

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

Model No. : 15MF605T

Brand : Philips Magnavox

FCC ID: A3KM135

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 : EM940676
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Date of Test : Jun. 07 ~ 08, 2005
Date of Report : Jun. 13, 2005

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TEST REPORT CERTIFICATION

(Class II Permissive Change)

Applicant : Philips Electronics Industries (Taiwan) Ltd.
 Manufacturer : Philips Electronics Industries (Taiwan) Ltd.
 Factory : Philips Consumer Electronics Co., of Suzhou Ltd.
 EUT Description : LCD TV
 FCC ID : A3KM135
 (A) MODEL NO. : 15MF605T
 (B) SERIAL NO. : TY0405032
 (C) BRAND NAME : Philips Magnavox
 (D) POWER SUPPLY : 16VDC —, 2.5A
 (E) TEST VOLTAGE : AC 120V/60Hz (Via Power Adapter)

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 : Jun. 07 ~ 08, 2005

Prepared by : Julie Hsu Jun. 22. 2005
 (Julie Hsu/Assistant Administrator)

Test Engineer : Tony Lee Jun. 23. 2005
 (Tony Lee/Section Manager)

Approve & Authorized Signer : Leon Liu Jun. 23 2005
 (Leon Liu/Senior Manager)

Name of the Representative of the Responsible Party : _____

Signature : _____

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	:	15MF605T
Serial Number	:	TY0405032
FCC ID.	:	A3KM135
Brand	:	Philips Magnavox
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 Consumer Electronics Co., of Suzhou Ltd. No. 161, Zhujiang Road, New District, Suzhou 215011, PROC
LCD Panel	:	CPT, Type No. CLAA150XP03
Scanning Frequency	:	Horizontal: 30-60kHz Vertical: 56-75Hz
Max Resolution	:	1024*768 / 75Hz, 60kHz
D-Sub Data Cable	:	Shielded, Detachable, 1.8m
Audio Cable	:	Non-Shielded, Detachable, 1.8m

Power Adapter	:	Philips, EADP-60BB B AC Input: 100-240V~ 50-60Hz, 2A DC Output: 16V, 3.75A Cable: Shielded, Undetachable, 1.8m Bonded a ferrite core
Power Cord	:	Non-Shielded, Detachable, 1.8m
Data of Receipt of Sample	:	Jun. 03, 2005
Date of Test	:	Jun. 07 ~ 08, 2005

Remark :

This EUT is a modified version of original FCC ID A3KM135, the differences are as follows:

- (1) Removed the D-Sub Cable's ferrite core.
- (2) Removed the Audio Cable's ferrite core.
- (3) Added a LCD Panel (CPT, Type No. CLAA150XP03)

1.2. Tested Supporting System Details

1.2.1. PERSONAL COMPUTER

Model Number	:	EW1035
Serial Number	:	N/A
FCC ID	:	By DoC
Manufacturer	:	COMPAQ
VGA Card	:	Nvidia FX5200
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. KEYBOARD

Model Number	:	KB-0133
Serial Number	:	271122-AB1
BSMI ID	:	R31310
FCC ID	:	by DoC
Manufacturer	:	COMPAQ
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.3. MODEM

Model Number	:	DM-1414
Serial Number	:	980034394
FCC ID	:	IFAXDM1414
Manufacturer	:	Accex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, M/N AM-91000A Non-Shielded, Undetachable, 1.8m

1.2.4. PS2 MOUSE

Model Number	:	M-S69
Serial Number	:	N/A
FCC ID	:	JNZ211443
BSMI ID	:	3892D101
Manufacturer	:	Logitech (Brand: COMPAQ)
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.2.5. PRINTER

Model Number	:	C2642A
Serial Number	:	TH85LIN0Y2
FCC ID	:	B94C2642X
Manufacturer	:	Hewlett Packard
Power Adapter	:	NMB, M/N C2175A
		Input Cable: Non-Shielded, Undetachable, 0.9m
		Output Cable: Non-Shielded, Detachable, 1.8m
Data Cable	:	Shielded, Detachable, 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	:	HA08623
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, 2.0m

1.2.9. EARPHONE (Link to EUT)

Model Number	:	N/A
Manufacturer	:	Panasonic
Earphone Cable	:	Non-Shielded, Undetachable, 1.1m

1.2.10. COLOUR TV PATTERN GENERATOR (Link to EUT)

Model Number : PM5418TDSI
 Type Number : LO646252
 Manufacturer : Philips
 Coaxial Cable : Shielded, Detachable, 1.5m
 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 (C3/R4) : **No. 3 Shielded Room**
 No. 67-4, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei Hsien 24443, 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 = $ku_c(y)$

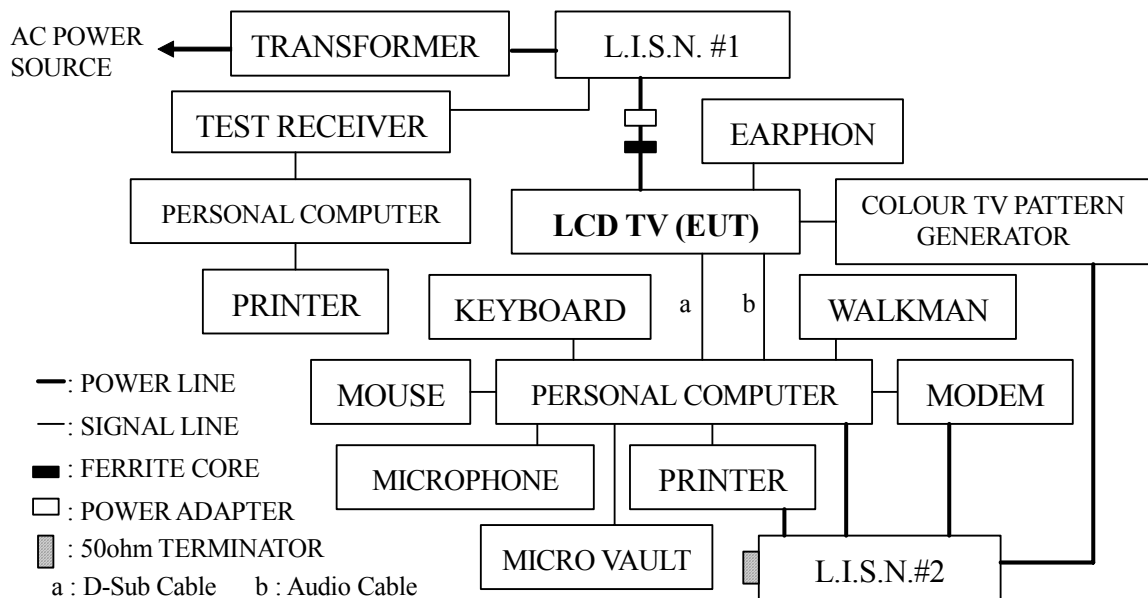
2. CONDUCTED DISTURBANCE MEASUREMENT

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	825442/020	Aug.05, 04'	Aug.04, 05'
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-1539-2	Nov.18, 04'	Nov.17, 05'
1.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-1539-3	Nov.18, 04'	Nov.17, 05'
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100041	Apr.09, 05'	Apr.08, 06'

2.2. Block Diagram of Test Setup



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

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

- 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	:	15MF605T
Serial Number	:	TY0405032
FCC ID	:	A3KM135
Manufacturer	:	Philips Electronics Industries (Taiwan) Ltd.
LCD Panel	:	CPT, Type No. CLAA150XP03
D-Sub Data Cable	:	Shielded, Detachable, 1.8m
Audio Cable	:	Non-Shielded, Detachable, 1.8m
Power Adapter	:	Philips, EADP-60BB AC Input: 100-240V~ 50-60Hz, 2A DC Output: 16V, 3.75A Cable: Shielded, Undetachable, 1.8m Bonded a ferrite core
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 2000 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 send the "Color Bar" image to EUT via RF Input. The screen of EUT display "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 PC System read data from FDD and then wrote data into FDD, same operation from HDD、Modem.
- 2.5.8. The other peripheral devices were drove and operated in turn during all testing.
- 2.5.9. 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. Line Conducted RF Voltage Measurement Results

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

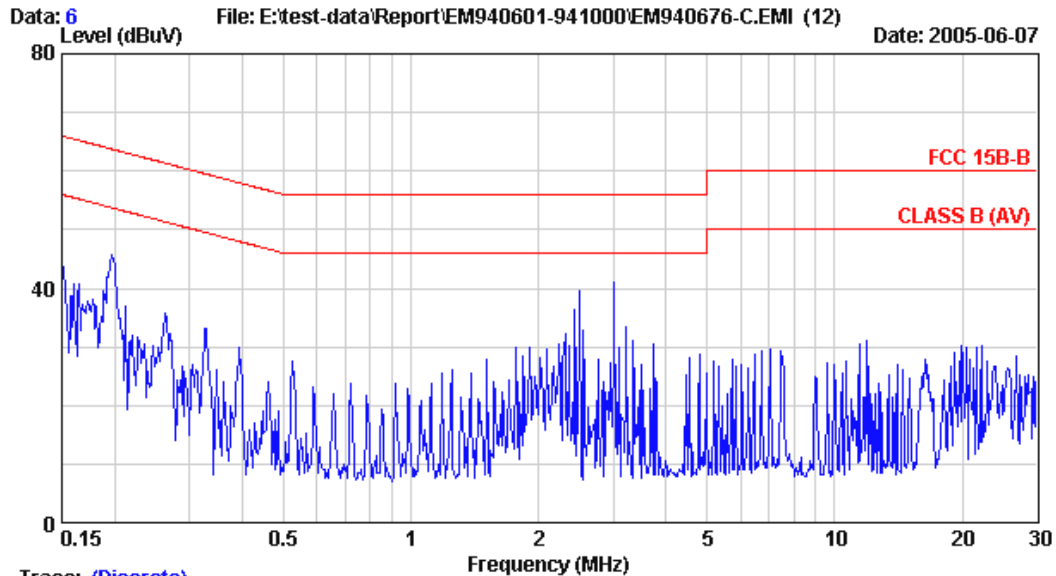
EUT with the selected as following test modes were performed during conducted measurement and all the test results are attached next pages.

Test Date : Jun. 07, 2005 Temperature : 25°C Humidity : 58%

Mode	Input Port	Frequency / Resolution, Image	Reference Data No.	
			Neutral	Line
1.	D-Sub	640*480/60Hz, 31kHz; H Pattern	# 6	# 5
2.		800*600/75Hz, 47kHz; H Pattern	# 11	# 12
3.		1024*768/75Hz, 60kHz; H Pattern	# 10	# 9
4.	D-Sub + RF	1024*768/75Hz, 60kHz; H Pattern + Image "Color Bar" (PIP Mode)	# 7	# 8



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Trace: (Discrete)

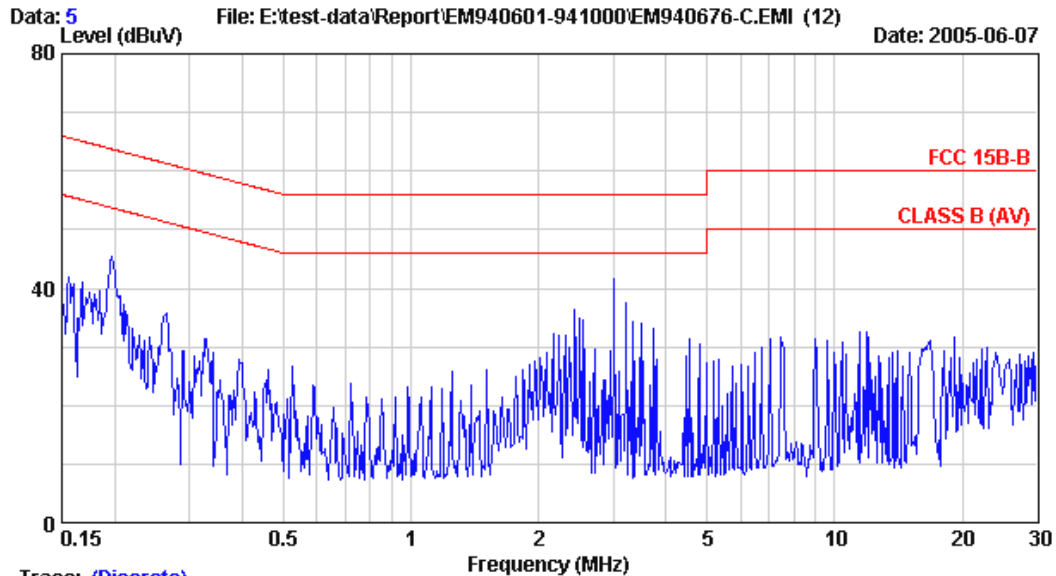
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Condition	: KNW-407	Phase	: NEUTRAL
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: 640*480/60Hz/31KHz		

		LISN	Cable		Emission			
Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)		
1	0.151	0.30	0.20	43.22	43.72	65.96	22.24	QP
2	0.198	0.20	0.20	45.23	45.63	63.71	18.08	QP
3	0.264	0.16	0.20	34.81	35.17	61.29	26.12	QP
4	2.500	0.10	0.40	39.17	39.67	56.00	16.33	QP
5	3.025	0.10	0.40	39.59	40.09	56.00	15.91	QP
6	11.870	0.14	0.70	30.32	31.16	60.00	28.84	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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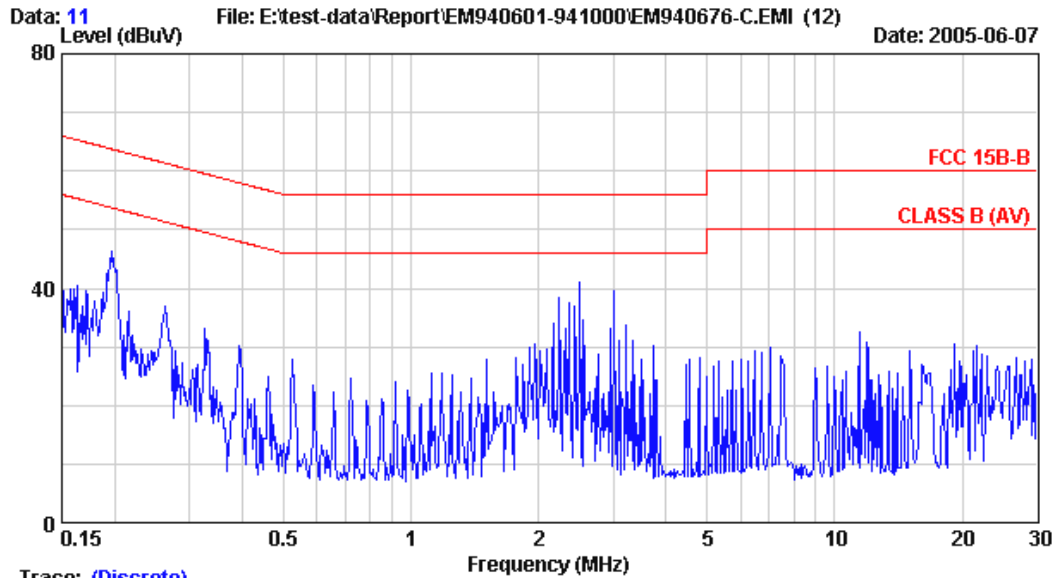
Site : NO.3 Shielded Room Data : 5
Condition : KNW-407 Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 25°C/58% ESCS30 Engineer: JAMES CHOU
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac/60Hz
Test Mode : 640*480/60Hz/31KHz

		LISN	Cable		Emission			
Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)		
1	0.156	0.29	0.20	41.37	41.86	65.69	23.83	QP
2	0.198	0.20	0.20	45.04	45.44	63.71	18.27	QP
3	0.263	0.16	0.20	35.22	35.58	61.34	25.75	QP
4	2.435	0.10	0.40	35.79	36.29	56.00	19.71	QP
5	3.025	0.10	0.40	39.97	40.47	56.00	15.53	QP
6	16.750	0.24	0.70	30.08	31.02	60.00	28.98	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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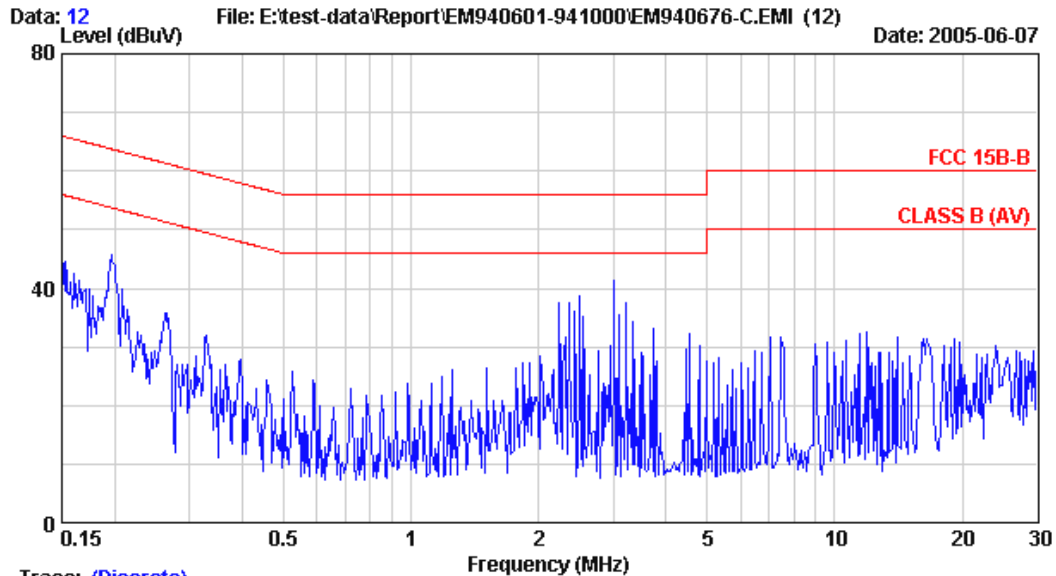
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Condition : KNW-407 Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 25°C/58% ESCS30 Engineer: JAMES CHOU
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac/60Hz
Test Mode : 800*600/75Hz/47KHz(D-SUB)

		LISN	Cable		Emission			
Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)		
1 0.150	0.30	0.20	43.07	43.57	66.00	22.43	QP	
2 0.198	0.20	0.20	45.76	46.16	63.71	17.55	QP	
3 0.263	0.16	0.20	35.95	36.31	61.34	25.02	QP	
4 2.500	0.10	0.40	40.44	40.94	56.00	15.06	QP	
5 3.025	0.10	0.40	39.07	39.57	56.00	16.43	QP	
6 11.438	0.13	0.70	31.68	32.51	60.00	27.49	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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Trace: (Discrete)

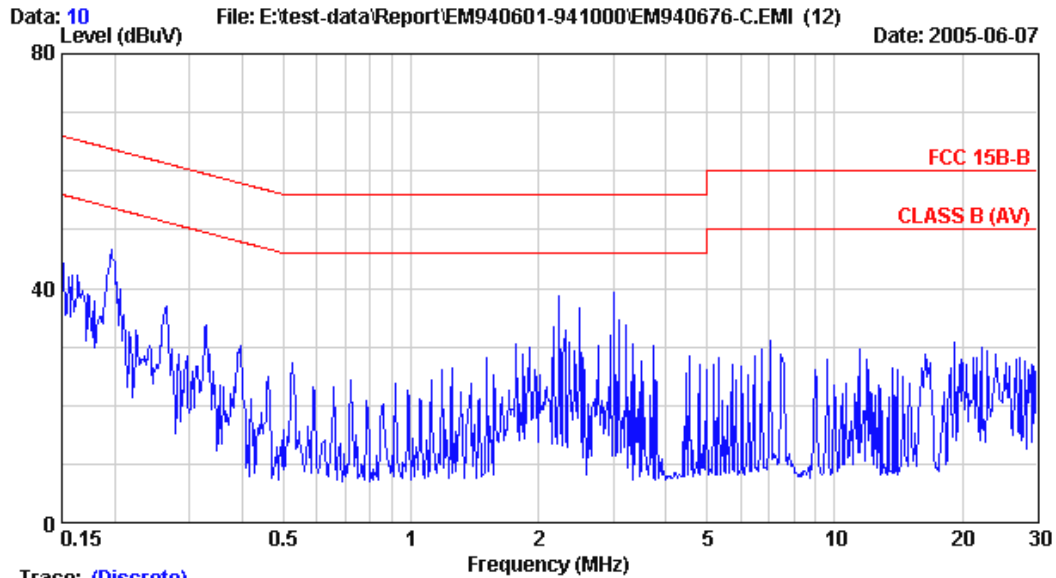
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Condition	: KNW-407	Phase	: LINE
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: 800*600/75Hz/47KHz (D-SUB)		

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)	
1	0.153	0.29	0.20	44.15	44.64	65.82	21.18	QP
2	0.197	0.21	0.20	45.21	45.62	63.76	18.14	QP
3	0.264	0.16	0.20	35.44	35.80	61.29	25.49	QP
4	2.500	0.10	0.40	38.26	38.76	56.00	17.24	QP
5	3.025	0.10	0.40	39.95	40.45	56.00	15.55	QP
6	16.486	0.23	0.70	30.51	31.44	60.00	28.56	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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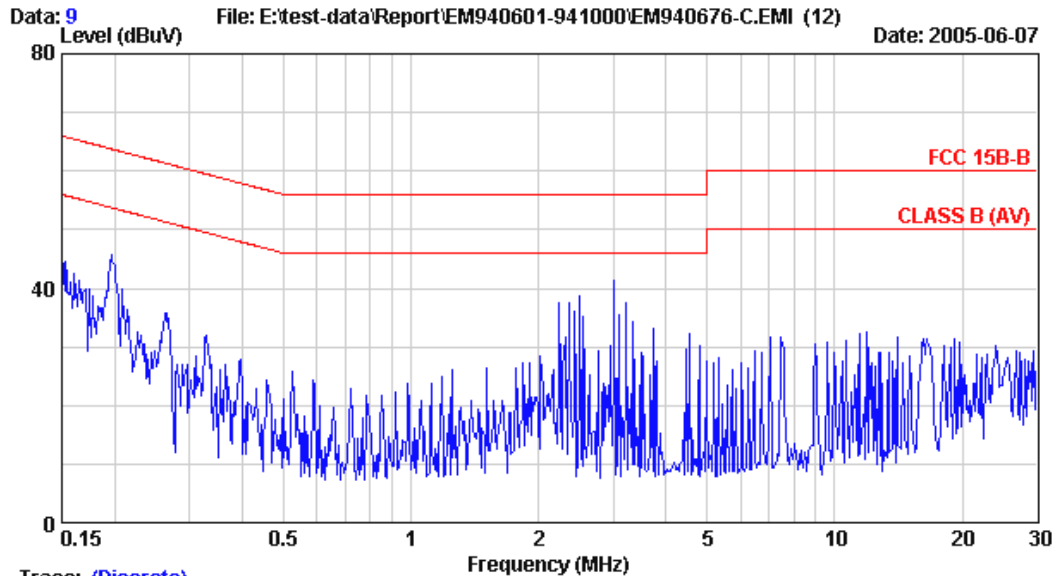
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Condition	: KNW-407	Phase	: NEUTRAL
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: 1024*768/75Hz/60KHz(D-SUB)		

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)	
1	0.158	0.28	0.20	41.71	42.19	65.56	23.37	QP
2	0.195	0.21	0.20	44.81	45.22	63.80	18.58	QP
3	0.264	0.16	0.20	36.68	37.04	61.29	24.25	QP
4	2.237	0.10	0.40	38.18	38.68	56.00	17.32	QP
5	3.025	0.10	0.40	38.81	39.31	56.00	16.69	QP
6	19.224	0.29	0.70	29.85	30.84	60.00	29.16	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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Trace: (Discrete)

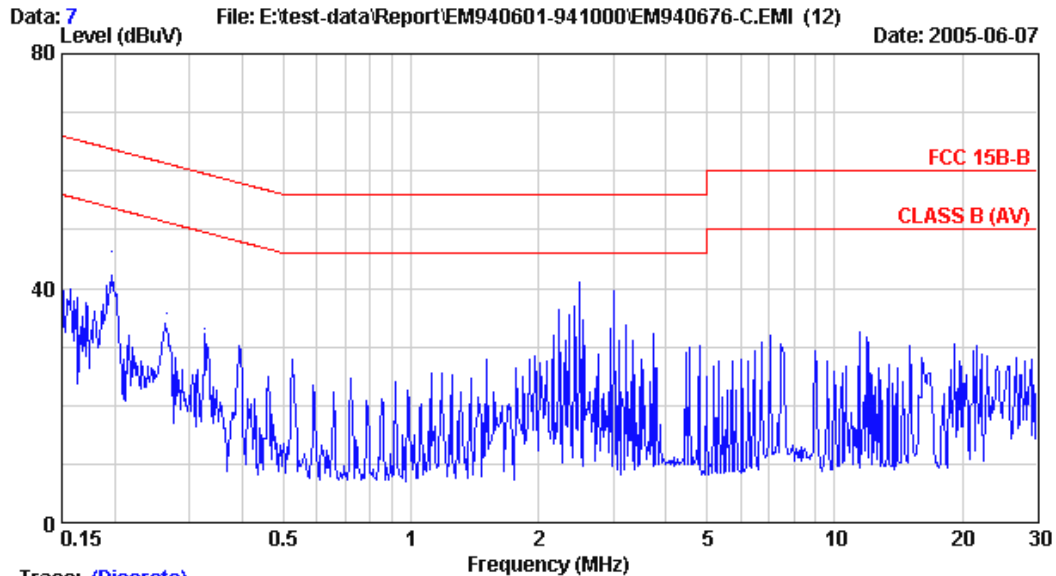
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Condition	: KNW-407	Phase	: LINE
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: 1024*768/75Hz/60KHz(D-SUB)		

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)	
1	0.153	0.29	0.20	44.15	44.64	65.82	21.18	QP
2	0.197	0.21	0.20	45.21	45.62	63.76	18.14	QP
3	0.264	0.16	0.20	35.44	35.80	61.29	25.49	QP
4	2.500	0.10	0.40	38.26	38.76	56.00	17.24	QP
5	3.025	0.10	0.40	39.95	40.45	56.00	15.55	QP
6	16.486	0.23	0.70	30.51	31.44	60.00	28.56	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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Email:ttmc@ttmc.com.tw



Trace: (Discrete)

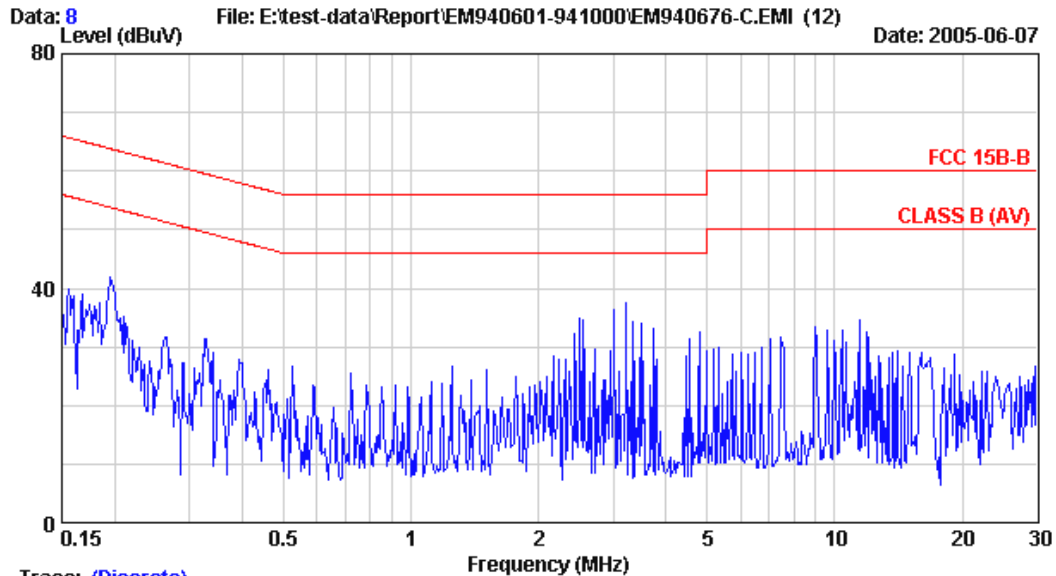
Site	: NO.3 Shielded Room	Data	: 7
Condition	: KNW-407	Phase	: NEUTRAL
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	: JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: PIP		

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)	
1	0.198	0.20	0.20	45.76	46.16	63.71	17.55	QP
2	0.264	0.16	0.20	35.30	35.66	61.29	25.63	QP
3	0.327	0.13	0.20	32.85	33.18	59.53	26.35	QP
4	2.500	0.10	0.40	40.44	40.94	56.00	15.06	QP
5	3.025	0.10	0.40	39.07	39.57	56.00	16.43	QP
6	11.438	0.13	0.70	31.68	32.51	60.00	27.49	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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Trace: (Discrete)

Site	: NO.3 Shielded Room	Data	: 8
Condition	: KNW-407	Phase	: LINE
Limit	: FCC 15B-B		
Env. / Ins.	: 25°C/58% ESCS30	Engineer:	JAMES CHOU
EUT	: LCD TV M/N:15MF605T		
Power Rating	: 120Vac/60Hz		
Test Mode	: PIP		

		LISN	Cable		Emission			
Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB)	(dB)	(dB μ V)	(dB μ V)	(dB μ V)	(dB)		
1	0.195	0.21	0.20	40.24	40.65	63.80	23.15	QP
2	0.263	0.16	0.20	31.22	31.58	61.34	29.75	QP
3	0.327	0.13	0.20	31.17	31.50	59.53	28.03	QP
4	3.025	0.10	0.40	35.97	36.47	56.00	19.53	QP
5	3.224	0.10	0.40	36.89	37.39	56.00	18.61	QP
6	11.438	0.13	0.70	33.74	34.57	60.00	25.43	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 DISTURBANCE MEASUREMENT

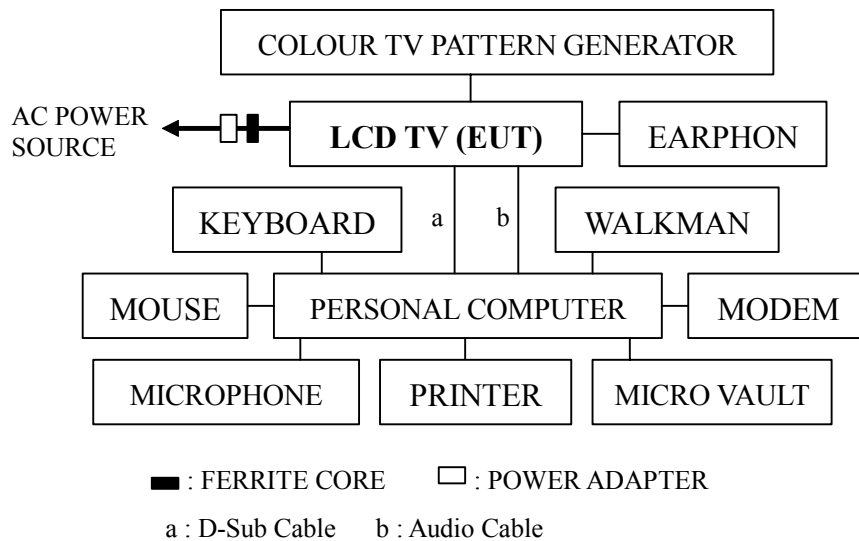
3.1. Test Equipment

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

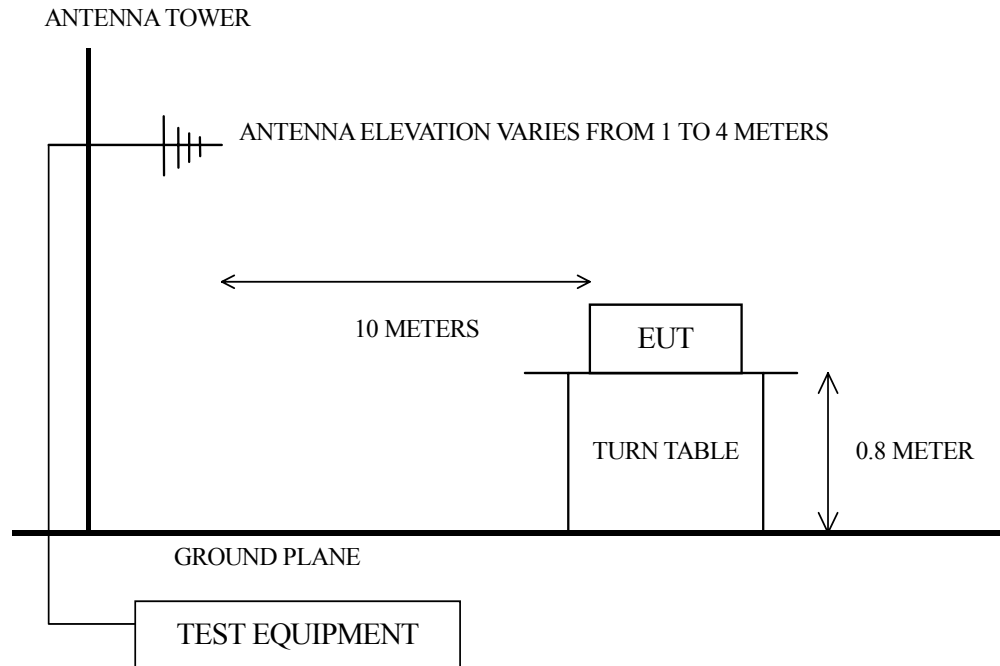
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8590L	3924A01446	N/A	N/A
2.	Test Receiver	Rohde&Schwarz	ESCS30	100338	May 07, 05'	May 06, 06'
3.	Amplifier	HP	8447D	2727A05737	N/A	N/A
4.	Broadband Antenna	Chase	VBA6106A	1263	Nov.15, 04'	Nov.14, 05'
5.	Log Periodic 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 (dB μ V/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 ESCS30 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.

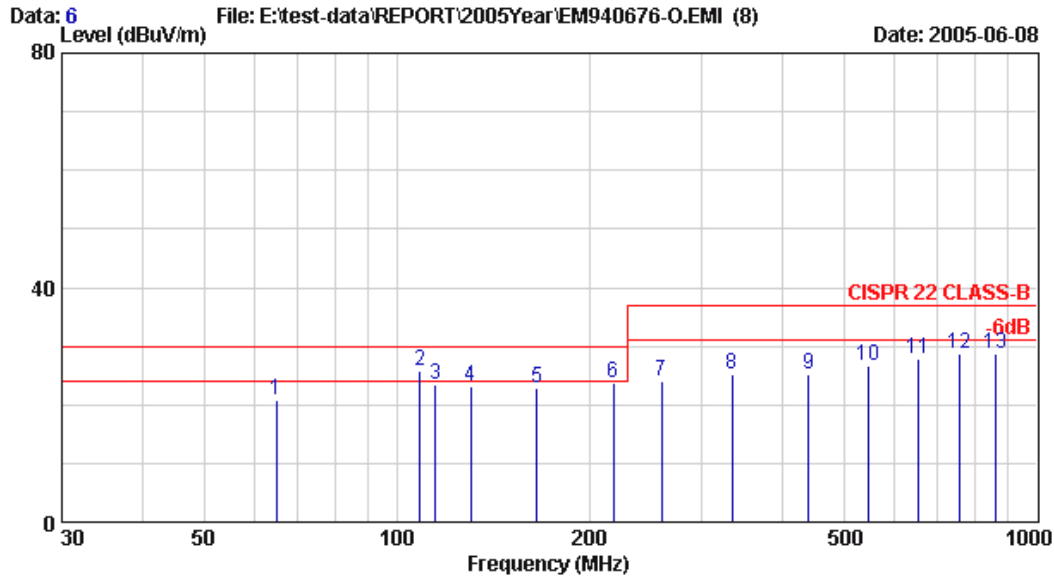
Test Date : Jun. 08, 2005 Temperature : 31°C Humidity : 58%

Mode	Input Port	Frequency / Resolution, Image	Reference Data No.	
			Horizontal	Vertical
※ 1.	D-Sub	640*480/60Hz, 31kHz; H Pattern	# 6	# 5
2.		800*600/75Hz, 47kHz; H Pattern	# 11	# 12
3.		1024*768/75Hz, 60kHz; H Pattern	# 10	# 9
4.	D-Sub + RF	1024*768/75Hz, 60kHz; H Pattern + Image “Color Bar” (PIP Mode)	# 7	# 8

(※ mode for maximum detected emission)



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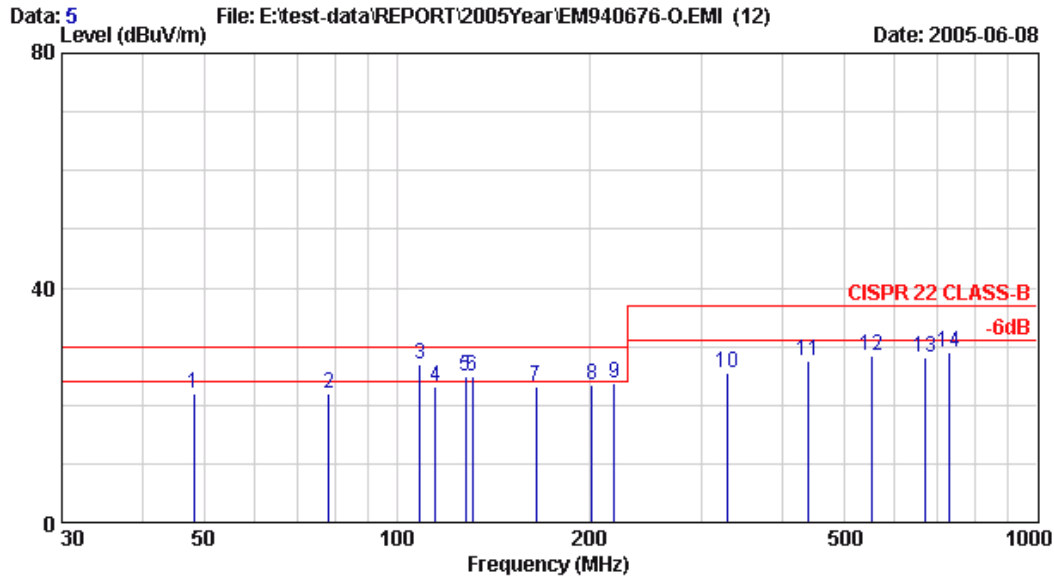
Site no. : NO.4 Open Site Data no. : 6
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 640*480 / 60Hz;31KHz (D-SUB)

	Freq.	Ant. Factor	Cable Loss	Reading	Emission Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB μ V)	(dB μ V/m)	(dB μ V/m)	(dB)	
1	64.817	12.90	0.87	7.06	20.83	30.00	9.17	
2	108.719	18.49	1.11	6.33	25.93	30.00	4.07	*
3	114.976	18.85	1.10	3.45	23.41	30.00	6.59	
4	130.538	20.05	1.18	1.95	23.18	30.00	6.82	
5	165.385	20.99	1.36	0.62	22.97	30.00	7.03	
6	218.199	21.57	1.52	0.53	23.62	30.00	6.38	
7	259.266	23.59	1.71	-1.29	24.01	37.00	12.99	
8	334.537	14.51	2.03	8.69	25.23	37.00	11.77	
9	439.924	16.50	2.32	6.24	25.06	37.00	11.94	
10	545.304	19.01	2.53	5.04	26.58	37.00	10.42	
11	650.694	21.65	2.90	3.39	27.94	37.00	9.06	
12	756.074	23.11	3.20	2.51	28.82	37.00	8.18	
13	861.464	25.13	3.37	0.24	28.74	37.00	8.26	

- 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 108.719MHz with corrected signal level of 25.93dB μ V/m (limit is 30.0dB μ V/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 315°.
4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.



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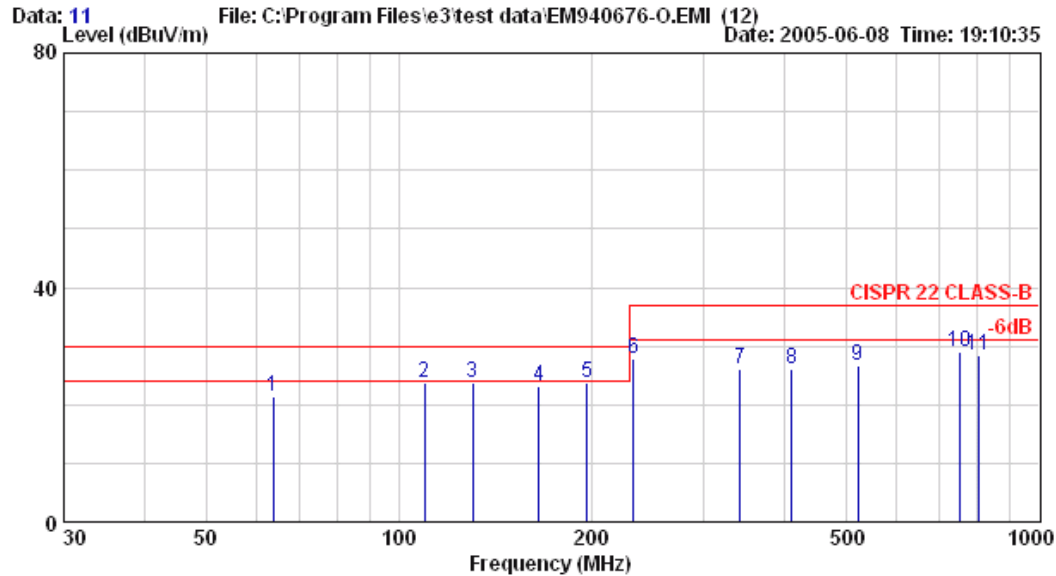
Site no. : NO.4 Open Site Data no. : 5
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 640*480 / 60Hz;31KHz (D-SUB)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	48.153	16.33	0.72	4.82	21.86	30.00	8.14	
2	78.240	14.11	0.93	6.92	21.96	30.00	8.04	
3	108.711	17.10	1.11	8.61	26.82	30.00	3.18	*
4	114.945	17.62	1.10	4.38	23.11	30.00	6.89	
5	128.169	19.07	1.16	4.63	24.86	30.00	5.14	
6	131.407	19.63	1.19	3.96	24.77	30.00	5.23	
7	165.332	21.14	1.36	0.52	23.03	30.00	6.97	
8	202.050	22.27	1.60	-0.45	23.42	30.00	6.58	
9	218.524	22.54	1.52	-0.43	23.63	30.00	6.37	
10	329.267	14.09	2.00	9.51	25.60	37.00	11.40	
11	438.159	16.94	2.32	8.15	27.41	37.00	9.59	
12	551.274	19.83	2.55	5.98	28.35	37.00	8.65	
13	668.191	21.64	2.95	3.65	28.24	37.00	8.76	
14	730.455	22.33	3.12	3.51	28.96	37.00	8.04	

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 108.711MHz with corrected signal level of 27.20dBμV/m (limit is 30.0dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 345°.
4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.



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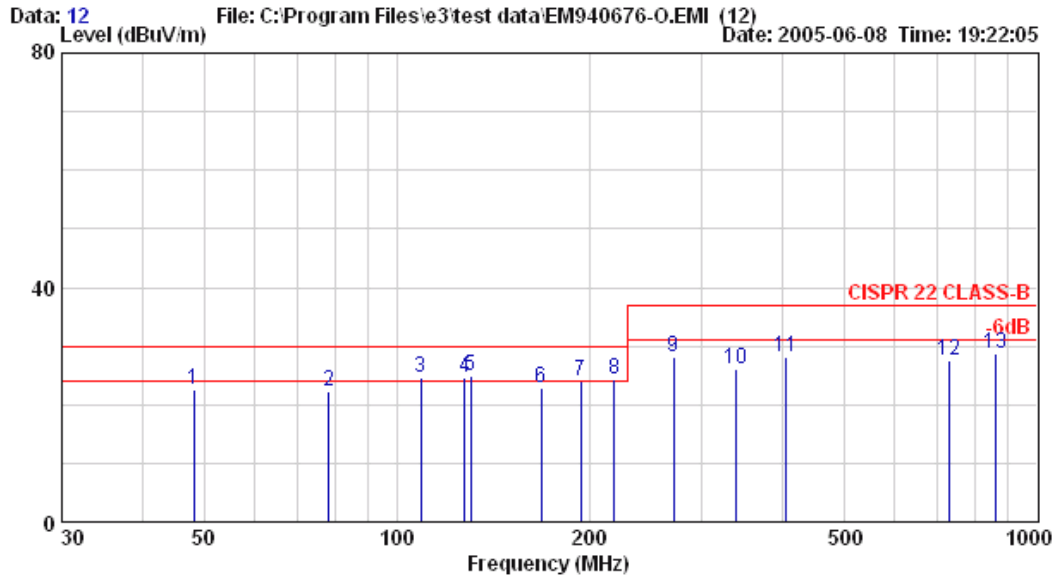
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Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 800*600 / 75Hz;47KHz (D-SUB)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	63.655	13.17	0.86	7.27	21.30	30.00	8.70	
2	109.832	18.58	1.11	4.12	23.81	30.00	6.19	
3	130.532	20.05	1.18	2.56	23.79	30.00	6.21	
4	165.442	20.99	1.36	0.82	23.17	30.00	6.83	
5	196.883	21.23	1.66	0.77	23.65	30.00	6.35	
6	232.910	22.16	1.59	4.08	27.82	37.00	9.18	
7	341.235	14.45	2.07	9.56	26.08	37.00	10.92	
8	411.028	15.92	2.23	7.97	26.11	37.00	10.89	
9	522.023	18.73	2.48	5.55	26.76	37.00	10.24	
10	752.594	23.15	3.19	2.60	28.94	37.00	8.06	
11	803.527	23.16	3.30	2.05	28.51	37.00	8.49	

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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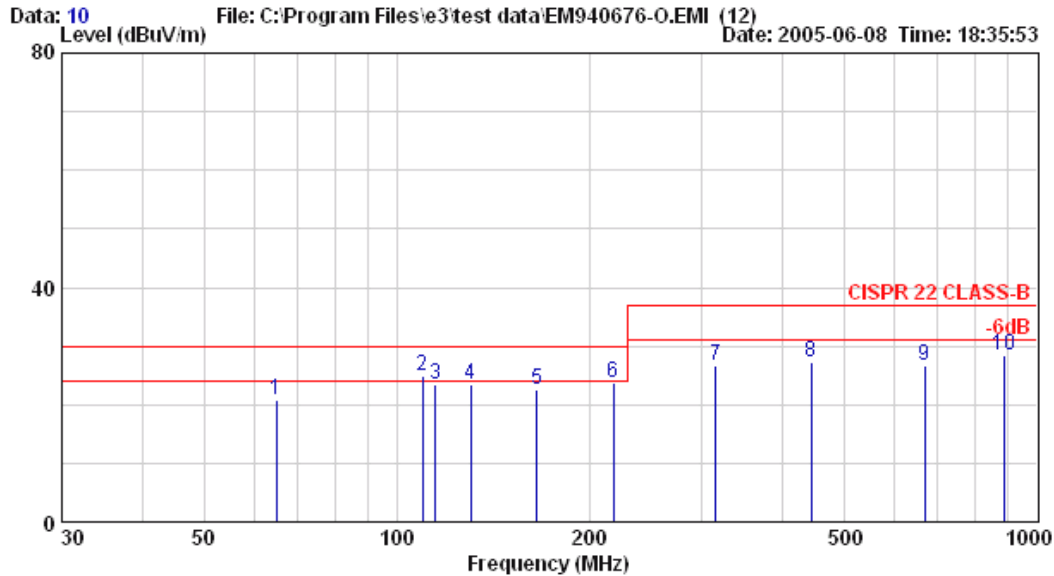
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Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 800*600 / 75Hz;47KHz (D-SUB)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	48.189	16.33	0.72	5.59	22.63	30.00	7.37	
2	78.259	14.11	0.93	7.13	22.17	30.00	7.83	
3	109.035	17.10	1.11	6.34	24.55	30.00	5.45	
4	127.641	19.07	1.16	4.49	24.72	30.00	5.28	
5	130.496	19.59	1.17	4.27	25.03	30.00	4.97	
6	168.181	21.16	1.37	0.31	22.84	30.00	7.16	
7	193.920	22.23	1.70	0.18	24.11	30.00	5.89	
8	218.513	22.54	1.52	0.22	24.28	30.00	5.72	
9	270.987	24.11	1.73	2.29	28.13	37.00	8.87	
10	338.370	14.45	2.05	9.69	26.19	37.00	10.81	
11	405.051	16.68	2.20	9.39	28.27	37.00	8.73	
12	728.983	22.23	3.12	2.34	27.69	37.00	9.31	
13	859.998	24.72	3.37	0.65	28.74	37.00	8.26	

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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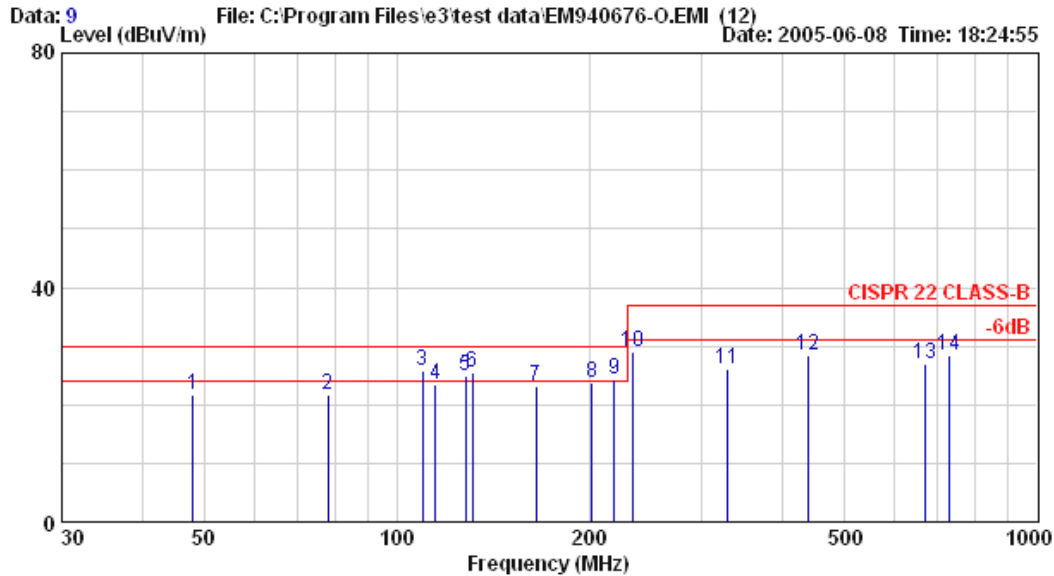
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Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 1024*768 / 75Hz; 60KHz (D-SUB)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	64.793	12.90	0.87	6.96	20.73	30.00	9.27	
2	109.824	18.58	1.11	5.29	24.98	30.00	5.02	
3	114.964	18.85	1.10	3.59	23.55	30.00	6.45	
4	130.517	20.05	1.18	2.18	23.41	30.00	6.59	
5	165.365	20.99	1.36	0.25	22.60	30.00	7.40	
6	218.198	21.57	1.52	0.65	23.74	30.00	6.26	
7	314.796	14.18	1.89	10.70	26.77	37.00	10.23	
8	443.462	16.49	2.33	8.52	27.34	37.00	9.66	
9	668.177	22.04	2.95	1.60	26.59	37.00	10.41	
10	888.487	24.32	3.38	0.67	28.37	37.00	8.63	

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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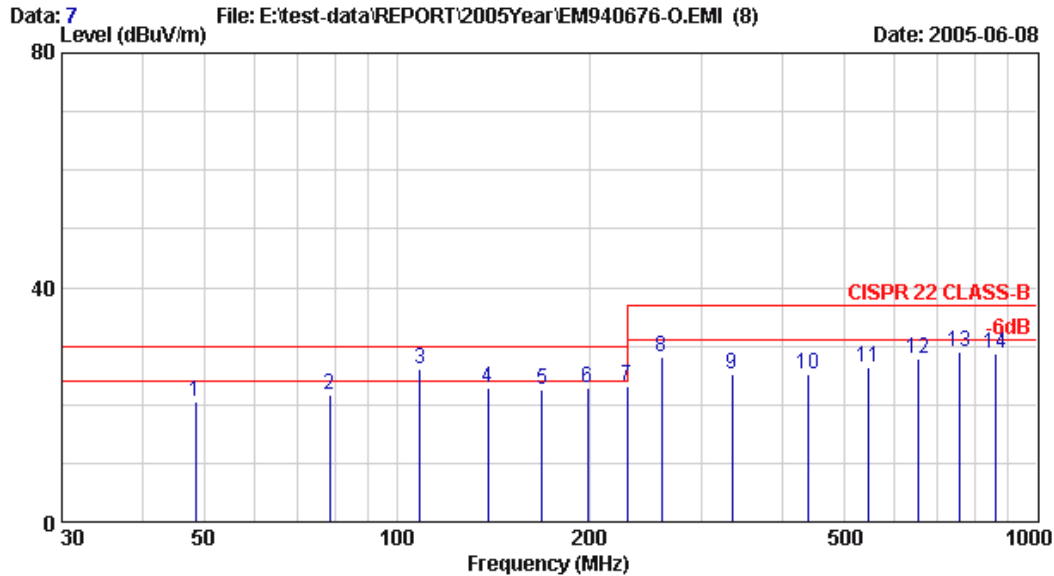
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Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : VERTICAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : 1024*768 / 75Hz; 60KHz (D-SUB)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	48.145	16.33	0.72	4.79	21.83	30.00	8.17	
2	78.233	14.11	0.93	6.66	21.70	30.00	8.30	
3	109.842	17.34	1.11	7.43	25.87	30.00	4.13	
4	114.956	17.62	1.10	4.66	23.39	30.00	6.61	
5	128.177	19.07	1.16	4.54	24.77	30.00	5.23	
6	131.401	19.63	1.19	4.68	25.49	30.00	4.51	
7	165.332	21.14	1.36	0.57	23.08	30.00	6.92	
8	202.049	22.27	1.60	-0.16	23.71	30.00	6.29	
9	218.524	22.54	1.52	0.26	24.32	30.00	5.68	
10	233.177	22.08	1.59	5.28	28.95	37.00	8.05	
11	329.245	14.03	2.00	10.04	26.07	37.00	10.93	
12	438.155	16.94	2.32	9.21	28.47	37.00	8.53	
13	668.177	21.64	2.95	2.42	27.01	37.00	9.99	
14	730.453	22.33	3.12	2.91	28.36	37.00	8.64	

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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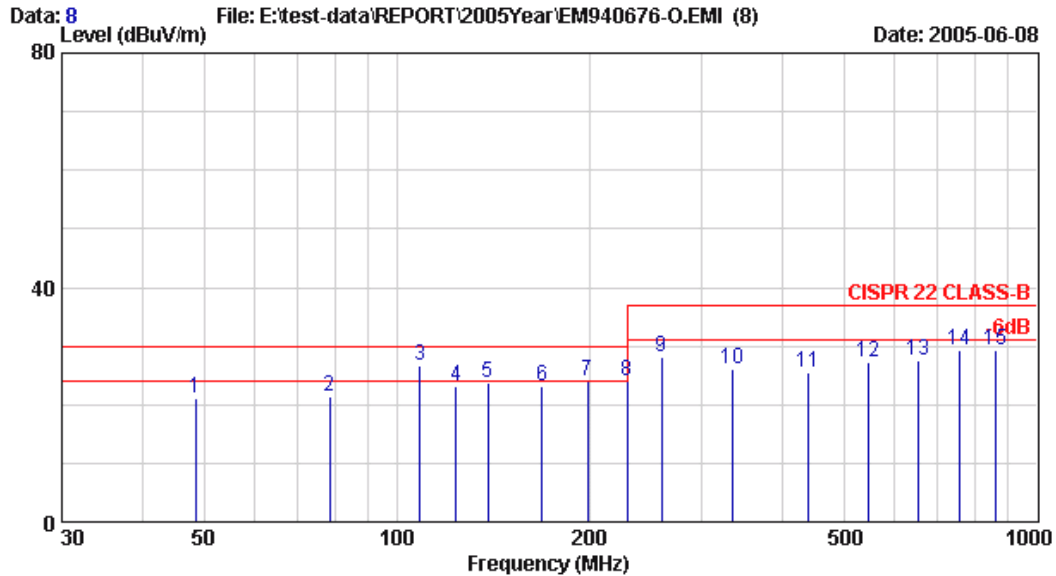
Site no. : NO.4 Open Site Data no. : 7
Dis. / Ant. : 10m VBA6106A/UPA6109 Ant. pol. : HORIZONTAL
Limit : CISPR 22 CLASS-B
Env. / Ins. : 31°C / 58% ESCS 30 Engineer : Tony Chen
EUT : LCD TV M/N:15MF605T
Power Rating : 120Vac / 60Hz
Test Mode : PIP

	Freq.	Ant.	Cable		Emission		
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin Remark
		(dB/m)	(dB)	(dB μ V)	(dB μ V/m)	(dB μ V/m)	(dB)
1	48.479	16.58	0.72	3.07	20.37	30.00	9.63
2	78.598	13.78	0.93	7.10	21.81	30.00	8.19
3	108.716	18.49	1.11	6.40	26.00	30.00	4.00
4	138.814	20.56	1.29	1.12	22.97	30.00	7.03
5	168.918	21.11	1.37	0.14	22.62	30.00	7.38
6	199.033	21.18	1.63	-0.08	22.73	30.00	7.27
7	229.149	22.13	1.57	-0.54	23.16	30.00	6.84
8	259.255	23.59	1.71	2.75	28.05	37.00	8.95
9	334.536	14.51	2.03	8.65	25.19	37.00	11.81
10	439.915	16.50	2.32	6.26	25.08	37.00	11.92
11	545.308	19.01	2.53	4.96	26.50	37.00	10.50
12	650.687	21.65	2.90	3.41	27.96	37.00	9.04
13	756.079	23.11	3.20	2.61	28.92	37.00	8.08
14	861.457	25.13	3.37	0.26	28.76	37.00	8.24

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 : Tony Chen
 EUT : LCD TV M/N:15MF605T
 Power Rating : 120Vac / 60Hz
 Test Mode : PIP

	Freq.	Ant.	Cable		Emission		
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin Remark
		(dB/m)	(dB)	(dB μ V)	(dB μ V/m)	(dB μ V/m)	(dB)
1	48.487	16.33	0.72	4.07	21.11	30.00	8.89
2	78.588	14.11	0.93	6.46	21.50	30.00	8.50
3	108.709	17.10	1.11	8.40	26.61	30.00	3.39
4	123.771	18.68	1.14	3.45	23.27	30.00	6.73
5	138.820	20.21	1.29	2.18	23.68	30.00	6.32
6	168.937	21.40	1.37	0.31	23.08	30.00	6.92
7	199.052	22.17	1.63	0.12	23.92	30.00	6.08
8	229.158	23.03	1.57	-0.49	24.11	30.00	5.89
9	259.274	23.65	1.71	2.81	28.17	37.00	8.83
10	334.547	14.54	2.03	9.59	26.16	37.00	10.84
11	439.938	16.86	2.32	6.39	25.57	37.00	11.43
12	545.316	19.66	2.53	4.98	27.18	37.00	9.82
13	650.707	21.09	2.90	3.47	27.46	37.00	9.54
14	756.084	23.44	3.20	2.64	29.28	37.00	7.72
15	861.474	24.69	3.37	1.36	29.42	37.00	7.58

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】