FCC PART 15, SUBPART B and C
TEST REPORT

for

WIRELESS FLOOD SENSOR

MODEL: FLZB1-ECO

Prepared for

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DATE: JUNE 14, 2017

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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:	Wireless Flood Sensor Model: FLZB1-ECO S/N: N/A
Product Description:	The EUT is a wireless device used to detect floods.
Modifications:	The EUT was not modified during the testing.
Customer:	Ecolink Intelligent Technology, Inc. 2055 Corte Del Nogal Carlsbad, California 92011
Test Dates:	June 1, 2, and 3, 2017

Test Specifications covered by accreditation:

NVLAP® TESTING
NVLAP LAB CODE 200528-0

ilac-MRA

CFR Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209, and 15.247

Test Procedures: ANSI C63.4: 2014 and ANSI C63.10: 2013

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	This test was not performed because the EUT is battery powered only and cannot be connected to the AC public mains.
2	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 9 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(d)
3	Emissions produced by the intentional radiator in restricted bands, 9 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)
4	DTS Bandwidth	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (a)(2)
5	Peak Power Output	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(3)
6	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (d)
7	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 Wireless Flood Sensor, Model: FLZB1-ECO. 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, 15.209, 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

Ecolink Intelligent Technology, Inc.

Mike Archbold	Product Development Engineer
Mike Bailey	VP of Operations and Product Development

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Edgar Valencia	Test Technician

2.4 Date Test Sample was Received

The test sample was received on June 1, 2017.

2.5 Disposition of the Test Sample

The test sample has not been returned to Ecolink Intelligent Technology, Inc. as of the date of this test report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
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 v04	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 Wireless Flood Sensor Model: FLZB1-ECO (EUT) was tested as a stand-alone unit.

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 EUT was programmed via a laptop that had the Ember Desktop firmware. This firmware allowed the EUT to transmit at the low, middle, or high channel. The laptop was removed prior to the testing as it was only used to program the EUT.

A fresh set of batteries were used prior to the testing.

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

The EUT has no external cables.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
WIRELESS FLOOD SENSOR	ECOLINK INTELLIGENT TECHNOLOGY, INC.	FLZB1-ECO	N/A	TBD
LAPTOP*	DELL	X436M A01	N/A	N/A
EMBER DESKTOP**	SILICON LABS	EM-ISA3-00	N/A	N/A

*****Only used to program the EUT.
**Firmware used to program the EUT that was on the laptop.

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
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	Keysight	N9038A	MY51210150	December 29, 2015	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	2 Year
Preamplifier	Com-Power	PA-840	711013	May 13, 2016	2 Year
Loop Antenna	Com-Power	AL-130	121090	February 9, 2017	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
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

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 not grounded.

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 has a gain of 5.46 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:

This test was not performed because the EUT is battery powered only and cannot be connected to the AC public mains.

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. 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 RADIATED EMISSION RESULTS
Wireless Flood Sensor, Model: FLZB1-ECO

Frequency MHz	Corrected Reading* dBuV/m	Specification Limit dBuV/m	Delta (Cor. Reading – Spec. Limit) dB
4810 (X-Axis) (H)	53.85 (Avg)	53.97	-0.12
4810 (Z-Axis) (V)	52.68 (Avg)	53.97	-1.29
4880 (X-Axis) (H)	51.57 (Avg)	53.97	-2.41
4880 (Y-Axis) (V)	51.12 (Avg)	53.97	-2.85
4810 (Y-Axis) (V)	50.09 (Avg)	53.97	-3.88
4810 (Y-Axis) (H)	49.64 (Avg)	53.97	-4.33

Notes:

*	The complete emissions data is given in Appendix E of this report.		
Pk	Peak Reading	Avg	Average Reading
H	Horizontal Polarization	V	Vertical Polarization

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 via radiated per section 8.1.2. of this test report to maximize the emission. The reference level was established by setting the instrument center frequency to DTS channel center frequency. 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. 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 Calculation

The fundamental and harmonics were measured at a 3-meter test distance. The EMI Receiver was used to obtain the final test data. The final qualification data sheets are located in Appendix E.

Where
$\delta(\mathrm{dB}) = 20\log\left[\sum\left(nt_1 + mt_2 + \ldots + \xi t_x\right)/T\right]$

n is the number of pulses of duration *t*1
m is the number of pulses of duration *t*2
ξ is the number of pulses of duration *tx*
T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

The worst case was advertising mode and is calculated as shown below:

Worst Case = 450 us on time with 41.9 ms between pulses

Total On Time = 450 us

450 us / 41.9 ms = 1.07% duty cycle

The maximum 20 dB peak to average ratio can be utilized.

9. CONCLUSIONS

The Wireless Flood Sensor, Model: FLZB1-ECO, 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, and 15.247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP® TESTING
NVLAP LAB CODE 200528-0

ilac-MRA

For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025.
For the most up-to-date version of our scopes and certificates please visit http://celectronics.com/quality/scope/

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."

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

Wireless Flood Sensor
Model: FLZB1-ECO
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

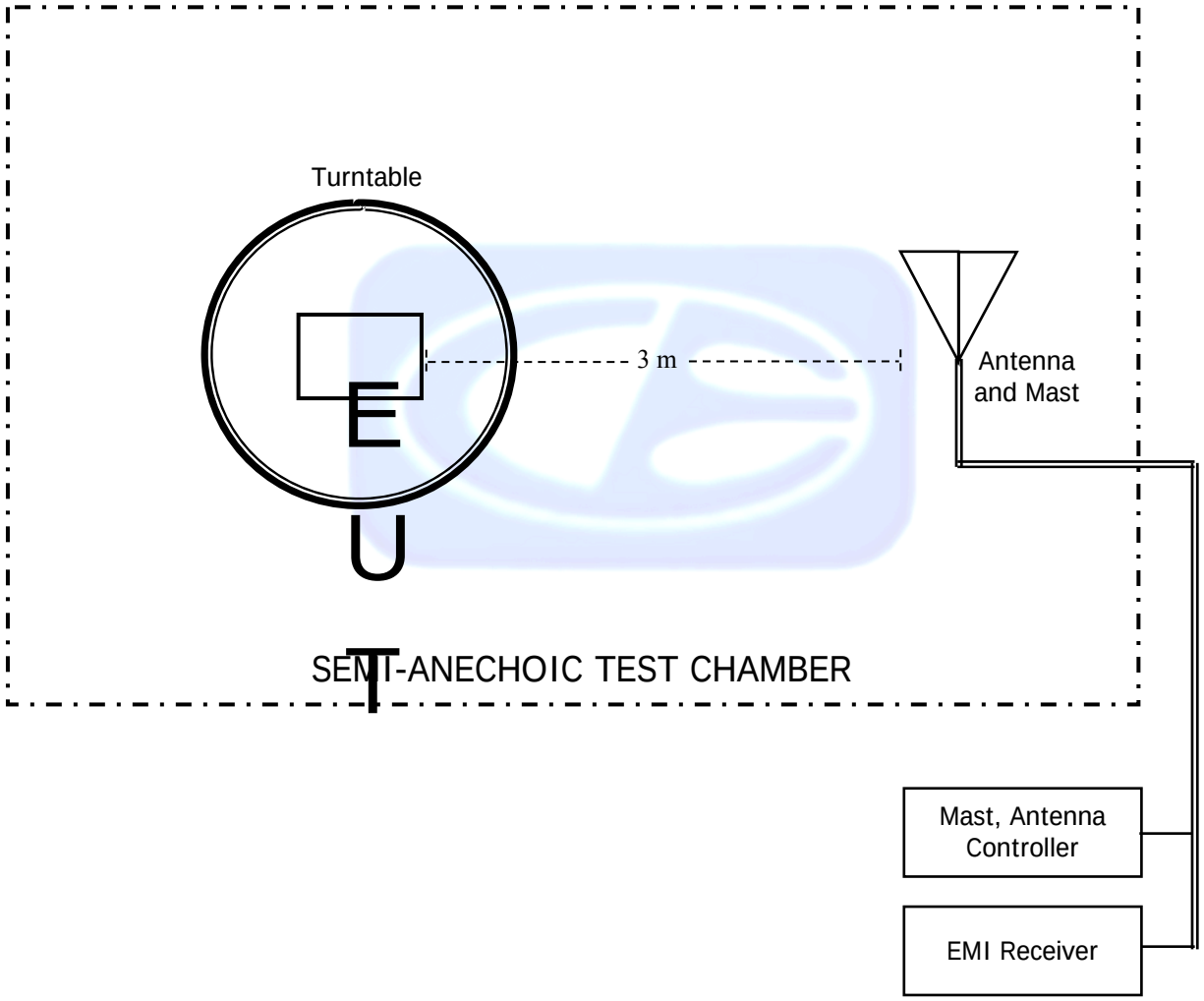
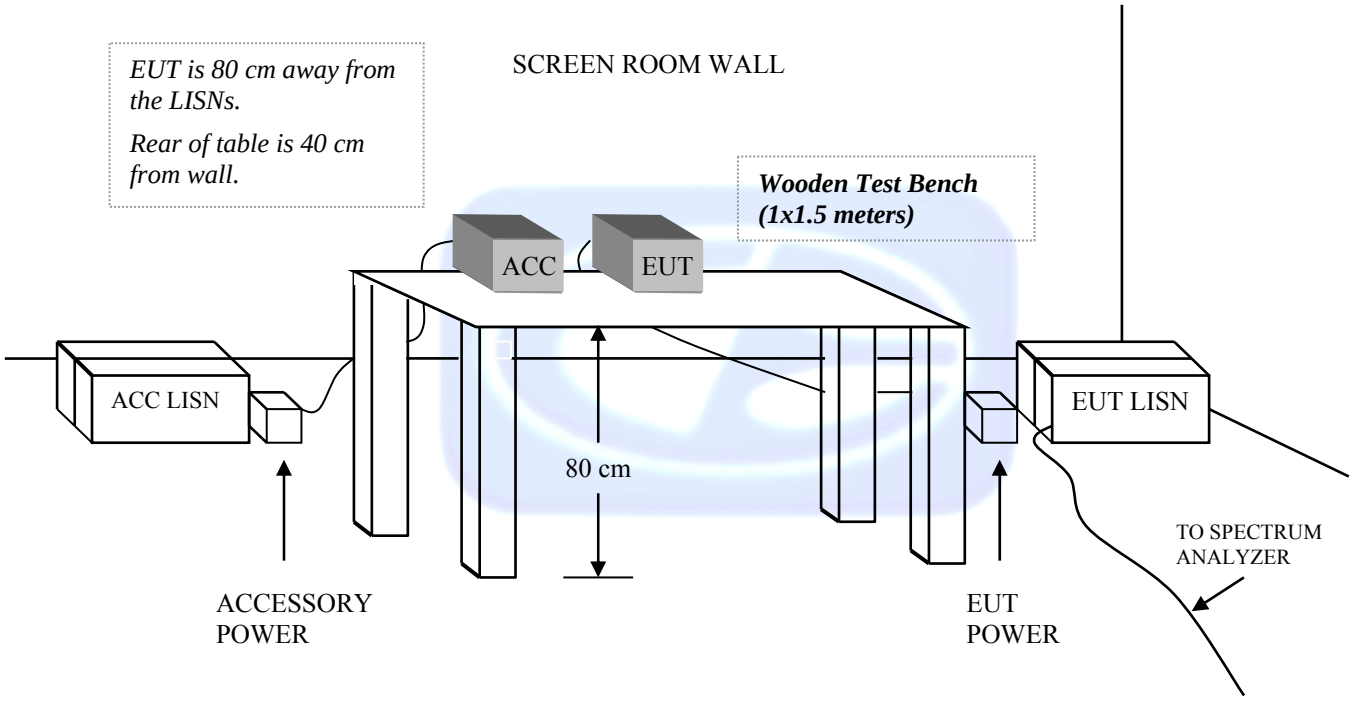


FIGURE 2: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 9, 2017

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-36.17	15.33
0.01	-35.86	15.64
0.02	-37.30	14.20
0.03	-36.58	14.92
0.04	-36.99	14.51
0.05	-37.66	13.84
0.06	-37.53	13.97
0.07	-37.64	13.86
0.08	-37.52	13.98
0.09	-37.62	13.88
0.1	-37.59	13.91
0.2	-37.79	13.71
0.3	-37.80	13.70
0.4	-37.70	13.80
0.5	-37.79	13.71
0.6	-37.79	13.71
0.7	-37.69	13.81
0.8	-37.49	14.01
0.9	-37.39	14.11
1	-37.39	14.11
2	-37.09	14.41
3	-37.09	14.41
4	-37.19	14.31
5	-36.98	14.52
6	-37.17	14.33
7	-37.05	14.45
8	-36.85	14.65
9	-36.84	14.66
10	-36.75	14.75
15	-37.16	14.34
20	-36.44	15.06
25	-37.88	13.62
30	-39.14	12.36

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: MAY 12, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.84	6.0	39.05
1.1	39.40	6.5	38.94
1.2	39.58	7.0	39.25
1.3	39.68	7.5	39.09
1.4	39.91	8.0	39.01
1.5	39.78	8.5	38.60
1.6	39.50	9.0	38.64
1.7	39.81	9.5	39.67
1.8	39.89	10.0	39.30
1.9	39.94	11.0	39.15
2.0	39.57	12.0	39.24
2.5	40.39	13.0	39.49
3.0	40.63	14.0	39.44
3.5	40.80	15.0	39.94
4.0	40.86	16.0	40.09
4.5	39.94	17.0	40.06
5.0	34.47	18.0	39.76
5.5	39.32		

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

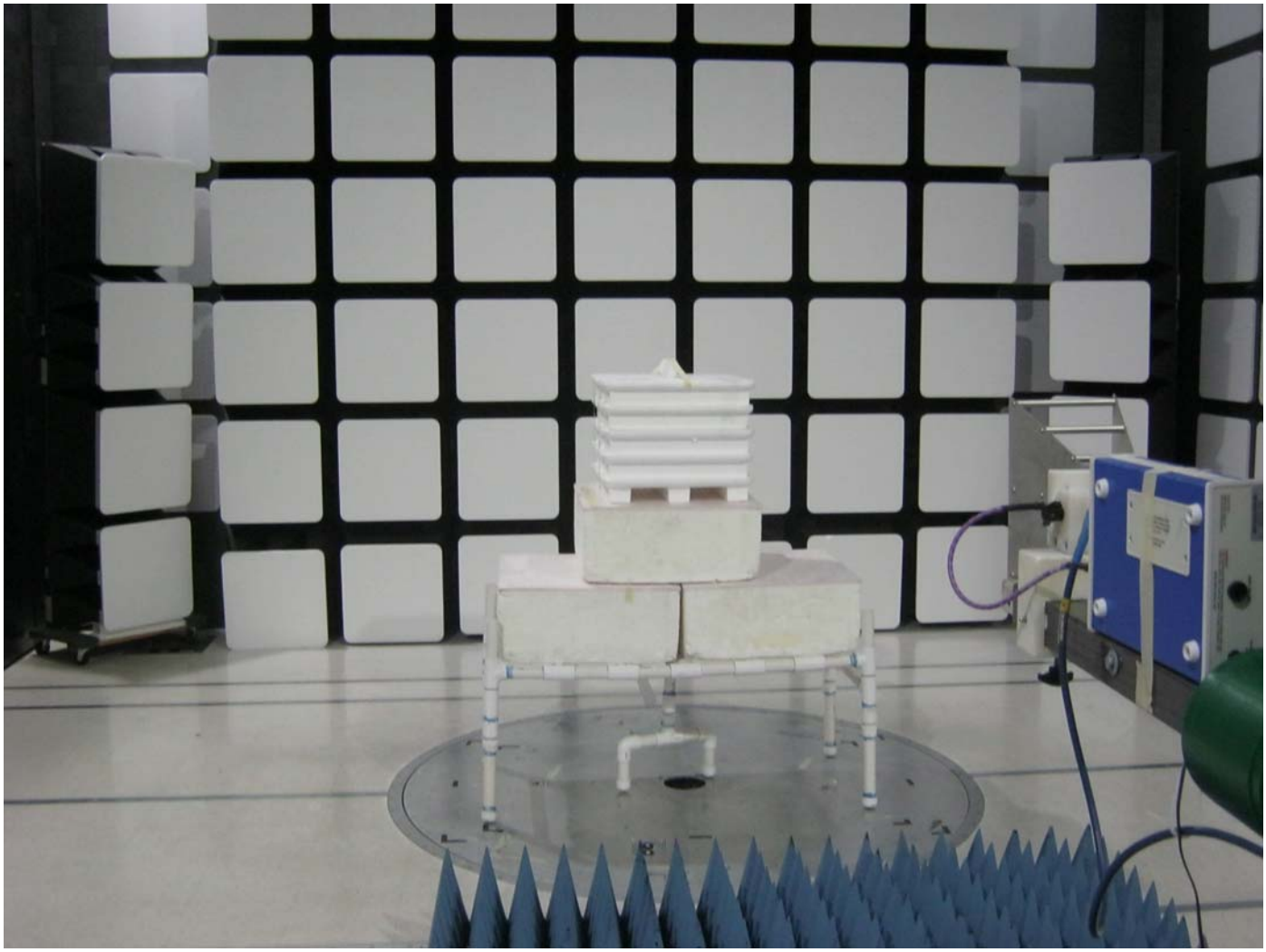
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: MAY 13, 2016

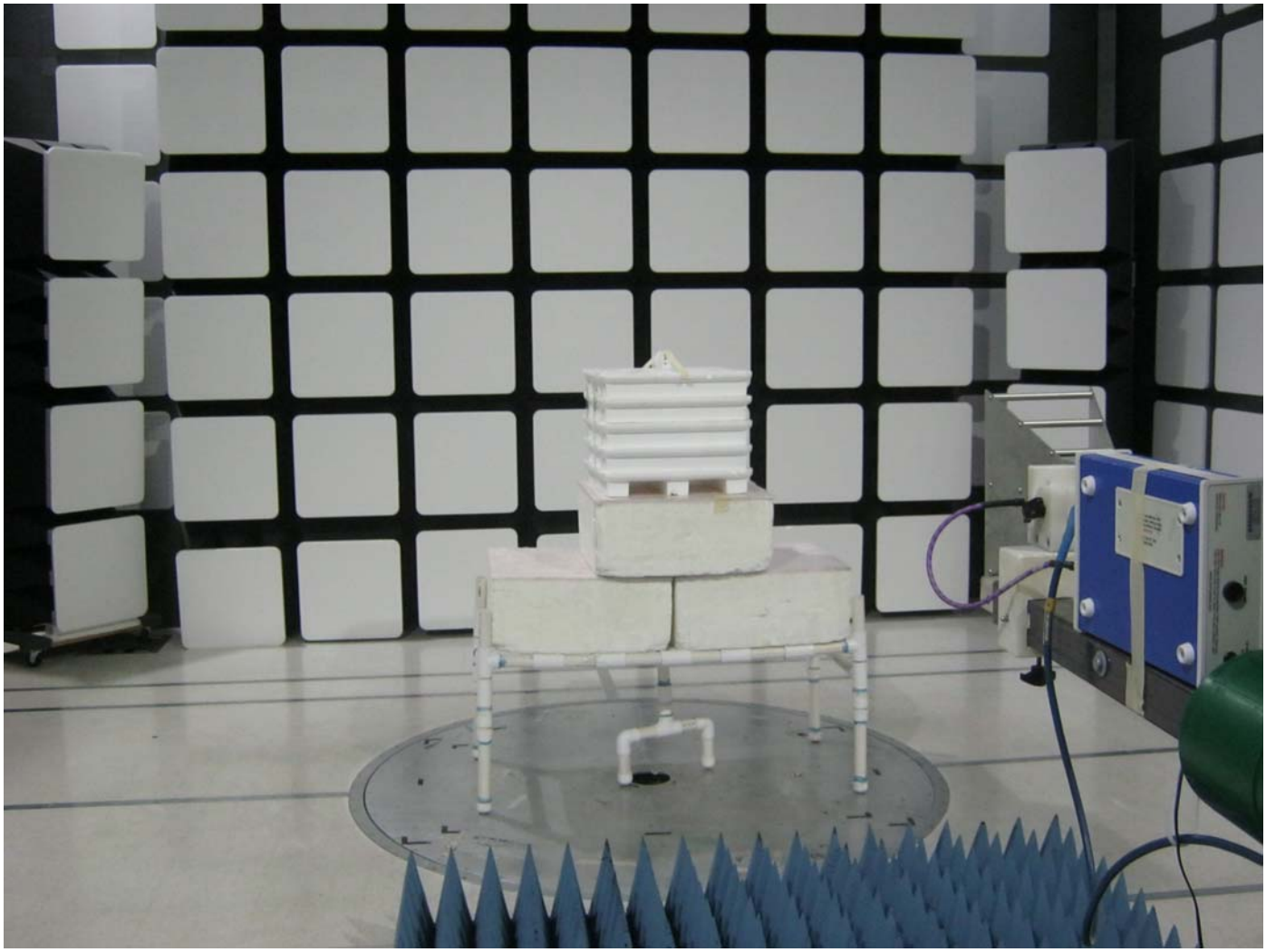
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.19	31.0	25.69
19.0	24.48	31.5	25.74
20.0	24.39	32.0	26.35
21.0	24.73	32.5	26.64
22.0	23.49	33.0	25.98
23.0	24.23	33.5	24.68
24.0	24.59	34.0	24.61
25.0	25.32	34.5	23.78
26.0	25.66	35.0	24.74
26.5	25.99	35.5	24.39
27.0	26.26	36.0	23.46
27.5	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

ECOLINK INTELLIGENT TECHNOLOGY, INC.
WIRELESS FLOOD SENSOR
MODEL: FLZB1-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

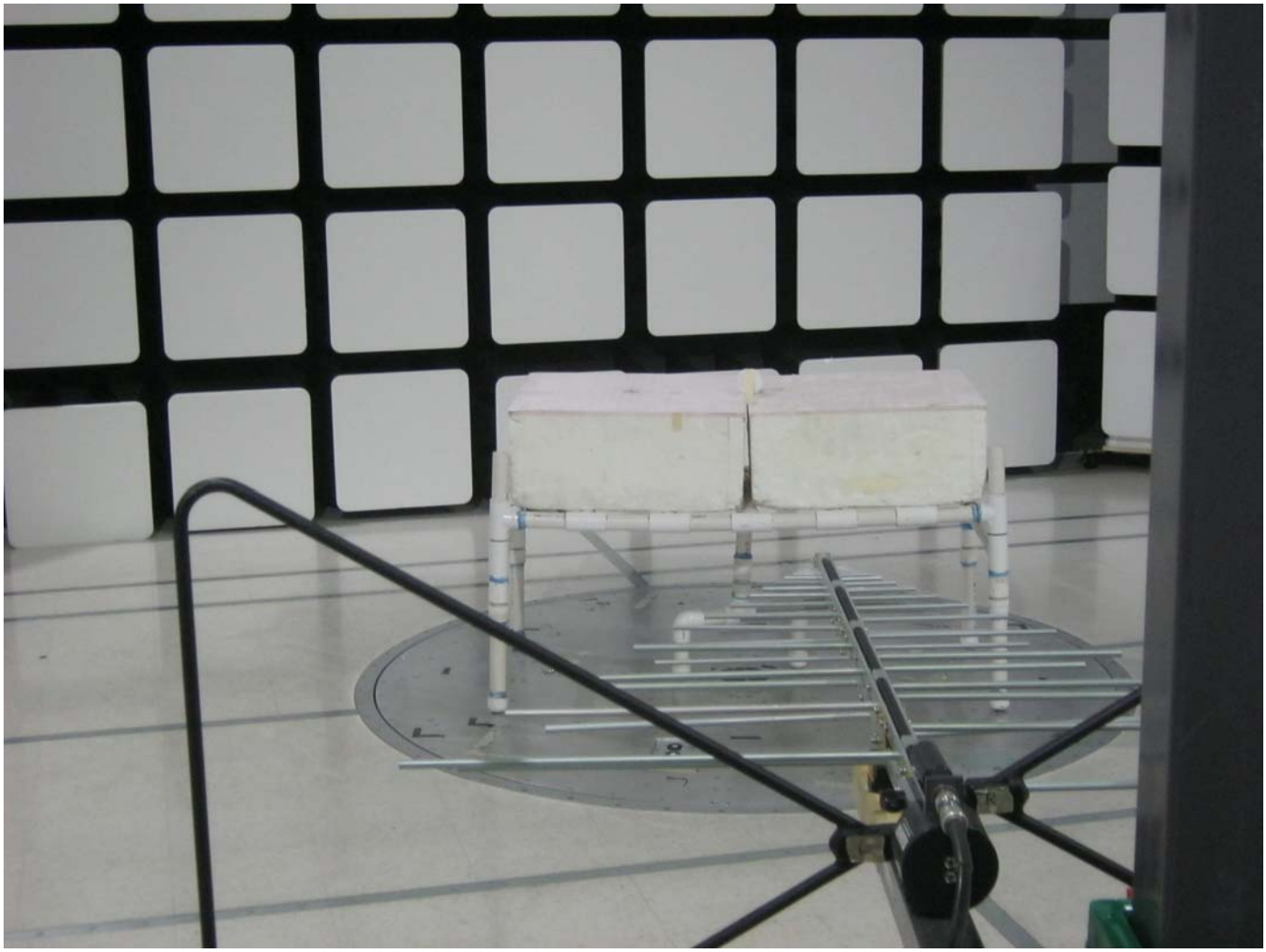
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
WIRELESS FLOOD SENSOR
MODEL: FLZB1-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

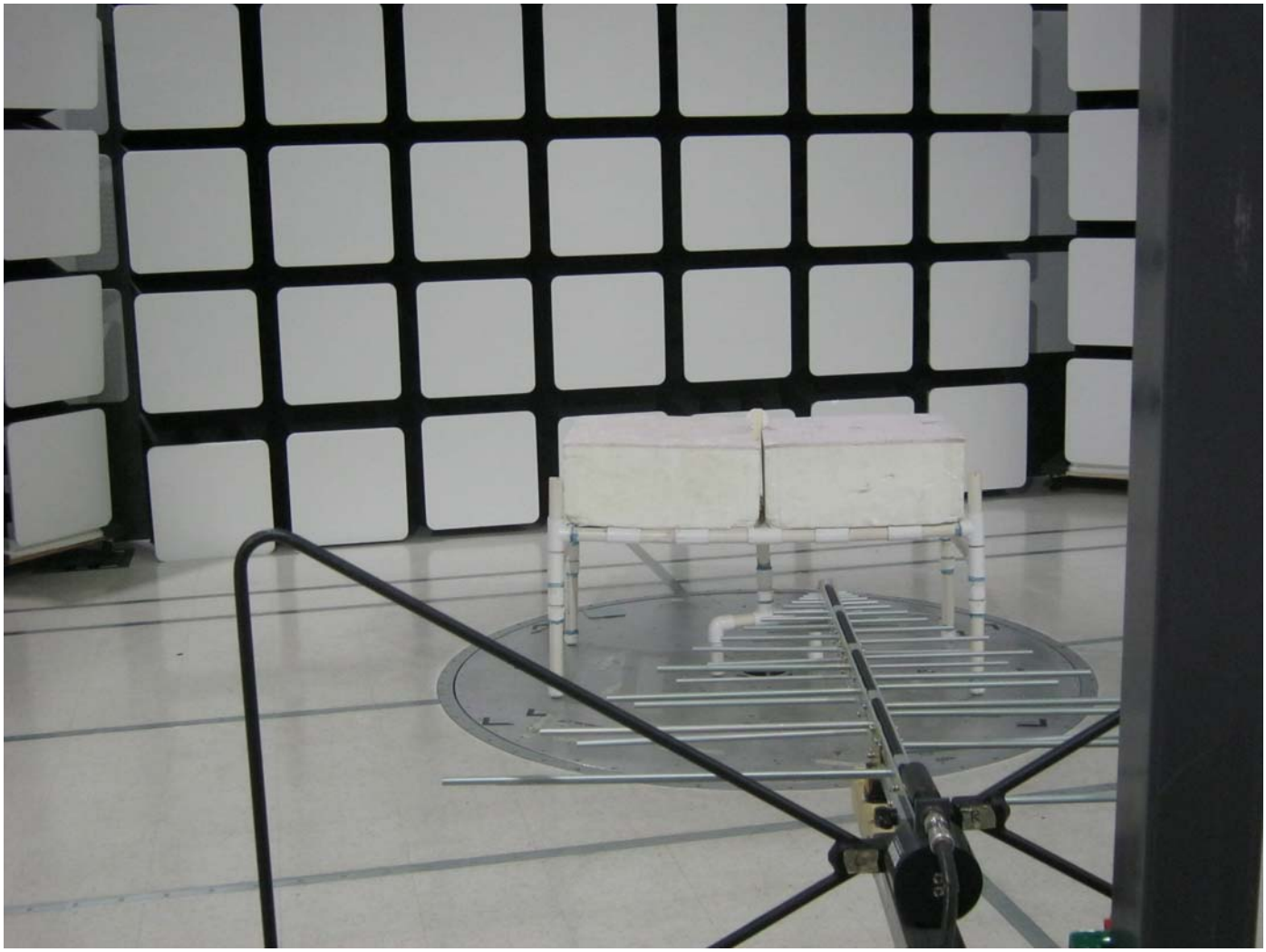
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
WIRELESS FLOOD SENSOR
MODEL: FLZB1-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

ECOLINK INTELLIGENT TECHNOLOGY, INC.
WIRELESS FLOOD SENSOR
MODEL: FLZB1-ECO
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.247
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	55.60	V	73.97	-18.37	Peak	227.50	152.61	
4810	46.49	V	53.97	-7.48	Avg	227.50	152.61	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	62.96	H	73.97	-11.01	Peak	23.50	164.37	
4810	53.85	H	53.97	-0.12	Avg	23.50	164.37	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	59.20	V	73.97	-14.77	Peak	171.00	181.14	
4810	50.09	V	53.97	-3.88	Avg	171.00	181.14	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	58.75	H	73.97	-15.22	Peak	177.50	174.04	
4810	49.64	H	53.97	-4.33	Avg	177.50	174.04	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	61.79	V	73.97	-12.18	Peak	95.50	173.98	
4810	52.68	V	53.97	-1.29	Avg	95.50	173.98	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel - Power Level -7
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810	42.39	H	73.97	-31.58	Peak	245.25	152.13	
4810	33.28	H	53.97	-20.69	Avg	245.25	152.13	
7215								**Not in Restricted Band**
7215								**Done via Conducted**
9620								**Not in Restricted Band**
9620								**Done via Conducted**
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

Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	55.89	V	73.97	-18.08	Peak	149.25	141.92	
4880	46.78	V	53.97	-7.19	Avg	149.25	141.92	
7320	50.48	V	73.97	-23.49	Peak	277.50	187.89	
7320	41.37	V	53.97	-12.60	Avg	277.50	187.89	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	60.68	H	73.97	-13.30	Peak	174.00	181.74	
4880	51.57	H	53.97	-2.41	Avg	174.00	181.74	
7320	50.30	H	73.97	-23.67	Peak	190.00	152.31	
7320	41.19	H	53.97	-12.78	Avg	190.00	152.31	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	60.23	V	73.97	-13.74	Peak	113.75	145.68	
4880	51.12	V	53.97	-2.85	Avg	113.75	145.68	
7320	47.48	V	73.97	-26.49	Peak	64.50	111.35	
7320	38.37	V	53.97	-15.60	Avg	64.50	111.35	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	53.97	H	73.97	-20.00	Peak	350.25	135.17	
4880	44.86	H	53.97	-9.11	Avg	350.25	135.17	
7320	49.69	H	73.97	-24.28	Peak	41.25	171.47	
7320	40.58	H	53.97	-13.39	Avg	41.25	171.47	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	58.62	V	73.97	-15.35	Peak	109.25	155.41	
4880	49.51	V	53.97	-4.46	Avg	109.25	155.41	
7320	48.54	V	73.97	-25.43	Peak	149.50	139.50	
7320	39.43	V	53.97	-14.54	Avg	149.50	139.50	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Power Level -7
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880	48.94	H	73.97	-25.03	Peak	288.25	136.67	
4880	39.83	H	53.97	-14.14	Avg	288.25	136.67	
7320	50.36	H	73.97	-23.62	Peak	117.25	161.38	
7320	41.25	H	53.97	-12.73	Avg	117.25	161.38	
9760								**Not in Restricted Band**
9760								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	43.12	V	73.97	-30.85	Peak	163.50	174.82	
4960	34.01	V	53.97	-19.96	Avg	163.50	174.82	
7440	45.87	V	73.97	-28.10	Peak	194.00	158.10	
7440	36.76	V	53.97	-17.21	Avg	194.00	158.10	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	47.41	H	73.97	-26.56	Peak	110.00	199.53	
4960	38.30	H	53.97	-15.67	Avg	110.00	199.53	
7440	46.34	H	73.97	-27.63	Peak	175.00	199.53	
7440	37.23	H	53.97	-16.74	Avg	175.00	199.53	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	43.88	V	73.97	-30.09	Peak	123.75	206.16	
4960	34.77	V	53.97	-19.20	Avg	123.75	206.16	
7440	46.40	V	73.97	-27.57	Peak	17.25	225.00	
7440	37.29	V	53.97	-16.68	Avg	17.25	225.00	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	46.40	H	73.97	-27.57	Peak	205.50	130.52	
4960	37.29	H	53.97	-16.68	Avg	205.50	130.52	
7440	46.13	H	73.97	-27.84	Peak	17.50	130.52	
7440	37.02	H	53.97	-16.95	Avg	17.50	130.52	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	46.13	V	73.97	-27.84	Peak	285.50	104.49	
4960	37.02	V	53.97	-16.95	Avg	285.50	104.49	
7440	46.98	V	73.97	-26.99	Peak	123.00	130.52	
7440	37.87	V	53.97	-16.10	Avg	123.00	130.52	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel - Power Level -15
Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960	49.26	H	73.97	-24.71	Peak	302.25	105.58	
4960	40.15	H	53.97	-13.82	Avg	302.25	105.58	
7440	46.06	H	73.97	-27.91	Peak	94.25	104.49	
7440	36.95	H	53.97	-17.02	Avg	94.25	104.49	
9920								**Not in Restricted Band**
9920								**Done via Conducted**
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 Class B and FCC 15.247

Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

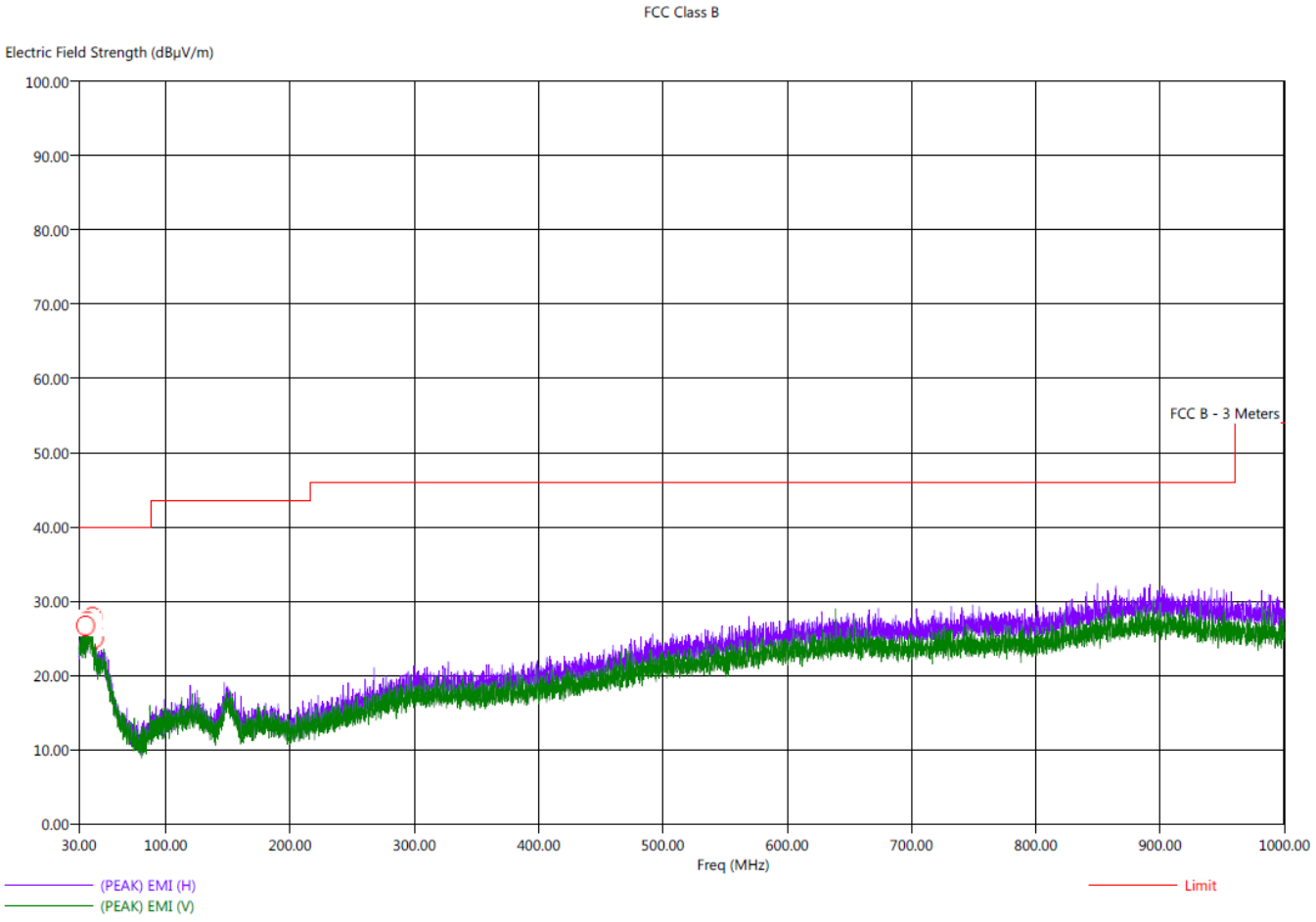
Date: 06/01/2017
Lab: D
Tested By: Kyle Fujimoto

Digital Portion and Non-Harmonic Emissions from the Transmitter
9 kHz to 30 MHz and 1 GHz to 25 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.
								Investigated in the
								X, Y, and Z-Axis

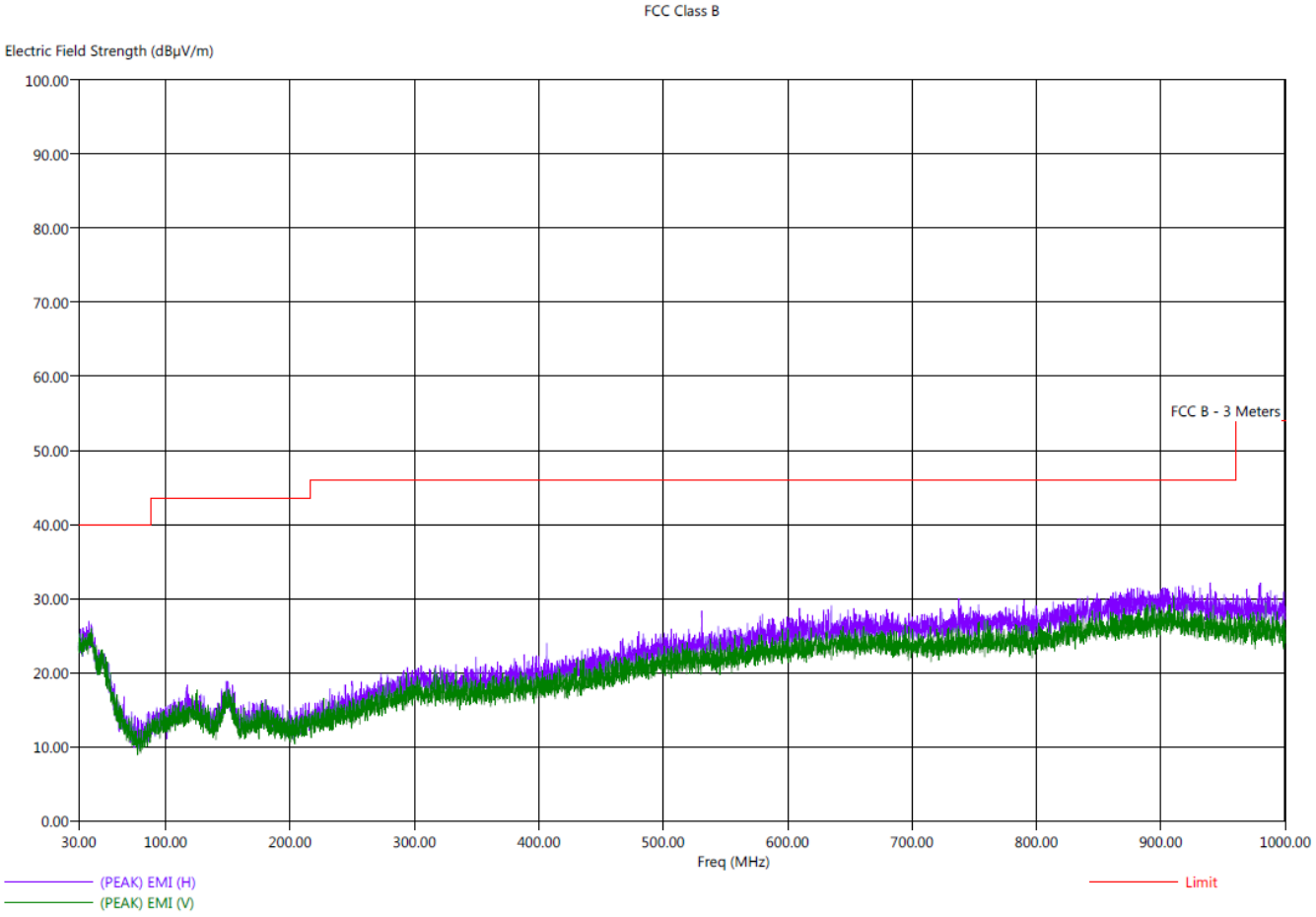
Title: Pre-Scan - FCC Class B
File: 1 - RE - Pre-Scan - FCC Class B - X-Axis Worst Case - 06-02-2017.set
Operator: Kyle Fujimoto
EUT Type: Ecolink Zigbee Flood Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Comments: Customer: Ecolink Intelligent Technology
Model: FLZB1-ECO
X-Axis

6/2/2017 7:49:08 AM
Sequence: Preliminary Scan



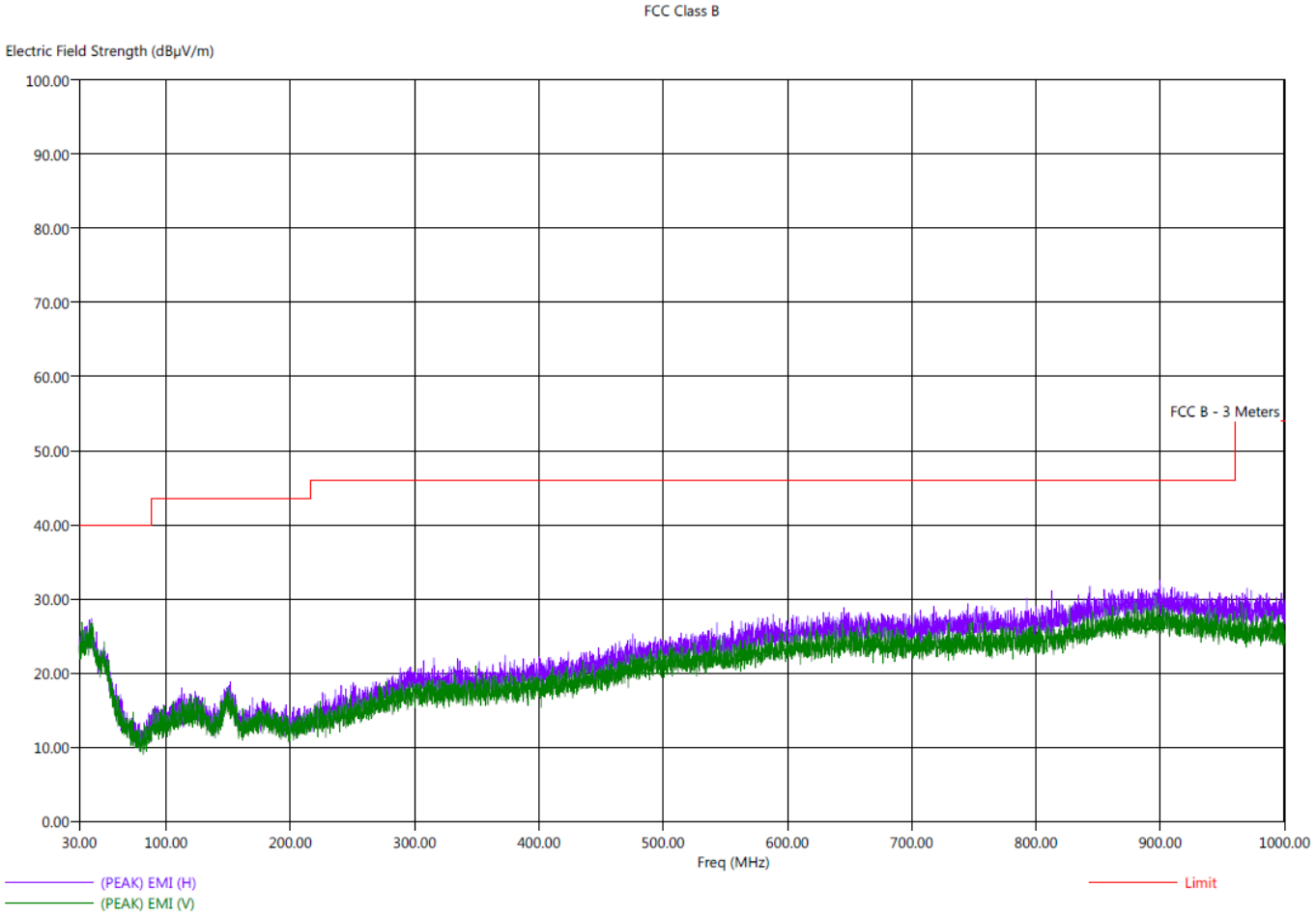
Title: Pre-Scan - FCC Class B
File: 1 - RE - Pre-Scan - FCC Class B - Y-Axis Worst Case - 06-02-2017.set
Operator: Kyle Fujimoto
EUT Type: Ecolink Zigbee Flood Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Comments: Customer: Ecolink Intelligent Technology
Model: FLZB1-ECO
Y-Axis

6/2/2017 7:58:59 AM
Sequence: Preliminary Scan



Title: Pre-Scan - FCC Class B
File: 1 - RE - Pre-Scan - FCC Class B - Z-Axis Worst Case - 06-02-2017.set
Operator: Kyle Fujimoto
EUT Type: Ecolink Zigbee Flood Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Comments: Customer: Ecolink Intelligent Technology
Model: FLZB1-ECO
Z-Axis

6/2/2017 8:07:38 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - RE - Final Scan - FCC Class B - X-Axis Worst Case - 05-12-2017.set
Operator: Kyle Fujimoto
EUT Type: Ecolink Zigbee Flood Sensor
EUT Condition: The EUT is continuously transmitting at the low channel
Comments: Company: Ecolink Intelligent Technology
Model: FLZB1-ECO
X-Axis

6/2/2017 8:15:39 AM
Sequence: Final Measurements

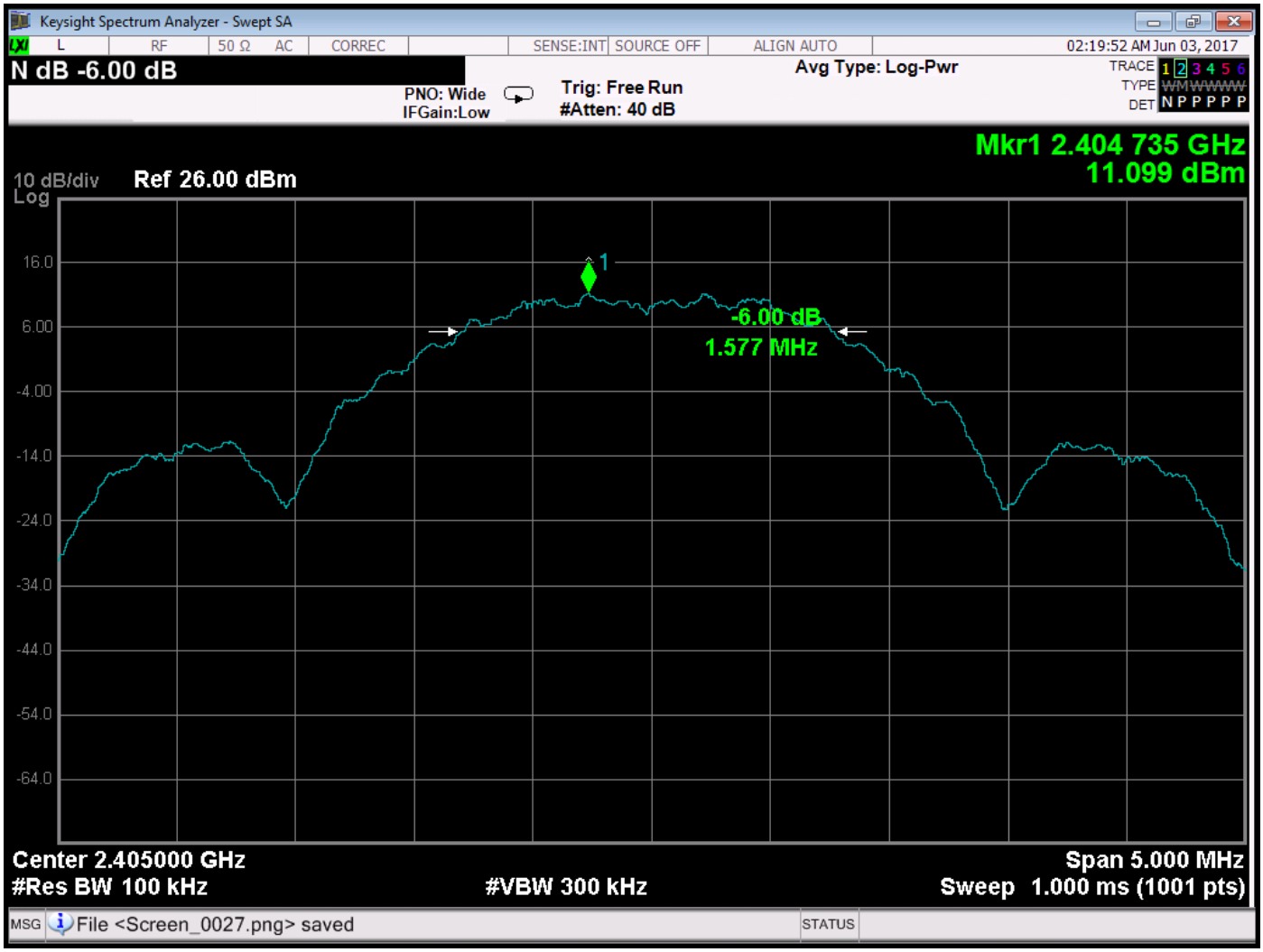
FCC Class B

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)
286.10	H	25.89	20.58	-20.11	-25.42	46.00	17.46	1.44	76.00	175.41
288.00	H	26.29	20.74	-19.71	-25.26	46.00	17.55	1.46	188.25	223.47
291.80	H	26.86	21.09	-19.14	-24.91	46.00	17.77	1.51	14.75	272.25
295.50	H	26.38	21.30	-19.62	-24.70	46.00	17.96	1.55	136.25	159.41
299.30	H	28.91	23.47	-17.09	-22.53	46.00	18.16	1.59	193.75	175.35
303.10	H	28.44	23.44	-17.56	-22.56	46.00	18.18	1.60	128.75	368.07

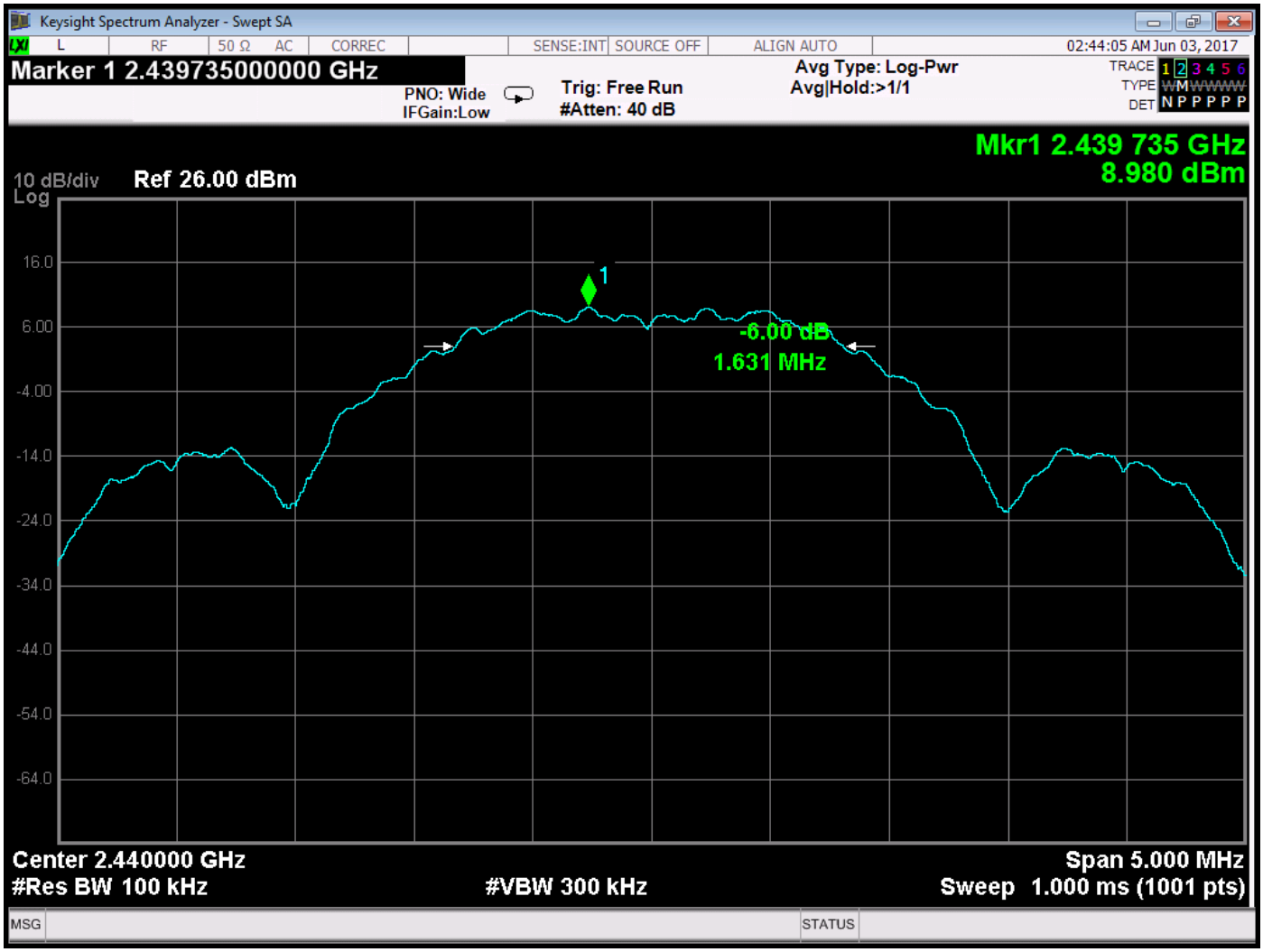
The worst case is the X-Axis

-6 dB BANDWIDTH

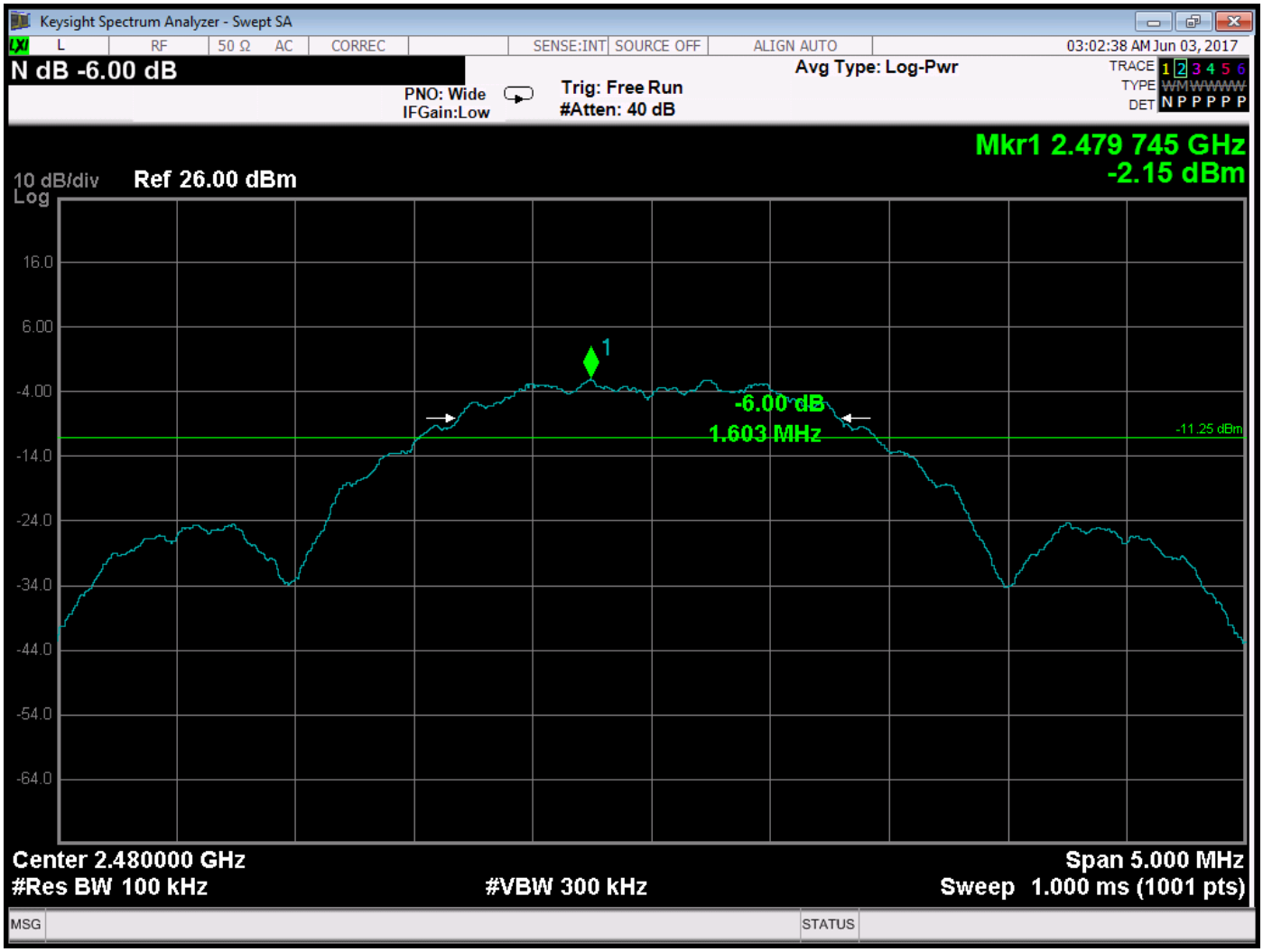
DATA SHEETS



-6 dB Bandwidth – Low Channel



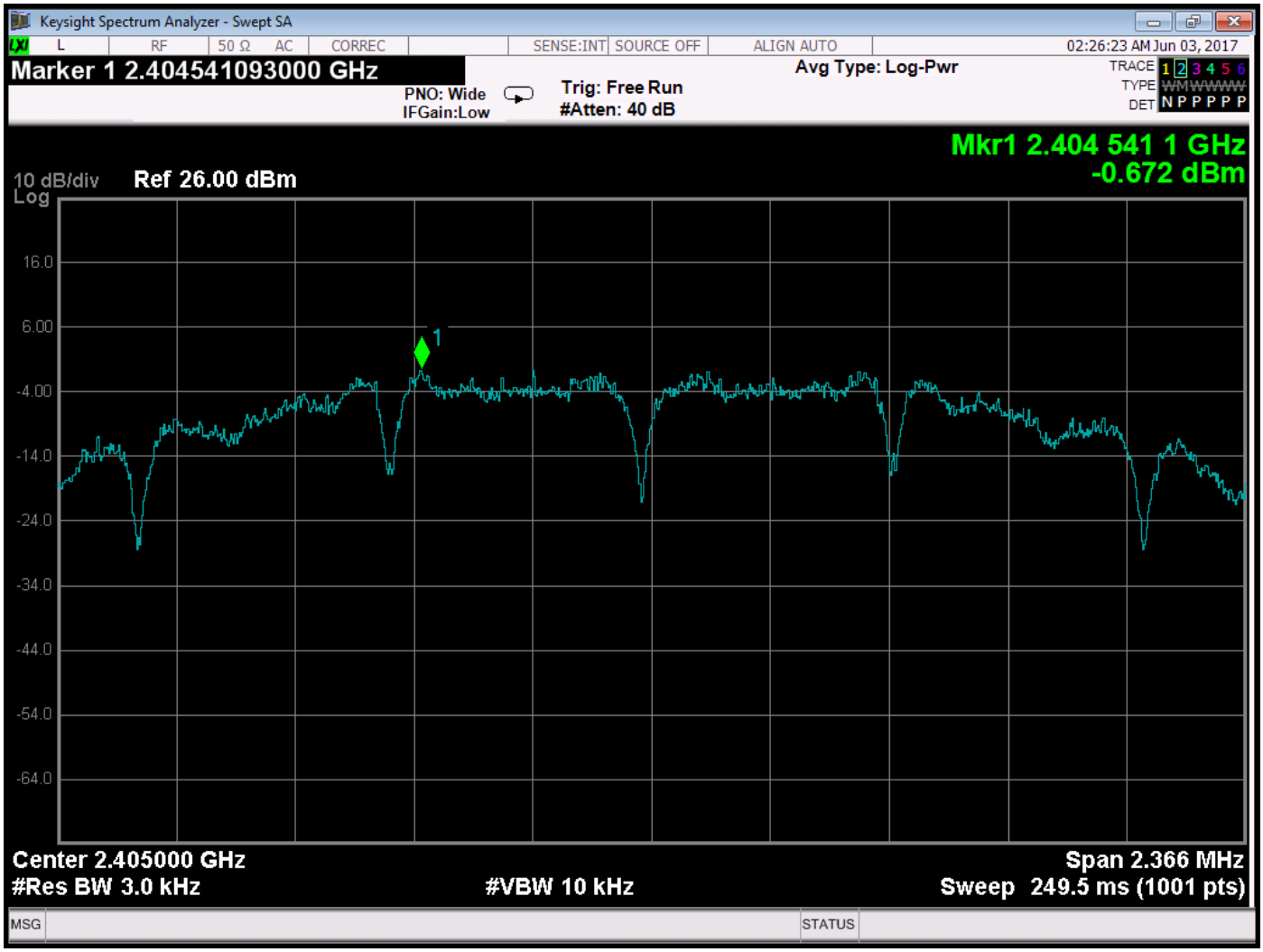
-6 dB Bandwidth – Middle Channel



-6 dB Bandwidth – High Channel

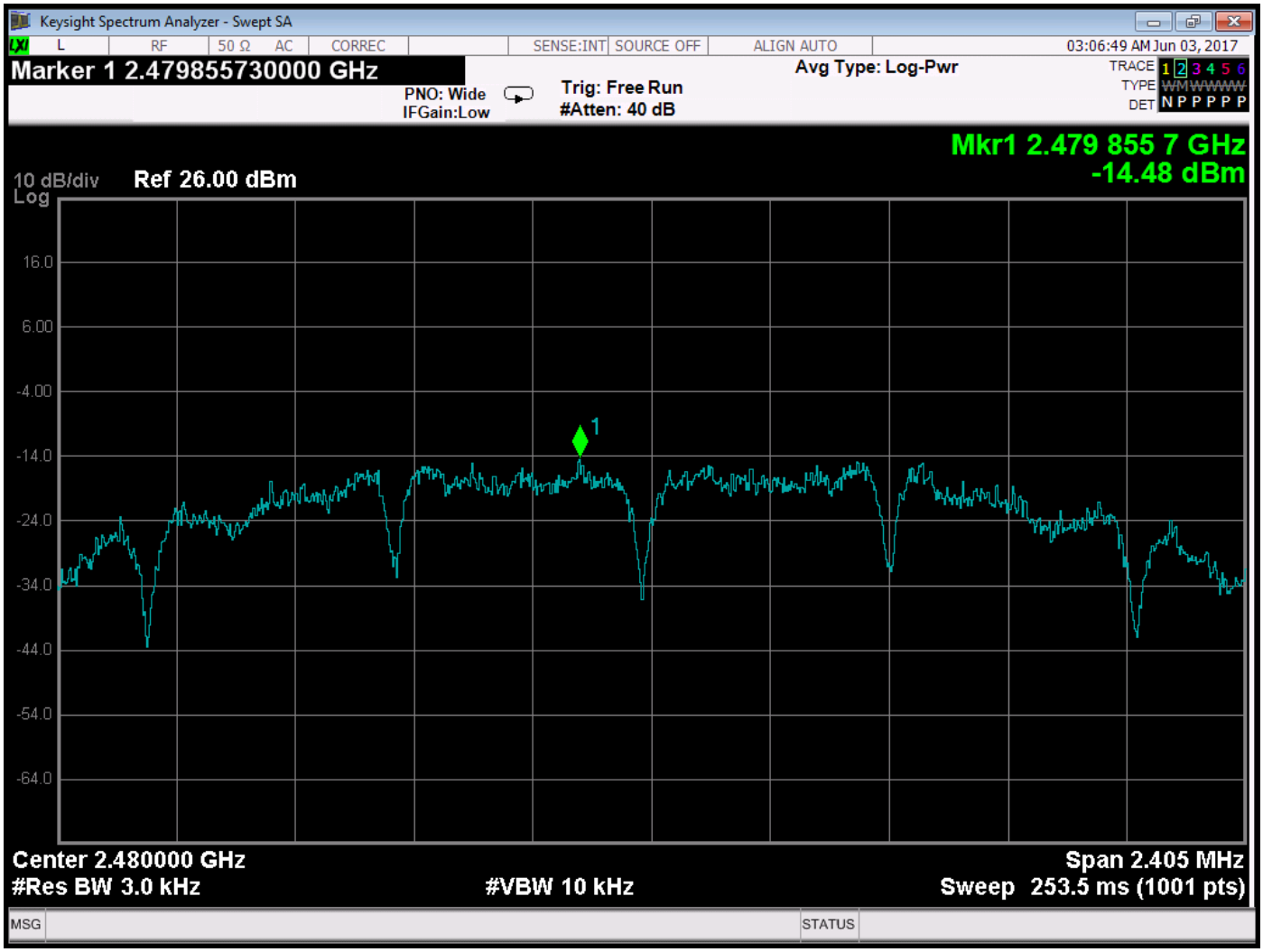
SPECTRAL DENSITY OUTPUT

DATA SHEETS



Spectral Density – Low Channel

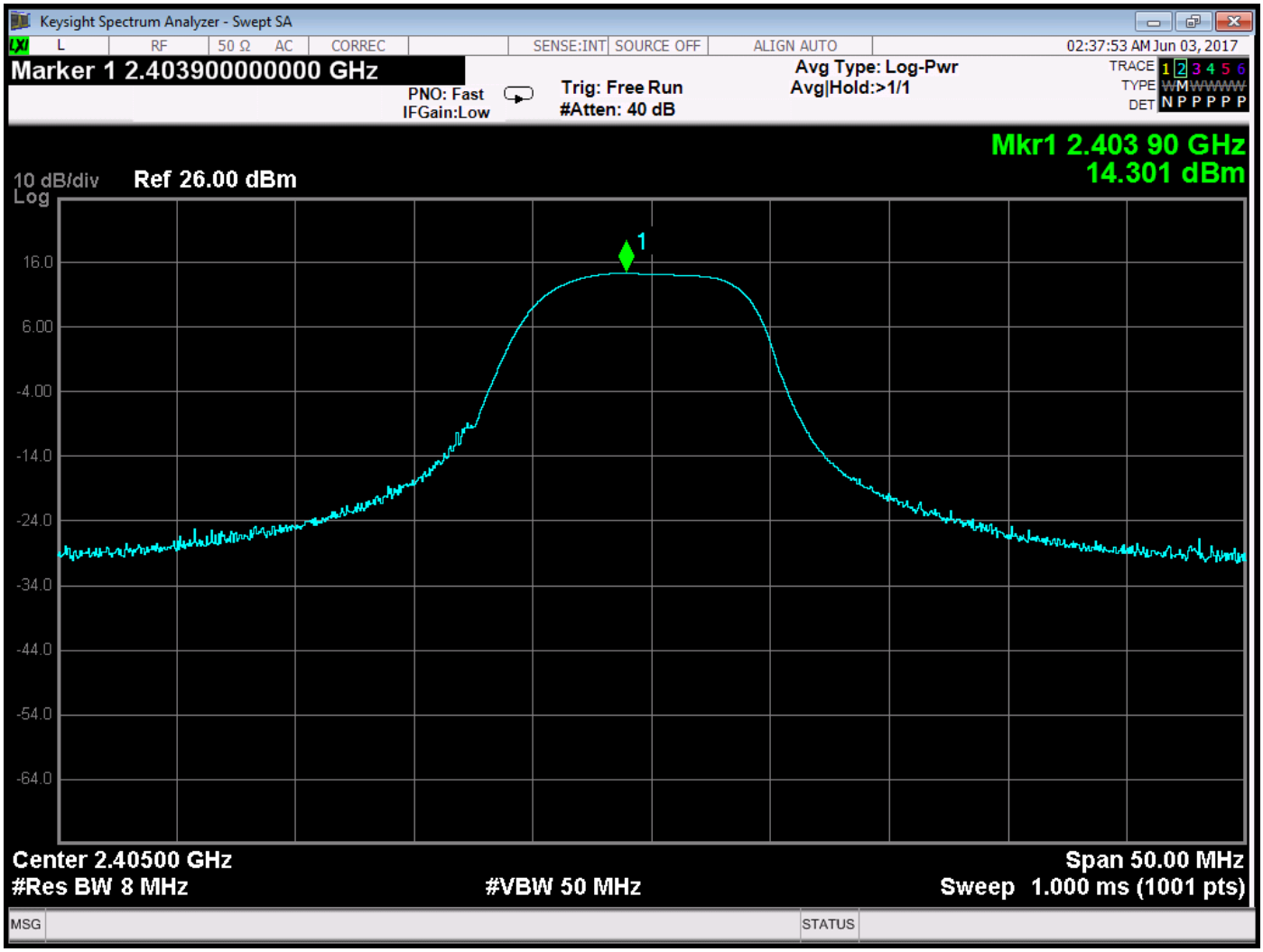
Spectral Density – Middle Channel



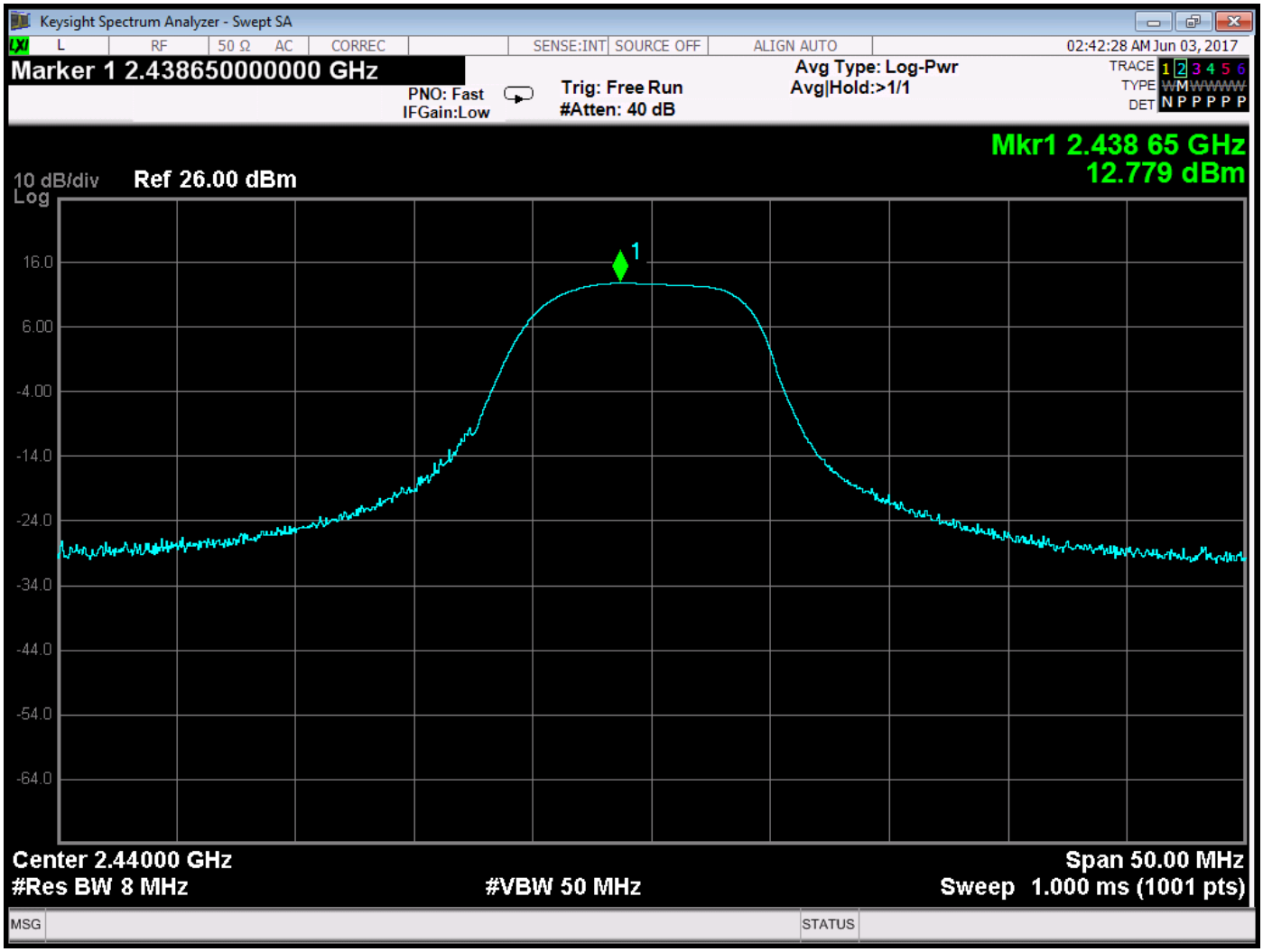
Spectral Density – High Channel

PEAK POWER

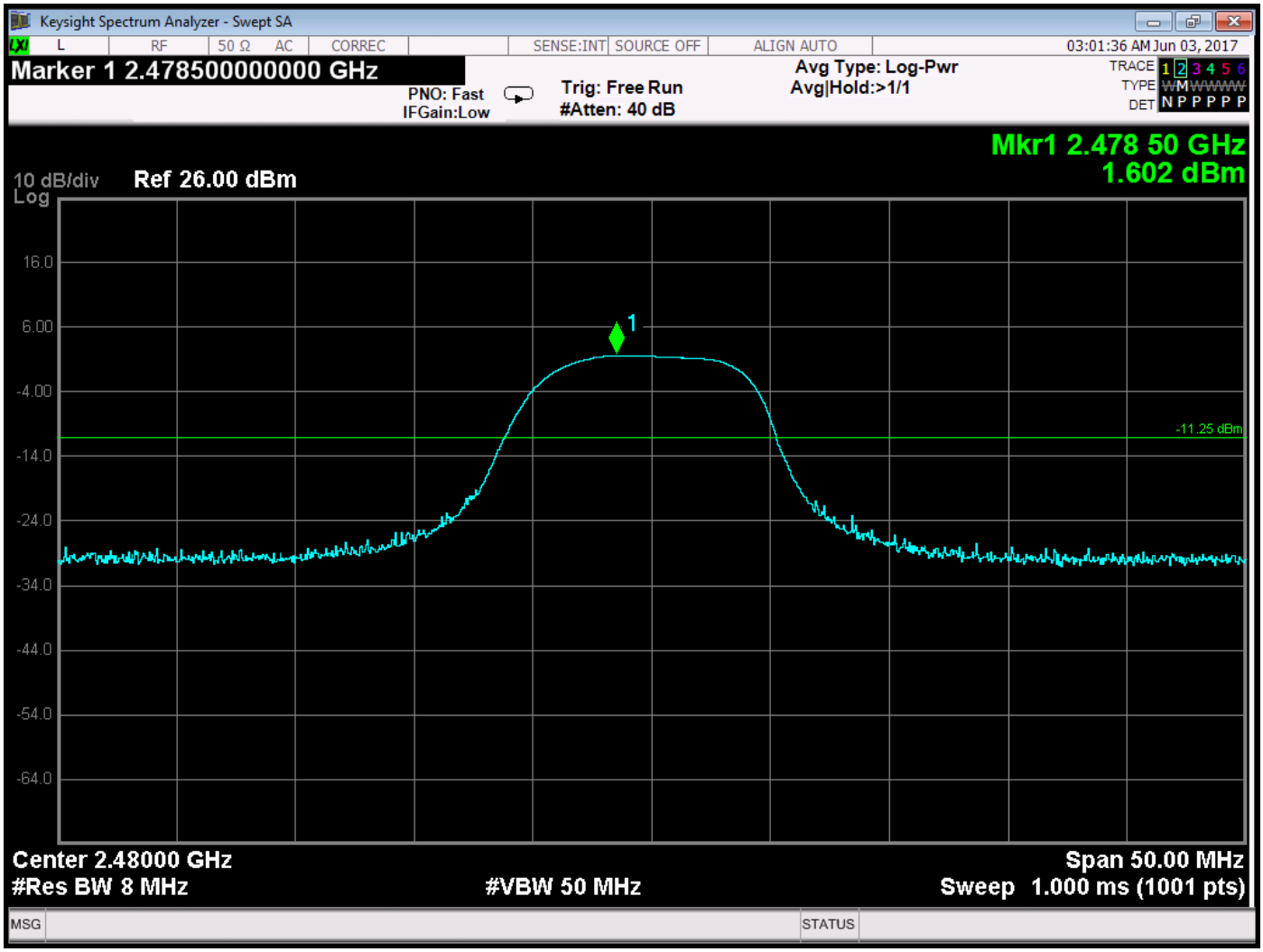
DATA SHEETS



Peak Power Output – Low Channel



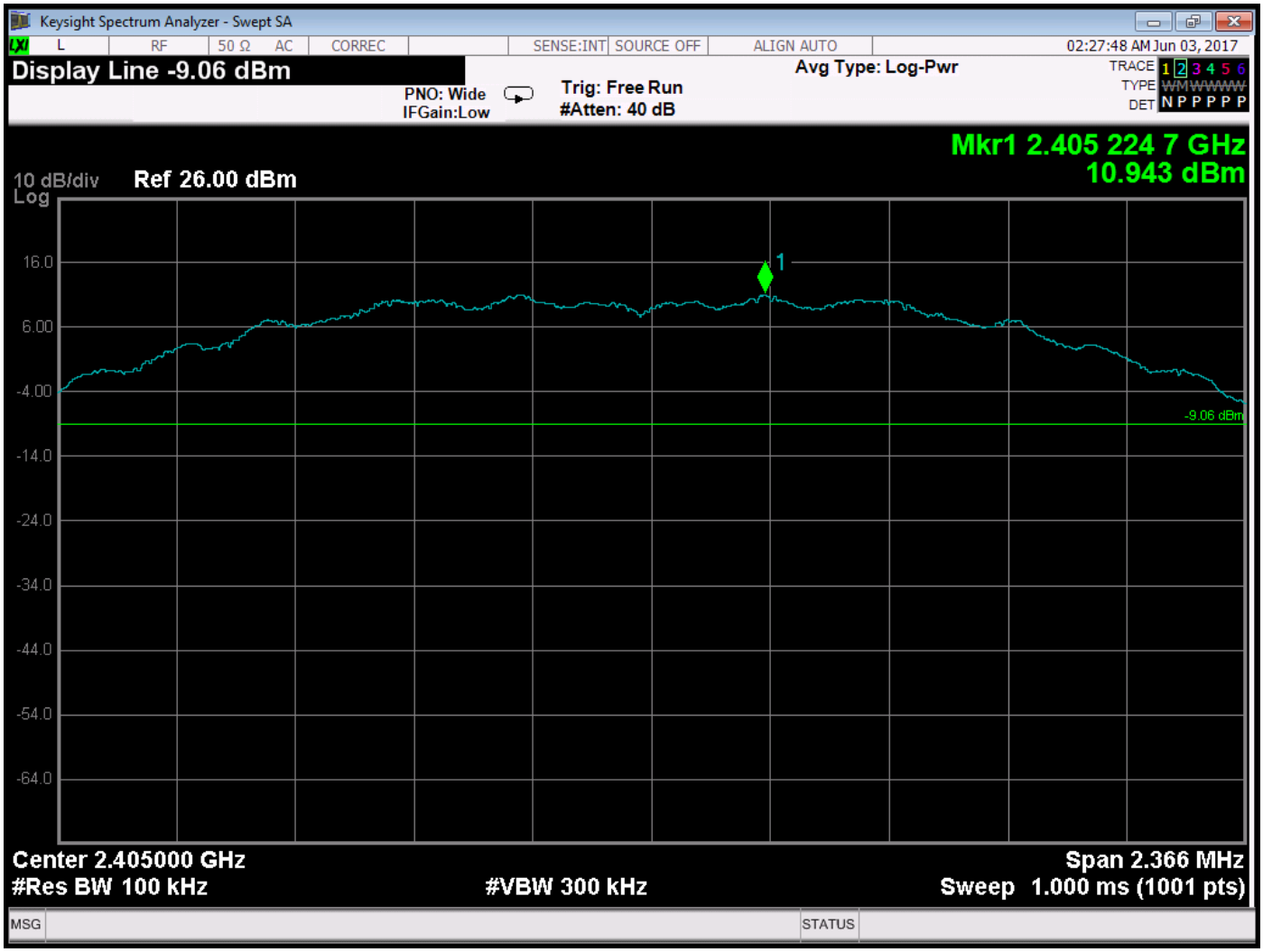
Peak Power Output – Middle Channel



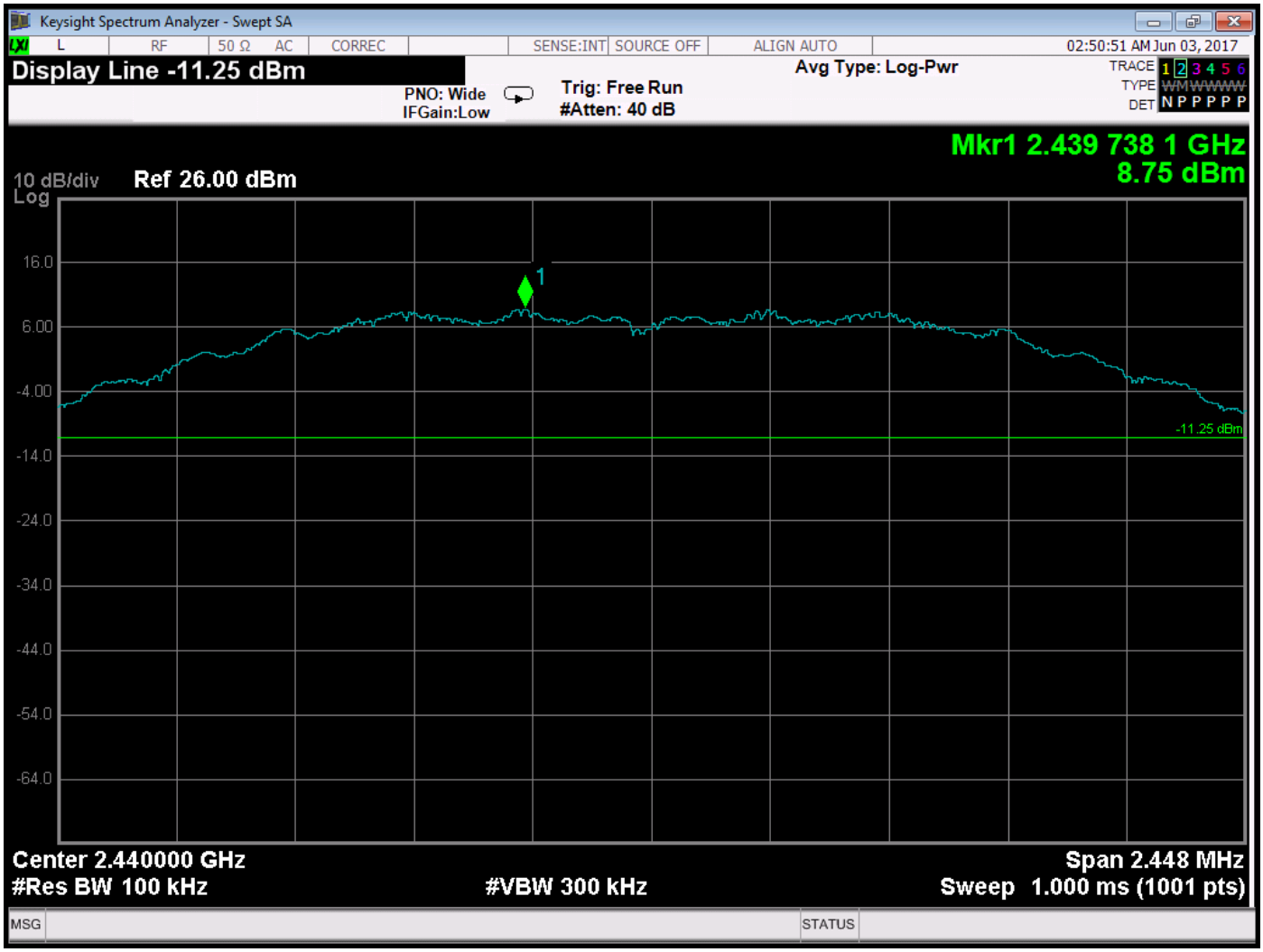
Peak Power Output – High Channel

HARMONIC EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

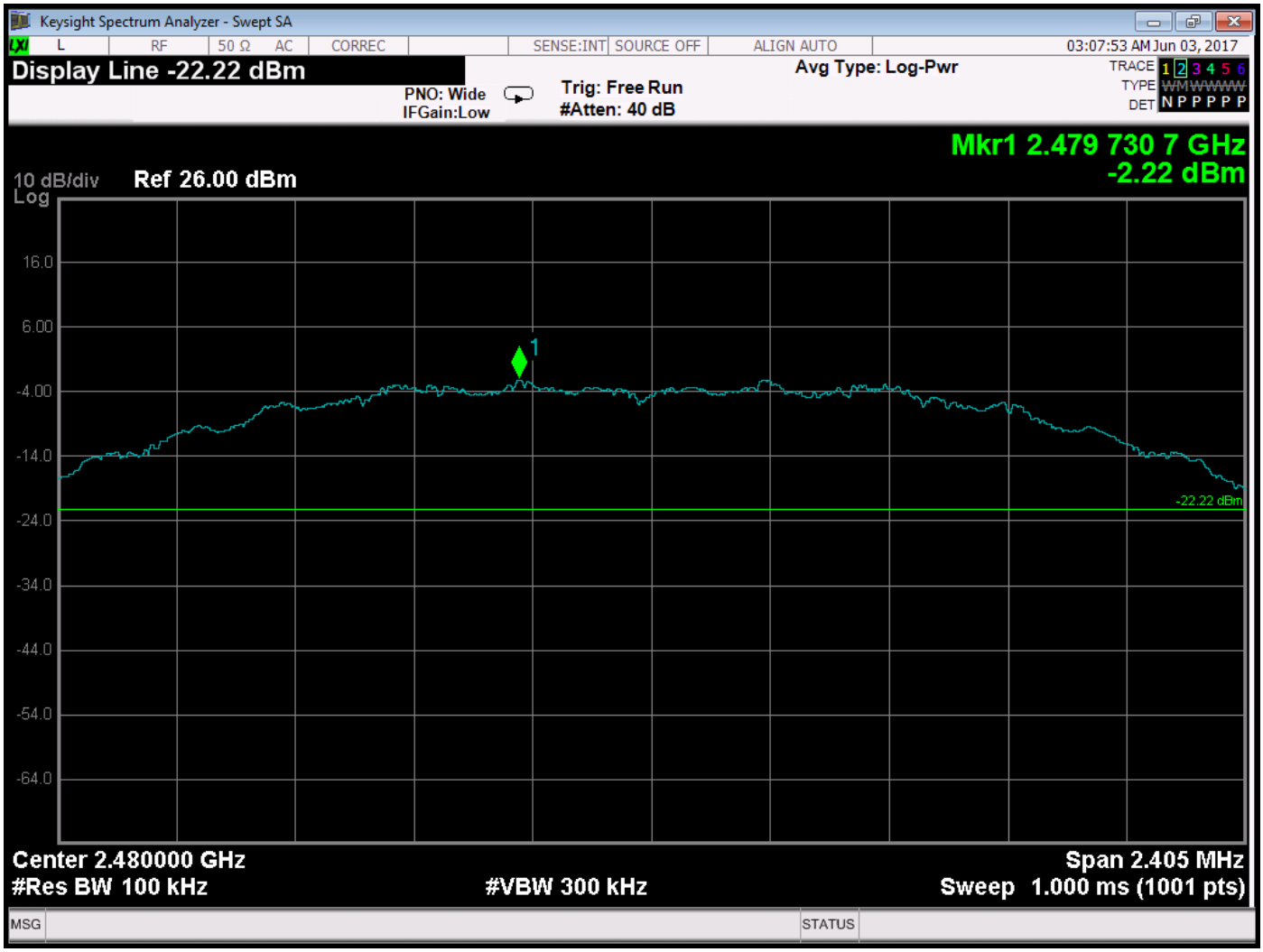
DATA SHEETS



Reference Level – 2405 MHz – 10.943 dBm



Reference Level – 2440 MHz – 8.75 dBm



Reference Level – 2480 MHz – -2.22 dBm

FCC 15.247
Ecolink Intelligent Technology, Inc., Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/27/2016 and 07/02/2016
Lab: D
Tested By: Kyle Fujimoto

Harmonic Emissions in Non-Restricted Frequency Bands – Three Highest

Freq. (MHz)	Level (dBm)	Margin	Spec Limit (dBm)	Comments
24730	-36.664	-47.607	10.943	**Low Channel**
24790	-36.979	-45.729	8.75	**Middle Channel**
6085	-46.334	-44.11	-2.22	**High Channel**

BAND EDGES

DATA SHEETS

FCC 15.247

Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

Date: 06/03/2017
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Low Channel

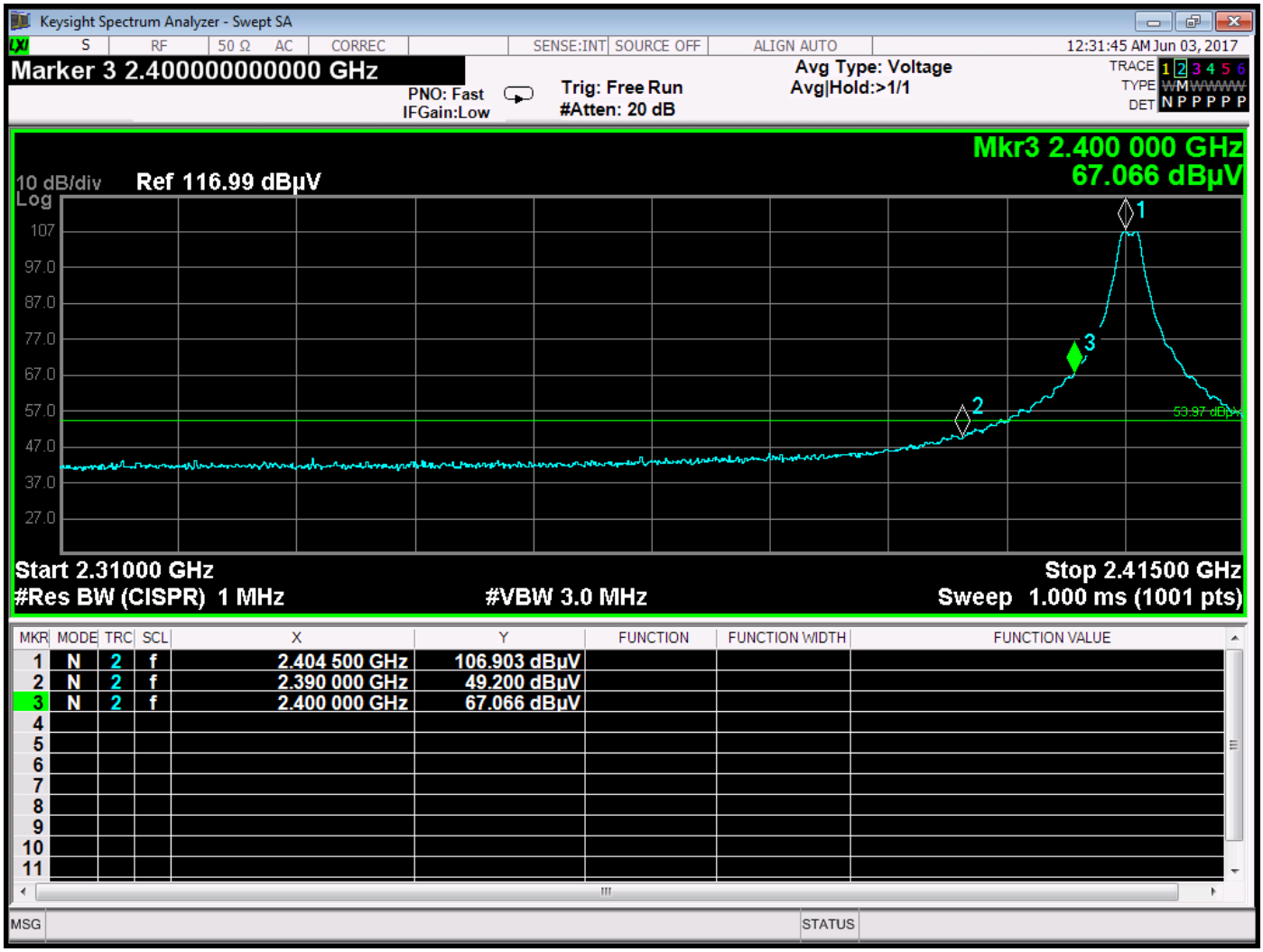
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405	107.80	V	--	--	Peak	161.50	156.55	**Fundamental**
2405	98.69	V	--	--	Avg	161.50	156.55	**Z-Axis Worst Case**
2390	49.80	V	73.97	-24.17	Peak	161.50	156.55	**Band Edge**
2390	40.69	V	53.97	-13.28	Avg	161.50	156.55	**Z-Axis Worst Case**
2405	106.90	H	--	--	Peak	206.50	143.00	**Fundamental**
2405	97.79	H	--	--	Avg	206.50	143.00	**X-Axis Worst Case**
2390	49.20	H	73.97	-24.77	Peak	206.50	143.00	**Band Edge**
2390	40.09	H	53.97	-13.88	Avg	206.50	143.00	**X-Axis Worst Case**

FCC 15.247
Ecolink Intelligent Technology, Inc.
Wireless Flood Sensor
Model: FLZB1-ECO

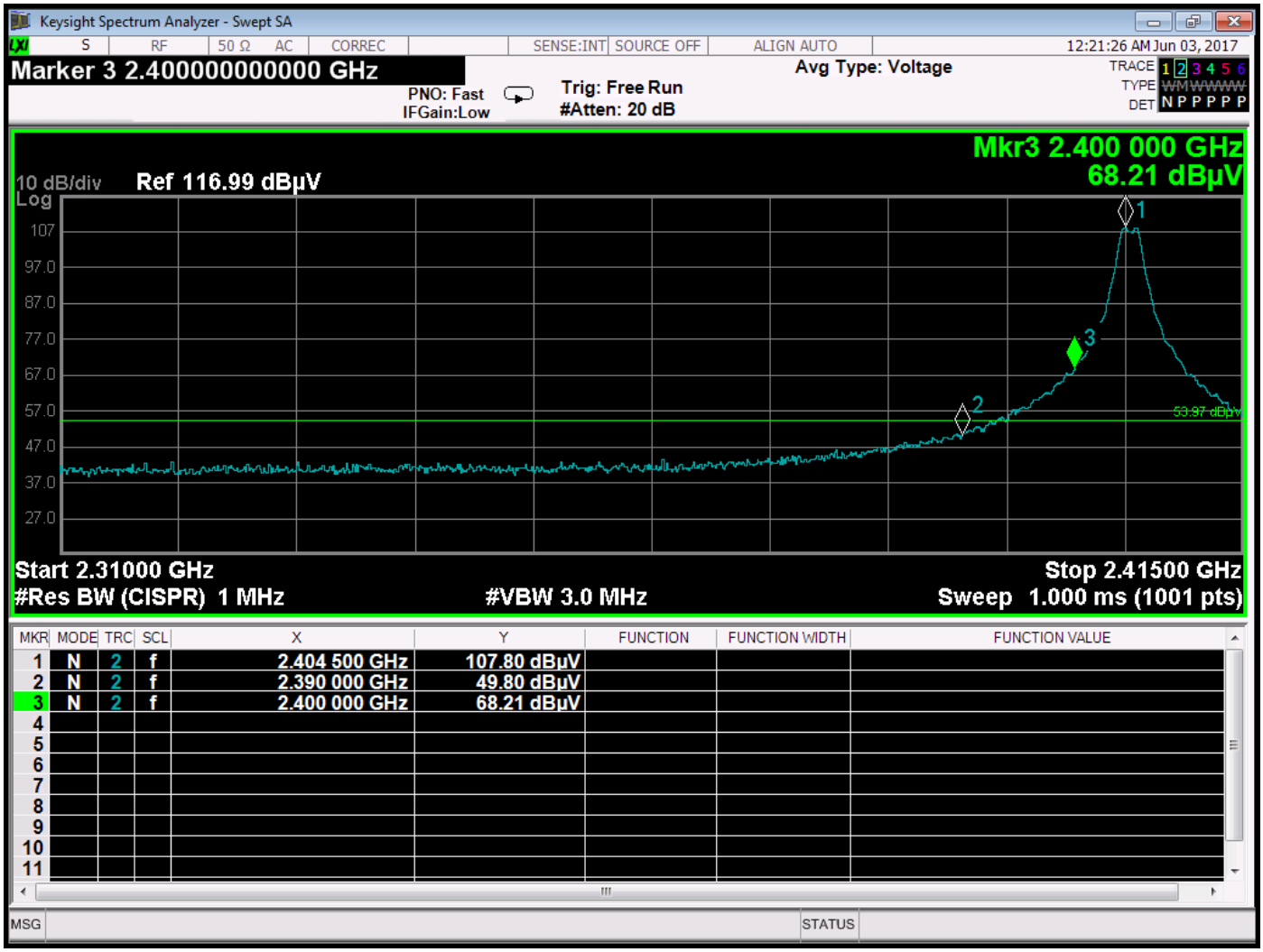
Date: 06/03/2017
Lab: D
Tested By: Kyle Fujimoto

Band Edge - High Channel

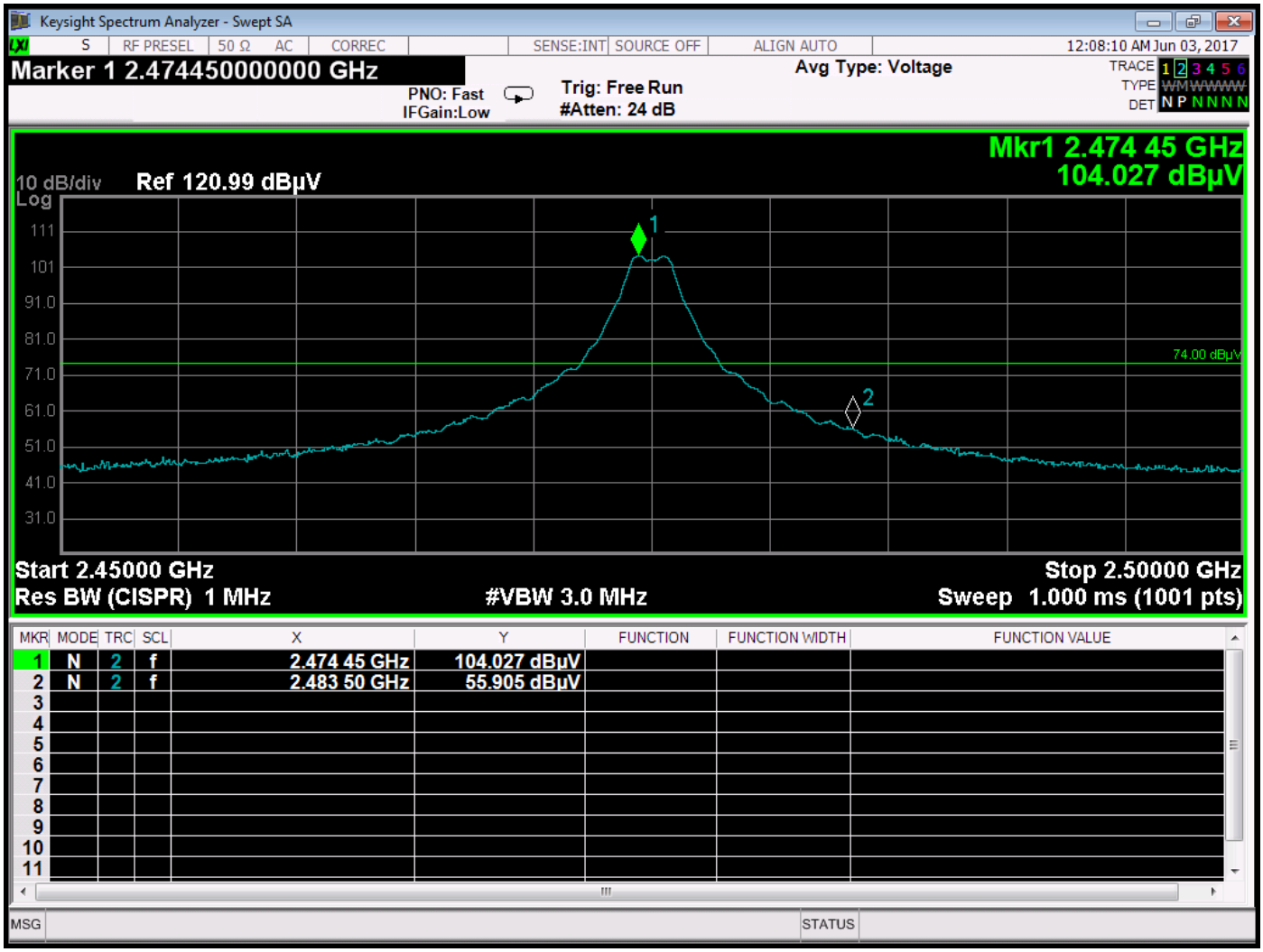
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480	92.39	V	113.97	-21.58	Peak	190.00	204.13	**Fund. of High Channel**
2480	83.28	V	93.97	-10.69	Avg	190.00	204.13	**Y-Axis Worst Case**
2483.5	59.96	V	73.97	-14.01	Peak	190.00	204.13	**Band Edge of High Ch.**
2483.5	50.85	V	53.97	-3.12	Avg	190.00	204.13	**Y-Axis Worst Case**
2480	94.84	H	113.97	-19.13	Peak	324.00	120.37	**Fund. of High Channel**
2480	85.73	H	93.97	-8.24	Avg	324.00	120.37	**X-Axis Worst Case**
2483.5	62.04	H	73.97	-11.93	Peak	324.00	120.37	**Fund. of High Channel**
2483.5	52.93	H	53.97	-1.04	Avg	324.00	120.37	**X-Axis Worst Case**
2475	101.48	V	--	--	Peak	148.75	115.23	**Fundamental**
2475	92.37	V	--	--	Avg	148.75	115.23	**Y-Axis Worst Case**
2483.5	53.08	V	73.97	-20.89	Peak	148.75	115.23	**Band Edge**
2483.5	43.97	V	53.97	-10.00	Avg	148.75	115.23	**Y-Axis Worst Case**
2475	104.03	H	--	--	Peak	146.75	108.91	**Fundamental**
2475	94.92	H	--	--	Avg	146.75	108.91	**X-Axis Worst Case**
2483.5	55.91	H	73.97	-18.07	Peak	146.75	108.91	**Band Edge**
2483.5	46.80	H	53.97	-7.18	Avg	146.75	108.91	**X-Axis Worst Case**



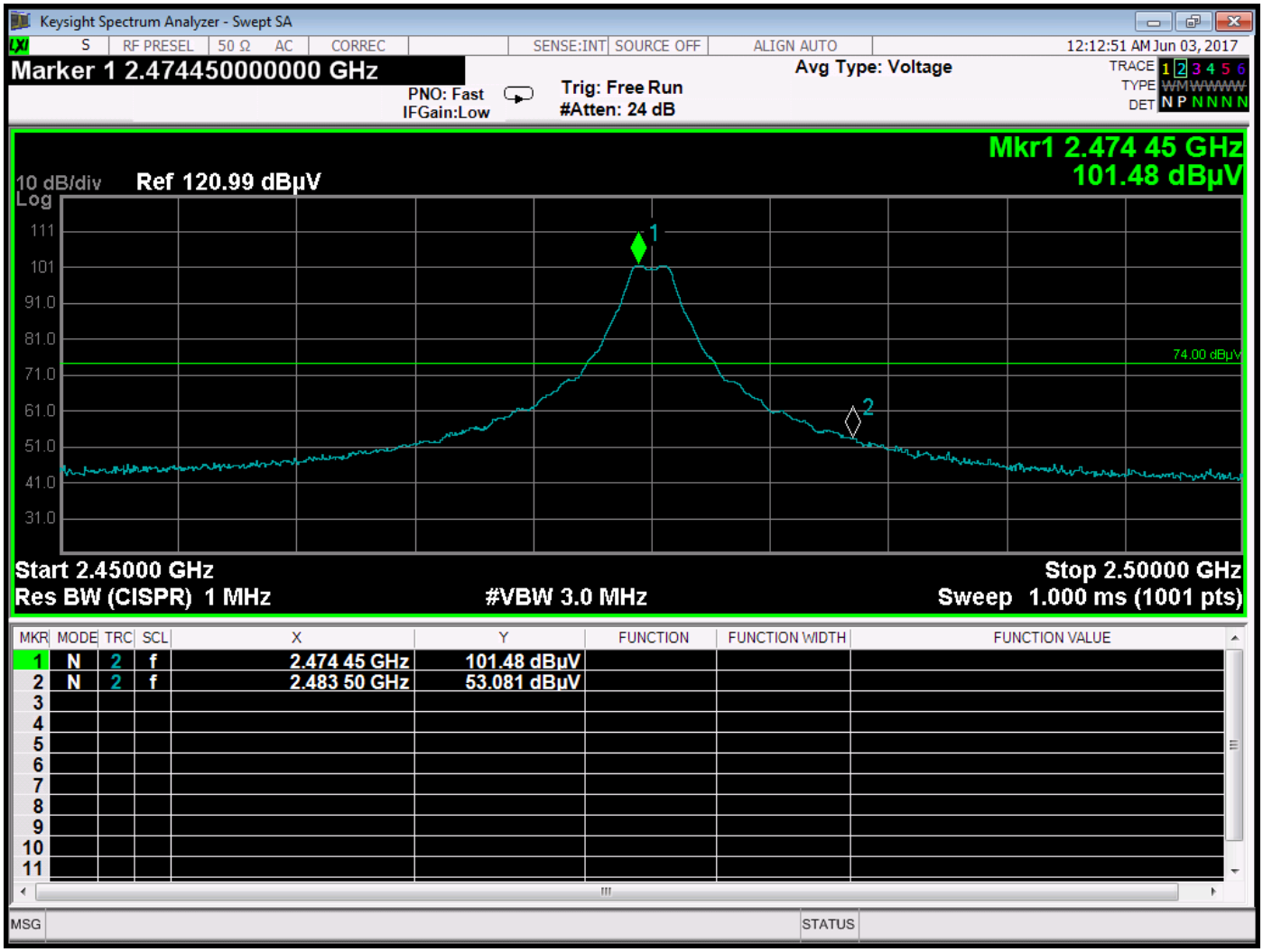
Band Edge – 2405 MHz – Horizontal Polarization – X-Axis – Worst Case



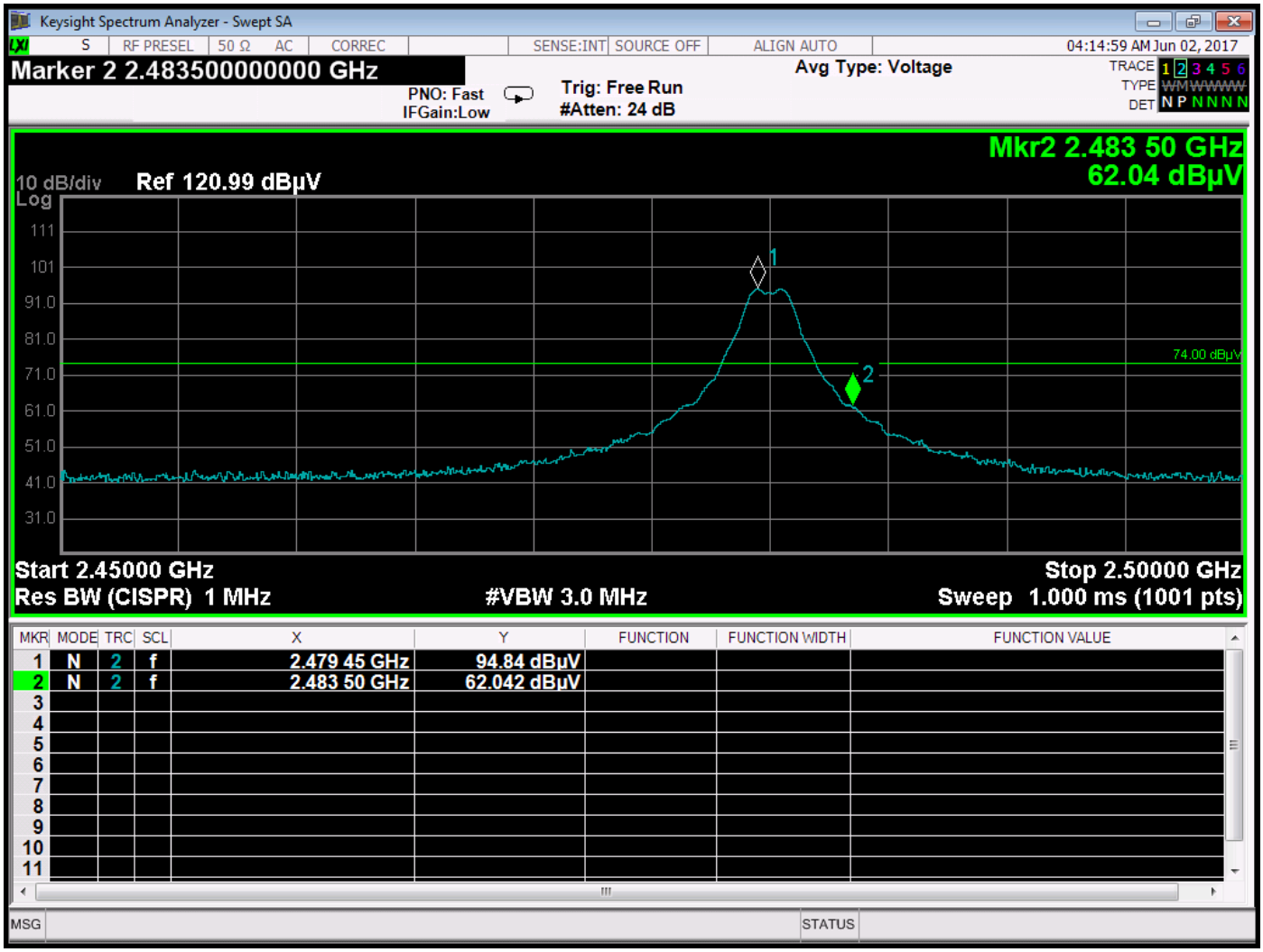
Band Edge – 2405 MHz – Vertical Polarization – Y-Axis – Worst Case



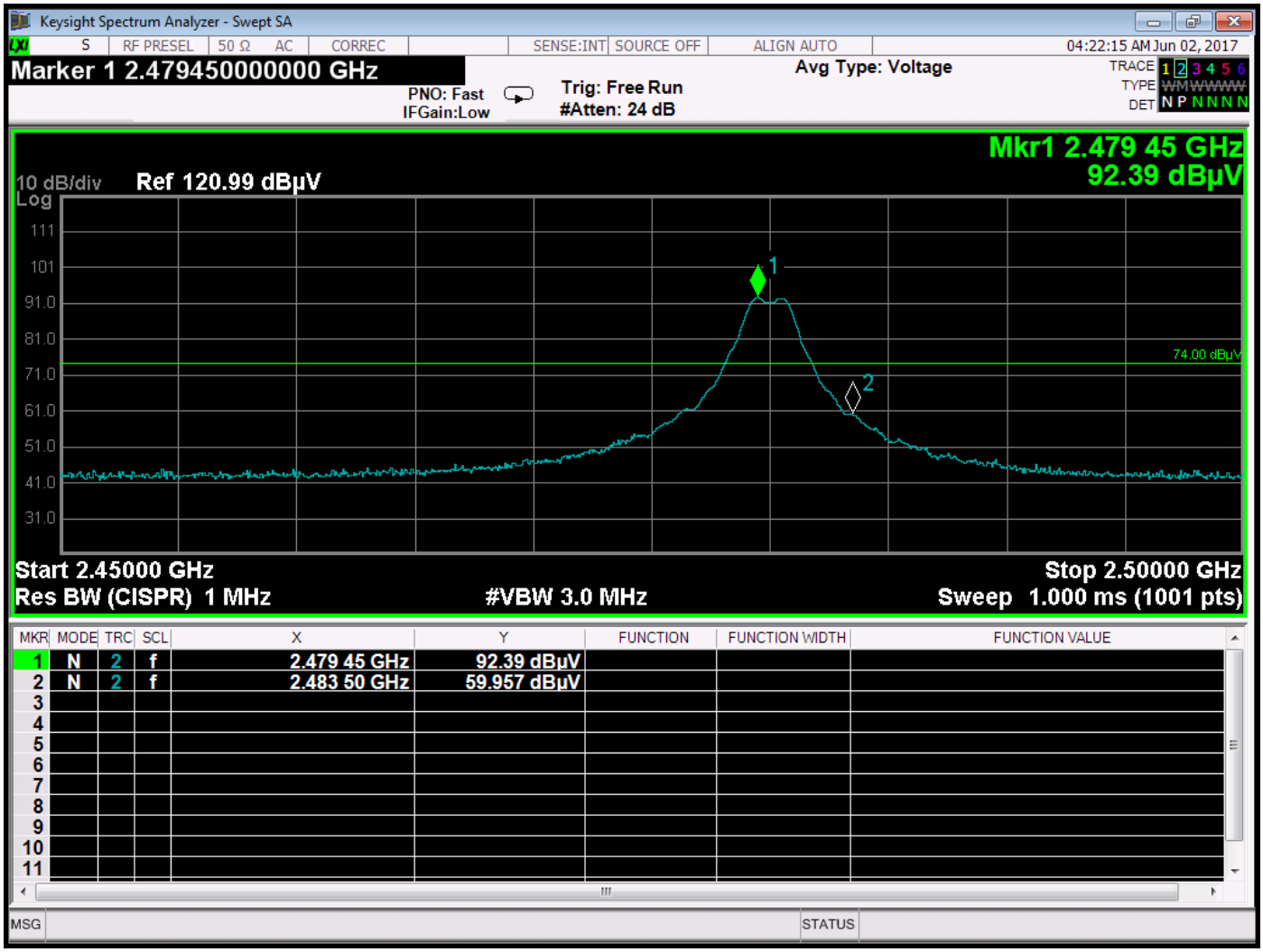
Band Edge – 2475 MHz – Horizontal Polarization – X-Axis – Worst Case



Band Edge – 2475 MHz – Vertical Polarization – Y-Axis – Worst Case.



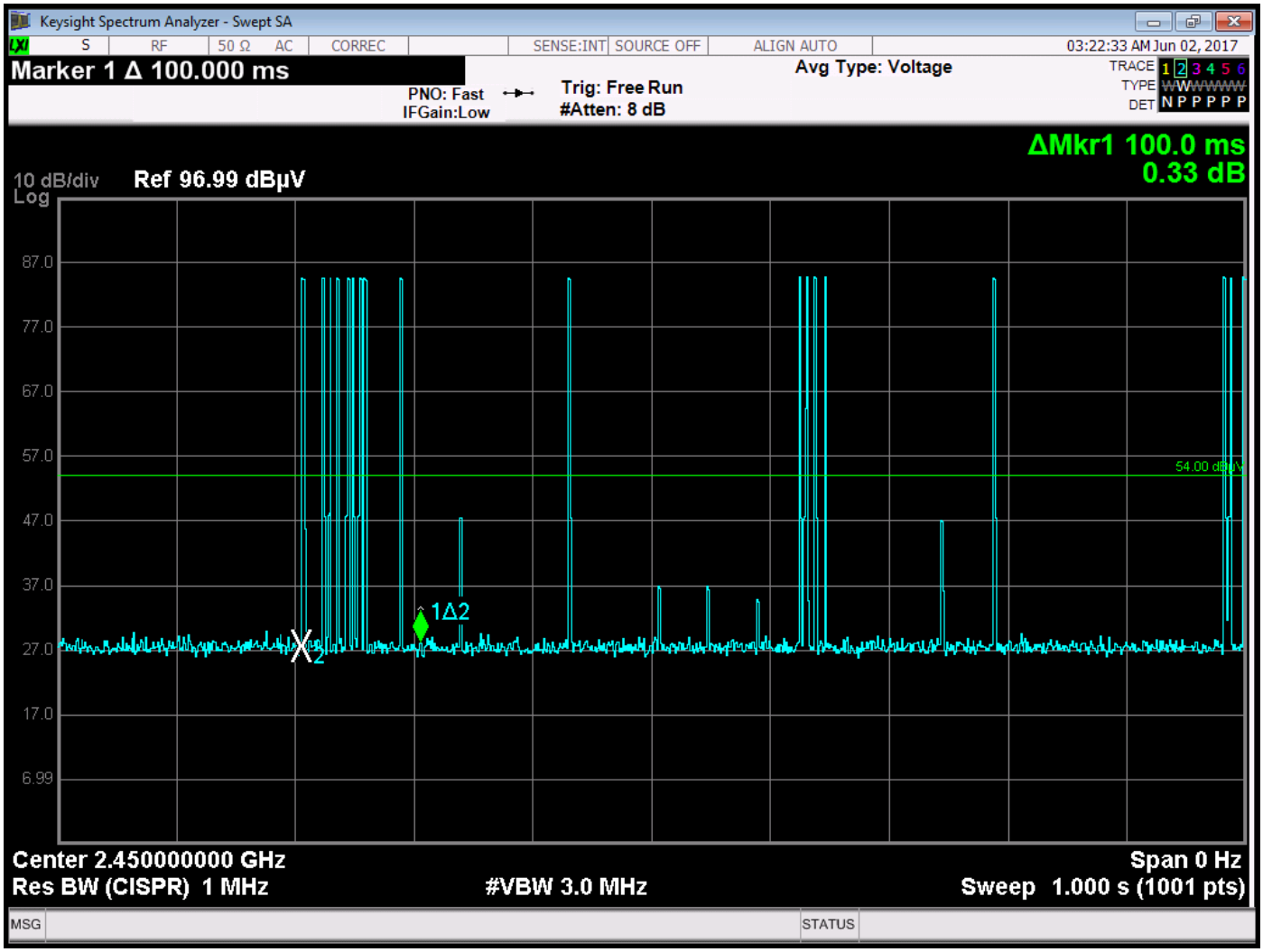
Band Edge – 2480 MHz – Horizontal Polarization – X-Axis – Worst Case.



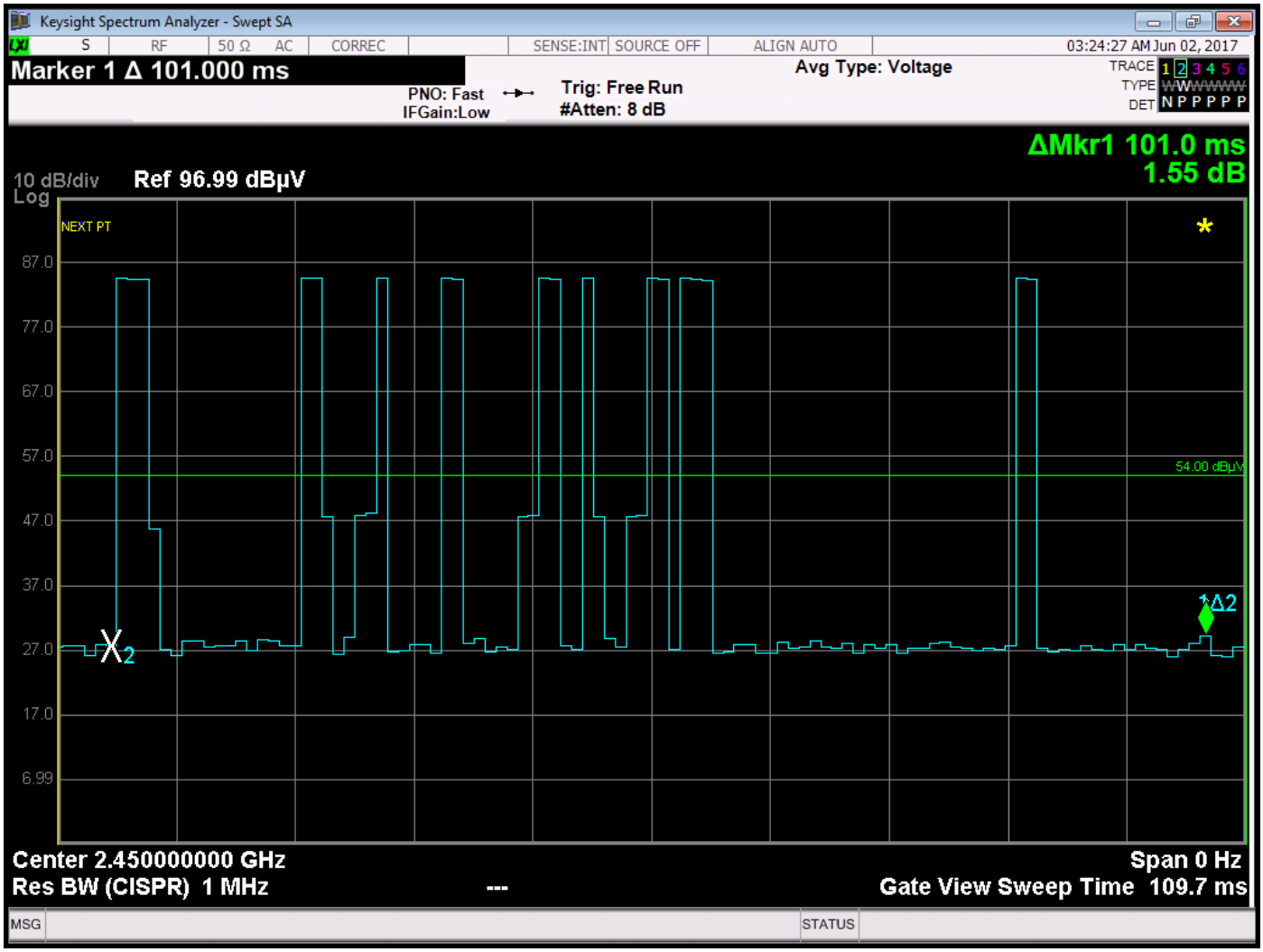
Band Edge – 2480 MHz – Vertical Polarization – Y-Axis – Worst Case.

DUTY CYCLE

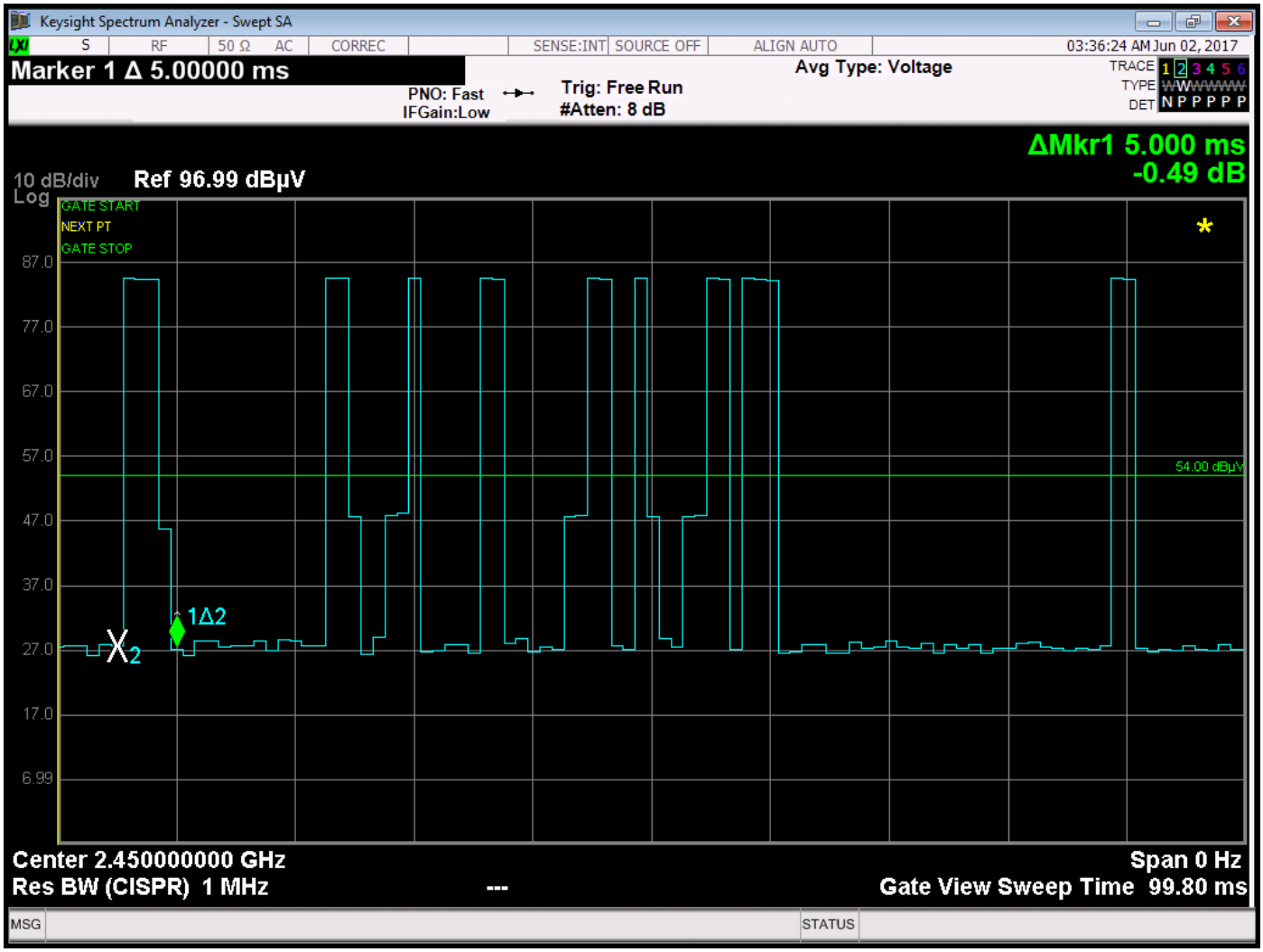
DATA SHEETS



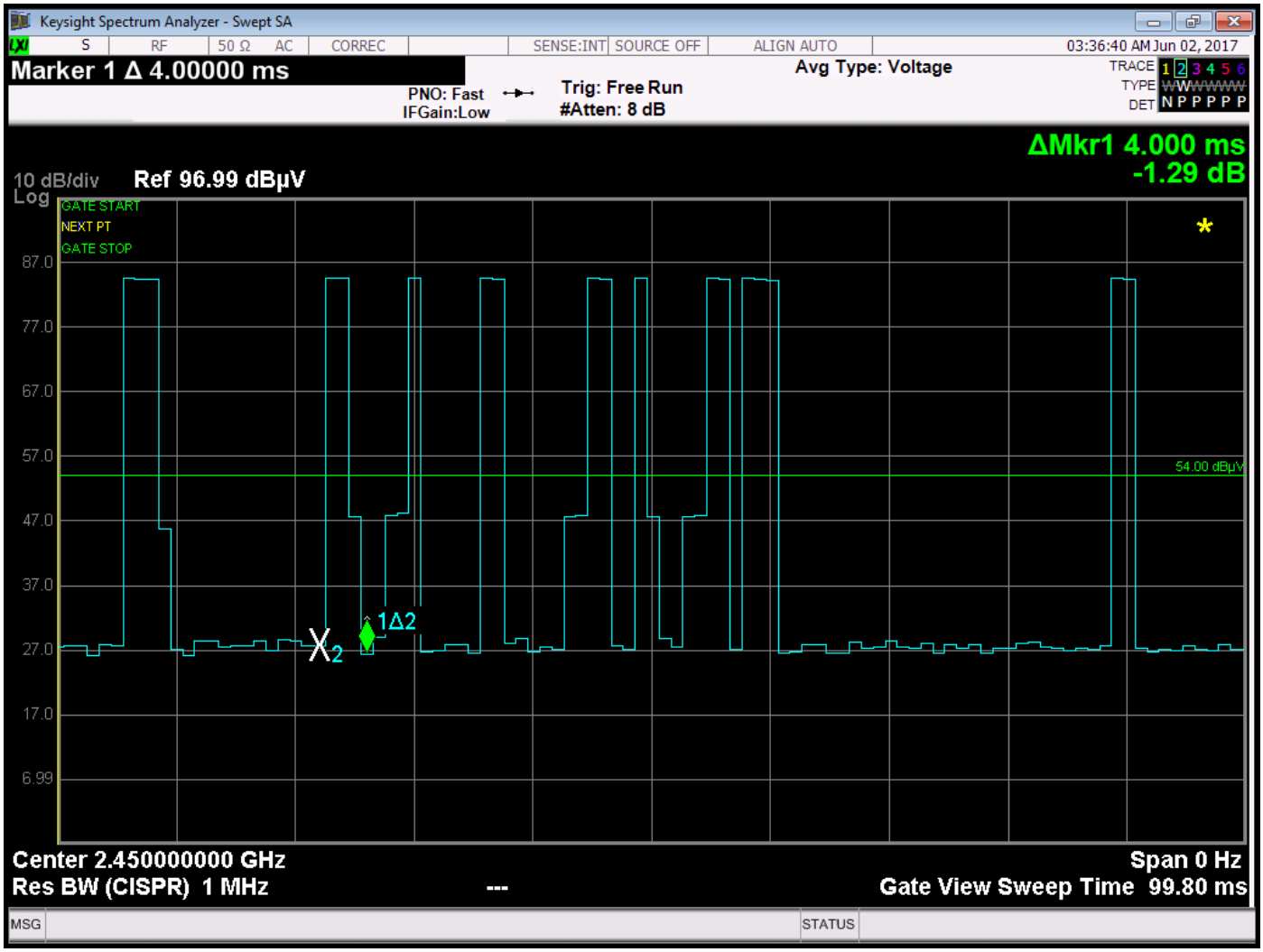
Worst Case 100 ms – Advertising Mode



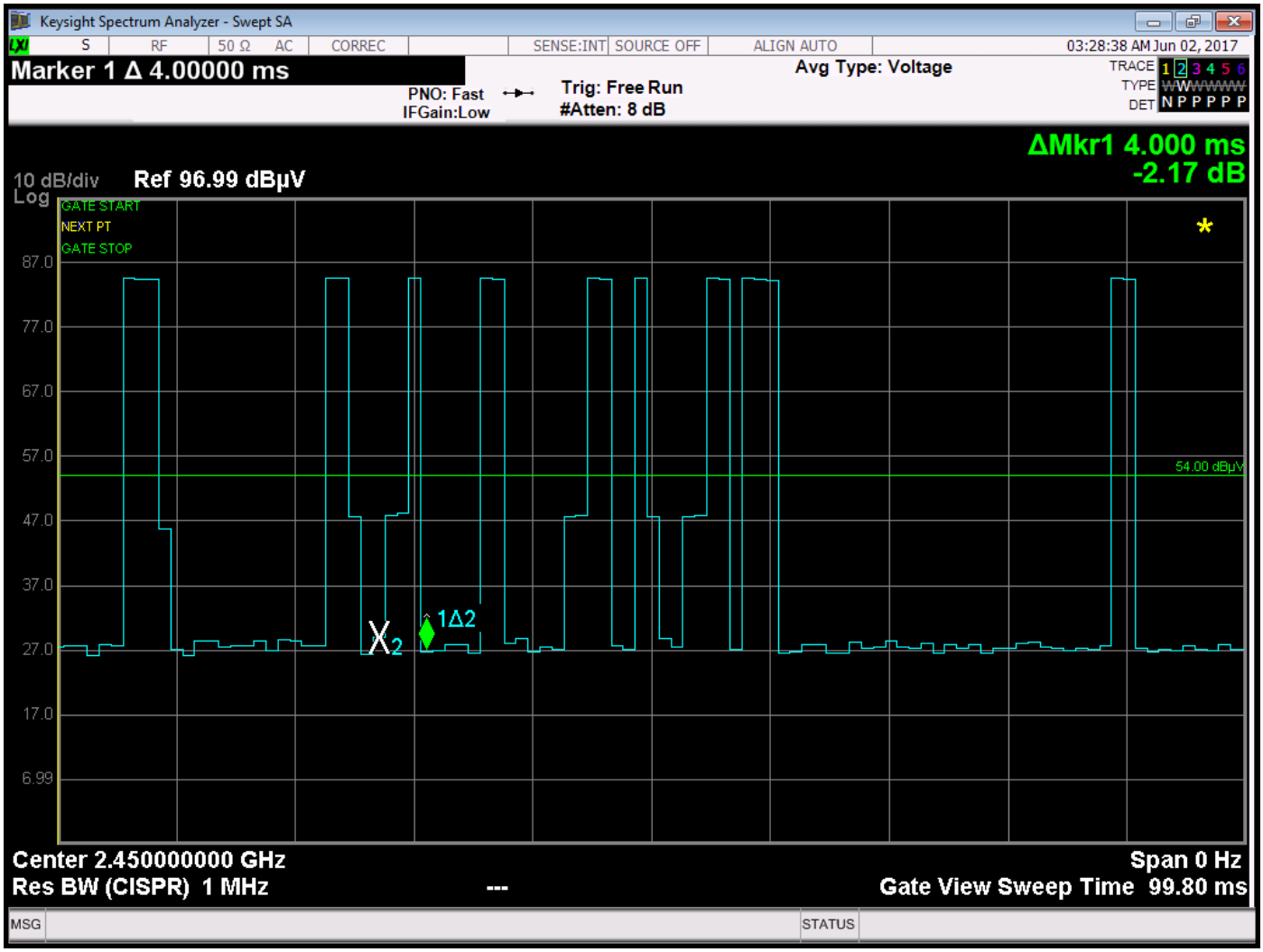
Worst Case 100 ms Close-up – Advertising Mode



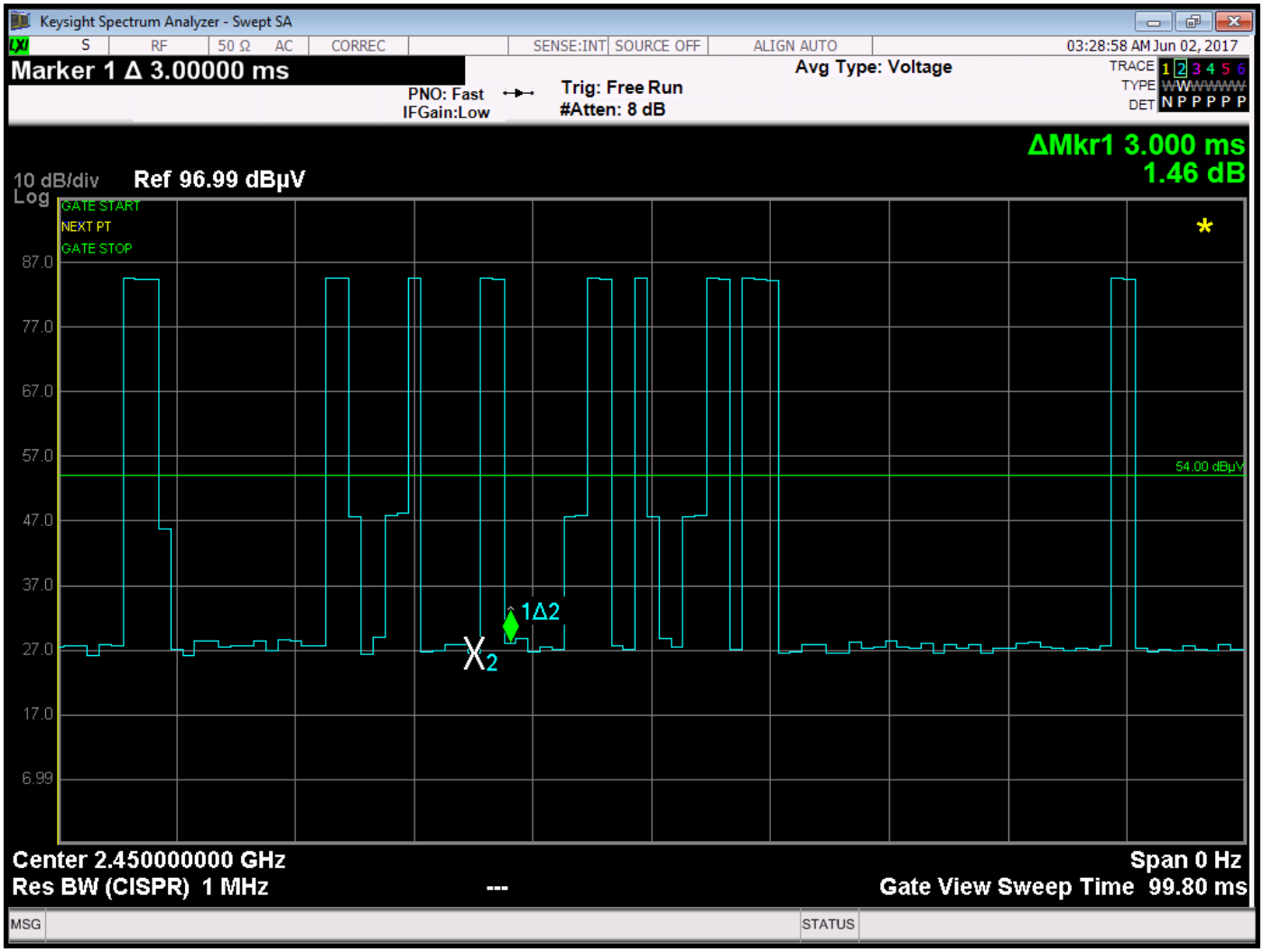
Pulse #1 – 5 ms – Advertising Mode



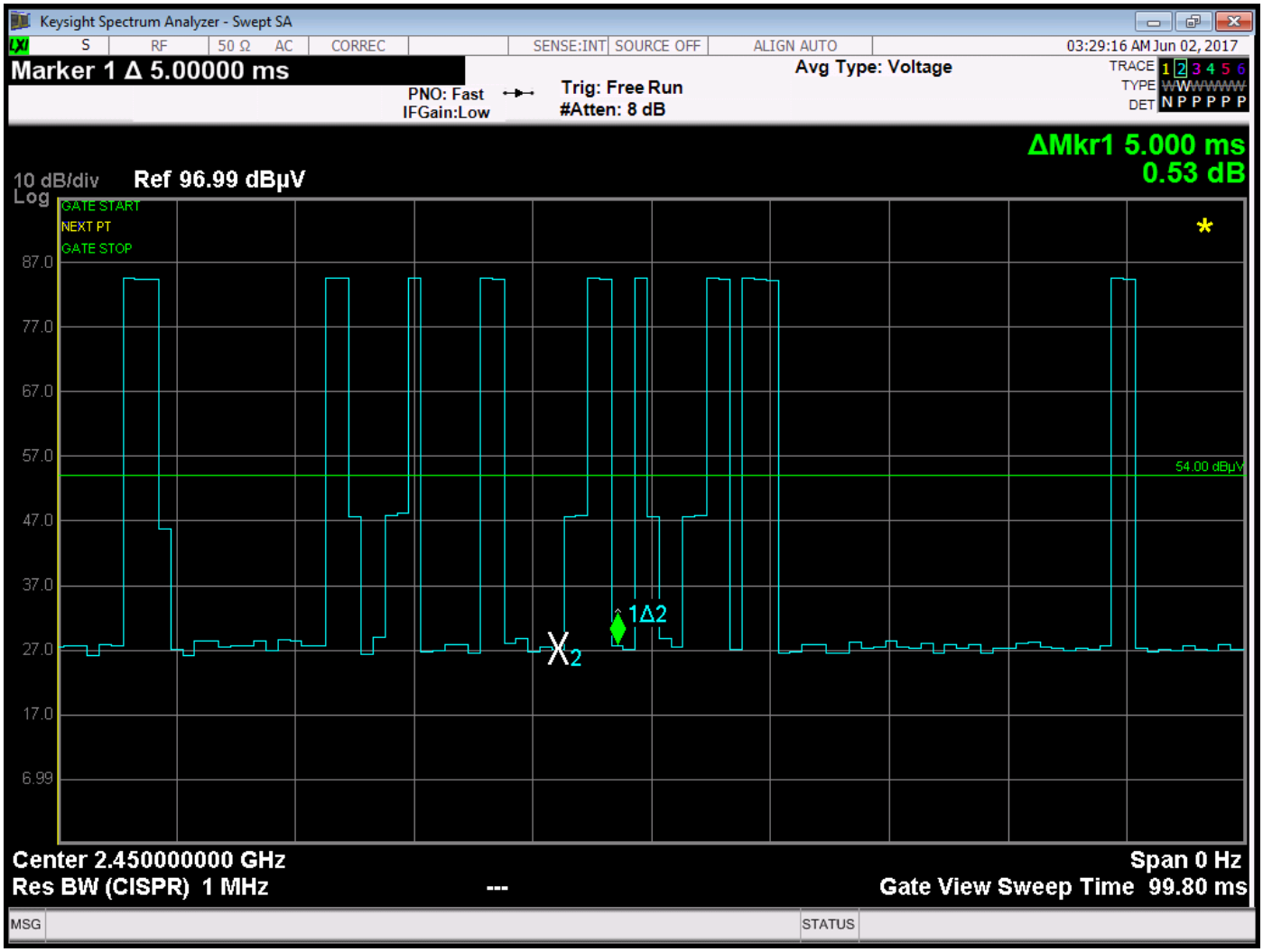
Pulse #2 – 4 ms – Advertising Mode



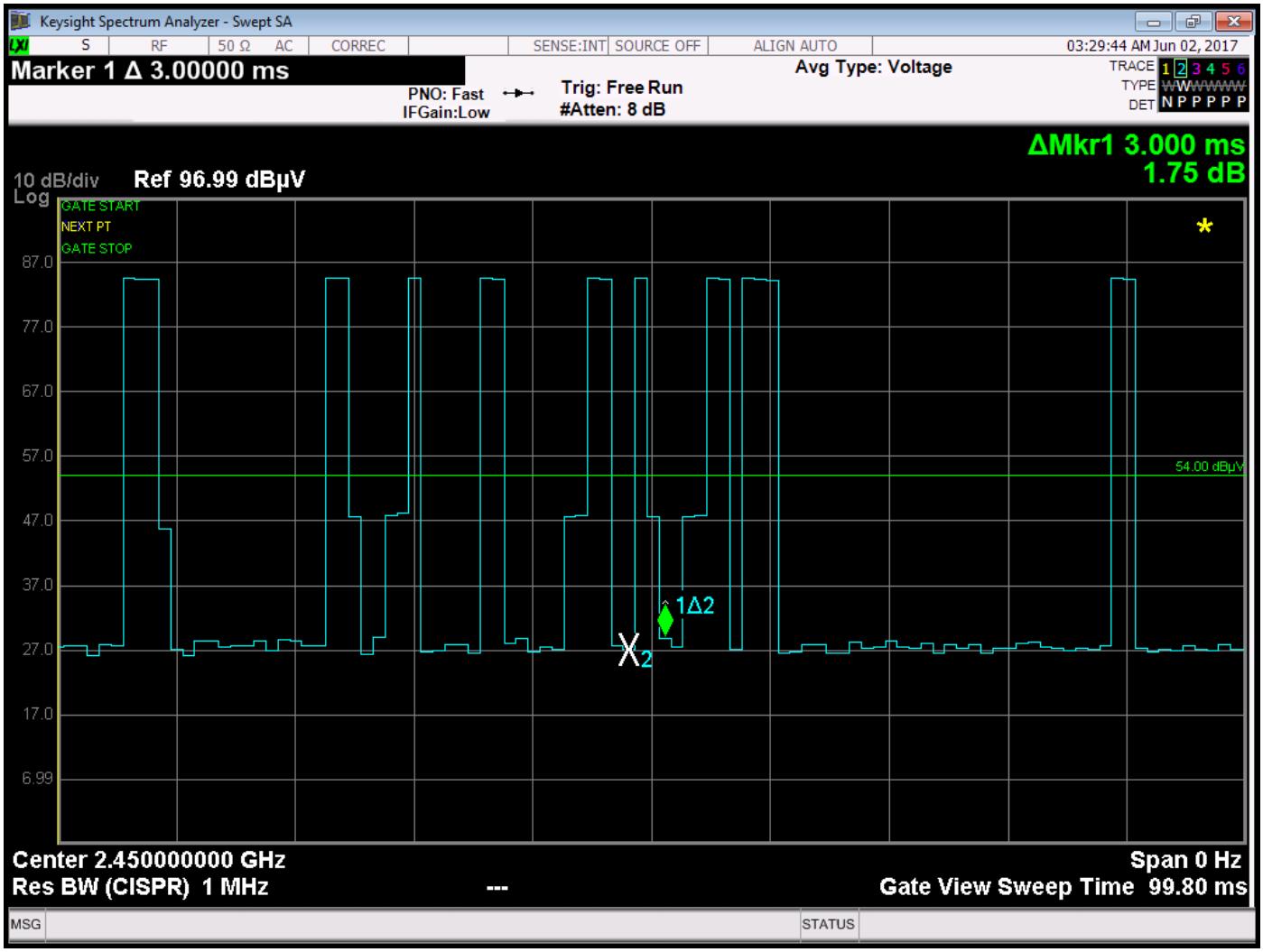
Pulse #3 – 3 ms – Advertising Mode



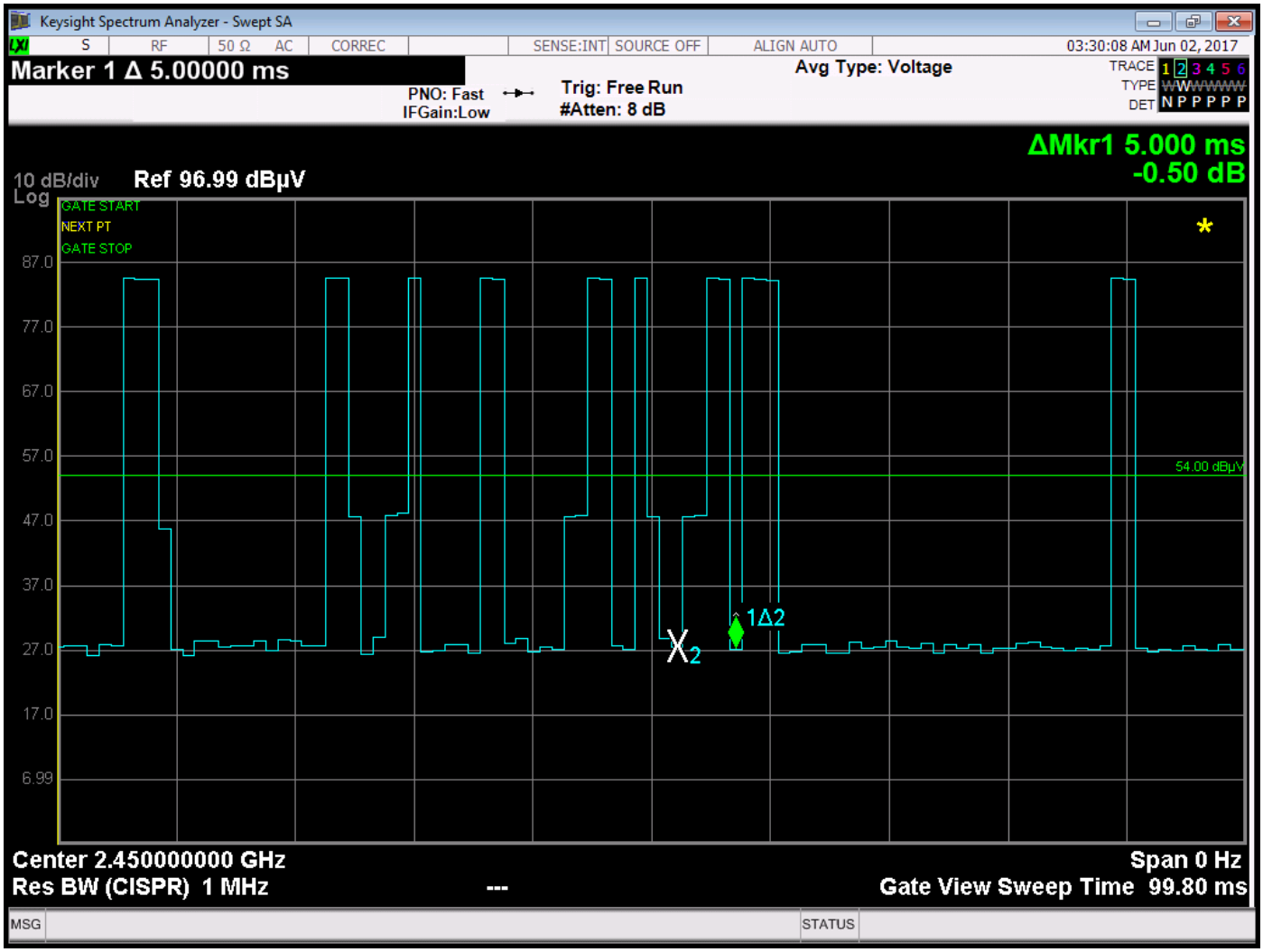
Pulse #4 – 3 ms – Advertising Mode



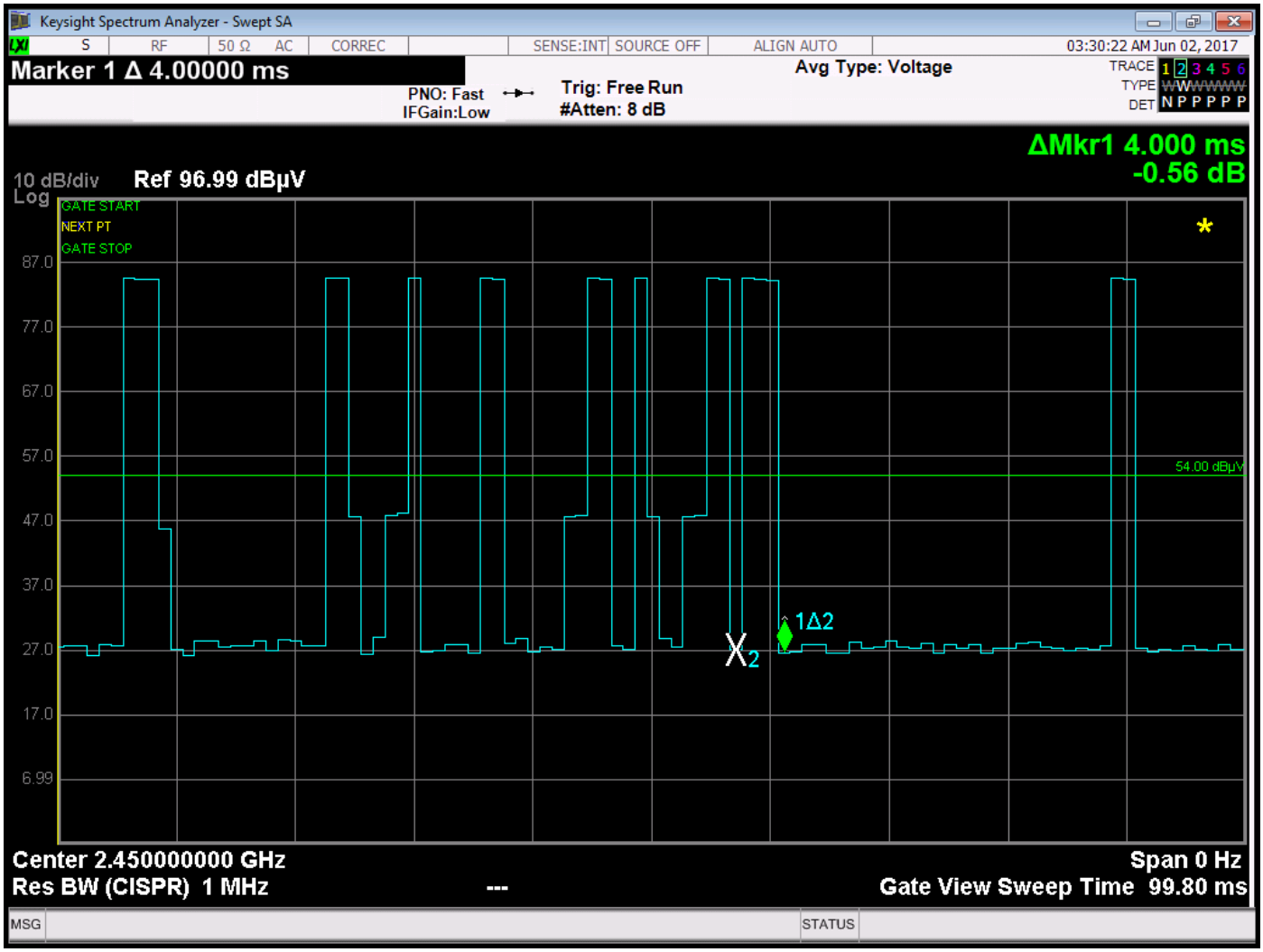
Pulse #5 – 5 ms – Advertising Mode



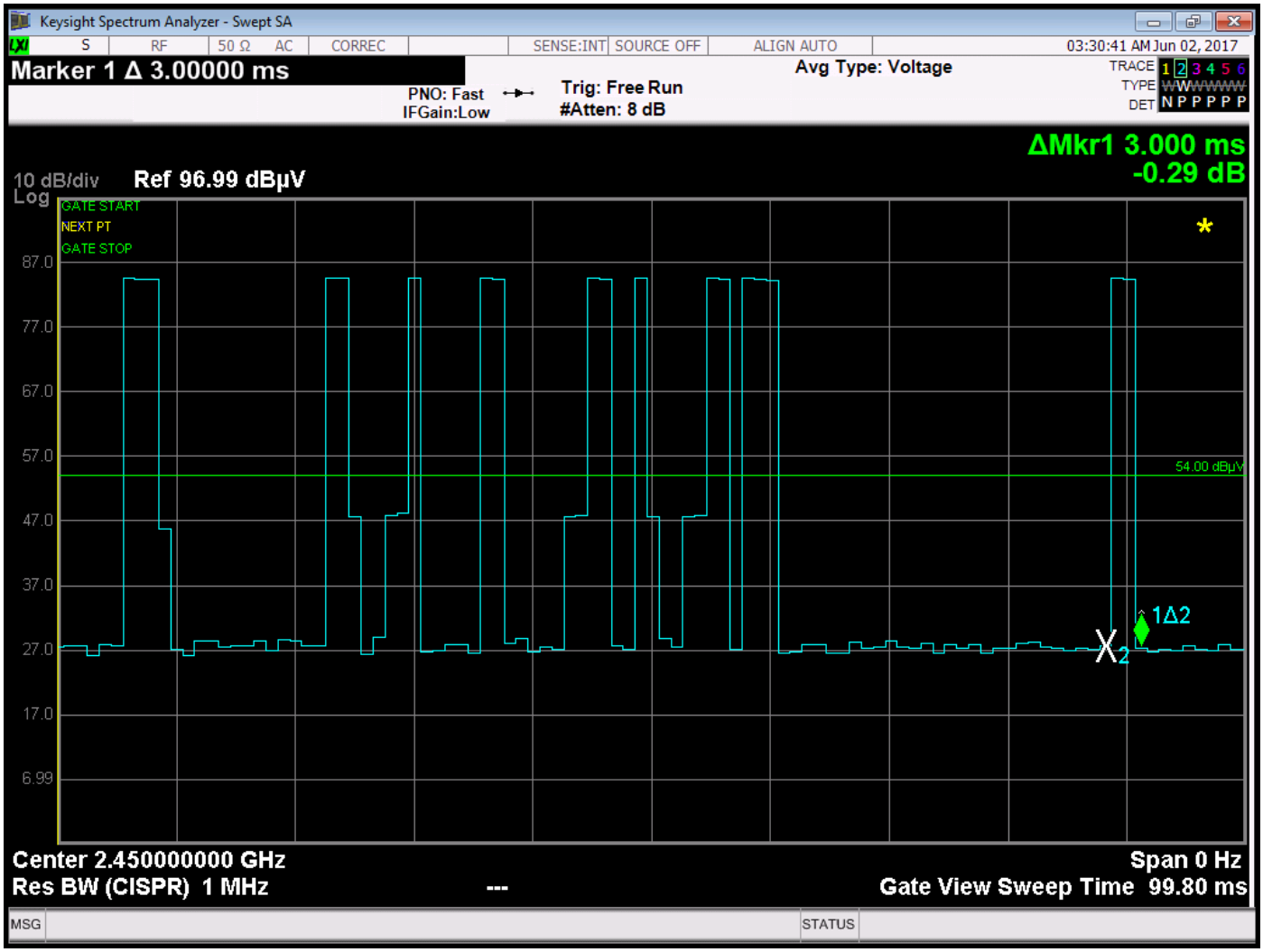
Pulse #6 – 3 ms – Advertising Mode



Pulse #7 – 5 ms – Advertising Mode



Pulse #8 – 4 ms – Advertising Mode

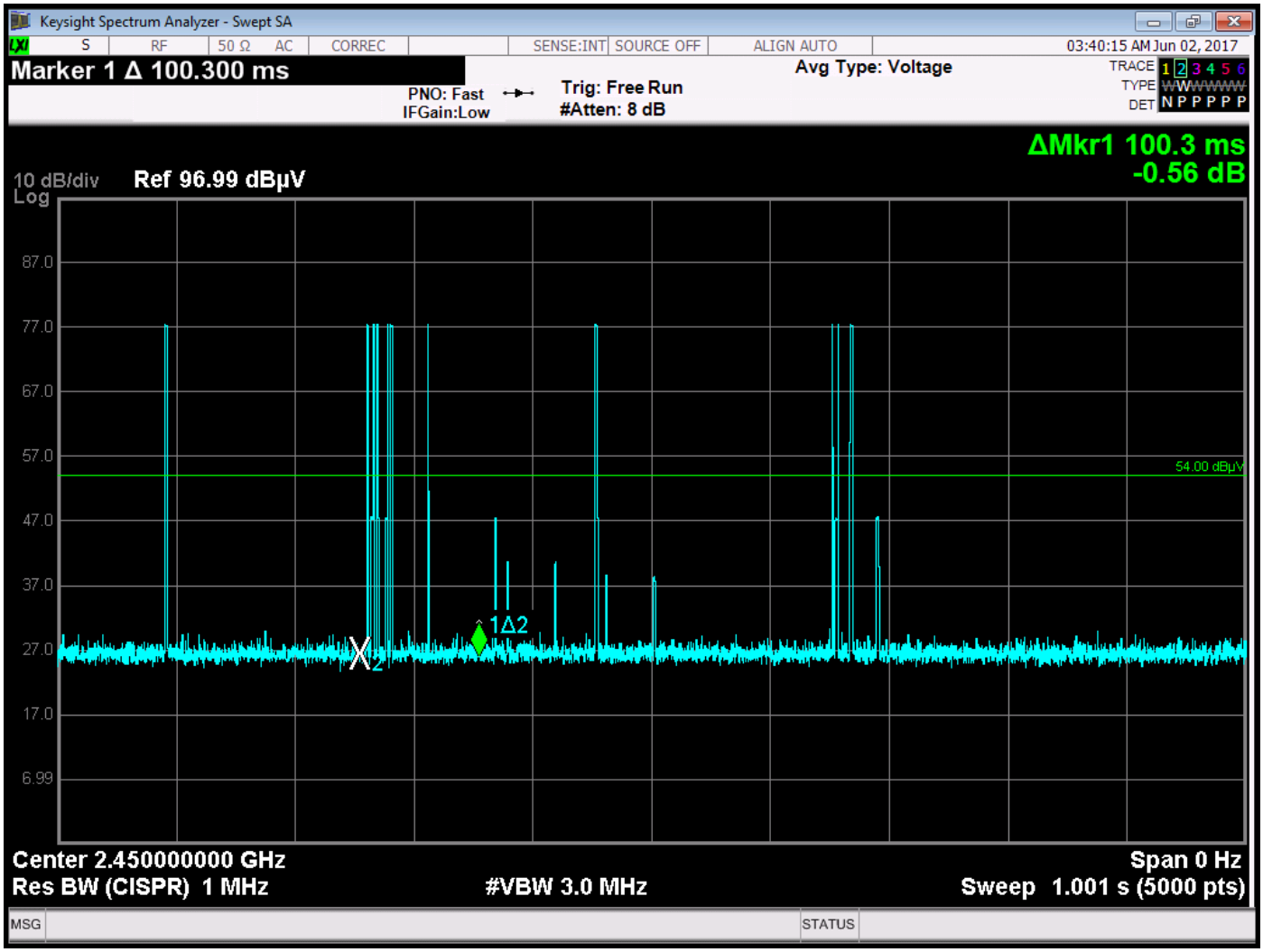


Pulse #9 – 3 ms – Advertising Mode

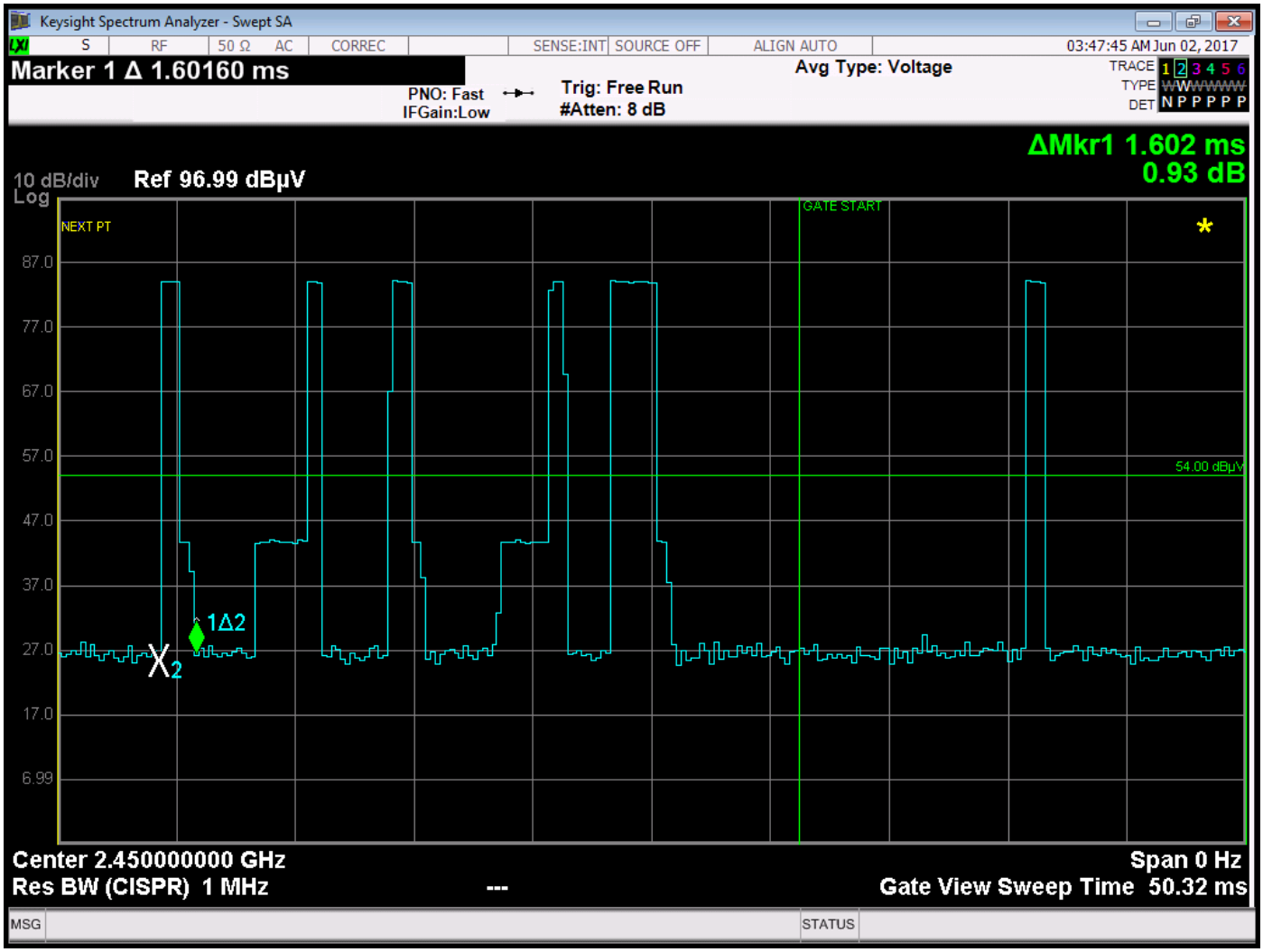
Total On Time = 35 ms

Total Duty cycle = 35 ms / 100 ms = 35%

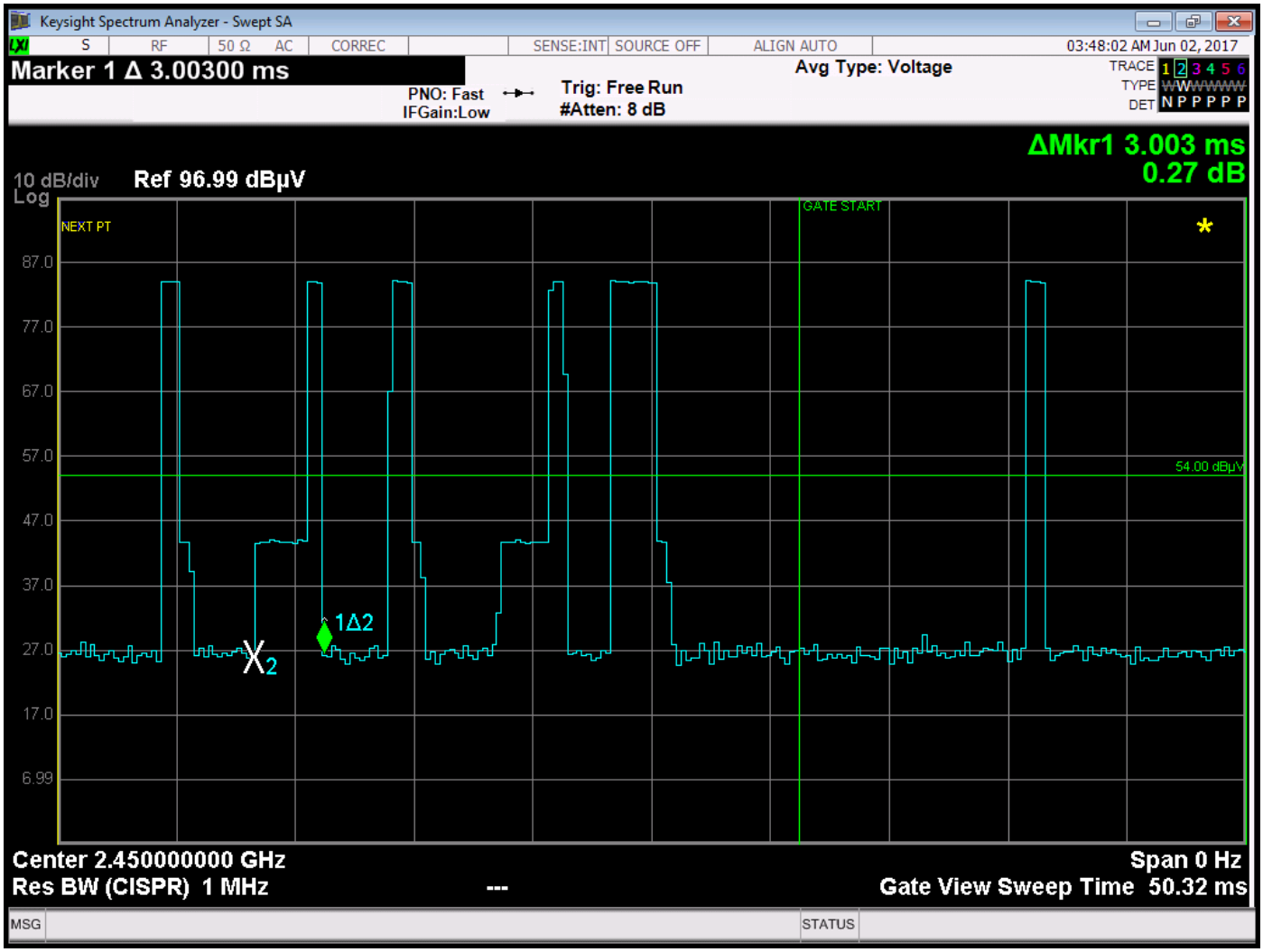
Peak to Average Ratio = -9.1186 dB



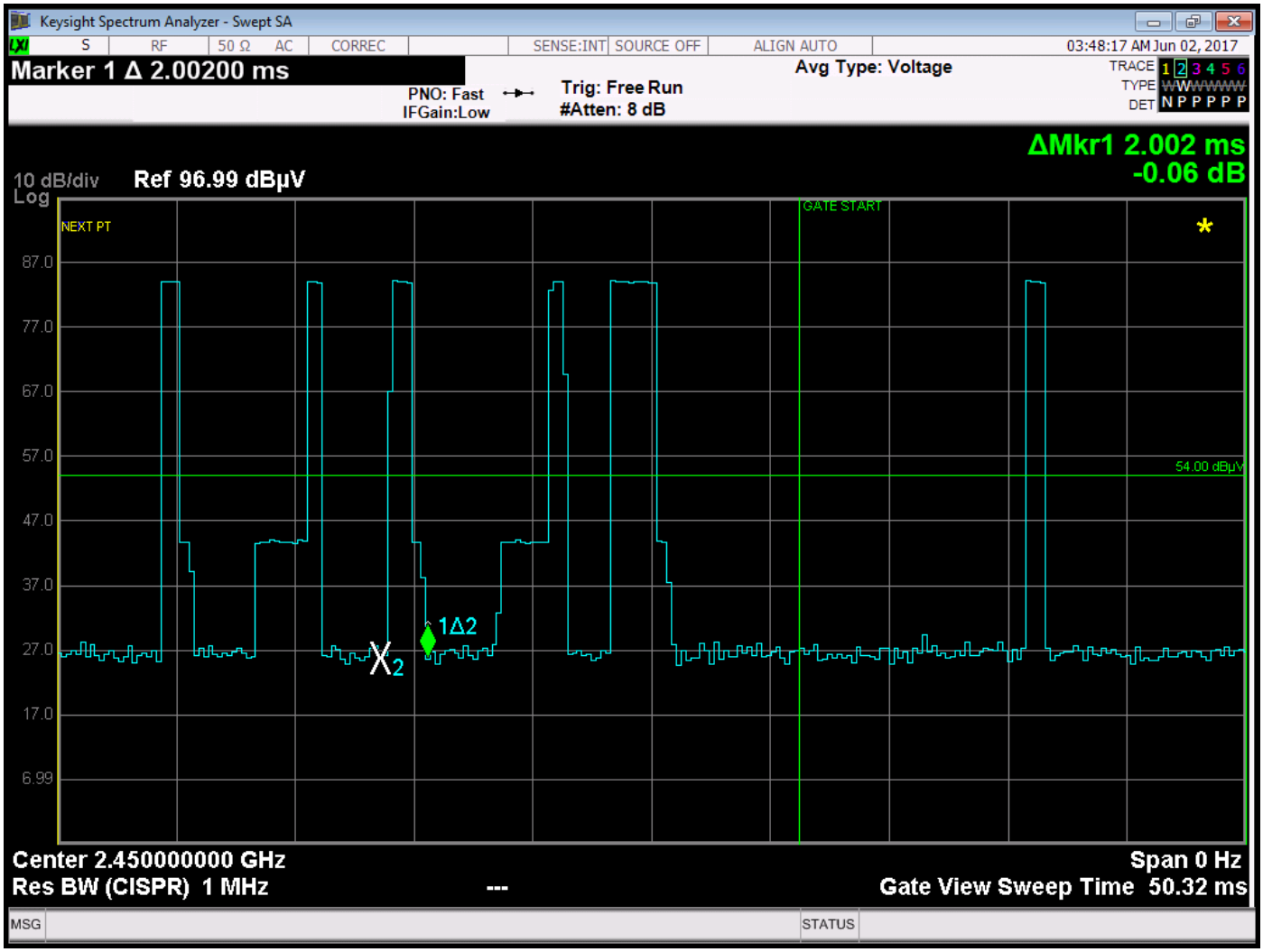
Worst 100 ms – Pairing Mode



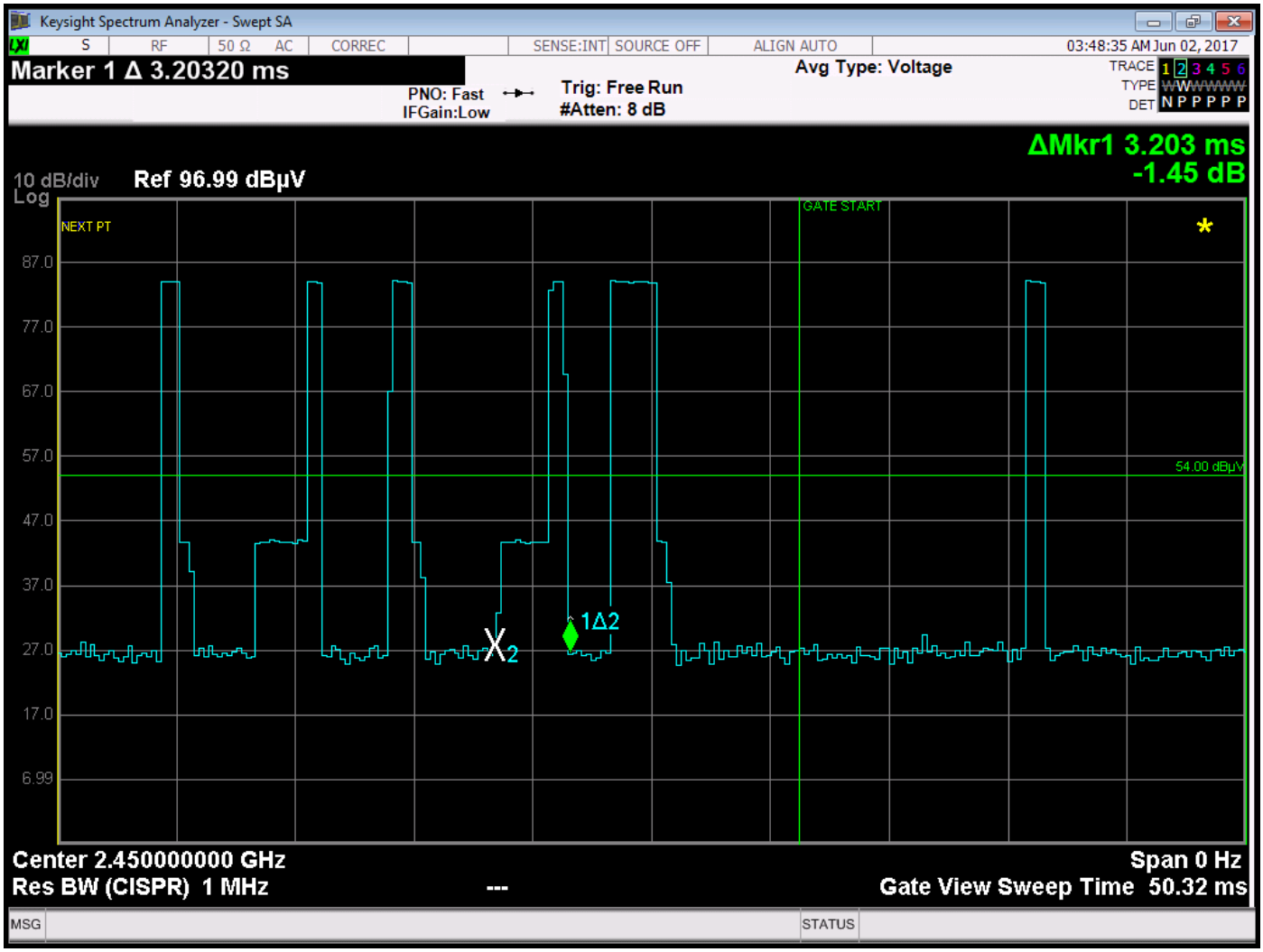
Pulse #1 – 1.602 ms – Pairing Mode



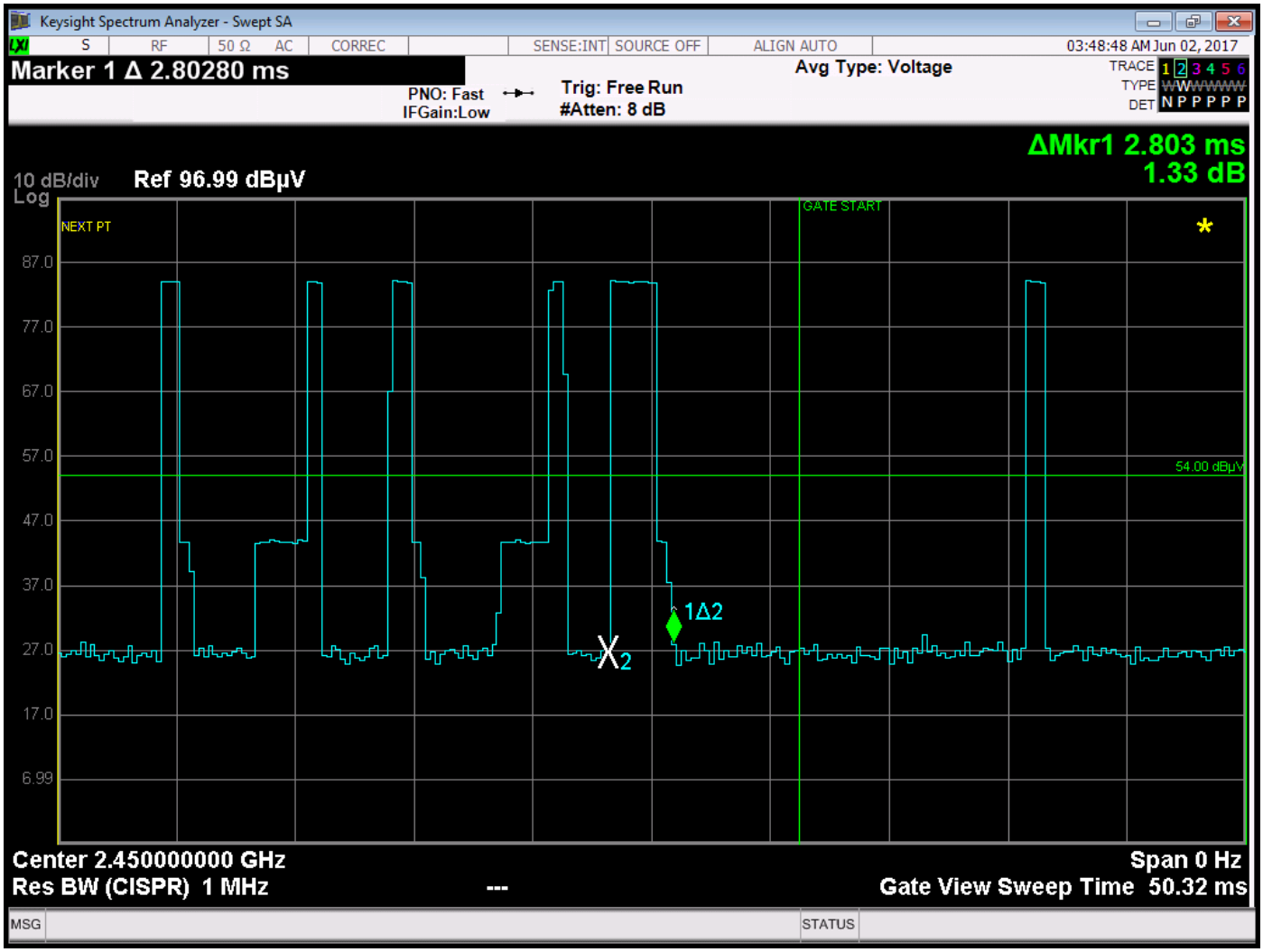
Pulse #2 – 3.003 ms – Pairing Mode



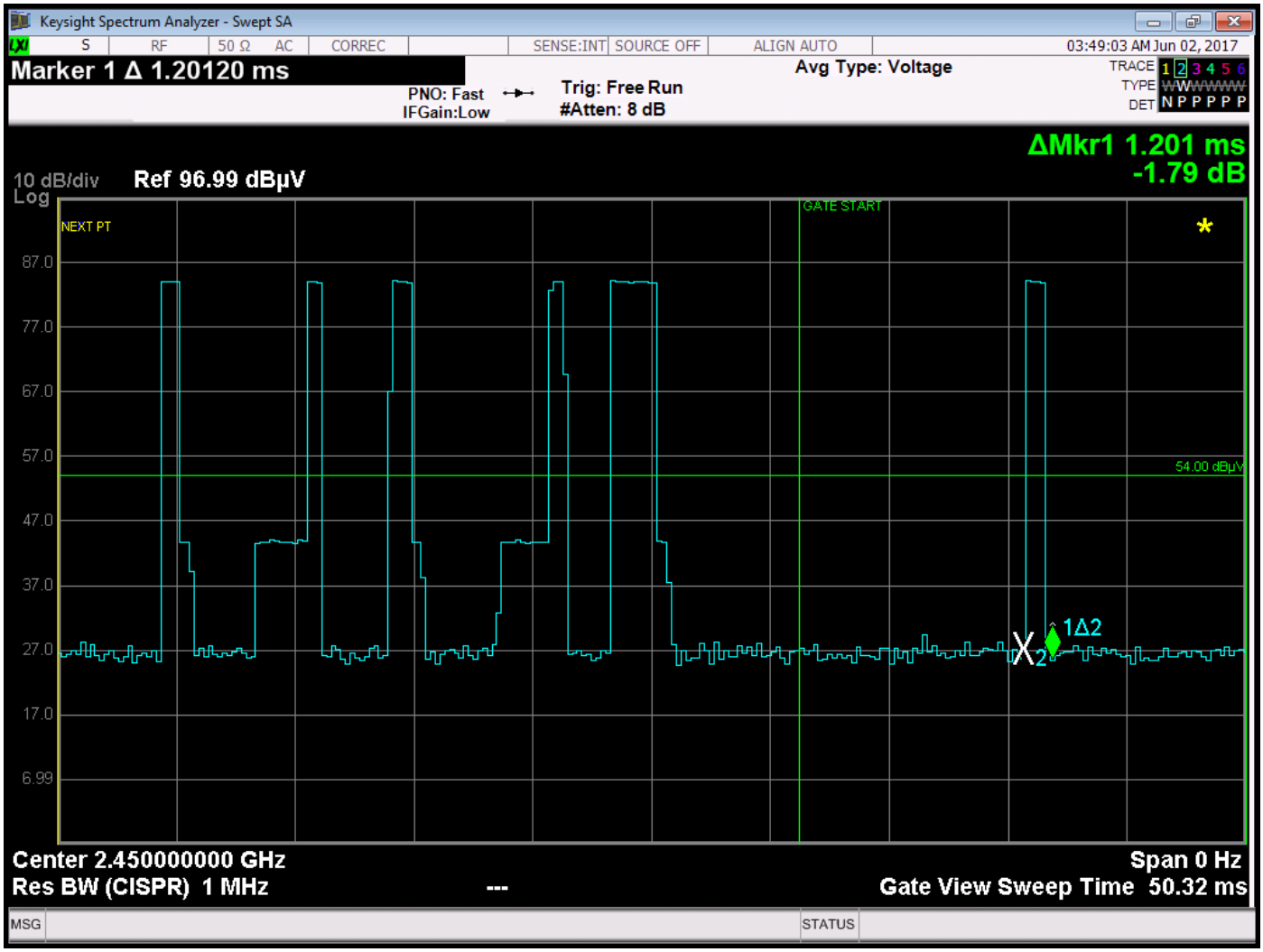
Pulse #3 – 2.002 ms – Pairing Mode



Pulse #4 – 3.203 ms – Pairing Mode



Pulse #5 – 2.803 ms – Pairing Mode



Pulse #6 – 1.201 ms – Pairing Mode

Total On Time = 13.814 ms

Total Duty cycle = 13.814 ms / 100 ms = 13.814%

Note: The advertising mode is worst case, so the duty cycle from that mode was used.