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FCC TEST REPORT

FCC 47 CFR Part 15C
Industry Canada RSS-210

Frequency hopping systems operating within the 2400 – 2483.5 MHz band

Report Reference No.....:	G0M-1406-3914-TFC247BT-V01
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-210, Issue 8, 2010-12 RSS-Gen, Issue 4, 2014-11 ANSI C63.4:2009
Test scope…….....:	partial Radio compliance test
Equipment under test (EUT):	
Product description	Long Range Bluetooth remote control
Model No.	CTR20
Additional Model(s)	None
Brand Name(s)	Leica Geosystems
Hardware version	V5.0
Firmware / Software version	V4.7
	FCC-ID: RFD-CTR20 IC: 3177A-CTR20
Contains	FCC-ID: PVH0939 IC: 5325A-0939
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 ..... :	2015-02-23	
Date (s) of performance of tests ..... :	2015-02-23 - 2015-03-03	
Compiled by ..... :	Burkhard Pudell	
Tested by (+ signature)..... : (Responsible for Test)	Burkhard Pudell	B. Pudell
Approved by (+ signature) ..... :	Christian Weber	C. Weber
Date of issue ..... :	2015-04-29	
Total number of pages ..... :	86	

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:

The EUT uses a radio module certified under FCC-ID PVH0946 and IC ID 5325A-0946. The EUT uses exactly the same hardware except for the antenna. The antenna connected to the module is different and therefore the conducted results for the EUT are identical to the conducted results of the module and the radiated tests are made with the EUT antenna and given in this test report.

Version History

Version	Issue Date	Remarks	Revised by
01	2015-04-29	Initial Release	

REPORT INDEX

1 Equipment (Test item) Description

Description	Long Range Bluetooth remote control	
Model	CTR20	
Additional Model(s)	None	
Brand Name(s)	Leica Geosystems	
Serial number	None	
Hardware version	V5.0	
Software / Firmware version	V4.7	
FCC-ID	RFD-CTR20	
IC	3177A-CTR20	
Contains FCC-ID	PVH0939	
Contains IC	5325A-0939	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	Bluetooth	
Operating frequency range	2402 - 2480 MHz	
Assigned frequency band	2400 - 2483.5 MHz	
Main test frequencies	F_{LOW}	2402 MHz
	F_{MID}	2441 MHz
	F_{HIGH}	2480 MHz
Spreading	FHSS	
Modulations	GFSK	
Number of channels	79 hopping channels at all	
Channel spacing	1 MHz	
Number of antennas	1	
Antenna	Type	external dedicated
	Model	GAT25
	Manufacturer	Radial
	Gain	2.0 dBi (declaration)
Manufacturer	Leica Geosystems AG Heinrich Wild Strasse 9435 Heerbrugg SWITZERLAND	
Power supply	V_{NOM}	5.0 VDC
	V_{MIN}	4.75 VDC
	V_{MIN}	5.25 VDC

AC/DC-Adaptor	Model	N/A
	Vendor	N/A
	Input	N/A
	Output	N/A

1.1 Photos – Equipment External

EUT FRONT CS20 with CTR20

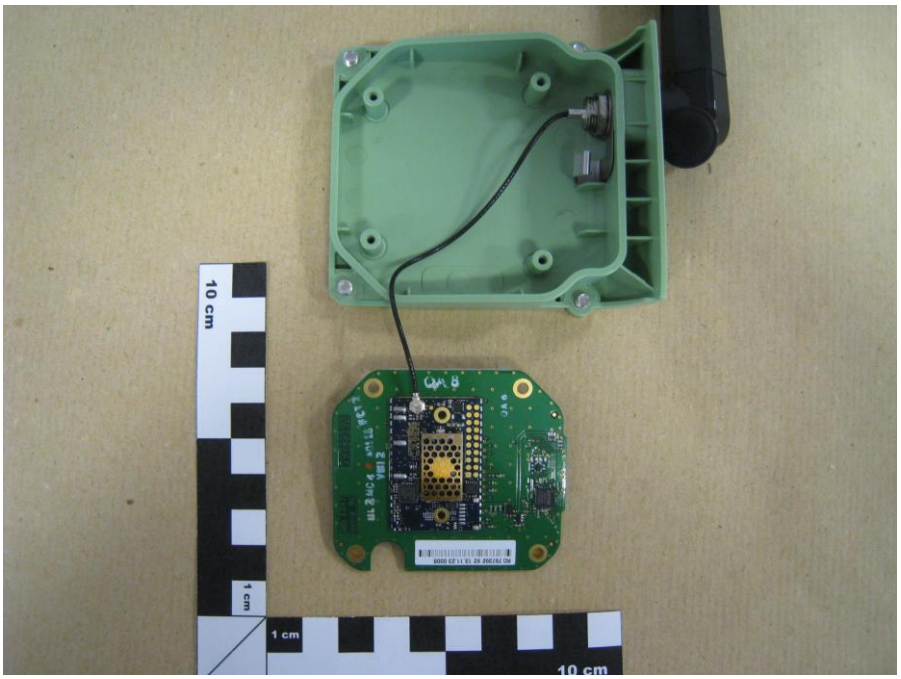

EUT BACK CS20 with CTR20

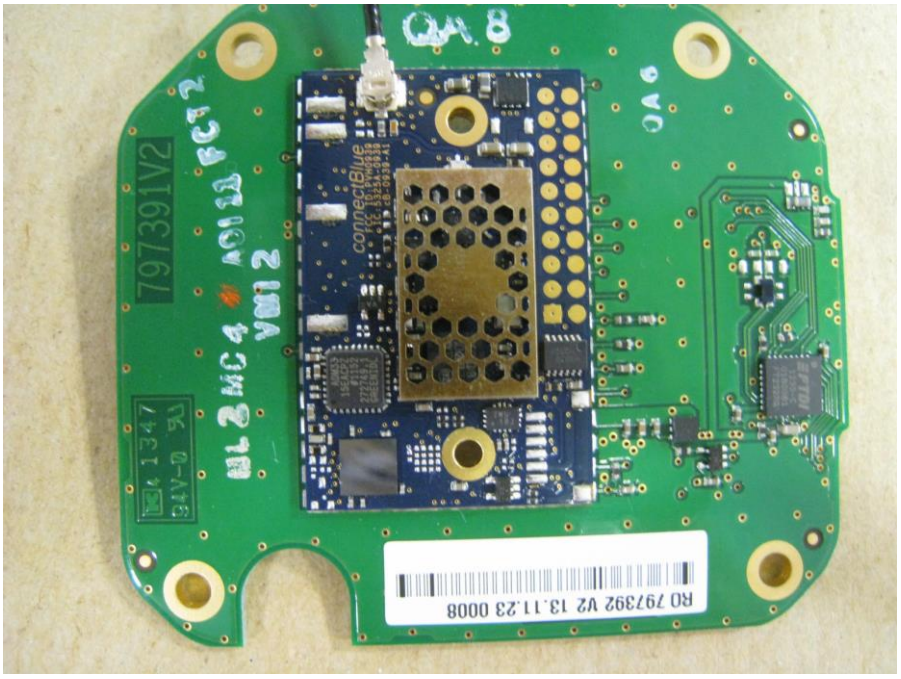

EUT CTR20

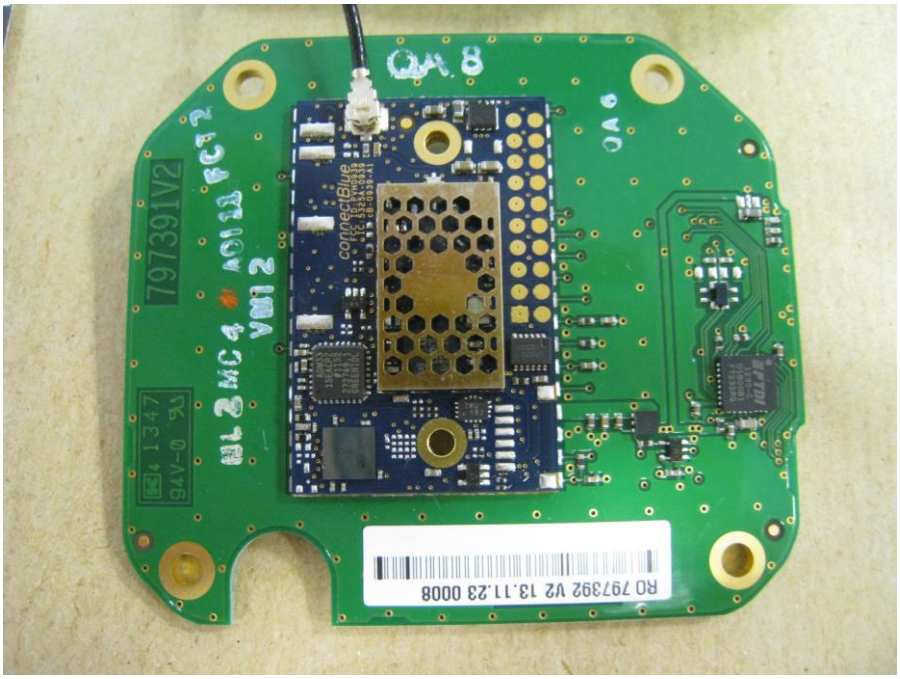

ANTENNA FRONT GAT25


ANTENNA BACK GAT25

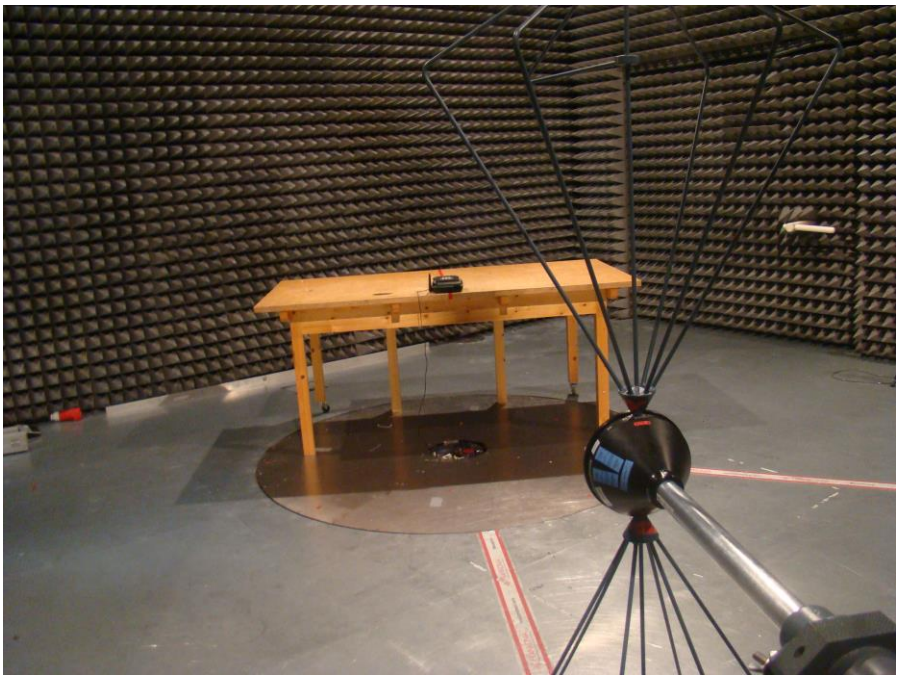
1.2 Photos – Equipment internal

EUT PCB WITH ANTENNA


EUT PCB TOP


EUT PCB BOTTOM


1.3 Photos – Test setup

Setup radiated spurious emission


Setup AC-Power-line


1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
AE	CS20	Leica	808012	Basic - device
SIM	CBT	R&S	EF00358	Bluetooth - Tester

***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	
DH5	General conditions:	EUT powered by internal accu
	Radio conditions:	Mode = DUT-Testmode Modulation = GFSK Power setting = Max
AC-Powerline	General conditions:	EUT powered by commercial AC/DC-Adapter
	Radio conditions:	Mode = standalone transmit Spreading = Hopping Power level = Maximum
Receive	General conditions:	EUT powered by internal accu
	Radio conditions:	Mode = DUT-Slave mode

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	FSEK 30	EF00168	2015-01	2016-01

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSEK 30	EF00168	2015-01	2016-01
Biconical Antenna	R&S	HK 116	EF00203	2014-04	2016-04
LPD Antenna	R&S	HL 223	EF00013	2014-04	2016-04
LPD Antenna	R&S	BBHA 9120D	EF00019	2014-03	2016-03

AC powerline conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2014-11	2016-11
EMI Test Receiver	R&S	ESCS 30	EF00295	2014-10	2015-10

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, IC RSS-210				
Product Specific Standard Section	**Requirement – Test**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 6.6	Occupied Bandwidth	RSS-Gen 6.6	N/R	Informational only
FCC § 15.247(a)(1) IC RSS-210 § A8.1	20 dB Bandwidth	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Number of hopping frequencies	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(a)(1) IC RSS-210 § A8.1	Frequency hopping channel separation	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Time of occupancy (Dwell time)	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(b)(1) IC RSS-210 § A8.4	Maximum peak conducted power	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
47 CFR 15.207 RSS-Gen 8.8	AC power line conducted emissions	ANSI C63.4	PASS	
FCC § 15.247(d) IC RSS-210 § A8.5	Band edge compliance	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(d) IC RSS-210 § A8.5	Conducted spurious emissions	Public notice DA 00-705	N/R	Test results are given in test report under FCC-ID PVH0946
FCC § 15.247(d) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 6.13	Transmitter radiated spurious emissions	Public notice DA 00-705 / ANSI C 63.4	PASS	
IC RSS-Gen 7.1	Receiver radiated spurious emissions	ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

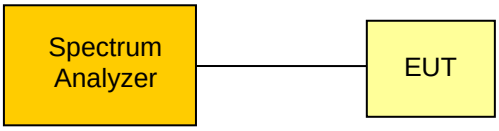
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. to IC RSS-Gen	**Verdict: PASS**
Test according to measurement reference	Reference Method
	RSS-Gen 6.6
Test frequency range	Tested frequencies
	F_{LOW} / F_{MID} / F_{HIGH}

Limits

None (Informational only)

Test setup



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 [kHz]
F_{LOW}	2402	DH5	991.984
F_{MID}	2441	DH5	991.984
F_{HIGH}	2480	DH5	1002.004

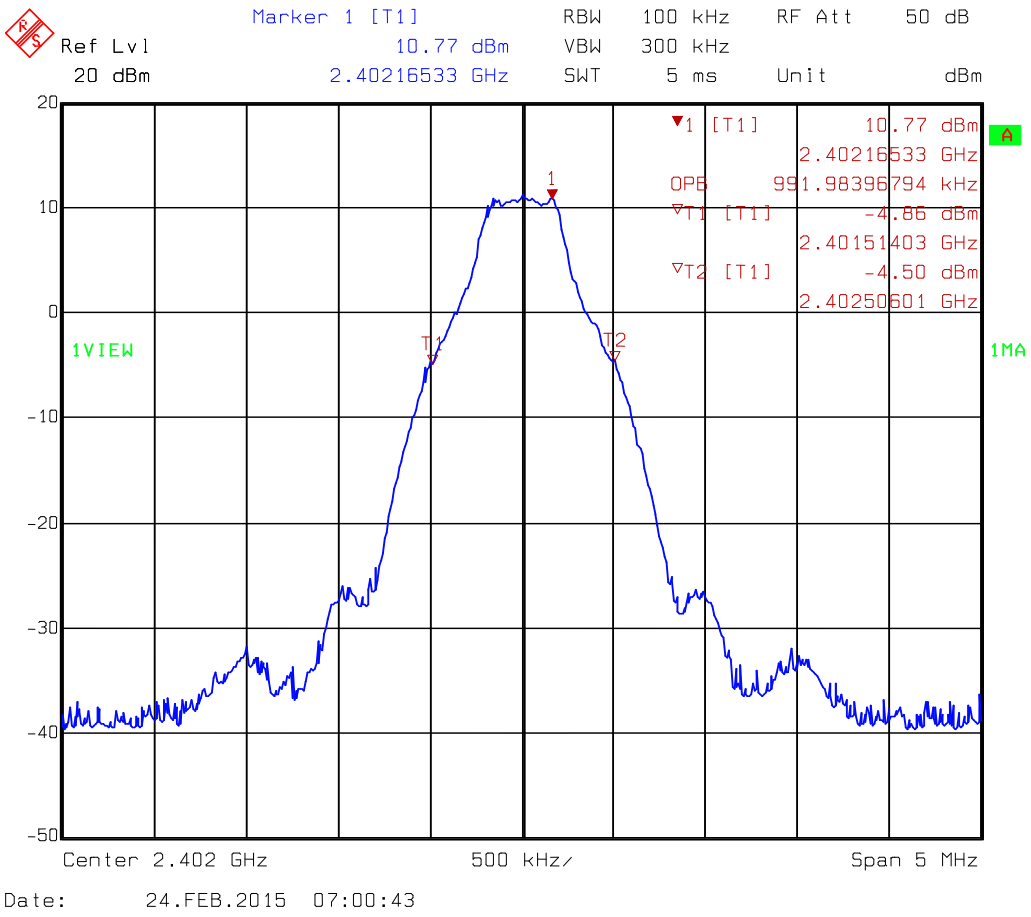
Comments:

Occupied Bandwidth – DH5 F_{LOW}

Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Burkhard Pudell
Test Conditions:	Tnom / Vnom
Mode:	Tx, BT-BR, CH: 0, 2402 MHz, DH5
Test Date:	2015-02-24
Verdict:	NONE (INFORMATION ONLY)
Note 1:	A spectrum analyzer with an integrated 99% power bandwidth function is used
Note 2:	OBW= 991.984 kHz

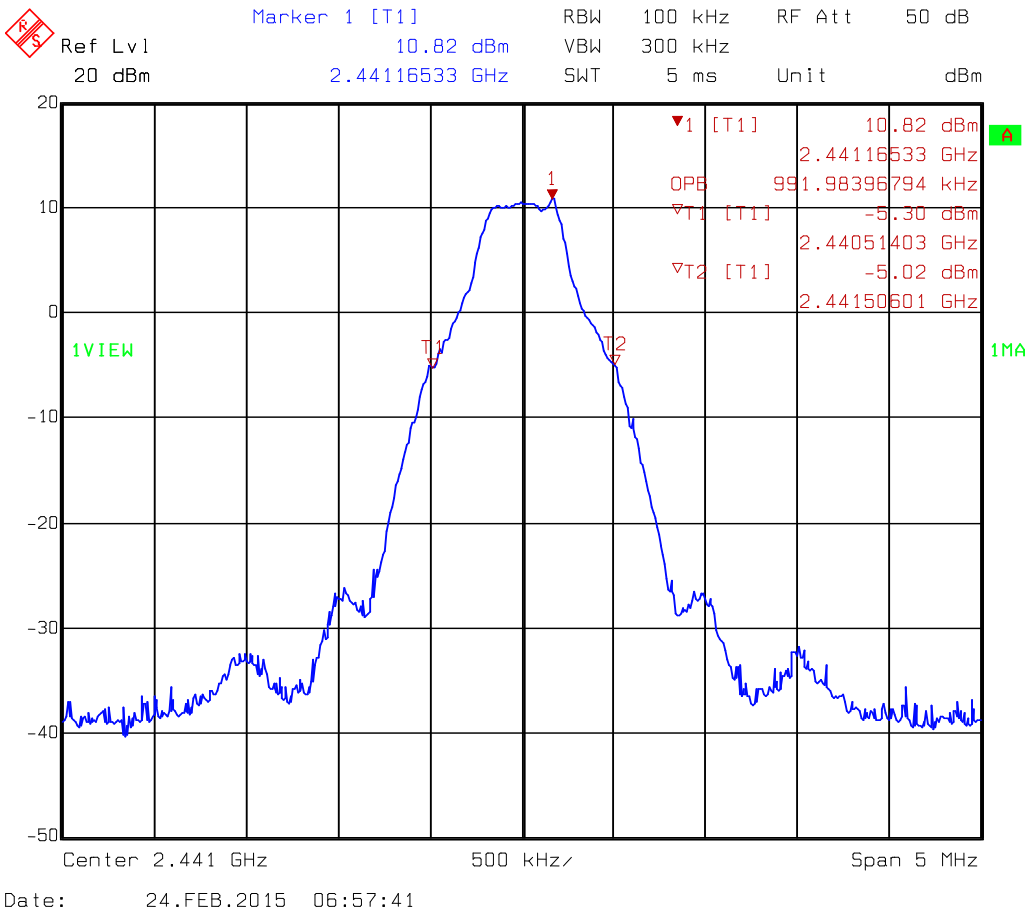


Occupied Bandwidth – DH5 F_{MID}

Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Burkhard Pudell
Test Conditions:	Tnom / Vnom
Mode:	Tx, BT-BR, CH: 39, 2441 MHz, DH5
Test Date:	2015-02-24
Verdict:	NONE (INFORMATION ONLY)
Note 1:	A spectrum analyzer with an integrated 99% power bandwidth function is used
Note 2:	OBW= 991.984 kHz

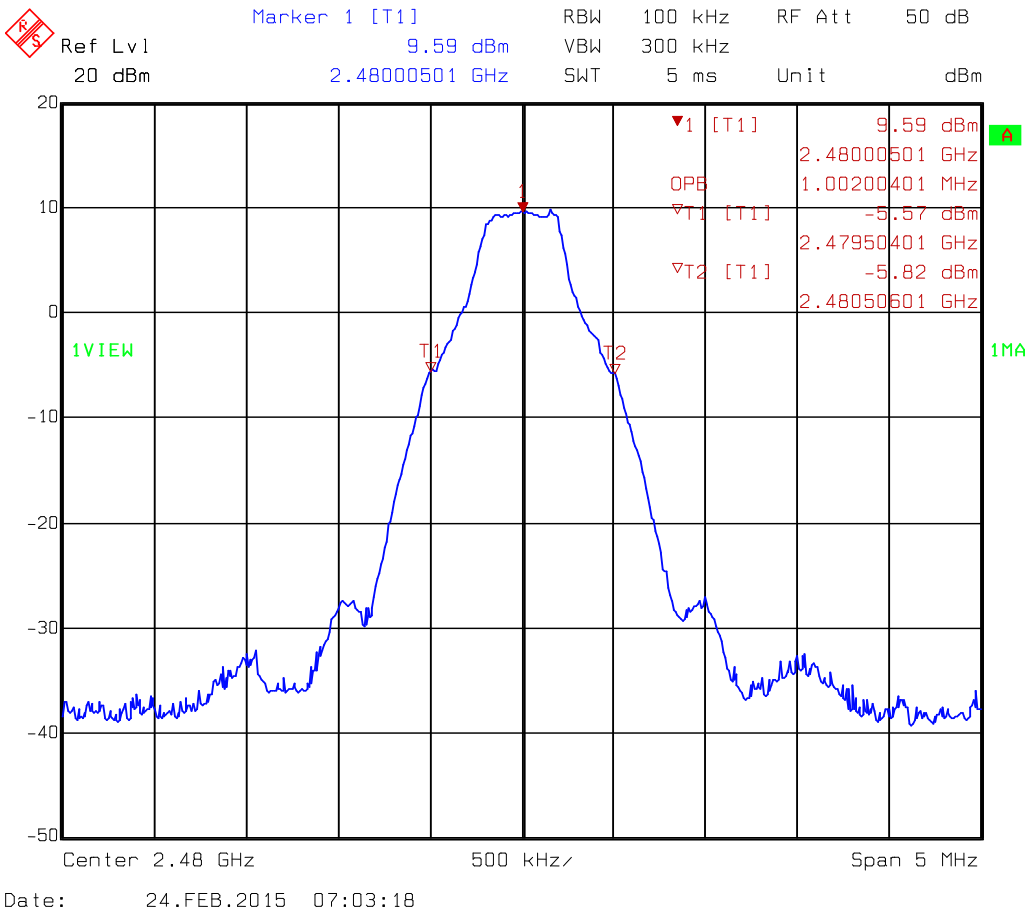


Occupied Bandwidth – DH5 F_{HIGH}

Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Burkhard Pudell
Test Conditions:	Tnom / Vnom
Mode:	Tx, BT-BR, CH: 78, 2480 MHz, DH5
Test Date:	2015-02-24
Verdict:	NONE (INFORMATION ONLY)
Note 1:	A spectrum analyzer with an integrated 99% power bandwidth function is used
Note 2:	OBW= 1002.004 kHz



3.2 Test Conditions and Results – AC power line conducted emissions

Power line conducted emissions acc. to FCC 47 CFR 15.207 / IC RSS-Gen				**Verdict: PASS**
Test according referenced standards	Reference Method			
	ANSI C63.4			
Fully configured sample scanned over the following frequency range	Frequency range			
	0.15 MHz to 30 MHz			
Points of Application	Application Interface			
AC Mains	LISN			
EUT test mode	AC-Powerline			
Limits and results				
Frequency [MHz]	Quasi-Peak [dBµV]	Result	Average [dBµV]	Result
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS
0.5 to 5	56	PASS	46	PASS
5 to 30	60	PASS	50	PASS
Comments: * Limit decreases linearly with the logarithm of the frequency.				

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1406-3914

Manufacturer:	Leica Geosystems AG
EUT Name:	CTR20
Model:	1875059
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Belz
Test Conditions:	Tnom: 23°C, Unom: internal Battery 10.8 V from CS20
LISN:	ESH2-Z5 L
Mode:	Bluetooth Link with camera
Test Date:	2015-03-03
Note:	charging

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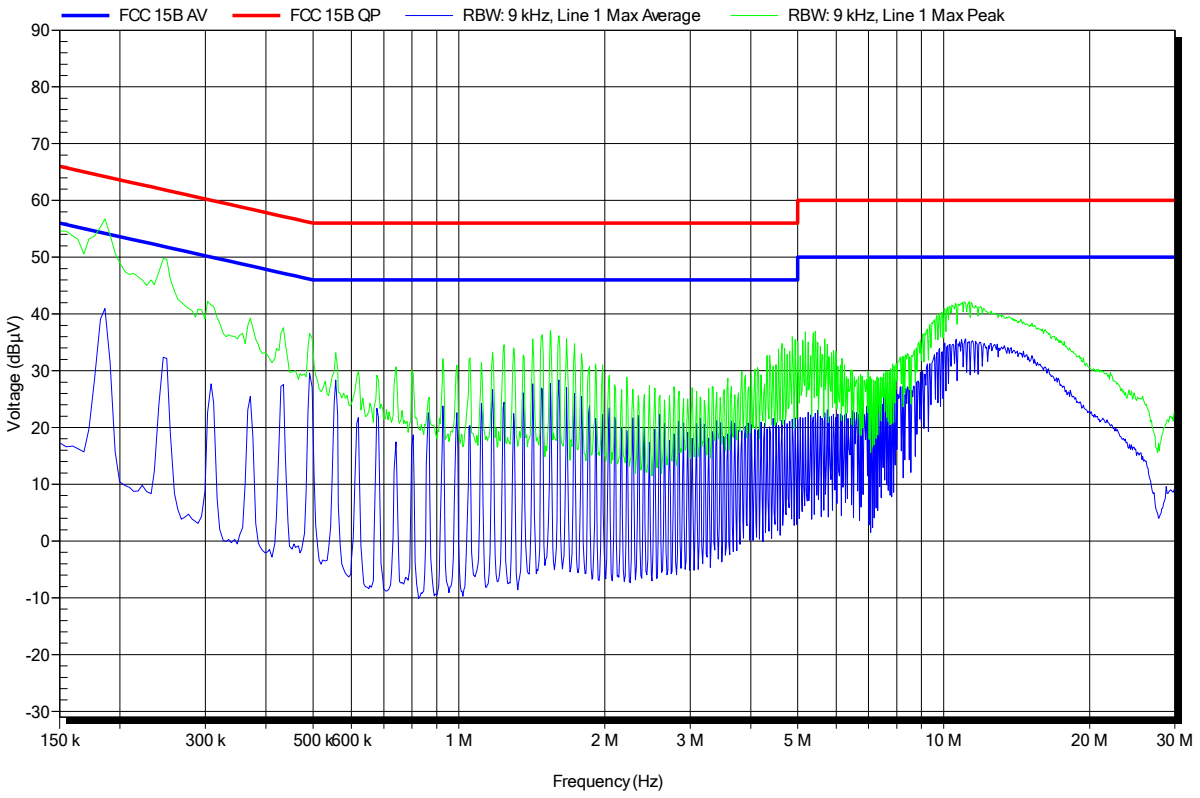

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1406-3914

Manufacturer:	Leica Geosystems AG
EUT Name:	CTR20
Model:	1875059
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Belz
Test Conditions:	Tnom: 23°C, Unom: internal Battery 10.8 V from CS20
LISN:	ESH2-Z5 N
Mode:	Bluetooth Link with camera
Test Date:	2015-03-03
Note:	charging

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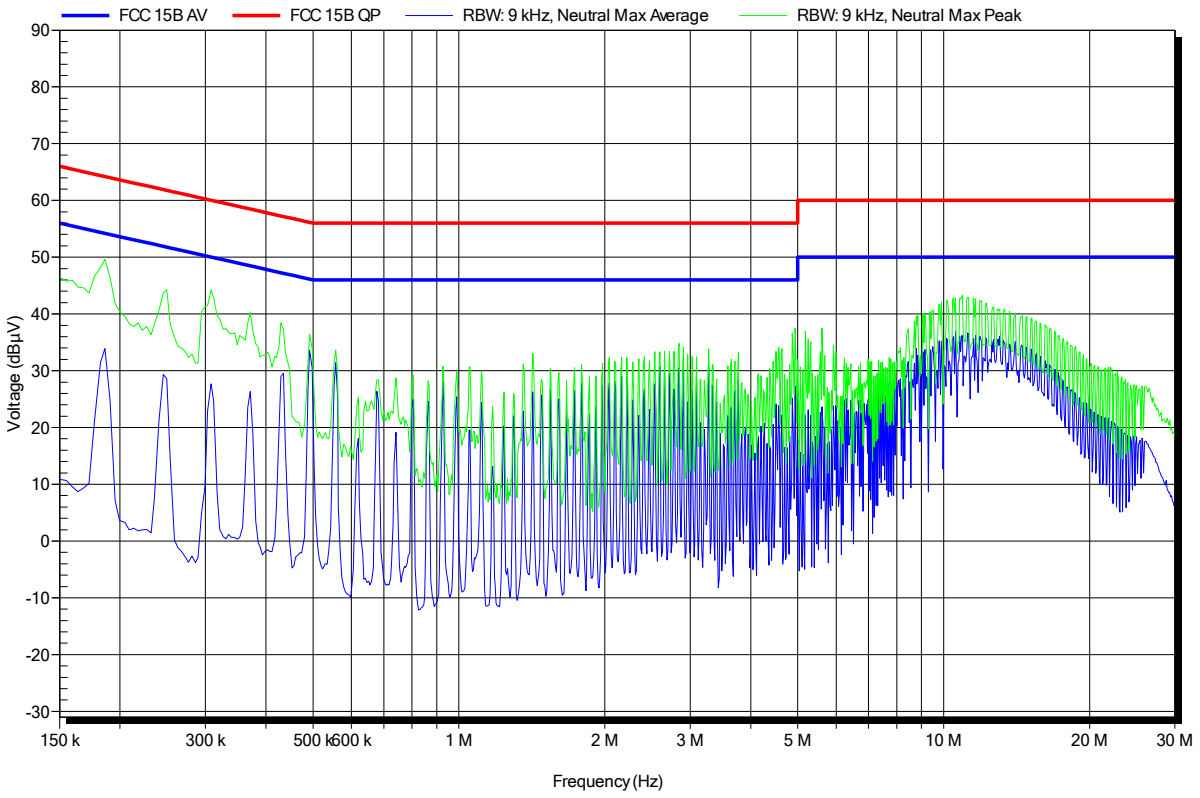
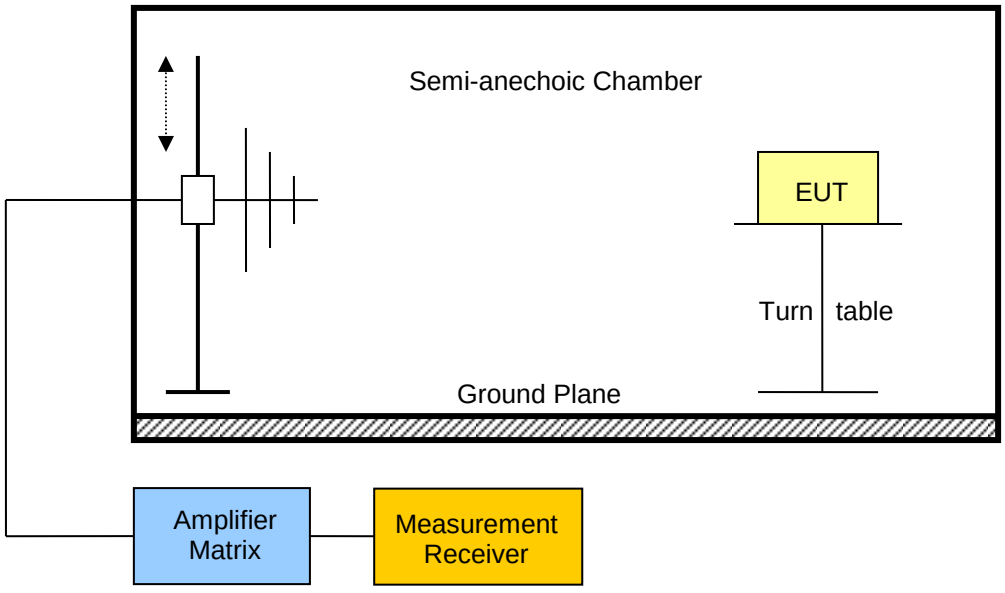


3.3 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. FCC 47 CFR 15.247 / IC RSS-210				**Verdict: PASS**
Test according referenced standards		Reference Method		
		FCC 15.247(d) / IC RSS-210 A8.5		
Test according to measurement reference		Reference Method		
		FCC Public Notice DA 00-705 / ANSI C63.4		
Test frequency range		Tested frequencies		
		30 MHz – 10th 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

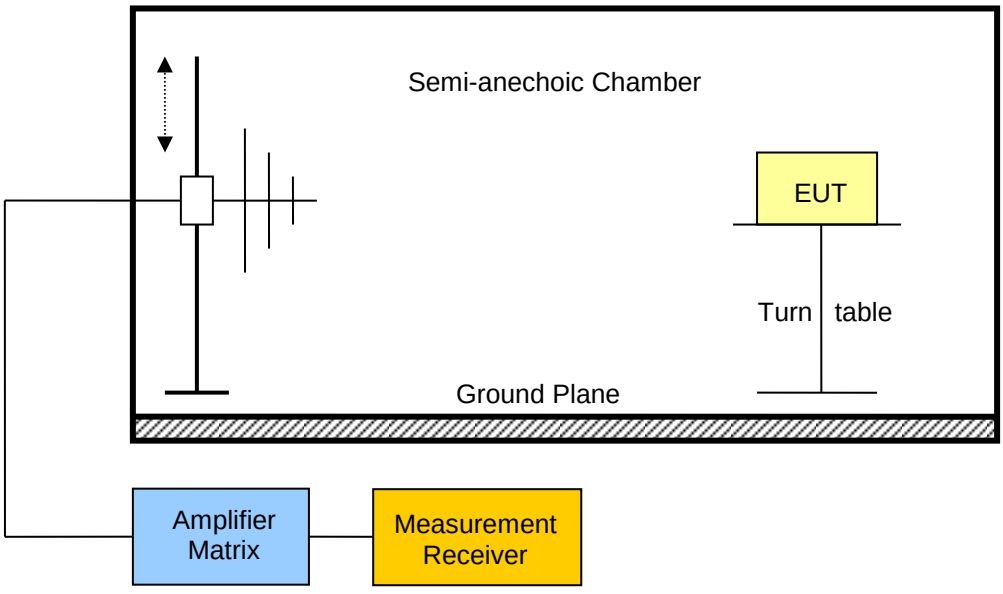
Test results – Internal Antenna

Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2402	DH5	2382	54.62	pk	ver	74.00	3	-19.38
F_{LOW}	2402	DH5	2382	42.44	RMS	ver	54.00	3	-11.56
F_{LOW}	2402	DH5	2389	55.47	pk	ver	74.00	3	-18.53
F_{LOW}	2402	DH5	2389	46.88	RMS	ver	54.00	3	-07.12
F_{HIGH}	2480	DH5	2483.5	59.51	pk	ver	74.00	3	-14.49
F_{HIGH}	2480	DH5	2483.5	51.06	RMS	ver	54.00	3	-02.94
F_{HIGH}	2480	DH5	2483.5	53.82	pk	hor	74.00	3	-20.18
F_{HIGH}	2480	DH5	2483.5	45.34	RMS	hor	54.00	3	-08.66
F_{HIGH}	2480	DH5	2486.6	56.99	pk	ver	74.00	3	-17.01
F_{HIGH}	2480	DH5	2486.6	42.56	RMS	ver	54.00	3	-11.44
F_{HIGH}	2480	DH5	2492.8	53.49	pk	ver	74.00	3	-20.51
F_{HIGH}	2480	DH5	2492.8	43.38	RMS	ver	54.00	3	-10.62

Comments: * Physical distance between EUT and measurement antenna.

3.4 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. to IC RSS-210				**Verdict: PASS**
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 3th 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]	Polarisation	Det.	Limit [dbµV/m]	Margin [dbµV/m]
$F_{Hopping}$	Receive	352	36.06	hor	pk	46.00	-9.94 dB
$F_{Hopping}$	Receive	416	32.67	ver	pk	46.00	-13.33 dB
$F_{Hopping}$	Receive	478.4	33.34	hor	pk	46.00	-12.66 dB
$F_{Hopping}$	Receive	480	33.84	ver	pk	46.00	-12.16 dB

Comments:
* Physical distance between EUT and measurement antenna.
** Emission level corresponds to ambient noise floor

ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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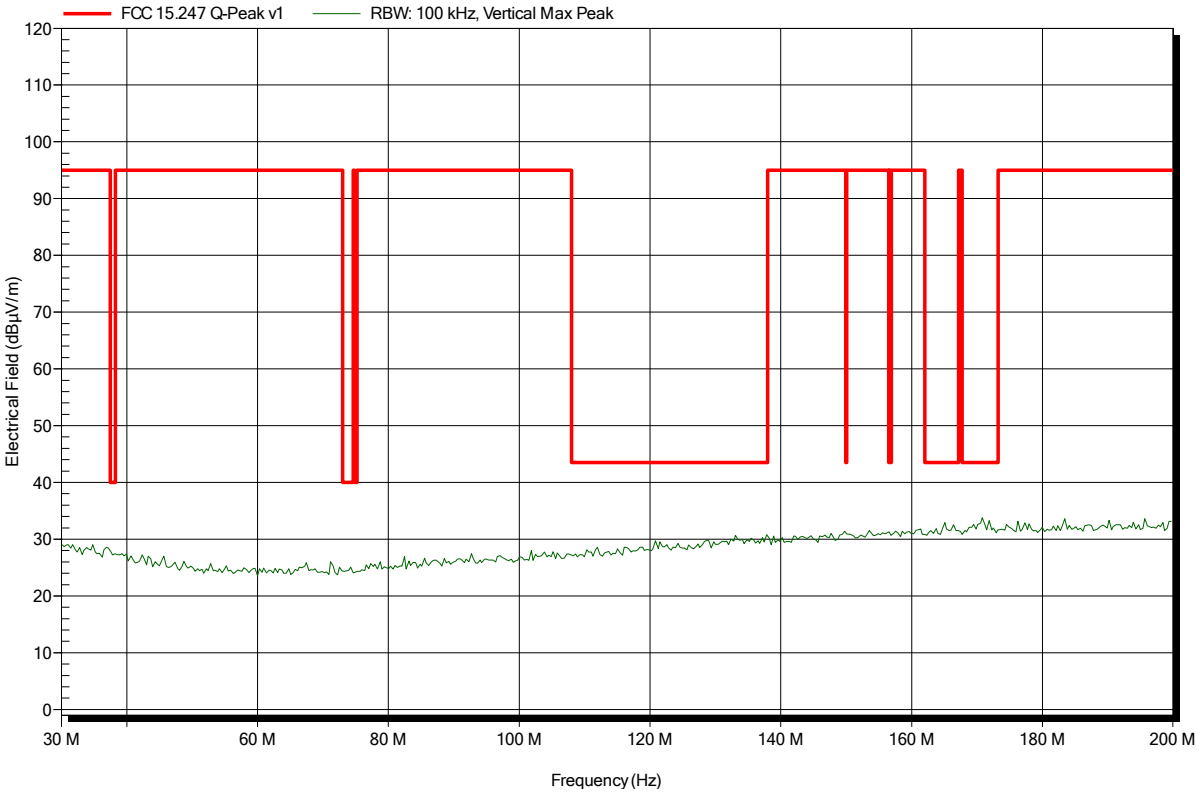

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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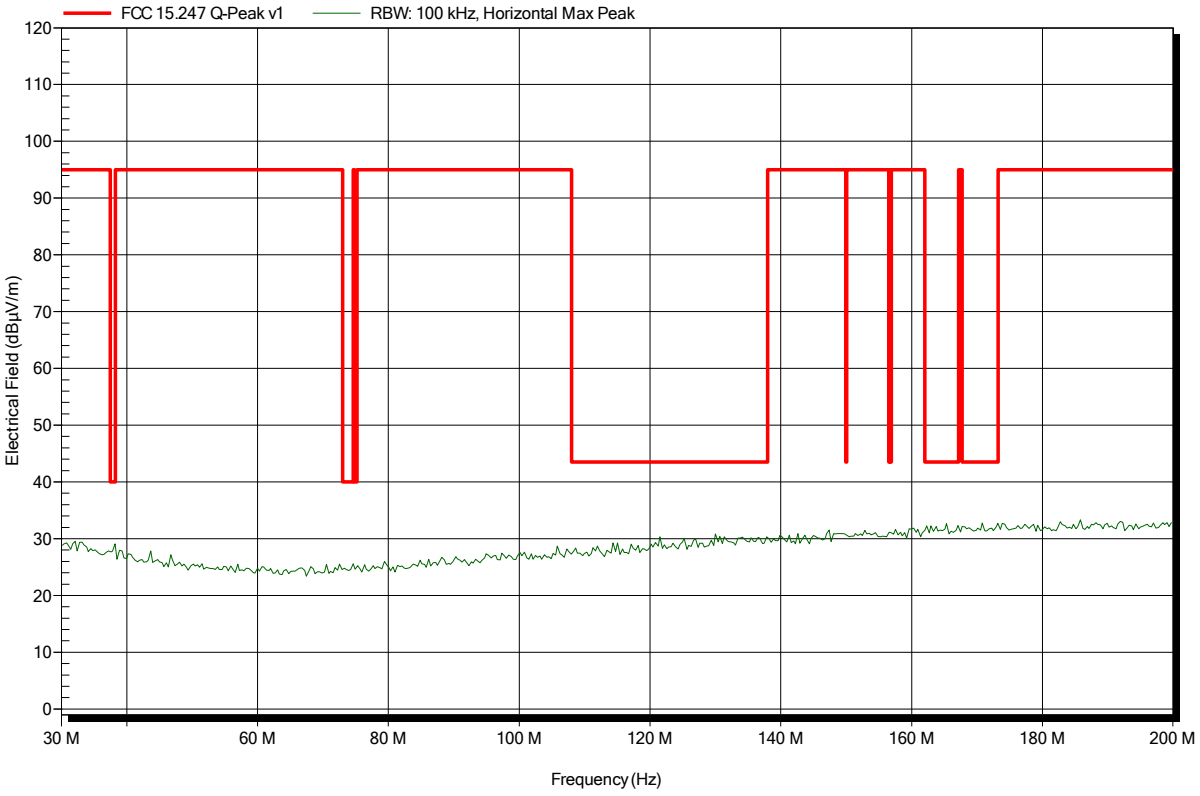

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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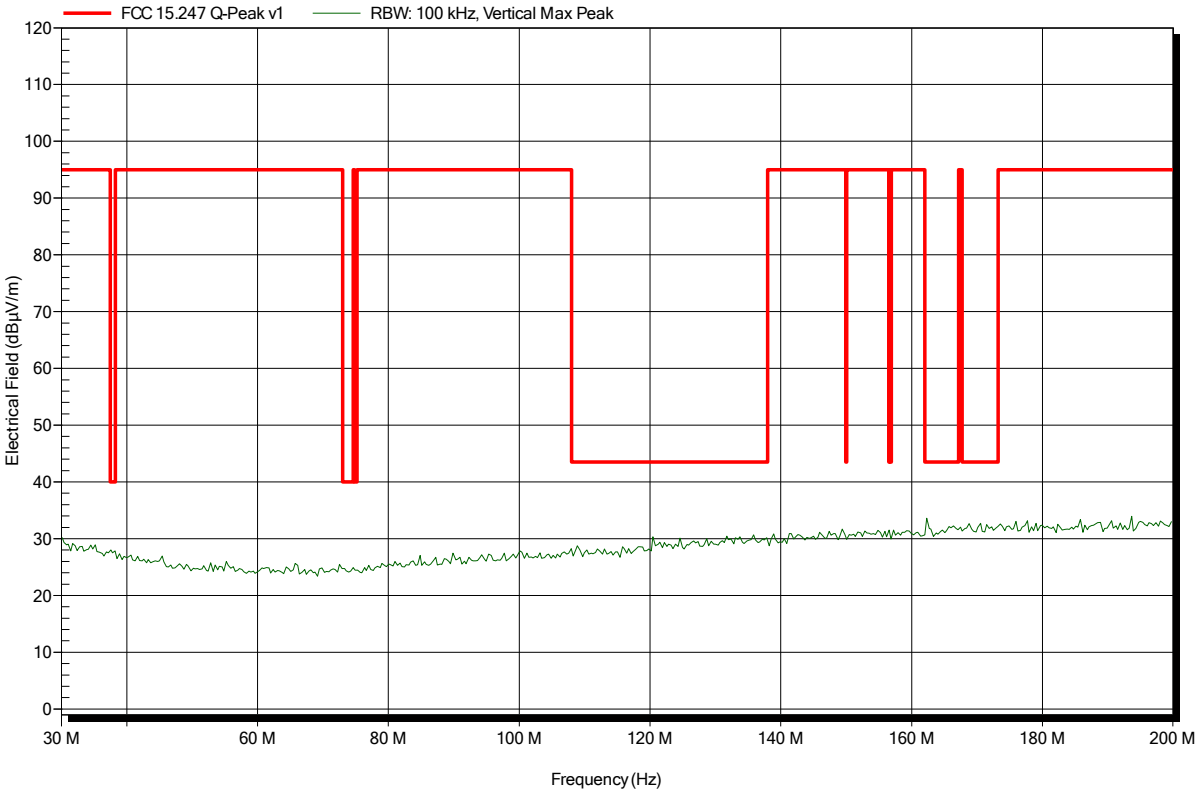

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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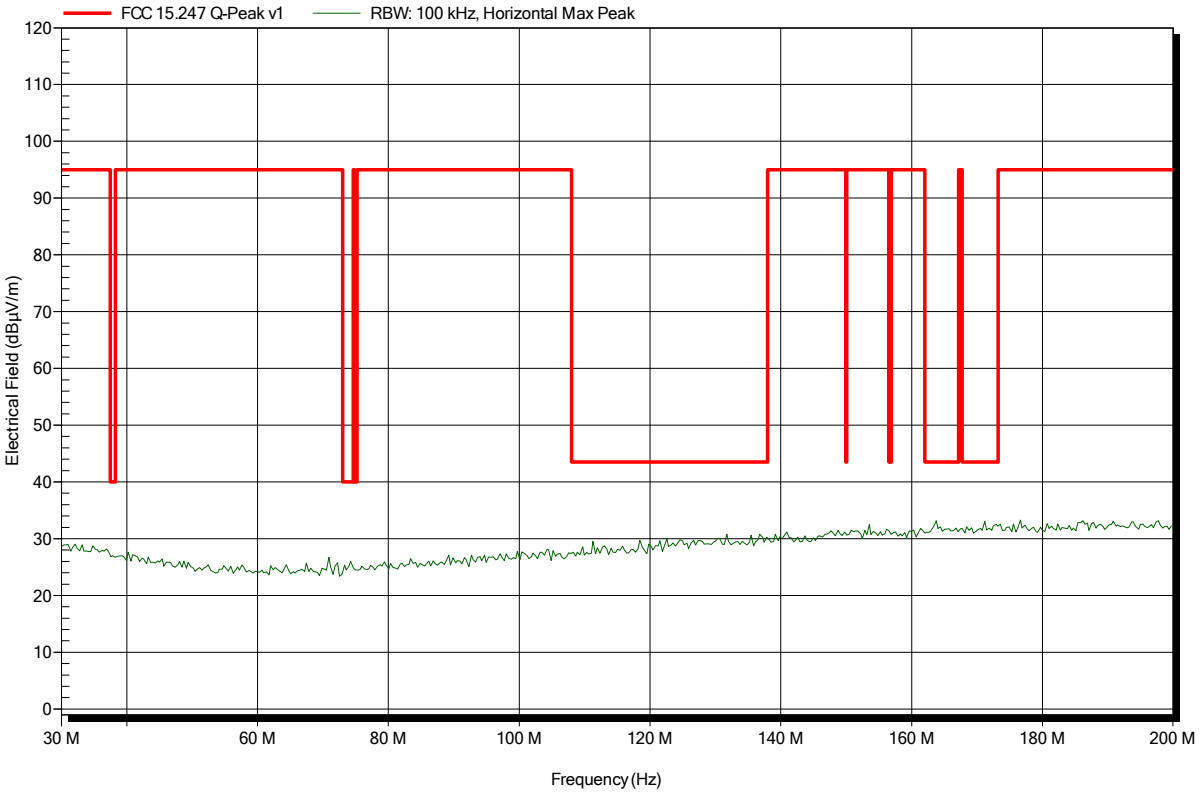

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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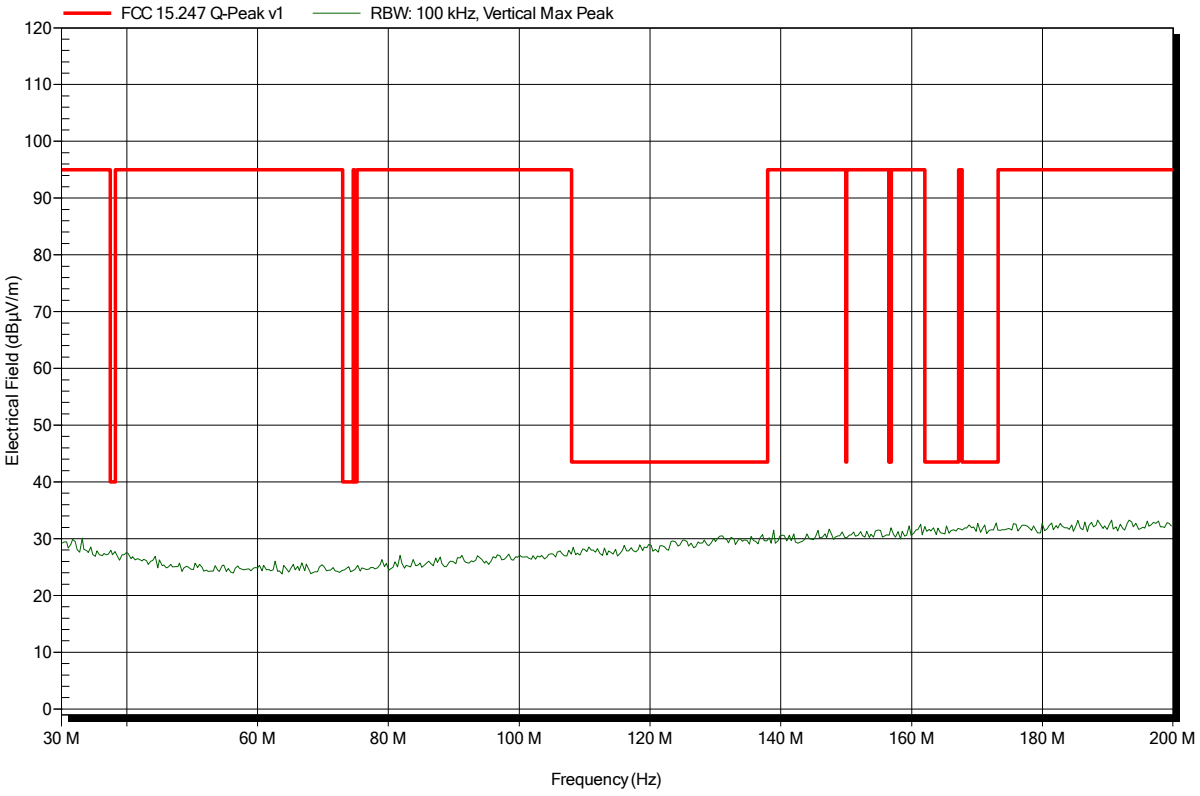

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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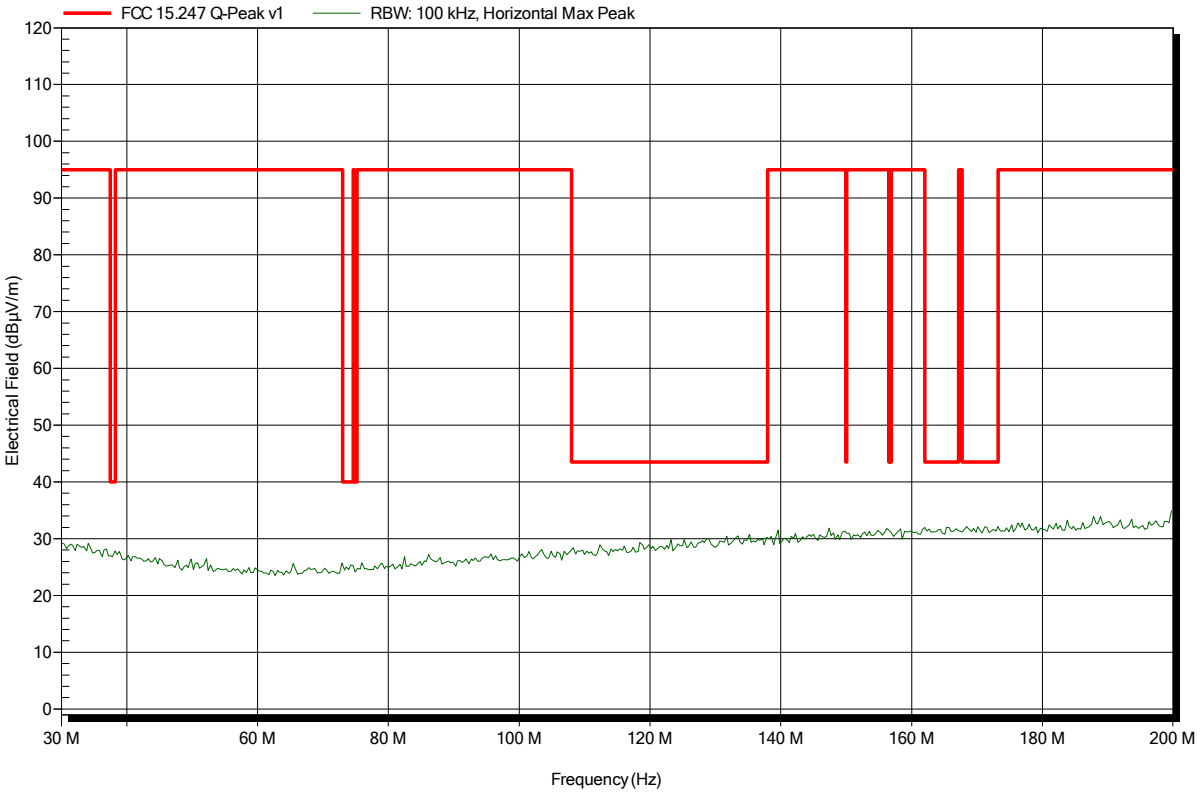

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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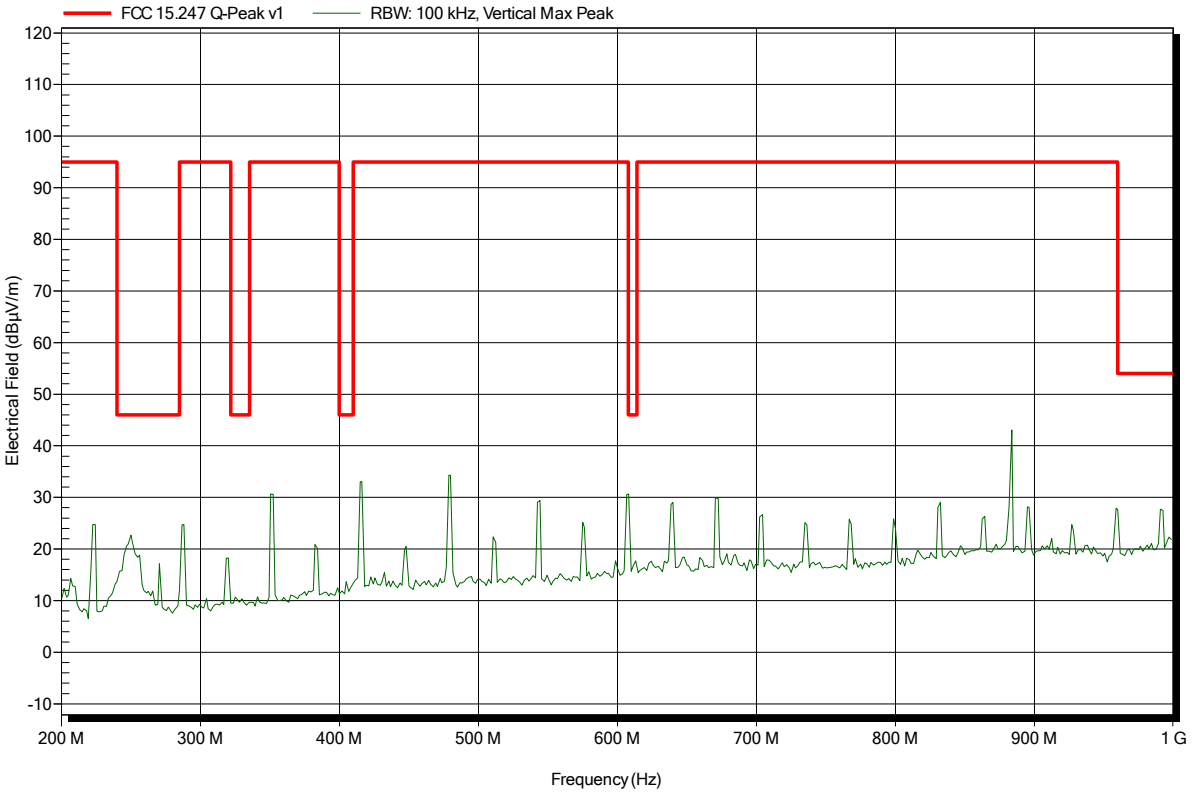

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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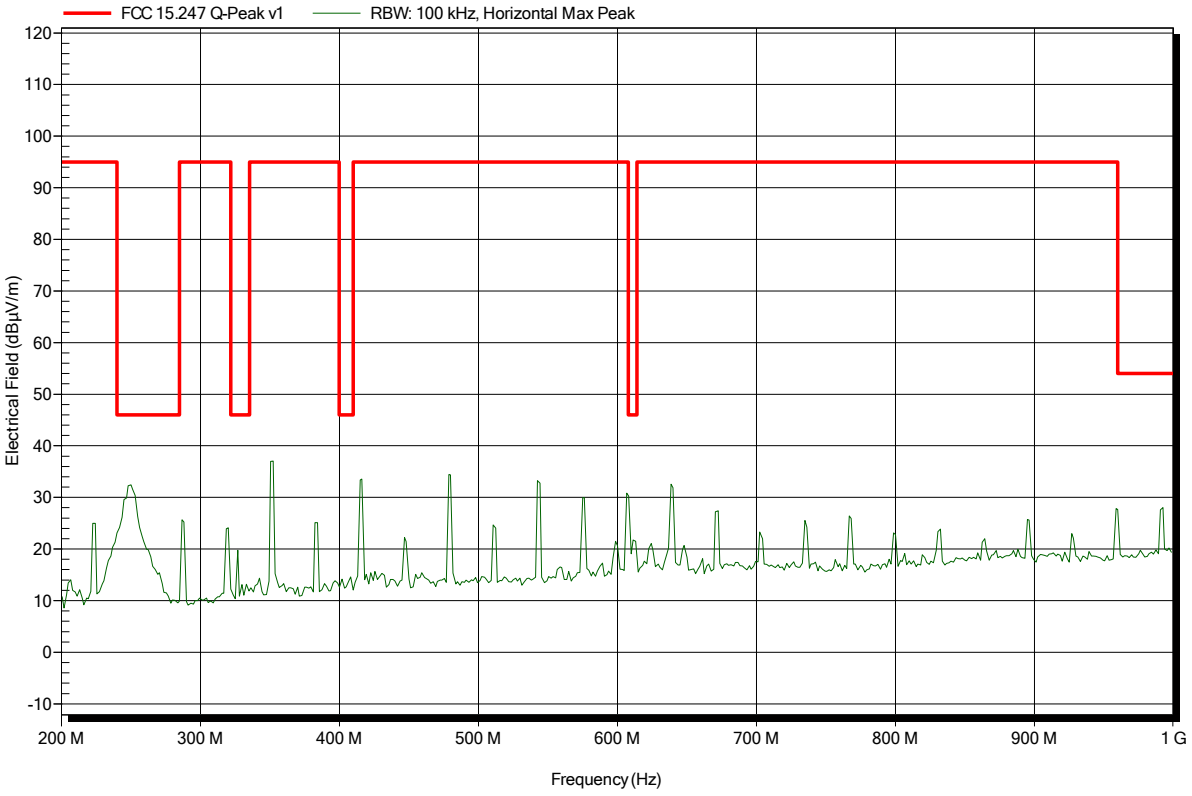

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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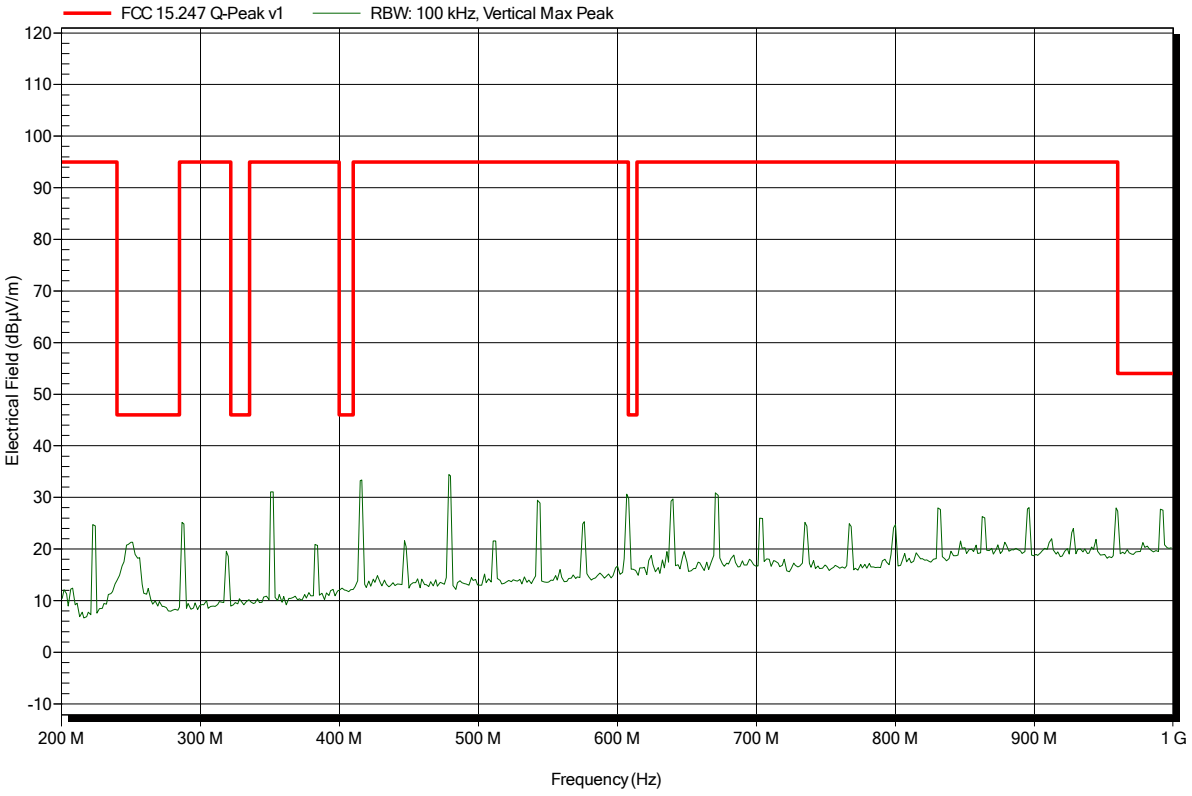

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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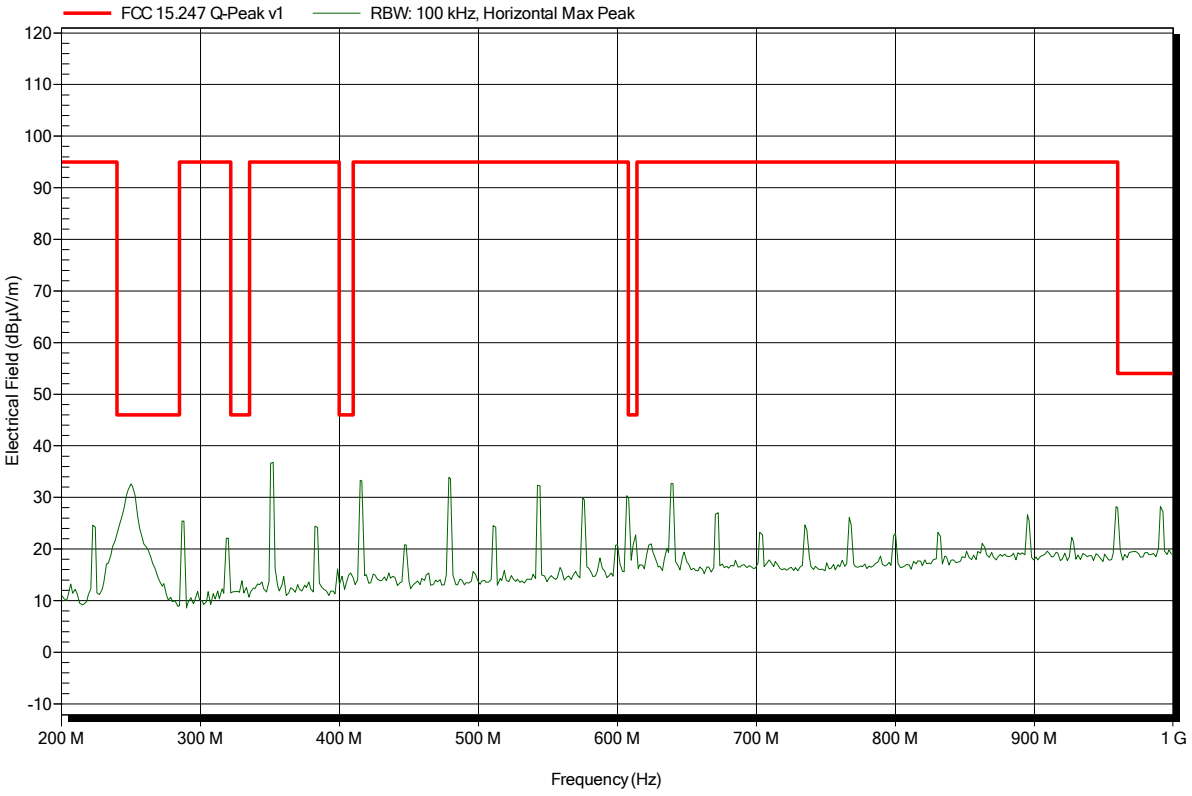

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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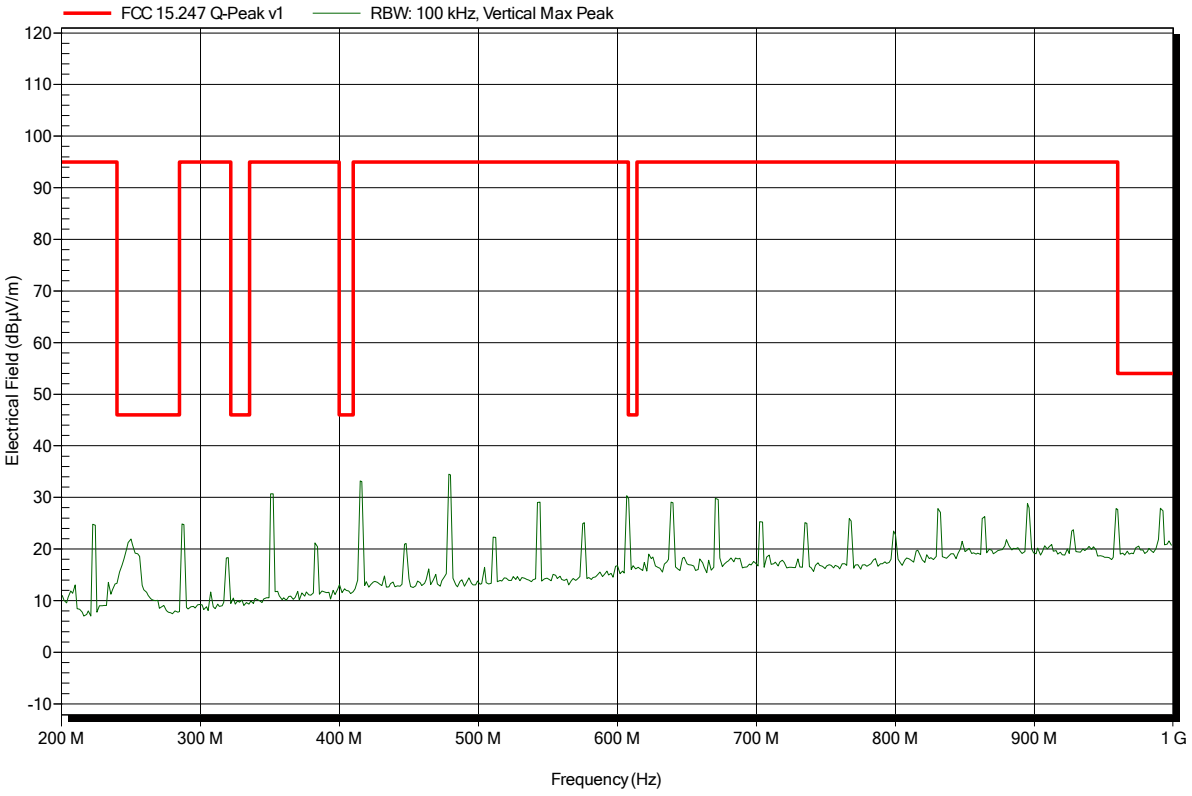

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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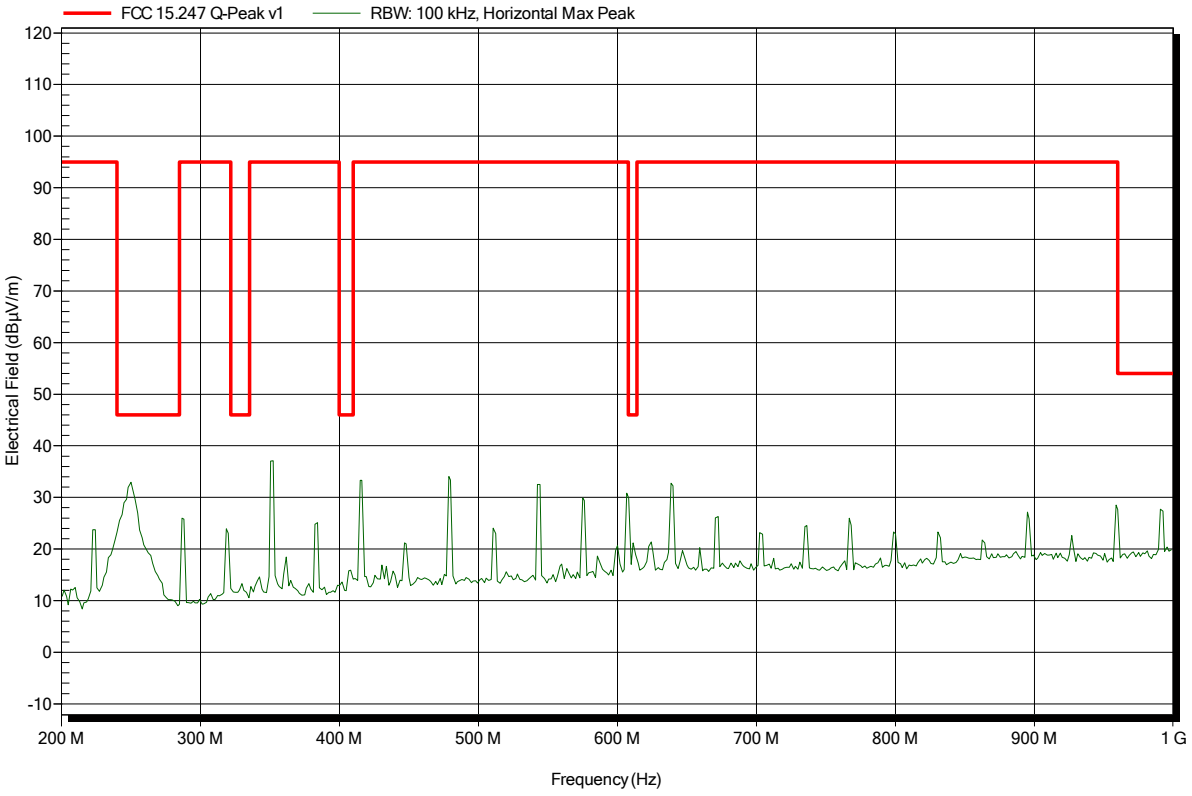

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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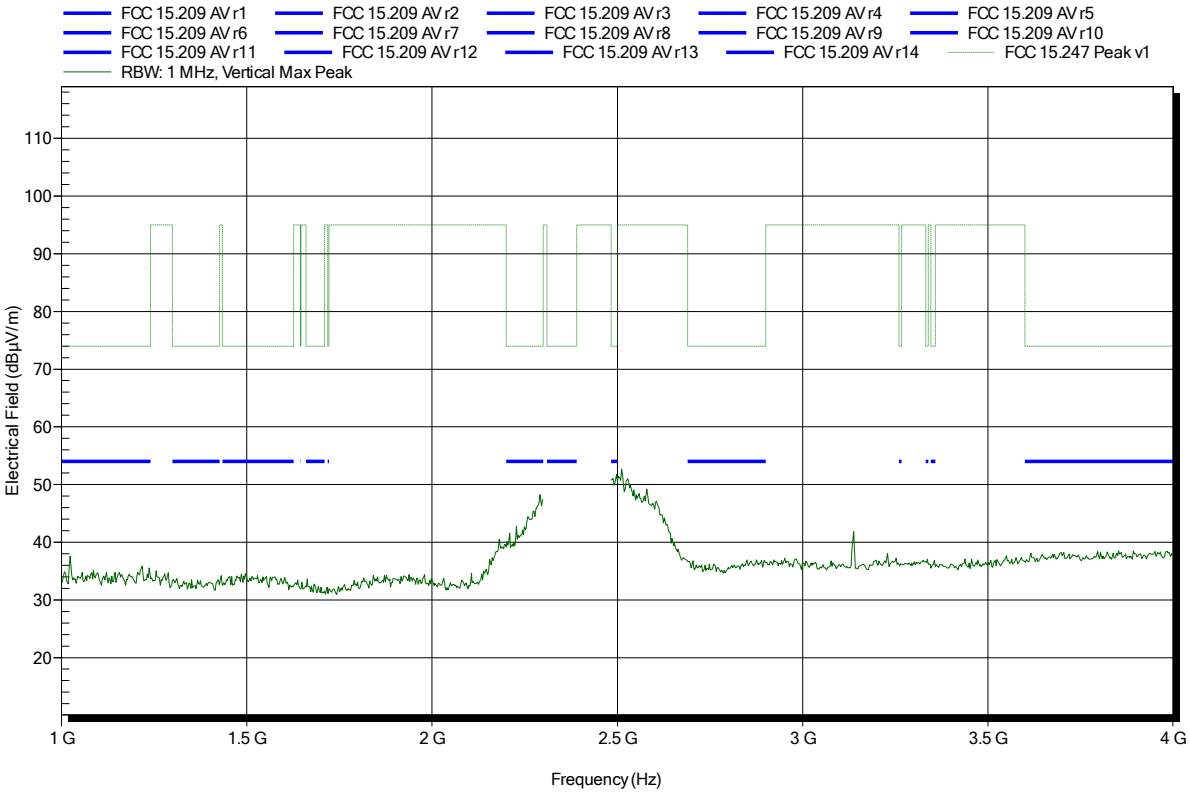

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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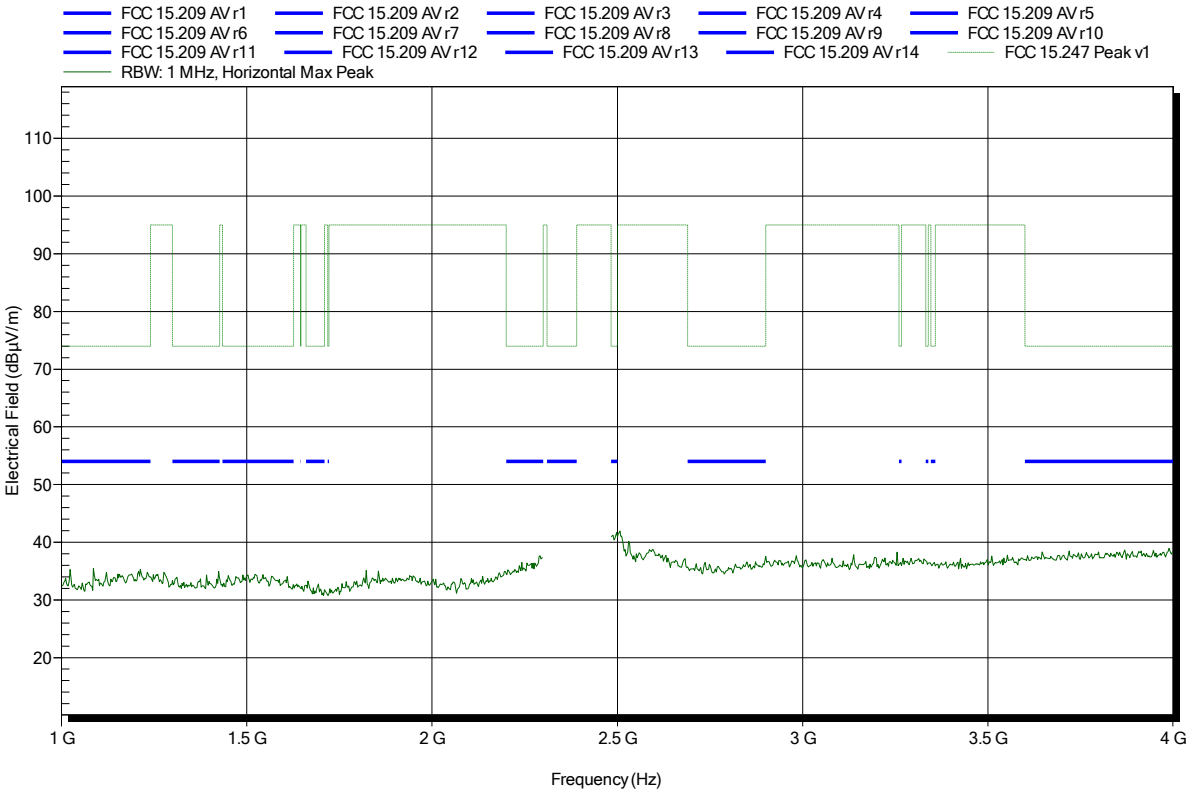

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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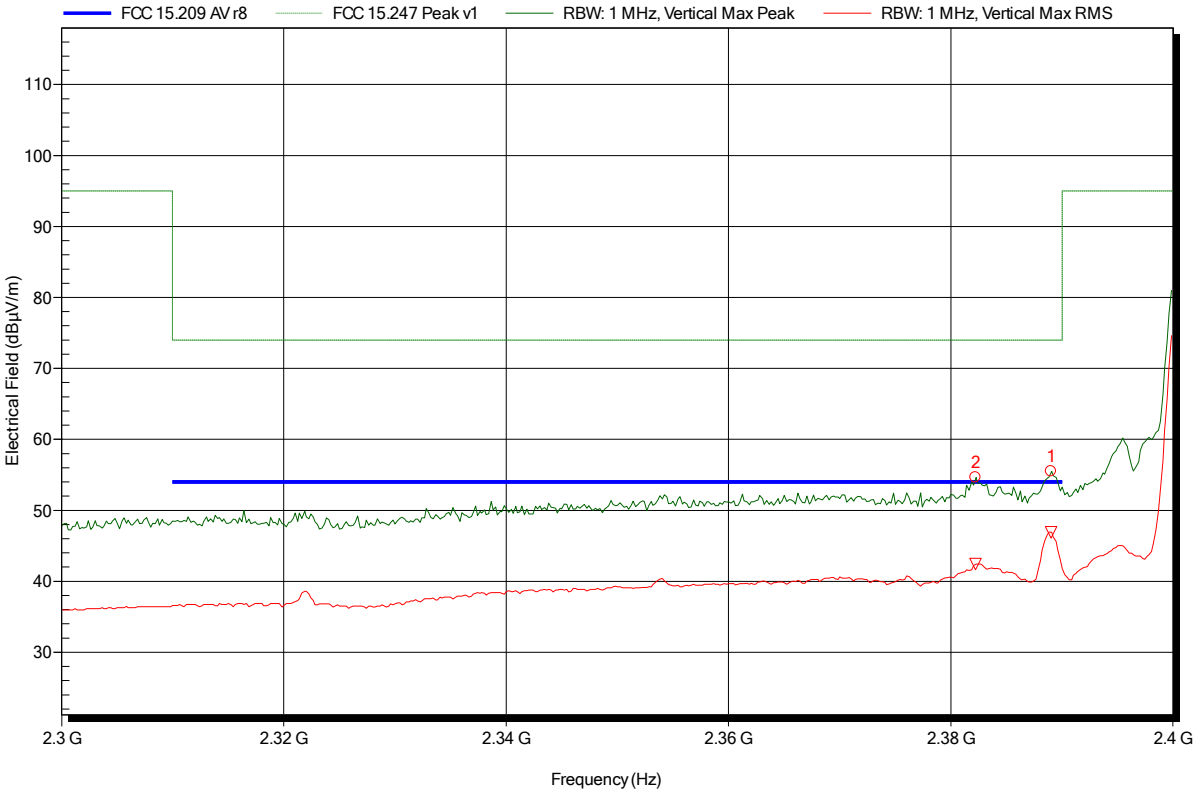

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.382 GHz	54.62 dBµV/m	74 dBµV/m	-19.38 dB	Pass
2.389 GHz	55.47 dBµV/m	74 dBµV/m	-18.53 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.382 GHz	42.44 dBµV/m	54 dBµV/m	-11.56 dB	Pass
2.389 GHz	46.88 dBµV/m	54 dBµV/m	-7.12 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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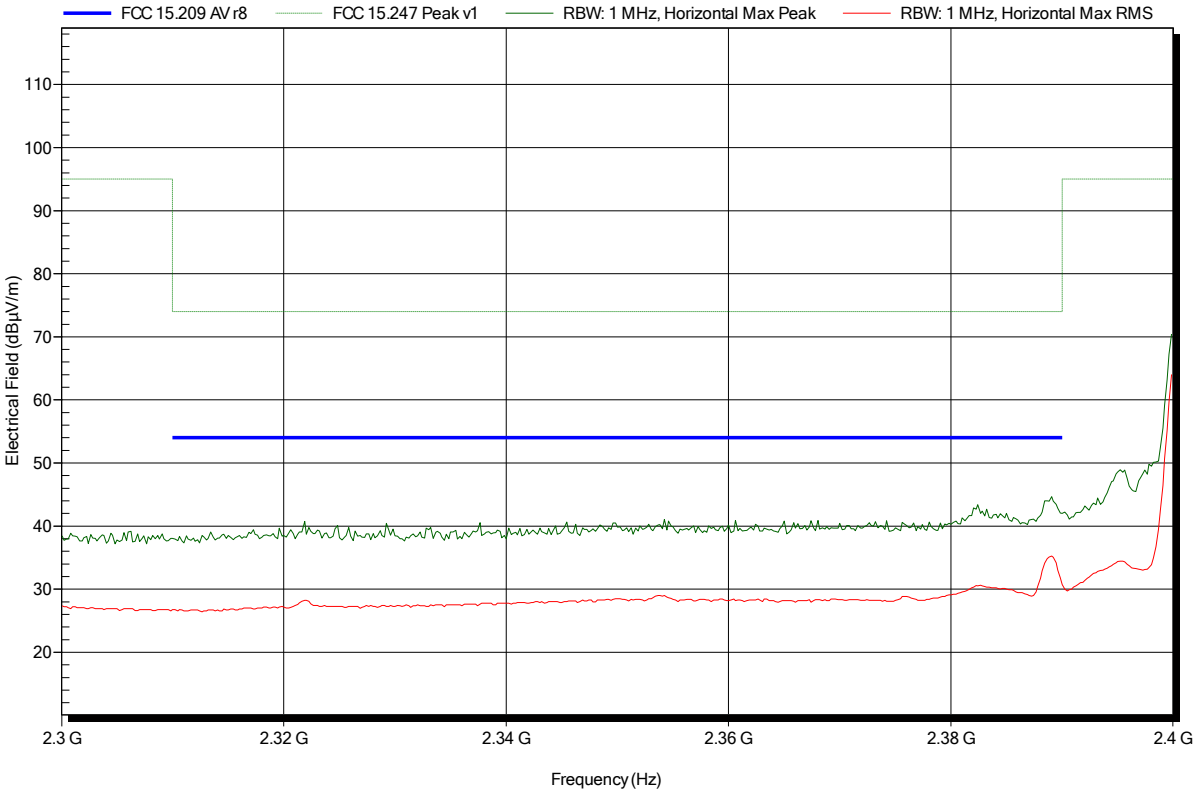

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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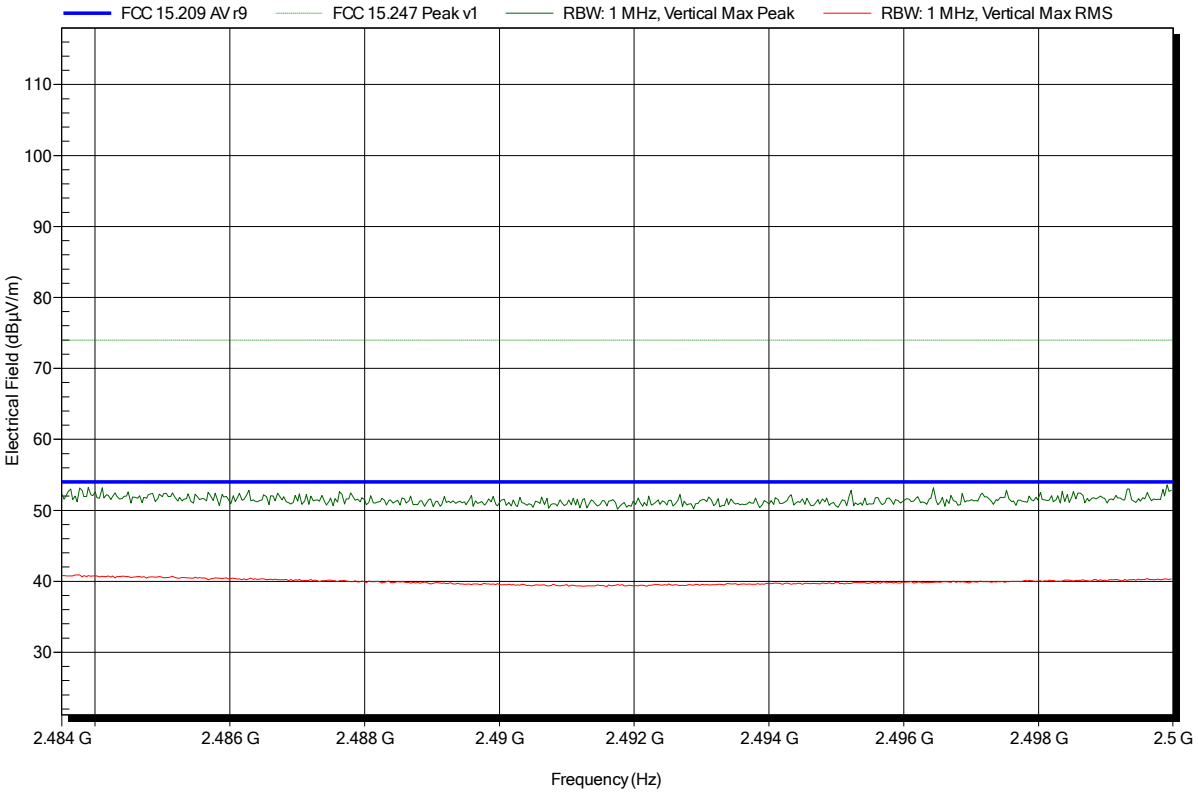

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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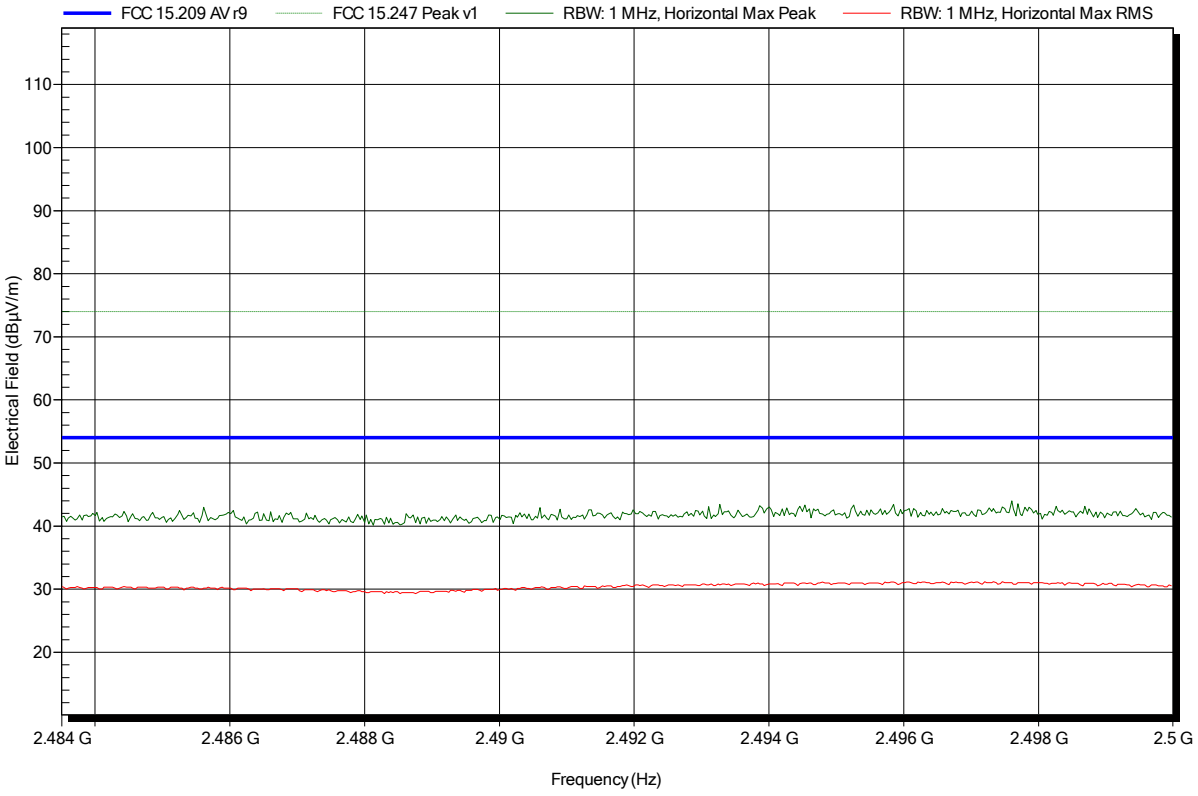

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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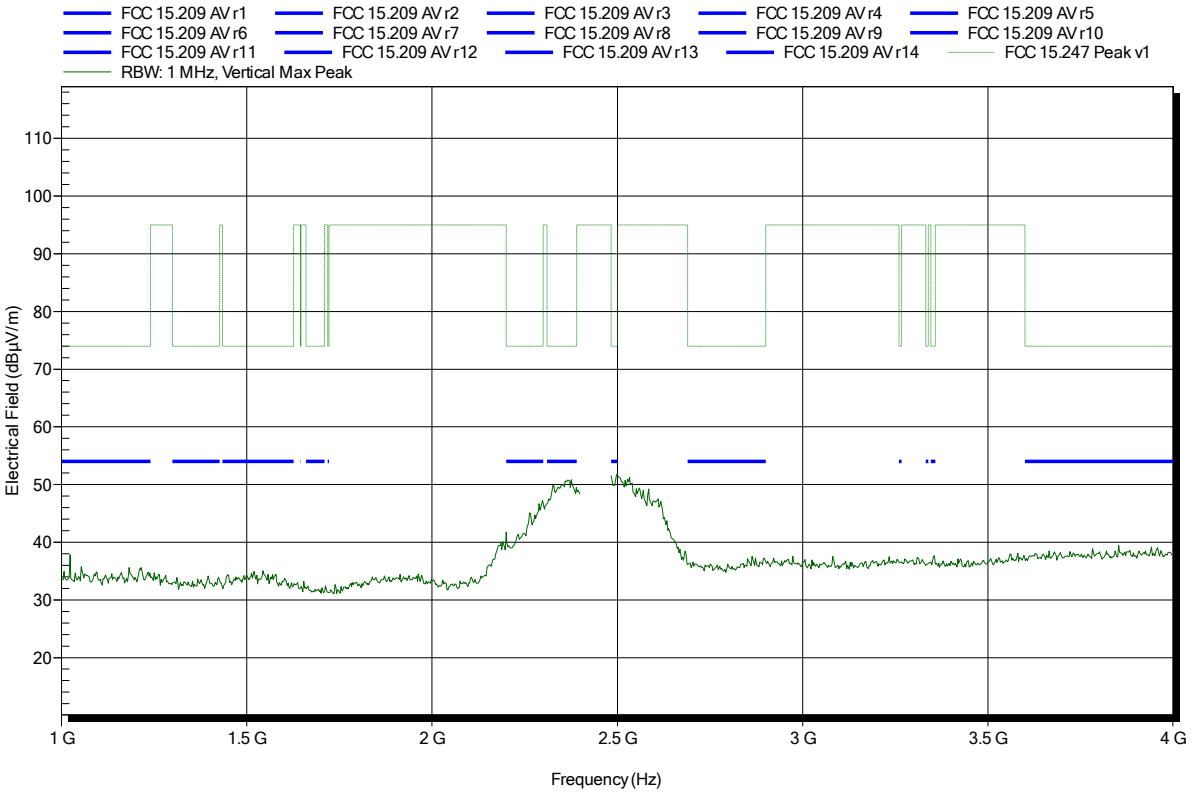

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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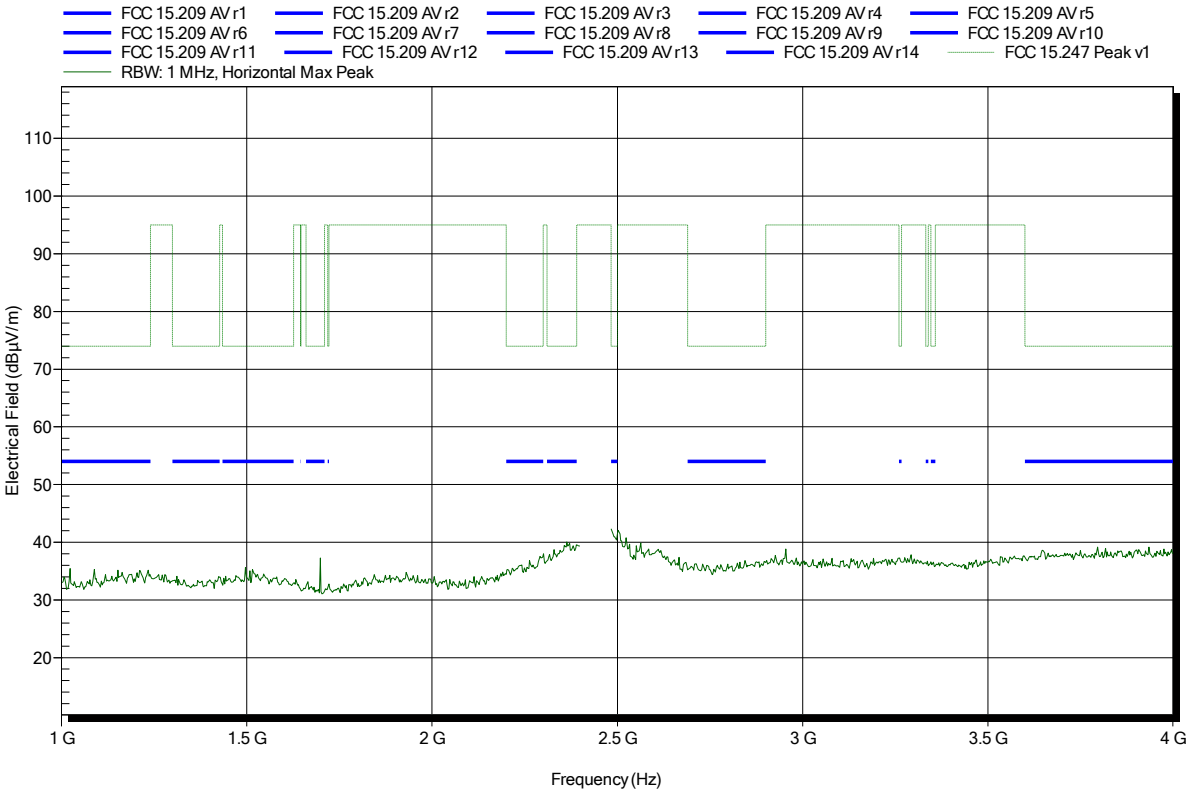

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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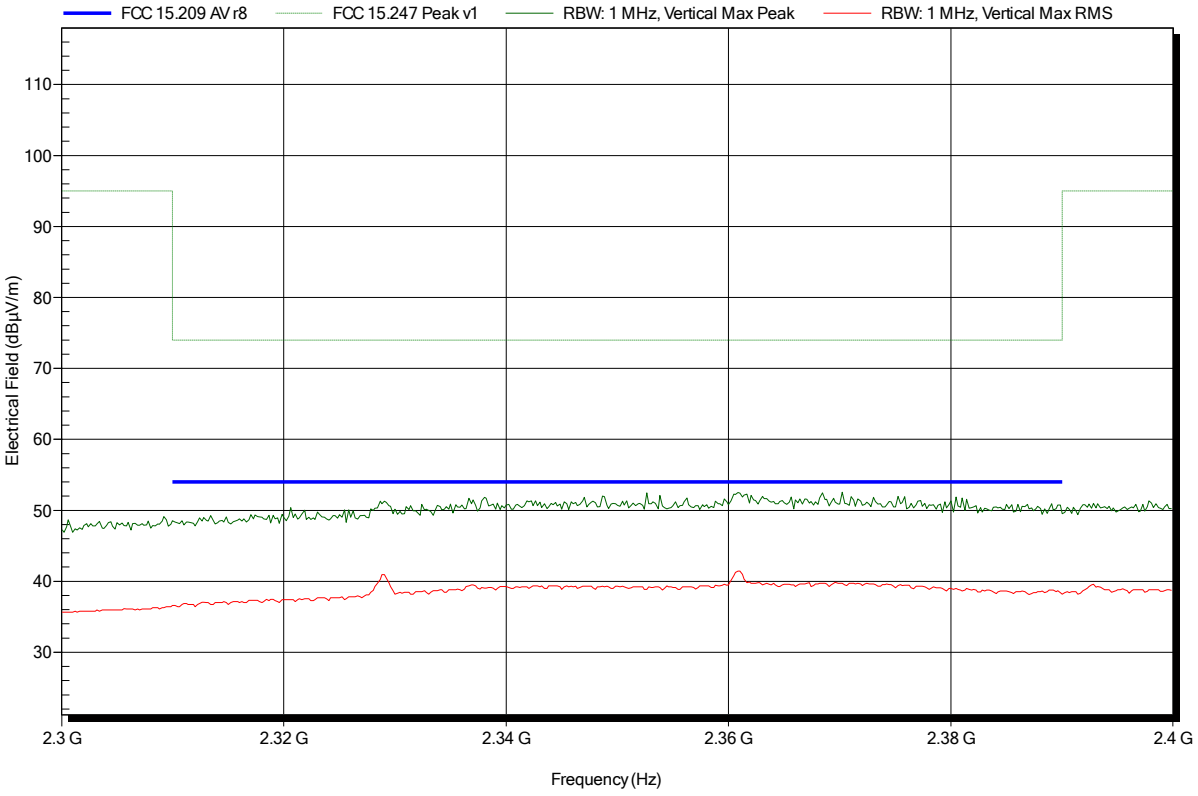

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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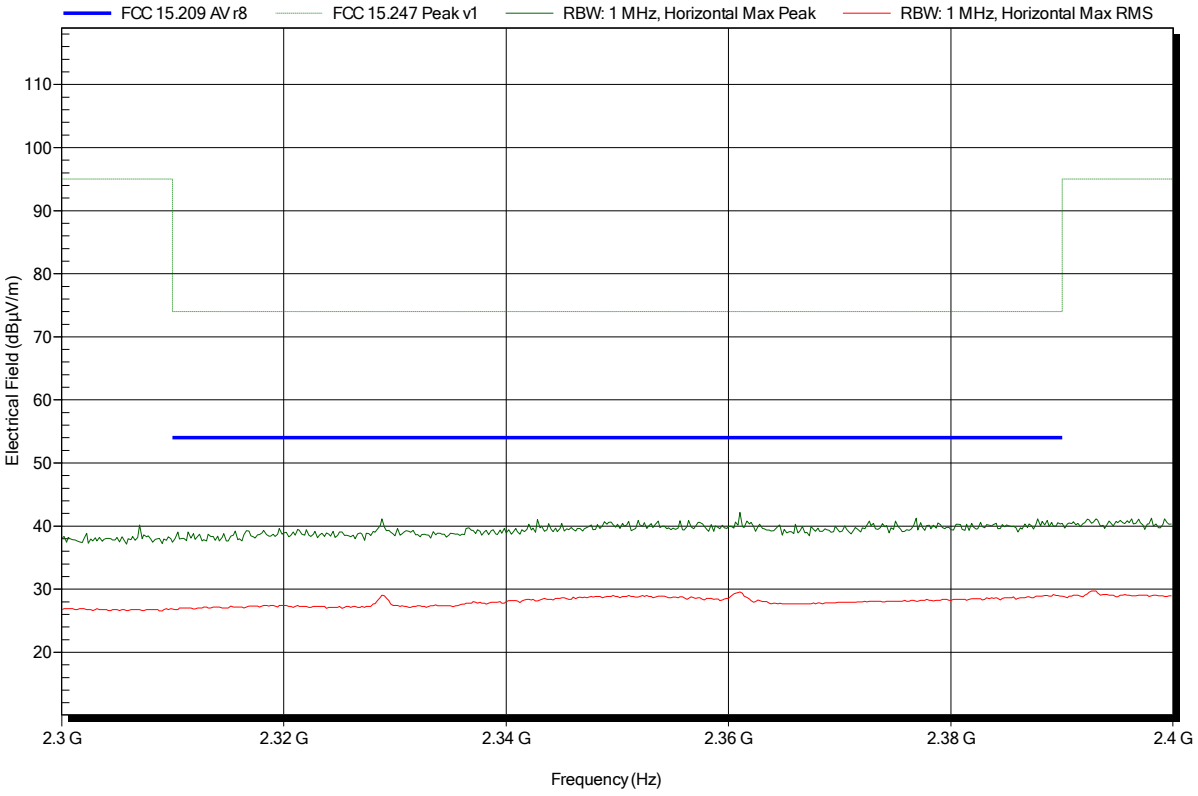

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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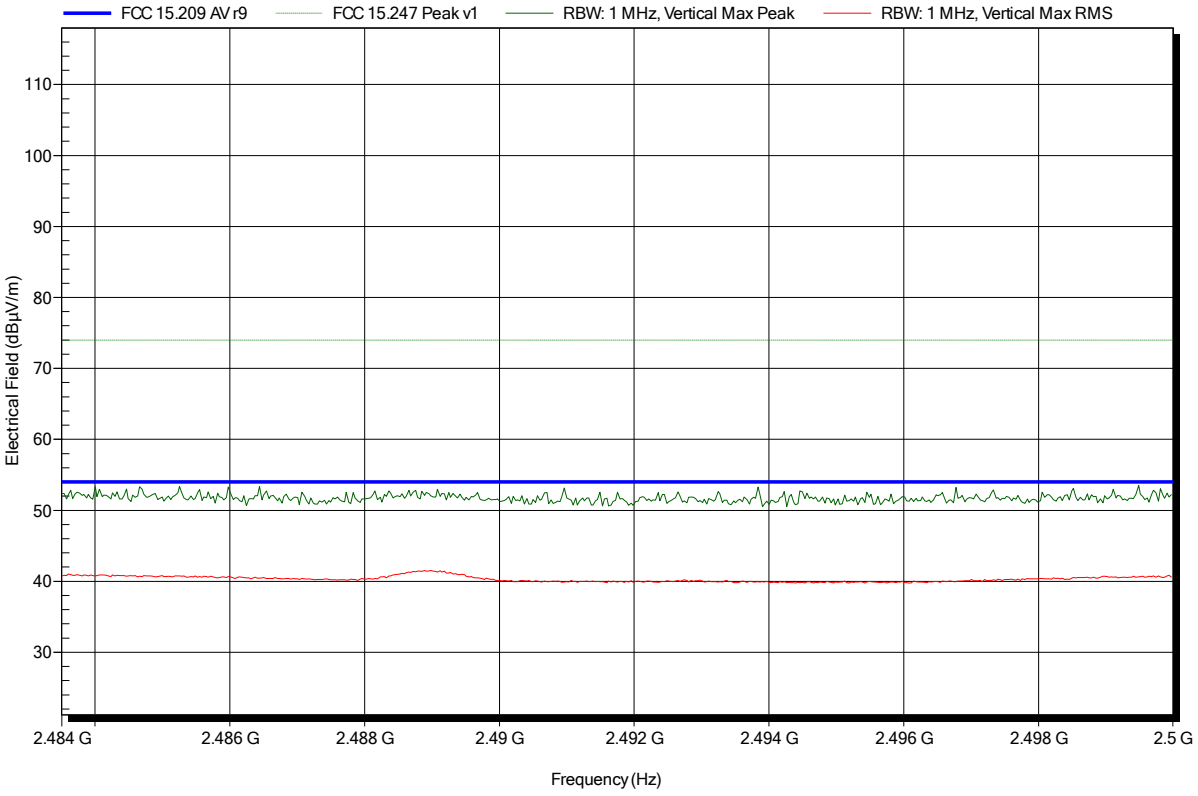

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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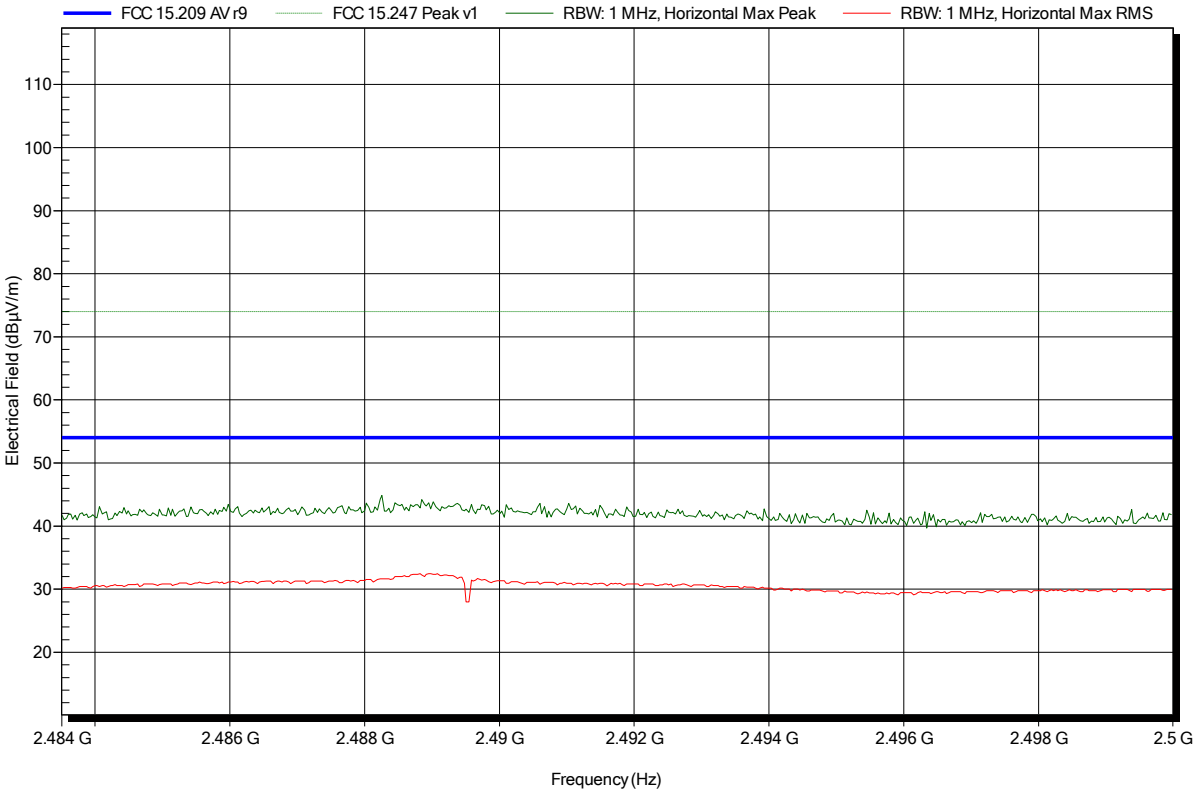

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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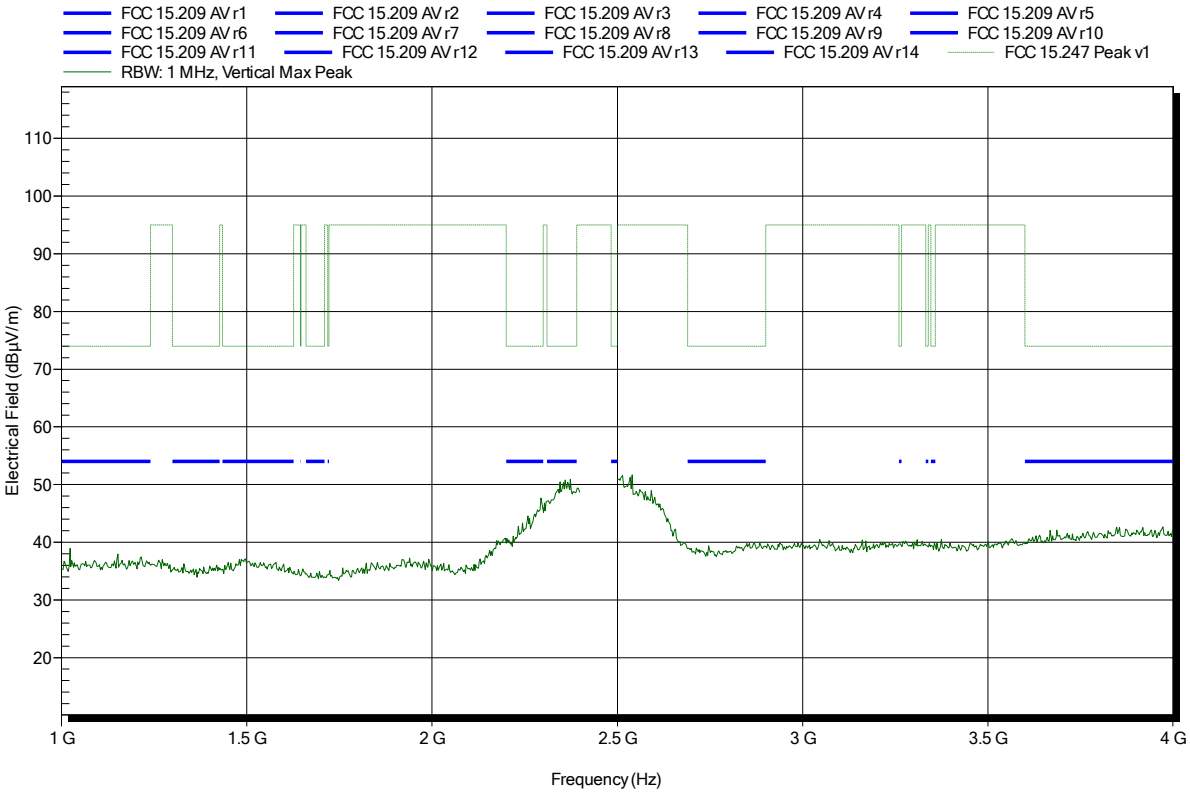

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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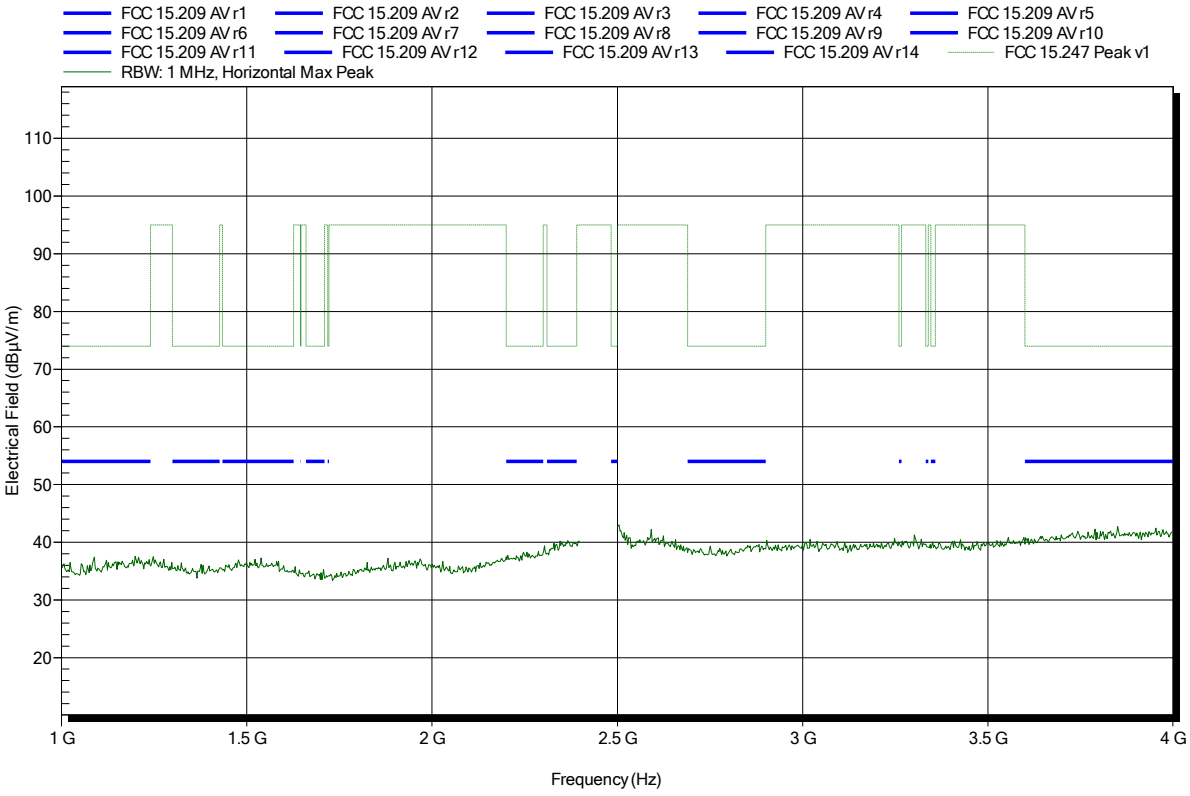

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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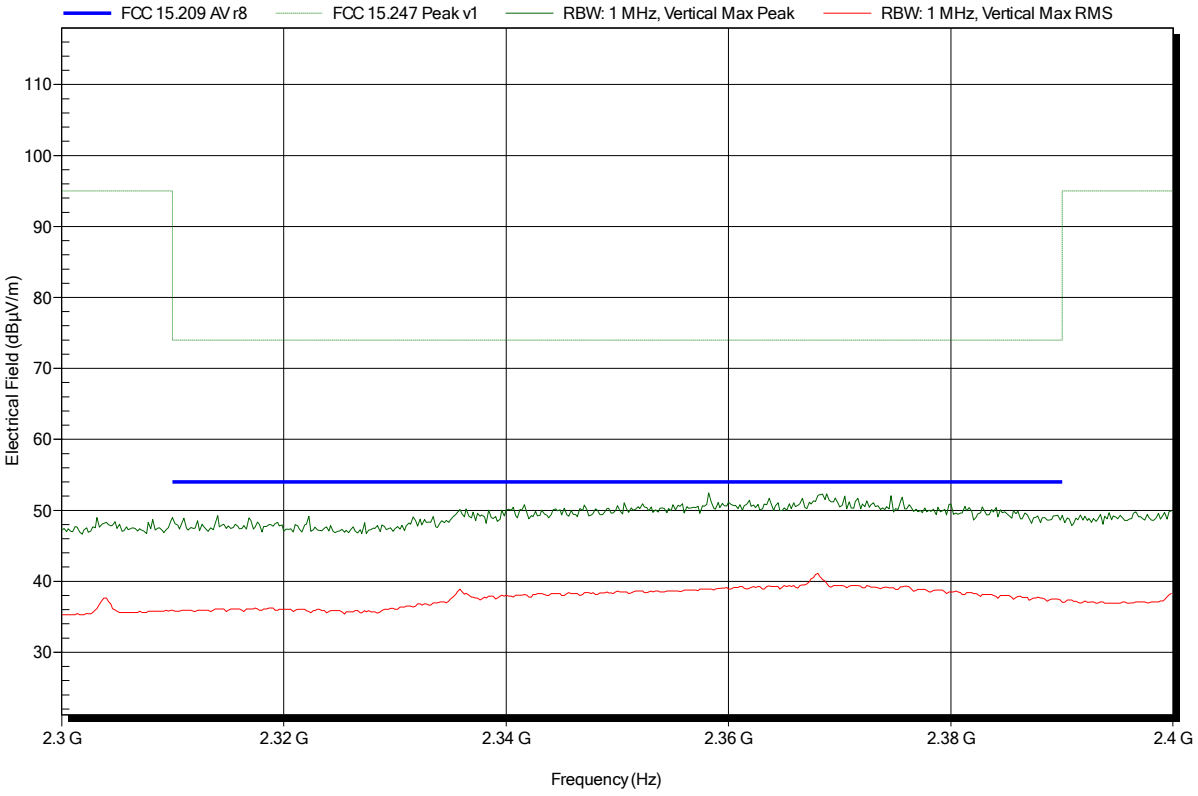

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; lower bandedge

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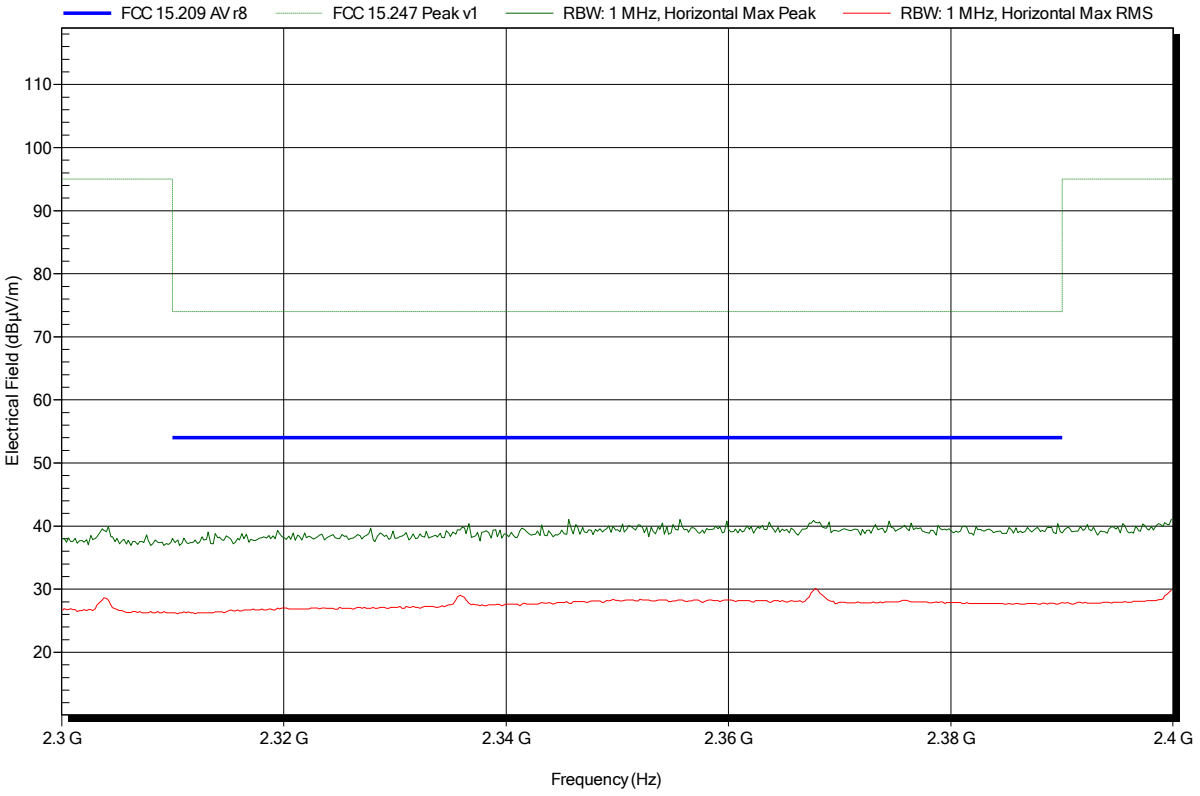

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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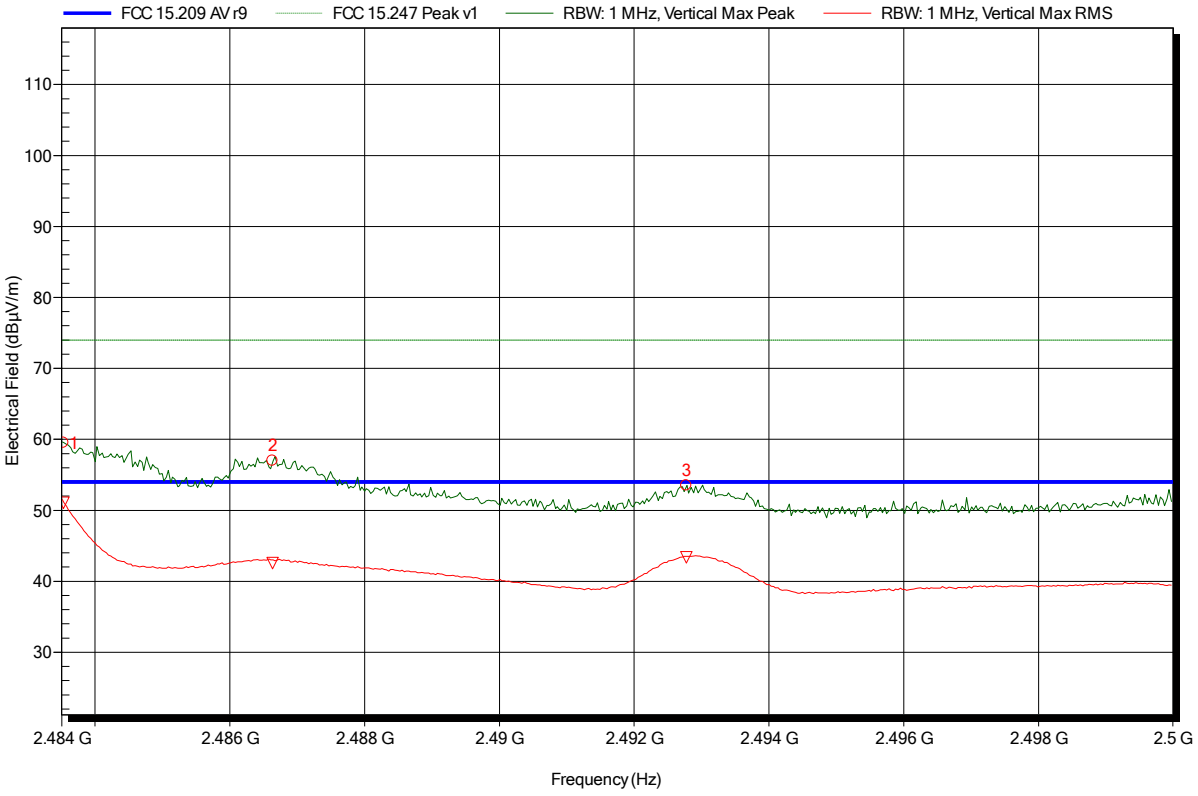

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4835 GHz	59.51 dBµV/m	74 dBµV/m	-14.49 dB	Pass
2.4866 GHz	56.99 dBµV/m	74 dBµV/m	-17.01 dB	Pass
2.4928 GHz	53.49 dBµV/m	74 dBµV/m	-20.51 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4835 GHz	51.06 dBµV/m	54 dBµV/m	-2.94 dB	Pass
2.4866 GHz	42.56 dBµV/m	54 dBµV/m	-11.44 dB	Pass
2.4928 GHz	43.38 dBµV/m	54 dBµV/m	-10.62 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical; upper bandedge

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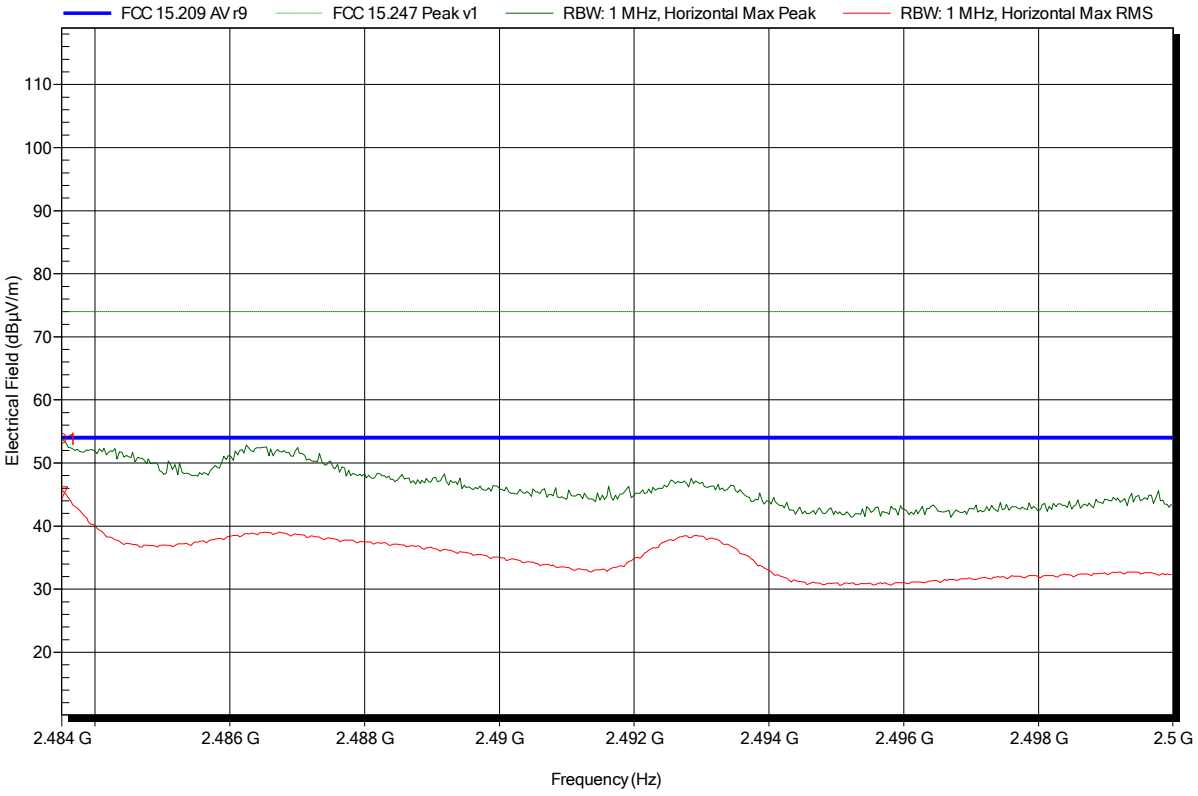

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4835 GHz	53.82 dBµV/m	74 dBµV/m	-20.18 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4835 GHz	45.34 dBµV/m	54 dBµV/m	-8.66 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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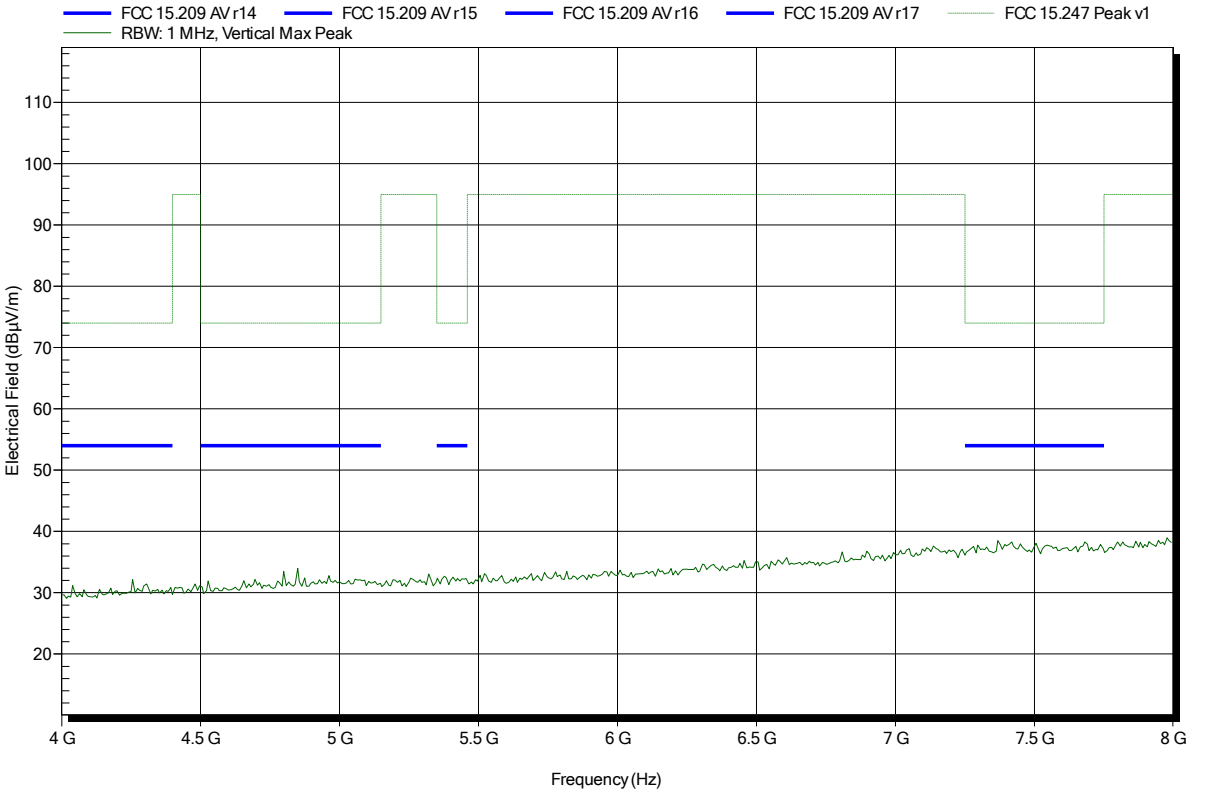

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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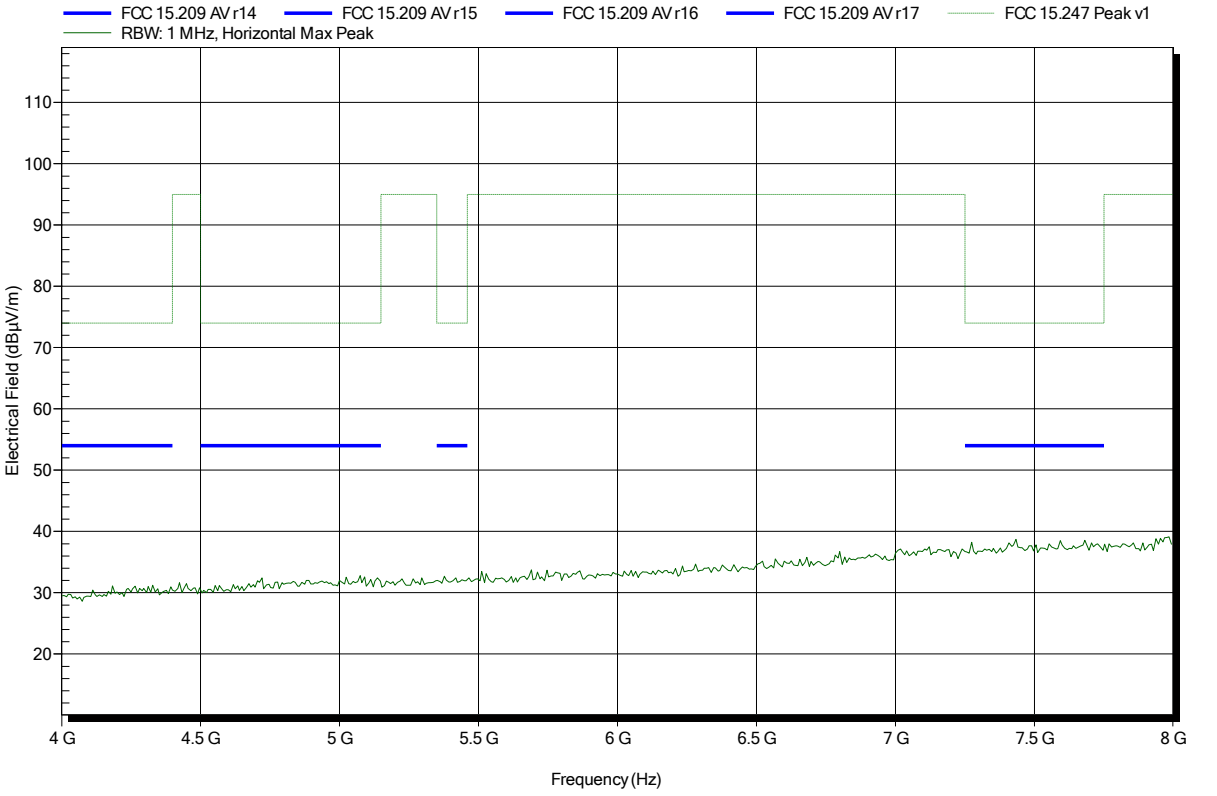

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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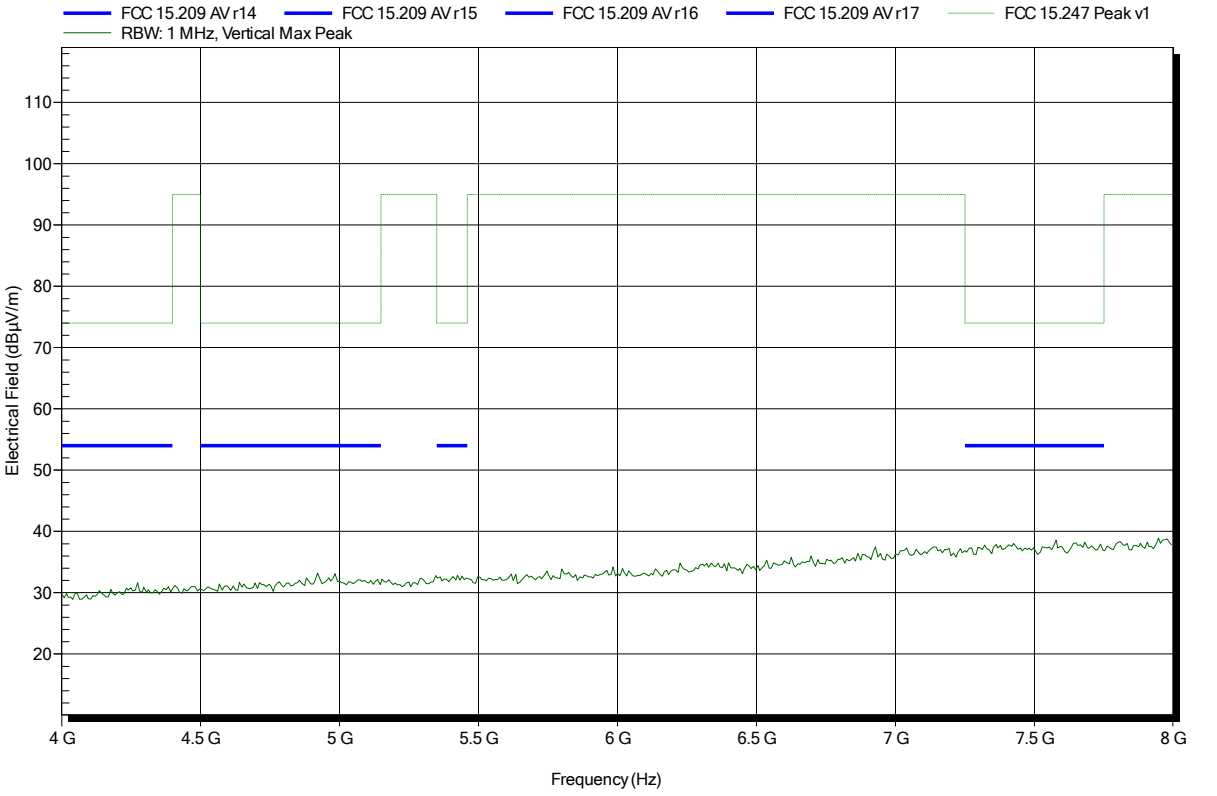

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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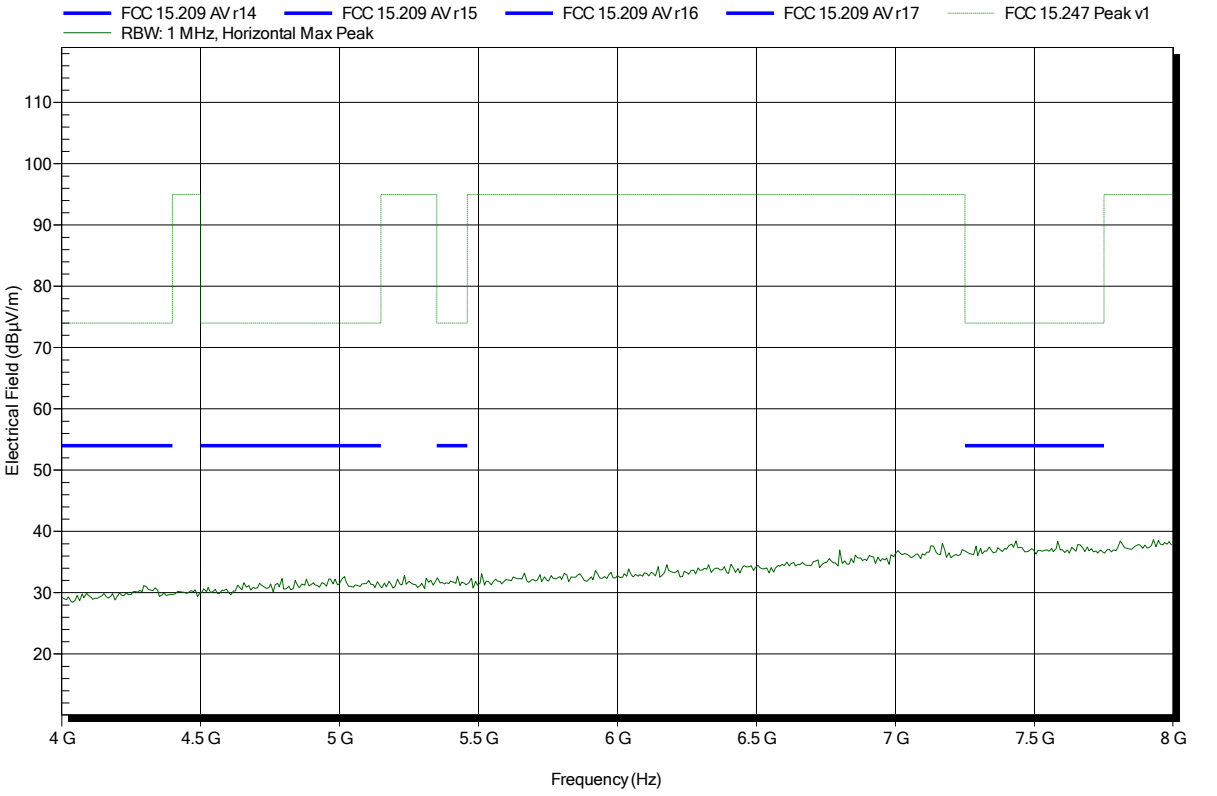

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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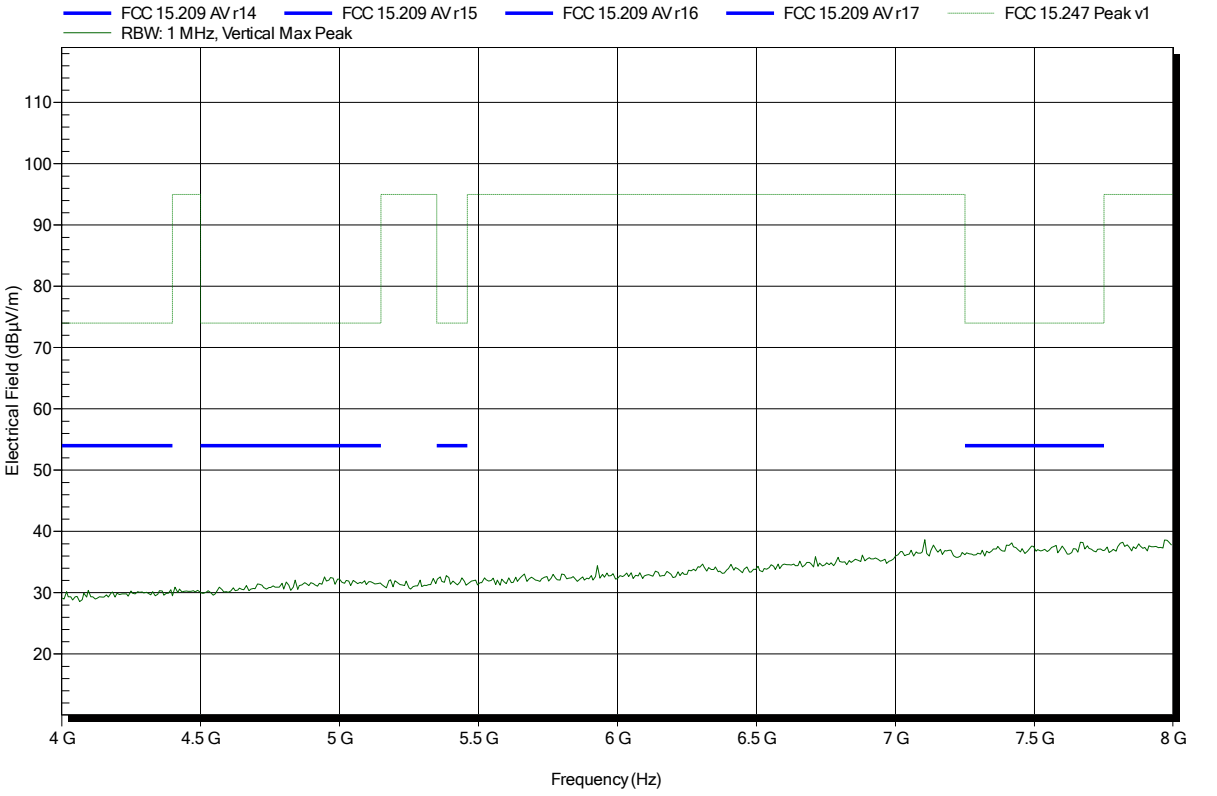

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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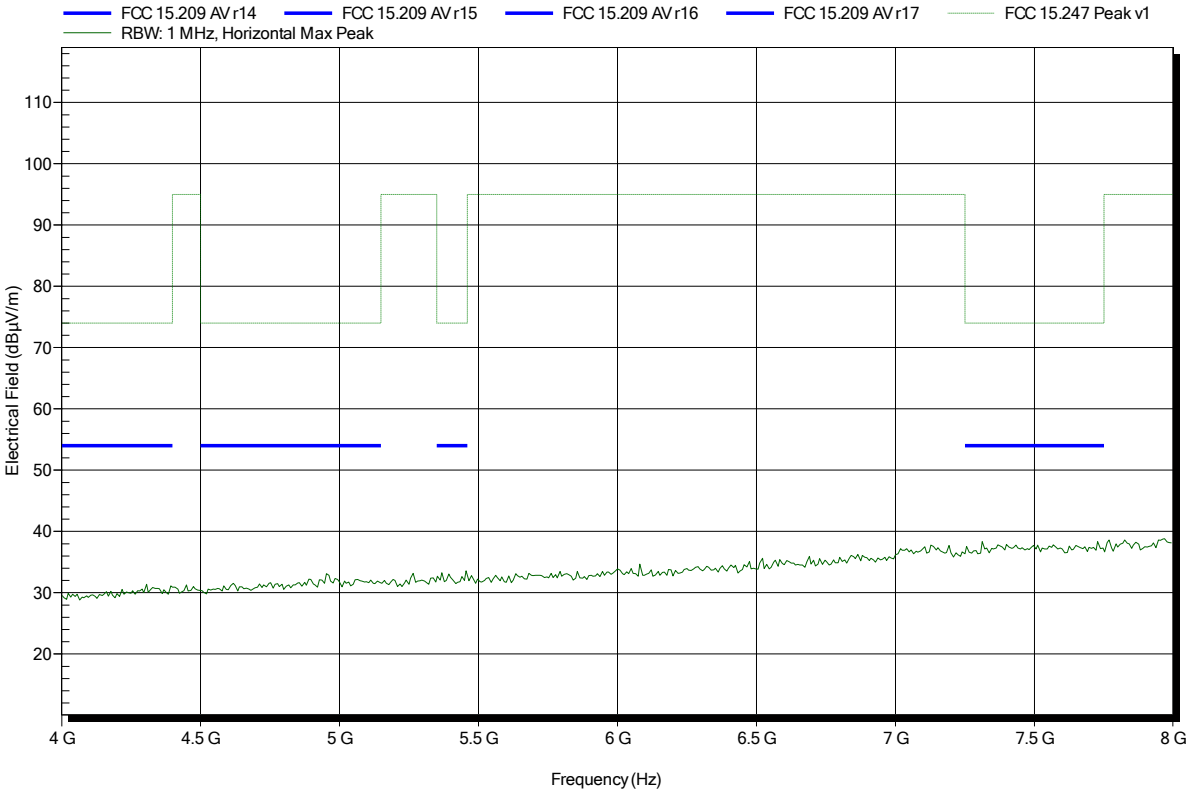

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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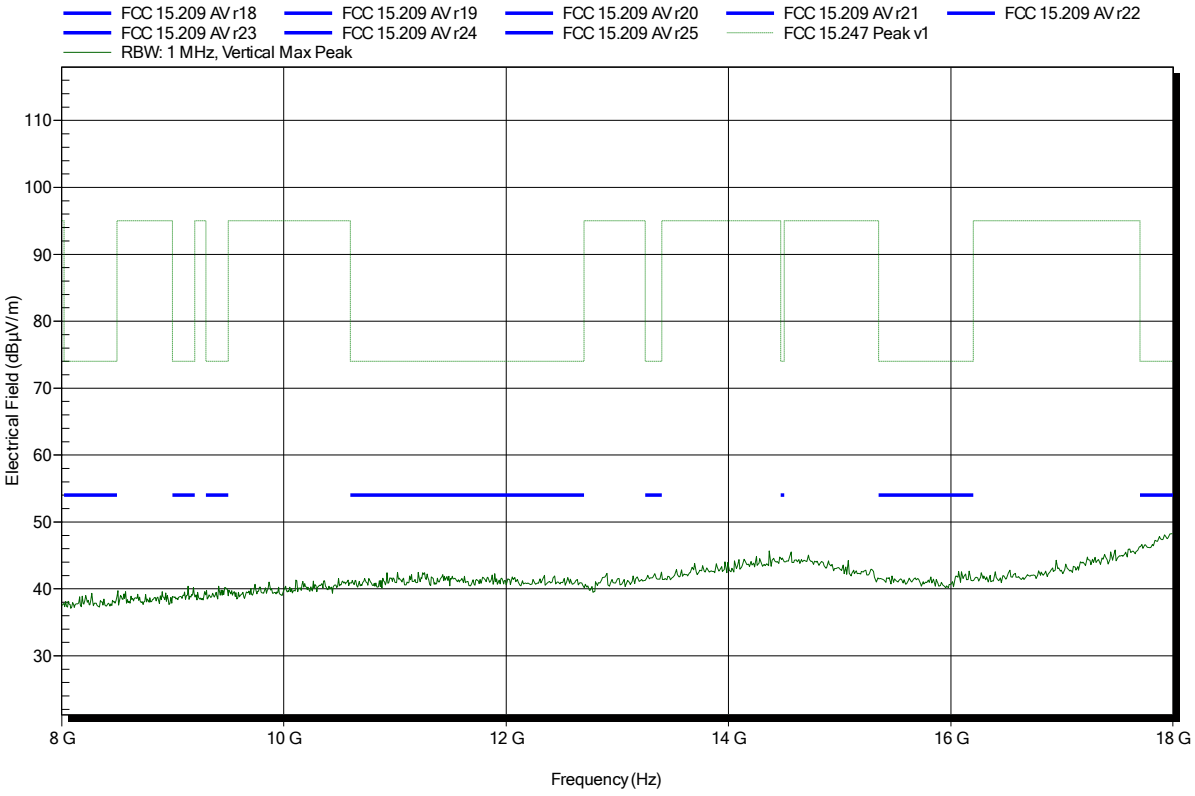

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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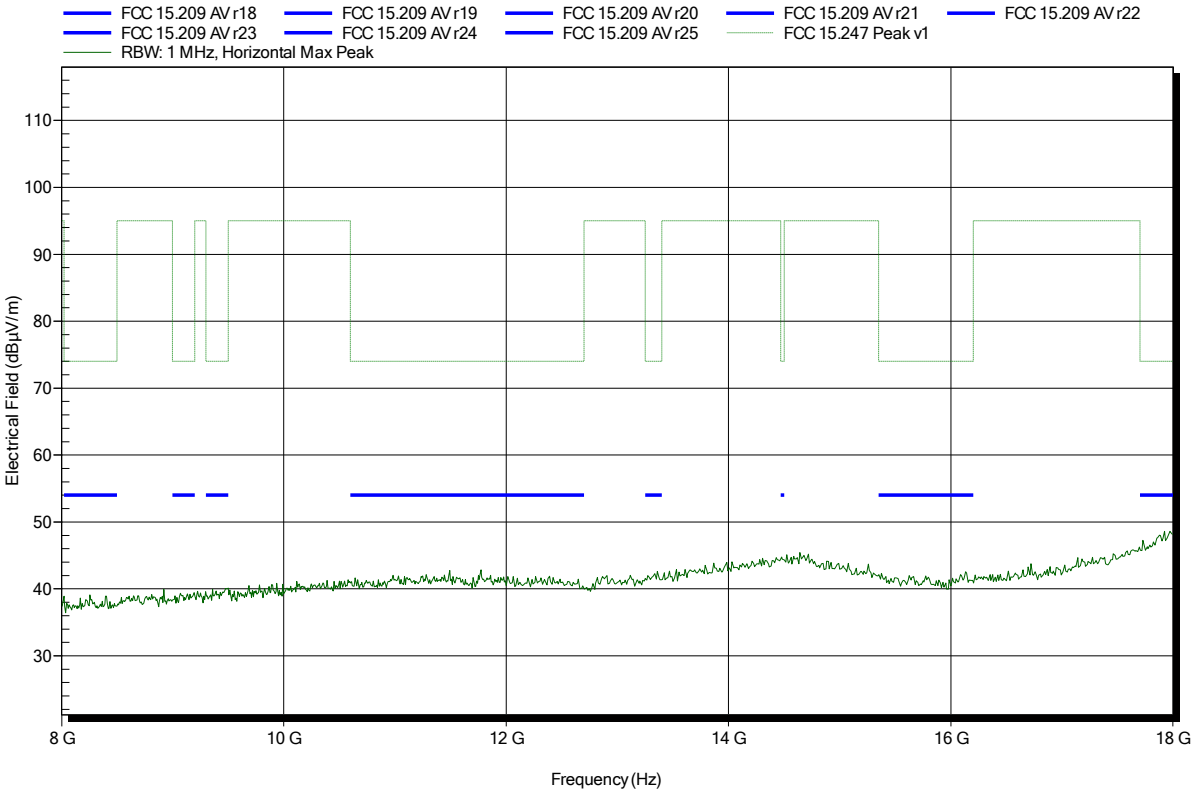

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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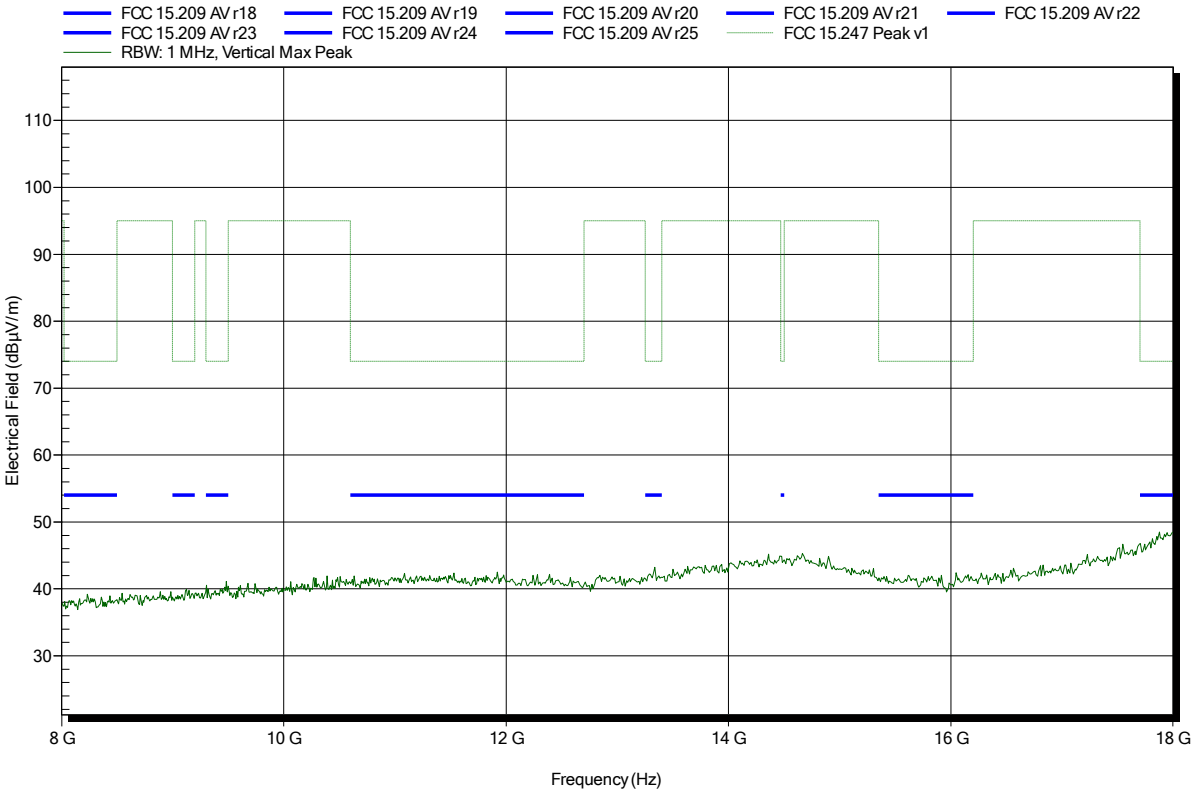

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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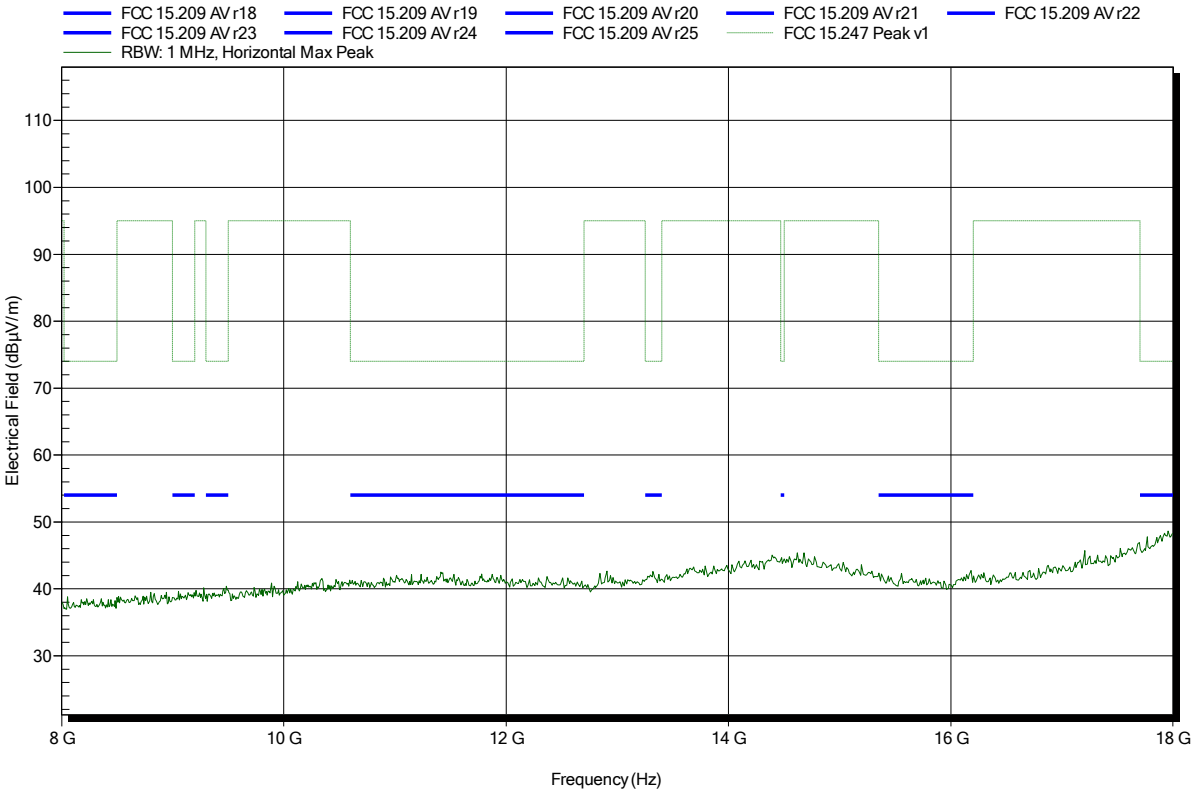

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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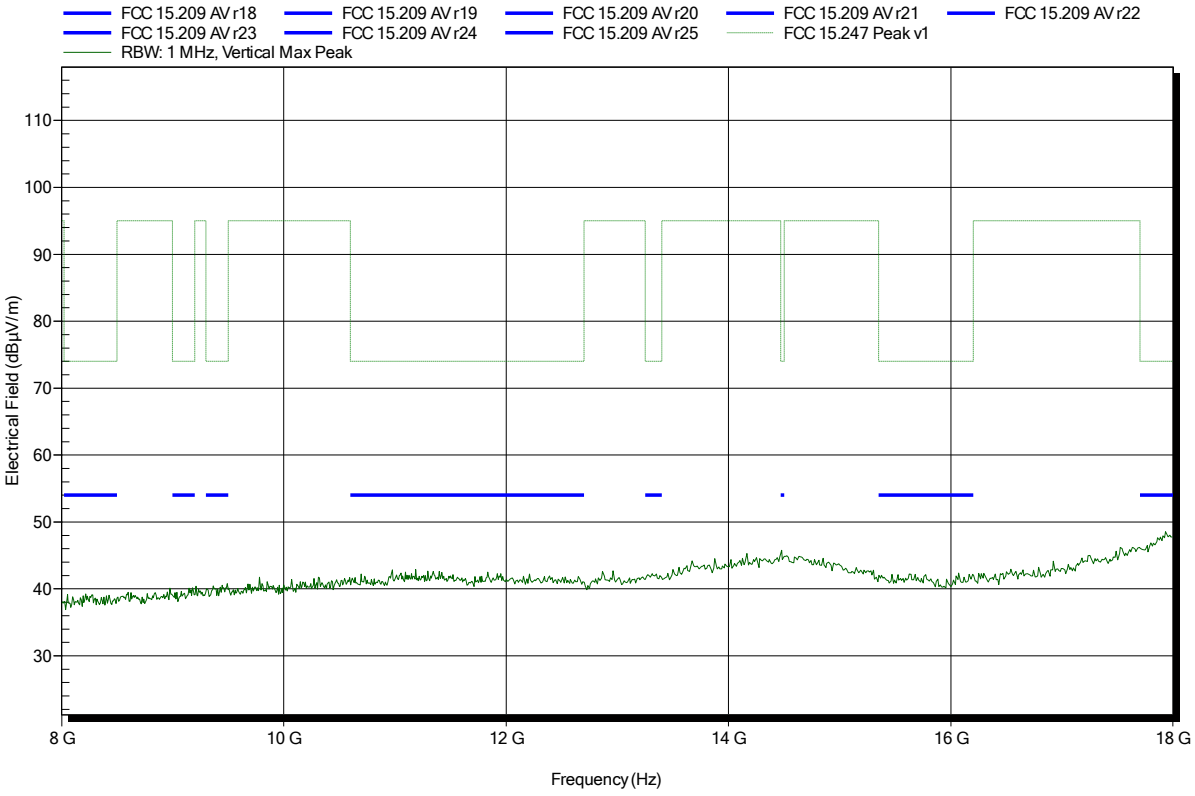

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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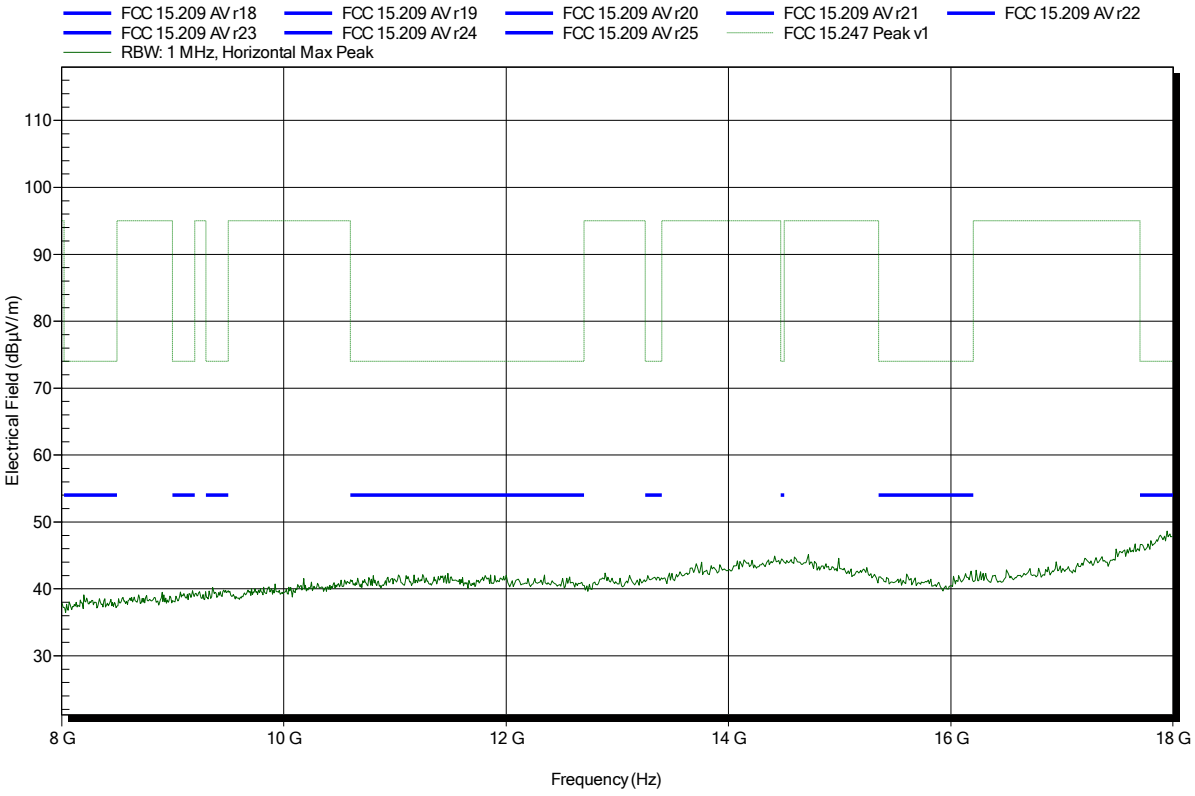

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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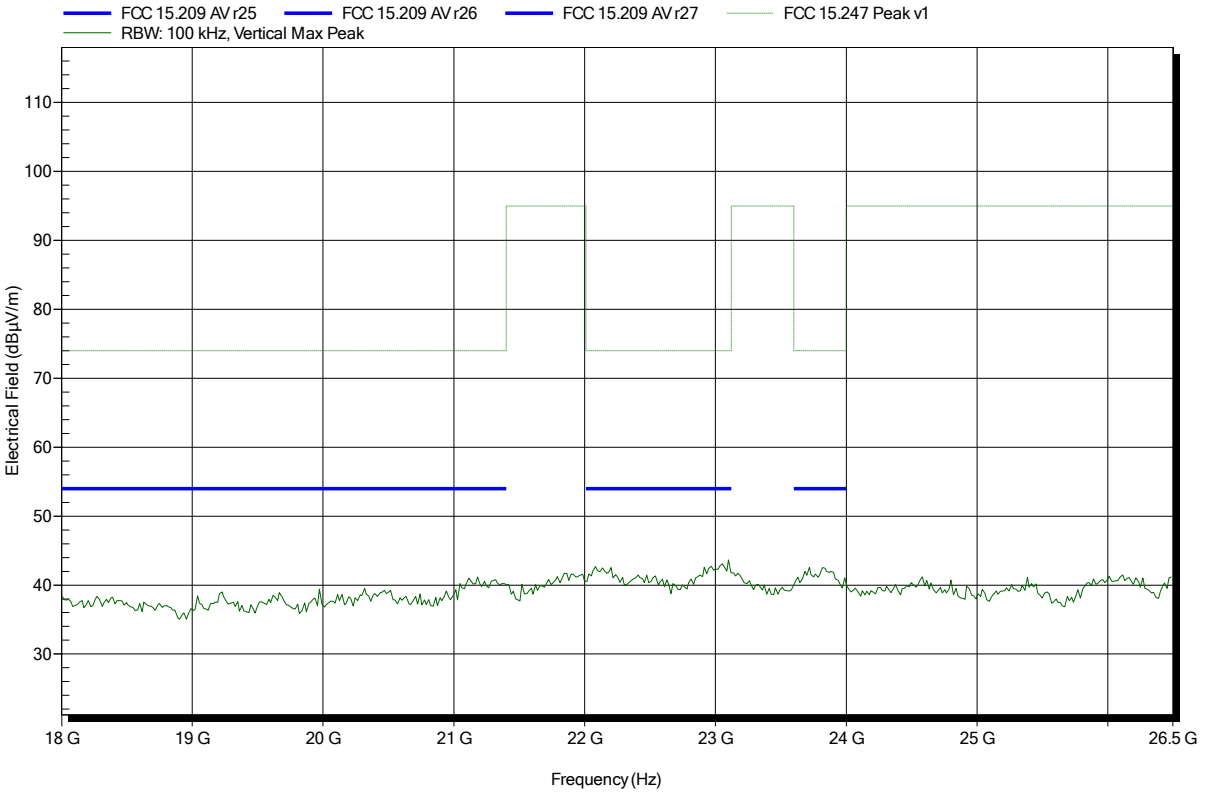

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 0; 2402 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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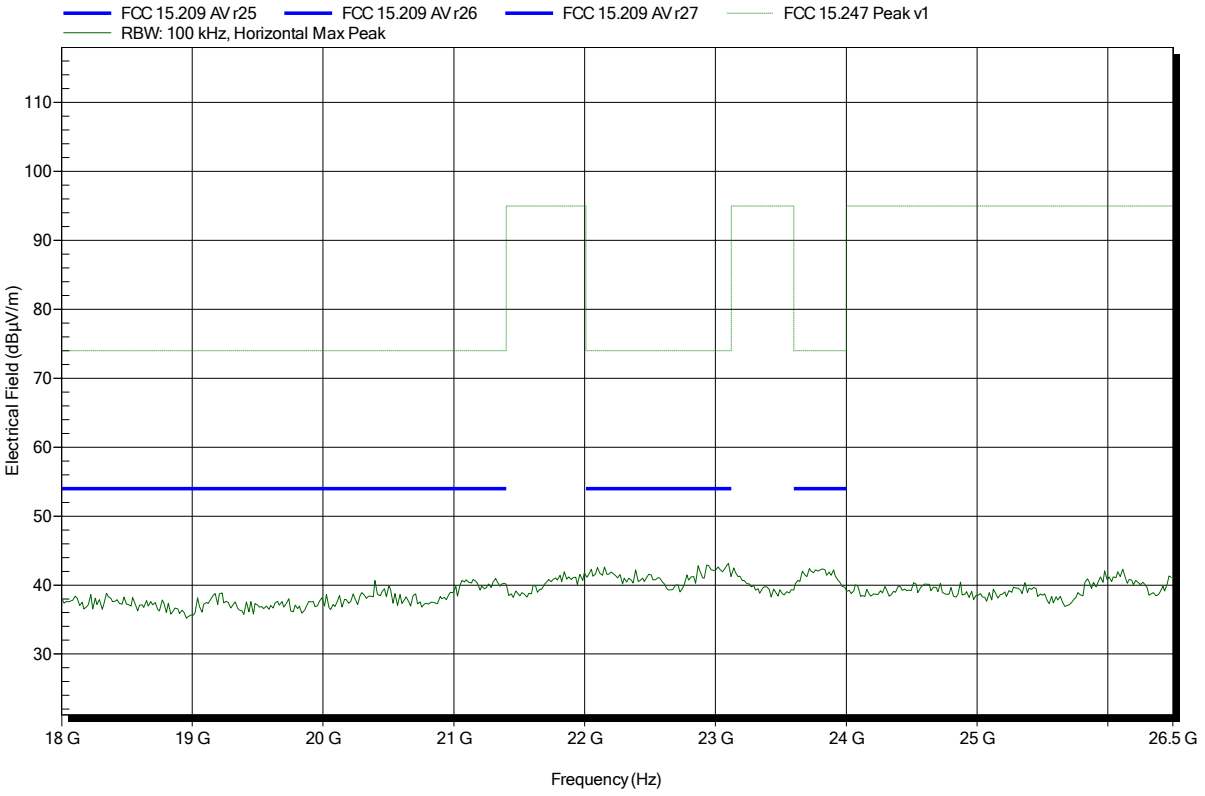

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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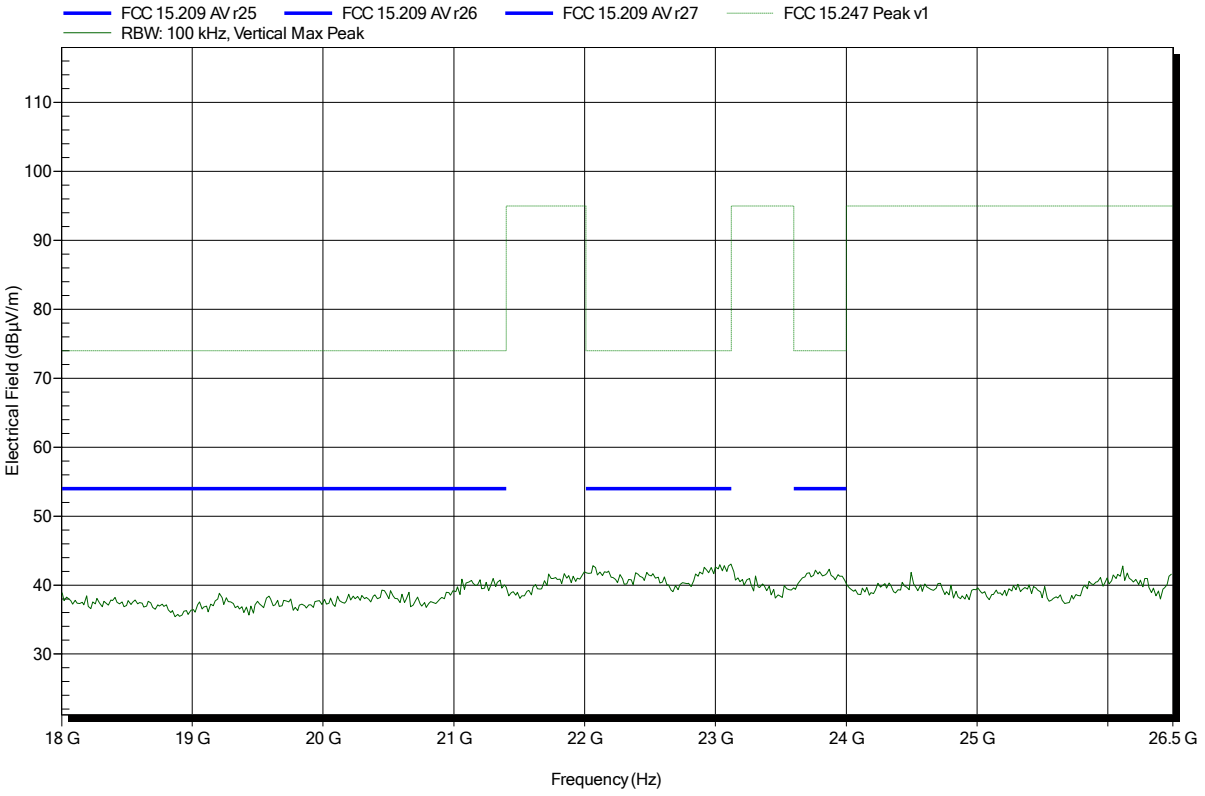

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 39; 2441 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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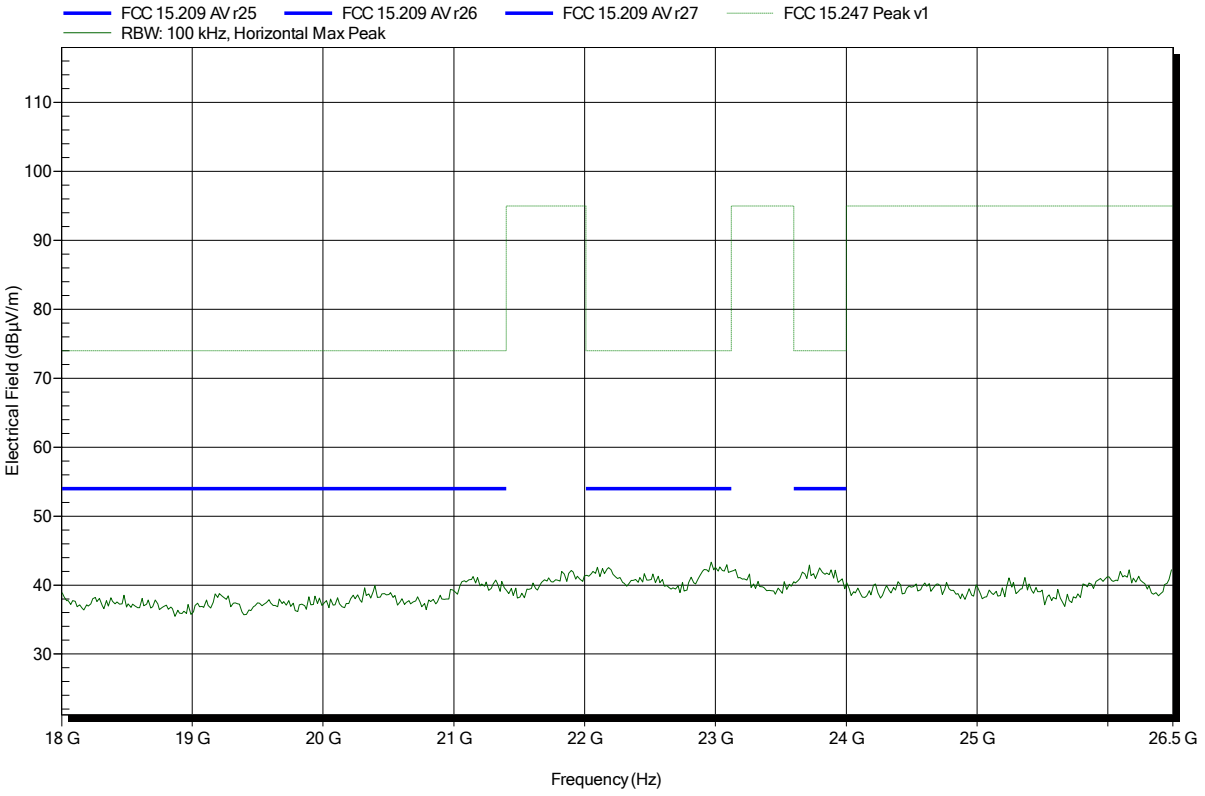

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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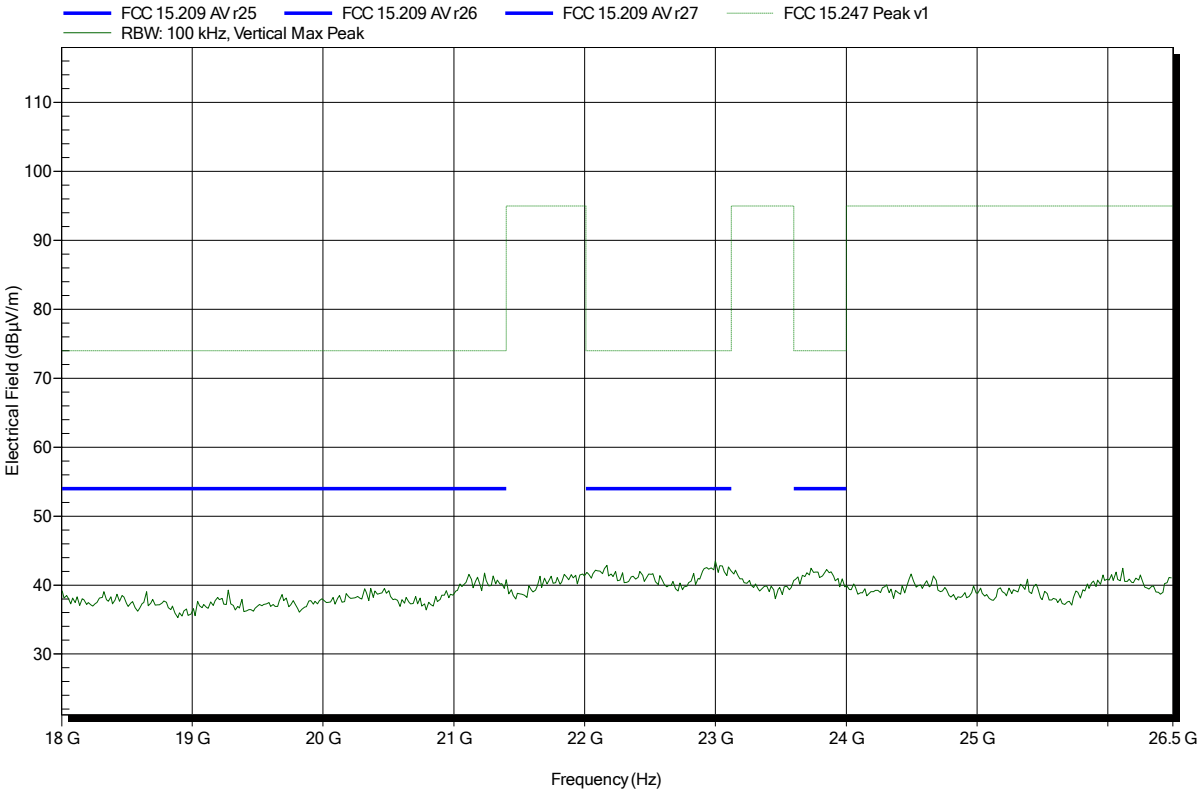

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT-BR; CH: 78; 2480 MHz; DUT-Testmode; DH5
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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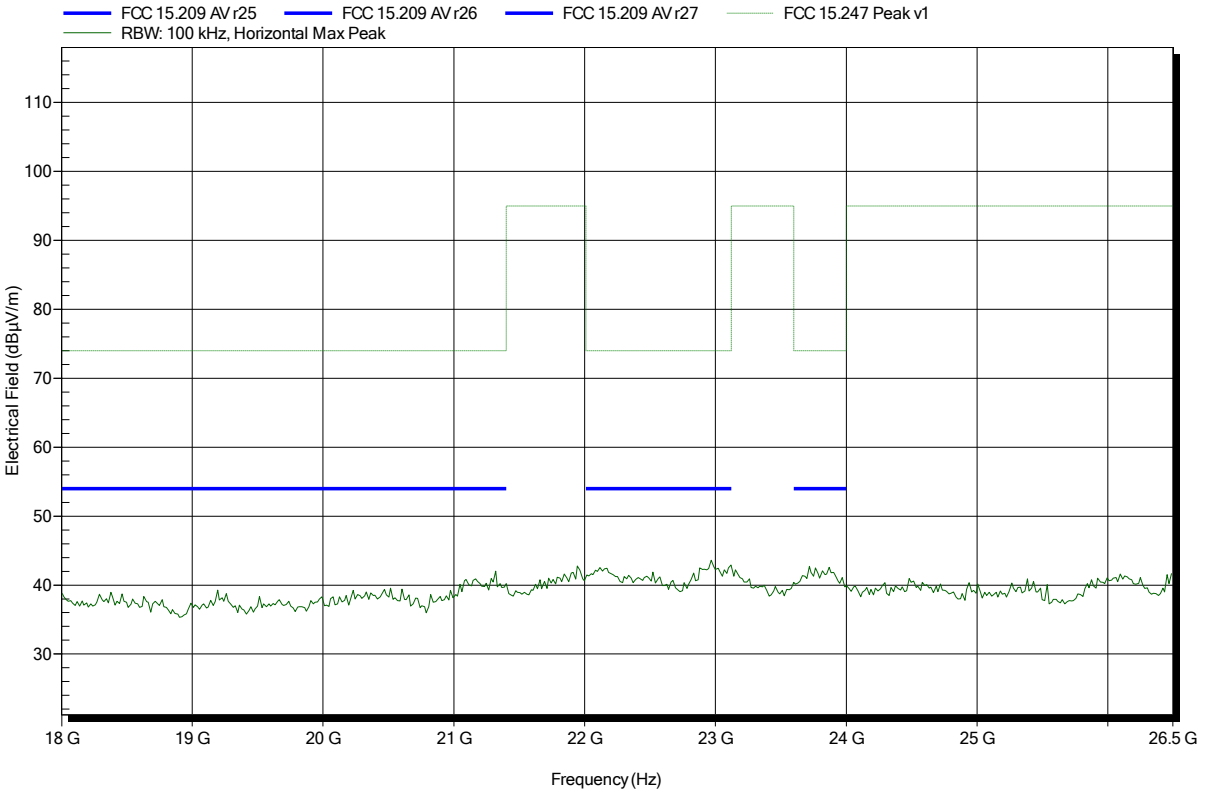

ANNEX B Receiver radiated spurious emissions

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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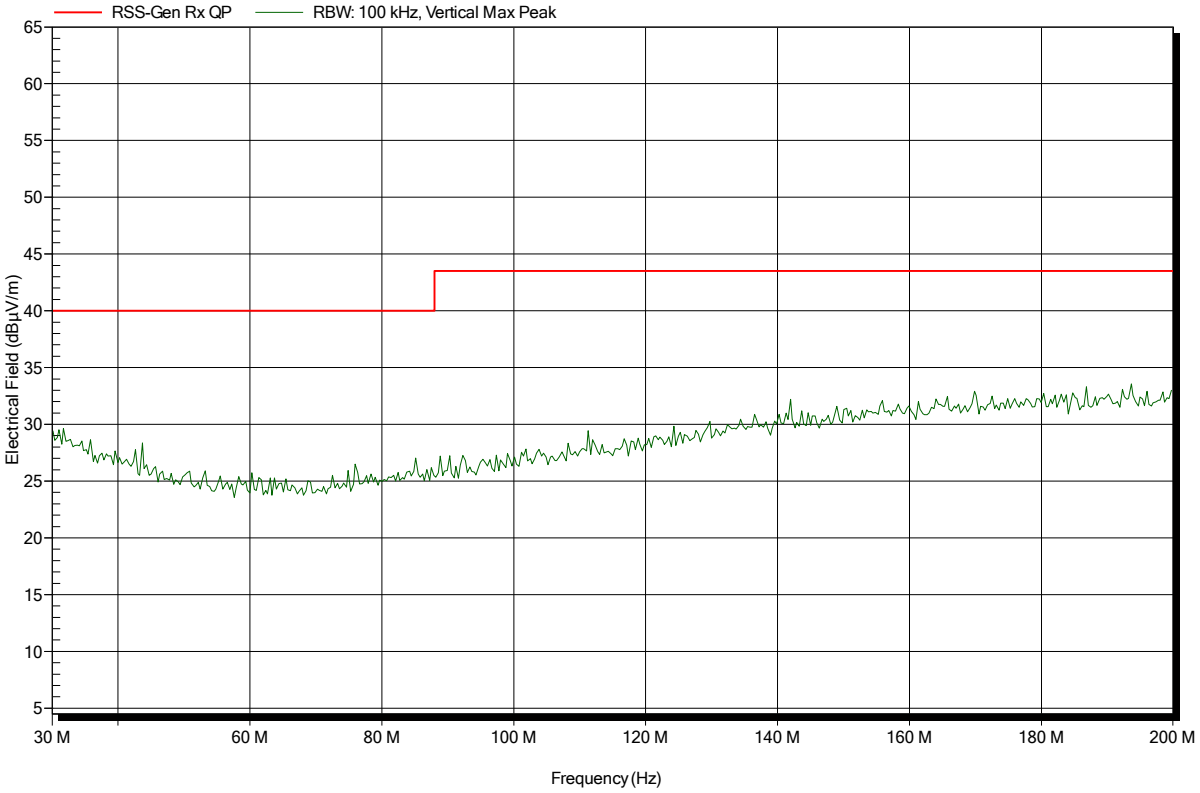

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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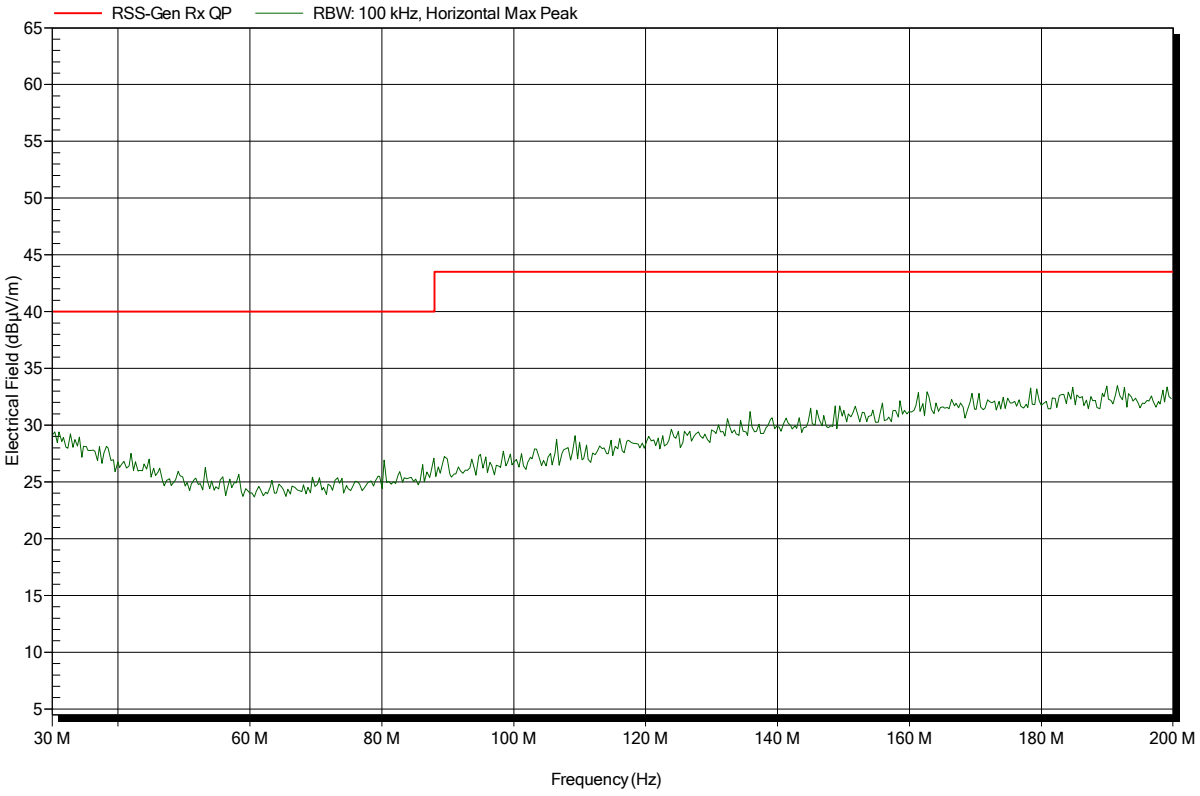

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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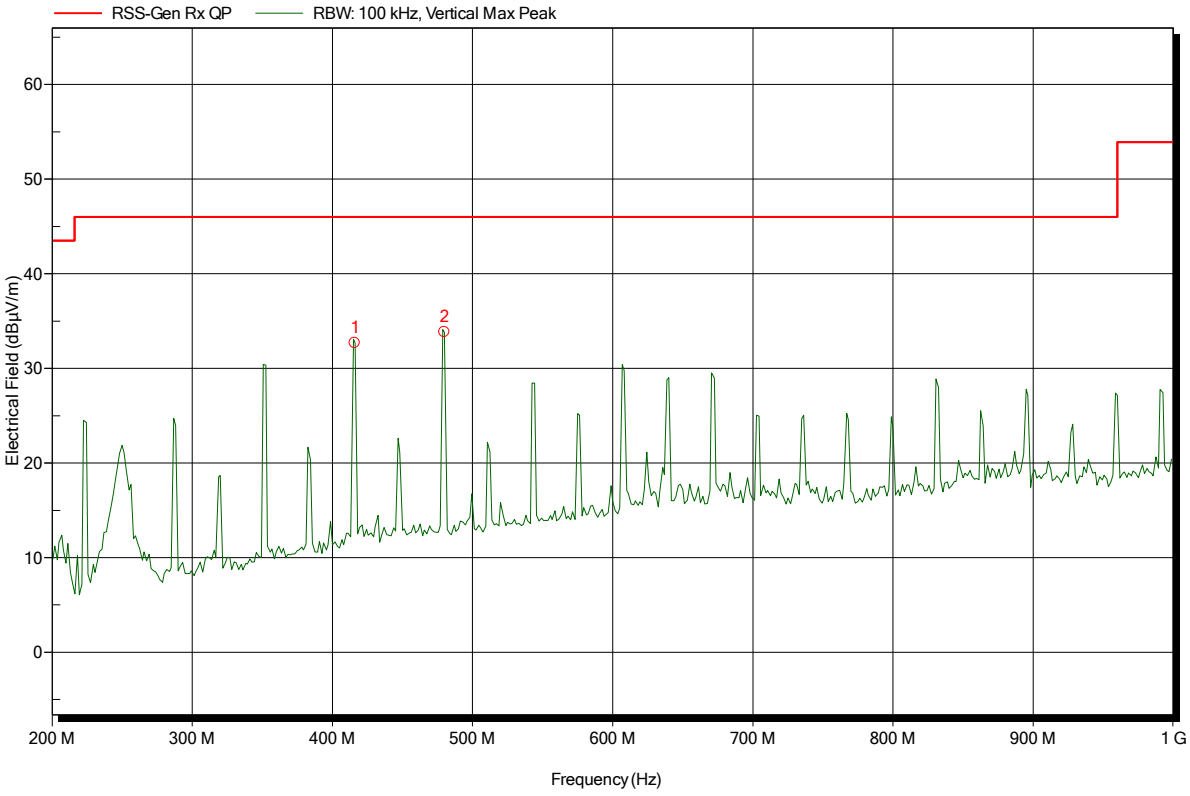

Frequency	Peak	Peak Limit	Peak Difference	Status
416 MHz	32.67 dBµV/m	46 dBµV/m	-13.33 dB	Pass
480 MHz	33.84 dBµV/m	46 dBµV/m	-12.16 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-24
Note:	EUT horizontal; ANT vertical

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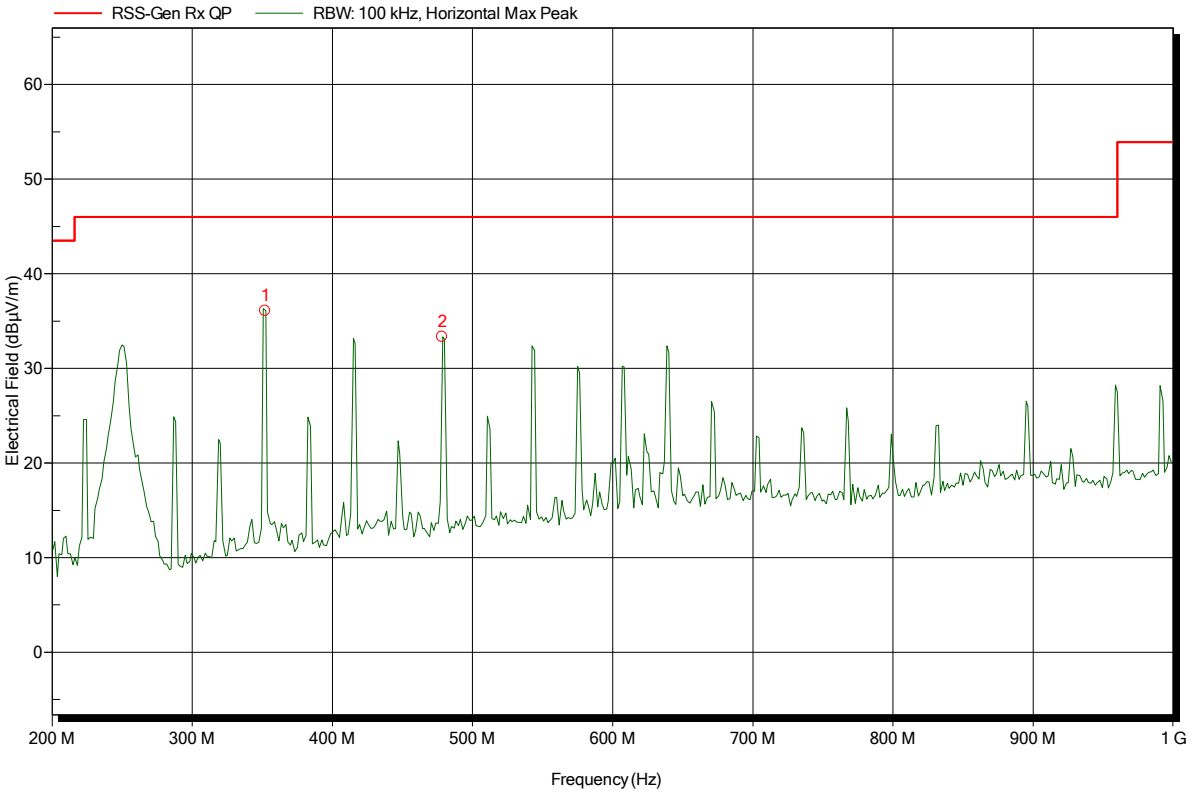

Frequency	Peak	Peak Limit	Peak Difference	Status
352 MHz	36.06 dBµV/m	46 dBµV/m	-9.94 dB	Pass
478.4 MHz	33.34 dBµV/m	46 dBµV/m	-12.66 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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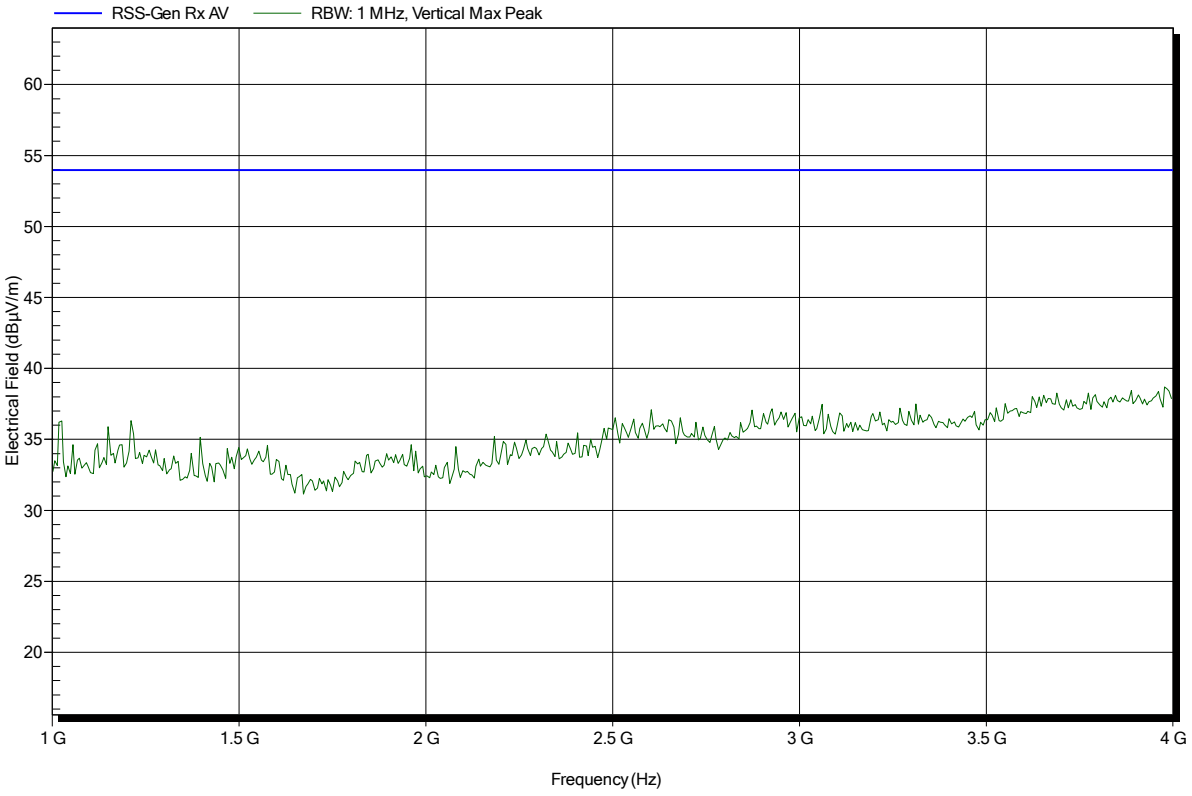

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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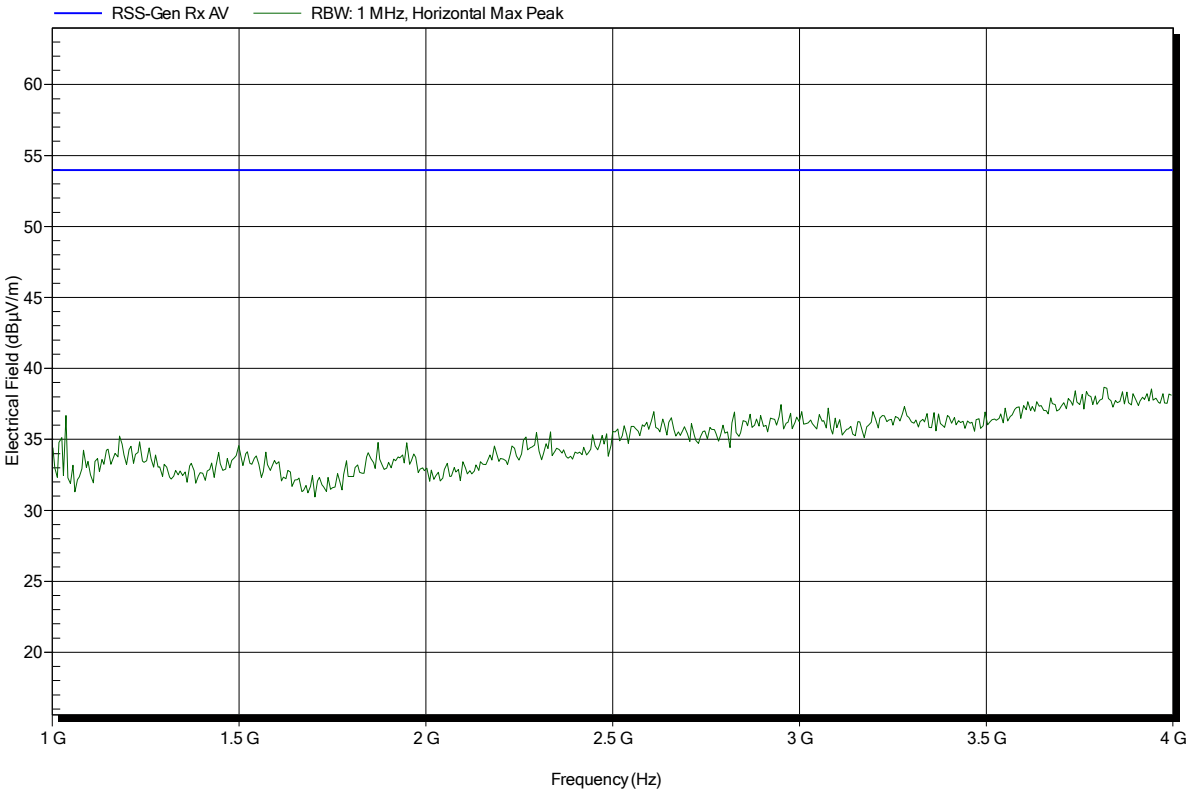

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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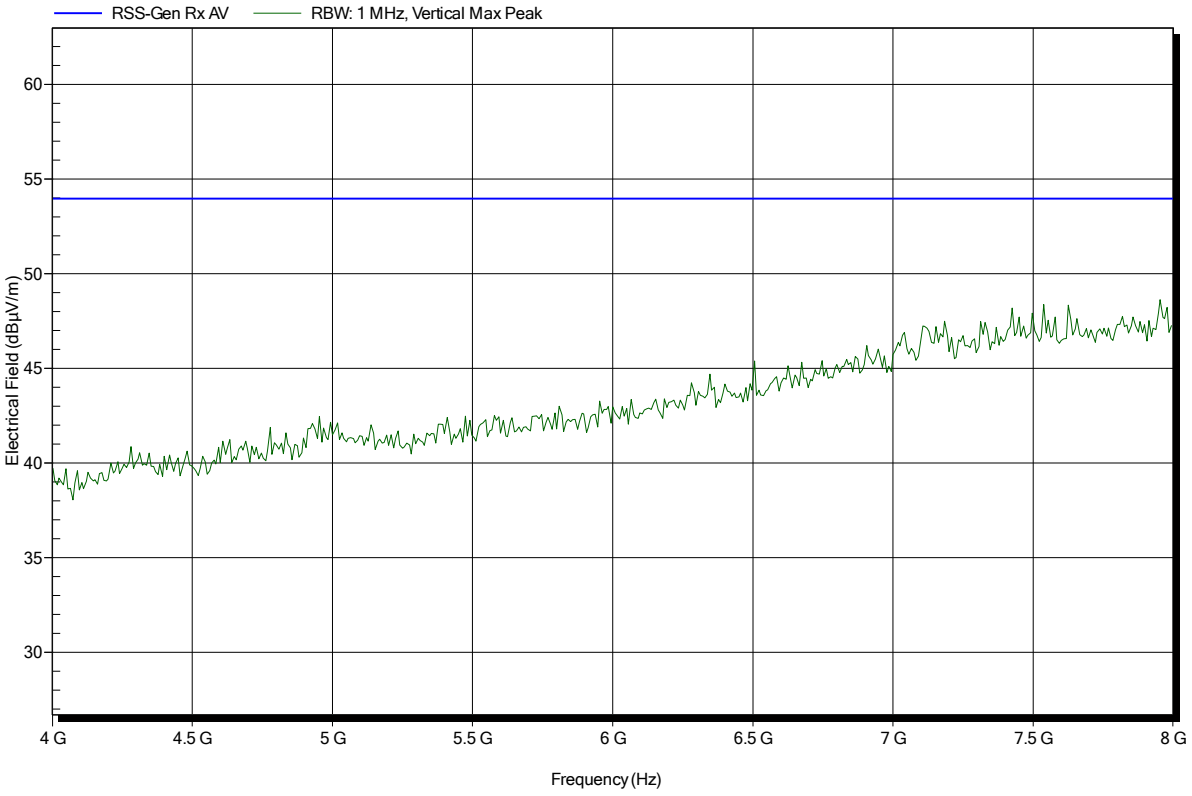

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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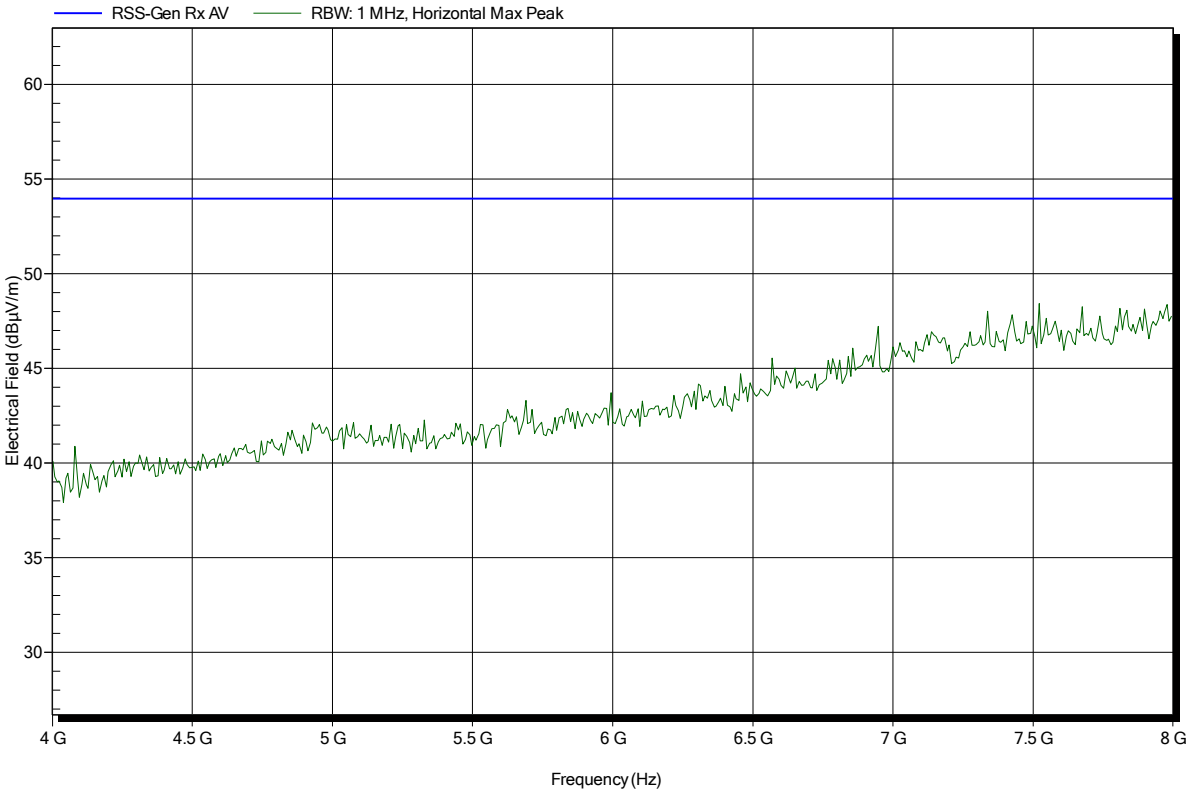

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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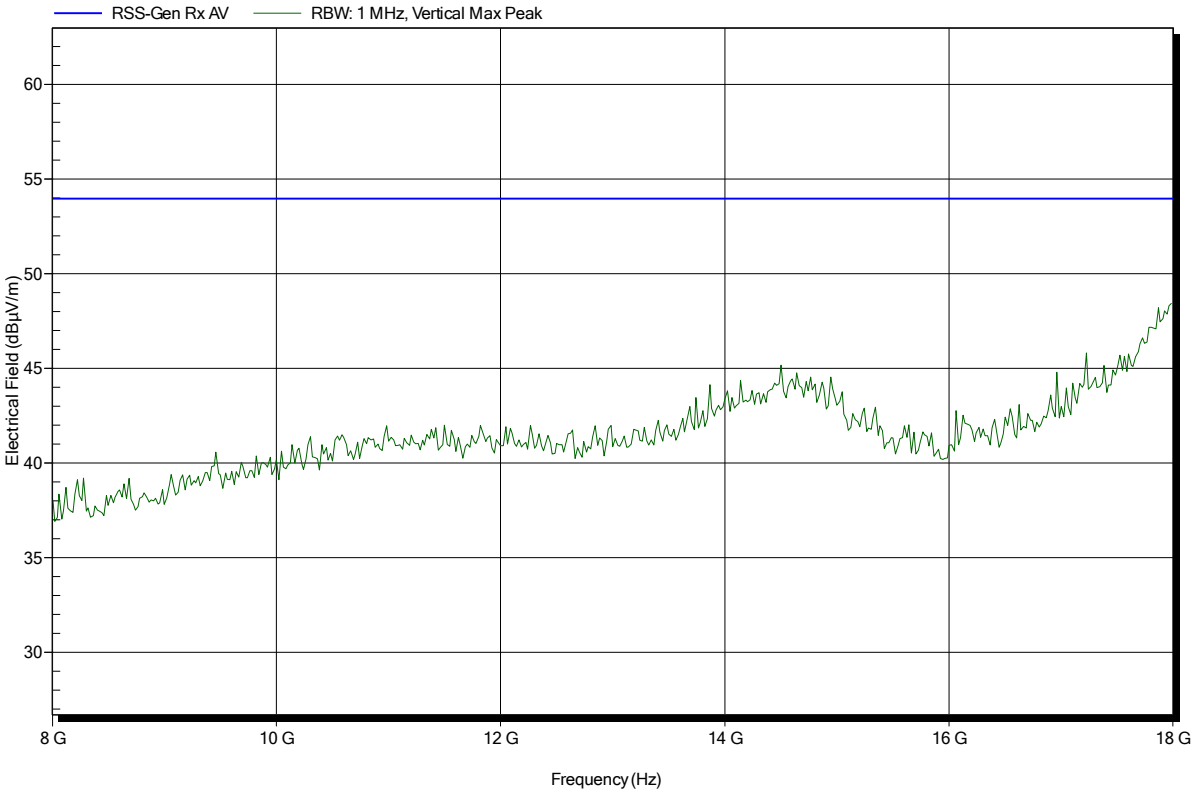

Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-210

Project number: G0M-1406-3914

Applicant:	Leica Geosystems AG
EUT Name:	Long Range Bluetooth remote control on CS20
Model:	CTR20
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 5.0 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; BT-BR; CH: Hopping; DUT-RX -Test-Mode
Test Date:	2015-02-23
Note:	EUT horizontal; ANT vertical

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