APPLICATION FOR CERTIFICATION
On Behalf of
Philips Electronics Industries (Taiwan) Ltd.
LCD TV

Model No.：23PF5320/28

Brand : PHILIPS

FCC ID: A3KM144

Prepared for : Philips Electronics Industries (Taiwan) Ltd.
5, Tze Chiang 1 Rd, Chungli Ind. Park,
Chungli, Taoyuan Hsien, Taiwan, R.O.C.

Prepared By : AUDIX Corporation
Technical Division EMC Department
No. 53-11, Tin-Fu Tsun, Lin-Kou,
Taipei Hsien, Taiwan, R.O.C.

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File Number	:	EM940775
Report Number	:	EM-F940155
Date of Test	:	Jul. 06, 2005
Date of Report	:	Jul. 08, 2005

TABLE OF CONTENTS

TEST REPORT CERTIFICATION

Applicant	:	Philips Electronics Industries (Taiwan) Ltd.
Manufacturer	:	Philips Electronics Industries (Taiwan) Ltd.
Factory	:	Philips Consummer Electronics Co., of Suzhou Ltd.
EUT Description	:	LCD TV
FCC ID	:	A3KM144
		(A) MODEL NO. : 23PF5320/28
		(B) SERIAL NO. : TY0405224
		(C) BRAND NAME : PHILIPS
		(D) POWER SUPPLY : 100-240V~, 60-50Hz
		(E) TEST VOLTAGE : AC 120V/60Hz

Measurement Standards and Methods Used :

FCC CFR 47 Part15 / Jan. 2005 and CISPR 22/1997 and ANSI C63.4-2003

The device described above was tested by AUDIX CORPORATION to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 Subpart B with the provisions of section §15.107 (a) and § 15.109 (g) Class B limits both conducted and radiated emission.

The measurement results are contained in this test report and AUDIX CORPORATION is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Corporation.

Date of Test : Jul. 06, 2005

Prepared by : Julie Hsu Jul. 11. 2005.
(Julie Hsu/Assistant Administrator)

Test Engineer : Tony Lee Jul. 11. 2005.
(Tony Lee/Section Manager)

Approve & Authorized Signer : Leon Liu Jul 12 2005
(Leon Liu/Senior Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	LCD TV (The TV Tuner & AV Functions & HD Functions are not available in this test report)
Model Number	:	23PF5320/28
Serial Number	:	TY0405224
FCC ID.	:	A3KM144
Brand	:	PHILIPS
Applicant	:	Philips Electronics Industries (Taiwan) Ltd. 5, Tze Chiang 1 Rd, Chungli Ind. Park, Chungli, Taoyuan Hsien, Taiwan, R.O.C.
Manufacturer	:	Philips Electronics Industries (Taiwan) Ltd. 5, Tze Chiang 1 Rd, Chungli Ind. Park, Chungli, Taoyuan Hsien, Taiwan, R.O.C.
Factory	:	Philips Consummer Electronics Co., of Suzhou Ltd. No. 161, Zhujiang Road, New District, Suzhou 215011, PROC
LCD Panel	:	QDI, Type No. QD23HL02
Scanning Frequency	:	Horizontal: 30-50kHz Vertical: 56-63Hz
Max Resolution	:	1280*768 / 60Hz, 47kHz
D-Sub Data Cable	:	Shielded, Detachable, 1.8m Bonded two ferrite cores
Audio Cable	:	Non-Shielded, Detachable, 1.5m
Power Cord	:	Non-Shielded, Detachable, 1.8m
Data of Receipt of Sample	:	Jun. 27, 2005
Date of Test	:	Jul. 06, 2005

1.2. Tested Supporting System Details

1.2.1. PERSONAL COMPUTER

Model Name	:	Dell Dim 4600PC
Model Number	:	DMC
Serial Number	:	N/A
FCC ID.	:	by FCC DoC
BSMI ID	:	R33002
Manufacturer	:	DELL
VGA Card	:	Nvidia FX5200
Power Cord	:	Non-shielded, Detachable, 1.8m

1.2.2. KEYBOARD

Model Number	:	SK-8110
Serial Number	:	N/A
BSMI ID	:	T3A002
FCC ID	:	by DoC
Manufacturer	:	DELL
Data Cable	:	Non-Shielded, Undetachable, 2m

1.2.3. PS2 MOUSE

Model Number	:	MO71KC
Serial Number	:	406012041
BSMI ID	:	R41108
FCC ID	:	by DoC
Manufacturer	:	DELL
Data Cable	:	Non-Shielded, Undetachable, 2m

1.2.4. MODEM

Model Number	:	DM-1414
Serial Number	:	980034387
FCC ID	:	IFAXDM1414
Manufacturer	:	Accex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, M/N AM-91000A Non-Shielded, Undetachable, 1.8m

1.2.5. DOT MATRIX PRINTER

Model Number	:	KX-P2135
Serial Number	:	8DMCNC02116
BSMI ID	:	3872A371
FCC ID	:	ACJ5Z6KX-P2135
Brand	:	Panasonic
Manufacturer	:	Matsushita
Data Cable	:	Non-Shielded, Detachable, 1.5m
Power Cord	:	Non-Shielded, Undetachable, 1.8m

1.2.6. MICROPHONE

Model Number	:	HD-303
Serial Number	:	N/A
Manufacturer	:	Multimedia Microphone System
Data Cable	:	Non-Shielded, Undetachable, 2.2m

1.2.7. WALKMAN

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08496
Manufacturer	:	Panasonic
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.8. MICRO VAULT (USB Storage Media)

Model Number	:	USM128U2
Serial Number	:	N/A
FCC ID	:	By DoC
BSMI ID	:	D33021
Manufacturer	:	SONY
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.9. COLOUR TV PATTERN GENERATOR (Link to EUT)

Model Number	:	PM5418TDSI
Type Number	:	LO646252
Manufacturer	:	Philips
Coaxial Cable	:	Shielded, Detachable, 2.1m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.3. Description of Test Facility

Name of Firm	:	**Audix Corporation** Technical Division EMC Department No. 53-11, Tin-Fu Tsun, Lin-Kou, Taipei County, Taiwan, R.O.C.
Test Facility & Location (C5/R4)	:	**No. 5 Shielded Room** No. 67-4, Tin-Fu Tsun, Lin-Kou, Taipei County, Taiwan, R.O.C. **No. 4 Open Area Test Site** No. 67-4, Tin-Fu Tsun, Lin-Kou, Taipei County, Taiwan, R.O.C. March 31, 2003 Renewal on Federal Communication Commission Registration Number: 90991
NVLAP Lab. Code	:	200077-0
(NVLAP is a NATA accredited body under Mutual Recognition Agreement)		
DAR-Registration No.	:	DAT-P-145/03-01

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
Radiation Test (Distance: 10m)	30MHz~300MHz	±2.99dB
	300MHz~1000MHz	±2.73dB

Remark：Uncertainty = $ku_c(y)$

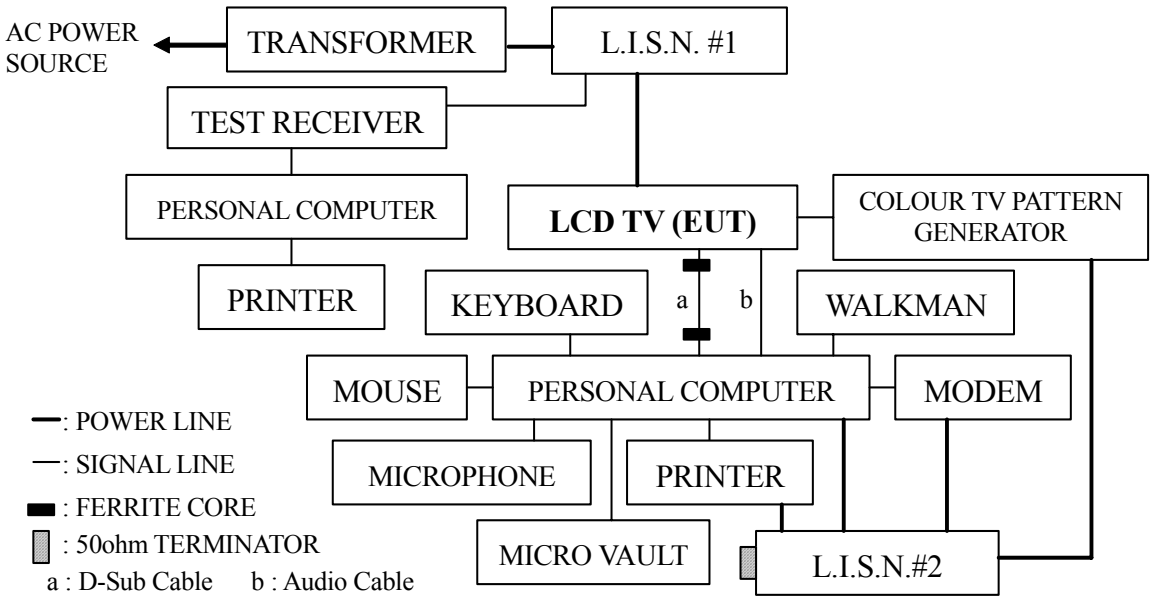
2. POWERLINE CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipments are used during the power line conducted tests：

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	Rohde & Schwarz	ESCS 30	100039	Jun.23, 05’	Jun.22, 06’
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-1539-2	Nov.18, 04’	Nov.17, 05’
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-1539-3	Nov.18, 04’	Nov.17, 05’
4.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100040	Apr.09, 05’	Apr.08, 06’

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit (§15.107, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark: 1. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2. The lower limit applies at the band edges.

2.4. EUT's Configuration during Compliance Measurement

The following equipments were installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tended to maximize its emission characteristics in a normal application.

2.4.1. LCD TV (EUT)

Model Number	:	23PF5320/28
Serial Number	:	TY0405224
FCC ID	:	A3KM144
Manufacturer	:	Philips Electronics Industries (Taiwan) Ltd.
LCD Panel	:	QDI, Type No. QD23HL02
D-Sub Data Cable	:	Shielded, Detachable, 1.8m Bonded two ferrite cores
Audio Cable	:	Non-Shielded, Detachable, 1.5m
Power Cord	:	Non-Shielded, Detachable, 1.8m

2.4.2. Supporting System : As in Section 1.2

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown on 2.2.

2.5.2. Turned on the power of all equipments.

2.5.3. Personal computer read data from disk.

2.5.4. The PC System running the test program "H-V1.8 IBM" by Windows XP and the screen of EUT displayed "H" pattern by EUT's resolution via D-Sub Input.

2.5.5. Set the PC System to send the "H" pattern to EUT via D-Sub Input, and sent the "Color Bar" image to EUT via RF Input. The screen of EUT displayed "H" pattern and the "Color Bar" image at same time during PIP mode testing.

2.5.6. The PC System running the program "Windows Media Player" and sent the sound to earphone of EUT during all testing.

2.5.7. The other peripheral devices were driven and operated in turn during all testing.

2.5.8. Repeat above procedure from 2.5.3 to 2.5.8.

2.6. Test Procedure

The EUT was connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N. #2). This provided a 50ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. 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 FCC ANSI C63.4-2003 on conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was pre-scanned with a peak detector.

The all final readings from test receiver were measured with Quasi-Peak detector and Average detector. (Remark： If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.7. Powerline Conducted Emission Measurement Results

PASSED. All emissions not reported below are too low against the prescribed limits.

EUT with the selected as following test modes were performed during conducted measurement and all the test results are attached next pages.

Test Date： Jul. 06, 2005 Temperature：30℃ Humidity：62％

Mode	Input Port	Frequency / Resolution, Image	Reference Data No.	
			Neutral	Line
1.	D-Sub	640*480/60Hz, 31kHz; H Pattern	# 5	# 6
2.		1280*720/60Hz, 46kHz; H Pattern	# 4	# 3
3.		1280*768/60Hz, 47kHz; H Pattern	# 1	# 2
4.	D-Sub + RF	1280*768/60Hz, 47kHz; H Pattern + Image “Color Bar” (PIP Mode)	# 8	# 7

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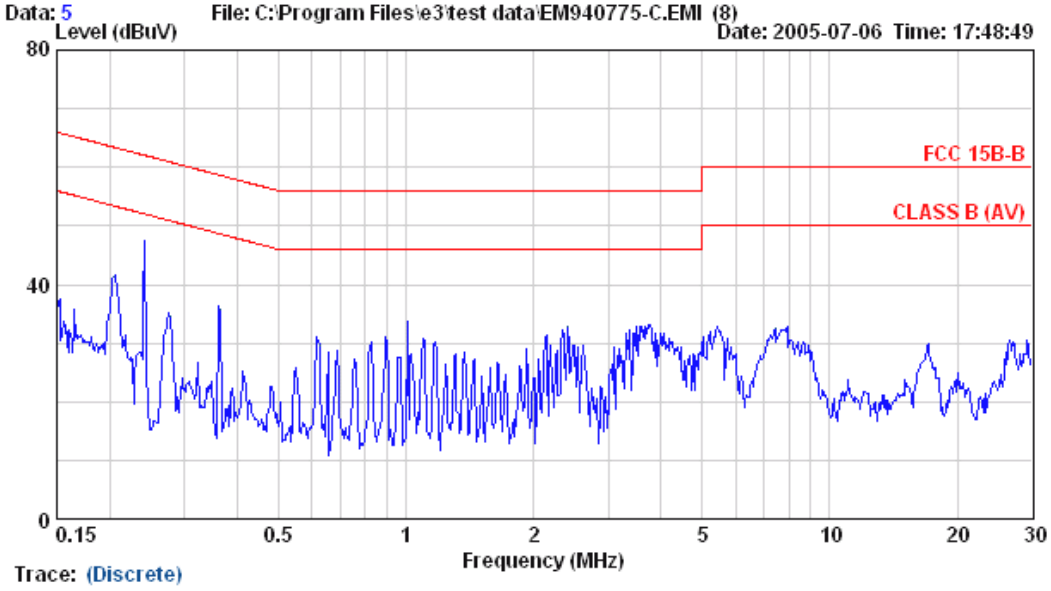

Site : NO.5 Shielded room Data : 5
Condition : KNW-407(8-1539-3) Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 640*480 / 60Hz;31KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.205	0.10	0.20	41.11	41.41	63.40	21.99	QP
2	0.277	0.10	0.20	34.38	34.68	60.90	26.22	QP
3	0.363	0.10	0.20	35.31	35.61	58.65	23.04	QP
4	0.624	0.10	0.20	29.37	29.67	56.00	26.33	QP
5	2.396	0.10	0.40	32.20	32.70	56.00	23.30	QP
6	7.446	0.16	0.60	31.68	32.44	60.00	27.56	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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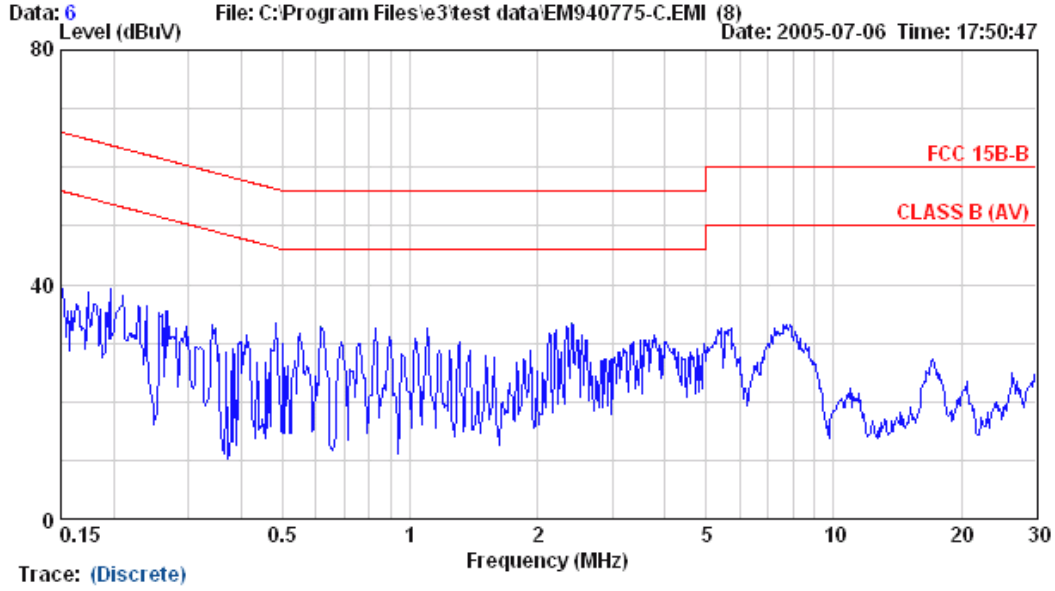

Site : NO.5 Shielded room Data : 6
Condition : KNW-407(8-1539-3) Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 640*480 / 60Hz;31KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.209	0.20	0.20	36.06	36.46	63.23	26.77	QP
2	0.346	0.12	0.20	32.32	32.64	59.05	26.41	QP
3	0.617	0.10	0.20	32.56	32.86	56.00	23.14	QP
4	1.094	0.10	0.40	29.87	30.37	56.00	25.63	QP
5	2.396	0.10	0.40	32.95	33.45	56.00	22.55	QP
6	7.486	0.16	0.60	30.92	31.68	60.00	28.32	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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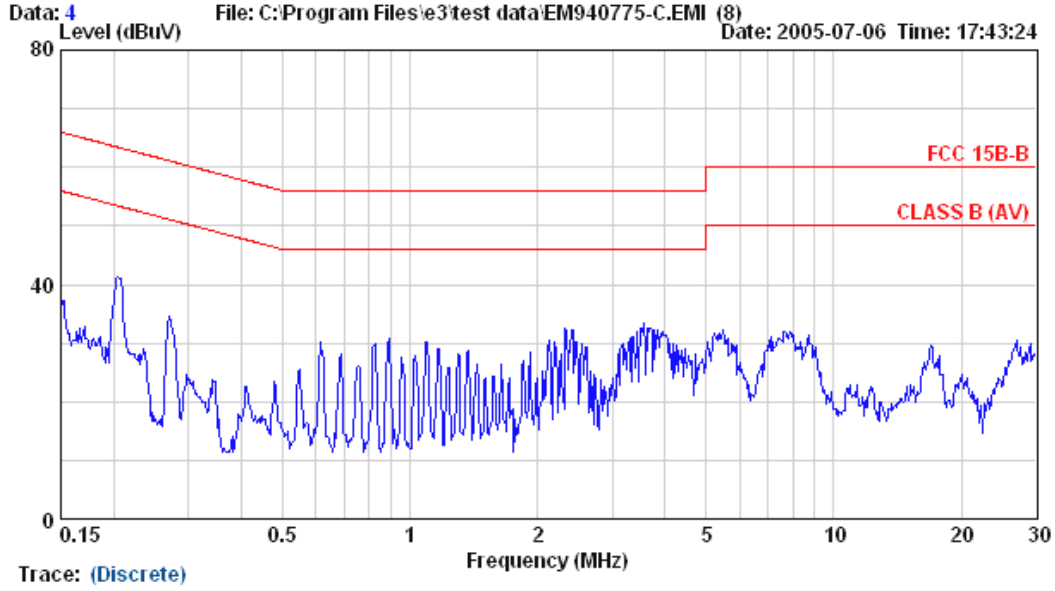

Site : NO.5 Shielded room Data : 4
Condition : KNW-407(8-1539-3) Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 1280*720 / 60Hz;46KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.205	0.10	0.20	40.91	41.21	63.40	22.19	QP
2	0.273	0.10	0.20	33.24	33.54	61.03	27.49	QP
3	0.617	0.10	0.20	29.25	29.55	56.00	26.45	QP
4	1.100	0.10	0.40	29.74	30.24	56.00	25.76	QP
5	2.334	0.10	0.40	31.80	32.30	56.00	23.70	QP
6	7.646	0.16	0.60	31.18	31.94	60.00	28.06	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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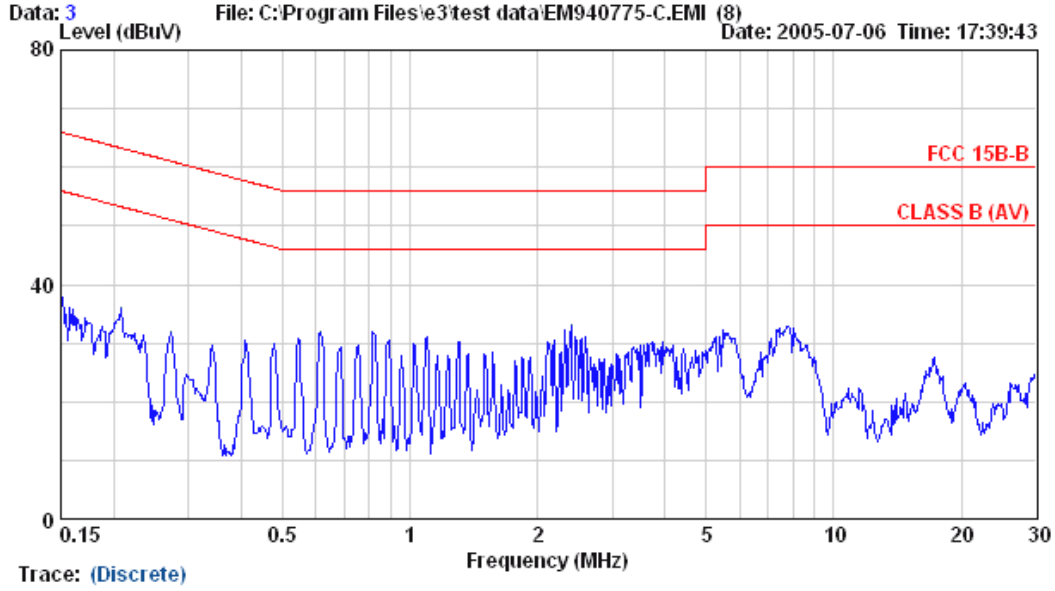

Site : NO.5 Shielded room Data : 3
Condition : KNW-407(8-1539-3) Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 1280*720 / 60Hz;46KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.207	0.20	0.20	35.56	35.96	63.32	27.35	QP
2	0.273	0.17	0.20	31.48	31.85	61.03	29.18	QP
3	0.406	0.10	0.20	27.48	27.78	57.73	29.95	QP
4	0.617	0.10	0.20	31.77	32.07	56.00	23.93	QP
5	2.396	0.10	0.40	32.65	33.15	56.00	22.85	QP
6	7.566	0.16	0.60	31.25	32.01	60.00	27.99	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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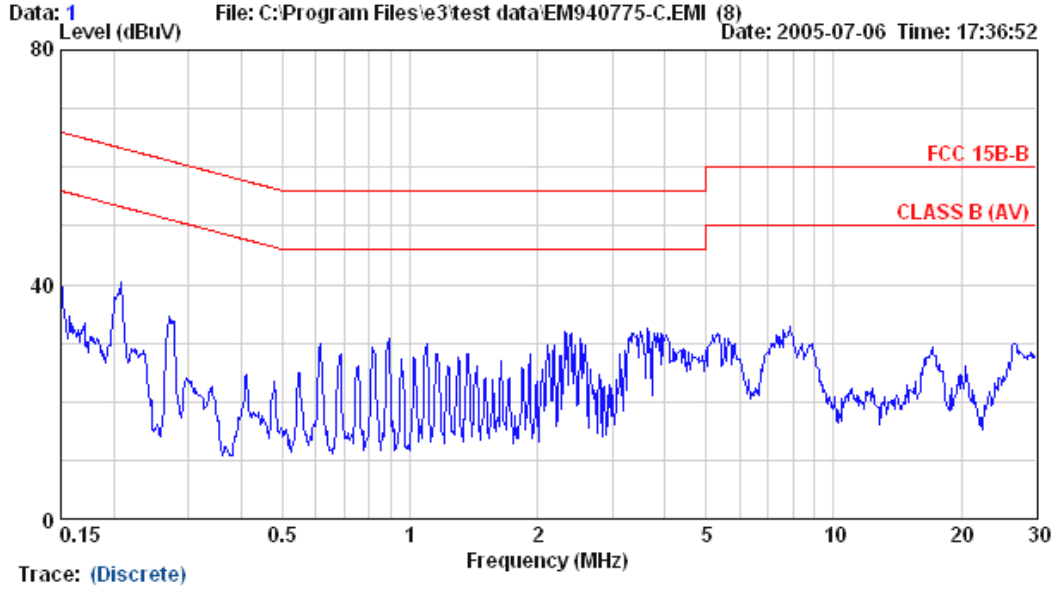

Site : NO.5 Shielded room Data : 1
Condition : KNW-407(8-1539-3) Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 1280*768 / 60Hz;48KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.207	0.10	0.20	40.03	40.33	63.32	22.99	QP
2	0.270	0.10	0.20	34.40	34.70	61.12	26.42	QP
3	0.611	0.10	0.20	28.68	28.98	56.00	27.02	QP
4	0.885	0.10	0.20	29.90	30.20	56.00	25.80	QP
5	3.381	0.10	0.40	30.93	31.43	56.00	24.57	QP
6	7.728	0.16	0.60	30.31	31.07	60.00	28.93	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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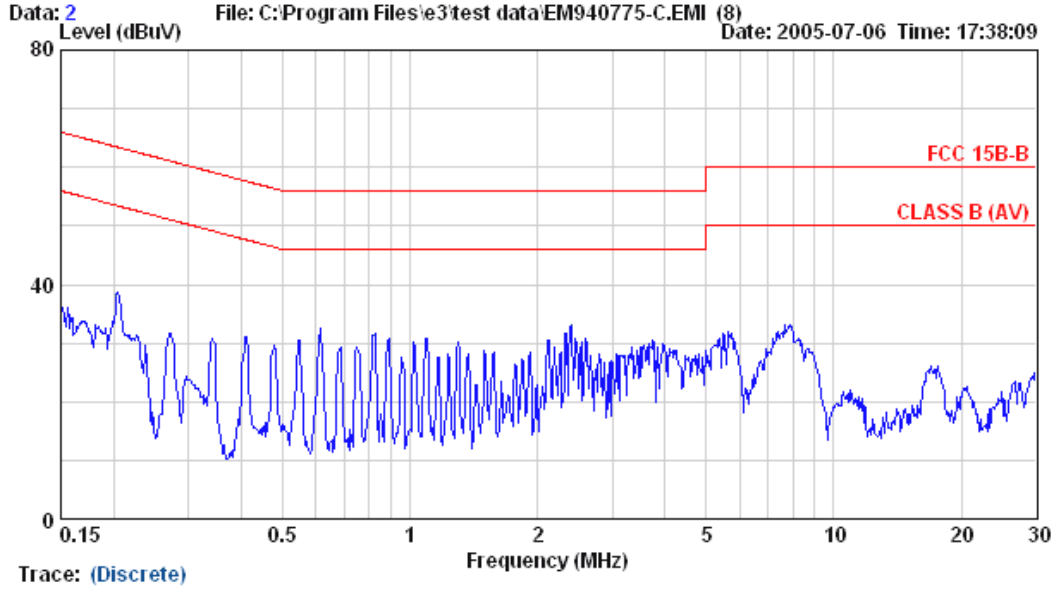

Site : NO.5 Shielded room Data : 2
Condition : KNW-407(8-1539-3) Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : 1280*768 / 60Hz;48KHz(D-SUB)

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.203	0.20	0.20	37.66	38.06	63.49	25.44	QP
2	0.406	0.10	0.20	28.53	28.83	57.73	28.90	QP
3	0.611	0.10	0.20	30.32	30.62	56.00	25.39	QP
4	0.822	0.10	0.20	31.19	31.49	56.00	24.51	QP
5	2.396	0.10	0.40	32.73	33.23	56.00	22.77	QP
6	7.646	0.16	0.60	31.27	32.03	60.00	27.97	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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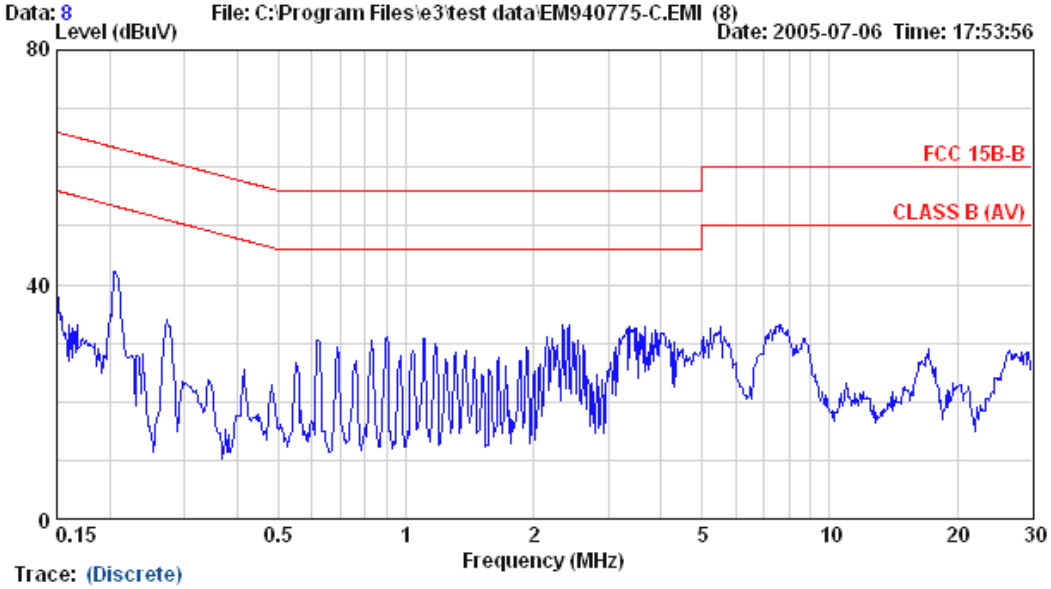

Site : NO.5 Shielded room Data : 8
Condition : KNW-407(8-1539-3) Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : PIP

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.207	0.10	0.20	41.26	41.56	63.32	21.76	QP
2	0.276	0.10	0.20	32.51	32.81	60.94	28.13	QP
3	0.617	0.10	0.20	30.19	30.49	56.00	25.51	QP
4	0.894	0.10	0.20	30.10	30.40	56.00	25.60	QP
5	2.422	0.10	0.40	32.48	32.98	56.00	23.02	QP
6	7.446	0.16	0.60	30.78	31.54	60.00	28.46	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

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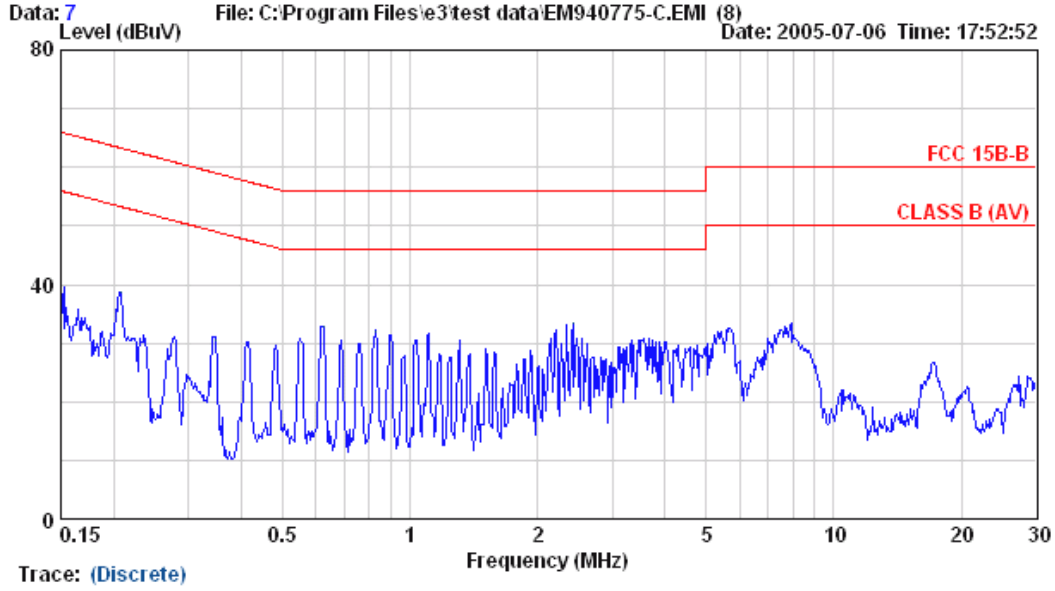


Site : NO.5 Shielded room Data : 7
Condition : KNW-407(8-1539-3) Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 30*C / 62% ESCS 30 Engineer: Tony Chen
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac/60Hz
Test Mode : PIP

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.207	0.20	0.20	38.22	38.62	63.32	24.69	QP
2	0.348	0.12	0.20	30.12	30.43	59.00	28.57	QP
3	0.624	0.10	0.20	32.48	32.78	56.00	23.22	QP
4	0.830	0.10	0.20	31.77	32.07	56.00	23.93	QP
5	2.422	0.10	0.40	32.93	33.43	56.00	22.57	QP
6	7.566	0.16	0.60	31.21	31.97	60.00	28.03	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + 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.

3. RADIATED EMISSION MEASUREMENT

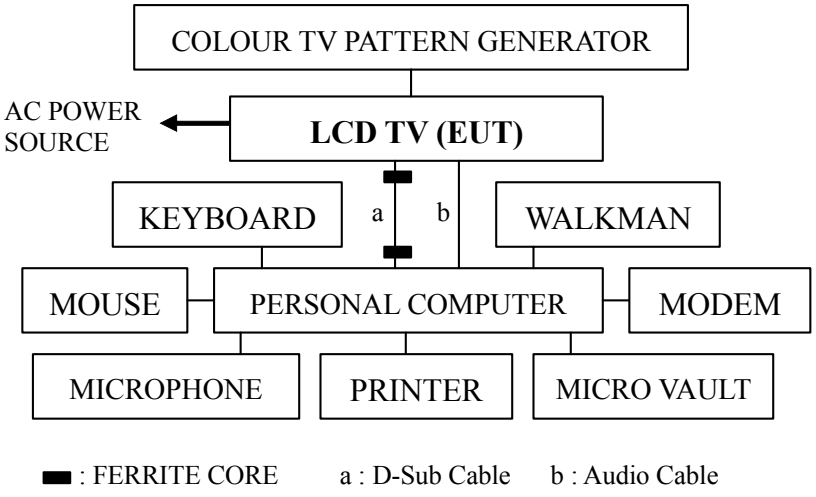
3.1. Test Equipment

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

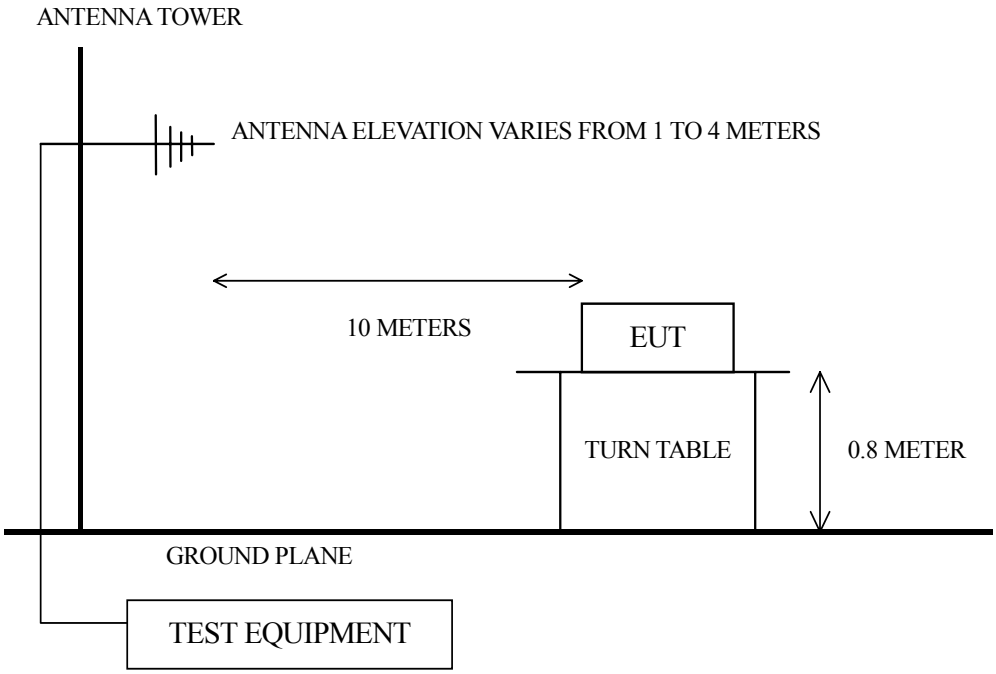
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8590L	3624A01446	N/A	N/A
2.	Test Receiver	Rohde&Schwarz	ESVS10	845165/018	Jun.08, 05’	Jun.07, 06’
3.	Amplifier	HP	8447D	2727A05737	N/A	N/A
4.	Broadband Antenna	Chase	VBA6106A	1263	Nov.15, 04’	Nov.14, 05’
5.	Log Periodic Antenna	Chase	UPA6109	1020	Nov.15, 04’	Nov.14, 05’

3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Open Area Test Site Setup Diagram



3.3. Radiation Limit (§15.109/CISPR 22, Class B)

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 (dBμV/m)
30 ~ 230	10	30
230 ~ 1000	10	37

Note： (1) The tighter limit applies at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the E.U.T.

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators were the same as those used in conducted measurement. Please refer to 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which was listed in 2.5. except the test set up replaced by section 3.2.

3.6. Test Procedure

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table rotate 360 degrees to determine the position of the maximum emission level. EUT was set 10 meters away from the receiving antenna which were mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-2003 and CISPR 22 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVS10 was set at 120kHz.

The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector.

The all final readings from test receiver were measured with Quasi-Peak detector.

3.7. Radiated Emission Measurement Results

PASSED. All emissions not reported below are too low against the prescribed limits.

EUT with the selected as following test modes were performed during radiated measurement and all the test results are attached next pages.

Test Date： Jul. 06, 2005 Temperature：32℃ Humidity：46%

	Mode	Input Port	Frequency / Resolution, Image	Reference Data No.	
				Horizontal	Vertical
	1.	D-Sub	640*480/60Hz, 31kHz; H Pattern	# 6	# 5
	2.		1280*720/60Hz, 46kHz; H Pattern	# 2	# 1
※	3.		**1280*768/60Hz, 47kHz; H Pattern**	**# 3**	**# 4**
	4.	D-Sub + RF	1280*768/60Hz, 47kHz; H Pattern + Image “Color Bar” (PIP Mode)	# 7	# 8

(※ mode for maximum detected emission)

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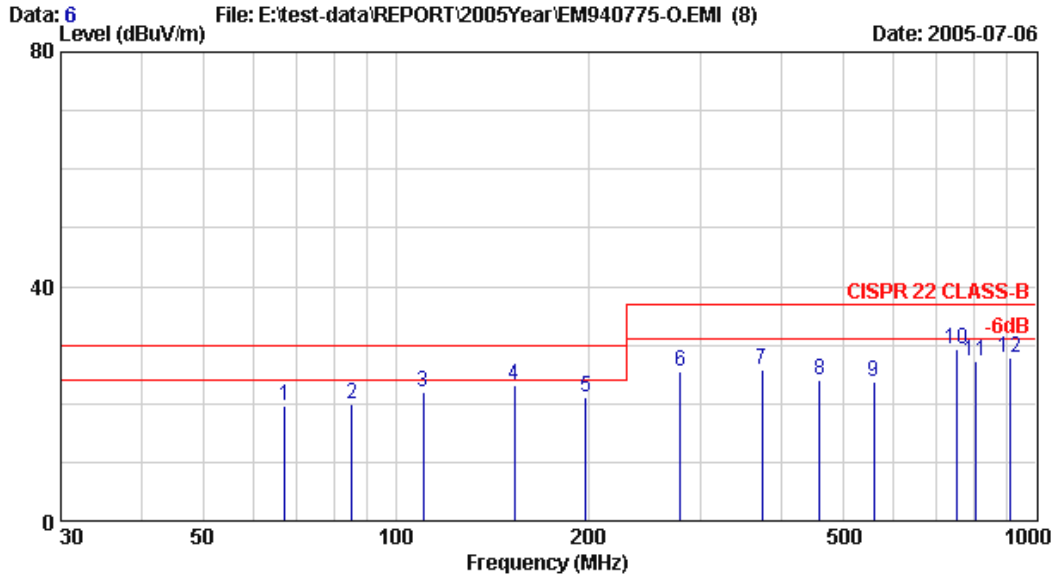

Site no. : NO.4 Open Site Data no. : 6
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 640*480/60Hz ; 31KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	67.166	12.65	0.88	6.25	19.77	30.00	10.23	
2	85.398	15.45	0.98	3.55	19.98	30.00	10.02	
3	110.396	18.64	1.11	2.22	21.97	30.00	8.03	
4	153.164	20.75	1.35	1.01	23.11	30.00	6.89	
5	198.385	21.18	1.64	-1.64	21.19	30.00	8.81	
6	278.284	24.53	1.73	-0.63	25.64	37.00	11.36	
7	373.416	15.23	2.12	8.37	25.72	37.00	11.28	
8	459.176	17.59	2.39	4.12	24.10	37.00	12.90	
9	557.731	20.43	2.56	0.64	23.63	37.00	13.37	
10	754.387	23.20	3.19	2.90	29.29	37.00	7.71	
11	807.044	23.09	3.30	0.79	27.19	37.00	9.81	
12	911.059	23.82	3.39	0.60	27.81	37.00	9.19	

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

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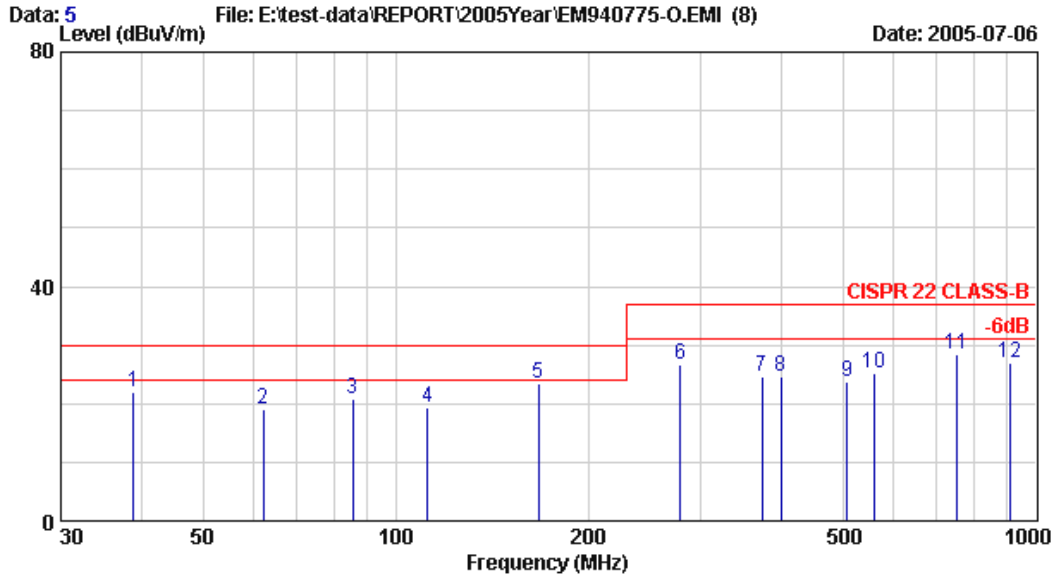

Site no. : NO.4 Open Site Data no. : 5
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 640*480/60Hz ; 31KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	38.898	20.38	0.65	0.85	21.88	30.00	8.12	
2	62.063	13.97	0.86	4.25	19.08	30.00	10.92	
3	85.693	14.94	0.99	4.83	20.75	30.00	9.25	
4	112.254	17.56	1.11	0.79	19.46	30.00	10.54	
5	167.387	21.16	1.37	0.79	23.32	30.00	6.68	
6	278.504	23.75	1.73	1.18	26.66	37.00	10.34	
7	373.594	15.43	2.12	7.06	24.61	37.00	12.39	
8	399.952	16.73	2.18	5.74	24.66	37.00	12.34	
9	507.741	18.77	2.45	2.66	23.88	37.00	13.12	
10	557.629	20.28	2.56	2.35	25.19	37.00	11.81	
11	754.387	23.50	3.19	1.67	28.36	37.00	8.64	
12	912.271	23.86	3.39	-0.39	26.85	37.00	10.15	

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

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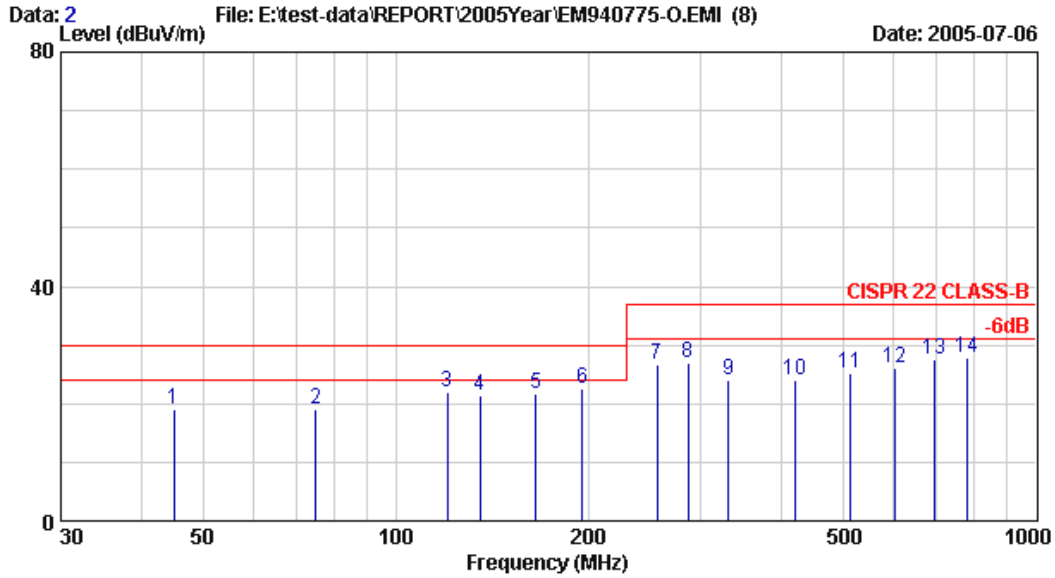

Site no. : NO.4 Open Site Data no. : 2
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 1280*720/60Hz 46KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	45.027	17.97	0.70	0.45	19.13	30.00	10.87	
2	75.145	13.45	0.91	4.59	18.95	30.00	11.05	
3	120.314	18.97	1.11	1.94	22.02	30.00	7.98	
4	135.363	20.38	1.24	-0.15	21.47	30.00	8.53	
5	165.481	20.99	1.36	-0.78	21.57	30.00	8.43	
6	195.596	21.25	1.68	-0.47	22.45	30.00	7.55	
7	255.814	23.25	1.70	1.76	26.70	37.00	10.30	
8	285.917	24.62	1.75	0.64	27.01	37.00	9.99	
9	331.089	14.56	2.01	7.54	24.11	37.00	12.89	
10	421.414	16.41	2.26	5.23	23.90	37.00	13.10	
11	511.751	18.68	2.45	3.95	25.08	37.00	11.92	
12	602.076	20.69	2.74	2.54	25.97	37.00	11.03	
13	692.411	22.53	3.02	1.98	27.53	37.00	9.47	
14	782.739	23.22	3.26	1.25	27.72	37.00	9.28	

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

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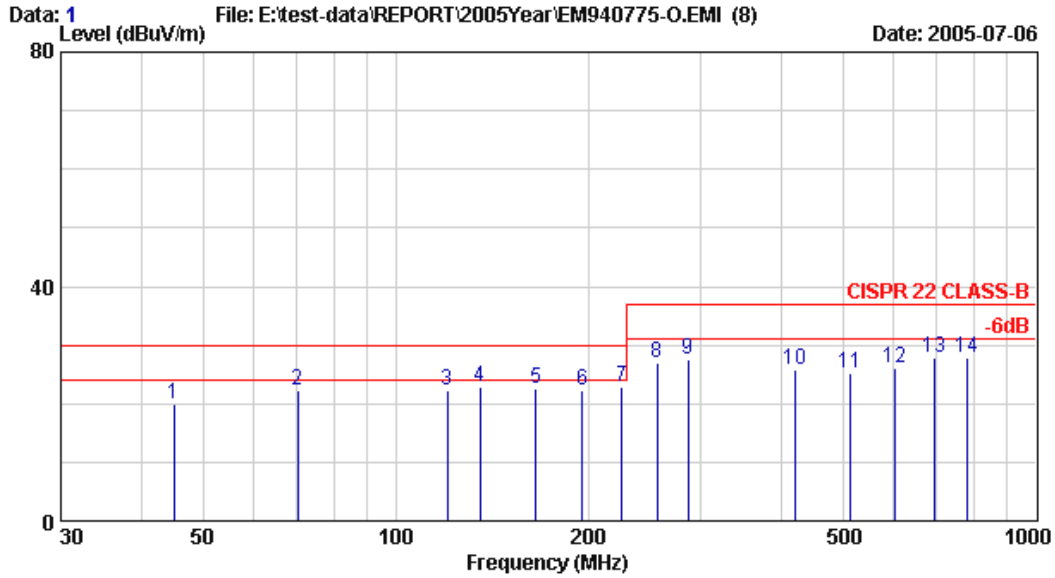

Site no. : NO.4 Open Site
Dis. / Ant. : 10m VBA6106A/UPA6109
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 1280*720/60Hz ; 46KHz
S/N:TY0405224

Data no. : 1
Ant. pol. : VERTICAL
Engineer : ALEX HUANG

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	45.007	18.27	0.70	1.04	20.02	30.00	9.98	
2	70.319	13.13	0.88	8.15	22.16	30.00	7.84	
3	120.280	18.21	1.11	2.92	22.25	30.00	7.75	
4	135.337	19.87	1.24	1.75	22.87	30.00	7.13	
5	165.455	21.14	1.36	0.08	22.59	30.00	7.41	
6	195.563	22.09	1.68	-1.45	22.31	30.00	7.69	
7	225.677	23.39	1.55	-1.95	22.99	30.00	7.01	
8	255.792	23.66	1.70	1.70	27.06	37.00	9.94	
9	285.906	23.25	1.75	2.52	27.52	37.00	9.48	
10	421.410	17.16	2.26	6.25	25.67	37.00	11.33	
11	511.746	18.97	2.45	3.88	25.30	37.00	11.70	
12	602.071	20.73	2.74	2.60	26.06	37.00	10.94	
13	692.406	22.88	3.02	1.98	27.88	37.00	9.12	
14	782.732	23.31	3.26	1.17	27.73	37.00	9.27	

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

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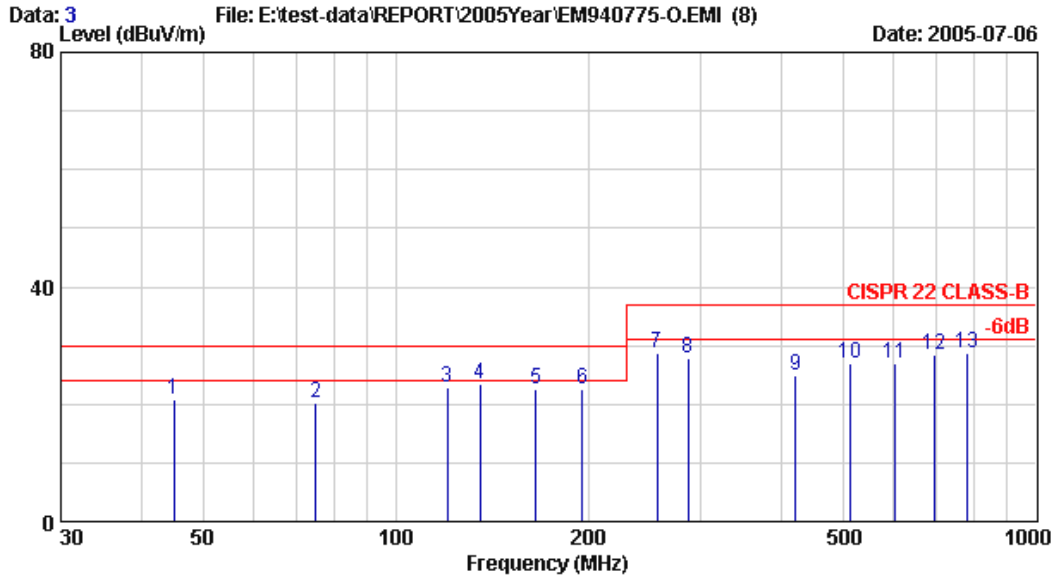

Site no. : NO.4 Open Site Data no. : 3
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 1280*768/60Hz ; 47KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	45.031	17.97	0.70	2.21	20.89	30.00	9.11	
2	75.134	13.45	0.91	5.75	20.11	30.00	9.89	
3	120.306	18.97	1.11	2.90	22.98	30.00	7.02	
4	135.367	20.38	1.24	1.75	23.37	30.00	6.63	*
5	165.471	20.99	1.36	0.14	22.49	30.00	7.51	
6	195.587	21.25	1.68	-0.47	22.45	30.00	7.55	
7	255.805	23.25	1.70	3.72	28.66	37.00	8.34	
8	285.921	24.62	1.75	1.60	27.97	37.00	9.03	
9	421.420	16.41	2.26	6.21	24.88	37.00	12.12	
10	511.750	18.68	2.45	5.84	26.97	37.00	10.03	
11	602.072	20.69	2.74	3.62	27.05	37.00	9.95	
12	692.406	22.53	3.02	2.96	28.51	37.00	8.49	
13	782.745	23.22	3.26	2.31	28.78	37.00	8.22	

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 135.367MHz with corrected signal level of 23.37dBμV/m (limit is 30.0dBμV/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 160°.
4. 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.

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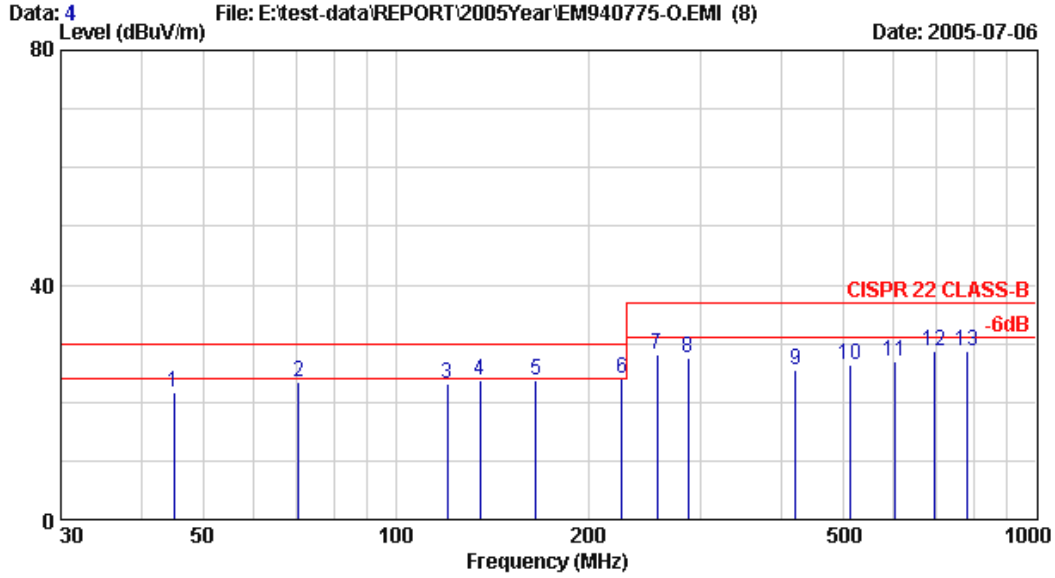

Site no. : NO.4 Open Site Data no. : 4
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 32*C / 46% ESVS 10 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : 1280*768/60Hz ; 47KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	45.041	17.60	0.70	3.49	21.79	30.00	8.21	
2	70.435	13.13	0.88	9.39	23.40	30.00	6.60	
3	120.317	18.21	1.11	3.84	23.17	30.00	6.83	
4	135.380	19.87	1.24	2.69	23.81	30.00	6.19	
5	165.495	21.14	1.36	1.31	23.82	30.00	6.18	
6	225.710	23.39	1.55	-0.85	24.09	30.00	5.91	*
7	255.825	23.66	1.70	2.70	28.06	37.00	8.94	
8	285.930	23.25	1.75	2.60	27.60	37.00	9.40	
9	421.430	17.16	2.26	6.13	25.55	37.00	11.45	
10	511.768	18.97	2.45	4.88	26.30	37.00	10.70	
11	602.090	20.73	2.74	3.56	27.02	37.00	9.98	
12	692.428	22.88	3.02	2.96	28.86	37.00	8.14	
13	782.765	23.31	3.26	2.21	28.77	37.00	8.23	

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 225.710MHz with corrected signal level of 24.09dBμV/m (limit is 30.0dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 90°.
4. 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.

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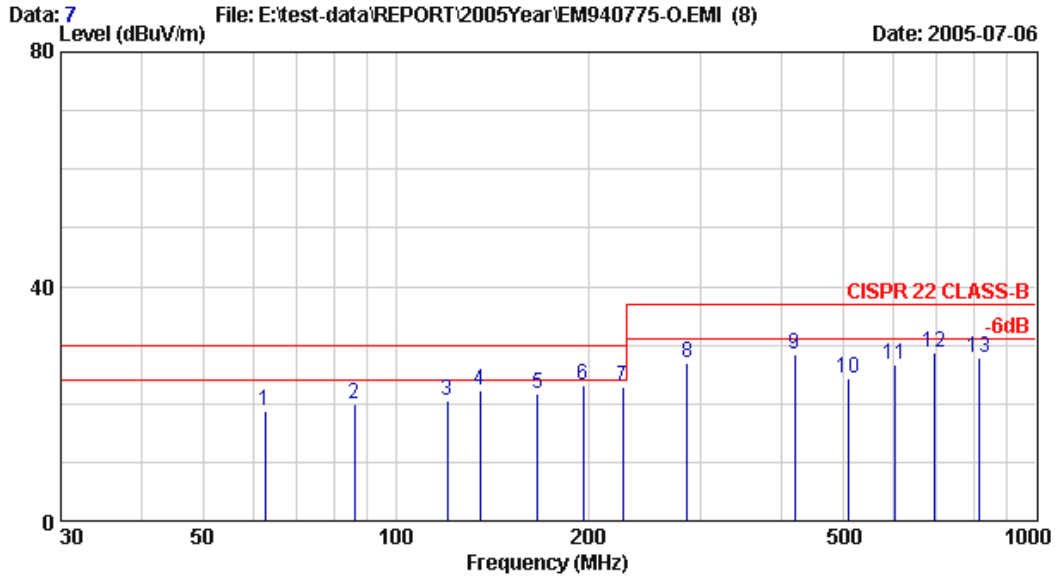

Site no. : NO.4 Open Site Data no. : 7
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31*C / 58% ESCS 30 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : PIP / 1280*768/60Hz ; 47KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	62.455	13.44	0.86	4.34	18.64	30.00	11.36	
2	86.235	15.52	0.99	3.51	20.02	30.00	9.98	
3	120.540	18.97	1.11	0.35	20.43	30.00	9.57	
4	135.565	20.38	1.24	0.55	22.17	30.00	7.83	
5	166.560	21.03	1.37	-0.79	21.61	30.00	8.39	
6	196.230	21.25	1.67	0.23	23.14	30.00	6.86	
7	226.230	22.07	1.56	-0.79	22.84	30.00	7.16	
8	285.263	24.74	1.74	0.54	27.02	37.00	9.98	
9	420.530	16.39	2.26	9.65	28.30	37.00	8.70	
10	510.265	18.61	2.45	3.23	24.29	37.00	12.71	
11	602.234	20.69	2.74	3.14	26.57	37.00	10.43	
12	692.536	22.53	3.02	3.21	28.76	37.00	8.24	
13	815.530	23.22	3.32	1.23	27.77	37.00	9.23	

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

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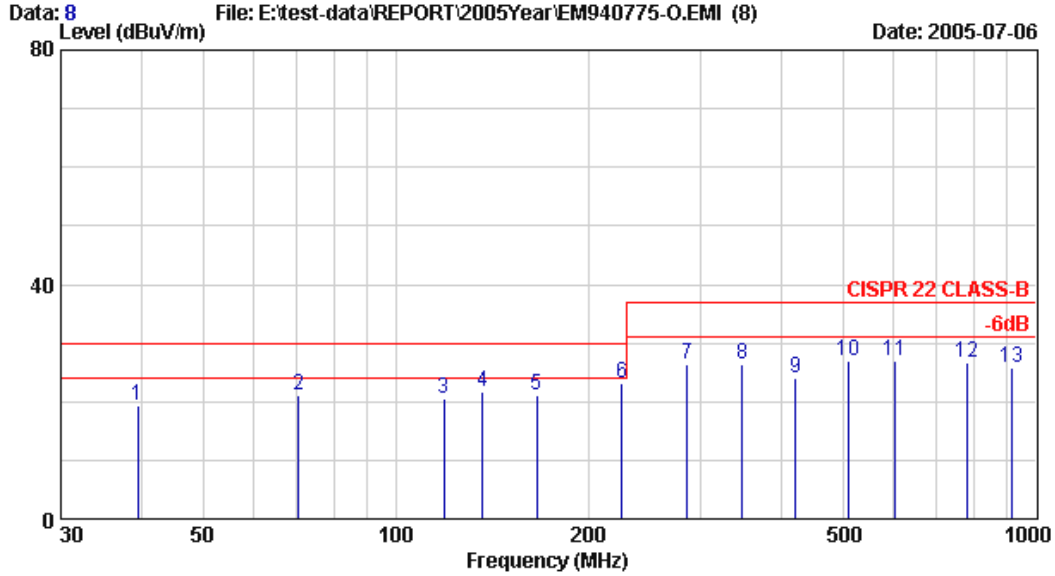

Site no. : NO.4 Open Site Data no. : 8
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31*C / 58% ESCS 30 Engineer : ALEX HUANG
EUT : LCD TV M/N:23PF5320/28
Power Rating : 120Vac / 60Hz
Test Mode : PIP / 1280*768/60Hz ; 47KHz
S/N:TY0405224

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	39.545	20.21	0.66	-1.45	19.41	30.00	10.59	
2	70.530	13.13	0.89	7.21	21.22	30.00	8.78	
3	119.130	18.14	1.11	1.33	20.58	30.00	9.42	
4	136.545	20.00	1.26	0.53	21.79	30.00	8.21	
5	166.334	21.15	1.37	-1.43	21.08	30.00	8.92	
6	225.330	23.29	1.55	-1.75	23.09	30.00	6.91	
7	285.536	23.29	1.75	1.45	26.49	37.00	10.51	
8	348.156	14.76	2.10	9.53	26.40	37.00	10.60	
9	421.565	17.16	2.26	4.65	24.07	37.00	12.93	
10	510.230	18.98	2.45	5.64	27.07	37.00	9.93	
11	602.257	20.73	2.74	3.54	27.00	37.00	10.00	
12	782.565	23.31	3.26	0.23	26.80	37.00	10.20	
13	915.252	23.94	3.39	-1.47	25.87	37.00	11.13	

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

4. DEVIATION TO TEST SPECIFICATIONS

【NONE】