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FCC TEST REPORT

FCC 47 CFR Part 15C
ISED RSS-247

Digital transmission systems operating within the 2400 – 2483.5 MHz band

Report Reference No. ..... :	G0M-1608-5788-TFC247BL_L-V02
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 ISED OATS Filing assigned code: 3470A
Applicant's name ..... :	Schneider Schreibgeräte GmbH
Address ..... :	Unterm Dorf 184/1 78144 Schramberg GERMANY
Test specification:	
Standard..... :	47 CFR Part 15C RSS-247, Issue 1, 2015-05
Test scope…….. ..... :	complete Radio compliance test
Equipment under test (EUT):	
Product description	blukii module
Model No.	L
Additional Model(s)	None
Brand Name(s)	blukii
Hardware version	3.0
Firmware / Software version	None
	FCC-ID: A6C-104001 IC: N/A
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 ..... : 2016-10-04

Date (s) of performance of tests ..... : 2016-10-06 – 2016-10-14

Compiled by ..... : Wilfried Treffke

Tested by (+ signature) ..... : Sebastian Suckow .....
(Responsible for Test)

Approved by (+ signature) ..... : Christian Weber .....
(Head of Lab)

Date of issue ..... : 2016-11-18

Total number of pages ..... : 92

General remarks:

The test results presented in this report relate only to the object tested.
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Additional comments:

Version History

Version	Issue Date	Remarks	Revised by
01	2016-10-28	Initial Release	
02	2016-11-18	FCC-ID corrected	C. Weber

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1 Equipment (Test item) Description

Description	blukii module	
Model	L	
Additional Model(s)	None	
Brand Name(s)	blukii	
Serial number	None	
Hardware version	3.0	
Software / Firmware version	None	
PMN	N/A	
HVIN	L	
FVIN	N/A	
HMN	N/A	
FCC ID	A6C-104001	
IC	N/A	
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	custom model
	Manufacturer	ProAnt
	Gain	+0.0 dBi (manufacturer declaration)
Manufacturer	Schneider Schreibgeräte GmbH Unterm Dorf 184/1 78144 Schramberg GERMANY	
Power supply	V_{NOM}	3.0VDC
AC/DC-Adaptor	none	

1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				

***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 full 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 battery
	Radio conditions:	Mode = standalone receive (scan mode) Spreading = On Modulation = GFSK
AC-Powerline	General conditions:	EUT powered by commercial Laptop
	Radio conditions:	Mode = Transmit Spreading = On

1.6 Test Equipment Used During Testing

Measurement Software			
Description	Manufacturer	Name	Version
EMC Test Software	Dare Instruments	Radimation	2015.2.4

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

6dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

Power spectral density					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2016-05	2016-12

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242	2016-04	2017-04
Biconical Antenna	R&S	HK 116	EF00012	2016-05	2019-05
LPD Antenna	R&S	HL 223	EF00187	2016-05	2019-05
LPD Antenna	R&S	HL 025	EF00327	2015-10	2018-10

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	2015-10	2016-10

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

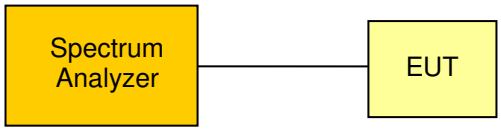
2 Result Summary

FCC 47 CFR Part 15C, ISED 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) ISED RSS-247 § 5.2	6dB Bandwidth	ANSI C63.10	PASS	
FCC § 15.247(b)(3) ISED RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	PASS	
FCC § 15.247(e) ISED RSS-247 § 5.2	Power spectral density	ANSI C63.10	PASS	
47 CFR 15.207 ISED RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.4	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Band edge compliance	ANSI C63.10	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-247 § 5.5	Transmitter radiated spurious emissions	ANSI C63.10	PASS	
ISED 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 ISED 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		



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

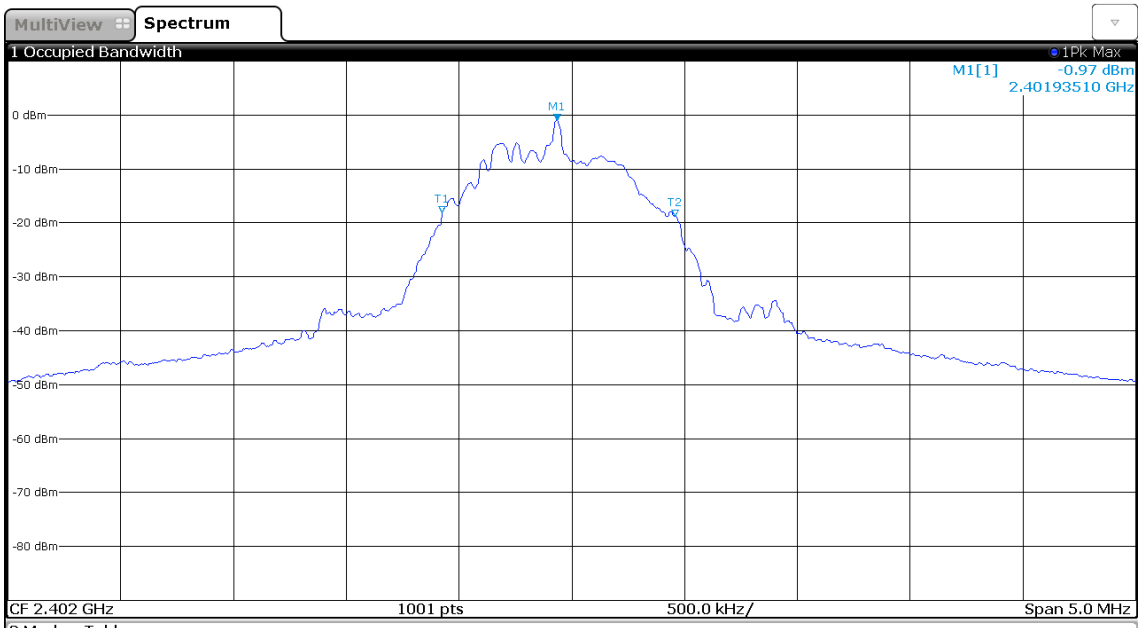
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [MHz]
F_{LOW}	2402	Transmit	1.032
F_{MID}	2440	Transmit	1.038
F_{HIGH}	2480	Transmit	1.044

Comments:

Occupied Bandwidth – F_{LOW}

Occupied Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Occupied Bandwidth [MHz]:	1.032



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4019351 GHz**	**-0.97 dBm**	Occ Bw	**1.03251941 MHz**
T1		1	2.40142385 GHz	-18.20 dBm	Occ Bw Centroid	2.401940109 GHz
T2		1	2.40245637 GHz	-18.83 dBm	Occ Bw Freq Offset	-59.890785352 kHz

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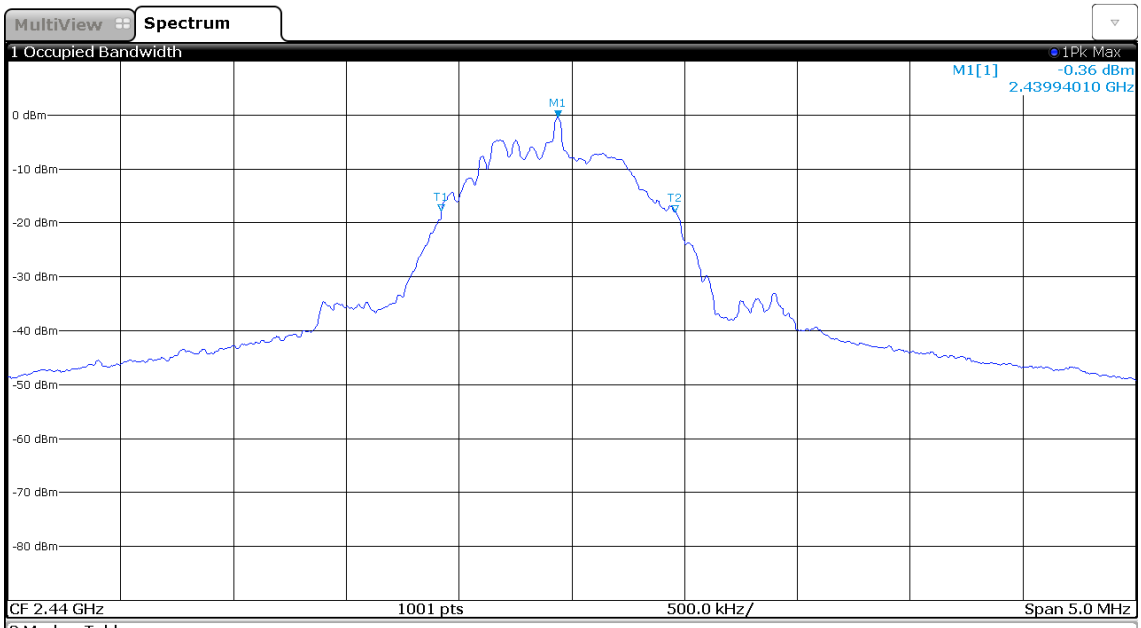
Occupied Bandwidth – F_{MID}

Occupied Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Occupied Bandwidth [MHz]:	1.038



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4399401 GHz**	**-0.36 dBm**	Occ Bw	**1.038122014 MHz**
T1		1	2.43942042 GHz	-17.87 dBm	Occ Bw Centroid	2.439939482 GHz
T2		1	2.44045854 GHz	-17.91 dBm	Occ Bw Freq Offset	-60.518106905 kHz

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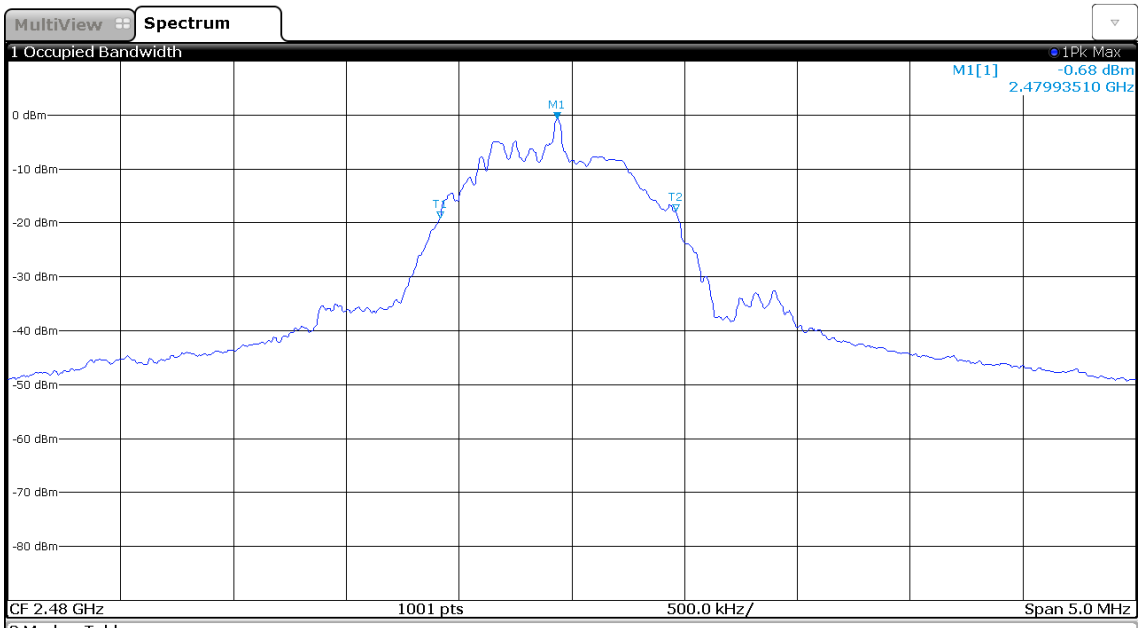
Occupied Bandwidth – F_{HIGH}

Occupied Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Occupied Bandwidth [MHz]:	1.044



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4799351 GHz**	**-0.68 dBm**	Occ Bw	**1.043701231 MHz**
T1		1	2.47941624 GHz	-19.17 dBm	Occ Bw Centroid	2.479938088 GHz
T2		1	2.48045994 GHz	-17.87 dBm	Occ Bw Freq Offset	-61.911967803 kHz

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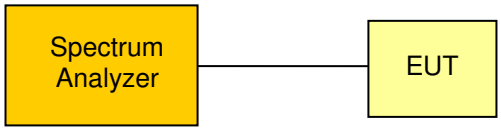
3.2 Test Conditions and Results – 6 dB Bandwidth

6dB Bandwidth acc. to FCC 15.247 / ISED RSS-247	Verdict: PASS
EUT requirement rule parts and clause	Reference
	FCC 15.247(a)(2) / ISED 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



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

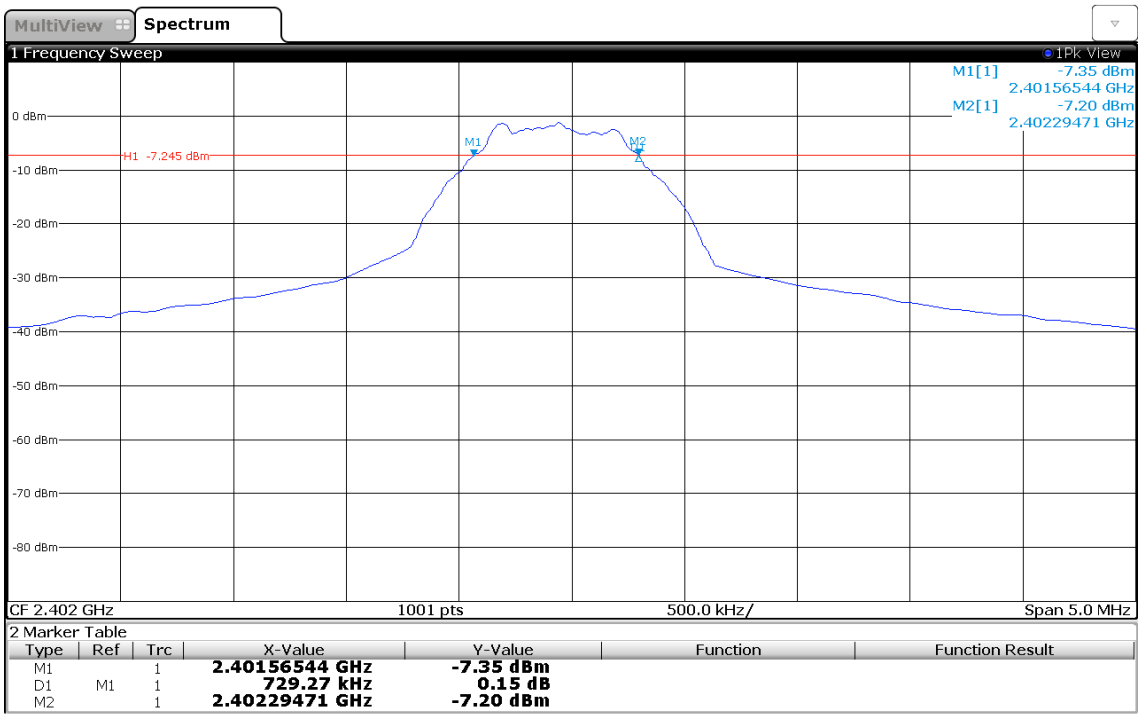
Channel	Frequency [MHz]	Mode	6 dB Bandwidth [kHz]	Limit [kHz]	Result
F_{LOW}	2402	Transmit	729	500	PASS
F_{MID}	2440	Transmit	694	500	PASS
F_{HIGH}	2480	Transmit	709	500	PASS

Comments:

6 dB Bandwidth – F_{LOW}

DTS (6 dB) Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	Tnom/Vnom
Operator:	C. Weber
Test Site:	Eurofins Product Service GmbH
Test Date:	2016-10-10
Lower Frequency [MHz]:	2401.565
Upper Frequency [MHz]:	2402.295
6 dB Bandwidth [kHz]:	729



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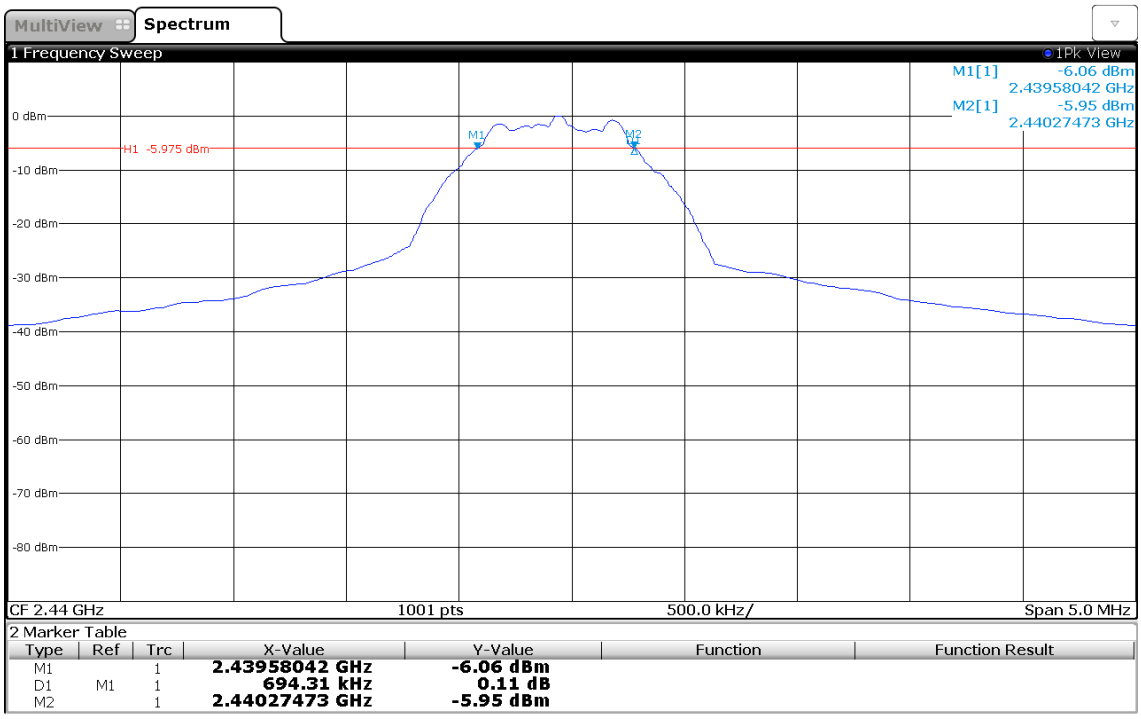
6 dB Bandwidth – F_{MID}

DTS (6 dB) Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Lower Frequency [MHz]:	2439.580
Upper Frequency [MHz]:	2440.275
6 dB Bandwidth [kHz]:	694



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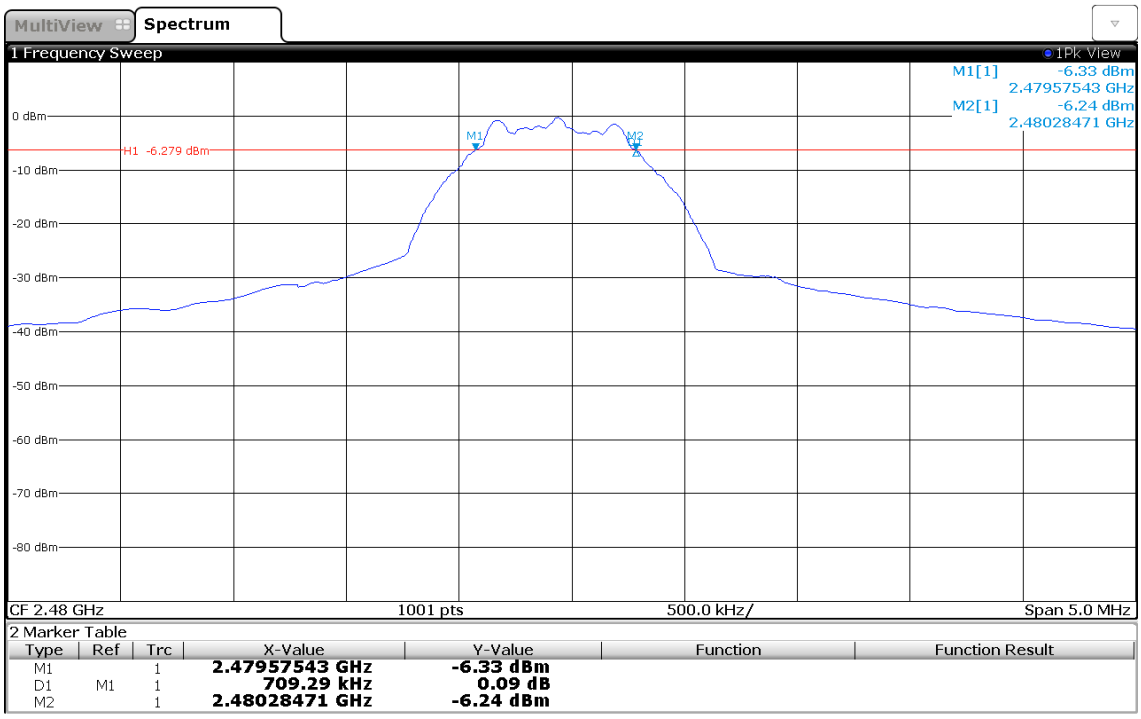
6 dB Bandwidth – F_{HIGH}

DTS (6 dB) Bandwidth

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Lower Frequency [MHz]:	2479.575
Upper Frequency [MHz]:	2480.285
6 dB Bandwidth [kHz]:	709



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3.3 Test Conditions and Results – Maximum peak conducted power

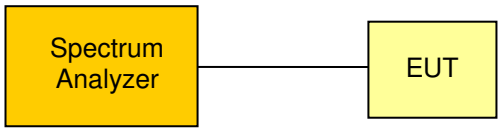
Maximum peak conducted power acc. to FCC 15.247 / ISED RSS-247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(b)(3) / ISED RSS-247 5.4
Test according to measurement reference	Reference Method
	ANSI C63.10
Test frequency range	Tested frequencies
	F_{LOW} / F_{MID} / F_{HIGH}
Measurement mode	Peak
Maximum antenna gain	0.0 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



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} = 3.0V	Transmit	-0.101	0.0010	30	-30.10
F_{MID}	2440	V_{nom} = 3.0V	Transmit	0.615	0.0012	30	-29.39
F_{HIGH}	2480	V_{nom} = 3.0V	Transmit	0.177	0.0010	30	-29.82
Comment:							

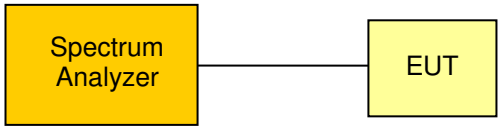
3.4 Test Conditions and Results – Power spectral density

Power spectral density acc. to FCC 15.247 / ISED RSS-247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(e) / ISED 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



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	2401.937	-0.122	8.0	-08.12
F_{MID}	2440	Transmit	2439.937	0.613	8.0	-07.39
F_{HIGH}	2480	Transmit	2479.943	0.228	8.0	-07.77

Comments: RBW=100 kHz

3.5 Test Conditions and Results – AC power line conducted emissions

Power line conducted emissions acc. to FCC 47 CFR 15.207 / ISED 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 power line			
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 1

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

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L (large)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Unom: 120 VAC
LISN:	ESH2-Z5 N
Mode:	BTLE 2402 MHz Phase N
Test Date:	2016-10-17
Note:	

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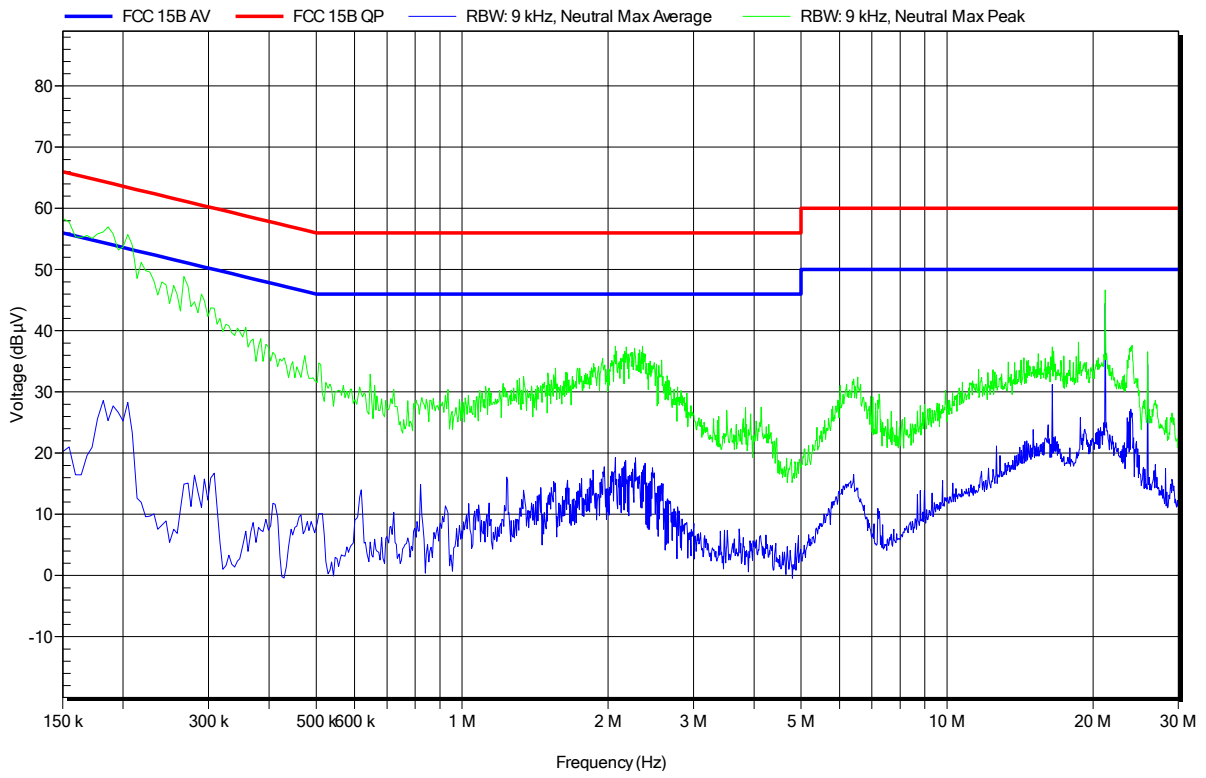

Conducted Emissions 2

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

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L (large)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Unom: 120 VAC
LISN:	ESH2-Z5 L
Mode:	BTLE 2402 MHz Phase L
Test Date:	2016-10-17
Note:	

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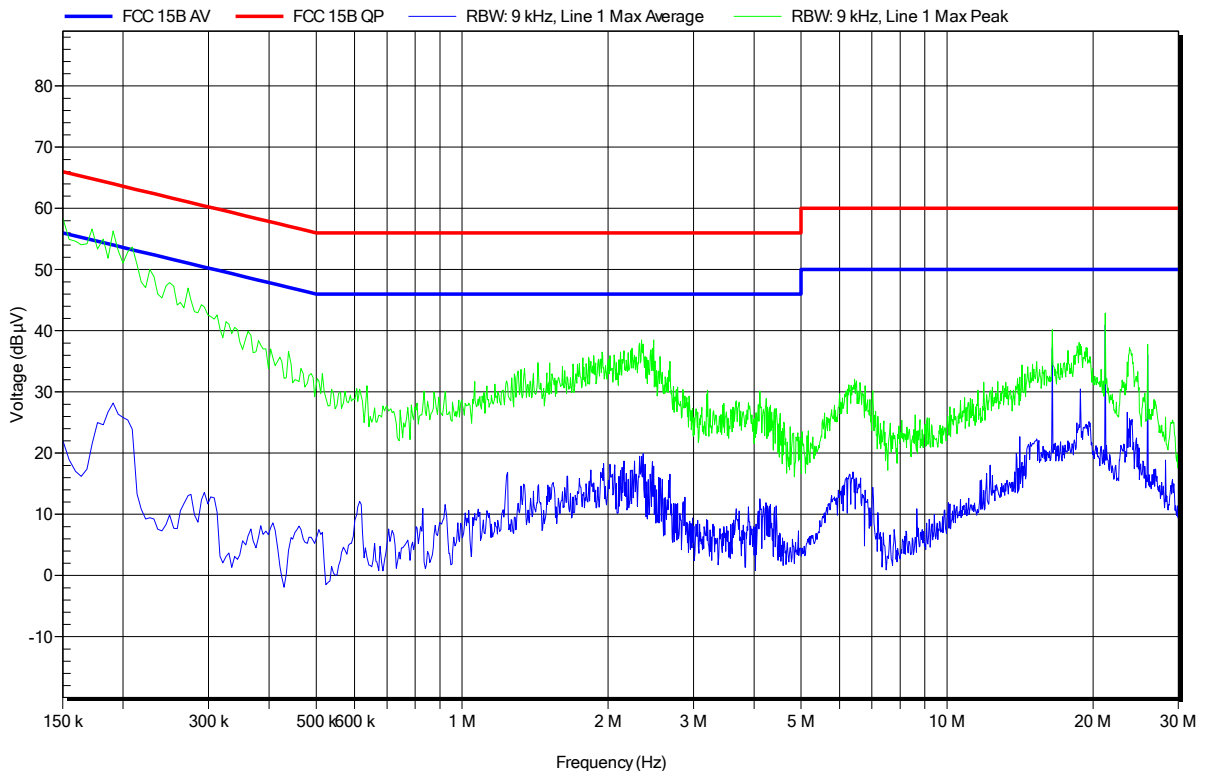


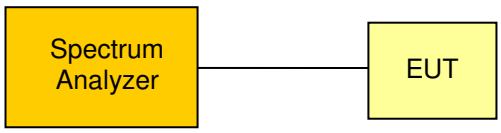
3.6 Test Conditions and Results – Band edge compliance

Band-edge compliance acc. to FCC 15.247 / ISED RSS-247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(d) / ISED 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	Power measurement detector = Peak
≤ -30 dB / 100 kHz	Power measurement detector = RMS

Test setup



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

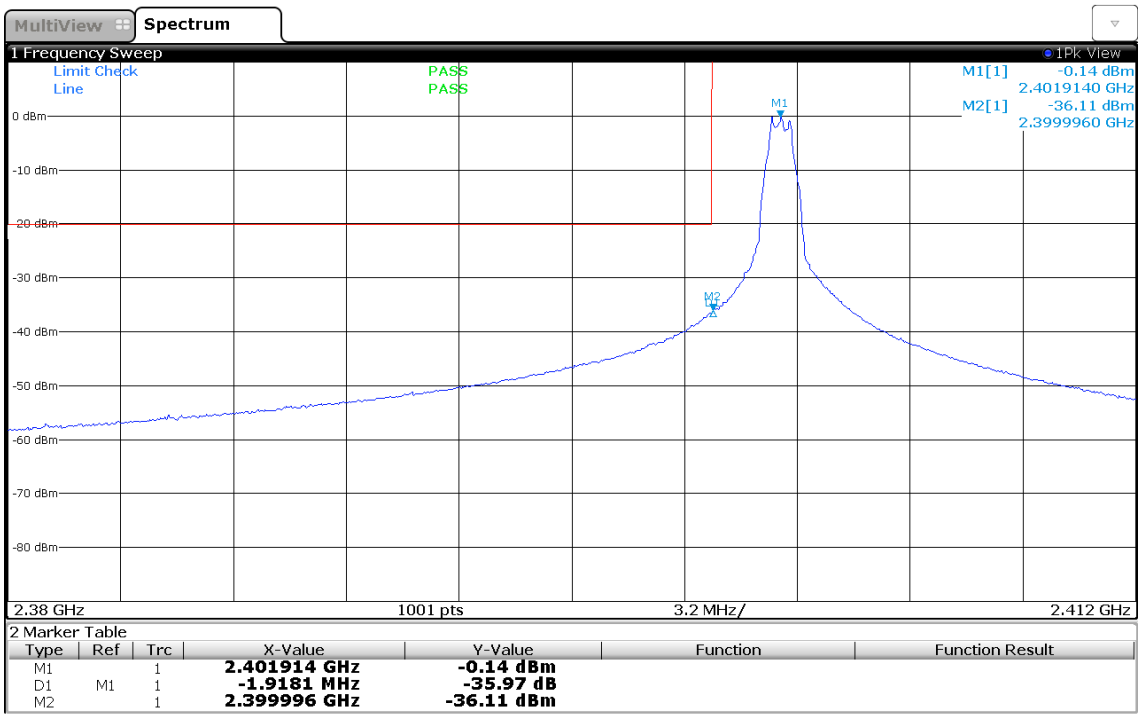
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]
F_{LOW}	2402	Transmit	-35.97	-20	-15.97
F_{HIGH}	2480	Transmit	-41.93	-20	-21.93

Comments:

Band-edge compliance – Lower Edge

Band-edge Compliance

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Band-edge	Lower
In-band Frequency [MHz]:	2401.914
Max. in-band Level [dBm/100 kHz]:	-0.138
Out-of-band Frequency [MHz]:	2399.996
Max. out-of-band Level [dBm/100 kHz]:	-36.107
Attenuation [dB]:	-35.97



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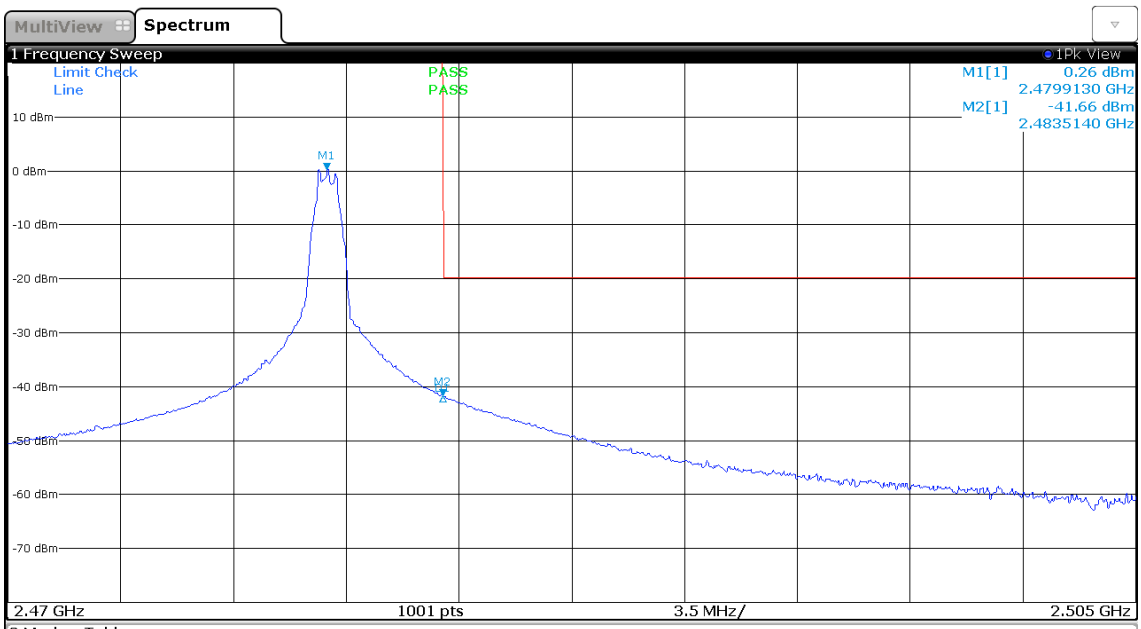
Band-edge compliance – Upper Edge

Band-edge Compliance

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
Test Sample ID:	
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:	2016-10-10
Band-edge	Upper
In-band Frequency [MHz]:	2479.913
Max. in-band Level [dBm/100 kHz]:	0.265
Out-of-band Frequency [MHz]:	2483.514
Max. out-of-band Level [dBm/100 kHz]:	-41.662
Attenuation [dB]:	-41.93



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	2.479913 GHz	0.26 dBm		
D1	M1	1	3.6014 MHz	-41.93 dB		
M2		1	2.483514 GHz	-41.66 dBm		

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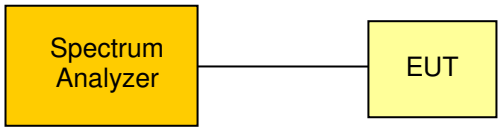
3.7 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. to FCC 15.247 / ISED RSS-247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(d) / ISED RSS-247 5.5
Test according to measurement reference	Reference Method
	ANSI C63.10
Test frequency range	Tested frequencies
	10 MHz – 10th 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



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

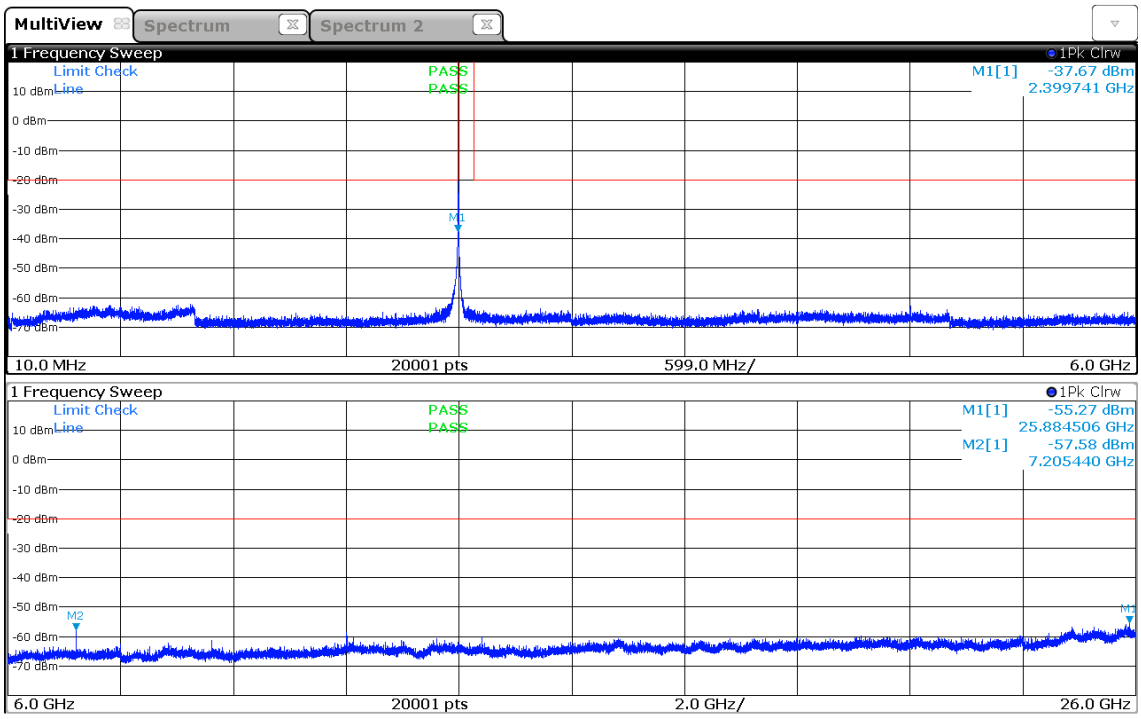
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]
F_{LOW}	2402	no significant spurious emissions					
F_{MID}	2440	no significant spurious emissions					
F_{HIGH}	2480	no significant spurious emissions					

Comments:

Conducted spurious emissions – F_{LOW}

Conducted Spurious Emissions

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Max. in-band Frequency [MHz]:	2401.9
Max. in-band Level [dBm/100 kHz]:	-0.1
Out-of-band Limit [dBm/100 kHz]:	-20.1



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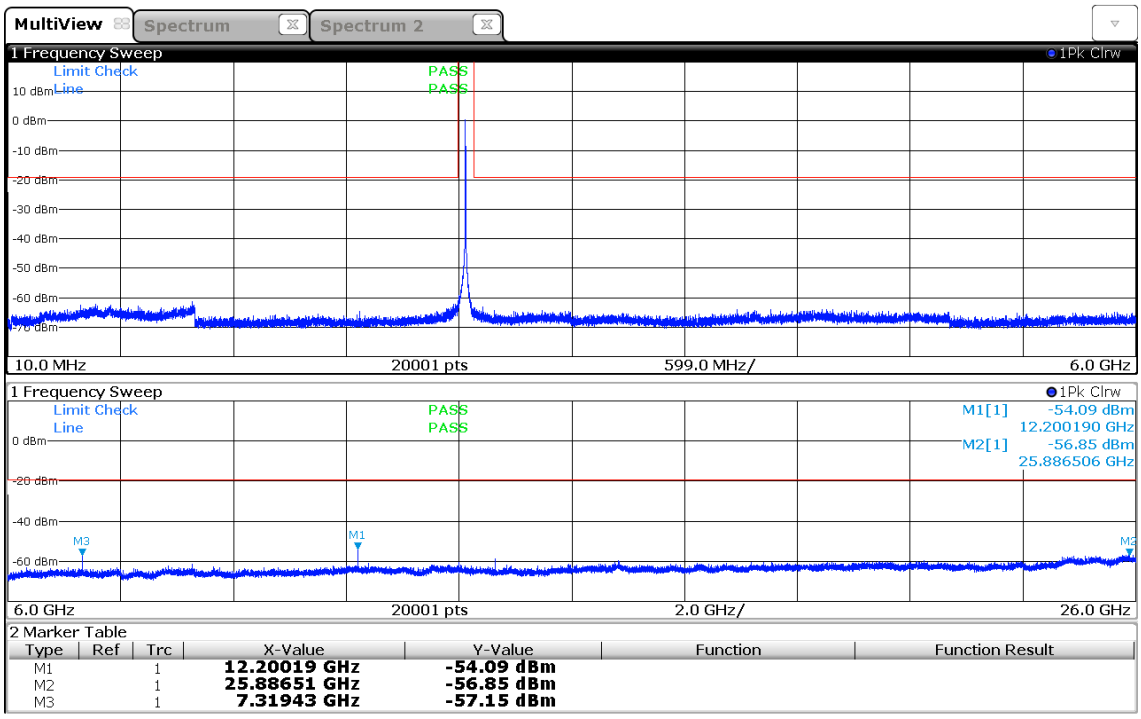
Conducted spurious emissions – F_{MID}

Conducted Spurious Emissions

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Max. in-band Frequency [MHz]:	2439.9
Max. in-band Level [dBm/100 kHz]:	0.7
Out-of-band Limit [dBm/100 kHz]:	-19.3



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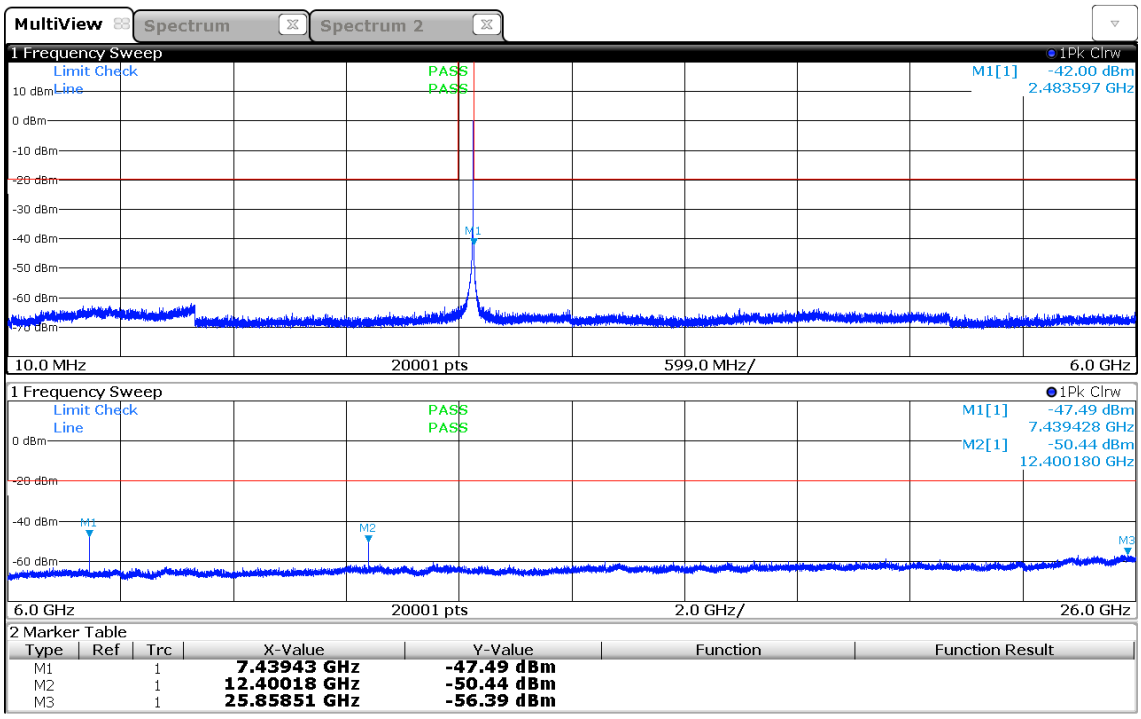
Conducted spurious emissions – F_{HIGH}

Conducted Spurious Emissions

Project Number:	G0M-1608-5788
Applicant	Schneider Schreibgeräte GmbH
Model Description	blukii module
Model:	L (large)
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:	2016-10-10
Max. in-band Frequency [MHz]:	2479.9
Max. in-band Level [dBm/100 kHz]:	0.3
Out-of-band Limit [dBm/100 kHz]:	-19.7



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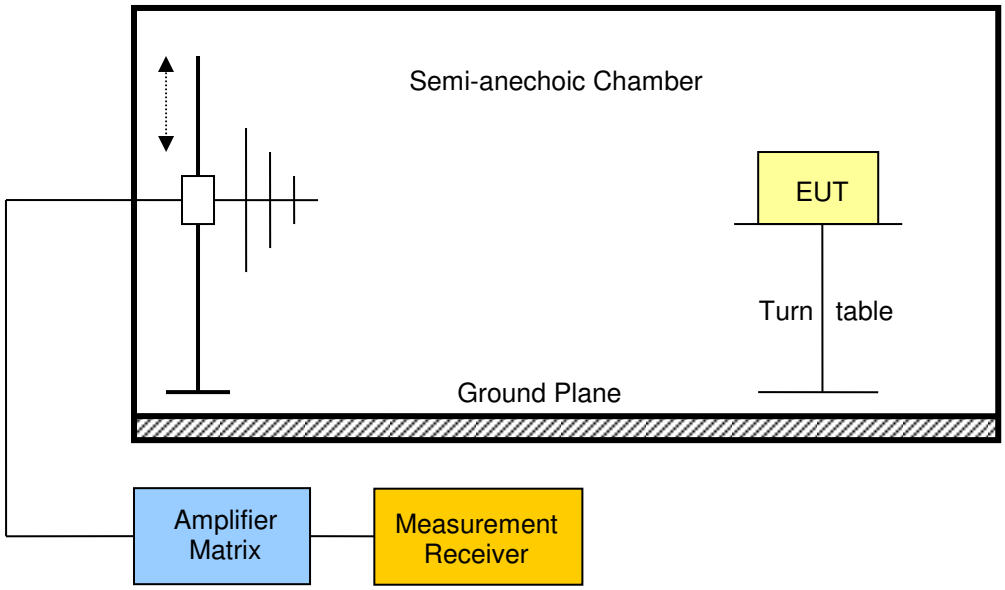
3.8 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. to FCC 47 CFR 15.247 / ISED RSS-247				**Verdict: PASS**
Test according referenced standards		Reference Method		
		FCC 15.247(d) / ISED RSS-247 5.5		
Test according to measurement reference		Reference Method		
		ANSI C63.10		
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

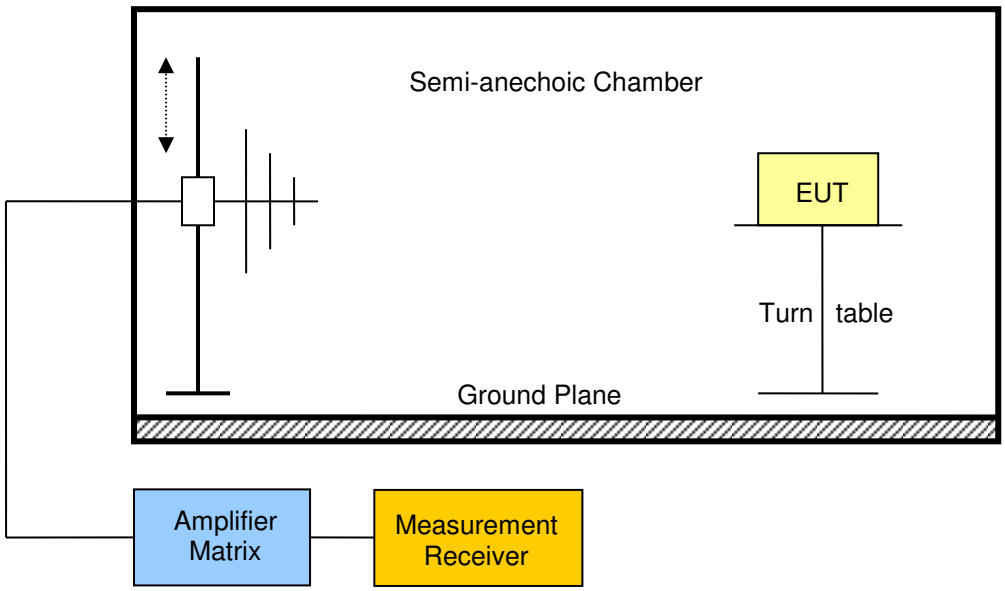
Test results

Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
0	2402	Transmit	2390	66.64	pk	hor	74.00	3	-07.36
0	2402	Transmit	2390	40.28	RMS	hor	54.00	3	-13.72
0	2402	Transmit	2390	59.71	pk	ver	74.00	3	-14.29
0	2402	Transmit	2390	38.94	RMS	ver	54.00	3	-15.06
0	2402	Transmit	4800	45.01	pk	hor	74.00	3	-28.99
0	2402	Transmit	4800	42.79	pk	ver	74.00	3	-31.21
19	2440	Transmit	4880	45.61	pk	hor	74.00	3	-28.39
19	2440	Transmit	4880	42.93	pk	ver	74.00	3	-31.07
19	2440	Transmit	7320	50.61	pk	hor	74.00	3	-23.39
19	2440	Transmit	7320	46.32	pk	ver	74.00	3	-27.68
39	2480	Transmit	2483.5	73.67	pk	hor	74.00	3	-0.33
39	2480	Transmit	2483.5	48.60	RMS	hor	54.00	3	-05.40
39	2480	Transmit	2483.5	70.02	pk	ver	74.00	3	-03.98
39	2480	Transmit	2483.5	43.29	RMS	ver	54.00	3	-10.71
39	2480	Transmit	4960	42.03	pk	hor	74.00	3	-31.97
39	2480	Transmit	4960	40.90	pk	ver	74.00	3	-33.10
39	2480	Transmit	7440	49.40	pk	hor	74.00	3	-24.60
39	2480	Transmit	7440	46.46	pk	ver	74.00	3	-27.54
39	2480	Transmit	12390	49.66	pk	hor	74.00	3	-24.34
39	2480	Transmit	12390	49.28	pk	ver	74.00	3	-24.72

Comments: * Physical distance between EUT and measurement antenna.

3.9 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. to ISED RSS-247				**Verdict: PASS**
Test according referenced standards	Reference Method			
	ISED RSS-247 3.1			
Test according to measurement reference	Reference Method			
	ANSI C63.10			
Test frequency range	Tested frequencies			
	30 MHz – 5th 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	34.56	38.00	ver	pk	40.00	-2.03 dB

Comments:
* Emission level corresponds to ambient noise floor

ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-07
Note:	

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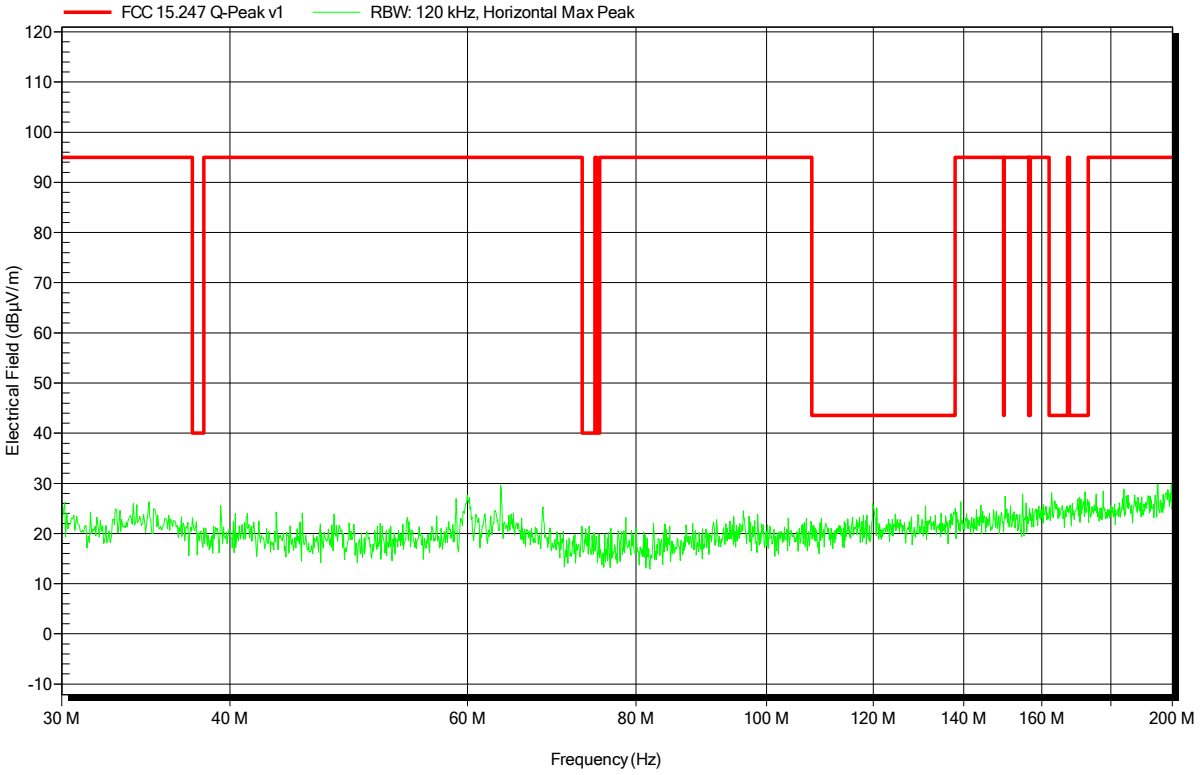

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-07
Note:	

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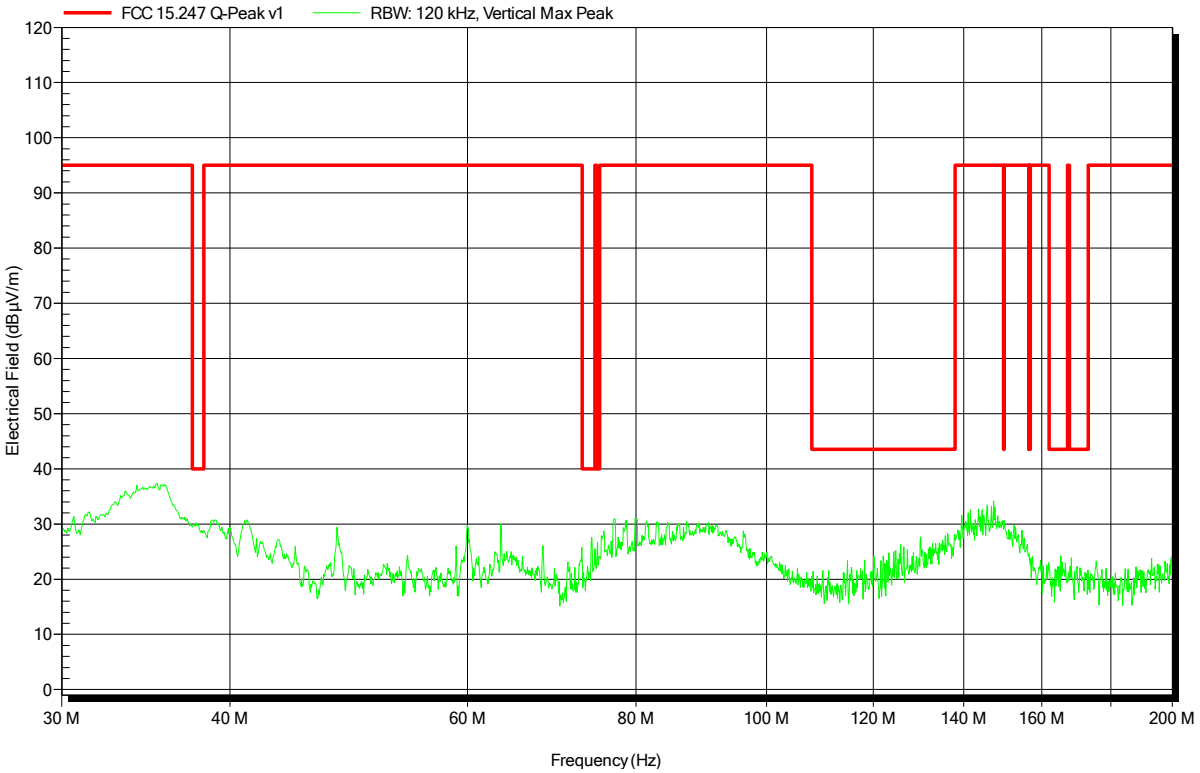

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-07
Note:	

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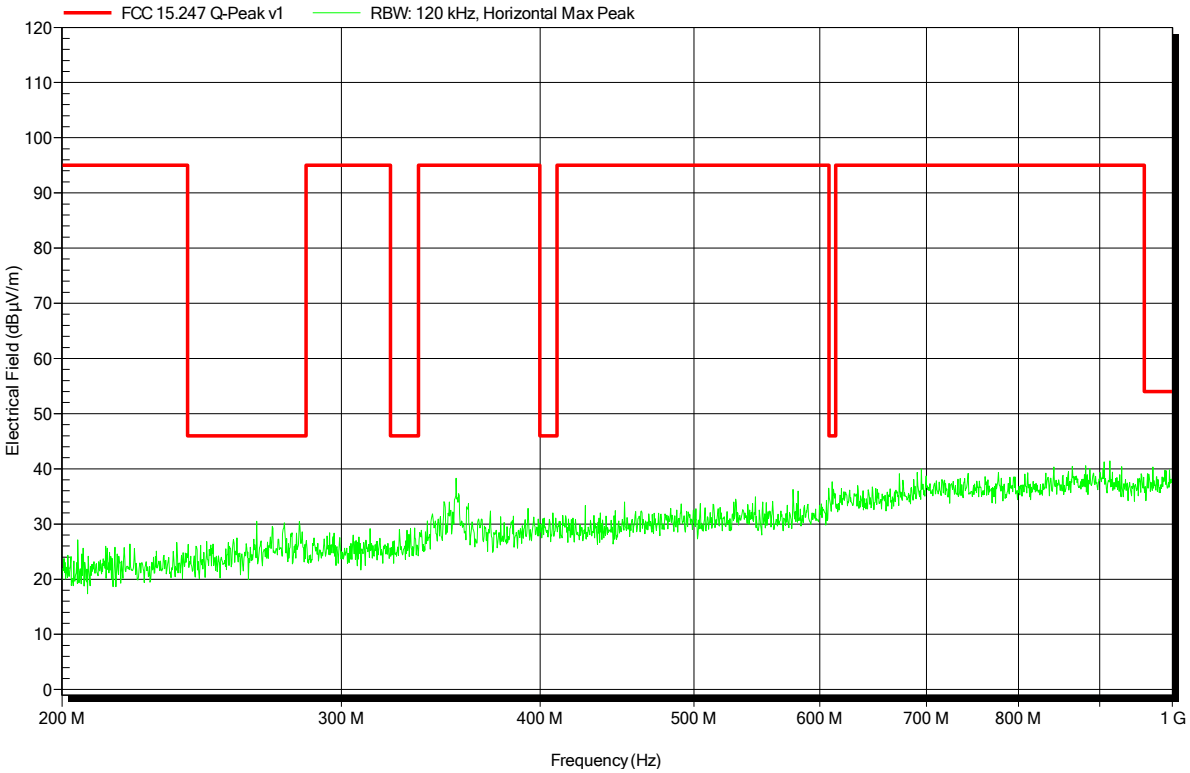

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-07
Note:	

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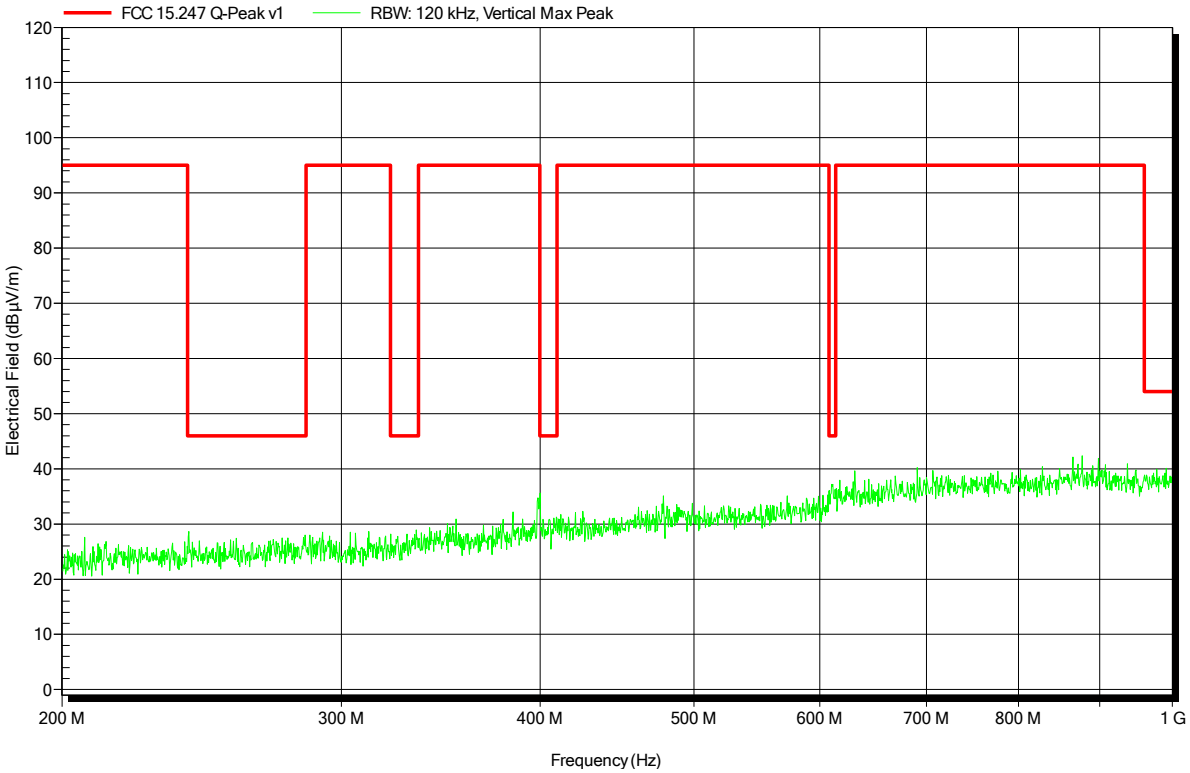

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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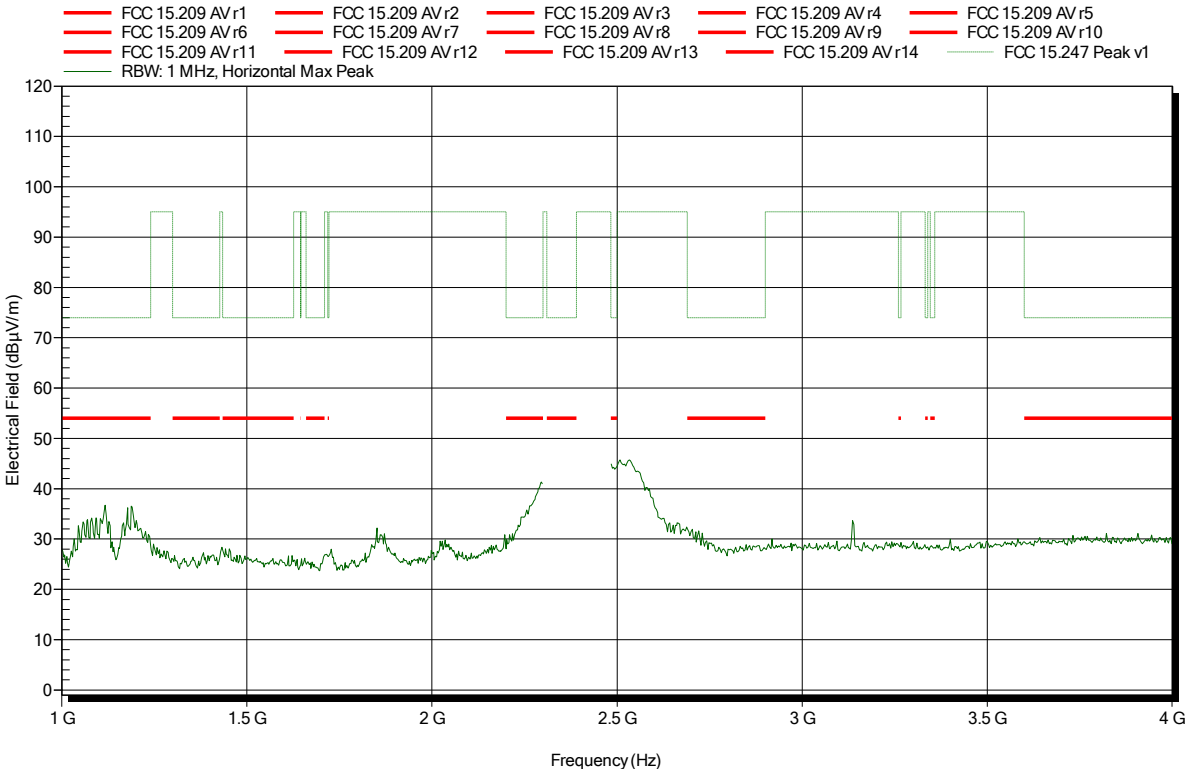

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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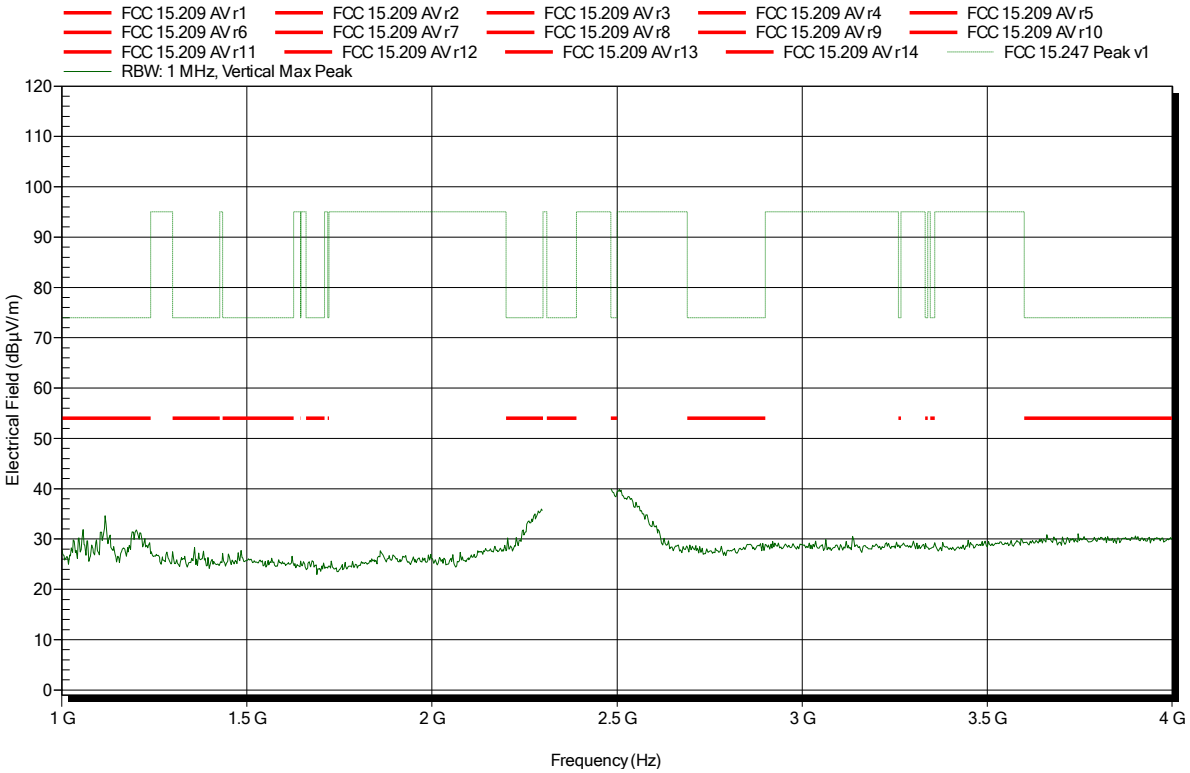

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	lower bandedge

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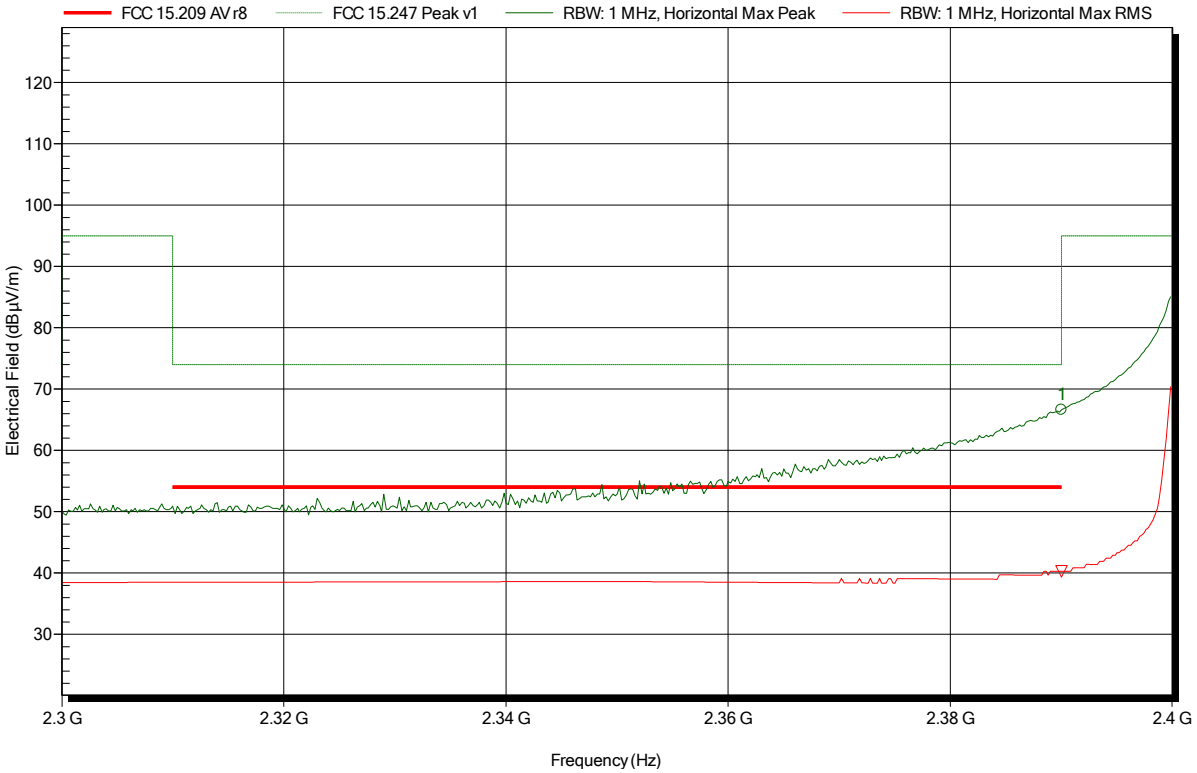

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.39 GHz	66.64 dBµV/m	74 dBµV/m	-7.36 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.39 GHz	40.28 dBµV/m	54 dBµV/m	-13.72 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	lower bandedge

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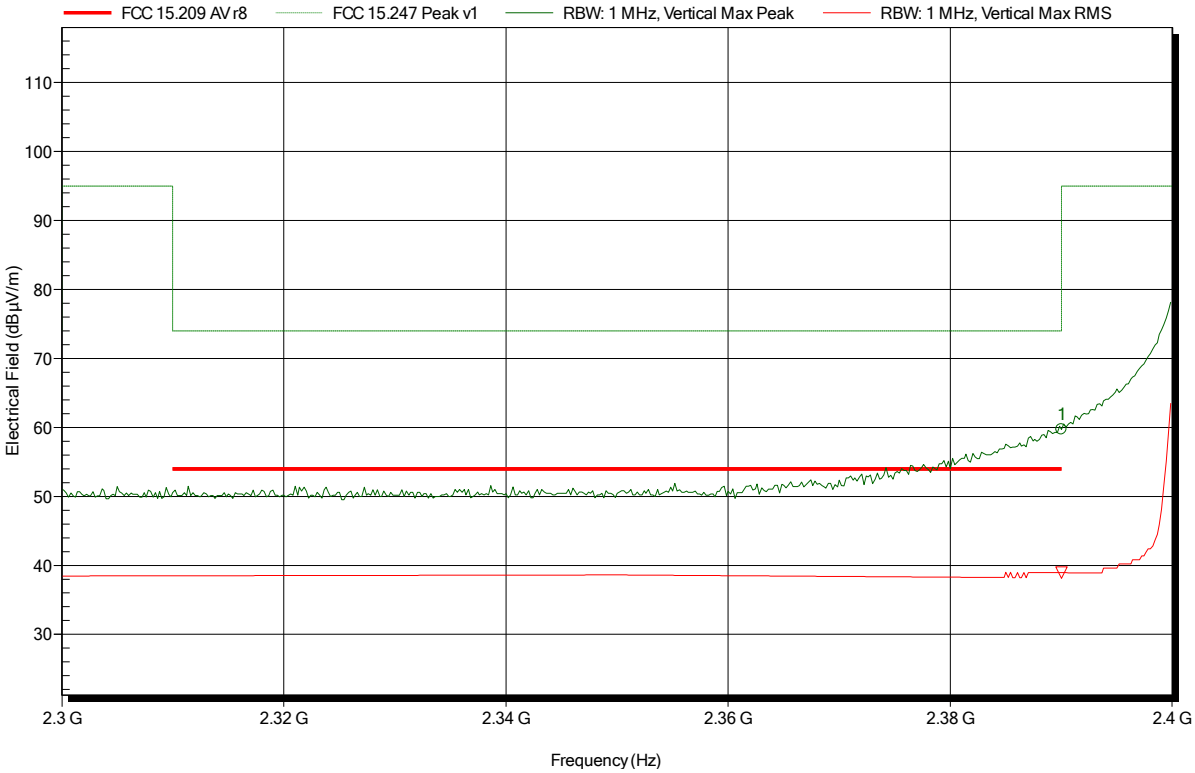

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.39 GHz	59.71 dBµV/m	74 dBµV/m	-14.29 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.39 GHz	38.94 dBµV/m	54 dBµV/m	-15.06 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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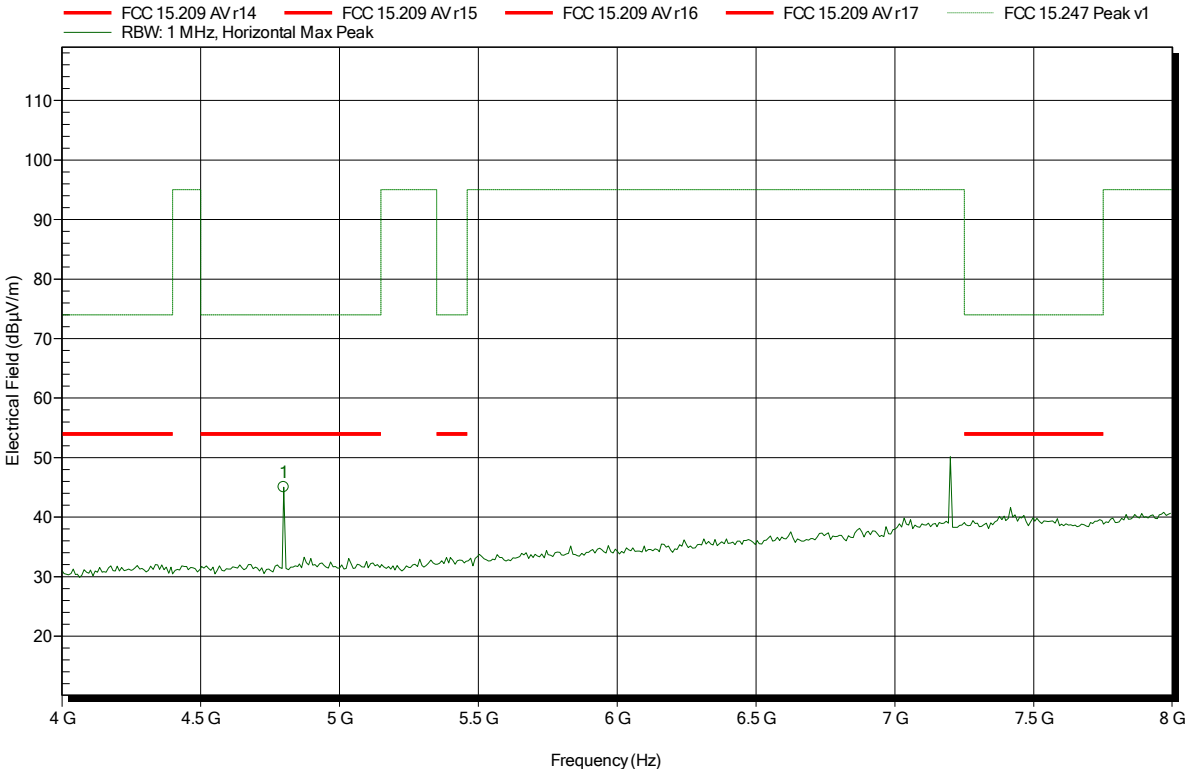


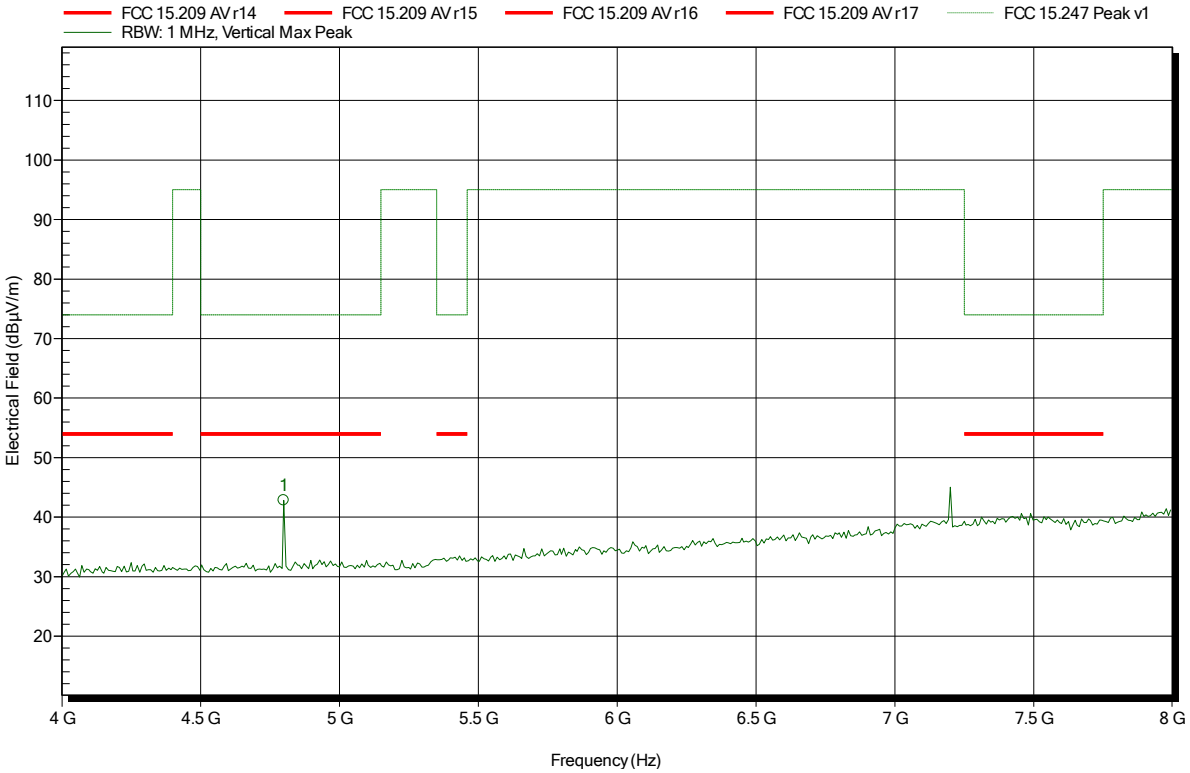
Frequency	Peak	Peak Limit	Peak Difference	Status
4.8 GHz	45.01 dBµV/m	74 dBµV/m	-28.99 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

Index 2



Frequency	Peak	Peak Limit	Peak Difference	Status
4.8 GHz	42.79 dBµV/m	74 dBµV/m	-31.21 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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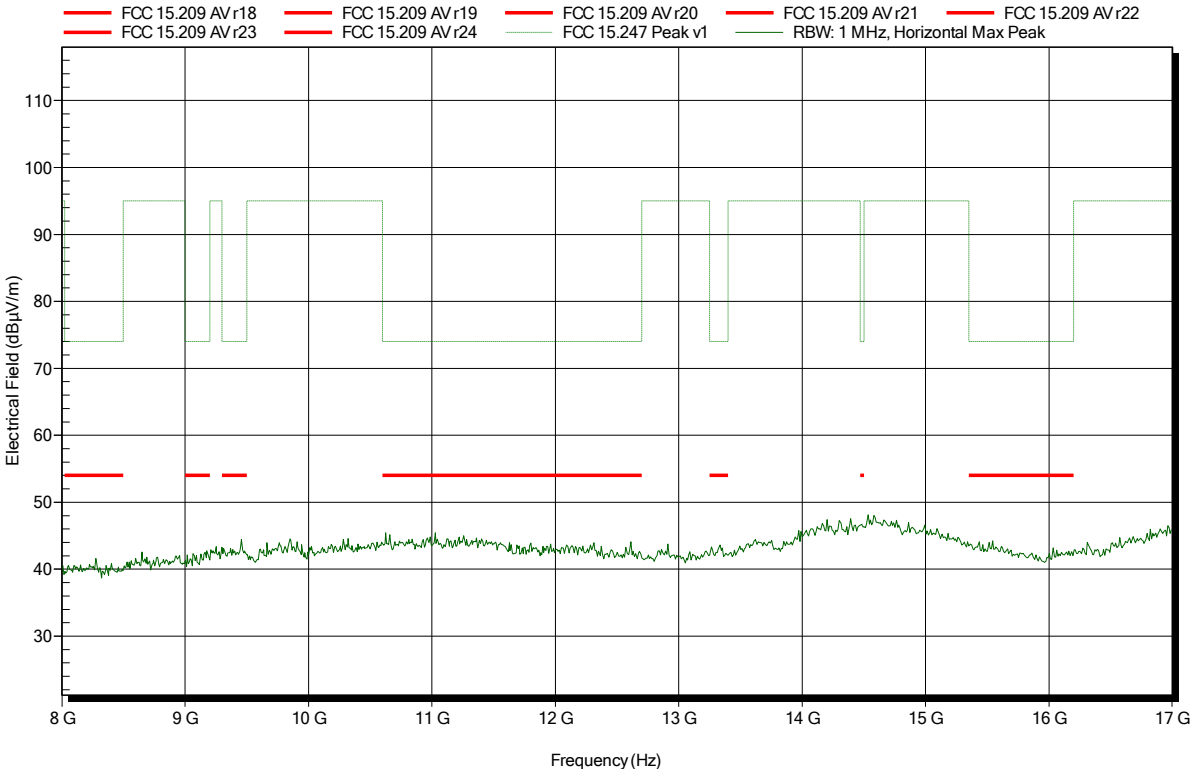
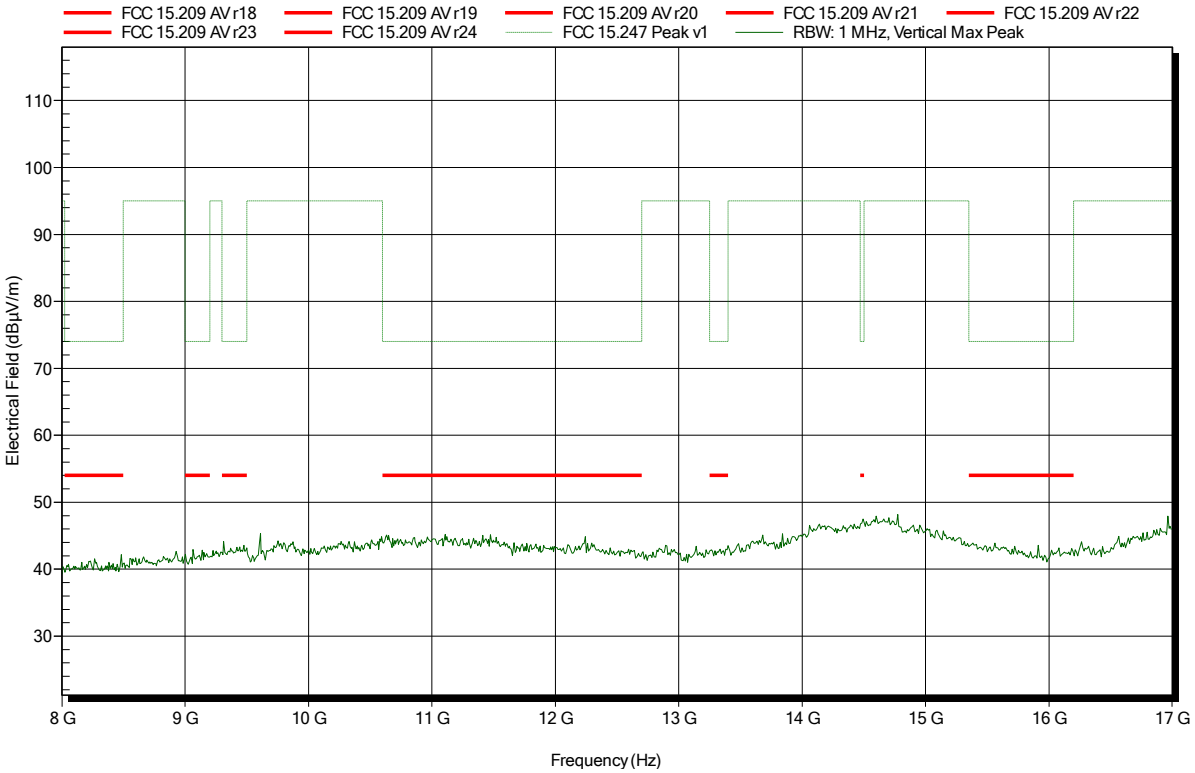


Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

Index 3



Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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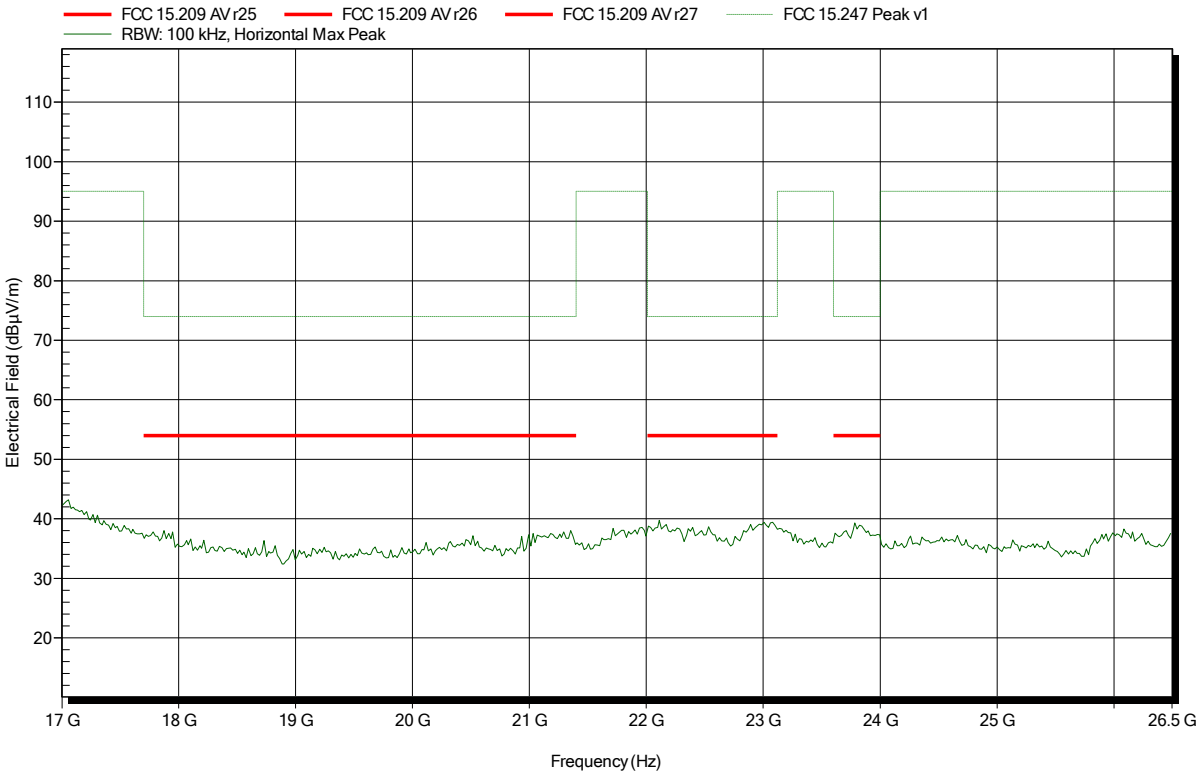

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2402 MHz
Test Date:	2016-10-06
Note:	

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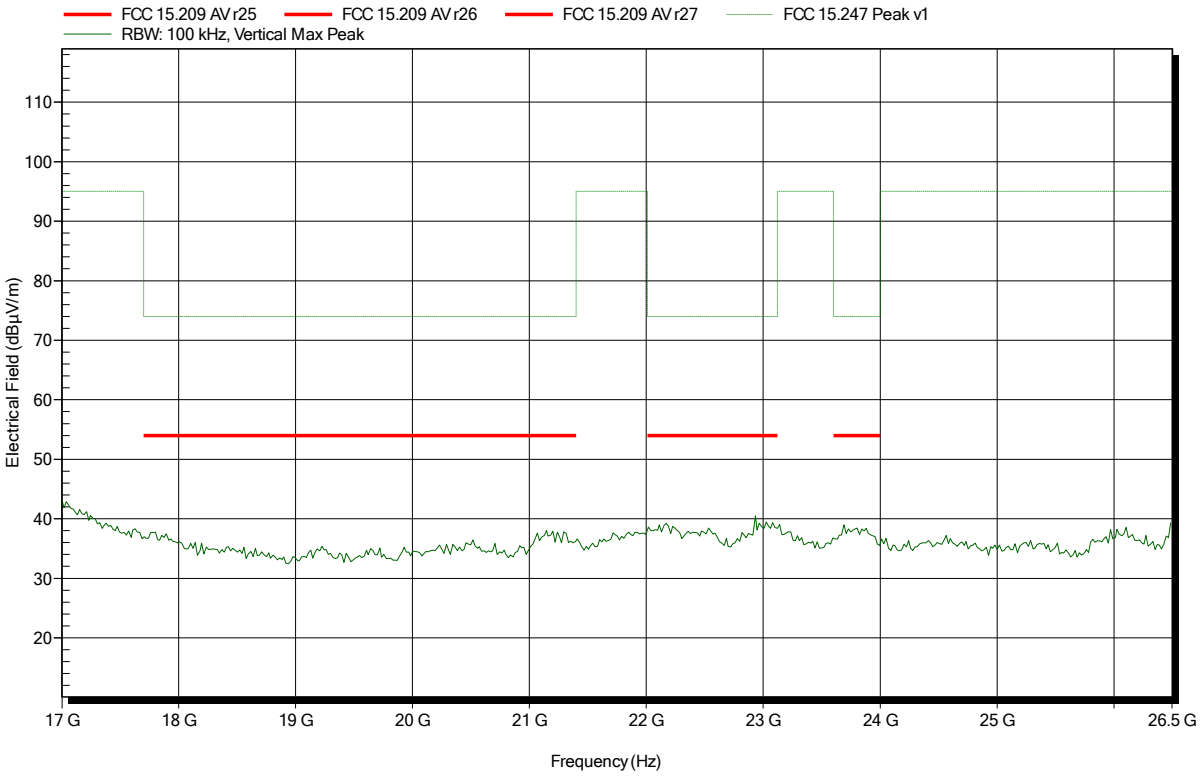

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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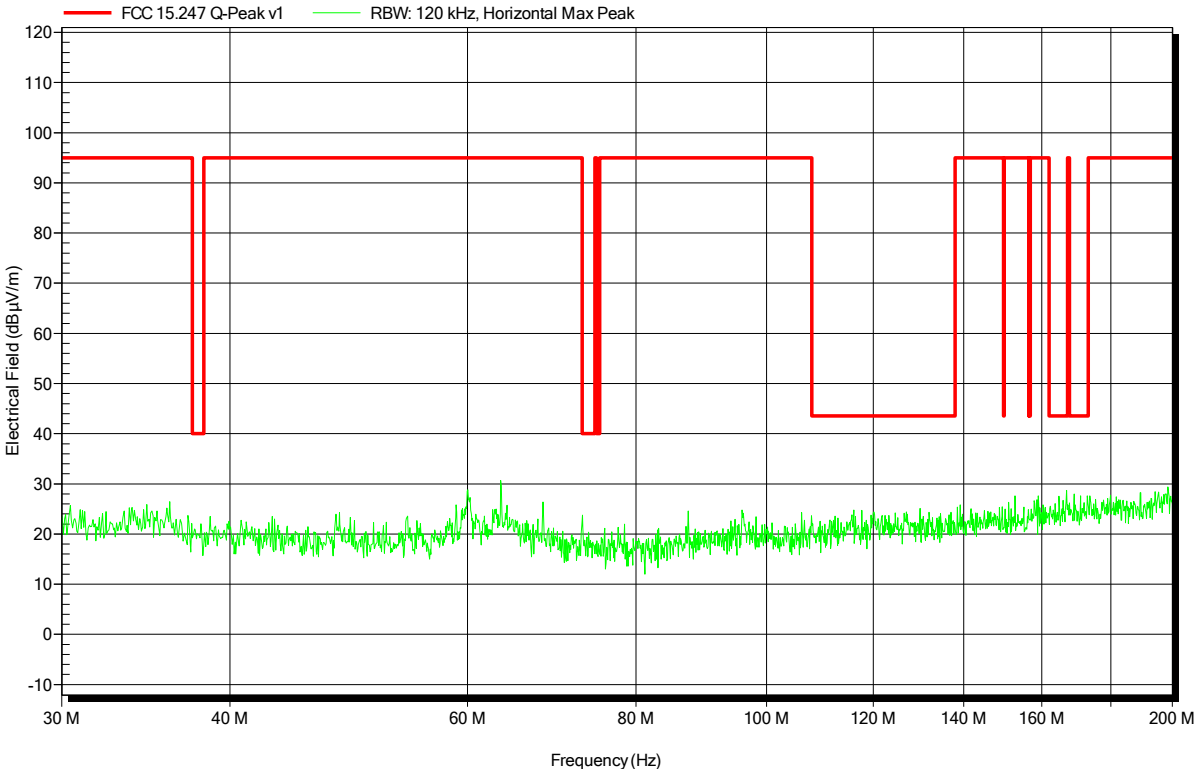

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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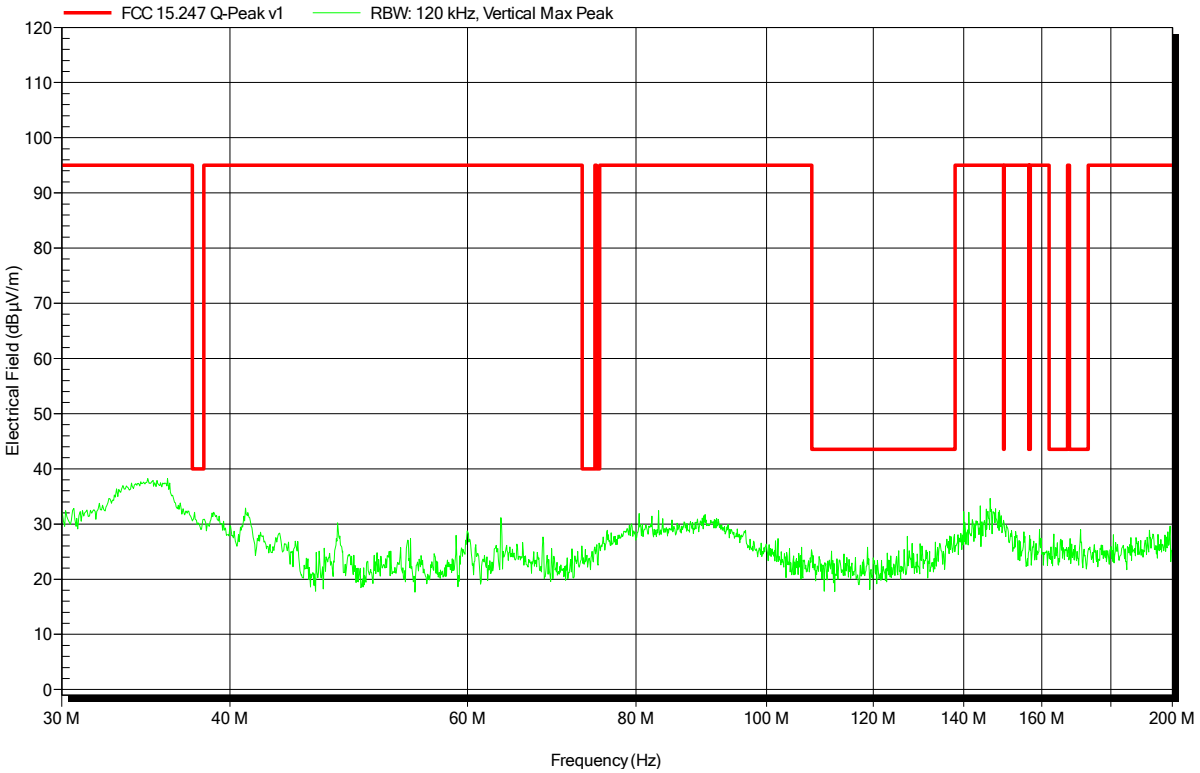

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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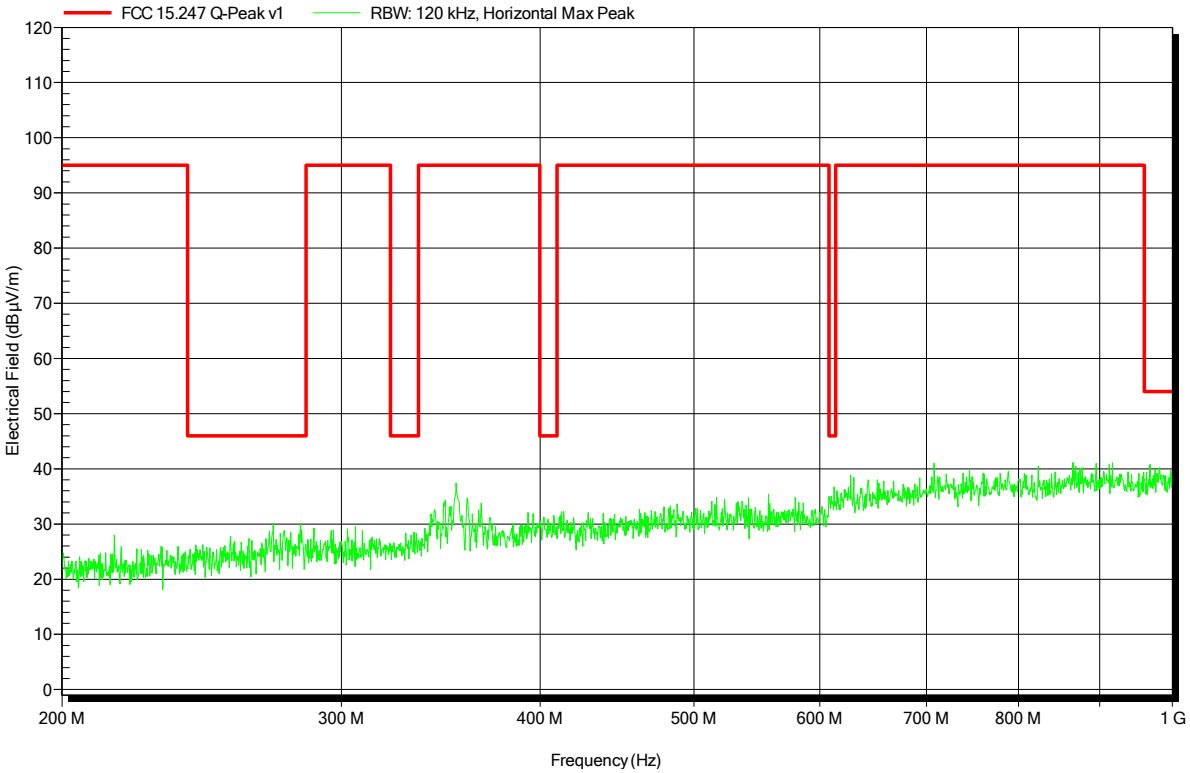

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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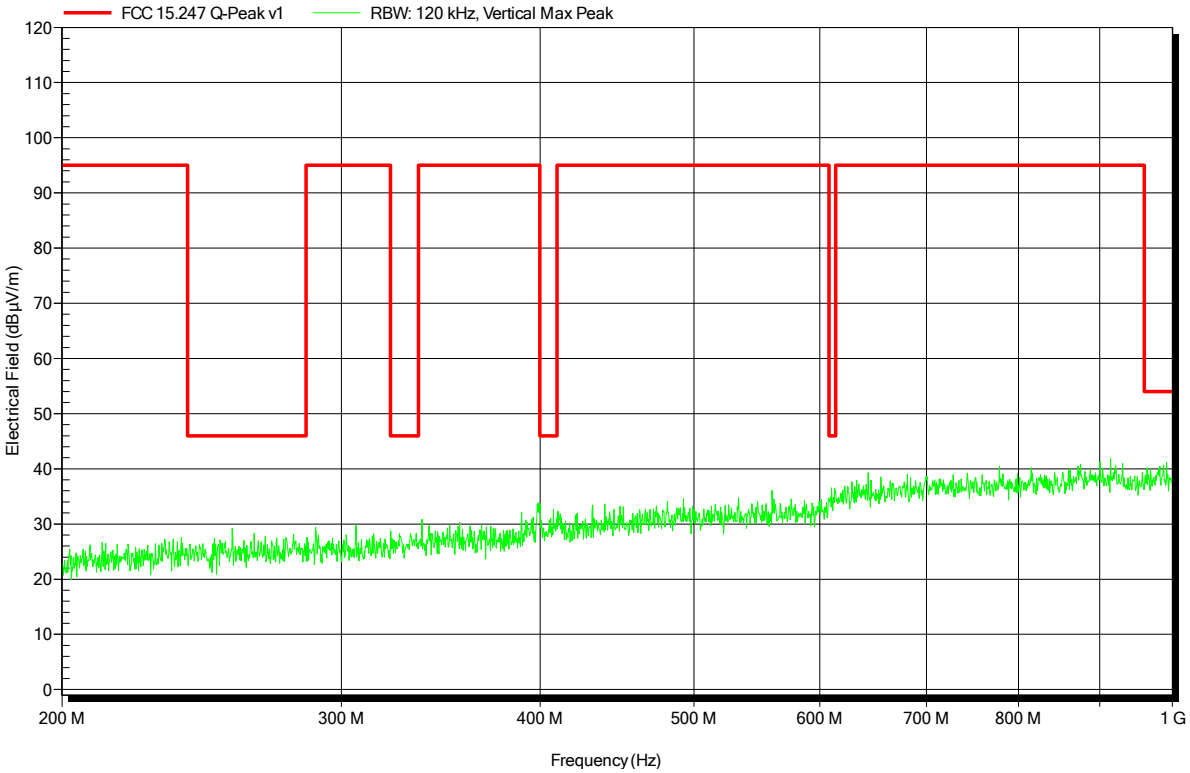

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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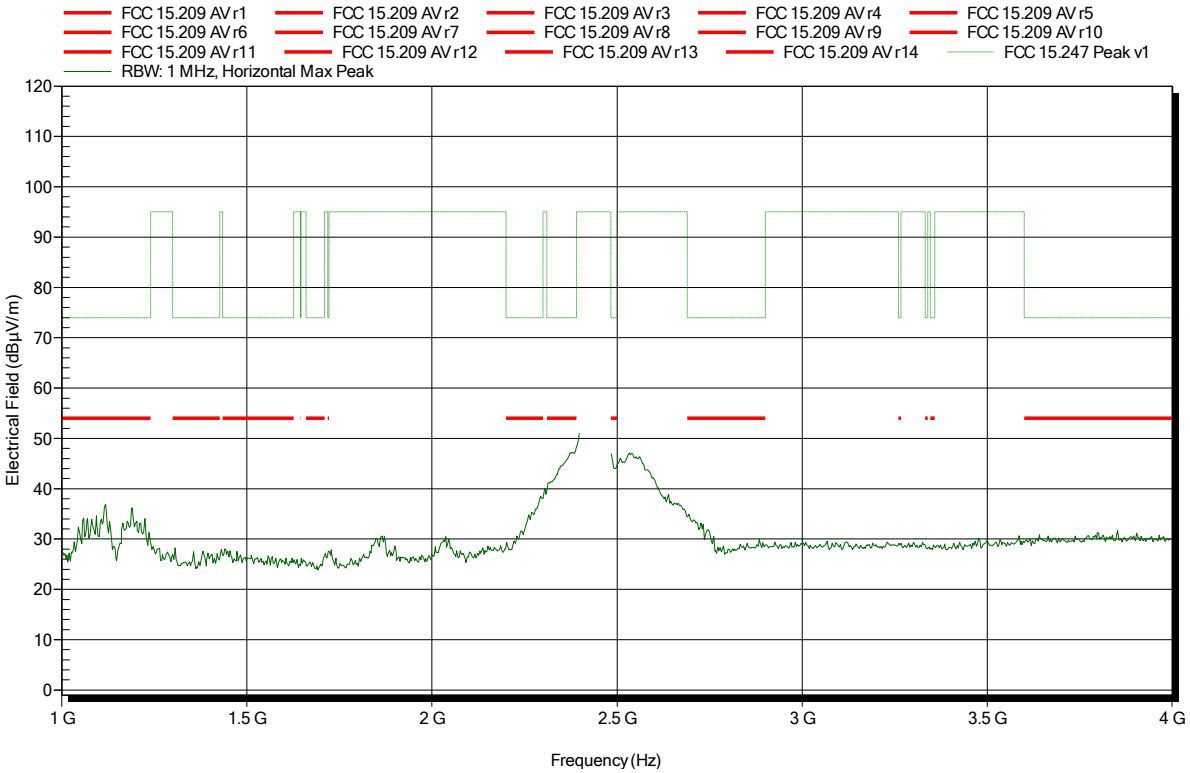

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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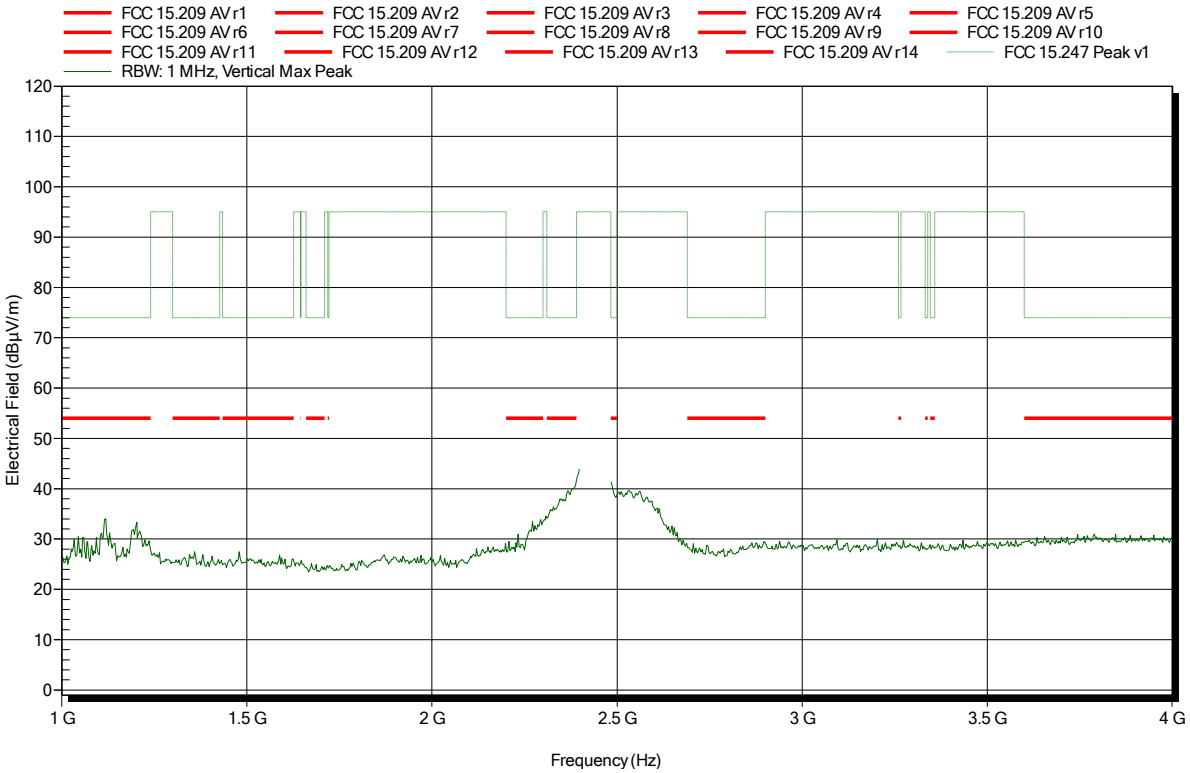

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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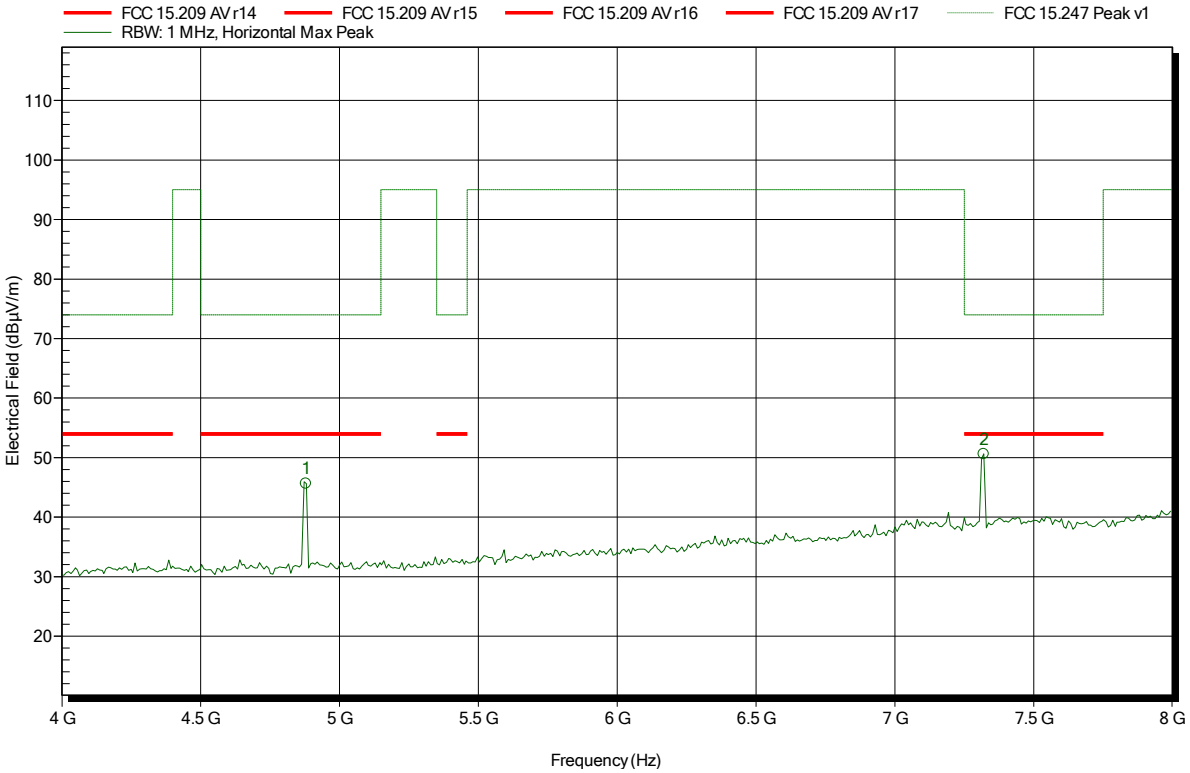

Frequency	Peak	Peak Limit	Peak Difference	Status
4.88 GHz	45.61 dBµV/m	74 dBµV/m	-28.39 dB	Pass
7.32 GHz	50.61 dBµV/m	74 dBµV/m	-23.39 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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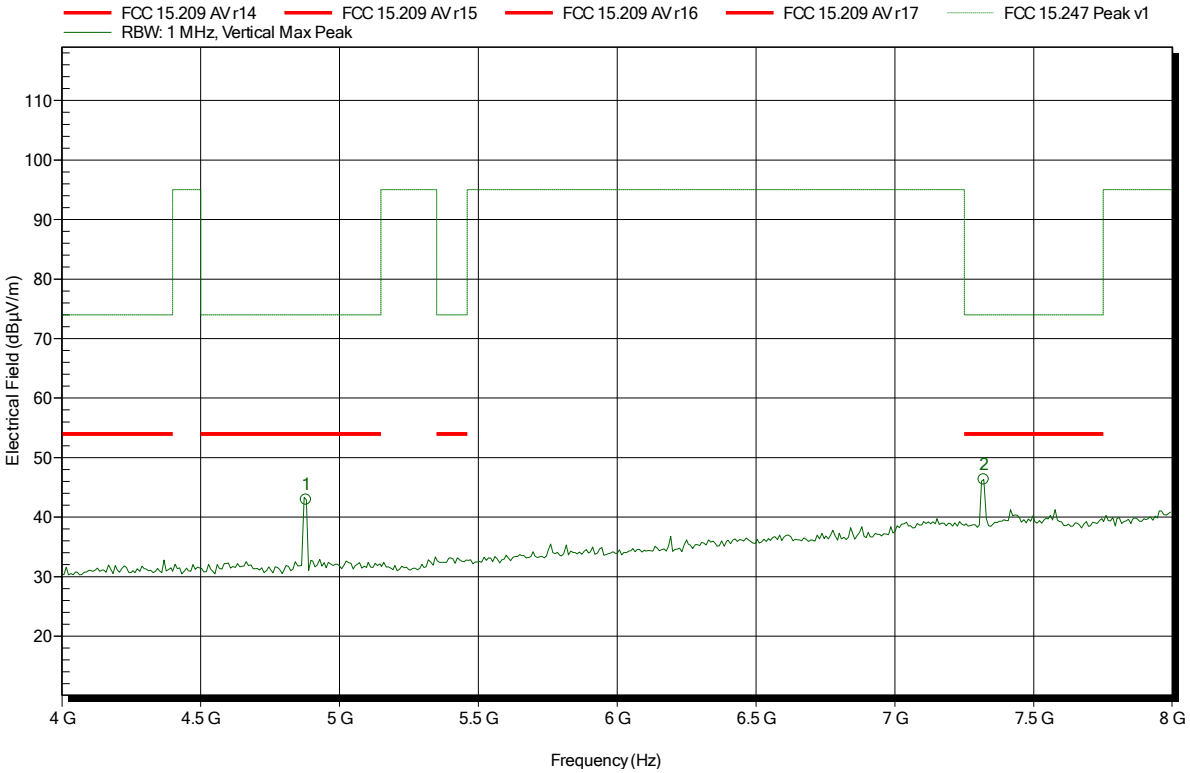

Frequency	Peak	Peak Limit	Peak Difference	Status
4.88 GHz	42.93 dBµV/m	74 dBµV/m	-31.07 dB	Pass
7.32 GHz	46.32 dBµV/m	74 dBµV/m	-27.68 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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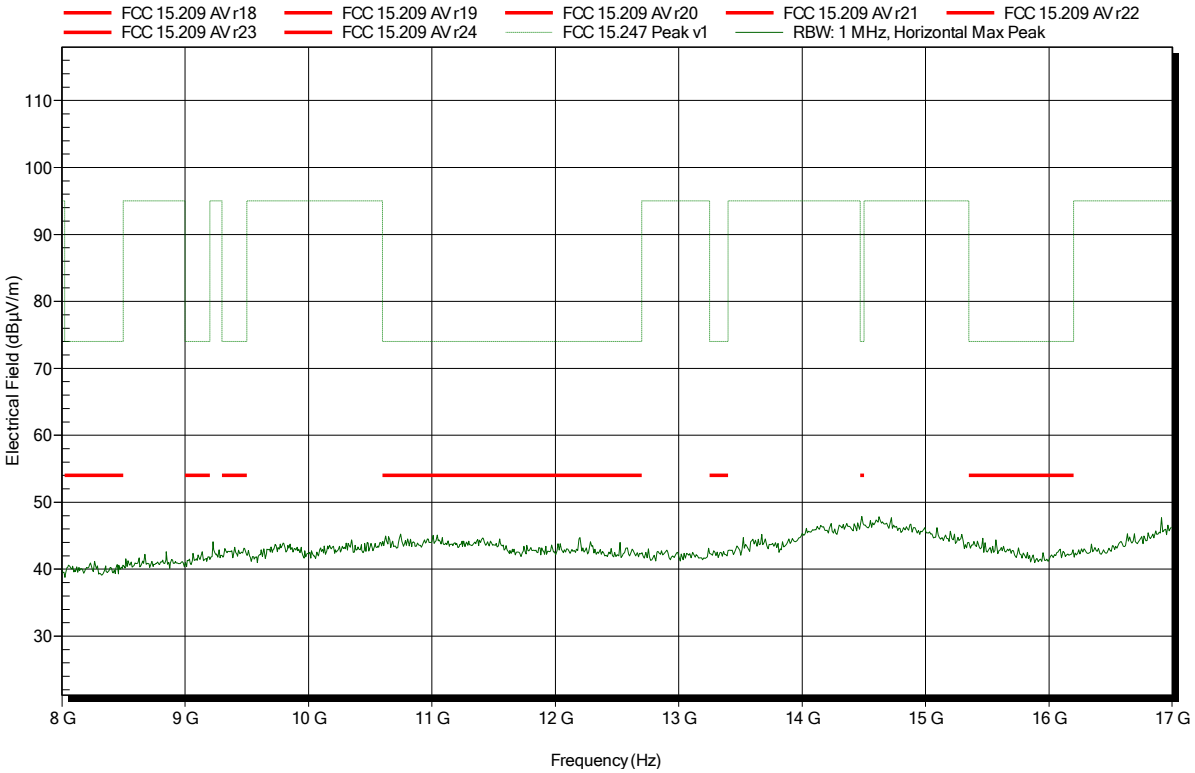

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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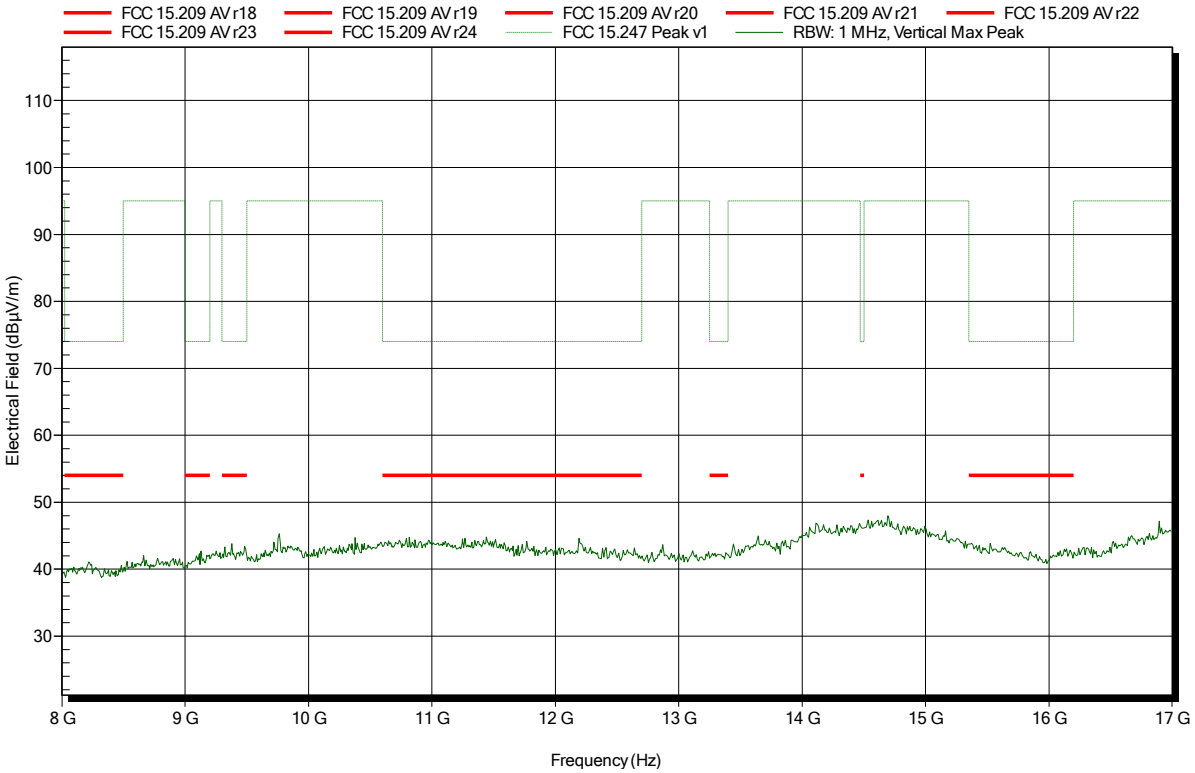

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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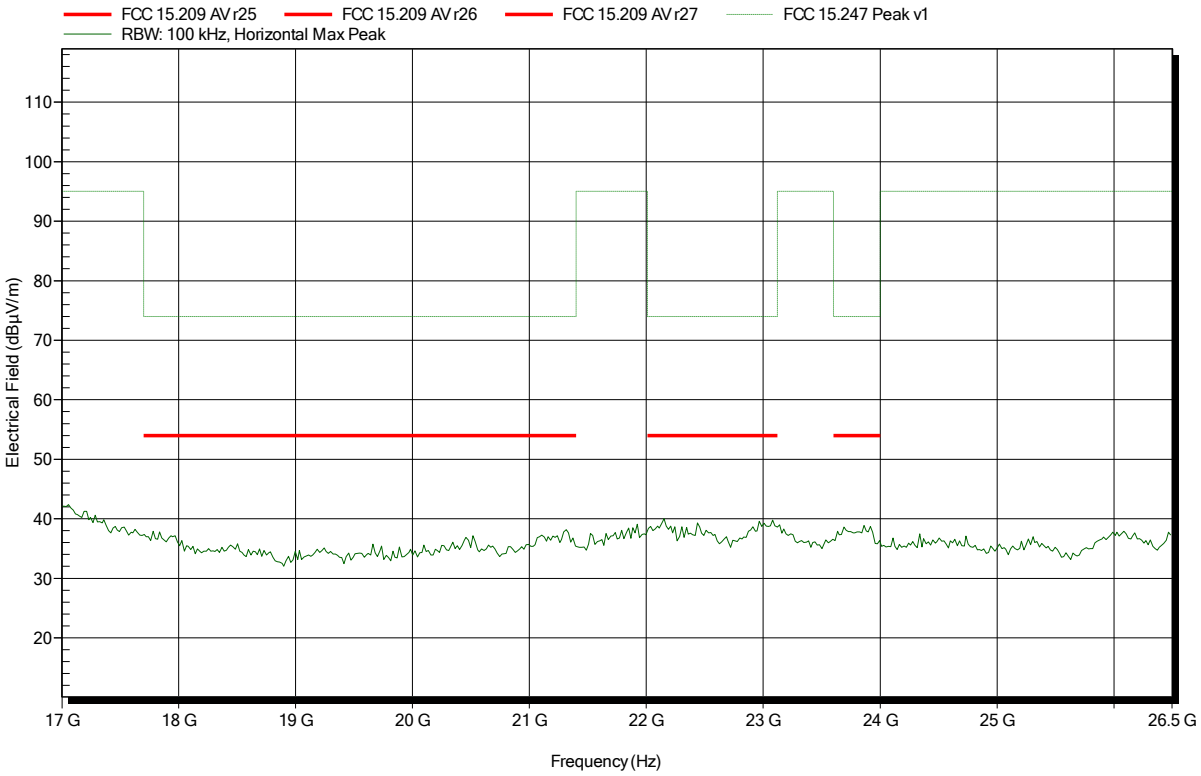

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2440 MHz
Test Date:	2016-10-06
Note:	

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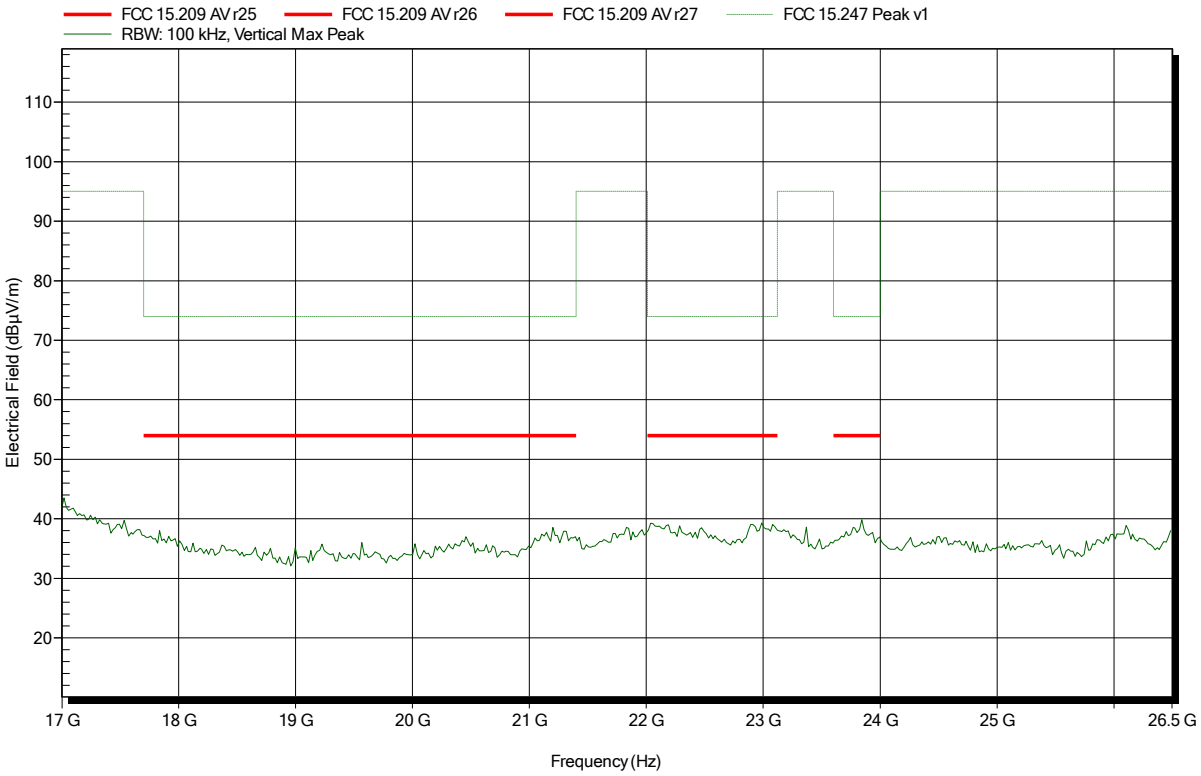

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-07
Note:	

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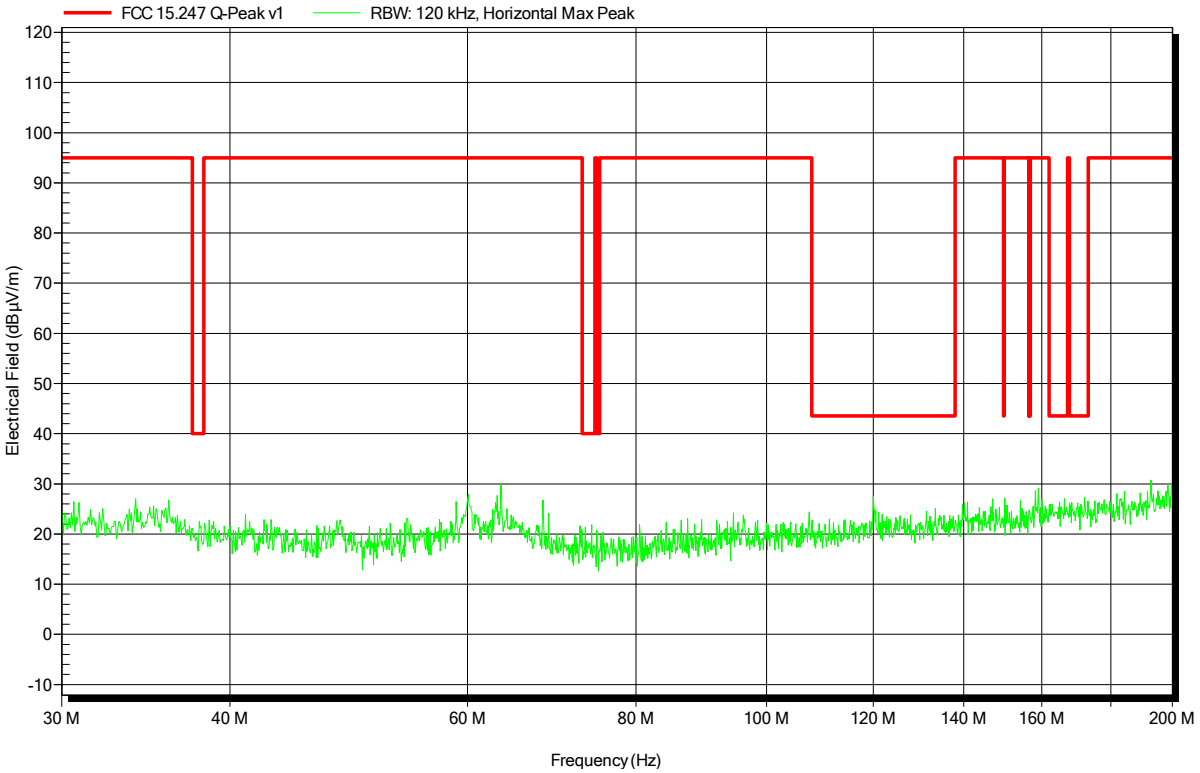

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-07
Note:	

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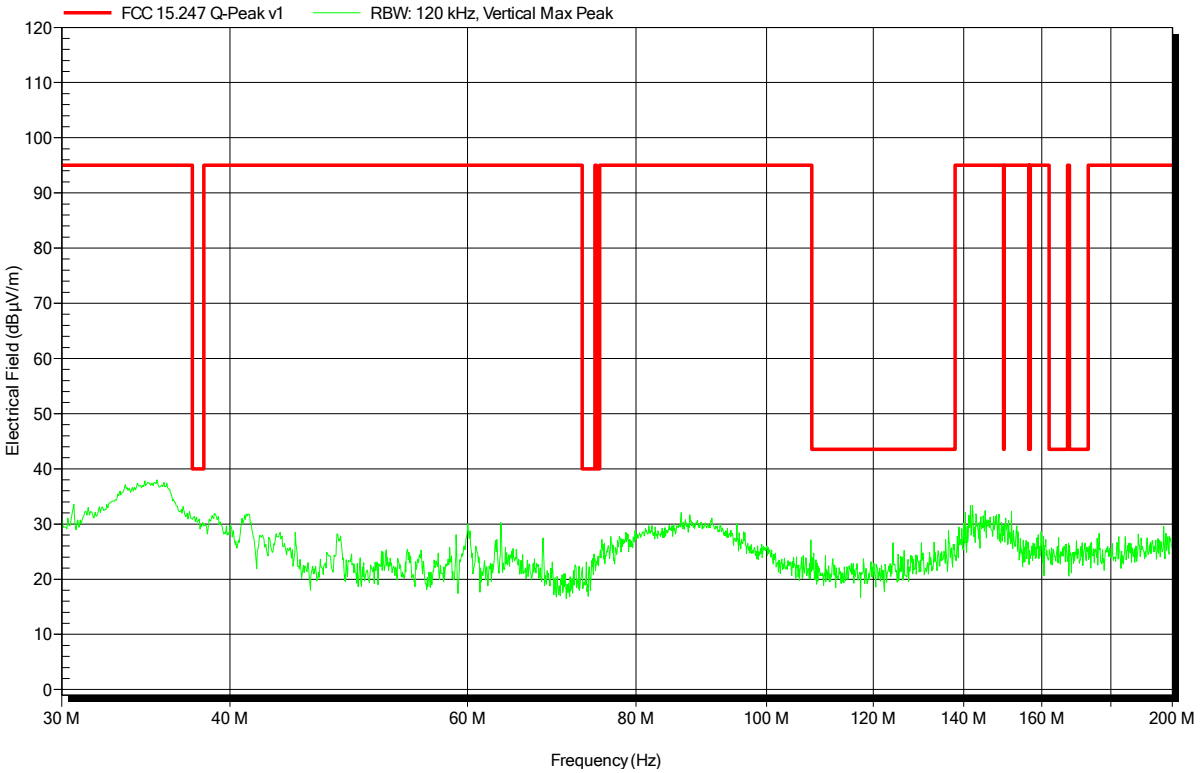

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-07
Note:	

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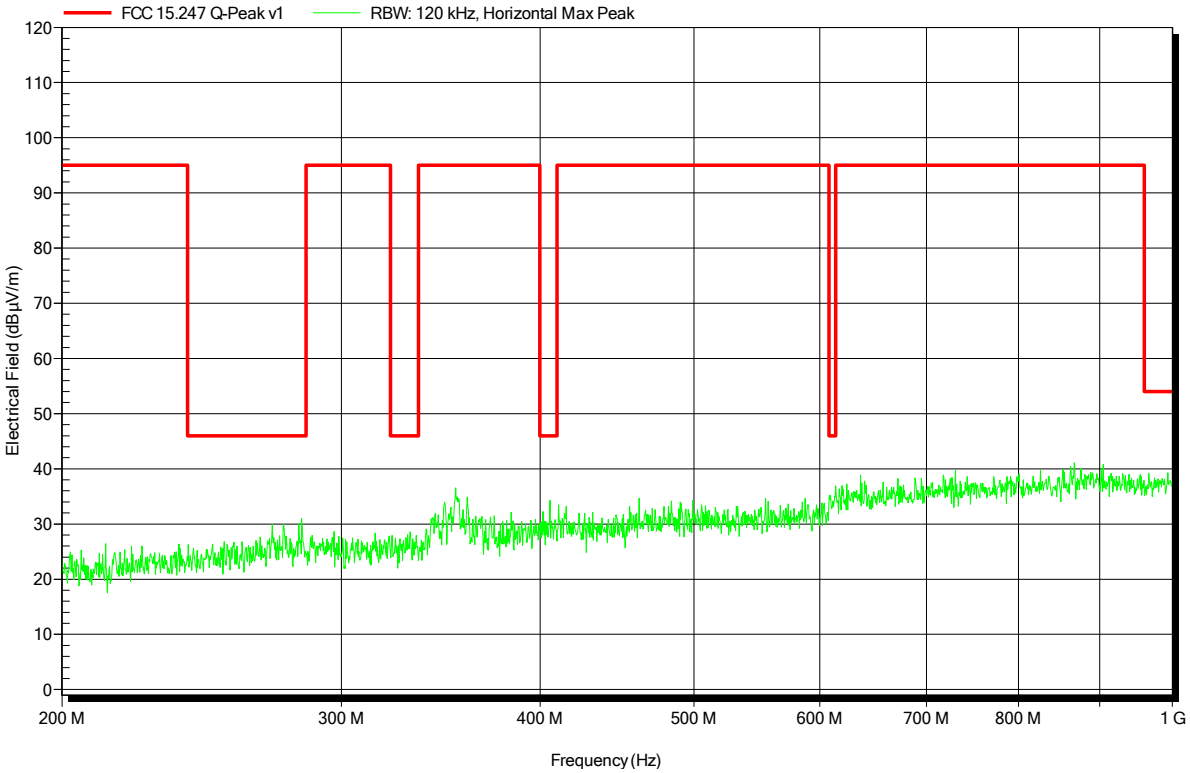

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-07
Note:	

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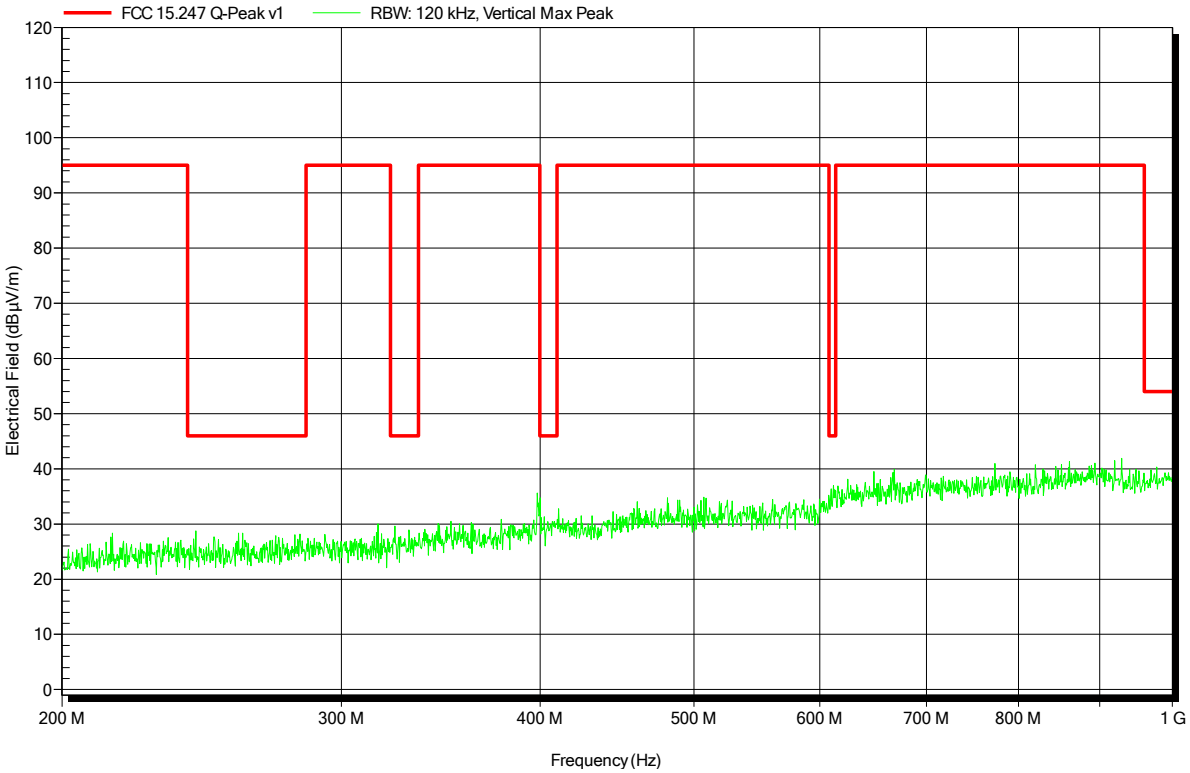

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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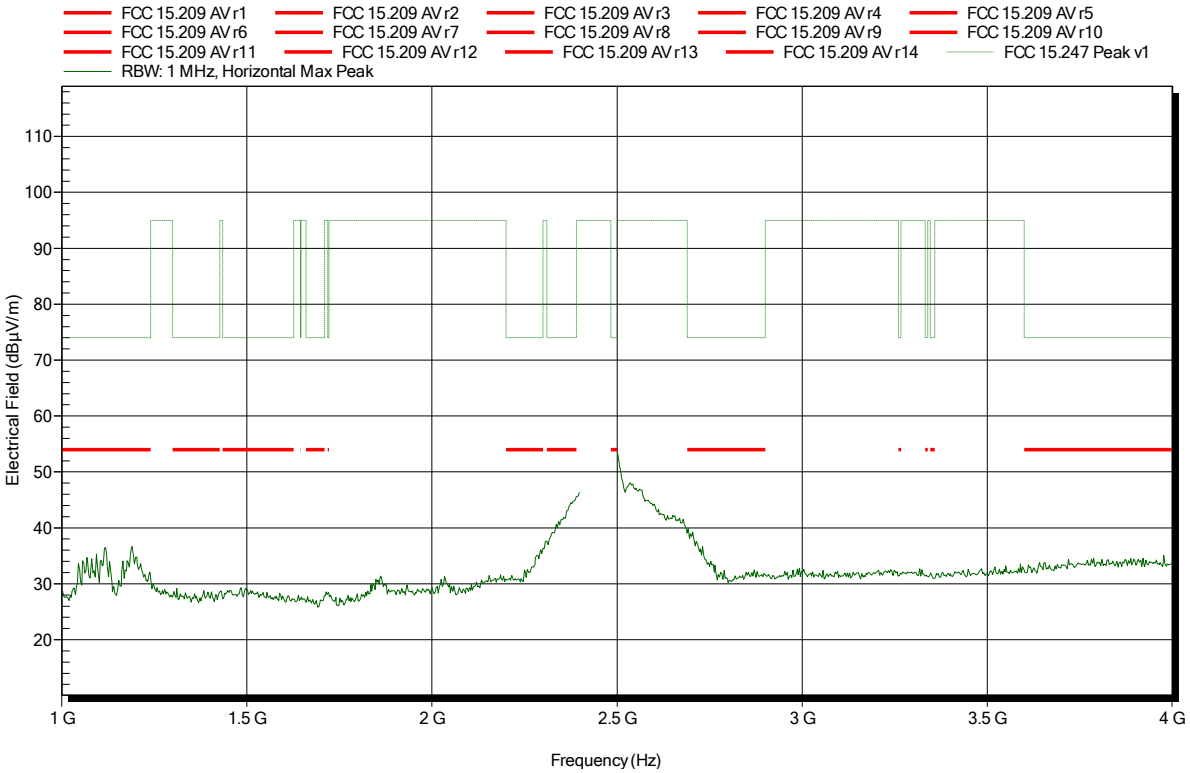

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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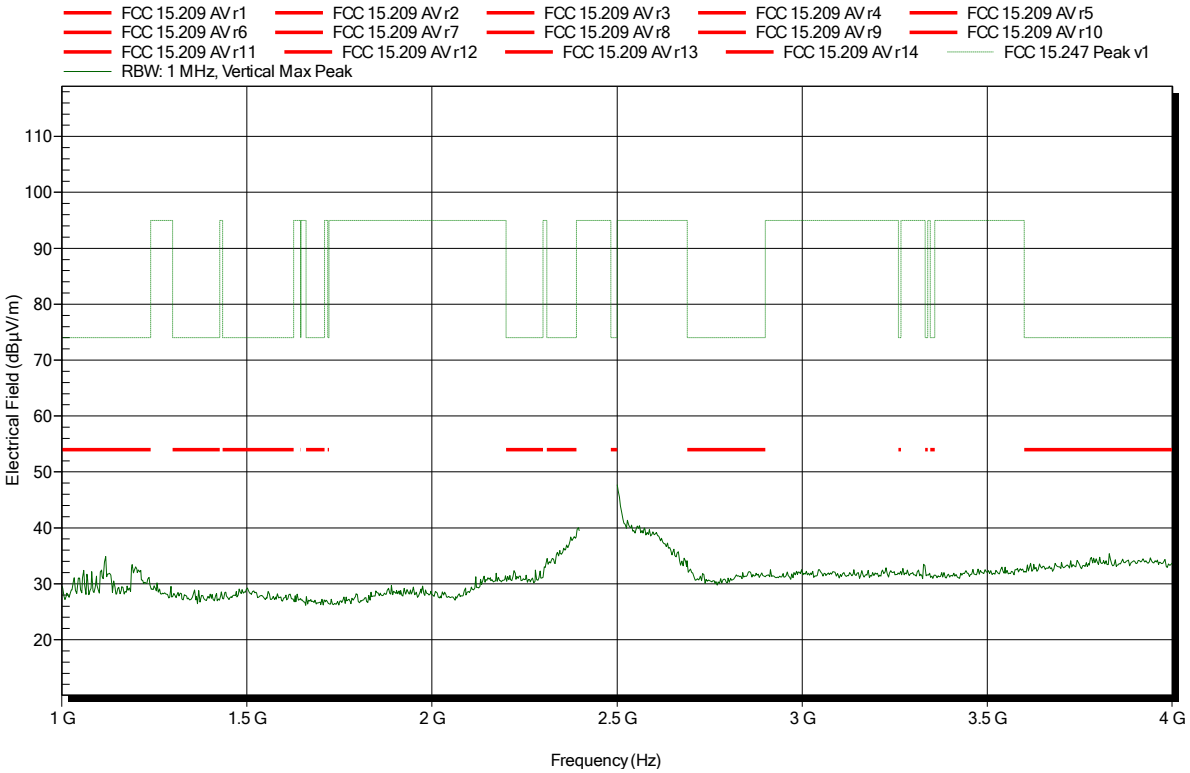

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	upper bandedge

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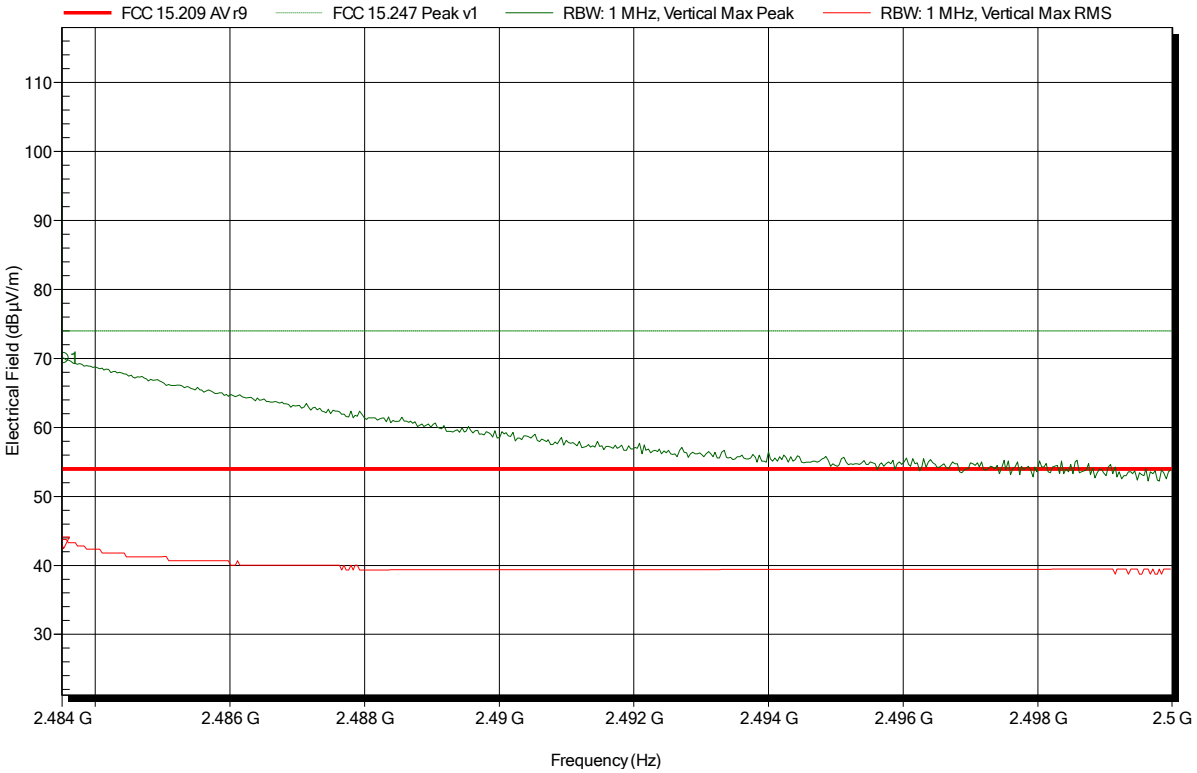

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4835 GHz	70.02 dBµV/m	74 dBµV/m	-3.98 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4835 GHz	43.29 dBµV/m	54 dBµV/m	-10.71 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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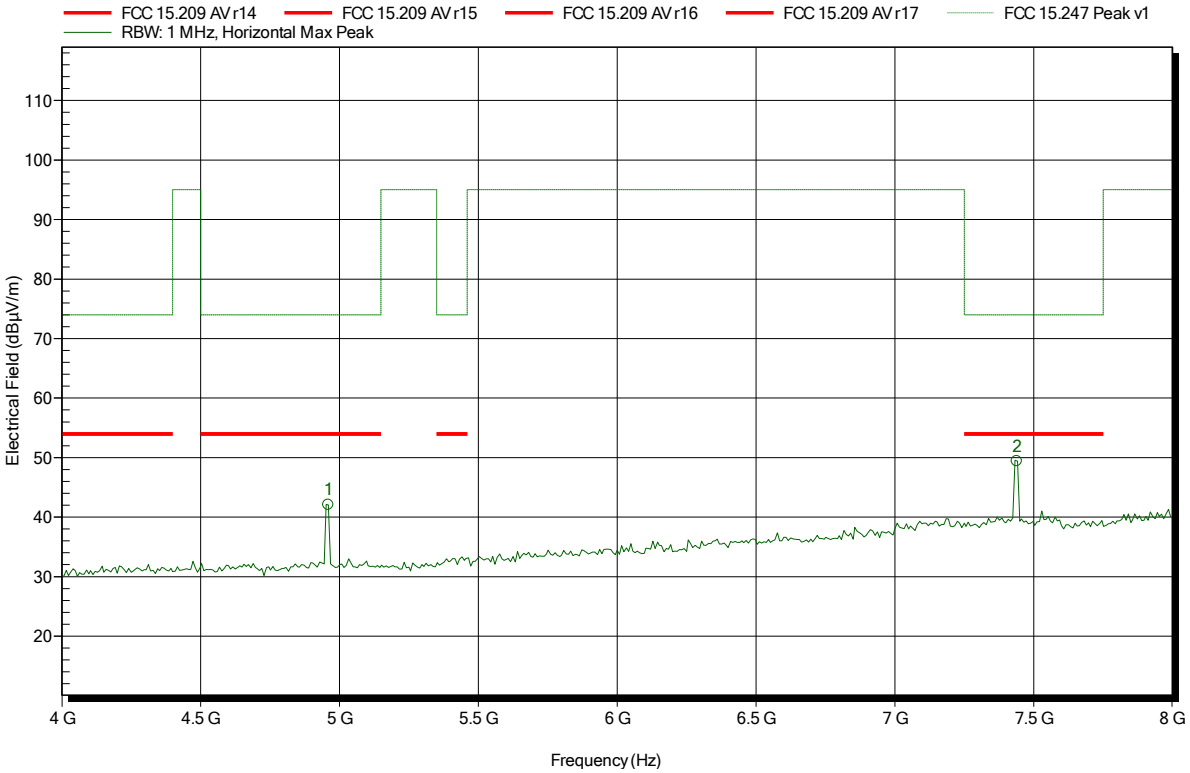

Frequency	Peak	Peak Limit	Peak Difference	Status
4.96 GHz	42.03 dBµV/m	74 dBµV/m	-31.97 dB	Pass
7.44 GHz	49.4 dBµV/m	74 dBµV/m	-24.6 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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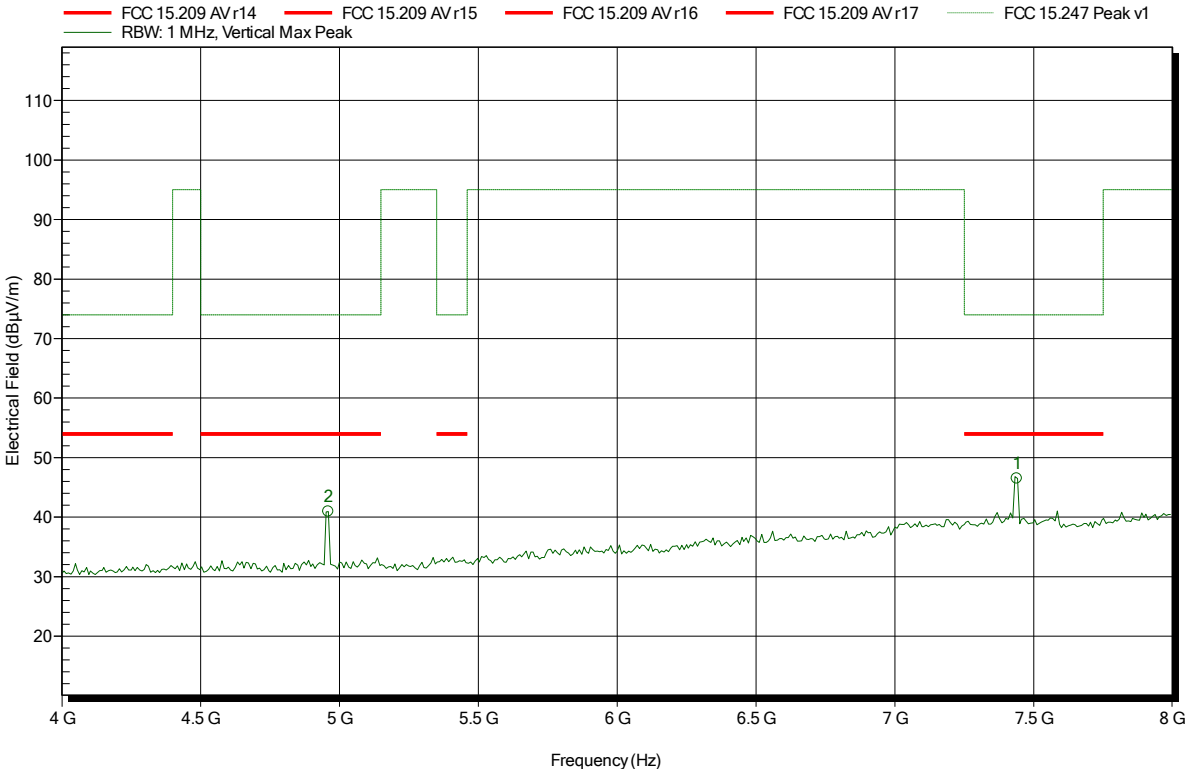

Frequency	Peak	Peak Limit	Peak Difference	Status
4.96 GHz	40.9 dBµV/m	74 dBµV/m	-33.1 dB	Pass
7.44 GHz	46.46 dBµV/m	74 dBµV/m	-27.54 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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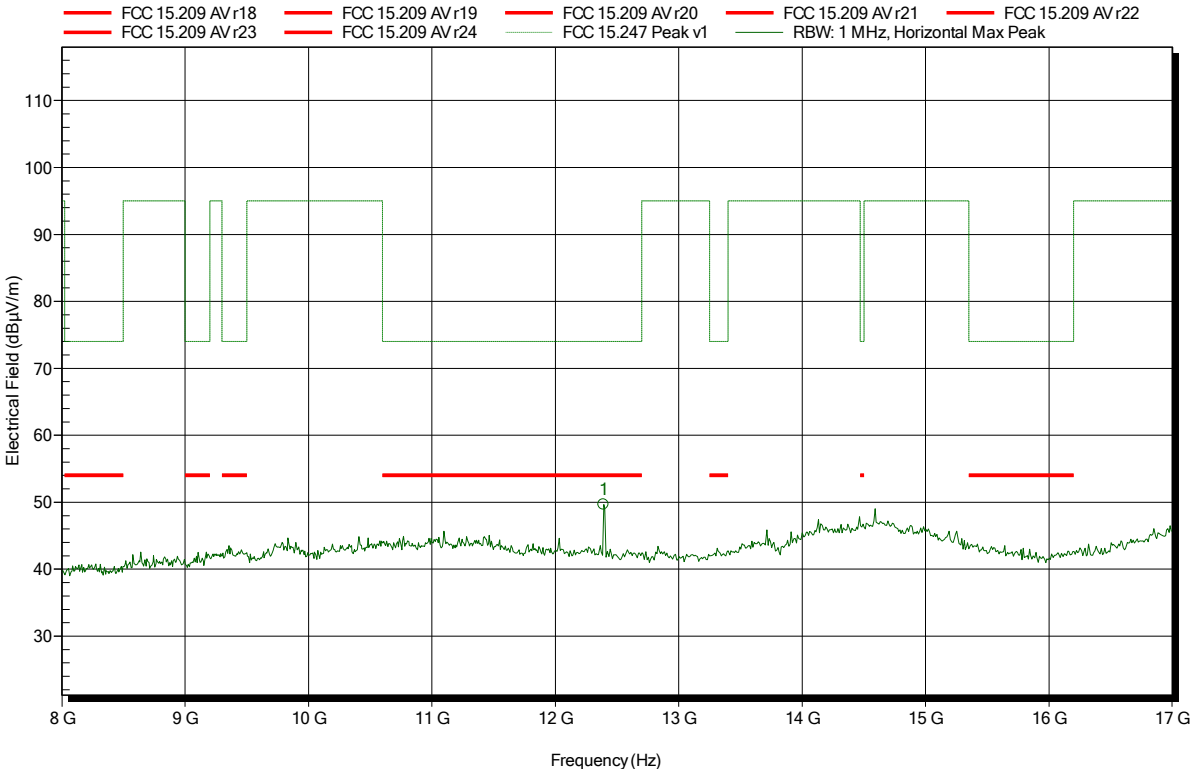

Frequency	Peak	Peak Limit	Peak Difference	Status
12.39 GHz	49.66 dBµV/m	74 dBµV/m	-24.34 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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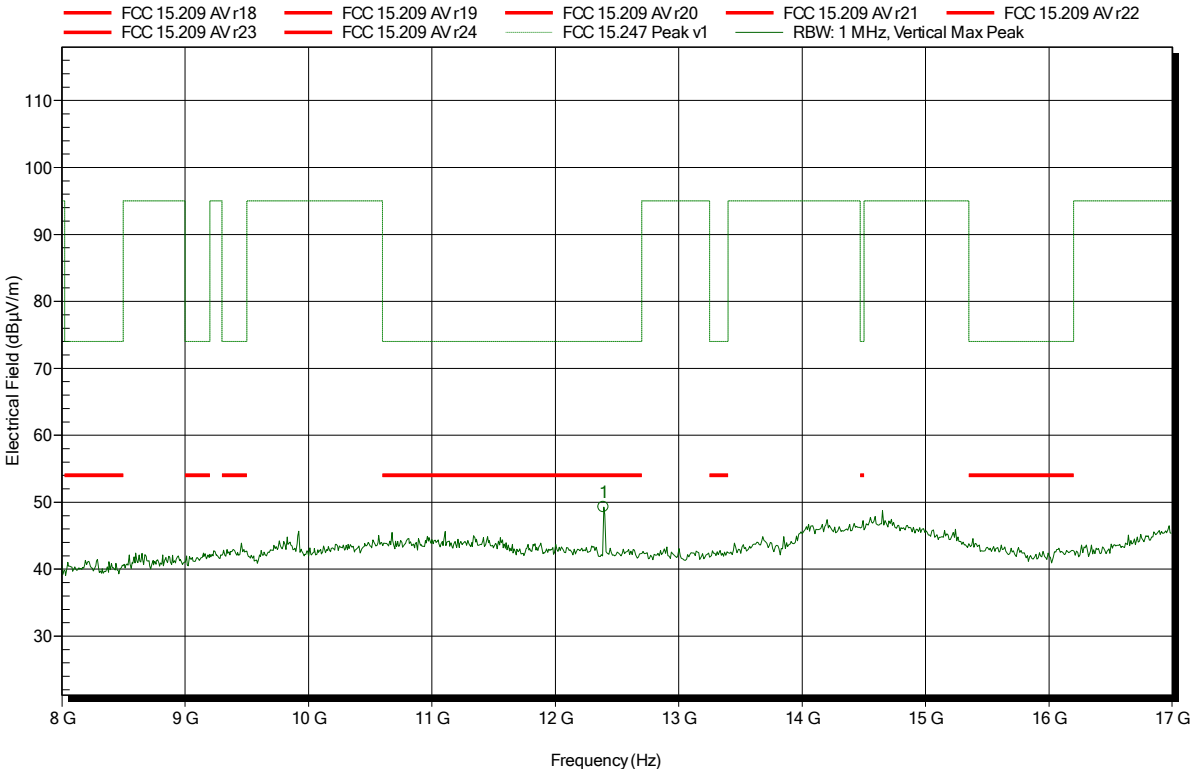

Frequency	Peak	Peak Limit	Peak Difference	Status
12.39 GHz	49.28 dBµV/m	74 dBµV/m	-24.72 dB	Pass

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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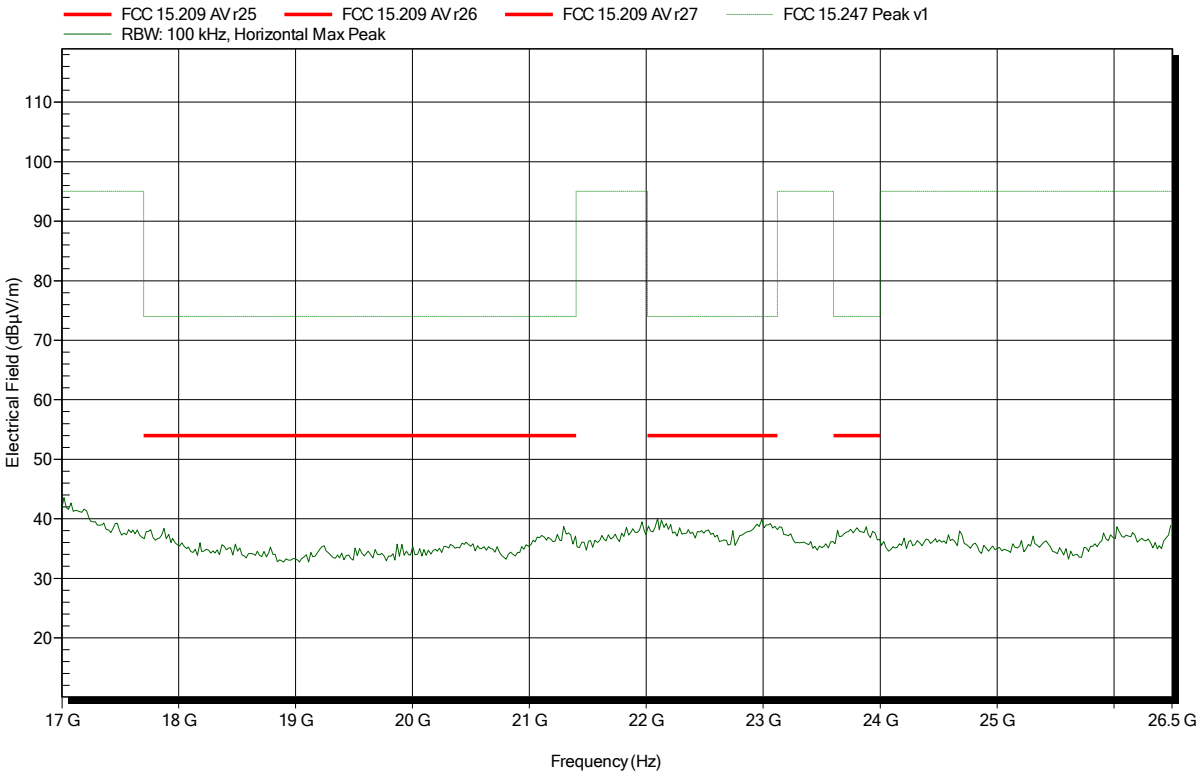

Spurious emissions according to FCC 15.247, RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Amplifier Research AT 4560 (old name) / ATH18G40 (new name), Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; BT LE 2480 MHz
Test Date:	2016-10-06
Note:	

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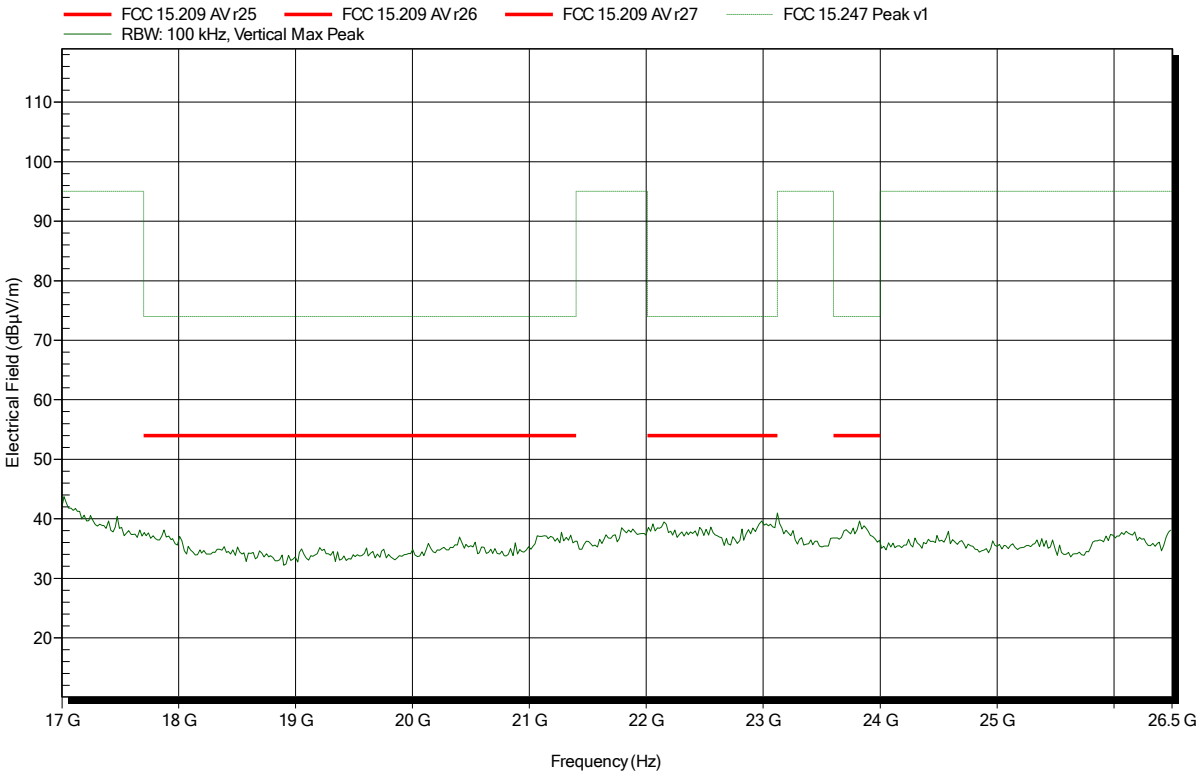

ANNEX C Receiver radiated spurious emissions

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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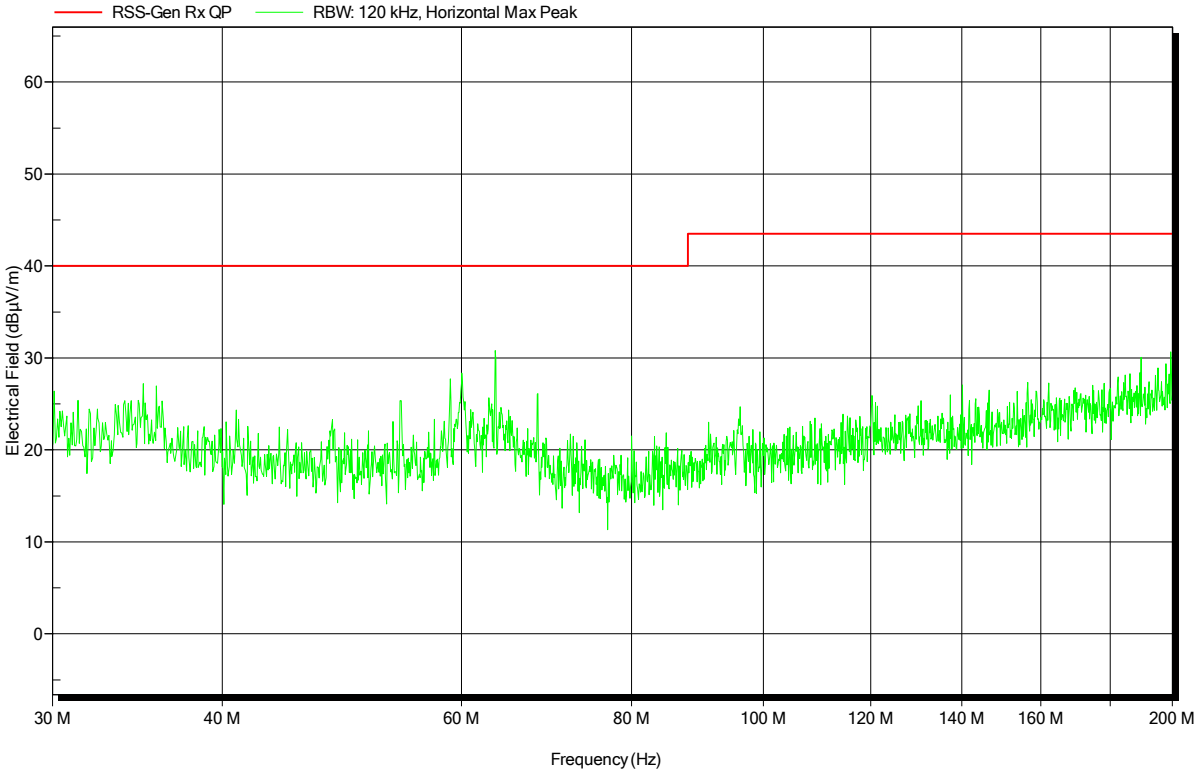

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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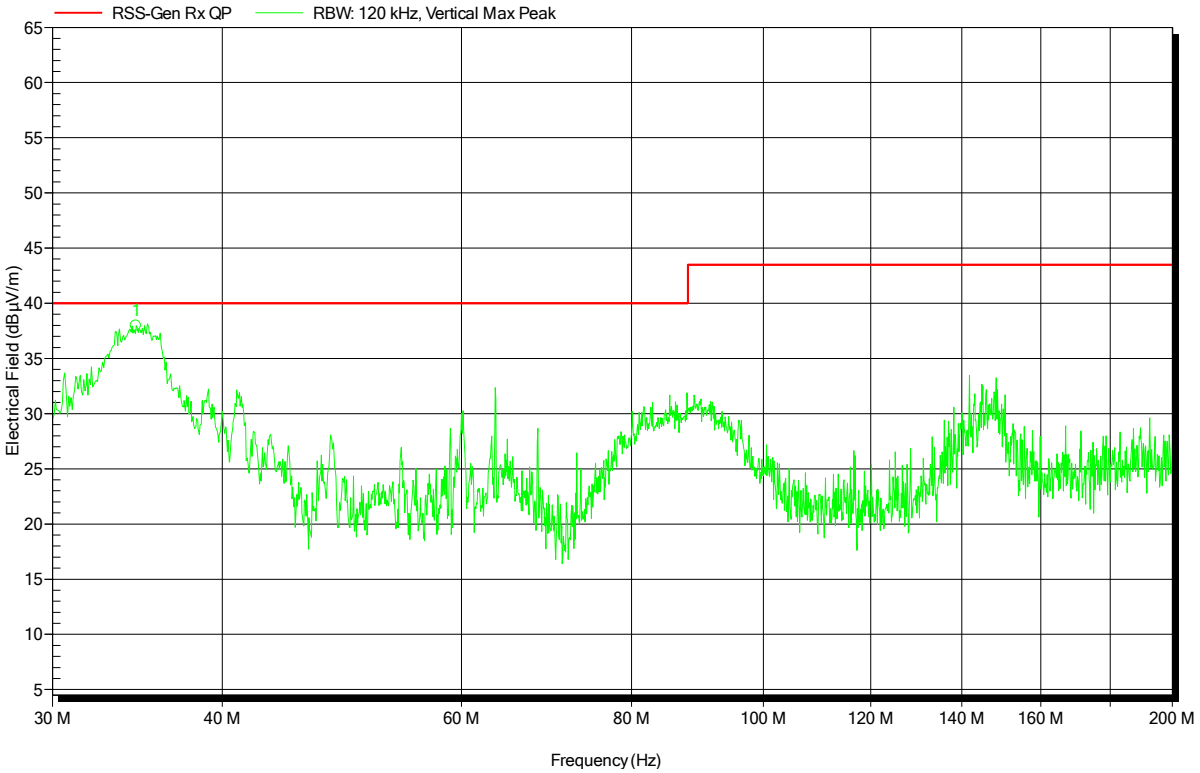

Frequency	Peak	Peak Limit	Peak Difference	Status
34.56 MHz	38 dBµV/m	40 dBµV/m	-2.03 dB	Pass

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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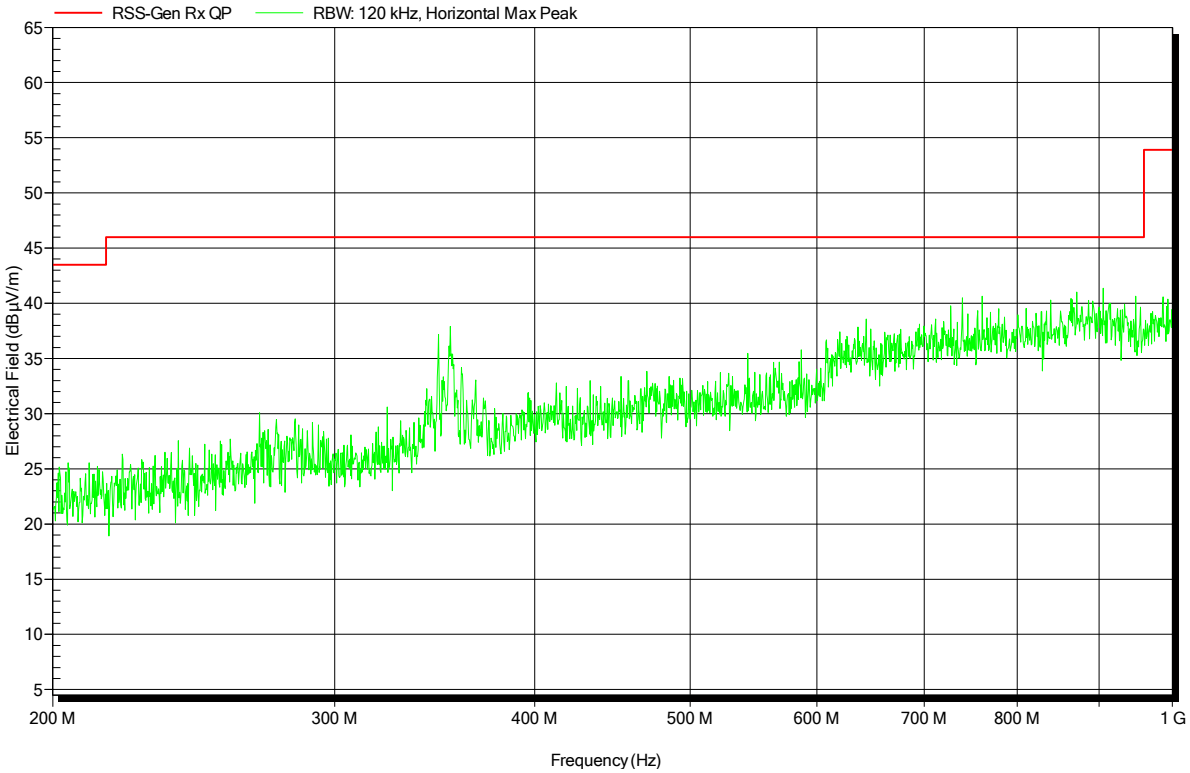

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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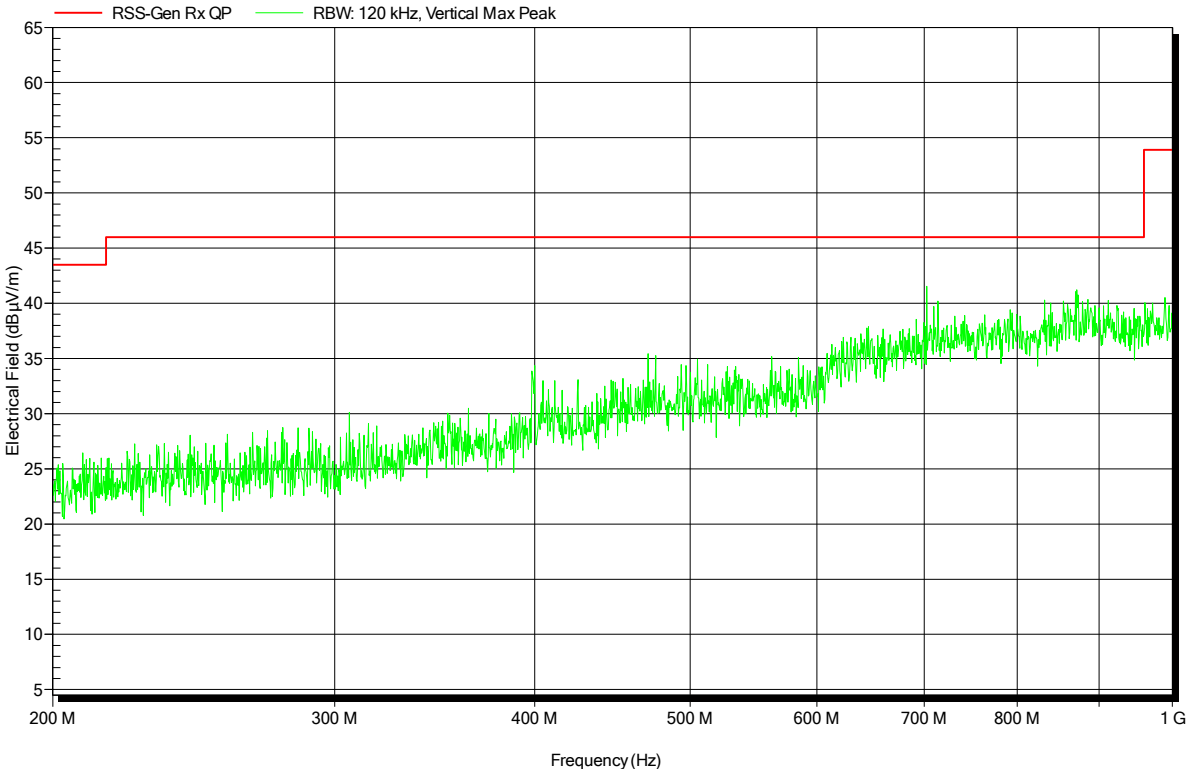

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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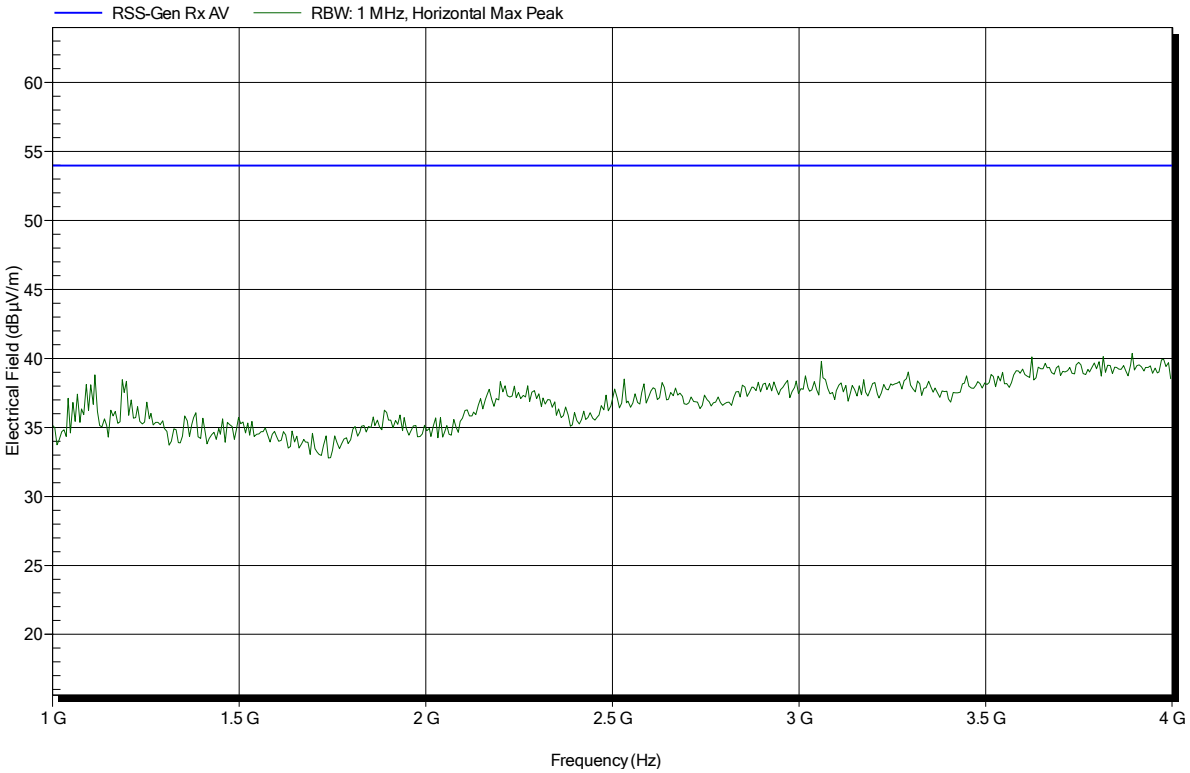

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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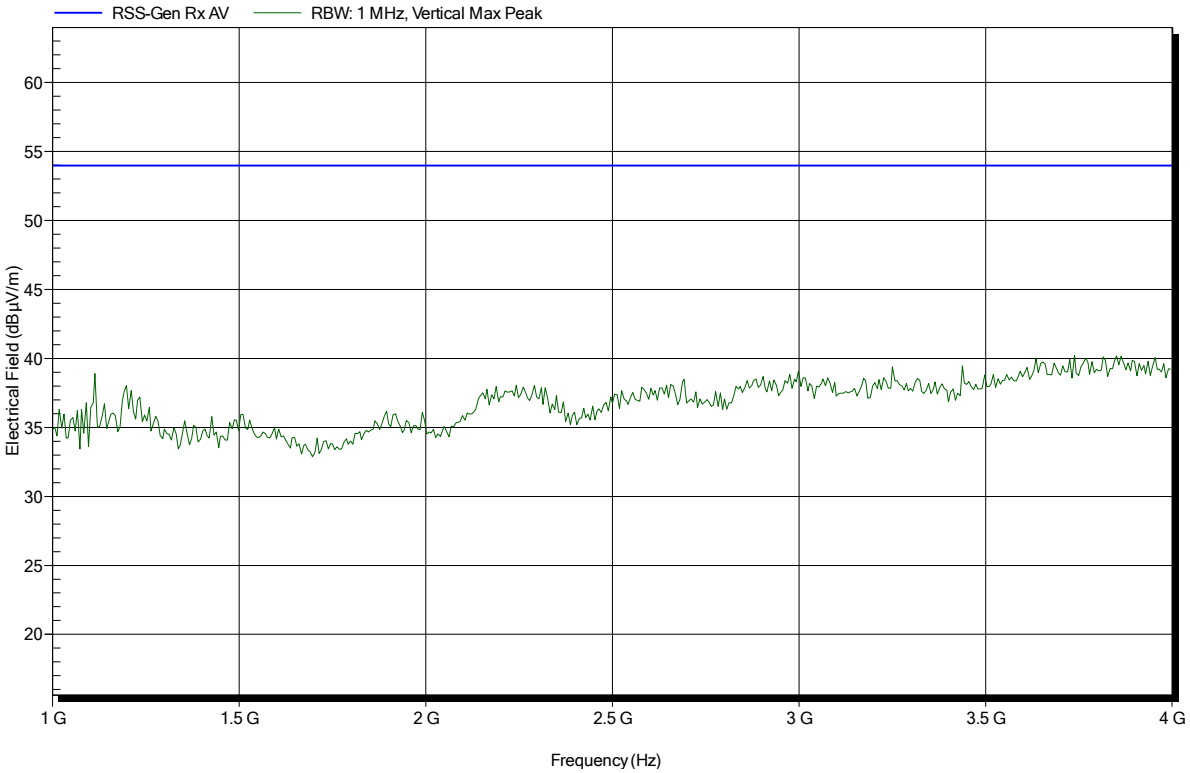

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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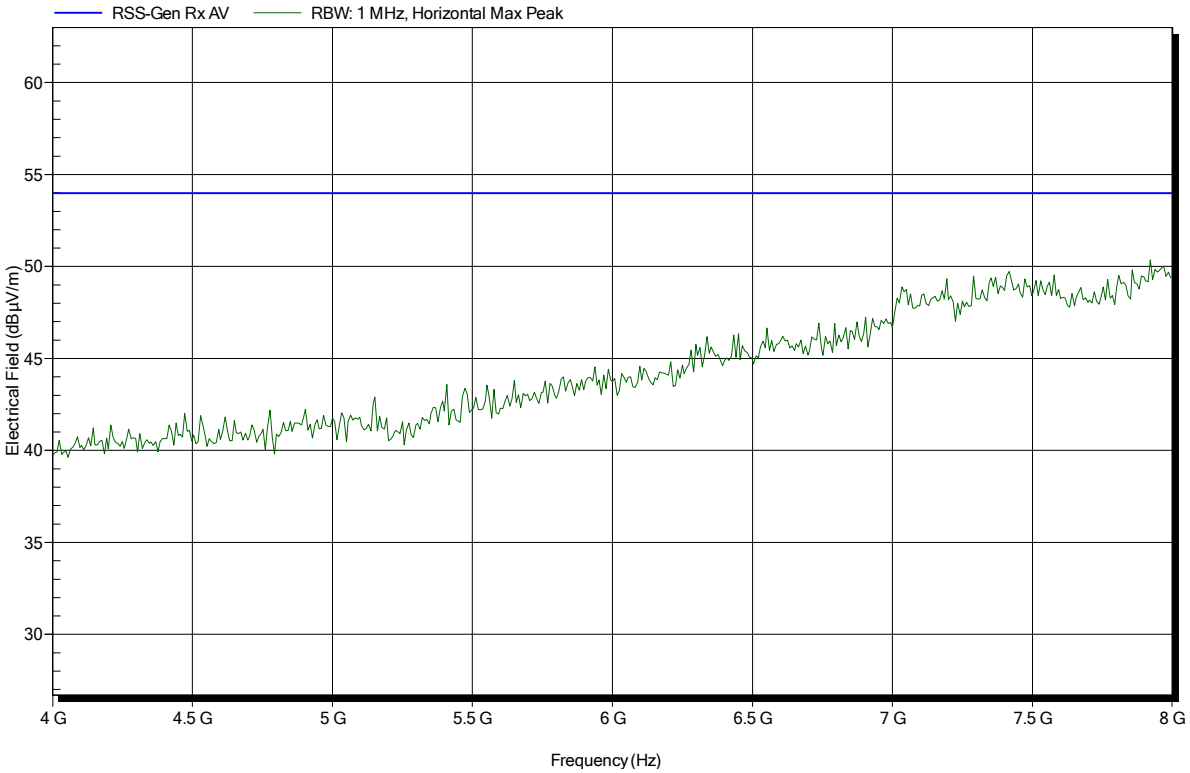

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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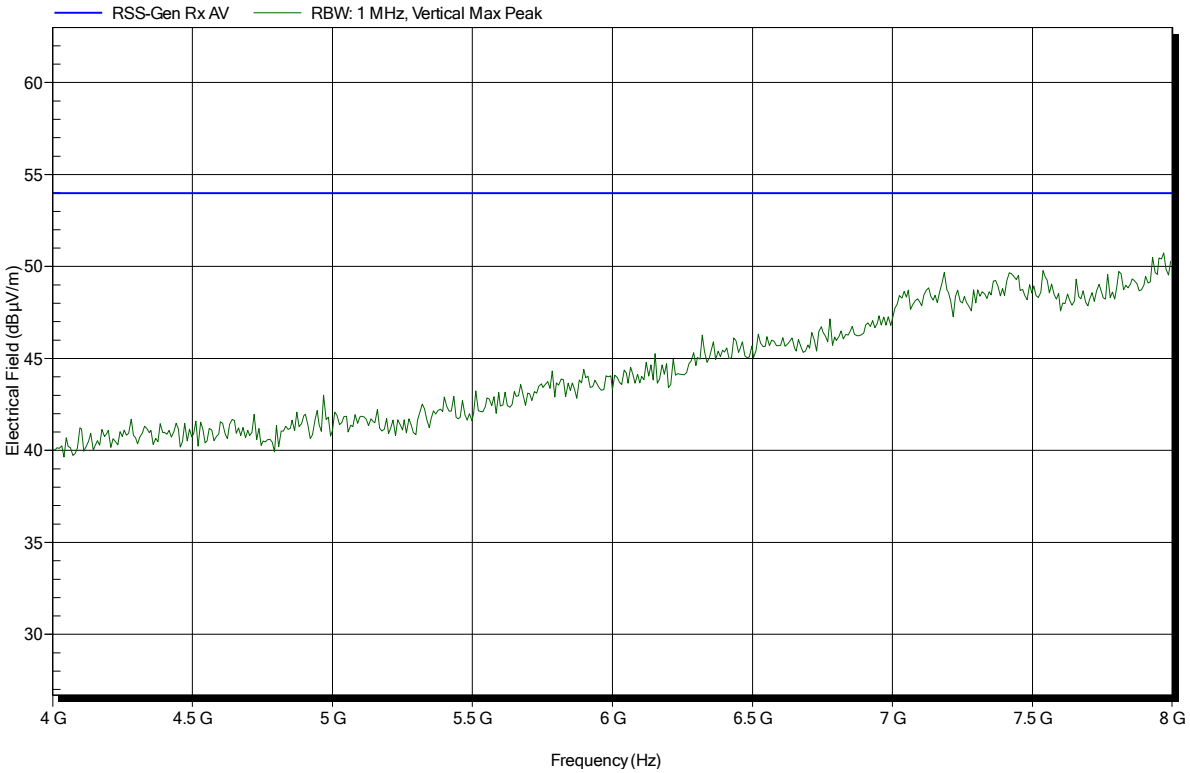

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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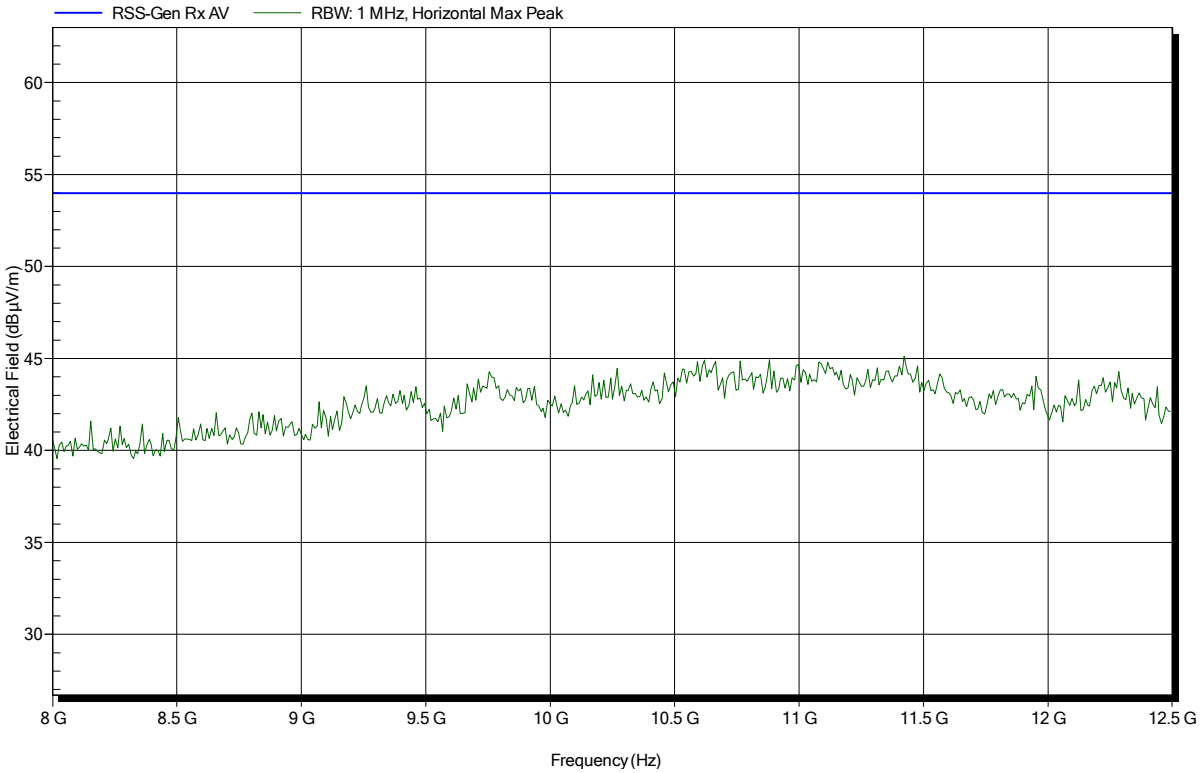

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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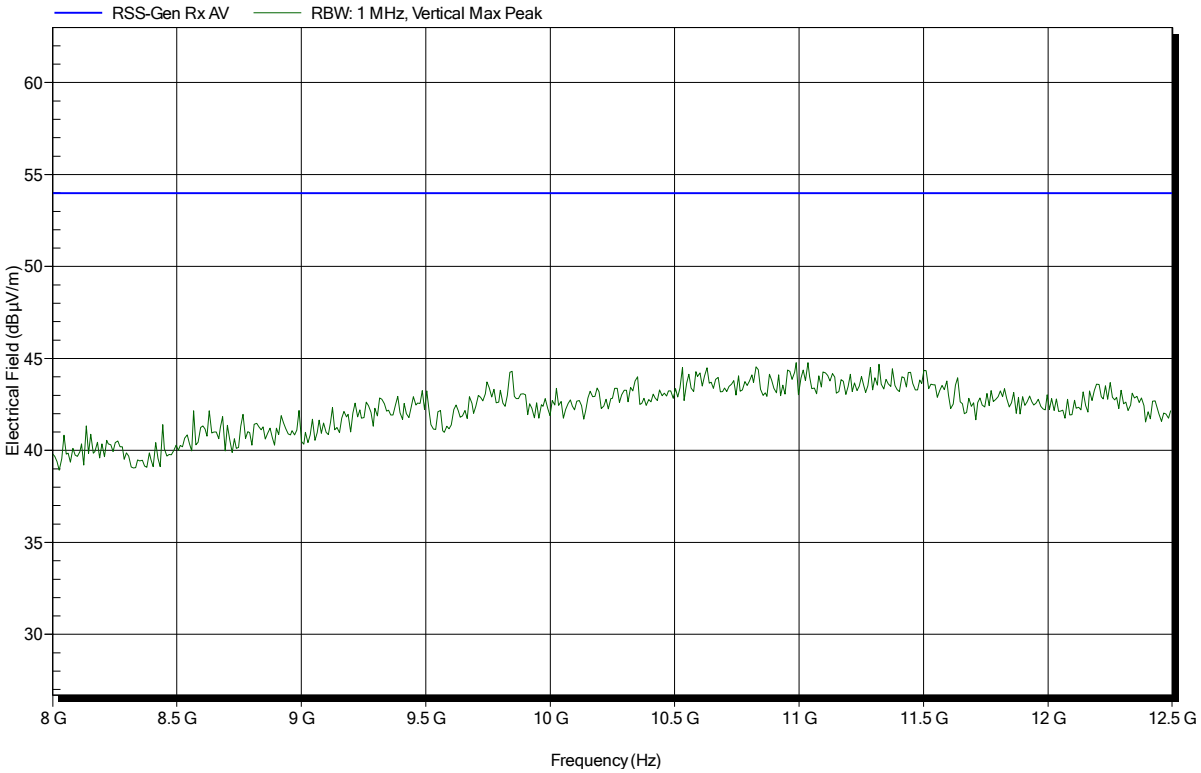

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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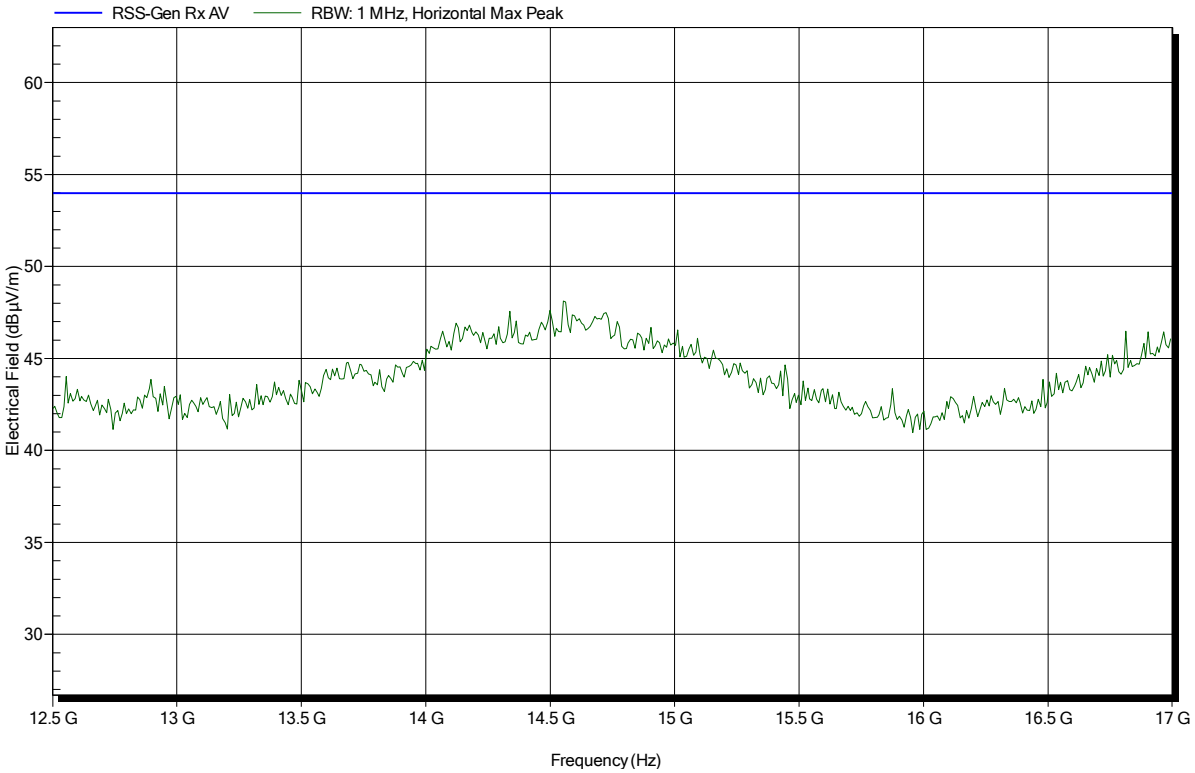
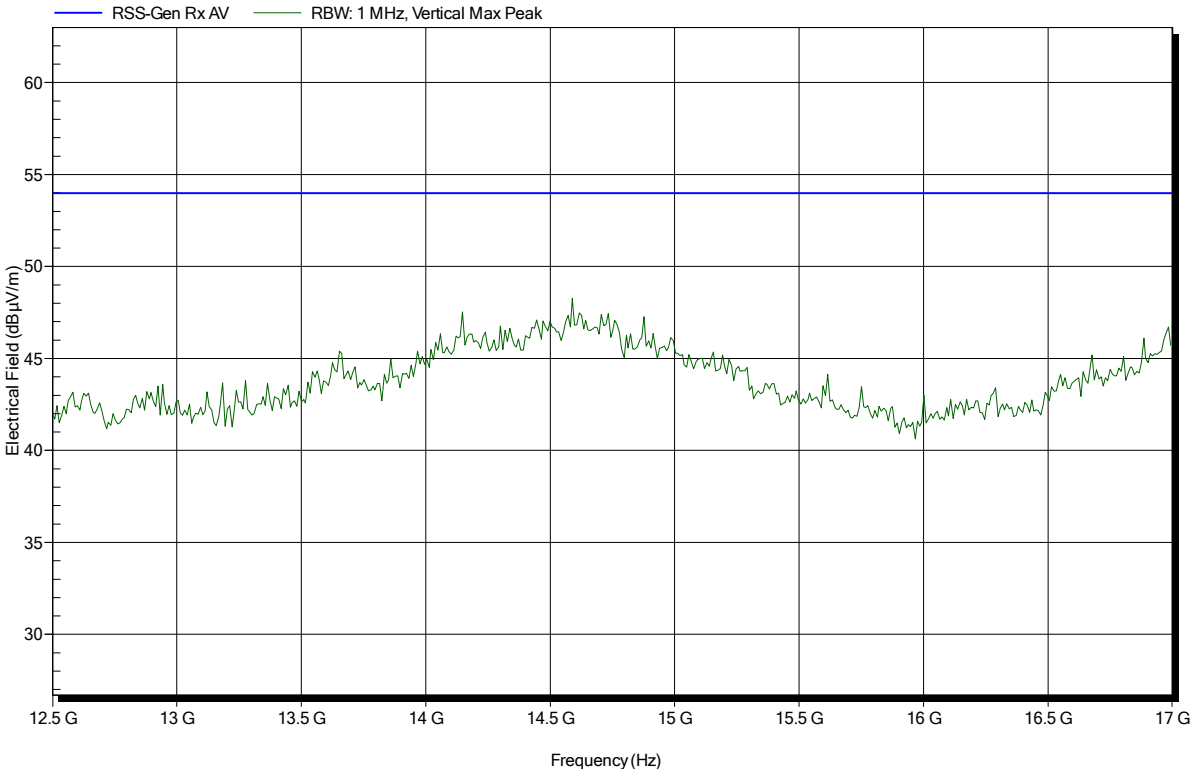


Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1608-5788

Applicant:	Schneider Schreibgeräte GmbH
EUT Name:	blukii module
Model:	L
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Suckow
Test Conditions:	Tnom: 20°C, Vnom: 3 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; BT LE 2440 MHz
Test Date:	2016-10-07
Note:	

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