

**FCC PART 15 SUBPART C SECTION 15.247
TEST REPORT***for***DOOR CHIME BUTTON****Model: SW-ATT-DB (HOPPING MODE)**

Prepared for

NORTEK SECURITY & CONTROLS, LLC.
1950 CAMINO VIDA ROBLE, SUITE 150
CARLSBAD, CA 92008

Prepared by: _____

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DATE: JANUARY 16, 2015

	REPORT BODY	APPENDICES					TOTAL
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PAGES	19	2	2	2	15	31	71

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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 certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Device Tested: Door Chime Button
Model: SW-ATT-DB (Hopping Mode)
S/N: N/A

Product Description: The EUT is designed to integrate with the AT&T Digital Life security system. The SW-ATT-DB is used to ring the door chime and send a power-up message to the security system.

Modifications: The EUT was not modified during testing.

Manufacturer: Nortek Security & Controls, LLC.
1950 Camino Vida Roble, Suite 150
Carlsbad, CA 92008

Test Dates: January 15 and 16, 2015.

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart C Sections 15.205, 15.207, 15.209 & 15.247.

Test Procedure: ANSI C63.10, and DA 00-705.



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 C Sections 15.207
2	Radiated RF Emissions & Harmonics, 9 kHz – 10,000 MHz	Complies with the limits of CFR Title 47 Part 15 Subpart C Sections 15.205, 15.209
3	20dB Bandwidth	Complies with CFR Title 47 Part 15 Subpart C Section 15.247
4	Maximum Peak Output Power	Complies with CFR Title 47 Part 15 Subpart C Section 15.247
5	Emissions in Non-Restricted Frequency Bands (in 100kHz Bandwidth)	The EUT does not have a conducted port; therefore this test was not performed.
6	Emissions in the Restricted Bands	Complies with CFR Title 47 Part 15 Subpart C Section 15.205



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Door Chime Button Model: SW-ATT-DB (Hopping Mode). The EMI measurements were performed according to the measurement procedure described in 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 C sections 15.205, 15.207, 15.209 and 15.247.



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

Nortek Security & Controls, LLC.

Josh Hansen Regulatory Engineer

Compatible Electronics Inc.

Matt Harrison Test Technician

Jeff Klinger Director of Engineering

2.4 Date Test Sample was Received

The test sample was received on January 15, 2015.

2.5 Disposition of the Test Sample

The test sample remains at Compatible Electronics 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 C63.10: 2009	American National Standard for Testing Unlicensed Wireless Devices
DA 00-705	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems



4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration

The Door Chime Button Model: SW-ATT-DB (Fixed Mode) (EUT) was setup in a tabletop configuration. The EUT was connected to a Doorbell and a transformer. The EUT was checked in all 3-Axes and the worst case was found to be the X-Axis. The EUT was continuously transmitting a data stream during transmitter tests and continuously receiving during receiver tests.

The voltage was varied $\pm 15\%$; 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

This is a 1 meter, unshielded, round cable that connects the EUT to the Doorbell. The cable is hardwired into both ends of the cable. This cable was not bundled.

Cable 2

This is a 1 meter, unshielded, round cable that connects the EUT to the Transformer. The cable is hardwired into both ends of the cable. This cable was not bundled.

Cable 3

This is a 1 meter, unshielded, round cable that connects the Transformer to the Doorbell. The cable is hardwired into both ends of the cable. This cable was not bundled.



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

#	EQUIPMENT TYPE	MANU-FACTURER	MODEL	SERIAL NUMBER
1	DOOR CHIME BUTTON (EUT)	NORTEK SECURITY & CONTROLS LLC	SW-ATT-DB (Hopping Mode)	NONE
2	DOORBELL	HEATHZENITH	WD-1 BASE	NONE
3	TRANSFORMER	HEATHZENITH	EM57580	NONE



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	100219	9/5/2014	9/2/2015
Antenna, Loop	Com Power	AL-130	121049	12/6/2013	12/6/2015
Antenna, CombiLog	Com Power	AC-220	25857	5/21/2014	5/21/2015
Antenna, Horn 1-18GHz	Com Power	AH-118	071250	7/1/2014	7/1/2016
Pre-Amp, 1-18GHz	Com Power	PAM-118	443013	4/24/2014	4/24/2015
Pre-Amp, 1-18GHz	Com Power	PAM-118	443011	4/24/2014	4/24/2015
Notch Filter	Microwave Circuits	N0309153	3709-01 DC0415	5/9/2013	5/9/2015
LISN	Com Power	LI-215	191944	4/18/2014	4/18/2015
Mast, Antenna Positioner	Sunol Science Corporation	TWR 95-4	081309-3	N/A	N/A
Antenna Mast	Sunol Science Corporation	TWR 95-4	081309-3	N/A	N/A
Turntable	Sunol Science Corporation	FM2011VS	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

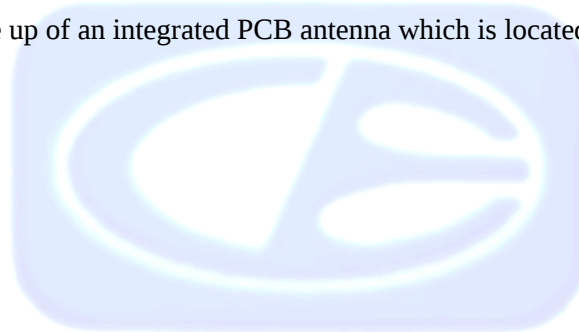
The FHSS uses 101 channels maximum and 50 channels minimum using a pseudo random technique. It uses GFSK modulation. The channels are separated by approximately 250kHz.

1 == 902.25 MHz
2 == 902.49 MHz
3 == 902.74 MHz
4 == 902.99 MHz...

The EUT does not transmit on the following channels:
908.24
915.73

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

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 complies with the limits of CFR Title 47 Part 15 Subpart C section 15.207.



8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The Rohde & Schwarz 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 two 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 radiated Harmonic emissions a linear average 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	100 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 C63.10. 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 C sections 15.205, 15.209 and 15.247.



8.1.3 20dB Bandwidth

The 20dB Bandwidth was measured directly connected to the EMI Receiver using a RBW set to 1% of the 20dB Bandwidth and a VBW of 3 times greater than RBW. A peak detector and a max hold trace were used with auto sweep time. The trace was allowed to fully maximize. We measured the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission. The automatic bandwidth measurement capability of the EMI Receiver was employed using the n dB bandwidth mode with n set to 20 dB. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with Part 15, Subpart C, Section 15.247.

8.1.4 Maximum Peak Conducted Output Power

The maximum peak conducted output power was calculated using the formula found in DA-00-075. A Field Strength measurement was made at a 3-meter test distance using an EMI Receiver. The Receiver used a resolution bandwidth that is greater than the 20dB bandwidth and a video bandwidth greater than 3 x RBW. Sweep time was set to auto with a peak detector using the max hold function of the EMI Receiver. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with Part 15 Subpart C, Section 15.247.

8.1.5 Spurious RF Conducted Emissions

Test Results: *The EUT does not have a conducted port; therefore this test was not performed. Per DA 00-705 Radiated Spurious Emissions tested to the limits found in 15.247(c) are acceptable.*

The Spurious RF Conducted Emissions measurements were performed using the EMI Receiver directly connected to the EUT. A reference level was established by setting the instrument center frequency to the channel center frequency. The RBW was 100 kHz and VBW 300 kHz. A peak detector was used with a sweep time set to auto. A max hold trace was used and allowed to fully stabilize. The peak marker function was used to determine the level and 20dB below that was the reference level. For Emission Level Measurement the center frequency and span were set to encompass the frequency range to be measured. The number of measurement points were greater than span/RBW. A max hold trace was used and allowed to fully stabilize. The peak marker function was used to determine the maximum amplitude level. The final qualification data sheets are located in Appendix E.



8.1.6 Emissions in the Restricted Bands (Radiated)

The Emissions in the Restricted Bands measurement was performed using the EMI Receiver at a 3-meter test distance to obtain the final test data. 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 C63.10. 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 Part 15 Subpart C, Section 15.205.

8.1.7 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 lower and upper channels were 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 15.247.



9. TEST PROCEDURE DEVIATIONS

The test procedures were not deviated from throughout all tests.

10. CONCLUSIONS

The Door Chime Button Model: SW-ATT-DB (Hopping Mode) meets all of the relevant specification requirements defined in the Code of Federal Regulations Title 47, Part 15 Subpart C sections 15.205, 15.207, 15.209 and 15.247.



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](http://www.ansica.org/wwwversion2/outside/ALLdirectoryDetails.asp?menuID=1&prgID=3&orgID=123&status=4)

<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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20621 Pascal Way
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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
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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Silverado Division
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Silverado, CA 92676
(949) 589-0700

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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

DOOR CHIME BUTTON

Model: SW-ATT-DB (HOPPING MODE)

S/N: N/A

No additional models were tested.



APPENDIX D***DIAGRAMS, FACTORS, CHARTS, AND PHOTOS***

Brea Division
114 Olinda Drive
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FIGURE 1: PLOT MAP AND LAYOUT OF TEST SITE BELOW 1GHZ

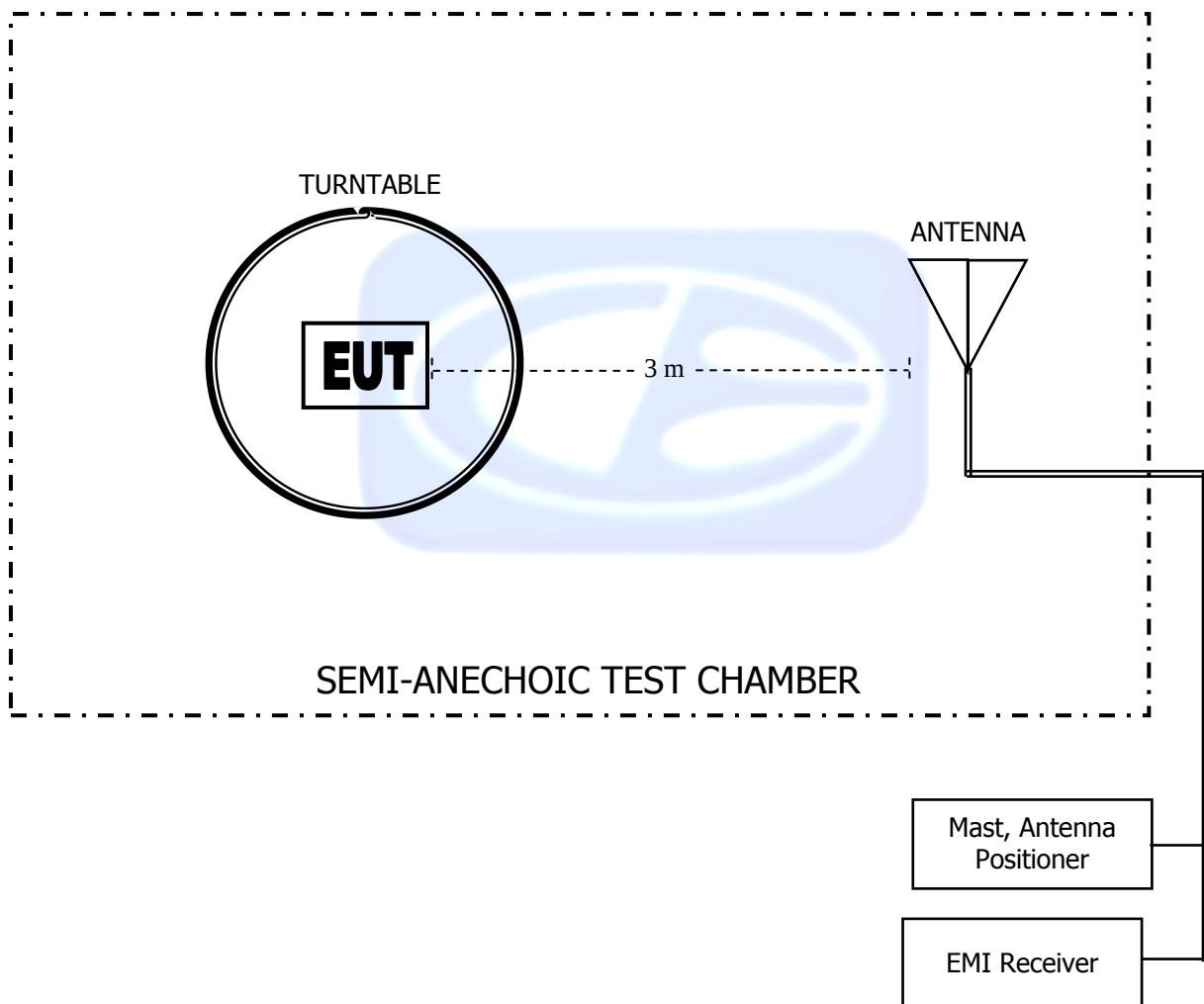


FIGURE 2: PLOT MAP AND LAYOUT OF TEST SITE ABOVE 1GHZ

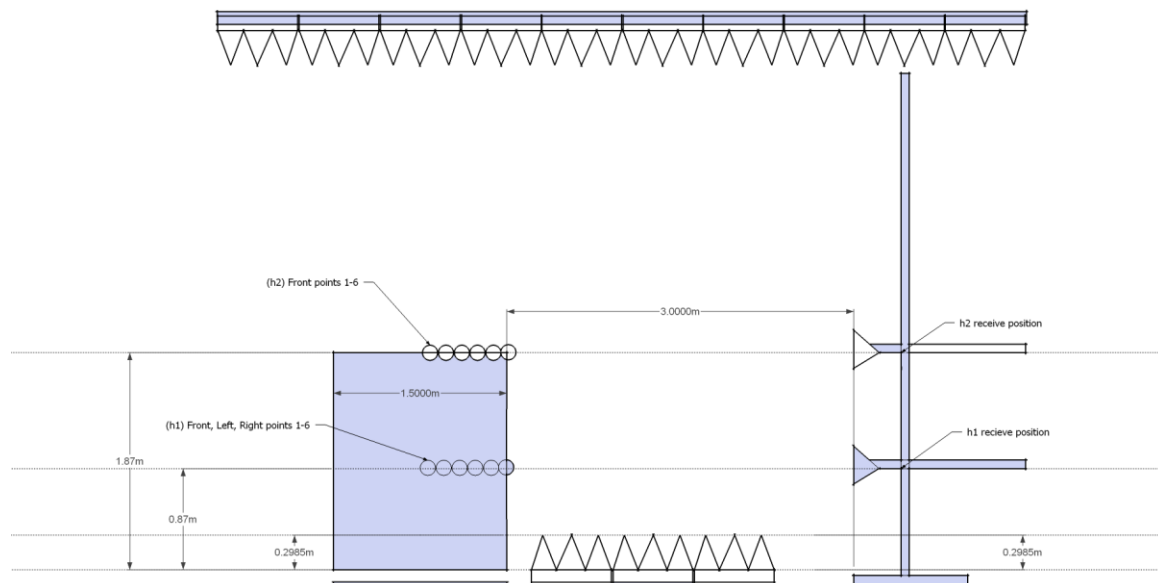
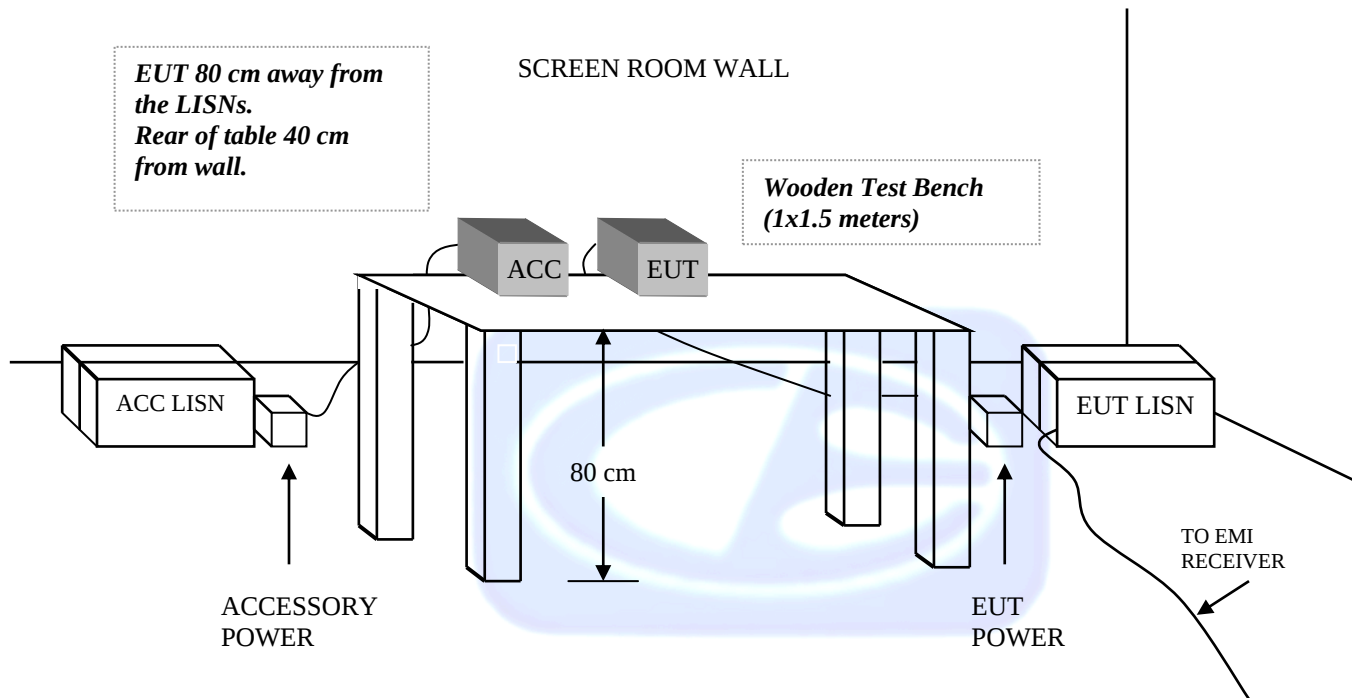


FIGURE 3: CONDUCTED EMISSIONS TEST SETUP

COM-POWER AL-130**LOOP ANTENNA****S/N: 121049****CALIBRATION DUE: DECEMBER 6, 2015**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)	FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-34.64	16.86	0.8	-36.32	15.18
0.01	-34.78	16.72	0.9	-36.22	15.28
0.02	-35.91	15.59	1.0	-36.22	15.28
0.03	-35.48	16.02	2.0	-35.91	15.59
0.04	-35.82	15.68	3.0	-35.91	15.59
0.05	-36.49	15.01	4.0	-36.01	15.49
0.06	-36.30	15.20	5.0	-35.80	15.70
0.07	-36.43	15.07	6.0	-36.00	15.50
0.08	-36.30	15.20	7.0	-35.90	15.60
0.09	-36.39	15.11	8.0	-35.70	15.80
0.1	-36.41	15.09	9.0	-35.70	15.80
0.2	-36.61	14.89	10.0	-35.60	15.90
0.3	-36.63	14.87	15.0	-36.52	14.98
0.4	-36.52	14.99	20.0	-35.75	15.75
0.5	-36.63	14.87	25.0	-37.78	13.72
0.6	-36.62	14.88	30.0	-38.62	12.88
0.7	-36.53	14.97			



COM-POWER AC-220**LAB R - COMBILOG ANTENNA****S/N: 25857****CALIBRATION DUE: MAY 21, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	22.5	160	13.3
35	22.5	180	15.0
40	23.0	200	14.6
45	21.5	250	16.5
50	21.3	300	18.1
60	18.2	400	19.4
70	13.2	500	21.4
80	11.6	600	21.6
90	11.9	700	23.7
100	12.6	800	26.0
120	15.1	900	26.6
140	13.6	1000	28.5



COM-POWER AH-118**HORN ANTENNA****S/N: 071250****CALIBRATION DUE: JULY 1, 2016**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
1000	30.1	9500	44.2
1500	29.2	10000	43.4
2000	31.6	10500	44.6
2500	35.5	11000	45.1
3000	33.7	11500	45.7
3500	36.0	12000	46.2
4000	35.4	12500	45.4
4500	35.5	13000	44.8
5000	40.1	13500	46.7
5500	37.8	14000	47.8
6000	39.0	14500	46.4
6500	39.9	15000	47.2
7000	40.4	15500	45.5
7500	44.4	16000	45.0
8000	44.1	16500	44.5
8500	43.1	17000	47.0
9000	43.0	17500	47.8
		18000	44.2



COM-POWER PAM-118**1-18GHz - PREAMPLIFIER****S/N: 443013****CALIBRATION DUE: APRIL 24, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
500	26.2	5500	25.3
1000	25.6	6000	25.0
1100	25.9	6500	24.7
1200	25.9	7000	23.6
1300	26.3	7500	23.3
1400	26.5	8000	23.7
1500	26.3	8500	24.0
1600	26.1	9000	24.3
1700	26.2	9500	24.1
1800	26.3	10000	23.7
1900	25.8	11000	24.2
2000	26.0	12000	23.2
2500	26.0	13000	22.8
3000	25.8	14000	22.6
3500	25.9	15000	22.9
4000	26.4	16000	22.3
4500	26.0	17000	22.6
5000	25.6	18000	23.9



COM-POWER PAM-118**1-18GHz - PREAMPLIFIER****S/N: 443011****CALIBRATION DUE: April 24, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
0.500	27.2	7.000	23.8
1.000	26.6	7.500	23.9
1.500	27.0	8.000	24.4
2.000	27.0	8.500	25.2
2.500	27.4	9.500	26.2
3.000	27.6	10.000	25.8
3.500	27.5	11.000	25.5
4.000	27.3	12.000	25.4
4.500	27.3	13.000	25.1
5.000	27.5	14.000	24.6
5.500	26.3	15.000	24.1
6.000	26.1	16.000	25.1
6.500	25.4	17.000	25.2
		18.000	24.4





FRONT VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART 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



REAR VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART C - RADIATED EMISSIONS < 1GHz

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

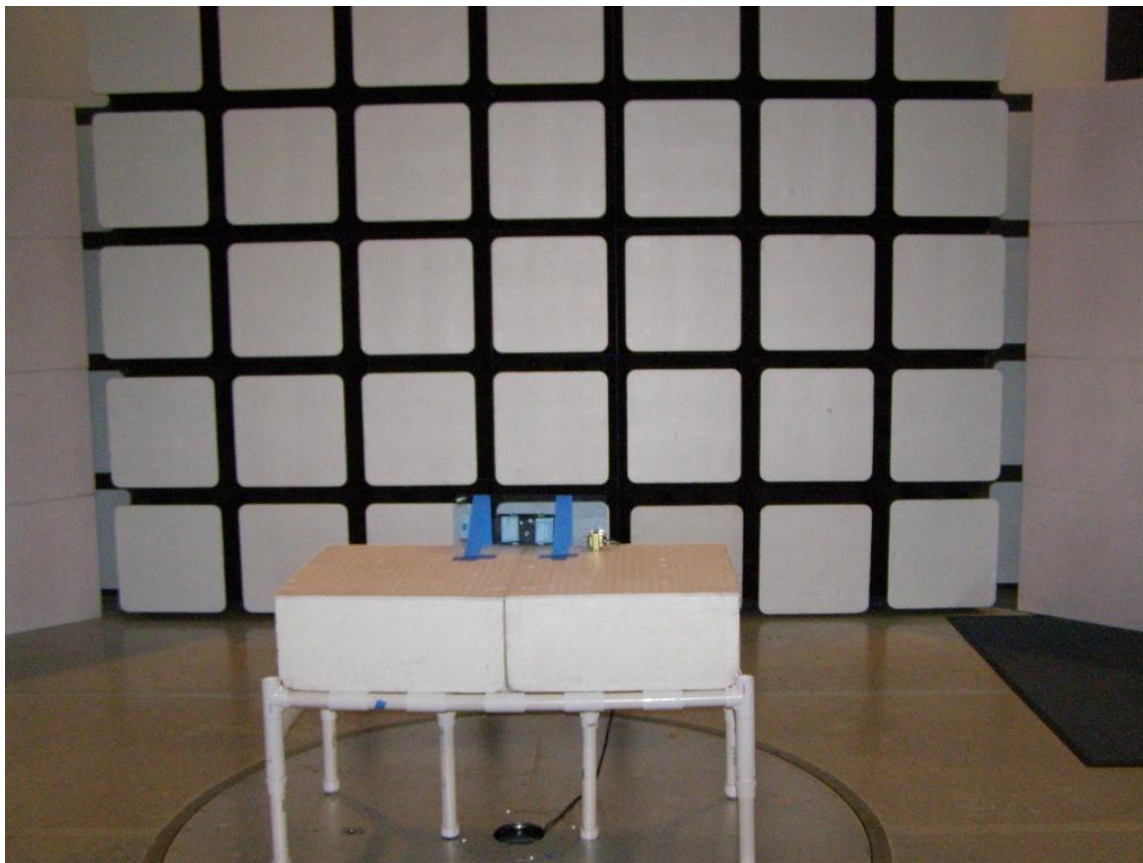


Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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

Silverado Division
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(949) 589-0700

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



FRONT VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART C - RADIATED EMISSIONS > 1GHz

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



Brea Division
114 Olinda Drive
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Agoura Division
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Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART C - RADIATED EMISSIONS > 1GHz

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





FRONT VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART C - CONDUCTED EMISSIONS < 1GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

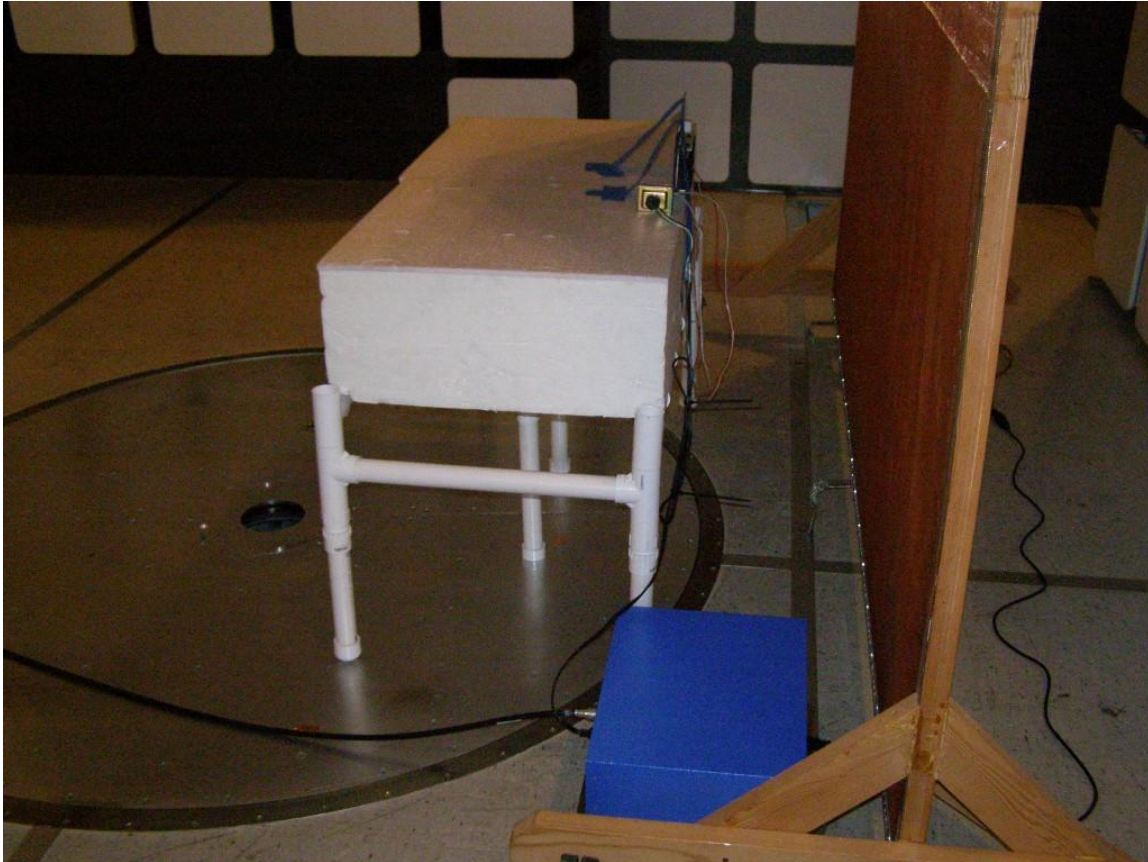


Brea Division
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Lake Forest Division
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(949) 587-0400



REAR VIEW

NORTEK SECURITY & CONTROLS LLC
Door Chime Button
Model: SW-ATT-DB (Fixed Mode)
FCC SUBPART C - CONDUCTED EMISSIONS < 1GHz

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



Brea Division
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Agoura Division
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Agoura, CA 91301
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Silverado Division
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(949) 589-0700

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

APPENDIX E

RADIATED EMISSIONS DATA SHEETS



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

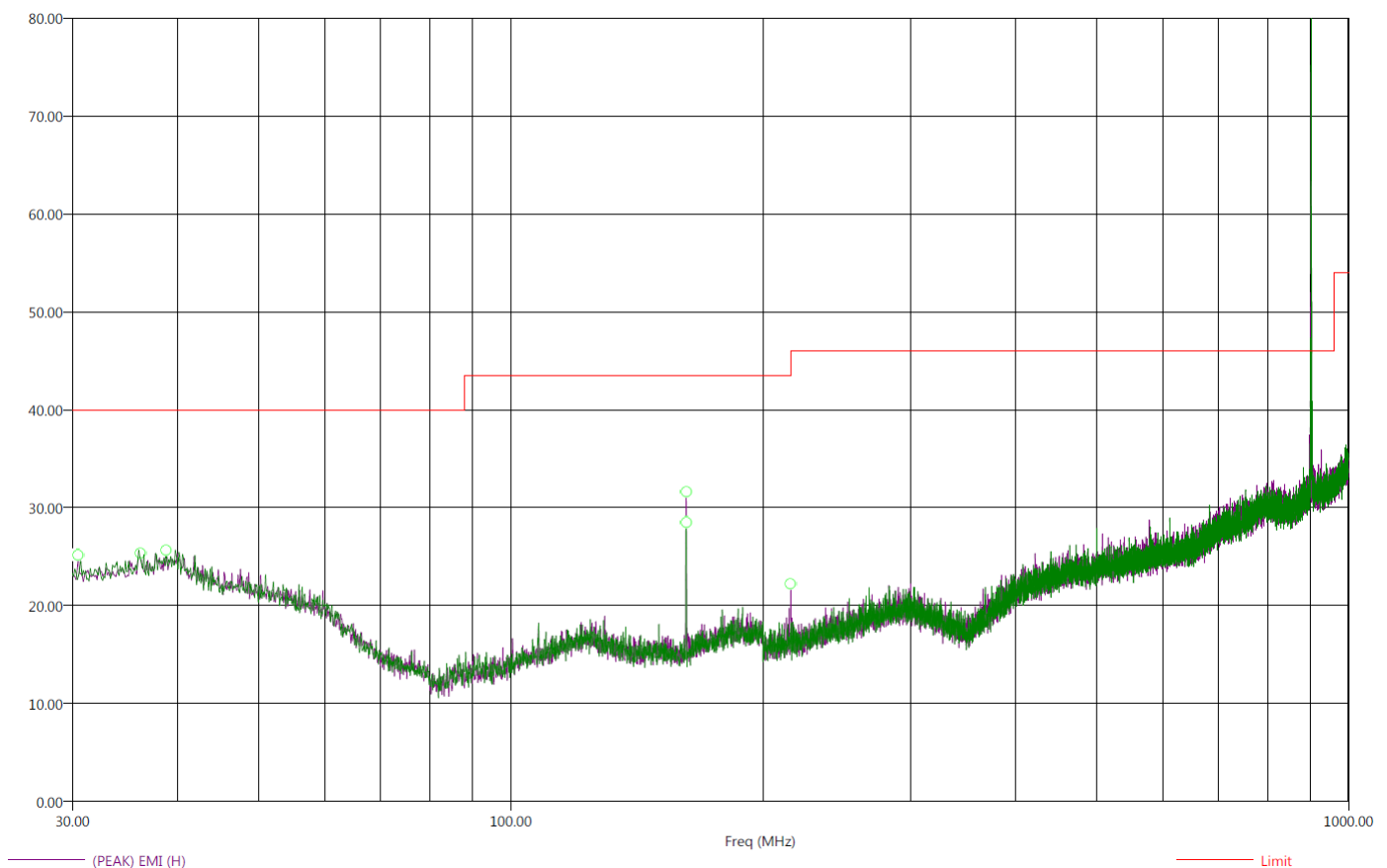
Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

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: SW-ATT-DB (Hopping).
EUT Condition: Transmitting 902.23 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

1/15/2015 10:53:56 AM
Sequence: Preliminary Scan

Compatible Electronics, Inc. FAC-3 (Lab R)Electric Field Strength (dB μ V/m)

***There were no radiated emissions besides harmonics found between 9kHz-30 MHz or 1-10GHz.-
There were no additional emissions in Receive Mode.***



Brea Division
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Agoura Division
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(818) 597-0600

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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 Final 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: SW-ATT-DB (Hopping).
EUT Condition: Transmitting 902.23 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

1/15/2015 11:15:20 AM
Sequence: Final Measurements

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

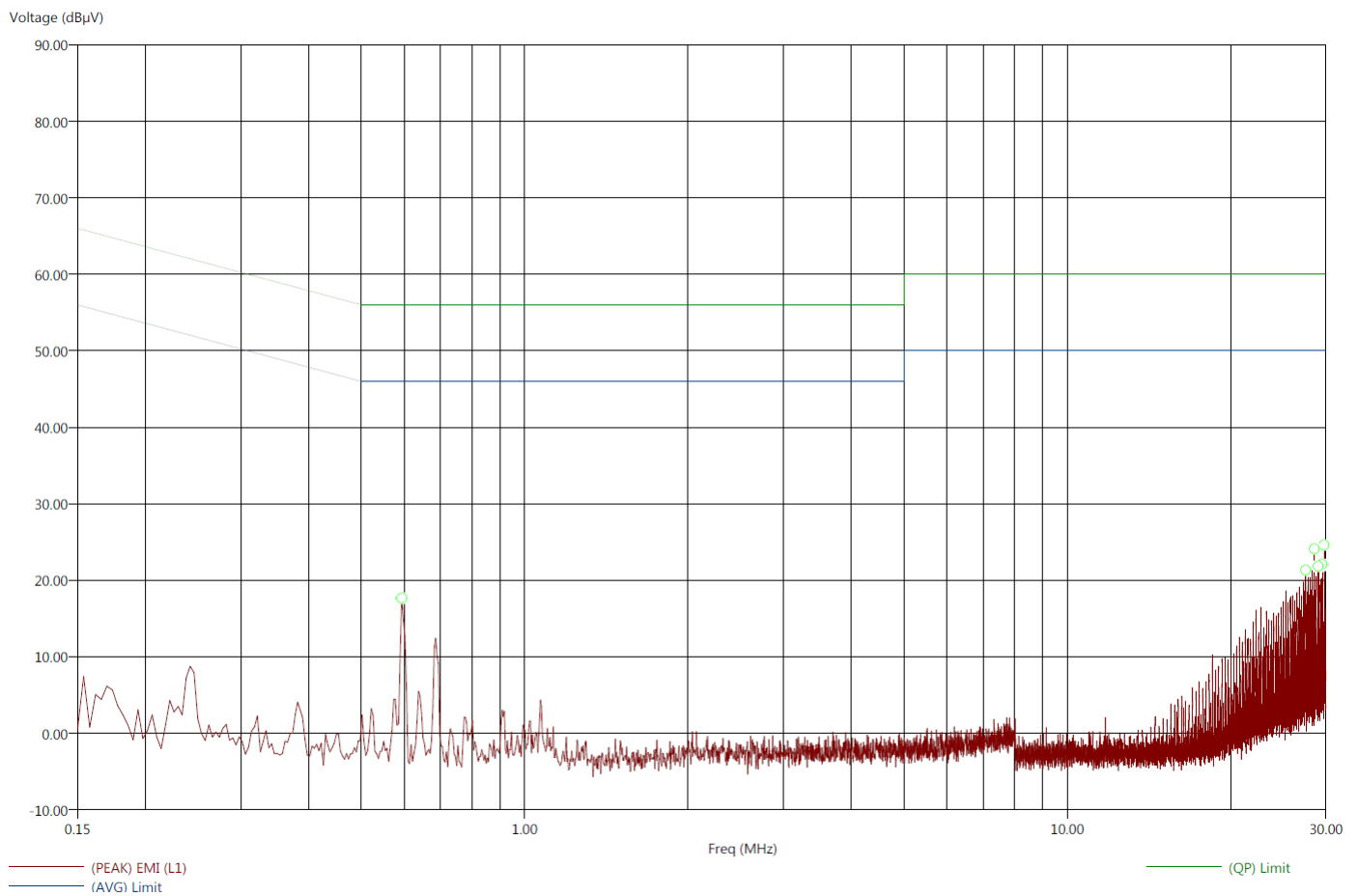
Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBμV/m)	(PEAK) EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable(dB)
30.50	-21.43	18.57	24.80	40.00	H	82.25	217.73	22.50	0.73
36.20	-20.72	19.28	25.32	40.00	H	336.25	142.32	22.62	1.09
38.80	-20.22	19.78	24.97	40.00	V	154.25	226.50	22.89	1.24
162.00	-12.12	31.40	32.72	43.52	H	162.50	179.64	13.47	0.95
162.00	-14.12	29.40	30.86	43.52	V	248.50	104.89	13.47	0.95
216.00	-32.73	13.27	18.84	46.00	H	52.25	164.23	15.26	1.57

*There were no radiated emissions besides harmonics found between 9kHz-30 MHz or 1GHz-10GHz.
There were no additional emissions in Receive Mode.*



Title: FCC 15.207
File: Conducted Pre-Line.set
Operator: Matt Harrison
EUT Type: SW-ATT-DB (Hopping).
EUT Condition: Transmitting 902.23 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

1/16/2015 1:49:25 PM
Sequence: Preliminary Scan

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

Brea Division
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Agoura Division
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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 15.207
File: Conducted Final-Line.set
Operator: Matt Harrison
EUT Type: SW-ATT-DB.
EUT Condition: Transmitting 918.78 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

1/16/2015 1:52:38 PM
Sequence: Final Measurements

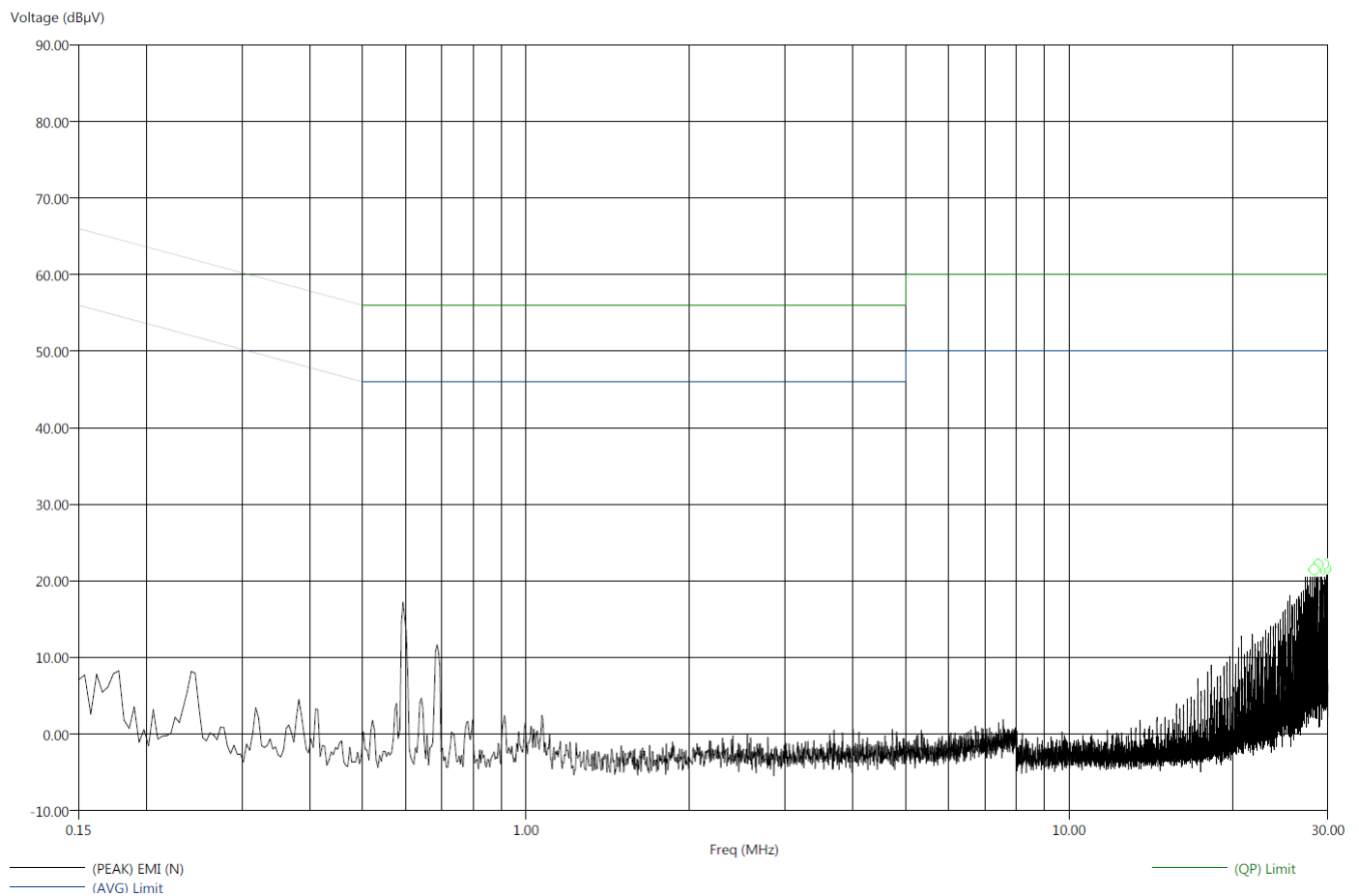
Compatible Electronics, Inc. FAC-3 (LAB R)

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dB V)	(QP) EMI (dB V)	(PEAK) EMI (dB V)	(AVG) Limit (dB V)	(QP) Limit (dB V)	Transducer (dB)	Cable (dB)
0.59	-37.60	-41.50	8.40	14.50	19.33	46.00	56.00	0.24	0.00
27.53	-38.61	-42.57	11.39	17.43	23.41	50.00	60.00	0.32	0.64
28.54	-37.49	-41.68	12.51	18.32	23.97	50.00	60.00	0.35	0.66
29.04	-37.94	-42.26	12.06	17.74	23.67	50.00	60.00	0.37	0.68
29.55	-42.16	-48.92	7.84	11.08	23.72	50.00	60.00	0.39	0.69
29.79	-37.98	-43.35	12.02	16.65	24.16	50.00	60.00	0.39	0.69



Title: FCC 15.207
File: Conducted Pre-Neutral.set
Operator: Matt Harrison
EUT Type: SW-ATT-DB.
EUT Condition: Transmitting 918.78 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

1/16/2015 1:55:32 PM
Sequence: Preliminary Scan

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

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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 15.207
File: Conducted Final-Line.set
Operator: Matt Harrison
EUT Type: SW-ATT-DB.
EUT Condition: Transmitting 918.78 MHz.
Comments: Connected to Transformer and Doorbell.
Temp: 66f
Hum: 41%
120V 60Hz

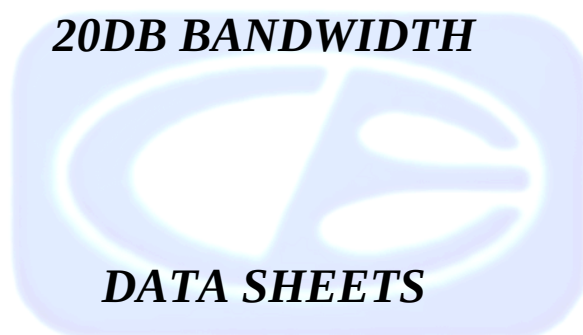
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Sequence: Final Measurements

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

Freq (MHz)	(AVG) Margin AVL (dB)	(QP) Margin QPL (dB)	(AVG) EMI (dB V)	(QP) EMI (dB V)	(PEAK) EMI (dB V)	(AVG) Limit (dB V)	(QP) Limit (dB V)	Transducer (dB)	Cable (dB)
28.29	-40.94	-43.93	9.06	16.07	24.71	50.00	60.00	0.35	0.66
28.55	-43.53	-45.61	6.47	14.39	24.73	50.00	60.00	0.35	0.66
28.79	-38.67	-41.86	11.33	18.14	25.24	50.00	60.00	0.36	0.67
29.04	-37.66	-41.26	12.34	18.74	24.95	50.00	60.00	0.37	0.68
29.54	-37.53	-41.43	12.47	18.57	25.29	50.00	60.00	0.39	0.69
29.79	-37.33	-41.81	12.67	18.19	24.85	50.00	60.00	0.39	0.69



20DB BANDWIDTH



DATA SHEETS



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

20 dB BANDWIDTH

FCC 15.247

Nortek
Door Chime Button
Model: SW-ATT-DB (HOPPING
MODE)

Date: 1/16/2015

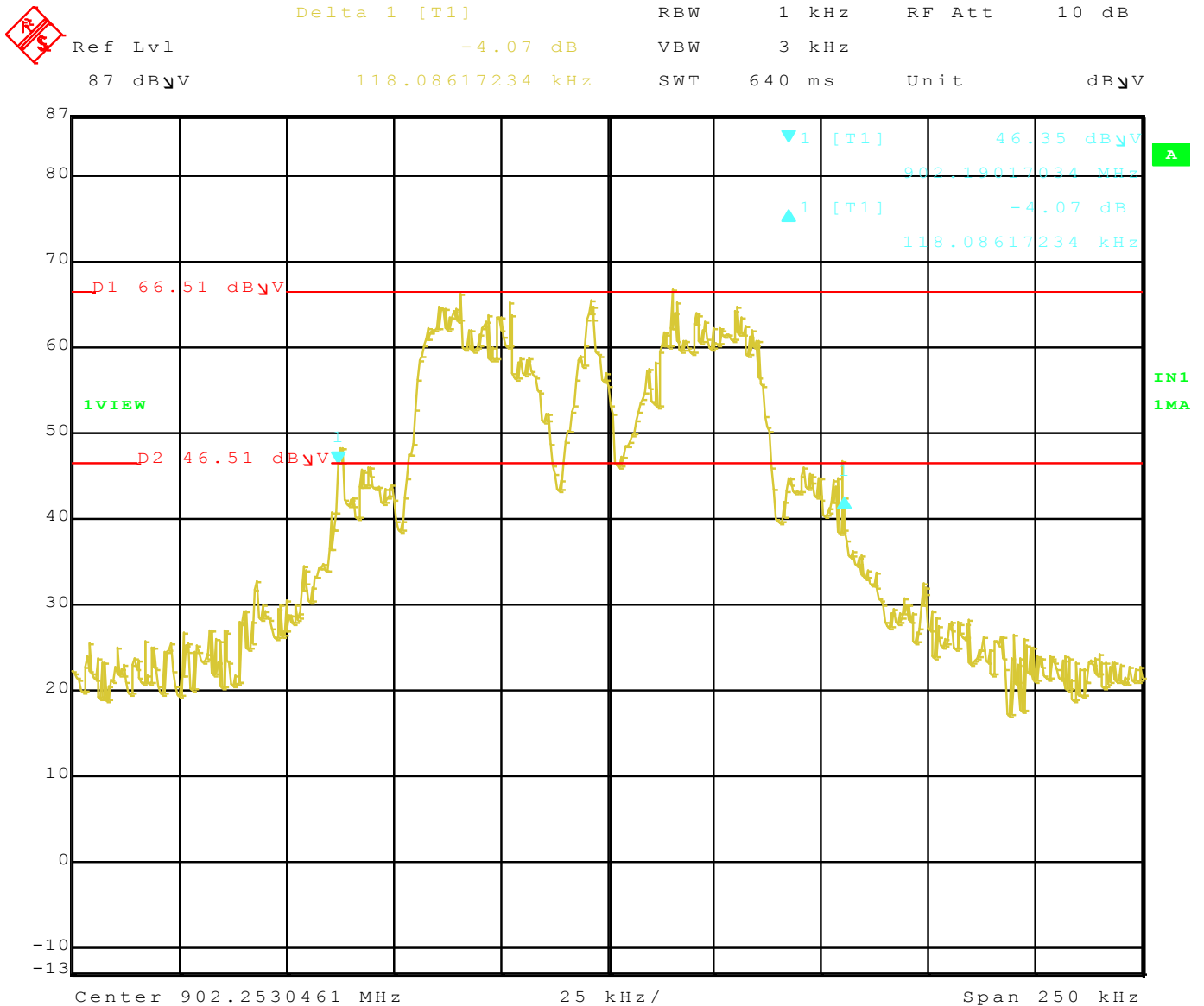
Lab: R

Tested By: M. Harrison

20dB Bandwidth

Freq. (MHz)	Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Comments
902.25	118.08	250.00	-131.92	
915.23	118.24	250.00	-131.76	
927.72	118.24	250.00	-131.76	





Title: SW-ATT-DB (Hopping)
Comment A: 20dB Bandwidth.
Date: 16.JAN.2015 09:09:08



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

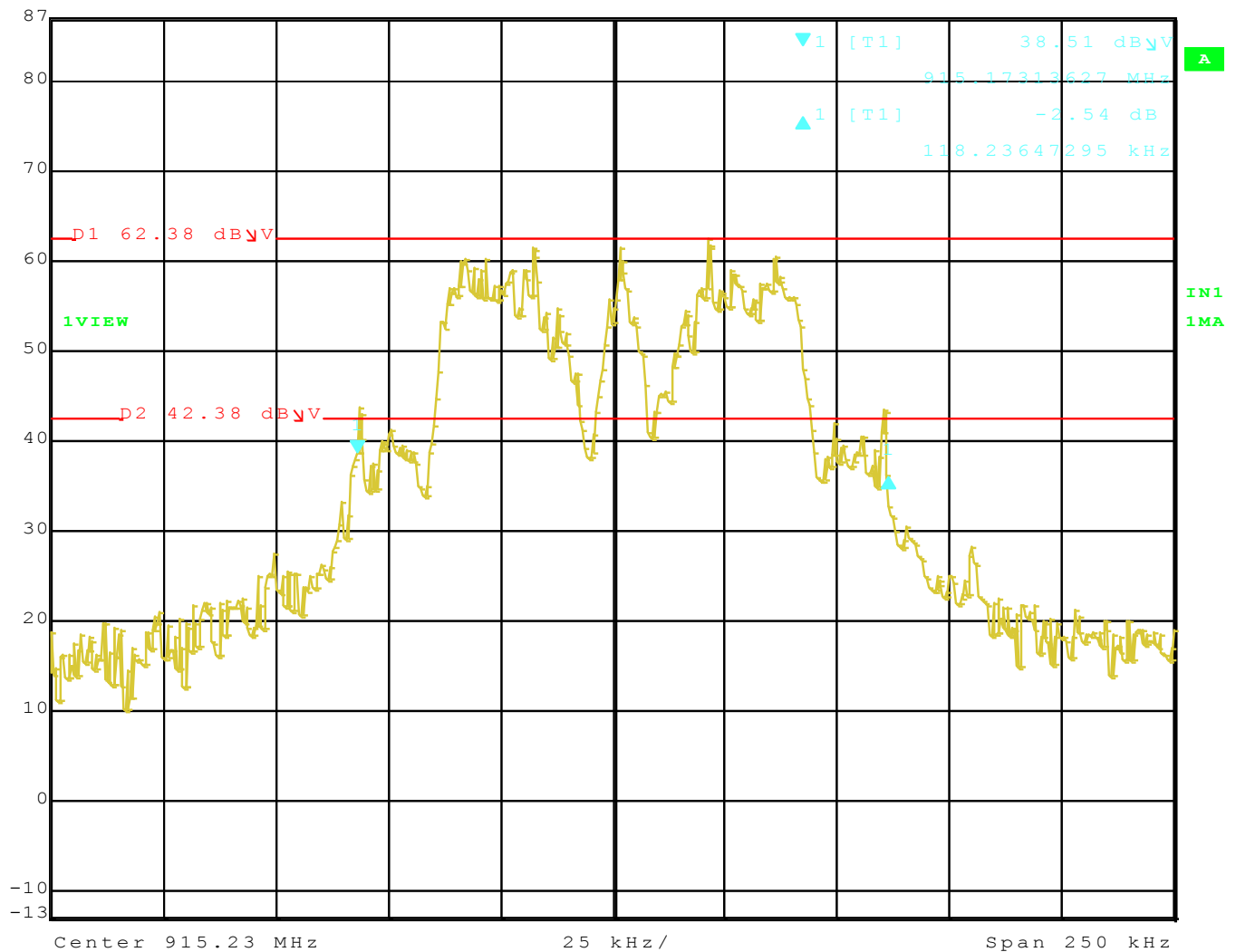
Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

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



Ref Lvl	Delta 1 [T1]	RBW	1 kHz	RF Att	10 dB
87 dBμV	-2.54 dB	VBW	3 kHz		
	118.23647295 kHz	SWT	640 ms	Unit	dBμV



Title: SW-ATT-DB (Hopping)
Comment A: 20dB Bandwidth, Middle Channel.
Date: 16.JAN.2015 09:19:45



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

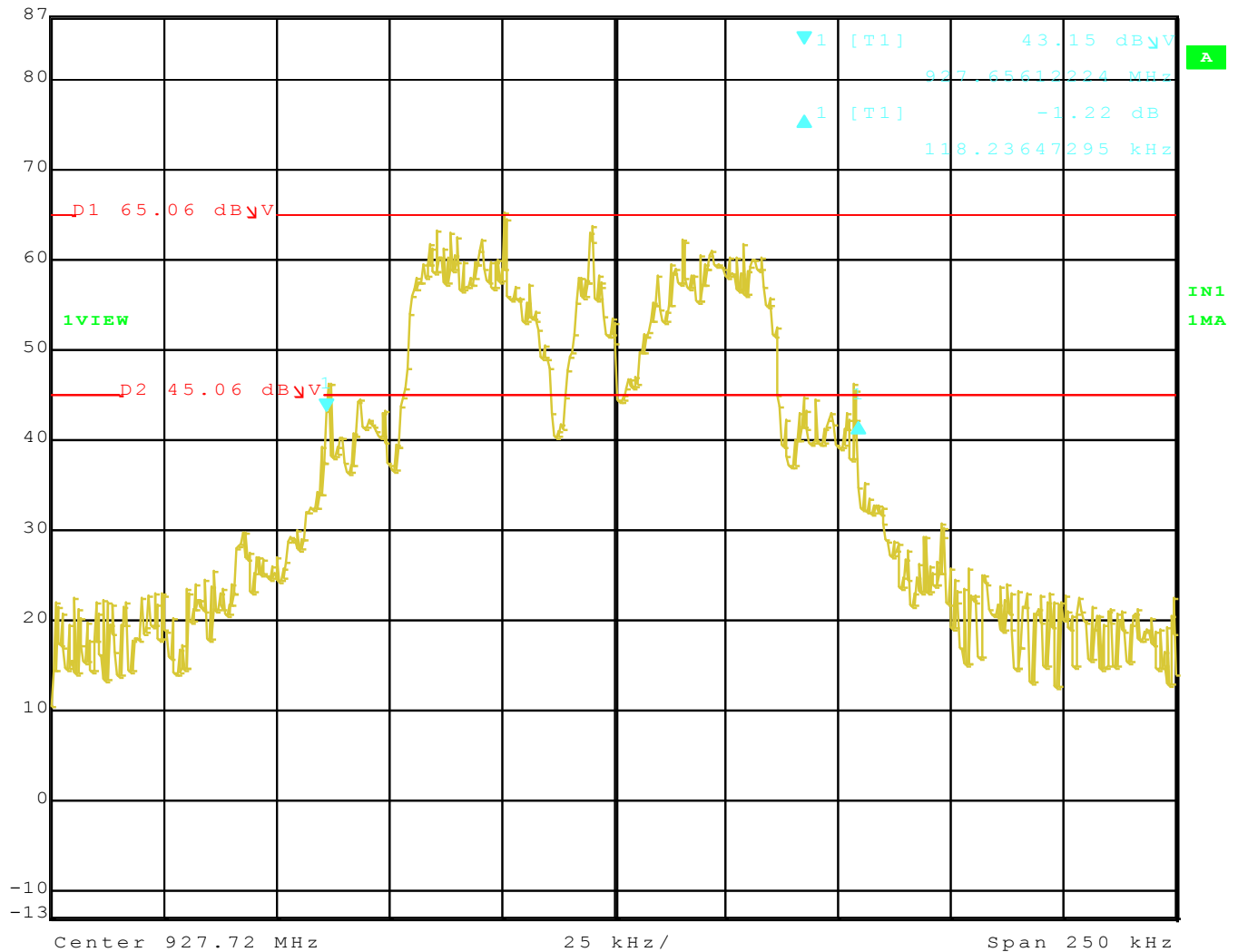
Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
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Lake Forest Division
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Lake Forest, CA 92630
(949) 587-0400



Ref Lvl	Delta 1 [T1]	RBW	1 kHz	RF Att	10 dB
87 dBμV	-1.22 dB	VBW	3 kHz		
	118.23647295 kHz	SWT	640 ms	Unit	dBμV



Title: SW-ATT-DB (Hopping)
Comment A: 20dB Bandwidth, High Channel.
Date: 16.JAN.2015 09:22:14



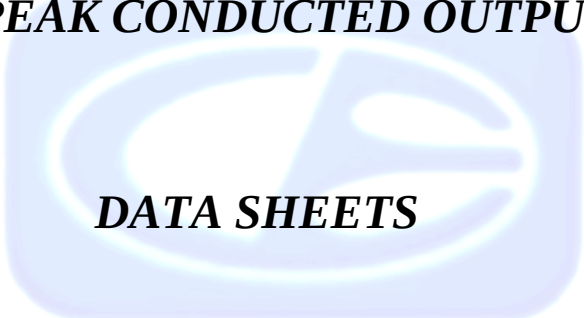
Brea Division
114 Olinda Drive
Brea, CA 92823
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Agoura Division
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MAXIMUM PEAK CONDUCTED OUTPUT POWER



DATA SHEETS



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(949) 587-0400

MAXIMUM PEAK CONDUCTED OUTPUT POWER

FCC 15.247

Nortek
Door Chime Button
Model: SW-ATT-DB
(HOPPING MODE)

Date: 4/9/2014
Lab: R
Tested By: M. Harrison

Freq. (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Peak / QP / Avg	Comments
902.25	10.36	30.00	-19.64	Peak	
915.23	9.16	30.00	-20.84	Peak	
927.72	10.24	30.00	-19.76	Peak	



***EMISSIONS IN RESTRICTED FREQUENCY BANDS (RADIATED
FIELD STRENGTH)
DATA SHEETS***



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

HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (Low Channel-Horizontal)

FCC 15.247

Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: M. Harrison

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

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1804.50	50.44	H	53.98	-3.54	Peak	1.18	0	
2706.75	52.33	H	53.98	-1.65	Peak	1.00	313	
3609.00	54.60	H	73.98	-19.38	Peak	1.08	360	
3609.00	33.75	H	53.98	-20.23	Avg	1.08	360	
4511.25	52.67	H	53.98	-1.31	Peak	1.07	195	
5413.50	46.36	H	53.98	-7.62	Peak	1.24	304	
6315.75	51.76	H	53.98	-2.22	Peak	1.00	140	
7218.00	50.57	H	53.98	-3.41	Peak	1.01	196	
8120.25	52.96	H	53.98	-1.02	Peak	1.00	243	
9022.50	50.12	H	53.98	-3.86	Peak	2.12	360	

Test distance
3 meter



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Brea, CA 92823
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Agoura, CA 91301
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19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

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

HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (Low Channel-Vertical)

FCC 15.247Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DBDate: 1/15/2015
Lab: R
Test ENG: M. Harrison**Compatible Electronics, Inc. FAC-3 (Lab R)**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1804.50	50.32	V	53.98	-3.66	Peak	2.06	106	
2706.75	55.75	V	73.98	-18.23	Peak	1.12	243	
2706.75	38.04	V	53.98	-15.94	Avg	1.12	243	
3609.00	63.54	V	73.98	-10.44	Peak	1.00	230	
3609.00	42.69	V	53.98	-11.29	Avg	1.00	230	
4511.25	50.94	V	53.98	-3.04	Peak	2.09	23	
5413.50	53.54	V	73.98	-20.44	Peak	1.15	205	
5413.50	32.62	V	53.98	-21.36	Avg	1.15	205	
6315.75	52.02	V	53.98	-1.96	Peak	1.00	140	
7218.00	50.69	V	53.98	-3.29	Peak	1.01	210	
8120.25	52.96	V	53.98	-1.02	Peak	1.41	213	
9022.50	56.38	V	73.98	-17.60	Peak	1.00	151	
9022.50	35.72	V	53.98	-18.26	Avg	1.00	151	

Test distance
3 meter**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

HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (Mid Channel-Horizontal)

FCC 15.247

Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: M. Harrison

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

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830.46	48.73	H	53.98	-5.25	Peak	1.05	0	
2745.69	54.07	H	73.98	-19.91	Peak	1.01	320	
2745.69	36.13	H	53.98	-17.85	Avg	1.01	320	
3660.92	56.04	H	73.98	-17.94	Peak	1.08	350	
3660.92	35.09	H	53.98	-18.89	Avg	1.08	350	
4576.15	51.56	H	53.98	-2.42	Peak			
5491.38	46.20	H	73.98	-27.78	Peak	1.42	190	
6406.61	51.94	H	53.98	-2.04	Peak	1.43	153	
7321.84	54.53	H	73.98	-19.45	Peak	1.13	200	
7321.84	33.77	H	53.98	-20.21	Avg	1.13	200	
8237.07	59.22	H	73.98	-14.76	Peak	1.09	150	
8237.07	38.78	H	53.98	-15.20	Avg	1.09	150	
9152.30	48.20	H	53.98	-5.78	Peak	1.66	304	

Test distance
3 meter



Brea Division
114 Olinda Drive
Brea, CA 92823
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HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (Mid Channel-Vertical)

FCC 15.247

Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: M. Harrison

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

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830.46	51.00	V	53.98	-2.98	Peak	1.00	20	
2745.69	55.60	V	73.98	-18.38	Peak	1.02	182	
2745.69	37.66	V	53.98	-16.32	Avg	1.02	182	
3660.92	63.71	V	73.98	-10.27	Peak	1.00	170	
3660.92	42.76	V	53.98	-11.22	Avg	1.00	170	
4576.15	49.24	V	53.98	-4.74	Peak	1.33	90	
5491.38	51.60	V	53.98	-2.38	Peak	1.35	190	
6406.61	52.59	V	53.98	-1.39	Peak	1.00	146	
7321.84	50.56	V	53.98	-3.42	Peak	1.72	360	
8237.07	62.16	V	73.98	-11.82	Peak	1.16	225	
8237.07	41.72	V	53.98	-12.26	Avg	1.16	225	
9152.30	48.35	V	53.98	-5.63	Peak	1.2	195	

Test distance

3 meter



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HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (High Channel-Horizontal)

FCC 15.247

Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: M. Harrison

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

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1855.44	37.95	H	53.98	-16.03	Peak	1.00	256	
2783.16	53.27	H	73.98	-20.71	Peak	1.00	323	
3710.88	55.10	H	73.98	-18.88	Peak	1.00	196	
3710.88	33.60	H	53.98	-20.38	Avg	1.00	196	
4638.60	49.99	H	53.98	-3.99	Peak	1.07	204	
5566.32	47.52	H	53.98	-6.46	Peak	1.30	203	
6494.04	53.13	H	73.98	-20.85	Peak	1.41	138	
6494.04	32.60	H	53.98	-21.38	Avg	1.41	138	
7421.76	52.09	H	53.98	-1.89	Peak	1.21	205	
8349.48	60.42	H	73.98	-13.56	Peak	1.30	170	
8349.48	40.31	H	53.98	-13.67	Avg	1.30	170	
9277.20	54.62	H	73.98	-19.36	Peak	1.02	216	
9277.20	33.22	H	53.98	-20.76	Avg	1.05	216	

Test distance
3 meter



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HARMONIC EMISSIONS IN RESTRICTED FREQUENCY BANDS (High Channel-Vertical)

FCC 15.247

Company: Nortek
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: M. Harrison

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

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1855.44	52.03	V	53.98	-1.95	Peak	1.06	50	
2783.16	56.99	V	73.98	-16.99	Peak	1.11	150	
2783.16	35.88	V	53.98	-18.10	Avg	1.11	150	
3710.88	61.58	V	73.98	-12.40	Peak	1.14	168	
3710.88	40.08	V	53.98	-13.90	Avg	1.14	168	
4638.60	48.52	V	53.98	-5.46	Peak	2.00	16	
5566.32	44.91	V	53.98	-9.07	Peak	1.28	204	
6494.04	54.05	V	73.98	-19.93	Peak	1.05	173	
6494.04	33.52	V	53.98	-20.46	Avg	1.05	173	
7421.76	51.06	V	53.98	-2.92	Peak	2.15	360	
8349.48	62.31	V	73.98	-11.67	Peak	1.00	218	
8349.48	42.20	V	53.98	-11.78	Avg	1.00	218	
9277.20	57.82	V	73.98	-16.16	Peak	1.07	150	
9277.20	36.42	V	53.98	-17.56	Avg	1.07	150	

Test distance
3 meter



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***EMISSIONS OUTSIDE OF THE FUNDAMENTAL FREQUENCY
BAND AT BAND EDGES
DATA SHEETS***



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BAND EDGES HORIZONTAL

FCC 15.247

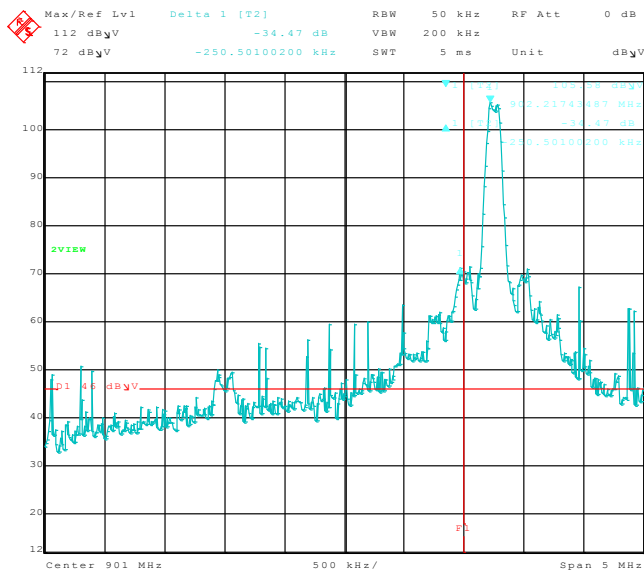
Company: Nortek.
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: Matt Harrison

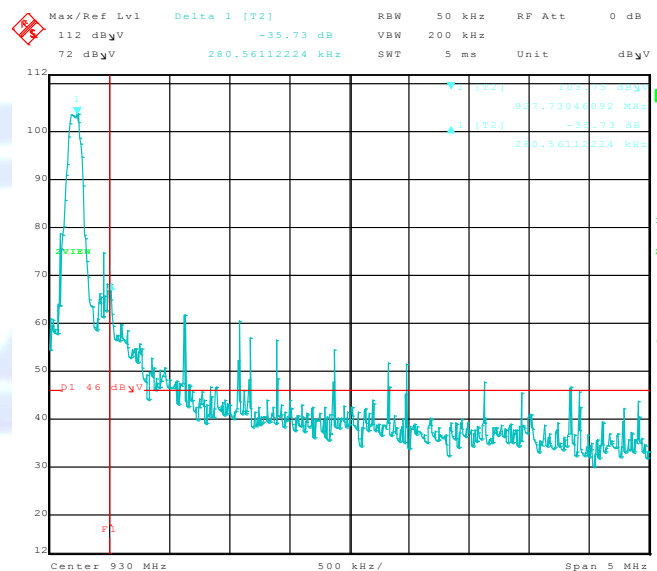
Compatible Electronics, Inc. FAC-3 (Lab R)

Freq. (MHz)	Level (dBμV)	Margin (dB)	Limit (dBμV)	Pol	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
901.96	-34.47	-20.00	-14.47	H	Peak	1.00	155	No Marker Delta Method Used
928.01	-35.73	-20.00	-15.73	H	Peak	1.00	150	No Marker Delta Method Used

Test distance
3 meter



Title: SW-ATT-DB.
Comment A: Lower Band Edge, Horizontal.
Date: 15.JAN.2015 10:13:21



Title: SW-ATT-DB.
Comment A: Upper Band Edge, Horizontal.
Date: 15.JAN.2015 10:01:13



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BAND EDGES VERTICAL

FCC 15.247

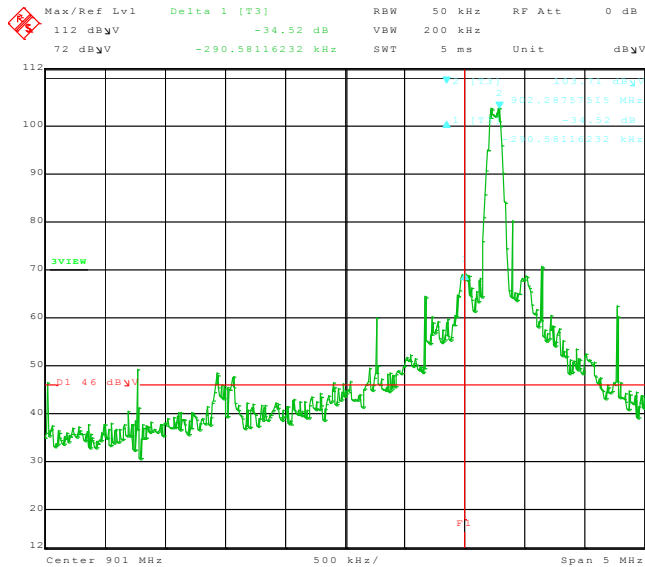
Company: Nortek.
EUT: Door Chime Button
Model: SW-ATT-DB

Date: 1/15/2015
Lab: R
Test ENG: Matt Harrison

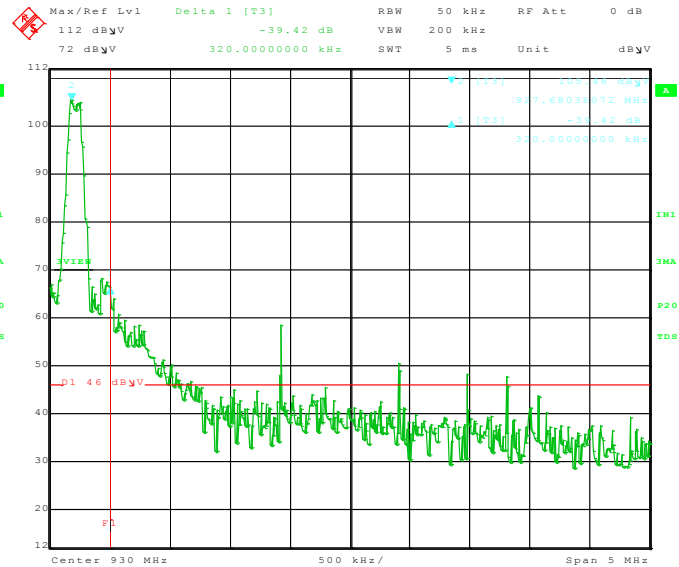
Compatible Electronics, Inc. FAC-3 (Lab R)

Freq. (MHz)	Level (dBμV)	Margin (dB)	Limit (dBμV)	Pol	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
901.99	-34.52	-20.00	-14.52	V	Peak	1.10	133	No Marker Delta Method Used
928.00	-39.42	-20.00	-19.42	V	Peak	1.10	133	No Marker Delta Method Used

Test distance
3 meter



Title: SW-ATT-DB.
Comment A: Lower Band Edge, Vertical.
Date: 15.JAN.2015 10:12:20



Title: SW-ATT-DB.
Comment A: Upper Band Edge, Vertical.
Date: 15.JAN.2015 09:58:48



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***CHANNEL SEPARATION
DATA SHEETS***



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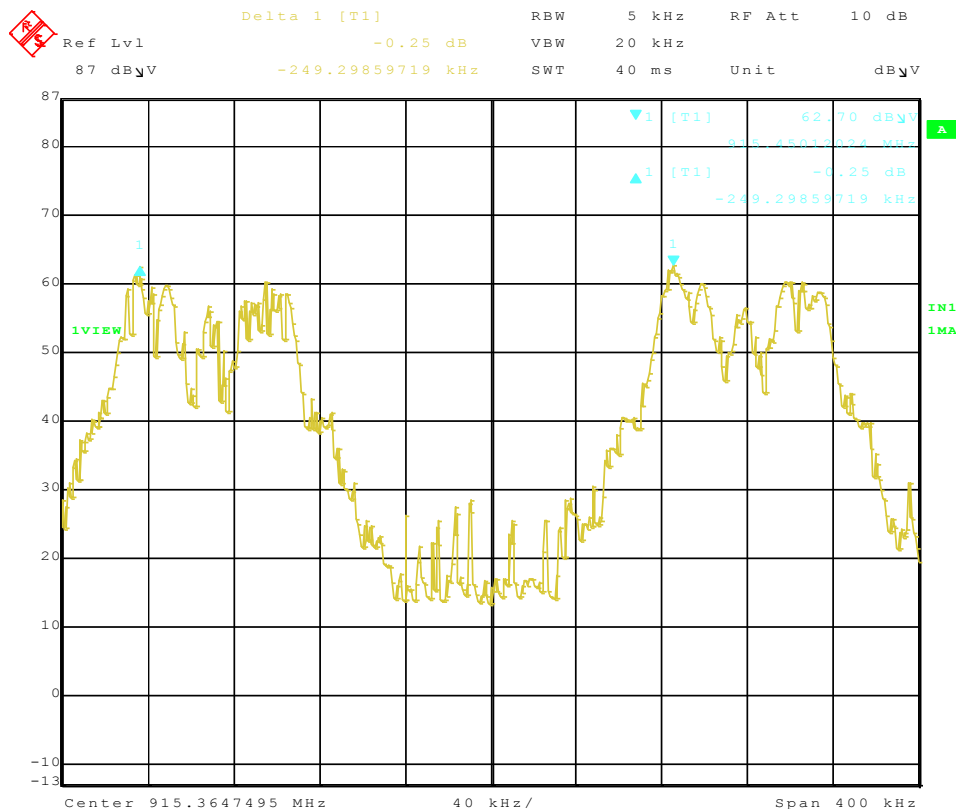
CHANNEL SEPARATION

FCC 15.247

Company: Nortek	Date: 1/16/2015
EUT: Door Chime Button	Lab: R
Model: SW-ATT-DB	Test ENG: Matt Harrison

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

Freq. (MHz)	Delta (kHz)	Limit (Min) (kHz)	Margin (kHz)	Comments
915.36	249.30	118.24	131.06	



Title: SW-ATT-DB (Hopping)
Comment A: Carrier Frequency Separation.
Date: 16.JAN.2015 09:38:20



***TIME OF OCCUPANCY
DATA SHEETS***



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TIME OF OCCUPANCY

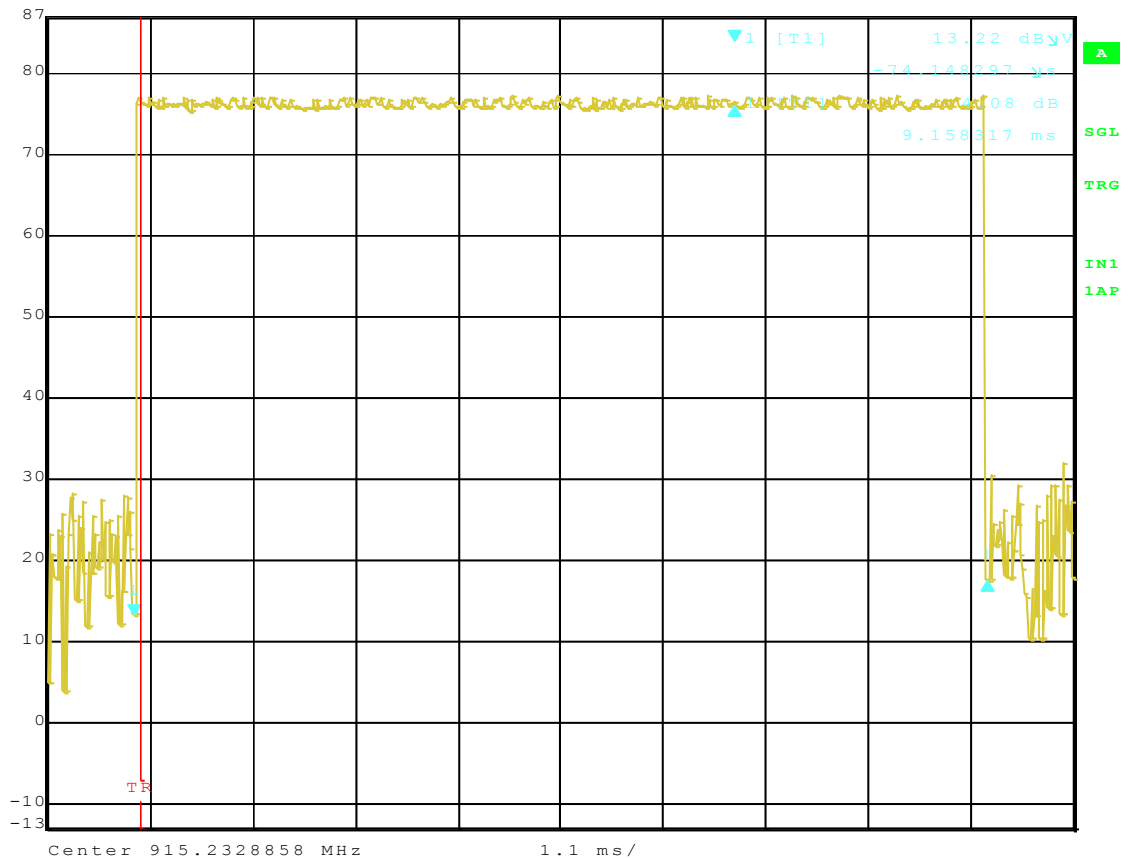
FCC 15.247

Company:	Nortek	Date:	1/16/2015
EUT:	Door Chime Button	Lab:	R
Model:	SW-ATT-DB	Test ENG:	Matt Harrison

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

Freq. (MHz)	Time (mS)	Limit (mS)	Margin (mS)	Comments
915.23	146.53	400.00	-253.47	


 Delta 1 [T1] RBW 1 MHz RF Att 10 dB
 Ref Lvl 4.08 dB VBW 3 MHz
 87 dBμV 9.158317 ms SWT 11 ms Unit dBμV



Title: SW-ATT-DB (Hopping)
 Comment A: Time Of Occupancy
 Date: 16.JAN.2015 09:48:01

Pulse Width = 9.15837 mS



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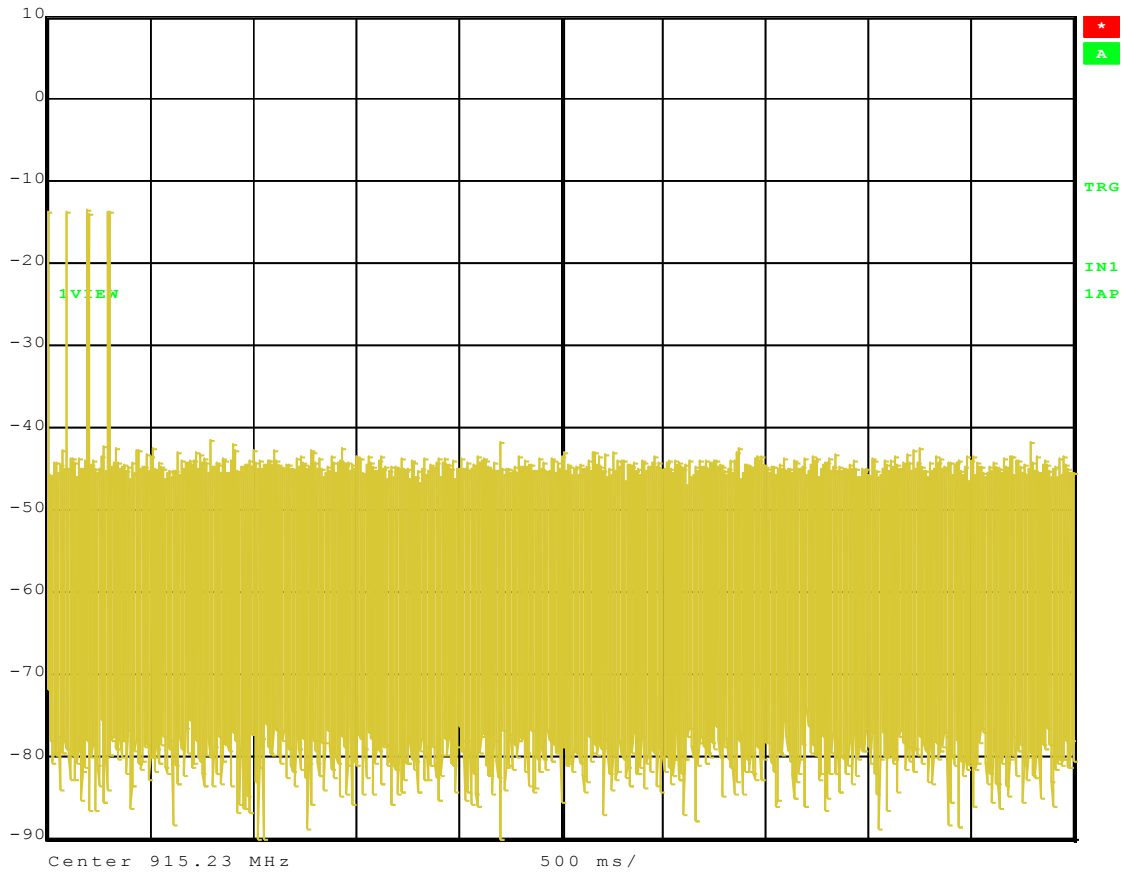
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Ref Lvl
10 dBm

RBW 10 kHz RF Att 60 dB
VBW 30 kHz
SWT 5 s Unit dBm



Title: SW-ATT-DB.
Comment A: Time Of Occupancy.
Date: 16.JAN.2015 15:12:05

Number of Pulses in 5 Seconds = 4
Number of Pulses in 20 Seconds = 4*4= 16 Pulses in a 20 Second Period
Time Of Occupancy = 16 * 9.158317mS = 146.5331mS per 20 Second Period



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***HOPPING CHANNELS
DATA SHEET***



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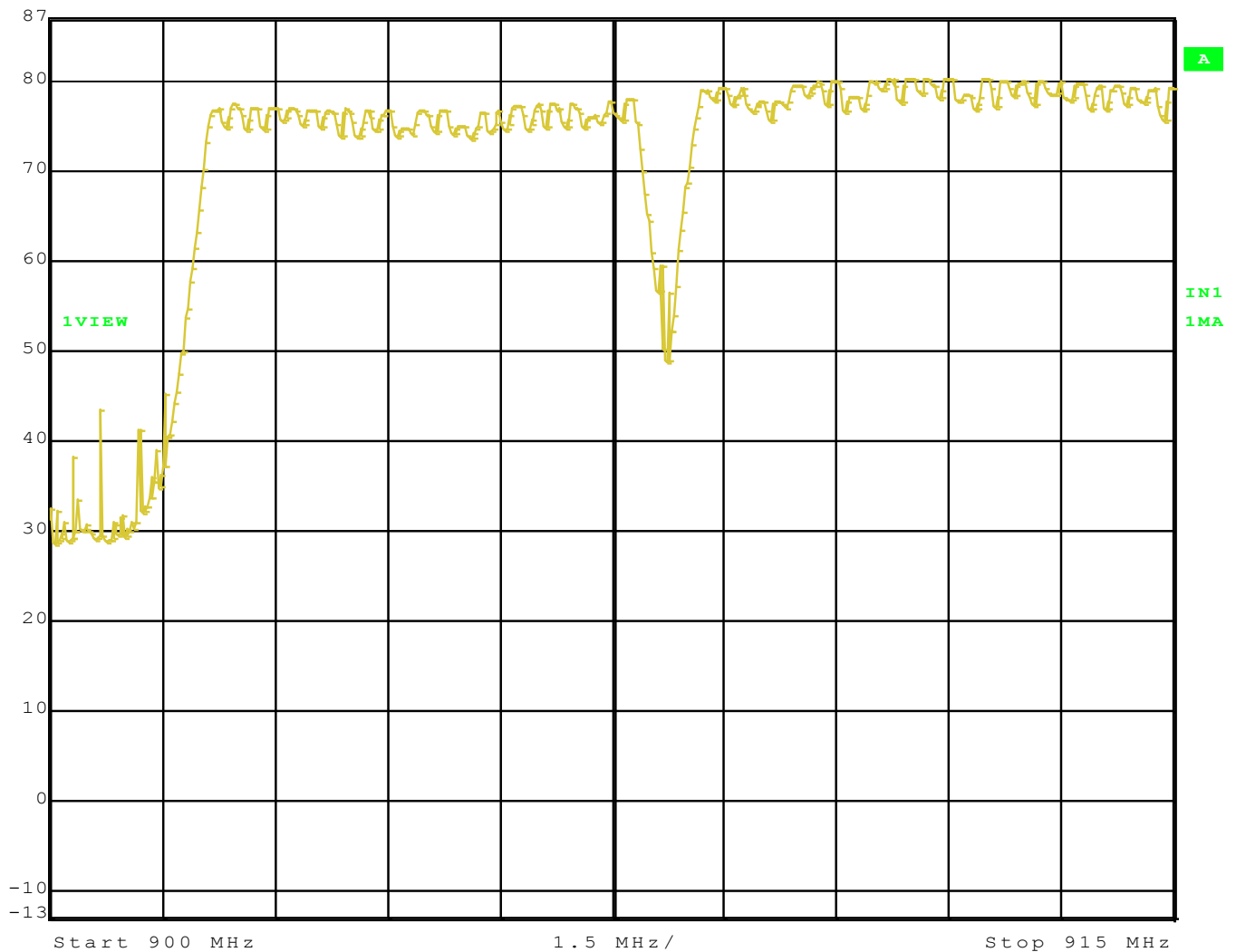
Ref Lvl

87 dBμV

RBW 200 kHz RF Att 10 dB

VBW 1 MHz

SWT 5 ms Unit dBμV



Title: SW-ATT-DB.

Comment A: Hopping Channels.

Date: 26.FEB.2015 15:08:35



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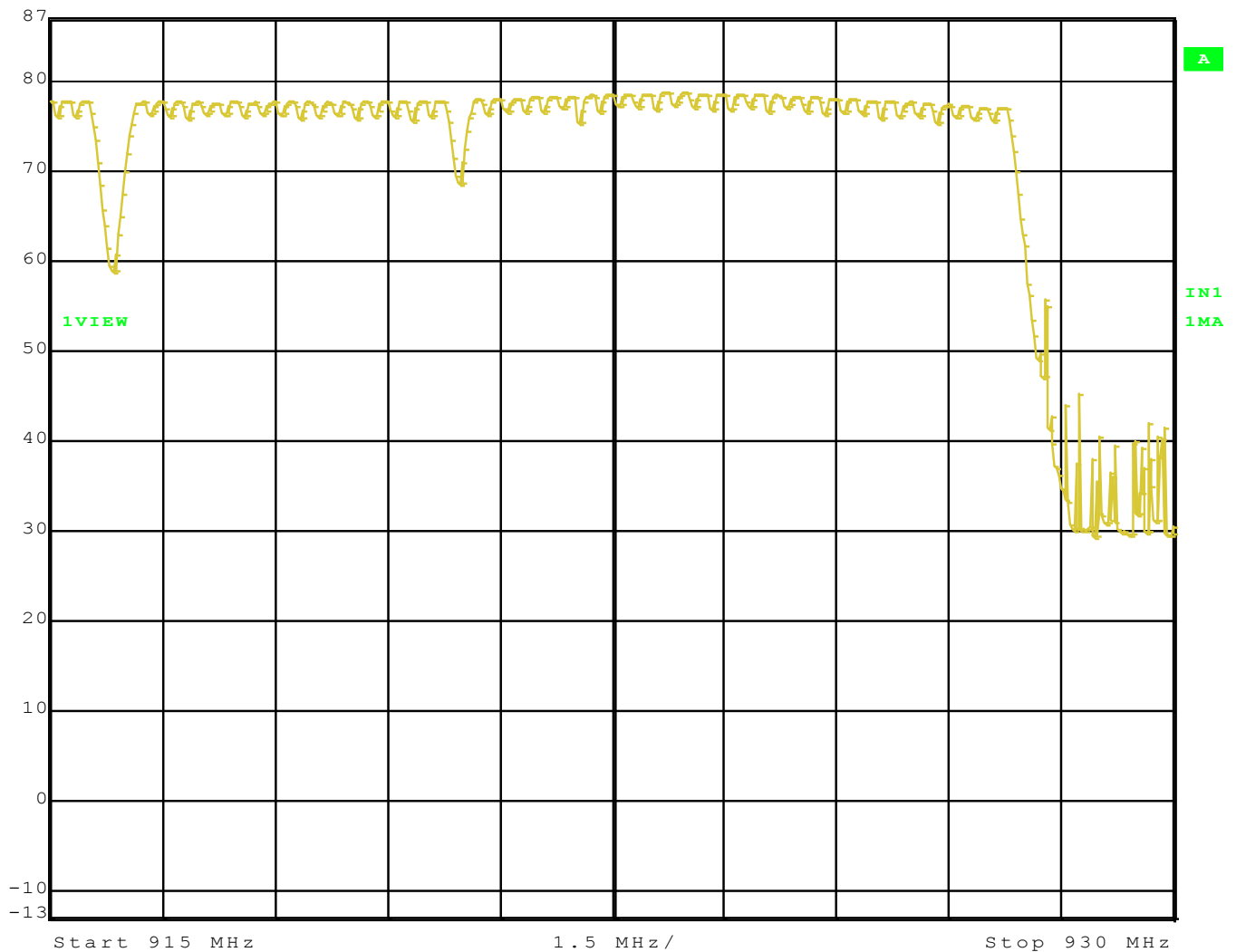
Ref Lvl

87 dBμV

RBW 200 kHz RF Att 10 dB

VBW 1 MHz

SWT 5 ms Unit dBμV



Title: SW-ATT-DB.

Comment A: Hopping Channels.

Date: 26.FEB.2015 15:20:21



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