FCC PART 15, SUBPART B and C
TEST REPORT

for

DUAL INTELISOCKET

MODEL: IS-302

Prepared for

IBIS NETWORKS
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DATE: MAY 4, 2016

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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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 without the written permission of Compatible Electronics, 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 federal government.

Device Tested:	Dual InteliSocket Model: IS-302 S/N: N/A
Product Description:	The EUT is a dual smart socket which meters plug load energy usage and provides device on/off capability.
Modifications:	The EUT was not modified during the testing.
Customer:	IBIS Networks 828 Bishop Street, Ste 1601 Honolulu, Hawaii 96813
Test Dates:	March 9 and 10, 2016
Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247
Test Procedure:	ANSI C63.10 and ANSI C63.4
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207.
2	Spurious Radiated RF Emissions, 30 MHz – 1000 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.209
3	Spurious Radiated RF Emissions, 10 kHz – 30 MHz and 1000 MHz – 25000 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, section 15.247(d)
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
5	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, and section 15.247 (d)
6	DTS Bandwidth	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (a)(2)
7	Peak Power Output	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(3)
8	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (d)
9	Peak Power Spectral Density from the Intentional Radiator to the Antenna	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (e)

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Dual InteliSocket, Model: IS-302. The emissions measurements were performed according to the measurement procedure described in ANSI C63.10 and ANSI C63.4. 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 **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

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

IBIS Networks

Michael Pfeffer	CEO

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
James Ross	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on March 8, 2016.

2.5 Disposition of the Test Sample

The test sample has not been returned to IBIS Networks 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
N/A	Not Applicable

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
ANSI C63.4 2014	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators
558074 D01 DTS Meas Guidance v03r05	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating under 15.247

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Dual InteliSocket Model: IS-302 (EUT) was connected to (2) PA-840 Preamplifiers. The EUT was continuously transmitting.

The EUT was tested in the X, Y and Z axis. The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The voltage was varied ±15%; the transmitting signal amplitude ad frequency did not vary.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and any cables were maximized. All initial investigations were performed with the measurement receiver in manual mode scanning the frequency range continuously. Photographs of the test setup are in Appendix D of this report.

4.1.1 Cable Construction and Termination

Cables 1 - 2 These are 2-meter unshielded cables connecting the preamplifiers to the EUT. These cables have a NEMA 5-15 plug at the EUT end and have an IEC 60320 C13 connector at the preamplifier end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
DUAL INTELISOCKET	IBIS NETWORKS	IS-302	N/A	2AECN302
PREAMPLIFIER #1	COM-POWER, INC.	PA-840	711013	N/A
PREAMPLIFIER #2	COM-POWER, INC.	PA-840	711919	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
RF RADIATED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51100115	April 3, 2015	1 Year
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	1 Year
Preamplifier	Com-Power	PA-118	551024	March 6, 2015	2 Year
Preamplifier	Com-Power	PA-840	711013	May 13, 2014	2 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Horn Antenna	Com-Power	AH-826	0071957	N/A	N/A
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
RF CONDUCTED EMISSIONS TEST EQUIPMENT – LAB A					
Shield Room Test	Compatible Electronics	11CD	N/A	N/A	N/A
LISN	Com-Power	LI-215	12082	June 9, 2015	1 Year
LISN	Com-Power	LI-215	12090	June 9, 2015	1 Year
Transient Limiter	Com-Power	252A910	1	October 14, 2015	1 Year
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	May 27, 2015	1 Year
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A15285	May 27, 2015	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	May 27, 2015	1 Year

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was grounded via the third wire saftey ground in the AC power plug.

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Description and Frequencies

The lowest frequency the EUT will use is 2405 MHz and the highest frequency the EUT will use is 2480 MHz. The EUT will be able to be tuned every 5 MHz between the lowest frequency and the highest frequency.

7.2 Antenna Gain

The EUT utilizes a chip antenna that has a gain of 2 dBi.

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 spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. 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 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. 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 Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.207.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as the measuring meter. Below 1 GHz, a built-in, internal preamplifier was used to increase the sensitivity of the instrument. At frequencies above 1 GHz, external preamplifiers were used. The Com Power Microwave Preamplifier Model: PA-118 was used for frequencies above from1 GHz to 18 GHz, and the Com Power Microwave Preamplifier Model: PA-840 was used for frequencies above 18 GHz. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged by using a duty cycle correction factor.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	Combilog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4. 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 (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.247 (d) for radiated emissions. Please see Appendix E for the data sheets.

8.1.3 RF Emissions Test Results

Table 1.0 CONDUCTED EMISSION RESULTS
Dual InteliSocket, Model: IS-302

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
0.211(WL)	45.75	53.18	-7.43
0.202(WL)	46.09	53.53	-7.45
0.217(WL)	45.32	52.91	-7.60
0.206(WL)	45.67	53.35	-7.69
0.214(WL)	45.33	53.05	-7.72
0.226(WL)	44.88	52.61	-7.73

Table 2.0 RADIATED EMISSION RESULTS
Dual InteliSocket, Model: IS-302

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
7320 (V)(Y-axis)	52.90 (Avg)	54.00	-1.10
4880 (H)(X-axis)	52.79 (Avg)	54.00	-1.21
7425 (H)(X-axis)	52.68 (Avg)	54.00	-1.32
7215 (V)(Y-axis)	52.44 (Avg)	54.00	-1.56
7425 (H)(Z-axis)	52.32 (Avg)	54.00	-1.68
7215 (H)(X-axis)	52.05 (Avg)	54.00	-1.95

Notes:

*	The complete emissions data is given in Appendix E of this report.		
Pk	Peak Reading	A	Average Reading
H	Horizontal Polarization	V	Vertical Polarization
(WL)	White Lead		

8.2 DTS Bandwidth

The DTS Bandwidth was measured using the EMI Receiver. The bandwidth was measured using a direct connection from the RF output of the EUT. The following steps were performed for measuring the DTS Bandwidth.

1. Set RBW = 100 kHz
2. Set the video bandwidth (VBW) to equal or greater than 3 times the RBW
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep = Auto Couple
6. Allow the trace to stabilize
7. Measure 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 6 dB relative to the maximum level measured in the fundamental emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(2).

8.3 Peak Output Power

The Peak Output Power was measured using the EMI Receiver. The peak output power was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was 8 MHz and the video bandwidth was 50 MHz. The cable loss was also added back into the reading using the reference level offset. The Peak Output Power was then taken.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(3).

8.4 Emissions in Non-Restricted Bands

The emissions in the non-restricted frequency bands measurements were performed using the EMI receiver directly connected to the EUT. The reference level was established by setting the instrument center frequency to DTS channel center frequency. The span was set to ≥ 1.5 times the DTS bandwidth. The RBW was set to 100 kHz and the VBW was set to 300 kHz. A peak detector was used with sweep 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 20 dB 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 RBW was set to 100 kHz and the VBW was set to 300 kHz. A peak detector was used with a sweep time set to auto. The number of measurement points were greater than the 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.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d).

8.5 RF Band Edges

The RF band edges were taken at 2390 MHz when the EUT was on the low channel and 2483.5 MHz when the EUT was on the high channel using the EMI Receiver. A preamplifier was used to boost the signal level, with the plots being taken at a 3 meter test distance. The radiated emissions test procedure as describe in section 8.1.2 of this test report was used to maximize the emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the restricted bands closest to the band edges at 2390 MHz and 2483.5 MHz also meet the limits of section 15.209. Please see the data sheets located in Appendix E.

8.6 Spectral Density Test

The spectrum density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The following steps were performed for measuring the spectral density.

1. Set analyzer center frequency to DTS channel center frequency
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to 3 kHz <= RBW <= 100 kHz
4. Set the VBW >= 3 X RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize
9. Use the peak marker function to determine the maximum amplitude level within the RBW
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (e).

8.7 Duty Cycle

The duty cycle was measured using the EMI Receiver. The EUT was operating in normal operating mode. The frequency span was taken to 0 Hz to determine the time for each transmission and the worst case time between transmissions.

Please see the data sheets in Appendix E for the plot and more specific details about the duty cycle.

The duty cycle is then used to determine the peak to average ratio by using the formula
20 log (duty cycle in percent/100).

The duty cycle was 9.72% so based on the above formula:
20 log (9.72%/100) = 20 log (0.0972) = -20.25 dB.

Since the duty cycle was less than 10%, a maximum of 20 dB can be subtracted from the peak reading to determine the average.

9. CONCLUSIONS

The Dual InteliSocket, Model: IS-302, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B, and Subpart C, sections 15.205, 15.209, 15.207, and 15.247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

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

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

NVLAP listing links

Agoura Division / **Brea Division** / **Silverado/Lake Forest Division**

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."

ANSI listing CETCB

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

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).
APEC MRA list NIST MRA site

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

VCCI Support member: Please visit http://www.vcci.jp/vcci_e/

FCC Listing, from FCC OET site
FCC test lab search 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

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

The EUT was not modified during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Dual InteliSocket
Model: IS-302
S/N: N/A

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER

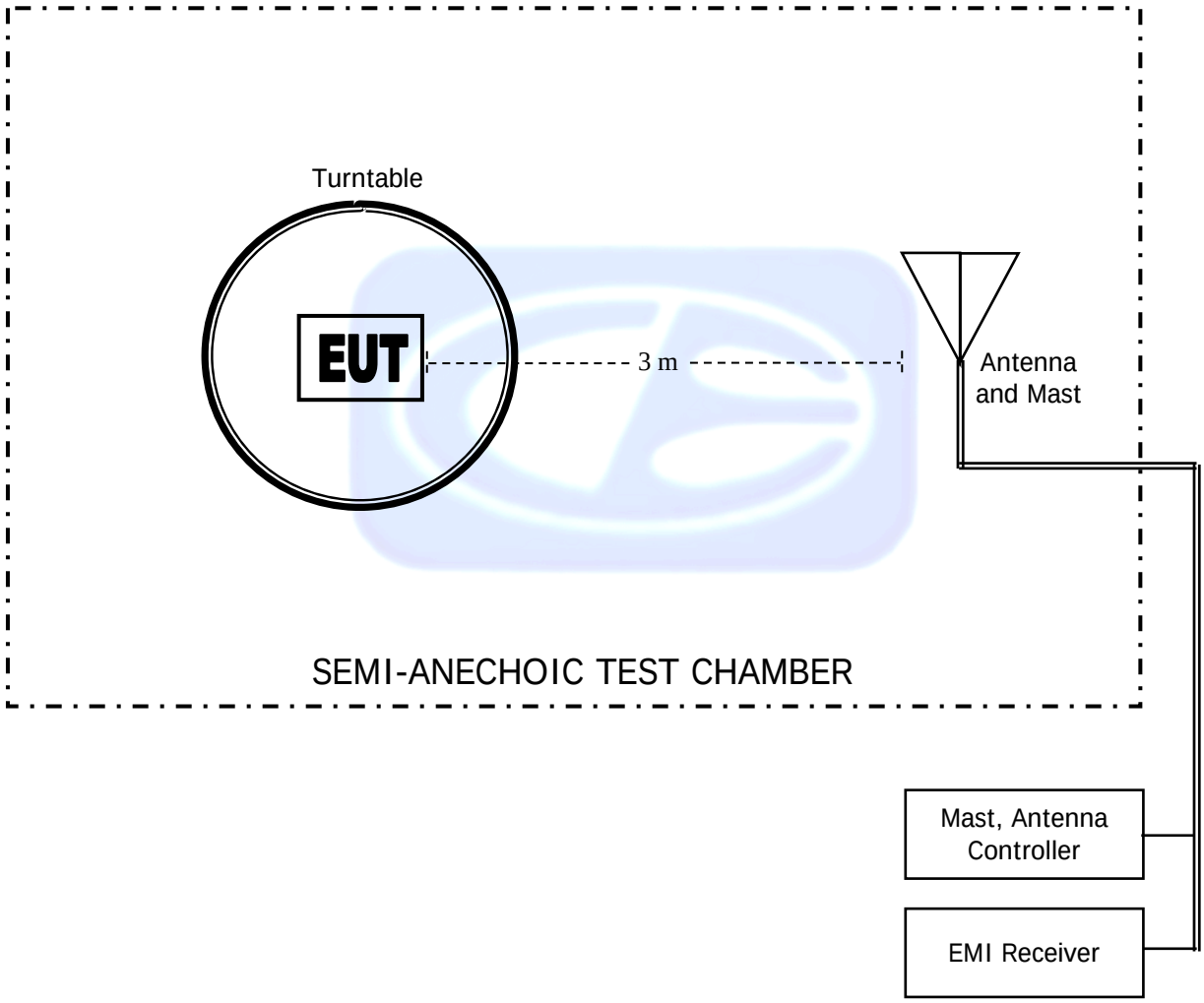
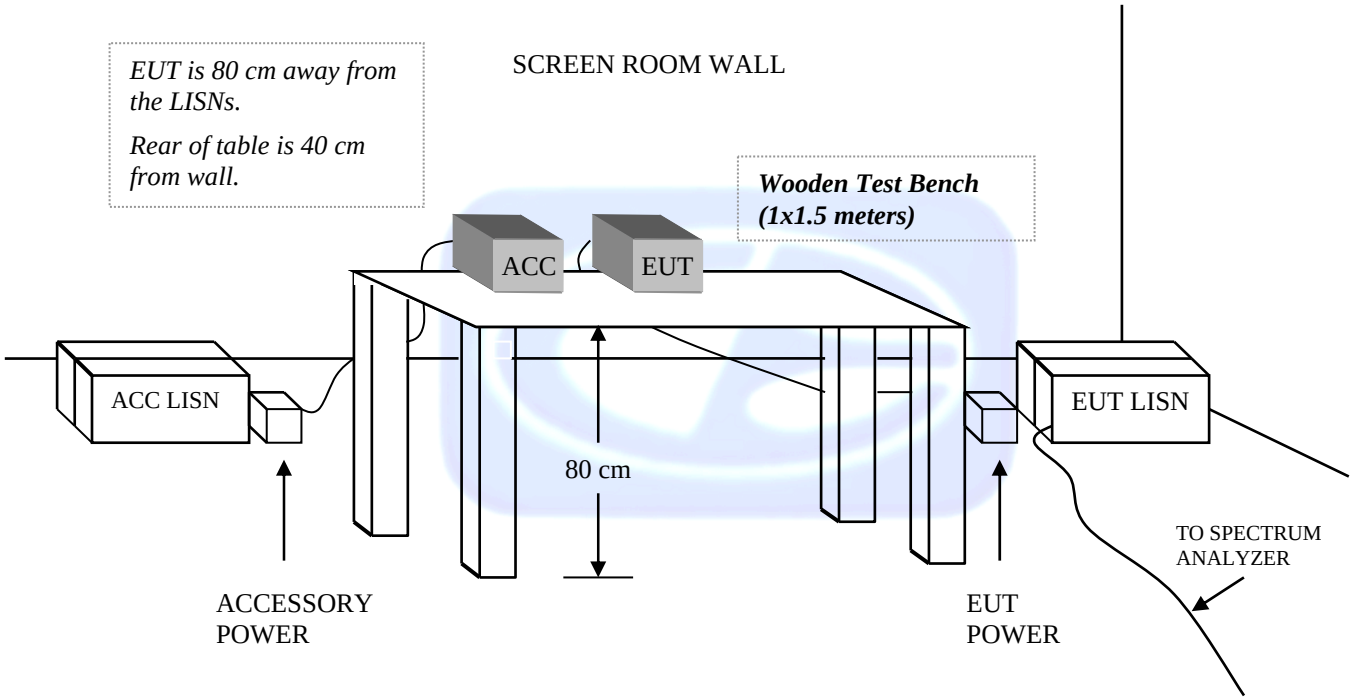


FIGURE 2: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: SEPTEMBER 3, 2015

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	24.00	200	13.00
35	24.30	250	15.30
40	25.40	300	18.20
45	21.50	350	17.90
50	22.50	400	18.60
60	15.40	450	19.80
70	12.70	500	21.60
80	11.10	550	22.40
90	13.40	600	23.70
100	13.80	650	24.30
120	15.40	700	24.00
125	15.40	750	24.50
140	13.10	800	24.30
150	17.20	850	26.30
160	13.20	900	26.90
175	14.20	950	26.00
180	14.30	1000	25.60

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	39.03
7.0	36.33	16.0	39.07
7.5	37.03	16.5	41.40
8.0	37.56	17.0	43.18
8.5	40.07	17.5	47.01
9.0	38.92	18.0	46.48
9.5	38.21		

COM-POWER PA-118

PREAMPLIFIER

S/N: 551024

CALIBRATION DATE: MARCH 6, 2015

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.76	6.0	38.77
1.1	40.46	6.5	38.46
1.2	40.05	7.0	38.27
1.3	40.58	7.5	38.77
1.4	39.50	8.0	39.25
1.5	39.92	8.5	38.63
1.6	40.40	9.0	39.58
1.7	40.10	9.5	42.12
1.8	40.49	10.0	38.53
1.9	38.86	11.0	40.21
2.0	41.53	12.0	41.15
2.5	41.05	13.0	40.51
3.0	40.29	14.0	40.32
3.5	40.82	15.0	39.47
4.0	40.88	16.0	39.88
4.5	41.37	17.0	39.79
5.0	40.73	18.0	40.61
5.5	39.05		

COM-POWER AH-826

HORN ANTENNA

S/N: 71957

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

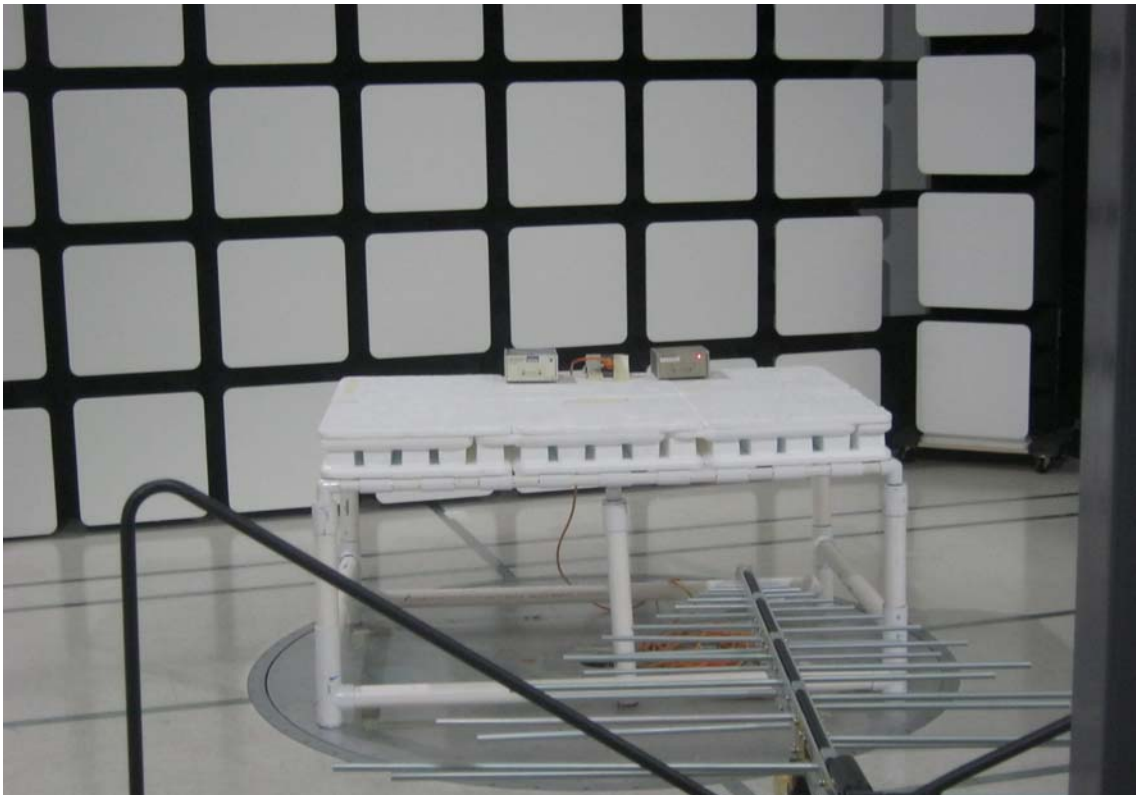
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: MAY 13, 2014

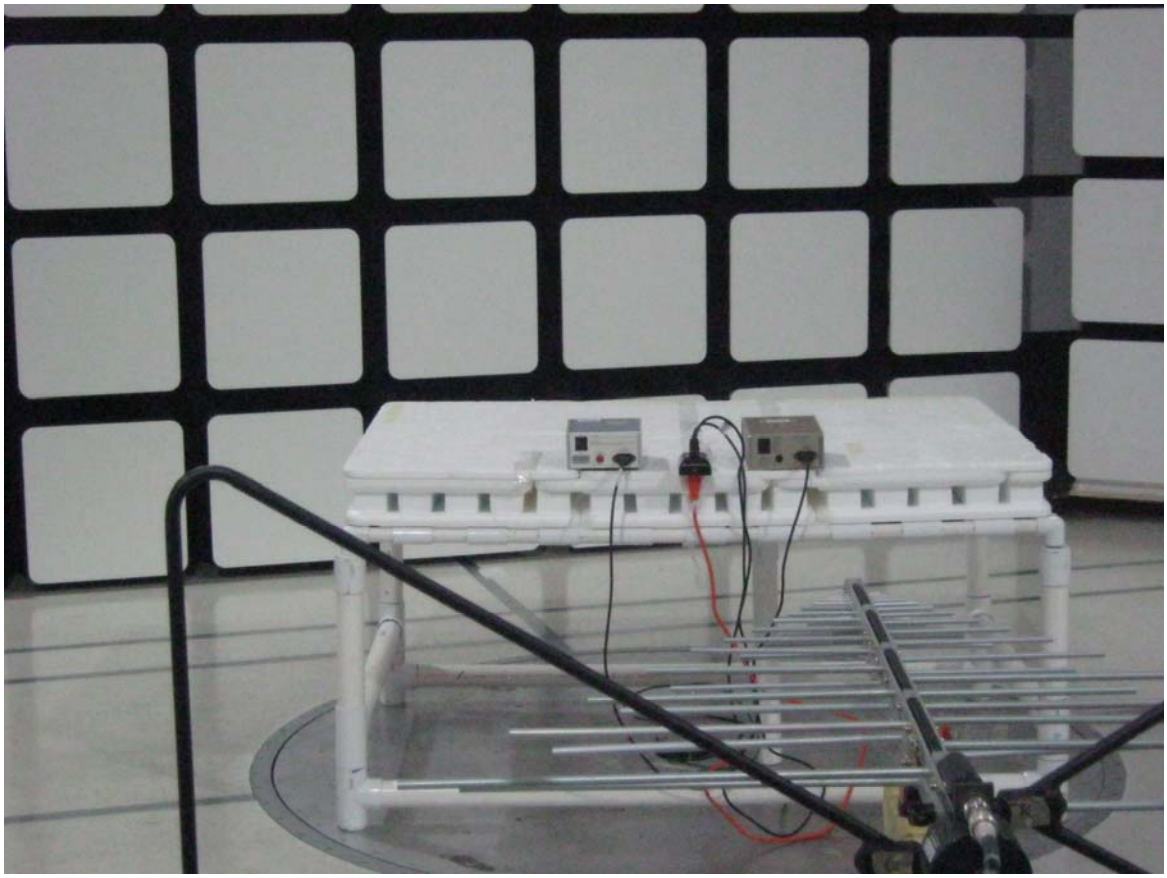
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.19	31.0	25.69
19.0	24.48	31.5	25.74
20.0	24.39	32.0	26.35
21.0	24.73	32.5	26.64
22.0	23.49	33.0	25.98
23.0	24.23	33.5	24.68
24.0	24.59	34.0	24.61
25.0	25.32	34.5	23.78
26.0	25.66	35.0	24.74
26.5	25.99	35.5	24.39
27.0	26.26	36.0	23.46
27.5	25.33	36.5	23.71
28.0	24.49	37.0	26.35
28.5	24.74	37.5	23.49
29.0	25.93	38.0	25.42
29.5	26.28	38.5	24.87
30.0	26.17	39.0	22.60
30.5	26.11	39.5	20.57
		40.0	19.15



FRONT VIEW

IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

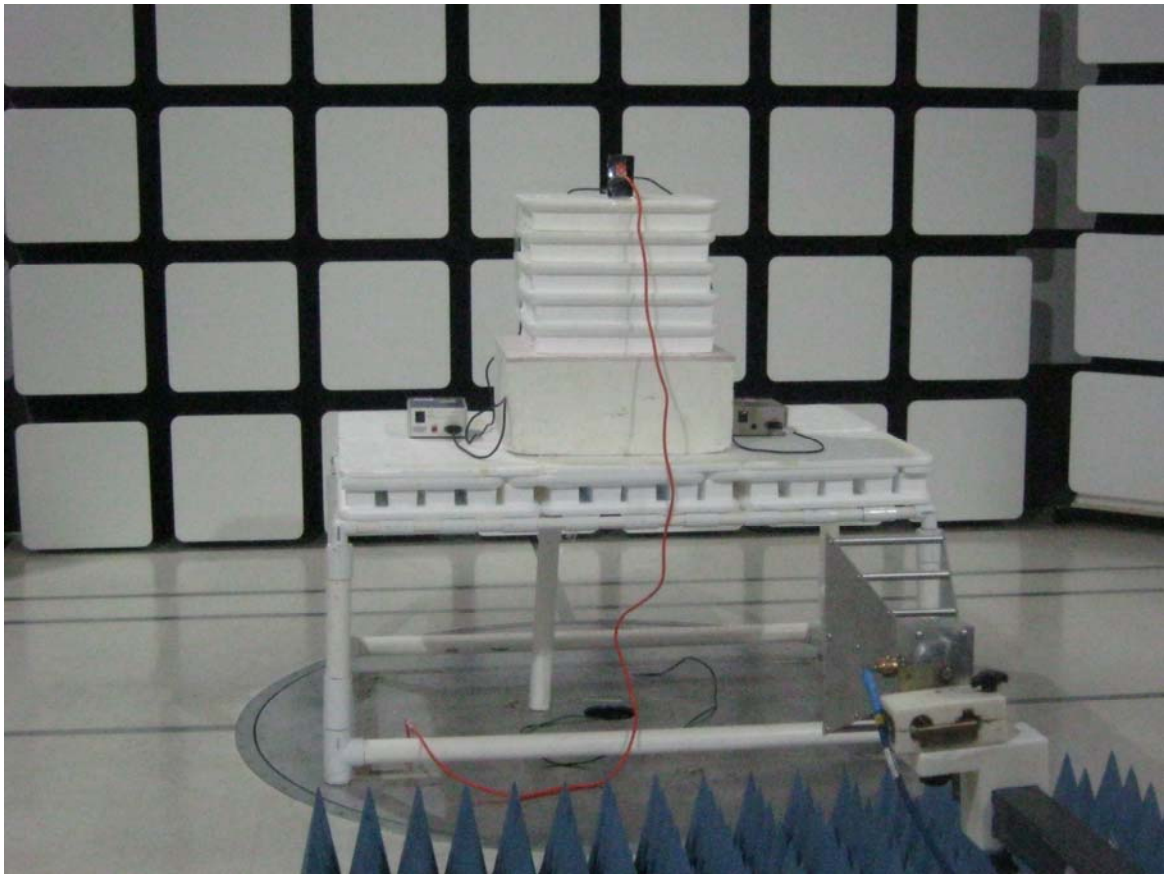
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

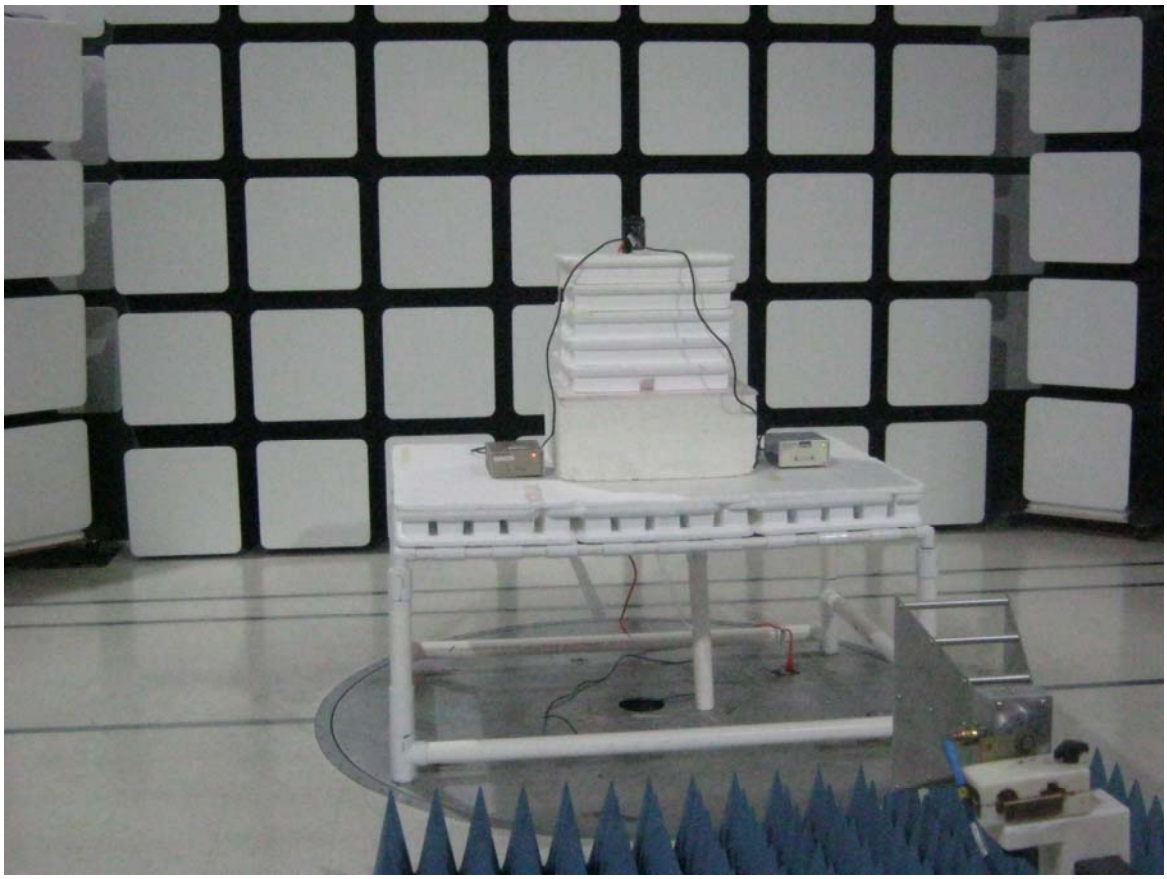
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

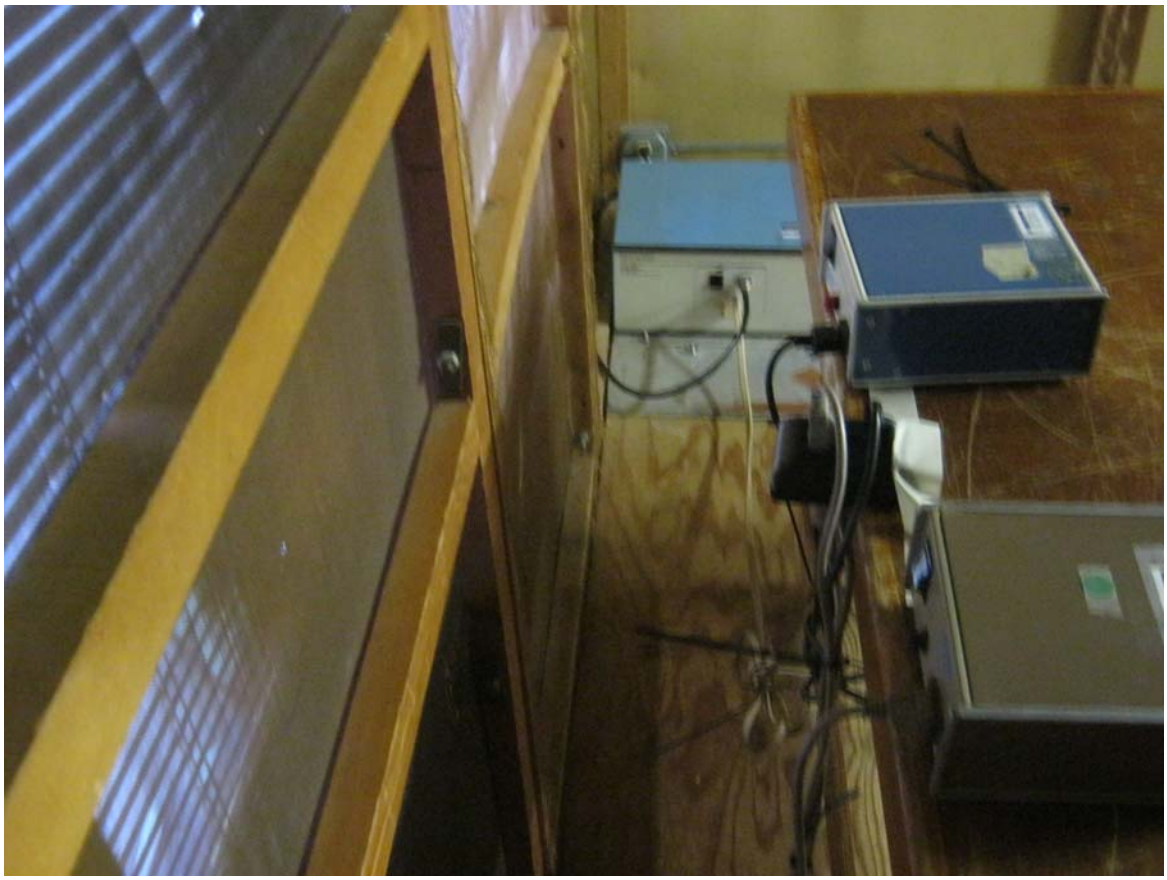
IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

IBIS NETWORKS
DUAL INTELISOCKET
MODEL: IS-302
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	65.11	V	73.97	-8.86	Peak	348.50	225.07	
4810	45.11	V	53.97	-8.86	Peak	348.50	225.07	
7215	66.43	V	73.97	-7.54	Peak	52.00	271.34	
7215	46.43	V	53.97	-7.54	Avg	52.00	271.34	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	65.50	V	73.97	-8.47	Peak	182.00	215.52	
4810	45.50	V	53.97	-8.47	Peak	182.00	215.52	
7215	72.44	V	73.97	-1.53	Peak	176.25	229.97	
7215	52.44	V	53.97	-1.53	Avg	176.25	229.97	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	67.02	V	73.97	-6.95	Peak	186.25	121.97	
4810	47.02	V	53.97	-6.95	Peak	186.25	121.97	
7215	70.97	V	73.97	-3.00	Peak	23.75	215.52	
7215	50.97	V	53.97	-3.00	Avg	23.75	215.52	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	69.86	H	73.97	-4.11	Peak	123.75	152.47	
4810	49.86	H	53.97	-4.11	Peak	123.75	152.47	
7215	72.05	H	73.97	-1.92	Peak	86.00	189.43	
7215	52.05	H	53.97	-1.92	Avg	86.00	189.43	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	66.15	H	73.97	-7.82	Peak	117.75	233.01	
4810	46.15	H	53.97	-7.82	Peak	117.75	233.01	
7215	68.37	H	73.97	-5.60	Peak	245.75	279.34	
7215	48.37	H	53.97	-5.60	Avg	245.75	279.34	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
Low Channel
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	63.63	H	73.97	-10.34	Peak	355.00	220.89	
4810	43.63	H	53.97	-10.34	Peak	355.00	220.89	
7215	68.24	H	73.97	-5.74	Peak	290.25	237.25	
7215	48.24	H	53.97	-5.74	Avg	290.25	237.25	
9620								**No Emissions**
9620								**Detected**
12025								**No Emissions**
12025								**Detected**
14430								**No Emissions**
14430								**Detected**
16835								**No Emissions**
16835								**Detected**
19240								**No Emissions**
19240								**Detected**
21645								**No Emissions**
21645								**Detected**
24050								**No Emissions**
24050								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	58.43	V	73.97	-15.54	Peak	163.75	156.05	
4880	38.43	V	53.97	-15.54	Peak	163.75	156.05	
7320	65.63	V	73.97	-8.34	Peak	5.00	155.56	
7320	45.63	V	53.97	-8.34	Avg	5.00	155.55	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	68.01	V	73.97	-5.96	Peak	94.75	145.25	
4880	48.01	V	53.97	-5.96	Peak	94.75	145.25	
7320	72.90	V	73.97	-1.07	Peak	124.00	124.53	
7320	52.90	V	53.97	-1.07	Avg	124.00	124.53	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	57.81	V	73.97	-16.17	Peak	298.00	293.67	
4880	37.81	V	53.97	-16.17	Peak	298.00	293.67	
7320	70.21	V	73.97	-3.76	Peak	36.25	250.44	
7320	50.21	V	53.97	-3.76	Avg	36.25	250.44	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	72.79	H	73.97	-1.18	Peak	161.00	188.00	
4880	52.79	H	53.97	-1.18	Peak	161.00	188.00	
7320	69.19	H	73.97	-4.78	Peak	5.00	154.44	
7320	49.19	H	53.97	-4.78	Avg	5.00	154.44	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	70.66	H	73.97	-3.31	Peak	40.00	206.92	
4880	50.66	H	53.97	-3.31	Peak	40.00	206.92	
7320	68.34	H	73.97	-5.63	Peak	226.75	205.55	
7320	48.34	H	53.97	-5.63	Avg	226.75	205.55	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2440 MHz
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	67.32	H	73.97	-6.65	Peak	74.25	193.55	
4880	47.32	H	53.97	-6.65	Peak	74.25	193.55	
7320	68.31	H	73.97	-5.66	Peak	267.25	207.70	
7320	48.31	H	53.97	-5.66	Avg	267.25	207.70	
9760								**No Emissions**
9760								**Detected**
12200								**No Emissions**
12200								**Detected**
14640								**No Emissions**
14640								**Detected**
17080								**No Emissions**
17080								**Detected**
19520								**No Emissions**
19520								**Detected**
21960								**No Emissions**
21960								**Detected**
24400								**No Emissions**
24400								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	61.51	V	73.97	-12.46	Peak	356.25	174.98	
4950	41.51	V	53.97	-12.46	Peak	356.25	174.98	
7425	66.13	V	73.97	-7.84	Peak	55.00	168.47	
7425	46.13	V	53.97	-7.84	Avg	55.00	168.47	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	66.65	V	73.97	-7.32	Peak	282.50	124.59	
4950	46.65	V	53.97	-7.32	Peak	282.50	124.59	
7425	70.70	V	73.97	-3.28	Peak	58.25	131.76	
7425	50.70	V	53.97	-3.28	Avg	58.25	131.76	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	64.10	V	73.97	-9.87	Peak	229.50	141.67	
4950	44.10	V	53.97	-9.87	Peak	229.50	141.67	
7425	69.19	V	73.97	-4.78	Peak	269.75	147.40	
7425	49.19	V	53.97	-4.78	Avg	269.75	147.40	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - X-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	67.60	H	73.97	-6.37	Peak	158.25	200.47	
4950	47.60	H	53.97	-6.37	Peak	158.25	200.47	
7425	72.68	H	73.97	-1.29	Peak	63.75	190.86	
7425	52.68	H	53.97	-1.29	Avg	63.75	190.86	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - Y-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	68.10	H	73.97	-5.87	Peak	72.50	127.16	
4950	48.10	H	53.97	-5.87	Peak	72.50	127.16	
7425	70.98	H	73.97	-2.99	Peak	285.50	133.73	
7425	50.98	H	53.97	-2.99	Avg	285.50	133.73	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2475 MHz
Transmit Mode - Z-Axis

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950	61.39	H	73.97	-12.58	Peak	143.75	147.40	
4950	41.39	H	53.97	-12.58	Peak	143.75	147.40	
7425	72.32	H	73.97	-1.65	Peak	146.75	142.02	
7425	52.32	H	53.97	-1.65	Avg	146.75	142.02	
9900								**No Emissions**
9900								**Detected**
12375								**No Emissions**
12375								**Detected**
14850								**No Emissions**
14850								**Detected**
17325								**No Emissions**
17325								**Detected**
19800								**No Emissions**
19800								**Detected**
22275								**No Emissions**
22275								**Detected**
24750								**No Emissions**
24750								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - X-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	53.28	V	73.97	-20.69	Peak	194.25	167.94	
4960	33.28	V	53.97	-20.69	Peak	194.25	167.94	
7440	57.03	V	73.97	-16.94	Peak	44.00	185.25	
7440	37.03	V	53.97	-16.94	Avg	44.00	185.25	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - Y-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	52.96	V	73.97	-21.01	Peak	4.25	149.85	
4960	32.96	V	53.97	-21.01	Peak	4.25	149.85	
7440	57.16	V	73.97	-16.81	Peak	207.25	144.35	
7440	37.16	V	53.97	-16.81	Avg	207.25	144.35	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - Z-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	53.39	V	73.97	-20.58	Peak	182.50	164.47	
4960	33.39	V	53.97	-20.58	Peak	182.50	164.47	
7440	57.74	V	73.97	-16.23	Peak	39.00	178.20	
7440	37.74	V	53.97	-16.23	Avg	39.00	178.20	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - X-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	54.40	H	73.97	-19.57	Peak	210.00	148.83	
4960	34.40	H	53.97	-19.57	Peak	210.00	148.83	
7440	58.01	H	73.97	-15.96	Peak	351.75	128.89	
7440	38.01	H	53.97	-15.96	Avg	351.75	128.89	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - Y-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	53.52	H	73.97	-20.45	Peak	182.50	147.16	
4960	33.52	H	53.97	-20.45	Peak	182.50	147.16	
7440	57.14	H	73.97	-16.83	Peak	65.25	136.53	
7440	37.14	H	53.97	-16.83	Avg	65.25	136.53	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

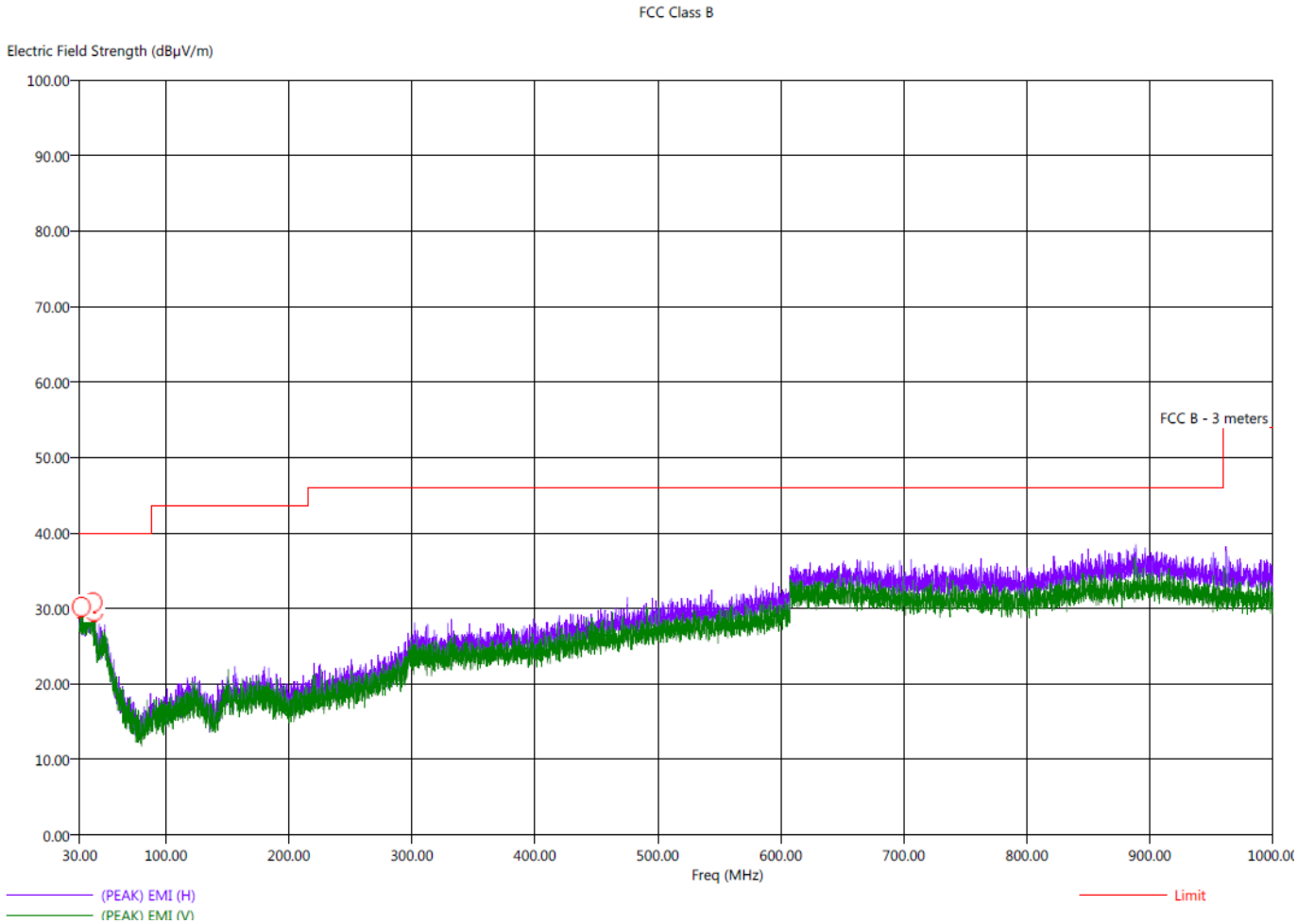
FCC 15.247
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting
2480 MHz
Transmit Mode - Z-Axis

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	53.16	H	73.97	-20.82	Peak	209.00	122.74	
4960	33.16	H	53.97	-20.82	Peak	209.00	122.74	
7440	56.72	H	73.97	-17.26	Peak	37.25	128.89	
7440	36.72	H	53.97	-17.26	Avg	37.25	128.89	
9920								**No Emissions**
9920								**Detected**
12400								**No Emissions**
12400								**Detected**
14880								**No Emissions**
14880								**Detected**
17360								**No Emissions**
17360								**Detected**
19840								**No Emissions**
19840								**Detected**
22320								**No Emissions**
22320								**Detected**
24800								**No Emissions**
24800								**Detected**

Title: Pre-Scan - FCC Class B
File: Agilent - Pre-Scan - FCC Class B - Z-Axis - 30 MHz to 1000 MHz - 03-10-2016.set
Operator: Kyle Fujimoto
EUT Type: Dual InteliSocket
EUT Condition: The EUT is continuously transmitting - Z-Axis - Worst Case
Comments: Company: IBIS Networks
Model: IS-302

3/10/2016 11:45:23 A
Sequence: Preliminary Sc



No additional emissions, except for harmonics, were found between 10 kHz – 30 MHz and 1 GHz – 25 GHz.

Title: Radiated Final - FCC Class B
File: Agilent - Final Scan - FCC Class B - 30 MHz to 1000 MHz - 03-10-2016.set
Operator: Kyle Fujimoto
EUT Type: Dual InteliSocket
EUT Condition: The EUT is continuously transmitting - Z-Axis - Worst Case
Comments: Company: IBIS Networks
Model: IS-302

3/10/2016 11:59:50 AM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
30.60	H	31.17	26.19	-8.83	-13.81	40.00	24.03	0.35	117.75	253.13
31.40	V	32.12	26.16	-7.88	-13.84	40.00	24.09	0.36	242.25	400.05
36.90	H	31.96	26.72	-8.04	-13.28	40.00	24.69	0.41	310.50	269.67
39.10	H	32.50	27.22	-7.50	-12.78	40.00	25.23	0.42	235.25	268.47
40.90	V	32.79	26.70	-7.21	-13.30	40.00	24.80	0.44	244.50	399.10
41.80	V	31.81	26.32	-8.19	-13.68	40.00	23.85	0.44	12.25	158.32

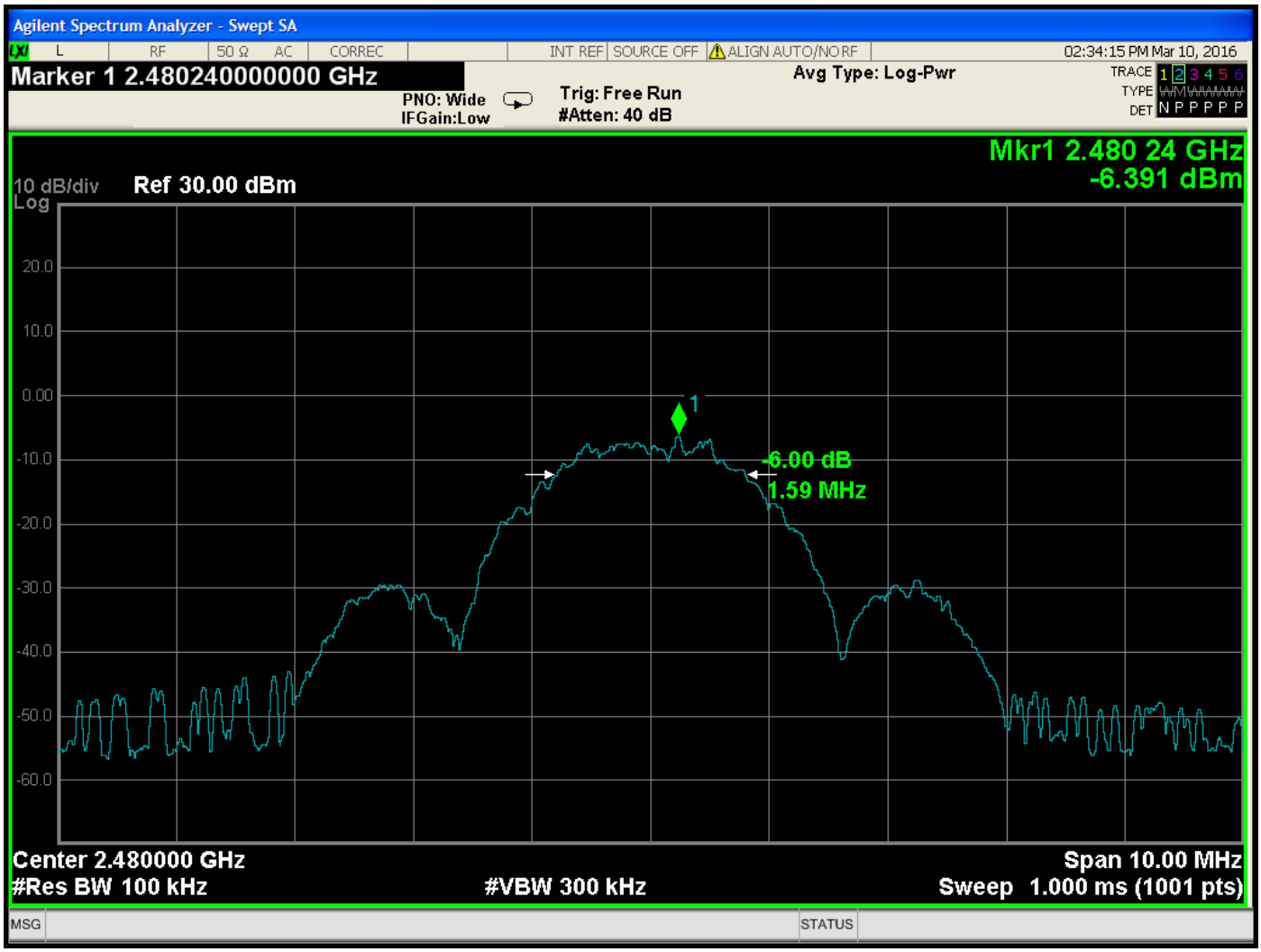
-6 dB BANDWIDTH

DATA SHEETS

-6 dB Bandwidth – Low Channel – Model: IS-302

-6 dB Bandwidth – Middle Channel – Model: IS-302

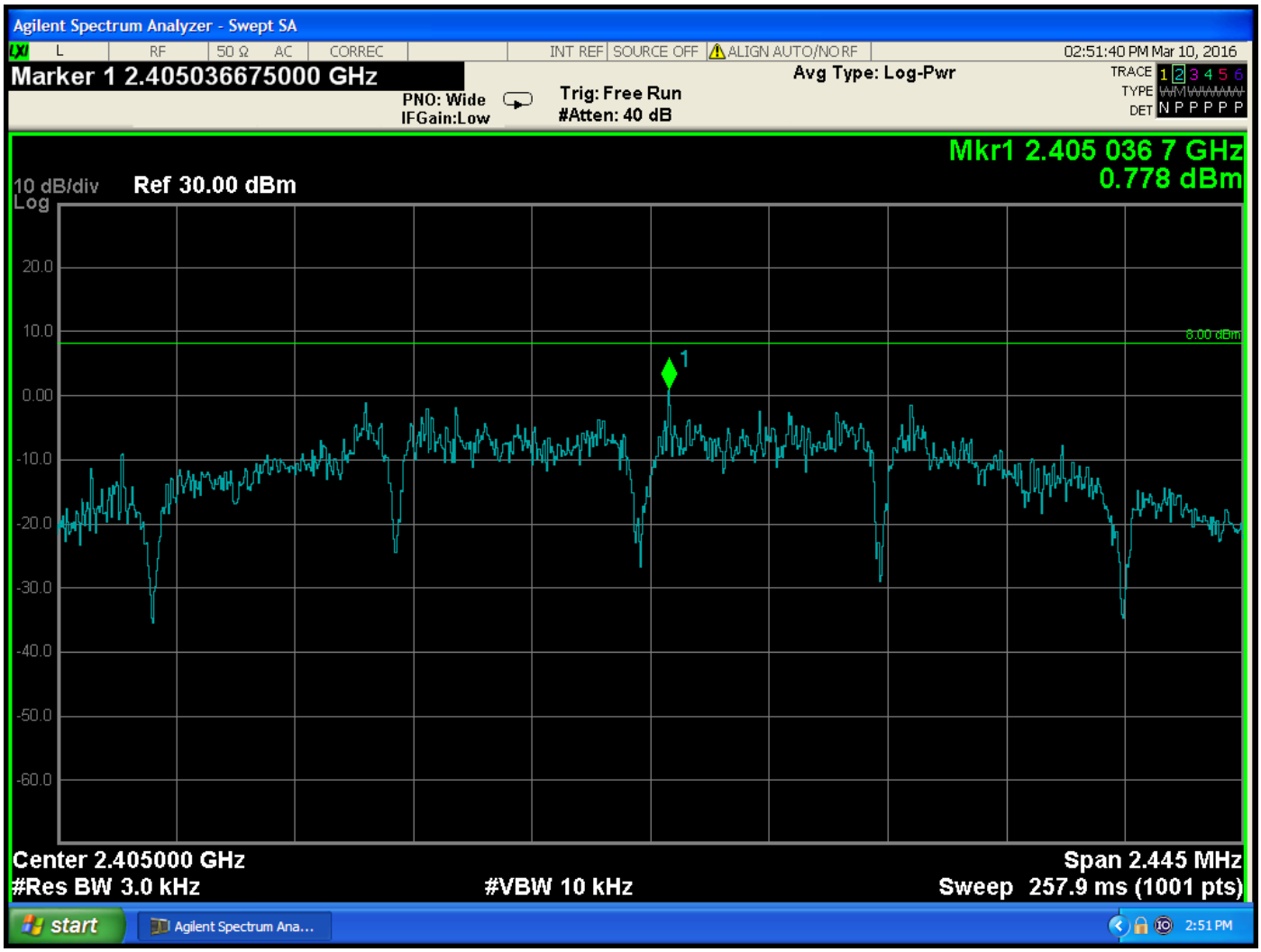
-6 dB Bandwidth – High Channel(2475 MHz) – Model: IS-302



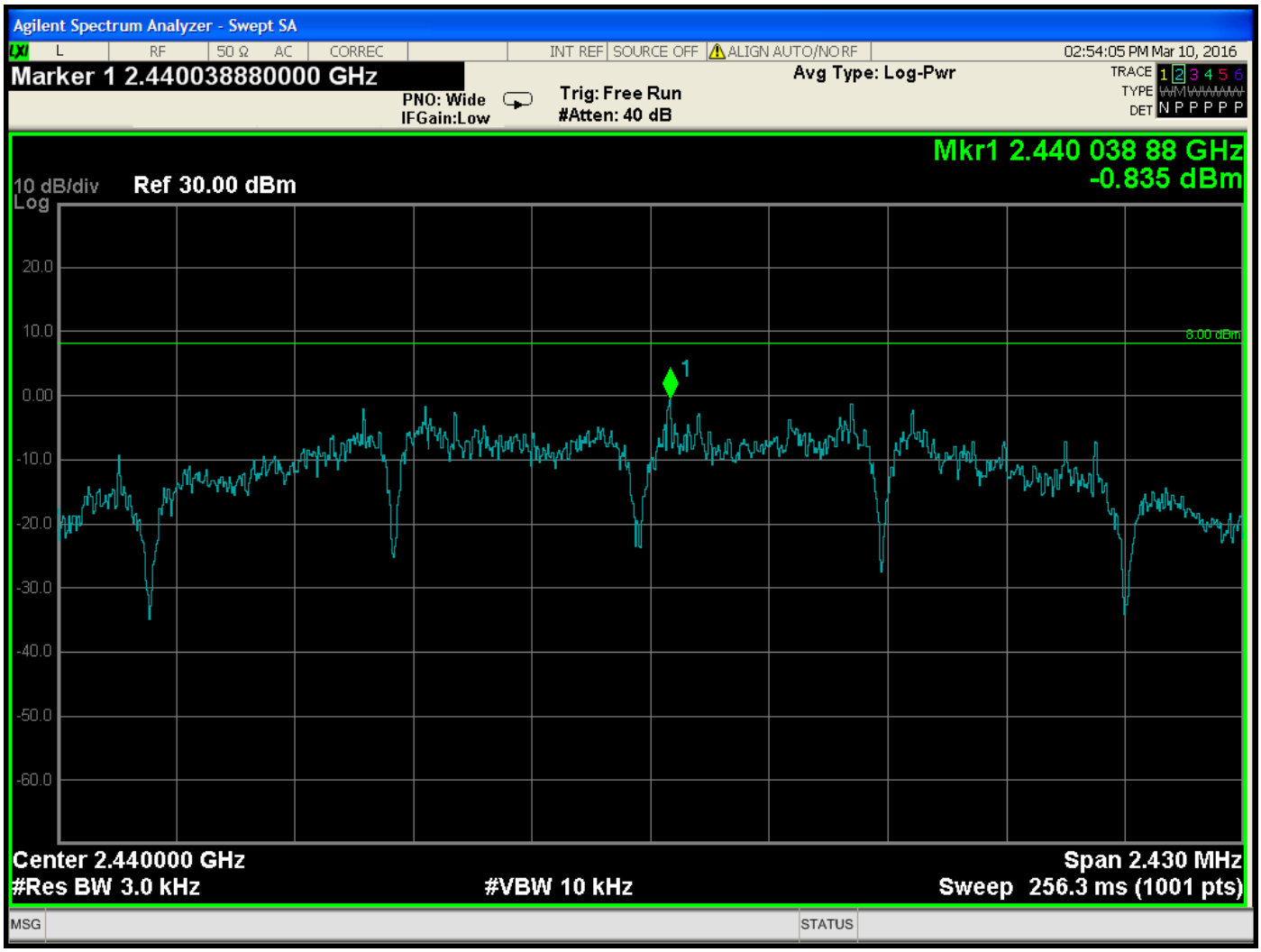
-6 dB Bandwidth – High Channel(2480 MHz) – Model: IS-302

SPECTRAL DENSITY OUTPUT

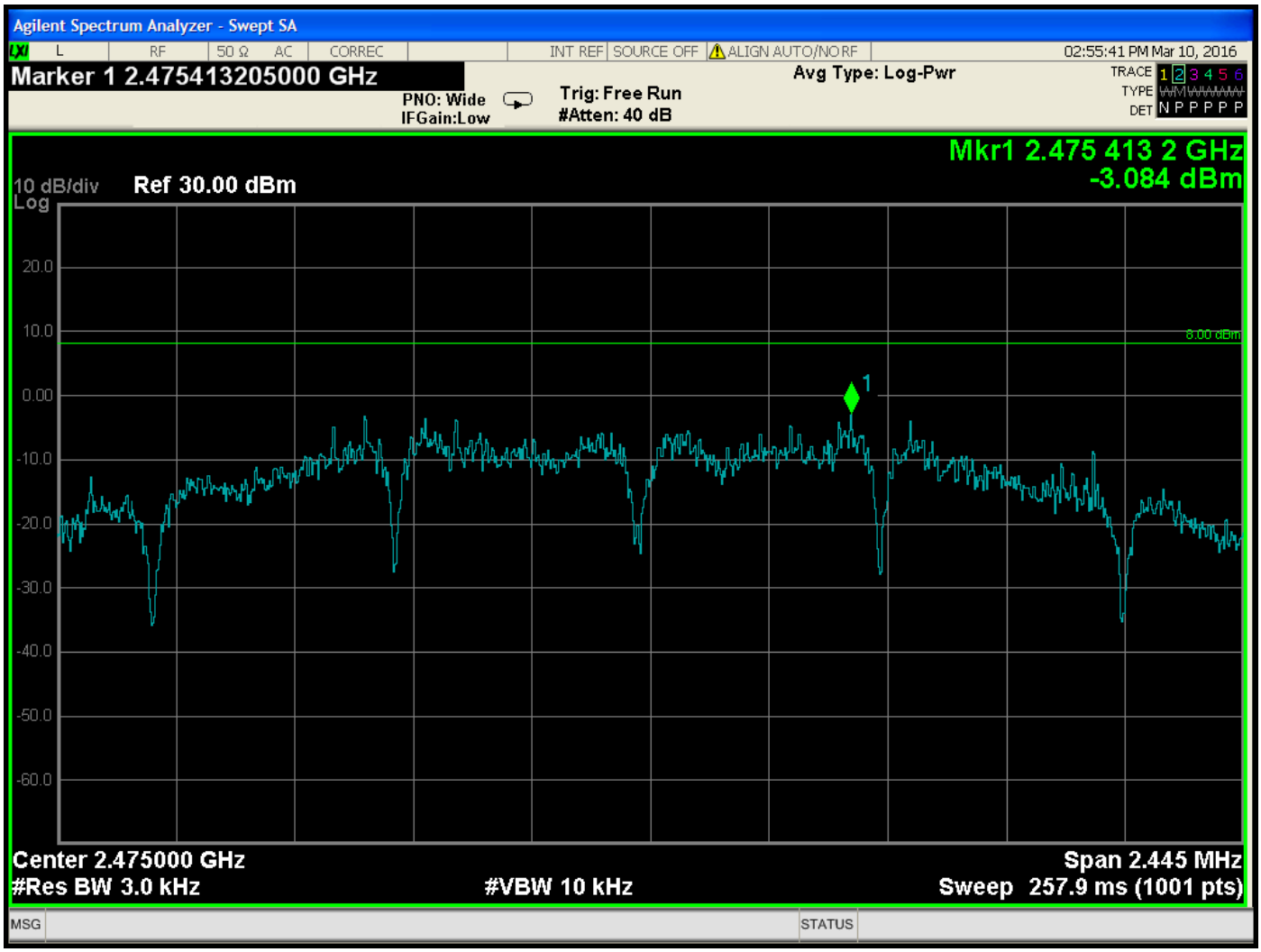
DATA SHEETS



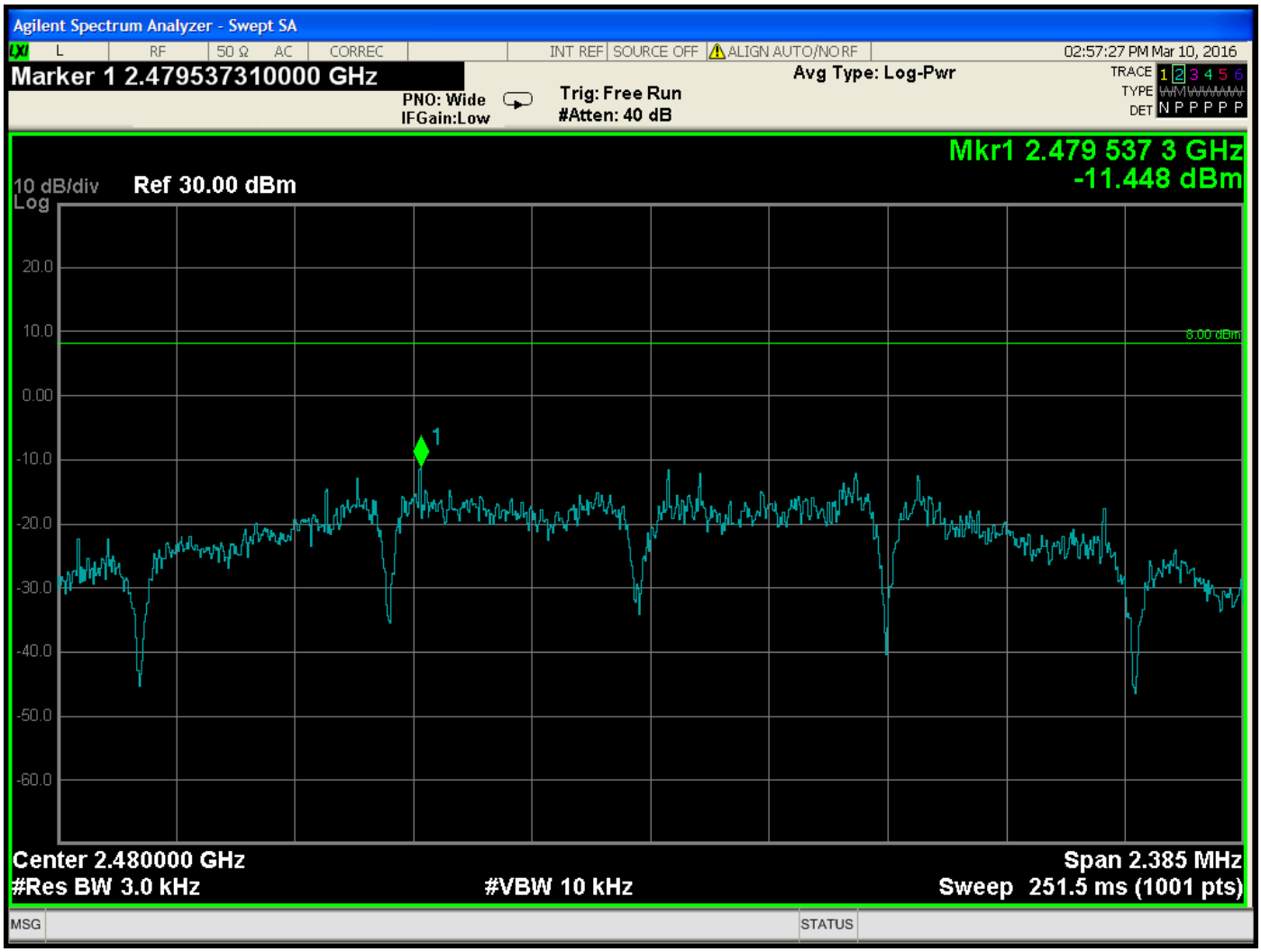
Spectral Density – Low Channel – Model: IS-302



Spectral Density – Middle Channel – Model: IS-302



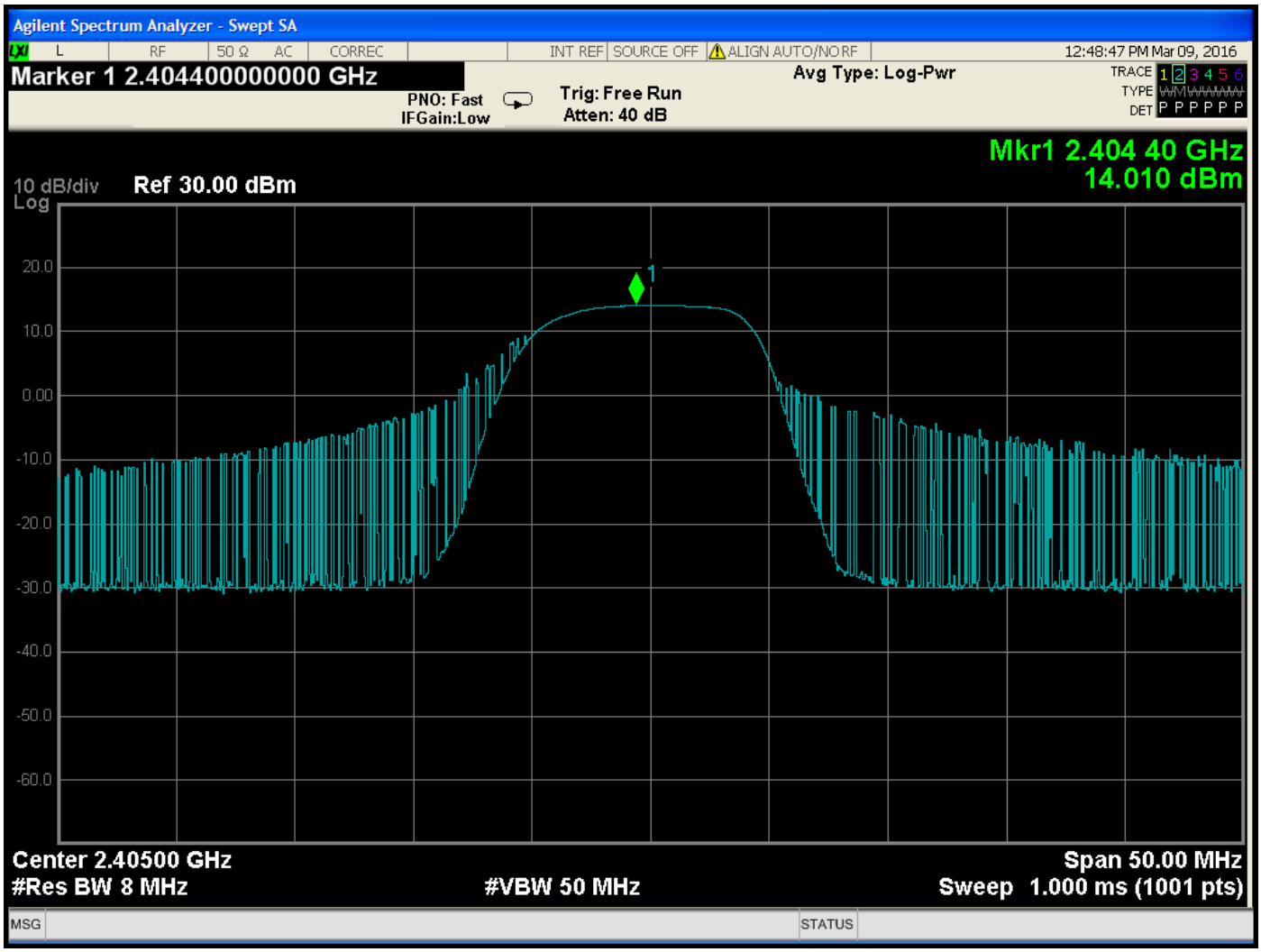
Spectral Density – High Channel(2475 MHz) – Model: IS-302



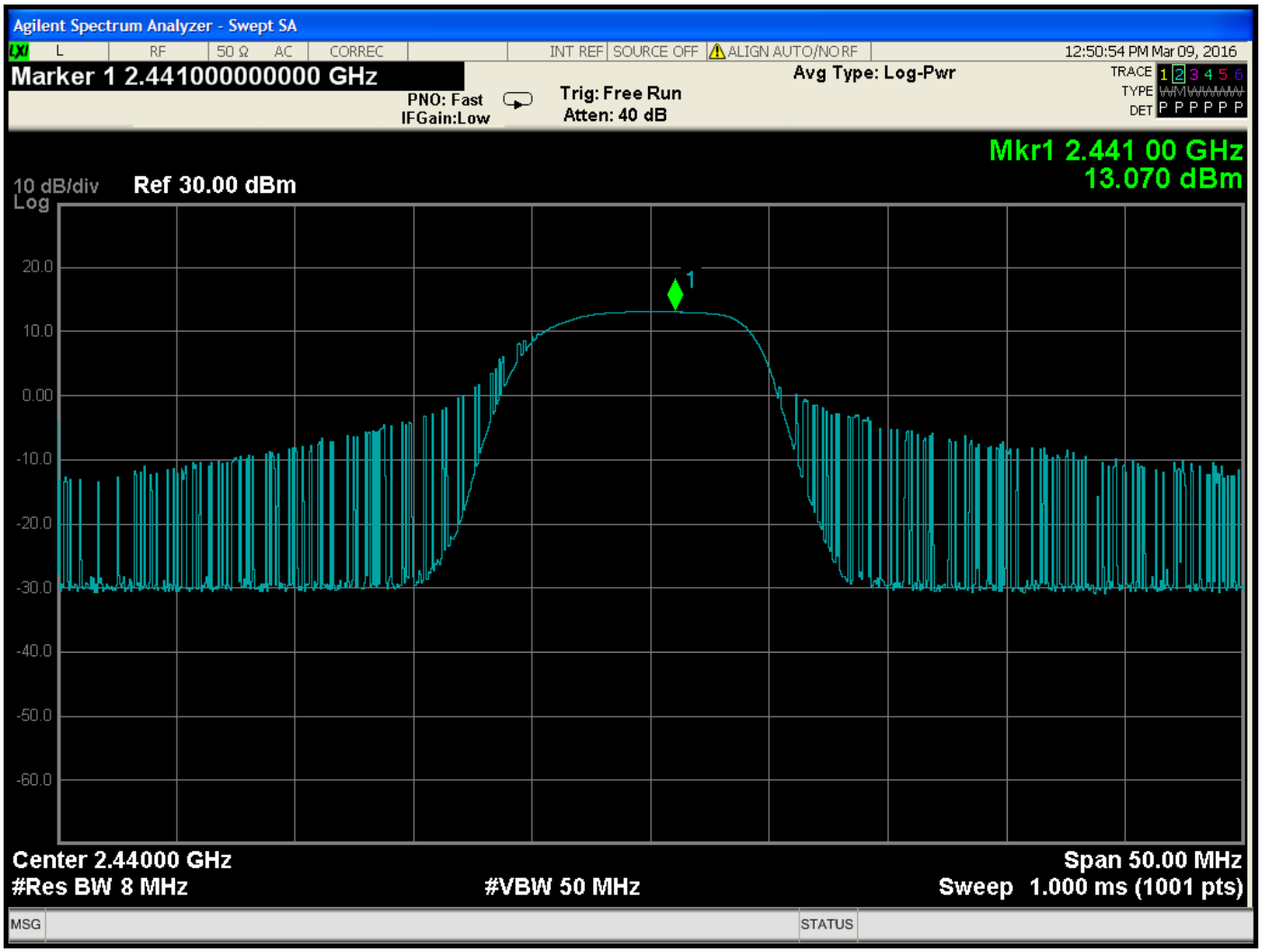
Spectral Density – High Channel(2480 MHz) – Model: IS-302

PEAK POWER

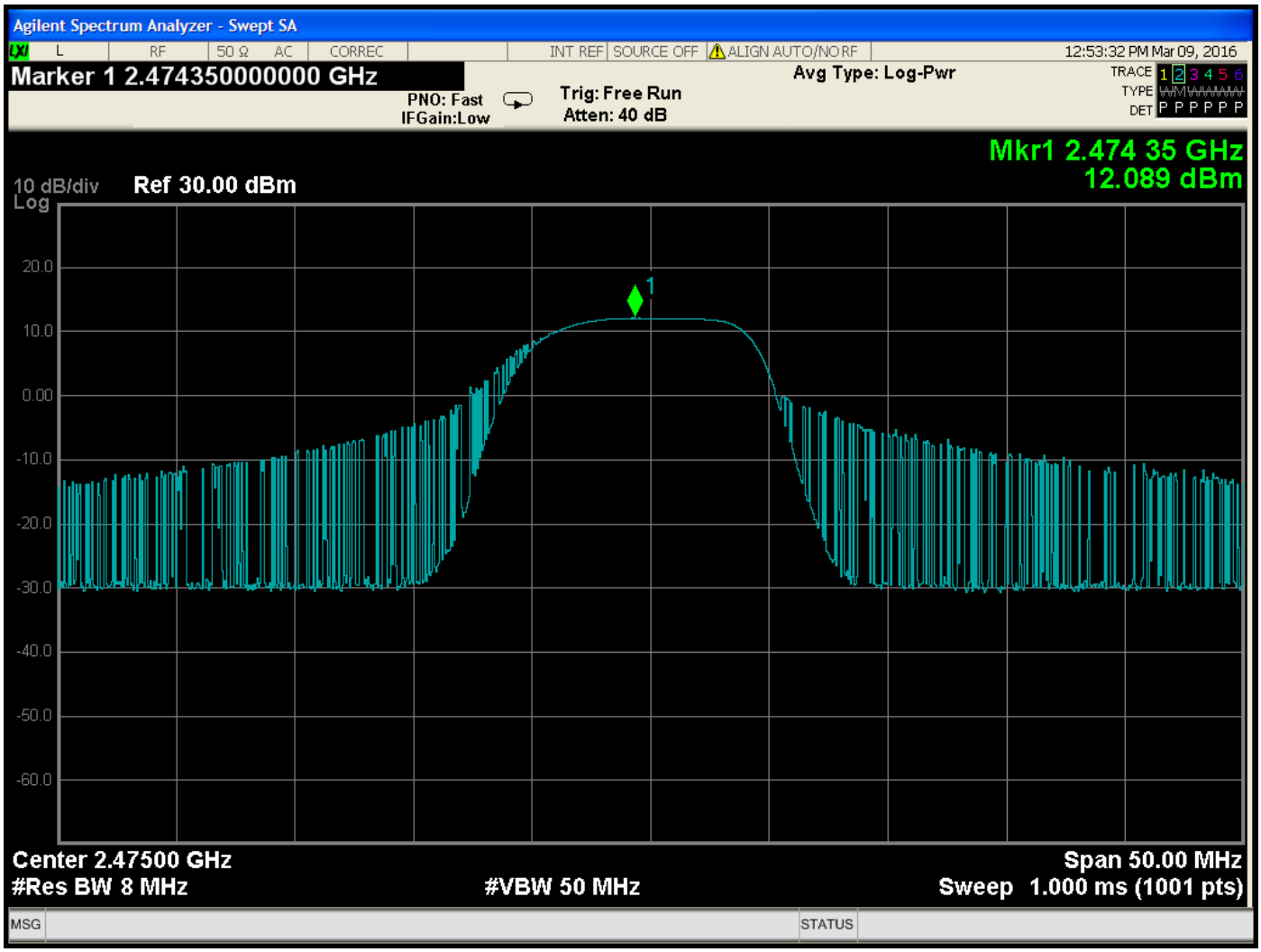
DATA SHEETS



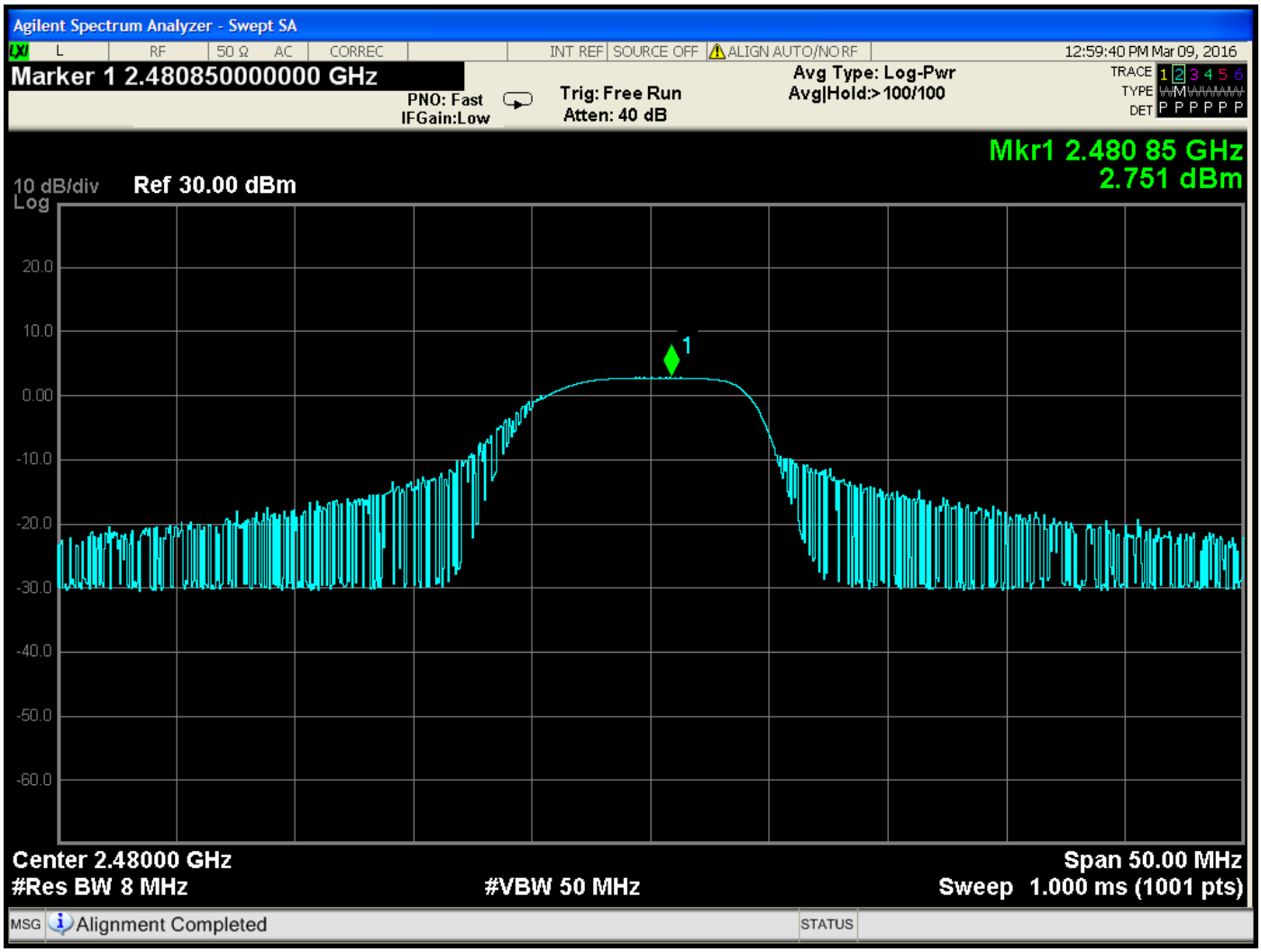
Peak Power Output – Low Channel – Model: IS-302



Peak Power Output – Middle Channel – Model: IS-302



Peak Power Output – High Channel(2475 MHz) – Model: IS-302



Peak Power Output – High Channel(2480 MHz) – Model: IS-302

BAND EDGES

DATA SHEETS

FCC 15.247

IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

Low Channel

Band Edges - Vertical and Horizontal Polarization

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405.00	107.30	V	--	--	Peak	168.75	198.50	**Band Edge - Low Channel**
2405.00	87.30	V	--	--	Avg	168.75	198.50	**Fundamental - Z-Axis**
2390.00	45.58	V	73.97	-28.39	Peak	168.75	198.50	**Band Edge**
2390.00	25.58	V	53.97	-28.39	Avg	168.75	198.50	**Low Channel - Z-Axis**
2334.53	55.23	V	73.97	-18.74	Peak	168.75	198.50	**Band Edge**
2334.53	35.23	V	53.97	-18.74	Avg	168.75	198.50	**Low Channel - Z-Axis**
2405.00	107.13	H	--	--	Peak	83.00	168.47	**Band Edge - Low Channel**
2405.00	87.13	H	--	--	Avg	83.00	168.47	**Fundamental - X-Axis**
2390.00	44.14	H	73.97	-29.83	Peak	83.00	168.47	**Band Edge**
2390.00	24.14	H	53.97	-29.83	Avg	83.00	168.47	**Low Channel - X-Axis**
2340.47	58.47	H	73.97	-15.50	Peak	83.00	168.47	**Band Edge**
2340.47	38.47	H	53.97	-15.50	Avg	83.00	168.47	**Low Channel - X-Axis**

FCC 15.247

IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting

Date: 03/09/2016
Lab: D
Tested By: Kyle Fujimoto

2475 MHz

Band Edges - Vertical and Horizontal Polarization

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2475.00	104.48	V	--	--	Peak	356.25	128.53	**Band Edge - High Channel**
2475.00	84.48	V	--	--	Avg	356.25	128.53	**Fundamental - Z-Axis**
2483.50	44.65	V	73.97	-15.47	Peak	356.25	128.53	**Band Edge**
2483.50	24.65	V	53.97	-15.47	Avg	356.25	128.53	**High Channel - Z-Axis**
2475.00	104.93	H	--	--	Peak	314.50	137.67	**Band Edge - High Channel**
2475.00	84.93	H	--	--	Avg	314.50	137.67	**Fundamental - X-Axis**
2483.50	45.09	H	73.97	-15.88	Peak	314.50	137.67	**Band Edge**
2483.50	25.09	H	53.97	-15.88	Avg	314.50	137.67	**High Channel - X-Axis**

FCC 15.247

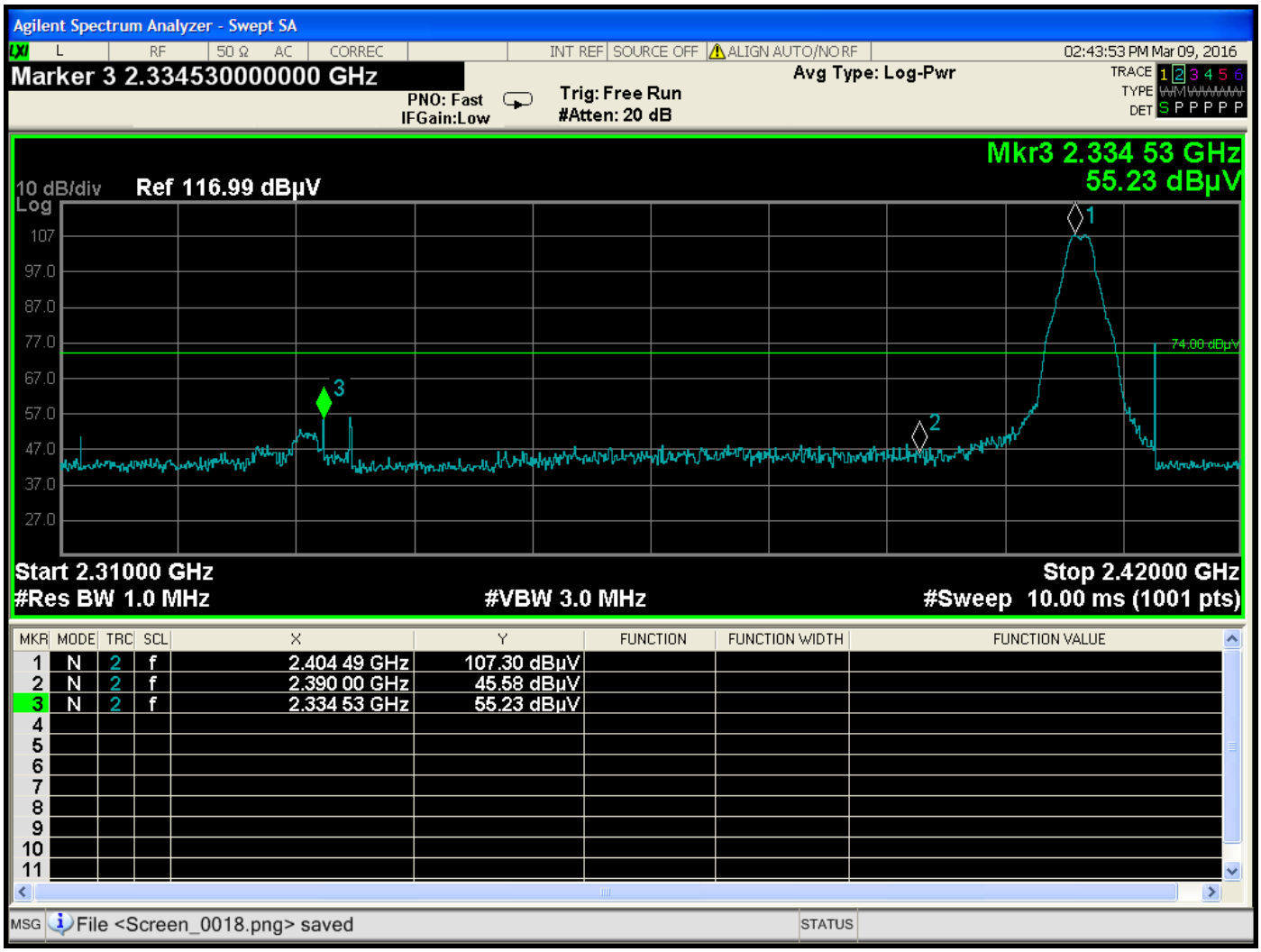
IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting

Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

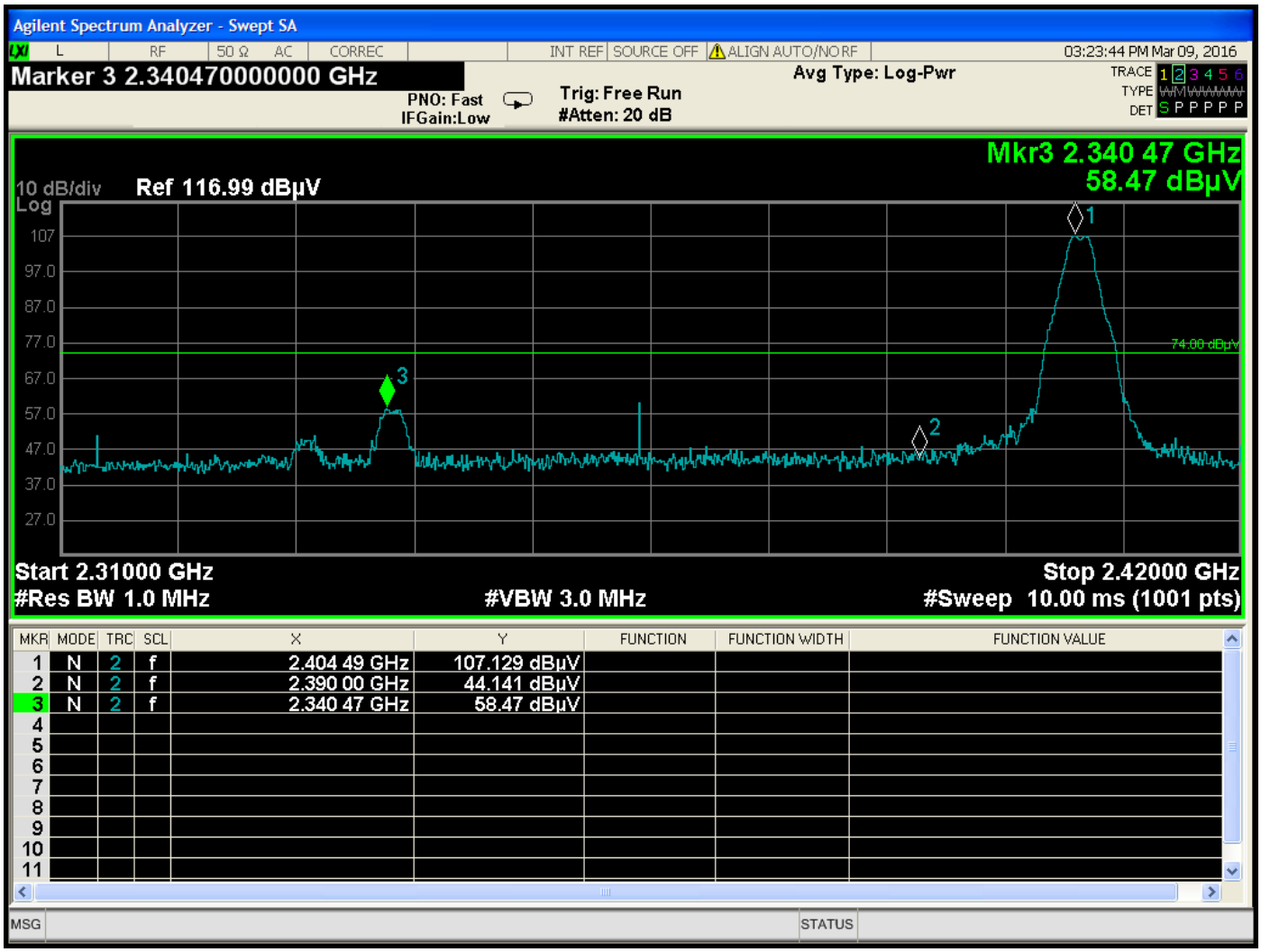
2480 MHz

Band Edges - Vertical and Horizontal Polarization

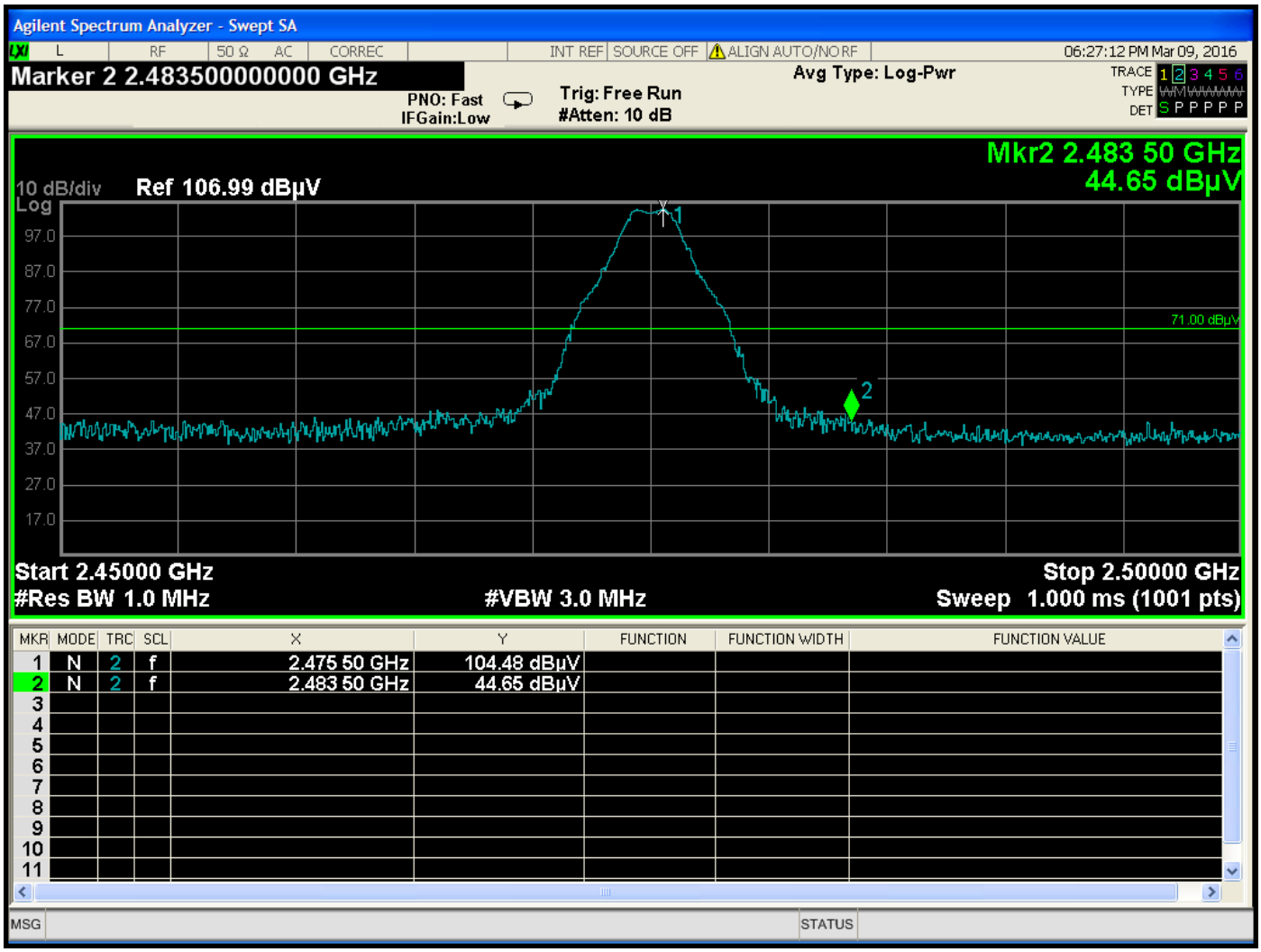
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	94.27	V	--	--	Peak	5.25	195.46	**Band Edge - High Channel**
2480.00	74.27	V	--	--	Avg	5.25	195.46	**Fundamental - Z-Axis**
2483.50	56.68	V	73.97	-17.29	Peak	5.25	195.46	**Band Edge**
2483.50	36.68	V	53.97	-17.29	Avg	5.25	195.46	**High Channel - Z-Axis**
2480.00	95.63	H	--	--	Peak	134.25	185.67	**Band Edge - High Channel**
2480.00	75.63	H	--	--	Avg	134.25	185.67	**Fundamental - X-Axis**
2483.50	57.92	H	73.97	-16.05	Peak	134.25	185.67	**Band Edge**
2483.50	37.92	H	53.97	-16.05	Avg	134.25	185.67	**High Channel - X-Axis**



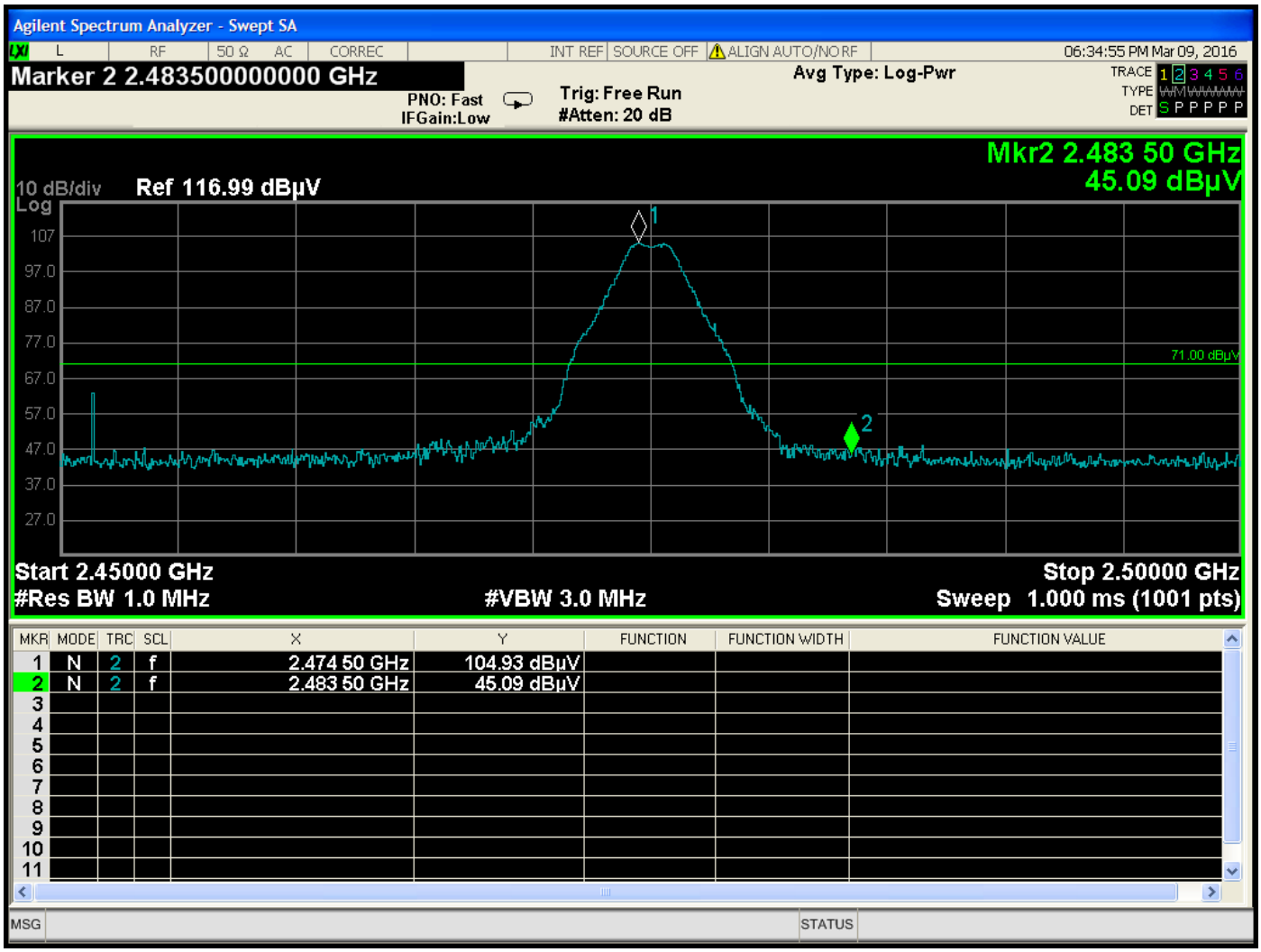
Band Edge – Low Channel – Vertical – Z-Axis – Worst Case – Model: IS-302



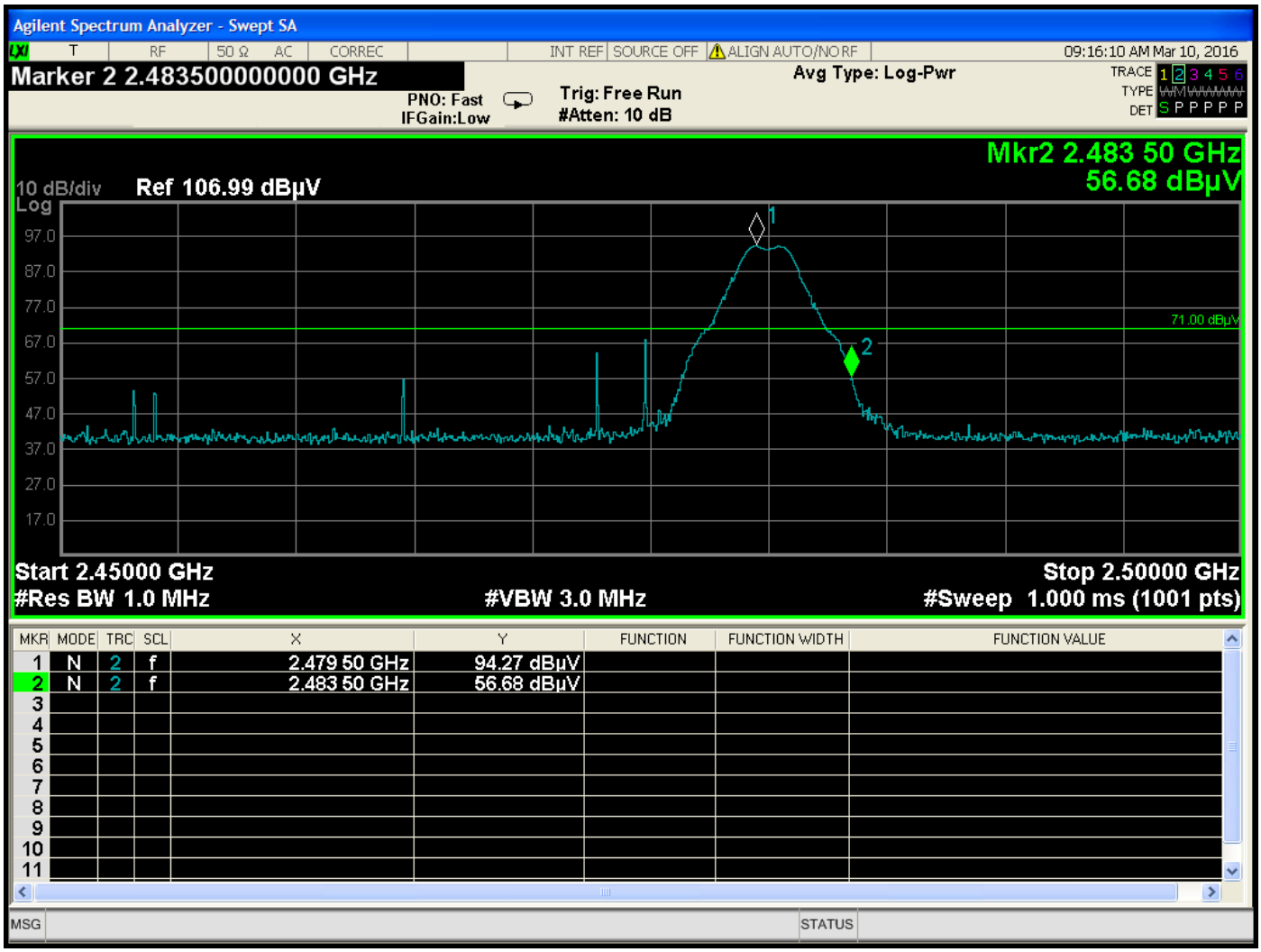
Band Edge – Low Channel – Horizontal – X-Axis – Worst Case – Model: IS-302



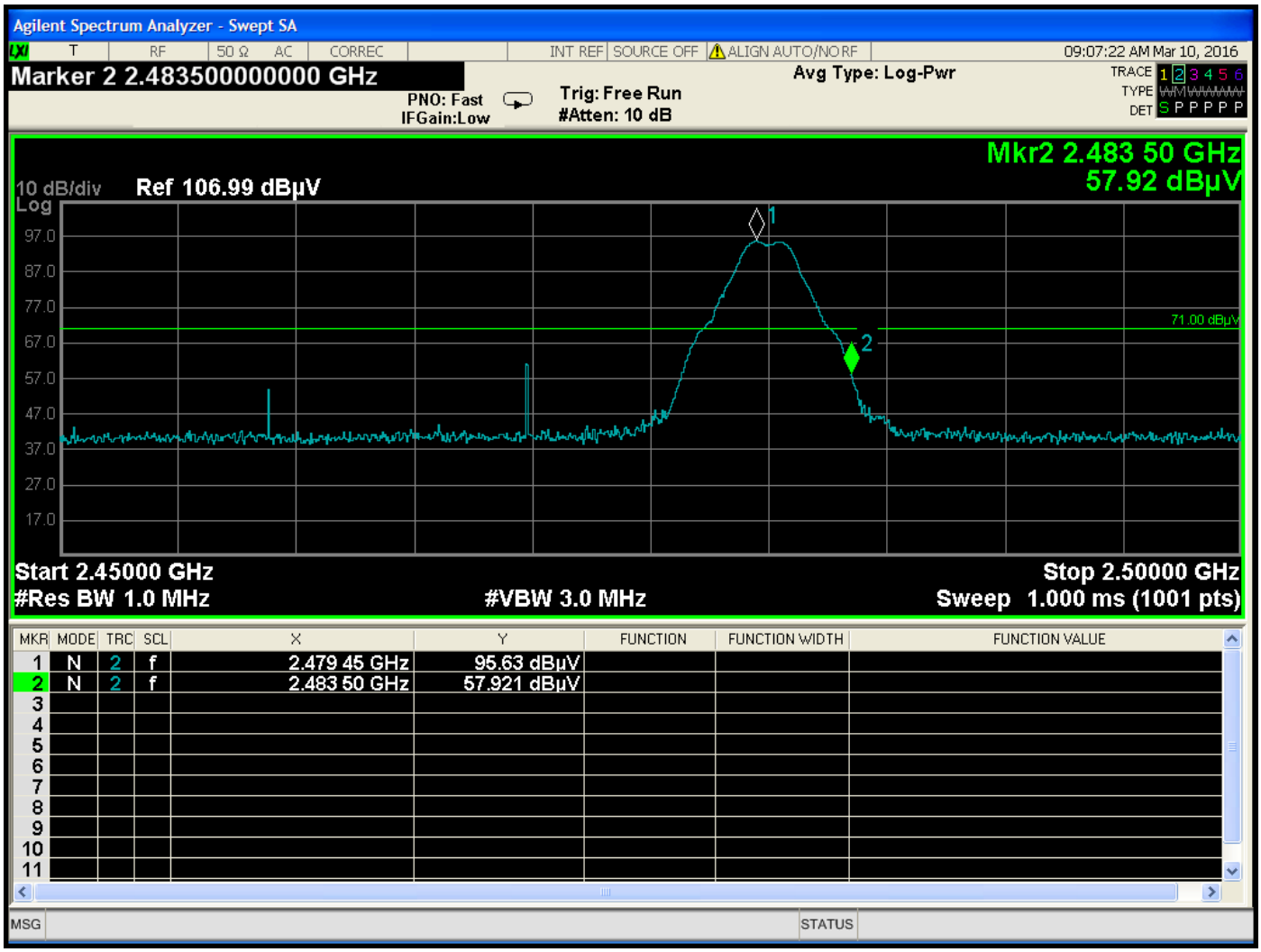
Band Edge – High Channel (2475 MHz) – Vertical – Z-Axis – Worst Case – Model: IS-302



Band Edge – High Channel (2475 MHz) – Horizontal – X-Axis – Worst Case – Model: IS-302



Band Edge – High Channel (2480 MHz) – Vertical – Z-Axis – Worst Case – Model: IS-302



Band Edge – High Channel (2480 MHz) – Horizontal – X-Axis – Worst Case – Model: IS-302

EMISSIONS IN
NON-RESRTICTED BANDS
DATA SHEETS

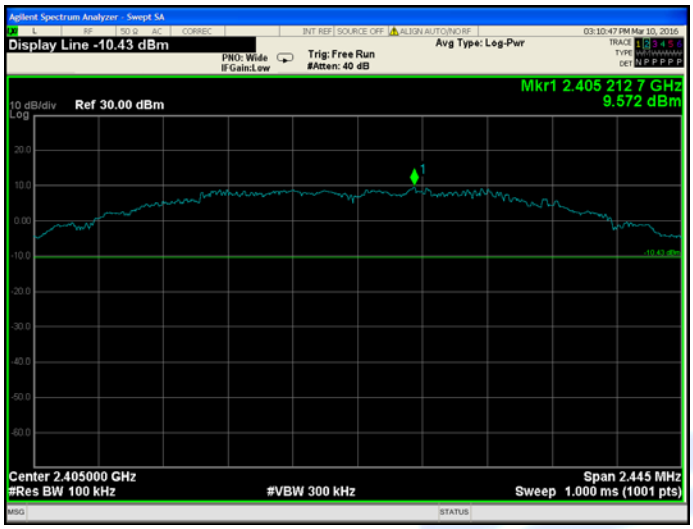
FCC 15.247 - Emissions in Non-Restricted Bands

IBIS Networks
Dual InteliSocket
Model: IS-302
Configuration: Continuously Transmitting

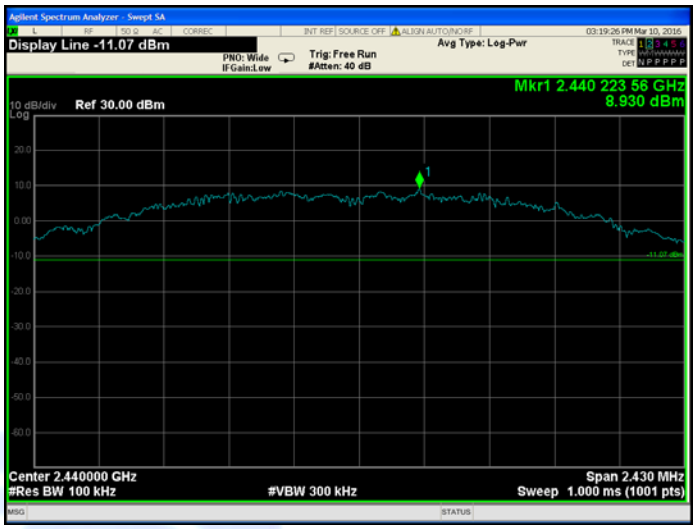
Date: 03/10/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBm)	Limit (dBm)	Margin	Peak / QP / Avg	Comments
2400.0	-47.683	-21.29	-26.393	Peak	High Channel (2480 MHz)
7219	-29	-10.43	-18.57	Peak	Low Channel
24160	-38.39	-21.29	-17.1	Peak	High Channel (2480 MHz)

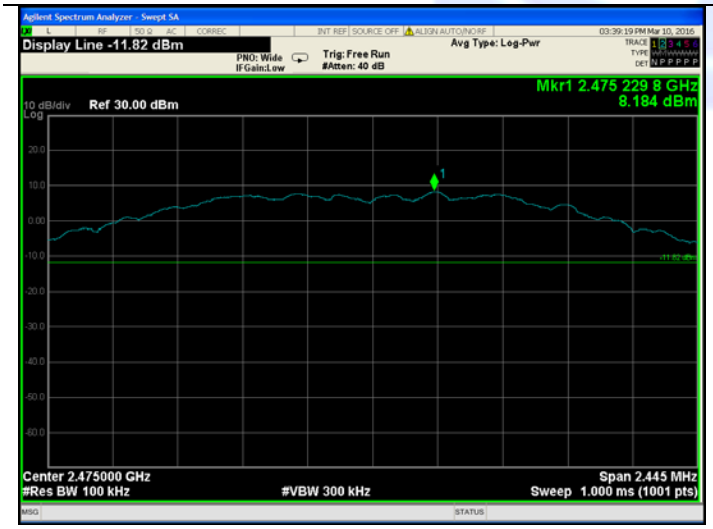
REFERENCE LEVEL MEASUREMENTS



Reference Level – Low Channel(2405 MHz)



Reference Level – Middle Channel(2440 MHz)

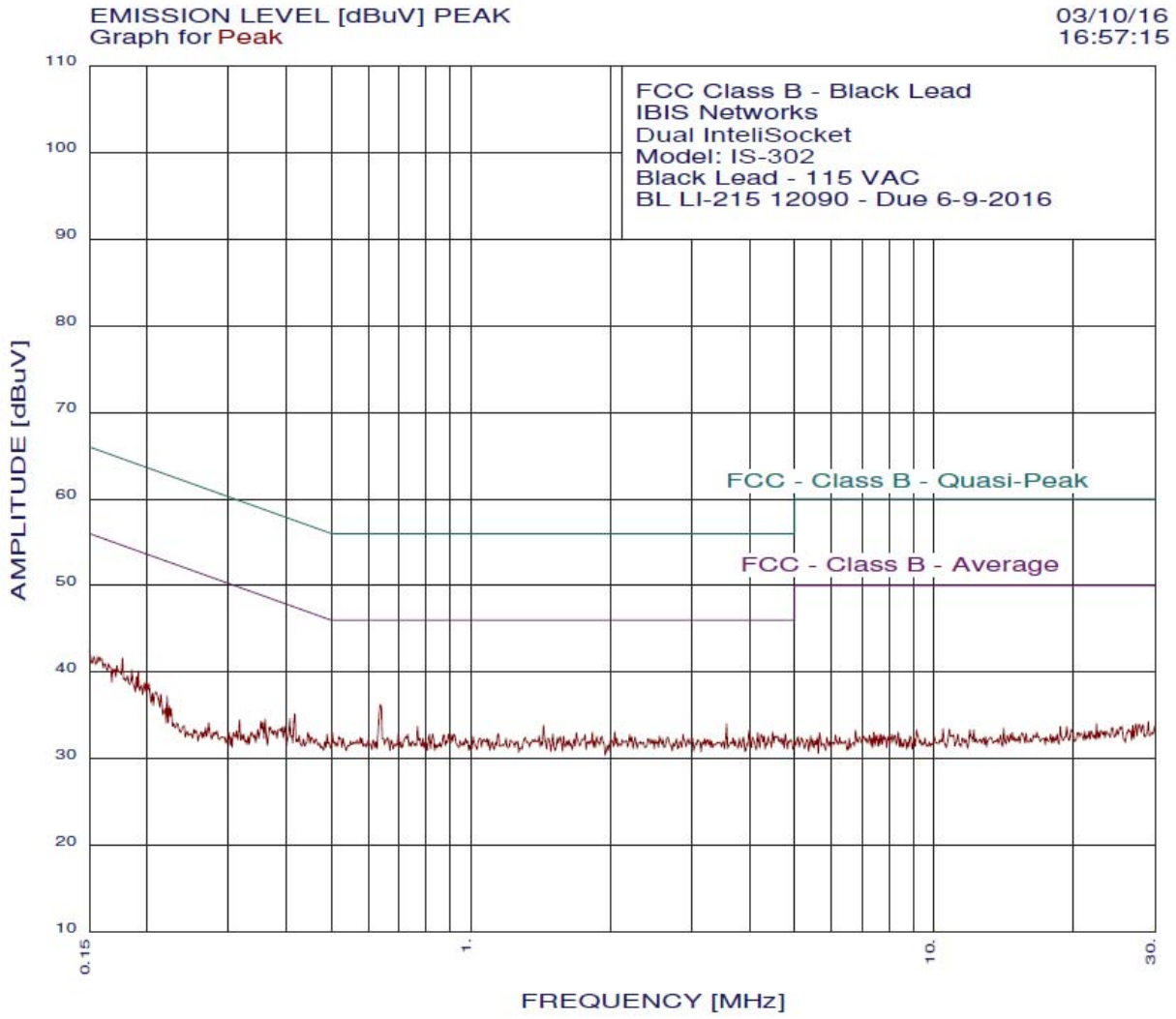


Reference Level – High Channel(2475 MHz)

Reference Level – High Channel(2480 MHz)

CONDUCTED EMISSIONS

DATA SHEETS


EMISSION LEVEL [dBuV] PEAK
Graph for Peak
03/10/16
16:57:15
FCC Class B - Black Lead
IBIS Networks
Dual InteliSocket
Model: IS-302
Black Lead - 115 VAC
BL LI-215 12090 - Due 6-9-2016
FCC - Class B - Quasi-Peak
FCC - Class B - Average
AMPLITUDE [dBuV]
110
100
90
80
70
60
50
40
30
20
10
0.15
1.
10.
30.
FREQUENCY [MHz]

03/10/16 16:57:15

FCC Class B - Black Lead
IBIS Networks
Dual InteliSocket
Model: IS-302
Black Lead - 115 VAC
BL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

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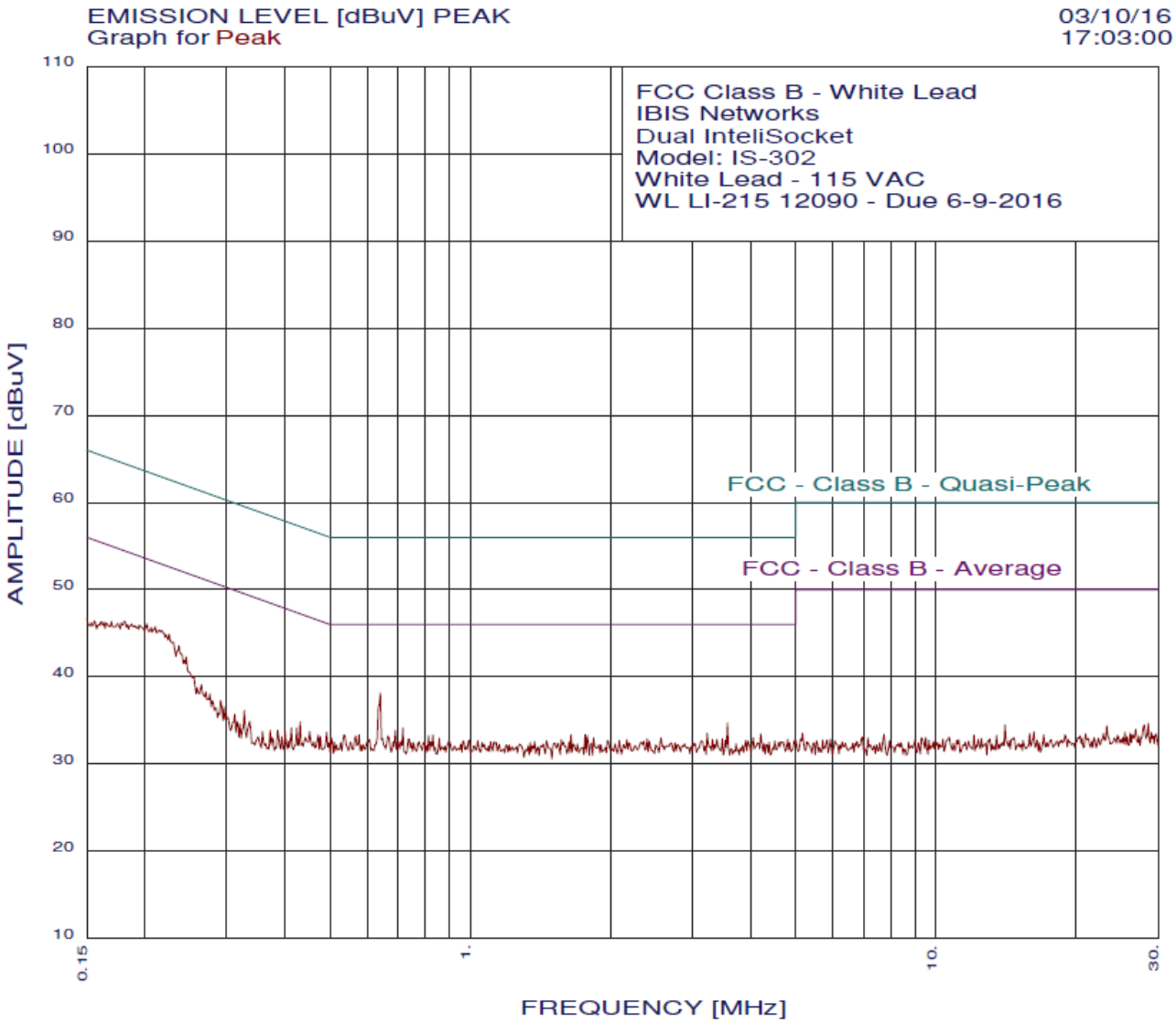
39 highest peaks above -50.00 dB of FCC - Class B - Average limit line
Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.637	36.25	46.00	-9.75
2	3.565	34.01	46.00	-11.99
3	1.434	33.87	46.00	-12.13
4	0.767	33.74	46.00	-12.26
5	0.417	35.15	47.50	-12.36
6	3.987	33.21	46.00	-12.79
7	4.480	33.12	46.00	-12.88
8	2.044	33.09	46.00	-12.91
9	1.830	33.08	46.00	-12.92
10	0.502	33.05	46.00	-12.95
11	0.698	33.05	46.00	-12.95
12	4.159	33.01	46.00	-12.99
13	0.177	41.61	54.63	-13.02
14	1.690	32.98	46.00	-13.02
15	0.406	34.65	47.72	-13.07
16	4.774	32.92	46.00	-13.08
17	1.504	32.87	46.00	-13.13
18	1.148	32.85	46.00	-13.15
19	0.919	32.85	46.00	-13.15
20	0.826	32.85	46.00	-13.15
21	0.814	32.84	46.00	-13.16
22	0.731	32.84	46.00	-13.16
23	4.227	32.81	46.00	-13.19
24	2.870	32.80	46.00	-13.20
25	2.201	32.79	46.00	-13.21
26	1.763	32.78	46.00	-13.22
27	0.876	32.75	46.00	-13.25
28	0.489	32.85	46.18	-13.33
29	1.404	32.66	46.00	-13.34
30	4.384	32.62	46.00	-13.38
31	2.554	32.60	46.00	-13.40
32	1.918	32.59	46.00	-13.41
33	1.586	32.57	46.00	-13.43
34	1.560	32.57	46.00	-13.43
35	0.518	32.55	46.00	-13.45
36	1.011	32.55	46.00	-13.45
37	4.050	32.51	46.00	-13.49
38	3.882	32.51	46.00	-13.49
39	2.665	32.50	46.00	-13.50


EMISSION LEVEL [dBuV] PEAK
Graph for Peak
03/10/16
17:03:00
FCC Class B - White Lead
IBIS Networks
Dual InteliSocket
Model: IS-302
White Lead - 115 VAC
WL LI-215 12090 - Due 6-9-2016
FCC - Class B - Quasi-Peak
FCC - Class B - Average
AMPLITUDE [dBuV]
110
100
90
80
70
60
50
40
30
20
10
0.15
1.
10.
30.
FREQUENCY [MHz]

03/10/16 17:03:00

FCC Class B - White Lead
IBIS Networks
Dual InteliSocket
Model: IS-302
White Lead - 115 VAC
WL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

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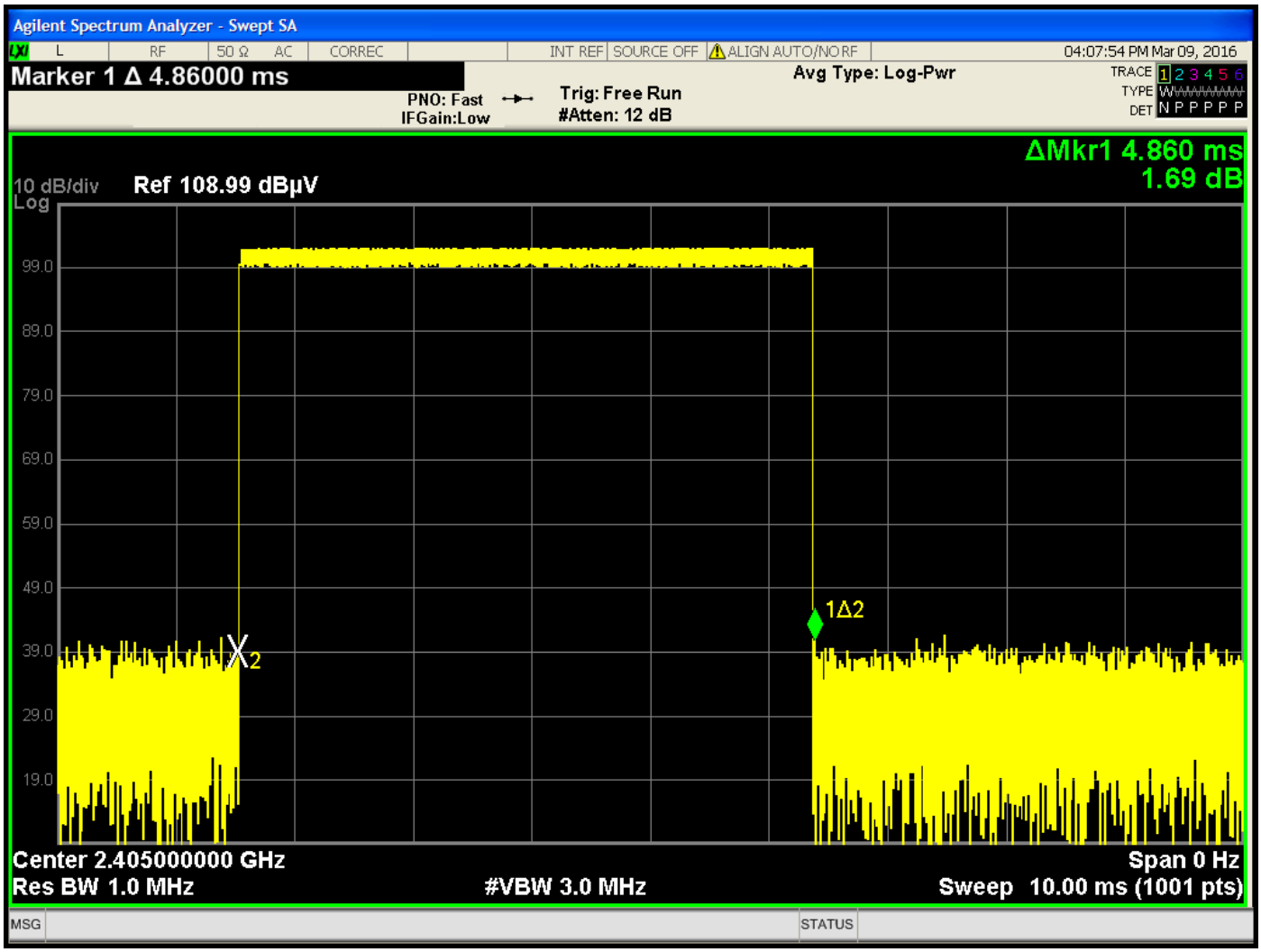
39 highest peaks above -50.00 dB of FCC - Class B - Average limit line
Peak criteria : 0.00 dB, Curve : Peak

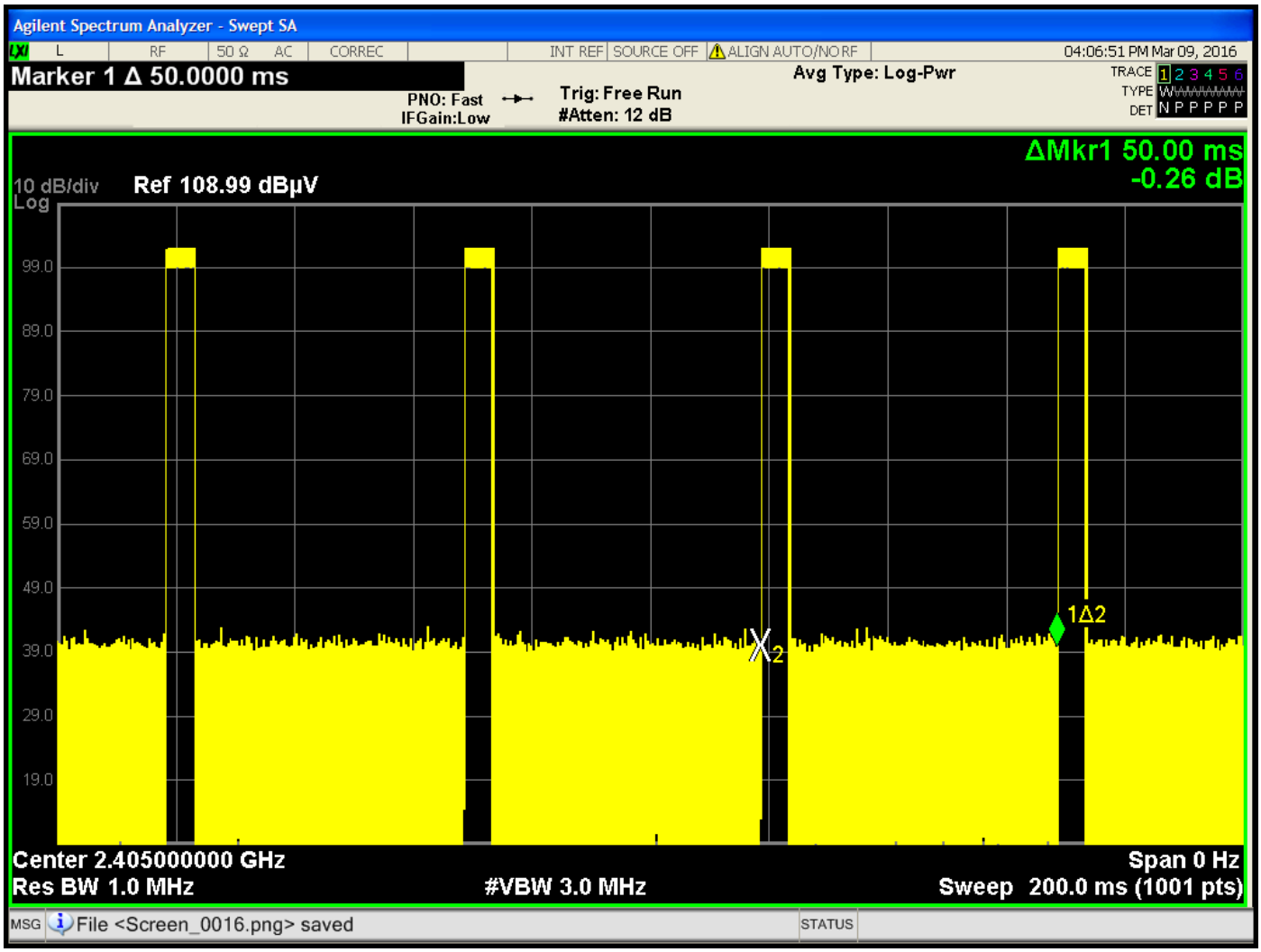
Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.211	45.75	53.18	-7.43
2	0.202	46.09	53.53	-7.45
3	0.217	45.32	52.91	-7.60
4	0.206	45.67	53.35	-7.69
5	0.214	45.33	53.05	-7.72
6	0.226	44.88	52.61	-7.73
7	0.641	38.13	46.00	-7.87
8	0.195	45.92	53.84	-7.92
9	0.222	44.80	52.74	-7.94
10	0.181	46.38	54.46	-8.08
11	0.187	46.05	54.15	-8.10
12	0.190	45.84	54.01	-8.18
13	0.193	45.73	53.93	-8.20
14	0.183	45.97	54.33	-8.36
15	0.185	45.86	54.24	-8.38
16	0.178	46.19	54.59	-8.39
17	0.230	43.96	52.43	-8.47
18	0.175	46.11	54.72	-8.61
19	0.170	46.33	54.98	-8.65
20	0.237	43.53	52.21	-8.68
21	0.163	46.26	55.29	-9.03
22	0.165	46.15	55.20	-9.05
23	0.161	46.27	55.43	-9.16
24	0.156	46.39	55.69	-9.30
25	0.234	42.94	52.30	-9.36
26	0.159	45.98	55.51	-9.54
27	0.246	42.29	51.90	-9.61
28	0.153	46.20	55.82	-9.62
29	0.243	41.90	52.00	-10.09
30	3.565	34.71	46.00	-11.29
31	0.255	40.05	51.60	-11.54
32	0.716	34.13	46.00	-11.87
33	0.690	33.83	46.00	-12.17
34	0.265	39.11	51.29	-12.18
35	0.431	34.83	47.24	-12.40
36	3.226	33.50	46.00	-12.50
37	0.492	33.62	46.14	-12.52
38	4.204	33.42	46.00	-12.58
39	1.763	33.38	46.00	-12.62

DUTY CYCLE

DATA SHEETS



Time of One Pulse is 4.86 ms



Time Between Pulses = 50 ms
Total On Time = 4.86 ms
Total Duty Cycle = 4.86 ms / 50.00 ms = 9.72%
The Maximum Peak to Average Ratio of -20 dB can be used.