

FCC TEST REPORT	
FCC 47 CFR Part 15C Industry Canada RSS-247 Digital transmission systems operating within the 2400 – 2483.5 MHz band	
Report Reference No. :	G0M-1511-5219-TFC247BL-V03
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	  A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Applicant's name	Leica Geosystems AG
Address	Heinrich Wild Strasse 9435 Heerbrugg SWITZERLAND
Test specification:	
Standard..... :	47 CFR Part 15C RSS-247, Issue 1, 2015-05 RSS-Gen, Issue 4, 2014-11 ANSI C63.10:2013 ANSI C63.4:2014
Test scope..... :	complete Radio compliance test
Equipment under test (EUT):	
Product description	Laser Distance Meter
Model No.	Leica Disto D2
Additional Model(s)	None
Brand Name(s)	Leica Geosystem AG
Hardware version	None
Firmware / Software version	None
	FCC-ID: RFF-LD2BT IC: 3177A-LD2BT
Test result	Passed

Possible test case verdicts:

- neither assessed nor tested : N/N
- required by standard but not appl. to test object : N/A
- required by standard but not tested : N/T
- not required by standard for the test object : N/R
- test object does meet the requirement : P (Pass)
- test object does not meet the requirement : F (Fail)

Testing:

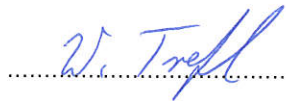
Test Lab Temperature : 20 – 23 °C

Test Lab Humidity : 32 – 38 %

Date of receipt of test item : 2015-12-16

Date (s) of performance of tests : 2015-12-17 – 2016-01-04

Compiled by : Christian Weber

Tested by (+ signature) : Wilfried Treffke 

(Responsible for Test)

Approved by (+ signature) : Christian Weber 

(Head of Lab)

Date of issue : 2016-03-22

Total number of pages : 89

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	Issue Date	Remarks	Revised by
01	2016-01-14	Initial Release	
02	2016-03-10	Conducted power in W corrected	C. Weber
03	2016-03-22	Conducted power in W corrected	C. Weber

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1 Equipment (Test item) Description

Description	Laser Distance Meter	
Model	Leica Disto D2	
Additional Model(s)	None	
Brand Name(s)	Leica Geosystem AG	
Serial number	None	
Hardware version	None	
Software / Firmware version	None	
FCC-ID	RFF-LD2BT	
IC	3177A-LD2BT	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	Bluetooth 4.0 Low Energy	
Operating frequency range	2402 - 2480 MHz	
Assigned frequency band	2400 - 2483.5 MHz	
Main test frequencies	F _{LOW}	2402 MHz
	F _{MID}	2442 MHz
	F _{HIGH}	2480 MHz
Spreading	Frequency Hopping	
Modulations	GFSK	
Number of channels	40	
Channel spacing	2MHz	
Number of antennas	1	
Antenna	Type	integrated
	Model	2450AT18B100E
	Manufacturer	Johanson Technology
	Gain	0.5 dBi
Manufacturer	flex Hungary Munkas u. 28 8660 Tab Hungary	
Power supply	V _{NOM}	3.0 VDC
	V _{MIN}	N/R
	V _{MAX}	N/R
AC/DC-Adaptor	none	

1.1 Photos – Equipment External



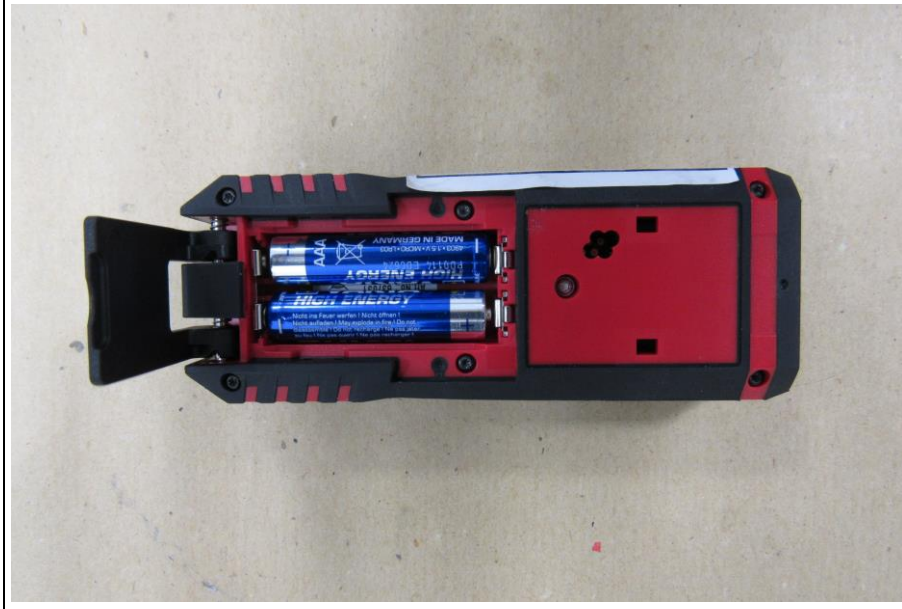
EUT SIDE VIEW



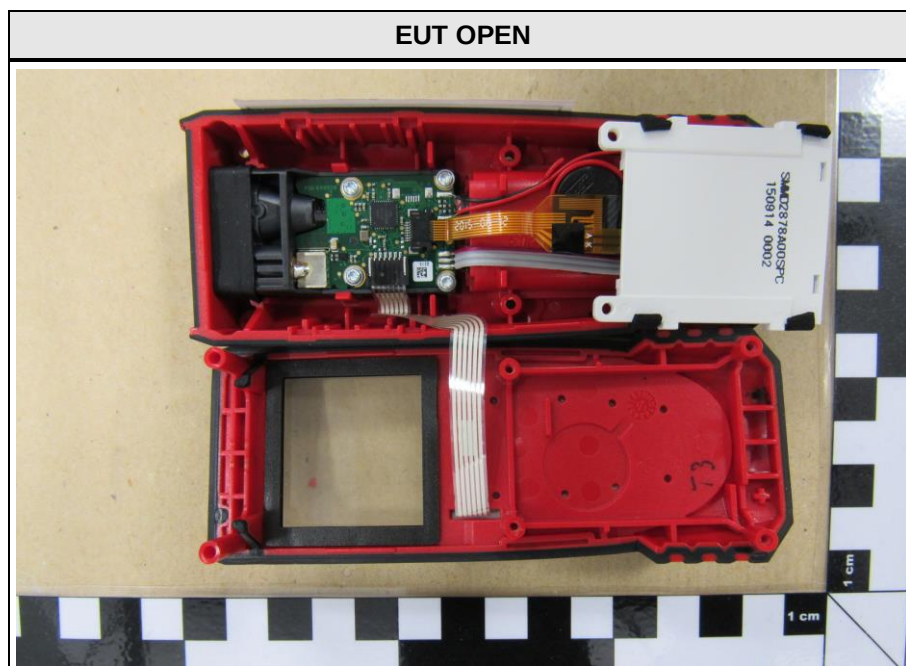
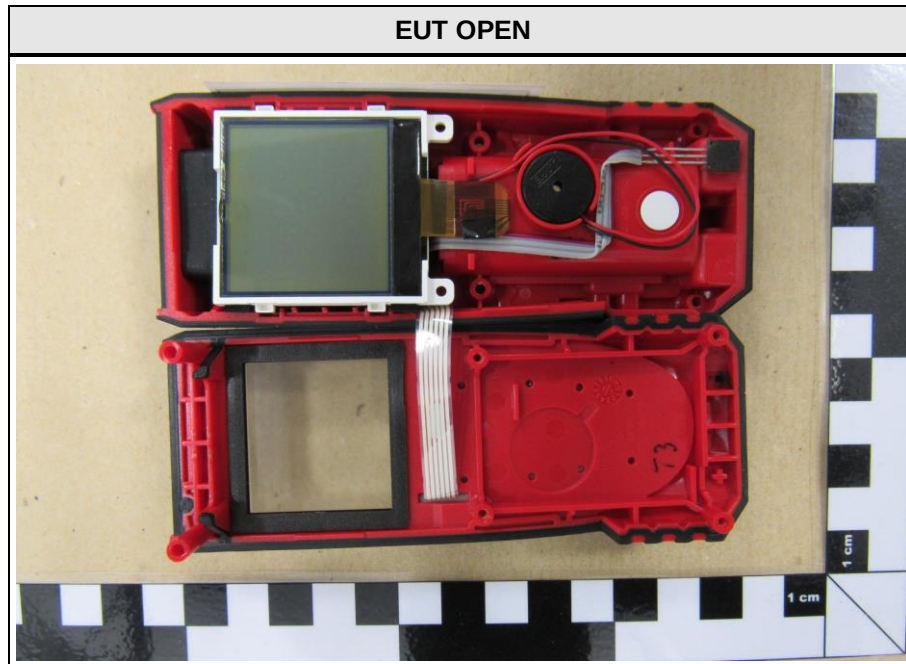
EUT TOP



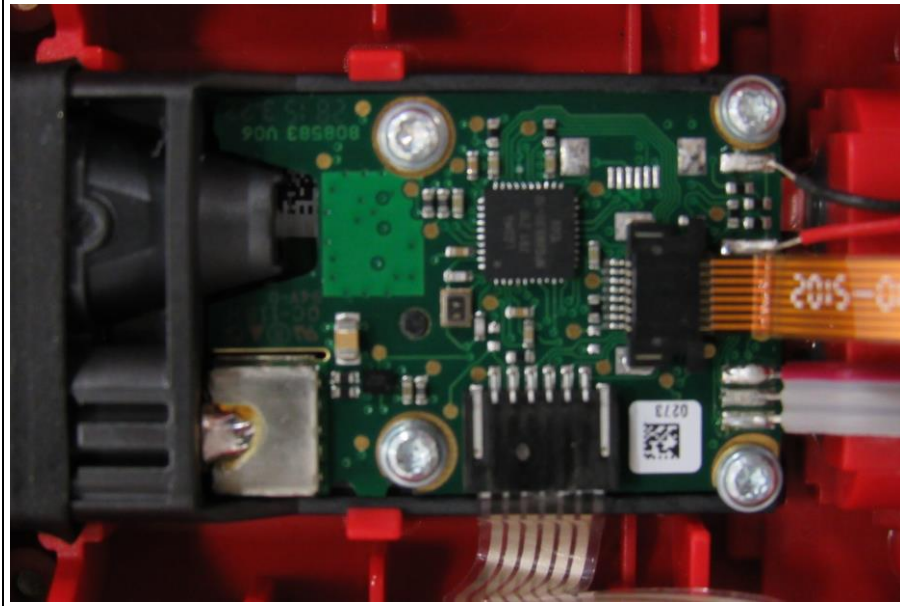
EUT BATTERY COMPARTMENT



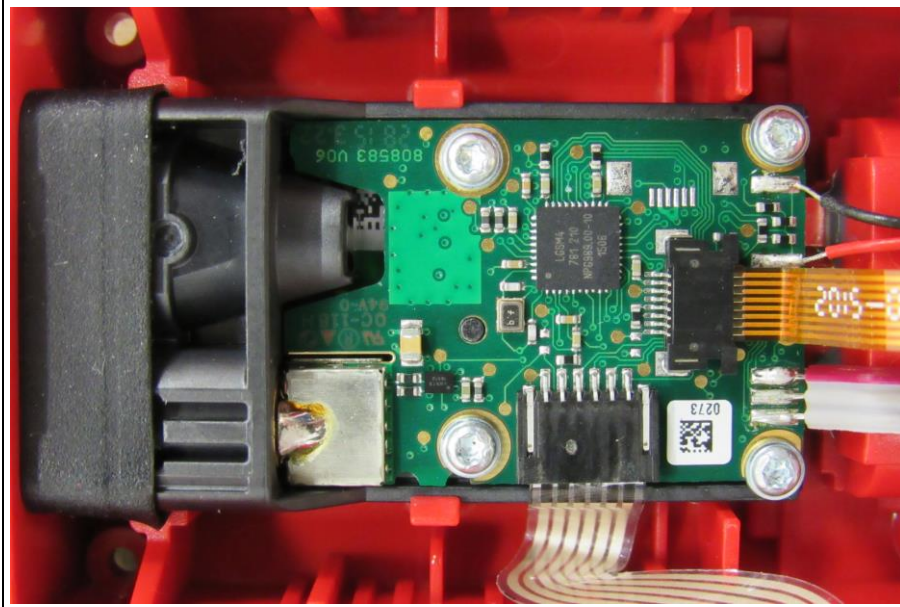
1.2 Photos – Equipment internal

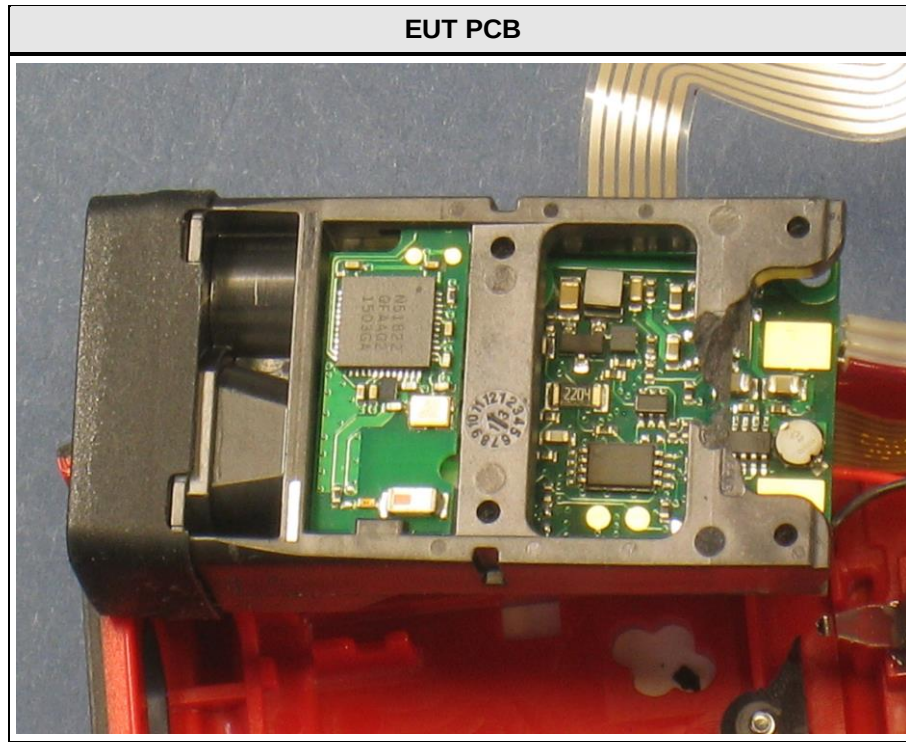


EUT PCB

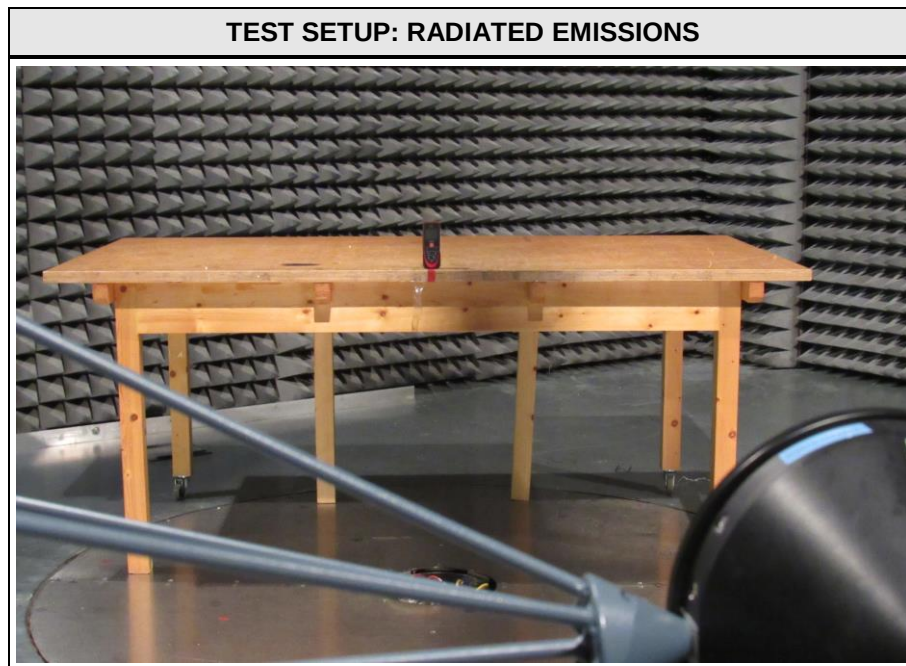


EUT PCB





1.3 Photos – Test setup



1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
AE	LAPTOP	Lenovo	T61	Remote Test Setup
*Note: Use the following abbreviations: AE : Auxiliary/Associated Equipment, or SIM : Simulator (Not Subjected to Test) CABL : Connecting cables				

1.5 Test Modes

Mode #	Description	
Transmit	General conditions:	EUT powered by fully charged battery.
	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = GFSK Data rate = 1 Mbps Bandwidth = 2 MHz Duty cycle = 100 % Power level = Maximum
Receive	General conditions:	EUT powered by fully charged battery.
	Radio conditions:	Mode = standalone receive (scan mode) Spreading = On Modulation = GFSK

1.6 Test Equipment Used During Testing

Measurement Software			
Description	Manufacturer	Name	Version
EMC Test Software	Dare Instruments	Radimation	2014.1.15

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

6dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

Power spectral density					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2015-03	2016-03

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242		
Biconical Antenna	R&S	HK 116	EF00012		
LPD Antenna	R&S	HL 223	EF00187		
LPD Antenna	R&S	HL 025	EF00327		

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:

$$\text{Reading on Analyzer (dB}\mu\text{V)} + \text{A.F. (dB)} = \text{Net field strength (dB}\mu\text{V/m)}$$

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:

$$\text{Limit (dB}\mu\text{V/m)} = 20 * \log (\mu\text{V/m})$$

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, IC RSS-247				
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks
RSS-Gen 6.6	Occupied Bandwidth	ANSI C63.10	N/R	Informational only
FCC § 15.247(a)(2) IC RSS-247 § 5.2	6dB Bandwidth	ANSI C63.10	PASS	
FCC § 15.247(b)(3) IC RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	PASS	
FCC § 15.247(e) IC RSS-247 § 5.2	Power spectral density	ANSI C63.10	PASS	
47 CFR 15.207 IC RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.4	PASS	
FCC § 15.247(d) IC RSS-247 § 5.5	Band edge compliance	ANSI C63.10	PASS	
FCC § 15.247(d) IC RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	PASS	
FCC § 15.247(d) FCC § 15.209 IC RSS-247 § 5.5	Transmitter radiated spurious emissions	ANSI C63.10	PASS	
IC RSS-247 § 3.1	Receiver radiated spurious emissions	ANSI C63.10	PASS	
Remarks:				

3 Test Conditions and Results

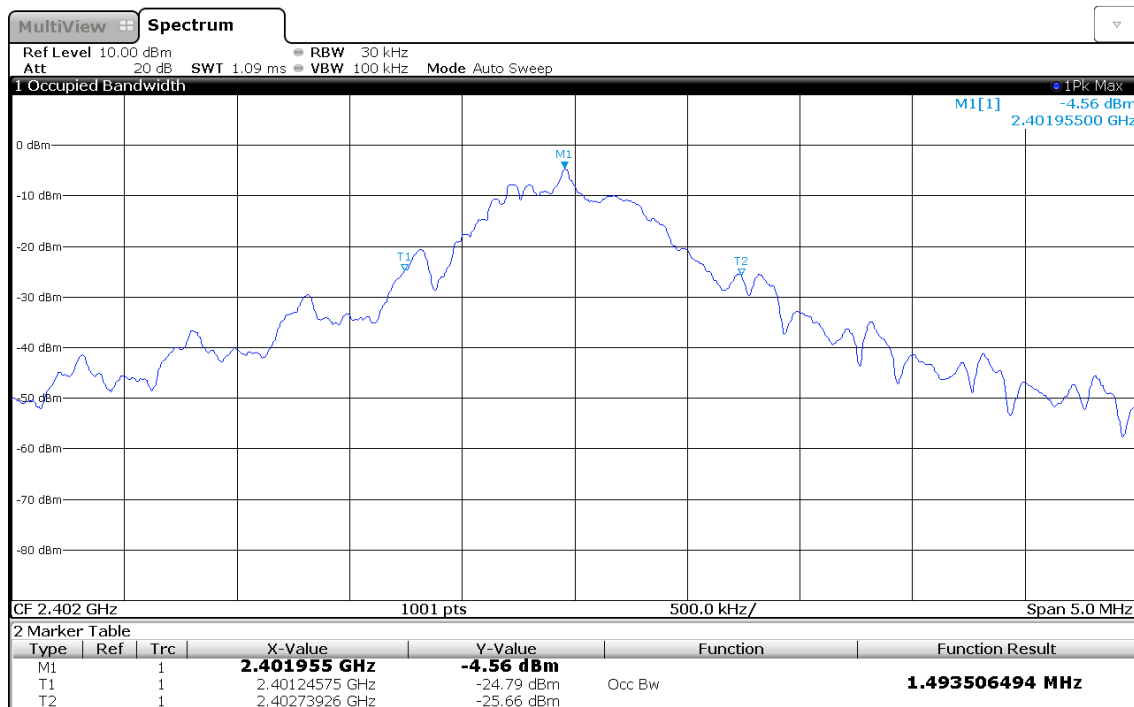
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. to IC RSS-Gen			Verdict: PASS
Test according to measurement reference	Reference Method		
	ANSI C63.10		
Test frequency range	Tested frequencies		
	F _{LOW} / F _{MID} / F _{HIGH}		
Limits			
None (Informational only)			
Test setup			
Spectrum Analyzer EUT			
Test procedure			
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to at least twice the emission spectrum 3. Resolution bandwidth set to 1 % of span 4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function			
Test results			
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [MHz]
F _{LOW}	2402	Transmit	1.494
F _{MID}	2442	Transmit	1.698
F _{HIGH}	2480	Transmit	1.643
Comments:			

Occupied Bandwidth – F_{Low}

Occupied Bandwidth

Project Number: G0M-1511-5219
Applicant: Leica Geosystems AG
Model Description: Laser Distance Meter
Model: Leica Disto D2
Test Sample ID: 1
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: C. Weber
Test Site: Eurofins Product Service GmbH
Test Date: 2016-01-04
Occupied Bandwidth [MHz]: 1.494

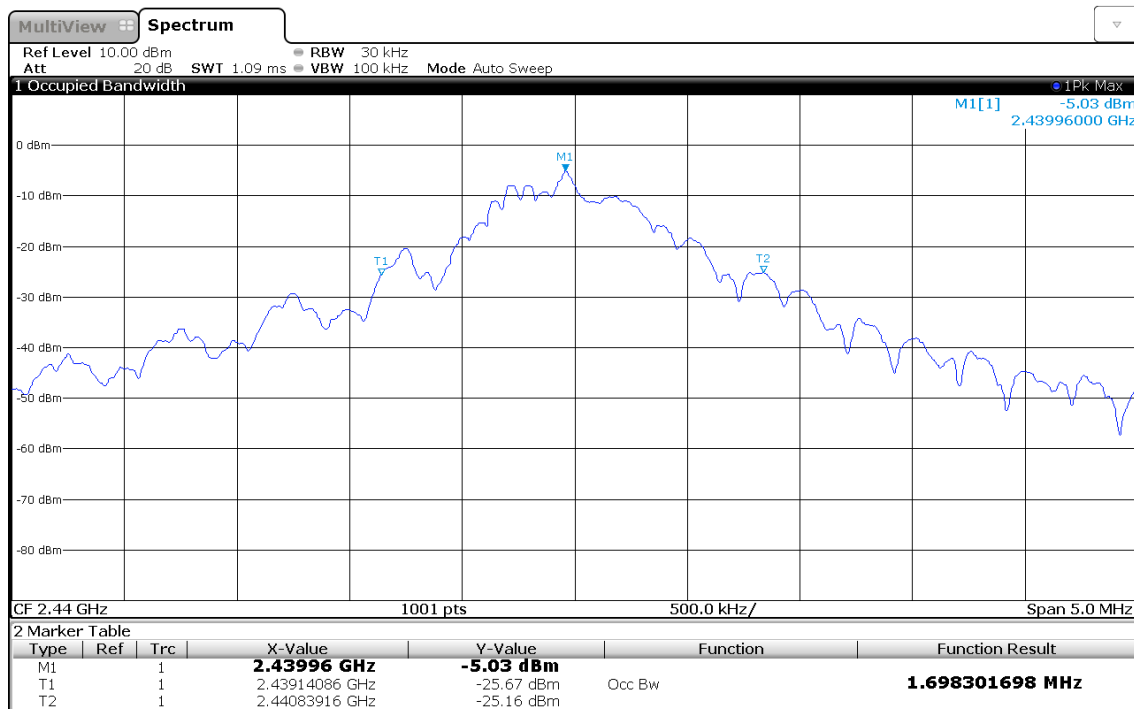


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Occupied Bandwidth – F_{MID}

Occupied Bandwidth

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 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: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Occupied Bandwidth [MHz]: 1.698

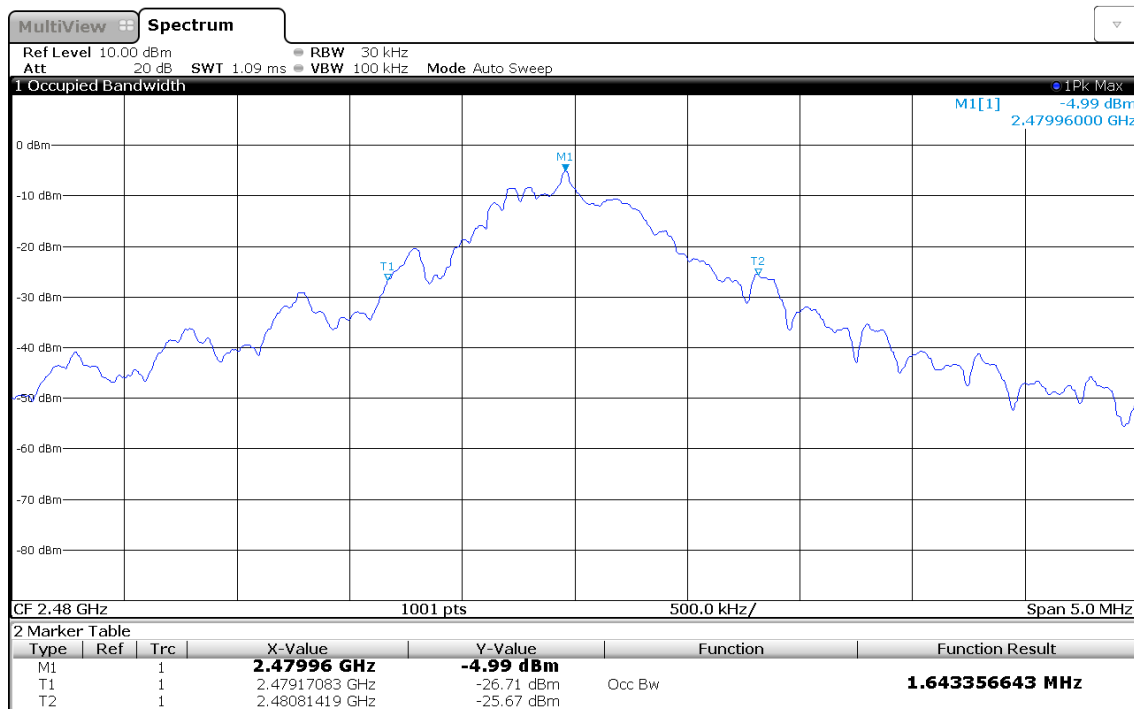


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Occupied Bandwidth – F_{HIGH}

Occupied Bandwidth

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 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: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Occupied Bandwidth [MHz]: 1.643



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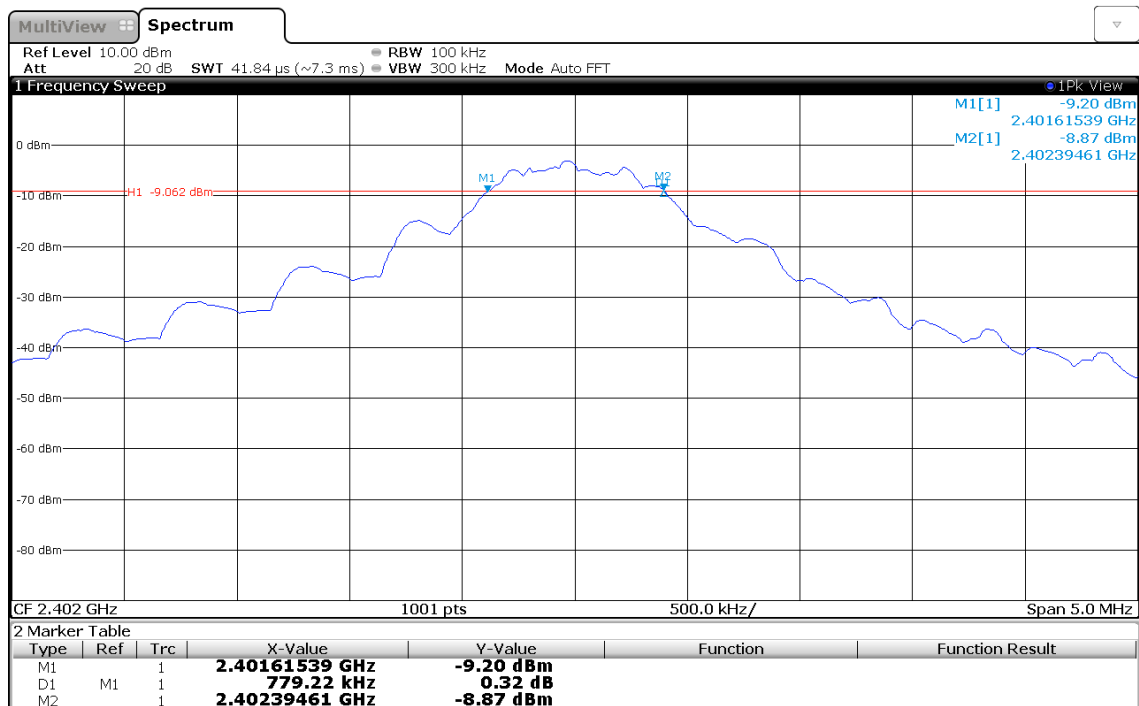
3.2 Test Conditions and Results – 6 dB Bandwidth

6dB Bandwidth acc. to FCC 15.247 / IC RSS-247				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.247(a)(2) / IC RSS-247 5.2			
Test according to measurement reference		Reference Method			
		ANSI C63.10			
Test frequency range		Tested frequencies			
		F _{LOW} / F _{MID} / F _{HIGH}			
Limits					
Limit					
≥ 500kHz					
Test setup					
Spectrum Analyzer EUT					
Test procedure					
1. EUT set to test mode 2. Span set to at least twice the emission spectrum 3. Detector set to peak and max hold and RBW is set to 100 kHz 4. Envelope peak value of emission spectrum is selected 5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak 6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak 7. 6 dB Bandwidth is determined by marker frequency separation					
Test results					
Channel	Frequency [MHz]	Mode	6 dB Bandwidth [kHz]	Limit [kHz]	Result
F _{LOW}	2402	Transmit	779	500	PASS
F _{MID}	2442	Transmit	814	500	PASS
F _{HIGH}	2480	Transmit	704	500	PASS
Comments:					

6 dB Bandwidth – F_{Low}

DTS (6 dB) Bandwidth

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: T_{nom}/V_{nom}
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Lower Frequency [MHz]: 2401.615
 Upper Frequency [MHz]: 2402.395
 6 dB Bandwidth [kHz]: 779

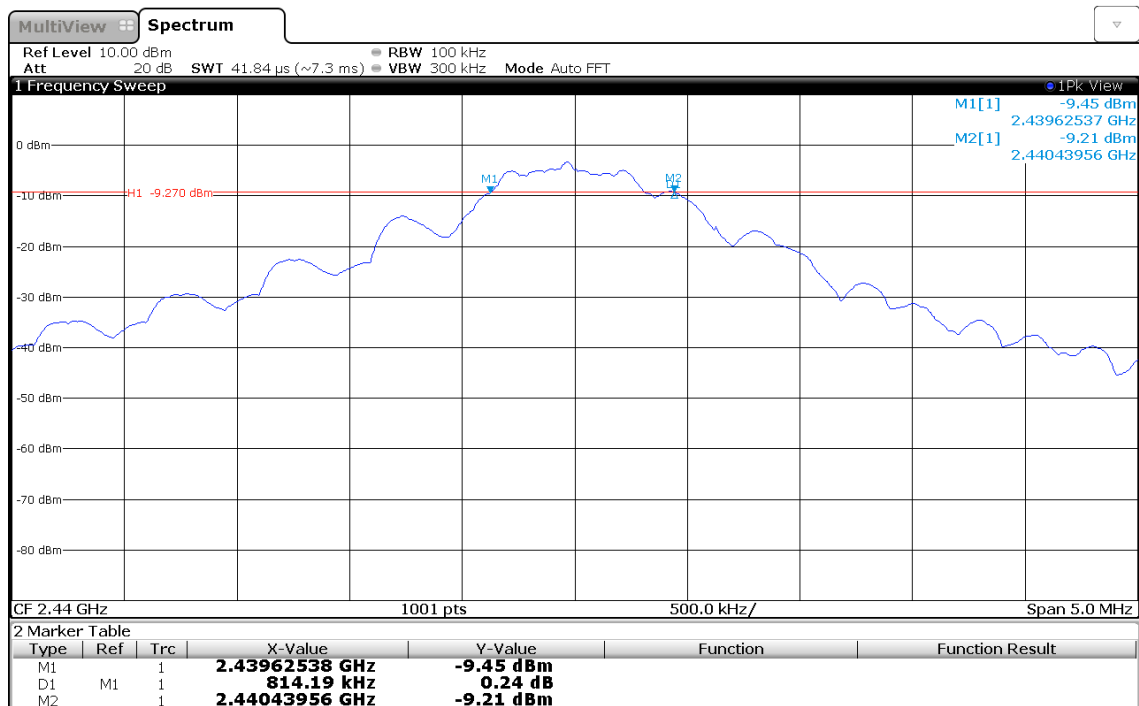


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6 dB Bandwidth – F_{MID}

DTS (6 dB) Bandwidth

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Lower Frequency [MHz]: 2439.625
 Upper Frequency [MHz]: 2440.440
 6 dB Bandwidth [kHz]: 814

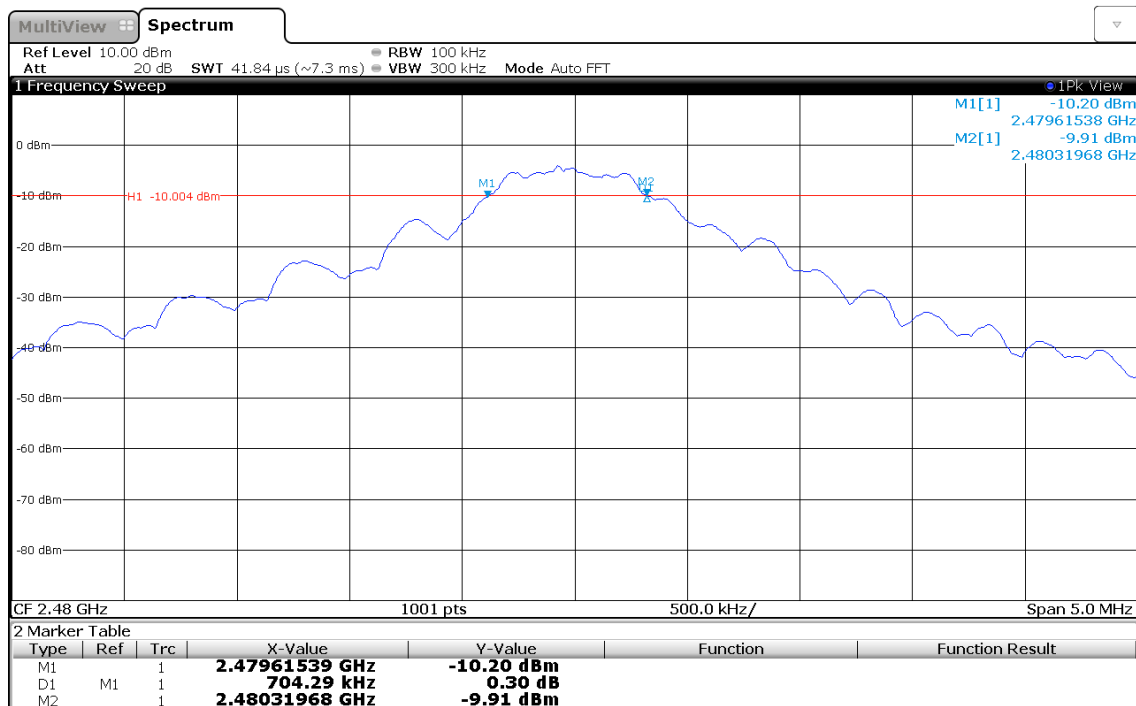


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6 dB Bandwidth – F_{HIGH}

DTS (6 dB) Bandwidth

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Lower Frequency [MHz]: 2479.615
 Upper Frequency [MHz]: 2480.320
 6 dB Bandwidth [kHz]: 704



Date: 4 JAN 2016 10:33:32

3.3 Test Conditions and Results – Maximum peak conducted power

Maximum peak conducted power acc. to FCC 15.247 / IC RSS-247		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.247(b)(3) / IC RSS-247 5.4	
Test according to measurement reference	Reference Method	
	ANSI C63.10	
Test frequency range	Tested frequencies	
	F _{LOW} / F _{MID} / F _{HIGH}	
Measurement mode	Peak	
Maximum antenna gain	0.5 dBi ⇒ Limit correction = 0 dB	
Limits		
1 W (30 dBm)		
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.		
Test setup		
Spectrum Analyzer EUT		
Test procedure		
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to twice the 20 dB bandwidth and detector to peak and max hold 4. Resolution bandwidth is set to 3 MHz 5. Peak conducted power is determined from peak of spectrum envelope		

Test results							
Channel	Frequency [MHz]	Voltage	Mode	Peak power [dbm]	Peak power [W]	Limit [dBm]	Margin [dB]
F _{LOW}	2402	V _{nom} = 3.3V	Transmit	-2.432	0.0006	30	-32.43
F _{MID}	2442	V _{nom} = 3.3V	Transmit	-2.451	0.0006	30	-32.45
F _{HIGH}	2480	V _{nom} = 3.3V	Transmit	-3.204	0.0005	30	-33.20
Comment:							

3.4 Test Conditions and Results – Power spectral density

Power spectral density acc. to FCC 15.247 / IC RSS-247					Verdict: PASS	
EUT requirement rule parts and clause		Reference				
		FCC 15.247(e) / IC RSS-247 5.2				
Test according to measurement reference		Reference Method				
		ANSI C63.10				
Test frequency range		Tested frequencies				
		F _{LOW} / F _{MID} / F _{HIGH}				
Measurement mode		Peak				
Limits						
8 dBm / 3 kHz						
Test setup						
Spectrum Analyzer EUT						
Test procedure						
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span is set large enough to capture maximum emissions in passband, RBW is set to 3kHz 4. Peak power density is determined from peak emission of envelope						
Test results						
Channel	Frequency [MHz]	Test mode	Peak frequency [MHz]	Peak power density [dBm]	Limit [dBm/3kHz]	Margin [dB]
F _{LOW}	2402	Transmit	2401.976	-2.574	8.0	-10.57
F _{MID}	2442	Transmit	2439.970	-2.544	8.0	-10.54
F _{HIGH}	2480	Transmit	2479.970	-3.312	8.0	-11.31
Comments: RBW=100 kHz was used for all measurements						

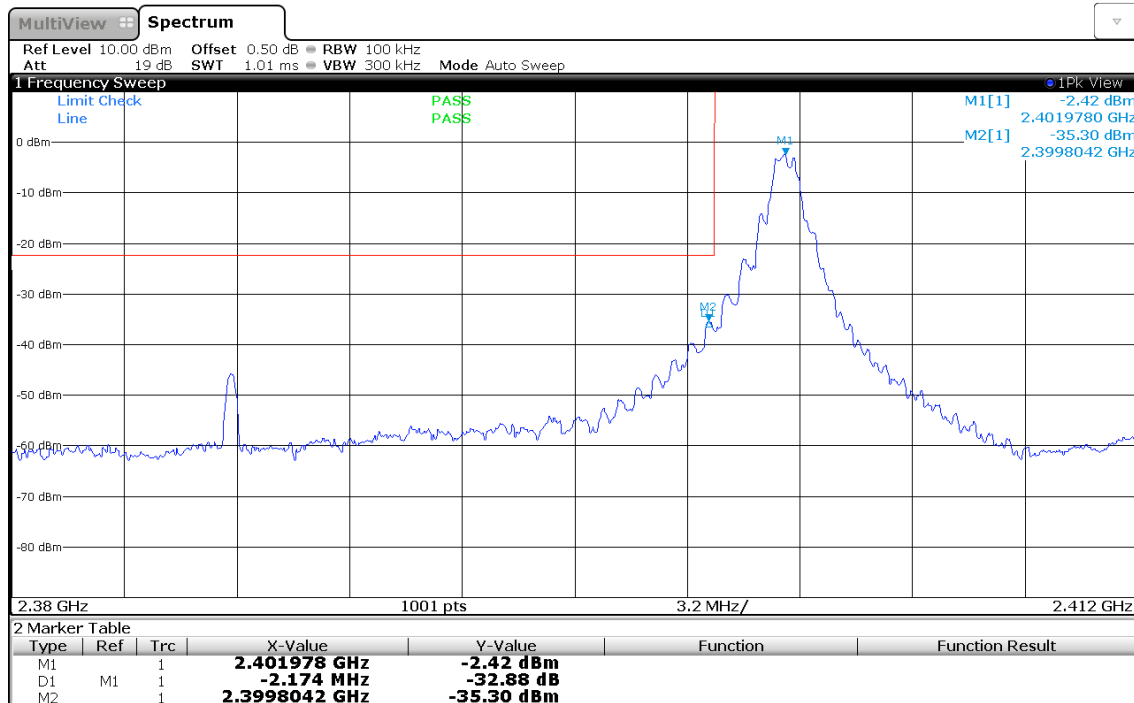
3.5 Test Conditions and Results – Band edge compliance

Band-edge compliance acc. to FCC 15.247 / IC RSS-247				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.247(d) / IC RSS-247 5.5			
Test according to measurement reference		Reference Method			
		ANSI C63.10			
Test frequency range		Tested frequencies			
		F _{LOW} / F _{HIGH}			
Measurement mode		Peak			
Limits					
Limit			Condition		
≤ -20 dB / 100 kHz			Peak power measurement detector = Peak		
≤ -30 dB / 100 kHz			Peak power measurement detector = RMS		
Test setup					
Spectrum Analyzer EUT					
Test procedure					
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference					
Test results					
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]
F _{LOW}	2402	Transmit	-32.88	-20	
F _{HIGH}	2480	Transmit	-45.59	-20	
Comments:					

Band-edge compliance – Lower Edge

Band-edge Compliance

Project Number: G0M-1511-5219
Applicant: Leica Geosystems AG
Model Description: Laser Distance Meter
Model: Leica Disto D2
Test Sample ID: 1
Reference Standards: FCC 15.247, RSS-247
Reference Method: ANSI C63.10:2013, Section 11.11
Operational Mode: GFSK, Channel: 0, 2402 MHz
Operating Conditions: Tnom/Vnom
Operator: C. Weber
Test Site: Eurofins Product Service GmbH
Test Date: 2016-01-04
Band-edge: Lower
In-band Frequency [MHz]: 2401.978
Max. in-band Level [dBm/100 kHz]: -2.421
Out-of-band Frequency [MHz]: 2399.804
Max. out-of-band Level [dBm/100 kHz]: -35.3
Attenuation [dB]: -32.88

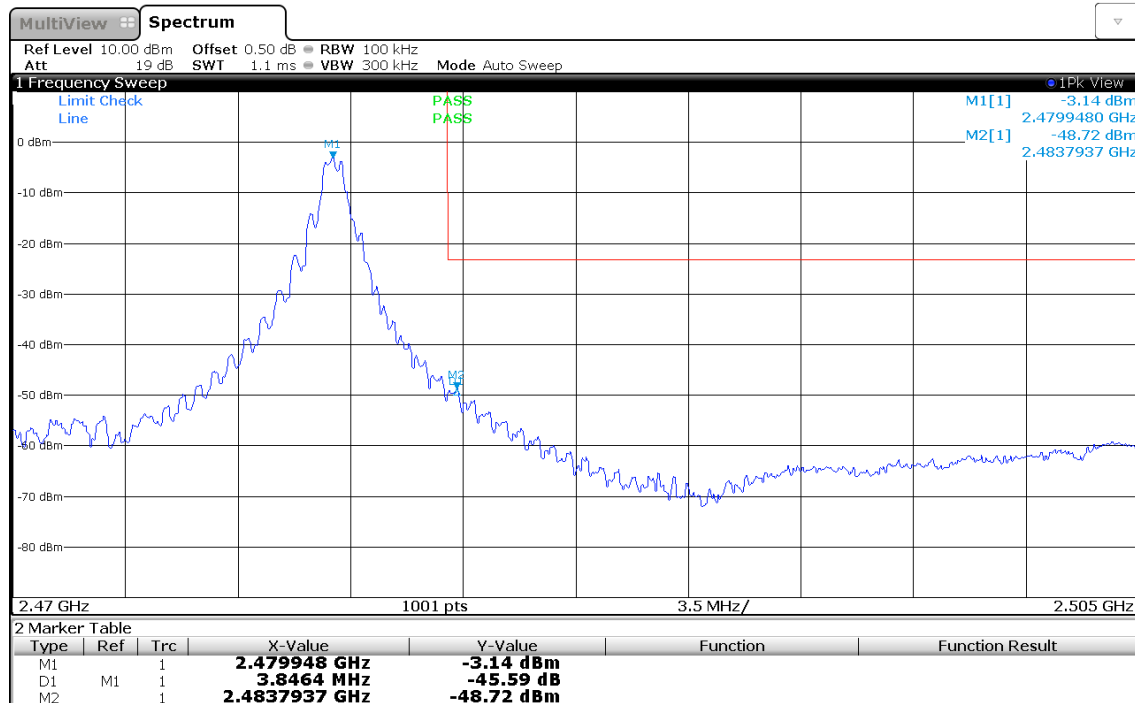


Date: 4. JAN. 2016 10:45:47

Band-edge compliance – Upper Edge

Band-edge Compliance

Project Number: G0M-1511-5219
Applicant: Leica Geosystems AG
Model Description: Laser Distance Meter
Model: Leica Disto D2
Test Sample ID: 1
Reference Standards: FCC 15.247, RSS-247
Reference Method: ANSI C63.10:2013, Section 11.11
Operational Mode: GFSK, Channel: 39, 2480 MHz
Operating Conditions: Tnom/Vnom
Operator: C. Weber
Test Site: Eurofins Product Service GmbH
Test Date: 2016-01-04
Band-edge: Upper
In-band Frequency [MHz]: 2479.948
Max. in-band Level [dBm/100 kHz]: -3.136
Out-of-band Frequency [MHz]: 2483.794
Max. out-of-band Level [dBm/100 kHz]: -48.724
Attenuation [dB]: -45.59



Date: 4. JAN. 2016 10:46:54

Test Report No.: G0M-1511-5219-TFC247BL-V03

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

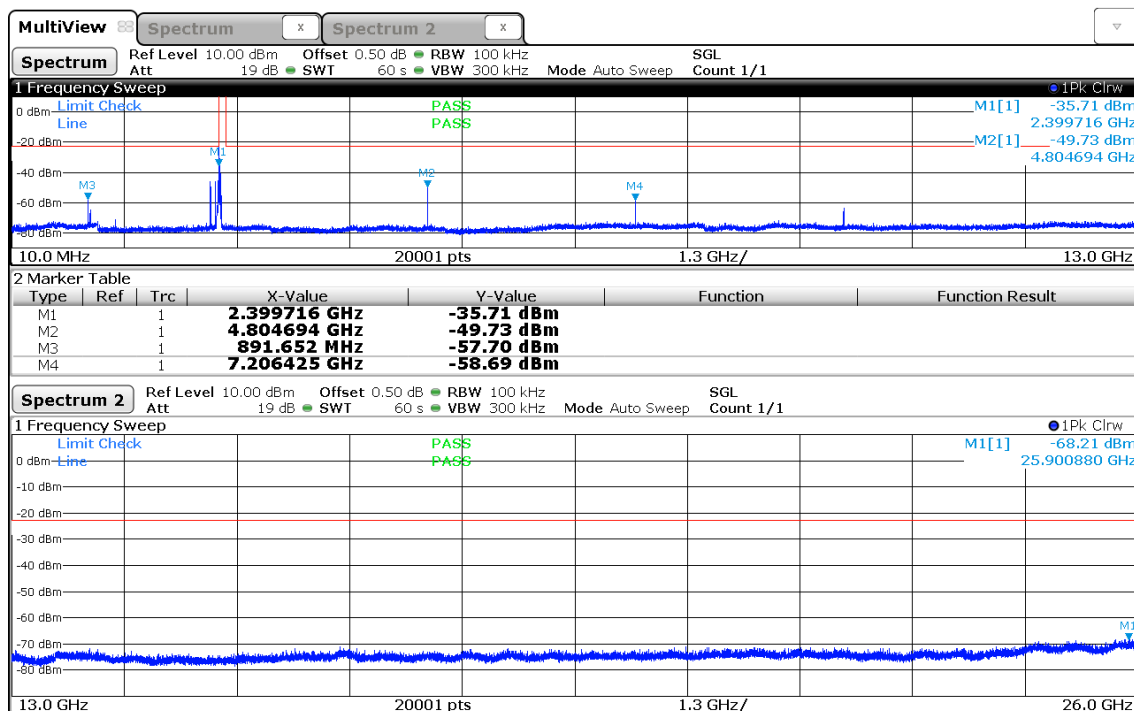
3.6 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. to FCC 15.247 / IC RSS-247						Verdict: PASS	
EUT requirement rule parts and clause			Reference				
			FCC 15.247(d) / IC RSS-247 5.5				
Test according to measurement reference			Reference Method				
			ANSI C63.10				
Test frequency range			Tested frequencies				
			10 MHz – 10 th Harmonic				
Measurement mode			Peak				
Limits							
Limit				Condition			
≤ -20 dB / 100 kHz				Peak power measurement detector = Peak			
≤ -30 dB /100 kHz				Peak power measurement detector = RMS			
Test setup							
Spectrum Analyzer EUT							
Test procedure							
1. EUT set to test mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth is set to 100 kHz and detector to peak and max hold 4. Markers are set to peak emission levels within frequency band 5. Emission level is determined by second marker on emission peak 6. Attenuation is determined from level difference							
Test results							
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]
F _{LOW}	2402	Transmit	2399.7	-35.71	-2.7	-22.7	-13.01
F _{LOW}	2440	Transmit	2546.5	-45.49	-2.4	-22.4	-23.09
F _{LOW}	2480	Transmit	2511.4	-43.88	-4.2	-24.2	-19.68
Comments:							

Conducted spurious emissions – F_{Low}

Conducted Spurious Emissions

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: Tnom/Vnom
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Max. in-band Frequency [MHz]: 2401.9
 Max. in-band Level [dBm/100 kHz]: -2.7
 Out-of-band Limit [dBm/100 kHz]: -22.7



Date: 4. JAN. 2016 11:06:10

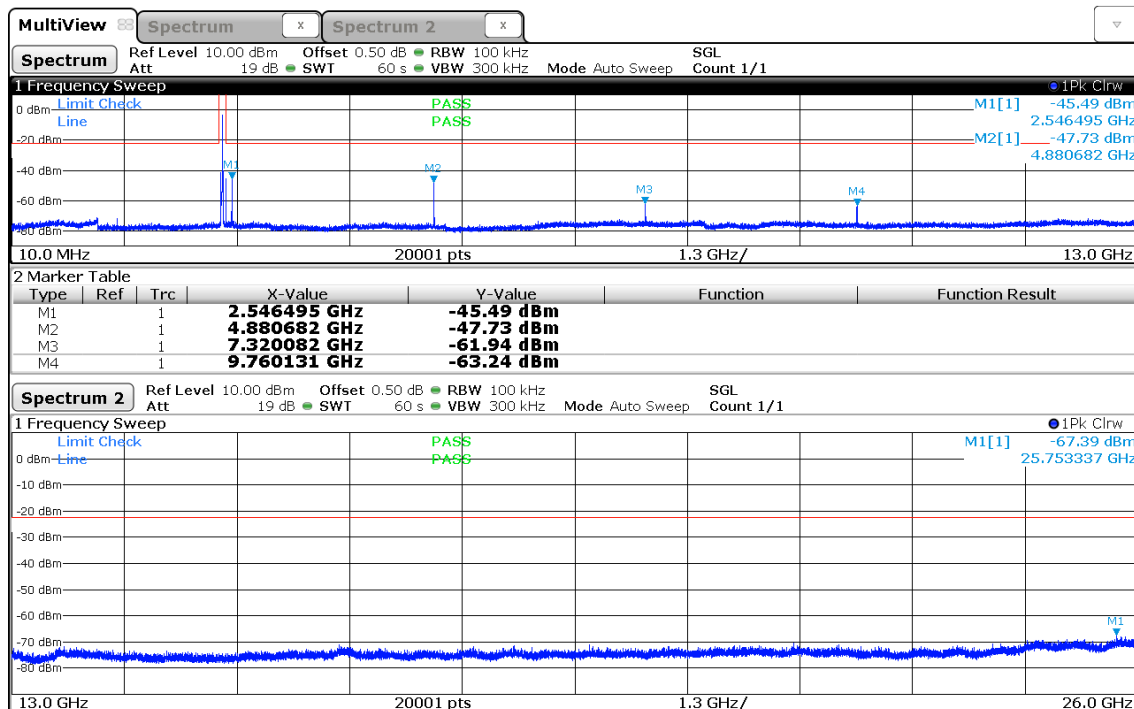
Test Report No.: G0M-1511-5219-TFC247BL-V03

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Conducted spurious emissions – F_{MID}

Conducted Spurious Emissions

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Max. in-band Frequency [MHz]: 2440.0
 Max. in-band Level [dBm/100 kHz]: -2.4
 Out-of-band Limit [dBm/100 kHz]: -22.4

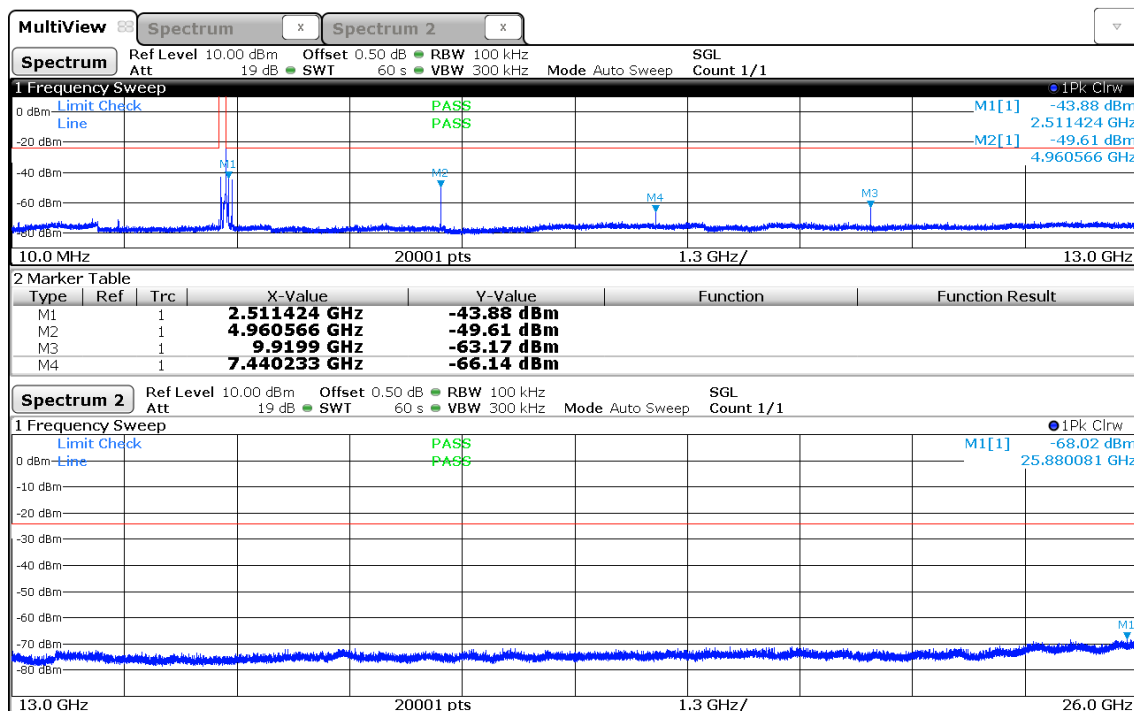


Date: 4. JAN. 2016 11:12:40

Conducted spurious emissions – F_{HIGH}

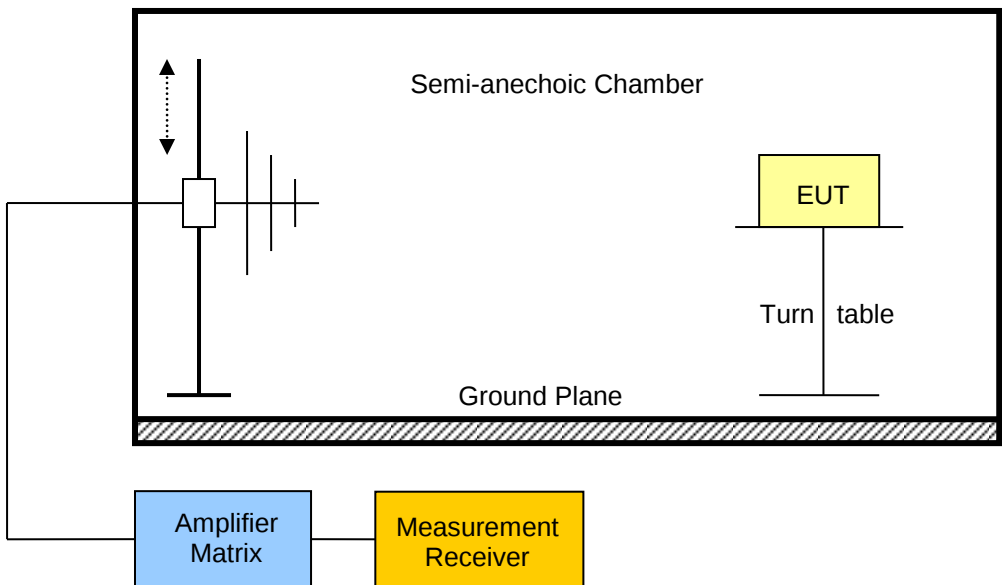
Conducted Spurious Emissions

Project Number: G0M-1511-5219
 Applicant: Leica Geosystems AG
 Model Description: Laser Distance Meter
 Model: Leica Disto D2
 Test Sample ID: 1
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: C. Weber
 Test Site: Eurofins Product Service GmbH
 Test Date: 2016-01-04
 Max. in-band Frequency [MHz]: 2480.2
 Max. in-band Level [dBm/100 kHz]: -4.2
 Out-of-band Limit [dBm/100 kHz]: -24.2



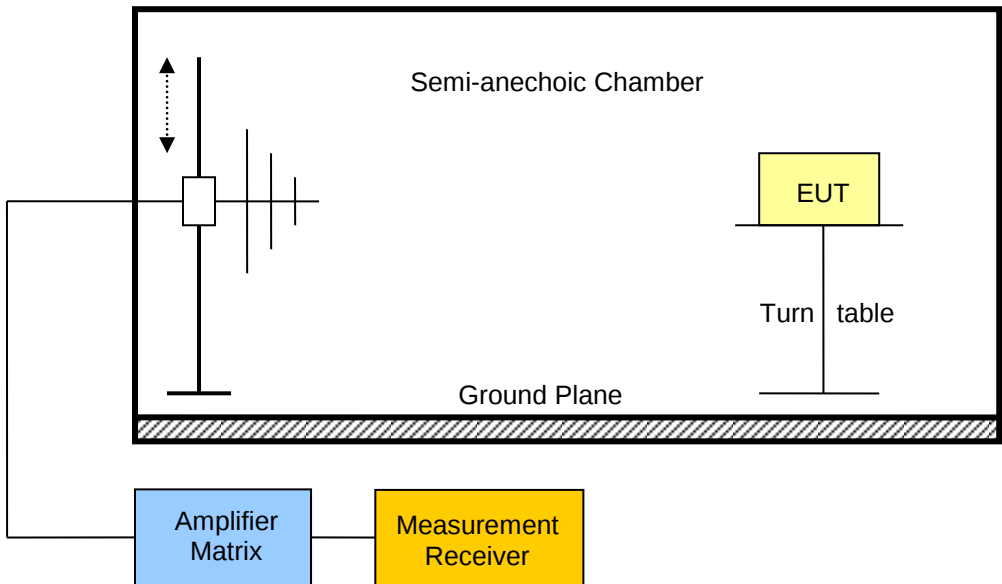
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3.7 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. to FCC 47 CFR 15.247 / IC RSS-247				Verdict: PASS
Test according referenced standards	Reference Method			
	FCC 15.247(d) / IC RSS-247 5.5			
Test according to measurement reference	Reference Method			
	ANSI C63.10			
Test frequency range	Tested frequencies			
	30 MHz – 10 th Harmonic			
Limits				
Frequency range [MHz]	Detector	Limit [µV/m]	Limit [dBµV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)). When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.				
Test setup				
				

Test procedure								
1. EUT set to test mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels within restricted bands								
Test results								
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
0	2402	Transmit	4805	54.61	pk	hor	74.00	-19.39
0	2402	Transmit	4805	40.80	RMS	hor	54.00	-13.20
19	2440	Transmit	4880	49.54	pk	ver	74.00	-24.46
19	2440	Transmit	4880	51.35	pk	hor	74.00	-22.65
39	2480	Transmit	2484	53.72	pk	ver	74.00	-20.28
39	2480	Transmit	2484	34.19	RMS	ver	54.00	-19.81
39	2480	Transmit	2484	53.32	pk	hor	74.00	-20.68
39	2480	Transmit	2484	34.06	RMS	hor	54.00	-19.94
39	2480	Transmit	4960	48.09	pk	ver	74.00	-25.91
39	2480	Transmit	4960	51.93	pk	hor	74.00	-22.07
Comments:								

3.8 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. to IC RSS-247				Verdict: PASS
Test according referenced standards	Reference Method			
	IC RSS-247 3.1			
Test according to measurement reference	Reference Method			
	ANSI C63.10			
Test frequency range	Tested frequencies			
	30 MHz – 5 th Harmonic			
EUT test mode	Receive			
Limits				
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Test setup				
				

Test procedure							
1. EUT set to receive mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels							
Test results							
Channel	Frequency [MHz]	Emission [MHz]	Emission Level [dBμV/m]	Pol.	Det.	Limit [dBμV/m]	Margin [dBμV/m]
19	2440	7720	52.16	ver	pk	53.98	-1.82 dB
Comments:							

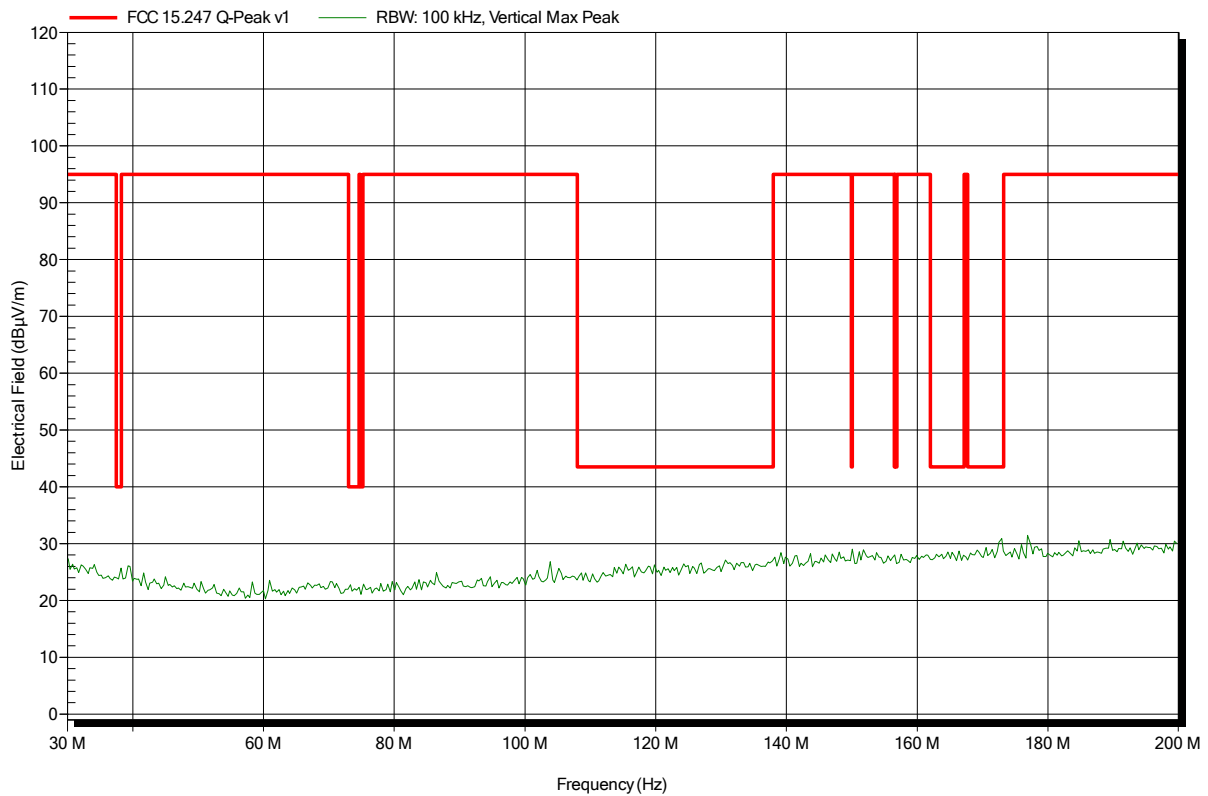
ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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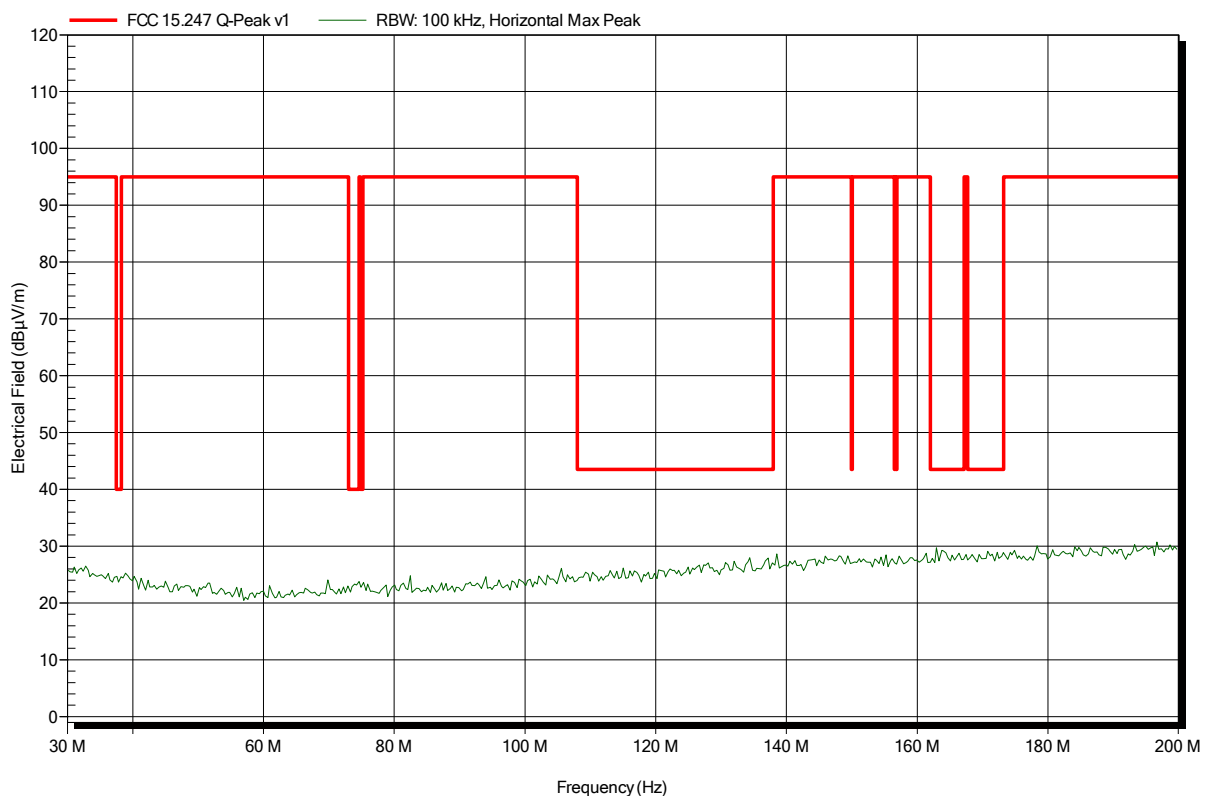


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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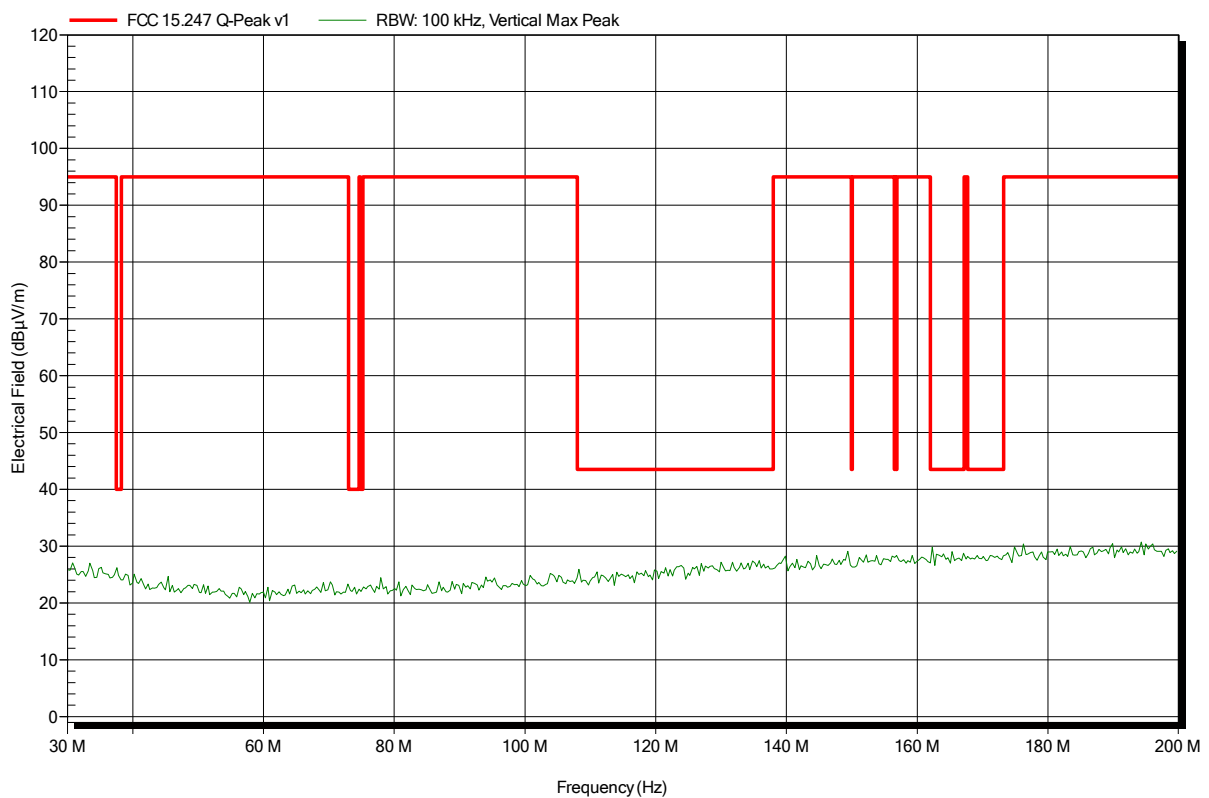


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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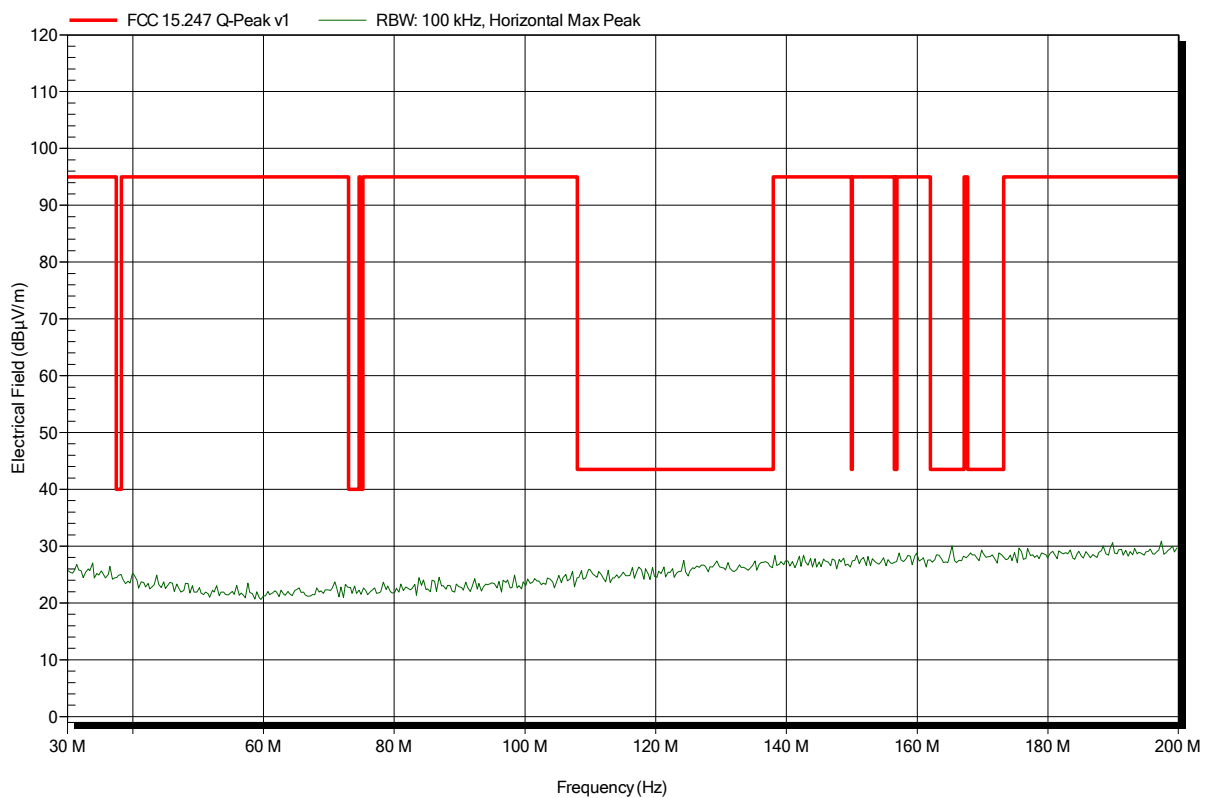


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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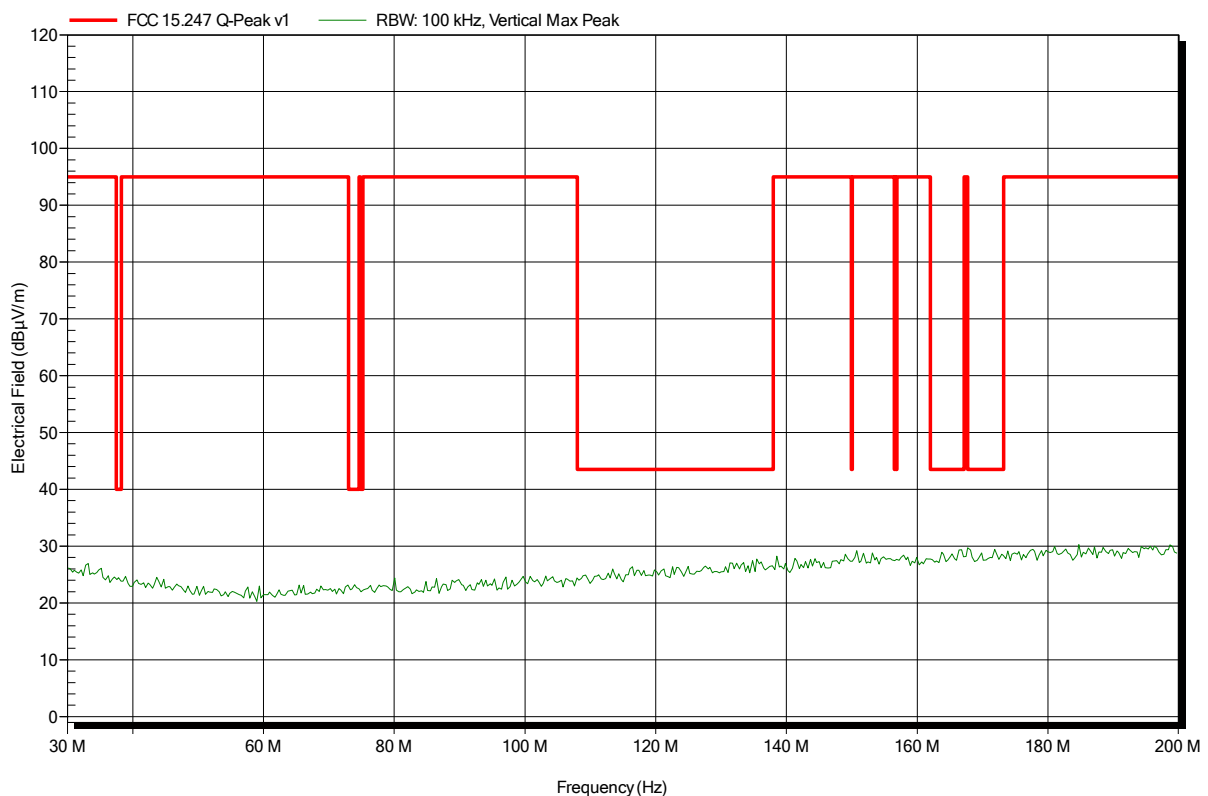


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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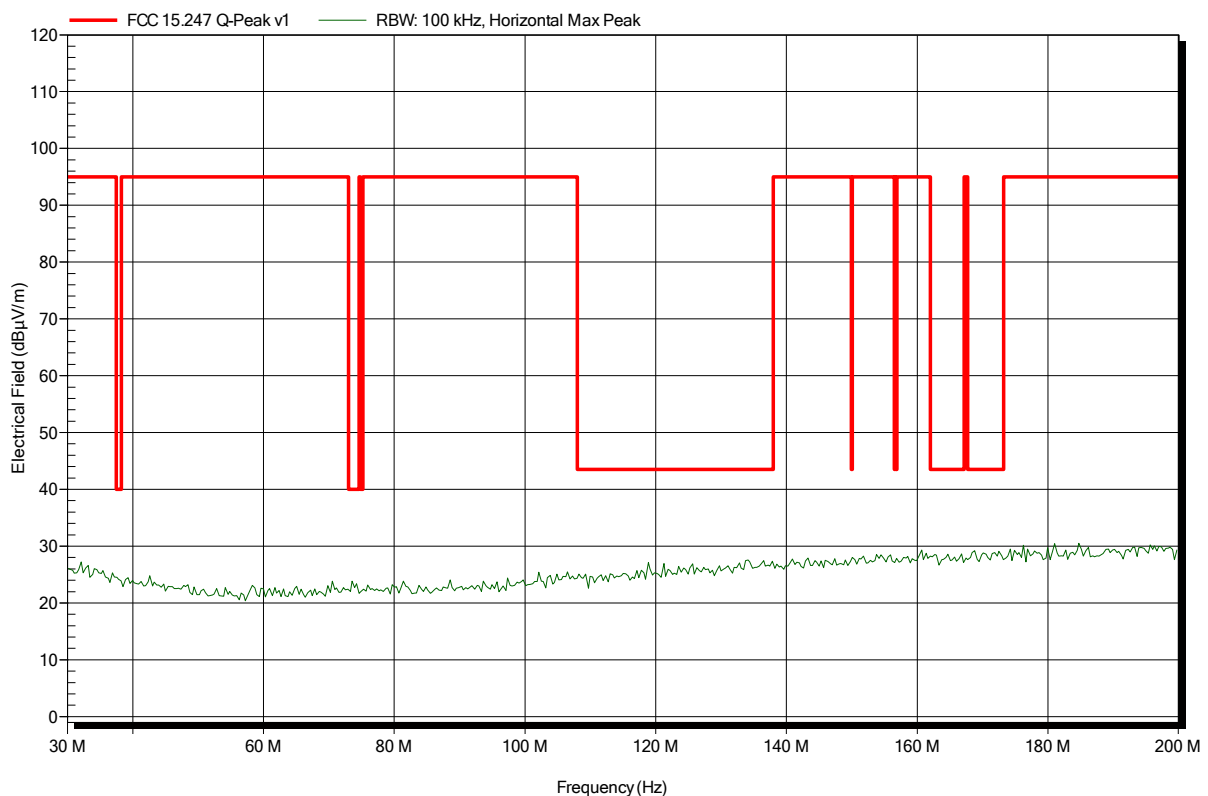


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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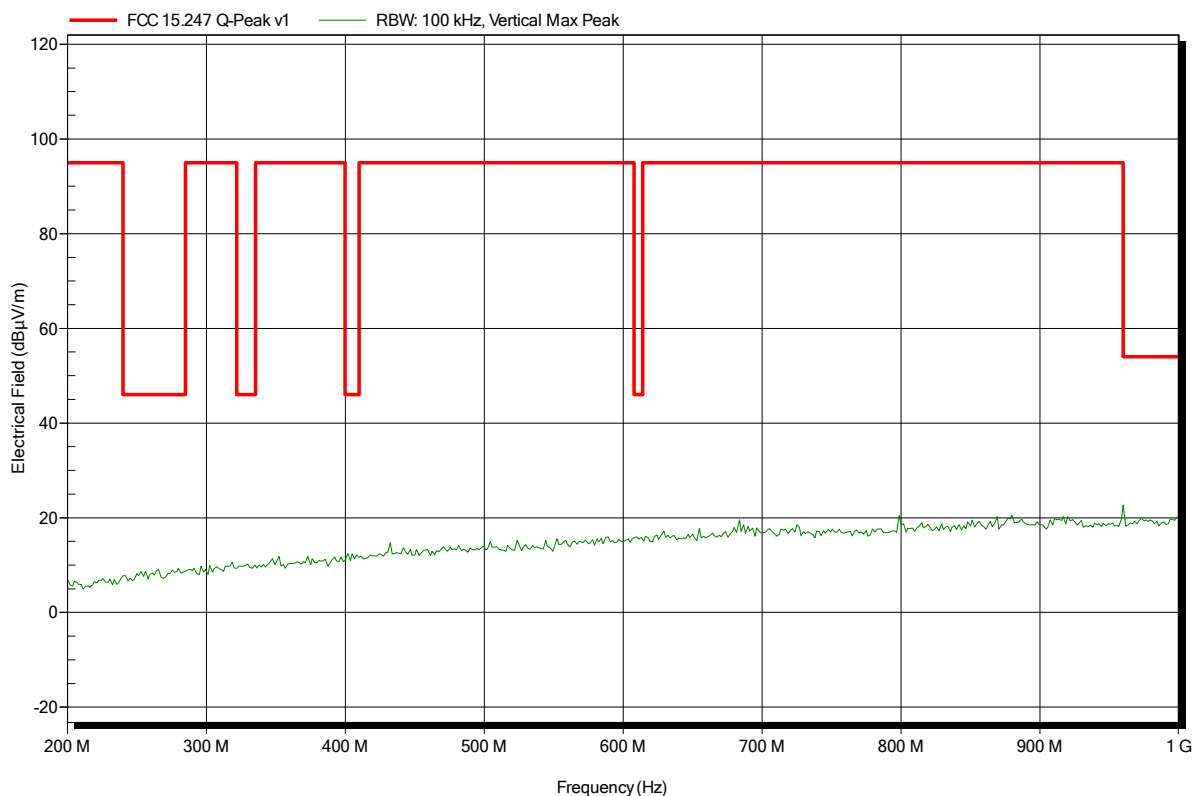


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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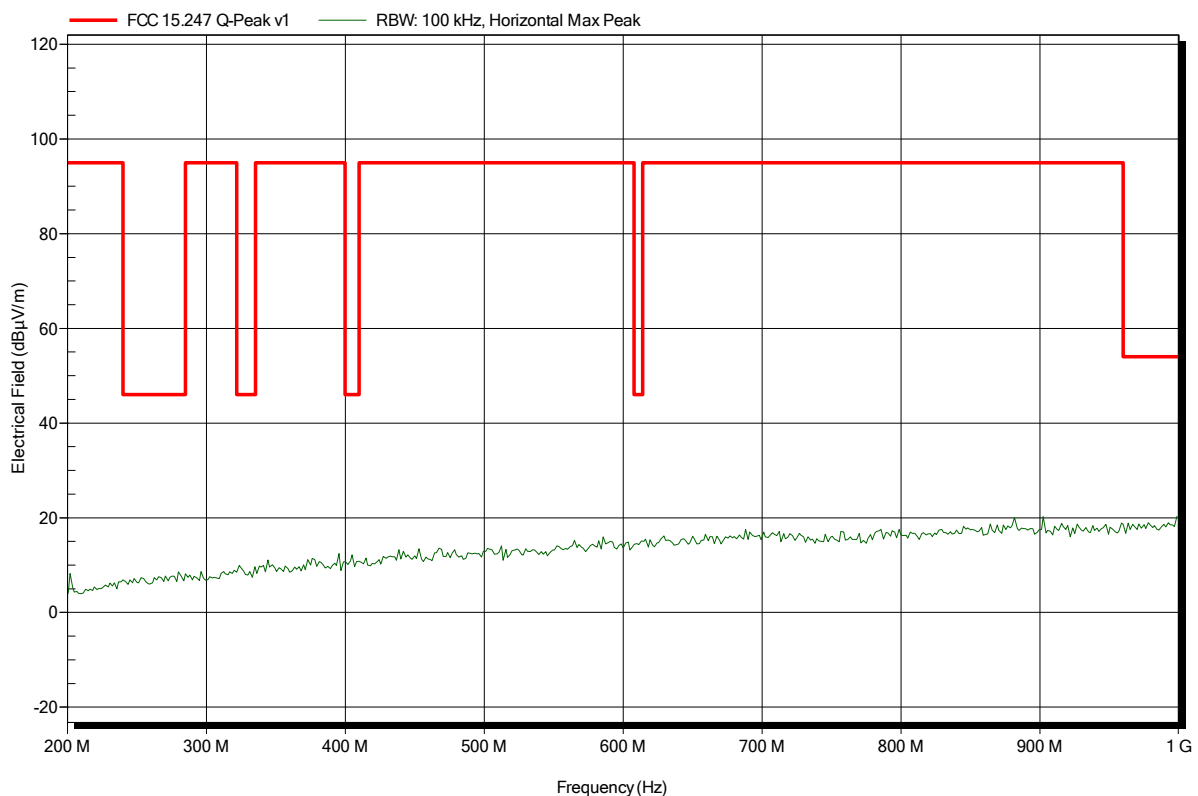


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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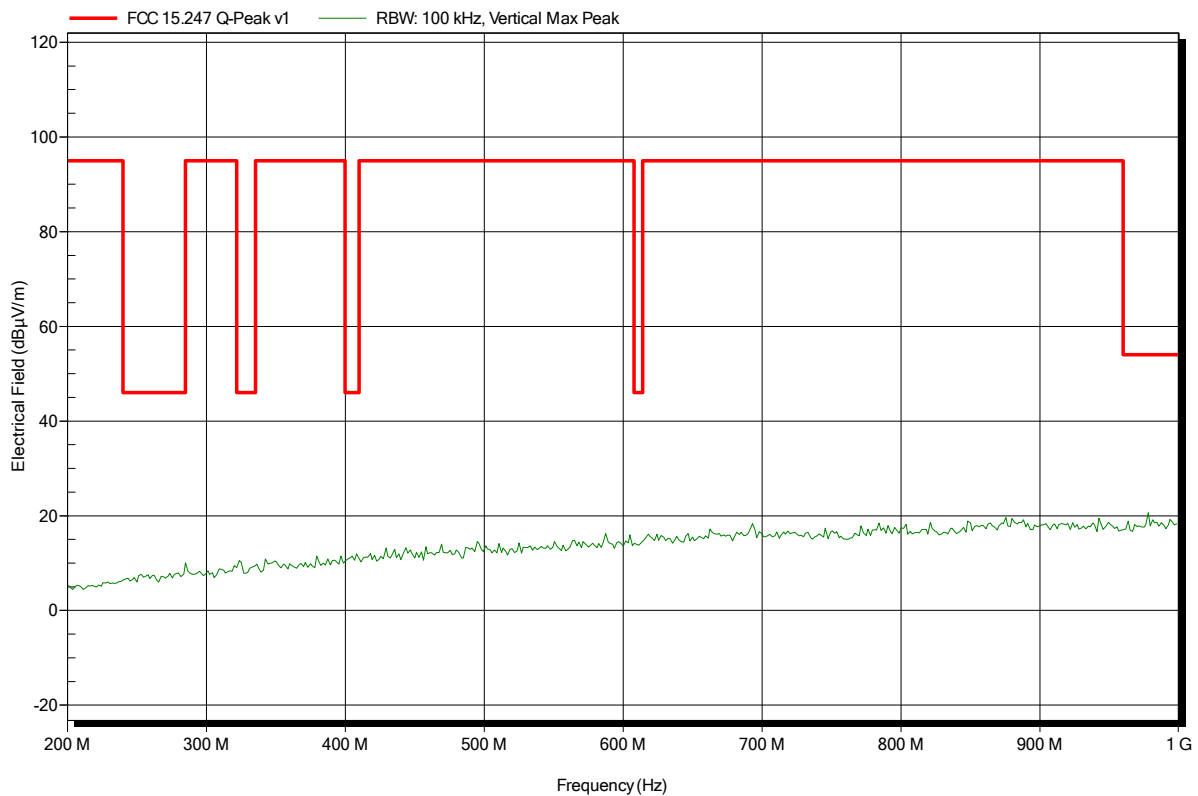


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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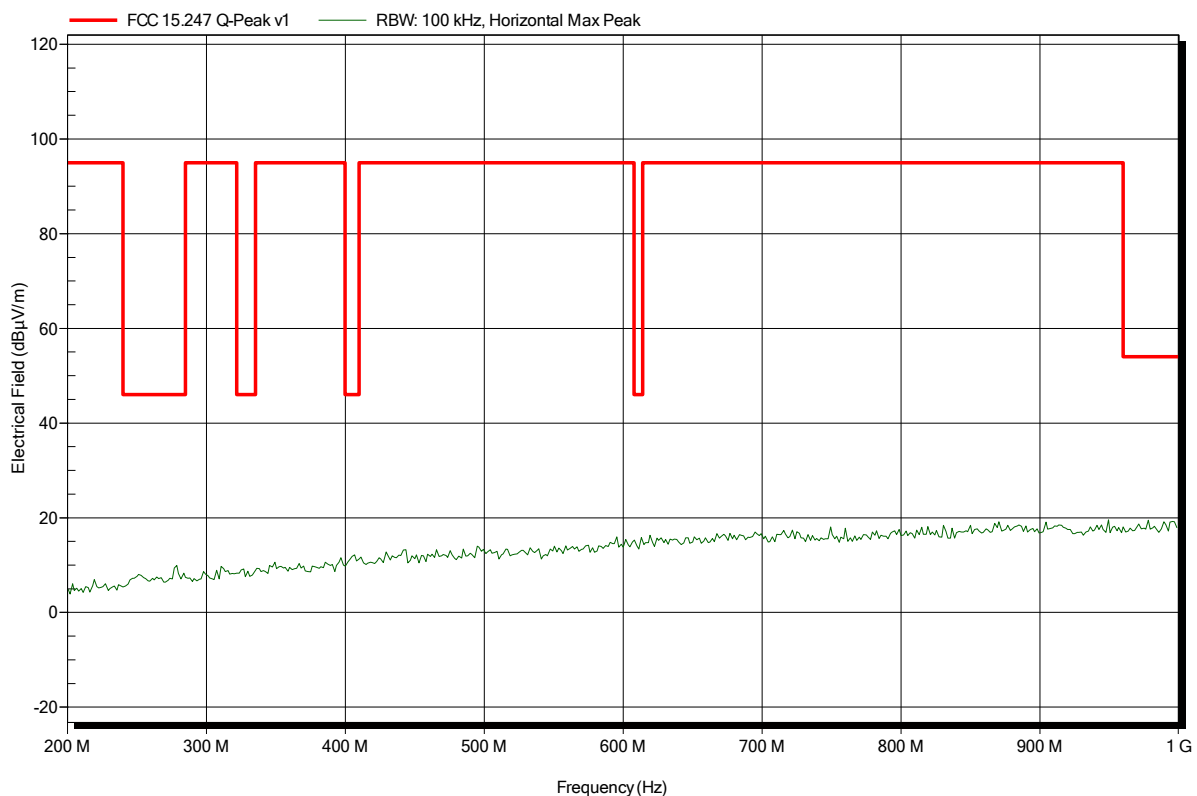


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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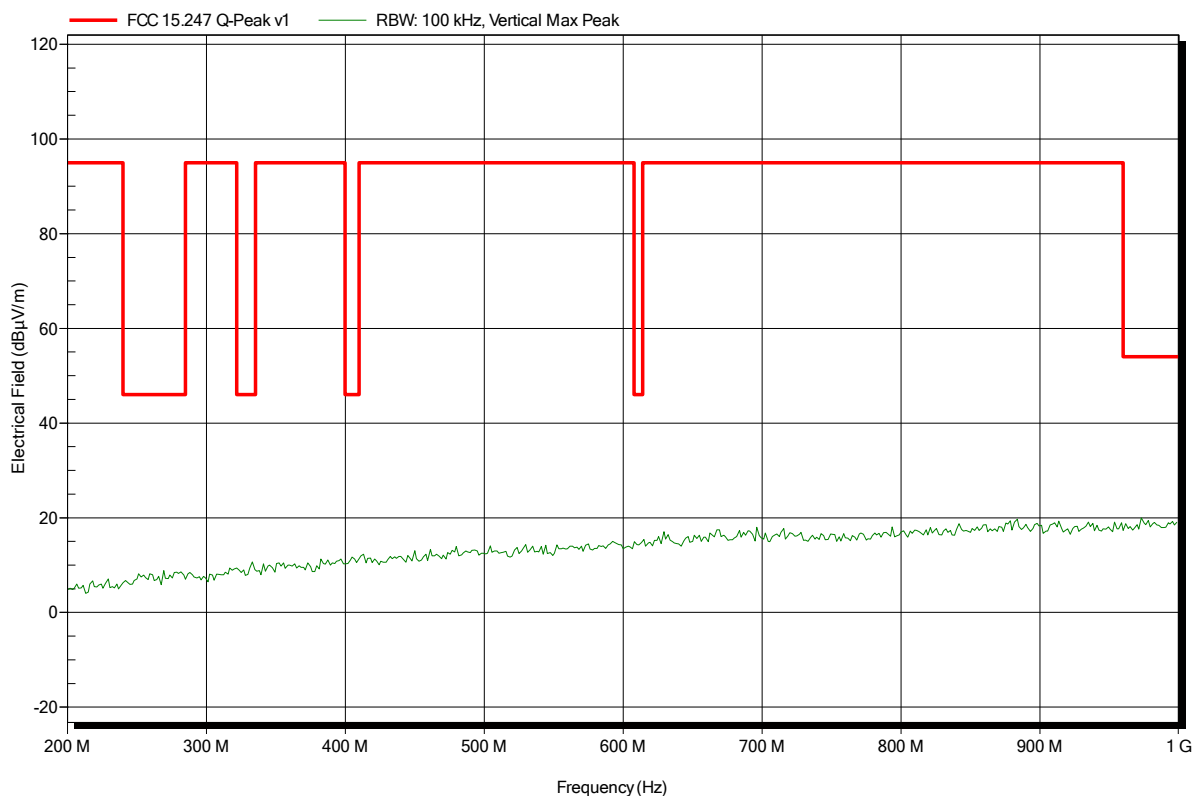


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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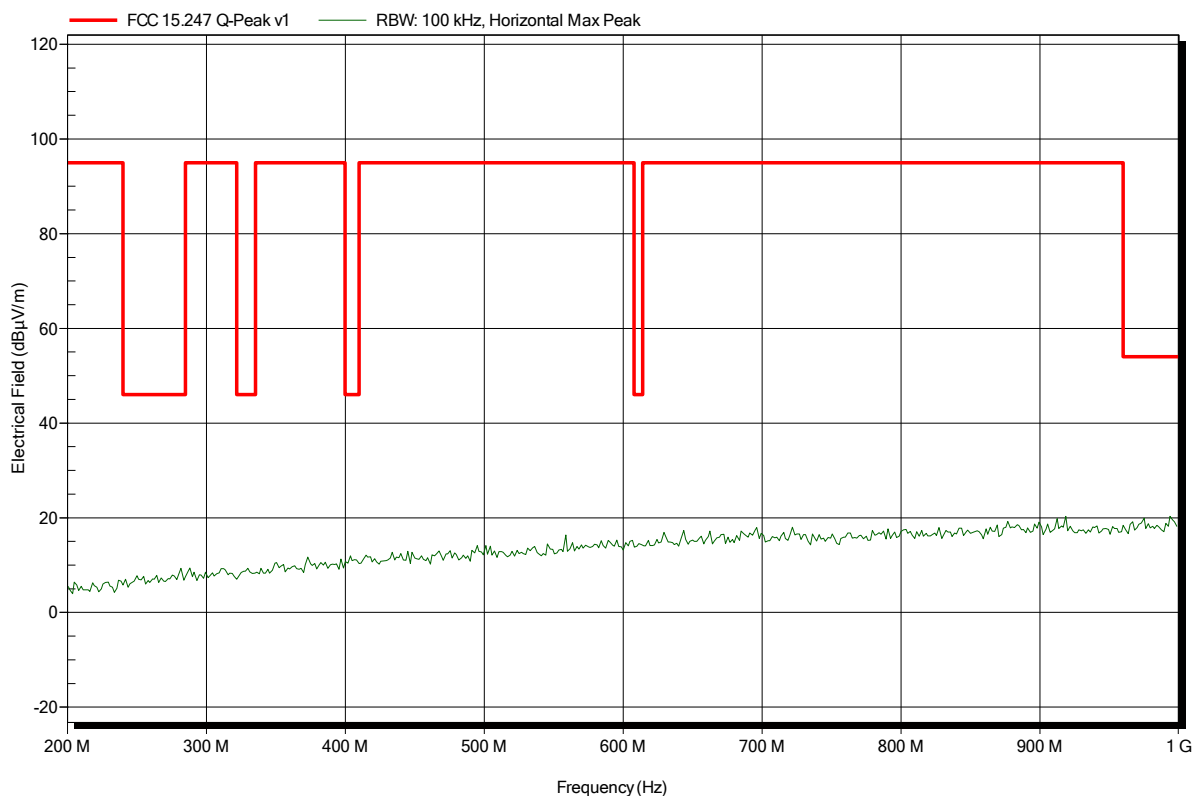


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
Test Date:	2015-12-18
Note:	EUT vertical

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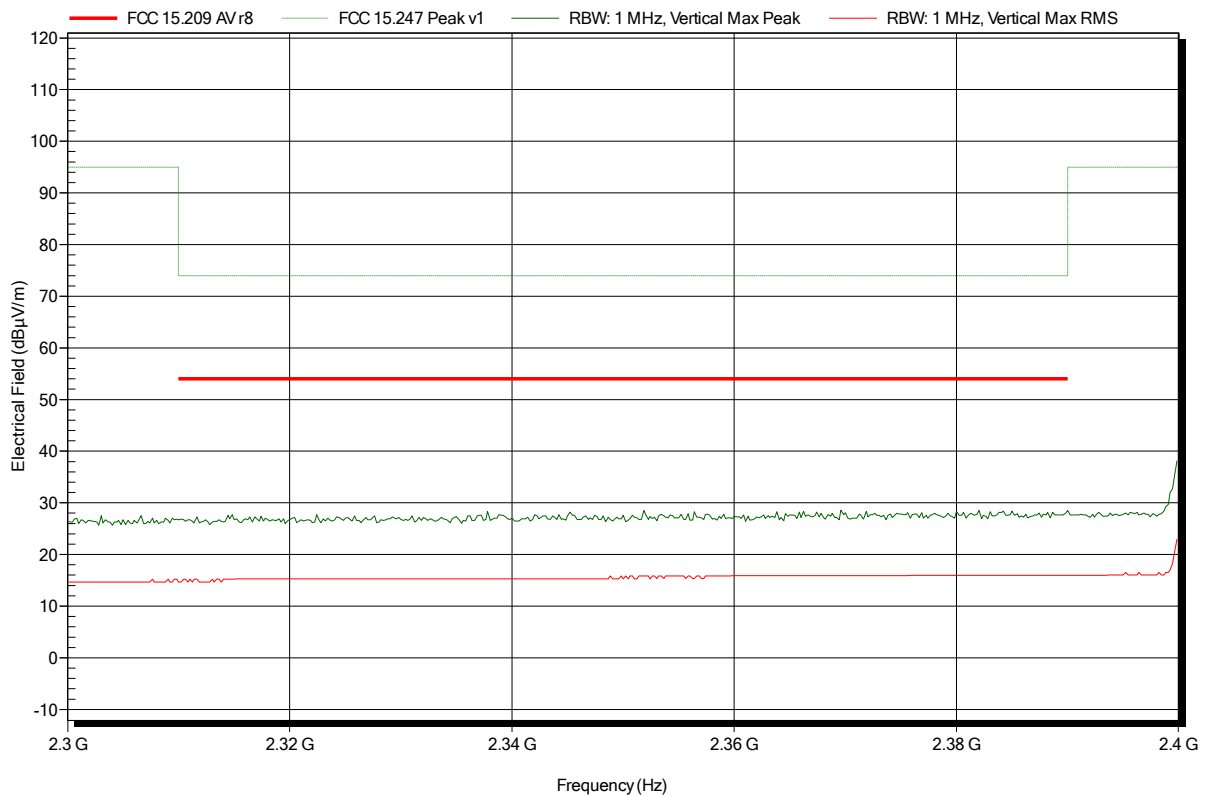


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical; lower bandedge

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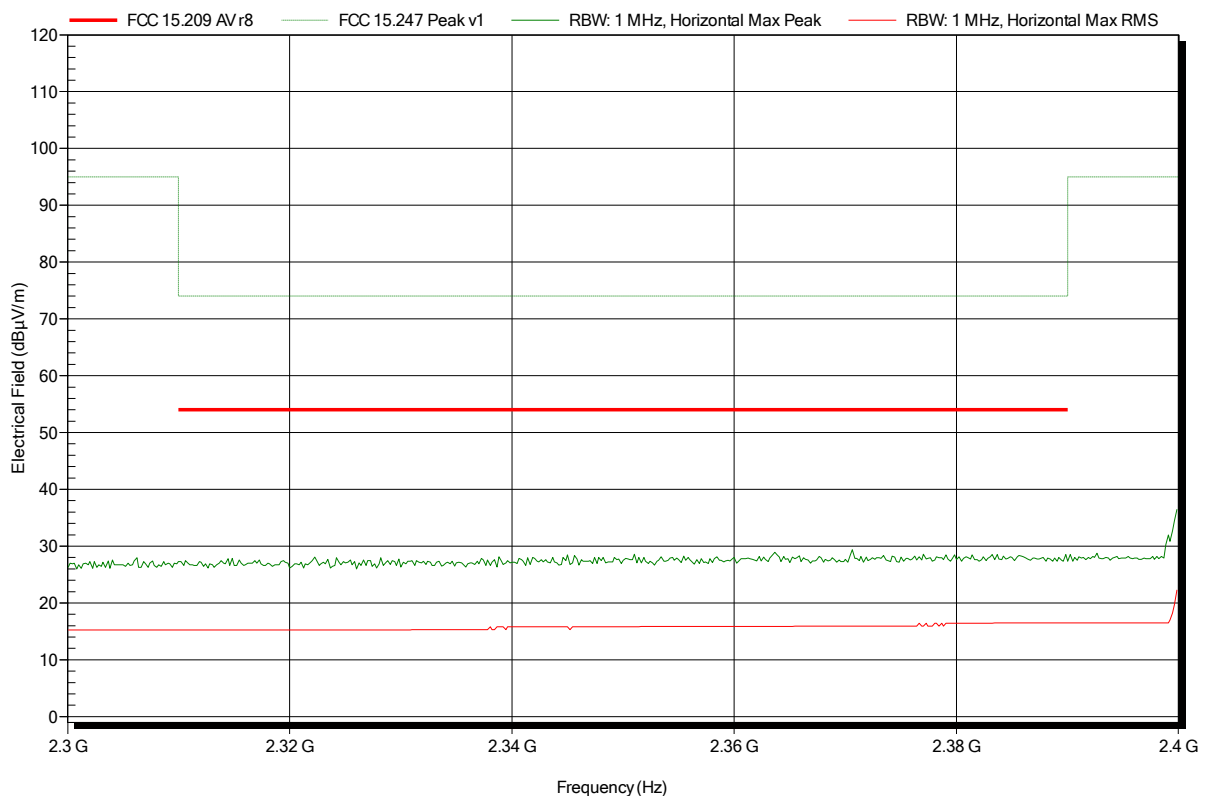


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical; lower bandedge

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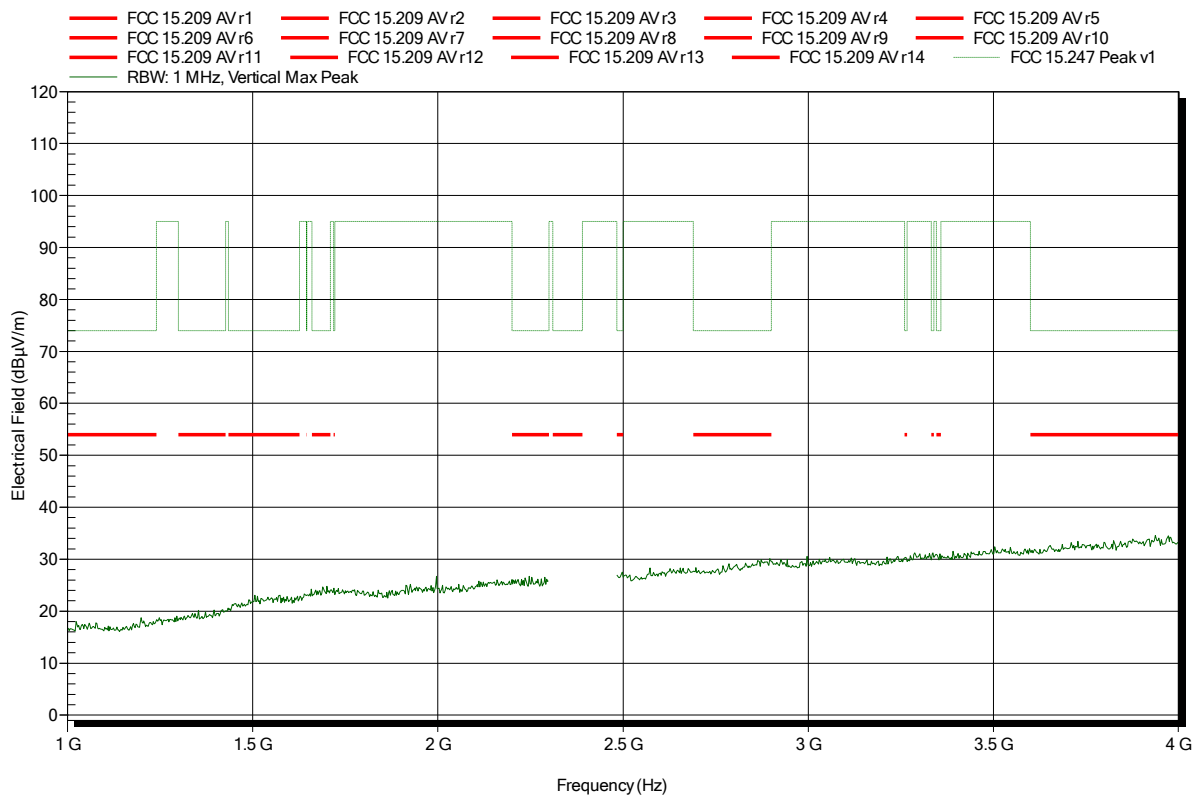


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: GOM-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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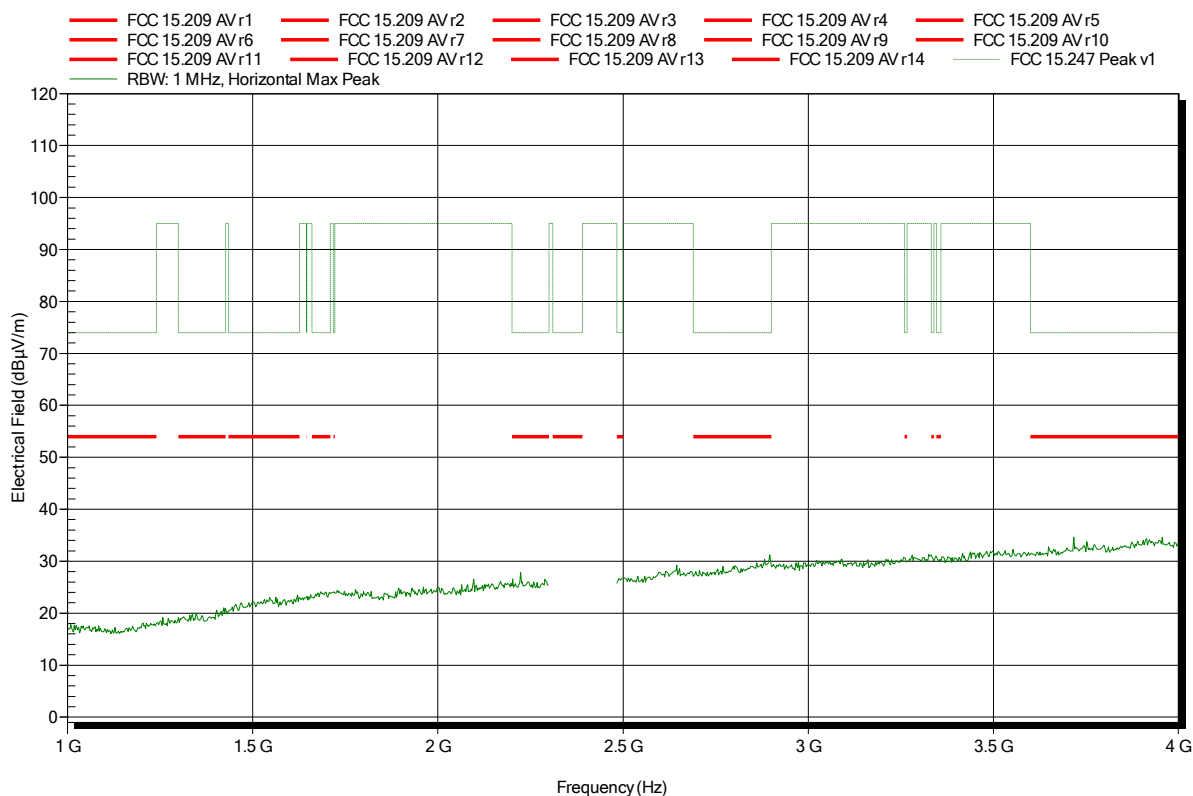


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: GOM-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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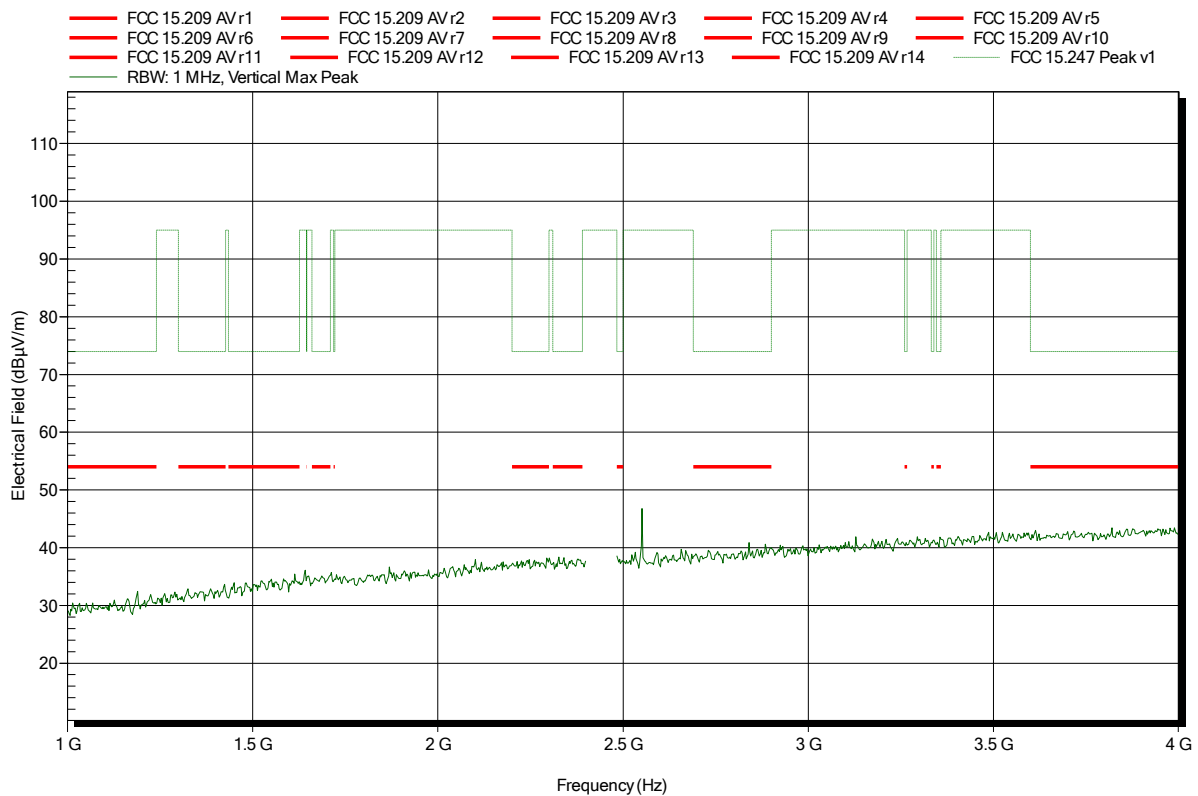


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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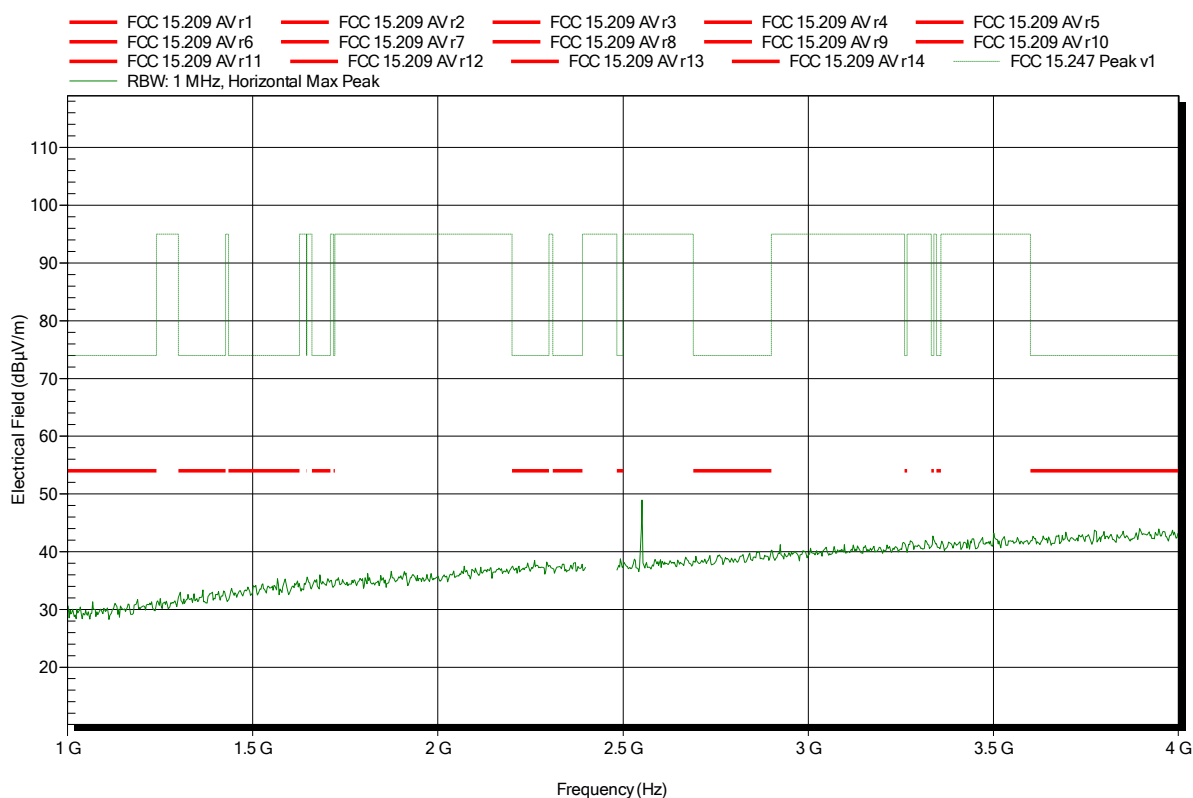


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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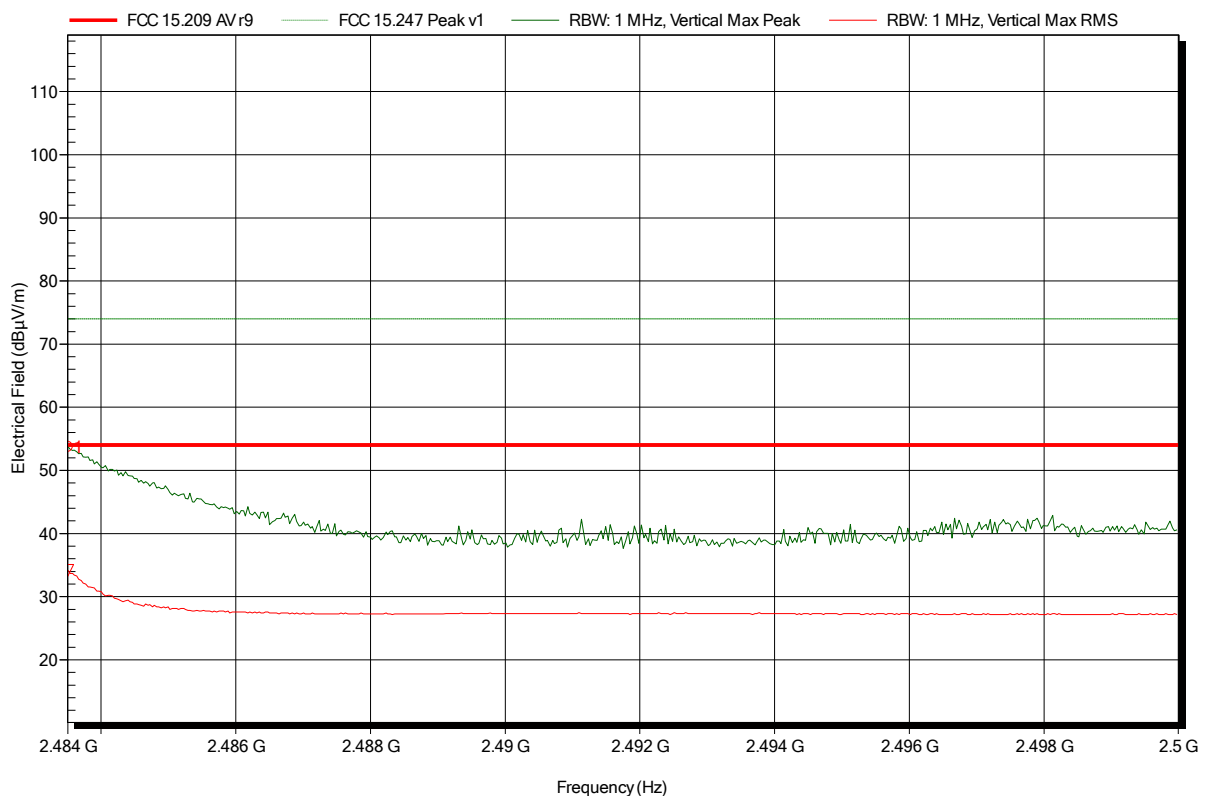


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical; higher bandedge

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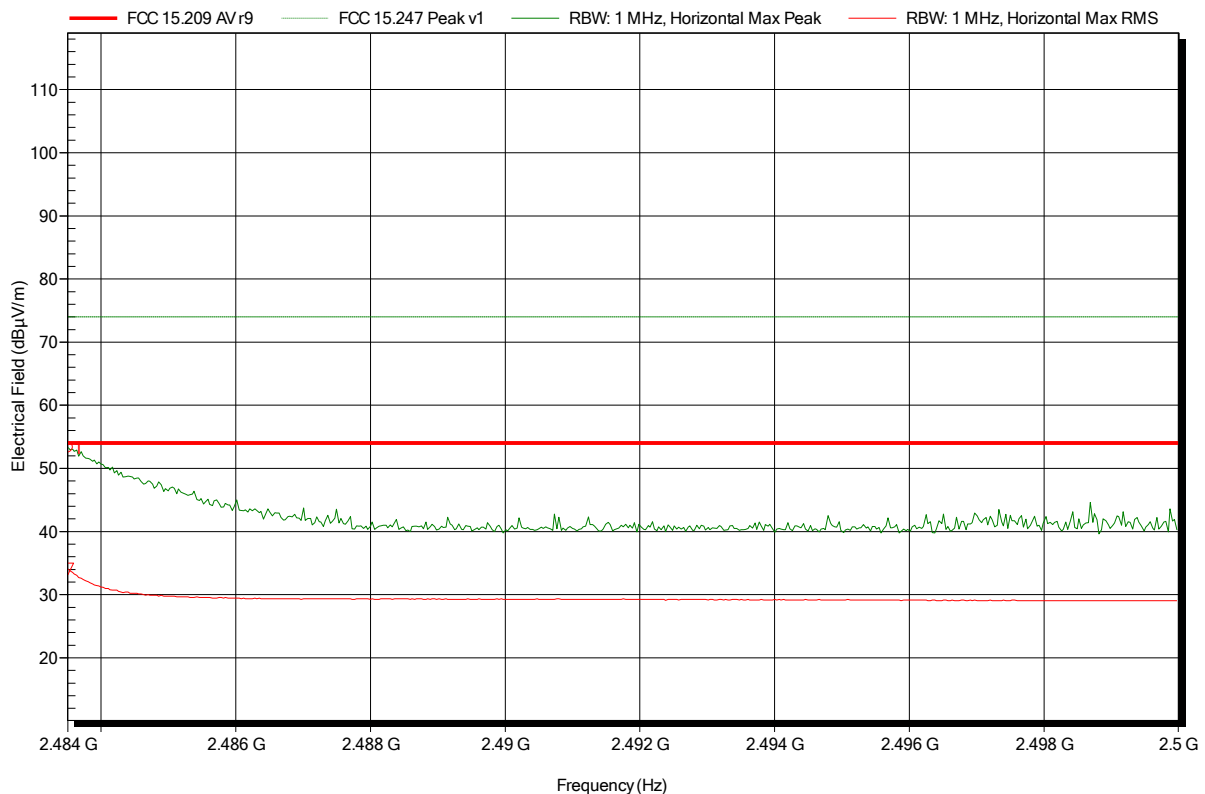
Frequency 2.484 GHz	Peak 53.72 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -20.28 dB	Peak Status Pass
Frequency 2.484 GHz	RMS 34.19 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -19.81 dB	RMS Status Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical; higher bandedge

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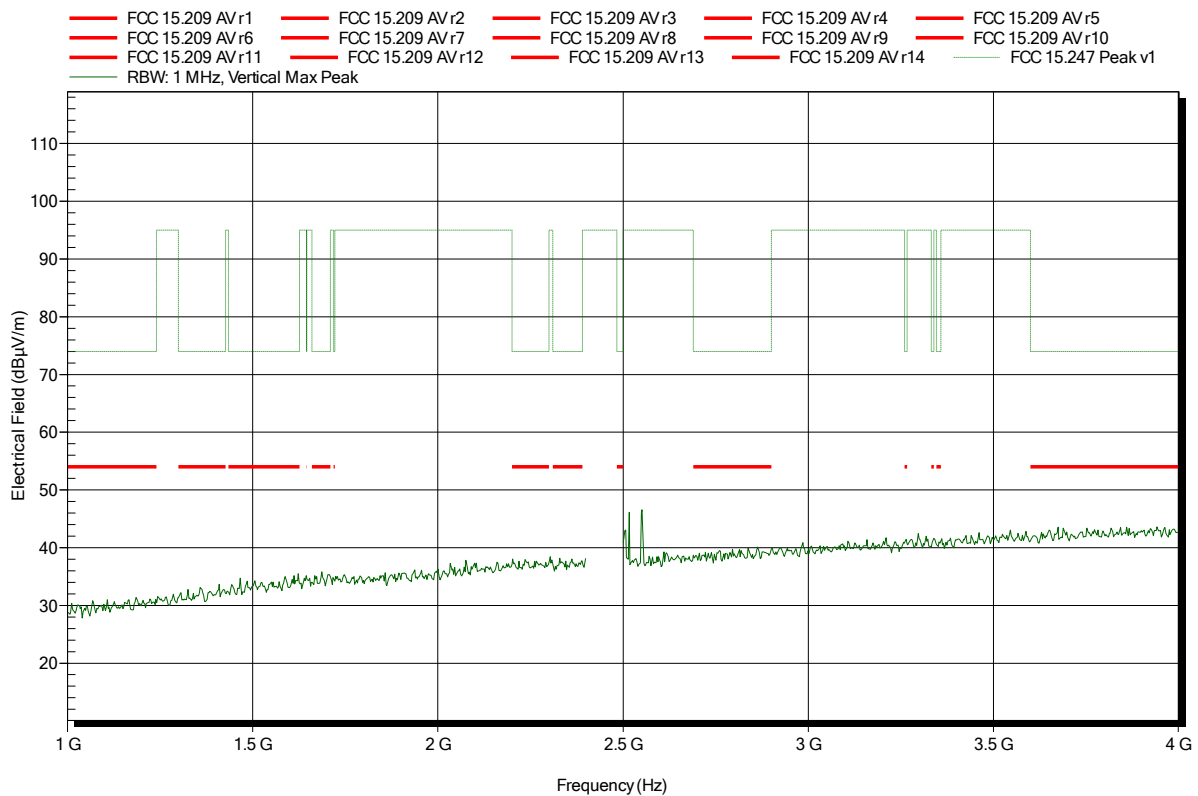
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	53.32 dBµV/m	74 dBµV/m	-20.68 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	34.06 dBµV/m	54 dBµV/m	-19.94 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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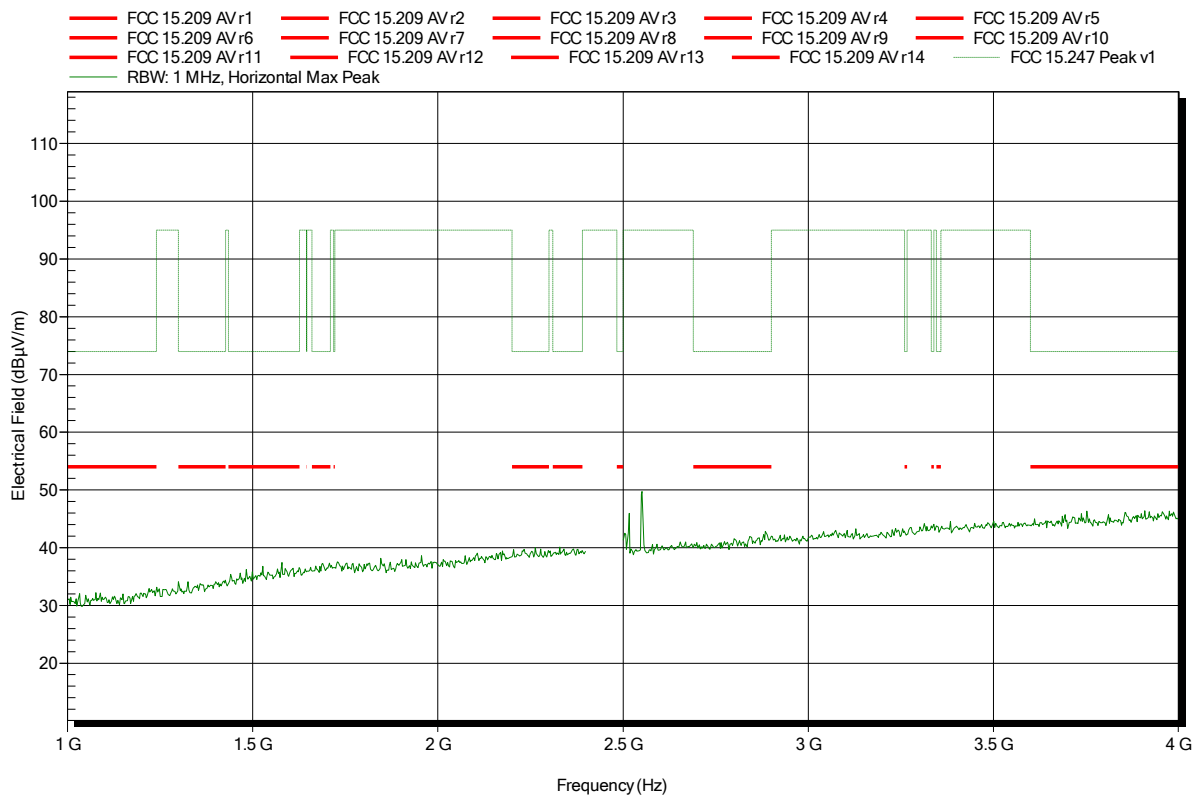


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: GOM-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 3 m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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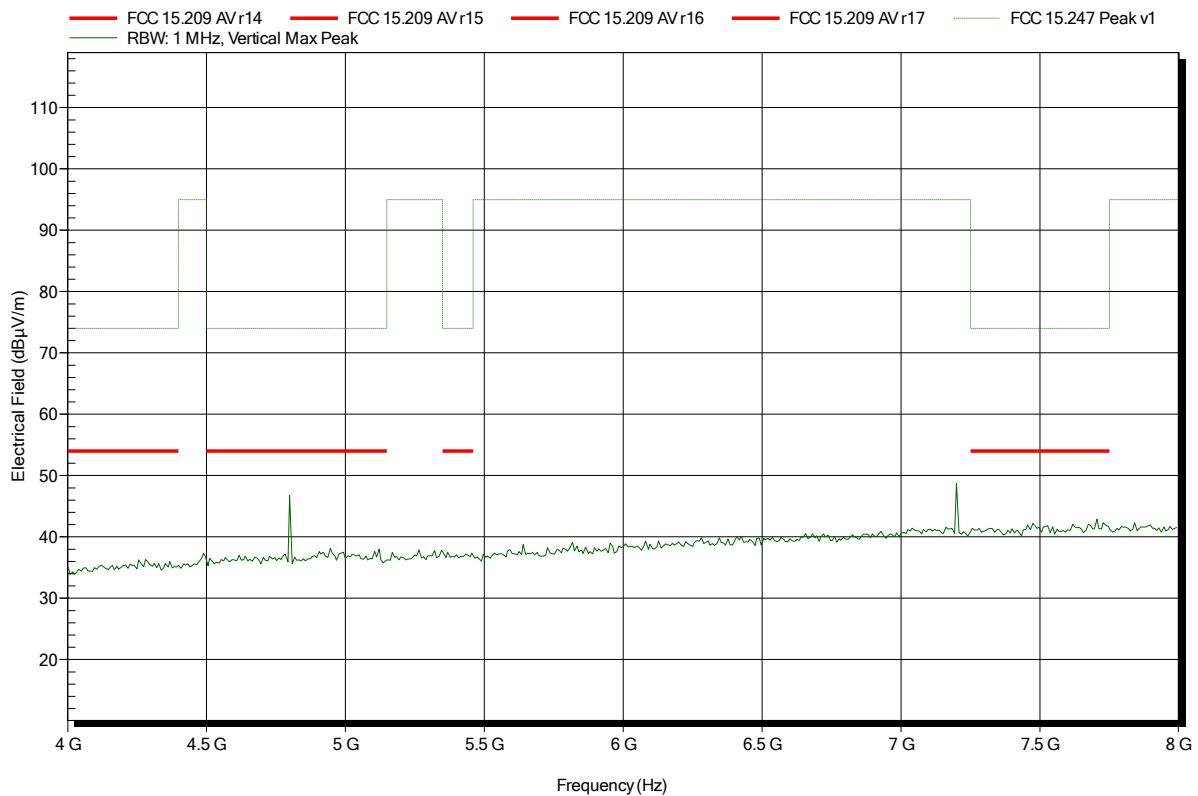


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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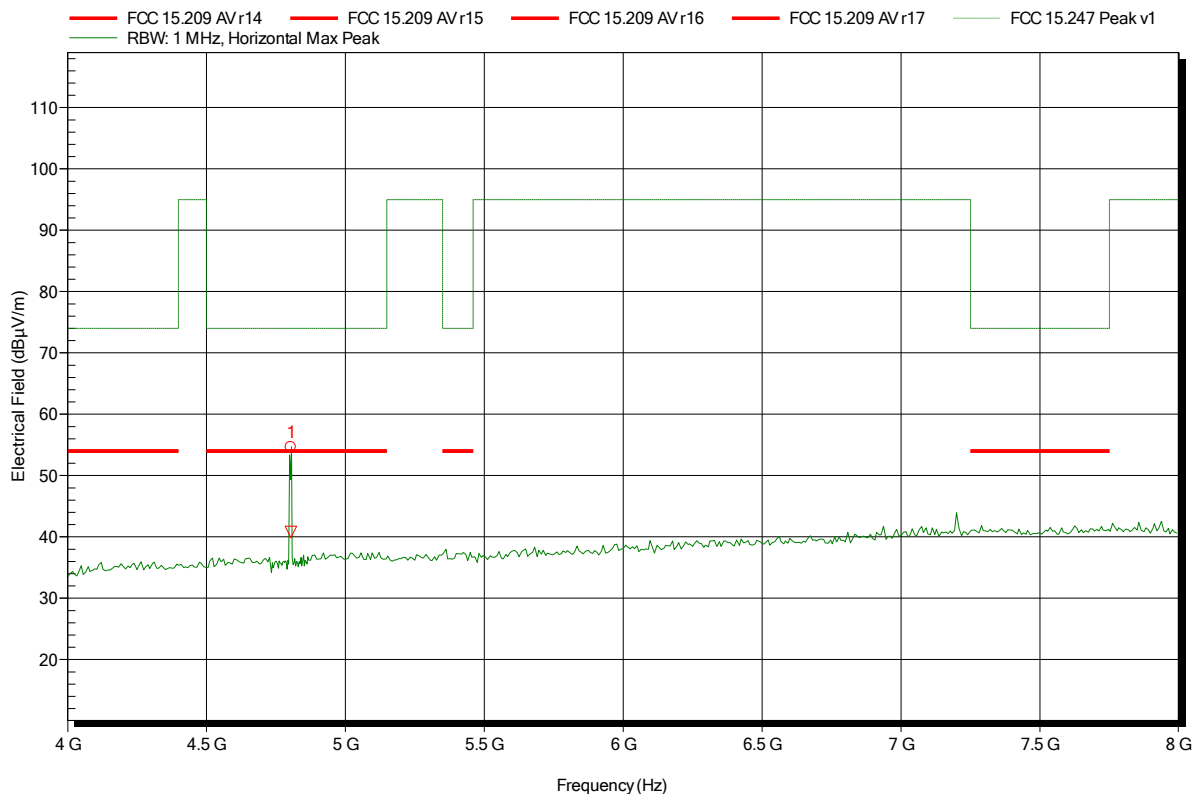


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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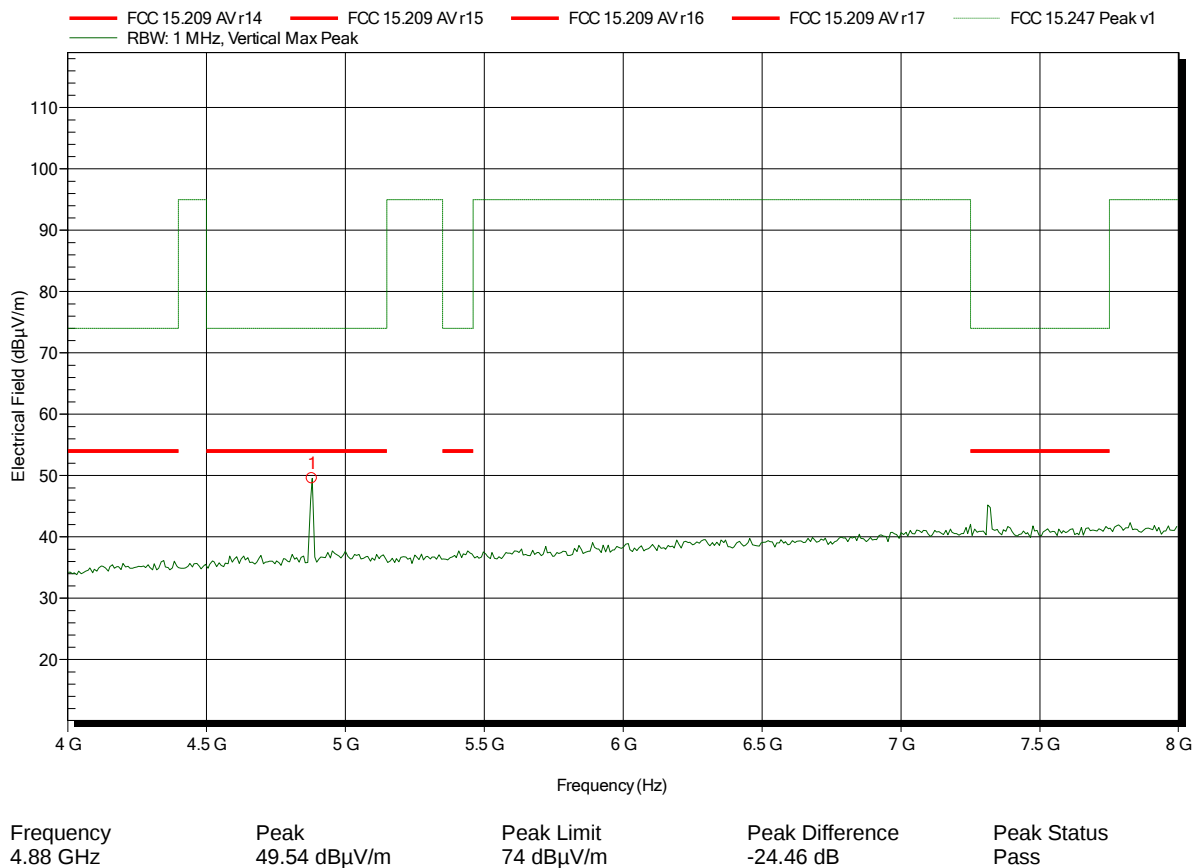
Frequency 4.805 GHz	Peak 54.61 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -19.39 dB	Peak Status Pass
Frequency 4.805 GHz	RMS 40.8 dBμV/m	RMS Limit 54 dBμV/m	RMS Difference -13.2 dB	RMS Status Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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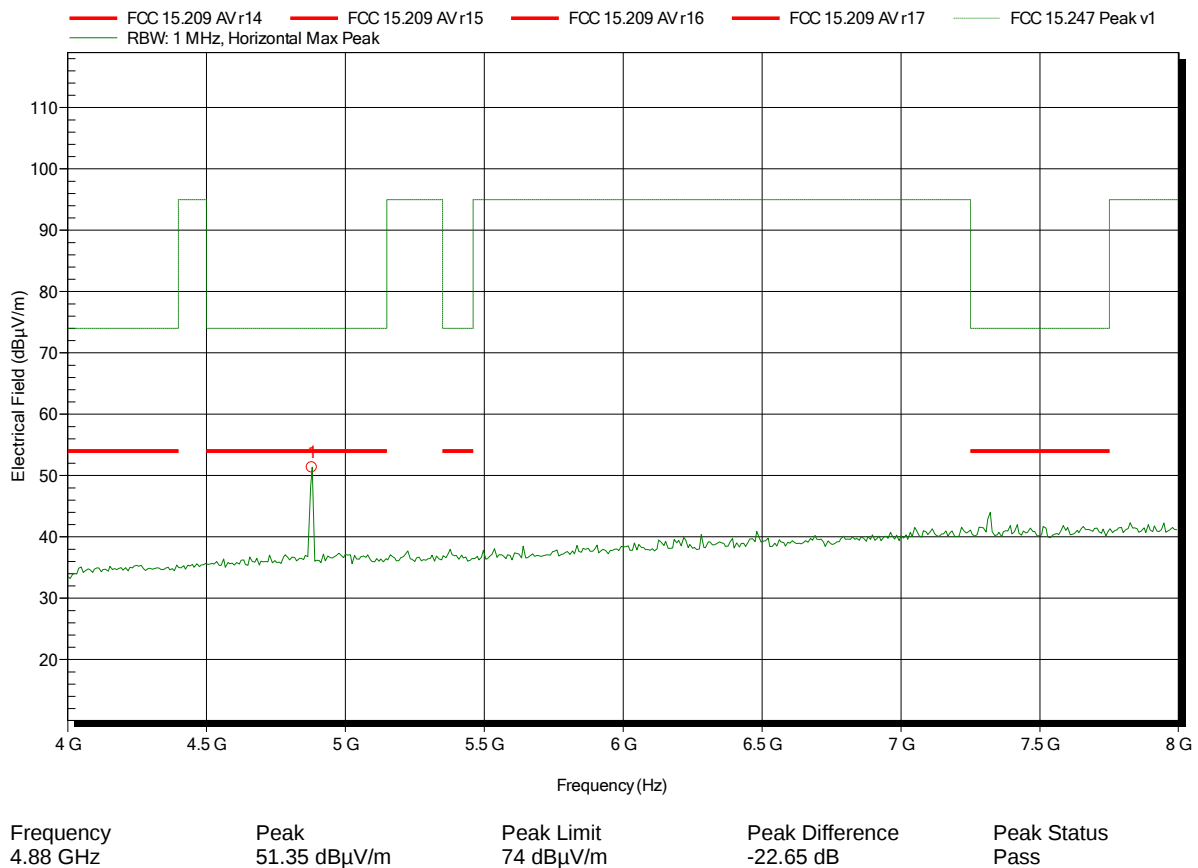


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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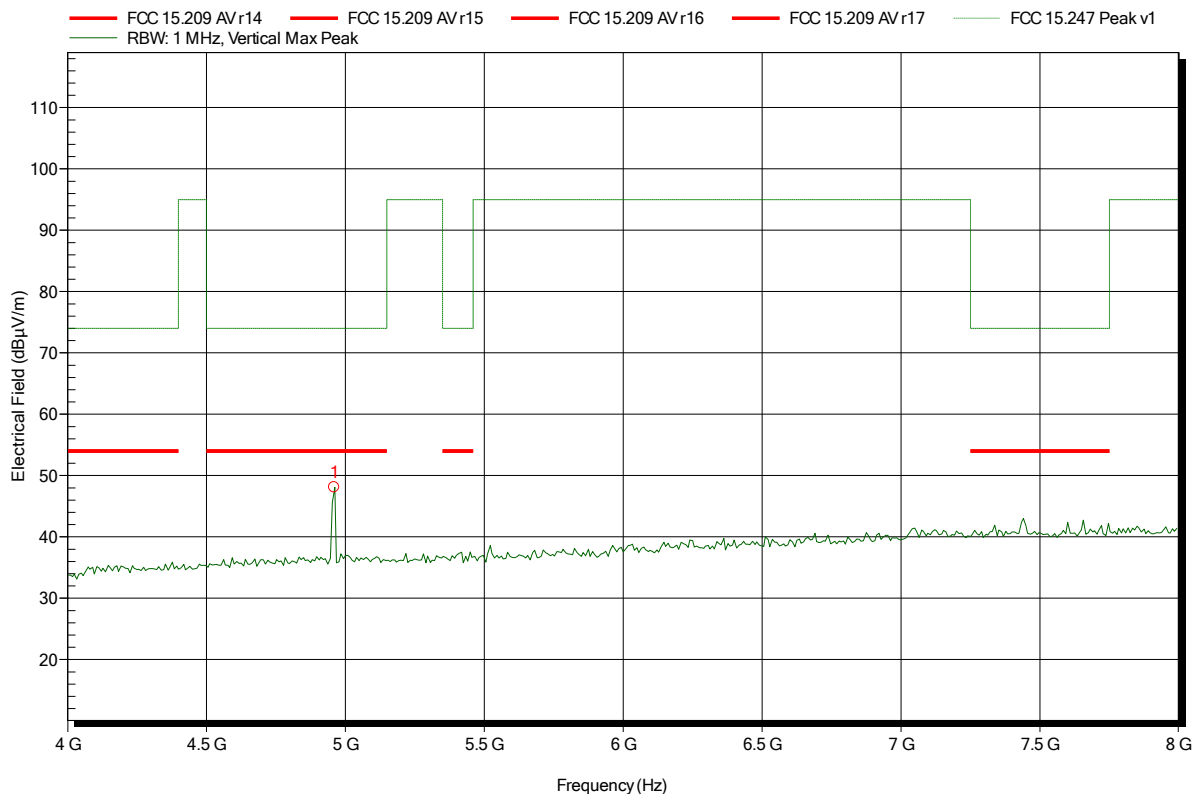


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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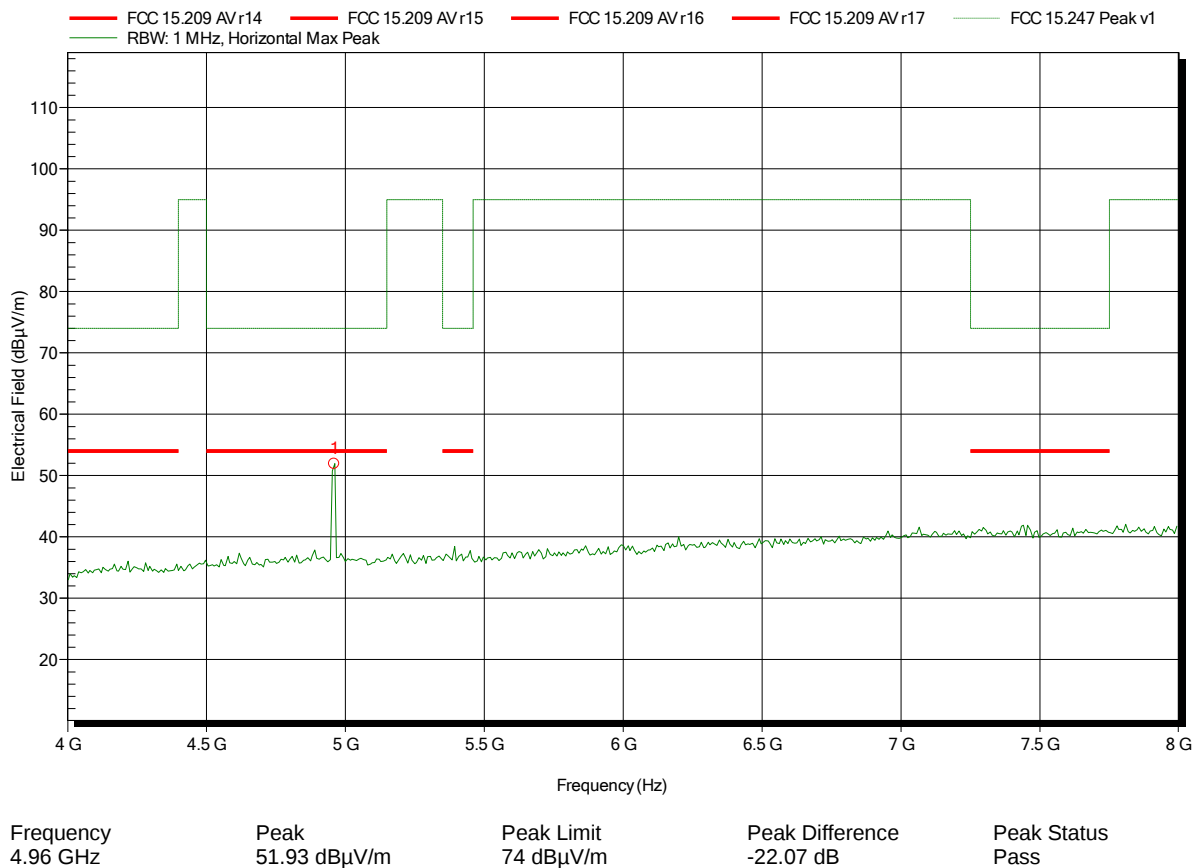
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.96 GHz	48.09 dBµV/m	74 dBµV/m	-25.91 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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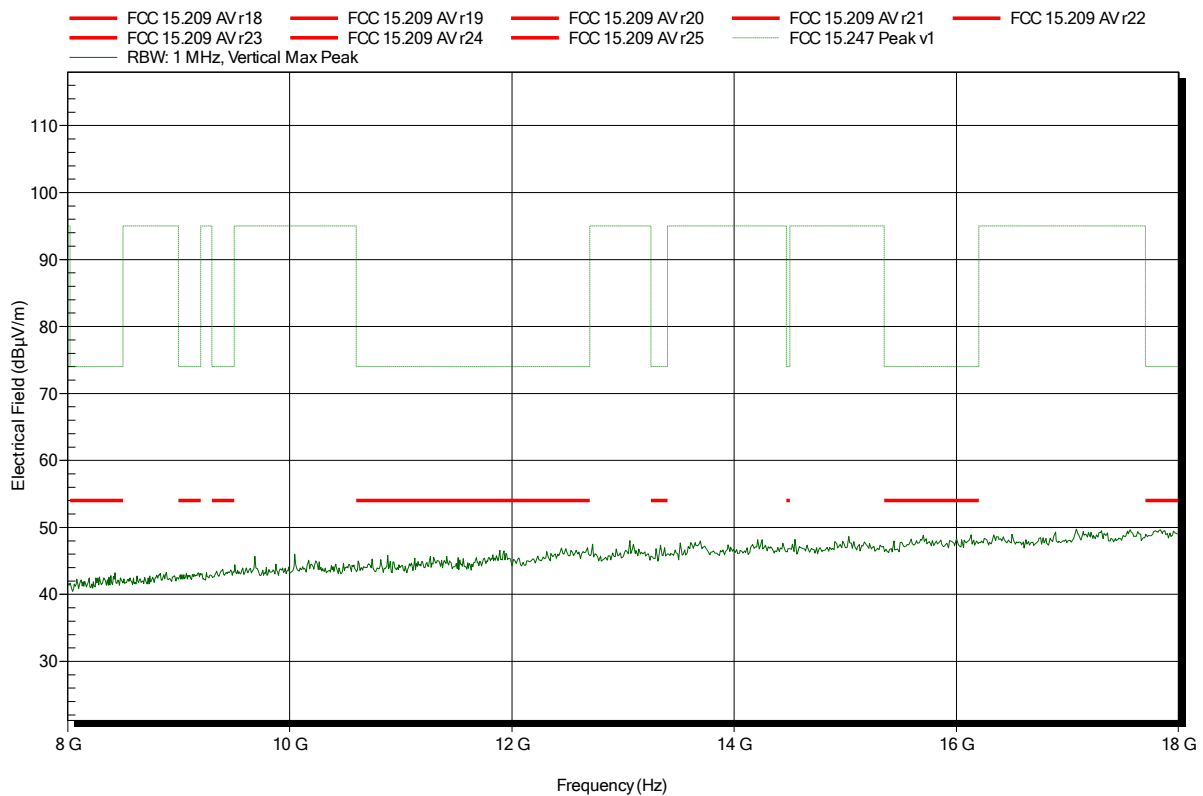


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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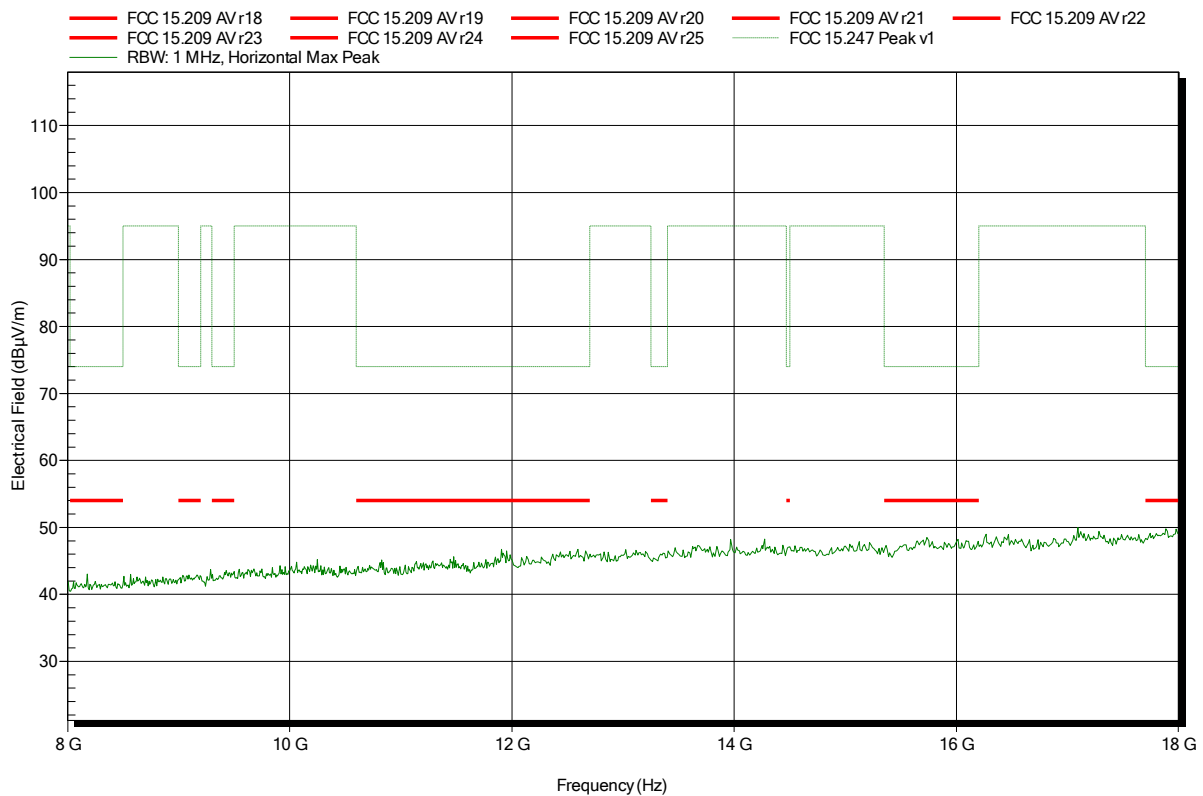


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: GOM-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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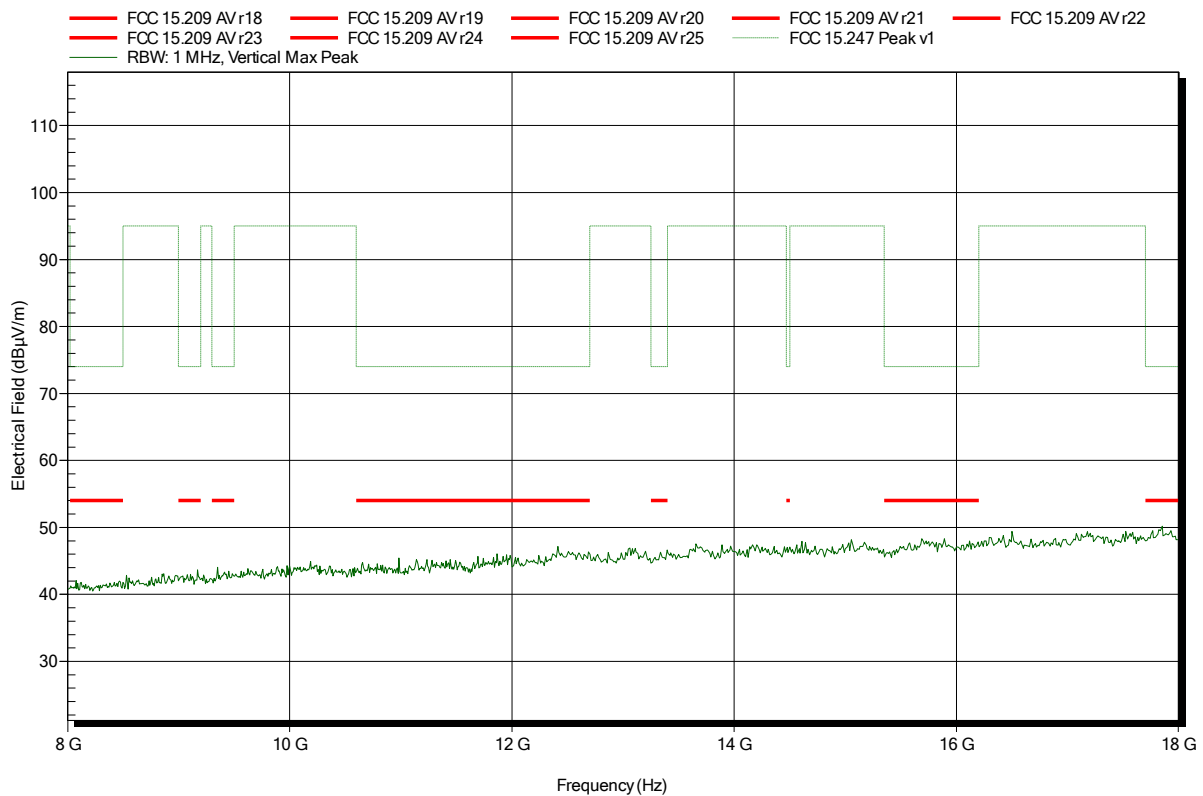


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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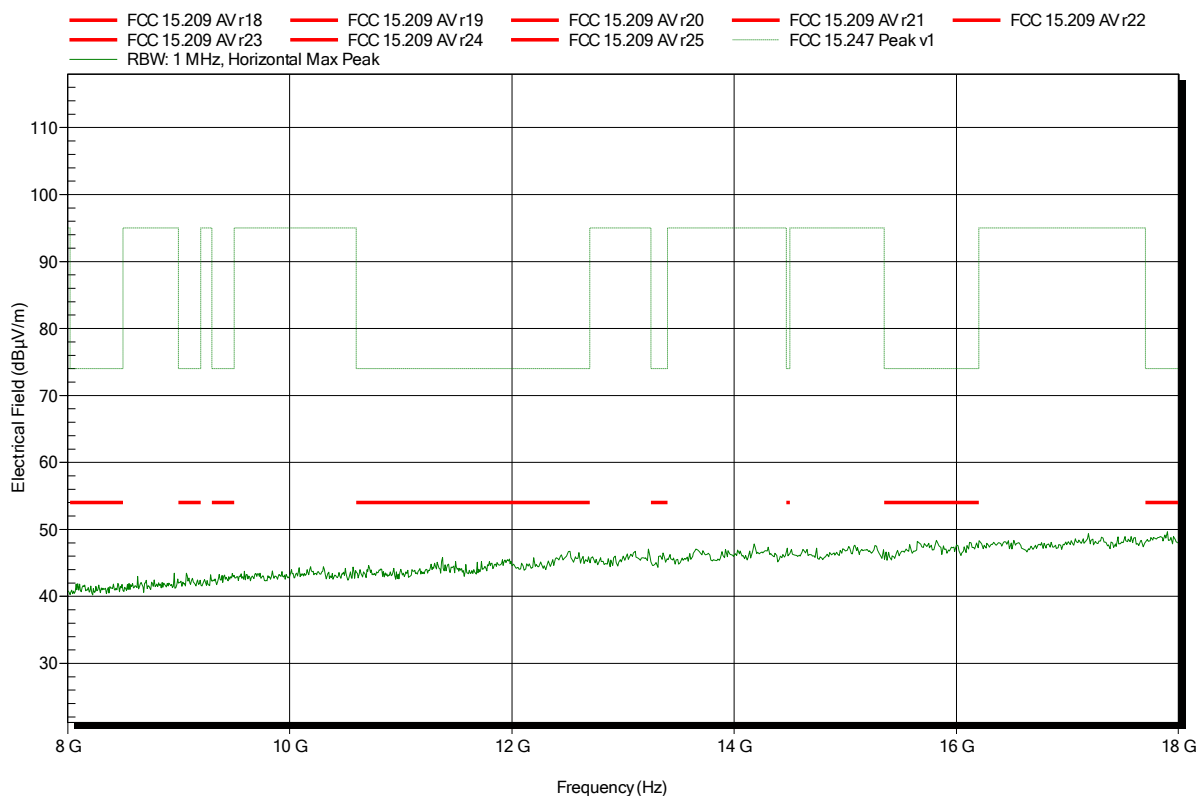


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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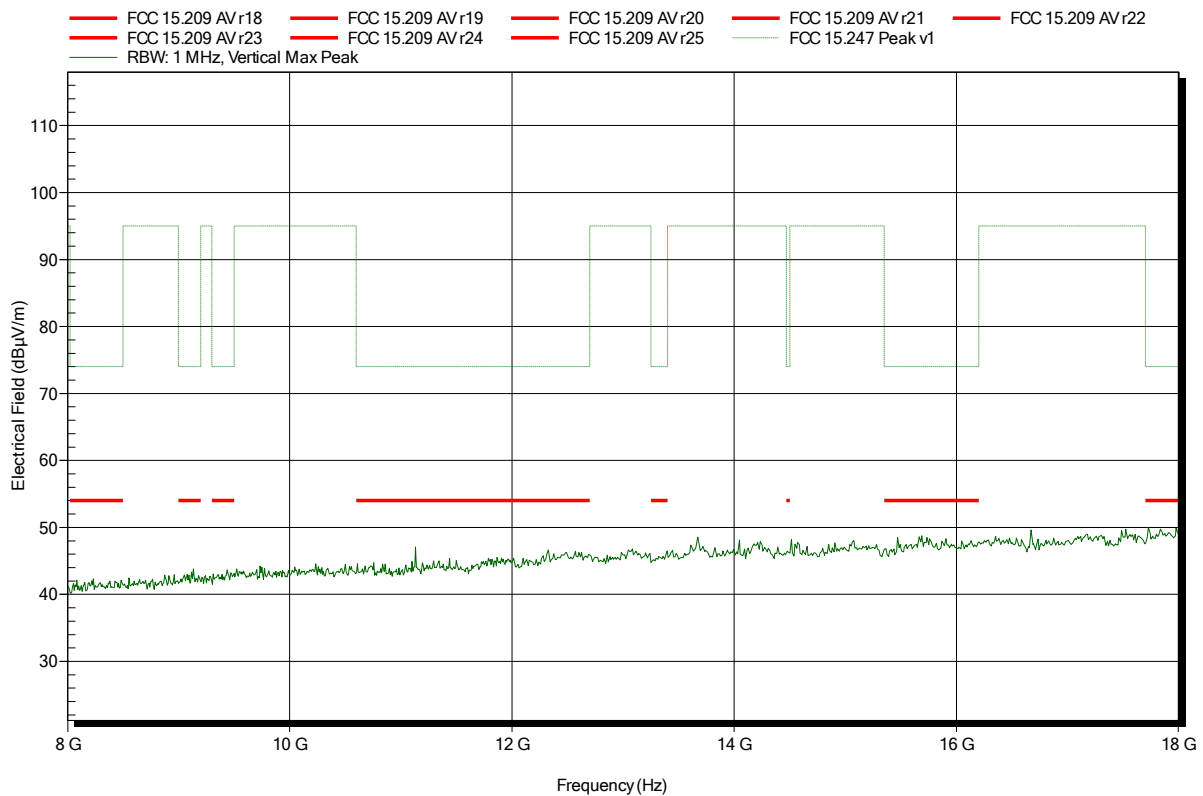


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: GOM-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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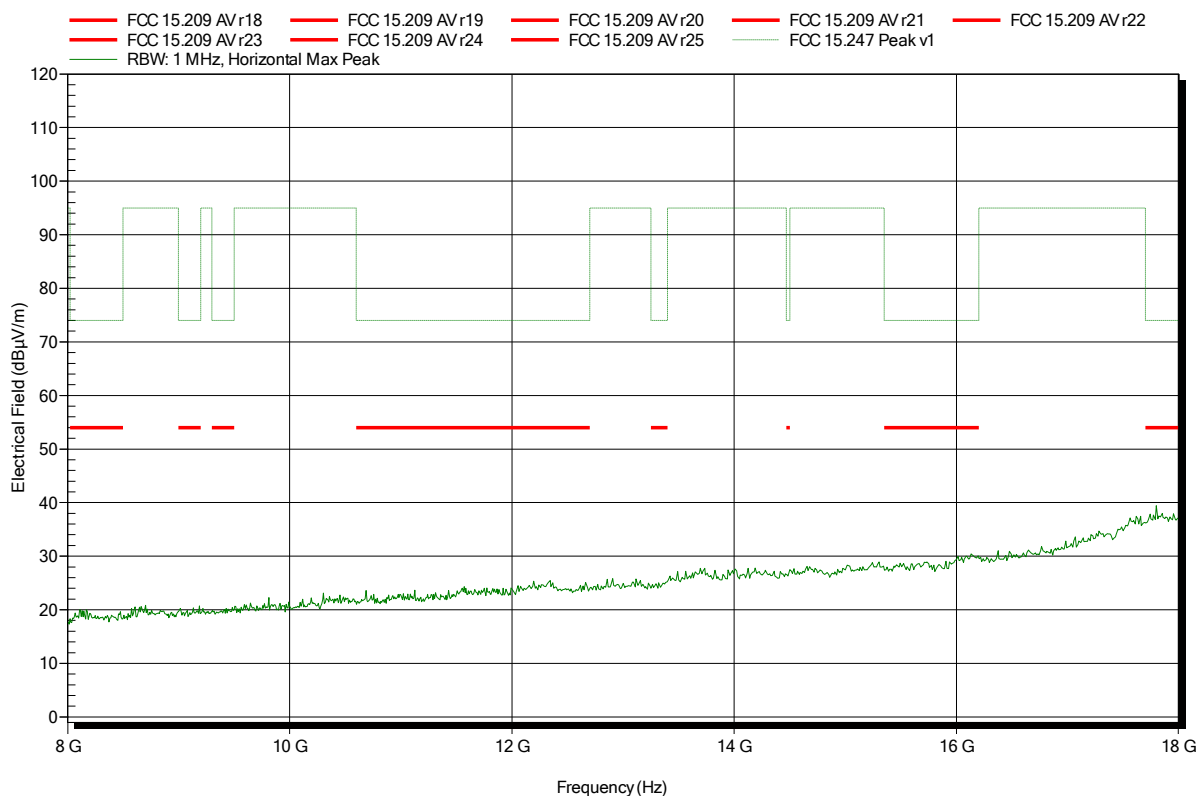


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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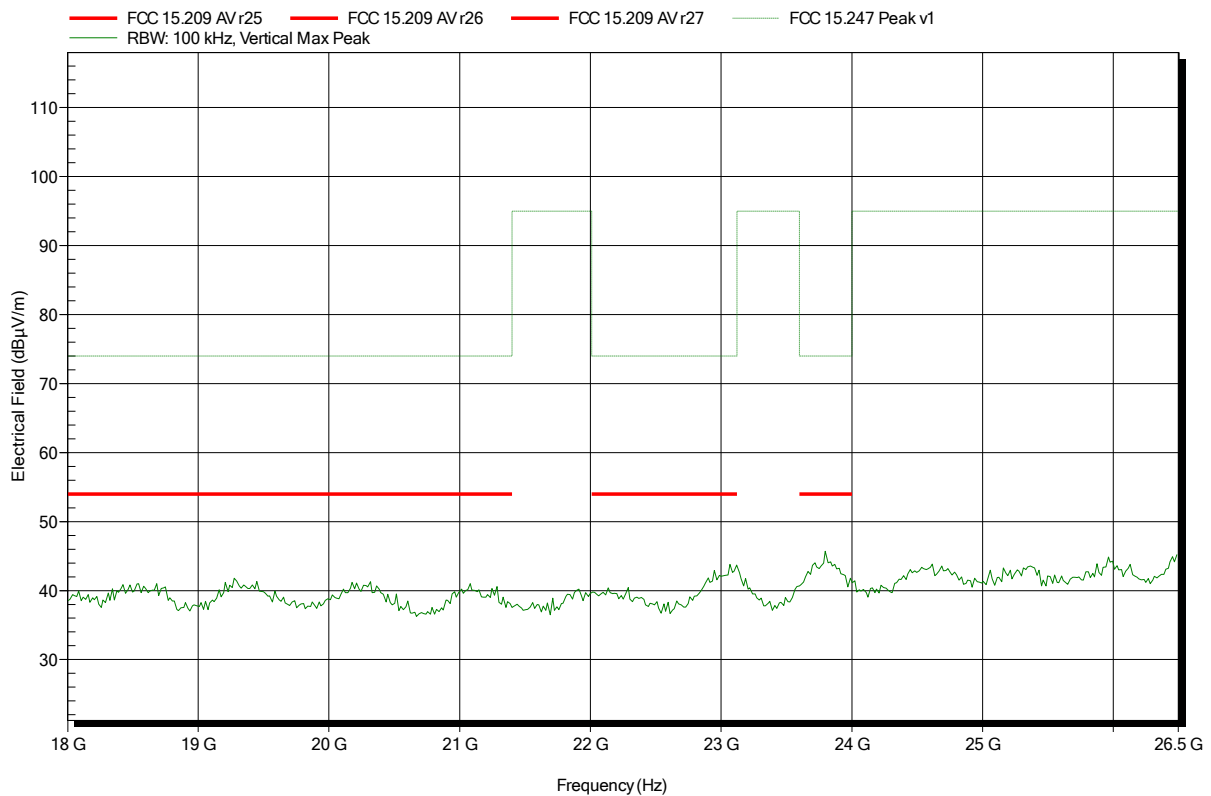


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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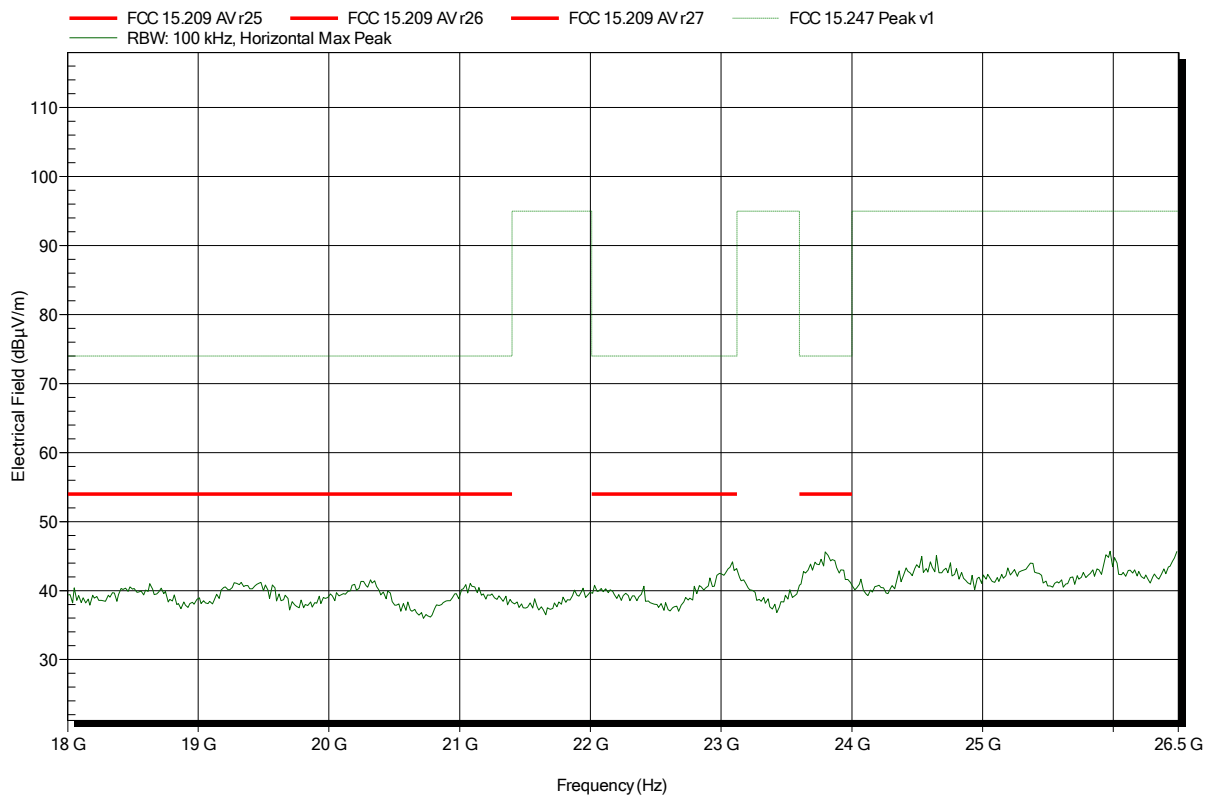


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-LE; CH: 0; 2402 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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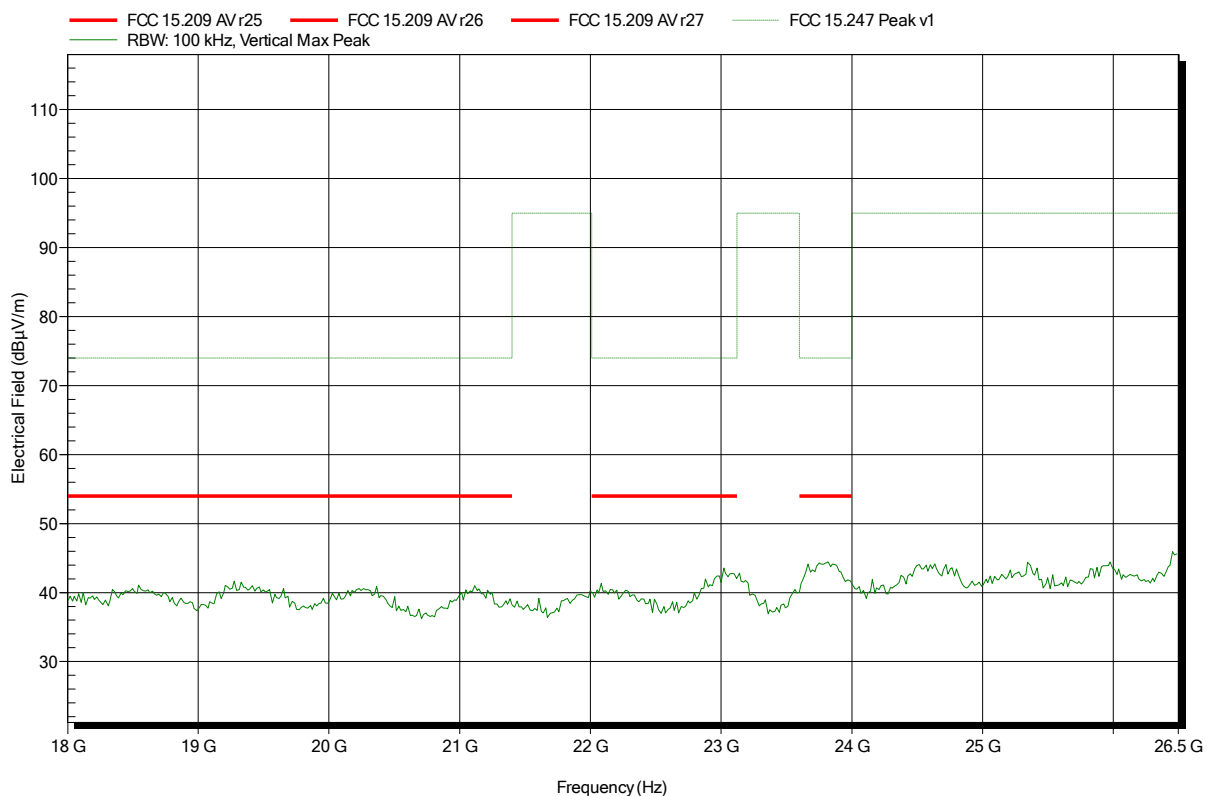


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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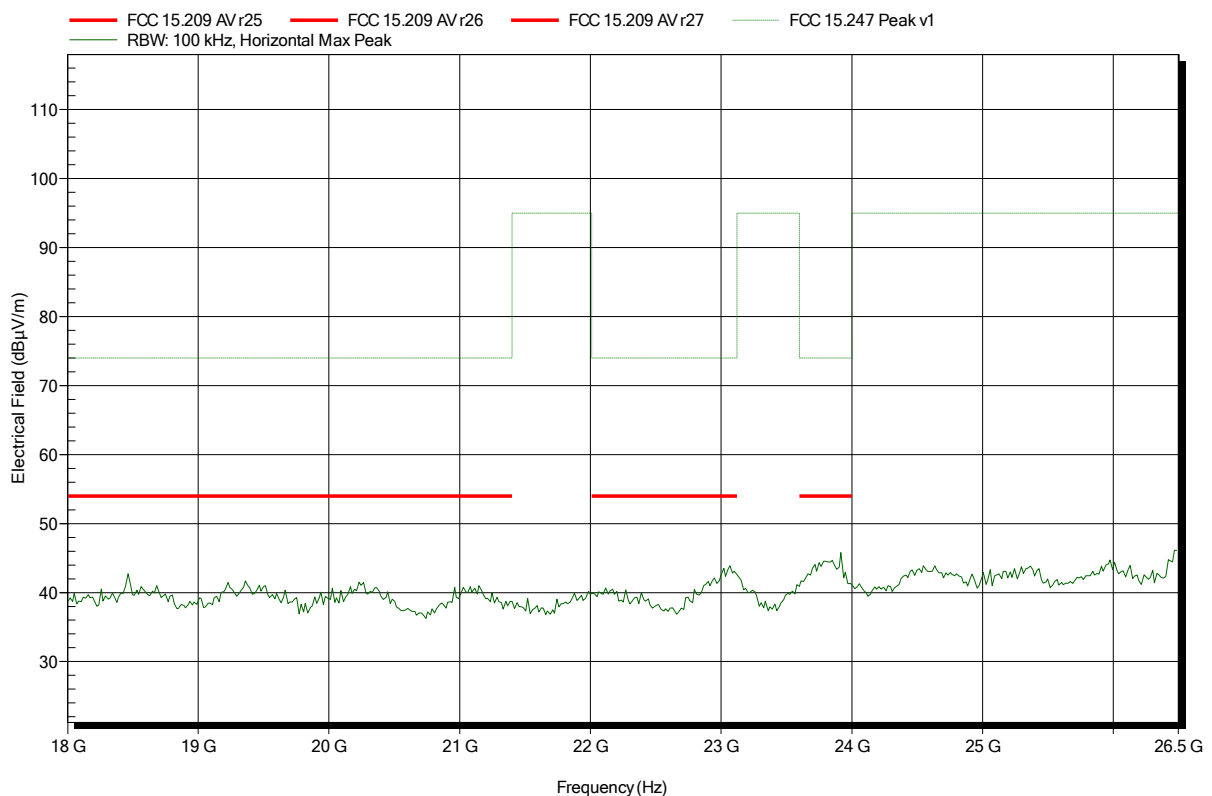


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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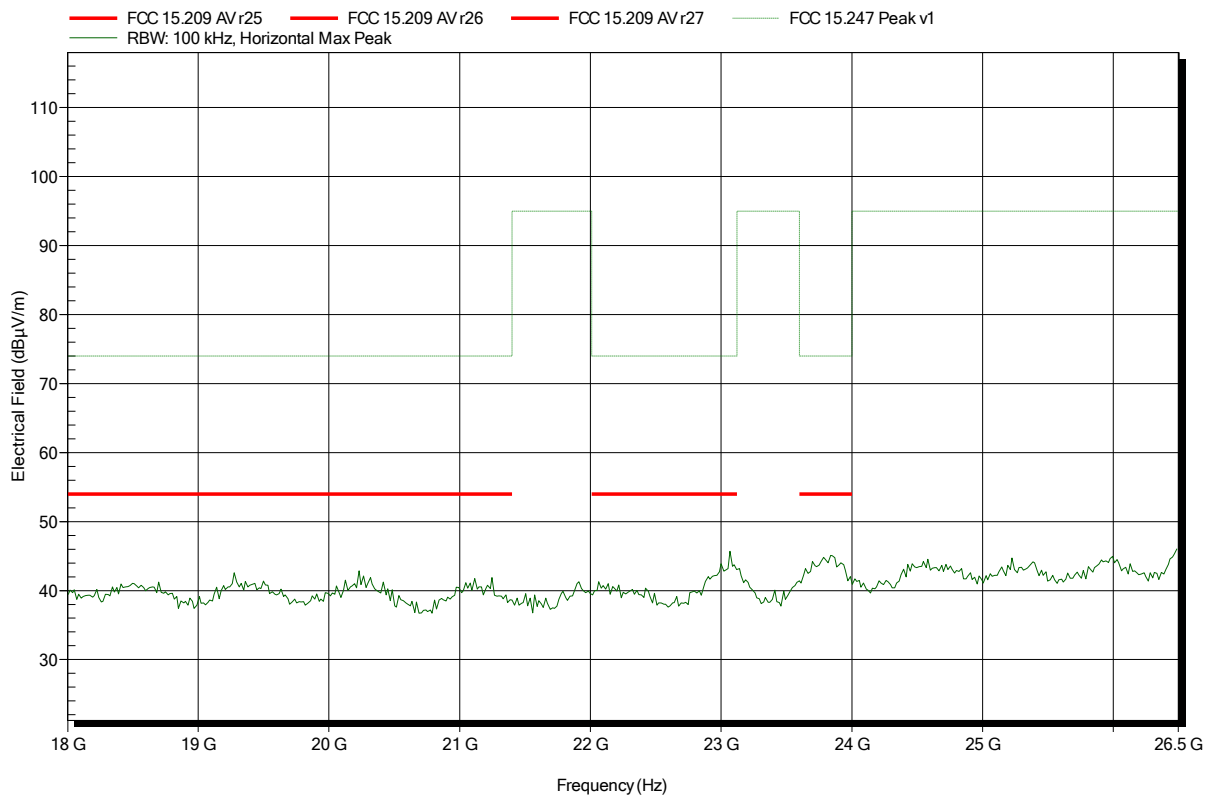


Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BT-LE; CH: 39; 2480 MHz; GFSK; ANT integral
 Test Date: 2015-12-16
 Note: EUT vertical

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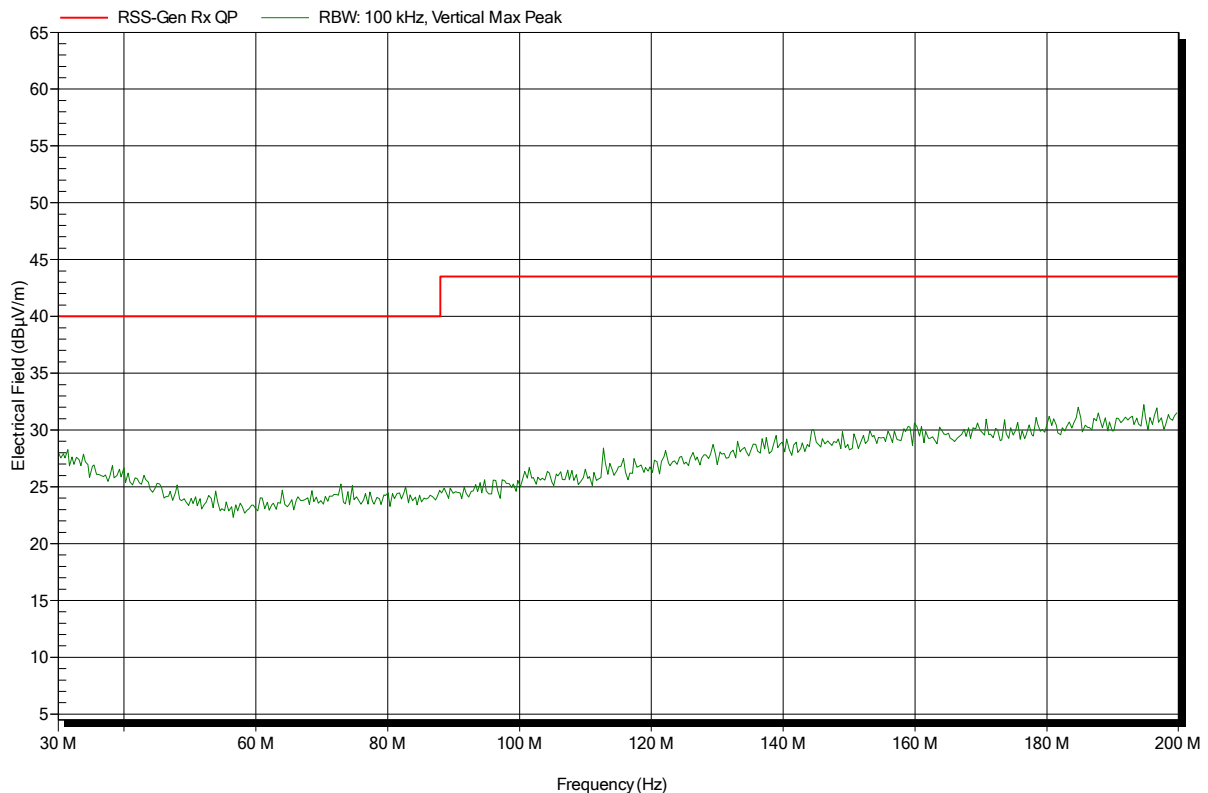
ANNEX B Receiver radiated spurious emissions

Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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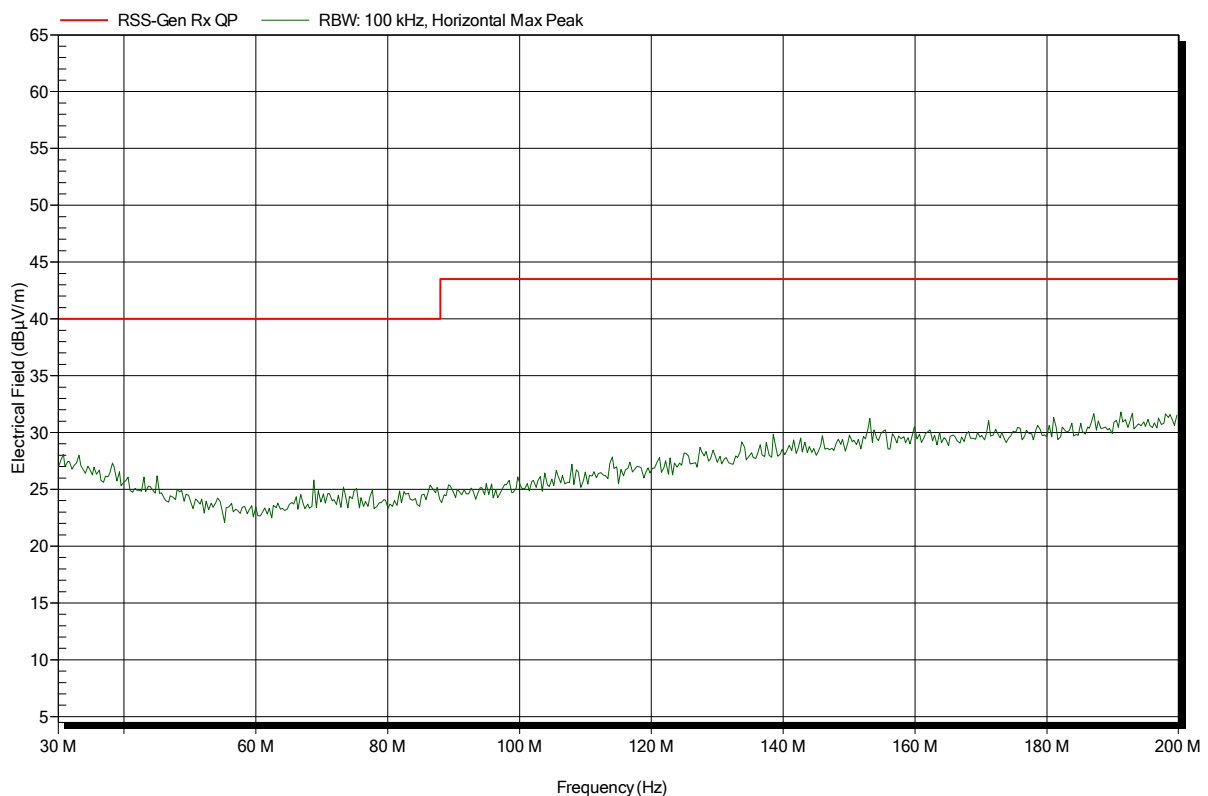


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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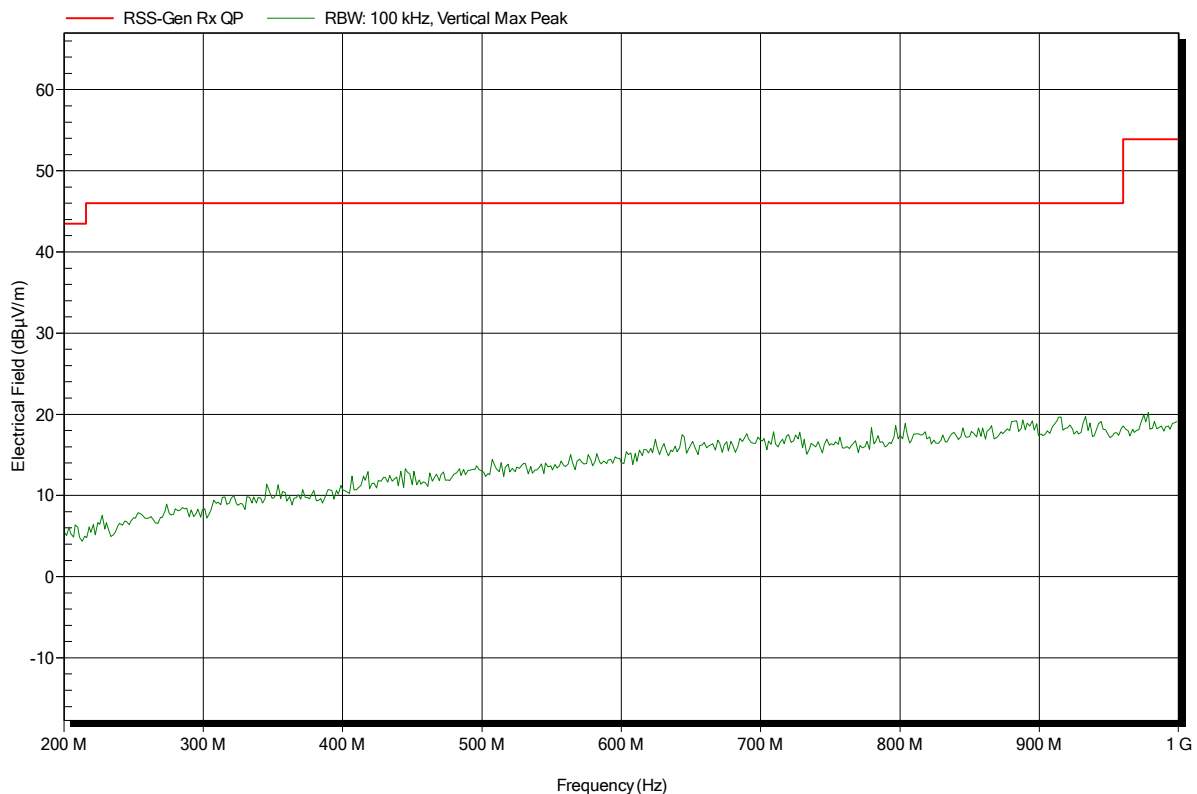


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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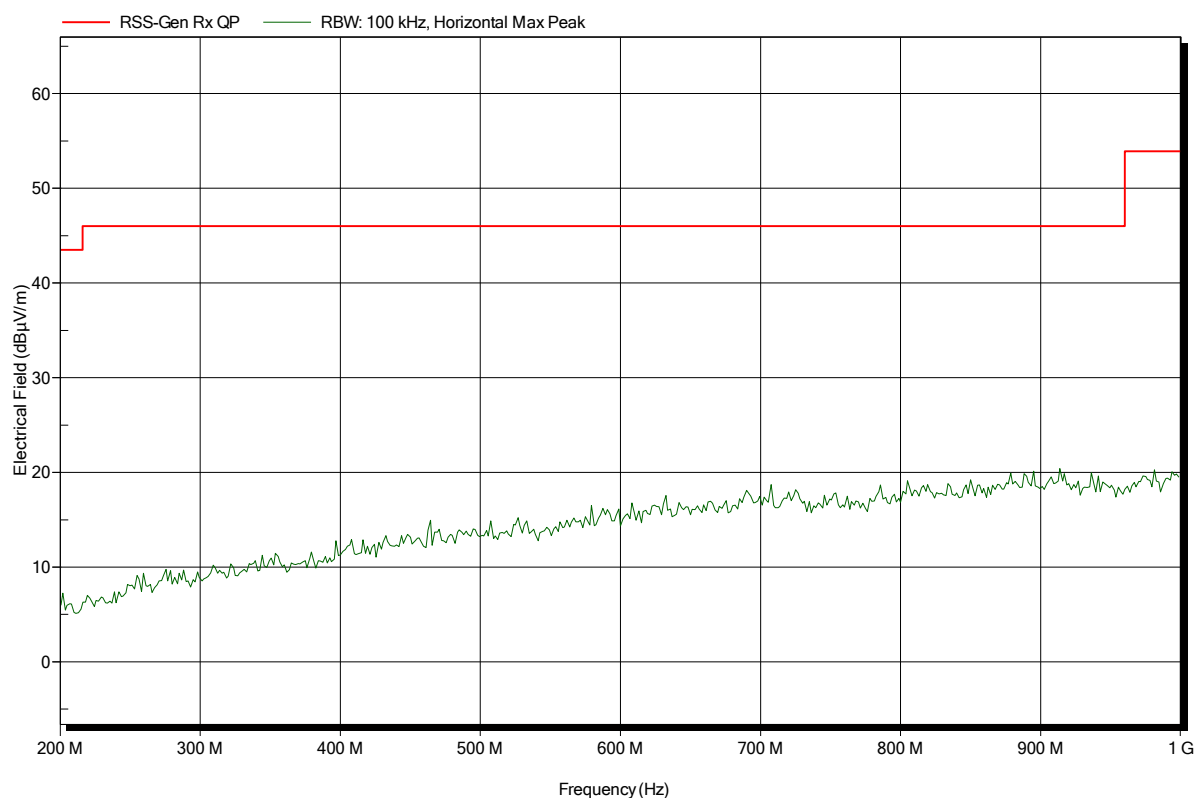


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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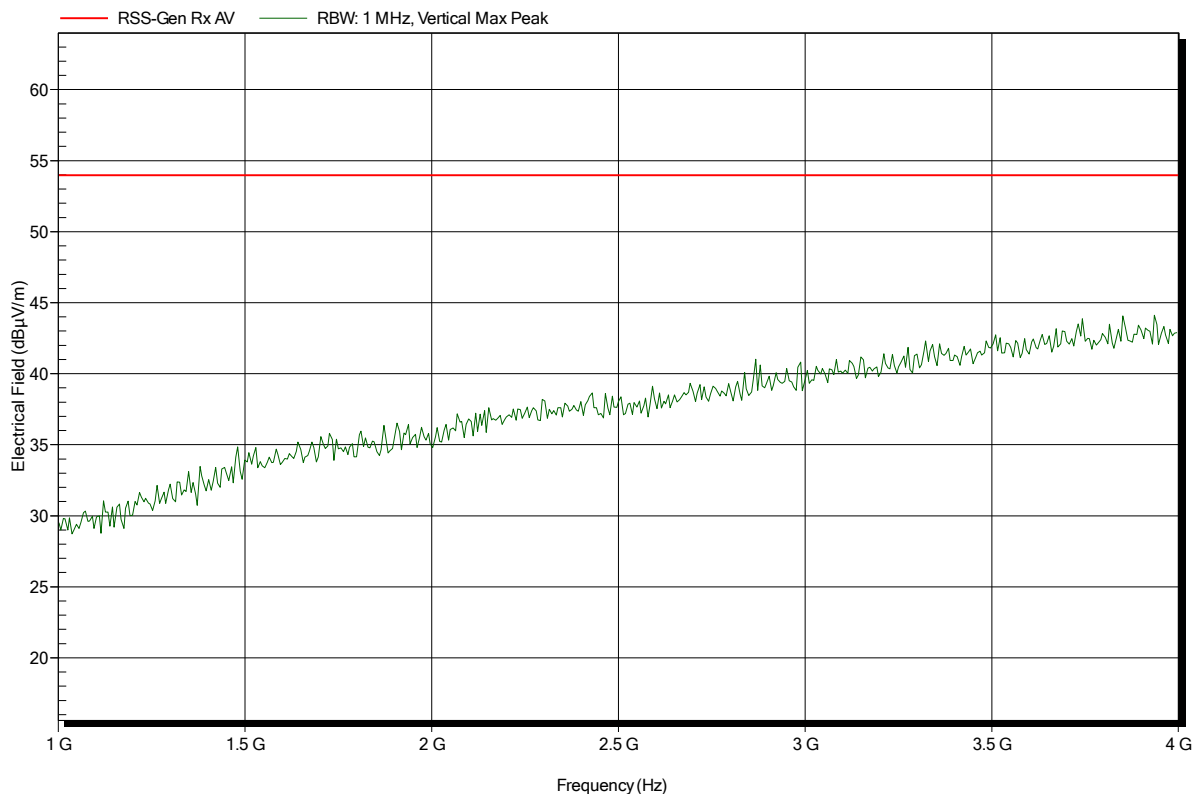


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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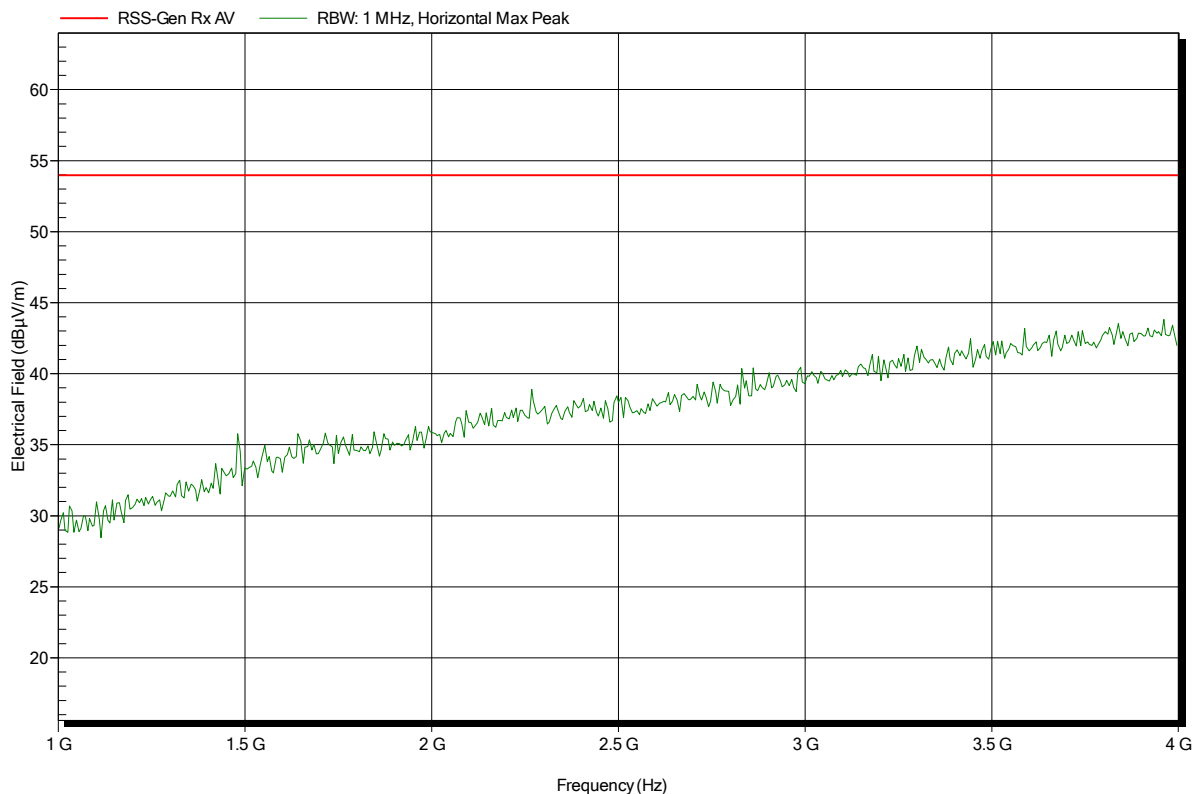


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 3 m
 Mode: RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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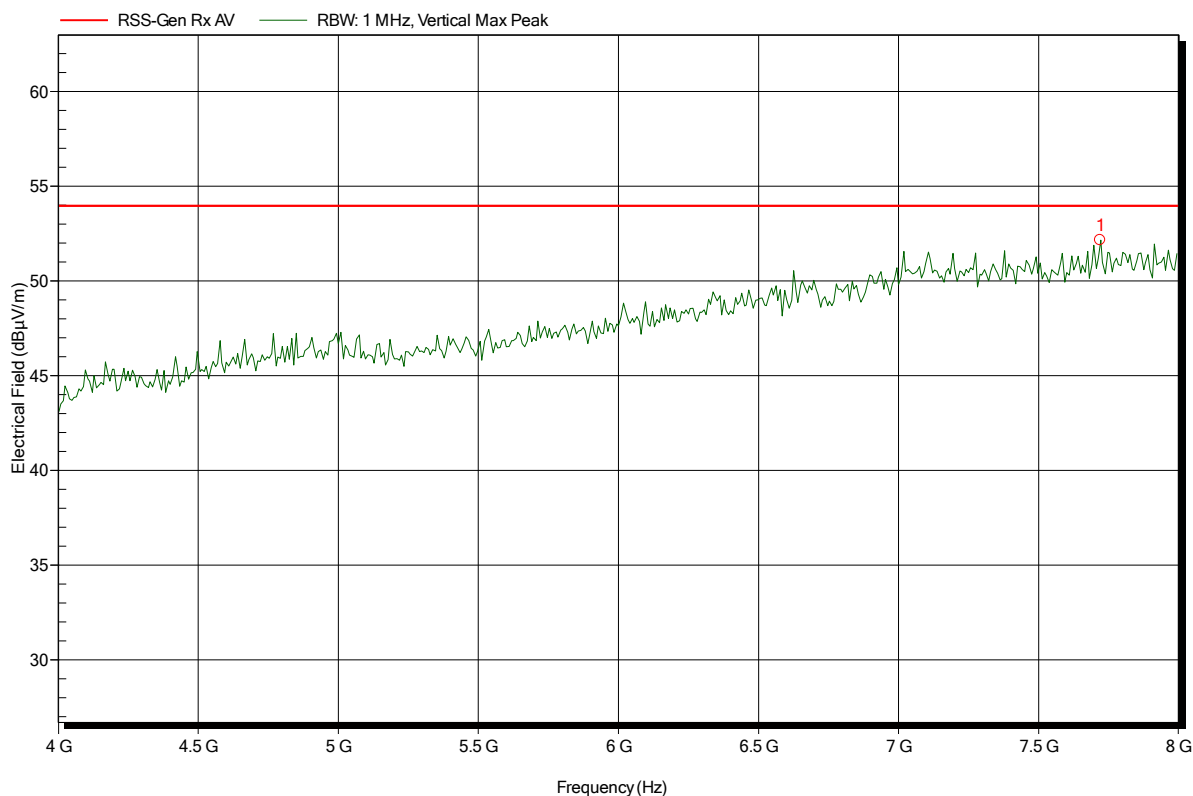


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant: Leica Geosystems AG
 EUT Name: Laser Distance Meter
 Model: Leica Disto D2
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pudell
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 3 m
 Mode: RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
 Test Date: 2015-12-17
 Note: EUT vertical

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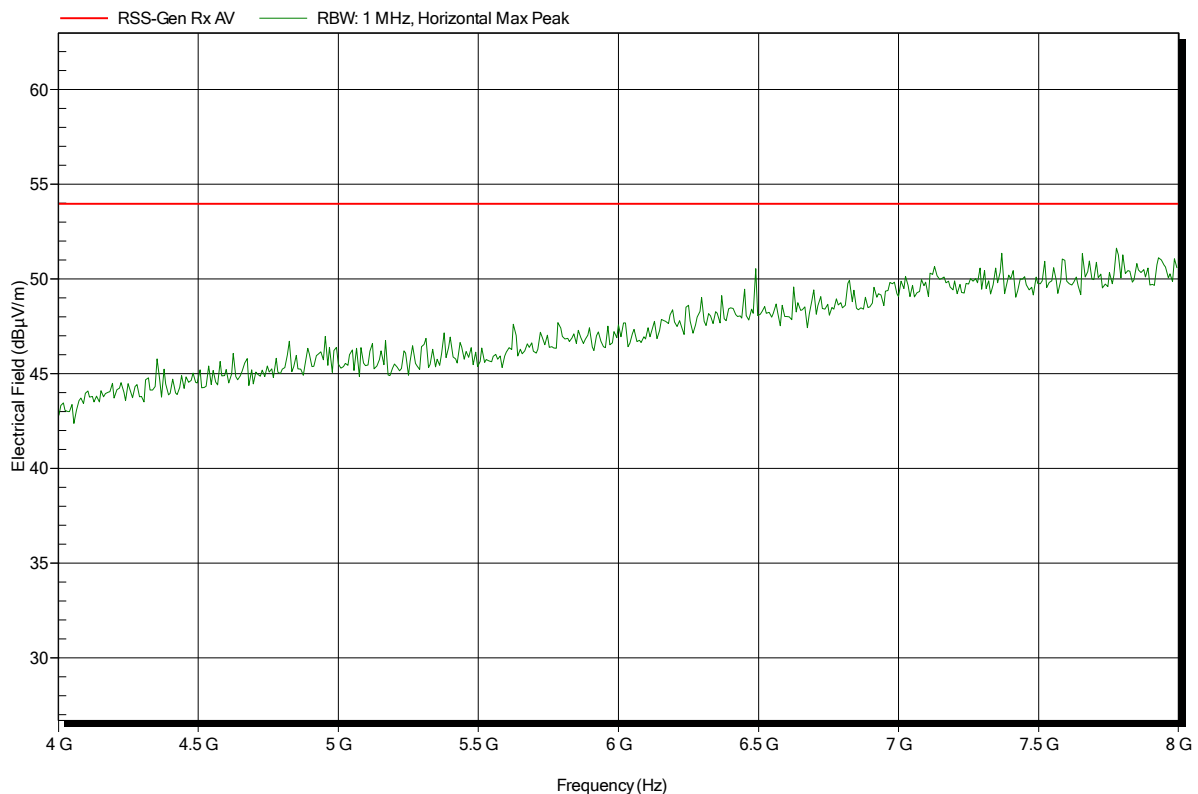
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.72 GHz	52.16 dBµV/m	53.98 dBµV/m	-1.82 dB	Pass

Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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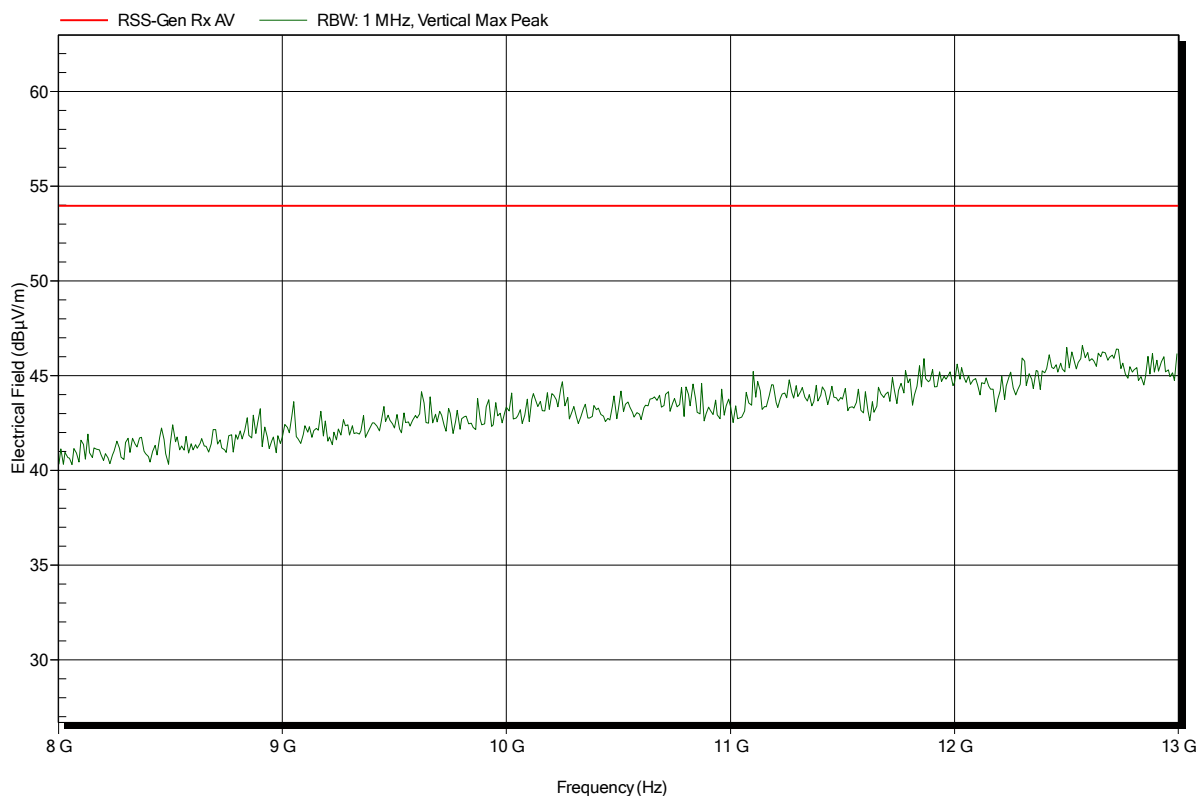


Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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Spurious emissions according to IC RSS-247, I1

Project number: G0M-1511-5219

Applicant:	Leica Geosystems AG
EUT Name:	Laser Distance Meter
Model:	Leica Disto D2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC (2x AAA-battery)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; BT-LE; CH: 19; 2440 MHz; GFSK; ANT integral
Test Date:	2015-12-17
Note:	EUT vertical

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