

HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

INT'L STANDARD CERTIFICATION TEAM
SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNKI-DO, 467-701, KOREA
TEL: +82 31 639 8518 FAX: +82 31 639 8525

CERTIFICATION

Manufacture;

HYUNDAI IMAGE QUEST CO., LTD. SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNKI-DO, 467-701, KOREA Dates of Tests: MARCH 13, 2001

Test Report No.: HCT-F01-0301

Test Site: HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO.. LTD.

FCC ID :

PJIL18C0D080 L80A / L18C0D080

MODEL / TYPE:

FCC Rule Part(s): Part 15 & 2; ET Docket 95-19

Classification: FCC Class B Peripheral Device (JBP)

Standard(s): FCC Class B: 1998 (CISPR 22)

Equipment(EUT) Type: 18.1" LCD Monitor

Max Resolution: 1280X1024 Non-interlaced (@80KHz/75Hz)

Port/ Connector(s) 15-pin D-sub VGA connector, 20-pin DVI-D (Digital RGB)

S-Video, Composite Video

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-1992.(See Test Report if any modifications were made for compliance)

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HYUNDAI C-Tech. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse of 1988,21 U.S.C.853(a).

Report prepared by : Ki-Soo Kim Manager of EMC Tech. Part



TABLE OF CONTENTS

PAGE

1. GENERAL INFORMATION	3
1.1 Product Description	3
1.2 Related submittal(s)/Grant(s)	3
1.3 Tested System Details	4
1.4 Test Methodology	4
1.5 Test Facility	4
2. SYSTEM TEST CONFIGURATION	5
2.1 Justification	5
2.2 EUT Exercise Software	ر
2.3 Cable Description	3
2.4 Noise Suppression Parts on Cable	6
2.5 Equipment Modifications	6
2.6 Configuration of Tested System	7
3. PRELIMINARY TESTS	8
3.1 Power line Conducted Emissions Tests	9
3.2 Radiated Emissions Tests	9
4. FINAL CONDUCTED AND RADIATED EMISSION TESTS SUMMARY	9
4.1 Conducted Emission Tests	10
4.2 Radiated Emission Tests	10
5. FIELD STRENGTH CALCULATION	11
6. LIST OF TEST EQUIPMENT	12

ATTACHMENT A	ID Label / Location Info.
ATTACHMENT B	External Photos.
ATTACHMENT C	Block Diagram
ATTACHMENT D	
ATTACHMENT E	
ATTACHMENT F	Internal Photos.

GENERAL INFORMATION 1.

1.1 Product Description

The Hyundai Image Quest CO., LTD. Model L80A (referred to as the EUT in this report) is a 18.1" LCD Monitor HOR. Freq. 80KHz w/max. Resolution of 1280X1024 Non-Interlaced. Product specification information described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	PLASTIC
LIST OF EACH OSC. OR XTAL. FREQ.(FREQ. 1MHz)	12MHz / 14.318 MHz / 24.576 MHz / 20.48MHz
POWER REQUIREMENT	100 - 240 VAC 60/50Hz 2.5A
NUMBER OF LAYERS	MAIN BOARD 4 LAYER OSD BOARD 2 LAYER CONNECTOR BOARD 2 LAYER POWER BOARD 1 LAYER INVERTER BOARD 2 LAYER
MAX. RESOLUTION	1280X1024 NON-INTERLACED(@80KHz/ 75 Hz)
H-SYNC FREQUENCY RANGE	31.0KHz 80KHz
V-SYNC FREQUENCY RANGE	56 Hz 87Hz
LCD SIZE	18.1" (LCD Type : HYUNDAI/ HT18E22-100)

1.2 **Related Submittal(s) / Grant(s)**

ORIGINAL SUBMITTAL ONLY

1.3 Tested System Details

The Model names for all equipment, plus descriptions used in the tested system (including inserted cards) are:

DEVICE TYPE	MANUFACTURER	MODEL NUMBER	FCC ID / DoC	CONNECTED TO
MONITOR (EUT)	HYUNDAI IMAGE QUEST CO., LTD.	L80A	CKLL18C0D080	HOST
PC(HOST)	COMPAQ	PD1000	DoC	N/A
KEY BOARD	H/P	SK-2501-2D-K	GYUR385K	HOST
USB KEY BOARD	GATEWAY	SK-9900U	DoC	HOST
PRINTER	H/P	HP895C	DoC	HOST
MODEM	3COM CORPORATION	56K FAX MODEM	DoC	HOST
EAR PHONE	HYUNDAI MULTICAV	BOOM MIC HEADSET	N/A	HOST
USB HDD (3EA)	USB DRIVE	FLASH DM	N/A	HOST
VIDEO CARD	C 2000 TECHNOLOGIES LTD.	N625	DoC	HOST
MOUSE	H/P	M-S34	DZL211029	HOST

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at an antenna to EUT distance of 10 meters.

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1,MAEKOK-RI,HOBUP-MYUN,ICHON-SI,KYOUNGKI-DO, 467-701,KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 24,2000(Confirmation Number: EA90661)

2.SYSTEM TEST CONFIGURATION

2.1 Justification

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the following components and I/O cards inside the E.U.T were used.

DEVICE TYPE	MANUFACTURE	MODEL/PART NUMBER
MAIN BOARD	DAE HEUNG CO., Ltd.	E4208618601-
POWER BOARD	С&С ТЕСН.	3610200090
CONNECTOR BOARD	DAE HEUNG CO., Ltd.	3010700769
OSD BOARD	DAE HEUNG CO., Ltd.	3610200090
INVERTOR BOARD	GREEN C&C TECH.	3610200091
LCD BOARD	HYUNDAI CO., Ltd.	HT18E22-100

2.2 EUT exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a 3-1/2 inch disc, was inserted into drive A and is auto starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is :(1) Display test, (2) RS 232 test (3) Key board test,(4) Printer test,(5) FDD test,(6) HDD test. The complete cycle takes about 20 seconds and is repeated continuously. As the keyboard and mouse are strictly input devices, no data is transmitted to them during test. They are however, continuously scanned for data input activity. The video resolution modes setup and change program was used during the radiated and conducted emission testing.

2.3 Cable Description

The marked "(D)" means the Data Cable and "(P)" means the Power Cable.

	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
MONITOR(EUT)	N	Y	1.8(P), 1.5(D), 2.0(D)
PC(HOST)	N	N/A	1.8(P)
PRINTER	N	Y	2.0(P),1.8(D)
KEY BOARD	N/A	Y	2.0(D)
USB KEY BOARD	N/A	Y	2.0(D)
S-VHS CABLE	N/A	Y	1.0(D)
USB CABLE	N/A	Y	1.5(D)
COMPOSITE	N/A	Y	1.5(D)
AUDIO CABLE	N/A	Y	2.0(D)
EAR PHONE	N/A	Y	1.8(D)
MODEM	N	Y	2.0(P),0.8(D)
MOUSE	N/A	Y	1.8(D)

2.4 Noise Suppression Parts on Cable. (I/O CABLE)

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
MONITOR(EUT)	Y	BOTH END	Y	BOTH END
PRINTER	Y	PC END	Y	BOTH END
KEY BOARD	Y	PC END	N	N/A
USB KEY BOARD	N	N/A	N	N/A
S-VHS CABLE	N	N/A	N	N/A
USB CABLE	Y	BOTH END	N	BOTH END
COMPOSITE	Y	BOTH END	Y	BOTH END
AUDIO CABLE	Y	BOTH END	Y	BOTH END
EAR PHONE	N	N/A	N	N/A
MODEM	Y	PC END	Y	BOTH END
MOUSE	N	N/A	N	N/A

2.5 Equipment Modifications

N/A

FCC ID: PJIL18C0D080 REPORT NO: HCT-F01-0301 DATE: MARCH 13, 2001

2.6 Configuration of Test system

Line Conducted Test EUT was connected to LISN, all other supporting equipment were

connected to another LISN.

Preliminary Power line Conducted Emission tests were performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse

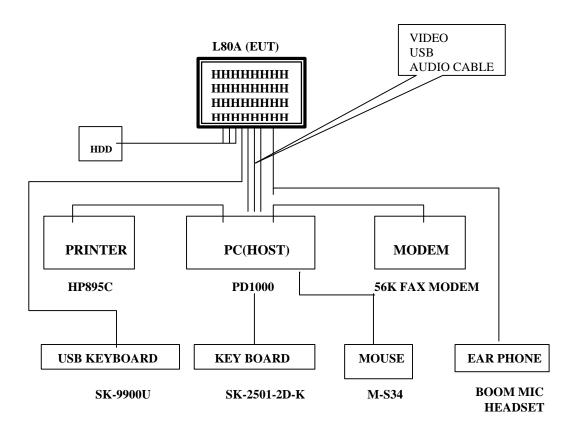
operating conditions.

Radiated Emission Test : Preliminary Radiated Emissions tests were conducted using the

procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating condition. Final Radiated Emission tests were conducted at 10 meter

open area test site.

[Configuration of Tested System]



3. PRELIMINARY TESTS

3.1 AC Power line Conducted Emission Tests

During Preliminary Tests, the following operating mode were investigated

Processor Speed (MHz)	Video Resolution (w/max)	The worst operating condition
Pentium II 200 MHz	1280X1024 Non-Interlaced (80KHz/75Hz)	X
Pentium II 200 MHz	12801024 Non-Interlaced (63.9KHz/60Hz)	
Pentium II 200 MHz	1024X768 Non-Interlaced (68.7KHz/85Hz)	
Pentium II 200 MHz	800 x 600 Non-Interlaced (53.7 KHz/85Hz)	
Pentium II 200 MHz	640 x 480 Non-Interlaced (31.5KHz/60Hz)	

4.2 Radiated Emission Tests

Processor Speed (MHz)		Video Resolution (w/max)	The worst operating condition
Pentium II 200 MHz	1280X1024	Non-Interlaced (80KHz/75Hz)	X
Pentium II 200 MHz	12801024	Non-Interlaced (63.9KHz/60Hz)	
Pentium II 200 MHz	1024X768	Non-Interlaced (68.7KHz/85Hz)	
Pentium II 200 MHz	800 x 600	Non-Interlaced (53.7 KHz/85Hz)	
Pentium II 200 MHz	640 x 480	Non-Interlaced (31.5KHz/60Hz)	

NOTE:

The monitor(EUT) has video interface ports(15-pin D-sub VGA connector, 20-pin DVI-D (Digital RGB), S-Video and Composite Video) to support various kinds of graphics adapters. So the test were performed with each video interface port. The final measurement was performed with VGA 15 pin D-sub video interface port that produce the worst case emission.

Tested by Keun- Ho Park / Engineer Date: FEB. 26, 2001

4. FINAL CONDUCETD AND RADIATED EMISSION TESTS SUMMARY

4.1 Conducted Emission Test

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Humidity Level Temperature: 20 : 32%

Limit apply to : CISPR 22 **Type of Tests** : CLASS B Date : FEB. 27, 2001

Result : PASSED BY -5.0 dB **EUT** : 18.1" LCD MONITOR

Operating Condition : 1280X1024 Non-Interlaced (Hf: 80KHz, Vf: 75Hz) **Detector** : CISPR Quasi-Peak (6 dB Bandwidth : 9 KHz)

CISPR Average(6 dB Bandwidth: 9 KHz)

Line Conducted Emission Tabulated Data

Power Line Conducted Emissions				CISPR 22	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuV)	Margin (dB)	Detector Mode
14.64	53.6	Н	60	-6.4	Quasi-Peak
14.39	41.0	Н	50	-9.0	Average
14.51	55.0	N	60	-5.0	Quasi-Peak
0.885	37.4	N	46.0	-8.6	Average

NOET:

1. All video modes and resolutions were investigated and the worst-case emissions are reported Other video modes & resolution were tested and found to be in compliance.

Measured by: Keun-Ho Park / Engineer Date: FEB. 27, 2001

TEL: +82 31 639 8518 FAX: +82 31 639 8525

HYUNDAI C-TECH. CO..LTD. EMC LAB San 136-1,Ami-Ri-Bubal-Eub,Ichon-Si,Kyongki-Do

HYUNDAI IMAGE QUEST CO., LTD. Manufacturer:

Shield Room Test Site: Operator: Test Specification:

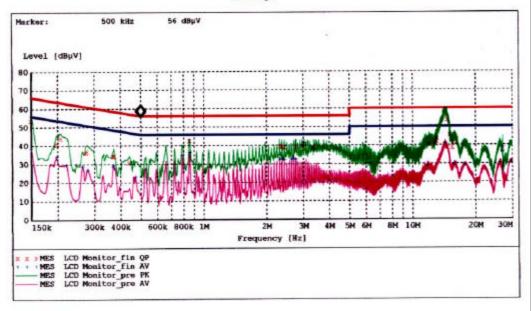
Keun-Ho Park CISPR 22 CLASS B

Comment: HOT

2/27/01 / 9:47:38PM Start of Test:

SCAN TABLE: "MIC CLASS B" Short Description:

KN22 CLASS B Voltage IF Transducer Step Detector Meas. Start Stop Bandw. Time Frequency Frequency Width C/E FACTOR 100.0 ms 9 kHz 150.0 kHz 500.0 kHz 3.0 kHz MaxPeak Average 500.0 kHz 5.0 MHz 5.0 kHz MaxPeak 10.0 ms 9 kHz C/E FACTOR Average



MEASUREMENT RESULT: "LCD Monitor_fin QP" 2/27/01 9:53PM Level Transd Limit Margin Line PE Frequency MHZ dB_µV dB dBµV dB 0.150000 53.60 0.5 12.4 1 0.198000 40.70 0.5 23.0 1 0.207000 44.00 0.5 19.3 0.273000 24.9 36.20 0.5 61 36.90 24.1 0.276000 0.5 61 23.9 34.60 0.5 59 0.369000 24.0 0.372000 34.40 0.5 59 0.441000 30.80 0.5 57 26.2 0.855000 42.80 0.5 56 13.2 2.310000 39.70 0.6 16.3 2.375000 0.6 56 16.5 39.50 17.0 2.445000 39.00 0.6 56 1 2.775000 0.6 56 16.5 39.50 0.6 56 16.1 2.970000 39.90

Page 1/2 2/27/01 9:53PM LCD Monitor

MEASUREMENT	RESULT	: "LCD	Monito	or_fin	QP"	
(continued) Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
3.035000	40.70	0.6	56	15.3	1	
3.365000	39.00	0.6	56	17.0	1	
12.010000	40.30	1.3	60	19.7	1	
13.015000	40.60	1.4	60	19.4	1	
13.065000	42.10	1.4	60	17.9	1	
13.195000	43.70	1.4	60	16.3	1	
14.640000	53.60	1.5	60	6.4	1	
15,105000	45.60	1.5	60	14.4	1	
15.500000	38.70	1.5	60	21.3	1	
15.880000	41.50	1.6	60	18.5	1	

Frequency	Level	Transd	Limit	Margin	Line	PE
MHZ	dΒμV	dB	dΒμV	dB		
0.150000	38.40	0.5	56	17.6	1	
0.198000	34.00	0.5	54	19.7	1	
0.219000	29.70	0.5	53	23.2	1	
0.264000	29.00	0.5	51	22.3	1	
0.279000	27.20	0.5	51	23.6	1	
0.369000	28.80	0.5	49	19.7	1	
0.372000	29.40	0.5	49	19.1	1	
0.474000	23.40	0.5	46	23.0	1	
0.790000	34.80	0.5	46	11.2	1	
0.860000	36.30	0.5	46	9.7	1	
2.310000	32.30	0.6	46	13.7	1	
2.375000	32.80	0.6	46	13.2	1	
2.440000	32.30	0.6	46	13.7	1	
2.640000	32.40	0.6	46	13.6	1	
2.705000	32.90	0.6	46	13.1	1	
2.770000	32.50	0.6	46	13.5	1	
11.820000	28.90	1.3	50	21.1	1	
14.390000	41.00	1.5	50	9.0	1	
15.855000	29.70	1.6	50	20.3	1	
17.845000	29.30	1.7	50	20.7	1	
26.300000	30.40	2.1	50	19.6	1	
26.995000	36.30	2.1	50	13.7	1	
27.075000	38.80	2.2	50	11.2	1	
29.570000	31.20	2.3	50	18.8	1	-

Page 2/2 2/27/01 9:53PM LCD Monitor

HYUNDAI C-TECH. CO., LTD. EMC LAB San 136-1, Ami-Ri-Bubal-Eub, Ichon-Si, Kyongki-Do

L80A

Manufacturer:

HYUNDAI IMAGE QUEST CO., LTD.

Test Site: Operator:

Shield Room Keun-Ho Park Test Specification: CISPR 22 CLASS B

Comment:

NEUTRAL

Start of Test:

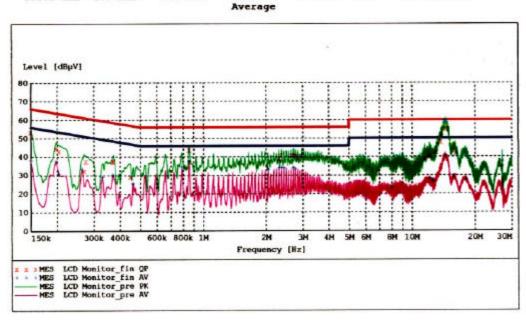
2/27/01 / 9:54:49PM

SCAN TABLE: "MIC CLASS B" Short Description: Step Start Stop Width Frequency Frequency Width 150.0 kHz 500.0 kHz 3.0 kHz 500.0 kHz 5.0 MHz 5.0 kHz

KN22 CLASS B Voltage Detector Meas. IF Transducer Time Bandw. C/E FACTOR MaxPeak 100.0 ms 9 kHz

Average MaxPeak

10.0 ms 9 kHz C/E FACTOR



MEASUREMENT 2/27/01 10:02		"LCD	Monito	r_fin	QP"	
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	53.40	0.5	66	12.6	1	
0.198000	44.60	0.5	64	19.1	1	
0.204000	43.10	0.5	63	20.4	1	
0.270000	32.20	0.5	61	28.9	1	
0.276000	37.40	0.5	61	23.5	1	
0.369000	37.30	0.5	59	21.2	1	
0.372000	37.30	0.5	59	21.2	1	
0.450000	29.10	0.5	57	27.8	1	
0.855000	43.60	0.5	56	12.4	1	
2.305000	39.00	0.6	56	17.0	1	
2.375000	40.80	0.6	56	15.2	1	
2.640000	40.70	0.6	56	15.3	1	
2.705000	40.80	0.6	56	15.2	1	
2.770000	40.50	0.6	56	15.5	1	

Page 1/2 2/27/01 10:02PM LCD Monitor

MEASUREMENT (continued)	RESULT:	"LCD	Monito	or_fin	QP"	
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.840000	39.70	0.6	56	16.3	1	
2.965000	40.40	0.6	56	15.6	1	
11.550000	38.90	1.3	60	21.1	1	
12.140000	40.40	1.3	60	19.6	1	
12.200000	40.00	1.3	60	20.0	1	
13.135000	42.20	1.4	60	17.8	1	
13.705000	47.90	1.4	60	12.1	1	
13.975000	51.20	1.4	60	8.8	1	
14.510000	55.00	1.5	60	5.0	1	
16.200000	41.60	1.6	60	18.4	1	

MEASUREMENT 2/27/01 10:02	PM	: "LCD	Monito	or_rin	AV.	
Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dΒμV	dB	dBµV	dB		
0.150000	38.10	0.5	56	17.9	1	-
0.198000	37.60	0.5	54	16.1	1	
0.204000	30.80	0.5	53	22.7	1	
0.264000	33.40	0.5	51	17.9	1	
0.330000	29.00	0.5	50	20.5	1	
0.369000	30.10	0.5	49	18.5	1	
0.372000	30.20	0.5	49	18.2	1	
0.462000	25.50	0.5	47	21.1	1	
0.790000	34.60	0.5	46	11.4	1	
0.855000	37.40	0.5	46	8.6	1	
2.045000	33.20	0.6	46	12.8	1	
2.310000	33.90	0.6	46	12.1	1	
2.375000	34.30	0.6	46	11.7	1	
2.440000	33.70	0.6	46	12.3	1	
2.705000	34.10	0.6	46	11.9	1	
2.770000	33.40	0.6	46	12.6	1	
12.200000	28.10	1.3	50	21.9	1	
12.600000	27.00	1.4	50	23.0	1	
12.730000	26.70	1.4	50	23.3	1	
14.455000	40.50	1.5	50	9.5	1	
15.860000	28.90	1.6	50	21.1	1	
18.215000	27.70	1.7	50	22.3	1	
26.995000	34.90	2.1	50	15.1	1	
27.075000	37.60	2.2	50	12.4	1	

Page 2/2 2/27/01 10:02PM LCD Monitor

TEL: +82 31 639 8518 FAX: +82 31 639 8525

4.2 Radiated Emissions Tests

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

Humidity Level : 36 % Temperature : 13

Limit apply to : CISPR 22 Type of Tests : CLASS B

Date : MAR. 6, 2001 Result : PASSED BY - 3.5dB

EUT : 18.1" LCD MONITOR

Operating Condition : 1280X1024 Non-Interlaced (Hf :80 kHz, Vf : 75 Hz)

Detector : CISPR Quasi-Peak (6 dB Bandwidth : 120 KHz)

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBuV	dB	dB	(H/V)	dBuV/m	dB	dB
48.0	11.41	12.59	1.40	V	25.4	30.0	-4.6
129.2	8.03	13.87	2.40	V	24.3	30.0	-5.7
158.3	9.13	14.77	2.60	V	26.5	30.0	-3.5
161.6	6.40	14.80	2.70	V	23.9	30.0	-6.1
169.1	4.50	14.90	2.70	V	22.1	30.0	-7.9
206.9	4.61	15.99	3.00	V	23.6	30.0	-6.4
229.9	5.01	17.19	3.30	V	25.5	30.0	-4.5
243.4	8.63	17.57	3.50	V	29.7	37.0	-7.3
384.1	10.86	16.54	4.20	V	31.6	37.0	-5.4
498.4	7.47	18.23	4.90	V	30.6	37.0	-6.4
498.4	6.97	18.23	4.90	Н	30.1	37.0	-6.9
628.5	2.50	21.30	5.90	V	29.7	37.0	-7.3
640.0	4.23	21.47	5.90	V	31.6	37.0	-5.4
640.0	4.13	21.47	5.90	Н	31.5	37.0	-5.5

NOTE:

- 1.All video modes and resolutions were investigated and the worst-case emissions are reported.
- 2.Other video modes & resolution were tested and found to be in compliance.
- 3. The EUT was test up to 2GHz and no significant emission was found.

Measured by: Keun-Ho Park / Engineer Date: MAR. 6, 2001

5. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

where FS = Field Strength

RA = **Receiver Amplitude**

AF = Antenna Factor

CF = **Cable Attenuation Factor**

Assume a receiver reading of 21.5 dBuV is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The 30 dBuV/m value was mathematically converted to its corresponding level in uV/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 dBuV/m$$

Level in uV/m = Common Antilogarithm [(30 dBuV/m)/20] = 31.6 uV/m

6. LIST OF TEST EQUIPMENT

TYPE	MANUFACTURE	MODEL	CAL. DATE
EMI Test Receiver	Rohde & Schwarz	ESH3	2000.6.29
EMI Test Receiver	Rohde & Schwarz	ESVP	2001.2.14
EMI Test Receiver	Rohde & Schwarz	ESI40	2001.1.18
EMI Test Receiver	Rohde & Schwarz	ESVS30	2000.6.29
Spectrum Monitor	Rohde & Schwarz	EZM	N.A
Graphic Plotter	Rohde & Schwarz	DOP2	N.A
Printer	Rohde & Schwarz	PDN	N.A
Spectrum Analyzer	H.P	8591EM	2000.7.11
LISN	EMCO	3825/2	2000.10.13
LISN	Rohde & Schwarz	ESH2-Z5	2000.7.14
Amplifier	Hewlett-Packard	8447E	2001.3.2
Dipole Antennas	Rohde & Schwarz	VHAP	2000.6.29
Dipole Antennas	Rohde & Schwarz	UHAP	2000.6.29
Biconical Antenna	Rohde & Schwarz	BBA-9106	2000.6.29
Log-Periodic Antenna	Rohde & Schwarz	UHALP-9107	2000.6.29
Antenna Position Tower	EMCO	1051-12	N.A
Turn Table	EMCO	1060-06	N.A
Line Filter	KEENE	ULW 2X30-60	N.A
Power Analyzer	Voltech	PM 3300	2000.12.20
Reference Network Impedan	ceVoltech	IEC 555	N.A
AC Power Source	PACIFIC	Magnetic Module	N.A
AC Power Source	PACIFIC	360AMX	N. A