

ELECTROMAGNETIC COMPATIBILITY TEST REPORT



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EMC Test Laboratory: **QAI Laboratories Ltd.**
Address: 3980 North Fraser Way
Burnaby, BC, V5J 5K5 Canada.
Phone: (604) 527-8378
Fax: (604) 527-8368

Laboratory Accreditations (per ISO/IEC 17025:2017)



American Association for Laboratory Accreditation Certificate Number: 3657.02

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Manufacturer: **Tantalus Systems Corp.**
Address: 200-3555 Gilmore Way,
Burnaby, BC, Canada | V5G 0B3
Phone: 604-299-0458
Applicable Test Standards: **CFR Title 47 FCC Part 15 Subpart B**
CFR Title 47 FCC Part 90 Subpart T
ICES-003
RSS-119 Issue 12
Equipment Tested: **WAN Transceiver**
Tantalus Part Number: XR-3100
FCC ID: OZFXR3001
IC ID: 3669A-XR3100



REVISION HISTORY

Date	Report Number	Details	Author's Initials
April 8, 2020	E10402-1904-Tantalus-XR-3100 & Part 90_RSS-119 Radio Module- Rev-2.0	Final – Add ISED	RS
March 26, 2020	E10402-1904-Tantalus-XR-3100, & Part 90 Radio Module- Rev-1.0	Final	RS
September 30, 2019	E10402-1904-Tantalus-XR-3100, & Part 90 Radio Module- Rev-0.0	Draft	RS
<i>All previous versions of this report have been superseded by the latest dated revision as listed in the above table. Please dispose of all previous electronic and paper printed revisions accordingly</i>			

REPORT AUTHORIZATION

The data documented in this report is for the equipment provided by Tantalus Systems Corp. Tests were conducted on the sample equipment as requested by Tantalus Systems Corp. for the purpose of demonstrating compliance with FCC Title 47 CFR Part 90 Radio Module as agreed upon by Tantalus Systems Corp. as per Quote 19SH09121.

Tantalus Systems Corp. is responsible for the tested product configuration, continued product compliance, and for the appropriate auditing of subsequent products as required. This report may comprise partial list of tests that are required for FCC Declaration of Conformity and can only be produced by the manufacturer.

This is to certify that the following report is true and correct to the best of our knowledge.

Testing Performed by
Jack Qin
EMC Test Engineer

Report Prepared by
Ravi Sharma
EMC Technical Writer

Reviewed by
Rick Hiebert
EMC Project Manager

Approved by
Parminder Singh
Director of EMC Department

QAI FACILITIES

British Columbia
QAI Laboratories Inc.
Main Laboratory/Headquarters
3980 North Fraser Way,
Burnaby, BC V5J Canada

Ontario
QAI Laboratories Inc.
25 Royal Group Crescent #3,
Vaughan,
ON L4H 1X9 Canada

Virginia
QAI Laboratories Ltd.
1047 Zachary Taylor Hwy,
Suite A Huntly,
VA 22640 USA

China
QAI Laboratories Ltd
Room 408, No. 228, Jiangchang
3rd Road Jing'An District,
Shanghai, China 200436

California
QAI Laboratories Ltd.
8385 White Oak Avenue Rancho
Cucamonga, CA 91730 USA

Oklahoma
QAI Laboratories Ltd.
5110 North Mingo Road
Tulsa, OK 74117, USA

Miami
QAI Laboratories Ltd.
8148 NW 74th Ave,
Medley, FL 33166 USA

South Korea
QAI Laboratories Ltd
#502, 8, Sanbon-ro 324beon-gil
Gunpo-si, Gyeonggi-do, 15829,
South Korea

QAI EMC ACCREDITATION

QAI EMC is your one-stop regulatory compliance partner for electromagnetic compatibility (EMC) and electromagnetic interference (EMI). Products are tested to the latest and applicable EMC/EMI requirements for domestic and international markets. QAI EMC goes above and beyond being a testing facility—we are your regulatory compliance partner. QAI EMC has the capability to perform RF Emissions and Immunity for all types of electronics manufacturing including Industrial, Scientific, Medical, Information Technology, Telecom, Wireless, Automotive, Marine and Avionics.

EMC Laboratory Location	FCC Designation (3m SAC)	IC Registration (3m SAC)	A2LA Certificate
Burnaby, BC, Canada	CA9543	21146-1	3657.02

EMC Facility Burnaby BC, Canada



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Section I: Executive Summary of Standards and Limits

1.1 Applicable Emission Standards

FCC/IC–Emissions

Test or Measurement	Applicable Standards	Description	Result
Radiated Emissions	CFR Title 47 FCC Part 15 Subpart B ICES-003	The radiated emissions are measured in the 30-1000MHz range or upto 5x the highest EUT frequency whichever is higher.	Complies
Conducted Emissions for AC Mains		The Conducted Emissions are measured on the phase and Neutral Power lines in the 0.15 - 30.0 MHz range	

Method of Measurement:

For the radiated emissions the Equipment under test (EUT) is positioned in the center of the turntable in the SAC. The Equipment under test (EUT) is then measured for all the radiated emissions in the frequency range of 30MHz – 1GHz. Measurements were made using the spectrum analyzer and receiver using the appropriate antennas, amplifiers, attenuators, and filters.

The required Quasi-Peak CISPR bandwidth shall be 120 kHz for the range 30 – 1000 MHz. A 1 MHz Resolution Bandwidth (RBW, CISPR Band E) shall be used and a 10 Hz Video Bandwidth (VBW). The ANSI C63.4:2014 requirement for the placement of RF Absorber on the turntable Ground Plane shall be satisfied.

Emissions in both horizontal and vertical polarizations were measured while rotating the Equipment Under Test (EUT) on the turntable to maximize signal strength. In the case of high ambient noises, the measurements are performed at a closer distance and the limit is adjusted per the equation below. The result is added or subtracted to the required emission level to ensure compliance at the new distance.

$$20 \log \left(\frac{D1}{D2} \right) ; \quad \text{Where} \quad \begin{array}{l} D1 = \text{Current Distance} \\ D2 = \text{Required Distance} \end{array}$$

1.2 Applicable Radiated Emission Limits

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FCC Title 47 CFR Part 15-(Class B)/ICES-003 (Class B)

Frequency (MHz)	Field Strength Quasi Peak (Class B)		Result
	(dB μ V/m @ 3m SAC)	(dB μ V/m @ 10m OATS)	
30 – 88	40.0	29.5	Complies
88 – 216	43.5	33.0	
216 – 960	46.0	35.5	
Above 960	53.9	43.4	
Note 1: The lower limit shall apply at the transition frequency			
Note 2: Additional provisions may be required for cases where interference occurs			

1.3 Applicable Conducted Emission Limits

FCC/IC for above standards-Class B

Frequency (MHz)	Conducted Limit (dB μ V)		Result
	Quasi-Peak	Average	
0.15 – 0.50	66 to 56	56 to 46	Complies
0.50 – 5	56	46	
5 – 30	60	50	
Note 1: The lower limit shall apply at the transition frequencies.			
Note 2: The limit decreases linearly with the logarithm of the frequency in the 0.15 to 0.50 MHz			

1.4 Applicable FCC Part 90 Subpart T and RSS-119 Issue 12 Standards

See [Section 3.3](#)

Section II: GENERAL INFORMATION

2.1 Product Description

The information provided in this section is for the Equipment Under Test (EUT) and the corresponding Auxiliary Equipment needed to perform the tests as a complete system.



XR-3100

Equipment Under Test (EUT) Information

Equipment	Manufacturer	Model No.	Serial No.
XR-3100 & Part 90/RSS-119 Radio Module	Tantalus Systems Corp.	XR-3100	002EEC138A
Note: Highest frequency generated or tuned upon within the 222MHz Radio Module used in EUT: FCC ID: OZFXR3001 IC ID: 3669A-XR3100			

EUT Test Mode/Configuration/Operation During Testing

Mode	EUT Test Configuration/Operation
1	Operating continuously at 120/240V 60Hz AC supply

Monitoring the EUT

As per client's instructions and procedures.

2.2 Environmental Conditions

The equipment under test was operated and tested under the following environmental conditions:

Parameter	Conditions
Location	Indoors
Temperature	21°C
Relative Humidity	33.1%
Atmospheric Pressure	101.2 kPa

2.3 Measurement Uncertainty

Parameter	Uncertainty
Radiated Emissions, 30MHz-1GHz	± 2.40 dB
Radiated Emissions, 1GHz-40GHz	± 2.48 dB
Conducted Emissions, 0.15MHz-30MHz	± 2.82 dB
Radio Frequency	±1.5 x 10 ⁻⁵ MHz
Total RF Power Conducted	±1.36 dB
Spurious Emissions, Conducted	±1.36 dB
RF Power Density, Conducted	±1.36 dB
Temperature	±1°C
Humidity	±5 %
DC and low frequency voltages	±3 %

2.4 Worst Test Case

Worst-case orientation was determined during the preliminary testing.
The final radiated emissions were performed in the worst-case orientation.

2.5 Sample Calculations of Emissions Data

Radiated and conducted emissions were performed using EMC32 software developed by Rohdes & Schwarz. Transducer factors like Antenna factors, Cable Losses and Amplifier gains were stored in the test templates which are used to perform the emissions measurements. After test is finished, data is generated from the EMC32 consisting of product details, emission plots and final data tables as shown below.

Frequency (MHz)	Q-Peak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Ant. Ht. (cm)	Pol	Turntable Position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
42.663900	33.0	1000.000	120.000	100.0	H	70.0	13.2	7.5	40.5

Quasi-Peak reading shown in the table above is already corrected by the software using correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

Or

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable Loss} - \text{Amp gain (if pre-amplifier was used)}$$

The final Quasi peak reading shown in the data is calculated by the software using following equation:

$$\text{Corrected Quasi-Peak (dBµV/m)} = \text{Raw Quasi-Peak Reading} + \text{Antenna factor} + \text{Cable loss}$$

To obtain the final Quasi-Peak or Average reading during power line conducted emissions, transducer factors are included in the final measurement as shown below.

Frequency (MHz)	Q-Peak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150	44.3	1000.000	9.000	GND	0.6	21.7	66.0

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150	27.2	1000.000	9.000	GND	0.6	28.8	56.0

Quasi Peak or Average reading shown in above table is already corrected by the software using the correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

The final Quasi-peak or Average reading shown in the data is calculated by the software using following equation:

$$\text{Corr. Quasi-Peak/Average Reading (dBµV)} = \text{Raw Quasi-Peak/Average Reading} + \text{Antenna factor} + \text{Cable loss}$$

The allowable margin from the limits, as per the standards, were calculated for both radiated and conducted emissions:

$$\text{Margin (dB)} = \text{Limit} - \text{Quasi-Peak or Average reading}$$

2.6 Test Equipment List

The tables below contain all the equipment used by QAI Laboratories in conducting all tests on the Equipment Under Test (EUT) as per Section 1.

Emissions Test Equipment

Sl. NO.	Manufacturer	Model	Description	Serial No.	S/W Version	Calibration Due Date
1	Sunol Sciences	SM46C	Turntable	051204-2	N/A	N/A
2	Sunol Sciences	TWR95	Mast	TREML0001	N/A	N/A
3	Sunol Sciences	JB1	Biconilog Antenna 30MHz – 2GHz	A070209	N/A	2020-Aug-16
4	Sunol Sciences	DRH-118	Horn Antenna 1GHz-18GHz	A050905	N/A	2020-Mar-10
5	ETS Lindgren	2165	Turntable	00043677	N/A	N/A
6	ETS Lindgren	2125	Mast	00077487	N/A	N/A
7	Rohde & Schwarz	ESU40	EMI Receiver	100011	EMC32 v10.35.10/ FV 4.73 SP4	2019-Dec-01
8	EMCO	3825/2	LISN (150kHz-30MHz)	9002-1601	N/A	2020-Aug-25
9	ETS Lindgren	S201	5-meter Semi-Anechoic Chamber	1030	N/A	N/A
10	AH Systems	PAM118	Amplifier (10KHz-18GHz)	189	N/A	Conditional Use
11	California Instruments	PACS-1	Harmonics and flicker analyzer	52117	CTS3.0 v3.2.0.35	2020-May-23
12	California Instruments	OMNI 1-18 I	Programmable Impedance Flicker test	--	N/A	2020-May-23
13	California Instruments	3001ix	Power supply	HK52117	N/A	2020-May-23

Note: Equipment listed above have 3 years calibration interval.

Measurement Software List

Sl. No.	Manufacturer	Model	Version	Description
1	Rhode & Schwarz	EMC 32	6.20.0	Emissions Test Software
2	VI Automation	Via EMC Immunity Executive	1.0.308	Radiated and Conducted Immunity Test Program
3	TESEQ	WIN 3000	1.2.0	Surge, EFT & Voltage Dips Immunity Test Program
4	Thurlby Thandar Instruments	HA-PC Link Version	2.02	Harmonics and Flicker Test Program

Section III: DATA & TEST RESULTS

3.1 Radiated Emissions - FCC Part 15 Subpart B, ICES-003

- **Date Performed:**
 - September 17, 18, 2019

- **Test Standard:**
 - As per [Section 1.1](#) of this report

- **Required Limit:**
 - As per [Section 1.2](#) of this report

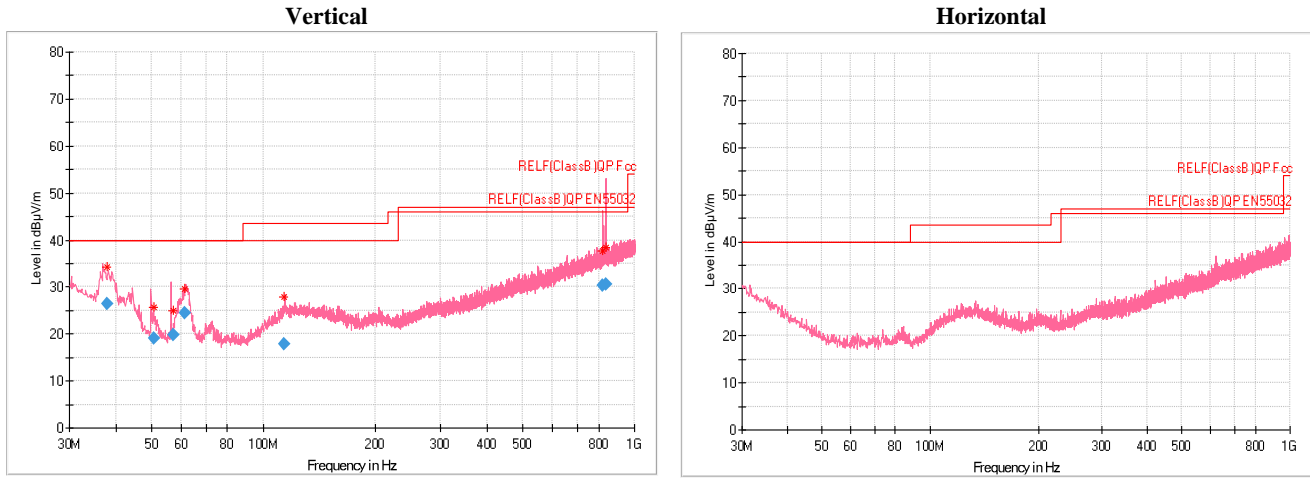
- **Test Method:**
 - As per [Section 1.1](#) of this report

- **Modifications:**
 - No modification was required to comply for this test.

- **Result:**
 - The EUT **complies** with the applicable standard.

Measurement Data and Plots:

- Test Voltage Used: 120VAC/60 Hz
- Frequency Range: 30MHz to 1GHz



Plot 1: Radiated Emissions scanned at 3m SAC—for reference only

Table 1: Quasi-Peak Data of Radiated Emissions measured at 3m-FCC /ISED Class B Limit

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
37.8662	26.54	40.0	13.46	1000	120.000	204.0	V	46	22.3
50.5876	19.13	40.0	20.87	1000	120.000	110.0	V	64	16.3
57.3529	19.90	40.0	20.10	1000	120.000	113.0	V	75	15.4
61.1775	24.40	40.0	15.60	1000	120.000	104.0	V	0	15.1
113.3225	17.98	43.5	25.52	1000	120.000	135.0	V	216	21.2
821.5333	30.33	53.9	23.57	1000	120.000	236.0	V	0	33.1
839.6364	30.47	53.9	23.43	1000	120.000	300.0	V	255	33.2

3.2 AC Mains Conducted Emissions - FCC Part 15 Subpart B, ICES-003

- **Date Performed:**
 - September 17, 2019

- **Test Standard:**
 - As per [Section 1.1](#) of this report

- **Required Limit:**
 - As per [Section 1.3](#) of this report

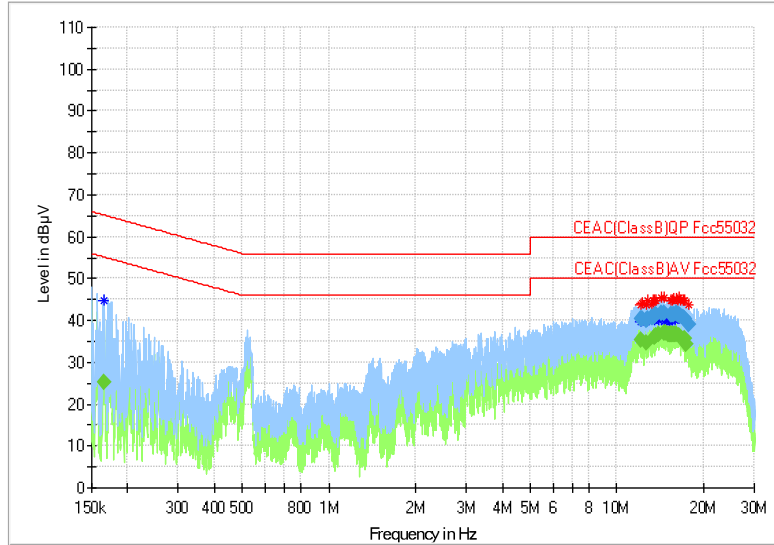
- **Test Method:**
 - As per [Section 1.1](#) of this report

- **Modifications:**
 - No modification was required to comply for this test.

- **Result:**
 - The EUT **complies** with the applicable standard.

Measurement Data and Plot:

- Test Voltage Used: 120VAC/60Hz, **Line 1**
- Frequency Range: 150 KHz to 30 MHz

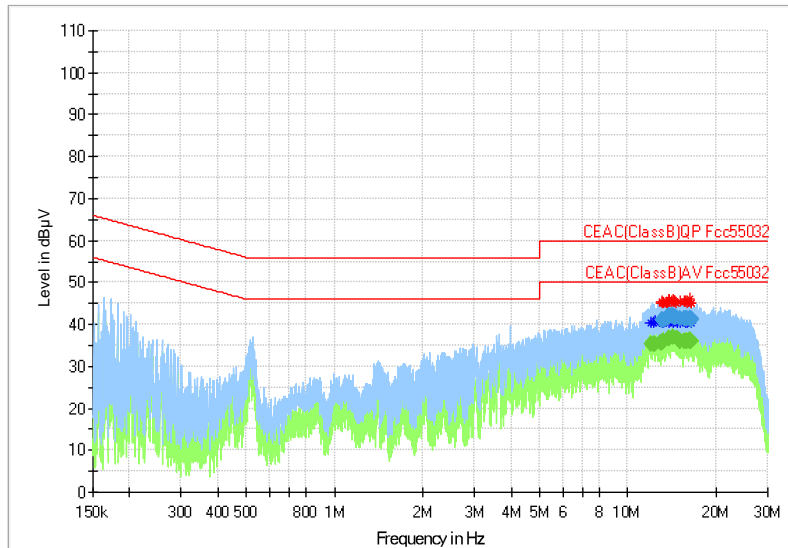


Plot 2: Conducted Emissions –120Vac/60Hz, Line 1–for reference only

Table 2: Quasi-Peak and Average Data of Conducted Emissions–120VAC/60Hz, Line 1

Frequency (MHz)	Quasi Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line	PE	Corr. (dB)
12.1240	---	35.35	50	14.6	1000	9.000	L1	GND	10.5
12.6880	---	34.68	50	15.3	1000	9.000	L1	GND	10.5
13.5000	---	35.98	50	14.0	1000	9.000	L1	GND	10.6
13.6600	---	36.22	50	13.8	1000	9.000	L1	GND	10.6
13.7080	41.43	---	60	18.6	1000	9.000	L1	GND	10.6
14.0040	---	36.82	50	13.2	1000	9.000	L1	GND	10.6
14.5760	---	37.02	50	13.0	1000	9.000	L1	GND	10.6
14.7880	---	36.89	50	13.1	1000	9.000	L1	GND	10.6
15.1120	---	36.58	50	13.4	1000	9.000	L1	GND	10.6
15.2040	---	36.57	50	13.4	1000	9.000	L1	GND	10.6
15.3200	---	36.60	50	13.4	1000	9.000	L1	GND	10.6
15.3640	---	36.70	50	13.3	1000	9.000	L1	GND	10.6
15.5240	---	36.67	50	13.3	1000	9.000	L1	GND	10.6
15.6520	---	36.74	50	13.3	1000	9.000	L1	GND	10.7
15.7680	---	36.69	50	13.3	1000	9.000	L1	GND	10.7
15.9960	---	36.70	50	13.3	1000	9.000	L1	GND	10.7
16.1560	---	36.66	50	13.3	1000	9.000	L1	GND	10.7
16.4320	---	36.42	50	13.6	1000	9.000	L1	GND	10.7
17.1320	---	35.62	50	14.4	1000	9.000	L1	GND	10.7
17.4280	---	34.44	50	15.6	1000	9.000	L1	GND	10.8

- Test Voltage Used: 120VAC/60Hz, **Line 2**
- Frequency Range: 150 KHz to 30 MHz

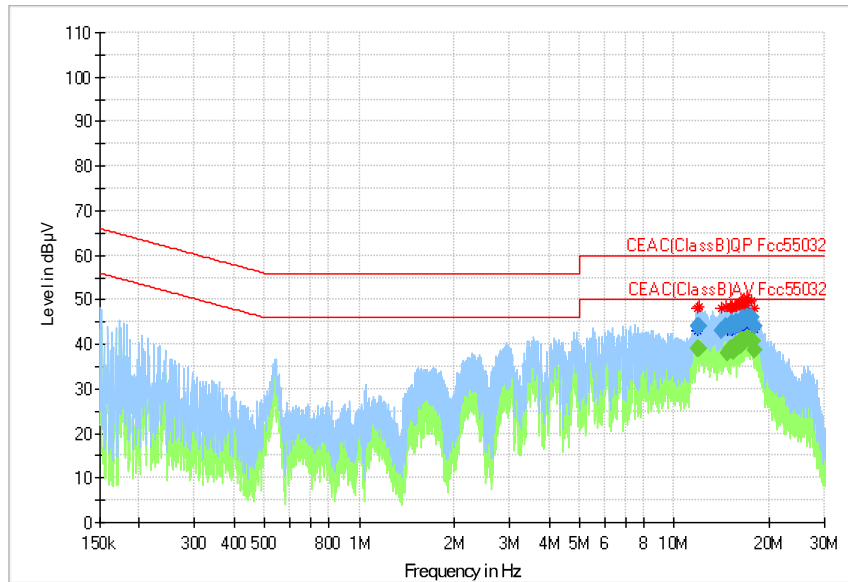


Plot 3: Conducted Emissions –120Vac/60Hz, Line 2–for reference only

Table 3: Quasi-Peak and Average Data of Conducted Emissions–120VAC/60Hz, Line 2

Frequency (MHz)	Quasi Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line	PE	Corr. (dB)
12.0280	---	35.26	50	14.7	1000	9.000	L1	GND	10.5
12.2360	---	35.48	50	14.5	1000	9.000	L1	GND	10.5
12.4400	---	35.22	50	14.8	1000	9.000	L1	GND	10.5
12.9800	---	35.62	50	14.4	1000	9.000	L1	GND	10.5
13.0280	---	35.76	50	14.2	1000	9.000	L1	GND	10.5
13.0520	---	35.76	50	14.2	1000	9.000	L1	GND	10.5
13.2200	---	35.93	50	14.1	1000	9.000	L1	GND	10.5
13.2440	---	36.04	50	14.0	1000	9.000	L1	GND	10.5
13.8160	---	36.80	50	13.2	1000	9.000	L1	GND	10.6
13.8400	---	36.74	50	13.3	1000	9.000	L1	GND	10.6
14.2040	---	37.02	50	13.0	1000	9.000	L1	GND	10.6
14.7440	---	36.52	50	13.5	1000	9.000	L1	GND	10.6
15.0880	---	36.07	50	13.9	1000	9.000	L1	GND	10.6
15.1120	---	36.08	50	13.9	1000	9.000	L1	GND	10.6
15.6040	---	36.08	50	13.9	1000	9.000	L1	GND	10.6
15.7200	---	36.10	50	13.9	1000	9.000	L1	GND	10.7
15.8560	---	36.00	50	14.0	1000	9.000	L1	GND	10.7
16.3120	---	36.24	50	13.8	1000	9.000	L1	GND	10.7
16.3600	---	36.02	50	14.0	1000	9.000	L1	GND	10.7
16.4480	---	36.03	50	14.0	1000	9.000	L1	GND	10.7

- Test Voltage Used: 240VAC/50Hz, **Line 1**
- Frequency Range: 150 KHz to 30 MHz

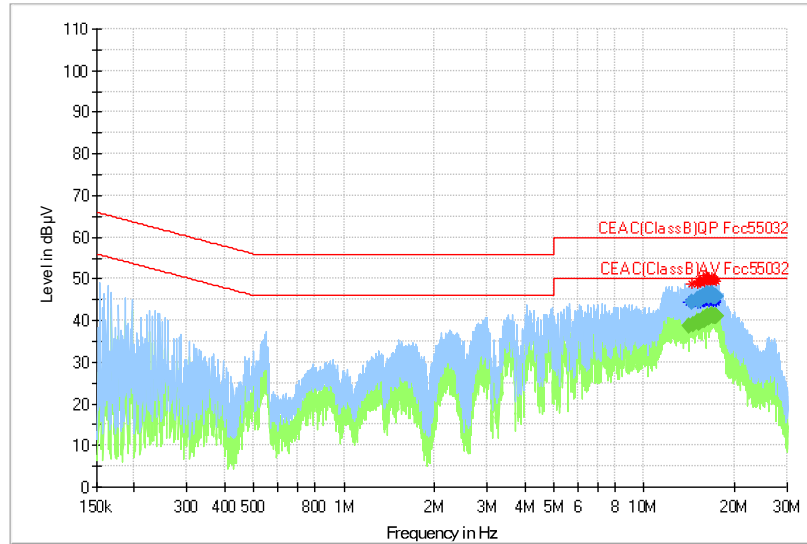


Plot 4: Conducted Emissions –240VAC/50Hz, Line 1–for reference only

Table 4: Quasi-Peak and Average Data of Conducted Emissions–240VAC/50Hz, Line 1

Frequency (MHz)	Quasi Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line	PE	Corr. (dB)
11.9120	---	39.11	50	10.9	1000	9.000	L1	GND	10.5
11.9320	---	39.17	50	10.8	1000	9.000	L1	GND	10.5
14.6680	---	38.03	50	12.0	1000	9.000	L1	GND	10.6
15.1280	---	38.90	50	11.1	1000	9.000	L1	GND	10.6
15.2400	---	38.95	50	11.1	1000	9.000	L1	GND	10.6
15.2640	---	39.13	50	10.9	1000	9.000	L1	GND	10.6
15.3560	---	38.45	50	11.6	1000	9.000	L1	GND	10.6
15.6440	---	39.26	50	10.7	1000	9.000	L1	GND	10.7
15.7360	45.21	---	60	14.8	1000	9.000	L1	GND	10.7
15.8040	---	40.07	50	9.9	1000	9.000	L1	GND	10.7
15.8720	---	39.82	50	10.2	1000	9.000	L1	GND	10.7
15.9400	---	39.41	50	10.6	1000	9.000	L1	GND	10.7
16.1920	---	39.62	50	10.4	1000	9.000	L1	GND	10.7
16.3520	---	40.68	50	9.3	1000	9.000	L1	GND	10.7
16.4000	45.85	---	60	14.1	1000	9.000	L1	GND	10.7
16.4440	---	40.94	50	9.1	1000	9.000	L1	GND	10.7
16.6400	---	40.67	50	9.3	1000	9.000	L1	GND	10.7
16.6400	45.12	---	50	14.9	1000	9.000	L1	GND	10.7
16.6880	45.73	---	60	14.3	1000	9.000	L1	GND	10.7
16.7760	45.58	---	60	14.4	1000	9.000	L1	GND	10.7
16.9120	46.18	---	60	13.8	1000	9.000	L1	GND	10.7
16.9840	---	41.33	50	8.7	1000	9.000	L1	GND	10.7
17.1440	46.07	---	60	13.9	1000	9.000	L1	GND	10.7
17.1440	---	41.30	50	8.7	1000	9.000	L1	GND	10.7
17.6000	46.02	---	60	14.0	1000	9.000	L1	GND	10.8
17.6120	---	40.65	50	9.4	1000	9.000	L1	GND	10.8
17.7240	---	40.62	50	9.4	1000	9.000	L1	GND	10.8
18.0480	---	38.85	50	11.2	1000	9.000	L1	GND	10.8

- Test Voltage Used: 240VAC/50Hz, **Line 2**
- Frequency Range: 150 KHz to 30 MHz



Plot 5: Conducted Emissions –240VAC/50Hz, Line 2–for reference only

Table 5: Quasi-Peak and Average Data of Conducted Emissions–240VAC/50Hz, Line 2

Frequency (MHz)	Quasi Peak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Line	PE	Corr. (dB)
14.1840	---	38.83	50	11.2	1000	9.000	L1	GND	10.6
14.6080	---	39.01	50	11.0	1000	9.000	L1	GND	10.6
15.0640	---	39.63	50	10.4	1000	9.000	L1	GND	10.6
15.2280	---	39.67	50	10.3	1000	9.000	L1	GND	10.6
15.2960	---	39.37	50	10.6	1000	9.000	L1	GND	10.6
15.4800	---	39.85	50	10.2	1000	9.000	L1	GND	10.6
15.6760	---	40.09	50	9.9	1000	9.000	L1	GND	10.7
15.7200	---	40.43	50	9.6	1000	9.000	L1	GND	10.7
15.9040	---	40.09	50	9.9	1000	9.000	L1	GND	10.7
16.0400	---	40.63	50	9.4	1000	9.000	L1	GND	10.7
16.2240	46.23	---	60	13.8	1000	9.000	L1	GND	10.7
16.2240	---	41.05	50	9.0	1000	9.000	L1	GND	10.7
16.2680	46.43	---	60	13.6	1000	9.000	L1	GND	10.7
16.3840	46.21	---	60	13.8	1000	9.000	L1	GND	10.7
16.3840	---	40.86	50	9.1	1000	9.000	L1	GND	10.7
16.4760	---	40.76	50	9.2	1000	9.000	L1	GND	10.7
16.6440	46.19	---	60	13.8	1000	9.000	L1	GND	10.7
16.6440	---	41.06	50	8.9	1000	9.000	L1	GND	10.7
16.7360	46.34	---	60	13.7	1000	9.000	L1	GND	10.7
16.7600	46.38	---	60	13.6	1000	9.000	L1	GND	10.7
16.7600	---	41.47	50	8.5	1000	9.000	L1	GND	10.7
16.9880	---	41.07	50	8.9	1000	9.000	L1	GND	10.7
17.1040	---	40.92	50	9.1	1000	9.000	L1	GND	10.7
17.2160	---	40.91	50	9.1	1000	9.000	L1	GND	10.7
17.4000	---	41.02	50	9.0	1000	9.000	L1	GND	10.8
17.4240	---	40.88	50	9.1	1000	9.000	L1	GND	10.8

3.3 Spurious Emissions – Part 90 Subpart T & RSS-119 Issue 12 Section 5.8.5 Emissions Mask F

- **Date Performed:**
 - September 17, 18, 2019

- **Test Standard:**
 - Part 90 Subpart T & RSS-119 Issue 12: (221 – 222 MHz Band)
 - 90.210 Emissions Mask F
 - RSS-119 Issue 12 Section 5.8.5 Emissions Mask F

Table 6: Conducted Spurious Emissions – Low Frequency Tx=221.0025 MHz

Frequency MHz	Conducted Emissions dBm	Limit dBm	Margin dB
221.0025	36.3		
442.005	-26.1	-25	1.1
663.0075	-36.5	-25	11.5
884.01	-37.3	-25	12.3
1105.0125	-33	-25	8
1326.015	-36	-25	11
1547.0175	-36	-25	11
1768.02	-35	-25	10
1989.0225	-33	-25	8
2210.025	-34	-25	9

Table 7: Conducted Spurious Emissions – Mid Frequency Tx=221.4975 MHz

Frequency MHz	Conducted Emissions dBm	Limit dBm	Margin dB
221.4975	36.8		
442.995	-25.34	-25	0.34
664.4925	-36.3	-25	11.3
885.99	-36	-25	11
1107.4875	-33.76	-25	8.76
1328.985	-34.5	-25	9.5
1550.4825	-36.5	-25	11.5
1771.98	-35.5	-25	10.5
1993.4775	-36.9	-25	11.9
2214.975	-32.73	-25	7.73

Table 8: Conducted Spurious Emissions – High Frequency Tx=221.9975 MHz

Frequency MHz	Conducted Emissions dBm	Limit dBm	Margin dB
221.9975	36.5		
443.995	-25.44	-25	0.44
665.9925	-33	-25	8
887.99	-35	-25	10
1109.9875	-33	-25	8
1331.985	-33	-25	8
1553.9825	-34	-25	9
1775.98	-36.6	-25	11.6
1997.9775	-33	-25	8
2219.975	-34	-25	9

- **Modifications:**
 - No modification was required to comply for this test.

- **Result:**
 - The EUT **complies** with the applicable standard.

Appendix A: TEST SETUP PHOTOS

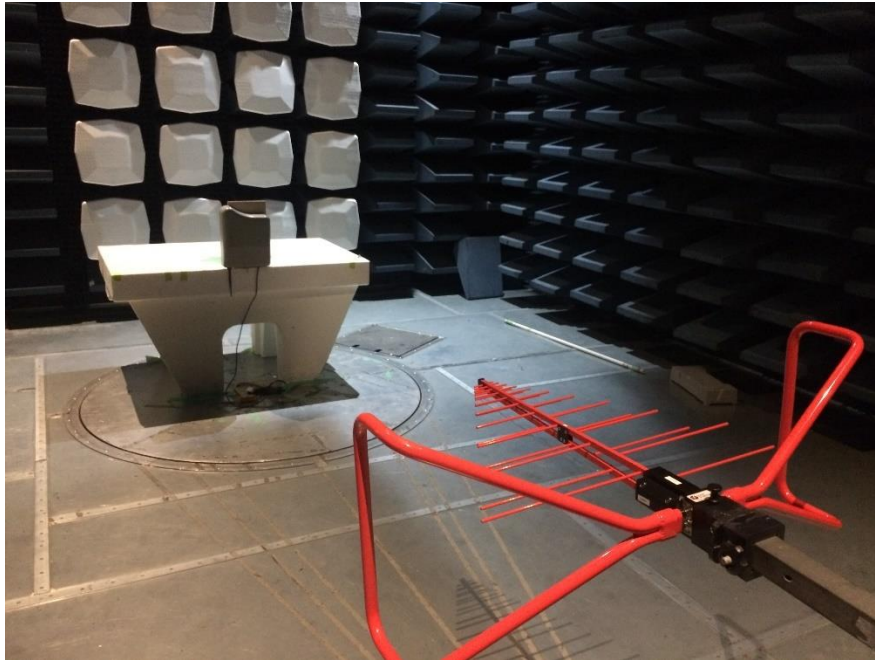


Figure 1: Radiated Emissions performed at the SAC Test Setup

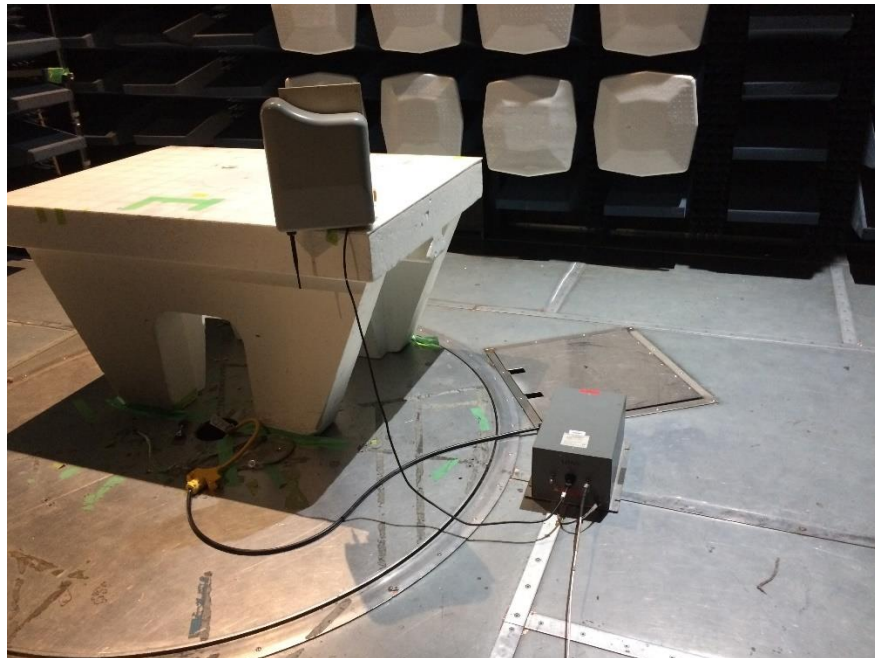


Figure 2: Conducted Emissions performed at the SAC Test Setup

Appendix B: ABBREVIATIONS

Abbreviation	Definition
AC	Alternating Current
AM	Amplitude Modulation
CE	European Conformity
CISPR	Comité International Spécial des Perturbations Radioélectriques (International Special Committee on Radio Interference)
DC	Direct Current
EFT	Electrical Fast Transient
EMC	Electro Magnetic Compatibility
EMI	Electro Magnetic Interference
ESD	Electrostatic Discharge
EUT	Equipment Under Test
FCC	Federal Communications Commission
IC	Industry Canada
ICES	Interference Causing Equipment Standard
IEC	International Electrotechnical Commission
LISN	Line Impedance Stabilizing Network
OATS	Open Area Test Site
RF	Radio Frequency
RMS	Root-Mean-Square
SAC	Semi-Anechoic Chamber

END OF REPORT