EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

FCC PART 15.247, SUBPART C
IC RSS 210, ISSUE 8
TEST REPORT

for

the

IN HOME GATEWAY

MODEL: BDG-A100

Prepared for

Bidgely, Inc.
298 S. Sunnyvale Ave, Ste 205
Sunnyvale, CA 94086

Prepared by: George Hsu
GEORGE HSU

Approved by: Kevin Bothmann
KEVIN BOTHMANN

ELECTRO MAGNETIC TEST, INC.
1547 PLYMOUTH STREET
MOUNTAIN VIEW, CALIFORNIA 94043
(650) 965-4000

DATE: JULY 14, 2014

	REPORT BODY	APPENDICES				TOTAL
		A	***B***	***C***	***D***	
PAGES	28	34	3	2	2	**69**

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

TABLE OF CONTENTS

EMT
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EMT ELECTRO MAGNETIC TEST, INC.
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LIST OF APPENDICES

LIST OF FIGURES

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification 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.

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

The measurement data and conclusions contained in this test report are deemed satisfactory evidence of compliance with Industry Canada Interference-Causing Equipment Standard ICES-003, Issue 5, August 2012.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "A"	-
	Telecom Conducted Emissions Test Site "A"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

*These agencies do not issue an identifying number to test labs.

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GENERAL REPORT SUMMARY (CONTINUED)

Device Tested: In Home Gateway
Model: BDG-A100
S/N: N/A

Product Description: The In-home Gateway is part of an energy management system for residential consumers. The product connects to a Zigbee enabled Smart Energy Meter and Bidgely's cloud using a wired Ethernet connection. The product collects data from the Smart Energy Meter and sends it to the cloud.

Modifications: The EUT was not modified during the testing.

Manufacturer: Bidgley, Inc.
298 S. Sunnyvale Ave, Ste 205
Sunnyvale, CA 94086

Test Date(s): June 18, 19, 30, July,7, and 8, 2014

Test Specifications: EMI requirements
Limits: FCC Title 47, Part 15 Subpart C
Test Procedure: ANSI C63.4: 2009

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	FCC STANDARD	IC STANDARD	REMARKS	RESULTS
7.1	Radiated Emissions (General Requirements and Emissions in Restricted Freqeuency Bands)	15.209, 15.247	RSS-GEN Issue 3, [6.1] RSS 210 Issue 8[A2.6]	Radiated	**PASS**
7.2	Conducted Emissions	15.207(a)	IC RSS-GEN Issue 3 [7.2.4]	Conducted	**PASS**
7.3	Occupied Bandwidth	15.247(a)(2)	RSS 210 Issue 8, [A8.2] IC RSS-GEN Issue 3 [4.6]	Conducted	**PASS**
7.4	Maximum Peak Output Power	15.247 (b)	RSS 210 Issue 8, [A8.4]	Conducted	**PASS**
7.5	Maximum Peak Power Spectral Density	15.247(e)	RSS 210 Issue 8, [A8.2]	Conducted	**PASS**
7.6	Emissions in Non-Restricted Frequency Bands	15.247(d)	RSS 210 Issue 8, [A8.5]	Conducted	**PASS**
7.7	Bandedge	15.247(d)	RSS 210 Issue 8, [A8.5]	Conducted	**PASS**
7.8	Antenna Requirement	15.203,15.247(b)(4))	IC RSS-GEN Issue 3 [7.1.2]	N/A	**PASS**

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TECHNICAL DESCRIPTION OF THE EUT

Manufacturer:	Bidgley, Inc.
Manufacturer Address:	298 S. Sunnyvale Ave, Ste 205, Sunnyvale, CA 94086
EUT Name:	In Home Gateway
Model No:	BDG-A100
Operation frequency:	2405 MHz to 2480 MHz
Channel Number:	16
Modulation Technology:	DSSS
Antenna Type:	Internal Antenna
Antenna Gain:	0.5 dB
Maximum Output Power:	17.48 dBm

Description of Channel:

Zigbee

Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

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1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the In Home Gateway Model: BDG-A100. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2009. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined in FCC Title 47, Part 15, Subpart C.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Electro Magnetic Test, Inc., 1547 Plymouth Street, Mountain View, California, 94043.

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 measurement results in this report and the calibration of the test equipment are traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Bidgley, Inc.

Daidipya Patwa	Product Manager

Electro Magnetic Test, Inc.

David Vivanco	Test Technician
George Hsu	Test Technician
Kevin Bothmann	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on June 16, 2014.

2.5 Disposition of the Test Sample

The test sample has not yet been returned to Bidgely, Inc..

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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
CISPR	International Special Committee On Radio Interference
FCC	Federal Communications Commission

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3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15, Subpart C	FCC Rules - Radio frequency devices (including digital devices).
RSS 210, Issue 8, December 2010	Licence-exempt Radio Apparatus (All Frequency Bands): Category 1 Equipment
RSS-Gen Issue 3, December 2010	General Requirements and Information for the Certification of Radio Apparatus
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.
FCC Publication KDB558074	Guidance for Performing Compliance Measurments on Digital Transmissions Systems (DTS) Operating Under 15.247, June 5, 2014

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4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – EMI

The In Home Gateway was connected to a remote network switch via its Ethernet port. The network switch was connected to a remote pc via its Ethernet port. During testing the Zigbee radio was continuously transmitting and the remote PC was pinging to the EUT.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The cables were moved to maximize the emissions. The final conducted as well as radiated data was taken in this mode of operation. All initial investigations were performed with the EMI receiver in manual mode scanning the frequency range continuously. The cables were bundled and routed as shown in the photographs in Appendix B.

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4.1.1 Cable Construction and Termination

Cables #1

This is a 50 foot unshielded Ethernet cable connecting the EUT to a Ethernet Switch. It has plastic RJ45 connectors on both ends of the cable

Cable #2

This is a 5 ft. unshielded power cable connecting the EUT to its AC power supply. It has a 1/4 inch round power connector on the EUT end and is hardwired into the AC power supply.

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5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID
IN HOME GATEWAY (EUT)	BIDGLEY, INC.	BDG-A100	N/A	N/A
AC ADAPTER	DVE	DSA-6PFE-05FUS	N/A	DoC
THE FOLLOWING WERE LOCATED OUTSIDE THE TEST SITE:				
REMOTE ETHERNET SWITCH	NETGEAR	GS108Tv2	29SA375E0105A	DoC
REMOTE ETHERNET SWITCH POWER SUPPLY	NETGEAR	MT12-Y120100-A1	N/A	DoC
REMOTE LAPTOP COMPUTER	MARASST TECHNOLOGY	ATM2810	N/A	DoC
REMOTE LAPTOP POWER SUPPLY	ASIAN POWER DEVICES	NB-90B19	N/A	DoC

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5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	July 30, 2013	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	July 29, 2013	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00451	July 29, 2013	1 Year
Radiated EMI Software	Sector Design	N/A	Ver.1.4.6	N/A	N/A
Conducted EMI Software	Hewlett Packard	85869PC	Ver. A.02.03	N/A	N/A
Preamplifier	Com Power	PA-102	1482	March 4, 2014	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 19, 2013	1 Year
LISN	Com Power	LI-200	12012	October 1, 2013	1 Year
LISN	Com Power	LI-200	12214	October 1, 2013	1 Year
LISN	Com Power	LI-200	1767	October 1, 2013	1 Year
LISN	Com Power	LI-200	1768	October 1, 2013	1 Year
Biconical Antenna	Com Power	AB-100	01557	July 8, 2014	1 Year
Log Periodic Antenna	Com Power	AL-100	16001	June 27, 2013	1 Year
Horn Antenna	Com Power	AHA-118	711054	N/A	N/A
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39A220ZD	N/A	N/A

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5.2 EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	January 3, 2014	1 Year
EMI Test Software	Rohde & Schwarz	EMC32	V8.40.0	N/A	N/A
Passive Loop Antenna (9 KHz – 30 MHz)	ETS-Lindgren	6512	00128210	October, 28, 2010	4 Years
BiConiLog Antenna (30 MHz – 1 GHz)	ETS-Lindgren	3142D	00109337	August 23, 2013	1 Year
Horn Antenna (1 GHz – 18 GHz)	ETS-Lindgren	3117	00109294	July 24, 2013	1 Year
Preamplifier (1 GHz – 18 GHz)	Rohde & Schwarz	TS-PR18	100056	December 20, 2013	1 Year
Horn Antenna (18 GHz – 26.5 GHz)	ETS-Lindgren	3160-09	102646	April 22, 2014	1 Year
Preamplifier (18 GHz – 26.5 GHz)	Rohde & Schwarz	TS-PR26	100034	April 23, 2014	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Dell, Inc.	OPTIPLEX 745	4T50WC1	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A

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6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to the table below and section 7 of this report for the details of which sites were used for testing. All sites are located at 1547 Plymouth Street, Mountain View, California 94043.

Site Used For Test	Site Description
	Open Field Test Site "A"
X	Mains Conducted Emissions Test Site "A"
	Telecom Conducted Emissions Test Site "A"
X	3 Meter Semi-Anechoic Chamber Site "E"
	Mains Conducted Emissions Test Site "E"
	Telecom Conducted Emissions Test Site "E"

6.2 EUT Mounting, Bonding and Grounding

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

The EUT was not grounded.

6.3 Facility Environmental Characteristics

All tests were performed in a climate controlled building. The temperature was 22° C, humidity 45%, and barometric pressure 102.6 kPa.

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7. TEST PROCEDURES

7.1 Radiated Emissions Test – Semi-Anechoic Chamber

7.1.1 General Requirements Limit (FCC PART 15 Section 15.209(a)(1), IC-RSS-GEN Issue 3, [6.1])

Frequency of Emission (MHz)	Field Strength		Measurement Distance (Meters)
	µV/m	dBµV/m	
0.009-0.49	2400/F(kHz)		300
0.49-1.705	24000/F(kHz)		30
1.705-30	30		30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

7.1.2 Emissions in Restricted Bands Limit (FCC PART 15 Section 15.247(d), RSS 210 Issue 8[A2.6])

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Limit
See General Limits Requirement In Above Chart

7.1.3 Test Procedure

The Rohde & Schwarz ESU40 EMI receiver was used as a measuring meter while under software control by the Rohde & Schwarz EMC32 software. To increase the sensitivity of the instrument, the built in preamplifier was used from 9 KHz to 1 GHz and an external

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preamplifier was used from 1 GHz to 26.5 GHz. The EMI receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI receiver records the highest measured reading over all the sweeps. The built in quasi-peak or average detector was used only for those readings which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was 100 kHz from 9 kHz to to 26.5 GHz.

The Loop Antenna, Broadband BiConiLog and horn antennas were used as transducers during the measurement. The Loop antenna was used from 9 KHz to 30 MHz, the BiConiLog antenna was used from 30 MHz to 1000 MHz and horn antennas were used from 1GHz – 26.5 GHz. The frequency spans were wide (9 kHz to 150 kHz, 150 kHz to 30 MHz, 30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz, 300 MHz to 1 GHz, 1 GHz to 18 GHz and 18 GHz to 26.5 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

The 5 meter semi-anechoic chamber of Electro Magnetic Test, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2009. 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. The EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

The presence of non EUT signals was verified by turning the EUT off. In case a non EUT signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the other signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance from 9 kHz to 26.5 GHz. to obtain final test data.

Calculation Of Radiated Emission Test Data:

Amplitude - Gain + Antenna Factor + Cable Loss = Corrected Amplitude

Corrected Amplitude - Limit = Margin

7.2 Conducted Emissions Test – Mains Ports

7.2.1 Limit (FCC PART 15 Section 15.207(a), IC RSS-GEN Issue 3 [7.2.4])

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Note: Decreases with the logarithm of the frequency

7.2.2 Test Procedure

The HP 8566B spectrum analyzer was used as a measuring meter along with the HP 85650A quasi-peak adapter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak detector was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the spectrum analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the HP 8566B spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2009. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.15 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable and peripheral placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The final data was collected under program control by the HP 85869PC software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave.

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7.3 Occupied Bandwidth

7.3.1 Limit (FCC PART 15 Section 15.247(a)(2), IC-RSS 210 Issue 8, [A8.2], IC RSS-GEN Issue 3 [4.6])

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

Limit
6 dB Bandwidth ≥ 500 kHz

7.3.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 100 kHz
VBW: ≥ 3 X RBW
Detector: Peak
Trace Mode: Max Hold

(1) When the trace is completed, mark the peak value

(2) Measure the 6db bandwidth using Xdb down function, If this does not encompass the full bandwidth, then "Measure the maximum width of the emission that is constraiended by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission"

7.3.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.4 Maximum Peak Output Power

7.4.1 Limit (FCC PART 15 Section 15.247(b)(3), IC-RSS 210 Issue 8, [A8.4])

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Limit
Maximum Peak Output Power (Digital Modulation) ≤ 1Watt or 30 dBm

7.4.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator and set the Spectrum Analyzer as below:

RBW > DTS Bandwidth
VBW ≥ 3 x RBW
Span ≥ 3 * RBW
Detector: Peak
Trace Mode: Max Hold

(1) When the trace is completed, mark the peak value

7.4.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

7.5 Maximum Peak Power Spectral Density

7.5.1 Limit (FCC PART 15 Section 15.247(e), IC-RSS 210 Issue 8, [A8.2])

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density

Limit
8 dBm

7.5.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator and set the Spectrum Analyzer as below:

3 kHz ≤ RBW ≤ 100 kHz
VBW ≥ 3 x RBW
Span ≥ 1.5 * DTS Bandwidth
Detector: Peak
Sweep Time auto

(1) Use Peak Marker Function

(2) If value Exceeds limit, reduce RBW (no less than 3 kHz)

7.5.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

7.6 Emissions in Non-Restricted Frequency Bands

7.6.1 Limit (FCC PART 15 Section 15.247(d), IC-RSS 210 Issue 8, [A8.5])

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Limit
20db Below Peak Power Spectral Density
30db Below Average Power Spectral Density

7.6.2 Test Procedure

(1) Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 100 KHz
VBW: ≥ 3 x RBW
Detector: Peak
Trace Mode: Max Hold
Span ≥ 1.5 DTS Bandwidth

(2) Set Frequency Span to DTS Channel Center Frequency

(3) Use Peak Marker Function, This is your reference PSD

RBW: 100 KHz
VBW: ≥ 3 x RBW
Detector: Peak
Trace Mode: Max Hold

(4) Set Span to encompass frequency range

(5) Report 3 highest emissions

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7.6.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

7.7 Bandedge

7.7.1 Limit (FCC PART 15 Section 15.247(d), IC-RSS 210 Issue 8, [A8.5])

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Limit
20db Below Peak Power Spectral Density
30db Below Average Power Spectral Density

7.7.2 Test Procedure

(1) Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 100 KHz
VBW: ≥ 3 x RBW
Detector: Peak
Trace Mode: Max Hold
Span ≥ 1.5 DTS Bandwidth

(2)Set Frequency Span to DTS Channel Center Frequency

(3)Use Peak Marker Function, This is your reference PSD

RBW: 100 KHz
VBW: ≥ 3 x RBW
Detector: Peak
Trace Mode: Max Hold

(4) Set Span to encomapass the bandedge

(5) Report 3 highest emissions

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7.7.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.8 Antenna Requirement

7.8.1 Requirement (FCC PART 15 SECTION 15.203,15.247(b)(4), IC RSS-GEN Issue 3 [7.1.2])

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.8.2 Test Result

The antenna is integrated on the main PCB with no consideration for replacement on the In Home Gateway.

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8. CONCLUSIONS / COMPLIANCE STATEMENT

Based upon the results contained in this report, Electro Magnetic Test, Inc. has determined that the In Home Gateway, Model: BDG-A100 meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C.

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APPENDIX A

RADIATED AND CONDUCTED DATA SHEETS

EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	9 KHz to 30 MHz

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators were attenuated more than 20 dB below the permissible value

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Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	30 MHz to 1 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.34	31.5	124.0	Vertical	38.0	12.1	8.50	40.00
50.01	31.9	100.0	Vertical	0.0	9.0	8.10	40.00
180.00	37.9	100.0	Vertical	0.0	11.4	5.60	43.50
360.03	41.3	100.0	Horizontal	270.0	16.8	4.70	46.00
360.03	43.5	167.0	Vertical	315.0	16.8	2.50	46.00
540.03	44.2	163.0	Horizontal	270.0	21.9	1.80	46.00
720.03	41.4	194.0	Vertical	87.0	25.3	4.60	46.00
900.03	42.8	120.0	Vertical	164.0	28.5	3.20	46.00

Quasipeak Measurement:

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.34	24.8	124.0	Vertical	38.0	12.1	15.20	40.00
50.01	29.4	100.0	Vertical	0.0	9.0	10.60	40.00
180.00	36.8	100.0	Vertical	0.0	11.4	6.70	43.50
360.03	40.7	100.0	Horizontal	270.0	16.8	5.30	46.00
360.03	42.9	167.0	Vertical	315.0	16.8	3.10	46.00
540.03	43.4	163.0	Horizontal	270.0	21.9	2.60	46.00
720.03	39.5	194.0	Vertical	87.0	25.3	6.50	46.00
900.03	40.2	120.0	Vertical	164.0	28.5	5.80	46.00

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Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee, Channel 11	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4809.807	64.5	100.0	Horizontal	212.0	6.4	9.49	74.00
4809.807	62.4	100.0	Vertical	193.4	6.4	11.55	74.00
7214.710	60.0	154.7	Horizontal	47.0	9.5	13.98	74.00
7214.710	63.7	100.0	Vertical	304.6	9.5	22.72	74.00
9619.738	47.9	100.0	Horizontal	60.8	12.9	26.10	74.00
9619.738	47.9	100.0	Vertical	216.9	12.9	21.74	74.00

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4809.807	29.5	100.0	Horizontal	212.0	6.4	24.51	54.00
4809.807	29.4	100.0	Vertical	193.4	6.4	24.55	54.00
7214.710	31.3	154.7	Horizontal	47.0	9.5	10.28	54.00
7214.710	31.4	100.0	Vertical	304.6	9.5	22.60	54.00
9619.738	32.3	100.0	Horizontal	60.8	12.9	26.11	54.00
9619.738	32.3	100.0	Vertical	216.9	12.9	21.69	54.00

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Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee, Channel 18	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4880.513	69.2	100.0	Horizontal	212.0	6.7	4.80	74.0
4880.513	70.6	100.0	Vertical	193.4	6.7	3.43	74.0
7321.122	54.8	154.7	Horizontal	47.0	9.7	19.17	74.0
7321.122	61.2	154.7	Vertical	304.6	9.7	12.82	74.0
9761.472	46.0	100.0	Horizontal	60.8	13.1	27.88	74.0
9761.472	47.7	100.0	Vertical	216.9	13.1	26.34	74.0

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4880.513	30.6	100.0	Horizontal	212.0	6.7	23.39	54.0
4880.513	30.2	100.0	Vertical	193.4	6.7	23.81	54.0
7321.122	31.4	154.7	Horizontal	47.0	9.7	22.63	54.0
7321.122	31.5	154.7	Vertical	304.6	9.7	22.53	54.0
9761.472	32.5	100.0	Horizontal	60.8	13.1	21.48	54.0
9761.472	32.5	100.0	Vertical	216.9	13.1	21.48	54.0

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Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee, Channel 26	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4960.753	72.1	100.0	Horizontal	212.0	6.7	1.92	74.0
4960.753	69.9	100.0	Vertical	193.4	6.7	4.12	74.0
7441.127	57.7	154.7	Horizontal	47.0	9.7	16.33	74.0
7441.127	52.3	154.7	Vertical	304.6	9.7	21.75	74.0
9921.702	49.5	100.0	Horizontal	60.8	13.1	24.46	74.0
9921.702	52.4	100.0	Vertical	216.9	13.1	21.62	74.0

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
4960.753	30.4	100.0	Horizontal	212.0	6.7	23.57	54.0
4960.753	30.5	100.0	Vertical	193.4	6.7	23.47	54.0
7441.127	32.1	154.7	Horizontal	47.0	9.7	21.90	54.0
7441.127	32.1	154.7	Vertical	304.6	9.7	21.95	54.0
9921.702	32.8	100.0	Horizontal	60.8	13.1	21.21	54.0
9921.702	32.8	100.0	Vertical	216.9	13.1	21.20	54.0

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Radiated Emissions

EUT:	In Home Gateway	Model Name:	BDG-A100
Test Mode:	Zigbee	Test Date:	6/18/14
Test Engineer:	George Hsu	Measurement:	18 GHz to 26.5 GHz

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators were attenuated more than 20 dB below the permissible value

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1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

6dB Bandwidth Test Data (Conducted)

Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	6 dB Bandwidth (KHz)	Limit (KHz)	Conclusion
Zigbee	11	2405	1650.641	≥ 500	PASS
	18	2440	1618.589	≥ 500	PASS
	26	2480	1730.769	≥ 500	PASS

Test Equipment: Please refer to section 5.2

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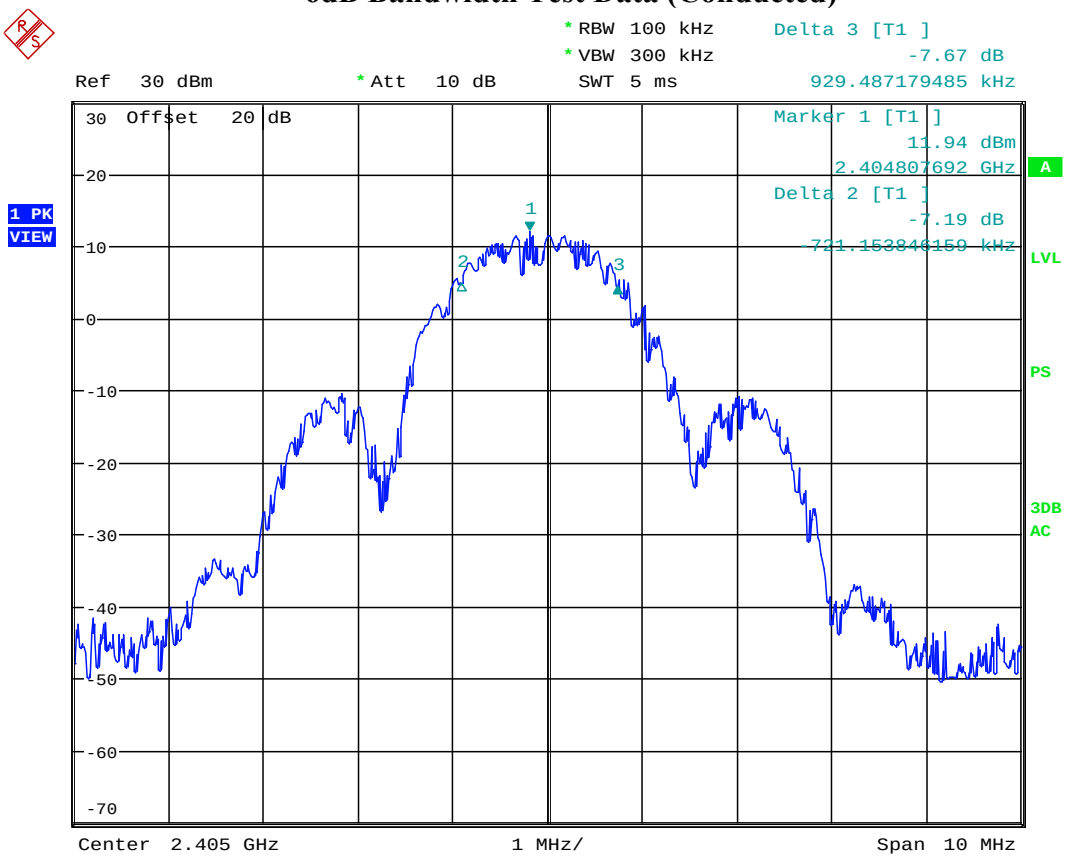
6dB Bandwidth Test Data (Conducted)



Channel 11

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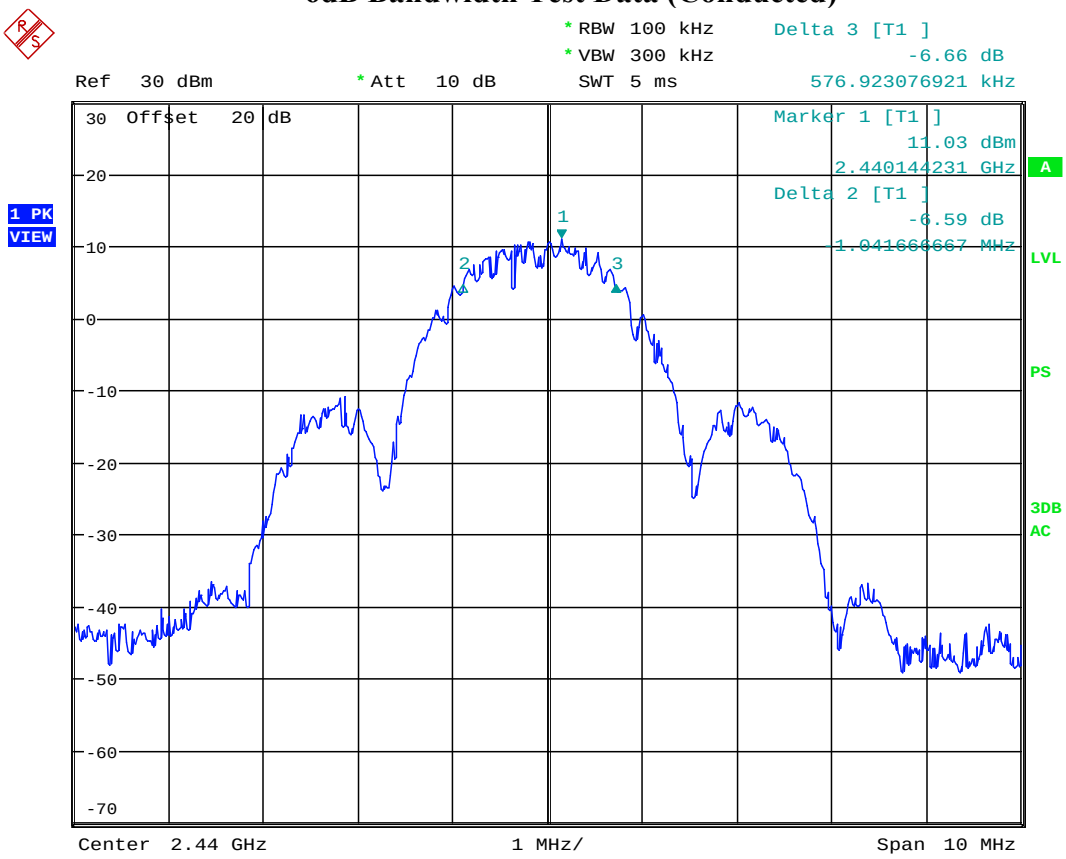
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

6dB Bandwidth Test Data (Conducted)



Channel 18

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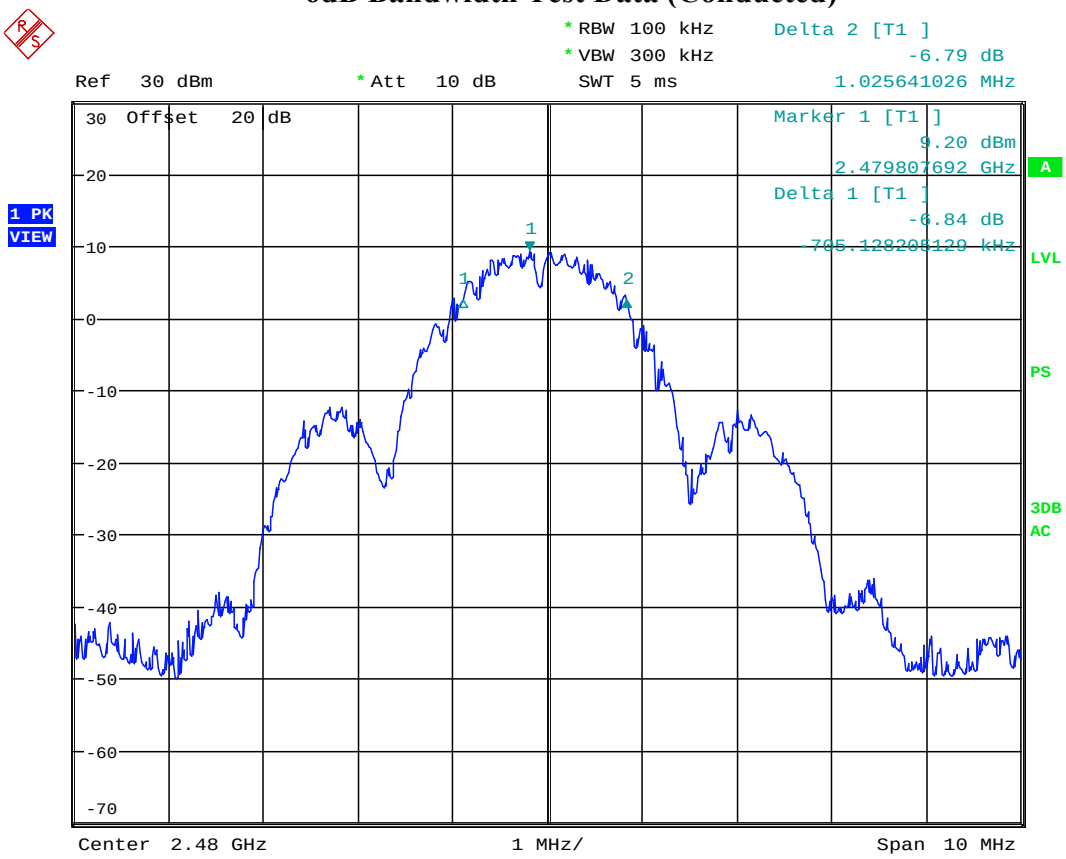
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

6dB Bandwidth Test Data (Conducted)



Channel 26

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

99% Occupied Bandwidth Test Data (Conducted)

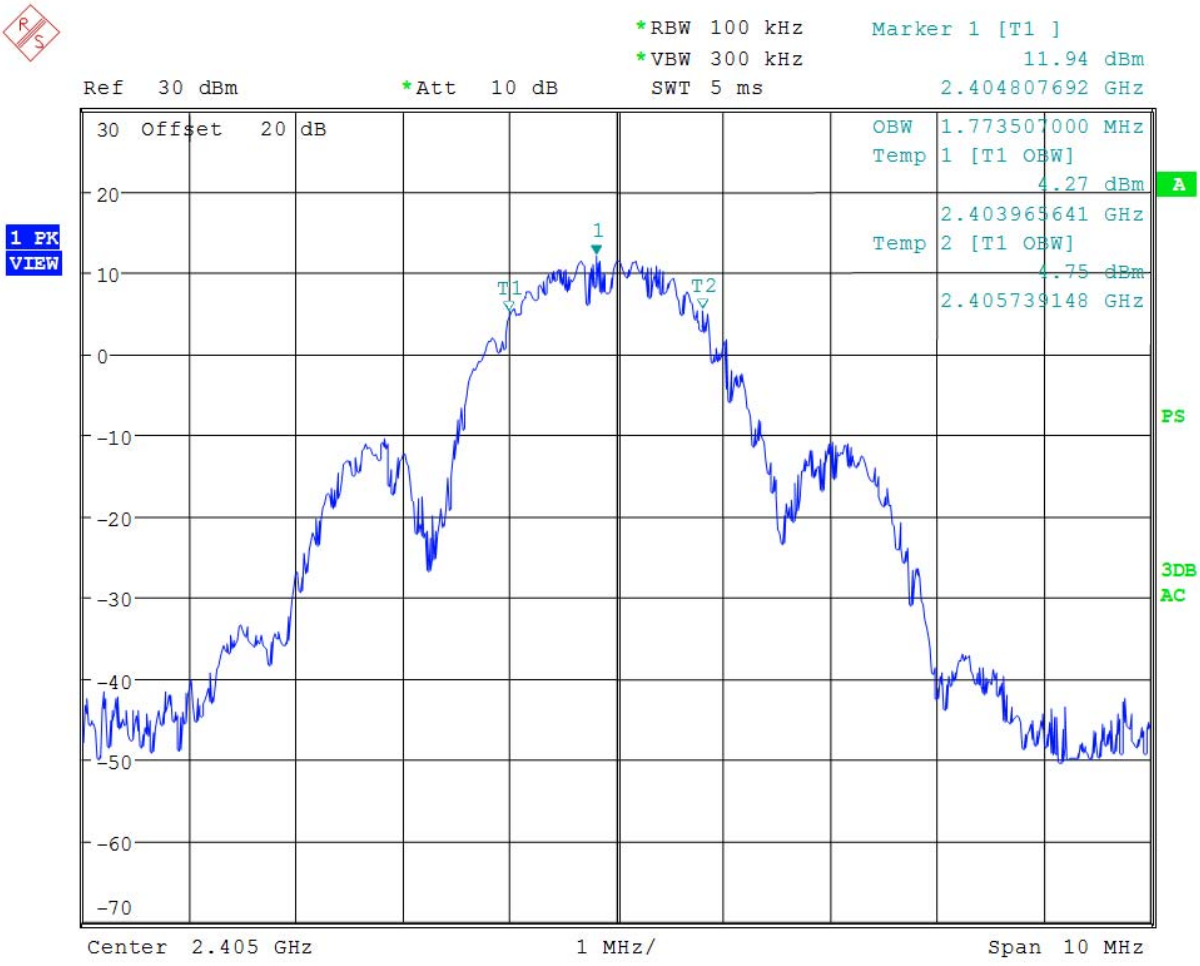
Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	99% Bandwidth (KHz)	Limit (KHz)	Conclusion
Zigbee	11	2405	1773.507	≥ 500	PASS
	18	2440	1751.154	≥ 500	PASS
	26	2480	1864..084	≥ 500	PASS

Test Equipment: Please refer to section 5.2

EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

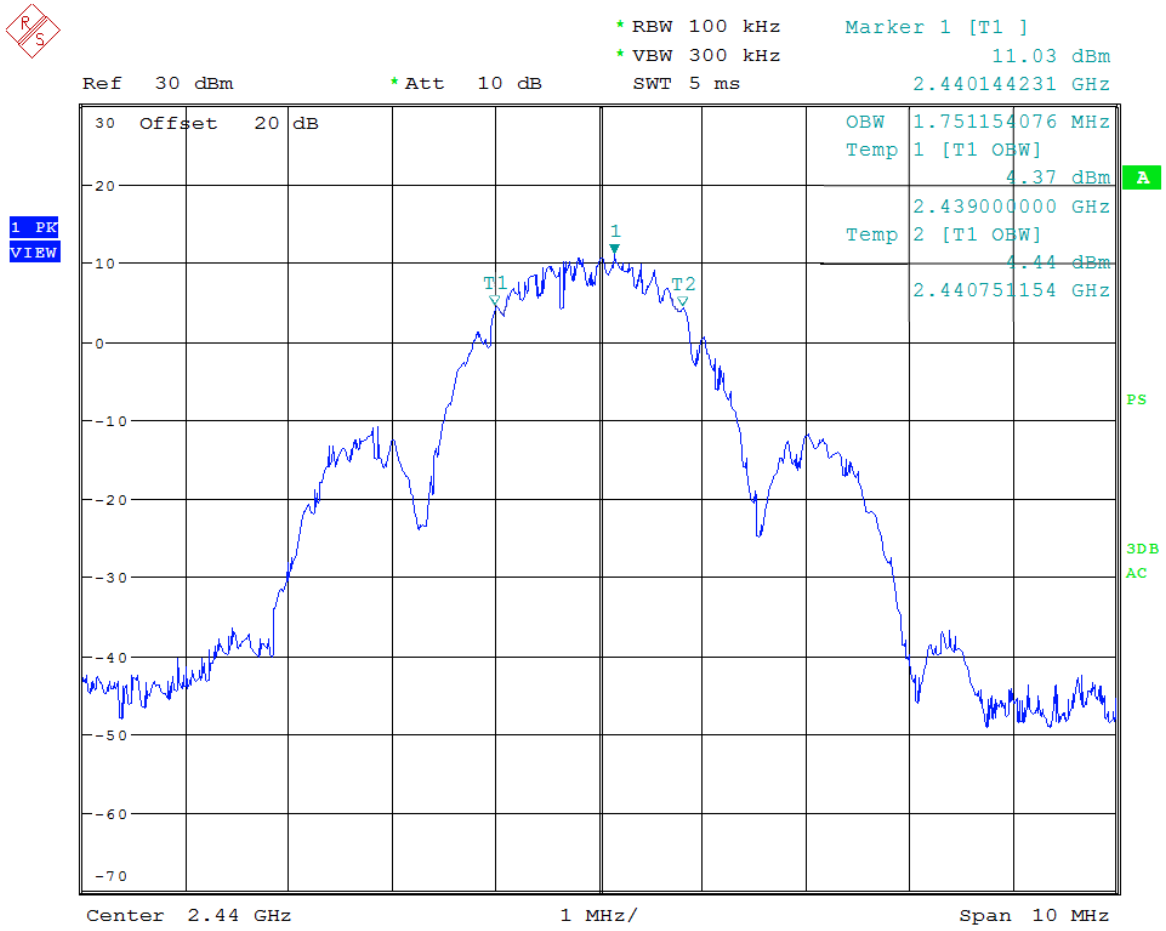
99% Occupied Bandwidth Test Data (Conducted)



Channel 11

EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

99% Occupied Bandwidth Test Data (Conducted)



Channel 18

EMT
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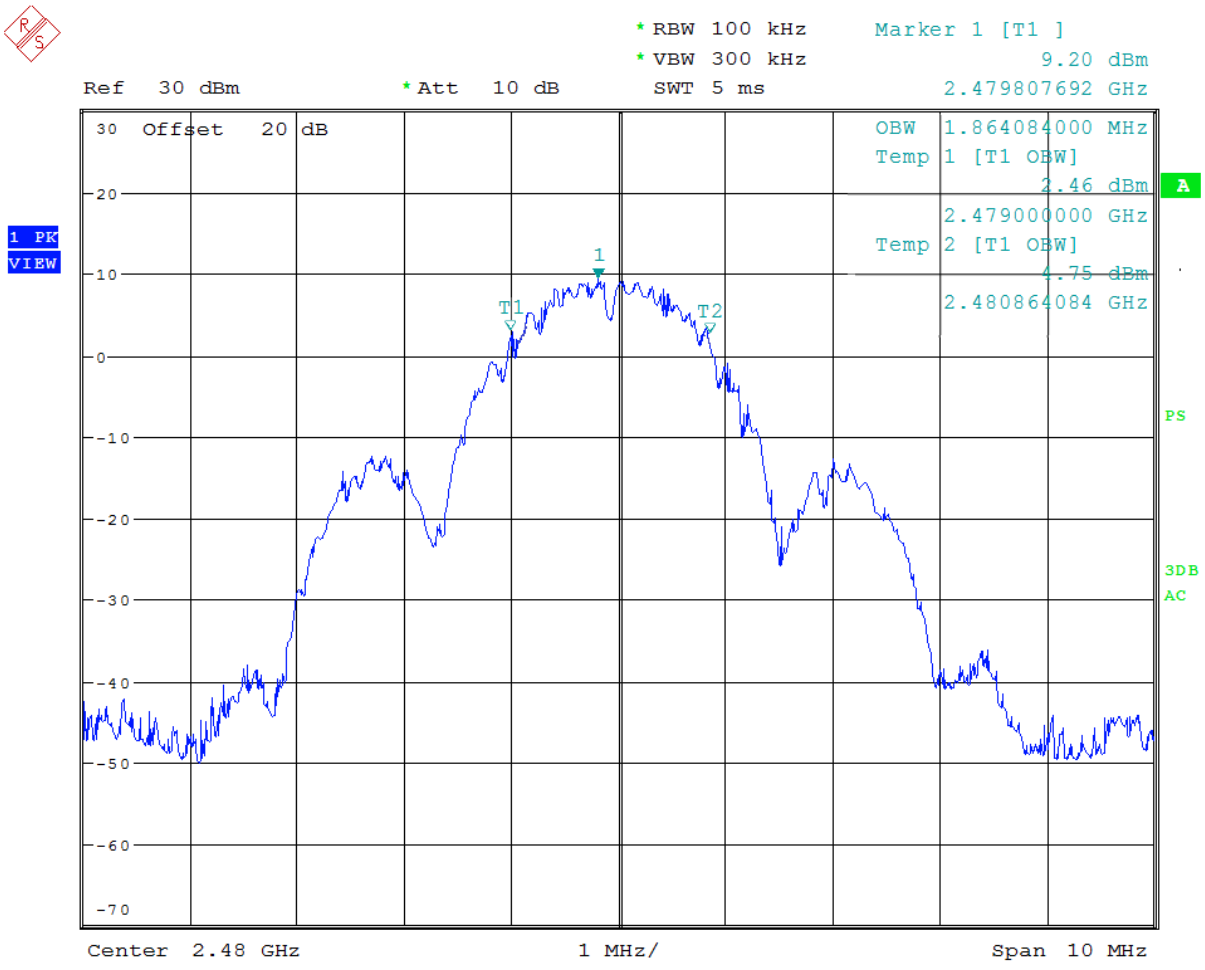
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

99% Occupied Bandwidth Test Data (Conducted)



Channel 26

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Maximum Peak Output Power Test Data (Conducted)

Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Conclusion
Zigbee	11	2405	17.68	≤ 30	Pass
	18	2440	16.56	≤ 30	Pass
	26	2480	15.08	≤ 30	Pass

Test Equipment: Please refer to section 5.2

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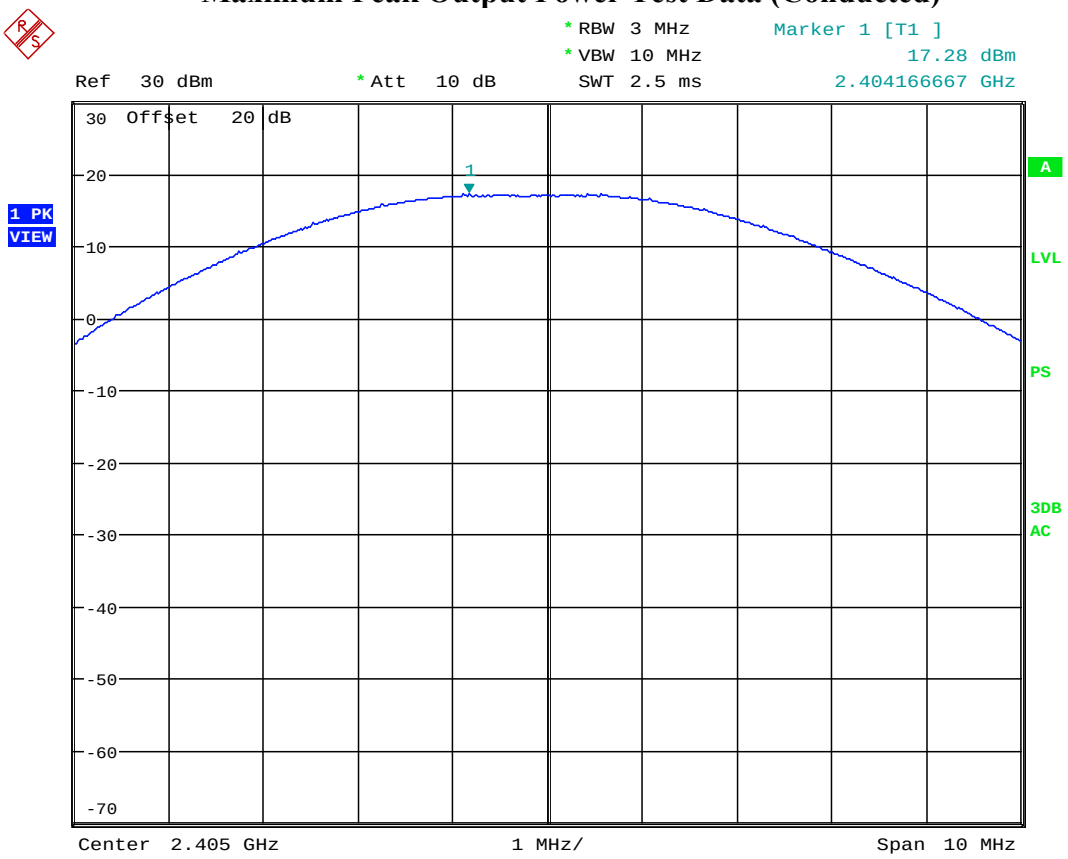
Maximum Peak Output Power Test Data (Conducted)



Channel 11

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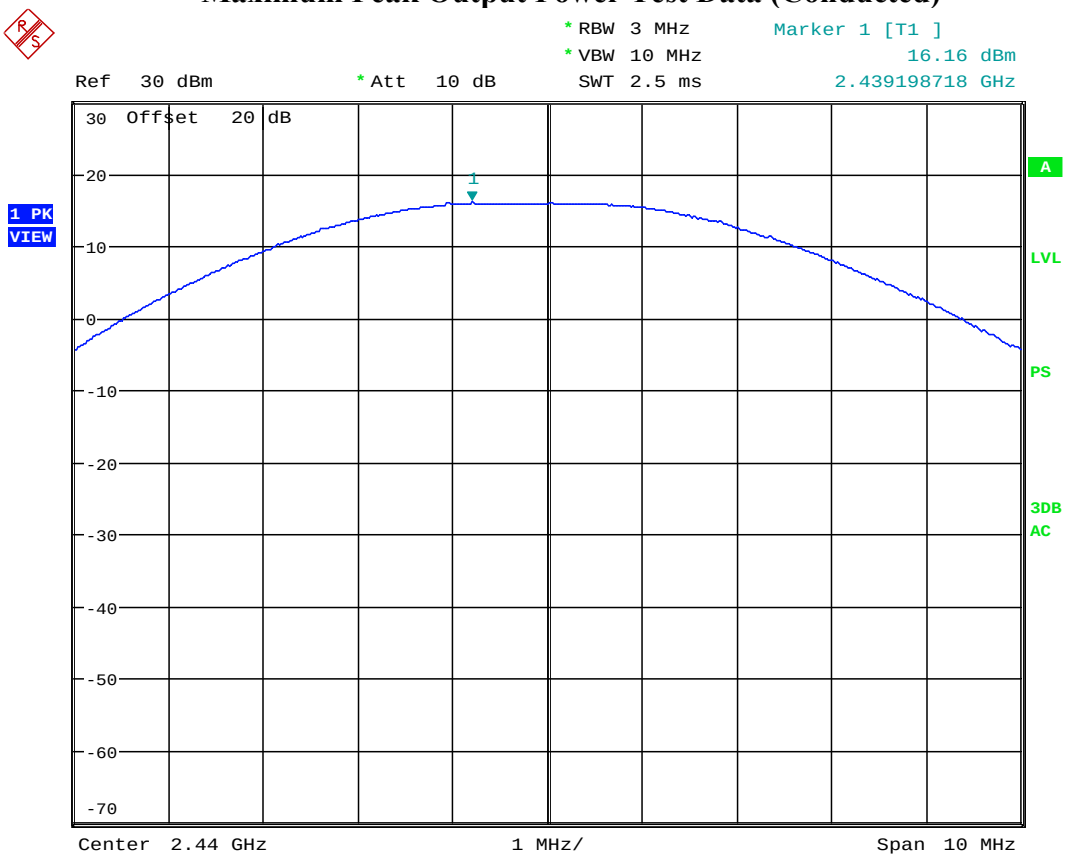
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Maximum Peak Output Power Test Data (Conducted)



Channel 18

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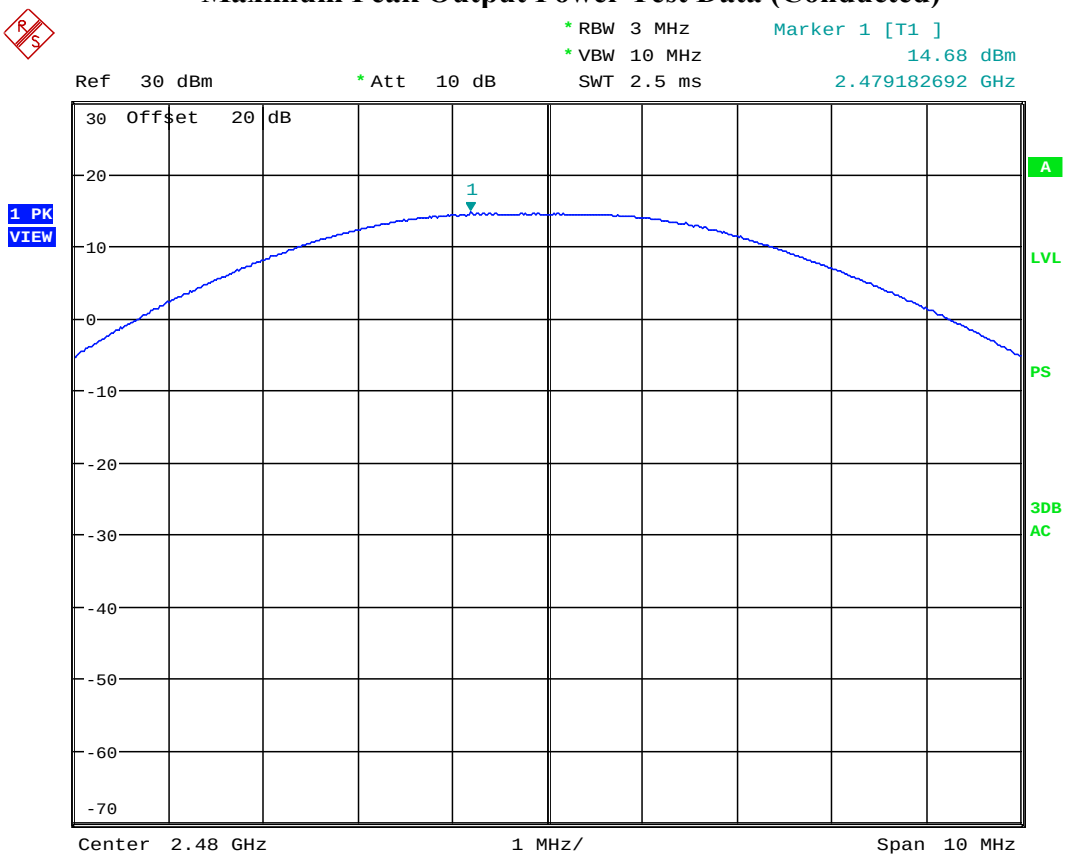
Maximum Peak Output Power Test Data (Conducted)



Channel 26

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Maximum Power Spectral Density Test Data (Conducted)

Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	Peak (dBm)	Limit (dBm)	Conclusion
Zigbee	11	2405	7.16	≤ 8	Pass
	18	2440	5.69	≤ 8	Pass
	26	2480	4.00	≤ 8	Pass

Test Equipment: Please refer to 5.2

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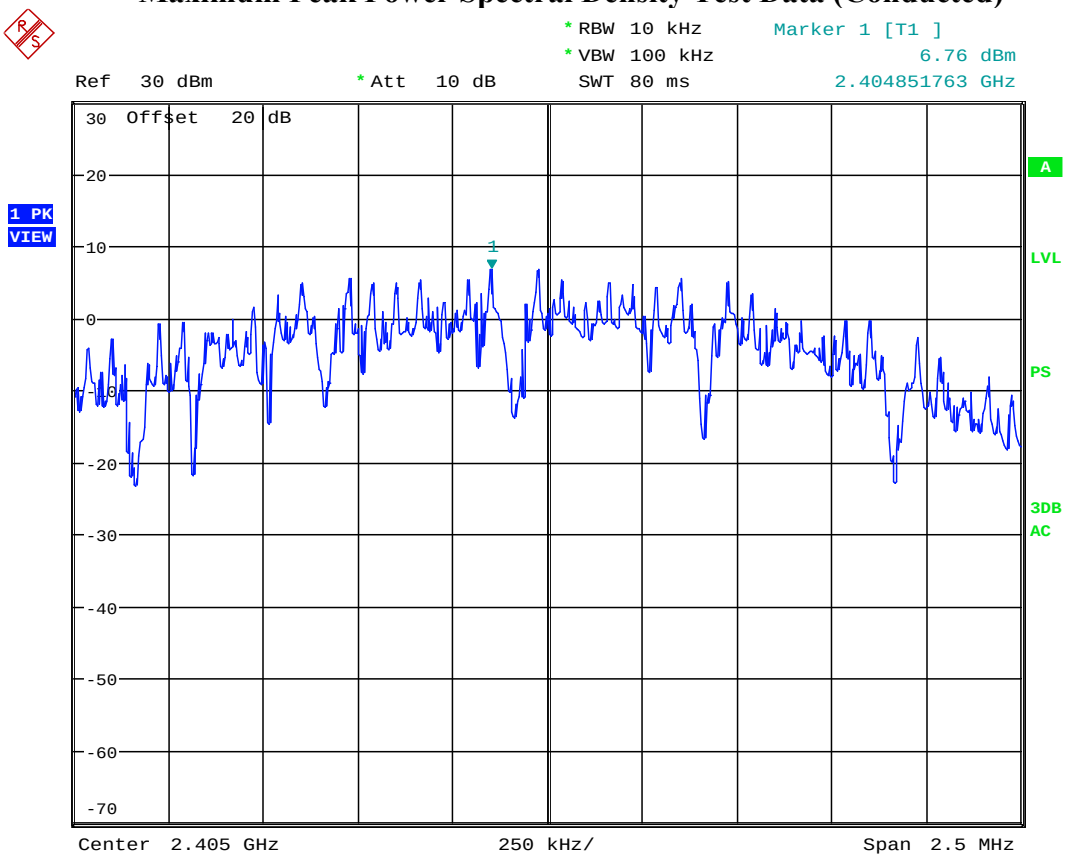
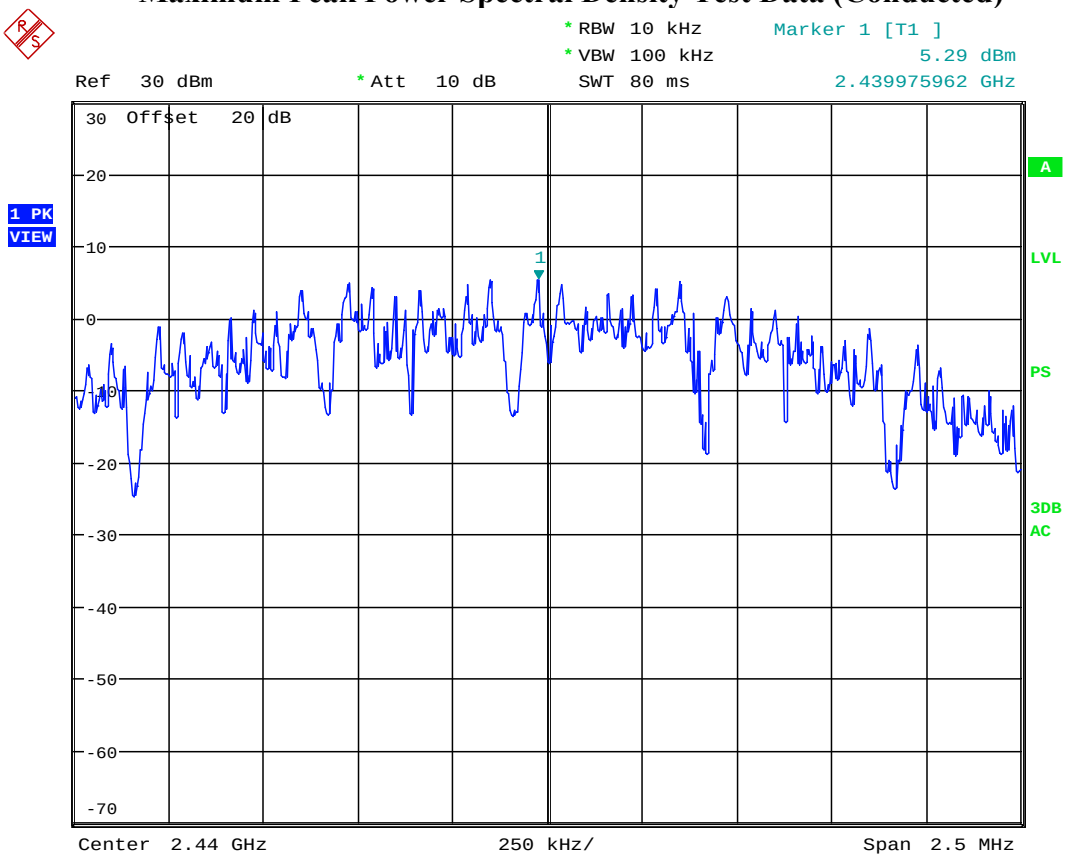
Maximum Peak Power Spectral Density Test Data (Conducted)



Low Channel, Channel 11

ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

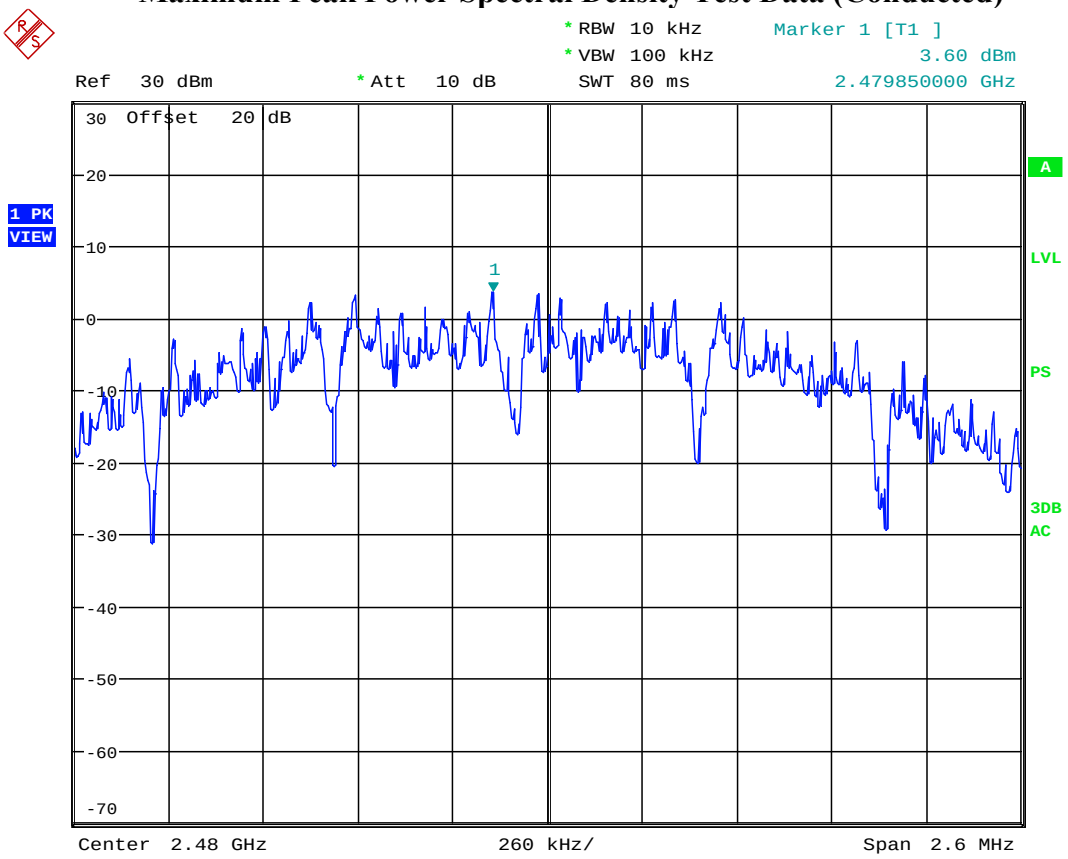
Maximum Peak Power Spectral Density Test Data (Conducted)



Middle Channel, Channel 18

ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Maximum Peak Power Spectral Density Test Data (Conducted)



Middle Channel, Channel 26

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)

Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	Peak (dBm)	Limit (dBm)	Conclusion
Zigbee	11	2227.243	-48.51	≤ -13.24	Pass
	11	2276.602	-44.16	≤ -13.24	Pass
	11	2400.000	-27.47	≤ -13.24	Pass
	18	2391.025	-54.80	≤ -14.71	Pass
	18	2364.102	-58.07	≤ -14.71	Pass
	18	5406.314	-57.23	≤ -14.71	Pass
	26	2379.807	-47.77	≤ -16.40	Pass
	26	22980.769	-45.85	≤ -16.40	Pass
	26	24206.730	-47.59	≤ -16.40	Pass

Test Equipment: Please refer to 5.2

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Bandedge Test Data (Conducted)

Company:	Bidgley, Inc.	Test Date	7/7/14
EUT Name	In Home Gateway	Test Engineer	George Hsu
Model:	BDG-A100	Test Result	PASS
Operating Mode	TX Mode		

Mode	Test CH	Frequency (MHz)	Peak (dBm)	Limit (dBm)	Conclusion
Zigbee	11	2400.000	-48.19	≤ -13.24	Pass
	11	2399.827	-42.70	≤ -13.24	Pass
	11	2399.715	-42.78	≤ -13.24	Pass
	11	2399.138	-44.58	≤ -13.24	Pass
	26	2483.500	-38.77	≤ -16.40	Pass
	26	2484.662	-42.78	≤ -16.40	Pass
	26	2485.264	-45.02	≤ -16.40	Pass
	26	2486.352	-45.65	≤ -16.40	Pass

Test Equipment: Please refer to 5.2

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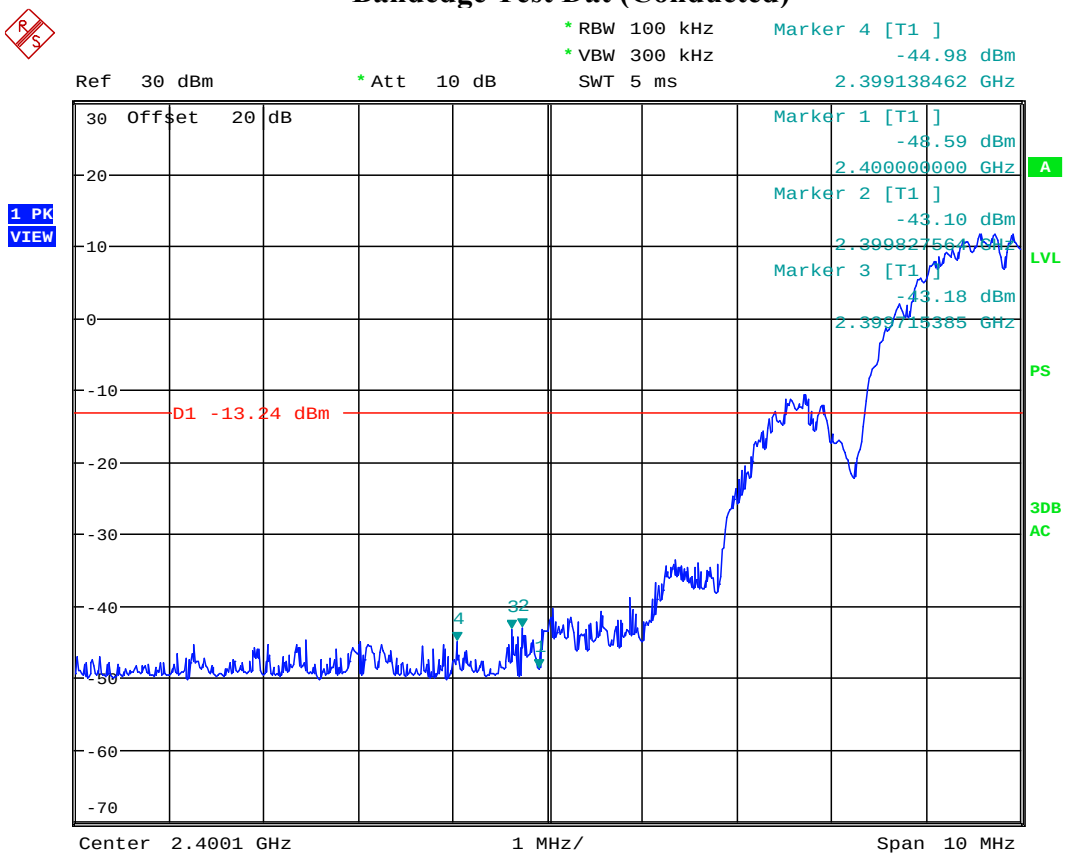
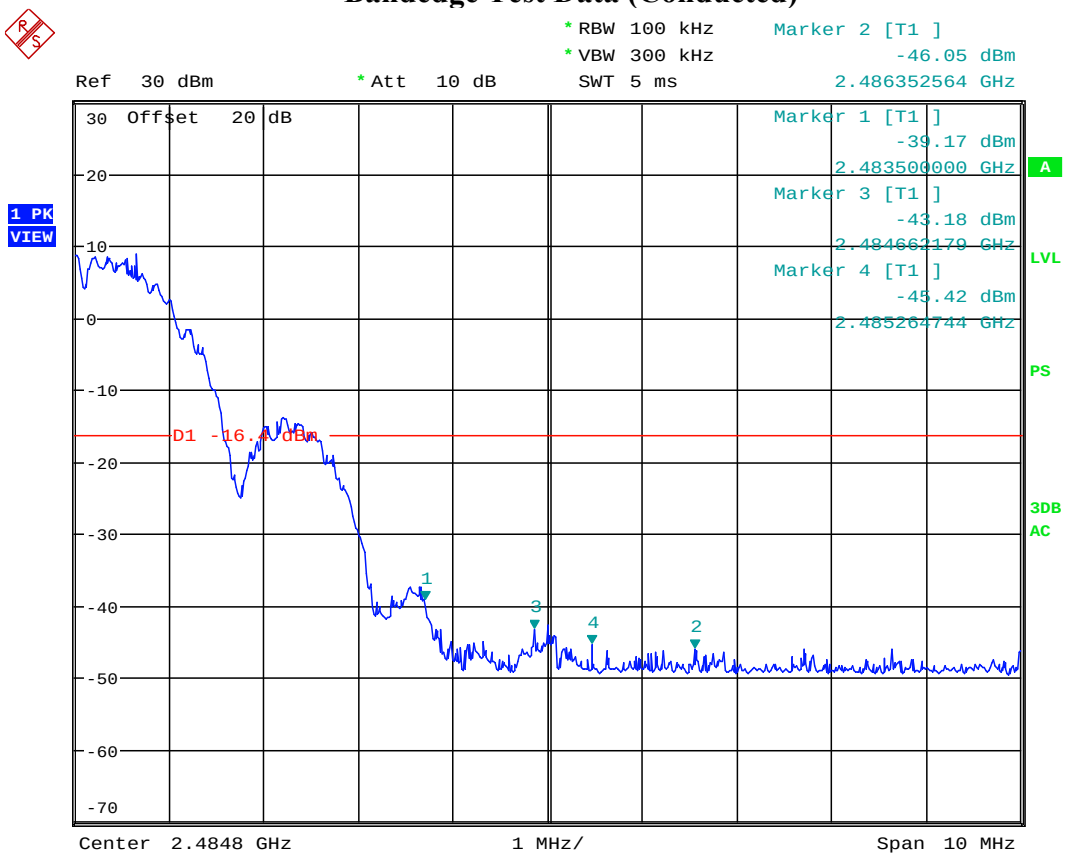
Bandedge Test Dat (Conducted)



Low Channel, Channel 11

ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

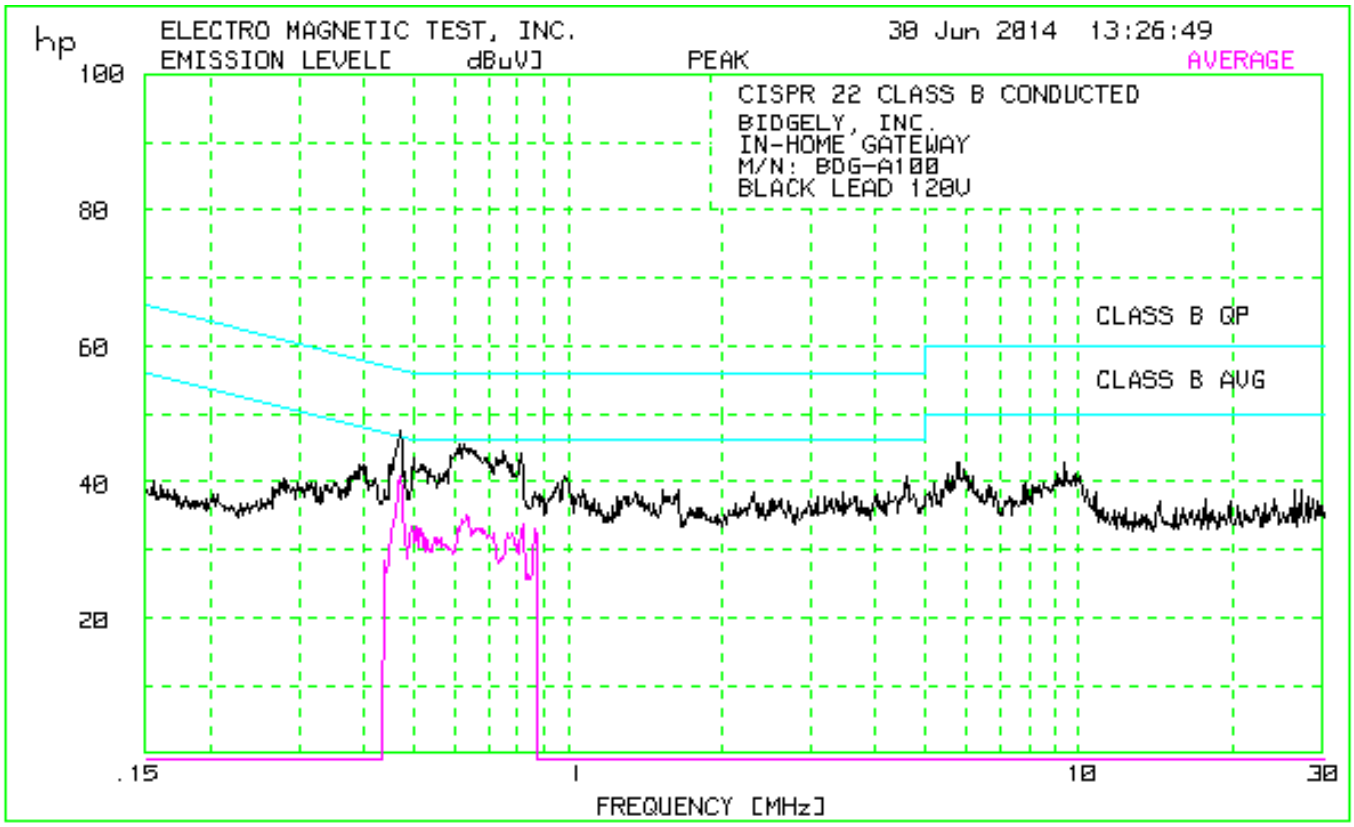
Bandedge Test Data (Conducted)



High Channel, Channel 26

EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Conducted Emissions Data (AC Powerline)


hp
ELECTRO MAGNETIC TEST, INC.
30 Jun 2014 13:26:49
EMISSION LEVELC dBuV]
PEAK
AVERAGE
CISPR 22 CLASS B CONDUCTED
BIDGELY, INC.
IN-HOME GATEWAY
M/N: BDG-A100
BLACK LEAD 120V
CLASS B QP
CLASS B AVG
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]

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=====================================================
ELECTRO MAGNETIC TEST, INC.      30 Jun 2014  13:26:49
=====================================================
 1. CONDUCTED WITH PRESELECTOR
    1.3  CISPR 22 CLASS B CONDUCTED
=====================================================
58 highest Peaks above -50 dB of Limit Line #2
  peak criteria = .1 dB

PEAK#    FREQ (MHz)       (dBuV)        DELTA
  1         .4731          47.4          1.0
  2         .6131          45.4          -.6
  3         .6263          45.4          -.6
  4         .6363          44.9         -1.1
  5         .6465          44.9         -1.1
  6         .6197          44.8         -1.2
  7         .7497          44.5         -1.5
  8         .6638          44.4         -1.6
  9         .8117          44           -2.0
 10         .6709          43.9         -2.1
 11         .7577          43.9         -2.1
 12         .5877          43.7         -2.3
 13         .4988          43.6         -2.4
 14         .7225          43.5         -2.5
 15         .6889          43.4         -2.6
 16         .7418          43.2         -2.8
 17         .7301          43           -3.0
 18         .7658          42.9         -3.1
 19         .5203          42.6         -3.4
 20         .7111          42.6         -3.4
 21         .7739          42.5         -3.5
 22         .5287          42           -4.0
 23         .4487          42.6         -4.2
 24         .5371          41.8         -4.2
 25         .4806          41.6         -4.7
 26         .5785          41.3         -4.7
 27         .5633          41.2         -4.8
 28         .5724          41.2         -4.8
 29         .7905          41.2         -4.8
 30         .9873          40.7         -5.3
 31        4.606           40.7         -5.3
 32         .3994          42.3         -5.5
 33         .4036          42.2         -5.5
 34         .3931          42.3         -5.6
 35        4.558           39.8         -6.2
 36         .9564          39.7         -6.3
 37         .3889          41.3         -6.7
 38         .4188          40.6         -6.8
 39         .3828          41.4         -6.8
 40        5.784           42.9         -7.1
 41        9.363           42.7         -7.3
 42         .4101          40.2         -7.4
 43        1.075           38.6         -7.4
 44        1.54            38.6         -7.4
 45        1.641           38.6         -7.4
 46         .3768          40.8         -7.5
 47         .4883          38.6         -7.5
 48         .9364          38.5         -7.5
 49        1.356           38.4         -7.6
 50        3.461           38.4         -7.6
 51         .8603          38.3         -7.7
 52        2.315           38.3         -7.7
 53        4.232           38.3         -7.7
 54         .8788          38.2         -7.8
 55        1.052           38.1         -7.9
 56        4.755           38.1         -7.9
 57        4.014           38           -8.0
 58         .3708          40.3         -8.1
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ELECTRO MAGNETIC TEST, INC.      30 Jun 2014  13:26:49
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 1. CONDUCTED WITH PRESELECTOR
    1.3  CISPR 22 CLASS B CONDUCTED
======================================================
Avg Peaks above -50 dB of Limit Line #2
  peak criteria = .1 dB

PEAK#    FREQ (MHz)        (dBuV)         DELTA
  1         .4706          40.7           -5.8
  2         .6363          35            -11.0
  3         .6197          34.3          -11.7
  4         .816           33.6          -12.4
  5         .5068          33.4          -12.6
  6         .4961          33.3          -12.7
  7         .6099          33.2          -12.8
  8         .6638          33.2          -12.8
  9         .6744          33.2          -12.8
 10         .8649          33.2          -12.8
 11         .5149          33            -13.0
 12         .6852          32.9          -13.1
 13         .6533          32.7          -13.3
 14         .7186          32.4          -13.6
 15         .7658          32.3          -13.7
 16         .7822          32.3          -13.7
 17         .7036          32            -14.0
 18         .5287          31.7          -14.3
 19         .5515          31.7          -14.3
 20         .5663          31.6          -14.4
 21         .5724          30.7          -15.3
 22         .54            30.1          -15.9
 23         .7379          28.6          -17.4
 24         .437           28.2          -18.9
 25         .8379          26.3          -19.7
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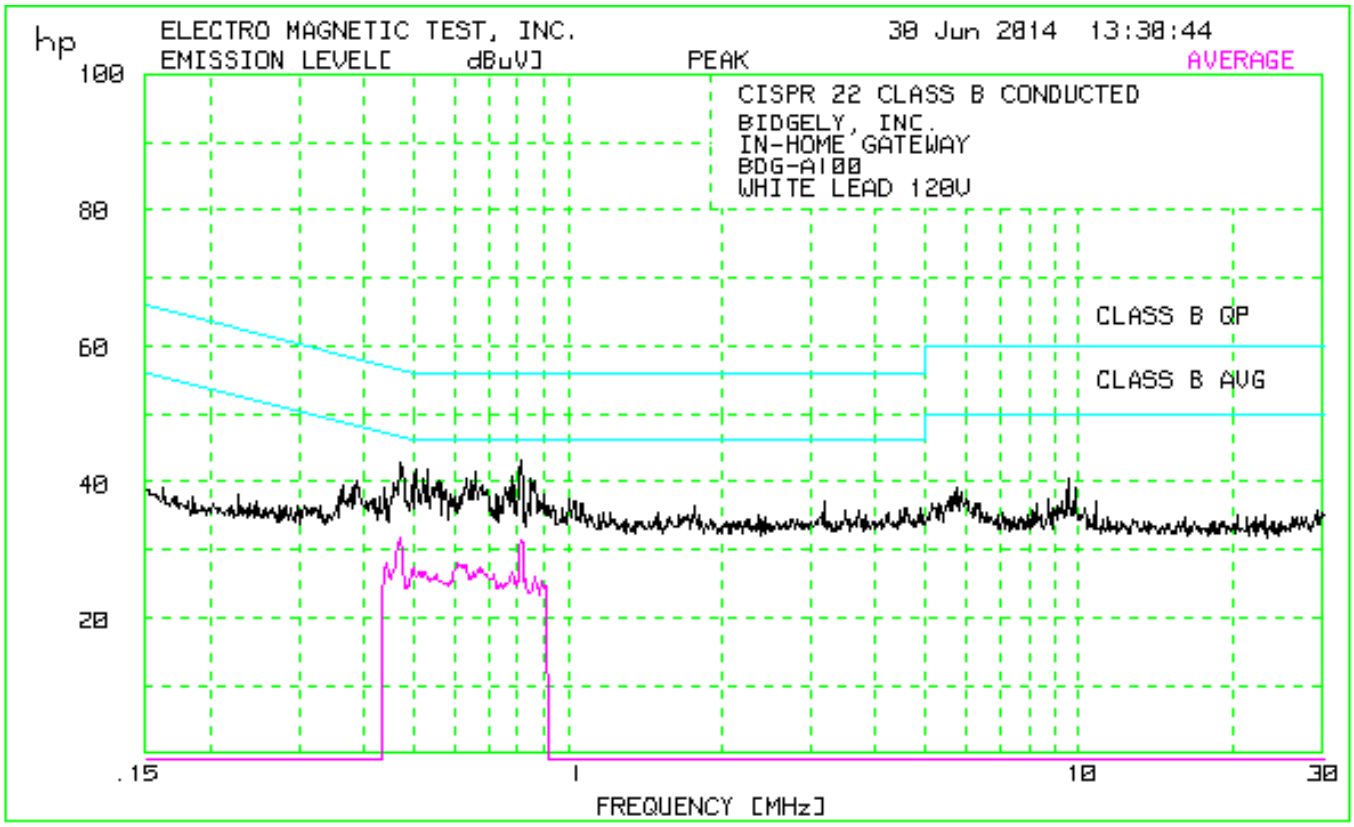
hp
ELECTRO MAGNETIC TEST, INC.
30 Jun 2014 13:30:44
EMISSION LEVELC dBuV]
PEAK
AVERAGE
CISPR 22 CLASS B CONDUCTED
BIDGELY, INC.
IN-HOME GATEWAY
BDG-A100
WHITE LEAD 120V
CLASS B QP
CLASS B AVG
100
80
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FREQUENCY [MHz]

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58 highest Peaks above -50 dB of Limit Line #2
  peak criteria = .1 dB

PEAK#    FREQ (MHz)       (dBuV)        DELTA
  1         .8117          43.1          -2.9
  2         .4731          42.9          -3.5
  3         .5041          41.9          -4.1
  4         .4781          42            -4.3
  5         .5315          41.7          -4.3
  6         .6603          41.3          -4.7
  7         .7822          40.8          -5.2
  8         .5231          40.6          -5.4
  9         .8468          40.4          -5.6
 10         .6363          40.3          -5.7
 11         .6465          40.2          -5.8
 12         .8649          40.2          -5.8
 13         .5633          40            -6.0
 14         .5574          39.9          -6.1
 15         .5693          39.6          -6.4
 16         .4961          39.3          -6.7
 17         .6852          39.3          -6.7
 18         .5457          39.2          -6.8
 19         .678           39.2          -6.8
 20         .7577          39.2          -6.8
 21         .7739          39.2          -6.8
 22         .4583          39.9          -6.8
 23         .5785          38.9          -7.1
 24         .6962          38.8          -7.2
 25         .6263          38.7          -7.3
 26         .7658          38.5          -7.5
 27         .6533          38.3          -7.7
 28         .4393          39.2          -7.8
 29         .5877          38.2          -7.8
 30         .6197          38.2          -7.8
 31         .9023          38.1          -7.9
 32         .3889          40            -8.0
 33         .7263          38            -8.0
 34         .6003          37.6          -8.4
 35         .6131          37.6          -8.4
 36         .734           37.6          -8.4
 37         .5149          37.5          -8.5
 38         .3848          39.4          -8.7
 39        1.003           37.3          -8.7
 40        1.03            37.1          -8.9
 41         .8834          37            -9.0
 42        3.163           37            -9.0
 43         .4883          37            -9.1
 44         .3788          39            -9.3
 45        1.075           36.7          -9.3
 46         .3631          39.3          -9.3
 47         .8379          36.6          -9.4
 48        1.063           36.6          -9.4
 49         .9216          36.5          -9.5
 50         .9364          36.5          -9.5
 51         .4278          37.6          -9.6
 52        1.767           36.4          -9.6
 53        9.513           40.4          -9.6
 54        4.558           36.1          -9.9
 55         .3592          38.8          -9.9
 56         .7111          36           -10.0
 57         .4166          37.4         -10.1
 58         .7418          35.9         -10.1
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 1. CONDUCTED WITH PRESELECTOR
    1.3  CISPR 22 CLASS B CONDUCTED
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Avg Peaks above -50 dB of Limit Line #2
  peak criteria = .1 dB

PEAK#    FREQ (MHz)        (dBuV)         DELTA
  1         .4706          31.7          -14.8
  2         .8117          31.2          -14.8
  3         .6099          27.9          -18.1
  4         .6296          27.6          -18.4
  5         .4988          27.3          -18.7
  6         .678           27.2          -18.8
  7         .4416          28            -19.0
  8         .6673          27            -19.0
  9         .5231          26.7          -19.3
 10         .5149          26.6          -19.4
 11         .6533          26.5          -19.5
 12         .778           26.5          -19.5
 13         .5545          26.4          -19.6
 14         .7186          26.4          -19.6
 15         .8649          26.1          -19.9
 16         .8247          25.5          -20.5
 17         .8881          25.3          -20.7
 18         .7418          25            -21.0
 19         .9119          24.6          -21.4
 20         .4832          24.8          -21.4
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ELECTRO MAGNETIC TEST, INC.
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APPENDIX B

TEST SETUP DIAGRAMS

EMT **ELECTRO MAGNETIC TEST, INC.**
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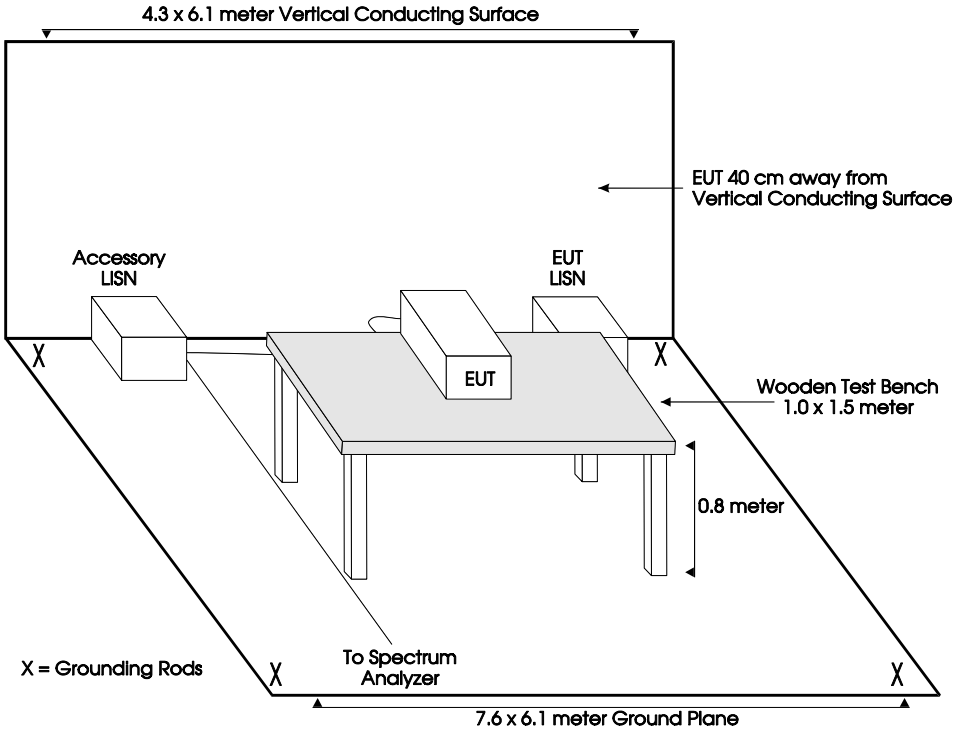

FIGURE 1 – TABLETOP CONDUCTED EMISSIONS TEST SETUP – SITE "A"

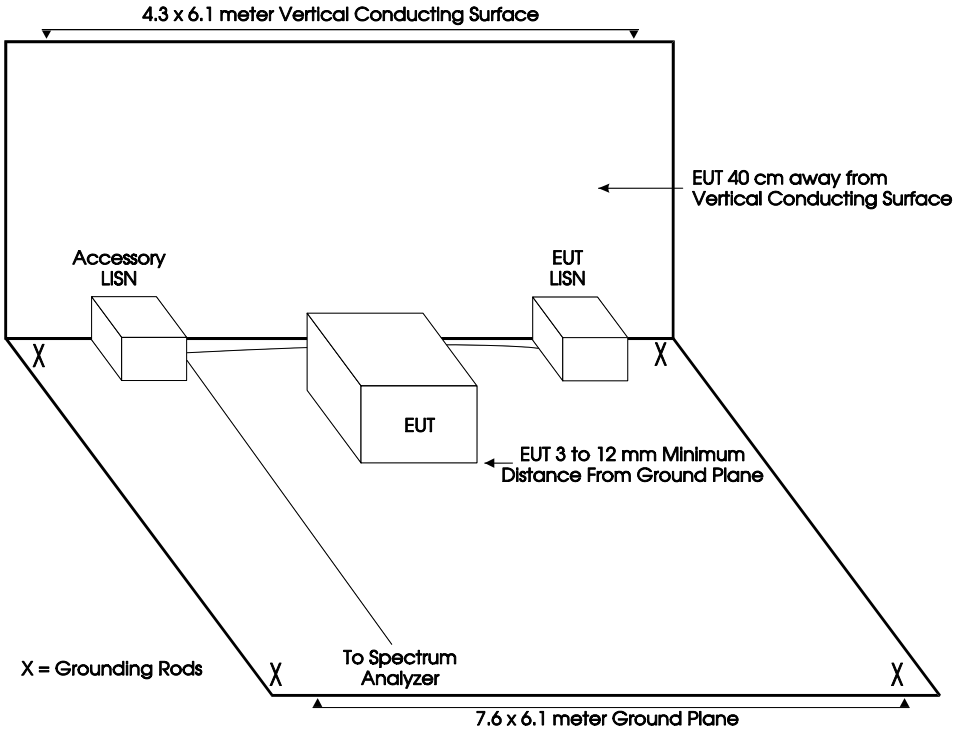

FIGURE 1a – FLOORSTANDING CONDUCTED EMISSIONS TEST SETUP – SITE "A"

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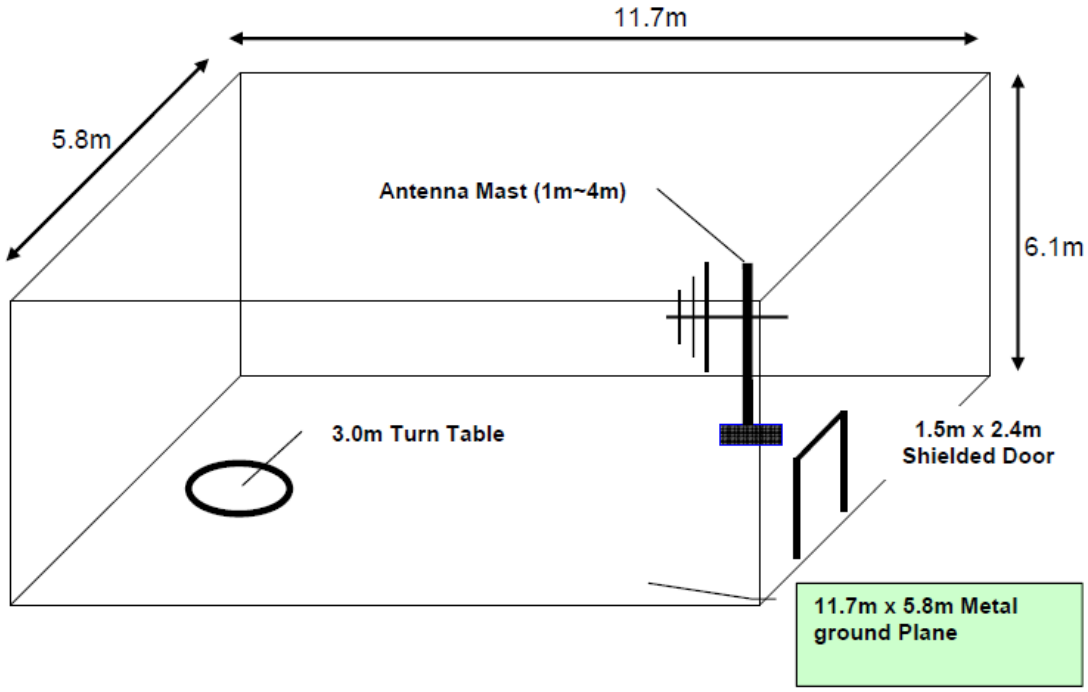

FIGURE 3 - LAYOUT OF 5 METER SEMI-ANECHOIC CHAMBER

EMT
ELECTRO MAGNETIC TEST, INC.
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APPENDIX C

MODIFICATIONS TO THE EUT

EMT
ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

MODIFICATIONS TO THE EUT

No modifications were made to the EUT by Electro Magnetic Test, Inc. personnel during the testing.

EMT
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1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

APPENDIX D

ADDITIONAL MODELS COVERED UNDER THIS REPORT

EMT ELECTRO MAGNETIC TEST, INC.
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

ADDITIONAL MODELS COVERED UNDER THIS REPORT

There are no additional models to be covered under this report.