

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
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CERTIFICATION (Permissive Change Class)

Manufacture;

IMAGEQUEST CO., LTD.
SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI,
KYOUNKI-DO, 467-701, KOREA

Date of Issue: NOVEMBER 22, 2001**Test Report No.: HCT-F01-1103****Test Site: HYUNDAI CALIBRATION & CERTIFICATION
TECHNOLOGIES CO., LTD.****FCC ID :****MODEL / TYPE :**

PJISLIMVIEW527B
SlimView 527

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:****15" LCD Monitor****Max Resolution:****1024X768 (@60KHz/ 75Hz)****Port/ Connector(s)****15-pin D-sub VGA connector****LCD PANEL****Hyundai Display Technology Inc.(HT15X13-100)**

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



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1. GENERAL INFORMATION

1.1 Product Description

The ImageQuest CO., LTD. Model SlimView 527 (referred to as the EUT in this report) is a 15" LCD Monitor HOR. Freq. 60KHz w/max. Resolution of 1024X768 . 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, 20MHz
POWER REQUIREMENT	DC 12V/5V --- 2.0A/2.0A
NUMBER OF LAYERS	MAIN BOARD 4 LAYER OSD BOARD 1 LAYER POWER BOARD 1 LAYER INVERTER BOARD 4 LAYER
MAX. RESOLUTION	1024X768 (@60KHz/ 75 Hz)
H-SYNC FREQUENCY RANGE	31KHz 60KHz
V-SYNC FREQUENCY RANGE	56Hz 75Hz
LCD TYPE	15" (LCD Type : HT15X13-100)

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)	IMAGEQUEST CO., LTD.	SlimView 527	PJISLIMVIEW527B	HOST
PC(HOST)	H/P	DTPC-17	DoC	N/A
KEY BOARD	H/P	SK-2501-2D-K	GYUR385K	HOST
PRINTER	H/P	HP895C	DoC	HOST
MODEM	3COM CORPORATION	56K FAX MODEM	DoC	HOST
VIDEO CARD	DIAMOND	3D3000	DoC	HOST
MOUSE	H/P	INTELLIMOUSE	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	ImageQuest CO., Ltd.	3041001039
POWER BOARD	C&C TECH CO.,LTD.	3610200087
OSD BOARD	ImageQuest CO., Ltd.	3010700781
INVERTOR BOARD	ImageQuest CO., Ltd.	3610400244
LCD BOARD	Hyundai Display Technology Inc.	HT15X13-100

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)
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)
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	N	PC END	Y	BOTH END
KEY BOARD	Y	PC END	Y	PC END
MODEM	Y	PC END	Y	BOTH END
MOUSE	N	N/A	Y	PC END

2.5 Equipment Modifications

N/A

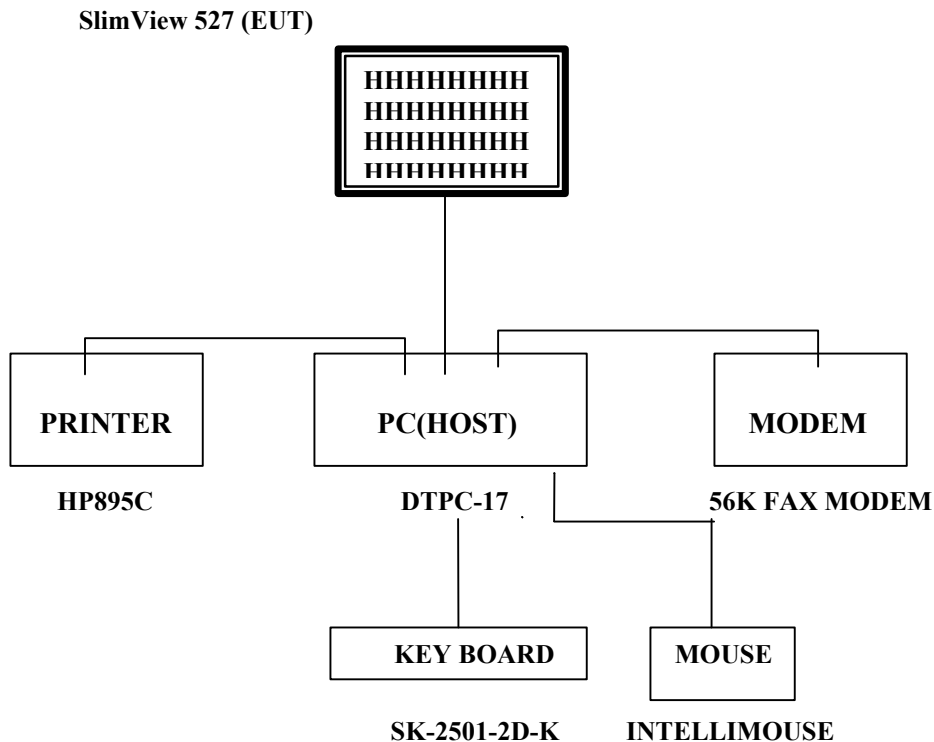
2.6 Configuration of Test system

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 350 MHz	1024X768 (60KHz/75Hz)	X
	1024X768 (48.4KHz/60Hz)	
	1024X768 (56.5KHz/70Hz)	
	720X400 (31.5KHz/70Hz)	
	800 x 600 (46.7 KHz/75Hz)	
	640 x 480 (31.5KHz/60Hz)	

4.2 Radiated Emission Tests

During Preliminary Tests, the following operating mode were investigated

Processor Speed (MHz)	Video Resolution (w/max)	The worst operating condition
Pentium 350 MHz	1024X768 (60KHz/75Hz)	X
	1024X768 (48.4KHz/60Hz)	
	1024X768 (56.5KHz/70Hz)	
	720X400 (31.5KHz/70Hz)	
	800 x 600 (46.7 KHz/75Hz)	
	640 x 480 (31.5KHz/60Hz)	

Tested by Kyoung-Houn SEO / Engineer

Date : NOVEMBER 5, 2001

4. FINAL CONDUCTED 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 : 35% Temperature : 22
 Limit apply to : CISPR 22
 Type of Tests : CLASS B
 Date : NOVEMBER 12 , 2001
 Result : PASSED BY -3.9dB
 EUT : 15" LCD MONITOR

Operating Condition : 1024X768 (Hf : 60KHz, 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
0.16	51.6	HOT	56.0	3.9	Average
1.27	41.8	HOT	46.0	4.2	Average
1.20	41.7	HOT	46.0	4.3	Average
0.72	40.9	HOT	46.0	5.1	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 : Kyoung-Houn SEO / Engineer

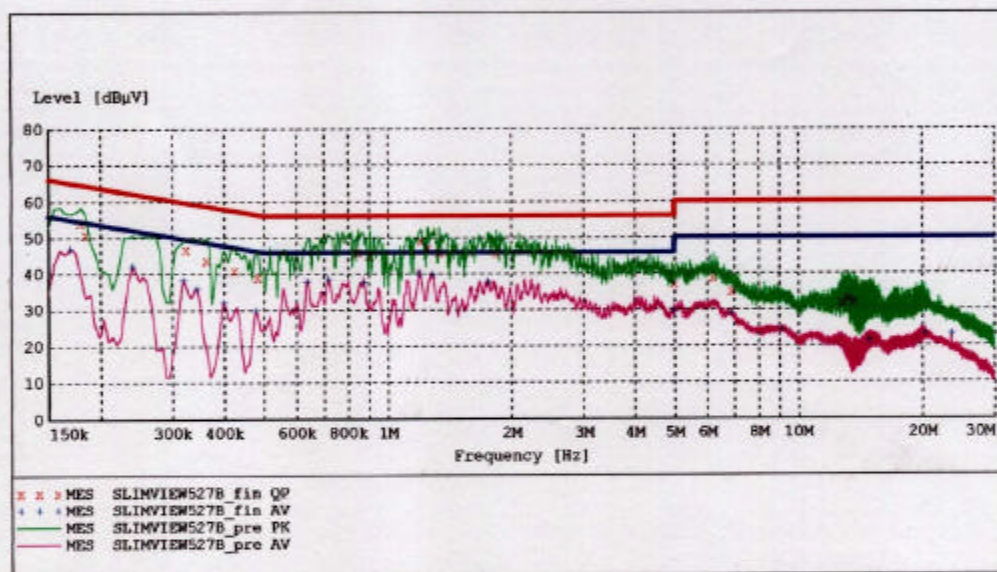
Date : NOVEMBER 12, 2001

HYUNDAI C-TECH. CO., LTD.
EMC TEST LAB.

EUT: SLIMVIEW527B
 Manufacturer:
 Operating Condition:
 Test Site: Shield Room
 Operator: SEO.K.H.
 Test Specification:
 Comment: N
 Start of Test: 11/12/01 / 2:00:22PM

SCAN TABLE:

Short Description:			EN 55022 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	100.0 ms	9 kHz	CABLE LOSS (NEW)
500.0 kHz	5.0 MHz	5.0 kHz	Average	10.0 ms	9 kHz	CABLE LOSS (NEW)
			MaxPeak			
			Average			



MEASUREMENT RESULT: "SLIMVIEW527B_fin QP"
 11/12/01 2:04PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.180000	54.20	0.5	65	10.3	1	---
0.185000	50.90	0.5	64	13.4	1	---
0.325000	46.80	0.5	60	12.8	1	---
0.365000	43.80	0.5	59	14.8	1	---
0.425000	40.90	0.5	57	16.5	1	---
0.485000	39.00	0.5	56	17.2	1	---
0.850000	45.90	0.5	56	10.1	1	---
0.910000	45.00	0.5	56	11.0	1	---
1.210000	49.10	0.5	56	6.9	1	---
1.260000	47.00	0.5	56	9.0	1	---
1.340000	45.90	0.5	56	10.1	1	---
1.845000	45.60	0.6	56	10.4	1	---
5.000000	37.00	0.9	56	19.0	1	---
6.225000	38.70	1.0	60	21.3	1	---

MEASUREMENT RESULT: "SLIMVIEW527B_fin QP"
 (continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
6.905000	35.10	1.1	60	24.9	1	---
12.820000	32.00	1.4	60	28.0	1	---
13.245000	33.10	1.4	60	26.9	1	---
13.700000	32.40	1.5	60	27.6	1	---

MEASUREMENT RESULT: "SLIMVIEW527B_fin AV"
 11/12/01 2:04PM

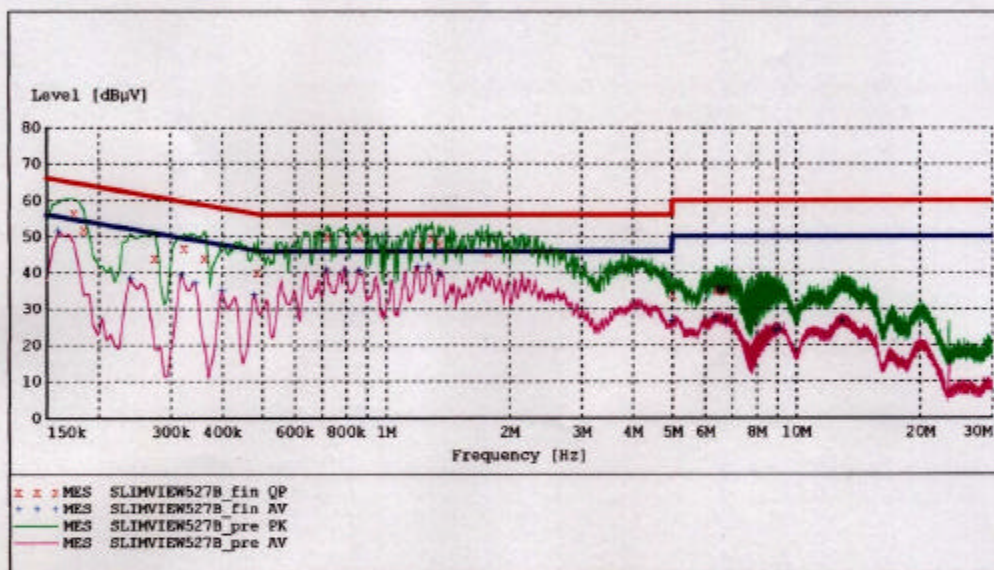
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.170000	47.00	0.5	55	8.0	1	---
0.240000	42.30	0.5	52	9.8	1	---
0.320000	38.30	0.5	50	11.4	1	---
0.345000	36.00	0.5	49	13.1	1	---
0.400000	32.30	0.5	48	15.5	1	---
0.480000	29.90	0.5	46	16.4	1	---
0.640000	37.80	0.5	46	8.2	1	---
0.720000	38.60	0.5	46	7.4	1	---
0.875000	37.50	0.5	46	8.5	1	---
1.200000	40.10	0.5	46	5.9	1	---
1.290000	39.80	0.5	46	6.2	1	---
1.760000	37.60	0.6	46	8.4	1	---
5.000000	29.60	0.9	46	16.4	1	---
6.905000	29.00	1.1	50	21.0	1	---
9.150000	24.40	1.2	50	25.6	1	---
14.910000	21.40	1.5	50	28.6	1	---
20.385000	23.30	1.8	50	26.7	1	---
23.655000	23.20	2.0	50	26.8	1	---

HYUNDAI C-TECH. CO., LTD.
EMC TEST LAB.

EUT: SLIMVIEW527B
 Manufacturer:
 Operating Condition:
 Test Site: Shield Room
 Operator: SEO.K.H.
 Test Specification:
 Comment: H
 Start of Test: 11/12/01 / 2:06:22PM

SCAN TABLE:

Short Description:			EN 55022 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	100.0 ms	9 kHz	CABLE LOSS (NEW)
500.0 kHz	5.0 MHz	5.0 kHz	Average	10.0 ms	9 kHz	CABLE LOSS (NEW)
			MaxPeak			
			Average			



MEASUREMENT RESULT: "SLIMVIEW527B_fin QP"
 11/12/01 2:10PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Line	PE
0.175000	56.40	0.5	65	8.3	1	---
0.185000	51.80	0.5	64	12.4	1	---
0.275000	44.00	0.5	61	16.9	1	---
0.325000	46.80	0.5	60	12.8	1	---
0.365000	44.10	0.5	59	14.6	1	---
0.490000	40.00	0.5	56	16.2	1	---
0.725000	50.10	0.5	56	5.9	1	---
0.865000	49.80	0.5	56	6.2	1	---
1.220000	47.60	0.5	56	8.4	1	---
1.300000	49.70	0.5	56	6.3	1	---
1.355000	48.00	0.5	56	8.0	1	---
1.785000	45.60	0.6	56	10.4	1	---
5.000000	34.20	0.9	56	21.8	1	---
6.430000	35.70	1.0	60	24.3	1	---

MEASUREMENT RESULT: "SLIMVIEW527B_fin QP"
 (continued)

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
6.475000	35.20	1.0	60	24.8	1	---
6.600000	35.20	1.1	60	24.8	1	---
6.675000	35.10	1.1	60	24.9	1	---
6.805000	35.40	1.1	60	24.6	1	---

MEASUREMENT RESULT: "SLIMVIEW527B_fin AV"
 11/12/01 2:10PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.160000	51.60	0.5	56	3.9	1	---
0.240000	38.60	0.5	52	13.5	1	---
0.320000	39.50	0.5	50	10.2	1	---
0.345000	37.20	0.5	49	11.9	1	---
0.400000	35.20	0.5	48	12.6	1	---
0.480000	34.20	0.5	46	12.1	1	---
0.720000	40.90	0.5	46	5.1	1	---
0.800000	40.80	0.5	46	5.2	1	---
0.865000	40.60	0.5	46	5.4	1	---
1.205000	41.70	0.5	46	4.3	1	---
1.275000	41.80	0.5	46	4.2	1	---
1.355000	39.60	0.5	46	6.4	1	---
5.000000	26.70	0.9	46	19.3	1	---
6.365000	27.80	1.0	50	22.2	1	---
6.785000	26.90	1.1	50	23.1	1	---
8.915000	24.20	1.2	50	25.8	1	---
9.145000	24.60	1.2	50	25.4	1	---
12.970000	26.80	1.4	50	23.2	1	---

4.2 Radiated Emissions Tests

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

Humidity Level : 32 % Temperature : 24
 Limit apply to : CISPR 22
 Type of Tests : CLASS B
 Date : NOVEMBER 20, 2001
 Result : PASSED BY -3.0dB

EUT : 15" LCD MONITOR
 Operating Condition : 1024X768 (Hf :60 kHz, Vf : 75 Hz)
 Detector : CISPR Quasi-Peak (6 dB Bandwidth : 120 KHz)

Frequency MHz	Reading dBuV/m	Ant. Factor dB	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dBuV
38.1	6.48	17.02	1.00	V	24.5	30.0	-5.5
63.1	17.68	6.72	1.70	H	26.1	30.0	-3.9
139.8	4.99	14.41	2.50	V	21.9	30.0	-8.1
174.7	9.26	15.04	2.70	H	27.0	30.0	-3.0
210.9	7.40	16.20	3.20	H	26.8	30.0	-3.2
281.1	9.14	17.86	3.80	H	30.8	37.0	-6.2
401.5	12.50	16.50	4.20	H	33.2	37.0	-3.8
511.8	10.14	18.76	5.00	H	33.9	37.0	-3.1
545.0	5.95	19.15	5.30	H	30.4	37.0	-6.6
602.3	5.26	20.74	5.80	V	31.8	37.0	-5.2
613.3	2.69	21.01	5.90	H	29.6	37.0	-7.4
748.0	3.76	22.54	6.40	V	32.7	37.0	-4.3

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.

Measured by Kyoung-Houn Seo / Engineer

Date : NOVEMBER 20 , 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.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$

$$\text{Level in uV/m} = \text{Common Antilogarithm} [(30 \text{ dBuV/m})/20] = 31.6 \text{ uV/m}$$

6. LIST OF TEST EQUIPMENT

TYPE	MANUFACTURE	MODEL	CAL. DATE
EMI Test Receiver	Rohde & Schwarz	ESH3	2001.6.29
EMI Test Receiver	Rohde & Schwarz	ESVP	2001.2.14
EMI Test Receiver	Rohde & Schwarz	ESI40	2001.1.18
EMI Test Receiver	Rohde & Schwarz	ESVS30	2001.6.26
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	2001.7.11
LISN	EMCO	3825/2	2001.7.13
LISN	Rohde & Schwarz	ESH2-Z5	2001.7.14
Amplifier	Hewlett-Packard	8447E	2001.3.2
Dipole Antennas	Rohde & Schwarz	VHAP	2001.6.28
Dipole Antennas	Rohde & Schwarz	UHAP	2001.6.28
Biconical Antenna	Rohde & Schwarz	BBA-9106	2001.6.28
Log-Periodic Antenna	Rohde & Schwarz	UHALP-9107	2001.6.26
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	2001.2.20Reference
Network Impedance	Voltech	IEC 555	N.A
AC Power Source	PACIFIC	Magnetic Module	N.A
AC Power Source	PACIFIC	360AMX	N.A