Report on the FCC and ISED Testing of the

Acuity Brands Lighting

RMODITHP

In accordance with FCC 47 CFR Part 15.247 & ISED Canada's Radio Standards Specifications RSS-247

America

Add value.
Inspire trust.

Prepared for: Acuity Brands Lighting, Inc.
One LithoniaWay
Conyers, GA 30012

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

COMMERCIAL-IN-CONFIDENCE

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Pete Walsh	**Service Line Manager**	**Authorized Signatory**	2019-January-02

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FCC Accreditation Designation Number US1063 Tampa, FL Test Laboratory	Innovation, Science, and Economic Development Canada Accreditation Main Site Number 2087A-2 Tampa, FL Test Laboratory Satellite Site Number: 4175C Boca Raton, FL Test Laboratory

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with FCC Part 15.247, ISED Canada's RSS-247

A2LA Cert. No. 2955.15

ACCREDITATION
Our A2LA Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our A2LA Accreditation.

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TABLE OF CONTENTS

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 for a Permissive Change.

The purpose of the permissive change is to add a new data rate / emission designator for 900 MHz transceiver. The new data rate is enabled via software only. There are no hardware changes to the EUT.

1.2 Applicant Information

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

1.3 Product Description

The RMODIT 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 network. This can either be done by using an external host processor, or by using the processor on the module.

There are two radios on the module. One radio is a 2.4 GHz BLE MAC and PHY. The other radio is a proprietary 904-926 MHz implementation. The radios are capable of transmitting and receiving at the same time.

The new data rate aftects to the 904 - 926 MHz transmitter only and the test results are documented in this report.

Technical Details

Mode of Operation:	900 MHz ISM
Frequency Range:	904 - 926 MHz
Data Rate:	250 kbps
Number of Channels:	12
Channel Separation:	2 MHz
Modulations:	O-QPSK
Antenna Type/Gain:	PCB Trace Antenna / 1.0 dBi
Input Power:	5 Vdc (USB)

Model Number: RMODITHP

Test Sample Serial Number(s): 67806022080118030104379 Radiated Emissions, 67806022080118030104210 RF Conducted Emissions, 67806022080118030103936 Power Line Conducted Emissions,

Test Sample Condition: The test samples were in good operating condition without any physical damages.

1.4 Test Methodology and Considerations

The EUT was evaluated for radiated and RF Conducted measurements for the new data rate.

The EUT was evaluated in the Z-orientation as the worst-case orientation determined during the original certification of the product.

For the RF Conducted Measurements, a sample was provided with a temporary connector to allow direct coupling to the spectrum analyzer.

The device was also evaluated for radiated intermodulation between the 900 MHz and the Bluetooth low energy (BLE) radio. All intermodulation products were found compliant to the requirements of FCC 15.209 and ISED Canada RSS-210.

Power Setting used during Test: -59

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

Innovation, Science and Economic Development Canada Lab Code: 4175C

2.2 Laboratory Accreditations/Recognitions/Certifications

TÜV SÜD America, Inc. is accredited to ISO/IEC 17025 by American Association for Laboratory Accreditation (A2LA) and has been issued certificate number 2955.15 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.

Main Site Information:

TÜV SÜD America, Inc.
5610 West Sligh Ave., Suite 100
Tampa, FL 33634
Phone: 813-284-2715
www.tuv-sud-america.com

FCC Designation Number US1063
FCC Test Firm Registration #: 160606
Innovation, Science, and Economic Development Canada Lab Code: 2087A-2

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:

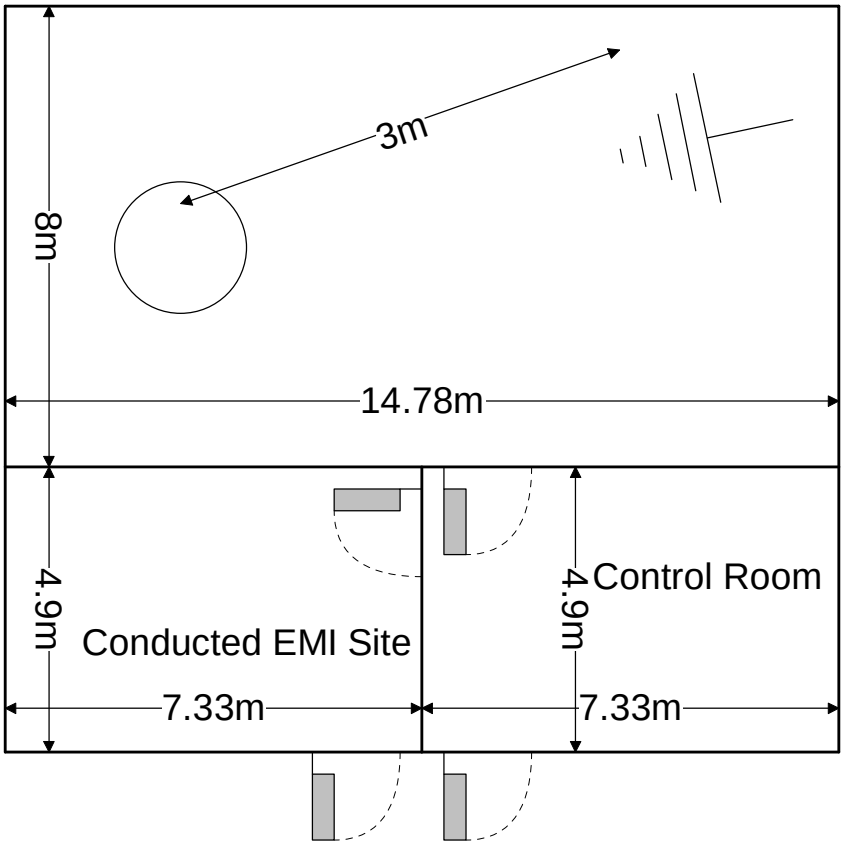


Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

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:

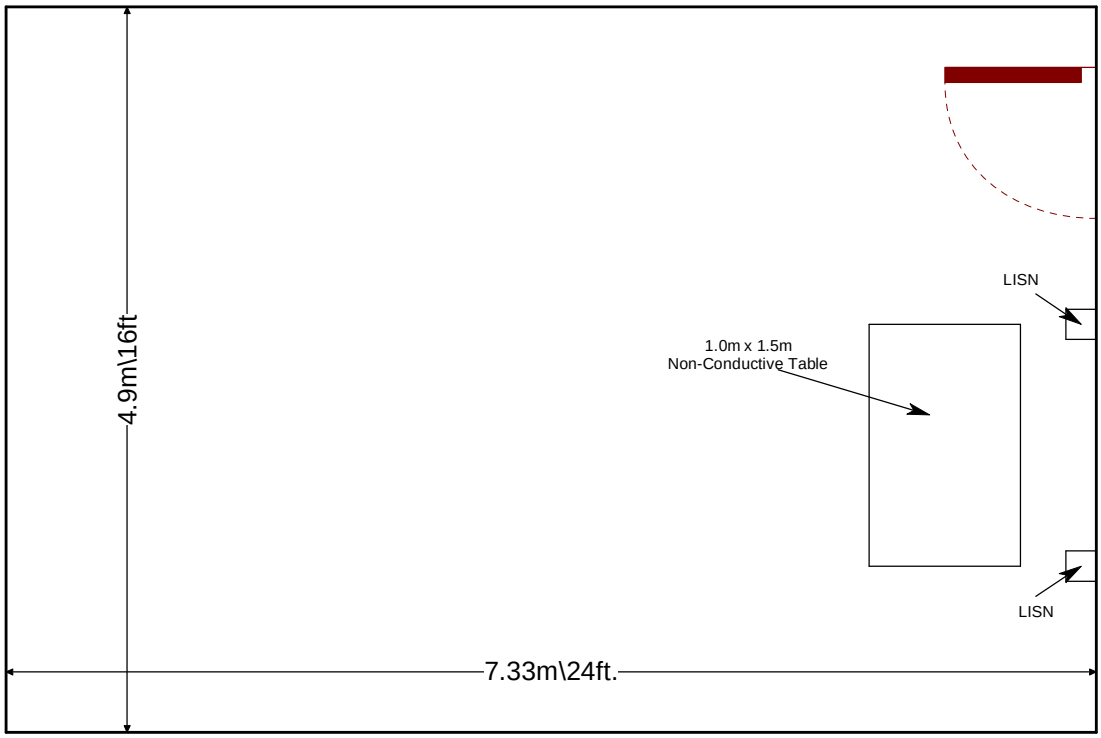


Figure 2.3.2-1: AC Mains Conducted EMI Site

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, 2018.
- US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2018
- FCC KDB 558074 D01 15.247 Meas Guidance v05 – Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of the FCC Rules, August 24, 2018.
- 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, Amendment 1, March 2018.

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
BEMC00078	EMCO	6502	Active Loop Antenna	9104-2608	5/9/2018	5/9/2020
BEMC00282	Microwave Circuits	H3G020G4	2-20GHz Band Pass Filter	74541	5/17/2018	5/17/2019
BEMC00283	Rohde & Schwarz	FSP40	Spectrum Analyzer	1000033	11/28/2017	11/28/2019
BEMC00523	Agilent	E7405A	9kHz-26.5GHz EMC analyzer/HYZ	MY45103293	12/9/2016	12/9/2018
BEMC02002	EMCO	3108	30 MHz to 200 MHz Biconical Antenna	2147	11/28/2017	11/30/2019
BEMC02004	EMCO	3146	200 MHz to 1 GHz Log Periodic Antenna	1385	12/27/2017	12/27/2019
BEMC02006	EMCO	3115	Linear Polarized Horn antenna, 1-18 GHz	2573	4/7/2017	4/7/2019
BEMC02011	Hewlett-Packard	HP 8447D	100 kHz to 1.3 GHz low-noise, high gain amplifier	2443A03952	10/18/2018	10/18/2019
BEMC02045	ACS Boca	Conducted Cable Set	Consists of cables 2046, 2047, 2062, 2063 and 2065	2045	10/22/2018	10/22/2019
BEMC02069	Trilithic, Inc.	7NM867/122-X1-AA	Notch Filter	200315126	2/28/2018	2/28/2019
BEMC02071	Trilithic, Inc.	4HC1400-1-KK	High Pass Filter	9643263	10/17/2018	10/17/2019
BEMC02086	Merrimac	FAN-6-10K	10dB Attenuator	23148-83-1	10/17/2018	10/17/2019
BEMC02095	ETS Lindgren	TILE4! - Version 4.2.A	Tile Automation Software	85242	NCR	NCR
BEMC02110	Aeroflex Inmet	40AH2W-10	Attenuator 10dB, 2.9 mm-M/F, DC-40GHz 2 W	2110	8/5/2018	8/5/2019
BEMC02112	Teledyne Storm Products	921-0101-036	Duratest High Frequency Cable Max. frequency 26.5GHz	12-06-698	10/16/2018	10/16/2019
BEMC02121	Teledyne Storm Products	A81-0303	Radiated Cable Set	2121	7/26/2018	7/26/2019
BEMC02138	Hewlett Packard	8449B	Pre-Amplifier	3008A00320	12/1/2017	12/1/2018
BEMC03004	Teseq	CFL 9206A	Transient Filter Limiter 9kHz - 30MHz	34720	8/10/2018	8/10/2019
TEMC00153	Rhode & Schwarz Vertrieb München	ESH3-Z5	Voltage Network	894785/012	10/19/2018	10/19/2019

Notes:

- **NCR=No Calibration Required**
- **The assets were only used during the active period of the calibration cycle.**

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	RMODITHP	67806022080118030104379
2	Laptop	DELL	Latitude E7250	3904132400043
3	19.5V Power Supply	DELL	LA65NS2-01	CN-06TM1C-72438-54L-8611-A04

Table 5-2: Cable Description – Radiated Emissions

Cable #	Cable Type	Length	Shield	Termination
A	USB	10 m	Yes	EUT to Laptop
B	Power	1.83 m	No	Power Supply to Laptop
C	Power	0.89 m	No	Power Supply to AC Mains

Table 5-1: EUT and Support Equipment Description – Power Line Conducted Emissions

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Acuity Brands Lighting	RMODITHP	67806022080118030103936
2	7 Port Aluminum 3.0 HUB	AUKEY	CB-H4	N/A
3	12V Power Supply	N/A	SAW30-120-2500U	N/A

Table 5-2: Cable Description – Power Line Conducted Emissions

Cable #	Cable Type	Length	Shield	Termination
A	USB	4.6 m	Yes	EUT to HUB
B	Power	1.22 m	No	Power Supply to HUB

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

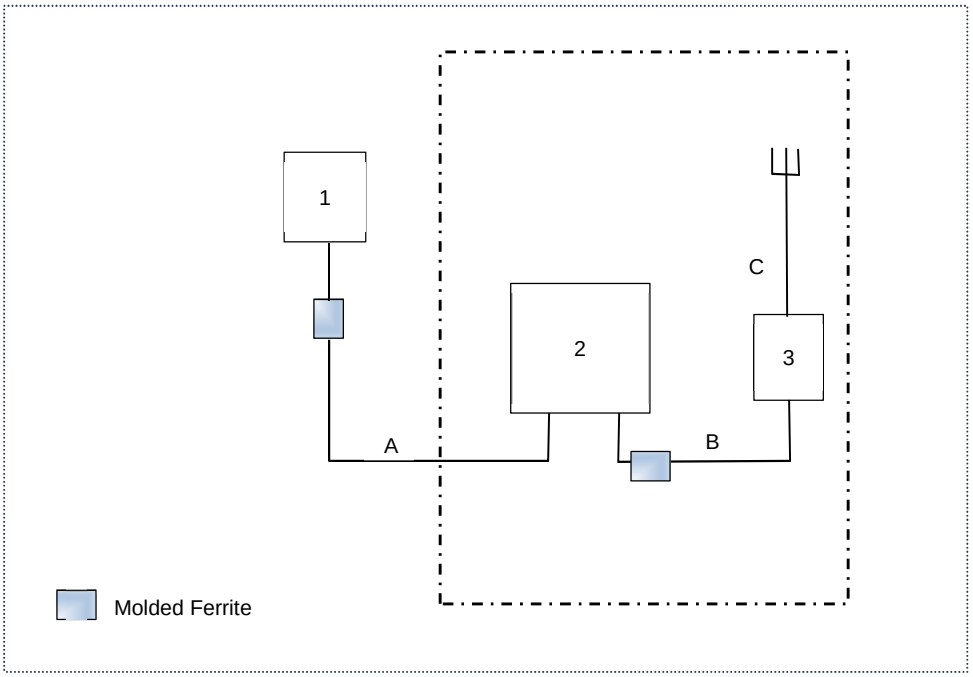


Figure 6-1: EUT and Support Equipment Block Diagram – Radiated Emissions

Note: The equipment within the dotted box was set outside of the test environment.

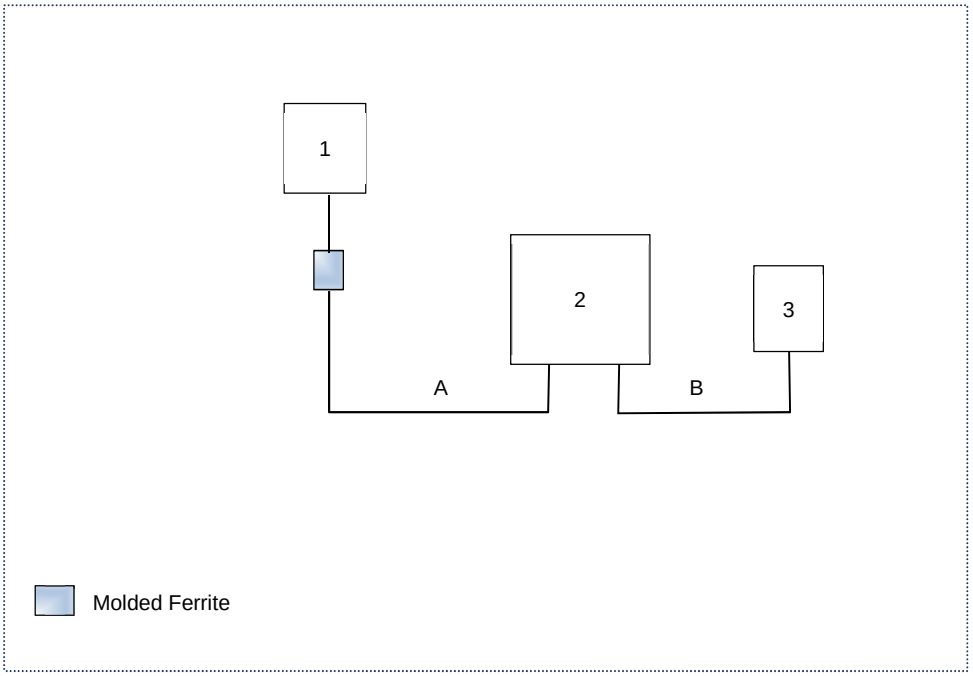


Figure 6-2: EUT and Support Equipment Block Diagram – Power Line Conducted Emissions

7 SUMMARY OF TESTS

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

Test Begin Date: September 11, 2018
Test End Date: November 20, 2018

Table 7-1: Summary of Tests

Requirements	FCC Rule Part	ISED Canada	Test Results
Antenna Requirement	FCC: Section 15.203		Pass
6 dB Bandwidth	FCC: Section 15.247(a)(2)	ISED Canada: RSS-247 5.2(a)	Pass
99% Bandwidth		ISED Canada: RSS-GEN 6.6	Pass
Peak Output Power	FCC: Section 15.247(b)(3)	ISED Canada: RSS-247 5.4(d)	Pass
Band-Edge Compliance of RF Conducted Emissions	FCC: Section 15.247(d)	ISED Canada: RSS-247 5.5	Pass
RF Conducted Spurious Emissions	FCC: Section 15.247(d)	ISED Canada: RSS-247 5.5	Pass
Radiated Spurious Emissions into Restricted Frequency Bands	FCC: Sections 15.205, 15.209	ISED Canada: RSS-Gen 8.9, 8.10	Pass
Power Spectral Density	FCC: Section 15.247(e)	ISED Canada: RSS-247 5.2(b)	Pass
Power Line Conducted Emissions	FCC: Section 15.207	ISED Canada: RSS-Gen 8.8	Pass

7.1 Antenna Requirement – FCC: Section 15.203

The EUT uses Trace intenna that is integral to the PCB. The antenna is not removable 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 ANSI C63.10 Subclause 11.8.1 Option 1. 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.

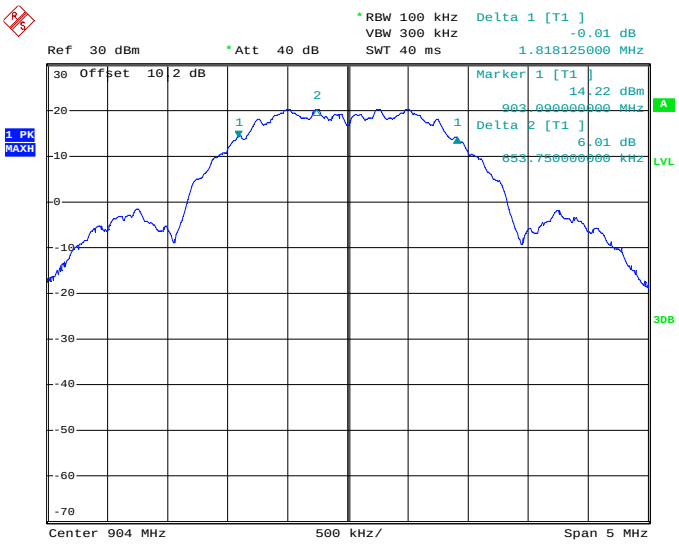
The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission. The RBW was set to 1% to 5% of the approximated bandwidth. The occupied 99% bandwidth was measured by using 99% bandwidth equipment function of the spectrum analyzer using a peak detector.

7.2.2 Measurement Results

Performed by: Thierry Jean-Charles

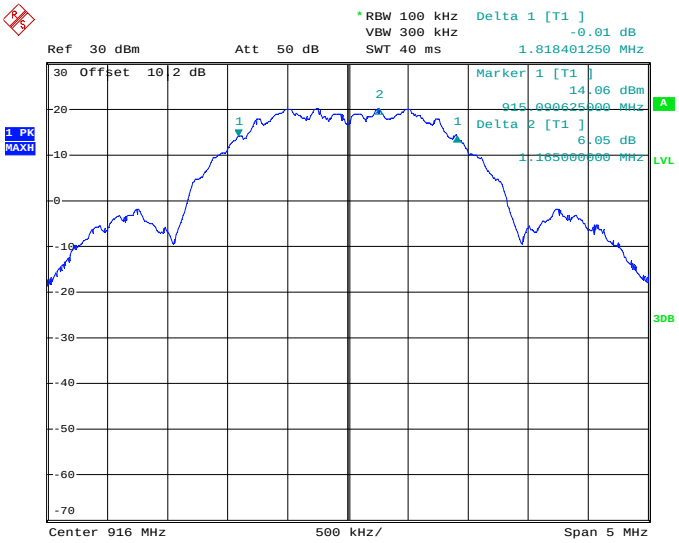
Table 7.2.2-1: 6dB / 99% Bandwidth

Frequency (MHz)	6dB Bandwidth (kHz)	99% Bandwidth (kHz)
904	1818.12500	2390.0
916	1818.40125	2400.0
926	1815.62500	2417.5



Date: 14.SEP.2018 15:47:30

Figure 7.2.2-1: 6dB BW - Low Channel



Date: 14.SEP.2018 14:55:19

Figure 7.2.2-2: 6dB BW - Middle Channel

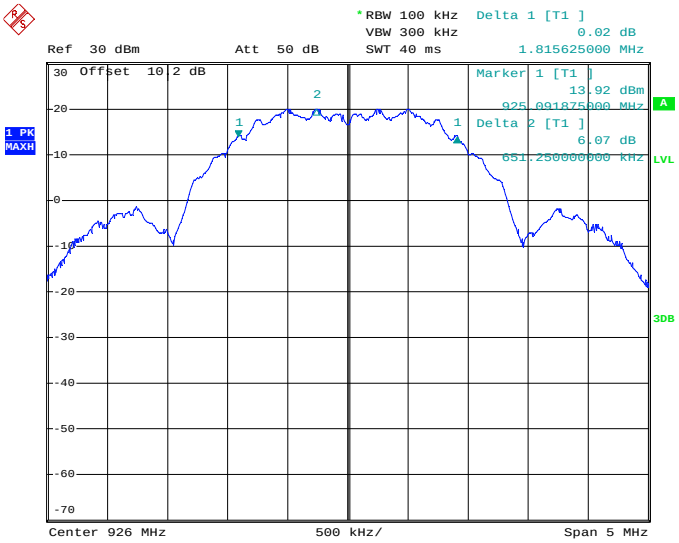


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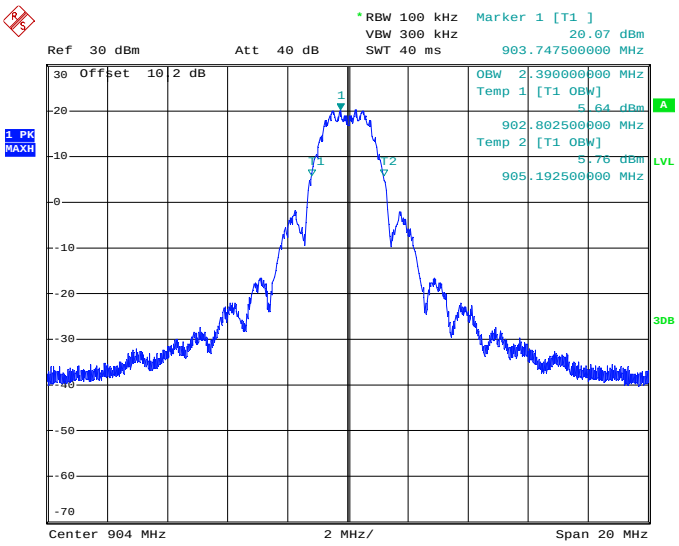
Figure 7.2.2-3: 6dB BW - High Channel



Date: 14.SEP.2018 15:52:23

Figure 7.2.2-4: 99% OBW - Low Channel

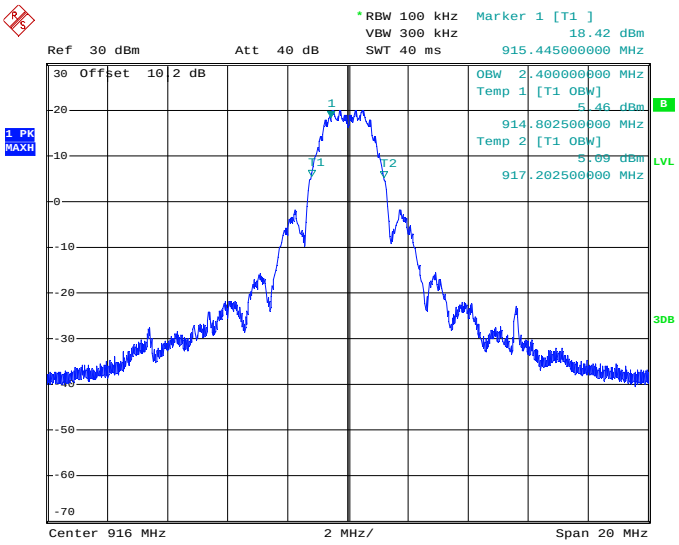


Figure 7.2.2-5: 99% OBW - Middle Channel

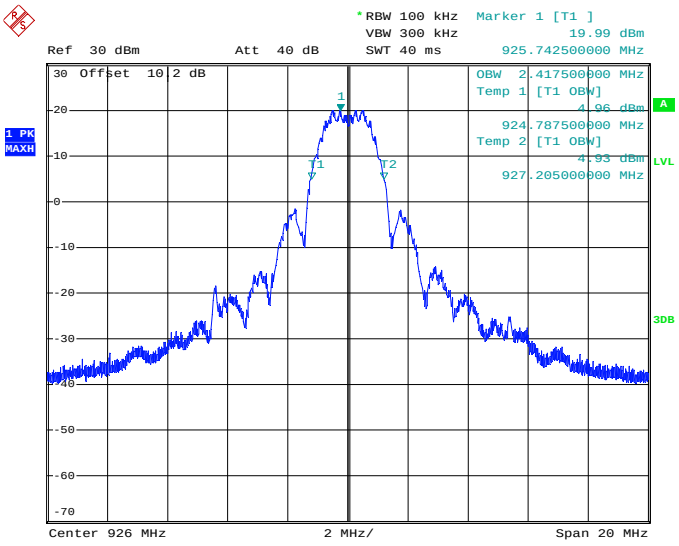


Figure 7.2.2-6: 99% OBW - High Channel

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 ANSI C63.10 Subclause 11.9.1.1 RBW ≥ DTS bandwidth. The RF output of the equipment under test was directly connected to the input of the spectrum analyzer through suitable attenuation.

The Maximum Output Power allowed is 1 Watt (30 dBm)

7.3.2 Measurement Results

Performed by: Thierry Jean-Charles

Table 7.3.2-1: RF Output Power

Frequency (MHz)	Power (dBm)
904	23.83
916	23.53
926	23.34

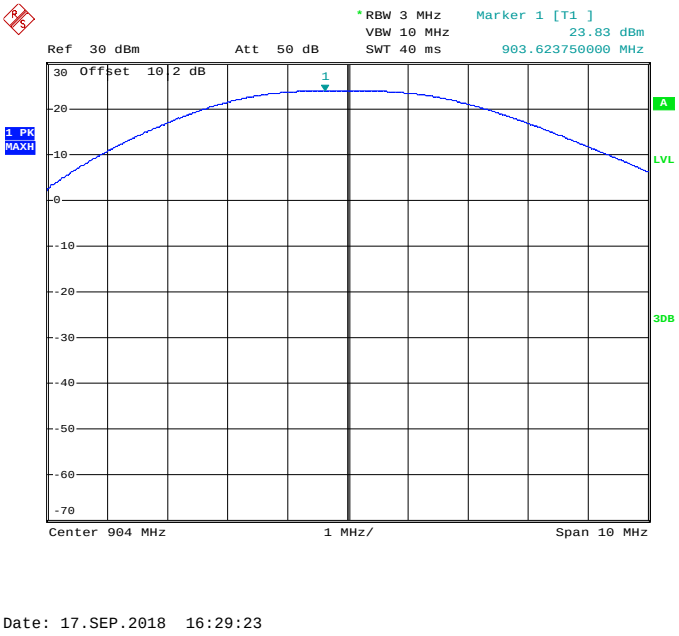
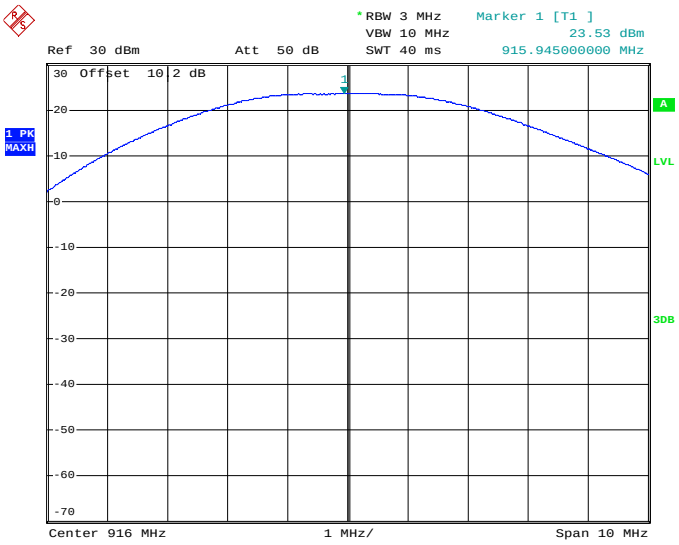
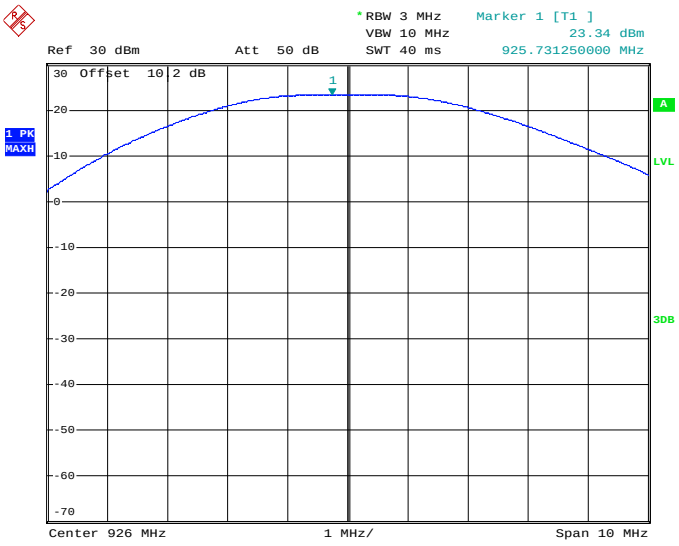


Figure 7.3.2-1: RF Output Power - Low Channel



Date: 17.SEP.2018 16:03:24

Figure 7.3.2-2: RF Output Power - Middle Channel



Date: 17.SEP.2018 16:42:46

Figure 7.3.2-3: RF Output Power - High Channel

7.4 Band-Edge Compliance 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 connected to the input of the spectrum analyzer through 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

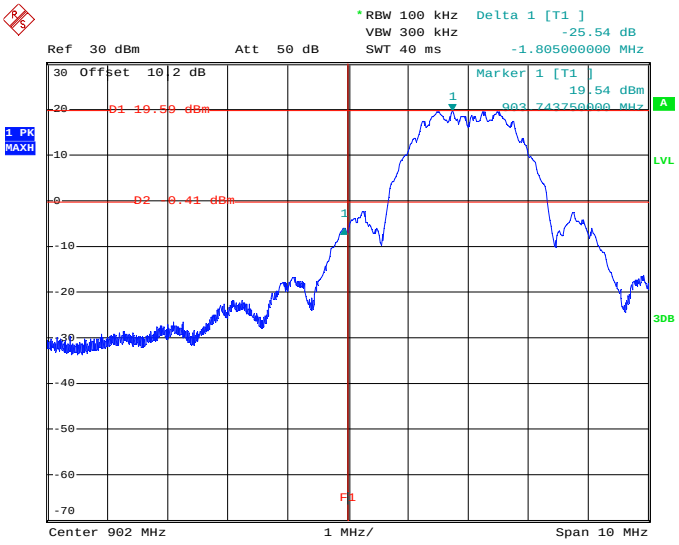


Figure 7.4.1.2-1: Lower Band-Edge

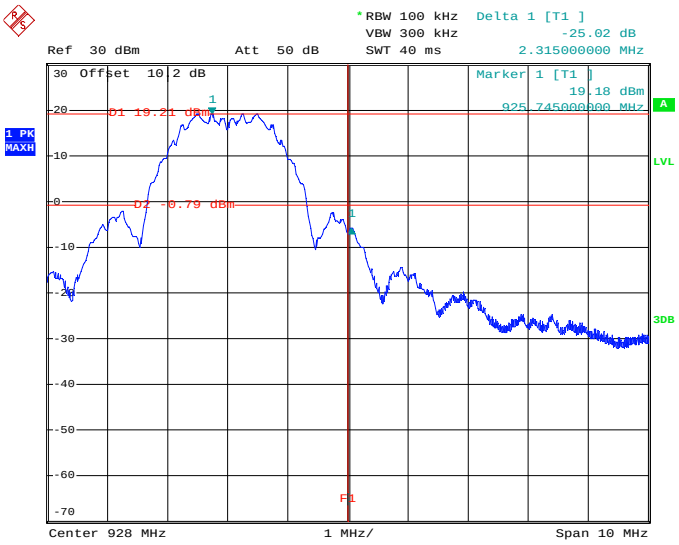


Figure 7.4.1.2-2: Upper Band-Edge

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 ANSI C63.10 Section 7.8.8. 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 10 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.

7.4.2.2 Measurement Results

Performed by: Thierry Jean-Charles

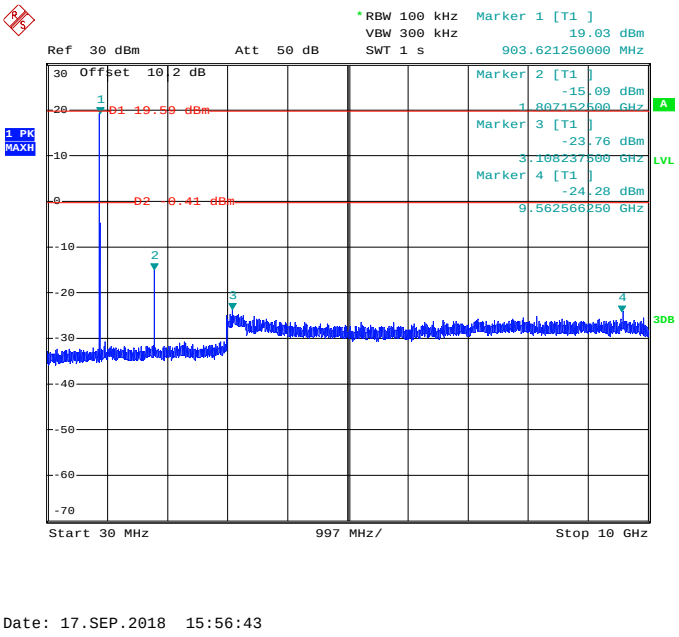


Figure 7.4.2.2-1: 30 MHz – 10 GHz – Low Channel

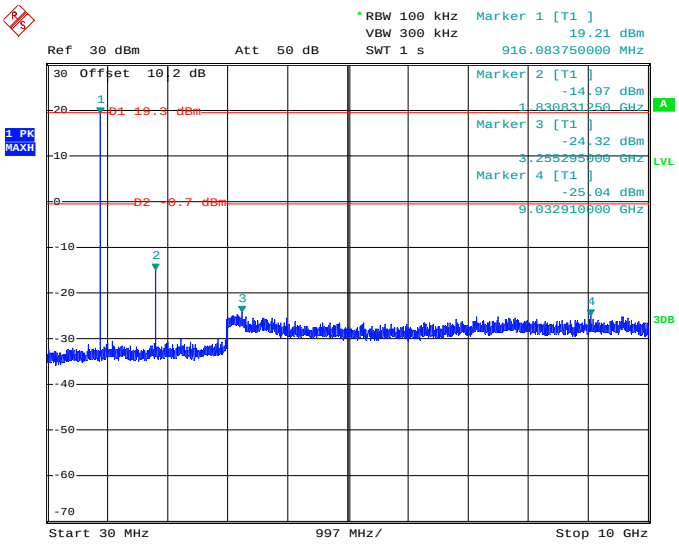


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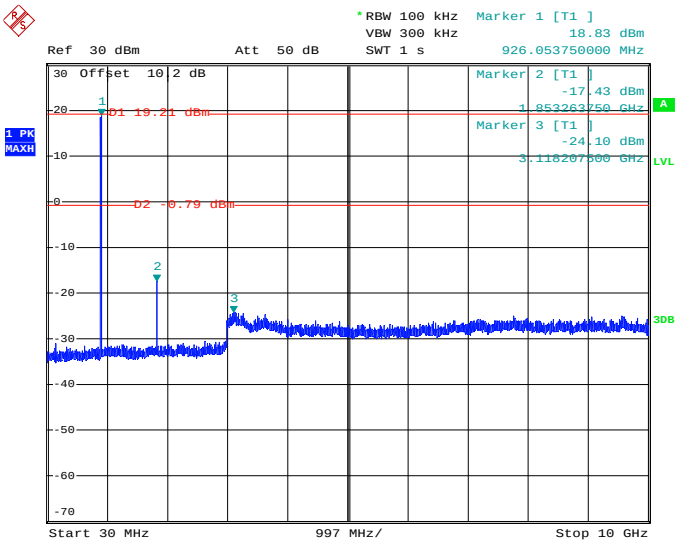
Figure 7.4.2.2-2: 30 MHz – 10 GHz – Middle Channel



Date: 17.SEP.2018 17:22:56

Figure 7.4.2.2-3: 30 MHz – 10 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 10 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 1 m 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 Measurement Results

Performed by: Jean Rene, Thierry Jean-Charles

Radiated band-edge and spurious emissions found in the restricted frequency bands of 9 kHz to 10 GHz are reported in the tables below.

Table 7.4.3.2-1: 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 904 MHz										
2712	40.93	27.85	H	1.96	42.89	29.81	74.0	54.0	31.1	24.2
2712	39.97	26.47	V	1.96	41.93	28.43	74.0	54.0	32.1	25.6
3616	38.80	25.57	H	4.99	43.79	30.56	74.0	54.0	30.2	23.4
3616	39.19	26.10	V	4.99	44.18	31.09	74.0	54.0	29.8	22.9
Middle Channel 916 MHz										
2748	45.03	35.90	H	2.13	47.16	38.03	74.0	54.0	26.8	16.0
2748	40.62	27.10	V	2.13	42.75	29.23	74.0	54.0	31.2	24.8
3664	38.34	24.81	H	5.38	43.72	30.19	74.0	54.0	30.3	23.8
3664	37.93	25.98	V	5.38	43.31	31.36	74.0	54.0	30.7	22.6
High Channel 926 MHz										
960	---------	38.25	H	-0.52	---------	37.73	--------	46.0	---------	8.3
960	---------	35.88	V	-0.52	---------	35.36	--------	46.0	---------	10.6
965.3125	---------	47.86	H	-0.80	---------	47.06	--------	54.0	---------	6.9
965.3125	---------	44.48	V	-0.80	---------	43.68	--------	54.0	---------	10.3
2778	49.36	41.22	H	2.22	51.58	43.44	74.0	54.0	22.4	10.6
2778	40.91	28.71	V	2.22	43.13	30.93	74.0	54.0	30.9	23.1
3704	38.47	26.29	H	5.54	44.01	31.83	74.0	54.0	30.0	22.2
3704	37.85	25.97	V	5.54	43.39	31.51	74.0	54.0	30.6	22.5

Notes:
All emissions above 3704 MHz were attenuated below the limits and the noise floor of the measurement equipment.

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: 40.93 + 1.96 = 42.89 dBµV/m
Margin: 74 dBµV/m – 42.89 dBµV/m = 31.11 dB

Example Calculation: Average
Corrected Level: 27.85 + 1.96 = 29.81 dBµV/m
Margin: 54 dBµV/m – 29.81 dBµV/m = 24.19 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 ANSI C63.10 Subclause 11.10.2 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 to 10 kHz. The Span was adjusted to 1.5 times the DTS bandwidth and the sweep time was set to auto. The measurements were performed using a peak detector.

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)
904	7.98	8.0	0.02
916	7.62	8.0	0.38
926	7.45	8.0	0.55

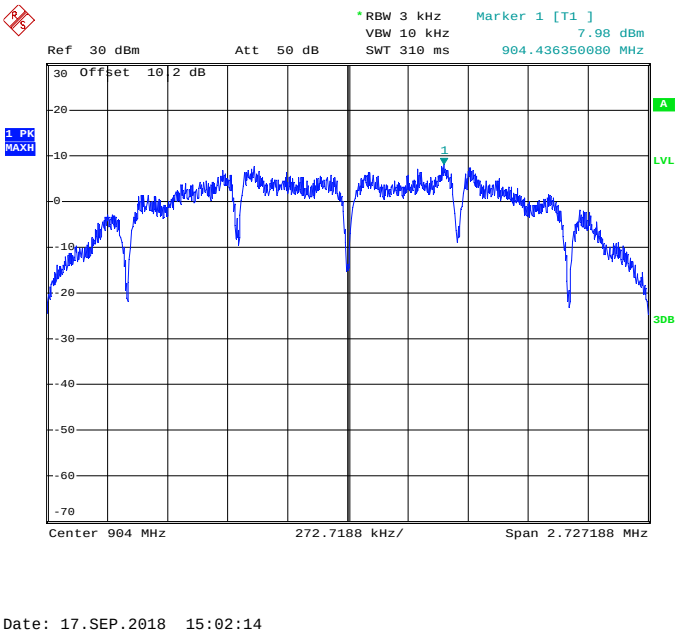


Figure 7.5.2-1: Power Spectral Density - Low Channel

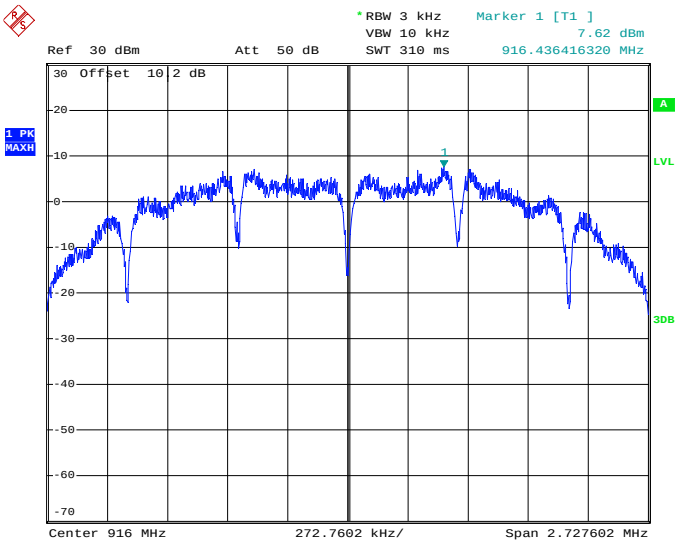


Figure 7.5.2-2: Power Spectral Density - Middle Channel

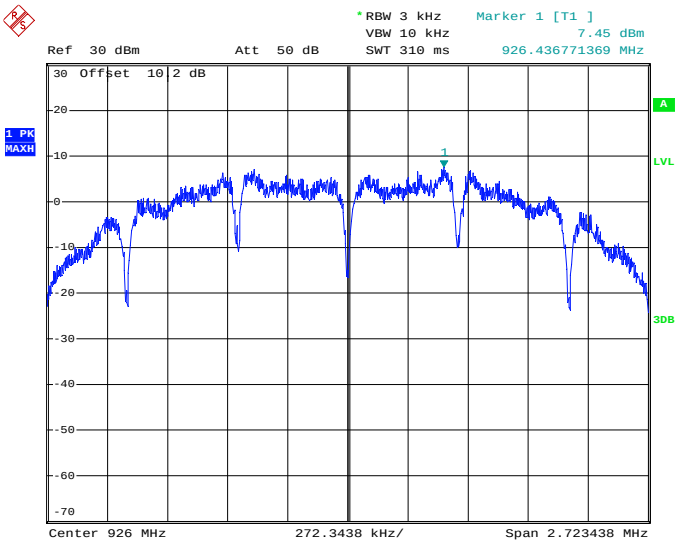


Figure 7.5.2-3: Power Spectral Density – High Channel

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

Table 7.6.2-1: Conducted Emissions Results – Line 1

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

Plot Number:
72142240_ACU_CE02
Power Supply Description: 12 VDC 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									
0.368813	28.111	20.463	10.034	38.145	30.498	59.748	49.748	21.603	19.251
0.383287	31.337	23.702	10.035	41.372	33.738	59.335	49.335	17.962	15.597
0.507	31.493	23.075	10.031	41.524	33.106	56	46	14.476	12.894
0.50825	31.029	22.53	10.031	41.06	32.561	56	46	14.94	13.439
0.675688	23.392	16.636	10.056	33.448	26.693	56	46	22.552	19.307
0.845812	27.833	20.755	10.067	37.9	30.822	56	46	18.1	15.178
1.0094	25.233	17.365	10.092	35.325	27.457	56	46	20.675	18.543
1.18549	25.616	18.05	10.115	35.73	28.164	56	46	20.27	17.836
1.34736	24.468	17.172	10.133	34.601	27.305	56	46	21.399	18.695
1.52935	22.284	15.6	10.153	32.437	25.753	56	46	23.563	20.247

Table 7.6.2-2: Conducted Emissions Results – Line 2

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

Plot Number:
72142240_ACU_CE02
Power Supply Description: 12 VDC 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 2									
0.337438	29.154	21.066	10.071	39.225	31.138	60.645	50.645	21.42	19.507
0.397124	31.308	23.619	10.077	41.384	33.696	58.939	48.939	17.555	15.244
0.408312	31.057	23.459	10.077	41.134	33.536	58.62	48.62	17.486	15.083
0.50665	31.673	23.596	10.08	41.753	33.676	56	46	14.247	12.324
0.50875	31.111	23.071	10.08	41.191	33.152	56	46	14.809	12.848
0.676088	24.056	16.57	10.096	34.152	26.666	56	46	21.848	19.334
0.845613	27.848	20.57	10.113	37.961	30.683	56	46	18.039	15.317
1.18228	26.859	20.19	10.154	37.013	30.345	56	46	18.987	15.655
1.35565	25.614	18.426	10.169	35.782	28.595	56	46	20.218	17.405
1.5233	27.172	20.859	10.183	37.354	31.042	56	46	18.646	14.958

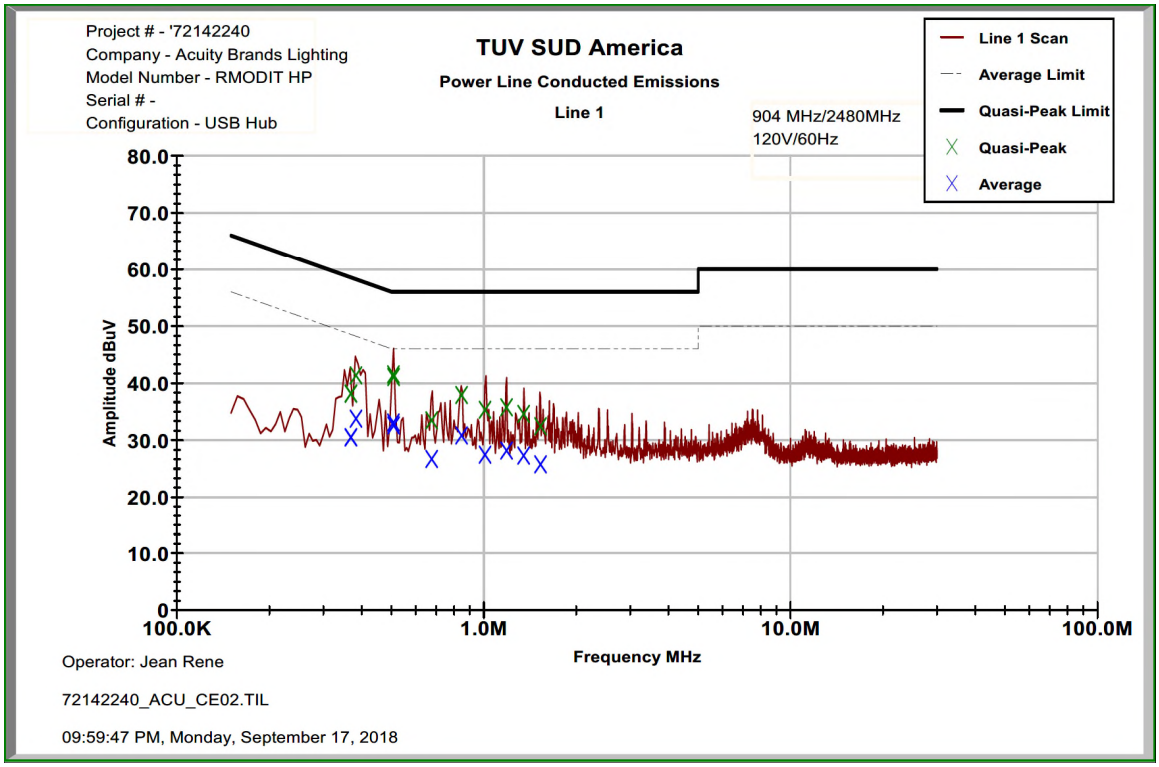


Figure 7.6.2-1: Conducted Emissions Results – Line 1

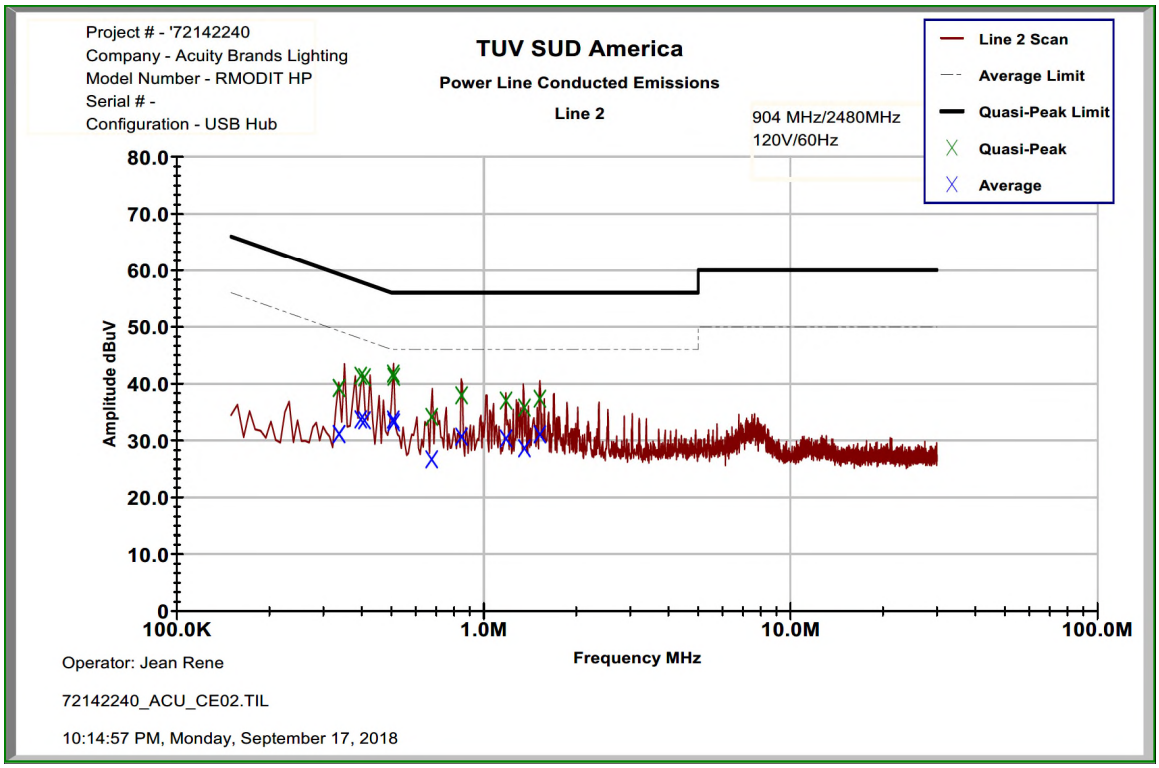


Figure 7.6.2-2: Conducted Emissions Results – Line 2

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	± 1.15 dB
Power Spectral Density	± 1.15 dB
Antenna Port Conducted Emissions	± 1.15 dB
Radiated Emissions ≤ 1GHz	± 5.86 dB
Radiated Emissions > 1GHz	± 4.65 dB
Temperature	± 0.860 °C
Radio Frequency	$\pm 2.832 \times 10^{-8}$
AC Power Line Conducted Emissions	±3.72 dB

9 CONCLUSION

In the opinion of TÜV SÜD America, Inc. the models RMODITHP, 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