

*FCC PART 15, SUBPART B and C
TEST REPORT**for*

ACCESS POINT

MODEL: 2443

Prepared for

SMARTLABS, INC.
16542 MILLIKAN AVENUE
IRVINE, CALIFORNIA 92606Prepared by: 

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114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: JANUARY 2, 2009

	REPORT BODY	APPENDICES					TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
PAGES	16	2	2	2	13	16	51

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TABLE OF CONTENTS

Section / Title	PAGE
GENERAL REPORT SUMMARY	4
SUMMARY OF TEST RESULTS	4
1. PURPOSE	5
2. ADMINISTRATIVE DATA	6
2.1 Location of Testing	6
2.2 Traceability Statement	6
2.3 Cognizant Personnel	6
2.4 Date Test Sample was Received	6
2.5 Disposition of the Test Sample	6
2.6 Abbreviations and Acronyms	6
3. APPLICABLE DOCUMENTS	7
4. DESCRIPTION OF TEST CONFIGURATION	8
4.1 Description Of Test Configuration - EMI	8
4.1.1 Cable Construction and Termination	9
5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT	10
5.1 EUT and Accessory List	10
5.2 EMI Test Equipment	11
6. TEST SITE DESCRIPTION	12
6.1 Test Facility Description	12
6.2 EUT Mounting, Bonding and Grounding	12
7. TEST PROCEDURES	13
7.1 RF Emissions	13
7.1.1 Conducted Emissions Test	13
7.1.2 Radiated Emissions (Spurious and Harmonics) Test	14
7.1.3 Radiated Emissions (Spurious and Harmonics) Test (Continued)	15
8. CONCLUSIONS	16

LIST OF APPENDICES

APPENDIX	TITLE
A	Laboratory Recognitions
B	Modifications to the EUT
C	Additional Models Covered Under This Report
D	Diagrams, Charts, and Photos <ul style="list-style-type: none">• Test Setup Diagrams• Radiated Emissions Photos• Antenna and Effective Gain Factors
E	Data Sheets

LIST OF FIGURES

FIGURE	TITLE
1	Conducted Emissions Test Setup
2	Plot Map And Layout of Radiated Test Site – 3 Meters

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested: Access Point
Model: 2443
S/N: N/A

Product Description: See Expository Statement

Modifications: The EUT was modified in order to meet the specifications. Please see the list located in Appendix B.

Manufacturer: SmartLabs, Inc.
16542 Millikan Avenue
Irvine, California 92606

Test Dates: December 16 and 17, 2008

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205, 15.209 and 15.249

Test Procedure: ANSI C63.4

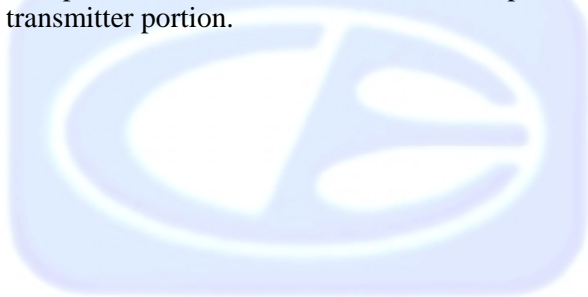
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C section 15.207.
2	Radiated RF Emissions, 10 kHz – 9300 MHz (Transmitter Portion)	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, and 15.249.
3	Radiated RF Emissions, 10 kHz – 9300 MHz (Digital and Receiver Portion)	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Access Point, Model: 2443. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B for the digital and receiver portion; and the limits defined in Subpart C, sections 15.205, 15.207, 15.209, and 15.249 for the transmitter portion.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

SmartLabs, Inc.

John Lockyer
Marcus Escobosa

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer
Michael Christensen Lab Manager

2.4 Date Test Sample was Received

The test sample was received on December 15, 2008.

2.5 Disposition of the Test Sample

The sample has not been returned to SmartLabs, Inc. as of January 2, 2009.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4 2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4. DESCRIPTION OF TEST CONFIGURATION**4.1 Description Of Test Configuration - EMI**

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Access Point, Model: 2443 (EUT) was directly connected to the AC public mains. The EUT was controlled by a ControLinc Model: 2430 that was also connected to the AC public mains. The EUT's antenna is hardwired onto the PCB itself. The EUT was tested in three orthogonal axis. The EUT was continuously transmitting and/or receiving.

The final radiated data as well as the conducted data was taken in the both the transmitting and receiving modes. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

- Cable 1** This is a 2-meter unshielded cable connecting the EUT to the AC public mains. The cable has a 2-prong female connector at the EUT end and a 2-prong male connector at the AC public mains end.
- Cable 2** This is a 2-meter unshielded cable connecting the ControLinc to the AC public mains. The cable is hard wired at the ControLinc end and has a 2-prong power connector at the AC public mains end.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIALNUMBER	FCC ID
ACCESS POINT (EUT)	SMARTLABS, INC.	2443	N/A	TBD
CONTROLINC	SMARTLABS, INC.	2430	N/A	N/A

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	September 17, 2008	Sept. 17, 2010
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Radiated Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Biconical Antenna	Com Power	AB-900	15226	February 28, 2008	Feb. 28, 2009
Log Periodic Antenna	Com Power	AL-100	16060	June 27, 2008	June 27, 2009
Preamplifier	Com-Power	PA-102	1017	January 11, 2008	Jan. 11, 2009
Loop Antenna	Com Power	AL-130	17089	September 29, 2008	Sept. 29, 2009
Horn Antenna	Com Power	AH-118	071175	June 27, 2008	June 27, 2010
Microwave Preamplifier	Com Power	PA-122	181921	March 3, 2008	March 3, 2009
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Microwave Preamplifier	Com Power	PA-840	711013	March 3, 2008	March 3, 2009
Horn Antenna	Com-Power	AH826	71957	December 12, 2007	Dec. 12, 2009
RF CONDUCTED EMISSIONS TEST EQUIPMENT					
LISN	Com Power	LI-215	12078	September 29, 2008	Sept. 29, 2009
LISN	Com Power	LI-215	12082	September 29, 2008	Sept. 29, 2009
Transient Limiter	Seaward	252A910	1	September 26, 2008	Sept. 26, 2009

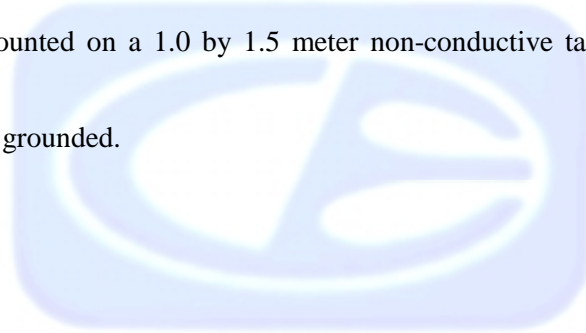
6. TEST SITE DESCRIPTION**6.1 Test Facility Description**

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, section 15.207.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz, and the Com-Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the EMI Receiver to keep the amplitude reading calibrated.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 9.3 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

7.1.3 Radiated Emissions (Spurious and Harmonics) Test (Continued)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain the final test data. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.



8. CONCLUSIONS

The Access Point, Model: 2443 meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B for the digital and receiver portion; and the limits defined in Subpart C, sections 15.205, 15.207, 15.209, and 15.249 for the transmitter portion.





APPENDIX A

LABORATORY RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada



APPENDIX B

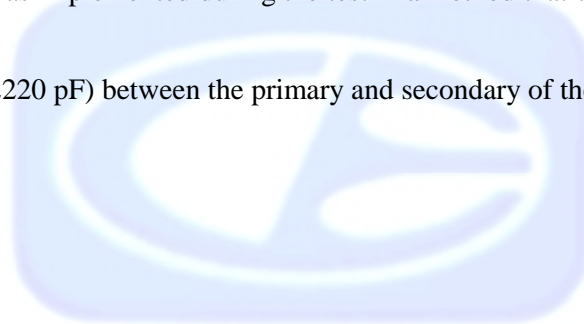
MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.249 or FCC Class B specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

Added a high voltage capacitor (2220 pF) between the primary and secondary of the transformer. Also the inductor was shorted.





APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Access Point
Model: 2443
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

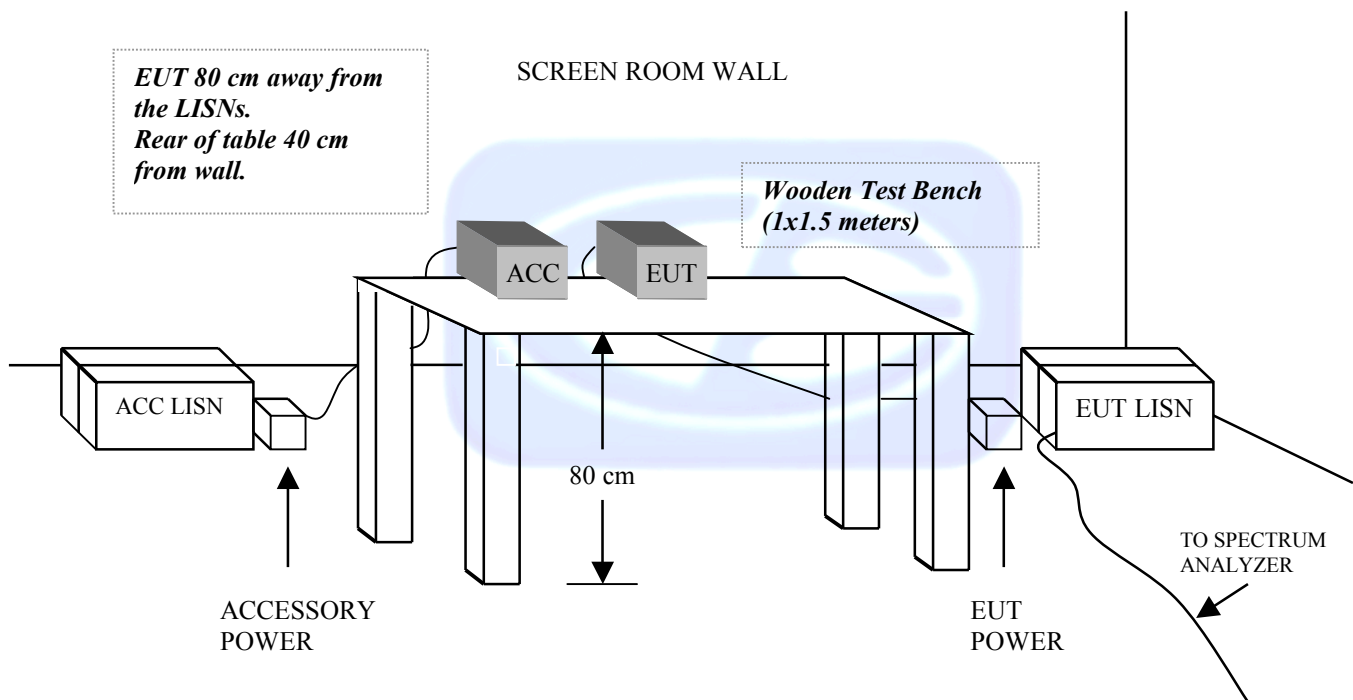
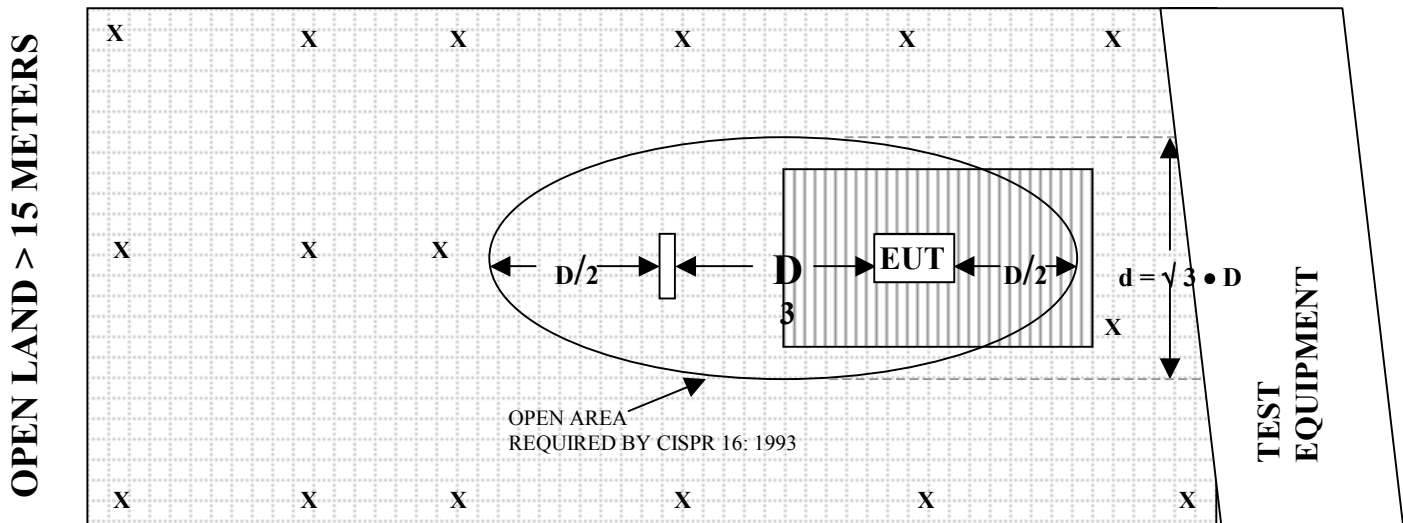


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED TEST SITE – 3 METERS

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

- | | | | |
|---|--------------------------|--|-----------------|
| X | = GROUND RODS | | = GROUND SCREEN |
| D | = TEST DISTANCE (meters) | | = WOOD COVER |

COM-POWER AB-900**BICONICAL ANTENNA**

S/N: 15226

CALIBRATION DATE: FEBRUARY 28, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	12.1	100	10.7
35	12.2	120	13.6
40	11.7	140	12.1
45	9.9	160	12.2
50	11.3	180	15.2
60	9.4	200	16.5
70	7.6	250	16.5
80	6.0	275	18.1
90	6.8	300	21.5

COM-POWER AL-100**LOG PERIODIC ANTENNA****S/N: 16060****CALIBRATION DATE: JUNE 27, 2008**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.7	700	21.2
400	15.3	800	21.7
500	17.4	900	21.8
600	19.0	1000	22.8

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: JUNE 27, 2008

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.5	10.0	39.4
1.5	25.4	10.5	39.7
2.0	28.3	11.0	39.0
2.5	28.9	11.5	40.0
3.0	29.7	12.0	39.7
3.5	30.8	12.5	41.7
4.0	31.4	13.0	42.7
4.5	32.6	13.5	41.2
5.0	33.7	14.0	41.6
5.5	34.4	14.5	43.2
6.0	34.7	15.0	42.3
6.5	35.4	15.5	39.3
7.0	37.0	16.0	41.7
7.5	37.4	16.5	39.6
8.0	37.6	17.0	43.0
8.5	37.6	17.5	47.1
9.0	38.5	18.0	46.2
9.5	38.6		

COM-POWER PA-102**PREAMPLIFIER**

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.2	300	38.0
40	38.0	350	38.3
50	38.3	400	38.0
60	38.6	450	37.5
70	38.4	500	37.9
80	38.4	550	37.9
90	38.3	600	37.8
100	38.1	650	37.5
125	38.5	700	38.0
150	38.2	750	37.7
175	38.1	800	37.1
200	38.4	850	37.1
225	38.2	900	37.1
250	38.2	950	37.0
275	38.2	1000	36.5

COM-POWER PA-122**PREAMPLIFIER**

S/N: 181921

CALIBRATION DATE: MARCH 3, 2008

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.32	10.0	35.47
1.5	35.40	10.5	35.05
2.0	34.77	11.0	34.16
2.5	35.07	11.5	33.75
3.0	34.86	12.0	34.65
3.5	34.48	12.5	34.41
4.0	34.30	13.0	35.36
4.5	33.96	13.5	35.30
5.0	34.06	14.0	35.87
5.5	34.54	14.5	36.44
6.0	35.90	15.0	36.24
6.5	36.85	15.5	35.92
7.0	36.55	16.0	35.53
7.5	35.31	16.5	35.29
8.0	33.57	17.0	34.96
8.5	33.36	17.5	34.02
9.0	35.01	18.0	33.39
9.5	35.97		

COM-POWER AL-130**LOOP ANTENNA****S/N: 17089****CALIBRATION DATE: SEPTEMBER 29, 2008**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.57	9.93
0.01	-42.06	9.44
0.02	-42.43	9.07
0.05	-42.50	9.00
0.07	-42.10	9.40
0.1	-42.03	9.47
0.2	-44.50	7.00
0.3	-41.93	9.57
0.5	-41.90	9.60
0.7	-41.73	9.77
1	-41.23	10.27
2	-40.90	10.60
3	-41.20	10.30
4	-41.30	10.20
5	-40.70	10.80
10	-41.10	10.40
15	-42.17	9.33
20	-42.00	9.50
25	-42.20	9.30
30	-43.10	8.40



FRONT VIEW

SMARTLABS, INC.
ACCESS POINT
MODEL: 2443

FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

SMARTLABS, INC.
ACCESS POINT
MODEL: 2443

FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



FRONT VIEW

SMARTLABS, INC.
ACCESS POINT
MODEL: 2443

FCC SUBPART B AND C – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

SMARTLABS, INC.
ACCESS POINT
MODEL: 2443

FCC SUBPART B AND C – CONDUCTED EMISSIONS

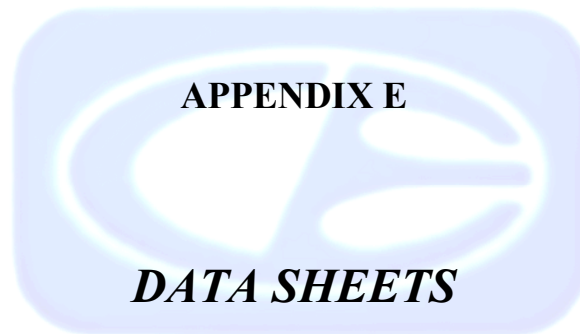
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
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(949) 589-0700

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20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



RADIATED EMISSIONS

DATA SHEETS

FCC 15.249

SmartLabs, Inc.

Access Point

Model: 2443

Date: 12/17/08

Labs: B and D

Tested By: Kyle Fujimoto

X-Axis**Transmit Mode**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
914.94	89.88	V	94	-4.12	Peak	1.5	180	
1829.36	55.45	V	74	-18.55	Peak	1.12	150	
1829.36	51.86	V	54	-2.14	Avg	1.12	150	
2744.3	40.76	V	74	-33.24	Peak	1.13	225	
2744.3	28.66	V	54	-25.34	Avg	1.13	225	
3659.23	40.94	V	74	-33.06	Peak	1.59	175	
3659.23	28.61	V	54	-25.39	Avg	1.59	175	
4574.16	44.88	V	74	-29.12	Peak	1.16	150	
4574.16	31.16	V	54	-22.84	Avg	1.16	150	
5489.09		V	74		Peak			No Emission
5489.09		V	54		Avg			Detected
6404.02		V	74		Peak			No Emission
6404.02		V	54		Avg			Detected
7318.96		V	74		Peak			No Emission
7318.96		V	54		Avg			Detected
8233.89		V	74		Peak			No Emission
8233.89		V	54		Avg			Detected
9148.82		V	74		Peak			No Emission
9148.82		V	54		Avg			Detected

FCC 15.249
 SmartLabs, Inc.
 Access Point
 Model: 2443

Date: 12/17/08
 Labs: B and D
 Tested By: Kyle Fujimoto

**X-Axis
 Transmit Mode**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
914.94	94.26	H	114	-19.74	Peak	1	180	
914.94	93.27	H	94	-0.73	QP	1	180	
1829.36	53.91	H	74	-20.09	Peak	1.15	150	
1829.36	50.91	H	54	-3.09	Avg	1.15	150	
2744.3	45.12	H	74	-28.88	Peak	1.16	150	
2744.3	33.66	H	54	-20.34	Avg	1.16	150	
3659.23	44.91	H	74	-29.09	Peak	1.16	150	
3659.23	32.13	H	54	-21.87	Avg	1.16	150	
4574.16	47.92	H	74	-26.08	Peak	1.18	150	
4574.16	34.48	H	54	-19.52	Avg	1.18	150	
5489.09		H	74		Peak			No Emission
5489.09		H	54		Avg			Detected
6404.02		H	74		Peak			No Emission
6404.02		H	54		Avg			Detected
7318.96		H	74		Peak			No Emission
7318.96		H	54		Avg			Detected
8233.89		H	74		Peak			No Emission
8233.89		H	54		Avg			Detected
9148.82		H	74		Peak			No Emission
9148.82		H	54		Avg			Detected

FCC 15.249

SmartLabs, Inc.

Access Point

Model: 2443

Date: 12/17/08

Labs: B and D

Tested By: Kyle Fujimoto

Y-Axis**Transmit Mode**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
914.94	82.88	V	94	-11.12	Peak	1	180	
1829.36	49.51	V	74	-24.49	Peak	1.12	160	
1829.36	45.46	V	54	-8.54	Avg	1.12	160	
2744.3	45.93	V	74	-28.07	Peak	1.19	150	
2744.3	33.81	V	54	-20.19	Avg	1.19	150	
3659.23	43.97	V	74	-30.03	Peak	1.16	150	
3659.23	31.74	V	54	-22.26	Avg	1.16	150	
4574.16	46.02	V	74	-27.98	Peak	1.19	150	
4574.16	34.06	V	54	-19.94	Avg	1.19	150	
5489.09		V	74		Peak			No Emission
5489.09		V	54		Avg			Detected
6404.02		V	74		Peak			No Emission
6404.02		V	54		Avg			Detected
7318.96		V	74		Peak			No Emission
7318.96		V	54		Avg			Detected
8233.89		V	74		Peak			No Emission
8233.89		V	54		Avg			Detected
9148.82		V	74		Peak			No Emission
9148.82		V	54		Avg			Detected

FCC 15.249

SmartLabs, Inc.

Access Point

Model: 2443

Date: 12/17/08

Labs: B and D

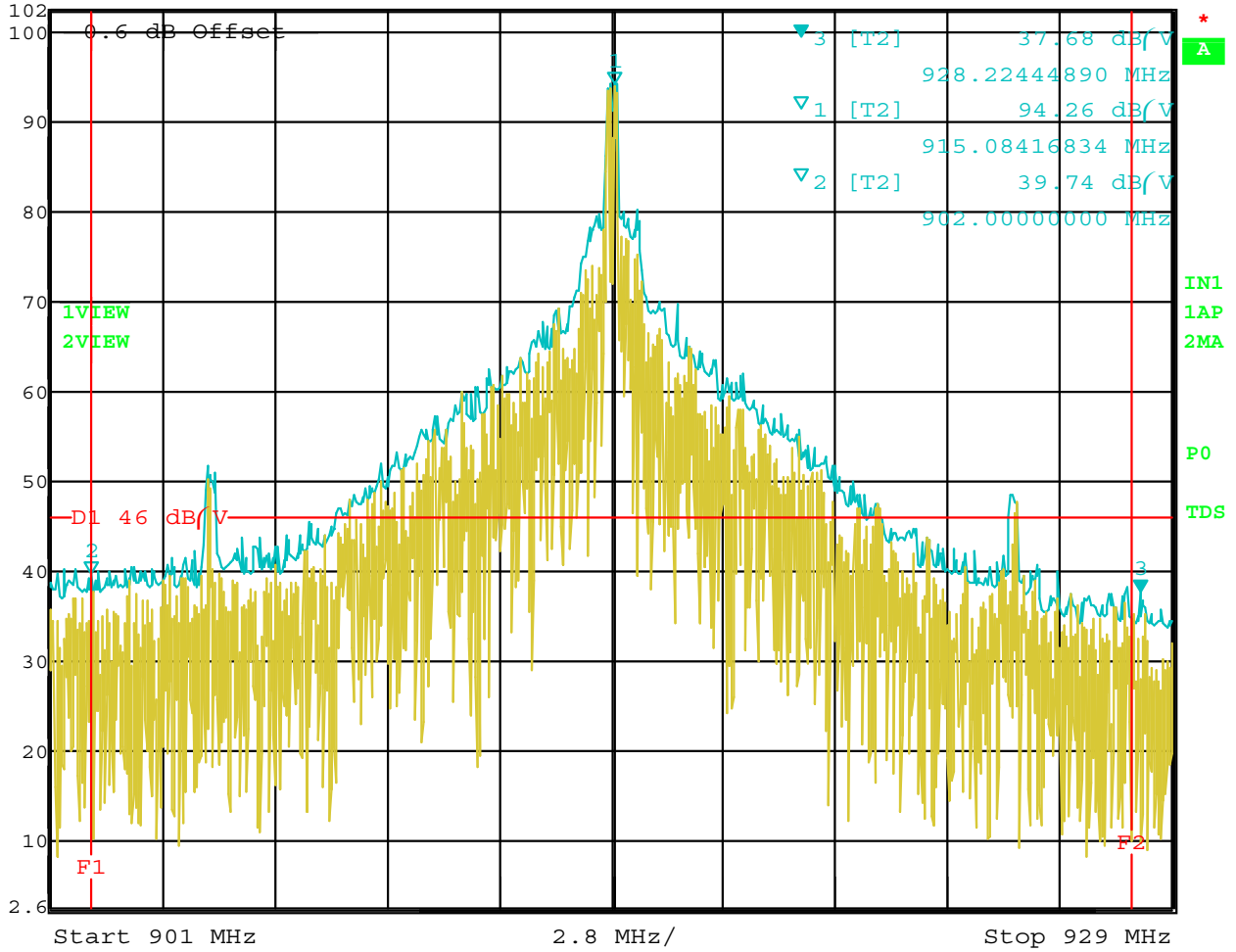
Tested By: Kyle Fujimoto

Z-Axis**Transmit Mode**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
914.94	90.08	V	94	-3.92	Peak	1	90	
1829.36	55.99	V	74	-18.01	Peak	1.16	150	
1829.36	52.94	V	54	-1.06	Avg	1.16	150	
2744.3	41.89	V	74	-32.11	Peak	1.19	125	
2744.3	31.41	V	54	-22.59	Avg	1.19	125	
3659.23	44.84	V	74	-29.16	Peak	1.18	150	
3659.23	31.74	V	54	-22.26	Avg	1.18	150	
4574.16	46.33	V	74	-27.67	Peak	1.18	180	
4574.16	34.06	V	54	-19.94	Avg	1.18	180	
5489.09		V	74		Peak			No Emission
5489.09		V	54		Avg			Detected
6404.02		V	74		Peak			No Emission
6404.02		V	54		Avg			Detected
7318.96		V	74		Peak			No Emission
7318.96		V	54		Avg			Detected
8233.89		V	74		Peak			No Emission
8233.89		V	54		Avg			Detected
9148.82		V	74		Peak			No Emission
9148.82		V	54		Avg			Detected



Ref Lvl 102.6 dB/V
Marker 3 [T2] 37.68 dB/V
928.22444890 MHz
RBW 100 kHz RF Att 10 dB
VBW 300 kHz
SWT 7 ms Unit dB/V



Date: 10.NOV.2008 14:59:20

Band Edge of the Fundamental – X-Axis – Horizontal Polarization (Worst Case)

Test Location : Compatible Electronics **Page** : 1/1
Customer : SmartLabs, Inc. **Date** : 12/16/2008
Manufacturer : SmartLabs, Inc. **Time** : 9:42:49
Eut name : Access Point **Lab** : D
Model : 2443 **Test Distance** : 3.0 Meters
Serial # : N/A
Specification : FCC Class B
Distance correction factor (20 * log(test/spec)) : 0.00
Test Mode : Test Type: Radiated Emissions Qualification
 Test Range: 10 kHz to 1 GHz (Vertical and Horizontal)
 Clocks: 10 MHz and 22.1184 MHz (Transmit Mode - Worst Case)
 Test Engineer: Kyle Fujimoto

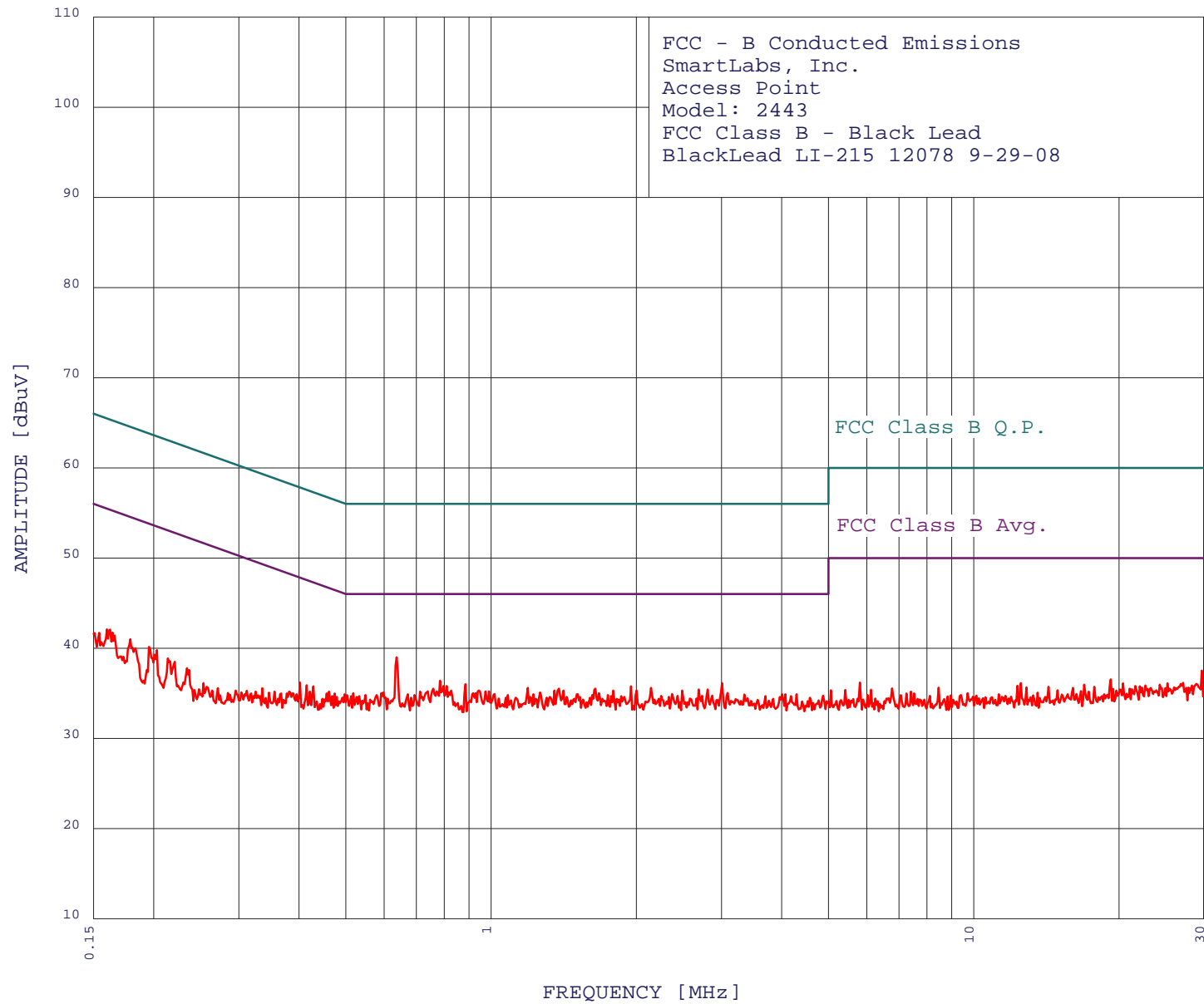
Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	44.368	48.20	0.70	10.12	38.14	20.88	40.00	-19.12
2V	66.552	54.90	0.77	8.19	38.47	25.39	40.00	-14.61
3V	70.000	48.40	0.80	7.60	38.40	18.40	40.00	-21.60
4V	88.706	47.30	0.98	6.70	38.31	16.66	43.50	-26.84
5V	110.890	37.30	1.05	12.34	38.29	12.41	43.50	-31.09
6V	210.055	37.90	1.58	16.50	38.32	17.67	43.50	-25.83
7V	221.810	36.00	1.68	16.50	38.22	15.95	46.00	-30.05
8V	266.178	33.30	1.77	17.55	38.20	14.42	46.00	-31.58
9H	299.900	38.00	1.90	21.49	38.00	23.39	46.00	-22.61
10V	310.581	33.60	1.97	13.01	38.07	10.51	46.00	-35.49
11V	500.185	33.90	2.70	17.40	37.90	16.10	46.00	-29.90
12V	559.900	40.50	2.92	18.39	37.88	23.93	46.00	-22.07
13V	709.893	37.80	3.34	21.25	37.94	24.45	46.00	-21.55
14V	709.900	34.90	3.34	21.25	37.94	21.55	46.00	-24.45
15H	739.900	36.10	3.46	21.41	37.76	23.21	46.00	-22.79
16H	859.900	34.20	3.88	21.76	37.10	22.74	46.00	-23.26
17H	919.900	34.90	3.92	22.01	37.06	23.77	46.00	-22.23
18H	979.900	34.30	4.34	22.61	36.70	24.55	54.00	-29.45

CONDUCTED EMISSIONS

DATA SHEETS

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

12/16/2008 13:12:16



COMPATIBLE
ELECTRONICS



12/16/2008

13:12:16

FCC - B Conducted Emissions
 SmartLabs, Inc.
 Access Point
 Model: 2443

FCC Class B - Black Lead
 BlackLead LI-215 12078 9-29-08
 TEST ENGINEER : Kyle Fujimoto

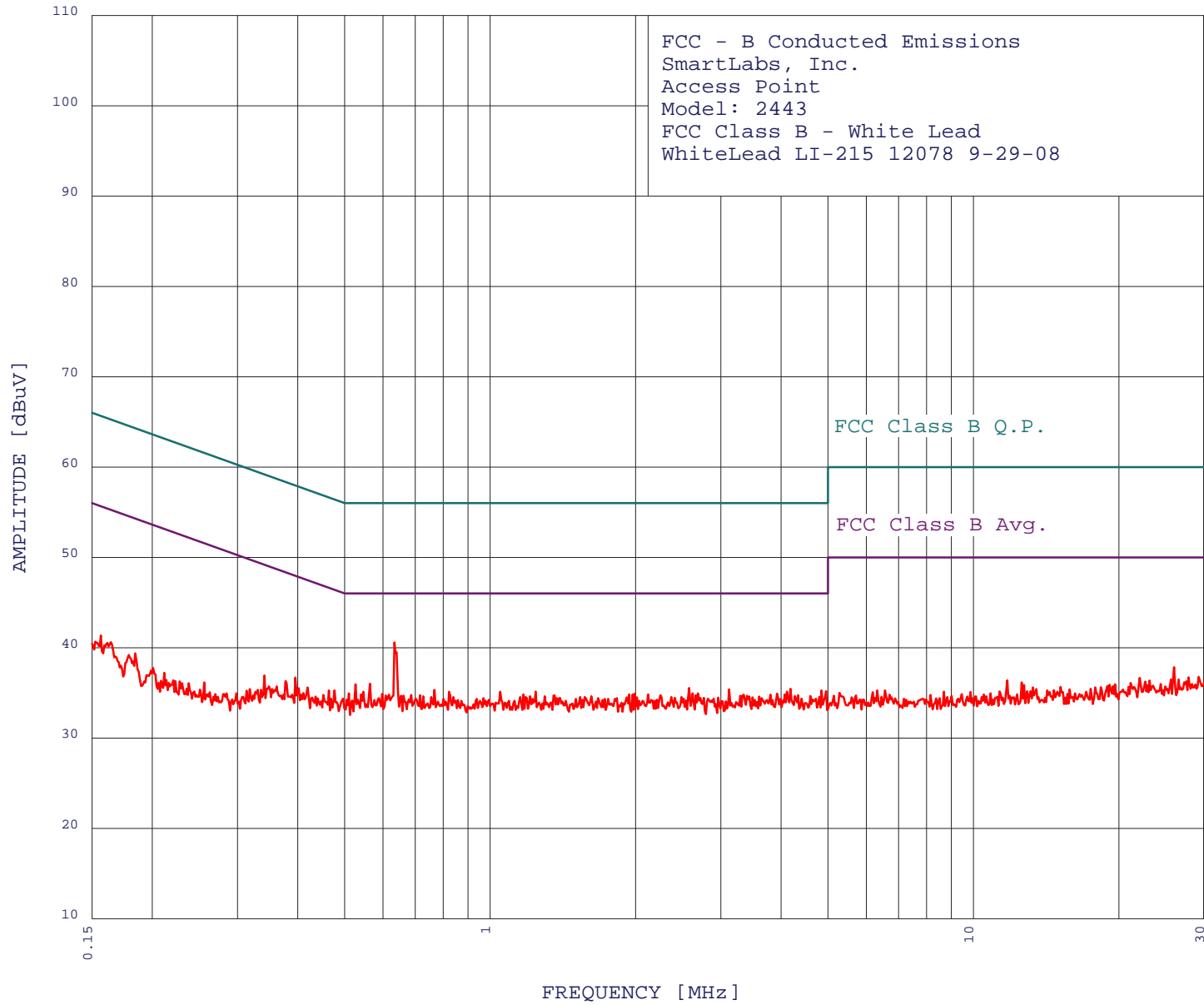
 48 highest peaks above -50.00 dB of FCC Class B Avg. limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.637	38.99	46.00	-7.01
2	0.783	36.39	46.00	-9.61
3	3.011	36.13	46.00	-9.87
4	0.885	36.00	46.00	-10.00
5	0.809	35.79	46.00	-10.21
6	1.950	35.78	46.00	-10.22
7	1.191	35.59	46.00	-10.41
8	2.145	35.59	46.00	-10.41
9	1.382	35.49	46.00	-10.51
10	1.646	35.49	46.00	-10.51
11	2.811	35.42	46.00	-10.58
12	2.693	35.41	46.00	-10.59
13	2.488	35.30	46.00	-10.70
14	0.944	35.30	46.00	-10.70
15	1.352	35.29	46.00	-10.71
16	1.412	35.29	46.00	-10.71
17	1.790	35.28	46.00	-10.72
18	2.002	35.28	46.00	-10.72
19	0.990	35.20	46.00	-10.80
20	0.974	35.20	46.00	-10.80
21	0.739	35.19	46.00	-10.81
22	1.262	35.09	46.00	-10.91
23	0.598	35.09	46.00	-10.91
24	3.091	35.03	46.00	-10.97
25	0.518	34.99	46.00	-11.01
26	2.371	34.90	46.00	-11.10
27	1.223	34.89	46.00	-11.11
28	4.294	34.89	46.00	-11.11
29	0.672	34.89	46.00	-11.11
30	1.504	34.89	46.00	-11.11
31	4.071	34.88	46.00	-11.12
32	4.008	34.88	46.00	-11.12
33	3.346	34.85	46.00	-11.15
34	0.497	34.89	46.05	-11.16
35	1.083	34.80	46.00	-11.20
36	0.694	34.79	46.00	-11.21
37	0.580	34.79	46.00	-11.21
38	0.550	34.79	46.00	-11.21
39	1.745	34.79	46.00	-11.21
40	2.870	34.72	46.00	-11.28
41	4.877	34.72	46.00	-11.28
42	2.250	34.69	46.00	-11.31
43	0.532	34.69	46.00	-11.31
44	0.513	34.69	46.00	-11.31
45	3.702	34.66	46.00	-11.34
46	2.334	34.60	46.00	-11.40
47	0.474	34.98	46.45	-11.46
48	0.461	35.18	46.67	-11.48

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

12/16/2008 13:18:27



COMPATIBLE
ELECTRONICS



12/16/2008

13:18:27

FCC - B Conducted Emissions
 SmartLabs, Inc.
 Access Point
 Model: 2443

FCC Class B - White Lead
 WhiteLead LI-215 12078 9-29-08
 TEST ENGINEER : Kyle Fujimoto

 48 highest peaks above -50.00 dB of FCC Class B Avg. limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.634	40.58	46.00	-5.42
2	0.564	36.01	46.00	-9.99
3	0.527	35.93	46.00	-10.07
4	2.582	35.54	46.00	-10.46
5	4.182	35.43	46.00	-10.57
6	3.124	35.37	46.00	-10.63
7	0.767	35.31	46.00	-10.69
8	4.851	35.27	46.00	-10.73
9	4.954	35.17	46.00	-10.83
10	4.114	35.12	46.00	-10.88
11	0.547	35.12	46.00	-10.88
12	1.049	35.12	46.00	-10.88
13	1.243	35.12	46.00	-10.88
14	0.822	35.12	46.00	-10.88
15	2.693	34.95	46.00	-11.05
16	2.624	34.94	46.00	-11.06
17	0.510	34.94	46.00	-11.06
18	3.924	34.91	46.00	-11.09
19	1.992	34.91	46.00	-11.09
20	0.598	34.90	46.00	-11.10
21	0.476	35.26	46.40	-11.15
22	1.172	34.82	46.00	-11.18
23	2.123	34.82	46.00	-11.18
24	1.939	34.81	46.00	-11.19
25	1.971	34.81	46.00	-11.19
26	3.800	34.81	46.00	-11.19
27	3.346	34.78	46.00	-11.22
28	0.686	34.75	46.00	-11.25
29	0.396	36.69	47.95	-11.25
30	4.339	34.74	46.00	-11.26
31	0.716	34.74	46.00	-11.26
32	2.250	34.72	46.00	-11.28
33	1.352	34.72	46.00	-11.28
34	3.401	34.69	46.00	-11.31
35	3.294	34.68	46.00	-11.32
36	0.655	34.67	46.00	-11.33
37	0.662	34.66	46.00	-11.34
38	4.600	34.65	46.00	-11.35
39	0.464	35.26	46.62	-11.36
40	0.728	34.63	46.00	-11.37
41	1.297	34.62	46.00	-11.38
42	1.620	34.61	46.00	-11.39
43	4.799	34.56	46.00	-11.44
44	2.488	34.54	46.00	-11.46
45	2.371	34.53	46.00	-11.47
46	1.154	34.52	46.00	-11.48
47	1.184	34.52	46.00	-11.48
48	1.536	34.51	46.00	-11.49
