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RADIO REPORT FCC 47 CFR Part 15C ISED Canada RSS-247 Digital transmission systems operating within the 2400 – 2483.5 MHz band	
Report Reference No	G0M-1801-7167-TFC247BL-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Test Firm Designation Number: DE0008 IC Testing Laboratory site: 3470A-3
Applicant	Leica Geosystems AG
Address	Heinrich Wild Strasse 9435 Heerbrugg SWITZERLAND
Test Specification	According to FCC/ISED rules
Standard	47 CFR Part 15C RSS-247, Issue 2, 2017-02
Non-Standard Test Method	None
Test Scope	partial compliance test
Equipment under Test (EUT):	
Product Description	Laser Distance Meter
Model(s)	Leica BLK3D
Additional Model(s)	None
Brand Name(s)	Leica Geosystems AG
Hardware Version(s)	V02
Software Version(s)	Android Version 7.1.2, API 25, Kernel Version 3.18.31, BSP Version 3.5
FCC-ID	RFF-IIS01
IC	3177A-IIS01
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	2018-02-16	
Report:		
Compiled by	Abdullah Al Jamal	
Tested by (+ signature) (Responsible for Test)	Abdullah Al Jamal / Wilfried Treffke	W. Treffke
Approved by (+ signature) (Deputy Head of Lab)	Toralf Jahn	T. J
Date of Issue	2018-04-17	
Total number of pages	76	
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:		
None		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2018-04-17	Initial Release	

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V_{NOM}	Nominal supply voltage

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	Laser Distance Meter	
Model	Leica BLK3D	
Additional Model(s)	None	
Brand Name(s)	Leica Geosystems AG	
Serial Number(s)	Not specified	
Hardware Version(s)	V02	
Software Version(s)	Android Version 7.1.2, API 25, Kernel Version 3.18.31, BSP Version 3.5	
PMN	Leica BLK3D	
HVIN	Leica BLK3D	
FVIN	N/A	
HMN	N/A	
FCC-ID	RFF-IIS01	
IC	3177A-IIS01	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400 - 2483.5 MHz	
Radio technology	Bluetooth LE	
Modulation	GFSK	
Number of antenna ports	1	
Radio Module	Type	Bluetooth radio module
	Model	NFA324A-12H32
	Manufacturer	FOXCONN
	HW Version	V02
	SW Version	BSP 3.5
Antenna	Type	Integrated antenna
	Model	A9703050 Rev 05
	Manufacturer	Sinbon
	Gain	Not specified (no declaration by manufacturer)
Supply Voltage	V_{NOM}	3.8 VDC
Operating Temperature	T_{NOM}	20 °C
AC/DC-Adaptor	Model	AD06D050100E
	Vendor	RRC
	Input	100.0 VAC – 240.0 VAC
	Output	5.0 VDC
Manufacturer	Leica Geosystems AG Heinrich Wild Strasse 9435 Heerbrugg SWITZERLAND	

1.1 Photos – Equipment External

EUT OVERVIEW


EUT TOP VIEW


EUT BOTTOM VIEW

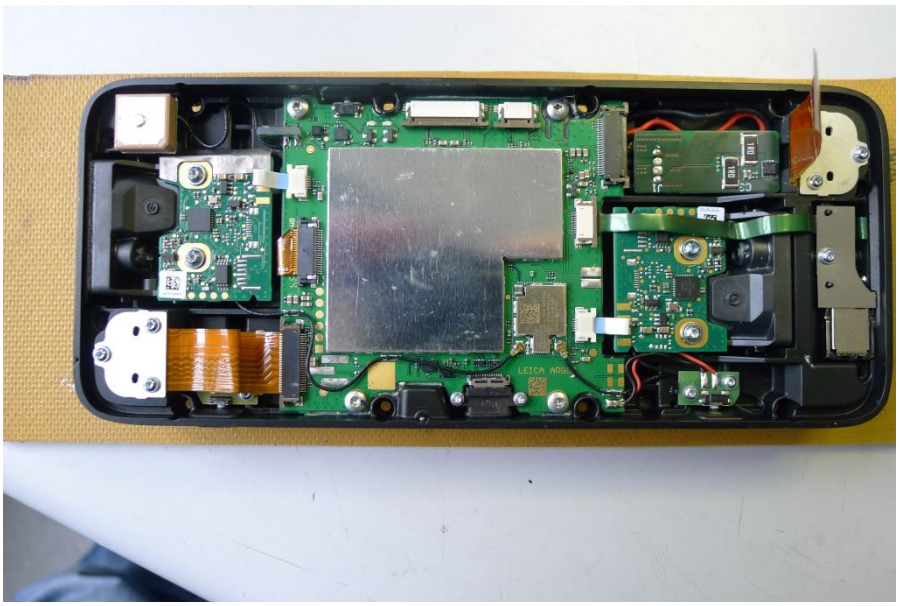
EUT SIDE VIEW (A)

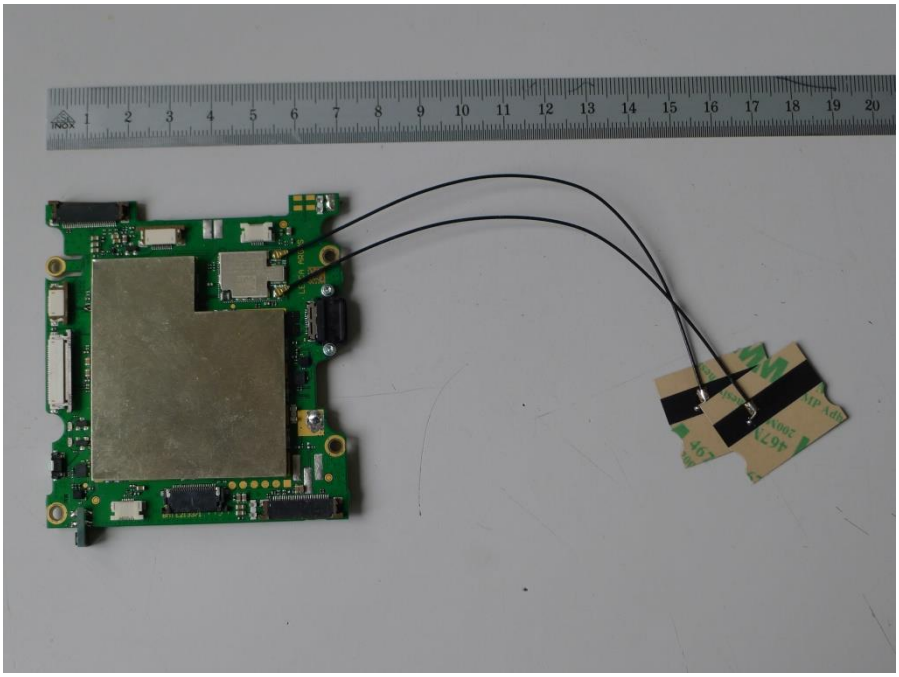
EUT SIDE VIEW (B)

EUT SIDE VIEW (C)

EUT SIDE VIEW (D)


1.2 Photos – Equipment Internal

EUT INTERNAL OVERVIEW


EUT INTERNAL DETAIL (A)


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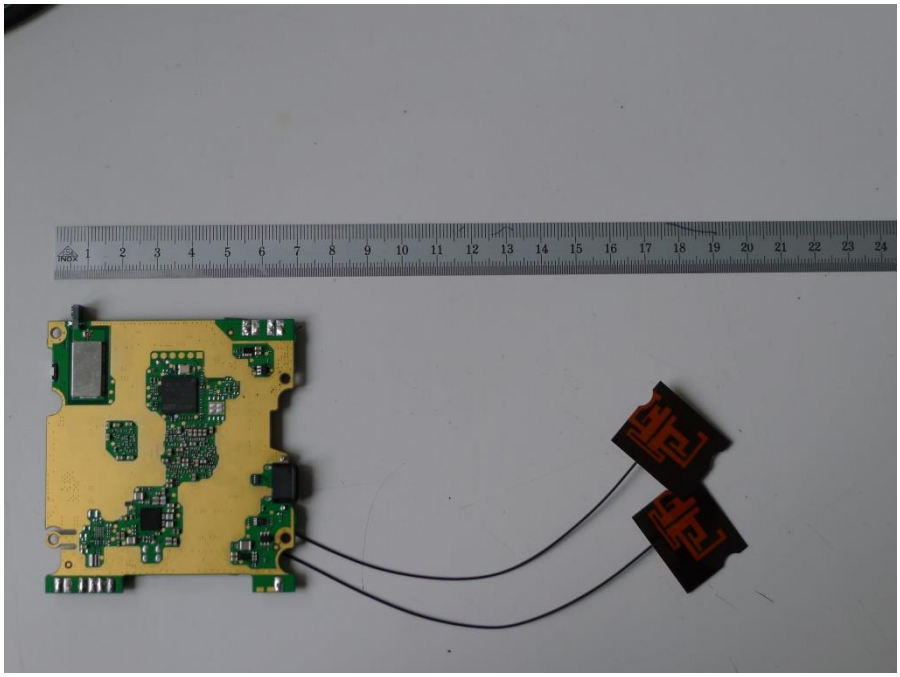
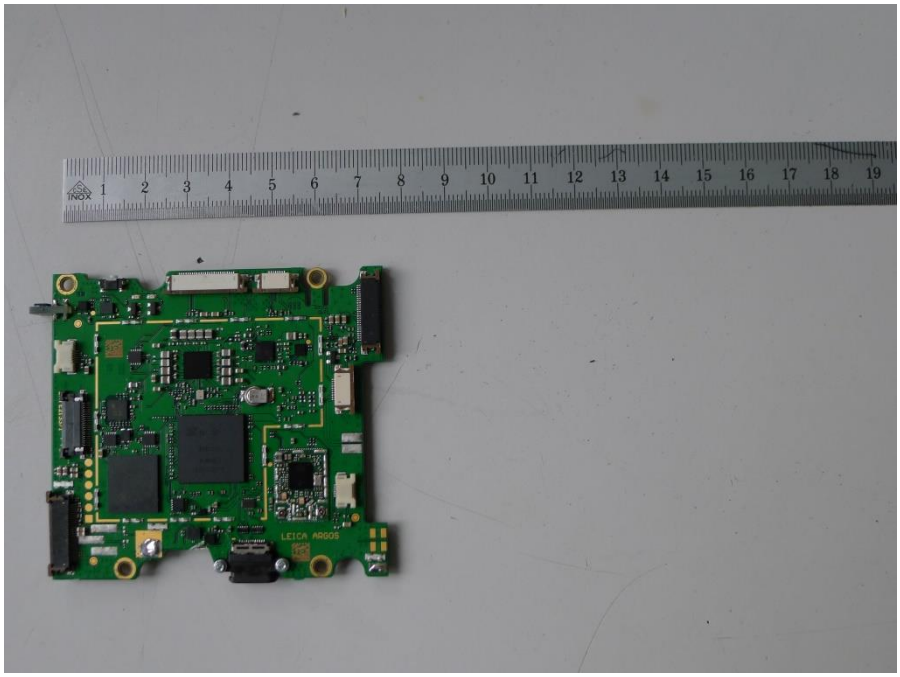
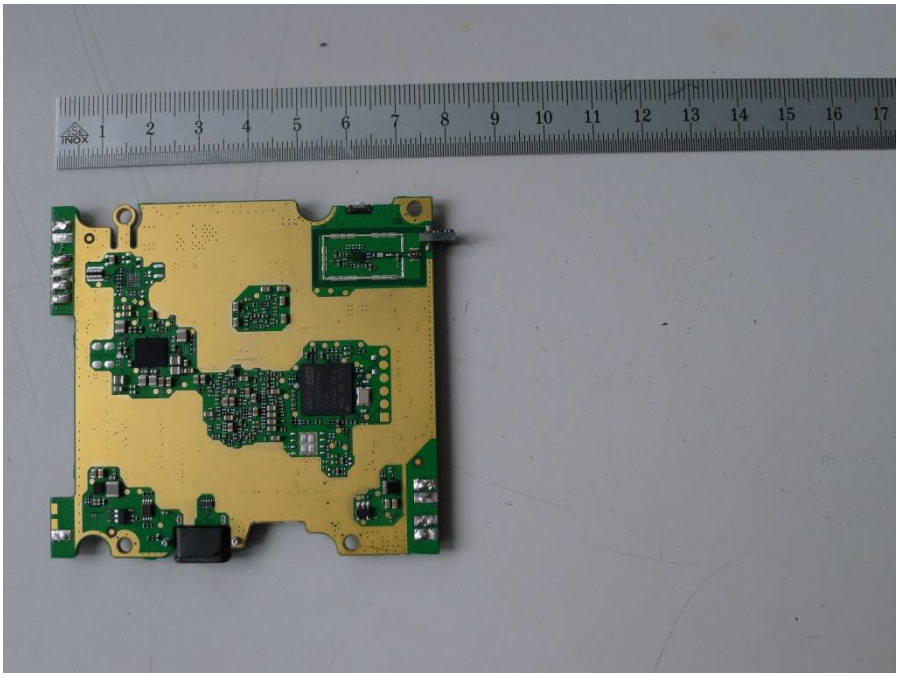


EUT INTERNAL DETAIL (B)



EUT INTERNAL DETAIL (C)



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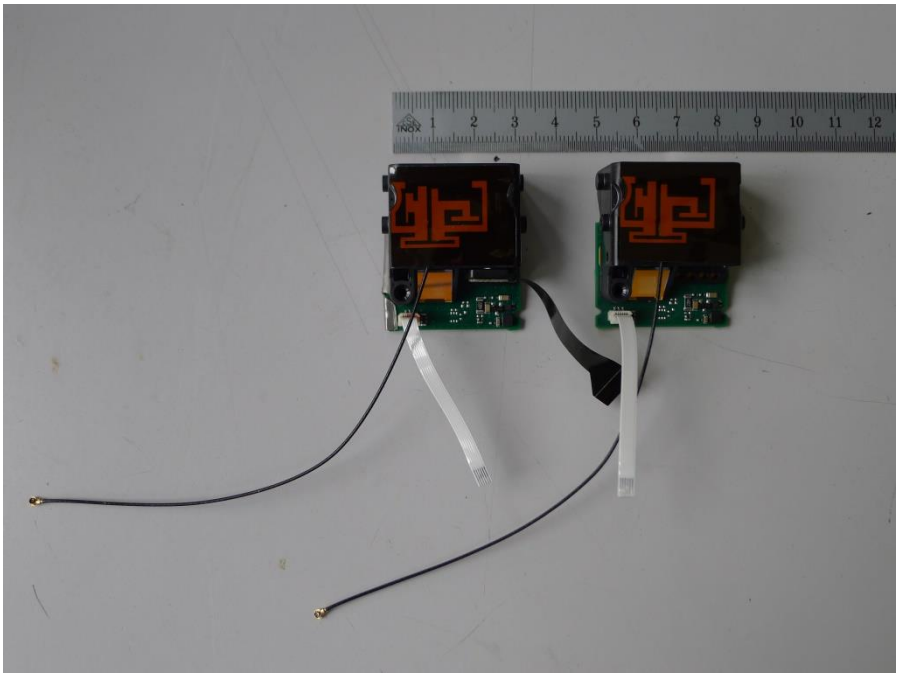

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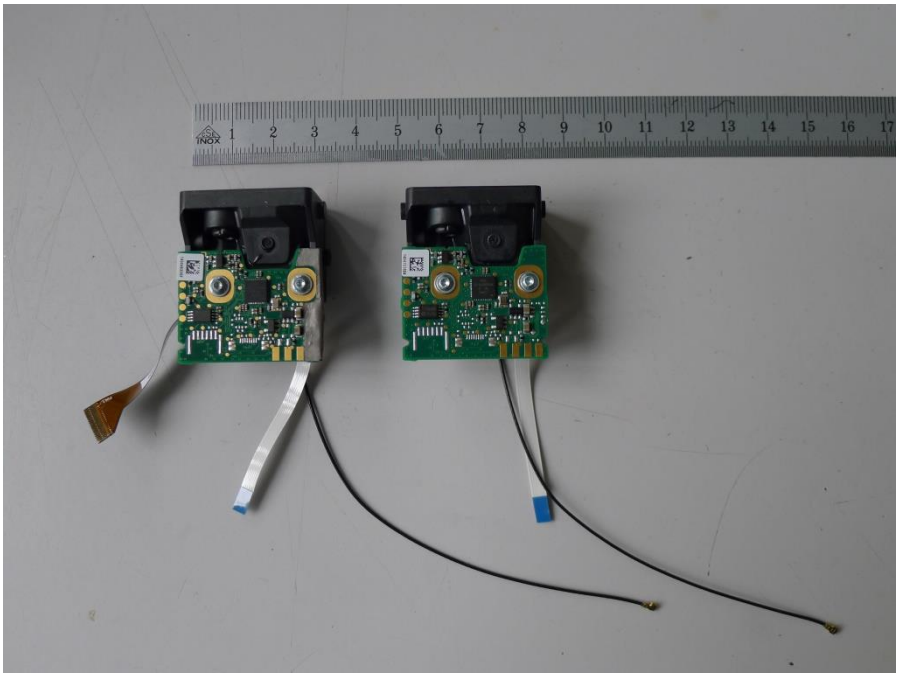
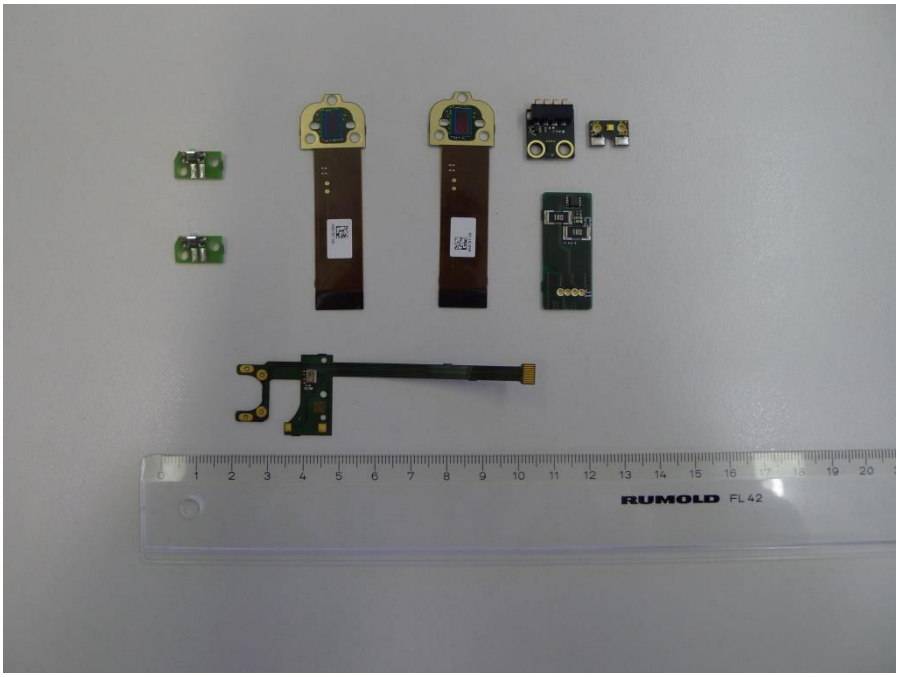
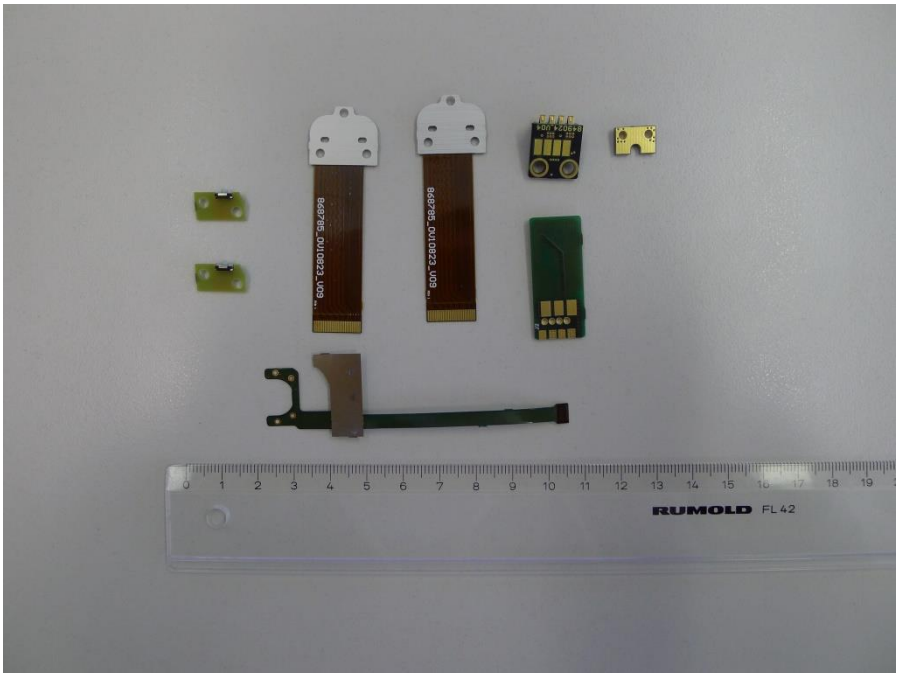
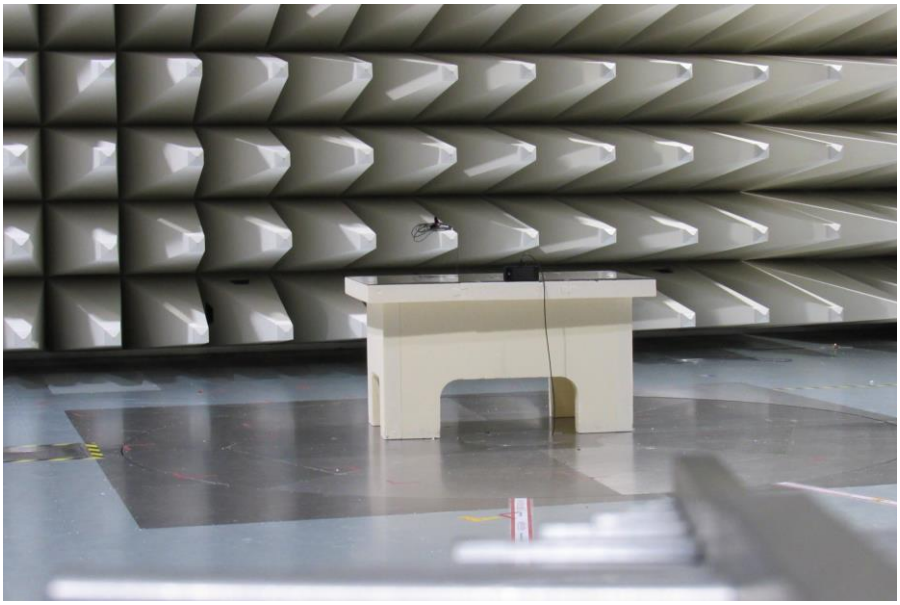


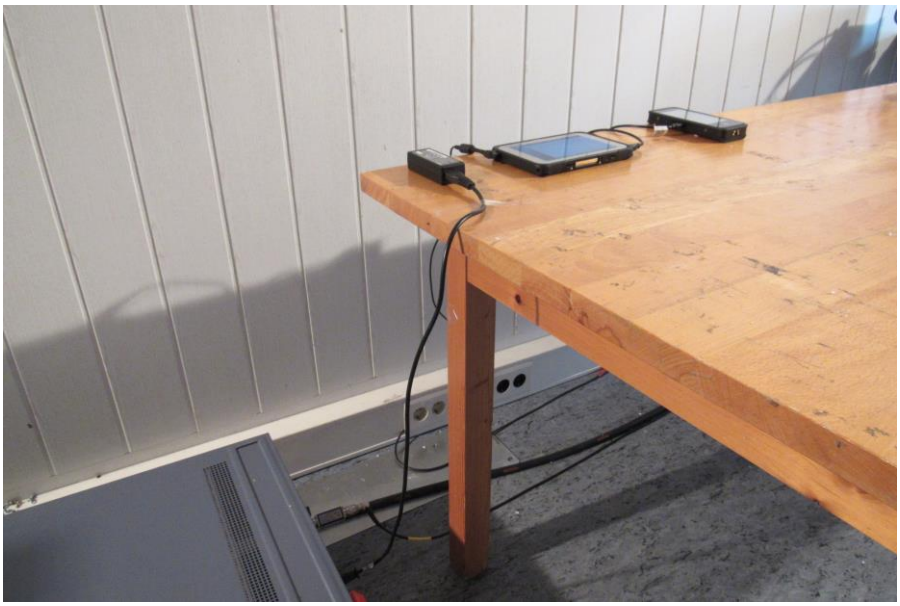
EUT INTERNAL DETAIL (F)



EUT INTERNAL DETAIL (G)


1.3 Photos – Test Setup

TEST SETUP (A)


TEST SETUP (B)


1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE1	Notebook	Lenovo	L430	S/N R9-T6F8A 12/09 (Type 2466-3FG)
AE2	Power Supply AC Adapter 90W 20V	Lenovo	42T4428	None
AE3	Personal Computer (Toughpad)	Panasonic Corporation Osaka, Japan	FZ-M1	Model No.: FZ-M1CCAACED Serial No.: 4LTCA17675
AE4	Power Supply AC Adapter	Panasonic Corporation Osaka, Japan	---- / ----	Model No.: CF-AA6373A M2
Description:				
AE1 – A4	Auxillary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
Comment: None				

1.5 Test Modes

Mode	Description
GFSK	Mode = Transmit Modulation = GFSK Spreading = None Duty cycle = 88%
Receive	Mode = Receive
Comment: None	

1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	0	2402
F2	Tx / Rx	19	2440
F3	Tx / Rx	39	2480

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) = 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 = 47.5 dBµV/m	:	47.5 dBµV/m	- 57.0 dBµV/m	= -9.5 dB

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 6.6	Occupied Bandwidth	ANSI C63.10	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247 § 5.2	6 dB Bandwidth	ANSI C63.10	N/T	
FCC § 15.247(b)(3) ISED RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	N/T	
FCC § 15.247(e) ISED RSS-247 § 5.2	Power spectral density	ANSI C63.10	N/T	
FCC § 15.207 ISED RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.10	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Band edge compliance	ANSI C63.10	N/T	
FCC § 15.247(d) ISED RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	N/T	
FCC § 15.247(d) FCC § 15.209 ISED RSS-GEN § 8.9	Transmitter radiated spurious emissions	ANSI C63.10	PASS	
ISED RSS-247 § 3.1	Receiver radiated spurious emissions	ANSI C63.10	PASS	
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 - Occupied bandwidth

3.1.1 Information

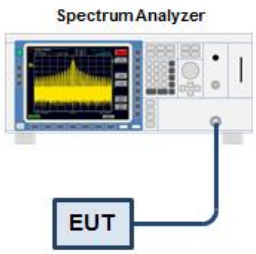
Test Information	
Reference	ISED RSS-Gen 6.6
Measurement Method	ANSI C63.10 6.9.3
Operator	Abdullah Al Jamal
Date	2018-03-02

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup

Test Setup



3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 3	EF00241	2017-07	2019-07

3.1.5 Procedure

Test Procedure

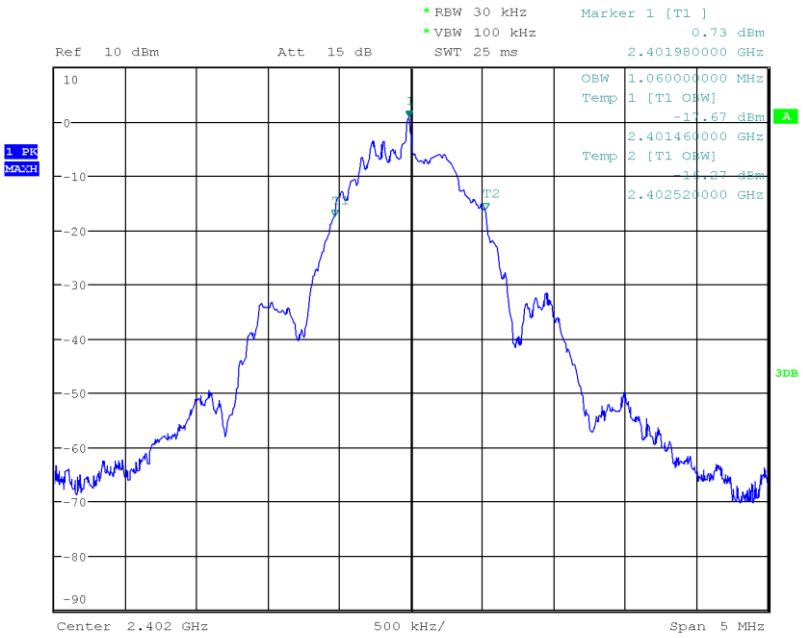
1. EUT transmitter is activated in test mode under normal conditions
2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum
3. The resolution bandwidth is set to 1 % of the bandwidth
4. The occupied bandwidth is measured with the build-in analyzer function

3.1.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
GFSK	2402	1.060
GFSK	2440	1.055
GFSK	2480	1.055

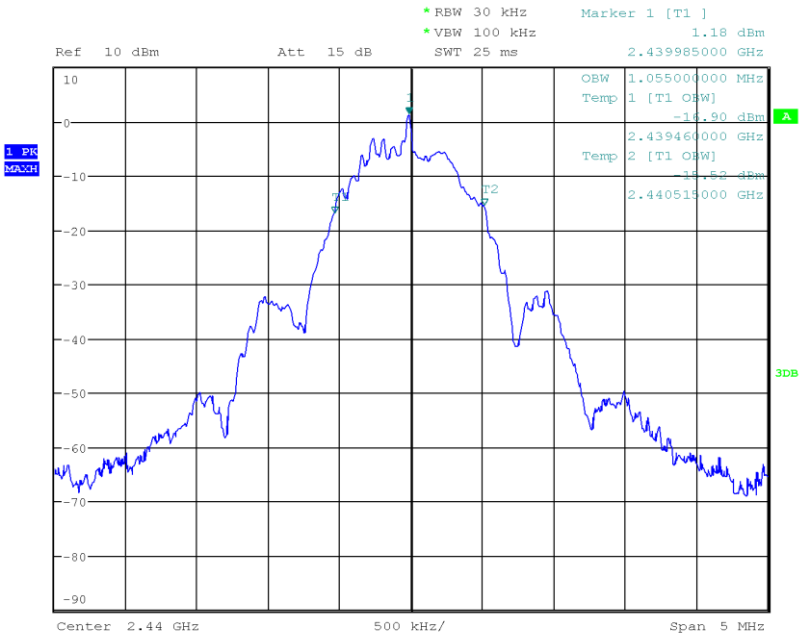
Occupied Bandwidth

Project Number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
Model Description:	Laser Distance Meter
Model:	Leica BLK3D
Test Sample ID:	17403
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Abdullah Al Jamal
Test Site:	Eurofins Product Service GmbH
Test Date:	2018-03-02
Note:	LE
Occupied Bandwidth [MHz]:	1.060



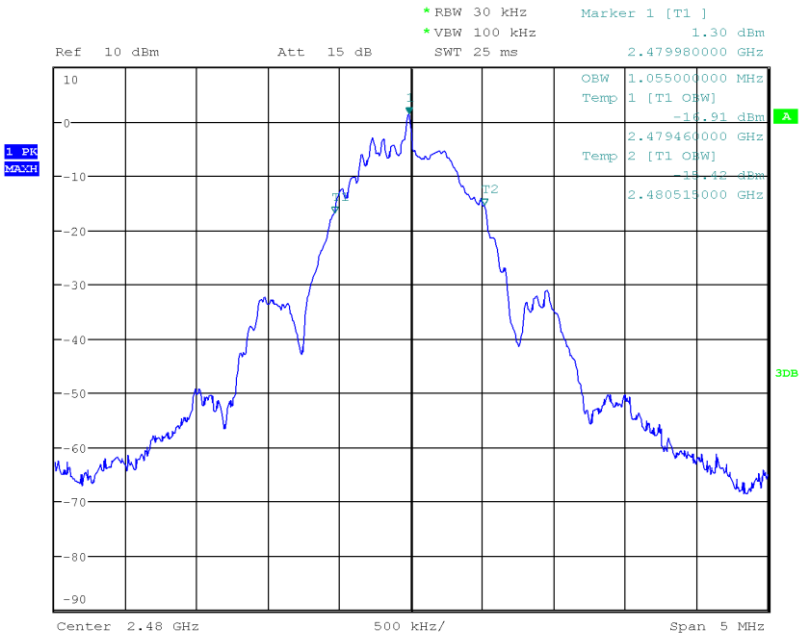
Occupied Bandwidth

Project Number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
Model Description:	Laser Distance Meter
Model:	Leica BLK3D
Test Sample ID:	17403
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 19, 2440 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Abdullah Al Jamal
Test Site:	Eurofins Product Service GmbH
Test Date:	2018-03-02
Note:	LE
Occupied Bandwidth [MHz]:	1.055



Occupied Bandwidth

Project Number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
Model Description:	Laser Distance Meter
Model:	Leica BLK3D
Test Sample ID:	17403
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 39, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Abdullah Al Jamal
Test Site:	Eurofins Product Service GmbH
Test Date:	2018-03-02
Note:	LE
Occupied Bandwidth [MHz]:	1.055



3.2 Test Conditions and Results - AC powerline conducted emissions

3.2.1 Information

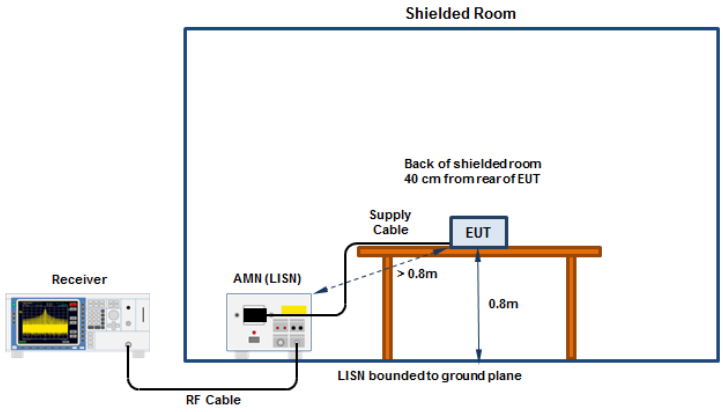
Test Information	
Reference	FCC 15.207
Measurement Method	ANSI C63.10 6.2
Operator	Abdullah Al Jamal
Date	2018-03-05

3.2.2 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		

3.2.3 Setup

Test Setup



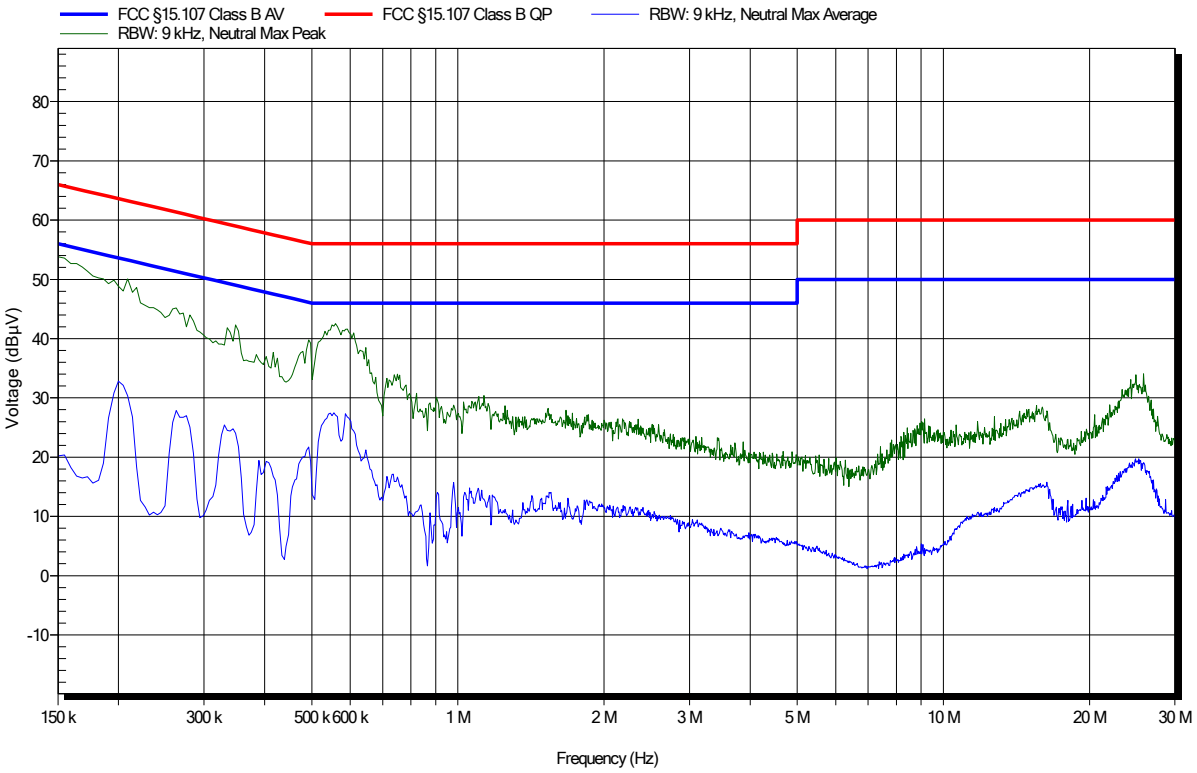
3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESCS 30	EF00295	2017-07	2018-07
LISN	R&S	ESH2-Z5	EF00182	2017-01	2019-01

EMI voltage test in the ac-mains according to FCC 15.207

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 21.8°C, Unom: 3.8 VDC (rechargeable battery pack Li-Ion)
LISN:	ESH2-Z5 N
Mode:	BT/LE, WLAN
Test Date:	2018-03-05
Note:	

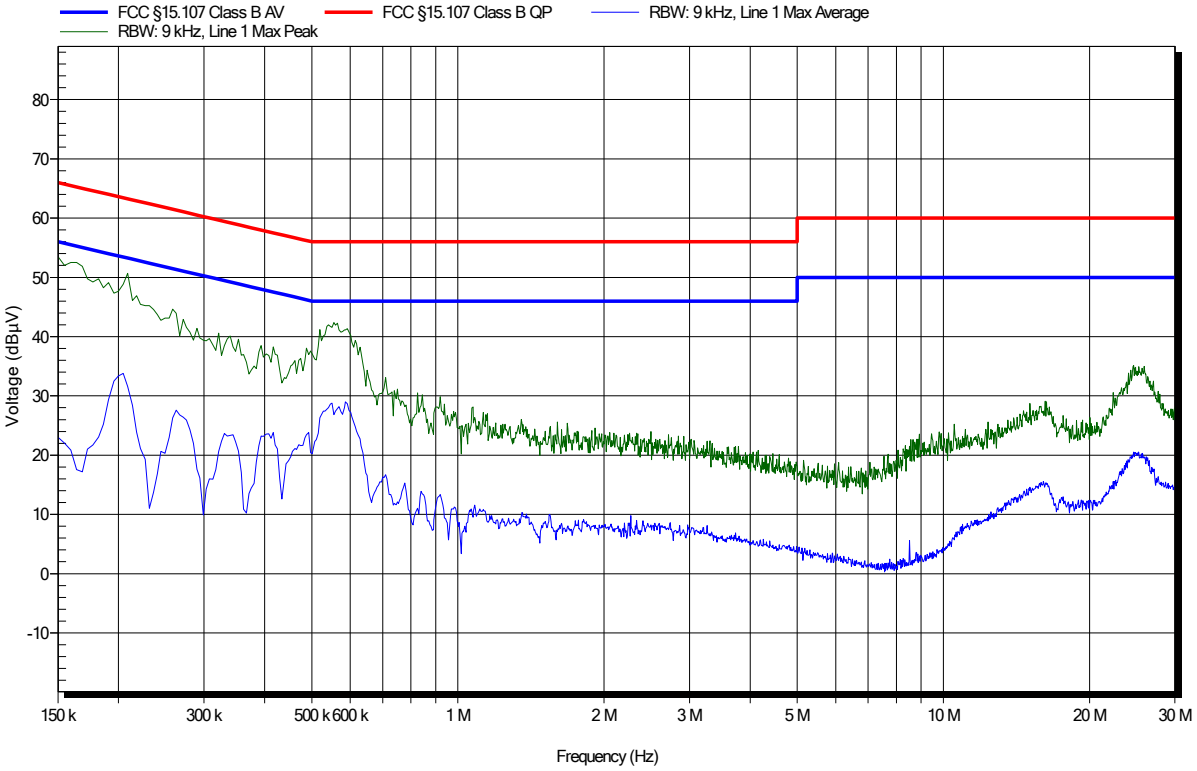
Index 1



EMI voltage test in the ac-mains according to FCC 15.207

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 21.8°C, Unom: 3.8 VDC (rechargeable battery pack Li-Ion)
LISN:	ESH2-Z5 L
Mode:	BT/LE, WLAN
Test Date:	2018-03-05
Note:	

Index 2



3.3 Test Conditions and Results - Transmitter radiated emissions

3.3.1 Information

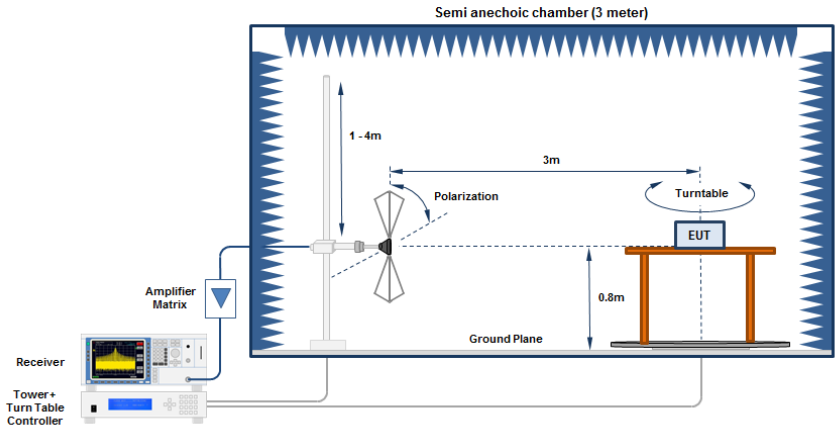
Test Information	
Reference	FCC 15.247(d) / ISED RSS-GEN 8.9
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Abdullah Al Jamal
Date	2018-02-24

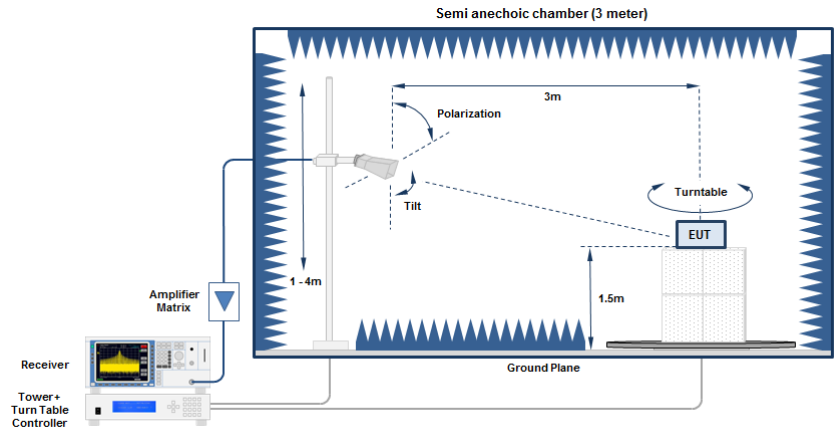
3.3.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [dBµV/m]	Measurement distance [m]
0.009 - 0.09	Average	2400/F[kHz]	300
0.09 - 0.110	Quasi-Peak	2400/F[kHz]	300
0.110 - 0.490	Average	2400/F[kHz]	300
0.490 - 1.705	Quasi-Peak	24000/F[kHz]	30
1.705 - 30.0	Quasi-Peak	30	30
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

3.3.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz


3.3.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC6	EF00910	2017-03	2020-03
Measurement Receiver	R&S	ESU 26	EF00887	2017-07	2018-07
Antenna	R&S	VULB 9162	EF00978	2016-11	2019-11

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC6	EF00910	2017-03	2020-03
Measurement Receiver	R&S	ESU 26	EF00887	2017-07	2018-07
Antenna	R&S	BBHA 9120D	EF01153	2017-08	2018-08
Antenna	Amplifier Research	AT4560	EF01152	2017-10	2018-10

3.3.5 Procedure

Test Procedure < 30 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 EUT is rotated through 360° 4. The emissions are measured with peak detector and max hold 5. All significant emissions are measured again using the corresponding final detector

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

3.3.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2402	975.48	36.80	pk	hor	54.00	-17.20
2402	2389	50.10	pk	hor	74.00	-23.90
2402	2389	36.38	avg	hor	54.00	-17.62
2440	991.74	37.00	pk	hor	54.00	-17.00
2440	4880	38.89	pk	ver	74.00	-35.11
2440	4960	39.65	pk	ver	74.00	-34.35

3.4 Test Conditions and Results - Receiver radiated emissions

3.4.1 Information

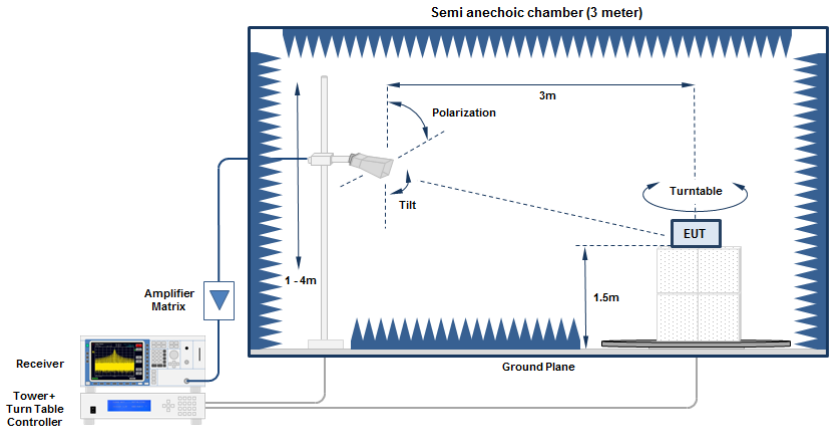
Test Information	
Reference	ISED RSS-247 3.1
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Abdullah Al Jamal
Date	2018-02-24

3.4.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [dBµV/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

3.4.3 Setup

Test Setup > 1 GHz



3.4.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC6	EF00910	2017-03	2020-03
Measurement Receiver	R&S	ESU 26	EF00887	2017-07	2018-07
Antenna	R&S	VULB 9162	EF00978	2016-11	2019-11

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC6	EF00910	2017-03	2020-03
Measurement Receiver	R&S	ESU 26	EF00887	2017-07	2018-07
Antenna	R&S	BBHA 9120D	EF01153	2017-08	2018-08

3.4.5 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

3.4.6 Results

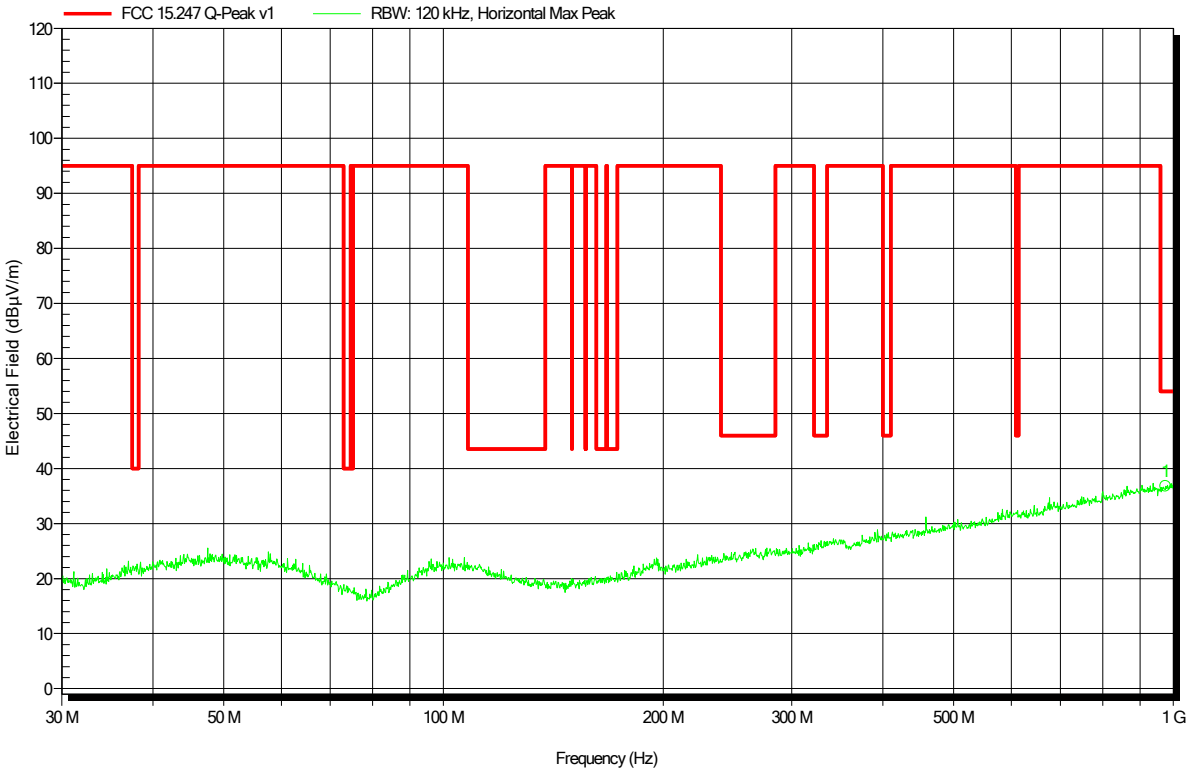
Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2440	3892	44.42	pk	ver	53.98	-09.56
2440	7480	49.89	pk	hor	53.98	-04.09

ANNEX A Transmitter spurious emissions

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Horizontal
Measurement distance:	3 m
Mode:	TX; LE; 2402 MHz
Test Date:	2018-02-24
Note:	

Index 1

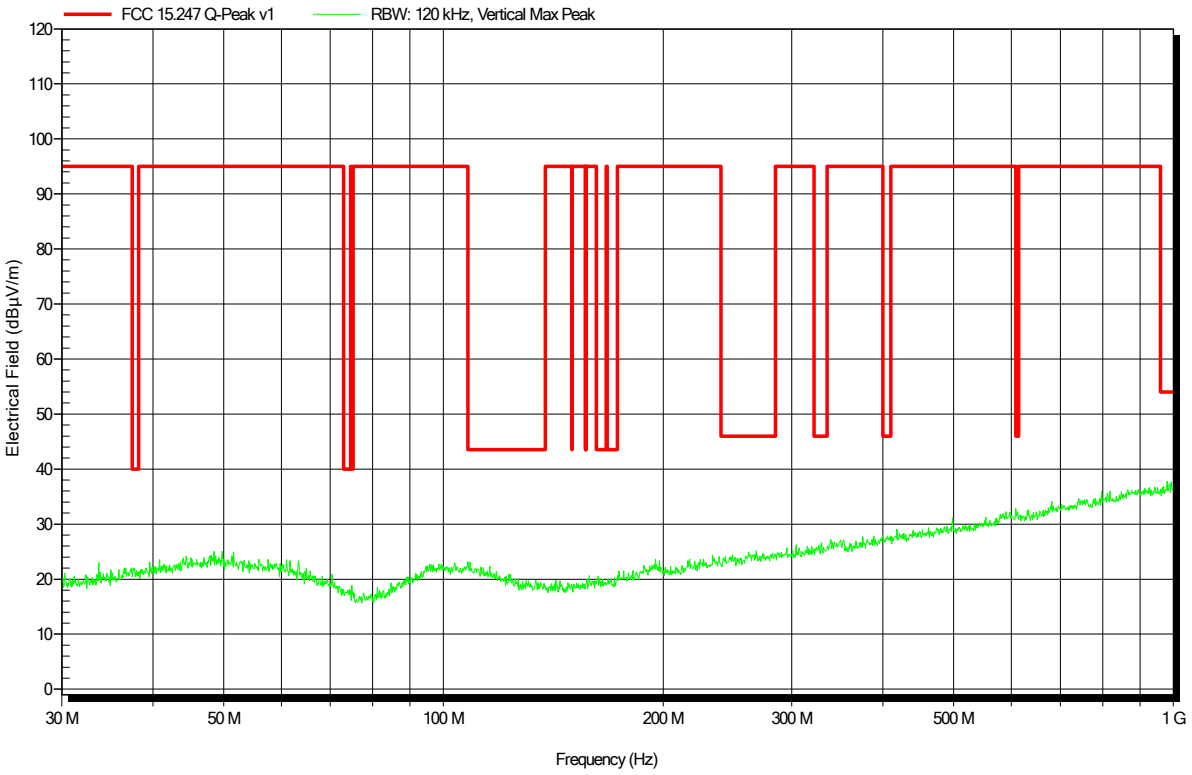


Frequency	Peak	Peak Limit	Peak Difference	Status
975.48 MHz	36.8 dBµV/m	54 dBµV/m	-17.2 dB	Pass

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Vertical
Measurement distance:	3 m
Mode:	TX; LE; 2402 MHz
Test Date:	2018-02-24
Note:	

Index 2



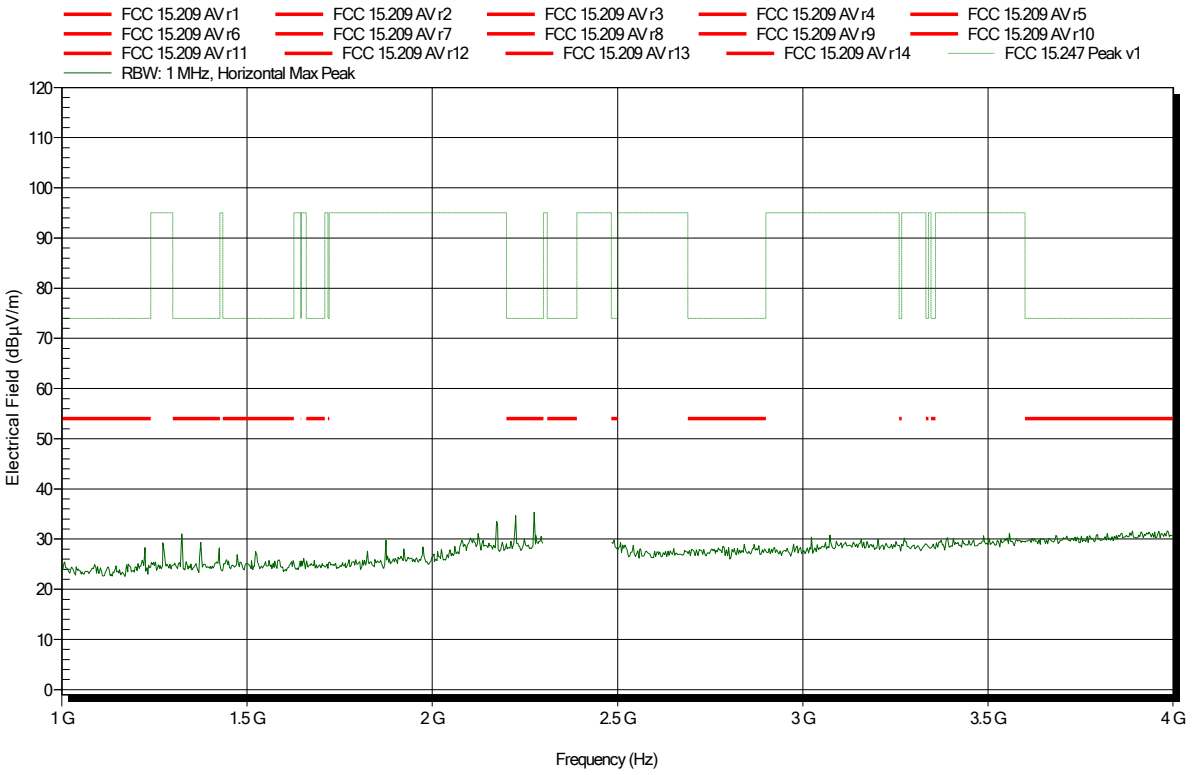
Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

Index 3



Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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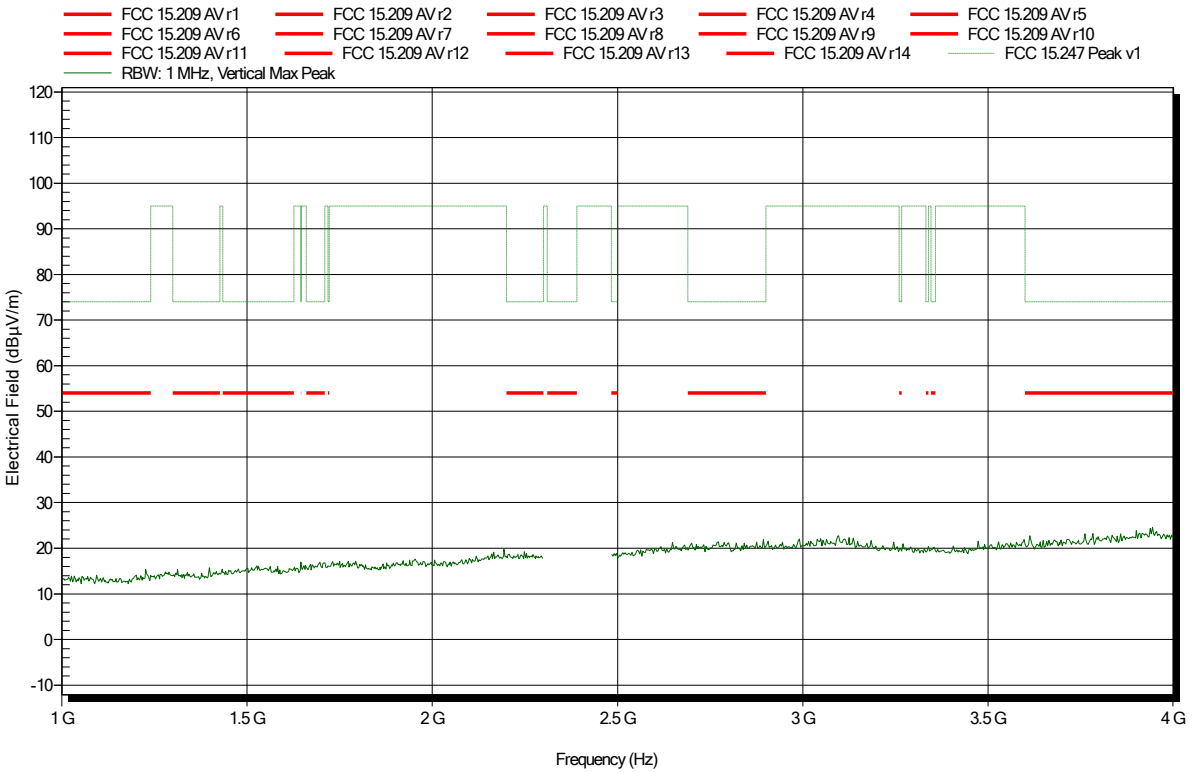

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	lower bandedge

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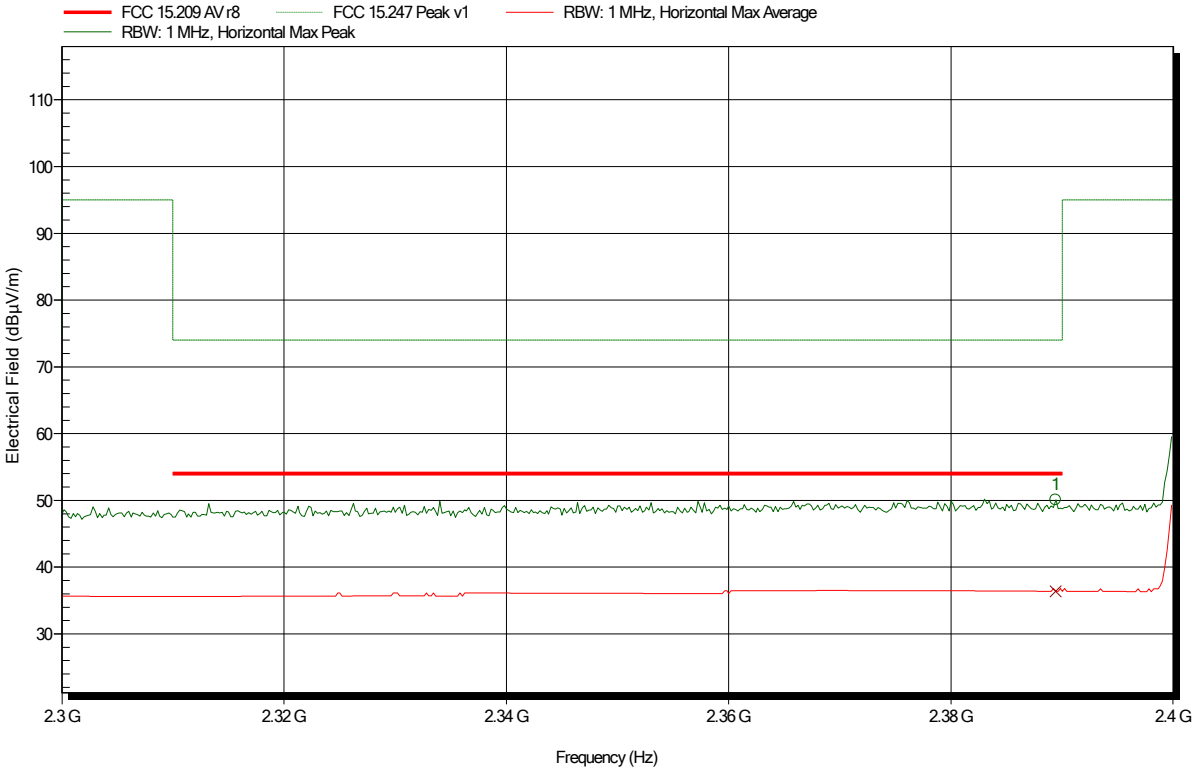

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.389 GHz	50.1 dBµV/m	74 dBµV/m	-23.9 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.389 GHz	36.38 dBµV/m	54 dBµV/m	-17.62 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	lower bandedge

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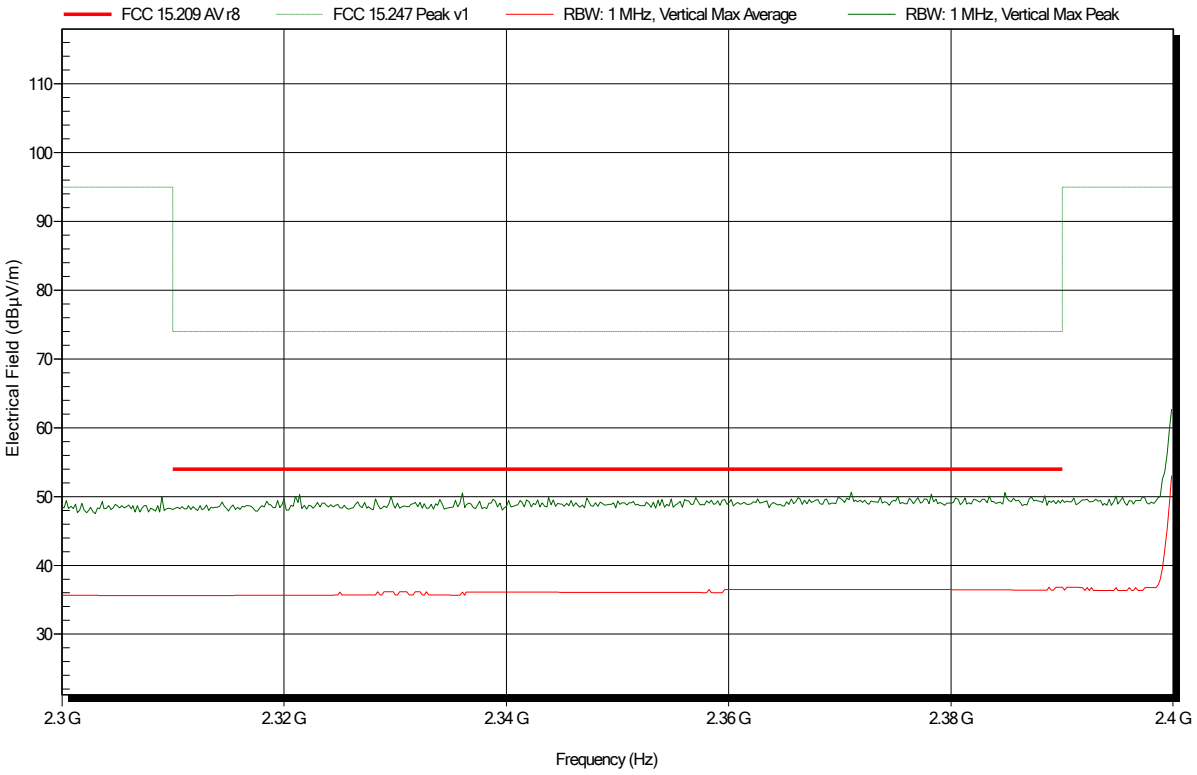

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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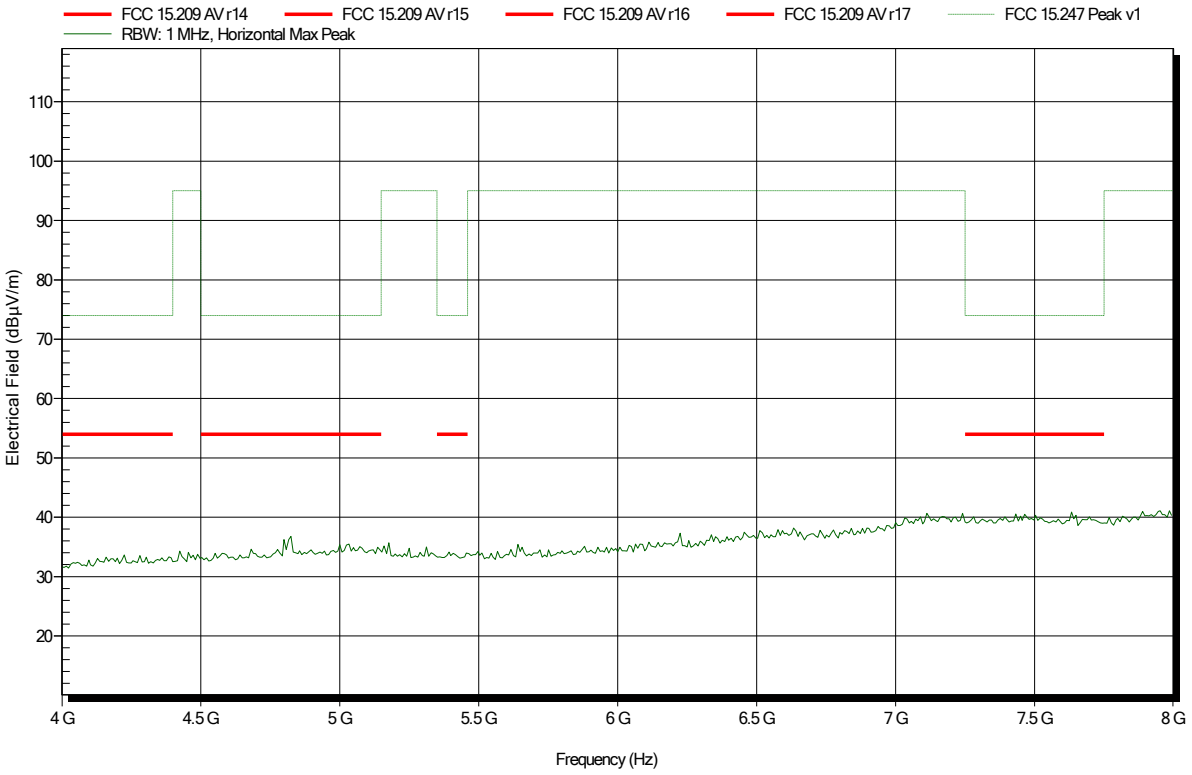

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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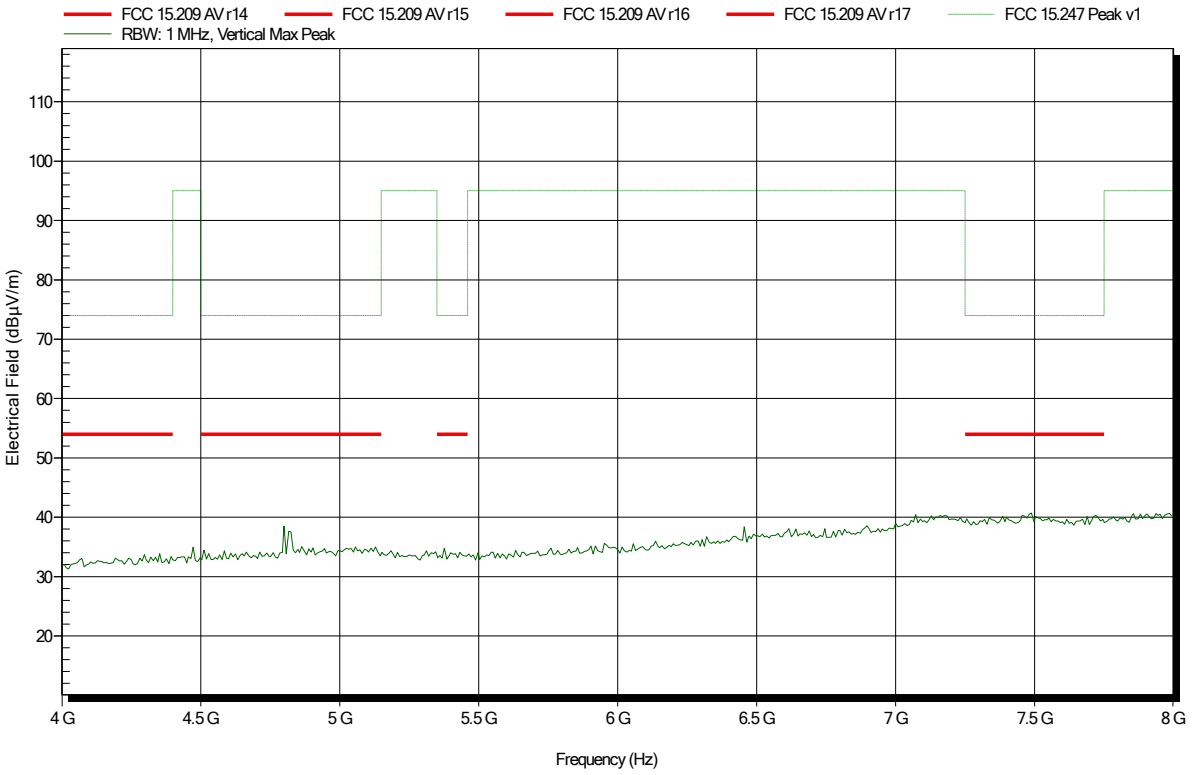


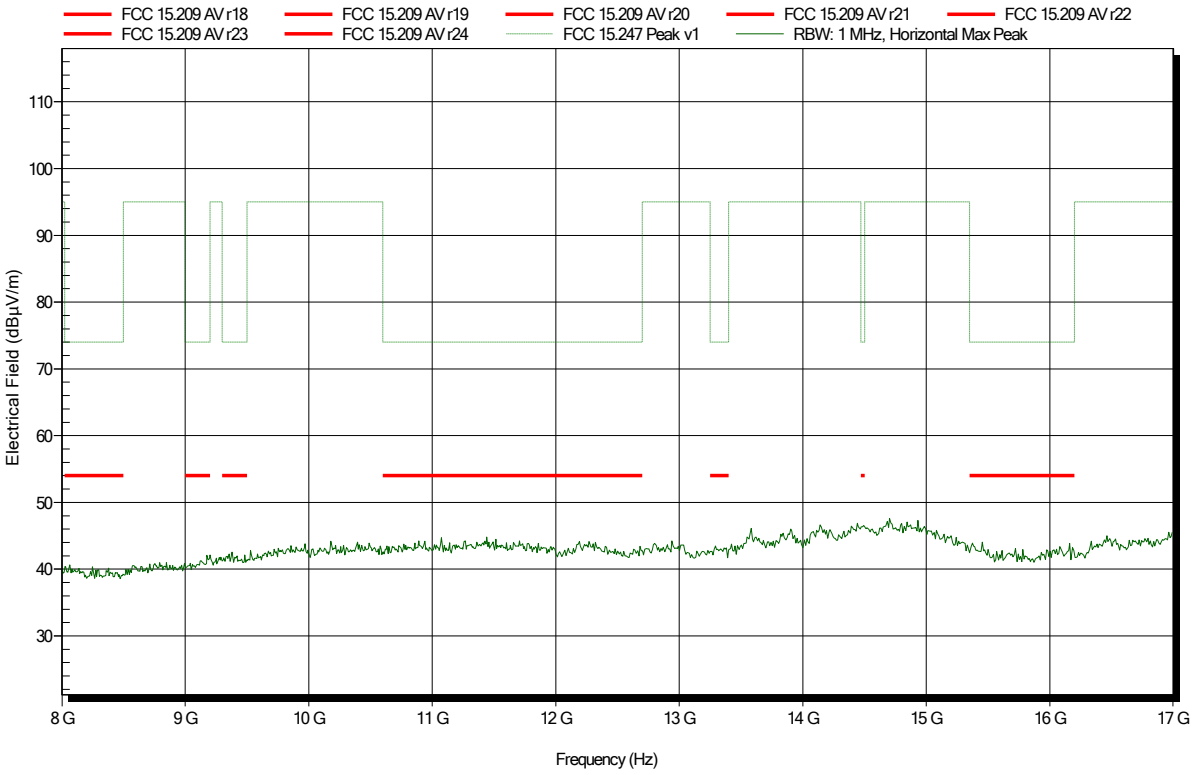
Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

Index 6



Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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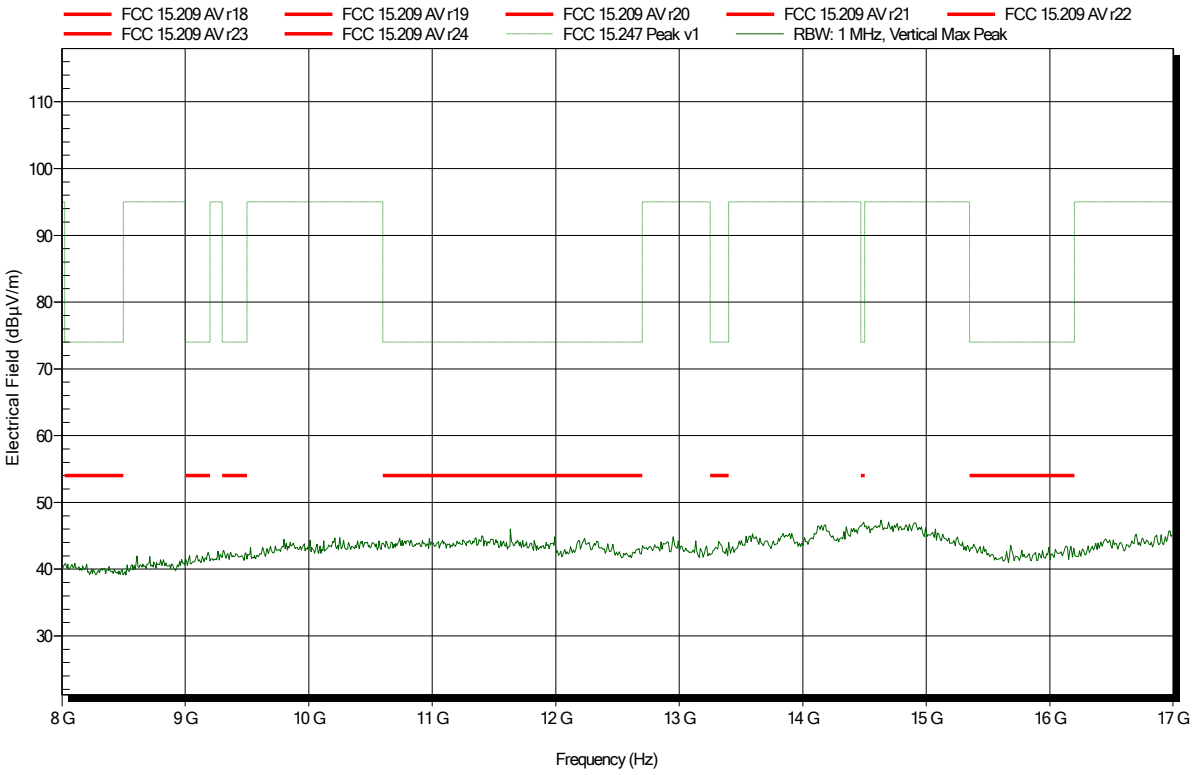

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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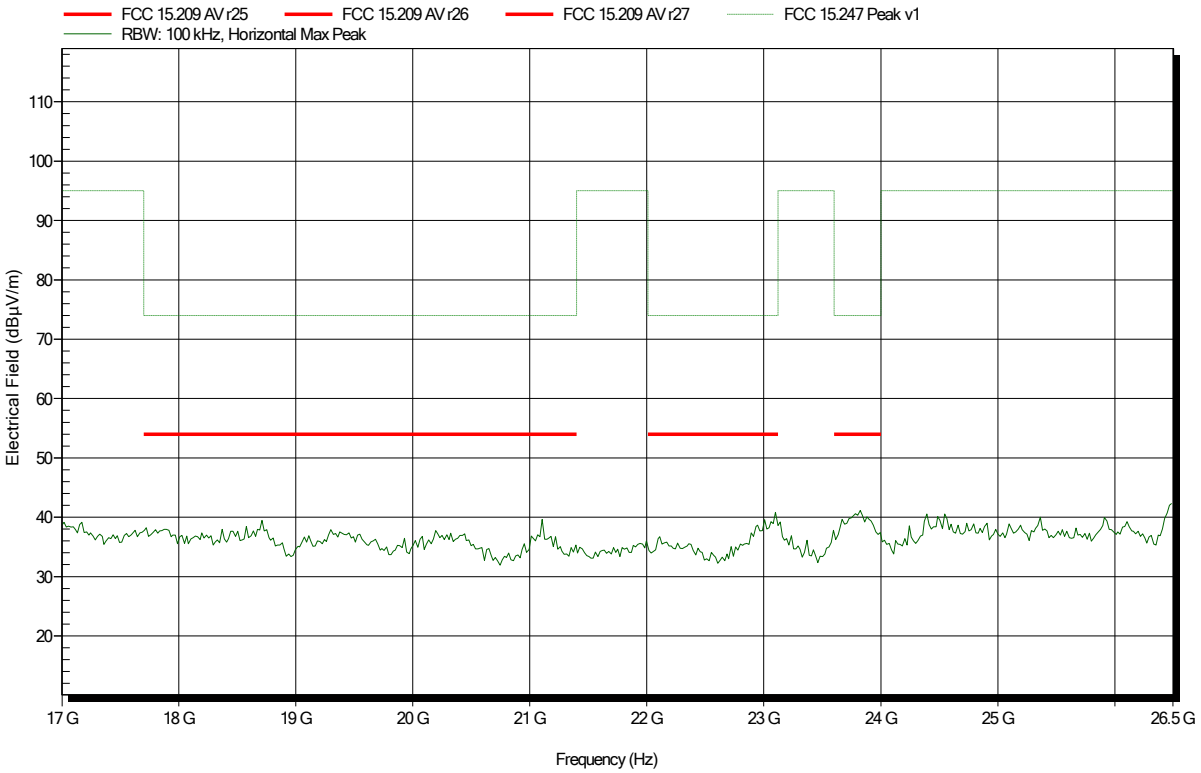

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2402 MHz
Test Date:	2018-02-28
Note:	

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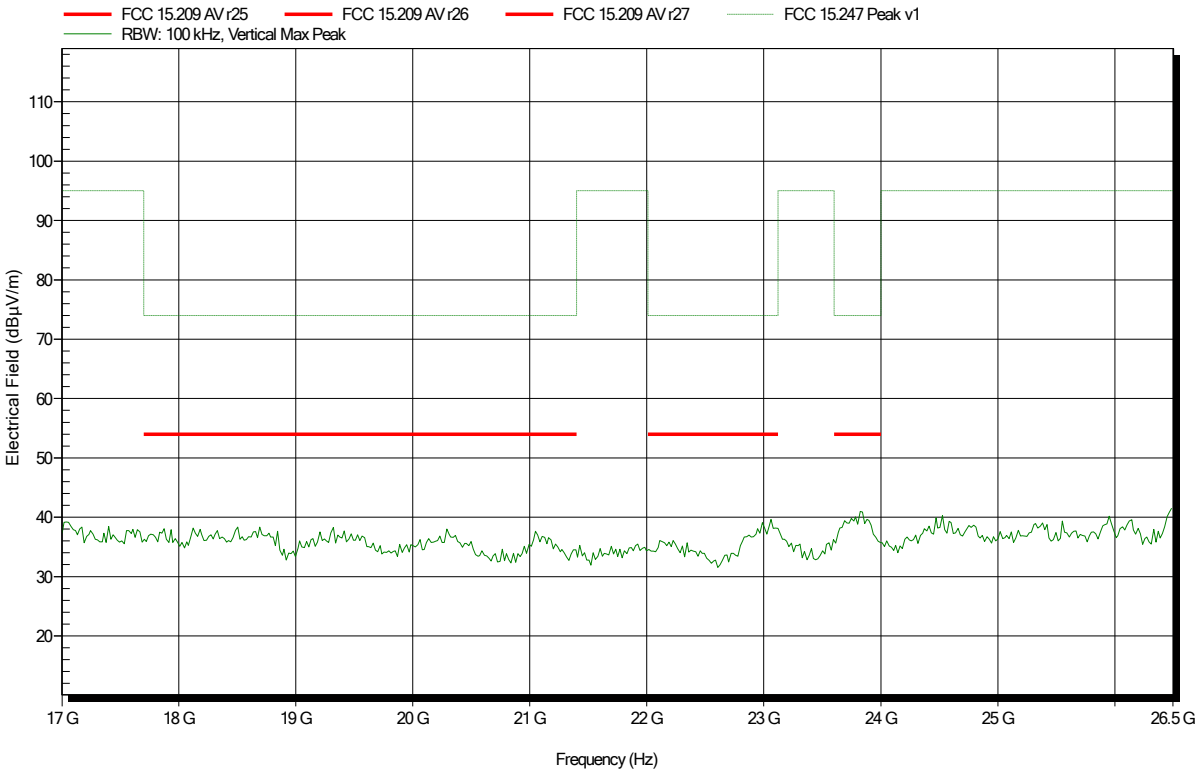

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Horizontal
Measurement distance:	3 m
Mode:	TX; LE; 2440 MHz
Test Date:	2018-02-24
Note:	

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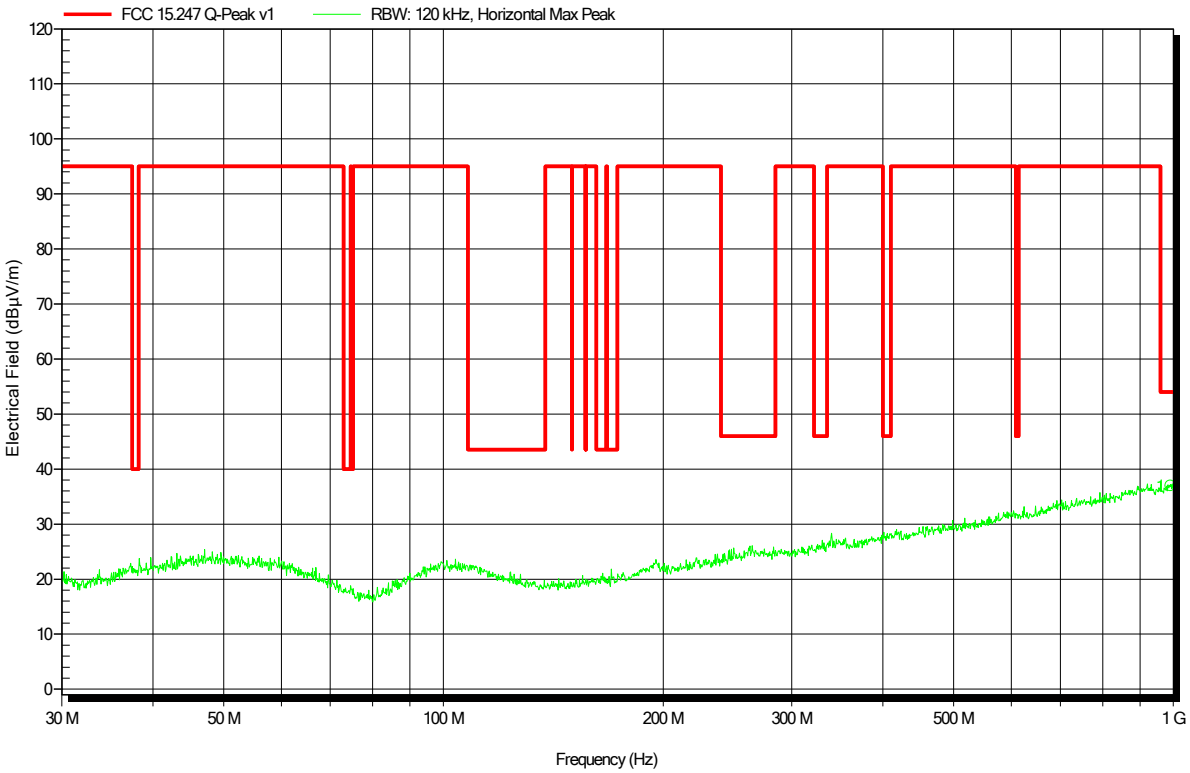
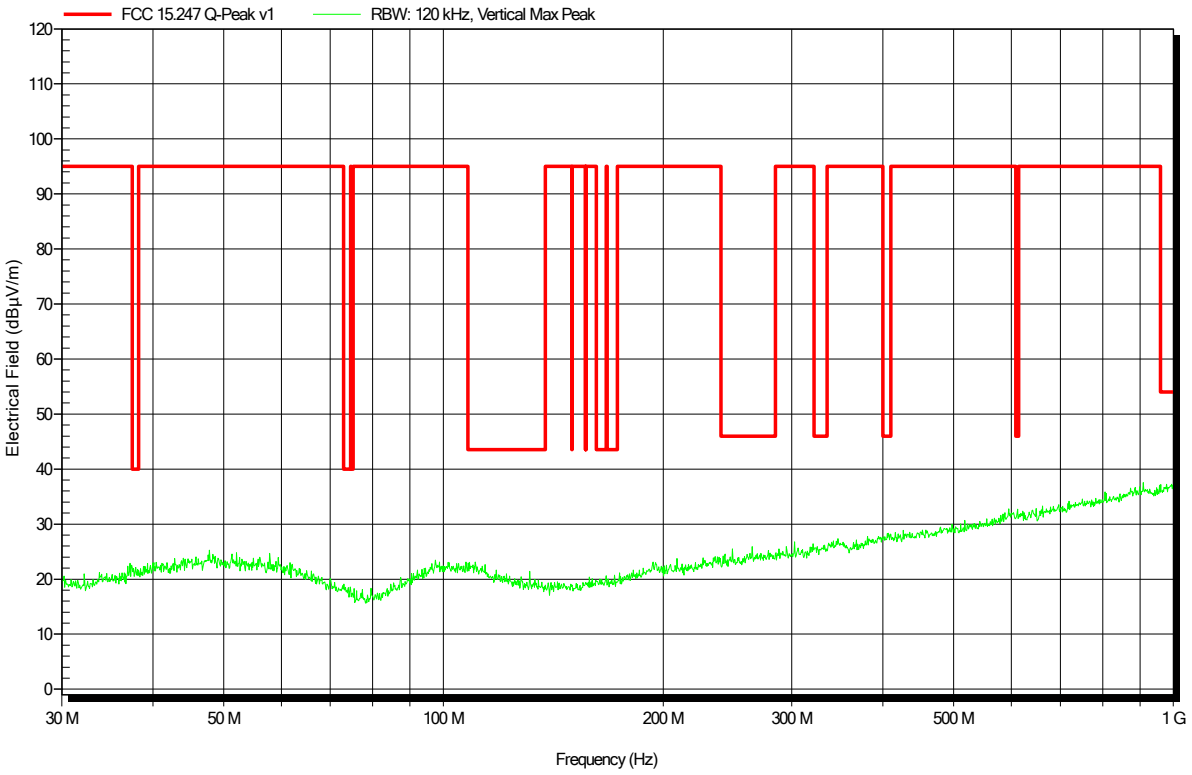


Frequency	Peak	Peak Limit	Peak Difference	Status
991.74 MHz	37 dBµV/m	54 dBµV/m	-17.0 dB	Pass

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Vertical
Measurement distance:	3 m
Mode:	TX; LE; 2440 MHz
Test Date:	2018-02-24
Note:	

Index 5



Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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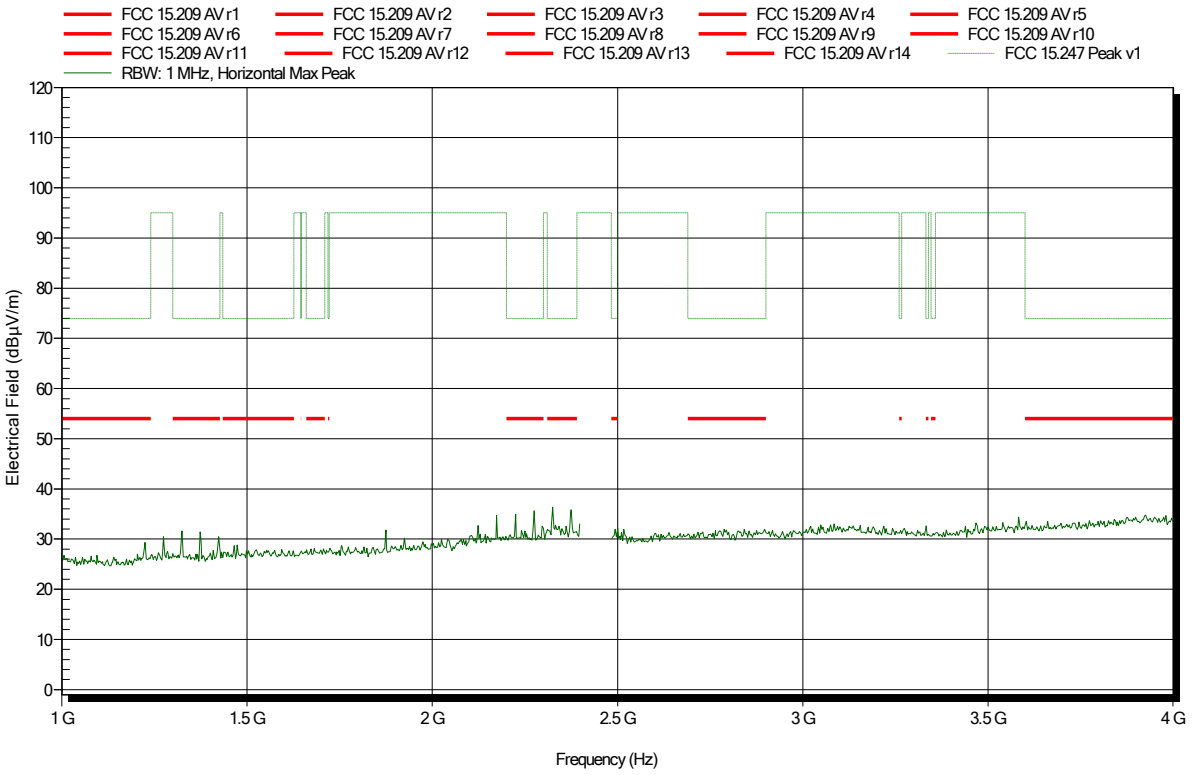

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 3 m
Mode: TX; BLE; 2440 MHz
Test Date: 2018-02-28
Note:

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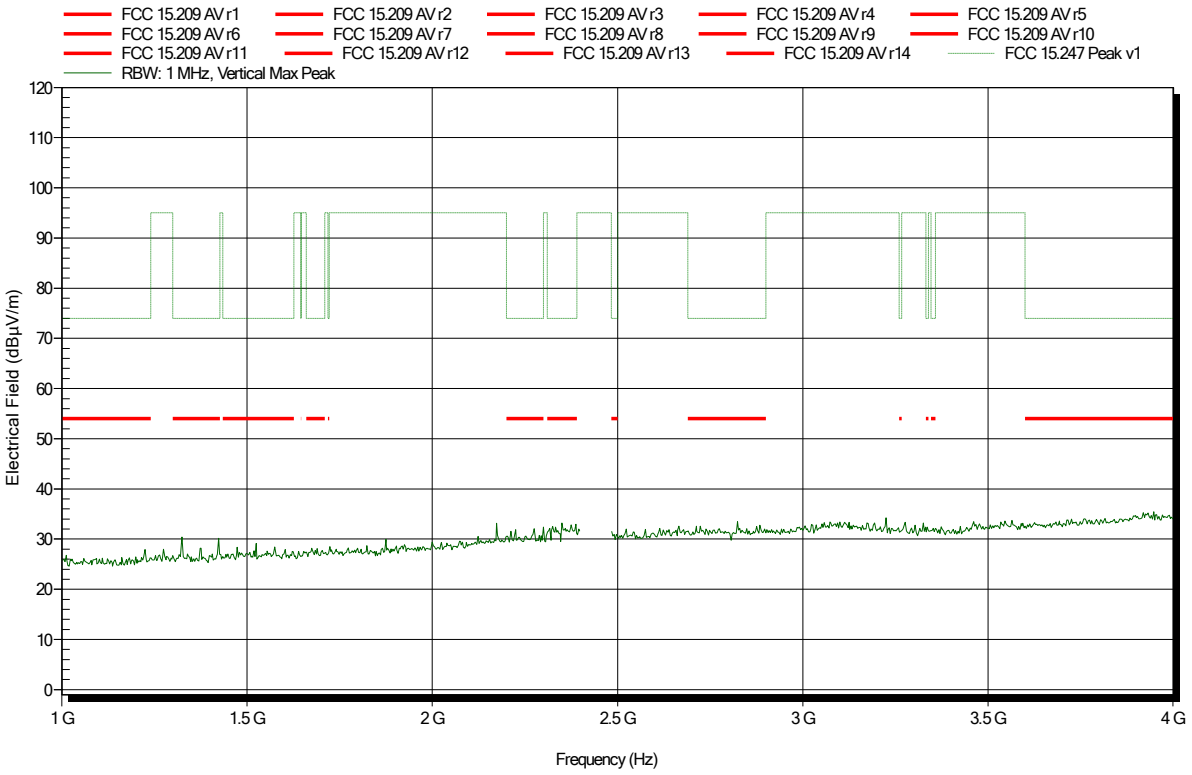

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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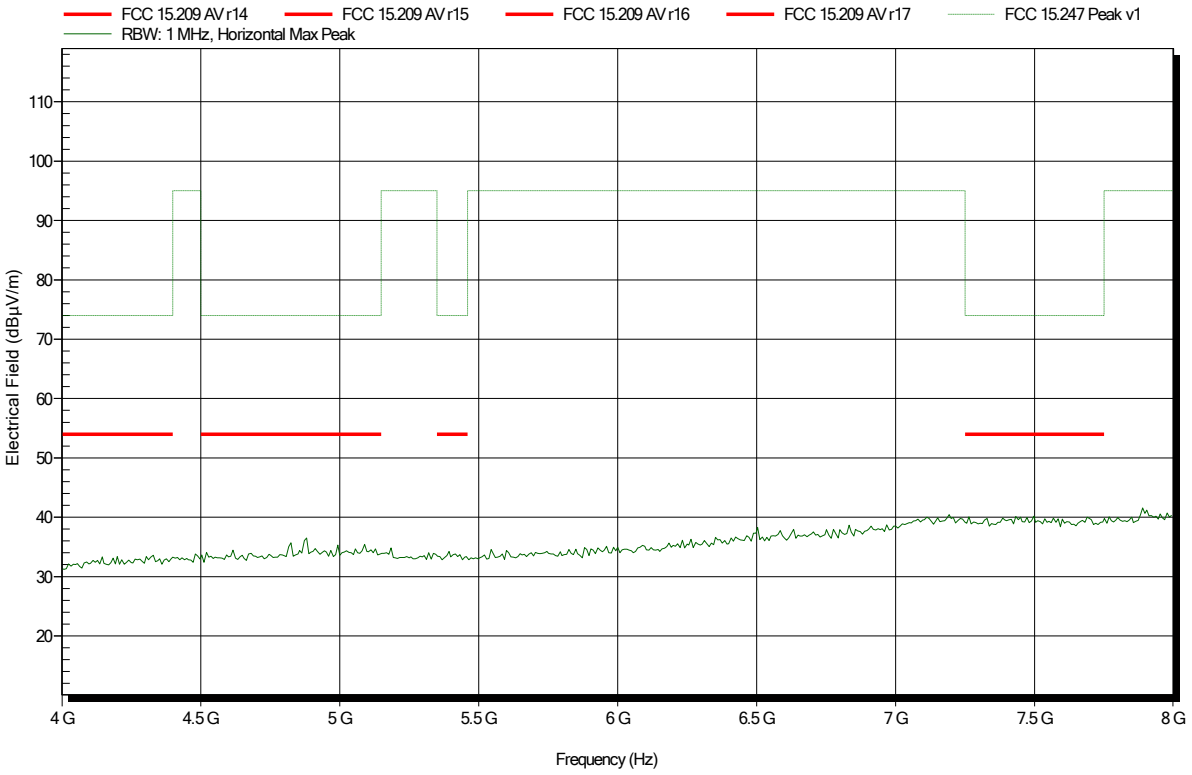

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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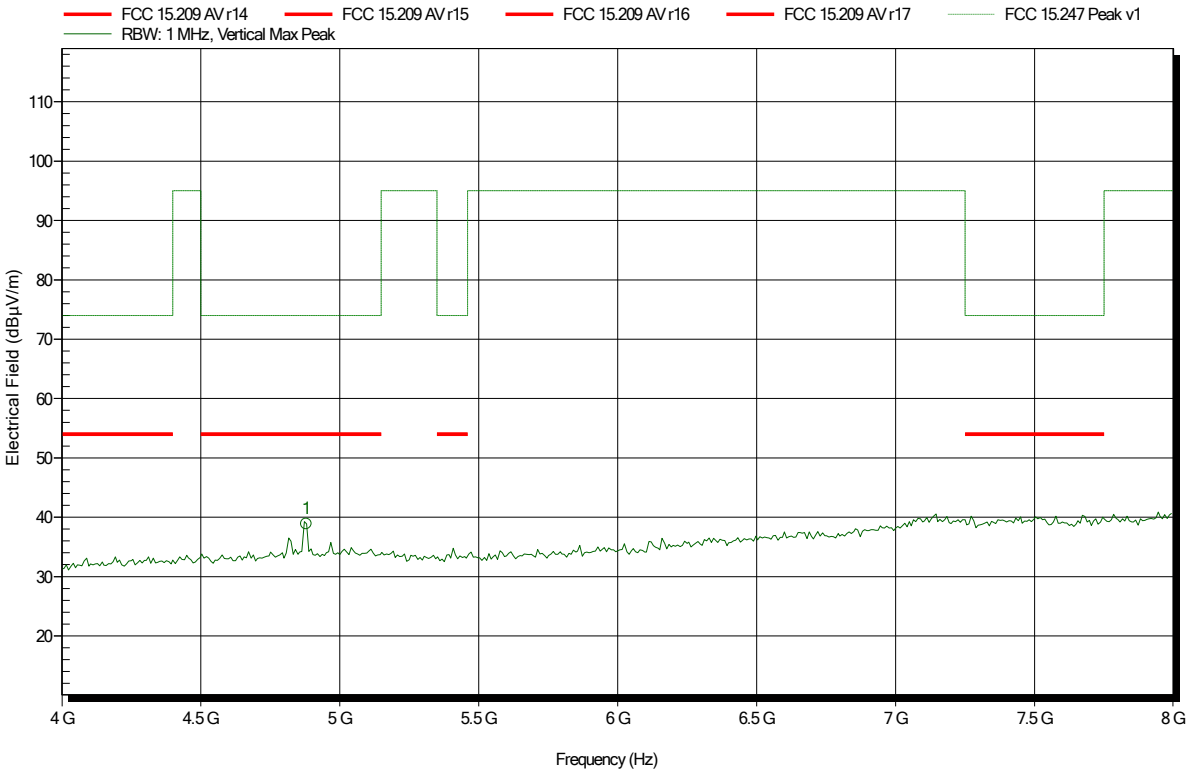

Frequency	Peak	Peak Limit	Peak Difference	Status
4.88 GHz	38.89 dBµV/m	74 dBµV/m	-35.11 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BLE; 2440 MHz
Test Date: 2018-02-28
Note:

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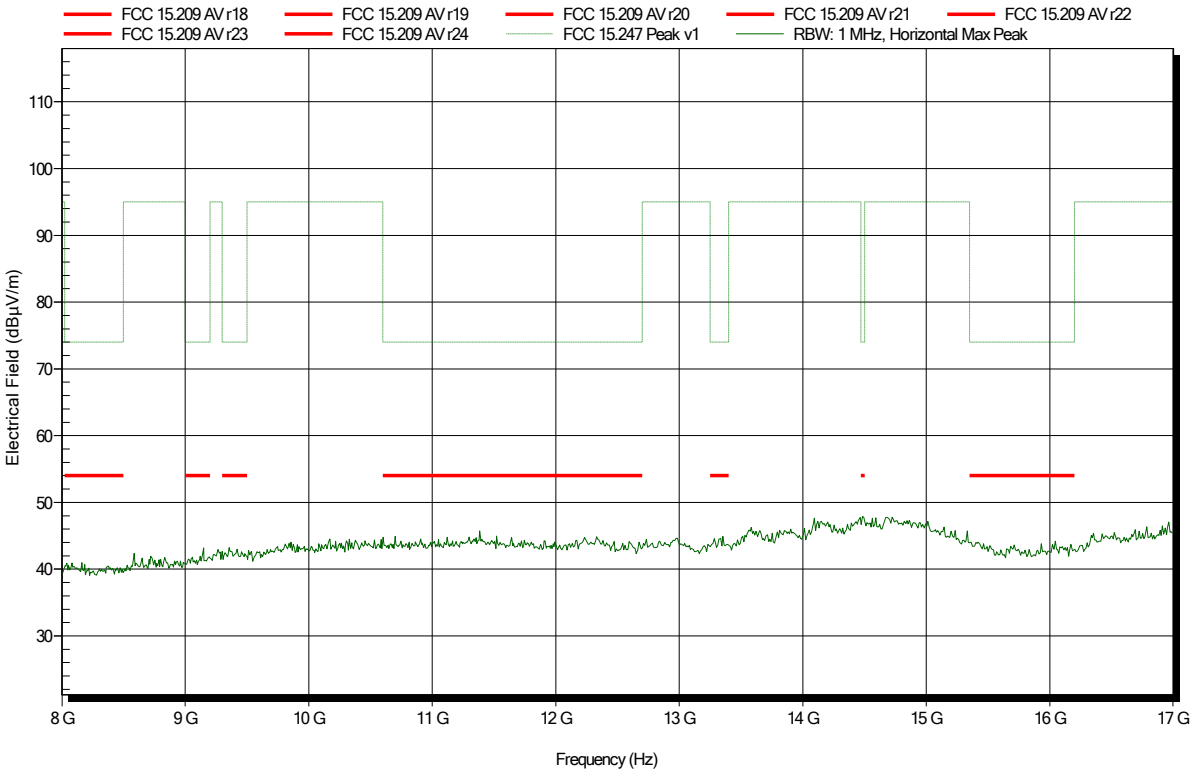

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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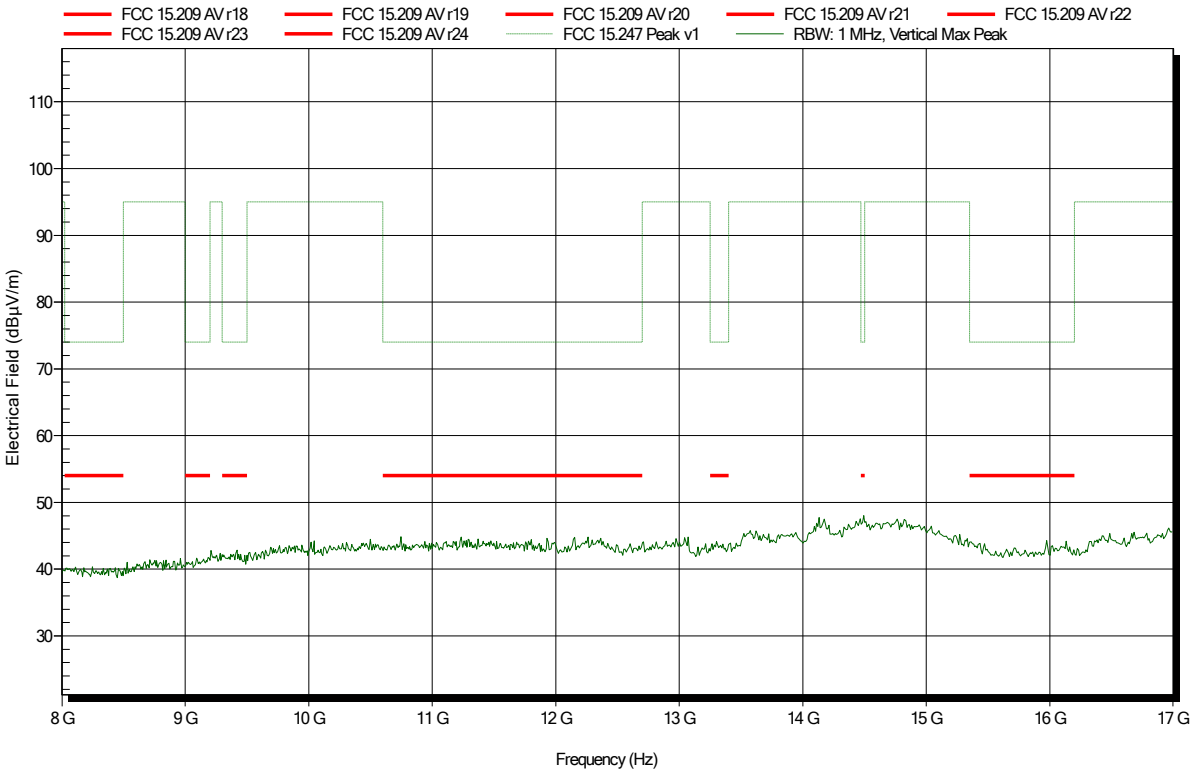

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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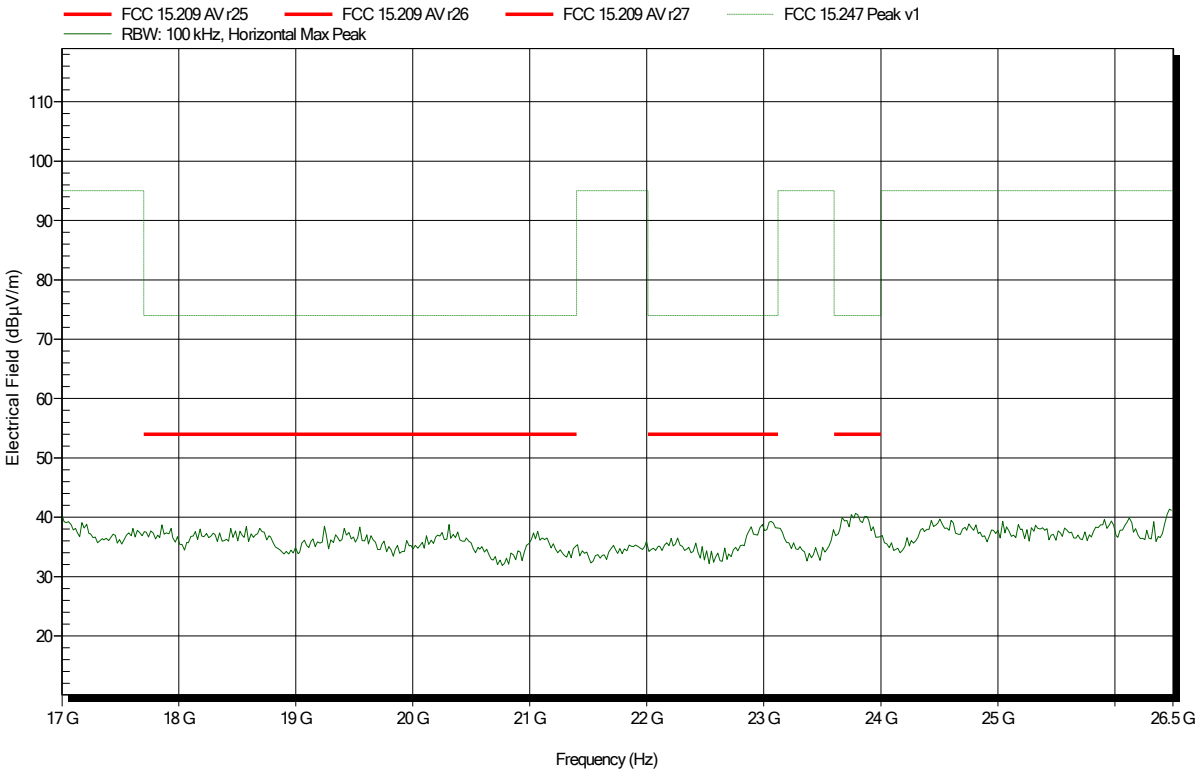

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2440 MHz
Test Date:	2018-02-28
Note:	

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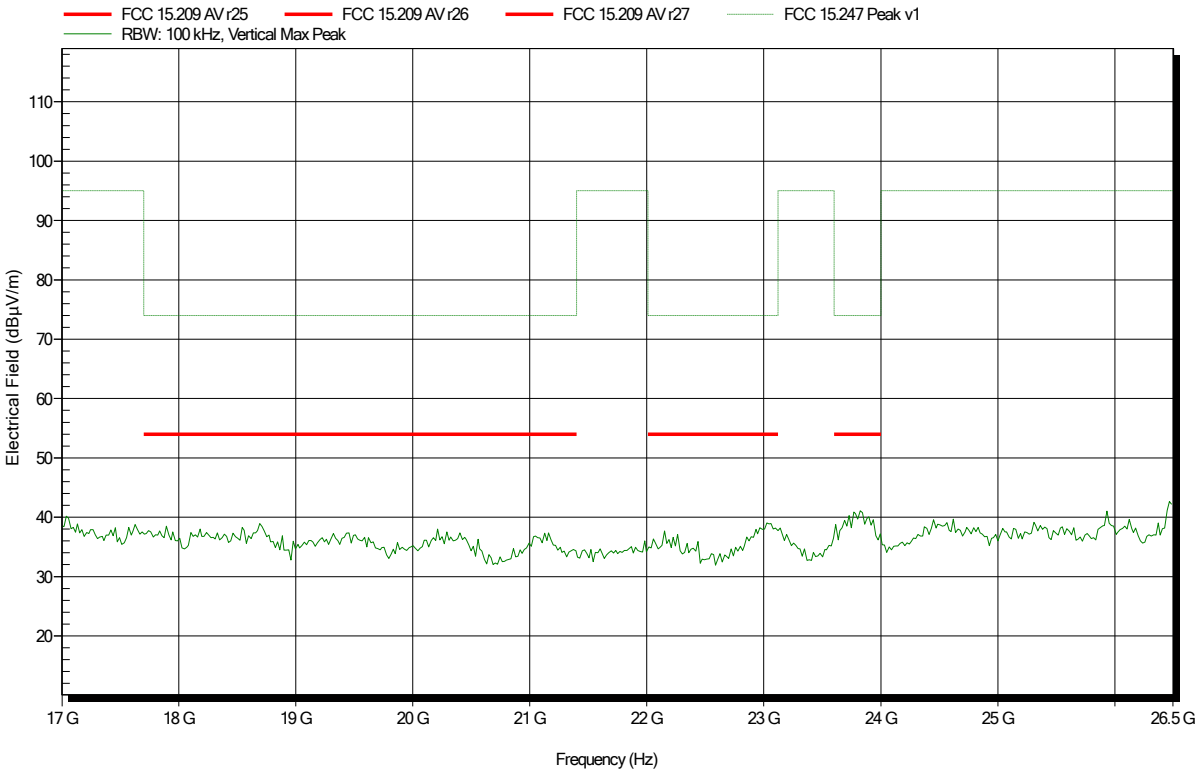

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Horizontal
Measurement distance:	3 m
Mode:	TX; LE; 2480 MHz
Test Date:	2018-02-24
Note:	

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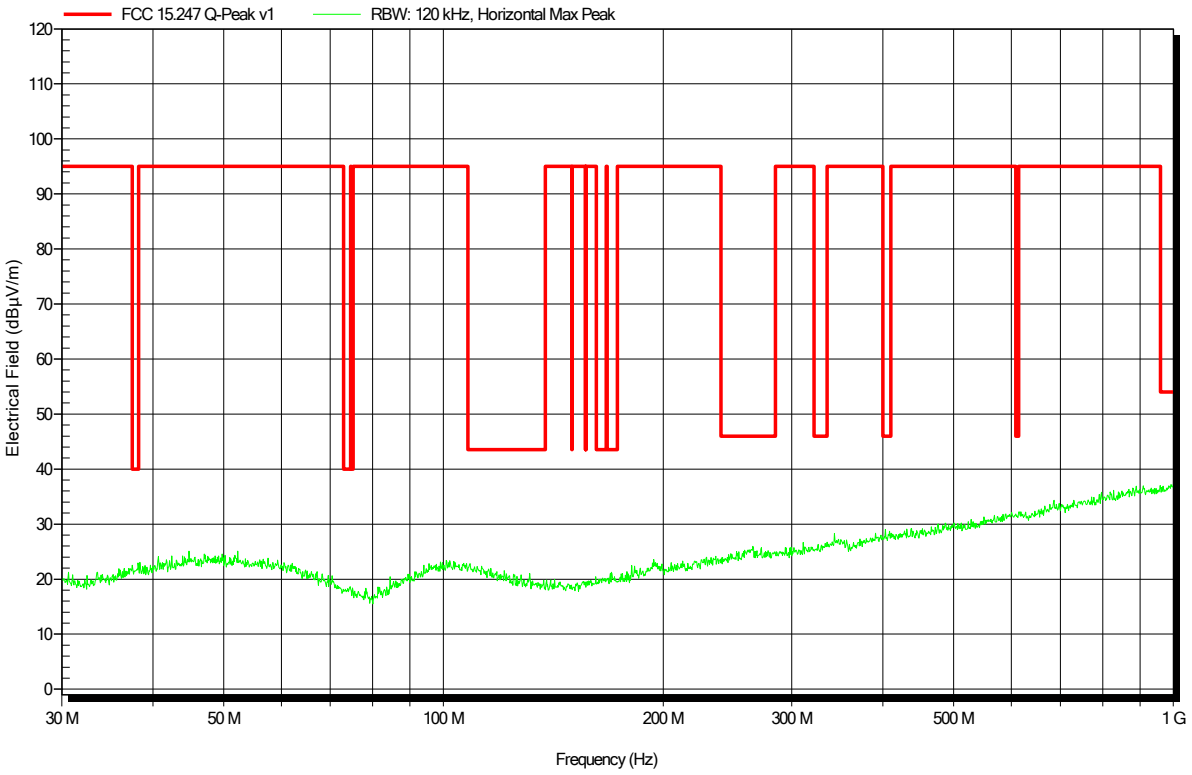

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Vertical
Measurement distance:	3 m
Mode:	TX; LE; 2480 MHz
Test Date:	2018-02-24
Note:	

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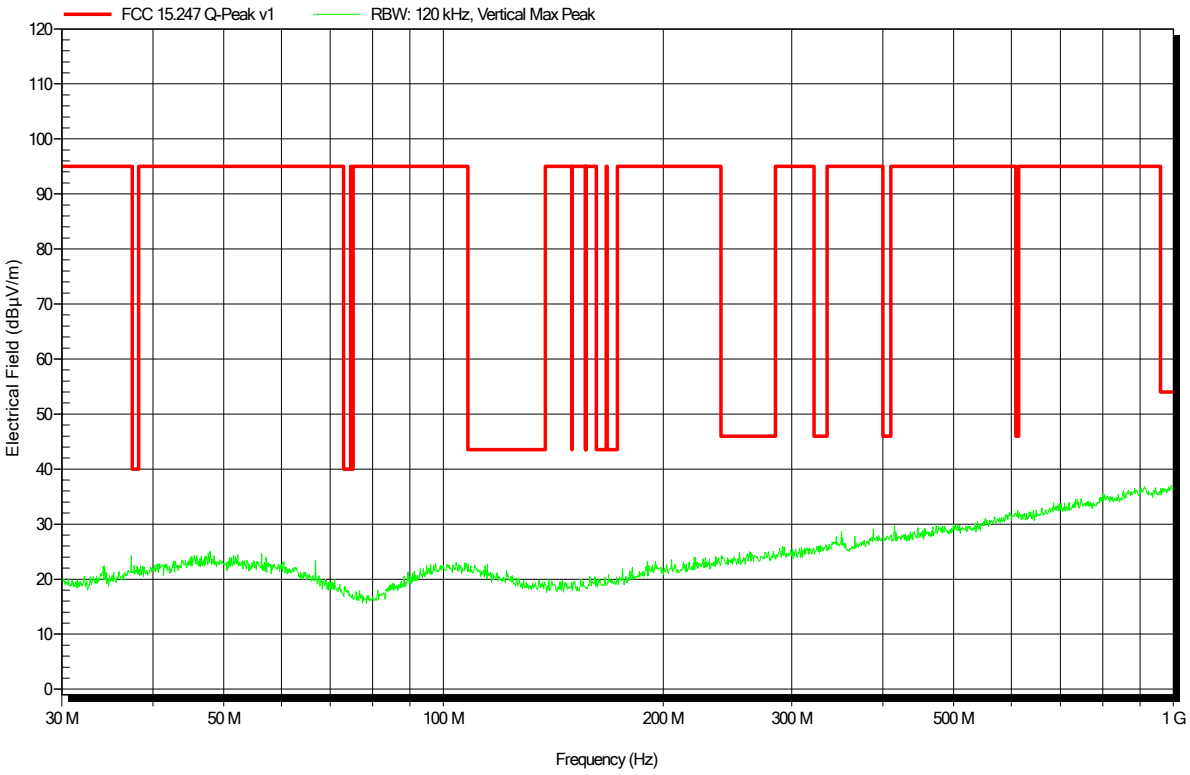

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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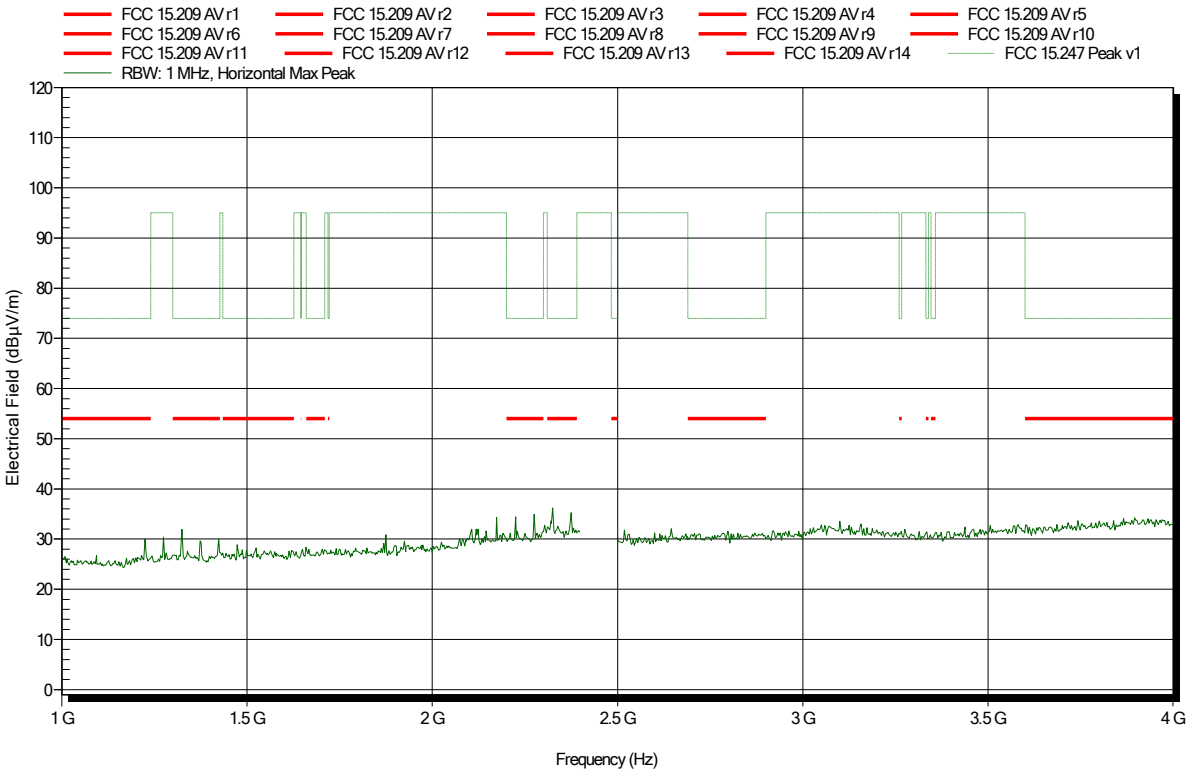

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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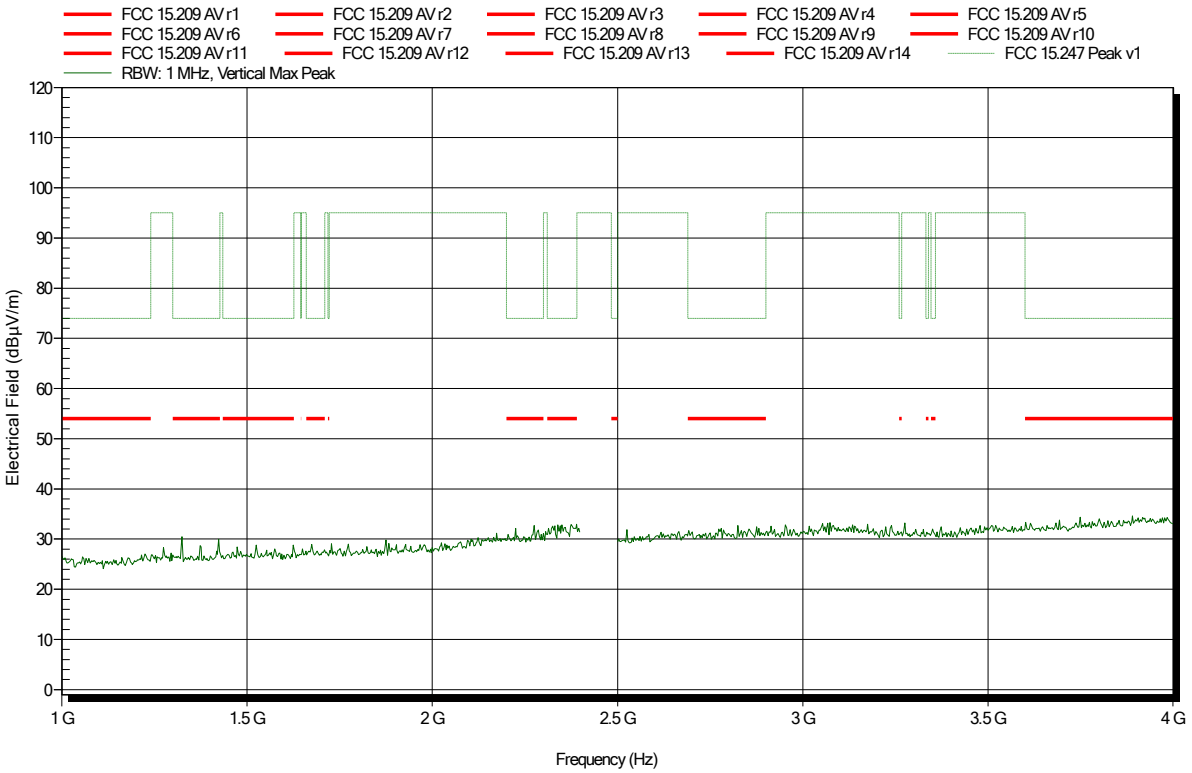

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	upper bandedge

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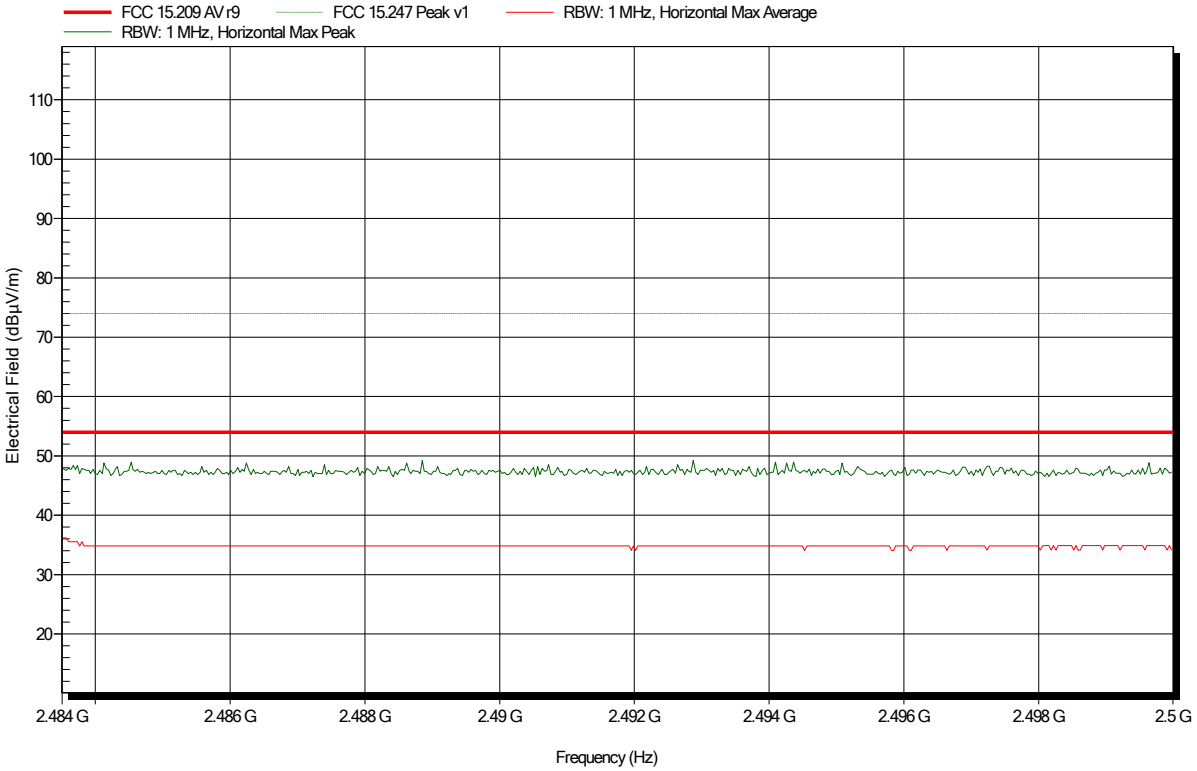

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	upper bandedge

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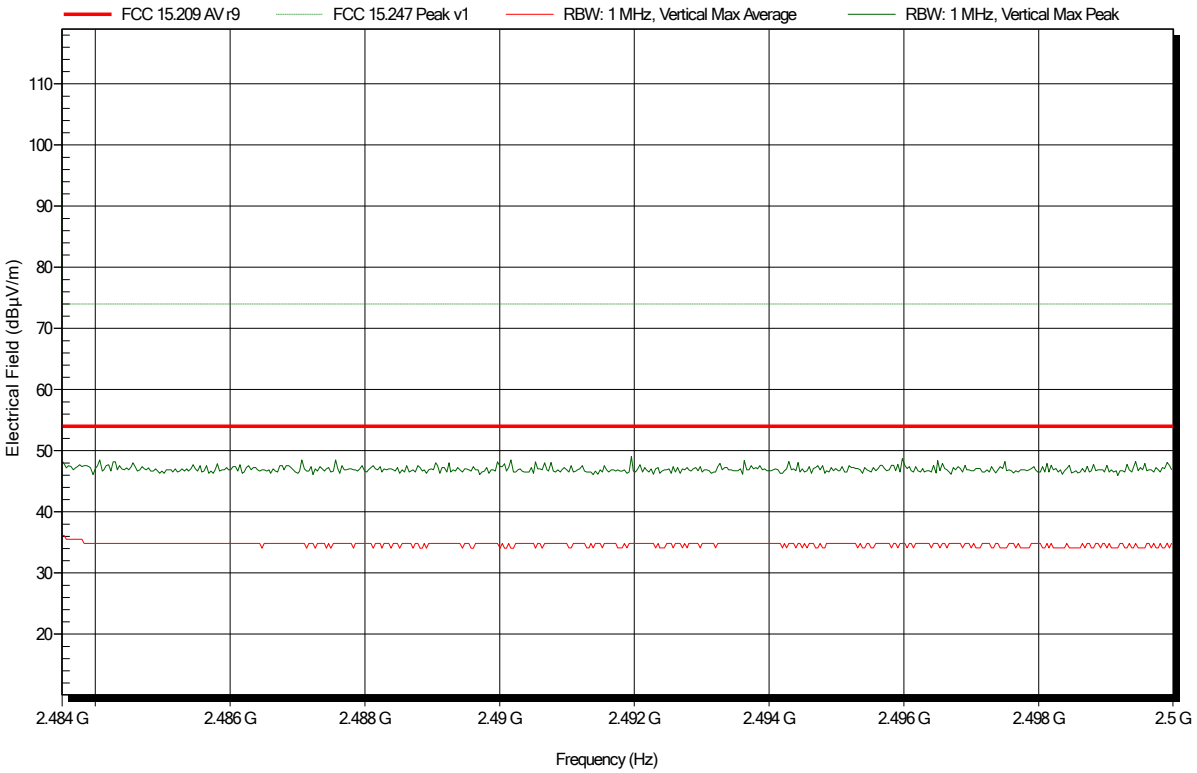

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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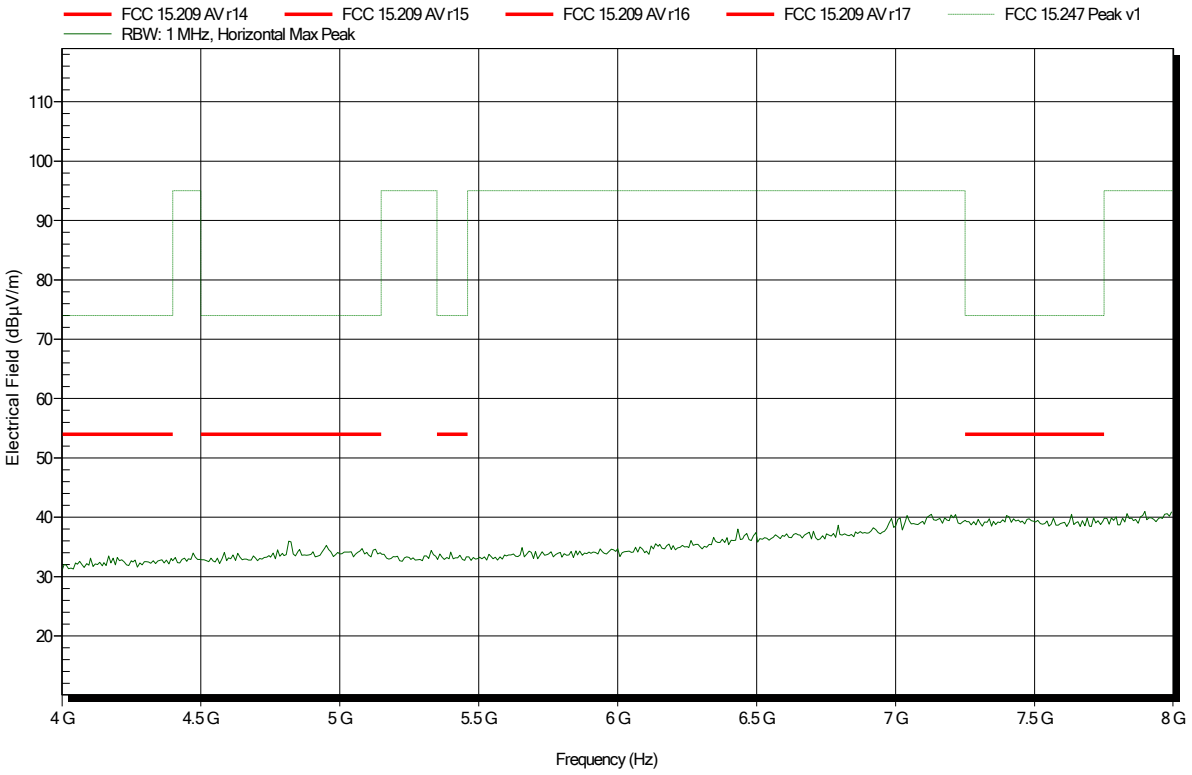

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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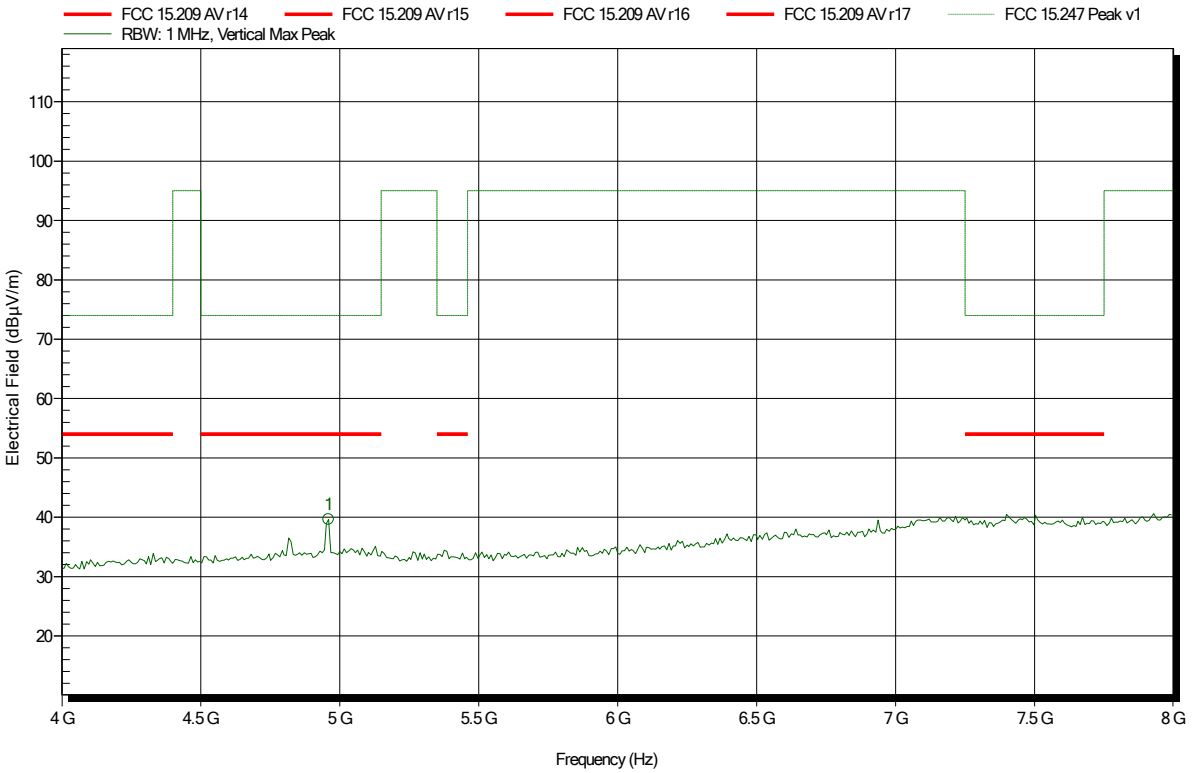

Frequency	Peak	Peak Limit	Peak Difference	Status
4.96 GHz	39.65 dBµV/m	74 dBµV/m	-34.35 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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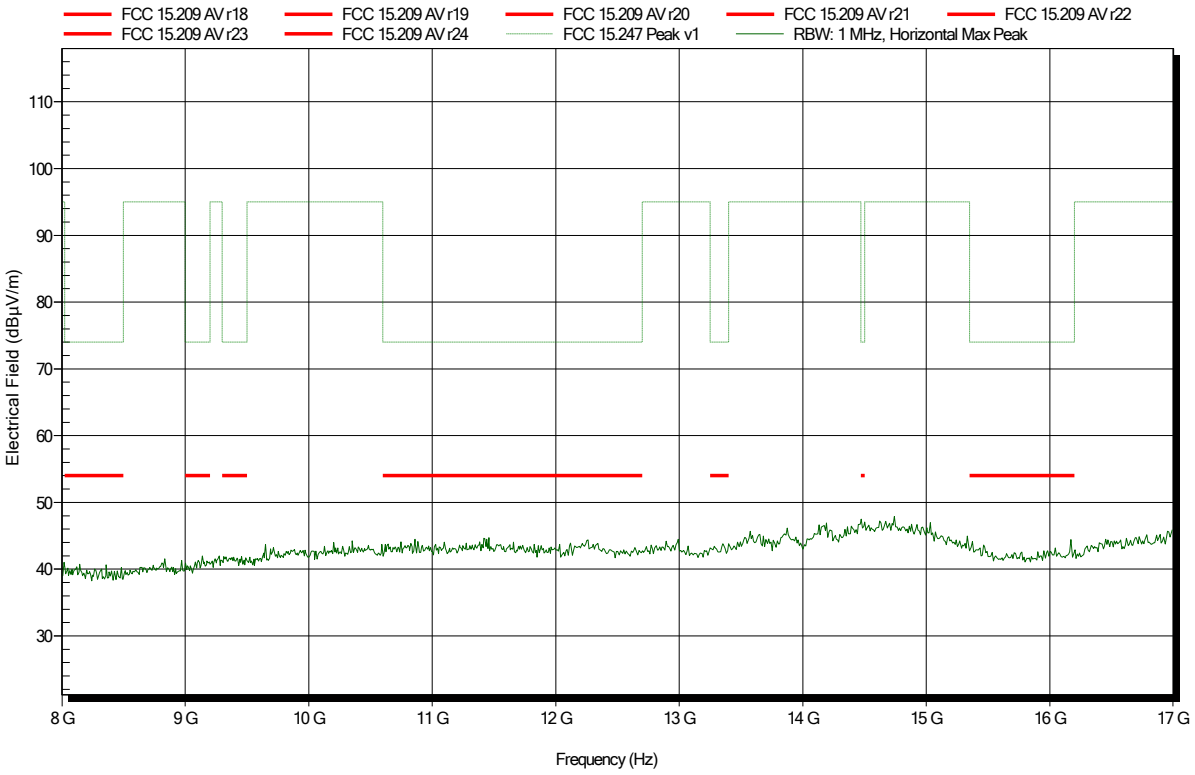

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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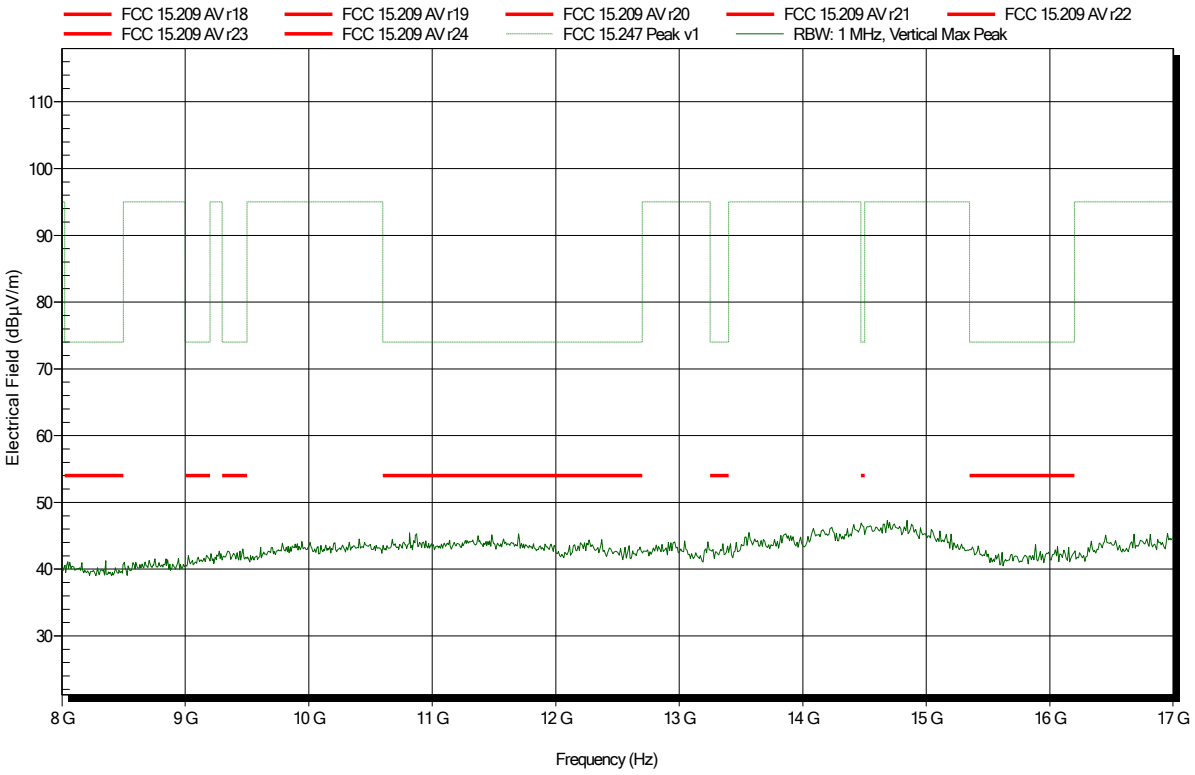

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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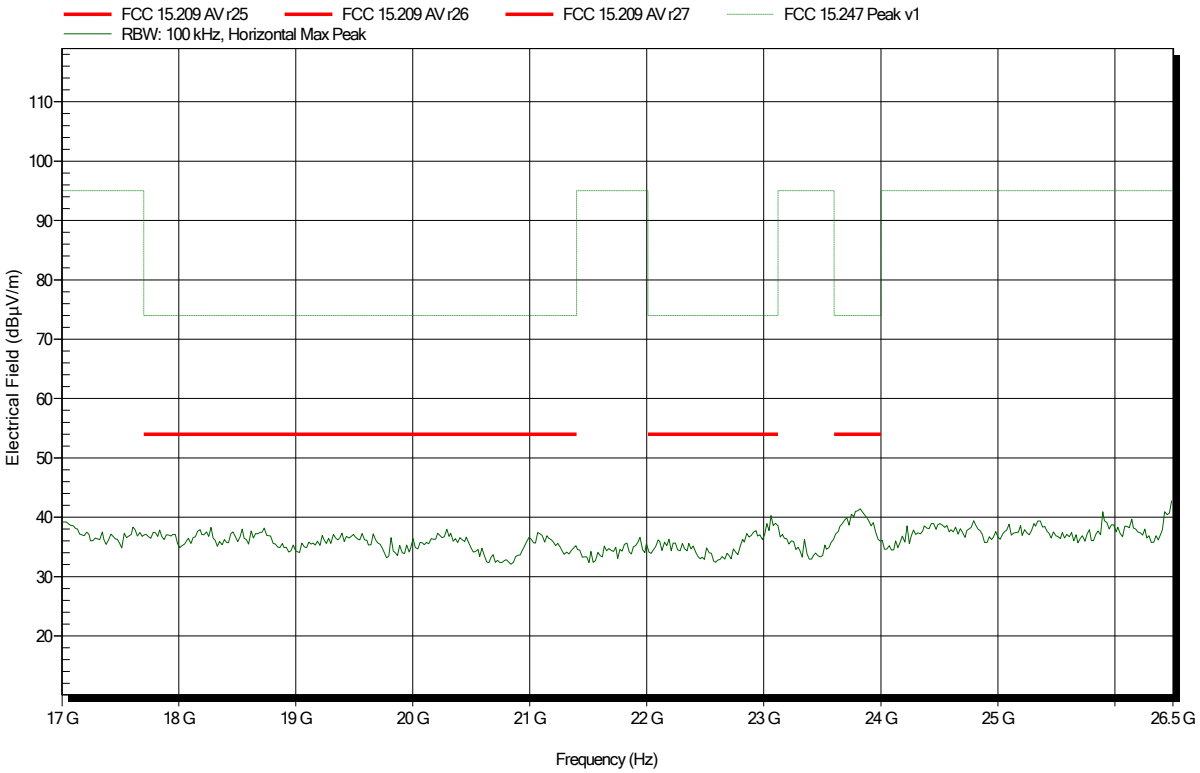

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number:

Applicant:
EUT Name:
Model:

Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Test Conditions:	Tnom: 22°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BLE; 2480 MHz
Test Date:	2018-02-28
Note:	

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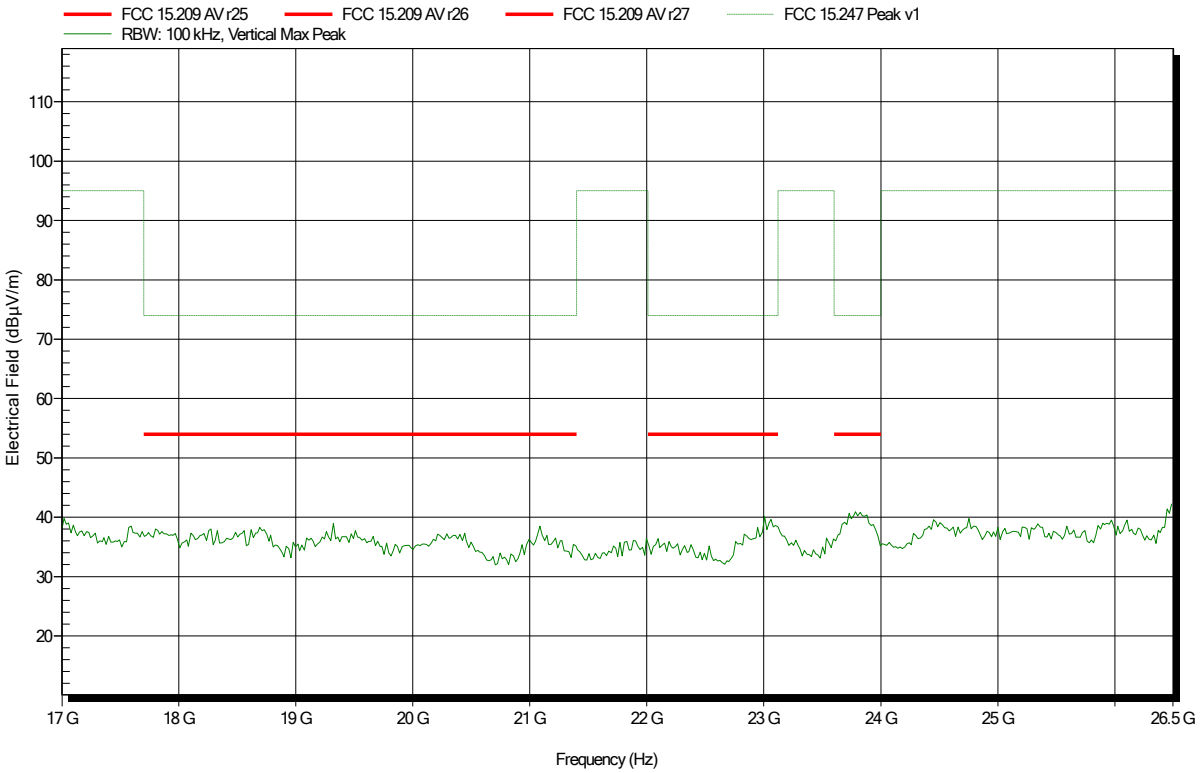

ANNEX B Receiver spurious emissions

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22.1°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Horizontal
Measurement distance:	3 m
Mode:	RX; LE; 2440 MHz
Test Date:	2018-02-24
Note:	

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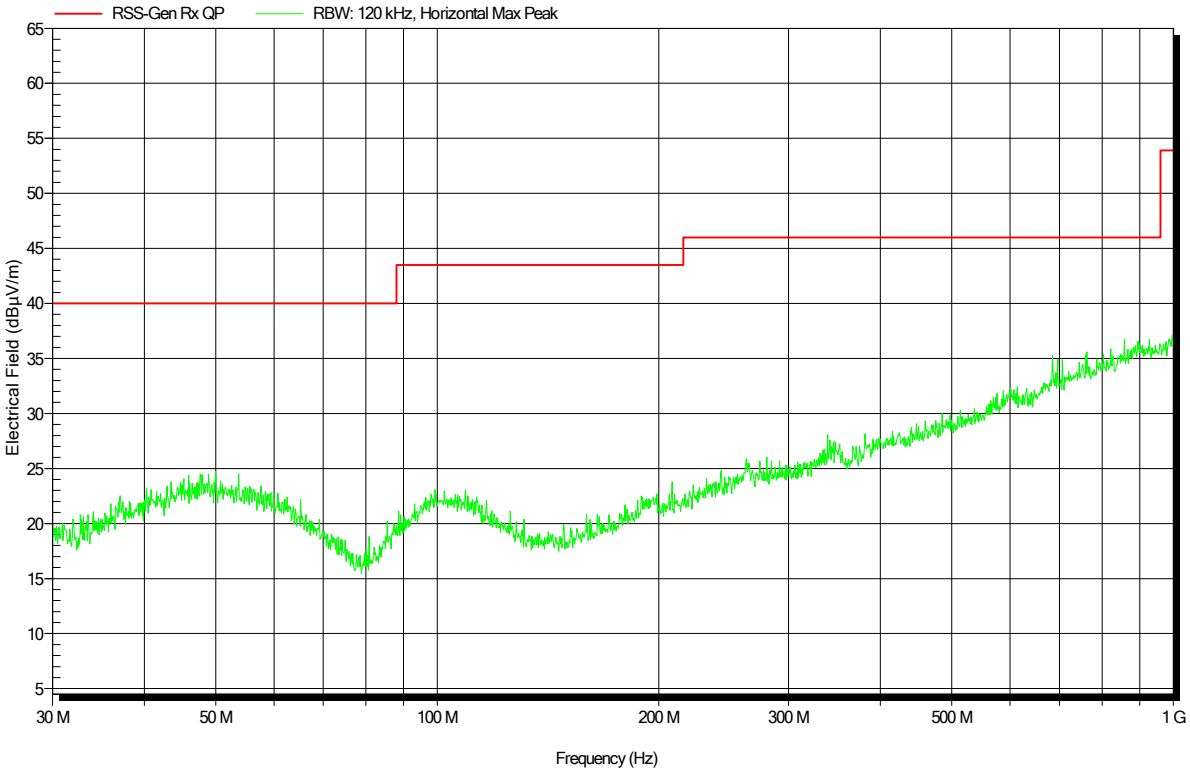

Spurious emissions according to FCC 15.247

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 22.1°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck VULB 9162, Vertical
Measurement distance:	3 m
Mode:	RX; LE; 2440 MHz
Test Date:	2018-02-24
Note:	

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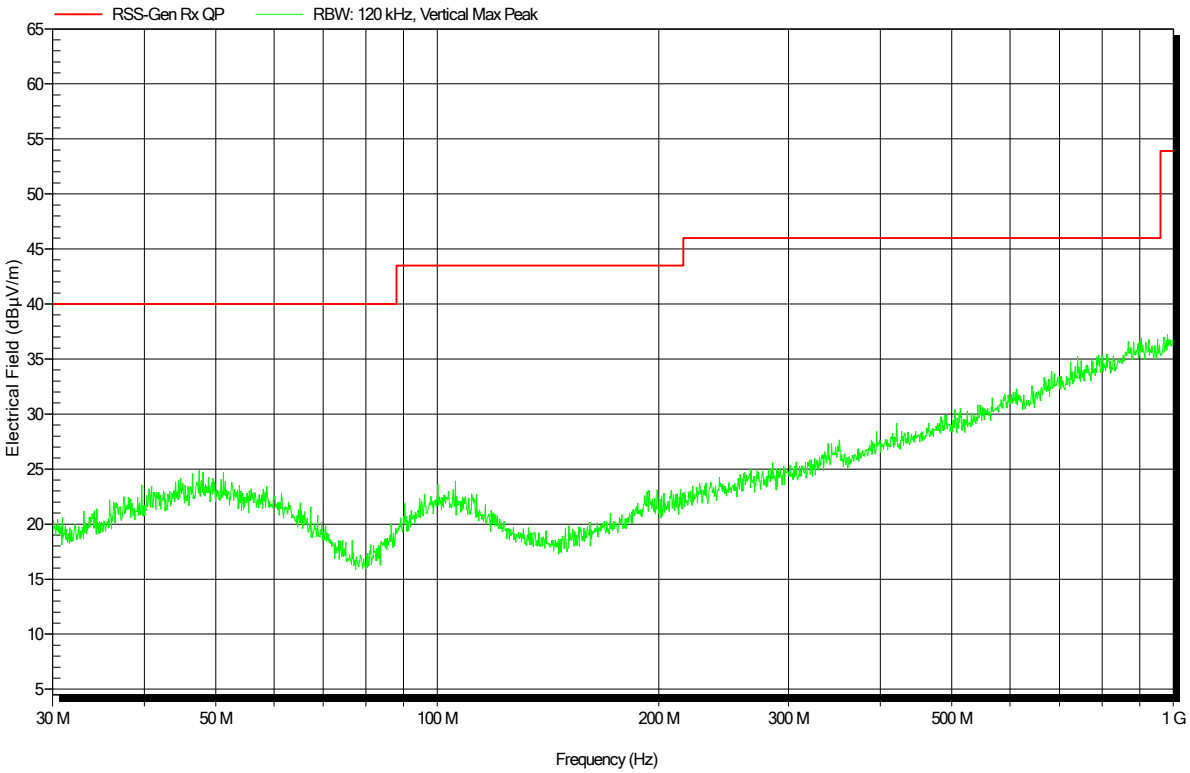
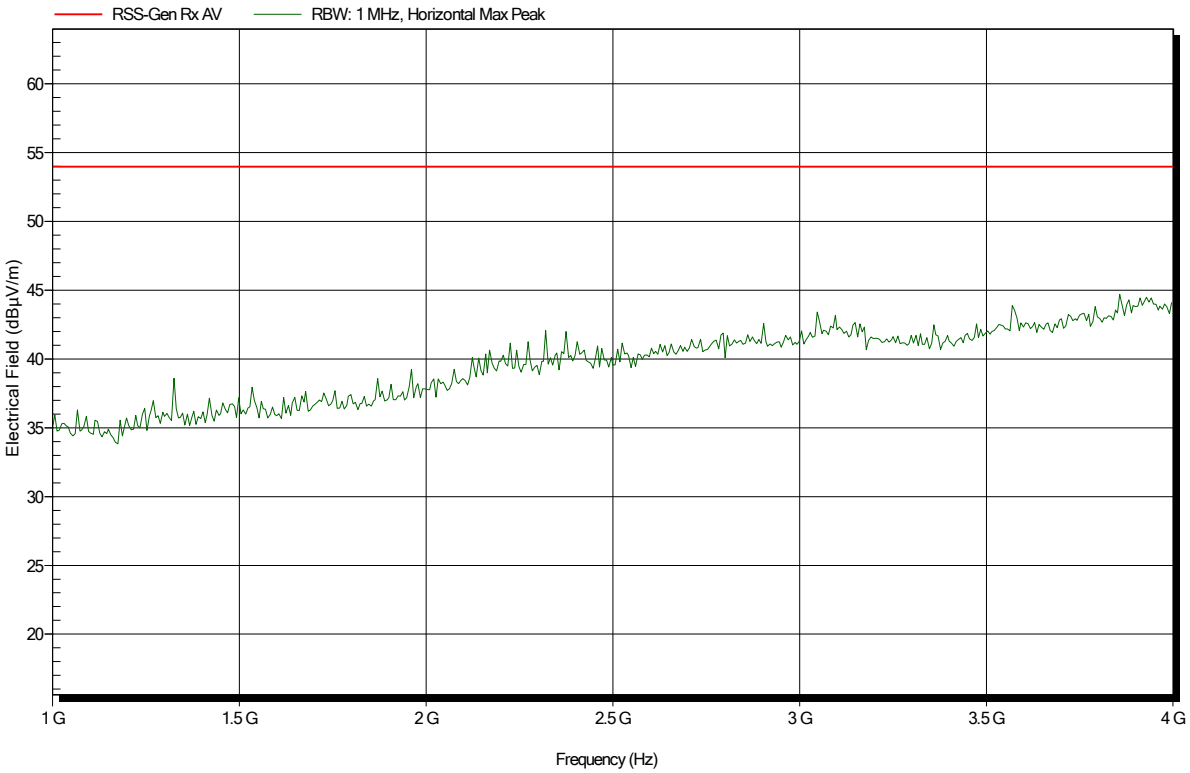


Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

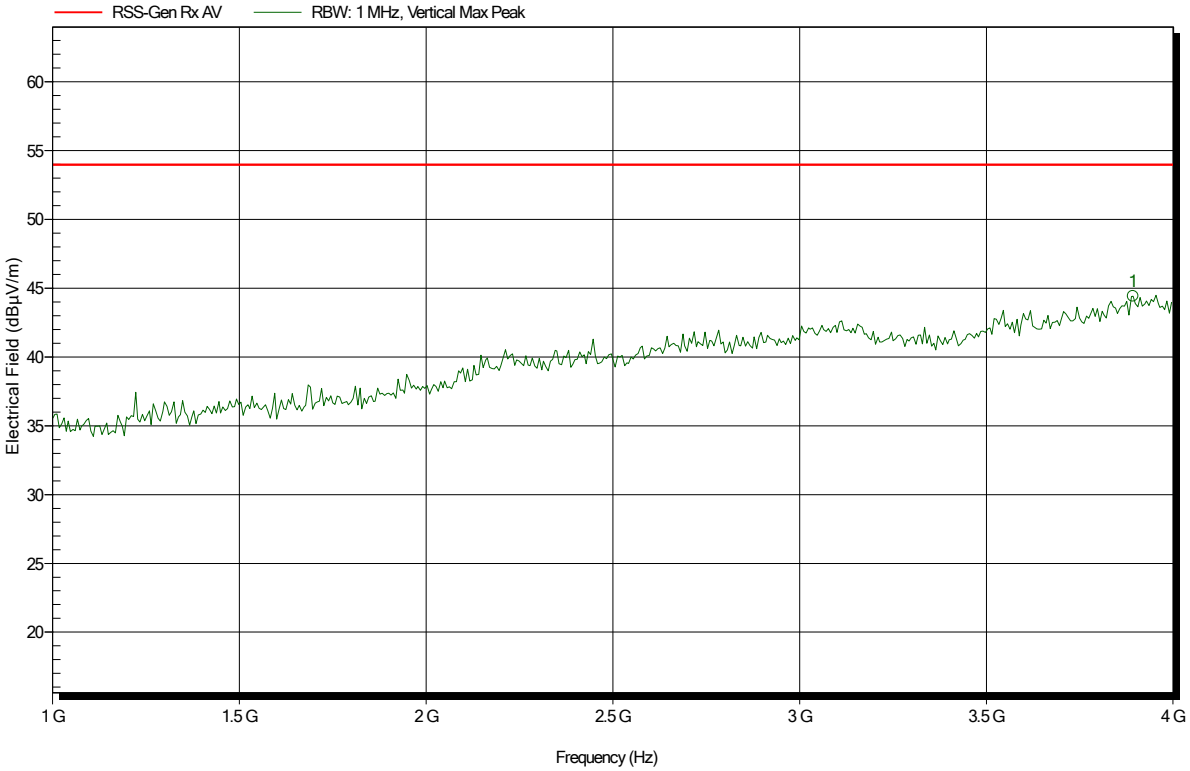
Index 3



Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

Index 6

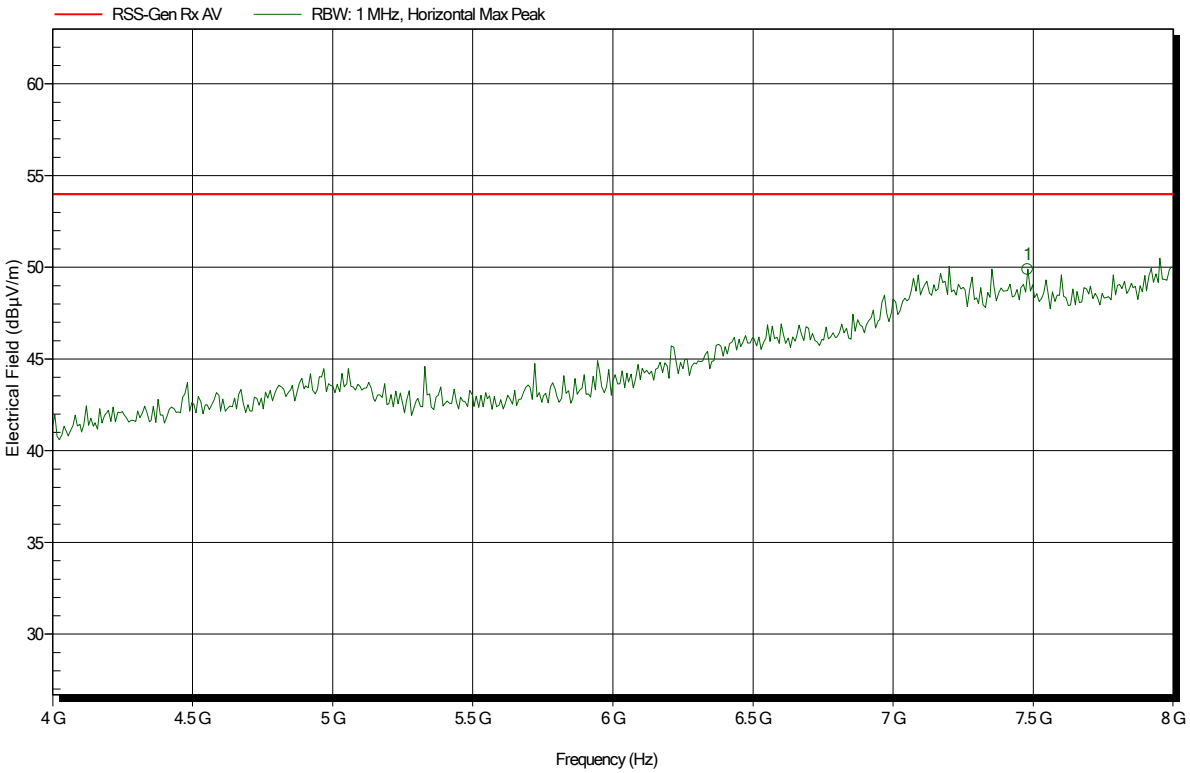


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.892 GHz	44.42 dBµV/m	53.98 dBµV/m	-9.56 dB	Pass

Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

Index 4

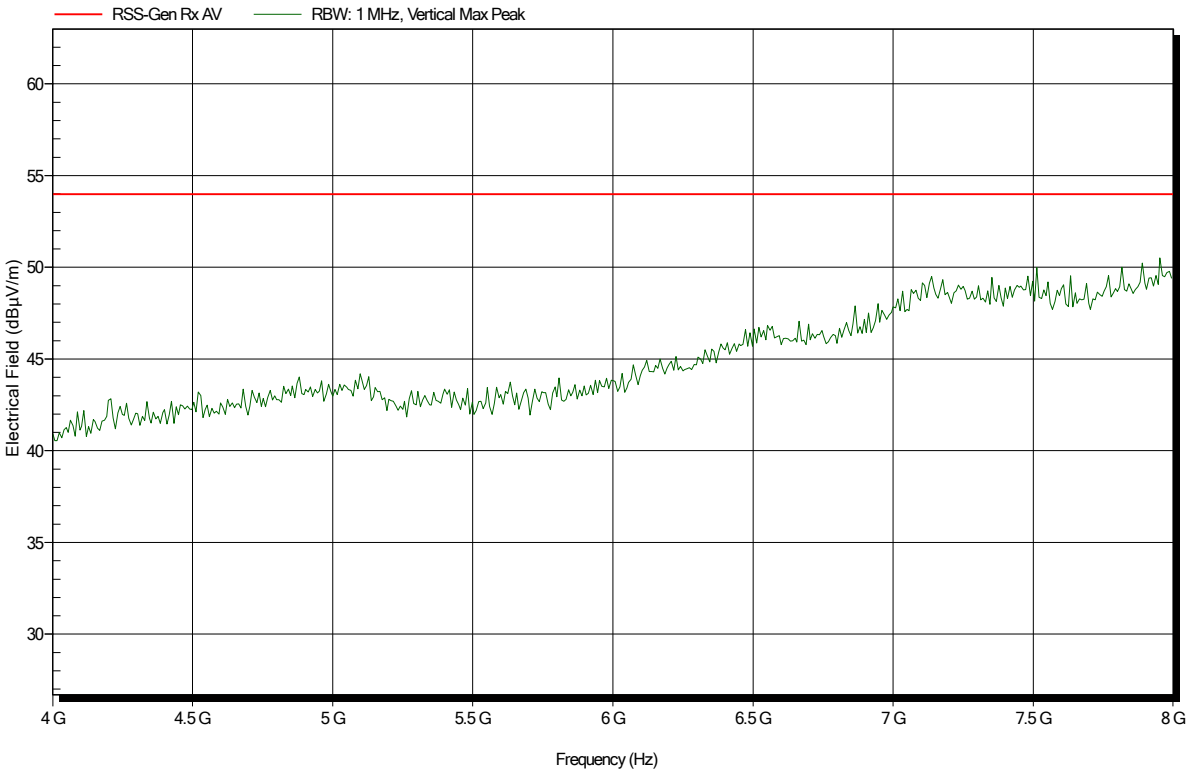


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.48 GHz	49.89 dBµV/m	53.98 dBµV/m	-4.09 dB	Pass

Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

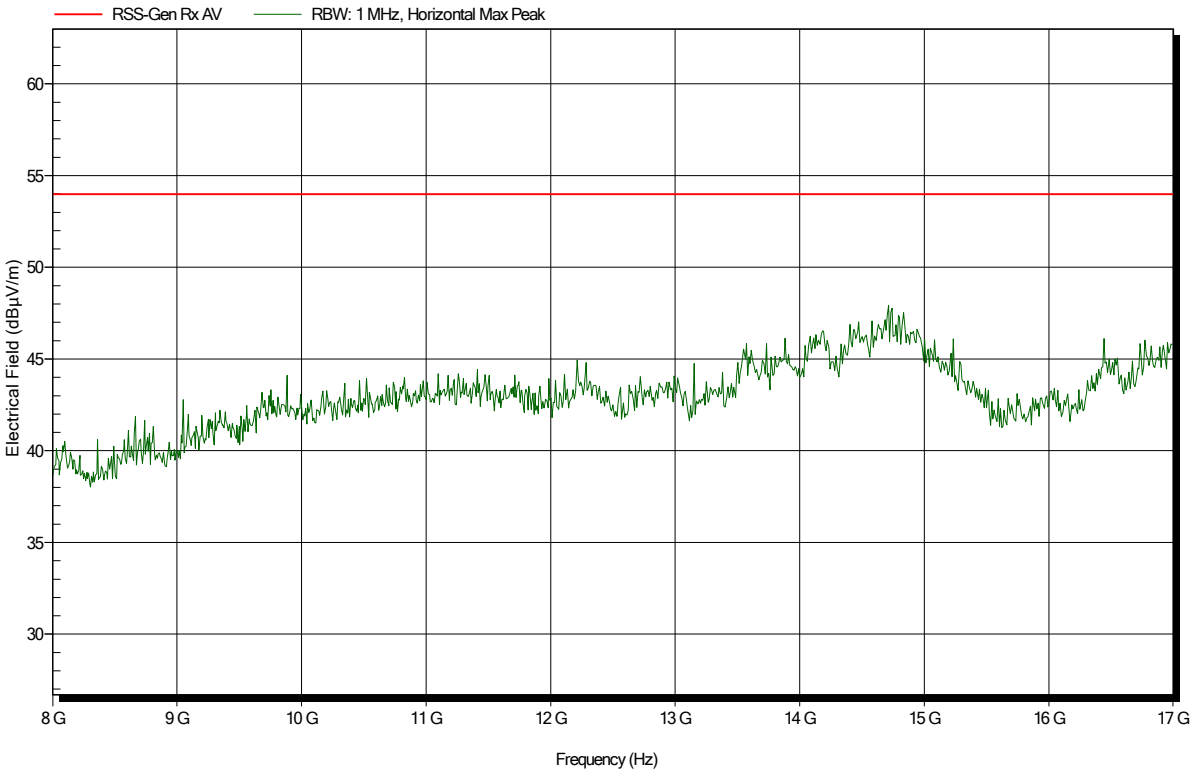
Index 5



Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

Index 1



Spurious emissions according to ISED RSS-247, I2

Project number:	G0M-1801-7167
Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica BLK3D
Test Site:	Eurofins Product Service GmbH
Operator:	Abdullah Al Jamal
Test Conditions:	Tnom: 24.8°C, Vnom: 3.8 VDC (rechargeable battery pack Li-Ion)
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; BT; 2441 MHz
Test Date:	2018-02-27
Note:	

Index 2