

**FCC PART 15 SUBPART C
TEST REPORT***for***ELECTRONIC LOCK
Model: 450191**

Prepared for

**KWIKSET HHI
19701 DAVINCI
FOOTHILL RANCH, CA 92610**

Prepared by: _____

MATT HARRISON

Approved by: _____

JOSH HANSEN**COMPATIBLE ELECTRONICS INC.
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LAKE FOREST, CALIFORNIA 92630
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DATE: APRIL 3, 2013

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	19	2	2	2	12	13	48

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1	Plot Map And Layout of Test Site Below 1GHz
2	Plot Map And Layout of Test Site Above 1GHz



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 in any form unless done so in full with 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 or other governments.

Device Tested: Electronic Lock
Model: 450191
S/N: N/A

Product Description: The Electronic Lock is an electronic lock transmitting via Zwave Protocol.

Modifications: The EUT was not modified during testing.

Manufacturer: Kwikset HHI
19701 DaVinci
Foothill Ranch, CA 92610

Test Date: October 17th, 2012

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart B Sections 15.109
CFR Title 47, Part 15 Subpart C Sections 15.205, 15.209 and 15.249

Test Procedure: ANSI C63.4
ANSI C63.10



SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz.	The EUT is battery powered; therefore this test was not performed.
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 Part 15 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)

SIX HIGHEST RADIATED EMISSIONS READINGS

	Reading Type (PK / QP / AV)	Polarization (Vert / Horz)	Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Delta (dB)	Test Distance
1	PK	V	908.39	80.38	93.97	-13.59	3-Meter
2	AV	V	7872.00	38.91	53.98	-15.07	3-Meter
3	AV	V	7877.00	38.74	53.98	-15.24	3-Meter
4	AV	H	8078.00	38.65	53.98	-15.33	3-Meter
5	AV	V	8086.00	38.61	53.98	-15.37	3-Meter
6	AV	H	7897.00	38.49	53.98	-15.49	3-Meter



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Electronic Lock Model: 450191. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI 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 sections 15.109 and Part 15 Subpart C sections 15.205, 15.209 and 15.249.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The 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

Kwikset HHI

Chris Taylor Code & Compliance Program Manager

Compatible Electronics Inc.

Josh Hansen	Lab Manager
Matt Harrison	Test Technician
Jeff Klinger	Director of Engineering

2.4 Date Test Sample was Received

The test sample was received on October 17th, 2012.

2.5 Disposition of the Test Sample

The test sample remains at Compatible Electronics, Inc. as of the date of this test report.

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 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

The Electronic Lock Model: 450191 (EUT) was setup in a tabletop configuration. The EUT was powered by 4-AA batteries. The EUT was continuously transmitting a data stream during transmitter tests and continuously receiving during receiver tests.

The 4-AA batteries were replaced with 4 new AA batteries; the transmitting signal amplitude and frequency did not vary.

It was determined that the emissions were at their highest level when the EUT was transmitting in the configuration described above for Radiated Emissions. The final radiated data was taken in the above configuration. Please see Appendix E for the test data.

4.1.1 Photograph Test Configuration



4.1.2 Cable Construction and Termination

Cable 1

There were no interconnecting cables.



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

#	EQUIPMENT TYPE	MANU-FACTURER	MODEL	SERIAL NUMBER	FCC ID
1	ELECTRONIC LOCK (EUT)	KWIKSET HHI	450191	N/A	NUL450191ZWV
2	BATTERY	N/A	AA	N/A	N/A



5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Computer	Compatible Electronics	NONE	NONE	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100172	01/18/2012	01/18/2013
Antenna, Loop	Com Power	AL-130	17085	01/26/2011	01/26/2013
Antenna, CombiLog	Com Power	AC-220	003	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
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 the figures in Appendix D of this report for test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 by 0.8 meter high non-conductive table, which was placed on the ground plane.

The EUT was not grounded.

6.3 Facility Environmental Characteristics

When applicable refer to the data sheets in Appendix E for the relative humidity, air temperature, and barometric pressure.



7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Number and Frequencies

There is only 1 channel.

1 == 908 MHz

7.2 Antenna

The antenna is made up of an integrated PCB antenna which is located on 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

(This test was not performed)

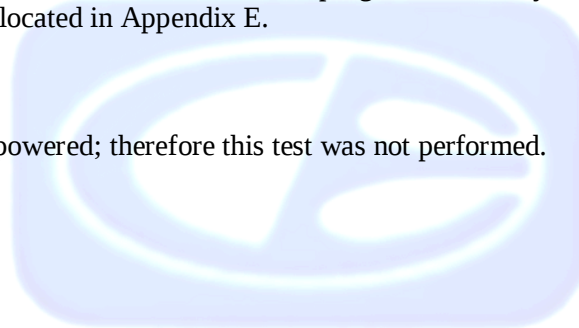
The EMI receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. The LISN output was measured using the EMI receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for 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. The final qualification data is located in Appendix E.

Test Results:

The EUT is battery powered; therefore this test was not performed.



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. Amplifiers were used to increase the sensitivity of the instrument. There was one Microwave Preamplifier used for frequencies above 1 GHz.

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

For the Harmonic emissions a duty cycle correction factor was used.

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 Hz
.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 sections 15.109 and CFR Title 47 Part 15 Subpart C sections 15.205, 15.209 and 15.249.



8.1.3 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.

8.1.4 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. 908 MHz was tuned during the low and high band edge tests. The final qualification data sheets are located in Appendix E.

Test Results:

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



9. TEST PROCEDURE DEVIATIONS

The test procedures were not deviated from throughout all tests.

10. CONCLUSIONS

The Electronic Lock Model: 450191 meets all of the relevant specification requirements defined in the Code of Federal Regulations Title 47, Part 15 Subpart B sections 15.109 and Code of Federal Regulations Title 47, Part 15 Subpart C sections 15.205, 15.209 and 15.249.



APPENDIX A

***LABORATORY ACCREDITATIONS AND
RECOGNITIONS***



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LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP LAB CODES 200063-0,
200528-0, 200527-0

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

NVLAP listing links

Agoura Division - <http://ts.nist.gov/Standards/scopes/2000630.htm>Brea Division - <http://ts.nist.gov/Standards/scopes/2005280.htm>Silverado/Lake Forest Division - <http://ts.nist.gov/Standards/scopes/2005270.htm>

ANSI listing

[CETCB](#)<https://www.ansica.org/wwwversion2/outside/ALLdirectoryDetails.asp?menuID=1&prgID=3&orgID=123&status=4>

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).



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).

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



VCCI Listing, from VCCI site

[Enter "Compatible" in search form](http://www.vcci.or.jp/vcci_e/activity/registration/setsubi.html) http://www.vcci.or.jp/vcci_e/activity/registration/setsubi.html

FCC Listing, from FCC OET site

[FCC test lab search](https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>

Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

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APPENDIX B

MODIFICATIONS TO THE EUT



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MODIFICATIONS TO THE EUT

There were no modifications made to the EUT during testing.



APPENDIX C***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

Brea Division
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ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

ELECTRONIC LOCK
Model: 450191
S/N: None

No additional models were tested.



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APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS



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FIGURE 1: PLOT MAP AND LAYOUT OF TEST SITE BELOW 1GHZ

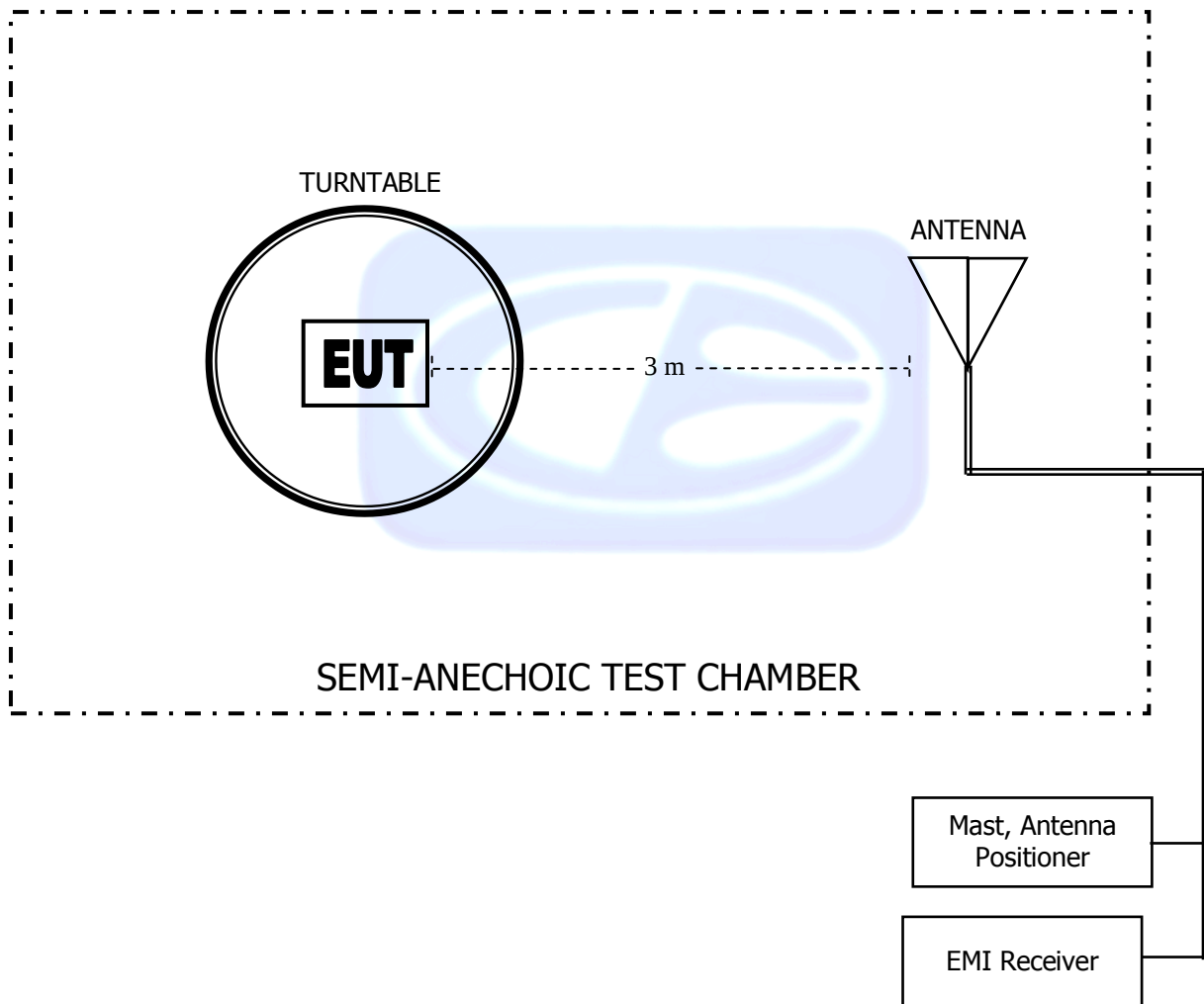
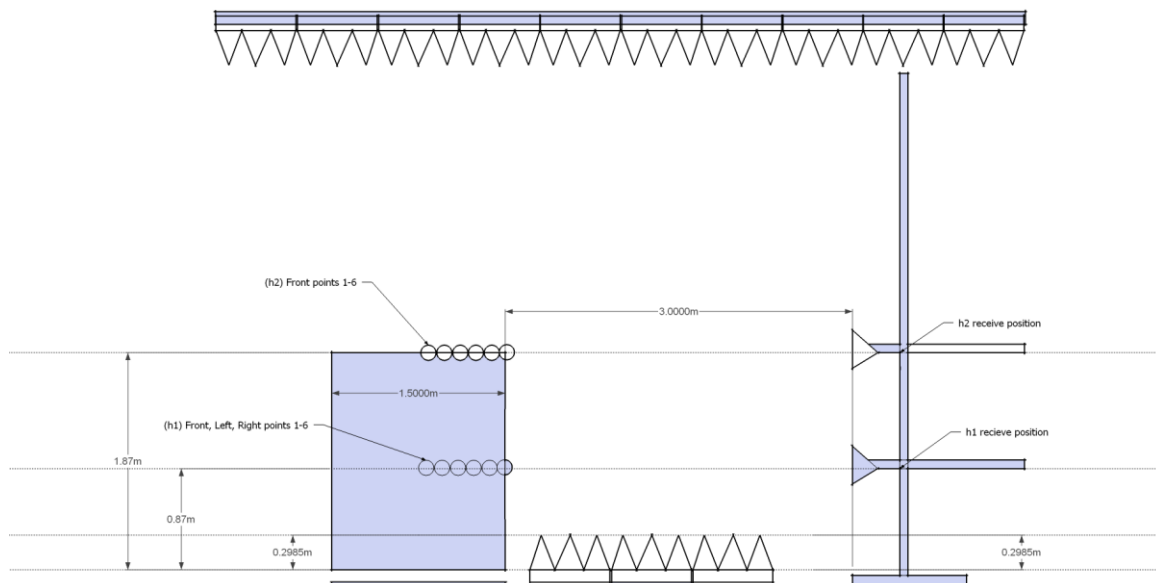


FIGURE 2: PLOT MAP AND LAYOUT OF TEST SITE ABOVE 1GHZ



COM-POWER AL-130**LOOP ANTENNA****S/N: 17085****CALIBRATION DUE: JANUARY 26, 2013**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)	FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.14	10.36	0.8	-40.91	10.59
0.01	-40.98	10.52	0.9	-40.80	10.70
0.02	-40.87	10.63	1.0	-40.81	10.69
0.03	-40.13	11.37	2.0	-40.51	10.99
0.04	-40.42	11.08	3.0	-40.54	10.96
0.05	-41.06	10.44	4.0	-40.44	11.06
0.06	-41.07	10.43	5.0	-40.32	11.18
0.07	-41.12	10.38	6.0	-40.69	10.81
0.08	-41.03	10.47	7.0	-40.37	11.13
0.09	-41.04	10.46	8.0	-39.99	11.51
0.1	-41.26	10.24	9.0	-40.00	11.50
0.2	-41.23	10.27	10.0	-40.08	11.42
0.3	-41.26	10.24	15.0	-42.36	9.14
0.4	-41.14	10.36	20.0	-38.75	12.75
0.5	-41.24	10.26	25.0	-40.70	10.80
0.6	-41.22	10.28	30.0	-41.09	10.41
0.7	-41.12	10.38			



COM-POWER AC-220**LAB P - COMBILOG ANTENNA****S/N: 003****CALIBRATION DUE: MAY 25, 2013**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	19.2	180	9.2
35	19.3	200	9.3
40	20.0	250	12.1
45	17.8	300	14.2
50	17.8	300	13.8
60	13.2	400	15.0
70	7.9	500	17.5
80	6.9	600	17.9
90	8.1	700	20.7
100	8.1	800	20.3
120	9.6	900	21.3
140	9.7	1000	22.4
160	8.6		



COM-POWER AH-118**HORN ANTENNA****S/N: 071250****CALIBRATION DUE: JULY 3, 2013**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1000	26.5	9500	40.4
1500	27.2	10000	40.3
2000	31.5	10500	41.7
2500	31.9	11000	42.1
3000	32.7	11500	42.3
3500	34.0	12000	42.6
4000	33.5	12500	41.4
4500	34.9	13000	42.7
5000	36.2	13500	43.6
5500	36.6	14000	42.4
6000	36.8	14500	42.7
6500	37.4	15000	45.4
7000	39.4	15500	45.1
7500	39.6	16000	42.9
8000	42.4	16500	44.0
8500	40.3	17000	46.8
9000	39.6	17500	47.5
		18000	46.6



COM-POWER PAM-118
1-18GHz - PREAMPLIFIER

S/N: 443013

CALIBRATION DUE: MARCH 12, 2013

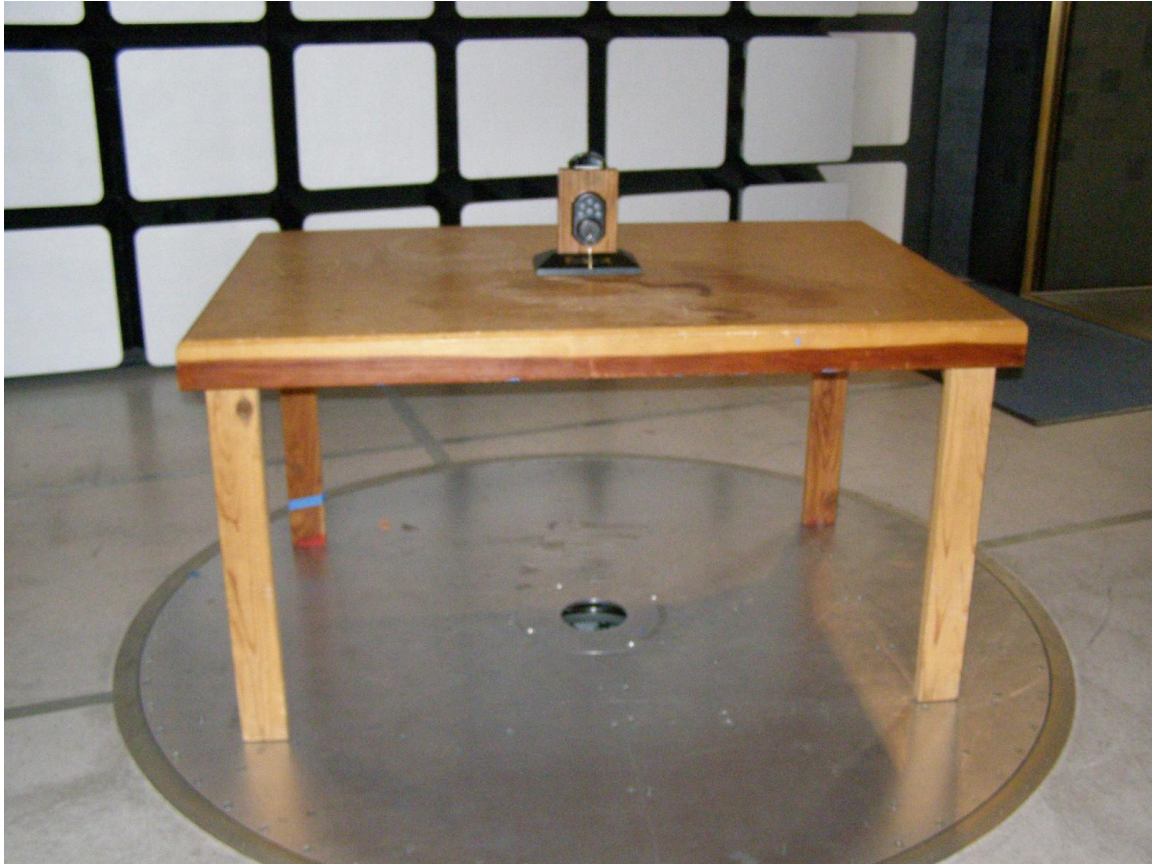
FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
0500	27.20	9500	26.30
1000	26.20	10000	26.70
1500	27.00	10500	26.60
2000	26.90	11000	26.20
2500	26.80	11500	25.90
3000	26.90	12000	25.60
3500	26.90	12500	25.50
4000	27.10	13000	25.30
4500	26.70	13500	25.00
5000	26.40	14000	25.30
5500	26.00	14500	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

KWIKSET HHI
ELECTRONIC LOCK

Model: 450191

FCC SUBPART B & C - RADIATED EMISSIONS < 1GHz

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



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REAR VIEW

**KWIKSET HHI
ELECTRONIC LOCK**

Model: 450191

FCC SUBPART B & C - RADIATED EMISSIONS < 1GHz

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

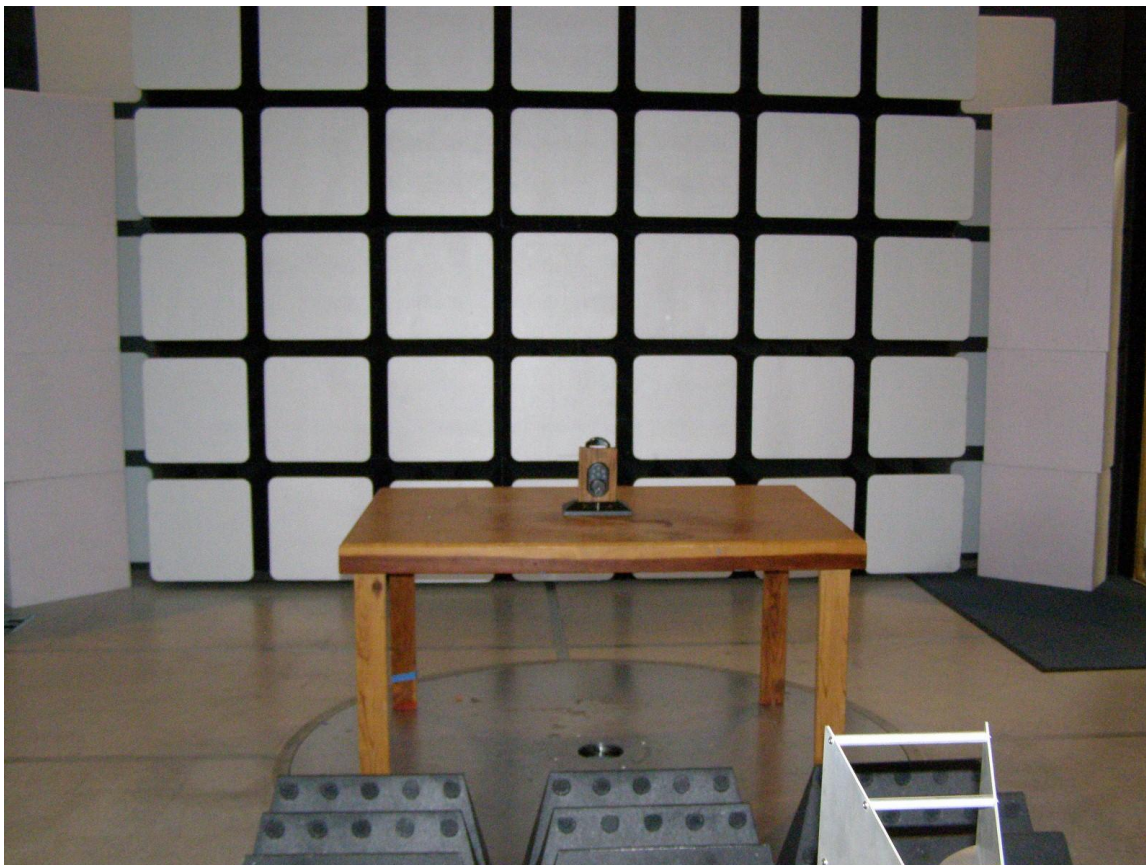


Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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

KWIKSET HHI
ELECTRONIC LOCK

Model: 450191

FCC SUBPART B & C - RADIATED EMISSIONS > 1GHz

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



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(949) 587-0400

**REAR VIEW**

KWIKSET HHI
ELECTRONIC LOCK

Model: 450191

FCC SUBPART B & C - RADIATED EMISSIONS > 1GHz

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



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APPENDIX E***RADIATED EMISSIONS DATA SHEETS***

Brea Division
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(714) 579-0500

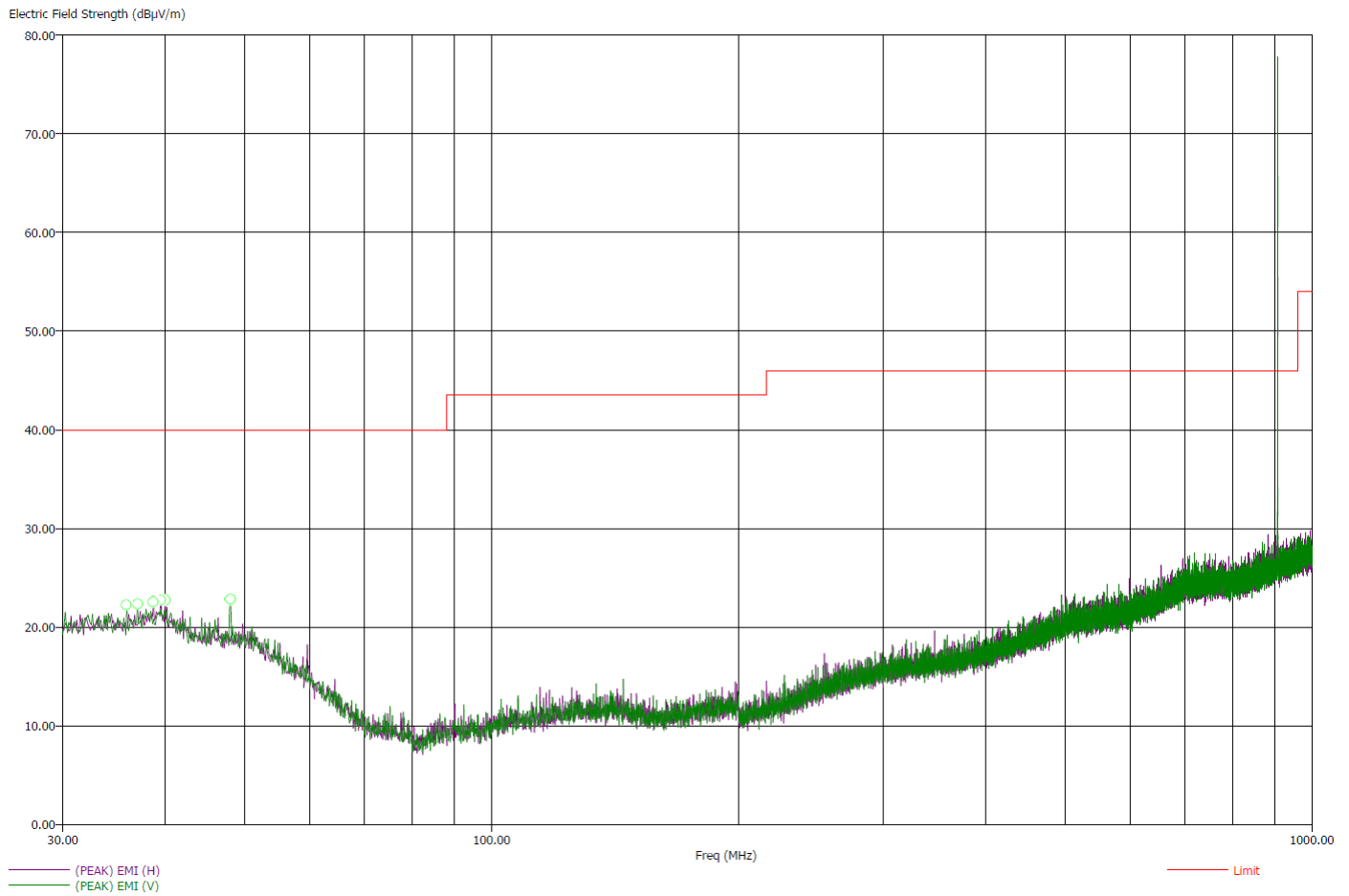
Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

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

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

Title: FCC 15.109 Class B/15.209
File: Radiated Pre-Scan 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: Electric Lock (Deadbolt) Model: 450191
EUT Condition: Continuously Transmitting 908MHz.
Comments:
Temp: 72f
Hum: 48%
Battery Operated

10/17/2012 9:19:59 AM
Sequence: Preliminary Scan

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

There were no radiated emissions found below 30 MHz or above 1000MHz



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(949) 589-0700

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

Title: FCC 15.109 Class B/15.209
File: Radiated Final 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: Electric Lock (Deadbolt) Model: 450191
EUT Condition: Continuously Transmitting 908MHz.
Comments:
Temp: 72f
Hum: 48%
Battery Operated

10/17/2012 9:42:01 AM
Sequence: Final Measurements

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)
35.90	-24.26	15.74	21.38	40.00	V	238.25	286.64	19.44	0.50
37.00	-24.01	15.99	21.38	40.00	V	276.75	213.64	19.60	0.52
38.70	-23.52	16.48	21.68	40.00	H	134.25	400.11	19.84	0.54
39.50	-23.37	16.63	21.78	40.00	H	60.25	210.70	19.92	0.55
40.00	-23.33	16.67	21.87	40.00	H	204.50	235.11	19.95	0.56
48.00	-25.41	14.59	19.62	40.00	V	137.25	219.52	17.80	0.56

There were no radiated emissions found below 30 MHz or above 1000MHz



***FUNDAMENTAL & HARMONICS
DATA SHEETS***



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114 Olinda Drive
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Lake Forest, CA 92630
(949) 587-0400

FCC 15.249Kwikset
Electric Lock (Deadbolt)
Model: 450191Date: 10-17-2012
Lab: P
Tested By: Matt Harrison**Fundamental Field Strength**

Freq. (MHz)	Peak Level (dBμV)	Pol (v/h)	Limit (dBμV)	Margin (dB)	Peak / QP / Avg	Table Angle (deg)	Tower Height (m)	Comments
908.39	71.51	H	93.97	-22.46	Peak	180.00	1.28	
908.39	80.38	V	93.97	-13.59	Peak	180.00	1.15	

Test distance
3 meter**Brea Division**
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Brea, CA 92823
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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

FCC 15.249

Kwikset
Electric Lock (Deadbolt)
Model: 450191

Date: 10-17-2012
Lab: P
Tested By: Matt Harrison

Harmonic Emissions

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit (dBμV)	Margin (dB)	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1816.78	--	H	--	--	Peak			No Emission Found
1816.78	--	H	--	--	Avg			No Emission Found
2725.17	47.14	H	53.98	-6.84	Peak	1.00	180	In Restricted Band
2725.17	N/A	H	53.98	--	Avg			In Restricted Band
3633.56	--	H	--	--	Peak			No Emissions Found
3633.56	--	H	--	--	Avg			In Restricted Band
4541.95	--	H	--		Peak			No Emissions Found
4541.95	--	H	--		Avg			In Restricted Band
5450.34	--	H	--		Peak			No Emissions Found
5450.34	--	H	--		Avg			In Restricted Band
6358.73	--	H	--		Peak			No Emissions Found
6358.73	--	H	--		Avg			No Emissions Found
7267.12	--	H	--		Peak			In Restricted Band
7267.12	--	H	--		Avg			In Restricted Band
8175.51	--	H	--		Peak			No Emissions Found
8175.51	--	H	--		Avg			In Restricted Band
9083.9	--	H	--		Peak			No Emissions Found
9083.9	--	H	--		Avg			In Restricted Band

Test distance
3 meter


FCC 15.249

Kwikset
Electric Lock (Deadbolt)
Model: 450191

Date: 10-17-2012
Lab: P
Tested By: Matt Harrison

Harmonic Emissions

Freq. (MHz)	Level (dBμV)	Pol (v/h)	Limit (dBμV)	Margin (dB)	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1816.78	42.77	V	53.98	-11.21	Peak	2.10	200	
1816.78	N/A	V	53.98	--	Avg			
2725.17	45.40	V	53.98	-29.53	Peak	1.00	360	In Restricted Band
2725.17	N/A	V	53.98	--	Avg			In Restricted Band
3633.56	--	V	--	--	Peak			No Emissions Found
3633.56	--	V	--	--	Avg			In Restricted Band
4541.95	--	V	--	--	Peak			No Emissions Found
4541.95	--	V	--	--	Avg			In Restricted Band
5450.34	--	V	--	--	Peak			No Emissions Found
5450.34	--	V	--	--	Avg			In Restricted Band
6358.73	--	V	--	--	Peak			No Emissions Found
6358.73	--	V	--	--	Avg			No Emissions Found
7267.12	--	V	--	--	Peak			No Emissions Found
7267.12	--	V	--	--	Avg			In Restricted Band
8175.51	--	V	--	--	Peak			No Emissions Found
8175.51	--	V	--	--	Avg			In Restricted Band
9083.9	--	V	--	--	Peak			No Emissions Found
9083.9	--	V	--	--	Avg			In Restricted Band

Test distance
3 meter


EMISSIONS RADIATED OUTSIDE OF THE FUNDAMENTAL FREQUENCY BAND

DATA SHEETS



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(949) 589-0700

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

FCC 15.249

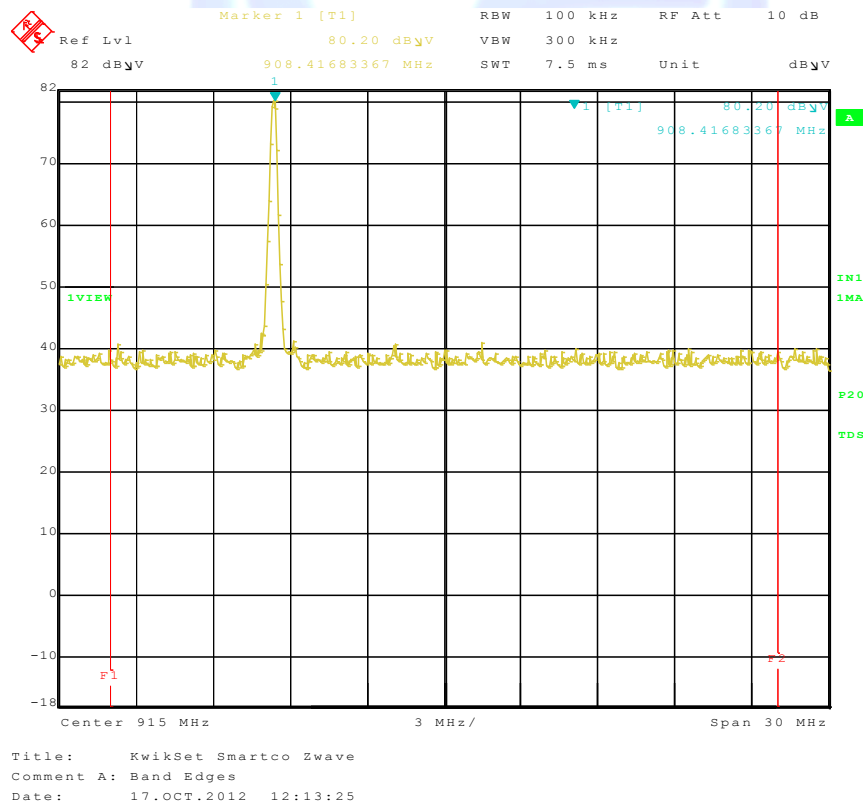
Kwikset
Electric Lock (Deadbolt)
Model: 450191

Date: 10-17-2012
Lab: P
Tested By: Matt Harrison

Band Edge

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
908.39	71.51	H	--	--	Peak	1.28	180.00	Fundamental
								@ 3 meters
N/A	--	H	46.00	--	Peak			No Emissions Found
		H	46.00	--	QP			
908.39	80.38	V	--	--	Peak	1.15	180.00	Fundamental
								@ 3 meters
N/A	--	V	46.00	--	Peak			No Emissions Found
		V	46.00	--	QP			

Test Distance
3 meters



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RECEIVER EMISSIONS
DATA SHEETS



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

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

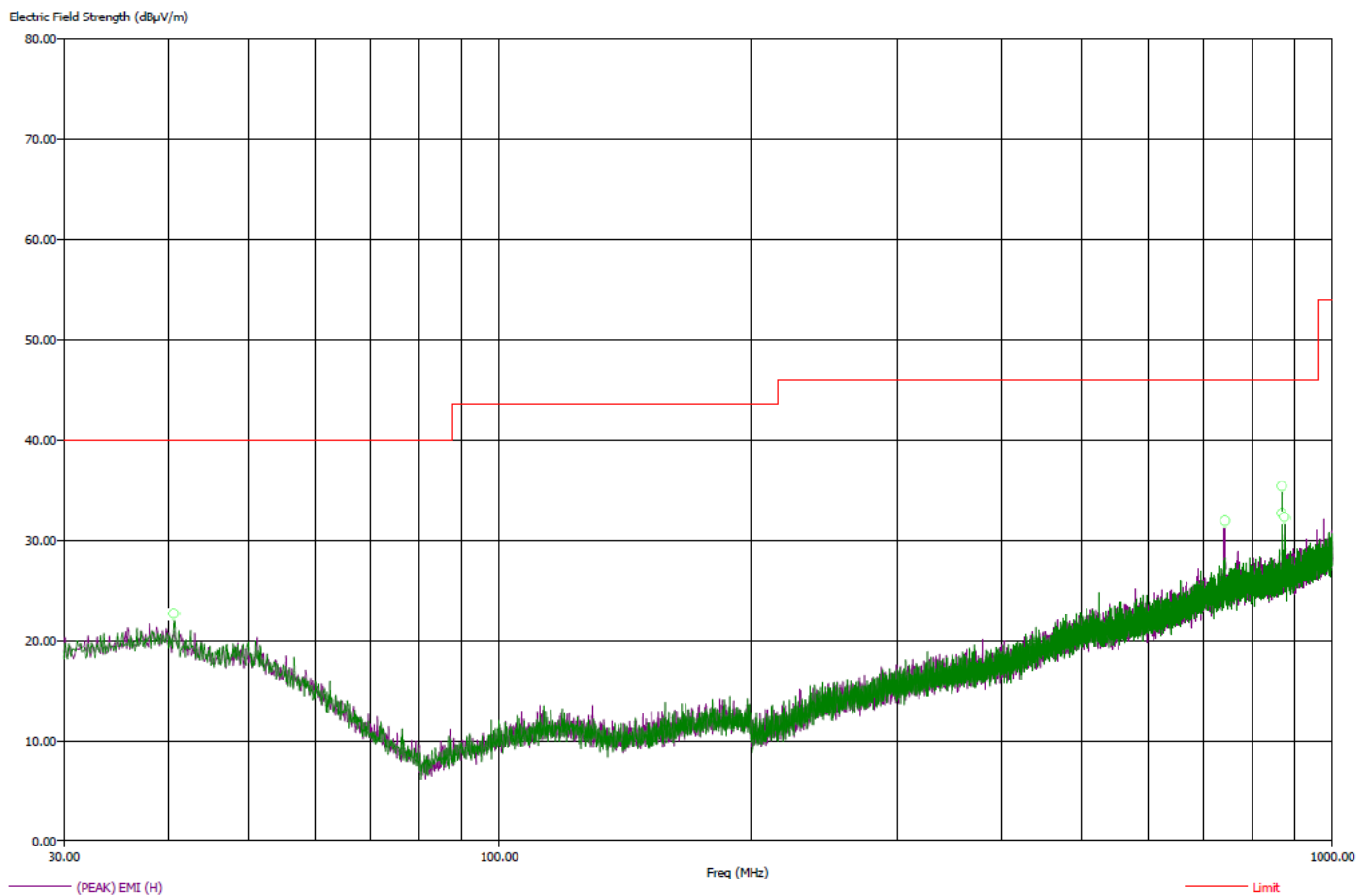
Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

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

Title: FCC 15.209
File: Radiated Pre-Scan 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: Electric Lock (Deadbolt) Model: 450191
EUT Condition: Receive Mode
Comments:
Temp: 79f
Hum: 24%
Battery Powered

2/21/2013 6:51:54 PM
Sequence: Preliminary Scan

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



There were no radiated emissions above 1000 MHz



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(949) 587-0400

Title: FCC 15.209
File: Radiated Final 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: Electric Lock (Deadbolt) Model: 450191
EUT Condition: Receive Mode.
Comments:
Temp: 79f
Hum: 24%
Battery Powered

2/21/2013 7:12:55 PM
Sequence: Final Measurements

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)
40.70	-24.32	15.68	21.59	40.00	V	117.00	208.23	18.92	0.60
742.90	-22.91	23.09	29.20	46.00	H	171.75	193.94	20.22	3.47
869.50	-20.43	25.57	29.68	46.00	H	316.00	388.05	20.71	3.78
869.50	-21.92	24.08	29.30	46.00	V	251.50	244.64	20.71	3.78
875.70	-22.32	23.68	28.75	46.00	V	0.00	266.35	20.73	3.80
877.20	-22.62	23.38	29.60	46.00	H	281.75	279.23	20.73	3.81

There were no radiated spurious emissions above 1000 MHz

