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Project: 08CA14738
File: TC8326
Report: 08CA14738-FCC
Date: April 24, 2008
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

Summary of Test Results:

Test Result

Requirement – Test	Reference standards	Verdict
Conducted Disturbance at the mains ports	47CFR Part 15.207(a) / 47CFR Part 15.109(g)	Complied
Radiated Emission Test		Complied

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.
April 24, 2008

Reviewed by Kyungyong, Kim
Senior Project Engineer
Conformity Assessment Services - 3014ASEO
UL Korea Ltd.
April 24, 2008

Test Report Details

Tests Performed By:	UL Korea Ltd. 33rd FL. GFC Bldg. 737 Yeoksam-dong, Kangnam-ku, Seoul, 135-984, Korea
Test Site:	SK Tech 820-2 Wolmoon-Ri, Wabu-Up, Namyangju-Si, Kyunggi-Do, Korea The test facility was deemed to have the environment and capabilities necessary to perform the tests included in the test package.
Applicant:	ADVAN Int'l Corp. 47817 Fremont Blvd. Fremont CA 94538, Fremont, California, U.S.A
Applicant Contact: Title:	Dae Sung Oh General Manager
Phone:	82-2-703-5197
E-mail:	pilotdan@advancorp.com
Manufacturer:	D&T Inc. Daedeok Valley, 60-1, Jang Dong, Yuseong Gu, Daejeon, 305-343, Korea
Trade Name:	Advan
Product Type:	26" LCD Monitor
Model Number:	240-030-960
FCC ID:	QVXAMM260WTDS
Multiple model Name:	Vision Elect HDTV This certificate covers the multilisting model name as described on the manufacturer's affidavit
Product standards:	FCC Part 15 Subpart B Class B
Sample Serial Number:	N/A (Proto type)
Sample Receive Date:	April 01, 2008
Testing Start Date:	April 02, 2008
Date Testing Complete: Test Report Date:	April 23, 2008 April 24, 2008
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.

Report Directory

1. General Product Description

1.1 Equipment Description

No.	-
1	The 240-030-960 (Vision Elect HDTV) LCD Monitor intended for use in endoscopic surgical applications.
2	N/A

1.2 Equipment Configuration

No.	Product Type	Manufacturer	Model	Comments
1	26" LCD Monitor	D&T Inc.	240-030-960 (Vision Elect HDTV)	EUT
2	AC/DC Adapter	AULT KOREA Corp.	JMW1150KA2400F07	
3	DC Extension Cable	JEC Korea	1501047	
4	DC Extension Cable	JEC Korea	1501047001	
5	DC Extension Cable	JEC Korea.	1501047002	
6	DC Extension Cable	Nortra	240-030-932	
7	DC Extension Cable	Nortra	240-030-722	
8	Converter	JEC Korea.	1501055	
9	Converter	JEC Korea.	1501055001	
Note: The EUT is consisted of the following component provided by the manufacturer.				

1.3 Technical Data

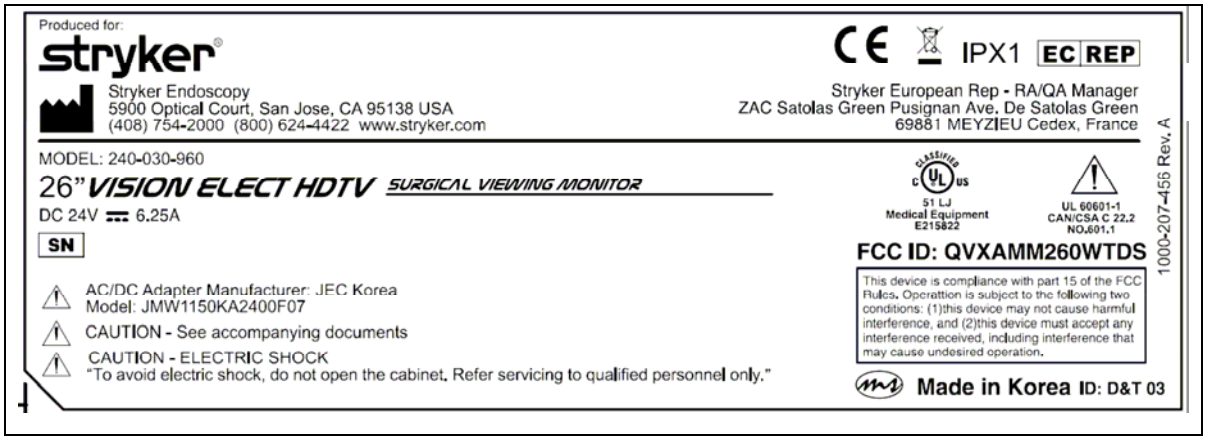
No.		
1	LCD monitor Panel	25.54 inches (a-Si TFT Active matrix LCD)
2	Input Signal	1 x DVI
		1 x VGA
		1 x HD/SD-SDI
		1 x C-Video/SOG
		1 x S-Video
		1 x Component (Y/G, Pb/B, Pr/ R, H/CS, VS)
		1 x Optical (optional)
3	Electrical	
	Power Adapter	AC 100-240V; DC 24V
	Power Consumption	150W (max)
	Electrical Input Rating	24V DC 6.25A
4	Dimensions	
	Dimensions (W × H × D)	616.4 x 428.8 x 121.2mm
	Weight	19.62 lbs
	VESA Mounting Interface	VESA 100 x 100mm
Note: All the technical data described above were provided by the manufacturer		

1.4 Technical descriptions and documents

No.	Document Title and Description
1	240-030-960 (Vision Elect HDTV) User Manual
Note: The following document was provided by the manufacturer	

1.5 Equipment Marking Plate

1.5.1 Equipment Marking Plate



1.5.2 Equipment Marking Plate for Multiple models Name

2. Test Condition

2.1 Equipment Used During Test:

Use*	Product Type	Manufacturer	Model	Comments
EUT	26" LCD Monitor	D&T Inc.	240-030-960	None
AE	PC	Samsung electronics	DB-P73	Connected to EUT through the DVI, VGA, S-Video Cable. Connected to EUT through the Component Cable.
AE	Keyboard	LOGITECH INC.	Y-Bp62a	Connected to PC
AE	Mouse	LOGITECH INC.	M-BJ58	Connected to PC
AE	LCD Monitor	D&T Inc.	FS-L2401D	Extension monitor
AE	AC/DC Adapter	XP Power	AMM120PS24	Connected to External monitor
AE	Patten Generator for C-video	LEDER	LCG-399A	Connected to EUT through the C-Video Cable
AE	AC/DC Adapter			Connected to Extension monitor
AE	SDI Patten Generator	Gefen Inc.	CONVERTER	Connected to EUT through the BNC Cable
AE	AC/DC adapter	ASTRO	GT-4201D-05	Connected to SDI Patten Generator
AE	Optical transmitter	Opticis	M1-201SA	Connected to EUT through the Optical Cable

* Note: **EUT** - Equipment Under Test, **AE** - Auxiliary/Associated Equipment, **SIM** - Simulator (Not Subjected to Test)

2.2 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	5 Pin, DC Extension Cable	-	15ft	Unshielded	Model: 1501047
3	5 Pin, DC Extension Cable	-	75ft	Unshielded	Model: 1501047001
4	2 Pin, DC Extension Cable	-	75ft	Unshielded	Model: 240-030-932
5	2 Pin, DC Extension Cable	-	15ft	Unshielded	Model: 240-030-722
6	5 Pin, DC Extension Cable	-	1.5m	Unshielded	Model: 1501047002
7	Converter	-	0.55 m	Unshielded	Model: 1501055
8	Converter	-	0.55 m	Unshielded	Model: 1501055001
9	DVI In	I/O	1.8 m	Shielded	24 pin DVI-D cable
10	Optical DVI In	N/E	20.0 m	Unshielded	4 pin Optical cable
11	VGA In	I/O	1.8 m	Shielded	15 pin D-Sub cable
12	SDI In	I/O	1.8 m	Shielded	BNC cable
13	SDI Out	I/O	1.8 m	Shielded	BNC cable
14	S-Video In	I/O	1.8 m	Shielded	S-Video cable
15	Component (Y/Pb/Pr) In	I/O	1.8 m	Shielded	5 Port BNC cable
16	C-Video In	I/O	1.8 m	Shielded	BNC cable
17	RS232	I/O	1.8 m	Unshielded	-

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

2.3 Power Interface:

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

2.4 EUT Internal Operating Frequencies:

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

2.5 EUT Operation Modes

2.1 EUT Operation Modes for EMI

Mode #	Mode	Comments
1	DVI Mode	Worst case condition
2	Optical DVI Mode	-
3	VGA Mode	Additional tests for radiated emission
4	SDI In/Out Mode	Worst case condition
5	S-VIDEO Mode	-
6	C-Video Mode	-
7	Component (Y/Pb/Pr) Mode	-

Note
1. The final test was performed at the DVI mode (1920 * 1200 video resolution with 60 Hz vertical refresh rate) and SDI in/out mode.
2. Testing has been performed under continuous displaying "H" Patten for configuration modes of 1,2,3
3. Testing has been performed under continuous displaying "Color Bar" Patten for configuration modes of 4,5,6, and 7.
4. All configuration described above has 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	DVI Mode	640 * 480 @ 60Hz	-
2		1920 * 1200 @ 60Hz	Worst case condition
3	SDI Mode	SMPTE 296M	Worst case condition

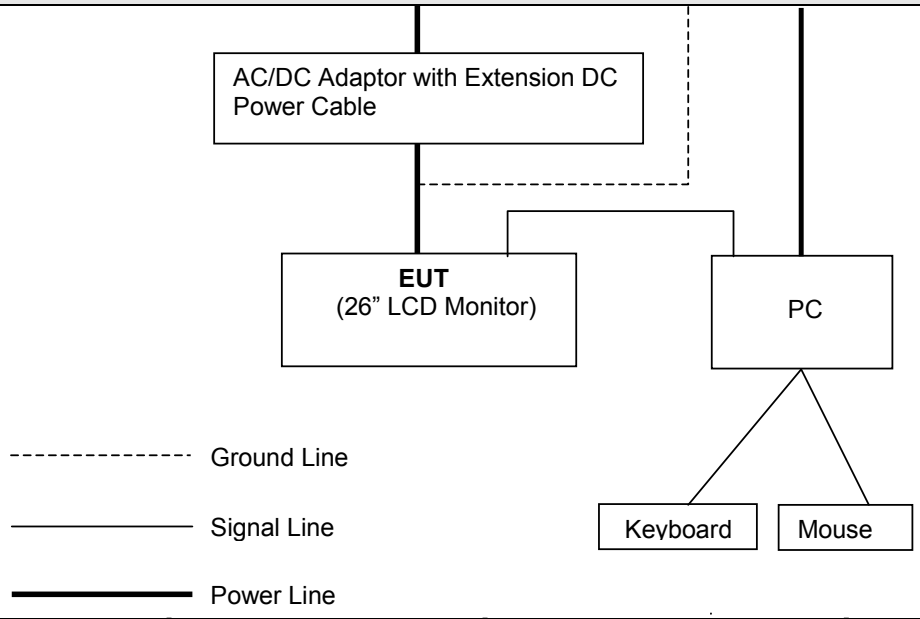
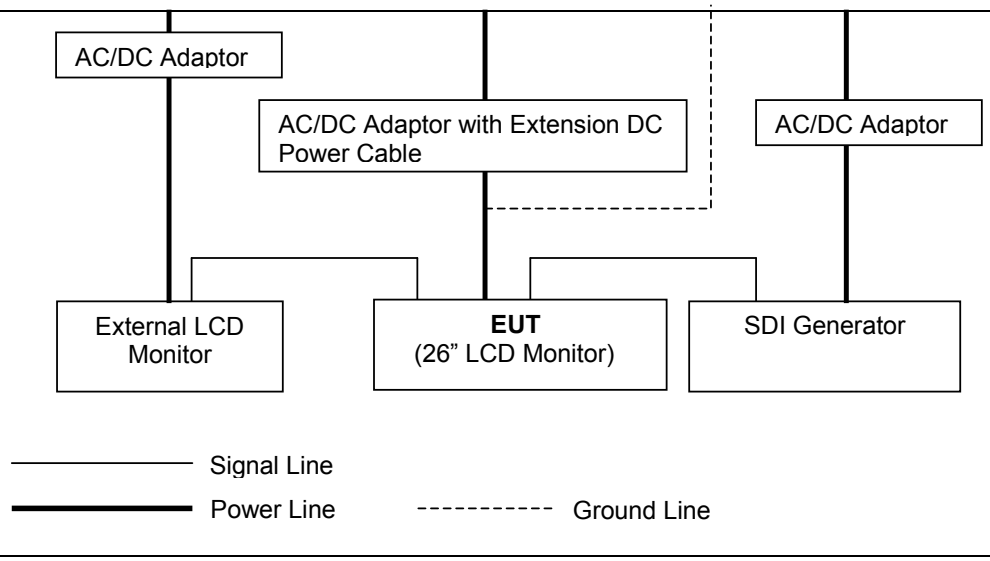
Note:
1. Video resolution where it refers from above is representative worst-case so final test was performed at DVI mode (1920 * 1200 @ 60Hz) and SDI mode (SMPTE 296M).
2. EUT have been performed under continuous displaying "H" Patten for configuration modes of 1and 2.
3. EUT have been performed under continuous displaying "Color Bar" Patten for configuration modes of 3.

2.3 DC Extension Cable for EMI test

Mode #	DC cable type	Test Item
1	1501047: 15ft, 5 Pin, JEC Korea	-
2	1501047001: 75ft, 5 Pin, JEC Korea	-
3	240-030-932: 75ft, 2 Pin, Nortra	Full test items (worst case condition)
4	240-030-722:15ft, 2 Pin, Nortra	-
5	1501047002: 1.5m, 5 Pin, JEC Korea	-

Note:
1. Radiated emission and conducted emission test were performed for all extension power cable during the preliminary testing
2. Mode# 3 was tested for final measurements.

2.6 Test Configuration

Mode	Description
1 DVI mode & VGA mode	
2 SDI mode	

Note:

1. Above test configuration was performed for 240-030-932 (2pin - 2pin extension cable, 75ft, Nortra Cables) or 240-030-722 (2pin - 2pin extension cable, 15ft, Nortra Cables) with 1501055 (5pin - 2pin converting cable, JEC Korea) and 1501055001 (2pin - 5pin converting cable, JEC Korea)

2. Radiated emission and conducted emission test were performed for all extension power cable during the preliminary testing.

3. Test Condition and Results

3.1 Mains Terminal Disturbance Voltage Test

1	**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	20 °C
	Relative Humidity	43 %
	Frequency range on each side of line	Measurement Point
Fully configured sample scanned over the following frequency range	150 kHz to 30 MHz	AC Mains

Limits - Class A

Frequency (MHz)	Limit (dBµV)			
	Quasi-Peak	Result	Average	Result
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	Result	Average	Result
0.15 to 0.50	66 to 56	N/A	56 to 46	**Pass**
0.50 to 5	56	N/A	46	**Pass**
5 to 30	60	N/A	50	**Pass**

Conducted Emissions EUT Configuration Settings			
Power Interface Mode # (See Section 2.3)	EUT Configurations Mode # (See Section 2.6)	EUT Operation Mode # (See 2.1)	DC Extension Cable # (See Section 2.6)
1	1, 2	1, 4	3

Conducted Emissions Test Equipment				
Description	Manufacturer	Model	Identifier	Cal. Due
Test Receiver	ROHDE&SCHWARZ	ESHS 10	862970/019	2008. 07. 24
LISN	ROHDE&SCHWARZ	ESH2-Z5	836679/018	2008. 07. 25
LISN	ROHDE&SCHWARZ	ESH2-Z5	834549/011	2008. 07. 25
Supplementary information: N/A				

Figure 1. Test Setup for Conducted Emissions (DVI mode)

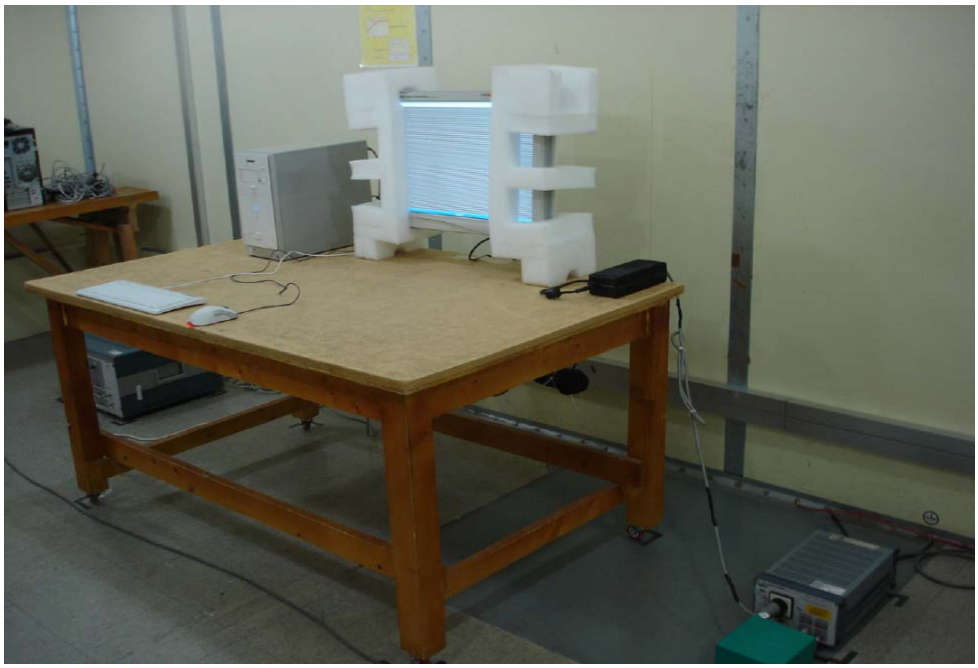
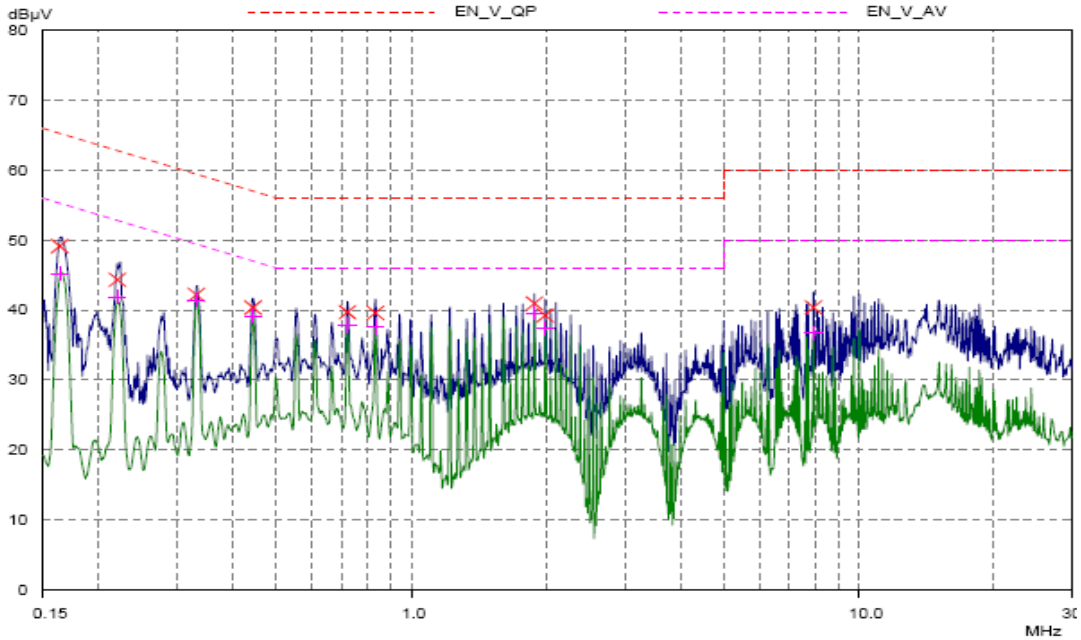


Figure 2. Conducted Emissions Graph (DVI mode)

Line Polarity: Neutral - PE



Line Polarity: LINE - PE

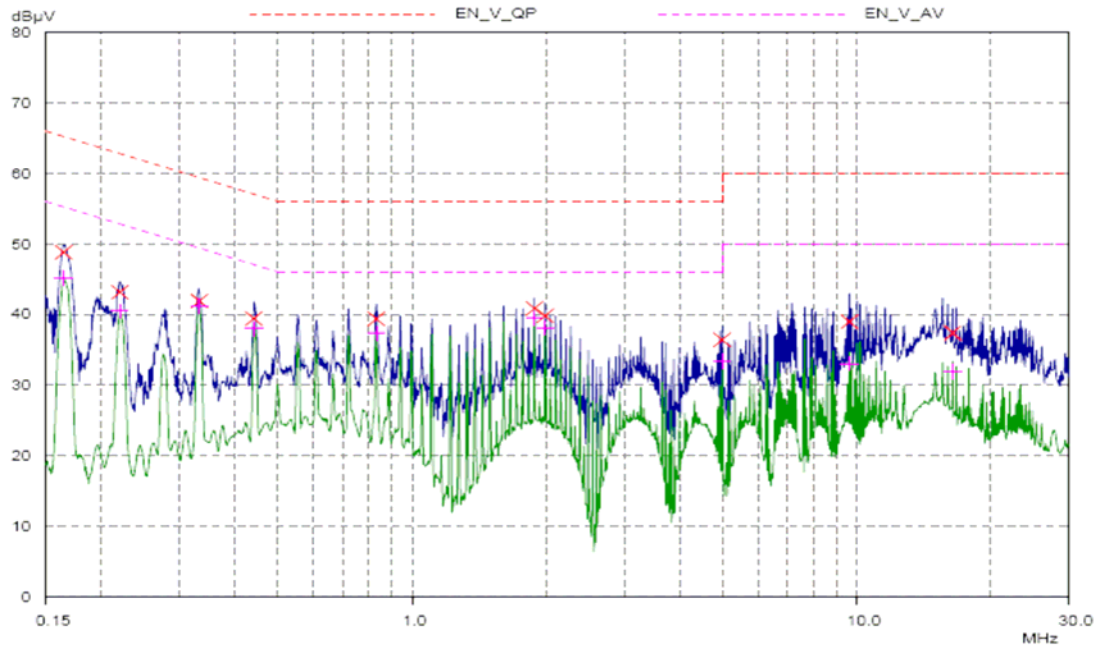


Table 1. Conducted Emissions Data Table (DVI mode)

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
0.16	0.1	0.07	49.12	45.23	N	49.30	45.41	65.27	55.27	15.97	9.86
0.22	0.2	0.14	44.32	41.83	N	44.61	42.12	62.82	52.82	18.21	10.70
0.33	0.1	0.13	42.17	41.41	N	42.39	41.63	59.44	49.44	17.05	7.81
0.44	0.1	0.13	40.34	39.11	N	40.57	39.34	57.01	47.01	16.45	7.68
0.72	0.3	0.13	39.67	37.84	N	40.06	38.23	56.00	46.00	15.94	7.77
0.83	0.2	0.13	39.57	37.56	N	39.91	37.90	56.00	46.00	16.09	8.10
1.88	0.1	0.15	40.93	39.57	N	41.22	39.86	56.00	46.00	14.78	6.14
1.99	0.1	0.15	39.75	38.06	L	40.01	38.32	56.00	46.00	15.99	7.68
4.99	0.2	0.25	36.45	33.42	L	36.95	33.92	56.00	46.00	19.05	12.08
7.93	0.2	0.32	40.36	36.67	N	40.93	37.24	60.00	50.00	19.07	12.76

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. Test Setup for Conducted Emissions (SDI Mode)

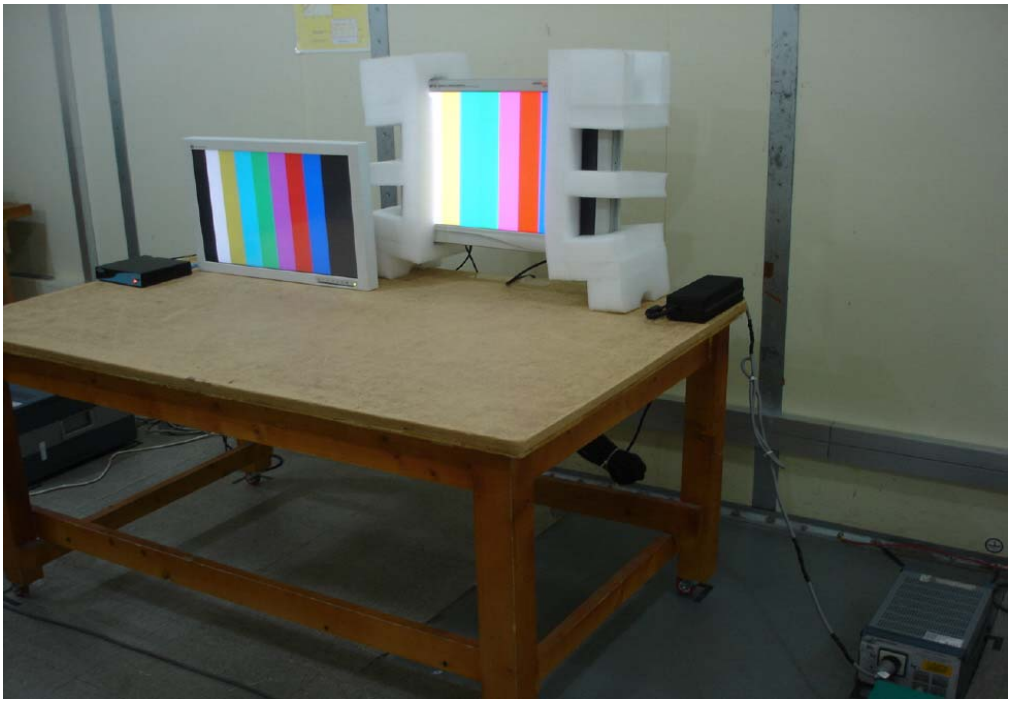
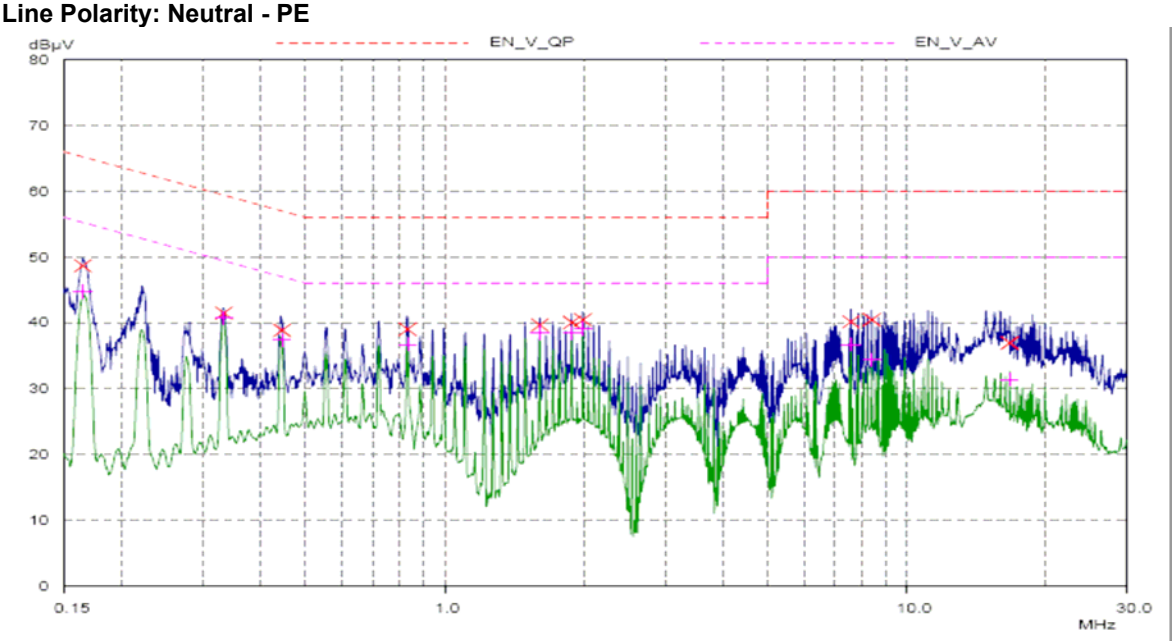


Figure 4. Conducted Emissions Graph (SDI mode)

Line Polarity: Neutral - PE



Line Polarity: LINE - PE

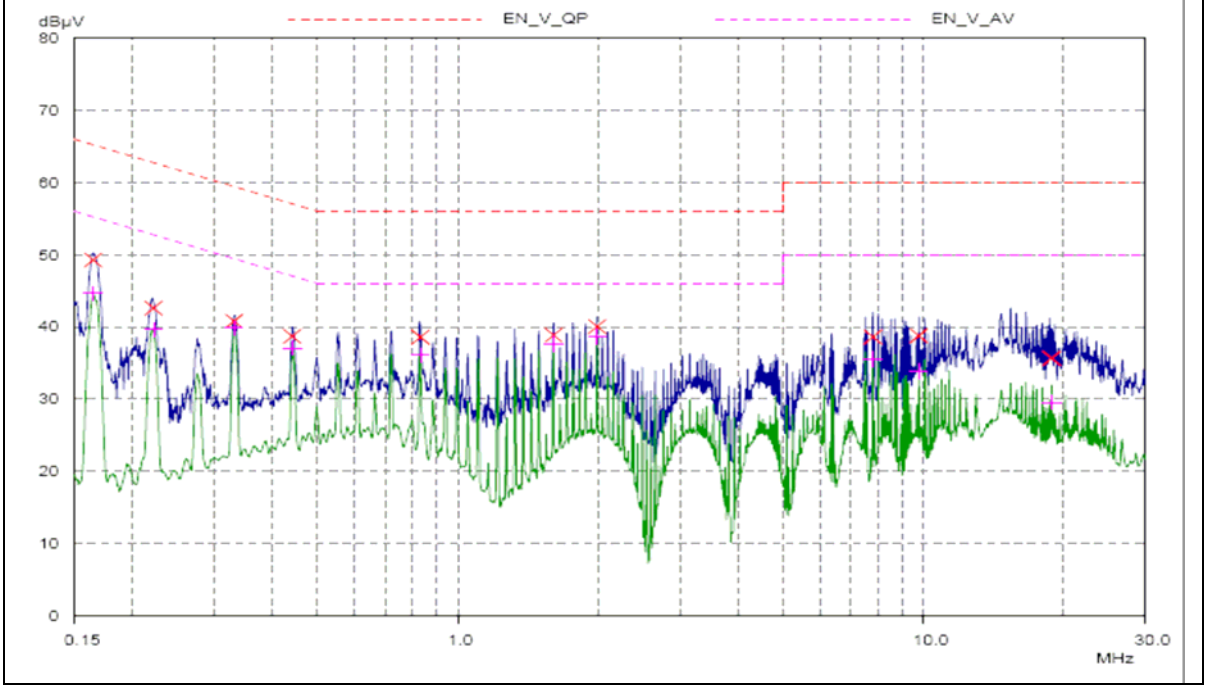


Table 2. Conducted Emissions Data Table (SDI mode)

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
0.16	0.1	0.07	49.24	44.65	L	49.42	44.83	65.24	55.24	15.81	10.40
0.33	0.1	0.13	41.42	40.64	N	41.63	40.85	59.40	49.40	17.77	8.55
0.44	0.1	0.13	38.80	37.28	N	39.03	37.51	56.98	46.98	17.95	9.47
0.83	0.2	0.13	38.96	36.61	N	39.30	36.95	56.00	46.00	16.70	9.05
1.61	0.2	0.15	39.59	38.45	N	39.94	38.80	56.00	46.00	16.06	7.20
1.88	0.1	0.15	40.00	38.38	N	40.29	38.67	56.00	46.00	15.71	7.33
1.99	0.1	0.15	40.38	39.03	N	40.64	39.29	56.00	46.00	15.36	6.71
7.59	0.4	0.32	40.10	36.61	N	40.81	37.32	60.00	50.00	19.19	12.68
8.42	0.4	0.35	40.42	34.41	N	41.22	35.21	60.00	50.00	18.78	14.79
9.80	0.3	0.39	38.76	33.79	L	39.42	34.45	60.00	50.00	20.58	15.55

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.

3.2 Radiated Disturbance

	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 3 meter at semi-anechoic chamber. Final measurements (quasi-peak or average as noted) were then performed at 3 meter open field test site 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	15.0 °C
	Relative Humidity	34.0 %
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30 MHz – 1 GHz	3 meter measurement distance
	1.0 GHz – 2.0GHz	

Limits - Class A

Frequency (MHz)	Limit (dBµV/m)	
	Quasi-Peak	Results
30 to 230	**N/A**	**N/A**
230 to 1000	**N/A**	**N/A**

Limits - Class B

Frequency (MHz)	Limit (dBµV/m)	
	Quasi-Peak	Results
30 to 88	40.0	**Pass**
88 to 216	43.5	**Pass**
216 to 960	46.0	**Pass**
Above 960	54 (Average)	**Pass**

Radiation Disturbance EUT Configuration settings

Power Interface Mode # (See Section 2.3)	EUT Configurations Mode # (See Section 2.6)	EUT Operation Mode # (See 2.1)	DC Extension Cable # (See Section 2.6)
1	1, 2	1, 3, 4	3

Radiated Emissions Test Equipment				
Description	Manufacturer	Model	Identifier	Cal. Due
Bilog antenna	Rohde & Schwarz	VULB9168	9168-230	2008.07. 05
Antenna mast	Dokin	5906	N/A	N/A
Antenna Turtable Controller	Dokin	5907	N/A	N/A
Amplifier	H.P	8447F	3113A05153	2008. 07. 23
EMI Receiver	Rohde & Schwarz	ESVS10	834468/008	2008. 07. 24
SPECTRUM ANALYZER	ADVANTEST	R3361A	11730187	2008. 07. 24
Horn antenna	ETS-LINDGREN	3115	56768	2008. 07. 24
EMI Receiver	Rohde & Schwarz	ESPI7	100025	2008. 10. 29
Amplifier	MITEQ	ASF44	1116321	2009. 03. 07
Supplementary information: N/A				

Figure 5. Test Setup for Radiated Emission (DVI Mode)

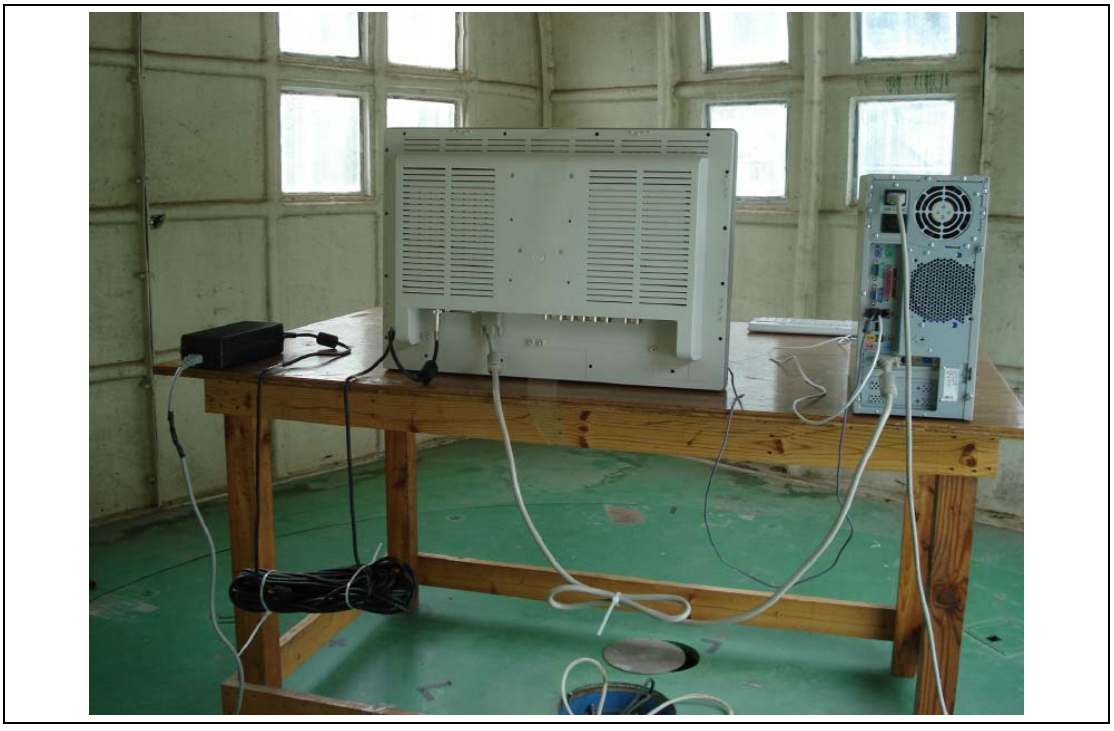


Table 3. Radiated emissions data (DVI Mode)

Radiated Emission: CISPR 11

Scan Setup: Electric Field Strength

Level Unit: dBuV/m

Subrange	Detectors	IF Bandwidth
30MHz - 1GHz	QuasiPeak	120kHz

Frequency Reading (MHz)	Reading (dBuV/m)	Polarization	Ant. Factor (dB)	Cable Loss (dB)	Limit (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)
240.34	26.5	H	9.3	1.3	46.0	37.1	8.9
543.99	22.8	V	17.3	2.2	46.0	42.3	3.7
600.00	19.4	H	19.4	2.4	46.0	41.2	4.8
625.47	18.6	V	19.4	2.4	46.0	40.4	5.6
743.25	17.5	H	20.5	3.1	46.0	41.1	4.9
Supplementary information: None							

Figure 6. Test Setup for Radiated Emission (SDI Mode)

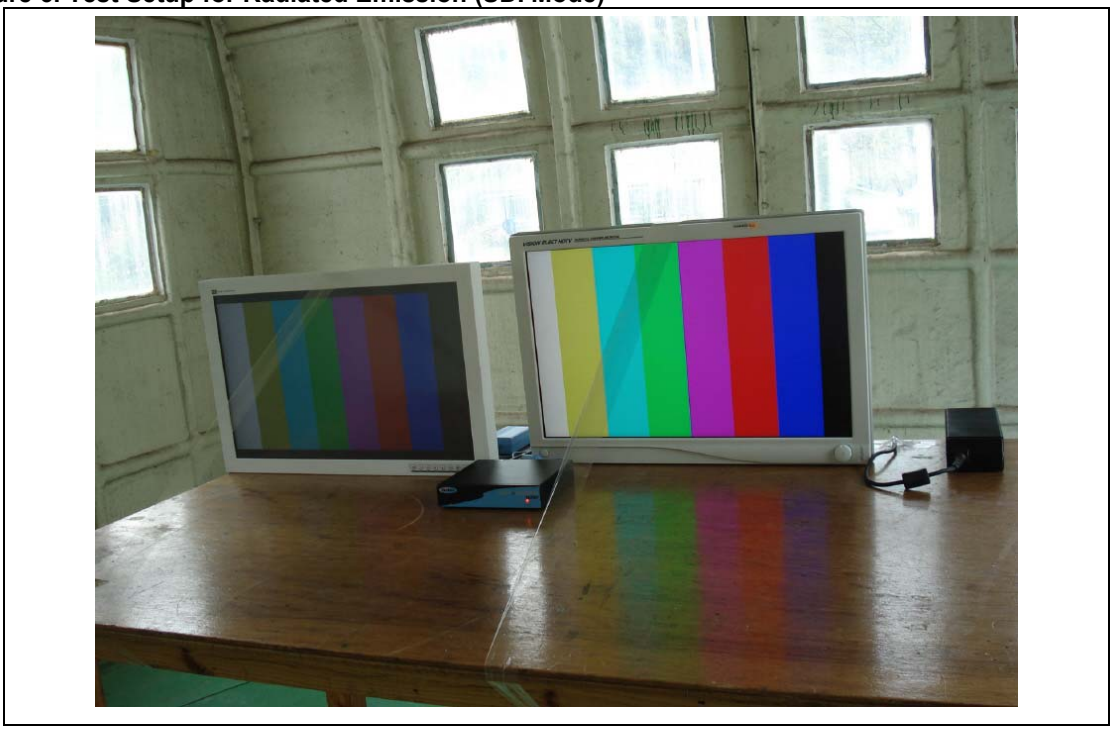


Table 4. Radiated emissions data (SDI mode)

Radiated Emission: CISPR 11

Scan Setup: Electric Field Strength

Level Unit: dBuV/m

Subrange	Detectors	IF Bandwidth
30MHz - 1GHz	QuasiPeak	120kHz

Frequency Reading (MHz)	Reading (dBuV/m)	Polarization	Ant. Factor (dB)	Cable Loss (dB)	Limit (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)
154.98	21.5	H	12.6	1.1	43.5	35.2	8.3
206.56	20.9	V	9.3	1.3	43.5	31.5	12.0
234.78	23.5	V	9.3	1.3	46.0	34.1	11.9
256.78	23.5	H	11.3	1.6	46.0	36.4	9.6
308.95	20.9	H	12.9	1.7	46.0	35.5	10.5
540.27	21.8	V	17.3	2.2	46.0	41.3	4.7
690.46	18.4	V	20.2	2.5	46.0	41.1	4.9

Supplementary information: None

Figure 7. Test Setup for Radiated Emission (VGA Mode)

Table 5. Radiated emissions data (VGA mode)

Radiated Emission: CISPR 11

Scan Setup: Electric Field Strength

Level Unit: dBuV/m

Subrange	Detectors	IF Bandwidth
30MHz - 1GHz	QuasiPeak	120kHz

Frequency Reading (MHz)	Reading (dBuV/m)	Polarization	Ant. Factor (dB)	Cable Loss (dB)	Limit (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)
240.33	12.5	H	9.5	1.3	37.0	23.3	13.7
544.40	10.3	V	17.1	2.2	37.0	29.6	7.4
620.14	9.8	V	19.3	2.4	37.0	31.5	5.5
Supplementary information: Additional tests for compare with worst mode							

Appendix A

Measurement Uncertainties

Test	Uncertainty
Radiated Emissions	± 4.6 dB
Conducted Emissions	± 3.92 dB

Appendix B
AFFIDAVIT for Multilisting model

ADVAN
IMAGE YOUR LIFE

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,

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

Appendix C
Letter of Declaration

March 19, 2008

TO WHOM IT MAY CONCERN

FCC ID Number Product Title/Model
QVX AMM260WTDS LCD COLOR DISPLAY / 240-030-960, VISION ELECT HDTV

Hereby we confirm that above product is updated as followings.

Add of LCD panel

-. LG Philips LCD panel, Model: LM260WU2
(Existing panel model: LM260WU1)

Add of optional power extension cords

- Model (Type)
1501047 (5pin - 5pin extension cable, 15ft, JEC Korea)
1501047001(5pin - 5pin extension cable, 75ft, JEC Korea)
1501047002(5pin - 5pin extension cable, 1500mm, JEC Korea)
240-030-932 (2pin - 2pin extension cable, 75ft, Nortra Cables)
240-030-722 (2pin - 2pin extension cable, 15ft, Nortra Cables)
1501055 (5pin - 2pin converting cable, JEC Korea)
1501055001 (2pin - 5pin converting cable, JEC Korea)

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

Sincerely,

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