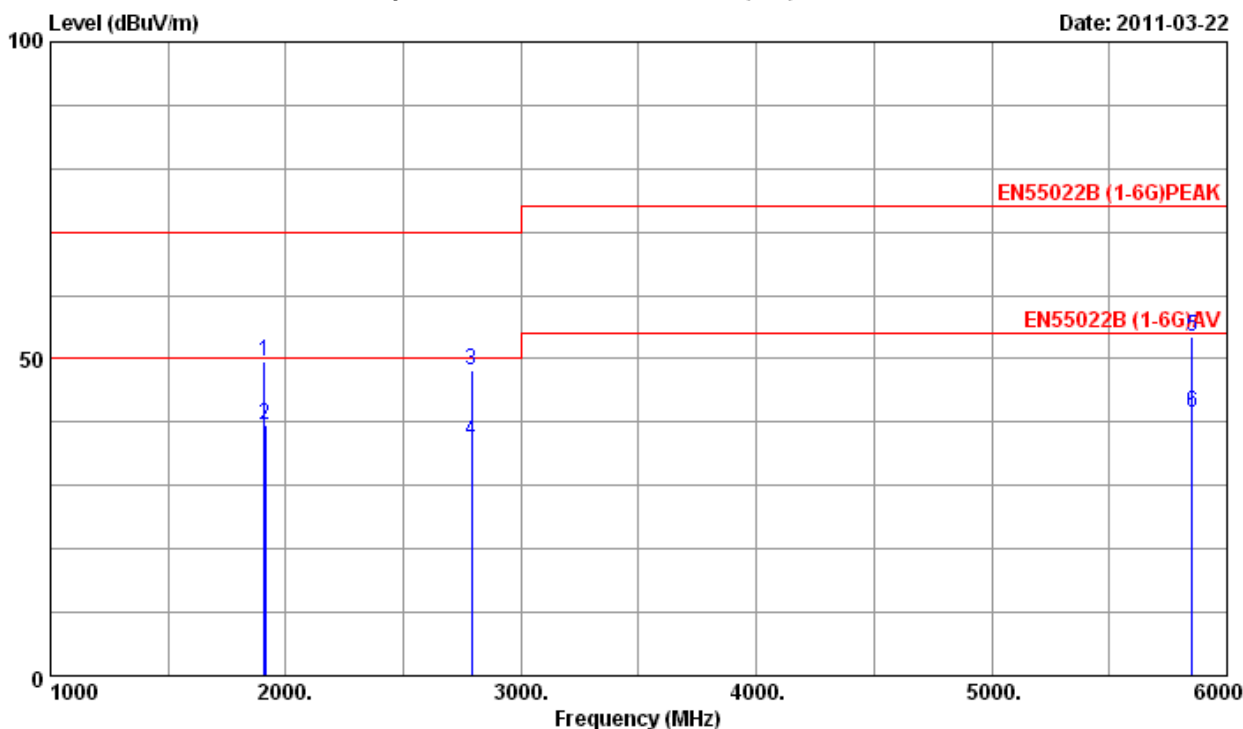


Site no. : 10m Chamber Test Site Data No. : 97
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running ''H'' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel In Vertical

Data: 98

File: E:\2011 Report Data\T\TPV\ACS11Q0453.EM6 (114)

Date: 2011-03-22



Site no. : 10m Chamber Test Site Data No. : 98
 Dis. / Ant. : 3m 2011 3115 ANT Ant. pol. : VERTICAL
 Limit : EN55022B (1-6G) PEAK
 Env. / Ins. : 24°C/56% Engineer : Frank_Li
 EUT : LCD Monitor M/N:L230UH
 Power Rating : DC 19V Adapter Input AC 230V/50Hz
 Test Mode : Running 'H' Pattern
 DVI-VGA:1080*1920@60Hz
 Power Line:1.8M/DVI-VGA/DVI/DP Line:1.8M
 Panel In Vertical

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1910.140	26.12	5.21	33.89	52.25	49.69	70.00	20.31	Peak
2	1913.260	26.12	5.21	33.89	42.20	39.64	50.00	10.36	Average
3	2790.140	30.21	6.42	33.72	45.26	48.17	70.00	21.83	Peak
4	2790.145	30.21	6.42	33.72	34.26	37.17	50.00	12.83	Average
5	5850.142	35.88	8.94	34.25	42.85	53.42	74.00	20.58	Peak
6	5853.250	35.88	8.94	34.25	30.85	41.42	54.00	12.58	Average

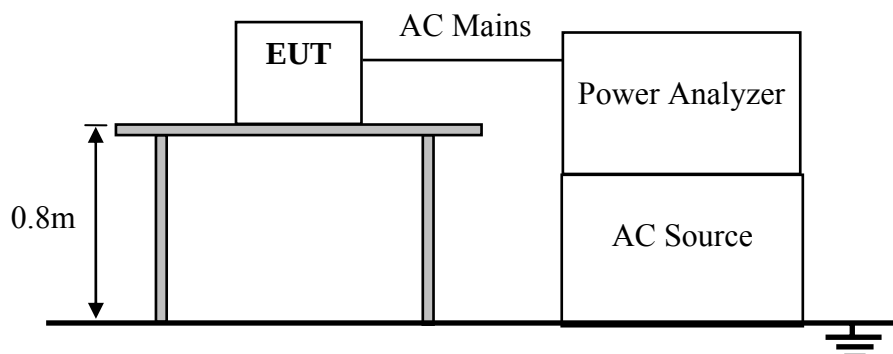
Remarks: 1. Emission Level=Antenna Factor+Cable Loss-Amp Factor+Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

5. HARMONIC CURRENT TEST

5.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Compliance Test System	California Instruments	5001ix	58481	Nov.15, 10	1 Year
2.	Compliance Test System	California Instruments	PACS-1	72627	Nov.15, 10	1 Year

5.2. Block Diagram of Test Setup



5.3. Test Standard

EN61000-3-2: 2006+A1: 2009+A2:2009; Class D

5.4. Limits of Harmonic Current

Limits for Class D Equipment		
Harmonic order (n)	Maximum permissible harmonic current per watt (mA/W)	Maximum permissible harmonic current (A)
3	3.4	0.23
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
13	0.30	0.21
15 ≤ n ≤ 39 (odd harmonic only)	3.85/n	0.15 × 15/n

Remark: if the EUT Power level is below 75 Watts and therefore has no defined limits.

5.5. EUT Configuration on Test

The configurations of EUT are listed in Section 3.5.

5.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 5.2.

5.7. Test Procedure

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the necessary for the EUT to be exercised.

5.8. Test Results

PASS.

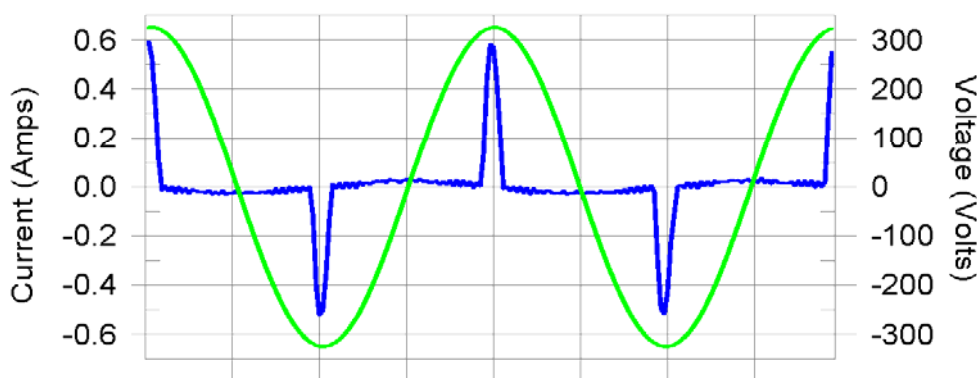
The EUT was tested and all the test results are listed in next pages.

Harmonics – Class-D per Ed. 3.2 (2009)(Run time)

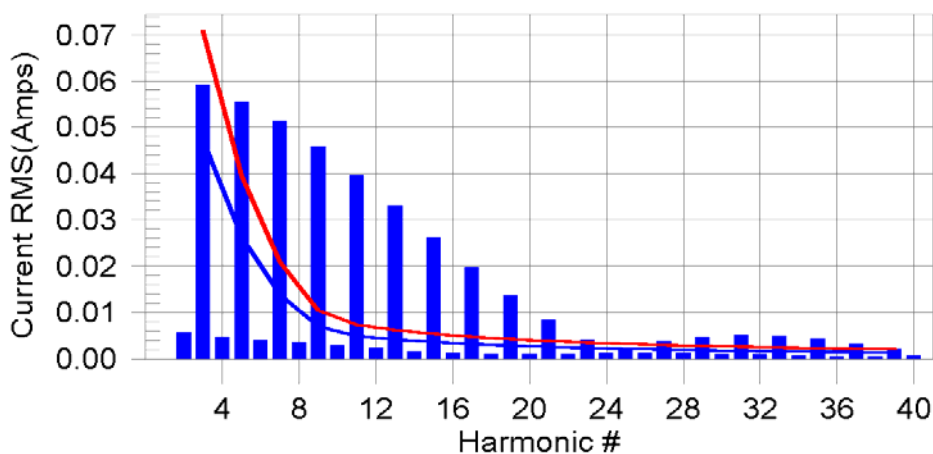
EUT: LCD Monitor M/N:L230UH
 Test category: Class-D per Ed. 3.2 (2009) (European limits)
 Test date: 2011-3-30 Start time: 0:05:37 End time: 0:08:29
 Test duration (min): 2.5 Data file name: H-000537.cts_data
 Comment: Running "H" Pattern
 Customer: TPV

Test Result: N/L Source qualification: Normal

Current & voltage waveforms



Harmonics and Class D limit line European Limits



Test result: N/L Worst harmonic was #15 with 0.00% of the limit.

Current Test Result Summary (Run time)

EUT: LCD Monitor M/N:L230UH Tested by: Jolly-Xu
 Test category: Class-D per Ed. 3.2 (2009) (European limits) Test Margin: 100
 Test date: 2011-3-30 Start time: 0:05:37 End time: 0:08:29
 Test duration (min): 2.5 Data file name: H-000537.cts_data
 Comment: Running "H" Pattern
 Customer: TPV

Test Result: N/L Source qualification: Normal
 THC(A): 0.00 I-THD(%): 0.00 POHC(A): 0.000 POHC Limit(A): 0.000
 Highest parameter values during test:
 V_RMS (Volts): 229.99 Frequency(Hz): 50.00
 I_Peak (Amps): 0.612 I_RMS (Amps): 0.140
 I_Fund (Amps): 0.063 Crest Factor: 4.407
 Power (Watts): 13.9 Power Factor: 0.440

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.006						
3	0.059	0.047	0.0	0.059	0.071	0.00	N/L
4	0.005						
5	0.055	0.026	0.0	0.056	0.040	0.00	N/L
6	0.004						
7	0.051	0.014	0.0	0.051	0.021	0.00	N/L
8	0.004						
9	0.045	0.007	0.0	0.046	0.010	0.00	N/L
10	0.003						
11	0.039	0.005	0.0	0.040	0.007	0.00	N/L
12	0.002						
13	0.032	0.004	0.0	0.033	0.006	0.00	N/L
14	0.002						
15	0.026	0.004	0.0	0.026	0.005	0.00	N/L
16	0.001						
17	0.019	0.003	0.0	0.020	0.005	0.00	N/L
18	0.001						
19	0.013	0.003	0.0	0.014	0.004	0.00	N/L
20	0.001						
21	0.008	0.003	0.0	0.008	0.004	0.00	N/L
22	0.001						
23	0.004	0.002	0.0	0.004	0.003	0.00	N/L
24	0.001						
25	0.002	0.002	0.0	0.002	0.003	0.00	N/L
26	0.001						
27	0.003	0.002	0.0	0.004	0.003	0.00	N/L
28	0.001						
29	0.004	0.002	0.0	0.005	0.003	0.00	N/L
30	0.001						
31	0.005	0.002	0.0	0.005	0.003	0.00	N/L
32	0.001						
33	0.005	0.002	0.0	0.005	0.002	0.00	N/L
34	0.001						
35	0.004	0.002	0.0	0.004	0.002	0.00	N/L
36	0.000						
37	0.003	0.001	0.0	0.003	0.002	0.00	N/L
38	0.001						
39	0.002	0.001	0.0	0.002	0.002	0.00	N/L
40	0.001						

Note: The EUT power level is below 75.0 Watts and therefore has no defined limits

Voltage Source Verification Data (Run time)

EUT: LCD Monitor M/N:L230UH **Tested by:** Jolly-Xu
Test category: Class-D per Ed. 3.2 (2009) (European limits) **Test Margin:** 100
Test date: 2011-3-30 **Start time:** 0:05:37 **End time:** 0:08:29
Test duration (min): 2.5 **Data file name:** H-000537.cts_data
Comment: Running "H" Pattern
Customer: TPV

Test Result: N/L **Source qualification:** Normal

Highest parameter values during test:

Voltage (Vrms): 229.99	Frequency(Hz): 50.00
I_Peak (Amps): 0.612	I_RMS (Amps): 0.140
I_Fund (Amps): 0.063	Crest Factor: 4.407
Power (Watts): 13.9	Power Factor: 0.440

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.087	0.460	18.85	OK
3	0.442	2.070	21.37	OK
4	0.048	0.460	10.40	OK
5	0.038	0.920	4.08	OK
6	0.021	0.460	4.62	OK
7	0.021	0.690	3.08	OK
8	0.018	0.460	3.83	OK
9	0.031	0.460	6.65	OK
10	0.008	0.460	1.76	OK
11	0.022	0.230	9.48	OK
12	0.010	0.230	4.37	OK
13	0.031	0.230	13.34	OK
14	0.007	0.230	3.23	OK
15	0.016	0.230	6.82	OK
16	0.007	0.230	2.86	OK
17	0.018	0.230	7.94	OK
18	0.009	0.230	3.75	OK
19	0.018	0.230	7.70	OK
20	0.007	0.230	3.01	OK
21	0.012	0.230	5.30	OK
22	0.003	0.230	1.51	OK
23	0.008	0.230	3.37	OK
24	0.005	0.230	2.03	OK
25	0.005	0.230	2.15	OK
26	0.003	0.230	1.16	OK
27	0.007	0.230	3.11	OK
28	0.003	0.230	1.16	OK
29	0.008	0.230	3.41	OK
30	0.003	0.230	1.24	OK
31	0.008	0.230	3.36	OK
32	0.002	0.230	0.87	OK
33	0.008	0.230	3.35	OK
34	0.002	0.230	1.05	OK
35	0.007	0.230	2.96	OK
36	0.002	0.230	0.84	OK
37	0.005	0.230	2.24	OK
38	0.002	0.230	0.86	OK
39	0.004	0.230	1.63	OK
40	0.003	0.230	1.22	OK

6. VOLTAGE FLUCTUATIONS & FLICKER TEST

6.1. Test Equipment

Same as Section 5.1.

6.2. Block Diagram of Test Setup

Same as Section 5.2.

6.3. Test Standard

EN61000-3-3:2008

6.4. Limits of Voltage Fluctuation and Flick

Test Item	Limit	Note
P_{st}	1.0	P_{st} means Short-term flicker indicator
P_{lt}	0.65	P_{lt} means long-term flicker indicator
T_{dt}	0.2	T_{dt} means maximum time that dt exceeds 3%
$d_{max}(\%)$	4%	d_{max} means maximum relative voltage change.
$d_c(\%)$	3%	d_c means relative steady-state voltage change.

6.5. EUT Configuration on Test

The configurations of EUT are listed in Section 3.5.

6.6. Operating Condition of EUT

Same as Section 5.6.

6.7. Test Procedure

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal conditions During the flick measurement, the measure time shall include that part of whole operation changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

6.8. Test Results

PASS.

Please refer to the following page.

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: LCD Monitor M/N:L230UH
 Test category: All parameters (European limits)
 Test date: 2011-3-29 Start time: 23:49:17
 Test duration (min): 10 Data file name: F-000535.cts_data
 Comment: Running "H" Pattern
 Customer: TPV

Tested by: Jolly-Xu
 Test Margin: 100
 End time: 23:59:38

Test Result: Pass

Status: Test Completed

Pst and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 229.82
 Highest dt (%): 0.00
 Time(mS) > dt: 0.0
 Highest dc (%): 0.00
 Highest dmax (%): 0.00
 Highest Pst (10 min. period): 0.064
 Highest Plt (2 hr. period): 0.028

Test limit (%):	3.30	Pass
Test limit (mS):	500.0	Pass
Test limit (%):	3.30	Pass
Test limit (%):	4.00	Pass
Test limit:	1.000	Pass
Test limit:	0.650	Pass

7. IMMUNITY PERFORMANCE CRITERIA

Performance Level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level by its manufacturer or the requestor of the test, or the agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:

1. Based on the used product standard
2. Based on the declaration of the manufacturer, requestor or purchaser

Performance criterion A

When seen from the normal viewing distance, the EUT shall operate with no change beyond the manufacturer's specification, in flicker, colour, focus and jitter (except for the power frequency magnetic field test).

Power frequency magnetic field test

For CRT monitors, the following also applies:

The jitter shall be measured using a measuring microscope as specified in 6.6.14 of ISO 9241-3.

The jitter (in mm) shall not exceed the value $\frac{(\text{character height in mm} + 0,3) \times 2,5}{33,3}$ when the monitor is immersed in a continuous magnetic field of 1A/m (r.m.s.) at one of the power frequencies of 50Hz.

Alternatively, a field of 50A/m may be applied, and a transparent graduated mask used to assess the jitter. In that case, the jitter shall not exceed 50 times the value in the above formula.

NOTE-This test level is used to simplify the measurement of jitter. Lesser values of the test level may be used if non-linearity is experienced, due to, for example, saturation of screening material.

The EUT shall be tested in two positions, both perpendicular to the magnetic field.

Performance criterion B

Screen disturbances during the application of the test are permissible.

Performance criterion C

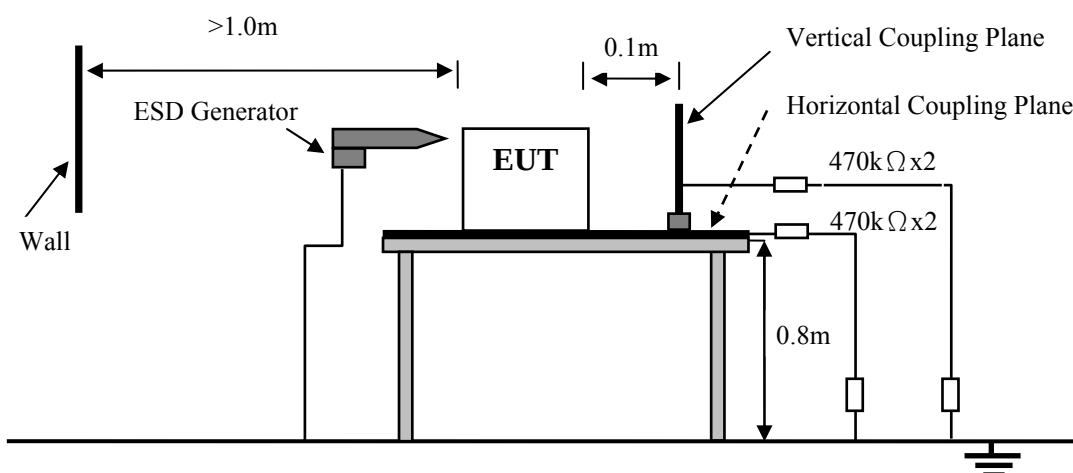
Failures which are not self-recovered after removal of the external disturbance, but which can be recovered to normal operation by reset or reboot are permissible.

8. ELECTROSTATIC DISCHARGE IMMUNITY TEST

8.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Tester	EM Test	Dito	V0503100053	Dec.17, 09	1 Year

8.2. Block Diagram of Test Setup



8.3. Test Standard

EN 55024: 1998+A1:2001+A2: 2003 (IEC 61000-4-2: 2008)
 (Severity Level 1 & 2 & 3 for Air Discharge at 2 kV & 4 kV & 8kV,
 Severity Level 1 & 2 for Contact Discharge at 2 kV & 4kV & 6kV)

8.4. Severity Levels and Performance Criterion

Severity Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)	Performance criterion
1.	2	2	B
2.	4	4	
3.	6	8	
4.	8	15	
X	Special	Special	

8.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

8.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 8.2.

8.7. Test Procedure

8.7.1. Air Discharge:

The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 20 times for each pre-selected test point. This procedure was repeated until all the air discharge completed

8.7.2. Contact Discharge:

All the procedure was same as Section 8.7.1. except that the generator was re-triggered for a new single discharge and repeated 50 times for each pre-selected test point. The tip of the discharge electrode was touching the EUT before the discharge switch was operated.

8.7.3. Indirect discharge for horizontal coupling plane:

At least 20 single discharges were applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

8.7.4. Indirect discharge for vertical coupling plane:

At least 20 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

8.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Electrostatic Discharge Test Results

Audix Technology (Shenzhen) Co., Ltd.

Applicant : TPV Electronics (FuJian) Co., Ltd.	Test Date : Mar.20, 2011
EUT : LCD Monitor	Temperature : 23°C
M/N : L230UH	Humidity : 45%
Test Voltage : DC 19V Adapter Input AC 230V/50Hz	Test Mode : Running "H" Pattern
Test Engineer : Adam	Pressure : 101KPa
Required Performance : B	Actual Performance : A

Air Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ $\pm 8\text{kV}$ # For Air Discharge each Point Positive 10 times and negative 10 times discharge.

Contact Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ $\pm 6\text{kV}$ # For Contact Discharge each point positive 25 times and negative 25 times discharge

For the time interval between successive single discharges an initial value of one second.

Discharge Voltage (kV)	Type of discharge	Dischargeable Points	Performance		Result (Pass/Fail)
			Required	Observation	
± 2	Contact	6,7	B	A	Pass
± 4	Contact	6,7	B	A	Pass
± 2	Air	1,2,3,4,5	B	A	Pass
± 4	Air	1,2,3,4,5	B	A	Pass
± 8	Air	1,2,3,4,5	B	A	Pass
± 2	HCP-Bottom	Edge of the HCP	B	A	Pass
± 2	VCP-Front	Center of the VCP	B	A	Pass
± 2	VCP-Left	Center of the VCP	B	A	Pass
± 2	VCP-Back	Center of the VCP	B	A	Pass
± 2	VCP-Right	Center of the VCP	B	A	Pass
$\pm 4, \pm 6$	HCP-Bottom	Edge of the HCP	B	A	Pass
$\pm 4, \pm 6$	VCP-Front	Center of the VCP	B	A	Pass
$\pm 4, \pm 6$	VCP-Left	Center of the VCP	B	A	Pass
$\pm 4, \pm 6$	VCP-Back	Center of the VCP	B	A	Pass
$\pm 4, \pm 6$	VCP-Right	Center of the VCP	B	A	Pass

Discharge Points Description

<u>1</u>	DVI Port	<u>6</u>	Screws
<u>2</u>	USB Port	<u>7</u>	Metal
<u>3</u>	LCD/ Slot/ LED	<u>8</u>	
<u>4</u>	DC In		
<u>5</u>	Display		

Remark: After discharge to the ungrounded part of EUT, it needs the bleeder resistor to remove the charge prior to next ESD pulse.

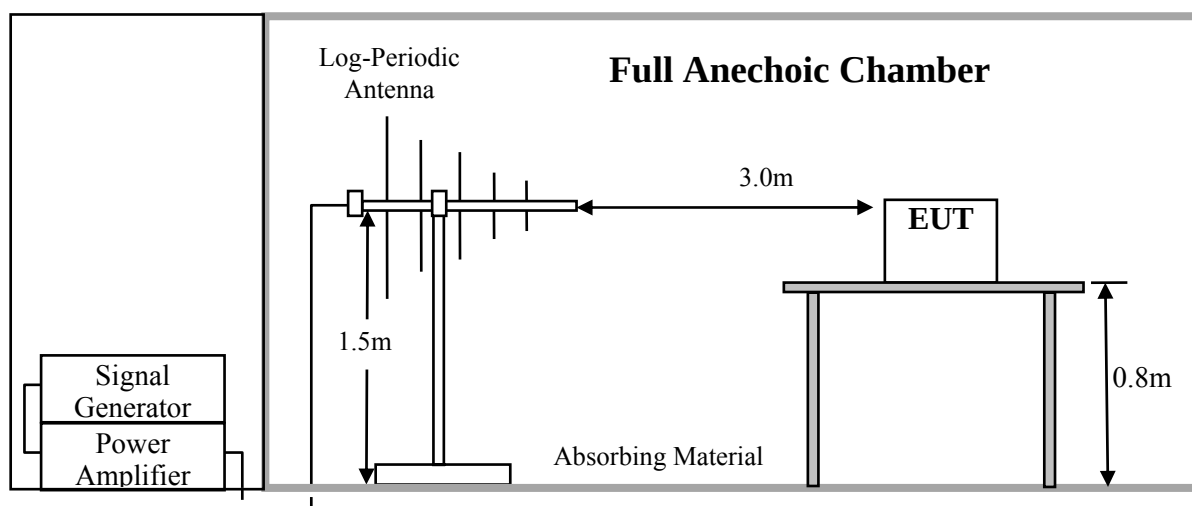
Discharge was considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

9. RF FIELD STRENGTH SUSCEPTIBILITY TEST

9.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	2#Chamber	AUDIX	N/A	N/A	May.15.10	1Year
2.	Signal Generator	Agilent	N5181A	MY49061013	Nov.05,10	1Year
3	Amplifier	MILMEGA	AS0825-125	1014056	NCR	NCR
4	MICROWAVE HORN ANTENNA	Schwarzbeck	STLP9149	9149-060	NCR	NCR
5	Power Meter	Anritsu	ML2487A	6K00002472	May.08, 10	1Year
6	Power Sensor	Anritsu	MA2491A	032516	May.08, 10	1Year
7	RF Cable	MICABLE	A04-07-07-2M	09111340	NCR	NCR
8	RF Cable	STORM	MFR-57500	90-195-2MTR	NCR	NCR
9	RF Cable	STORM	MFR-57500	90-195-4MTR	NCR	NCR

9.2. Block Diagram of Test Setup



9.3. Test Standard

EN 55024: 1998+A1:2001+A2: 2003 (IEC 61000-4-3: 2006+A1:2007)
(Severity Level: 2 at 3V / m)

9.4. Test Severity Level and Performance Criterion

Severity Level	Test Field Strength V/m	Performance Criteria
1.	1	A
2.	3	
3.	10	
X.	Special	

9.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

9.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 9.2.

9.7. Test Procedure

Testing was performed in a Fully anechoic chamber as recommended by IEC 61000-4-3. The EUT was placed on an 80 cm high non-conductive table located in the area of field uniformity. The radiating antenna was placed 3m in front of the EUT and Support system, and dwell time of the radiated interference was controlled by an automated, computer-controlled system. The signal source was stepped through the applicable frequency range at a rate no faster than 1% of the fundamental. The signal was amplitude modulated 80% over the frequency range 80 MHz to 1GHz at a level of 3 V/m. The dwell time was set at 3 s. Field presence was monitored during testing via a field probe placed in close proximity to the EUT. Throughout testing, the EUT was closely monitored for signs of susceptibility. The test was performed with the antennae oriented in both a horizontal and vertical polarization.

All the scanning conditions are as follows:

Test conditions	
Frequency	80MHz-1GHz
Frequency increments step	1% of momentary used
Test level	3V/m (unmodulated)
Dwell time	3s
Test signal	80% amplitude modulated by 1kHz sinusoidal audio signal

9.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

RF Field Strength Susceptibility Test Results

Audix Technology(Shenzhen) Co.,Ltd.

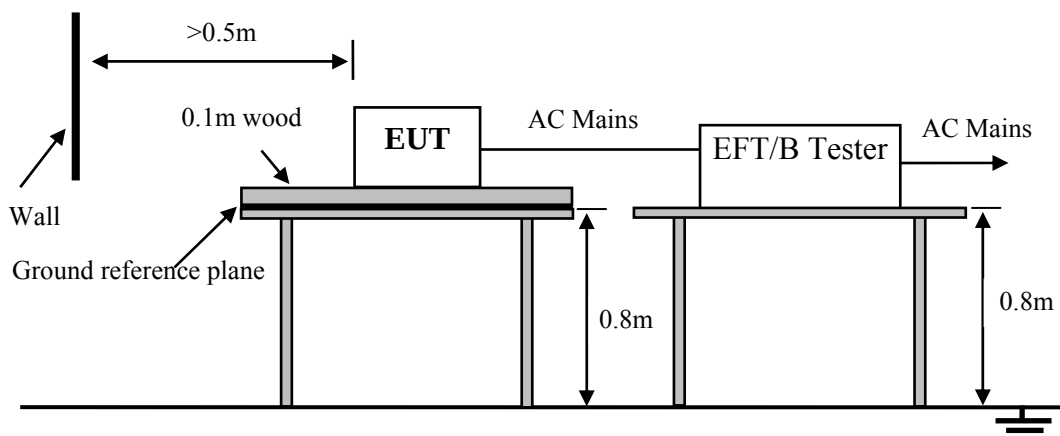
Applicant : TPV Electronics (FuJian) Co., Ltd. EUT : LCD Monitor M/N : L230UH Test Voltage : DC 19V Adapter Input AC 230V/50Hz Test Engineer : Cary Required Performance : A	Test Date : Mar.20, 2011 Temperature : 22.7℃ Humidity : 49.5% Pressure : 100.6KPa Test Mode : Running "H" Pattern Actual Performance : A																																			
Modulation: ☒ AM ☐ Pulse ☐ none 1 kHz 80%																																				
Frequency Rang :80 MHz -1000MHz																																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Horizontal</th> <th colspan="2" style="text-align: center;">Vertical</th> <th style="text-align: center;">Result</th> </tr> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">Required</th> <th style="width: 20%;">Observation</th> <th style="width: 20%;">Required</th> <th style="width: 20%;">Observation</th> <th style="width: 20%;">(Pass / Fail)</th> </tr> <tr> <td style="text-align: center;">Front</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">Pass</td> </tr> <tr> <td style="text-align: center;">Right</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">Pass</td> </tr> <tr> <td style="text-align: center;">Rear</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">Pass</td> </tr> <tr> <td style="text-align: center;">Left</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">Pass</td> </tr> </table>	Horizontal		Vertical		Result		Required	Observation	Required	Observation	(Pass / Fail)	Front	A	A	A	A	Pass	Right	A	A	A	A	Pass	Rear	A	A	A	A	Pass	Left	A	A	A	A	Pass
Horizontal		Vertical		Result																																
	Required	Observation	Required	Observation	(Pass / Fail)																															
Front	A	A	A	A	Pass																															
Right	A	A	A	A	Pass																															
Rear	A	A	A	A	Pass																															
Left	A	A	A	A	Pass																															
Remark: No function loss																																				

10. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

10.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Burst Tester	TESEQ	NSG3025	28017	Jul.24, 10	1 Year

10.2. Block Diagram of Test Setup



10.3. Test Standard

EN 55024: 1998+A1:2001+A2: 2003 (IEC 61000-4-4:2004+Cor 1:2006+Cor 2:2007)
(Severity Level 2 at 1kV)

10.4. Severity Levels and Performance Criterion

Open Circuit Output Test Voltage $\pm 10\%$			
Severity Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines	Performance criterion
1.	0.5 kV	0.25 kV	B
2.	1 kV	0.5 kV	
3.	2 kV	1 kV	
4.	4 kV	2 kV	
X	Special	Special	

10.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

10.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 10.2.

10.7. Test Procedure

The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support $0.1\text{m} \pm 0.01\text{m}$ thick. The ground reference plane was $1\text{m} \times 1\text{m}$ metallic sheet with 0.65mm minimum thickness. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables.

10.7.1. For input and AC power ports:

The EUT was connected to the power mains by using a coupling device that couples the EFT interference signal to AC power lines. Both positive transients and negative transients of test voltage were applied during compliance test and the duration of the test can't less than 1min.

10.7.2. For signal lines and control lines ports:

It's unnecessary to test.

10.7.3. For DC input and DC output power ports:

It's unnecessary to test.

10.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Electrical Fast Transient/Burst Test Results

Audix Technology (Shenzhen)Co., Ltd.

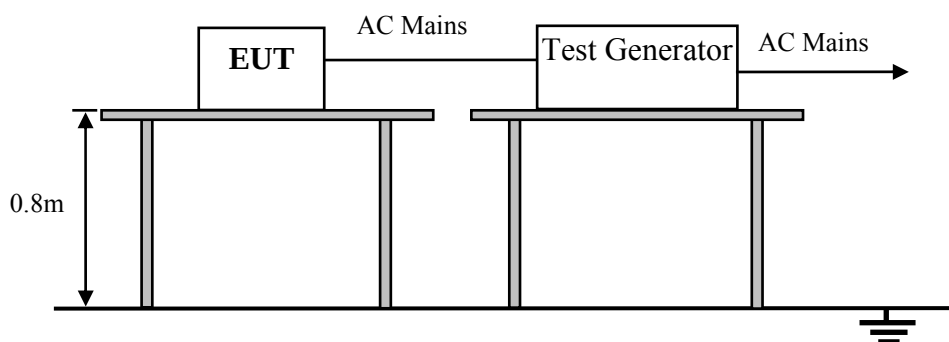
Applicant : TPV Electronics (FuJian) Co., Ltd. EUT : LCD Monitor M/N : L230UH Test Voltage : DC 19V Adapter Input AC 230V/50Hz Test Engineer : Adam Required Performance : B	Test Date : Mar.20, 2011 Temperature : 23℃ Humidity : 45% Test Mode : Running "H" Pattern Pressure : 101KPa Actual Performance : A				
Repetition Frequency : <u>5 kHz</u> Burst Duration : <u>15ms</u> Burst Period: <u>300ms</u>					
Inject Time(s): <u>120s</u> Inject Method: <u>Direct</u> Inject Line: ☒ AC Mains ☐ DC Supply ☐ Signal					
Line	Test Voltage	Performance			Result (Pass/Fail)
		Required	Observation(+)	Observation(-)	
L	0.5/1kV	B	A	A	Pass
N	0.5/1kV	B	A	A	Pass
PE	0.5/1kV	B	A	A	Pass
L N	0.5/1kV	B	A	A	Pass
L PE	0.5/1kV	B	A	A	Pass
N PE	0.5/1kV	B	A	A	Pass
L N PE	0.5/1kV	B	A	A	Pass
Signal Line					
Remark:					

11. SURGE TEST

11.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Tester	HAEFELY	PSURGE4.1	083519-12	May.08, 10	1 Year

11.2. Block Diagram of Test Setup



11.3. Test Standard

EN 55024: 1998+A1: 2001+A2: 2003 (IEC 61000-4-5: 2005)
(Severity Level: Line to Line was Level 2 at 1kV)

11.4. Severity Levels and Performance Criterion

Severity Level	Open-Circuit Test Voltage kV	Performance criterion
1	0.5	B
2	1.0	
3	2.0	
4	4.0	
*	Special	

11.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

11.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 11.2

11.7. Test Procedure

- 1) Set up the EUT and test generator as shown on Section 11.2.
- 2) For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

11.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Surge Immunity Test Results

Audix Technology (Shenzhen) Co., Ltd.

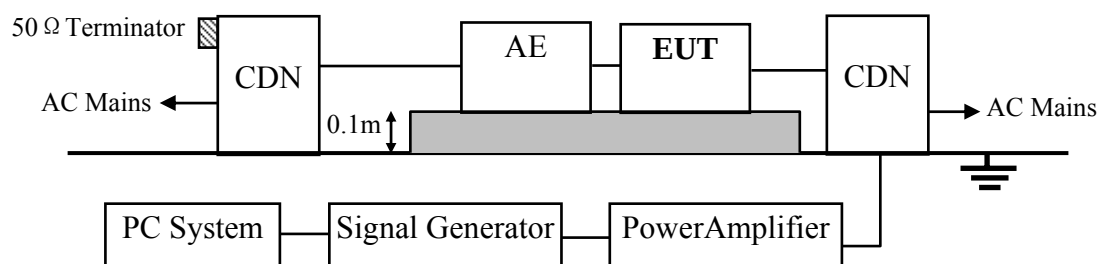
Applicant : TPV Electronics (FuJian) Co., Ltd. EUT : LCD Monitor M/N : L230UH Power Supply : DC 19V Adapter Input AC 230V/50Hz Test Engineer : Adam Required Performance : B	Test Date : Mar.20, 2011 Temperature : 23°C Humidity : 45% Test Mode : Running "H" Pattern Pressure : 101KPa Actual Performance : A										
No.of pluse: ±5 Interval:60 Seconds											
Line : ☒ AC Mains ☐ DC Supply ☐ Signal											
Location	Volt	500V			1kV			2kV			Result (Pass/Fail)
	Phase	Performance			Performance			Performance			
		Required	+	-	Required	+	-	Required	+	-	
L-N	0°	B	A	A	B	A	A				Pass
	90°	B	A	A	B	A	A				Pass
	180°	B	A	A	B	A	A				Pass
	270°	B	A	A	B	A	A				Pass
L-PE	0°	B	A	A	B	A	A	B	A	A	Pass
	90°	B	A	A	B	A	A	B	A	A	Pass
	180°	B	A	A	B	A	A	B	A	A	Pass
	270°	B	A	A	B	A	A	B	A	A	Pass
N-PE	0°	B	A	A	B	A	A	B	A	A	Pass
	90°	B	A	A	B	A	A	B	A	A	Pass
	180°	B	A	A	B	A	A	B	A	A	Pass
	270°	B	A	A	B	A	A	B	A	A	Pass
Signal Line											
Remark:											

12. INJECTED CURRENTS SUSCEPTIBILITY TEST

12.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	Agilent	N5181A	MY49061013	Nov.05,10	1 Year
2.	Amplifier	AR	25A250A	19152	NCR	NCR
3.	Amplifier	AR	100A250	19368	NCR	NCR
4.	Power meter	HP	436A	2016A07891	May.08, 10	1 Year
5.	Power sensor	Agilent	8482B	MY41090514	Nov.26, 10	1 Year
6.	CDN	FCC	FCC-801-M3-25	107	May.08, 10	1 Year
7.	CDN	FCC	FCC-801-M3-25	07045	May.08, 10	1 Year
8.	PC	N/A	N/A	N/A	N/A	N/A
9.	Attenuator	Weinschel	40-6-34	LJ092	May.08, 10	1 Year
10.	EM Injection Clamp	FCC	F-203I-23mm	403	May.08, 10	1 Year
11.	RF Cable	MICABLE	A04-07-07-2M	09111340	NCR	NCR
12.	RF Cable	STORM	MFR-57500	90-195-2MTR	NCR	NCR

12.2. Block Diagram of Test Setup



12.3. Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (IEC61000-4-6: 2003+A1: 2004+A2: 2006)
(Severity Level 2 at 3V (r.m.s.) and frequency is from 0.15MHz to 80MHz)

12.4. Severity Levels and Performance Criterion

Severity Level	Voltage Level (e.m.f.) V	Performance criterion
1	1	A
2	3	
3	10	
X	Special	

12.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

12.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 12.2.

12.7. Test Procedure

- 1) Set up the EUT, CDN and test generators as shown on Section 12.2.
- 2) Let the EUT work in test mode and test it.
- 3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 10 and 30 mm (where possible).
- 4) The disturbance signal described below is injected to EUT through CDN.
- 5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 6) The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.
- 7) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

12.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Injected Currents Susceptibility Test Results

Audix Technology (Shenzhen) Co., Ltd.

Applicant	: TPV Electronics (FuJian) Co., Ltd.	Test Date	: Mar.20, 2011	
EUT	: LCD Monitor	Temperature	: 22.7℃	
M/N	: L230UH	Humidity	: 49.8%	
Power Supply	: DC 19V Adapter Input AC 230V/50Hz	Test Mode	: Running "H" Pattern	
Test Engineer	: Cary	Pressure	: 100.6KPa	
Required Performance	: A	Actual Performance	: A	

Frequency Range (MHz)	Injected Position	Voltage Level (e.m.f.)	Required	Observation	Result (Pass / Fail)
0.15 ~ 20	AC Mains	3V	A	A	PASS
20 ~ 80	AC Mains	3V	A	A	PASS

Modulation Signal: 1kHz 80% AM

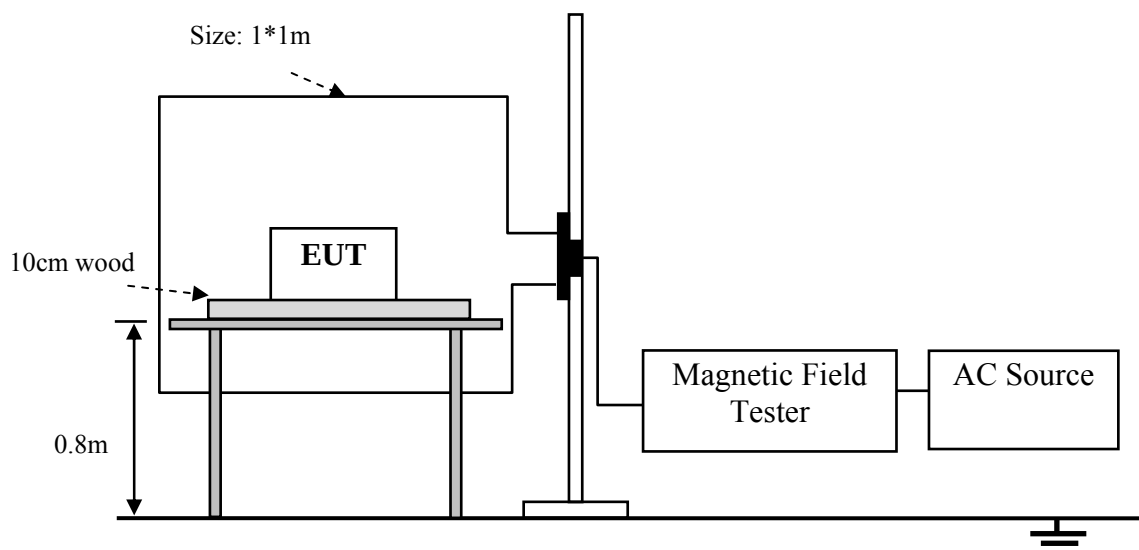
Remark:

13. MAGNETIC FIELD IMMUNITY TEST

13.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic Field Tester	HEAFELY	MAG100.1	083858-10	May.08, 10	1 Year

13.2. Block Diagram of Test Setup



13.3. Test Standard

EN 55024: 1998+A1: 2001+A2: 2003 (IEC 61000-4-8: 2009)
(Severity Level 1 at 1A/m)

13.4. Severity Levels and Performance Criterion

Severity Level	Magnetic Field Strength A/m	Performance criterion
1.	1	A
2.	3	
3.	10	
4.	30	
5.	100	
X.	Special	

13.5. EUT Configuration on Test

The configurations of EUT are listed in Section 3.5.

13.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 13.2.

13.7. Test Procedure

The EUT was subjected to the test magnetic field by using the induction coil of standard dimensions (1m*1m) and shown in Section 13.2. The induction coil was then rotated by 90° in order to expose the EUT to the test field with different orientations.

13.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Magnetic Field Immunity Test Results

Audix Technology (Shenzhen) Co., Ltd.

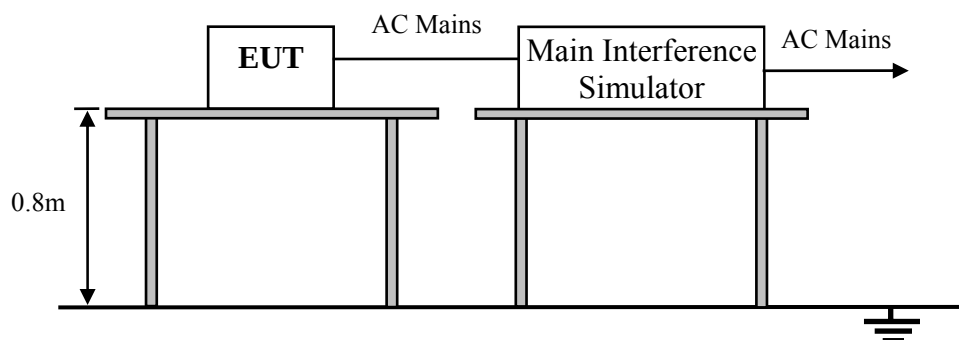
Applicant	:	TPV Electronics (FuJian) Co., Ltd.	Test Date	:	Mar.20, 2011
EUT	:	LCD Monitor	Temperature	:	22.7°C
M/N	:	L230UH	Humidity	:	49.2%
Test Voltage	:	DC 19V Adapter Input AC 230V/50Hz	Test Mode	:	Running "H" Pattern
Test Engineer	:	Cary	Pressure	:	100.6KPa
Required Performance	:	A	Actual Performance	:	A
Test Level	Testing Duration	Coil Orientation	Required	Observation	Result (Pass/Fail)
1A/m	5 min / coil	X	A	A	PASS
1A/m	5 min / coil	Y	A	A	PASS
1A/m	5 min / coil	Z	A	A	PASS
Remark: No function loss.					

14. VOLTAGE DIPS AND INTERRUPTIONS TEST

14.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Main Interference Simulator	HEAFELY	PLINE 1610	083690-05	May.08, 10	1 Year

14.2. Block Diagram of Test Setup



14.3. Test Standard

EN 55024: 1998+A1: 2001+A2: 2003 (IEC 61000-4-11: 2004)

14.4. Severity Levels and Performance Criterion

Test Level $\%U_T$	Voltage dip and short interruptions $\%U_T$	Duration (in period)	Performance Criterion
0	100	250	C
0	100	0.5	B
70	30	25	C

14.5. EUT Configuration

The configurations of EUT are listed in Section 3.5.

14.6. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 14.2.

14.7. Test Procedure

- 1) The EUT and test generator were setup as shown on Section 14.2.
- 2) The interruption is introduced at selected phase angles with specified duration.
- 3) Record any degradation of performance.

14.8. Test Results

PASS.

The EUT was tested and all the test results are listed in next page.

Voltage Dips And Interruptions Test Results

Audix Technology (Shenzhen) Co., Ltd.

Applicant	: TPV Electronics (FuJian) Co., Ltd.	Test Date	: Mar.20, 2011
EUT	: LCD Monitor	Temperature	: 22.7°C
M/N	: L230UH	Humidity	: 49.8%
Power Supply	: DC 19V Adapter Input AC 120V/50Hz; DC 19V Adapter Input AC 230V/50Hz	Test Mode	: Running "H" Pattern
Test Engineer	: Cary	Pressure	: 100.6KPa
Required Performance	: B & C	Actual Performance	: A & B

Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in period)	Phase Angle	Required	Observation	Result (Pass / Fail)
0	100	0.5P	0° -360°	B	A	PASS
70	30	25P	0° -360°	C	A	PASS
0	100	250P	0° -360°	C	B	PASS

Note 1: U_T is the rated voltage for the equipment.
Note 2: The frequency of the test voltage shall be within ±2% of the rated frequency, the output voltage shall be within ±5% of the rated voltage.

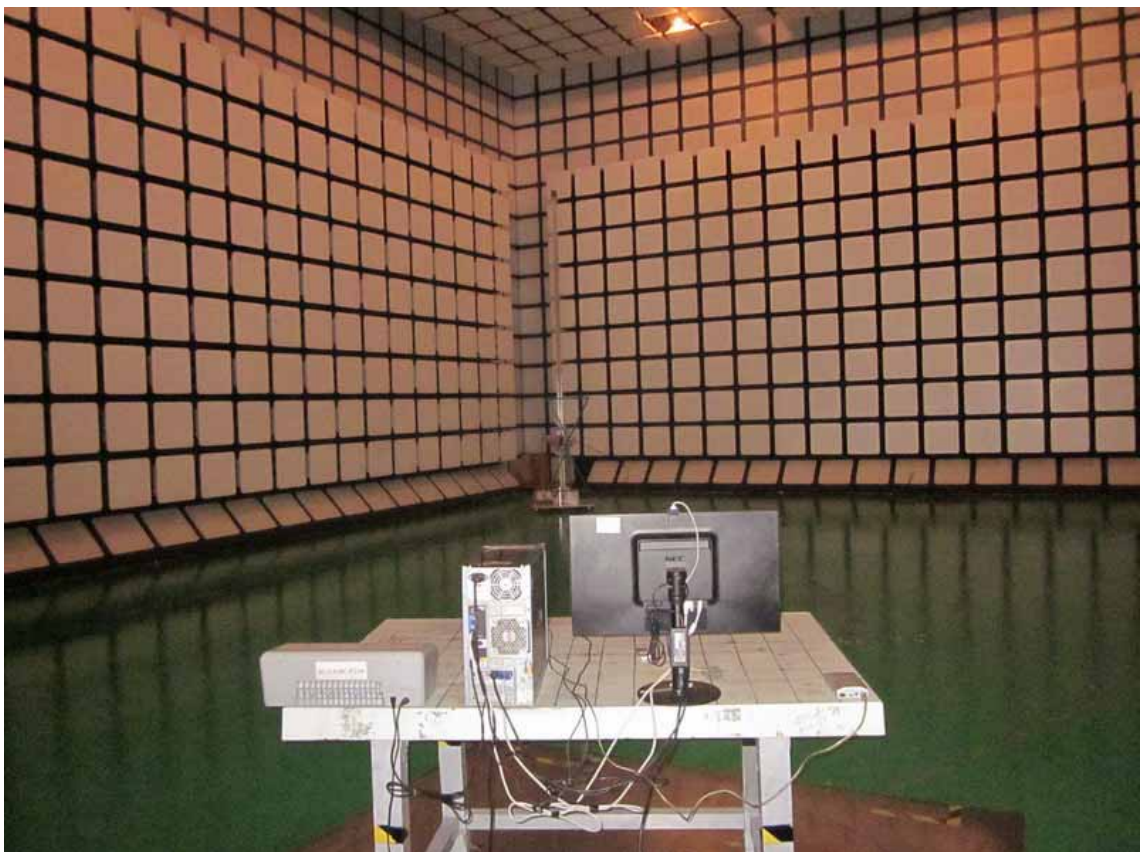
Remark: B test screen of EUT was little flicker, and after finishing the test, it can be self recovery.

15. PHOTOGRAPHS

15.1. Photos of Power Line Conducted Emission Test



15.2. Photos of Radiated Emission Test (In Anechoic Chamber)



The Worst Resolution: 1.8m Cable, DVI-VGA, 1920*1080@60Hz



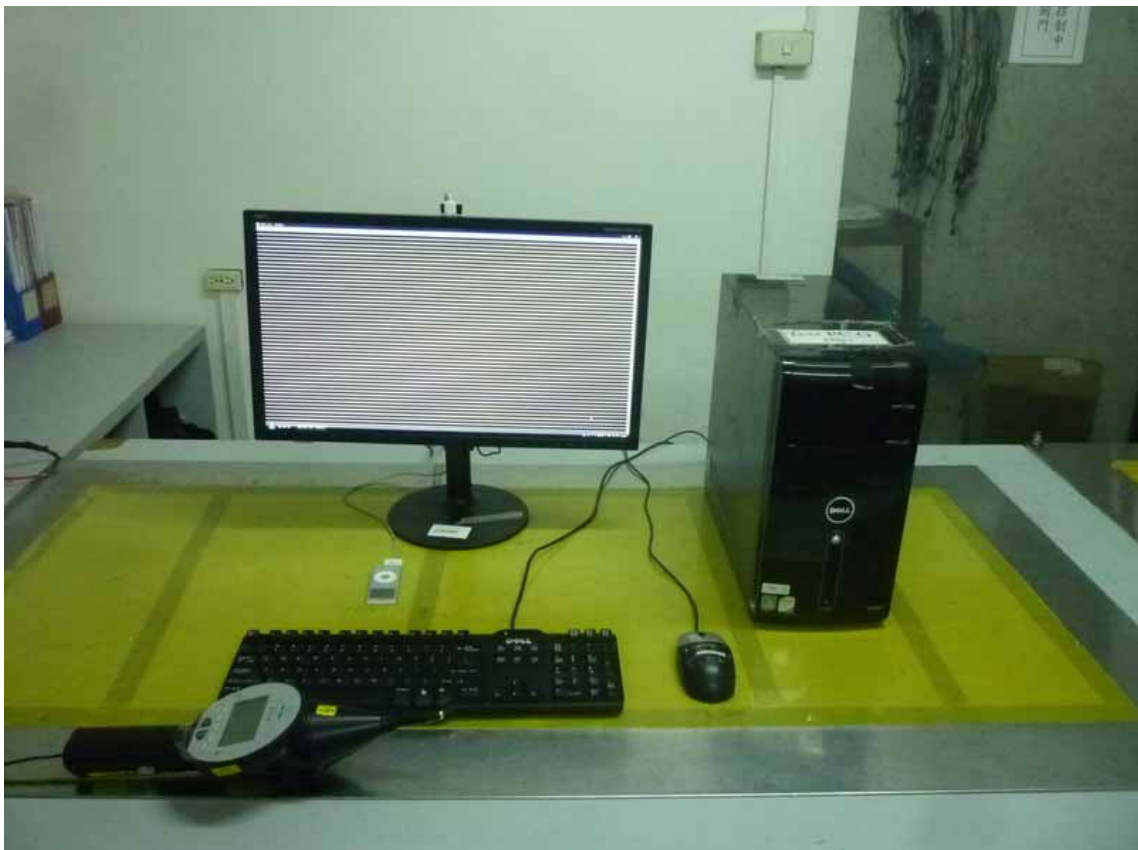
(At Anechoic 10m Chamber Test 1GHz –6GHz)



15.3. Photo of Harmonic / Flicker Test



15.4. Photos of Electrostatic Discharge Immunity Test



15.5. Photo of RF Strength Susceptibility Test



15.6. Photo of Electrical Fast Transient/Burst Immunity Test



15.7. Photo of Surge Test



15.8. Photo of Injected Currents Susceptibility Test



15.9. Photo of Magnetic Field Test



15.10. Photo of Voltage Dips and interruptions test

