FCC PART 15, SUBPART B and C
TEST REPORT

for

LIGHTING CONTROL GATEWAY

MODEL: LCG300

Prepared for

MESH SYSTEMS LLC
N1078 QUALITY DRIVE, SUITE B
GREENVILLE, WISCONSIN 54942

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DATE: AUGUST 22, 2019

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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:	Lighting Control Gateway Model: LCG300 S/N: N/A
Product Description:	The EUT is device to monitor the status of LED lights and shut them on or off.
Modifications:	The EUT was not modified during the testing.
Customer:	Mesh Systems LLC N1078 Quality Drive, Suite B Greenvile, Wisconsin 54942
Test Dates:	July 26, 27 and 30, 2019

Test Specifications covered by accreditation:

Emissions requirements
CFR Title 47, Part 15, Subpart B; and
Subpart C, sections 15.205, 15.207, 15.209, and 15.247

Test Procedure: ANSI C63.4 and ANSI C63.10

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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; the limits of CFR Title 47, Part 15, Subpart C, section 15.207 See section 6.3 for Measurement Uncertainty
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; the limits of CFR Title 47, Part 15, Subpart C, section 15.209 See section 6.3 for Measurement Uncertainty
3	Spurious Radiated RF Emissions, 9 kHz – 30 MHz and 1000 MHz – 9300 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; CFR Title 47, Part 15, Subpart C, section 15.247(d) See section 6.3 for Measurement Uncertainty
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 9 kHz – 9.3 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, 9 kHz – 9.3 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, 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	Maximum Conducted Output Power	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	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 Lighting Control Gateway, Model: LCG300. 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

Mesh Systems LLC

Nate Welch	Associate Embedded Engineer

Compatible Electronics Inc.

Thomas Szynal	Test Technician
James Ross	Test Engineer
Kyle Fujimoto	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on July 25, 2019.

2.5 Disposition of the Test Sample

The test sample has not been returned to Mesh Systems LLC 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
KDB 558074 D01 v05r02	Guidance for Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 of the FCC Rules

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

Internal Antenna: Lighting Control Gateway, Model: LCG300 (EUT) was connected to the AC public mains.

External Antenna: Lighting Control Gateway, Model: LCG300 (EUT) was connected to the external antenna via a lightning surge protector via its antenna port. The EUT was also connected to the AC public mains.

The laptop was used to the program the EUT to continuously transmit or receive at the low, middle, or high channel on a continuous basis.

The EUT was continuously transmitting or receiving at the low, middle, or high channel during the testing. The EUT was also continuously transmitting a cellular signal on a continuous basis.

The LED light stand also was also fully illuminated with all twelve LED's turned on.

The EUT voltage was also varied between 85% and 115% using a variable transformer and the fundamental was verified to not change.

The firmware used for the EUT is stored on the company's servers.

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. 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

Cable 1 This is a 7.62-meter braid shielded cable connecting the EUT to the lightning surge protector. The cable has an 'N' connector at each end. The cable was coiled to a length of 1-meter. The shield of the cable was grounded to the chassis via the connectors. The lightning surge protector is then directly connected to the external antenna.

Cable 2 This is a 1-meter unshielded cable connecting the lightning surge protector to earth ground. The cable is hard wired at each end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
LIGHTING CONTROL GATEWAY	MESH SYSTEMS LLC	LCG300	N/A	2AC46-LCG300
EXTERNAL ANTENNA	L-COM	HGV-906U	N/A	N/A
900 MHZ ANTENNA	NEARSON	S765FL-L-XX-915	N/A	N/A
PUCK ANTENNA	EMBEDDED ANTENNA DESIGN	CMO	N/A	N/A
LAPTOP*	HEWLETT PACKARD	HSTNN-C28C	N/A	N/A
LIGHTNING SURGE PROTECTOR	L-COM	AL-NMNFB	N/A	N/A
AC ADAPTER FOR LAPTOP*	HEWLETT PACKARD	HSTNN-DA40	N/A	N/A
MODFLEX TEST TOOL SUITE*	LS RESEARCH	VERSION 2.6.2.0	N/A	N/A

*****Used to program the EUT to transmit or receive on a continuous basis.

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
CombiLog Antenna	Com-Power	AC-220	61093	June 5, 2019	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 22, 2018	2 Year
EMI Receiver, 20 Hz – 40 GHz	Rohde & Schwarz	ESIB40	100172	March 22, 2019	1 Year
EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies	N9038A	MY51210150	July 26, 2018	1 Year
Loop Antenna	Com-Power	AL-130R	121090	February 5, 2019	2 Year
Preamplifier	Com-Power	PA-118	181653	January 25, 2019	1 Year
Digital Multimeter	Fluke	115	36601149WS	September 20, 2018	2 Year
Variable Transformer	Superior Electric	Type: 11560	Spec: BP142056	N/A	N/A
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	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
LISN (EUT)	Com-Power	LI-215A	191951	January 10, 2019	1 Year
Attenuator, 10 dB	SureCall	SC-ATT-10	17100025	November 27, 2018	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 to earth ground via the safety ground of the AC Adapter.

6.3 Measurement Uncertainty

Compatible Electronics' U_{lab} value is less than U_{cispr}, thus based on this − compliance is deemed to occur if no measured disturbance exceeds the disturbance limit

$$u_c(y) = \sqrt{\sum_i c_i^2 \; u^2(x_i)}$$

MEASUREMENT TYPE	UNCERTAINTY VALUES
Radiated Emissions 30 MHz to 1000 MHz	3.26 dB (Vertical) 3.19 dB (Horizontal)
Radiated Emissions 1 GHz to 40 GHz	3.67 dB (Both Vertical and Horizontal)
AC Line Conducted Emissions 0.15 MHz to 30 MHz	2.72 dB (Line and Neutral Leads)

7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Channel Description and Frequencies

The lowest operating channel is 906 MHz and the highest operating channel is 924 MHz.

7.2 Antenna Gain

The gain of the external antenna is 6 dBi.
The gain of the 900 MHz antenna is 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 EMI Receiver was used as a measuring meter. A 10 dB Attenuator was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The EUT 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 computer software. The final qualification data is located in Appendix E.

The six highest reading are listed in Table 1.

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, Section 15.207. Please see Appendix E for the data sheets.

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 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.

The frequencies above 1 GHz were averaged by using the RMS detector function on the EMI Receiver.

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 9.3 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.

The six highest reading are listed in Table 2.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; 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 CONDUCTED EMISSION RESULTS
Lighting Control Gateway, Model: LCG300

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
0.202 (WL) (Tx Mode) (Internal Antenna)	46.83 (Avg)	52.90	-6.07
0.206 (WL) (Tx Mode) (Internal Antenna)	46.81 (Avg)	52.90	-6.09
0.214 (BL) (Tx Mode) (Internal Antenna)	46.79 (Avg)	52.88	-6.09
0.214 (WL) (Tx Mode) (Internal Antenna)	46.76 (Avg)	52.86	-6.10
0.218 (WL) (Tx Mode) (Internal Antenna)	46.79 (Avg)	52.93	-6.14
0.218 (BL) (Tx Mode) Internal Antenna	46.64 (Avg)	52.95	-6.30

BL Black Lead
WL White Lead
Avg Average
Tx Transmit
Rx Receive
QP Quasi-Peak
Avg Average

8.1.3 RF Emissions Test Results

Table 2 RADIATED EMISSION RESULTS
Lighting Control Gateway, Model: LCG300

Frequency MHz	Corrected Reading* dBuV/m	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
8154 (H) (Y-Axis) (External Antenna)	53.89 (Avg)	53.97	-0.08
8154 (V) (Y-Axis) (External Antenna)	53.46 (Avg)	53.97	-0.51
8226 (V) (Y-Axis) (Internal Antenna)	52.22 (Avg)	53.97	-1.75
8226 (H) (Y-Axis) (Internal Antenna)	51.61 (Avg)	53.97	-2.36
8154 (V) (Y-Axis) (Internal Antenna)	51.11 (Avg)	53.97	-2.86
8226 (V) (Y-Axis) (External Antenna)	50.42 (Avg)	53.97	-3.55
8154 (H) (Y-Axis) (Internal Antenna)	50.42 (Avg)	53.97	-3.55

QP Quasi-Peak Reading
H Horizontal Polarization
Avg Average Reading
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 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 Maximum Average Output Power

The Conducted Average Output Power was measured using the EMI Receiver. The average output power was measured using the average power measurement procedure described in section 11.9.2.2.2 of ANSI C63.10. The Maximum Average Output Power was then taken. The following steps were performed for measuring the Maximum Average Output Power.

1. Set span to at least 1.5 times the OBW
2. Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz
3. Set VBW ≥ [3 X RBW]
4. Number of points in sweep is ≥ [2 x span /RBW]. 1001 points were used for the measurement
5. Sweep time - auto
6. Detector = RMS
7. Sweep Trigger = Free Run
8. Trace average at least 100 traces in power averaging (rms) mode
9. Computer power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges.

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 30 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 measured using the EMI Receiver. The RF band edges were 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.

The RF band edges were taken at 902 MHz when the EUT was on the low channel and 928 MHz when the EUT was on the high channel using the EMI Receiver. The following steps were performed for measuring the band edges:

1. Set analyzer center frequency to DTS channel center frequency
2. Set the span wide enough to cover the band edges.
3. Set the RBW to 100 kHz
4. Set the VBW >= 3 X RBW
5. Detector = Peak
6. Sweep time = auto couple
7. Allow the trace to stabilize
8. Use the peak marker function to determine the maximum amplitude level

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d) for band edges. 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 at least 1.5 times the OBW.
3. Set the RBW to 3 kHz <= RBW <= 100 kHz
4. Set the VBW >= 3 X RBW
5. Detector = power averaging (RMS)
6. Ensure that the number of measurement points in the sweep >= 2 x span/RBW
7. Sweep time = auto couple
8. Employ trace averaging (RMS) mode over a minimum of 100 traces
9. Use the peak marker function to determine the maximum amplitude level
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 Variation of the Input Power

The variation of the input power test was performed using the EMI Receiver. The EUT input power was varied between 85% and 115% of the nominal rated supply voltage. The carrier frequency was monitored for any change in amplitude.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart A section 15.31 (e).

9. CONCLUSIONS

The Lighting Control Gateway, Model: LCG300 (EUT), as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B, and Subpart C, sections 15.205, 15.207, 15.209 and 15.247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP® TESTING
NVLAP LAB CODE 200528-0

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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

Lighting Control Gateway
Model: LCG300
S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER

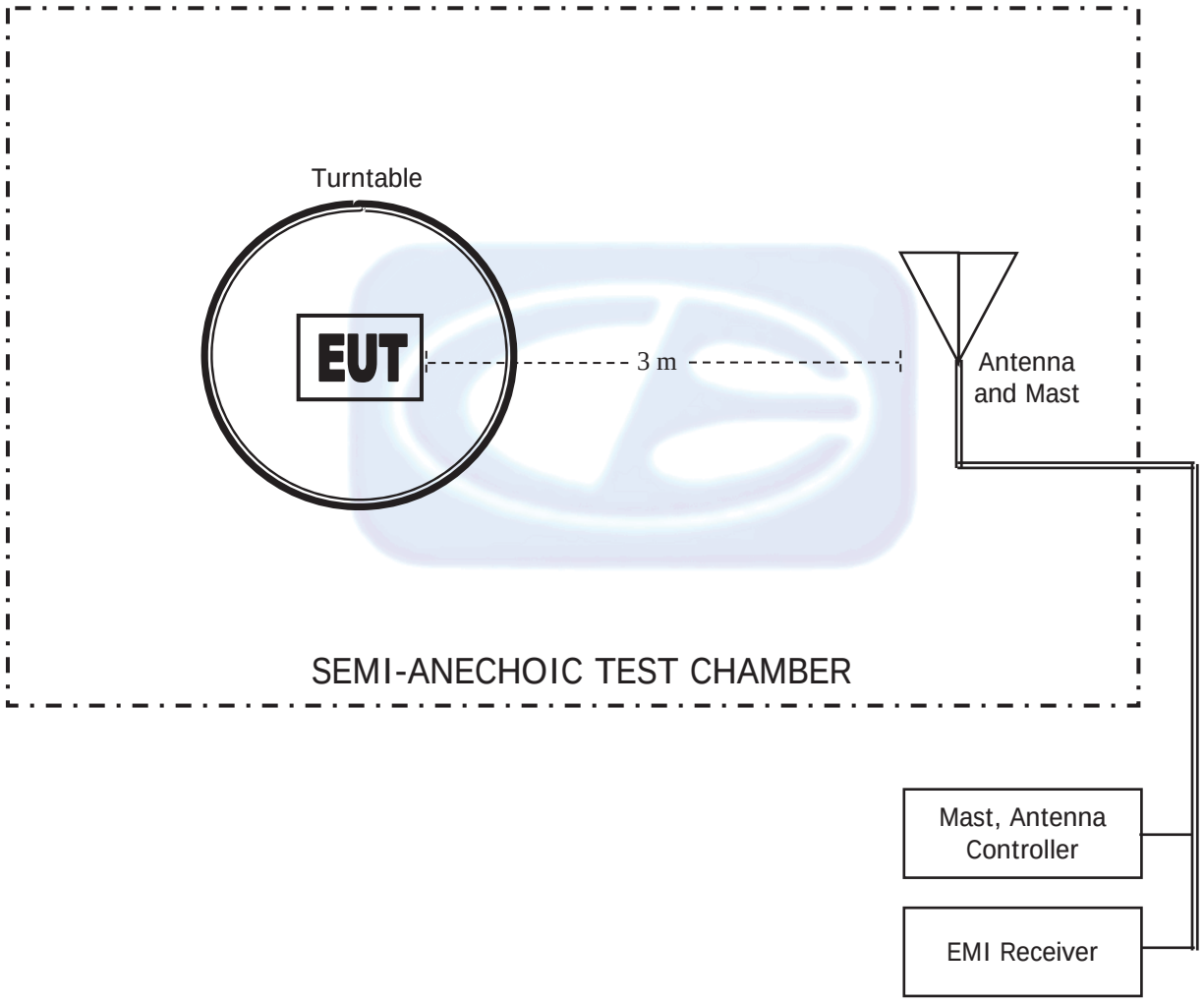
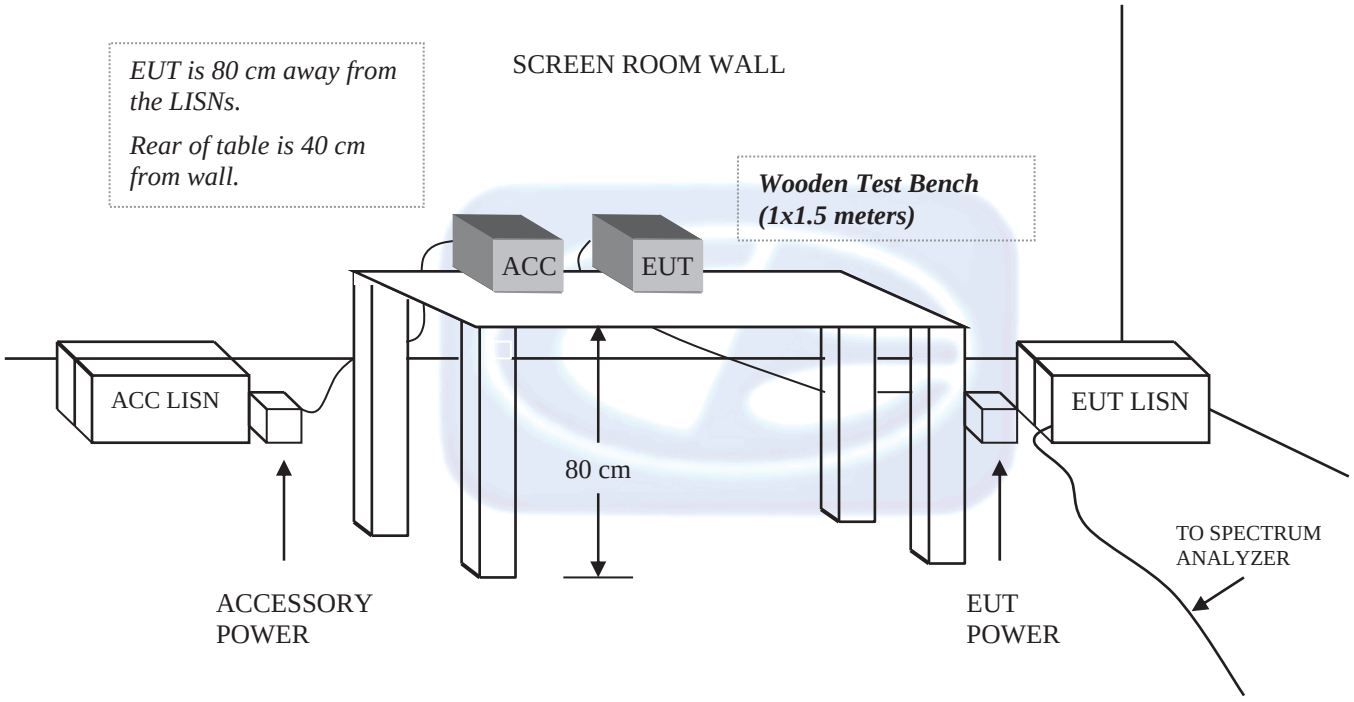


FIGURE 2: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130R

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 5, 2019

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.01	15.6	-35.9
0.02	14.8	-36.7
0.03	15.6	-35.9
0.04	15.1	-36.4
0.05	14.4	-37.0
0.06	14.6	-36.9
0.07	14.4	-37.1
0.08	14.3	-37.1
0.09	14.5	-36.9
0.10	14.1	-37.3
0.20	14.1	-37.3
0.30	14.0	-37.4
0.40	14.0	-37.4
0.50	14.2	-37.2
0.60	14.2	-37.2
0.70	14.2	-37.2
0.80	14.2	-37.3
0.90	14.3	-37.2
1.00	14.5	-37.0
2.00	14.5	-36.9
3.00	14.5	-36.9
4.00	14.7	-36.8
5.00	14.6	-36.9
6.00	14.6	-36.9
7.00	14.6	-36.9
8.00	14.6	-36.9
9.00	14.6	-36.9
10.00	14.8	-36.6
11.00	14.9	-36.6
12.00	14.8	-36.6
13.00	14.8	-36.7
14.00	14.6	-36.8
15.00	14.5	-36.9
16.00	14.5	-37.0
17.00	14.6	-36.9
18.00	14.7	-36.7
19.00	14.8	-36.6
20.00	14.9	-36.6
21.00	14.6	-36.8
22.00	14.2	-37.2
23.00	13.7	-37.7
24.00	13.3	-38.2
25.00	13.0	-38.5
26.00	12.9	-38.6
27.00	13.0	-38.5
28.00	13.1	-38.4
29.00	13.1	-38.4
30.00	12.9	-38.5

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61093

CALIBRATION DATE: JUNE 5, 2019

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	22.10	200	15.30
35	20.90	250	16.80
40	20.10	300	19.00
45	19.40	350	19.60
50	18.40	400	21.70
60	15.10	450	21.60
70	12.00	500	22.20
80	11.60	550	22.70
90	13.50	600	24.20
100	14.70	650	24.40
120	15.90	700	24.50
125	15.90	750	25.40
140	14.80	800	26.30
150	15.50	850	26.70
160	19.80	900	27.50
175	15.20	950	27.80
180	14.90	1000	27.90

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 22, 2018

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.71	10.0	40.08
1.5	25.46	10.5	40.75
2.0	29.26	11.0	41.78
2.5	27.95	11.5	41.02
3.0	29.03	12.0	40.32
3.5	29.70	12.5	40.96
4.0	30.71	13.0	40.29
4.5	31.62	13.5	39.48
5.0	33.23	14.0	39.89
5.5	35.07	14.5	42.75
6.0	34.43	15.0	40.98
6.5	34.98	15.5	38.54
7.0	36.75	16.0	39.40
7.5	37.10	16.5	39.40
8.0	37.66	17.0	41.74
8.5	39.29	17.5	42.58
9.0	37.75	18.0	44.68
9.5	38.23		

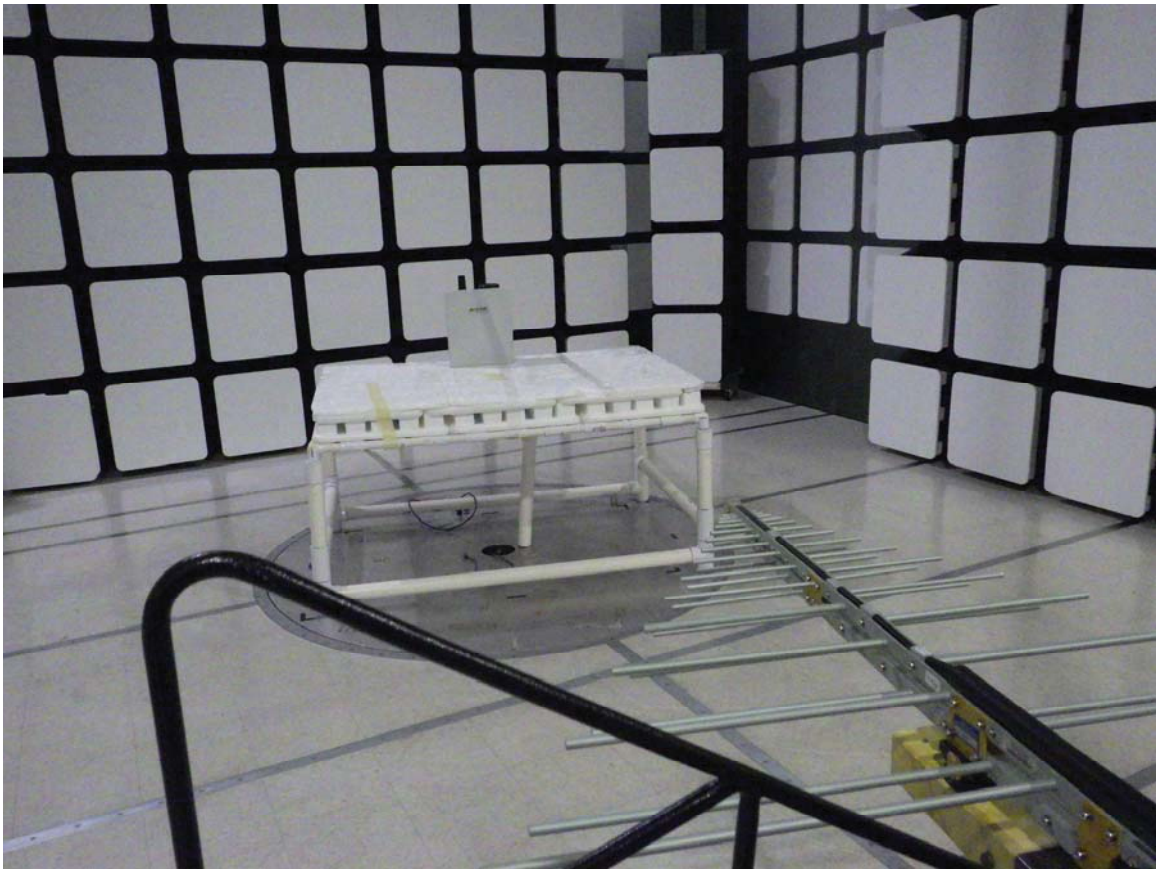
COM-POWER PA-118

PREAMPLIFIER

S/N: 181653

CALIBRATION DATE: JANUARY 25, 2019

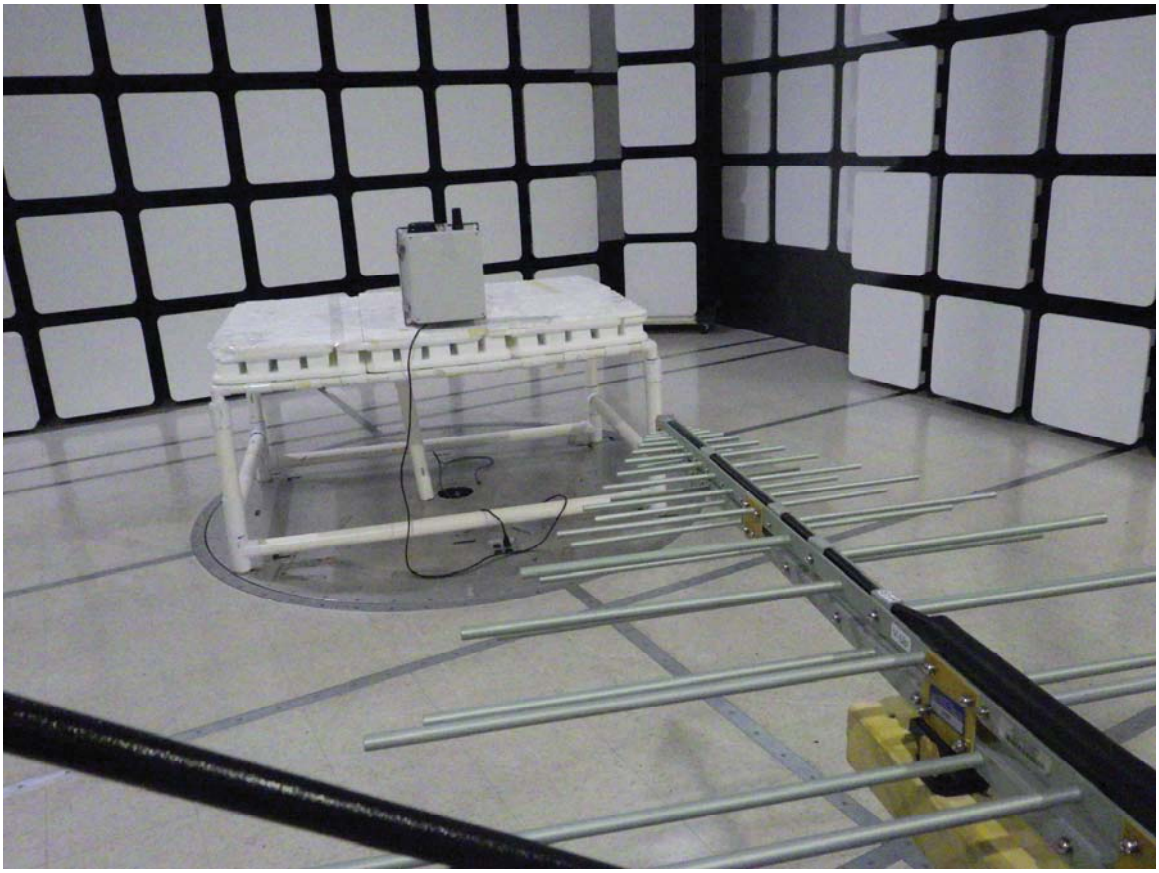
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.10	6.0	40.60
1.1	40.10	6.5	39.50
1.2	40.00	7.0	39.40
1.3	39.70	7.5	39.30
1.4	39.60	8.0	39.20
1.5	39.90	8.5	40.50
1.6	40.00	9.0	39.60
1.7	39.70	9.5	39.50
1.8	39.50	10.0	38.80
1.9	39.60	11.0	38.70
2.0	39.90	12.0	42.20
2.5	40.10	13.0	40.00
3.0	40.80	14.0	40.30
3.5	40.60	15.0	40.20
4.0	40.50	16.0	41.00
4.5	41.60	17.0	39.70
5.0	39.20	18.0	40.90
5.5	40.00		



FRONT VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
BELOW 1 GHz – INTERNAL ANTENNA

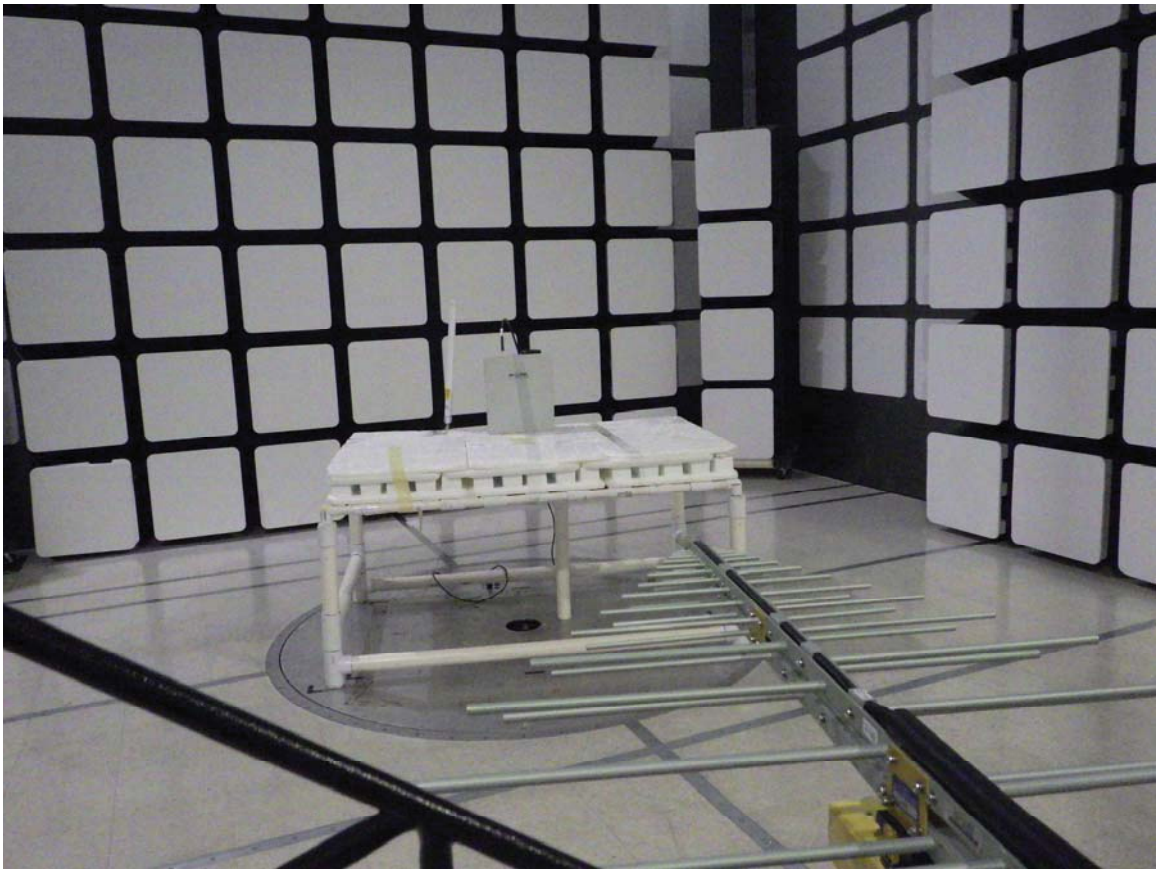
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
BELOW 1 GHz – INTERNAL ANTENNA

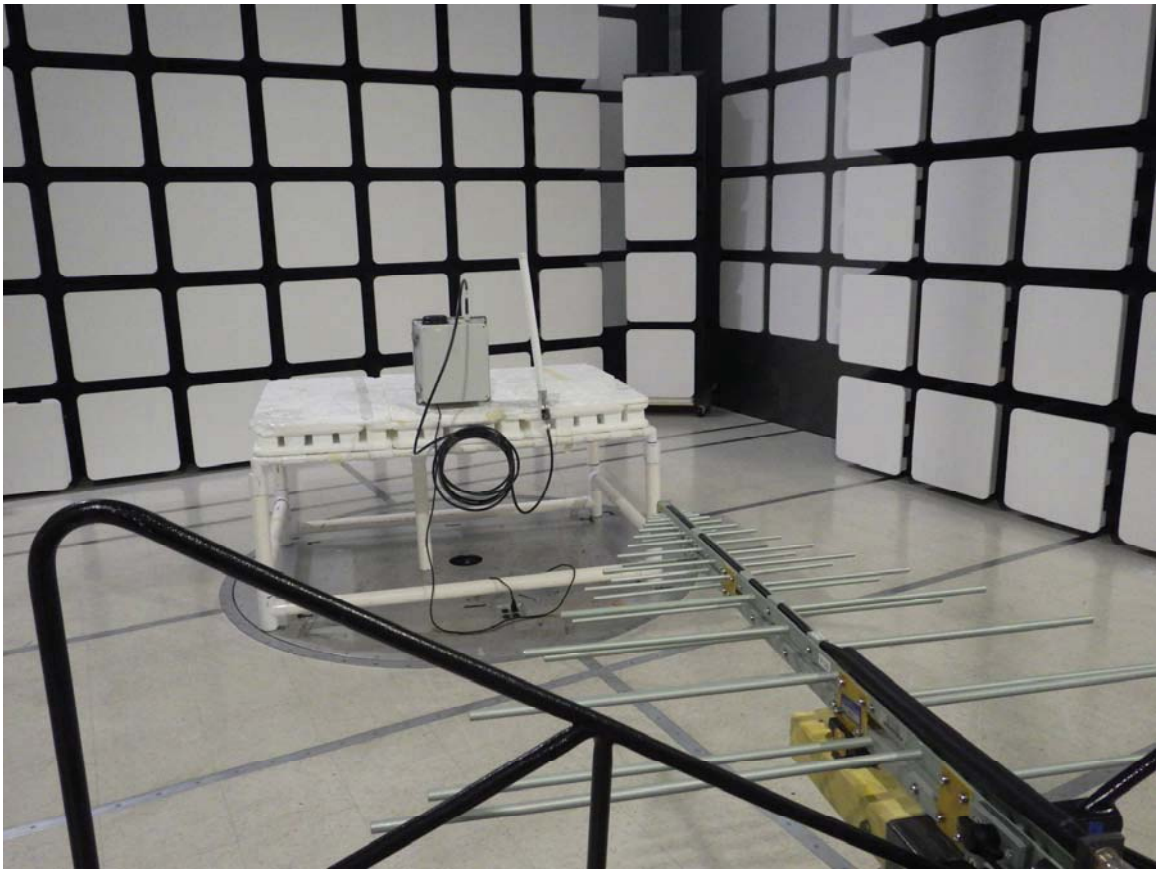
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
BELOW 1 GHz – EXTERNAL ANTENNA

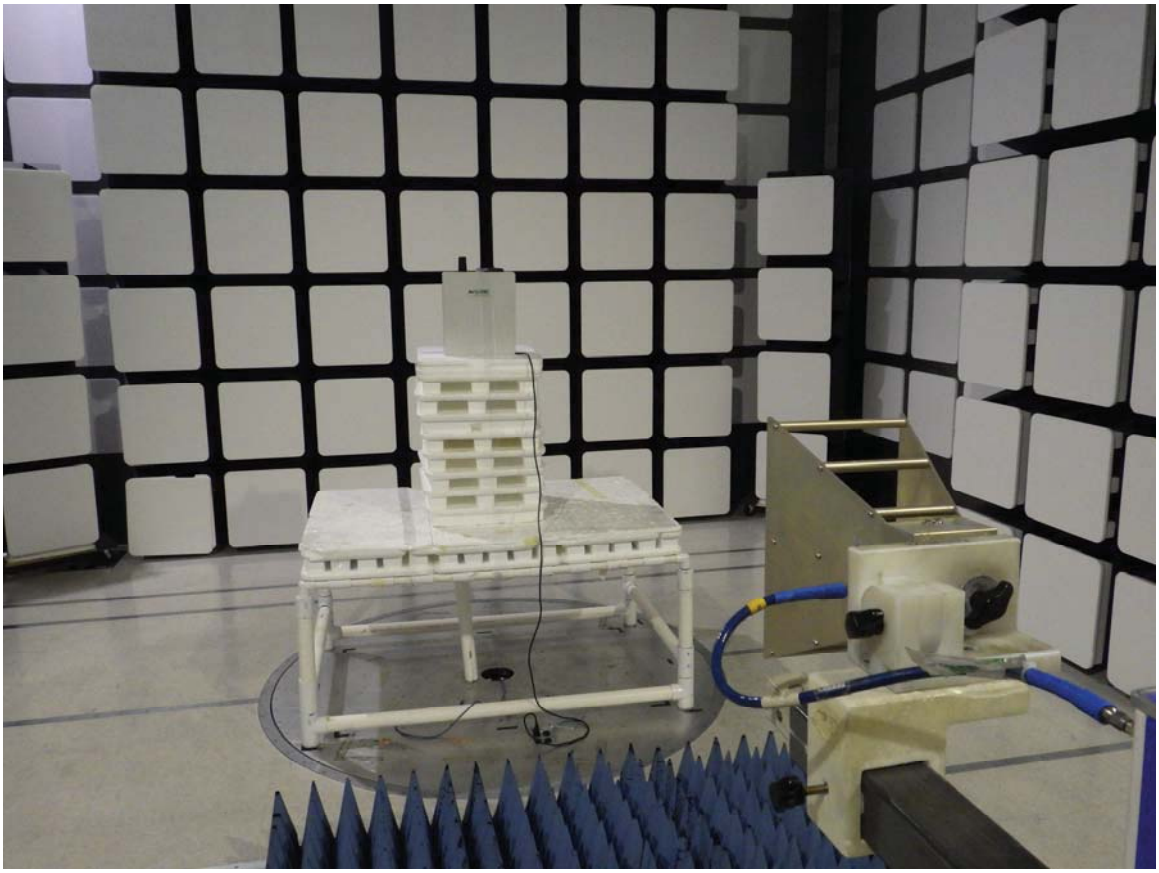
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
BELOW 1 GHz – EXTERNAL ANTENNA

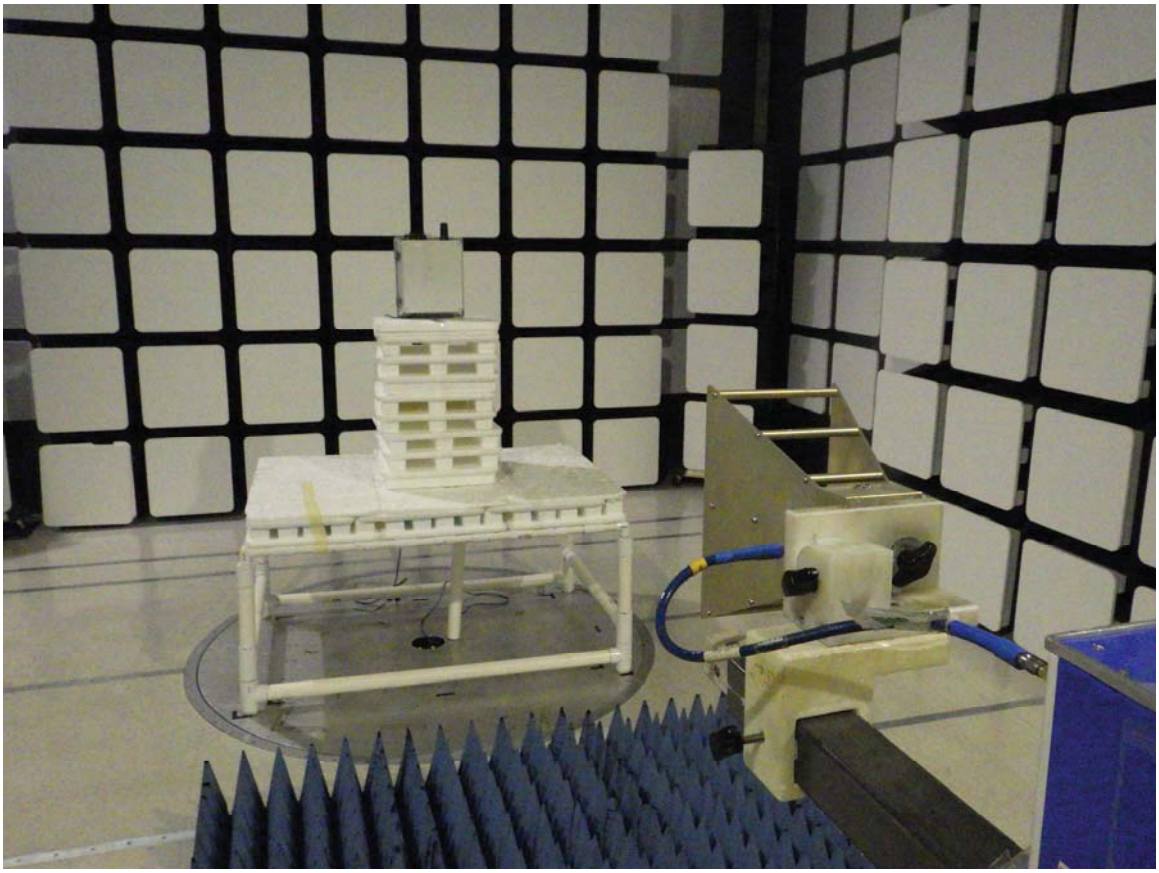
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
ABOVE 1 GHz – INTERNAL ANTENNA

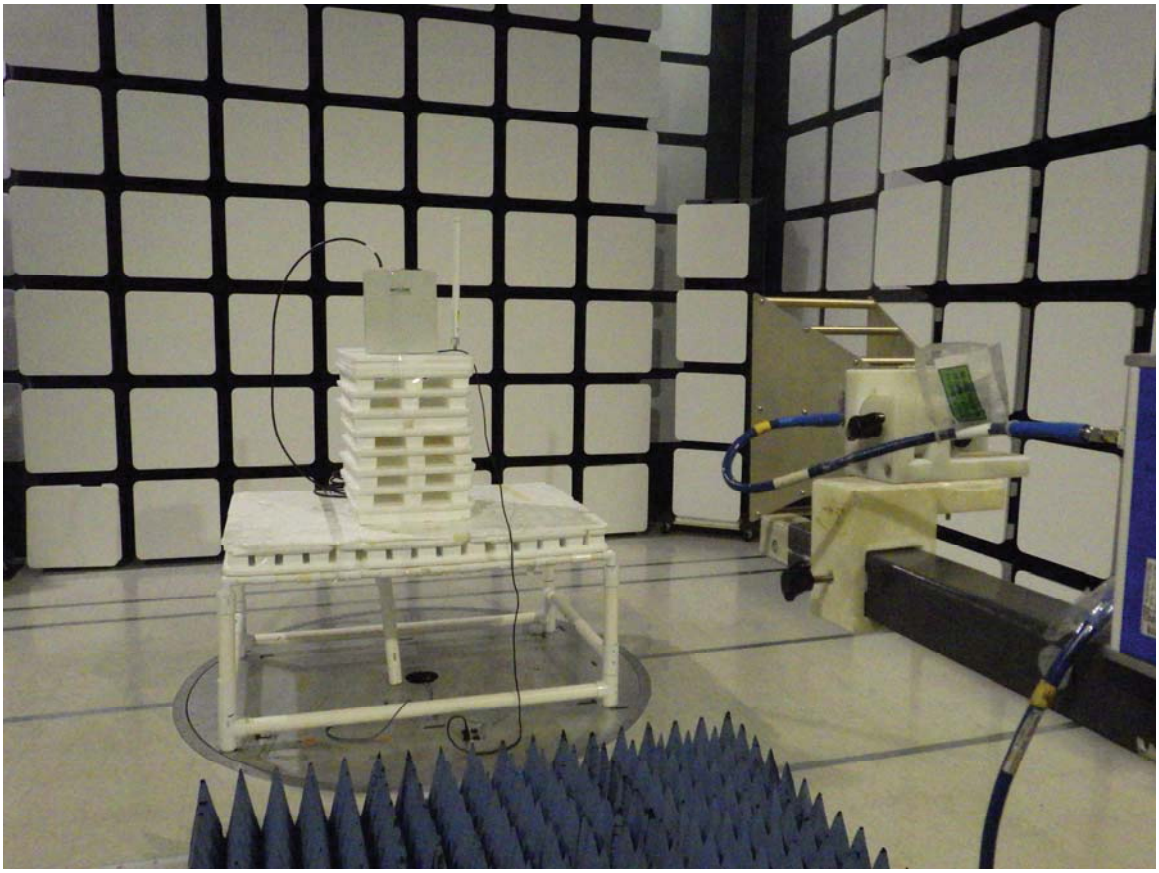
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
ABOVE 1 GHz – INTERNAL ANTENNA

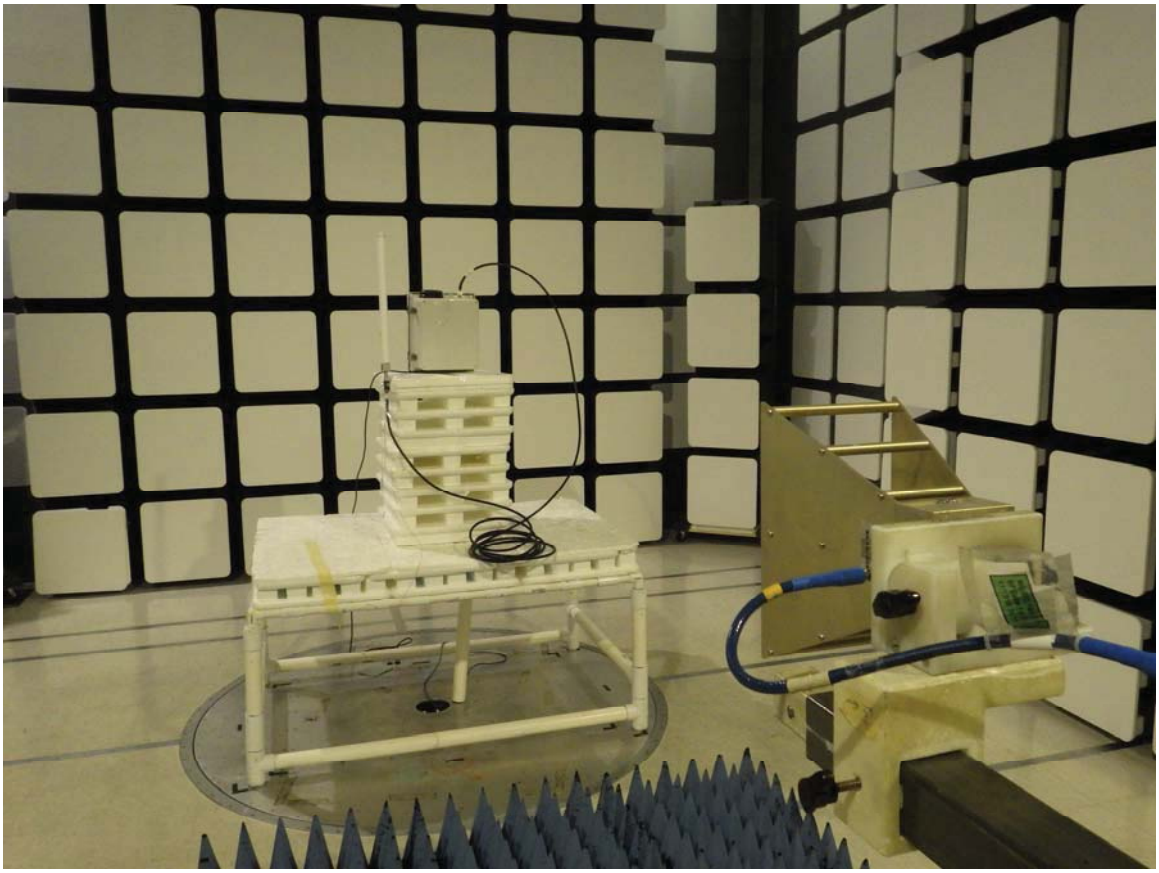
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
ABOVE 1 GHz – EXTERNAL ANTENNA

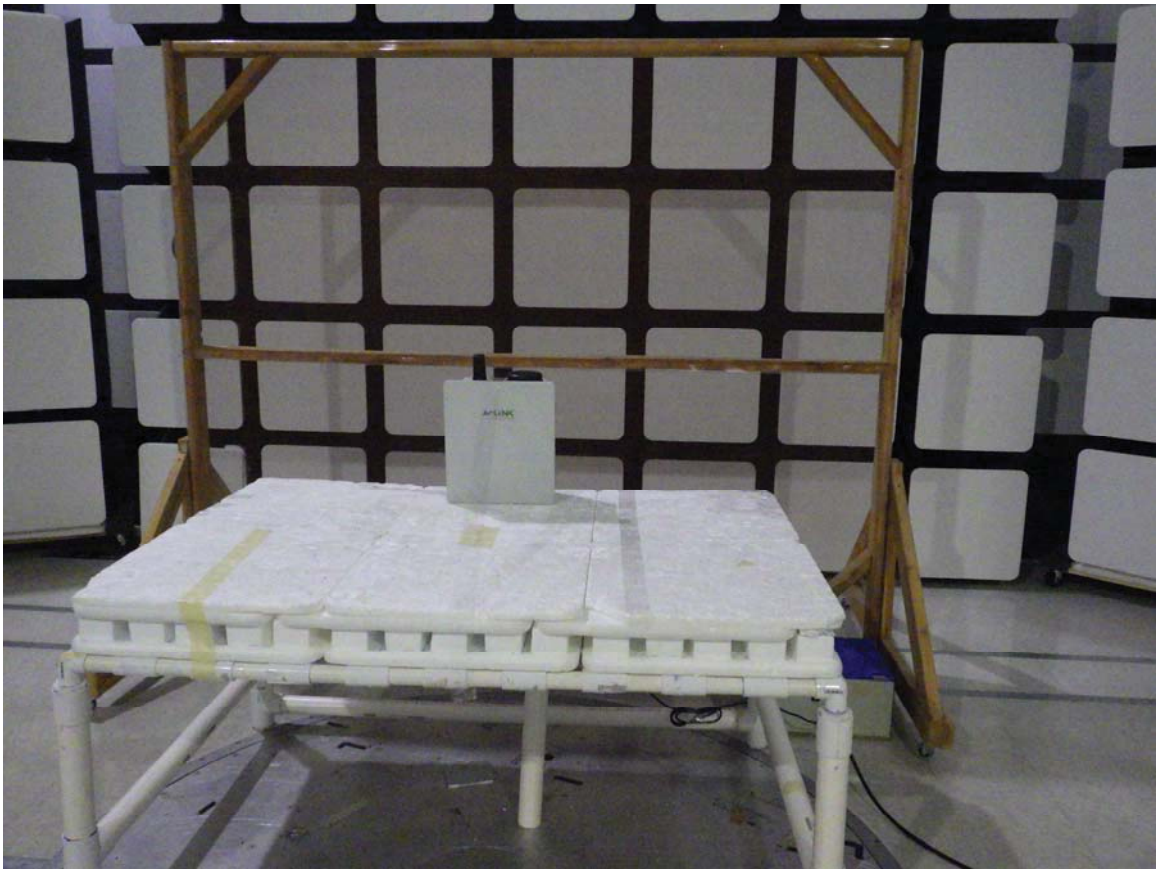
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – RADIATED EMISSIONS
ABOVE 1 GHz – EXTERNAL ANTENNA

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

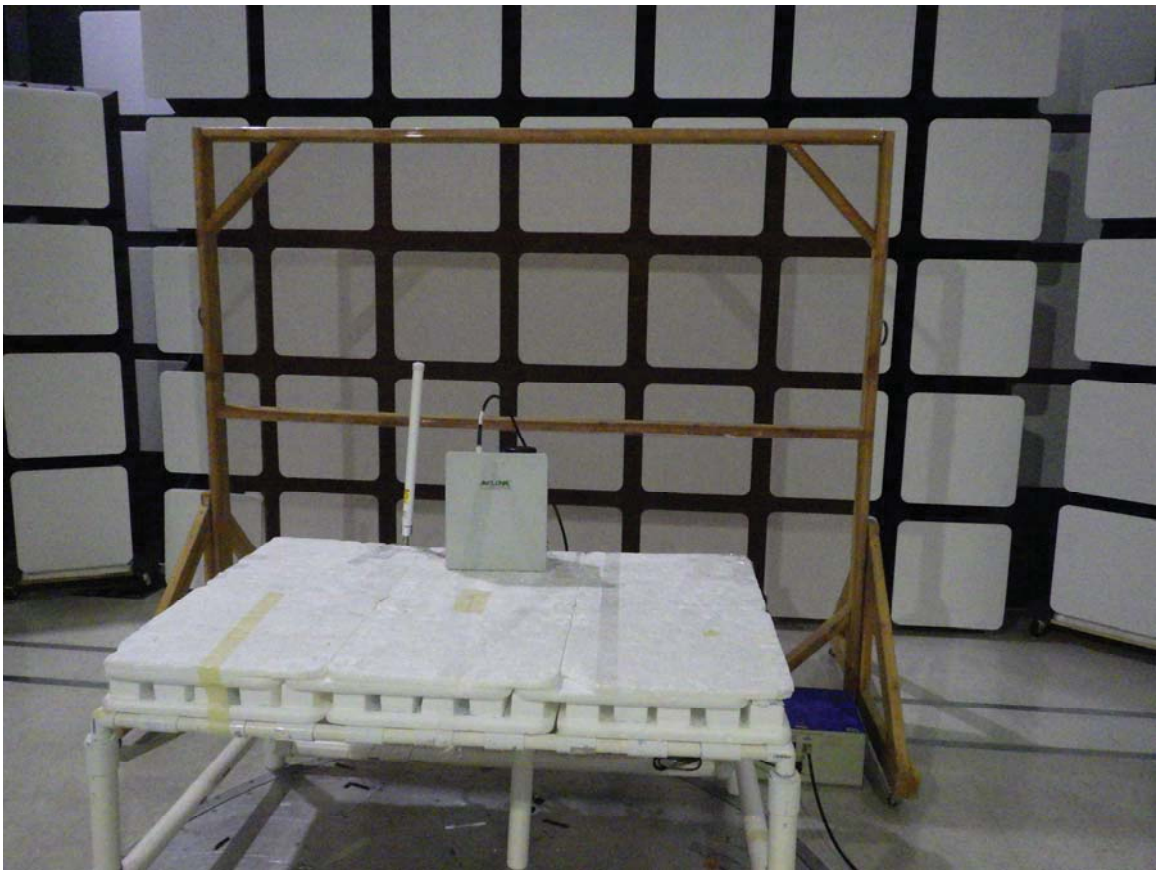
MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – CONDUCTED EMISSIONS – INTERNAL ANTENNA

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – CONDUCTED EMISSIONS – INTERNAL ANTENNA

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – CONDUCTED EMISSIONS – EXTERNAL ANTENNA

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

MESH SYSTEMS LLC
LIGHTING CONTROL GATEWAY
MODEL: LCG300
FCC SUBPART B AND C – CONDUCTED EMISSIONS – EXTERNAL ANTENNA

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Low Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1812								**N/A - Done via Conducted**
								Not in Restricted Band
2718	44.64	V	73.97	-29.33	Peak	164.25	107.02	
2718	34.28	V	53.97	-19.69	Avg	164.25	107.02	
3624	44.97	V	73.97	-29.00	Peak	148.75	100.00	
3624	37.95	V	53.97	-16.02	Avg	148.75	100.00	
4530	47.06	V	73.97	-26.91	Peak	158.25	157.53	
4530	37.01	V	53.97	-16.96	Avg	158.25	157.53	
5436	51.85	V	73.97	-22.12	Peak	161.00	209.11	
5436	41.11	V	53.97	-12.87	Avg	161.00	209.11	
6342								**N/A - Done via Conducted**
								Not in Restricted Band
7248								**N/A - Done via Conducted**
								Not in Restricted Band
8154	58.58	V	73.97	-15.39	Peak	196.50	112.34	
8154	51.11	V	53.97	-2.86	Avg	196.50	112.34	
9060	50.65	V	73.97	-23.33	Peak	192.25	100.00	
9060	39.37	V	53.97	-14.60	Avg	192.25	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Low Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1812								**N/A - Done via Conducted**
								Not in Restricted Band
2718	49.43	H	73.97	-24.54	Peak	232.00	100.00	
2718	41.02	H	53.97	-12.95	Avg	232.00	100.00	
3624	49.49	H	73.97	-24.48	Peak	188.50	154.61	
3624	43.85	H	53.97	-10.12	Avg	188.50	154.61	
4530	48.44	H	73.97	-25.53	Peak	194.00	113.71	
4530	37.03	H	53.97	-16.94	Avg	194.00	113.71	
5436	50.60	H	73.97	-23.37	Peak	224.75	100.00	
5436	41.92	H	53.97	-12.05	Avg	224.75	100.00	
6342								**N/A - Done via Conducted**
								Not in Restricted Band
7248								**N/A - Done via Conducted**
								Not in Restricted Band
8154	57.46	H	73.97	-16.51	Peak	224.50	100.00	
8154	50.42	H	53.97	-3.55	Avg	224.50	100.00	
9060	52.17	H	73.97	-21.80	Peak	143.75	120.52	
9060	43.32	H	53.97	-10.65	Avg	143.75	120.52	

FCC 15.247

Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Middle Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1828								**N/A - Done via Conducted**
								Not in Restricted Band
2742	46.34	V	73.97	-27.63	Peak	170.50	105.47	
2742	35.86	V	53.97	-18.12	Avg	170.50	105.47	
3656	45.78	V	73.97	-28.19	Peak	149.75	100.00	
3656	39.62	V	53.97	-14.35	Avg	149.75	100.00	
4570	42.59	V	73.97	-31.38	Peak	185.50	123.68	
4570	29.96	V	53.97	-24.01	Avg	185.50	123.68	
5484								**N/A - Done via Conducted**
								Not in Restricted Band
6398								**N/A - Done via Conducted**
								Not in Restricted Band
7312	51.84	V	73.97	-22.13	Peak	185.25	168.76	
7312	42.91	V	53.97	-11.06	Avg	185.25	168.76	
8226	61.51	V	73.97	-12.46	Peak	196.50	117.53	
8226	52.22	V	53.97	-1.75	Avg	196.50	117.53	
9140	51.58	V	73.97	-22.39	Peak	187.00	100.00	
9140	40.43	V	53.97	-13.55	Avg	187.00	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Middle Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1828								**N/A - Done via Conducted**
								Not in Restricted Band
2742	51.88	H	73.97	-22.09	Peak	205.25	100.00	
2742	40.64	H	53.97	-13.33	Avg	205.25	100.00	
3656	46.84	H	73.97	-27.13	Peak	188.00	104.16	
3656	42.25	H	53.97	-11.72	Avg	188.00	104.16	
4570	45.79	H	73.97	-28.18	Peak	191.75	100.00	
4570	30.92	H	53.97	-23.05	Avg	191.75	100.00	
5484								**N/A - Done via Conducted**
								Not in Restricted Band
6398								**N/A - Done via Conducted**
								Not in Restricted Band
7312	52.87	H	73.97	-21.10	Peak	222.00	130.49	
7312	44.11	H	53.97	-9.86	Avg	222.00	130.49	
8226	61.49	H	73.97	-12.48	Peak	224.50	121.35	
8226	51.61	H	53.97	-2.36	Avg	224.50	121.35	
9140	51.93	H	73.97	-22.05	Peak	126.75	100.00	
9140	40.30	H	53.97	-13.67	Avg	126.75	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
High Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1848								**N/A - Done via Conducted**
								Not in Restricted Band
2772	42.88	V	73.97	-31.09	Peak	348.75	118.43	
2772	34.16	V	53.97	-19.81	Avg	348.75	118.43	
3696	46.14	V	73.97	-27.83	Peak	325.50	100.00	
3696	39.87	V	53.97	-14.10	Avg	325.50	100.00	
4620	43.26	V	73.97	-30.71	Peak	331.75	100.00	
4620	33.17	V	53.97	-20.80	Avg	331.75	100.00	
5544								**N/A - Done via Conducted**
5544								**Not in Restricted Band**
6468								**N/A - Done via Conducted**
								Not in Restricted Band
7392	48.02	V	73.97	-25.95	Peak	8.25	150.25	
7392	39.33	V	53.97	-14.64	Avg	8.25	150.25	
8316	47.35	V	73.97	-26.62	Peak	316.50	100.00	
8316	35.19	V	53.97	-18.78	Avg	316.50	100.00	
9240	46.52	V	73.97	-27.45	Peak	342.25	100.00	
9240	34.29	V	53.97	-19.68	Avg	342.25	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
High Channel - Y-Axis
Transmit Mode - Internal Antenna

Date: 07/26/2019
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
1848								**N/A - Done via Conducted**
								Not in Restricted Band
2772	51.62	H	73.97	-22.35	Peak	27.00	100.00	
2772	40.45	H	53.97	-13.52	Avg	27.00	100.00	
3696	49.71	H	73.97	-24.26	Peak	0.50	100.04	
3696	43.95	H	53.97	-10.02	Avg	0.50	100.04	
4620	42.53	H	73.97	-31.44	Peak	338.00	100.00	
4620	32.30	H	53.97	-21.67	Avg	338.00	100.00	
5544								**N/A - Done via Conducted**
5544								**Not in Restricted Band**
6468								**N/A - Done via Conducted**
								Not in Restricted Band
7392	49.90	H	73.97	-24.07	Peak	38.75	100.00	
7392	40.55	H	53.97	-13.42	Avg	38.75	100.00	
8316	48.20	H	73.97	-25.77	Peak	331.50	130.79	
8316	37.20	H	53.97	-16.77	Avg	331.50	130.79	
9240	46.20	H	73.97	-27.77	Peak	38.00	100.00	
9240	34.51	H	53.97	-19.46	Avg	38.00	100.00	

FCC 15.247 and FCC Class B

Mesh Systems LLC
Lighting Control Gateway
Model: LCG300

Date: 07/29/2019
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx - 9 kHz to 30 MHz and 1 GHz to 9.3 GHz
Digital Portion from the EUT - 9 kHz to 30 MHz and 1 GHz to 9.3 GHz
Internal Antenna

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from the Non Harmonic Emissions
								from the Tx
								9 kHz to 30 MHz
								No Emissions Detected
								from the Non Harmonic Emissions
								from the Tx
								1 GHz to 9.3 GHz
								No Emissions Detected
								from the Digital Portion
								of the EUT
								9 kHz to 30 MHz
								No Emissions Detected
								from the Digital Portion
								of the EUT
								1 GHz to 9.3 GHz
								Tested in both Horizontal and
								Vertical Polarizations

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Low Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/29/2019
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
1812								**N/A - Done via Conducted**
								Not in Restricted Band
2718	42.60	V	73.97	-31.37	Peak	351.25	246.79	
2718	36.22	V	53.97	-17.75	Avg	351.25	246.79	
3624	47.35	V	73.97	-26.62	Peak	20.75	100.00	
3624	40.36	V	53.97	-13.61	Avg	20.75	100.00	
4530	45.82	V	73.97	-28.15	Peak	339.00	166.79	
4530	38.50	V	53.97	-15.47	Avg	339.00	166.79	
5436	49.47	V	73.97	-24.50	Peak	344.75	140.52	
5436	40.27	V	53.97	-13.70	Avg	344.75	140.52	
6342								**N/A - Done via Conducted**
								Not in Restricted Band
7248								**N/A - Done via Conducted**
								Not in Restricted Band
8154	58.70	V	73.97	-15.27	Peak	17.50	232.10	
8154	53.46	V	53.97	-0.51	Avg	17.50	232.10	
9060	55.35	V	73.97	-18.62	Peak	346.00	100.00	
9060	47.21	V	53.97	-6.76	Avg	346.00	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Low Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/29/2019
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
1812								N/A - Done via Conducted
								Not in Restricted Band
2718	46.32	H	73.97	-27.65	Peak	11.00	100.00	
2718	41.83	H	53.97	-12.14	Avg	11.00	100.00	
3624	47.66	H	73.97	-26.31	Peak	15.00	120.40	
3624	40.62	H	53.97	-13.35	Avg	15.00	120.40	
4530	43.07	H	73.97	-30.90	Peak	343.75	100.00	
4530	35.54	H	53.97	-18.43	Avg	343.75	100.00	
5436	48.98	H	73.97	-24.99	Peak	34.00	100.00	
5436	41.54	H	53.97	-12.43	Avg	34.00	100.00	
6342								N/A - Done via Conducted
								Not in Restricted Band
7248								N/A - Done via Conducted
								Not in Restricted Band
8154	58.85	H	73.97	-15.12	Peak	42.25	147.68	
8154	53.89	H	53.97	-0.08	Avg	42.25	147.68	
9060	55.10	H	73.97	-18.87	Peak	324.00	100.00	
9060	46.14	H	53.97	-7.83	Avg	324.00	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Middle Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/26/2019
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
1828								**N/A - Done via Conducted**
								Not in Restricted Band
2742	40.82	V	73.97	-33.15	Peak	351.00	100.00	
2742	33.32	V	53.97	-20.65	Avg	351.00	100.00	
3656	46.71	V	73.97	-27.26	Peak	360.00	182.73	
3656	40.31	V	53.97	-13.66	Avg	360.00	182.73	
4570	44.98	V	73.97	-28.99	Peak	0.00	143.68	
4570	37.95	V	53.97	-16.02	Avg	0.00	143.68	
5484								**N/A - Done via Conducted**
								Not in Restricted Band
6398								**N/A - Done via Conducted**
								Not in Restricted Band
7312	54.83	V	73.97	-19.14	Peak	352.00	184.40	
7312	49.13	V	53.97	-4.84	Avg	352.00	184.40	
8226	55.40	V	73.97	-18.57	Peak	17.00	242.79	
8226	50.42	V	53.97	-3.55	Avg	17.00	242.79	
9140	55.06	V	73.97	-18.91	Peak	338.75	250.00	
9140	49.98	V	53.97	-3.99	Avg	338.75	250.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
Middle Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/26/2019
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
1828								N/A - Done via Conducted
								Not in Restricted Band
2742	46.63	H	73.97	-27.34	Peak	21.25	151.14	
2742	40.76	H	53.97	-13.21	Avg	21.25	151.14	
3656	48.53	H	73.97	-25.44	Peak	11.25	136.94	
3656	42.32	H	53.97	-11.65	Avg	11.25	136.94	
4570	44.11	H	73.97	-29.86	Peak	315.25	100.00	
4570	35.90	H	53.97	-18.07	Avg	315.25	100.00	
5484								N/A - Done via Conducted
								Not in Restricted Band
6398								N/A - Done via Conducted
								Not in Restricted Band
7312	53.82	H	73.97	-20.15	Peak	41.25	136.88	
7312	48.49	H	53.97	-5.48	Avg	41.25	136.88	
8226	54.46	H	73.97	-19.51	Peak	336.75	100.00	
8226	49.33	H	53.97	-4.64	Avg	336.75	100.00	
9140	49.30	H	73.97	-24.67	Peak	47.00	100.00	
9140	40.41	H	53.97	-13.56	Avg	47.00	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
High Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/26/2019
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
1848								**N/A - Done via Conducted**
								Not in Restricted Band
2772	44.07	V	73.97	-29.90	Peak	343.25	147.08	
2772	38.01	V	53.97	-15.96	Avg	343.25	147.08	
3696	47.27	V	73.97	-26.70	Peak	324.75	100.00	
3696	41.35	V	53.97	-12.62	Avg	324.75	100.00	
4620	44.43	V	73.97	-29.54	Peak	360.00	100.00	
4620	36.77	V	53.97	-17.20	Avg	360.00	100.00	
5544								**N/A - Done via Conducted**
								Not in Restricted Band
6468								**N/A - Done via Conducted**
								Not in Restricted Band
7392	54.97	V	73.97	-19.00	Peak	346.00	217.35	
7392	49.42	V	53.97	-4.55	Avg	346.00	217.35	
8316	54.01	V	73.97	-19.96	Peak	349.00	100.00	
8316	48.85	V	53.97	-5.12	Avg	349.00	100.00	
9240	48.49	V	73.97	-25.48	Peak	341.25	100.00	
9240	38.40	V	53.97	-15.57	Avg	341.25	100.00	

FCC 15.247
Mesh Systems LLC
Lighting Control Gateway
Model: LCG300
High Channel - Y-Axis
Transmit Mode - External Antenna

Date: 07/26/2019
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
1848								**N/A - Done via Conducted**
								Not in Restricted Band
2772	46.84	H	73.97	-27.13	Peak	8.00	137.23	
2772	42.84	H	53.97	-11.13	Avg	8.00	137.23	
3696	51.27	H	73.97	-22.70	Peak	360.00	162.25	
3696	46.63	H	53.97	-7.34	Avg	360.00	162.25	
4620	46.14	H	73.97	-27.83	Peak	19.00	167.98	
4620	39.67	H	53.97	-14.30	Avg	19.00	167.98	
5544								**N/A - Done via Conducted**
								Not in Restricted Band
6468								**N/A - Done via Conducted**
								Not in Restricted Band
7392	55.14	H	73.97	-18.83	Peak	43.00	195.14	
7392	48.59	H	53.97	-5.38	Avg	43.00	195.14	
8316	52.94	H	73.97	-21.03	Peak	324.00	100.00	
8316	48.75	H	53.97	-5.22	Avg	324.00	100.00	
9240	48.21	H	73.97	-25.76	Peak	337.25	100.00	
9240	38.95	H	53.97	-15.02	Avg	337.25	100.00	

FCC 15.247 and FCC Class B

Mesh Systems LLC
Lighting Control Gateway
Model: LCG300

Date: 07/29/2019
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx - 9 kHz to 30 MHz and 1 GHz to 9.3 GHz
Digital Portion from the EUT - 9 kHz to 30 MHz and 1 GHz to 9.3 GHz
External Antenna

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from the Non Harmonic Emissions
								from the Tx
								9 kHz to 30 MHz
								No Emissions Detected
								from the Non Harmonic Emissions
								from the Tx
								1 GHz to 9.3 GHz
								No Emissions Detected
								from the Digital Portion
								of the EUT
								9 kHz to 30 MHz
								No Emissions Detected
								from the Digital Portion
								of the EUT
								1 GHz to 9.3 GHz
								Tested in both Horizontal and
								Vertical Polarizations

Title: Pre-Scan - FCC Class B
File: 1 - RS - Pre-Scan - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna
The frequency at 906 MHz is from the intentional radiator and is subject to the limits of FCC 15.247 instead.

7/30/2019 9:08:51 AM
Sequence: Preliminary Scan

Title: Radiated Final - FCC Class B
File: 1 - RS - Final Scan - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

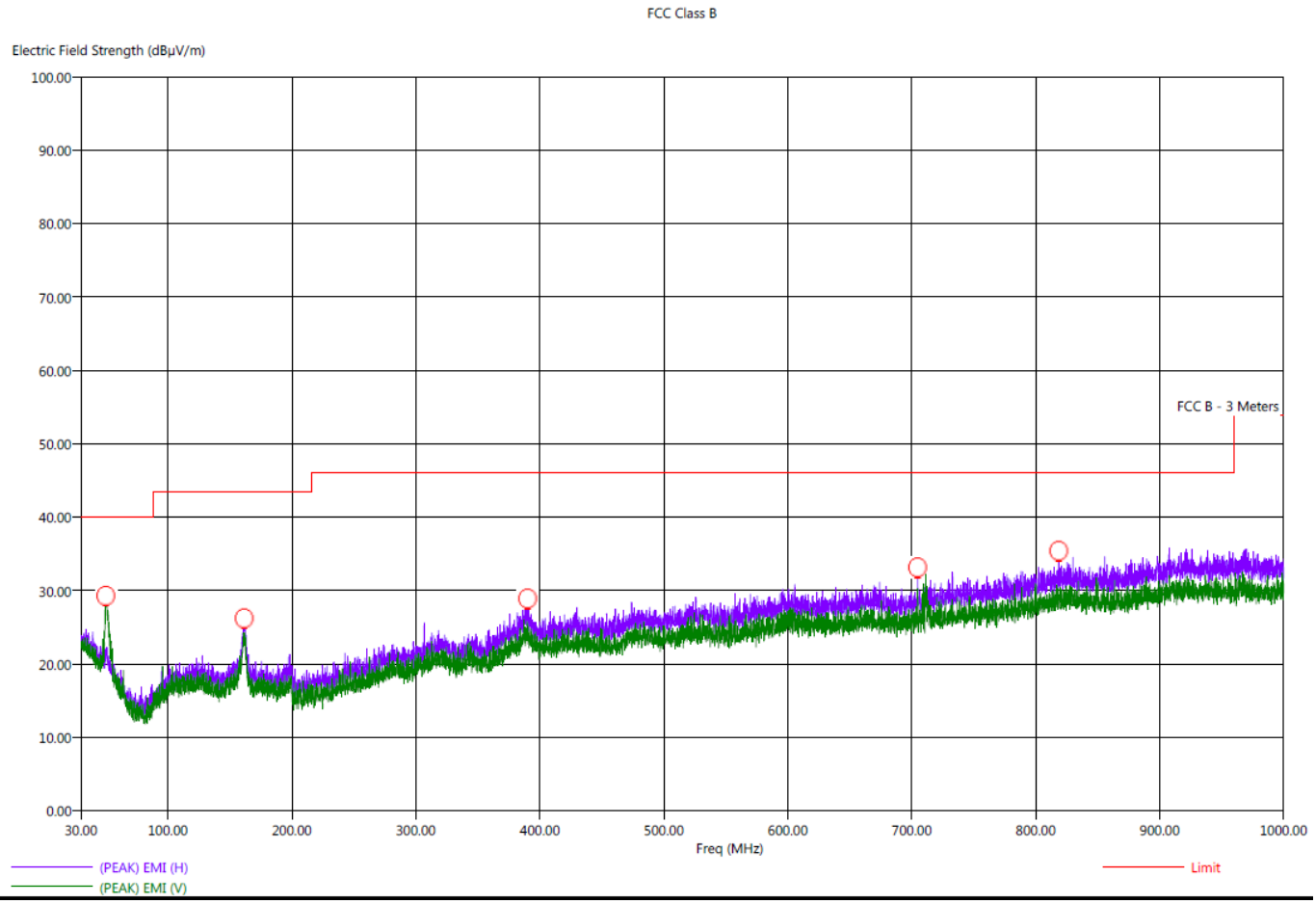
7/30/2019 9:33:46 AM
Sequence: Final Measurements

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)
50.10	V	25.53	19.12	-14.47	-20.88	40.00	18.39	0.90	89.00	225.77
161.90	H	26.44	21.46	-17.06	-22.04	43.50	22.03	1.30	102.75	389.23
806.60	H	42.40	37.20	-3.60	-8.80	46.00	26.60	2.80	133.50	258.73
807.10	H	43.23	37.83	-2.77	-8.17	46.00	26.60	2.80	133.00	274.85
969.80	V	45.08	40.84	-8.89	-13.13	53.97	28.13	3.10	159.50	126.67
970.20	H	38.62	33.61	-15.35	-20.36	53.97	28.09	3.10	86.75	209.59

Title: Pre-Scan - FCC Class B
File: 2 - RS - Pre-Scan - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateweay
EUT Condition: The EUT is continuously receiving at 906 MHz
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 10:00:04 AM
Sequence: Preliminary Scan



Note: No Emissions were detected from 1 GHz to 5 GHz

Title: Radiated Final - FCC Class B
File: 2 - RS - Final Scan - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 10:24:36 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)
49.90	V	30.40	25.10	-9.60	-14.90	40.00	18.37	0.90	201.75	160.52
50.40	V	31.03	26.32	-8.97	-13.68	40.00	18.34	0.90	128.50	144.16
161.60	H	27.54	21.45	-15.96	-22.05	43.50	22.08	1.30	14.50	209.00
390.20	H	27.35	22.52	-18.65	-23.48	46.00	23.16	2.06	136.25	324.22
704.70	H	31.34	25.33	-14.66	-20.67	46.00	24.57	2.52	66.00	291.68
818.60	H	33.33	28.38	-12.67	-17.62	46.00	26.90	2.80	101.50	225.89

Note: No Emissions were detected from 1 GHz to 5 GHz

Title: Pre-Scan - FCC Class B
File: 3 - RS - Pre-Scan - External Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz and WCDMA - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna
The frequency at 906 MHz is from the intentional radiator and is subject to the limits of FCC 15.247 instead.

7/30/2019 1:54:34 PM
Sequence: Preliminary Scan

Title: Radiated Final - FCC Class B
File: 3 - RS - Final Scan - External Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz and WCDMA - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

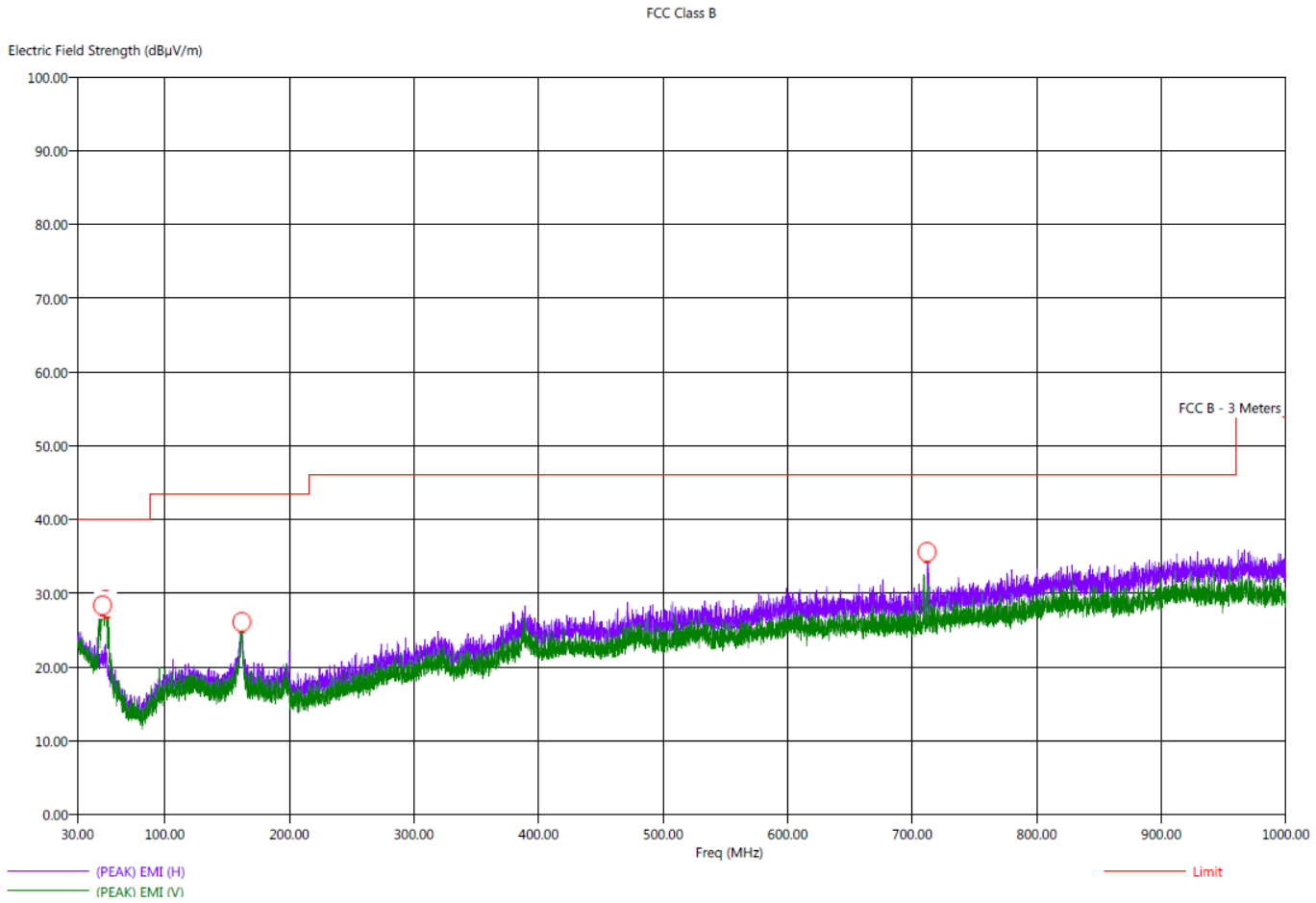
7/30/2019 2:29:49 PM
Sequence: Final Measurements

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)
53.40	V	32.19	27.92	-7.81	-12.08	40.00	17.40	0.90	316.75	144.04
57.20	V	26.40	19.51	-13.60	-20.49	40.00	16.14	0.90	310.75	127.50
66.40	V	24.94	20.34	-15.06	-19.66	40.00	13.01	0.96	33.00	143.92
80.00	V	29.01	26.06	-10.99	-13.94	40.00	11.60	1.10	64.50	111.38
161.00	H	27.24	21.49	-16.26	-22.01	43.50	22.00	1.30	41.00	340.34
969.70	V	49.08	44.68	-4.89	-9.29	53.97	28.16	3.10	49.00	127.86

Title: Pre-Scan - FCC Class B
File: 4 - RS - Pre-Scan - External Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 10:48:42 AM
Sequence: Preliminary Scan



Note: No Emissions were detected from 1 GHz to 5 GHz

Title: Radiated Final - FCC Class B
File: 4 - RS - Final Scan - External Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 11:12:32 AM
Sequence: Final Measurements

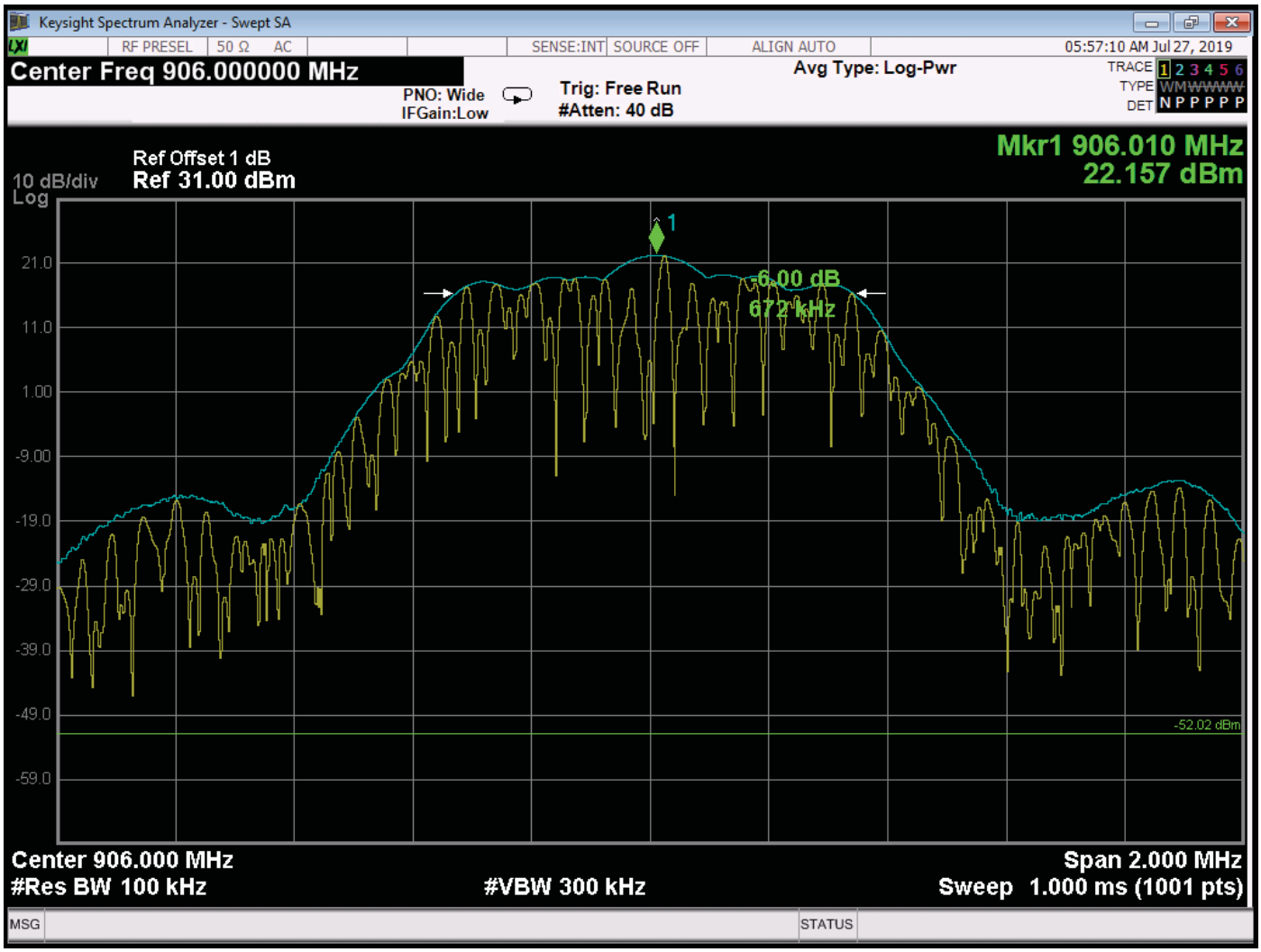
FCC Class B

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 Aql (deg)	Twr Ht (cm)
50.10	V	33.60	26.78	-6.40	-13.22	40.00	18.36	0.90	158.00	127.62
51.80	V	29.94	24.49	-10.06	-15.51	40.00	17.91	0.90	49.00	111.38
52.50	V	31.73	26.49	-8.27	-13.51	40.00	17.79	0.90	339.00	111.32
53.40	V	28.25	22.56	-11.75	-17.44	40.00	17.43	0.90	219.25	177.29
161.90	H	27.06	21.51	-16.44	-21.99	43.50	22.08	1.30	335.25	111.38
712.10	H	31.11	25.70	-14.89	-20.30	46.00	24.80	2.55	1.25	193.29

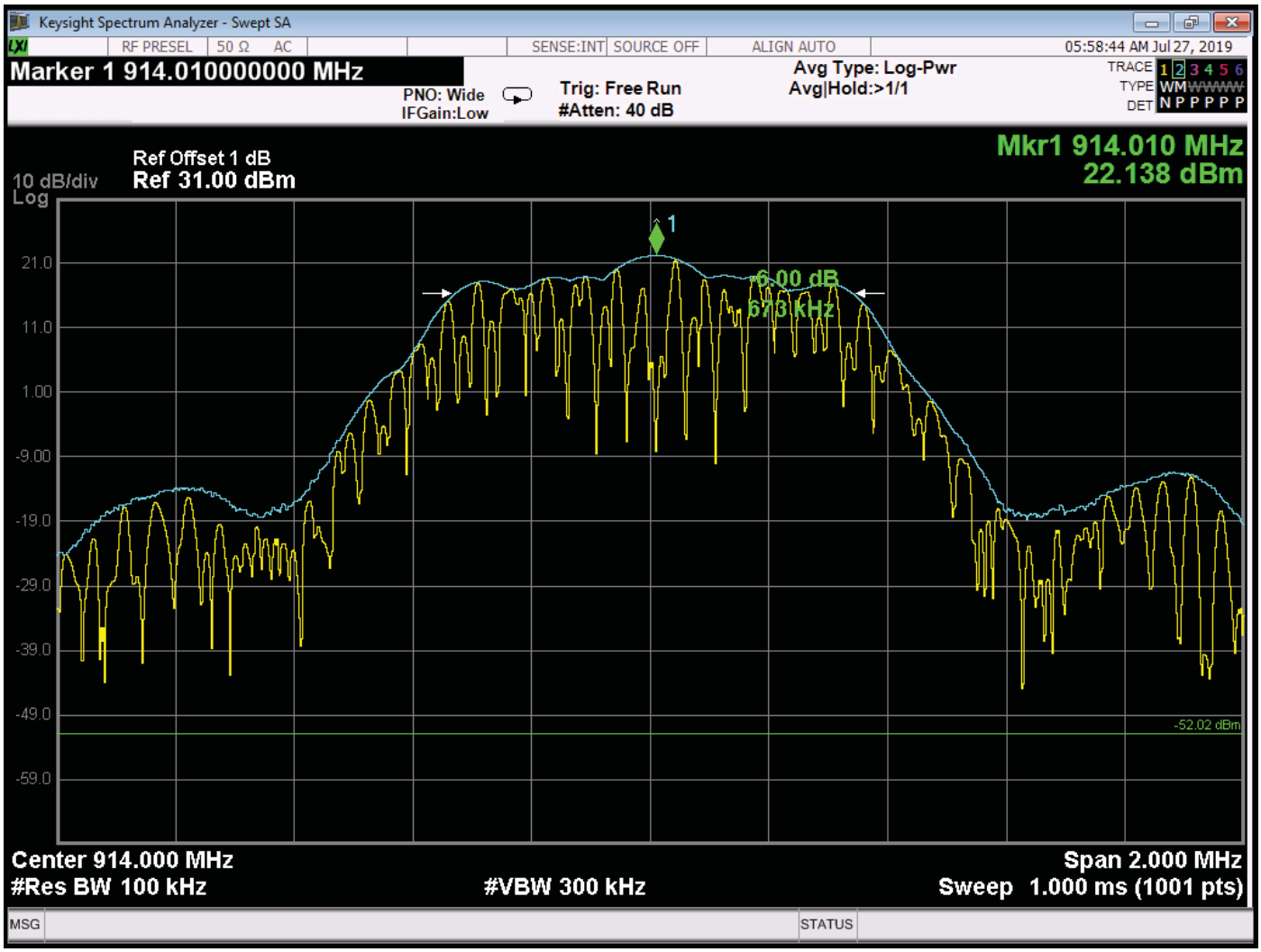
Note: No Emissions were detected from 1 GHz to 5 GHz

-6 dB BANDWIDTH

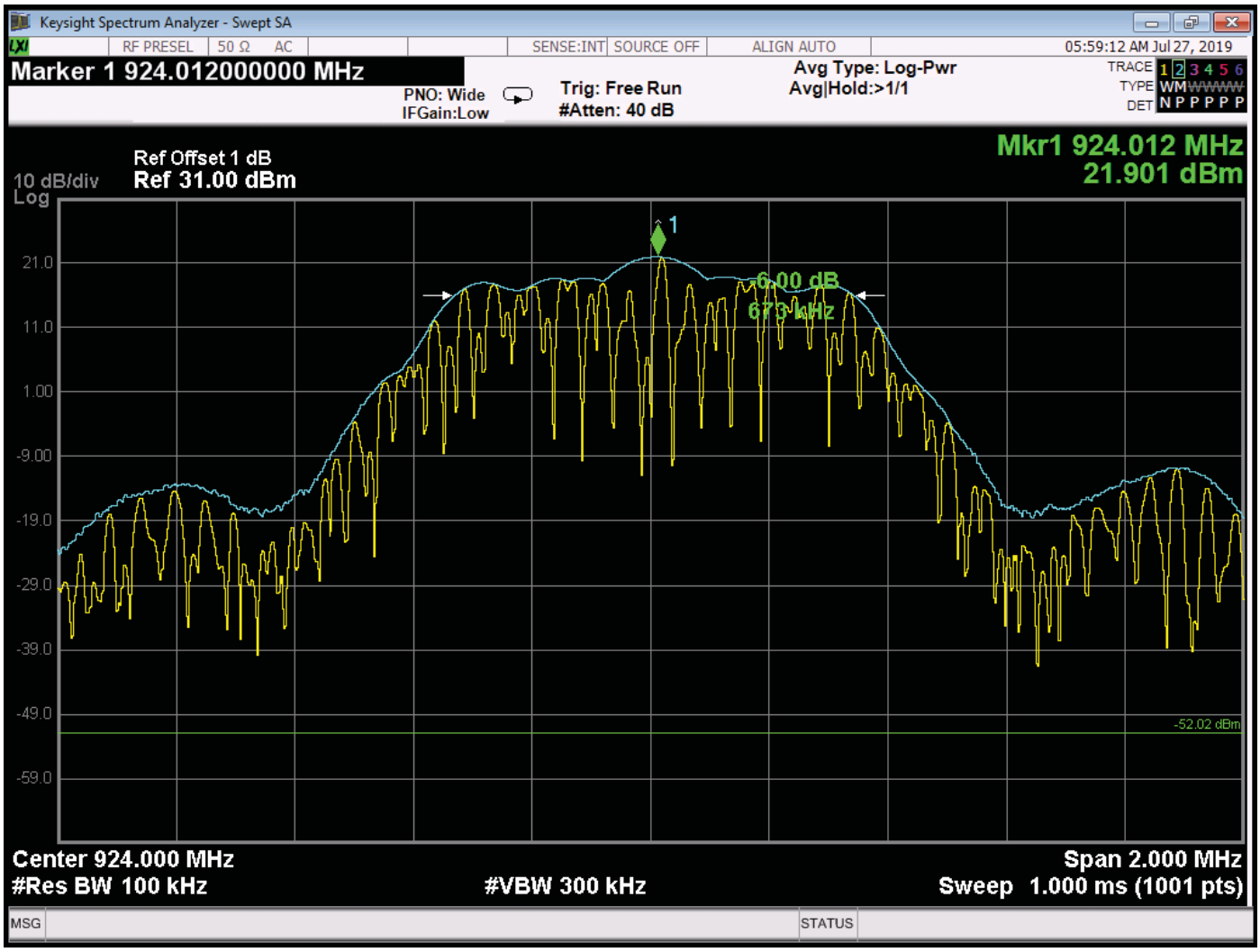
DATA SHEETS



-6 dB Bandwidth – Low Channel



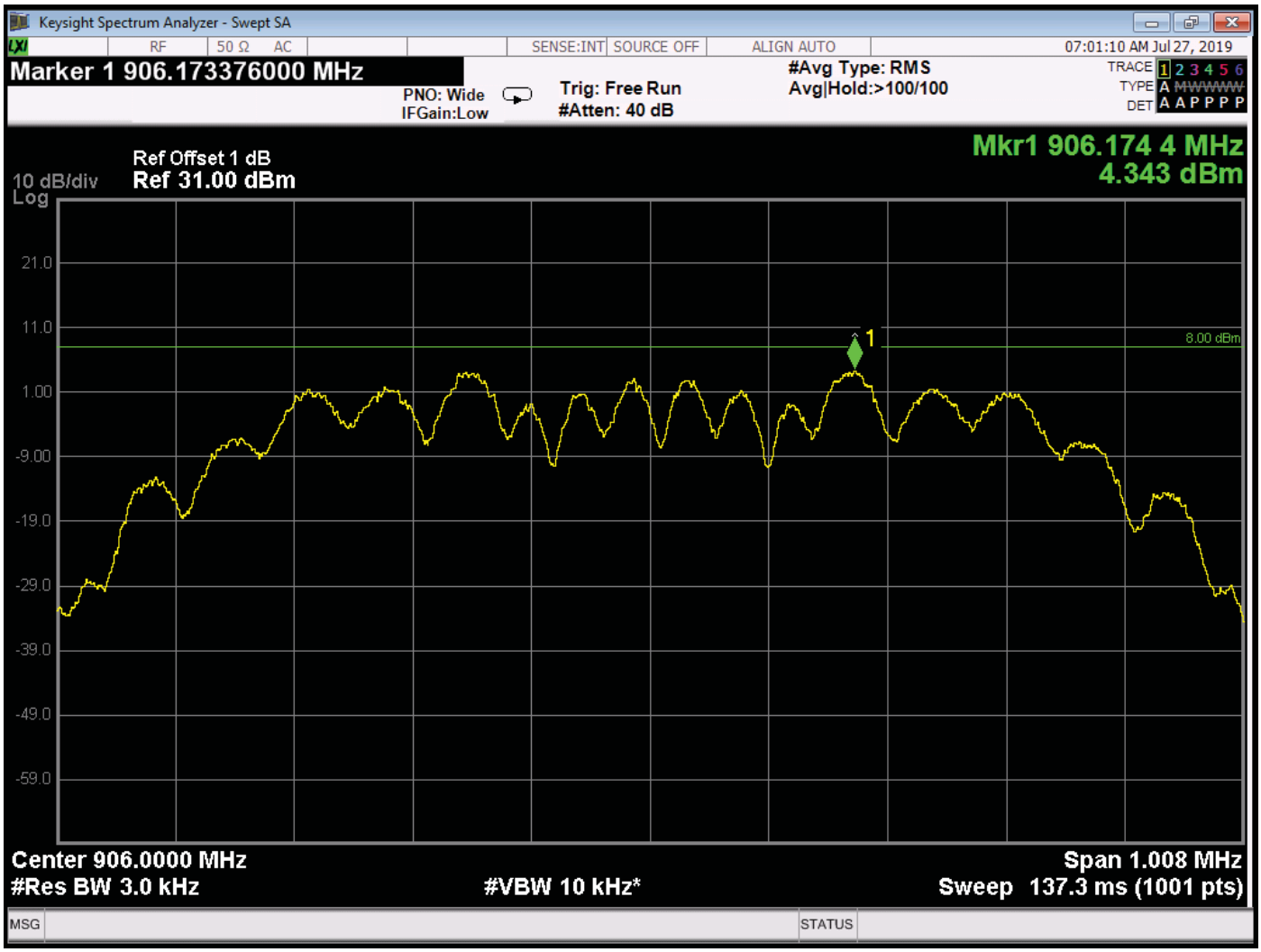
-6 dB Bandwidth – Middle Channel



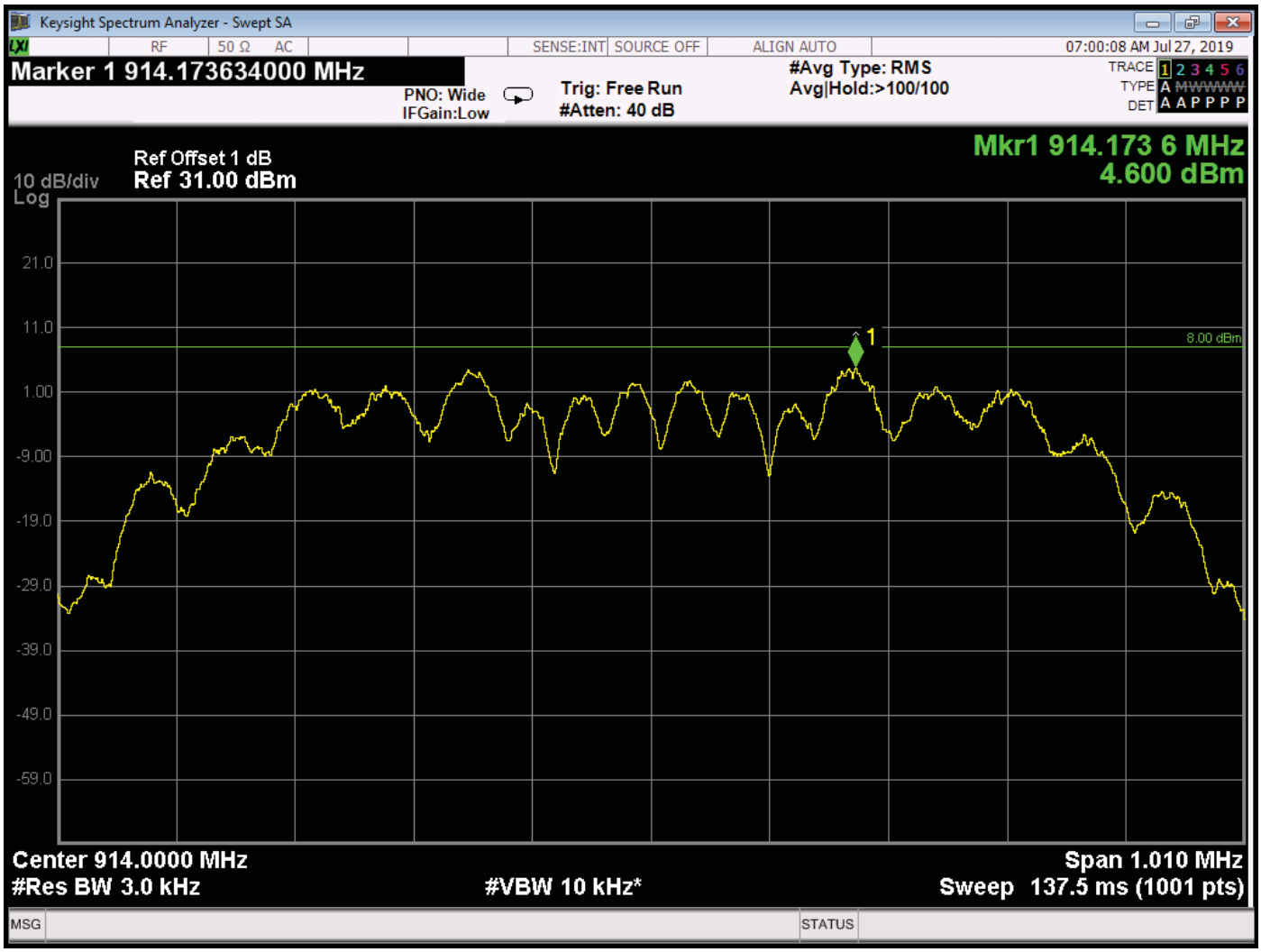
-6 dB Bandwidth – High Channel

SPECTRAL DENSITY OUTPUT

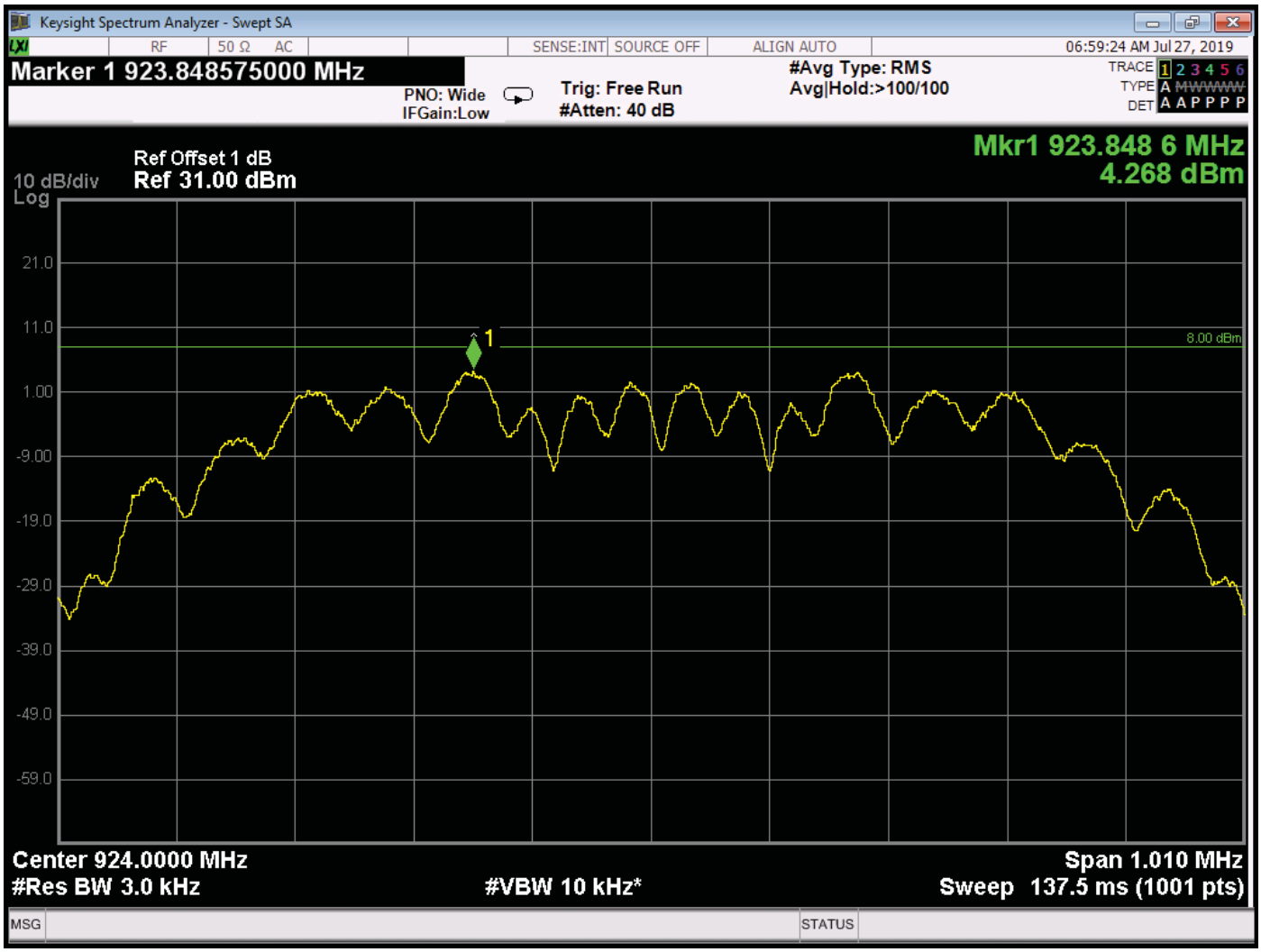
DATA SHEETS



Spectral Density – Low Channel



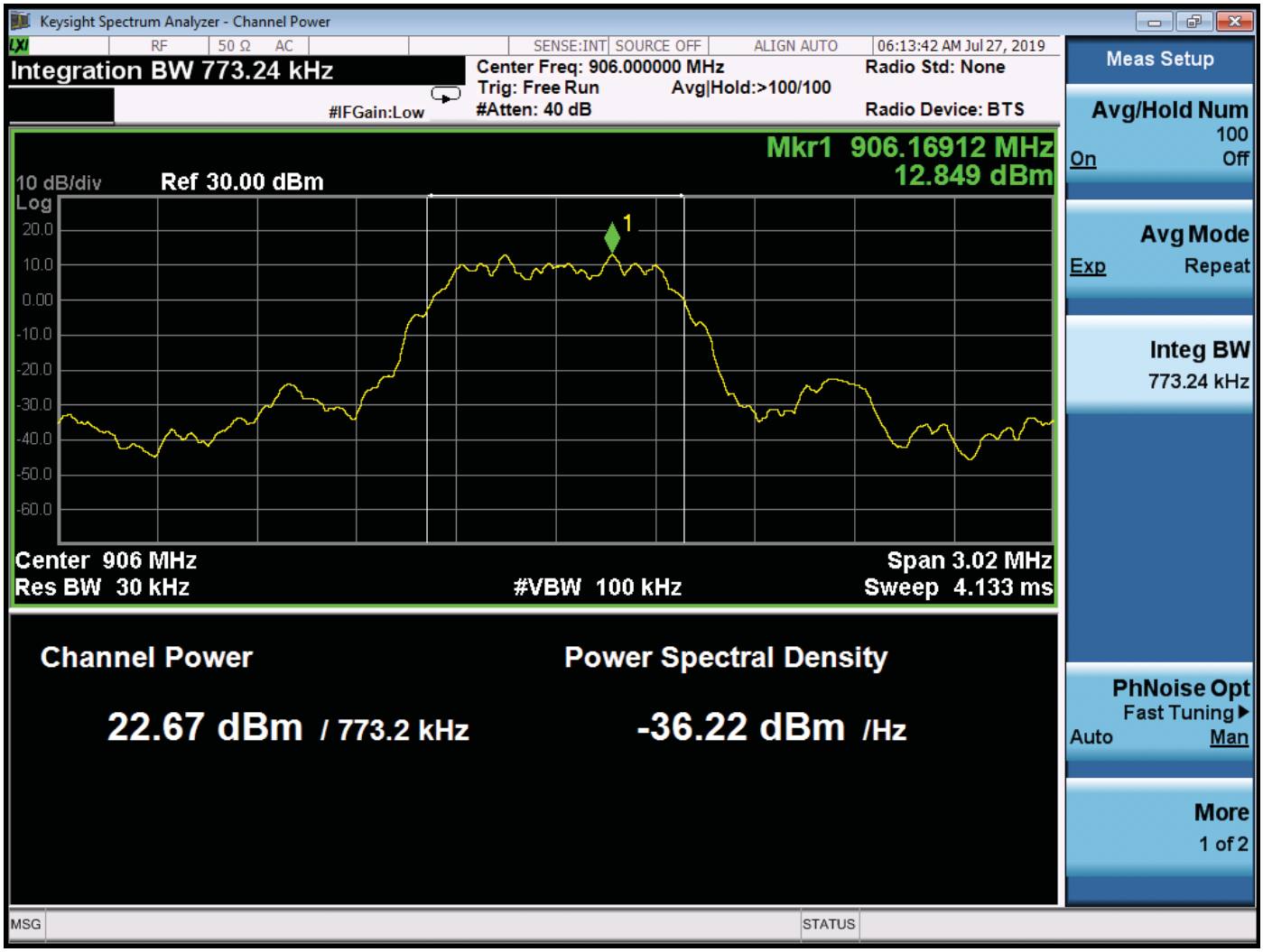
Spectral Density – Middle Channel



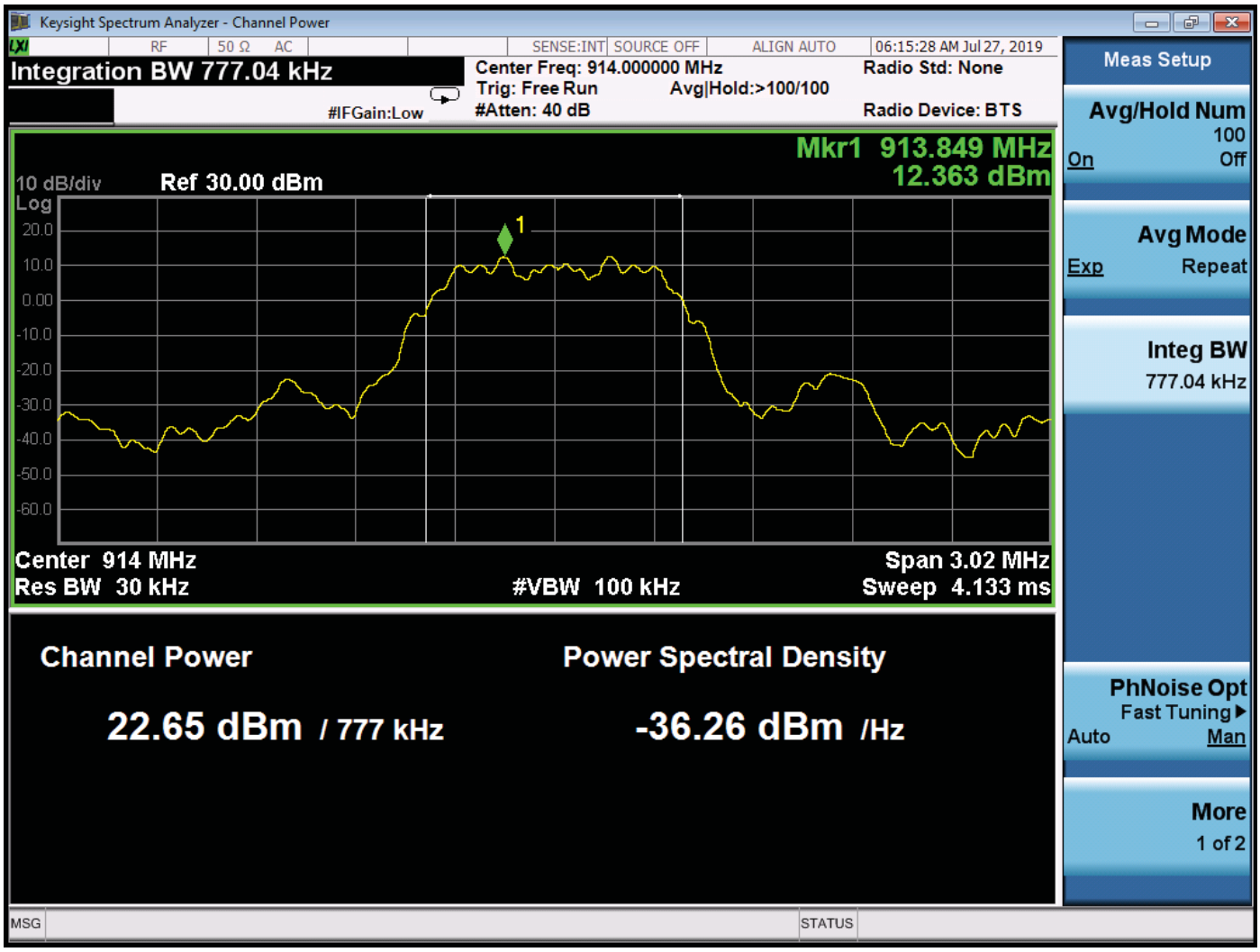
Spectral Density – High Channel

AVERAGE POWER

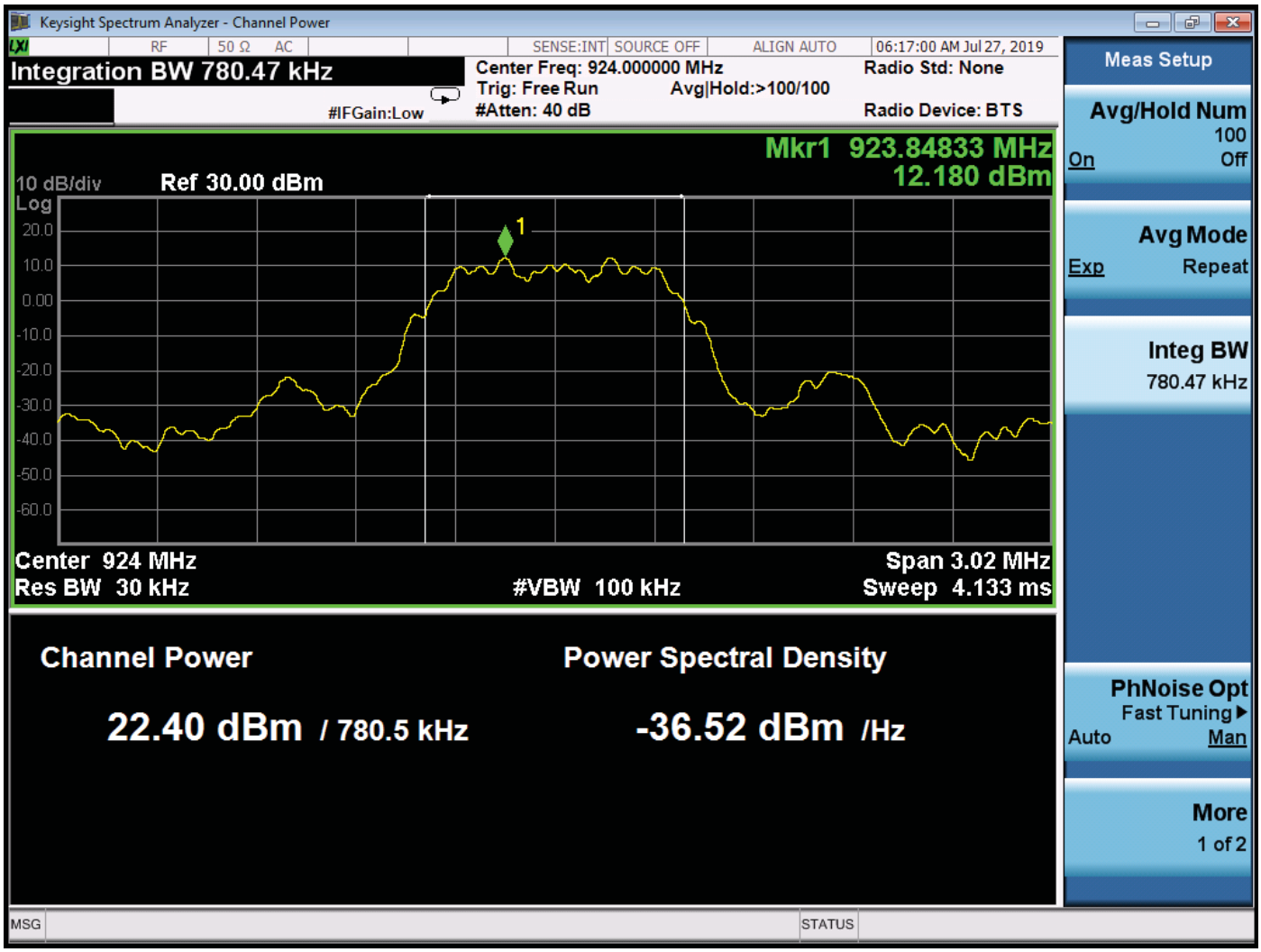
DATA SHEETS



Average Output Power – Low Channel



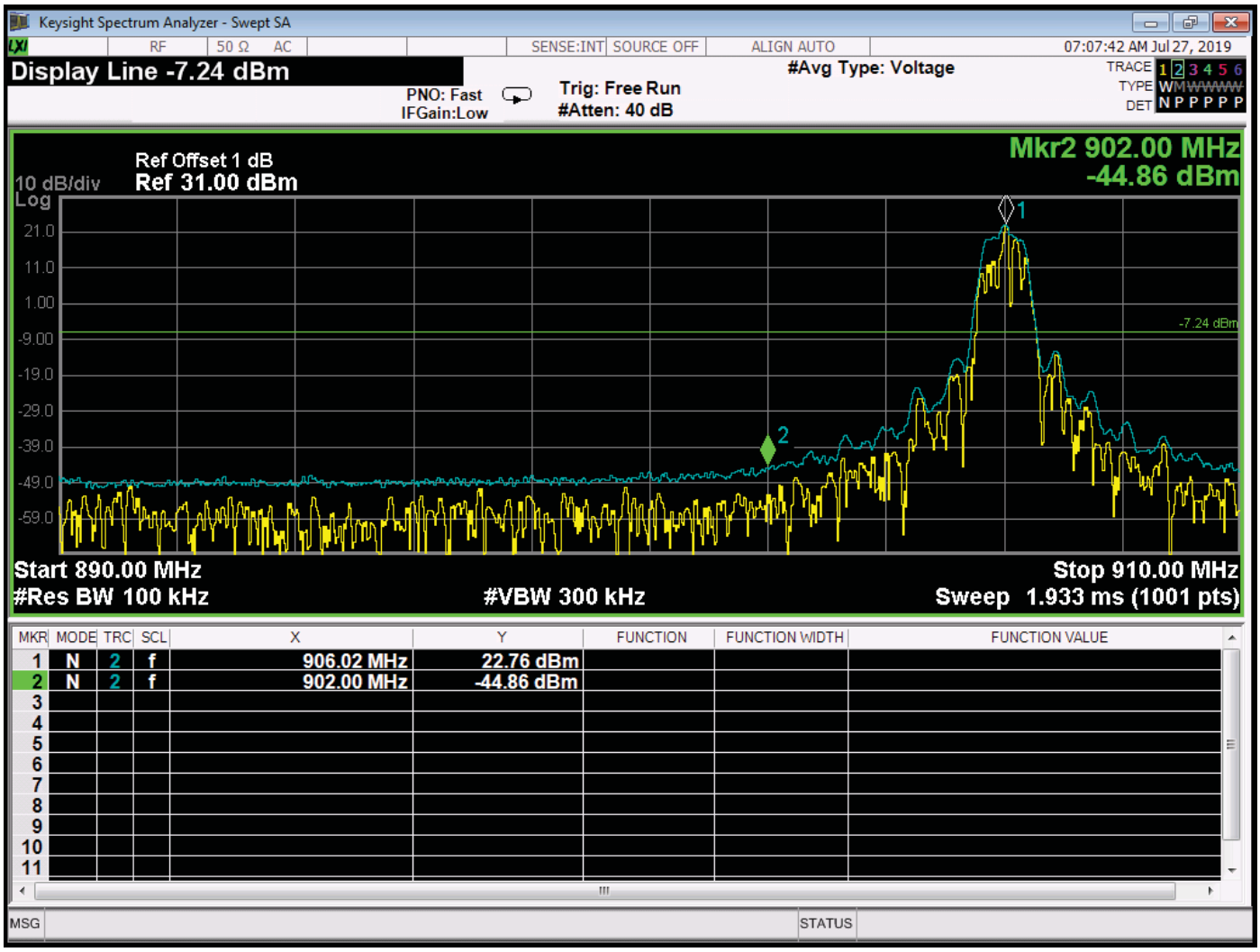
Average Output Power – Middle Channel



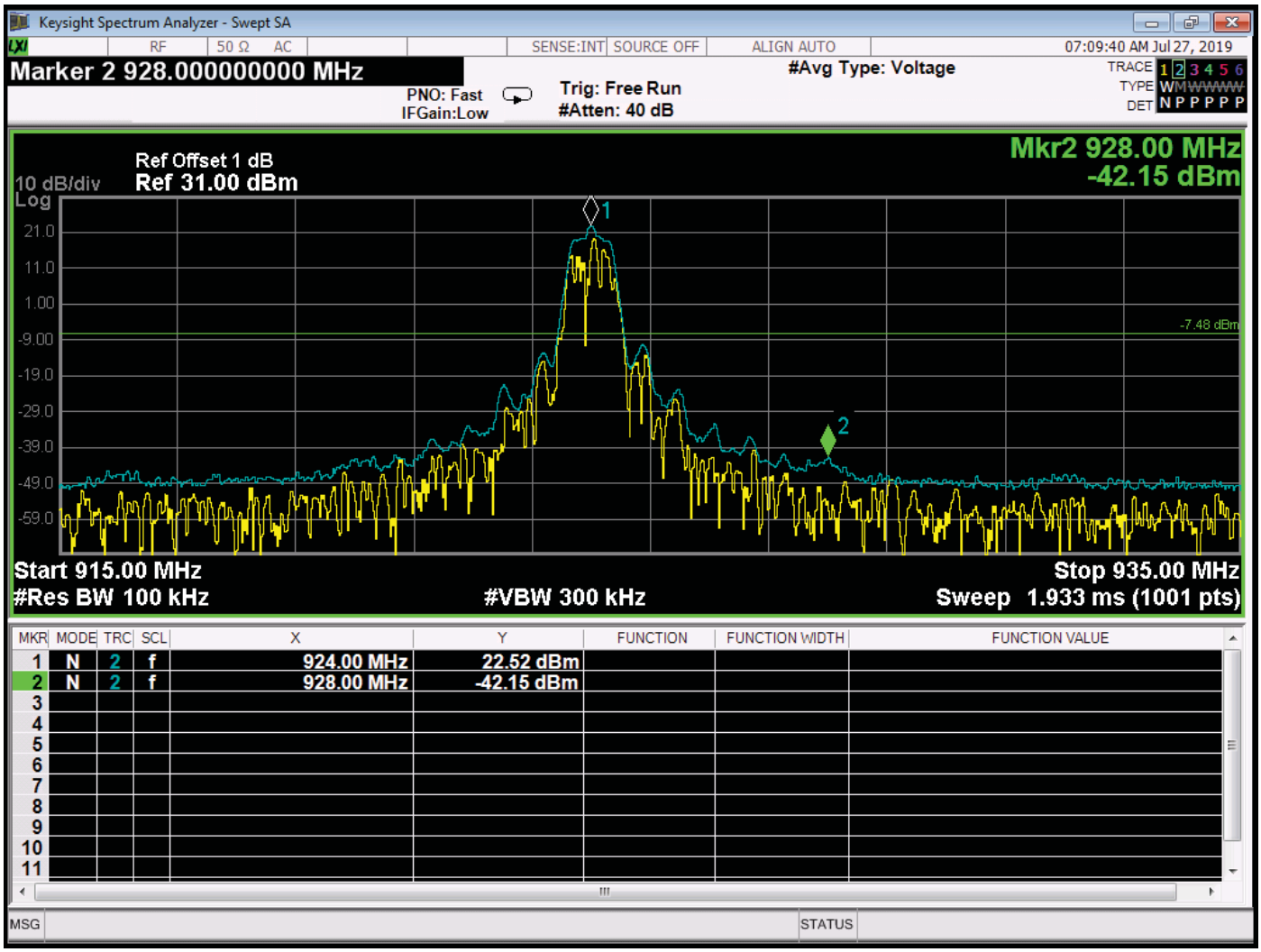
Average Output Power – High Channel

BAND EDGES

DATA SHEETS



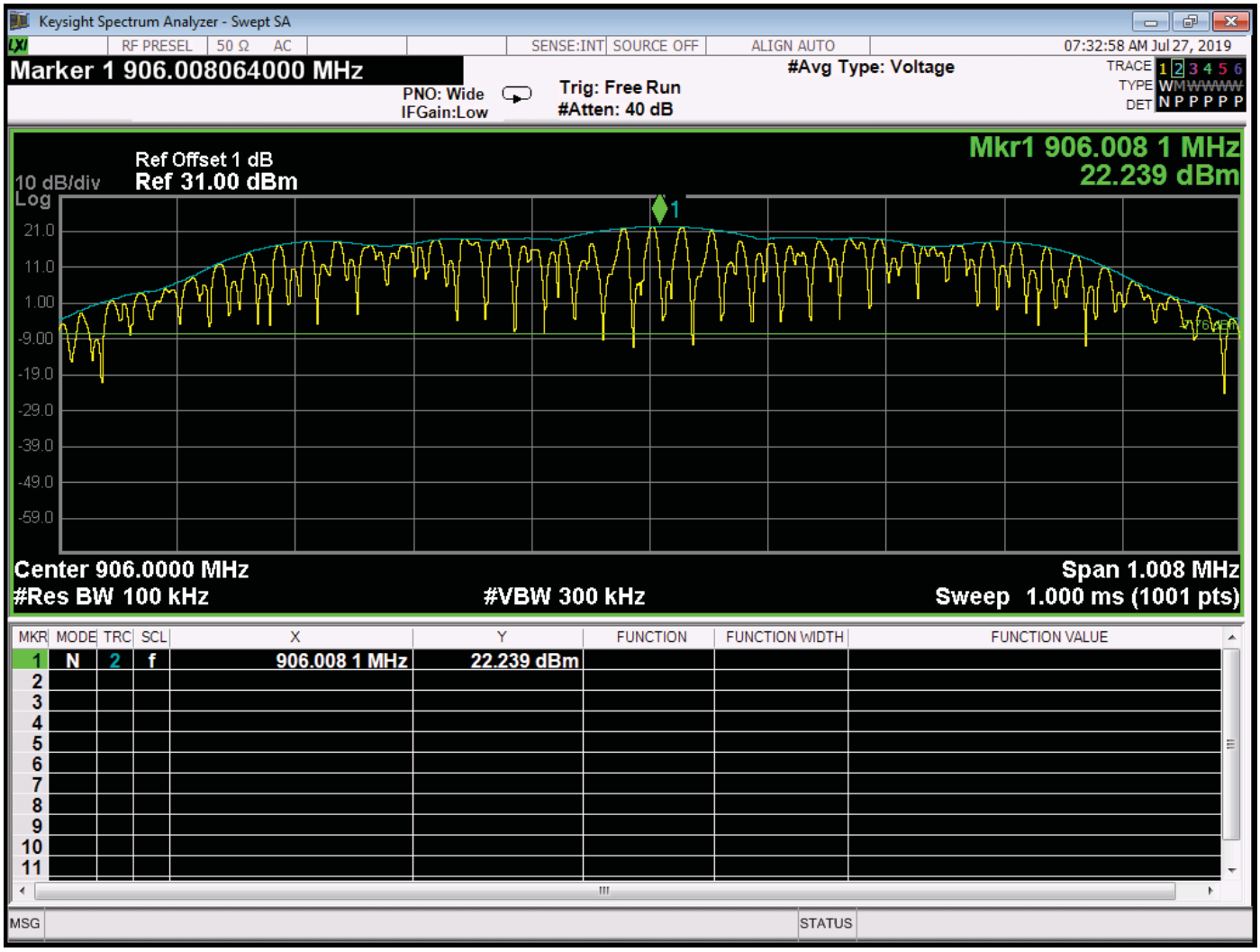
Band Edges – Low Channel



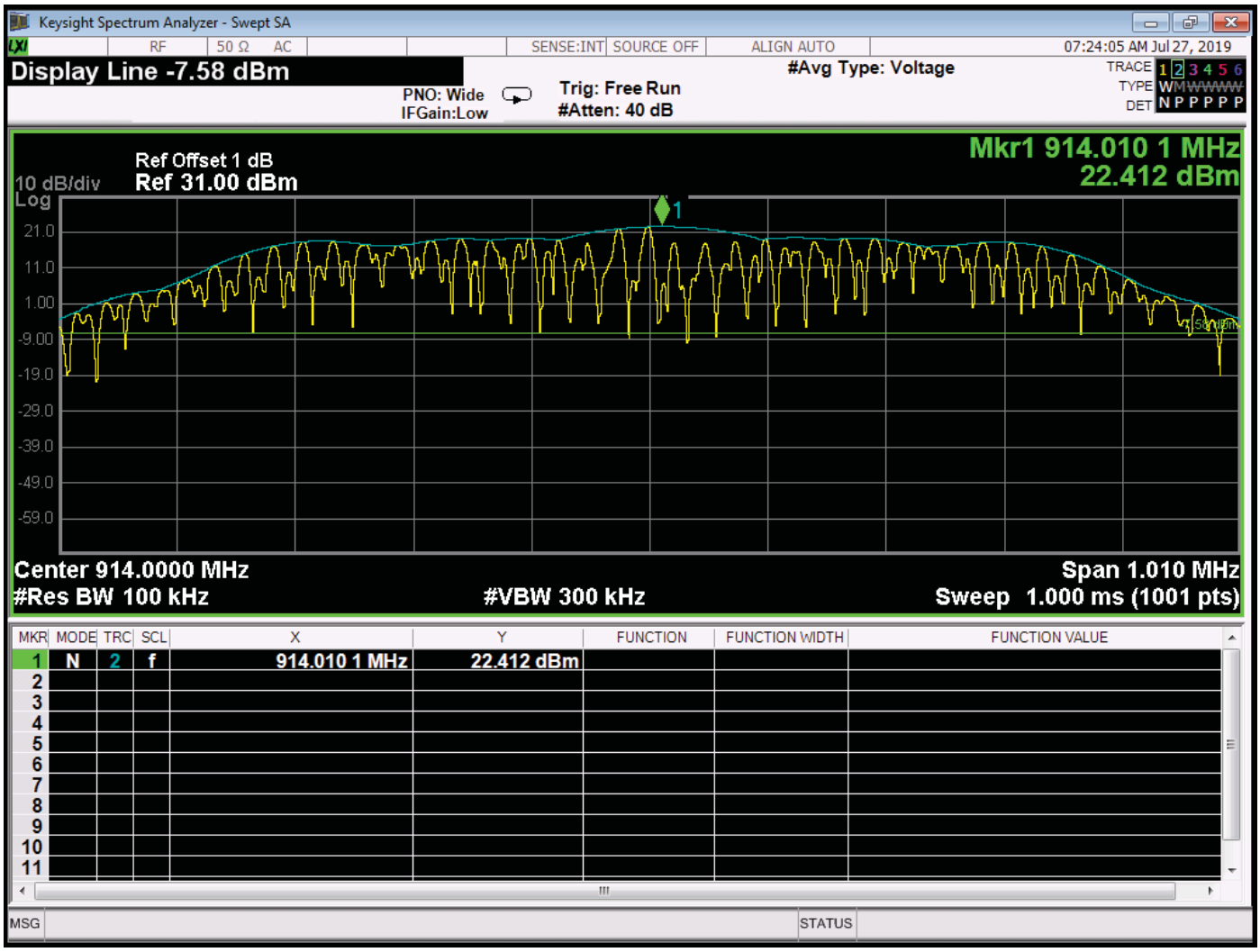
Band Edges – High Channel

EMISSIONS IN NON-RESRTICTED BANDS

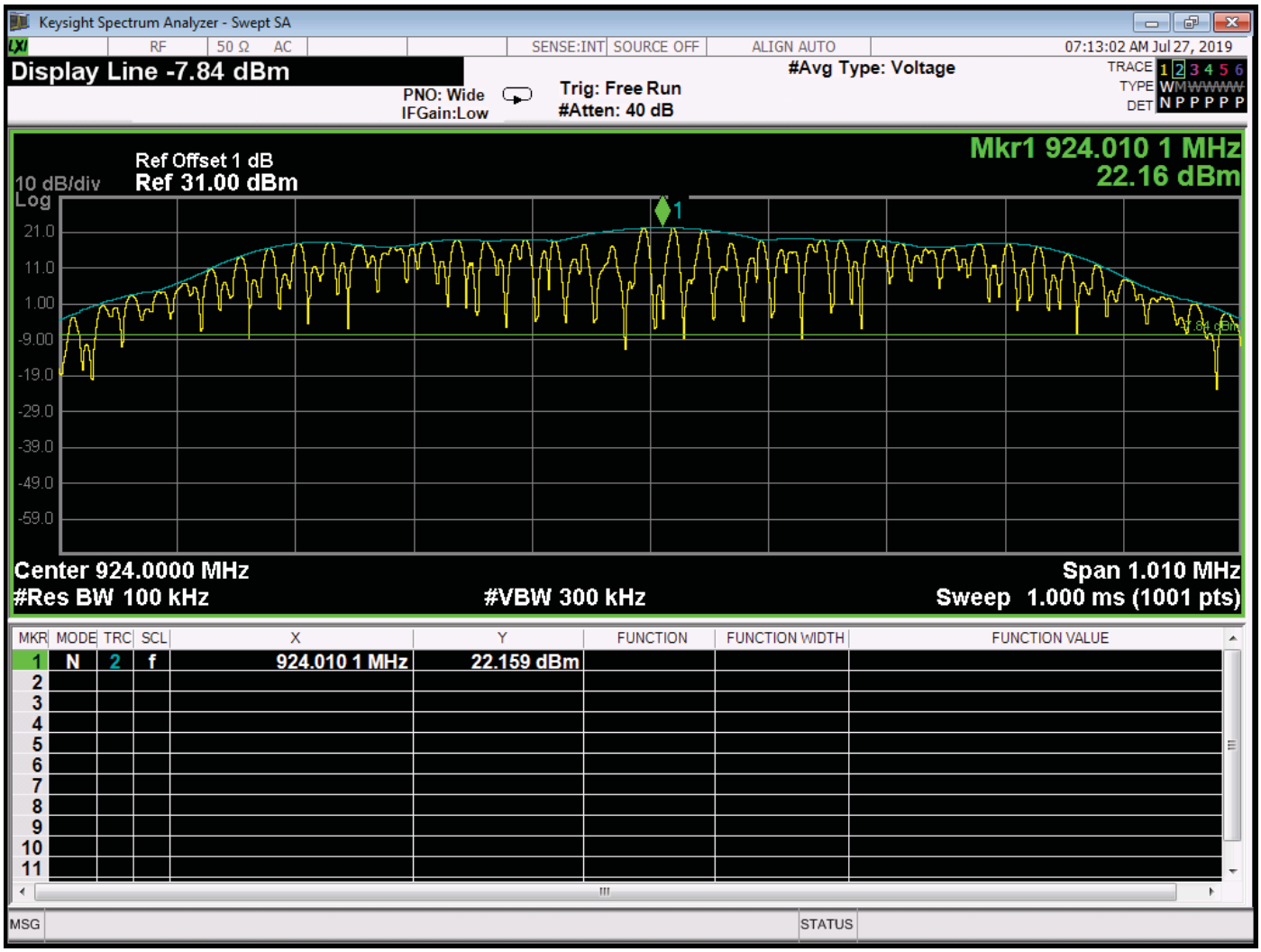
DATA SHEETS



RF Antenna Conducted – Reference Level – Low Channel



RF Antenna Conducted – Reference Level – Middle Channel



RF Antenna Conducted – Reference Level – High Channel

MESH SYSTEMS LLC

LIGHTING CONTROL GATEWAY

MODEL: LCG300

EMISSIONS IN NON-RESTRICTED BANDS

FREQUENCY (MHz)	LEVEL (dBm)	Limit* (dBm)	Margin (dB)
1813.40	-46.272	-7.588	-38.684
1828.50	-47.048	-7.588	-39.460
1847.80	-47.914	-7.588	-40.326

Note: The three highest non-restricted emissions are reported.

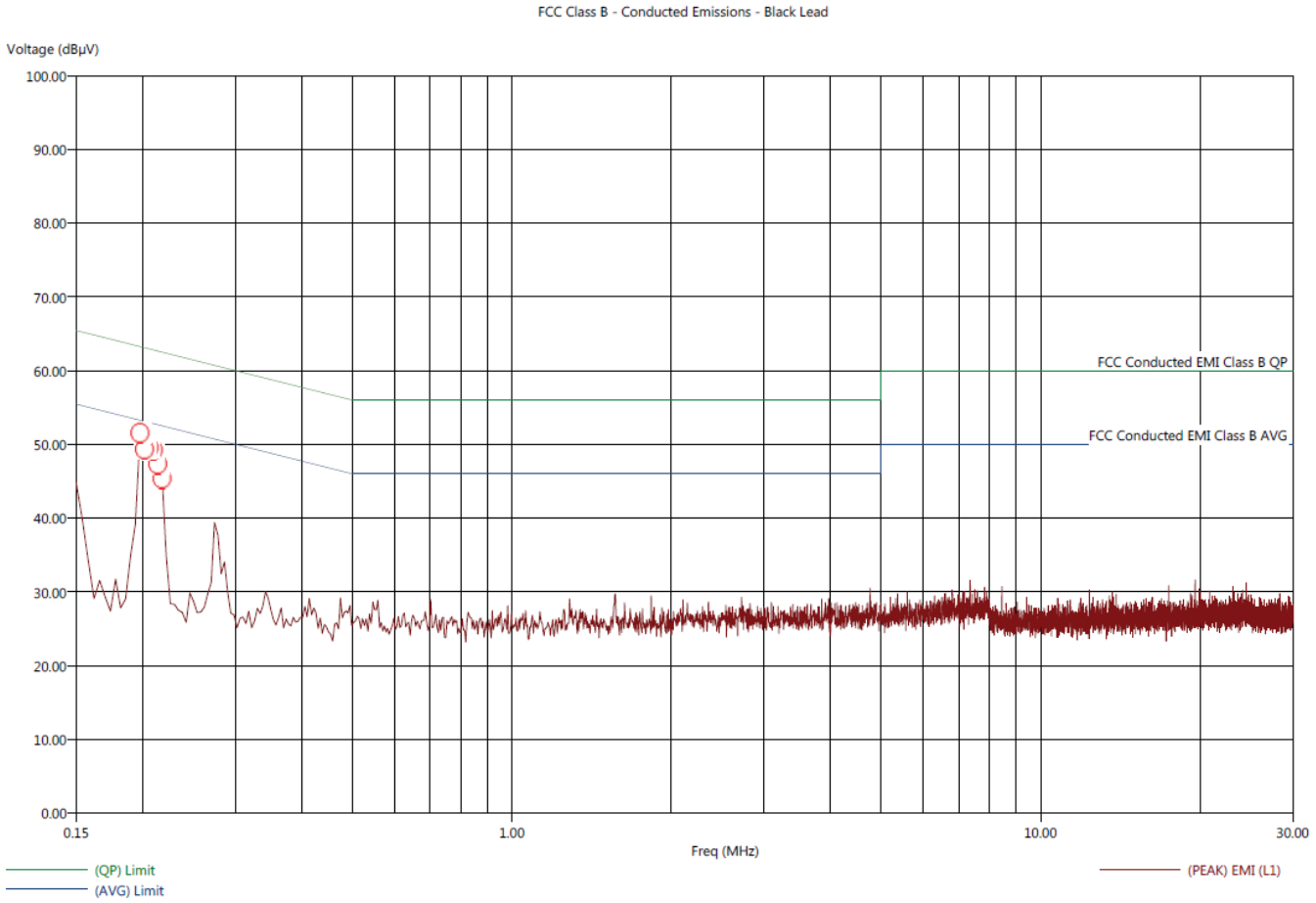
*The Limit is based on 30 dB below the highest reference level obtained on the previous pages.

CONDUCTED EMISSIONS

DATA SHEETS

Title: FCC B - Conducted Emissions - Black Lead
File: 1 - RS - Pre-Scan - Black Lead - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 3:50:20 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - Black Lead
File: 1 - RS - Final Scan - Black Lead - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

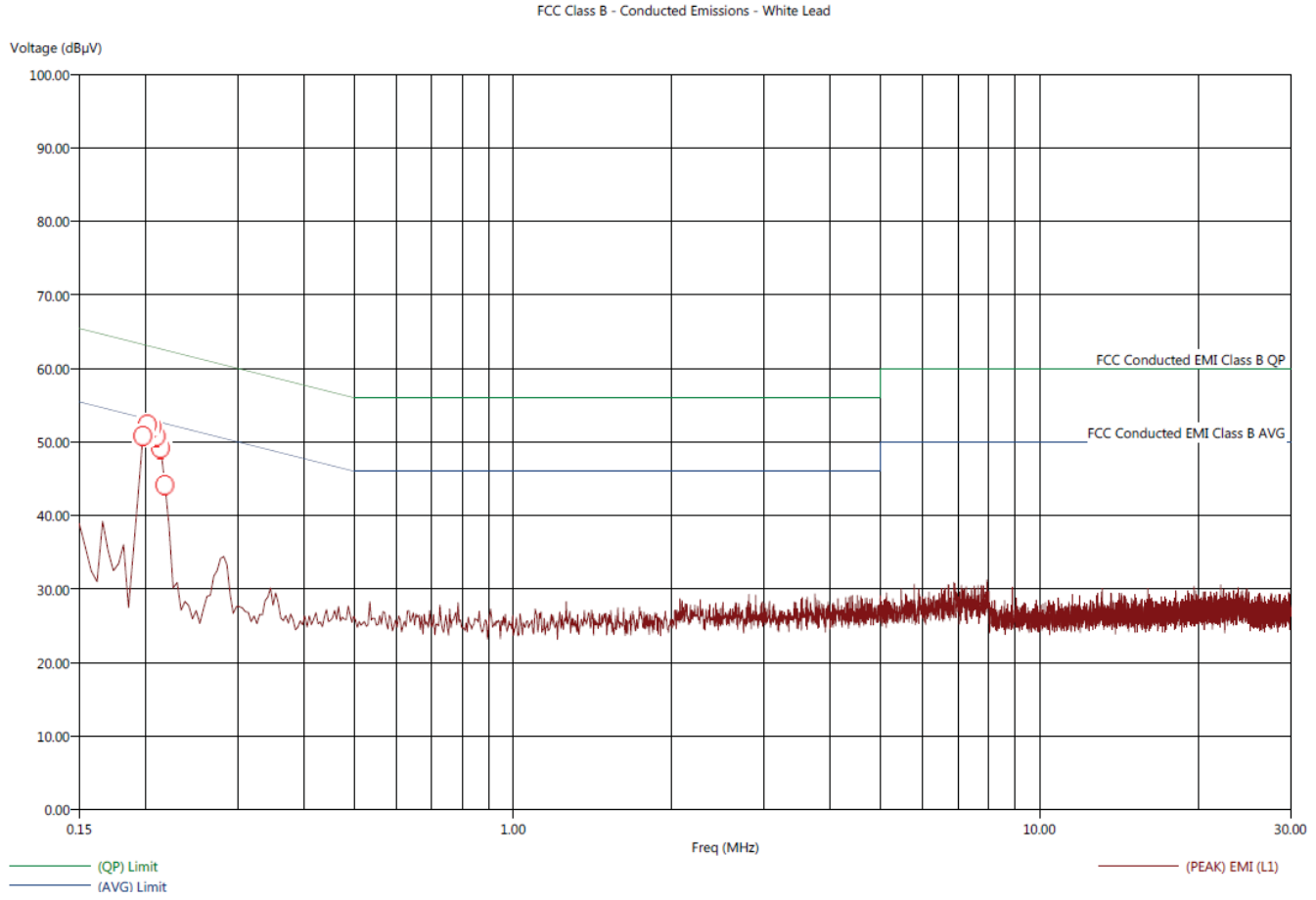
7/30/2019 3:53:48 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.198	54.44	41.66	1.31	-11.47	53.13	0.00	0.29	9.80
0.202	54.67	45.93	1.67	-7.07	53.00	0.00	0.28	9.80
0.206	54.88	45.07	1.84	-7.98	53.04	0.00	0.29	9.80
0.210	54.60	46.25	1.61	-6.74	52.99	0.00	0.28	9.80
0.214	54.04	46.79	1.16	-6.09	52.88	0.00	0.28	9.80
0.218	54.36	46.64	1.41	-6.30	52.95	0.00	0.28	9.80

Title: FCC B - Conducted Emissions - White Lead
File: 2 - RS - Pre-Scan - White Lead - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 3:57:07 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - White Lead
File: 2 - RS - Final Scan - White Lead - Internal Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Model: LCG300
S/N: N/A
Internal Antenna

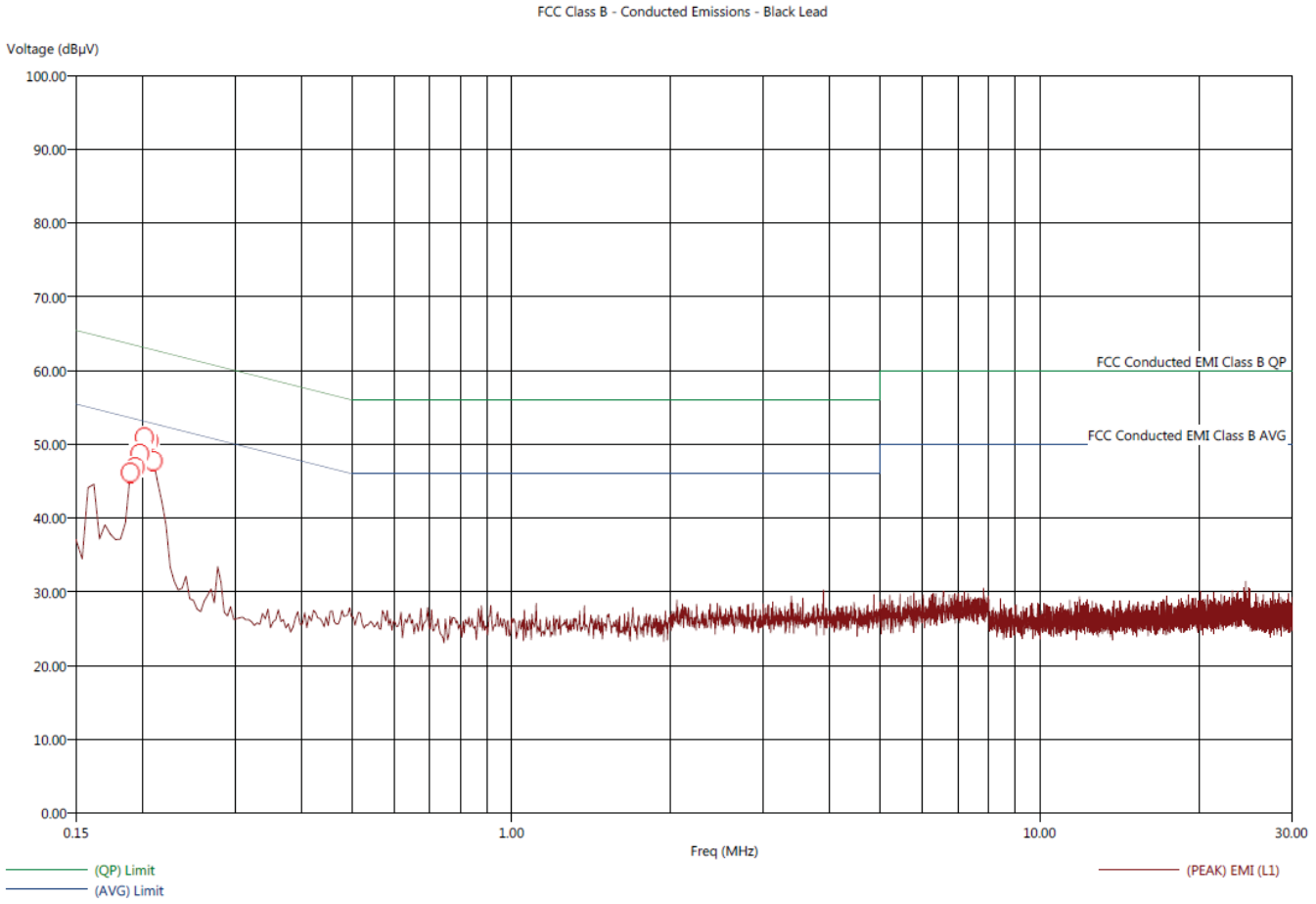
7/30/2019 4:00:03 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.198	54.73	45.00	1.68	-8.05	53.04	0.00	0.26	9.80
0.202	54.04	46.83	1.14	-6.07	52.90	0.00	0.25	9.80
0.206	53.99	46.81	1.09	-6.09	52.90	0.00	0.25	9.80
0.210	54.38	45.87	1.38	-7.12	53.00	0.00	0.26	9.80
0.214	53.67	46.76	0.81	-6.10	52.86	0.00	0.25	9.80
0.218	54.08	46.79	1.15	-6.14	52.93	0.00	0.26	9.80

Title: FCC B - Conducted Emissions - Black Lead
File: 3 - RS - Pre-Scan - Black Lead - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 3:32:55 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - Black Lead
File: 3 - RS - Final Scan - Black Lead - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

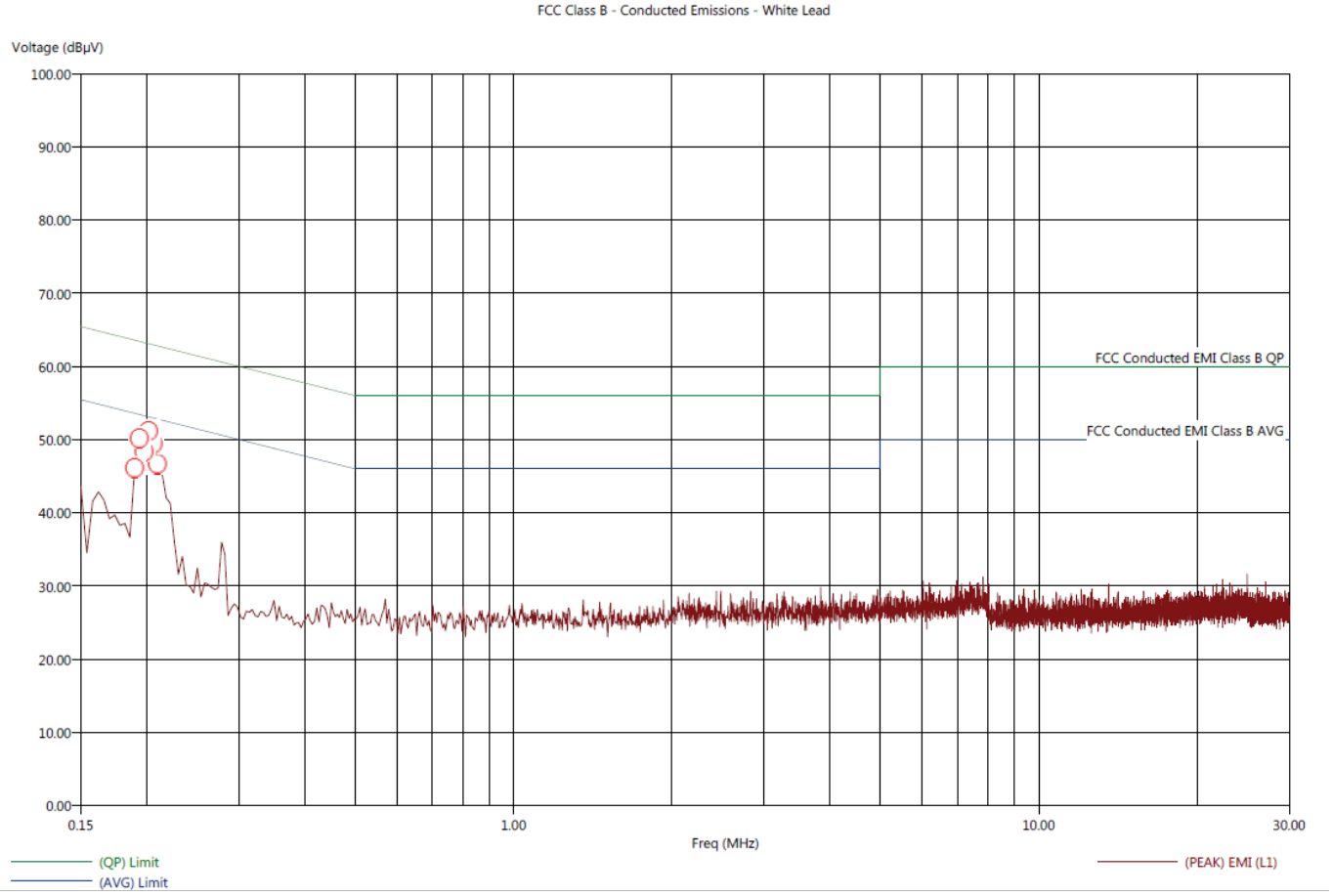
7/30/2019 3:36:15 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.190	46.95	29.67	-6.70	-23.98	53.65	0.00	0.32	9.80
0.194	53.27	37.40	0.08	-15.79	53.19	0.00	0.30	9.80
0.198	52.73	37.03	-0.49	-16.19	53.22	0.00	0.30	9.80
0.202	53.89	37.05	0.71	-16.13	53.18	0.00	0.30	9.80
0.206	53.35	39.56	0.33	-13.46	53.02	0.00	0.29	9.80
0.210	54.17	39.59	1.12	-13.47	53.06	0.00	0.29	9.80

Title: FCC B - Conducted Emissions - White Lead
File: 4 - RS - Pre-Scan - White Lead - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

7/30/2019 3:39:33 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - White Lead
File: 4 - RS - Final Scan - White Lead - Internal Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
Internal Antenna

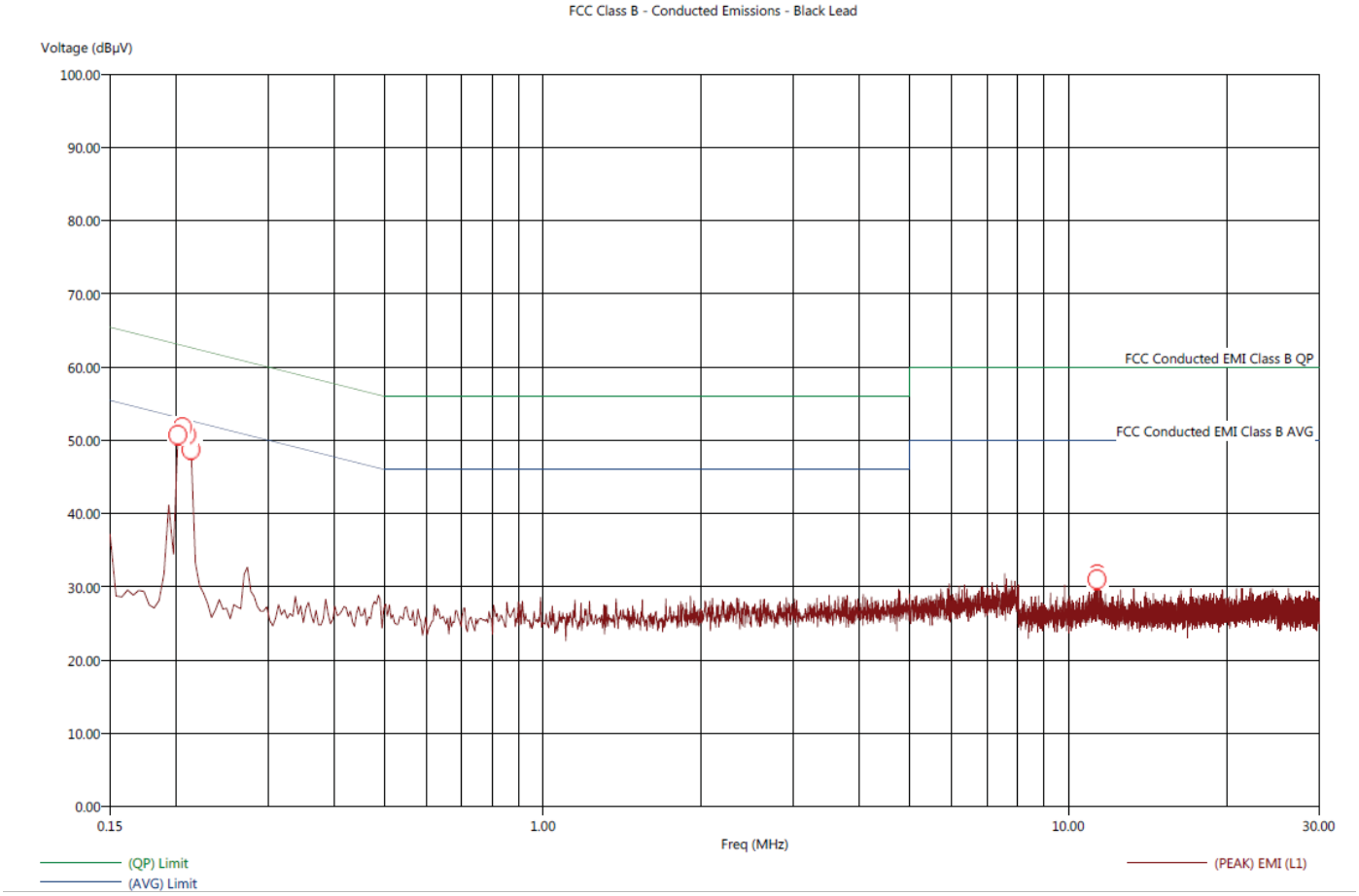
7/30/2019 3:42:53 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.190	49.98	33.33	-3.40	-20.06	53.39	0.00	0.28	9.80
0.194	51.05	34.60	-2.26	-18.71	53.31	0.00	0.28	9.80
0.198	53.05	40.46	0.09	-12.51	52.96	0.00	0.26	9.80
0.202	53.68	37.52	0.54	-15.62	53.14	0.00	0.27	9.80
0.206	53.06	39.88	0.06	-13.12	53.00	0.00	0.26	9.80
0.210	53.31	40.37	0.37	-12.57	52.94	0.00	0.26	9.80

Title: FCC B - Conducted Emissions - Black Lead
File: 5 - RS - Pre-Scan - Black Lead - External Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 2:58:29 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - Black Lead
File: 5 - RS - Final Scan - Black Lead - External Antenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

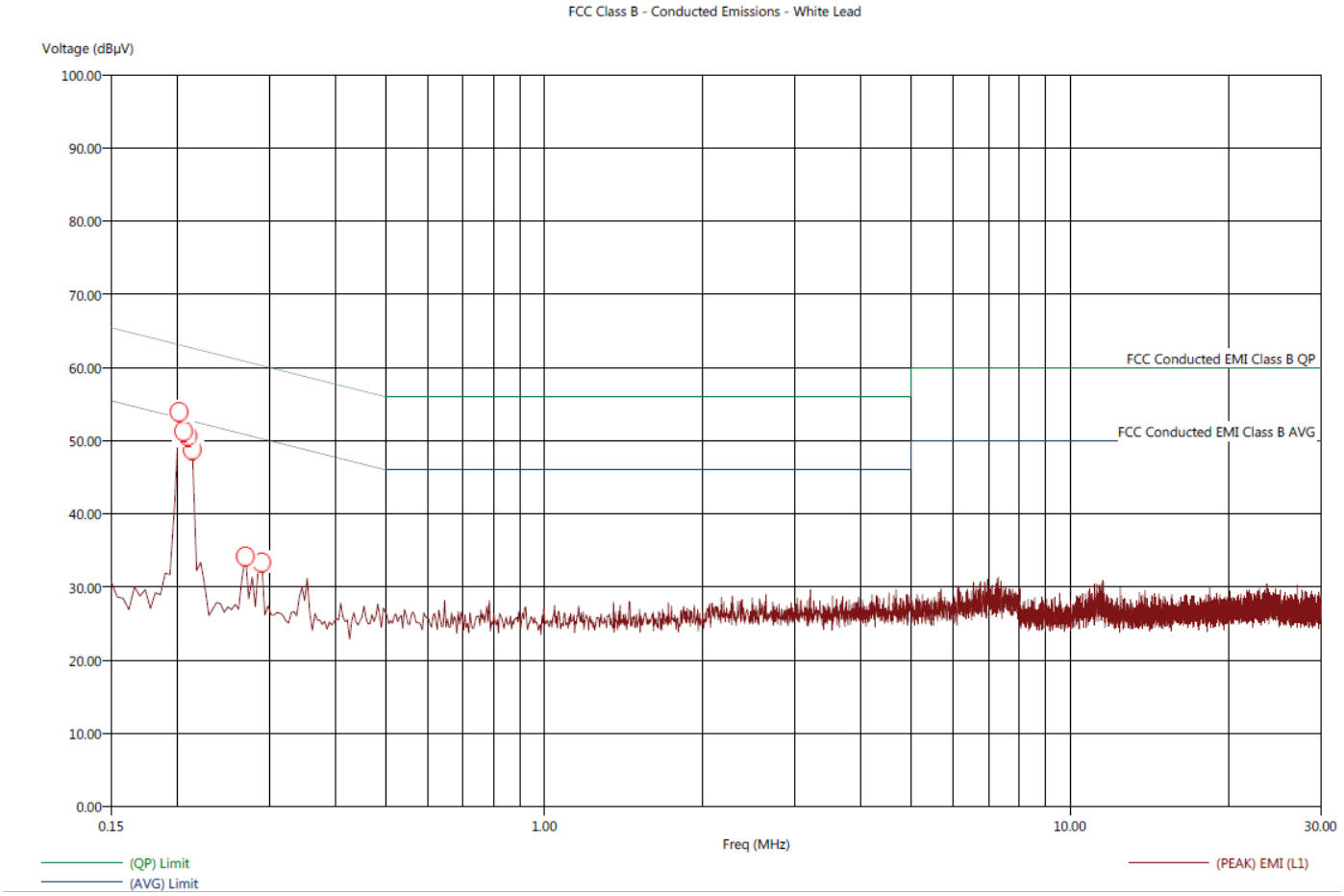
7/30/2019 3:02:12 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.202	53.73	40.74	0.59	-12.40	53.14	0.00	0.29	9.80
0.206	53.58	46.07	0.64	-6.87	52.94	0.00	0.28	9.80
0.210	53.94	45.66	0.95	-7.33	52.99	0.00	0.28	9.80
0.214	52.94	45.51	0.13	-7.31	52.81	0.01	0.27	9.79
11.342	25.07	11.09	-24.93	-38.91	50.00	0.32	0.03	9.90
11.358	24.19	11.13	-25.81	-38.87	50.00	0.32	0.03	9.90

Title: FCC B - Conducted Emissions - White Lead
File: 6 - RS - Pre-Scan - White Lead - External Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 3:05:40 PM
Sequence: Preliminary Scar



Title: FCC B - Conducted Emissions - White Lead
File: 6 - RS - Final Scan - White Lead - External Anenna - Tx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously transmitting at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

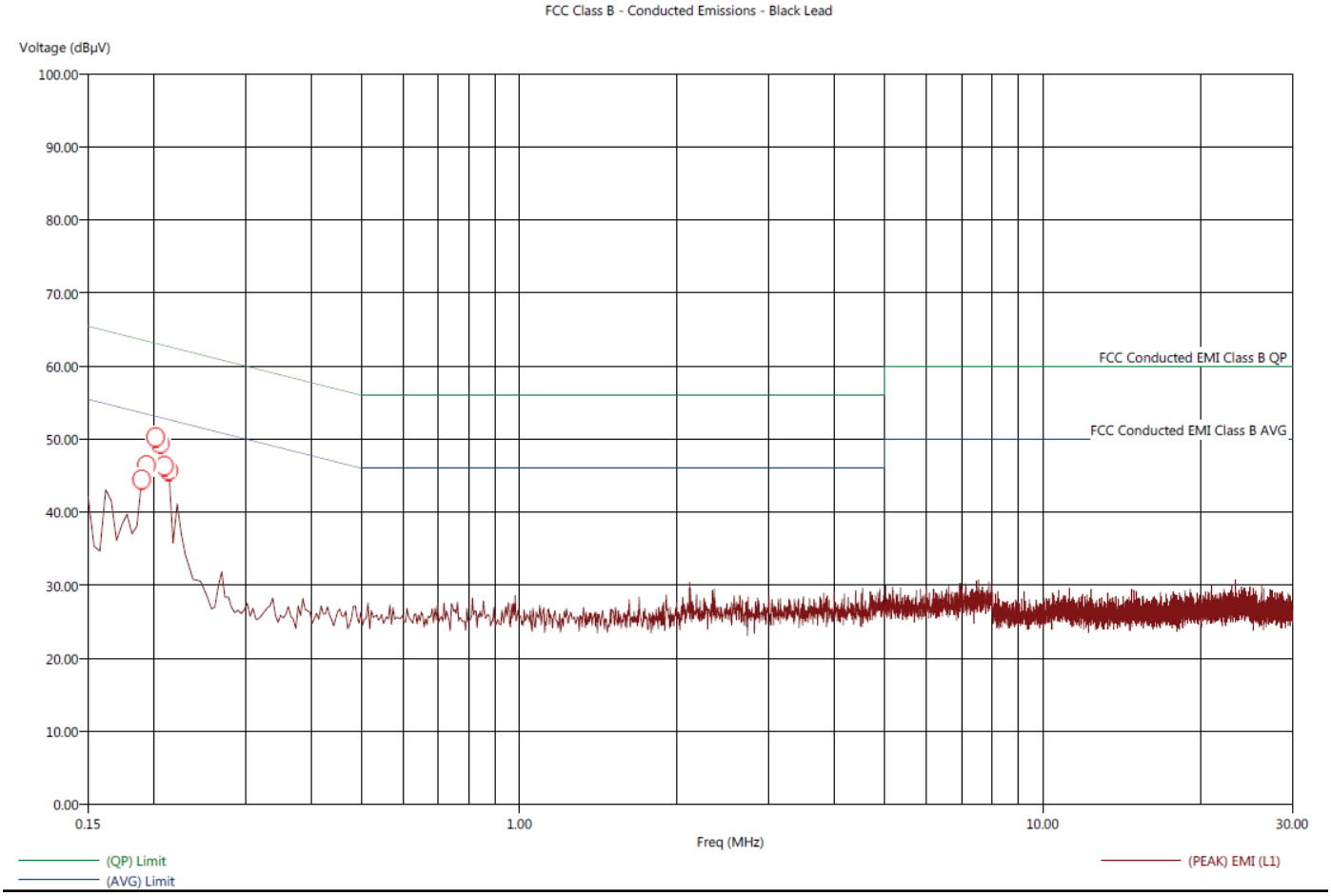
7/30/2019 3:08:46 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.202	53.50	46.13	0.60	-6.76	52.90	0.00	0.25	9.80
0.206	54.17	44.71	1.14	-8.32	53.04	0.00	0.26	9.80
0.210	53.99	45.50	0.99	-7.49	52.99	0.00	0.26	9.80
0.214	53.12	45.80	0.29	-7.03	52.84	0.01	0.25	9.79
0.270	36.93	23.27	-13.71	-27.37	50.63	0.04	0.12	9.76
0.290	35.53	18.29	-14.86	-32.10	50.39	0.04	0.11	9.76

Title: FCC B - Conducted Emissions - Black Lead
File: 7 - RS - Pre-Scan - Black Lead - Exteral Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 3:13:51 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - Black Lead
File: 7 - RS - Final Scan - Black Lead - External Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

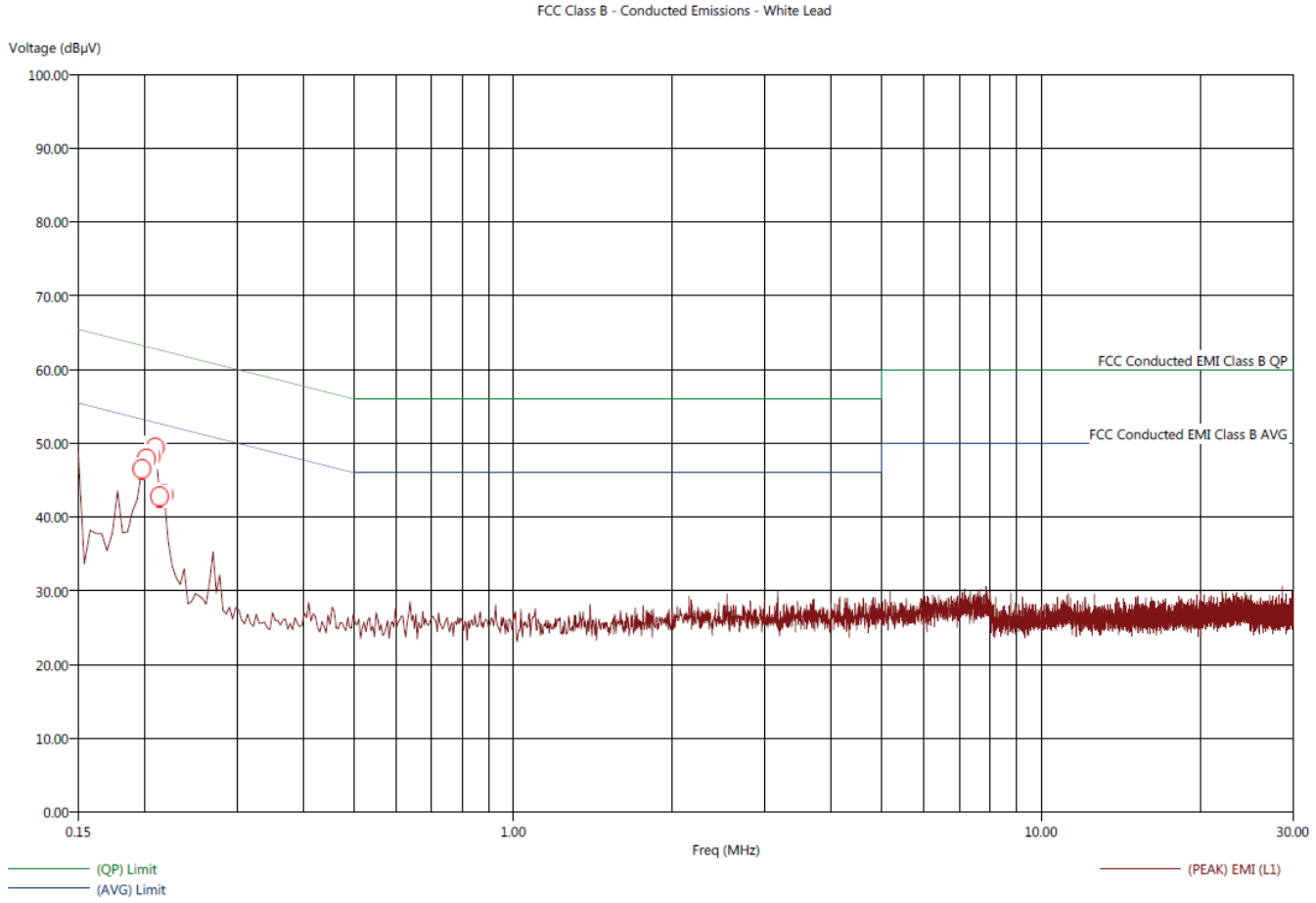
7/30/2019 3:17:19 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.190	47.20	30.84	-6.30	-22.66	53.50	0.00	0.31	9.80
0.194	49.57	34.61	-3.72	-18.69	53.30	0.00	0.30	9.80
0.202	52.67	38.74	-0.27	-14.19	52.94	0.00	0.28	9.80
0.206	51.79	40.85	-1.19	-12.12	52.98	0.00	0.28	9.80
0.210	52.46	38.74	-0.48	-14.20	52.95	0.00	0.28	9.80
0.214	51.39	39.81	-1.48	-13.06	52.86	0.00	0.28	9.80

Title: FCC B - Conducted Emissions - White Lead
File: 8 - RS - Pre-Scan - White Lead - External Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 3:20:46 PM
Sequence: Preliminary Scan



Title: FCC B - Conducted Emissions - White Lead
File: 8 - RS - Final Scan - White Lead - External Anenna - Rx Mode - FCC Class B - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: Lighting Control Gateway
EUT Condition: The EUT is continuously receiving at 906 MHz - Worst Case
Company: Mesh Systems LLC
Model: LCG300
S/N: N/A
External Antenna

7/30/2019 3:23:57 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.198	51.64	35.06	-1.62	-18.20	53.26	0.00	0.27	9.80
0.202	52.99	38.20	-0.12	-14.91	53.11	0.00	0.27	9.80
0.206	52.18	38.03	-0.96	-15.12	53.15	0.00	0.27	9.80
0.210	51.85	38.36	-0.95	-14.43	52.79	0.01	0.25	9.79
0.214	52.35	39.39	-0.50	-13.46	52.85	0.00	0.25	9.80
0.218	51.90	38.10	-0.86	-14.65	52.75	0.01	0.24	9.79