FCC CFR47 PART 15 SUBPART C
CLASS II PERMISSIVE CHANGE
CERTIFICATION TEST REPORT

FOR

900 MHZ WIRELESS TELEPHONE HEADSET AMPLIFIER - BASE UNIT

MODEL NUMBER: CS50-R

BRAND NAME: PLANTRONICS, INC.

FCC ID: AL8CS50XXXX

REPORT NUMBER: 06U10325-1

ISSUE DATE: JUNE 12, 2006

Prepared for
PLANTRONICS, INC.
345 ENCINAL STREET
SANTA CRUZ, CA 95060, USA

Prepared by
COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
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LAB CODE:200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	6/12/06	Initial Issue	A. Ilarina

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1. TEST RESULT CERTIFICATION

COMPANY NAME: PLANTRONICS, INC.
345 ENCINAL STREET
SANTA CRUZ, CA 95060, USA

EUT DESCRIPTION: 900 MHz Wireless Telephone Headset Amplifier Base Unit

MODEL: CS50-R

DATE TESTED: JUNE 05-06, 2006

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standard. 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 Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

ALVIN ILARINA
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

THANH NGUYEN
EMC TECHNICIAN
COMPLIANCE CERTIFICATION SERVICES

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2. EUT CLASS II PERMISSIVE DESCRIPTION

The EUT is the 900MHz Wireless Base Amplifier unit operates in frequency range from 902 to 928 MHz. The Base has the maximum output power of 0.039 Watts with antenna gain of 2.1dBi.

This is a Class II permissive change for FCC ID: AL8CS50XXXX, originally granted on 8/12/2003.

The major change filed under this application includes:

Change #1 For the new model CS50-R, change the model CS50-USB as follows:

1) Remove USB cable – USB driver circuitry remains.
2) Add cable & 3.5mm Jack for connection to International Resources, Inc., model NSQ412 phone.

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4/2001, FCC CFR 47 Part 2 and FCC CFR 47 Part 15.

4. FACILITIES AND ACCREDITATION

4.1. FACILITIES AND EQUIPMENT

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measurement instruments utilized to perform the tests documented in this report have been calibrated in accordance with the manufacturer's recommendations, and are traceable to national standards.

5.2. MEASUREMENT UNCERTAINTY

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

Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

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

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5.3. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	2/4/2007
RF Filter Section	Agilent / HP	85420E	3705A00256	2/4/2007
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/3/2006
Quasi-Peak Adaptor	Agilent / HP	85650A	3145A01654	1/21/2008
SA Display Section 2	Agilent / HP	85662A	2816A16696	4/7/2008
SA RF Section, 1.5 GHz	Agilent / HP	85680B	2814A04227	1/7/2008
Antenna, Bilog 30 ~ 2000 MHz	Chase	CBL6112B	2586	3/3/2006
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/17/2006
Spectrum Analyzer, 26.5 GHz	Agilent / HP	8593EM	3710A00205	7/26/2006
Antenna, Horn 1 ~ 18 GHz	ETS	3117	29301	4/22/2007
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2006
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	8379443	8/30/2006
EMI Test Receiver	R & S	ESHS 20	827129/006	6/3/2006

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6. SETUP OF EQUIPMENT UNDER TEST

6.1. SETUP OF THE BASE (RF MODE)

SUPPORT EQUIPMENT

TEST PERIPHERALS				
Device Type	Manufacturer	Model Number	Serial Number	FCC ID
Telephone	International resource, Inc.	NSQ412	9601900	DoC

I/O CABLES

TEST I / O CABLES								
Cable No	I/O Port	# of I/O Port	Connector Type	Type of Cable	Cable Length	Data Traffic	Bundled	Remark
1	DC	2	DC/AC	Unshielded	2m	No	No	N/A
2	Audio	1	Audio Plug	Shielded	.5m	Yes	No	N/A
3	Phone	1	RJ11	Unshielded	2m	No	No	Terminated

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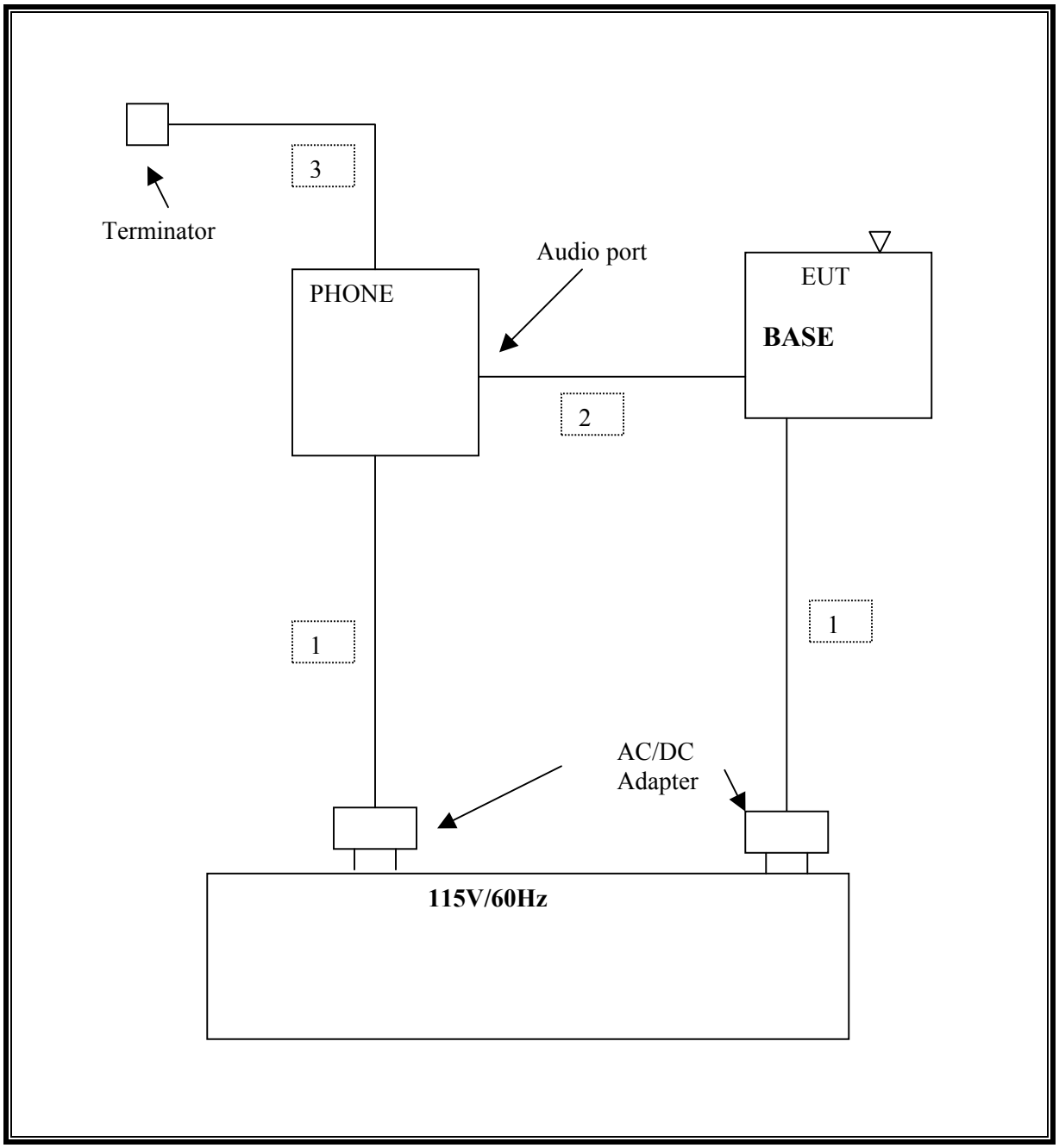
SETUP DIAGRAM BASE



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7. APPLICABLE LIMITS AND TEST RESULTS

7.1. PEAK OUTPUT POWER

PEAK POWER LIMIT

§15.247 (b) The maximum peak output power of the intentional radiator shall not exceed the following:

§15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz , and 5725-5850 MHz bands: 1 watt.

§15.247 (b) (4) Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum antenna gain is 2.1 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with VBW >= VBW > EBW.
(RBW=3MHz; VBW=8MHz)

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RESULTS

No non-compliance noted:

BASE

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	906	15.20	30	-14.80
Middle	915	15.07	30	-14.93
High	924	14.77	30	-15.23

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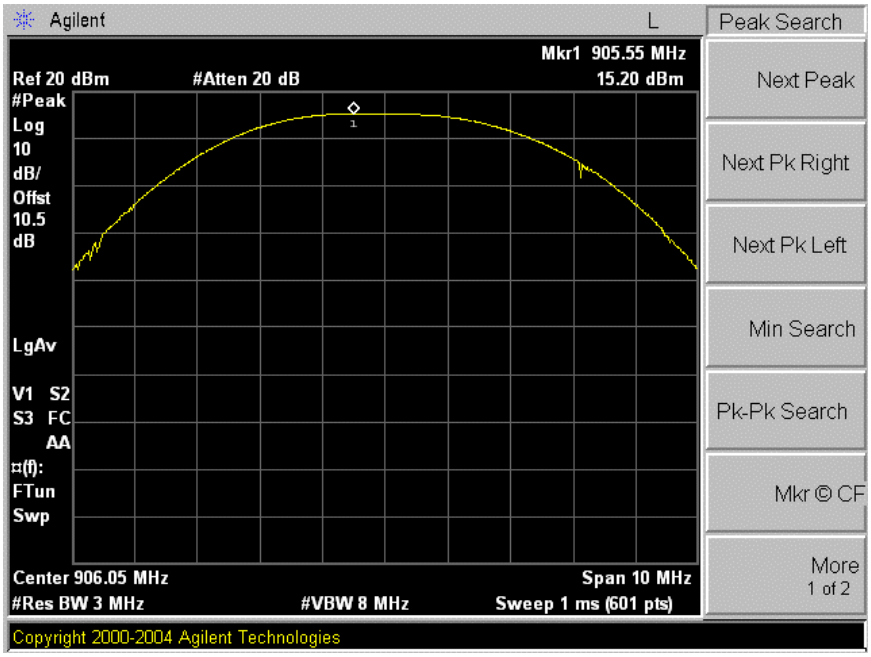
OUTPUT POWER BASE

PEAK POWER LOW CH BASE



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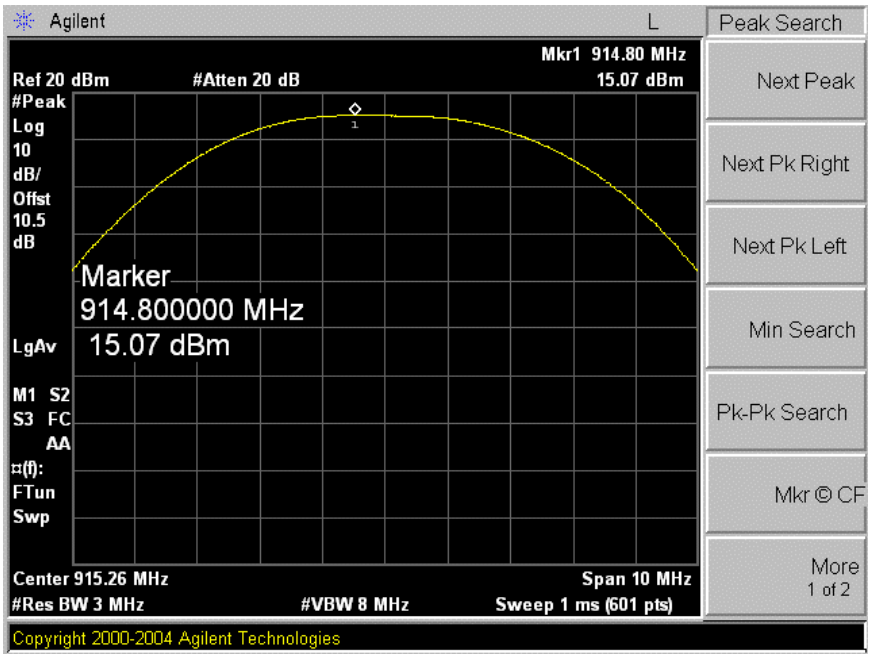
PEAK POWER MID CH BASE



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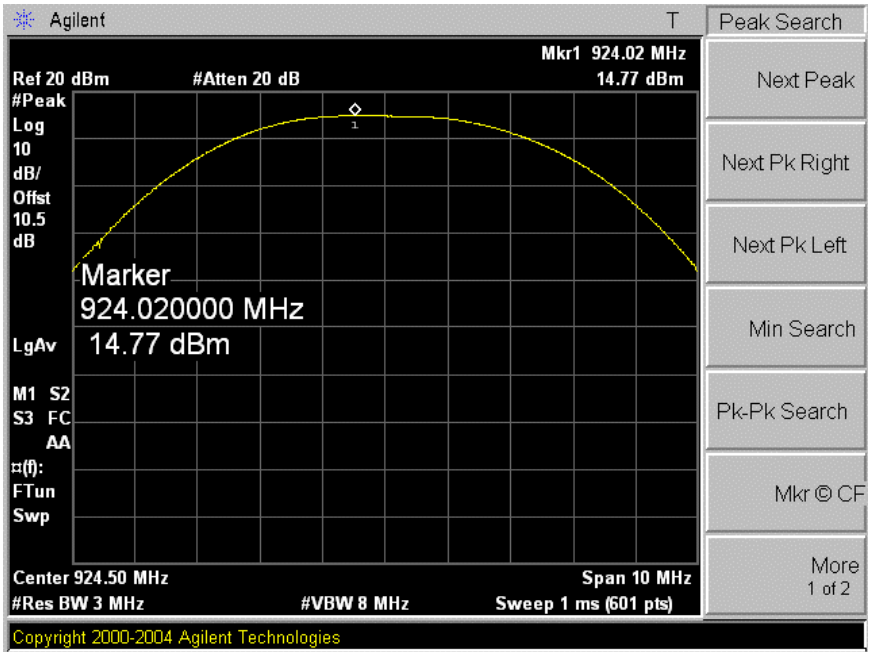
PEAK POWER HIGH CH BASE



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7.2. CONDUCTED SPURIOUS EMISSIONS

LIMITS

§15.247 (c) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

Please refer to radiated spurious emissions.

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7.3. RADIATED EMISSIONS

LIMITS

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2] Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

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§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

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TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

RESULTS

No non-compliance noted:

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TX MODE:

NON-RESTRICTED BAND EDGE PLOT (LOW BAND EDGE, HORIZONTAL)

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Tel: (408) 463-0888
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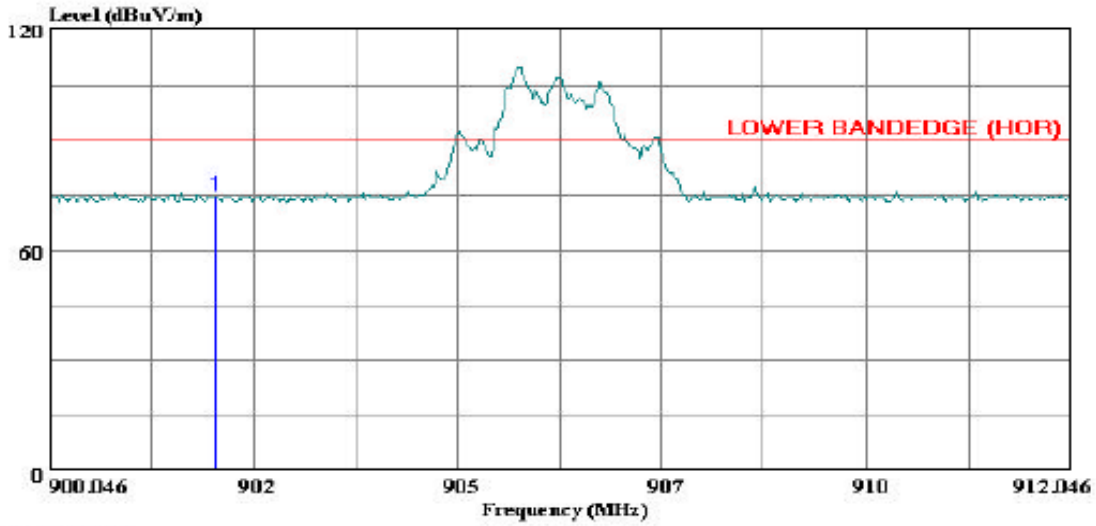

(Audix ATC)
Trace: 29 Ref Trace:

Condition: LOWER BANDEDGE (HOR) HORIZONTAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx Low Channel
Model: : CS50-R
: Fundemental

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	902.002	48.62	25.93	74.55	90.12	-15.57	Peak

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NON-RESTRICTED BAND EDGE PLOT (LOW BAND EDGE, VERTICAL)

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Tel: (408) 463-0888
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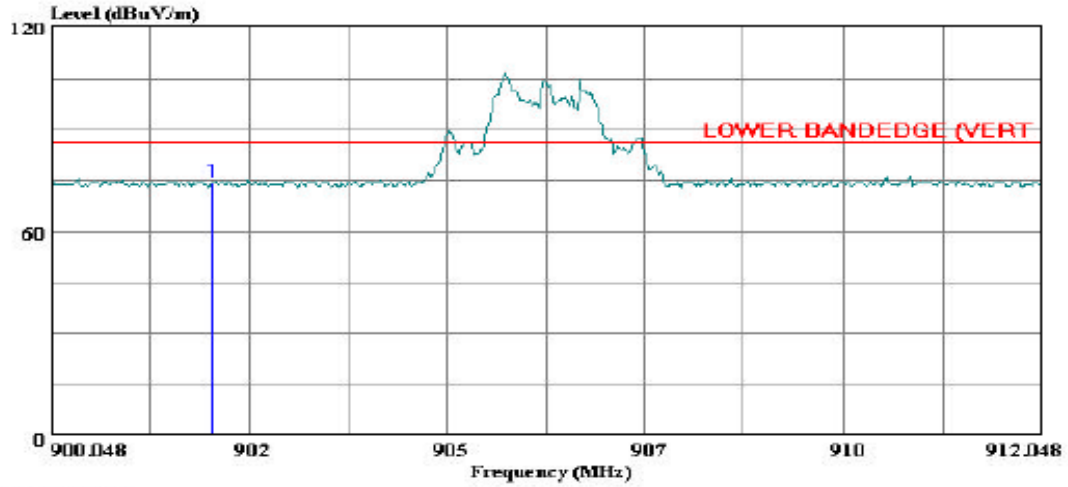

(Audix ATC)
Trace: 35 Ref Trace:

Condition: LOWER BANDEDGE (VERT VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx Low Channel
Model: : CS50-R
: Fundemental Bandedge

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	902.004	48.31	25.93	74.24	86.56	-12.32	Peak

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NON-RESTRICTED BAND EDGE PLOT (HIGH BAND EDGE, HORIZONTAL)

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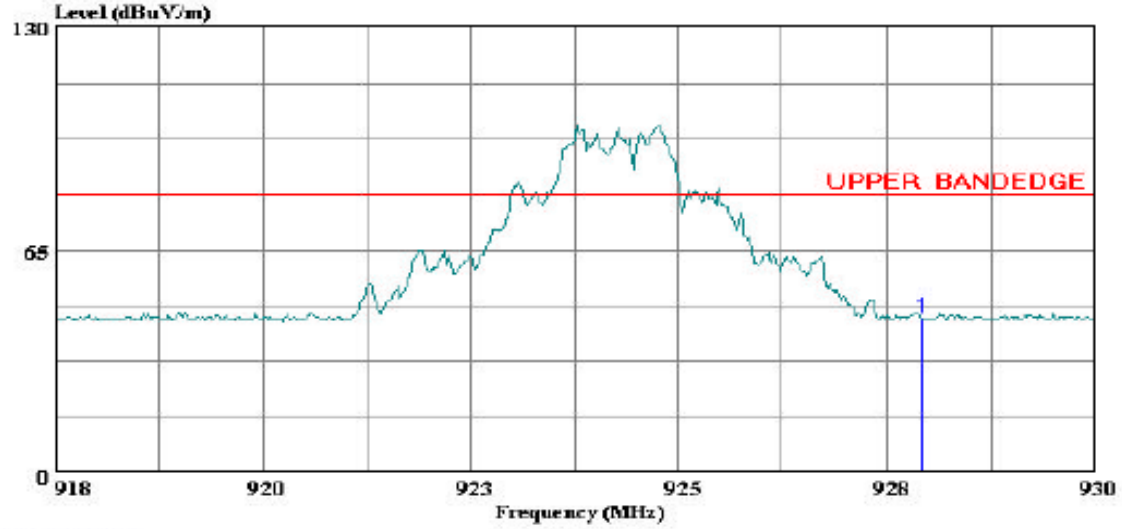

(Audix ATC)
Trace: 21 Ref Trace:

Condition: UPPER BANDEDGE HORIZONTAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	927.996	18.81	26.24	45.05	81.62	-36.57	Peak

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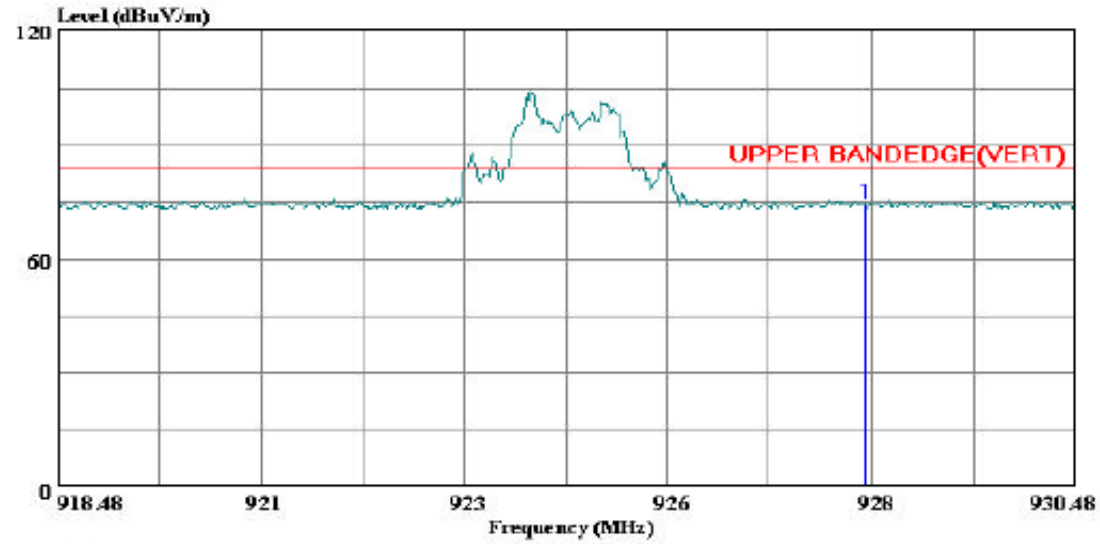

(Audix ATC)
Trace: 23 Ref Trace:

Condition: UPPER BANDEDGE(VERT) VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

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	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	927.996	47.91	26.24	74.15	84.41	-10.26	Peak

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RESTRICTED BAND EDGE PLOT (LOW BAND EDGE, HORIZONTAL)

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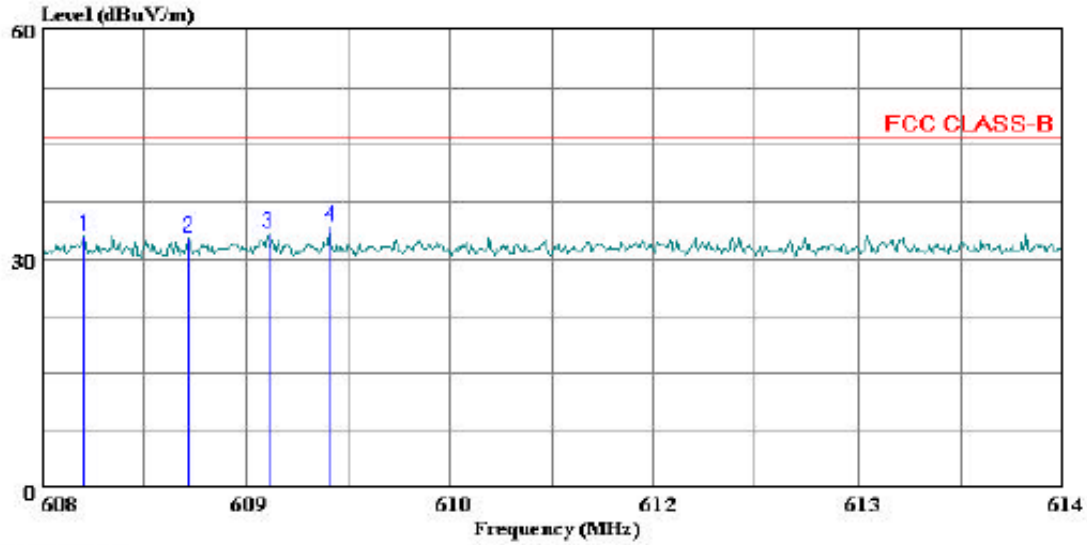

(Audix ATC)
Trace: 31 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx Low Channel
Model: : CS50-R
: Low restricted band

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	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	608.252	11.33	21.64	32.97	46.00	-13.03	Peak
2	608.864	11.17	21.66	32.83	46.00	-13.17	Peak
3	609.332	11.72	21.66	33.38	46.00	-12.62	Peak
4	609.692	12.55	21.66	34.21	46.00	-11.79	Peak

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RESTRICTED BAND EDGE PLOT (LOW BAND EDGE, VERTICAL)

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Morgan Hill, CA 9503
Tel: (408) 463-0888
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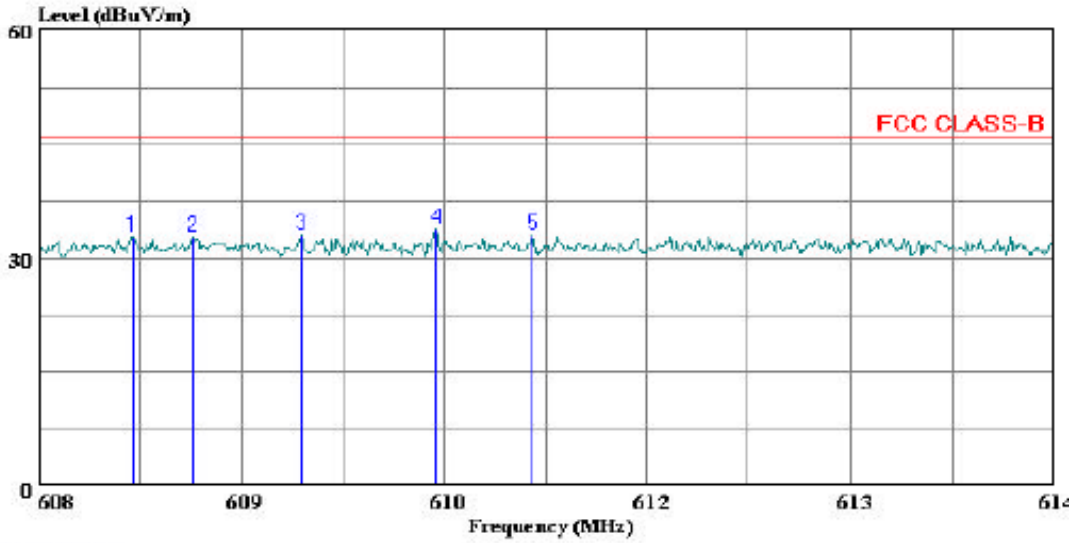

(Audix ATC)
Trace: 33 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx Low Channel
Model: : CS50-R
: Low restricted band

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	608.558	11.15	21.65	32.79	46.00	-13.21	Peak
2	608.912	11.24	21.66	32.90	46.00	-13.10	Peak
3	609.554	11.36	21.66	33.02	46.00	-12.98	Peak
4	610.352	12.18	21.66	33.84	46.00	-12.16	Peak

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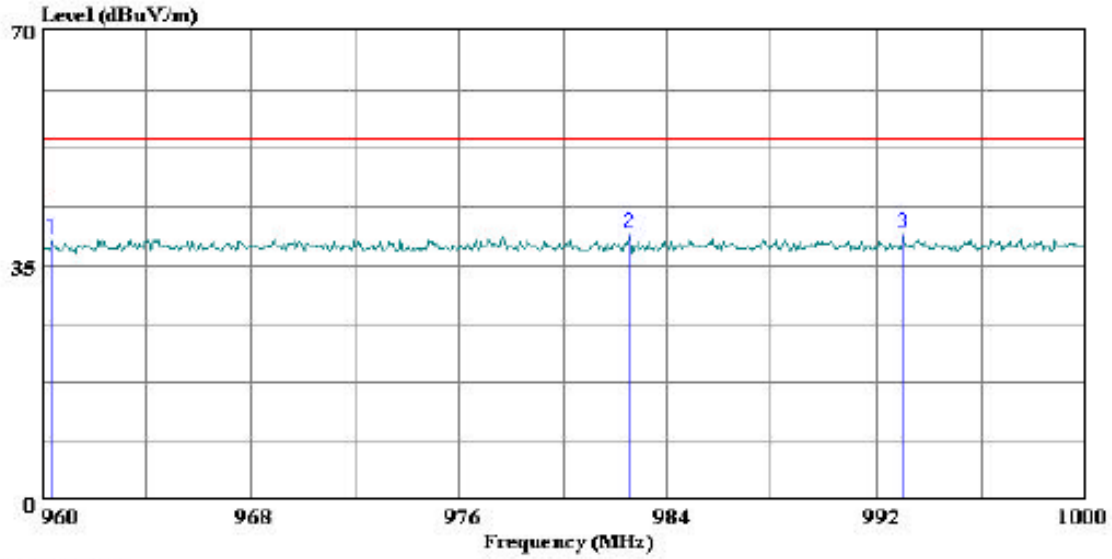

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Condition: FCC CLASS-B VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	960.360	12.10	26.56	38.66	54.00	-15.34	Peak
2	982.560	12.92	26.75	39.67	54.00	-14.33	Peak
3	992.960	12.91	26.93	39.84	54.00	-14.16	Peak

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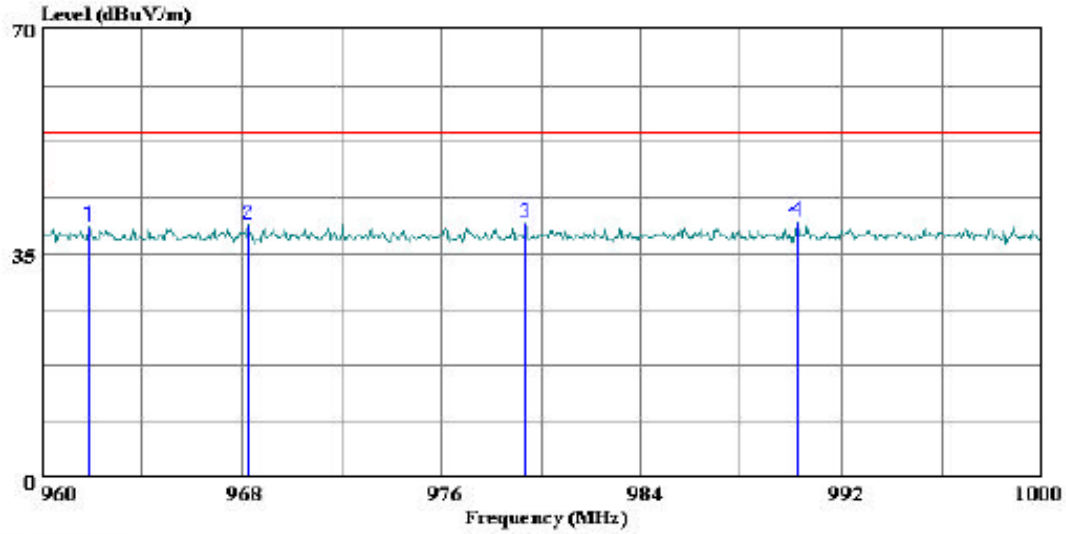

(Audix ATC)
Trace: 13 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	961.880	12.63	26.60	39.23	54.00	-14.77	Peak
2	968.280	12.78	26.65	39.43	54.00	-14.57	Peak
3	979.360	12.98	26.74	39.72	54.00	-14.28	Peak
4	990.160	13.17	26.89	40.06	54.00	-13.94	Peak

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HARMONICS AND SPURIOUS EMISSIONS (BASE)

High Frequency Measurement
Compliance Certification Services, Morgan Hill Open Field Site

Company:PLANTRONICS, INC.
Project #: O6U10325
Date: 06/06/2006
Test Engineer:Thanh Nguyen
Configuration: EUT connects to phone.
Mode: Continuouly transmitting.

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T119; S/N: 29301 @3m	T34 HP 8449B			

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
Thanh 177079008		Thanh 208946003		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
Tx low ch 906.048MHz															
1.812	3.0	71.3	34.7	30.8	1.7	-37.1	0.0	0.0	66.7	30.1	74	54	-7.3	-23.9	V
2.718	3.0	62.5	33.7	32.1	2.1	-36.1	0.0	0.0	60.6	31.9	74	54	-13.4	-22.1	V
3.624	3.0	66.3	32.8	33.0	2.4	-35.3	0.0	0.0	66.4	32.9	74	54	-7.6	-21.1	V
4.530	3.0	60.1	32.5	33.5	2.7	-34.9	0.0	0.0	61.5	33.8	74	54	-12.5	-20.2	V
5.430	3.0	53.2	32.4	34.1	3.0	-34.7	0.0	0.0	55.5	34.8	74	54	-18.5	-19.2	V
6.342	3.0	53.6	32.1	34.7	3.2	-34.5	0.0	0.0	57.0	35.4	74	54	-17.0	-18.6	V
1.812	3.0	72.6	35.3	30.8	1.7	-37.1	0.0	0.0	68.0	30.7	74	54	-6.0	-23.3	H
2.718	3.0	72.5	33.4	32.1	2.1	-36.1	0.0	0.0	70.7	31.6	74	54	-3.3	-22.4	H
3.624	3.0	56.9	32.4	33.0	2.4	-35.3	0.0	0.0	57.0	32.4	74	54	-17.0	-21.6	H
4.530	3.0	54.5	33.3	33.5	2.7	-34.9	0.0	0.0	55.9	34.6	74	54	-18.1	-19.4	H
5.430	3.0	56.7	33.5	34.1	3.0	-34.7	0.0	0.0	59.0	35.8	74	54	-15.0	-18.2	H
6.342	3.0	49.7	32.3	34.7	3.2	-34.5	0.0	0.0	53.1	35.7	74	54	-20.9	-18.3	H
Tx Mid ch 915.21 MHz															
1.830	3.0	72.5	34.8	30.9	1.7	-37.1	0.0	0.0	68.0	30.3	74	54	-6.0	-23.7	V
2.476	3.0	66.8	33.6	31.9	2.1	-36.3	0.0	0.0	64.4	31.2	74	54	-9.6	-22.8	V
3.661	3.0	62.3	32.7	33.0	2.4	-35.3	0.0	0.0	62.4	32.8	74	54	-11.6	-21.2	V
4.576	3.0	60.2	32.5	33.6	2.7	-34.9	0.0	0.0	61.6	33.8	74	54	-12.4	-20.2	V
5.491	3.0	55.5	33.6	34.1	3.0	-34.8	0.0	0.0	57.8	35.9	74	54	-16.2	-18.1	V
1.830	3.0	73.4	34.7	30.9	1.7	-37.1	0.0	0.0	68.9	30.2	74	54	-5.1	-23.8	H
2.476	3.0	70.5	34.5	31.9	2.1	-36.3	0.0	0.0	68.1	32.1	74	54	-5.9	-21.9	H
3.661	3.0	55.8	33.4	33.0	2.4	-35.3	0.0	0.0	55.9	33.5	74	54	-18.1	-20.5	H
4.576	3.0	56.7	32.6	33.6	2.7	-34.9	0.0	0.0	58.1	34.0	74	54	-15.9	-20.0	H
5.491	3.0	55.4	32.5	34.1	3.0	-34.8	0.0	0.0	57.7	34.8	74	54	-16.3	-19.2	H
Tx High Ch 924.48MHz															
1.849	3.0	69.5	33.8	31.0	1.7	-37.1	0.0	0.0	65.1	29.4	74	54	-8.9	-24.6	V
2.773	3.0	66.6	33.0	32.2	2.2	-36.1	0.0	0.0	64.9	31.3	74	54	-9.1	-22.7	V
3.698	3.0	63.5	32.6	33.0	2.4	-35.3	0.0	0.0	63.7	32.8	74	54	-10.3	-21.2	V
4.623	3.0	51.2	32.5	33.6	2.7	-34.9	0.0	0.0	52.6	33.9	74	54	-21.4	-20.1	V
5.550	3.0	51.6	32.2	34.2	3.0	-34.8	0.0	0.0	54.0	34.5	74	54	-20.0	-19.5	V
1.849	3.0	71.8	35.5	31.0	1.7	-37.1	0.0	0.0	67.4	31.1	74	54	-6.6	-22.9	H
2.773	3.0	73.4	34.7	32.2	2.2	-36.1	0.0	0.0	71.7	33.0	74	54	-2.3	-21.0	H
3.698	3.0	61.8	33.4	33.0	2.4	-35.3	0.0	0.0	62.0	33.6	74	54	-12.0	-20.4	H
4.623	3.0	61.5	32.5	33.6	2.7	-34.9	0.0	0.0	62.9	33.9	74	54	-11.1	-20.1	H
5.550	3.0	45.5	32.4	34.2	3.0	-34.8	0.0	0.0	47.8	34.7	74	54	-26.2	-19.3	H

Rev. 5.1.6

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

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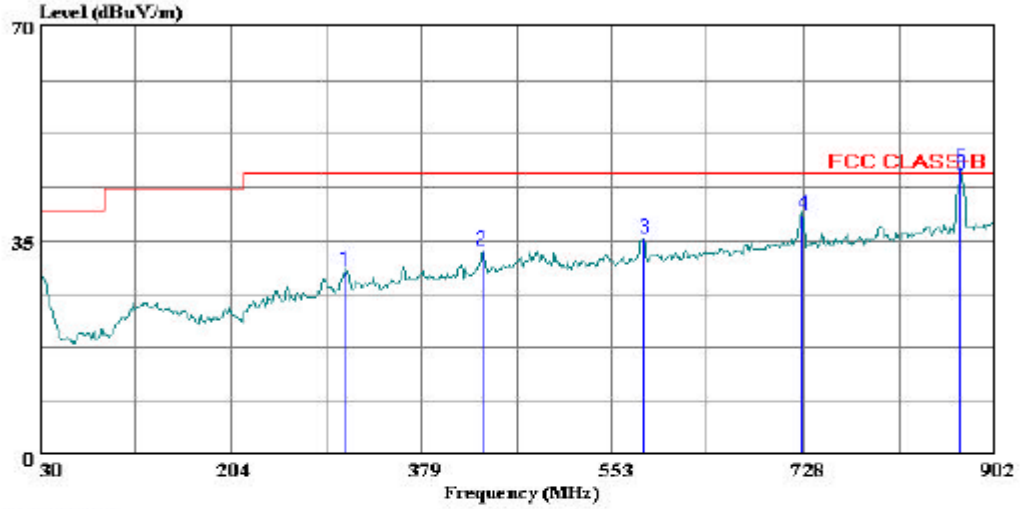
SPURIOUS EMISSIONS 30 TO 902 MHz BASE (HORIZONTAL)

561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 4 File#: 325.EMI Date: 06-05-2006 Time: 12:14:16



(Audix ATC)
Trace: 1 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Transmit Low channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	309.912	14.17	15.92	30.09	46.00	-15.91	Peak
2	434.608	14.61	18.84	33.45	46.00	-12.55	Peak
3	582.848	14.07	21.31	35.38	46.00	-10.62	Peak
4	725.856	15.68	23.54	39.22	46.00	-6.78	Peak
5	870.608	20.30	25.56	45.86	46.00	-0.14	QP
6 *	870.608	21.50	25.56	47.06	46.00	1.06	Peak

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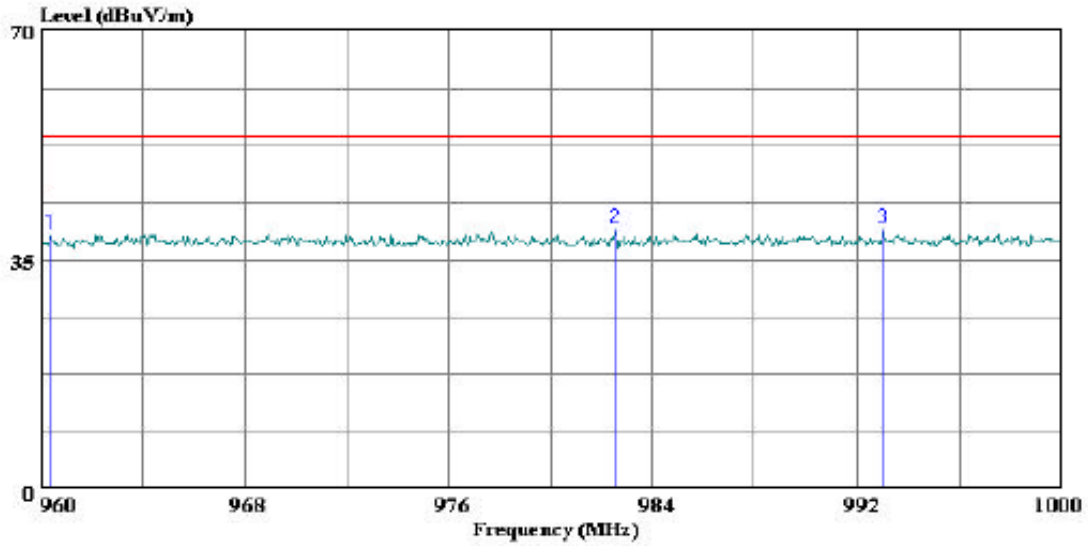
SPURIOUS EMISSIONS 960 TO 1000MHz BASE (HORIZONTAL)

561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 12 File#: 325.EMI Date: 06-05-2006 Time: 14:01:01



(Audix ATC)
Trace: 11 Ref Trace:

Condition: FCC CLASS-B Horizontal
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	960.360	12.10	26.56	38.66	54.00	-15.34	Peak
2	982.560	12.92	26.75	39.67	54.00	-14.33	Peak
3	992.960	12.91	26.93	39.84	54.00	-14.16	Peak

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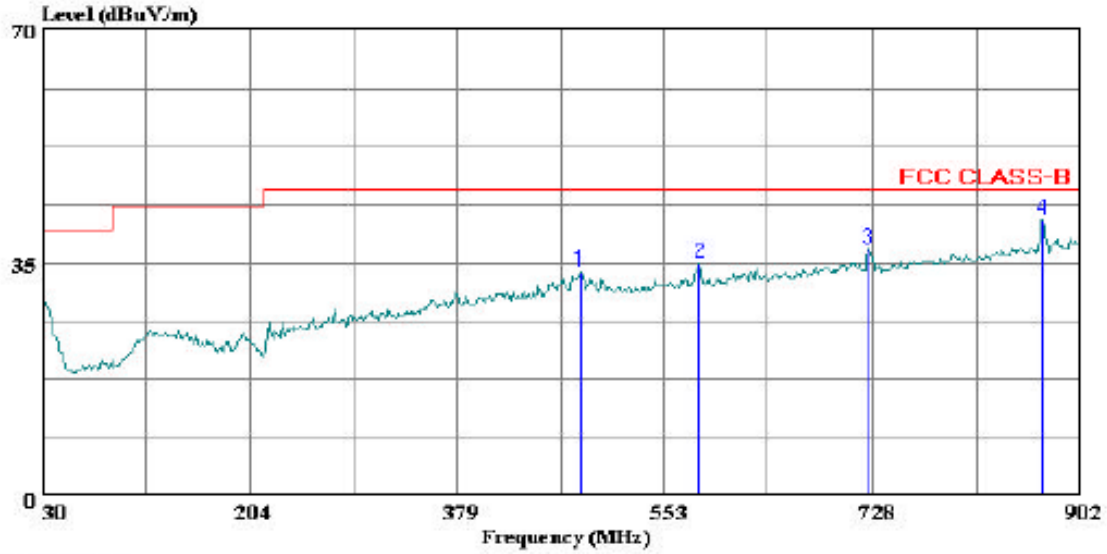
SPURIOUS EMISSIONS 30 TO 902 MHz BASE (VERTICAL)

561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 10 File#: 325.EMI Date: 06-05-2006 Time: 12:33:15



(Audix ATC)
Trace: 9 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Transmit Low channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	482.568	13.91	19.89	33.80	46.00	-12.20	Peak
2	582.848	13.62	21.31	34.93	46.00	-11.07	Peak
3	723.240	13.56	23.51	37.07	46.00	-8.93	Peak
4	869.736	15.93	25.50	41.43	46.00	-4.57	Peak

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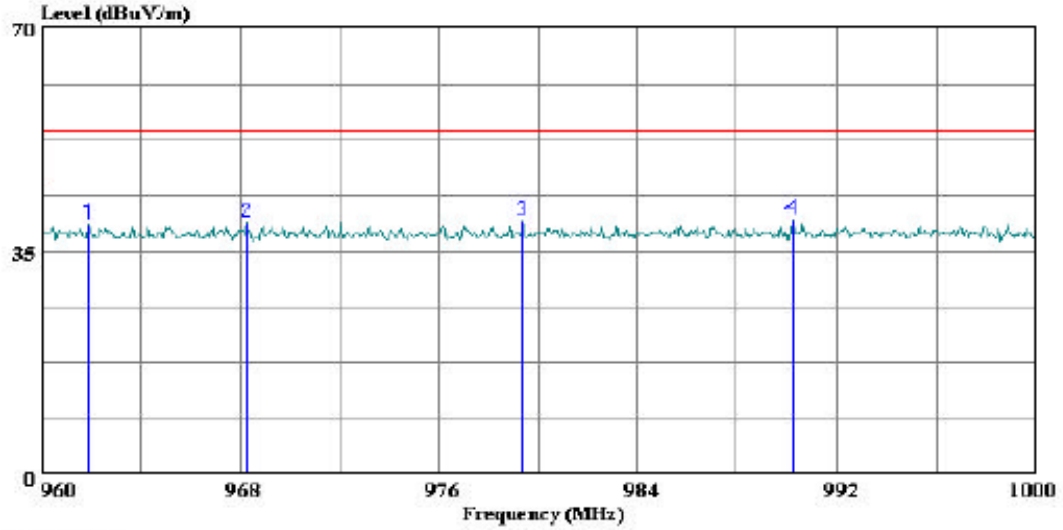
SPURIOUS EMISSIONS 960 TO 1000 MHz BASE (VERTICAL)

561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 14 File#: 325.EMI Date: 06-05-2006 Time: 14:04:54



(Audix ATC)
Trace: 13 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Thanh Nguyen
Company: : PLANTRONICS
Project #: : 06U10325
S/N: :
Configuration: : EUT connects to another base phone
Mode of Operation: Tx High Channel
Model: : CS50-R

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	961.880	12.63	26.60	39.23	54.00	-14.77	Peak
2	968.280	12.78	26.65	39.43	54.00	-14.57	Peak
3	979.360	12.98	26.74	39.72	54.00	-14.28	Peak
4	990.160	13.17	26.89	40.06	54.00	-13.94	Peak

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7.4. POWERLINE CONDUCTED EMISSIONS

LIMIT

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator 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 µH/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 boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

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6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.15	28.54	--	--	0.00	66.00	56.00	-37.46	-27.46	L1
1.17	17.26	--	--	0.00	56.00	46.00	-38.74	-28.74	L1
22.54	19.70	--	--	0.00	60.00	50.00	-40.30	-30.30	L1
0.15	28.80	--	--	0.00	66.00	56.00	-37.20	-27.20	L2
1.29	19.16	--	--	0.00	56.00	46.00	-36.84	-26.84	L2
22.54	21.90	--	--	0.00	60.00	50.00	-38.10	-28.10	L2
6 Worst Data									

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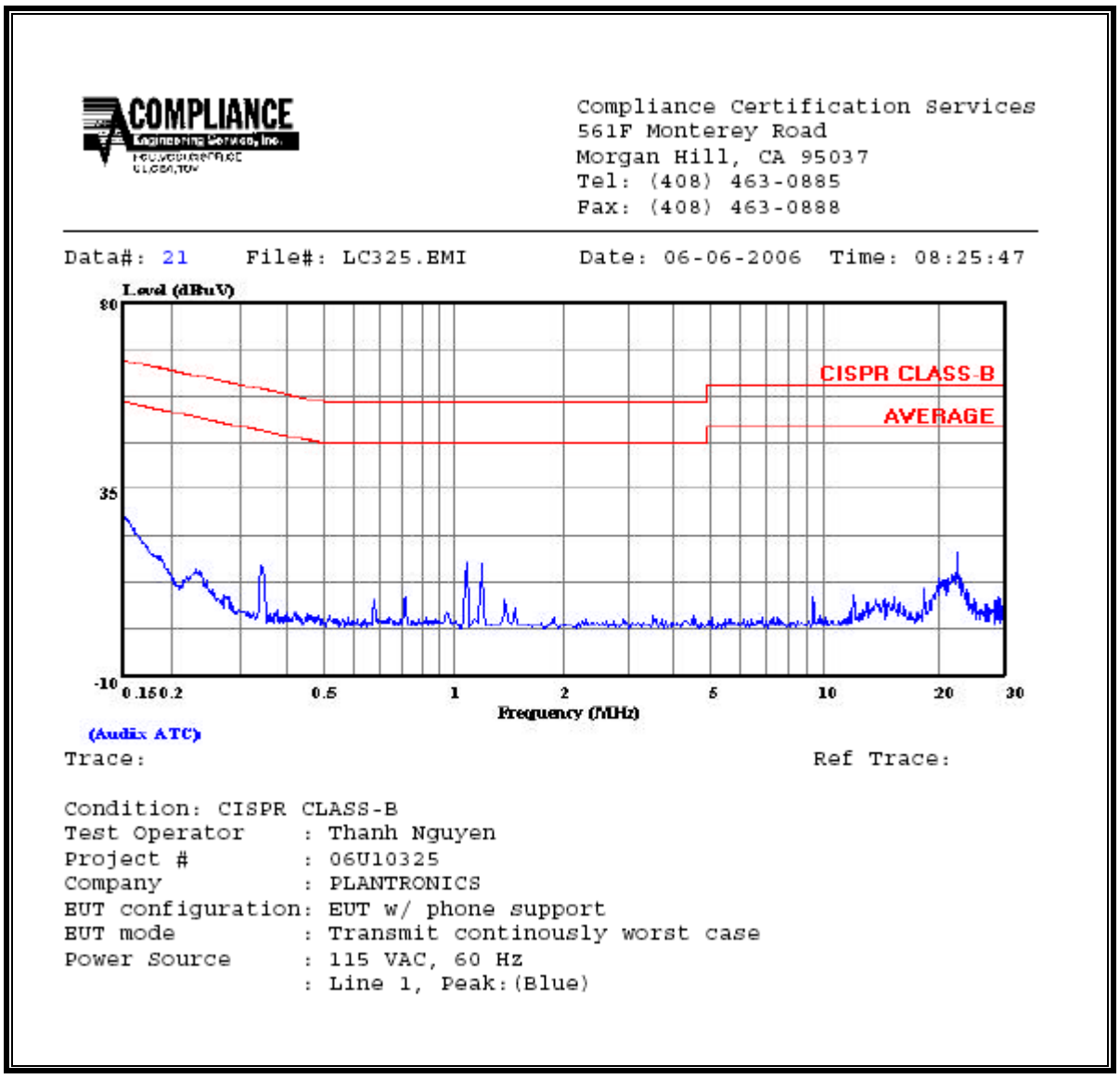
TX MODE:

LINE 1 RESULT



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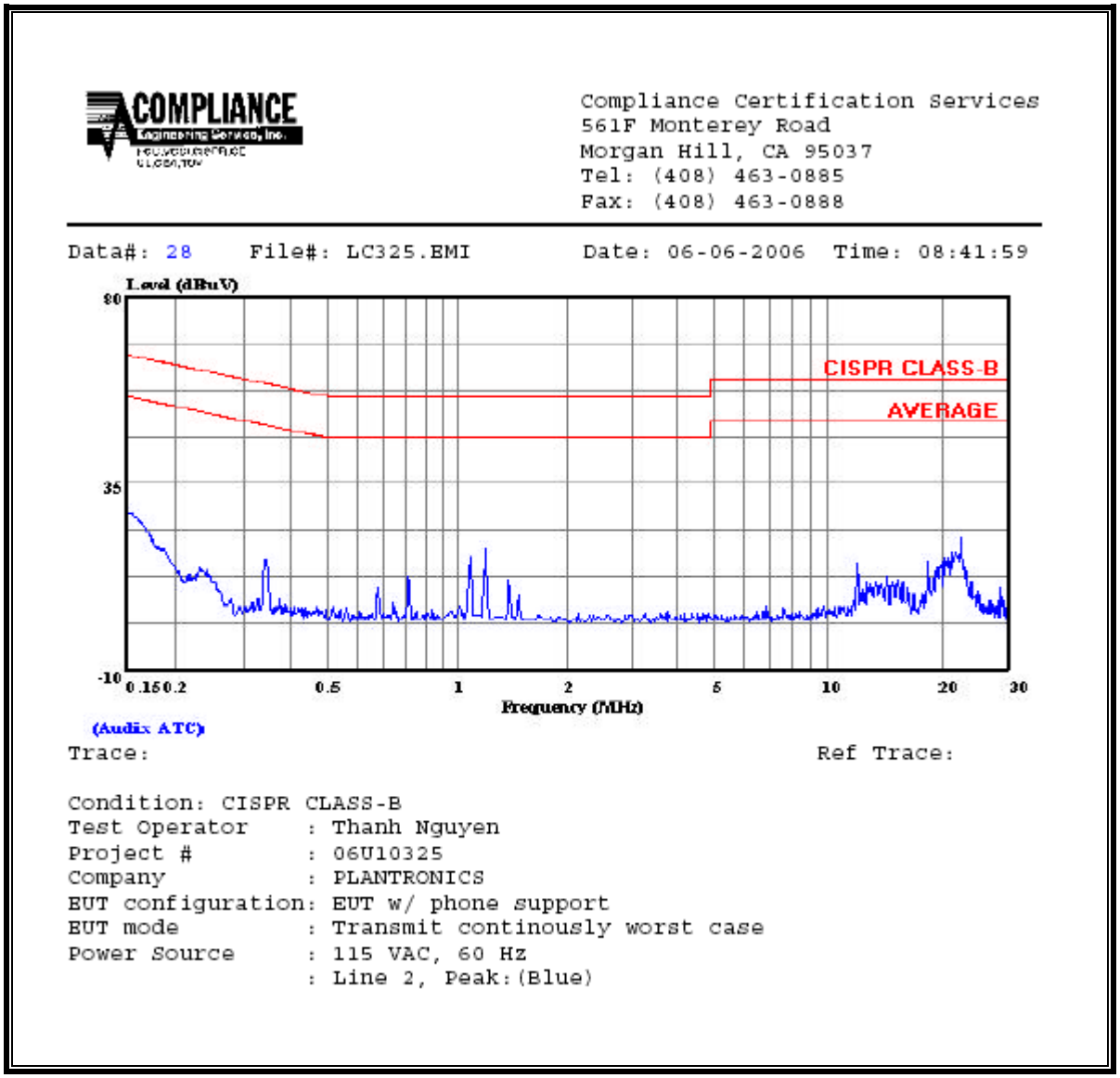
LINE 2 RESULT



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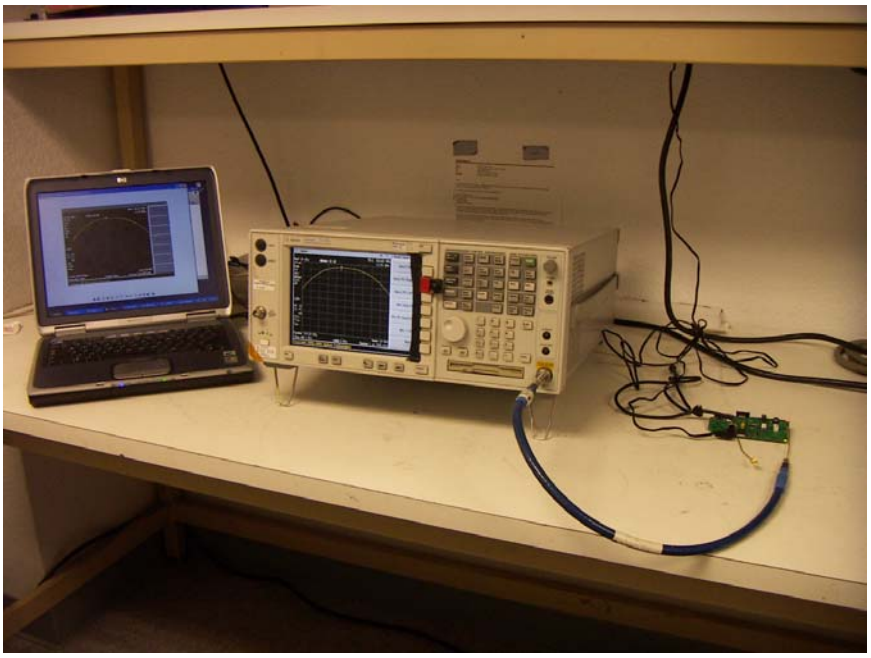
8. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

ANTENNA PORT CONDUCTED PHOTO BASE



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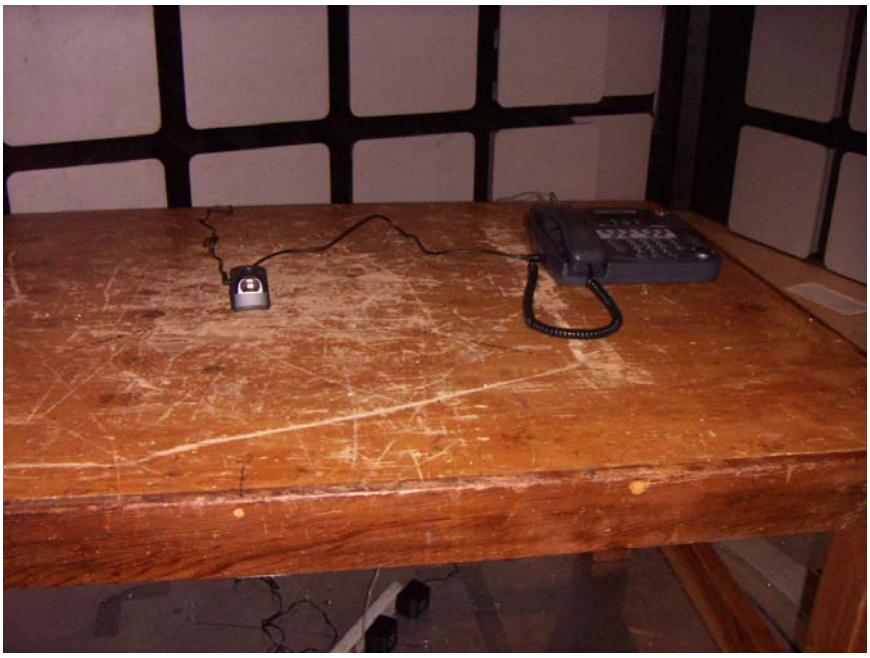
RADIATED RF MEASUREMENT SETUP

RADIATED FRONT PHOTO BASE



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RADIATED BACK PHOTO BASE

POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

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LINE CONDUCTED FRONT PHOTO BASE

This report shall not be reproduced except in full, without the written approval of CCS.

LINE CONDUCTED BACK PHOTO BASE

END OF REPORT

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