

APPLICATION FOR CERTIFICATION
Class II Permissive Change
On Behalf of
Delta Electronics, Inc.
19" LCD Monitor
Models : 190B4XX (where X = 0 ~ 9 or A ~ Z)
Test Model : 190B4CG
Brand : PHILIPS
FCC ID : H79L19DAR

Prepared for : Delta Electronics, Inc.
3, Tung Yuan Road, Chungli Industrial Zone,
Taoyuan Hsien 320, 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 : EM930187 (G920370/R2)
Report Number : EM-F930033
Date of Test : Feb. 13 ~ 16, 2004
Date of Report : Feb. 26, 2004

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TEST REPORT CERTIFICATION

(Class II Permissive Change)

Applicant	:	Delta Electronics, Inc.
Manufacturer # 1	:	Delta Electronics (Dong Guan) Co., Ltd.
Manufacturer # 2	:	Delta Electronics (Thailand) Public Company Limited.
FCC ID	:	H79L19DAR
EUT Description	:	19" LCD Monitor
		(A) MODEL NO. : 190B4XX
		(B) SERIAL NO. : N/A
		(C) BRAND : PHILIPS
		(D) POWER SUPPLY : AC 100-240V~, 60-50Hz
		(Test Voltage: AC 120V/60Hz)

Measurement Procedure Used:
FCC CFR 47 Part15B/ Dec. 2003 and CISPR 22/1997
ANSI C63.4-2001

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 CISPR 22 Class B radiated emission limit below 1GHz against the 15.109(g) of FCC Part 15 and 15.109(a) of FCC Part 15 limit above 1GHz, and compared to the conducted emission limit of 15.107(a) of FCC Part 15.

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 : Feb. 13 ~ 16, 2004

Prepared By: Kitty Ni Mar. 01, 2004
(Kitty Ni/Officer)

Test Engineer: Allen Wang Mar 02, 2004
(Allen Wang/Deputy Manager)

Approve & Authorized Signer: Leon Liu Mar. 4 2004
(Leon Liu/General Assistant Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	19" LCD Monitor
Model Number	:	190B4XX (where X = 0 ~ 9 or A ~ Z) Test Model : 190B4CG
Brand Name	:	PHILIPS
FCC ID	:	H79L19DAR
Applicant	:	Delta Electronics, Inc. 3, Tung Yuan Road, Chungli Industrial Zone Taoyuan Hsien 320, Taiwan, R.O.C.
Manufacturer #1	:	Delta Electronics (Dong Guan) Co., Ltd. Delta Plant 3, Delta Industrial Estate, Shijie Town, Dong Guan City, Guangdong Province, P.R.C.
Manufacturer #2	:	Delta Electronics (Thailand) Public Company Limited. 714 Soi E5, EPZ, Bangpoo Industrial Estate, Sukhumvit Road KM37, Samutprakarn 10280.
LCD Panel	:	Fujitsu, M/N FLC48SXC8V
Main Board # 1 (w/D-Sub Only)	:	L19H
D-Sub Data Cable	:	Shielded, Detachable, 1.85m Bonded two ferrite cores
Main Board # 2 (w/D-Sub & DVI Port are available and user selectable)	:	L19J
D-Sub Data Cable	:	Shielded, Detachable, 1.8m Bonded two ferrite cores
DVI Data Cable	:	Shielded, Detachable, 1.8m
Power Cord	:	Non-Shielded, Detachable, 1.8m (3 Pin)
Date of Receipt of Sample	:	Feb. 12, 2004
Date of Test	:	Feb. 13 ~ 16, 2004

Remark :

This EUT is a modified version of original FCC ID H79L19DAR, The differences are listed as follows: (please refer to photos of EUT)

- (1) to add a different LCD Panel (Fujitsu, M/N FLC48SXC8V)
- (2) to modify the EMI Debug.
- (3) to add a different color of cabinet.

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM

Model Number	:	HP VECTRA XE320
Serial Number	:	SG21101987
FCC ID	:	By DoC
BSMI ID	:	3912A318
VGA Card	:	ATI, M/N RADEON VE CARD
Brand	:	HP
Manufacturer	:	First International Computer, Inc.
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. KEYBOARD

Model Number	:	SK-2502C
Serial Number	:	M020236414
FCC ID	:	By DoC
BSMI ID	:	3872F107
Manufacturer	:	Silitek (Brand: HP)
Data Cable	:	Non-Shielded, Undetachable, 1.8m

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. PS2 MOUSE

Model Number	:	M-S48a
Serial Number	:	LZE20501521
FCC ID	:	JNZ201213
BSMI ID	:	4882A001
Manufacturer	:	Logitech (Brand: HP)
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.2.5. MODEM

Model Number	:	DM-1414
Serial Number	:	980034388
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A
		Non-Shielded, Undetachable, 1.8m

1.2.6. USB 2.0 STORAGE MEDIA

Model Number	:	USM64U2
Serial Number	:	N/A
FCC ID	:	By DoC
BSMI ID	:	D33021
Manufacturer	:	SONY
USB Data Cable	:	Shielded, Detachable, 1m

1.2.7. MICROPHONE

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

1.2.8. WALKMAN

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08473
Manufacturer	:	Panasonic
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.9. EARPHONE

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

1.3. Description of Test Facility

Name of Firm : **Audix Corporation**
 Technical Division EMC Department
 No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei County 24443, Taiwan, R.O.C.

Test Facility & Location (C4/R5) : **No. 4 Shielded Room**
 No. 67-4, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei County 24443, Taiwan, R.O.C.

No. 5 Open Test Site
 No. 67-4, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei County 24443, Taiwan, R.O.C.

Dec. 19, 2003 Re-file on
 Federal Communication Commission
 Registration Number: 90992

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	±2.66dB
Radiation Test (Distance: 3m)	30MHz~300MHz	+4.26dB / -4.22dB
	300MHz~1000MHz	+5.28dB / -4.0dB
Radiation Test (Distance: 10m)	30MHz~300MHz	+4.5dB / -4.5dB
	300MHz~1000MHz	+3.88dB / -3.84dB

Remark : Uncertainty = $k_{uc}(y)$

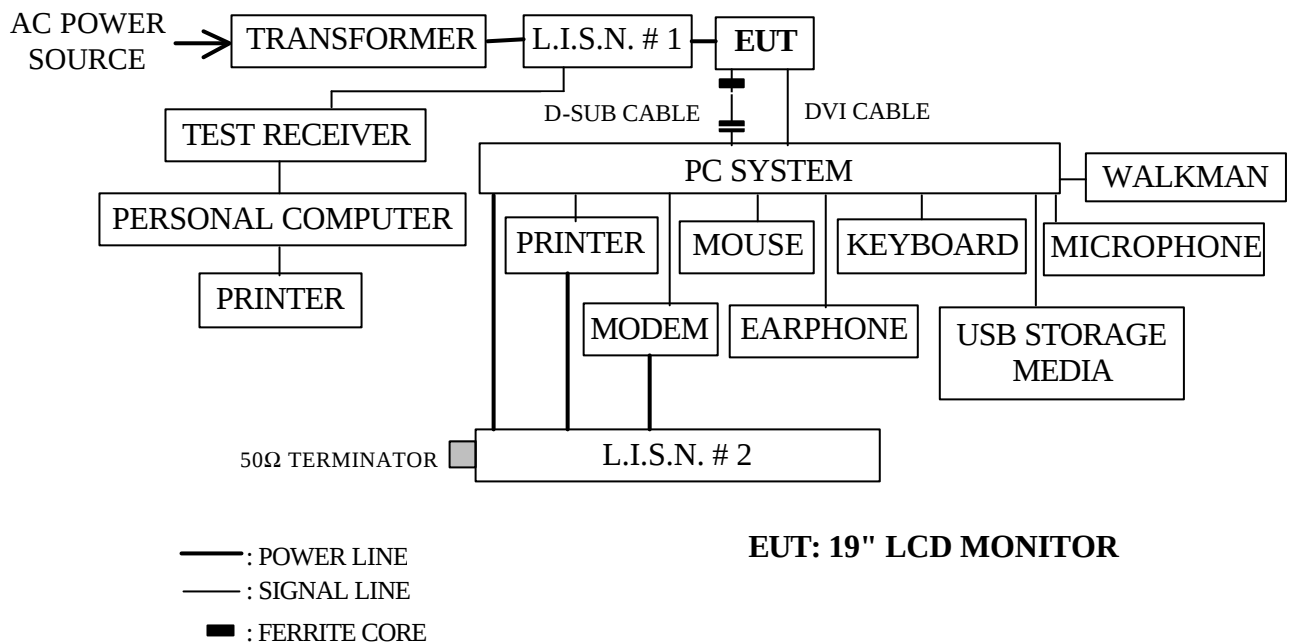
2. CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipment are used during the power line conducted measurement :

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. 20, 03'	Nov. 19, 04'
3.	L.I.S.N. #2	Kyoritsu	KNW-407	8-1430-6	Nov. 20, 03'	Nov. 19, 04'

2.2. Block Diagram of Test Setup



2.3. Conducted Emission Limit (§5.107(a), 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

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. 19" LCD Monitor (EUT)

Model Number	:	190B4XX
Test Model	:	190B4CG
Serial Number	:	N/A
Brand	:	PHILIPS
FCC ID	:	H79L19DAR
Manufacturer	:	Delta Electronics (Thailand) Public Company Limited.
LCD Panel	:	Fujitsu, M/N FLC48SXC8V
Main Board	:	L19J
(w/D-Sub & DVI Port are available and user selectable)		
D-Sub Data Cable	:	Shielded, Detachable, 1.8m Bonded two ferrite cores
DVI Data Cable	:	Shielded, Detachable, 1.8m
AC Power Cord	:	Non-Shielded, Detachable, 1.8m (3 Pin)

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. Personal computer read data from disk.

2.5.4. Personal computer running the EMI self-test program "Test Patv 18" by windows 98 and sent "H" character to LCD Monitor (EUT), then the screen of LCD Monitor (EUT) displayed "H" pattern by EUT's resolution via D-Sub or DVI input.

2.5.5. The other peripheral devices were drove and operated in turn during all testing.

2.6. Test Procedure

The EUT was connected to the power mains through a line impedance stabilization network (L.I.S.N. #1) and the other peripheral devices power cord were connected to the power mains through a 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 C63.4-2001 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. Line Conducted RF Voltage Measurement Results

PASSED. Please refer to the following pages.

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

EUT with following test modes and with AC 120V/60Hz supplying voltage were performed during conducted measurement and all the test results are attached in next pages.

Test Date : Feb. 13, 2004 Temperature : 24 Humidity : 59 %

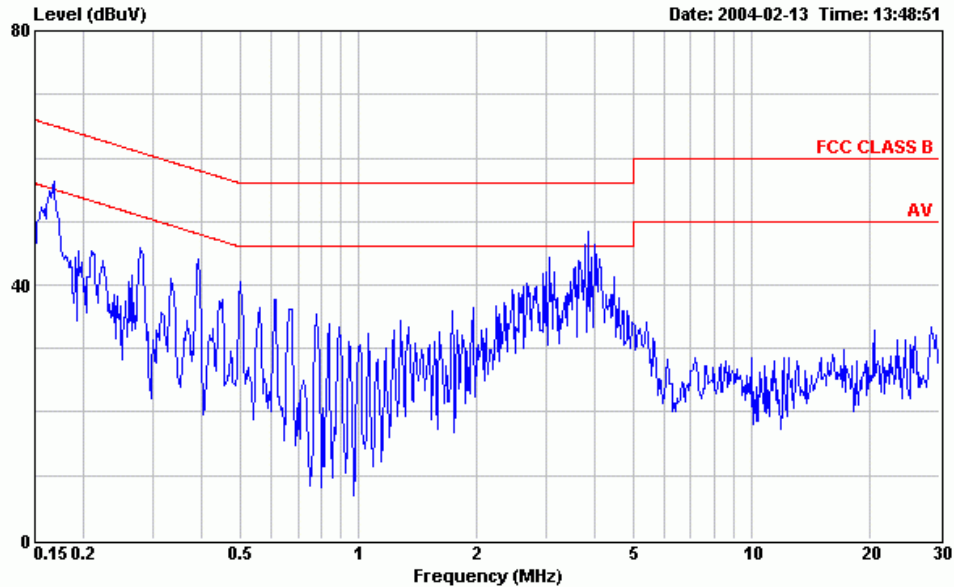
The details of test modes and reference test data are as follows :

Mode	Input	Frequency Resolution	Reference Test Data #
1.	D-Sub	640*480/60Hz, 31kHz	# 169, (170, 171) ; # 172, (173, 174).
2.		1024*768/75Hz, 60kHz	# 166, (167, 168) ; # 163, (164, 165).
3.		1280*1024/75Hz, 80kHz	# 16, (17, 18) ; # 13, (14, 15).
4.	DVI	640*480/60Hz, 31kHz	# 178, (179, 180) ; # 175, (176, 177).
5.		1024*768/75Hz, 60kHz	# 28, (29, 30) ; # 25, (26, 27).
6.		1280*1024/75Hz, 80kHz	# 19, (20, 21) ; # 22, (23, 24).



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Data#: 169 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz(D-SUB)

Data#: 170 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:49:22

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	53.95	-11.21	65.16	53.65	0.26	0.04	QP
2	0.276	43.53	-17.39	60.92	43.33	0.15	0.05	QP
3	0.390	42.61	-15.45	58.06	42.46	0.10	0.05	QP
4	1.226	31.47	-24.53	56.00	31.30	0.10	0.07	QP
5	2.625	37.94	-18.06	56.00	37.76	0.10	0.08	QP
6	3.999	42.61	-13.39	56.00	42.42	0.10	0.09	QP

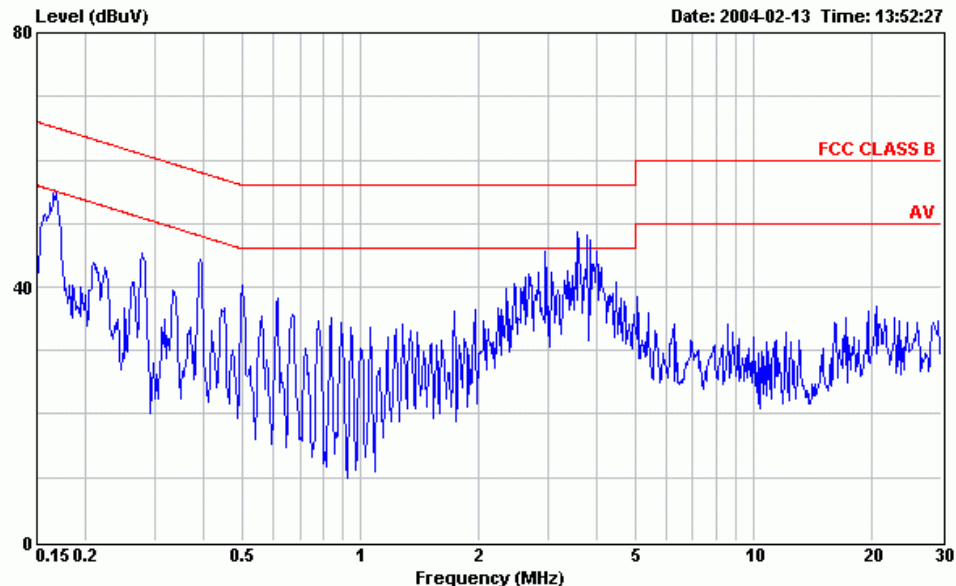
Data#: 171 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 !	0.166	51.34	-3.82	55.16	51.04	0.26	0.04	Average
2 !	0.276	42.52	-8.40	50.92	42.32	0.15	0.05	Average
3 !	0.390	40.14	-7.92	48.06	39.99	0.10	0.05	Average
4	1.226	30.57	-15.43	46.00	30.40	0.10	0.07	Average
5	2.625	34.86	-11.14	46.00	34.68	0.10	0.08	Average
6	3.999	34.33	-11.67	46.00	34.14	0.10	0.09	Average



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Data#: 172 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz(D-SUB)

Data#: 173 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:52:35

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	53.67	-11.48	65.15	53.37	0.26	0.04	QP
2	0.279	43.67	-17.18	60.85	43.47	0.15	0.05	QP
3	0.391	42.87	-15.17	58.04	42.72	0.10	0.05	QP
4	1.227	31.49	-24.51	56.00	31.32	0.10	0.07	QP
5	2.623	40.21	-15.79	56.00	40.03	0.10	0.08	QP
6	3.999	43.01	-12.99	56.00	42.82	0.10	0.09	QP

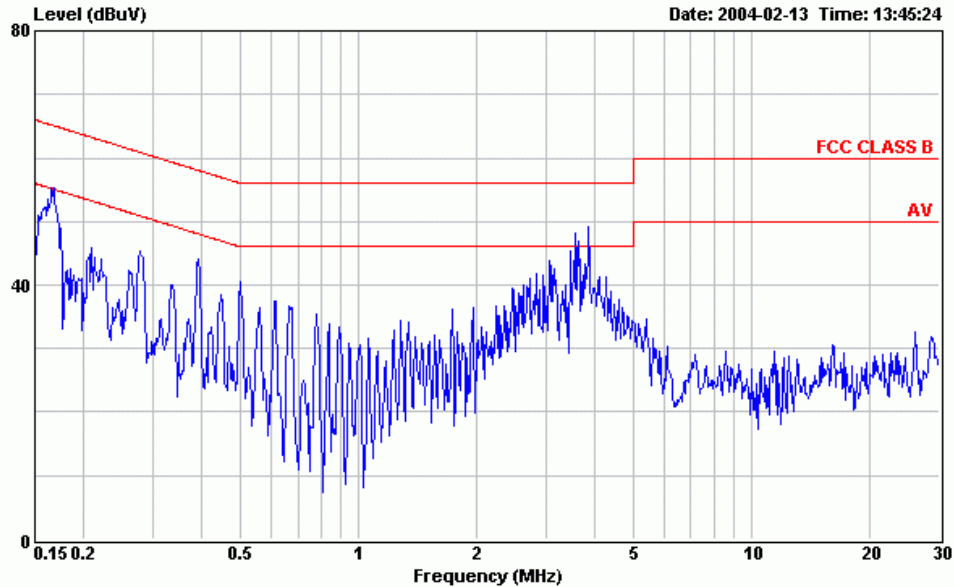
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	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 !	0.166	51.42	-3.73	55.15	51.12	0.26	0.04	Average
2 !	0.279	42.79	-8.06	50.85	42.59	0.15	0.05	Average
3 !	0.391	40.33	-7.71	48.04	40.18	0.10	0.05	Average
4	1.227	30.24	-15.76	46.00	30.07	0.10	0.07	Average
5 !	2.623	37.90	-8.10	46.00	37.72	0.10	0.08	Average
6	3.999	32.19	-13.81	46.00	32.00	0.10	0.09	Average



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Data#: 166 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(D-SUB)

Data#: 167 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:45:59

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	53.87	-11.28	65.15	53.57	0.26	0.04	QP
2	0.276	43.57	-17.35	60.92	43.37	0.15	0.05	QP
3	0.390	42.45	-15.61	58.06	42.30	0.10	0.05	QP
4	1.225	31.25	-24.75	56.00	31.08	0.10	0.07	QP
5	2.621	38.66	-17.34	56.00	38.48	0.10	0.08	QP
6	3.997	42.65	-13.35	56.00	42.46	0.10	0.09	QP

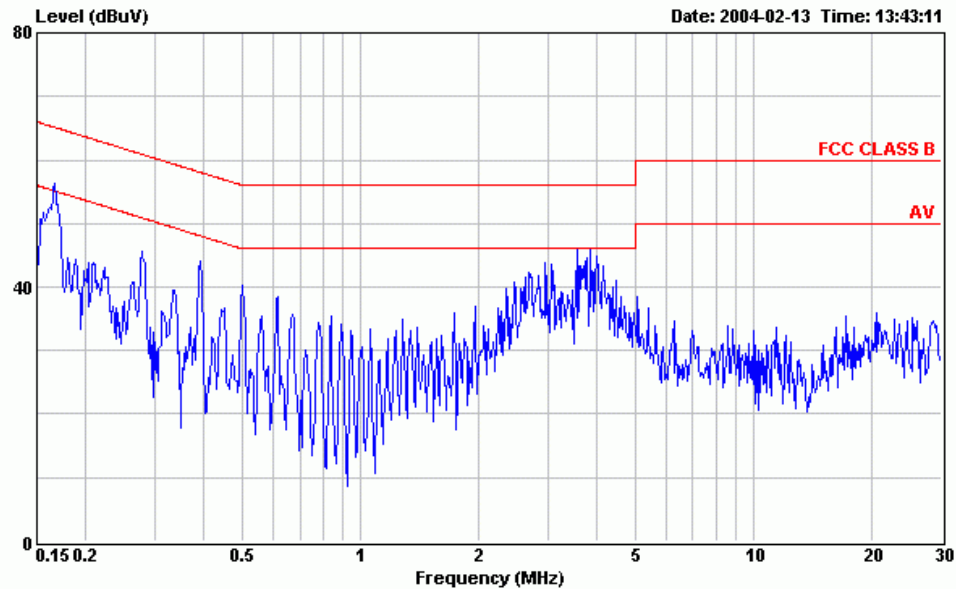
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	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 !	0.166	51.34	-3.81	55.15	51.04	0.26	0.04	Average
2 !	0.276	42.54	-8.38	50.92	42.34	0.15	0.05	Average
3 !	0.390	40.16	-7.90	48.06	40.01	0.10	0.05	Average
4	1.225	29.97	-16.03	46.00	29.80	0.10	0.07	Average
5 !	2.621	36.71	-9.29	46.00	36.53	0.10	0.08	Average
6	3.997	33.77	-12.23	46.00	33.58	0.10	0.09	Average



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Data#: 163 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(D-SUB)

Data#: 164 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:43:44

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.167	53.67	-11.46	65.13	53.37	0.26	0.04	QP
2	0.277	43.43	-17.49	60.92	43.23	0.15	0.05	QP
3	0.389	43.31	-14.77	58.08	43.16	0.10	0.05	QP
4	1.228	31.69	-24.31	56.00	31.52	0.10	0.07	QP
5	2.621	40.82	-15.18	56.00	40.64	0.10	0.08	QP
6	3.994	42.63	-13.37	56.00	42.44	0.10	0.09	QP

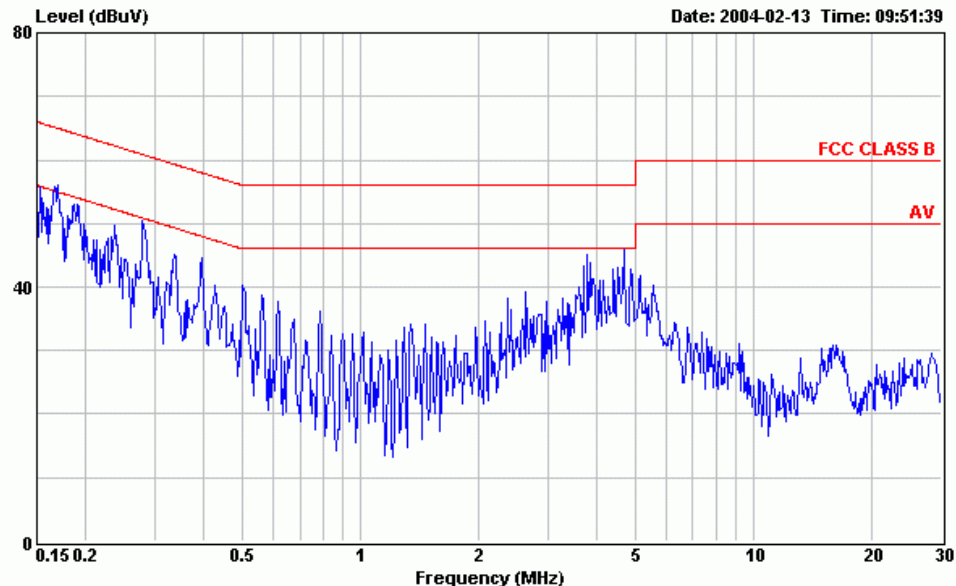
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	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.167	51.35	-3.78	55.13	51.05	0.26	0.04	Average
2	0.277	42.31	-8.61	50.92	42.11	0.15	0.05	Average
3	0.389	40.89	-7.19	48.08	40.74	0.10	0.05	Average
4	1.228	30.36	-15.64	46.00	30.19	0.10	0.07	Average
5	2.621	38.48	-7.52	46.00	38.30	0.10	0.08	Average
6	3.994	31.73	-14.27	46.00	31.54	0.10	0.09	Average



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Data#: 16 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(D-SUB)

Data#: 17 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 09:54:22

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.190	51.38	-12.68	64.06	51.11	0.22	0.05	QP
2	0.236	47.27	-14.98	62.25	47.04	0.18	0.05	QP
3	0.281	47.81	-12.97	60.78	47.61	0.15	0.05	QP
4	0.616	36.84	-19.16	56.00	36.71	0.10	0.03	QP
5	1.344	31.92	-24.08	56.00	31.75	0.10	0.07	QP
6	4.591	42.71	-13.29	56.00	42.55	0.11	0.05	QP

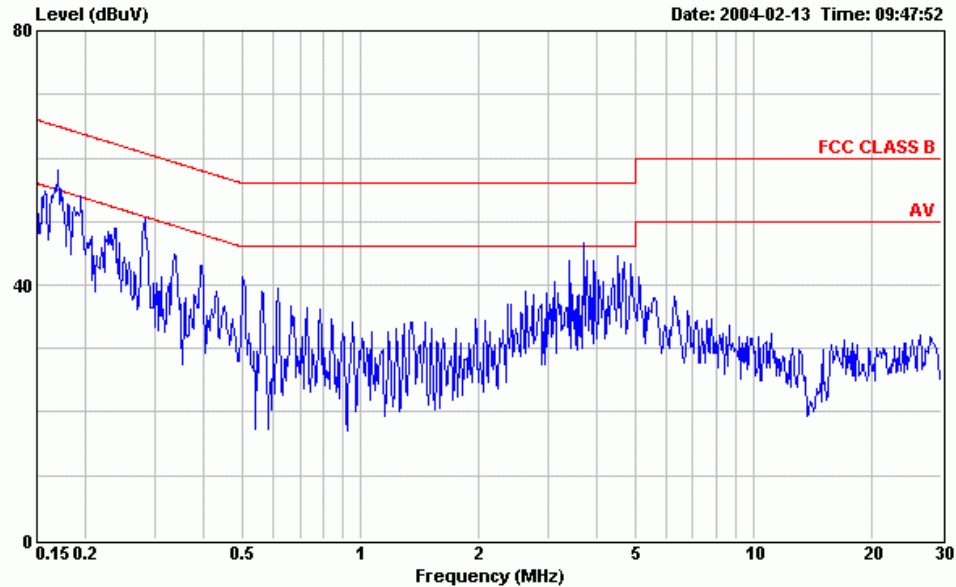
Data#: 18 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.190	42.31	-11.75	54.06	42.04	0.22	0.05	Average
2	0.236	39.01	-13.24	52.25	38.78	0.18	0.05	Average
3	0.281	44.22	-6.56	50.78	44.02	0.15	0.05	Average
4	0.616	34.22	-11.78	46.00	34.09	0.10	0.03	Average
5	1.344	21.23	-24.77	46.00	21.06	0.10	0.07	Average
6	4.591	34.87	-11.13	46.00	34.71	0.11	0.05	Average



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Data#: 13 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(D-SUB)

Data#: 14 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 09:49:48

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(D-SUB)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	51.39	-12.71	64.10	51.12	0.22	0.05	QP
2	0.235	47.25	-15.03	62.28	47.02	0.18	0.05	QP
3	0.281	47.69	-13.09	60.78	47.49	0.15	0.05	QP
4	0.616	37.73	-18.27	56.00	37.60	0.10	0.03	QP
5	1.346	32.12	-23.88	56.00	31.95	0.10	0.07	QP
6	3.690	41.33	-14.67	56.00	41.13	0.10	0.10	QP

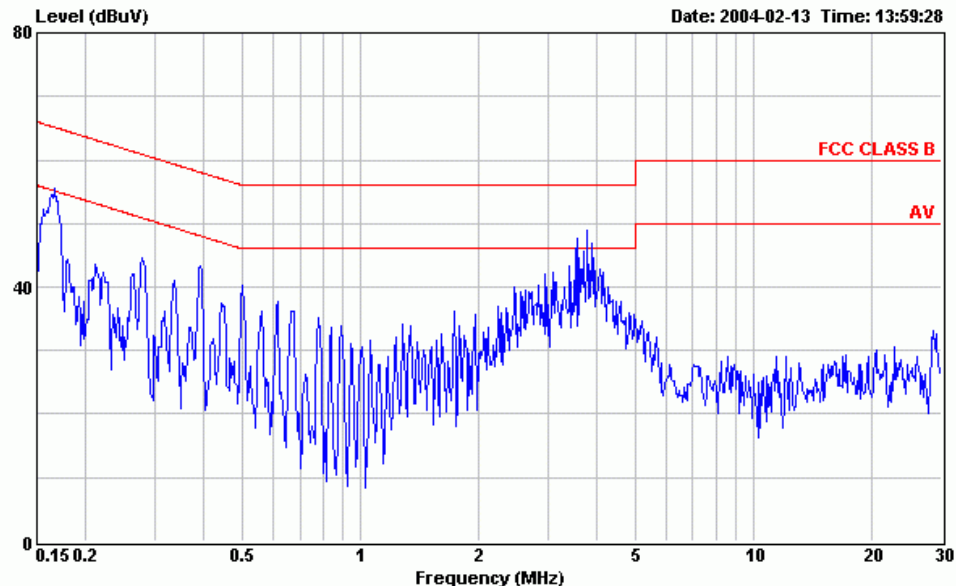
Data#: 15 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	42.74	-11.36	54.10	42.47	0.22	0.05	Average
2	0.235	38.55	-13.73	52.28	38.32	0.18	0.05	Average
3	0.281	44.30	-6.48	50.78	44.10	0.15	0.05	Average
4	0.616	34.01	-11.99	46.00	33.88	0.10	0.03	Average
5	1.346	23.69	-22.31	46.00	23.52	0.10	0.07	Average
6	3.690	30.98	-15.02	46.00	30.78	0.10	0.10	Average



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Data#: 178 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz (DVI)

Data#: 179 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:59:33

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz (DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	53.83	-11.33	65.16	53.53	0.26	0.04	QP
2	0.279	44.07	-16.78	60.85	43.87	0.15	0.05	QP
3	0.389	42.61	-15.47	58.08	42.46	0.10	0.05	QP
4	1.229	30.78	-25.22	56.00	30.61	0.10	0.07	QP
5	2.622	38.14	-17.86	56.00	37.96	0.10	0.08	QP
6	3.994	41.55	-14.45	56.00	41.36	0.10	0.09	QP

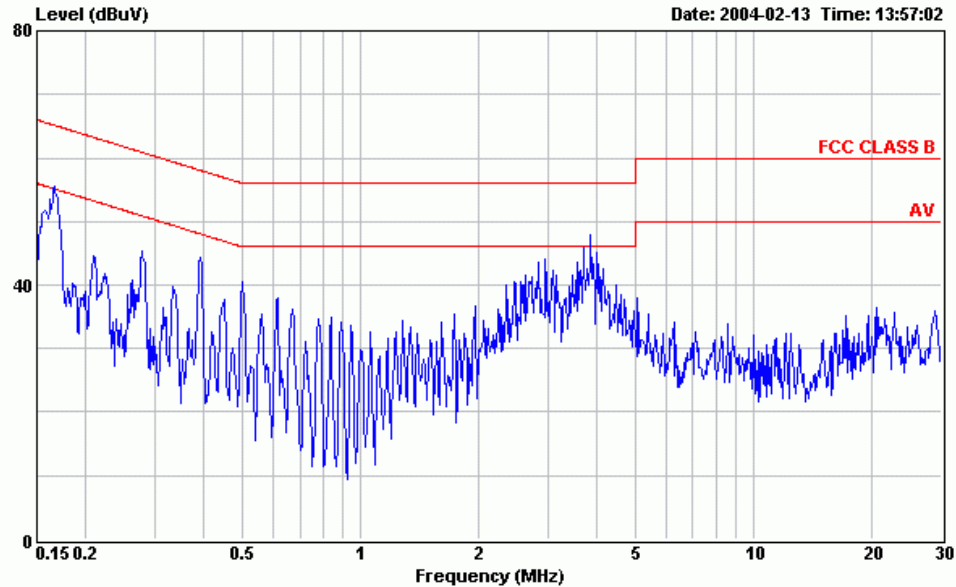
Data#: 180 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 !	0.166	51.31	-3.85	55.16	51.01	0.26	0.04	Average
2 !	0.279	43.14	-7.71	50.85	42.94	0.15	0.05	Average
3	1.229	29.62	-16.38	46.00	29.45	0.10	0.07	Average
4 !	2.622	36.32	-9.68	46.00	36.14	0.10	0.08	Average
5	3.994	32.18	-13.82	46.00	31.99	0.10	0.09	Average



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Data#: 175 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz (DVI)

Data#: 176 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 13:57:34

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 640*480 / 60Hz;31KHz (DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	53.65	-11.51	65.16	53.35	0.26	0.04	QP
2	0.277	43.21	-17.71	60.92	43.01	0.15	0.05	QP
3	0.388	43.11	-14.99	58.10	42.96	0.10	0.05	QP
4	1.230	30.40	-25.60	56.00	30.23	0.10	0.07	QP
5	2.625	39.73	-16.27	56.00	39.55	0.10	0.08	QP
6	3.999	42.77	-13.23	56.00	42.58	0.10	0.09	QP

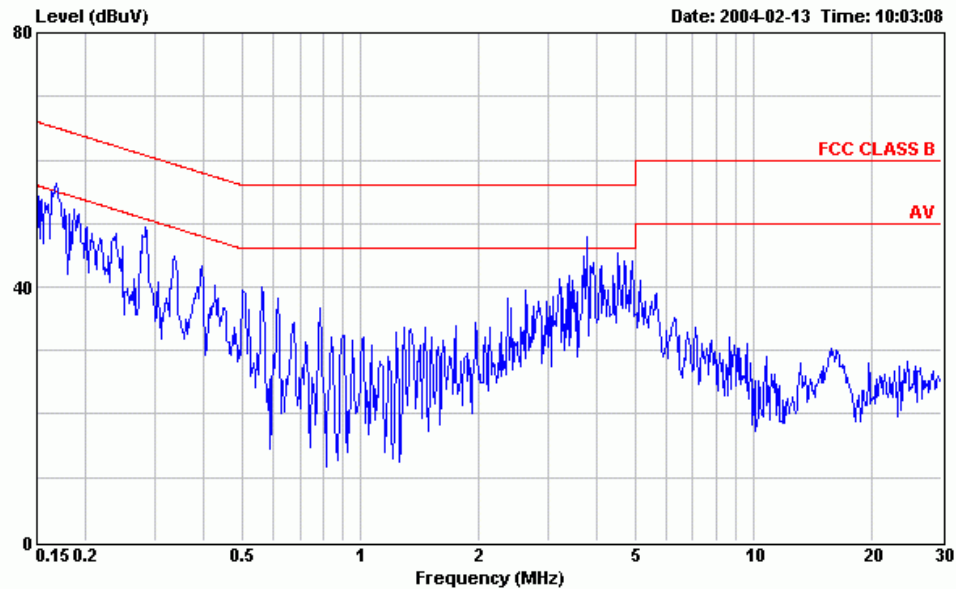
Data#: 177 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 !	0.166	51.26	-3.90	55.16	50.96	0.26	0.04	Average
2 !	0.277	42.18	-8.74	50.92	41.98	0.15	0.05	Average
3 !	0.388	40.32	-7.78	48.10	40.17	0.10	0.05	Average
4	1.230	28.63	-17.37	46.00	28.46	0.10	0.07	Average
5 !	2.625	36.76	-9.24	46.00	36.58	0.10	0.08	Average
6	3.999	32.25	-13.75	46.00	32.06	0.10	0.09	Average



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Data#: 28 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(DVI)

Data#: 29 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 10:03:35

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	50.67	-13.39	64.06	50.40	0.22	0.05	QP
2	0.236	46.59	-15.65	62.24	46.36	0.18	0.05	QP
3	0.281	47.39	-13.41	60.80	47.19	0.15	0.05	QP
4	0.616	37.18	-18.82	56.00	37.05	0.10	0.03	QP
5	1.345	32.61	-23.39	56.00	32.44	0.10	0.07	QP
6	3.689	42.41	-13.59	56.00	42.21	0.10	0.10	QP

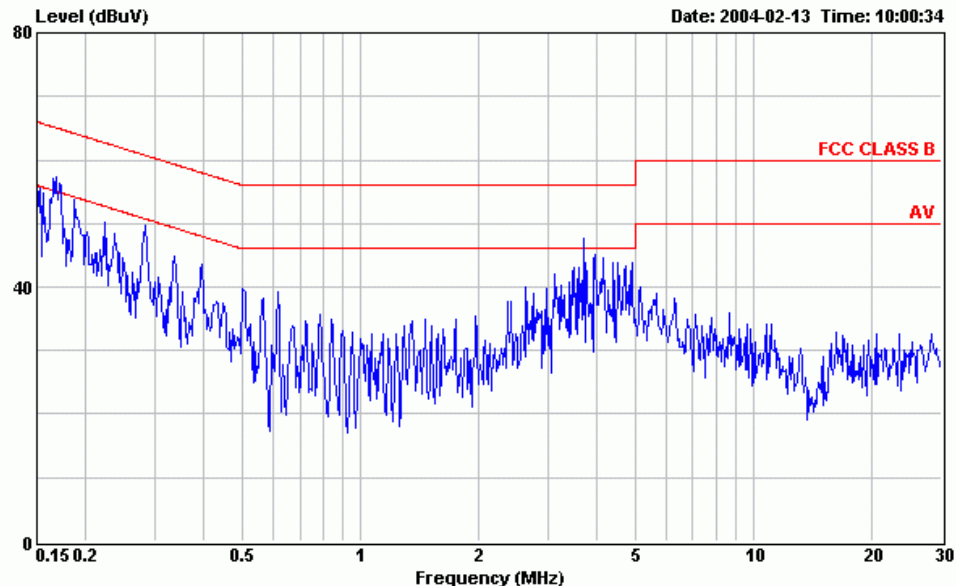
Data#: 30 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	41.76	-12.30	54.06	41.49	0.22	0.05	Average
2	0.236	38.38	-13.86	52.24	38.15	0.18	0.05	Average
3	0.281	44.26	-6.54	50.80	44.06	0.15	0.05	Average
4	0.616	34.46	-11.54	46.00	34.33	0.10	0.03	Average
5	1.345	25.80	-20.20	46.00	25.63	0.10	0.07	Average
6	3.689	31.40	-14.60	46.00	31.20	0.10	0.10	Average



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Data#: 25 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(DVI)

Data#: 26 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 10:01:58

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1024*768 / 75Hz;60KHz(DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	49.78	-14.28	64.06	49.51	0.22	0.05	QP
2	0.235	46.14	-16.13	62.27	45.91	0.18	0.05	QP
3	0.281	47.31	-13.47	60.78	47.11	0.15	0.05	QP
4	0.617	38.09	-17.91	56.00	37.96	0.10	0.03	QP
5	1.344	31.96	-24.04	56.00	31.79	0.10	0.07	QP
6	3.688	42.52	-13.48	56.00	42.32	0.10	0.10	QP

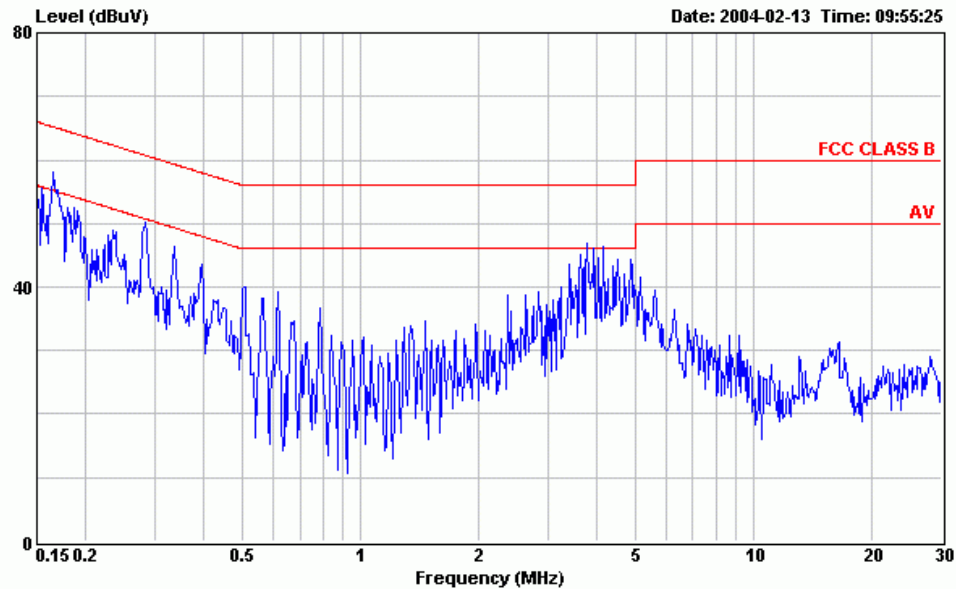
Data#: 27 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.189	41.88	-12.18	54.06	41.61	0.22	0.05	Average
2	0.235	38.53	-13.74	52.27	38.30	0.18	0.05	Average
3	0.281	43.64	-7.14	50.78	43.44	0.15	0.05	Average
4	0.617	36.17	-9.83	46.00	36.04	0.10	0.03	Average
5	1.344	23.86	-22.14	46.00	23.69	0.10	0.07	Average
6	3.688	30.36	-15.64	46.00	30.16	0.10	0.10	Average



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Data#: 19 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(DVI)

Data#: 20 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 09:57:20

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) NEUTRAL
EUT : 19" LCD MONITOR M/N:190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.188	51.51	-12.61	64.12	51.24	0.22	0.05	QP
2	0.234	46.49	-15.80	62.29	46.26	0.18	0.05	QP
3	0.284	47.41	-13.30	60.71	47.21	0.15	0.05	QP
4	0.617	36.92	-19.08	56.00	36.79	0.10	0.03	QP
5	1.346	32.39	-23.61	56.00	32.22	0.10	0.07	QP
6	4.590	43.03	-12.97	56.00	42.87	0.11	0.05	QP

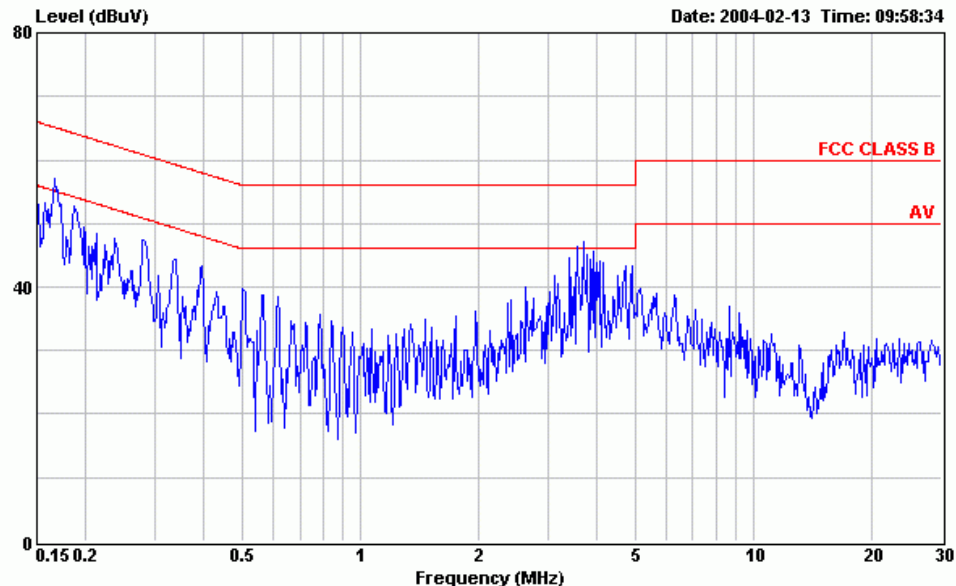
Data#: 21 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.188	42.43	-11.69	54.12	42.16	0.22	0.05	Average
2	0.234	37.99	-14.30	52.29	37.76	0.18	0.05	Average
3	0.284	42.86	-7.85	50.71	42.66	0.15	0.05	Average
4	0.617	34.45	-11.55	46.00	34.32	0.10	0.03	Average
5	1.346	24.87	-21.13	46.00	24.70	0.10	0.07	Average
6	4.590	34.86	-11.14	46.00	34.70	0.11	0.05	Average



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Data#: 22 File#: C:\Delta-EM930187.EMI



Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(DVI)

Data#: 23 File#: C:\Delta-EM930187.EMI

Date: 2004-02-13 Time: 09:59:08

Site : No.4 Shielded room
Condition : FCC CLASS B KNW-407(S/R4-031127) LINE
EUT : 19" LCD MONITOR M/N: 190B4CG
POWER : 120Vac / 60Hz(24°C / 59%)
MEMO : 1280*1024 / 75Hz;80KHz(DVI)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.188	50.22	-13.90	64.12	49.95	0.22	0.05	QP
2	0.236	46.41	-15.84	62.25	46.18	0.18	0.05	QP
3	0.281	47.27	-13.51	60.78	47.07	0.15	0.05	QP
4	0.616	37.87	-18.13	56.00	37.74	0.10	0.03	QP
5	1.346	32.08	-23.92	56.00	31.91	0.10	0.07	QP
6	3.691	43.06	-12.94	56.00	42.86	0.10	0.10	QP

Data#: 24 File#: C:\Delta-EM930187.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.188	42.42	-11.70	54.12	42.15	0.22	0.05	Average
2	0.236	38.90	-13.35	52.25	38.67	0.18	0.05	Average
3	0.281	43.72	-7.06	50.78	43.52	0.15	0.05	Average
4	0.616	35.68	-10.32	46.00	35.55	0.10	0.03	Average
5	1.346	26.86	-19.14	46.00	26.69	0.10	0.07	Average
6	3.691	32.34	-13.66	46.00	32.14	0.10	0.10	Average

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment are used during the radiated emission measurement :

3.1.1. For 30MHz~1000MHz Frequency (At No. 5 Open Field Test Site)

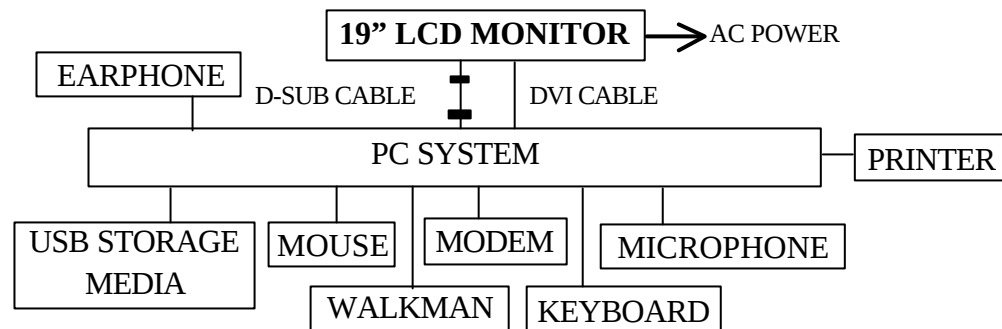
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00272	Jun. 06, 03'	Jun. 05, 04'
2.	Test Receiver	R&S	ESVS10	849231/017	Feb. 06, 04'	Feb. 05, 05'
3.	Biconical Antenna	Chase	VBA6106A	1227	Nov.24, 03'	Nov.23, 04'
4.	Log Periodic Antenna	Chase	UPA6109	1061	Nov.24, 03'	Nov.23, 04'

3.1.2. For 1GHz~2GHz Frequency (At No. 6 Open Field Test Site)

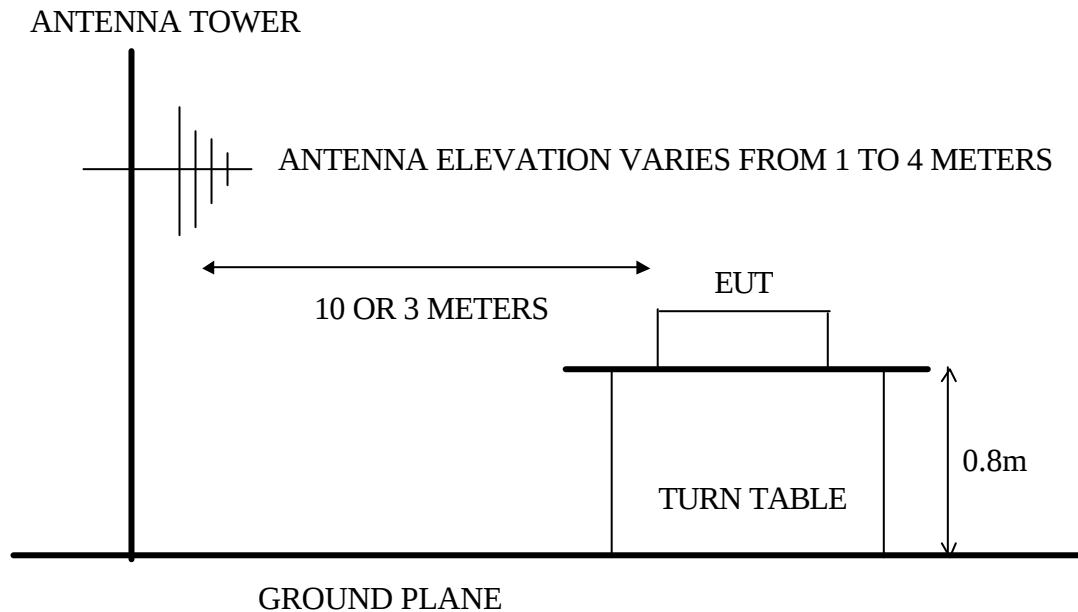
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00272	Jun. 06, 03'	Jun. 05, 04'
2.	Amplifier	HP	8449B	3008A00529	Jul. 02, 03'	Jul. 01, 04'
3.	Horn Antenna	EMCO	3115	9609-4927	Jul. 04, 03'	Jul. 03, 04'

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 & 3m) Setup Diagram (10m for 30-1000MHz; 3m for 1GHz-2GHz)



3.3. Radiation Limit (§5.109/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
Above 1GHz	3	74.0 (Peak)
Above 1GHz	3	54.0 (Average)

- 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) There is no over 1GHz limits in CISPR 22 standard. Therefore, a FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.109 (a), (g).
 - (4) The 3m limit apply relation: $L2 = L1(d1/d2)$

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators were 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 (or 3 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 CISPR 22 and ANSI C63.4-2001 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVS10 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth of the HP Spectrum Analyzer 8593EM was set at 1MHz. (For 1GHz-2GHz)

The frequency range from 30MHz to 2GHz was checked.

For 30-1000MHz frequency range, EUT with AC 120V/60Hz supplying voltage and with the following test modes were performed during radiated measurement at No. 5 open test site, all the test results are listed in section 3.7.1.

The details of test modes are as follows :

Mode	Input	Frequency Resolution
1.	D-Sub	640*480/60Hz, 31kHz
2.		1024*768/75Hz, 60kHz
3.		1280*1024/75Hz, 80kHz
4.	DVI	640*480/60Hz, 31kHz
5.		1024*768/75Hz, 60kHz
6.		1280*1024/75Hz, 80kHz

(**mode for maximum detected emission**)

For 1-2GHz frequency range, the **test mode 6** was selected and measured within No. 6 open test site and the test results are listed in section 3.7.2.

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.

3.7.1. 30MHz to 1000MHz frequency and 10 meters distance measurement.

(At No. 5 open test site)

Date of Test :	Feb. 16, 2004	Temperature :	23
EUT :	19" LCD Monitor	Humidity :	38%
Test Mode :	640*480/60Hz, 31kHz	Input :	D-Sub

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
83.262	14.80	1.02	3.68	19.50	30.00	10.50
132.273	19.93	1.15	0.19	21.27	30.00	8.73
166.325	20.94	1.42	- 0.61	21.75	30.00	8.25
186.000	21.79	1.50	- 2.29	21.00	30.00	9.00
215.001	21.75	1.48	- 1.74	21.49	30.00	8.51
249.400	22.59	1.70	- 1.30	22.99	37.00	14.01
274.653	24.11	1.77	- 3.44	22.44	37.00	14.56
326.833	15.21	1.94	6.44	23.59	37.00	13.41
376.258	15.84	2.18	5.16	23.18	37.00	13.82
453.306	17.10	2.34	5.48	24.92	37.00	12.08
546.767	19.80	2.51	2.68	24.99	37.00	12.01
653.646	21.61	2.86	2.00	26.47	37.00	10.53
724.653	21.60	3.08	- 0.88	23.80	37.00	13.20
844.979	25.60	3.29	- 3.47	25.42	37.00	11.58
980.456	25.24	3.50	- 2.47	26.27	37.00	10.73

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
56.254	14.26	0.89	6.24	21.39	30.00	8.61
83.260	14.14	1.02	6.50	21.66	30.00	8.34
132.269	20.51	1.15	- 0.62	21.04	30.00	8.96
186.003	20.69	1.50	- 1.12	21.07	30.00	8.93
200.251	22.24	1.51	- 3.00	20.75	30.00	9.25
214.778	22.15	1.48	- 3.63	20.00	30.00	10.00
249.390	22.80	1.70	0.85	25.35	37.00	11.65
326.827	15.58	1.94	7.72	25.24	37.00	11.76
398.025	17.44	2.23	5.11	24.78	37.00	12.22
453.303	17.79	2.34	5.11	25.24	37.00	11.76
546.762	19.70	2.51	2.00	24.21	37.00	12.79
653.643	21.94	2.86	1.49	26.29	37.00	10.71
784.372	23.57	3.20	- 0.95	25.82	37.00	11.18
844.975	24.59	3.29	- 2.47	25.41	37.00	11.59

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

Date of Test :	<u>Feb. 16, 2004</u>	Temperature :	<u>23</u>
EUT :	<u>19" LCD Monitor</u>	Humidity :	<u>38%</u>
Test Mode :	<u>1024*768/75Hz, 60kHz</u>	Input :	<u>D-Sub</u>

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
48.068	15.98	0.83	4.83	21.64	30.00	8.36
72.001	13.07	1.00	7.87	21.94	30.00	8.06
77.954	13.63	0.99	6.79	21.41	30.00	8.59
136.242	19.98	1.23	0.50	21.71	30.00	8.29
178.369	21.43	1.45	- 0.60	22.28	30.00	7.72
214.369	21.73	1.48	- 0.82	22.39	30.00	7.61
250.369	22.65	1.71	0.63	24.99	37.00	12.01
324.400	14.88	1.92	7.92	24.72	37.00	12.28
389.574	16.87	2.21	7.25	26.33	37.00	10.67
443.620	16.78	2.33	5.54	24.65	37.00	12.35
473.597	18.33	2.37	4.19	24.89	37.00	12.11
540.160	19.35	2.49	8.13	29.97	37.00	7.03
649.286	21.72	2.85	4.55	29.12	37.00	7.88
779.144	23.53	3.19	1.72	28.44	37.00	8.56
909.000	24.00	3.41	4.50	31.91	37.00	5.09

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
42.010	18.59	0.74	3.51	22.84	30.00	7.16
77.934	13.69	0.99	7.78	22.46	30.00	7.54
120.001	19.34	1.19	0.87	21.40	30.00	8.60
174.042	21.77	1.42	- 2.05	21.14	30.00	8.86
209.822	22.43	1.47	- 1.17	22.73	30.00	7.27
221.809	21.47	1.55	0.53	23.55	30.00	6.45
240.055	22.90	1.68	1.06	25.64	37.00	11.36
249.748	23.02	1.71	2.59	27.32	37.00	9.68
324.682	15.36	1.92	9.81	27.09	37.00	9.91
389.574	17.59	2.21	6.18	25.98	37.00	11.02
454.497	18.01	2.35	3.36	23.72	37.00	13.28
519.435	19.37	2.42	4.84	26.63	37.00	10.37
649.286	22.07	2.85	2.41	27.33	37.00	9.67
714.221	21.40	3.06	1.66	26.12	37.00	10.88
844.072	24.72	3.29	1.62	29.63	37.00	7.37
908.998	24.05	3.41	3.44	30.90	37.00	6.10

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

Date of Test :	Feb. 16, 2004	Temperature :	23
EUT :	19" LCD Monitor	Humidity :	38%
Test Mode :	1280*1024/75Hz, 80kHz	Input :	D-Sub

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dB μ V	Emission Level Horizontal dB μ V/m	Limits dB μ V/m	Margin dB
60.893	12.31	0.92	7.49	20.72	30.00	9.28
81.007	14.32	1.00	5.76	21.08	30.00	8.92
162.002	20.72	1.42	- 2.11	20.03	30.00	9.97
216.005	21.84	1.50	- 2.50	20.84	30.00	9.16
270.125	23.77	1.76	0.37	25.90	37.00	11.10
385.848	16.43	2.20	9.10	27.73	37.00	9.27
441.040	16.72	2.32	6.28	25.32	37.00	11.68
532.090	19.09	2.46	7.37	28.92	37.00	8.08
735.516	22.52	3.11	0.60	26.23	37.00	10.77
816.037	23.72	3.25	- 0.33	26.64	37.00	10.36
990.935	25.00	3.52	- 0.54	27.98	37.00	9.02

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dB μ V	Emission Level Vertical dB μ V/m	Limits dB μ V/m	Margin dB
54.440	14.62	0.87	7.76	23.25	30.00	6.75
83.050	13.99	1.02	9.09	24.10	30.00	5.90
157.500	21.62	1.42	- 2.52	20.52	30.00	9.48
165.037	22.01	1.42	0.04	23.47	30.00	6.53
200.453	22.24	1.51	- 0.51	23.24	30.00	6.76
244.062	22.91	1.69	0.42	25.02	37.00	11.98
373.319	16.33	2.18	11.22	29.73	37.00	7.27
440.898	17.42	2.32	8.00	27.74	37.00	9.26
551.250	19.80	2.53	6.94	29.27	37.00	7.73
586.920	20.67	2.64	7.45	30.76	37.00	6.24
674.617	22.46	2.95	0.77	26.18	37.00	10.82
732.880	22.27	3.10	1.74	27.11	37.00	9.89
927.582	24.57	3.44	- 0.90	27.11	37.00	9.89

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

Date of Test :	<u>Feb. 16, 2004</u>	Temperature :	<u>23</u>
EUT :	<u>19" LCD Monitor</u>	Humidity :	<u>38%</u>
Test Mode :	<u>640*480/60Hz, 31kHz</u>	Input :	<u>DVI</u>

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
69.322	12.74	0.98	2.39	16.11	30.00	13.89
137.738	20.05	1.25	- 2.96	18.34	30.00	11.66
162.777	20.74	1.42	- 3.31	18.85	30.00	11.15
176.245	21.44	1.43	- 0.84	22.03	30.00	7.97
183.665	21.55	1.48	- 3.01	20.02	30.00	9.98
205.249	21.57	1.49	- 0.67	22.39	30.00	7.61
239.100	22.55	1.67	- 2.42	21.80	37.00	15.20
269.038	23.61	1.76	- 2.34	23.03	37.00	13.97
300.091	25.10	1.80	- 1.78	25.12	37.00	11.88
364.508	15.44	2.17	6.26	23.87	37.00	13.13
425.620	16.46	2.30	3.82	22.58	37.00	14.42
480.116	18.31	2.37	1.11	21.79	37.00	15.21
540.131	19.24	2.49	- 1.74	19.99	37.00	17.01
680.326	22.16	2.96	- 2.60	22.52	37.00	14.48

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
69.360	13.01	0.98	7.43	21.42	30.00	8.58
137.713	20.34	1.25	- 0.04	21.55	30.00	8.45
162.739	21.92	1.42	- 1.98	21.36	30.00	8.64
183.640	21.01	1.48	- 3.10	19.39	30.00	10.61
204.600	22.23	1.49	- 2.34	21.38	30.00	8.62
239.200	22.88	1.68	- 1.14	23.42	37.00	13.58
300.190	24.64	1.80	- 0.17	26.27	37.00	10.73
398.026	17.44	2.23	6.80	26.47	37.00	10.53
425.648	16.99	2.30	4.14	23.43	37.00	13.57
480.090	19.05	2.37	2.18	23.60	37.00	13.40
540.106	18.99	2.49	2.08	23.56	37.00	13.44
680.300	22.69	2.96	- 1.09	24.56	37.00	12.44

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

Date of Test : Feb. 16, 2004 Temperature : 23

EUT : 19" LCD Monitor Humidity : 38%

Test Mode : 1024*768/75Hz, 60kHz Input : DVI

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
72.816	13.01	1.00	6.05	20.06	30.00	9.94
113.609	18.72	1.18	0.29	20.19	30.00	9.81
154.402	20.44	1.40	- 1.09	20.75	30.00	9.25
195.196	21.62	1.53	- 3.17	19.98	30.00	10.02
208.794	21.65	1.47	- 3.03	20.09	30.00	9.91
235.989	22.63	1.67	- 1.79	22.51	37.00	14.49
276.783	24.22	1.78	1.50	27.50	37.00	9.50
357.884	15.66	2.16	9.57	27.39	37.00	9.61
449.542	16.93	2.34	7.84	27.11	37.00	9.89
475.730	18.40	2.37	3.51	24.28	37.00	12.72
573.935	20.70	2.60	4.40	27.70	37.00	9.30
672.140	21.83	2.94	1.71	26.48	37.00	10.52
750.689	23.47	3.15	0.86	27.48	37.00	9.52
848.896	25.97	3.30	- 0.55	28.72	37.00	8.28

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
113.307	17.62	1.18	4.12	22.92	30.00	7.08
126.905	20.40	1.14	1.02	22.56	30.00	7.44
154.101	21.03	1.40	- 1.12	21.31	30.00	8.69
181.296	20.94	1.47	- 0.07	22.34	30.00	7.66
194.894	20.82	1.53	0.70	23.05	30.00	6.95
208.492	22.51	1.48	- 0.08	23.91	30.00	6.09
275.083	24.76	1.78	0.61	27.15	37.00	9.85
374.500	16.49	2.18	8.64	27.31	37.00	9.69
443.038	17.42	2.33	4.88	24.63	37.00	12.37
482.320	18.98	2.37	3.22	24.57	37.00	12.43
541.243	19.22	2.49	2.11	23.82	37.00	13.18
645.995	21.67	2.84	1.19	25.70	37.00	11.30
750.747	23.53	3.15	- 0.14	26.54	37.00	10.46
848.952	24.88	3.30	- 0.64	27.54	37.00	9.46

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

Date of Test :	Feb. 16, 2004	Temperature :	23
EUT :	19" LCD Monitor	Humidity :	38%
Test Mode :	1280*1024/75Hz, 80kHz	Input :	DVI

Frequency MHz	Antenna	Cable	Meter Reading	Emission Level		Limits dBμV/m	Margin dB
	Factor dB/m	Loss dB	Horizontal dBμV	Horizontal	Horizontal		
108.890	18.48	1.15	2.28	21.91	30.00	8.09	
135.002	20.01	1.21	- 0.88	20.34	30.00	9.66	
181.251	21.27	1.47	- 0.04	22.70	30.00	7.30	
217.244	21.75	1.50	- 0.78	22.47	30.00	7.53	
270.002	23.77	1.76	0.87	26.40	37.00	10.60	
373.639	15.45	2.18	5.49	23.12	37.00	13.88	
405.009	16.63	2.25	7.42	26.30	37.00	10.70	
440.733	16.71	2.32	4.90	23.93	37.00	13.07	
540.011	19.35	2.49	5.11	26.95	37.00	10.05	
* 675.013	21.90	2.95	5.33	30.18	37.00	6.82	
810.016	23.42	3.24	1.02	27.68	37.00	9.32	
945.022	26.86	3.46	- 3.59	26.73	37.00	10.27	

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level= Antenna Factor + Cable Loss + Meter Reading.
 3. “*” The worst emission was detected at 675.013MHz with corrected signal level of 30.18dBμV/m (limit was 37dBμV/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 270 °.
 4. 0 ° is the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

Date of Test :	Feb. 16, 2004	Temperature :	23
EUT :	19" LCD Monitor	Humidity :	38%
Test Mode :	1280*1024/75Hz, 80kHz	Input :	DVI

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
54.253	14.70	0.87	6.83	22.40	30.00	7.60
61.540	14.05	0.93	5.59	20.57	30.00	9.43
108.888	16.91	1.15	3.18	21.24	30.00	8.76
133.087	20.45	1.17	0.83	22.45	30.00	7.55
157.502	21.62	1.42	- 1.22	21.82	30.00	8.18
190.263	20.29	1.52	2.98	24.79	30.00	5.21
226.617	21.43	1.60	- 0.46	22.57	30.00	7.43
376.642	16.46	2.18	10.35	28.99	37.00	8.01
405.008	17.15	2.25	5.73	25.13	37.00	11.87
440.732	17.42	2.32	7.50	27.24	37.00	9.76
480.114	18.92	2.37	6.85	28.14	37.00	8.86
540.013	19.06	2.49	5.72	27.27	37.00	9.73
551.159	19.80	2.53	6.84	29.17	37.00	7.83
675.016	22.46	2.95	5.77	31.18	37.00	5.82
810.018	23.27	3.24	- 1.08	25.43	37.00	11.57
945.021	26.14	3.46	2.61	32.21	37.00	4.79

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level= Antenna Factor + Cable Loss + Meter Reading.
 3. “*” The worst emission was detected at 945.021MHz with corrected signal level of 32.21dBμV/m (limit was 37dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 45 °.
 4. 0 is the table front facing the antenna. Degree is calculated from 0 clockwise facing the antenna.

3.7.2. 1GHz-2GHz frequency and 3 meters distance measurement.
(At No. 6 open test site)

Date of Test :	Feb. 16, 2004	Temperature :	23
EUT :	19" LCD Monitor	Humidity :	38%
Test Mode :	1280*1024/75Hz, 80kHz	Input :	DVI

Antenna Frequency MHz	Cable Factor dB/m	Meter Reading Loss dB	Emission Level Horizontal dB μ V	(Peak) Horizontal dB μ V/m	Limits dB μ V/m	Margin dB
1080.000	24.17	2.01	21.22	47.40	74.00	26.60
1215.000	24.58	2.03	24.99	51.60	74.00	22.40
1350.000	24.94	2.05	29.61	56.60	74.00	17.40
1620.000	25.87	2.07	19.56	47.50	74.00	26.50
1755.000	26.45	2.09	24.82	53.36	74.00	20.64
1890.000	26.99	2.10	15.81	44.90	74.00	29.10

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dB μ V	Emission Level Vertical dB μ V/m	(Peak) Limits dB μ V/m	Margin dB
1079.990	24.17	2.01	19.56	45.74	74.00	28.26
1215.420	24.58	2.03	26.03	52.64	74.00	21.36
1350.100	24.94	2.05	28.18	55.17	74.00	18.83
1620.200	25.87	2.07	18.80	46.74	74.00	27.26
1755.000	26.45	2.09	23.52	52.06	74.00	21.94
1890.000	26.99	2.10	14.01	43.10	74.00	30.90

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

Date of Test : Feb. 16, 2004 Temperature : 23

EUT : 19" LCD Monitor Humidity : 38%

Test Mode : 1280*1024/75Hz, 80kHz Input : DVI

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level (Average) Horizontal dBμV/m	Limits dBμV/m	Margin dB
1080.000	24.17	2.01	5.72	31.90	54.00	22.10
1215.000	24.58	2.03	14.79	41.40	54.00	12.60
1350.000	24.94	2.05	21.11	48.10	54.00	5.90
1620.000	25.87	2.07	4.46	32.40	54.00	21.60
1755.000	26.45	2.09	11.46	40.00	54.00	14.00
1890.000	26.99	2.10	2.61	31.70	54.00	22.30

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level (Average) Vertical dBμV/m	Limits dBμV/m	Margin dB
1079.990	24.17	2.01	4.29	30.47	54.00	23.53
1215.420	24.58	2.03	14.58	41.19	54.00	12.81
1350.100	24.94	2.05	20.89	47.88	54.00	6.12
1620.200	25.87	2.07	3.11	31.05	54.00	22.95
1755.000	26.45	2.09	11.44	39.98	54.00	14.02
1890.000	26.99	2.10	2.96	32.05	54.00	21.95

- Remark :
1. All readings are Average values.
 2. Emission Level = Antenna Factor + Cable Loss + Meter Reading.

4. DEVIATION TO TEST SPECIFICATIONS

【NONE】