Certification Test Report

FCC ID: 2ADCB-XPMOD
IC: 6715C-XPMOD

FCC Rule Part: 15.247
ISED Canada's Radio Standards Specification: RSS-247

Report Number: BO72130458.100

Applicant: Acuity Brands Lighting, Inc.

Model(s): XPMOD

Test Begin Date: **August 17, 2017**
Test End Date: **September 23, 2017**

Report Issue Date: October 23, 2017

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, ANSI, or any agency of the Federal Government.

Prepared by:

Thierry Jean-Charles
Team Lead
TÜV SÜD America, Inc.

Reviewed by:

Ryan McGann
Senior Engineer
TÜV SÜD America, Inc.

This report contains 33 pages

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1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations Section 15.247 and Innovation Science and Economic Development Canada's Radio Standards Specification RSS-247 for the tests documented herein.

1.2 Applicant Information

Acuity Brands Lighting, Inc.
One Lithonia Way
Conyers, GA 30012

1.3 Product Description

The Acuity Brands Lighting, Inc. XPoint Wireless RF Module is a device designed to solder directly to another PCB using castellated edges. The product is intended to allow a variety of Acuity Brands devices to communicate in a wireless ZigBee network. This can either be done by using an external host processor, or by using the processor on the module.

Technical Details

Mode of Operation:	IEEE 802.15.4
Frequency Range:	2405 MHz - 2480 MHz
Number of Channels:	16
Channel Separation:	5 MHz
Modulations:	O-QPSK
Antenna Type/Gain:	Chip Antenna, 3 dBi
Input Power:	3.3 VDC

Model Number: XPMOD

Test Sample Serial Number(s): N/A

Test Sample Condition: The EUT was in good condition with no physical damages

1.4 Test Methodology and Considerations

The EUT was evaluated for radiated, power line and RF conducted emissions.

The RF conducted measurements were performed on a test sample configured with an RF connector at the antenna port to allow direct coupling to the RF test equipment.

The evaluation for radiated emissions were performed for the EUT set in thee orthogonal orientations. The worst-case orientation was determined to be the EUT flat for the band-edge measurements and the EUT set vertically relative to the tabletop for the radiated spurious emissions. Please refer to the test setup photos for more detail.

The Power line conducted emissions evaluation was performed using an of the shelf AC/DC adapter to power the interface board to the EUT.

The EUT was also evaluated for unintentional emissions. The results are documented in a separate test report.

The EUT was configured to the maximum RF output power during the evaluation corresponding to a software power setting of 199.

2 TEST FACILITIES

2.1 Location

The radiated and conducted emissions test sites are located at the following address:

TÜV SÜD America, Inc.
3998 FAU Blvd, Suite 310
Boca Raton, Florida 33431
Phone: (561) 961-5585
Fax: (561) 961-5587
http://www.tuv-sud-america.com

2.2 Laboratory Accreditations/Recognitions/Certifications

TÜV SÜD America, Inc. is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ANAB program and has been issued certificate number AT-1533 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

FCC Test Firm Registration #: 475089
Innovation, Science and Economic Development Canada Lab Code: 4175C

2.3 Radiated & Conducted Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The EMC radiated test facility consists of an RF-shielded enclosure. The interior dimensions of the indoor semi-anechoic chamber are approximately 48 feet (14.6 m) long by 36 feet (10.8 m) wide by 24 feet (7.3 m) high and consist of rigid, 1/8 inch (0.32 cm) steel-clad, wood core modular panels with steel framing. In the shielded enclosure, the faces of the panels are galvanized and the chamber is self-supporting. 8-foot RF absorbing cones are installed on 4 walls and the ceiling. The steel-clad ground plane is covered with vinyl flooring.

The turntable is driven by pneumatic motor, which can support a 2000 lb. load. The turntable is flush with the chamber floor which it is connected to, around its circumference, with a continuous metallic loaded spring. An EMCO Model 1060 Multi-device controller controls the turntable position.

A pneumatic motor is used to control antenna polarizations and height relative to the ground. The height information is displayed on the control unit EMCO Model 1050.

The control room is an RF shielded enclosure attached to the semi-anechoic chamber with two bulkhead panels for connecting RF, and control cables. The dimension of the room is 7.3 m x 4.9 m x 3 m high and the entrance doors of both control and conducted rooms are 3 feet (0.91 m) by 7 feet (2.13 m).

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3.1-1 below:

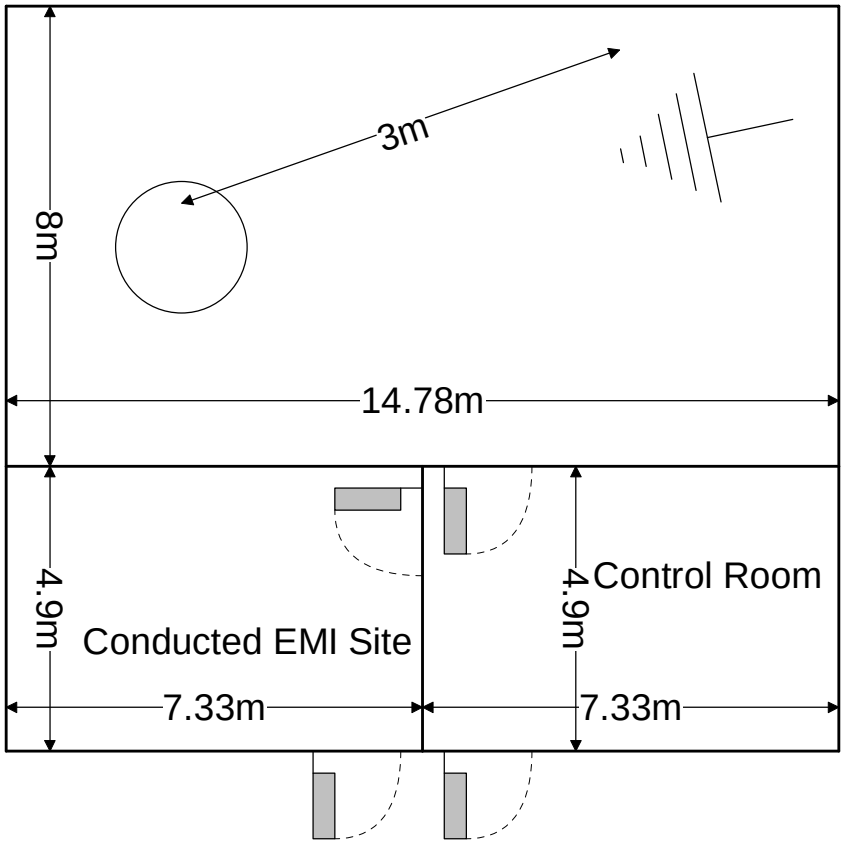

Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m^3. The power line conducted emission site includes two LISNs: a Solar Model 8028-50 50 Ω/50 µH and an EMCO Model 3825/2R, which are installed as shown in the figure below. For evaluations requiring 230 V, 50 Hz AC input, a Polarad LISN (S/N 879341/048) is used in conjunction with a California Instruments signal generator Model 2001RP-OP1.

A diagram of the room is shown below in figure 2.3.2-1:

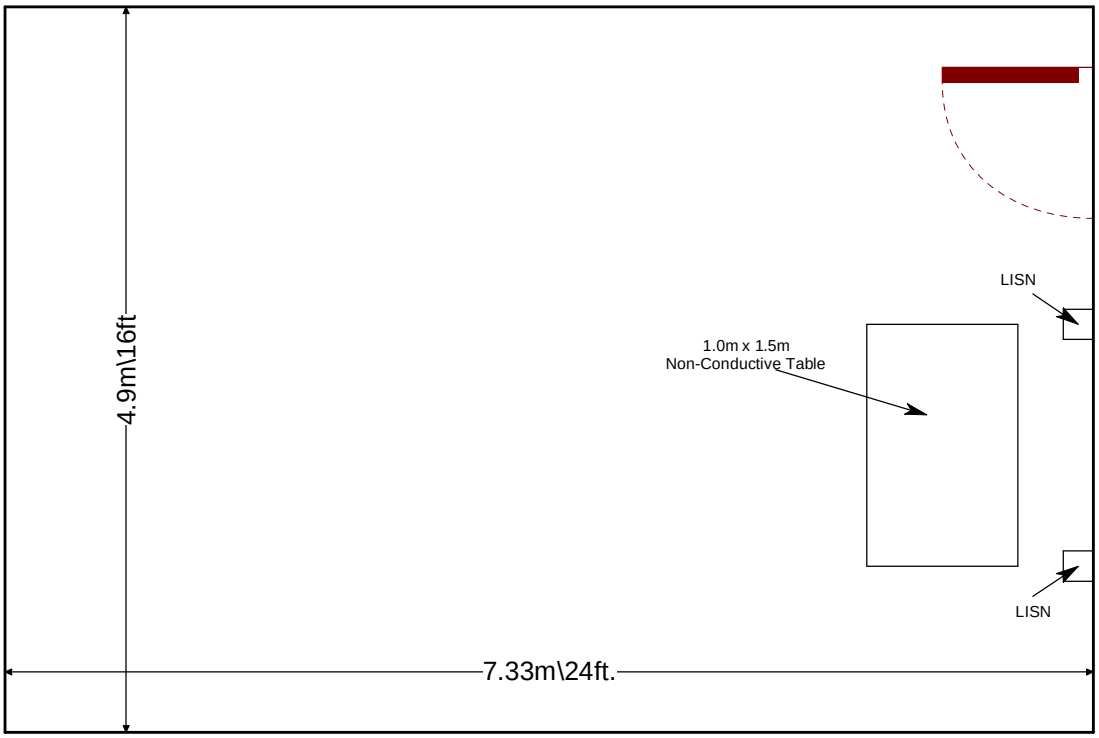

Figure 2.3.2-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

- ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
- US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures, 2017.
- US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2017
- FCC KDB 558074 D01 DTS Meas Guidance v04 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247, April 5, 2017.
- Innovation, Science and Economic Development Canada Radio Standards Specification: RSS-247 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices, Issue 2, February 2017.
- Innovation, Science and Economic Development Canada Radio Standards Specification: RSS-GEN – General Requirements for Compliance of Radio Apparatus, Issue 4, November 2014.

4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

Table 4-1: Test Equipment List

AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
78	EMCO	6502	Antennas	9104-2608	5/11/2016	5/11/2018
282	Microwave Circuits	H2G020G4	Filters	74541	5/23/2017	5/23/2018
283	Rohde & Schwarz	FSP40	Spectrum Analyzers	1000033	7/21/2016	7/21/2018
523	Agilent	E7405	Spectrum Analyzers	MY45103293	12/9/2016	12/9/2018
653	Suhner	SF-102A	Cables	0944/2A	9/6/2016	9/6/2017
653	Suhner	SF-102A	Cables	0944/2A	9/5/2017	9/5/2018
2002	EMCO	3108	Antennas	2147	11/19/2015	11/19/2017
2004	EMCO	3146	Antennas	1385	11/19/2015	11/19/2017
2006	EMCO	3115	Antennas	2573	4/7/2017	4/7/2019
2008	COM-Power	AH-826	Antennas	81009	NCR	NCR
2011	Hewlett-Packard	HP 8447D	Amplifiers	2443A03952	11/2/2016	11/2/2017
2022	EMCO	LISN3825/2R	LISN	1095	9/14/2015	9/14/2017
2045	ACS Boca	Conducted Cable Set	Cable Set	2045	10/31/2016	10/31/2017
2082	Teledyne Storm Products	90-010-048	Cables	2082	4/7/2017	4/7/2018
2086	Merrimac	FAN-6-10K	Attenuators	23148-83-1	11/2/2016	11/2/2017
2089	Agilent Technologies, Inc.	83017A	Amplifiers	3123A00214	12/2/2016	12/2/2017
2095	ETS Lindgren	TILE4! - Version 4.2.A	Software	85242	NCR	NCR
2111	Aeroflex Inmet	40AH2W-20	Attenuator	2111	7/20/2017	7/20/2018
2121	ACS Boca	Radiated Cable Set	Cable Set	2121	7/31/2017	7/31/2018
3004	Teseq	CFL 9206A	Attenuators	34720	9/14/2016	9/14/2017
3004	Teseq	CFL 9206A	Attenuators	34720	8/29/2017	8/29/2018

Notes:

- **NCR=No Calibration Required**
- **The assets were only used during the active period of the calibration cycle.**
- **Where applicable, the asset calibration cycle information was provided to cover the entire test period.**

5 SUPPORT EQUIPMENT

Table 5-1: EUT and Support Equipment Description – Radiated Emissions

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Acuity Brands Lighting, Inc.	XPMOD	N/A
2	Interface Board	Acuity Brands Lighting, Inc.	401-00634-002 Rev C	N/A
3	DC Power Supply	MPJA	HY5003	003700278

Table 5-2: Cable Description – Radiated Emissions

Cable #	Cable Type	Length	Shield	Termination
A	Power Leads	2.2 m	No	Interface Board to Power Supply
B	Power Cord	2.3 m	No	Power Supply to AC Mains

Table 5-3: EUT and Support Equipment Description – Power Line Conducted Emissions

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Acuity Brands Lighting, Inc.	XPMOD	N/A
2	Interface Board	Acuity Brands Lighting, Inc.	401-00634-002 Rev C	N/A
3	Evaluation Board	Silicone Labs	Wireless Starter Kit PCB4001 Rev A03	152606580
4	I.T.E. Power Supply	Dongguan City Yingju Electronics Co., LTD	YJ-01SWP0500500U	N/A

Table 5-4: Cable Description – Power Line Conducted Emissions

Cable #	Cable Type	Length	Shield	Termination
A	USB cable	1 m	No	Evaluation board to Power Supply
B	Extension Cord	1.83 m	No	Power Supply to AC Mains

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

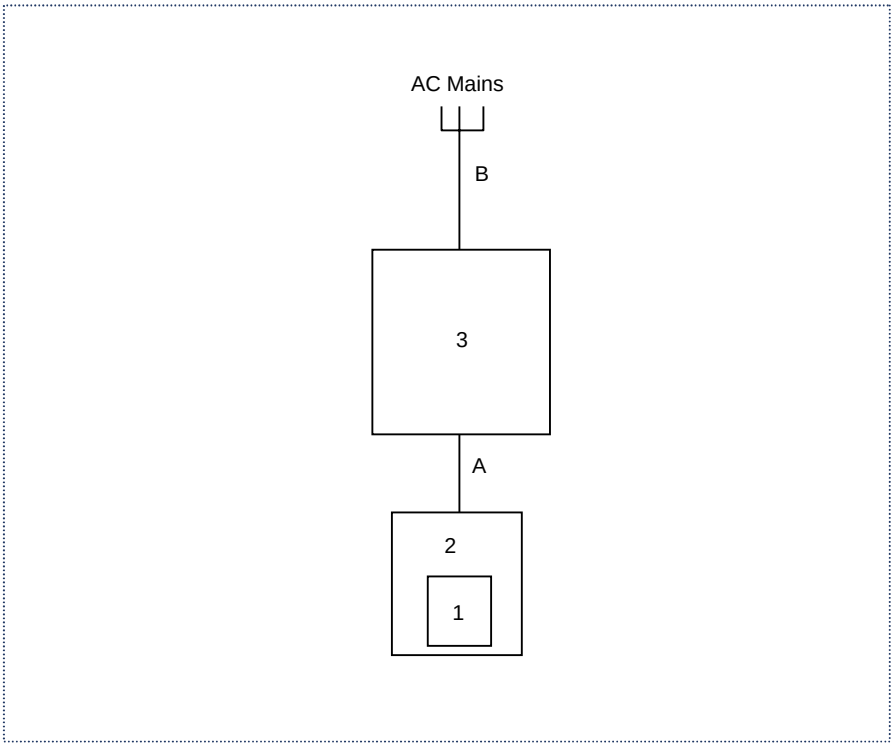

Figure 6-1: EUT and Support Equipment Description – Radiated Emissions

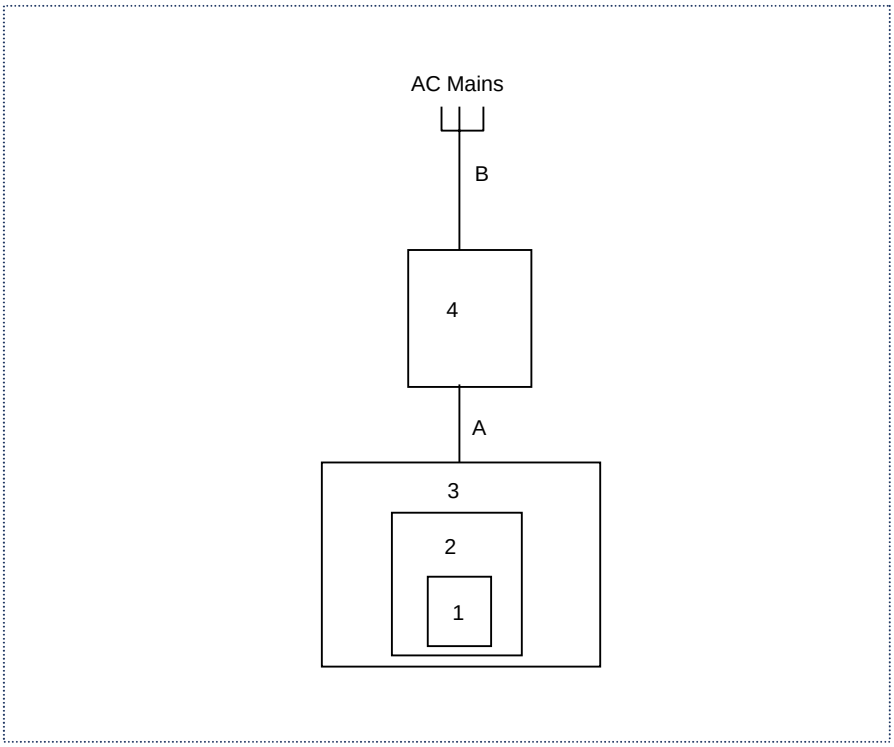

Figure 6-2: EUT and Support Equipment Description – Power Line Conducted Emissions

7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

7.1 Antenna Requirement – FCC: Section 15.203

The EUT uses an integral chip antenna that is directly soldered to the module PCB. The antenna gain is 3 dBi. The antenna is not detachable and therefore meets the requirements of FCC Section 15.203.

7.2 6 dB Bandwidth - FCC: Section 15.247(a)(2); ISED Canada: RSS-247 5.2(a); 99% Bandwidth ISED Canada: RSS-GEN 6.6

7.2.1 Measurement Procedure

The 6dB bandwidth was measured in accordance with the FCC KDB 558074 D01 DTS Meas Guidance v04 Section 8.1 Option 2. The RBW of the spectrum analyzer was set to 100 kHz and VBW 300 kHz. Span was set large enough to capture the emissions and >> RBW. A peak detector was used for the measurements.

The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission. The RBW was set to 1% to 5% of the approximated bandwidth. The occupied 99% bandwidth was measured by using 99% bandwidth equipment function of the spectrum analyzer using a peak detector.

7.2.2 Measurement Results

Performed by: Thierry Jean-Charles

Table 7.2.2-1: 6dB / 99% Bandwidth

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth [kHz]
2405	1660	2280
2440	1650	2280
2480	1650	2280

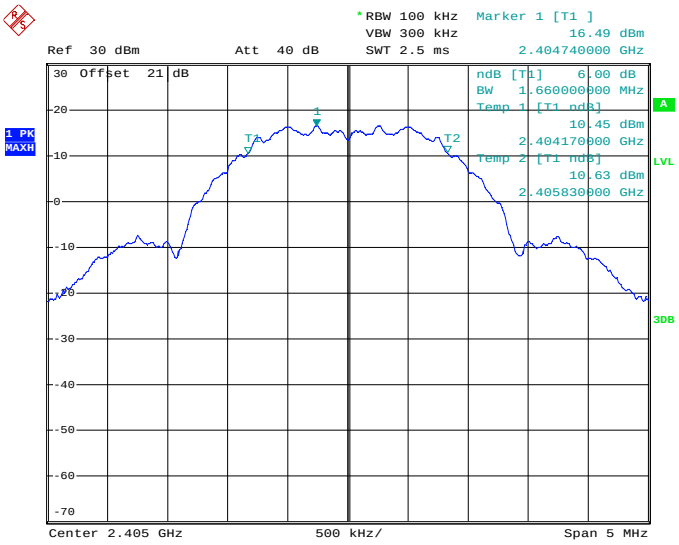

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Figure 7.2.2-1: 6dB BW - Low Channel

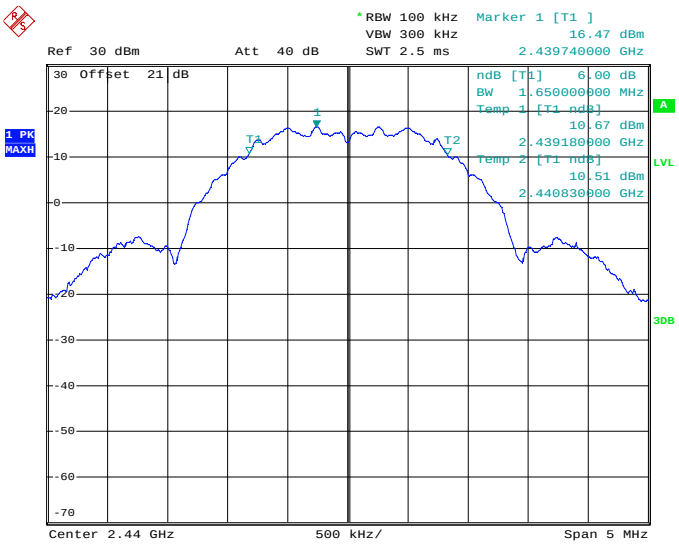

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Figure 7.2.2-2: 6dB BW - Middle Channel

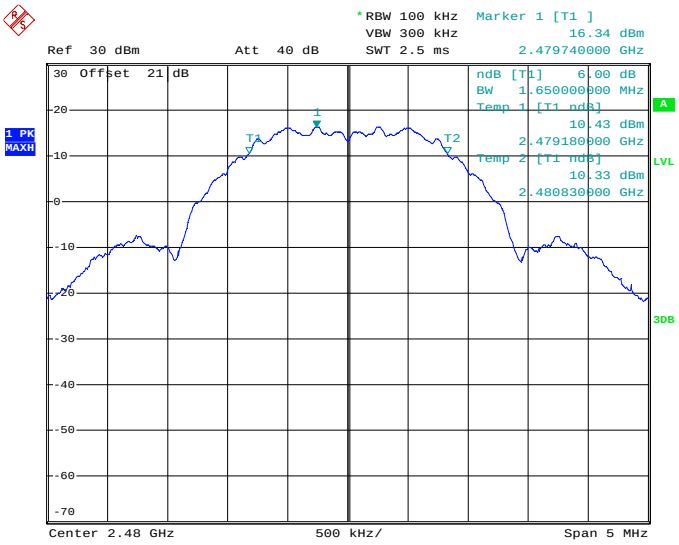

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Figure 7.2.2-3: 6dB BW - High Channel

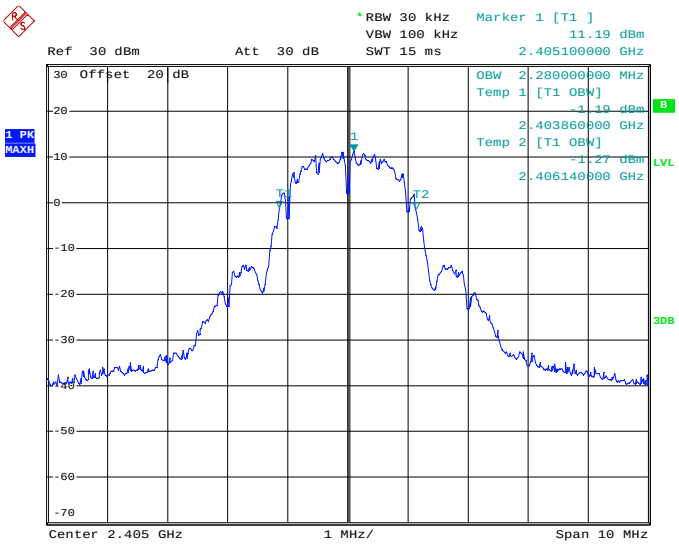

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Figure 7.2.2-4: 99% OBW - Low Channel

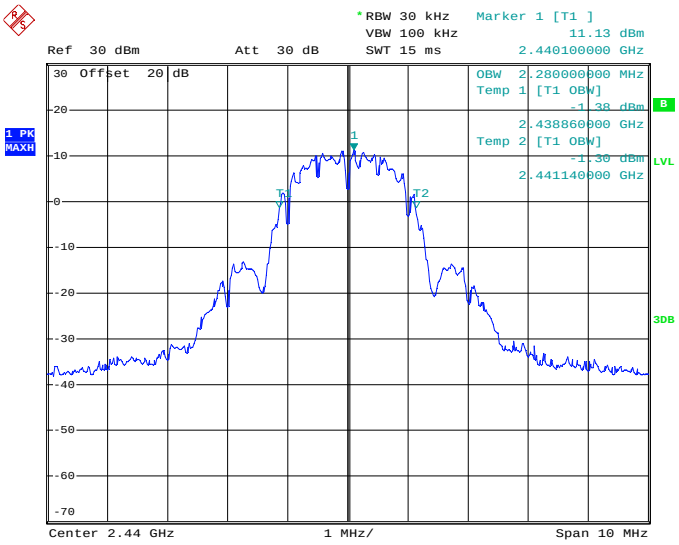

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Figure 7.2.2-5: 99% OBW - Middle Channel

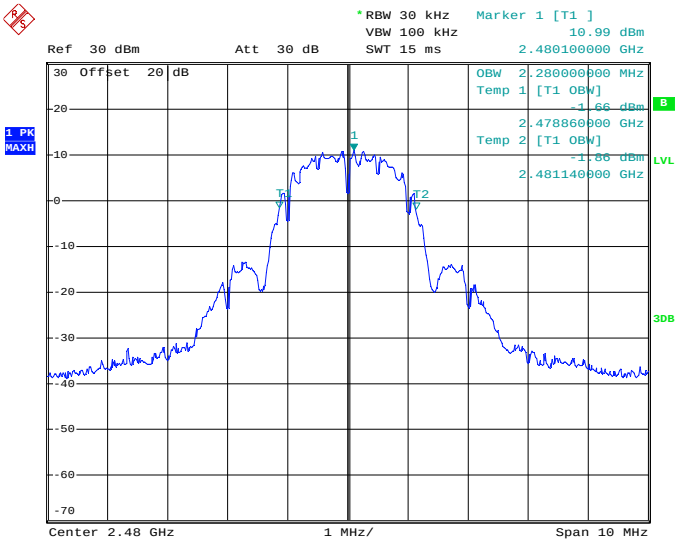

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Figure 7.2.2-6: 99% OBW - High Channel

7.3 Peak Output Power – FCC: Section 15.247(b)(3); ISED Canada: RSS-247 5.4(d)

7.3.1 Measurement Procedure (Conducted Method)

The fundamental emission output power was measured in accordance with the FCC KDB 558074 D01 DTS Meas Guidance v04 Section 9.1.1 RBW ≥ DTS bandwidth. The RF output of the equipment under test was directly connected to the input of the spectrum analyzer through suitable attenuation.

7.3.2 Measurement Results

Performed by: Thierry Jean-Charles

Table 7.3.2-1: RF Output Power

Frequency [MHz]	Level [dBm]
2405	19.47
2440	19.32
2480	19.16

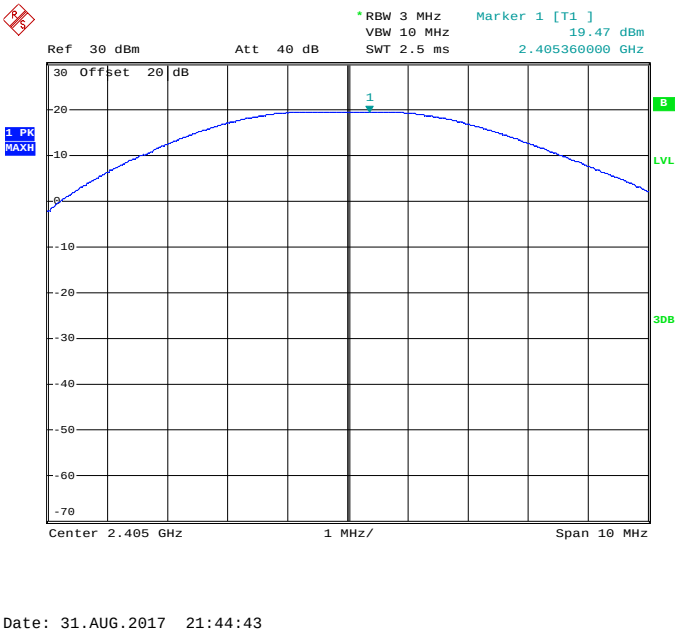

Figure 7.3.2-1: RF Output Power - Low Channel

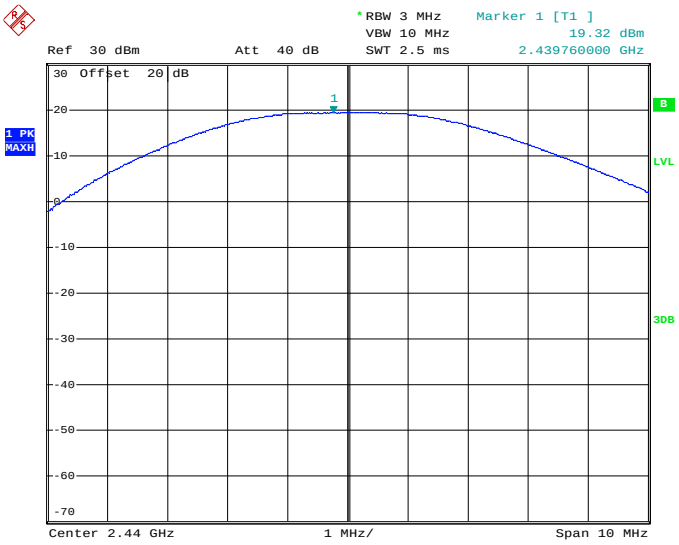

Figure 7.3.2-2: RF Output Power - Middle Channel

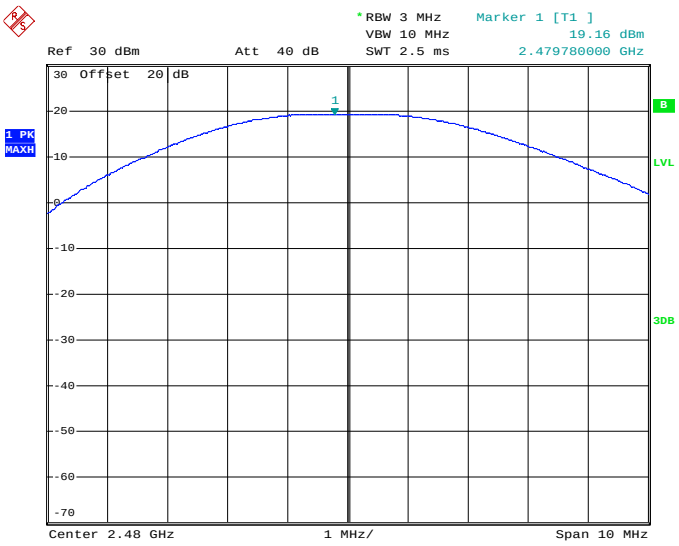

Figure 7.3.2-3: RF Output Power - High Channel

7.4 Band-Edge and Spurious Emissions

7.4.1 Band-Edge Compliance of RF Conducted Emissions – FCC: Section 15.247(d); ISED Canada: RSS-247 5.5

7.4.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer via suitable attenuation. The EUT was investigated at the lowest and highest channel available to determine band-edge compliance. For each measurement, the spectrum analyzer's RBW was set to 100 kHz, and the VBW was set to 300 kHz.

7.4.1.2 Measurement Results

Performed by: Thierry Jean-Charles

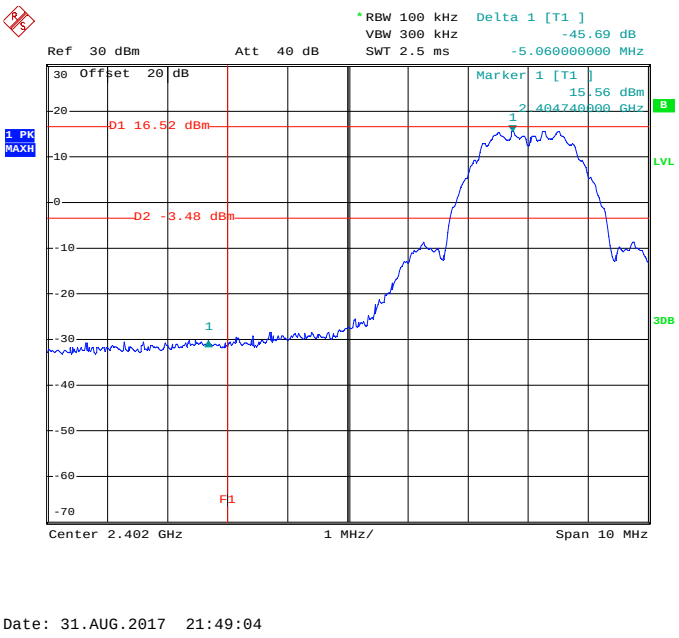

Figure 7.4.1.2-1: Lower Band-edge

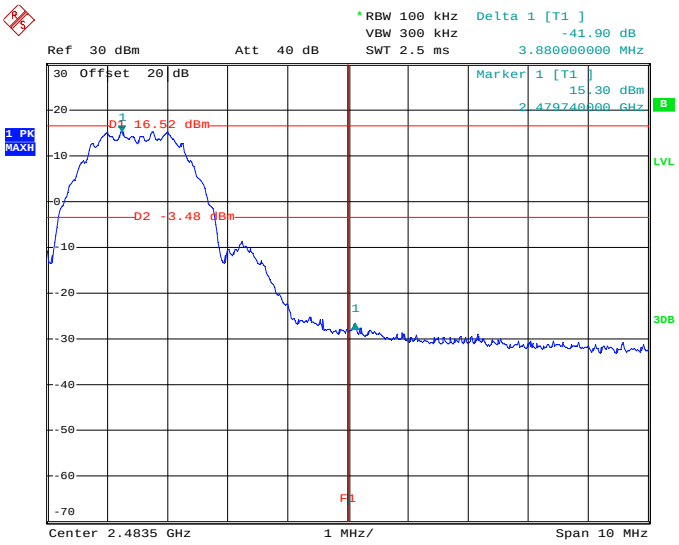

Figure 7.4.1.2-2: Upper Band-edge

7.4.2 RF Conducted Spurious Emissions – FCC: Section 15.247(d); ISED Canada: RSS-247 5.5

7.4.2.1 Measurement Procedure

The RF Conducted Spurious Emissions were measured in accordance with the FCC KDB 558074 D01 DTS Meas Guidance v04 Section 11.3 Emission level measurement. The RF output port of the equipment under test was directly connected to the input of the spectrum analyzer. The EUT was investigated for conducted spurious emissions from 30 MHz to 25 GHz, 10 times the highest fundamental frequency. Measurements were made at the low, center and high channels of the EUT. For each measurement, the spectrum analyzer's RBW was set to 100 kHz and the VBW was set to 300 kHz. The peak Max Hold function of the analyzer was utilized. The reference level was determined by measuring the Peak PSD level in any 100-kHz bandwidth within the DTS channel bandwidth.

7.4.2.2 Measurement Results

Performed by: Thierry Jean-Charles

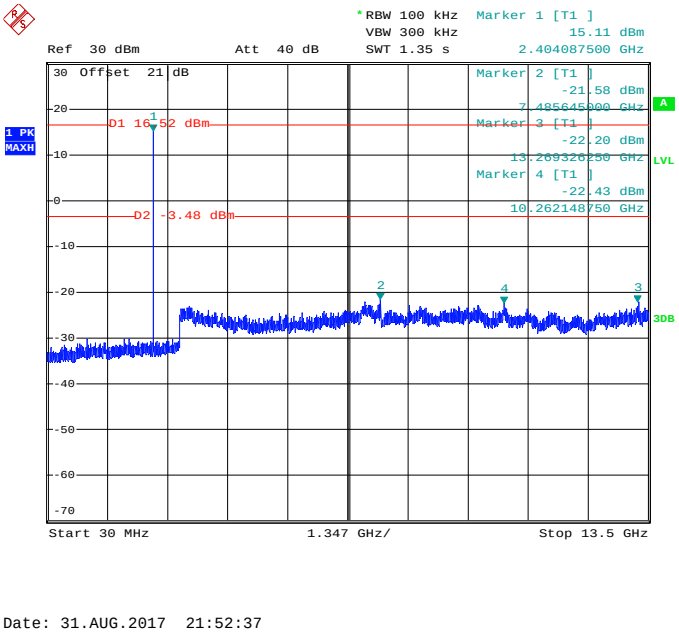

Figure 7.4.2.2-1: 30 MHz – 13.5 GHz – Low Channel

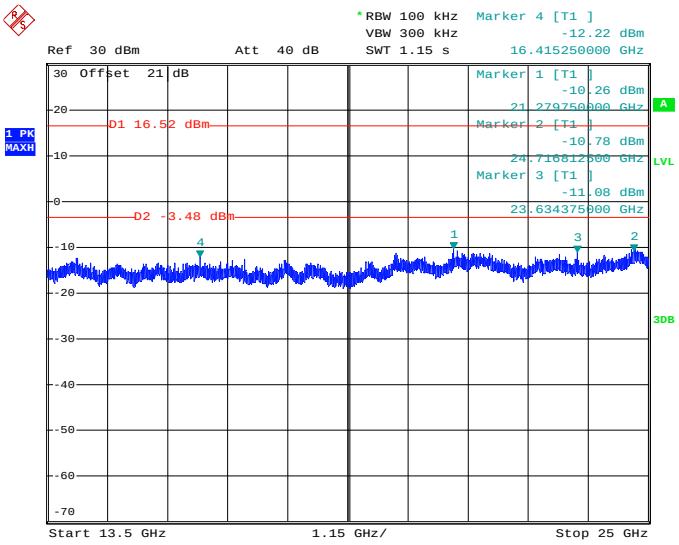

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Figure 7.4.2.2-2: 13.5 GHz – 25 GHz – Low Channel

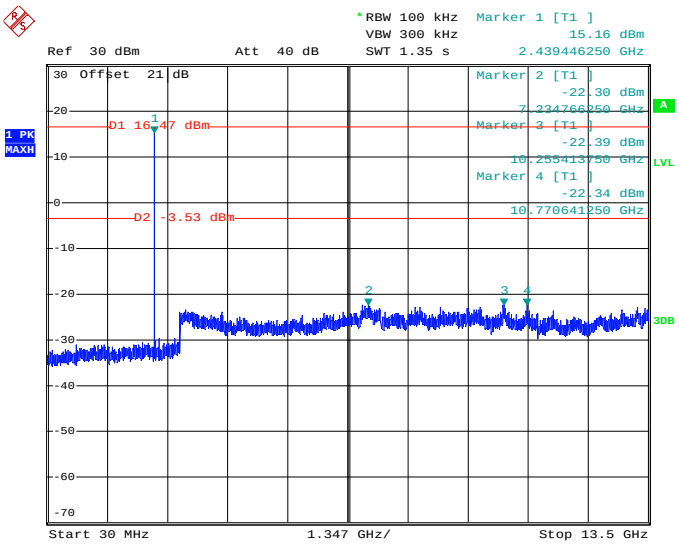

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Figure 7.4.2.2-3: 30 MHz – 13.5 GHz – Middle Channel

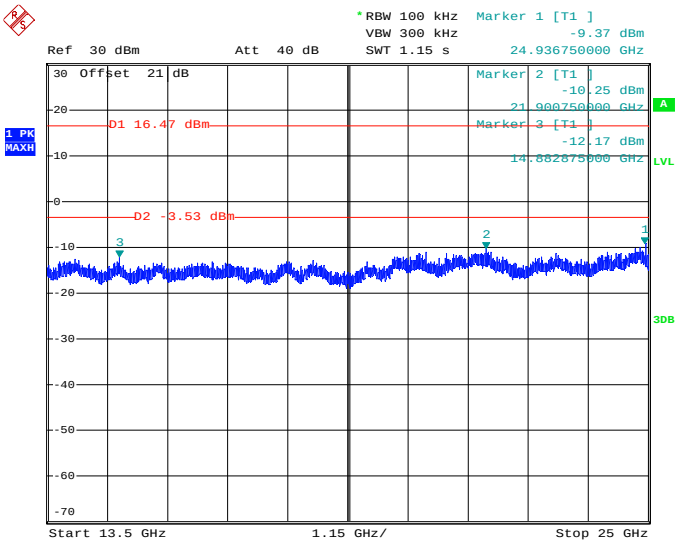


Figure 7.4.2.2-4: 13.5 GHz – 25 GHz – Middle Channel

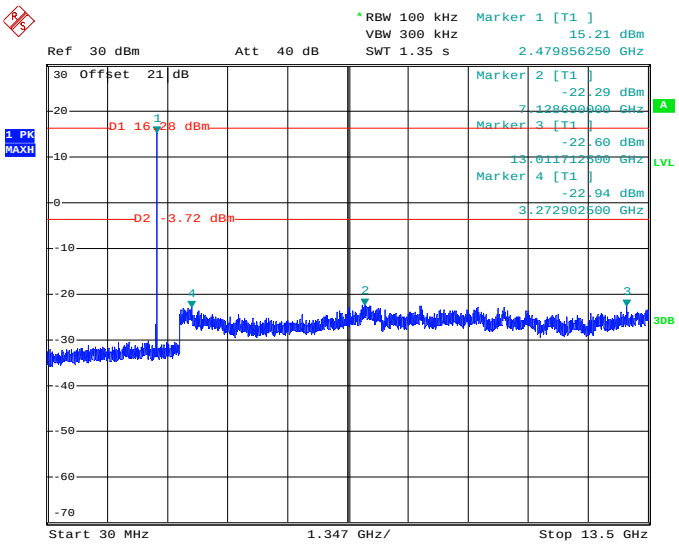


Figure 7.4.2.2-5: 30 MHz – 13.5 GHz – High Channel

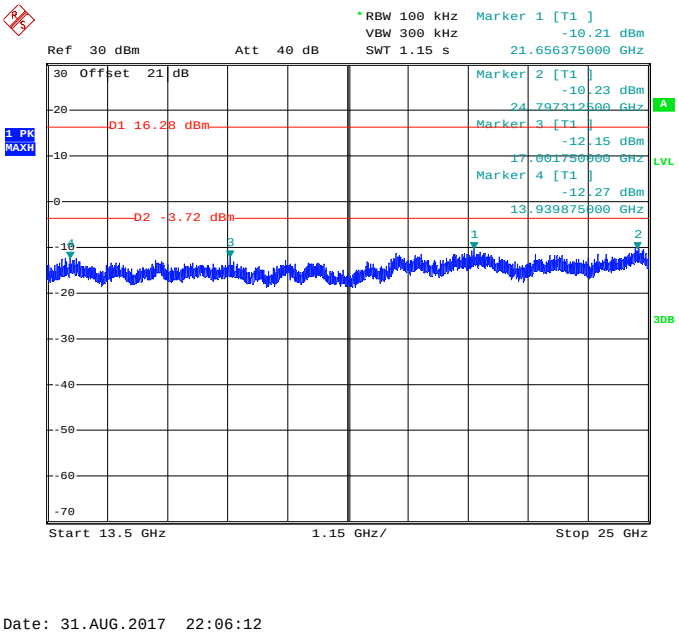


Figure 7.4.2.2-6: 13.5 GHz – 25 GHz – High Channel

7.4.3 Radiated Spurious Emissions into Restricted Frequency Bands – FCC: Sections 15.205, 15.209; ISED Canada: RSS-Gen 8.9, 8.10

7.4.3.1 Measurement Procedure

Radiated emissions tests were made over the frequency range of 9 kHz to 26 GHz, 10 times the highest fundamental frequency. Each emission found to be in a restricted band as defined by section 15.205, including any emission at the operational band-edge, was compared to the radiated emission limits as defined in Section 15.209.

For measurements below 30 MHz, the receive antenna height was set to 1m and the EUT was rotated through 360 degrees. The resolution bandwidth was set to 200 Hz below 150 kHz and to 9 kHz above 150 kHz.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000 MHz, quasi-peak measurements were made using a resolution bandwidth RBW of 120 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000 MHz, peak measurements are made with RBW of 1 MHz and VBW of 3 MHz. Average measurements are performed in the linear scale using VBW of 30 Hz.

7.4.3.2 Duty Cycle

A duty cycle correction factor of 20*log(7.8/100) = -22.16 dB was used for the average measurements. The justification for the duty cycle correction factor is provided in the Theory of Operation exhibit

7.4.3.3 Measurement Results

Performed by: Jean Rene

Radiated band-edge and spurious emissions found in the restricted frequency bands of 9 kHz to 25 GHz are reported in the tables below.

Table 7.4.3.3-1: Radiated Spurious Emissions Tabulated Data

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel										
2390	61.27	47.93	H	-4.94	56.33	20.83	74.0	54.0	17.7	33.2
2390	58.15	44.26	V	-4.94	53.21	17.16	74.0	54.0	20.8	36.8
4810	43.71	30.38	H	4.05	47.76	12.27	74.0	54.0	26.2	41.7
4810	44.03	31.28	V	4.05	48.08	13.17	74.0	54.0	25.9	40.8
Middle Channel										
4880	43.45	30.30	H	4.34	47.79	12.49	74.0	54.0	26.2	41.5
4880	43.56	30.62	V	4.34	47.90	12.81	74.0	54.0	26.1	41.2
7320	43.37	30.00	H	9.42	52.79	17.27	74.0	54.0	21.2	36.7
7320	43.97	30.44	V	9.42	53.39	17.71	74.0	54.0	20.6	36.3
High Channel										
2483.5	76.49	64.14	H	-4.51	71.98	37.47	74.0	54.0	2.0	16.5
2483.5	69.56	57.88	V	-4.51	65.05	31.21	74.0	54.0	9.0	22.8
4960	44.02	31.93	H	4.69	48.71	14.46	74.0	54.0	25.3	39.5
4960	43.45	30.59	V	4.69	48.14	13.12	74.0	54.0	25.9	40.9
7440	43.86	29.73	H	9.72	53.58	17.29	74.0	54.0	20.4	36.7
7440	44.27	31.02	V	9.72	53.99	18.58	74.0	54.0	20.0	35.4

Notes:
All emissions above 7.44 GHz were attenuated below the limits and the noise floor of the measurement equipment.
The average measurements are further corrected using a duty cycle correction factor of 20*log (7.8/100) = -22.16 dB.

7.4.4 Sample Calculation:

$R_C = R_U + CF_T$

Where:

CF_T	=	Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only)
R_U	=	Uncorrected Reading
R_C	=	Corrected Level
AF	=	Antenna Factor
CA	=	Cable Attenuation
AG	=	Amplifier Gain
DC	=	Duty Cycle Correction Factor

Example Calculation: Peak
Corrected Level: 61.27 + (-4.94) = 56.33 dBµV/m
Margin: 74 dBµV/m – 56.33 dBµV/m = 17.7 dB

Example Calculation: Average
Corrected Level: 47.93 + (-4.94) - 22.16 = 20.83 dBµV/m
Margin: 54 dBµV/m – 20.83 dBµV/m = 33.2 dB

7.5 Power Spectral Density – FCC: Section 15.247(e); ISED Canada: RSS-247 5.2(b)

7.5.1 PSD Measurement Procedure (Conducted Method)

The power spectral density was measured in accordance with the FCC KDB 558074 D01 DTS Meas Guidance v04 Section 10.2 Method PKPSD (peak PSD). The RF output port of the EUT was directly connected to the input of the spectrum analyzer. Offset values were input for cable and external attenuation. The spectrum analyzer RBW was set to 3 kHz and VBW 10 kHz. Span was adjusted to 1.5 times the DTS bandwidth and the sweep time was set to auto.

7.5.2 Measurement Results

Performed by: Thierry Jean-Charles

Results are shown below.

Table 7.5.2-1: Power Spectral Density

Frequency [MHz]	PSD [dBm]	Limit [dBm]	Margin [dB]
2405	4.93	8.0	3.07
2440	4.73	8.0	3.27
2480	4.64	8.0	3.36

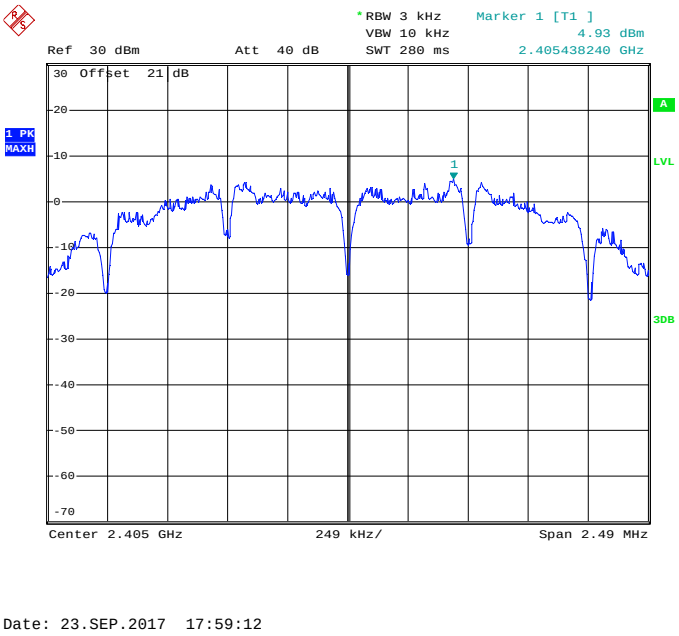
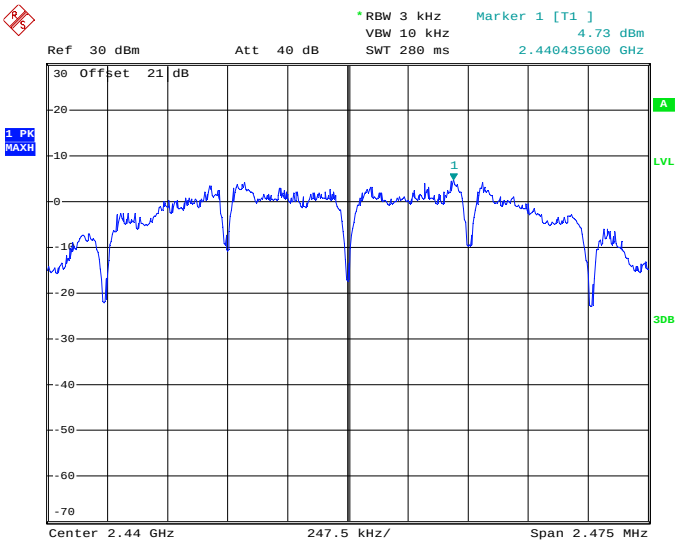


Figure 7.5.2-1: Power Spectral Density - Low Channel



Date: 31.AUG.2017 21:37:24

Figure 7.5.2-2: Power Spectral Density - Middle Channel

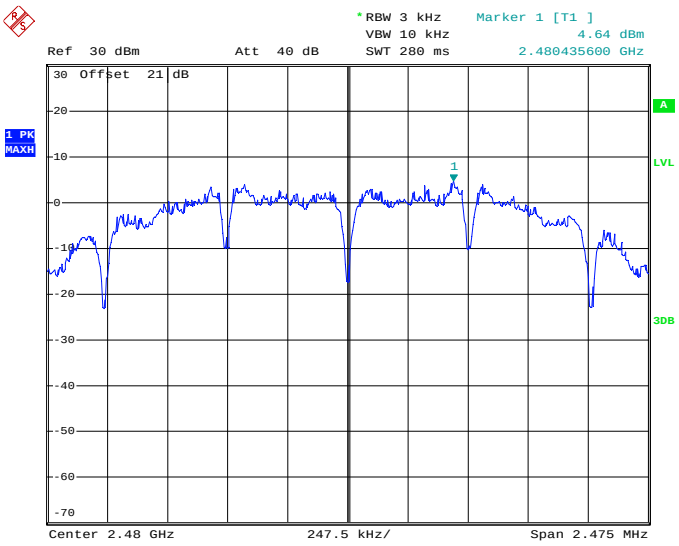


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Figure 7.5.2-3: Power Spectral Density – High Channel

7.6 Power Line Conducted Emissions – FCC: Section 15.207; ISED Canada: RSS-Gen 8.8

7.6.1 Measurement Procedure

ANSI C63.10 section 6.2 was the guiding document for this evaluation. Conducted emissions were performed from 150 kHz to 30 MHz with the spectrum analyzer's resolution bandwidth set to 9 kHz and the video bandwidth set to 30 kHz. The calculation for the conducted emissions is as follows:

Corrected Reading = Analyzer Reading + LISN Loss + Cable Loss
Margin = Applicable Limit - Corrected Reading

7.6.2 Measurement Results

Performed by: Jean Rene

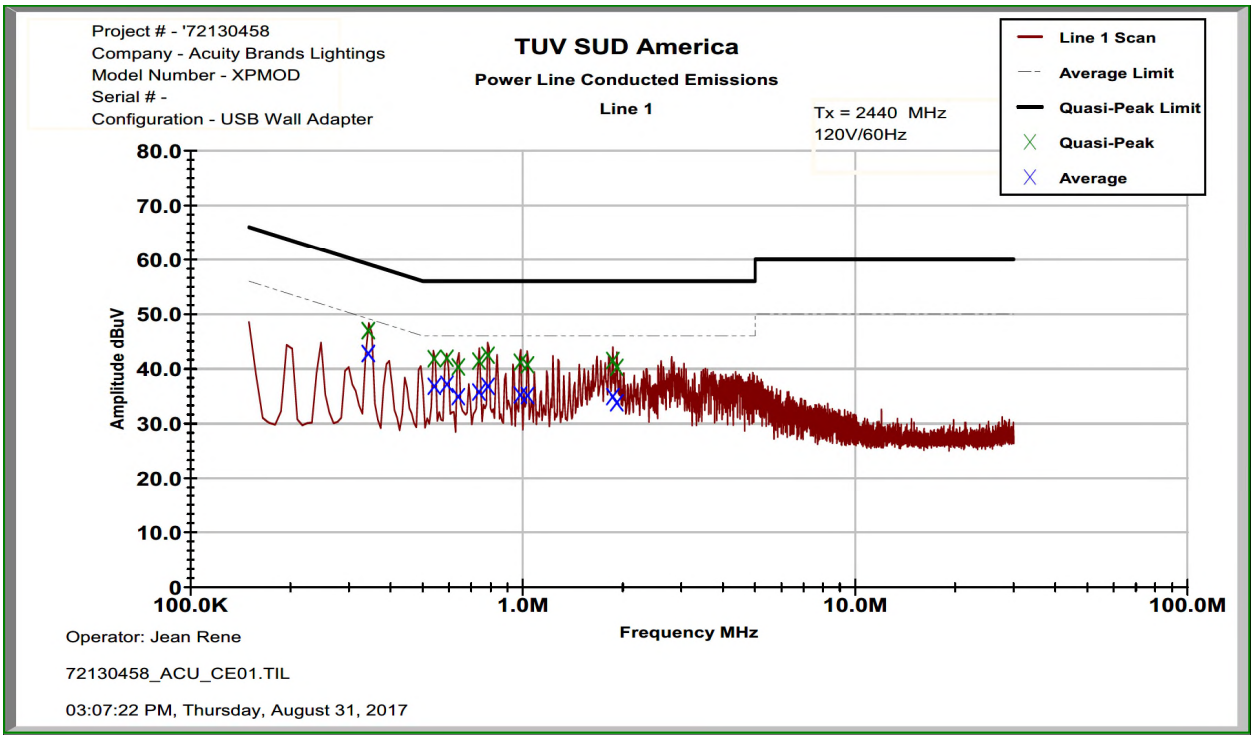

Figure 7.6.2-1: Conducted Emissions Results – Line 1

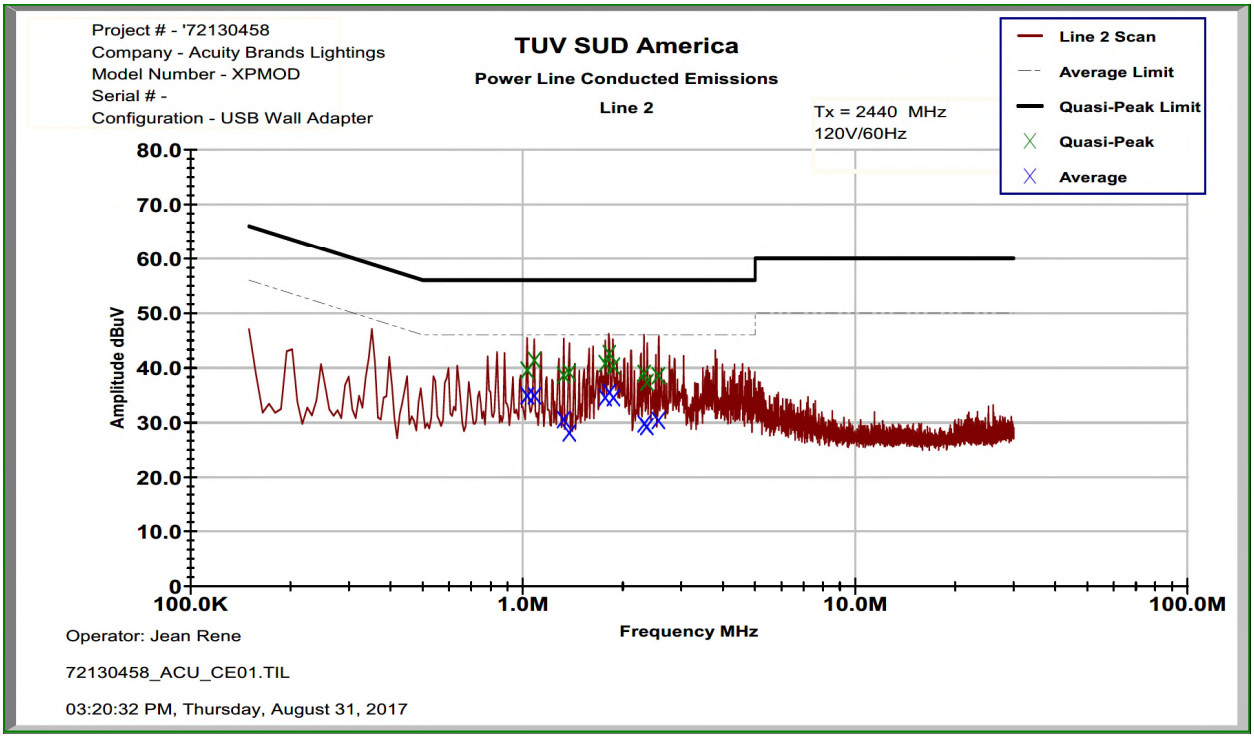

Figure 7.6.2-2: Conducted Emissions Results – Line 2

Table 7.6.2-1: Conducted EMI Results

☒ Line 1 ☒ Line 2 ☐ Line 3
☐ Line 4
☐ To Ground ☒ Floating
☐ Telecom Port _____
☒ dBµV ☐ dBµA

Plot Number:
72130458_ACU_CE01
Power Supply Description: 5 VDC I.T.E. Power Supply

Frequency (MHz)	Uncorrected Reading		Total Correction Factor (dB)	Corrected Level		Limit		Margin (dB)	
	Quasi-Peak	Average		Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
Line 1									
0.343025	36.692	32.503	10.26	46.95	42.76	59.13	49.13	12.2	6.4
0.54155	31.57	26.515	10.26	41.83	36.78	56.00	46.00	14.2	9.2
0.590988	31.636	26.901	10.26	41.90	37.16	56.00	46.00	14.1	8.8
0.639524	30.075	24.651	10.27	40.34	34.92	56.00	46.00	15.7	11.1
0.737538	31.135	25.475	10.27	41.40	35.74	56.00	46.00	14.6	10.3
0.785762	32.188	26.487	10.27	42.46	36.76	56.00	46.00	13.5	9.2
0.98335	30.9	24.912	10.30	41.20	35.21	56.00	46.00	14.8	10.8
1.03307	30.407	24.794	10.29	40.69	35.08	56.00	46.00	15.3	10.9
1.86617	31.126	24.566	10.29	41.41	34.85	56.00	46.00	14.6	11.1
1.91876	29.858	23.417	10.29	40.14	33.70	56.00	46.00	15.9	12.3
Line 2									
1.03143	29.273	24.635	10.26	39.53	34.89	56.00	46.00	16.5	11.1
1.08411	31.101	24.613	10.26	41.36	34.87	56.00	46.00	14.6	11.1
1.32658	28.317	20.253	10.26	38.57	30.51	56.00	46.00	17.4	15.5
1.37936	28.825	17.8	10.26	39.08	28.06	56.00	46.00	16.9	17.9
1.77051	30.423	24.217	10.26	40.68	34.47	56.00	46.00	15.3	11.5
1.82209	32.262	25.169	10.26	42.52	35.43	56.00	46.00	13.5	10.6
1.87142	29.952	24.185	10.26	40.21	34.44	56.00	46.00	15.8	11.6
2.31588	28.589	19.377	10.35	38.94	29.73	56.00	46.00	17.1	16.3
2.36006	26.971	18.895	10.35	37.33	29.25	56.00	46.00	18.7	16.8
2.55725	28.173	19.981	10.35	38.53	30.34	56.00	46.00	17.5	15.7

8 MEASUREMENT UNCERTAINTIES

The expanded laboratory measurement uncertainty figures (U_{Lab}) provided below correspond to an expansion factor (coverage factor) k = 1.96 which provide confidence levels of 95%.

Table 8-1: Measurement Uncertainties

Parameter	U_{lab}
Occupied Channel Bandwidth	± 0.009 %
RF Conducted Output Power	± 0.349 dB
Power Spectral Density	± 0.372 dB
Antenna Port Conducted Emissions	± 1.264 dB
Radiated Emissions ≤ 1GHz	± 3.93 dB
Radiated Emissions > 1GHz	± 5.814 dB
Temperature	± 0.860 °C
Radio Frequency	$\pm 2.832 \times 10^{-8}$
AC Power Line Conducted Emissions	±2.93 dB

9 CONCLUSION

In the opinion of TÜV SÜD America, Inc. the model XPMOD, manufactured by Acuity Brands Lighting, Inc., meets the requirements of FCC Part 15.247 and Industry Canada's Radio Standards Specification RSS-247 for the tests documented herein.

END REPORT