



UL Korea, Ltd

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Project: 07CA54500
File: MC15562
Report: 07CA54500-FCC
Date: November 12, 2007
Model: 240-030-960

Electromagnetic Compatibility Test Report

FCC Certification Part 15 Subpart B Class B

For

**ADVAN Int'l Corp.
47817 Fremont Blvd. Fremont CA 94538, Fremont, California, U.S.A**

UL Korea Ltd.

33rd Fl. Gangnam finance Center, 737 Yeoksam-Dong, Kangnam-Gu, Seoul, 135-984, Korea
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to public safety and committed to
quality service for over 100 years*

Project Number: 07CA54500 File Number MC15562 Test Report No: 07CA54500-FCC
Model Number: 240-030-960 Date of Issue: November 12, 2007

TEST REPORT DETAILS

Test report No: 07CA54500-FCC
Tests Performed By: UL Korea Ltd.
33rd FL. Gangnam Finance Center, 737 Yeoksam-dong,
Kangnam-ku, Seoul, 135-984, Korea

Test site: CHUNGBUK TECHNOPARK
685-3 Yangcheong-ri, Ochang-eub, Cheongwon-kun, Chungbuk-
province, Republic of Korea
Registration No: 647924

The test facility was deemed to have the environment and capabilities
necessary to perform the tests included in the test package

Tests Performed For: ADVAN Int'l Corp.
47817 Fremont Blvd. Fremont CA 94538, Fremont, California, U.S.A

Manufacturer: D&T Inc.
Daedeok Valley, 60-1, Jang Dong, Yuseong Gu, Daejeon,
305-343, Korea

Applicant Contact: Dae Sung Oh
Title: General Manager
Phone: 82-2-703-5197
E-mail: pilotdan@advancorp.com
Test Report Date: November 12, 2007

Product Type: 26" LCD Color Display
Trademark: ADVAN
Model Number: 240-030-960
Multiple model Name: Vision Elect HDTV
This certificate covers the multilisting model name as described on the
manufacturer's affidavit

FCC ID: QVXAMM260WTDS
Product standards: FCC Part 15 Subpart B Class B

Sample Serial Number: None (Proto type)

Sample Receive Date: November 02, 2007

Testing Start Date: November 02, 2007

Date Testing Complete: November 12, 2007

Overall Results: **PASS**

UL Korea Ltd. reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. UL Korea Ltd. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from UL Korea Ltd. issued reports.

Project Number: 07CA54500
Model Number: 240-030-960

File Number MC15562

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TEST SUMMARY

Test Result

Requirement – Test	Reference standards	Verdict
AC Power line Conducted Emission Test	47CFR Part 15.107(a) / 47CFR Part 15.109(g)	Complied
Radiated Emission Test		Complied

Remark: Modifications to EUT required for compliance

- See Clause 6 of this report for modification details required for compliance to the radiated emission and photos of Internal product.

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by UL Korea, Ltd. in accordance with the procedures stated in each test requirement and specification. The applicant determined the list of tests performed were applicable to the Equipment Under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

The equipment under test has

- ☒ met the technical requirements
☐ not met the technical requirements



Tested by
Sung Hoon, Baek, Associate Project Engineer
Conformity Assessment Services - 3014ASEO
UL Korea Ltd.
November 12, 2007



Reviewed by
Kyung Yong, Kim, Senior Project Engineer
Conformity Assessment Services - 3014ASEO
UL Korea Ltd.
November 28, 2007

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1. EQUIPMENT UNDER TEST (EUT)

1.1 Equipment Description

Specification

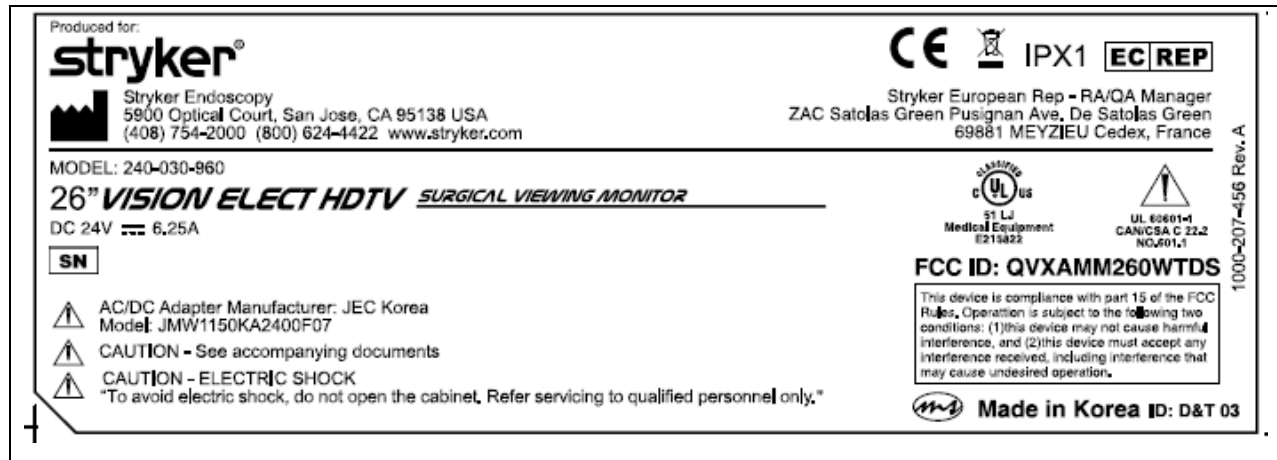
Display	View Angle	+/-89° (L/R) × +/-89° (U/D)
	Display Color	16 million colors
	Native Resolution	1920 dots × 1200 dots
LCD Monitor Panel	25.54 inches (a-Si TFT Active matrix LCD)	
Synchronization	2.5 - 5.0 Vpp separated sync	
Pixel Pitch	0.2865(Pixel Pitch W) x 0.2865(H)	
Response Time	<25ms Typ	
Input Signal	1 x DVI 1 x VGA 1 x SDI 1 x C-Video/SOG 1 x S-Video 1 x Component (Y/G, Pb/B, Pr/R, H/CS,VS) 1 x Optical	
Electrical	Power Adapter	AC 100-240V/50-60 Hz; DC 24V
Dimensions	Dimensions (W × H × D)	616.4 x 428.8 x 121.2 mm
	Weight	19.62 lbs
	VESA Mounting Interface	VESA 100 x 100 mm

Project Number: 07CA54500
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1.2 Equipment Marking Plate



Equipment Marking Plate for Multiple Models Name



1.3 Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
EUT	26" LCD Monitor	D&T Inc.	240-030-960	EUT
EUT	AC/DC Adapter	AULT KOREA Corp.	JMW1150KA2400F07	EUT
AE	PC	CBTP	CBTP	-
AE	Printer	SAMSUNG	ML-2250G	-
AE	Keyboard	Behavior Tech Computer Corp.	5211	-
AE	Mouse	LG	-	-
AE	LCD Monitor	D&T Inc.	FS-L2401T	Extension monitor
AE	AC/DC Adapter	AULT KOREA Corp.	JMW1150KA2400F04	Connected to Extension monitor
AE	SDI Patten Generator	Gefen Inc.	CONVERTER	DVI to HD SDI Scaler
AE	AC/DC adapter	ASTRO	GT-4201D-05	Connected to SDI Patten Generator
AE	DVD Player	E-tronics	V-768	-
AE	Optical transmitter	Opticis	M1-201SA	-
* Note: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, SIM - Simulator (Not Subjected to Test)				

1.4 EUT Input/Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
1	Mains	AC	1.8 m	Unshielded	Hospital-grade AC Power cord
2	DVI In	I/O	1.8 m	Shielded	24 pin DVI-D
3	Optical DVI In	I/O	20.0 m	Unshielded	4 pin Optical
4	VGA In	I/O	1.8 m	Shielded	15 pin D-Sub
5	SDI In, Out	I/O	1.8 m	Shielded	BNC
6	S-Video In	I/O	1.8 m	Shielded	S-Video
7	Component (Y/Pb/Pr) In	I/O	1.8m	Shielded	5 Port BNC
8	C-Video In	I/O	1.8m	Shielded	BNC
Note: *AC = AC Power Port DC = DC Power Port N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports * RS-232 port is used for service purpose only. No user interface port					

1.5 EUT Internal Operating Frequencies:

Frequency (MHz)	Description	Frequency (MHz)	Description
192.375 MHz	Memory Clock	27.00 MHz	System Clock
158.625 MHz	Display Clock	28.322 MHz	System Clock

1.6 Power Interface:

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
Rated	AC 100-240	3.0	-	50~60	Single	-
1	AC 120	-	-	60	Single	-

2. EUT Operation Modes for EMI

2.1 Modes of EMI Testing

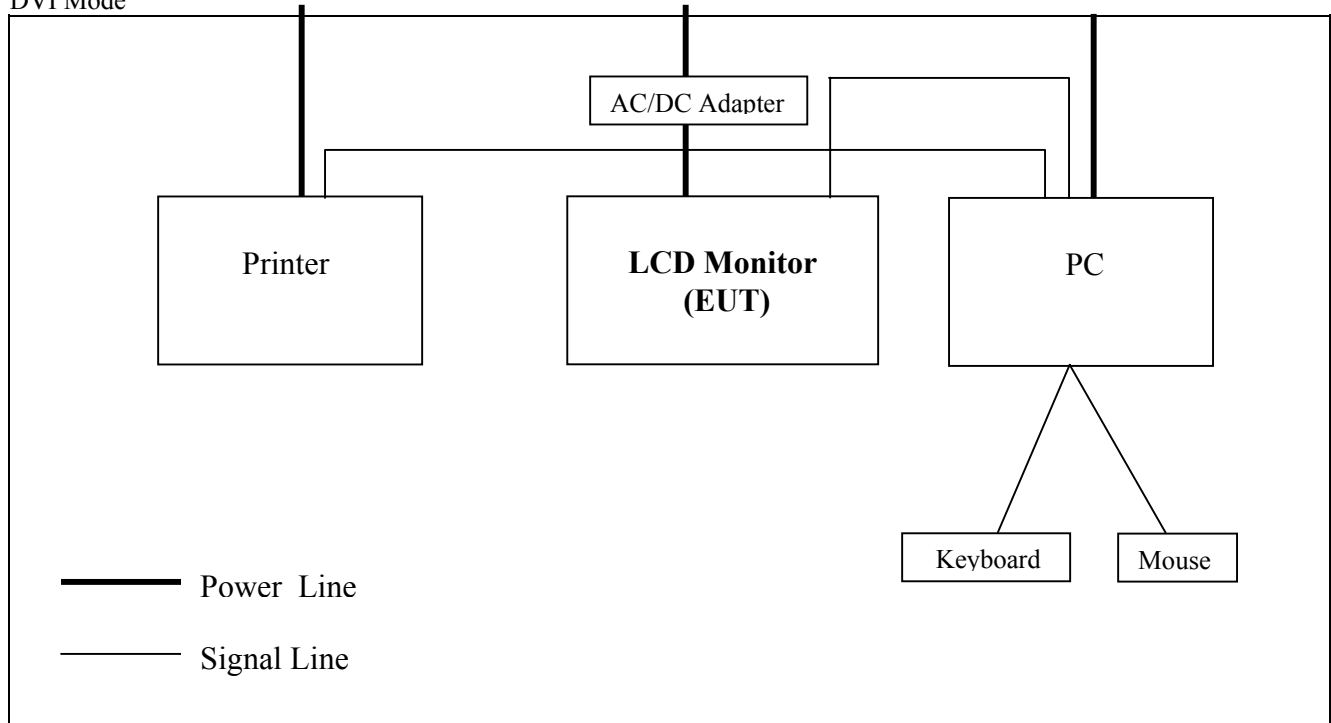
Mode #	Mode	Comments
1	DVI Mode	Worst case condition
2	Optical DVI Mode	-
3	VGA Mode	-
4	SDI In/Out Mode	Worst case condition
5	S-VIDEO Mode	-
6	C-Video Mode	-
7	Component (Y/Pb/Pr) Mode	-
Note 1. Testing has been performed under continuous displaying "H" Patten for configuration modes of 1,2,3 2. Testing have been performed under continuous displaying "Color Bar" Patten for configuration modes of 4,5,6, and 7. 4. All the configuration described above have been investigated during the preliminary testing and selected two cases as worst case condition for final measurements.		

2.2 Modes of Video resolution

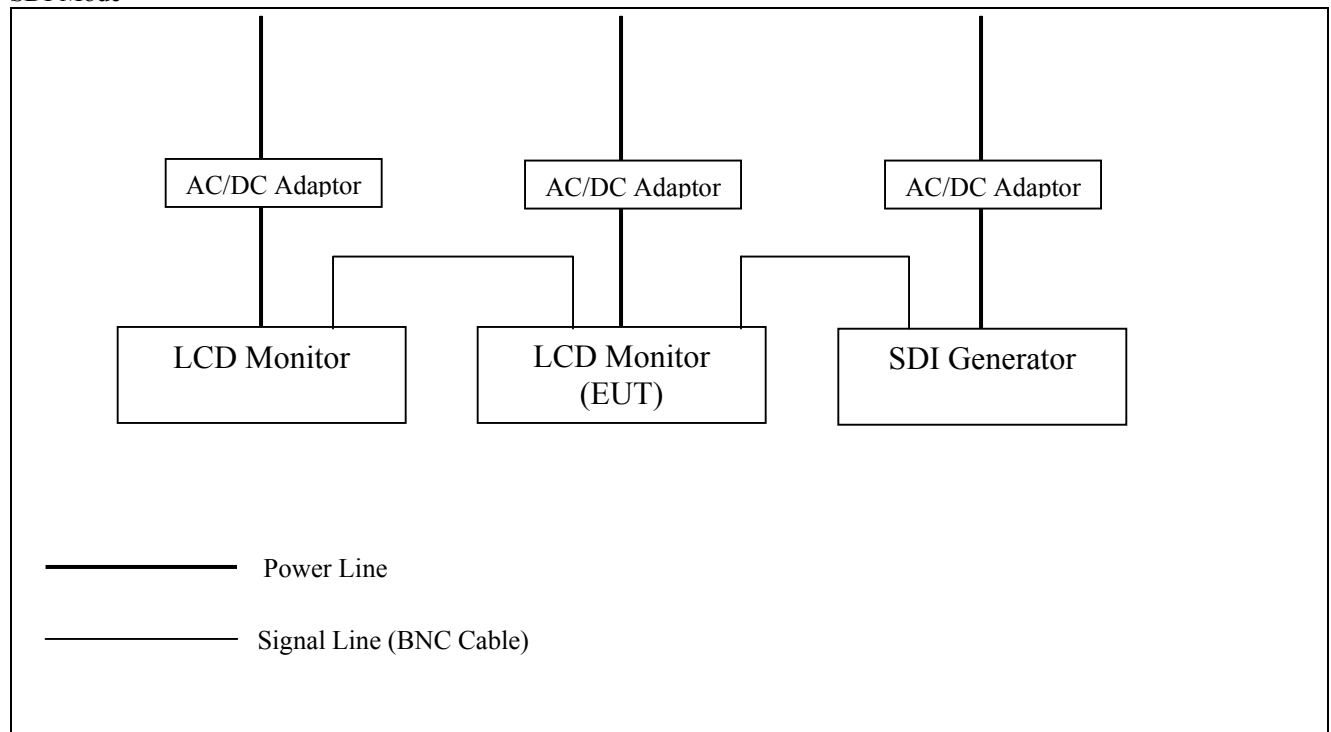
Mode #		Resolution	Comments
1	VGA Mode	640 * 480 @ 60Hz	-
2		1920 * 1200 @ 60Hz	-
3	DVI Mode	640 * 480 @ 60Hz	-
4		1920 * 1200 @ 60Hz	Worst case condition
5	SDI Mode	SMPTE 296M	Worst case condition
Note: 1. Video resolution where it refers from above is representative worst case. 2. EUT have been performed under continuous displaying “H” Patten for configuration modes of 1,2,3, and 4. 3. EUT have been performed under continuous displaying “Color Bar” Patten for configuration modes of 5.			

3. EUT Configurations:

DVI Mode



SDI Mode



4. CONDUCTED EMISSION

	TEST: Limits of mains terminal disturbance voltage				
Method	Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN.				—
Parameters required prior to the test		Laboratory Ambient Temperature		10 to 40 °C	
		Relative Humidity		10 to 90 %	
Parameters recorded during the test		Laboratory Ambient Temperature		22 °C	
		Relative Humidity		40 %	
		Frequency range on each side of line		Measurement Point	
Fully configured sample scanned over the following frequency range		150 kHz to 30 MHz		Mains	
Limits – Class A					
Frequency (MHz)	Limit (dBµV)				
	Quasi-Peak	Results	Average	Results	
0.15 to 0.50	79	N/A	66	N/A	
0.50 to 30	73	N/A	60	N/A	
Limits – Class B					
Frequency (MHz)	Limit (dBµV)				
	Quasi-Peak	Results	Average	Results	
0.15 to 0.50	66 to 56	Pass	56 to 46	Pass	
0.50 to 5	56	Pass	46	Pass	
5 to 30	60	Pass	50	Pass	
Supplementary information: None					

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Test Receiver	Rohde & Schwarz	ESIB26	100359	2007.04.04	2008.04.04
LISN	SCHWARZBECK	NNLK8129	8129162	2007.04.03	2008.04.03
LISN	Rohde & Schwarz	ESH2-Z5	100146	2007.04.03	2008.04.03

Figure 1
Conducted Emission Test Setup: DVI Mode



Figure 2
Conducted Emission Test Setup: SDI Mode

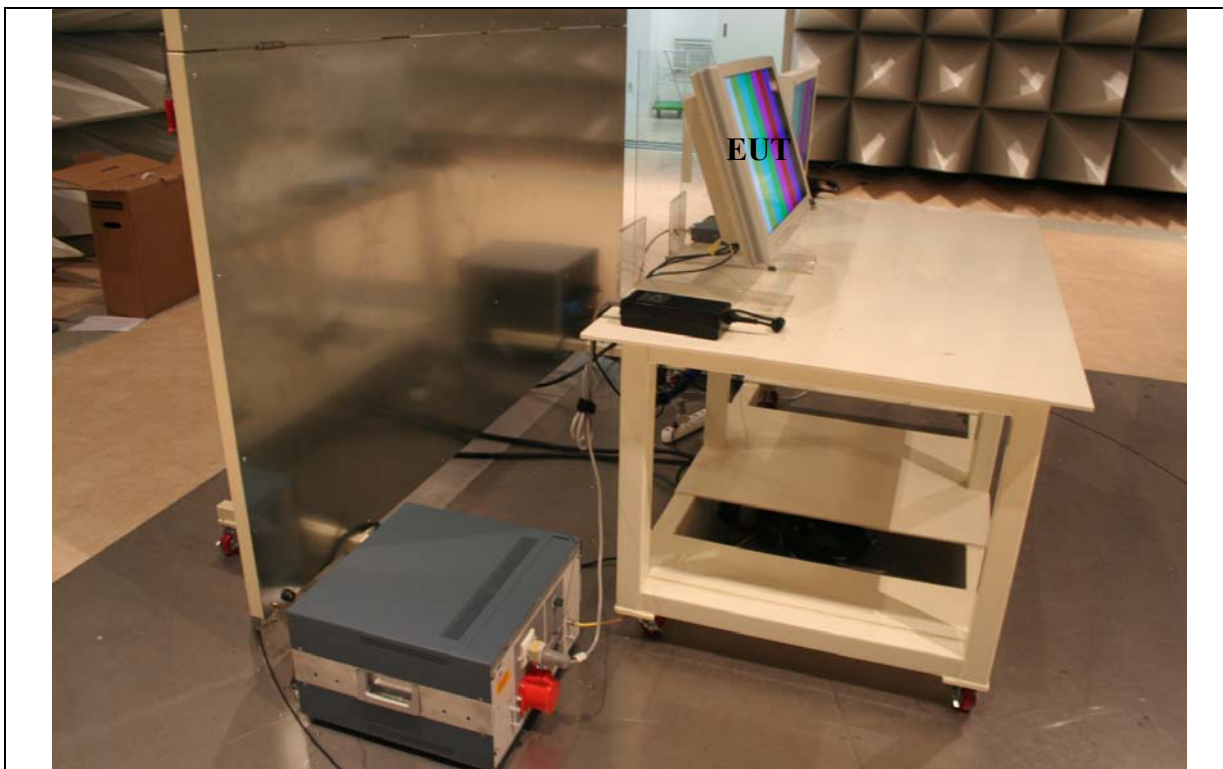


Table 1.

Test data for conducted emission: DVI Mode

Test Frequency (MHz)	Correction Factor		Reading value (dBuV)		Line	Level (dBuV)		Limit (dBuV)		Margin (dB)	
	Cable	LISN	QP	AV		QP	AV	QP	AV	QP	AV
0.17	0.06	0.08	49.66	47.20	N	49.80	47.30	65.10	55.10	15.30	7.80
0.22	0.07	0.08	47.55	46.50	L	47.70	46.70	62.80	52.80	15.10	6.10
0.33	0.08	0.11	42.91	42.40	N	43.10	42.60	59.40	49.40	16.30	6.80
0.34	0.08	0.08	41.94	41.50	L	42.10	41.70	59.30	49.30	17.20	7.60
0.50	0.10	0.10	41.4	41.10	N	41.60	41.30	56.00	46.00	14.40	4.70
0.61	0.11	0.10	42.69	42.40	N	42.90	42.60	56.00	46.00	13.10	3.40
0.72	0.12	0.10	40.08	39.70	N	40.30	39.90	56.00	46.00	15.70	6.10
0.89	0.13	0.11	41.46	41.30	N	41.70	41.50	56.00	46.00	14.30	4.50
1.00	0.13	0.12	38.25	37.50	N	38.50	37.80	56.00	46.00	17.50	8.20
1.05	0.14	0.12	37.64	37.10	N	37.90	37.40	56.00	46.00	18.10	8.60
2.12	0.18	0.14	38.68	38.10	N	39.00	38.40	56.00	46.00	17.00	7.60
2.22	0.19	0.14	37.37	35.80	L	37.70	36.10	56.00	46.00	18.30	9.90
2.56	0.21	0.15	37.84	37.00	N	38.20	37.40	56.00	46.00	17.80	8.60
3.06	0.25	0.16	37.89	36.30	L	38.30	36.70	56.00	46.00	17.70	9.30
8.96	0.43	0.26	41.11	37.80	N	41.80	38.50	60.00	50.00	18.20	11.50
Note: 1. Margin (dB)= Limit (dBuV) - Level (dBuV) 2. If no frequencies are specified in the tables, no measurement for quasi-peak or average was necessary.											

Table 2.

Test data for conducted emission: SDI Mode

Test Frequency (MHz)	Correction Factor		Reading value (dBuV)		Line	Level (dBuV)		Limit (dBuV)		Margin (dB)	
	Cable	LISN	QP	AV		QP	AV	QP	AV	QP	AV
0.17	0.06	0.08	49.76	47.36	L	49.90	47.50	65.10	55.10	15.20	7.60
0.22	0.07	0.10	50.23	49.13	N	50.40	49.30	62.70	52.70	12.30	3.40
0.33	0.08	0.11	44.11	43.81	N	44.30	44.00	59.40	49.40	15.10	5.40
0.44	0.09	0.11	37.90	37.40	N	38.10	37.60	57.00	47.00	18.90	9.40
0.50	0.10	0.10	39.90	39.60	N	40.10	39.80	56.00	46.00	15.90	6.20
0.61	0.11	0.10	39.49	39.19	L	39.70	39.40	56.00	46.00	16.30	6.60
0.72	0.12	0.10	37.68	37.08	L	37.90	37.30	56.00	46.00	18.10	8.70
0.89	0.13	0.11	39.66	39.46	N	39.90	39.70	56.00	46.00	16.10	6.30
2.12	0.18	0.14	38.18	37.38	N	38.50	37.70	56.00	46.00	17.50	8.30
4.79	0.29	0.19	38.82	34.92	L	39.30	35.40	56.00	46.00	16.70	10.60
7.12	0.37	0.25	41.08	36.48	N	41.70	37.10	60.00	50.00	18.30	12.90
7.79	0.39	0.25	44.26	40.66	L	44.90	41.30	60.00	50.00	15.10	8.70
10.30	0.45	0.28	40.77	36.07	N	41.50	36.80	60.00	50.00	18.50	13.20

Note:

1. Margin (dB)= Limit (dBuV) - Level (dBuV)
2. If no frequencies are specified in the tables, no measurement for quasi-peak or average was necessary.

Figure 3
Graphical representation of conducted emissions: DVI Mode

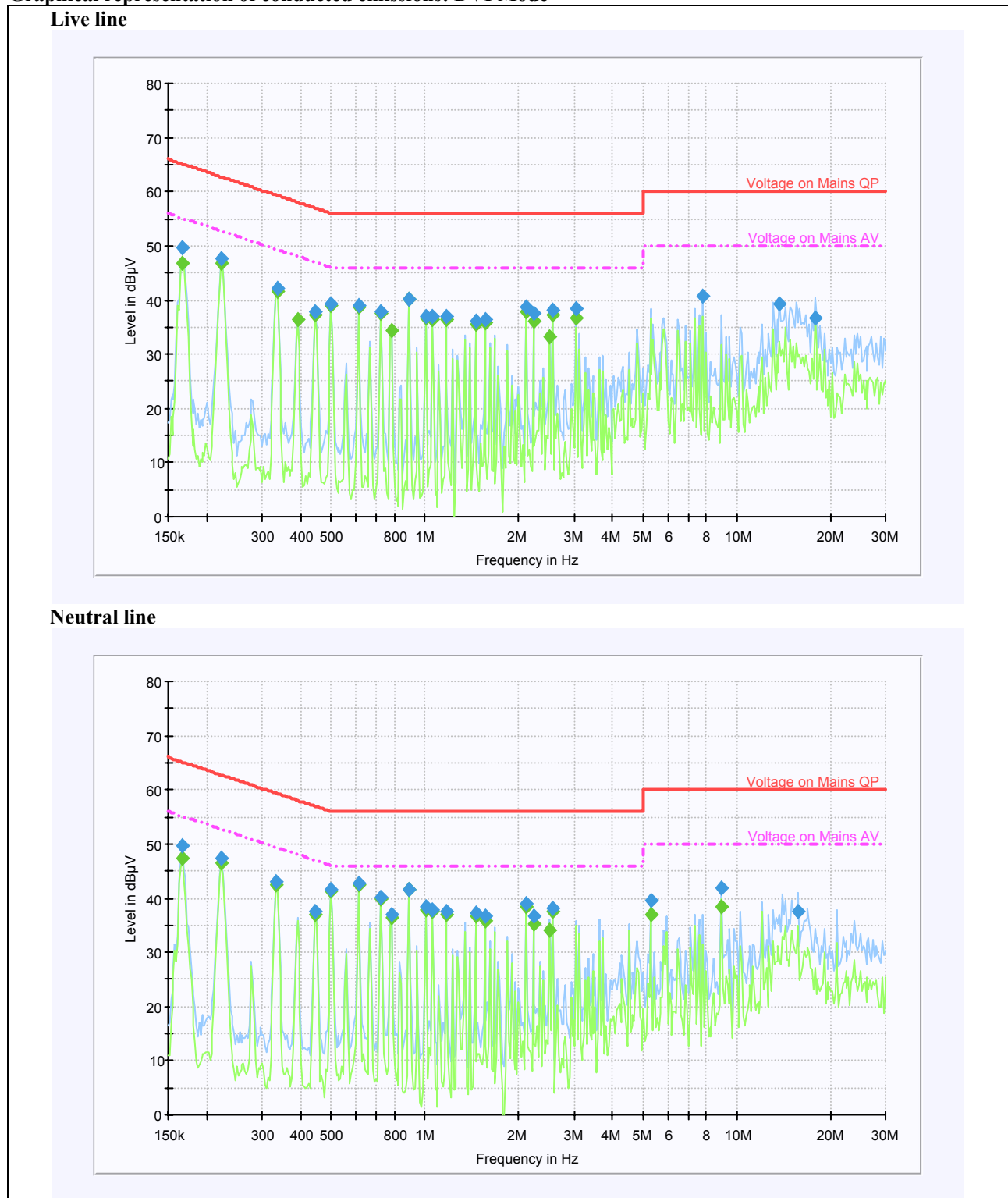
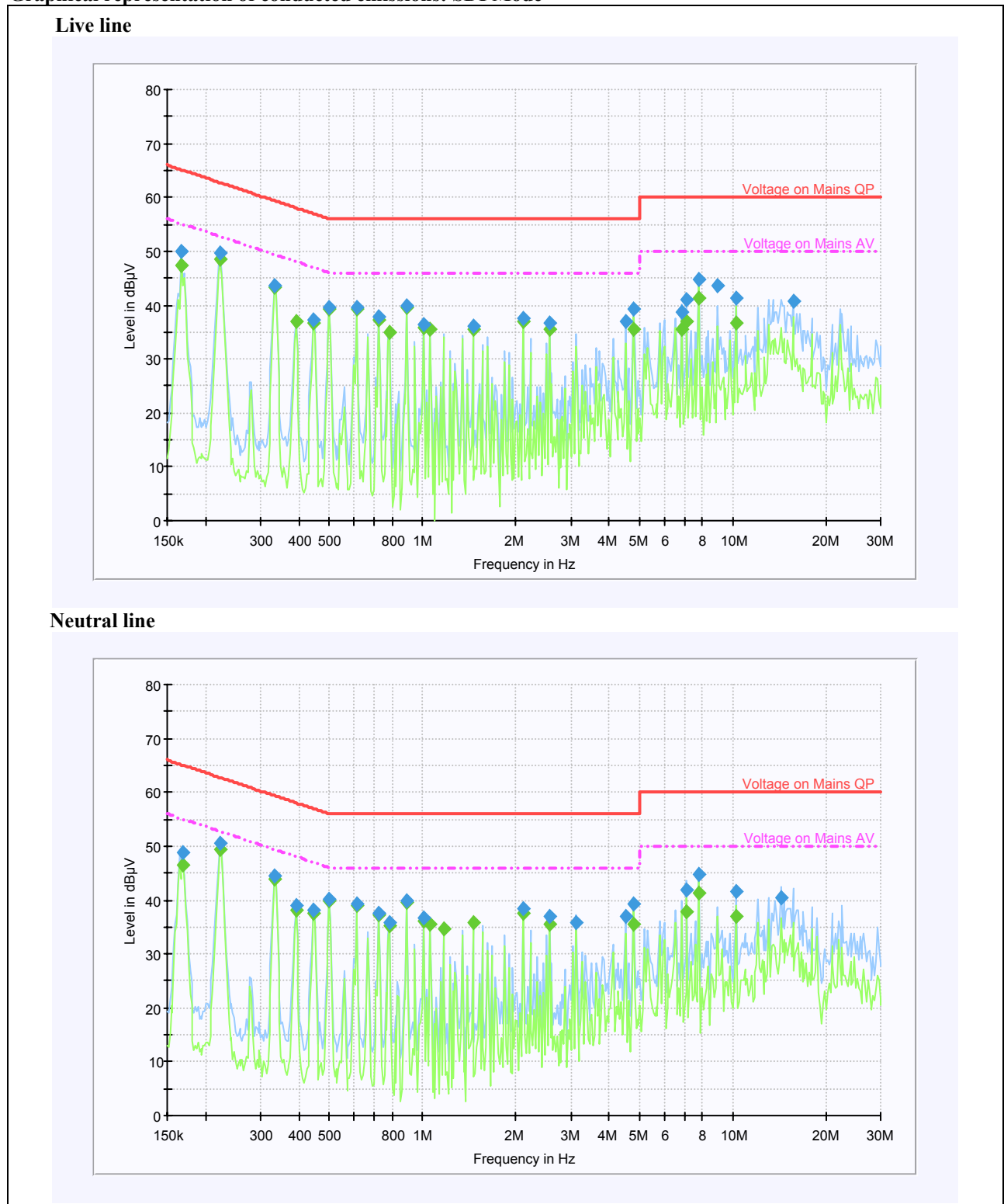


Figure 4
Graphical representation of conducted emissions: SDI Mode



5. RADIATED EMISSION

	TEST: Limits for radiated disturbance		
Method	Measurements were made at Open area test site that complies to CISPR 16/ANSI C63.4. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at 1, 2, 3 and 4 meter heights in both horizontal and vertical polarities. Final measurements (quasi-peak or average as noted) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.		—
Parameters required prior to the test		Laboratory Ambient Temperature	10 to 40 °C
		Relative Humidity	10 to 90 %
Parameters recorded during the test		Laboratory Ambient Temperature	23 °C
		Relative Humidity	38 %
		Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range		30 MHz – 1.0 GHz	(10 meter measurement distance)
		1.0 GHz – 2.0GHz	(3 meter measurement distance)
Limits - Class B			
Frequency (MHz)	Limit (dBμV/m)		
	Quasi-Peak	Results	
30 to 230	30	Pass	
230 to 1000	37	Pass	
1000 to 2000	54	Pass	
Supplementary information: None			

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Test Receiver	Rohde & Schwarz	ESIB26	100359	2007.04.04	2008.04.04
BiconiLog ANT	CBL6112D	Schaffner	21784	2006.06.26	2008.06.26
Position controller	Inn-co	CO 2000	11261105/L	N/A	N/A
Antenna Mast	Inn-co	MA 4000	-	N/A	N/A
Turntable	Inn-co	DT 3000	-	N/A	N/A

Figure 9

Photo of Radiated emission test setup: DVI Mode

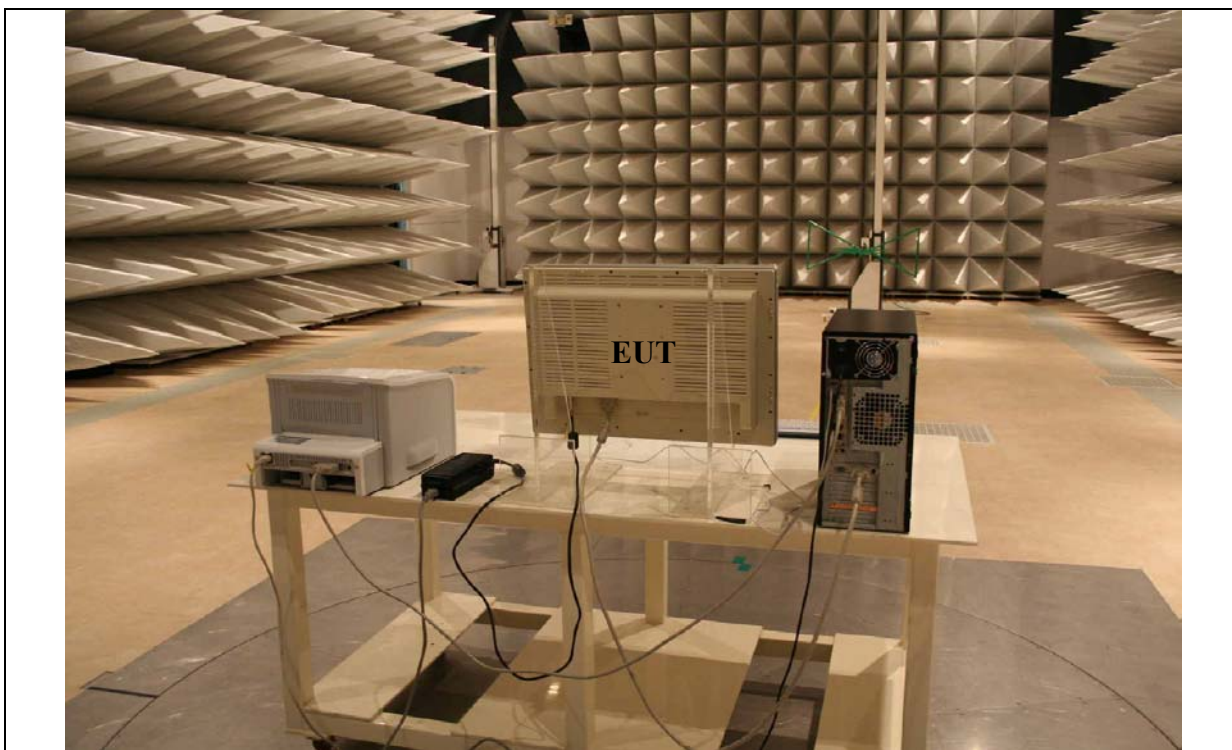
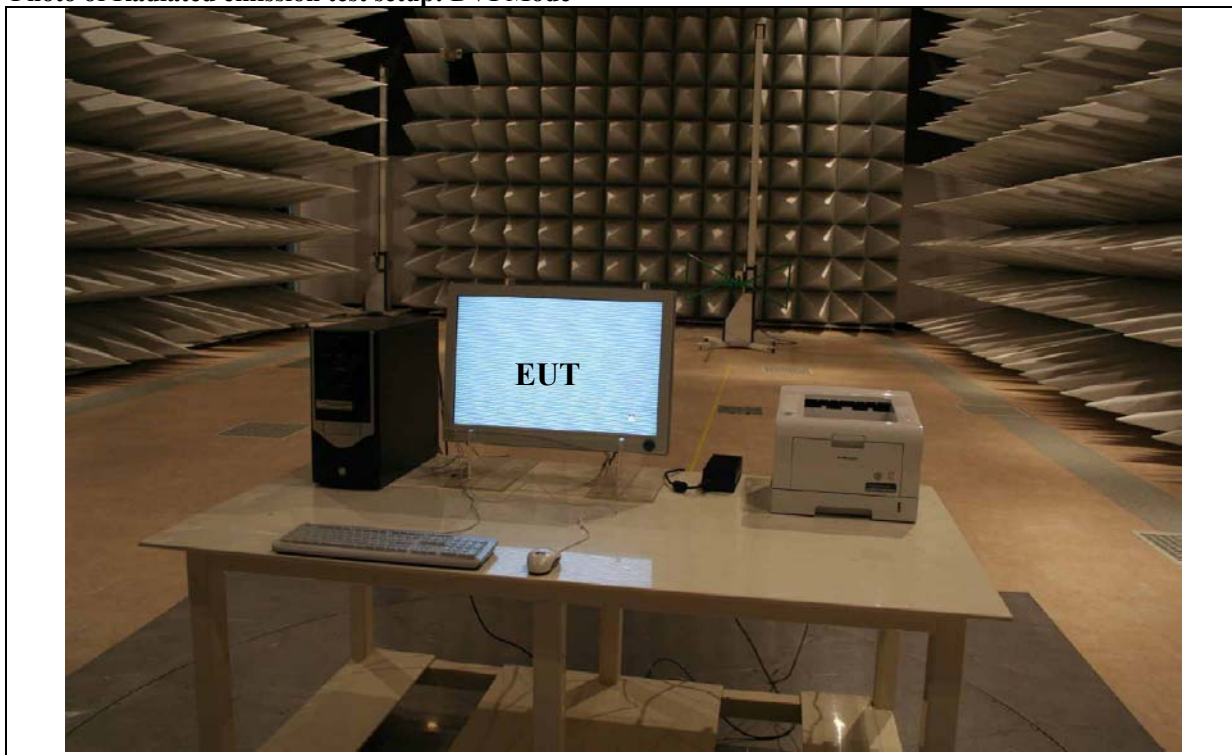


Photo of Radiated emission test setup: 1GHz to 2GHz

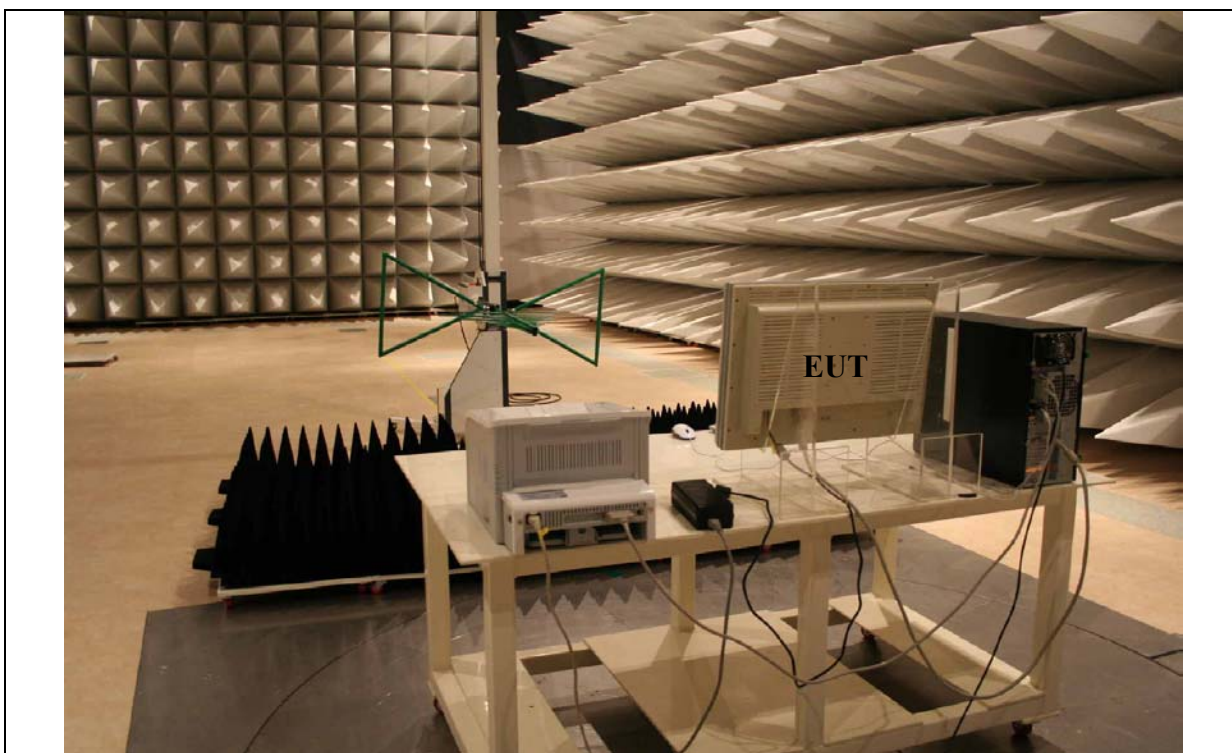
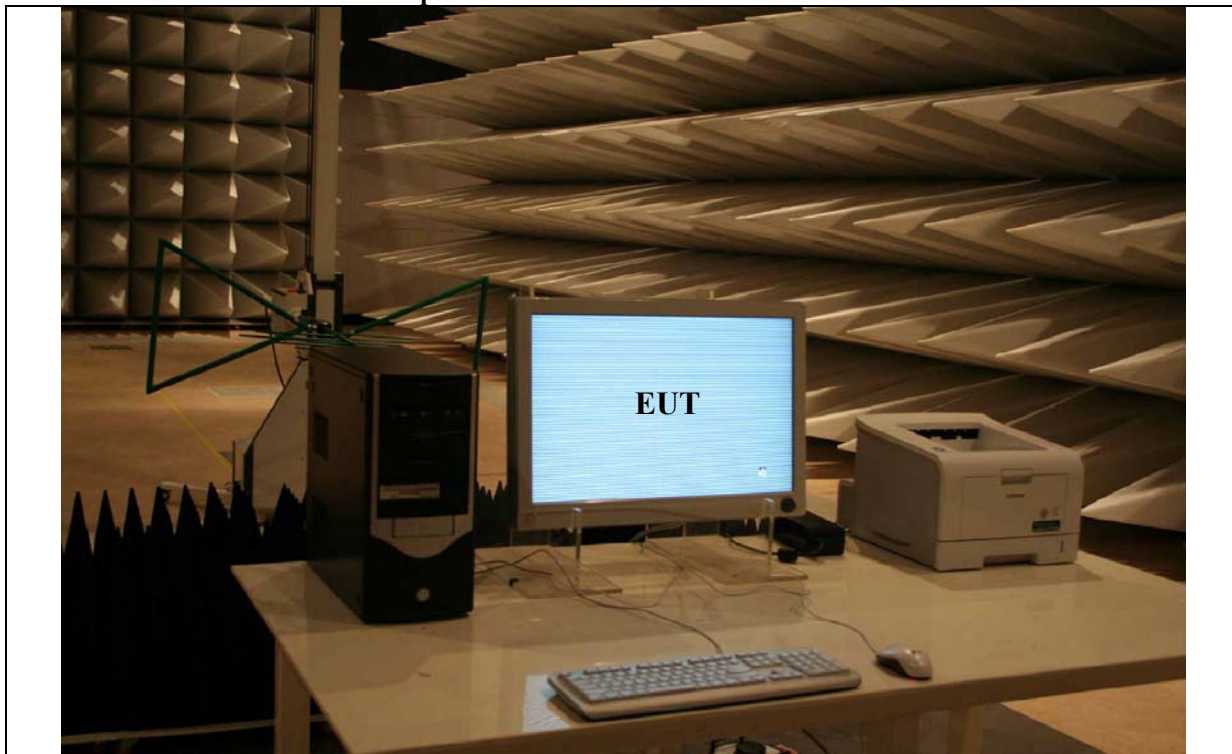


Figure 10

Photo of Radiated emission test setup: SDI Mode

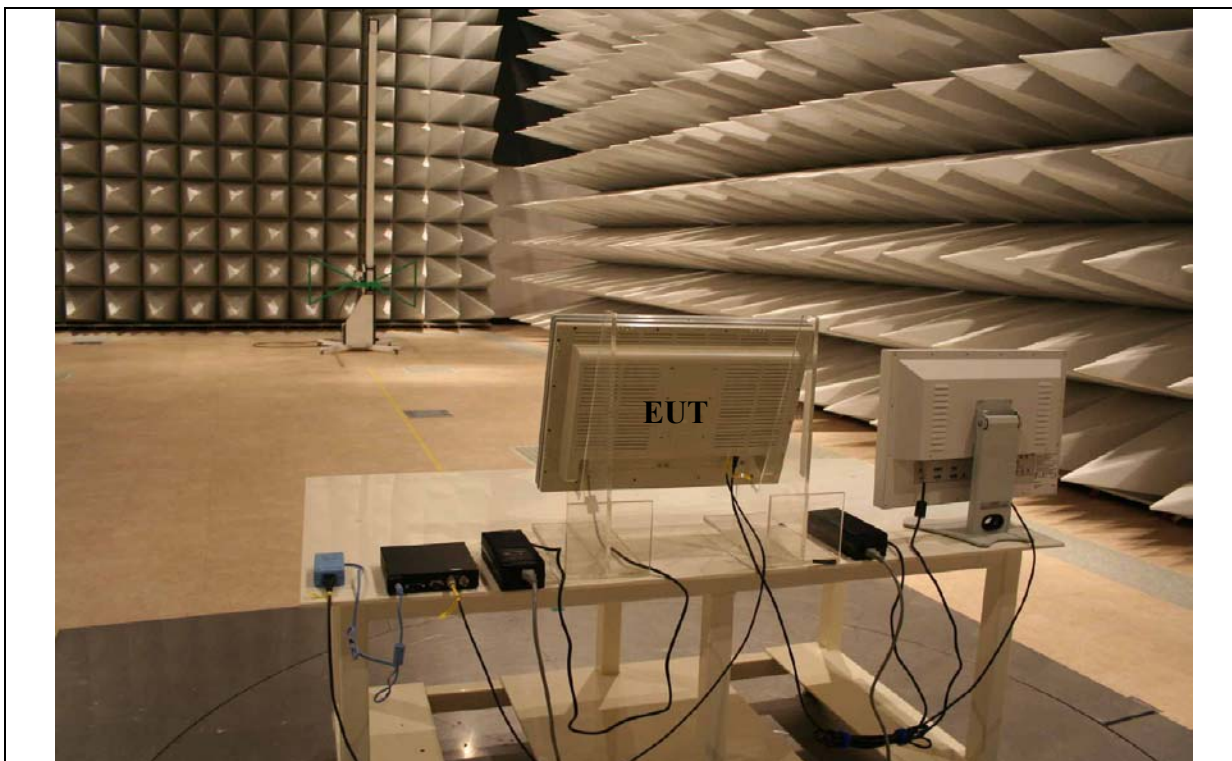
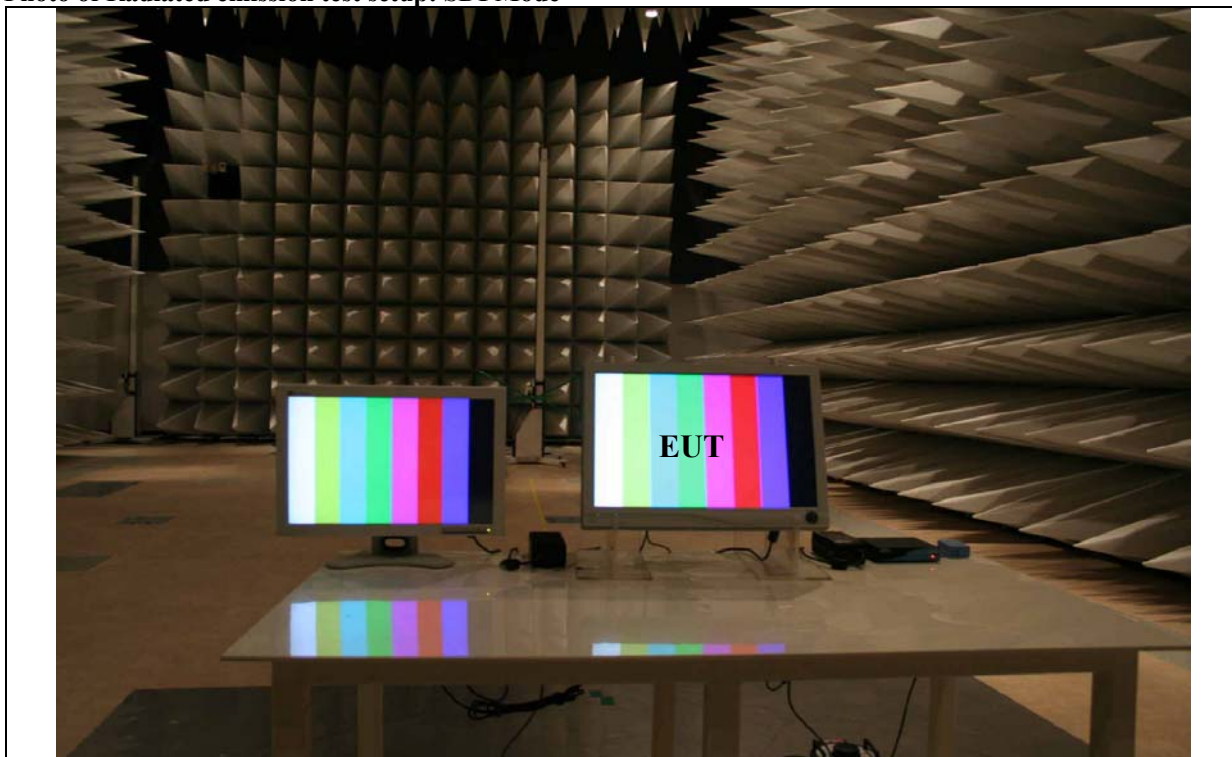


Photo of Radiated emission test setup: 1GHz to 2GHz

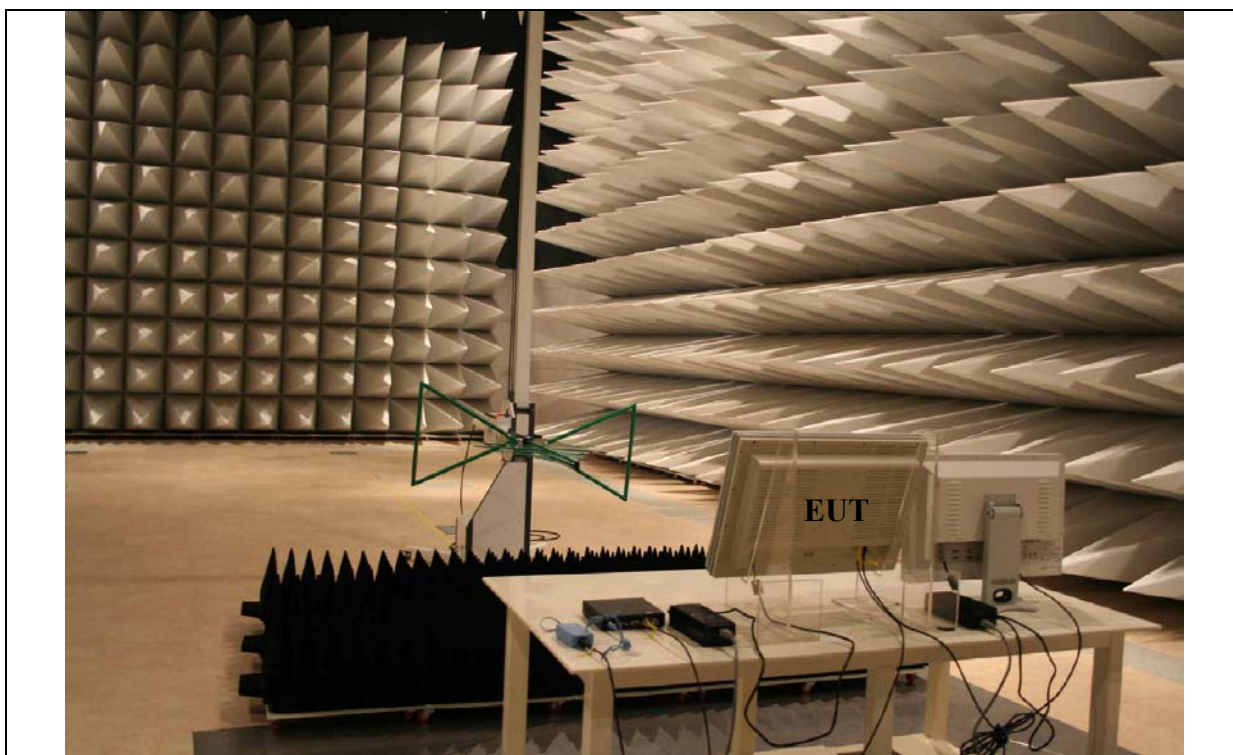


Table 5

Radiated emission Test data: DVI Mode

Test Frequency (MHz)	Meter Reading (dBuV)	Detector (Pk/QP)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (m)	Gain/Loss Factor (dB)	Transducer Factor (dB/m)	Level dBuV/m	Limit dBuV/m	Margin (dB)
34.05	6.10	QP	V	0.0	1.00	0.90	15.60	22.60	30.00	7.40
44.08	12.20	QP	V	278.0	1.05	1.04	9.86	23.10	30.00	6.90
98.02	13.00	QP	V	114.0	2.05	1.40	10.20	24.60	30.00	5.40
123.41	5.50	QP	V	0.0	1.05	1.75	12.05	19.30	30.00	10.70
161.24	1.20	QP	H	156.0	3.05	1.90	9.70	12.80	30.00	17.20
200.59	16.06	QP	V	0.0	1.05	2.21	8.89	27.96	30.00	2.84
295.16	16.40	QP	V	0.0	1.00	2.80	12.80	32.00	37.00	5.00

Note:

1. Margin (dB)= Limit (dBuV) - Level (dBuV)
2. If no frequencies are specified in the tables, no measurement for quasi-peak or average was necessary.

Table 6

Radiated emission Test data: SDI Mode

Test Frequency (MHz)	Meter Reading (dBuV)	Detector (Pk/QP)	Polarity (V/H)	Azimuth (Degrees)	Antenna Height (m)	Gain/Loss Factor (dB)	Transducer Factor (dB/m)	Level dBuV/m	Limit dBuV/m	Margin (dB)
30.20	6.50	QP	V	182.0	1.05	0.90	17.70	25.10	30.00	4.90
56.03	16.40	QP	V	0.0	3.95	1.10	6.00	23.50	30.00	6.50
61.81	12.90	QP	V	286.0	1.05	1.20	5.20	19.30	30.00	10.70
97.10	12.50	QP	H	94.0	3.95	1.40	10.10	24.00	30.00	6.00
97.25	11.30	QP	V	126.0	1.05	1.40	10.10	22.80	30.00	7.20
106.76	3.50	QP	H	257.0	2.95	1.55	11.35	16.40	30.00	13.60
148.75	4.40	QP	V	247.0	3.95	1.90	10.10	16.40	30.00	13.60
171.75	6.90	QP	H	144.0	3.95	2.00	9.10	18.00	30.00	12.00
202.56	8.80	QP	V	316.0	1.00	2.24	8.86	19.90	30.00	10.10
222.84	9.20	QP	H	10.0	3.95	2.40	8.80	20.40	30.00	9.60
400.67	5.30	QP	V	332.0	1.00	3.40	15.80	24.50	37.00	12.50
445.67	5.00	QP	H	204.0	2.95	3.62	16.18	24.80	37.00	12.20

Note:

1. Margin (dB)= Limit (dBuV) - Level (dBuV)
2. If no frequencies are specified in the tables, no measurement for quasi-peak or average was necessary.

6. EUT Modification

EUT Modification for Radiation Disturbance

#1	Attach the EMI form gasket (20x4x490mm) under the Connector bracket to make strong ground contact with mainframe.
#2	Attach the EMI form gasket (22x20x170mm) at these 4 points to make more strong ground contact with LCD panel and mainframe.
#3	Attach the EMI form gasket (22x20x80mm) with the temperature sensor cable.
#4	Adhere the EMI tape like this picture with the OSD cable.
#5	Attach the EMI form gasket (20x5x175) at this 2 point on the VESA mount bracket to enhance shield case and rear cover contact
#6	Insert the clamp ring style ferrite core (TDK, type: ZCAT1730-0730A) through the DC input cable.
#7	Adhere the EMI tape like this picture with the light sensor cable.
#8	Insert the flat ring style ferrite core (SCC Co.,Ltd, type : PC2910) on the both side of component(YPbPr) cable.
#9	Attach the EMI form gasket (27x15x140mm) at this point and contact with FPC Cable by using EMI tape to reduce the amount of radiation occurring from FPC cable.

Note: See photos of Internal product for modification details required for compliance to the radiated emission.

7. AFFIDAVIT for Multilisting Model



November 5, 2007

We hereby confirm that the *LCD Color Display, model 240-030-960* manufactured by *ADVAN Int'l Corp.* as a basic application, has several multilisting models as described below and these multilisting models are the same as basic model except the model name designation and are the same characteristic and construction in electronically and mechanically. So, we declare that these multilisting models to be added on the basic application could be applied without any further engineering investigation and evaluation.

Model

Basic Model No.: 240-030-960

Additional (sub) Model No.: *Vision Elect HDTV*

FCC ID Number for Basic & Multilisting Product

QVXAMM260WTD

If you have any questions, please feel free to contact me at the address shown below.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Jang", is written over a horizontal line.

Name: Andy Jang
Company: ADVAN Int'l Corp.
Fax: +82- 2-701-3064
Email: andyjang@advancorp.com

ADVAN Int'l Corp.
47817 Fremont Blvd. Fremont CA 94538, Fremont, California, U.S.A 94538

7. Measurement Uncertainties

Test	Uncertainty
Radiated Emissions	± 3.50 dB
Conducted Emissions	± 5.49 dB