MEASUREMENT / TECHNICAL REPORT

HYUNDAI ELECTRONICS INDUSTRIES CO.,LTD.

MODEL : A725

This report concerns(check one) : Original grant__X_ Class change

Equipment type : CRT MONITOR

Deferred grant requested per 47 CFR 0.457(d)(1)( ) ? yes___no__X

If yes, defer until:

____ agrees to notify the Commission by

of the intended date of announcement of the product so that the grant can be issued on that date.

Report prepared by : BONG JAE, HUR General Manager of QA Office

Company : HYUNDAI ELECTRONICS INDUSTRIES CO., LTD.
Address : SAN 136-1, AMI-RI, BUBAL-EUB, ICHON-SI, KYOUNGKI-DO, KOREA
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1. GENERAL INFORMATION

HYUNDAI ELECTORONICS INDUSTRIES CO., LTD. CORP QA OFFICE /QUALITY MANAGEMENT TEAM
SAN 136-1, AMI-RI , BUBAL-EUB, ICHON-SI,KYOUNKI-DO, 467-701,KOREA
TEL : +82 336 639 8517 FAX : +82 336 639 8525

1.1 Product Description

The Hyundai Electronics Industries Co., Ltd. Model (refered to as the EUT in this report) is a 17"COLOR CRT Monitor HOR. Freq. 68.7 KHz w/max. Resolution of 1024X768 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)	**12 MHz**
CHIPSET BRAND AND PART NO.	**STMICRO ELECTRO: UUC3842N SAMSUNG ELECTRO: ULM7805CT PHLIPS H.K: 3200001396 NATIONAL SEMICO: ULM358 WELTREND: 32050011327 SAMSUNG ELECTRO: 3203000819 PHLIPS H.K: 3200000763 SAMSUNG ELECTRO: 3200001232 MYSON TECH: 3204000577**
POWER REQUIREMENT	**100 - 240 VAC 60/50Hz 2.0 A**
NUMBER OF LAYERS	**MAIN BOARD 1 LAYER CRT BOARD 1 LAYER AUDIO POWER BOARD 1 LAYER SPEAKER BOARD**
MAX. RESOLUTION	**1024X768 NON-INTERLACED (@68.7 KHz/85 Hz)**
H-SYNC FREQUENCY RANGE	**30KHz 70KHz**
V-SYNC FREQUENCY RANGE	**50 Hz 150Hz**
CRT TYPE	**17" (CRT Type :SAMSUNG M41QAR361X114)**

1.2 Related Submittal(s) / Grant(s)

ORIGINAL SUBMITTAL ONLY

1.3 Tested System Details

HYUNDAI ELECTORONICS INDUSTRIES CO., LTD. CORP QA OFFICE /QUALITY MANAGEMENT TEAM
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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
COLOR MONITOR (EUT)	HYUNDAI	A725	CKLA725	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	M-S34	DZL211029	HOST
SPEAKER	DIAMOND	MS-030021	-	MONITOR

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 on May 22, 1997 and accepted dated July 25,1997(1300F2)

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	HYUNDAI	E4208517701
CRT BOARD	HYUNDAI	E4208616902
AUDIO POWER BOARD	HYUNDAI	E4208617703
SPEAKER BOARD	DIAMOND	380-6079

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.

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2.3 Cable Description

	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
PC(HOST)	N	N/A	1.8(P)
MONITOR(EUT)	N	Y	1.8(P), 1.5(D)
PRINTER	N	Y	2.0(P),1.5(D)
KEY BOARD	N/A	Y	2.0(D)
MODEM	N	Y	2.0(P),1.5(D)
MOUSE	N/A	Y	1.8(D)
SPEAKER	N	N	0.5(P),2.0(D)

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

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

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
MONITOR(EUT)	Y	PC END	Y	BOTH END
SPEAKER(EUT)	Y	MONITOR END	N	N/A
PRINTER	N	N/A	Y	BOTH END
KEY BOARD	Y	PC END	N	N/A
MODEM	N	N/A	Y	BOTH END
MOUSE	N	N/A	N	N/A

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2.5 Equipment Modifications

N/A

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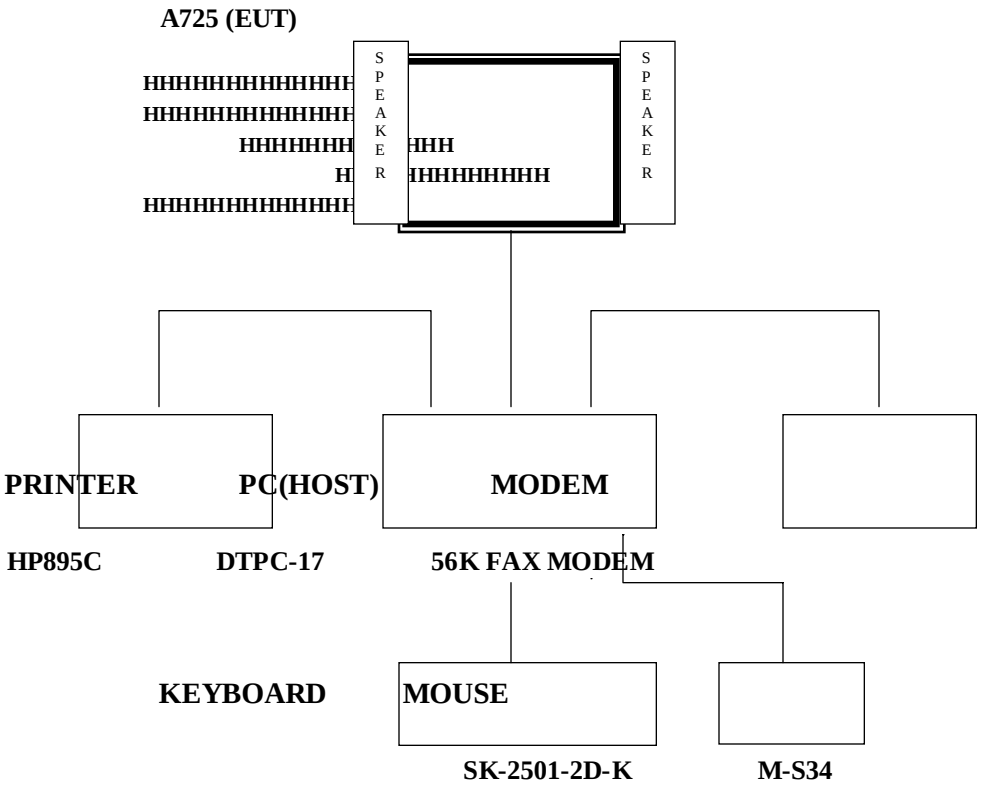
2.6 Configuration of Test system

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]



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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	1024 x 768 Non-Interlaced (68.7KHz/85Hz)	X
Pentium 350 MHz	800 x 600 Non-Interlaced (53.7 KHz/85Hz)	
Pentium 350 MHz	640 x 480 Non-Interlaced (50.6 KHz/100Hz)	
Pentium 350 MHz	1280x1024 Non-Interlaced (64 KHz/60Hz)	

4.2 Radiated Emission Tests

Processor Speed (MHz)	Video Resolution (w/max)	The worst operating condition
Pentium 350 MHz	1024 x 768 Non-Interlaced (68.7KHz/85Hz)	X
Pentium 350 MHz	800 x 600 Non-Interlaced (53.7 KHz/85Hz)	
Pentium 350 MHz	640 x 480 Non-Interlaced (50.6 KHz/100Hz)	
Pentium 350 MHz	1280x1024 Non-Interlaced (64 KHz/60Hz)	

During Preliminary Tests, the following operating mode were investigated

Tested by KEUN HO, PARK / Engineer **Date : JUNE 8, 2000**

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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 : 32% Temperature : 24
Limit apply to : CISPR 22
Type of Tests : CLASS B
Date : JUNE 9, 2000
Result : PASSED BY -8.9 dB

EUT : 17" CRT MONITOR
Operating Condition : 1024X768 Non-Interlaced (Hf : 68.7 KHz, Vf : 85Hz)
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 (Average)	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuV)	Margin (dB)
7.331	41.1	H	50	-8.9
6.988	40.7	H	50	-9.3
7.058	40.7	H	50	-9.3
6.785	37.0	N	50	-13.0

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 : JUNE 9, 2000

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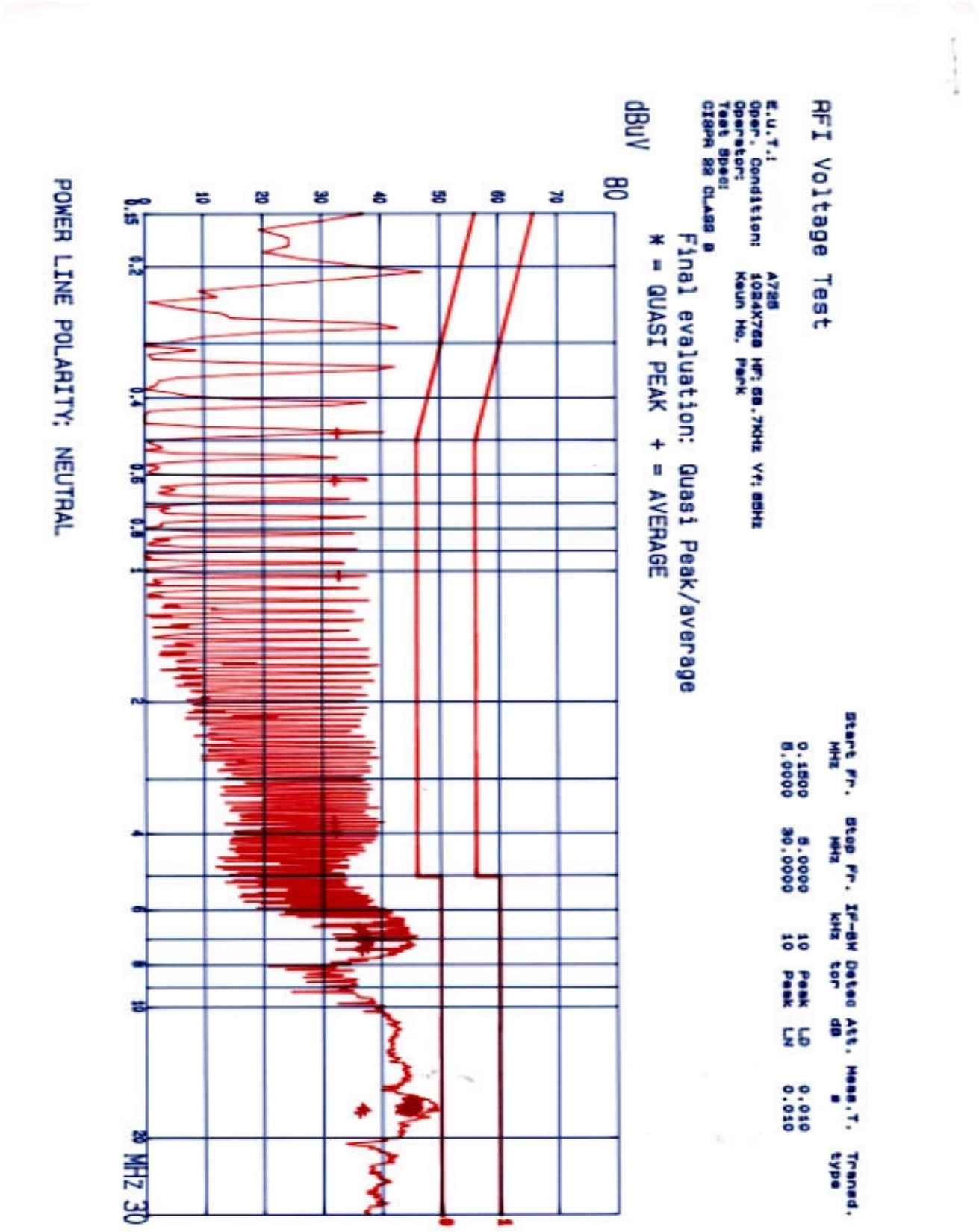

RFI Voltage Test
E.U.T.: A725
Oper. Condition: 1024X768 HF: 68.7KHz Vf: 85Hz
Operator: Keun Ho. Park
Test Spec: CISPR 22 CLASS B
Final evaluation: Quasi Peak/average
* = QUASI PEAK + = AVERAGE
dBuV
80
70
60
50
40
30
20
10
0.15
0.2
0.4
0.6
0.8
1
2
4
6
8
10
20
30
MHz
POWER LINE POLARITY: NEUTRAL
Start Fr. MHz
Stop Fr. MHz
IF-BW KHz
Detec tor
Att. dB
Meas.T. s
Transd. type
0.1500 0.0000 10 Peak LD 0.010
0.0000 30.0000 10 Peak LN 0.010

RFI Voltage Test

E.u.T.: A725
Oper. Condition: 1024X768 HF: 68.7KHz Vf: 85Hz
Operator: Keun Ho, Park
Test Spec: CISPR 22 CLASS B

Start Fr. MHz	Stop Fr. MHz	IF-BW kHz	Detec tor	Att. dB	Meas.T. s	Transd. type
0.1500	5.0000	10	Peak	LO	0.010	
5.0000	30.0000	10	Peak	LN	0.010	

POWER LINE POLARITY: NEUTRAL

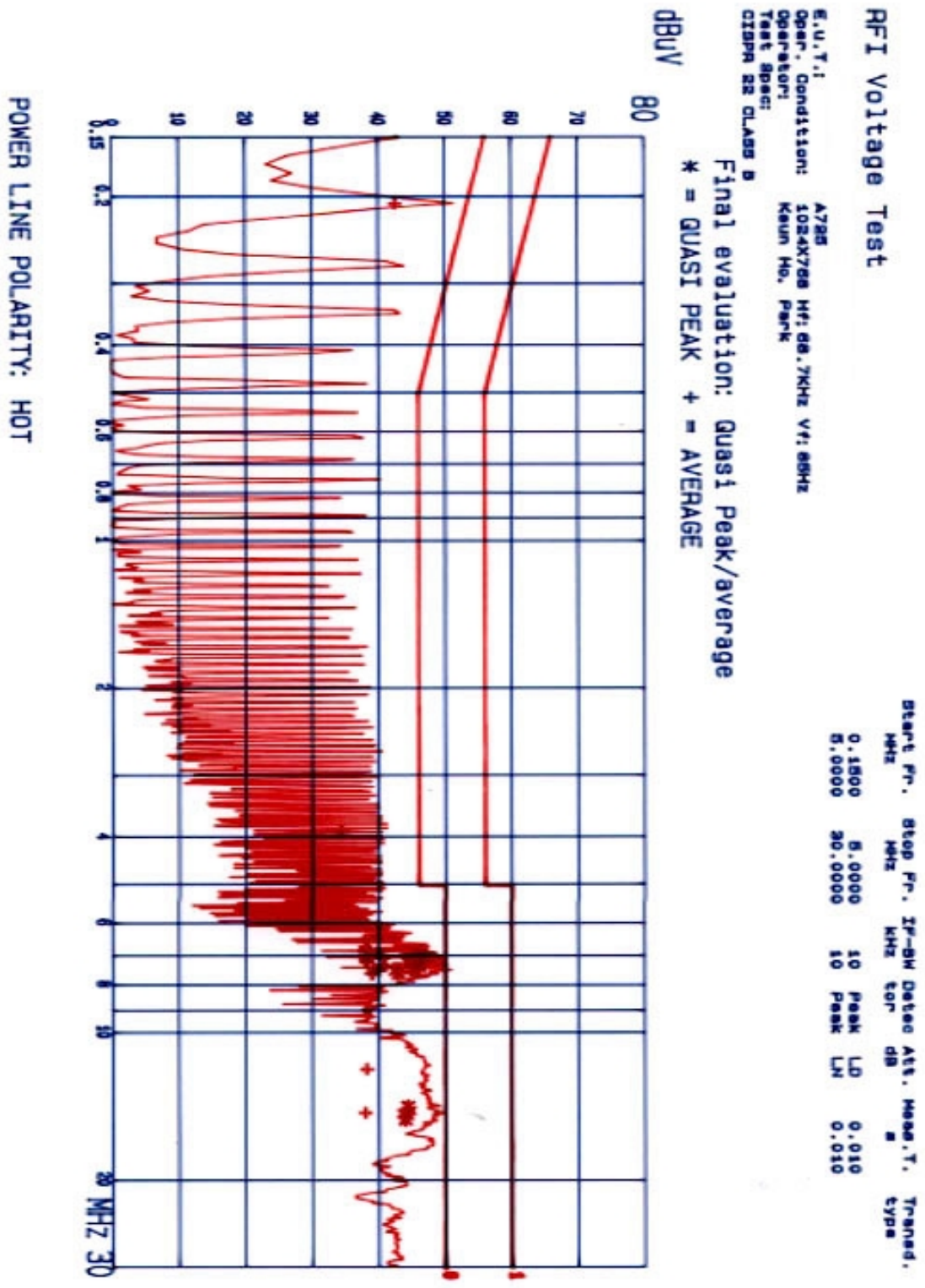
Quasi Peak values

Frequency MHz	Peak dBuV	Q-Peak dBuV	QP-Margin dB
16.3750	49.1	44.9	-15.0
16.4450	47.9	45.0	-14.9
16.5080	48.0	44.2	-15.7
16.5180	47.4	44.6	-15.3
16.5780	47.4	45.2	-14.7
16.6480	48.3	45.7	-14.2
16.7180	48.8	45.8	-14.1
16.7880	49.8	45.7	-14.2
16.8510	49.0	44.8	-15.1
16.8580	49.4	44.7	-15.2
16.9210	49.7	45.6	-14.3
16.9910	48.6	45.8	-14.2
17.0610	49.4	45.7	-14.2
17.1240	47.5	43.2	-16.7
17.1310	48.6	44.9	-15.0
17.2010	47.7	43.3	-16.6
17.2540	48.3	44.9	-15.0
17.3340	49.7	44.8	-15.1
17.4040	49.1	44.7	-15.2

Average values

Frequency MHz	Peak dBuV	Average dBuV	Average-Margin dB
0.4700	40.8	32.7	-13.7
0.6100	37.8	32.8	-13.8
1.0250	37.7	32.9	-13.1
3.7600	40.4	32.1	-13.9
3.9720	39.5	32.3	-13.7
6.5750	44.6	36.1	-13.9
6.5450	44.5	36.2	-13.8
6.7180	44.4	36.9	-13.1
6.7850	44.8	37.0	-13.0
6.8180	45.6	36.9	-13.7
6.9880	46.2	37.8	-13.4
7.0580	44.8	36.8	-13.2
7.1280	45.1	37.7	-13.3
7.1910	45.7	37.4	-13.6
7.2510	45.0	36.7	-13.3
7.3310	44.4	37.7	-13.3
7.4010	43.8	36.7	-13.3
17.0510	49.4	36.7	-13.3
17.3340	49.7	37.0	-13.0
17.5370	47.3	36.2	-13.8

* Limit exceeded


RFI Voltage Test
E.U.T.: A725
Oper. Condition: 1024X768 Hf: 68.7KHz Vf: 60Hz
Operator: Keun Ho. Park
Test Spec:
CISPR 22 CLASS B
Start Fr. MHz
Stop Fr. MHz
IF-BW KHz
Detec tor
Att. dB
Meas.T. m
Transd. type
0.1500 0.0000 10 Peak LD 0.010
5.0000 30.0000 10 Peak LN 0.010
Final evaluation: Quasi Peak/average
* = QUASI PEAK + = AVERAGE
dBuV
80
70
60
50
40
30
20
10
0
0.15
0.2
0.4
0.6
0.8
1
2
4
6
8
10
20
30 MHz
POWER LINE POLARITY: HOT

POWER LINE POLARITY: HOT

RFI Voltage Test

E.U.T.: A725
Oper. Condition: 1024X768 Hf: 68.7KHz Vf: 85Hz
Operator: Kaun Ho. Park
Test Spec: CISPR 22 CLASS B

Start Fr. MHz	Stop Fr. MHz	IF-BW kHz	Detec tor	Att. dB	Meas.T. s	Transd. type
0.1500	5.0000	10	Peak	LO	0.010	
5.0000	30.0000	10	Peak	LN	0.010	

Quasi Peak values

Frequency MHz	Peak dBuV	Q-Peak dBuV	QP-Margin dB
0.9180	48.9	48.5	-13.6
6.9880	49.5	46.7	-13.3
7.0580	50.1	46.3	-13.7
7.1280	49.2	46.1	-13.9
7.1910	50.1	46.1	-13.9
7.1980	49.5	44.7	-15.3
7.2610	50.4	46.8	-14.2
7.3310	50.3	46.0	-14.1
7.4010	49.3	46.1	-14.9
7.4640	51.1	43.7	-17.4
7.6040	49.1	43.1	-16.9
14.1140	49.2	44.4	-15.7
14.3870	48.8	44.7	-15.3
14.5900	50.0	43.9	-16.1
14.8000	49.1	44.3	-15.7
16.0730	48.9	44.0	-16.0

Average values

Frequency MHz	Peak dBuV	Average dBuV	Average-Margin dB
0.2060	51.4	42.7	-10.9
3.9020	40.7	34.4	-11.6
6.7160	47.6	38.1	-11.9
6.7850	47.3	38.5	-11.5
6.8550	46.3	38.1	-11.9
6.9180	48.9	38.7	-10.3
6.9880	49.5	40.7	-8.3
7.0580	50.1	40.7	-9.3
7.1210	47.7	38.1	-11.9
7.1280	49.2	38.3	-11.7
7.1980	49.5	38.9	-11.7
7.2610	50.4	40.7	-9.3
7.3310	50.3	41.1	-8.9
7.4010	49.3	39.2	-10.8
7.4640	51.1	40.0	-10.0
7.4710	48.4	40.1	-8.9
7.5940	48.6	39.0	-11.0
7.6040	49.1	38.0	-11.0
11.8530	46.8	38.3	-11.7
14.5970	47.7	38.1	-11.9

M Limit exceeded

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 : 25
Limit apply to : CISPR 22
Type of Tests : CLASS B
Date : JUNE 9, 2000
Result : PASSED BY -3.6 dB

==========

EUT : 17" COLOR MONITOR
Operating Condition : 1024X768 Non-Interlaced (Hf :68.7 kHz, Vf : 85 Hz)
Detector : CISPR Quasi-Peak (6 dB Bandwidth : 120 KHz)

Radiated Emissions		Ant.	Correction Factors	Total	CISPR 22	
Freq. (MHz)	Ampl. (dBuV)	Pol.	Antenna & Cable Loss (dB/m)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
94.1	14.6	V	10.6	25.2	30.0	-4.8
94.1	14.2	H	10.6	24.8	30.0	-5.2
122.5	11.8	V	14.6	26.4	30.0	-3.6
122.5	10.6	H	14.6	25.2	30.0	-4.8
329.9	9.4	V	19.5	28.9	37.0	-8.1
339.4	8.3	V	19.5	27.8	37.0	-9.2
499.6	7.5	V	22.9	30.4	37.0	-6.6

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 : KEUN HO, PARK / Engineer Date : JUNE 9, 2000

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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

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