

RADIO REPORT FCC 47 CFR Part 15C ISED Canada RSS-247 Digital transmission systems operating within the 2400 – 2483.5 MHz band	
Report Reference No	G0M-1902-8028-TFC247ZB-V02
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Test Firm Designation Number: DE0008 ISED Testing Laboratory site: 3470A-2
Applicant	dresden elektronik ingenieurtechnik gmbh
Address	Enno-Heidebroek-Straße 12 01237 Dresden GERMANY
Test Specification	According to FCC/ISED rules
Standard	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, 2018-04
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model(s)	ConBee II
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	0
Software Version(s)	0
FCC-ID	XVV-CONBEE2
IC	8720A-CONBEE2
Test Result	PASSED

Possible test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
not applicable to EUT	N/A	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2019-01-31	
Report:		
Compiled by	Wilfried Treffke	
Tested by (+ signature) (Responsible for Test)	Wilfried Treffke	
Approved by (+ signature) (Head of Lab)	Christian Weber	
Date of Issue	2019-05-03	
Total number of pages	118	
General Remarks:		
The test results presented in this report relate only to the object tested. The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2019-04-12	Initial Release	
02	2019-05-03	Replaced document: G0M-1902-8028-TFC247ZB-V01 Replaced by: G0M-1902-8028-TFC247ZB-V02 Reason: Typo because of model name	W. Treffke

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
DSSS	Direct Sequence Spread Spectrum
EUT	Equipment Under Test
FCC	Federal Communications Commission
IEEE 802.15.4	MAC and PHY Layer for Wireless Personal Area Networks
ISED	Innovation, Science and Economic Development Canada
O-QPSK	Offset-Quadrature Phase Shift Keying
QPSK	Quadrature Phase Shift Keying
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V _{NOM}	Nominal supply voltage

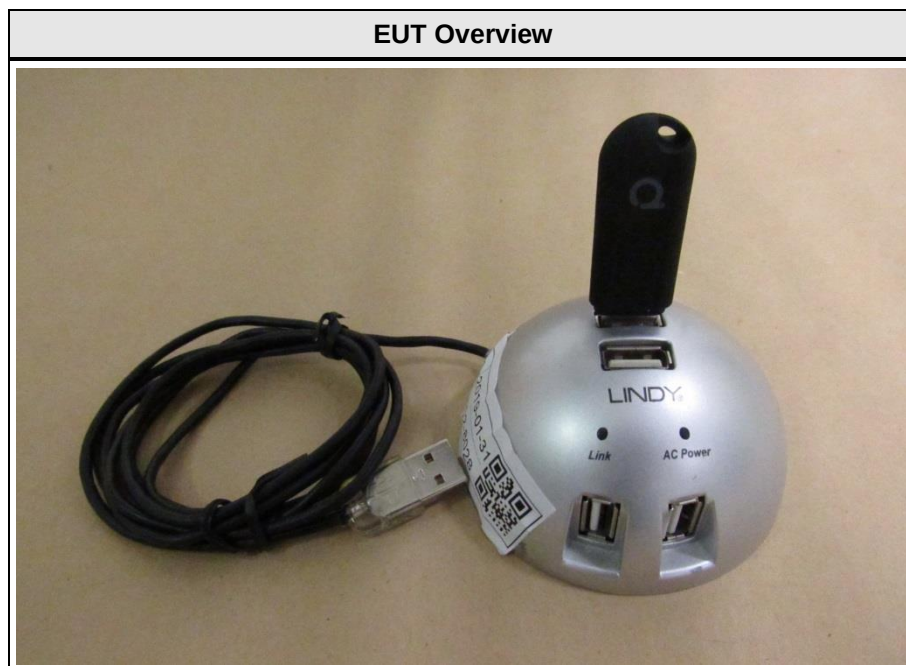
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1 Equipment (Test Item) Under Test

Description	2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna	
Model	ConBee II	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	None	
Hardware Version(s)	0	
Software Version(s)	0	
PMN	ConBee II	
HVIN	ConBee II	
FVIN	None	
HMN	None	
FCC-ID	XVV-CONBEE2	
IC	8720A-CONBEE2	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400 - 2483.5 MHz	
Radio technology	IEEE 802.15.4	
Modulation	O-QPSK	
Number of antenna ports	1	
Antenna	Type	Integrated
	Model	PCB-antenna
	Manufacturer	dresden elektronik ingenieurtechnik gmbh
	Gain	-4.4 dBi (customer declaration)
Supply Voltage	V _{NOM}	5.0 VDC (USB powered)
Operating Temperature	T _{NOM}	25 °C
AC/DC-Adaptor	Model	None
	Vendor	None
	Input	None
	Output	None
Manufacturer	dresden elektronik ingenieurtechnik gmbh Enno-Heidebroek-Straße 12 01237 Dresden GERMANY	

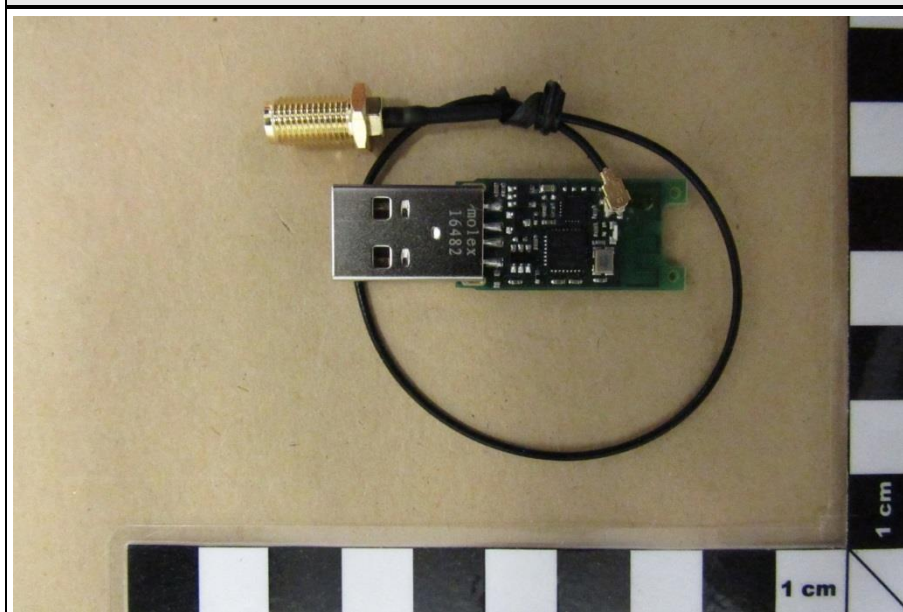
1.1 Photos – Equipment External



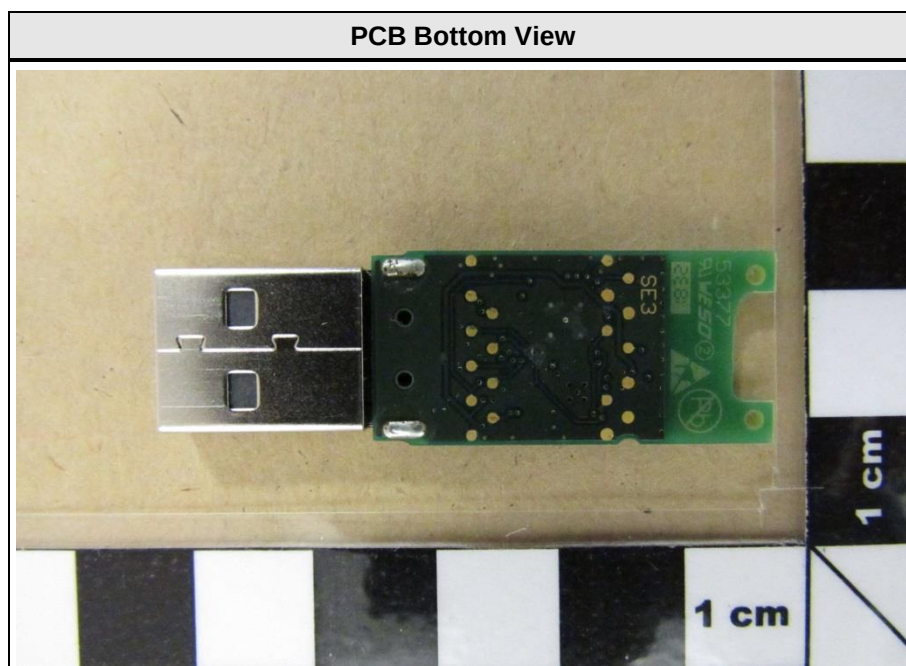
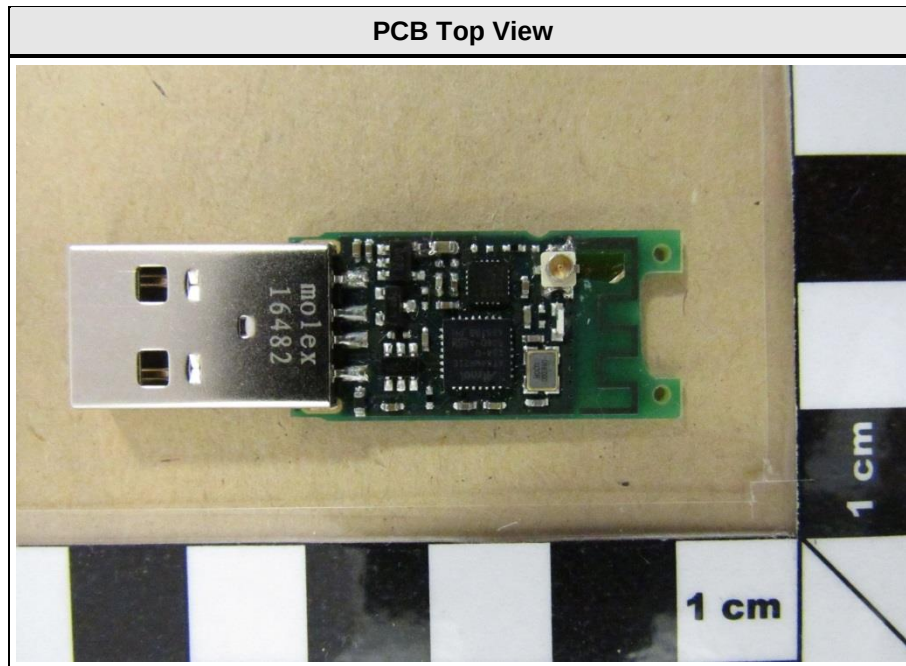
EUT Bottom View



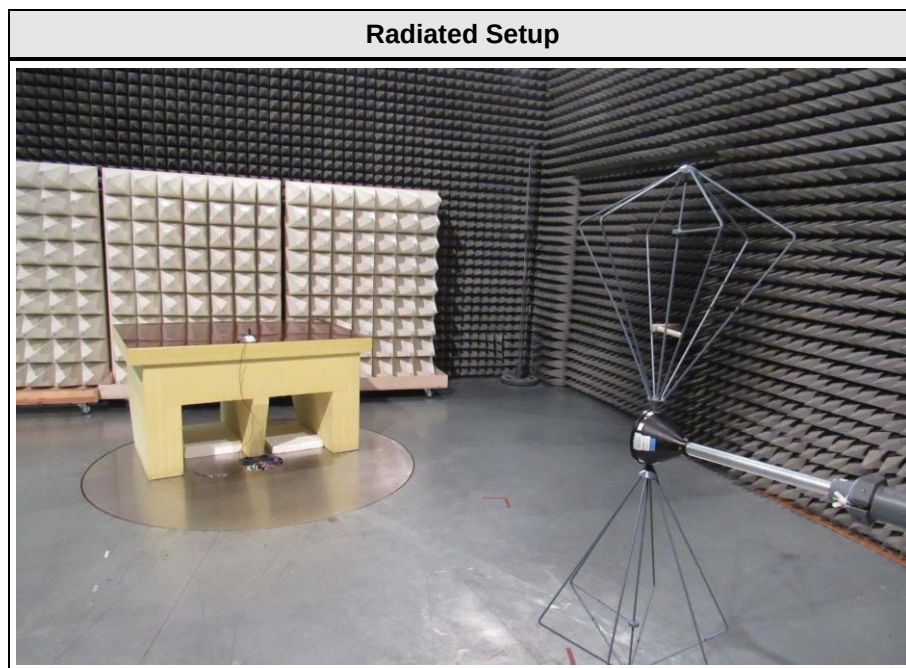
EUT Conducted Sample



1.2 Photos – Equipment Internal



1.3 Photos – Test Setup



1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laptop	Dell	Latitude E6420	S/N HPJ4R1
AE	Power Supply	Dell	FA65NE0-00	S/N RX929
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
Comment:				

1.5 Test mode duty cycle

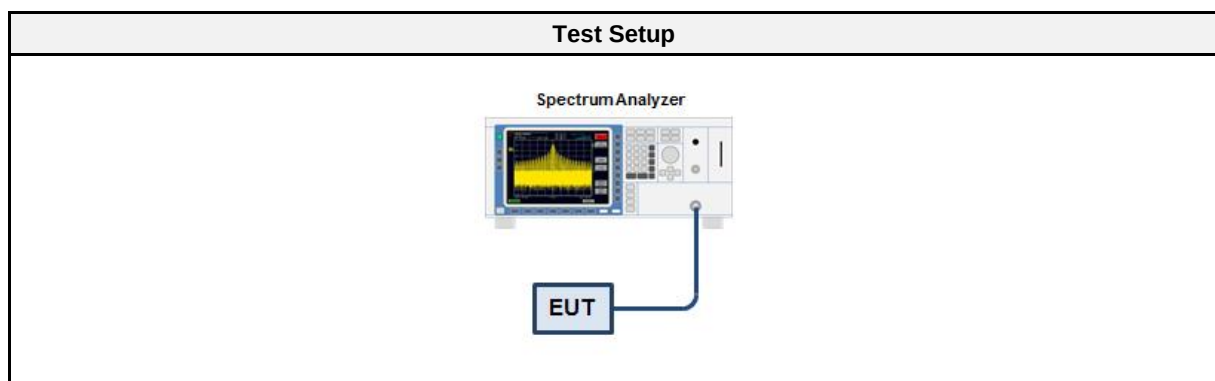
1.5.1 Information

Test Information	
Measurement Method	ANSI C63.10 11.6

1.5.2 Requirements

Requirements	
Duty cycle	Duty cycle correction
$\geq 98 \%$	No correction required
$< 98 \%$	Correction required ($10 \times \log_{10}(1/DC)$)

1.5.3 Setup



1.5.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

1.5.5 Procedure

Test Procedure
1. EUT set to test mode 2. Span is set to zero span 3. Detector set to peak 4. Sweep time is set long enough to capture at least 5 bursts 5. Envelope peak value of emission spectrum is selected 6. The maximum burst duration T_{ON} is measured using two markers set to the start and the end of the longest burst 7. The minimum idle duration T_{OFF} is measured using two markers set to the start and the end of the shortest idle period 8. The duty cycle is calculated by $DC = T_{ON} / (T_{ON} + T_{OFF})$ 9. The duty cycle correction is calculated by $DC = 10 \times \log_{10}(T_{ON} / (T_{ON} + T_{OFF}))$

1.5.6 Results

Duty Cycle Results		
Mode	Duty Cycle	Correction Factor [dB]
IEEE 802.15.4	1 (100%)	0

1.6 Test Modes

Mode	Description
DSSS O-QPSK	Mode = Transmit Modulation = O-QPSK Spreading = DSSS Data rate = 250 kbps Chip rate = 2000 kbps Duty cycle = 100% Software power level channel 11 – 25: b=10 (0x0A) Software power level channel 26: b=14 (0x0E)
O-QPSK	Mode = Transmit Modulation = O-QPSK Spreading = None Data rate = 2000 kbps Duty cycle = 100% Software power level channel 11 – 25: b=10 (0x0A) Software power level channel 26: b=14 (0x0E)
Receive	Mode = Receive
Comment:	

1.7 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	11	2405
F2	Tx / Rx	18	2440
F3	Tx / Rx	25	2475
F4	Tx / Rx	26	2480

1.8 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

Net:

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

Limit:

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

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

Margin:

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

Example only:

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

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	Requirement	Reference Method	Result	Remarks
ISED RSS-Gen, Issue 5 (section 6.6)	Occupied Bandwidth	ANSI C63.10-2013	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247, Issue 2 (section 5.2)	6 dB Bandwidth	ANSI C63.10-2013	PASS	
FCC § 15.247(b)(1) ISED RSS-247, Issue 2 (section 5.4)	Maximum peak conducted power	ANSI C63.10-2013	PASS	
FCC § 15.247(e) ISED RSS-247, Issue 2 (section 5.2)	Power spectral density	ANSI C63.10-2013	PASS	
FCC § 15.207 ISED RSS-247, Issue 2 (section 3.1)	AC power line conducted emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 (section 6.13)	Transmitter radiated spurious emissions	ANSI C63.10-2013	PASS	
ISED RSS-247, Issue 2 (section 3.1)	Receiver radiated spurious emissions	ANSI C63.10-2013	PASS	
Comment:				

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

3 Test Conditions and Results

3.1 Test Conditions and Results - Occupied bandwidth

3.1.1 Information

Test Information	
Reference	ISED RSS-Gen, Issue 5 (section 6.6)
Measurement Method	ANSI C63.10 6.9.3
Operator	Wilfried Treffke
Date	2019-03-07

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.1.4 Procedure

Test Procedure
1. EUT transmitter is activated in test mode under normal conditions 2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum 3. The resolution bandwidth is set to the range of 1 % to 5 % of the occupied bandwidth 4. The occupied bandwidth is measured with the build-in analyzer function

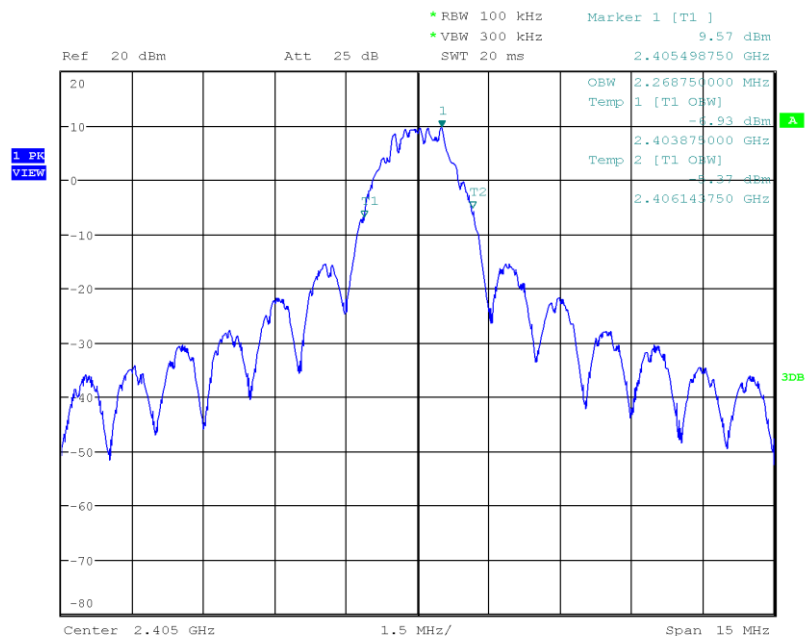
3.1.5 Results

Test Results - DSSS O-QPSK		
Mode	Frequency [MHz]	Bandwidth [MHz]
O-QPSK	2405	2.269
O-QPSK	2440	2.272
O-QPSK	2475	2.344
O-QPSK	2480	2.355

Test Results - O-QPSK		
Mode	Frequency [MHz]	Bandwidth [MHz]
O-QPSK	2405	2.261
O-QPSK	2440	2.288
O-QPSK	2475	2.317
O-QPSK	2480	2.362

Occupied Bandwidth

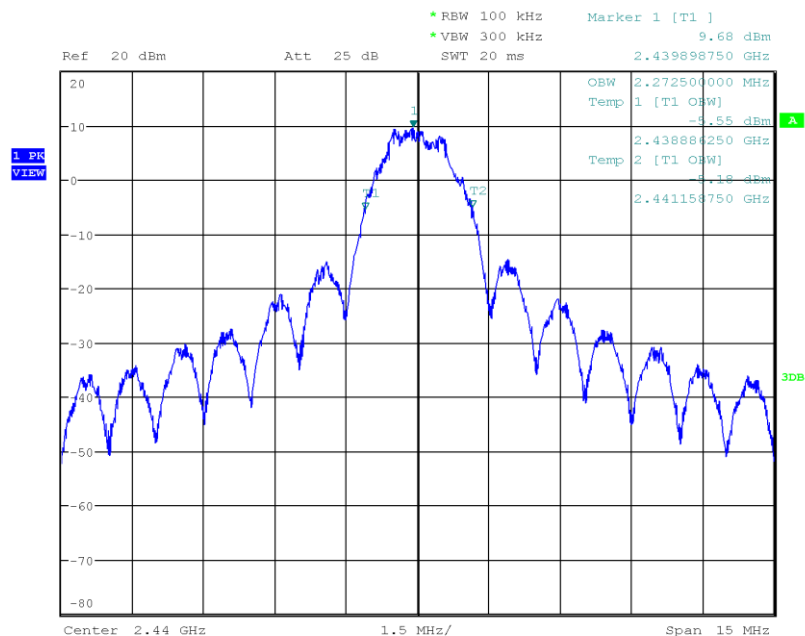
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.269



Date: 7.MAR.2019 06:05:34

Occupied Bandwidth

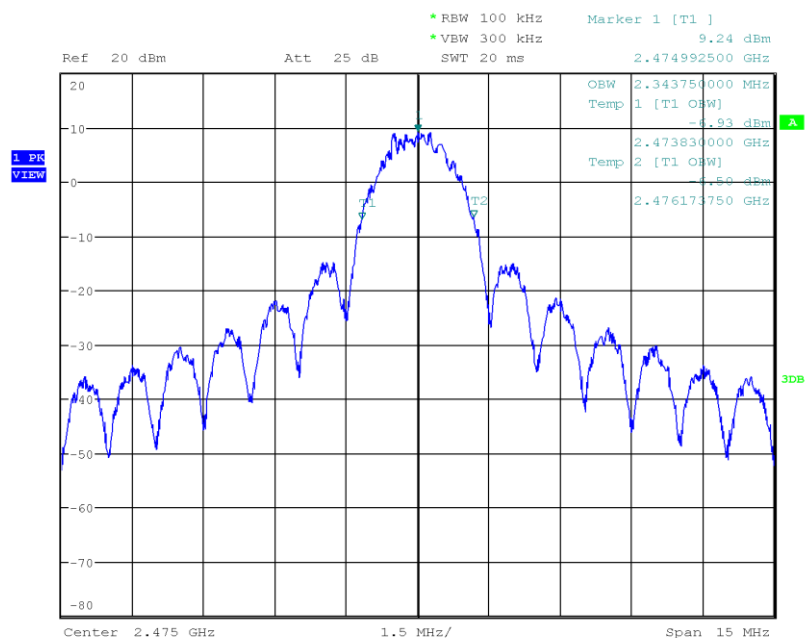
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.272



Date: 7.MAR.2019 06:14:05

Occupied Bandwidth

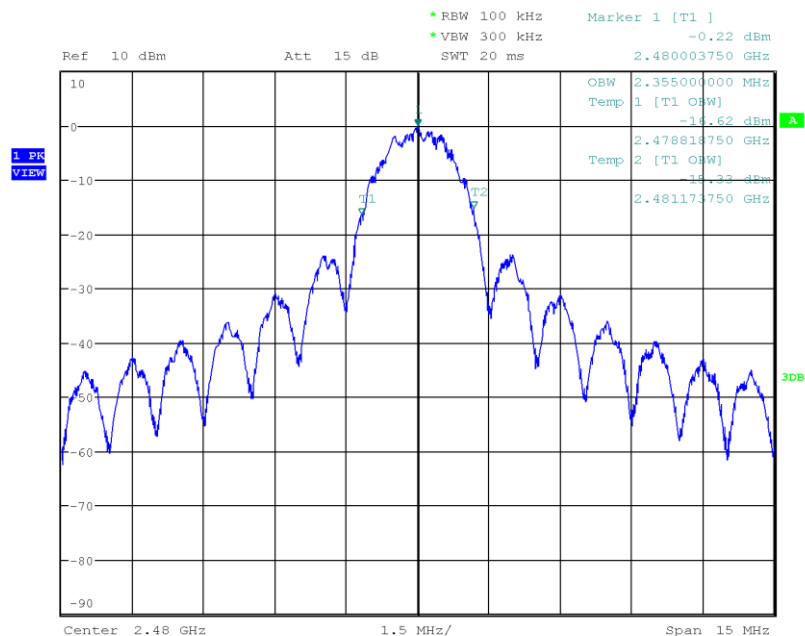
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.344



Date: 7.MAR.2019 06:15:46

Occupied Bandwidth

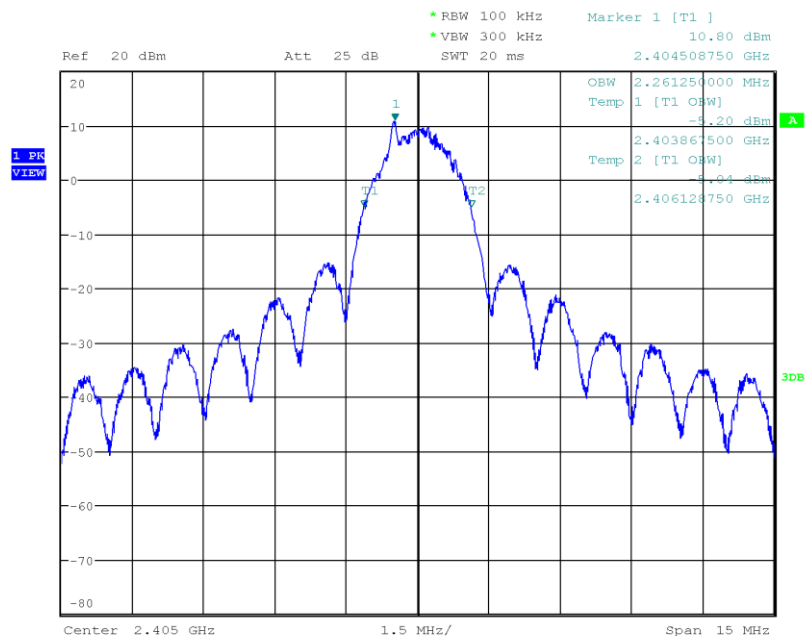
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.355



Date: 7.MAR.2019 06:20:54

Occupied Bandwidth

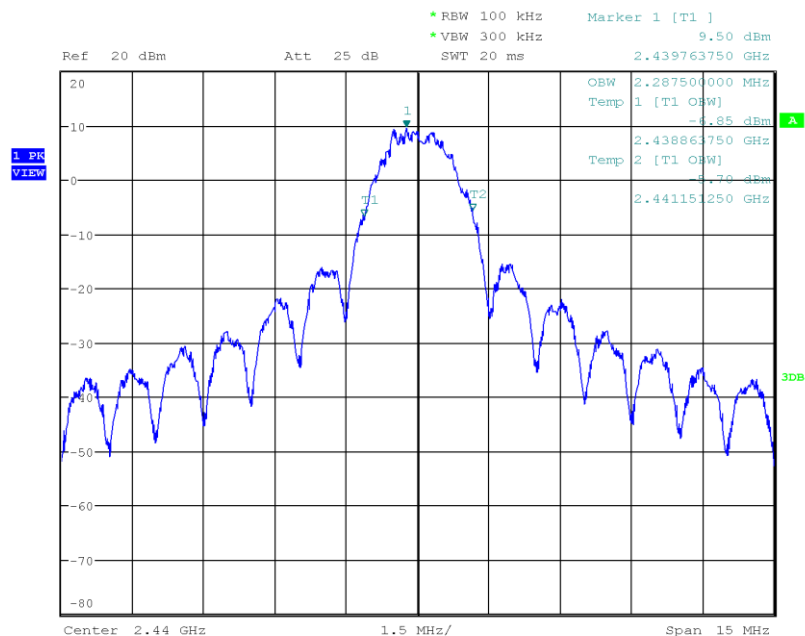
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.261



Date: 7.MAR.2019 06:24:38

Occupied Bandwidth

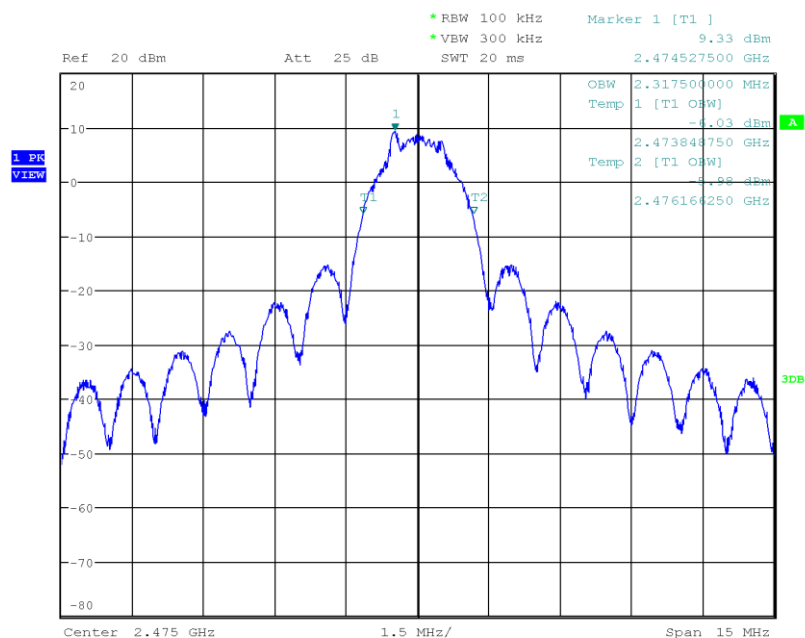
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.288



Date: 7.MAR.2019 06:25:54

Occupied Bandwidth

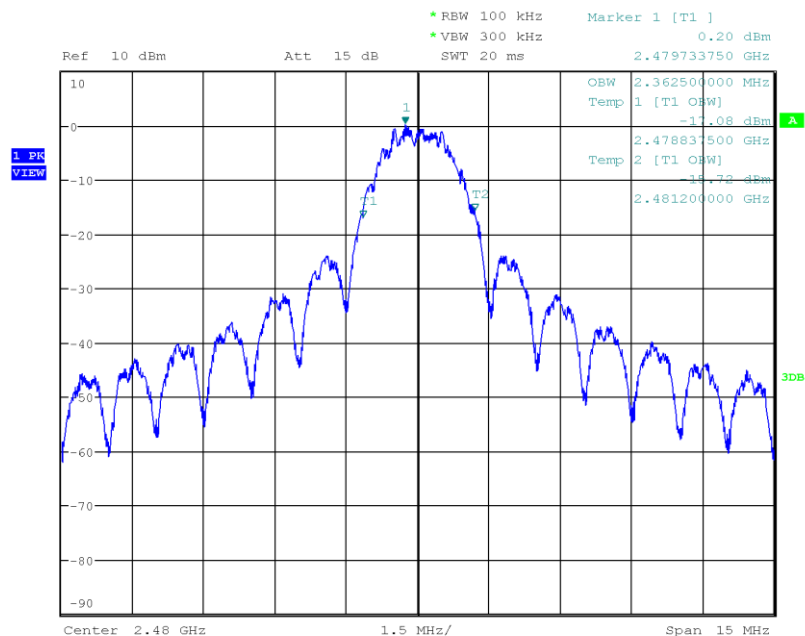
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.317



Date: 7.MAR.2019 06:30:19

Occupied Bandwidth

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Occupied Bandwidth [MHz]: 2.362



Date: 7.MAR.2019 06:32:22

3.2 Test Conditions and Results - 6 dB bandwidth

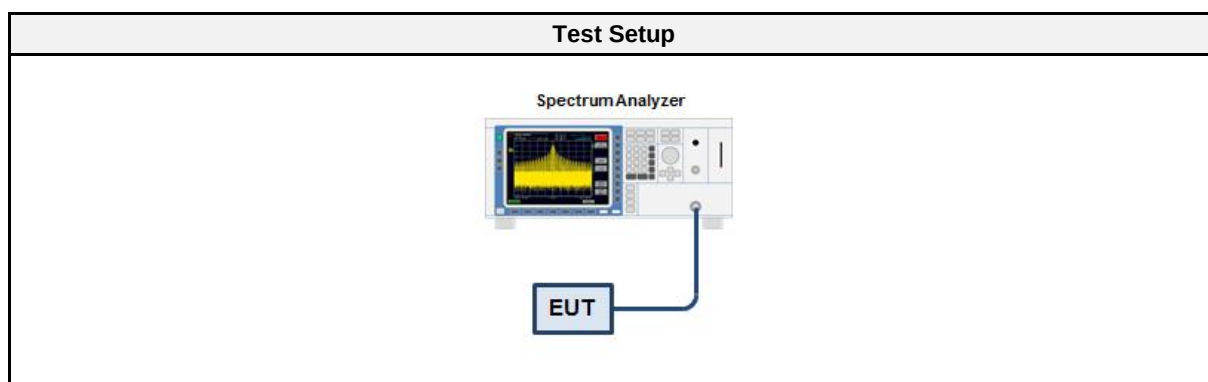
3.2.1 Information

Test Information	
Reference	FCC § 15.247(a)(2); ISED RSS-247, Issue 2 (section 5.2)
Measurement Method	ANSI C63.10 11.8
Operator	Wilfried Treffke
Date	2019-03-07

3.2.2 Limits

Limits
≥ 500kHz

3.2.3 Setup



3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.2.5 Procedure

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

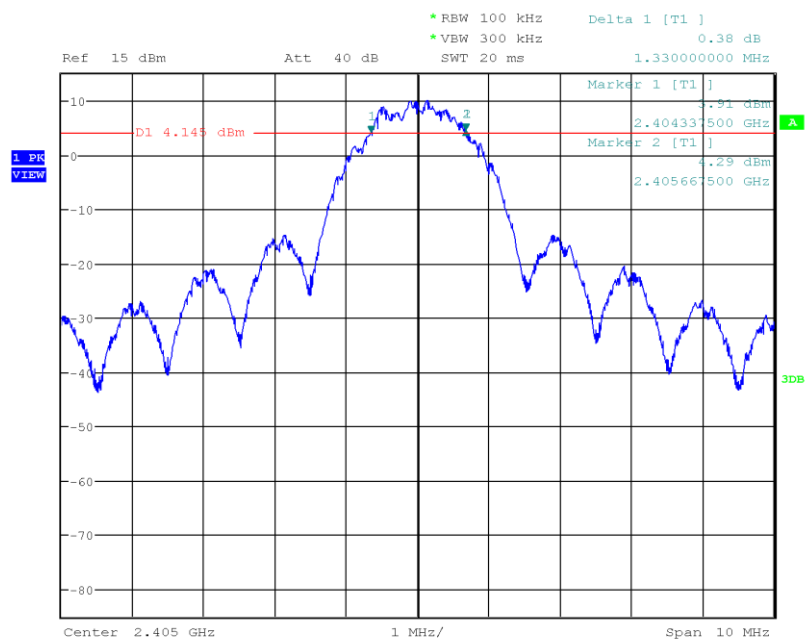
3.2.6 Results

Test Results - DSSS O-QPSK				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
O-QPSK	2405	1330.0	500	Pass
O-QPSK	2440	1350.0	500	Pass
O-QPSK	2475	1532.5	500	Pass
O-QPSK	2480	1560.0	500	Pass

Test Results - O-QPSK				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
O-QPSK	2405	1372.5	500	Pass
O-QPSK	2440	1495.0	500	Pass
O-QPSK	2475	1555.0	500	Pass
O-QPSK	2480	1555.0	500	Pass

DTS (6 dB) Bandwidth

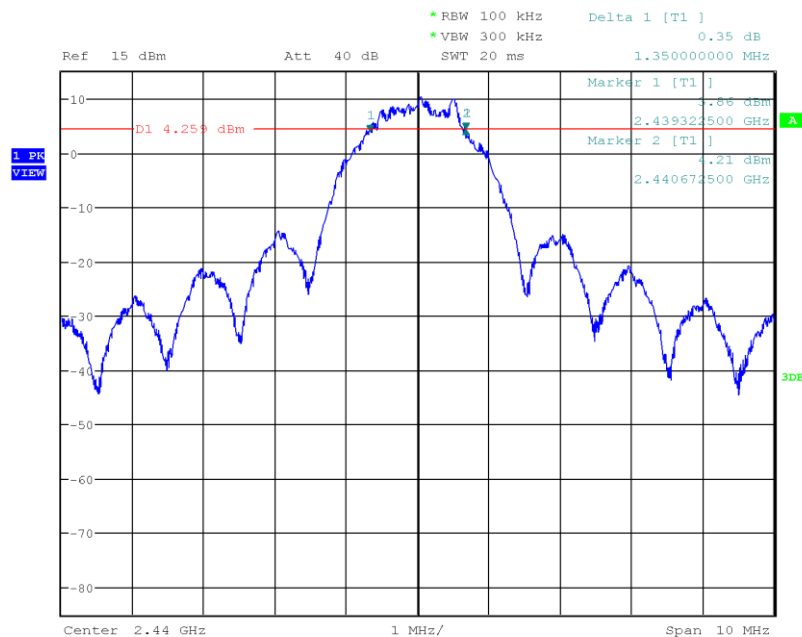
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 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2404.338
 Upper Frequency [MHz]: 2405.668
 6 dB Bandwidth [kHz]: 1330.0



Date: 7.MAR.2019 06:44:44

DTS (6 dB) Bandwidth

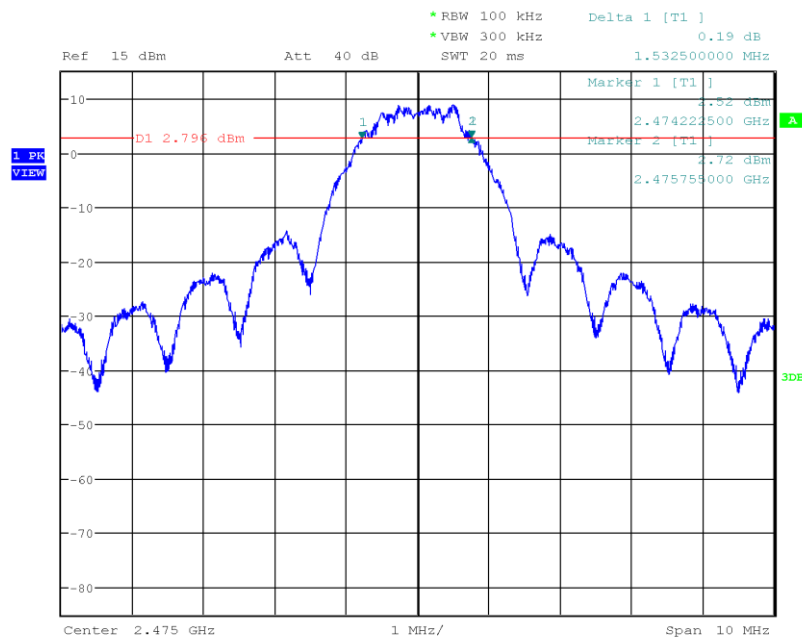
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 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2439.323
 Upper Frequency [MHz]: 2440.673
 6 dB Bandwidth [kHz]: 1350.0



Date: 7.MAR.2019 06:45:43

DTS (6 dB) Bandwidth

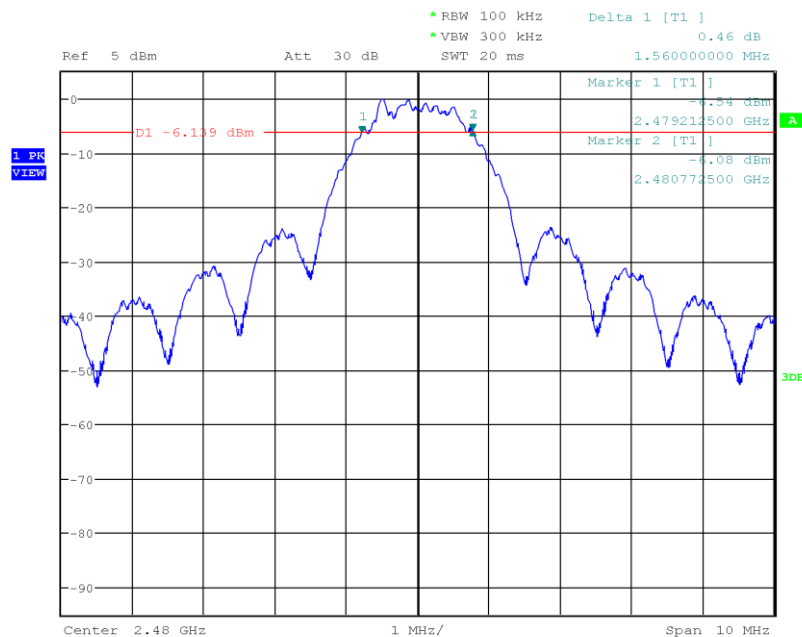
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 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2474.222
 Upper Frequency [MHz]: 2475.755
 6 dB Bandwidth [kHz]: 1532.5



Date: 7.MAR.2019 06:46:53

DTS (6 dB) Bandwidth

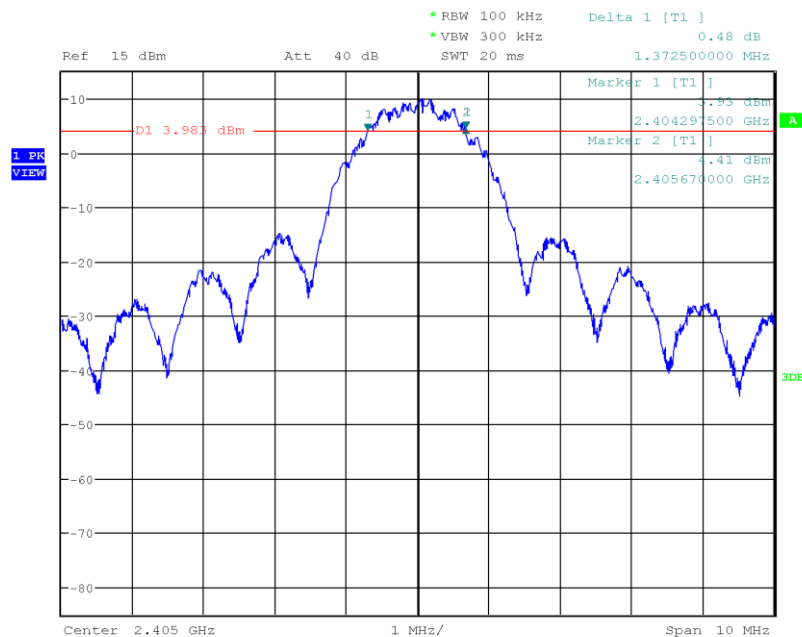
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2479.213
 Upper Frequency [MHz]: 2480.773
 6 dB Bandwidth [kHz]: 1560.0



Date: 7.MAR.2019 06:48:51

DTS (6 dB) Bandwidth

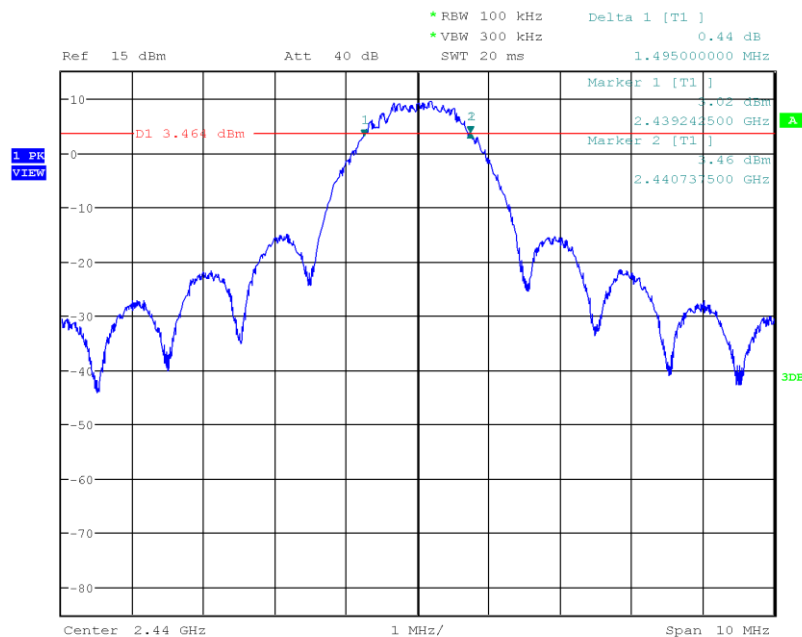
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2404.298
 Upper Frequency [MHz]: 2405.670
 6 dB Bandwidth [kHz]: 1372.5



Date: 7.MAR.2019 06:39:46

DTS (6 dB) Bandwidth

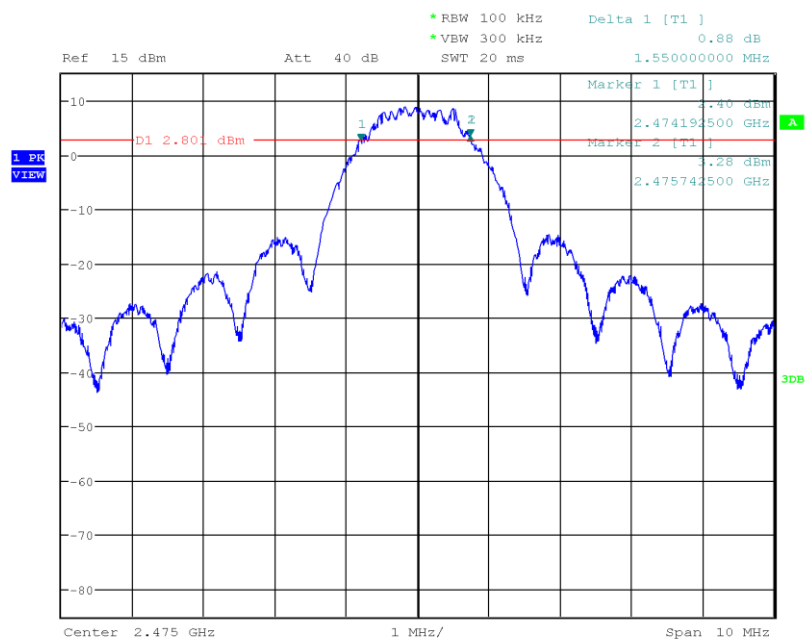
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2439.242
 Upper Frequency [MHz]: 2440.738
 6 dB Bandwidth [kHz]: 1495.0



Date: 7.MAR.2019 06:38:40

DTS (6 dB) Bandwidth

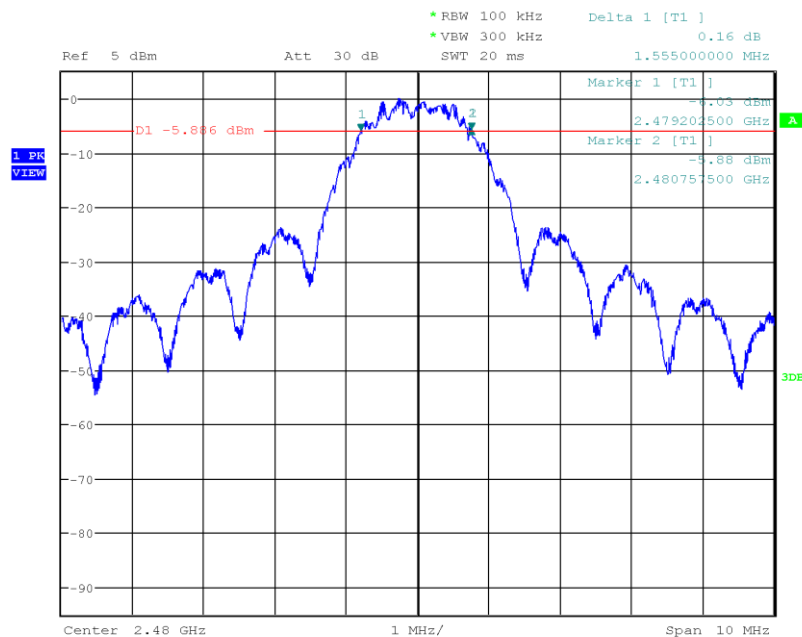
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2474.193
 Upper Frequency [MHz]: 2475.742
 6 dB Bandwidth [kHz]: 1550.0



Date: 7.MAR.2019 06:37:10

DTS (6 dB) Bandwidth

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Lower Frequency [MHz]: 2479.202
 Upper Frequency [MHz]: 2480.758
 6 dB Bandwidth [kHz]: 1555.0



Date: 7.MAR.2019 06:35:29

3.3 Test Conditions and Results - Maximum peak conducted output power

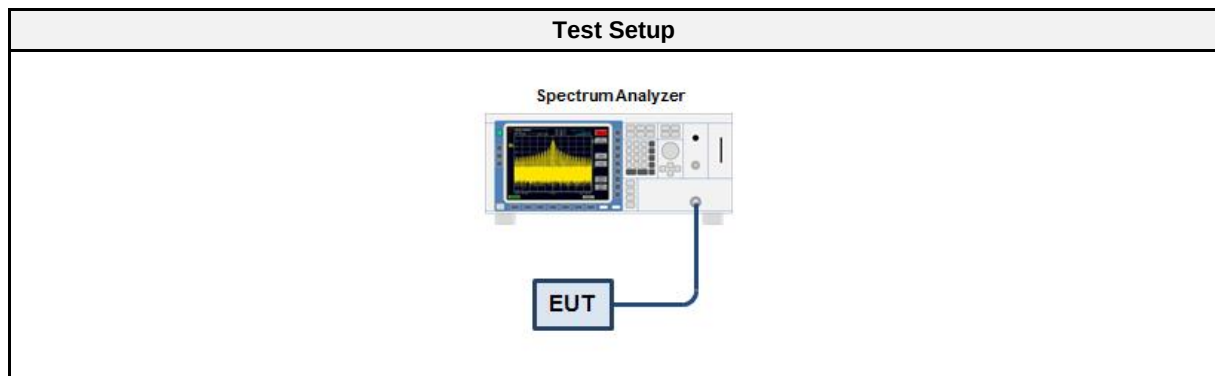
3.3.1 Information

Test Information	
Reference	FCC § 15.247(b)(1); ISED RSS-247, Issue 2 (section 5.4)
Measurement Method	ANSI C63.10 11.9.1
Operator	Wilfried Treffke
Date	2019-03-07

3.3.2 Limits

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.

3.3.3 Setup



3.3.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.3.5 Procedure

Test Procedure
1. EUT set to test hopping mode (Communication tester is used if needed) 2. Analyzer resolution bandwidth is set $\geq$ DTS bandwidth 3. Detector set to peak and max hold 4. Sweep time is set to auto 5. After the trace has stabilized a marker is set to peak of envelope

3.3.6 Results

Test Results - DSSS O-QPSK				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
2405	14.093	0.025663	1.0	PASS
2440	13.999	0.025113	1.0	PASS
2475	13.477	0.022269	1.0	PASS
2480	4.332	0.002711	1.0	PASS

Test Results - O-QPSK				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
2405	13.988	0.025050	1.0	PASS
2440	13.986	0.025038	1.0	PASS
2475	13.487	0.022320	1.0	PASS
2480	4.336	0.002714	1.0	PASS

3.4 Test Conditions and Results - Power spectral density

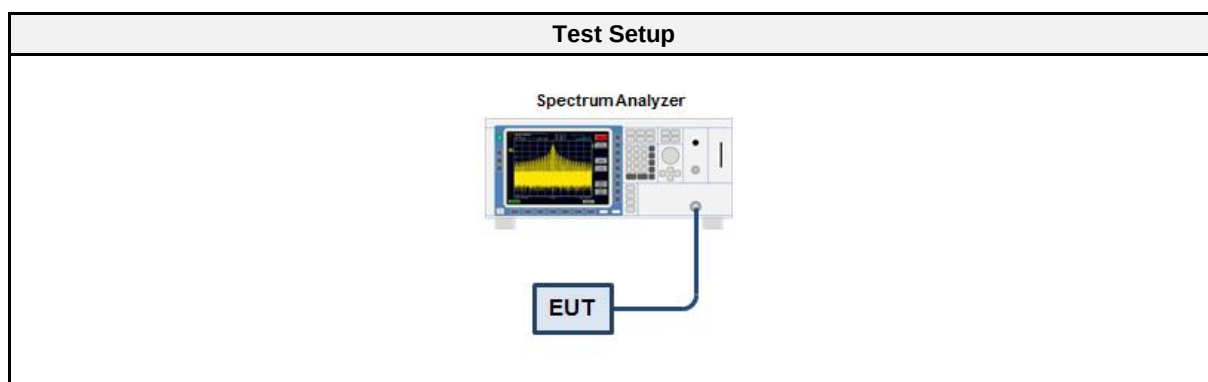
3.4.1 Information

Test Information	
Reference	FCC § 15.247(e); ISSED RSS-247, Issue 2 (section 5.2)
Measurement Method	ANSI C63.10 11.10.2, 14.3.2
Operator	Wilfried Treffke
Date	2019-03-07

3.4.2 Limits

Limits
8 dBm / 3 kHz

3.4.3 Setup



3.4.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.4.5 Procedure

Test Procedure
1. EUT set to test mode 2. The analyzer is set to DTS channel center frequency with a span of 1.5 times the DTS bandwidth 3. The RBW is set to 100 kHz with VBW $\geq$ RBW and the detector is set to peak with max hold 4. After the trace has stabilized a marker is set to the envelope maximum 5. If the power spectral density is above the limit the RBW is reduced (not lower than 3 kHz) and the measurement is repeated 6. If the EUT has more than one transmit chain the procedure is repeated for each transmit chain

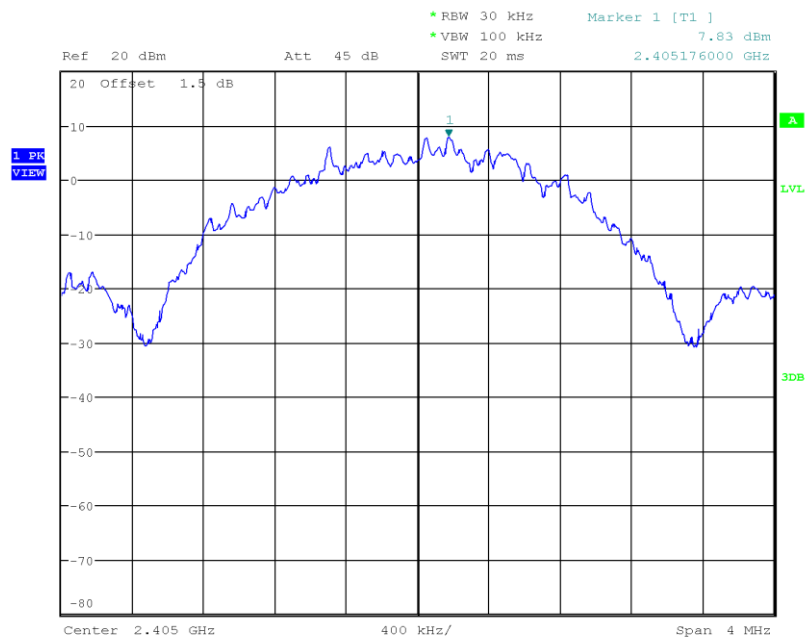
3.4.6 Results

Test Results - DSSS O-QPSK			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
2405	7.830 dBm / 30kHz	8.0	PASS
2440	6.930 dBm / 30kHz	8.0	PASS
2475	7.489 dBm / 30kHz	8.0	PASS
2480	1.290 dBm / 100kHz	8.0	PASS

Test Results - O-QPSK			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
2405	6.482 dBm / 30kHz	8.0	PASS
2440	6.567 dBm / 30kHz	8.0	PASS
2475	5.620 dBm / 30kHz	8.0	PASS
2480	1.477 dBm / 100kHz	8.0	PASS

Peak Power Spectral Density

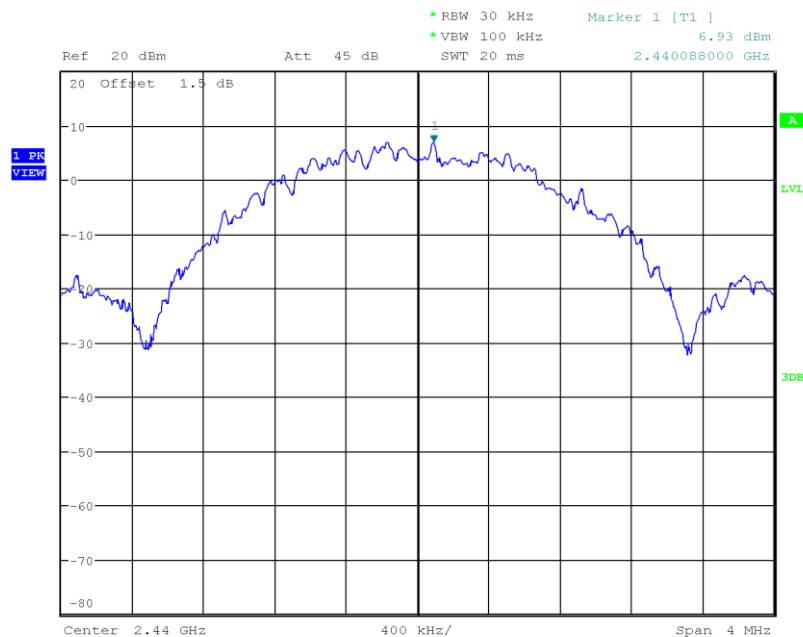
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2405.176
 Spectral Density [dBm/RBW]: 7.830
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:30:24

Peak Power Spectral Density

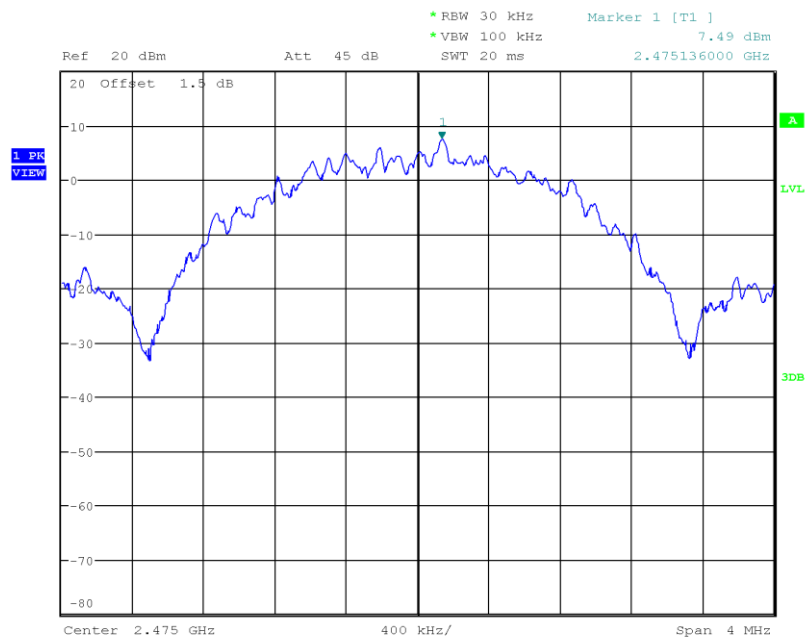
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2440.088
 Spectral Density [dBm/RBW]: 6.930
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:28:33

Peak Power Spectral Density

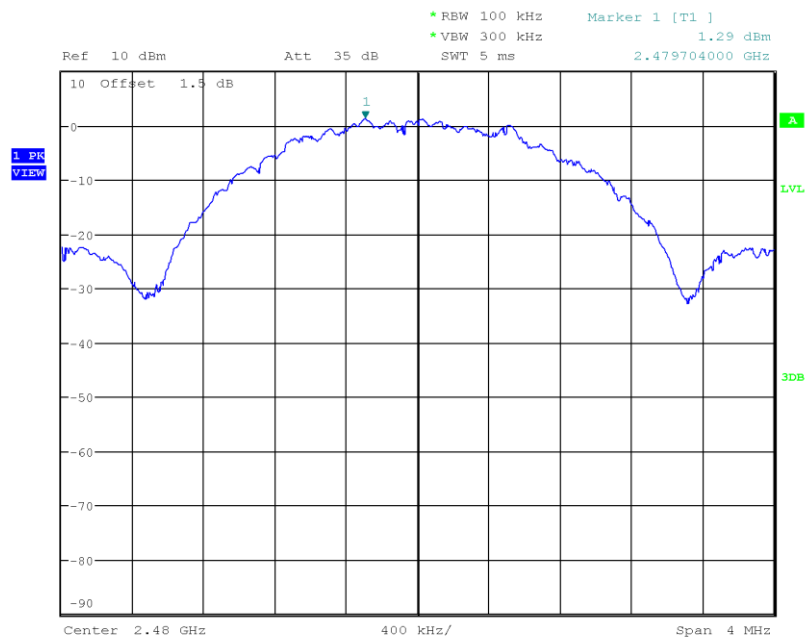
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2475.136
 Spectral Density [dBm/RBW]: 7.489
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:26:07

Peak Power Spectral Density

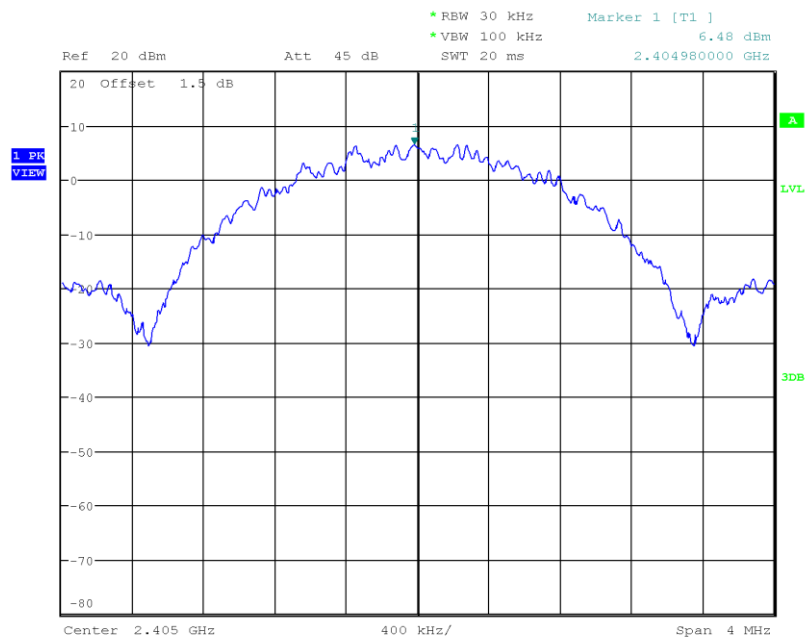
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2479.704
 Spectral Density [dBm/RBW]: 1.290
 Resolution Bandwidth [kHz]: 100 kHz



Date: 7.MAR.2019 07:31:38

Peak Power Spectral Density

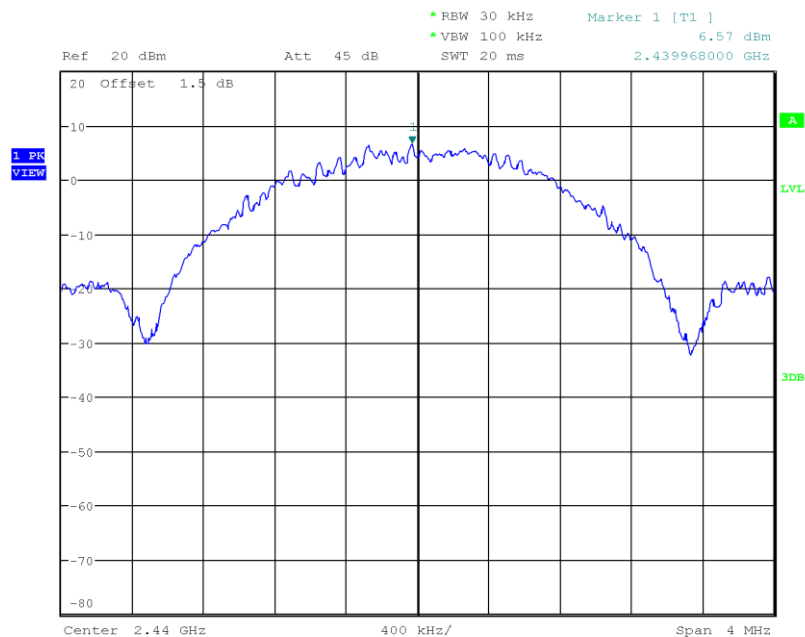
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2404.980
 Spectral Density [dBm/RBW]: 6.482
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:16:26

Peak Power Spectral Density

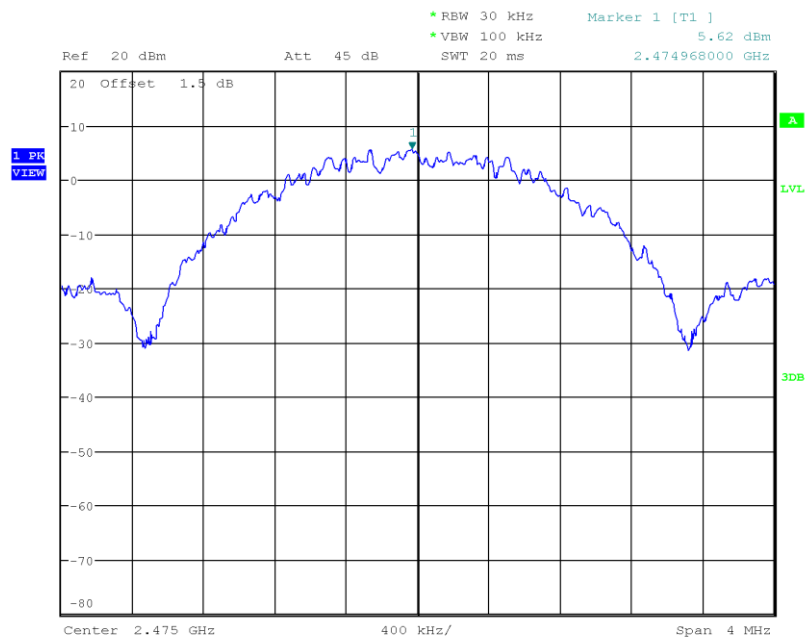
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2439.968
 Spectral Density [dBm/RBW]: 6.567
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:18:25

Peak Power Spectral Density

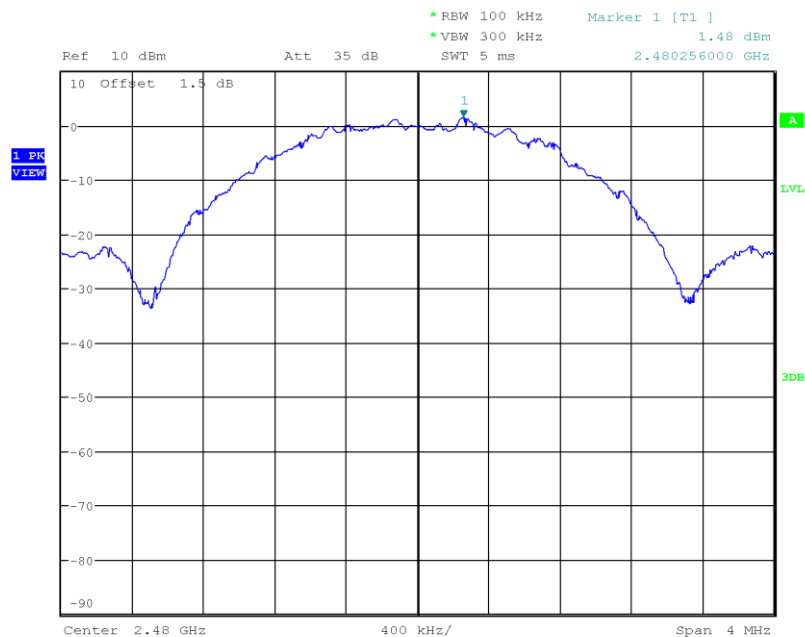
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2474.968
 Spectral Density [dBm/RBW]: 5.620
 Resolution Bandwidth [kHz]: 30 kHz



Date: 7.MAR.2019 07:21:51

Peak Power Spectral Density

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Peak Frequency [MHz]: 2480.256
 Spectral Density [dBm/RBW]: 1.477
 Resolution Bandwidth [kHz]: 100 kHz



Date: 7.MAR.2019 07:12:46

3.5 Test Conditions and Results - AC powerline conducted emissions

3.5.1 Information

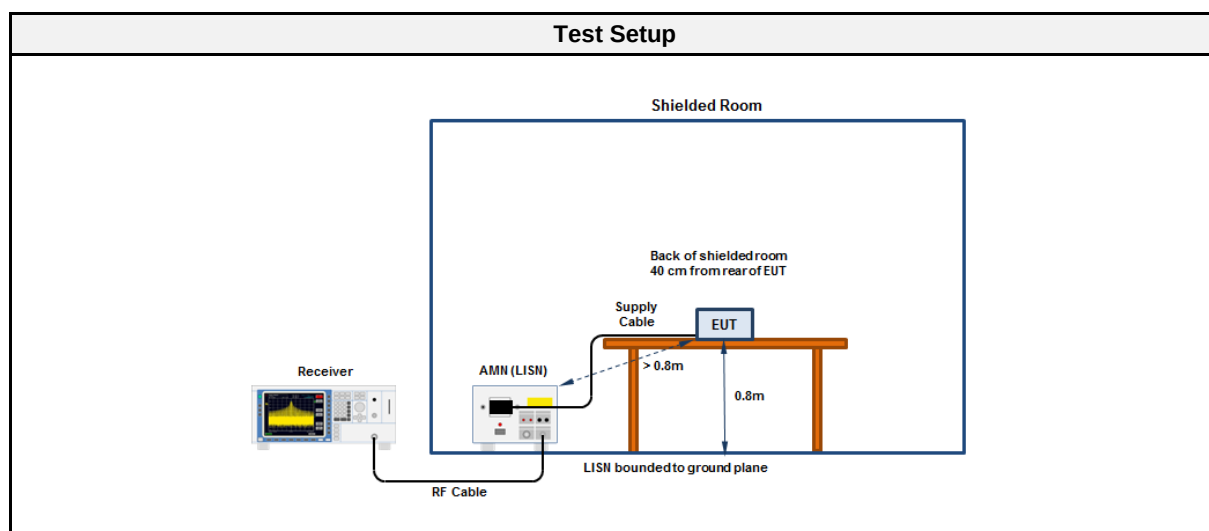
Test Information	
Reference	FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.2
Operator	Wilfried Treffke
Date	2019-03-08

3.5.2 Limits

Limits		
Frequency [MHz]	Quasi-Peak [dBμV]	Average [dBμV]
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50

* Limit decreases linearly with the logarithm of the frequency

3.5.3 Setup



3.5.4 Equipment

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

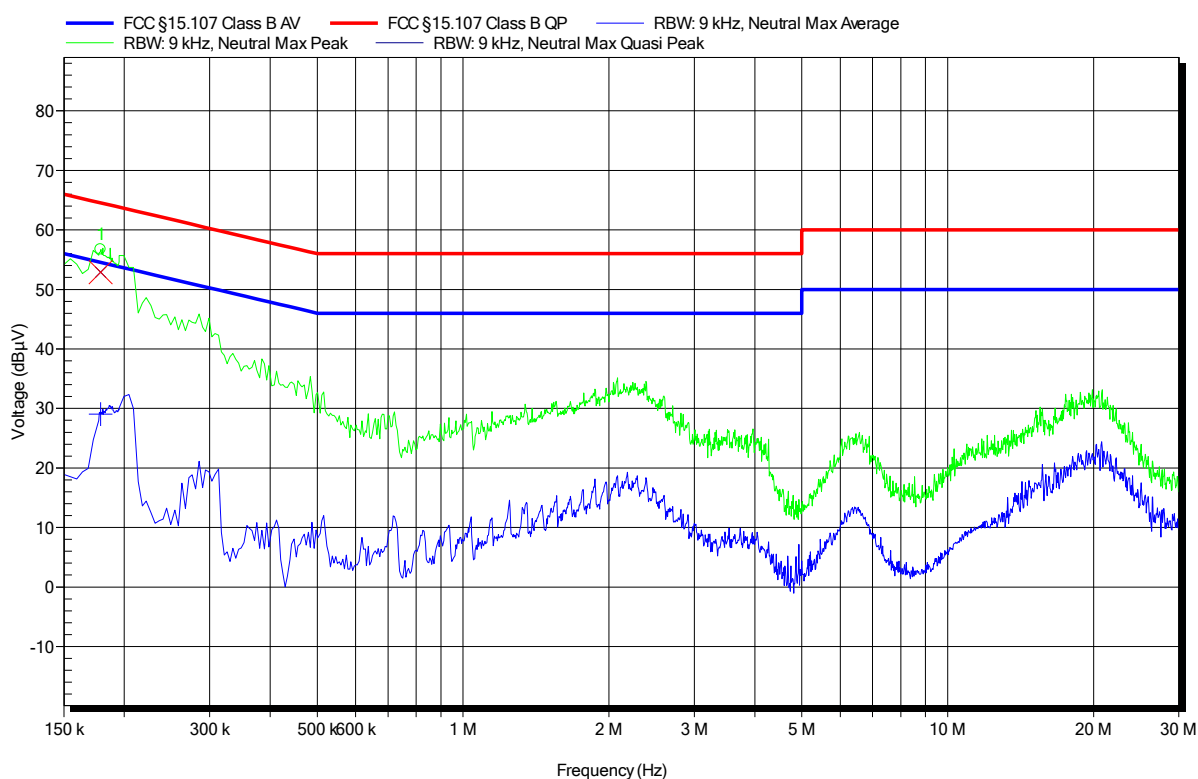
Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Receiver	R&S	ESU 26	EF00241	2017-07	2019-07
LISN	R&S	ESH3-Z5	EF00036	2017-01	2019-07

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

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 21°C, Unom:
 LISN: ESH3-Z5 (N)
 Mode: IEEE 802.15.4; Tx Channel 18
 Test Date: 2019-03-08
 Note:

Index 1



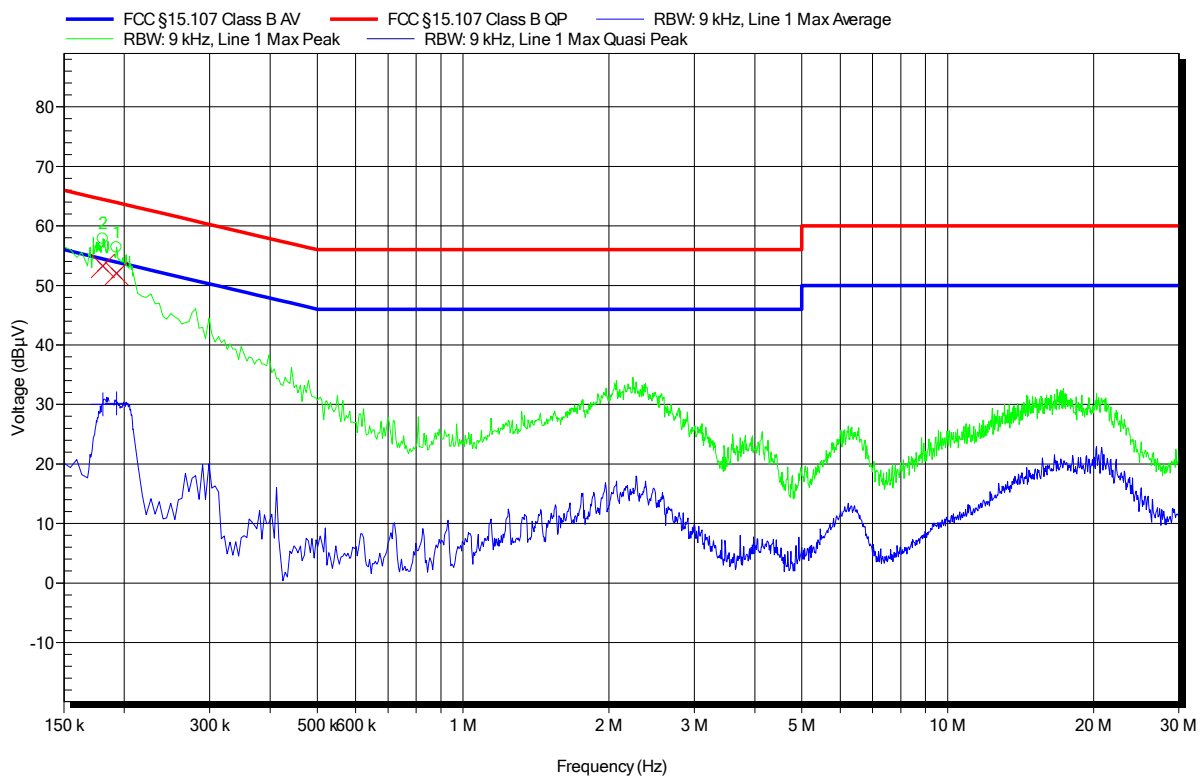
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
1	178.8 kHz	52.9 dBµV	64.54 dBµV	-11.64 dB	Pass
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status
1	178.8 kHz	29.05 dBµV	54.54 dBµV	-25.49 dB	Pass

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

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Mr. Treffke
Test Conditions: Tnom: 21°C, Unom:
LISN: ESH3-Z5 (L)
Mode: IEEE 802.15.4; Tx Channel 18
Test Date: 2019-03-08
Note:

Index 2



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
1	192.75 kHz	52 dBµV	63.92 dBµV	-11.92 dB	Pass
2	180.6 kHz	53.25 dBµV	64.46 dBµV	-11.21 dB	Pass

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status
1	192.75 kHz	30.16 dBµV	53.92 dBµV	-23.76 dB	Pass
2	180.6 kHz	29.99 dBµV	54.46 dBµV	-24.47 dB	Pass

3.6 Test Conditions and Results - Band-edge compliance

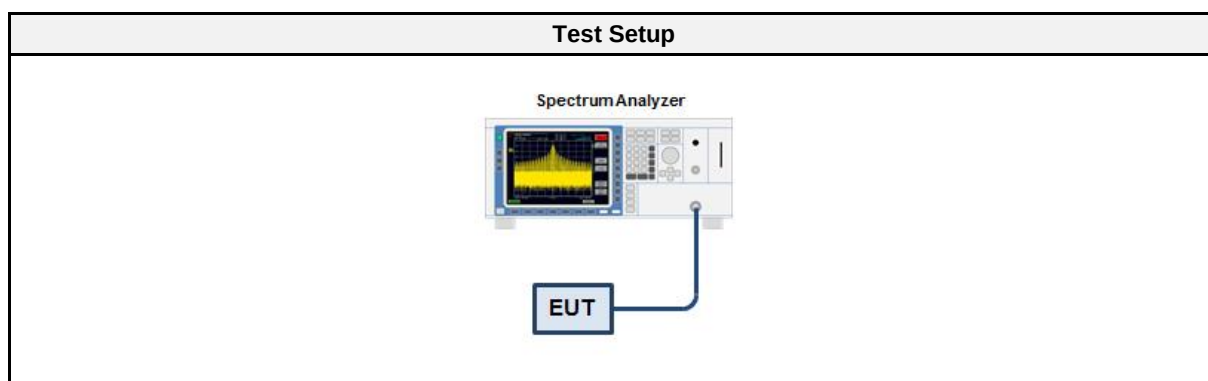
3.6.1 Information

Test Information	
Reference	FCC § 15.247(d); ISSED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.13
Operator	Wilfried Treffke
Date	2019-03-07

3.6.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

3.6.3 Setup



3.6.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.6.5 Procedure

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

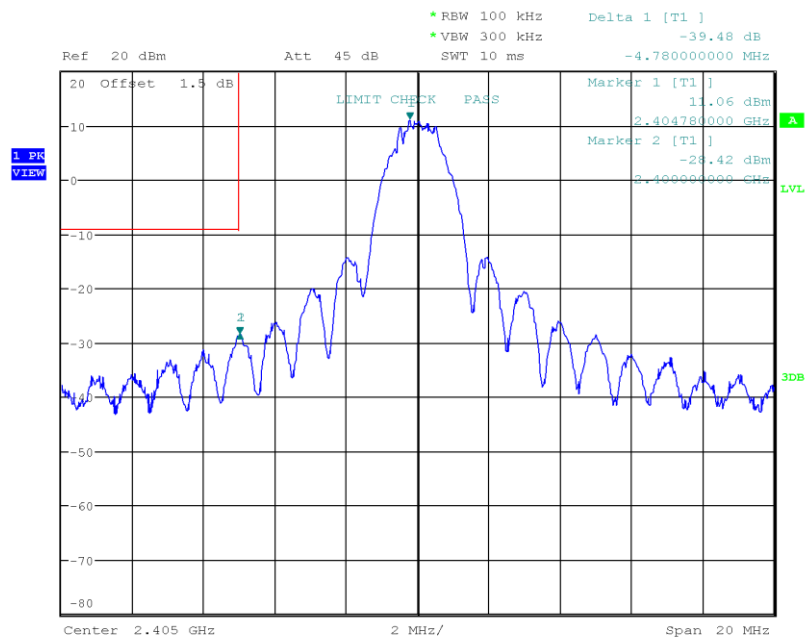
3.6.6 Results

Test Results - DSSS O-QPSK				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
O-QPSK	2405	-39.48	-20	PASS
O-QPSK	2475	-47.44	-20	PASS
O-QPSK	2480	-35.56	-20	PASS

Test Results - O-QPSK				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
O-QPSK	2405	-41.6	-20	PASS
O-QPSK	2475	-47.17	-20	PASS
O-QPSK	2480	-36.00	-20	PASS

Band-edge Compliance

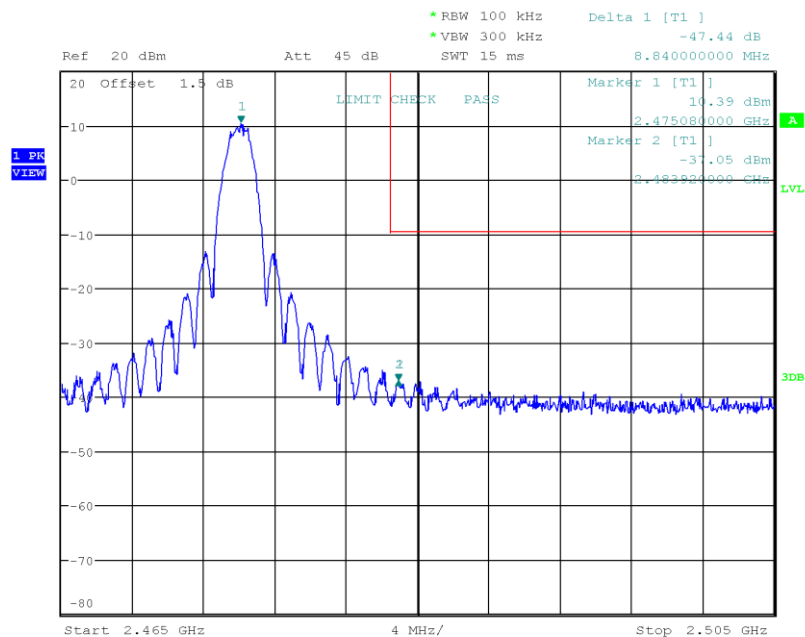
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Lower
 In-band Frequency [MHz]: 2404.78
 Max. in-band Level [dBm/100 kHz]: 11.056
 Out-of-band Frequency [MHz]: 2400.0
 Max. out-of-band Level [dBm/100 kHz]: -28.423
 Attenuation [dB]: -39.48



Date: 7.MAR.2019 07:42:29

Band-edge Compliance

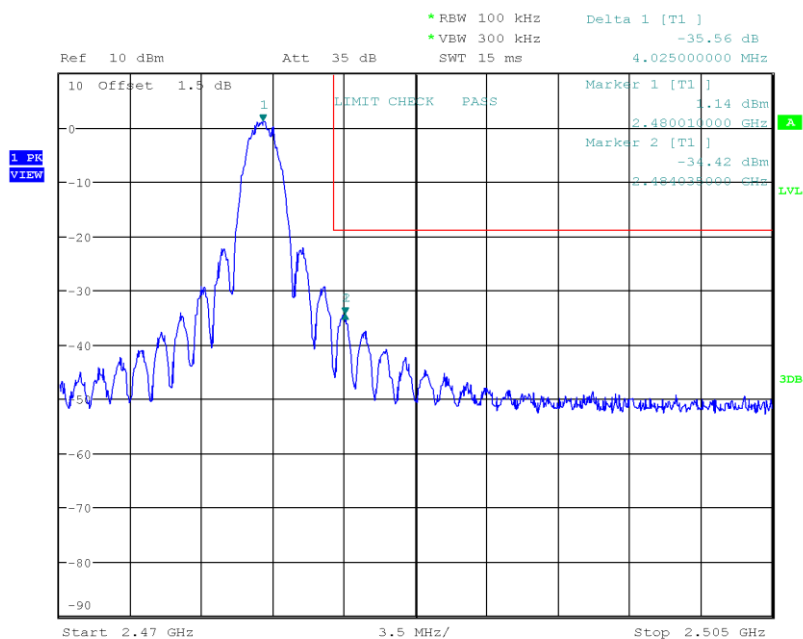
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Upper
 In-band Frequency [MHz]: 2475.08
 Max. in-band Level [dBm/100 kHz]: 10.394
 Out-of-band Frequency [MHz]: 2483.92
 Max. out-of-band Level [dBm/100 kHz]: -37.046
 Attenuation [dB]: -47.44



Date: 7.MAR.2019 07:40:29

Band-edge Compliance

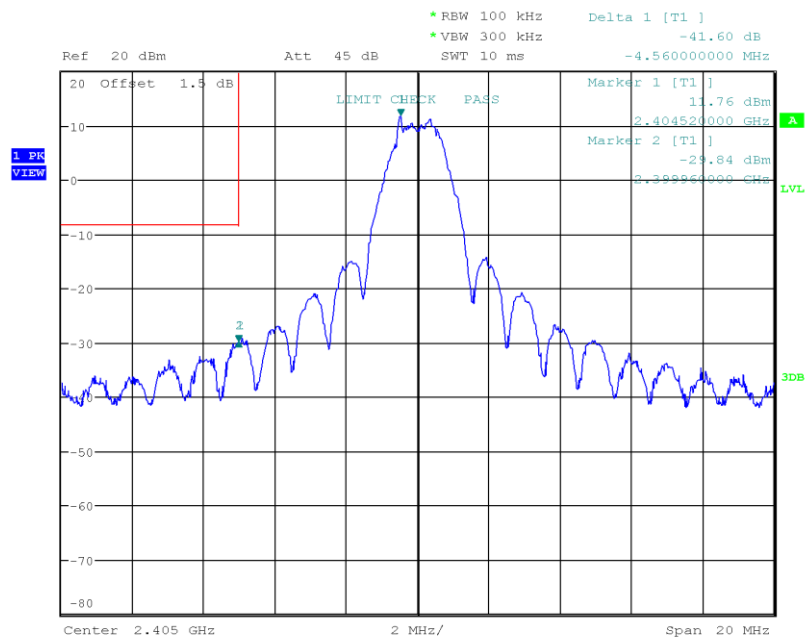
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Upper
 In-band Frequency [MHz]: 2480.01
 Max. in-band Level [dBm/100 kHz]: 1.142
 Out-of-band Frequency [MHz]: 2484.035
 Max. out-of-band Level [dBm/100 kHz]: -34.419
 Attenuation [dB]: -35.56



Date: 7.MAR.2019 07:38:16

Band-edge Compliance

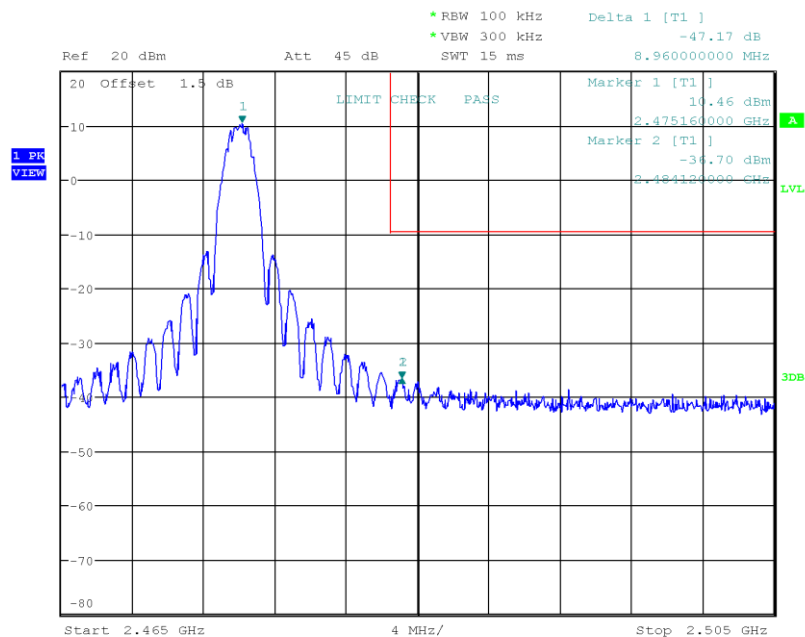
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Lower
 In-band Frequency [MHz]: 2404.52
 Max. in-band Level [dBm/100 kHz]: 11.756
 Out-of-band Frequency [MHz]: 2399.96
 Max. out-of-band Level [dBm/100 kHz]: -29.843
 Attenuation [dB]: -41.6



Date: 7.MAR.2019 07:43:52

Band-edge Compliance

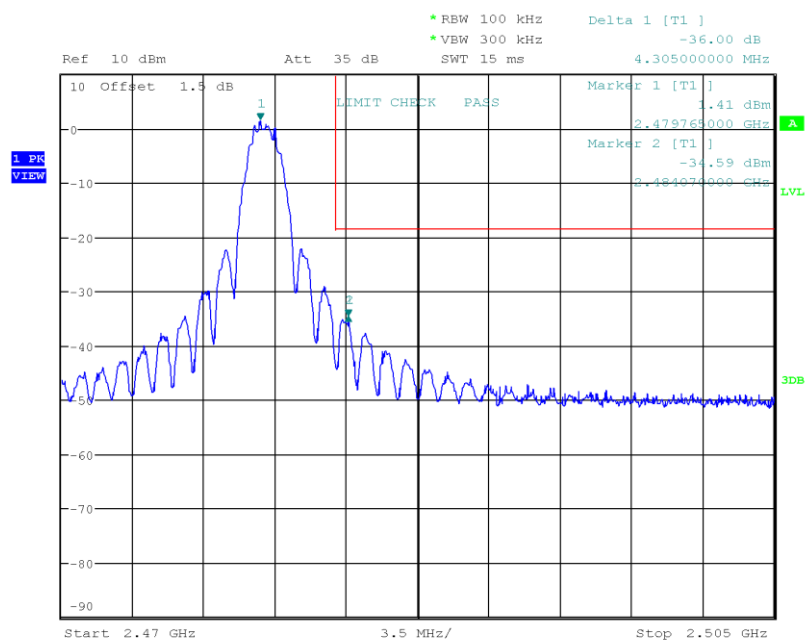
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Upper
 In-band Frequency [MHz]: 2475.16
 Max. in-band Level [dBm/100 kHz]: 10.462
 Out-of-band Frequency [MHz]: 2484.12
 Max. out-of-band Level [dBm/100 kHz]: -36.704
 Attenuation [dB]: -47.17



Date: 7.MAR.2019 07:45:19

Band-edge Compliance

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Band-edge: Upper
 In-band Frequency [MHz]: 2479.765
 Max. in-band Level [dBm/100 kHz]: 1.411
 Out-of-band Frequency [MHz]: 2484.07
 Max. out-of-band Level [dBm/100 kHz]: -34.591
 Attenuation [dB]: -36.0



Date: 7.MAR.2019 07:48:08

3.7 Test Conditions and Results - Conducted spurious emissions

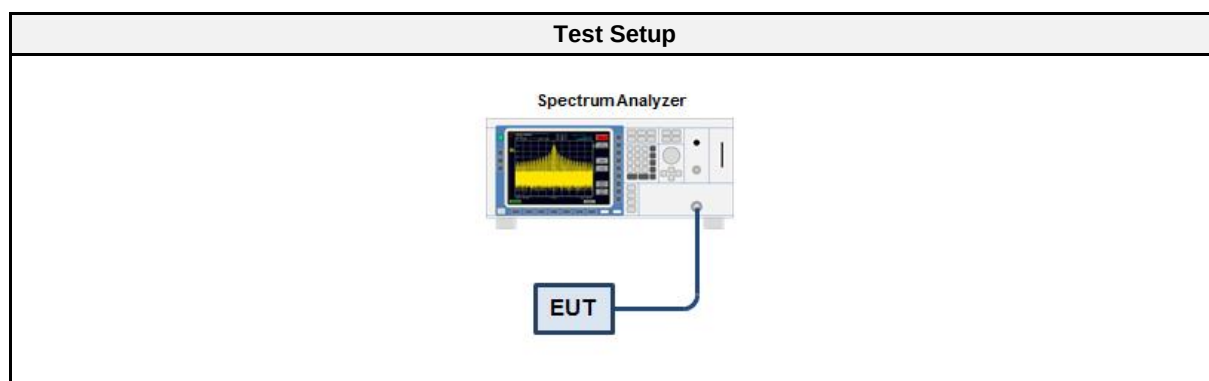
3.7.1 Information

Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.11
Operator	Wilfried Treffke
Date	2019-03-07

3.7.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

3.7.3 Setup



3.7.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2018-12	2019-12

3.7.5 Procedure

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

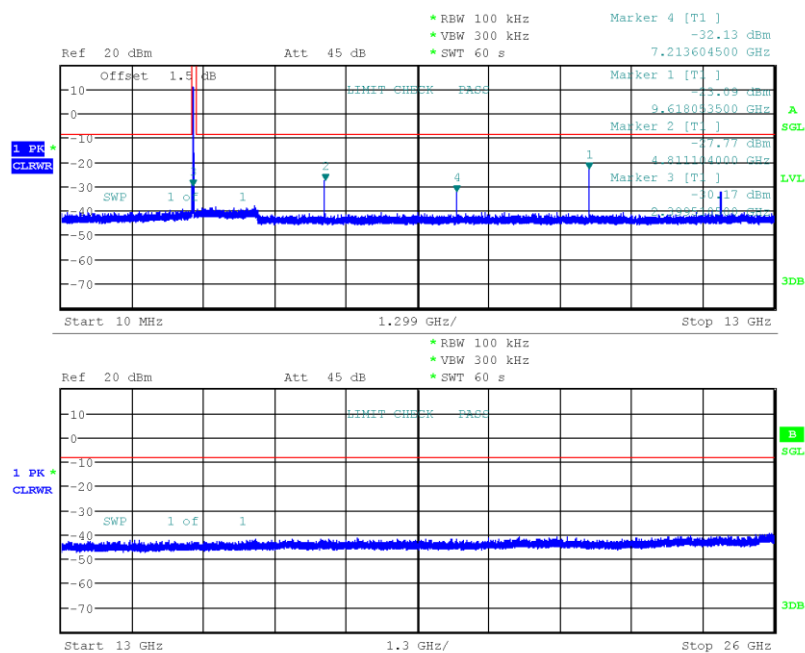
3.7.6 Results

Test Results - DSSS O-QPSK		
Mode	Channel [MHz]	Verdict
O-QPSK	2405	PASS
O-QPSK	2440	PASS
O-QPSK	2475	PASS
O-QPSK	2480	PASS

Test Results - O-QPSK		
Mode	Channel [MHz]	Verdict
O-QPSK	2405	PASS
O-QPSK	2440	PASS
O-QPSK	2475	PASS
O-QPSK	2480	PASS

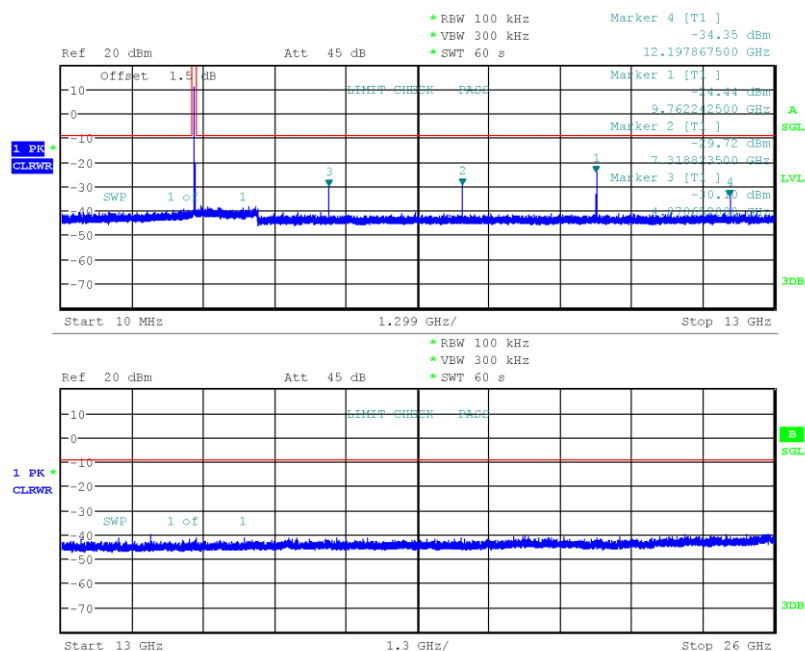
Conducted Spurious Emissions

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2405.1
 Max. in-band Level [dBm/100 kHz]: 11.6
 Out-of-band Limit [dBm/100 kHz]: -8.4



Conducted Spurious Emissions

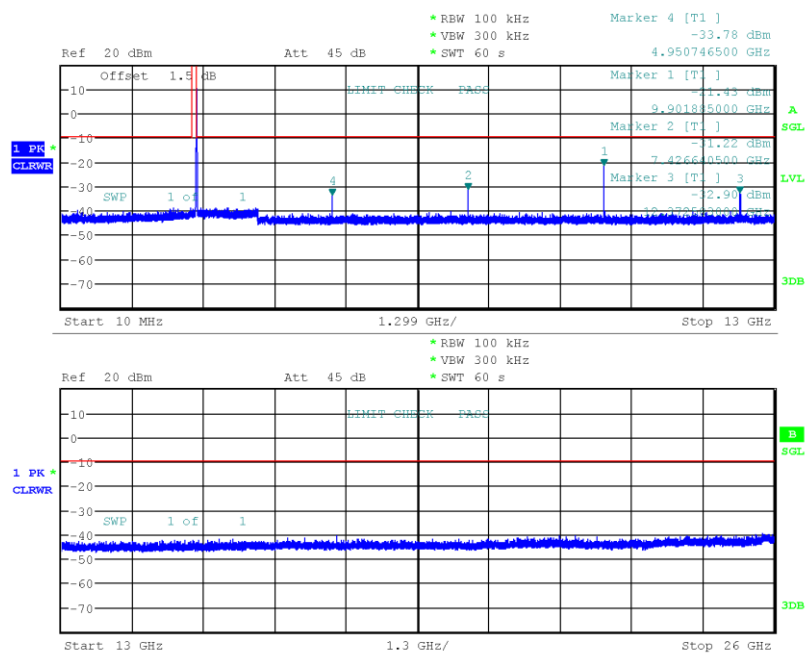
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2439.5
 Max. in-band Level [dBm/100 kHz]: 11.1
 Out-of-band Limit [dBm/100 kHz]: -8.9



Date: 7.MAR.2019 08:53:01

Conducted Spurious Emissions

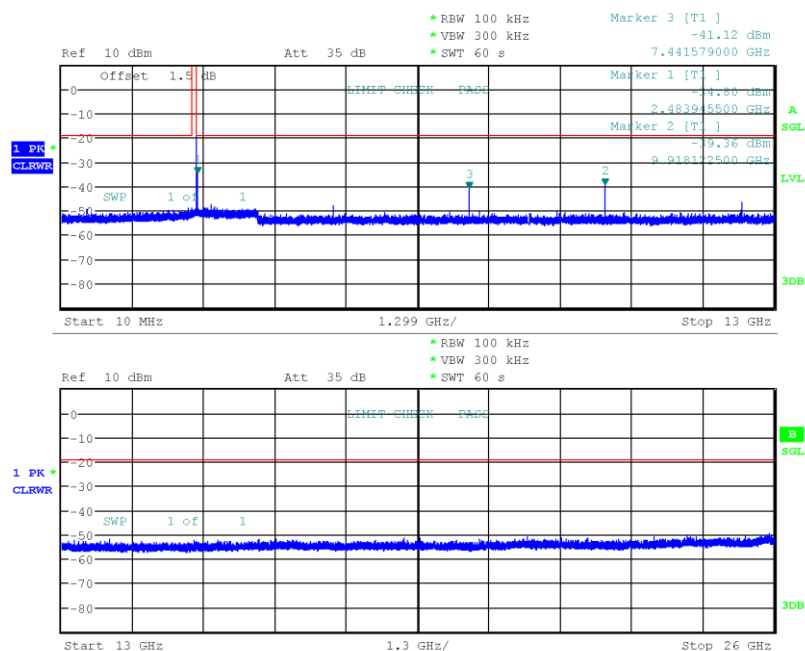
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2475.1
 Max. in-band Level [dBm/100 kHz]: 10.5
 Out-of-band Limit [dBm/100 kHz]: -9.5



Date: 7.MAR.2019 08:58:44

Conducted Spurious Emissions

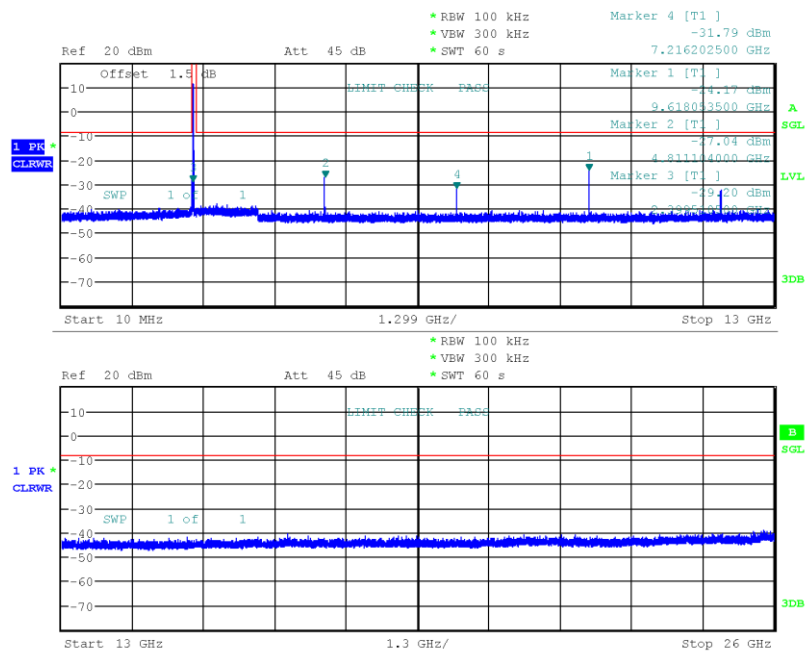
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (DSSS/250 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2479.7
 Max. in-band Level [dBm/100 kHz]: 1.0
 Out-of-band Limit [dBm/100 kHz]: -19.0



Date: 7.MAR.2019 09:02:12

Conducted Spurious Emissions

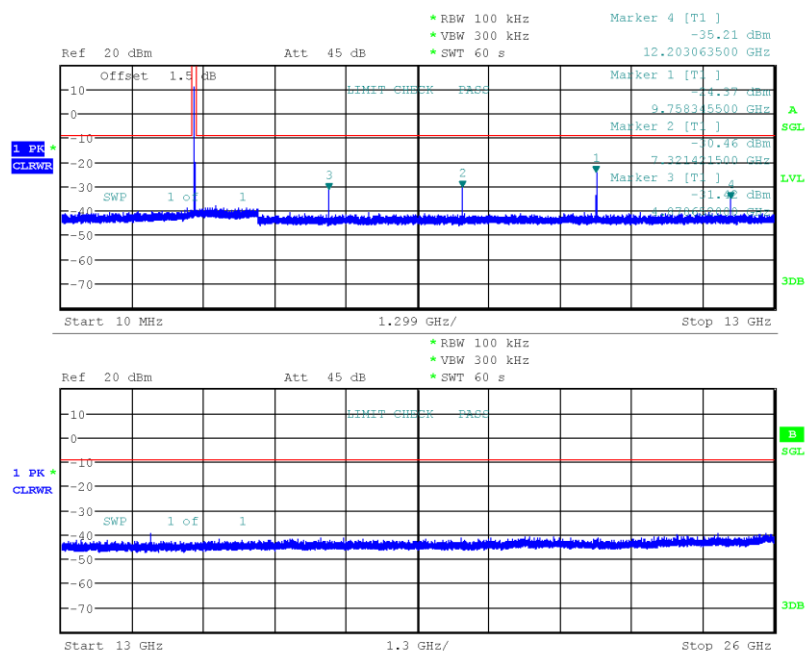
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 11, 2405 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2405.2
 Max. in-band Level [dBm/100 kHz]: 11.8
 Out-of-band Limit [dBm/100 kHz]: -8.2



Date: 7.MAR.2019 08:20:47

Conducted Spurious Emissions

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 18, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2440.0
 Max. in-band Level [dBm/100 kHz]: 11.2
 Out-of-band Limit [dBm/100 kHz]: -8.8



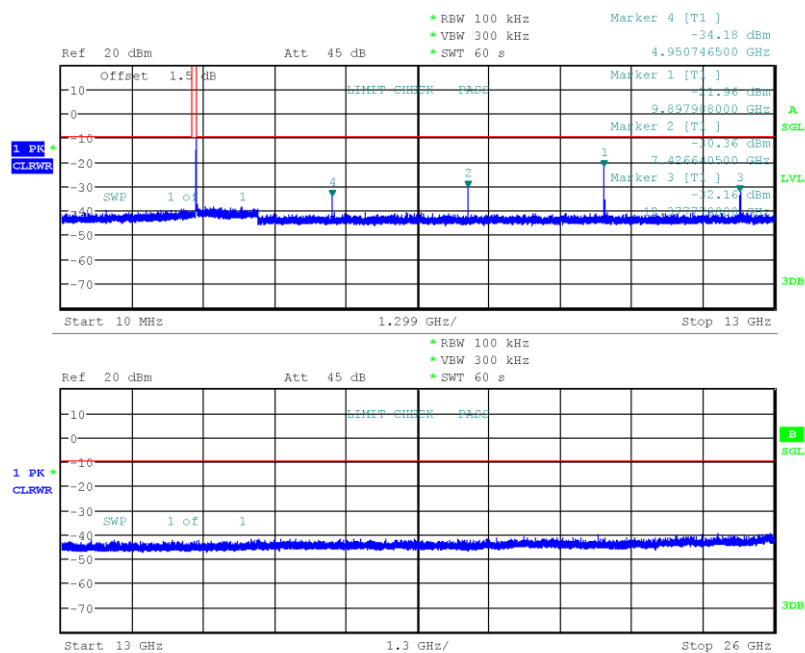
Date: 7.MAR.2019 08:27:05

Test Report No.: G0M-1902-8028-TFC247ZB-V02

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

Conducted Spurious Emissions

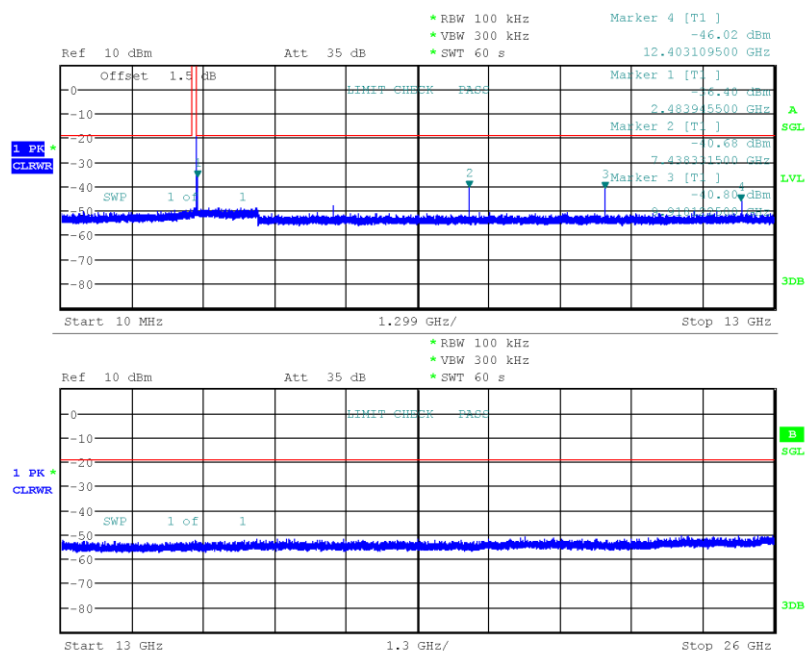
Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 25, 2475 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2475.1
 Max. in-band Level [dBm/100 kHz]: 10.5
 Out-of-band Limit [dBm/100 kHz]: -9.5



Date: 7.MAR.2019 08:30:55

Conducted Spurious Emissions

Project Number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 Model Description: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Sample ID: 22628
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: IEEE 802.15.4 (2000 kbps), Channel: 26, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Wilfried Treffke
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-03-07
 Max. in-band Frequency [MHz]: 2479.8
 Max. in-band Level [dBm/100 kHz]: 1.3
 Out-of-band Limit [dBm/100 kHz]: -18.7



Date: 7.MAR.2019 07:57:33

3.8 Test Conditions and Results - Transmitter radiated emissions

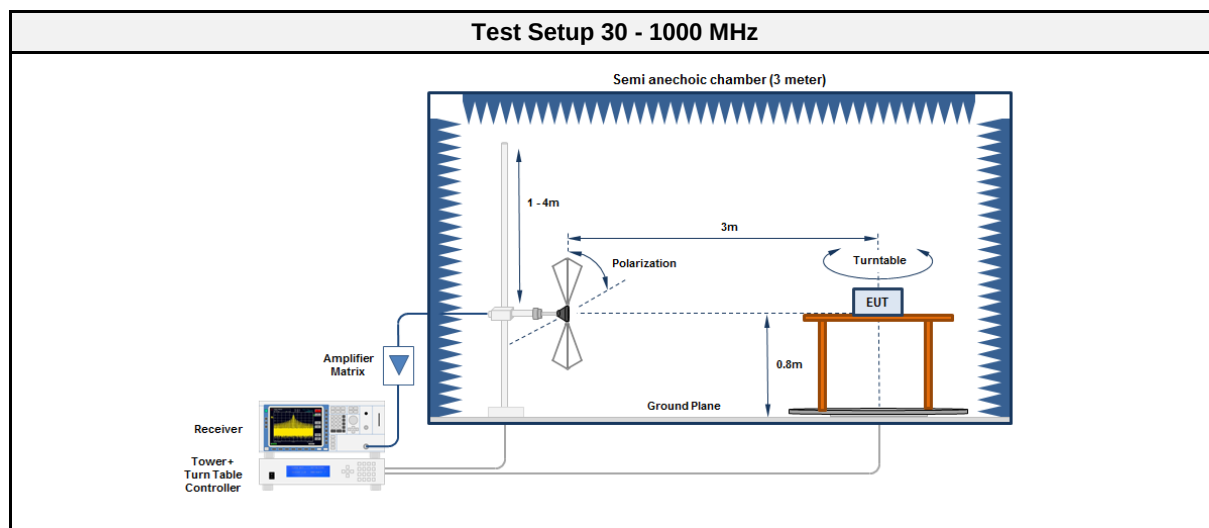
3.8.1 Information

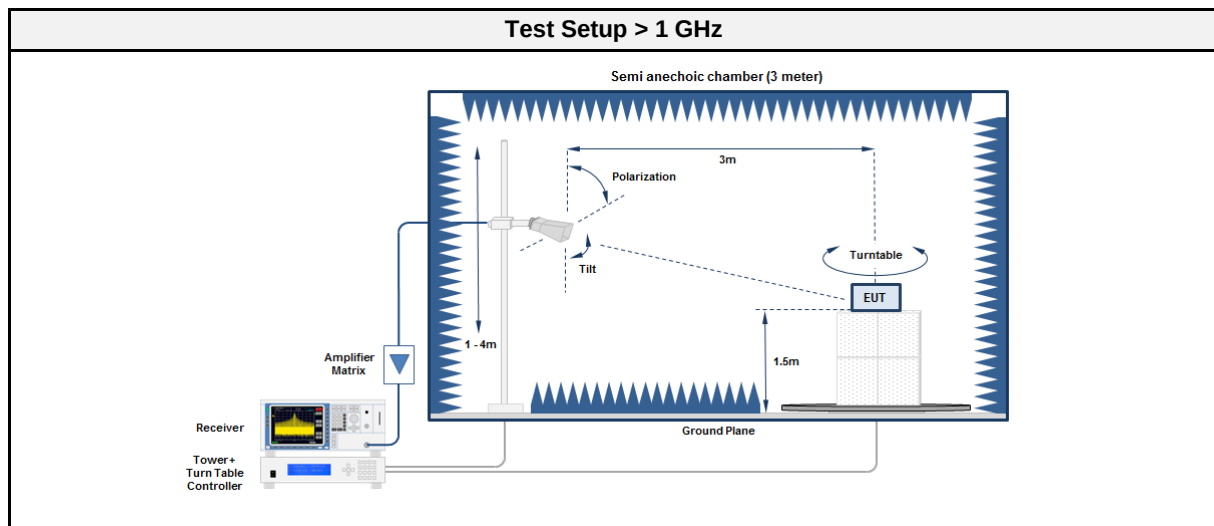
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISSED RSS-Gen, Issue 5 (section 6.13)
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Wilfried Treffke
Date	2019-03-08

3.8.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [$\mu\text{V/m}$]	Measurement distance [m]
0.009 - 0.09	Average	$2400/F[\text{kHz}]$	300
0.09 - 0.110	Quasi-Peak	$2400/F[\text{kHz}]$	300
0.110 - 0.490	Average	$2400/F[\text{kHz}]$	300
0.490 - 1.705	Quasi-Peak	$24000/F[\text{kHz}]$	30
1.705 - 30.0	Quasi-Peak	30	30
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.8.3 Setup





3.8.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2015.2.4

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2018-08	2019-08
Antenna	R&S	HK 116	EF00030	2016-04	2019-04
Antenna	R&S	HL 223	EF00212	2016-04	2019-04

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2018-08	2019-08
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2016-09	2019-09
Antenna	Amplifier Research	AT4560	EF00302	2018-04	2019-04

3.8.5 Procedure

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

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

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

3.8.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2405	2388.5	50.24	pk	ver	74.00	-23.76
2405	2389.8	50.95	pk	hor	74.00	-23.05
2405	2389.8	39.69	RMS	hor	54.00	-14.31
2405	4809	53.85	pk	hor	74.00	-20.15
2405	4809	50.65	RMS	hor	54.00	-03.35
2405	4809	52.30	pk	ver	74.00	-21.70
2405	4809	46.73	RMS	ver	54.00	-07.27
2405	12022	57.54	pk	ver	74.00	-16.46
2405	12022	49.91	RMS	ver	54.00	-04.09
2405	12023	58.94	pk	hor	74.00	-15.06
2440	4878	49.71	pk	ver	74.00	-24.29
2440	4881	53.66	pk	hor	74.00	-20.34
2440	12198	58.65	pk	hor	74.00	-15.35
2440	12203	57.07	pk	ver	74.00	-16.93
2480	2483.5	62.12	pk	hor	74.00	-11.88
2480	2483.5	53.86	RMS	hor	54.00	-00.34
2480	2483.5	60.56	pk	ver	74.00	-13.44
2480	2483.5	51.89	RMS	ver	54.00	-02.11
2480	4961	50.30	pk	ver	74.00	-23.70
2480	4961	46.88	RMS	ver	54.00	-07.12
2480	4962	49.82	pk	hor	74.00	-24.18
2480	7438	49.58	pk	ver	74.00	-24.42
2480	7438	44.65	RMS	ver	54.00	-09.35

3.9 Test Conditions and Results - Receiver radiated emissions

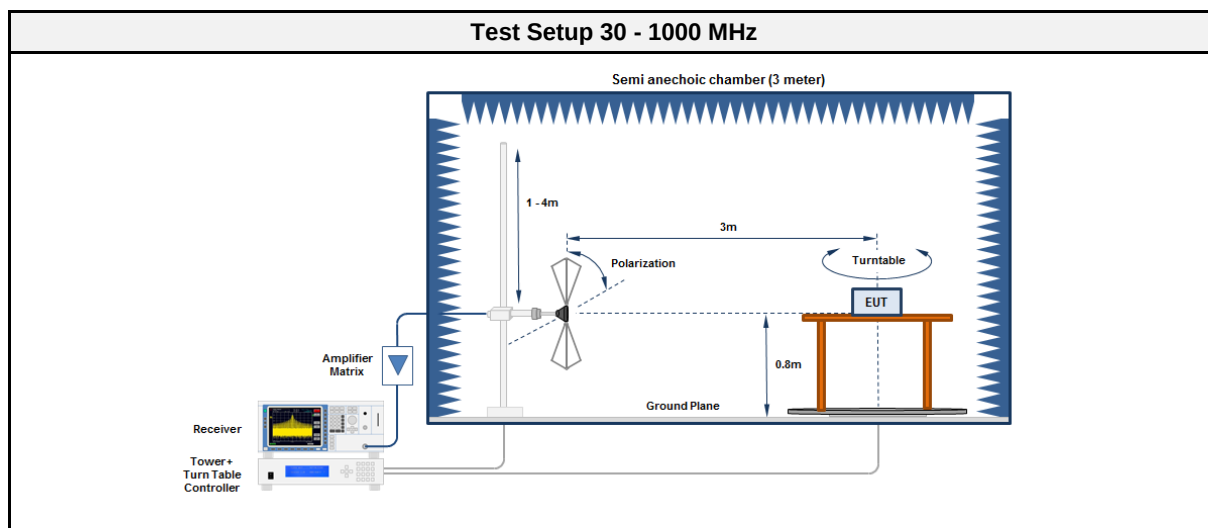
3.9.1 Information

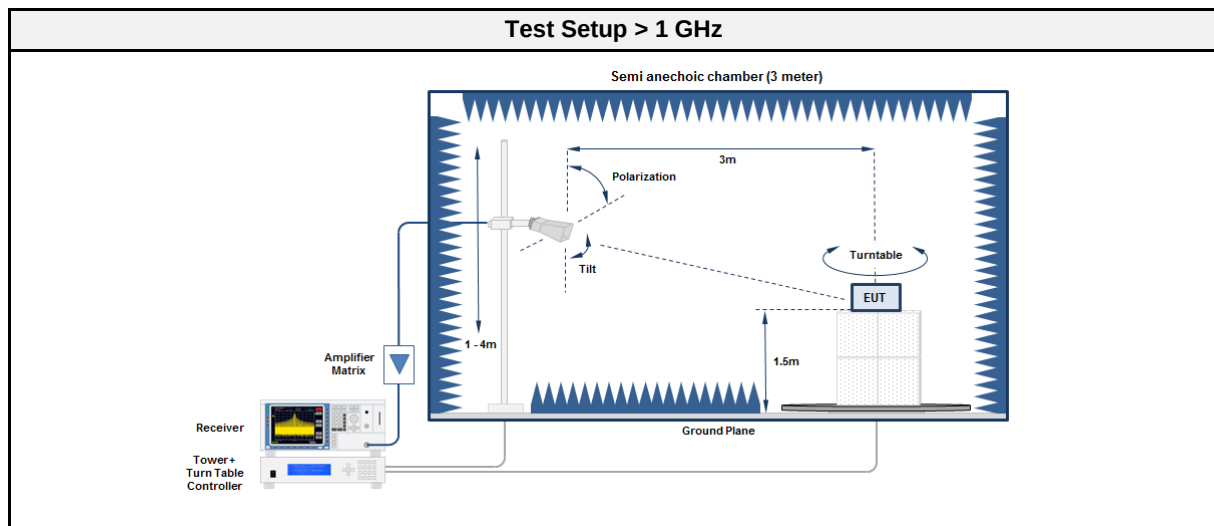
Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Wilfried Treffke
Date	2019-03-11

3.9.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [dB μ V/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.9.3 Setup





3.9.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2015.2.4

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2018-08	2019-08
Antenna	R&S	HK 116	EF00030	2016-04	2019-04
Antenna	R&S	HL 223	EF00212	2016-04	2019-04

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2018-08	2019-08
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2016-09	2019-09
Antenna	Amplifier Research	AT4560	EF00302	2018-04	2019-04

3.9.5 Procedure

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

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

3.9.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2440	5923	35.25	pk	hor	53.98	-18.73
2440	11317	44.02	pk	ver	53.98	-09.96

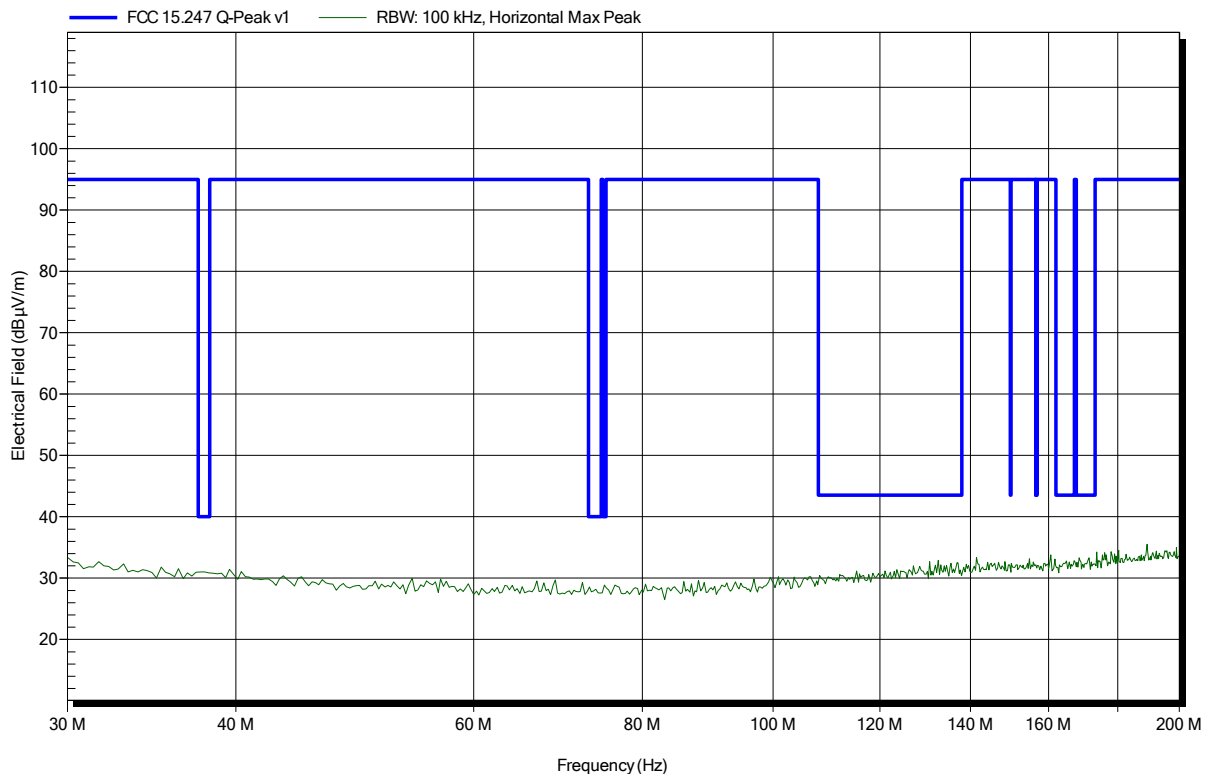
ANNEX A Transmitter spurious emissions

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
 Test Date: 2019-03-08
 Note:

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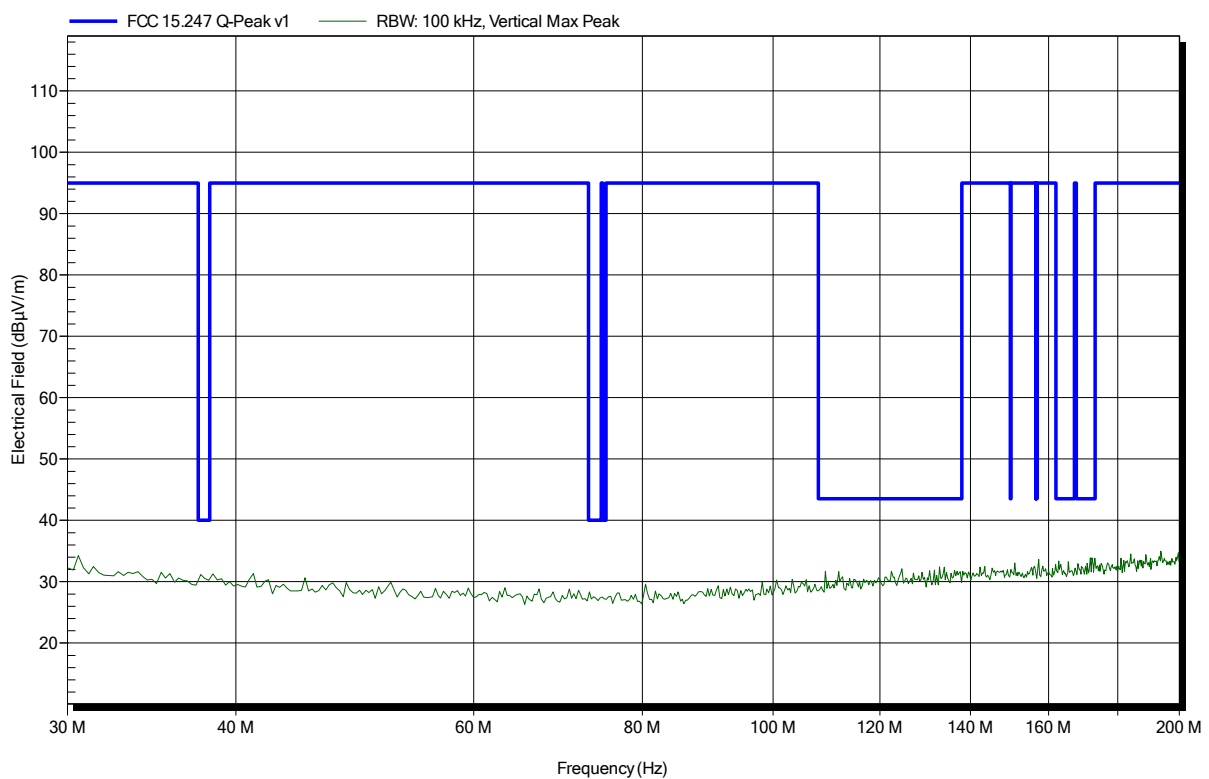


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Rohde & Schwarz HK 116, Vertical
Measurement distance: 3 m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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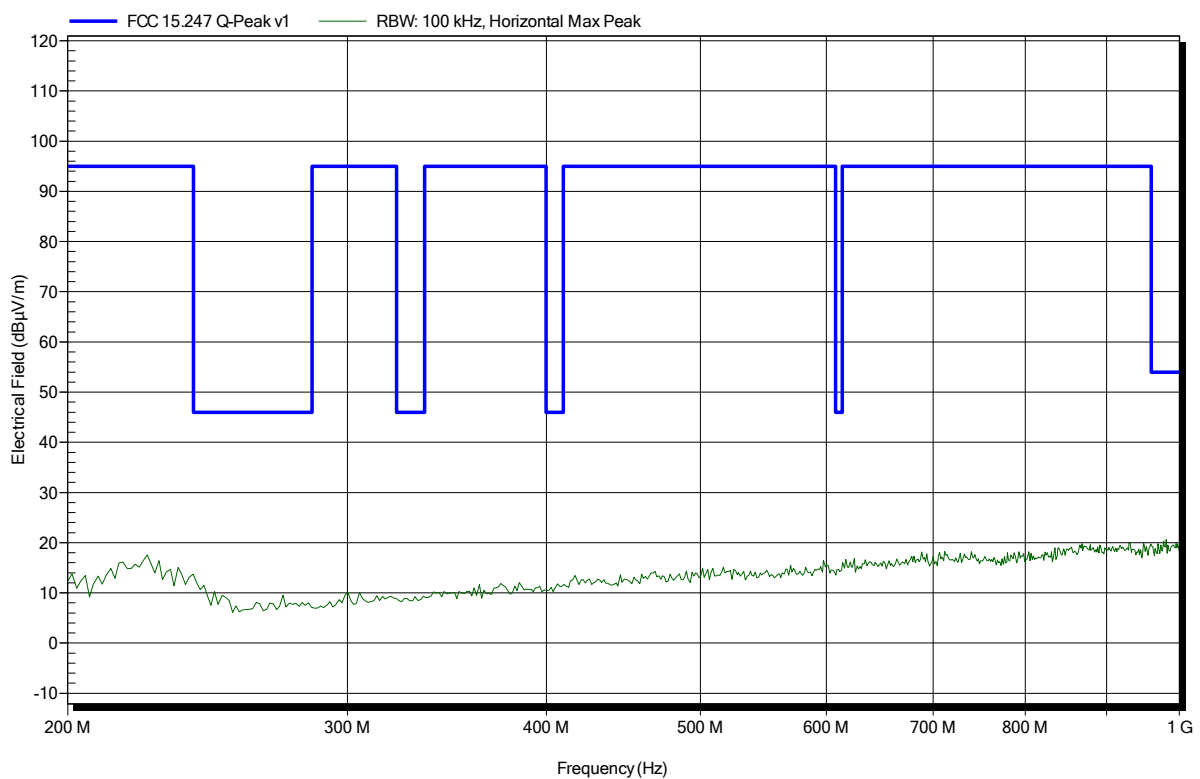


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Rohde & Schwarz HL 223, Horizontal
Measurement distance: 3 m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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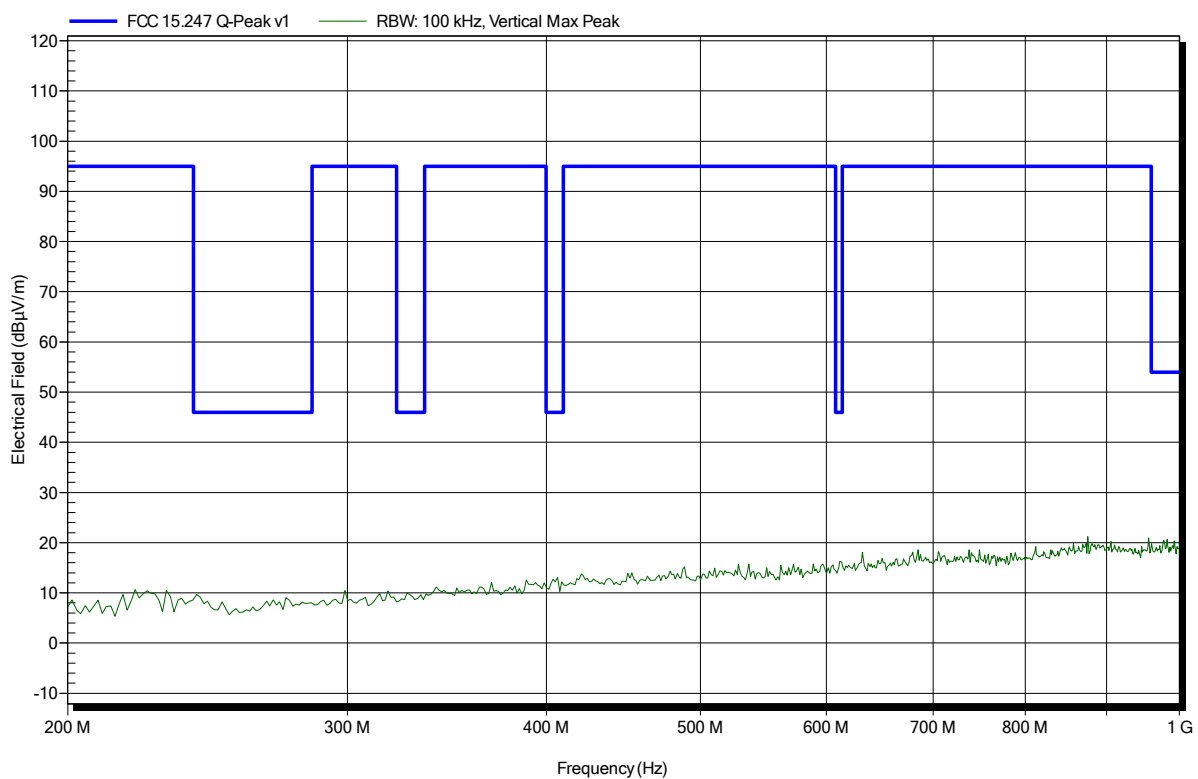


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Rohde & Schwarz HL 223, Vertical
Measurement distance: 3 m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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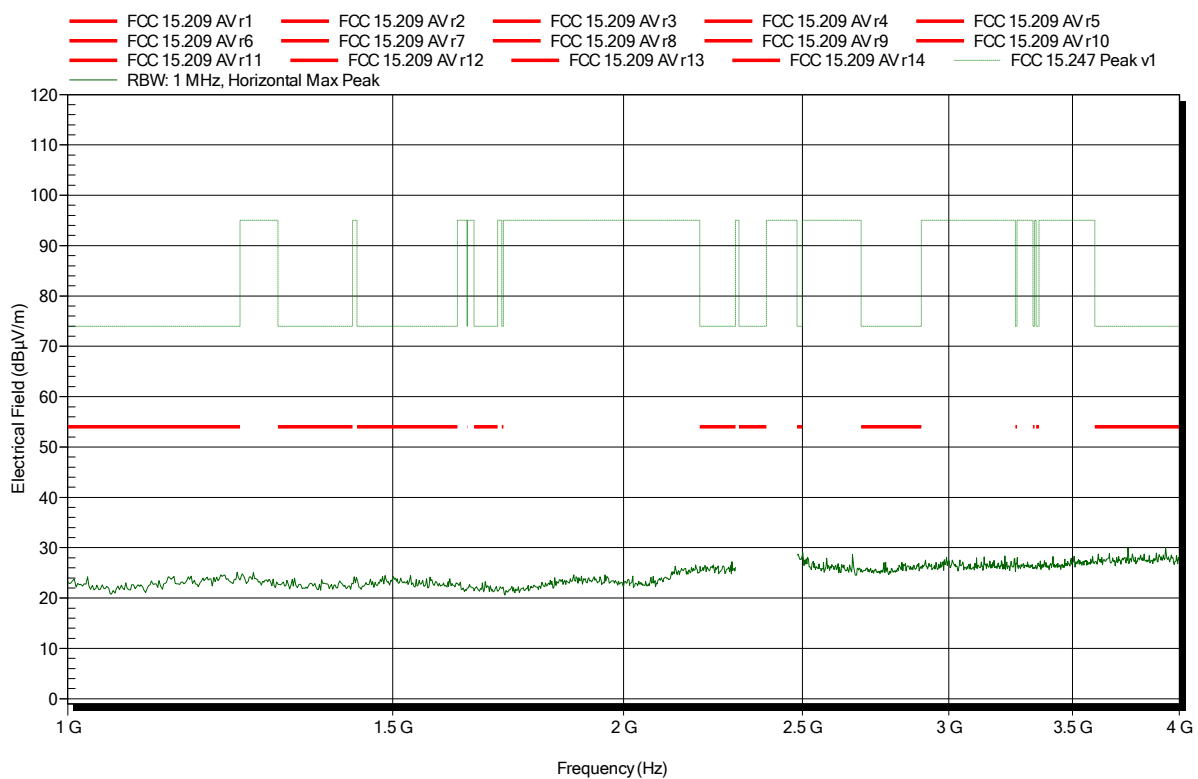


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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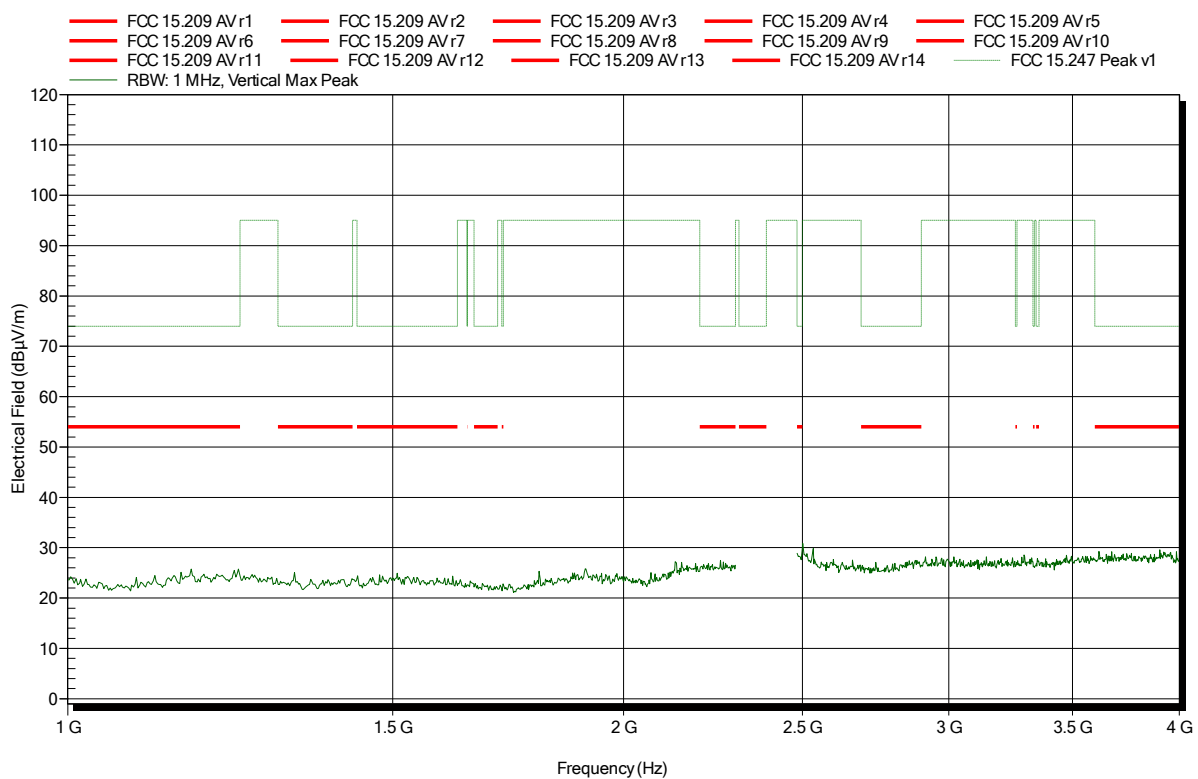


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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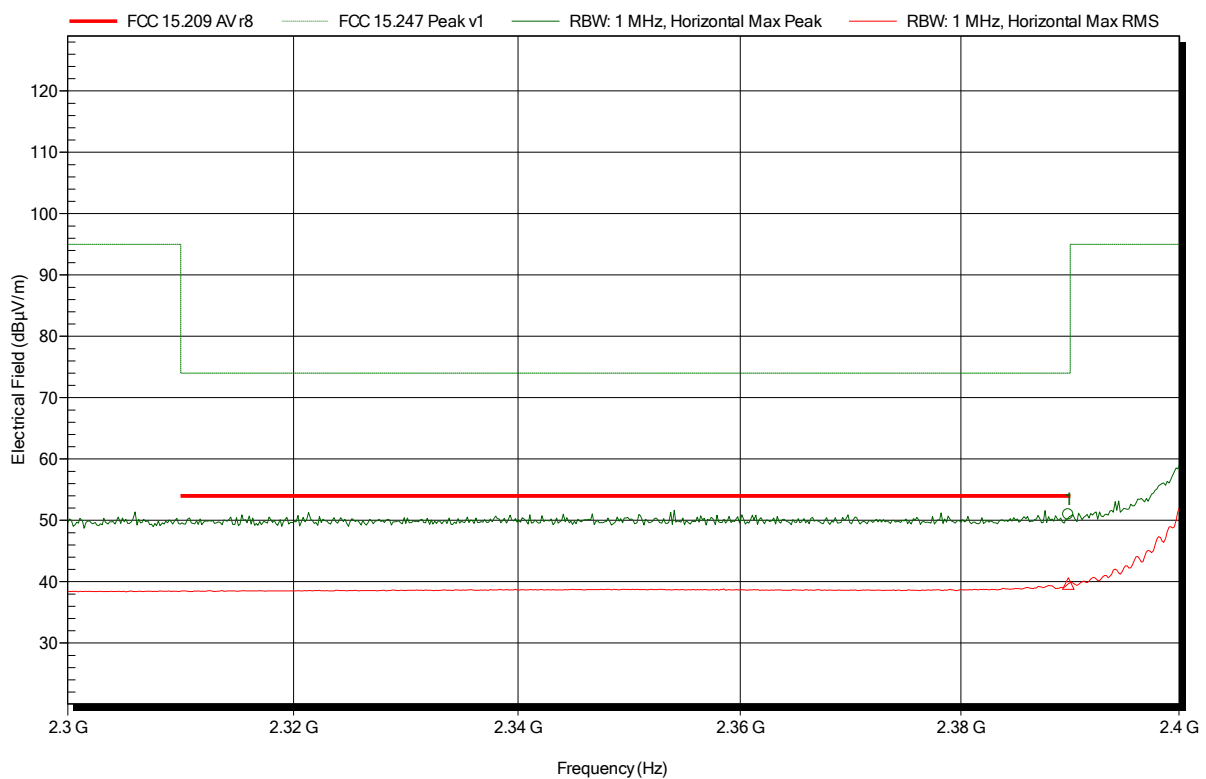


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note: lower bandedge

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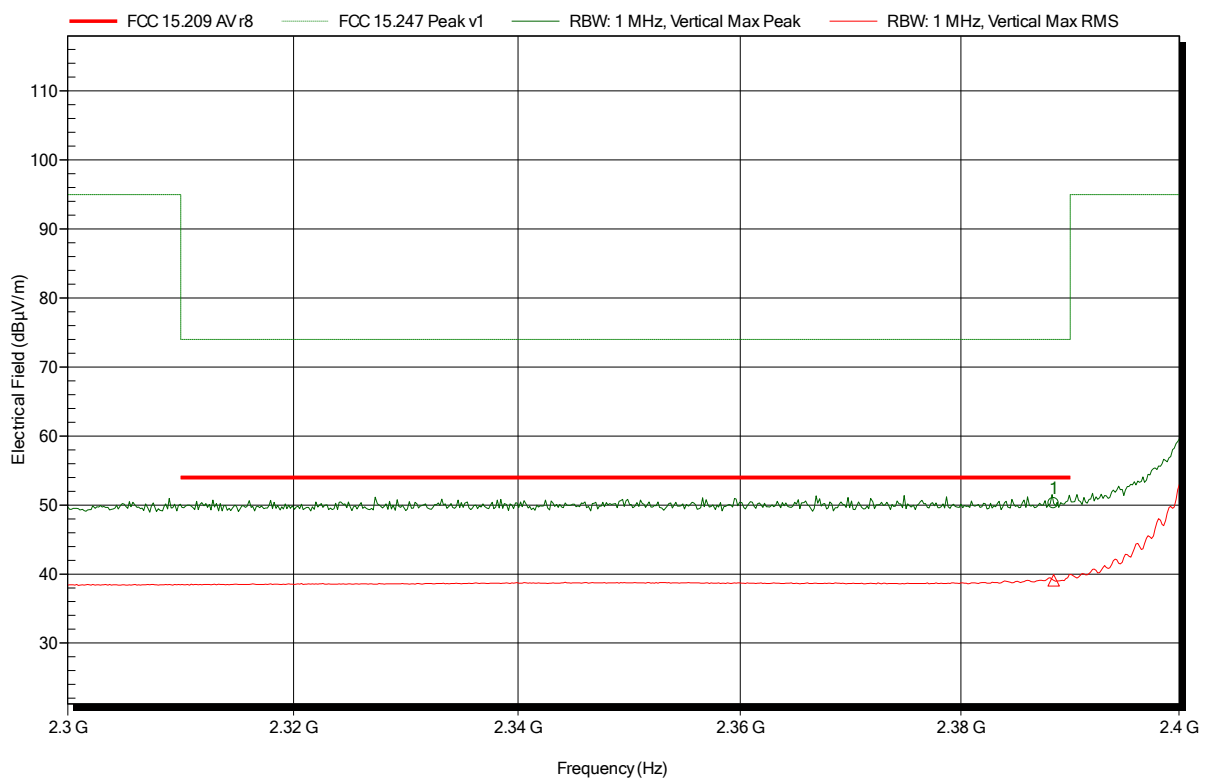
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.3898 GHz	50.95 dBµV/m	74 dBµV/m	-23.05 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.3898 GHz	39.69 dBµV/m	54 dBµV/m	-14.31 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note: lower bandedge

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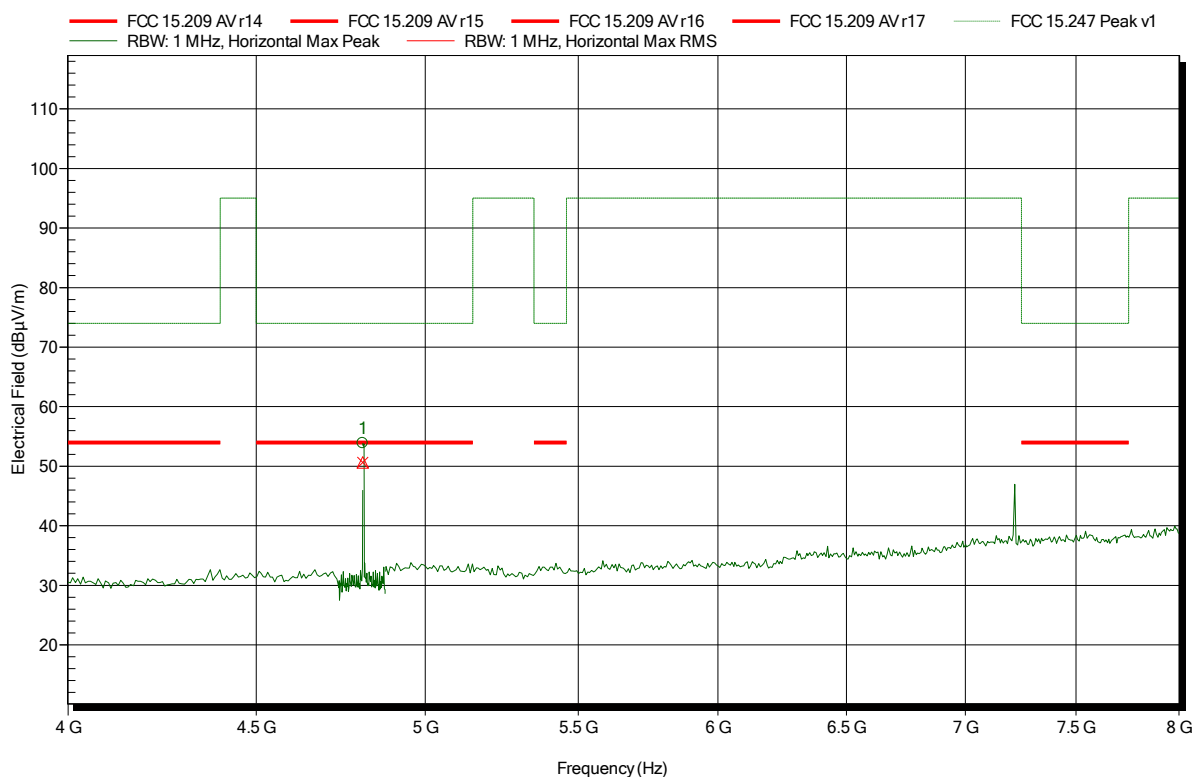
Frequency 2.3885 GHz	Peak 50.24 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -23.76 dB	Peak Status Pass
Frequency 2.3885 GHz	RMS 39.07 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -14.93 dB	RMS Status Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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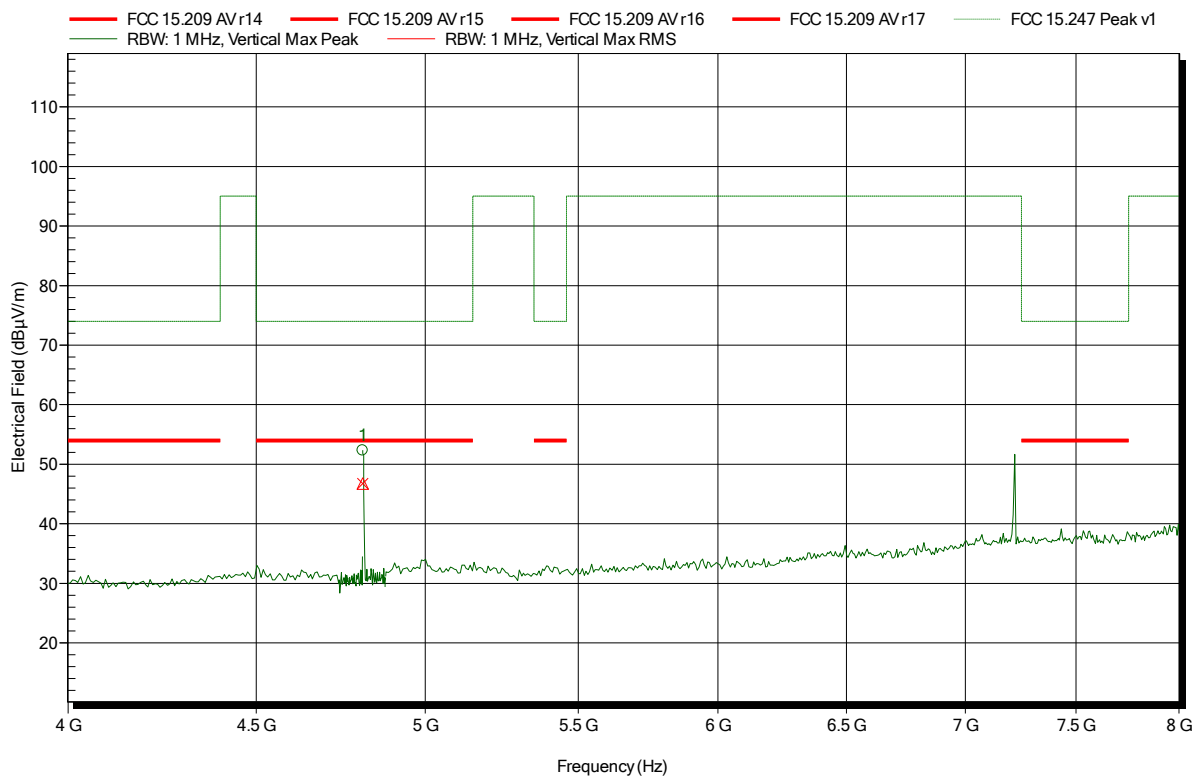
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.809 GHz	53.85 dBµV/m	74 dBµV/m	-20.15 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.809 GHz	50.65 dBµV/m	54 dBµV/m	-3.35 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
 Test Date: 2019-03-08
 Note:

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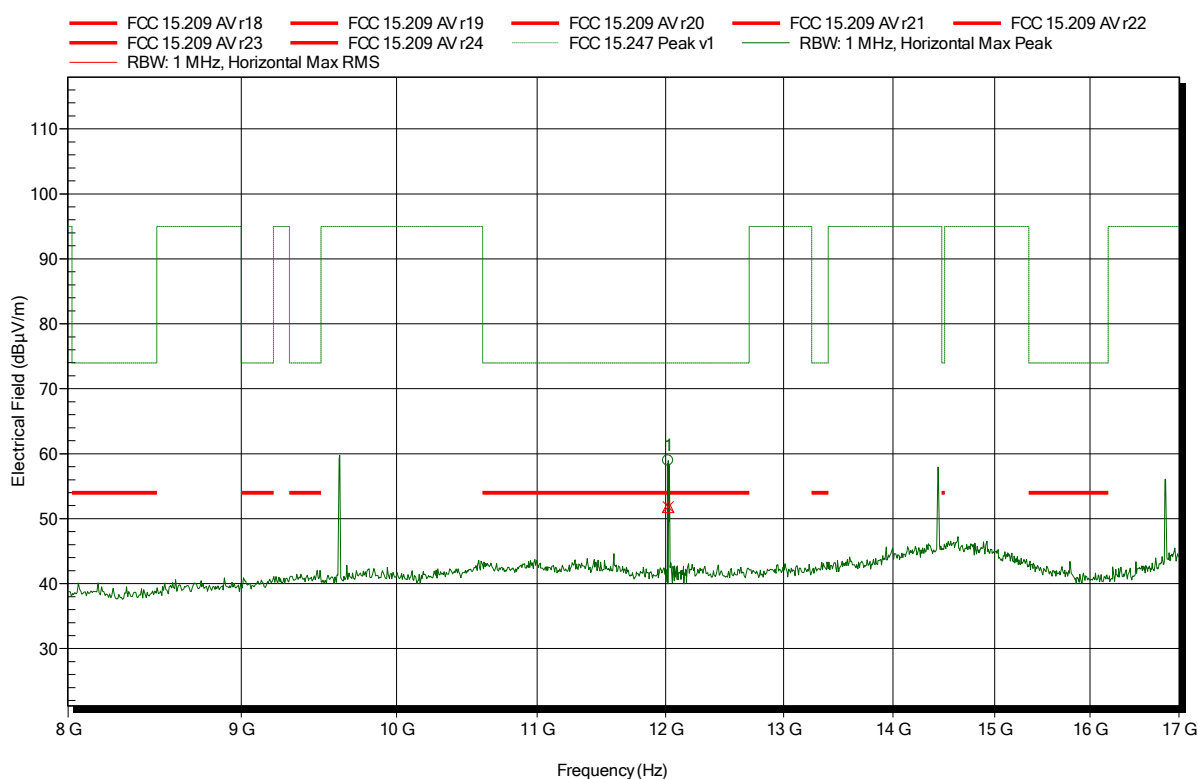
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.809 GHz	52.3 dBµV/m	74 dBµV/m	-21.7 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.809 GHz	46.73 dBµV/m	54 dBµV/m	-7.27 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
 Test Date: 2019-03-08
 Note:

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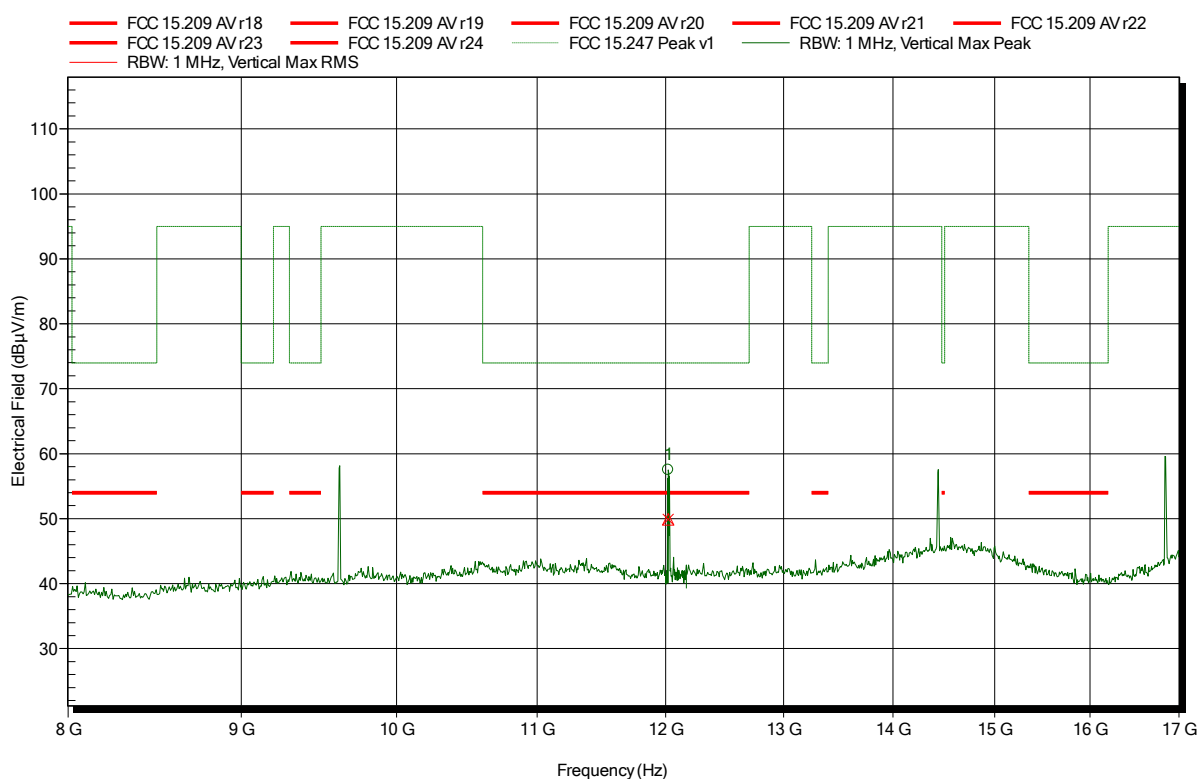
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.023 GHz	58.94 dBµV/m	74 dBµV/m	-15.06 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.023 GHz	51.81 dBµV/m	54 dBµV/m	-2.19 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
 Test Date: 2019-03-08
 Note:

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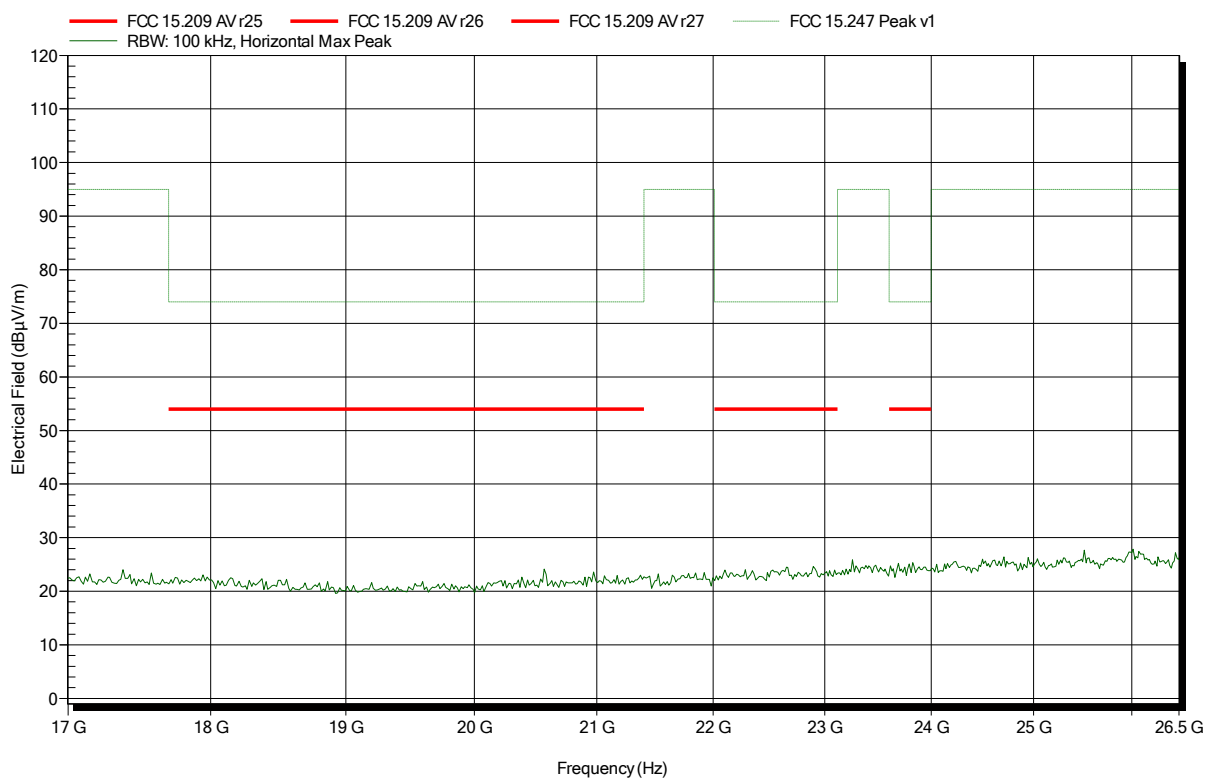
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.022 GHz	57.54 dBµV/m	74 dBµV/m	-16.46 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.022 GHz	49.91 dBµV/m	54 dBµV/m	-4.09 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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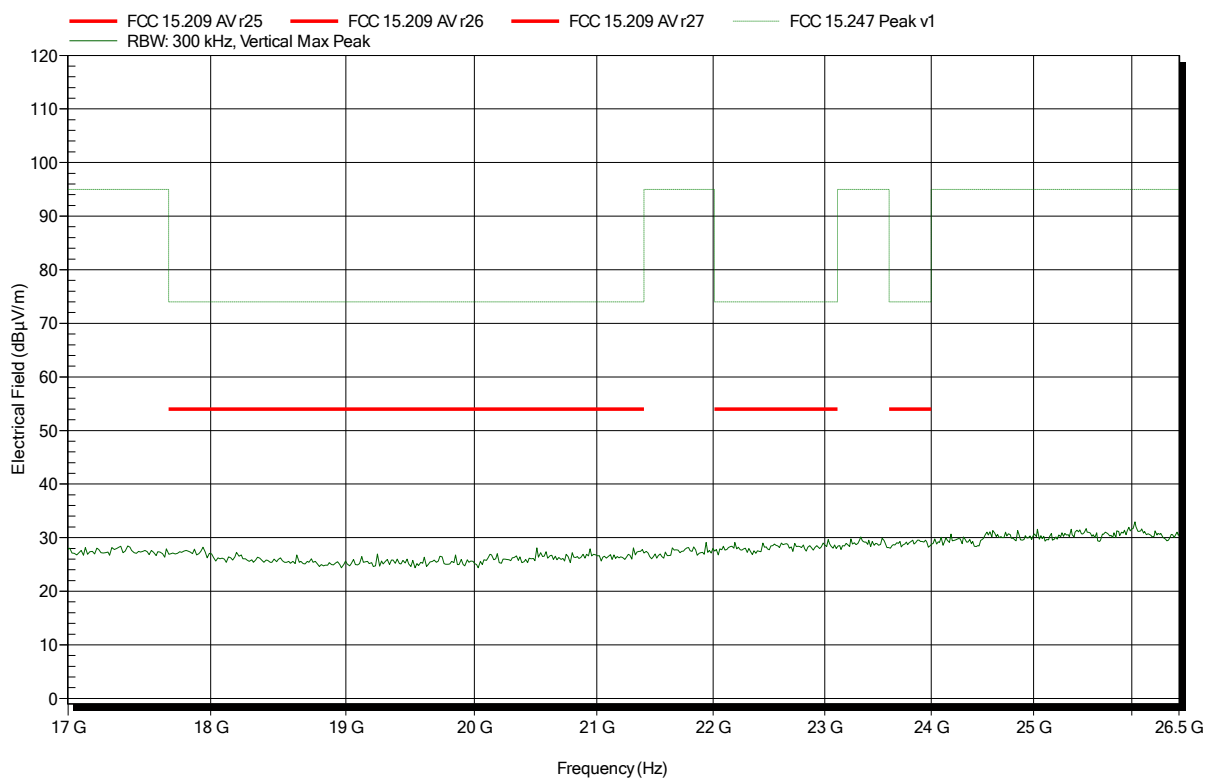


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2405 MHz
Test Date: 2019-03-08
Note:

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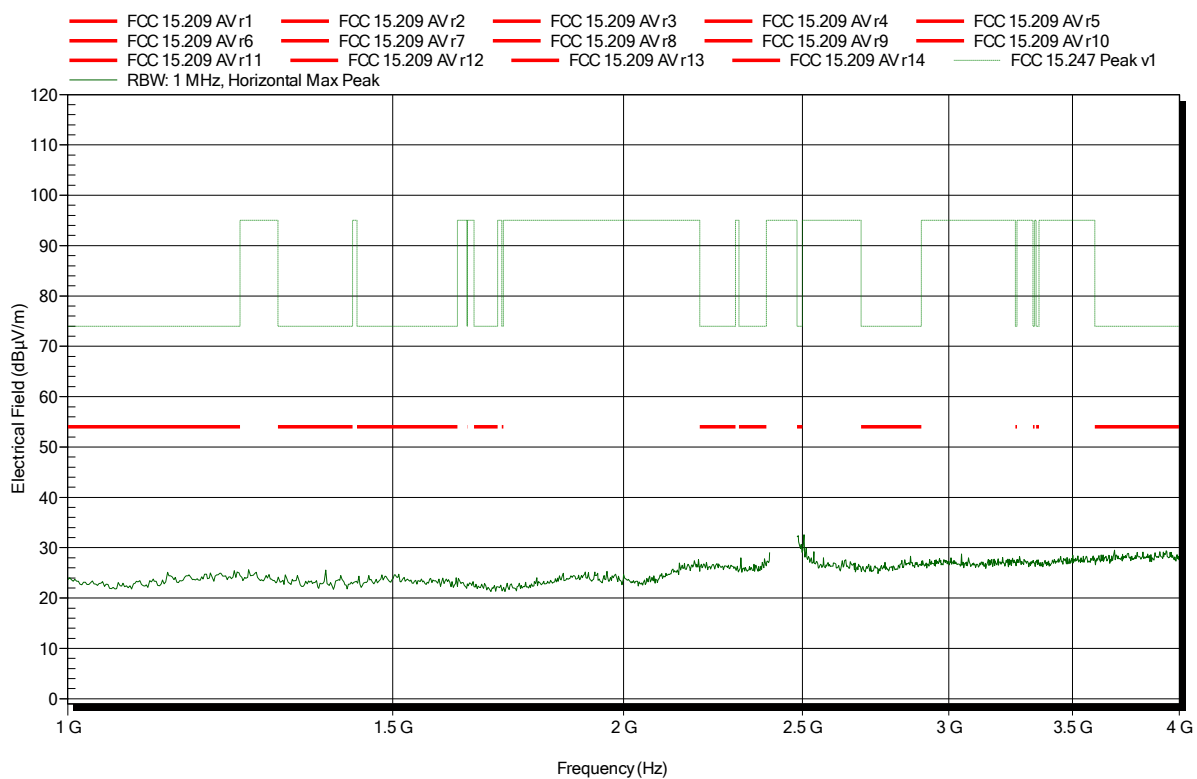


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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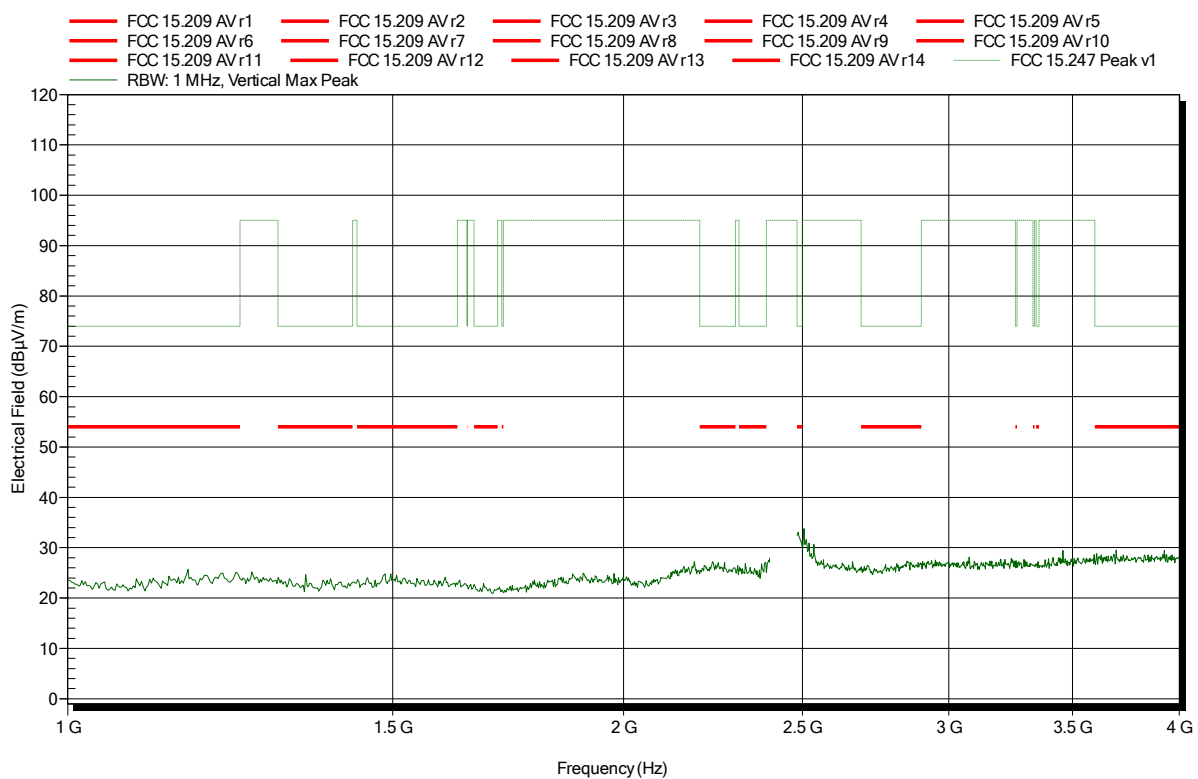


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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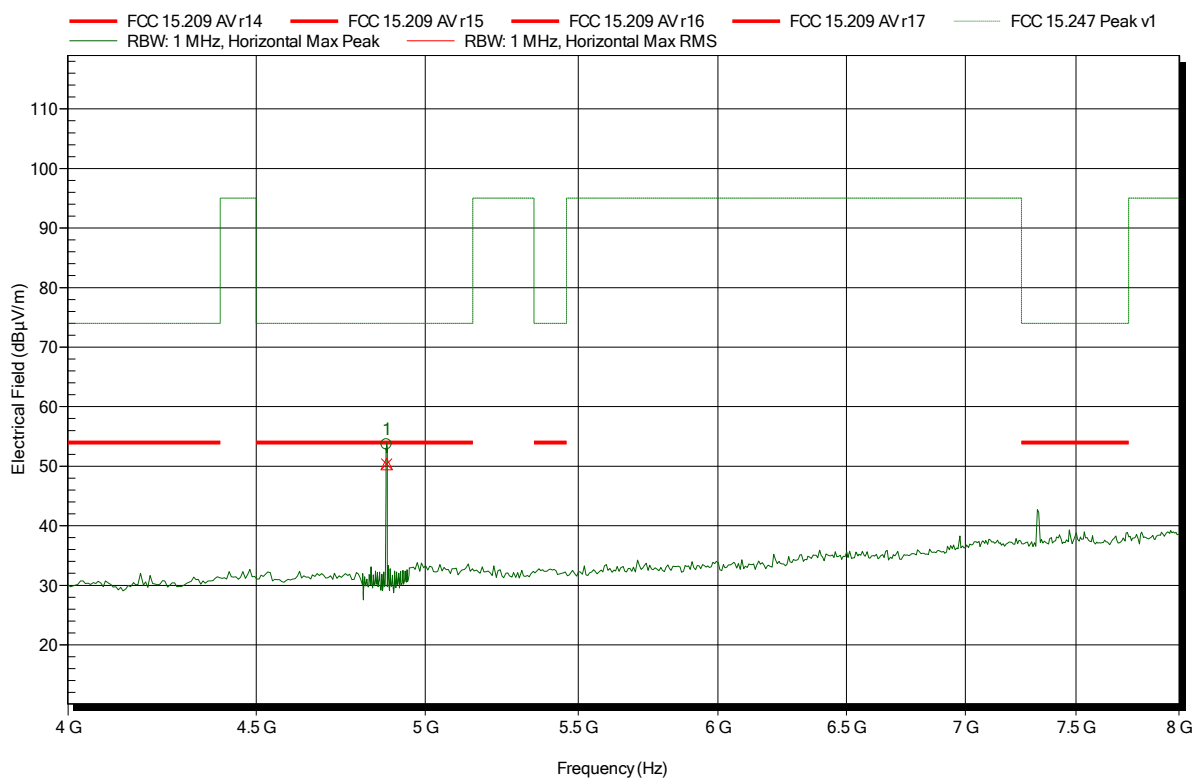


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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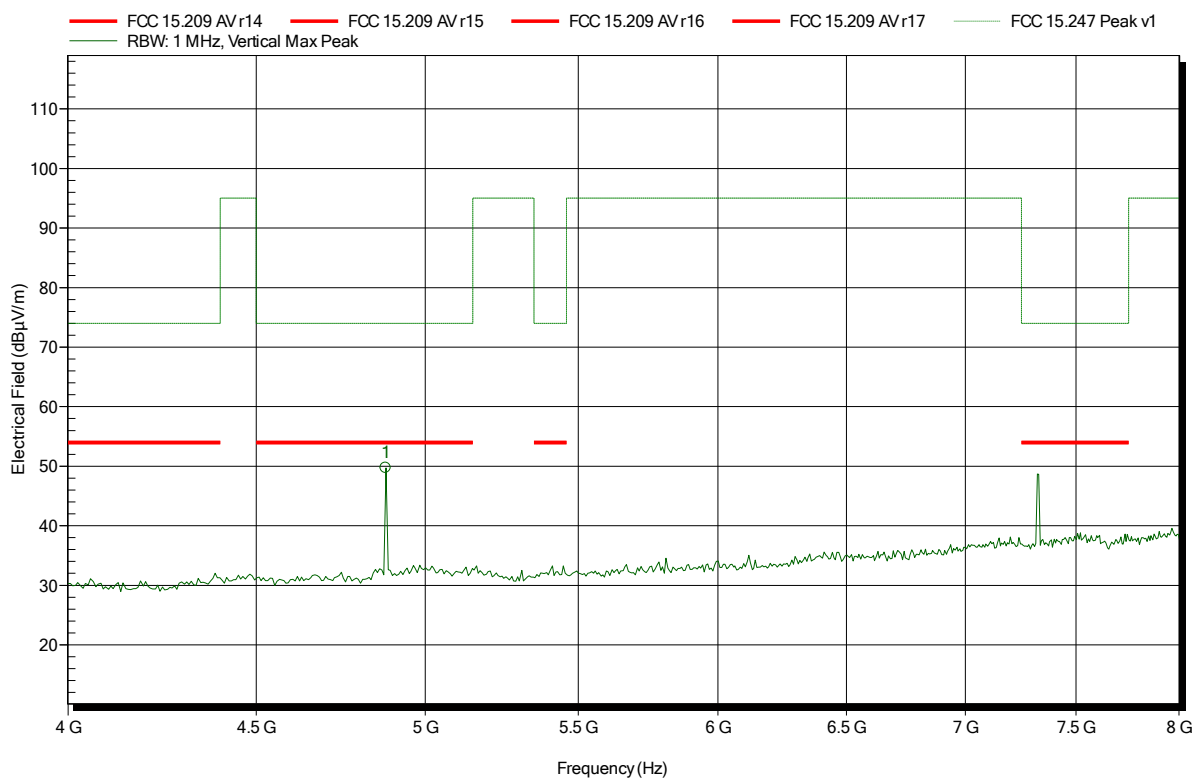
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.881 GHz	53.66 dBµV/m	74 dBµV/m	-20.34 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.881 GHz	50.38 dBµV/m	54 dBµV/m	-3.62 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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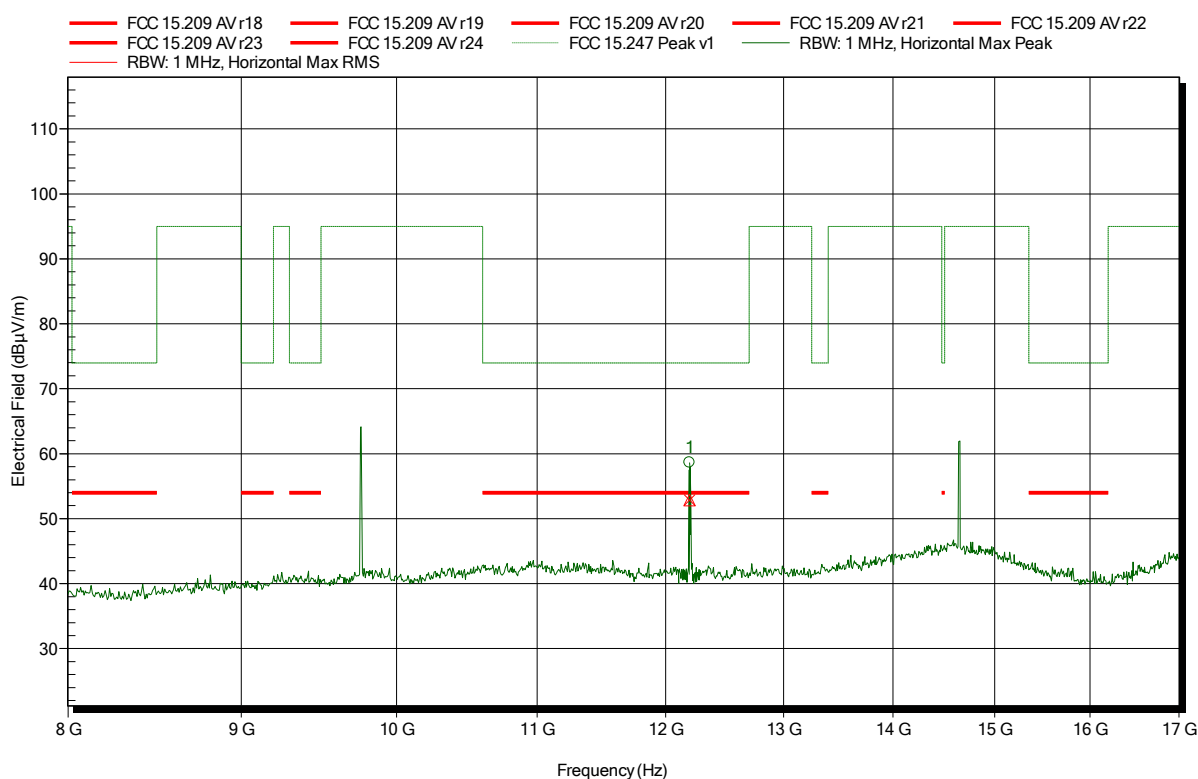
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.878 GHz	49.71 dBµV/m	74 dBµV/m	-24.29 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
 Test Date: 2019-03-08
 Note:

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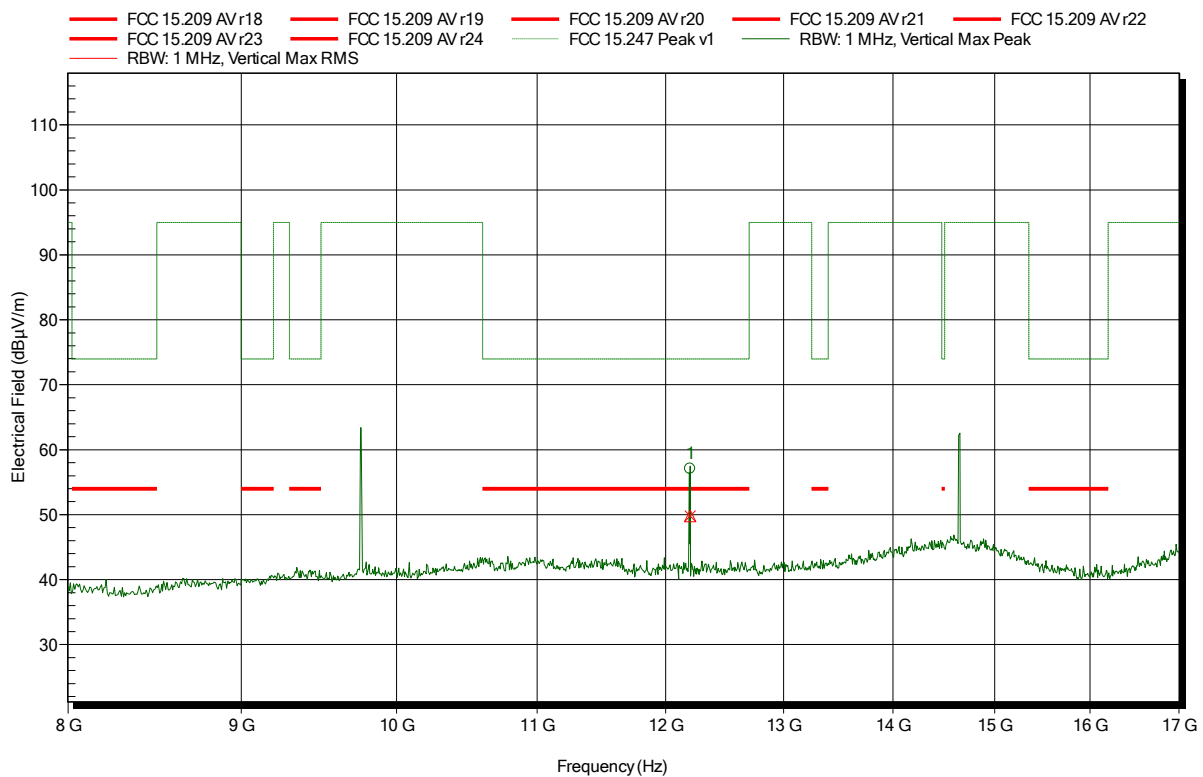
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.198 GHz	58.65 dBμV/m	74 dBμV/m	-15.35 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.198 GHz	52.85 dBμV/m	54 dBμV/m	-1.15 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
 Test Date: 2019-03-08
 Note:

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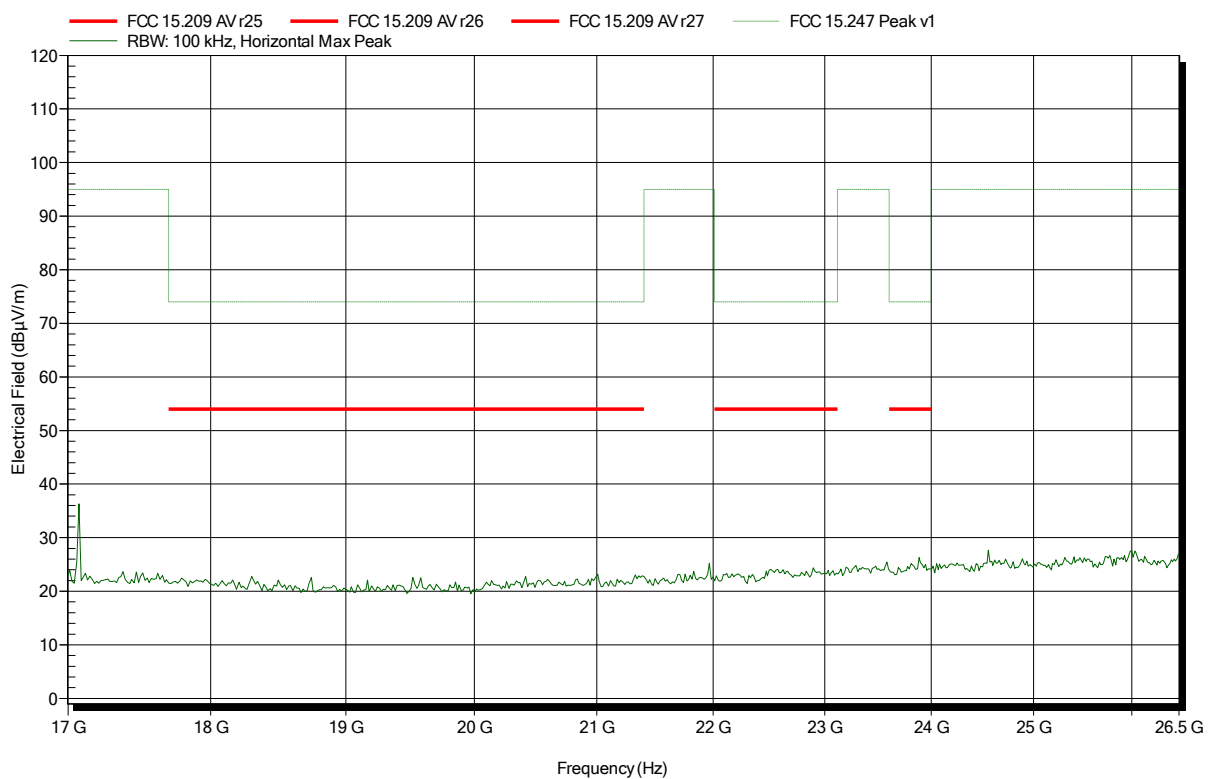
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.203 GHz	57.07 dBµV/m	74 dBµV/m	-16.93 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.203 GHz	49.79 dBµV/m	54 dBµV/m	-4.21 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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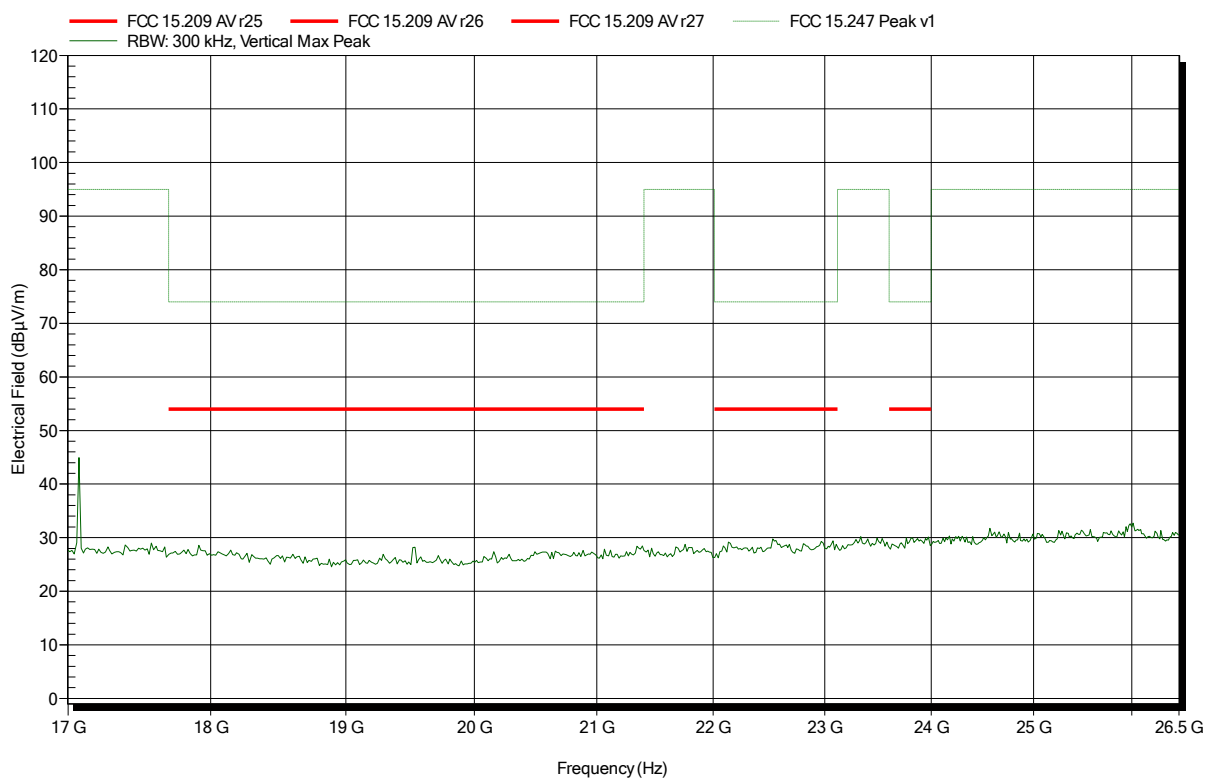


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 10; 2440 MHz
Test Date: 2019-03-08
Note:

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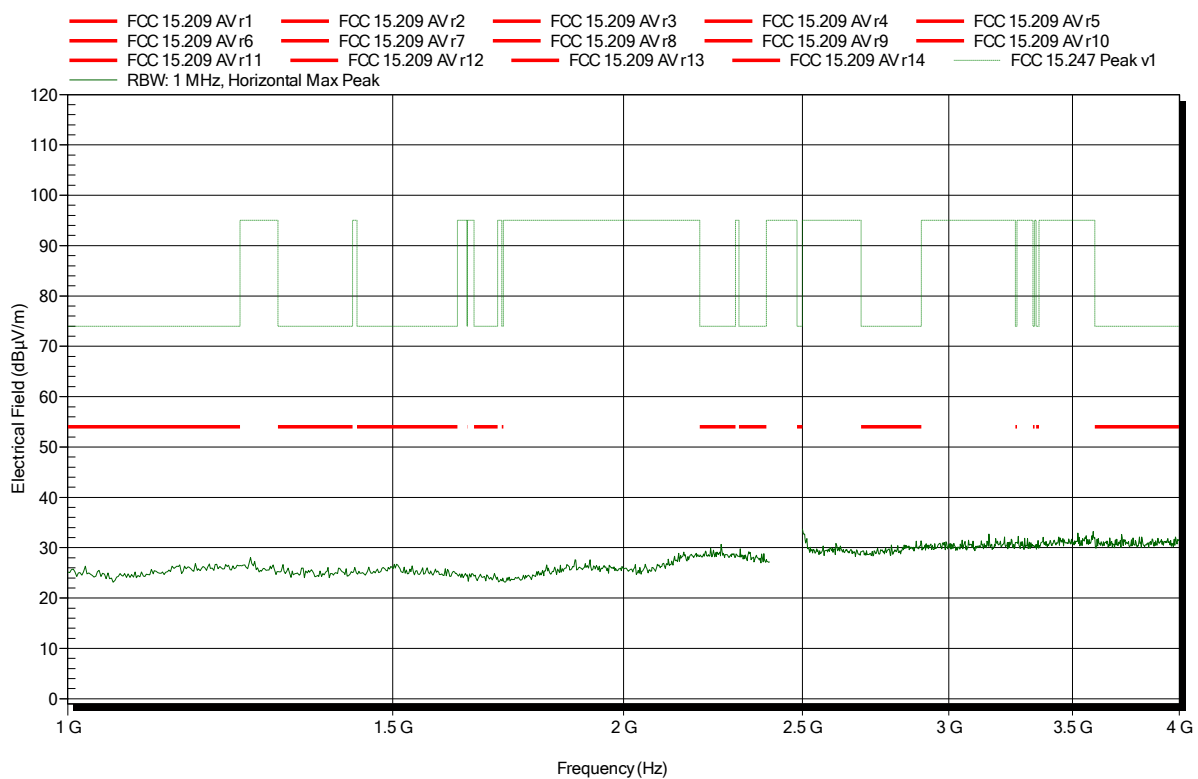


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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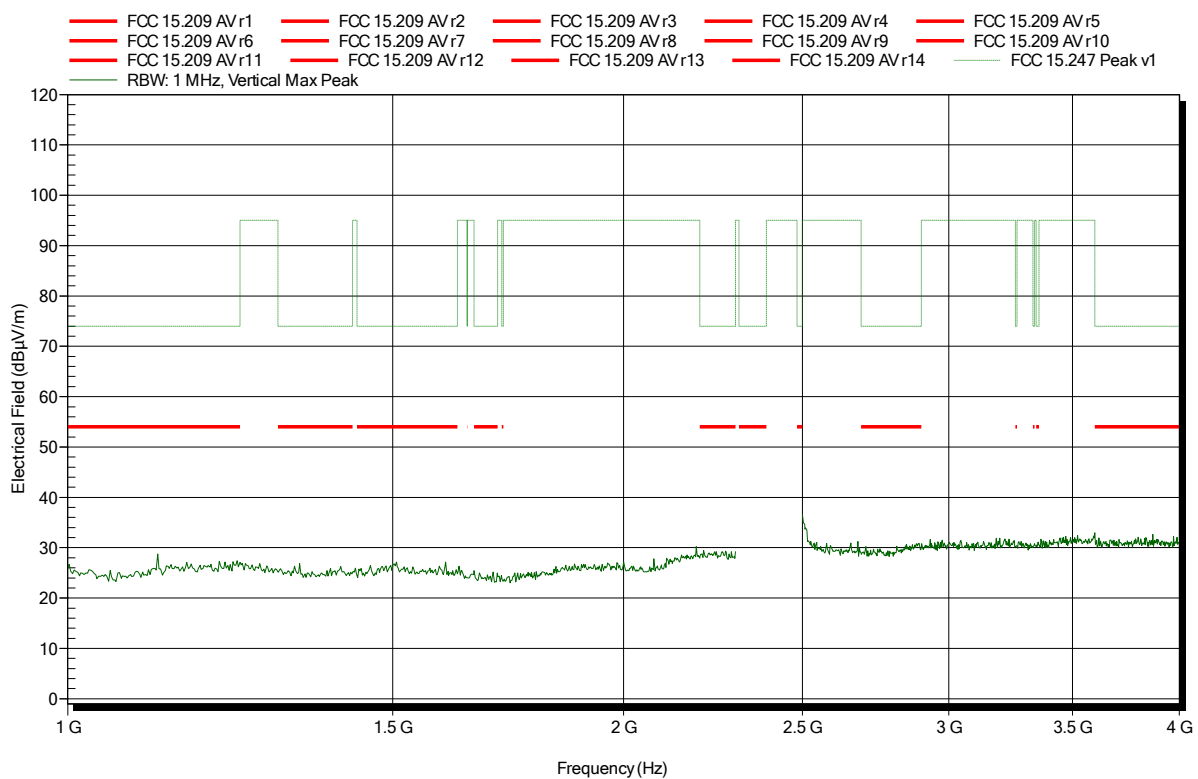


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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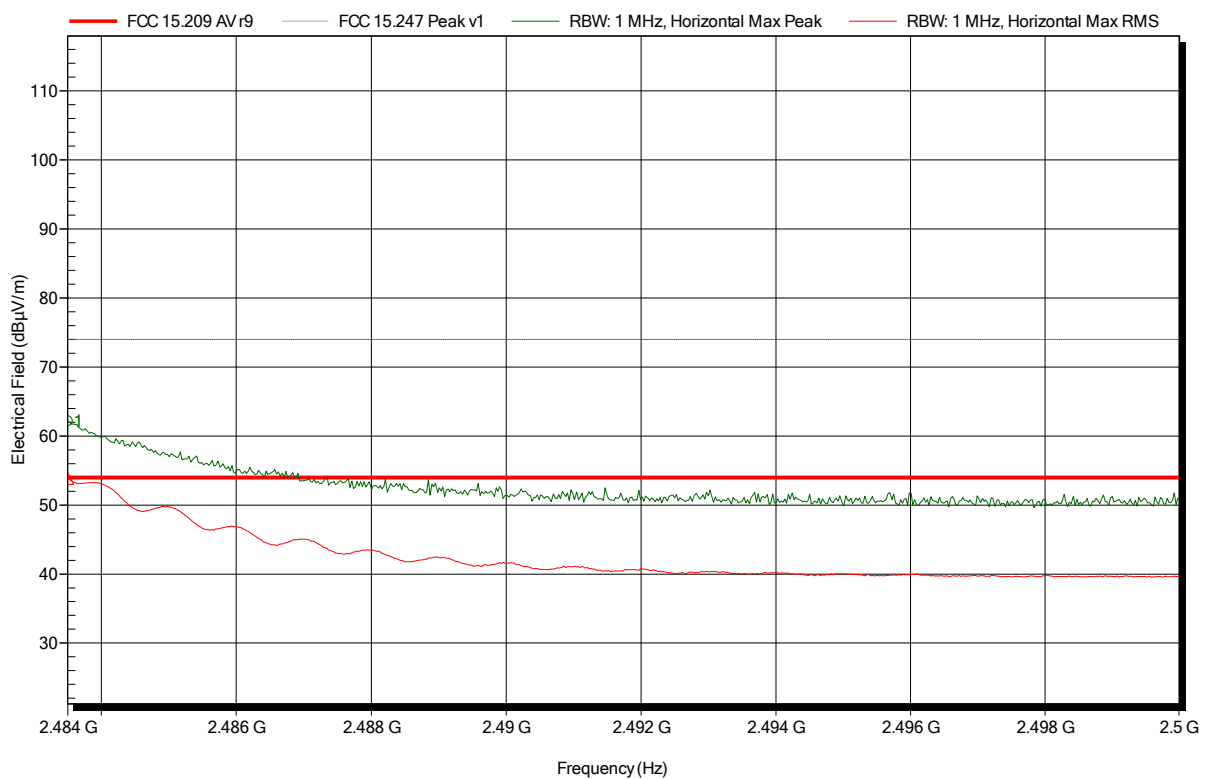


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note: upper bandedge

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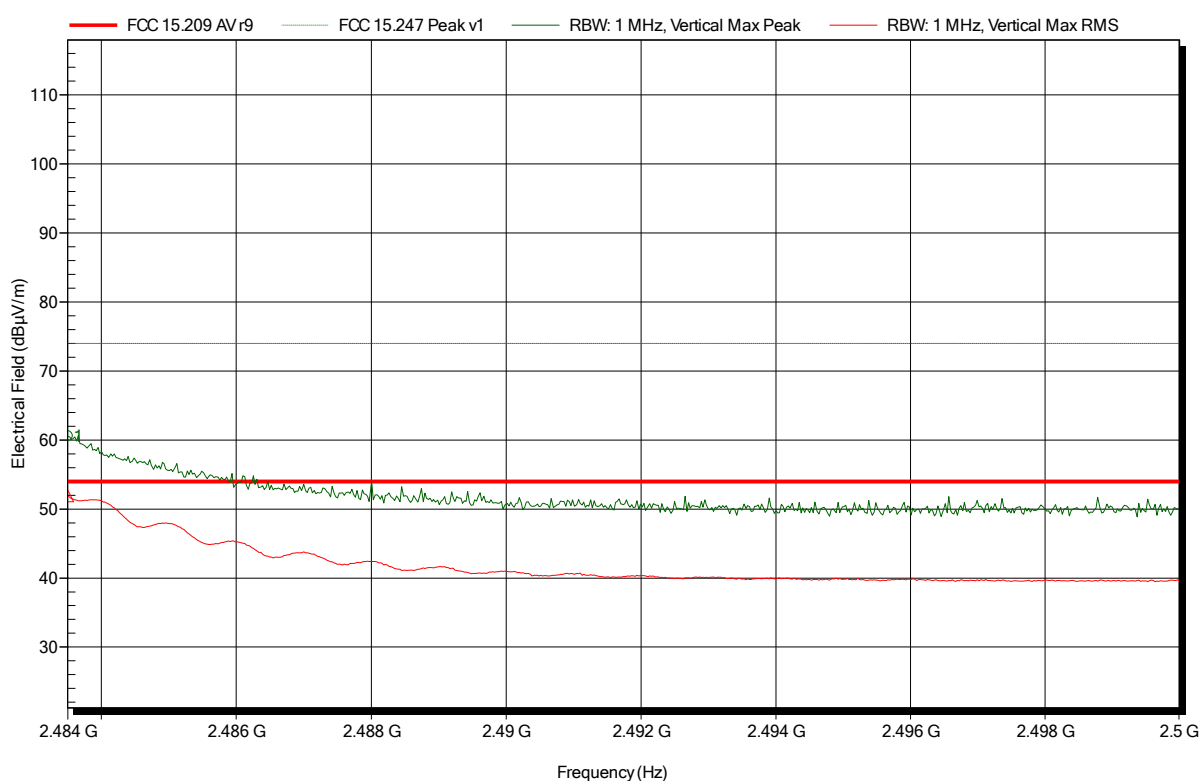


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4835 GHz	62.12 dBµV/m	74 dBµV/m	-11.88 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4835 GHz	53.86 dBµV/m	54 dBµV/m	-0.34 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
 Test Date: 2019-03-08
 Note: upper bandedge

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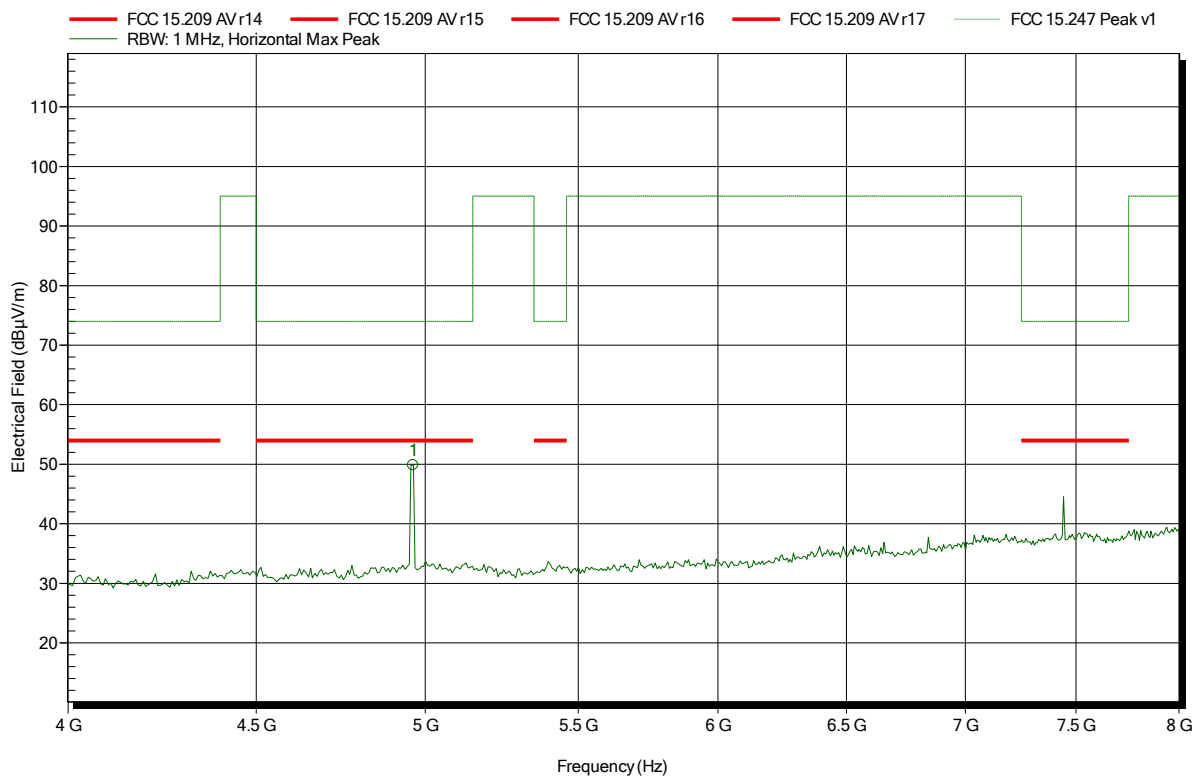
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4835 GHz	60.56 dBµV/m	74 dBµV/m	-13.44 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4835 GHz	51.89 dBµV/m	54 dBµV/m	-2.11 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
 Test Date: 2019-03-08
 Note:

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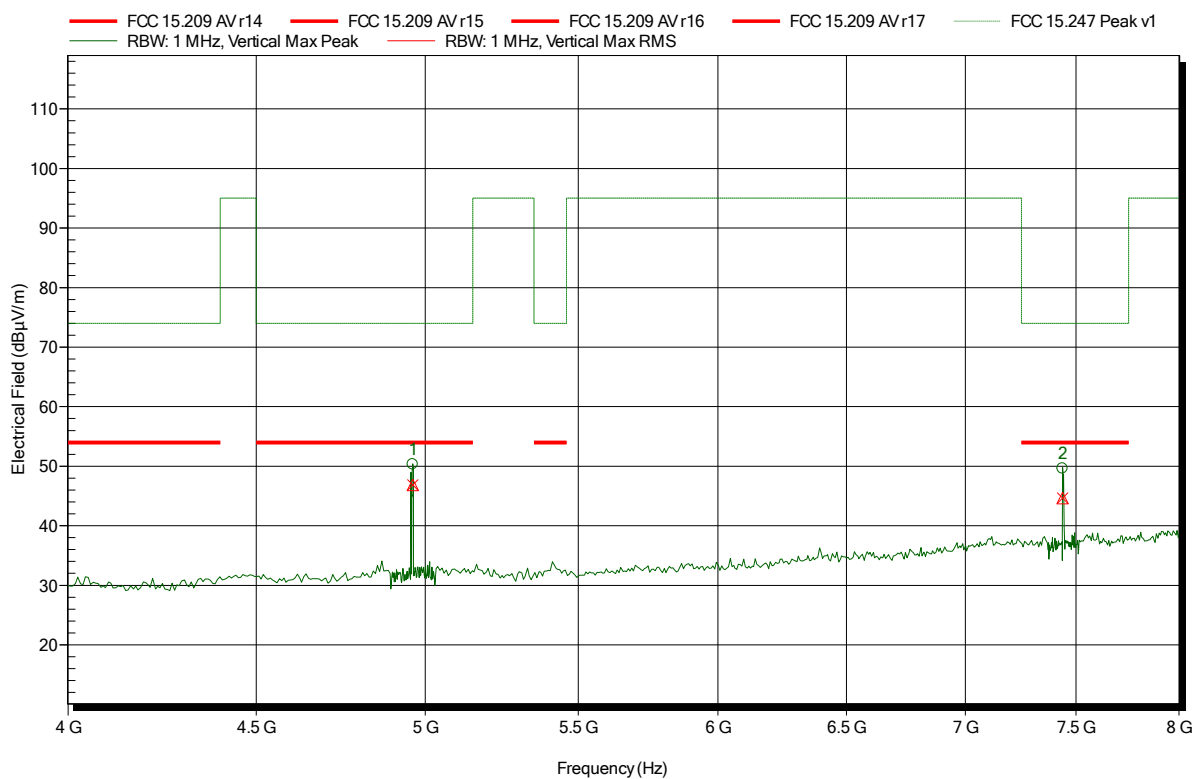
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.962 GHz	49.82 dBµV/m	74 dBµV/m	-24.18 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.961 GHz	50.3 dBµV/m	74 dBµV/m	-23.7 dB	Pass
7.438 GHz	49.58 dBµV/m	74 dBµV/m	-24.42 dB	Pass

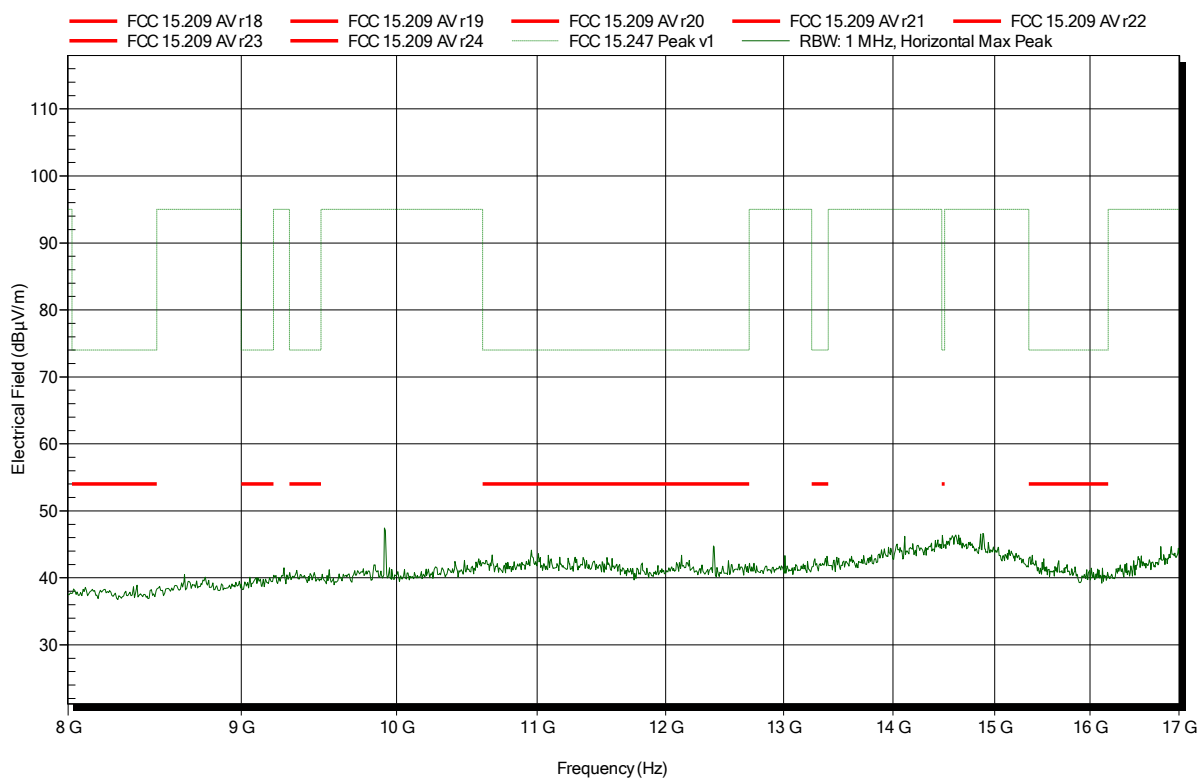
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.961 GHz	46.88 dBµV/m	54 dBµV/m	-7.12 dB	Pass
7.438 GHz	44.65 dBµV/m	54 dBµV/m	-9.35 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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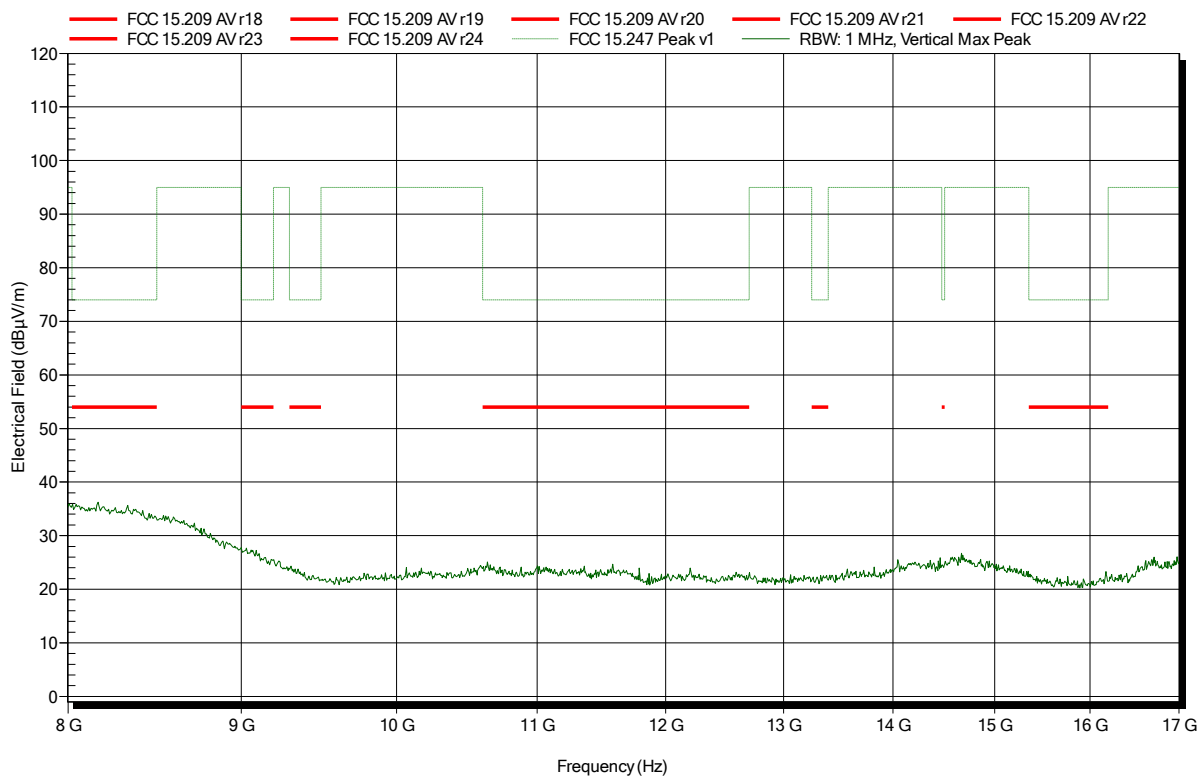


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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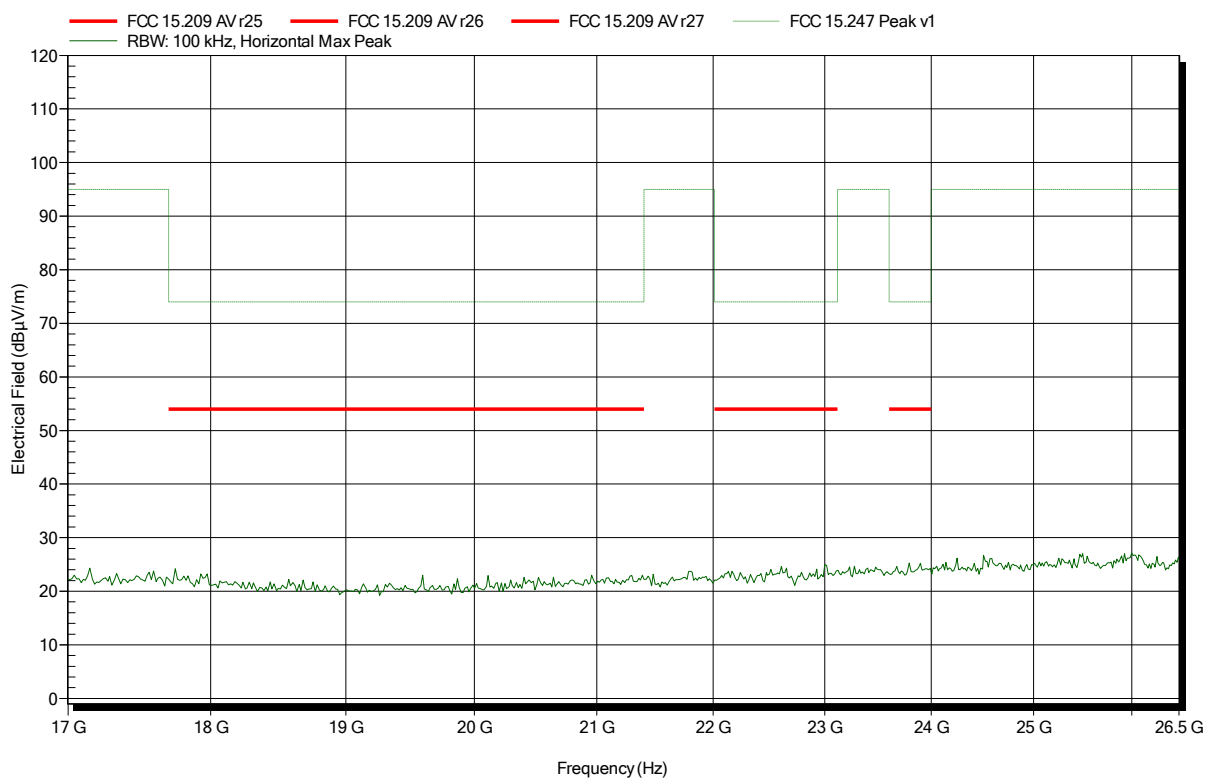


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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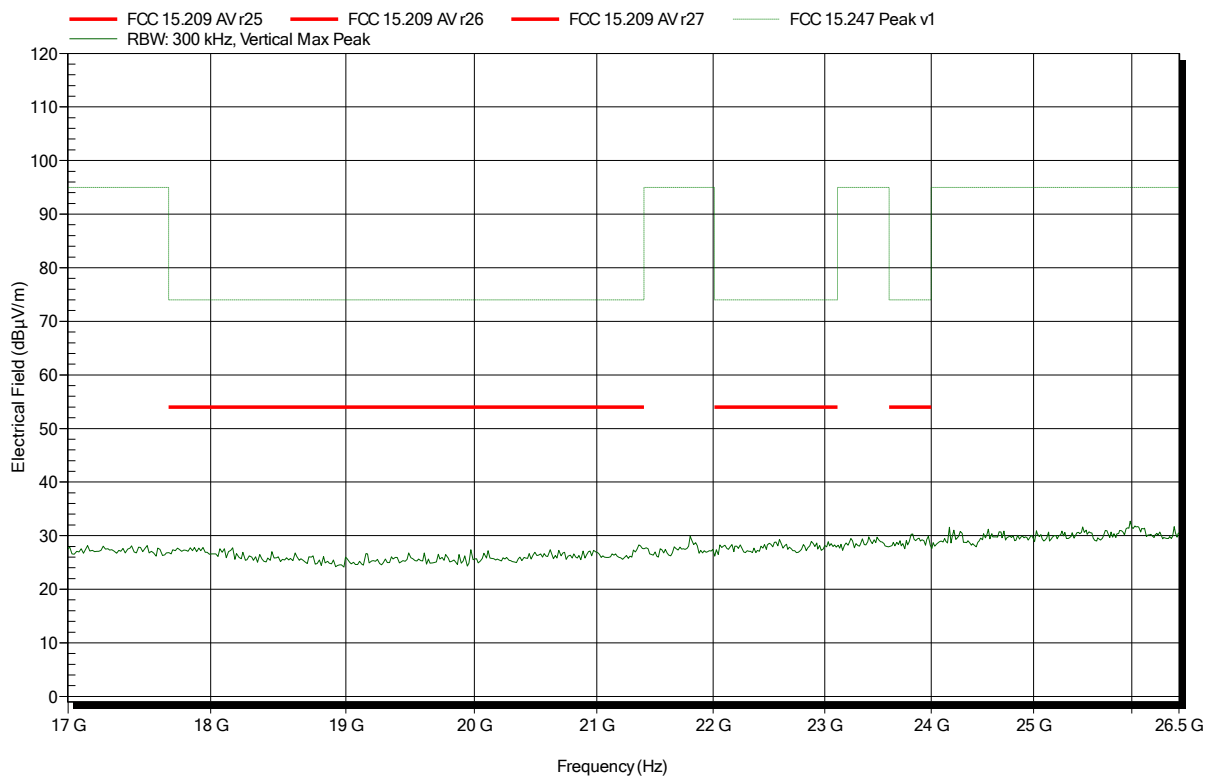


Spurious emissions according to FCC 47 e-CFR §15.247

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; IEEE 802.15.4; pow. lev. 14; 2480 MHz
Test Date: 2019-03-08
Note:

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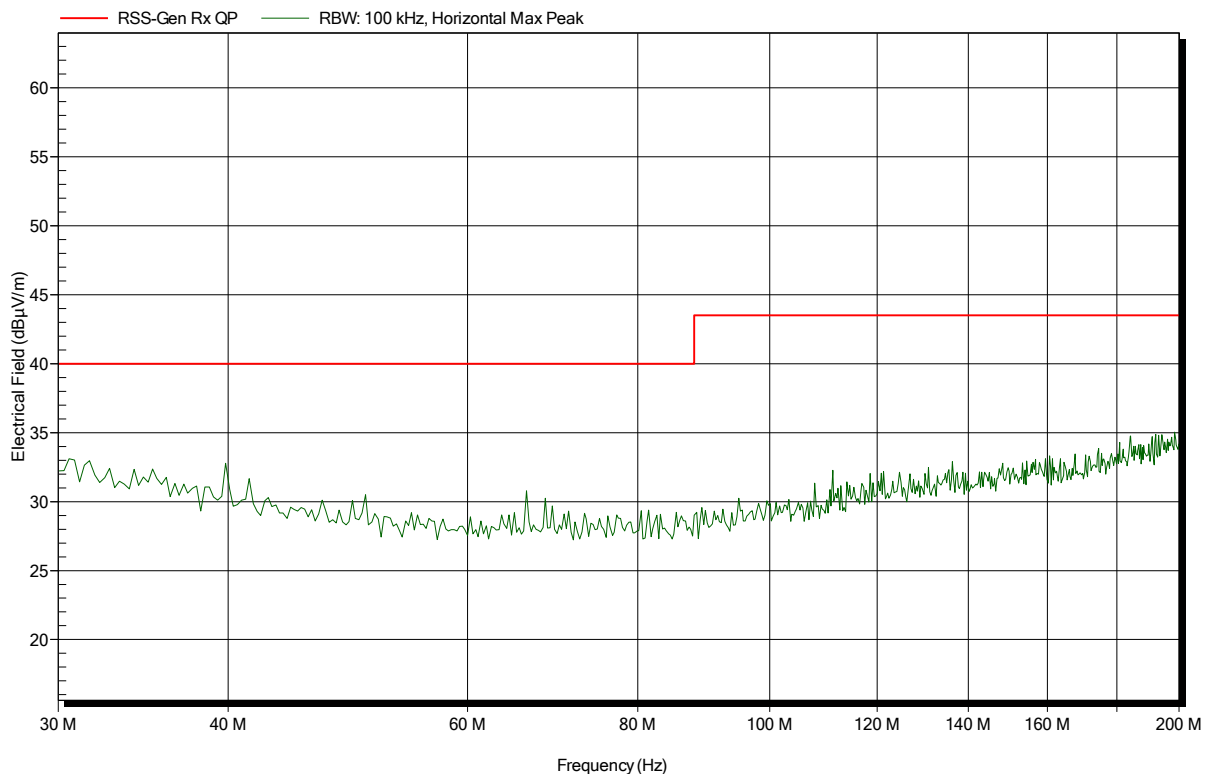
ANNEX B Receiver spurious emissions

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: RX; IEEE 802.15.4; 2440 MHz
 Test Date: 2019-03-08
 Note:

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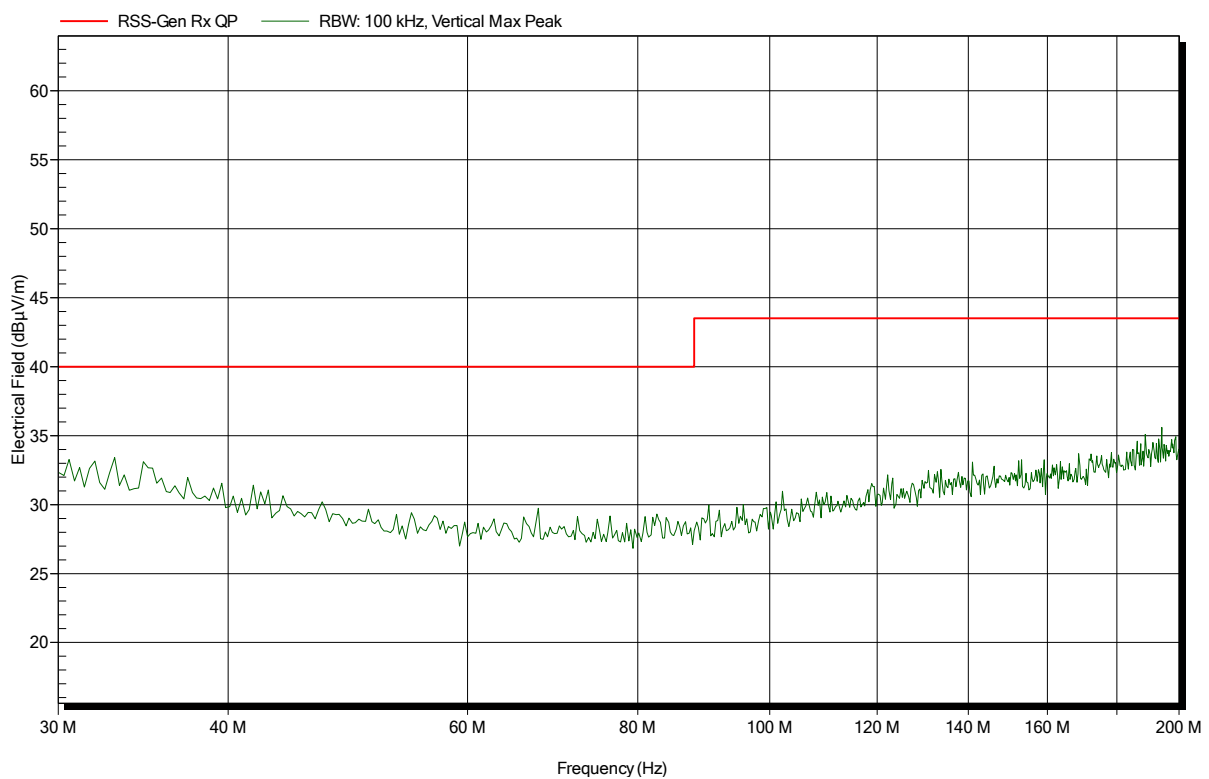


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Rohde & Schwarz HK 116, Vertical
Measurement distance: 3 m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

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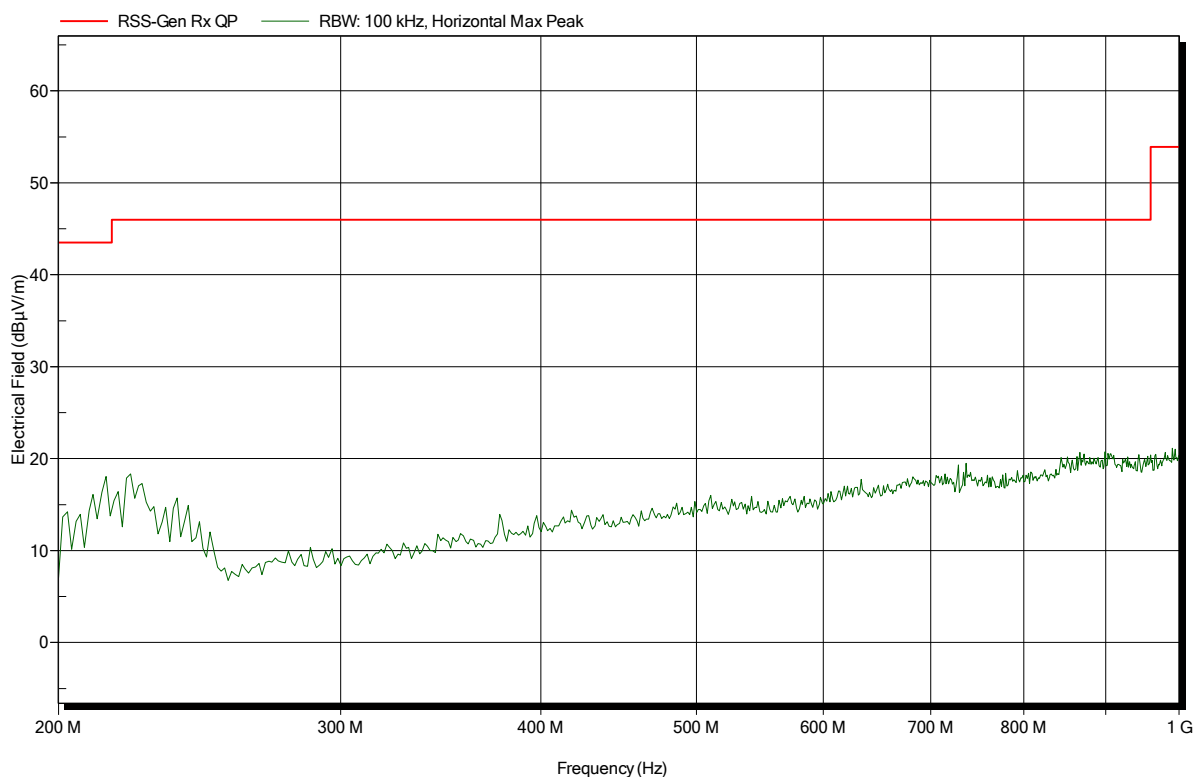


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Rohde & Schwarz HL 223, Horizontal
Measurement distance: 3 m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

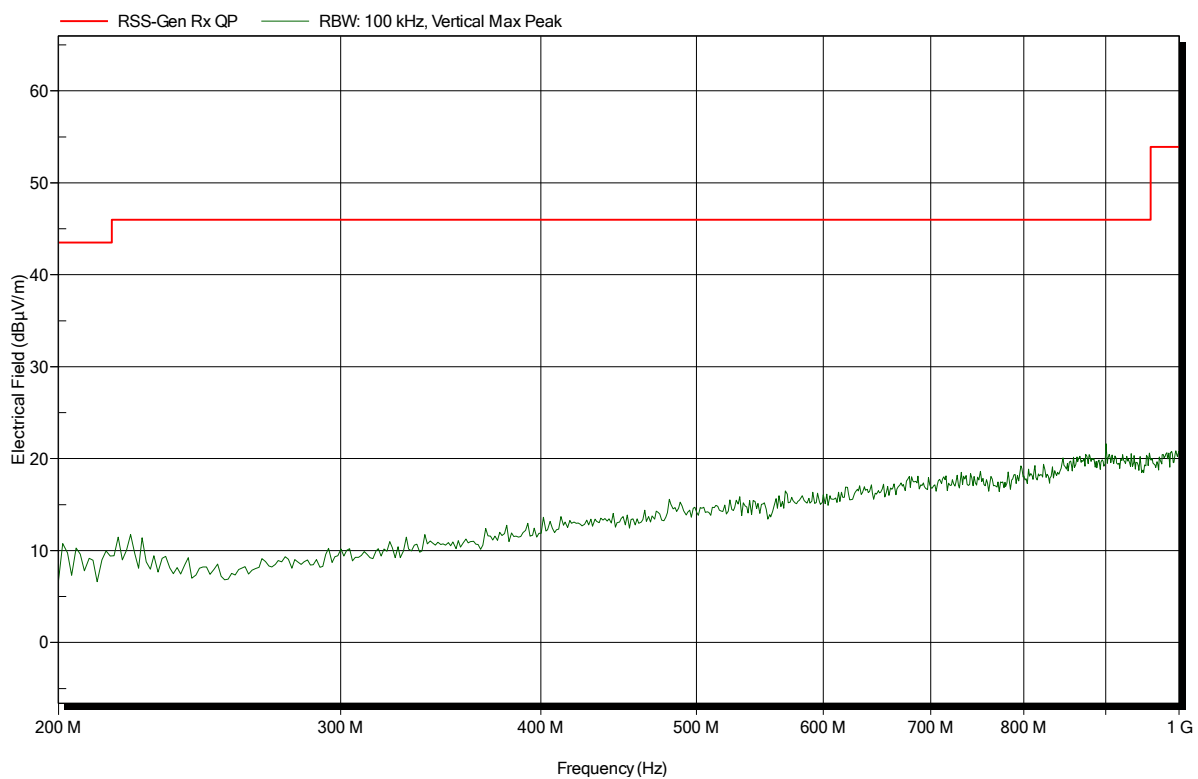
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Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; IEEE 802.15.4; 2440 MHz
 Test Date: 2019-03-08
 Note:

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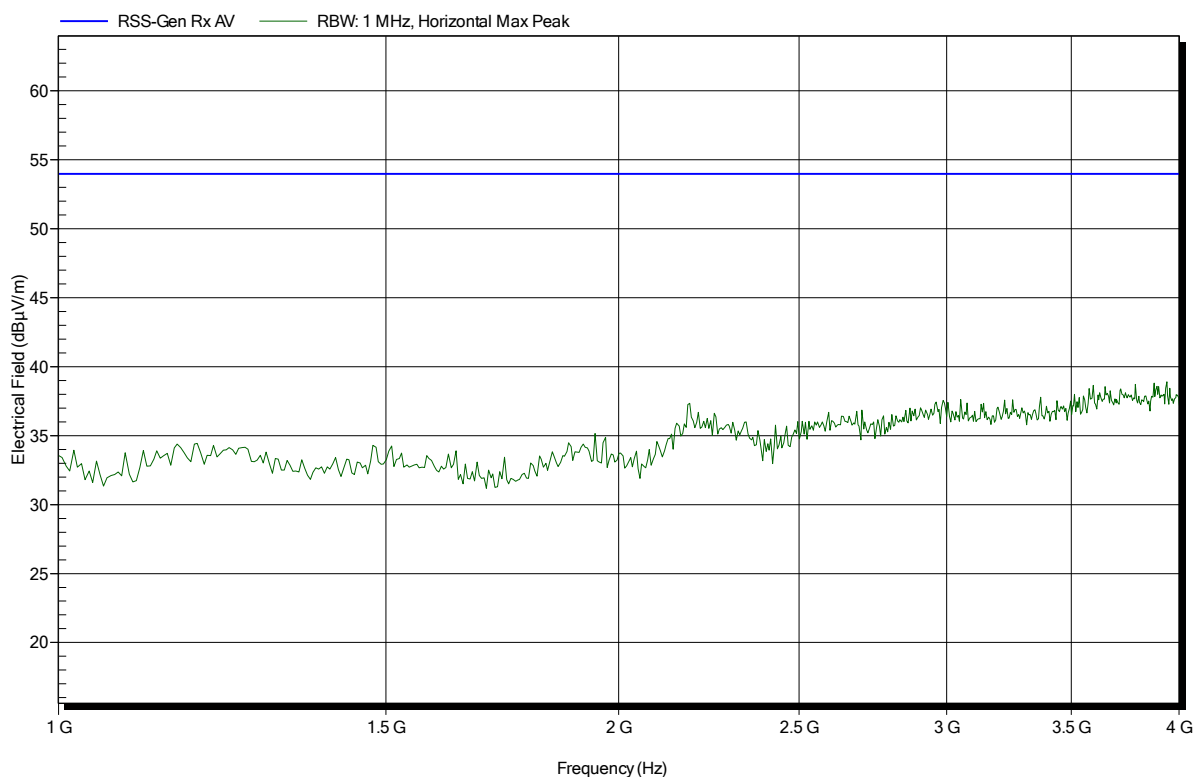


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 3 m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

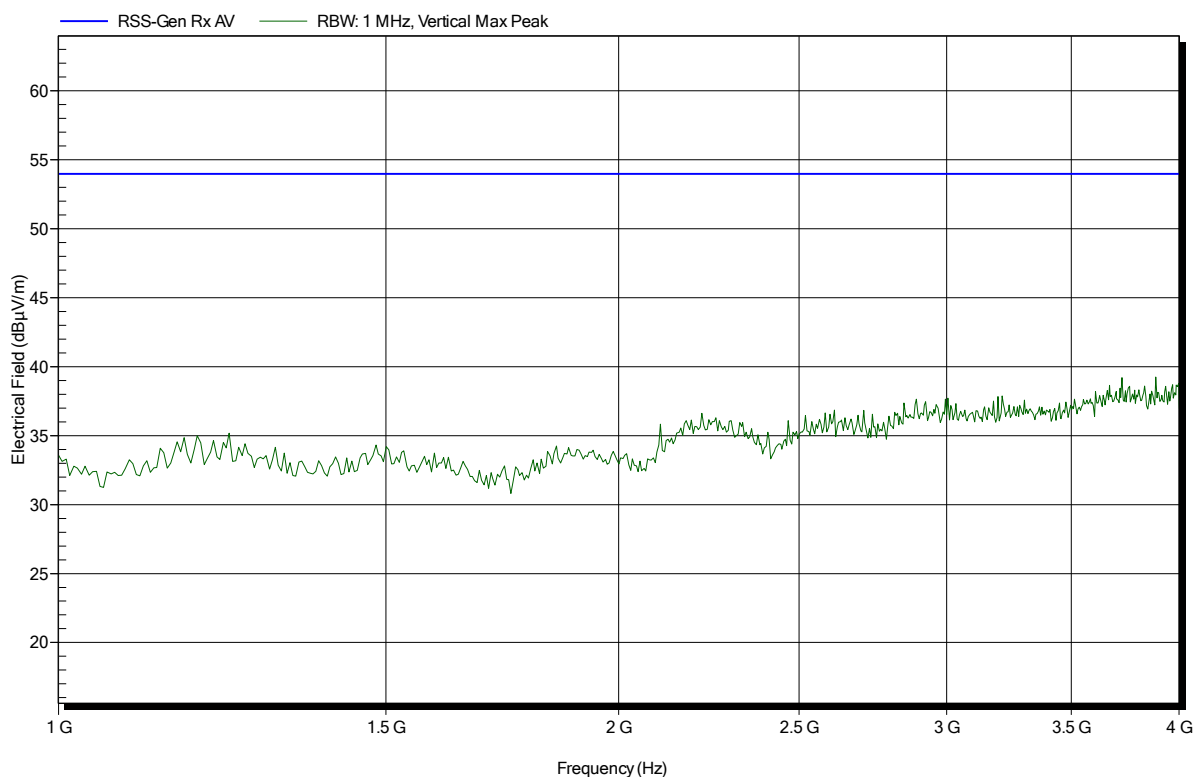
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Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028
 Applicant: dresden elektronik ingenieurtechnik gmbh
 EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
 Model: Conbee II
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: RX; IEEE 802.15.4; 2440 MHz
 Test Date: 2019-03-08
 Note:

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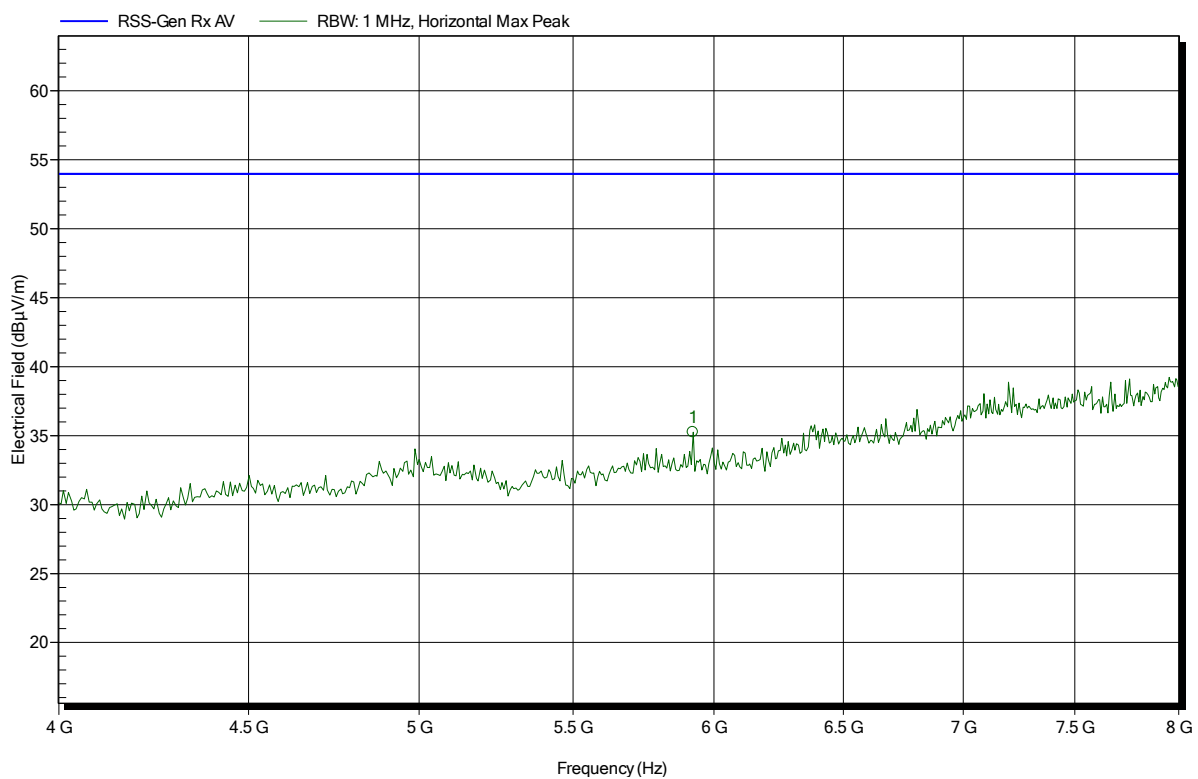


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

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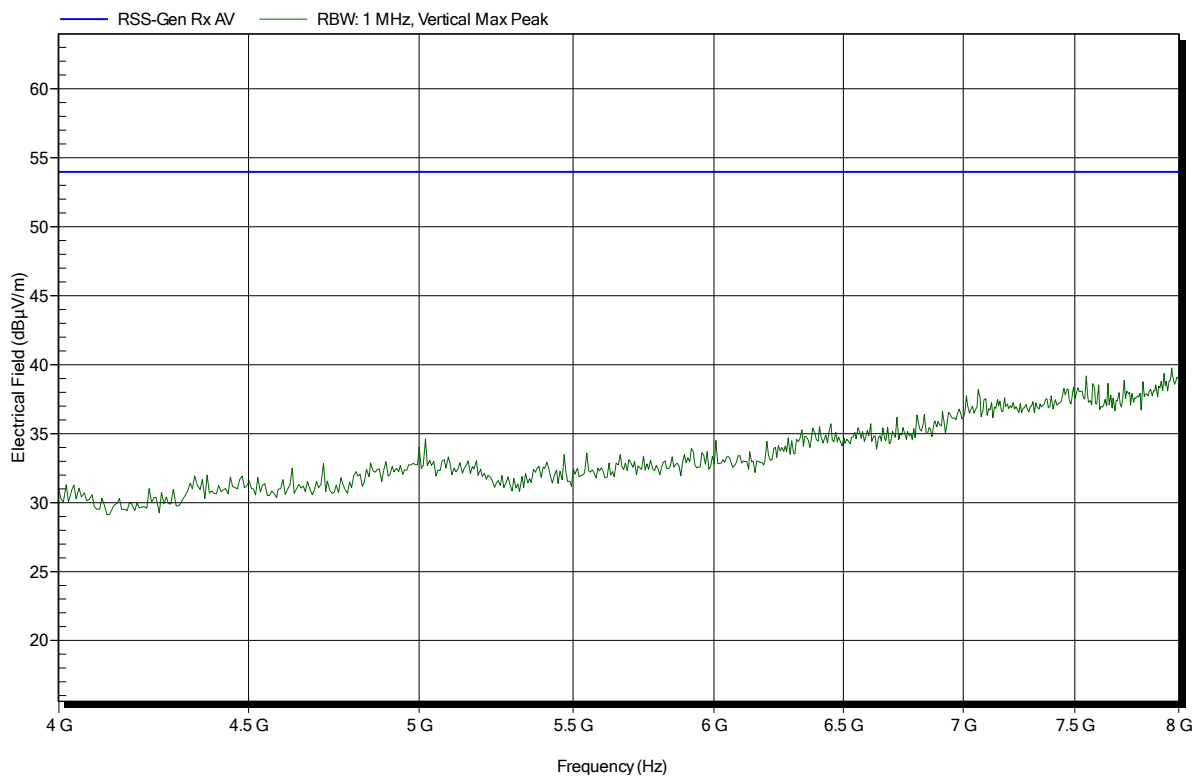
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.923 GHz	35.25 dBµV/m	53.98 dBµV/m	-18.73 dB	Pass

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

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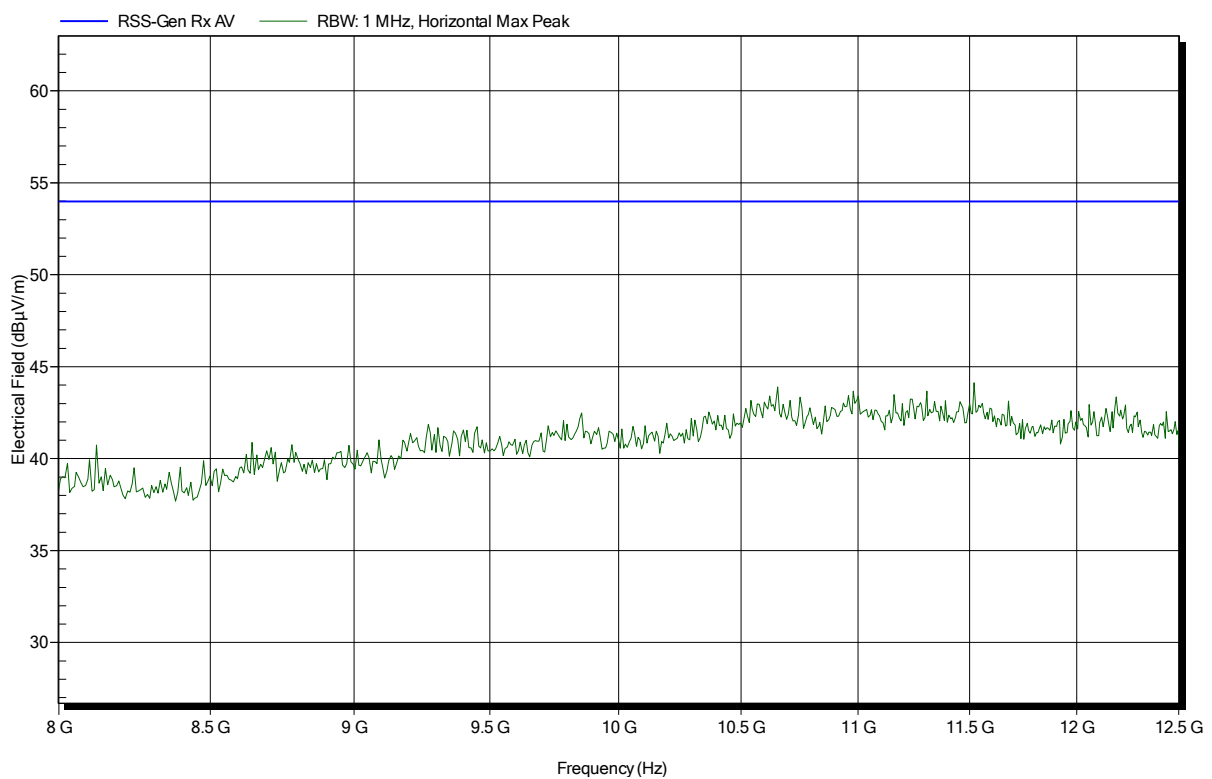


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

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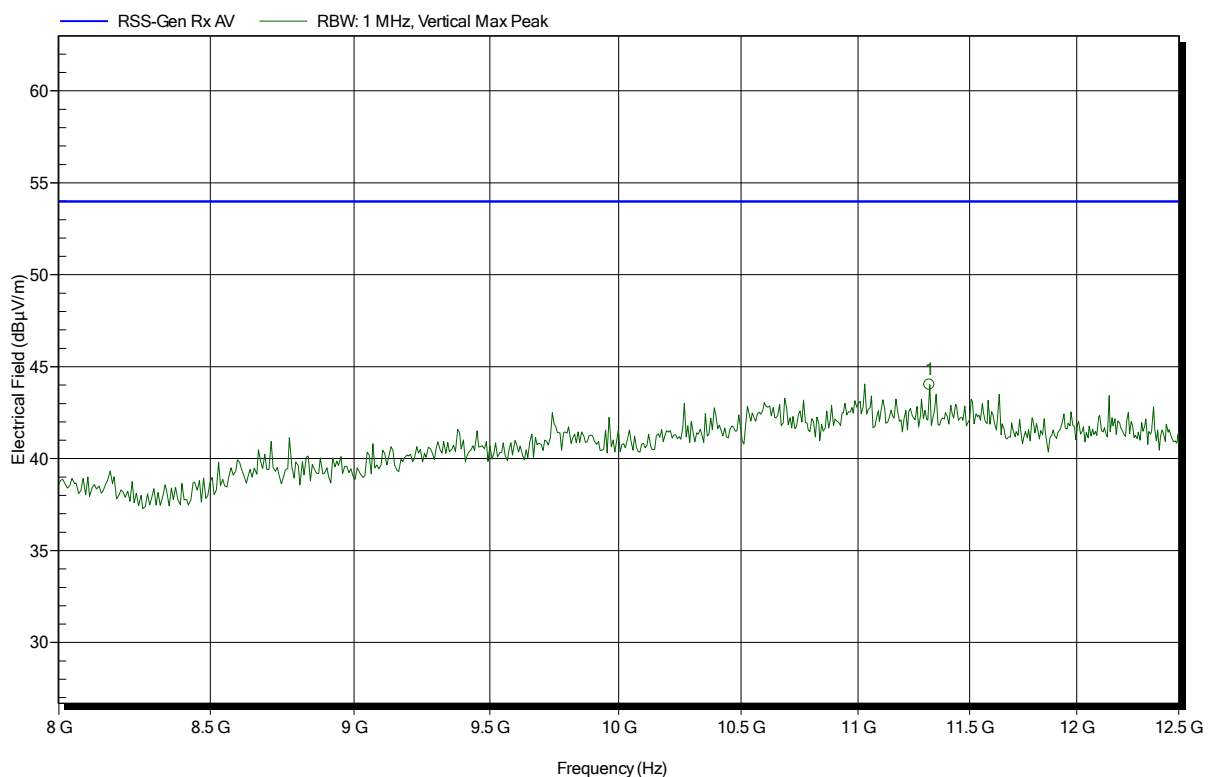


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1902-8028

Applicant: dresden elektronik ingenieurtechnik gmbh
EUT Name: 2,4GHz IEEE 802.15.4 ZigBee USB dongle with integrated antenna
Model: Conbee II
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom: 22°C, Vnom: 5.0 VDC (USB powered)
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: RX; IEEE 802.15.4; 2440 MHz
Test Date: 2019-03-08
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
11.317 GHz	44.02 dBµV/m	53.98 dBµV/m	-9.96 dB	Pass