



UL Korea, Ltd

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Project: 07CA59143
File: MC15562
Report: 07CA59143-A-2-FCC
Date: January 21, 2008
Model: AMVX2108

Electromagnetic Compatibility Test Report

FCC Certification Part 15 Subpart B Class B

For

AMPRONIX INC.
15 Whatney Irvine CA 92618 USA

UL Korea Ltd.

33rdFl. 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: 07CA59143
Model Number: AMVX2108

File Number MC15562

Test Report No: 07CA59143-A-2-FCC
Date of Issue: January 21, 2008

TEST REPORT DETAILS

Test report No: 07CA35064-A-2-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: AMPRONIX INC.
15 Whatney Irvine CA 92618 USA

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

Applicant Contact: Brian Yamada
Title: General engineer
Phone: 949-273-8000
E-mail: byamada@ampronix.com

Test Report Date: August 14, 2007

Product Type: LCD Color Display
Trademark: MEDVIX
Model Number: AMVX2108
FCC ID: VYGAMVX2108

Product standards: FCC Part 15 Subpart B Class B

Sample Serial Number: None (Proto type)

Sample Receive Date: August 01, 2007

Testing Start Date: August 01, 2007

Date Testing Complete: August 29, 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.

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.
August 29, 2007



Reviewed by
Kyung Yong, Kim, Senior Project Engineer
Conformity Assessment Services - 3014ASEO
UL Korea Ltd.
January 21, 2008

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1. EQUIPMENT UNDER TEST (EUT)

1.1 Equipment Description Specification

AMVX2108	LCD Panel	21.3" TFT LCD Panel
	Panel A	TX54D31VC0CAB
	Panel B	TX54D32VC0CAA
	Type	Active Matrix
	Resolution	1600*1200 @ 75Hz
	Pixel Pitch	0.27 mm
	Display Color	16.7 M Colors
	Color Tone	Up to 256 color tone
	Response Time	<25ms Typ.
	Face Finishing	Protective Filter with Anti-Reflected Hard Coated
	Viewing Angle	+/- 85°(Horizontal), +/- 85° (vertical)
Input Signal (Analog & Digital)	Sync (Analog)	2.5~5.0Vp-p separated sync
	Composite Sync (Analog)	Composite Video (NTSC/PAL)
	Y/C Sync (Analog)	S-Video (NTSC/PAL)
	Input Impedance (Analog)	Video - 75 Ohm, Sync - 1k Ohm
	Digital	3 channel TMDS receiver, single pixel 24-bit MSB-aligned RGB TFT
Scanning Frequency	Horizontal	31.47~79.98 kHz
	Vertical	50~75.3Hz
Signal Input Connector	Video	DVI, HD15, SD/HD-SDI 1 and 2, Component Y/G, Pb/B, Pr/R, H/CS, VS, C-Video and S-Video
Signal Output Connector (Loop Through)	Video	SD/HD-SDI, Component Y/G, Pb/B, Pr/R, H/CS, VS, C-Video and S-Video
Dimension	Free Mount	20" (W) x 15.31" (H) x 3.3" (D) 512 mm (W) x 389 mm (H) x 85 mm (D)
Weight	Free Mount	16.9 lbs (7.66 Kg)
AC/DC Adapter Description	Display Monitor	DC 24 V
	AC-Adapter	AC100~240 V 120 W Max +/-10 %

1.2 Equipment Marking Plate

Ampronix

For service or support, please call 800.400.7972

AMPRONIX Inc.
www.ampronix.com

产品名称 / Product Name : 液晶彩色显示器 / LCD Color Display

产品商标 / Trademark : MEDVIX

产品型号 / Model No. AMVX2108

Model Name :

With respect to electric shock, fire and
mechanical hazards only in accordance with UL60601-1
DC 24V --- 6.25A FCC ID :

⚠ AC/DC Adapter
Manufacturer : JEC Korea Corp. Model : JMW1150KA2400F04

⚠ CAUTION - See accompanying documents.

⚠ CAUTION - ELECTRIC SHOCK
"To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only."



IPX1

Serial No.

Manufactured

韩国制造
MADE IN KOREA



1.3 Equipment Used During Test

Use*	Product Type	Manufacturer	Model
EUT A	LCD Monitor (LCD Panel Model: TX54D31VC0CAB)	D&T Inc.	AMVX2108
EUT B	LCD Monitor (LCD Panel Model: TX54D32VC0CAA)	D&T Inc.	AMVX2108
EUT	AC/DC Adaptor	JEC Korea Corp.	JMW1150KA2400F04
EUT	Extension power cord (optional)	JEC Korea Corp.	1501047
AE	Key board	Logitech	Y-SM46
AE	Serial mouse	Logitech	M-UV83
AE	Mouse	LG	3D-320
AE	Printer	SAMSUNG	ML-2250G
AE	Video Signal Generator	Master. Co. LTD	MSPG-925LTH
AE	SDI Pattern Generator	ASTRO	SC-2055A
AE	DVD Player	Sherwood	DVD Player V768
AE	Pattern player	EFM-NETWORK	IP PLAY Time H35
AE	PC	CBTP	CBTP
AE	CCTV	SAMSUNG	HK211F

* **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	DVI In	I/O	1.8	Shielded	24 pin DVI-D
2	VGA In	I/O	1.8	Shielded	15 pin D-Sub
3	SDI-In 1, 2	I/O	1.8	Shielded	BNC
4	SDI-Out	I/O	1.8	Shielded	BNC
5	RGB / Component In, Out	I/O	1.8	Shielded	5 port BNC
6	S-Video In, Out	I/O	1.8	Shielded	S-Video
7	Mains	AC	2.1	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

1.5 EUT Internal Operating Frequencies:

Frequency (MHz)	Description	Frequency (MHz)	Description
10.00 MHz	CPLD Clock	67.50 MHz	Panel clock
27.00 MHz	System clock	324.00 MHz	Memory 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	Rating of AC/DC Adapter
1	AC 120			60 Hz	Single	

2. EUT Operation Modes for EMI

2.1 Modes of EMI Testing

	Mode	Comment
1	DVI Mode with Extension power cord	Worst case condition
2	VGA Mode with Extension power cord	
3	SDI In/Out Mode with Extension power cord	
4	Component In/Out Mode with Extension power cord	
5	Composite In/Out Mode with Extension power cord	
6	C-Video In/Out Mode with Extension power cord	
7	S-VIDEO In/Out Mode with Extension power cord	Worst case condition

Note

1. Testing have been performed under continuous displaying “H” Patten for configuration modes of 1,2.
2. Testing have been performed under continuous displaying “Color Bar” Patten for configuration modes of 3,4,5,6,7.
3. EMI test was performed for both LCD Panel model **TX54D31VC0CAB** and **TX54D32VC0CAA**.
4. All the configuration described above have been investigated during the preliminary testing and selected two cases as worst case condition for final measurements.

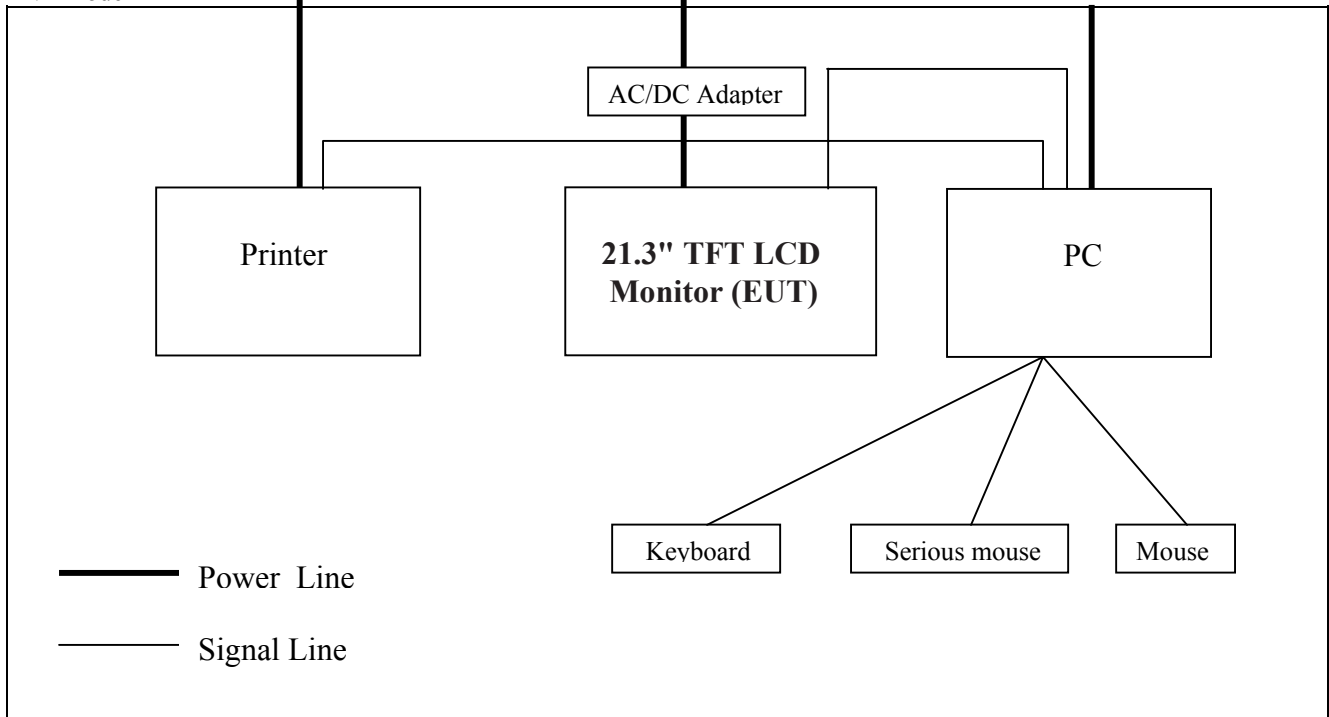
2.2 Modes of Video resolution

	Resolution	Comment
1	640 * 480 @ 60Hz	VGA Mode
2	1600 * 1200 @ 60Hz	VGA Mode
3	640 * 480 @ 60Hz	DVI Mode
4	1600 * 1200 @ 60Hz	DVI Mode

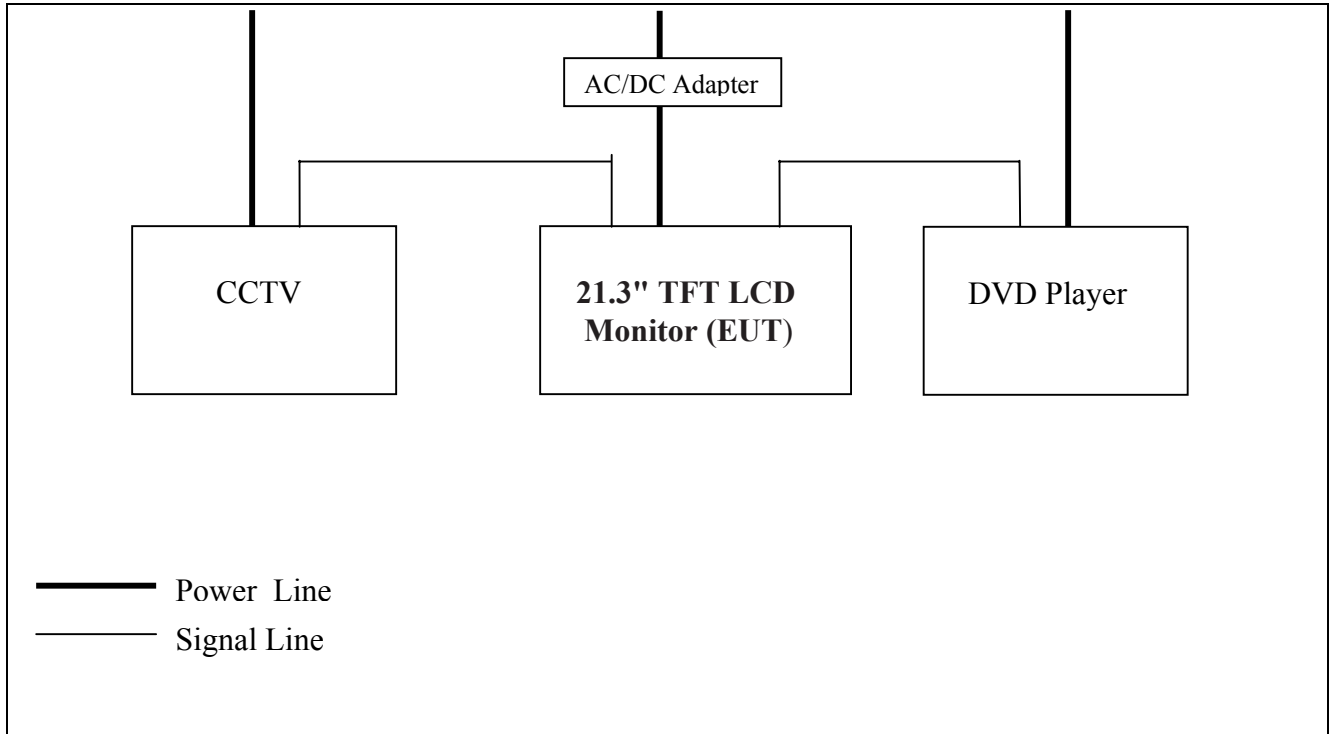
Note:
1. Video resolution where it refers from above are representative worst case
2. Test was performed for both LCD Panel model **TX54D31VC0CAB** and **TX54D32VC0CAA**.

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		27 °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 (LCD Panel: TX54D31VC0CAB)

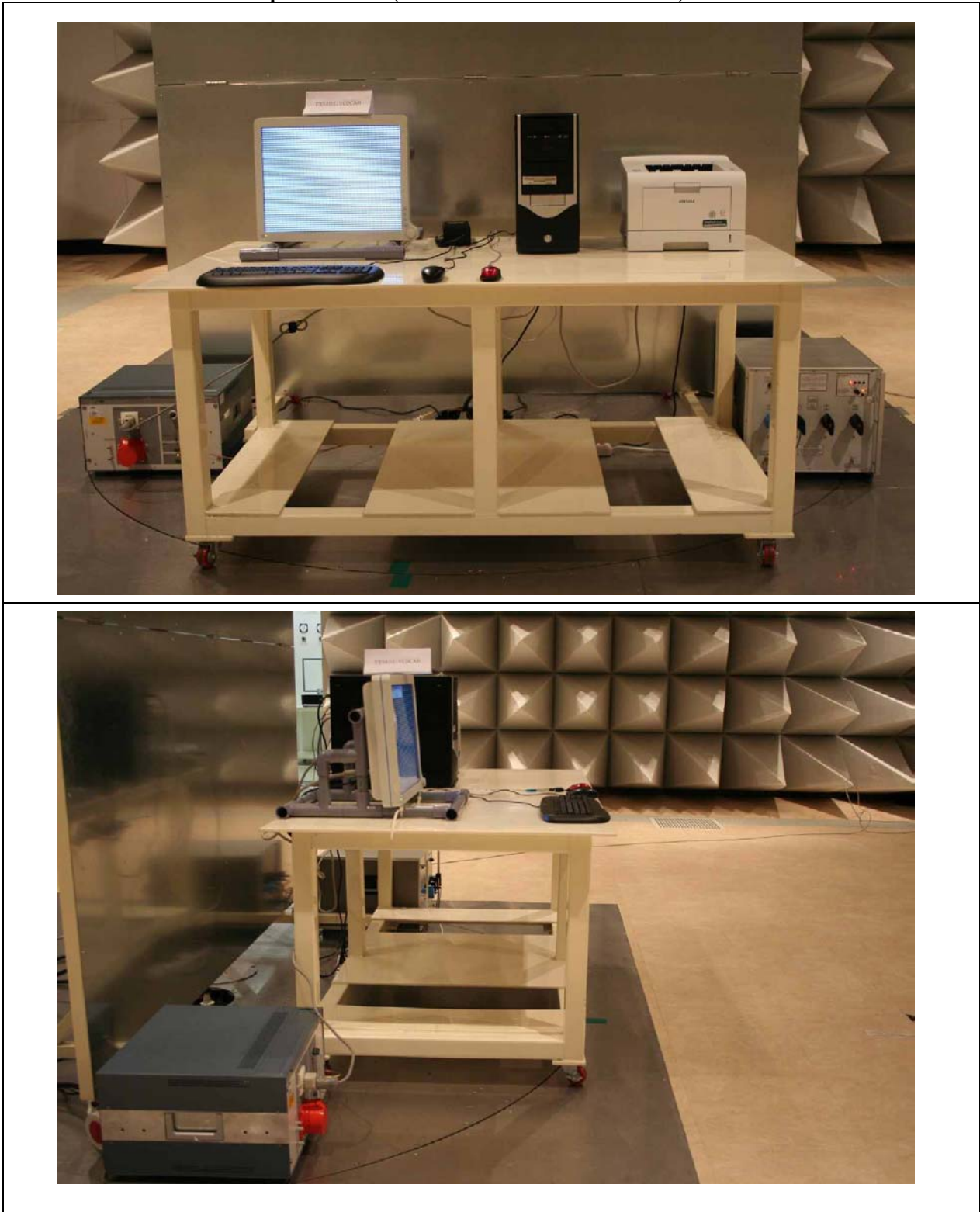


Figure 2
Conducted Emission Test Setup: S-Video Mode (LCD Panel: TX54D31VC0CAB)

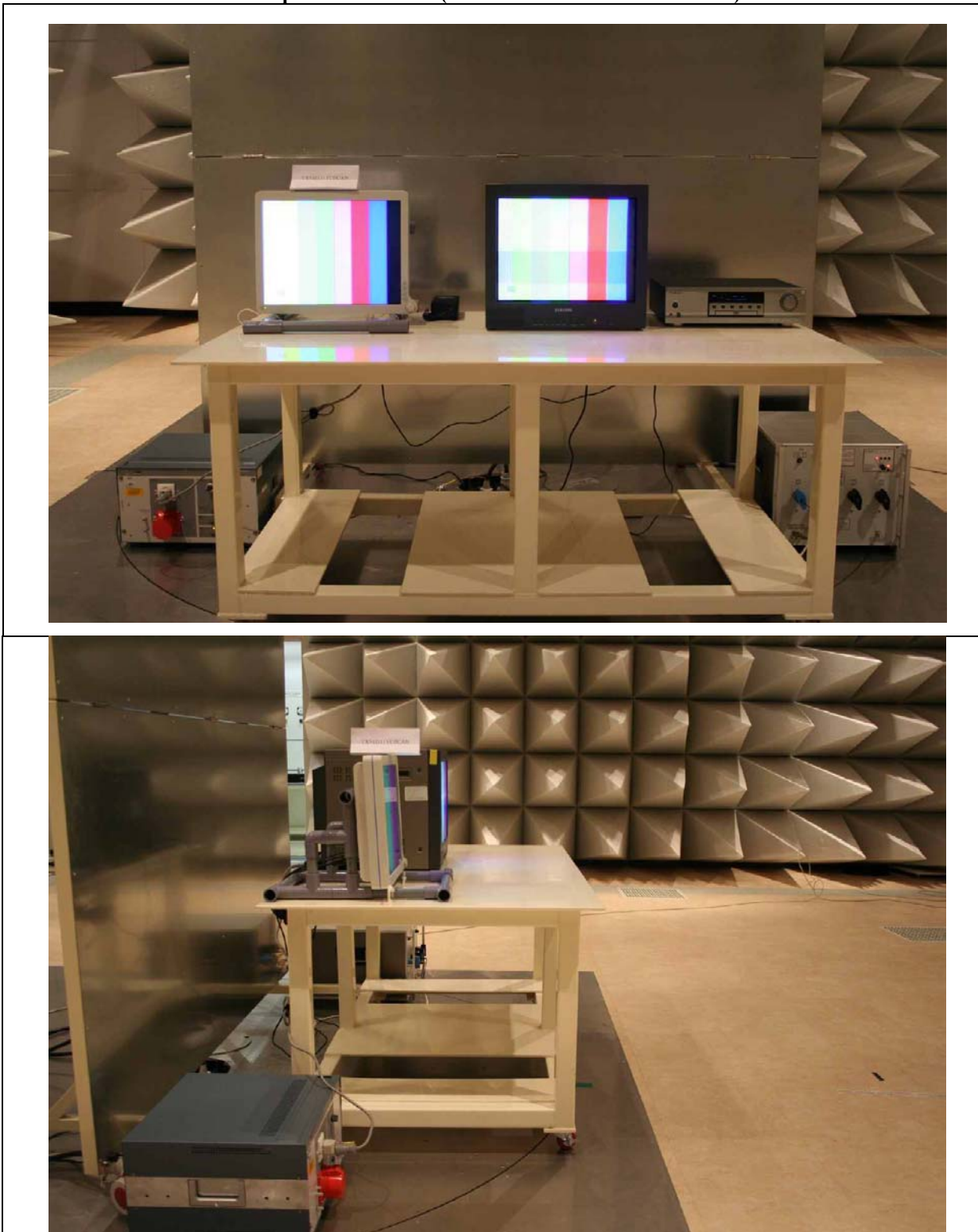


Table 1.
Test data for conducted emission: DVI Mode (LCD Panel: TX54D31VC0CAB)

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	0.12	48.82	-	H	49.00	-	64.90	54.9.0	15.90	-		
0.23	0.07	0.11	43.12	-	H	43.30	-	62.60	52.60	19.30	-		
0.34	0.08	0.11	40.61	-	H	40.80	-	59.20	49.20	18.40	-		
0.62	0.11	0.10	35.19	-	H	35.40	-	56.00	46.00	20.60	-		
1.59	0.11	0.13	36.66	-	H	36.90	-			19.10	-		
1.70	0.15	0.13	35.52	-	N	35.80	-			20.20	-		
2.10	0.17	0.15	35.38	-	H	35.70	-			20.30	-		
2.66	0.22	0.15	36.73	-	H	37.10	-			18.90	-		
3.06	0.25	0.15	36.60	-	H	37.00	-			19.00	-		
3.62	0.28	0.15	36.27	-	H	36.70	-			19.30	-		
4.98	0.30	0.16	36.84	-	N	37.30	-			18.70	-		
6.51	0.35	0.24	38.31	-	N	38.90	-			60.00	50.00	21.10	-
7.41	0.37	0.31	37.42	-	N	38.10	-					21.90	-
9.23	0.43	0.27	40.9	-	H	41.60	-	18.40	-				
9.51	0.43	0.27	40.00	-	H	40.70	-	19.30	-				
11.04	0.46	0.28	38.36	-	H	39.10	-	20.90	-				
29.27	0.77	0.15	36.48	-	N	37.40	-	22.60	-				

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: S-Video Mode (LCD Panel: TX54D31VC0CAB)

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	0.12	49.22	-	L	49.40	-	64.90	55.00	15.50	-
0.23	0.07	0.11	43.02	-	L	43.20	-	62.50	52.50	19.30	-
0.34	0.08	0.12	38.10	-	N	38.30	-	59.20	49.20	20.90	-
0.45	0.09	0.11	37.50	-	L	37.70	-	56.80	46.80	19.10	-
0.51	0.10	0.10	35.10	-	L	35.30	-	56.00	46.00	20.70	-
0.62	0.11	0.10	36.79	-	L	37.00	-			19.00	-
0.74	0.11	0.15	36.24	-	L	36.50	-			19.50	-
1.19	0.13	0.13	35.44	-	N	35.70	-			20.30	-
1.59	0.15	0.13	36.82	-	L	37.10	-			18.90	-
1.70	0.15	0.13	36.52	-	L	36.80	-			19.20	-
2.10	0.17	0.15	37.08	-	L	37.40	-			18.60	-
2.66	0.22	0.16	36.92	-	N	37.30	-			18.70	-
3.06	0.24	0.15	37.31	-	L	37.70	-			18.30	-
3.62	0.28	0.16	36.46	-	N	36.90	-			19.10	-
4.25	0.28	0.15	34.97	-	L	35.40	-			20.60	-
4.42	0.28	0.15	36.07	-	L	36.50	-			19.50	-
6.52	0.35	0.24	40.11	-	N	40.70	-	60.00	50.00	19.30	-
9.23	0.43	0.27	39.20	-	L	39.90	-			20.10	-
9.80	0.43	0.27	39.40	-	L	40.10	-			19.90	-
10.19	0.44	0.28	38.58	-	L	39.30	-			20.70	-
11.84	0.47	0.32	37.51	-	N	38.30	-			21.70	-

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.