TESTING
CERT #803.01, 803.02, 803.05, 803.06

SMARTLABS, INC. TEST REPORT

FOR THE

LAMPLINCTM - INSTEON PLUG-IN DIMMER (DUAL BAND), 2457D2

FCC PART 15 SUBPART C SECTIONS 15.207 & 15.249
AND
RSS-210 VERSION 7

TESTING

DATE OF ISSUE: OCTOBER 30, 2009

PREPARED FOR:

SmartLabs, Inc.
16542 Millikan Ave.
Irvine, CA 92606

P.O. No.: 09-3JL1020-I
W.O. No.: 90125

PREPARED BY:

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CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: October 23, 2009

Report No.: FC09-182

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ADMINISTRATIVE INFORMATION

DATE OF TEST:
October 23, 2009

DATE OF RECEIPT:
October 21, 2009

REPRESENTATIVE:
John Lockyer

MANUFACTURER:
SmartLabs, Inc.
16542 Millikan Ave.
Irvine, CA 92606

TEST LOCATION:
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

TEST METHOD: FCC Part 15 Subpart C Section 15.207 & 15.249, and RSS – 210 and RSS-GEN

PURPOSE OF TEST: To perform the testing of the LampLincTM - INSTEON Plug-In Dimmer (Dual Band), 2457D2 with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.249 and RSS – 210 devices.

APPROVALS

QUALITY ASSURANCE:

Steve Behm, Director of Engineering Services

TEST PERSONNEL:

Eddie Wong, Senior EMC Engineer

SITE FILE REGISTRATION NUMBERS

Location	Japan	Canada	FCC
Brea A	R-301, C-314 & T-1572	3082D-1	90473

SUMMARY OF RESULTS

Test	Specification/Method	Results
RF Output Power	FCC2.1046/15.249 (a) & (b)	Pass
Occupied Bandwidth	FCC2.1049	Pass
Radiated Spurious Emissions	FCC2.1053/15.249 (d)	Pass
Voltage Variation	FCC15.31(e)	Pass
Conducted Emissions	FCC15.207	Pass
FCC_ Bandedge		Pass
99% Bandwidth	RSS-210 Version 7	Pass

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

FCC 15.31(e) Voltage Variations
The supply voltage was varied between 85% and 115% of the nominal rated supply voltage, no change in the Fundamental signal level was observed.

FCC 15.31(m) Number Of Channels
This device operates on a single channel.

FCC 15.33(a) Frequency Ranges Tested
15.207 Conducted Emissions: 150 kHz – 30 MHz
15.209 Radiated Emissions: 9 kHz- 10 GHz

FCC 15.203 Antenna Requirements
The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

EUT Operating Frequency
The EUT was operating at 915 MHz

Temperature And Humidity During Testing
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested is a **LampLincTM - INSTEON Plug-In Dimmer (Dual Band), 2457D2**

EQUIPMENT UNDER TEST

LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model
Manuf: SmartLabs, Inc.
Model: 2457D2
Serial: NA

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Lamp
Manuf: Generic
Model: NA
Serial: NA

MEASUREMENT UNCERTAINTIES

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

FCC 2.1046/15.249 (a) & (b) RF OUTPUT POWER

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **SmartLabs, Inc.**
Specification: **FCC 15.249(a) / (b) Field strength of Fundamental/ Field strength of Harmonics**
Work Order #: **90125** Date: 10/23/2009
Test Type: **Radiated Scan** Time: 11:02:34
Equipment: **LampLincTM - INSTEON Plug-In Dimmer (Dual Band)** Sequence#: 3
Manufacturer: SmartLabs, Inc. Tested By: E. Wong
Model: 2457D2
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
Heliax Antenna Cable	P5565	09/04/2008	09/04/2010	P05565
Loop Antenna	2014	06/16/2008	06/16/2010	00314
1.0 GHz HPF	002	09/14/2009	09/14/2011	03169

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.

Freq= 915MHz.
Modulation: FSK
Power= 0dBm=0.001W.

50mV/m = 93.9dBuV/m 3 m. 500uV/m = 53.979 =54dBuV/m @3m
The EUT is set in constant transmit mode. The light is set at brightest setting.
20ºC, 42% Relative Humidity
Frequency range of measurement = 9 kHz- 10 GHz.
Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz- 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz- 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz-10,000 MHz RBW=1 MHz, VBW=1 MHz
Emission profile of the EUT rotated in three Orthogonal orientation was investigated.
Presented data is the worst case emission.

Transducer Legend:

T1=Bilog-AN01995 BILOG_012110	T2=Cable #10 ANP05050 041611
T3=Cable #15_05198_ Site A, 010511	T4=Pre_amp_HP8447D-AN00309-050210
T5=Heliax Cable 54' ANP05565 090410	T6=HF_pre AMP-1-26GHz_AN00786-072810.TRN
T7=Hi Freq_40GHz_2ft-AN02948-092111	T8=Horn Ant AN00849 060610
T9=HPF_1GHz_AN03169-091411.TRN	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	914.910M	84.7	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	87.5	93.9 Fundamental: X	-6.4	Horiz
2	914.910M	83.0	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	85.8	93.9 Fundamental: X	-8.1	Vert
3	914.917M	82.5	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	85.3	93.9 Fundamental: Y	-8.6	Horiz
4	914.910M	82.4	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	85.2	93.9 Fundamental: Z	-8.7	Horiz
5	1830.000M	52.6	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	45.2	54.0 X	-8.8	Vert
6	1829.970M	52.2	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	44.8	54.0 Y	-9.2	Horiz
7	1830.000M	52.1	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	44.7	54.0 Z	-9.3	Vert
8	914.910M	81.0	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	83.8	93.9 Fundamental: Z	-10.1	Horiz
9	915.063M	80.9	+23.5 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	83.7	93.9 Fundamental: Y	-10.2	Vert

10	1830.000M	49.5	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	42.1	Z	54.0	-11.9	Vert
11	3660.000M	41.8	+0.0 +4.8 +0.2	+0.0 -37.3	+0.0 +0.6	+0.0 +31.6	+0.0	41.7		54.0	-12.3	Vert
12	1829.900M	47.9	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	40.5	X	54.0	-13.5	Horiz
13	1829.570M	47.6	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	40.2	Y	54.0	-13.8	Vert
14	2745.000M	43.2	+0.0 +4.1 +0.3	+0.0 -37.8	+0.0 +0.5	+0.0 +29.3	+0.0	39.6		54.0	-14.4	Vert

FCC 2.1049 OCCUPIED BANDWIDTH

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer:	**SmartLabs, Inc.**		
Work Order #:	**90125**	Date:	10/23/2009
Test Type:	**Radiated Scan**	Time:	11:02:34
Equipment:	**LampLincTM - INSTEON Plug-In Dimmer (Dual Band)**	Sequence#:	3
Manufacturer:	SmartLabs, Inc.	Tested By:	E. Wong
Model:	2457D2		
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

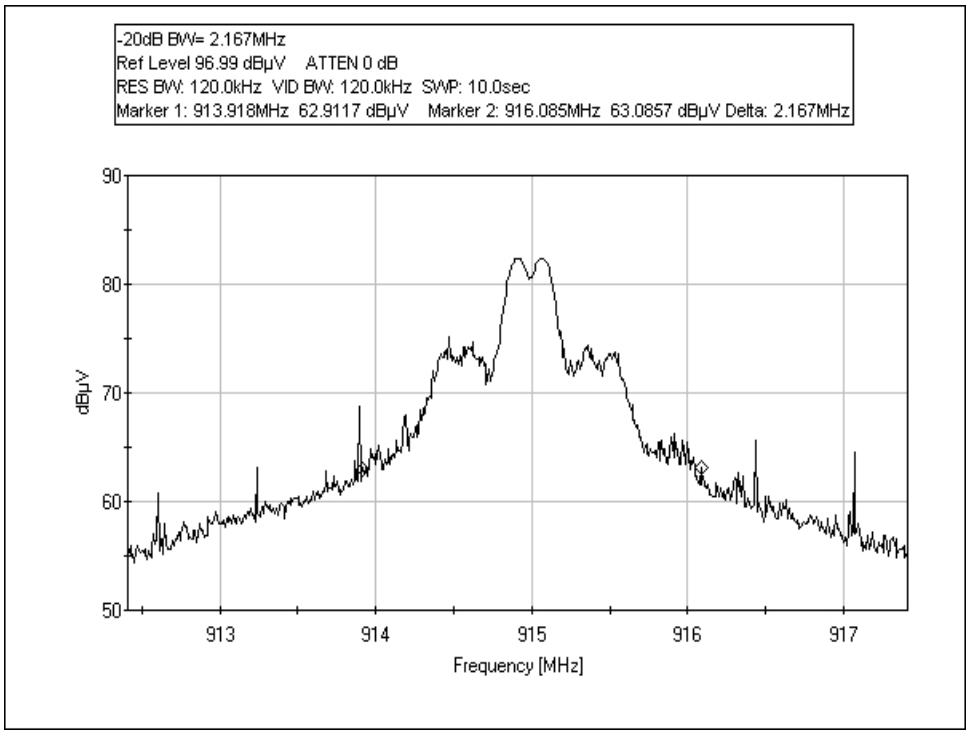
Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device.
A lamp is connected to the EUT with a light bulb installed.
Freq= 915MHz. Modulation: FSK Power= 0dBm=0.001W. 50mV/m = 93.9dBuV/m 3 m. 500uV/m = 53.979 =54dBuV/m @3m
The EUT is set in constant transmit mode. The light is set at brightest setting.

20ºC, 42% Relative Humidity

Emission profile of the EUT rotated in three Orthogonal orientations was investigated.
Presented data is the worst case emission.

2.1049 OBW BANDWIDTH 20dB BW = 2.167 MHz



FCC 2.1053/15.249 (d) RADIATED SPRURIOUS EMISSIONS

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer: **SmartLabs, Inc.**
Specification: **FCC 15.249(d) / 15.209**
Work Order #: **90125** Date: 10/23/2009
Test Type: **Radiated Scan** Time: 14:45:07
Equipment: **LampLincTM - INSTEON Plug-In Dimmer (Dual Band)** Sequence#: 3
Manufacturer: SmartLabs, Inc. Tested By: E. Wong
Model: 2457D2
S/N: NA

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309
Horn Antenna	6246	06/06/2008	06/06/2010	00849
Microwave Pre-amp	3123A00281	07/28/2008	07/28/2010	00786
2'-40GHz cable	NA	09/21/2009	09/21/2011	P2948
Heliax Antenna Cable	P5565	09/04/2008	09/04/2010	P05565
Loop Antenna	2014	06/16/2008	06/16/2010	00314
1.0 GHz HPF	002	09/14/2009	09/14/2011	03169

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air.. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.

Freq= 915MHz.
Modulation: FSK
Power= 0dBm=0.001W.

The EUT is set in constant transmit mode. The light is set at brightest setting.
20ºC, 42% Relative Humidity
Frequency range of measurement = 9 kHz- 10 GHz.
Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz- 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz- 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz-10,000 MHz RBW=1 MHz, VBW=1 MHz
Emission profile of the EUT rotated in three Orthogonal orientations was investigated. Presented data is the worst case emission.

Transducer Legend:

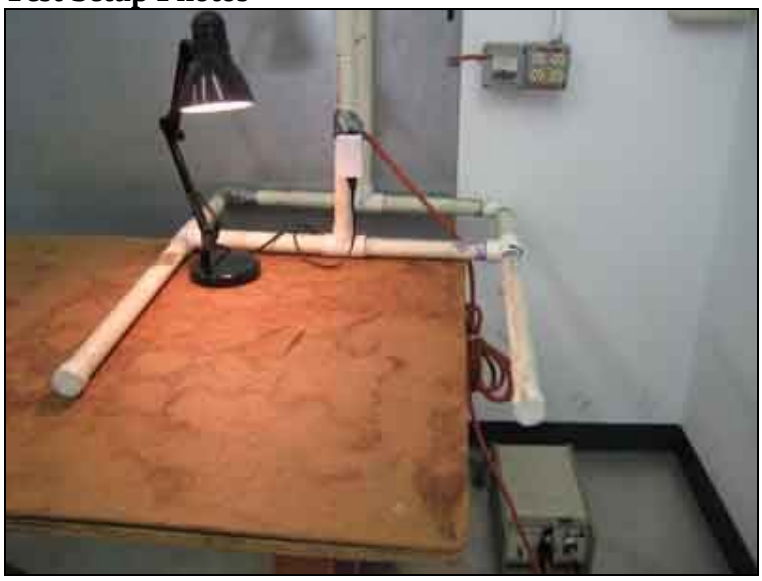
T1=Bilog-AN01995 BILOG_012110	T2=Cable #10 ANP05050 041611
T3=Cable #15_05198_ Site A, 010511	T4=Pre_amp_HP8447D-AN00309-050210
T5=Heliax Cable 54' ANP05565 090410	T6=HF_pre AMP-1-26GHz_AN00786-072810.TRN
T7=Hi Freq_40GHz_2ft-AN02948-092111	T8=Horn Ant AN00849 060610
T9=HPF_1GHz_AN03169-091411.TRN	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	66.356M QP	54.0	+6.3 +0.0 +0.0	+0.1 +0.0	+1.3 +0.0	-28.0 +0.0	+0.0	33.7	40.0	-6.3	Vert
^	66.356M	56.1	+6.3 +0.0 +0.0	+0.1 +0.0	+1.3 +0.0	-28.0 +0.0	+0.0	35.8	40.0	-4.2	Vert
3	1830.000M	52.6	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	45.2	54.0 X	-8.8	Vert
4	1829.970M	52.2	+0.0 +3.2 +0.3	+0.0 -38.0	+0.0 +0.4	+0.0 +26.7	+0.0	44.8	54.0 Y	-9.2	Horiz
5	905.014M	32.1	+23.4 +0.0 +0.0	+0.7 +0.0	+5.7 +0.0	-27.2 +0.0	+0.0	34.7	46.0	-11.3	Horiz
6	3660.000M	41.8	+0.0 +4.8 +0.2	+0.0 -37.3	+0.0 +0.6	+0.0 +31.6	+0.0	41.7	54.0	-12.3	Vert
7	925.083M	30.2	+23.7 +0.0 +0.0	+0.7 +0.0	+5.8 +0.0	-27.2 +0.0	+0.0	33.2	46.0	-12.8	Horiz
8	2745.000M	43.2	+0.0 +4.1 +0.3	+0.0 -37.8	+0.0 +0.5	+0.0 +29.3	+0.0	39.6	54.0	-14.4	Vert
9	66.358M	35.2	+6.3 +0.0 +0.0	+0.1 +0.0	+1.3 +0.0	-28.0 +0.0	+0.0	14.9	40.0	-25.1	Horiz

FCC 15.207 CONDUCTED EMISSIONS

Test Setup Photos



Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer:	**SmartLabs, Inc.**		
Specification:	**FCC 15.207 COND [AVE]**		
Work Order #:	**90125**	Date:	10/23/2009
Test Type:	**Conducted Emissions**	Time:	08:56:49
Equipment:	**LampLincTM - INSTEON Plug-In Dimmer (Dual Band)**	Sequence#:	1
Manufacturer:	SmartLabs, Inc.	Tested By:	E. Wong
Model:	2457D2		110V 60Hz
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN	1104	12/09/2008	12/09/2010	00847
6dB Attenuator	None	10/14/2008	10/14/2010	P05886
150kHz HPF	G7755	01/09/2008	01/09/2010	02610
Conducted Emission Cable	Cable #21	05/12/2008	05/12/2010	P04358
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.

Freq= 915MHz.
Modulation: FSK
Power= 0dBm=0.001W.

The EUT is set in constant transmit mode. The light is set at brightest setting.

20ºC, 42% Relative Humidity

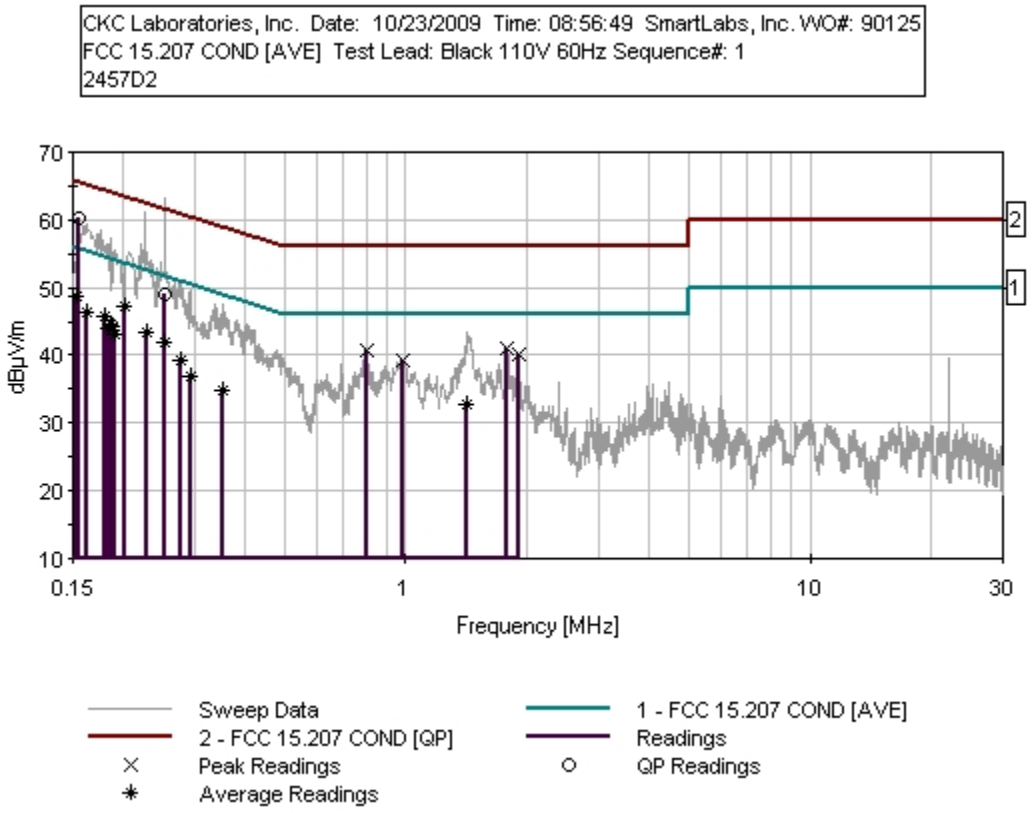
Transducer Legend:

T1=150kHz HPF AN02610_010910	T2=6dB atten-P05886-101410.TRN
T3=Cable #21 -P04358- Site A 05/12/10	T4=L1 Insertion Loss AN00847_120910

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	253.990k QP	42.7	+0.2	+6.1	+0.0	+0.0	+0.0	49.0	51.6	-2.6	Black
^	253.991k	56.8	+0.2	+6.1	+0.0	+0.0	+0.0	63.1	51.6	+11.5	Black
3	1.787M	34.7	+0.2	+6.1	+0.1	+0.0	+0.0	41.1	46.0	-4.9	Black
4	155.520k QP	52.9	+1.3	+6.1	+0.0	+0.0	+0.0	60.3	65.7	-5.4	Black
^	154.001k	56.1	+1.5	+6.1	+0.0	+0.0	+0.0	63.7	55.8	+7.9	Black
6	801.577k	34.2	+0.3	+6.1	+0.0	+0.0	+0.0	40.6	46.0	-5.4	Black
7	1.894M	33.7	+0.2	+6.1	+0.1	+0.0	+0.0	40.1	46.0	-5.9	Black
8	202.627k Ave	40.9	+0.2	+6.1	+0.0	+0.0	+0.0	47.2	53.5	-6.3	Black
^	205.268k	49.0	+0.2	+6.1	+0.0	+0.0	+0.0	55.3	53.4	+1.9	Black
10	987.776k	32.9	+0.3	+6.1	+0.1	+0.0	+0.0	39.4	46.0	-6.6	Black
11	154.001k Ave	41.1	+1.5	+6.1	+0.0	+0.0	+0.0	48.7	55.8	-7.1	Black
12	179.916k Ave	39.4	+0.3	+6.1	+0.0	+0.0	+0.0	45.8	54.5	-8.7	Black
13	161.635k Ave	39.8	+0.6	+6.1	+0.0	+0.0	+0.0	46.5	55.4	-8.9	Black
^	161.635k	52.8	+0.6	+6.1	+0.0	+0.0	+0.0	59.5	55.4	+4.1	Black
15	227.575k Ave	37.1	+0.2	+6.1	+0.0	+0.0	+0.0	43.4	52.5	-9.1	Black
^	225.629k	54.7	+0.2	+6.1	+0.0	+0.0	+0.0	61.0	52.6	+8.4	Black
17	188.286k Ave	38.0	+0.3	+6.1	+0.0	+0.0	+0.0	44.4	54.1	-9.7	Black
^	184.179k	49.9	+0.3	+6.1	+0.0	+0.0	+0.0	56.3	54.3	+2.0	Black
19	186.360k Ave	38.1	+0.3	+6.1	+0.0	+0.0	+0.0	44.5	54.2	-9.7	Black
20	253.990k Ave	35.5	+0.2	+6.1	+0.0	+0.0	+0.0	41.8	51.6	-9.8	Black
21	184.179k Ave	37.7	+0.3	+6.1	+0.0	+0.0	+0.0	44.1	54.3	-10.2	Black

22	190.842k Ave	36.7	+0.3	+6.1	+0.0	+0.0	+0.0	43.1	54.0	-10.9	Black
^	186.360k	50.8	+0.3	+6.1	+0.0	+0.0	+0.0	57.2	54.2	+3.0	Black
^	191.451k	49.1	+0.3	+6.1	+0.0	+0.0	+0.0	55.5	54.0	+1.5	Black
25	277.988k Ave	33.0	+0.2	+6.1	+0.0	+0.0	+0.0	39.3	50.9	-11.6	Black
^	277.988k	44.9	+0.2	+6.1	+0.0	+0.0	+0.0	51.2	50.9	+0.3	Black
27	1.422M Ave	26.4	+0.2	+6.1	+0.1	+0.0	+0.0	32.8	46.0	-13.2	Black
^	1.422M	37.0	+0.2	+6.1	+0.1	+0.0	+0.0	43.4	46.0	-2.6	Black
29	293.987k Ave	30.5	+0.2	+6.1	+0.0	+0.0	+0.0	36.8	50.4	-13.6	Black
^	293.987k	43.3	+0.2	+6.1	+0.0	+0.0	+0.0	49.6	50.4	-0.8	Black
31	350.709k Ave	28.4	+0.2	+6.1	+0.0	+0.0	+0.0	34.7	48.9	-14.2	Black
^	350.709k	41.1	+0.2	+6.1	+0.0	+0.0	+0.0	47.4	48.9	-1.5	Black



Test Location:	CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112		
Customer:	**SmartLabs, Inc.**		
Specification:	**FCC 15.207 COND [AVE]**		
Work Order #:	**90125**	Date:	10/23/2009
Test Type:	**Conducted Emissions**	Time:	09:02:54
Equipment:	**LampLincTM - INSTEON Plug-In Dimmer (Dual Band)**	Sequence#:	2
Manufacturer:	SmartLabs, Inc.	Tested By:	E. Wong
Model:	2457D2		110V 60Hz
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN	1104	12/09/2008	12/09/2010	00847
6dB Attenuator	None	10/14/2008	10/14/2010	P05886
150kHz HPF	G7755	01/09/2008	01/09/2010	02610
Conducted Emission Cable	Cable #21	05/12/2008	05/12/2010	P04358
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.

Freq= 915MHz.
Modulation: FSK
Power= 0dBm=0.001W.

The EUT is set in constant transmit mode. The light is set at brightest setting.

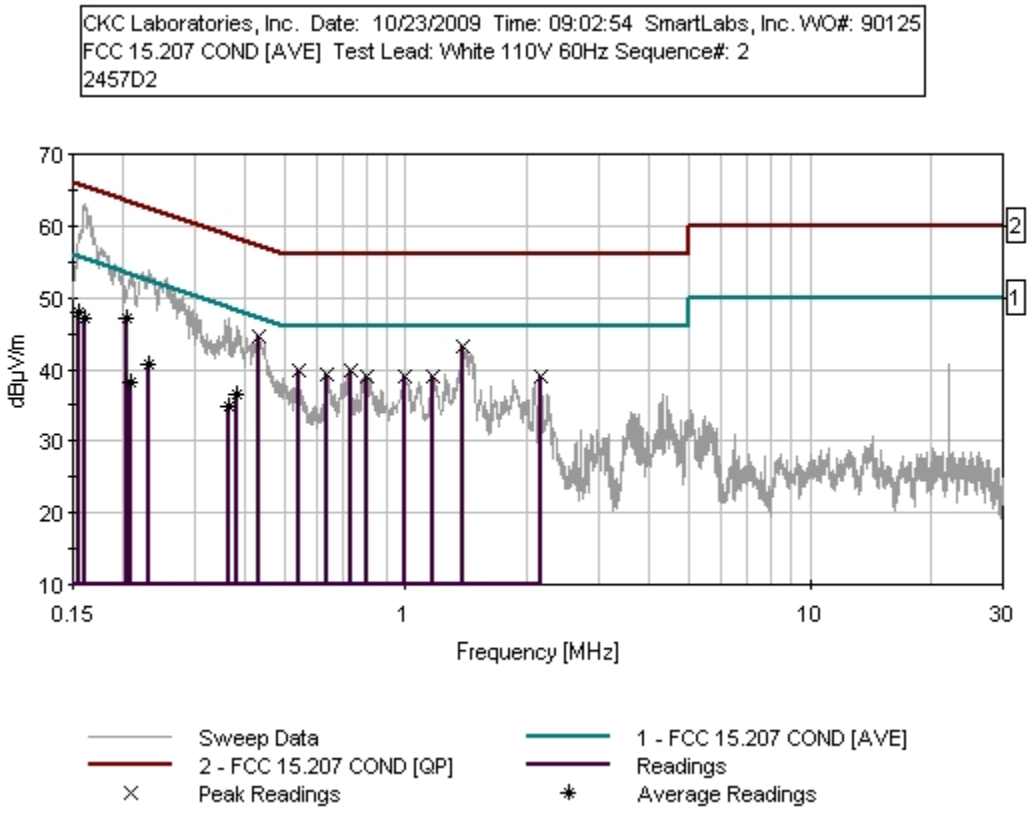
20ºC, 42% Relative Humidity

Transducer Legend:

T1=150kHz HPF AN02610_010910	T2=6dB atten-P05886-101410.TRN
T3=Cable #21 -P04358- Site A 05/12/10	T4=L2 Insertion Loss AN00847_120910

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	434.338k	38.4	+0.2	+6.1	+0.0	+0.0	+0.0	44.7	47.2	-2.5	White
2	1.388M	36.6	+0.3	+6.1	+0.1	+0.1	+0.0	43.2	46.0	-2.8	White
3	728.129k	33.6	+0.3	+6.1	+0.0	+0.0	+0.0	40.0	46.0	-6.0	White
4	544.146k	33.5	+0.2	+6.1	+0.0	+0.0	+0.0	39.8	46.0	-6.2	White
5	204.331k Ave	40.7	+0.2	+6.1	+0.0	+0.1	+0.0	47.1	53.4	-6.3	White
6	635.774k	33.0	+0.2	+6.1	+0.0	+0.0	+0.0	39.3	46.0	-6.7	White
7	804.485k	32.7	+0.3	+6.1	+0.0	+0.0	+0.0	39.1	46.0	-6.9	White
8	2.166M	32.6	+0.2	+6.1	+0.1	+0.1	+0.0	39.1	46.0	-6.9	White
9	996.281k	32.4	+0.3	+6.1	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
10	1.162M	32.4	+0.3	+6.1	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
11	155.077k Ave	40.5	+1.4	+6.1	+0.0	+0.0	+0.0	48.0	55.7	-7.7	White
12	160.181k Ave	40.5	+0.6	+6.1	+0.0	+0.0	+0.0	47.2	55.5	-8.3	White
^	160.181k	56.2	+0.6	+6.1	+0.0	+0.0	+0.0	62.9	55.5	+7.4	White
14	383.433k Ave	30.2	+0.2	+6.1	+0.0	+0.0	+0.0	36.5	48.2	-11.7	White
^	383.433k	39.6	+0.2	+6.1	+0.0	+0.0	+0.0	45.9	48.2	-2.3	White
16	232.174k Ave	34.2	+0.2	+6.1	+0.0	+0.1	+0.0	40.6	52.4	-11.8	White
^	232.174k	47.5	+0.2	+6.1	+0.0	+0.1	+0.0	53.9	52.4	+1.5	White
18	364.526k Ave	28.4	+0.2	+6.1	+0.0	+0.0	+0.0	34.7	48.6	-13.9	White
^	364.526k	40.8	+0.2	+6.1	+0.0	+0.0	+0.0	47.1	48.6	-1.5	White
^	367.435k	39.5	+0.2	+6.1	+0.0	+0.0	+0.0	45.8	48.6	-2.8	White
21	209.631k Ave	31.7	+0.2	+6.1	+0.0	+0.1	+0.0	38.1	53.2	-15.1	White
^	209.631k	46.5	+0.2	+6.1	+0.0	+0.1	+0.0	52.9	53.2	-0.3	White


CKC Laboratories, Inc. Date: 10/23/2009 Time: 09:02:54 SmartLabs, Inc. WO#: 90125
FCC 15.207 COND [AVE] Test Lead: White 110V 60Hz Sequence#: 2
2457D2
70
60
50
40
30
20
10
dBµV/m
0.15
1
10
30
Frequency [MHz]
2
1
Sweep Data
2 - FCC 15.207 COND [QP]
Peak Readings
1 - FCC 15.207 COND [AVE]
Readings
Average Readings

FCC_BANDEDGE

Test Setup Photos

Test Conditions

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer:	**SmartLabs, Inc.**		
Work Order #:	**90125**	Date:	10/23/2009
Test Type:	**Radiated Scan**	Time:	11:02:34
Equipment:	**LampLincTM - INSTEON Plug-In Dimmer (Dual Band)**	Sequence#:	3
Manufacturer:	SmartLabs, Inc.	Tested By:	E. Wong
Model:	2457D2		
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

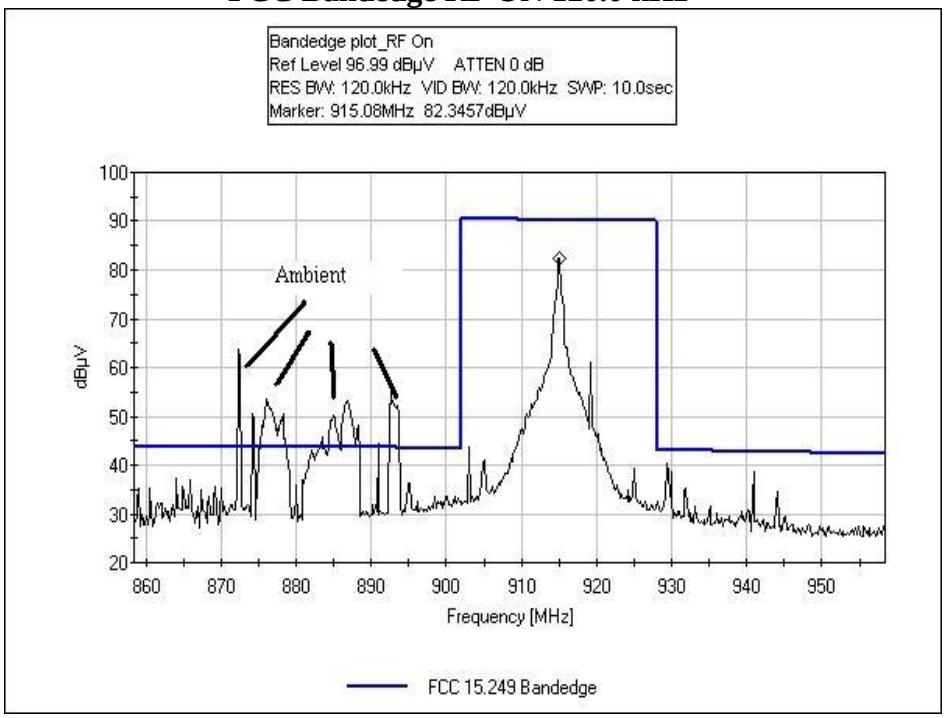
Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

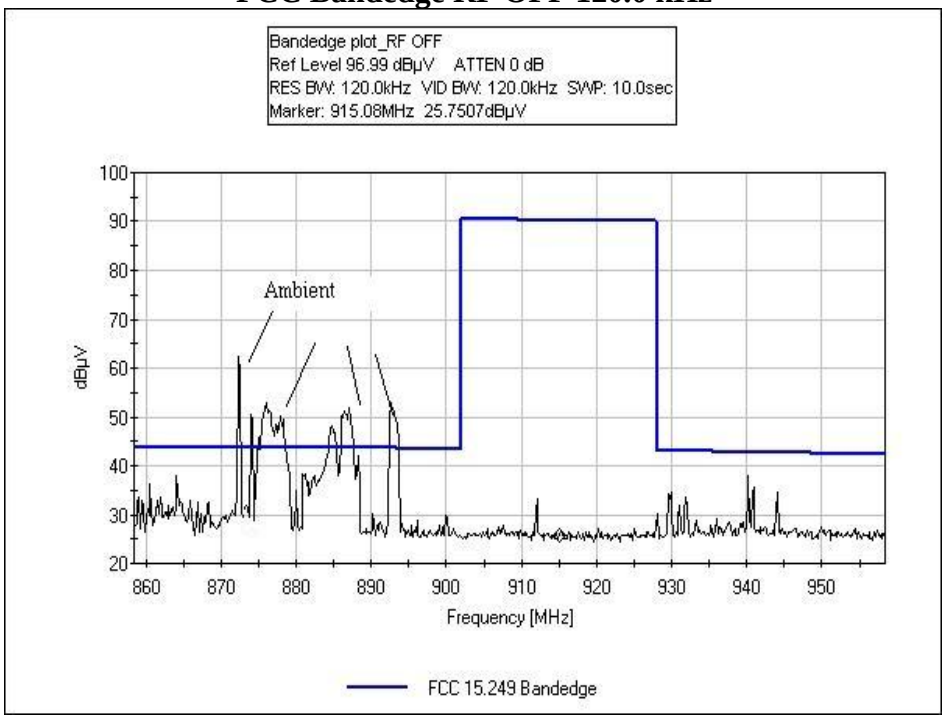
Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.
Freq= 915MHz. Modulation: FSK Power= 0dBm=0.001W. 50mV/m = 93.9dBuV/m 3 m. 500uV/m = 53.979 =54dBuV/m @3m The EUT is set in constant transmit mode. The light is set at brightest setting.
20ºC, 42% Relative Humidity
Emission profile of the EUT rotated in three Orthogonal orientations was investigated. Presented data is the worst case emission.

FCC Bandedge RF ON 120.0 kHz



FCC Bandedge RF OFF 120.0 kHz



Note: Two plots are presented to clarify the presence of ambient signal; one plot with the Device turned on, the other with the device turned off. The captured Ambient signal is annotated on the plots.

RSS-210 99% BANDWIDTH

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •110. N. Olinda Place. • Brea, CA 92821 • (714) 993-6112

Customer:	**SmartLabs, Inc.**		
Work Order #:	**90125**	Date:	10/23/2009
Test Type:	**Radiated Scan**	Time:	11:02:34
Equipment:	**LampLincTM - INSTEON Plug-In Dimmer (Dual Band)**	Sequence#:	3
Manufacturer:	SmartLabs, Inc.	Tested By:	E. Wong
Model:	2457D2		
S/N:	NA		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	US44300438	07/23/2008	07/23/2010	02672
Bilog Antenna	2451	01/21/2008	01/21/2010	01995
Pre amp to SA Cable	Cable #10	04/16/2009	04/16/2011	P05050
Cable	Cable15	01/05/2009	01/05/2011	P05198
Pre Amp	1937A02548	05/02/2008	05/02/2010	00309

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
LampLincTM - INSTEON Plug-In Dimmer (Dual Band) Model*	SmartLabs, Inc.	2457D2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Lamp	Generic	NA	NA

Test Conditions / Notes:

The EUT is placed on a plastic structure with dielectric constant approaching the value of air. The device is orientated as a wall mount device. A lamp is connected to the EUT with a light bulb installed.
Freq= 915MHz. Modulation: FSK Power= 0dBm=0.001W. 50mV/m = 93.9dBuV/m 3 m. 500uV/m = 53.979 =54dBuV/m @3m
The EUT is set in constant transmit mode, light is set at brightest setting. 20ºC, 42% Relative Humidity
Emission profile of the EUT rotated in three Orthogonal orientations was investigated. Presented data is the worst case emission.

The pulsating signal was captured with slow sweet time and the Channel bandwidth function of the spectrum analyzer was used to compute the 99% BW.

RSS- 210 99% BANDWIDTH 2.0MHz