Ossia, Inc.

REVISED EMC TEST REPORT TO 102580-4B

Cota WPT Source*
Model: Venus V2*
(*See Appendix A for Manufacturer Declaration)

Tested to The Following Standards:

FCC Part 18 Subpart C Section 18.305 & 18.307

Report No.: 102580-4C

Date of issue: June 12, 2019

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

Test Certificate # 803.05

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CKC LABORATORIES, INC. Testing the Future

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Ossia, Inc.
1100 112th Ave NE Suite 301
Bellevue WA 98004

Representative: Robert McDonald
Customer Reference Number: 13042

REPORT PREPARED BY:

Terri Rayle
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 102580

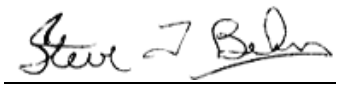
DATE OF EQUIPMENT RECEIPT: December 20, 2017
DATE(S) OF TESTING: December 20, 2017 and April 29-30, 2019

Revision History

Original: Testing of the Cota WPT Source, Model: Venus V2 to FCC Part 18 Subpart C Section 18.305 & 18.307.
Revision A: To update the customer address.
Revision B: To replace radiated emissions datasheets, 9kHz-30MHz and 1-3GHz.
Revision C: To add a statement in the Conditions During Test for Test Configuration notes.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the equipment provided by the client, tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
22116 23rd Drive S.E., Suite A
Canyon Park, Bothell, WA 98021

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.03.12
EMITest Immunity	5.03.10

Site Registration & Accreditation Information

Location	*NIST CB #	FCC	JAPAN
Canyon Park, Bothell, WA	US0081	US1022	A-0148

*CKC's list of NIST designated countries can be found at: https://standards.gov/cabs/designations.html

SUMMARY OF RESULTS

Standard / Specification: FCC Part 18 Subpart C

Test Procedure	Description	Modifications	Results
FCC Part 18.305 (b)	Radiated Emissions	NA	Pass
FCC Part 18.307 (b)	Conducted Emissions	NA	Pass

NA = Not Applicable

ISO/IEC 17025 Decision Rule
The declaration of pass or fail herein is based upon assessment to the specification(s) listed above, including where applicable, assessment of measurement uncertainties. For performance related tests, equipment was monitored for specified criteria identified in that section of testing.

Modifications During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions
The manufacturer declares the EUT has not been modified since the original collection of the data.

Modifications listed above must be incorporated into all production units.

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions
Investigation of worst-case Radiated Emissions Based on historical test data, the 2nd, 3rd, and 4th Harmonics of the fundamental frequency were identified as the worst-case emissions. The worst-case frequencies were maximized with the following boundary conditions established by the manufacturer: -The minimum separation distance between the tile and client is 0.3m -The maximum separation distance between the tile and client is 1.0m -The maximum angle between the tile and client is 60 degrees The following measurements were collected to narrow down the worst-case conditions, where **r** is the separation distance between the tile and client, φ is the azimuth angle, and θ is the altitude angle. r=1.0m, φ=0 degrees, θ=0 degrees r=1.0m, φ=30 degrees, θ=0 degrees r=1.0m, φ=60 degrees, θ=0 degrees r=1.0m, φ=0 degrees, θ=30 degrees r=1.0m, φ=0 degrees, θ=60 degrees Note: r is measured from the center of the front face on each device. The angles are measured from the tile's boresight line to a line connecting the center front face of each device. For the angle variation, the client was rotated to always be pointed at the center of the front face of the tile. After these initial measurements at 1m were collected, the worst-case margin was found to be the boresight condition (φ=0 θ=0). Further investigation was performed by varying the separation in 10cm increments from 0.3 to 1m. After the new maximum was found, the worst-case was investigated in small increments of roughly 1 cm, but the overall worst-case separation distance was identified at 40cm. Once the 40cm worst case separation distance was established, the azimuth and altitude angles were varied in 10 degree increments. The boresight condition was still found to be worst-case. All Radiated Emissions measurements included in the report were taken in the following configuration as worst-case: r=0.4m, φ=0 degrees, φ=0degrees EUT settings from manufacturer: 13dBm, dynamic tuning
The fundamental operating frequency is 2.45GHz.
Test configuration notes: The original testing was performed using power setting of +16dBm, however the equipment was later reduced to power setting of +13dBm. All radiated emissions testing was performed at power setting of +13dBm. The AC conducted emissions testing was performed only at the original power setting of +16dBm since emissions with the higher power setting represents worst case emissions. The manufacturer declares that the maximum power setting is fixed at +13dBm and cannot be altered by the end user.

EQUIPMENT UNDER TEST (EUT)

During testing, numerous configurations may have been utilized. The configurations listed below support compliance to the standard(s) listed in the Summary of Results section.

Configuration 1: Radiated Emissions tested on 4/29/2019 (see Appendix A)

Equipment Tested:

Device	Manufacturer	Model #	S/N
Cota WPT Source	Ossia, Inc.	Venus v1	14

Support Equipment:

Device	Manufacturer	Model #	S/N
Cota WPT Client	Ossia, Inc.	VenusRx	126
Laptop	Apple	MacBook Pro A1398	NA
Ethernet Switch	D-Link	DGS-1100-08	NA
USB 2.0 Extension Cable	Blue Rigger	32 ft (10m)	NA

Configuration 2: Conducted Emissions tested on 12/20/2017 (see Appendix A)

Equipment Tested:

Device	Manufacturer	Model #	S/N
Venus Tile 14	Ossia, Inc.	OL-10212	NA

Support Equipment:

Device	Manufacturer	Model #	S/N
USB Active Extension Cable	Trip Litte	U026-20M	NA
Laptop	Apple	A1398	NA
Venus B4 Client	Ossia, Inc.	OL-10210	39

FCC PART 18

18.305 Radiated Emissions

Test Notes: Radiated disturbances emanating from enclosure.

Test Setup / Conditions / Data

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**100740**	Date:	4/29/2019
Test Type:	**Maximized Emissions**	Time:	18:01:16
Tested By:	Michael Atkinson	Sequence#:	19
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 9kHz-30MHz

Method: FCC/OET MP-5 (February 1986)

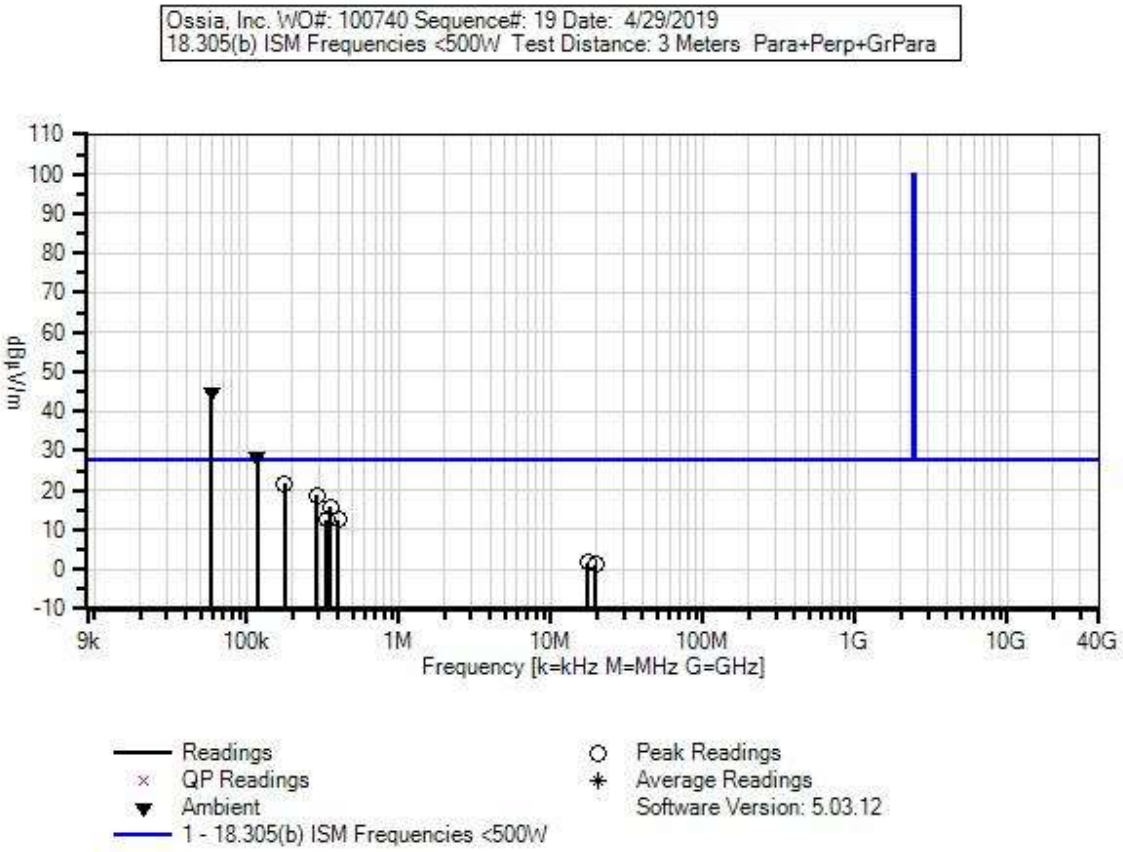
Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

3 orthogonal polarities investigated, worst case reported.

Manufacturer declares the lowest frequency used within the ISM device is 1MHz. All frequencies reported below 1MHz are related to other portions of the equipment governed under separate requirements.


Ossia, Inc. WO#: 100740 Sequence#: 19 Date: 4/29/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters Para+Perp+GrPara
dBµV/m
110
100
90
80
70
60
50
40
30
20
10
0
-10
9k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
QP Readings
Ambient
1 - 18.305(b) ISM Frequencies <500W
Peak Readings
Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T2	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T3	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T4	AN00052	Loop Antenna	6502	5/7/2018	5/7/2020

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	59.161k Ambient	75.3	+0.0	+0.0	+0.0	+9.7	-40.0	45.0	28.0 Not Related to EUT ISM Device	+17.0	Para
2	118.260k Ambient	59.1	+0.0	+0.0	+0.0	+9.5	-40.0	28.6	28.0 Not Related to EUT ISM Device	+0.6	Perp
3	177.179k	52.0	+0.0	+0.0	+0.0	+9.7	-40.0	21.7	28.0	-6.3	Perp
4	292.167k	49.1	+0.0	+0.0	+0.0	+9.6	-40.0	18.7	28.0	-9.3	Perp
5	356.979k	46.1	+0.0	+0.0	+0.0	+9.7	-40.0	15.8	28.0	-12.2	Perp
6	336.072k	43.0	+0.0	+0.0	+0.0	+9.6	-40.0	12.6	28.0	-15.4	Perp
7	402.974k	42.8	+0.0	+0.0	+0.0	+9.7	-40.0	12.5	28.0	-15.5	Perp
8	17.385M	33.1	+0.0	+0.0	+0.2	+8.5	-40.0	1.8	28.0	-26.2	Groun
9	19.705M	33.0	+0.0	+0.0	+0.2	+8.1	-40.0	1.3	28.0	-26.7	Perp
10	7.699M	20.2	+0.0	+0.0	+0.1	+9.4	-40.0	-10.3	28.0	-38.3	Groun

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**102580**	Date:	4/30/2019
Test Type:	**Maximized Emissions**	Time:	09:45:53
Tested By:	Michael Atkinson	Sequence#:	21
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 30-1000MHz

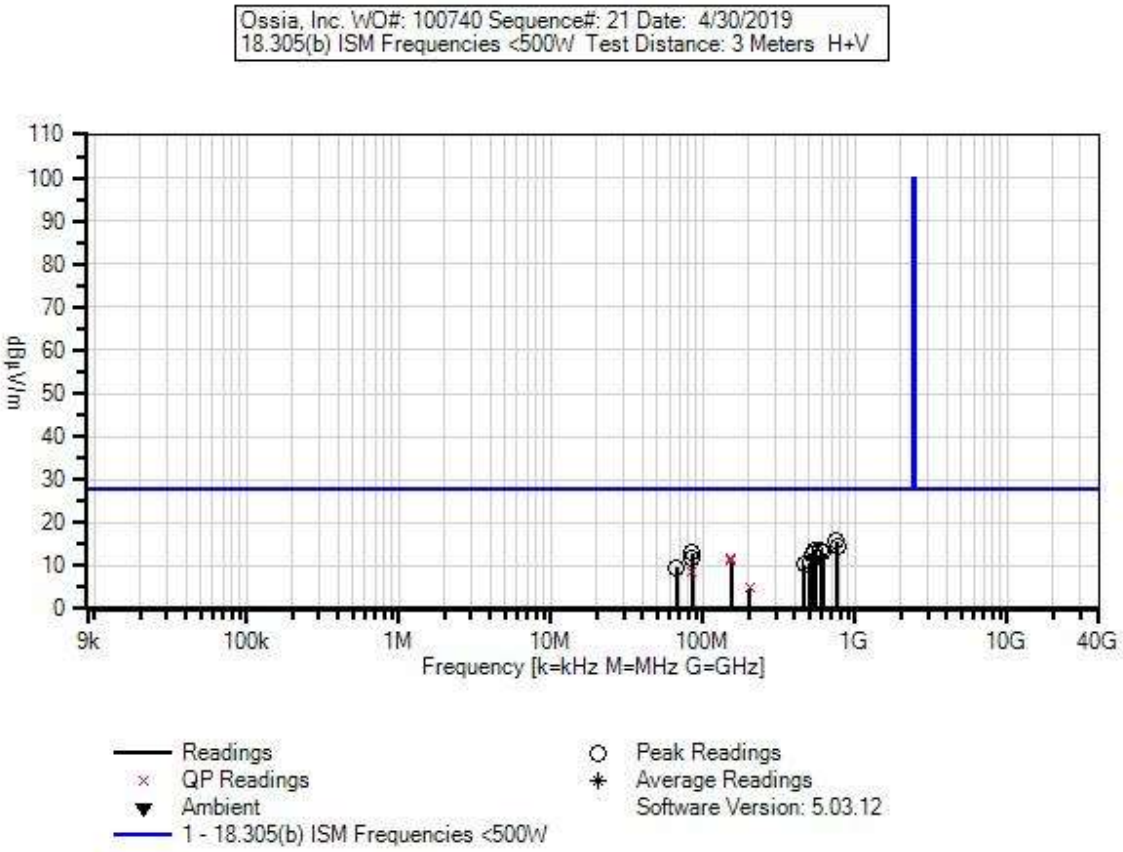
Method: FCC/OET MP-5 (February 1986)

Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

Horizontal and Vertical antenna polarities investigated, worst case reported.


Ossia, Inc. WO#: 100740 Sequence#: 21 Date: 4/30/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters H+V
110
100
90
80
70
60
50
40
30
20
10
0
dBµV/m
9k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
QP Readings
Ambient
1 - 18.305(b) ISM Frequencies <500W
Peak Readings
Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T1	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T2	ANP05305	Cable	ETSI-50T	10/24/2017	10/24/2019
T3	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T4	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T5	AN03628	Biconilog Antenna	3142E	6/7/2017	6/7/2019

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	748.957M	24.0	+0.3 +22.5	+1.4	+1.7	+5.8	-40.0	15.7	28.0	-12.3	Vert
2	762.385M	22.9	+0.3 +22.6	+1.4	+1.7	+5.8	-40.0	14.7	28.0	-13.3	Vert
3	759.466M	22.6	+0.3 +22.6	+1.4	+1.7	+5.8	-40.0	14.4	28.0	-13.6	Vert
4	590.158M	24.5	+0.3 +20.4	+1.3	+1.5	+5.8	-40.0	13.8	28.0	-14.2	Vert
5	546.955M	24.1	+0.3 +20.9	+1.2	+1.4	+5.8	-40.0	13.7	28.0	-14.3	Vert
6	614.094M	22.9	+0.3 +21.2	+1.3	+1.5	+5.8	-40.0	13.0	28.0	-15.0	Vert
7	84.522M	39.5	+0.1 +6.6	+0.5	+0.5	+5.8	-40.0	13.0	28.0	-15.0	Vert
8	528.273M	23.7	+0.3 +20.3	+1.2	+1.4	+5.8	-40.0	12.7	28.0	-15.3	Vert
9	84.300M	38.3	+0.1 +6.6	+0.5	+0.5	+5.8	-40.0	11.8	28.0	-16.2	Horiz
10	153.130M QP	34.4	+0.2 +9.9	+0.6	+0.7	+5.8	-40.0	11.6	28.0	-16.4	Vert
^	153.082M	34.7	+0.2 +9.9	+0.6	+0.7	+5.8	-40.0	11.9	28.0	-16.1	Vert
12	153.127M QP	34.2	+0.2 +9.9	+0.6	+0.7	+5.8	-40.0	11.4	28.0	-16.6	Horiz
^	153.200M	35.0	+0.2 +9.9	+0.6	+0.7	+5.8	-40.0	12.2	28.0	-15.8	Horiz
14	505.504M	23.1	+0.3 +19.0	+1.2	+1.3	+5.8	-40.0	10.7	28.0	-17.3	Vert
15	460.550M	24.2	+0.2 +17.8	+1.1	+1.3	+5.8	-40.0	10.4	28.0	-17.6	Vert
16	66.900M	35.9	+0.1 +7.0	+0.4	+0.4	+5.8	-40.0	9.6	28.0	-18.4	Horiz
17	85.151M QP	35.1	+0.1 +6.6	+0.5	+0.5	+5.8	-40.0	8.6	28.0	-19.4	Vert
18	202.700M QP	27.1	+0.2 +10.2	+0.7	+0.8	+5.8	-40.0	4.8	28.0	-23.2	Horiz
^	202.700M	31.2	+0.2 +10.2	+0.7	+0.8	+5.8	-40.0	8.9	28.0	-19.1	Horiz

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**100740**	Date:	4/30/2019
Test Type:	**Maximized Emissions**	Time:	09:09:00
Tested By:	Michael Atkinson	Sequence#:	20
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 1-3GHz

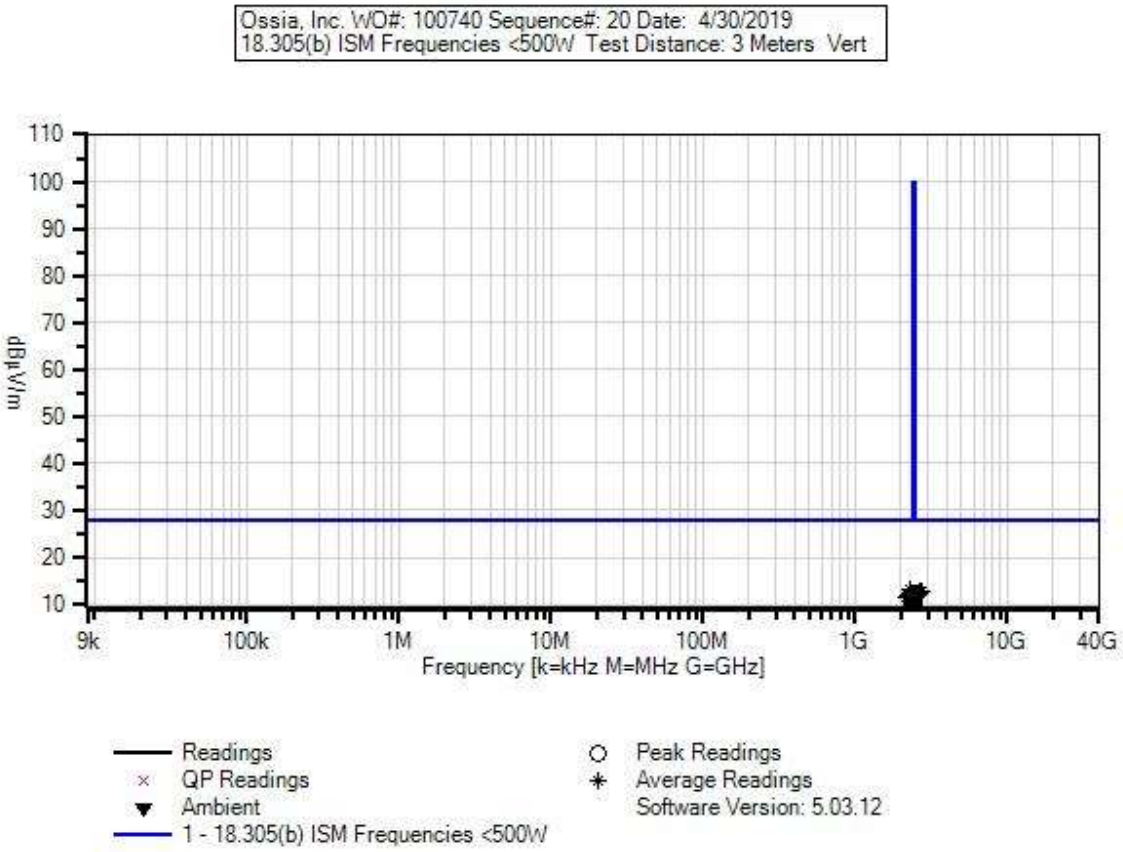
Method: FCC/OET MP-5 (February 1986)

Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

Horizontal and Vertical antenna polarities investigated, worst case reported.


Ossia, Inc. WO#: 100740 Sequence#: 20 Date: 4/30/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters Vert
110
100
90
80
70
60
50
40
30
20
10
dBµV/m
9k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
QP Readings
Ambient
1 - 18.305(b) ISM Frequencies <500W
Peak Readings
Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T2	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T3	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T4	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/21/2017	7/21/2019
T5	AN03417	Band Reject Filter	3TNF-1500/3000-N/N	11/15/2017	11/15/2019

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2322.000M	22.0	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	13.1	28.0	-14.9	Vert
	Ave										
^	2322.000M	39.3	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	30.4	28.0	+2.4	Vert
3	2702.000M	20.9	+0.0 +0.0	+0.5	+2.6	+28.7	-40.0	12.7	28.0	-15.3	Vert
	Ave										
^	2702.000M	32.2	+0.0 +0.0	+0.5	+2.6	+28.7	-40.0	24.0	28.0	-4.0	Vert
5	2654.000M	20.9	+0.0 +0.0	+0.5	+2.6	+28.6	-40.0	12.6	28.0	-15.4	Vert
	Ave										
^	2654.000M	35.9	+0.0 +0.0	+0.5	+2.6	+28.6	-40.0	27.6	28.0	-0.4	Vert
7	2598.000M	20.9	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	12.5	28.0	-15.5	Horiz
	Ave										
^	2598.000M	40.2	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	31.8	28.0	+3.8	Horiz
9	2562.100M	21.0	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	12.5	28.0	-15.5	Horiz
	Ave										
^	2562.100M	41.4	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	32.9	28.0	+4.9	Horiz
11	2576.800M	21.0	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	12.5	28.0	-15.5	Horiz
	Ave										
^	2576.800M	37.2	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	28.7	28.0	+0.7	Horiz
13	2632.000M	20.9	+0.0 +0.0	+0.5	+2.6	+28.5	-40.0	12.5	28.0	-15.5	Horiz
	Ave										
^	2632.000M	35.7	+0.0 +0.0	+0.5	+2.6	+28.5	-40.0	27.3	28.0	-0.7	Horiz
15	2584.200M	20.9	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	12.5	28.0	-15.5	Horiz
	Ave										
^	2584.200M	38.5	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	30.1	28.0	+2.1	Horiz
17	2598.000M	20.9	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	12.5	28.0	-15.5	Vert
	Ave										
^	2598.000M	41.2	+0.0 +0.1	+0.4	+2.7	+28.4	-40.0	32.8	28.0	+4.8	Vert

19	2552.900M Ave	20.9	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	12.4	28.0	-15.6	Horiz
^	2552.900M	42.5	+0.0 +0.1	+0.4	+2.7	+28.3	-40.0	34.0	28.0	+6.0	Horiz
21	2331.200M Ave	21.2	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	12.3	28.0	-15.7	Horiz
22	2542.000M Ave	20.9	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.3	28.0	-15.7	Vert
^	2542.000M	43.6	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	35.0	28.0	+7.0	Vert
24	2331.200M Ave	21.2	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	12.3	28.0	-15.7	Horiz
^	2331.200M	40.4	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	31.5	28.0	+3.5	Horiz
^	2331.200M	40.4	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	31.5	28.0	+3.5	Horiz
27	2501.405M Ave	20.9	+0.0 +0.1	+0.4	+2.7	+28.1	-40.0	12.2	28.0	-15.8	Horiz
^	2501.405M	50.4	+0.0 +0.1	+0.4	+2.7	+28.1	-40.0	41.7	28.0	+13.7	Horiz
29	2517.044M Ave	20.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.2	28.0	-15.8	Horiz
^	2517.044M	50.3	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	41.7	28.0	+13.7	Horiz
31	2512.000M Ave	20.9	+0.0 +0.1	+0.4	+2.7	+28.1	-40.0	12.2	28.0	-15.8	Vert
^	2512.000M	53.0	+0.0 +0.1	+0.4	+2.7	+28.1	-40.0	44.3	28.0	+16.3	Vert
33	2529.003M Ave	20.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.2	28.0	-15.8	Horiz
^	2529.003M	52.0	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	43.4	28.0	+15.4	Horiz
35	2522.564M Ave	20.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.2	28.0	-15.8	Horiz
^	2522.564M	52.2	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	43.6	28.0	+15.6	Horiz
37	2518.884M Ave	20.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.2	28.0	-15.8	Horiz
^	2518.884M	50.6	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	42.0	28.0	+14.0	Horiz
39	2537.300M Ave	20.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	12.2	28.0	-15.8	Horiz
^	2537.300M	46.8	+0.0 +0.1	+0.4	+2.7	+28.2	-40.0	38.2	28.0	+10.2	Horiz
41	2366.000M Ave	20.8	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	11.9	28.0	-16.1	Vert
^	2366.000M	46.9	+0.0 +0.1	+0.4	+2.5	+28.1	-40.0	38.0	28.0	+10.0	Vert
43	2377.200M Ave	20.7	+0.0 +0.1	+0.4	+2.6	+28.1	-40.0	11.9	28.0	-16.1	Horiz
^	2377.200M	46.1	+0.0 +0.1	+0.4	+2.6	+28.1	-40.0	37.3	28.0	+9.3	Horiz

45	2398.375M Ave	20.7	+0.0 +0.1	+0.4	+2.6	+28.1	-40.0	11.9	28.0	-16.1	Horiz
^	2398.375M	51.1	+0.0 +0.1	+0.4	+2.6	+28.1	-40.0	42.3	28.0	+14.3	Horiz
47	2239.200M Ave	20.8	+0.0 +0.1	+0.4	+2.4	+28.1	-40.0	11.8	28.0	-16.2	Horiz
^	2239.200M	35.7	+0.0 +0.1	+0.4	+2.4	+28.1	-40.0	26.7	28.0	-1.3	Horiz
49	2154.600M Ave	20.5	+0.0 +0.1	+0.4	+2.4	+28.2	-40.0	11.6	28.0	-16.4	Horiz
^	2154.600M	32.3	+0.0 +0.1	+0.4	+2.4	+28.2	-40.0	23.4	28.0	-4.6	Horiz
51	2227.500M Ave	20.5	+0.0 +0.1	+0.4	+2.4	+28.2	-40.0	11.6	28.0	-16.4	Horiz
^	2227.500M	38.2	+0.0 +0.1	+0.4	+2.4	+28.2	-40.0	29.3	28.0	+1.3	Horiz
53	2256.000M Ave	20.6	+0.0 +0.1	+0.4	+2.4	+28.1	-40.0	11.6	28.0	-16.4	Vert
^	2256.000M	38.0	+0.0 +0.1	+0.4	+2.4	+28.1	-40.0	29.0	28.0	+1.0	Vert

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**102580**	Date:	4/29/2019
Test Type:	**Maximized Emissions**	Time:	17:34:53
Tested By:	Michael Atkinson	Sequence#:	18
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 3-10GHz

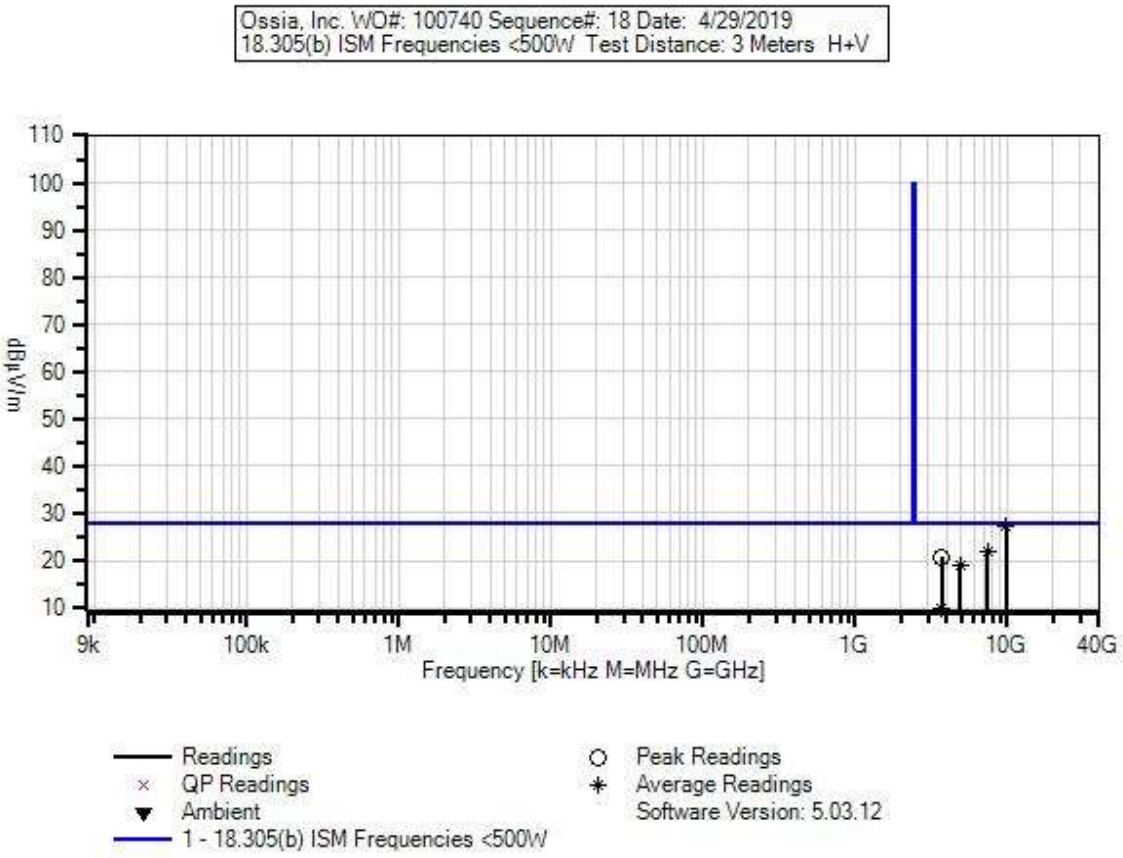
Method: FCC/OET MP-5 (February 1986)

Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

Horizontal and Vertical antenna polarities investigated, worst case reported.


Ossia, Inc. WO#: 100740 Sequence#: 18 Date: 4/29/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters H+V
110
100
90
80
70
60
50
40
30
20
10
dBµV/m
9k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
QP Readings
Ambient
1 - 18.305(b) ISM Frequencies <500W
Peak Readings
Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T2	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T3	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T4	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T5	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/21/2017	7/21/2019

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	9799.990M Ave	22.1	+0.0 +37.6	+0.5	+6.3	+0.7	-40.0	27.2	28.0	-0.8	Horiz
2	7350.000M Ave	18.1	+0.0 +36.6	+1.0	+5.4	+0.6	-40.0	21.7	28.0	-6.3	Vert
3	3674.968M	25.0	+0.0 +30.8	+0.4	+3.8	+0.8	-40.0	20.8	28.0	-7.2	Horiz
4	4900.000M Ave	21.2	+0.0 +32.5	+0.5	+4.2	+0.5	-40.0	18.9	28.0	-9.1	Vert
5	3675.099M Ave	14.1	+0.0 +30.8	+0.4	+3.8	+0.8	-40.0	9.9	28.0	-18.1	Horiz

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**102580**	Date:	4/29/2019
Test Type:	**Maximized Emissions**	Time:	18:37:06
Tested By:	Michael Atkinson	Sequence#:	19
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 10-18GHz

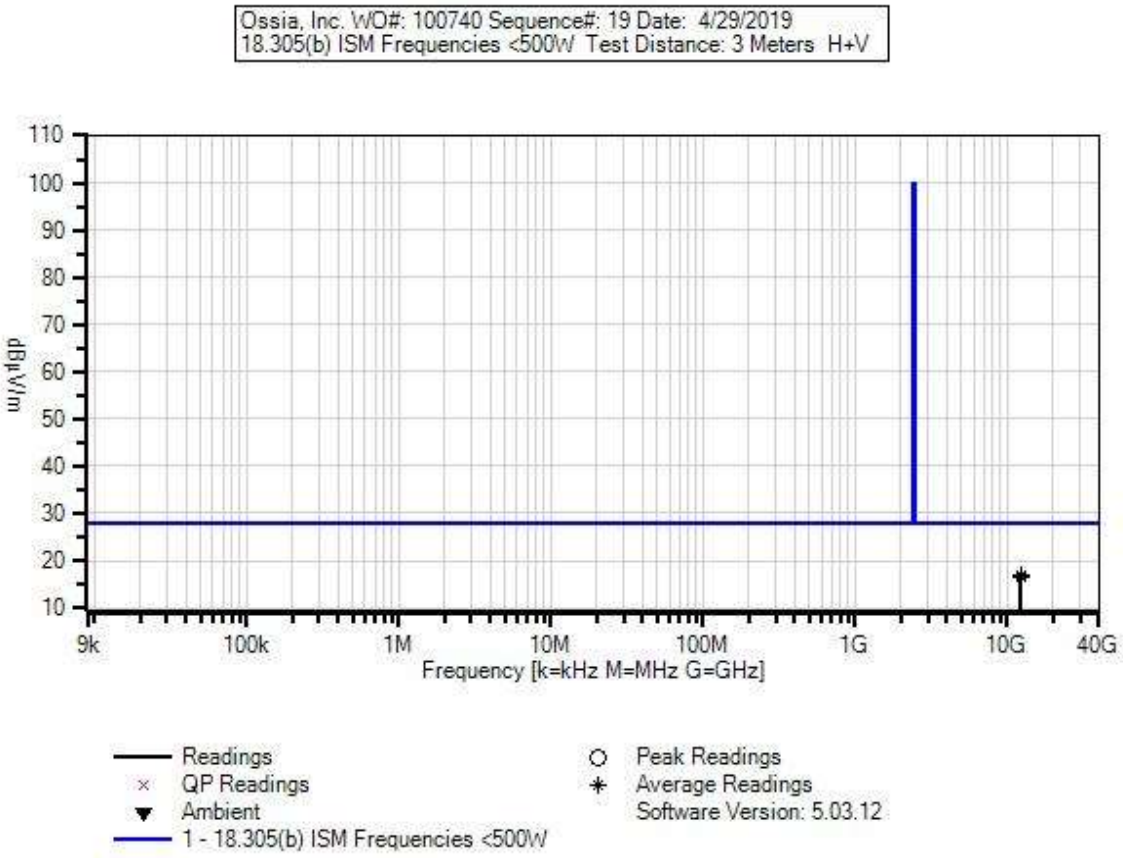
Method: FCC/OET MP-5 (February 1986)

Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

Horizontal and Vertical antenna polarities investigated, worst case reported.


Ossia, Inc. WO#: 100740 Sequence#: 19 Date: 4/29/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters H+V
110
100
90
80
70
60
50
40
30
20
10
dBµV/m
9k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
QP Readings
Ambient
1 - 18.305(b) ISM Frequencies <500W
Peak Readings
Average Readings
Software Version: 5.03.12

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T1	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T2	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T3	AN03116	High Pass Filter	11SH10-00313	1/22/2019	1/22/2021
T4	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	7/21/2017	7/21/2019
T5	AN03540	Preamp	83017A	3/25/2019	3/25/2021
T6	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T7	ANP06503	Cable	32026-29801-29801-36	3/13/2018	3/13/2020

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	12250.097 M Ave	34.0	+1.0 -34.6	+6.9 +6.1	+1.0 +3.1	+39.3	-40.0	16.8	28.0	-11.2	Horiz
2	12249.991 M Ave	33.5	+1.0 -34.6	+6.9 +6.1	+1.0 +3.1	+39.3	-40.0	16.3	28.0	-11.7	Vert
3	14699.587 M Ave	23.1	+0.5 -34.5	+8.3 +6.2	+0.3 +3.7	+40.8	-40.0	8.4	28.0	-19.6	Vert

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.305(b) ISM Frequencies <500W**		
Work Order #:	**102580**	Date:	4/30/2019
Test Type:	**Maximized Emissions**	Time:	10:16:58
Tested By:	Michael Atkinson	Sequence#:	23
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Temperature: 18-22°C
Humidity: 25-45%
Pressure: 102-103.5kPa

Frequency: 18-25GHz

Method: FCC/OET MP-5 (February 1986)

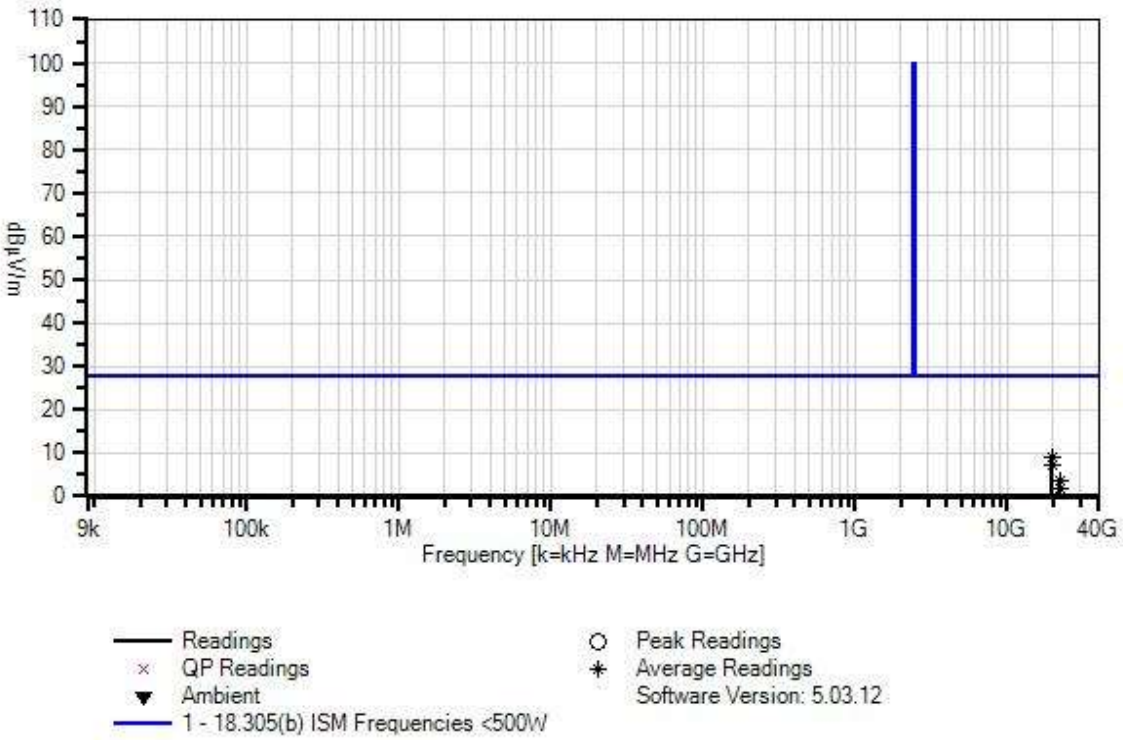
Client is charging, client is 0.4m away from tile, boresight configuration. 13dBm setting. The 0.4m separation distance was determined to be worst case configuration for Radiated Emissions (see report summary of conditions for justification of worst case).

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The Ethernet cable was terminated into an Ethernet switch at time of testing. The EUT was connected to a laptop remotely via a USB extension cable.

Horizontal and Vertical antenna polarities investigated, worst case reported.

Ossia, Inc. WO#: 100740 Sequence#: 23 Date: 4/30/2019
18.305(b) ISM Frequencies <500W Test Distance: 3 Meters H+V



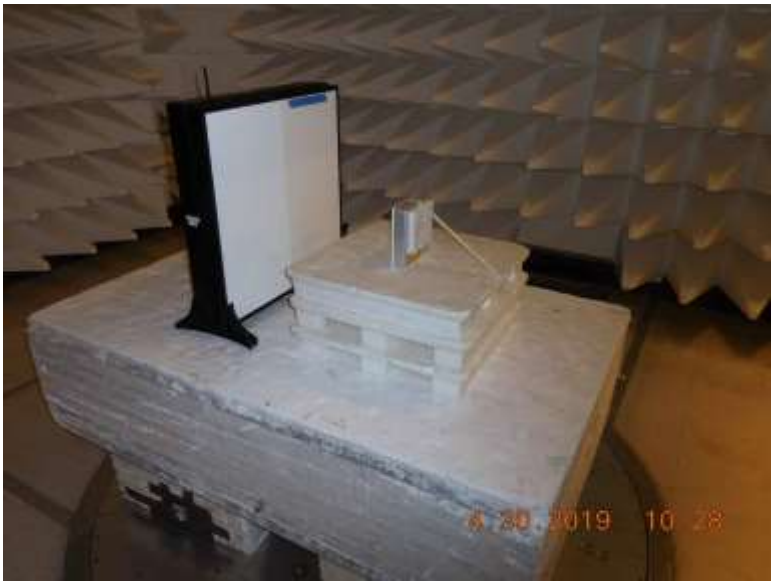
Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02872	Spectrum Analyzer	E4440A	11/3/2017	11/3/2019
T1	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	10/16/2018	10/16/2020
T2	AN02763-69	Waveguide	Multiple	4/23/2018	4/23/2020
T3	AN03122	Cable	32026-2-29801-36	3/13/2018	3/13/2020
T4	ANP06678	Cable	32026-29801-29801-144	3/13/2018	3/13/2020

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	19599.935 M Ave	49.3	-13.0	+1.9	+2.3	+8.5	-40.0	9.0	28.0	-19.0	Vert
2	19599.991 M Ave	47.7	-13.0	+1.9	+2.3	+8.5	-40.0	7.4	28.0	-20.6	Horiz
3	22050.044 M Ave	46.3	-16.1	+1.8	+2.5	+8.9	-40.0	3.4	28.0	-24.6	Horiz
4	22050.043 M Ave	44.6	-16.1	+1.8	+2.5	+8.9	-40.0	1.7	28.0	-26.3	Vert
5	24499.912 M Ave	37.9	-12.5	+1.8	+2.6	+9.7	-40.0	-0.5	28.0	-28.5	Horiz

Test Setup Photo(s)



18.307 AC Conducted Emissions

Test Notes: Conducted Disturbances at Mains Terminals, LISN method.

Test Setup / Conditions / Data

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.307(b) AC Mains - Average**		
Work Order #:	**102580**	Date:	12/20/2017
Test Type:	**Conducted Emissions**	Time:	18:37:32
Tested By:	Michael Atkinson	Sequence#:	28
Software:	EMITest 5.03.12		115VAC 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

Temperature: 23°C
Humidity: 30%
Pressure: 102.5kPa

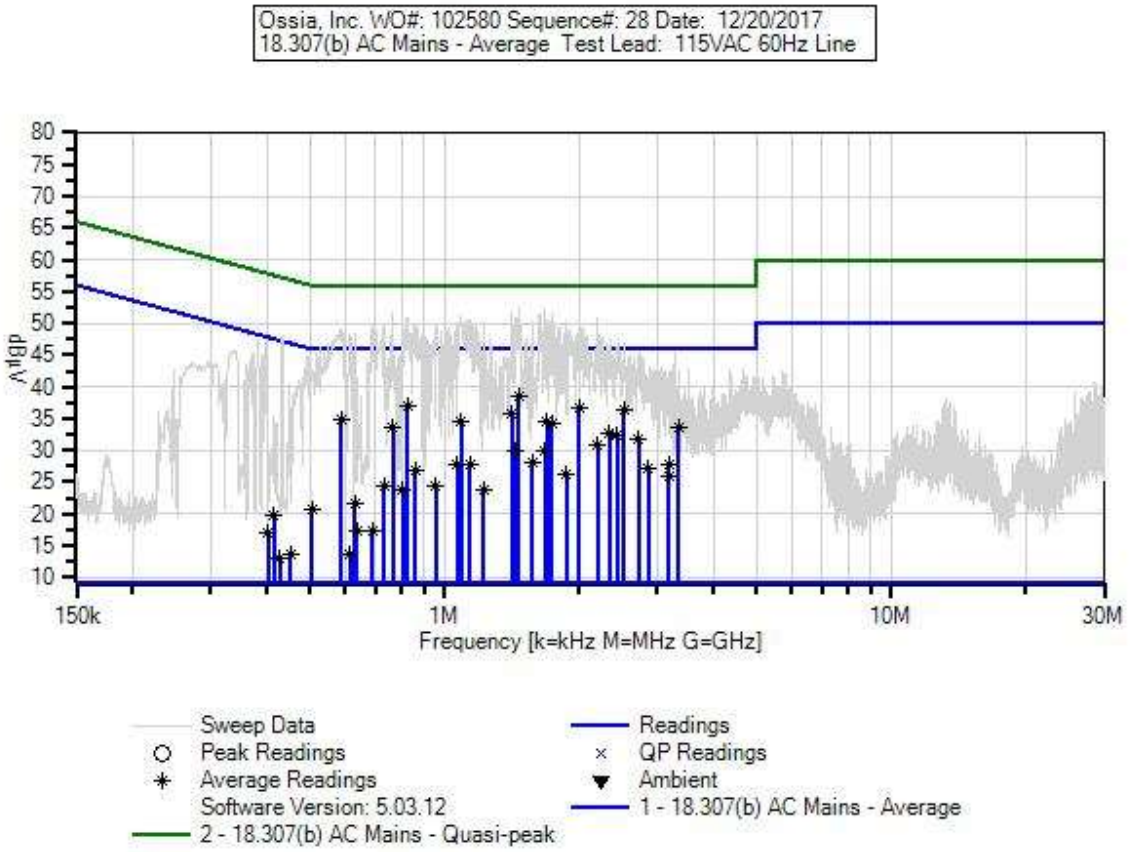
Frequency: 0.15-30MHz

Method: FCC/OET MP-5 (February 1986)

Client 1m away on table. 16dBm, no RSSI.

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The manufacturer declares the setup used for this test is representative of worst case conducted emissions.


Ossia, Inc. WO#: 102580 Sequence#: 28 Date: 12/20/2017
18.307(b) AC Mains - Average Test Lead: 115VAC 60Hz Line
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
dBµV
150k
1M
10M
30M
Frequency [k=kHz M=MHz G=GHz]
Sweep Data
Peak Readings
Average Readings
Software Version: 5.03.12
2 - 18.307(b) AC Mains - Quasi-peak
Readings
QP Readings
Ambient
1 - 18.307(b) AC Mains - Average

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02871	Spectrum Analyzer	E4440A	2/24/2017	2/24/2019
T2	AN02611	High Pass Filter	HE9615-150K-50-720B	2/18/2016	2/18/2018
T3	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T4	ANP06515	Cable	Heliax	1/21/2016	1/21/2018
T5	ANP06219	Attenuator	768-10	4/12/2016	4/12/2018
	AN01311	50uH LISN-Line1 (N)	3816/2	3/7/2016	3/7/2018
T6	AN01311	50uH LISN-Line2 (L)	3816/2	3/7/2016	3/7/2018

Measurement Data: Reading listed by margin. Test Lead: Line

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	1.468M	29.1	+0.0	+0.2	+0.0	+0.0	+0.0	38.4	46.0	-7.6	Line
Ave			+9.1	+0.0							
^	1.468M	43.1	+0.0	+0.2	+0.0	+0.0	+0.0	52.4	46.0	+6.4	Line
			+9.1	+0.0							
3	824.564k	27.6	+0.0	+0.2	+0.0	+0.1	+0.0	37.0	46.0	-9.0	Line
Ave			+9.1	+0.0							
^	824.564k	41.6	+0.0	+0.2	+0.0	+0.1	+0.0	51.0	46.0	+5.0	Line
			+9.1	+0.0							
5	2.000M	27.3	+0.0	+0.1	+0.0	+0.1	+0.0	36.7	46.0	-9.3	Line
Ave			+9.1	+0.1							
^	2.000M	40.7	+0.0	+0.1	+0.0	+0.1	+0.0	50.1	46.0	+4.1	Line
			+9.1	+0.1							
7	2.526M	26.9	+0.0	+0.1	+0.0	+0.1	+0.0	36.3	46.0	-9.7	Line
Ave			+9.1	+0.1							
^	2.526M	37.4	+0.0	+0.1	+0.0	+0.1	+0.0	46.8	46.0	+0.8	Line
			+9.1	+0.1							
9	1.413M	26.5	+0.0	+0.2	+0.0	+0.0	+0.0	35.8	46.0	-10.2	Line
Ave			+9.1	+0.0							
^	1.413M	42.5	+0.0	+0.2	+0.0	+0.0	+0.0	51.8	46.0	+5.8	Line
			+9.1	+0.0							
11	588.500k	25.6	+0.0	+0.2	+0.0	+0.0	+0.0	34.9	46.0	-11.1	Line
Ave			+9.1	+0.0							
^	588.500k	40.0	+0.0	+0.2	+0.0	+0.0	+0.0	49.3	46.0	+3.3	Line
			+9.1	+0.0							
13	1.699M	25.1	+0.0	+0.2	+0.0	+0.1	+0.0	34.6	46.0	-11.4	Line
Ave			+9.1	+0.1							
^	1.699M	41.3	+0.0	+0.2	+0.0	+0.1	+0.0	50.8	46.0	+4.8	Line
			+9.1	+0.1							

15	1.091M	25.3	+0.0	+0.2	+0.0	+0.0	+0.0	34.6	46.0	-11.4	Line
	Ave		+9.1	+0.0							
^	1.091M	41.9	+0.0	+0.2	+0.0	+0.0	+0.0	51.2	46.0	+5.2	Line
			+9.1	+0.0							
17	1.737M	24.8	+0.0	+0.2	+0.0	+0.1	+0.0	34.3	46.0	-11.7	Line
	Ave		+9.1	+0.1							
^	1.737M	41.9	+0.0	+0.2	+0.0	+0.1	+0.0	51.4	46.0	+5.4	Line
			+9.1	+0.1							
19	3.349M	24.1	+0.0	+0.1	+0.0	+0.1	+0.0	33.5	46.0	-12.5	Line
	Ave		+9.1	+0.1							
^	3.349M	36.2	+0.0	+0.1	+0.0	+0.1	+0.0	45.6	46.0	-0.4	Line
			+9.1	+0.1							
21	766.523k	24.1	+0.0	+0.2	+0.0	+0.1	+0.0	33.5	46.0	-12.5	Line
	Ave		+9.1	+0.0							
^	766.523k	42.4	+0.0	+0.2	+0.0	+0.1	+0.0	51.8	46.0	+5.8	Line
			+9.1	+0.0							
23	2.340M	23.4	+0.0	+0.1	+0.0	+0.1	+0.0	32.8	46.0	-13.2	Line
	Ave		+9.1	+0.1							
^	2.340M	38.4	+0.0	+0.1	+0.0	+0.1	+0.0	47.8	46.0	+1.8	Line
			+9.1	+0.1							
25	2.431M	23.0	+0.0	+0.1	+0.0	+0.1	+0.0	32.4	46.0	-13.6	Line
	Ave		+9.1	+0.1							
^	2.431M	39.0	+0.0	+0.1	+0.0	+0.1	+0.0	48.4	46.0	+2.4	Line
			+9.1	+0.1							
27	2.724M	22.4	+0.0	+0.1	+0.0	+0.1	+0.0	31.8	46.0	-14.2	Line
	Ave		+9.1	+0.1							
^	2.724M	37.7	+0.0	+0.1	+0.0	+0.1	+0.0	47.1	46.0	+1.1	Line
			+9.1	+0.1							
29	2.203M	21.5	+0.0	+0.1	+0.0	+0.1	+0.0	30.9	46.0	-15.1	Line
	Ave		+9.1	+0.1							
^	2.203M	41.5	+0.0	+0.1	+0.0	+0.1	+0.0	50.9	46.0	+4.9	Line
			+9.1	+0.1							
31	1.681M	20.5	+0.0	+0.2	+0.0	+0.1	+0.0	30.0	46.0	-16.0	Line
	Ave		+9.1	+0.1							
^	1.681M	42.9	+0.0	+0.2	+0.0	+0.1	+0.0	52.4	46.0	+6.4	Line
			+9.1	+0.1							
33	1.447M	20.6	+0.0	+0.2	+0.0	+0.0	+0.0	29.9	46.0	-16.1	Line
	Ave		+9.1	+0.0							
^	1.447M	41.6	+0.0	+0.2	+0.0	+0.0	+0.0	50.9	46.0	+4.9	Line
			+9.1	+0.0							
35	1.574M	18.9	+0.0	+0.2	+0.0	+0.0	+0.0	28.2	46.0	-17.8	Line
	Ave		+9.1	+0.0							
^	1.574M	40.8	+0.0	+0.2	+0.0	+0.0	+0.0	50.1	46.0	+4.1	Line
			+9.1	+0.0							
37	3.176M	18.3	+0.0	+0.1	+0.0	+0.1	+0.0	27.7	46.0	-18.3	Line
	Ave		+9.1	+0.1							

38	1.138M	18.4	+0.0	+0.2	+0.0	+0.0	+0.0	27.7	46.0	-18.3	Line
	Ave		+9.1	+0.0							
^	1.138M	41.4	+0.0	+0.2	+0.0	+0.0	+0.0	50.7	46.0	+4.7	Line
			+9.1	+0.0							
40	1.070M	18.3	+0.0	+0.2	+0.0	+0.0	+0.0	27.6	46.0	-18.4	Line
	Ave		+9.1	+0.0							
^	1.070M	40.7	+0.0	+0.2	+0.0	+0.0	+0.0	50.0	46.0	+4.0	Line
			+9.1	+0.0							
42	2.863M	17.8	+0.0	+0.1	+0.0	+0.1	+0.0	27.2	46.0	-18.8	Line
	Ave		+9.1	+0.1							
^	2.863M	34.8	+0.0	+0.1	+0.0	+0.1	+0.0	44.2	46.0	-1.8	Line
			+9.1	+0.1							
44	858.978k	17.5	+0.0	+0.2	+0.0	+0.1	+0.0	26.9	46.0	-19.1	Line
	Ave		+9.1	+0.0							
^	858.978k	40.3	+0.0	+0.2	+0.0	+0.1	+0.0	49.7	46.0	+3.7	Line
			+9.1	+0.0							
46	1.871M	16.7	+0.0	+0.2	+0.0	+0.1	+0.0	26.2	46.0	-19.8	Line
	Ave		+9.1	+0.1							
^	1.871M	40.8	+0.0	+0.2	+0.0	+0.1	+0.0	50.3	46.0	+4.3	Line
			+9.1	+0.1							
48	3.178M	16.4	+0.0	+0.1	+0.0	+0.1	+0.0	25.8	46.0	-20.2	Line
	Ave		+9.1	+0.1							
^	3.176M	34.5	+0.0	+0.1	+0.0	+0.1	+0.0	43.9	46.0	-2.1	Line
			+9.1	+0.1							
^	3.178M	33.8	+0.0	+0.1	+0.0	+0.1	+0.0	43.2	46.0	-2.8	Line
			+9.1	+0.1							
51	958.111k	15.0	+0.0	+0.2	+0.0	+0.1	+0.0	24.4	46.0	-21.6	Line
	Ave		+9.1	+0.0							
^	958.110k	40.4	+0.0	+0.2	+0.0	+0.1	+0.0	49.8	46.0	+3.8	Line
			+9.1	+0.0							
53	734.285k	14.9	+0.0	+0.2	+0.0	+0.1	+0.0	24.3	46.0	-21.7	Line
	Ave		+9.1	+0.0							
^	734.284k	40.5	+0.0	+0.2	+0.0	+0.1	+0.0	49.9	46.0	+3.9	Line
			+9.1	+0.0							
55	806.073k	14.3	+0.0	+0.2	+0.0	+0.1	+0.0	23.7	46.0	-22.3	Line
	Ave		+9.1	+0.0							
^	806.073k	41.7	+0.0	+0.2	+0.0	+0.1	+0.0	51.1	46.0	+5.1	Line
			+9.1	+0.0							
57	1.226M	14.3	+0.0	+0.2	+0.0	+0.0	+0.0	23.6	46.0	-22.4	Line
	Ave		+9.1	+0.0							
^	1.226M	41.0	+0.0	+0.2	+0.0	+0.0	+0.0	50.3	46.0	+4.3	Line
			+9.1	+0.0							
59	631.000k	12.4	+0.0	+0.2	+0.0	+0.0	+0.0	21.7	46.0	-24.3	Line
	Ave		+9.1	+0.0							
60	504.800k	11.3	+0.0	+0.2	+0.0	+0.0	+0.0	20.6	46.0	-25.4	Line
	Ave		+9.1	+0.0							
^	504.800k	36.6	+0.0	+0.2	+0.0	+0.0	+0.0	45.9	46.0	-0.1	Line
			+9.1	+0.0							
62	414.800k	10.6	+0.0	+0.2	+0.0	+0.0	+0.0	19.9	47.6	-27.7	Line
	Ave		+9.1	+0.0							
^	414.800k	38.6	+0.0	+0.2	+0.0	+0.0	+0.0	47.9	47.6	+0.3	Line
			+9.1	+0.0							

64	635.400k	8.1	+0.0	+0.2	+0.0	+0.0	+0.0	17.4	46.0	-28.6	Line
	Ave		+9.1	+0.0							
^	635.400k	39.9	+0.0	+0.2	+0.0	+0.0	+0.0	49.2	46.0	+3.2	Line
			+9.1	+0.0							
^	631.000k	39.3	+0.0	+0.2	+0.0	+0.0	+0.0	48.6	46.0	+2.6	Line
			+9.1	+0.0							
67	690.700k	7.9	+0.0	+0.2	+0.0	+0.1	+0.0	17.3	46.0	-28.7	Line
	Ave		+9.1	+0.0							
^	690.700k	40.0	+0.0	+0.2	+0.0	+0.1	+0.0	49.4	46.0	+3.4	Line
			+9.1	+0.0							
69	403.200k	7.7	+0.0	+0.1	+0.0	+0.0	+0.0	16.9	47.8	-30.9	Line
	Ave		+9.1	+0.0							
^	403.200k	38.6	+0.0	+0.1	+0.0	+0.0	+0.0	47.8	47.8	+0.0	Line
			+9.1	+0.0							
71	613.000k	4.3	+0.0	+0.2	+0.0	+0.0	+0.0	13.6	46.0	-32.4	Line
	Ave		+9.1	+0.0							
^	613.000k	39.5	+0.0	+0.2	+0.0	+0.0	+0.0	48.8	46.0	+2.8	Line
			+9.1	+0.0							
73	452.700k	4.2	+0.0	+0.2	+0.0	+0.0	+0.0	13.5	46.8	-33.3	Line
	Ave		+9.1	+0.0							
^	452.700k	38.8	+0.0	+0.2	+0.0	+0.0	+0.0	48.1	46.8	+1.3	Line
			+9.1	+0.0							
75	427.600k	3.6	+0.0	+0.2	+0.0	+0.0	+0.0	12.9	47.3	-34.4	Line
	Ave		+9.1	+0.0							
^	427.600k	37.5	+0.0	+0.2	+0.0	+0.0	+0.0	46.8	47.3	-0.5	Line
			+9.1	+0.0							

Test Location:	CKC Laboratories • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • 1-800-500-4EMC (4362)		
Customer:	**Ossia, Inc.**		
Specification:	**18.307(b) AC Mains - Average**		
Work Order #:	**102580**	Date:	12/20/2017
Test Type:	**Conducted Emissions**	Time:	18:20:28
Tested By:	Michael Atkinson	Sequence#:	27
Software:	EMITest 5.03.12		115VAC 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

Temperature: 23°C
Humidity: 30%
Pressure: 102.5kPa

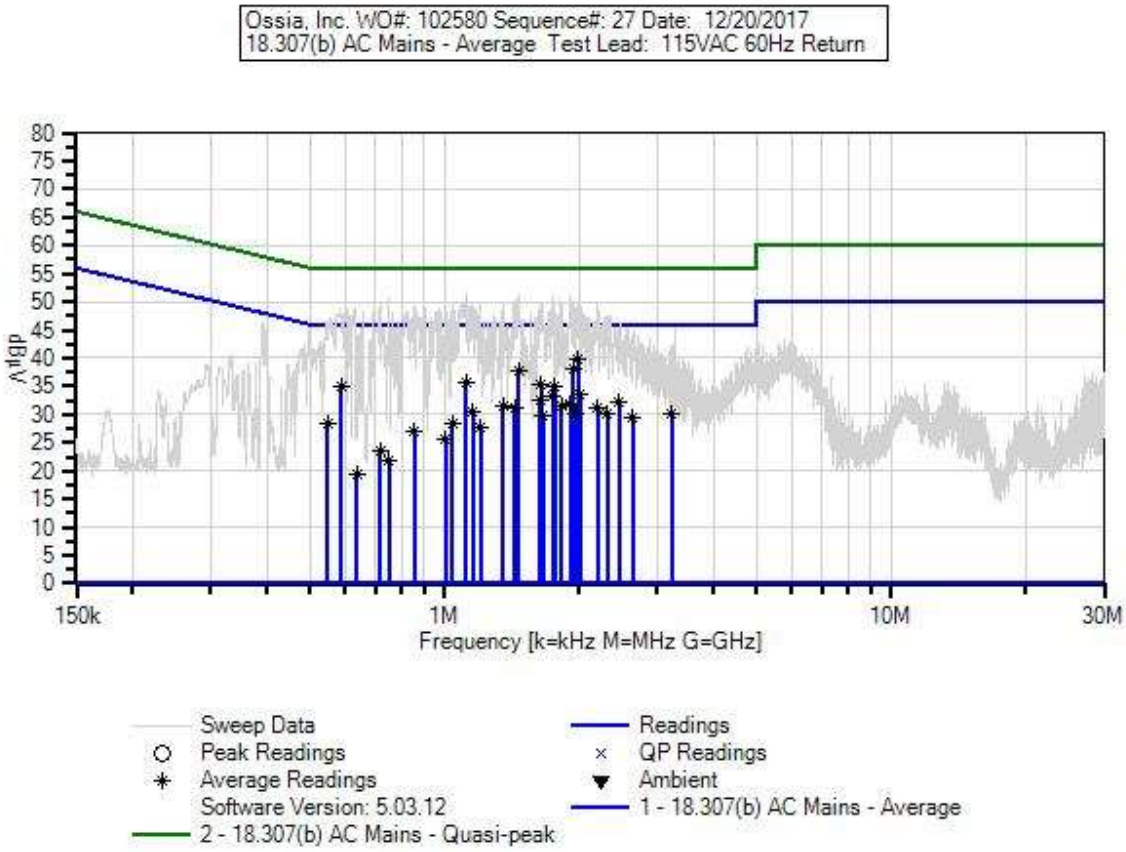
Frequency: 0.15-30MHz

Method: FCC/OET MP-5 (February 1986)

Client 1m away on table. 16dBm, no RSSI.

Ferrite (Fair-Rite Brand) PN 0475164181 installed on power cord by the manufacturer prior to testing.
The manufacturer declares the power cord is permanently installed and that the ferrite bead will be installed at the time of manufacturing.

The manufacturer declares the setup used for this test is representative of worst case conducted emissions.


Ossia, Inc. WO#: 102580 Sequence#: 27 Date: 12/20/2017
18.307(b) AC Mains - Average Test Lead: 115VAC 60Hz Return
dBµV
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
150k
1M
10M
30M
Frequency [k=kHz M=MHz G=GHz]
Sweep Data
Peak Readings
Average Readings
Software Version: 5.03.12
2 - 18.307(b) AC Mains - Quasi-peak
Readings
QP Readings
Ambient
1 - 18.307(b) AC Mains - Average

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02871	Spectrum Analyzer	E4440A	2/24/2017	2/24/2019
T1	AN02611	High Pass Filter	HE9615-150K-50-720B	2/18/2016	2/18/2018
T2	ANP06540	Cable	Heliax	10/30/2017	10/30/2019
T3	ANP06515	Cable	Heliax	1/21/2016	1/21/2018
T4	ANP06219	Attenuator	768-10	4/12/2016	4/12/2018
T5	AN01311	50uH LISN-Line1 (N)	3816/2	3/7/2016	3/7/2018
	AN01311	50uH LISN-Line2 (L)	3816/2	3/7/2016	3/7/2018

Measurement Data: Reading listed by margin. Test Lead: Return

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1 Ave	1.996M	30.6	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	39.9	46.0	-6.1	Retur
^	1.996M	40.7	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	50.0	46.0	+4.0	Retur
3 Ave	1.938M	28.6	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	38.0	46.0	-8.0	Retur
^	1.938M	40.5	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.9	46.0	+3.9	Retur
5 Ave	1.469M	28.5	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	37.8	46.0	-8.2	Retur
^	1.469M	41.9	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	51.2	46.0	+5.2	Retur
7 Ave	1.117M	26.5	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	35.8	46.0	-10.2	Retur
^	1.117M	42.4	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	51.7	46.0	+5.7	Retur
9 Ave	1.646M	25.8	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	35.2	46.0	-10.8	Retur
10 Ave	1.765M	25.8	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	35.1	46.0	-10.9	Retur
^	1.765M	40.5	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	49.8	46.0	+3.8	Retur
12 Ave	586.760k	25.6	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	34.9	46.0	-11.1	Retur
13 Ave	585.960k	25.6	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	34.9	46.0	-11.1	Retur
^	585.960k	39.8	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	49.1	46.0	+3.1	Retur
^	586.760k	39.7	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	49.0	46.0	+3.0	Retur
16 Ave	2.014M	24.2	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	33.5	46.0	-12.5	Retur
^	2.014M	41.9	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	51.2	46.0	+5.2	Retur

18 Ave	1.744M	23.7	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	33.1	46.0	-12.9	Retur
^	1.744M	41.4	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	50.8	46.0	+4.8	Retur
20 Ave	1.638M	23.3	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	32.7	46.0	-13.3	Retur
^	1.646M	40.3	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.7	46.0	+3.7	Retur
^	1.638M	40.3	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.7	46.0	+3.7	Retur
23 Ave	2.455M	22.8	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	32.1	46.0	-13.9	Retur
^	2.455M	37.7	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	47.0	46.0	+1.0	Retur
25 Ave	1.912M	22.3	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	31.7	46.0	-14.3	Retur
^	1.912M	41.5	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	50.9	46.0	+4.9	Retur
27 Ave	1.828M	22.2	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	31.5	46.0	-14.5	Retur
^	1.828M	40.4	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	49.7	46.0	+3.7	Retur
29 Ave	1.355M	22.2	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	31.5	46.0	-14.5	Retur
^	1.355M	40.6	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	49.9	46.0	+3.9	Retur
31 Ave	1.434M	22.0	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	31.3	46.0	-14.7	Retur
^	1.434M	40.7	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	50.0	46.0	+4.0	Retur
33 Ave	2.201M	21.9	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	31.2	46.0	-14.8	Retur
^	2.201M	40.8	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	50.1	46.0	+4.1	Retur
35 Ave	1.158M	21.3	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	30.6	46.0	-15.4	Retur
^	1.158M	40.8	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	50.1	46.0	+4.1	Retur
37 Ave	2.322M	20.9	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	30.2	46.0	-15.8	Retur
^	2.322M	40.2	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	49.5	46.0	+3.5	Retur
39 Ave	1.960M	20.7	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	30.0	46.0	-16.0	Retur
^	1.960M	39.7	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	49.0	46.0	+3.0	Retur

41 Ave	3.226M	20.7	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	30.0	46.0	-16.0	Retur
^	3.226M	36.2	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	45.5	46.0	-0.5	Retur
43 Ave	1.662M	20.5	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	29.9	46.0	-16.1	Retur
^	1.662M	40.3	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.7	46.0	+3.7	Retur
45 Ave	2.643M	20.2	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	29.5	46.0	-16.5	Retur
^	2.643M	36.1	+0.1 +0.0	+0.0	+0.1	+9.1	+0.0	45.4	46.0	-0.6	Retur
47 Ave	1.041M	19.2	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	28.5	46.0	-17.5	Retur
^	1.041M	40.2	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	49.5	46.0	+3.5	Retur
49 Ave	548.400k	19.1	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	28.4	46.0	-17.6	Retur
^	548.400k	37.4	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	46.7	46.0	+0.7	Retur
51 Ave	1.204M	18.6	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	27.9	46.0	-18.1	Retur
^	1.204M	40.5	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	49.8	46.0	+3.8	Retur
53 Ave	855.896k	17.6	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	27.0	46.0	-19.0	Retur
^	855.896k	39.9	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.3	46.0	+3.3	Retur
55 Ave	1.005M	16.1	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	25.5	46.0	-20.5	Retur
^	1.005M	39.8	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.2	46.0	+3.2	Retur
57 Ave	717.351k	14.0	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	23.4	46.0	-22.6	Retur
^	717.351k	40.4	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	49.8	46.0	+3.8	Retur
59 Ave	751.627k	12.4	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	21.8	46.0	-24.2	Retur
^	751.627k	41.2	+0.2 +0.0	+0.0	+0.1	+9.1	+0.0	50.6	46.0	+4.6	Retur
61 Ave	636.060k	10.0	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	19.3	46.0	-26.7	Retur
^	636.060k	39.3	+0.2 +0.0	+0.0	+0.0	+9.1	+0.0	48.6	46.0	+2.6	Retur

Test Setup Photo(s)

Appendix A: Manufacturer Declaration

At time of testing for the AC Conducted Emissions, the EUT was identified as:
Device: Venus Tile 14.
Model: OL-10212

At time of testing for the Radiated Emissions, the EUT was identified as:
Device: Cota WPT Source
Model: Venus v1

The manufacturer has chosen to use the following model name in its place.
The manufacturer declares that any differences between the names does not affect their EMC characteristics and therefore meets the level of testing equivalent to the tested model name:
Device: Cota WPT Source
Model: Venus V2

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Uncertainties reported are worst case for all CKC Laboratories' sites and represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit. Individual measurements were compared with the displayed limit value in the margin column. The margin was calculated based on subtracting the limit value from the corrected measurement value; a positive margin represents a measurement exceeding the limit, while a negative margin represents a measurement less than the limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB/m)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or caret (“^”) was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point, the measuring device is set into the linear mode and the scan time is reduced.