RADIO REPORT

FCC 47 CFR Part 15E

Unlicensed National Information Infrastructure Devices in the 5 GHz Bands

Report Reference No	G0M-2002-8805-TFC407WF-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	DAkkS - Registration number : D-PL-12092-01-04 FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Laird Connectivity Inc
Address	50 South Main Street 44308 Akron, OH United States of America
Test Specification	47 CFR Part 15E
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model(s)	RG191+LTE Series
Additional Model(s)	None
Brand Name(s)	Laird Connectivity
Hardware Version(s)	v750.03.224
Software Version(s)	v93.9.5.1
FCC-ID	SQG-RG191NALTE
Test Result	**PASSED**

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2020-06-18 (sample ID 29796) 2020-08-12 (sample ID 30742)	
Report:		
Compiled by	Toralf Jahn	
Tested by (+ signature) (Responsible for Test)	Toralf Jahn	T. J .....
Approved by (+ signature) (Head of Lab)	Christian Weber	C. Weber .....
Date of Issue	2020-09-03	
Total number of pages	92	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2020-09-03	Initial Release	

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
BPSK	Binary Phase Shift Keying
EIRP	Equivalent Isotropic Radiated Power
EUT	Equipment Under Test
FCC	Federal Communications Commission
HT	High Throughput
IEEE 802.11	MAC and PHY Layer for WiFi
OFDM	Orthogonal Frequency Division Multiplexing
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature Phase Shift Keying
RBW	Resolution bandwidth
RMS	Root mean square
TPC	Transmit Power Control
VBW	Video bandwidth
VHT	Very High Throughput

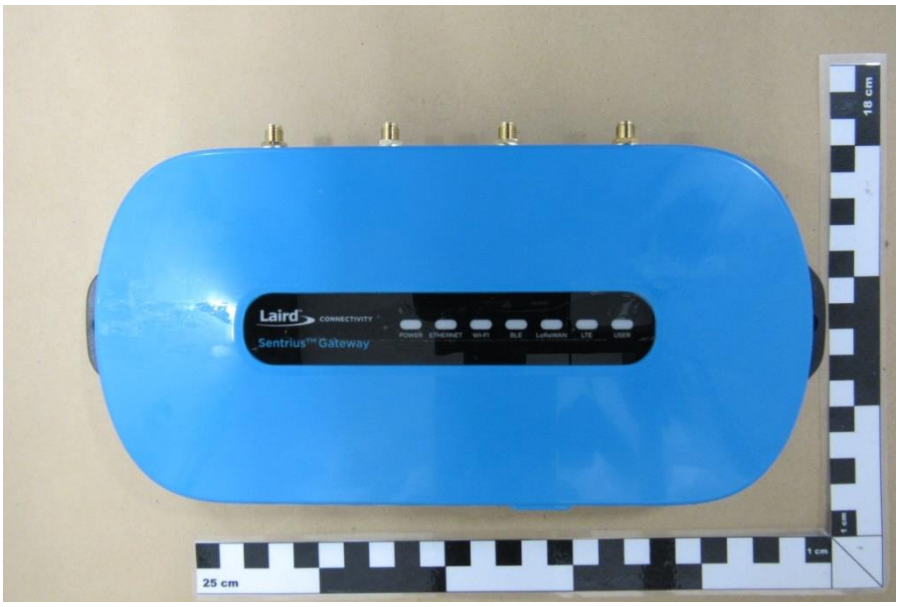
REPORT INDEX

1 Equipment (Test Item) Under Test

Description	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants	
Model	RG191+LTE Series	
Additional Model(s)	None	
Brand Name(s)	Laird Connectivity	
Serial Number(s)	Sample ID 29796 and 30742	
Hardware Version(s)	v750.03.224	
Software Version(s)	v93.9.5.1	
FCC-ID	SQG-RG191NALTE	
Equipment type	End Product	
Device type	Client	
Radio type	Transceiver	
Assigned frequency bands	5150 - 5250 MHz 5250 - 5350 MHz 5470 - 5725 MHz 5725 - 5850 MHz	
Radio technology	IEEE 802.11a IEEE 802.11n (HT20) IEEE 802.11n (HT40)	
Modulation	BPSK, QPSK, 16-QAM, 64-QAM	
Number of antenna ports	2	
Transmit power control	No	
Radio Module	Type	Wi-Fi
	Model	WB50NBT
	Manufacturer	Laird
	HW Version	1.0
	SW Version	3.5.4.20
	FCC-ID	SQG-WB50NBT
	IC	3147A-WB50NBT
Antenna 1 and 2	Type	External
	Model	MAF94051
	Manufacturer	Laird
	Gain	2.4 dBi @ 4.9 GHz 2.6 dBi @ 5.25 GHz 3.6 dBi @ 5.875 GHz
Supply Voltage	V_{NOM}	12 VDC
	V_{MIN}	N/A
	V_{MAX}	N/A
Operating Temperature	T_{NOM}	25 °C
	T_{MIN}	N/A
	T_{MAX}	N/A
Battery supply	No	
AC/DC-Adaptor	Model	GST25U12-P1J
	Vendor	Meanwell
	Input	115 VAC
	Output	12 VDC
Manufacturer	Laird Connectivity Inc 50 South Main Street 44308 Akron, OH United States of America	

1.1 Photos – Equipment External

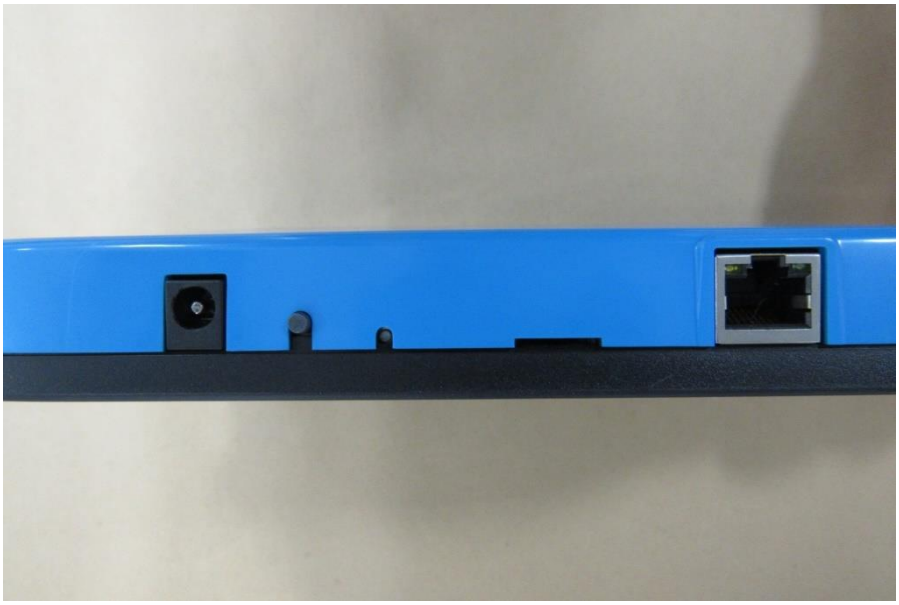
EUT WITH ANTENNAS


EUT TOP


EUT BOTTOM

EUT LABEL

EUT ANTENNA CONNECTORS


EUT DC AND ETHERNET CONNECTOR


LTE ANTENNA

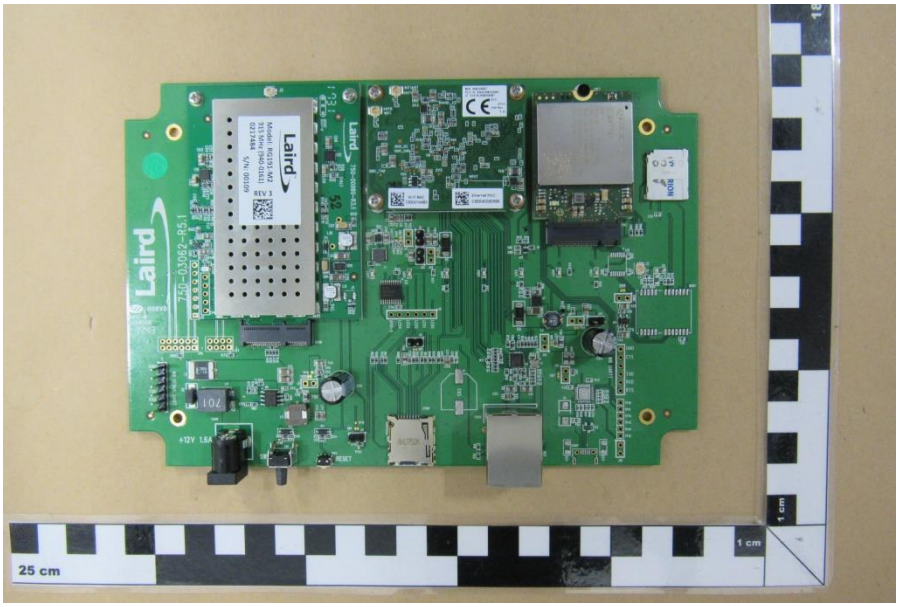

LoRa ANTENNA


WiFi ANTENNAS

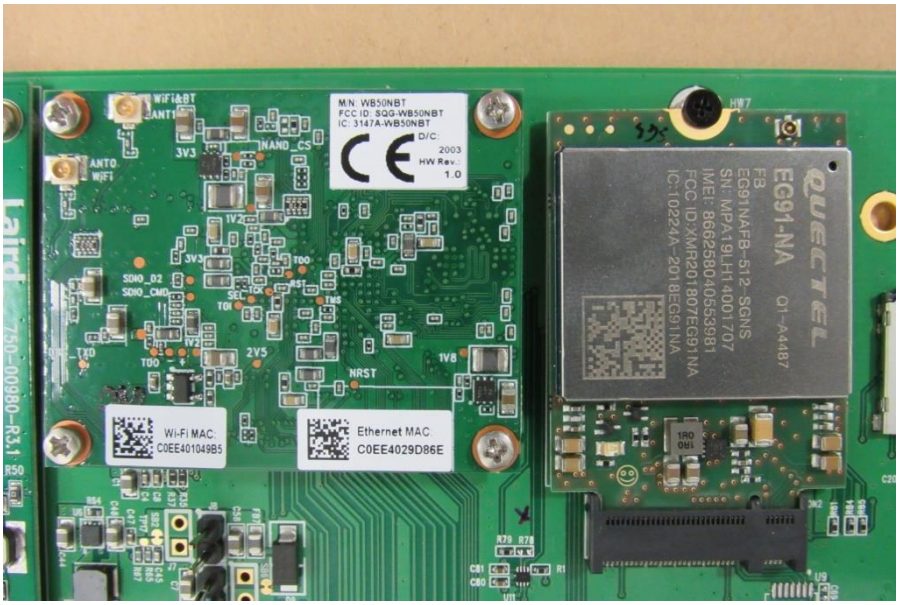

AC/DC-ADAPTOR


AC/DC-ADAPTOR


1.2 Photos – Equipment Internal

PCB TOP


LoRa


LTE AND WiFi


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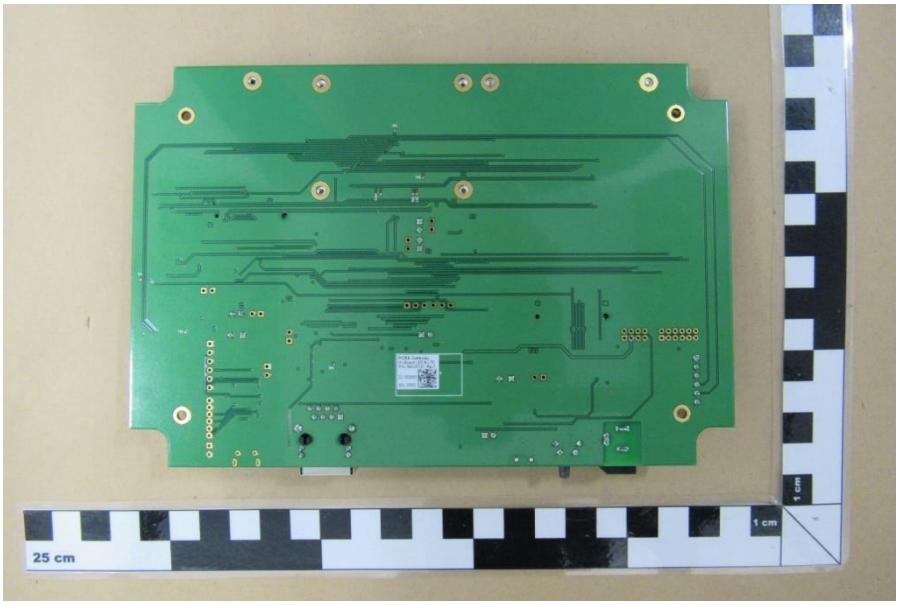
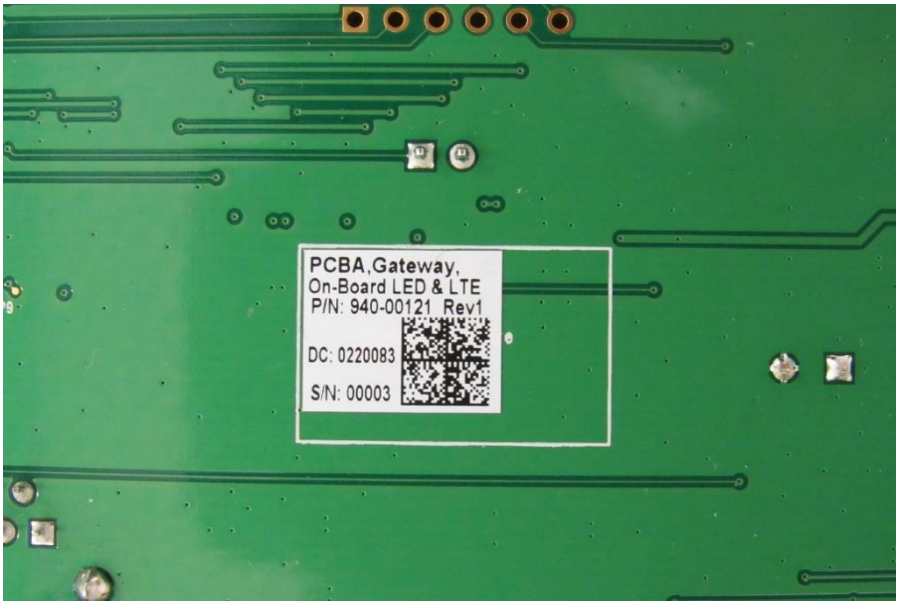
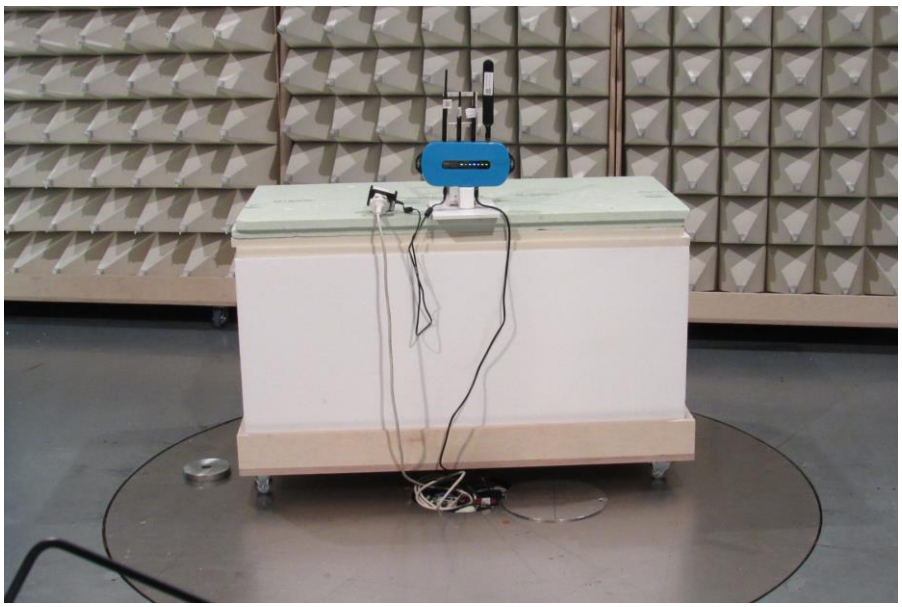


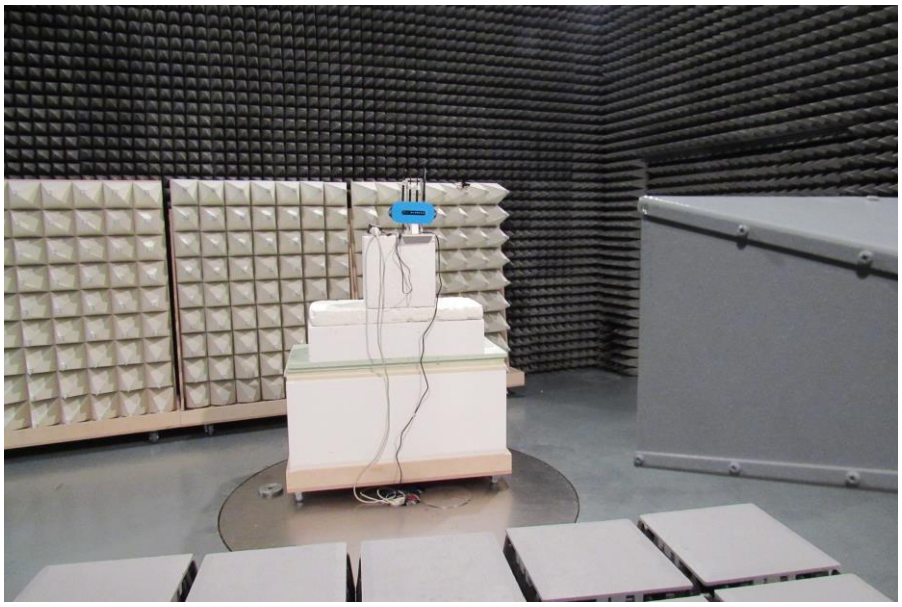
PCB BOTTOM LABEL


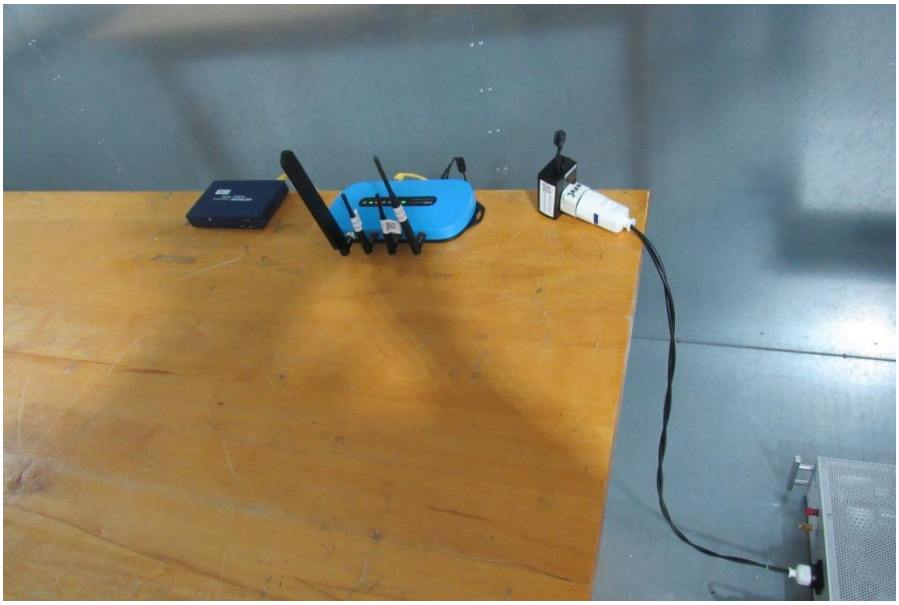
1.3 Photos – Test Setup

BELOW 1 GHz



ABOVE 1 GHz



AC POWER LINE


1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
CBL	Ethernet Cable	Copartner	CAT 5.E	
AE	Ethernet Switch	Netgear	GS108	Termination of Ethernet Cable
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.5 Test Modes

Mode	Description
OFDM (IEEE 802.11a)	Mode = Transmit Modulation = BPSK Spreading = OFDM Bandwidth = 20 MHz Duty cycle = 99.05% Power setting = FCC table Data rate = 6 Mbps Chain 0 + 1
HT40 (IEEE 802.11n)	Mode = Transmit Modulation = BPSK Spreading = OFDM Bandwidth = 40 MHz Duty cycle = 98.15% Power setting = FCC table Data rate = MCS0 Chain 0 + 1
Comment: Comment: The above settings were found as worst case in FCC module test report FR631002AN Rev. 02 of 2016-05-03 from International Certification Corp..	

1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx	36	5180
F2	Tx	52+56	5270
F3	Tx	116+120	5590
F4	Tx	157	5785

1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBµV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyzer (dBµV) + A.F. (dB/m) = Net field strength (dBµV/m)

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Limit (dBµV/m) = 20*log (µV/m)

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

Reading + AF	= Net Reading	:	Net reading - FCC limit	= Margin
+21.5 dBµV + 26 dB/m	= 47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

1.8 Normative References

References	
Designator	Reference
KDB 789033	KDB 789033 D02 v02r01
ANSI C63.10	ANSI C63.10:2013

2 Result Summary

FCC 47 CFR Part 15E				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
FCC 15.407(e)	6 dB bandwidth	KDB 789033 C.2	N/T	Only required in 5725-5850 MHz band.
FCC 15.407(a)(2),(a)(5),(h)(2)	26 dB bandwidth	KDB 789033 C.1	N/T	No limit. Basis for other measurements.
FCC 15.407(a)	Maximum output power	KDB 789033 E	N/T	
FCC 15.407(a)	Transmit power control	KDB 789033 E	N/T	Required in 5250-5350 and 5470-5725 MHz bands. Not required for EIRP < 500 mW.
FCC 15.407(a)	Power spectral density	KDB 789033 F	N/T	
FCC 15.407(g)	Frequency stability	ANSI C63.10 6.8	N/T	
FCC 15.207	AC power line conducted emissions	ANSI C63.10 6.2	PASS	
FCC 15.407(b)	Transmitter radiated emissions	KDB 789033 G	PASS	
FCC 15.407(a)	Radiation pattern	KDB 789033 H	N/T	5150-5250 MHz band only with EIRP > 21 dBm
Comment:				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

3 Test Conditions and Results

3.1 Test Conditions and Results - AC power line conducted emissions

3.1.1 Information

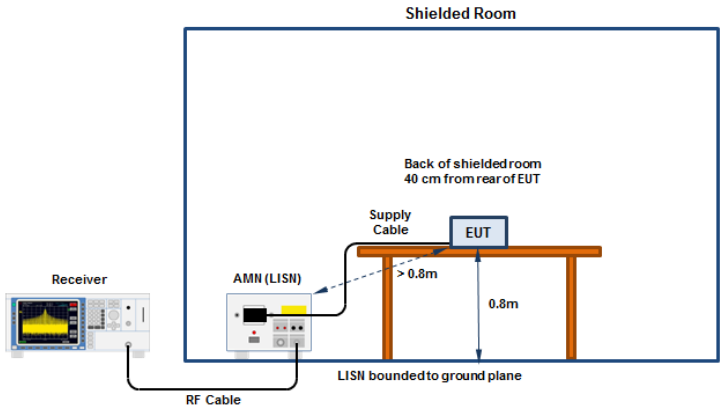
Test Information	
Reference	FCC 15.207
Measurement Method	ANSI C63.10 6.2
Measurement Uncertainty	± 3.82 dB
Operator	Toralf Jahn
Date	2020-06-30

3.1.2 Limits

Limits		
Frequency [MHz]	Quasi-Peak [dBµV]	Average [dBµV]
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50
* Limit decreases linearly with the logarithm of the frequency		

3.1.3 Setup

Test Setup



3.1.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2016.1.10

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESR7	EF00943	2020-07	2021-07
LISN	Schwarzbeck	NSLK 8127 RC	EF01592	2020-07	2021-07

Conducted emissions at the mains power port according to FCC part 15 C

Project Number:	G0M-2002-8805
Applicant:	Laird Connectivity
Model Description:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Sample ID:	29796
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Test Date:	2020-06-30
Operating Conditions:	ambient temperature: 25°C power input: 12 VDC via AC/DC-Adaptor
LISN:	Schwarzbeck NSLK 8127 RC N
Mode:	Tx: 802.11a; 5180 MHz + LoRa 923.3 MHz + LTE FDD 2
Applied to Port:	AC mains
Note 1:	sample ID 29796

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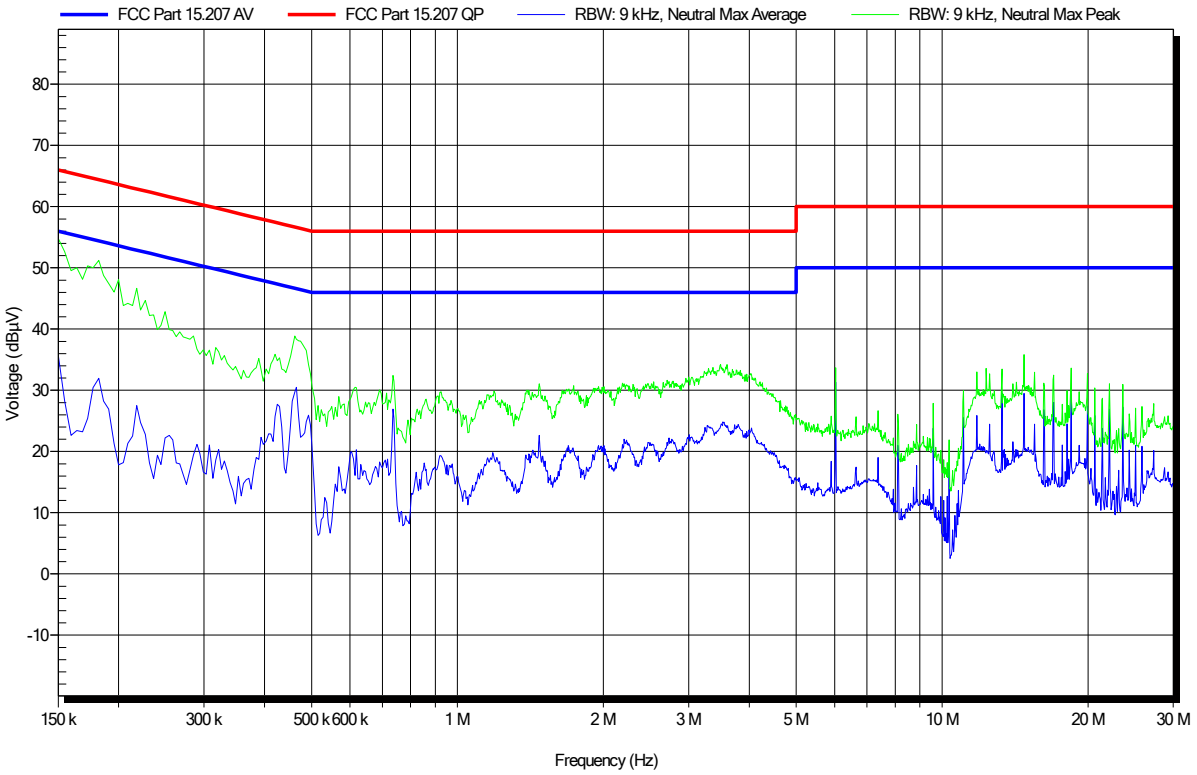

Conducted emissions at the mains power port according to FCC part 15 C

Project Number:	G0M-2002-8805
Applicant:	Laird Connectivity
Model Description:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Sample ID:	
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Test Date:	2020-06-30
Operating Conditions:	ambient temperature: 25°C power input: 12 VDC via AC/DC-Adaptor
LISN:	Schwarzbeck NSLK 8127 RC L
Mode:	Tx: 802.11a; 5180 MHz + LoRa 923.3 MHz + LTE FDD 2
Applied to Port:	AC mains
Note 1:	sample ID 29796

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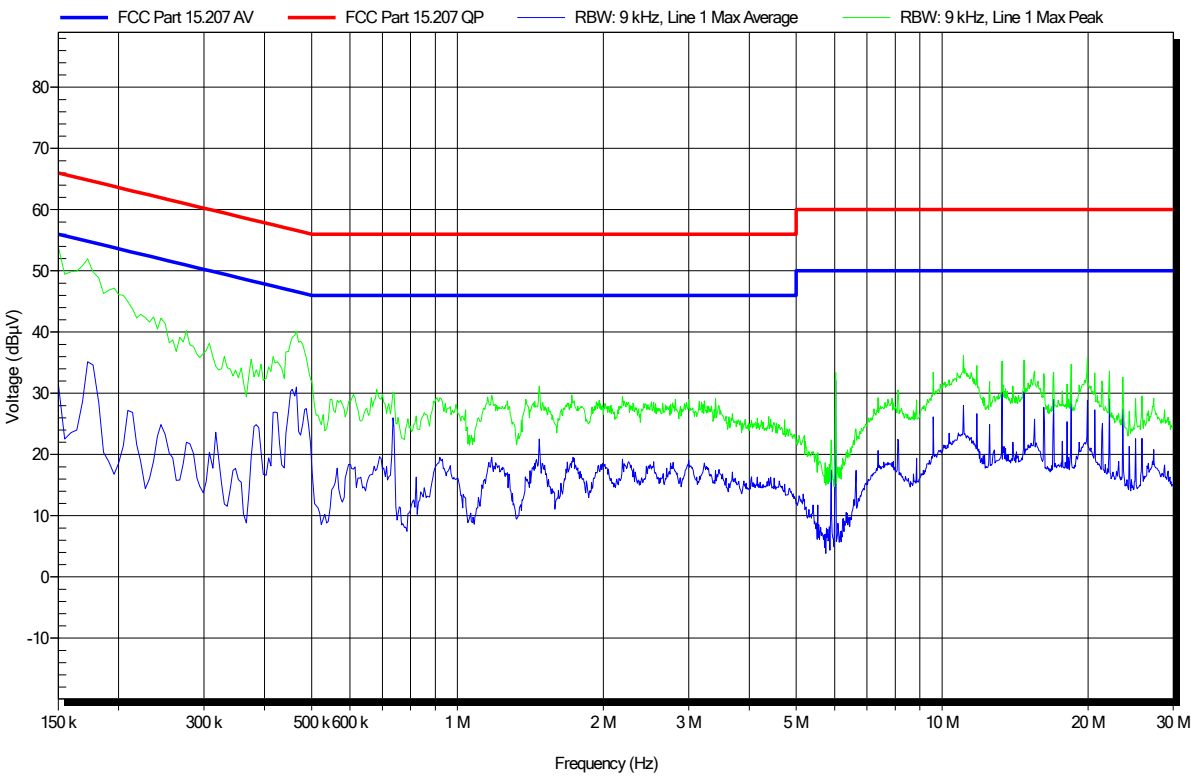


3.2 Test Conditions and Results - Transmitter radiated emissions

3.2.1 Information

Test Information	
Reference	FCC 15.407(b)
Measurement Method	KDB 789033 G
Measurement Uncertainty	± 5.7 dB
Operator	Toralf Jahn
Date	2020-06-24 (sample ID 29796) + 2020-08-27 (sample ID 30742)

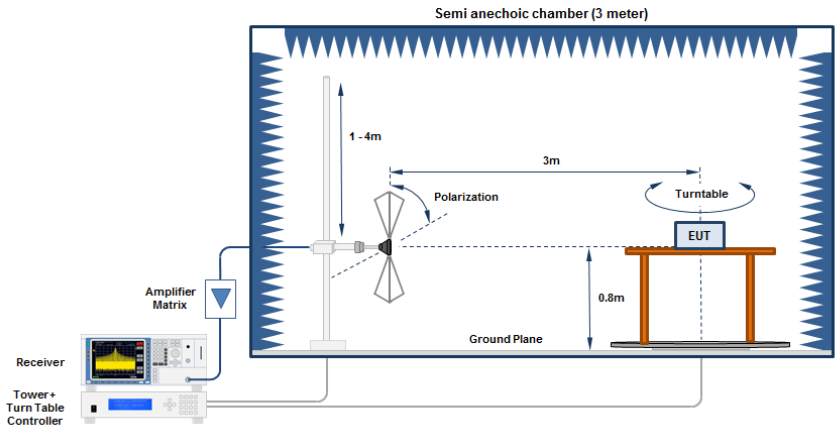
3.2.2 Limits

Limits - Restricted frequency bands and below 1 GHz			
Frequency [MHz]	Detector	Field strength [µV/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

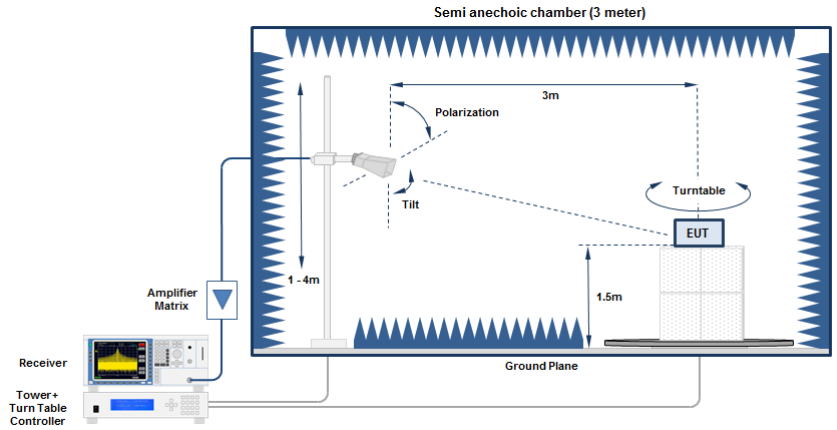
Limits - Outside restricted frequency bands above 1 GHz			
Frequency band [MHz]	Power limit [dBm EIRP]	Field strength limit [dBµV/m]	Measurement distance [m]
5150 - 5250	-27 dBm/MHz	68.2	3
5250 - 5350	-27 dBm/MHz	68.2	3
5470 - 5725	-27 dBm/MHz	68.2	3
5725 - 5850	-27 dBm/MHz @ ±75 MHz from band edge	68.2	3
5725 - 5850	10 to -27 dBm/MHz @ ±25 to ±75 MHz from band edge	105.2 to 68.2	3
5725 - 5850	15.6 to 10 dBm/MHz @ ±5 to ±25 MHz from band edge	110.8 to 105.2	3
5725 - 5850	27 to 15.6 dBm/MHz @ ±0 to ±5 MHz from band edge	122.2 to 110.8	3

3.2.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz



3.2.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2016.1.10
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	R&S	HK 116	EF00030	2019-04	2022-04
Antenna	R&S	HL 223	EF00187	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10
Antenna	Amplifier Research	AT4560	EF00302	2019-05	2021-05
Antenna	Flann Microwave Ltd	22240-25 Amp. CBL26402075	EF00301	2019-12	2022-12

3.2.5 Procedure

Test Procedure 30 - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground
2. EUT set to test mode
3. The receiver is set to peak detection with max hold
4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m
5. All significant emissions are measured again using the corresponding final detector

Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground
2. EUT set to test mode
3. The receiver is set to peak detection with max hold
4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m
5. All significant emissions are measured again using the corresponding final detector

3.2.6 Results

Test Results - Channel 36 / 5180 MHz - OFDM					
Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
264.0107	29.70	qpk	hor	46.00	-16.30
264.0107	33.00	qpk	ver	46.00	-12.99
351.9964	34.40	qpk	ver	68.20	-33.82
1463	47.94	pk	hor	74.00	-26.06
1463	47.29	RMS	hor	54.00	-06.71
1463	50.31	pk	ver	74.00	-23.69
2660	49.92	pk	hor	68.20	-18.28
2660	49.39	RMS	hor	54.00	-04.61
4960	55.27	pk	ver	74.00	-18.73
4960	48.07	RMS	ver	54.00	-05.93
5018	53.35	pk	ver	74.00	-20.65
5018	45.85	RMS	ver	54.00	-08.15
5070	57.30	pk	ver	74.00	-16.70
5070	48.91	RMS	ver	54.00	-05.09
5096	55.67	pk	ver	74.00	-18.33
5096	47.24	RMS	ver	54.00	-06.76
5150	66.31	pk	ver	74.00	-07.69
5150	53.79	RMS	ver	54.00	-00.21
5350	57.90	pk	ver	74.00	-16.10
5350	47.18	RMS	ver	54.00	-06.82
5382	59.07	pk	ver	74.00	-14.93
5382	50.53	RMS	ver	54.00	-03.47
5408	58.02	pk	ver	74.00	-15.98
5408	47.90	RMS	ver	54.00	-06.10
5440	58.99	pk	ver	74.00	-15.01
5440	49.04	RMS	ver	54.00	-04.96
10359	53.12	pk	hor	68.20	-15.08
15538	58.28	pk	hor	74.00	-15.72
15538	47.74	RMS	hor	54.00	-06.26
15544	59.73	pk	ver	74.00	-14.27
15544	49.63	RMS	ver	54.00	-04.37
20715	52.67	pk	ver	74.00	-21.33
20715	41.96	RMS	ver	54.00	-12.04
20717	55.36	pk	hor	74.00	-18.64
20717	43.61	RMS	hor	54.00	-10.39

Test Results - Channel 52+56 / 5270 MHz - HT40					
Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
1463	47.28	pk	hor	74.00	-26.72
1463	46.44	RMS	hor	54.00	-07.56
1463	47.29	pk	ver	74.00	-26.71
1463	46.50	RMS	ver	54.00	-07.50
2660	48.98	pk	hor	68.20	-19.22
2660	48.33	RMS	hor	54.00	-05.67
4992	54.20	pk	ver	74.00	-19.80
4992	47.39	RMS	ver	54.00	-06.61
5044	54.96	pk	ver	74.00	-19.04
5044	47.41	RMS	ver	54.00	-06.59
5070	53.68	pk	ver	74.00	-20.32
5070	46.26	RMS	ver	54.00	-07.74
5096	54.86	pk	ver	74.00	-19.14
5096	45.45	RMS	ver	54.00	-08.55
5122	59.14	pk	ver	74.00	-14.86
5122	50.98	RMS	ver	54.00	-03.02
5148	60.21	pk	ver	74.00	-13.79
5148	50.55	RMS	ver	54.00	-03.45
5356	57.17	pk	ver	74.00	-16.83
5356	48.89	RMS	ver	54.00	-05.11
5382	58.14	pk	ver	74.00	-15.86
5382	49.40	RMS	ver	54.00	-04.60
5408	56.56	pk	ver	74.00	-17.44
5408	46.39	RMS	ver	54.00	-07.61
15820	51.93	pk	hor	74.00	-22.07
15820	42.07	RMS	hor	54.00	-11.93
15820	52.00	pk	ver	74.00	-22.00
15820	41.08	RMS	ver	54.00	-12.92

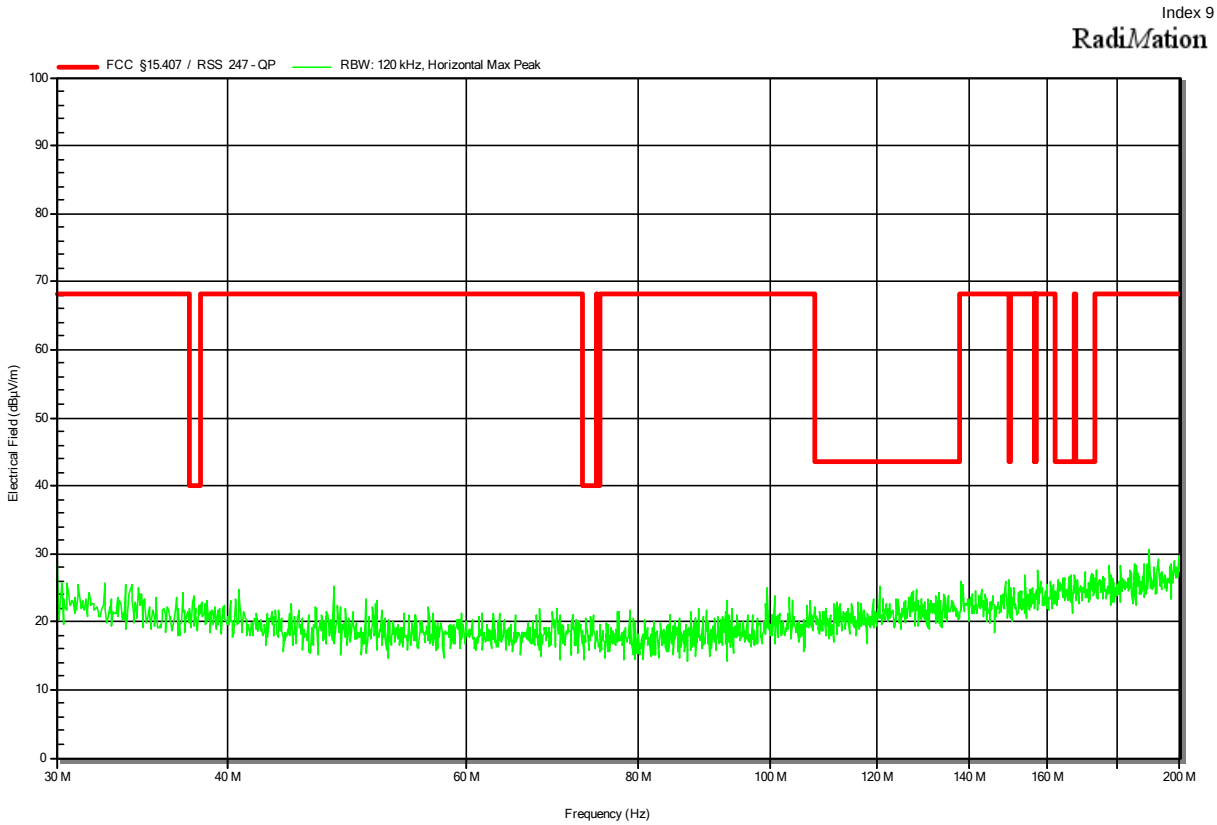
Test Results - Channel 116+120 / 5590 MHz - OFDM					
Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
1463	47.29	pk	hor	74.00	-26.71
1463	46.51	RMS	hor	54.00	-07.49
1463	48.08	pk	ver	74.00	-25.92
1463	47.15	RMS	ver	54.00	-06.85
2660	49.02	pk	hor	68.20	-19.18
2660	48.38	RMS	hor	54.00	-05.62
4960	54.87	pk	ver	74.00	-19.13
4960	46.00	RMS	ver	54.00	-08.00
11179	52.92	pk	hor	74.00	-21.08
11179	41.70	RMS	hor	54.00	-12.30
11187	48.79	pk	ver	74.00	-25.21
11187	37.53	RMS	ver	54.00	-16.47
22353	46.07	pk	hor	74.00	-27.93
22353	36.16	RMS	hor	54.00	-17.84

Test Results - Channel 157 / 5785 MHz - OFDM					
Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
1463	47.42	pk	hor	74.00	-26.58
1463	46.87	RMS	hor	54.00	-07.13
1463	48.00	pk	ver	74.00	-26.00
1463	46.86	RMS	ver	54.00	-07.14
2660	49.87	pk	hor	68.20	-18.33
2660	49.32	RMS	hor	54.00	-04.68
4960	57.07	pk	ver	74.00	-16.93
4960	49.46	RMS	ver	54.00	-04.54
11572	60.80	pk	hor	74.00	-13.20
11572	50.71	RMS	hor	54.00	-03.29
11572	59.83	pk	ver	74.00	-14.17
11572	49.44	RMS	ver	54.00	-04.56
17350	54.34	pk	hor	68.20	-13.86

ANNEX A Transmitter spurious emissions

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity Inc
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 30742
Test Date:	2020-08-27
Note:	



Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity Inc
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 30742
Test Date:	2020-08-27
Note:	

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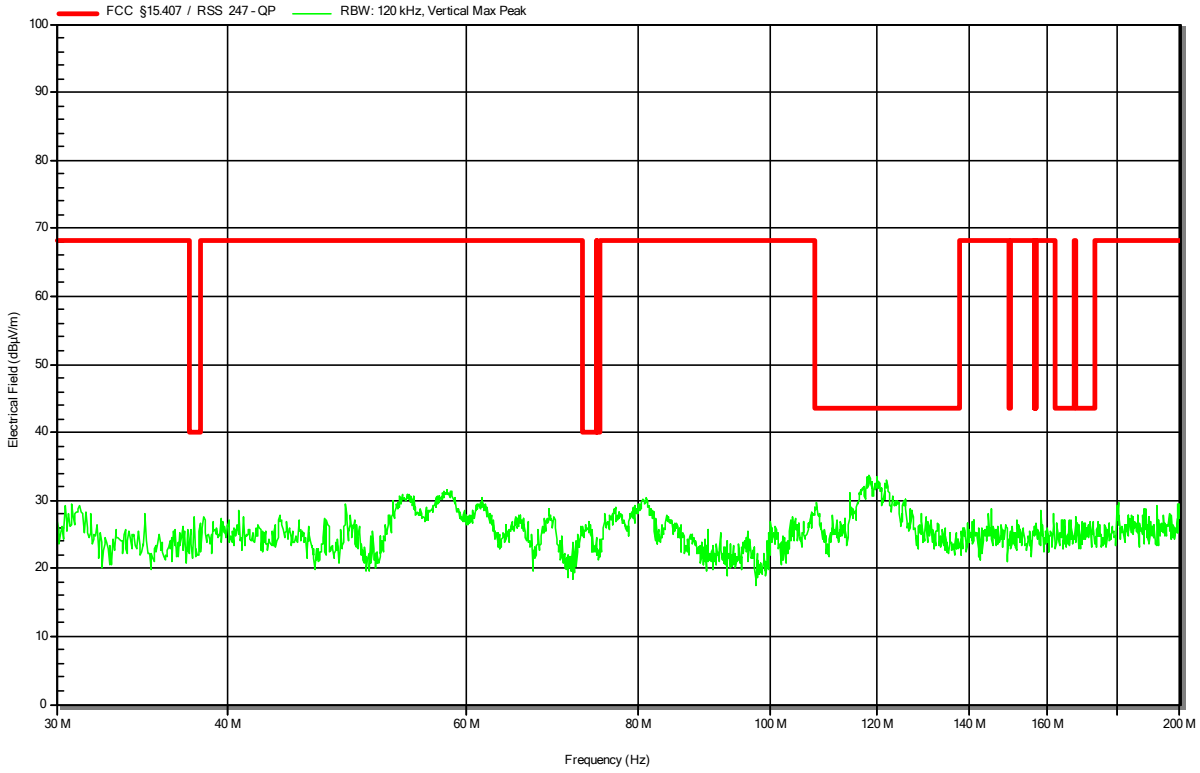
RadiMation



Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity Inc
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 30742
Test Date:	2020-08-27
Note:	

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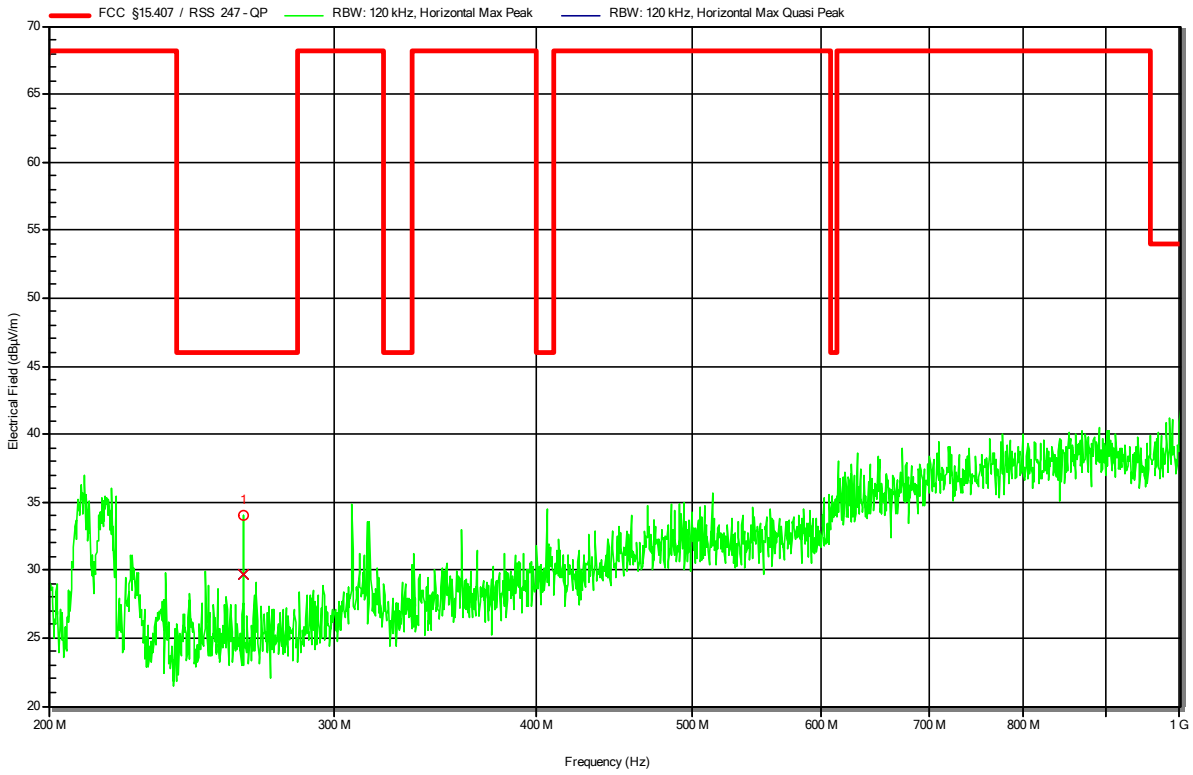
RadiMation



Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
264.0107 MHz	29.7 dBµV/m	46 dBµV/m	-16.3 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity Inc
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Mr. Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 30742
Test Date:	2020-08-27
Note:	

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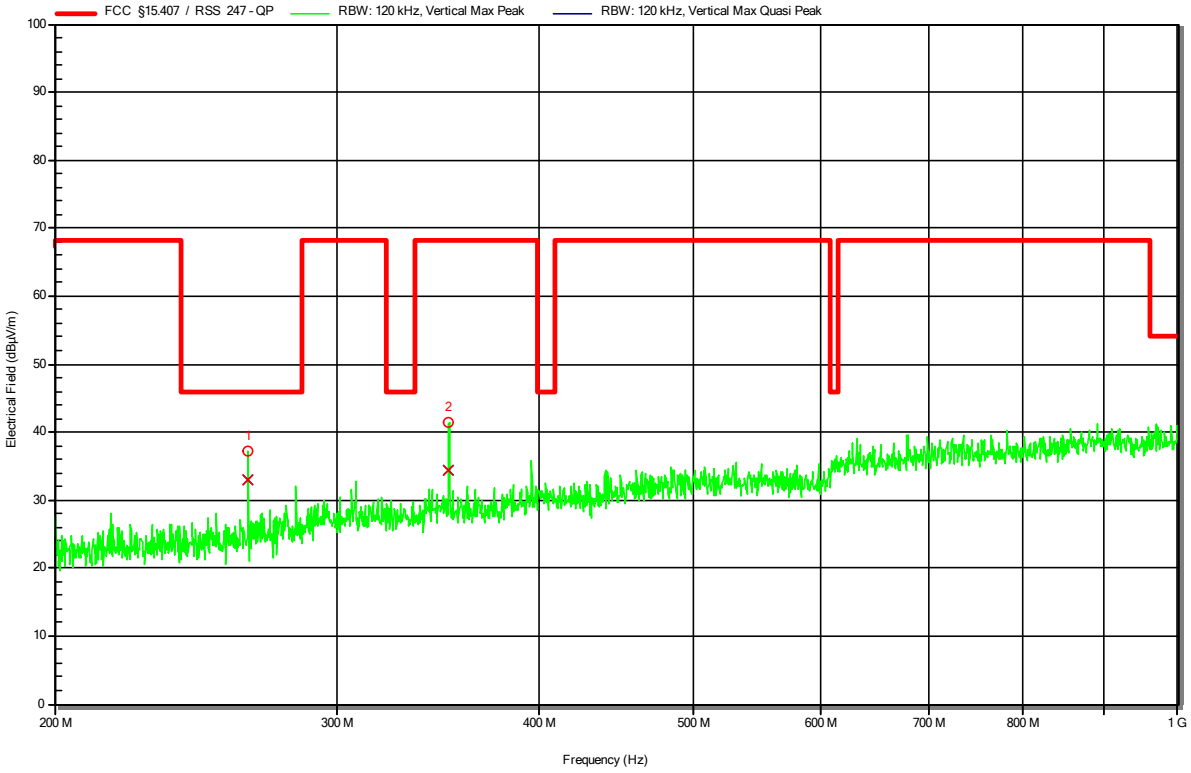
RadiMation



Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
264.0107 MHz	33 dBµV/m	46 dBµV/m	-12.99 dB	Pass
351.9964 MHz	34.4 dBµV/m	68.2 dBµV/m	-33.82 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-26
Note:	

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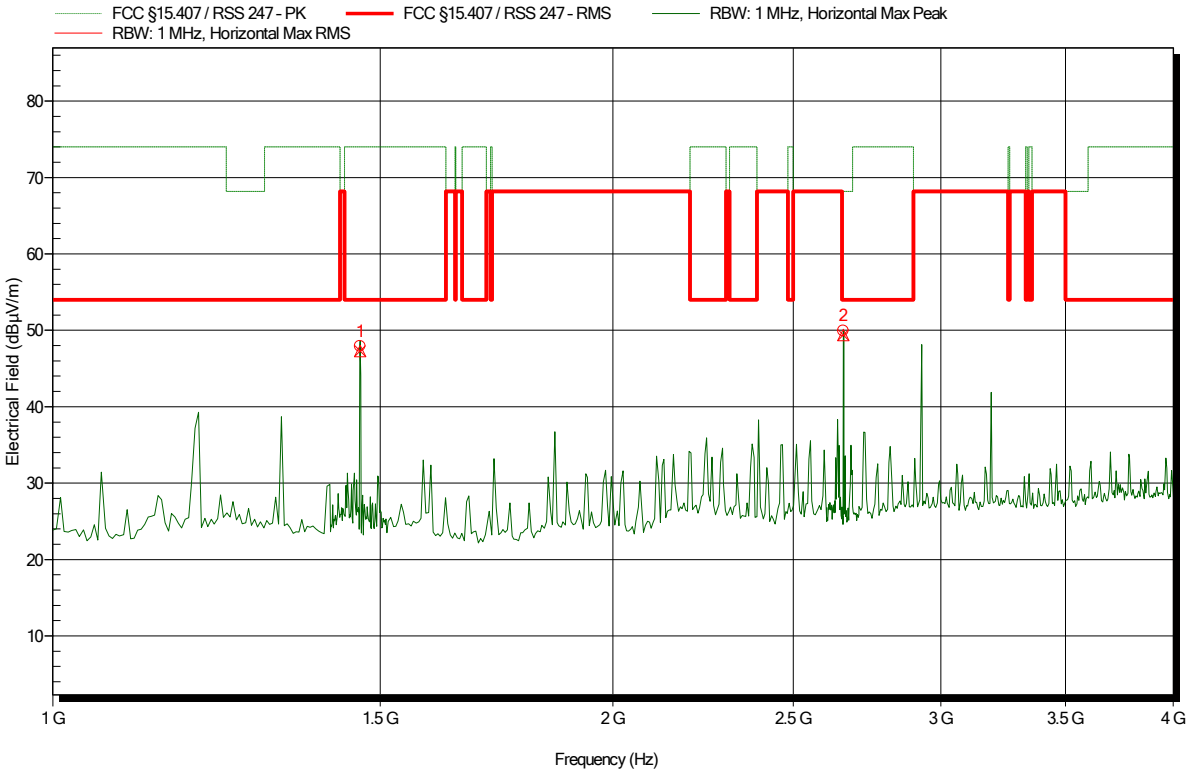

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	47.94 dBµV/m	74 dBµV/m	-26.06 dB	Pass
2.66 GHz	49.92 dBµV/m	68.2 dBµV/m	-18.28 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	47.29 dBµV/m	54 dBµV/m	-6.71 dB	Pass
2.66 GHz	49.39 dBµV/m	54 dBµV/m	-4.61 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2016.1.10
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-26
Note:	

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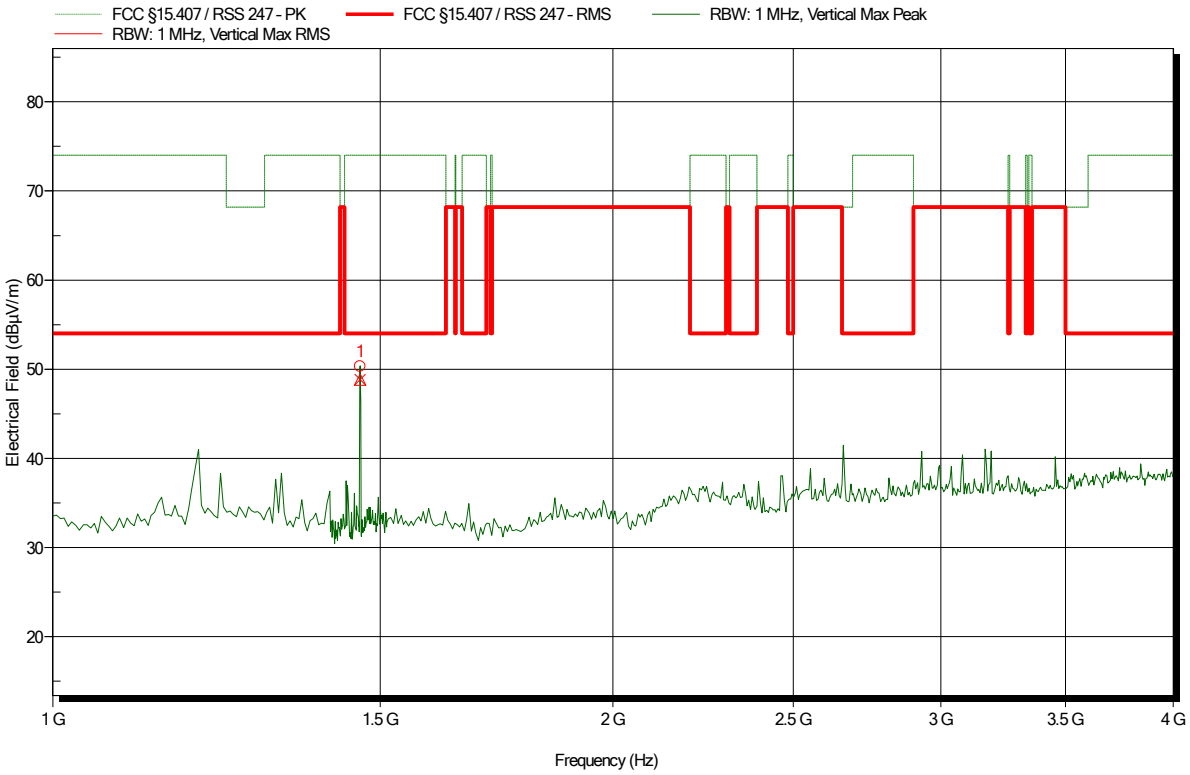

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	50.31 dBµV/m	74 dBµV/m	-23.69 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-26
Note:	

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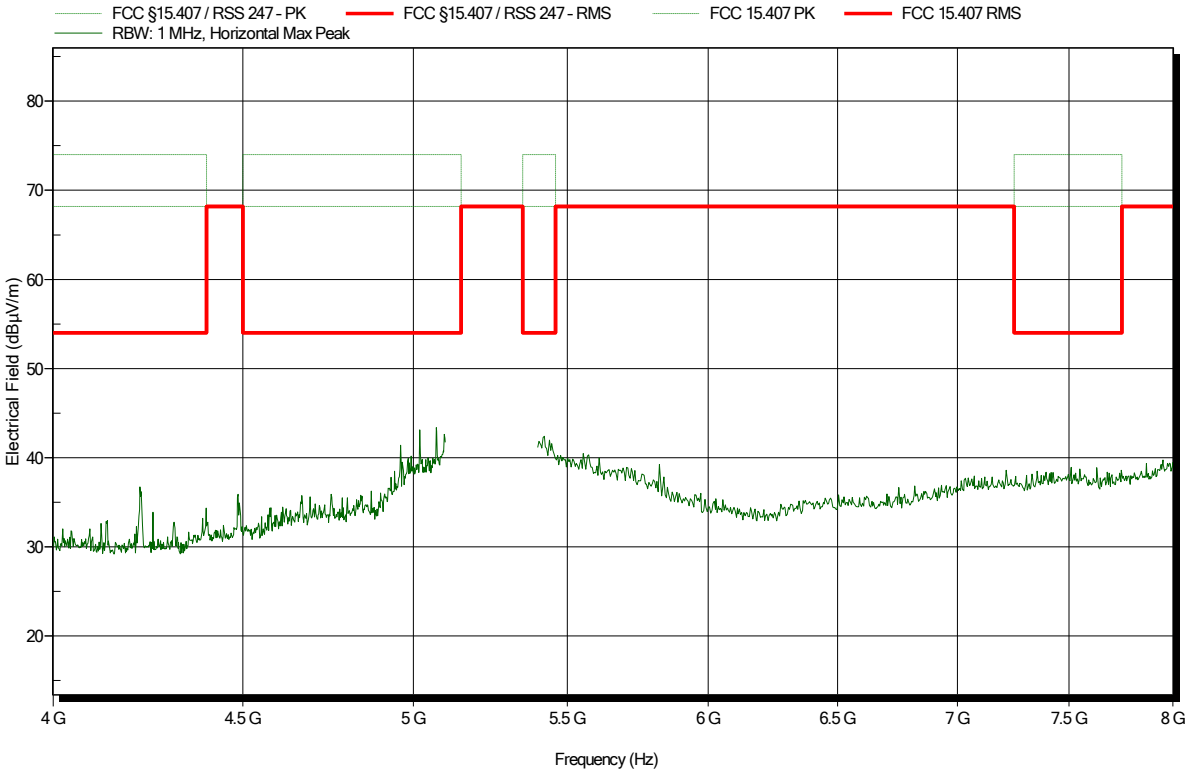

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-26
Note:	

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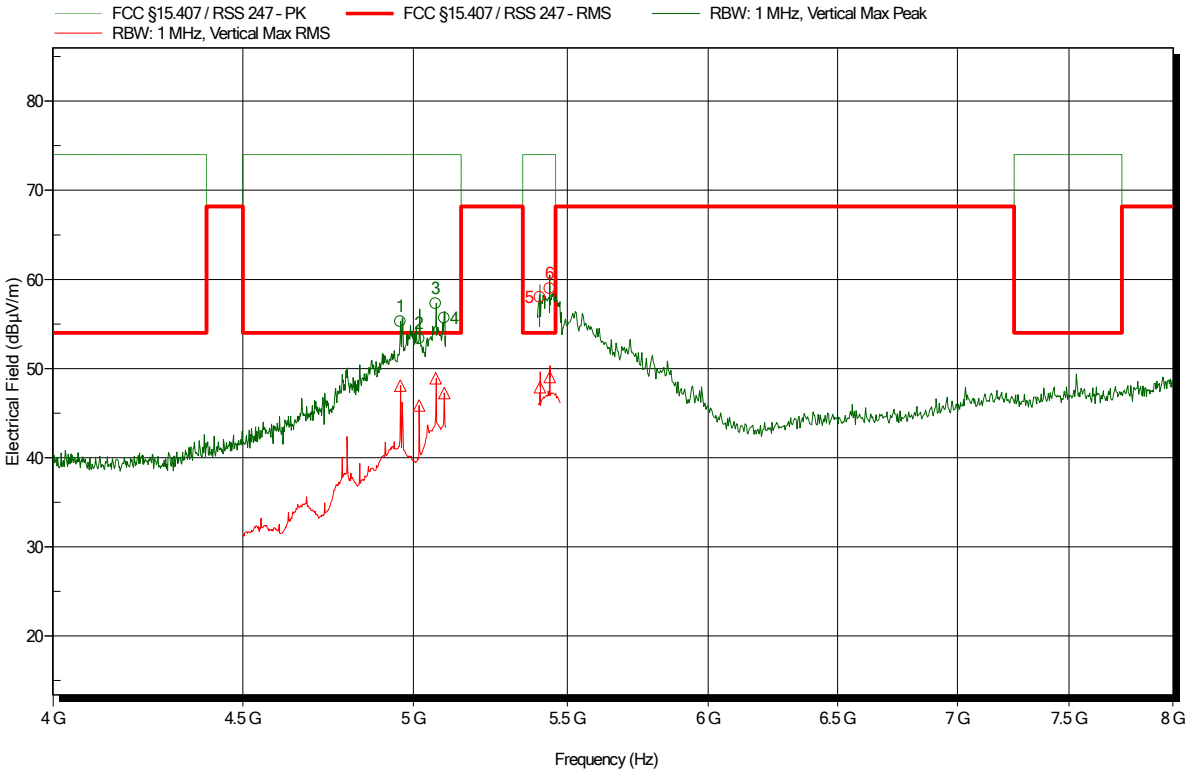

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.96 GHz	55.27 dBµV/m	74 dBµV/m	-18.73 dB	Pass
5.018 GHz	53.35 dBµV/m	74 dBµV/m	-20.65 dB	Pass
5.07 GHz	57.3 dBµV/m	74 dBµV/m	-16.7 dB	Pass
5.096 GHz	55.67 dBµV/m	74 dBµV/m	-18.33 dB	Pass
5.408 GHz	58.02 dBµV/m	74 dBµV/m	-15.98 dB	Pass
5.44 GHz	58.99 dBµV/m	74 dBµV/m	-15.01 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.96 GHz	48.07 dBµV/m	54 dBµV/m	-5.93 dB	Pass
5.018 GHz	45.85 dBµV/m	54 dBµV/m	-8.15 dB	Pass
5.07 GHz	48.91 dBµV/m	54 dBµV/m	-5.09 dB	Pass
5.096 GHz	47.24 dBµV/m	54 dBµV/m	-6.76 dB	Pass
5.408 GHz	47.9 dBµV/m	54 dBµV/m	-6.1 dB	Pass
5.44 GHz	49.04 dBµV/m	54 dBµV/m	-4.96 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-29
Note:	lower band area

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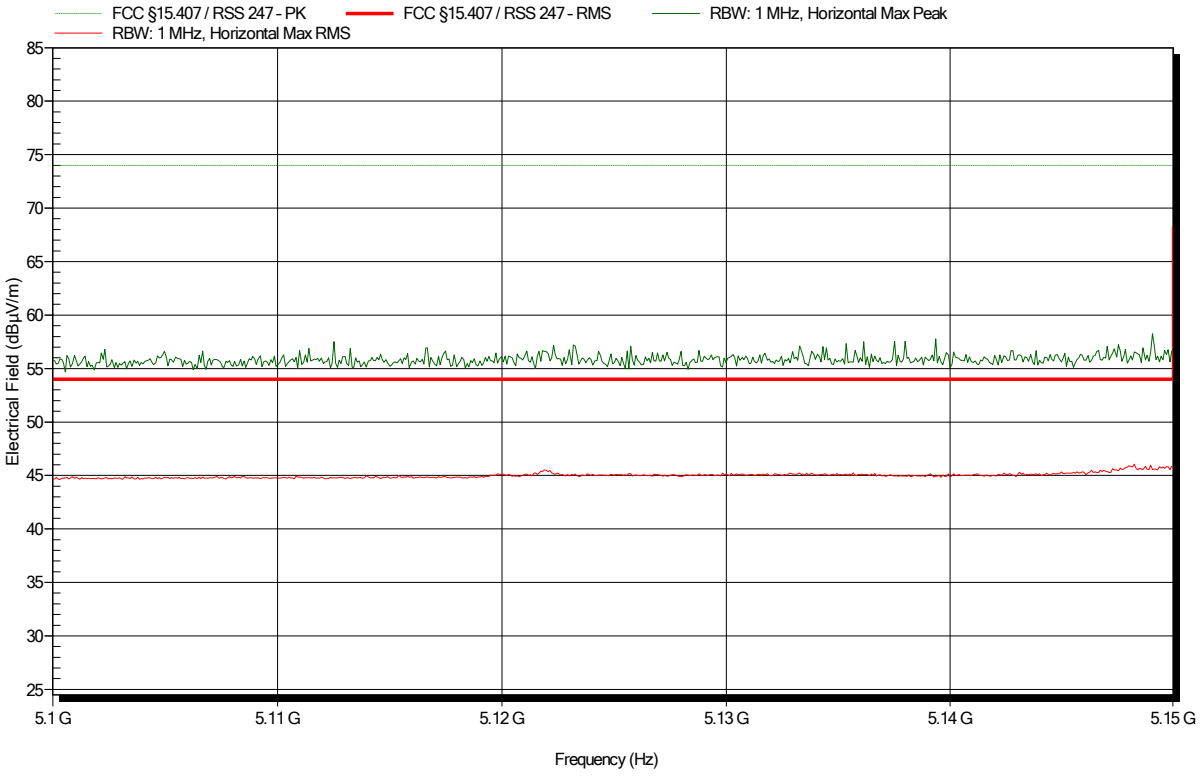

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-29
Note:	lower band area

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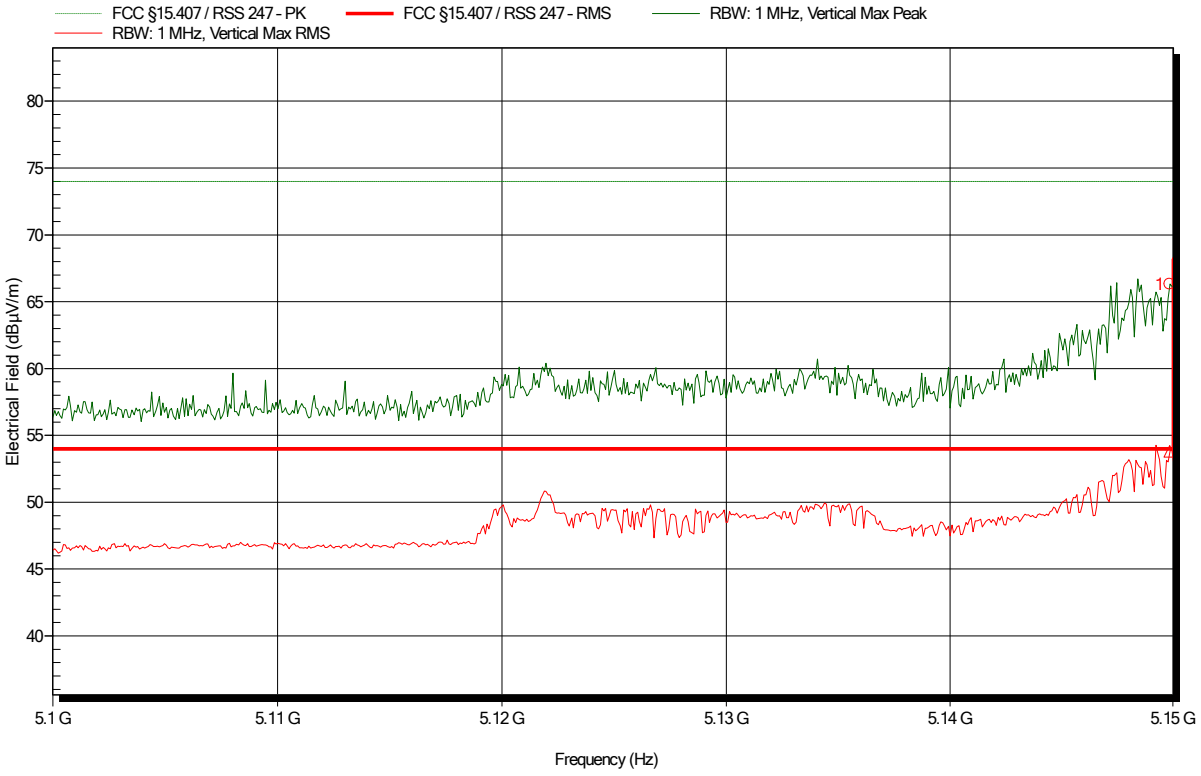

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.15 GHz	66.31 dBµV/m	74 dBµV/m	-7.69 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
5.15 GHz	53.79 dBµV/m	54 dBµV/m	-0.21 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-29
Note:	upper bandedge

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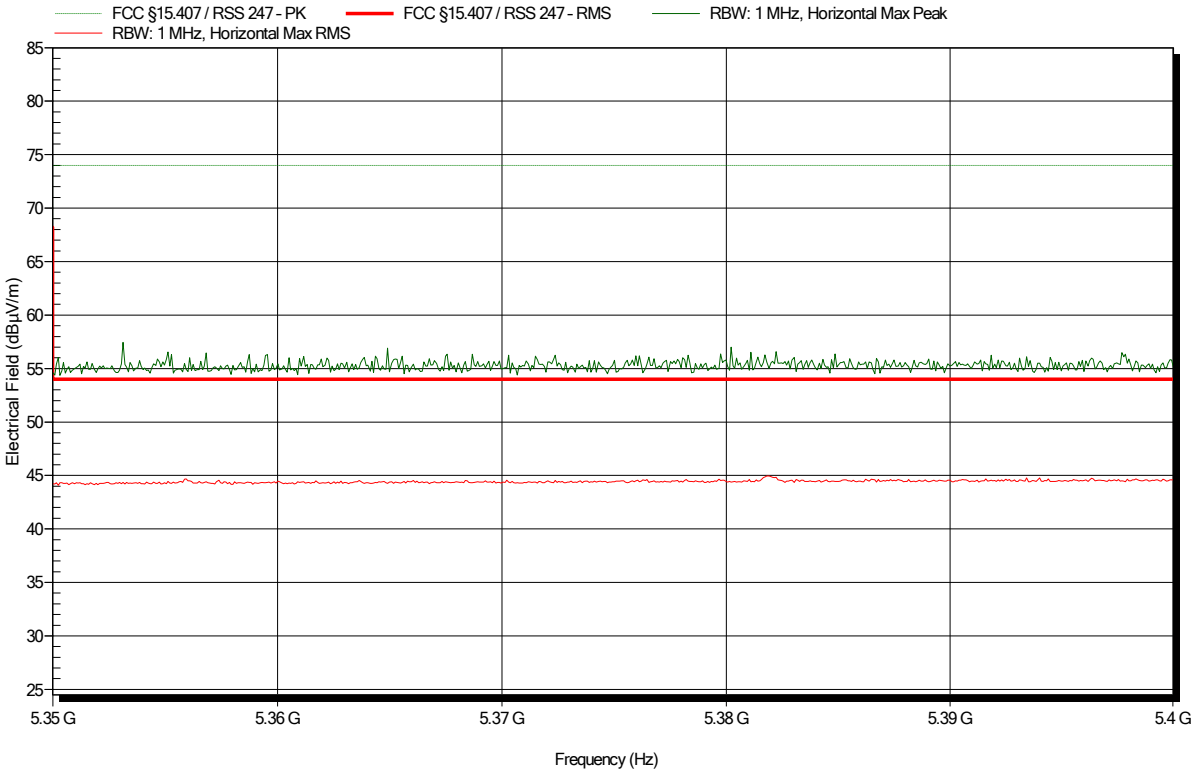

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-29
Note:	upper bandedge

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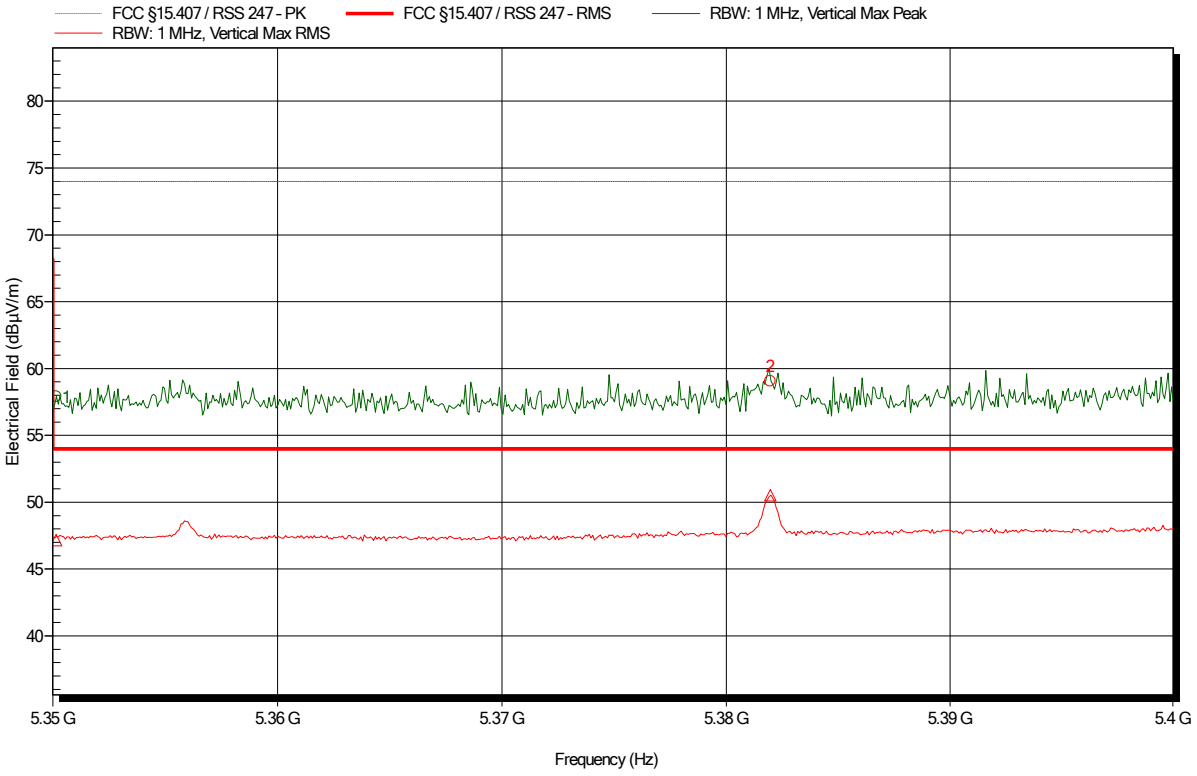

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.35 GHz	57.9 dBµV/m	74 dBµV/m	-16.1 dB	Pass
5.382 GHz	59.07 dBµV/m	74 dBµV/m	-14.93 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
5.35 GHz	47.18 dBµV/m	54 dBµV/m	-6.82 dB	Pass
5.382 GHz	50.53 dBµV/m	54 dBµV/m	-3.47 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-26
Note:	

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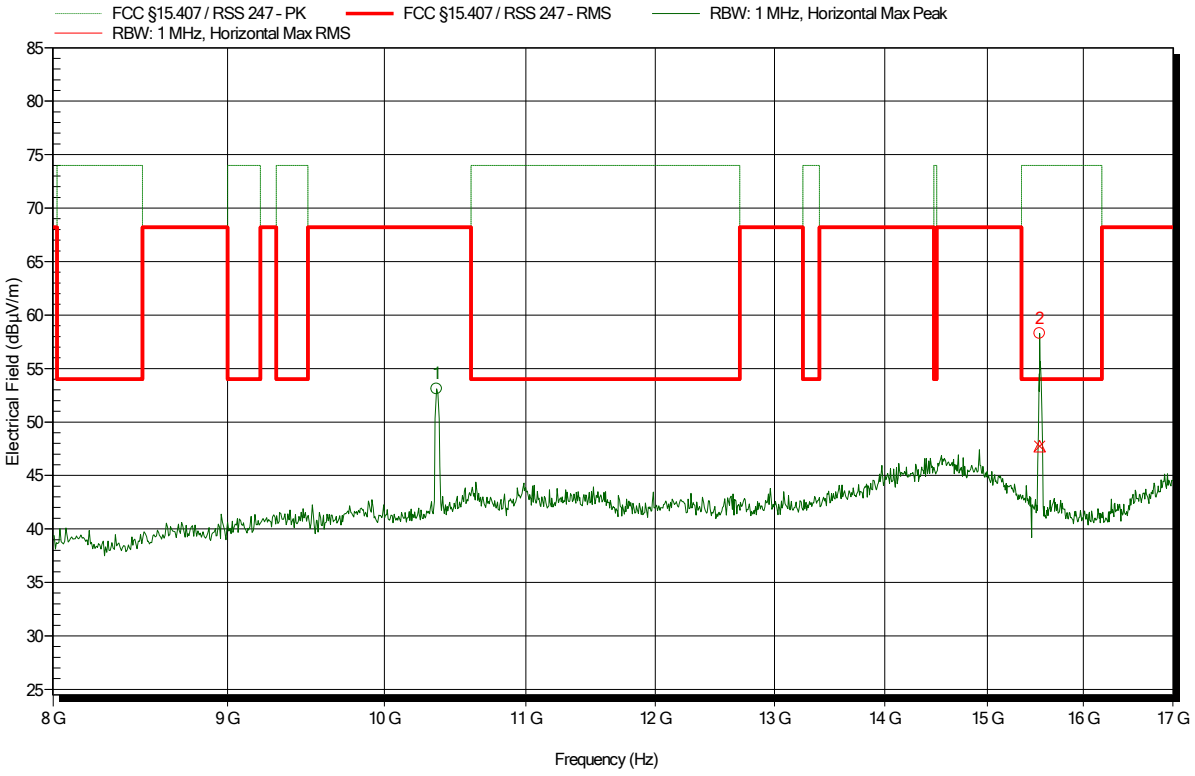

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
10.359 GHz	53.12 dBµV/m	68.2 dBµV/m	-15.08 dB	Pass
15.538 GHz	58.28 dBµV/m	74 dBµV/m	-15.72 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
15.538 GHz	47.74 dBµV/m	54 dBµV/m	-6.26 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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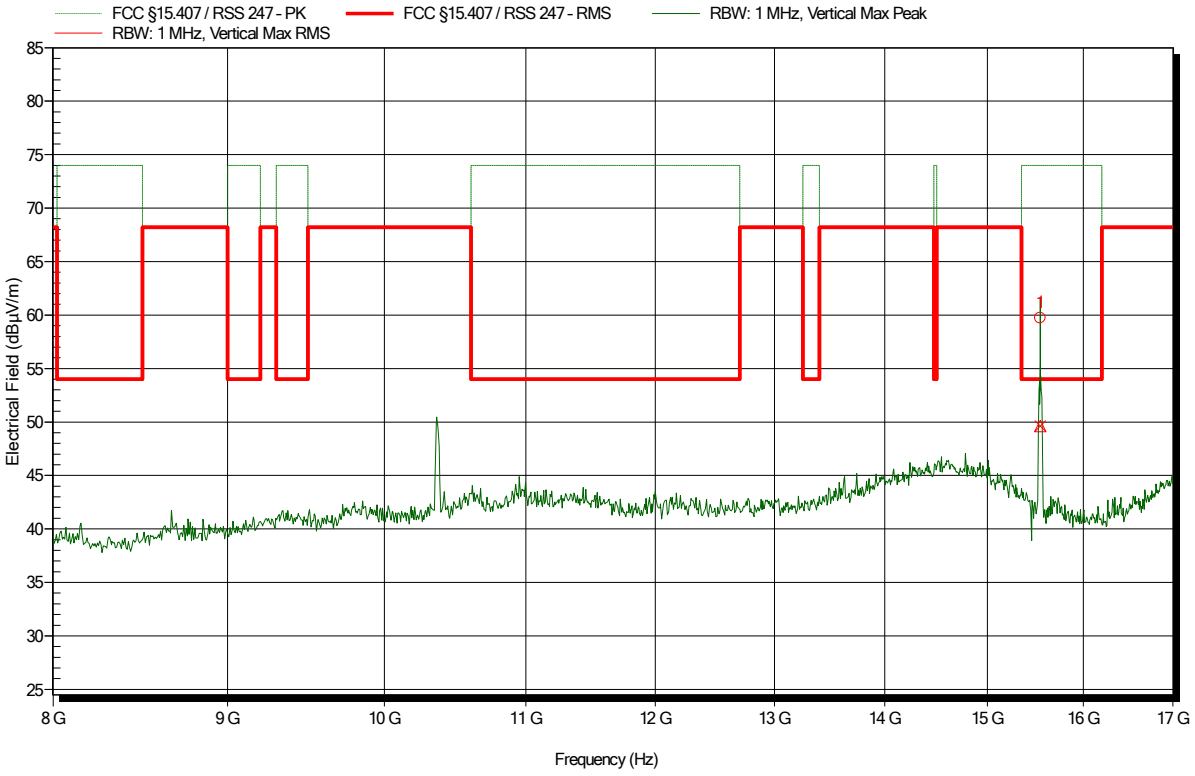

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
15.544 GHz	59.73 dBµV/m	74 dBµV/m	-14.27 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
15.544 GHz	49.63 dBµV/m	54 dBµV/m	-4.37 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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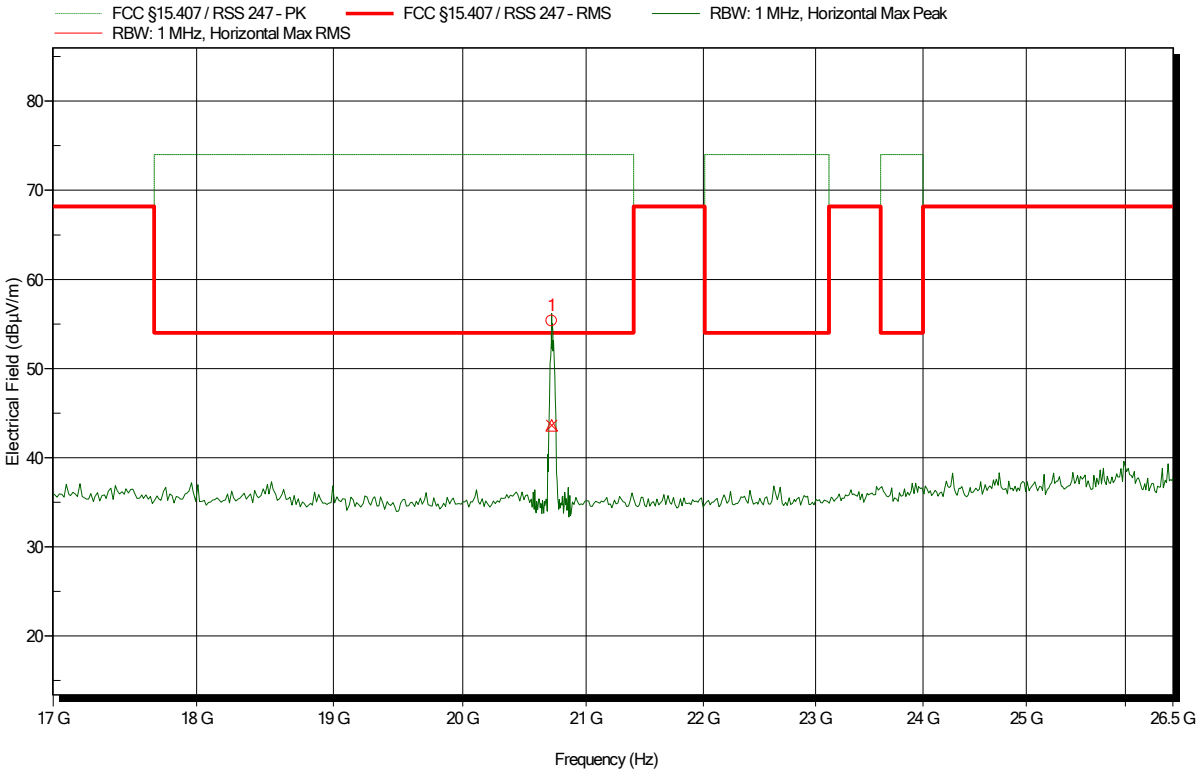

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
20.717 GHz	55.36 dBµV/m	74 dBµV/m	-18.64 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
20.717 GHz	43.61 dBµV/m	54 dBµV/m	-10.39 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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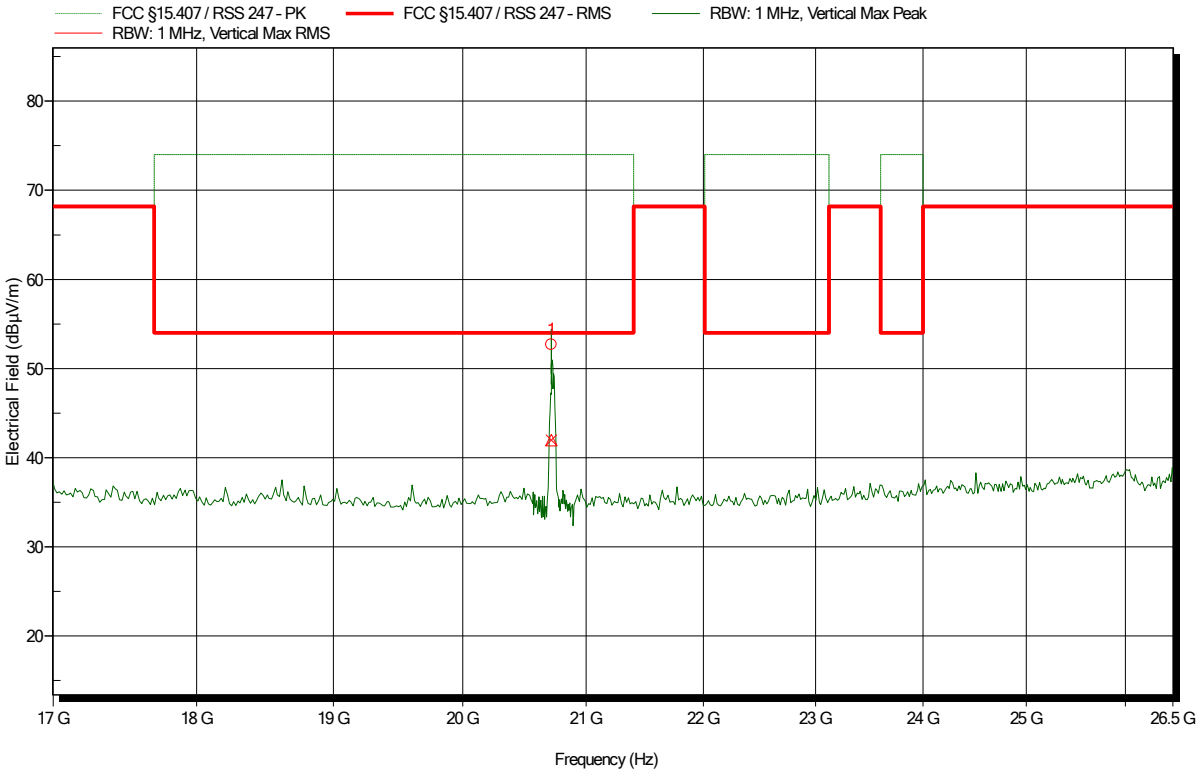

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
20.715 GHz	52.67 dBµV/m	74 dBµV/m	-21.33 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
20.715 GHz	41.96 dBµV/m	54 dBµV/m	-12.04 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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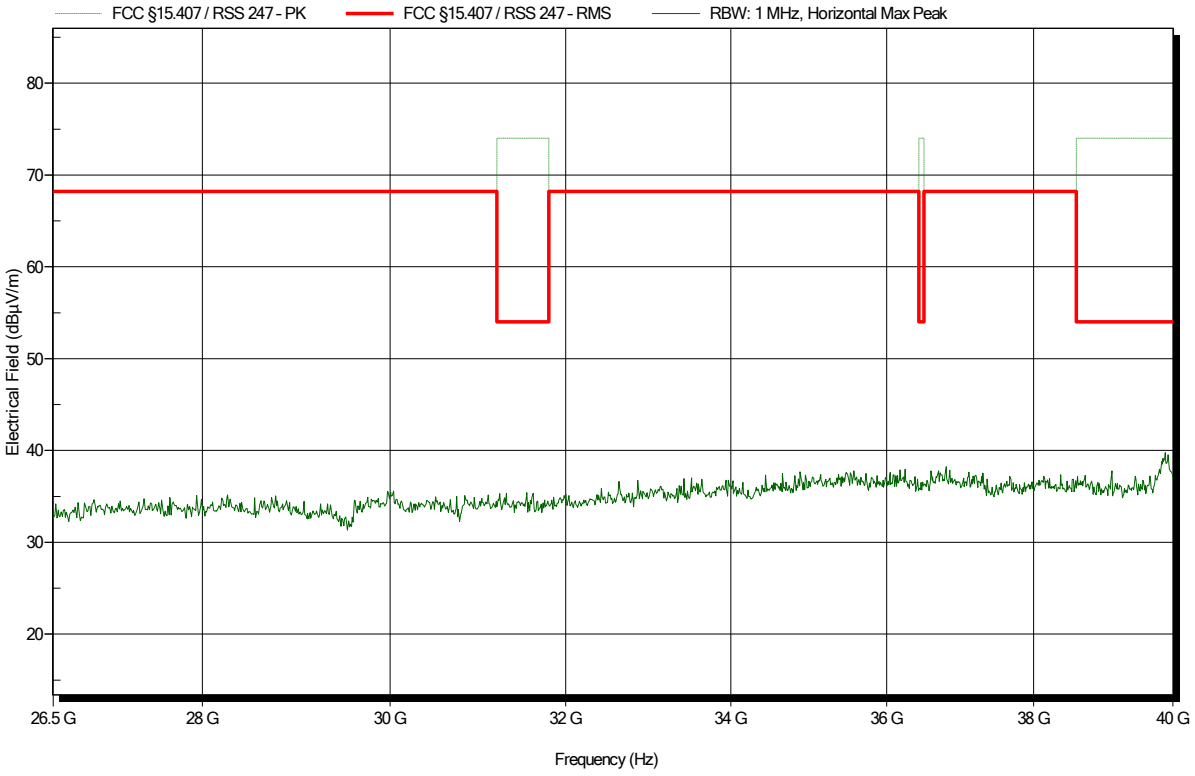

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5180 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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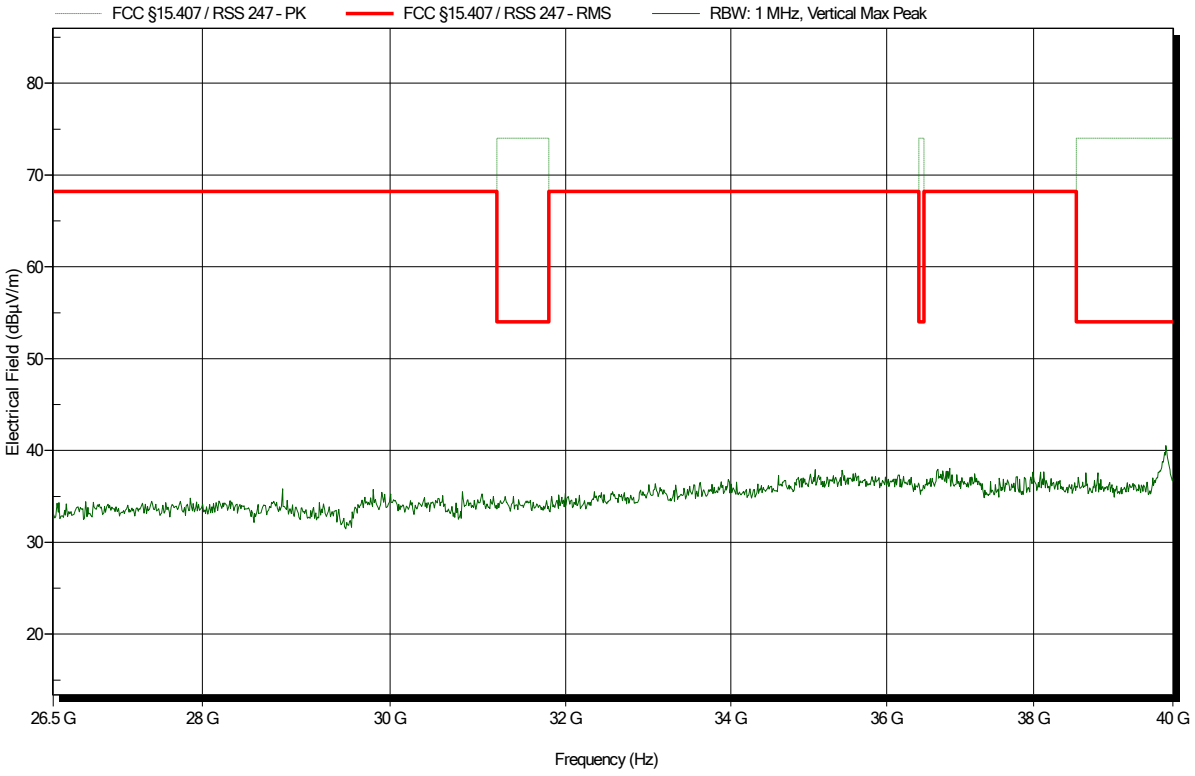

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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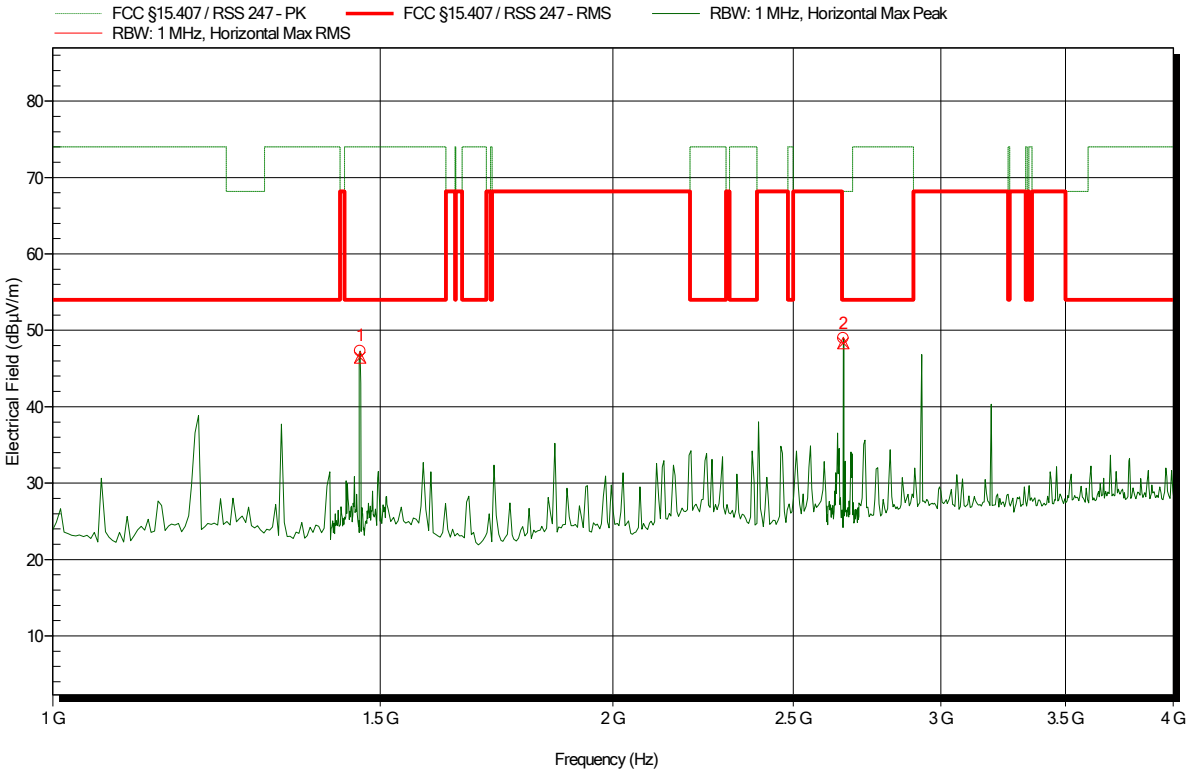

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	47.28 dBµV/m	74 dBµV/m	-26.72 dB	Pass
2.66 GHz	48.98 dBµV/m	68.2 dBµV/m	-19.22 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	46.44 dBµV/m	54 dBµV/m	-7.56 dB	Pass
2.66 GHz	48.33 dBµV/m	54 dBµV/m	-5.67 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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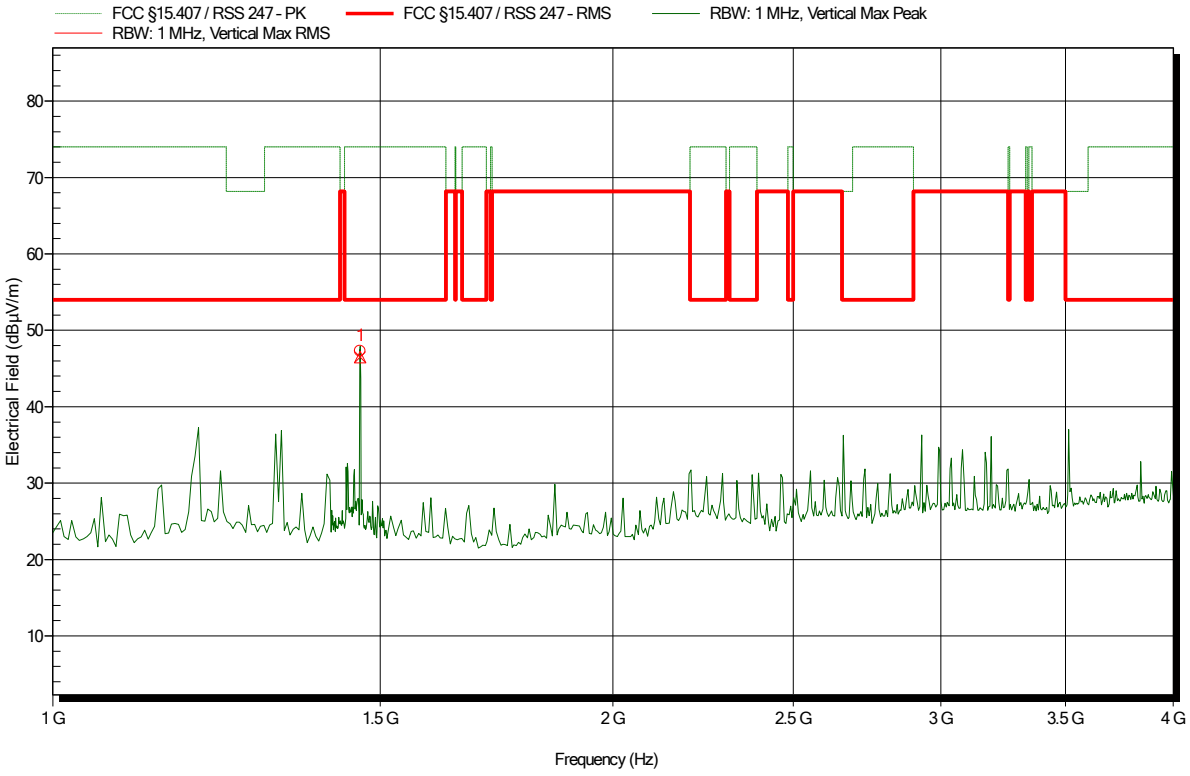

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	47.29 dBµV/m	74 dBµV/m	-26.71 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	46.5 dBµV/m	54 dBµV/m	-7.5 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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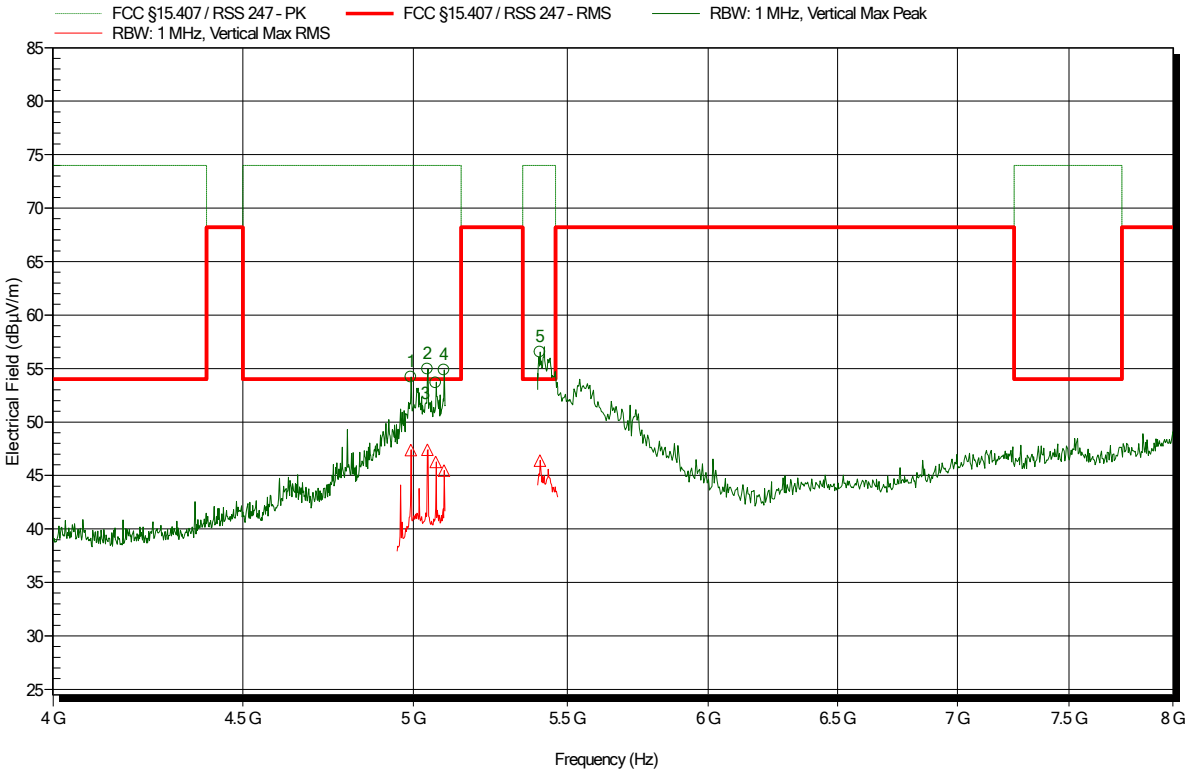

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.992 GHz	54.2 dBµV/m	74 dBµV/m	-19.8 dB	Pass
5.044 GHz	54.96 dBµV/m	74 dBµV/m	-19.04 dB	Pass
5.07 GHz	53.68 dBµV/m	74 dBµV/m	-20.32 dB	Pass
5.096 GHz	54.86 dBµV/m	74 dBµV/m	-19.14 dB	Pass
5.408 GHz	56.56 dBµV/m	74 dBµV/m	-17.44 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.992 GHz	47.39 dBµV/m	54 dBµV/m	-6.61 dB	Pass
5.044 GHz	47.41 dBµV/m	54 dBµV/m	-6.59 dB	Pass
5.07 GHz	46.26 dBµV/m	54 dBµV/m	-7.74 dB	Pass
5.096 GHz	45.45 dBµV/m	54 dBµV/m	-8.55 dB	Pass
5.408 GHz	46.39 dBµV/m	54 dBµV/m	-7.61 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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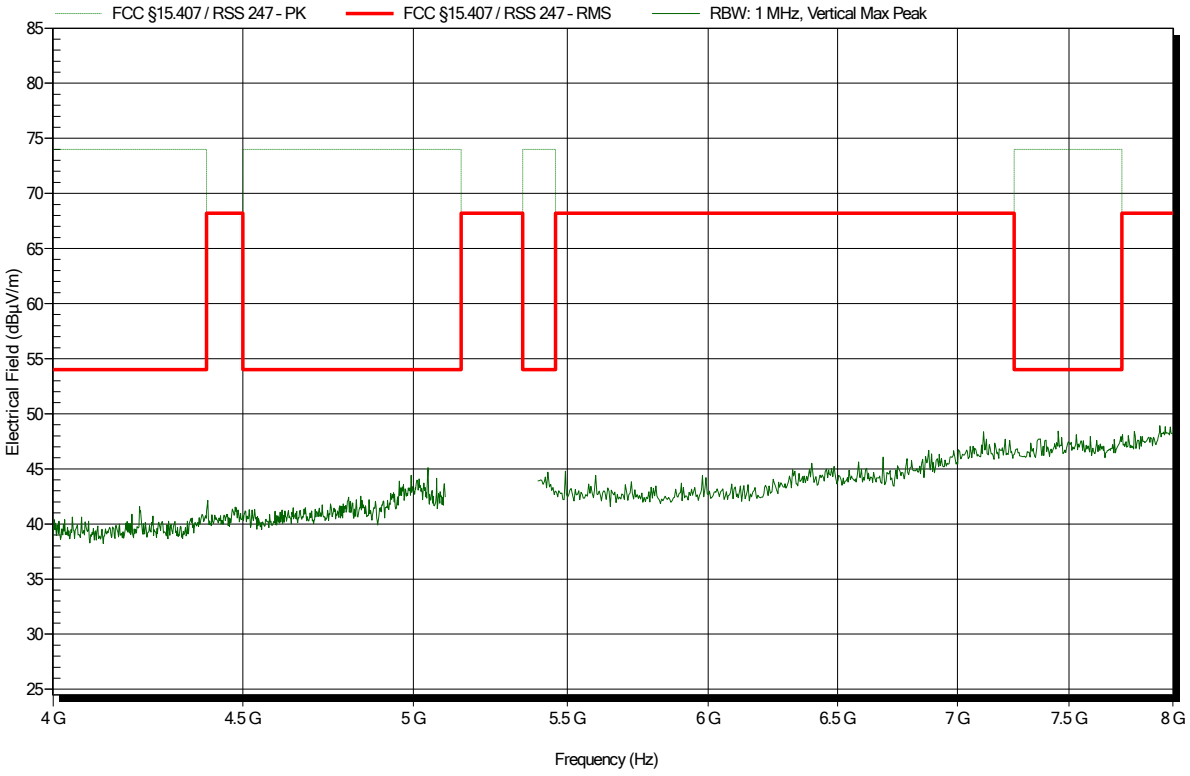

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	lower band area

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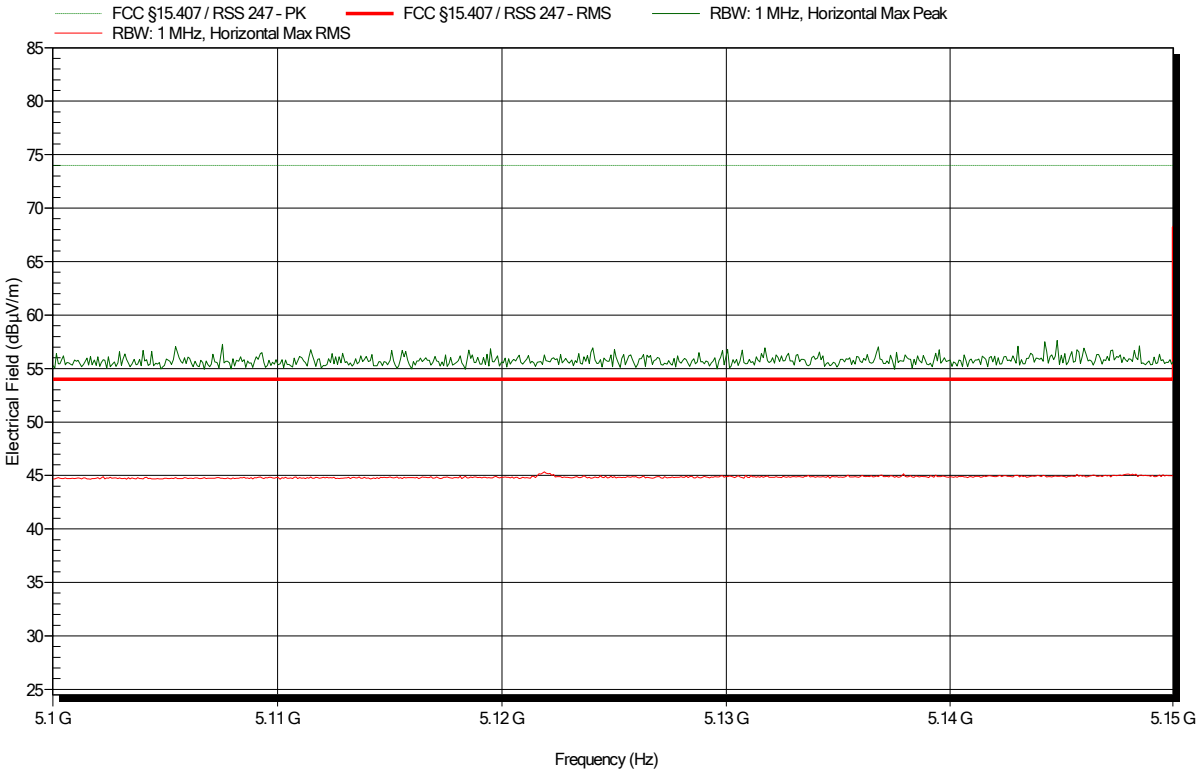

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	lower band area

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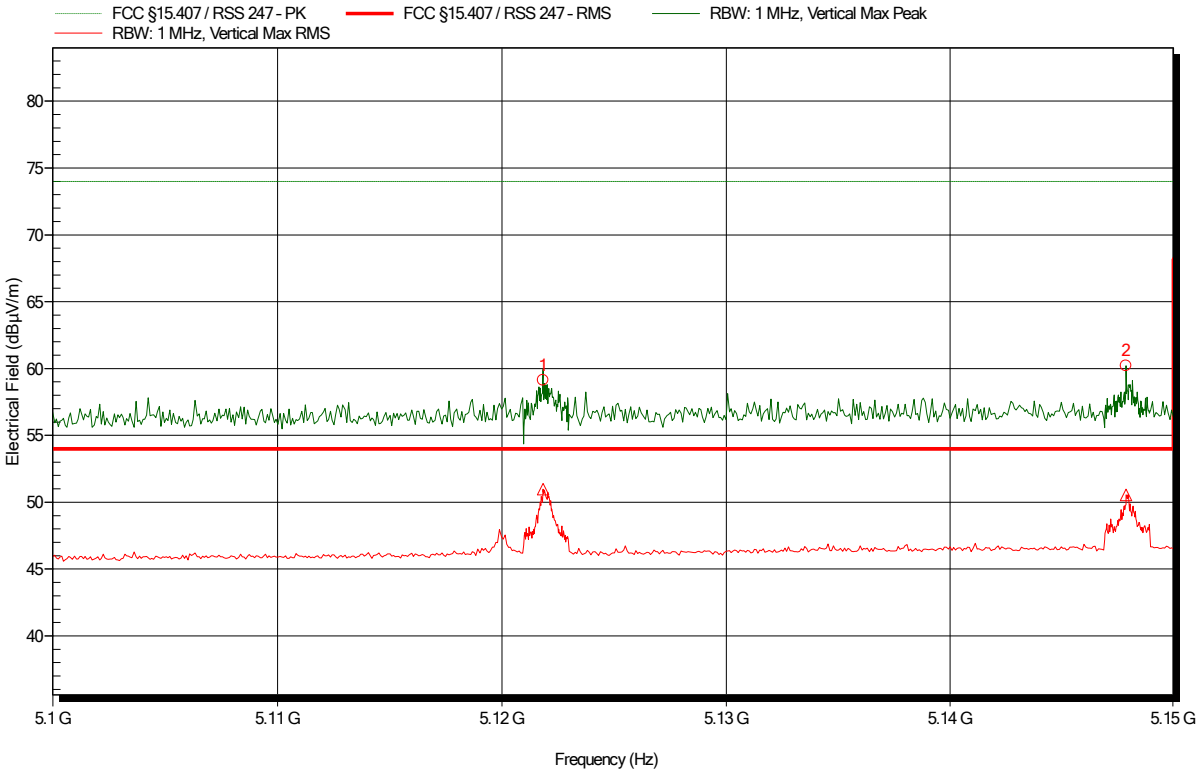

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.122 GHz	59.14 dBµV/m	74 dBµV/m	-14.86 dB	Pass
5.148 GHz	60.21 dBµV/m	74 dBµV/m	-13.79 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
5.122 GHz	50.98 dBµV/m	54 dBµV/m	-3.02 dB	Pass
5.148 GHz	50.55 dBµV/m	54 dBµV/m	-3.45 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	upper bandedge

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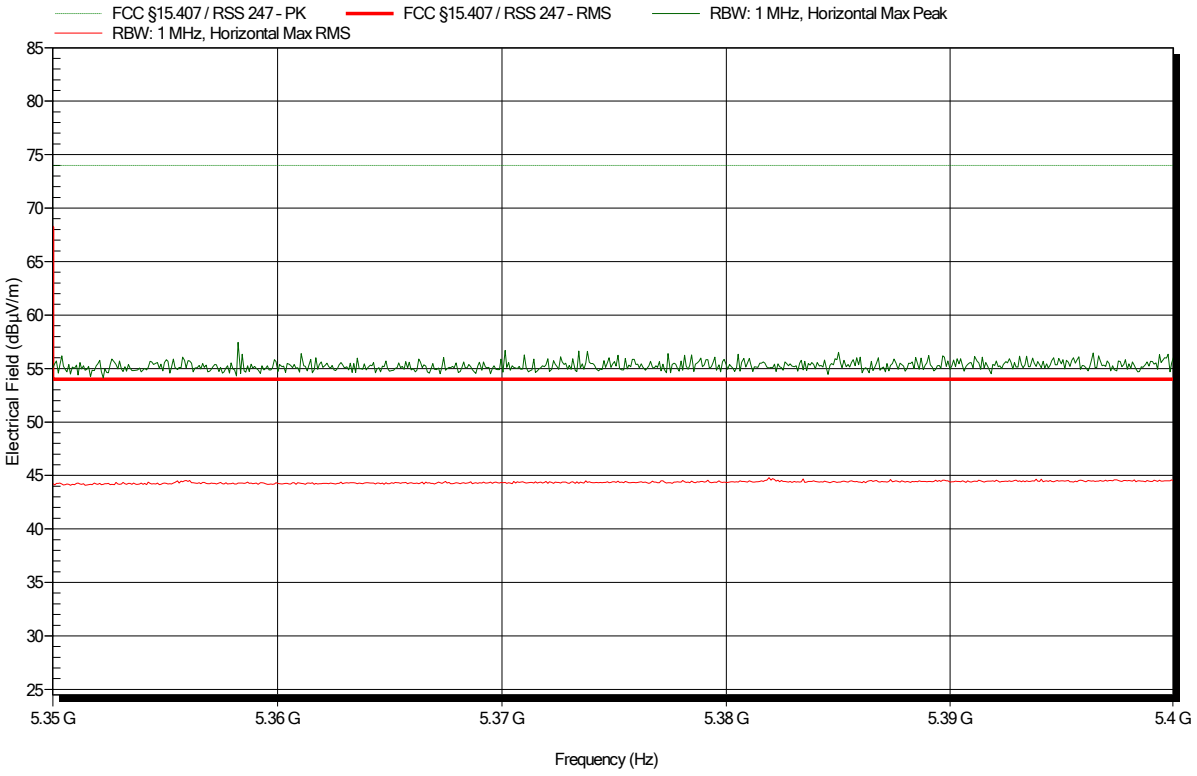

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	upper bandedge

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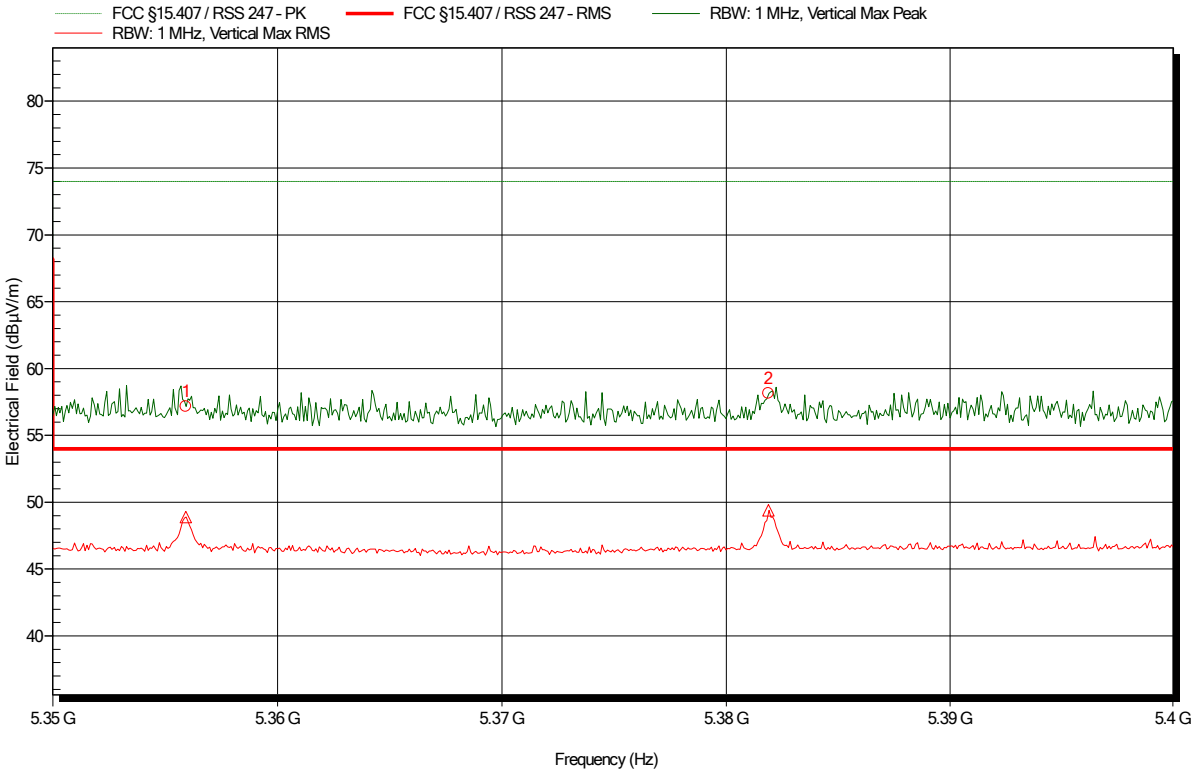

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.356 GHz	57.17 dBµV/m	74 dBµV/m	-16.83 dB	Pass
5.382 GHz	58.14 dBµV/m	74 dBµV/m	-15.86 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
5.356 GHz	48.89 dBµV/m	54 dBµV/m	-5.11 dB	Pass
5.382 GHz	49.4 dBµV/m	54 dBµV/m	-4.6 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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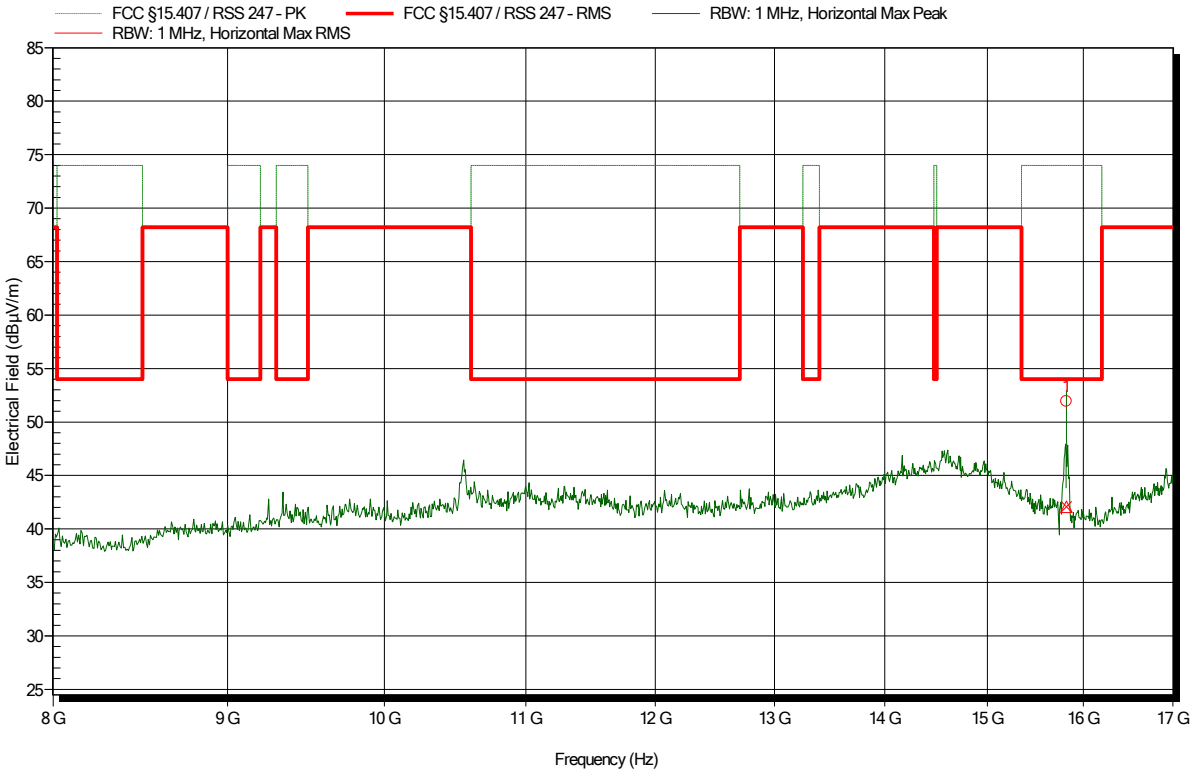

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
15.82 GHz	51.93 dBµV/m	74 dBµV/m	-22.07 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
15.82 GHz	42.07 dBµV/m	54 dBµV/m	-11.93 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-06-29
Note:	

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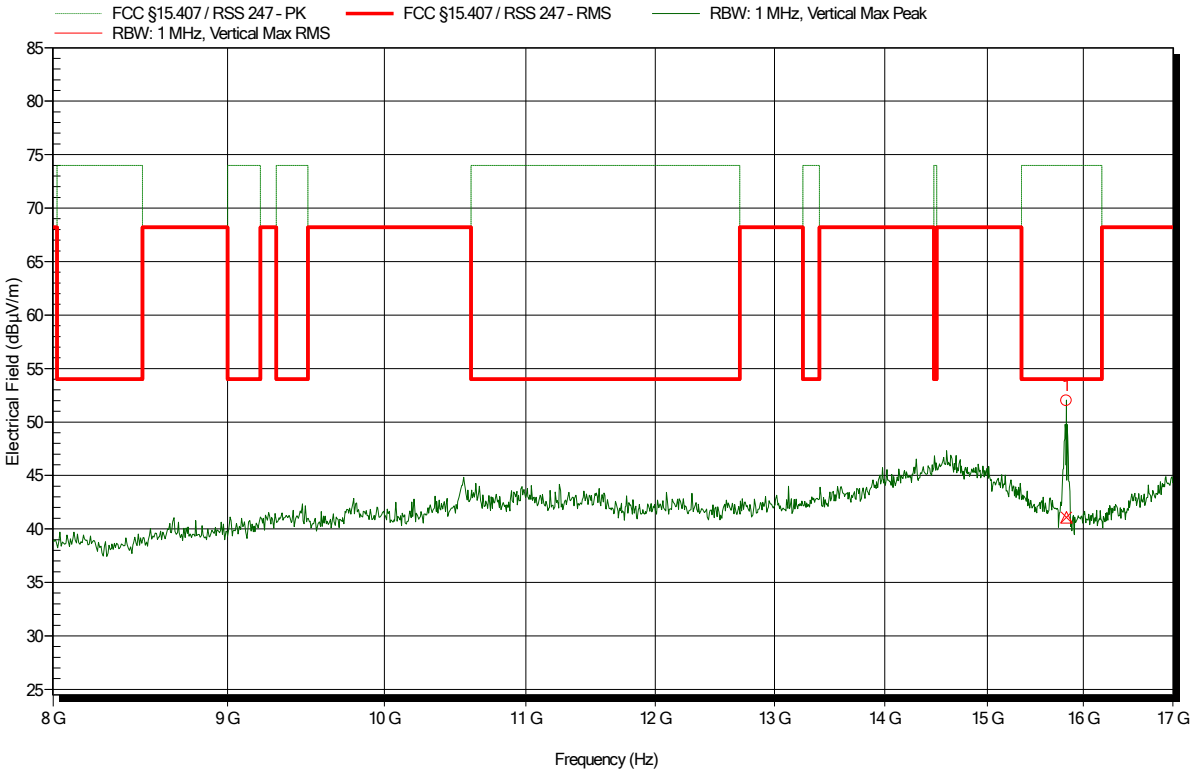

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
15.82 GHz	52 dBµV/m	74 dBµV/m	-22 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
15.82 GHz	41.08 dBµV/m	54 dBµV/m	-12.92 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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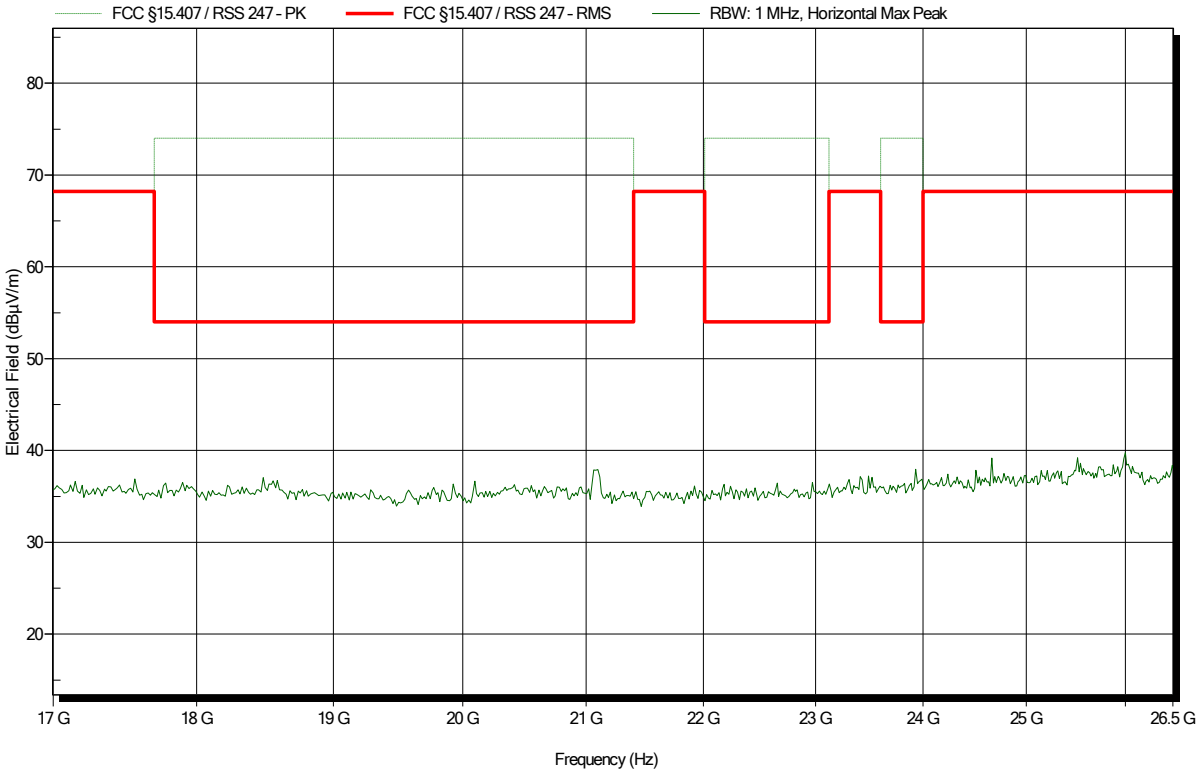

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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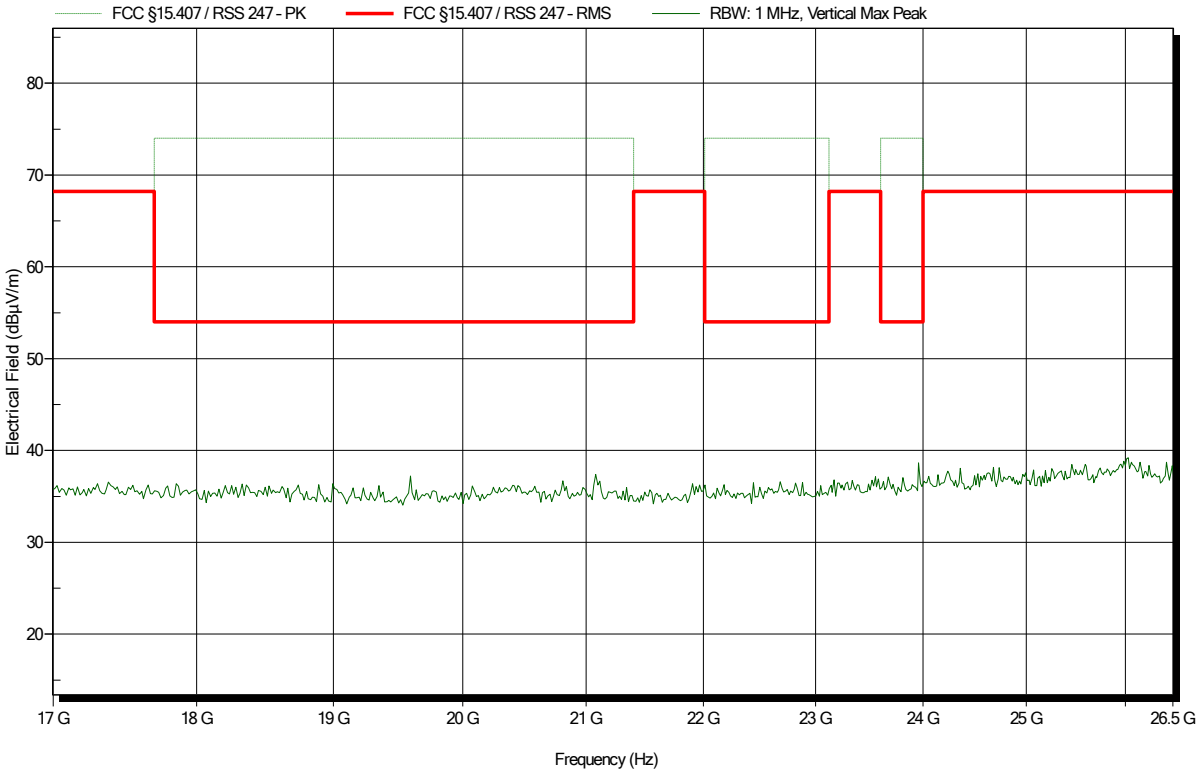

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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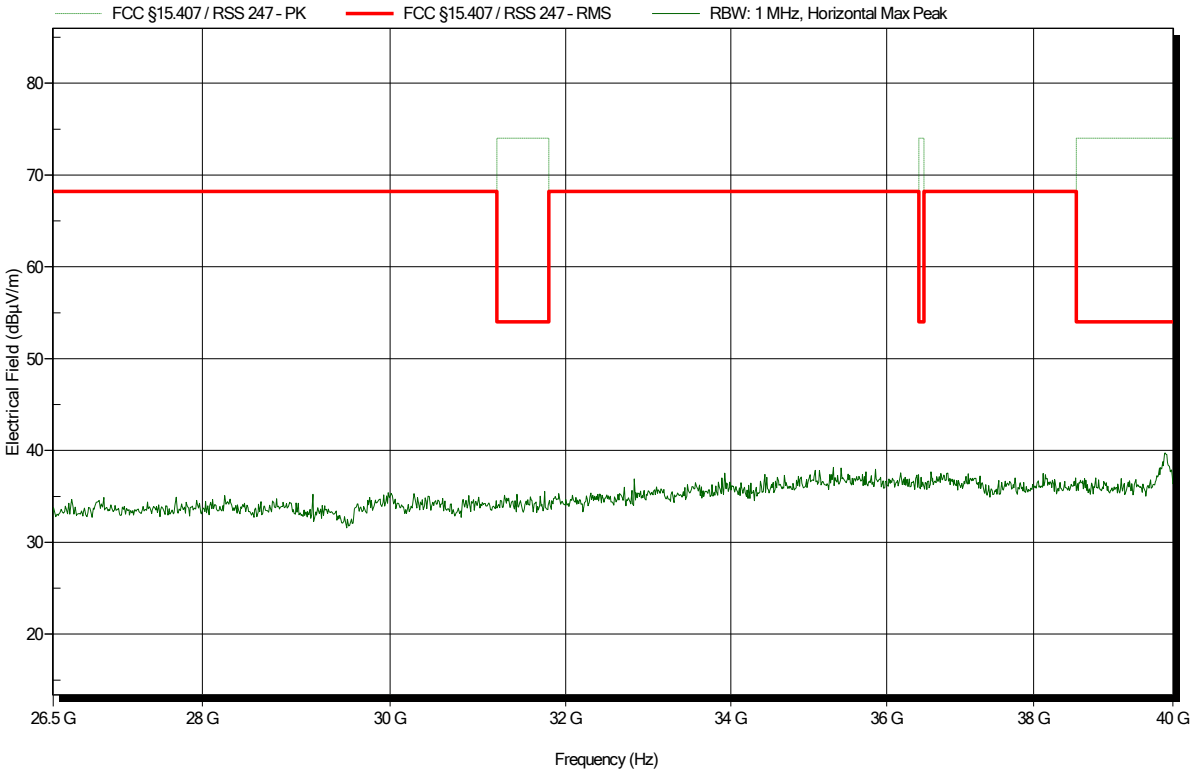

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5270 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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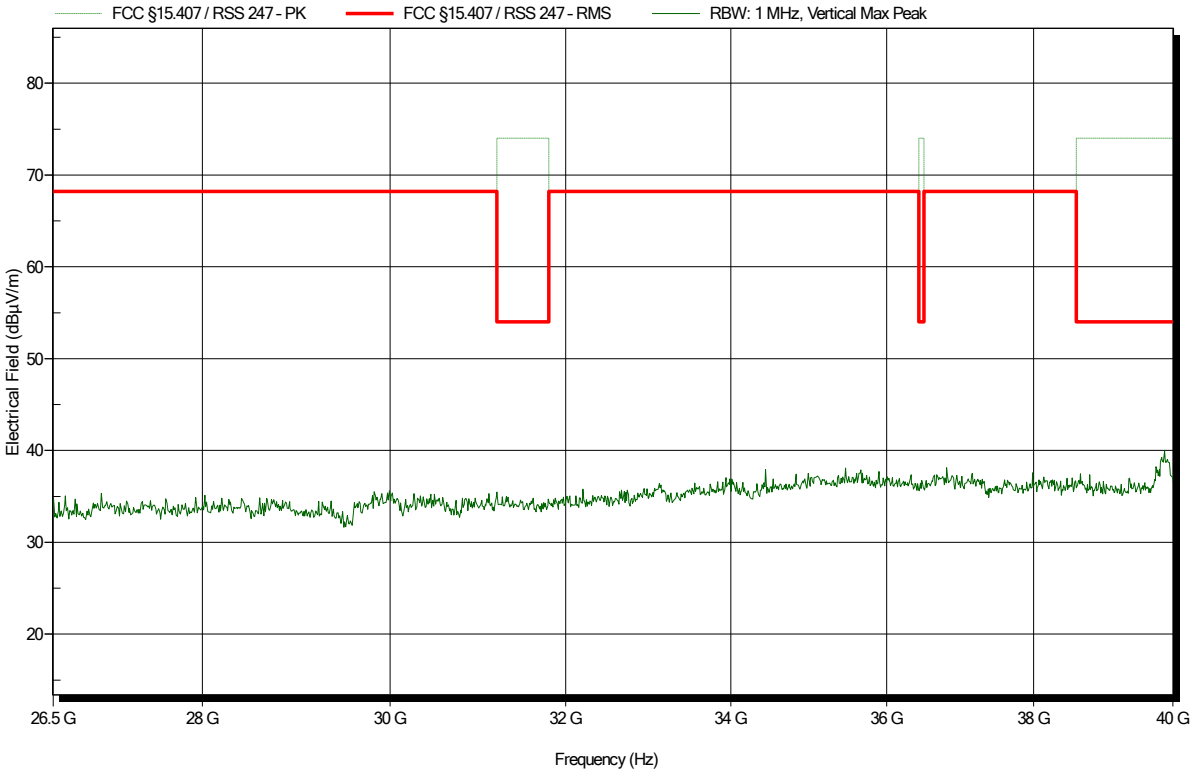

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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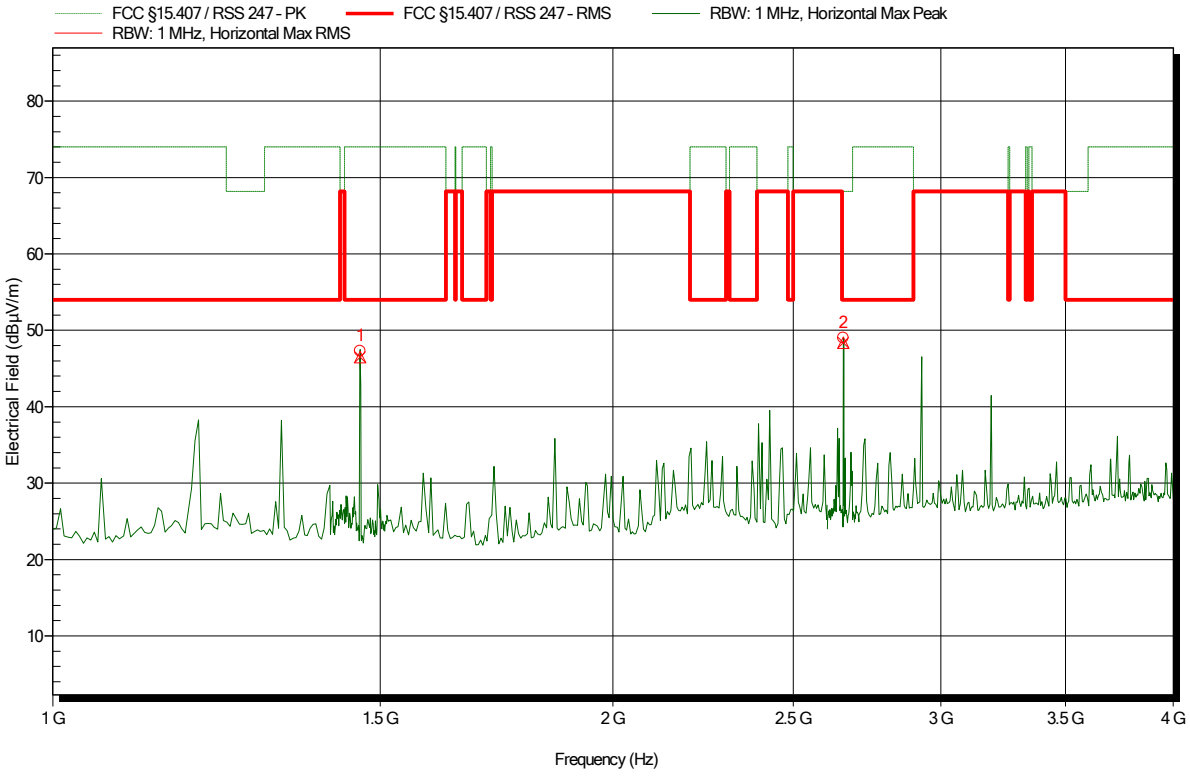

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	47.29 dBµV/m	74 dBµV/m	-26.71 dB	Pass
2.66 GHz	49.02 dBµV/m	68.2 dBµV/m	-19.18 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	46.51 dBµV/m	54 dBµV/m	-7.49 dB	Pass
2.66 GHz	48.38 dBµV/m	54 dBµV/m	-5.62 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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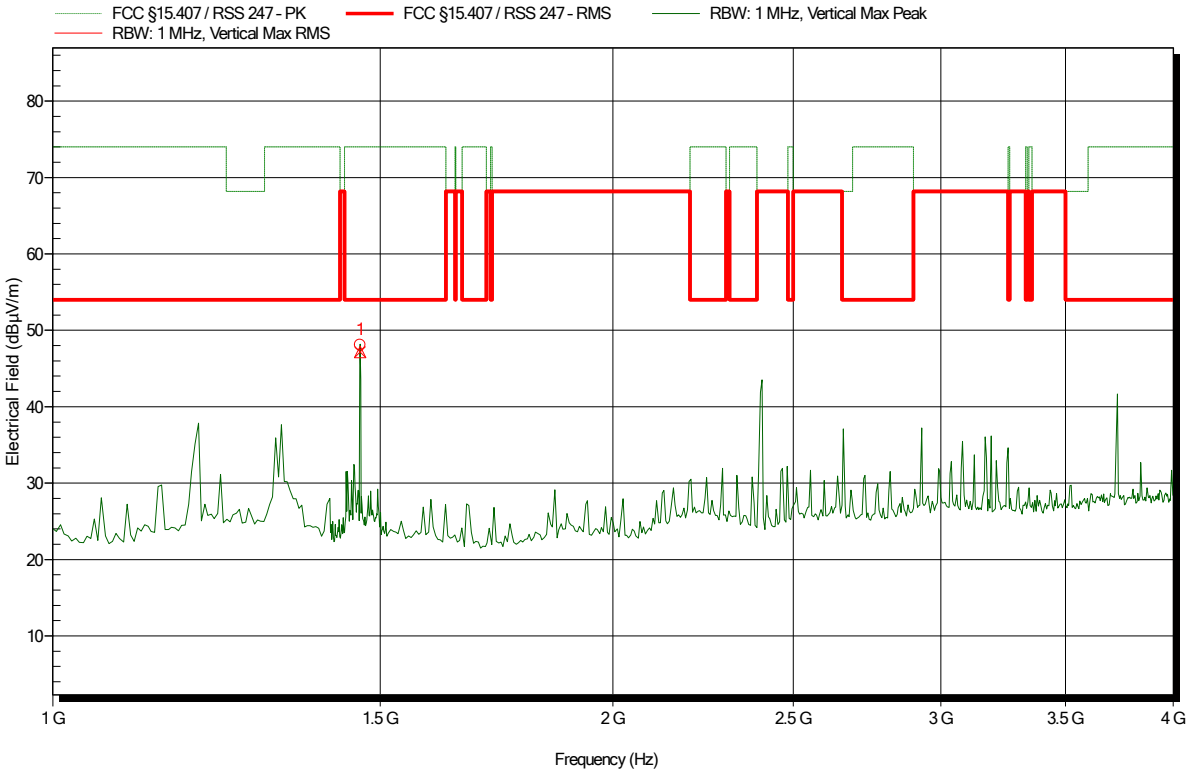

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	48.08 dBµV/m	74 dBµV/m	-25.92 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	47.15 dBµV/m	54 dBµV/m	-6.85 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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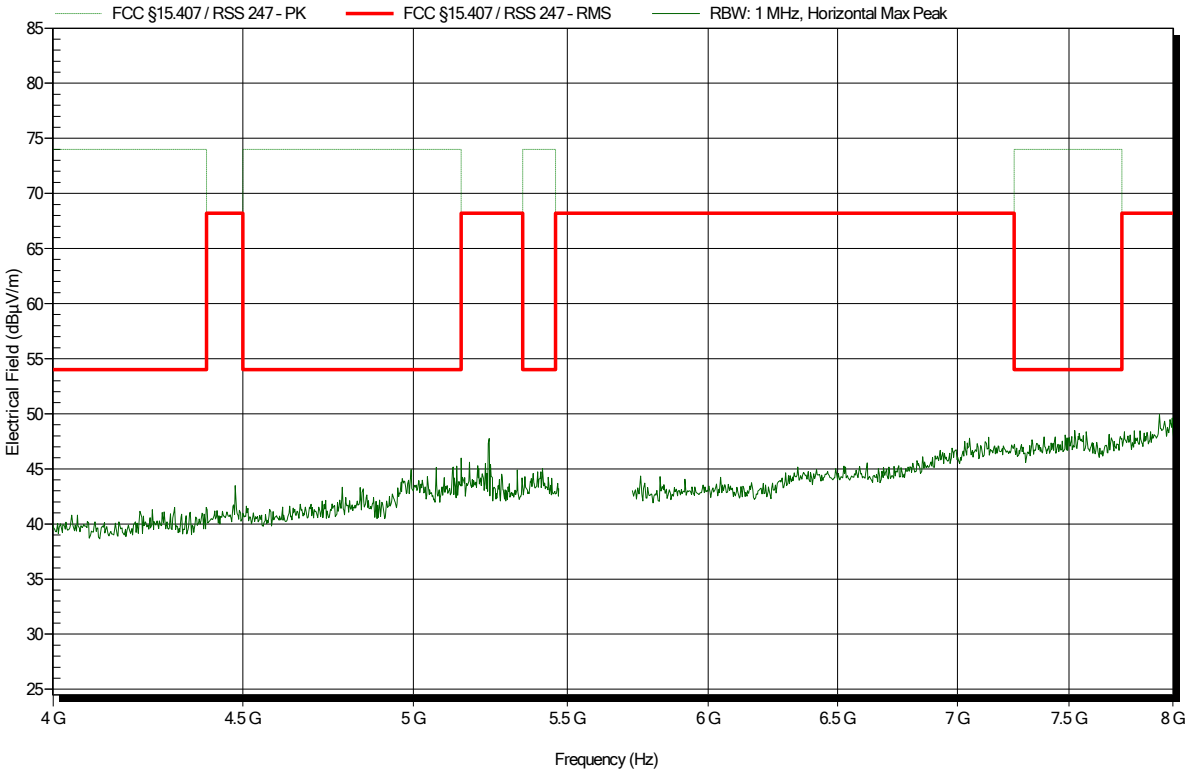

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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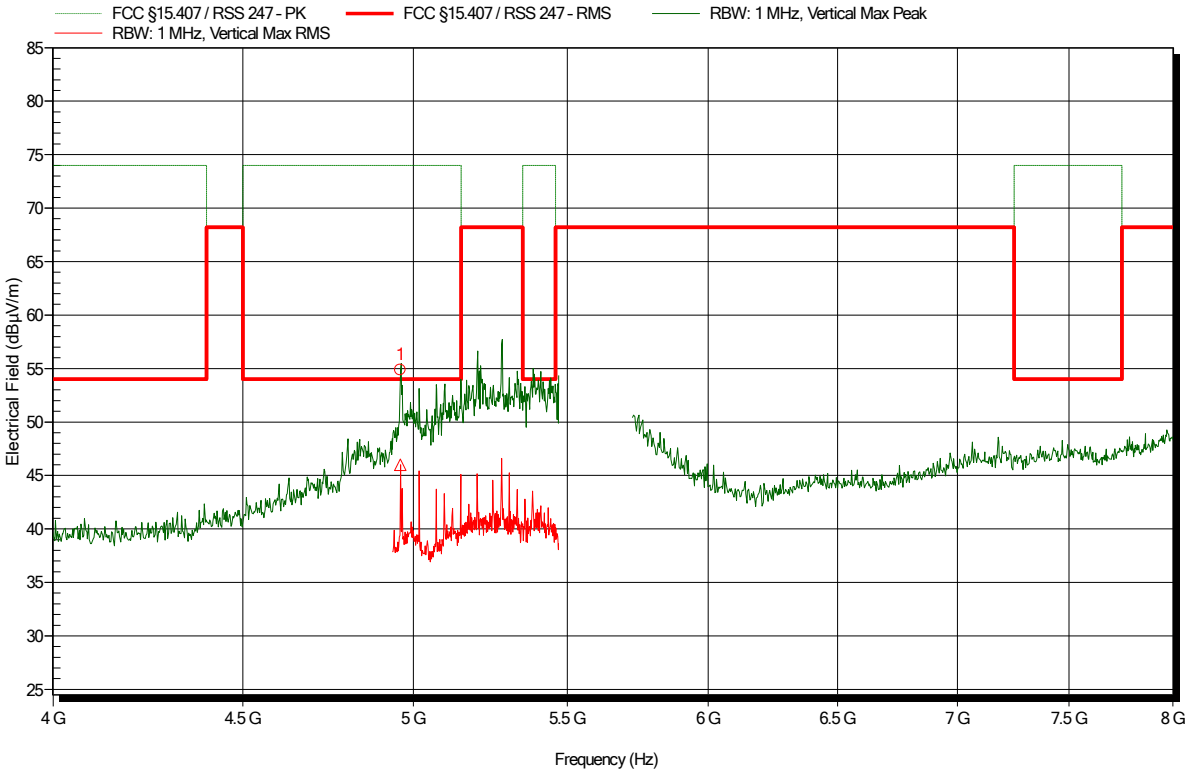

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.96 GHz	54.87 dBµV/m	74 dBµV/m	-19.13 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.96 GHz	46 dBµV/m	54 dBµV/m	-8 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	lower band area

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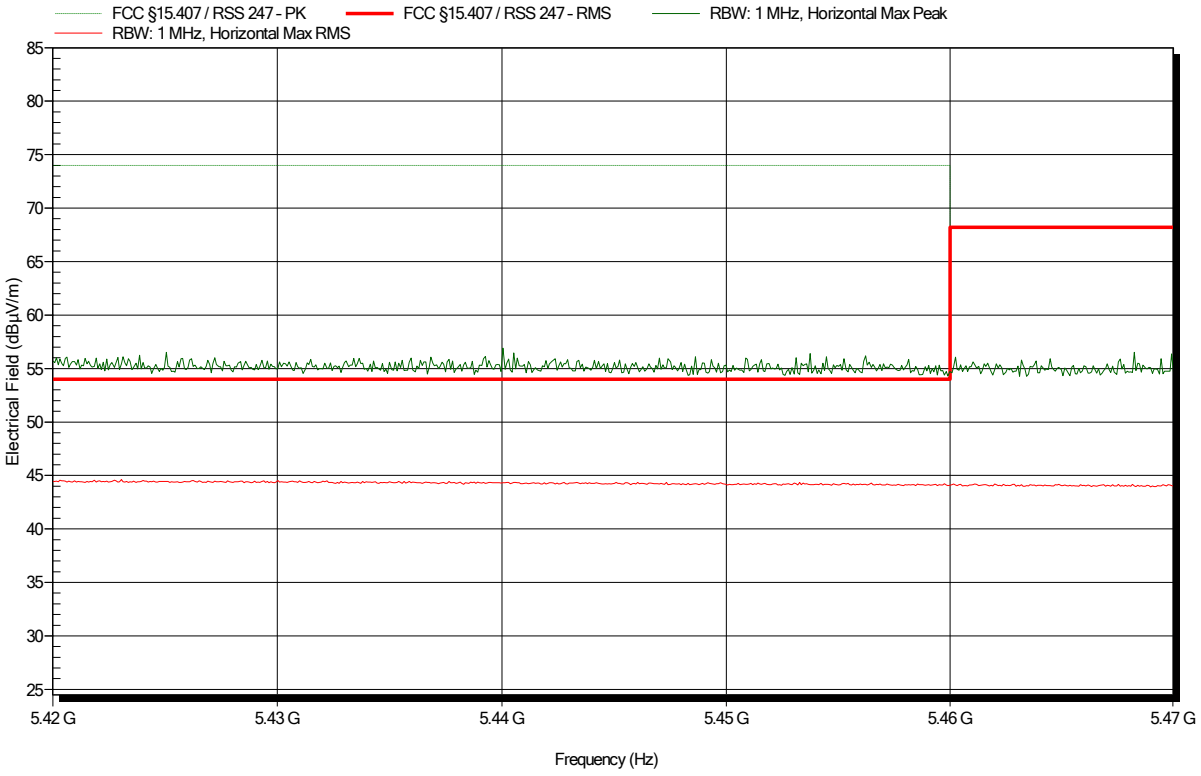

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	lower band area

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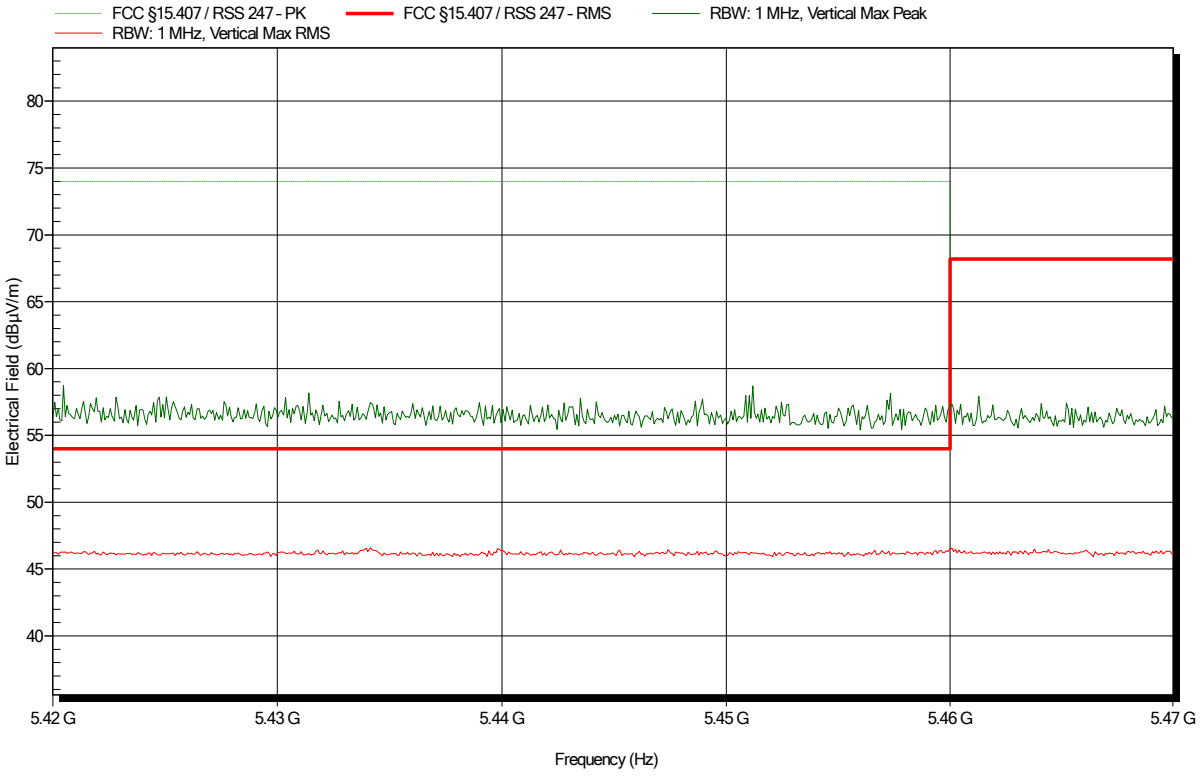

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	upper band area

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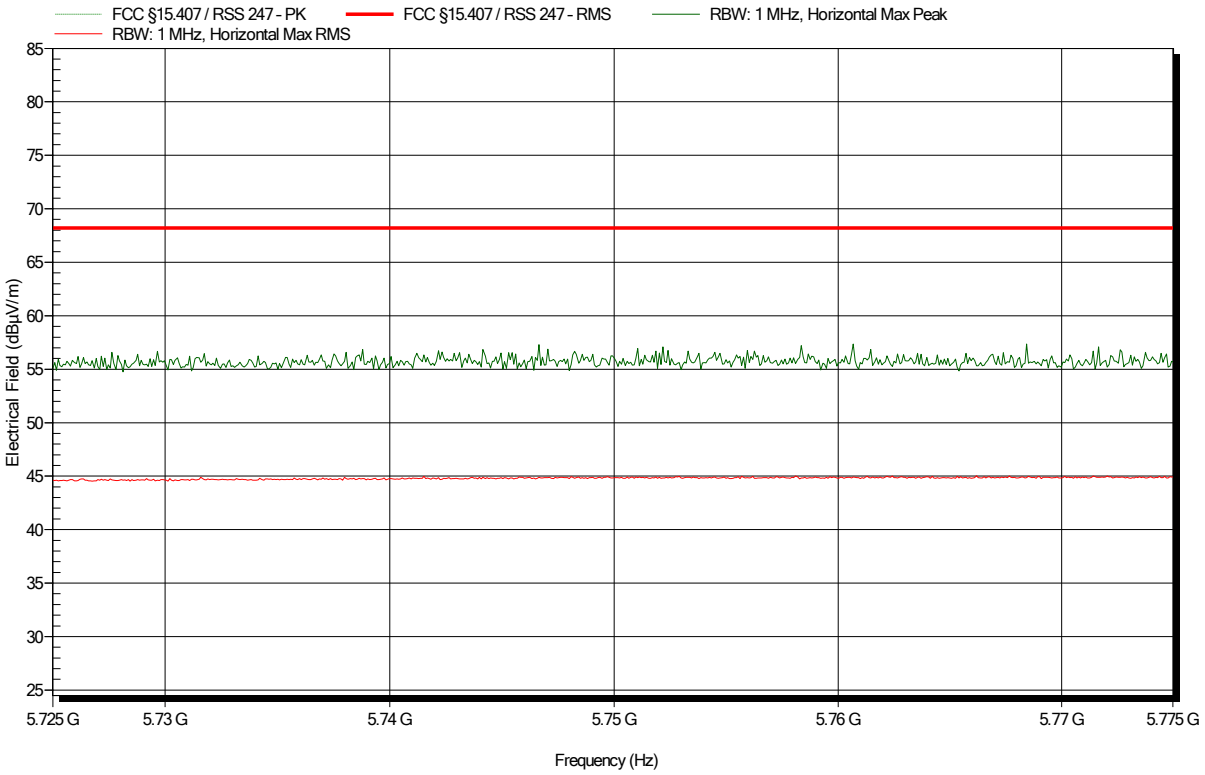

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	upper band area

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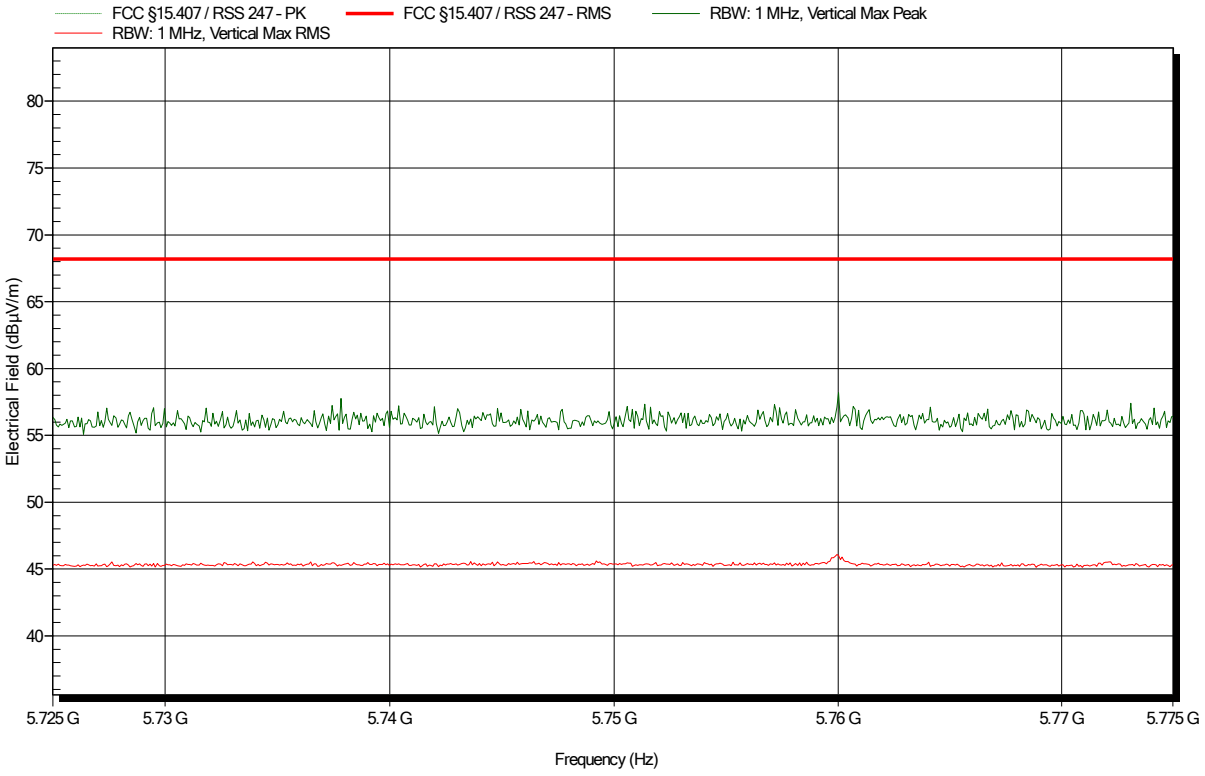

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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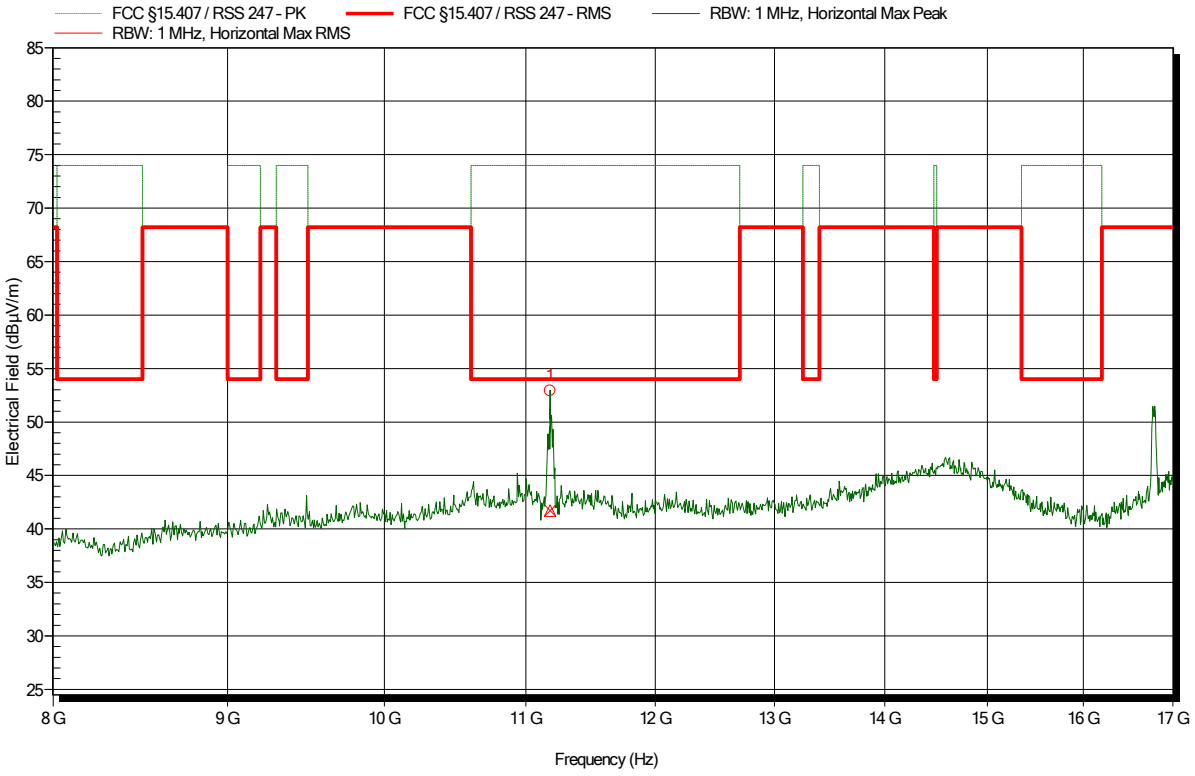

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
11.179 GHz	52.92 dBµV/m	74 dBµV/m	-21.08 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
11.179 GHz	41.7 dBµV/m	54 dBµV/m	-12.3 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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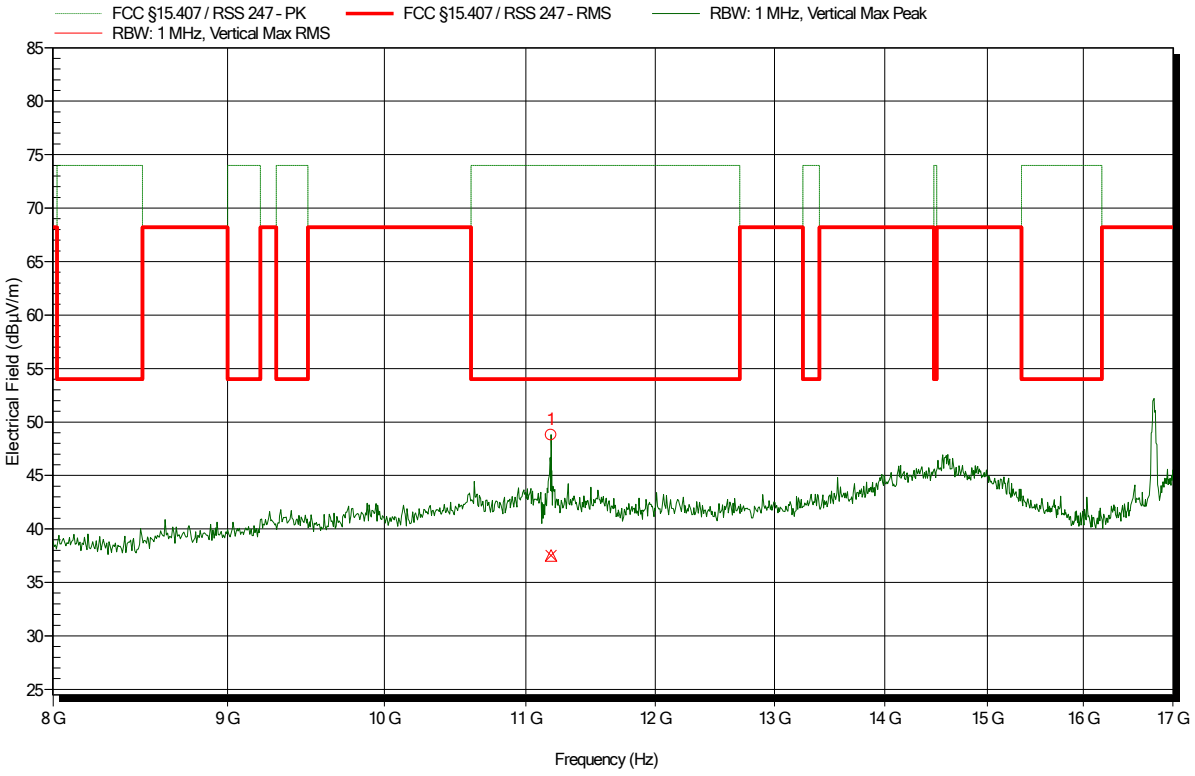

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
11.187 GHz	48.79 dBµV/m	74 dBµV/m	-25.21 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
11.187 GHz	37.53 dBµV/m	54 dBµV/m	-16.47 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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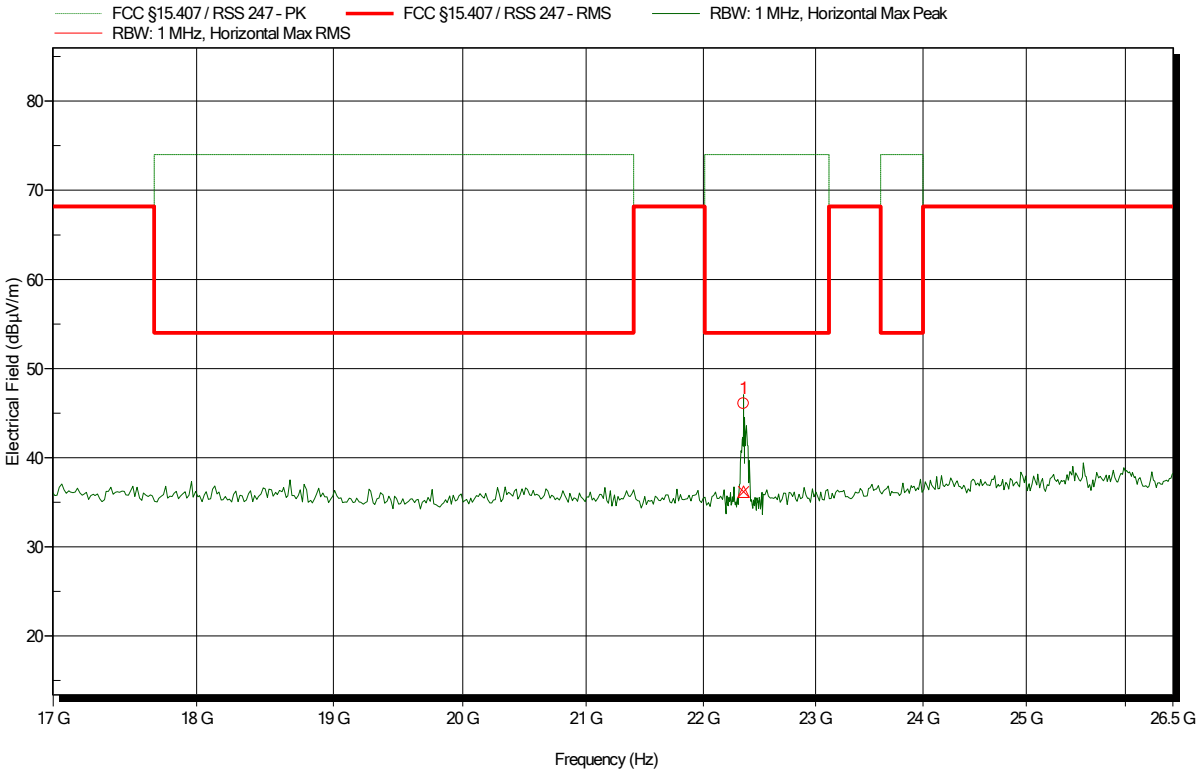

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
22.353 GHz	46.07 dBµV/m	74 dBµV/m	-27.93 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
22.353 GHz	36.16 dBµV/m	54 dBµV/m	-17.84 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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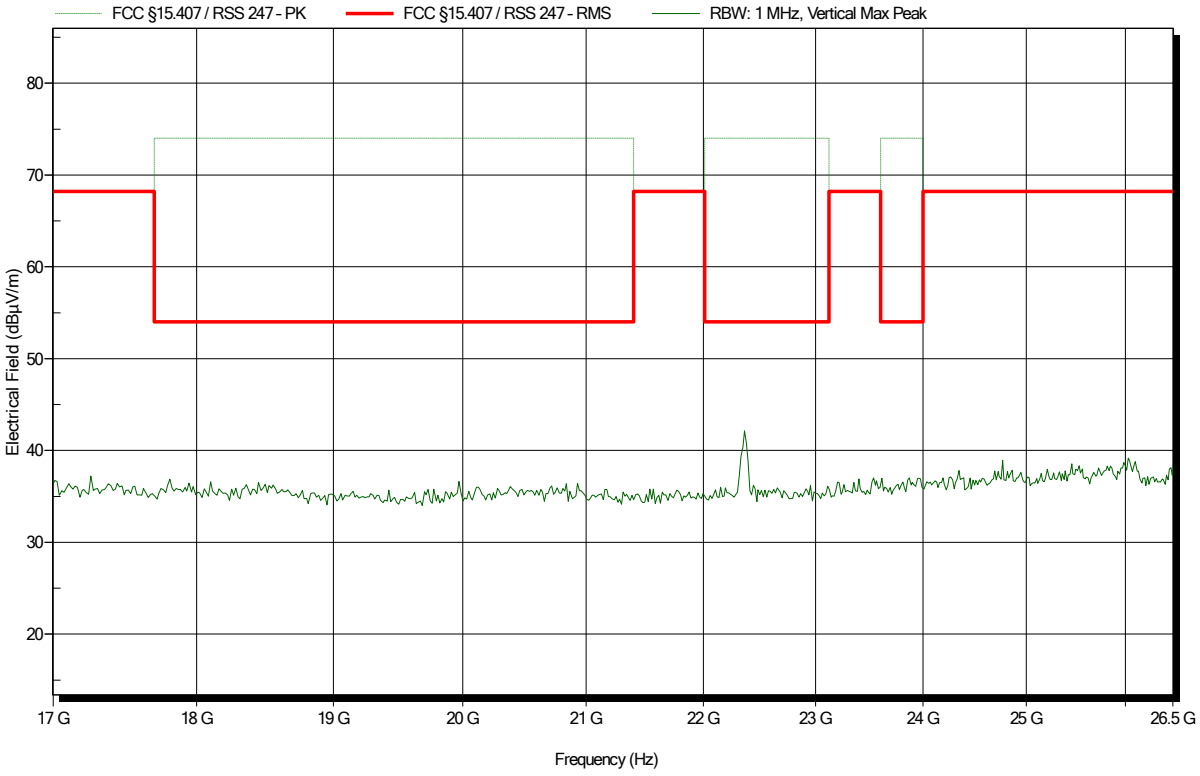

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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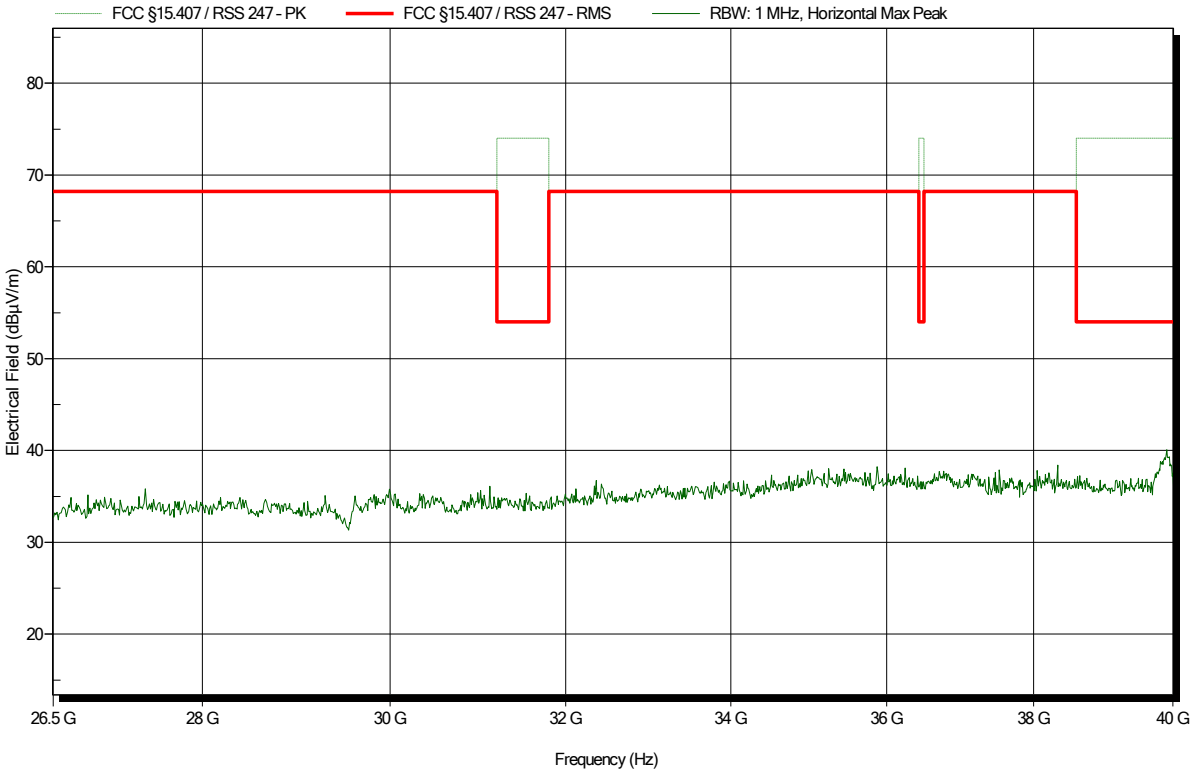

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
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Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11n 40MHz; 5590 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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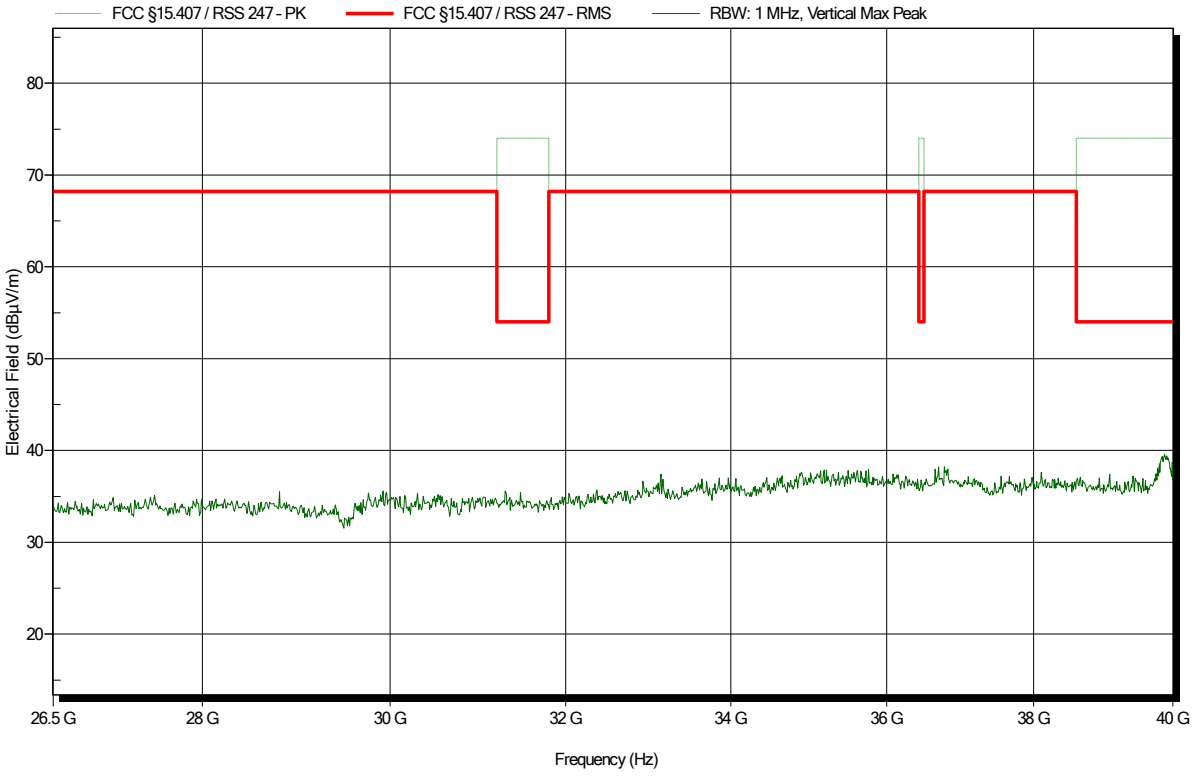

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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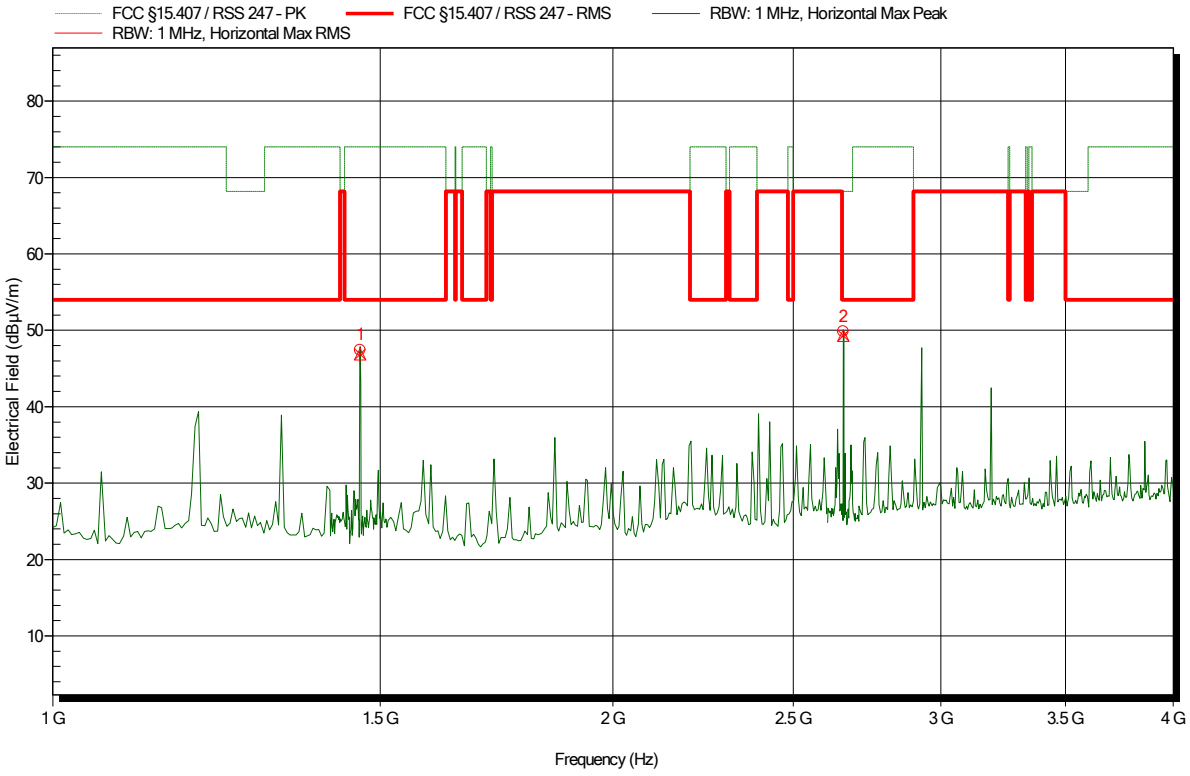

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	47.42 dBµV/m	74 dBµV/m	-26.58 dB	Pass
2.66 GHz	49.87 dBµV/m	68.2 dBµV/m	-18.33 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	46.87 dBµV/m	54 dBµV/m	-7.13 dB	Pass
2.66 GHz	49.32 dBµV/m	54 dBµV/m	-4.68 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
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Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
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Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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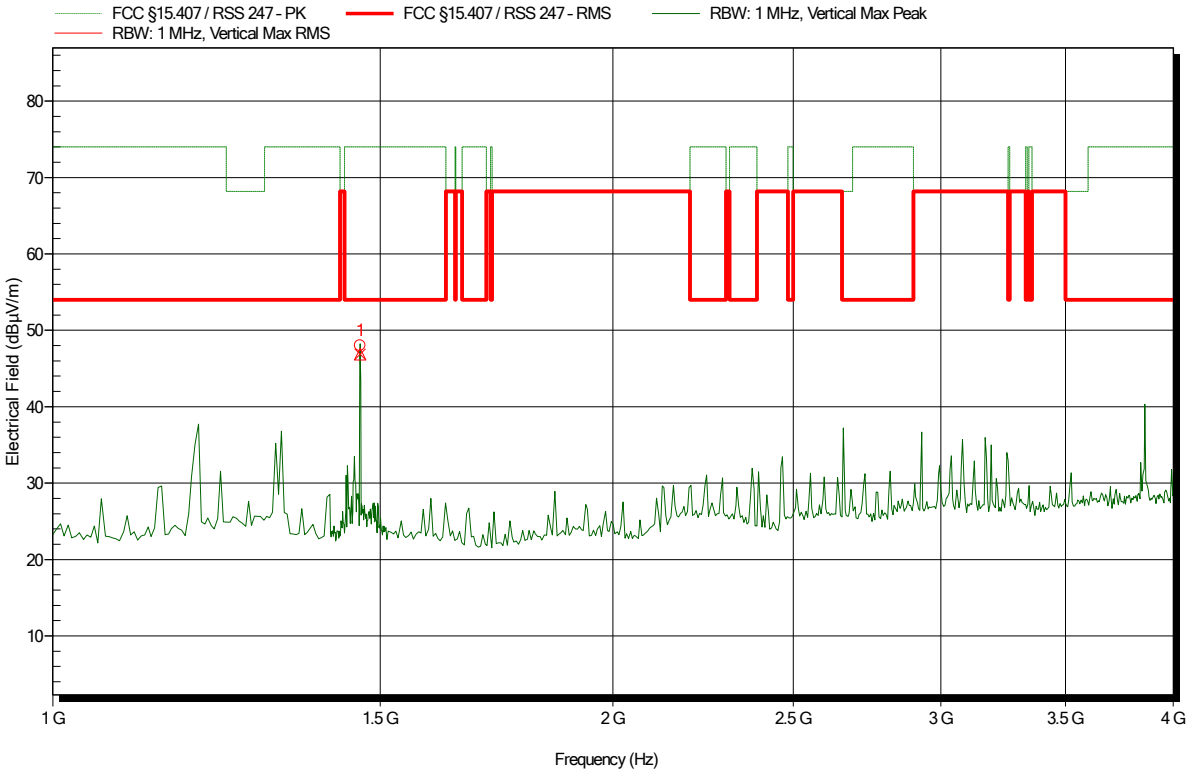

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.463 GHz	48 dBµV/m	74 dBµV/m	-26 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.463 GHz	46.86 dBµV/m	54 dBµV/m	-7.14 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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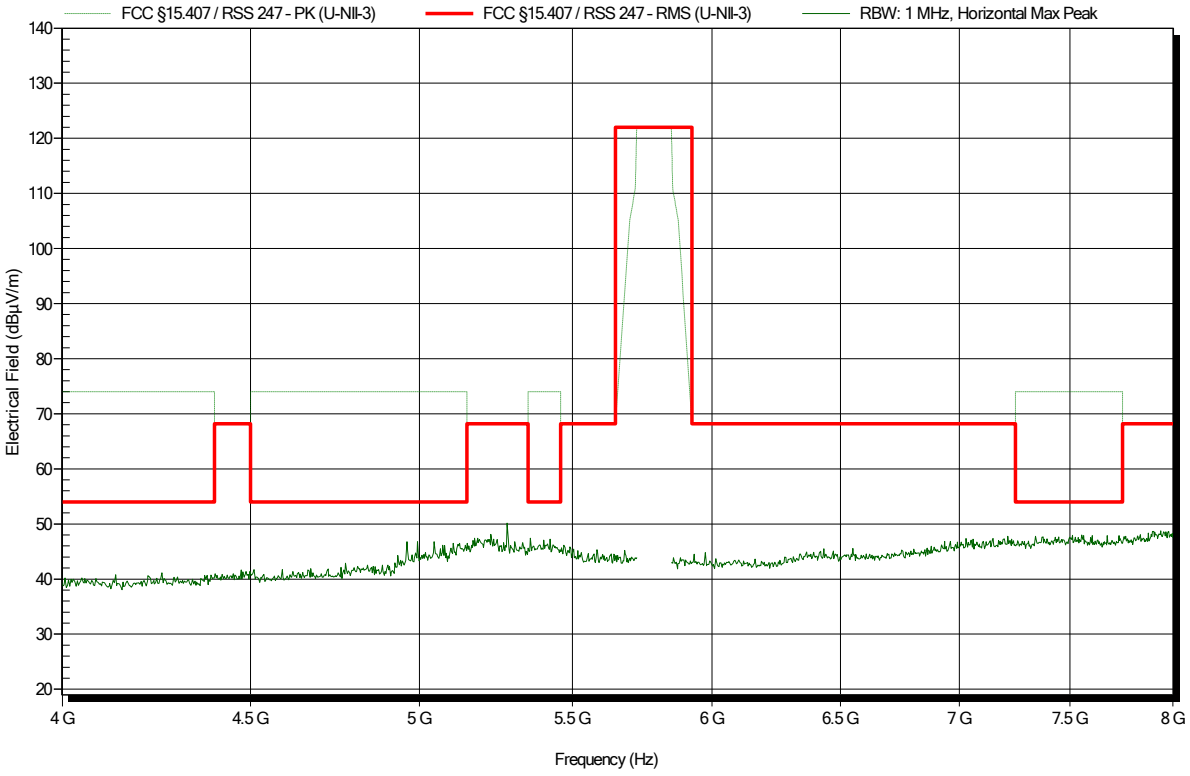

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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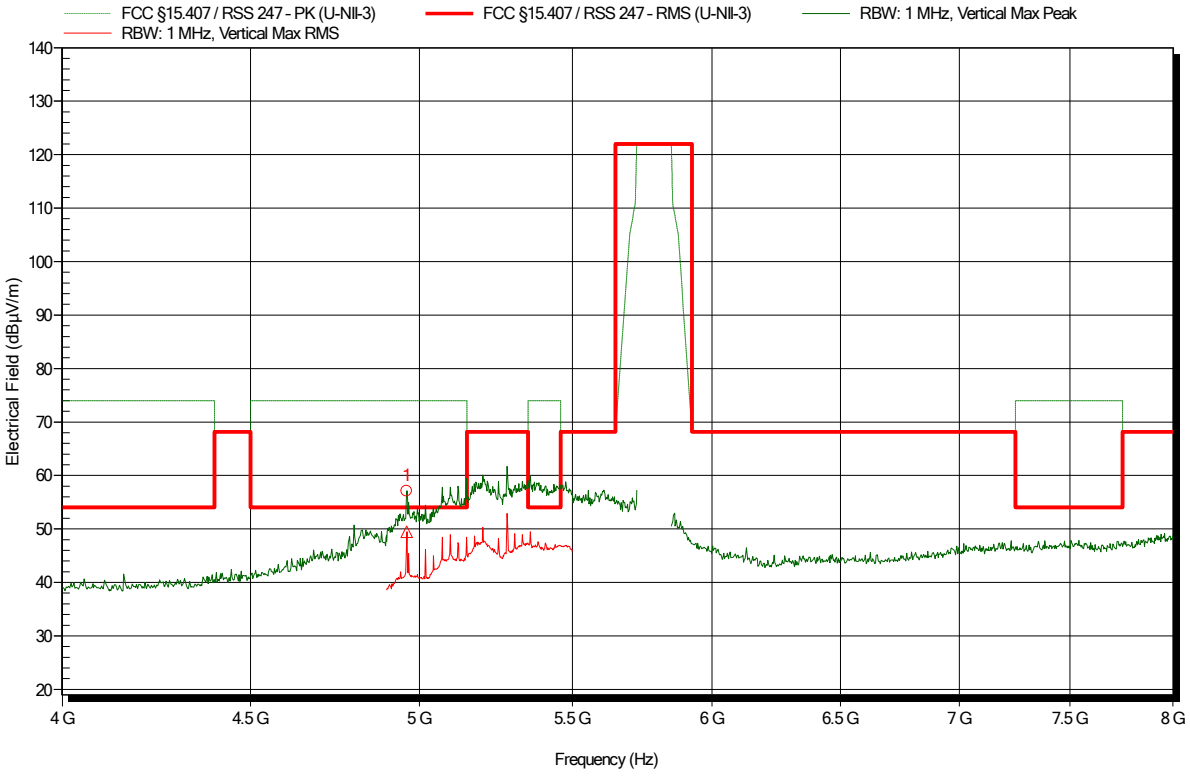

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.96 GHz	57.07 dBµV/m	74 dBµV/m	-16.93 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.96 GHz	49.46 dBµV/m	54 dBµV/m	-4.54 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	lower band area

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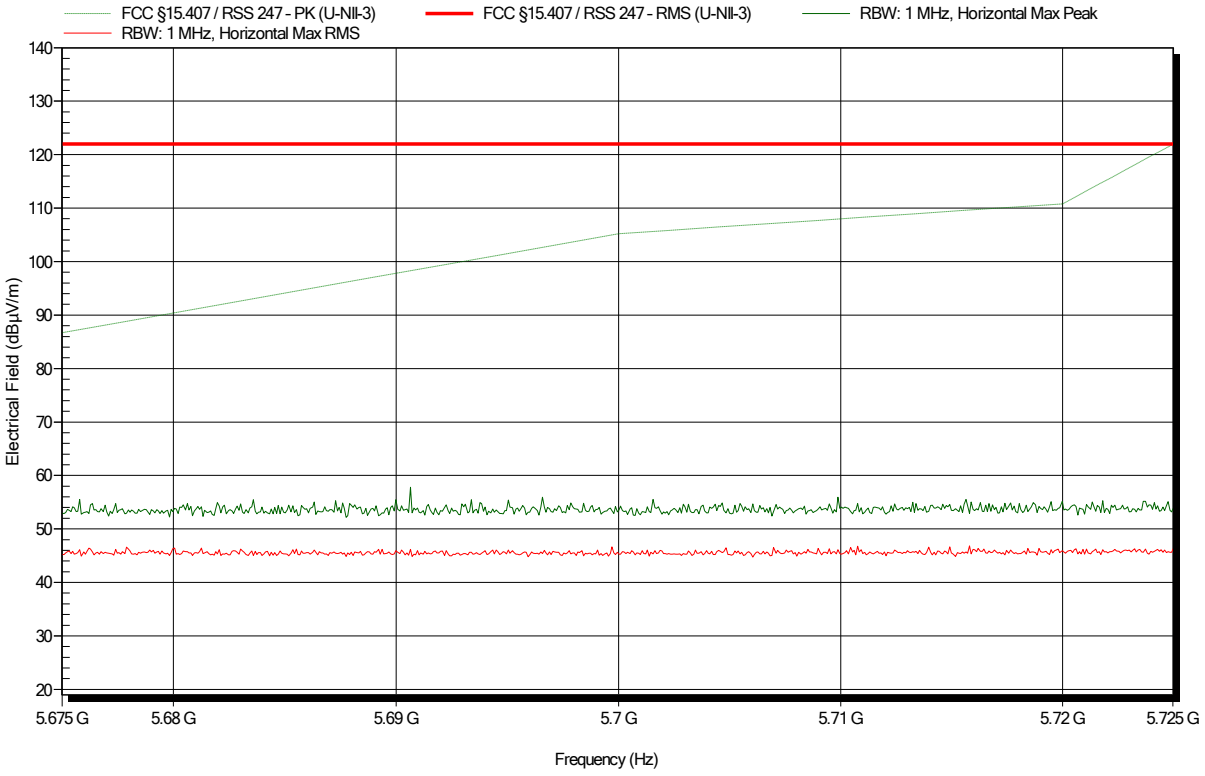

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	lower band area

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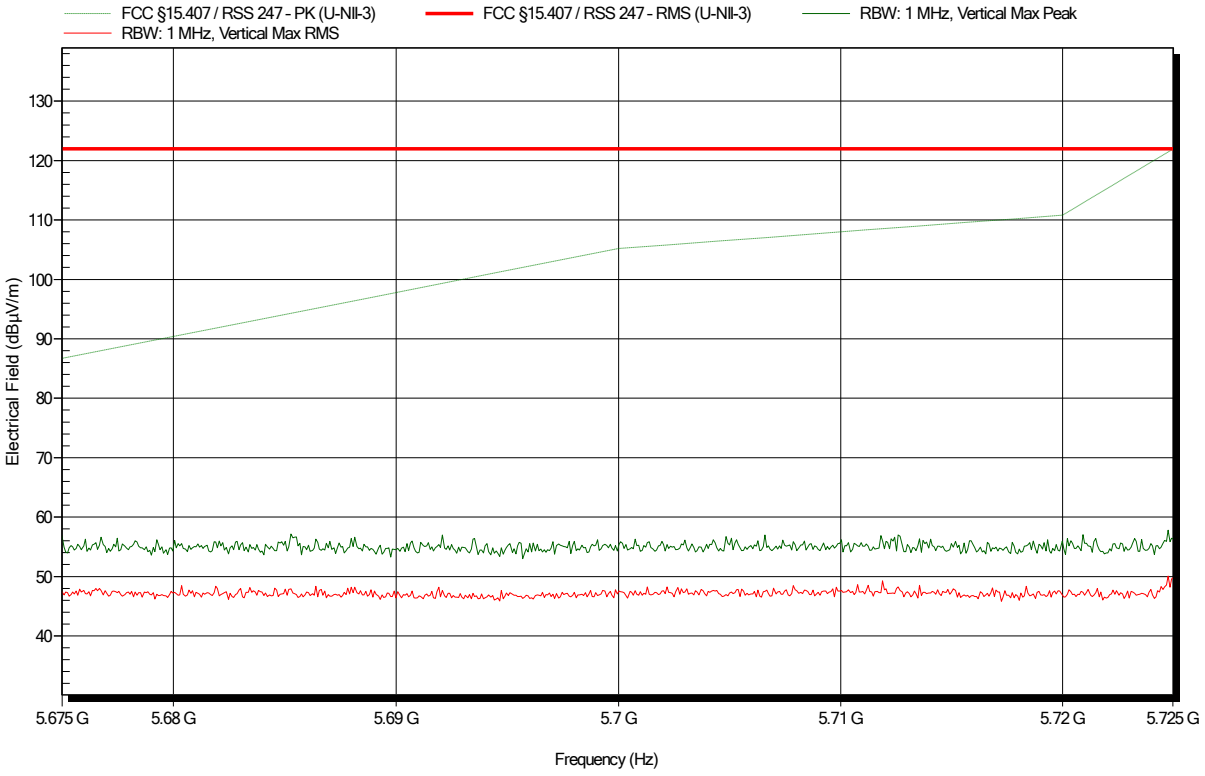

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	upper band area

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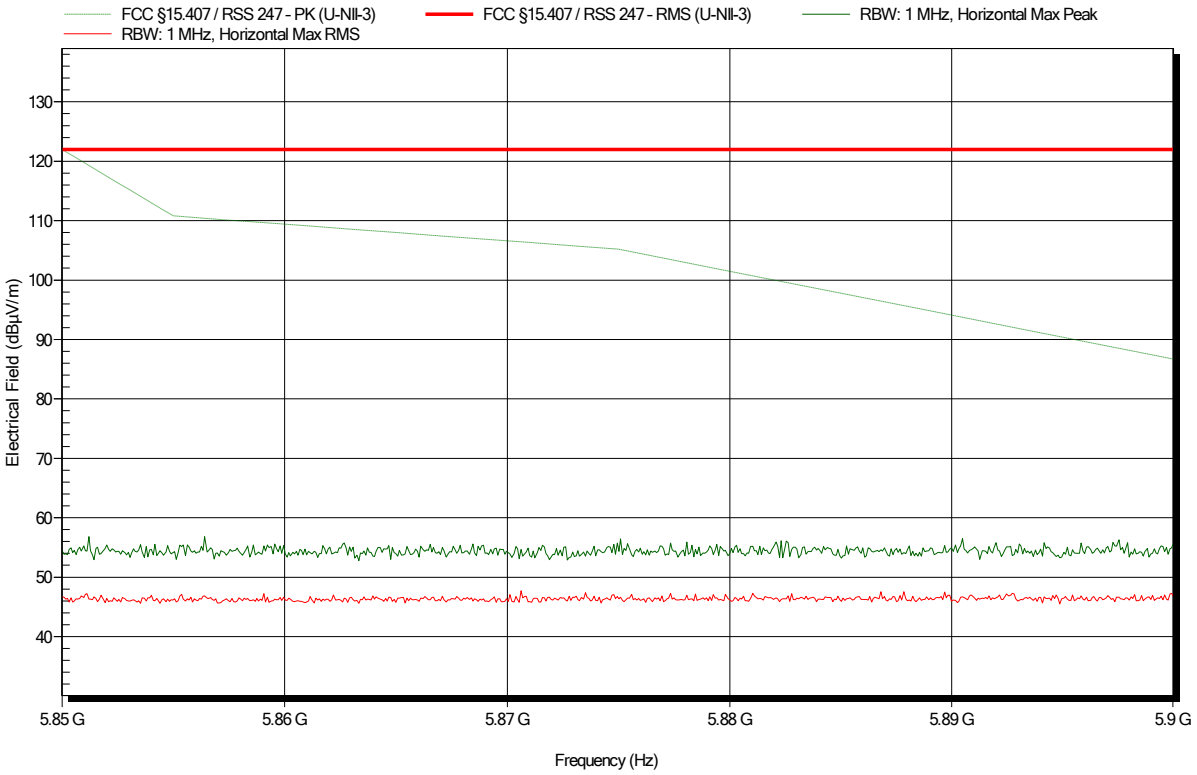

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	upper band area

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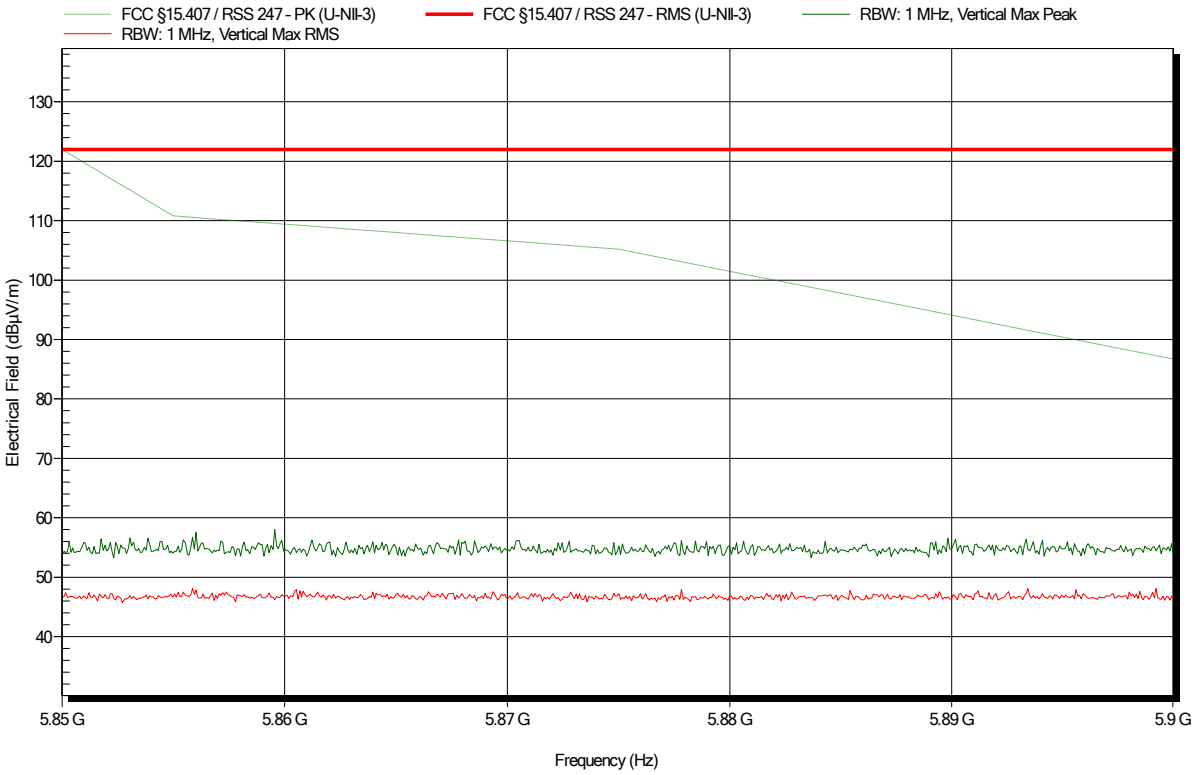

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
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EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
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Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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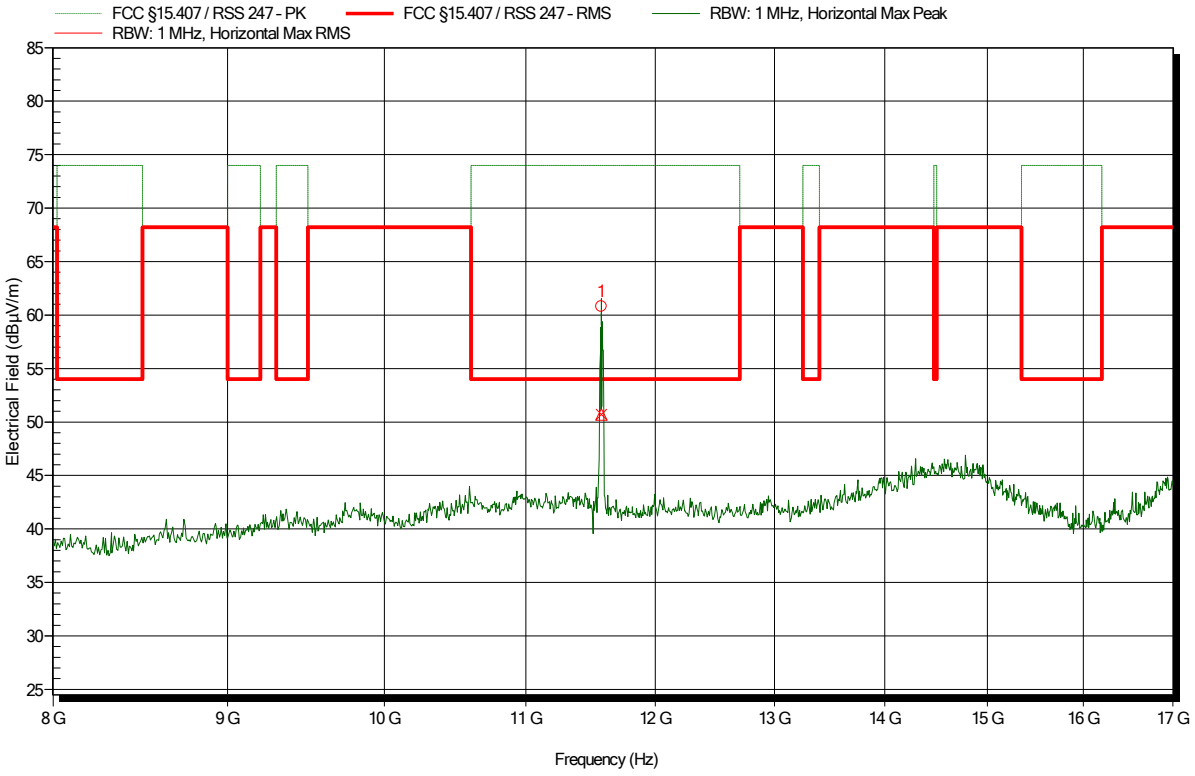

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
11.572 GHz	60.8 dBµV/m	74 dBµV/m	-13.2 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
11.572 GHz	50.71 dBµV/m	54 dBµV/m	-3.29 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-01
Note:	

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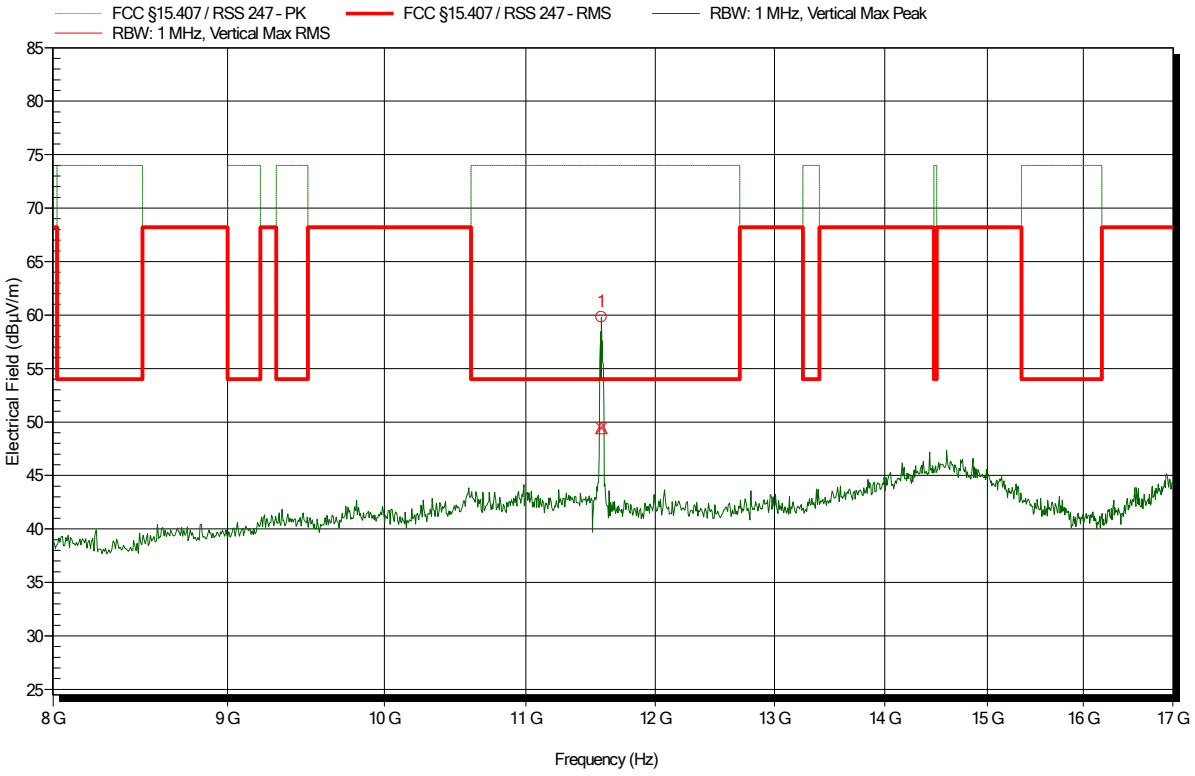

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
11.572 GHz	59.83 dBµV/m	74 dBµV/m	-14.17 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
11.572 GHz	49.44 dBµV/m	54 dBµV/m	-4.56 dB	Pass

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
Applicant:	Laird Connectivity
EUT Name:	915MHz LoRaWAN Gateway incl Wi-Fi, Ethernet & LTE - Indoor and IP67 variants
Model:	RG191+LTE Series
Test Site:	Eurofins Product Service Germany
Operator:	Toralf Jahn
Test Conditions:	Tnom: 25°C, Vnom: 12 VDC via AC/DC-Adaptor
Antenna:	Amplifier Research AT4560, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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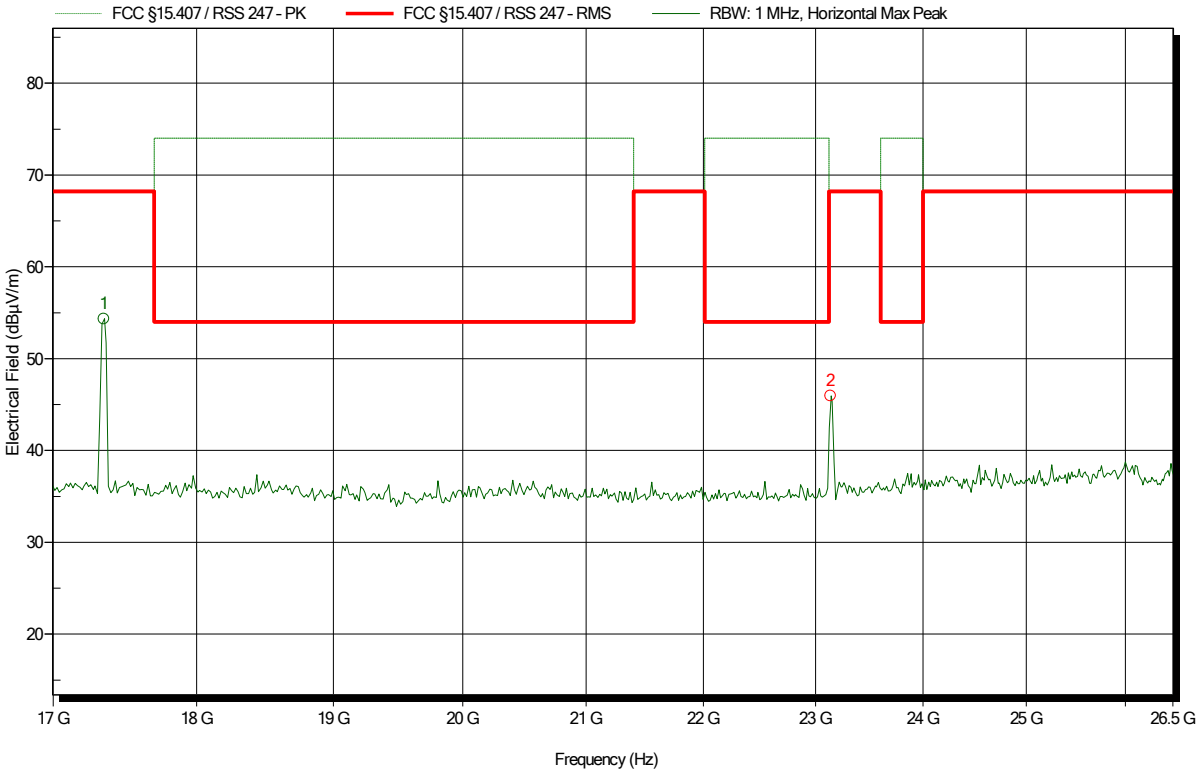

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
17.35 GHz	54.34 dBµV/m	68.2 dBµV/m	-13.86 dB	Pass
23.135 GHz	45.94 dBµV/m	68.2 dBµV/m	-22.26 dB	Pass

Frequency
17.35 GHz
23.135 GHz

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
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Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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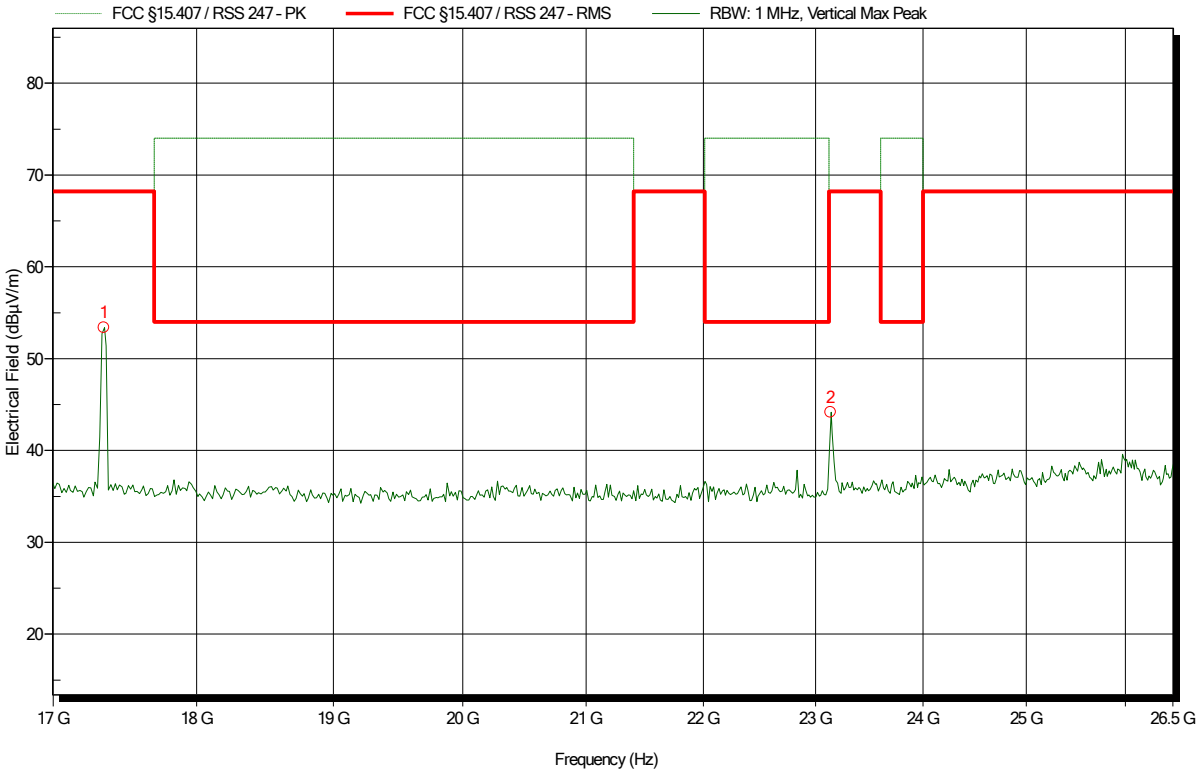

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
17.35 GHz	53.38 dBµV/m	68.2 dBµV/m	-14.82 dB	Pass
23.135 GHz	44.17 dBµV/m	68.2 dBµV/m	-24.03 dB	Pass

Frequency
17.35 GHz
23.135 GHz

Frequency
17.35 GHz
23.135 GHz

Spurious emissions according to FCC 15.407

Project number:	G0M-2002-8805
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Antenna:	Flann Microwave Ltd 22240-25+CBL26402075, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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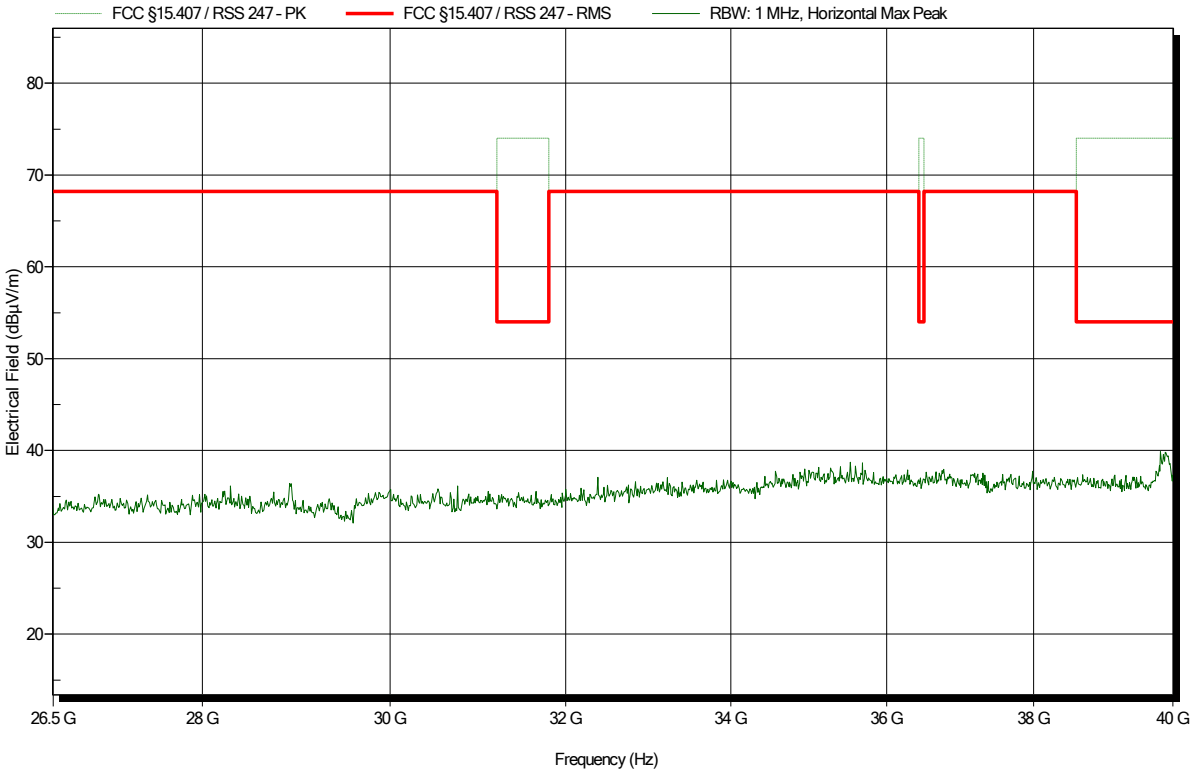

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Project number:	G0M-2002-8805
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Measurement distance:	1 m converted to 3m
Mode:	TX; 802.11a; 5785 MHz, Sample 29796
Test Date:	2020-07-02
Note:	

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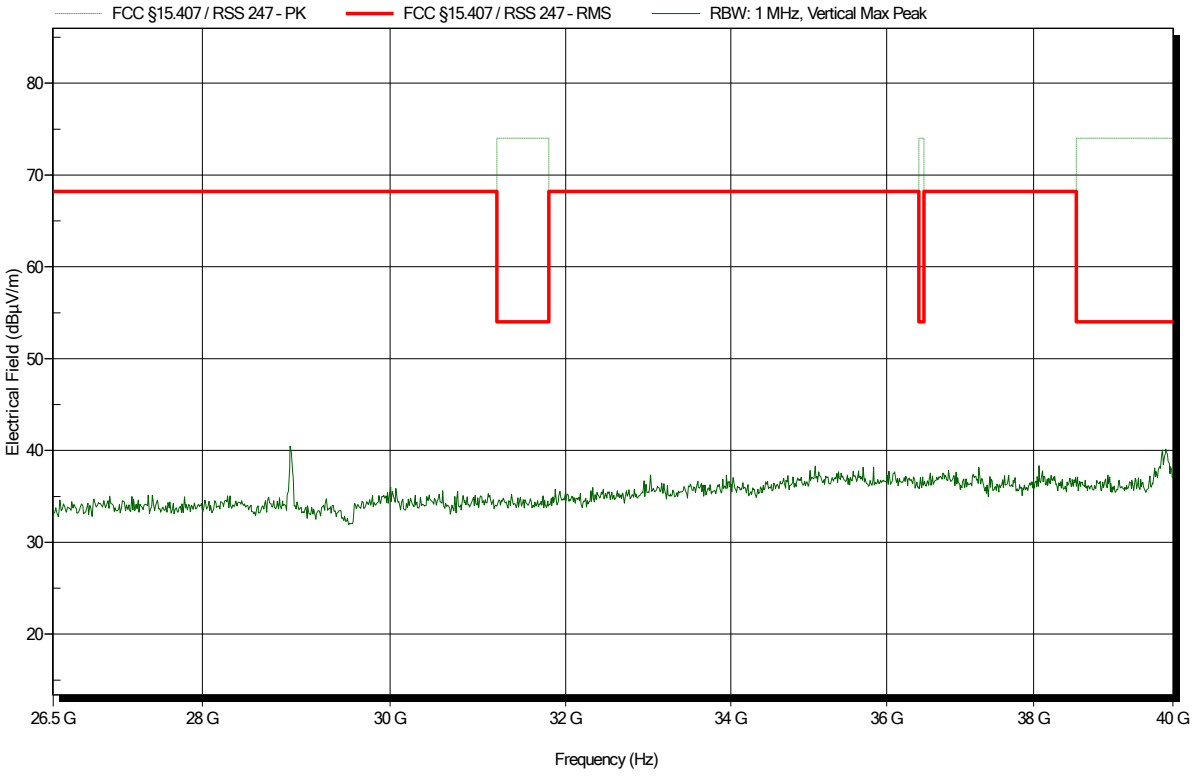

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