

TEST REPORT FOR FCC DoC
for
Philips Electronics Industries (Taiwan) Ltd.
Display Color Monitor

Model No. : E773p
Brand : DELL

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

Prepared By : Audix Corporation
Technical Division EMC Department
No. 53-11, Tin-Fu Tsun, Lin-Kou,
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File Number : EM-G921139
Report Number : TTEMC-F92220
Date of Test : Oct. 30 ~ Nov. 14, 2003
Date of Report : Nov. 17, 2003

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TEST REPORT FOR FCC COMPLIANCE DECLARATION

Applicant : Philips Electronics Industries (Taiwan) Ltd.
Manufacturer #1 : Philips Electronics Industries (Taiwan) Ltd.
Manufacturer #2 : Skyway (Dong Guan) Monitor Factory
Manufacturer #3 : Philips Consumer Electronics Co., of Suzhou Ltd.
Manufacturer #4 : Philips Monitors Manufacturing Hungary
EUT Description : Display Color Monitor
(A) MODEL NO. : E773p
(B) SERIAL NO. : N/A
(C) BRAND : DELL
(D) POWER SUPPLY : AC 100-240V~, 60-50Hz
(Test Voltage: AC 120V/60Hz)

Measurement Standards Used:
FCC Part 15B/ Mar. 2003 and CISPR 22/1997
ANSI C63.4-1992

The device described as above was tested by Audix Corporation to determine the maximum emission level emanating from the device. The measurement results are contained in this test report and Audix Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The report shows that the EUT is technically compliance with the provisions of Sections 15.107(a) and 15.109(a)(g) of Part 15 of the FCC Rules.

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

The applicant to claim product endorsement by NVLAP or any agency of the U.S. Government must not use this report.

Date of Test : Oct. 30 ~ Nov. 14, 2003

Prepared by : Monica Chang Nov. 20, 2003
(Monica Chang/Assistant)

Test Engineer : Allen Wang Nov. 21, 2003
(Allen Wang/Deputy Manager)

Approved & Authorized Signer : Leon Liu Nov. 24, 2003
(Leon Liu/Manager)

Name of the Representative of the Responsible Party : _____

Signature : _____

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Display Color Monitor
Model Number	:	E773p
Brand	:	DELL
Applicant	:	Philips Electronics Industries (Taiwan) Ltd. 5, Tze Chiang 1 Road, Chungli Industrial Park Chungli, Taoyuan, Taiwan, R.O.C.
Manufacturer #1	:	Philips Electronics Industries (Taiwan) Ltd. 5, Tze Chiang 1 Road, Chungli Industrial Park P.O. Box 123, Chungli, Taoyuan, Taiwan, R.O.C
Manufacturer #2	:	Skyway (Dong Guan) Monitor Factory Industrial Zone, Da Ling Shan Town, Dong Guan City, Guang Dong, China
Manufacturer #3	:	Philips Consumer Electronics Co., of Suzhou Ltd. No. 161, Zhujiang Road, New District, Suzhou 215011, China
Manufacturer #4	:	Philips Monitors Manufacturing Hungary Free Trade Zone Limited Liability Company (PMM LLC) H-9700 Szombathely, Puskas tivadar u. 10., HUNGARY
CRT	:	LG. Philips, M41LFQ903X39
Scanning Frequency	:	Horizontal: 30kHz ~ 70kHz Vertical: 50Hz ~ 160Hz
Max. Resolution	:	1280*1024/60Hz
Data Cable (D-Sub)	:	Shielded, Undetachable, 1.8m Bonded two ferrite cores
Date of Receipt of Sample	:	Oct. 28, 2003
Date of Test	:	Oct. 30 ~ Nov. 14, 2003

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM

Model Name	:	DHM
Serial Number	:	2MQC81S
FCC ID	:	By DoC
Manufacturer	:	DELL
VGA Card	:	NVIDIA, M/N FX5200
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. KEYBOARD

Model Number	:	SK-8100
Serial Number	:	N/A
FCC ID	:	By DoC
BSMI ID	:	3892D553
Manufacturer	:	DELL
Data Cable	:	Shielded, Undetachable, 2.1m

1.2.3. DOT MATRIX PRINTER

Model Number	:	KX-P2135
Serial Number	:	8DMCN02139
FCC ID	:	ACJ5Z6KX-P2135
BSMI ID	:	3872A371
Manufacturer	:	Matsushita (Brand: Panasonic)
Data Cable	:	Shielded, Detachable, 1.5m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.4. MODEM

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

1.2.5. MOUSE

Model Number	:	M-SAW34
Serial Number	:	LZA32249069
FCC ID	:	DZL211029
BSMI ID	:	4862A011
Manufacturer	:	DELL
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.2.6. USB MOUSE

Model Number	:	MINI 801 USB
Serial Number	:	CE2800500684
FCC ID	:	By DoC
BSMI ID	:	3892B623
Manufacturer	:	GENIUS (Brand: LEMEL)
Data Cable	:	Shielded, Undetachable, 1.0m

1.2.7. JOYSTICK (WingMan Extreme Digital 3D)

Model Number	:	J-ZA10
Serial Number	:	YED20600083
FCC ID	:	By DoC
BSMI ID	:	4882A172
Manufacturer	:	Logitech
Data Cable	:	Shielded, Undetachable, 2.25m

1.2.8. MICROPHONE

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

1.2.9. SPEAKER

Model Number	:	J-008
Serial Number	:	J80549157
Manufacturer	:	(J-S) JAZZ HIPSTER
Data Cable	:	Non-Shielded, Undetachable, 1m

1.2.10. WALKMAN

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08562
Manufacturer	:	Panasonic
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.11. EARPHONE

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

1.2.12. POWER CORD	:	Non-Shielded, Detachable, 1.8m
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1.3. Description of Test Facility

Name of Firm : Audix Corporation
 Technical Division EMC Department
 No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.

Test Site : **No. 4 Shielded Room**
 No. 67-4, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.

No. 4 Open Area Test Site
 Federal Communication Commission
 Registration Number: 90991
 Filing on February 10, 2003
 No. 67-4, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.

NVLAP Lab. Code : 200077-0
 (NVLAP is a NATA accredited body under Mutual Recognition Agreement)

DAR-Registration No. : DAT-P-145/03-00

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±2.66dB
Radiation Test (Distance: 10m)	30MHz~300MHz	+4.5dB / -4.5dB
	300MHz~1000MHz	+3.88dB / -3.84dB

Remark : Uncertainty = $ku_c(y)$

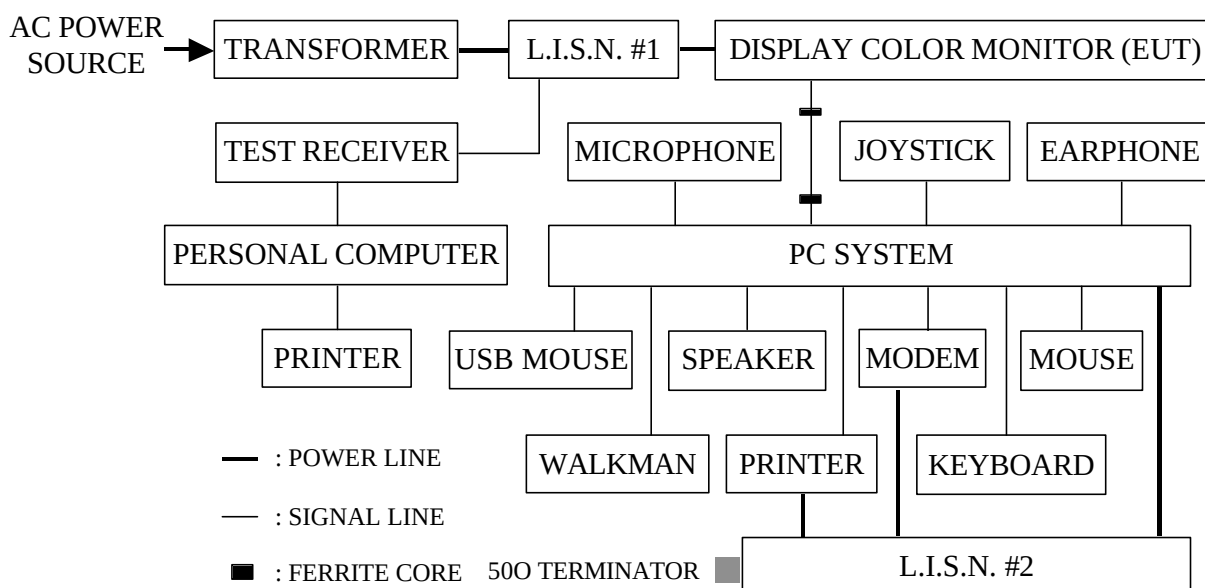
2. CONDUCTED EMISSION TEST

2.1. Test Equipment

The following test equipment was used during the conducted emission tests :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESHS10	844591/015	Mar. 05, 03'	Mar. 04, 04'
2.	L.I.S.N. #1	Kyoritsu	KNW-407	8-1430-5	Nov. 18, 02'	Nov. 17, 03'
3.	L.I.S.N. #2	Kyoritsu	KNW-407	8-1430-6	Nov. 18, 02'	Nov. 17, 03'

2.2. Block Diagram of Test Setup



2.3. Conducted Emission Limit (§15.107)

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

Remark1.: 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 equipment 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. Display Color Monitor (EUT)

Model Number	:	E773p
Serial No.	:	N/A
Brand	:	DELL
Manufacturer	:	Philips Electronics Industries (Taiwan) Ltd.
CRT	:	LG. Philips, M41LFQ903X39
Scanning Frequency	:	Horizontal: 30kHz ~ 70kHz Vertical: 50Hz ~ 160Hz
Max. Resolution	:	1280*1024/60Hz
Data Cable (D-Sub)	:	Shielded, Undetachable, 1.8m Bonded two ferrite cores

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 equipment.
- 2.5.3. PC system running the self-test program "EMI Exerciser 3.09" and sent character "H" to the Display Color Monitor (EUT) through VGA card and the screen displayed and filled with pattern "H" by EUT's resolution via D-Sub.
- 2.5.4. The other peripheral devices were driven and operated in turn during all testing.

2.6. Test Procedure

The EUT was put on table which was above the ground by 80cm and its power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.# 1). The peripheral devices power cord connected to the power mains through another line impedance stabilization network (L.I.S.N. # 2). This provided a 50 ohm 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 equipment and all of the interface cables were changed according to FCC ANSI C63.4-1992 during conducted measurement.

The bandwidth of the R&S Test Receiver ESHS10 was set at 10kHz.

The frequency range from 150kHz to 30MHz was checked.

2.7. Conducted Emission Measurement Results

PASSED. Please refer to the following pages.

(All the emissions not report below are too low against the prescribed limits.)

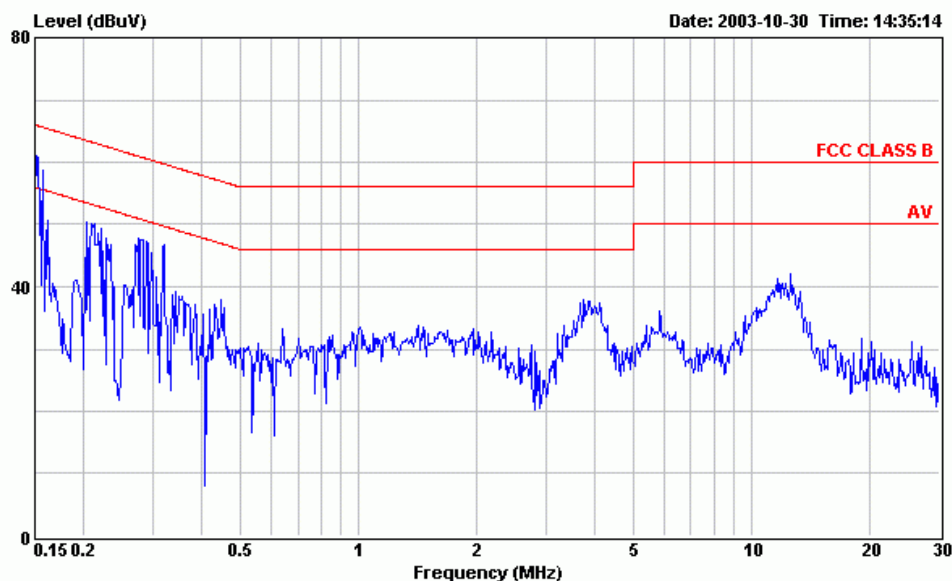
EUT with the following test modes were tested during conducted emission measurement and all the test results are attached in next pages.

EUT : Display Color Monitor Model No.: E773p

(Test Date: Oct. 30, 2003 Temperature: 25°C Humidity: 50%)

Mode	Resolution/ Frequency	Reference Data #
1.	640*480/75Hz, 37kHz	# 34 (35, 36); # 31 (32, 33)
2.	1024*768/85Hz, 69kHz	# 25 (26, 27); # 28 (29, 30)
3.	1280*1024/60Hz, 64kHz	# 22 (23, 24); # 19 (20, 21)

Data#: 34 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 640*480/75Hz 37KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 35 File#: D:\Philips-G921139-1.EMI

Date: 2003-10-30 Time: 14:36:16

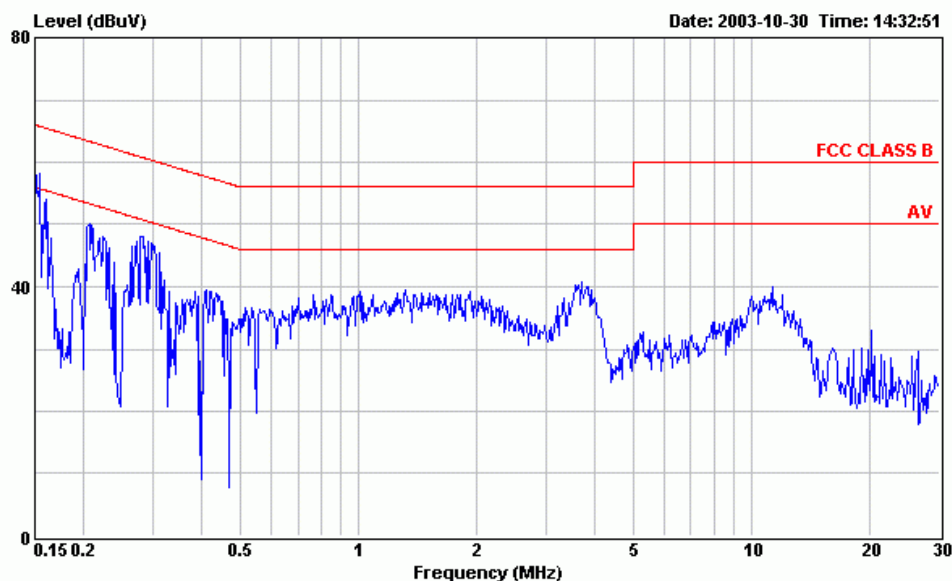
Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 640*480/75Hz 37KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	59.29	-6.65	65.94	58.96	0.30	0.03	QP
2	0.205	48.04	-15.38	63.42	47.79	0.20	0.05	QP
3	0.295	43.43	-16.96	60.39	43.24	0.14	0.05	QP
4	1.015	30.27	-25.73	56.00	30.11	0.10	0.06	QP
5	3.724	32.12	-23.88	56.00	31.92	0.10	0.10	QP
6	10.622	33.84	-26.16	60.00	33.62	0.11	0.11	QP

Data#: 36 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	41.69	-14.25	55.94	41.36	0.30	0.03	Average
2	0.205	28.57	-24.85	53.42	28.32	0.20	0.05	Average
3	0.295	23.57	-26.82	50.39	23.38	0.14	0.05	Average
4	1.015	16.00	-30.00	46.00	15.84	0.10	0.06	Average
5	3.724	26.15	-19.85	46.00	25.95	0.10	0.10	Average
6	10.622	24.92	-25.08	50.00	24.70	0.11	0.11	Average

Data#: 31 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 640*480/75Hz 37KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 32 File#: D:\Philips-G921139-1.EMI

Date: 2003-10-30 Time: 14:33:52

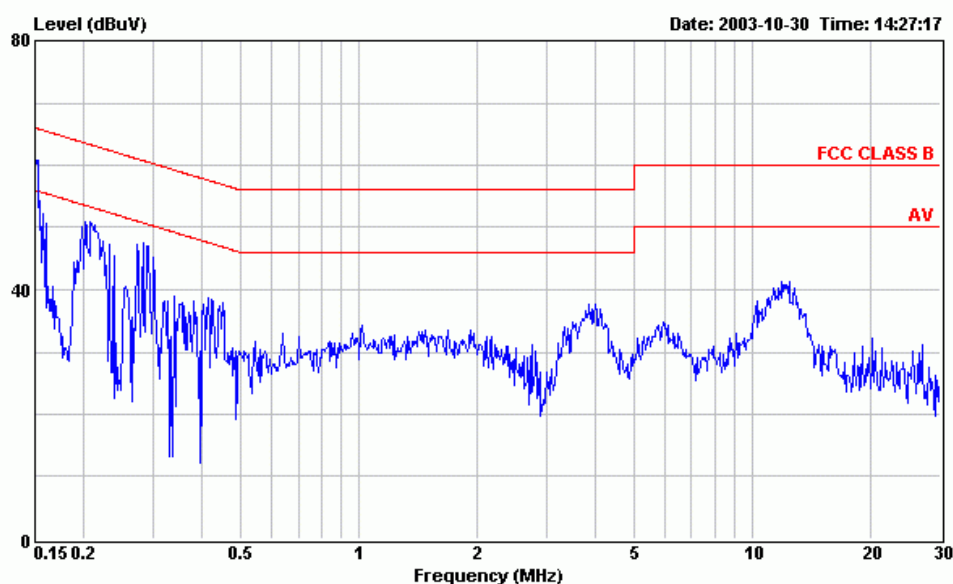
Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 640*480/75Hz 37KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	59.27	-6.69	65.96	58.94	0.30	0.03	QP
2	0.207	47.86	-15.46	63.32	47.61	0.20	0.05	QP
3	0.291	44.14	-16.36	60.50	43.94	0.15	0.05	QP
4	1.014	35.85	-20.15	56.00	35.69	0.10	0.06	QP
5	3.715	35.45	-20.55	56.00	35.25	0.10	0.10	QP
6	10.606	33.24	-26.76	60.00	33.02	0.11	0.11	QP

Data#: 33 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	41.82	-14.14	55.96	41.49	0.30	0.03	Average
2	0.207	27.74	-25.58	53.32	27.49	0.20	0.05	Average
3	0.291	27.03	-23.47	50.50	26.83	0.15	0.05	Average
4	1.014	22.43	-23.57	46.00	22.27	0.10	0.06	Average
5	3.715	28.68	-17.32	46.00	28.48	0.10	0.10	Average
6	10.606	25.44	-24.56	50.00	25.22	0.11	0.11	Average

Data#: 25 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1024*768/85Hz 69KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 26 File#: D:\Philips-G921139-1.EMI

Date: 2003-10-30 Time: 14:28:30

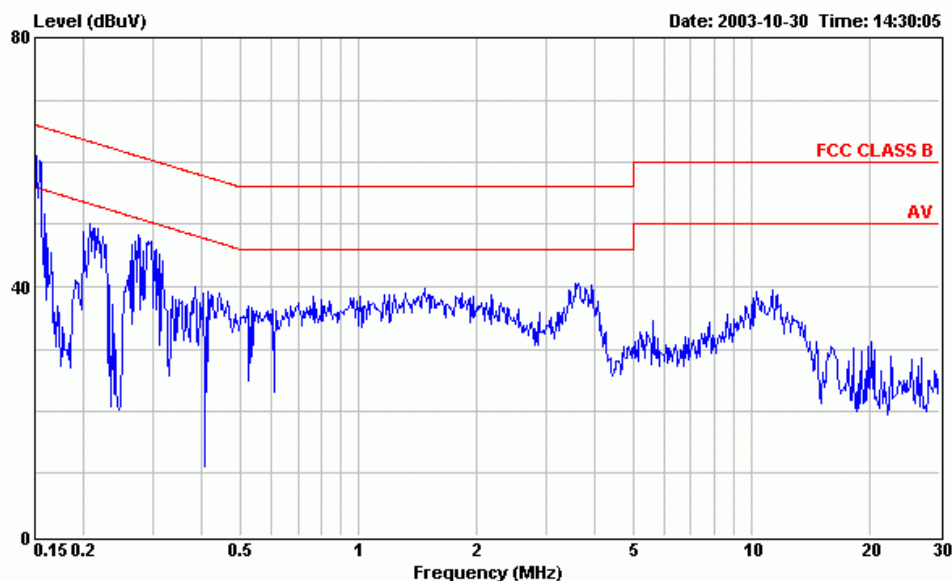
Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1024*768/85Hz 69KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	59.19	-6.74	65.93	58.86	0.30	0.03	QP
2	0.206	48.48	-14.89	63.37	48.23	0.20	0.05	QP
3	0.291	43.34	-17.14	60.48	43.14	0.15	0.05	QP
4	1.007	29.76	-26.24	56.00	29.60	0.10	0.06	QP
5	3.696	31.73	-24.27	56.00	31.53	0.10	0.10	QP
6	10.577	32.68	-27.32	60.00	32.46	0.11	0.11	QP

Data#: 27 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	41.63	-14.30	55.93	41.30	0.30	0.03	Average
2	0.206	28.80	-24.57	53.37	28.55	0.20	0.05	Average
3	0.291	24.72	-25.76	50.48	24.52	0.15	0.05	Average
4	1.007	15.98	-30.02	46.00	15.82	0.10	0.06	Average
5	3.696	26.03	-19.97	46.00	25.83	0.10	0.10	Average
6	10.577	23.30	-26.70	50.00	23.08	0.11	0.11	Average

Data#: 28 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1024*768/85Hz 69KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 29 File#: D:\Philips-G921139-1.EMI

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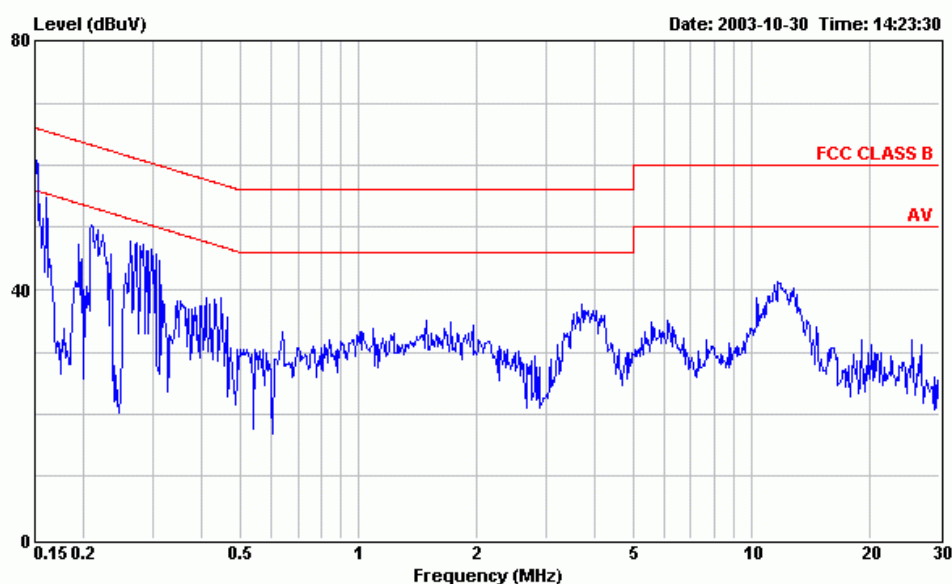
Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1024*768/85Hz 69KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	59.35	-6.61	65.96	59.02	0.30	0.03	QP
2	0.208	47.41	-15.89	63.30	47.17	0.19	0.05	QP
3	0.295	44.25	-16.14	60.39	44.06	0.14	0.05	QP
4	1.009	34.77	-21.23	56.00	34.61	0.10	0.06	QP
5	3.705	35.56	-20.44	56.00	35.36	0.10	0.10	QP
6	10.592	33.14	-26.86	60.00	32.92	0.11	0.11	QP

Data#: 30 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	41.75	-14.21	55.96	41.42	0.30	0.03	Average
2	0.208	30.32	-22.98	53.30	30.08	0.19	0.05	Average
3	0.295	27.05	-23.34	50.39	26.86	0.14	0.05	Average
4	1.009	21.27	-24.73	46.00	21.11	0.10	0.06	Average
5	3.705	28.45	-17.55	46.00	28.25	0.10	0.10	Average
6	10.592	25.08	-24.92	50.00	24.86	0.11	0.11	Average

Data#: 22 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KMW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1280*1024/60Hz 64KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 23 File#: D:\Philips-G921139-1.EMI

Date: 2003-10-30 Time: 14:24:38

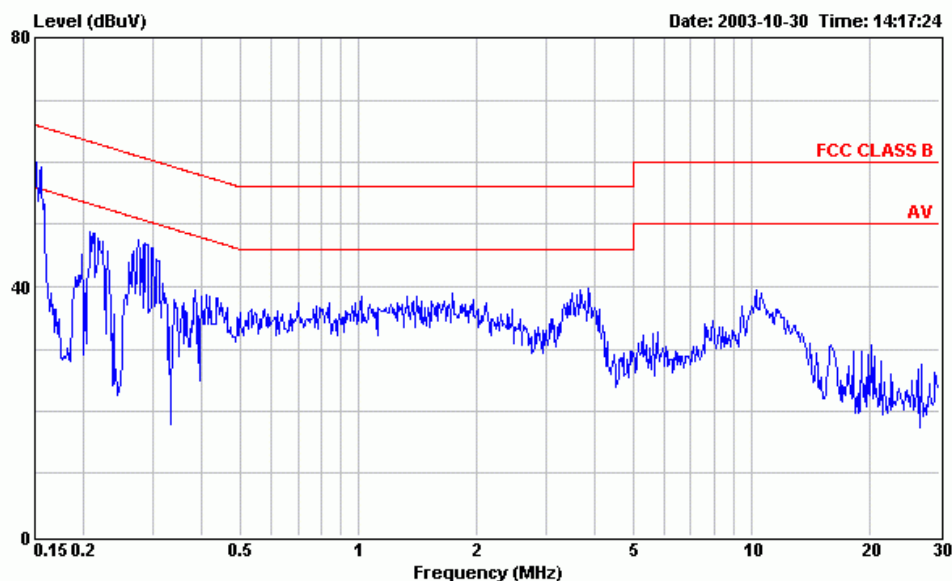
Site : No.4 Shielded room
 Condition : FCC CLASS B KMW-407(SR4-021125) LINE
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1280*1024/60Hz 64KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	59.33	-6.65	65.98	59.00	0.30	0.03	QP
2	0.209	48.23	-15.00	63.23	47.99	0.19	0.05	QP
3	0.293	43.56	-16.89	60.45	43.36	0.15	0.05	QP
4	1.028	29.38	-26.62	56.00	29.22	0.10	0.06	QP
5	3.680	31.97	-24.03	56.00	31.77	0.10	0.10	QP
6	10.558	33.42	-26.58	60.00	33.20	0.11	0.11	QP

Data#: 24 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	41.58	-14.40	55.98	41.25	0.30	0.03	Average
2	0.209	28.03	-25.20	53.23	27.79	0.19	0.05	Average
3	0.293	24.51	-25.94	50.45	24.31	0.15	0.05	Average
4	1.028	21.38	-24.62	46.00	21.22	0.10	0.06	Average
5	3.680	25.37	-20.63	46.00	25.17	0.10	0.10	Average
6	10.558	24.66	-25.34	50.00	24.44	0.11	0.11	Average

Data#: 19 File#: D:\Philips-G921139-1.EMI



Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1280*1024/60Hz 64KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

Data#: 20 File#: D:\Philips-G921139-1.EMI

Date: 2003-10-30 Time: 14:22:07

Site : No.4 Shielded room
 Condition : FCC CLASS B KNW-407(SR4-021125) NEUTRAL
 EUT : Display Color Monitor M/N:E773P
 POWER : 120Vac / 60Hz (25°C/50%)
 MEMO : 1280*1024/60Hz 64KHz
 Environment : S/N:TY0304581
 : CRT:Kumi (LG)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	59.46	-6.50	65.96	59.13	0.30	0.03	QP
2	0.208	47.61	-15.67	63.28	47.37	0.19	0.05	QP
3	0.291	44.46	-16.02	60.48	44.26	0.15	0.05	QP
4	1.026	34.10	-21.90	56.00	33.94	0.10	0.06	QP
5	3.672	35.62	-20.38	56.00	35.42	0.10	0.10	QP
6	10.556	34.12	-25.88	60.00	33.90	0.11	0.11	QP

Data#: 21 File#: D:\Philips-G921139-1.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	40.81	-15.15	55.96	40.48	0.30	0.03	Average
2	0.208	30.23	-23.05	53.28	29.99	0.19	0.05	Average
3	0.291	27.19	-23.29	50.48	26.99	0.15	0.05	Average
4	1.026	23.93	-22.07	46.00	23.77	0.10	0.06	Average
5	3.672	28.27	-17.73	46.00	28.07	0.10	0.10	Average
6	10.556	26.24	-23.76	50.00	26.02	0.11	0.11	Average

3. RADIATED EMISSION TEST

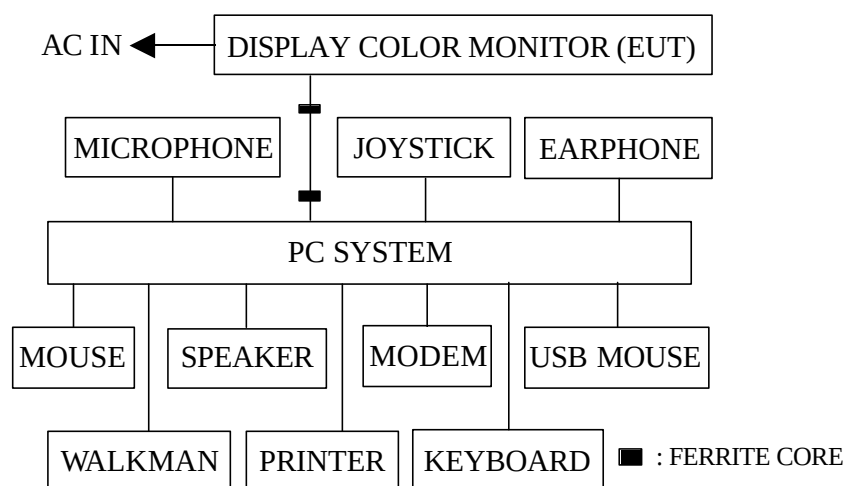
3.1. Test Equipment

The following test equipment was 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	R & S	ESVS10	845165/018	May 16, 03'	May 15, 04'
3.	Biconical Antenna	Chase	VBA6106A	1263	Nov. 26, 02'	Nov. 25, 03'
4.	Log Periodic Antenna	Chase	UPA6109	1020	Nov. 26, 02'	Nov. 25, 03'

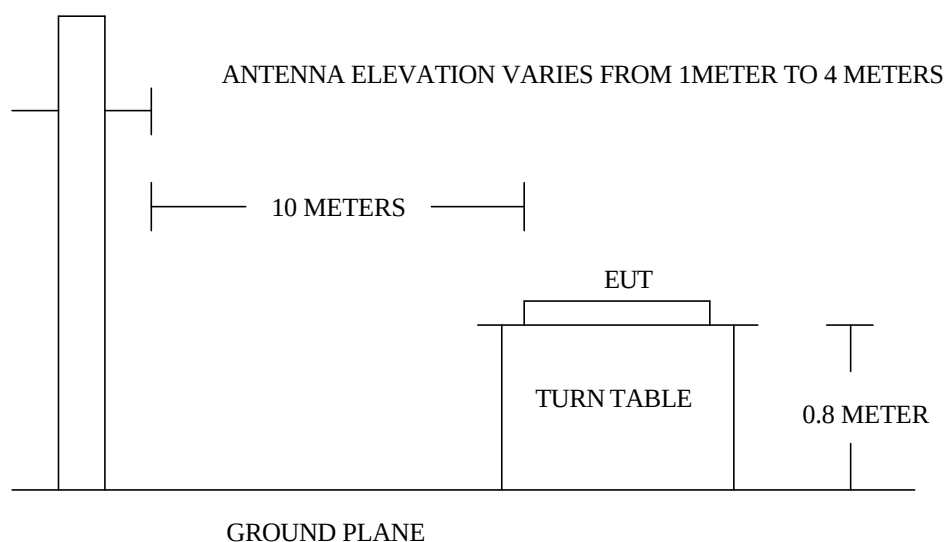
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Open Field Test Site (10m) Setup Diagram

ANTENNA TOWER



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

Notes : (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 device or system.

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its supporting system were same as those used in conducted measurement. Please refer to section 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which is 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 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 C63.4-1992 on radiated measurement.

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

The frequency range from 30MHz to 1000MHz was checked.

EUT with following test modes were tested during radiated emission measurement and all the test results are listed in section 3.7.

Mode	Resolution/ Frequency
1.	640*480/75Hz, 37kHz
2.	1024*768/85Hz, 69kHz
3.	1280*1024/60Hz, 64kHz

3.7. Radiated Emission Measurement Results

PASSED. Please refer to the following pages.

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

Date of Test : Nov. 14, 2003 Temperature : 28°C

EUT : Display Color Monitor Humidity : 52%

Test Mode : Resolution/ Frequency: 640*480/75Hz, 37kHz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
116.588	18.20	1.10	4.59	23.89	30.00	6.11
126.083	19.31	1.15	0.49	20.95	30.00	9.05
148.062	20.30	1.35	-0.58	21.07	30.00	8.93
185.898	20.58	1.59	-1.74	20.43	30.00	9.57
198.497	20.71	1.64	0.72	23.07	30.00	6.93
239.467	22.13	1.62	2.70	26.45	37.00	10.55
270.909	23.32	1.72	0.30	25.34	37.00	11.66
324.583	14.44	1.96	10.18	26.58	37.00	10.42
378.096	15.52	2.12	10.57	28.21	37.00	8.79
419.079	16.10	2.25	5.73	24.08	37.00	12.92
469.514	18.03	2.41	3.91	24.35	37.00	12.65
529.306	18.95	2.49	3.92	25.36	37.00	11.64
611.245	20.30	2.77	6.17	29.24	37.00	7.76
702.622	21.82	3.04	0.37	25.23	37.00	11.77

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
53.814	14.88	0.78	4.58	20.24	30.00	9.76
117.975	16.78	1.10	4.62	22.50	30.00	7.50
127.275	17.06	1.15	1.45	19.66	30.00	10.34
148.074	21.03	1.35	-4.62	17.76	30.00	12.24
185.868	21.52	1.59	-2.40	20.71	30.00	9.29
198.471	21.78	1.64	-0.48	22.94	30.00	7.06
239.378	21.20	1.62	3.68	26.50	37.00	10.50
324.552	14.45	1.96	10.18	26.59	37.00	10.41
378.138	15.97	2.12	9.83	27.92	37.00	9.08
419.095	16.58	2.25	8.83	27.66	37.00	9.34
469.442	18.87	2.41	3.91	25.19	37.00	11.81
529.372	19.15	2.49	6.85	28.49	37.00	8.51
611.232	19.78	2.77	7.22	29.77	37.00	7.23
702.662	21.53	3.04	0.37	24.94	37.00	12.06

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level = Antenna Factor + Cable Loss + Meter Reading.

Date of Test : Nov. 14, 2003 Temperature : 28°C

EUT : Display Color Monitor Humidity : 52%

Test Mode : Resolution/ Frequency: 1024*768/85Hz, 69kHz

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level	
				Horizontal dBμV	Horizontal dBμV/m	Limits dBμV/m	Margin dB
	121.506	18.70	1.12	3.10	22.92	30.00	7.08
	162.022	19.98	1.36	1.35	22.69	30.00	7.31
	189.325	20.67	1.66	2.09	24.42	30.00	5.58
	196.946	20.65	1.66	2.53	24.84	30.00	5.16
	209.269	20.85	1.52	3.37	25.74	30.00	4.26
*	216.000	21.33	1.51	3.06	25.90	30.00	4.10
	229.534	21.85	1.57	2.20	25.62	30.00	4.38
	256.523	22.68	1.70	0.48	24.86	37.00	12.14
	330.753	14.76	2.01	14.79	31.56	37.00	5.44
	378.007	15.46	2.12	12.59	30.17	37.00	6.83
	472.509	17.95	2.41	10.58	30.94	37.00	6.06
	492.770	17.97	2.43	10.95	31.35	37.00	5.65
	540.025	19.02	2.52	11.03	32.57	37.00	4.43
	654.785	20.58	2.91	7.59	31.08	37.00	5.92
	729.030	20.39	3.12	6.88	30.39	37.00	6.61

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level= Antenna Factor + Cable Loss + Meter Reading.
 3. The worst emission was detected at 216.000MHz with corrected signal level of 25.90dBμV/m (limit was 30dBμV/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 125 °.
 4. 0 ° is the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

Date of Test : Nov. 14, 2003 Temperature : 28°C

EUT : Display Color Monitor Humidity : 52%

Test Mode : Resolution/ Frequency: 1024*768/85Hz, 69kHz

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
*	47.260	16.11	0.71	7.13	23.95	30.00	6.05
	67.513	12.36	0.88	12.62	25.86	30.00	4.14
	74.266	12.38	0.90	14.21	27.49	30.00	2.51
	82.231	13.96	0.96	11.84	26.76	30.00	3.24
	121.507	16.78	1.12	2.67	20.57	30.00	9.43
	162.024	19.83	1.36	3.70	24.89	30.00	5.11
	209.268	21.50	1.52	2.57	25.59	30.00	4.41
	216.000	22.49	1.51	1.62	25.62	30.00	4.38
	229.534	20.35	1.57	1.92	23.84	30.00	6.16
	256.522	22.11	1.70	3.98	27.79	37.00	9.21
	362.116	15.68	2.11	13.62	31.41	37.00	5.59
	378.025	15.84	2.12	11.41	29.37	37.00	7.63
	472.515	18.70	2.41	9.93	31.04	37.00	5.96
	492.771	18.57	2.43	10.52	31.52	37.00	5.48
	540.025	18.95	2.52	9.73	31.20	37.00	5.80
	654.236	20.32	2.91	4.96	28.19	37.00	8.81
	736.923	21.19	3.14	4.27	28.60	37.00	8.40

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level= Antenna Factor + Cable Loss + Meter Reading.
 3. The worst emission was detected at 74.266MHz with corrected signal level of 27.49dBμV/m (limit was 30dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 325 °.
 4. 0 ° is the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

Date of Test : Nov. 14, 2003 Temperature : 28°C

EUT : Display Color Monitor Humidity : 52%

Test Mode : Resolution/ Frequency: 1280*1024/60Hz, 64kHz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level		Margin dB
			Horizontal dBμV	Horizontal dBμV/m	Limits dBμV/m		
69.878	12.92	0.88	7.97	21.77	30.00		8.23
129.076	19.53	1.16	0.51	21.20	30.00		8.80
177.873	20.86	1.44	-0.02	22.28	30.00		7.72
196.995	20.65	1.66	4.09	26.40	30.00		3.60
216.004	21.33	1.51	2.31	25.15	30.00		4.85
228.688	21.81	1.57	2.54	25.92	30.00		4.08
266.807	22.91	1.72	4.02	28.65	37.00		8.35
362.142	15.06	2.11	13.87	31.04	37.00		5.96
489.188	17.68	2.43	11.01	31.12	37.00		5.88
559.084	20.30	2.57	6.13	29.00	37.00		8.00
628.953	20.31	2.84	6.16	29.31	37.00		7.69
717.906	20.50	3.09	8.26	31.85	37.00		5.15

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level		Margin dB
			Vertical dBμV	Vertical dBμV/m	Limits dBμV/m		
38.136	19.91	0.64	5.48	26.03	30.00		3.97
57.212	13.81	0.82	10.47	25.10	30.00		4.90
69.904	12.11	0.88	14.28	27.27	30.00		2.73
76.244	12.98	0.92	9.99	23.89	30.00		6.11
82.550	13.99	0.96	11.76	26.71	30.00		3.29
127.066	16.97	1.15	3.82	21.94	30.00		8.06
177.870	20.92	1.44	0.79	23.15	30.00		6.85
184.217	21.35	1.56	1.09	24.00	30.00		6.00
216.030	22.49	1.51	2.04	26.04	30.00		3.96
266.807	22.91	1.72	3.90	28.53	37.00		8.47
374.823	15.94	2.12	10.78	28.84	37.00		8.16
412.956	16.43	2.23	12.21	30.87	37.00		6.13
489.183	18.38	2.43	10.76	31.57	37.00		5.43
520.955	19.12	2.47	10.14	31.73	37.00		5.27
628.945	19.73	2.84	6.15	28.72	37.00		8.28
736.956	21.19	3.14	5.14	29.47	37.00		7.53

- Remarks : 1. All readings are Quasi-Peak values.
2. Emission Level= Antenna Factor + Cable Loss + Meter Reading.