

EMC TEST REPORT For FCC



Test Report No. : 2005080040
Date of Issue : September 06, 2005
FCC ID : QJCSENSEVIEW
Model/Type No. : SenseVeiw
Kind of Product : Video Magnification System
Applicant : HIMS Co., Ltd.
Applicant Address : High-Tech Venture Hall 5104, 53-3, Eoeun-Dong, Yuseong-Gu, Daejeon, Korea.
Manufacturer : HIMS Co., Ltd.
Manufacturer Address : High-Tech Venture Hall 5104, 53-3, Eoeun-Dong, Yuseong-Gu, Daejeon, Korea.
Contact Person : Mr. Yang-Taik, Yoon
Telephone : +82-42-864-4460
Received Date : September 05, 2005
Test period : Start : June 17, 2005 End : September 06, 2005
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

The test results presented in this report relate only to the object tested.

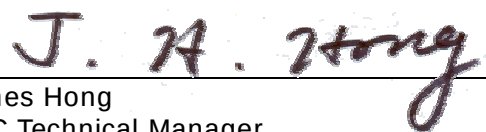
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Tested by

Reviewed by



Young-Joon, Park
EMC Test Engineer
Date: September 06, 2005



James Hong
EMC Technical Manager
Date: September 06, 2005

REPORT REVISION HISTORY

Date	Revision	Page No
September 06, 2005	Issued (2005080040)	All

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TABLE OF CONTENTS

REPORT REVISION HISTORY	2
1.0 General Product Description	4
1.1 Model Differences	4
1.2 Device Modifications	5
1.3 EUT Configuration(s)	6
1.4 Test Software	6
1.5 EUT Operating Mode(s)	6
1.6 Configuration	7
1.7 Calibration Details of Equipment Used for Measurement	8
1.8 Test Facility	8
1.9 Measurement Procedure	8
1.10 Laboratory Accreditations and Listings	9
2.0 Emissions Test Regulations	10
2.1 Conducted Voltage Emissions	11
2.2 Radiated Electric Field Emissions	12
APPENDIX A – TEST DATA	13
Conducted Voltage Emissions	13
Radiated Electric Field Emissions	15
APPENDIX B - Test Setup Photos and Configuration	16
Conducted Voltage Emissions	16
Radiated Electric Field Emissions	17
APPENDIX C – EUT Photographs	18
EUT External Photographs	19
EUT Internal Photographs	22
PCB	23
Photographs related to Label	31
FCC ID label location	32

1.0 General Product Description

1.0.1 Tested Equipment

- ☒ Unless otherwise indicated, all tests were conducted on Model SenseView.
☐ Tests performed on Model _____ were considered to be representative of Model(s) _____.

1.0.2 Equipment Size, Mobility and Identification

Dimensions: Approx. 560(W) by 400(L) by 310(H) ☒ mm ☐ inch
Mobility: ☐ Hand-held ☒ Table-top ☐ Built-in
☐ Traveling ☐ Floor-standing
Serial No.: Prototype

1.0.3 Electrical Ratings

Adaptor Input: 100-240 Vac, 50/60 Hz, 1.2 A
Output: 12 Vdc, 3.0 A

EUT Input: 12 Vdc
Output: -

1.0.4 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage: 120 Vac
Frequency: 60 Hz

1.0.5 Clock & Other Frequencies Utilized

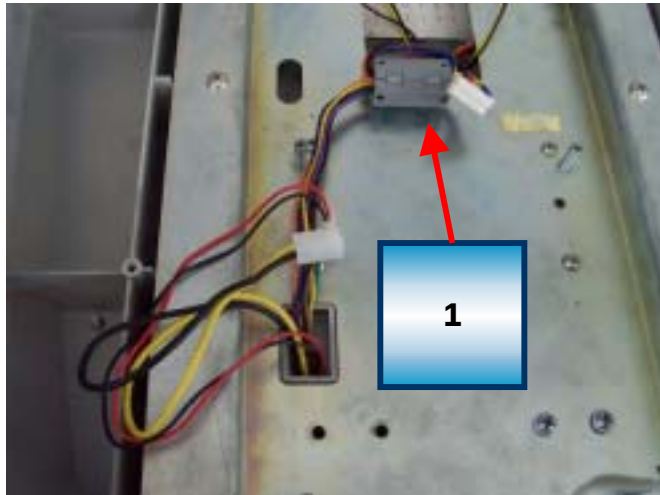
32.768 KHz, 8 MHz, 14.31818 MHz, 24.576 MHz, 28.6382 MHz,

1.1 Model Differences

Not applicable

1.2 Device Modifications

The following modifications were necessary for compliance:



Core location	Manufacturer	Part No.	Number of Cable Turn
1	TDK Corporation	ZCAT2132-1130	1

1.3 EUT Configuration(s)

See Appendix A for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

☒ Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC.
Adaptor (for EUT)	Dee Van Electronics Co., Ltd.	DSA-0421S-12136	-	DoC
Personal Computer	Hewlett-Packard Company	PD1059P	-	DoC
CRT Monitor	SAMSUNG	PG17HS	P013H1DN301661	DoC
CCTV Monitor	PHILIPS	LTC2814/90	M2100662	-
CCTV Monitor	HITRON System Inc.	CVX54X	M3020003	-
Keyboard (PS/2 type)	Hewlett-Packard Company	5219	BN5017686	E5XKB5209
Mouse (USB type)	SAMSUNG	OMS3CB	0303009881	DoC

☒ Cable Description

#	Description	Ferrite Core	Length (m)	Other Details
1	Adaptor power Cable, Unshielded	No	1.0	Connect to AC power
2	Keyboard cable, Shielded	No	1.5	PS/2 type
3	Mouse cable, Shielded	No	1.5	USB type
4	Monitor cable, Shielded	Yes	1.5	Between the PC and EUT
5	DC In Cable, Unshielded	Yes	1.5	Between the EUT and Adaptor
6	Monitor cable, Shielded	Yes	1.5	Between the EUT CRT Monitor
7	S-Video Cable, Unshielded	No	1.5	Between the EUT and CCTV Monitor
8	Video Cable, Unshielded.	No	1.0	Between the EUT and CCTV Monitor
9	AC power cable, Unshielded	No	1.5	Connect to AC power
10	AC power cable, Unshielded	No	1.5	Connect to AC power
11	AC power cable, Unshielded	No	1.5	Connect to AC power
12	AC power cable, Unshielded	No	1.5	Connect to AC power

1.4 Test Software

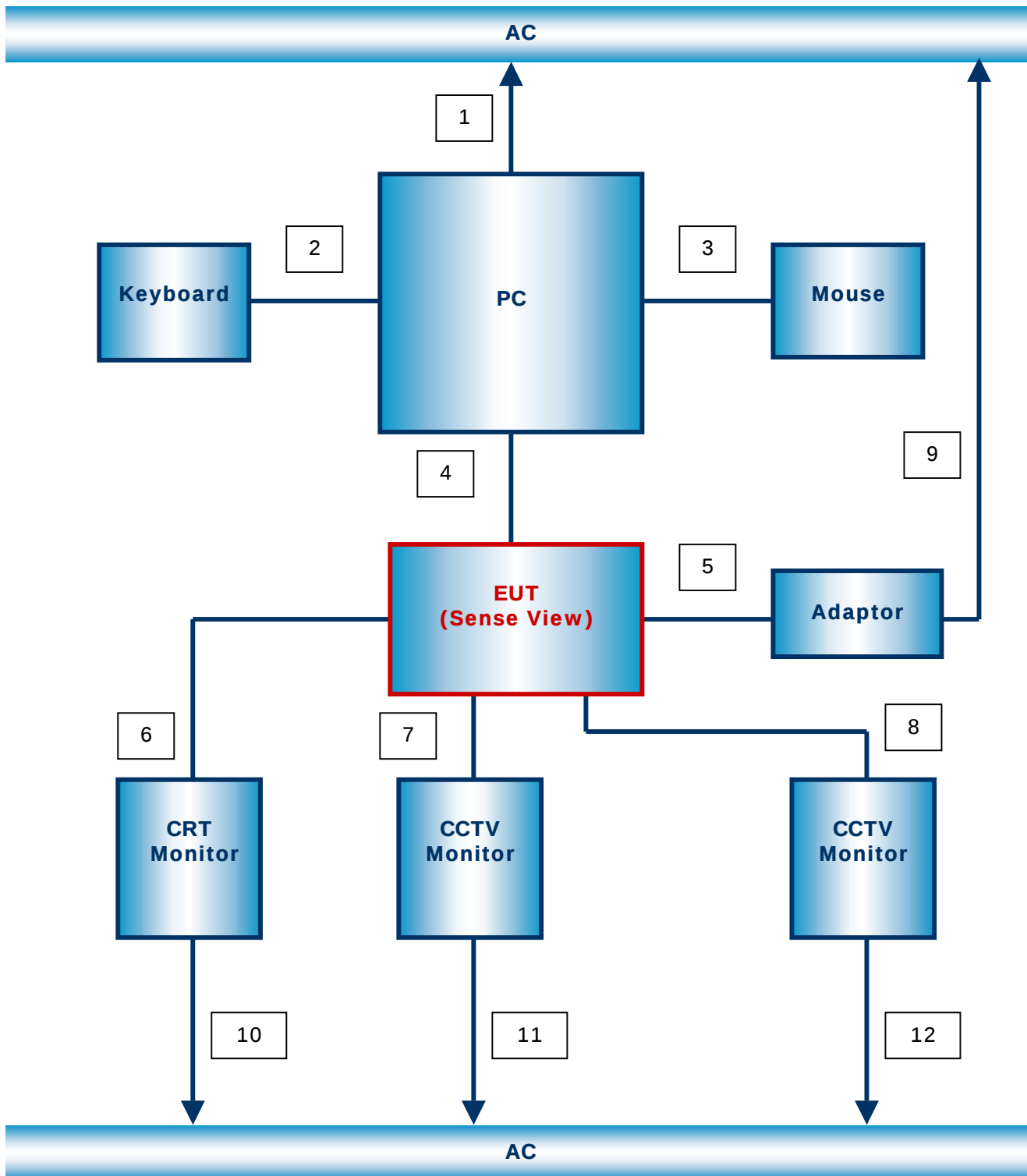
- ☐ EMC Test V 1.0
☒ Display Test Patterns – V1.5
☐ Ping.exe
☐ Not applicable

1.5 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

- ☐ Standby
☐ Display circles pattern
☒ Practice operation – AV output monitoring mode.
☒ Scrolling 'H'
☐ Read / Write

1.6 Configuration



1.7 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.8 Test Facility

The measurement facility is located at 386-1, Ho-Dong, Yongin-City, Kyungki-Do, Korea 449-100. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.9 Measurement Procedure

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested. Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)
Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3 m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-2001 7.2.3, 7.2.4, 8.3.1.1, 8.3.1.2

1.10 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	 93250
JAPAN	VCCI	10 meter Open Area Test Site and one conducted site.	 R-948, C-986
KOREA	MIC	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 No. 51, KR0025
International	KOLAS	EMC	
Europe	GLAS	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	 No.13000796-02

2.0 Emissions Test Regulations

The emissions tests were performed according to following regulations:

- | | | |
|--|----------------------------------|---|
| ☐ EN 61000-6-3:2001 | ☐ Class A | ☐ Class B |
| ☐ EN 61000-6-4:2001 | ☐ Class A | ☐ Class B |
| ☐ EN 50083-2:2001 | | |
| ☐ EN 55011:1998 +A1:1999 | ☐ Group 1 | ☐ Group 2 |
| | ☐ Class A | ☐ Class B |
| ☐ EN 55011:1998 +A1:1999 +A2:2002 | ☐ Group 1 | ☐ Group 2 |
| | ☐ Class A | ☐ Class B |
| ☐ EN 55013:1990 +A12:1994 +A13:1996 +A14:1999 | | |
| ☐ EN 55013:2001 | | |
| ☐ EN 55014-1:2000 | | |
| ☐ EN 55014-1:2000 +A1:2001 | | |
| ☐ EN 55015:2000 | | |
| ☐ EN 55015:2000 +A1:2001 | | |
| ☐ EN 55022:1994 +A1:1995 +A2:1997 | ☐ Class A | ☐ Class B |
| ☐ EN 55022:1998 | ☐ Class A | ☐ Class B |
| ☐ EN 55022:1998 +A1:2000 | ☐ Class A | ☐ Class B |
| ☐ EN 55022:1998 +A1:2000 +A2:2003 | ☐ Class A | ☐ Class B |
| ☐ EN 61000-3-2:2000 | | |
| ☐ EN 61000-3-3:1995 +A1:2001 | | |
| ☐ VCCI V-3/2004.04 | ☐ Class A | ☐ Class B |
| ☐ AS/NZS 3548:1995 +A1:1997 +A2:1997 | ☐ Class A | ☐ Class B |
| ☒ FCC Part 15 Subpart B | ☐ Class A | ☒ Class B |
| ☒ CISPR 22:1997 | ☐ Class A | ☒ Class B |
| The unit was tested to CISPR 22 and complied with the alternate methods allowed by FCC under paragraphs 15.107 and 15.109. | | |
| ☐ CISPR 22:1997 +A1:2000 | ☐ Class A | ☐ Class B |

2.1 Conducted Voltage Emissions

Test Date

August 25, 2005

Test Location

Shielded Room

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	Field Strength Meter	Rohde & Schwarz	ESHS30	828144/002	2006-02-01
☒	LISN	EMCO	3825/2	9607-2574	2005-09-03
☒	LISN	EMCO	3825/2	9409-2246	2005-09-03

Frequency Range of Measurement

150 kHz to 30 MHz

Test Results

The requirements are:

☒ MET

Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark
0.56	37.1	8.9	Average

☐ NOT MET

Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark

☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

2.2 Radiated Electric Field Emissions

Test Date

August 25, 2005

Test Location

☒ Testing was performed at a test distance of 10 meter Open Area Test Site

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	Field Strength Meter	Rohde & Schwarz	ESVS30	829673/015	2005-11-15
☒	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2006-05-27
☐	Biconical Antenna	EMCO	3110	9202-1510	2006-04-13
☐	Log-periodic Antenna	EMCO	3146	9607-4567	2006-04-08

Frequency Range of Measurement

30 MHz to 1 GHz:

Test Results

The requirements are:

☒ MET

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
702.50	32.2	4.8	Quasi-peak

☐ NOT MET

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark

☐ NOT APPLICABLE

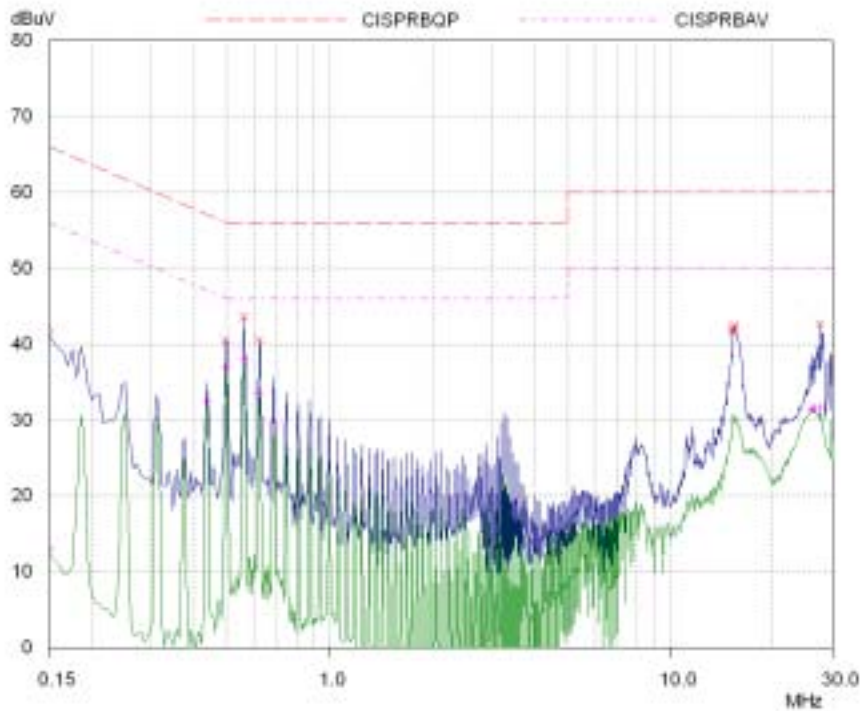
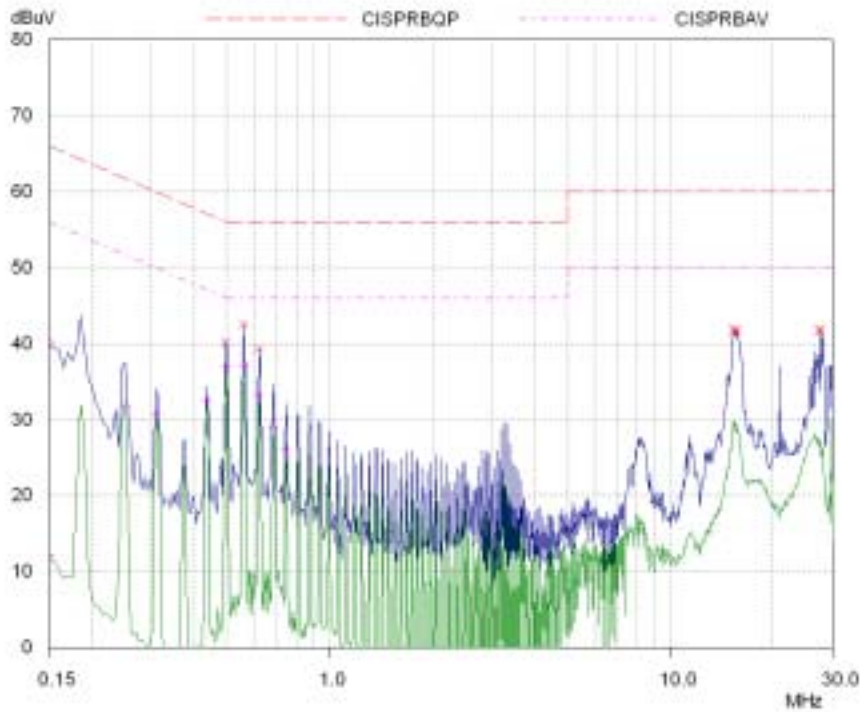
Remarks

See Appendix A for test data

APPENDIX A – TEST DATA

Conducted Voltage Emissions

Frequency [MHz]	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.25	0.1	0.1	H	61.8	37.3	37.5	24.3	51.8	31.6	31.8	20.0
0.31	0.1	0.1	H	60.0	33.9	34.1	25.9	50.0	30.5	30.7	19.3
0.50	0.1	0.1	H	56.1	40.1	40.3	15.8	46.1	36.8	36.9	9.1
0.56	0.1	0.1	H	56.0	42.4	42.6	13.4	46.0	36.9	37.1	8.9
0.62	0.1	0.1	N	56.0	40.4	40.6	15.4	46.0	33.4	33.6	12.4
15.30	0.7	0.2	H	60.0	40.8	41.6	18.4	50.0	29.0	29.8	20.2
15.39	0.7	0.2	N	60.0	41.5	42.4	17.6	50.0	28.7	29.5	20.5
15.81	0.7	0.2	H	60.0	40.3	41.2	18.8	50.0	28.8	29.7	20.3
27.51	1.0	0.3	H	60.0	39.4	40.7	19.3	50.0	27.4	28.7	21.3



Radiated Electric Field Emissions

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
54.30	17.7	V	1.0	4.7	1.4	30.0	23.8	6.2
114.38	11.2	V	1.0	9.5	2.1	30.0	22.8	7.2
121.80	9.1	H	4.0	9.6	2.0	30.0	20.7	9.3
189.30	10.8	H	4.0	7.0	2.7	30.0	20.5	9.5
243.30	9.1	H	4.0	9.1	3.0	37.0	21.2	15.8
283.80	10.4	H	4.0	10.5	3.2	37.0	24.1	12.9
297.30	15.3	H	4.0	10.9	3.2	37.0	29.4	7.6
419.00	11.8	H	4.0	14.0	3.9	37.0	29.7	7.3
433.00	10.9	H	4.0	14.1	3.9	37.0	28.9	8.1
459.25	9.3	V	1.0	14.8	4.1	37.0	28.2	8.8
702.50	8.7	V	1.0	18.4	5.1	37.0	32.2	4.8