



**FCC CFR47 PART 15 SUBPART B
ICES-003 ISSUE 4**

DECLARATION OF CONFORMITY TEST REPORT

FOR

WIRELESS STEREO HEADSET

MODEL NUMBER: CECHYA-0086

**FCC ID: ZL2CECHYA0086
IC: 409P-CECHYA0086**

REPORT NUMBER: 12U14487-2, Revision C

**ISSUE DATE: July 5, 2012
Revision Date: July 27, 2012**

Prepared for
**Sony Computer Entertainment America
919 East Hillsdale Blvd.
Foster City, CA 94404-2175**

Prepared by
**UL LLC
333 Pfingsten Rd.
Northbrook, IL 60062
TEL: (847) 272-8800**



NVLAP Lab code: 100414-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	07/05/12	Initial Issue	M.Ferrer
A	07/11/12	Adding serial number	M.Ferrer
B	07/13/12	Added new Radiated Emissions data	M.Ferrer
C	07/27/12	New Radiated and Conducted Emissions data	M.Ferrer

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Sony Computer Entertainment America
919 East Hillsdale Blvd.
Foster City, CA 94404-2175

EUT DESCRIPTION: Wireless Stereo Headset

MODEL: CECHYA-0086

SERIAL NUMBER: PVT-000004

DATE TESTED: 06/26/12 – 07/27/12

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART B	Pass
ICES-003 ISSUE 4	Pass

UL tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL By:



BART MUCHA
STAFF ENGINEER
UL

Tested By:



MICHAEL FERRER
SENIOR PROJECT ENGINEER
UL

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60193, USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Sample Calculations

Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)

Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)

Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	+/- 0.3 dB (k=2)
Radiated Disturbance, 30 to 1000 MHz	+/- 3.17 dB (k=2)

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a wireless stereo headset.

GENERAL INFORMATION

Power Requirements	5VDC
Highest frequency generated or used by the EUT	16 MHz

5.2. TEST CONFIGURATIONS

EUT Configuration	Description
Minimum Configuration	EUT connected to PC with minimum peripheral complement.

5.3. MODE(S) OF OPERATION

Mode of Operation	Description
Normal Mode	Charging and in Digital/RX/TX mode and Headphone mode

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was R01.00.00.

The EUT driver used standard windows drivers.

The test utility software used during testing was VMIttest, rev. 1.1.6.38.

5.5. MODIFICATIONS

No modifications were made during testing.

5.6. DETAILS OF TESTED SYSTEM**SUPPORT EQUIPMENT**

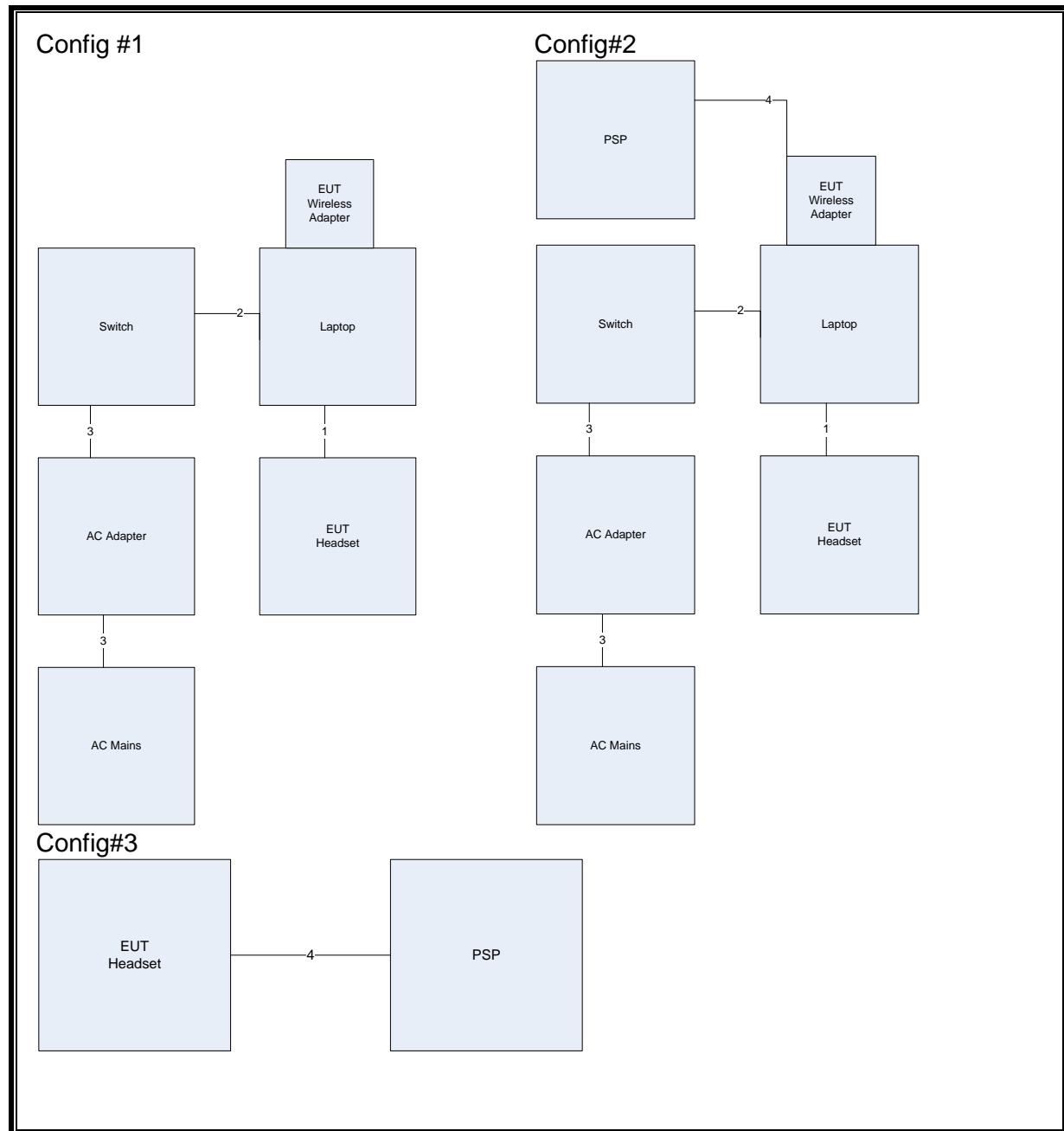
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	T420	4236B92	DoC
Game System	Sony	PS3	CF412610910-CECH-3	DoC
Game System	Sony	PSP	AT589304964-PSP30	Doc
Switch	Dlink	DSS-5+	-	Doc
AC/DC adpater	Dlink	AD-071AL	-	Doc

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	2	USB	4 Cond	1.47	USB Laptop to Headset
2	Ethernet	1	RJ45	8	2	Laptop to Switch
3	DC	1	DC	1	1.5	AC power to Switch
4	3.5mm	1	3.5mm	3cond	1.28	Headphone connection

TEST SETUP

The EUT is connected to the host laptop computer via USB during the tests. Test software exercised the radio card.

TEST SETUP DIAGRAM

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List						
Description	Manufacturer	Model	Asset	Cal Date	Cal Due	Test
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	20111228	20121231	RE
Bicon Antenna	Chase	VBA6106A	EMC4078	20120117	20130131	RE
Log-P Antenna	Chase	UPA6109	EMC4258	20110927	20120928	RE
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	20111228	20121231	CE
LISN	Solar	8602-50-TS-50-N	EMC4052	20120106	20130106	CE
LISN	Solar	8602-50-TS-50-N	EMC4064	20120106	20130106	CE

RE: Radiated Emissions

CE: Conducted Emissions AC Mains

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT is 16 MHz, therefore the frequency range was investigated from 30 MHz to 1000 MHz.

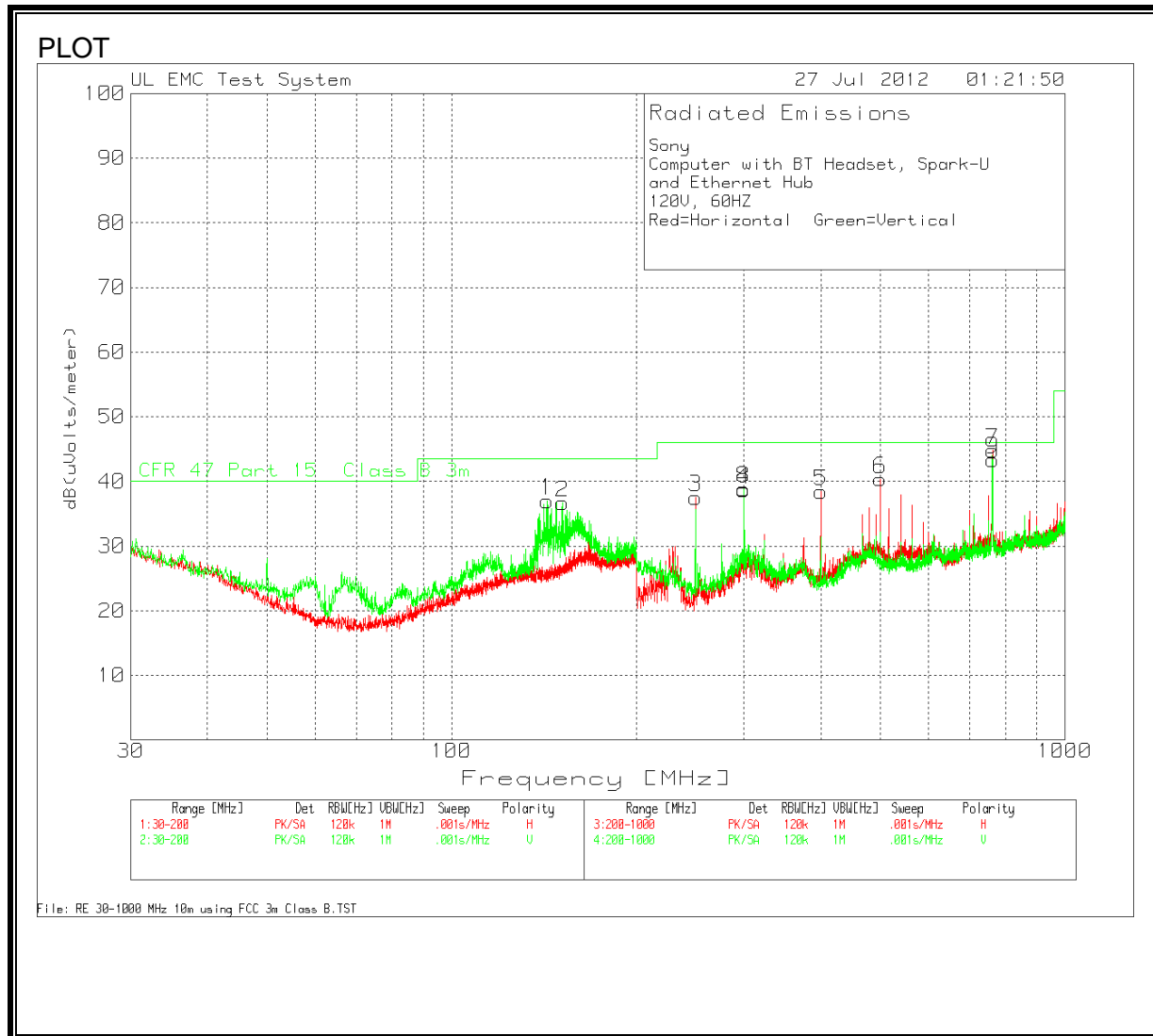
LIMIT

§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

RESULTS

Config#1

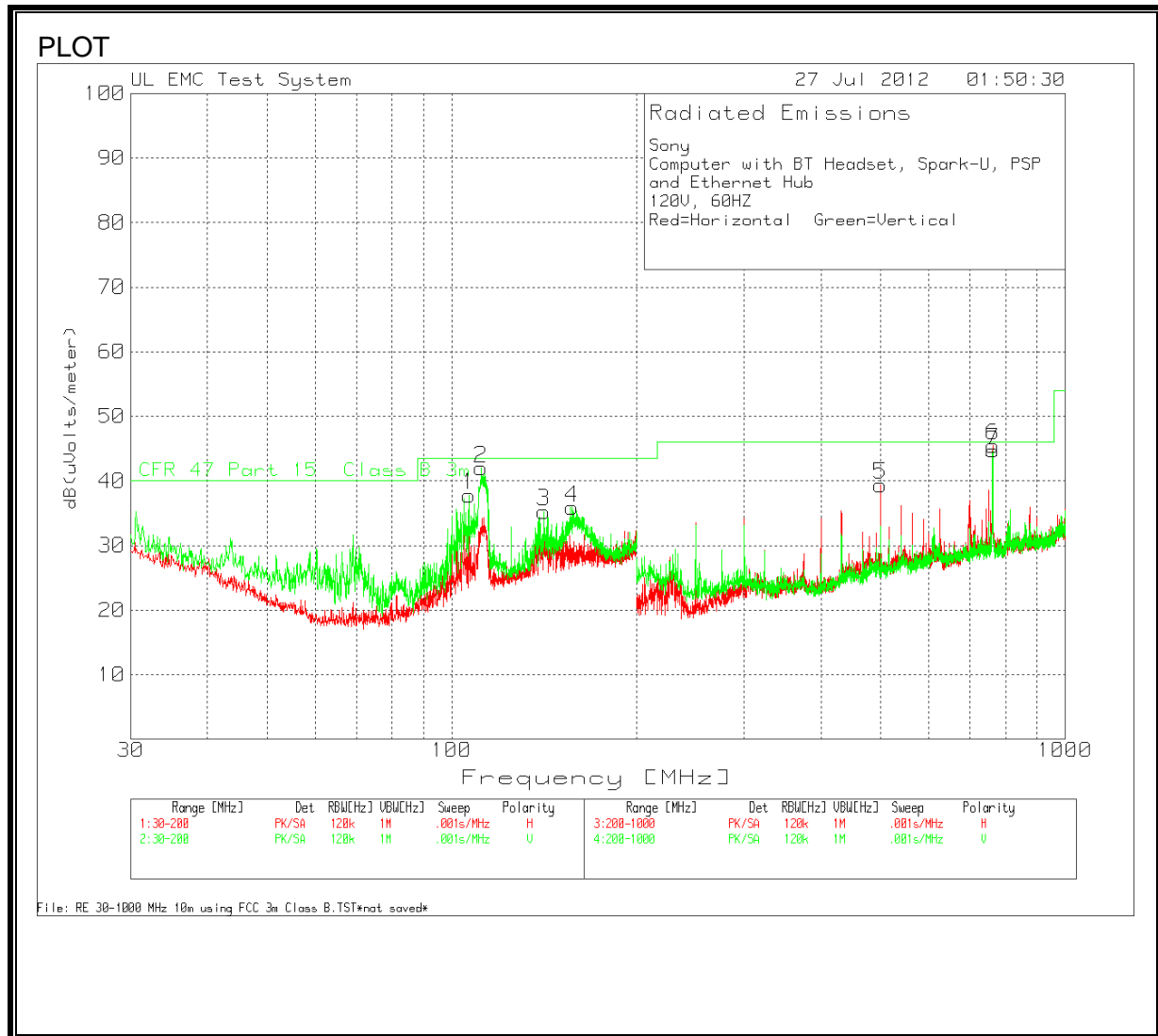
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL DATA

[illegible]

763MHz is an ambient of the laptop

Config#2

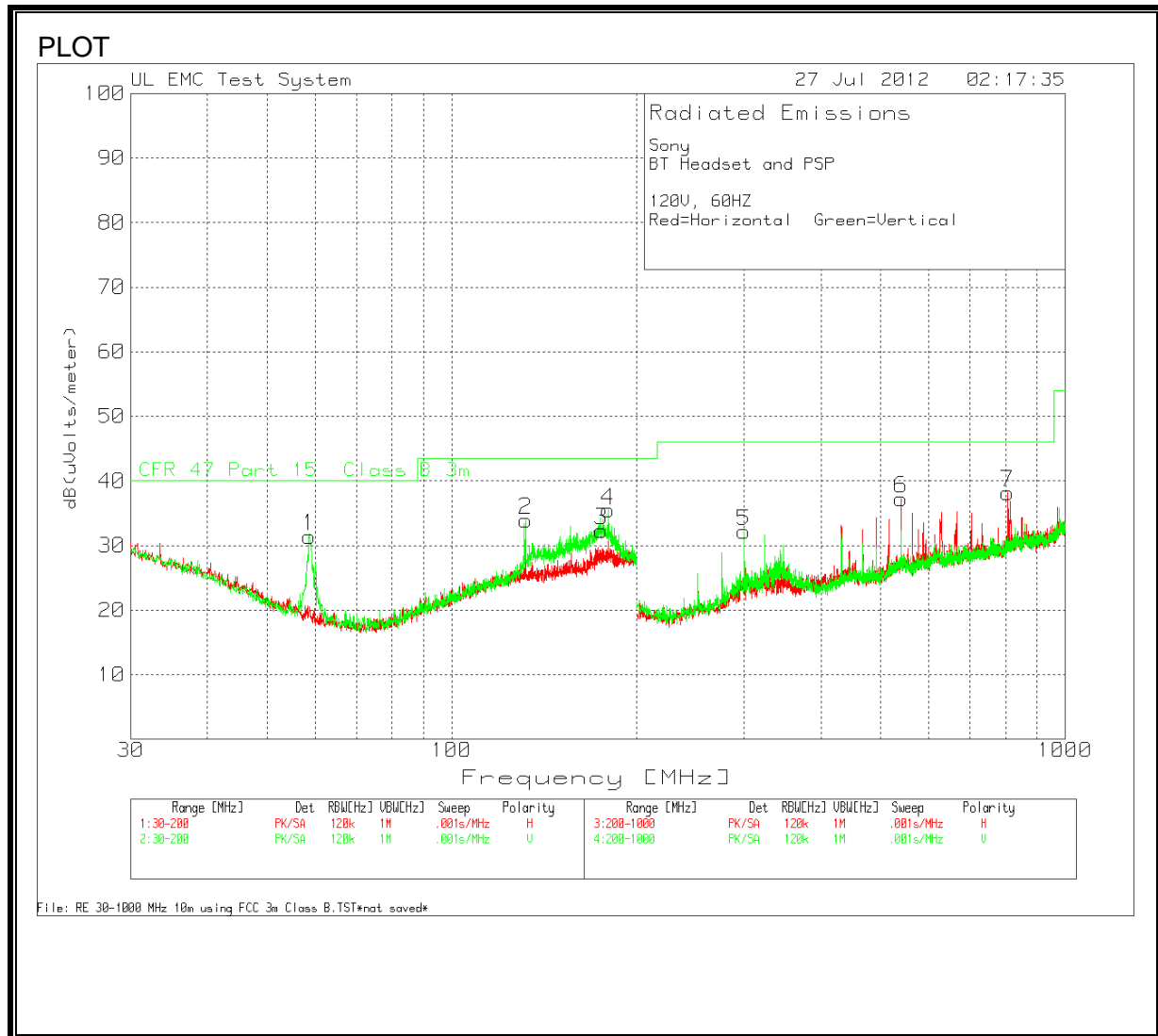
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL DATA

Sony													
Computer with BT Headset, Spark-U, PSP													
and Ethernet Hub													
120V, 60HZ													
Red=Horizontal Green=Vertical													
Marker No.	Test Frequency	Meter Reading	Detector	Antenna Factor	Gain/Loss Factor	10m to 3m (dB)	dB(uV/s/meter)	CFR 47 Part 15 Class B 3m	Margin	CISPR Class B 10m	Margin	Height [cm]	Polarity
1	106.7166	45.18	PK	11.6	-29.5	10.5	37.78	43.5	-5.72	30	-2.72	99	Vert
2	111.6442	48.67	PK	12.3	-29.5	10.5	41.97	43.5	-1.53	30	1.47	99	Vert
3	141.2094	39.86	PK	14.3	-29.4	10.5	35.26	43.5	-8.24	30	-5.24	99	Vert
4	157.4363	39.56	PK	15.1	-29.3	10.5	35.86	43.5	-7.64	30	-4.64	99	Vert
5	500.0666	43.35	PK	17.2	-31.7	10.5	39.35	46	-6.65	37	-8.15	99	Horz
6	763.3578	44.93	PK	21.4	-31.4	10.5	45.43	46	-0.57	37	-2.07	99	Horz
7	763.0913	44.15	PK	21.4	-31.3	10.5	44.75	46	-1.25	37	-2.75	199	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor	Gain/Loss Factor	10m to 3m [dB]	dB(uV/s/meter)	CFR 47 Part 15 Class B 3m	Margin	CISPR Class B 10m	Margin	Azimuth [Degs]	Height [cm]	Polarity
111.7727	42.82	QP	12.3	-29.5	10.5	36.12	43.5	-7.38	30	-4.38	164	100	Vert
PK - Peak detector													
QP - Quasi-Peak detector													

763MHz is an ambient of the laptop

Config#3

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL DATA

Sony											
BT Headset and PSP											
120V, 60HZ											
Red=Horizontal Green=Vertical											
Marker No.	Test Frequency	Meter Reading	Detector	Antenna Factor	Gain/Loss Factor	10m to 3m (dB)	dB(uVolts/meter)	CFR 47 Part 15 Class B	Margin	Height [cm]	Polarity
								3m			
1	58.6307	43.07	PK	7.1	-29.3	10.5	31.37	40	-8.63	300	Vert
2	131.949	38.74	PK	14.1	-29.4	10.5	33.94	43.5	-9.56	101	Vert
3	175.2774	35.43	PK	15.6	-29.2	10.5	32.33	43.5	-11.17	101	Vert
4	180.035	38.26	PK	15.8	-29.1	10.5	35.46	43.5	-8.04	101	Vert
6	540.04	39.37	PK	19	-31.6	10.5	37.27	46	-8.73	99	Horz
7	805.1965	37.43	PK	21.9	-31.6	10.5	38.23	46	-7.77	99	Horz
5	299.9334	41.45	PK	13	-32.8	10.5	32.15	46	-13.85	101	Vert
PK - Peak detector											

7.2. AC MAINS LINE CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

RESULTS Config #1**WORST EMISSIONS**

Sony

Spark-U Headset

Laptop and Ethernet

120 VAC 60Hz

Red=L1 Green=Neutral

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
No. Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
1 .15234	40.66 PK	.1	12.8	53.56	-	-	65.9	55.9	-	-
			Margin [dB]		-	-	-12.34	-2.34	-	-
2 .20075	41.65 PK	.1	11.5	53.25	-	-	63.6	53.6	-	-
			Margin [dB]		-	-	-10.35	-1.35	-	-
3 .26976	36.72 PK	0	11.1	47.82	-	-	61.1	51.1	-	-
			Margin [dB]		-	-	-13.28	-3.28	-	-
Line - L2 .15 - 1MHz										
4 .15764	39.91 PK	.1	12.7	52.71	-	-	65.6	55.6	-	-
			Margin [dB]		-	-	-12.89	-2.89	-	-
5 .20606	40.09 PK	.1	11.5	51.69	-	-	63.4	53.4	-	-
			Margin [dB]		-	-	-11.71	-1.71	-	-
6 .26934	34.4 PK	.1	11.1	45.6	-	-	61.1	51.1	-	-
			Margin [dB]		-	-	-15.5	-5.5	-	-

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

PK - Peak detector

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
.15262	32.71 QP	.1	12.8	45.61	-	-	65.86	55.86	-	-
			Margin [dB]:		-	-	-20.25	-10.25	-	-
.2034	34.15 QP	.1	11.5	45.75	-	-	63.47	53.47	-	-
			Margin [dB]:		-	-	-17.72	-7.72	-	-
.27074	28.04 QP	0	11.1	39.14	-	-	61.1	51.1	-	-
			Margin [dB]:		-	-	-21.96	-11.96	-	-
Line - L2 .15 - 1MHz										
.15397	32.53 QP	.1	12.8	45.43	-	-	65.78	55.78	-	-
			Margin [dB]:		-	-	-20.35	-10.35	-	-
.20335	33.98 QP	.1	11.5	45.58	-	-	63.47	53.47	-	-
			Margin [dB]:		-	-	-17.89	-7.89	-	-
.27124	27.5 QP	.1	11.1	38.7	-	-	61.08	51.08	-	-
			Margin [dB]:		-	-	-22.38	-12.38	-	-

QP - Quasi-Peak detector

LIMIT 3: CISPR 22/11 Group 1 Class B QP

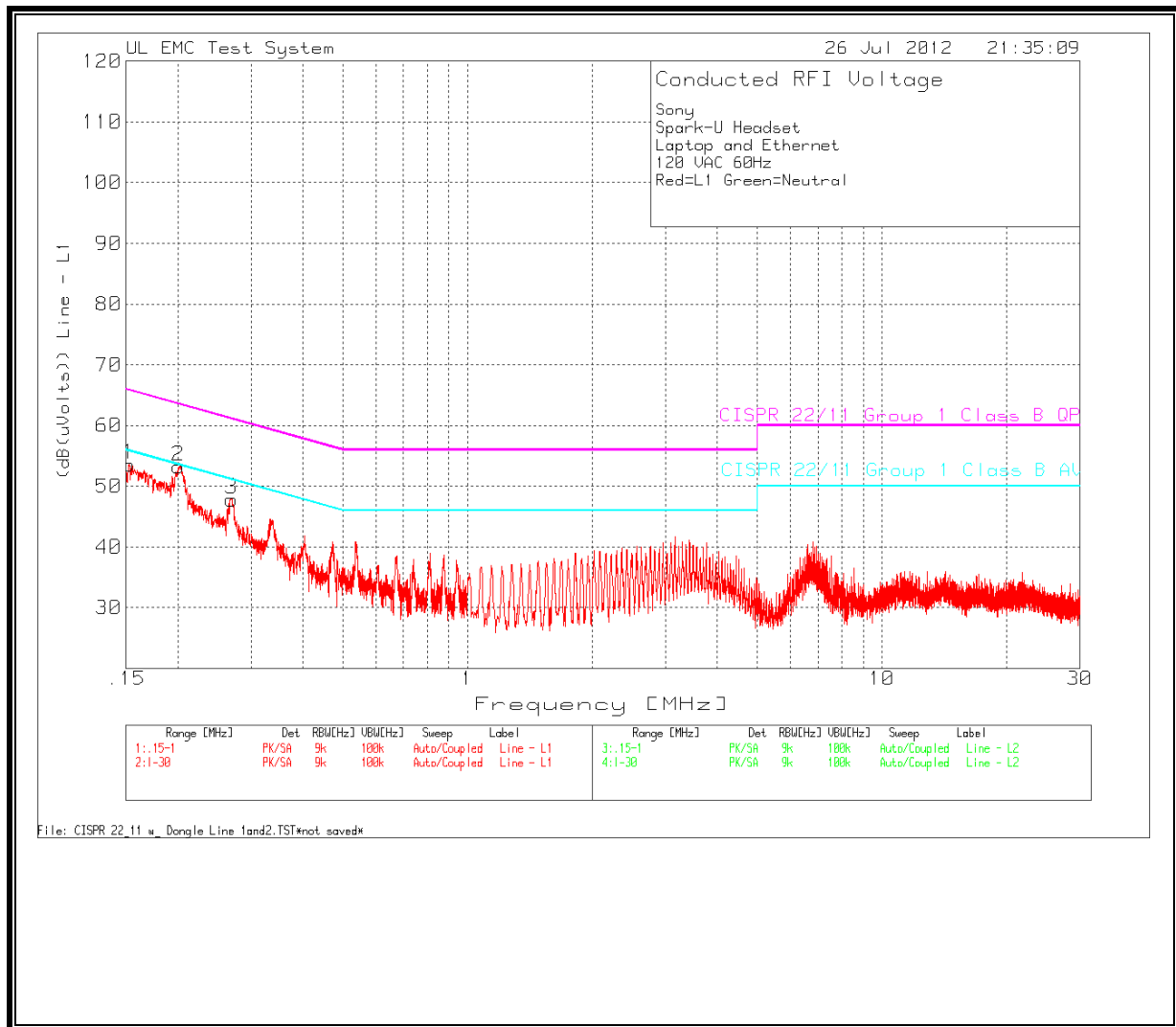
LIMIT 4: CISPR 22/11 Group 1 Class B AV

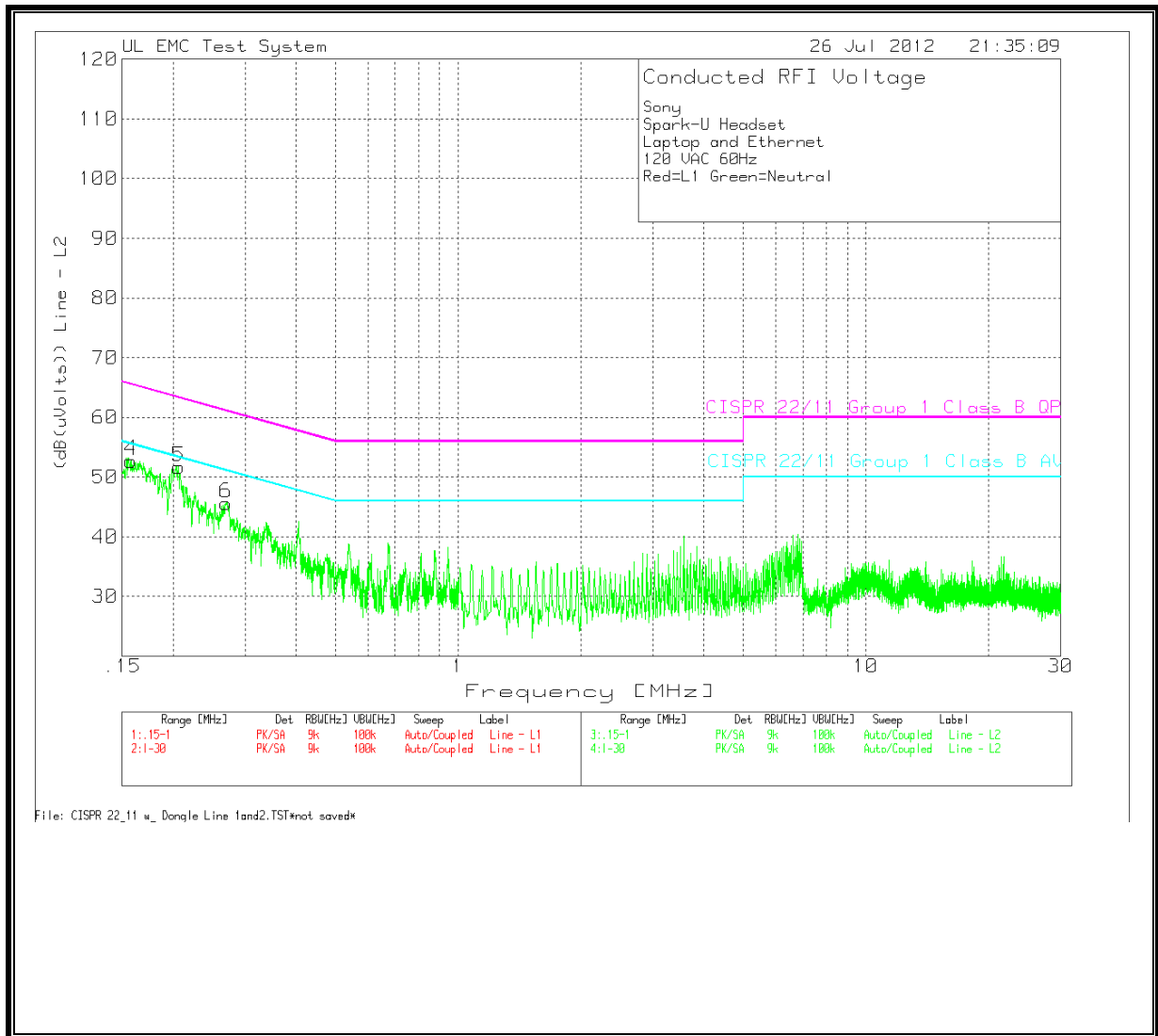
Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
.15262	3.37 Av	.1	12.8	16.27	-	-	65.86	55.86	-	-
			Margin [dB]:		-	-	-49.59	-39.59	-	-
.2034	25.47 Av	.1	11.5	37.07	-	-	63.47	53.47	-	-
			Margin [dB]:		-	-	-26.4	-16.4	-	-
.27074	22.23 Av	0	11.1	33.33	-	-	61.1	51.1	-	-
			Margin [dB]:		-	-	-27.77	-17.77	-	-
Line - L2 .15 - 1MHz										
.15397	3.11 Av	.1	12.8	16.01	-	-	65.78	55.78	-	-
			Margin [dB]:		-	-	-49.77	-39.77	-	-
.20335	22.84 Av	.1	11.5	34.44	-	-	63.47	53.47	-	-
			Margin [dB]:		-	-	-29.03	-19.03	-	-
.27124	17.41 Av	.1	11.1	28.61	-	-	61.08	51.08	-	-
			Margin [dB]:		-	-	-32.47	-22.47	-	-

Av - average detection

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

LINE 1 RESULTS

LINE 2 RESULTS

RESULTS Config #2**WORST EMISSIONS**

Sony

Spark-U Headset

Laptop, Ethernet and PSP

120 VAC 60Hz

Red=L1 Green=Neutral

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
No. Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
1 .15319	39.81 PK	.1	12.8	52.71	-	-	65.8	55.8	-	-
			Margin [dB]		-	-	-13.09	-3.09	-	-
2 .20202	39 PK	.1	11.5	50.6	-	-	63.5	53.5	-	-
			Margin [dB]		-	-	-12.9	-2.9	-	-
3 .27103	34.62 PK	0	11.1	45.72	-	-	61.1	51.1	-	-
			Margin [dB]		-	-	-15.38	-5.38	-	-
Line - L2 .15 - 1MHz										
4 .15764	37.76 PK	.1	12.7	50.56	-	-	65.6	55.6	-	-
			Margin [dB]		-	-	-15.04	-5.04	-	-
5 .20648	36.39 PK	.1	11.5	47.99	-	-	63.3	53.3	-	-
			Margin [dB]		-	-	-15.31	-5.31	-	-
6 .27019	33.16 PK	.1	11.1	44.36	-	-	61.1	51.1	-	-
			Margin [dB]		-	-	-16.74	-6.74	-	-

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

PK - Peak detector

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
.15754	31.63 QP	.1	12.7	44.43	-	-	65.59	55.59	-	-
			Margin [dB]:		-	-	-21.16	-11.16	-	-
.20259	33.98 QP	.1	11.5	45.58	-	-	63.5	53.5	-	-
			Margin [dB]:		-	-	-17.92	-7.92	-	-
.2701	28.19 QP	0	11.1	39.29	-	-	61.11	51.11	-	-
			Margin [dB]:		-	-	-21.82	-11.82	-	-
Line - L2 .15 - 1MHz										
.15686	31.11 QP	.1	12.7	43.91	-	-	65.63	55.63	-	-
			Margin [dB]:		-	-	-21.72	-11.72	-	-
.20309	33.71 QP	.1	11.5	45.31	-	-	63.48	53.48	-	-
			Margin [dB]:		-	-	-18.17	-8.17	-	-
.27087	27.84 QP	.1	11.1	39.04	-	-	61.09	51.09	-	-
			Margin [dB]:		-	-	-22.05	-12.05	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

QP - Quasi-Peak detector

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

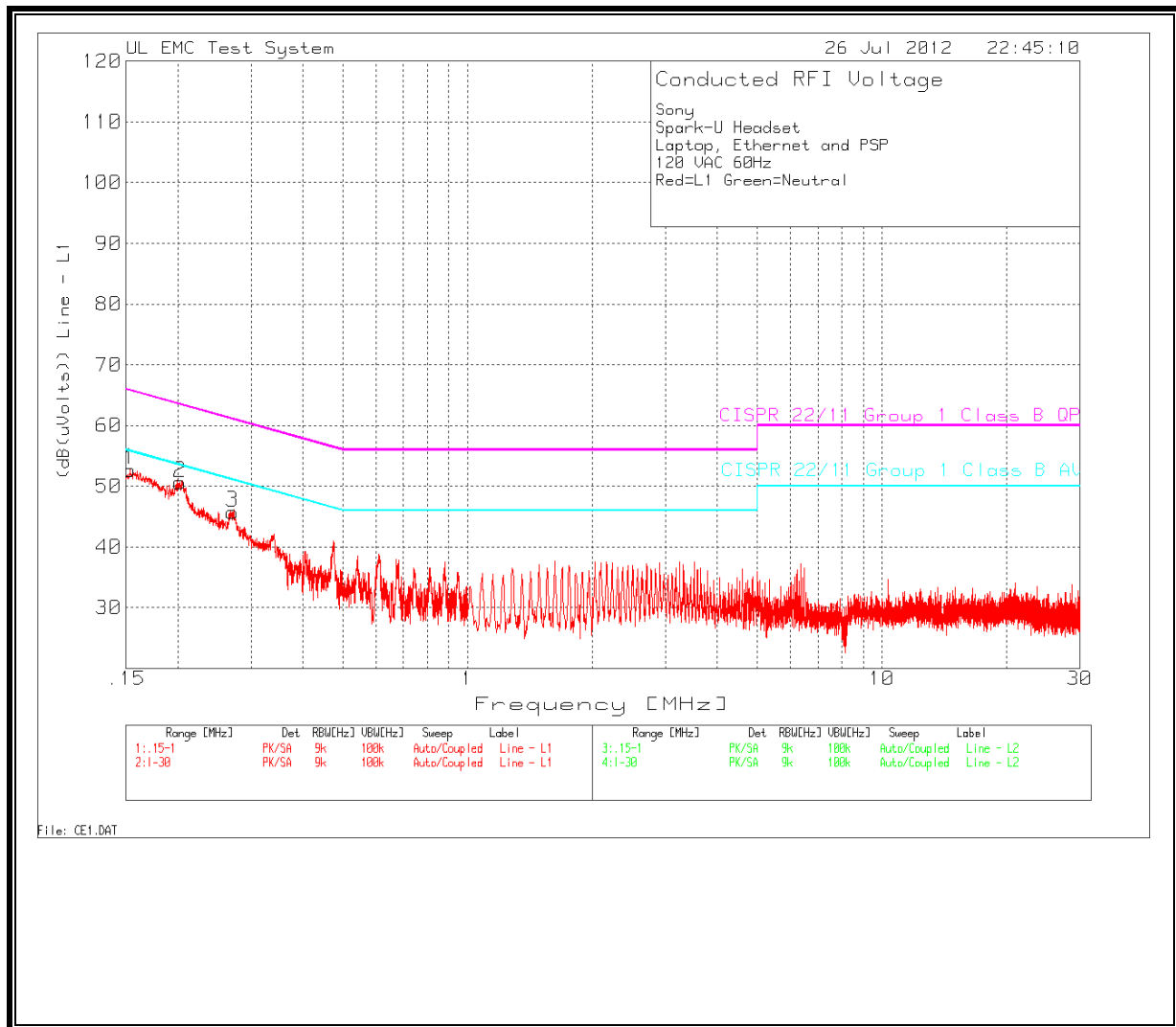
Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	(dB(uVolts))						
[MHz]	(dBuV)	[dB]	[dB]							
=====										
Line - L1 .15 - 1MHz										
.15754	2.23 Av	.1	12.7	15.03	-	-	65.59	55.59	-	-
			Margin [dB]:		-	-	-50.56	-40.56	-	-
.20259	23.95 Av	.1	11.5	35.55	-	-	63.5	53.5	-	-
			Margin [dB]:		-	-	-27.95	-17.95	-	-
.2701	22.28 Av	0	11.1	33.38	-	-	61.11	51.11	-	-
			Margin [dB]:		-	-	-27.73	-17.73	-	-
Line - L2 .15 - 1MHz										
.15686	1.86 Av	.1	12.7	14.66	-	-	65.63	55.63	-	-
			Margin [dB]:		-	-	-50.97	-40.97	-	-
.20309	22.92 Av	.1	11.5	34.52	-	-	63.48	53.48	-	-
			Margin [dB]:		-	-	-28.96	-18.96	-	-
.27087	18.09 Av	.1	11.1	29.29	-	-	61.09	51.09	-	-
			Margin [dB]:		-	-	-31.8	-21.8	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

Av - average detection

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

LINE 1 RESULTS

LINE 2 RESULTS