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<i>Test Report No.</i>			
Auftraggeber: <i>Client:</i>	Sling Media, Inc. 901, Mariners Island Blvd. Suite 300, San Mateo CA 94404 USA		
Gegenstand der Prüfung: <i>Test item:</i>	Multimedia equipment		
Bezeichnung: <i>Identification:</i>	SBPB1	Serien-Nr.: <i>Serial No.</i>	proto type FCC1
Wareneingangs-Nr.: <i>Receipt No.:</i>	1403001852	Eingangsdatum: <i>Date of receipt:</i>	18th March 2005
Prüfort: <i>Testing location:</i>	refer to section 2.1		
Prüfgrundlage: <i>Test specification:</i>	FCC Title 47, Part 15, Subpart B 2001(class B) The test procedures are followed as give in the standard ANSI C63.4 2003, EIA/TIA 603 and MP-5.		
Prüfergebnis: <i>Test Result</i>	Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage. The a. m. test item passed.		
Prüflaboratorium / Testing Laboratory:		TÜV Rheinland (India) Pvt., Ltd	
zusammengestellt/ compiled by: B.S. Ravindra Kumar		kontrolliert/ Reviewed by: G. Kalyan Varma	
9 th April 2005 Datum <i>Date</i>	 Unterschrift <i>Signature</i>	11th April 2005 Datum <i>Date</i>	 Unterschrift <i>Signature</i>
Sonstiges / Other Aspects: remarks			
Abkürzungen: ok / P = entspricht Prüfgrundlage fail / F = entspricht nicht Prüfgrundlage n.a. / N = nicht anwendbar		Abbreviations: ok / P = passed fail / F = failed n.a. / N = not applicable	
Dieser Prüfbericht bezieht sich nur auf den o.g. Prüfgegenstand und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts.			

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TEST SUMMARY

5.1.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE

RESULT: PASS

5.2.1 RADIATED EMISSION (RE)

RESULT: PASS

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report.

1.2 FCC Cross-reference Table

The results of emission measurements and product related information contained in this test report and the attached materials relate to the contents of the FCC standard report in the following way:

FCC § / heading

1.1 Product Description	Refer user manual attachment
1.2 Related Submittals	----
1.3 Tested System Details	Refer user manual attachment
1.4 Test Methodology	see 5.1, 5.2
1.5 Test Facility	see 2.1
2.1 FCC ID Label	Refer label attachment
2.2 Location of Label on EUT	Refer labellocation attachment
3.1 Justification	see 4.1
3.2 EUT Exercise Software	see 4.3
3.3 Special Accessories	see 4.4,
3.4 Equipment Modifications	---
3.5 Configuration of Tested System	see 4.2
4.1 Block Diagram	Refer block diagram attachment

2. Test Sites

2.1 Test Facilities

These test sites are in accordance with CISPR 16 for measurement of radio interference. OATS test site is of FCC listed site.

Location 1:

SAMEER – Centre for electromagnetics

2nd cross Road, CIT campus,

Taramani – Chennai – 600113

Location 2:

Electronics Test and Development Centre

Ring Road, Pinya Industrial estate

Bangalore

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

kind of equipment	manufacturer	type	S/N	calibrated until
EMI Receiver	R&S	ESCS-30	100063	21/08/05
Bilog antenna	ETS	3142B	00026416	19/06/05
EMI Receiver	R&S	ESAI-D	825316/004	03/02/06
LISN	R&S	ESH2-Z5	893606/023	10/07/07
Spectrum analyser	HP	HP8568B	2841A04517	11/06/05
Bilog antenna	Electromatics	EM69178-1	120	01/09/06

3. General Product Information

3.1 Product Function and Intended Use

Refer to the user's manual

3.2 Ratings and System Details

System input voltage: 6V DC
System Input current: 1A max
System Protection class: III
AC adaptor input voltage: AC 100-240V
AC adaptor Frequency: 50/60Hz
AC adaptor Input current: 0.45A
AC adaptor Protection class: I

EUT is applied along with AC adaptor make: HON-KWANG; model: HK-A512-A06

3.3 Independent Operation Modes

The basic operation modes are:

- A. RF cable input mode
- B. S Video input
- C. Composite video input
- D. Idle mode.

It was observed from the prescans that the maximum emissions were observed in RF cable input mode. Hence entire testing was carried out in mode A i.e, RF cable input mode. All tests were carried out at 120V AC/ 60Hz.

3.4 Noise Generating and Noise Suppressing Parts

Refer to the technical documentation and schematics

3.5 Submitted Documents

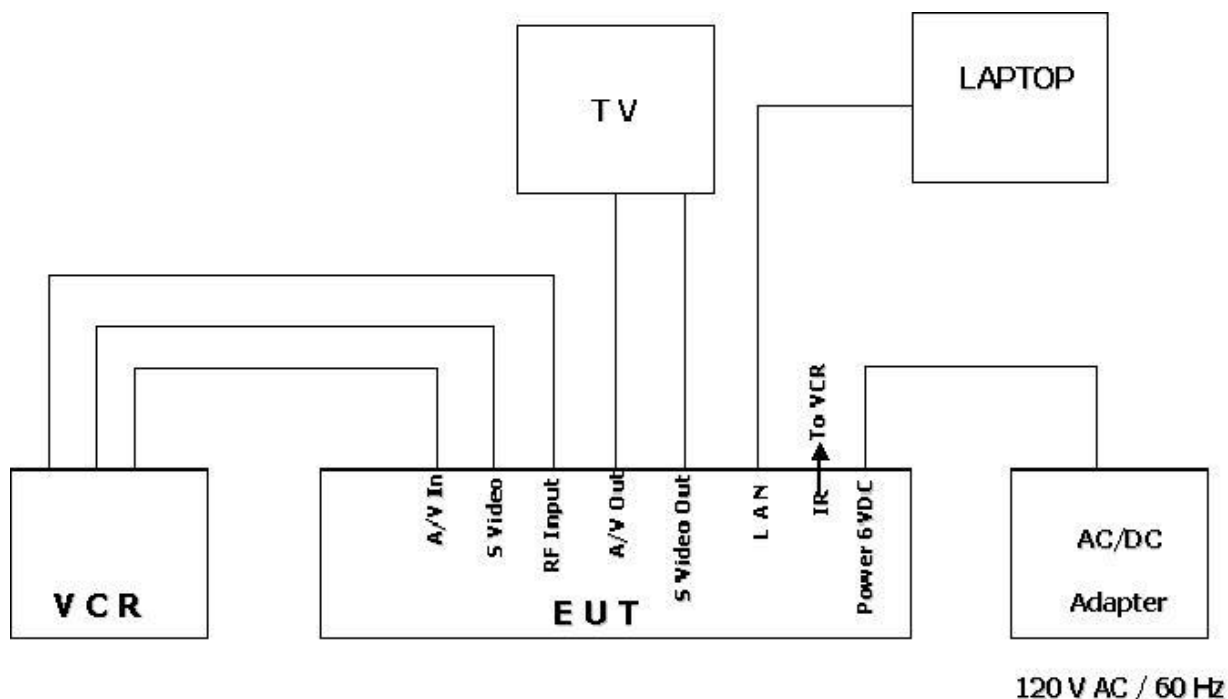
Technical Construction File

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Physical Configuration for Testing



4.3 Test Operation and Test Software

slingslayer software Ver0.27 used during testing

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4.4 Special Accessories and Auxiliary Equipment

Special accessory supplied along with EUT

Item	Make/trade mark	Model	Serial number
AC/DC adaptor	HON-KWANG	HK-A512-A06	KXXXXXXXXX

Auxiliary equipment used for testing

Item	Make/trade mark	Model	Serial number	Compliance details
VCR	Samsung	SV-5000W	61AX501899D/XAA	FCC complied
Television	Philips	15PT2303/69R	BZ000420556517	FCC complied
Laptop	HP	Pavilion Dv1000	CNF4463DW8	FCC complied

4.5 Countermeasures to achieve EMC Compliance

The test sample, which has been tested contained the noise suppression parts as described in the schematics . No additional measures were employed to achieve compliance.

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5. Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Mains Terminal Continuous Disturbance Voltage

RESULT:

PASS

Date of testing:	March 22, 2005
Test procedure:	FCC Title 47, Part 15, Subpart B
Frequency range:	0.45 - 30MHz
Equipment classification:	class B
Kind of test site:	shielded room
Bandwidth	9KHz
Ambient temperature	26°C
Humidity	51% RH

Disturbances other than those mentioned are small or not detectable. The measurement was done in peak detection mode. Quaispeak measurement was carried out on selected frequencies. Few Qp values attached for reference along with plots. The following spectral diagrams display the measurement of unweighted peak values.

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Figure 1: Spectral Diagrams, Conducted Emission, 150KHz - 30MHz, Line 1

**CONDUCTED EMISSION TEST
LINE**

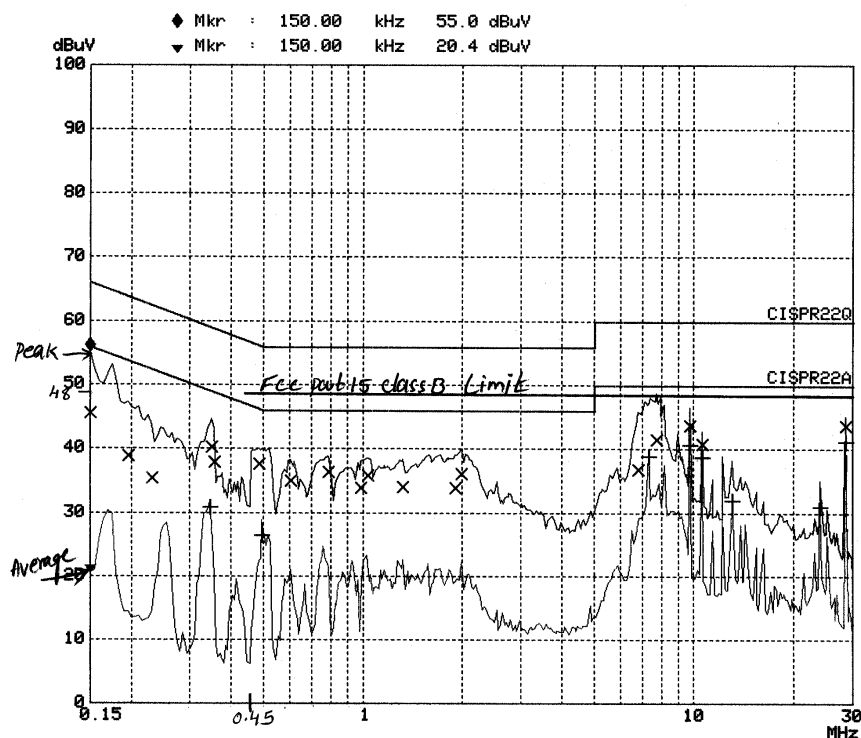
EUT: MULTI MEDIA DEVICE
Manuf: SLING MEDIA INC.
Op Cond: 120V AC
Test Spec: CISPR 22, CLASS B
Comment: MODEL NO:SLING BOX PB;SERIAL NO:FCC 1
Date: 22. Mar 05 11:10

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	30M	5k	9k	PK+AV	20ms AUTO	LN OFF

Transducer No.	Start	Stop	Name
1	9k	200M	CE

Final Measurement: x QP / + AV
Meas Time: 2 s
Subranges: 25
Acc Margin: 20dB



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Table 2: Conducted Emission, 150KHz - 30MHz, Line 1

CONDUCTED EMISSION TEST

LINE

EUT: MULTI MEDIA DEVICE
Manuf: SLING MEDIA INC.
Op. Cond: 120V AC
Test Spec: CISPR 22, CLASS B
Comment: MODEL NO:SLING BOX PB;SERIAL NO:FCC 1
Date: 22. Mar 05 11:10

Final Measurement Results:

Frequency MHz	QP Level dBuV	Delta Limit dB
0.15000	45.5	-20.4
0.19500	39.0	-24.9
0.23000	35.4	-27.0
0.35000	40.3	-18.7
0.35500	37.9	-20.9
0.48500	37.7	-18.6
0.60500	35.0	-21.0
0.78500	36.4	-19.6
0.98500	33.9	-22.0
1.03000	35.8	-20.1
1.32000	34.1	-21.8
1.90500	33.9	-22.0
1.98500	36.1	-19.8
6.80000	36.8	-23.1
7.71000	41.5	-18.4
9.76000	43.7	-16.2
10.58000	40.8	-19.1
28.63500	43.8	-16.1

Frequency MHz	AV Level dBuV	Delta Limit dB
0.34500	30.9	-18.2
0.49500	26.4	-19.6
7.32500	38.9	-11.0
9.76500	40.7	-9.3
10.58000	38.8	-11.1
13.02500	31.9	-18.0
24.00000	31.0	-18.9
28.63500	41.2	-8.7

* limit exceeded

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Figure 2: Spectral Diagrams, Conducted Emission, 150KHz - 30MHz, Line 2

CONDUCTED EMISSION TEST
NEUTRAL

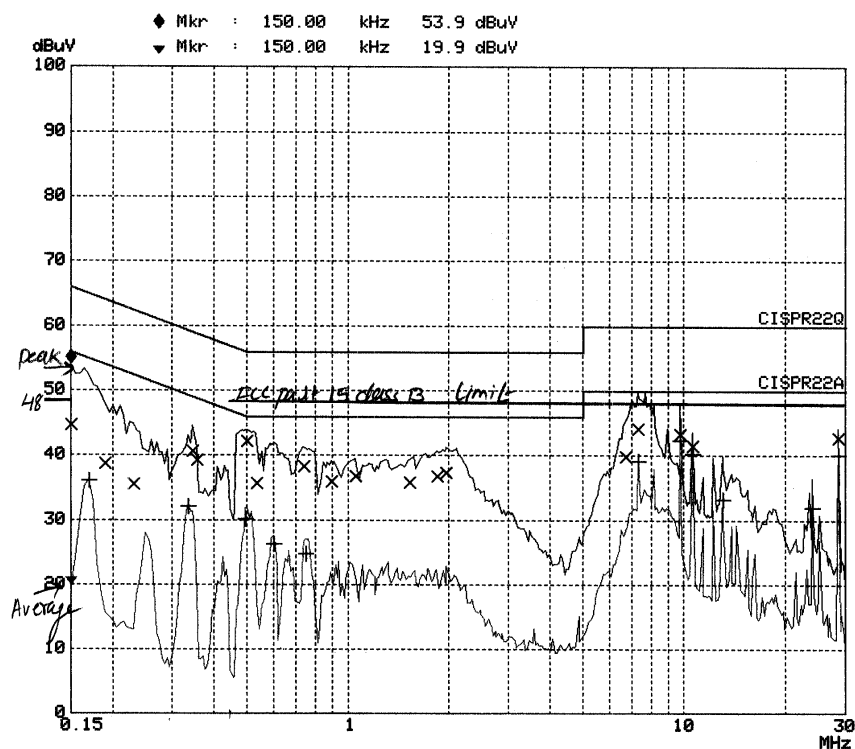
EUT: MULTI MEDIA DEVICE
Manuf: SLING MEDIA INC.
Op Cond: 120V AC
Test Spec: CISPR 22, CLASS B
Comment: MODEL NO:SLING BOX PB;SERIAL NO:FCC 1
Date: 22. Mar 05 10:54

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK+AV	20ms	AUTO	LN OFF

Transducer No.	Start	Stop	Name
1	9k	200M	CE

Final Measurement: x QP / + AV
Meas Time: 2 s
Subranges: 25
Acc Margin: 20dB



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Table 3: Conducted Emission, 150KHz - 30MHz, Line 2

CONDUCTED EMISSION TEST
NEUTRAL

EUT: MULTI MEDIA DEVICE
Manuf: SLING MEDIA INC.
Op Cond: 120V AC
Test Spec: CISPR 22, CLASS B
Comment: MODEL NO:SLING BOX PB;SERIAL NO:FCC 1
Date: 22. Mar 05 10:54

Final Measurement Results:

Frequency MHz	QP Level dBuV	Delta Limit dB
0.15000	44.7	-21.2
0.19000	38.7	-25.3
0.23000	35.6	-26.8
0.34500	40.6	-18.5
0.35500	39.3	-19.5
0.50000	42.2	-13.7
0.53500	35.7	-20.2
0.74000	38.3	-17.6
0.89000	36.0	-19.9
1.05000	36.8	-19.2
1.53000	35.9	-20.0
1.84500	36.8	-19.1
1.96000	37.4	-18.5
6.73000	39.8	-20.1
7.32500	44.1	-15.8
9.75500	43.4	-16.5
10.58000	41.5	-18.4
28.63500	42.7	-17.2

Frequency MHz	AV Level dBuV	Delta Limit dB
0.17000	36.1	-18.9
0.33500	32.1	-17.2
0.49500	30.2	-15.8
0.60000	26.4	-19.5
0.75000	24.8	-21.1
7.32500	39.2	-10.7
9.76500	42.4	-7.5
10.58000	40.3	-9.6
13.02000	33.2	-16.7
24.00000	32.0	-17.9
28.63500	40.2	-9.8

* limit exceeded

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5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated Emission (RE)

RESULT:

PASS

Date of testing:	March 21, 2005 & April 4, 2005
Test procedure:	FCC Title 47, Part 15, Subpart B
Frequency range:	30MHz - 1GHz
Equipment classification:	class B
Measurement distance:	3m
Kind of test site:	semi anechoic chamber & OATS
Bandwidth	120KHz
Ambient temperature/Humidity	28°C / 55% (anechoic chamber)
Ambient temperature/ Humidity	26°C/ 65% RH (OATS)

Disturbances other than those mentioned are small or not detectable.

Note: The EMI test receiver (make R&S model ESAI) was used for measuring radiated emission from the EUT in the semi anechoic chamber. Transducer table settings are available to enter the cable loss & antenna factor in the receiver to get the field strength (dBμV/m) values from the display. So manual calculation is not necessary.

For example:

$$E \text{ (dB}\mu\text{V/m)} = V \text{ (dB}\mu\text{V)} + AF \dots \dots \dots \text{Eq.1}$$

Where

E (dBμV/m) = Field strength

V (dBμV) = receiver two terminal voltage

AF = Antenna factor + cable loss

Radiated emission from the EUT was first measured in anechoic chamber at 3 meter distance for both horizontal and vertical polarization and antenna height was varied to maximize the emission. The manipulation of interconnecting cables was done to identify maximum emissions in the frequency range of 30MHz – 1000MHz from the EUT. The above RE measurement was repeated at OATS at 3 meters distance as required by FCC standard for those test frequencies with appreciable emission. Measurement was carried out for both horizontal and vertical polarization and antenna height was varied up to 4 meters to maximize the emission. The manipulation of interconnecting cables was done to identify maximum emissions. The photograph shows the maximum emission condition. Maximum emissions were observed at 0° table orientation and antenna height at 1.2 meters. Measurements were carried out in Peak detection mode and for selected frequencies Quasi peak detection mode used.

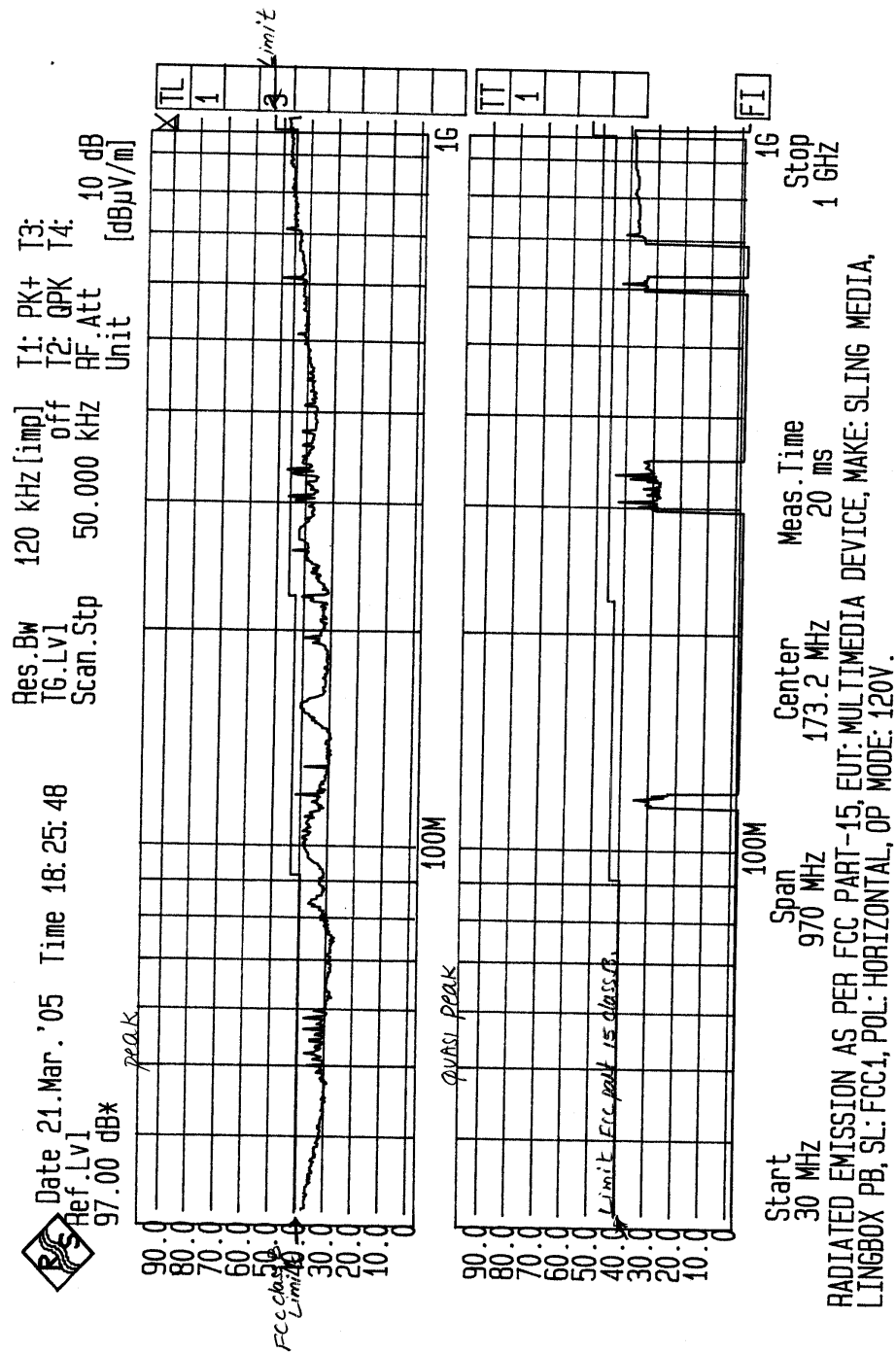
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Figure 3: Spectral Diagram, Radiated Emission 30MHz - 1000MHz, Horizontal polarization



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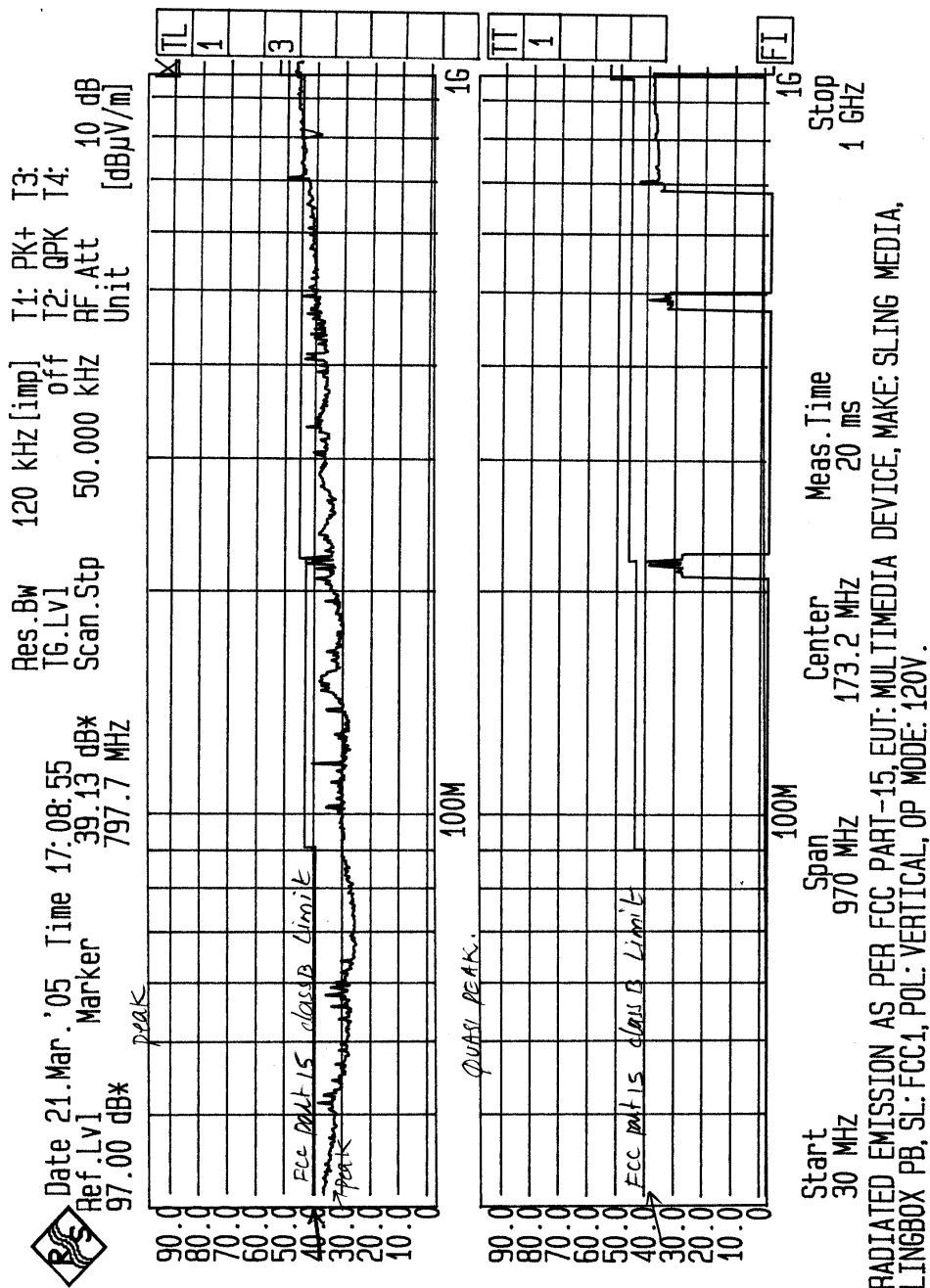
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Figure 4: Spectral Diagram, Radiated Emission 30MHz - 1000MHz, Vertical polarization



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Table 4: Radiated Emission, Horizontal and Vertical Antenna Orientations,

Horizontal polarization:

Freq (MHz)	Antenna position (meters)	Table position (degrees)	Antenna factor (dB μ V)	Cable loss (dBm)	E field value (dB μ V/m)	Spec Limit (dB μ V/m)
323.0	1.2	0	14.7	0.34	44.49	46.0
296.5	1.2	0	14.0	0.34	43.37	46.0
597.9	1.2	0	19.9	0.64	43.32	46.0
698.7	1.8	70	21.3	0.71	41.95	46.0
114.1	1.4	180	8.6	0.23	35.5	43.5

Vertical polarization:

Freq (MHz)	Antenna position (meters)	Table position (degrees)	Antenna factor (dB μ V)	Cable loss (dBm)	E field value (dB μ V/m)	Spec Limit (dB μ V/m)
698.7	1.0	0	21.3	0.71	44.11	46.0
215.4	1.2	0	11.4	0.28	40.53	43.5
484.4	1.2	270	18.5	0.56	40.35	46.0
212.9	1.2	0	11.4	0.28	39.34	43.5
797.7	1.5	80	22.1	0.71	39.13	46.0
214.5	1.2	180	11.4	0.28	40.63	43.5
34.9	1.0	180	19.0	0.13	34.0	40.0

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Photographs of the Test Set-Up

Photograph 1: Set-up for Conducted Emission on AC Mains



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Photograph 2: Set-up for Radiated Emission in anechoic chamber



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Photograph 3: Set-up for Radiated Emission at OATS

End of test report