

*FCC PART 15, SUBPART B & SUBPART C
TEST REPORT*

For
RF OUTLET
Model: R0510021

Prepared for

BUDDERFLY LLC
2 TRAP FALLS ROAD SUITE 507
SHELDON, CT 06484

Prepared by: _____

JOEY MADLANGBAYAN

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DATE: MAY 8, 2013

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	17	2	2	2	15	36	74

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1	Conducted Emissions Test Setup
2	Plot Map And Layout of Test Site below 1 GHz
3	Plot Map And Layout of Test Site above 1 GHz

GENERAL REPORT SUMMARY

This electromagnetic emission 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 in any form except in full, without the written permission of Compatible Electronics.

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

Device Tested: RF OUTLET
Model: R0510021
S/N: NONE

Product Description: The RF OUTLET is an outlet that replaces ordinary outlets and is capable of sensing the current/voltage on the Power Line.

Modifications: The EUT was modified in order to comply with specifications. Please see the list of modifications in Appendix B.

Manufacturer: Budderfly LLC
2 Trap Falls Rd., Suite 507
Sheldon, CT 06484

Test Date: March 13-15, 2013

Test Specifications: EMI requirements
ANSI C63.4 and C63.10
CFR Title 47, Part 15 Subpart B sections 15.107, 15.109, Subpart C Sections 15.205, 15.209 and 15.249

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz.	Complies with the limits of CFR Title 47 Part 15 Subpart B Section 15.107, Subpart C Section 15.207
2	Radiated RF Emissions & Harmonics, 9 kHz – 10,000 MHz.	Complies with the limits of CFR Title 47 Part 15 Subpart B Section 15.109 and Subpart C Section 15.205, 15.209
3	Fundamental Field Strength	Complies with CFR Title 47 Part 15 Subpart C Section 15.249(a)
4	Emissions Radiated Outside of the Fundamental Frequency Band	Complies with CFR Title 47 Part 15 Subpart C Section 15.249(d)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the RF Outlet Model: R0510021. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 and C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT (equipment under test) hereafter, are within the specification limits defined by the Code of Federal Regulations Title 47, Part 15 Subpart B section 15.107, 15.109, Subpart C sections 15.205, 15.207, 15.209 and 15.249. The power line carrier emissions tests were not performed by Compatible Electronics.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics 20621 Pascal Way Lake Forest, California 92630.

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

Budderfly LLC

Daniel Riscalla Vice President of Engineering

Compatible Electronics Inc.

Matt Harrison	Test Technician
Eugene Adams	Test Technician
Joey Madlangbayan	Test Engineer
Josh Hansen	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on February 13, 2013.

2.5 Disposition of the Test Sample

The test sample was returned to Budderfly LLC.

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
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
PCB	Printed Circuit Board
TX	Transmit
RX	Receive

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 2009	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.
ANSI C63.10: 2009	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz

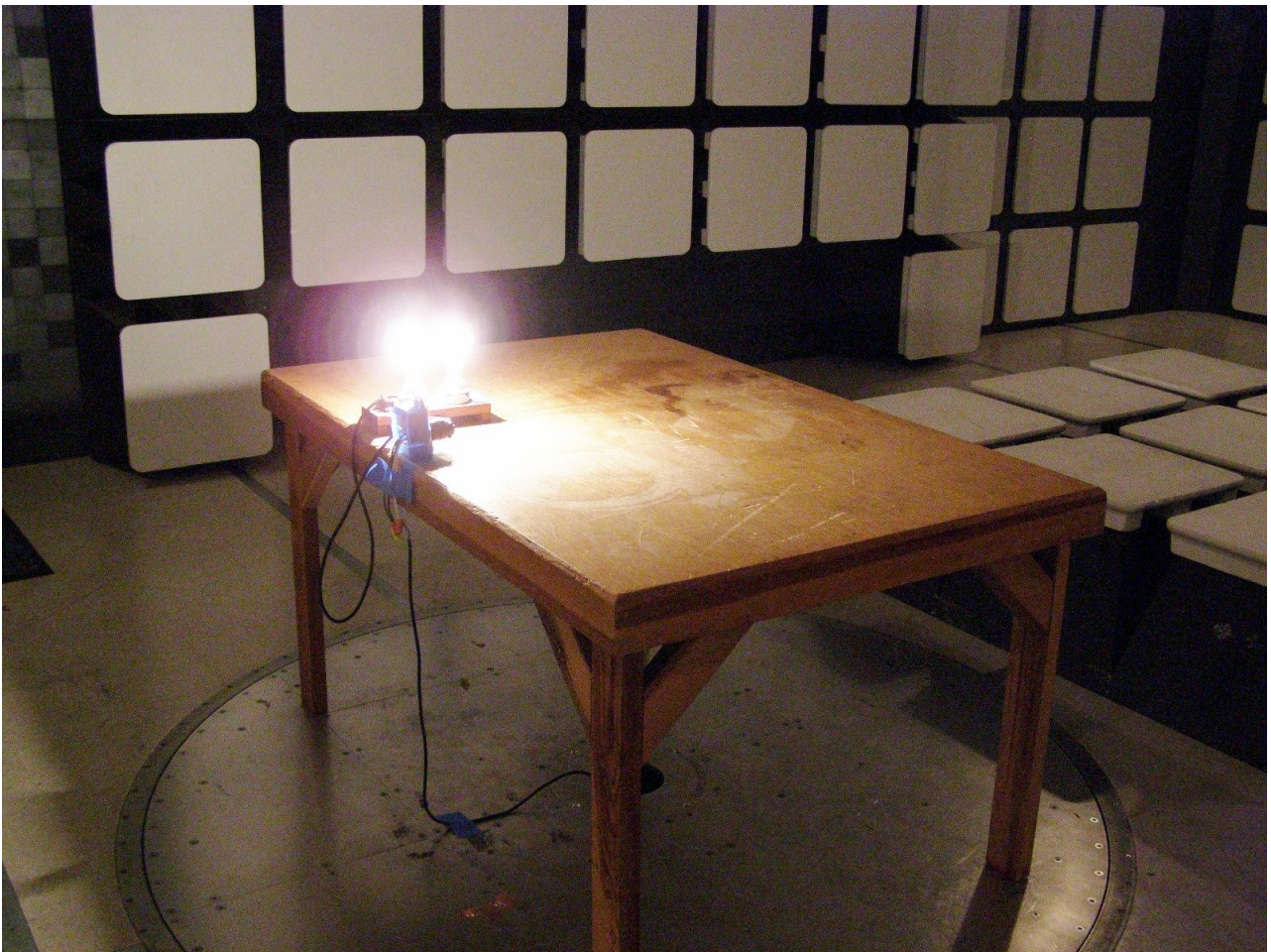
4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The EUT was tested in a tabletop configuration. The EUT was connected to the AC mains and a double bulb light fixture. The EUT was transmitting/receiving throughout all the tests. The device was also repeating all received messages throughout all tests.

The highest emissions were found when the EUT was running in the above configuration. The cables were moved to maximize the emissions. The final radiated and conducted data was taken in this mode of operation. All initial investigations were performed with the spectrum analyzer in manual mode scanning the frequency range continuously. The cables were and routed as shown in the photographs in Appendix D.

4.1.1 Photograph of Test Configuration - EMI



4.1.2 Cable Construction and Termination

Cable 1

This is a 1-meter, unshielded, round cable connecting the EUT to the light fixture. The cable is hardwired into the EUT and into the light fixture as well.

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

#	EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER
1	RF OUTLET (EUT)	BUDDERFLY LLC	R0510021	NONE
2	LIGHT FIXTURE	GENERIC	NONE	NONE

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Computer	Compatible Electronics	NONE	NONE	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100219	9/26/2012	9/26/2013
Antenna, Loop	Com Power	AL-130	17085	01/29/2013	01/29/2015
Antenna, CombiLog	Com Power	AC-220	25857	05/25/2012	05/25/2013
Antenna, Horn 1-18GHz	Com Power	AH-118	071250	07/03/2012	07/03/2013
Pre-Amp, 1-18GHz	Com Power	PAM-118	443013	03/12/2012	03/12/2013
Pre-Amp, 1-18GHz	Com Power	PAM-118	443011	06/11/2012	06/11/2013
High Pass Filter	AMTI Microwave Circuits	H3G020G4	481230	06/07/2012	06/07/2013
LISN	Com Power	LI 215	12088	3/05/2012	3/05/2013
Mast, Antenna Positioner	Sunol Science Corporation	TWR 95-4	020808-3	N/A	N/A
Antenna Mast	Sunol Science Corporation	TWR 95-4	020808-3	N/A	N/A
Turntable	Sunol Science Corporation	FM 2001	N/A	N/A	N/A
Mast and Turntable Controller	Sunol Science Corporation	SC104V	020808-1	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 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 grounded through the power cable.

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Number and Frequencies

There are a total of 16 channels. The low channel is at 915.38 MHz and the high channel is at 921.35 MHz. There is a 400 kHz separation between each channel.

1 = 915.38 MHz
2 = 915.78 MHz
3 = 916.18 MHz
4 = 916.58 MHz
5 = ...

7.2 Antenna

The antenna is made up of one 8cm wire antenna which is connected and soldered to the PCB.

8. TEST PROCEDURES

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

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The EMI receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. The LISN output was measured using the EMI receiver. 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 received its power through the LISN, which was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI 63.4. 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 computer software.

Test Results:

The EUT complies with the limits of CFR Title 47 Part 15 Subpart B section 15.107 and Subpart C section 15.207.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI receiver was used as a measuring meter. The receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the receiver records the highest measured reading over all the sweeps. Preamplifiers were used to increase the sensitivity of the instrument.

For spurious emissions the quasi-peak detector was used for frequencies below 1GHz and the average detector was used for frequencies above 1 GHz.

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

FREQUENCY RANGE (MHz)	TRANSDUCER	EFFECTIVE MEASUREMENT BANDWIDTH
.009 to .150	Active Loop Antenna	200 kHz
.150 to 30	Active Loop Antenna	9 kHz
30 to 1000	Combilog Antenna	120 kHz
1000 to 10000	Horn Antenna	1 MHz

The TDK FAC-3 shielded test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4, EN 50147-2, and CISPR 22. 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 in both vertical and horizontal polarizations (for E field radiated field strength).

Test Results:

The EUT complies with the limits of CFR Title 47 Part 15 Subpart B 15.109, Subpart C sections 15.205, 15.209 and 15.249.

8.2 Fundamental Field Strength

The Peak Transmit EMI was measured using the EMI Receiver 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 Part 15 Subpart C, Section 15.249.

8.3 Emissions Radiated Outside of the Fundamental Frequency Band

The Band Edge measurement was measured using the EMI Receiver at a 3-meter test distance to obtain the final test data. The frequency was tuned to the lowest and highest frequency if the EUT transmits more than one frequency. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with Part 15 Subpart C, Section 15.249 and 15.205.

8.4 Voltage Fluctuations

The supply voltage fluctuation test was performed using the EMI Receiver. The EUT input power was varied between 85% and 115% of the nominal rated supply voltage. The carrier frequency was monitored for any change in amplitude.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.31 (e).

9. TEST PROCEDURE DEVIATIONS

There were no deviations from the test procedures.

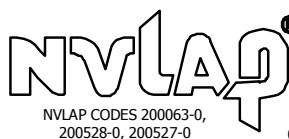
10. CONCLUSIONS

The RF OUTLET Model: R0510021 meets all of the relevant specification requirements defined in the Code of Federal Regulations Title 47, Part 15 Subpart B sections 15.107, 15.109 Subpart C sections 15.205, 15.209 and 15.249. The power line carrier emissions tests were not performed by Compatible Electronics.

APPENDIX A

LABORATORY ACCREDITATIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS



For US, Canada, Australia/New Zealand, Taiwan and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025 an ISO 9002 equivalent. Please follow the link to the NIST site for each of our facilities NVLAP certificate and scope of accreditation.

Silverado/Lake Forest Division: <http://ts.nist.gov/ts/htdocs/210/214/scopes/2005270.htm>

Brea Division: <http://ts.nist.gov/ts/htdocs/210/214/scopes/2005280.htm>

Agoura Division: <http://ts.nist.gov/ts/htdocs/210/214/scopes/2000630.htm>



Compatible Electronics has been accredited by ANSI and appointed by the FCC to serve as a Telecommunications Certification Body (TCB). Compatible Electronics ANSI TCB listing can be found at: http://www.ansi.org/public/ca/ansi_cp.html



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA). Compatible Electronics NIST US/EU CAB listing can be found at: <http://ts.nist.gov/ts/htdocs/210/gsig/emc-cabs-mar02.pdf>



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA). Compatible Electronics NIST US/APEC CAB listing can be found at: <http://ts.nist.gov/ts/htdocs/210/gsig/apec/bsmi-cabs-may02.pdf>



Compatible Electronics has been validated by NEMKO against ISO/IEC 17025 under the NEMKO EMC Laboratory Authorization (ELA) program to all EN standards required by the European Union (EU) EMC Directive 89/336/EEC. Please follow the link to the Compatible Electronics' web site for each of our facilities NEMKO ELA certificate and scope of accreditation. <http://www.celectronics.com/certs.htm>

We are also certified/listed for IT products by the following country/agency:



Compatible Electronics VCCI listing can be found at: http://www.vcci.or.jp/vcci_e/member/tekigo/setsubi_index_id.html

Just type "Compatible Electronics" into the Keyword search box.



Compatible Electronics FCC listing can be found at: https://gullfoss2.fcc.gov/prod/oet/index_ie.html

Just type "Compatible Electronics" into the Test Firms search box.



Compatible Electronics IC listing can be found at: http://spectrum.ic.gc.ca/~cert/labs/oats_lab_c_e.html

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The following modifications were made to the EUT during the test in order to comply with FCC Class B limits. The modifications were made in such a way that they could be reproduced during manufacturing.

1. The resistor value of R7 on the Insteon PCB was changed from 1k-ohm to 15k-ohm.
2. The resistor value of FR1 on the main PCB board was changed from 22-ohm to 1-ohm.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

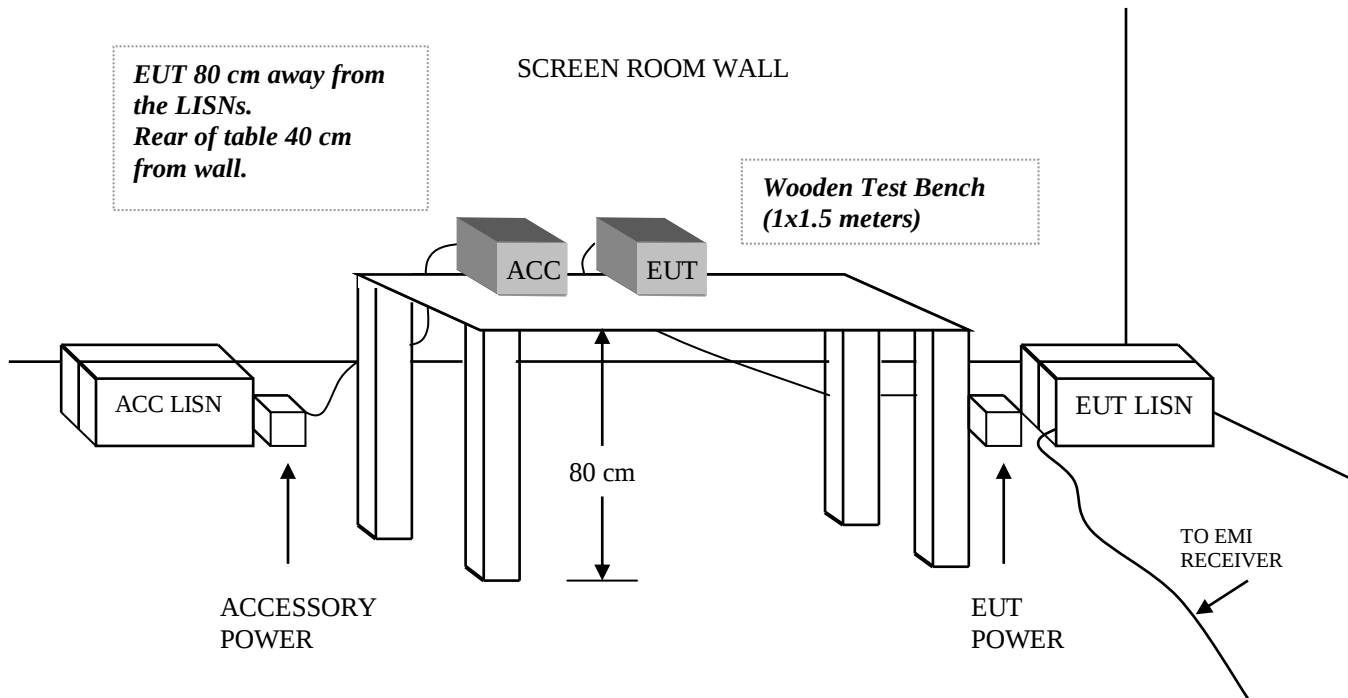
RF OUTLET
Model: R0510021
S/N: NONE

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 & LAYOUT OF TEST SITE
BELOW 1GHz**

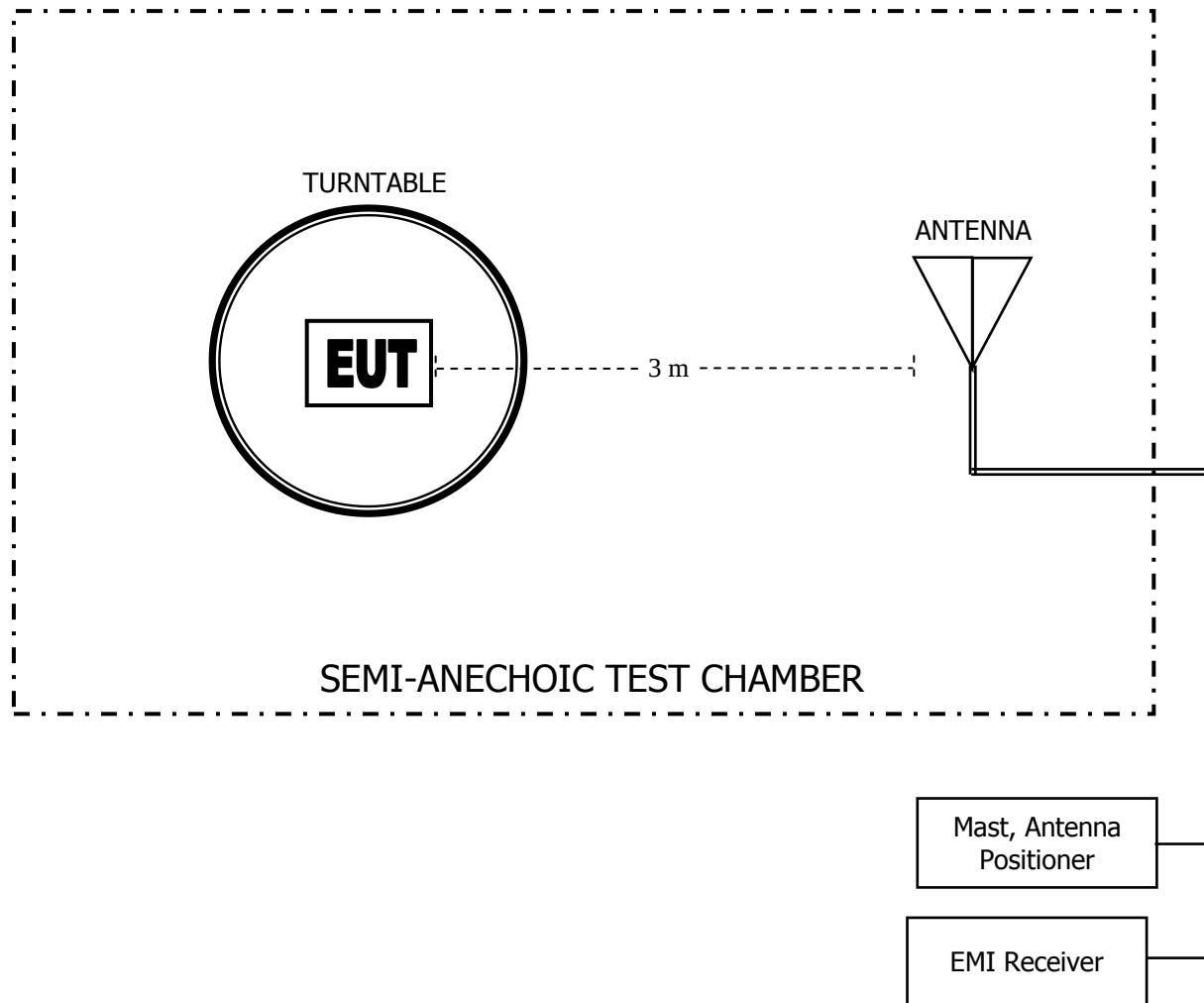
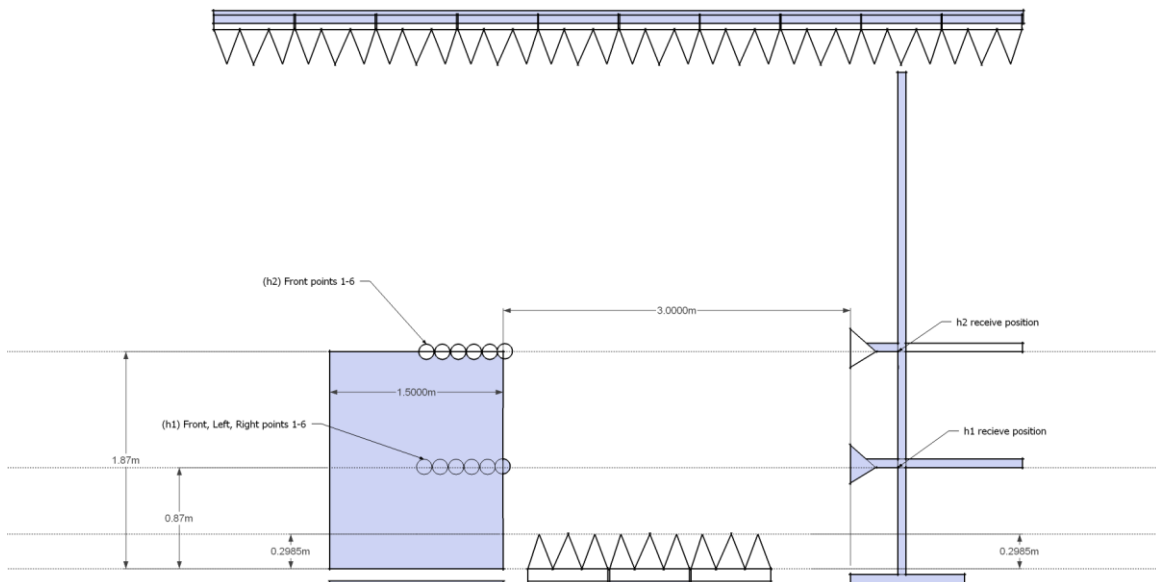


FIGURE 3: PLOT MAP & LAYOUT OF TEST SITE ABOVE 1 GHz



COM-POWER AL-130**LOOP ANTENNA****S/N: 17085****CALIBRATION DUE: JANUARY 29, 2015**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)	FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.70	10.80	0.8	-40.91	10.59
0.01	-40.50	11.00	0.9	-40.80	10.70
0.02	-40.70	10.80	1.0	-40.81	10.69
0.03	-40.10	11.40	2.0	-40.51	10.99
0.04	-40.50	11.00	3.0	-40.54	10.96
0.05	-41.10	10.40	4.0	-40.44	11.06
0.06	-41.00	10.50	5.0	-40.32	11.18
0.07	-41.10	10.40	6.0	-40.69	10.81
0.08	-41.10	10.40	7.0	-40.37	11.13
0.09	-41.20	10.30	8.0	-39.99	11.51
0.1	-41.20	10.30	9.0	-40.00	11.50
0.2	-41.40	10.10	10.0	-40.08	11.42
0.3	-41.30	10.20	15.0	-42.36	9.14
0.4	-41.20	10.30	20.0	-38.75	12.75
0.5	-41.40	10.10	25.0	-40.70	10.80
0.6	-41.40	10.10	30.0	-41.09	10.41
0.7	-41.20	10.30			

COM-POWER AC-220**LAB R - COMBILOG ANTENNA****S/N: 25857****CALIBRATION DUE: May 25, 2013**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	17.8	180	9.4
35	18.4	200	9.0
40	19.2	250	12.0
45	17.2	300	13.4
50	17.2	300	13.4
60	13.5	400	15.0
70	8.9	500	17.3
80	6.0	600	17.8
90	7.1	700	20.0
100	8.0	800	20.5
120	9.2	900	20.8
140	7.5	1000	22.4
160	8.3		

COM-POWER AH-118

HORN ANTENNA

S/N: 071250

CALIBRATION DUE: JULY 3, 2013

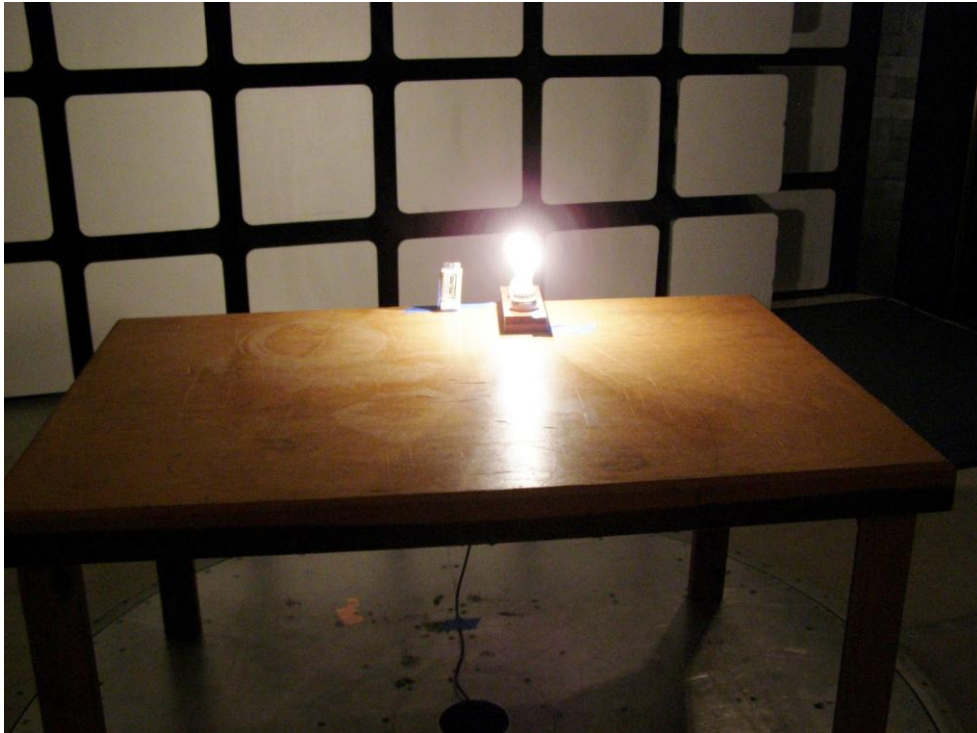
FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1000	26.46	9500	40.45
1500	27.24	10000	40.29
2000	31.54	10500	41.66
2500	31.95	11000	42.07
3000	32.71	11500	42.32
3500	33.99	12000	42.56
4000	33.47	12500	41.39
4500	34.86	13000	42.69
5000	36.21	13500	43.56
5500	36.59	14000	42.36
6000	36.79	14500	42.74
6500	37.36	15000	45.35
7000	39.45	15500	45.13
7500	39.58	16000	42.86
8000	42.36	16500	43.95
8500	40.32	17000	46.79
9000	39.57	17500	47.49
		18000	46.62

COM-POWER PAM-118**1-18GHz - PREAMPLIFIER****S/N: 443013****CALIBRATION DUE: MARCH 12, 2013**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
0500	27.20	9500	26.30
1000	26.20	10000	26.70
1500	27.00	10500	26.60
2000	26.90	11000	26.20
2500	26.80	11500	25.90
3000	26.90	12000	25.60
3500	26.90	12500	25.50
4000	27.10	13000	25.30
4500	26.70	13500	25.00
5000	26.40	14000	25.30
5500	26.00	14500	25.50
6000	25.70	15000	25.50
6500	25.30	15500	25.70
7000	25.10	16000	26.10
7500	25.00	16500	26.10
8000	25.20	17000	25.70
8500	25.50	17500	25.30
		18000	25.90

COM-POWER PAM-118**1-18GHz - PREAMPLIFIER****S/N: 443011****CALIBRATION DUE: JUNE 11, 2013**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
0.500	27.61	7.000	23.72
1.000	26.44	7.500	23.80
1.500	27.28	8.000	24.28
2.000	27.20	8.500	24.29
2.500	27.26	9.500	26.07
3.000	27.30	10.000	25.91
3.500	26.93	11.000	25.93
4.000	27.44	12.000	26.47
4.500	26.89	13.000	25.32
5.000	26.47	14.000	24.93
5.500	26.20	15.000	25.71
6.000	25.64	16.000	24.96
6.500	25.18	17.000	23.8
		18.000	26.27



FRONT VIEW

BUDDERFLY LLC

RF OUTLET

Model: R0510021

FCC Part 15 Subpart B & C - RADIATED EMISSIONS

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



REAR VIEW

BUDDERFLY LLC

RF OUTLET

Model: R0510021

FCC Part 15 Subpart B & C - RADIATED EMISSIONS

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

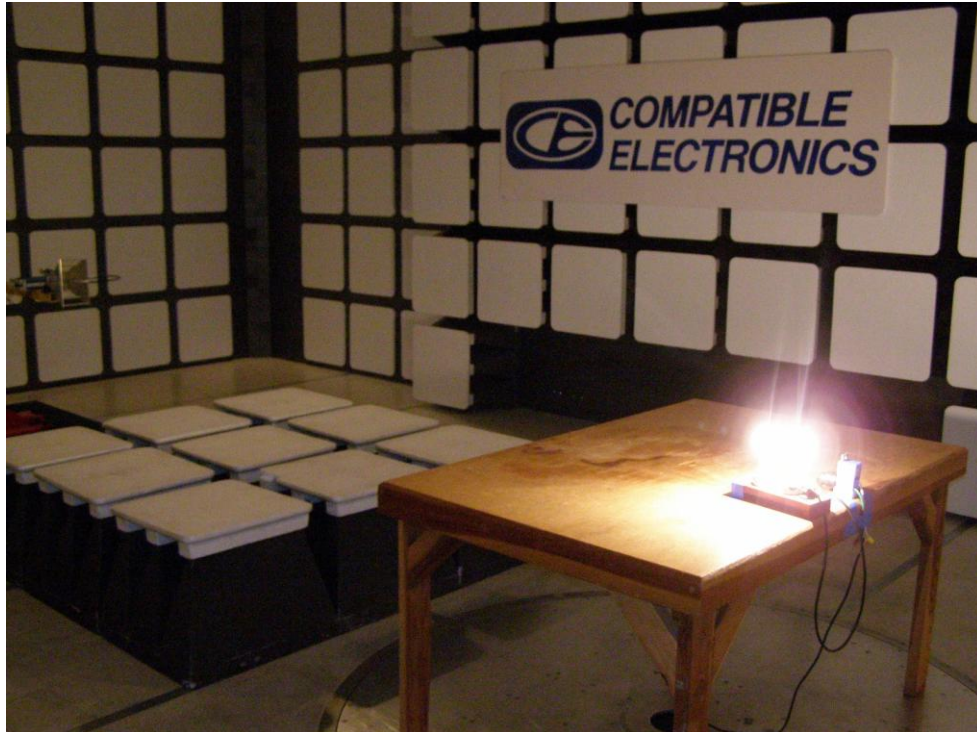


VIEW 1

BUDDERFLY LLC
RF OUTLET
Model: R0510021

FCC Part 15 Subpart B & C - RADIATED EMISSIONS – > 1GHz

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



VIEW 2

BUDDERFLY LLC
RF OUTLET
Model: R0510021

FCC Part 15 Subpart B & C - RADIATED EMISSIONS – > 1GHz

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



VIEW 1

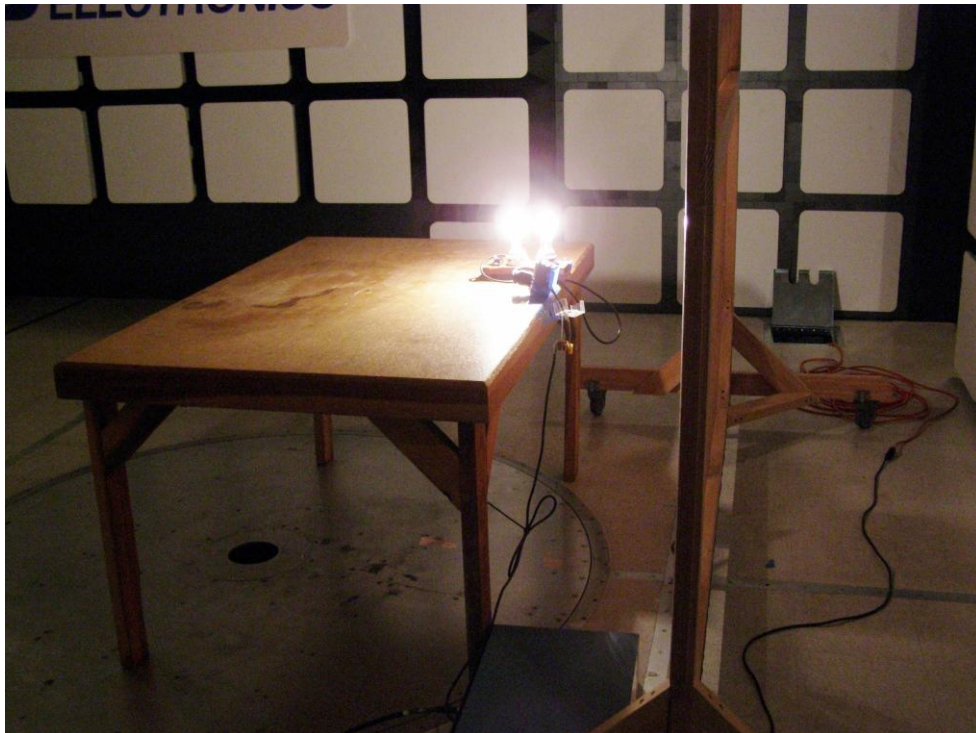
BUDDERFLY LLC

RF OUTLET

Model: R0510021

FCC Part 15 Subpart B & C - CONDUCTED EMISSIONS

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



VIEW 2

BUDDERFLY LLC

RF OUTLET

Model: R0510021

FCC Part 15 Subpart B & C - CONDUCTED EMISSIONS

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

APPENDIX E

DATA SHEETS

FUNDAMENTAL & HARMONICS

DATA SHEETS

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Fundamental Field Strength**

Channel (MHz)	Level (dBμV/m)	Polarity (H/V)	Limit (dBμV/m)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Ant. Height (m)	Comments
915.33	89.43	H	93.98	-4.55	Peak	285.00	1.00	Low Channel, 4dBm
915.33	89.51	V	93.98	-4.47	Peak	184.00	1.25	Low Channel, 4dBm
918.53	86.30	H	93.98	-7.68	Peak	360.00	1.00	Mid Channel, 4dBm
918.53	86.79	V	93.98	-7.19	Peak	160.00	1.30	Mid Channel, 4dBm
921.33	86.87	H	93.98	-7.11	Peak	156.00	1.45	High Channel, 4dBm
921.33	85.09	V	93.98	-8.89	Peak	200.00	1.25	High Channel, 4dBm

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - Low Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830.66	47.82	V	53.98	-6.16	Peak	1.00	315	
1830.66		V	--	--	Avg			
2745.99	47.54	H	53.98	-6.44	Peak	1.00	192	In Restricted Band
2745.99		H	--	--	Avg			
3661.32		H	53.98	--	Peak			No Emissions Found
3661.32		H	--	--	Avg			
4576.65		H	53.98	--	Peak			No Emissions Found
4576.65		H	--	--	Avg			
5491.98		H	53.98	--	Peak			No Emissions Found
5491.98		H	--	--	Avg			
6407.31		H	53.98	--	Peak			No Emissions Found
6407.31		H	--	--	Avg			
7322.64		H	53.98	--	Peak			No Emissions Found
7322.64		H	--	--	Avg			
8237.97		H	53.98	--	Peak			No Emissions Found
8237.97		H	--	--	Avg			
9153.30		H	53.98	--	Peak			No Emissions Found
9153.30		H	--	--	Avg			

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - Low Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830.66	51.32	V	53.98	-2.66	Peak	1.00	180	
1830.66		V	--	--	Avg			
2745.99	49.05	V	53.98	-4.93	Peak	1.00	240	
2745.99		V	--	--	Avg			In Restricted Band
3661.32		V	53.98	--	Peak			No Emissions Found
3661.32		V	--	--	Avg			
4576.65		V	53.98	--	Peak			No Emissions Found
4576.65		V	--	--	Avg			
5491.98		V	53.98	--	Peak			No Emissions Found
5491.98		V	--	--	Avg			
6407.31		V	53.98	--	Peak			No Emissions Found
6407.31		V	--	--	Avg			
7322.64		V	53.98	--	Peak			No Emissions Found
7322.64		V	--	--	Avg			
8237.97		V	53.98	--	Peak			No Emissions Found
8237.97		V	--	--	Avg			
9153.30		V	53.98	--	Peak			No Emissions Found
9153.30		V	--	--	Avg			

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - Mid Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1837.32	43.82	H	53.98	-10.16	Peak	1.00	230	
1837.32		H	--	--	Avg			
2755.98	47.14	H	53.98	-6.84	Peak	1.00	230	In Restricted Band
2755.98		H	--	--	Avg			
3674.64		H	53.98	--	Peak			No Emissions Found
3674.64		H	--	--	Avg			
4593.30		H	53.98	--	Peak			No Emissions Found
4593.30		H	--	--	Avg			
5511.96		H	53.98	--	Peak			No Emissions Found
5511.96		H	--	--	Avg			
6430.62		H	53.98	--	Peak			No Emissions Found
6430.62		H	--	--	Avg			
7349.28		H	53.98	--	Peak			No Emissions Found
7349.28		H	--	--	Avg			
8267.94		H	53.98	--	Peak			No Emissions Found
8267.94		H	--	--	Avg			
9186.60		H	53.98	--	Peak			No Emissions Found
9186.60		H	--	--	Avg			

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - Mid Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1837.32	46.11	V	53.98	-7.87	Peak	1.00	180	
1837.32		V	--	--	Avg			
2755.98	47.89	V	53.98	-6.09	Peak	1.00	180	In Restricted Band
2755.98		V	--	--	Avg			
3674.64		V	53.98	--	Peak			No Emissions Found
3674.64		V	--	--	Avg			
4593.30		V	53.98	--	Peak			No Emissions Found
4593.30		V	--	--	Avg			
5511.96		V	53.98	--	Peak			No Emissions Found
5511.96		V	--	--	Avg			
6430.62		V	53.98	--	Peak			No Emissions Found
6430.62		V	--	--	Avg			
7349.28		V	53.98	--	Peak			No Emissions Found
7349.28		V	--	--	Avg			
8267.94		V	53.98	--	Peak			No Emissions Found
8267.94		V	--	--	Avg			
9186.60		V	53.98	--	Peak			No Emissions Found
9186.60		V	--	--	Avg			

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - High Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1843.01		H	53.98	--	Peak			No Emissions Found
1843.01		H	--	--	Avg			
2764.52	45.98	H	53.98	-8.00	Peak	1.00	180	In Restricted Band
2764.52		H	--	--	Avg			
3686.02		H	53.98	--	Peak			No Emissions Found
3686.02		H	--	--	Avg			
4607.53		H	53.98	--	Peak			No Emissions Found
4607.53		H	--	--	Avg			
5529.03		H	53.98	--	Peak			No Emissions Found
5529.03		H	--	--	Avg			
6450.54		H	53.98	--	Peak			No Emissions Found
6450.54		H	--	--	Avg			
7372.04		H	53.98	--	Peak			No Emissions Found
7372.04		H	--	--	Avg			
8293.55		H	53.98	--	Peak			No Emissions Found
8293.55		H	--	--	Avg			
9215.05		H	53.98	--	Peak			No Emissions Found
9215.05		H	--	--	Avg			

Test distance
3 meter

FCC 15.249Budderfly
RF Outlet
Model: R0510021Date: 2/15/2013
Lab: P
Tested By: Matt Harrison**Harmonic Emissions - High Channel**

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1843.01	44.83	V	53.98	-9.15	Peak	1.00	180	
1843.01		V	--	--	Avg			
2764.52	47.63	V	53.98	-6.35	Peak	1.00	180	In Restricted Band
2764.52		V	--	--	Avg			
3686.02		V	53.98	--	Peak			No Emissions Found
3686.02		V	--	--	Avg			
4607.53		V	53.98	--	Peak			No Emissions Found
4607.53		V	--	--	Avg			
5529.03		V	53.98	--	Peak			No Emissions Found
5529.03		V	--	--	Avg			
6450.54		V	53.98	--	Peak			No Emissions Found
6450.54		V	--	--	Avg			
7372.04		V	53.98	--	Peak			No Emissions Found
7372.04		V	--	--	Avg			
8293.55		V	53.98	--	Peak			No Emissions Found
8293.55		V	--	--	Avg			
9215.05		V	53.98	--	Peak			No Emissions Found
9215.05		V	--	--	Avg			

Test distance
3 meter

***EMISSIONS RADIATED OUTSIDE OF THE FUNDAMENTAL
FREQUENCY BAND***

DATA SHEETS

FCC 15.249

Budderfly
RF Outlet
Model: R0510021

Date: 2/15/2013

Lab: P

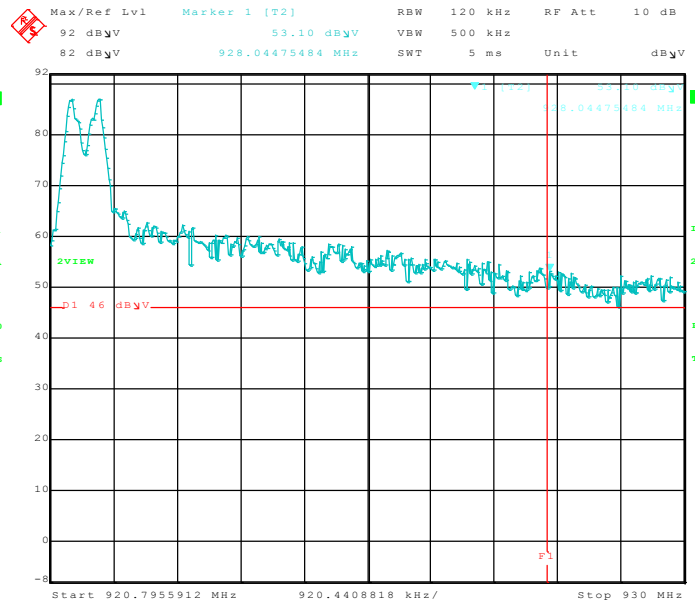
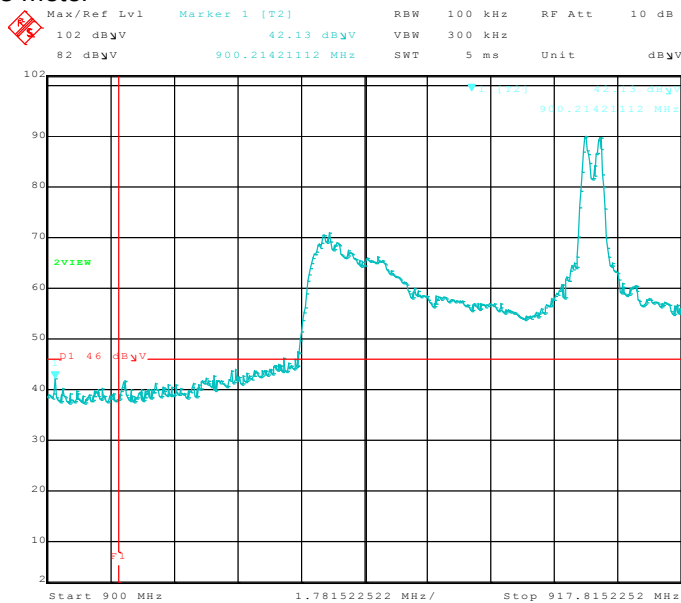
Tested By: Matt Harrison

Band Edge

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.23	89.30	H	--	--	Peak	1.00	285	Low Channel Fundamental @ 3 meters
900.21	42.13	H	46.00	-3.87	Peak	1.00	285	No Marker Delta
900.21	N/A	H	46.00	--	QP			Method Used
921.29	86.87	H	--	--	Peak	156.00	145	High Channel Fundamental @ 3 meters
928.04	53.10	H	46.00	--	Peak	156.00	145	No Marker Delta
928.04	45.29	H	46.00	-0.71	QP	156.00	145	Method Used

Test distance

3 meter



FCC 15.249

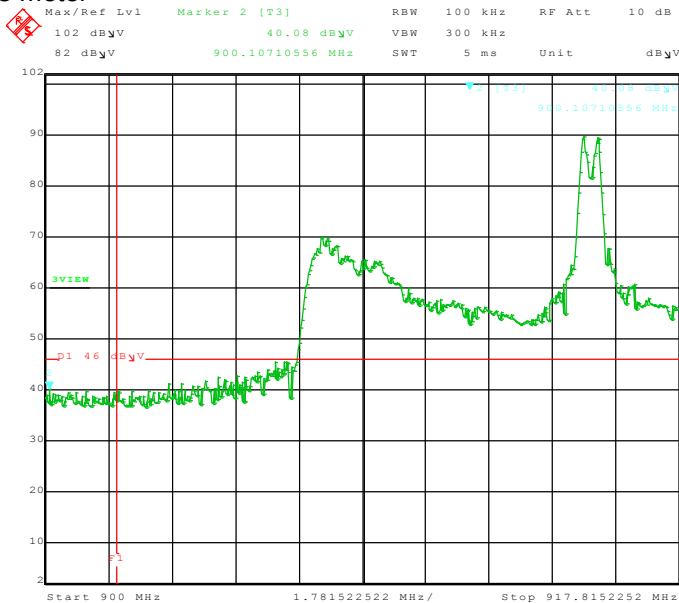
Budderfly
RF Outlet
Model: R0510021

Date: 2/15/2013
Lab: P
Tested By: Matt Harrison

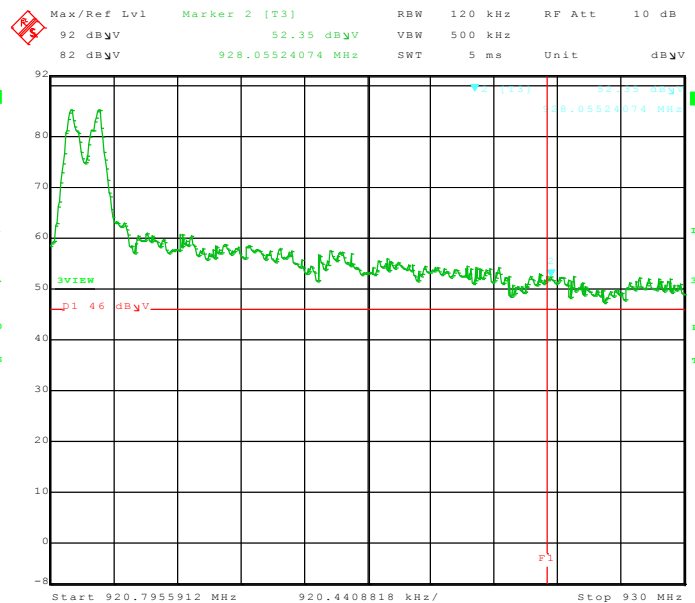
Band Edge

Freq. (MHz)	Level (dBμV)	Pol (V/H)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
915.23	89.51	V	--	--	Peak	1.25	184	Low Channel Fundamental @ 3 meters
900.10	40.08	V	46.00	-5.92	Peak	1.25	184	No Marker Delta
900.10	N/A	V	46.00	--	QP			Method Used
921.33	85.09	V	--	--	Peak	1.25	200	High Channel Fundamental @ 3 meters
928.05	52.35	V	46.00	--	Peak	1.25	200	No Marker Delta
928.05	45.97	V	46.00	-0.03	QP	1.25	200	Method Used

Test distance
3 meter



Title: Double Wall Plug.
Comment A: LBE, Channel 00, Vertical.
Date: 15.FEB.2013 18:04:25



Title: Double Wall Plug.
Comment A: UBE, Channel 15, Vertical.
Date: 15.FEB.2013 17:22:14

Title: FCC 15.209

2/14/2013 7:30:03 PM

File: Radiated Pre-Scan 30-1000Mhz.set

Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

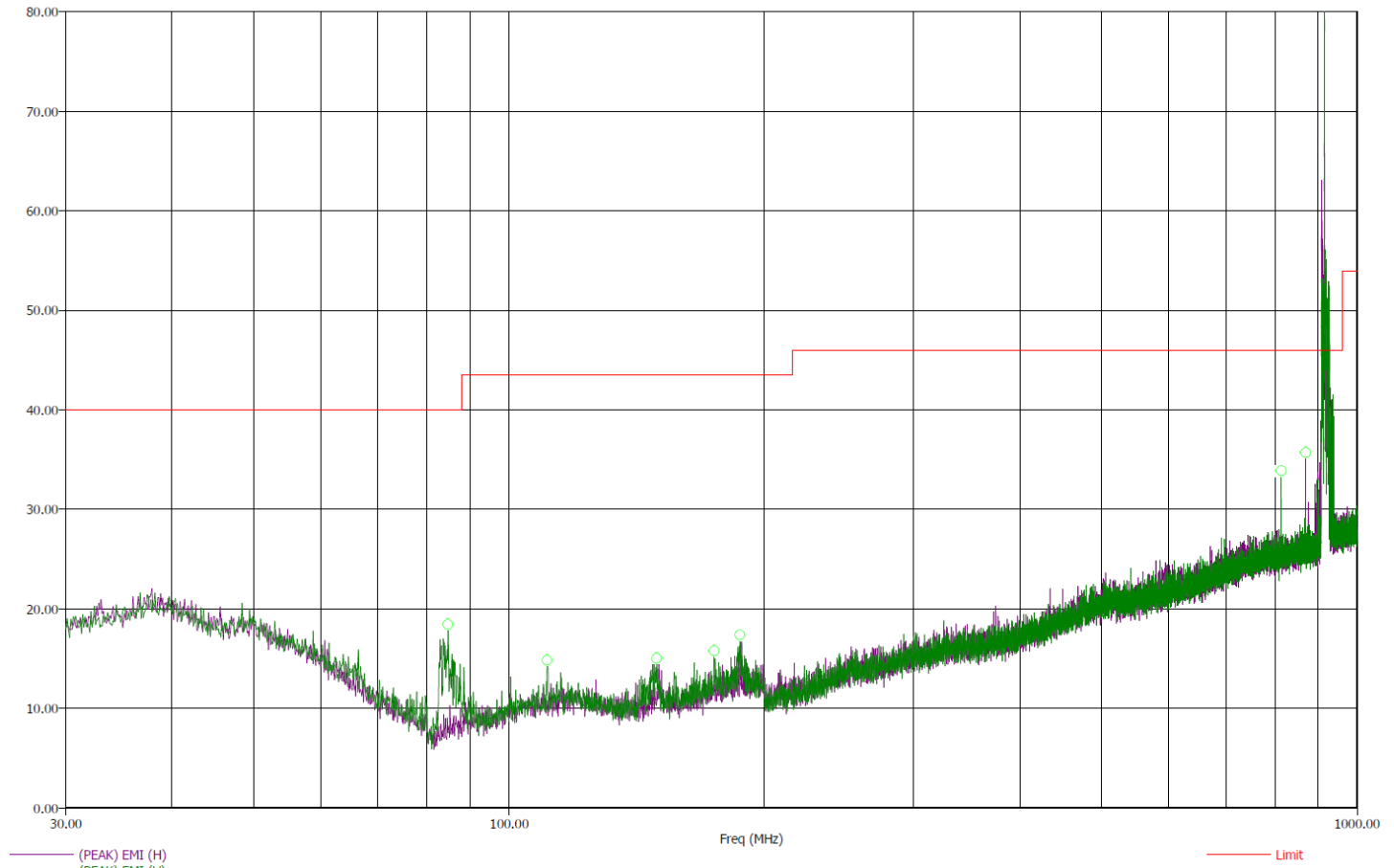
EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)Electric Field Strength (dB μ V/m)***There were no radiated emissions found below 30 MHz***

Title: FCC 15.209

2/14/2013 7:51:13 PM

File: Radiated Final 30-1000Mhz.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)
84.70	-28.85	11.15	19.25	40.00	V	264.75	153.52	6.52	0.80
110.90	-33.01	10.51	15.66	43.52	V	108.00	280.00	8.68	1.04
149.30	-33.18	10.34	16.42	43.52	V	291.50	104.64	7.88	1.30
174.40	-34.33	9.19	14.83	43.52	V	318.50	130.82	9.11	1.30
187.20	-29.04	14.48	20.28	43.52	V	165.25	99.11	9.25	1.40
813.60	-12.48	33.52	36.81	46.00	V	171.25	134.88	20.54	3.63
869.50	-19.05	26.95	38.67	46.00	H	135.50	328.05	20.71	3.78

There were no radiated emissions found below-30 MHz

Title: FCC 15.209

2/14/2013 8:14:53 PM

File: Radiated Pre-Scan 30-1000Mhzmid.set

Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

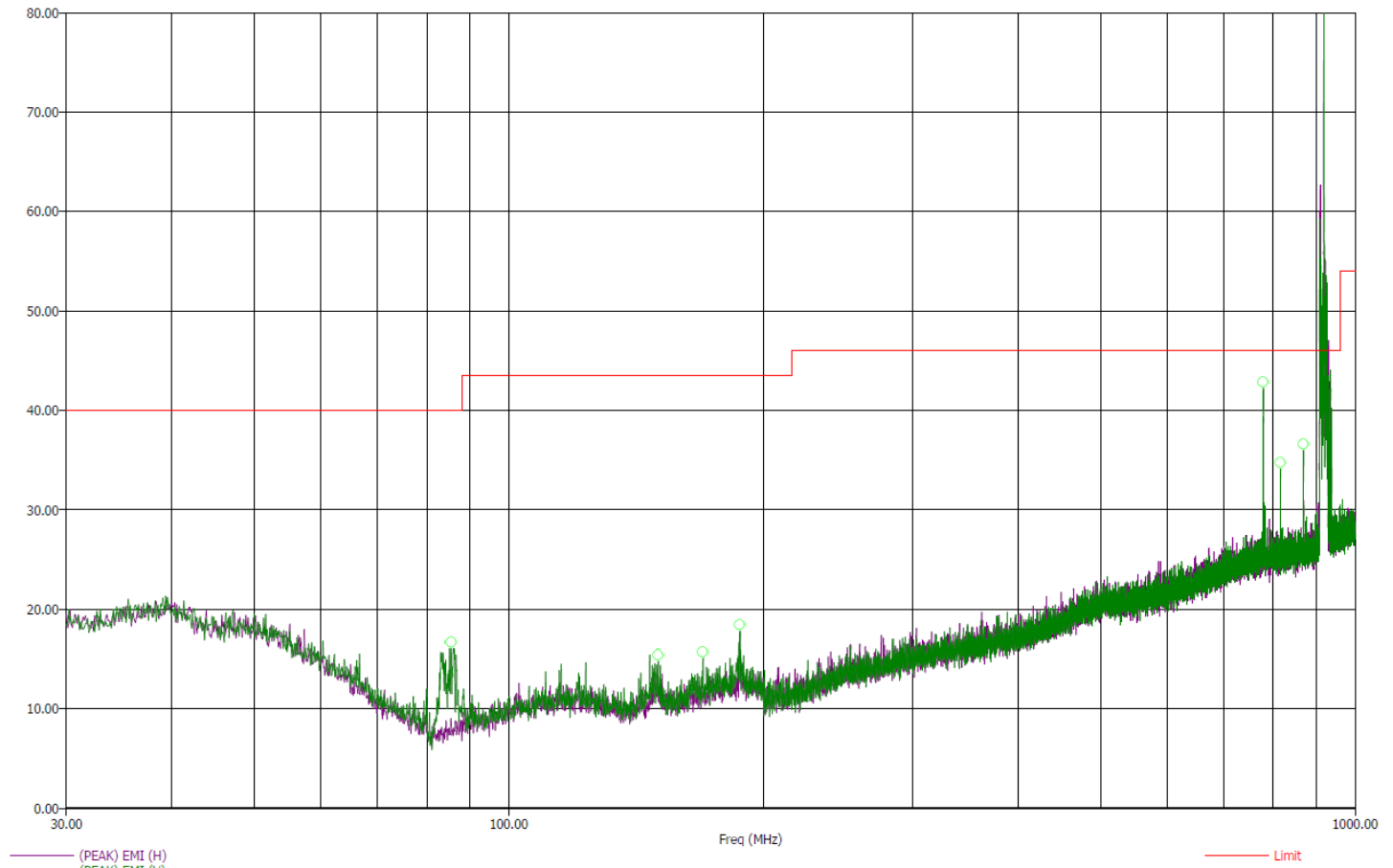
EUT Condition: Transceiver transmit signal at Middle Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)Electric Field Strength (dB μ V/m)***There were no radiated emissions found below 30 MHz***

Title: FCC 15.209

2/14/2013 8:35:50 PM

File: Radiated Final 30-1000Mhz_mid.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBµV/m)	(PEAK) EMI (dBµV/m)	Limit (dBµV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)
85.40	-29.18	10.82	18.45	40.00	V	245.75	116.58	6.60	0.81
150.20	-35.20	8.32	13.43	43.52	V	360.00	110.88	7.92	1.30
169.60	-35.36	8.16	13.79	43.52	V	173.00	225.17	8.85	1.30
187.60	-30.24	13.28	19.32	43.52	V	162.50	107.58	9.24	1.40
779.20	-23.74	22.26	28.62	46.00	V	0.00	193.05	20.40	3.56
816.40	-11.27	34.73	36.99	46.00	V	177.00	125.76	20.55	3.63
869.40	-10.00	36.00	39.55	46.00	V	269.75	120.82	20.71	3.78

There were no radiated emissions found below 30 MHz

Title: FCC 15.209

2/15/2013 4:31:54 PM

File: Radiated Pre-Scan 30-1000Mhz_Hi.set

Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

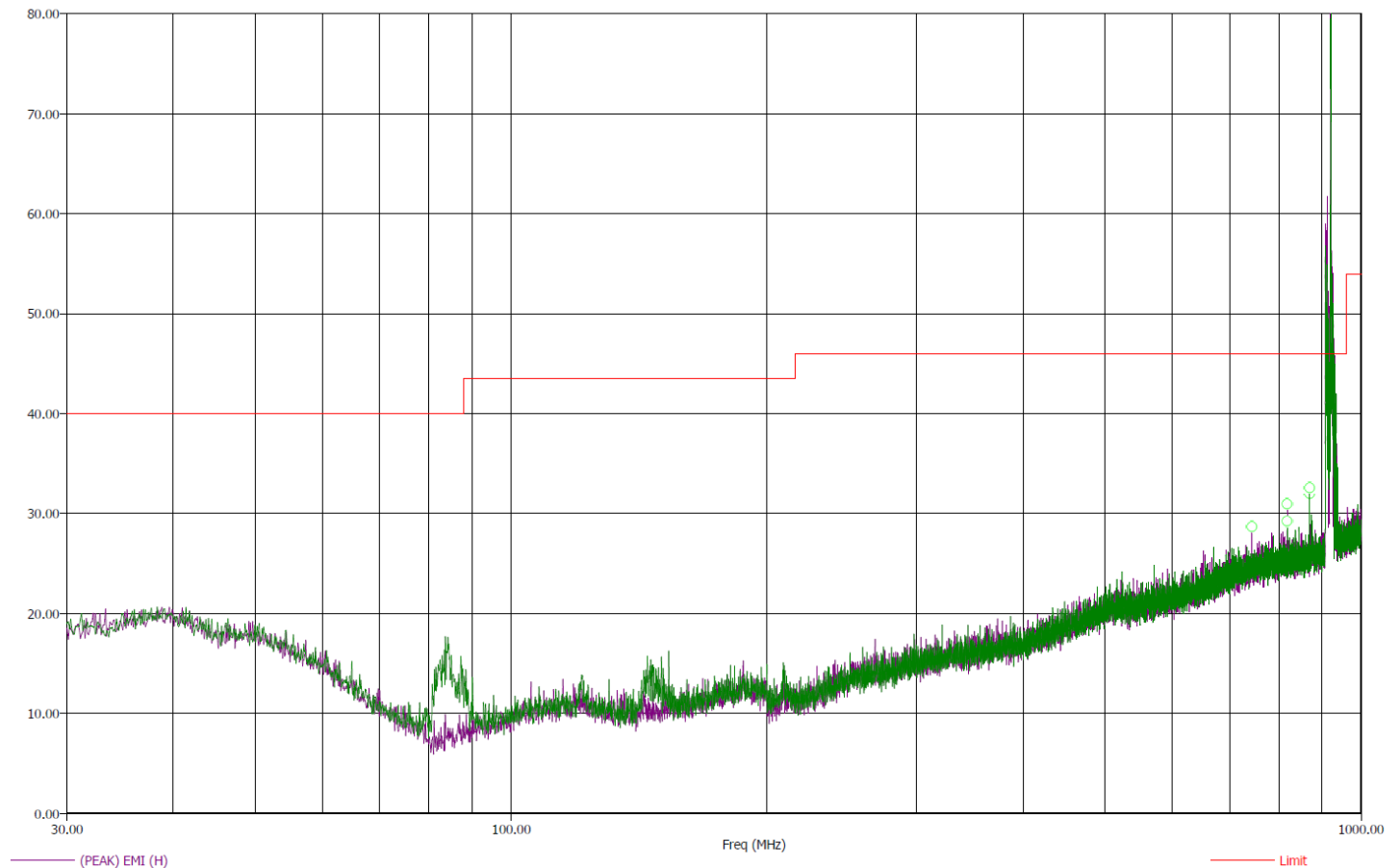
EUT Condition: Transceiver transmit signal at High Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)Electric Field Strength (dB μ V/m)***There were no radiated emissions found below 30 MHz***

Title: FCC 15.209

2/15/2013 5:14:51 PM

File: Radiated Final 30-1000Mhz_Hi.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at High Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

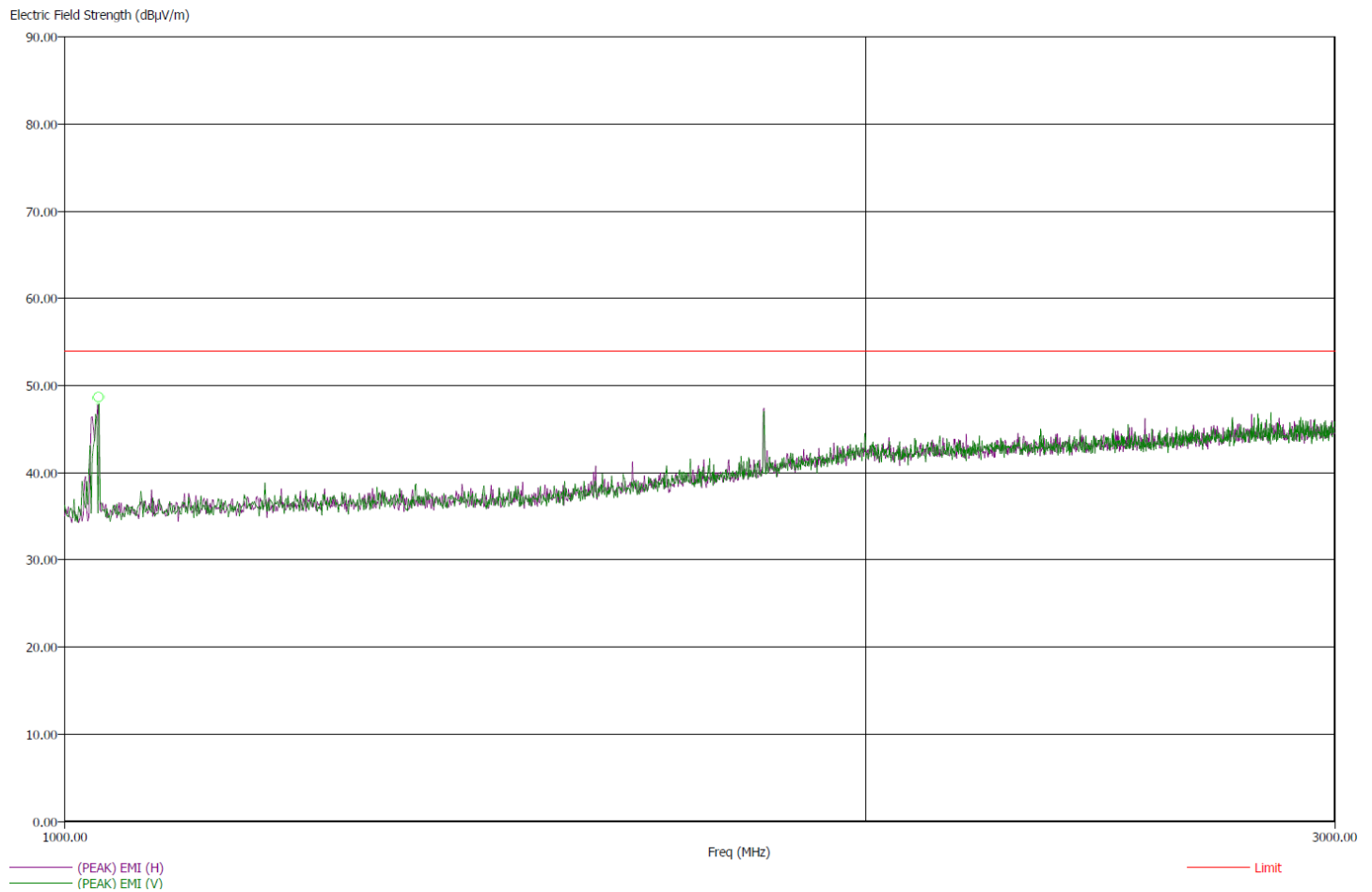
Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)
743.70	-24.52	21.48	26.80	46.00	H	9.75	316.35	20.23	3.48
819.00	-11.60	34.40	36.59	46.00	H	172.00	100.00	20.56	3.64
819.00	-16.59	29.41	32.87	46.00	V	319.75	101.64	20.56	3.64
869.40	-20.75	25.25	29.26	46.00	V	221.75	232.05	20.71	3.78
869.50	-20.23	25.77	30.54	46.00	H	359.75	153.05	20.71	3.78

There were no radiated emissions found below 30 MHz

Title: FCC 15.209
File: Radiated Pre-scan 1-3GHz_Low.set
Operator: Matt Harrison
EUT Type: RF Outlet (R0510021)
EUT Condition: Transceiver transmit signal at Low Channel.
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm
Temp: 71f
Hum: 37%
120V 60Hz

2/15/2013 8:39:55 PM
Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (Lab P)

No radiated emissions found above 3 GHz

Title: FCC 15.209

2/15/2013 8:48:13 PM

File: Radiated Final 1-3GHz_Low.set

Sequence: Final Measurements

Operator: Matt Harrison

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

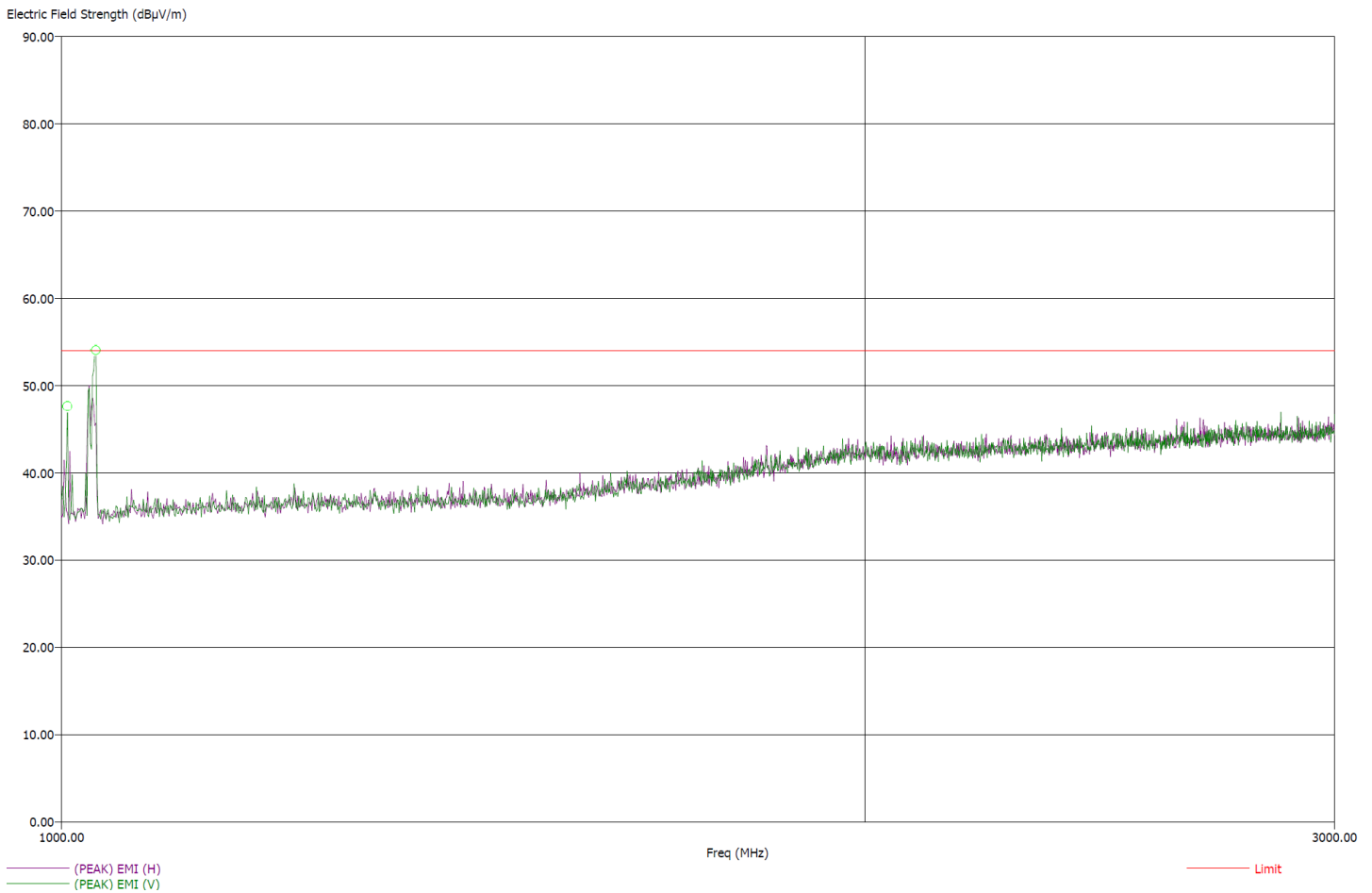
Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(AVG) Margin (dB)	(AVG) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)	Preamplifier (dB)
1029.00	-28.07	25.91	48.88	53.98	H	324.25	268.29	26.51	4.60	26.26
1030.00	-26.91	27.07	54.25	53.98	V	145.00	105.00	26.51	4.60	26.26

No radiated emissions found above 3 GHz

Title: FCC 15.209
File: Radiated Pre-scan 1-3GHz_Mid.set
Operator: Matt Harrison
EUT Type: RF Outlet (R0510021)
EUT Condition: Transceiver transmit signal at Middle Channel.
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm
Temp: 71f
Hum: 37%
120V 60Hz

2/15/2013 8:15:47 PM
Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (Lab P)

No radiated emissions found above 3 GHz

Title: FCC 15.209

2/15/2013 8:24:15 PM

File: Radiated Final 1-3GHz_Mid.set

Sequence: Final Measurements

Operator: Matt Harrison

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

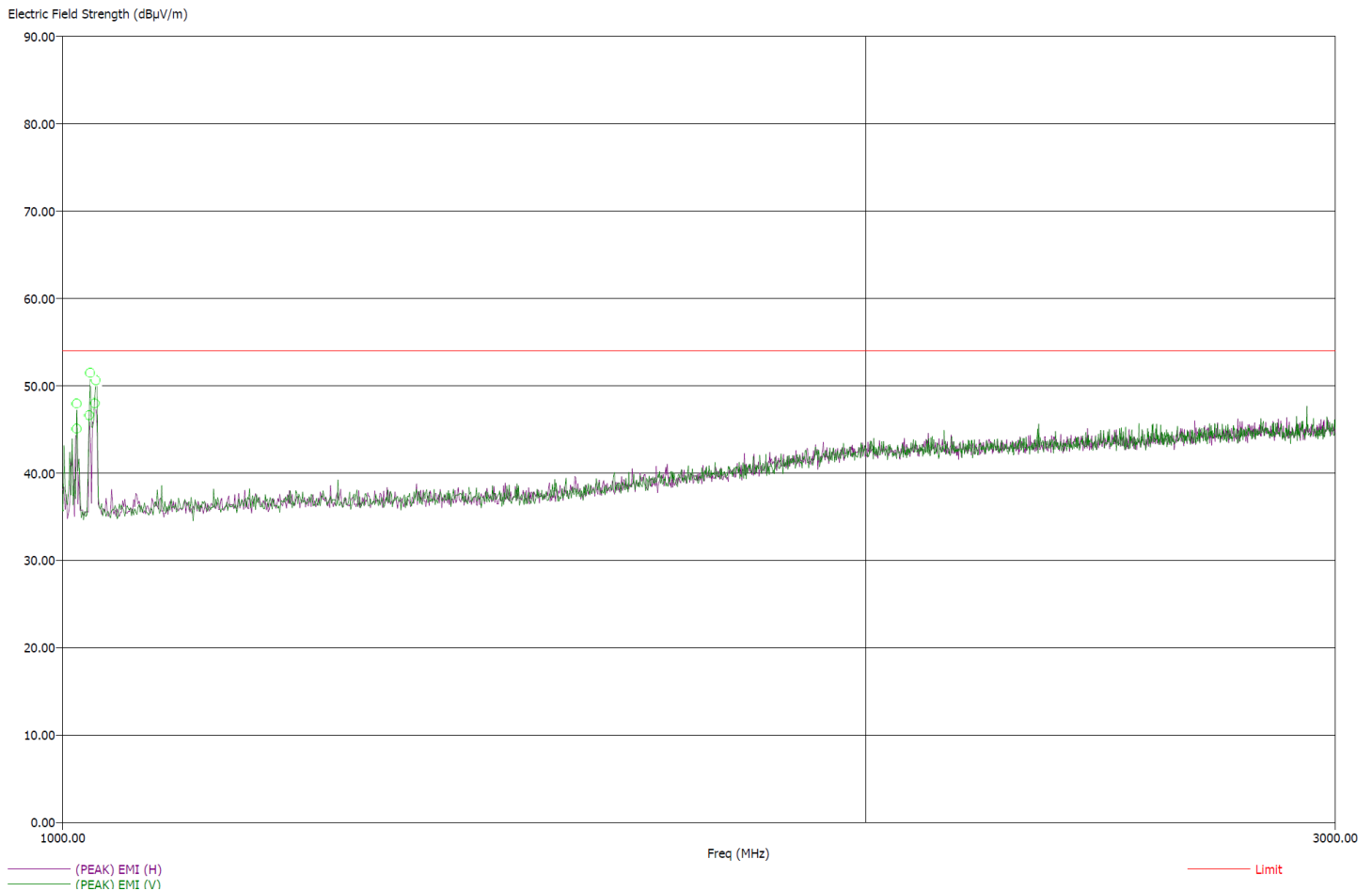
Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(AVG) Margin (dB)	(AVG) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)	Preamp (dB)
1005.00	-28.96	25.02	50.44	53.98	V	211.75	99.70	26.46	4.57	26.21
1030.00	-26.76	27.22	54.11	53.98	V	145.50	283.41	26.51	4.60	26.26

No radiated emissions found above 3 GHz

Title: FCC 15.209
File: Radiated Pre-scan 1-3GHz_Hi.set
Operator: Matt Harrison
EUT Type: RF Outlet (R0510021)
EUT Condition: Transceiver transmit signal at High Channel.
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm
Temp: 71f
Hum: 37%
120V 60Hz

2/15/2013 7:21:51 PM
Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (Lab P)

No radiated emissions found above 3 GHz

Title: FCC 15.209

2/15/2013 7:36:28 PM

File: Radiated Final 1-3GHz_Hi.set

Sequence: Final Measurements

Operator: Matt Harrison

EUT Type: Double Wall Plug

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at High Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (Lab P)

Freq (MHz)	(AVG) Margin (dB)	(AVG) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)	Preamp (dB)
1012.00	-28.98	25.00	48.34	53.98	H	320.25	106.64	26.48	4.58	26.22
1012.00	-28.95	25.03	51.60	53.98	V	153.25	99.47	26.48	4.58	26.22
1023.00	-28.41	25.57	52.25	53.98	H	192.50	101.70	26.50	4.59	26.25
1024.00	-28.21	25.77	54.10	53.98	V	142.75	110.35	26.50	4.59	26.25
1028.00	-28.08	25.90	52.38	53.98	H	200.00	99.41	26.51	4.60	26.25
1029.00	-26.58	27.40	55.60	53.98	V	140.25	106.52	26.51	4.60	26.26

No radiated emissions found above 3 GHz

Title: FCC 15.209

File: Conducted Pre-Line.set

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

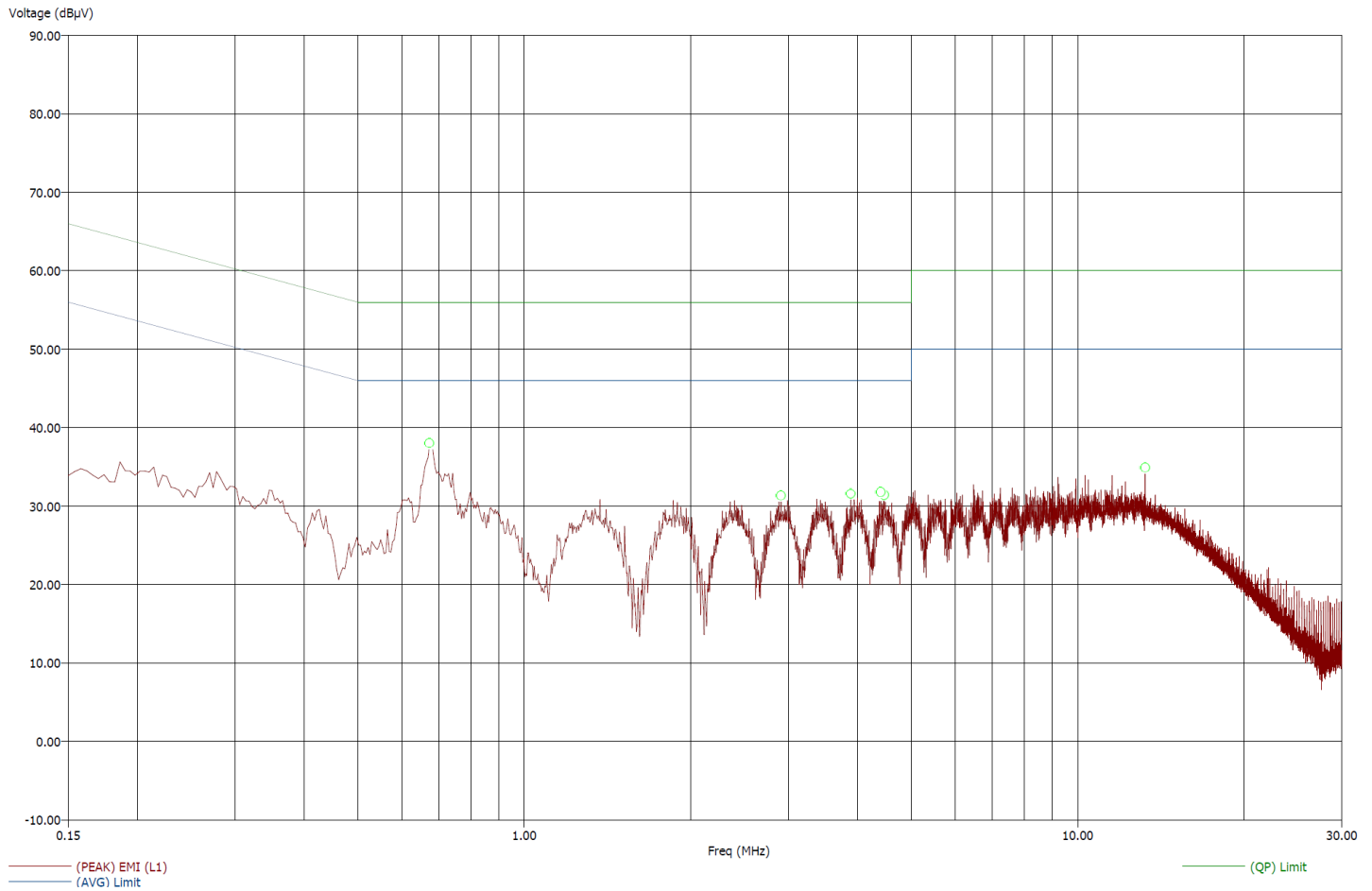
Temp: 71f

Hum: 37%

120V 60Hz

2/14/2013 6:36:42 PM

Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (LAB P)

Title: FCC 15.209

2/14/2013 6:39:24 PM

File: Conducted Final-Line.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.67	-14.81	-20.34	31.19	35.66	38.72	46.00	56.00	0.06	0.04
2.91	-22.92	-28.30	23.08	27.70	34.83	46.00	56.00	0.08	0.14
3.89	-25.53	-30.56	20.47	25.44	31.10	46.00	56.00	0.08	0.17
4.41	-26.36	-30.63	19.64	25.37	32.91	46.00	56.00	0.08	0.19
4.47	-24.36	-29.36	21.64	26.64	32.51	46.00	56.00	0.08	0.19
13.24	-28.43	-32.78	21.57	27.22	33.15	50.00	60.00	0.18	0.32

Title: FCC 15.209

2/14/2013 6:42:31 PM

File: Conducted Pre-Neutral.set

Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

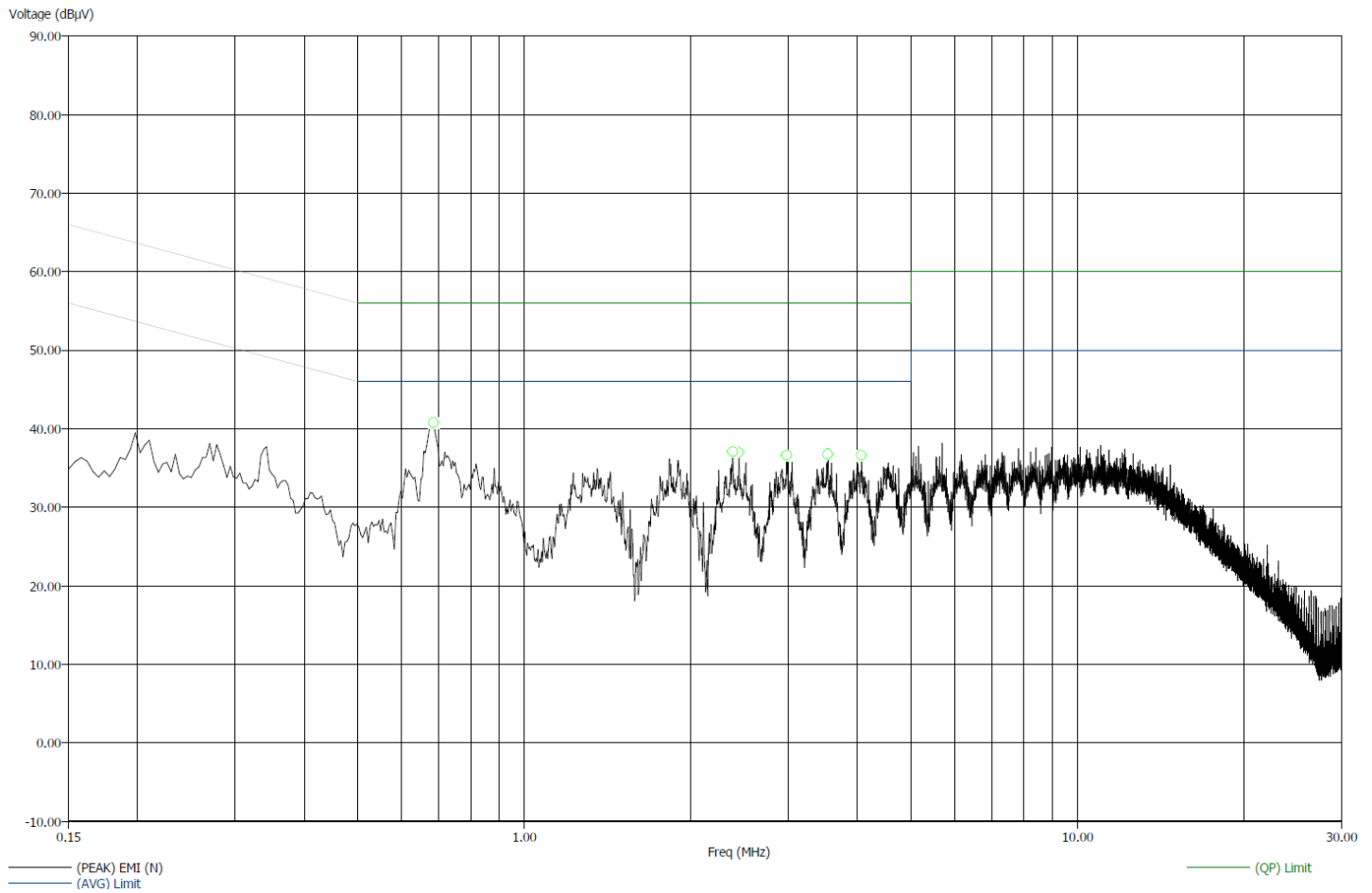
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)



Title: FCC 15.209

2/14/2013 6:44:53 PM

File: Conducted Final-Neutral.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Low Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.69	-12.91	-17.73	33.09	38.27	41.79	46.00	56.00	0.07	0.05
2.38	-19.23	-23.80	26.77	32.20	39.32	46.00	56.00	0.08	0.12
2.44	-19.16	-24.02	26.84	31.98	38.54	46.00	56.00	0.08	0.12
2.98	-19.28	-23.99	26.72	32.01	38.57	46.00	56.00	0.08	0.14
3.54	-19.56	-24.51	26.44	31.49	38.59	46.00	56.00	0.08	0.16
4.07	-19.32	-23.95	26.68	32.05	37.93	46.00	56.00	0.09	0.18

Title: FCC 15.209
File: Conducted Pre-Line_mid.set
Operator: Eugene Adams

2/14/2013 6:59:31 PM
Sequence: Preliminary Scan

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

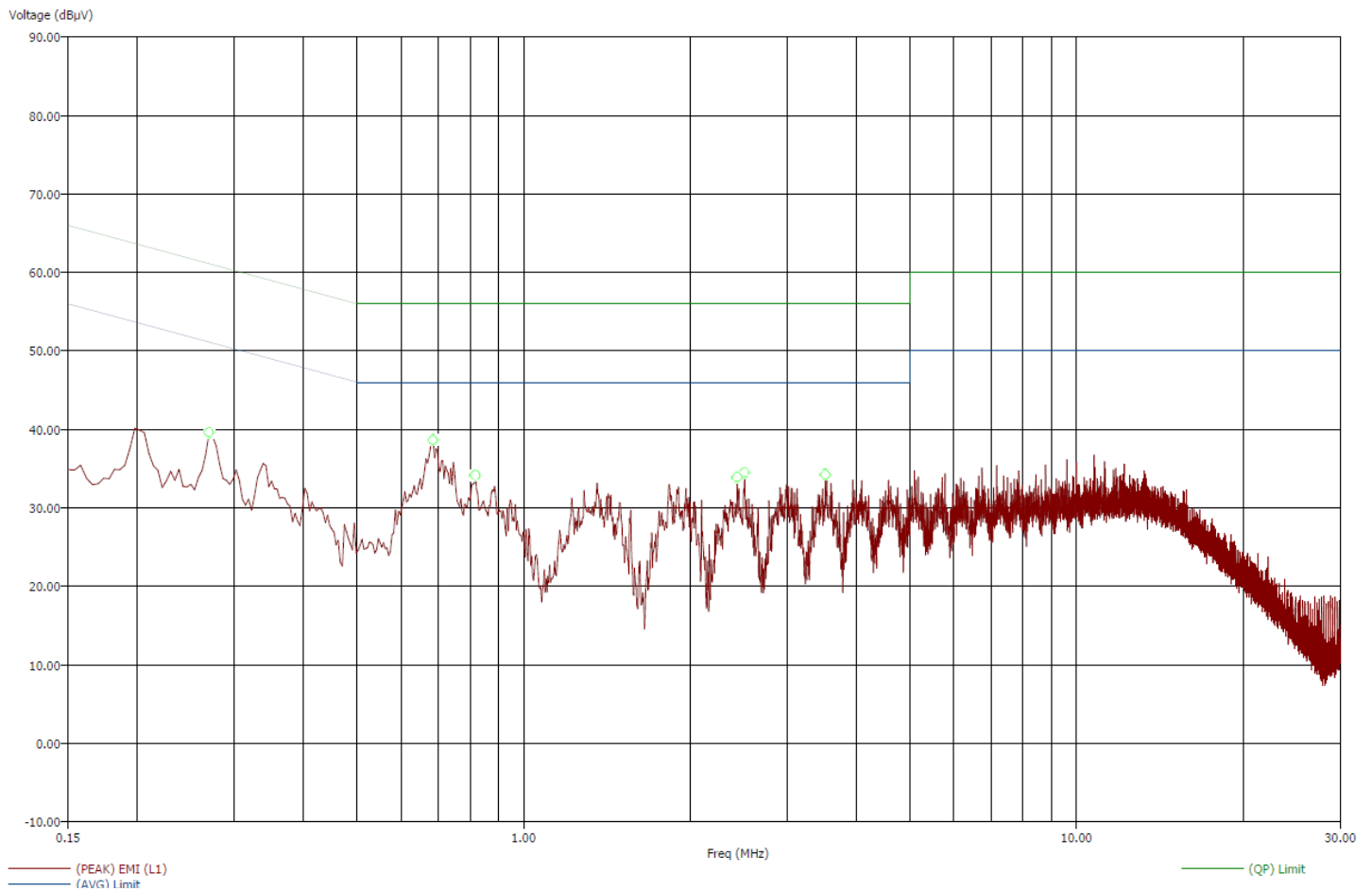
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)



Title: FCC 15.209

2/14/2013 7:02:03 PM

File: Conducted Final-Line_mid.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.27	-23.71	-26.73	27.40	34.39	41.81	51.12	61.12	0.07	0.00
0.69	-14.86	-19.70	31.14	36.30	39.73	46.00	56.00	0.06	0.05
0.82	-21.27	-25.45	24.73	30.55	35.42	46.00	56.00	0.06	0.07
2.43	-23.38	-27.74	22.62	28.26	34.83	46.00	56.00	0.07	0.12
2.51	-23.83	-28.20	22.17	27.80	36.28	46.00	56.00	0.07	0.12
3.51	-23.77	-28.65	22.23	27.35	34.03	46.00	56.00	0.08	0.16

Title: FCC 15.209

2/14/2013 6:53:29 PM

File: Conducted Pre-Neutral_mid.set

Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

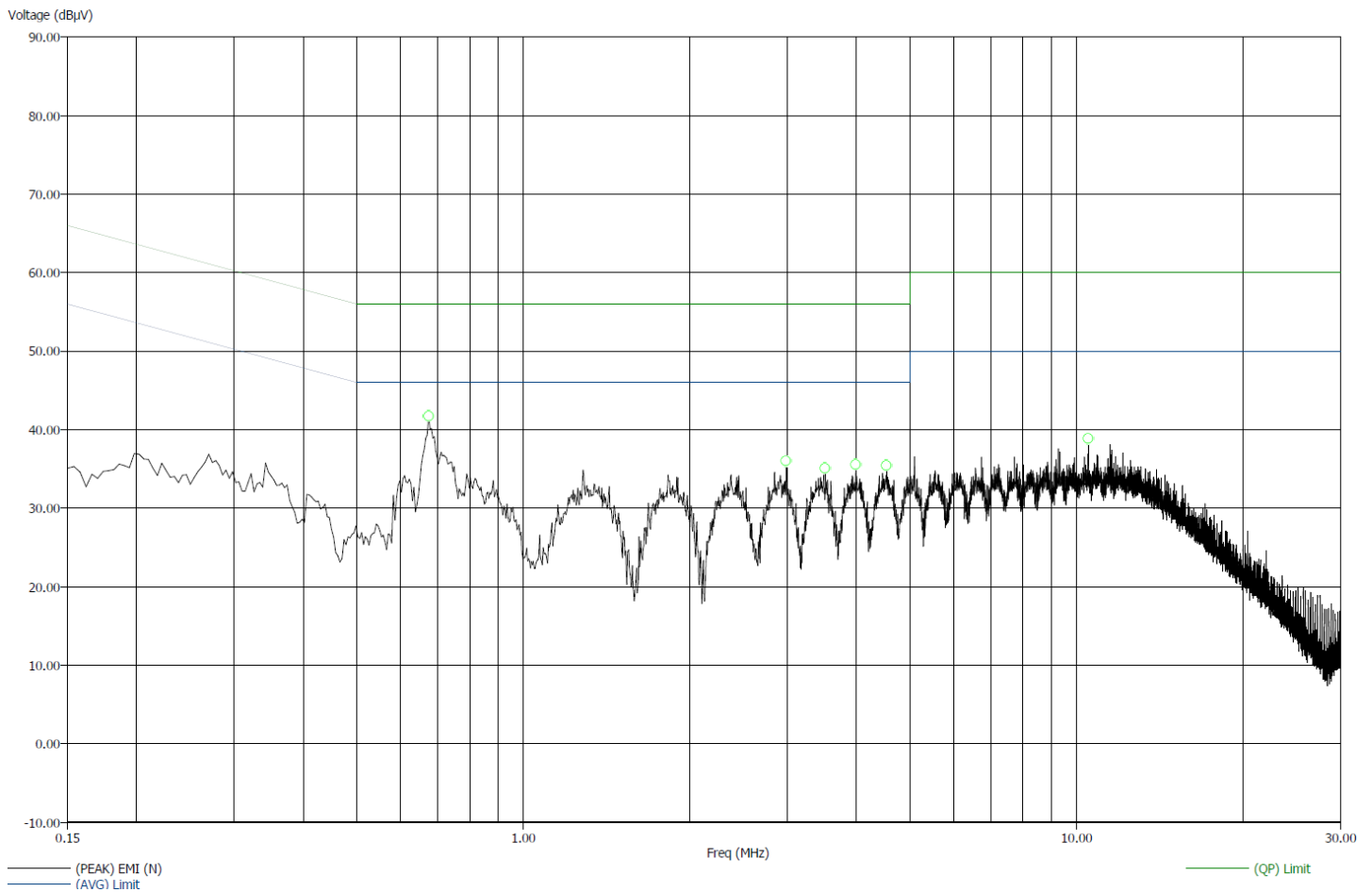
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)



Title: FCC 15.209

2/14/2013 6:55:57 PM

File: Conducted Final-Neutral_mid.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at Middle Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

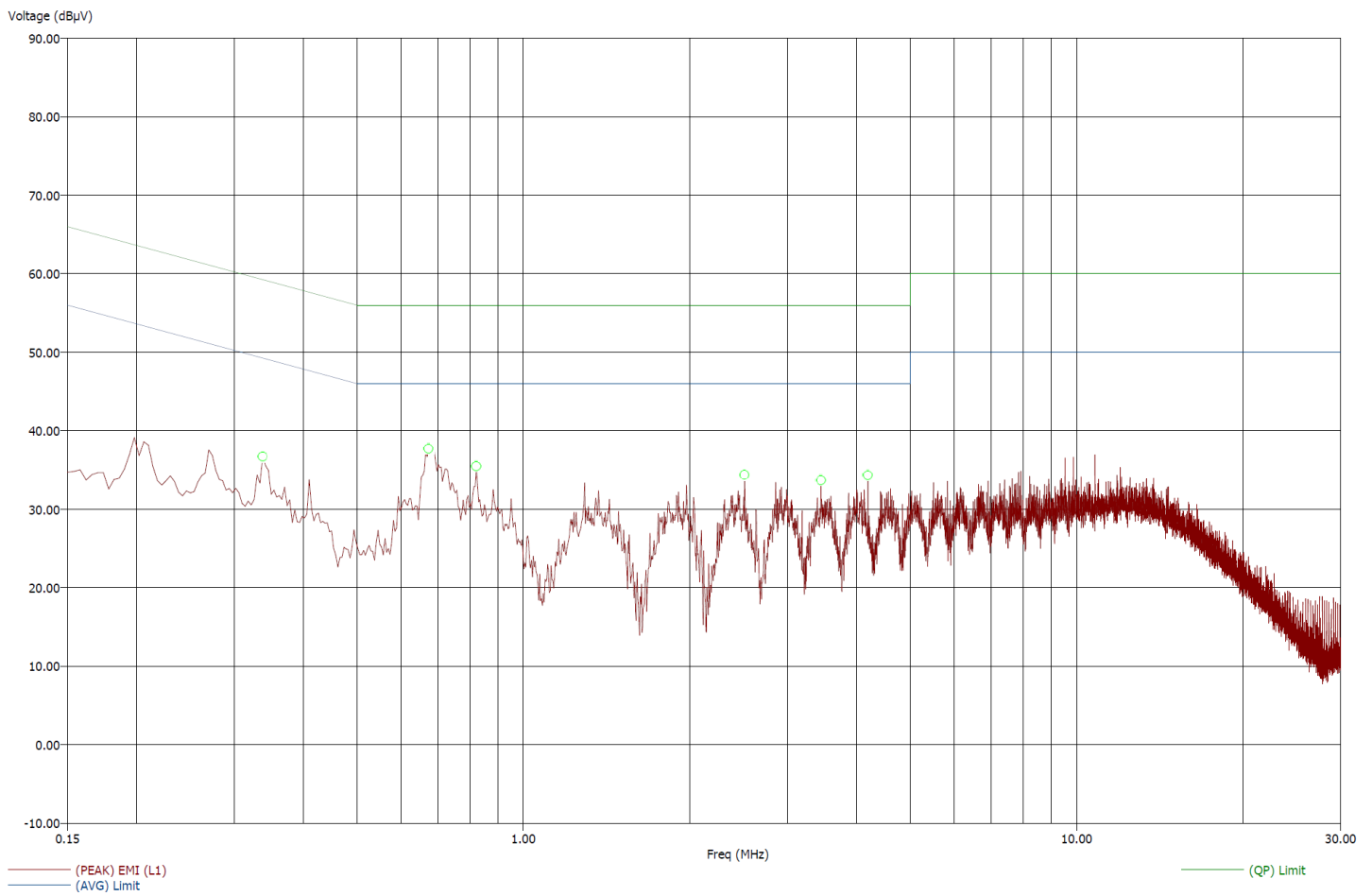
120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.67	-12.70	-18.23	33.30	37.77	41.11	46.00	56.00	0.07	0.04
2.99	-19.45	-24.41	26.55	31.59	38.84	46.00	56.00	0.08	0.14
3.51	-19.69	-24.84	26.31	31.16	36.90	46.00	56.00	0.08	0.16
3.99	-19.33	-24.45	26.67	31.55	38.22	46.00	56.00	0.09	0.18
4.53	-19.37	-24.24	26.63	31.76	37.62	46.00	56.00	0.10	0.19
10.50	-23.77	-28.03	26.23	31.97	38.56	50.00	60.00	0.15	0.22

Title: FCC 15.209
File: Conducted Pre-Line_hi.set
Operator: Eugene Adams
EUT Type: RF Outlet (R0510021)
EUT Condition: Transceiver transmit signal at High Channel.
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm
Temp: 71f
Hum: 37%
120V 60Hz

2/14/2013 7:08:01 PM
Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (LAB P)

Title: FCC 15.209

2/14/2013 7:10:35 PM

File: Conducted Final-Line_hi.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at High Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.34	-23.92	-27.37	25.33	31.88	38.83	49.25	59.25	0.06	0.00
0.67	-15.45	-20.53	30.55	35.47	39.01	46.00	56.00	0.06	0.04
0.82	-21.44	-26.33	24.56	29.67	35.43	46.00	56.00	0.06	0.07
2.51	-23.73	-28.26	22.27	27.74	35.70	46.00	56.00	0.07	0.12
3.45	-24.26	-28.59	21.74	27.41	36.53	46.00	56.00	0.08	0.16
4.19	-26.04	-29.65	19.96	26.35	36.31	46.00	56.00	0.08	0.18

Title: FCC 15.209 2/14/2013 7:14:03 PM

File: Conducted Pre-Neutral_hi.set Sequence: Preliminary Scan

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at High Channel.

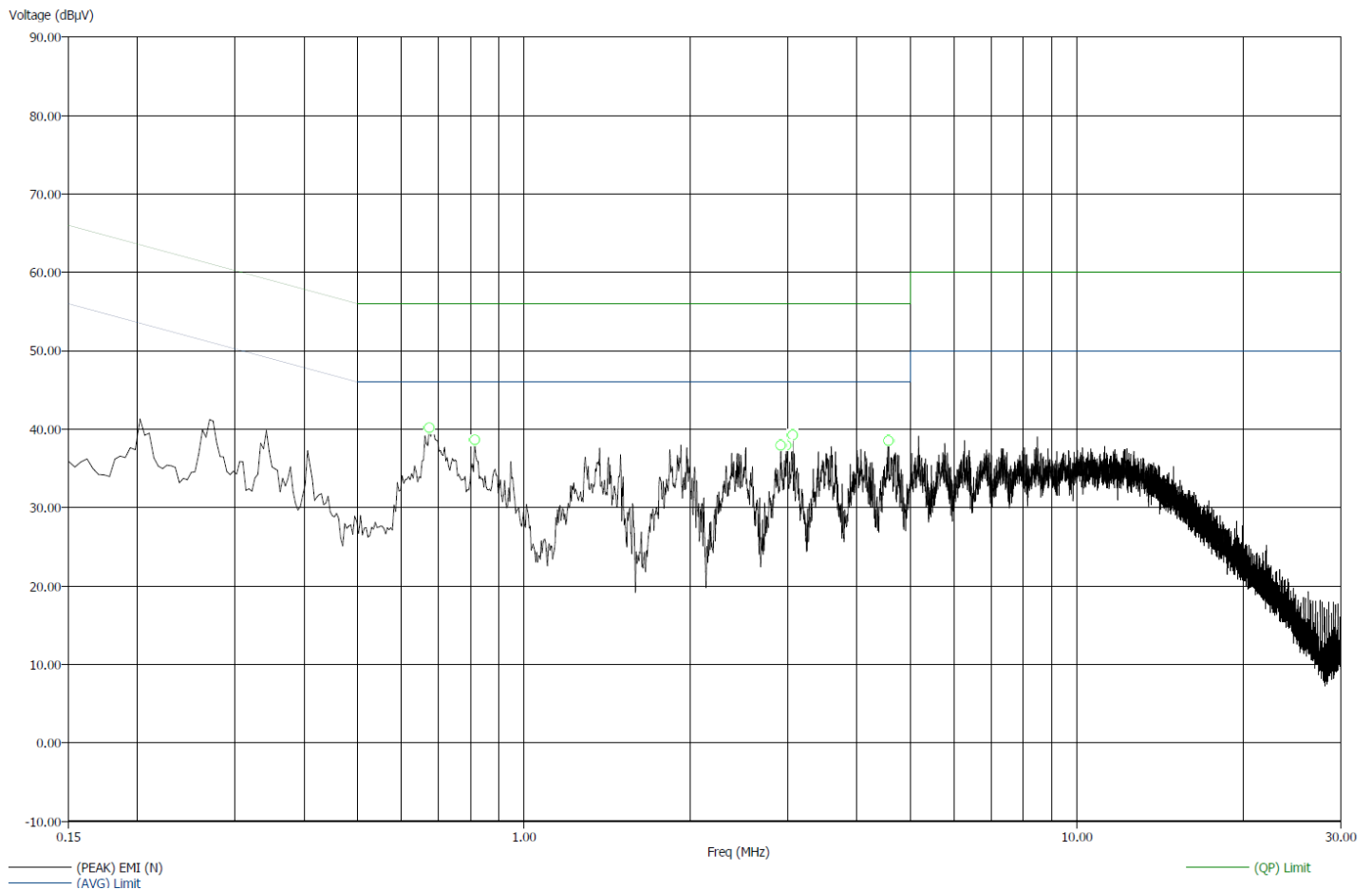
Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)



Title: FCC 15.209

2/14/2013 7:16:55 PM

File: Conducted Final-Neutral_hi.set

Sequence: Final Measurements

Operator: Eugene Adams

EUT Type: RF Outlet (R0510021)

EUT Condition: Transceiver transmit signal at High Channel.

Comments: Changed value of R7 on the Insteon PCB from 1kohm to 15Kohm and changed the value of resistor FR1 on the main PCB from 22ohm to 1ohm

Temp: 71f

Hum: 37%

120V 60Hz

Compatible Electronics, Inc. FAC-3 (LAB P)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dBμV)	(QP) EMI (dBμV)	(PEAK) EMI (dBμV)	(AVG) Limit (dBμV)	(QP) Limit (dBμV)	Transducer (dB)	Cable (dB)
0.67	-13.74	-18.70	32.26	37.30	41.03	46.00	56.00	0.07	0.04
0.81	-19.21	-23.03	26.79	32.97	39.24	46.00	56.00	0.07	0.07
2.91	-19.94	-23.89	26.06	32.11	37.90	46.00	56.00	0.08	0.14
2.98	-19.23	-23.31	26.77	32.69	38.84	46.00	56.00	0.08	0.14
3.06	-20.19	-23.81	25.81	32.19	38.77	46.00	56.00	0.08	0.15
4.57	-20.15	-24.55	25.85	31.45	37.94	46.00	56.00	0.10	0.19