

APPLICATION FOR CERTIFICATION
On Behalf of
Top Victory Electronics (Taiwan) Co., Ltd.
17" Color Monitor
Model : (1)7Elr (2)7Elr+
FCC ID : ARSCM769D

Prepared for : Top Victory Electronics (Taiwan) Co., Ltd.
18F, 738 Chung-Cheng Rd., Chung-Ho 235,
Taipei Hsien, Taiwan, R.O.C.

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Report Number : TTEMC-F20028
Date of Test : Mar. 23 ~ 30, 2000
Date of Report : Apr. 08, 2000

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1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	17" Color Monitor
Model Number	:	(1)7Elr (2)7Elr+
		M/N 7Elr is MPR-2 Safety Version M/N 7Elr+ is TCO Safety Version
Serial Number	:	N/A
FCC ID	:	ARSCM769D
Applicant	:	Top Victory Electronics (Taiwan) Co., Ltd. 18F, 738 Chung-Cheng Rd., Chung-Ho 235 Taiwan, R.O.C.
Manufacturer #1	:	Top Victory Electronics (Fujian) Co., Ltd. Yuan Hong Road, Shang-Lu Fuqing City, Fujian, China
Manufacturer #2	:	Beijing Orient Top Victory Electronics Co., Ltd. No. 10, Jiu Xian Qiao Rd., Chao Yang District, Beijing, China.
CRT	:	Chunghwa, M/N M41AGE93X76 C S/N B004500008
Data Cable	:	Shielded, Undetachable, 1.8m Bonded a ferrite core
Power Cord	:	Non-Shielded, Detachable, 1.8m
Date of Receipt of Sample	:	Mar. 22, 2000
Date of Test	:	Mar. 23 ~ 30, 2000

1.2. Tested Supporting System Details

1.2.1. PERSONAL COMPUTER

Mother Board	:	ASUS, M/N P5A FCC ID. By DoC
CPU	:	AMD K6-2 266MHz
Case	:	Enlight, M/N EN7105C
S.P.S.	:	SPI, M/N FSP250-61GT S/N W13562650
Floppy Driver 3.5"	:	Mitsumi, M/N D353M3
Hard Disk Driver	:	Seagate, M/N ST34321A S/N VTH90436
VGA Card	:	Dataexpert, M/N CP765V2 S/N E700492317 FCC ID LUT-CP765
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. PS2 KEYBOARD

Model Number	:	5121
Serial Number	:	J83300815
FCC ID	:	E5XKBM104M10UC
Manufacturer	:	BTC
Data Cable	:	Shielded, Undetachable, 1m

1.2.3. USB KEYBOARD

Model Number	:	KU-8933
Serial Number	:	8H17800113
FCC ID	:	By DoC
Manufacturer	:	Chicony Electronics Co., Ltd.
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.4. PRINTER

Model Number	:	2225C+
Serial Number	:	3123S97227
FCC ID	:	DSI6XU2225
Manufacturer	:	Hewlett Packard
Power Adapter	:	KANI, Model AD-09
Power Cord	:	Non-Shielded, Detachable, 2.0m
Data Cable	:	Shielded, Detachable, 1.2m

1.2.5. MODEM # 1

Model Number : DM-1414
Serial Number : 980034386
FCC ID : IFAXDM1414
Manufacturer : Accex
Data Cable : Shielded, Detachable, 1.2m
Power Adapter : Amigo, M/N AM-91000A
Non-Shielded, Undetachable, 1.8m

1.2.6. MODEM # 2

Model Number : DM-1414
Serial Number : 980034385
FCC ID : IFAXDM1414
Manufacturer : Accex
Data Cable : Shielded, Detachable, 1.2m
Power Adapter : Amigo, M/N AM-91000A
Non-Shielded, Undetachable, 1.8m

1.2.7. PS2 MOUSE

Model Number : M-S35
Serial Number : LZA82103122
FCC ID : DZL211029
Manufacturer : Logitech
Data Cable : Non-Shielded, Undetachable, 1.8m

1.2.8. USB MOUSE

Model Number : M-UB48
Serial Number : LZB81900205
FCC ID : DZL211137
Manufacturer : Logitech
Data Cable : Shielded, Undetachable, 1.8m

1.3. Description of Test Facility

Site Description (No. 7 Open Site)	:	Dec. 02, 1999 File on Federal Communication Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, U.S.A.
Name of Firm	:	Taiwan Tokin EMC Eng. Corp.
Site Location	:	No. 53-11, Tin-Fu Tsun, Lin-Kou, Taipei Hsien, Taiwan, R.O.C.
NVLAP lab. Code	:	200077-0
DAR-Registration No.	:	DAT-P-092/99-00

1.4. Measurement Uncertainty

- (1) Radiation Uncertainty $U_r = \pm 4.01\text{dB}$
- (2) Conduction Uncertainty $U_c = \pm 2.26\text{dB}$

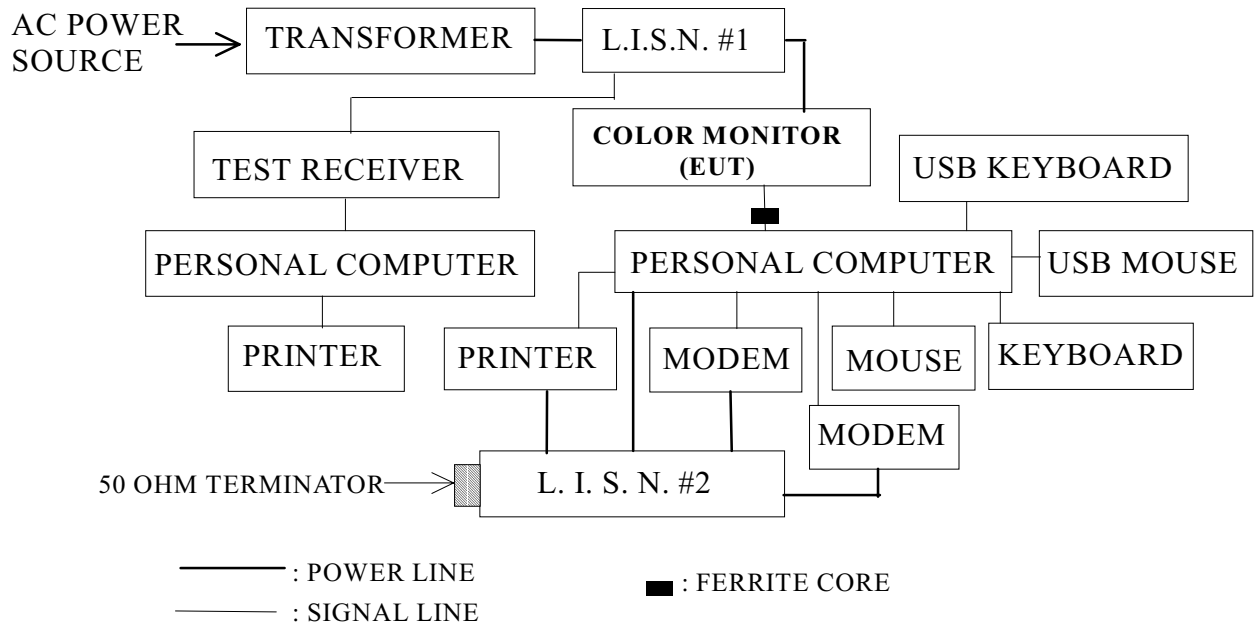
2. POWERLINE CONDUCTED TEST

2.1. Test Equipment

The following test equipment were used during the power line conducted tests :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	844591/015	Feb.15, 00'	1 Year
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-1430-5	Nov.27, 99'	1 Year
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-1430-6	Nov.27, 99'	1 Year
4.	Computer	DFI	IPV3120400	N/A	N/A	N/A
5.	Printer	HP	C6450A	PH96Q150GJ	N/A	N/A

2.2. Block Diagram of Test Setup



2.3. Conducted Powerline Emission Limit (CLASS B)

Frequency	Maximum RF Line Voltage	
	UV	DBuV
0.45MHz ~ 30MHz	250	48

REMARKS : RF LINE VOLTAGE (dBuV) = 20 log RF LINE VOLTAGE (uV)

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. 17" Color Monitor (EUT)

Model Number	:	7Elr
Serial Number	:	N/A
FCC ID	:	ARSCM769D
Manufacturer #1	:	Top Victory Electronics (Fujian) Co., Ltd.
Manufacturer #2	:	Beijing Orient Top Victory Electronics Co., Ltd.
CRT	:	Chunghwa, M/N M41AGE93X76 C S/N B004500008
Data 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. Turn on the power of all equipment.

2.5.3. Personal Computer read data from disk.

2.5.4. Personal Computer running the self-test program "Hwin" by windows and sent "H" character to monitor (EUT) through VGA card, the screen displayed and filled with "H" pattern by EUT's resolution.

2.5.5. Personal Computer read data from floppy disk 、 Modem and then wrote the data into floppy disk 、 Modem.

2.5.6. Personal computer sent "H" character to printer, the printer printed "H" pattern.

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

2.5.8. Repeat the above procedures from 2.5.3 to 2.5.7.

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 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 requirement.

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

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

Three kinds of horizontal working frequency were done during conducted measurement and all the test results are listed in section 2.7..

2.7. Line Conducted RF Voltage Measurement Results

PASSED. Please refer to the following pages. (9 pages)

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

EUT : 17" Color Monitor Model No.: 7Elr

Test Date : Mar. 30, 2000 Temperature : 25.1°C Humidity : 60%

Mode	Frequency Resolution	Reference Data #
1.	800*600/85Hz, 54KHz	# 10 (11, 12), # 13 (14, 15)
2.	1280*1024/60Hz, 64KHz	# 19 (20, 21), # 16 (17, 18)
3.	1024*768/85Hz, 69KHz	# 7 (8, 9), # 4 (5, 6)

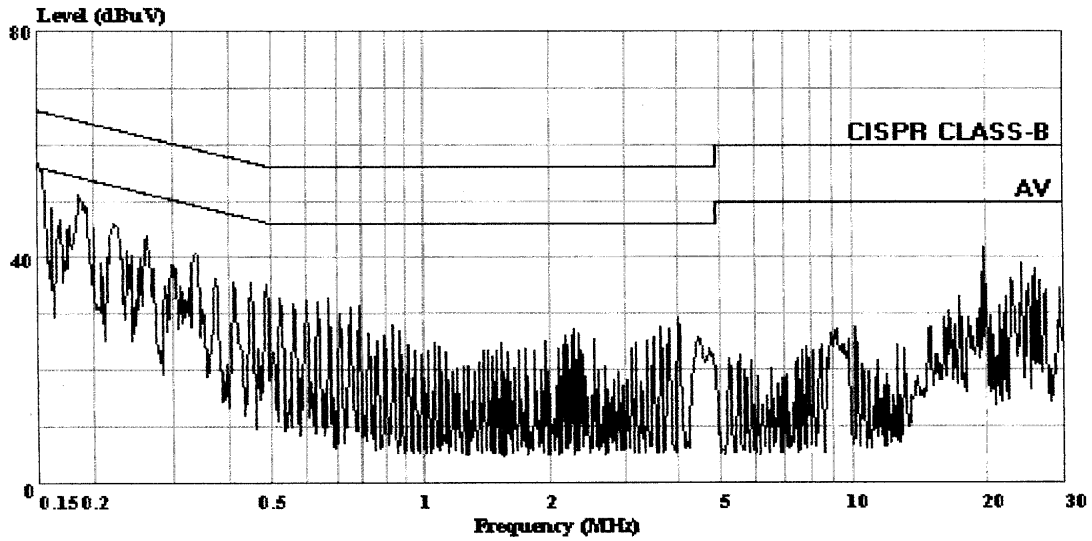
Please refer to the next pages.



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 10 File#: topvictory.EMI Date: 2000-03-30 Time: 17:20:40



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

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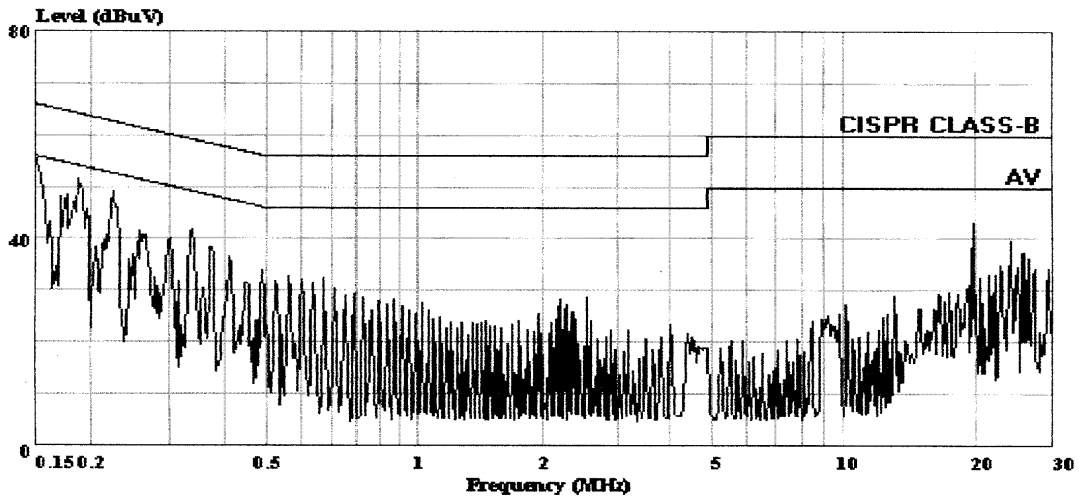
Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz(800X600;85Hz)



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 13 File#: topvictory.EMI Date: 2000-03-30 Time: 17:25:41



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

Trace:

Ref Trace:

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz(800X600;85Hz)



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 11 File#: topvictory.EMI Date: 2000-03-30 Time: 17:23:53
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz (800X600;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.151	55.29	-10.67	65.96	54.96	0.30	0.03	0.00	QP
2	0.188	51.45	-12.67	64.11	51.19	0.22	0.03	0.00	QP
3	0.337	42.36	-16.92	59.29	42.20	0.13	0.04	0.00	QP
4	0.676	32.04	-23.96	56.00	31.89	0.10	0.05	0.00	QP
5	4.127	29.60	-26.40	56.00	29.45	0.10	0.05	0.00	QP
6	19.828	41.83	-18.17	60.00	41.44	0.20	0.19	0.00	QP

Data#: 12 File#: topvictory.EMI Date: 2000-03-30 Time: 17:24:20
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz (800X600;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.151	47.31	-8.65	55.96	46.98	0.30	0.03	0.00	Average
2 !	0.188	45.24	-8.88	54.11	44.98	0.22	0.03	0.00	Average
3 !	0.337	39.88	-9.40	49.29	39.72	0.13	0.04	0.00	Average
4	0.676	29.24	-16.76	46.00	29.09	0.10	0.05	0.00	Average
5	4.127	22.39	-23.61	46.00	22.24	0.10	0.05	0.00	Average
6 !	19.816	40.46	-9.54	50.00	40.07	0.20	0.19	0.00	Average



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 14 File#: topvictory.EMI Date: 2000-03-30 Time: 17:28:29
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz(800X600;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.150	55.94	-10.05	65.99	55.61	0.30	0.03	0.00	QP
2	0.187	51.72	-12.45	64.17	51.46	0.22	0.03	0.00	QP
3	0.226	44.91	-17.67	62.58	44.69	0.18	0.04	0.00	QP
4	0.675	32.37	-23.63	56.00	32.22	0.10	0.05	0.00	QP
5	2.663	27.37	-28.63	56.00	27.22	0.10	0.05	0.00	QP
6	19.815	49.08	-10.92	60.00	48.69	0.20	0.19	0.00	QP

Data#: 15 File#: topvictory.EMI Date: 2000-03-30 Time: 17:28:59
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 54KHz(800X600;85Hz)

Page: 1

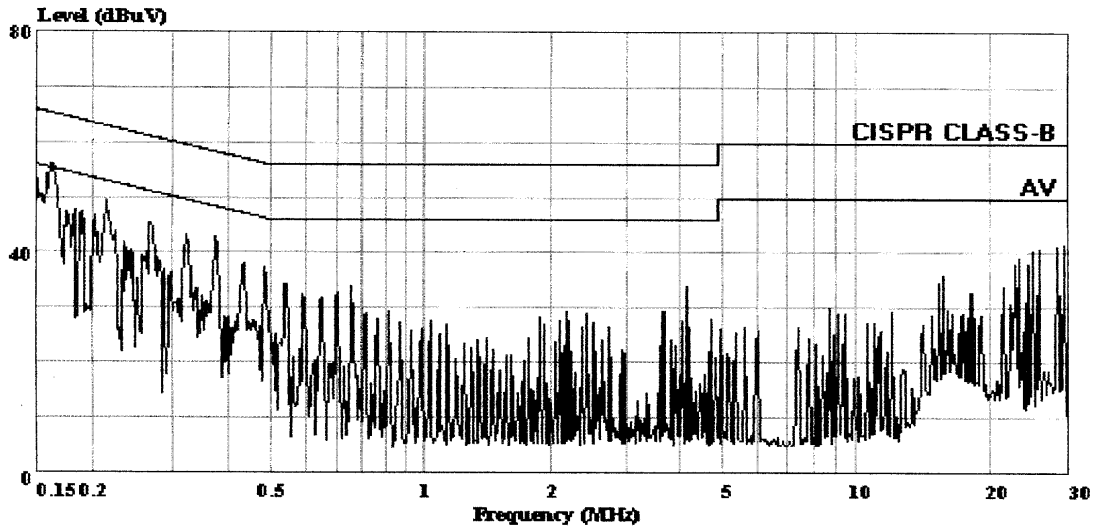
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.150	47.61	-8.38	55.99	47.28	0.30	0.03	0.00	Average
2 !	0.187	47.12	-7.05	54.17	46.86	0.22	0.03	0.00	Average
3	0.226	35.75	-16.83	52.58	35.53	0.18	0.04	0.00	Average
4	0.675	28.67	-17.33	46.00	28.52	0.10	0.05	0.00	Average
5	2.663	24.55	-21.45	46.00	24.40	0.10	0.05	0.00	Average
6 !	19.815	40.56	-9.44	50.00	40.17	0.20	0.19	0.00	Average

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Data#: 19 File#: topvictory.EMI Date: 2000-03-30 Time: 17:43:26



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

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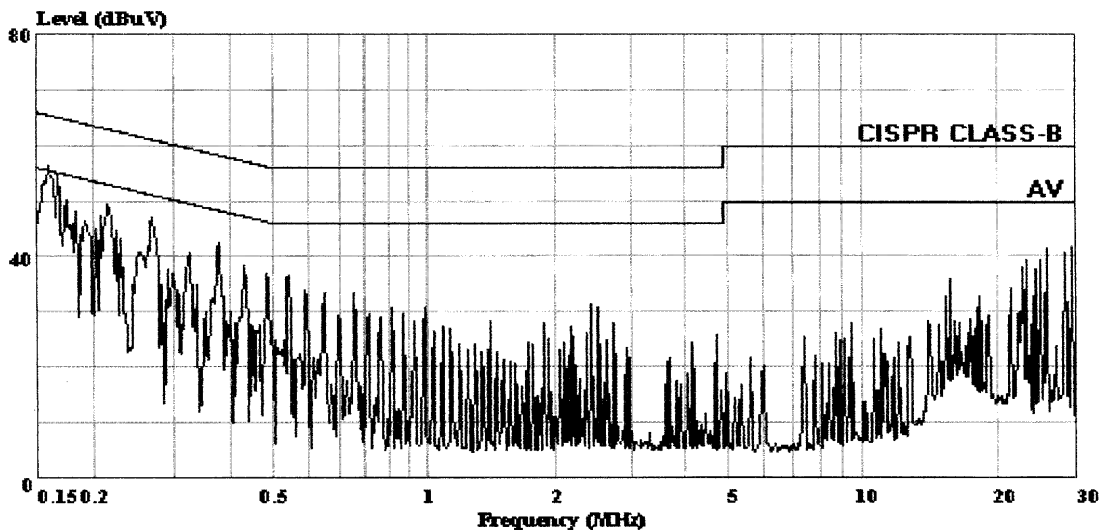
Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz (1280X1024; 60Hz)

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Data#: 16 File#: topvictory.EMI Date: 2000-03-30 Time: 17:30:22



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

Trace:

Ref Trace:

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz (1280X1024; 60Hz)



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Data#: 20 File#: topvictory.EMI Date: 2000-03-30 Time: 17:45:32
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz(1280X1024;60Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.160	55.54	-9.91	65.45	55.23	0.28	0.03	0.00	QP
2	0.213	48.39	-14.69	63.08	48.16	0.19	0.04	0.00	QP
3	0.378	41.53	-16.79	58.31	41.38	0.11	0.04	0.00	QP
4	0.756	32.59	-23.41	56.00	32.44	0.10	0.05	0.00	QP
5	4.263	33.73	-22.27	56.00	33.58	0.10	0.05	0.00	QP
6	29.199	38.52	-21.48	60.00	37.94	0.38	0.20	0.00	QP

Data#: 21 File#: topvictory.EMI Date: 2000-03-30 Time: 17:46:07
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz(1280X1024;60Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.160	48.21	-7.24	55.45	47.90	0.28	0.03	0.00	Average
2	0.213	42.65	-10.43	53.08	42.42	0.19	0.04	0.00	Average
3 !	0.378	40.00	-8.32	48.31	39.85	0.11	0.04	0.00	Average
4	0.756	29.93	-16.07	46.00	29.78	0.10	0.05	0.00	Average
5	4.263	25.89	-20.11	46.00	25.74	0.10	0.05	0.00	Average
6	29.199	33.61	-16.39	50.00	33.03	0.38	0.20	0.00	Average



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 17 File#: topvictory.EMI Date: 2000-03-30 Time: 17:39:37
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz(1280X1024;60Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.161	57.01	-8.42	65.42	56.70	0.28	0.03	0.00	QP
2	0.215	49.16	-13.84	63.00	48.94	0.19	0.04	0.00	QP
3	0.269	47.66	-13.49	61.15	47.47	0.16	0.04	0.00	QP
4	0.376	42.39	-15.97	58.36	42.24	0.11	0.04	0.00	QP
5	0.538	35.84	-20.16	56.00	35.70	0.10	0.04	0.00	QP
6	29.199	38.21	-21.79	60.00	37.63	0.38	0.20	0.00	QP

Data#: 18 File#: topvictory.EMI Date: 2000-03-30 Time: 17:40:22
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 64KHz(1280X1024;60Hz)

Page: 1

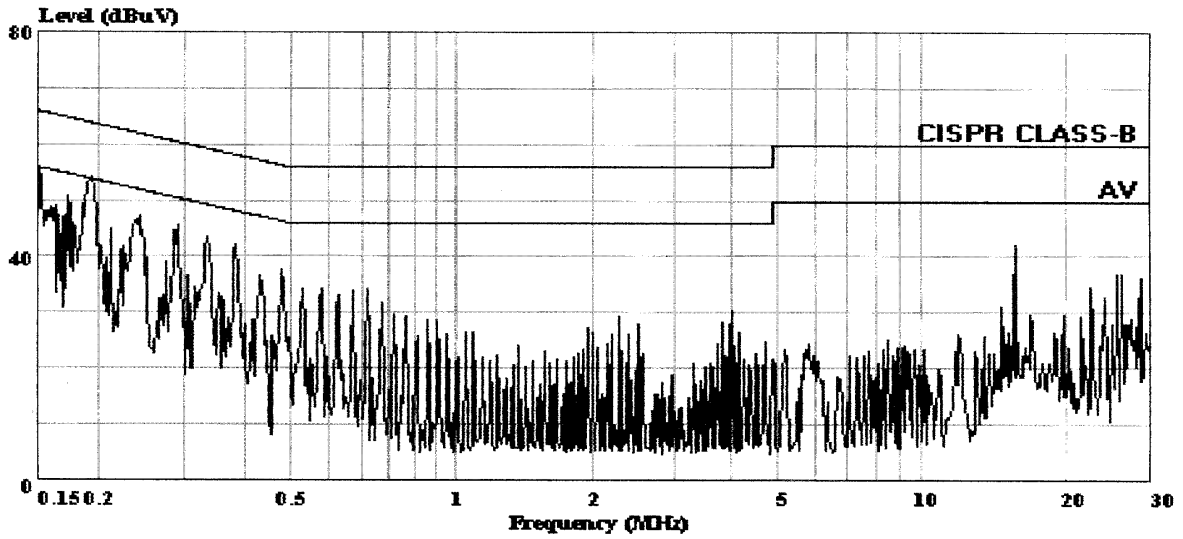
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.161	48.89	-6.54	55.42	48.58	0.28	0.03	0.00	Average
2 !	0.215	44.65	-8.35	53.00	44.43	0.19	0.04	0.00	Average
3 !	0.269	44.82	-6.33	51.15	44.63	0.16	0.04	0.00	Average
4 !	0.376	41.00	-7.36	48.36	40.85	0.11	0.04	0.00	Average
5	0.538	33.47	-12.53	46.00	33.33	0.10	0.04	0.00	Average
6	29.199	33.86	-16.14	50.00	33.28	0.38	0.20	0.00	Average

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TAIWAN TOKIN EMC ENG. CORP.

Data#: 7 File#: topvictory.EMI Date: 2000-03-30 Time: 17:11:07



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

Trace:

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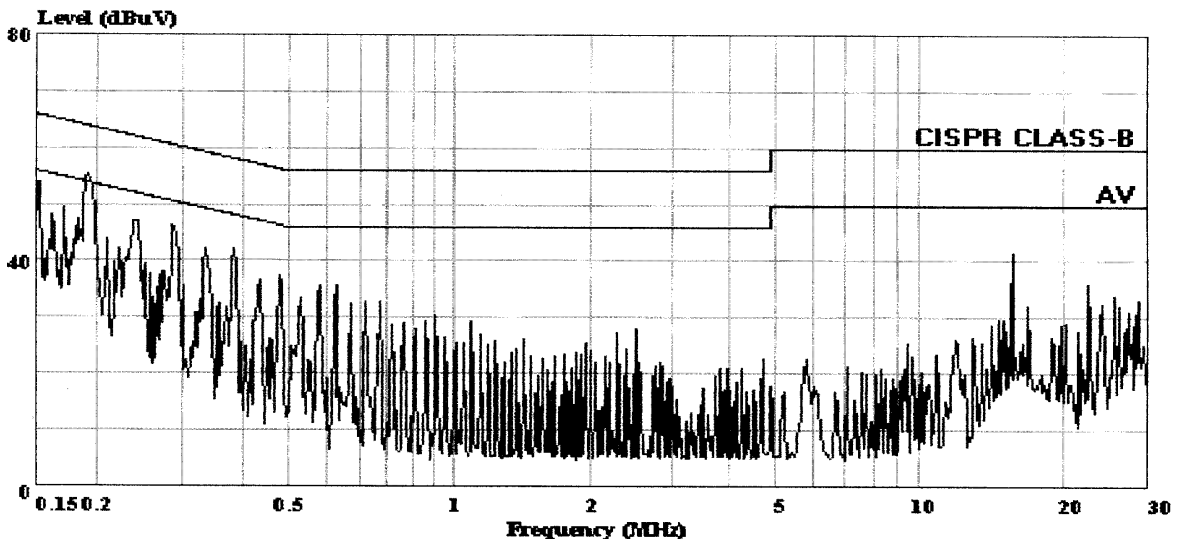
Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz (1024X768; 85Hz)

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TAIWAN TOKIN EMC ENG. CORP.

Data#: 4 File#: topvictory.EMI Date: 2000-03-30 Time: 16:40:57



TAIWAN TOKIN EMC ENG. CORP. (NO.4 SHIELDED ROOM)

Trace:

Ref Trace:

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz (1024X768; 85Hz)



No53-11, Tin-fu Tsun, Lin-kou Hsiang,
Ttaipei, County, Taiwan, R.O.C.
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TAIWAN TOKIN EMC ENG. CORP.

Data#: 8 File#: topvictory.EMI Date: 2000-03-30 Time: 17:14:10
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz(1024X768;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.150	48.33	-17.66	65.99	48.00	0.30	0.03	0.00	QP
2	0.191	53.54	-10.45	63.99	53.29	0.22	0.03	0.00	QP
3	0.286	43.12	-17.52	60.64	42.93	0.15	0.04	0.00	QP
4	0.720	33.40	-22.60	56.00	33.25	0.10	0.05	0.00	QP
5	4.127	30.10	-25.90	56.00	29.95	0.10	0.05	0.00	QP
6	15.700	38.46	-21.54	60.00	38.23	0.11	0.11	0.00	QP

Data#: 9 File#: topvictory.EMI Date: 2000-03-30 Time: 17:18:44
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 NEUTRAL
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz(1024X768;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.150	39.41	-16.58	55.99	39.08	0.30	0.03	0.00	Average
2	0.191	46.65	-7.34	53.99	46.40	0.22	0.03	0.00	Average
3	0.286	40.55	-10.09	50.64	40.36	0.15	0.04	0.00	Average
4	0.720	28.66	-17.34	46.00	28.51	0.10	0.05	0.00	Average
5	4.127	23.13	-22.87	46.00	22.98	0.10	0.05	0.00	Average
6	15.700	33.20	-16.80	50.00	32.97	0.11	0.11	0.00	Average



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TAIWAN TOKIN EMC ENG. CORP.

Data#: 5 File#: topvictory.EMI Date: 2000-03-30 Time: 16:58:49
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz(1024X768;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.192	54.02	-9.95	63.97	53.77	0.21	0.03	0.00	QP
2	0.288	45.71	-14.88	60.59	45.52	0.15	0.04	0.00	QP
3	0.384	41.75	-16.44	58.19	41.60	0.11	0.04	0.00	QP
4	0.623	35.22	-20.78	56.00	35.07	0.10	0.05	0.00	QP
5	2.641	28.51	-27.49	56.00	28.36	0.10	0.05	0.00	QP
6	15.702	38.84	-21.16	60.00	38.61	0.11	0.11	0.00	QP

Data#: 6 File#: topvictory.EMI Date: 2000-03-30 Time: 16:59:20
NO.4 SHIELDED ROOM

Condition: CISPR CLASS-B(AV) KNW-407 LINE
EUT : 17" COLOR MONITOR
POWER: 120Vac/60Hz
MEMO : 69KHz(1024X768;85Hz)

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1 !	0.192	48.13	-5.84	53.97	47.88	0.21	0.03	0.00	Average
2 !	0.288	42.56	-8.03	50.59	42.37	0.15	0.04	0.00	Average
3	0.384	38.09	-10.10	48.19	37.94	0.11	0.04	0.00	Average
4	0.623	31.51	-14.49	46.00	31.36	0.10	0.05	0.00	Average
5	2.641	25.22	-20.78	46.00	25.07	0.10	0.05	0.00	Average
6	15.702	34.27	-15.73	50.00	34.04	0.11	0.11	0.00	Average

3. RADIATED EMISSION TEST

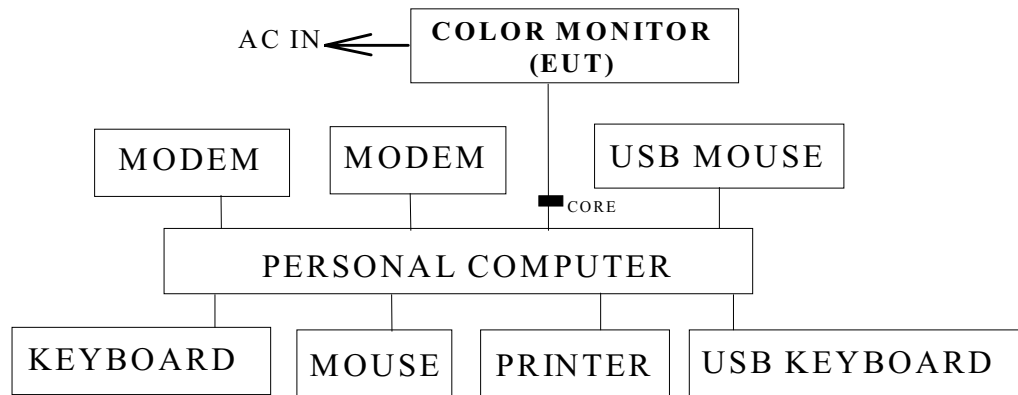
3.1. Test Equipment

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

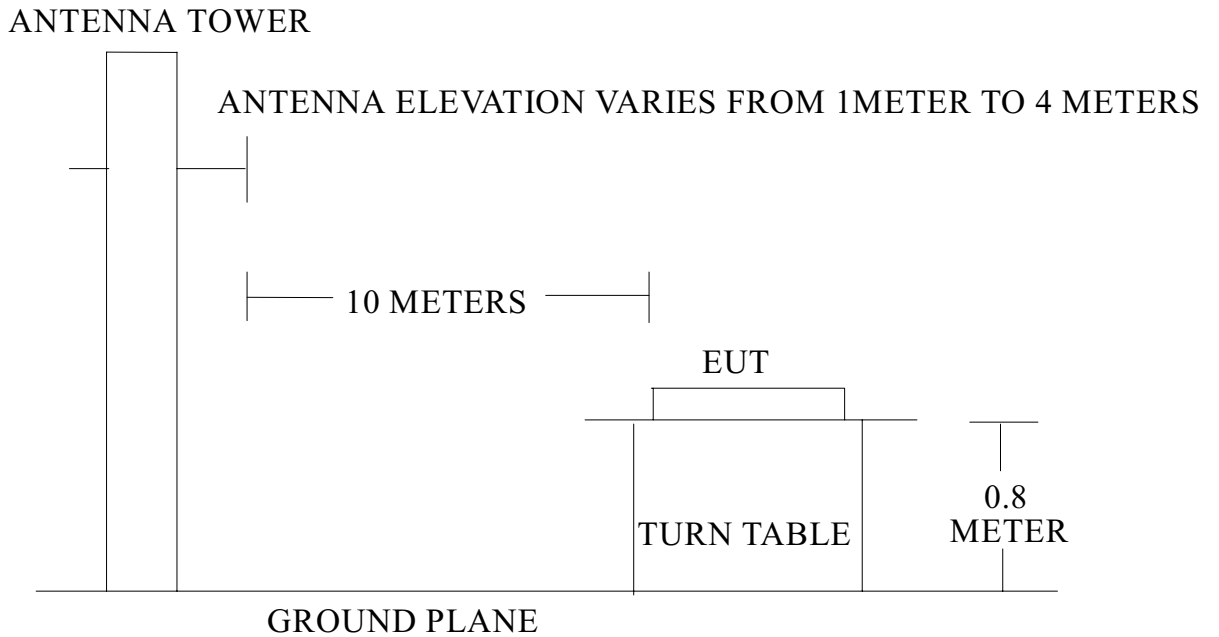
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	8595E	3829A03489	Oct.13, 99'	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS10	826148/005	May.05, 99'	1 Year
3.	Computer	TOKIN	586PC	N/A	N/A	NA
4.	Printer	HP	C6450A	TH96Q121ZC	N/A	N/A
5.	Amplifier	HP	8447D	2944A06891	N/A	N/A
6.	Broadband Antenna	Chase	VBA6106A	1240	Jul. 23, 99'	1 Year
7.	Log Periodic Antenna	Chase	UPA6109	1064	Jul. 23, 99'	1 Year

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



3.3. Radiation Limit (CISPR 22 Class B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS
MHz	Meters	dBuV/m
30 ~ 230	10	30
230 ~ 1000	10	37

- Remark :
- (1) The tighter limit shall apply 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 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 is listed in Section 2.5.

3.6. Test Procedure

The EUT and its simulators were 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 C63.4-1992 requirement.

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

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

Three kinds of horizontal working frequency were done during radiated measurement and all the test results are listed in section 3.7..

Test Mode :

- (1) 54KHz/800*600, 85Hz
- (2) 64KHz/1280*1024, 60Hz
- (3) 69KHz/1024*768, 85Hz

3.7. Radiated Emission Measurement Results

PASSED.

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

Date of Test :	Mar. 27, 2000	Temperature :	18.5°C
EUT :	17" Color Monitor	Humidity :	81%
Test Mode :	54KHz/800*600/85Hz		

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Horizontal dB μ V/m	Limits dB μ V/m	Margin dB
			Horizontal dB μ V	Horizontal dB μ V			
44.877	16.22	1.24	- 1.23		16.23	30.00	13.77
67.313	11.98	1.59	5.32		18.89	30.00	11.11
134.622	20.05	2.21	- 1.81		20.45	30.00	9.55
168.274	20.98	2.53	- 1.73		21.78	30.00	8.22
190.710	20.94	2.72	- 1.73		21.93	30.00	8.07
224.364	21.96	2.84	- 1.26		23.54	30.00	6.46
246.800	21.86	3.06	- 0.30		24.62	37.00	12.38
280.454	24.18	3.23	1.23		28.64	37.00	8.36
314.109	14.19	3.56	5.93		23.68	37.00	13.32
358.981	14.95	3.75	1.77		20.47	37.00	16.53
426.289	16.18	4.21	6.13		26.52	37.00	10.48
471.161	17.55	4.47	2.15		24.17	37.00	12.83
504.815	18.49	4.59	2.58		25.66	37.00	11.34
538.469	19.42	4.76	- 0.41		23.77	37.00	13.23
560.905	20.03	4.84	- 0.87		24.00	37.00	13.00

Remark : All reading are Quasi-Peak values.

Date of Test : Mar. 27, 2000 Temperature : 18.5°C
 EUT : 17" Color Monitor Humidity : 81%
 Test Mode : 54KHz/800*600/85Hz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
			Vertical dBμV				
33.660	18.77	1.07	3.12		22.96	30.00	7.04
44.878	18.16	1.24	5.30		24.70	30.00	5.30
67.314	12.93	1.59	10.15		24.67	30.00	5.33
112.174	17.33	2.03	3.89		23.25	30.00	6.75
168.264	20.77	2.53	- 0.84		22.46	30.00	7.54
190.693	23.18	2.72	- 2.13		23.77	30.00	6.23
224.360	21.54	2.84	- 1.58		22.80	30.00	7.20
280.450	21.73	3.23	0.20		25.16	37.00	11.84
314.084	14.79	3.56	5.73		24.08	37.00	12.92
358.969	15.61	3.75	1.80		21.16	37.00	15.84
415.059	16.45	4.17	2.90		23.52	37.00	13.48
448.713	17.23	4.35	3.91		25.49	37.00	11.51
504.803	18.65	4.59	3.68		26.92	37.00	10.08
527.239	18.98	4.78	0.75		24.51	37.00	12.49
594.547	20.13	5.19	0.07		25.39	37.00	11.61

Remark : All reading are Quasi-Peak values.

Date of Test : Mar. 23, 2000 Temperature : 22°C
 EUT : 17" Color Monitor Humidity : 65%
 Test Mode : 64KHz/1280*1024/60Hz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Horizontal dB μ V/m	Limits dB μ V/m	Margin dB
			Horizontal dB μ V	Horizontal dB μ V/m			
55.152	13.29	1.37	0.68	15.34	30.00	14.66	
70.904	12.27	1.62	0.90	14.79	30.00	15.21	
118.160	19.12	2.12	- 1.62	19.62	30.00	10.38	
133.912	20.00	2.19	- 2.95	19.24	30.00	10.76	
189.044	20.83	2.71	- 1.92	21.62	30.00	8.38	
228.404	22.14	2.85	0.00	24.99	30.00	5.01	
267.804	23.26	3.26	1.11	27.63	37.00	9.37	
315.058	14.16	3.61	12.24	30.01	37.00	6.99	
346.562	14.87	3.81	7.11	25.79	37.00	11.21	
370.190	15.11	3.99	7.60	26.70	37.00	10.30	
425.322	16.20	4.19	8.64	29.03	37.00	7.97	
472.578	17.57	4.45	6.98	29.00	37.00	8.00	
504.077	18.48	4.58	3.36	26.42	37.00	10.58	
574.961	19.89	5.09	1.13	26.11	37.00	10.89	

Remark : All reading are Quasi-Peak values.

Date of Test : Mar. 23, 2000 Temperature : 22°C
 EUT : 17" Color Monitor Humidity : 65%
 Test Mode : 64KHz/1280*1024/60Hz

Frequency MHz	Antenna Cable		Meter Reading	Emission Level		Limits dB μ V/m	Margin dB
	Factor dB/m	Loss dB	Vertical dB μ V	Vertical dB μ V/m			
31.489	19.75	1.00	5.13	25.88	30.00	4.12	
70.869	13.43	1.62	10.55	25.60	30.00	4.40	
110.249	17.39	1.97	2.10	21.46	30.00	8.54	
126.001	18.23	2.18	4.09	24.50	30.00	5.50	
133.901	19.07	2.19	4.22	25.48	30.00	4.52	
165.381	21.25	2.47	- 1.70	22.02	30.00	7.98	
189.016	22.34	2.71	- 1.71	23.34	30.00	6.66	
212.652	21.69	2.80	- 2.76	21.73	30.00	8.27	
267.782	22.93	3.26	- 0.95	25.24	37.00	11.76	
315.053	14.72	3.61	9.69	28.02	37.00	8.98	
346.557	15.70	3.81	4.17	23.68	37.00	13.32	
370.185	15.69	3.99	5.47	25.15	37.00	11.85	
441.069	17.27	4.32	1.46	23.05	37.00	13.95	
496.201	18.22	4.61	2.67	25.50	37.00	11.50	
543.457	19.45	4.89	0.22	24.56	37.00	12.44	

Remark : All reading are Quasi-Peak values.

Date of Test : Mar. 23, 2000 Temperature : 22°C
 EUT : 17" Color Monitor Humidity : 65%
 Test Mode : 69KHz/1024*768/85Hz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Horizontal dBuV/m	Limits dBuV/m	Margin dB
			Horizontal dBuV	Horizontal dBuV/m			
66.405	11.93	1.57	2.13		15.63	30.00	14.37
85.380	14.99	1.74	- 1.33		15.40	30.00	14.60
123.330	19.11	2.13	- 1.53		19.71	30.00	10.29
132.817	19.80	2.19	- 0.87		21.12	30.00	8.88
* 161.280	20.67	2.44	- 0.07		23.04	30.00	6.96
180.255	20.66	2.57	- 2.40		20.83	30.00	9.17
227.692	22.14	2.83	- 2.56		22.41	30.00	7.59
275.130	23.97	3.22	0.94		28.13	37.00	8.87
322.576	14.45	3.63	4.97		23.05	37.00	13.95
379.500	15.52	3.98	7.40		26.90	37.00	10.10
407.963	15.91	4.04	3.17		23.12	37.00	13.88
445.913	16.54	4.33	2.50		23.37	37.00	13.63
512.326	18.67	4.65	0.48		23.80	37.00	13.20
540.788	19.58	4.82	- 0.09		24.31	37.00	12.69
588.226	19.83	4.99	- 0.83		23.99	37.00	13.01

- Remark :
1. All reading are Quasi-Peak values.
 2. The worst emission was detected at 161.280MHz with corrected signal level of 23.04dBuV/m (limit was 30dBuV/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 55° .
 3. 0° is the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Date of Test : Mar. 23, 2000 Temperature : 22°C
 EUT : 17" Color Monitor Humidity : 65%
 Test Mode : 69KHz/1024*768/85Hz

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Vertical dBuV/m	Limits dBuV/m	Margin dB
			Vertical dBuV	Vertical dBuV/m			
66.405	12.87	1.57	5.29	19.73	30.00	10.27	
85.380	16.03	1.74	5.50	23.27	30.00	6.73	
113.842	17.56	2.04	5.04	24.64	30.00	5.36	
123.330	18.23	2.13	2.48	22.84	30.00	7.16	
* 132.818	18.95	2.19	5.12	26.26	30.00	3.74	
161.280	21.40	2.44	2.32	26.16	30.00	3.84	
189.751	23.06	2.73	- 1.88	23.91	30.00	6.09	
227.701	22.32	2.83	- 2.85	22.30	30.00	7.70	
256.163	22.51	3.00	- 0.86	24.65	37.00	12.35	
322.576	14.83	3.63	2.39	20.85	37.00	16.15	
360.526	15.52	3.74	3.01	22.27	37.00	14.73	
379.500	16.24	3.98	2.19	22.41	37.00	14.59	
474.375	18.21	4.45	2.56	25.22	37.00	11.78	
502.838	18.56	4.61	3.41	26.58	37.00	10.42	
578.738	19.71	5.12	- 0.06	24.77	37.00	12.23	

- Remark :
1. All reading are Quasi-Peak values.
 2. The worst emission was detected at 132.818MHz with corrected signal level of 26.26dBuV/m (limit was 30dBuV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 115° .
 3. 0° is the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

4. DEVIATION TO TEST SPECIFICATIONS

【NONE】

5. MODIFICATIONS TO EUT

1. Added a ferrite core on the signal cable of video board input.
2. Added a ferrite core on the signal cable (outside).
3. Added a ferrite core on Focus & G2.
4. Video board with metal shielding case.
5. Added ground wire from CRT arcing wire (right side) to video board shielding case.
6. Added three ground wires from the rear side of video shielding case (right, left & middle side) to mother board.
7. Added two ground wires from CRT arcing wire (right & left side) to mother board.

6. PHOTOGRAPHS

6.1. Photos of Powerline Conducted Measurement



FRONT VIEW OF CONDUCTED TEST



BACK VIEW OF CONDUCTED TEST

6.2. Photos of Radiated Measurement at Open Field Test Site

Test Mode: 69KHz/1024*768/85Hz



FRONT VIEW OF RADIATED TEST



BACK VIEW OF RADIATED TEST



SETUP WITH MAXIMUM DETECTED EMISSION AT HORIZONTAL POLARIZATION



SETUP WITH MAXIMUM DETECTED EMISSION AT VERTICAL POLARIZATION