

Global EMC Inc. Labs

EMC & RF Test Report

As per

RSS 210 Issue 8:2010

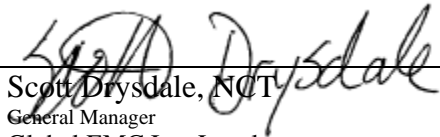
&

FCC Part 15 Subpart C:2012

Unlicensed Intentional Radiators

on the

RES-2100-SGM30XA



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Testing produced for



See Appendix A for full customer & EUT details.



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

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Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Report Scope

This report addresses the EMC verification testing and test results of the RES-2100-SGM30XA Unit, herein referred to as EUT (Equipment Under Test) performed at Global EMC Labs.

The EUT was tested for compliance against the following standards:


RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

The results contained in this report relate only to the item(s) tested.

This report does not imply product endorsement by A2LA or any other accreditation agency, any government, or Global EMC Inc.


Opinions/interpretations expressed in this report, if any, are outside the scope of Global EMC Inc accreditation. Any opinions expressed do not necessarily reflect the opinions of Global EMC Inc, unless otherwise stated.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
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Summary

The results contained in this report relate only to the item(s) tested.

EUT FCC Certification #, FCC ID:	TMB-G30SGM30XA
EUT Industry Canada Certification #, IC:	6028A-G30SGM30XA
EUT Passed all tests performed.	Yes (see test results summary)
Tests conducted by	Scott Drysdale

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Results Summary

Standard/Method	Description	Class/Limit	Result
FCC 15.203	Antenna Requirement	Unique	Pass See Justification
FCC 15.205 RSS 210 (Table 1)	Restricted Bands for intentional operation	QuasiPeak Average	Pass
FCC 15.207	Power line conducted emissions	QuasiPeak Average	Pass
FCC 15.209 RSS-210 (Table 2)	Spurious Radiated emissions	QuasiPeak Average	Pass
FCC 15.247(a)2 RSS-210 A8.2(a)	6 dB Bandwidth	> 500 kHz	Pass
FCC 15.247(b)2 RSS-210 A8.4(4)	Max output power	< 1 Watt	Pass
FCC 15.247(b)(4) RSS-210 A8.4(5)	Antenna Gain	< 6 dBi	Pass See Justifications
FCC 15.247(d) RSS-210 A8.5	Antenna conducted spurious	< 20 dBc	Pass
FCC 15.247(e) RSS-210 A8.2(b)	Spectral Density	< 8 dBm (3 kHz BW)	Pass
FCC 15.247(i) IC Safety code 6	Maximum Permissible Exposure	> 20 cm separation.	Pass See justification and calculations
Overall Result			Pass

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All tests were performed by Scott Drysdale.

If the product as tested or otherwise complies with the specification, the EUT is deemed to comply with the requirement and is deemed a 'PASS' grade. If not 'FAIL' grade will be issued. Note that 'PASS' / 'FAIL' grade is independent of any measurement uncertainties. A 'PASS' / 'FAIL' grade within measurement uncertainty is marked with a '*'.

Justifications, Descriptions, or Deviations

The following justifications for tests not performed descriptions, or deviations from the above listed specifications apply:

The duty cycle of the EUT during measurement was greater than or equal to 98%. Note that this duty cycle is performed in this special mode for test purposes only.

For the Antenna requirement specified in FCC 15.203 (RSS 210 section 5.5), this device has internal antenna(s) and has no end user serviceable operations.

For antenna conducted measurements the PCB trace antenna an identical sample was replaced with a standard connector and conducted measurements were performed.


For the Restricted Bands of operation, the EUT is designed to only operate between 2.4 GHz and 2.4835 GHz.

For the power line conducted emissions requirements, the EUT is DC powered, and this test does not apply. However for information purposes, power line conducted emissions with a representative host is included in this test report.

For the scope of this test report, radiated testing of the EUT was pre-scanned in three orthogonal axis to maximize emissions. Maximum emissions were found in the vertical EUT polarization. This setup was used for all testing in this report. Additionally, normally the EUT would be operated in this orientation.


For the Antenna gain, this device is designed for use with a PCB trace antenna with a measured gain less than 6.0 dBi. The conducted measurement was 124.6 dBuV/m at a 3 meter distance. Based on a factor of 95.2 (see FCC 412172 D01) applied, this is 29.4 dBm EIRP. Since conducted was 29.4 dBm, this equates to an antenna gain of 0 dBi.

For maximum permissible exposure, this device operates at less than 1 Watt at 2.4GHz to 2.4835 GHz MHz and is designed to operate greater than 20 cm from personnel during

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normal operation. No testing is required, however worst case calculated exposure compliance is presented as separate exhibit.

A later revision of the standard may have been substituted in place of the previous dated referenced revision. The year of the specification used are listed under applicable standards. Using the later revision accomplishes the goal of ensuring compliance to the intent of the previous specification, while allowing the laboratory to incorporate the extensions and clarifications made available by a later revision.

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Applicable Standards, Specifications and Methods

- ANSI C63.4:2009 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
- ANSI C63.10:2009 - American national standard for testing unlicensed wireless devices
- CFR 47 FCC 15 - Code of Federal Regulations – Radio Frequency Devices
- CISPR 22:2008 - Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
- FCC KDB 558074 - FCC KDB 558074 v03r01 Digital Transmission Systems, measurements and procedures
- ICES-003:2012 - Digital Apparatus - Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard
- ISO 17025:2005 - General Requirements for the competence of testing and calibration laboratories
- RSS 210:2010 - Issue 8: Spectrum Management and Telecommunications Policy. Radio Standards Specification Low Power Licence-Exempt Radiocommunication Devices

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Sample calculation(s)

Margin = limit – (received signal + antenna factor + cable loss – pre-amp gain)

Margin = 50.5dBuV/m – (50dBuV + 10dB + 2.5dB – 20dB)

Margin = 8.5 dB


Document Revision Status

Revision 1 - Draft - Oct 30th, 2013

Revision 2 - Revision for TCB.
Dec 16, 2013

Revision 3 - Revisions as per TCB request.
Included better references to ANSI C63.10, ANSI C63.4, or KDB as
appropriate for methods where applicable
Jan 9, 2014

Revision 4 - Correction of '500 uV/m' to '5000 uV/m' as applicable.
Jan 16, 2014

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Definitions and Acronyms

The following definitions and acronyms are applicable in this report.
See also ANSI C63.14.

AE – Auxiliary Equipment.

BW – Bandwidth. Unless otherwise stated, this refers to the 6 dB bandwidth.

EMC – Electro-Magnetic Compatibility

EMI – Electro-Magnetic Immunity

EUT – Equipment Under Test

ITE – Information Technology Equipment with a primary function(s) of entry, storage, display, retrieval, transmission, processing, switching, or control, of data.

LISN – Line impedance stabilization network

NCR – No Calibration Required

RF – Radio Frequency


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Testing Facility

Testing for EMC on the EUT was carried out at Global EMC labs in Montréal, Québec, Canada. The testing lab consists of a 3m semi-anechoic chamber calibrated to be able to allow measurements on an EUT with a maximum width or length of up to 2m and height up to 3m. The chamber is equipped with a turn table that is capable of testing devices up to 3300lb in weight. This facility is capable of testing products that are rated for 120 Vac and 240Vac single phase, or 208 Vac 3 phase input. DC capability is also available. The chamber is equipped with an antenna mast that controls polarization and height from the control room adjoining the shielded chamber. Radiated emissions measurements are performed using a Bilog, and Horn antenna where applicable. Conducted emissions, unless otherwise stated, are performed using a LISN.

Calibrations and Accreditations


The measurement site used is registered with Federal Communications Commission (FCC) and Industry Canada (IC). This site is calibrated for Normalized Site Attenuation (NSA) using test procedures outlined in ANSI C63.4 “Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz”. The semi-anechoic chamber is lined with ferrite tiles and absorption cones to minimize any undesired reflections. All measuring equipment is calibrated on an annual or bi-annual basis as listed for each respective test. Global EMC’s is accredited by A2LA with a scope of accreditation listed under certificate number 2555.01.

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Testing Environmental Conditions and Dates

Following were the environmental conditions in the facility during time of testing –

Date	Test	Init.	Temperature (°C)	Humidity (%)	Pressure (kPa)
Sep 27, 2013	Radiated	SD	20°C	30-45%	98 -103kPa
Oct 02, 2013	Antenna Conducted	SD	23°C	30-55%	98 -103kPa
Nov 21, 2013	PSD	SD	20°C	30-55%	98 -103kPa

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Detailed Test Results Section

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Power Line Conducted Emissions

Purpose

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT's power line does not exceed the limits listed below as defined in the applicable test standard, as measured from a LISN. This helps protect lower frequency radio services such as AM radio, shortwave radio, amateur radio operators, maritime radio, CB radio, and so on, from unwanted interference.

Limits & Method

The limits are as defined in 47 CFR FCC Part 15 Section 15.207


Method is as defined in ANSI C63.4:2009

Average Limits		QuasiPeak Limits	
150 kHz – 500 kHz	56 to 46 dBuV	150 kHz – 500 kHz	66 to 56 dBuV
500 kHz – 5 MHz	46 dBuV	500 kHz – 5 MHz	56 dBuV
5 MHz – 30 MHz	50 dBuV	500 kHz – 30 MHz	60 dBuV

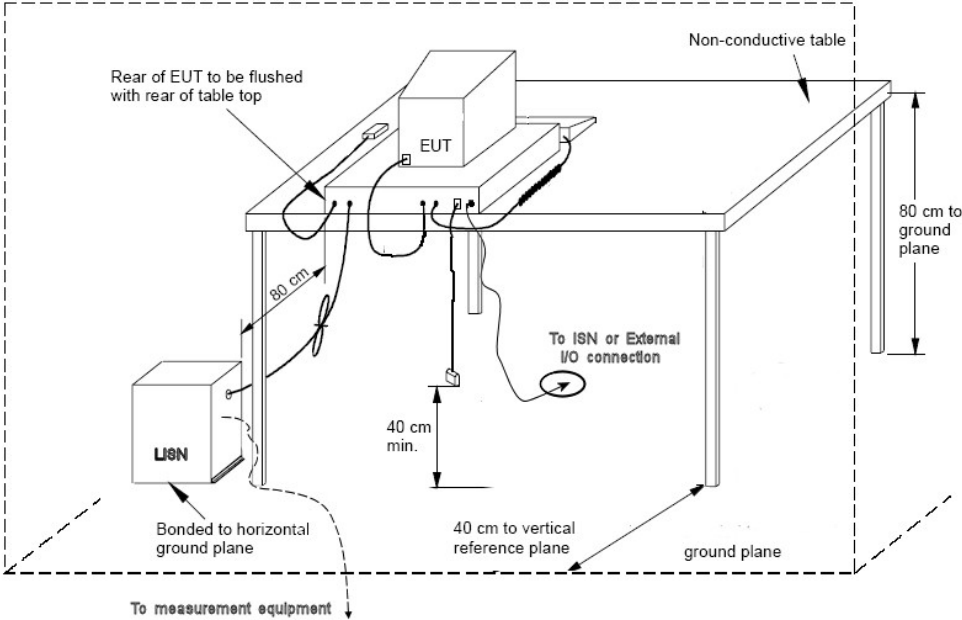
The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

Note: If the Peak or Quasi Peak detector measurements do not exceed the Average limits, then the EUT is deemed to have passed the requirements.


Both limits are applicable, and each is specified as being measured with a 9 kHz measurement bandwidth .

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Typical Setup Diagram



Note: The vertical reference plane is optional as per ANSI C63.4 section 5.2.2


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Measurement Uncertainty

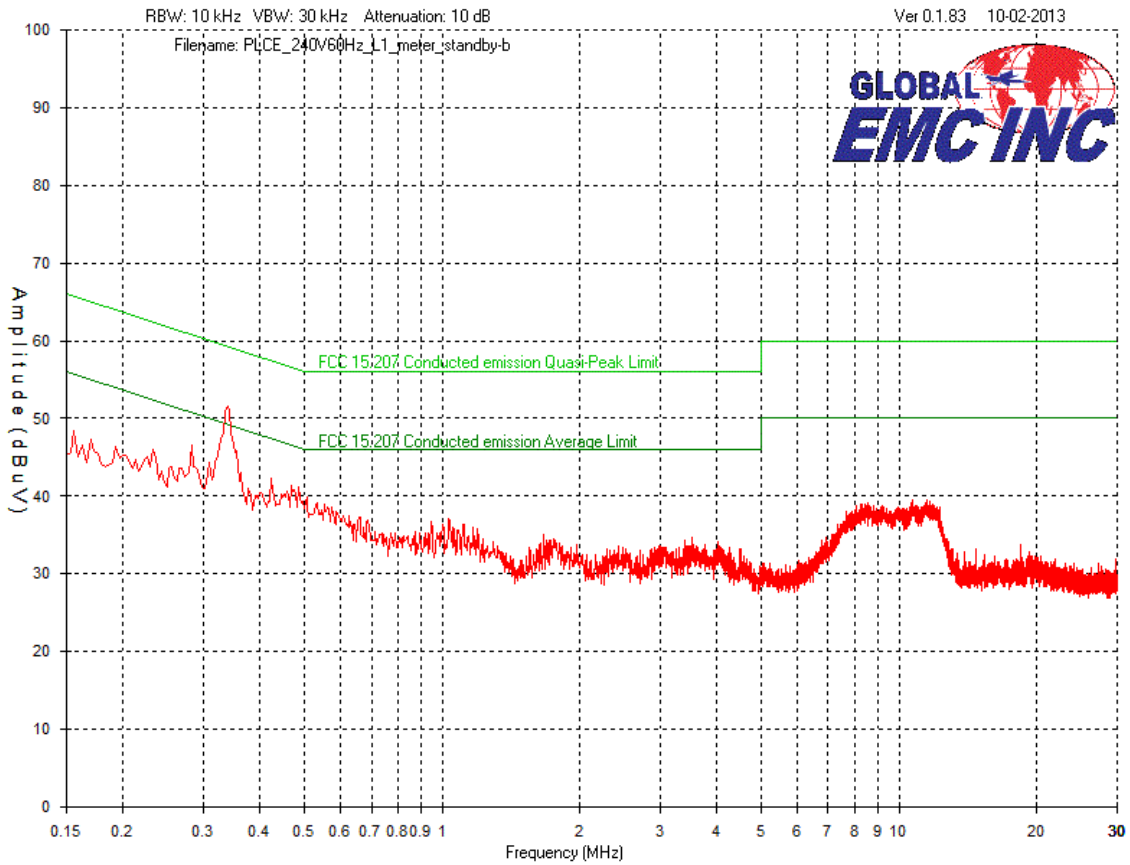
The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is +/-3.6 dB with a 'k=2' coverage factor and a 95% confidence level.


Preliminary Graphs

Note the graphs shown below are for graphical illustration only. For final measurements with the appropriate detector where applicable, please refer to the table. The graph shown below is a peak measurement graph, measured with a resolution bandwidth greater then or equal to the final required detector. These graphs are performed as a worst case measurement to enable the detection of frequencies of concern and for considerable time savings.

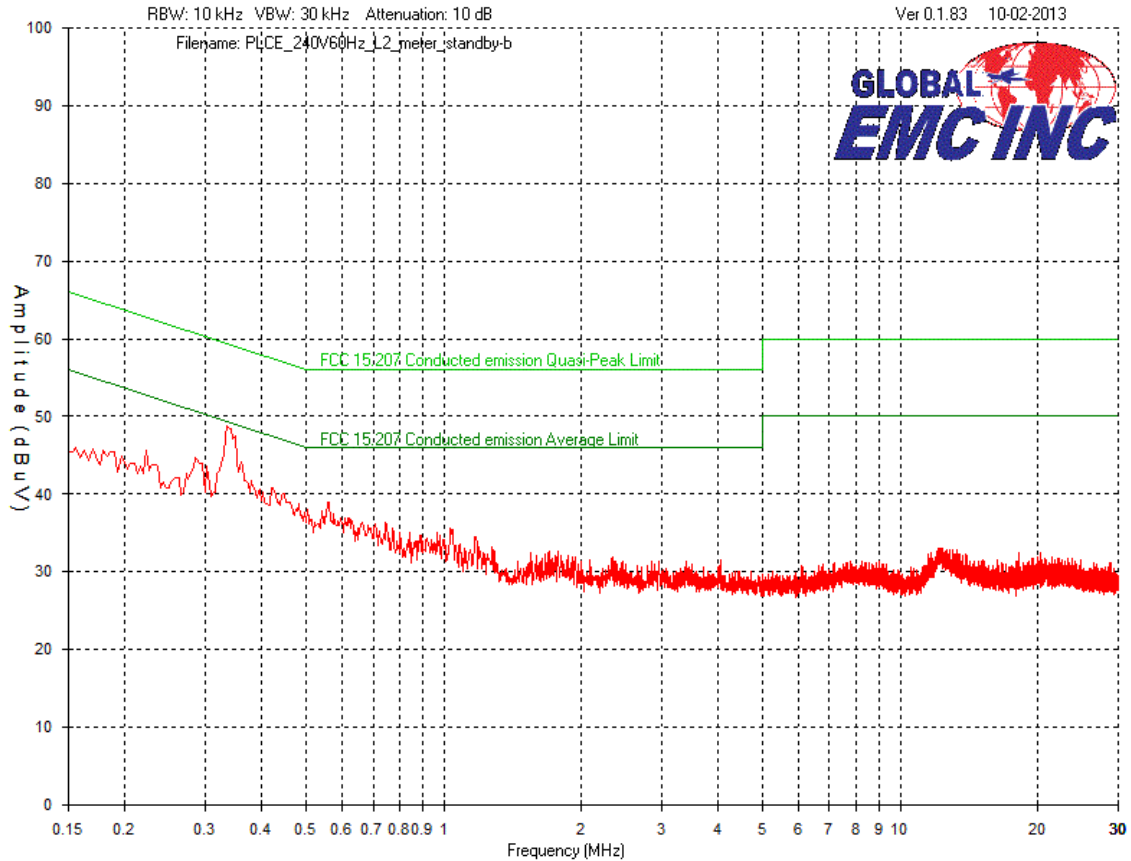
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Phase (Black/Brown)



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Neutral (White/Blue)



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Final Measurements

Average Emission reading table – Line 1

Frequency (MHz)	Raw (dBuV)	Atten Factor (dB)	LISN Factor (dB)	Cable (dB)	Level (dBuV)	Limit (dB)	Margin (dB)	Pass/Fail
0.3391	35	10	0	0.4	45.4	49.2	3.8	Pass

Peak Emission reading vs. Average Limit table – Line 1

Frequency (MHz)	Raw (dBuV)	Atten Factor (dB)	LISN Factor (dB)	Cable (dB)	Level (dBuV)	Limit (dB)	Margin (dB)	Pass/Fail
0.1566	37	10	0	1.4	48.4	55.6	7.2	Pass
11.4831	29.2	10	0.1	0.2	39.5	50	10.5	Pass
1.6724	24.9	10	0	0.2	35.1	46	10.9	Pass
3.5264	24.4	10	0.1	0.2	34.7	46	11.3	Pass
0.504883	29.7	10	0.0201	0.2	39.9201	46	6.1	Pass
1.03887	26.7	10	0.0306	0.2	36.9306	46	9.1	Pass

Average Emission reading table – Line 2


Frequency (MHz)	Raw (dBuV)	Atten Factor (dB)	LISN Factor (dB)	Cable (dB)	Level (dBuV)	Limit (dB)	Margin (dB)	Pass/Fail
0.3357	30.6	10	0	0.4	41	49.3	8.3	Pass

Peak Emission reading vs. Average Limit table – Line 1

Frequency (MHz)	Raw (dBuV)	Atten Factor (dB)	LISN Factor (dB)	Cable (dB)	Level (dBuV)	Limit (dB)	Margin (dB)	Pass/Fail
0.3357	38.4	10	0	0.4	48.8	49.3	0.5	Pass
0.1566	34.5	10	0	1.4	45.9	55.6	9.7	Pass
12.2194	22.7	10	0.1	0.3	33.1	50	16.9	Pass
0.594433	26.8	10	0.0219	0.2	37.0219	46	8.9	Pass
0.61765	26.8	10	0.0223	0.2	37.0223	46	9.0	Pass
1.47335	20.2	10	0.0371	0.2	30.4371	46	15.6	Pass

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Note: See 'Appendix B – EUT & Test Setup Photographs' for photos showing the test set-up for the highest line conducted emission

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Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset#
HP Spectrum Analyzer	8566B	HP	2013-01-22	2015-01-22	4169
Spectrum Analyzer Display	8566B	HP	1-22-13	1-22-15	4168
Quasi Peak Adapter	85650A	HP	2013-01-23	2015-01-23	4170
LISN	FCC-LISN-50/250-16-2-01	FCC	2013-05-06	2015-05-06	4005
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	N/A	N/A	4025
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	N/A	N/A	4026
Attenuator 10 dB	FP-50-10	Trilithic	N/A	N/A	4027

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class A_Rev1"

Client	Trilliant Networks Canada Inc.	
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Radiated Emissions

Purpose

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT does not exceed the limits listed below as defined in the applicable test standard, as measured from a receiving antenna. This helps protect broadcast radio services such as television, FM radio, pagers, cellular telephones, emergency services, and so on, from unwanted interference.

Limit(s) and Method

The method is as defined in ANSI C63.4:2009.


The limits are as defined in FCC Part 15, Section 15.209:

0.009 MHz – 0.490 MHz, 2400/F(kHz) uV/m at 300 m¹
0.490 MHz – 1.705 MHz, 24000/F(kHz) uV/m at 30 m¹
1.705 MHz – 30 MHz, 30 uV/m at 30 m¹
30 MHz – 88 MHz, 100 uV/m (40.0 dBuV/m¹) at 3 m
88 MHz – 216 MHz, 150 uV/m (43.5 dBuV/m¹) at 3 m
216 MHz – 960 MHz, 200 uV/m (46.0 dBuV/m¹) at 3 m
Above 960 MHz, 500 uV/m (54.0 dBuV/m¹) at 3 m
Above 1000 MHz, 500 uV/m (54 dBuV/m²) at 3m
Above 1000 MHz, 5000 uV/m (74 dBuV/m³) at 3m

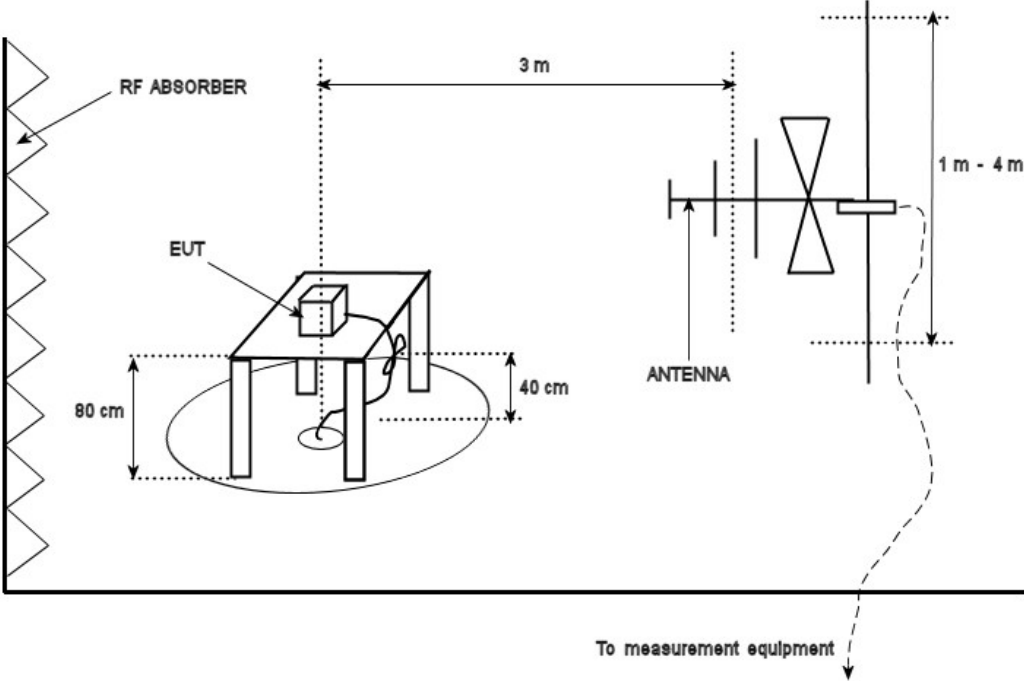
¹Limit is with Quasi Peak detector with bandwidths as defined in CISPR-16-1-1


²Limit is with 1 MHz measurement bandwidth and using an Average detector

³Limit is with 1 MHz measurement bandwidth and using a Peak detector

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Typical Radiated Emissions Setup



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Measurement Uncertainty


The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is +/-4.4 dB with a 'k=2' coverage factor and a 95% confidence level.

Preliminary Graphs

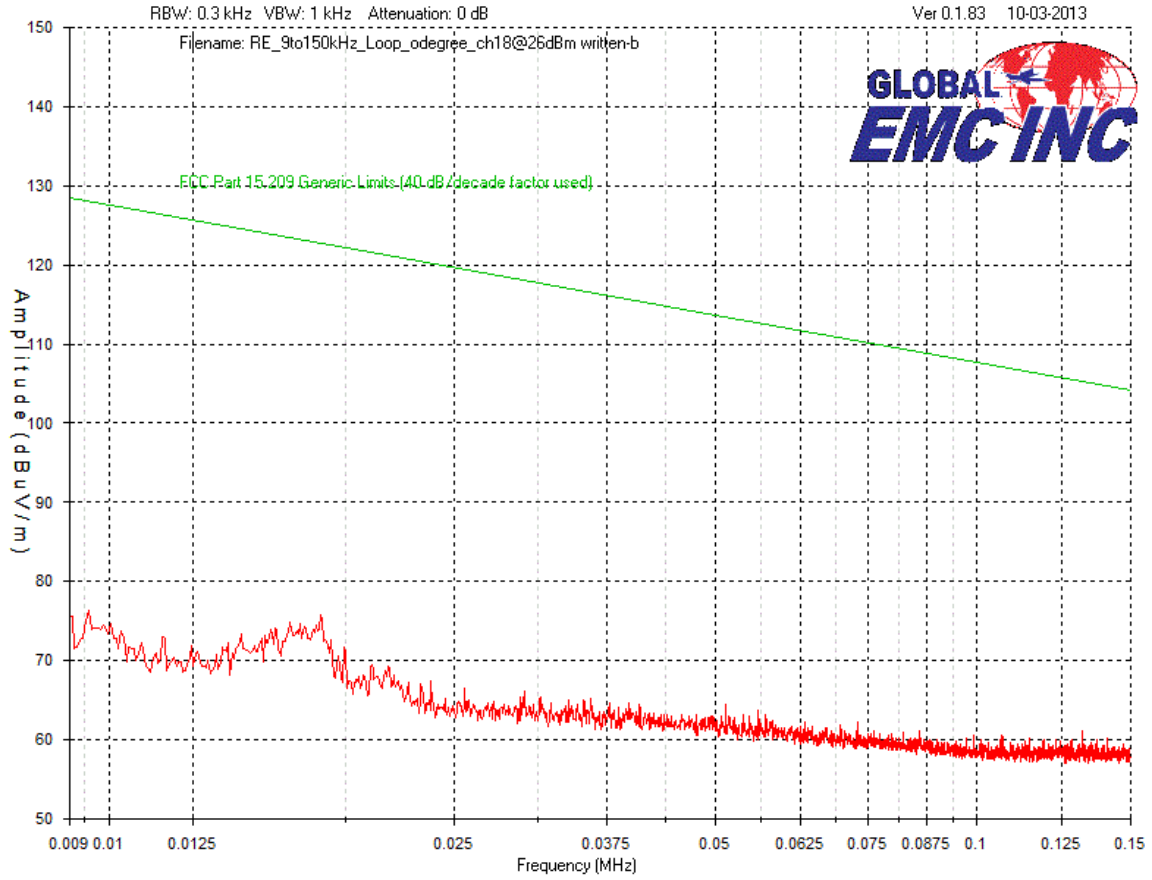
Note the graphs shown below are for graphical illustration only. For final measurements with the appropriate detector, please refer to the final measurement table where applicable. The graph shown below is a maximized peak measurement graph, measured with a resolution bandwidth greater than the final required detector and over a full 0-360 rotation. This peaking process is done as a worst case measurement. This process enables the detection of frequencies of concern for final measurement, and provides considerable time savings.


In accordance with FCC Part 15, Subpart A, Section 15.33, the device was scanned to the 10th harmonic (a minimum of a 25 GHz).

Devices scanned may be scanned at alternate test distances, and in accordance with FCC Part 15, Subpart A, Section 15.31, an extrapolation factor of 20 dB/decade was used above 30 MHz and 40 dB/decade below 30 MHz. For example for 1 meter measurements, an extrapolation factor 9.5 dB from 20 Log (1m / 3m) is applied.

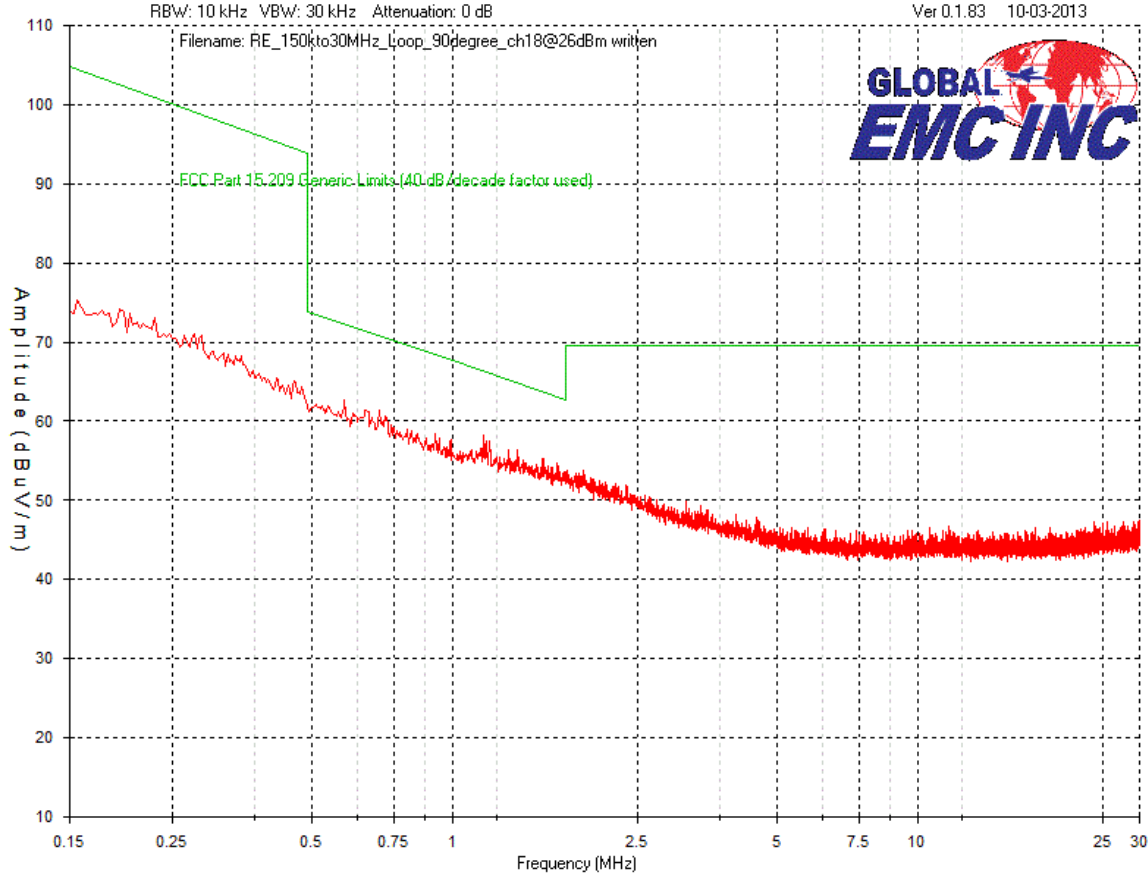
Client	Trilliant Networks Canada Inc.	
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Peak emissions graph - 9 kHz to 150 KHz



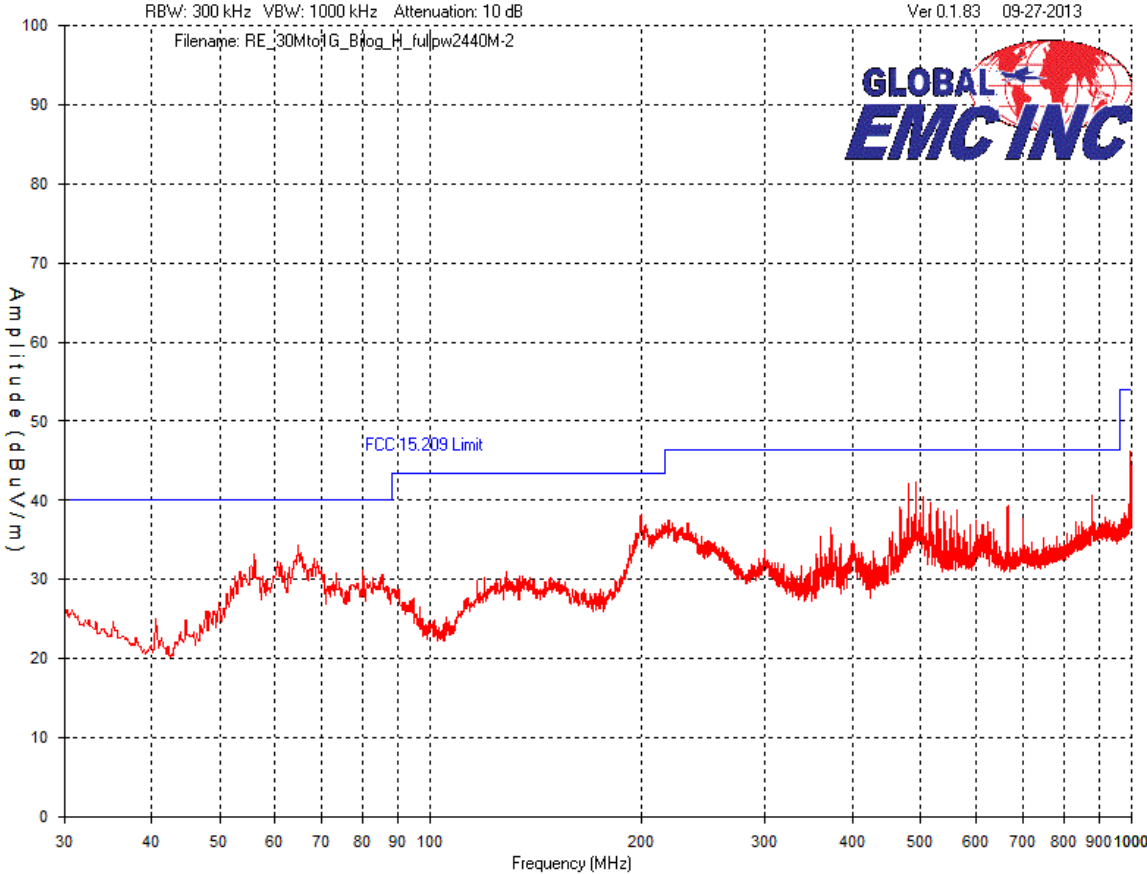
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Peak emissions graph - 150 kHz to 30 MHz




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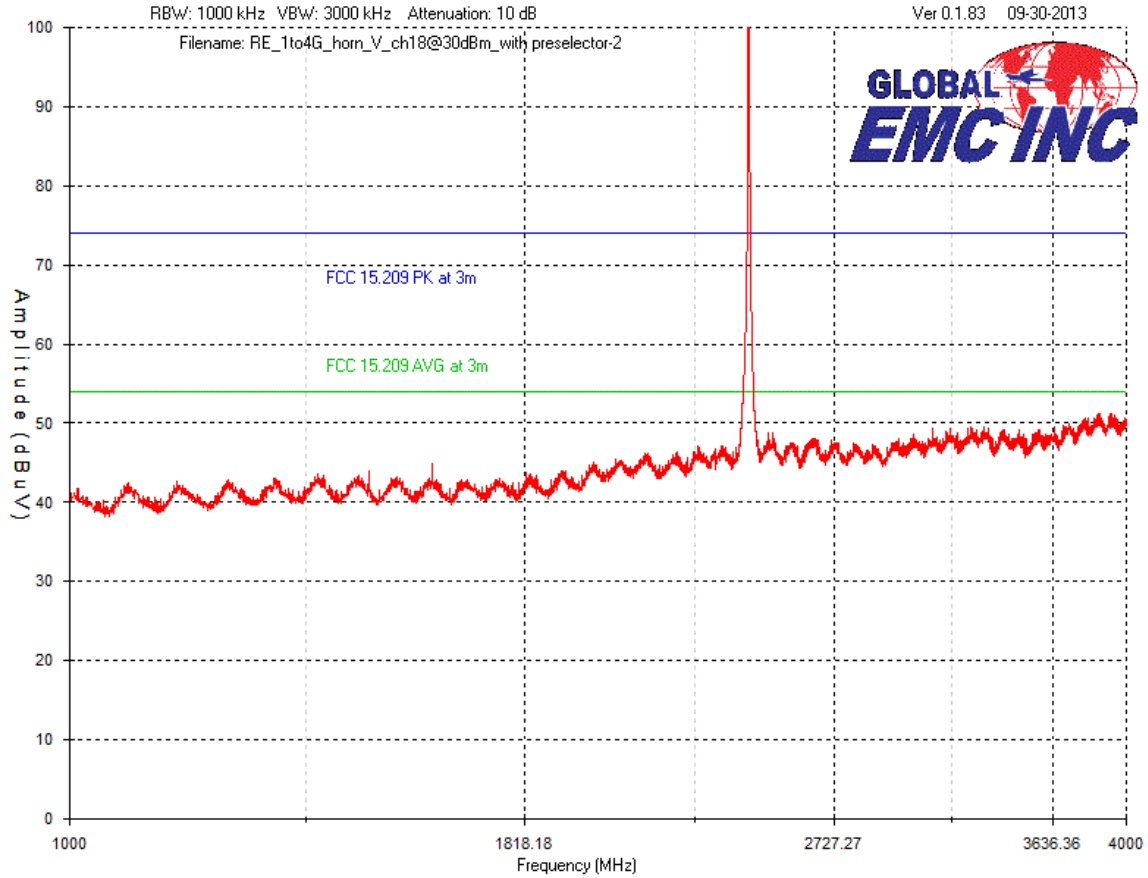
Vertical – Peak Emissions Graph – 30 MHz to 1 GHz




Low, Mid and High scanned, worst case or representative shown above.

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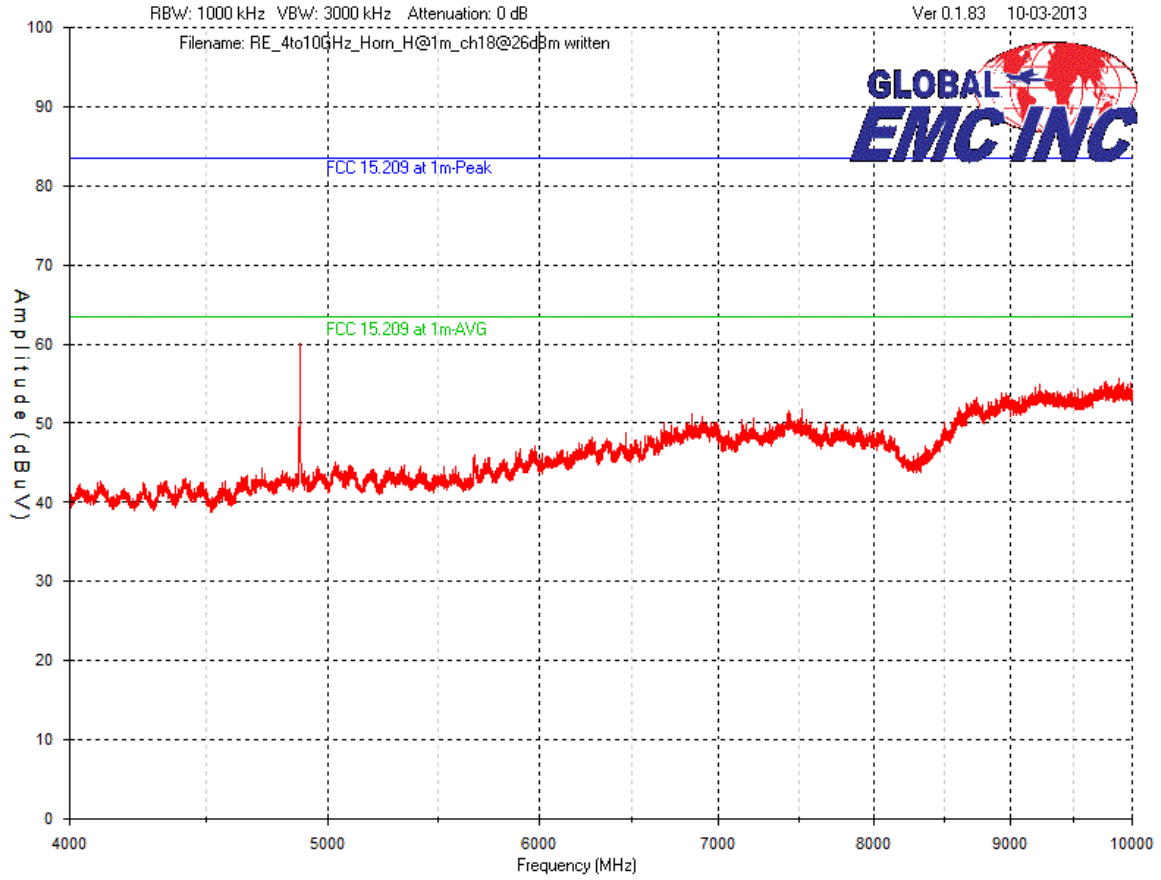
Vertical – Peak emissions Graph – Above 1 GHz




Note: No emissions were detected within the restricted bands at low, mid and high settings.

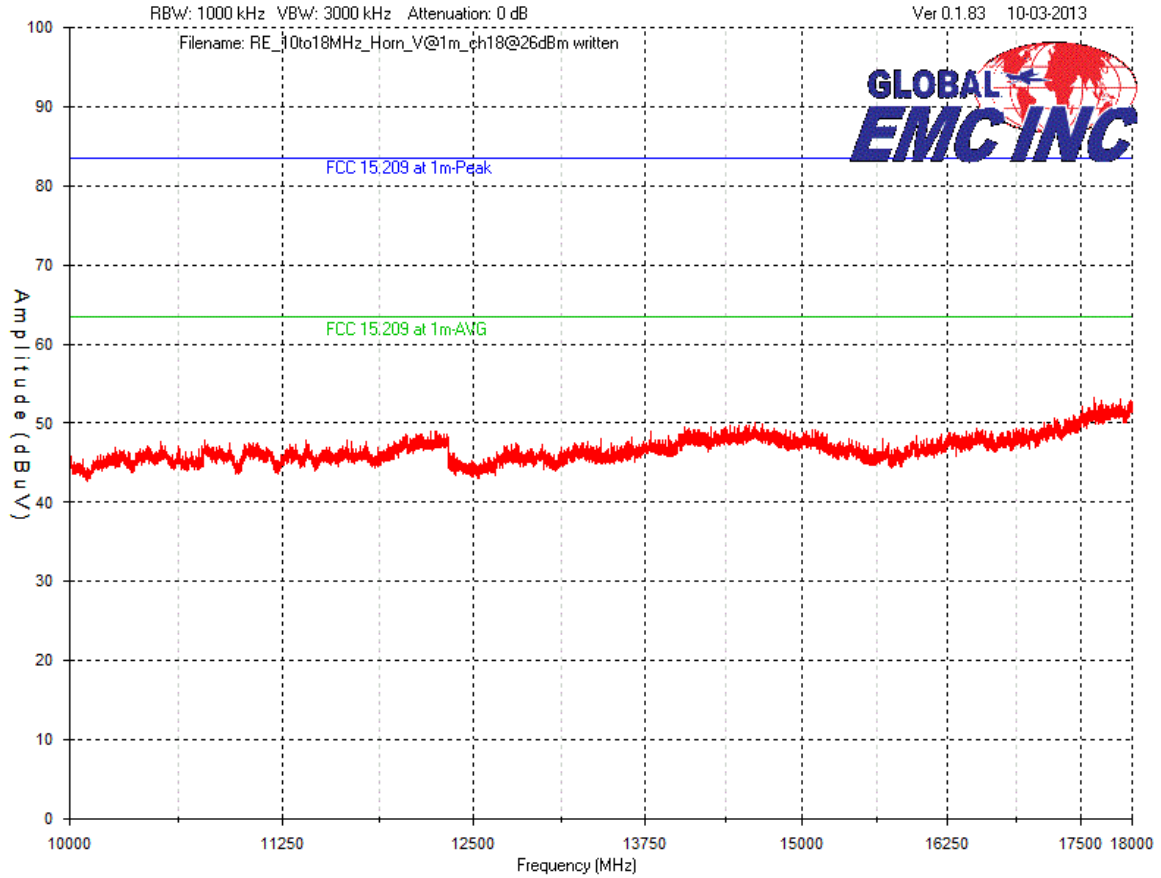
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Vertical – Peak emissions Graph – Above 1 GHz




Client	Trilliant Networks Canada Inc.	
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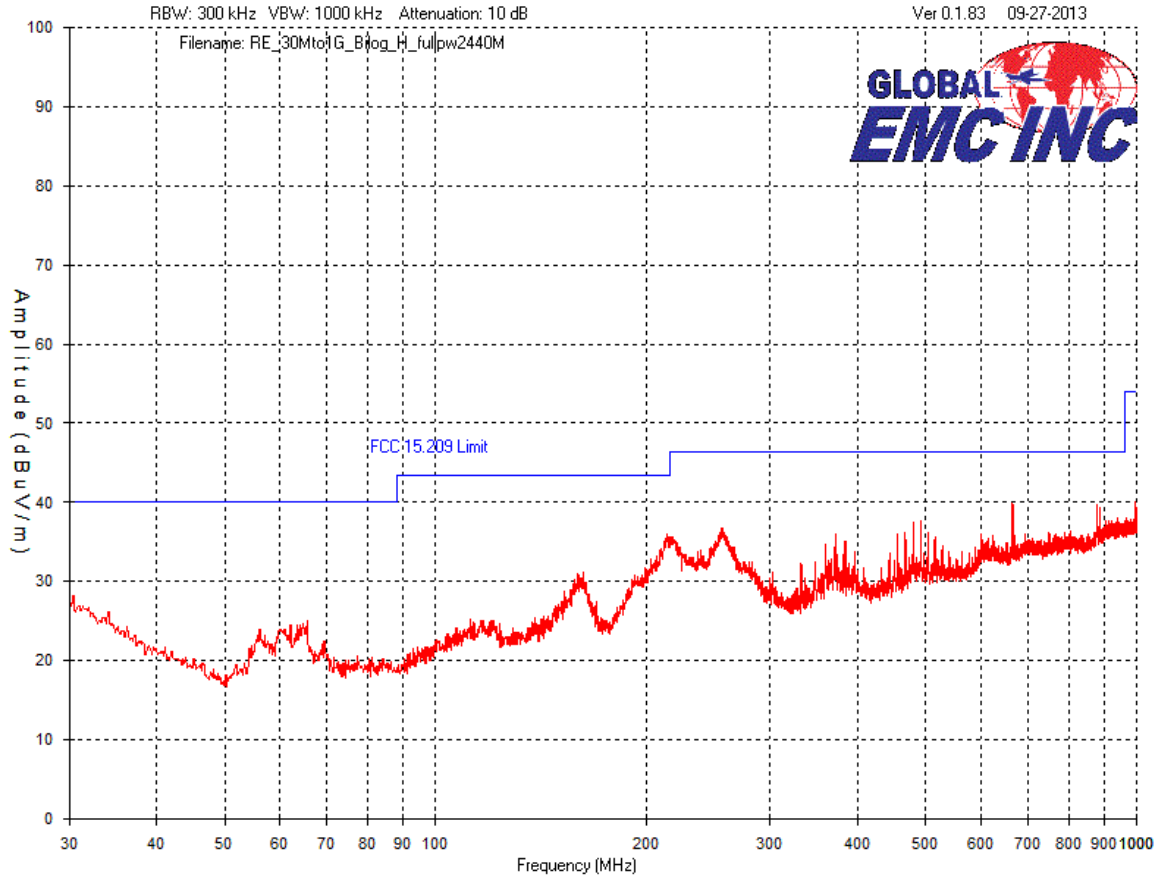
Vertical – Peak emissions Graph – Above 1 GHz




Note: Emissions were scanned to 26 GHz, and no emissions were detected above 18 GHz, and the system noise floor did not exceed the average limit

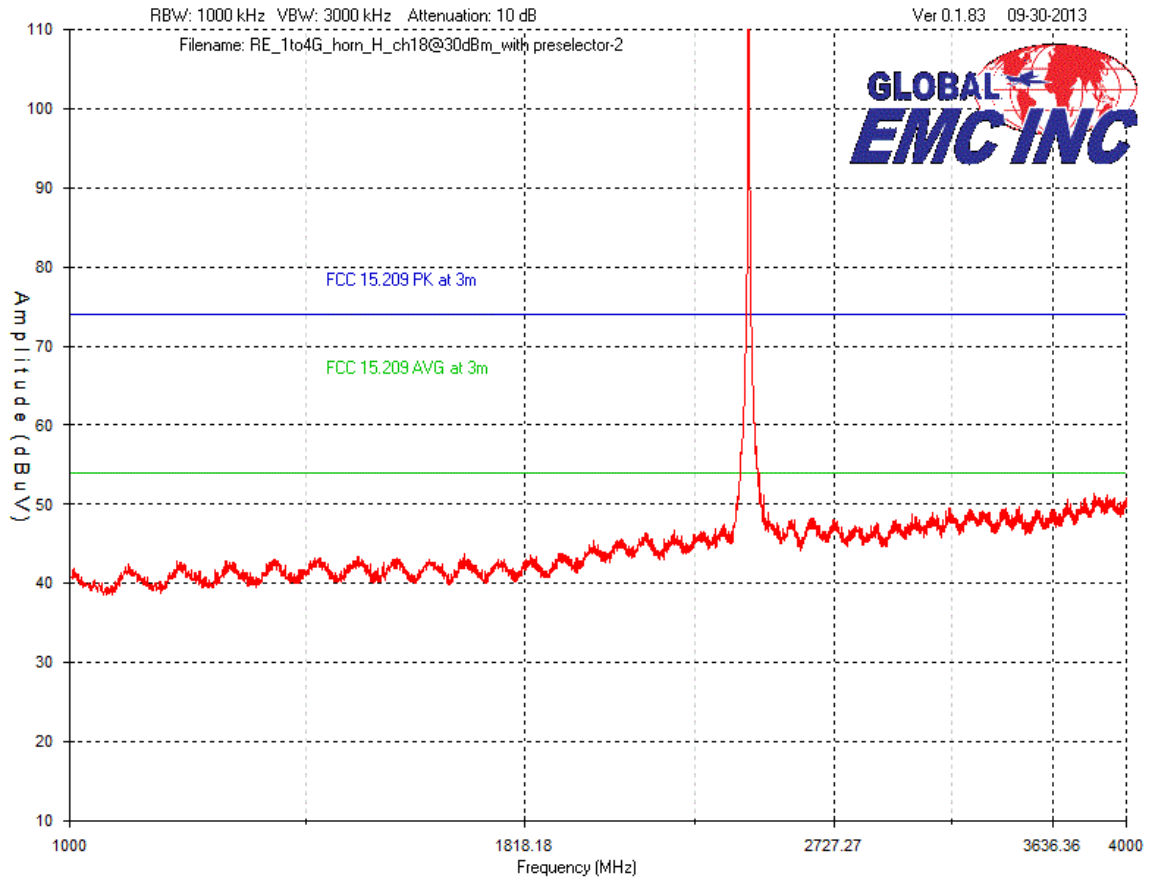
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Horizontal – Peak Emissions Graph – 30 MHz to 1 GHz




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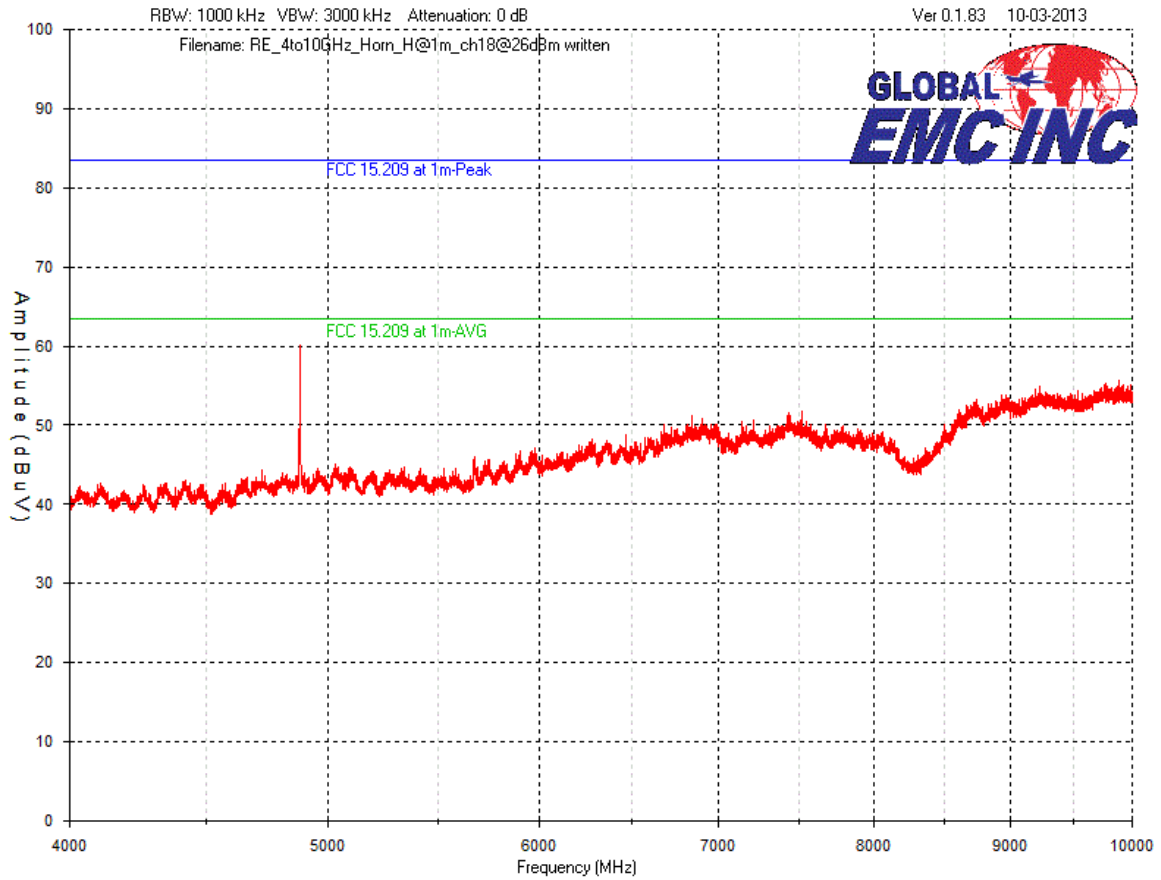
Horizontal – Peak Emissions Graph – Above 1 GHz




Note: No emissions were detected within the restricted bands at low, mid and high settings.

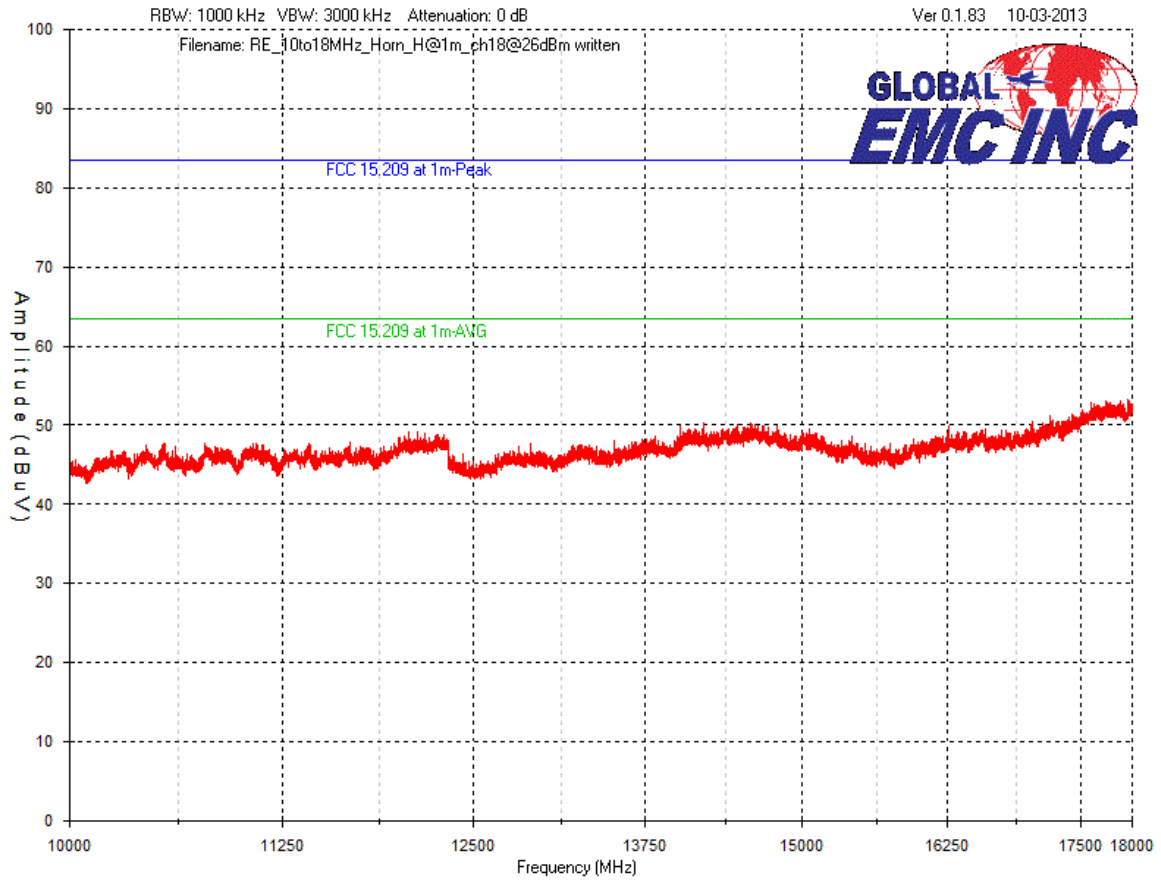
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Horizontal – Peak Emissions Graph – Above 1 GHz




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Horizontal – Peak Emissions Graph – Above 1 GHz



Note: Emissions were scanned to 26 GHz, and no emissions were detected above 18 GHz and the system noise floor did not exceed the average limit

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Final Measurements

Note: In accordance with 15.247(d), only frequencies exceeding the 15.209 limit that occur within the bands listed in 15.205, need to be verified with a final detector.


No peak emissions were detected within the bands specified in 15.205.

For information purposes, the fundamental was measured at 3 meters.

Test Frequency (MHz)	Detection mode (Q-Peak)	Antenna polarity (Horz/Vert)	Raw signal dB(µV)	Antenna factor dB	Cable loss dB	Attenuator dB+ Preselector	Pre-Amp Gain dB	Received signal dB(µV/m)	Emission limit dB(µV/m)	Margin dB(µV)	Result
Low Channel #11											
2405	Peak	Horz	111.0	28.3	4.1	10.0	36.1	117.3	N/A	N/A	PASS
2405	Avg	Horz	109.8	28.3	4.1	10.0	36.1	116.1	N/A	N/A	PASS
2405	Peak	Vert	102.7	28.4	4.1	10.0	36.1	109.1	N/A	N/A	PASS
2405	Avg	Vert	100.5	28.4	4.1	10.0	36.1	106.9	N/A	N/A	PASS
2390	Peak	Horz	56.3	28.3	4.1	10.0	36.1	62.6	74.0	11.4	PASS
2390	Avg	Horz	45.6	28.3	4.1	10.0	36.1	51.9	54.0	2.1	PASS
2390	Peak	Vert	49.2	28.4	4.1	10.0	36.1	55.6	74.0	18.4	PASS
2390	Avg	Vert	39.1	28.4	4.1	10.0	36.1	45.5	54.0	8.5	PASS
Low Channel #12											
2410	Peak	Horz	118.3	28.3	4.1	10.0	36.1	124.6	N/A	N/A	PASS
2410	Avg	Horz	116.0	28.3	4.1	10.0	36.1	122.3	N/A	N/A	PASS
2410	Peak	Vert	109.0	28.4	4.1	10.0	36.1	115.4	N/A	N/A	PASS
2410	Avg	Vert	106.5	28.4	4.1	10.0	36.1	112.9	N/A	N/A	PASS
2390	Peak	Horz	57.4	28.3	4.1	10.0	36.1	63.7	74.0	10.3	PASS
2390	Avg	Horz	46.5	28.3	4.1	10.0	36.1	52.8	54.0	1.2	PASS
2390	Peak	Vert	48.7	28.4	4.1	10.0	36.1	55.1	74.0	18.9	PASS
2390	Avg	Vert	39.1	28.4	4.1	10.0	36.1	45.5	54.0	8.5	PASS
Mid channel #18											
2440	Peak	Horz	113.8	28.3	4.1	10.0	36.1	120.1	N/A	N/A	PASS
2440	Avg	Horz	111.8	28.3	4.1	10.0	36.1	118.1	N/A	N/A	PASS
2440	Peak	Vert	106.9	28.4	4.2	10.0	36.1	113.4	N/A	N/A	PASS
2440	Avg	Vert	105.1	28.4	4.2	10.0	36.1	111.6	N/A	N/A	PASS
High channel #24											
2470	Peak	Horz	115.2	28.3	4.1	10.0	36.1	121.5	N/A	N/A	PASS
2470	Avg	Horz	113.5	28.3	4.1	10.0	36.1	119.8	N/A	N/A	PASS

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

2470	Peak	Vert	106.7	28.4	4.2	10.0	36.1	113.2	N/A	N/A	PASS
2470	Avg	Vert	104.4	28.4	4.2	10.0	36.1	110.9	N/A	N/A	PASS
2483.5	Peak	Horz	58.1	28.3	4.1	10.0	36.1	64.4	74.0	9.6	PASS
2483.5	Avg	Horz	46.1	28.3	4.1	10.0	36.1	52.4	54.0	1.6	PASS
2483.5	Peak	Vert	50.3	28.4	4.1	10.0	36.1	56.7	74.0	17.3	PASS
2483.5	Avg	Vert	38.6	28.4	4.1	10.0	36.1	45.0	54.0	9.0	PASS
High channel 25											
2475	Peak	Horz	103.2	28.3	4.1	10.0	36.1	109.5	N/A	N/A	PASS
2475	Avg	Horz	101.4	28.3	4.1	10.0	36.1	107.7	N/A	N/A	PASS
2475	Peak	Vert	94.6	28.4	4.2	10.0	36.1	101.1	N/A	N/A	PASS
2475	Avg	Vert	92.6	28.4	4.2	10.0	36.1	99.1	N/A	N/A	PASS
2483.5	Peak	Horz	55.6	28.3	4.1	10.0	36.1	61.9	74.0	12.1	PASS
2483.5	Avg	Horz	42.8	28.3	4.1	10.0	36.1	49.1	54.0	4.9	PASS
2483.5	Peak	Vert	48.9	28.4	4.1	10.0	36.1	55.3	74.0	18.7	PASS
2483.5	Avg	Vert	36.3	28.4	4.1	10.0	36.1	42.7	54.0	11.3	PASS


Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Harmonic emissions were measured at 3 m. Only the highest harmonic is recorded. A duty cycle correction factor is applied on average emission results.


The transmit packet occupies $4.35 \text{ ms} * 2 = 8.7 \text{ ms}$ of time, within 100ms window. Therefore, the relaxation factor allowance is calculated as:

$$\begin{aligned}
 \text{Average Factor} &= 20 * \text{Log}(\text{Worst Case EUT On-time over 100 ms time window}) \\
 &= 20 * \text{Log}(8.7/100) \\
 &= -21.2\text{dB}
 \end{aligned}$$

Test Frequency (MHz)	Detection mode (Q-Peak)	Antenna polarity (Horz/Vert)	Raw signal dB(μV)	Antenna factor dB	Cable loss dB	Attenuator dB+ Preselector	Pre-Amp Gain dB	Received signal dB(μV/m)	Emission limit dB(μV/m)	Margin dB(μV)	Result
Low Channel #11											
4810	Peak	Horz	47.4	33.3	5.9	10	35.6	61.0	74	13.0	PASS
4810	Avg	Horz	26.2	33.3	5.9	10	35.6	39.8	54	14.2	PASS
4810	Peak	Vert	42.6	33.3	5.9	10	35.6	56.2	74	17.8	PASS
4810	Avg	Vert	21.4	33.3	5.9	10	35.6	35.0	54	19.0	PASS
7215	Peak	Horz	46.8	37.3	7.2	10	35.7	65.6	74	8.4	PASS
7215	Avg	Horz	25.6	37.3	7.2	10	35.7	44.4	54	9.6	PASS
7215	Peak	Vert	47.4	37.6	7.2	10	35.7	66.5	74	7.5	PASS
7215	Avg	Vert	26.2	37.6	7.2	10	35.7	45.3	54	8.7	PASS
Low Channel #12											
4820	Peak	Horz	51.3	33.3	5.9	10	35.6	64.9	74	9.1	PASS
4820	Avg	Horz	30.1	33.3	5.9	10	35.6	43.7	54	10.3	PASS
4820	Peak	Vert	49.8	33.3	5.9	10	35.6	63.4	74	10.6	PASS
4820	Avg	Vert	28.6	33.3	5.9	10	35.6	42.2	54	11.8	PASS
7230	Peak	Horz	46.2	37.3	7.2	10	35.7	65.0	74	9.0	PASS
7230	Avg	Horz	25	37.3	7.2	10	35.7	43.8	54	10.2	PASS
7230	Peak	Vert	45.5	37.6	7.2	10	35.7	64.6	74	9.4	PASS
7230	Avg	Vert	24.3	37.6	7.2	10	35.7	43.4	54	10.6	PASS
Mid channel #18											
4880	Peak	Horz	49.6	33.3	5.9	10	35.6	63.2	74	10.8	PASS
4880	Avg	Horz	28.4	33.3	5.9	10	35.6	42.0	54	12.0	PASS
4880	Peak	Vert	50	33.3	5.9	10	35.6	63.6	74	10.4	PASS
4880	Avg	Vert	28.8	33.3	5.9	10	35.6	42.4	54	11.6	PASS
7320	Peak	Vert	46.3	37.7	7.2	10	35.8	65.4	74	8.6	PASS
7320	Avg	Vert	25.1	37.7	7.2	10	35.8	44.2	54	9.8	PASS

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	


7320	Peak	Horz	45.7	37.4	7.2	10	35.8	64.5	74	9.5	PASS
7320	Avg	Horz	24.5	37.4	7.2	10	35.8	43.3	54	10.7	PASS
High channel #24											
4940	Peak	Horz	47.6	33.3	5.9	10	35.5	61.3	74	12.7	PASS
4940	Avg	Horz	26.4	33.3	5.9	10	35.5	40.1	54	13.9	PASS
4940	Peak	Vert	47.2	33.6	5.9	10	35.5	61.2	74	12.8	PASS
4940	Avg	Vert	26	33.6	5.9	10	35.5	40.0	54	14.0	PASS
7410	Peak	Vert	40.6	37.5	7.2	10	35.8	59.5	74	14.5	PASS
7410	Avg	Vert	19.4	37.5	7.2	10	35.8	38.3	54	15.7	PASS
7410	Peak	Horz	41.7	37.4	7.2	10	35.8	60.5	74	13.5	PASS
7410	Avg	Horz	20.5	37.4	7.2	10	35.8	39.3	54	14.7	PASS
High channel 25											
4950	Peak	Horz	42.5	33.3	5.9	10	35.6	56.1	74	17.9	PASS
4950	Avg	Horz	21.3	33.3	5.9	10	35.6	34.9	54	19.1	PASS
4950	Peak	Vert	42.1	33.3	5.9	10	35.6	55.7	74	18.3	PASS
4950	Avg	Vert	20.9	33.3	5.9	10	35.6	34.5	54	19.5	PASS
7425	Peak	Vert	46.7	37.7	7.2	10	35.8	65.8	74	8.2	PASS
7425	Avg	Vert	25.5	37.7	7.2	10	35.8	44.6	54	9.4	PASS
7425	Peak	Horz	45.9	37.4	7.2	10	35.8	64.7	74	9.3	PASS
7425	Avg	Horz	24.7	37.4	7.2	10	35.8	43.5	54	10.5	PASS

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset#
HP Spectrum Analyzer	8566B	HP	2013-01-22	2015-01-22	4169
Spectrum Analyzer Display	8566B	HP	1-22-13	1-22-15	4168
Quasi Peak Adapter	85650A	HP	2013-01-23	2015-01-23	4170
BiLog Antenna	3142-C	ETS	2013-04-25	2015-04-25	4002
Horn Antenna	ATH1G18G	AR	2013-04-03	2015-04-03	4003
Loop Antenna	EM 6871	Electro-Metrics	Feb 5, 2013	Feb 5, 2015	70
Loop Antenna	EM 6872	Electro-Metrics	Feb 5, 2013	Feb 5, 2015	71
Attenuator 3 dB	FP-50-3	Trilithic	N/A	N/A	4028
9kHz-1GHz, 28dB preamp	LNA 6901	Teseq	8-6-13	8-6-15	4036
1-26.5GHz preamp	8449B	Agilent	2013-04-25	2015-04-25	4006
RF Cable 10m	LMR-400-10M-50OHM-MN-MN	LexTec	NCR	NCR	4025
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	NCR	NCR	4026
RF Cable 1M	LMR-400-1M-50OHM-MN-MN	LexTec	N/A	N/A	4039
RF Cable 0.5M	LMR-400-0.5M-50OHM-MN-MN	LexTec	N/A	N/A	4029
Horn Antenna 18 GHz - 26.5 GHz	SAS-572	A.H. Systems	8/27/2012	8/27/2014	GEMC 6371
18.0-26.5 GHz Harmonic Mixer	11970K	HP	21-Dec-11	21-Dec-13	GEMC 158

This report module is based on GEMC template "FCC – Radiated Emissions Class A_Rev3"

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

6dB Bandwidth of Digitally Modulated Systems

Purpose

The purpose of this test is to ensure that the bandwidth occupied exceeds a stated minimum. This helps ensure the utilization of the frequency allocation is sufficiently wide. This also helps prevent corruption of data by ensuring adequate data separation to distinguish the reception of the intended information.

Limits

The Limit is as specified in FCC Part 15 and RSS 210.

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Method


The DTS bandwidth method is as per FCC KDB 558074 Section 8.1 for the 6 dB BW. For the 20 dB BW, FCC KDB 558074, Section 2.0 references ANSI C63.10 for occupied bandwidth. ANSI C63.10 Section 6.9.1 was used for occupied bandwidth.

Results

The EUT passed. The minimum 6 dB BW measured was 1.530 MHz. For information purposes, the 20 dB BW was measured to be 2.610 MHz

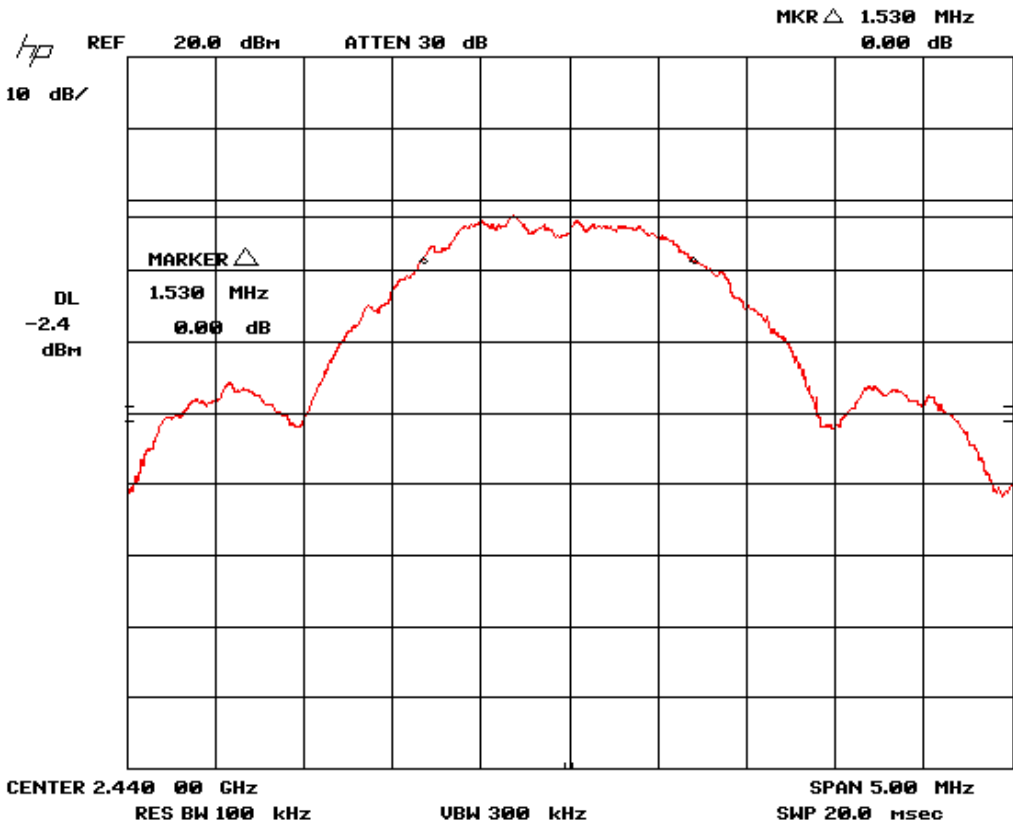
Table

Channel	Frequency	6 dB BW (MHz)	20 dB BW
11	2405	1.53	2.60
18	2440	1.53	2.61
25	2475	1.53	2.61


Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

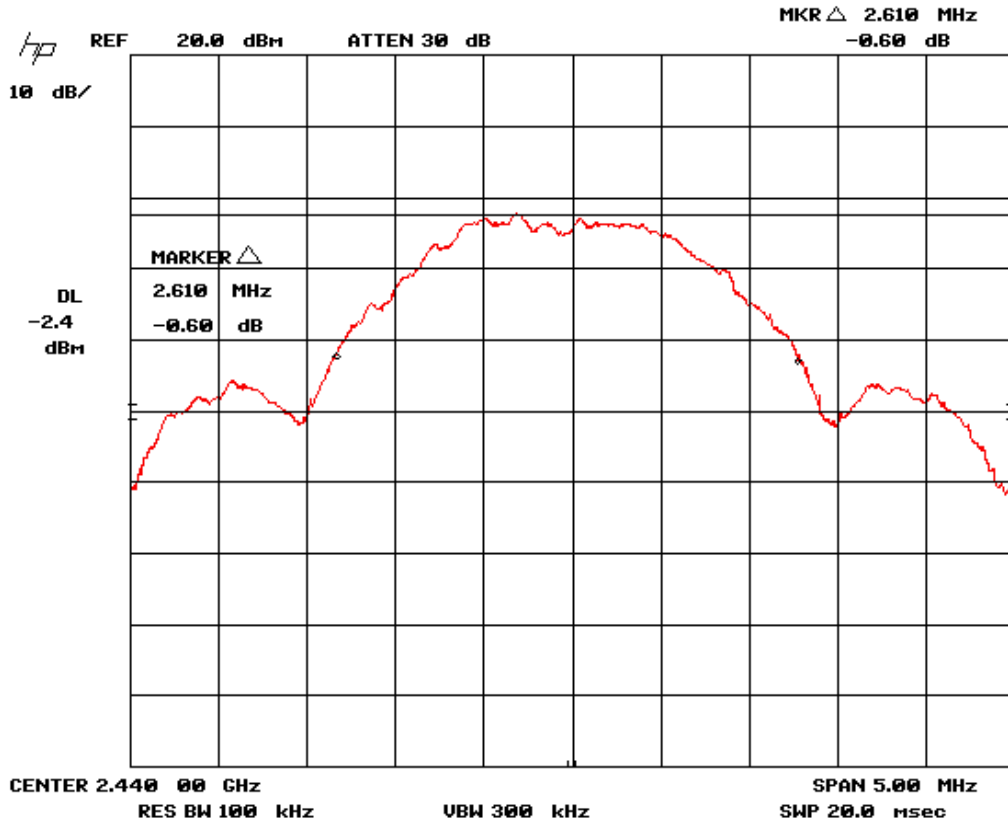
Graph(s)

The graphs shown below shows the channel spacing during the operation of the device. This is measured by a max hold on the spectrum analyzer and the highest resolution bandwidth that is sufficiently low to exhibit the 6 dB bandwidth of a channel during operation of the EUT. This measurement is a peak measurement. Max hold is performed for a duration of not less than 1 minute.




6 dB BW = 1.530 MHz

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	



20 dB BW = 2.610 MHz


Note: See 'Appendix B – EUT & Test Setup Photographs' for photos showing the test set-up.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 20 dB	FP-50-20	Trilithic	NCR	NCR	4038
Spectrum Analyzer Display	8566B	HP	2013-01-22	2015-01-22	4168
Spectrum Analyzer	8566B	HP	2013-01-22	2015-01-22	4169
RF Cable 0.5M	LMR-400- 0.5M- 50OHM- MN-MN	LexTec	N/A	N/A	4029

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B_Rev1"

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Maximum conducted (average) output power

Purpose

The purpose of this test is to ensure that the maximum power conducted to the radiating element does not exceed the limits specified. This ensures that if the end-user replaces the antenna, that the maximum power does not exceed an amount which may create an excessive power level.

Limits


The limits are defined in FCC Part 15.247(b) and RSS 210. For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands, the peak limit is 1 watt.

Method

Method was as per FCC KDB 558074 Section 9.2.2.2

Results


The EUT passed. The maximum conducted (average) output power measured was 29.4 dBm (871 mW).

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Table(s)

The tables shown below shows the Maximum conducted (average) output power output of the device during the antenna conducted measurement during transmit operation of the EUT.

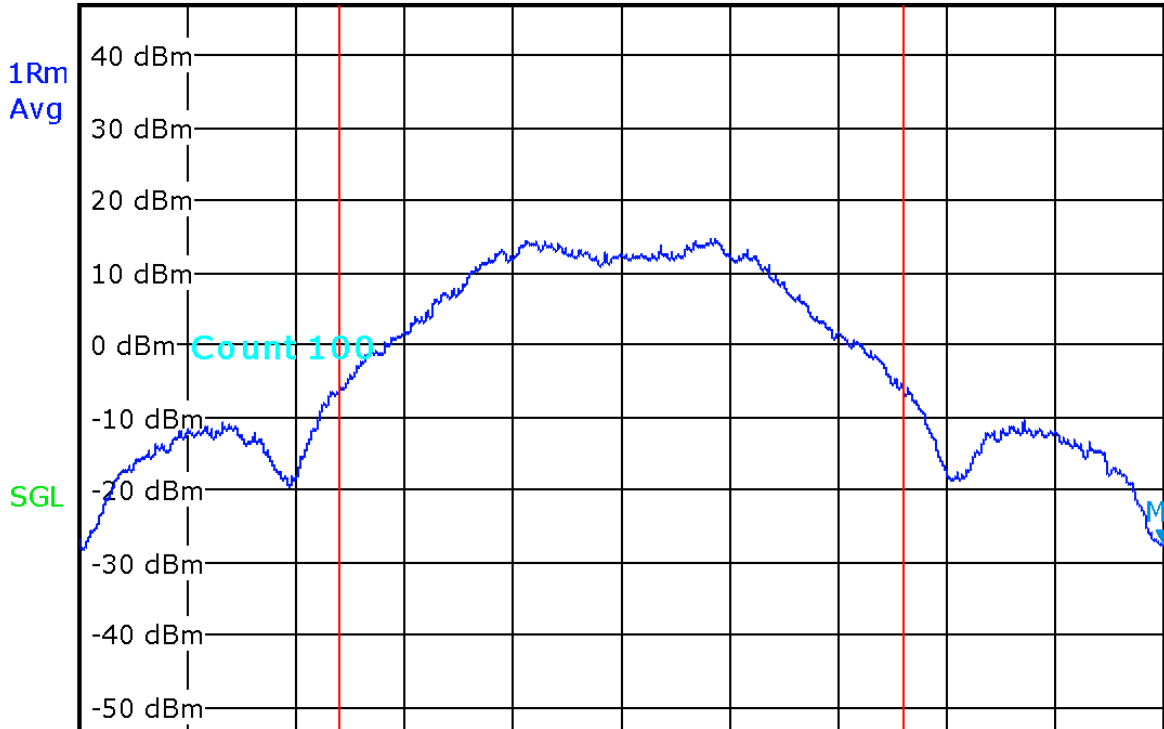
Band	Channel	Setting	Frequency (GHz)	Reading (dBm)	Atten.+Cable Factor(dB)	Maximum conducted (average) output power (dBm)
Low	11	24	2.405	3.5	21	24.2
Low	12	30	2.410	8.8	21	29.4
Medium	18	30	2.440	8.5	21	28.8
High	24	30	2.470	8.4	21	27.9
High	25	23	2.475	-2.6	21	16.7

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Low Channel 11 – Maximum conducted (average) output power




Offs 27.00 dB * RBW 100 kHz
 Att 30 dB * VBW 10 MHz **M1[1]** -27.49 dBm
 Ref 47.00 dBm SWT 2.5ms **2.407500000 GHz**



CF 2.405 GHz Span 5.0 MHz

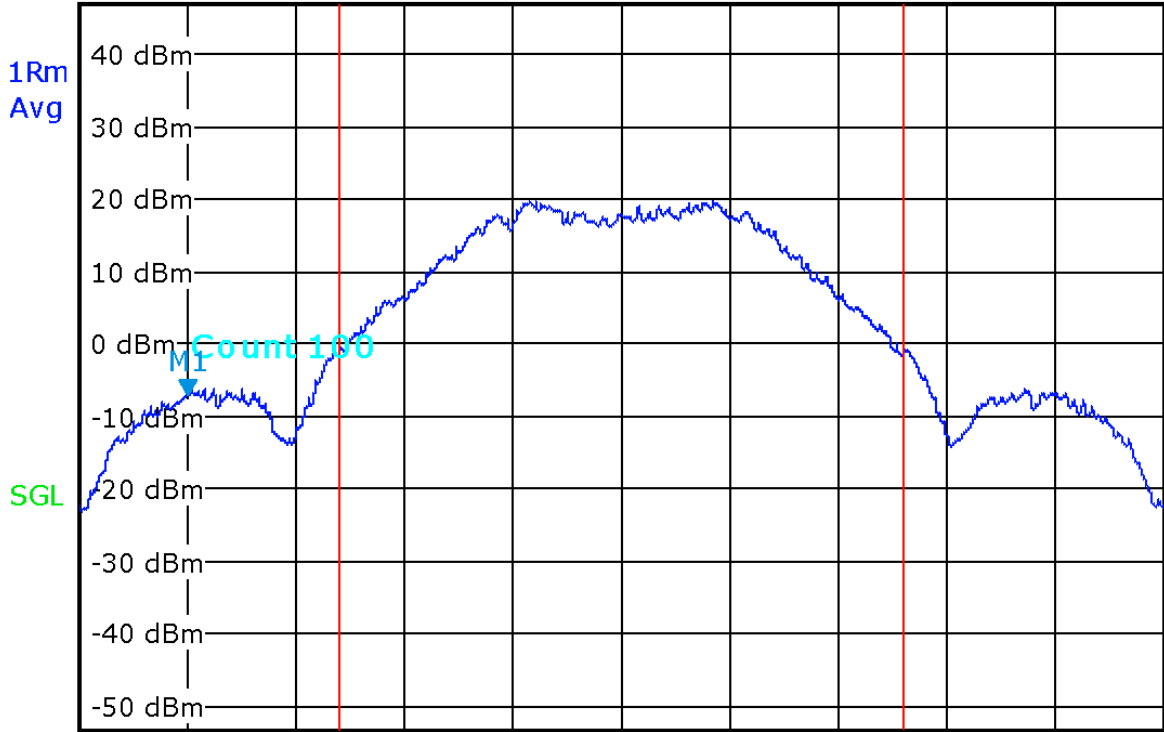
Tx Channel	Standard: NONE		
Bandwidth	2.610 MHz	Power	24.15 dBm

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Low Channel 12 – Maximum conducted (average) output power




Offs 27.00 dB * RBW 100 kHz
 Att 30 dB * VBW 10 MHz M1[1] -7.02 dBm
 Ref 47.00 dBm SWT 2.5ms 2.408000000 GHz



CF 2.41 GHz Span 5.0 MHz

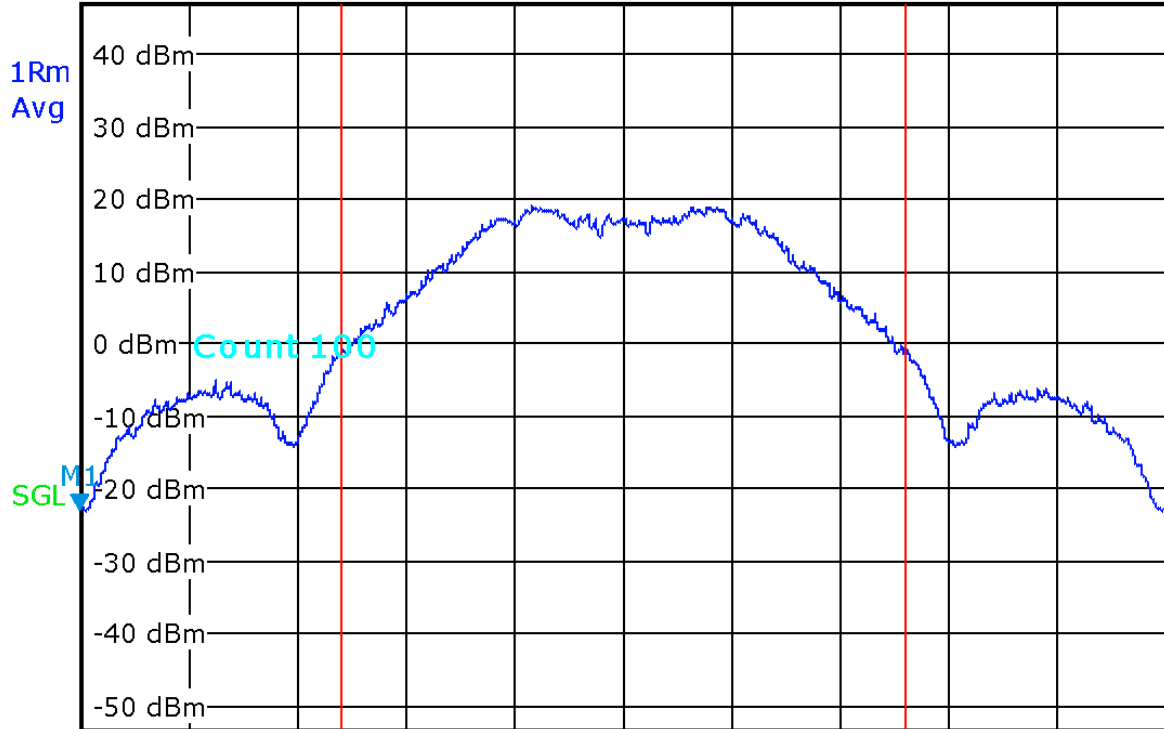
Tx Channel	Standard: NONE		
Bandwidth	2.610 MHz	Power	29.36 dBm

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Mid Channel 18– Maximum conducted (average) output power




Offs 27.00 dB * RBW 100 kHz
 Att 30 dB * VBW 10 MHz M1[1] -22.81 dBm
 Ref 47.00 dBm SWT 2.5ms 2.43750000 GHz



CF 2.44 GHz Span 5.0 MHz

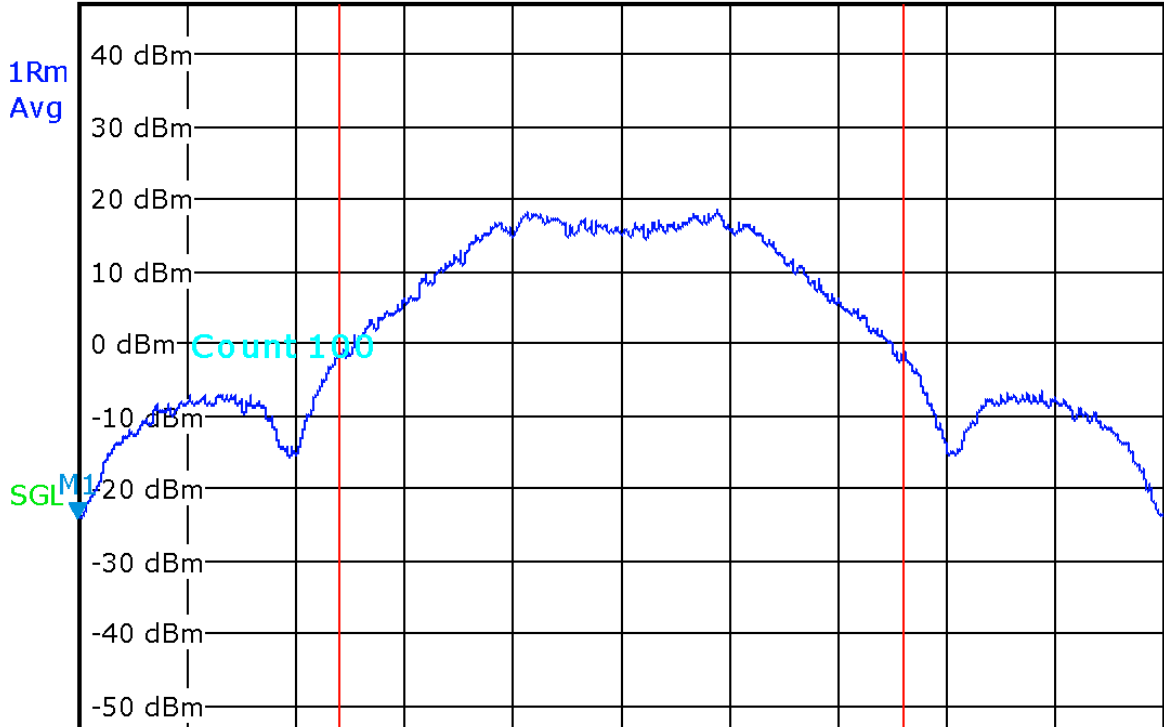
Tx Channel	Standard: NONE		
Bandwidth	2.610 MHz	Power	28.82 dBm

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

High Channel 24- Maximum conducted (average) output power.




Offs 27.00 dB * RBW 100 kHz
 Att 30 dB * VBW 10 MHz **M1[1]** -24.02 dBm
 Ref 47.00 dBm SWT 2.5ms **2.467500000 GHz**

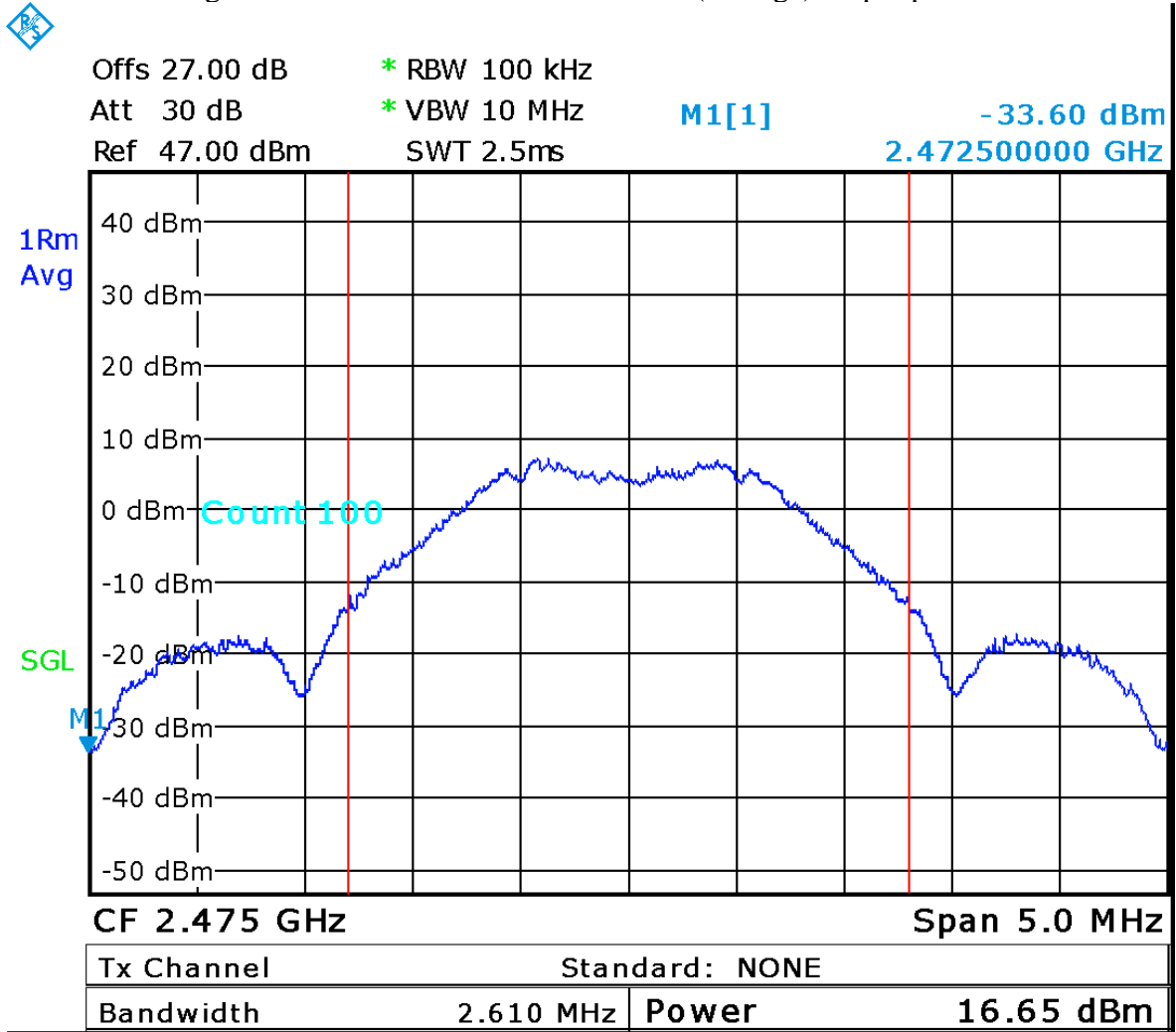


CF 2.47 GHz Span 5.0 MHz


Tx Channel	Standard: NONE		
Bandwidth	2.610 MHz	Power	27.92 dBm

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

High Channel 25 – Maximum conducted (average) output power.




Note: See 'Appendix B – EUT & Test Setup Photographs' for photos showing the test set-up.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Attenuator 30 dB	FP-50-30	Trilithic	NCR	NCR	4041
Spectrum Analyzer	ESL6	Rohde & Schwarz	11-15-13	11-16-15	160
Spectrum Analyzer Display	8566B	HP	2013-01-22	2015-01-22	4168
Spectrum Analyzer	8566B	HP	2013-01-22	2015-01-22	4169
RF Cable 0.5m	LMR-400- 0.5M- 50OHM- MN-MN	LexTec	NCR	NCR	4029

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B_Rev1"

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Spurious Conducted Emissions

Purpose

The purpose of this test is to ensure that the maximum power conducted to the radiating element at frequencies outside of the authorized spectrum does not exceed the limits specified. This ensures that the only the intended signal is delivered to the radiating element.

Limits


The limits are defined in 15.247(d). As an average power was used, in any 100 kHz band, the peak spurious harmonics emissions must be at least 30 dB below the fundamental, as the transmitter complied with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph 15.247 (b)(3) . Spurious Conducted emissions are to be evaluated up to the 10th harmonic. This -30 dBc requirement also applies at the ‘band edge’ or 2.4 GHz and 2.4835 GHz.

Method

Method was as per FCC KDB 558074 Section 11.3

Results

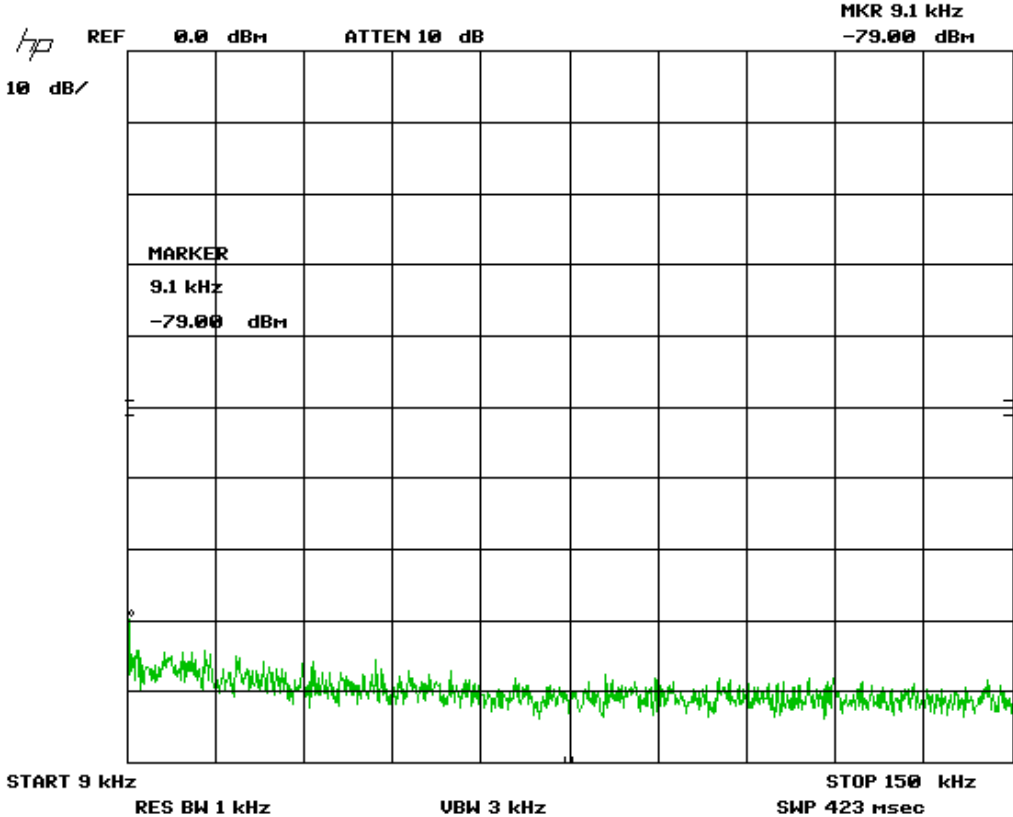
The EUT pass. Low, middle and high band was measured. The worst case for each mode is presented as a graph for the spectrum. The -30 dBc requirement is shown for the lower band edge at 2.4 GHz in the low band. The -30 dBc requirement is also shown for the higher band edge at 2.4835 GHz in the high band.


Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

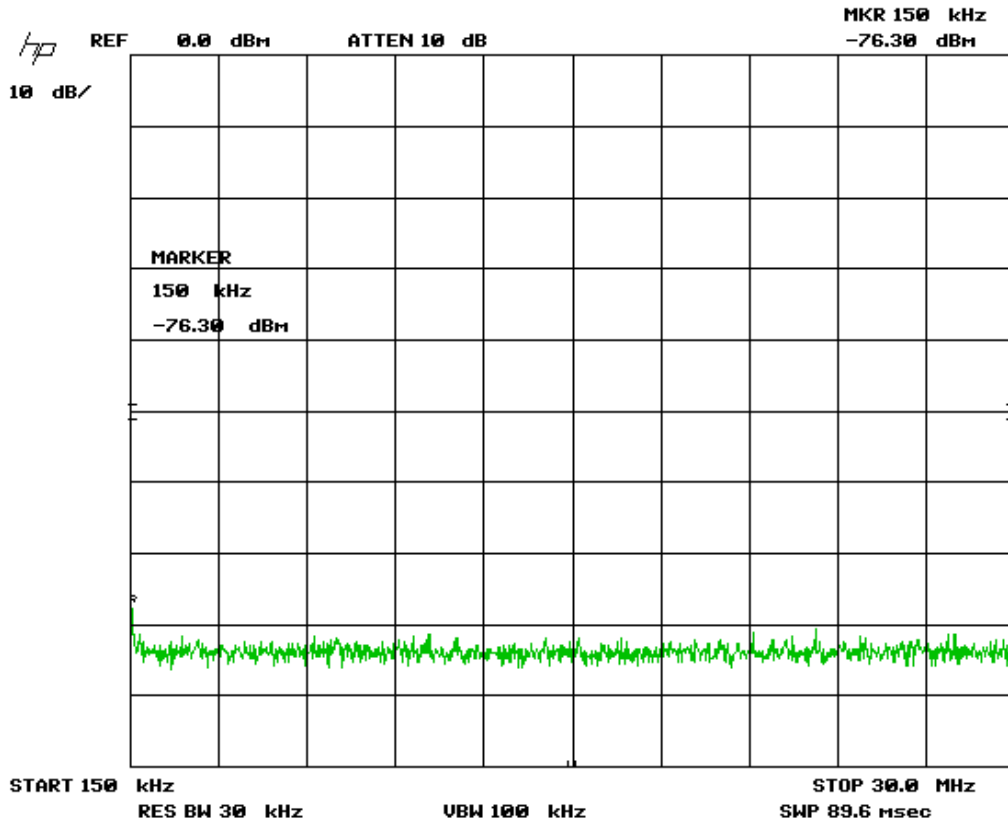
Graph(s)


The graphs shown below shows the peak power output of the device during the antenna conducted measurement during transmit operation of the EUT. Note there was 20 dB of external attenuation taken during this measurement.

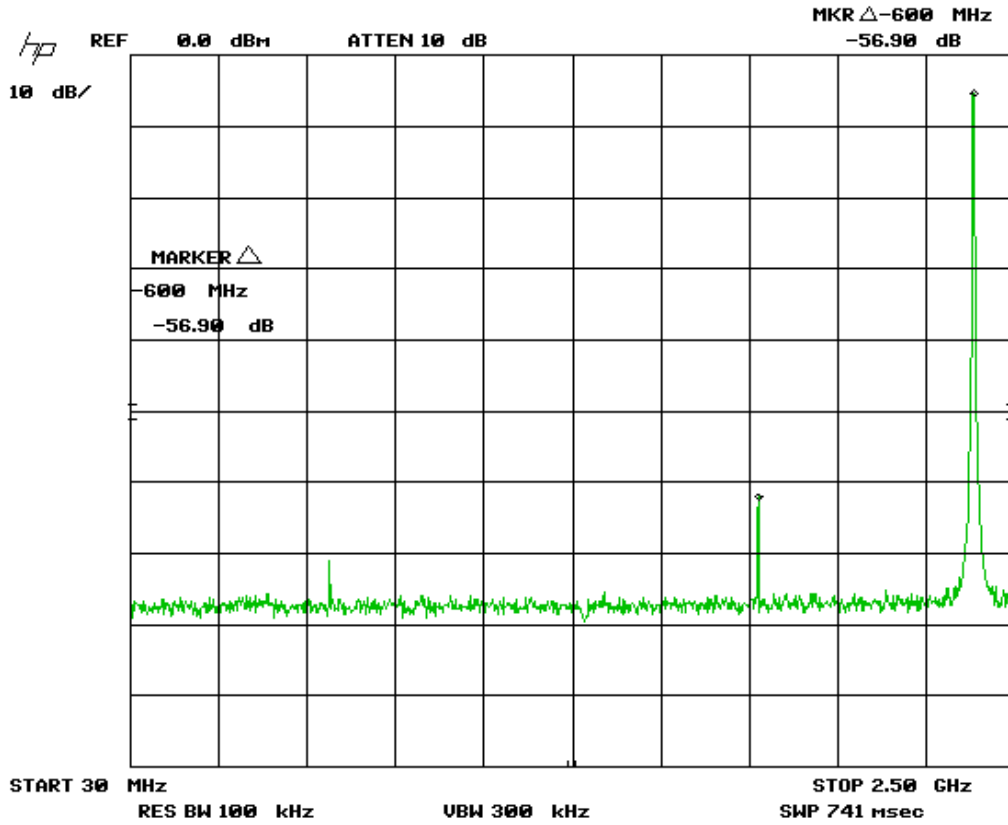
Frequencies below fundamental




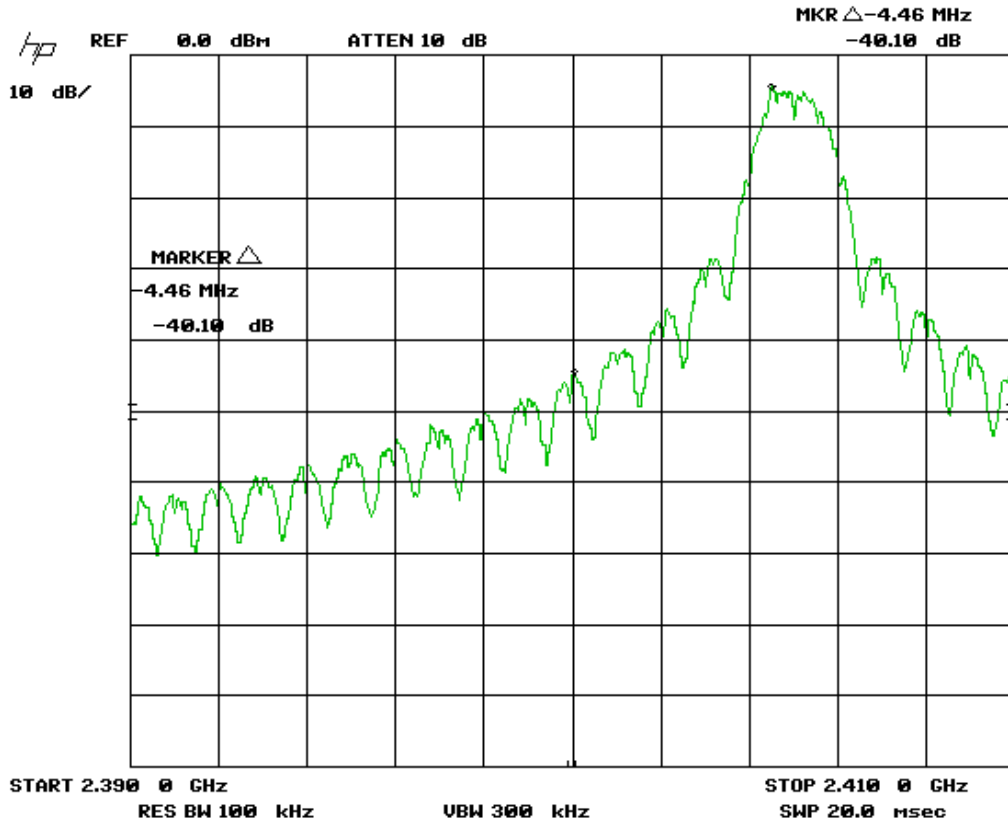
Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	




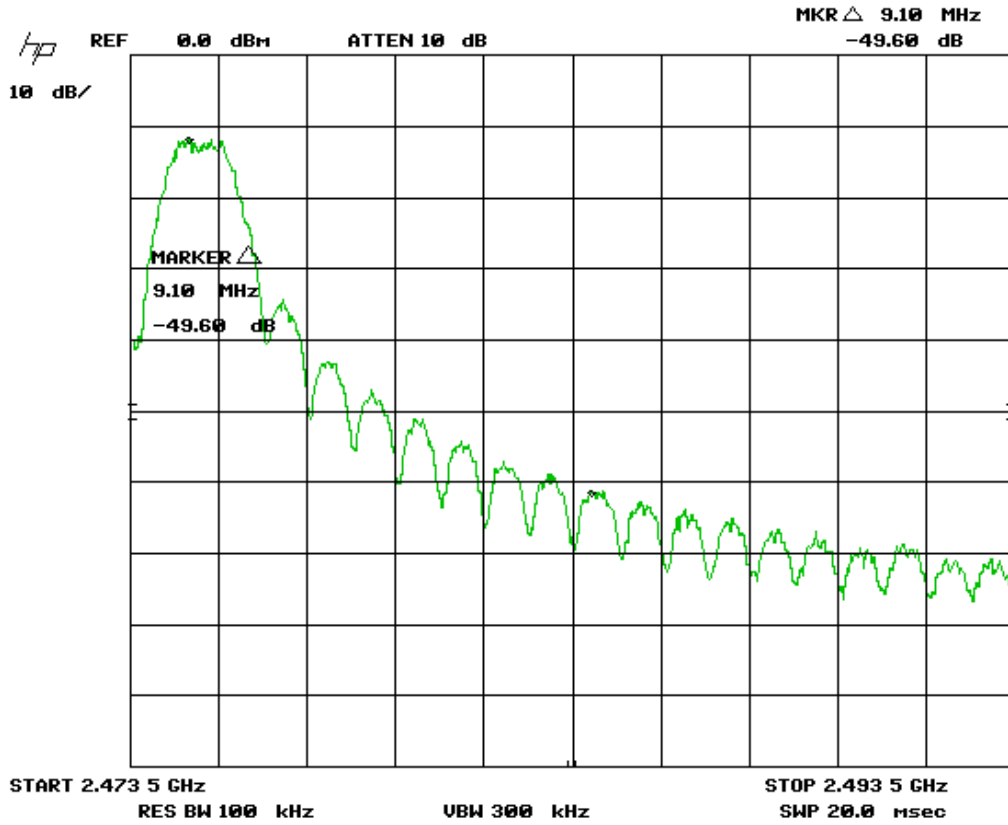
Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	




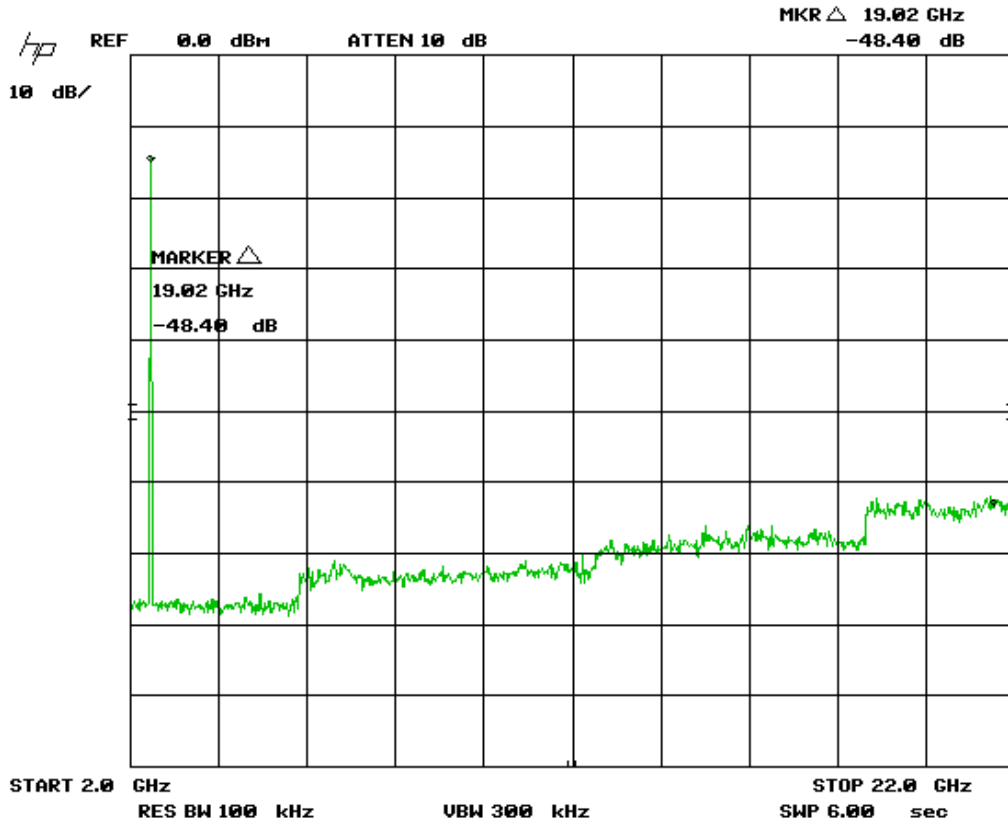
Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	




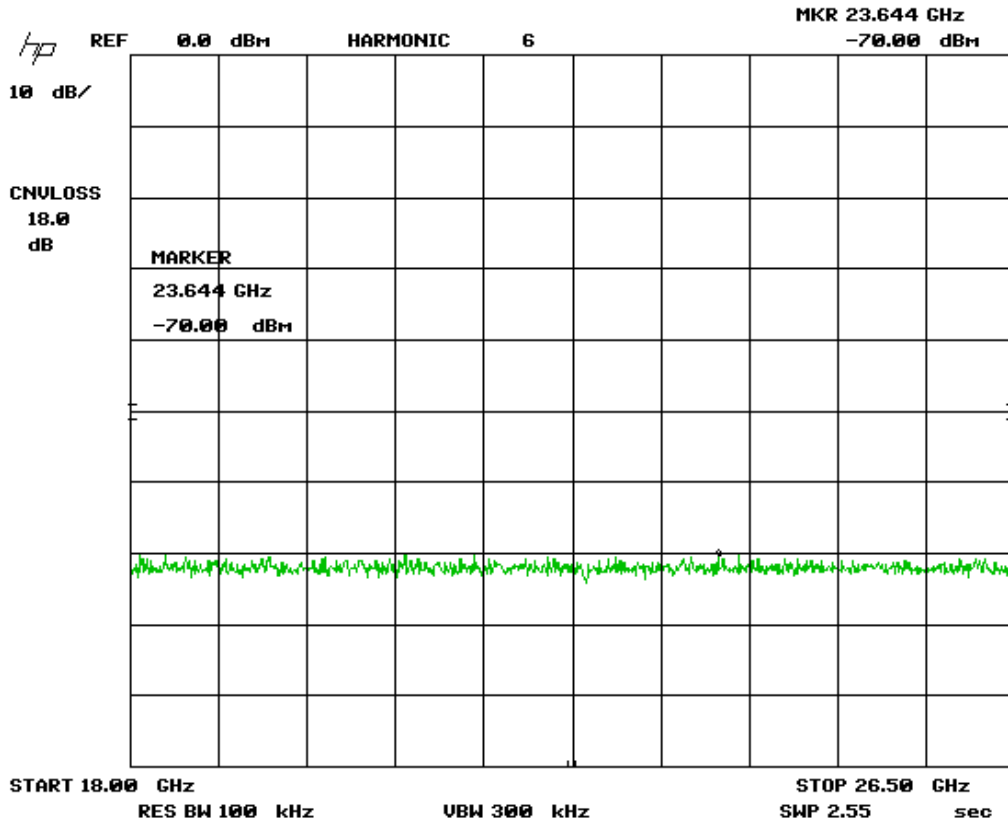
Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	




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Note: The applicable limit would be -44 dBm in any 100 kHz band, no emissions were detected and the noise floor was below -44 dBm in any 100 kHz band.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Spectrum Analyzer Display	8566B	HP	2013-01-22	2015-01-22	4168
Spectrum Analyzer	8566B	HP	2013-01-22	2015-01-22	4169
Quasi Peak Adapter	85650A	HP	2013-01-23	2015-01-23	4170
Attenuator 3 dB	FP-50-3	Trilithic	NCR	NCR	4028
9kHz-1GHz, 28dB preamp	LNA 6901	Teseq	8-6-13	8-6-15	4036
1GHz-26.5GHz preamp	8449B	Agilent	2013-04-25	2015-04-25	4006
RF Cable 7m	LMR-400-7M-50OHM-MN-MN	LexTec	NCR	NCR	4026
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	4039
RF Cable 0.5M	LMR-400-0.5M-50OHM-MN-MN	LexTec	NCR	NCR	4029
18.0-26.5 GHz Harmonic Mixer	11970K	HP	21-Dec-11	21-Dec-13	GEMC 158

This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B_Rev1"

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Power Spectral Density - DM

Purpose

The purpose of this test is to ensure that the maximum power spectral density to the radiating element does not exceed the limits specified. This ensures that the modulation is significantly wide enough, or low enough in power that it will allow for co-operation of other wireless devices operating within this frequency allocation.

Limits

The limits are defined in 15.247(e).

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Method


Method was as per FCC KDB 558074 Section 10.3

Results

The EUT passed. Each mode was tested at low, medium, and high band. The worst case value is 6.46 dBm as measured with a 3 kHz resolution bandwidth (maximum average conducted PSD power).

Band	Channel	Power Setting	Frequency (GHz)	PSD
Low	11	30 (See note)	2.405	6.5
Medium	18	30	2.440	5.5
High	25	30	2.475	4.4


Note: Due to band edge requirements, channel 11 is limited in application to a setting of 24. However, for the purposes of PSD, this produced a worst case PSD measurement over channel 12, which is the next full power channel.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Test Equipment List

Equipment	Model No.	Manufacturer	Last calibration date	Next calibration due date	Asset #
Spectrum Analyzer	ESL6	Rohde & Schwarz	11-15-13	11-15-15	160
Spectrum Analyzer Display	8566B	HP	1-22-13	1-22-15	4168
Spectrum Analyzer	8566B	HP	1-22-13	1-22-15	4169
RF Cable 1m	LMR-400-1M-50OHM-MN-MN	LexTec	NCR	NCR	4039
Power Attenuator 20 dB	25-A-FFN-20	Bird / Hutton	NCR	NCR	4038


This report module is based on GEMC template "FCC – Power Line Conducted Emissions Class B_Rev1"

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Appendix A – EUT Summary


For further details for filing purposes, refer to filing package.

Manufacturer	Trilliant Networks Canada Inc. 610 Du Luxembourg, Granby QC J2J 2V2 Canada
EUT Name	RES-2100-SGM30XA
EUT Model / SN (if known)	NDTD0000396 NDTD0000396 NDTD0000410 (with SMA connector)
EUT revision	1.2
Software version	2.247
Equipment category	Network equipment
EUT is powered using	DC voltage
Input voltage range(s) (V)	12Vdc and 3Vdc
Rated input current (A)	60mA max. (in transmit)
Frequency of all clocks present in EUT	16 MHz, 2.4835 GHz (intentional)
I/O cable description Specify length and type	No
Available connectors on EUT	2x5 male header on NIC
Approximate Size (LxWxH)	105mm X 80mm X 12mm
Equipment Category (Commercial / Residential / Medical)	Residential
Peripherals required for test	PC, Mesh Device(dongle)
Minimum Separation distance from operator	20 cm
Types and lengths of all I/O cables	N/A


Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Description	<p>The RES-2100-SGM30XA SecureMesh™ is a wireless communication card designed to be installed in GE's SGM-30xx meter series. The meters equipped with Trilliant's SecureMesh can communicate over Mesh networks (IEEE 802.15.4).</p>
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Note the EUT is considered to have been received the date of the commencement of the first test, unless otherwise stated. For a close-up picture of the EUT, see 'Appendix B – EUT & Test Setup Photographs'.

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	


Appendix B – EUT and Test Setup Photographs

Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Note: These photos are for information purposes only. Also refer to PDF files that are separate from this test report.


Power Line Conducted Emissions (in typical host SGM-3033 meter)



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	


Power Line Conducted Emissions #2(in typical host SGM-3033 meter)



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	


Radiated Emissions Below 30 MHz



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	


Radiated Emissions 30 MHz to 1 GHz



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Radiated Emissions above 1 GHz



Client	Trilliant Networks Canada Inc.	
Product	RES-2100-SGM30XA	
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2012	

Antenna Conducted Measurements

