



TEST REPORT

Report Number: 100928878MIN-011B
Project Number: G100928878

Testing performed on the
WOLC Gateway

FCC ID: PUU90002
Industry Canada ID: 10798A- PUU90002

to
47 CFR Part 15. 247:2010
RSS- 210, Issue 8, 2010

For
GE Lighting

Test Performed by:
Intertek Testing Services NA, Inc.
7250 Hudson Blvd., Suite 100
Oakdale, MN 55128 USA

Test Authorized by:
GE Lighting
1975 Noble Rd, Bldg 338
Cleveland, OH 44112 USA

Prepared by: Uri Spector
Uri Spector

Date: August 16, 2013

Reviewed by: Simon Khazon
Simon Khazon

Date: August 16, 2013

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



TABLE OF CONTENTS

1.0	GENERAL DESCRIPTION	3
1.1	Product Description; Test Facility	4
1.3	Environmental conditions	5
1.4	Measurement uncertainty	6
1.5	Field Strength Calculation	6
2.0	TEST SUMMARY	7
3.0	TEST CONDITIONS AND RESULTS	8
3.1	Maximum peak output power	8
3.2	Hopping channel carrier frequencies separation	12
3.3	20dB bandwidth of the hopping channel	14
3.4	Number of hopping frequencies	18
3.5	Average time of occupancy of hopping frequency	20
3.6	Antenna conducted spurious emissions	23
3.6.1	Antenna conducted band edge compliance	30
3.7	Radiated spurious emissions	35
3.8	RF Exposure Compliance	42
3.9	Transmitter power line conducted emissions	43
3.10	Receiver/digital device radiated emissions	46
3.11	Digital device conducted emissions	50
4.0	TEST EQUIPMENT	53



1.0 GENERAL DESCRIPTION

Model:	WOLC Gateway
Type of EUT:	Communication Gateway
Intertek Sample ID:	MIN1212041500-001
FCC ID:	PUU90002
Industry Canada ID:	10798A- PUU90002
Related Submittal(s) Grants:	None
Company:	GE Lighting
Customer:	Mr. Mark Wilbur
Address:	GE Lighting 1975 Noble Rd, Bldg 338 Cleveland, OH 44112
Phone:	(216) 266-3769
Fax:	(216) 606-6599
e-mail:	mark.wilbur2@ge.com
Test Standards:	<input checked="" type="checkbox"/> 47 CFR, Part 15:2010, §15.247 <input checked="" type="checkbox"/> RSS-210, Issue 8, 2010 <input checked="" type="checkbox"/> RSS-Gen, Issue 3, 2010 <input checked="" type="checkbox"/> 47 CFR, Part 15:2010, §15.107 and §15.109, Class A <input checked="" type="checkbox"/> ICES-003, Issue 5:2012 <input type="checkbox"/> Other
Type of radio:	<input type="checkbox"/> Stand -alone <input type="checkbox"/> Module <input type="checkbox"/> Hybrid
Date Sample Submitted:	December 10, 2012
Test Work Started:	December 10, 2012
Test Work Completed:	July 15, 2013
Test Sample Conditions:	<input type="checkbox"/> Damaged <input type="checkbox"/> Poor (Usable) <input checked="" type="checkbox"/> Good



1.1 Product Description; Test Facility

Product Description:	Communication Gateway
Transmitter Type:	<input checked="" type="checkbox"/> FHSS <input type="checkbox"/> Digital Modulation <input type="checkbox"/> WiFi <input type="checkbox"/> Blue Tooth
Operating Frequency Range(s):	From 902 to 928MHz
Number of Channels:	50
Modulation:	GFSK
Emission Designator:	498K4F1D
Antenna(s) Info:	Type: Omni Directional Antenna Gain: 3 dBi Connector Type: N-Type connector
Antenna Installation:	<input type="checkbox"/> User <input type="checkbox"/> Professional <input checked="" type="checkbox"/> Factory
Transmitter power configuration:	<input type="checkbox"/> Internal battery <input checked="" type="checkbox"/> External power source <input checked="" type="checkbox"/> 120VAC <input type="checkbox"/> 230VAC <input type="checkbox"/> 400VAC <input type="checkbox"/> [redacted] VDC <input type="checkbox"/> Other: [redacted] [redacted] Amp. <input type="checkbox"/> 50Hz <input checked="" type="checkbox"/> 60Hz
Special Test Arrangement:	None
Test Facility Accreditation:	A2LA (Certificate No. 1427.01)
Test Methodology:	Measurements performed according to the procedures in ANSI C63.10-2009 and FCC Public Notice DA 00-705



1.2 EUT Configuration

The equipment under test was operated during the measurement under the following conditions:

- Standby
- Continuous transmissions with hopping function enabled
- Continuous transmissions with hopping function disabled (modulated signal)
- Continuous transmissions with hopping function disabled (un-modulated signal)
- Continuous receiving
- Test program (customer specific)
- [REDACTED]

Operating modes of the EUT:

No.	Description
1	Test was performed at low channel, middle channel, and upper channel
2	

Cables:

No.	Type	Length	Designation	Note
1	AC Power	6ft	Power Cord	

Support equipment/Services:

No.	Item	Description
1	None	

1.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal

Temperature: +15 to +35 ° C

Humidity: 20-75 %

Atmospheric pressure: 86-106 kPa

Extreme

Temperature: -20 to +50 ° C

Supply voltage: 85% to +115%



1.4 Measurement uncertainty

The expanded uncertainty ($k = 2$) for radiated measurements has been determined to be:

± 4 dB at 10m and ± 5.4 dB at 3m

The expanded uncertainty ($k = 2$) for conducted measurements at antenna terminal has been determined to be:

± 1.0 dB

The expanded uncertainty ($k = 2$) for line conducted measurements has been determined to be:

± 2.6 dB

1.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured emissions reading on the EMI Receiver.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where: FS = Field Strength in dB(μ V/m)

RA = Receiver Amplitude in dB(μ V)

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB(m^{-1})

AG = Amplifier Gain in dB

Assume a receiver reading of 48.1 dB(μ V) is obtained. The antenna factor of 7.4 dB(m^{-1}) and cable factor of 1.6 dB is added and amplifier gain of 16.0 dB is subtracted giving field strength of 41.1 dB(μ V/m).

$$RA = 48.1 \text{ dB}(\mu\text{V})$$

$$AF = 7.4 \text{ dB}(m^{-1})$$

$$CF = 1.6 \text{ dB}$$

$$AG = 16.0 \text{ dB}$$

$$FS = RA + AF + CF - AG$$

$$FS = 48.1 + 7.4 + 1.6 - 16.0$$

$$FS = 41.1 \text{ dB}(\mu\text{V}/\text{m})$$

General notes:



2.0 TEST SUMMARY

Referring to the performance criteria and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards.

TEST SPECIFICATION	TEST PARAMETERS	RESULT
15.247(b), (c) / RSS-210 A8.4	Maximum peak output power	Pass
15.247(e) / RSS-210 A8.1	Hopping channel carrier frequencies separation	Pass
15.247(a) / RSS-210 A8.1	20dB bandwidth of the hopping channel	Pass
15.247(e) / RSS-210 A8.1	Number of hopping frequencies	Pass
15.247(e) / RSS-210 A8.1	Average time of occupancy of hopping frequency	Pass
15.247(d) / RSS-210 A8.5	Antenna conducted spurious and band edge emissions	Pass
15.247(d) / RSS-210 A8.5	Radiated spurious emissions	Pass
15.247(i) / RSS- Gen 5.5	RF Exposure Compliance	Pass
15.207 / RSS-Gen 7.2.2	Transmitter Power Line conducted emissions	Pass
15.109 / ICES-003	Receiver/digital device radiated emissions	Pass
15.107 / ICES-003	Digital device conducted emissions	Pass



3.0 TEST CONDITIONS AND RESULTS

3.1 Maximum peak output power

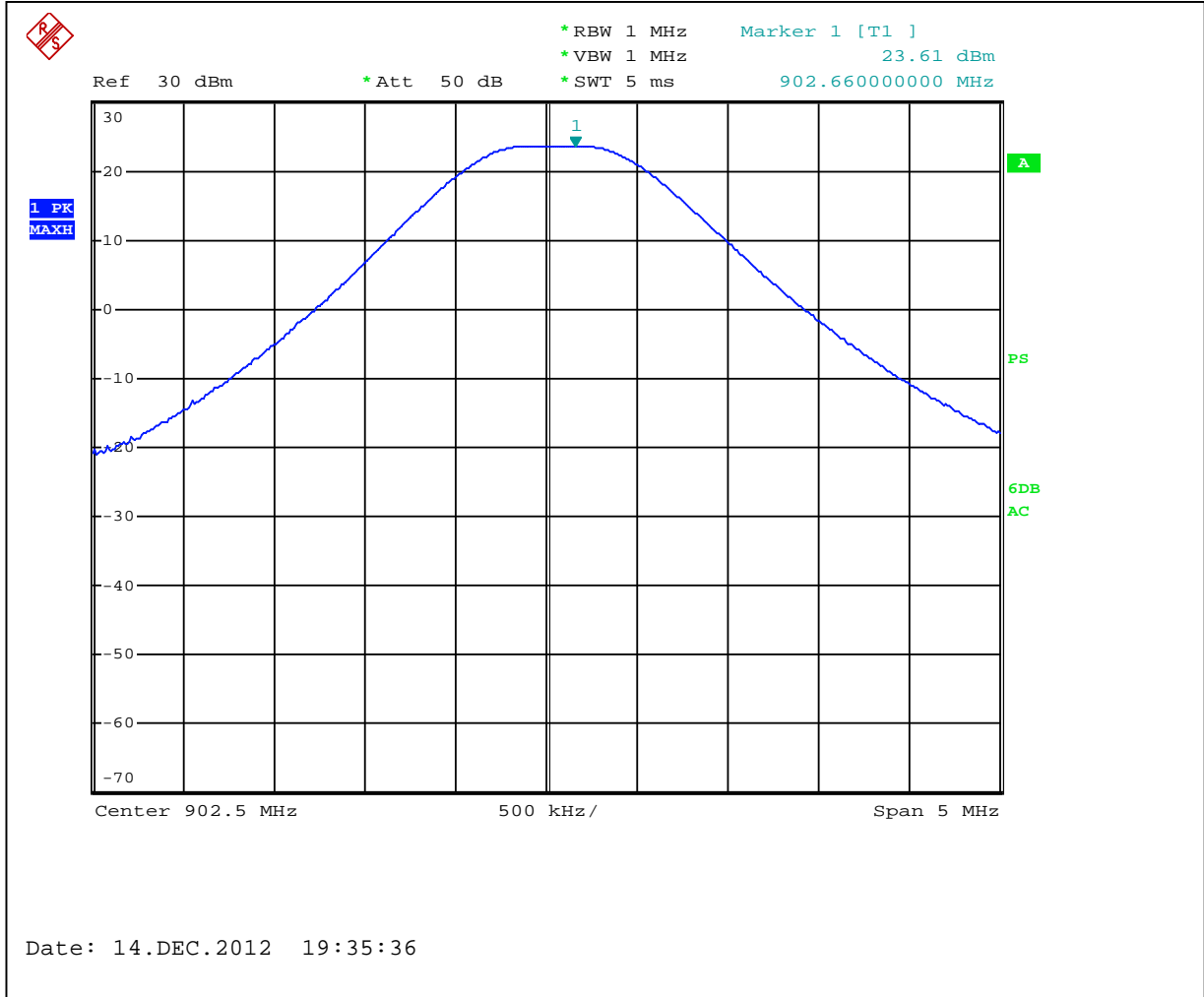
Test location: OATS Anechoic Chamber Other

Test result: **Pass**

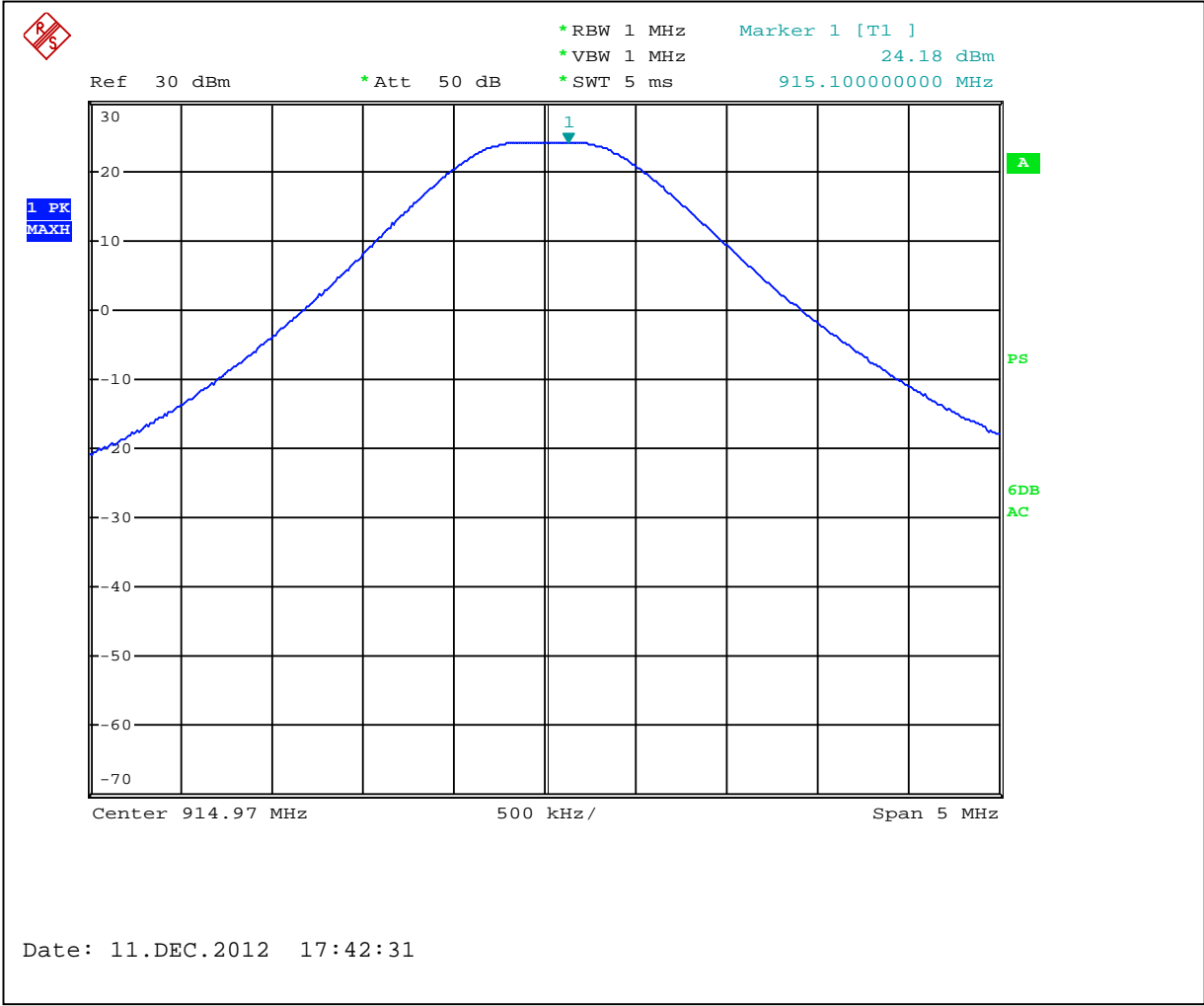
Max. Margin: 11.0dB below the limits

Power Output:	Conducted					
Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz		<input type="checkbox"/> 2400-2483.5MHz		<input type="checkbox"/> 5725-5850MHz	
Low Frequency MHz	Measured power dBm	Attenuation dB	Power at Antenna dBm	Limit dBm	Limit Reduction dB	Margin dB
902.50	23.6	0.7	24.3	30	0	-5.7
Middle Frequency MHz						
914.97	24.2	0.7	24.9	30	0	-5.1
Upper Frequency MHz						
927.45	23.9	0.7	24.6	30	0	-5.4
RBW:	<input checked="" type="checkbox"/> 1MHz <input type="checkbox"/> 3MHz <input type="checkbox"/> 10MHz					
VBW:	<input checked="" type="checkbox"/> 1MHz <input type="checkbox"/> 3MHz <input type="checkbox"/> 10MHz					
Antenna Gain:	<input checked="" type="checkbox"/> < 6dBi <input type="checkbox"/> >6dBi and = <input type="text"/> dBi, Output power reduction = <input type="text"/> dB					

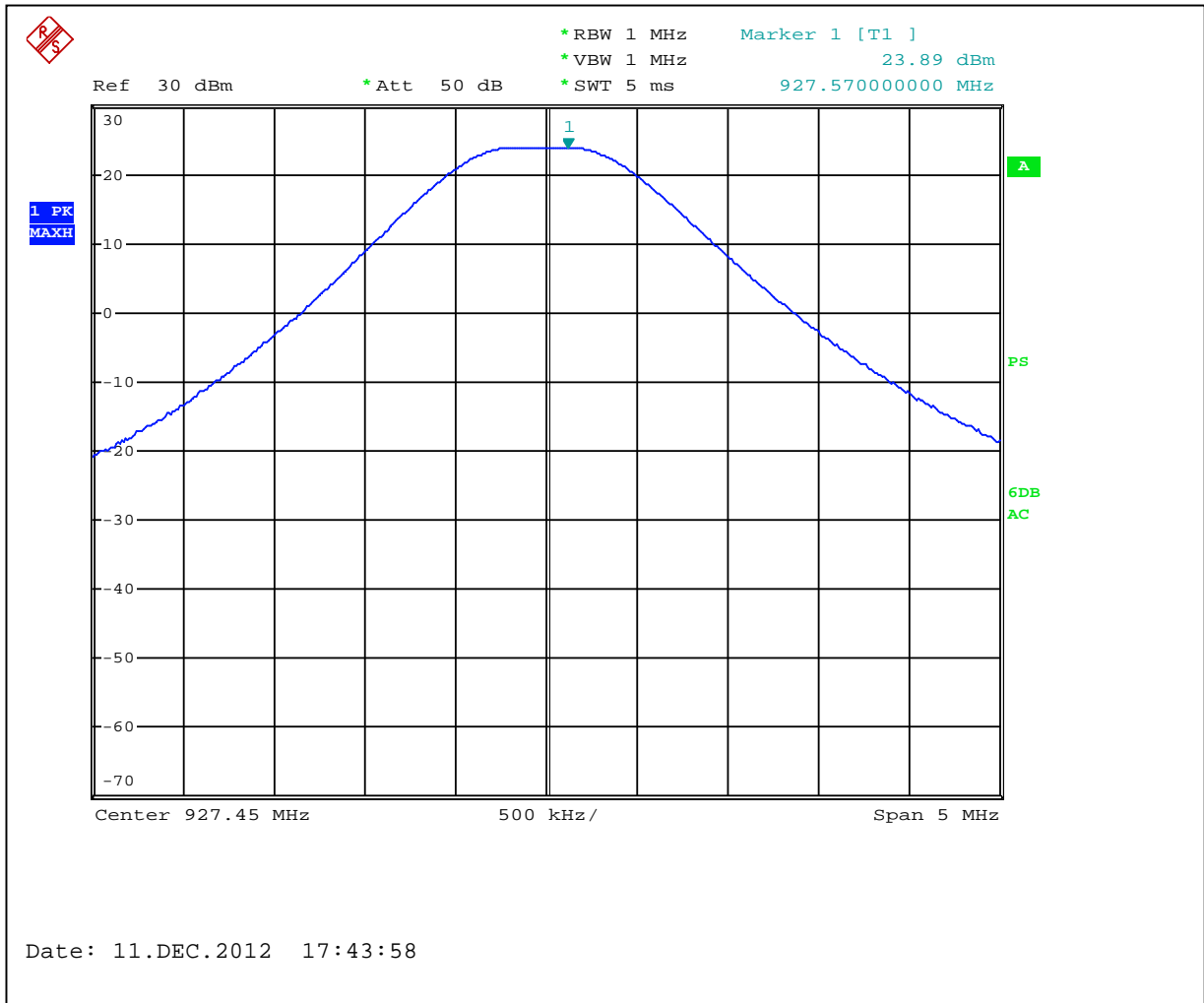
Notes:



Graph 3.1.1



Graph 3.1.2



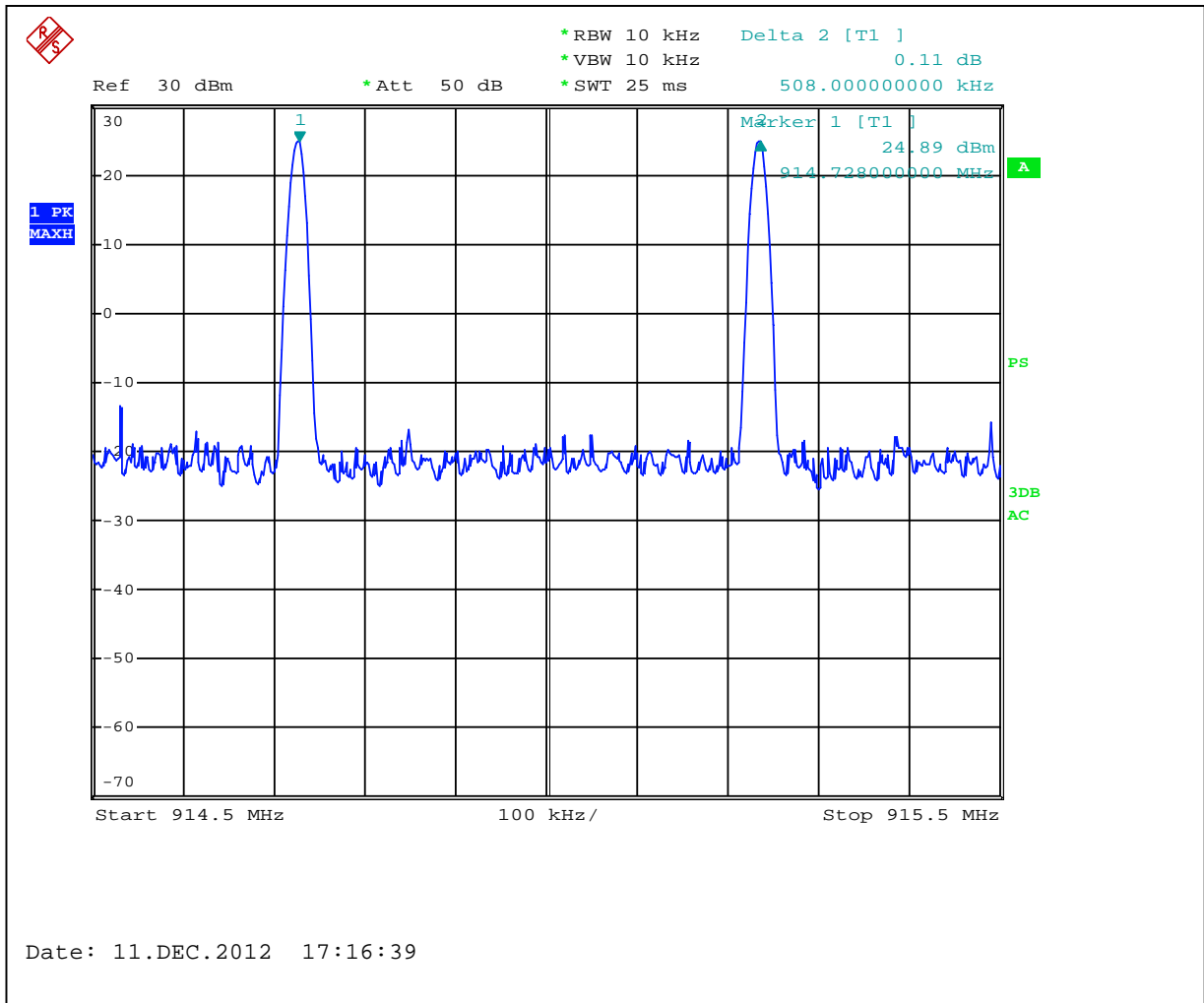
Graph 3.1.3



3.2 Hopping channel carrier frequencies separation

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz		
Measured Separation (kHz)	Limit (kHz)	Result	
508	25	Pass	
Limit:	<input checked="" type="checkbox"/> 25kHz <input type="checkbox"/> 20dB channel bandwidth <input type="checkbox"/> 2/3 of 20dB channel bandwidth		
Span:	<input type="checkbox"/> 3kHz <input checked="" type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input type="checkbox"/> other <input type="text"/> kHz		
RBW:	<input type="checkbox"/> 3kHz <input checked="" type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input type="checkbox"/> other <input type="text"/> kHz		
VBW:	<input type="checkbox"/> 3kHz <input checked="" type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input type="checkbox"/> other <input type="text"/> kHz		

Notes: None



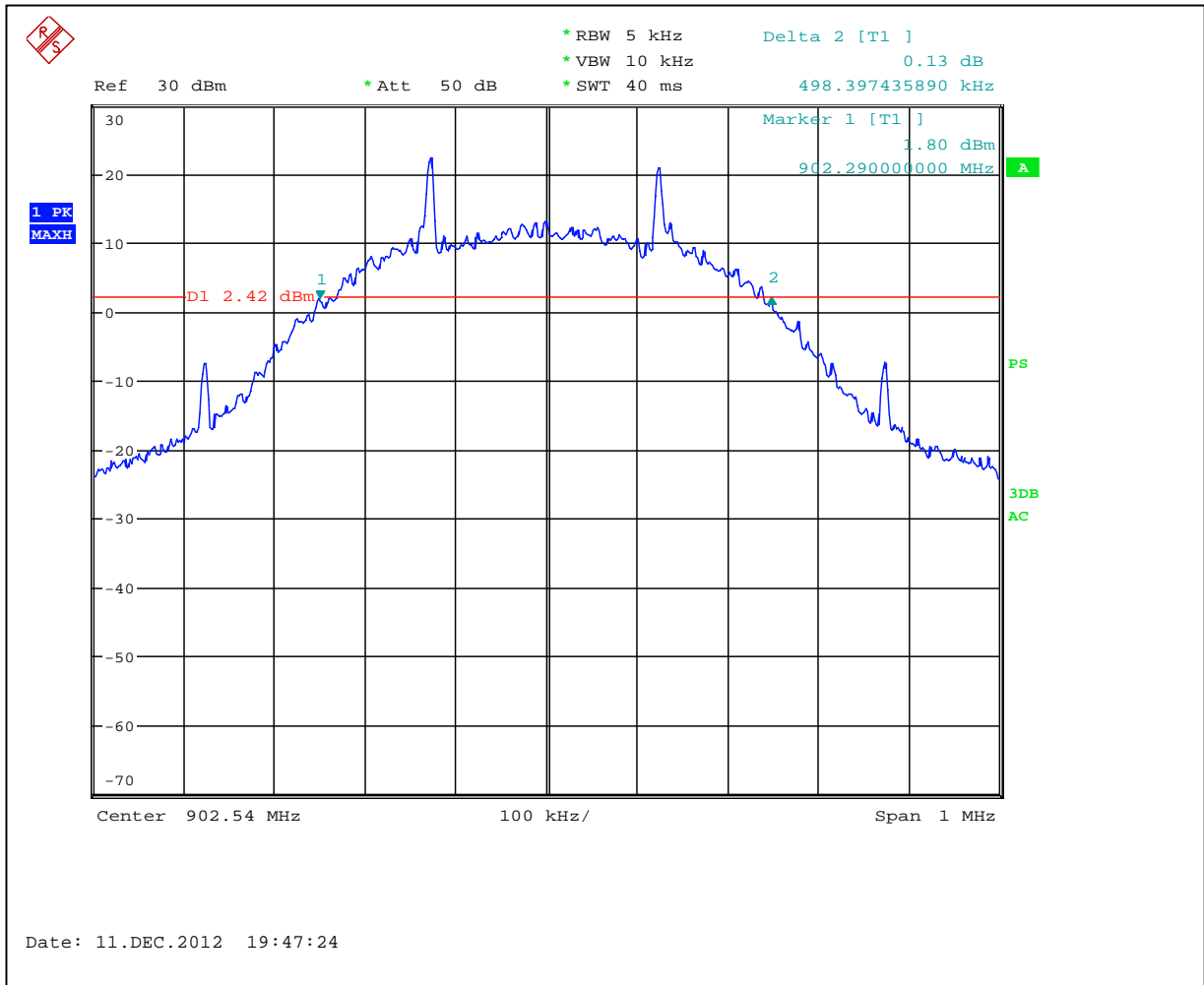
Graph 3.2.1



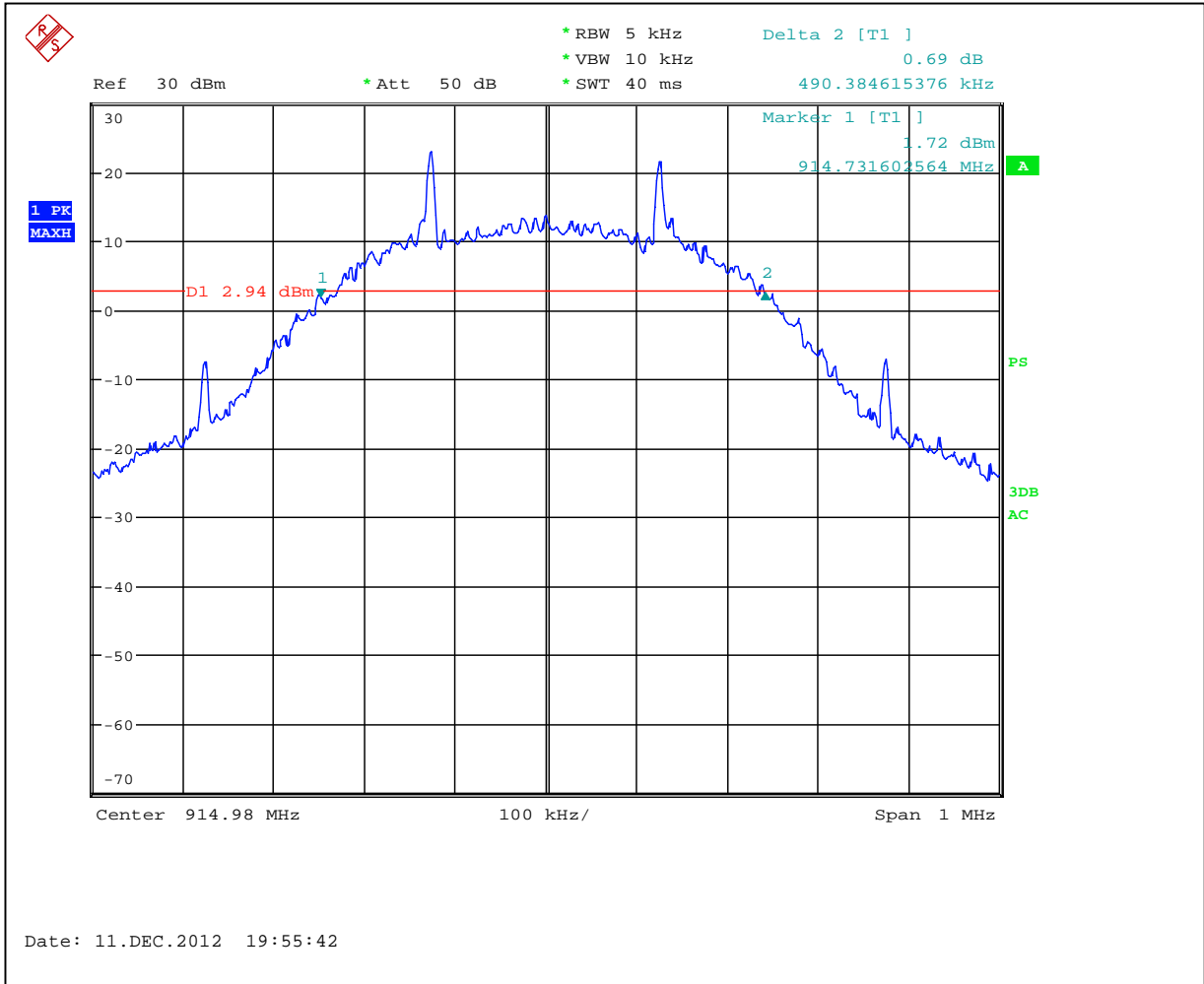
3.3 20dB bandwidth of the hopping channel

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz			
Low Frequency Channel (kHz)	Middle Frequency Channel (kHz)	Upper Frequency Channel (kHz)	Limit (kHz)	Result
498.4	490.4	488.8	500	Pass
Span:	1MHz			
RBW:	<input type="checkbox"/> 3kHz <input type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input checked="" type="checkbox"/> other 5kHz			
VBW:	<input type="checkbox"/> 3kHz <input type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input checked="" type="checkbox"/> other 10kHz			

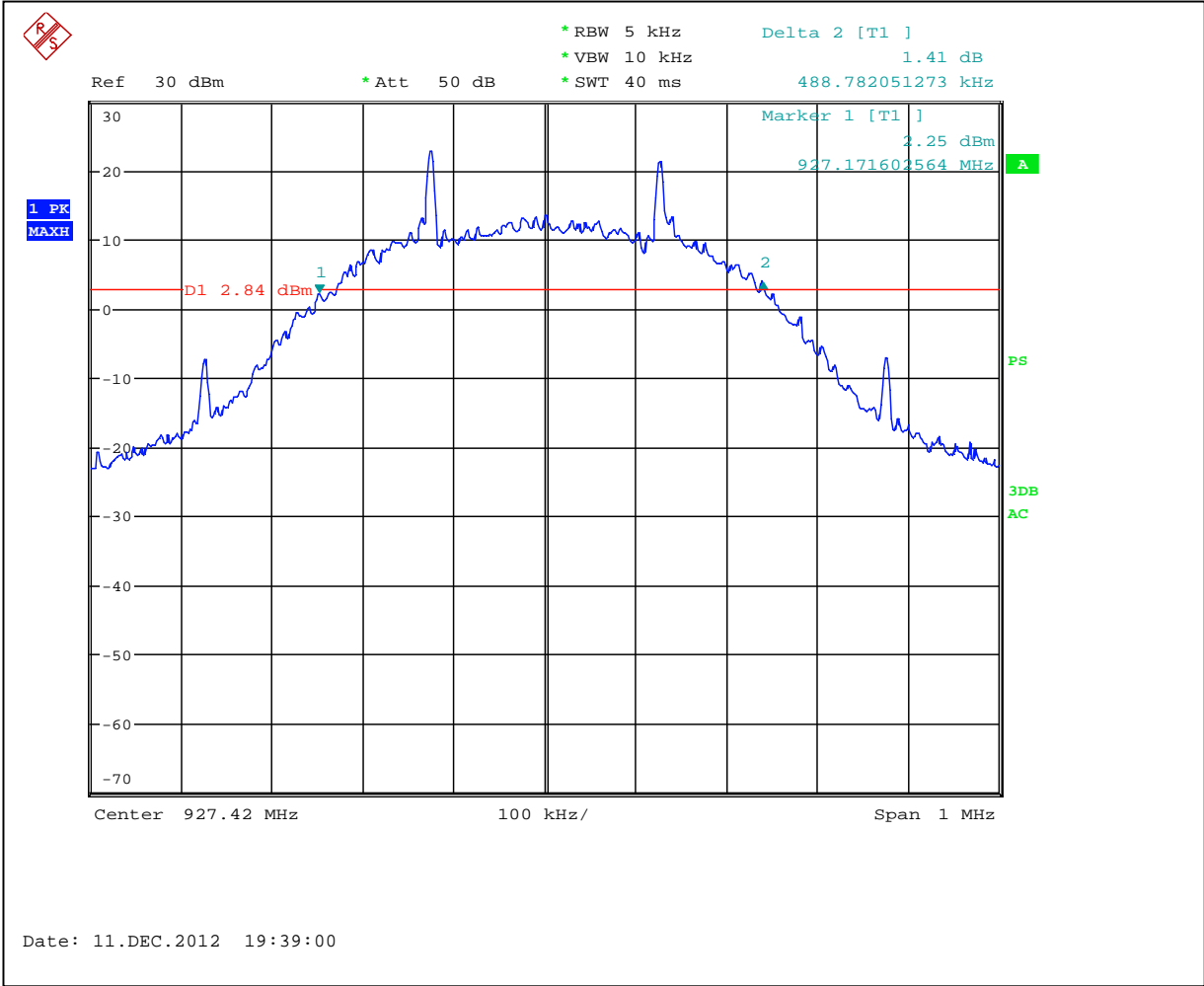
Notes: None



Graph 3.3.1



Graph 3.3.2



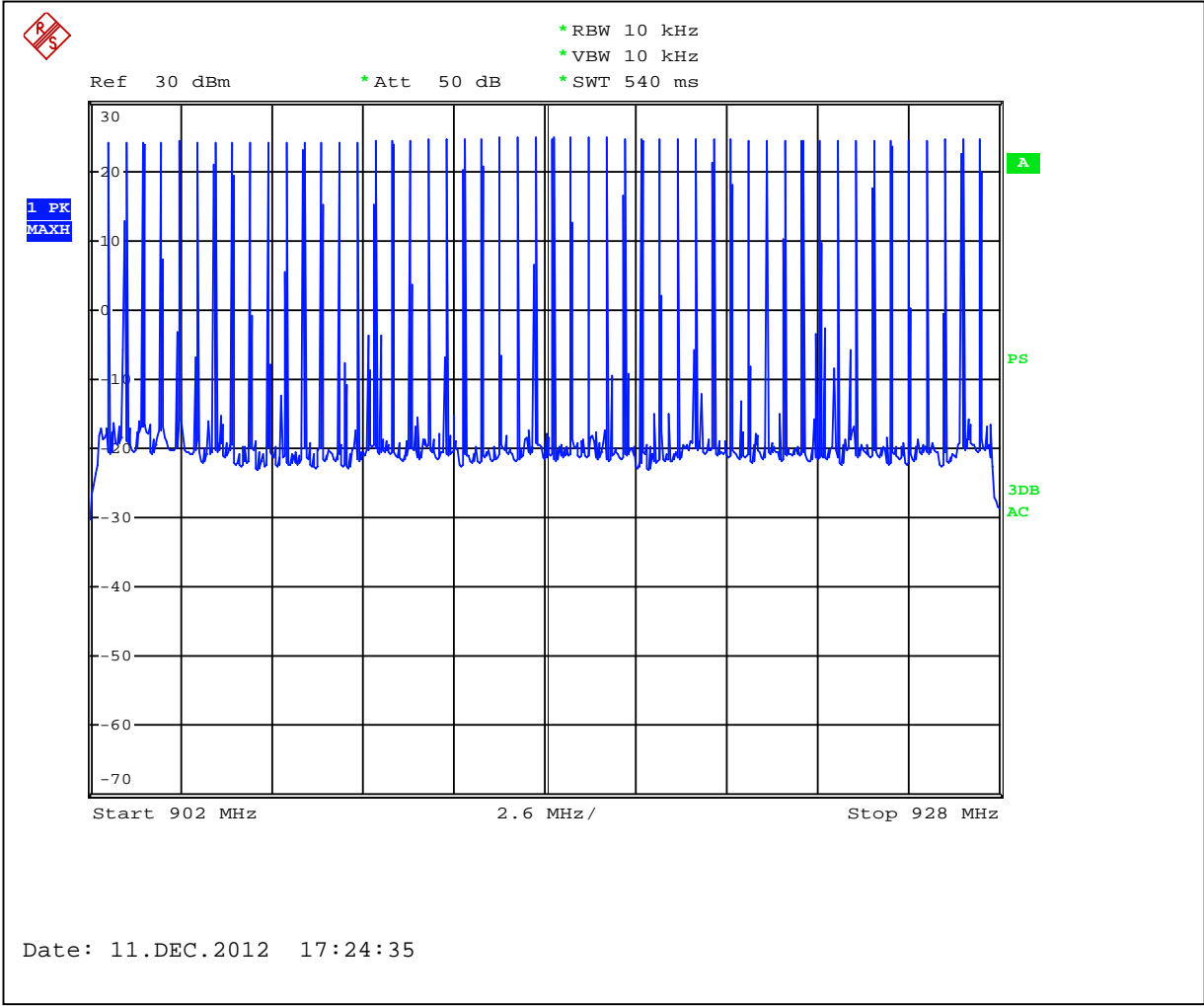
Graph 3.3.3



3.4 Number of hopping frequencies

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz	
Measured Number	Requirements	Result
50	25	Pass
Channel 20dB Bandwidth:	<input type="checkbox"/> <250kHz <input checked="" type="checkbox"/> ≥250kHz	

Notes: None



Graph 3.4.1



3.5 Average time of occupancy of hopping frequency

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz		
Measured / Calculated Time sec	Period sec	Limit sec	Result
0.385	10	0.4	Pass
Period:	<input checked="" type="checkbox"/> 10s <input type="checkbox"/> 20s <input type="checkbox"/> 30s <input checked="" type="checkbox"/> 0.4s multiplied by the channel number		
Channel 20dB Bandwidth:	<input type="checkbox"/> <250kHz <input checked="" type="checkbox"/> ≥250kHz		

Time of occupancy calculation:

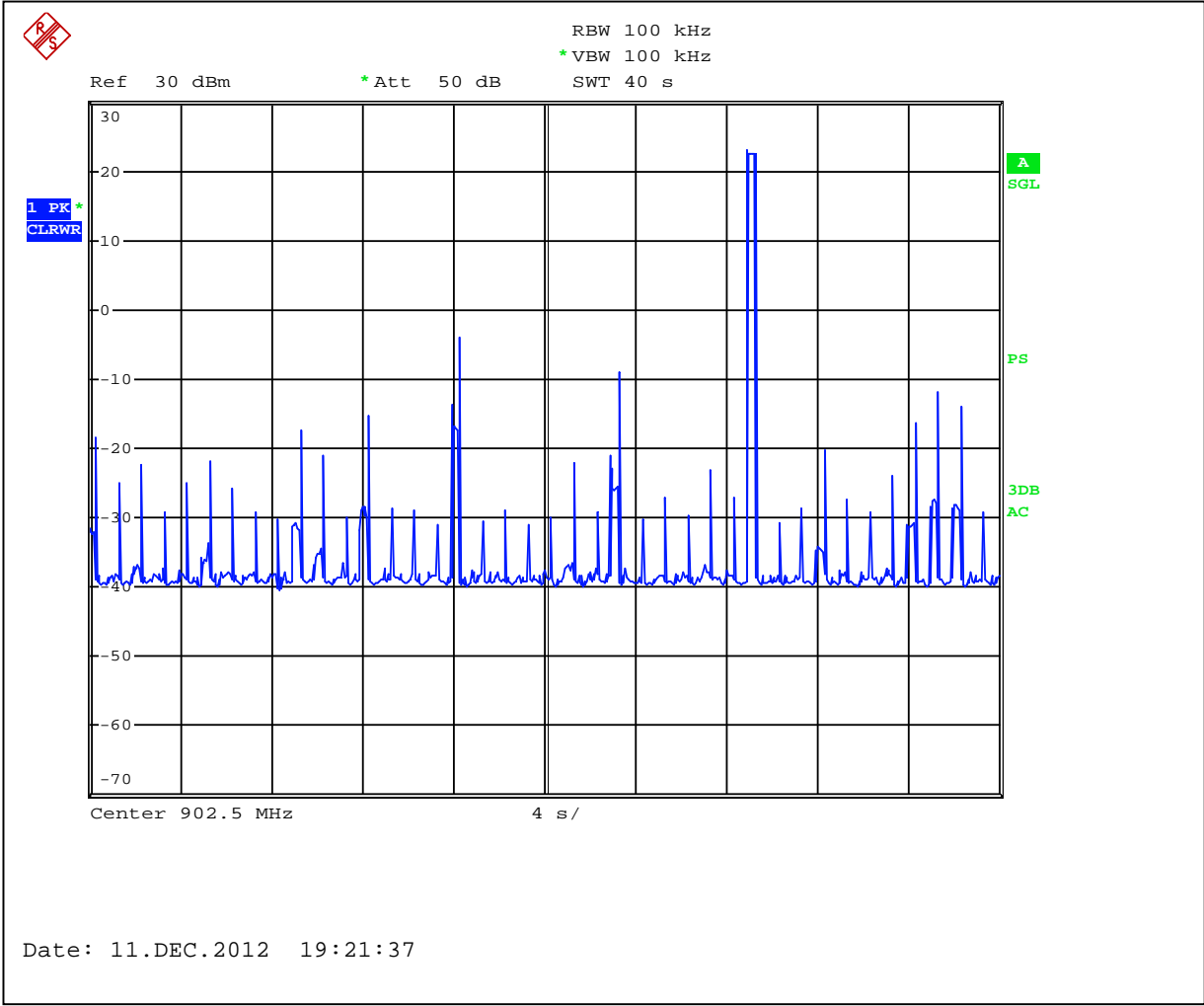
The minimum measured repetition of the channel occupancy (repetition) = 1 time in 40 sec

Single occupancy duration (single duration) = 0.385 sec

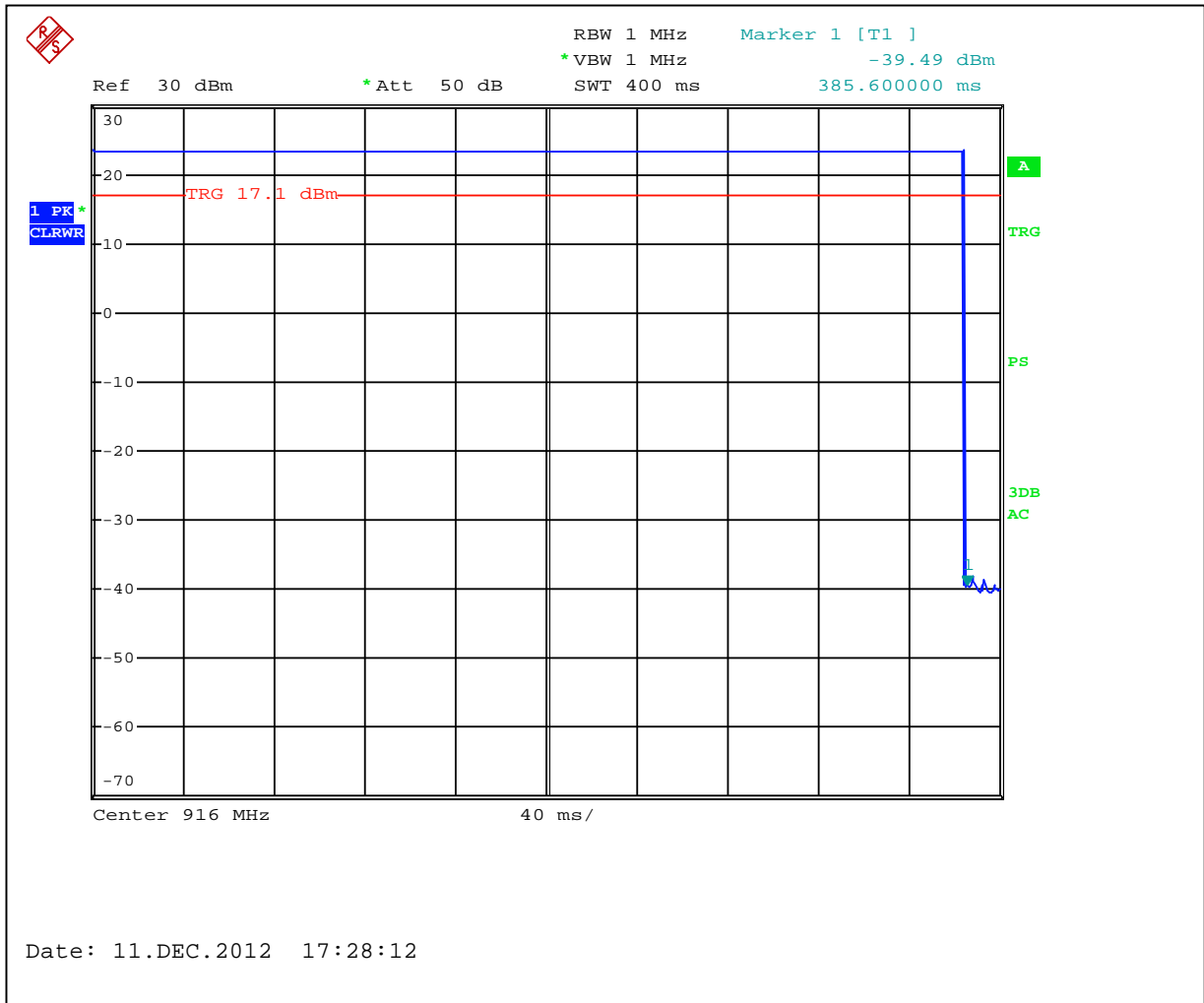
Period = 10 sec

Time of occupancy = (single duration) x (repetition) = 0.385 x 1 = 0.385 sec

Notes: None



Graph 3.5.1



Note: No video trigger delay was set

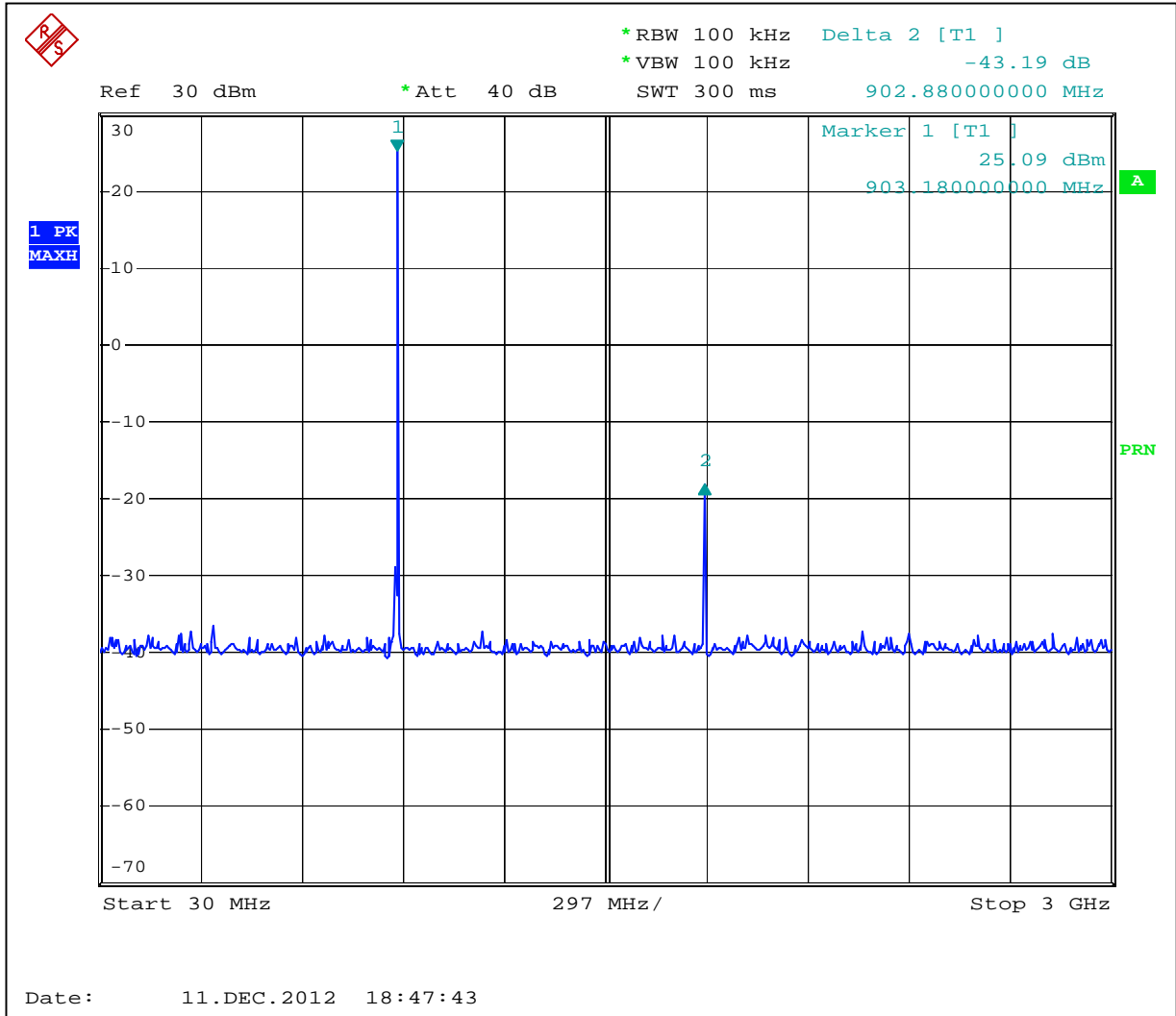
Graph 3.5.2



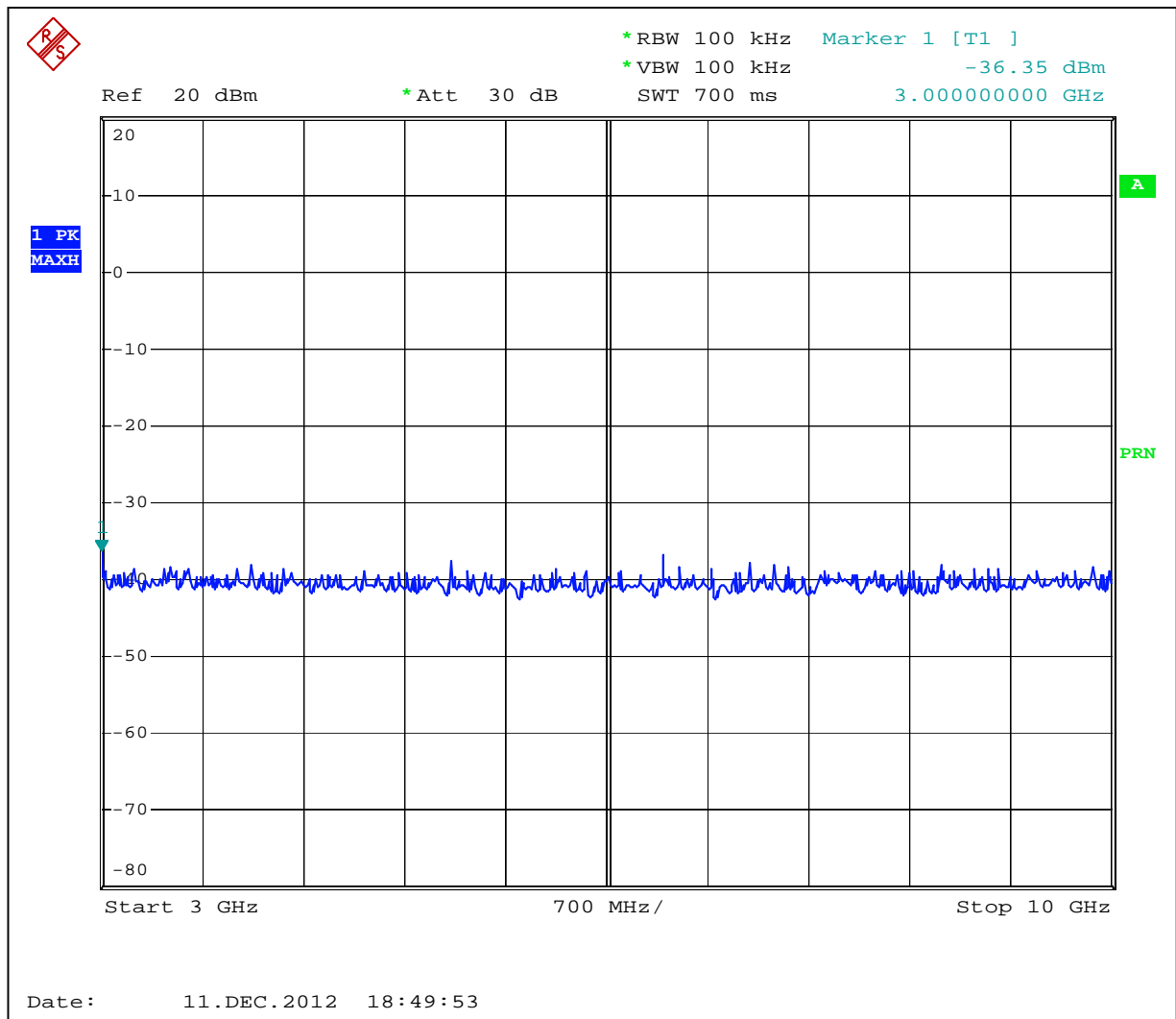
3.6 Antenna conducted spurious emissions

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz		
	Minimum Measured Attenuation dB	Minimum Allowed Attenuation dB	Margin dB
Low Frequency Channel	43.2	20	-23.2
Middle Frequency Channel	44.7	20	-24.7
Upper Frequency Channel	42.9	20	-22.9
Analyzer Settings:	<input checked="" type="checkbox"/> RBW=100KHz		
Minimum Allowed Attenuation:	<input checked="" type="checkbox"/> 20dB <input type="checkbox"/> 30dB (for digital systems with conducted power measured using RMS averaging over a time interval)		

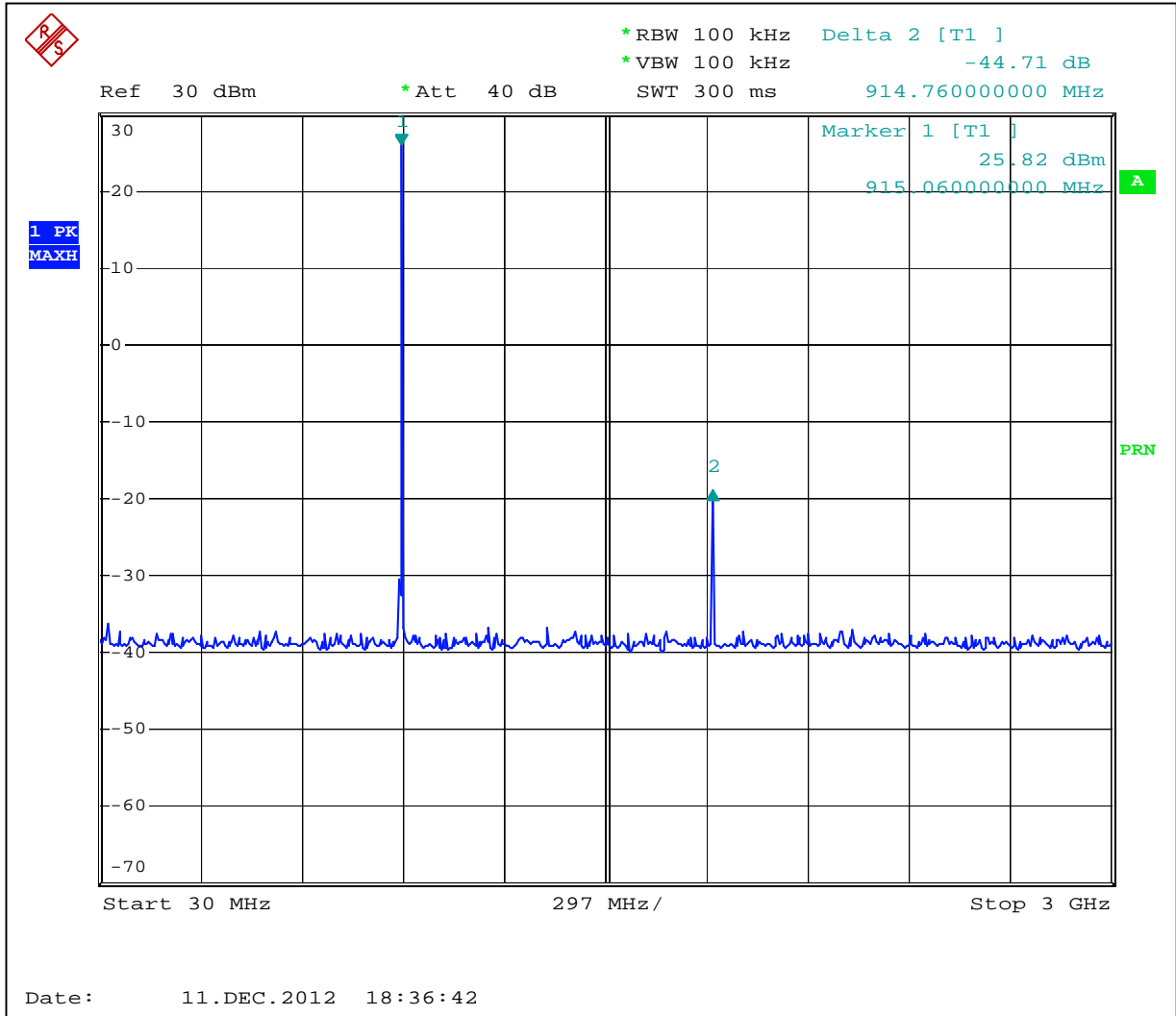
Notes: None



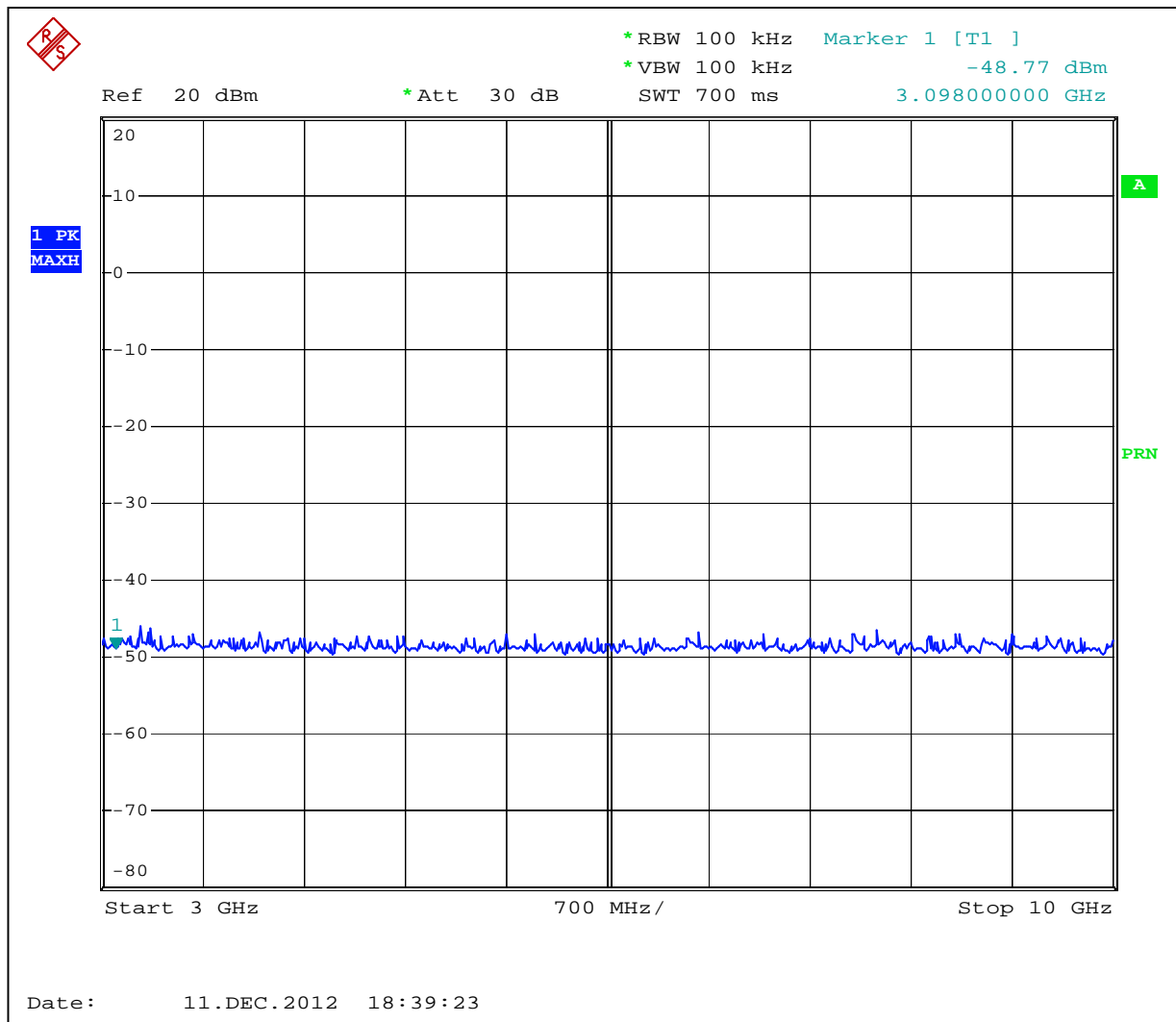
Graph 3.6.1



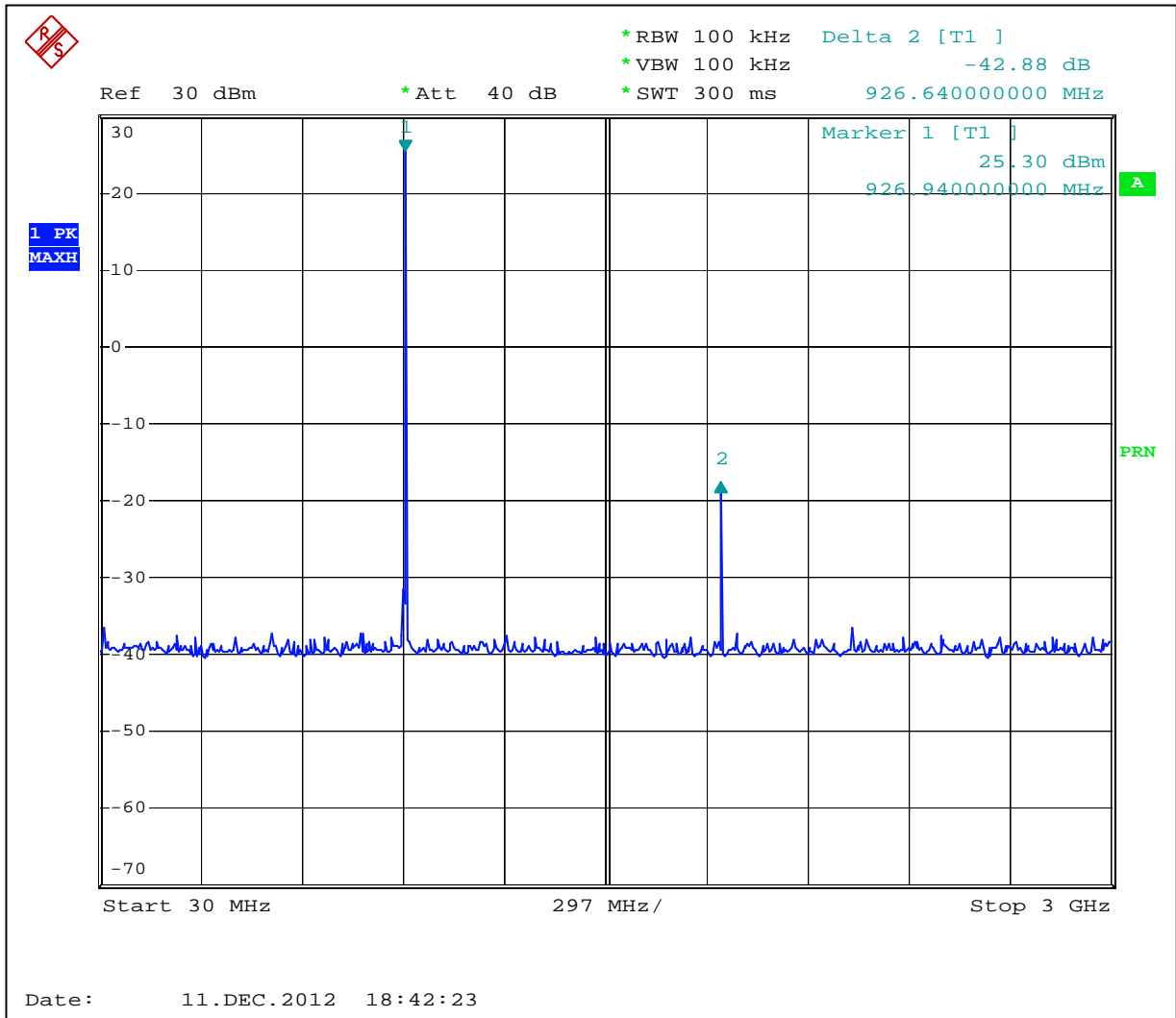
Graph 3.6.2



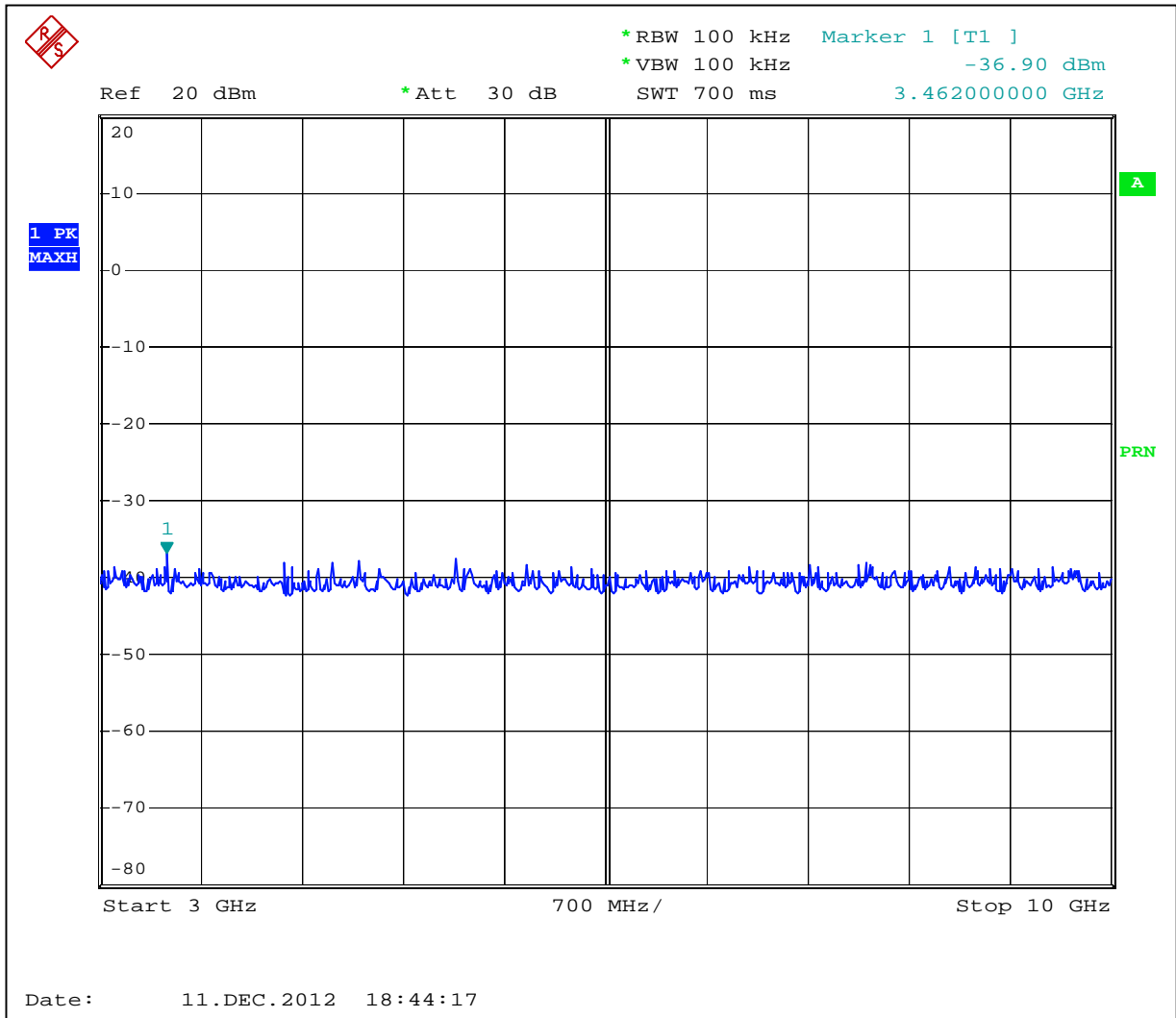
Graph 3.6.3



Graph 3.6.4



Graph 3.6.5



Graph 3.6.6



3.6.1 Antenna conducted band edge compliance

Hopping disabled

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz		
	Minimum Measured Attenuation dB	Minimum Allowed Attenuation dB	Margin dB
Low Frequency Channel (902MHz)	38.1	20	-18.1
Upper Frequency Channel (928MHz)	37.5	20	-17.5
Analyzer Settings:	<input checked="" type="checkbox"/> RBW=100KHz		
Minimum Allowed Attenuation:	<input checked="" type="checkbox"/> 20dB <input type="checkbox"/> 30dB (for digital systems with conducted power measured using RMS averaging over a time interval)		

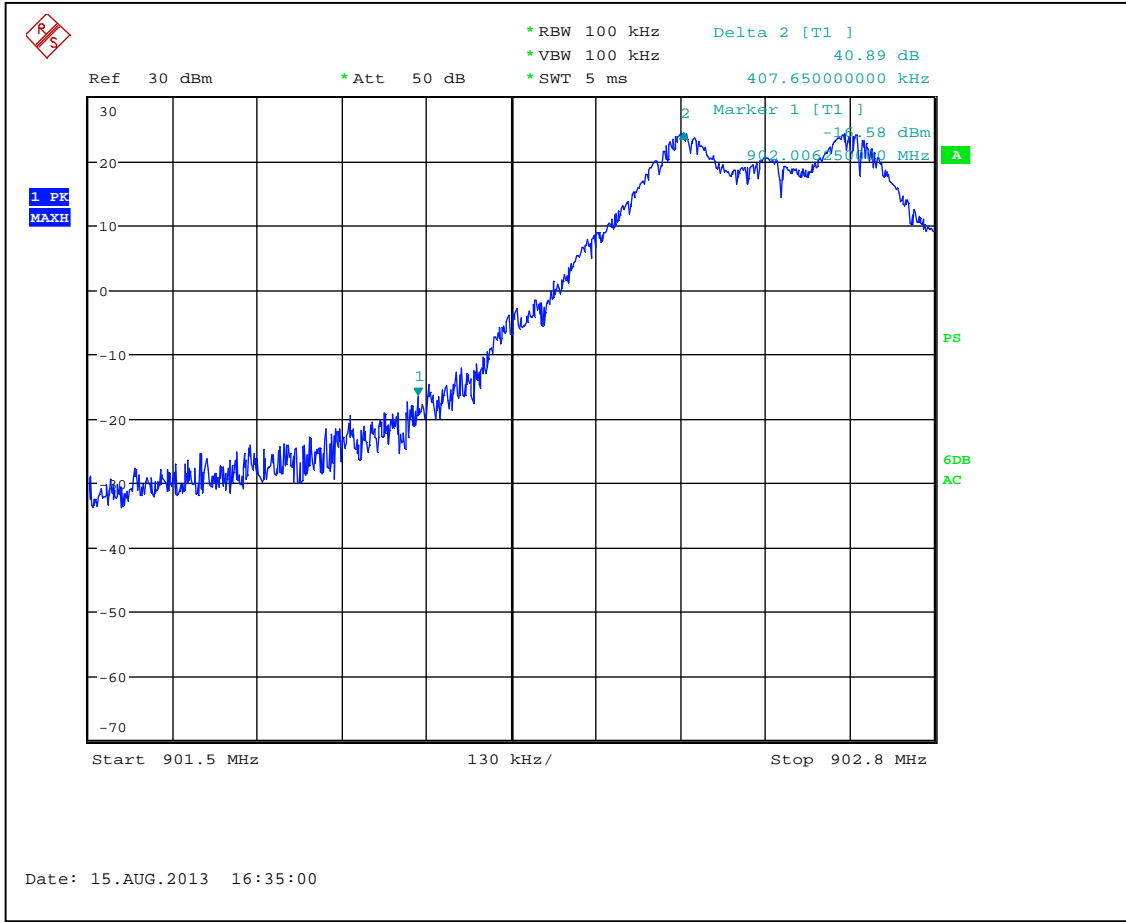
Hopping enabled

Frequency Range:	<input checked="" type="checkbox"/> 902-928MHz <input type="checkbox"/> 2400-2483.5MHz <input type="checkbox"/> 5725-5850MHz		
	Minimum Measured Attenuation dB	Minimum Allowed Attenuation dB	Margin dB
Low Frequency Channel (902MHz)	40.9	20	-20.9
Upper Frequency Channel (928MHz)	43.1	20	-23.1
Analyzer Settings:	<input checked="" type="checkbox"/> RBW=100KHz		
Minimum Allowed Attenuation:	<input checked="" type="checkbox"/> 20dB <input type="checkbox"/> 30dB (for digital systems with conducted power measured using RMS averaging over a time interval)		

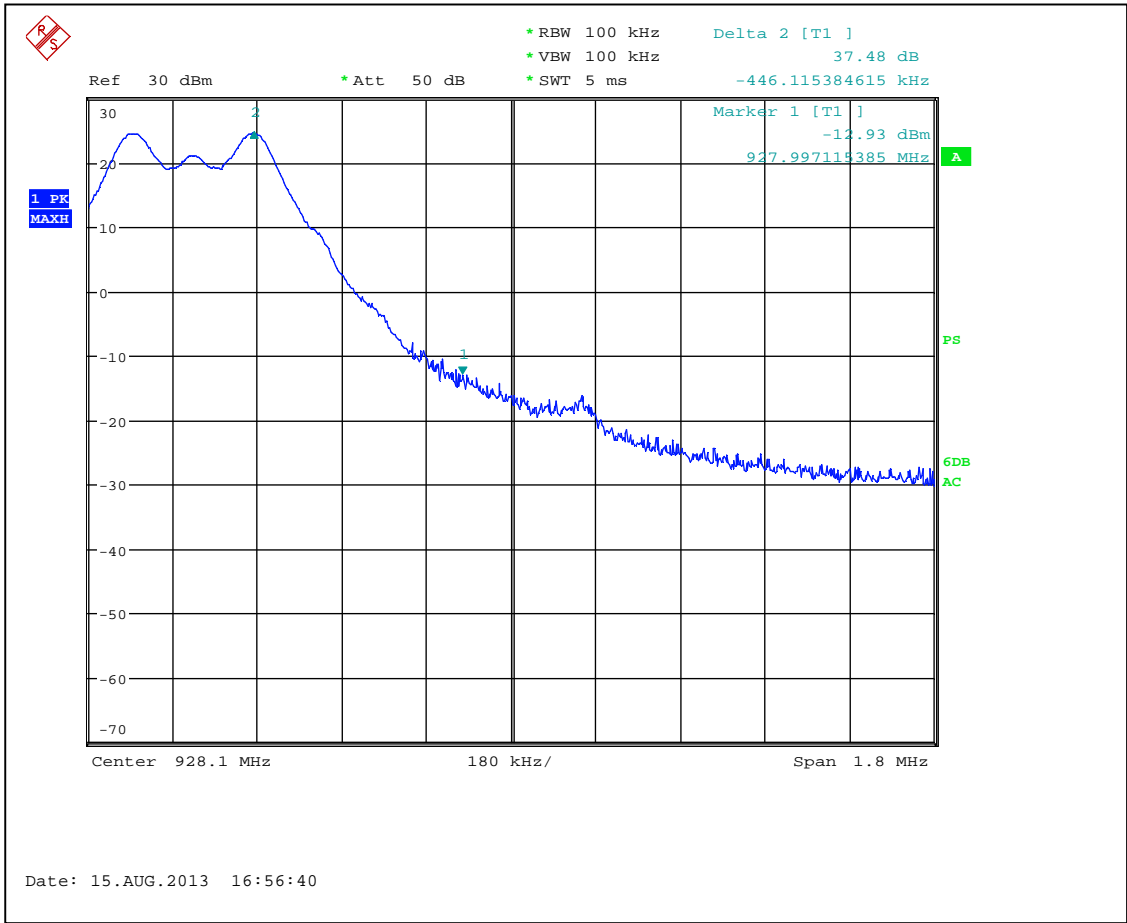
Notes: Graphs 3.6.4 and 3.6.5 show Band-edge compliance for low frequency channel. Graphs 3.6.6 and 3.6.7 show Band-edge compliance for high frequency channel.



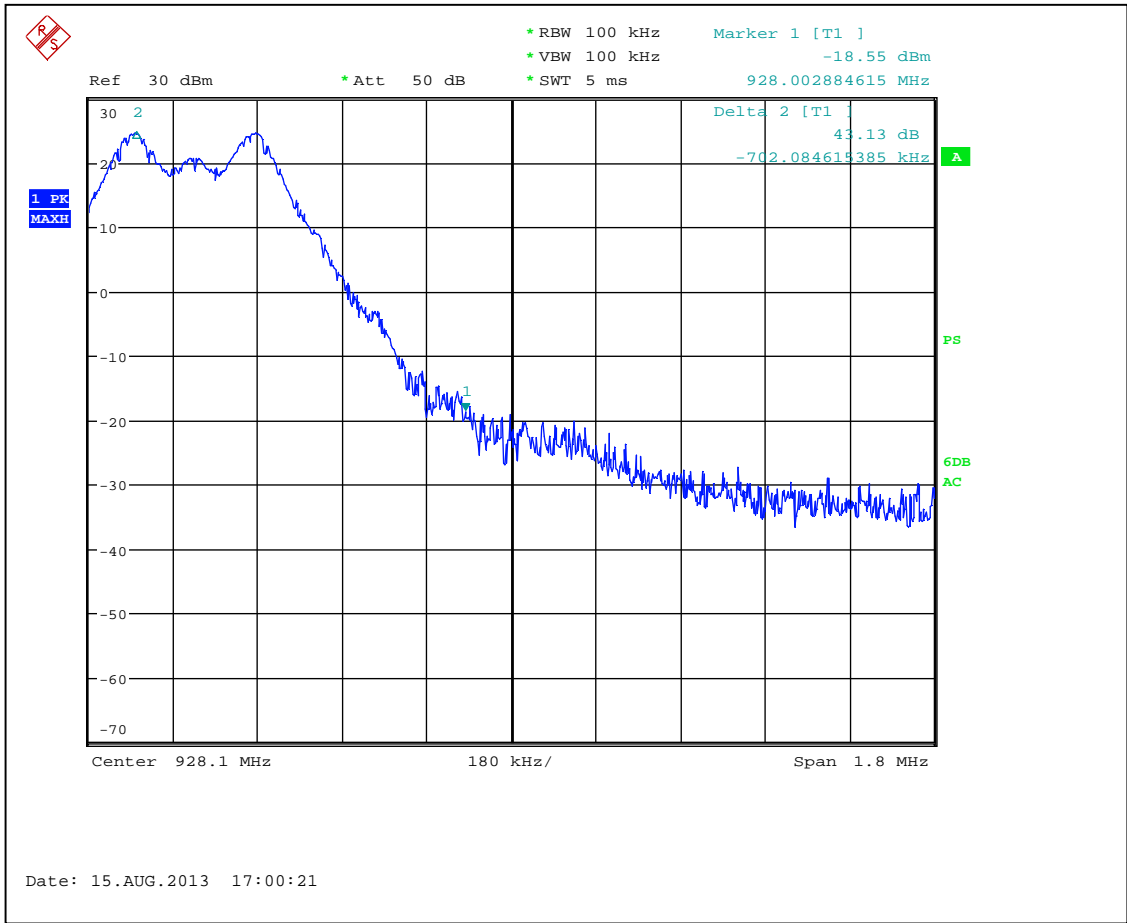
Graph 3.6.4 (hopping disabled)



Graph 3.6.5 (hopping enabled)



Graph 3.6.6 (hopping disabled)



Graph 3.6.7 (hopping enabled)



3.7 Radiated spurious emissions

Test location: OATS Anechoic Chamber Other

Test distance: 10 meters 3 meters

Frequency Range: 30MHz-10GHz

Test result: **Pass**

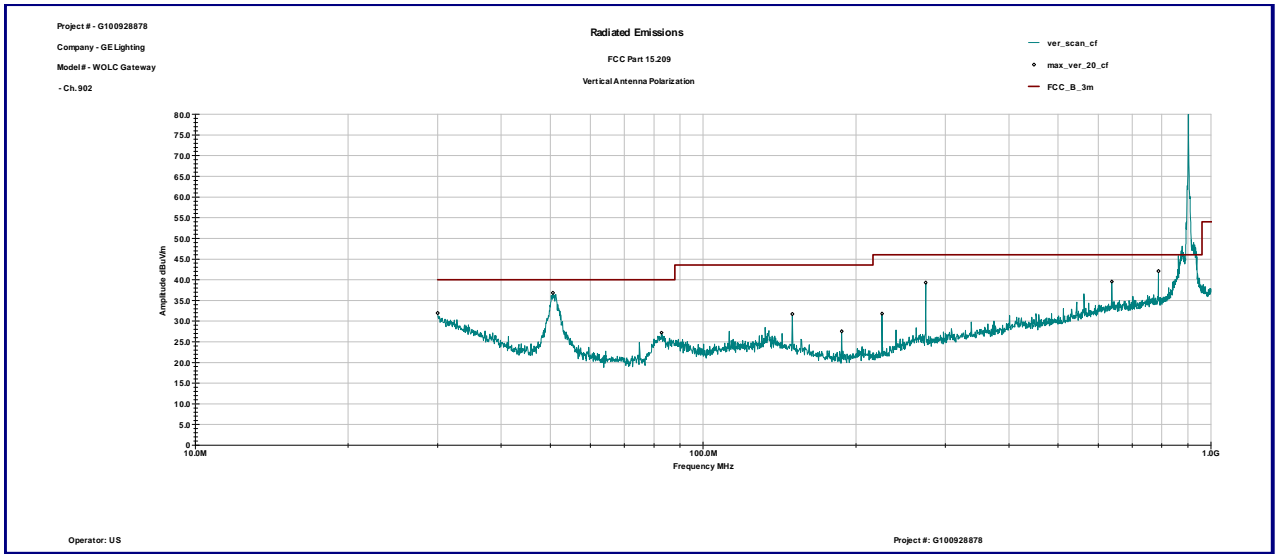
Max. Margin: 8.1dB below the limits

Date:	December 14, 2012	Result: Pass
Tested by:	Uri Spector	
Standard:	FCC part 15.247(d)	
Test Point:	Enclosure	
Operation mode:	See page 5	
Note:	Emissions at fundamental frequency, spurious emissions and harmonics outside restricted band of operation per FCC 15.205, and spurious emissions not related with transmitter operations were excluded from the Table.	

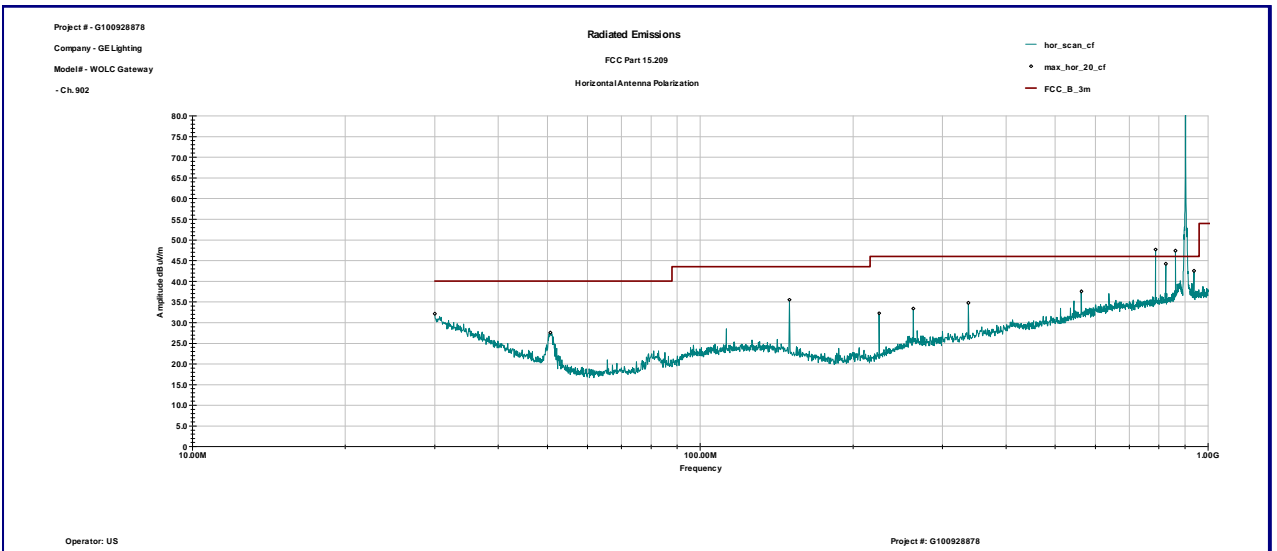
Table 3.7.1

Frequency MHz	Antenna Polarity	Peak Reading dBμV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Limit dBμV/m	Margin dB
Channel 902							
1.3015 GHz	V	50.0	26.8	41.9	34.9	54.0	-19.1
2.71 GHz	V	50.9	32.4	40.4	42.8	54.0	-11.2
2.71 GHz	H	54.1	32.3	40.4	45.9	54.0	-8.1
Channel 915							
2.746 GHz	V	50.1	32.5	40.4	42.2	54.0	-11.8
2.746 GHz	H	52.8	32.4	40.4	44.8	54.0	-9.2
Channel 928							
2.7865 GHz	V	46.9	32.7	40.5	39.1	54.0	-14.9
2.7865 GHz	H	50.2	32.6	40.5	42.4	54.0	-11.6
4.6405 GHz	H	44.1	36.9	39.3	41.7	54.0	-12.3

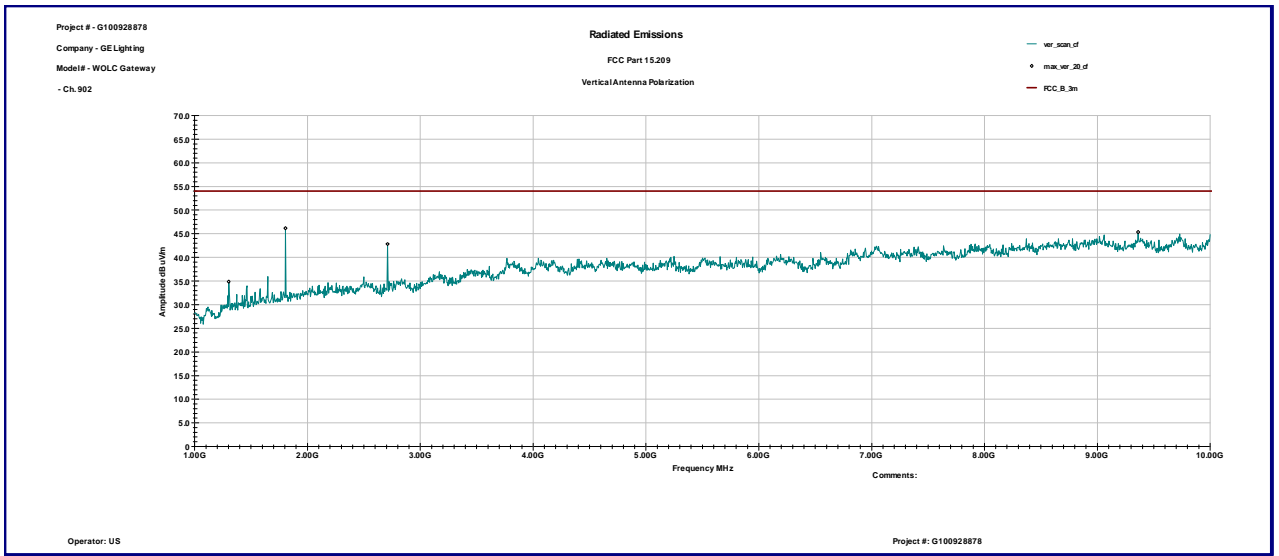
Comment:



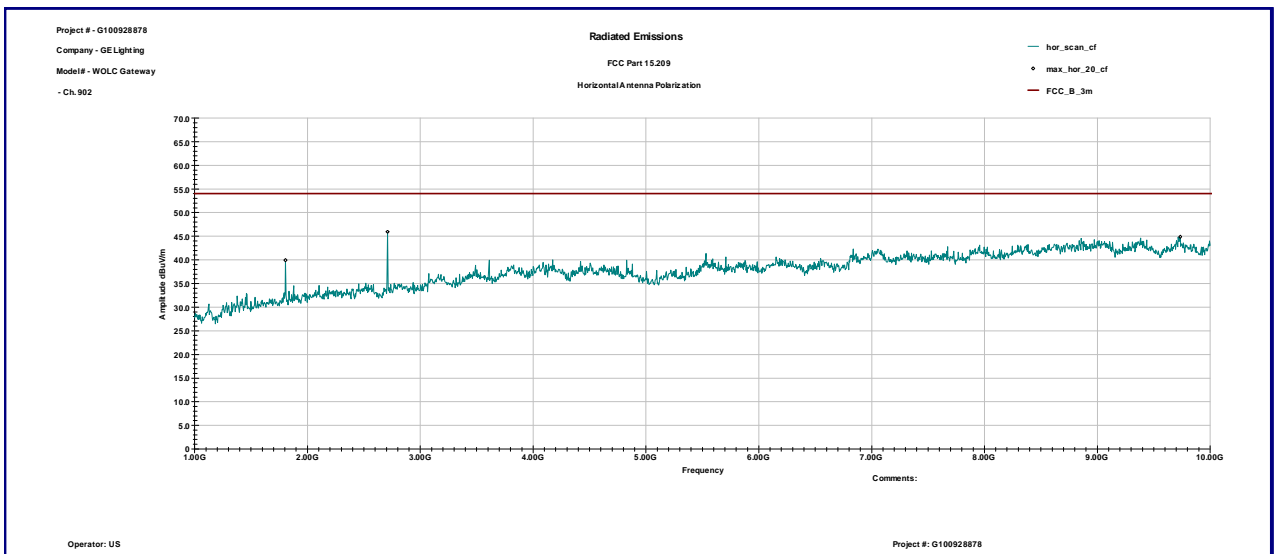
Graph 3.7.1



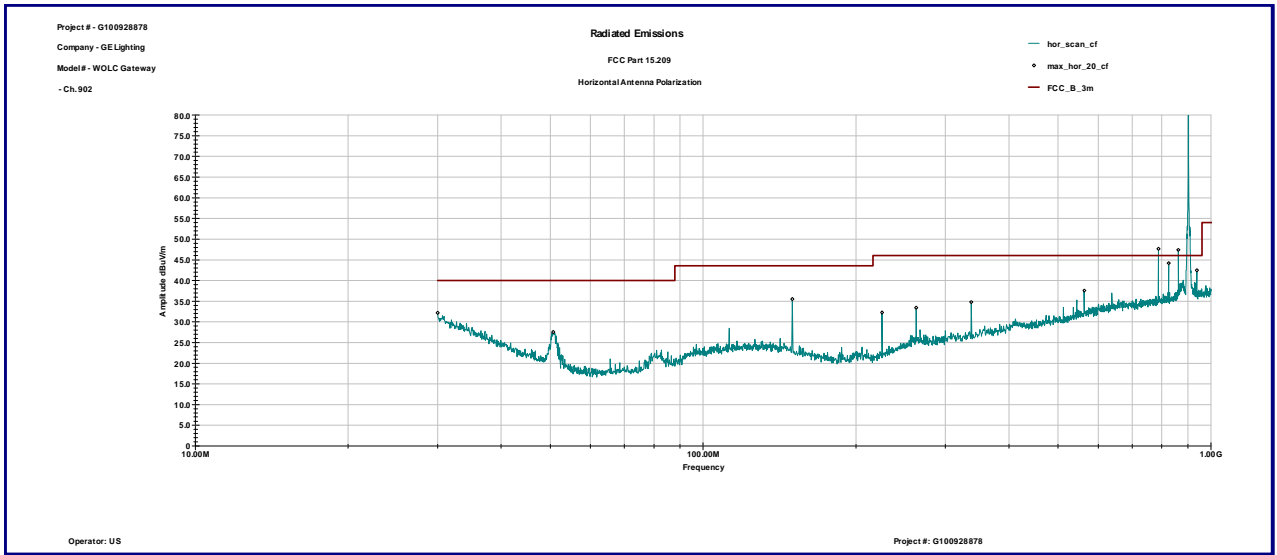
Graph 3.7.2



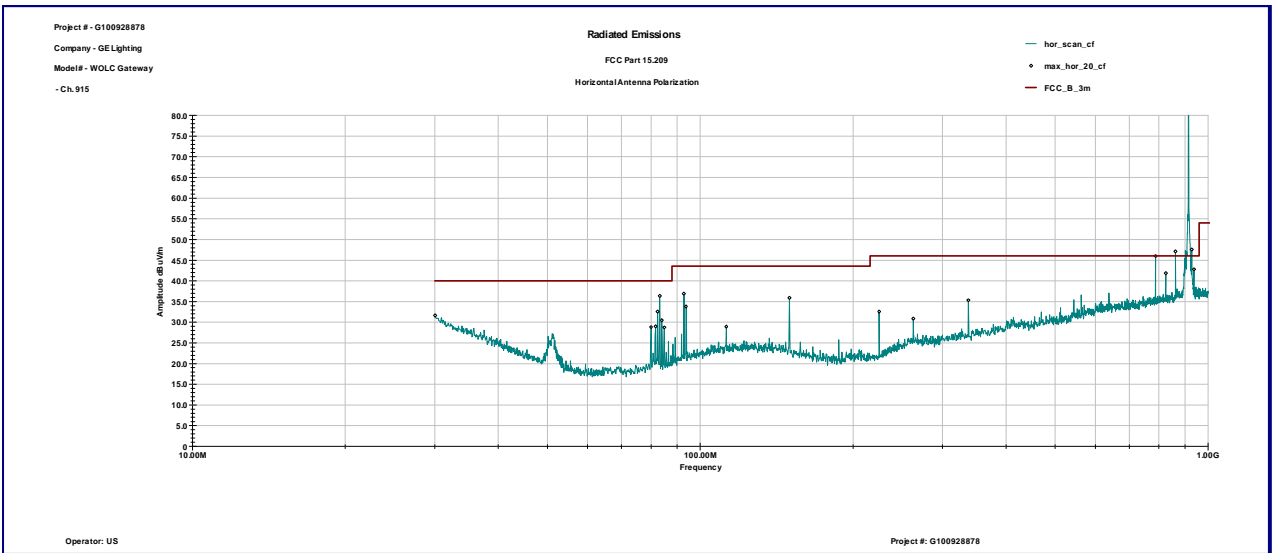
Graph 3.7.3



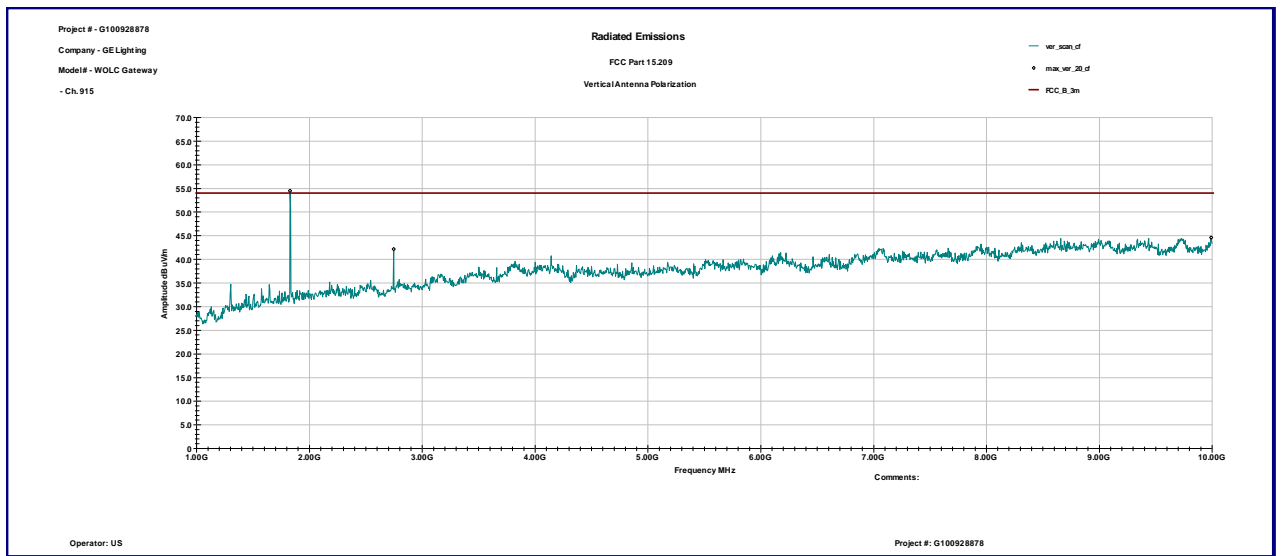
Graph 3.7.4



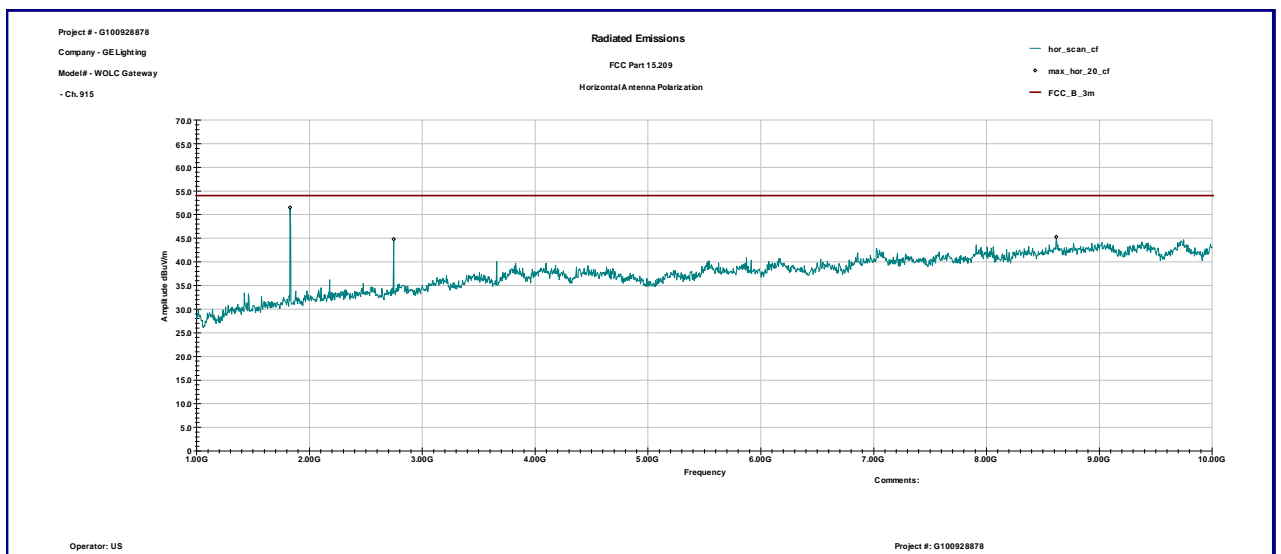
Graph 3.7.5



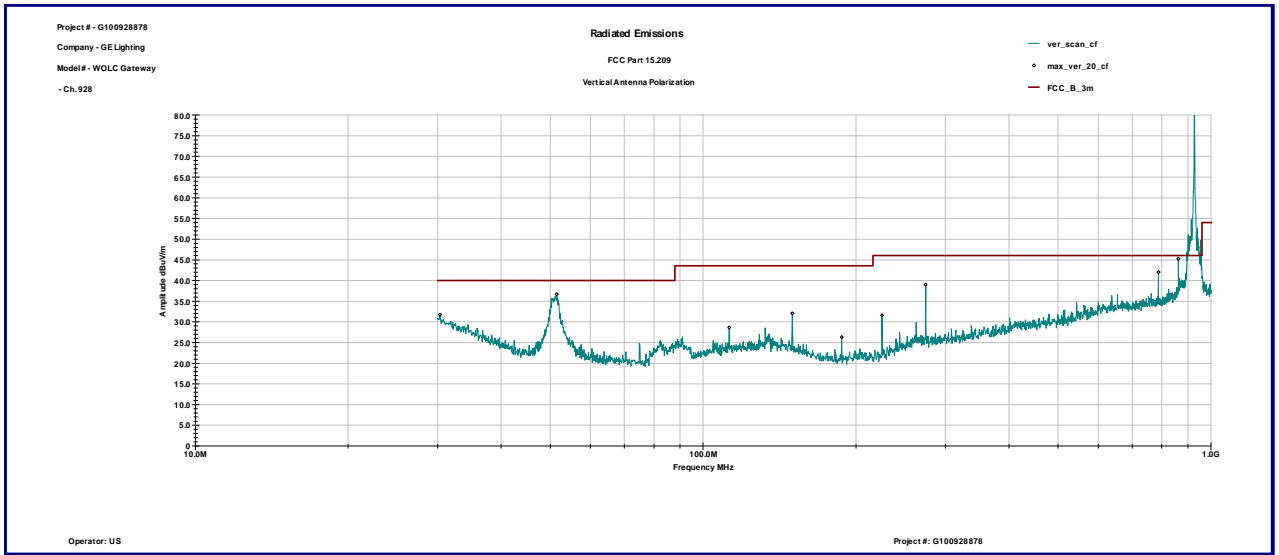
Graph 3.7.6



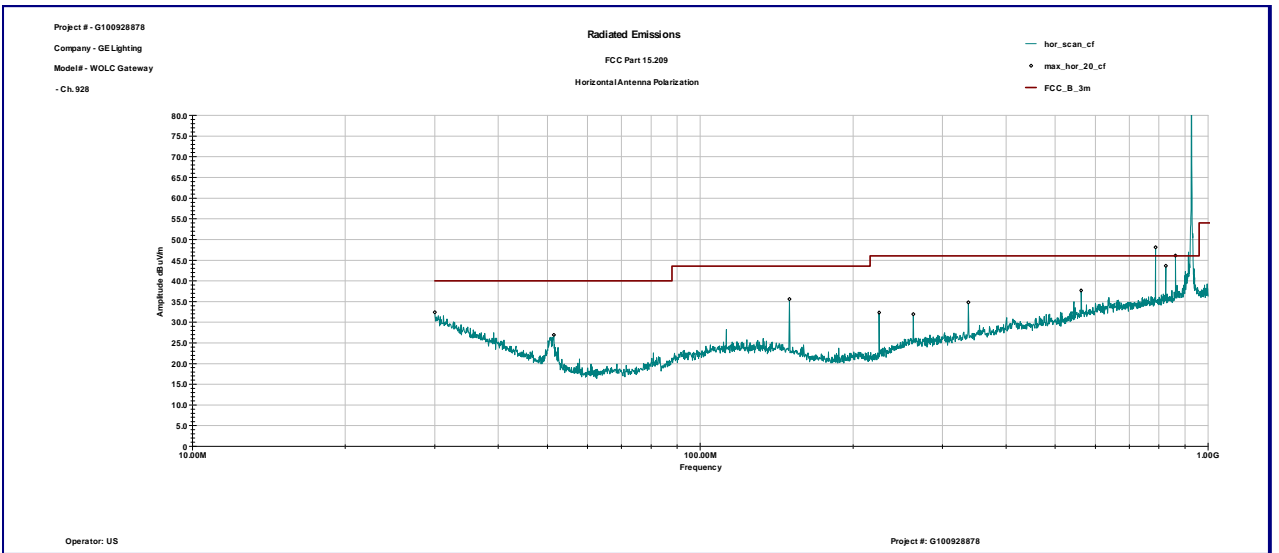
Graph 3.7.7



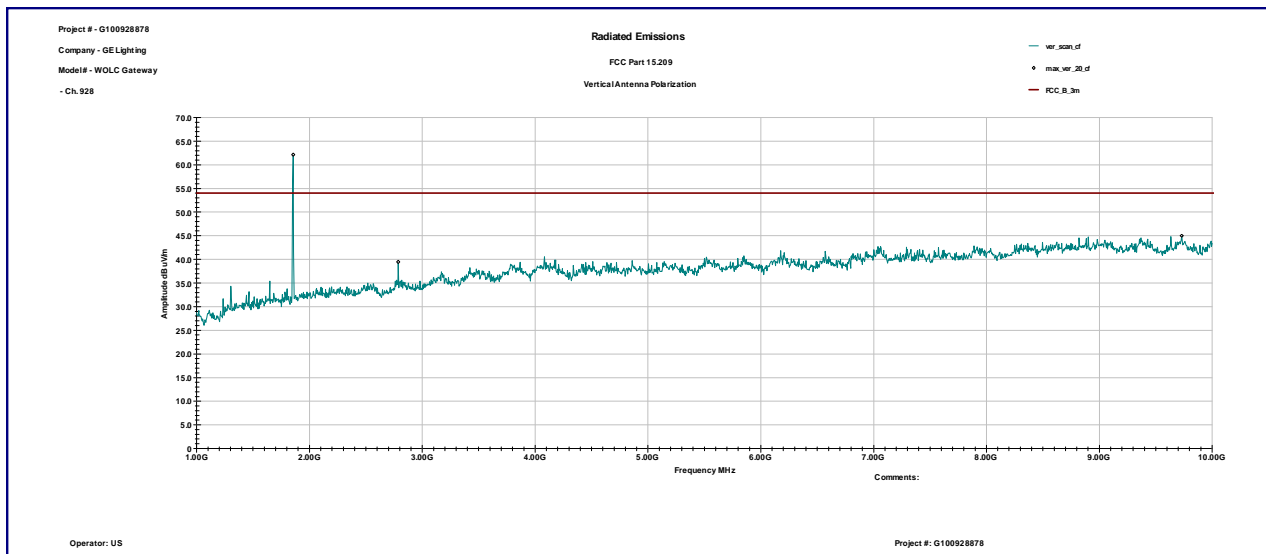
Graph 3.7.8



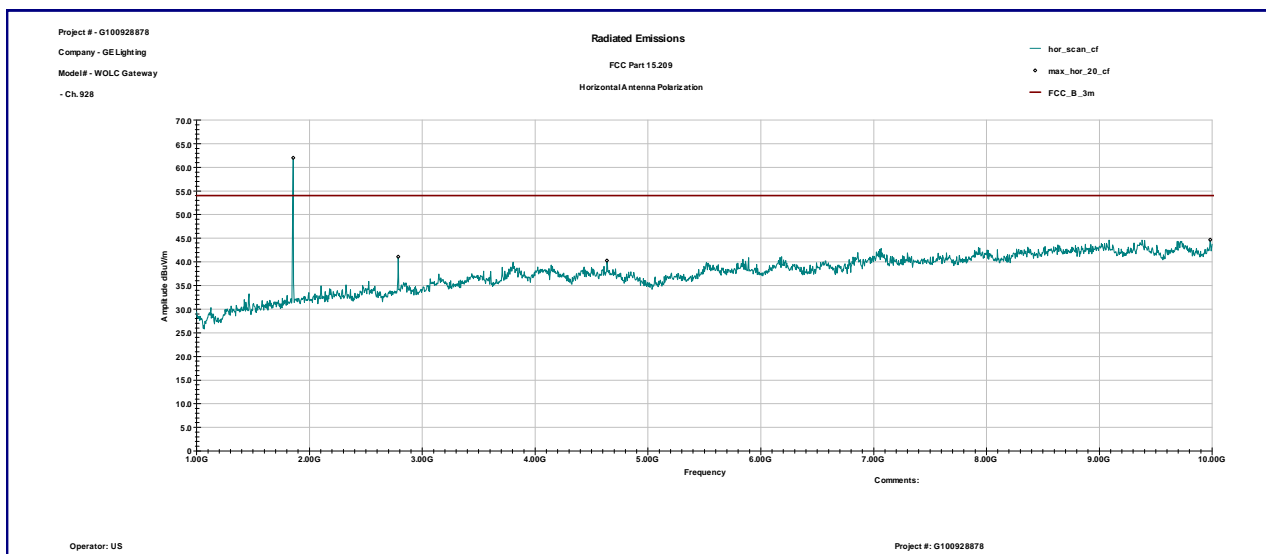
Graph 3.7.9



Graph 3.7.10



Graph 3.7.11



Graph 3.7.12



3.8 RF Exposure Compliance

The maximum measured antenna conducted power, P is 24.9dBm

The antenna gain, G is 3dBi

The maximum EIRP power = P + G
ERP = 24.9+ 3= 27.9dBm, or 0.616W

The limits for Maximum Permissible Exposure (MPE) for transmitter operating at 902-928MHz, MPE is
 $928/1500 = 0.619\text{mW/cm}^2$, or 6.2W/m^2

The Power Density, S is related to EIRP with the equation:

$S = \text{EIRP} / 4\pi D^2$, where D is the safe separation distance and = 0.2m, or 20cm

$S = 0.616 / 4\pi 0.2^2$,

$S = 1.225\text{mW/cm}^2$, or below the Maximum Permissible Exposure (MPE) of 6.2W/m^2



Date:	December 13, 2012	Result: Pass
Tested by:	Uri Spector	
Standard:	FCC Part 15.207	
Test Point:	AC Power Line	
Operation mode:	See page 5	
Note:	None	

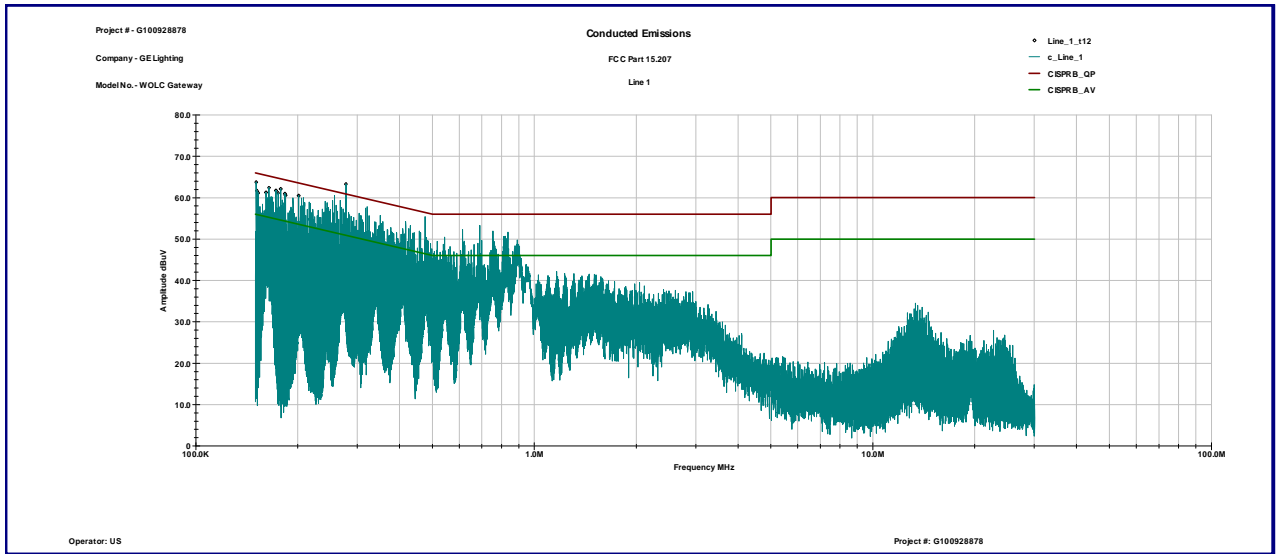
Table 3.9.1

Line 1

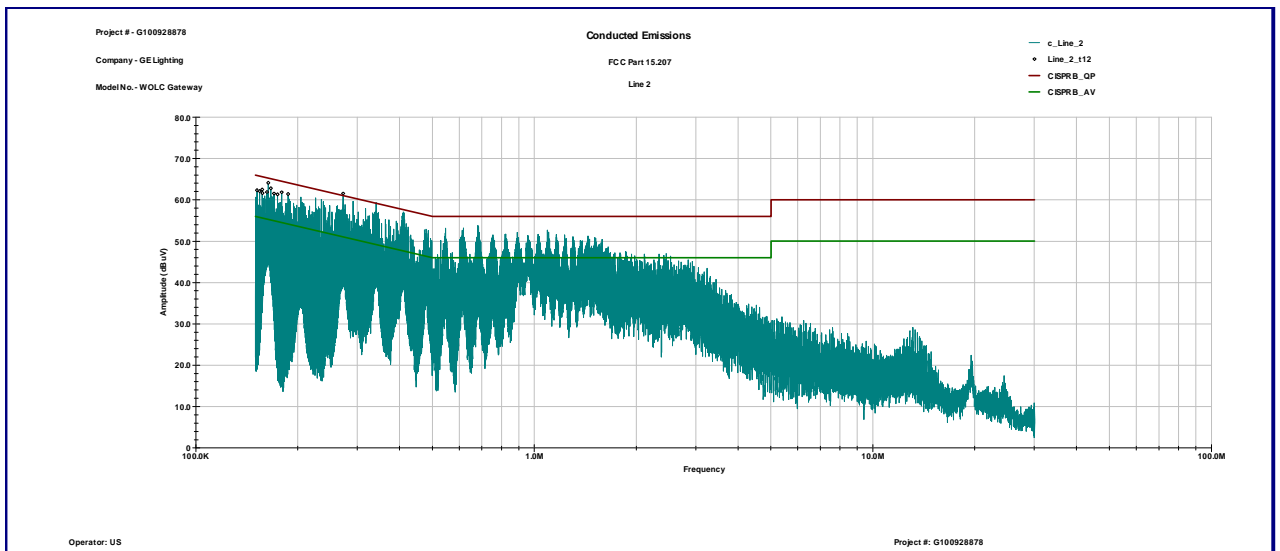
Frequency MHz	QP dB μ V	AVG dB μ V	Cable Loss dB	QP Lim dB μ V	AVG Lim dB μ V	QP Margin dB	AVG Margin dB
0.154	51.5	25.0	0.1	65.8	55.8	-14.2	-30.7
0.163	52.0	42.2	0.1	65.3	55.3	-13.2	-13.0
0.272	55.5	40.8	0.1	61.1	51.1	-5.4	-10.1
0.340	54.8	39.4	0.1	59.2	49.2	-4.3	-9.7
0.684	50.2	33.3	0.2	56.0	46.0	-5.6	-12.5
1.092	49.5	35.9	0.2	56.0	46.0	-6.3	-9.9

Line 2

Frequency MHz	QP dB μ V	AVG dB μ V	Cable Loss dB	QP Lim dB μ V	AVG Lim dB μ V	QP Margin dB	AVG Margin dB
0.151	51.4	24.0	0.1	65.9	55.9	-14.5	-31.9
0.178	49.8	21.3	0.1	64.6	54.6	-14.7	-33.2
0.277	47.8	28.6	0.1	60.9	50.9	-13.0	-22.2
0.476	42.5	28.5	0.1	56.4	46.4	-13.8	-17.8
0.689	42.4	27.8	0.2	56.0	46.0	-13.4	-18.0
0.835	44.9	32.7	0.2	56.0	46.0	-10.9	-13.1
1.500	35.8	24.8	0.3	56.0	46.0	-19.9	-20.9



Graph 3.9.1



Graph 3.9.2

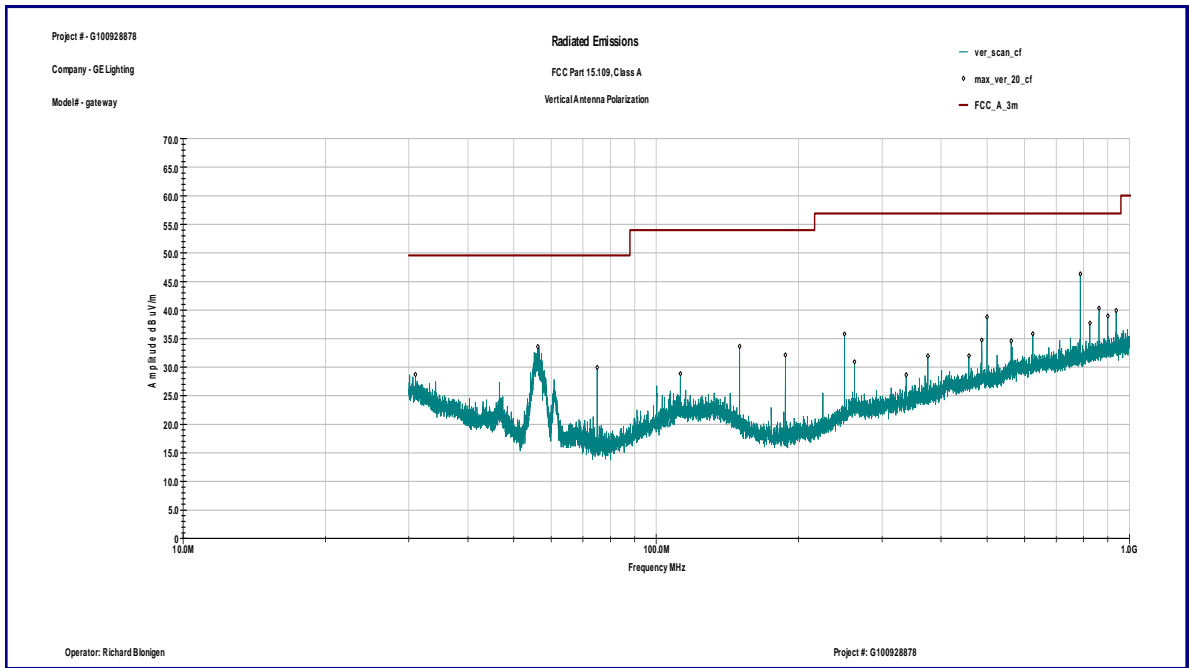


Date:	July 15, 2013	Result: Pass
Tested by:	Richard Blonigen	
Standard:	FCC Part 15.109, Class A	
Test Point:	Enclosure	
Operation mode:	See page 5	
Note:	None	

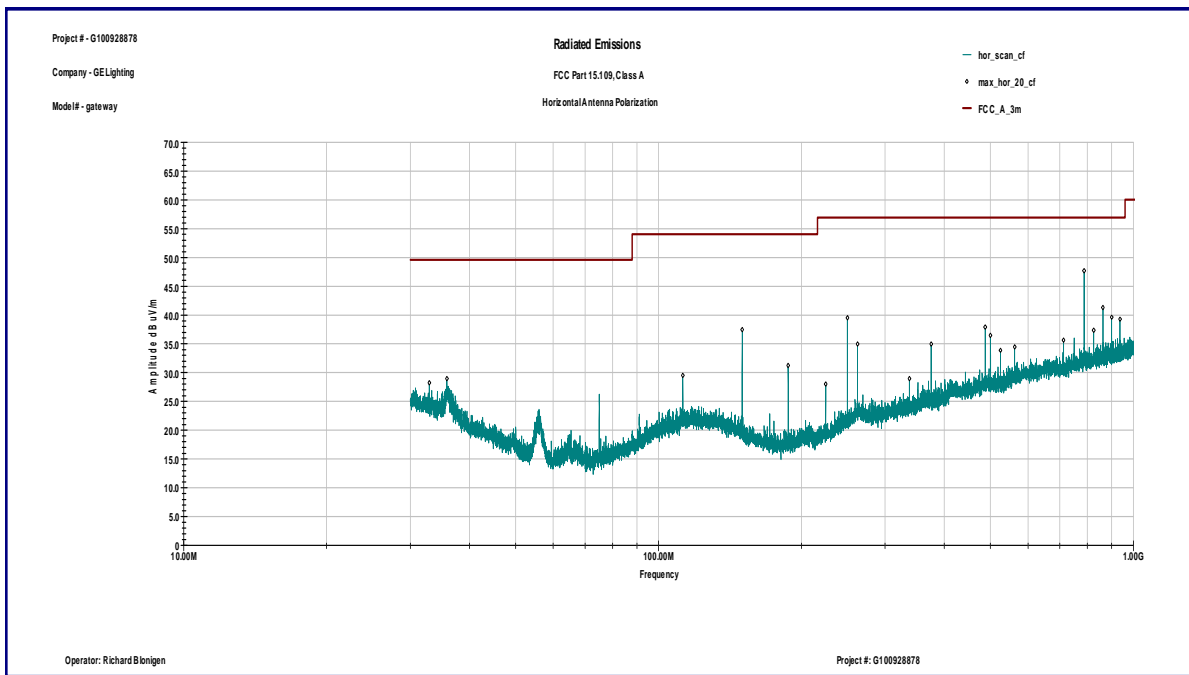
Table 3.10.1

Frequency	Ant. Polarity	Peak Reading dB μ V	Total C.F. dB1/m	Total at 3m dB μ V/m	Limit dB μ V/m	Margin dB
30.982 MHz	V	8.9	19.8	28.7	49.5	-20.8
56.232 MHz	V	25.6	8.0	33.6	49.5	-16.0
74.999 MHz	V	21.9	8.1	29.9	49.5	-19.6
499.98 MHz	V	18.1	20.7	38.8	56.9	-18.1
787.66 MHz	V	22.2	24.1	46.3	56.9	-10.6
862.59 MHz	V	15.3	25.0	40.3	56.9	-16.6
900.06 MHz	V	13.5	25.4	38.9	56.9	-18.0
937.54 MHz	V	14.2	25.7	39.9	56.9	-17.0
32.91 MHz	H	9.5	18.7	28.2	49.5	-21.3
150.03 MHz	H	24.7	12.8	37.4	54.0	-16.5
250.05 MHz	H	24.8	14.7	39.5	56.9	-17.4
487.48 MHz	H	17.2	20.7	37.9	56.9	-19.0
787.66 MHz	H	23.6	24.1	47.7	56.9	-9.2
824.91 MHz	H	12.6	24.8	37.3	56.9	-19.6
862.59 MHz	H	16.3	25.0	41.3	56.9	-15.6
900.06 MHz	H	14.2	25.4	39.6	56.9	-17.3
937.54 MHz	H	13.5	25.7	39.3	56.9	-17.6

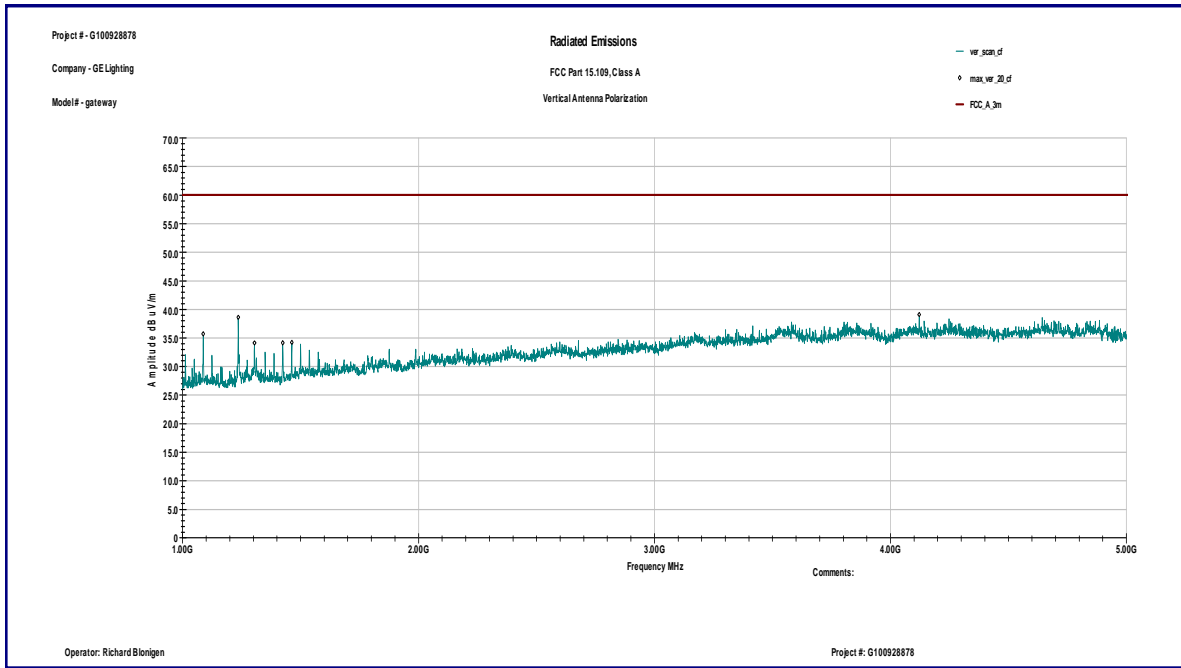
Frequency MHz	Antenna Polarity	Peak Reading dB μ V	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dB μ V/m	Limit dB μ V/m	Margin dB
1.087 GHz	V	51.9	25.9	42.1	35.7	60.0	-24.3
1.236 GHz	V	54.1	26.5	42.0	38.6	60.0	-21.4
1.305 GHz	V	49.2	26.8	41.9	34.1	60.0	-25.9
1.425 GHz	V	48.7	27.3	41.9	34.1	60.0	-25.9
1.463 GHz	V	48.6	27.5	41.8	34.2	60.0	-25.8
4.122 GHz	V	42.4	36.6	39.9	39.1	60.0	-20.9
1.05 GHz	H	48.2	25.8	42.1	31.9	60.0	-28.1
1.854 GHz	H	47.5	29.2	41.2	35.5	60.0	-24.5
4.705 GHz	H	39.9	37.0	39.3	37.6	60.0	-22.4



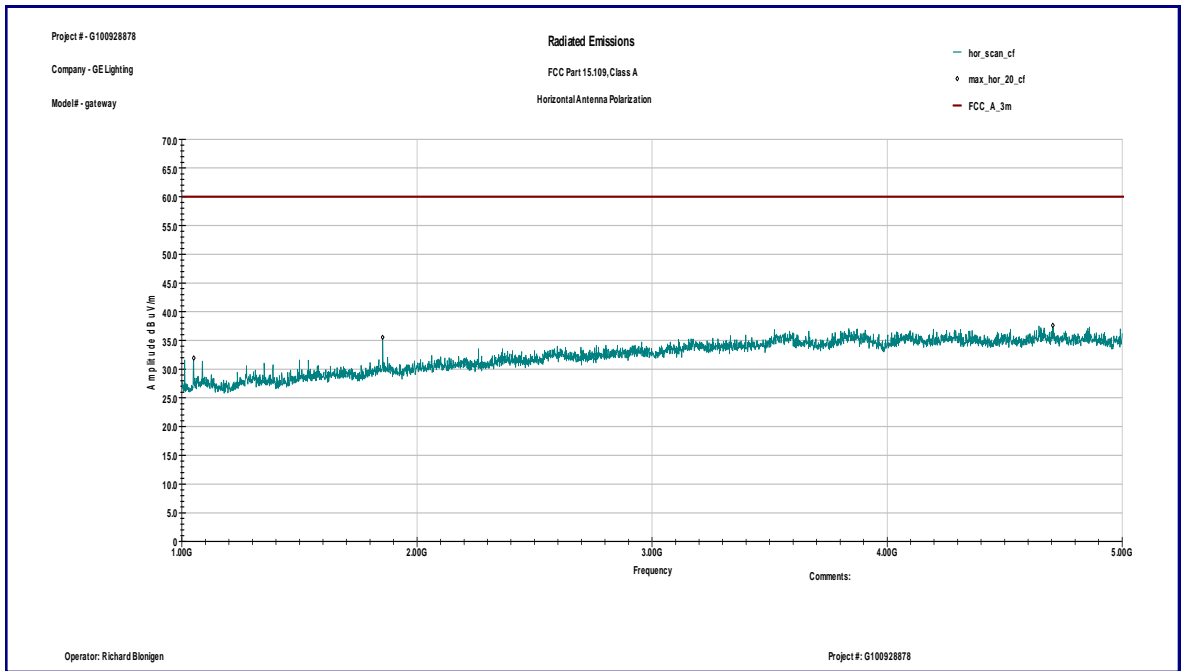
Graph 3.10.1



Graph 3.10.2



Graph 3.10.3



Graph 3.10.4



Date:	July 15, 2013	Result: Pass
Tested by:	Richard Blonigen	
Standard:	FCC Part 15.107, Class A	
Test Point:	Line 1 and Line 2	
Operation mode:	See page 5	
Note:	None	

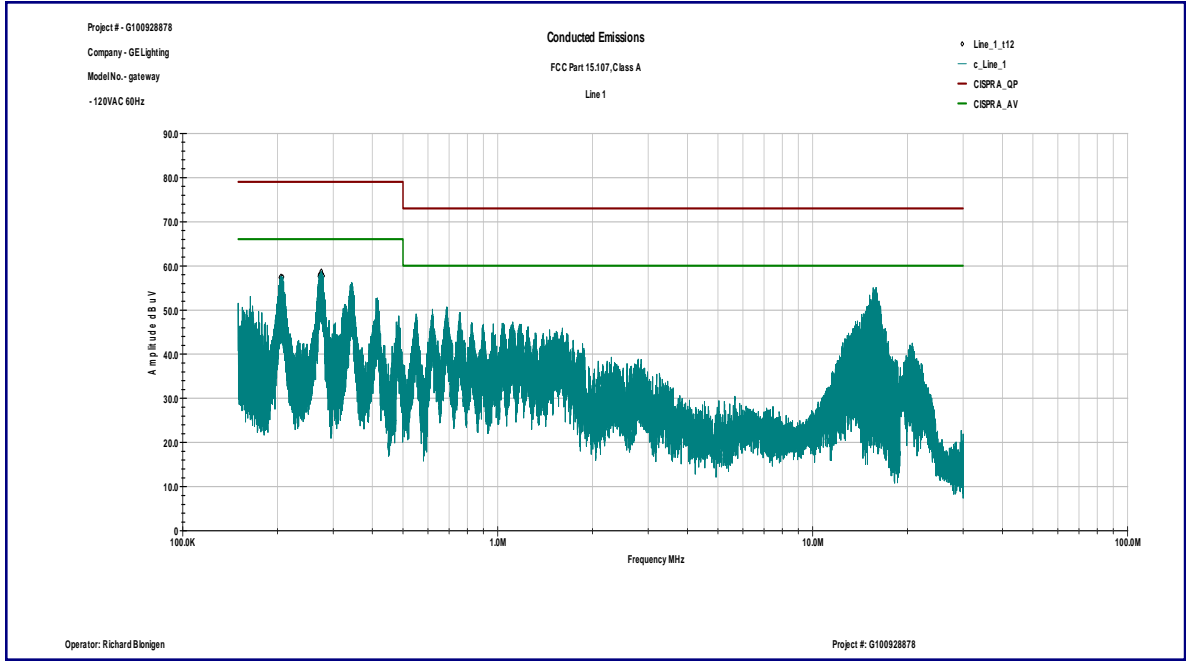
Table 3.11.1

Line 1

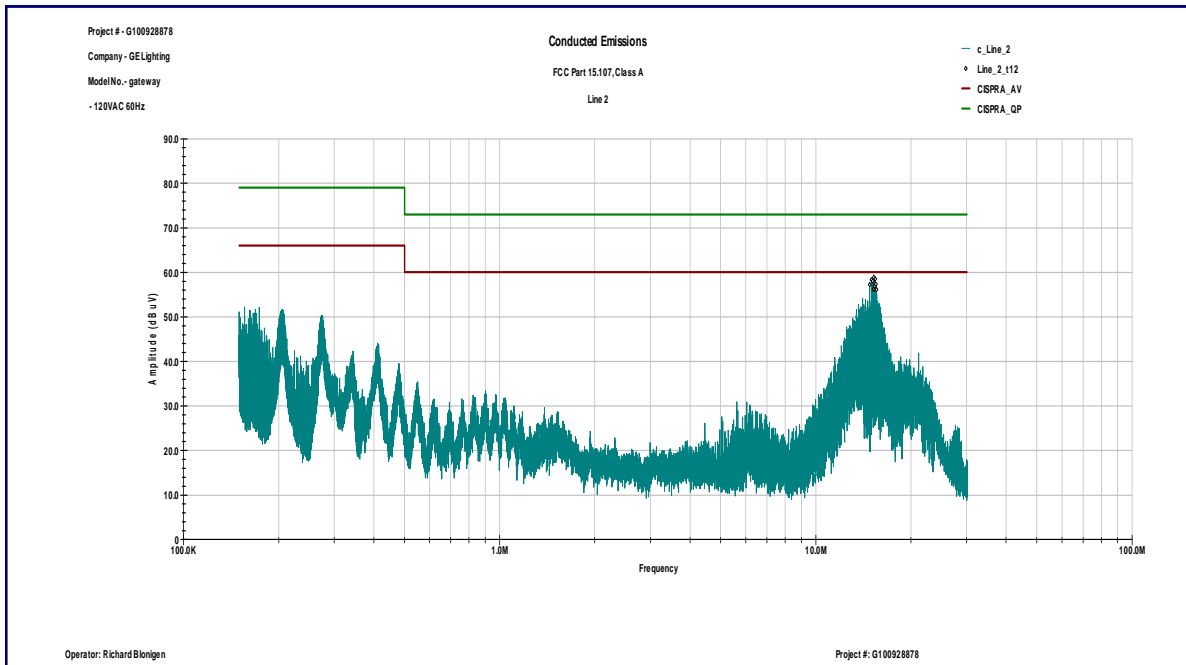
Frequency	Peak dB μ V	QP dB μ V	AVG dB μ V	QP Limit dB μ V	AVG Limit dB μ V	QP Margin dB	AVG Margin dB
204.0 KHz	57.4	N/A	N/A	79.0	66.0	-21.6	-8.6
205.02 KHz	57.6	N/A	N/A	79.0	66.0	-21.4	-8.4
205.66 KHz	57.3	N/A	N/A	79.0	66.0	-21.8	-8.8
207.27 KHz	57.5	N/A	N/A	79.0	66.0	-21.5	-8.5
271.04 KHz	57.6	N/A	N/A	79.0	66.0	-21.4	-8.4
271.59 KHz	58.0	N/A	N/A	79.0	66.0	-21.0	-8.0
272.64 KHz	57.9	N/A	N/A	79.0	66.0	-21.1	-8.1
274.67 KHz	58.4	N/A	N/A	79.0	66.0	-20.6	-7.6
275.22 KHz	58.8	N/A	N/A	79.0	66.0	-20.2	-7.2
276.7 KHz	58.2	N/A	N/A	79.0	66.0	-20.8	-7.8
277.31 KHz	57.8	N/A	N/A	79.0	66.0	-21.2	-8.2
278.73 KHz	57.7	N/A	N/A	79.0	66.0	-21.3	-8.3

Line 2

Frequency	Peak dB μ V	QP dB μ V	AVG dB μ V	QP Limit dB μ V	AVG Limit dB μ V	QP Margin dB	AVG Margin dB
14.796 MHz	57.3	N/A	N/A	73.0	60.0	-15.8	-2.8
15.21 MHz	56.2	N/A	N/A	73.0	60.0	-16.8	-3.8
15.272 MHz	56.3	N/A	N/A	73.0	60.0	-16.8	-3.8
15.318 MHz	57.0	N/A	N/A	73.0	60.0	-16.0	-3.0
15.342 MHz	56.7	N/A	N/A	73.0	60.0	-16.3	-3.3
15.381 MHz	56.9	N/A	N/A	73.0	60.0	-16.1	-3.1
15.399 MHz	N/A	53.9	33.6	73.0	60.0	-19.2	-26.4
15.462 MHz	N/A	54.1	34.3	73.0	60.0	-19.0	-25.7
15.466 MHz	57.3	N/A	N/A	73.0	60.0	-15.7	-2.7
15.532 MHz	56.1	N/A	N/A	73.0	60.0	-16.9	-3.9



Graph 3.11.1



Graph 3.11.2



4.0 TEST EQUIPMENT

DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.	INTERTEK ID	CAL DUE	USED
Spectrum Analyzer	R & S	FSP 40	100024	12559	11/29/2013	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESU	100398	25283	12/19/2013	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESCI	100358	12909	07/02/2013	<input checked="" type="checkbox"/>
Bicono-Log Antenna	Teseq	CBL6112D	32859	25289	08/09/2013	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	9507-4513	9936	05/16/2013	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	6579	15580	07/19/2013	<input type="checkbox"/>
Waveguide Horn Antenna	EMCO	3116	9904-2423	9705	11/07/2013	<input type="checkbox"/>
LISN	Fischer Custom Communications	FCC-LISN-2 MOD.SD	316	9945	07/17/2013	<input checked="" type="checkbox"/>
LISN	Solar Electronics	9252-50-R-24-BNC	068545	MIN-0060	02/07/2014	<input checked="" type="checkbox"/>
System	Quantum Change	TILE! Instrument Control	Ver. 3.4.K.29	15259	VBU	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESU	100398	25283	12/19/2013	<input checked="" type="checkbox"/>