

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-1911-8600-TFC247BL-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	    DAkkS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A-2 DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Medivation AG
Address	Stahlrain 2 5200 Brugg SWITZERLAND
Test Specification	According to FCC/ISED rules
Standard	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, Amendment 1, 2019-03
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Wireless single-use tracking system
Model(s)	iVation Camera
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	Z-5007_V1.0
Software Version(s)	V1.0
FCC-ID	2AU65-IV001
IC	n/a
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 - 26 °C	
Test Lab Humidity	25 - 40 %	
Date of receipt of test item	2019-12-16	
Report:		
Compiled by	Florian Voigt	
Tested by (+ signature) (Responsible for Test)	Florian Voigt supervised by Wilfried Treffke	<i>F. Voigt</i> <i>W. Treffke</i>
Approved by (+ signature) (Head of Lab)	Christian Weber	<i>C. Weber</i>
Date of Issue	2019-12-19	
Total number of pages	101	
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	2019-12-19	Initial Release	

ABBREVIATIONS AND ACRONYMS

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

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1 Equipment (Test Item) Under Test

Description	Wireless single-use tracking system	
Model	iVation Camera	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	00000139	
Hardware Version(s)	Z-5007_V1.0	
Software Version(s)	V1.0	
PMN	None	
HVIN	None	
FVIN	None	
HMN	None	
FCC-ID	2AU65-IV001	
IC	n/a	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400 - 2483.5 MHz	
Radio technology	Bluetooth LE	
Modulation	GFSK	
Number of antenna ports	1	
Antenna	Type	Integrated
	Model	Fusca 2.4 GHz A10192
	Manufacturer	Antenova Ltd.
	Gain	-1.9 dBi
Supply Voltage	V _{NOM}	3.0 VDC
Operating Temperature	T _{NOM}	20 °C
AC/DC-Adaptor	N/A	
Manufacturer	Medivation AG Stahlrain 2 5200 Brugg SWITZERLAND	

1.1 Photos – Equipment External



EUT Left



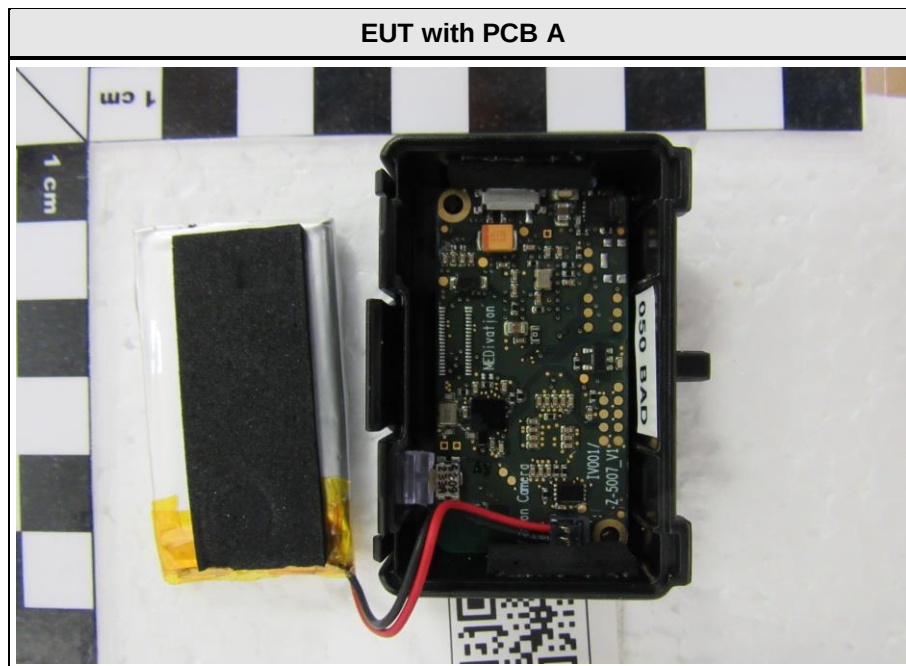
EUT Right



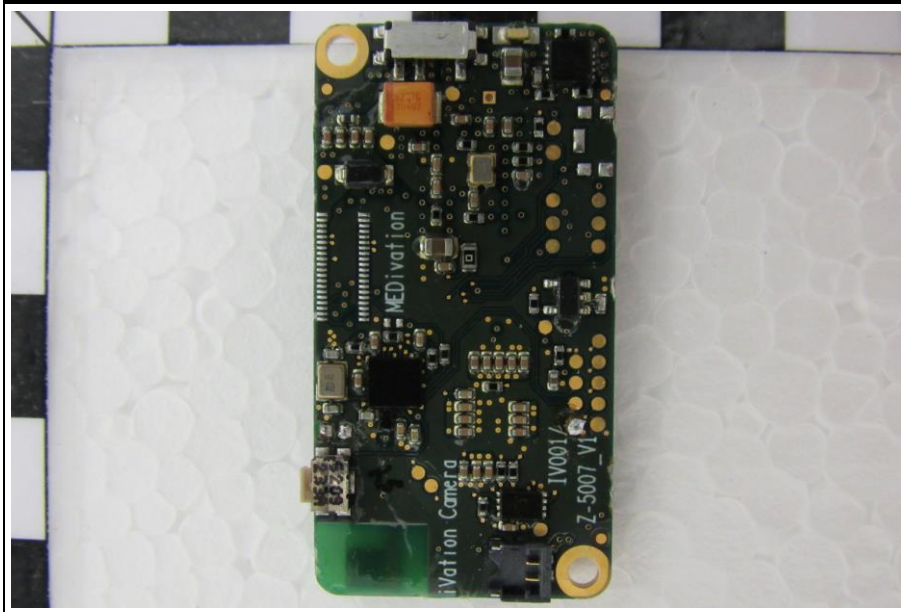
EUT Top



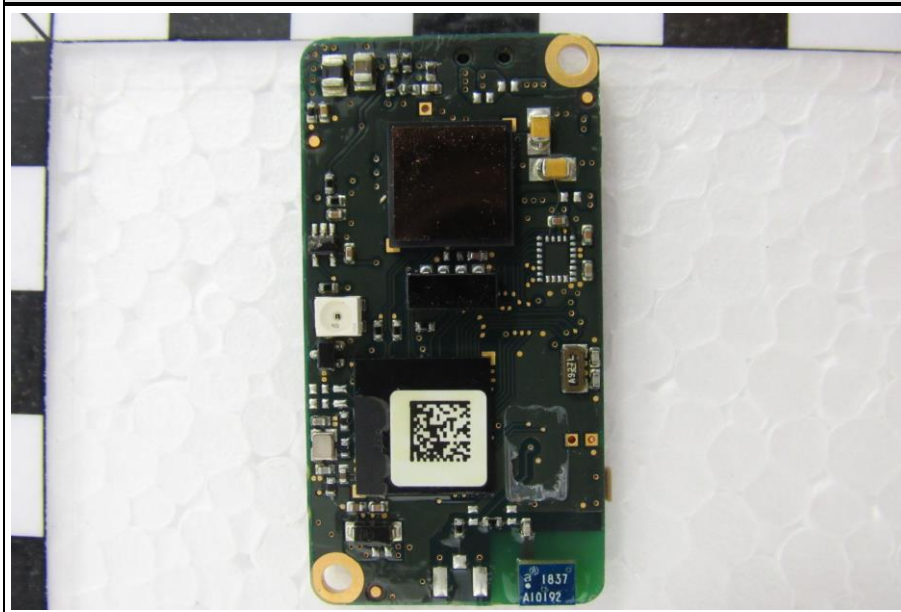
1.2 Photos – Equipment Internal



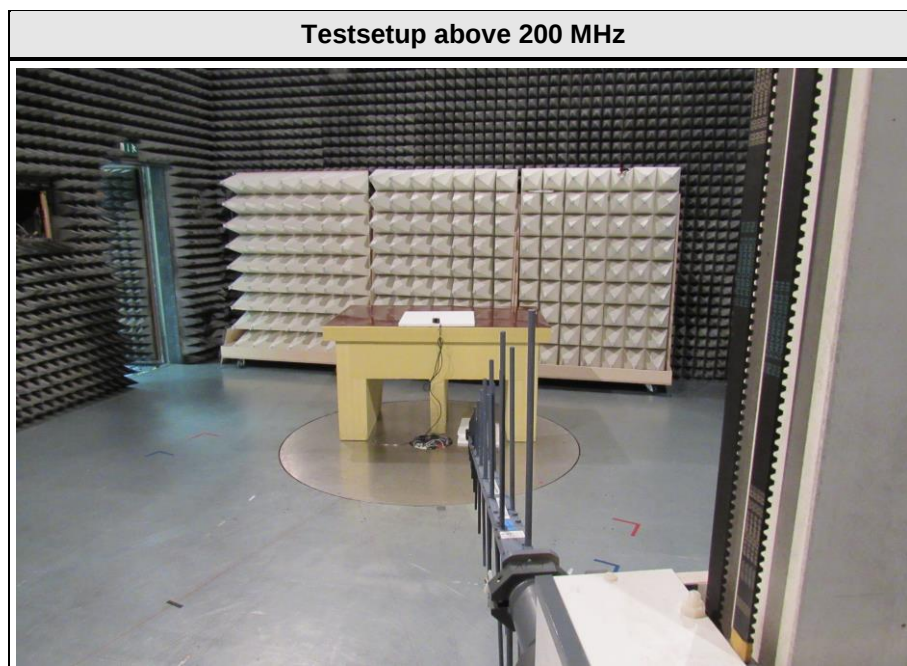
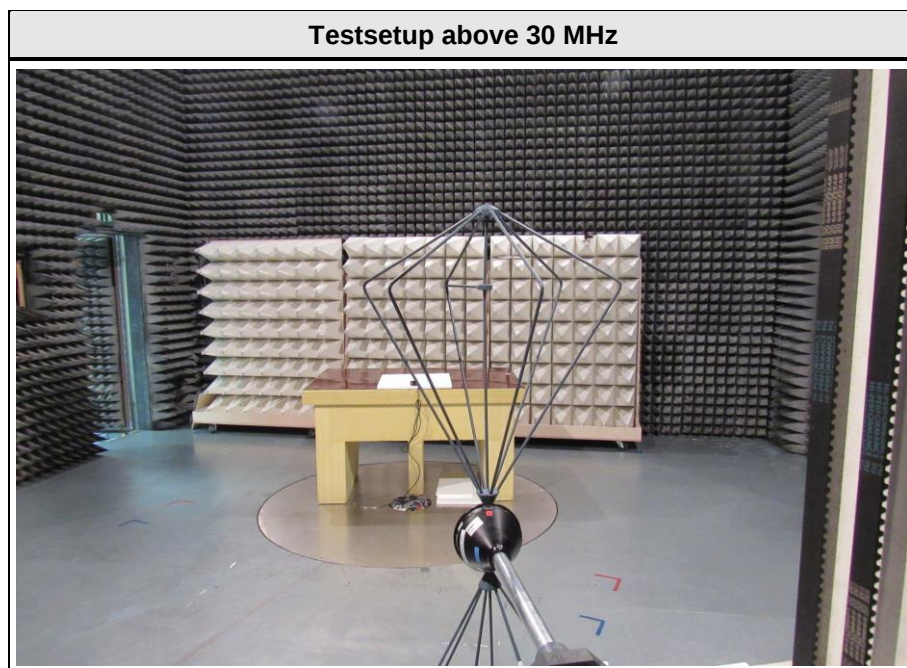
PCB top



PCB bottom



1.3 Photos – Test Setup



Testsetup EUT view below 1 GHz



Testsetup above 1 GHz



Testsetup above 17 GHz



Testsetup EUT view above 1 GHz



1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laptop	Lenovo	T540p	To set testmodes on EUT
CBL	USB to serial FTDI-Cable	---	3.3V, 1.5m	Connects laptop to EUT
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.5 Test Modes

Mode	Description
GFSK	Mode = Transmit Modulation = GFSK Spreading = None Duty cycle = 98% Powersetting = Not adjustable in software
Receive	Mode = Receive
Comment:	

1.6 Test Frequencies

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

1.7 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

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	N/R	Battery only device
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

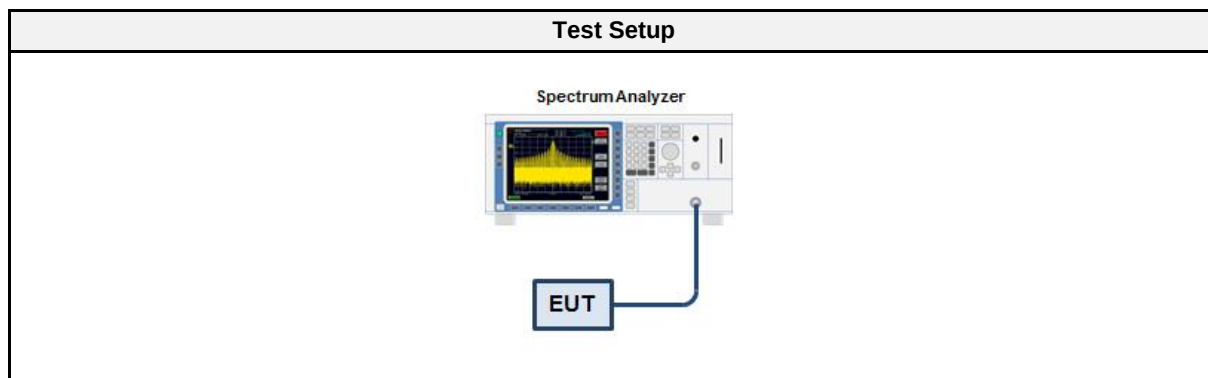
3.1.1 Information

Test Information	
Reference	ISED RSS-Gen, Issue 5 (section 6.6)
Measurement Method	ANSI C63.10 6.9.3
Operator	Florian Voigt
Date	2019-12-17

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup



3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2019-07	2020-07

3.1.5 Procedure

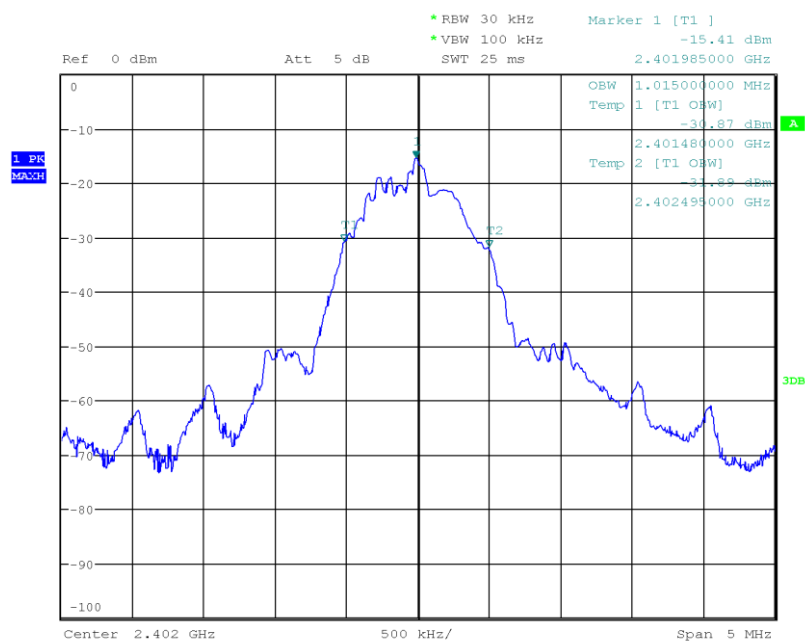
Test Procedure
1. EUT transmitter is activated in test mode under normal conditions 2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum 3. The resolution bandwidth is set to the range of 1 % to 5 % of the occupied bandwidth 4. The occupied bandwidth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

3.1.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
GFSK	2402	1.015
GFSK	2440	1.020
GFSK	2480	1.020

Occupied Bandwidth

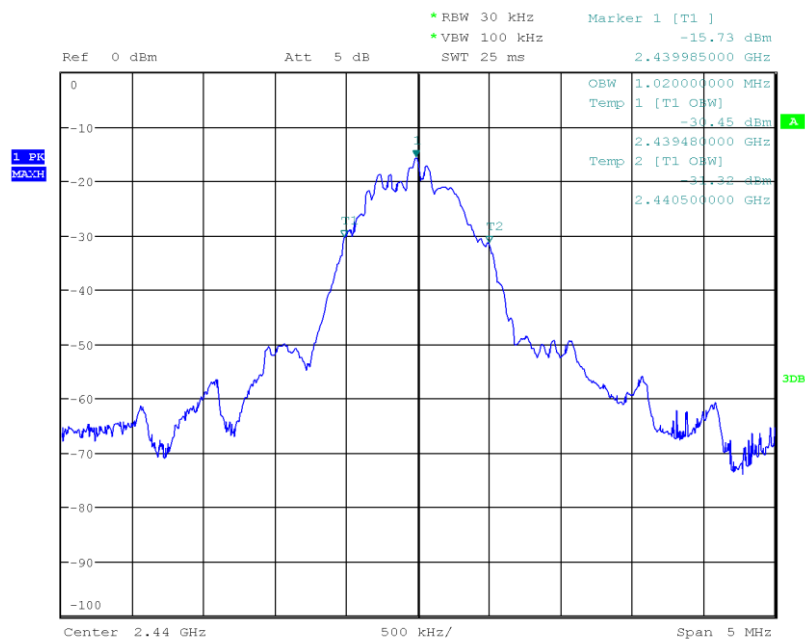
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Occupied Bandwidth [MHz]: 1.015



Date: 17.DEC.2019 15:15:44

Occupied Bandwidth

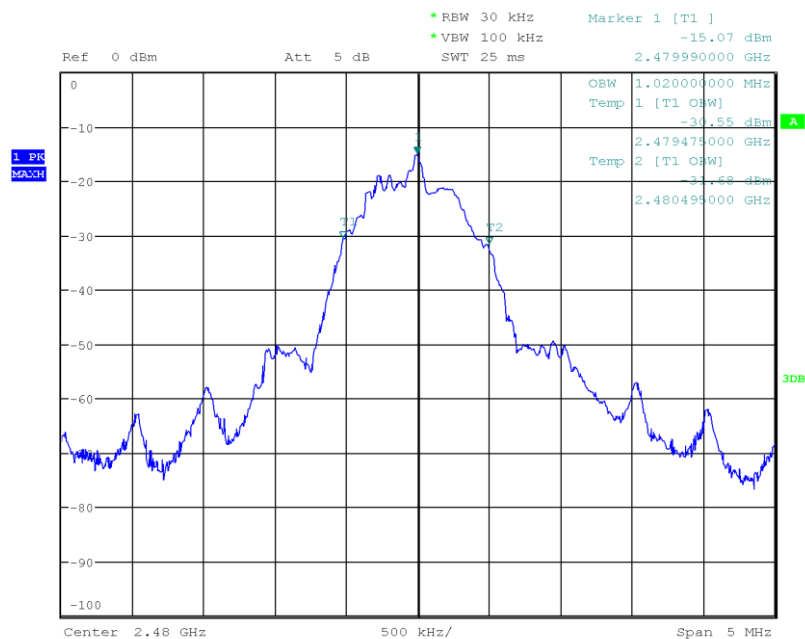
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Occupied Bandwidth [MHz]: 1.020



Date: 17.DEC.2019 15:17:05

Occupied Bandwidth

Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 6.9.3
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Occupied Bandwidth [MHz]: 1.020



Date: 17.DEC.2019 15:18:01

3.2 Test Conditions and Results - 6 dB bandwidth

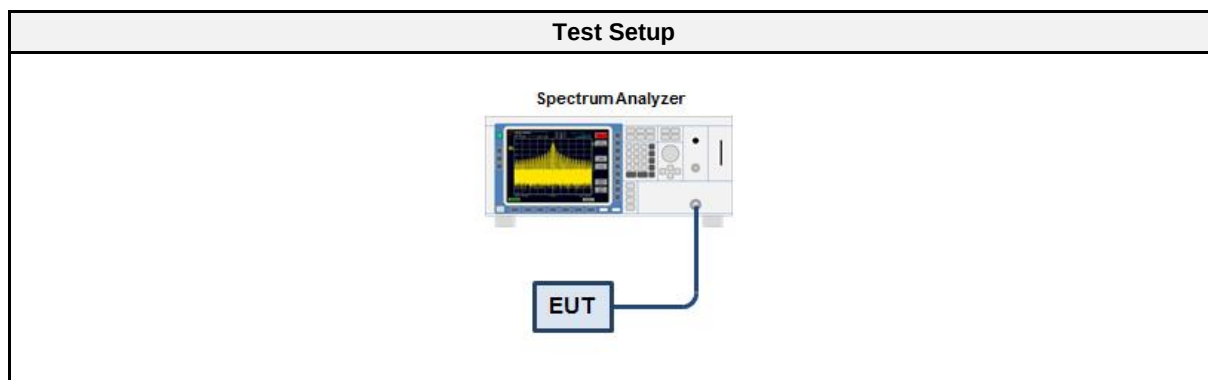
3.2.1 Information

Test Information	
Reference	FCC § 15.247(a)(2); ISED RSS-247, Issue 2 (section 5.2)
Measurement Method	ANSI C63.10 11.8
Operator	Florian Voigt
Date	2019-12-17

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	2019-07	2020-07

3.2.5 Procedure

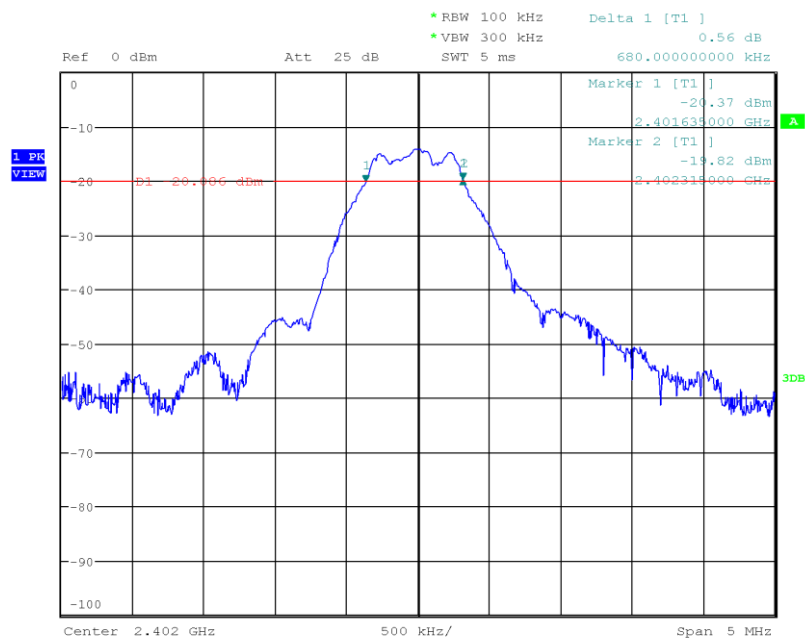
Test Procedure
1. EUT set to test mode 2. Span set to at least twice the emission spectrum 3. Detector set to peak and max hold and RBW is set to 100 kHz 4. Envelope peak value of emission spectrum is selected 5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak 6. Marker 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				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
GFSK	2402	680	500	PASS
GFSK	2440	680	500	PASS
GFSK	2480	680	500	PASS

DTS (6 dB) Bandwidth

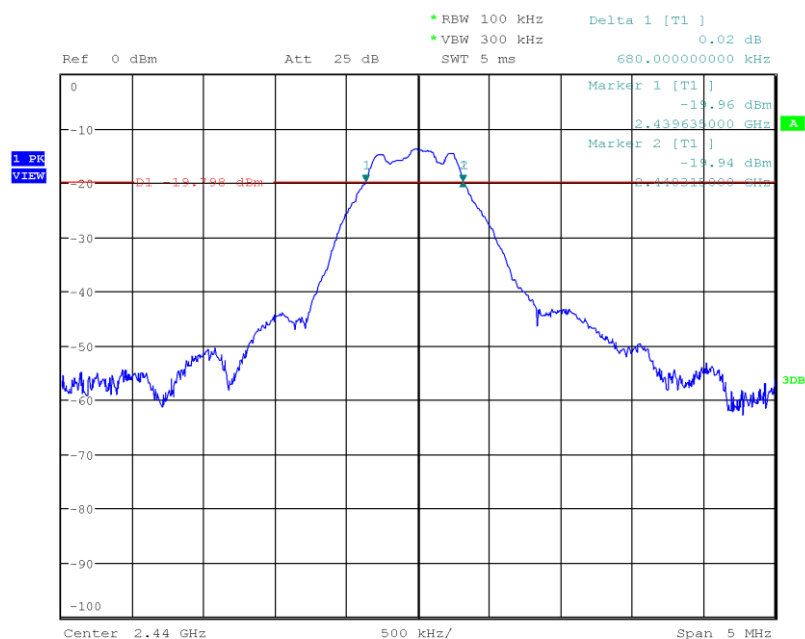
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Lower Frequency [MHz]: 2401.635
 Upper Frequency [MHz]: 2402.315
 6 dB Bandwidth [kHz]: 680



Date: 17.DEC.2019 15:22:19

DTS (6 dB) Bandwidth

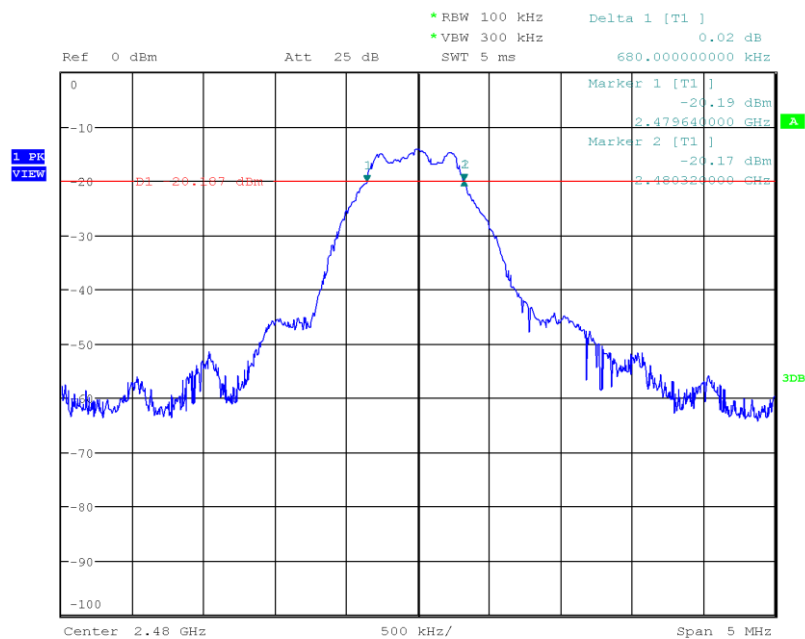
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Lower Frequency [MHz]: 2439.635
 Upper Frequency [MHz]: 2440.315
 6 dB Bandwidth [kHz]: 680



Date: 17.DEC.2019 15:23:34

DTS (6 dB) Bandwidth

Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Lower Frequency [MHz]: 2479.640
 Upper Frequency [MHz]: 2480.320
 6 dB Bandwidth [kHz]: 680



Date: 17.DEC.2019 15:24:28

3.3 Test Conditions and Results - Maximum peak conducted output power

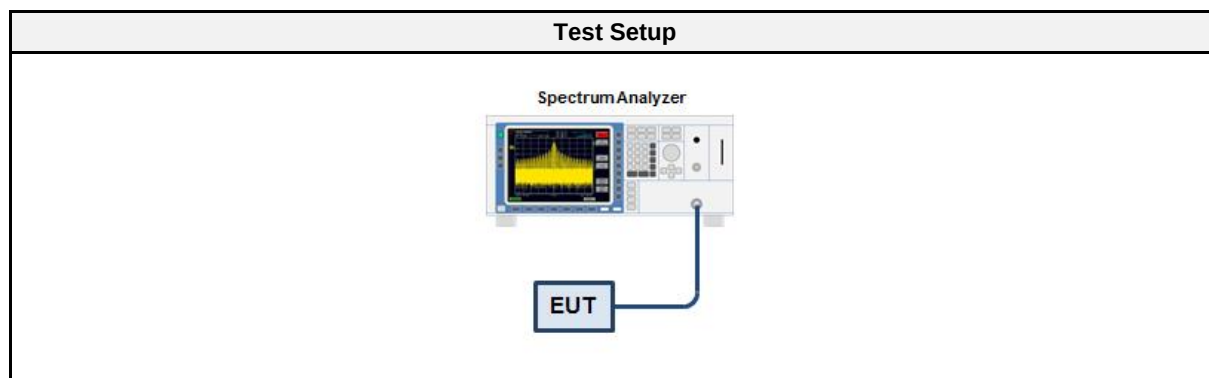
3.3.1 Information

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	Florian Voigt
Date	2019-12-17

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	2019-07	2020-07

3.3.5 Procedure

Test Procedure
1. EUT set to test 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				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
2402	-2.991	0.0005	1.0	PASS
2440	-2.728	0.0005	1.0	PASS
2480	-2.988	0.0005	1.0	PASS

3.4 Test Conditions and Results - Power spectral density

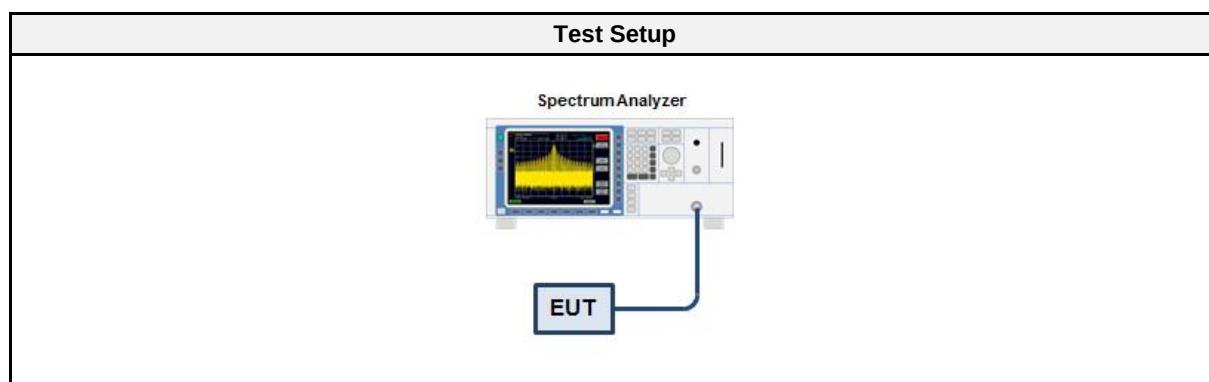
3.4.1 Information

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	Florian Voigt
Date	2019-12-17

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	2019-07	2020-07

3.4.5 Procedure

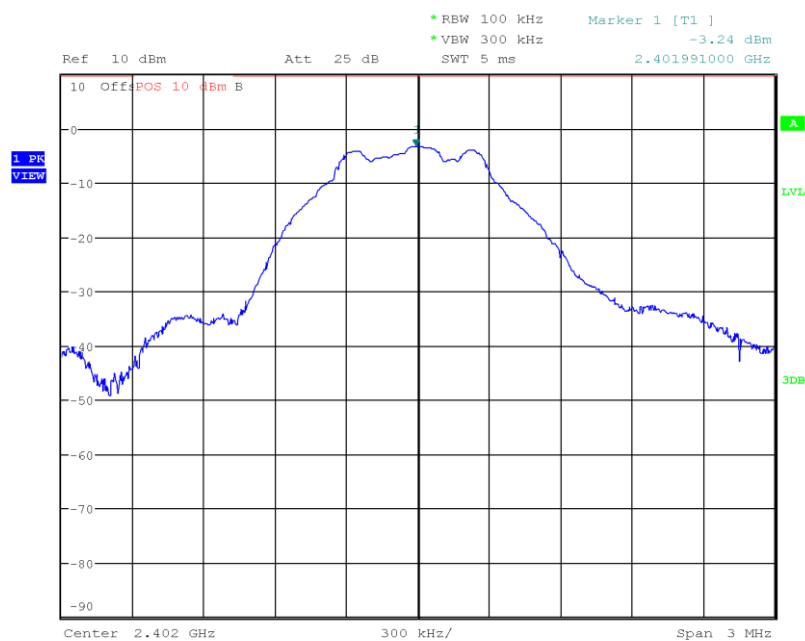
Test Procedure
1. EUT set to test mode 2. The analyzer is set to DTS channel center frequency with a span of 1.5 times the DTS bandwidth 3. The RBW is set to 100 kHz with VBW $\geq$ RBW and the detector is set to peak with max hold 4. After the trace has stabilized a marker is set to the envelope maximum 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			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
2402	-3.236	8.0	PASS
2440	-2.969	8.0	PASS
2480	-3.307	8.0	PASS
RBW = 100 kHz			

Peak Power Spectral Density

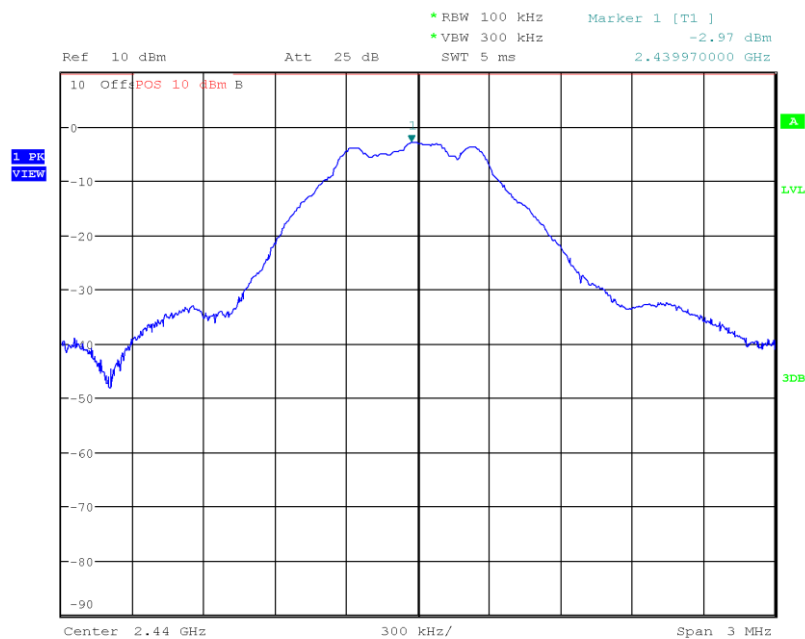
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Peak Frequency [MHz]: 2401.991
 Spectral Density [dBm/RBW]: -3.236
 Resolution Bandwidth [kHz]: 100 kHz



Date: 17.DEC.2019 15:39:59

Peak Power Spectral Density

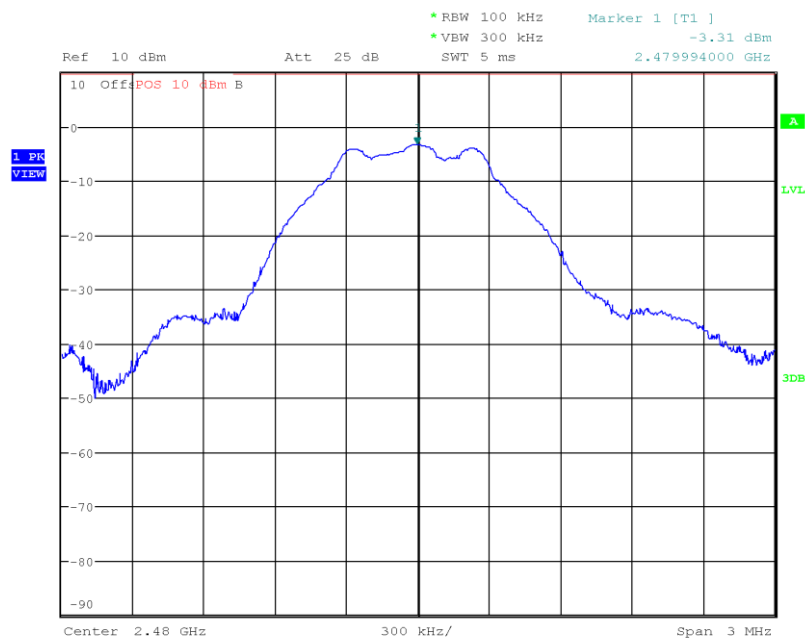
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Peak Frequency [MHz]: 2439.970
 Spectral Density [dBm/RBW]: -2.969
 Resolution Bandwidth [kHz]: 100 kHz



Date: 17.DEC.2019 15:41:29

Peak Power Spectral Density

Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.10.2
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Peak Frequency [MHz]: 2479.994
 Spectral Density [dBm/RBW]: -3.307
 Resolution Bandwidth [kHz]: 100 kHz



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3.5 Test Conditions and Results - Band-edge compliance

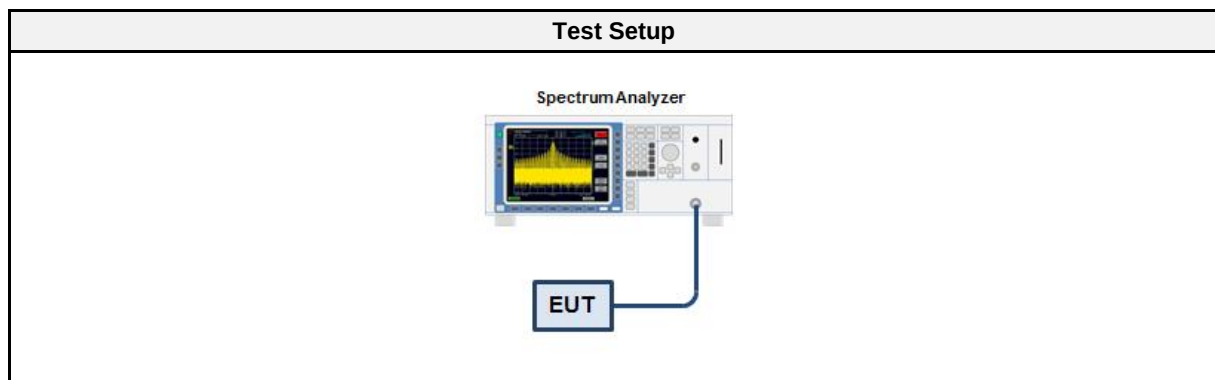
3.5.1 Information

Test Information	
Reference	FCC § 15.247(d); ISSED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.13
Operator	Florian Voigt
Date	2019-12-17

3.5.2 Limits

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

3.5.3 Setup



3.5.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01407	2019-07	2020-07

3.5.5 Procedure

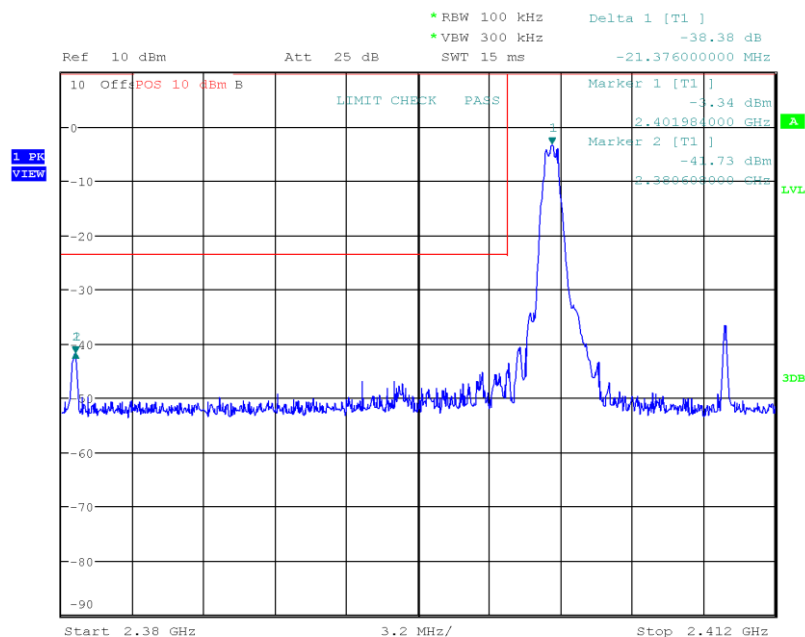
Test Procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference

3.5.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
GFSK	2402	-38.38	-20	PASS
GFSK	2480	-36.64	-20	PASS

Emissions in nonrestricted frequency bands at the Band-edge

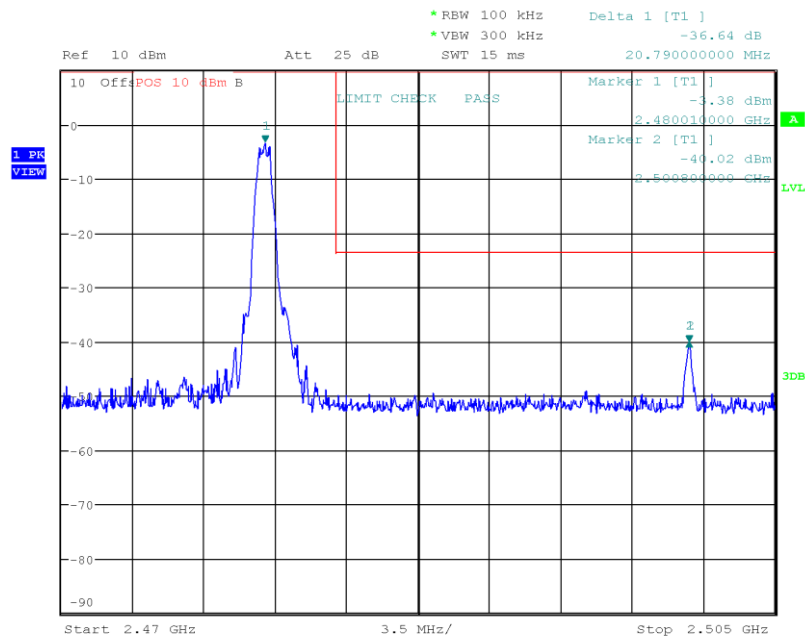
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Band-edge: Lower
 In-band Frequency [MHz]: 2401.984
 Max. in-band Level [dBm/100 kHz]: -3.344
 Out-of-band Frequency [MHz]: 2380.608
 Max. out-of-band Level [dBm/100 kHz]: -41.726
 Attenuation [dB]: -38.38



Date: 17.DEC.2019 16:07:08

Emissions in nonrestricted frequency bands at the Band-edge

Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Band-edge: Upper
 In-band Frequency [MHz]: 2480.01
 Max. in-band Level [dBm/100 kHz]: -3.384
 Out-of-band Frequency [MHz]: 2500.8
 Max. out-of-band Level [dBm/100 kHz]: -40.025
 Attenuation [dB]: -36.64



Date: 17.DEC.2019 16:09:20

3.6 Test Conditions and Results - Conducted spurious emissions

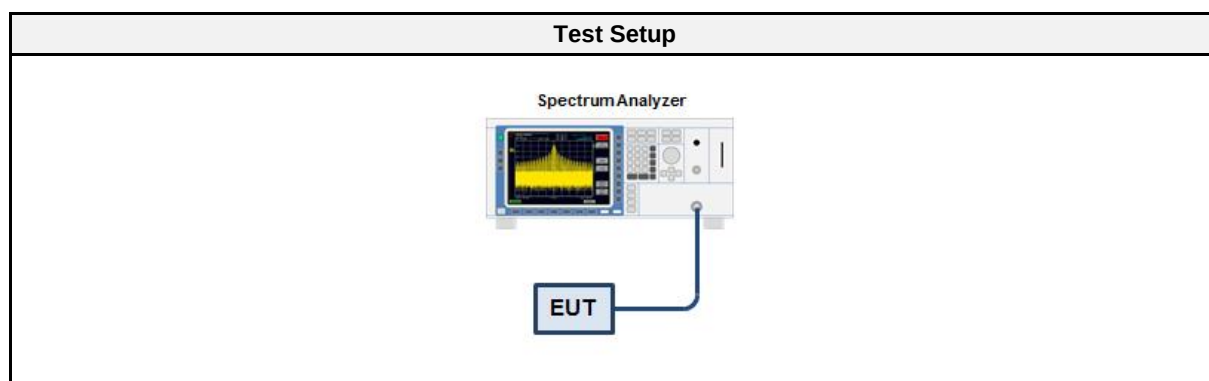
3.6.1 Information

Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.11
Operator	Florian Voigt
Date	2019-12-17

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	2019-07	2020-07

3.6.5 Procedure

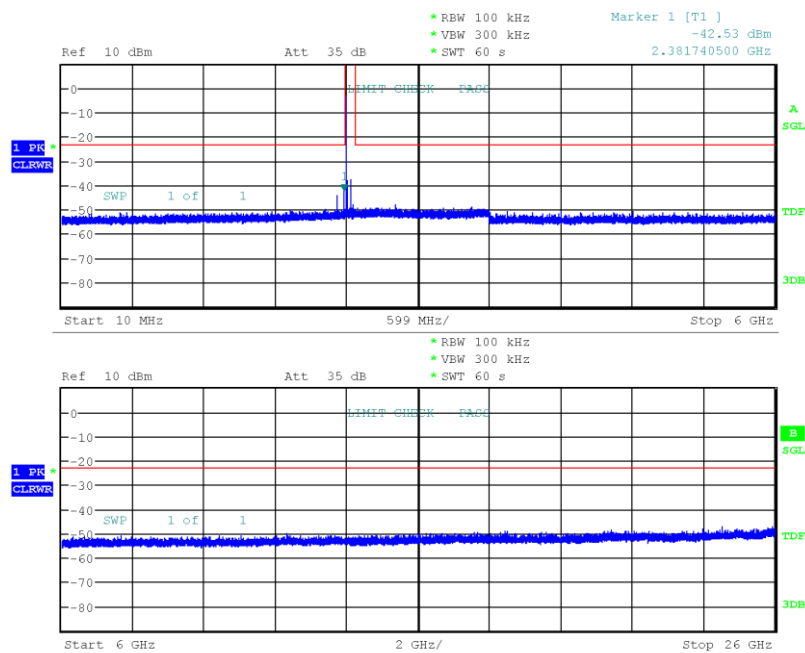
Test Procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference

3.6.6 Results

Test Results		
Mode	Channel [MHz]	Verdict
GFSK	2402	PASS
GFSK	2440	PASS
GFSK	2480	PASS

Conducted Spurious Emissions

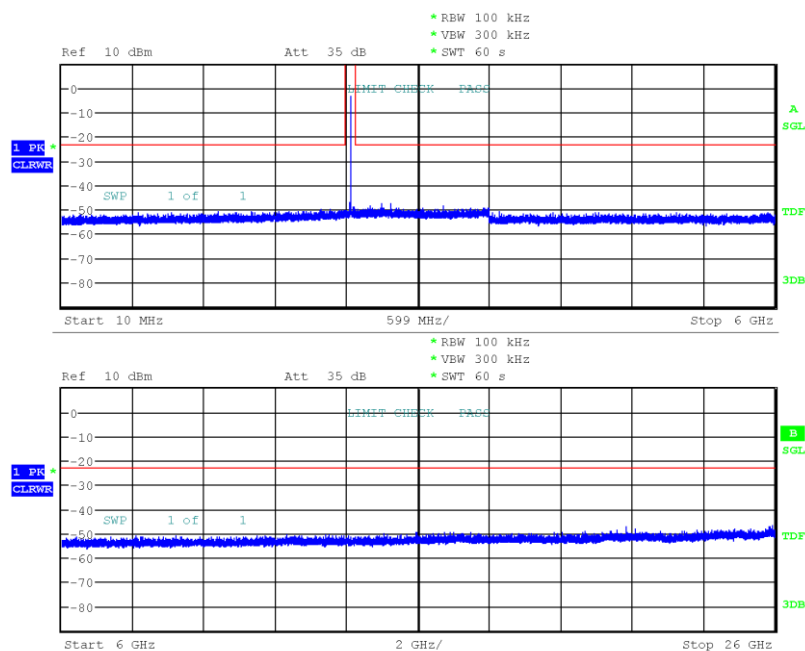
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 0, 2402 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Max. in-band Frequency [MHz]: 2402.0
 Max. in-band Level [dBm/100 kHz]: -3.3
 Out-of-band Limit [dBm/100 kHz]: -23.3



Date: 17.DEC.2019 16:33:43

Conducted Spurious Emissions

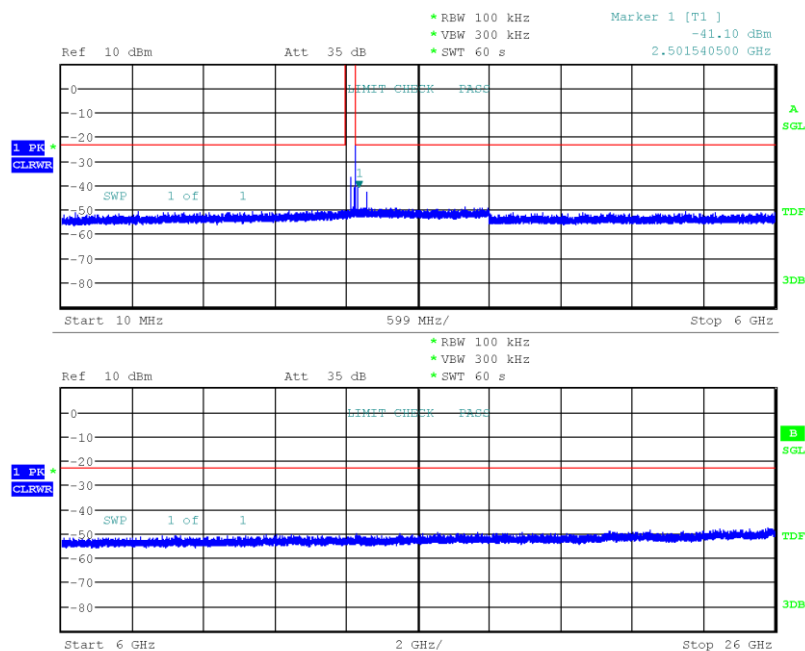
Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 19, 2440 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Max. in-band Frequency [MHz]: 2440.0
 Max. in-band Level [dBm/100 kHz]: -3.0
 Out-of-band Limit [dBm/100 kHz]: -23.0



Date: 17.DEC.2019 16:36:52

Conducted Spurious Emissions

Project Number: G0M-1911-8600
 Applicant: Medivation AG
 Model Description: Wireless single-use tracking system
 Model: iVation Camera
 Test Sample ID: 27184
 Reference Standards: FCC 15.247, RSS-247
 Reference Method: ANSI C63.10:2013, Section 11.11
 Operational Mode: GFSK, Channel: 39, 2480 MHz
 Operating Conditions: Tnom/Vnom
 Operator: Florian Voigt
 Test Site: Eurofins Product Service GmbH
 Test Date: 2019-12-17
 Max. in-band Frequency [MHz]: 2480.0
 Max. in-band Level [dBm/100 kHz]: -3.3
 Out-of-band Limit [dBm/100 kHz]: -23.3



Date: 17.DEC.2019 16:39:55

3.7 Test Conditions and Results - Transmitter radiated emissions

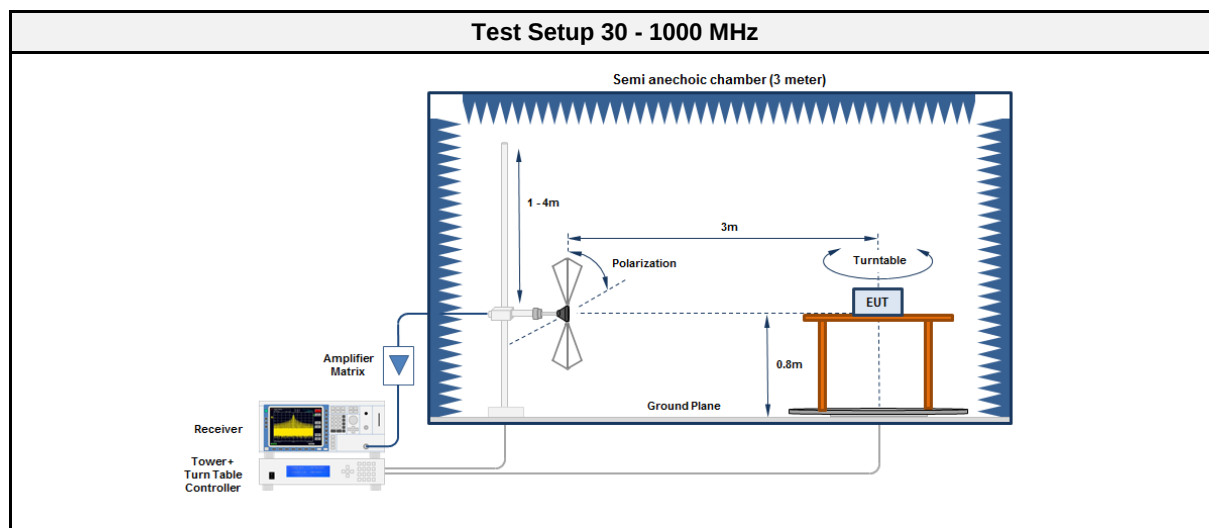
3.7.1 Information

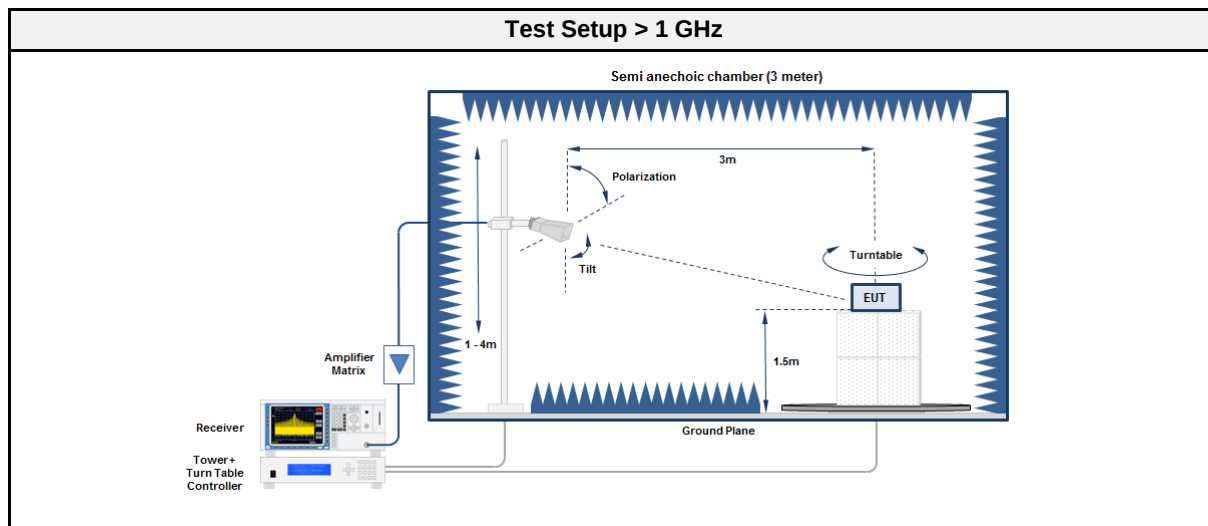
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISSED RSS-Gen, Issue 5 (section 6.13)
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Florian Voigt
Date	2019-12-16 + 2019-12-17

3.7.2 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

3.7.3 Setup





3.7.4 Equipment

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

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	2019-09	2020-09
Antenna	R&S	HK116	EF00030	2019-04	2022-04
Antenna	R&S	HL 223	EF00187	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Spectrum analyzer	R&S	FSU 26	EF01003	2019-07	2020-07
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10
Antenna	Amplifier Research	AT4560	EF00302	2019-05	2020-05

3.7.5 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

3.7.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2402	2330.9	50.29	pk	ver	74.00	-23.71
2402	2330.9	38.27	RMS	ver	54.00	-15.73
2402	2389.6	49.93	pk	hor	74.00	-24.07
2402	2389.6	38.26	RMS	hor	54.00	-15.74
2402	4803	43.25	pk	ver	74.00	-30.75
2402	4803	38.10	RMS	ver	54.00	-15.90
2402	4804	42.83	pk	hor	74.00	-31.17
2402	4804	37.59	RMS	hor	54.00	-16.41
2440	2498.1	26.55	pk	ver	74.00	-47.45
2440	2498.1	16.53	RMS	ver	54.00	-37.47
2440	2499.9	49.26	pk	hor	74.00	-24.74
2440	2499.9	35.16	RMS	hor	54.00	-18.84
2440	7319	46.38	pk	hor	74.00	-27.62
2440	7319	40.93	RMS	hor	54.00	-13.07
2440	7319	49.81	pk	ver	74.00	-24.19
2440	7319	44.93	RMS	ver	54.00	-09.07
2480	2499.9	54.62	pk	hor	74.00	-19.38
2480	2499.9	39.90	RMS	hor	54.00	-14.10
2480	7439	49.61	pk	ver	74.00	-24.39
2480	7439	44.75	RMS	ver	54.00	-09.25

3.8 Test Conditions and Results - Receiver radiated emissions

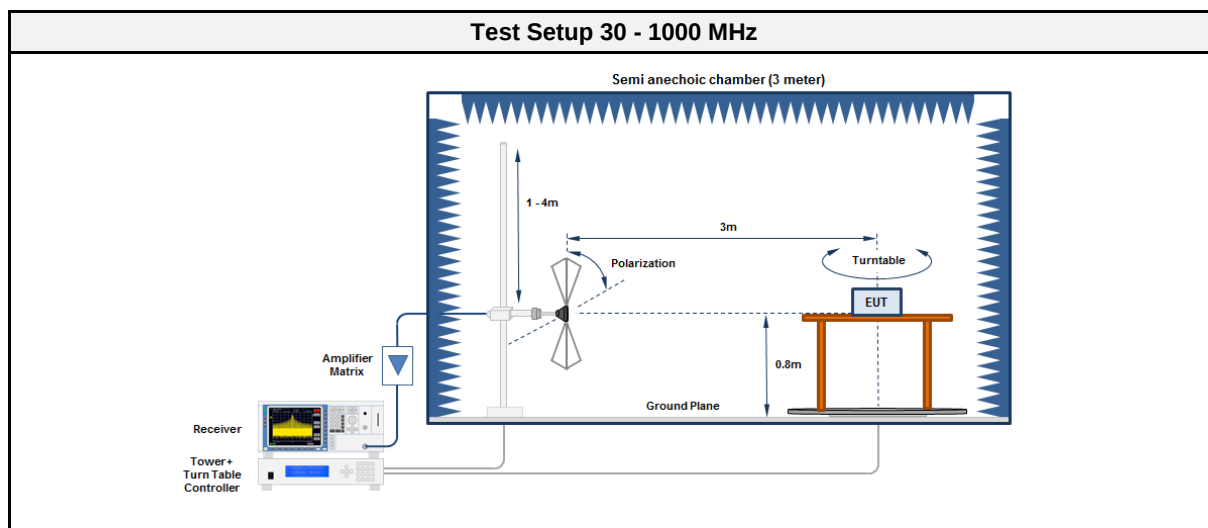
3.8.1 Information

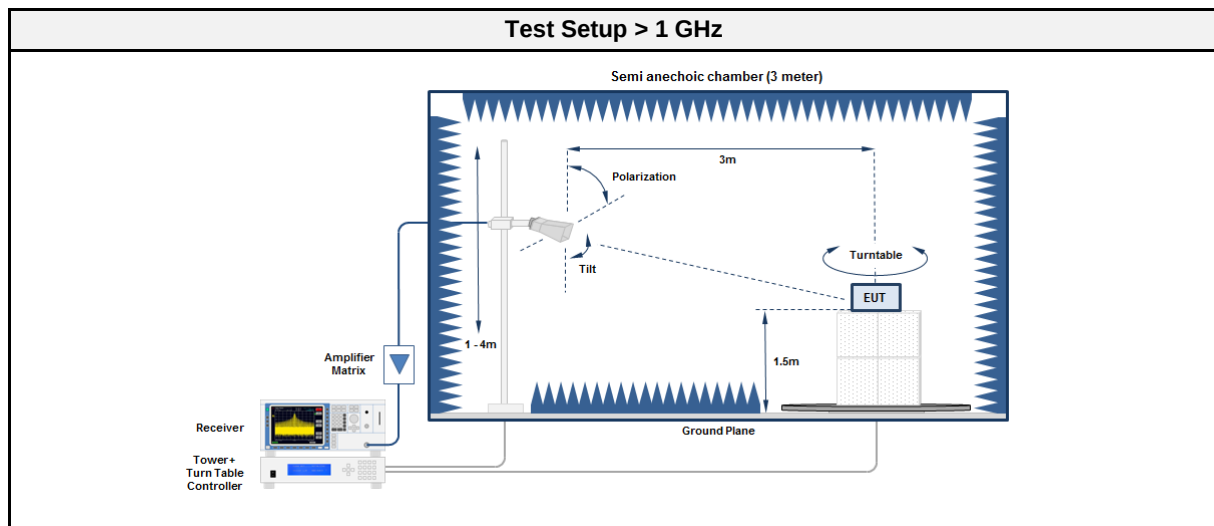
Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Florian Voigt
Date	2019-12-16 - 2019-12-18

3.8.2 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

3.8.3 Setup





3.8.4 Equipment

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

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	2019-09	2020-09
Antenna	R&S	HK116	EF00030	2019-04	2022-04
Antenna	R&S	HL 223	EF00187	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Spectrum analyzer	R&S	FSU 26	EF01003	2019-07	2020-07
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10

3.8.5 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

3.8.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2440	431.9424	28.60	pk	hor	46.00	-17.42
2440	432.0024	30.50	pk	ver	46.00	-15.55
2440	2404	30.45	pk	hor	53.98	-23.53
2440	2466	36.06	pk	ver	53.98	-17.92
2440	5583	35.80	pk	ver	53.98	-18.18

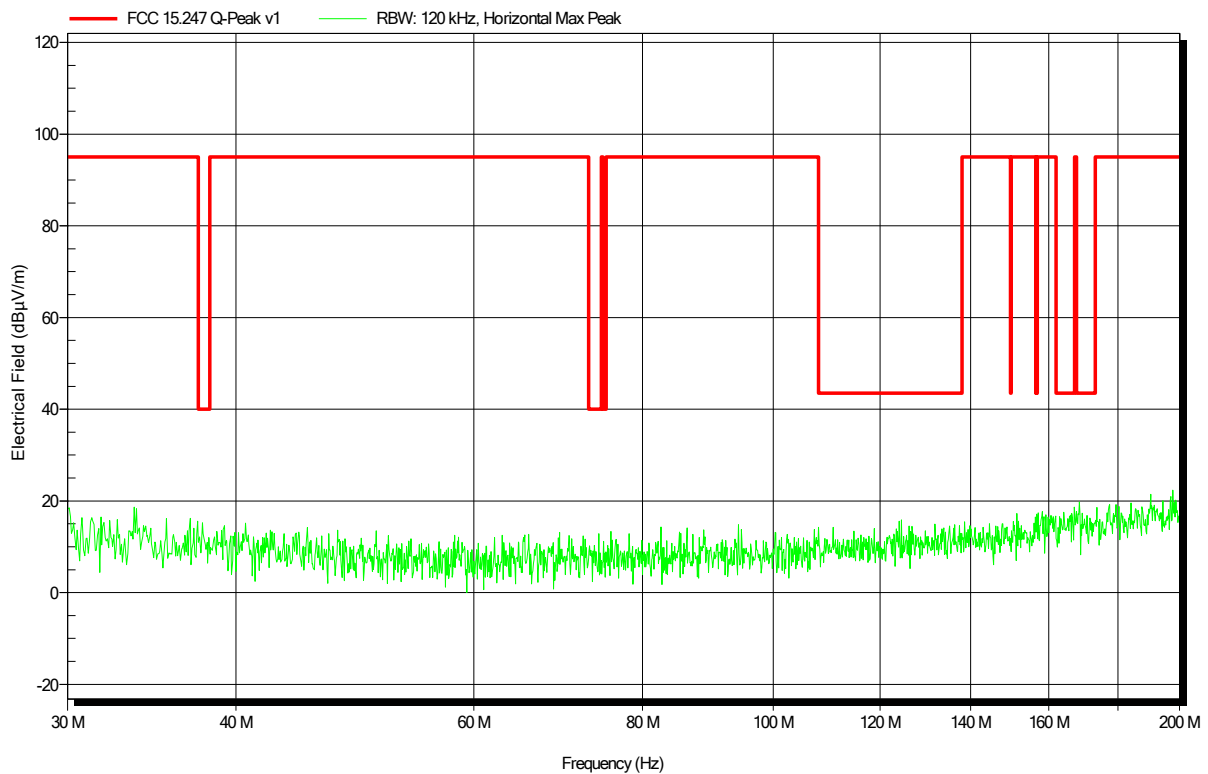
ANNEX A Transmitter spurious emissions

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Rohde & Schwarz HK 116, Horizontal
Measurement distance: 3 m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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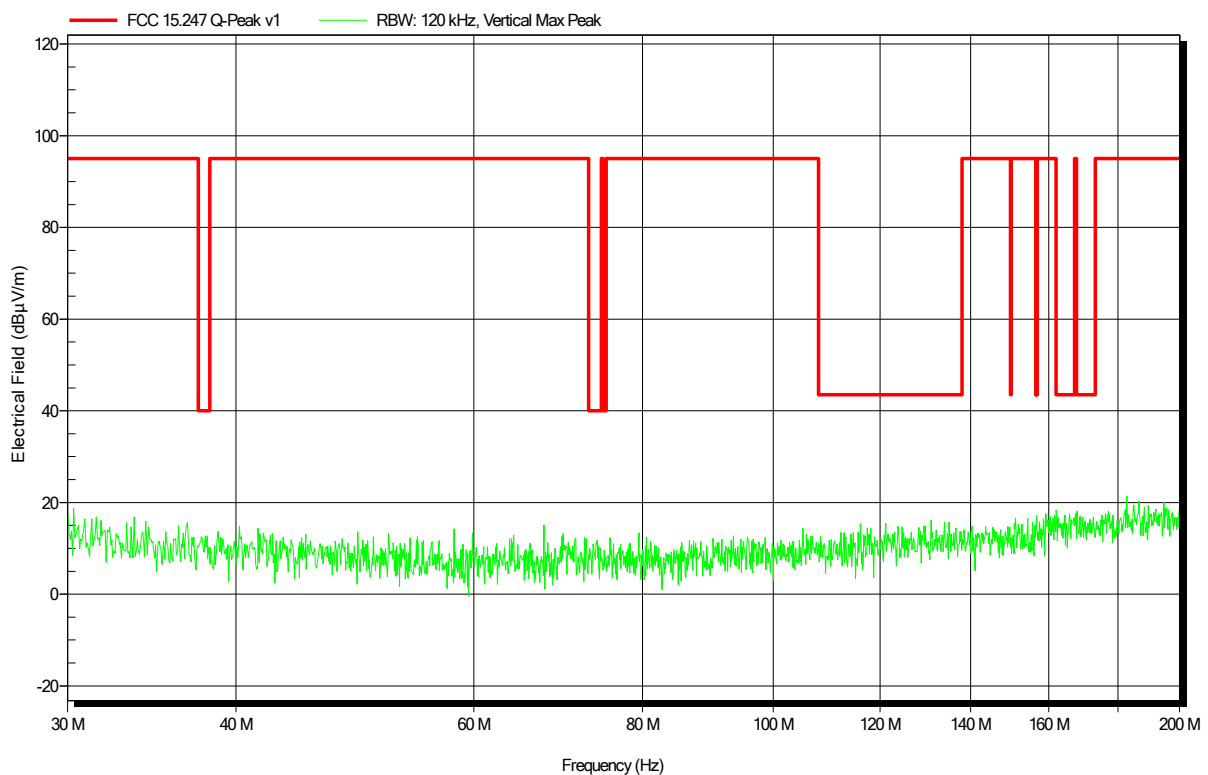


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

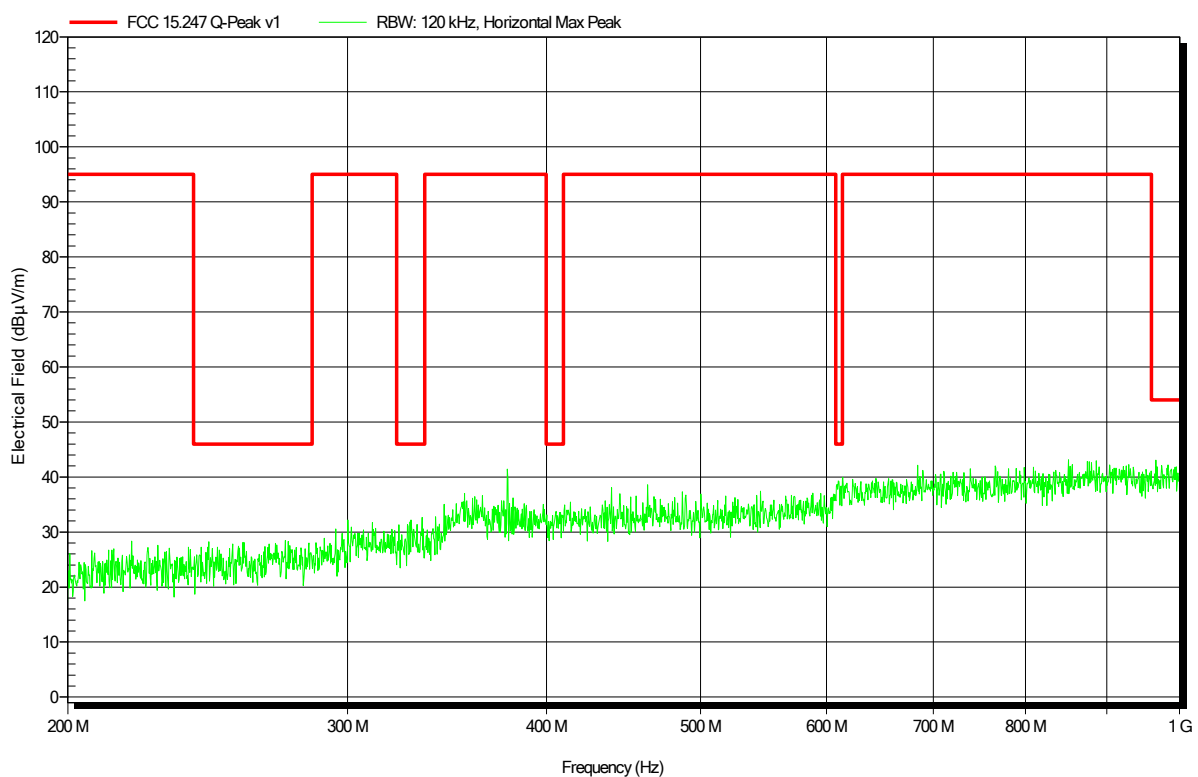
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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

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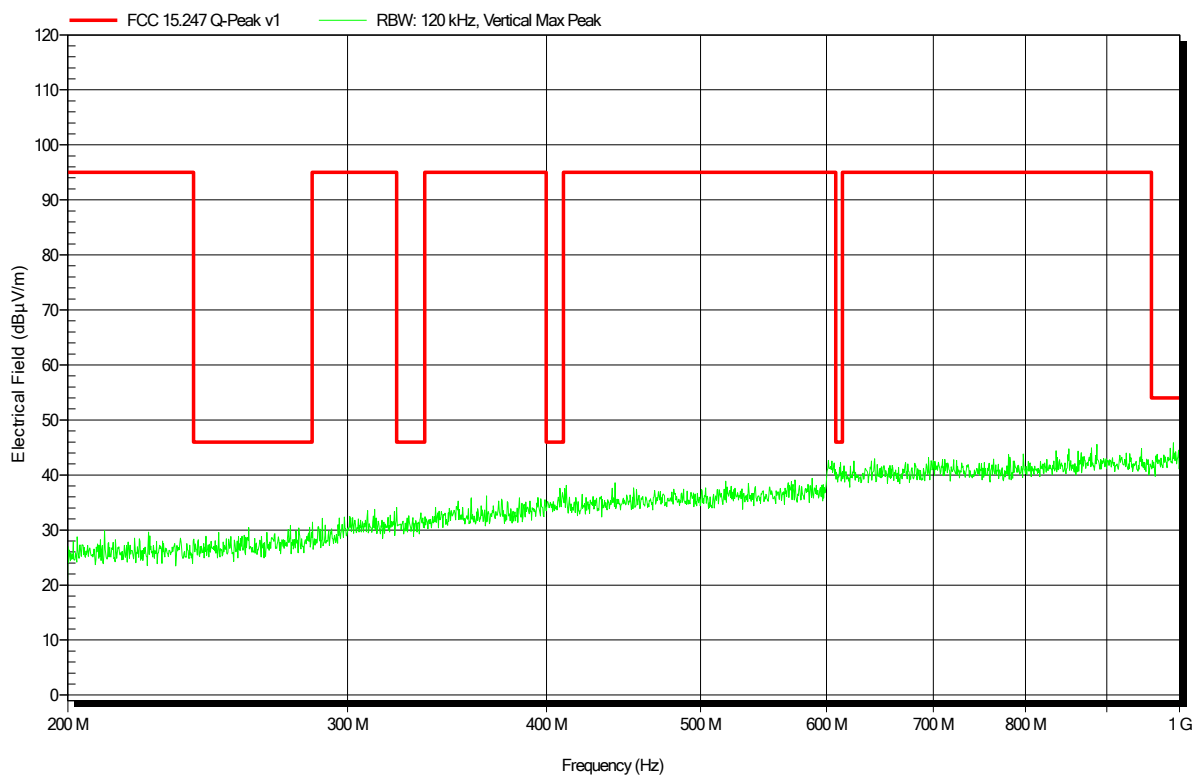


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Rohde & Schwarz HL 223, Vertical
Measurement distance: 3 m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

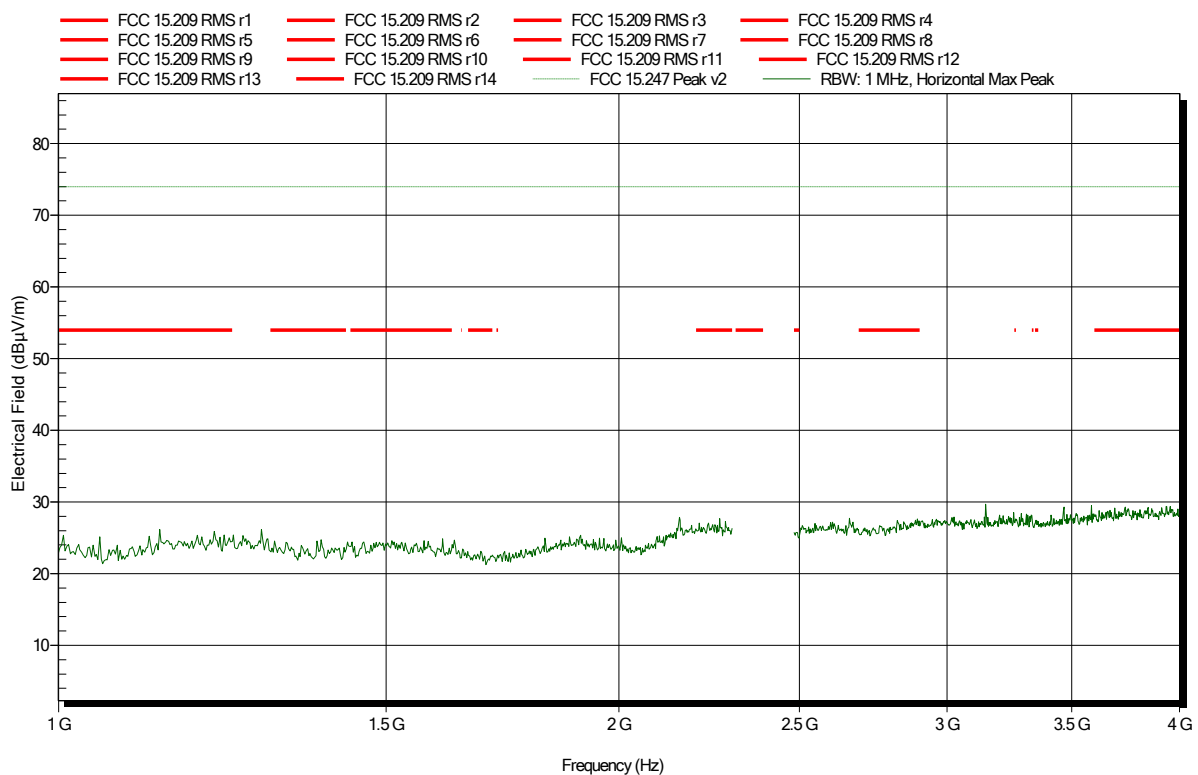
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

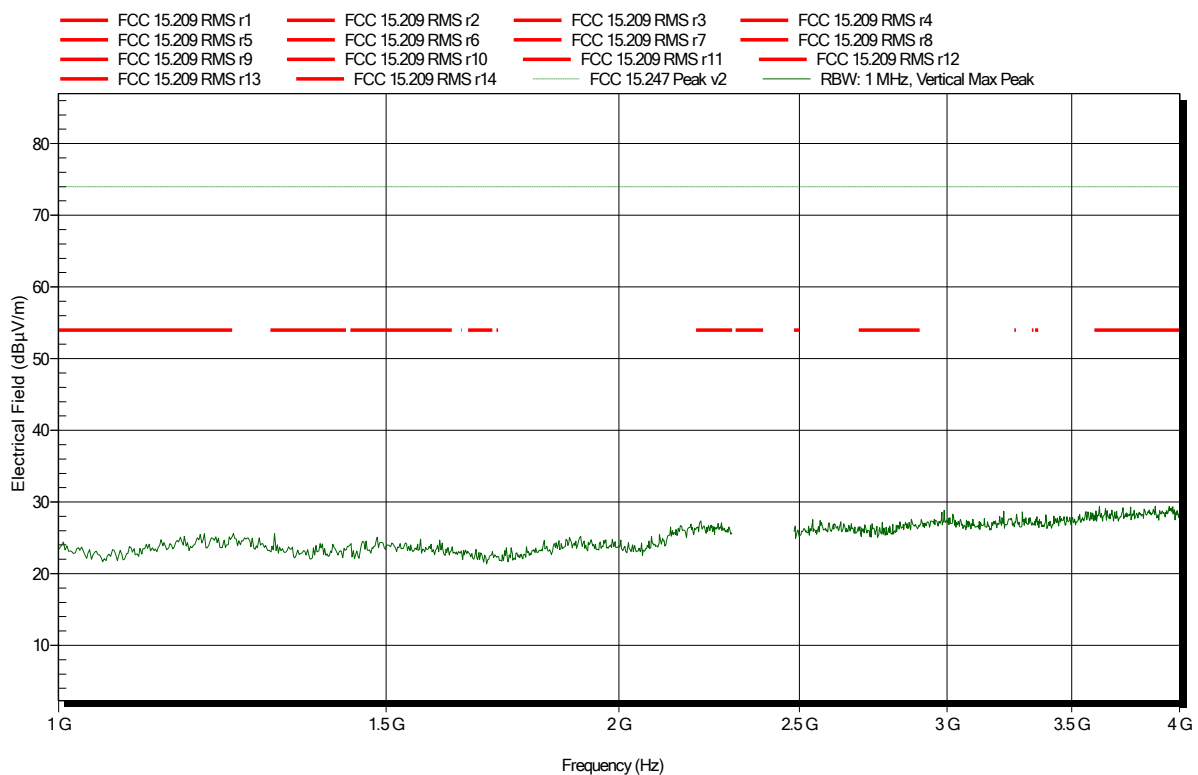
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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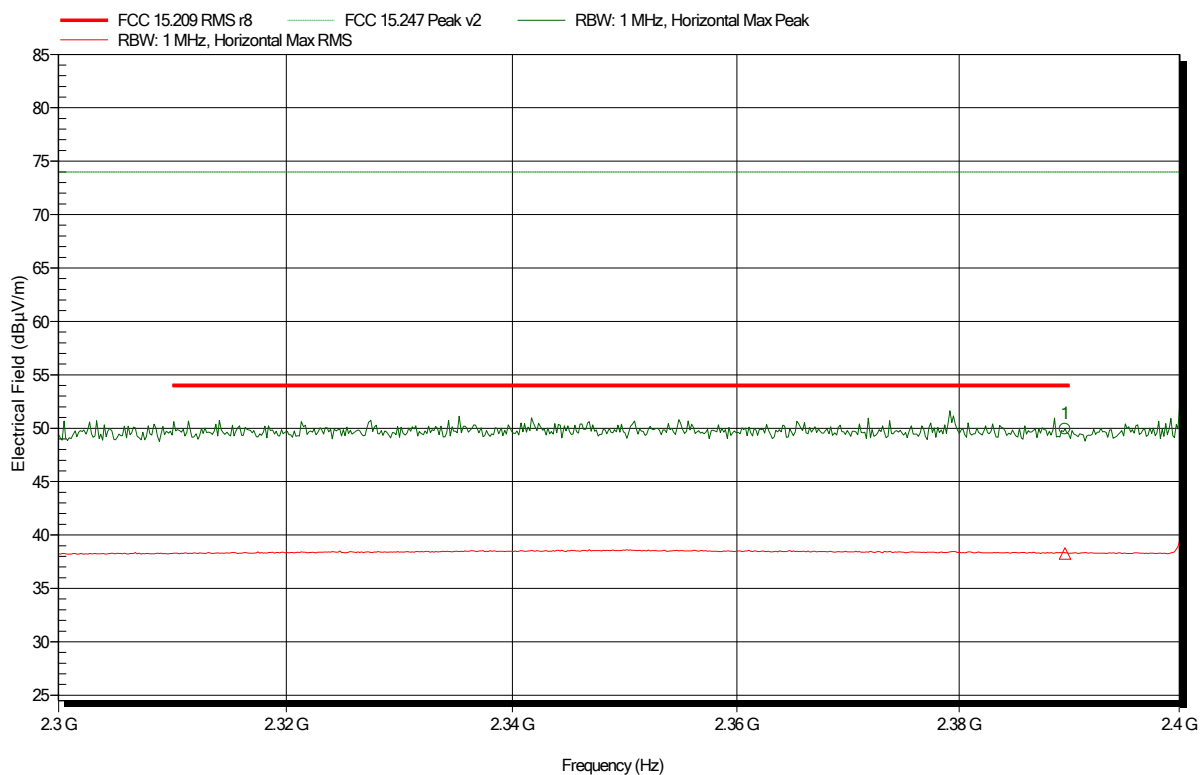


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note: lower bandedge

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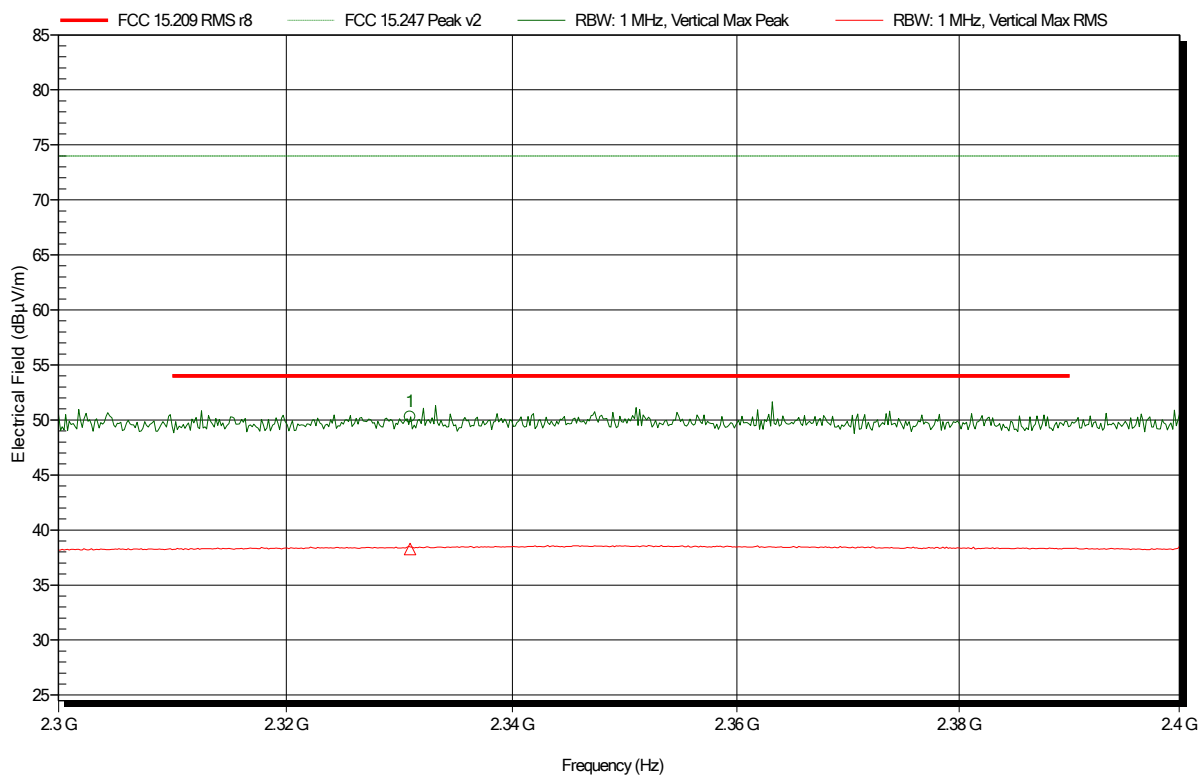
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.3896 GHz	49.93 dBµV/m	74 dBµV/m	-24.07 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.3896 GHz	38.26 dBµV/m	54 dBµV/m	-15.74 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note: lower bandedge

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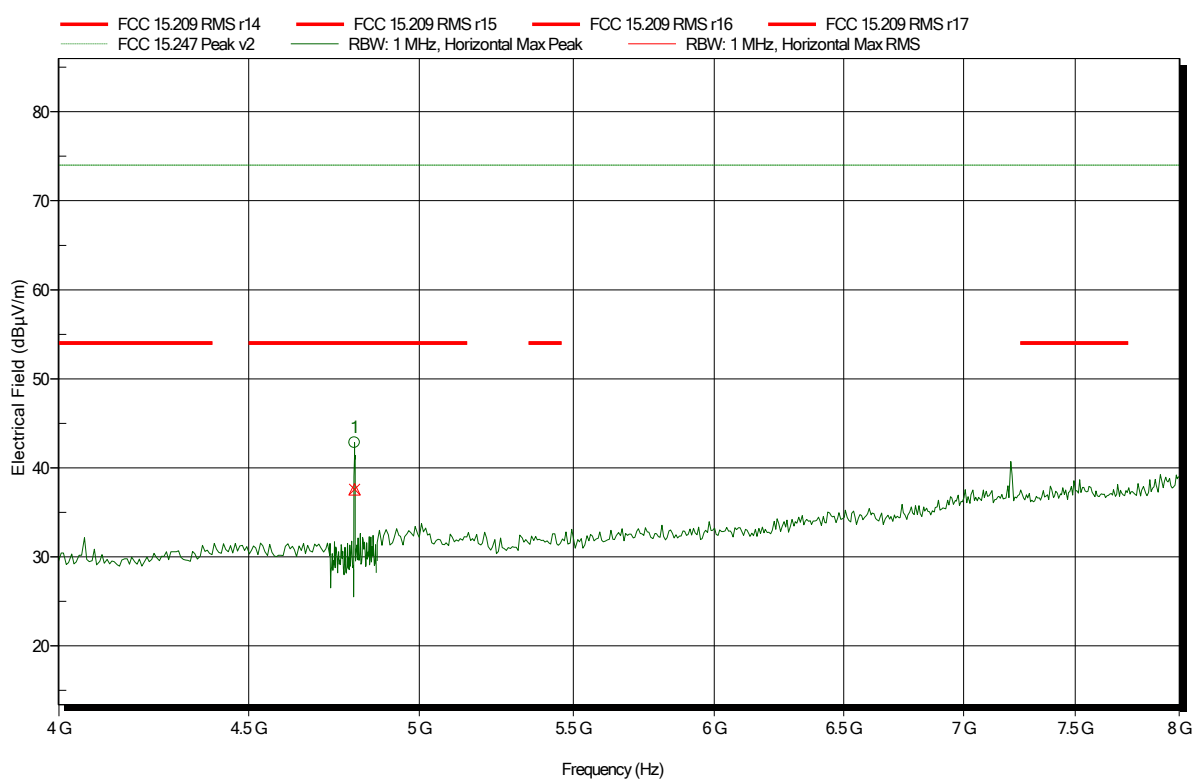
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.3309 GHz	50.29 dBµV/m	74 dBµV/m	-23.71 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.3309 GHz	38.27 dBµV/m	54 dBµV/m	-15.73 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Florian Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-17
 Note:

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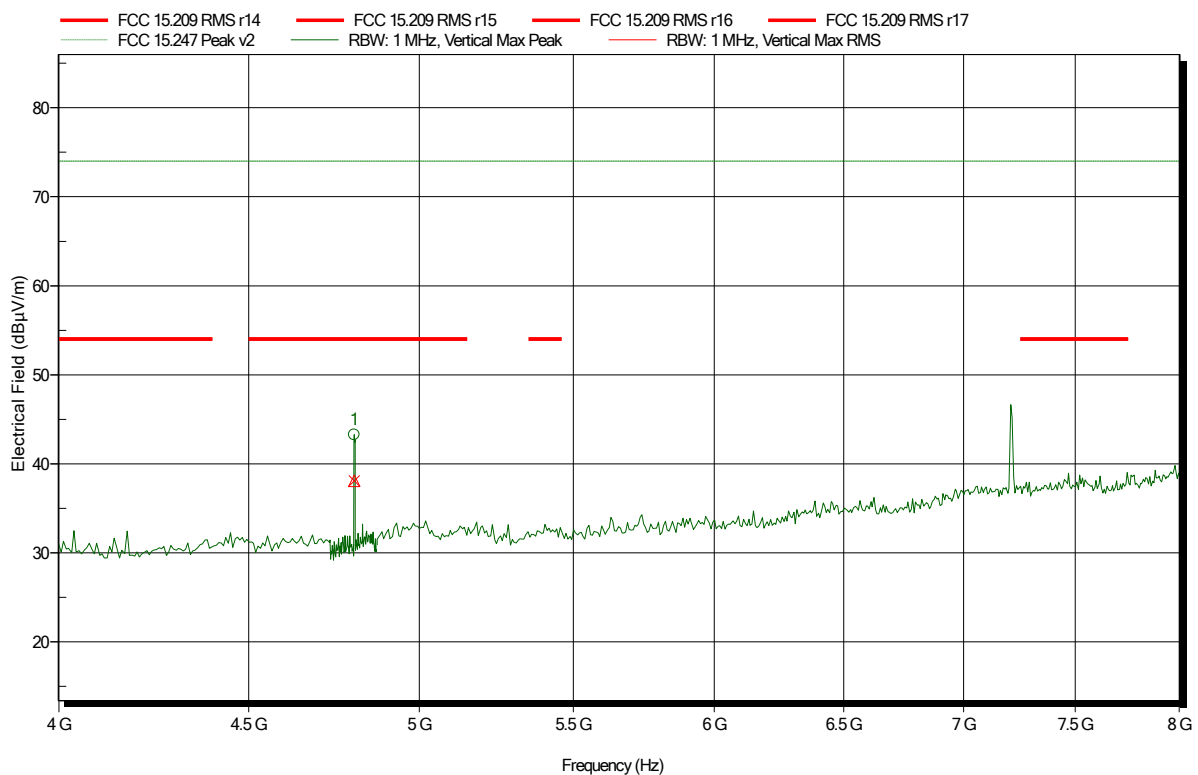
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.804 GHz	42.83 dBµV/m	74 dBµV/m	-31.17 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.804 GHz	37.59 dBµV/m	54 dBµV/m	-16.41 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Florian Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-17
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.803 GHz	43.25 dBµV/m	74 dBµV/m	-30.75 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.803 GHz	38.1 dBµV/m	54 dBµV/m	-15.9 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

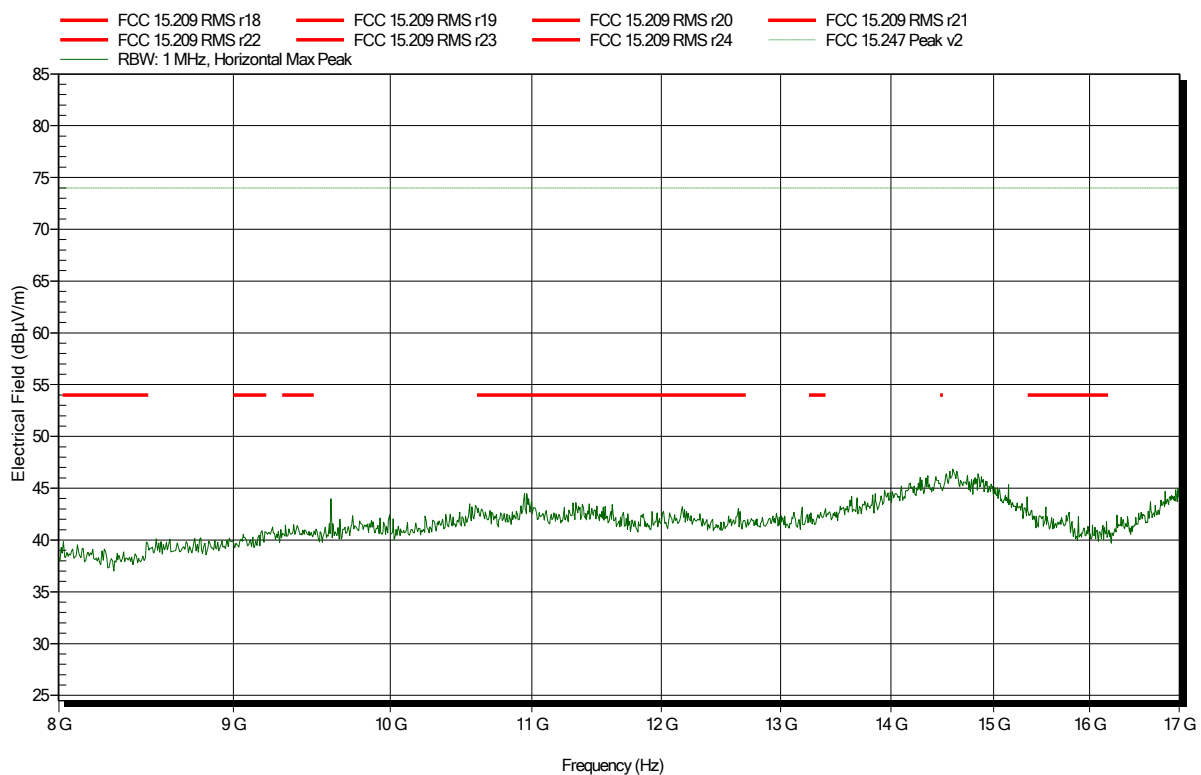
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

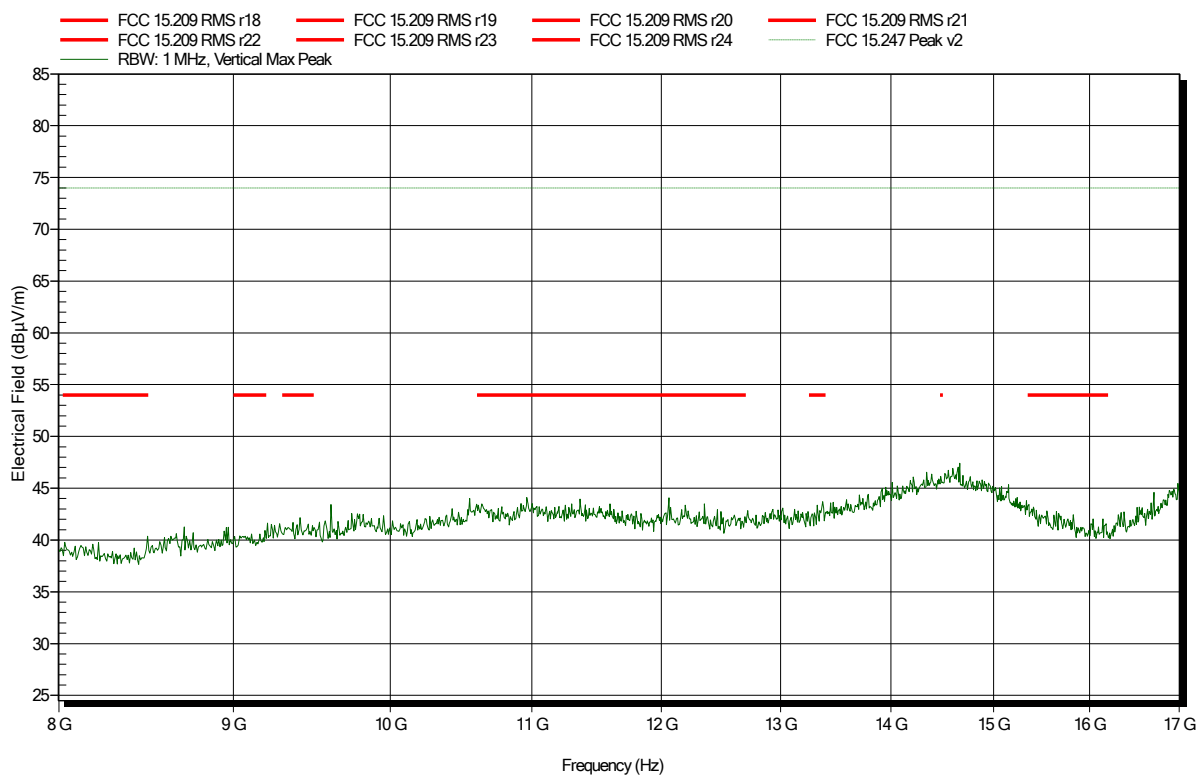
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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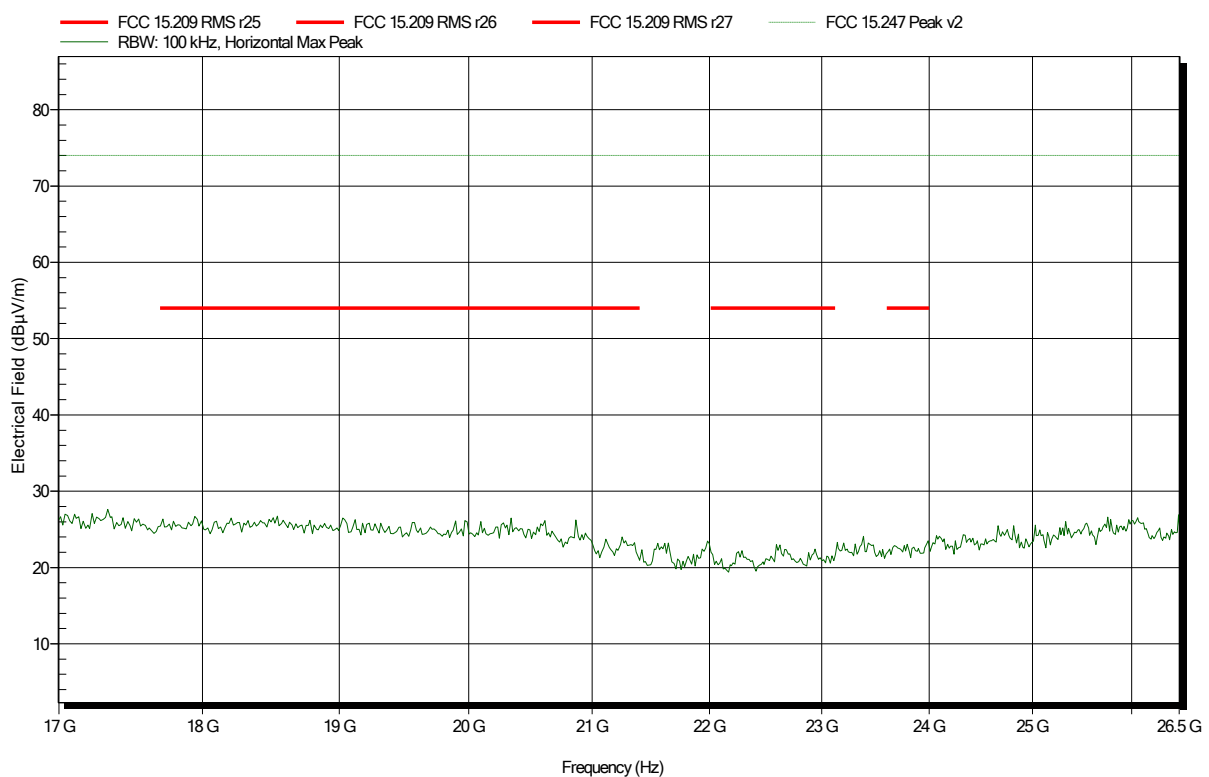


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

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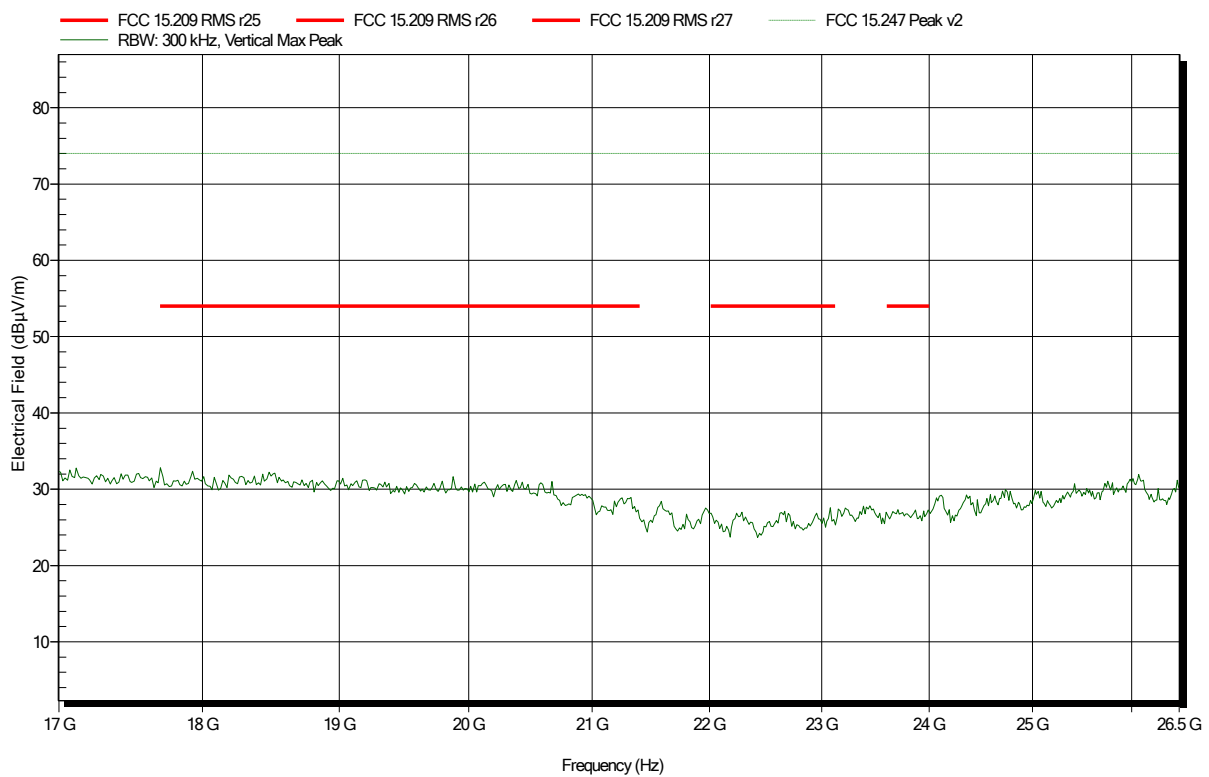


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2402MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

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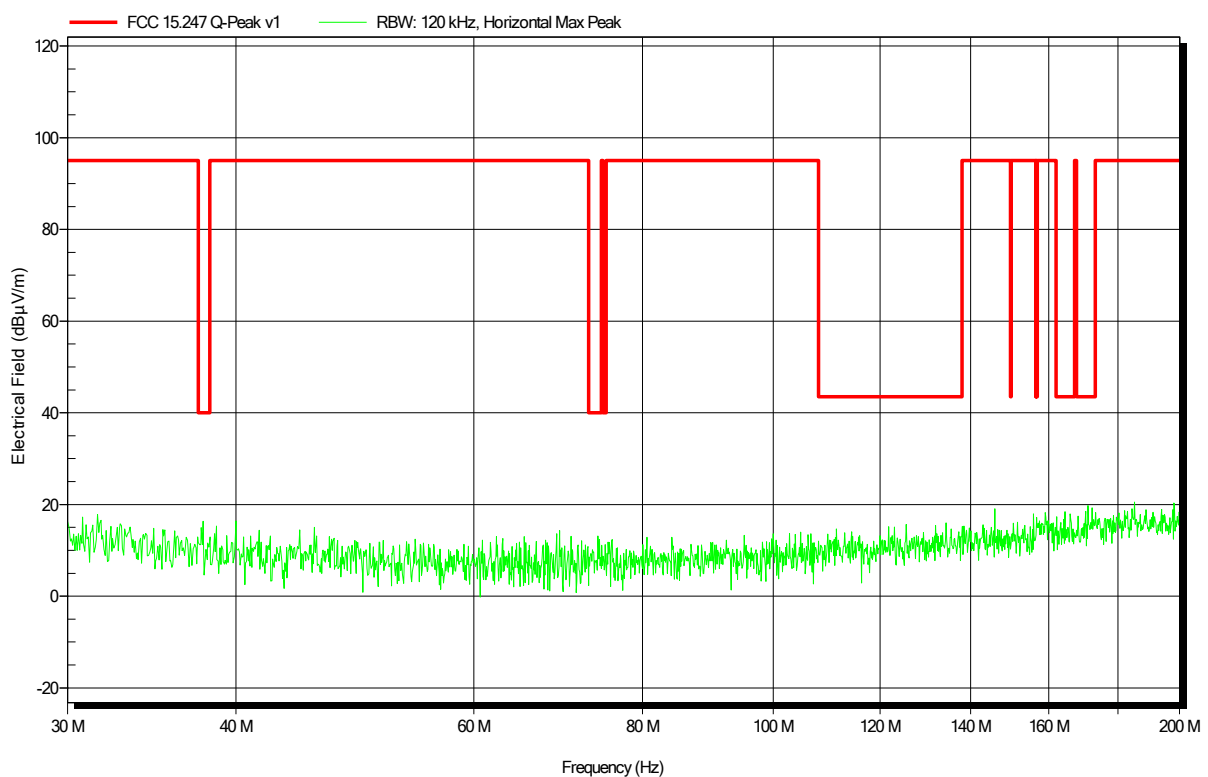


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Rohde & Schwarz HK 116, Horizontal
Measurement distance: 3 m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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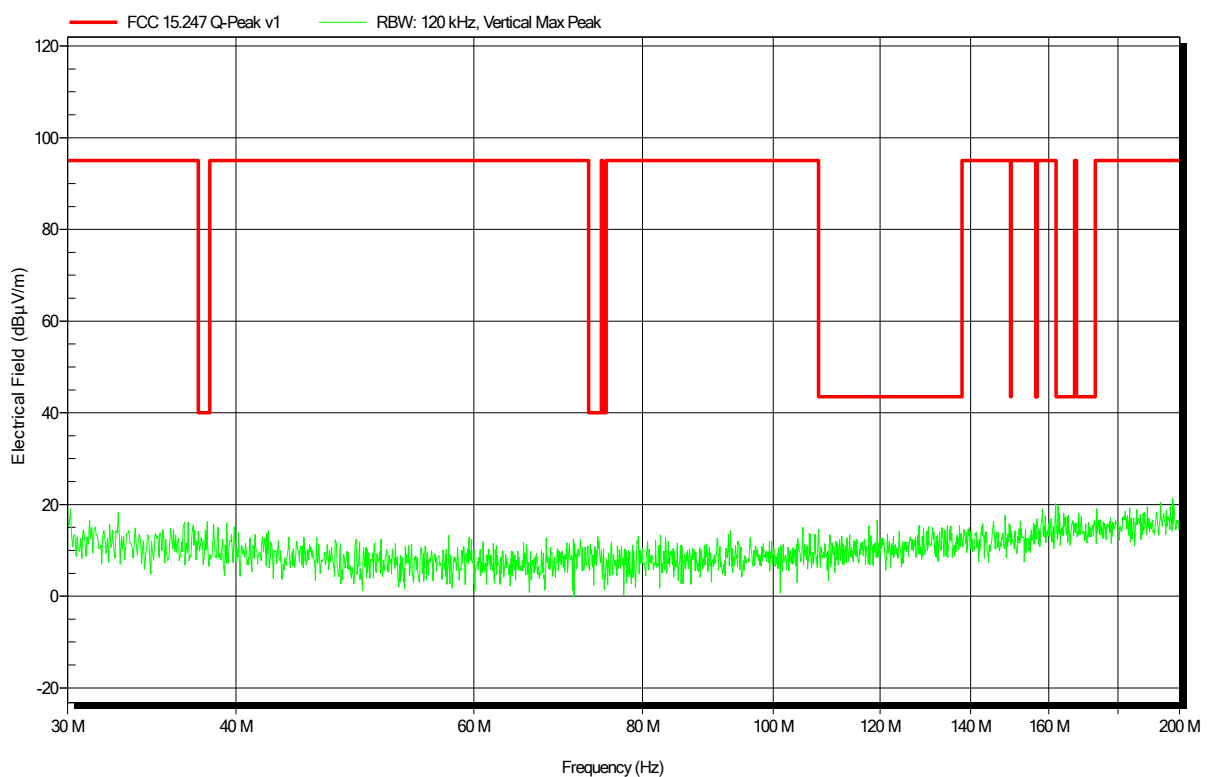


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Rohde & Schwarz HK 116, Vertical
Measurement distance: 3 m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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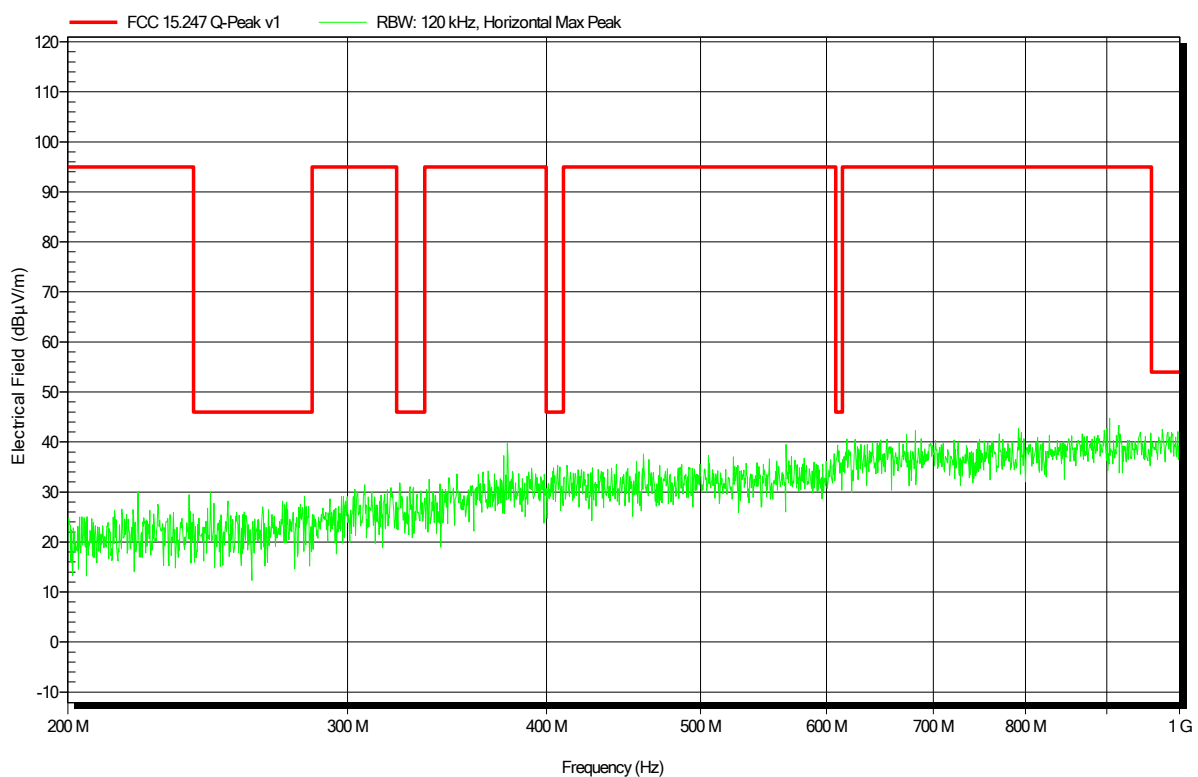


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

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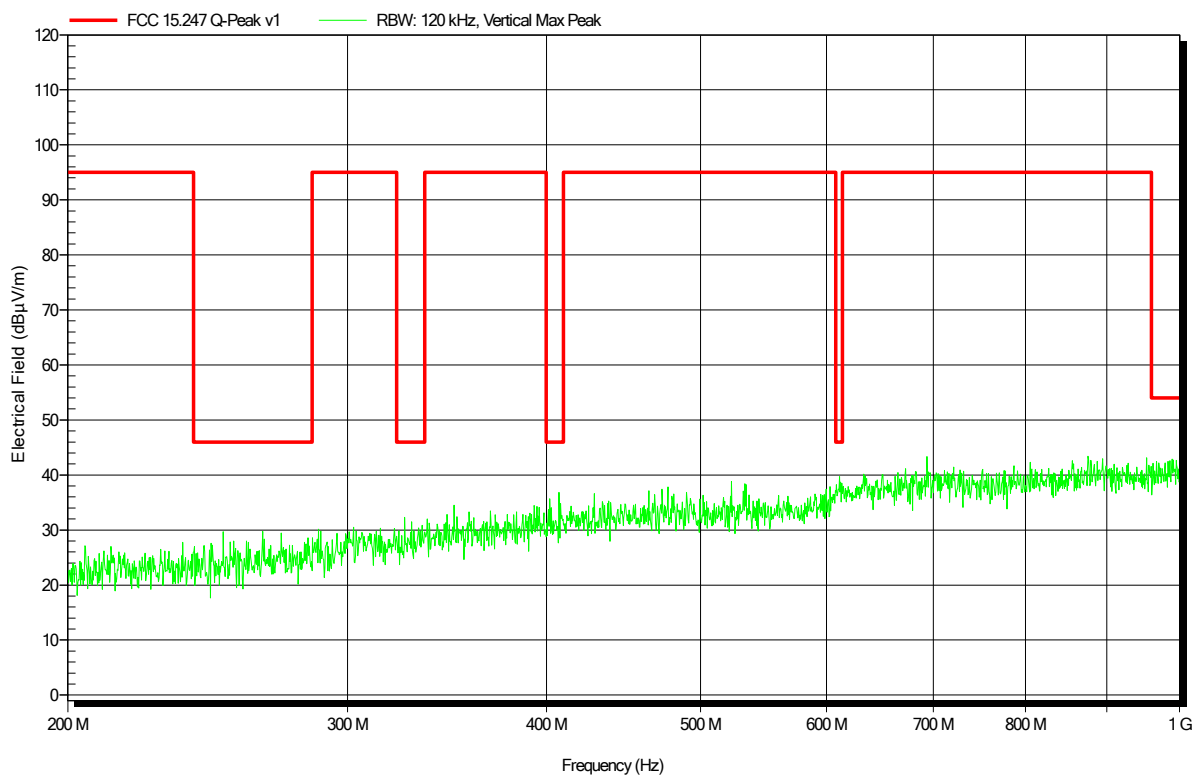


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Rohde & Schwarz HL 223, Vertical
Measurement distance: 3 m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

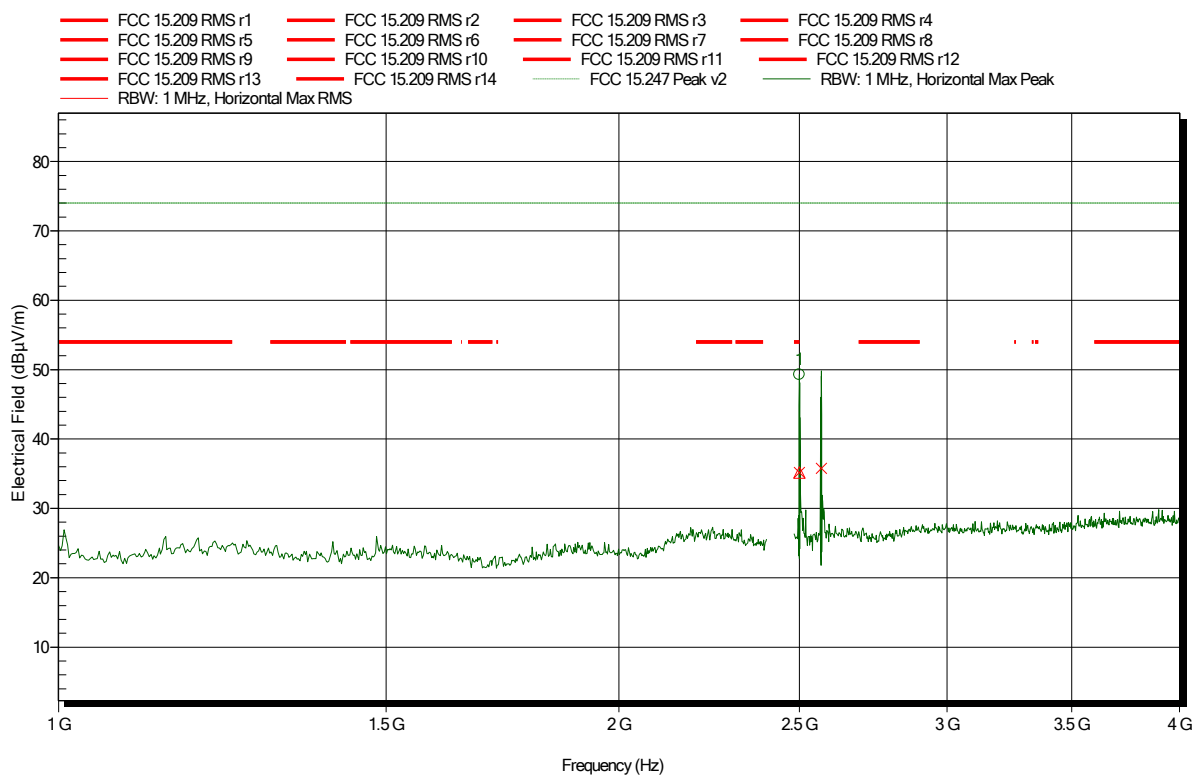
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-16

Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4999 GHz	49.26 dBμV/m	74 dBμV/m	-24.74 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4999 GHz	35.16 dBμV/m	54 dBμV/m	-18.84 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

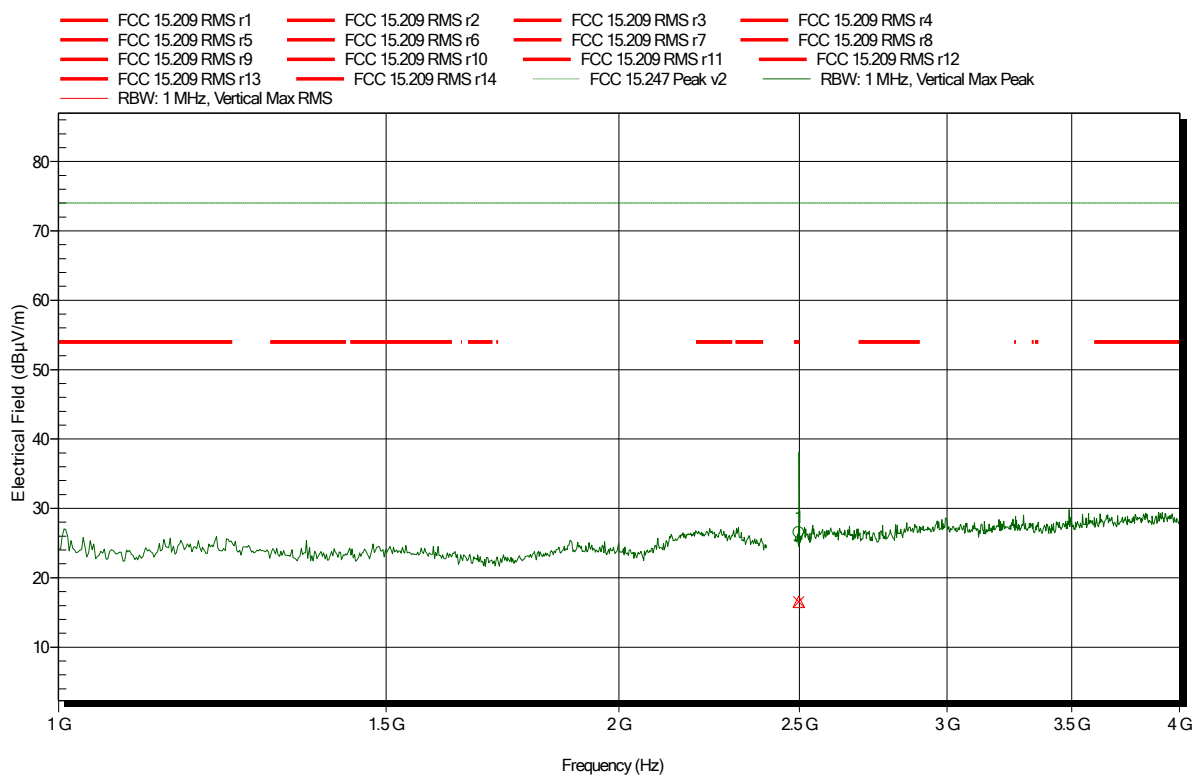
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-16

Note:

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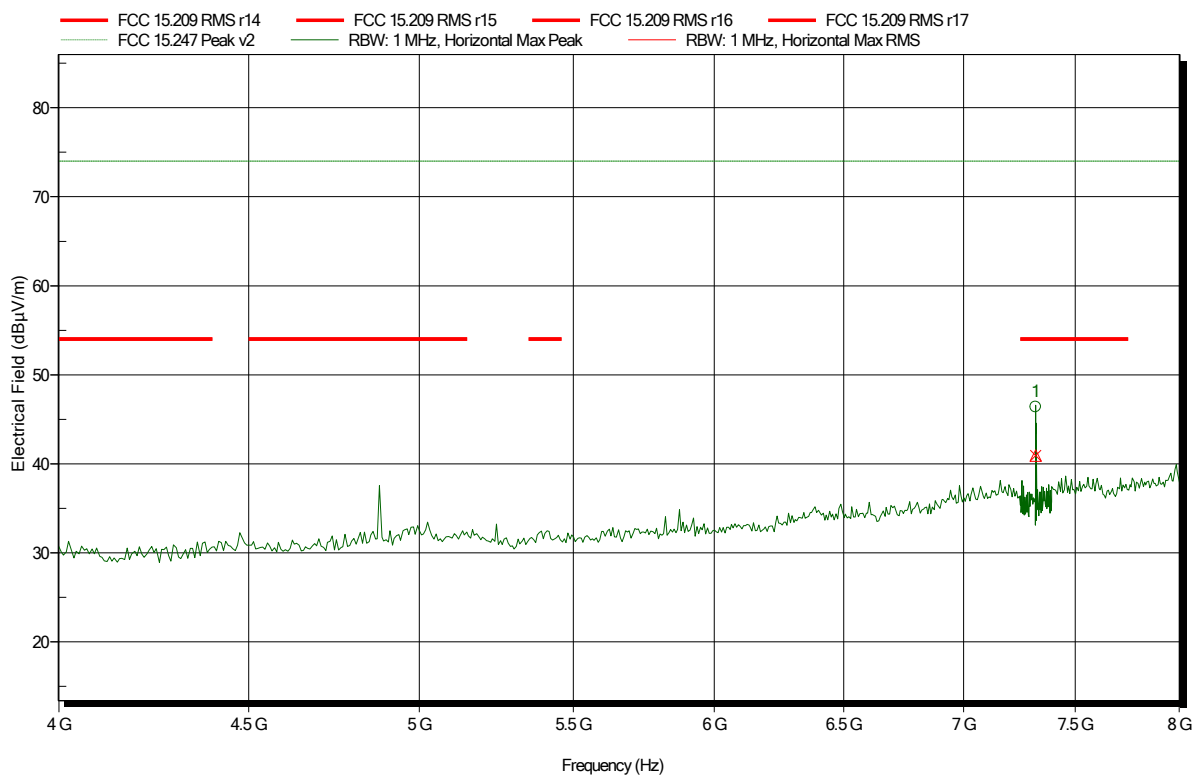
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4981 GHz	26.55 dBμV/m	74 dBμV/m	-47.45 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4981 GHz	16.53 dBμV/m	54 dBμV/m	-37.47 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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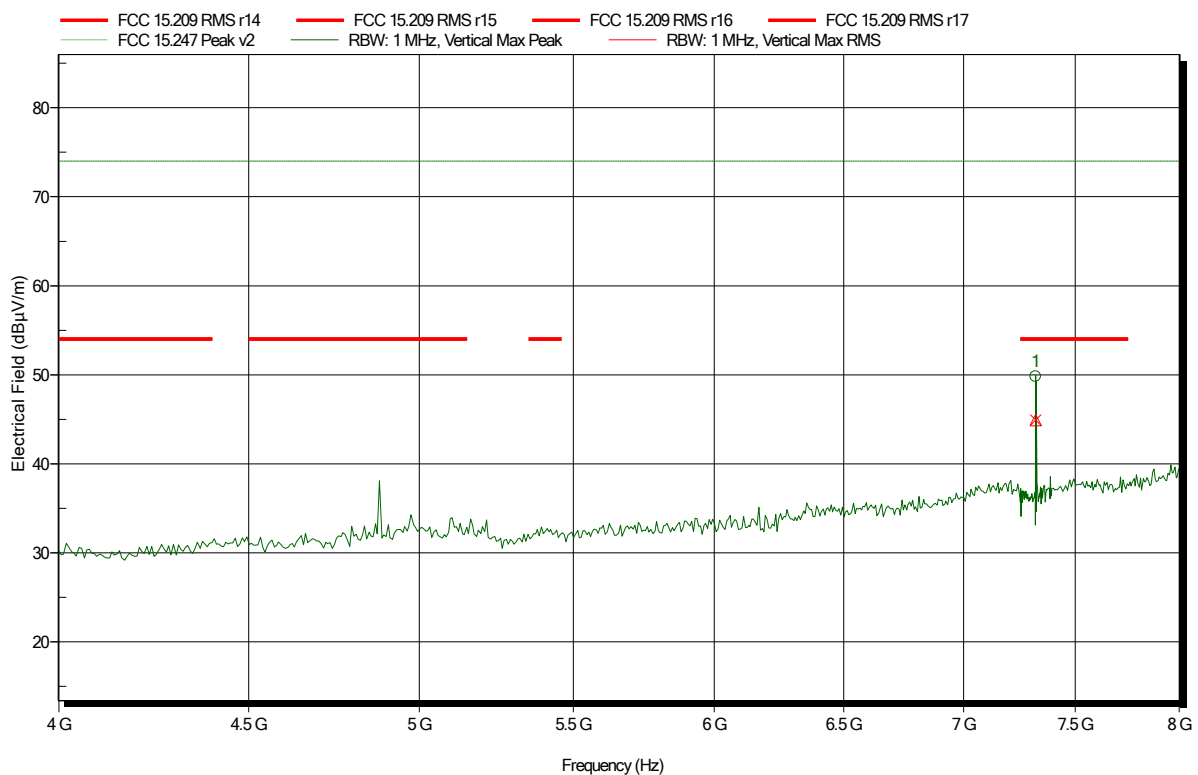
Frequency 7.319 GHz	Peak 46.38 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -27.62 dB	Peak Status Pass
Frequency 7.319 GHz	RMS 40.93 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -13.07 dB	RMS Status Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.319 GHz	49.81 dBµV/m	74 dBµV/m	-24.19 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
7.319 GHz	44.93 dBµV/m	54 dBµV/m	-9.07 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

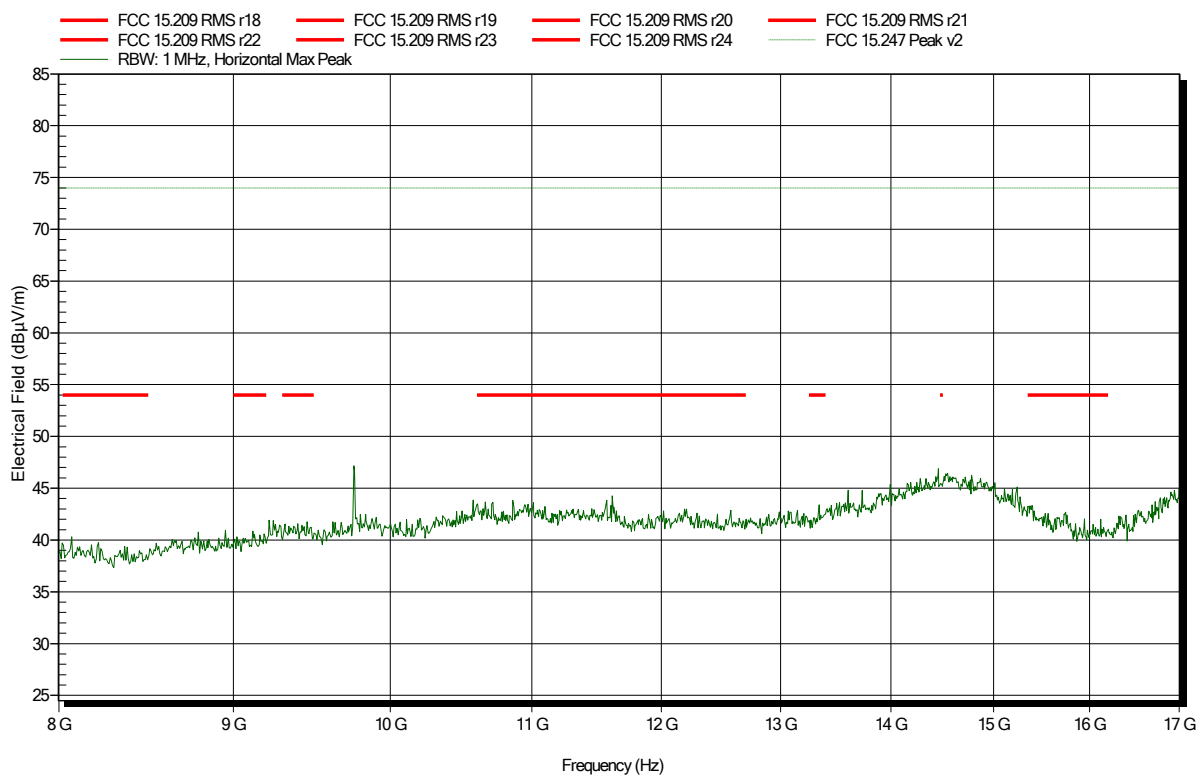
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-16

Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

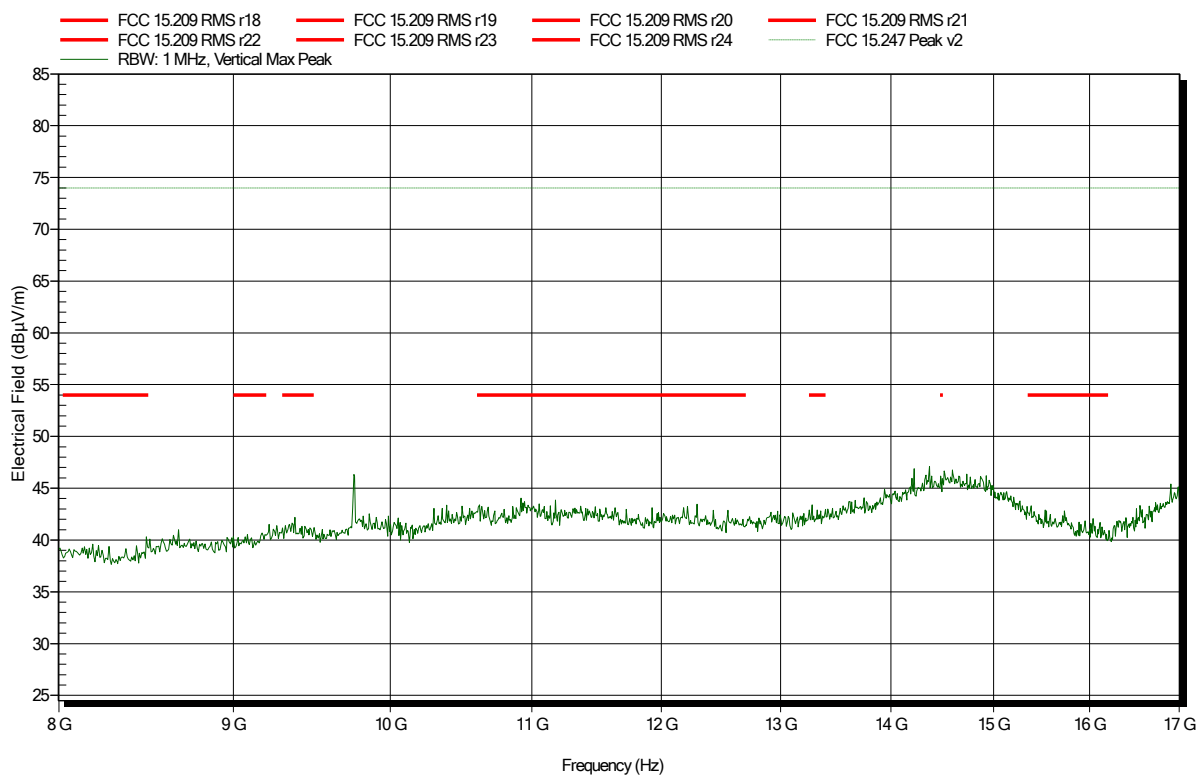
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-16

Note:

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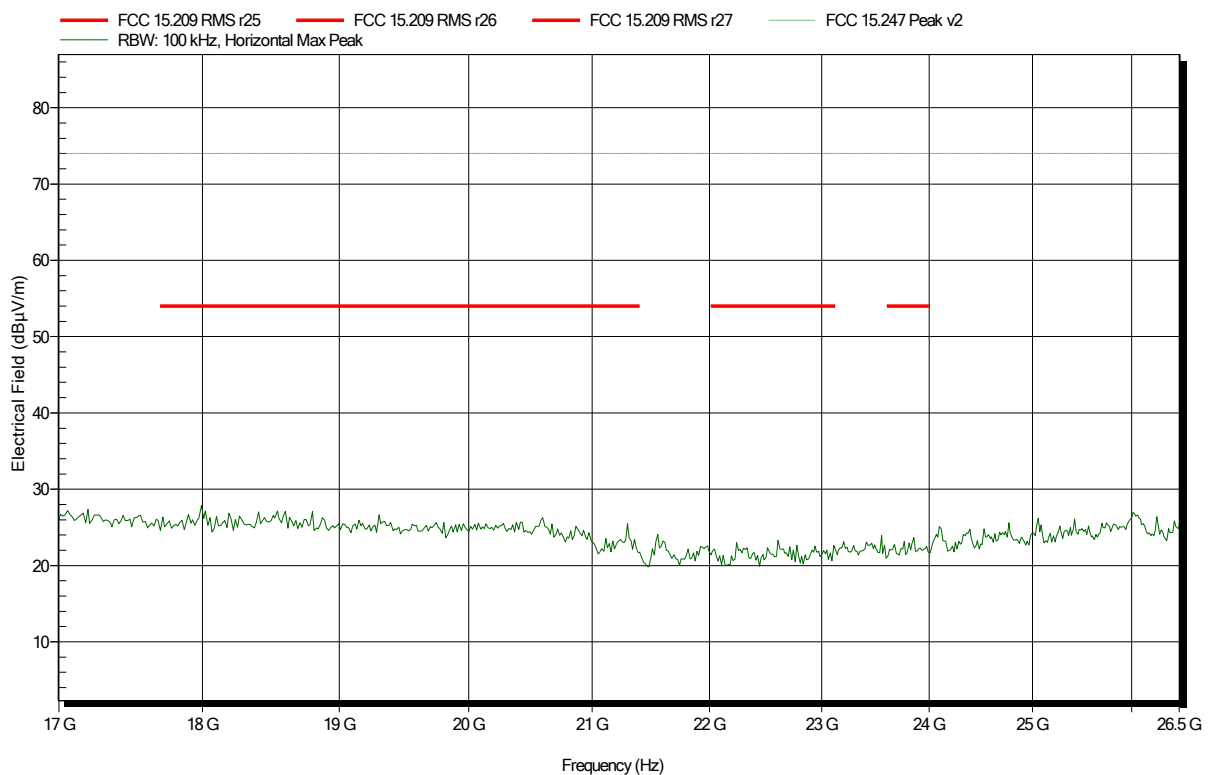


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

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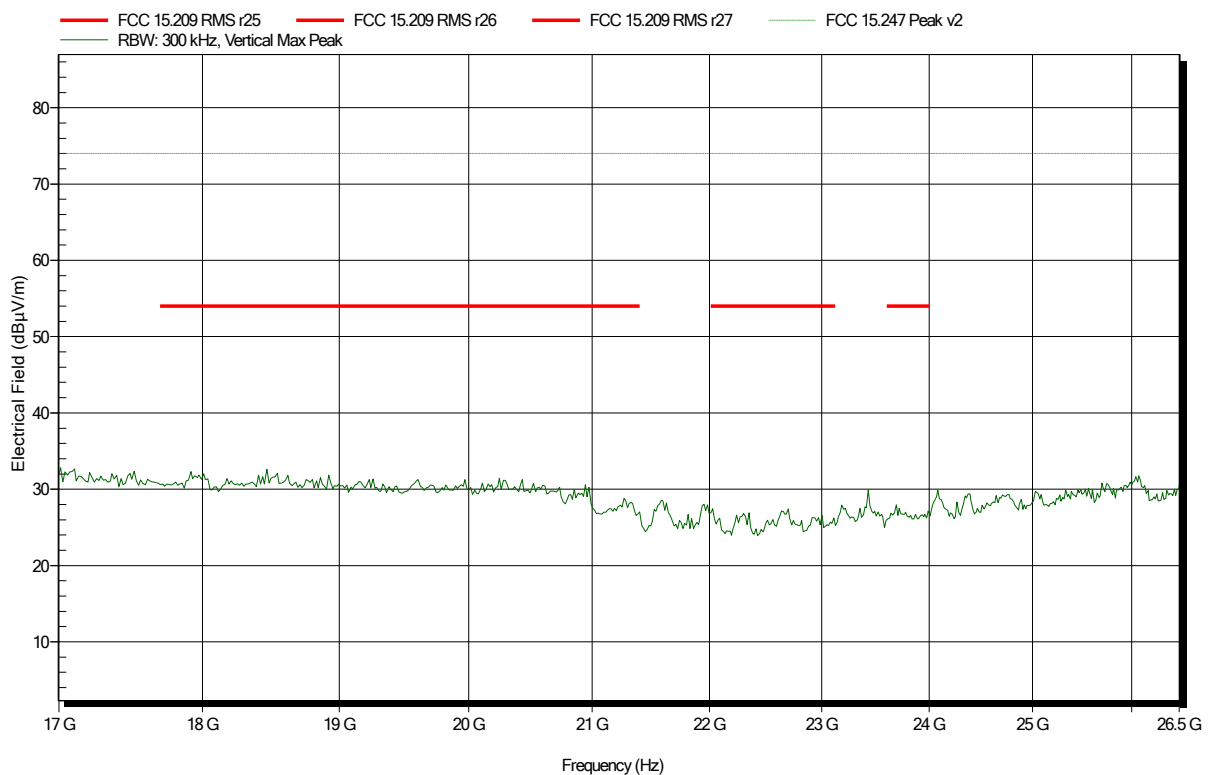


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2440MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

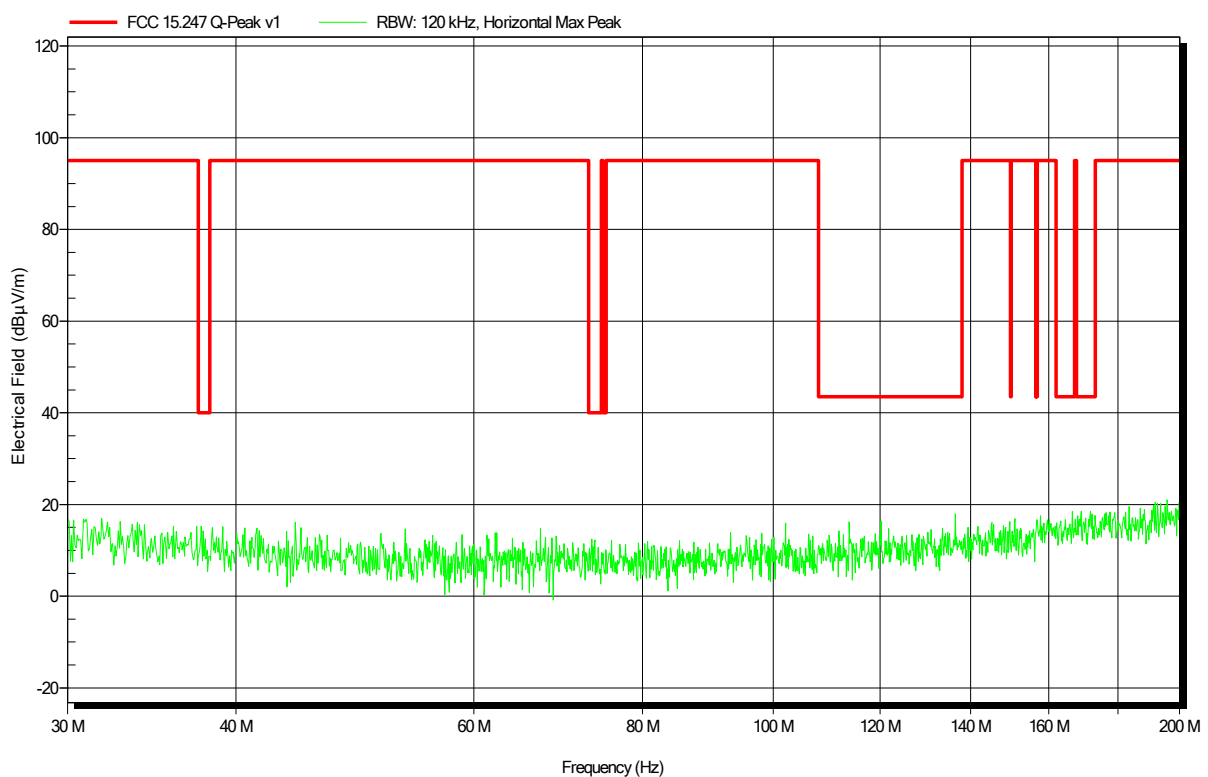
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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

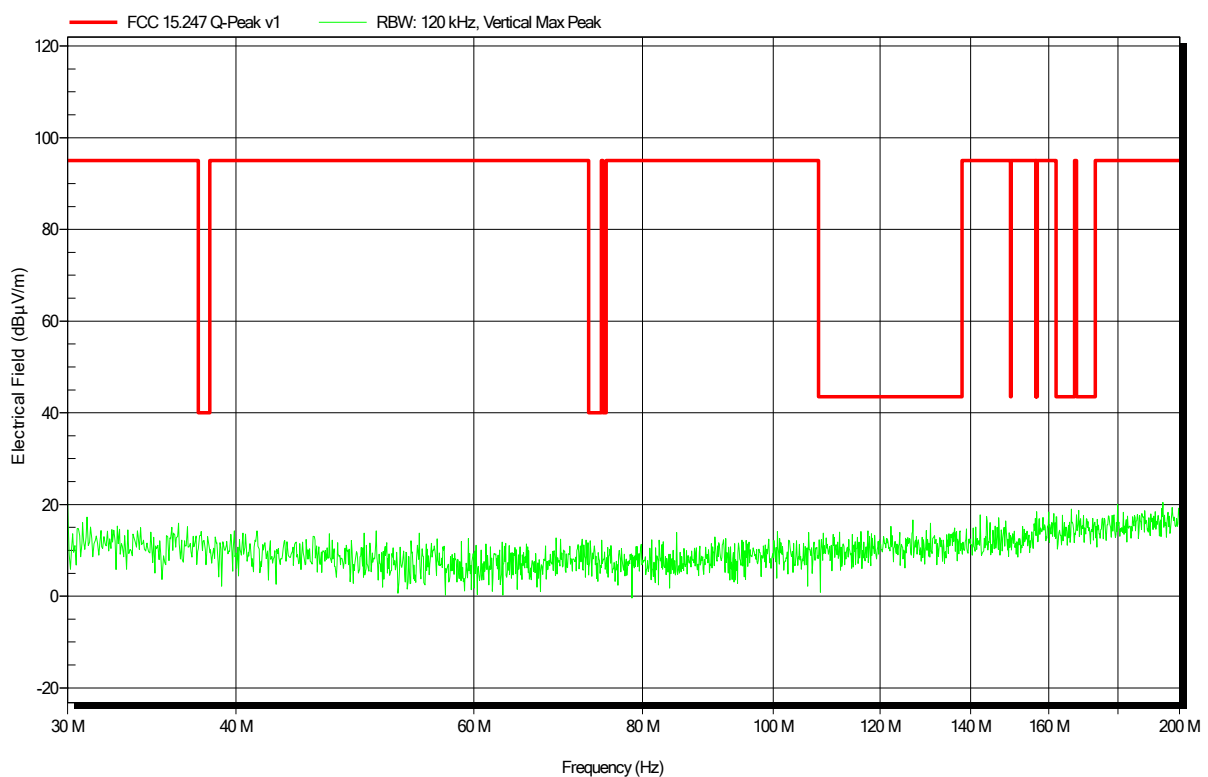
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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

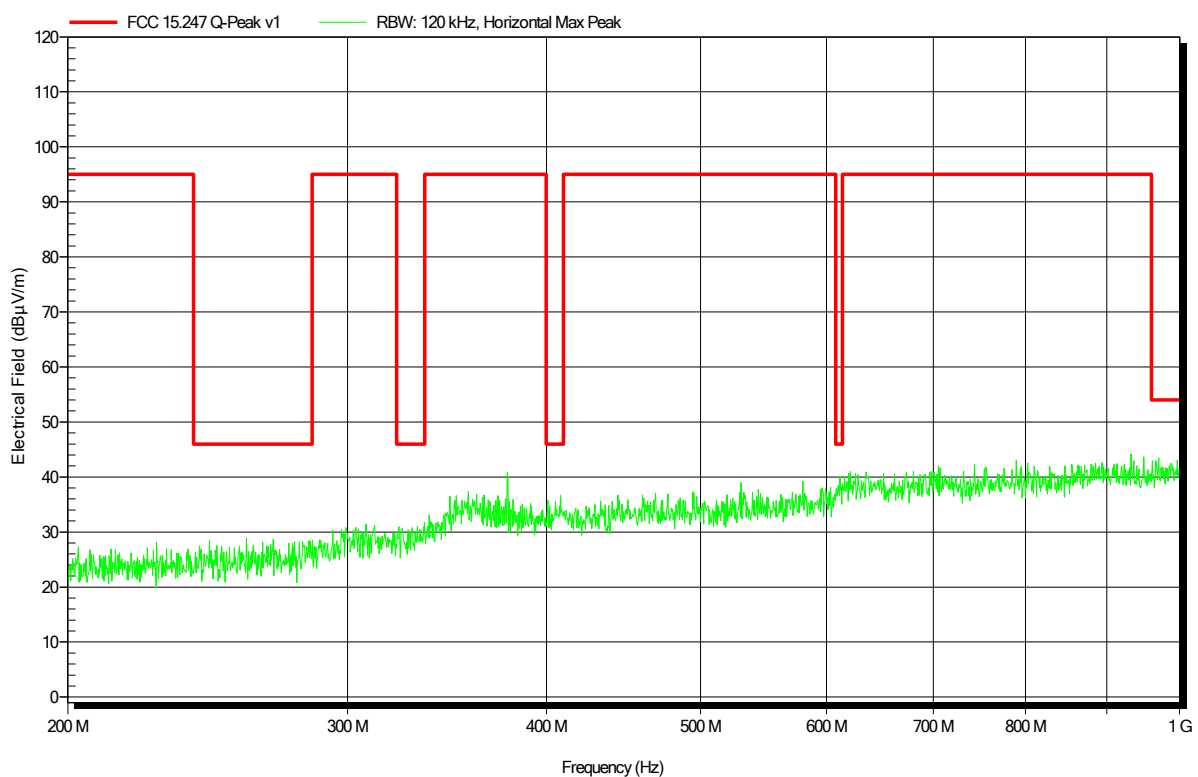
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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

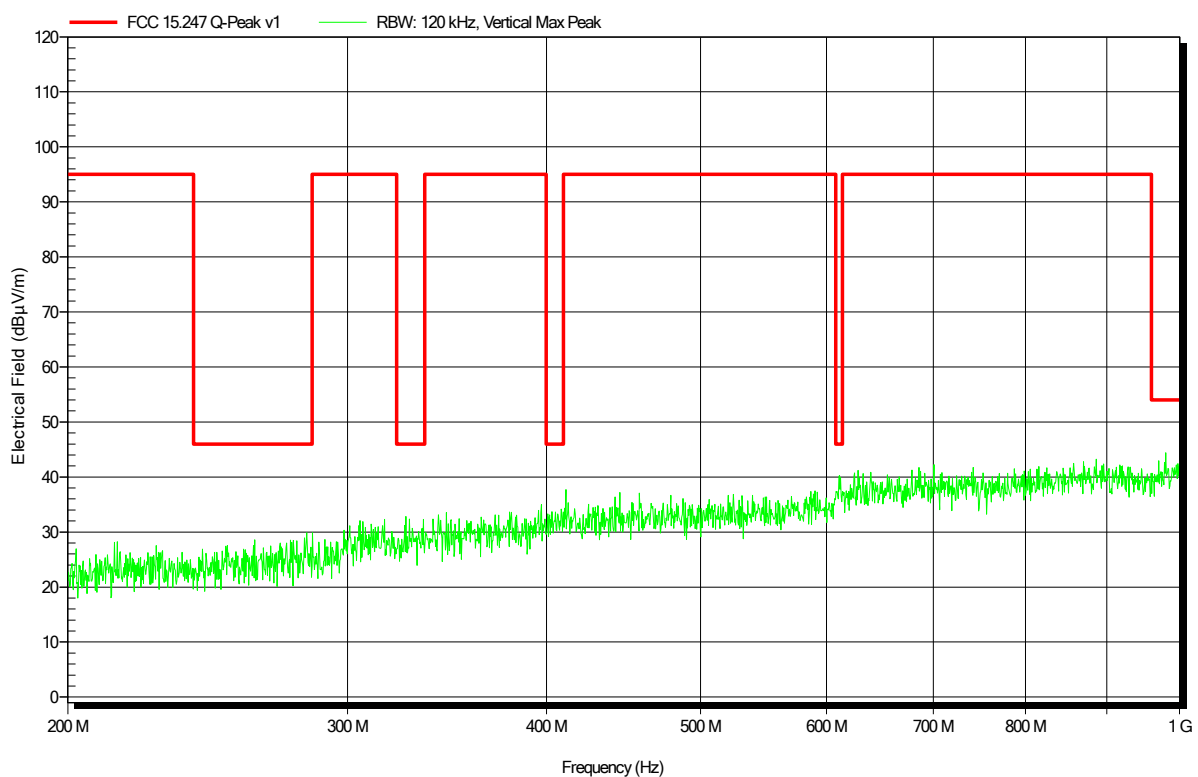
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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
 Test Date: 2019-12-16
 Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

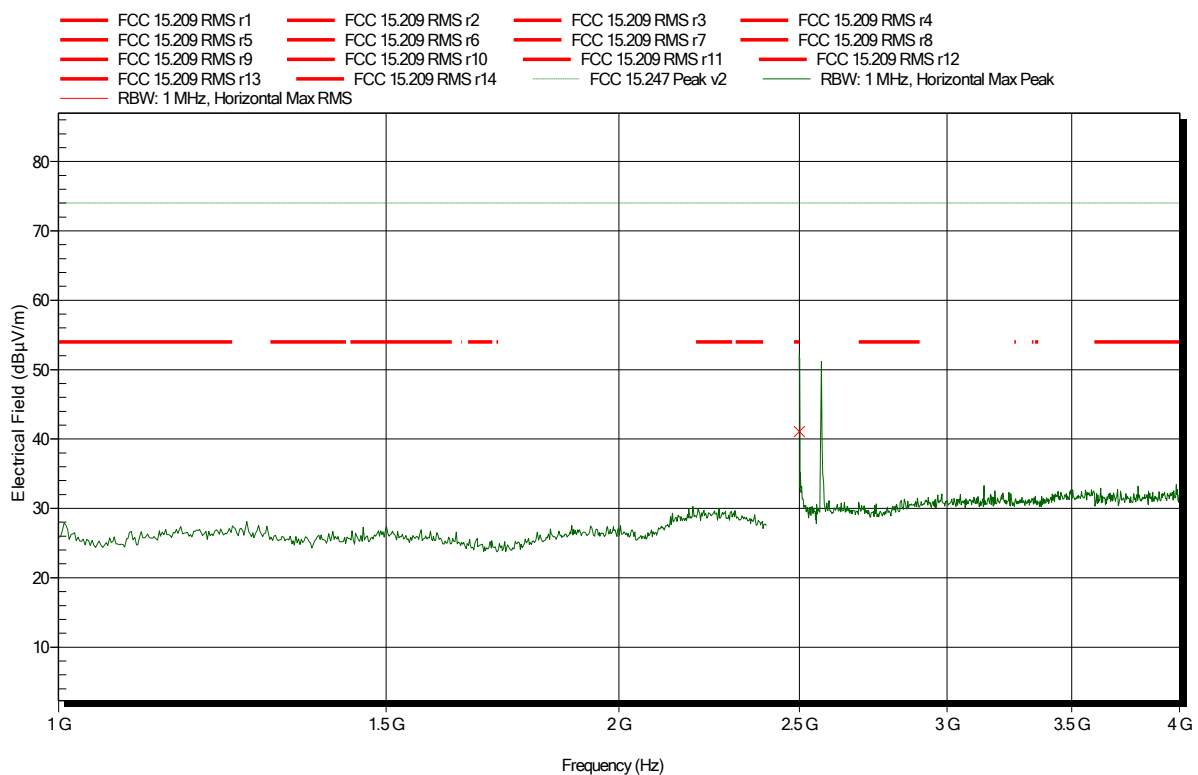
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

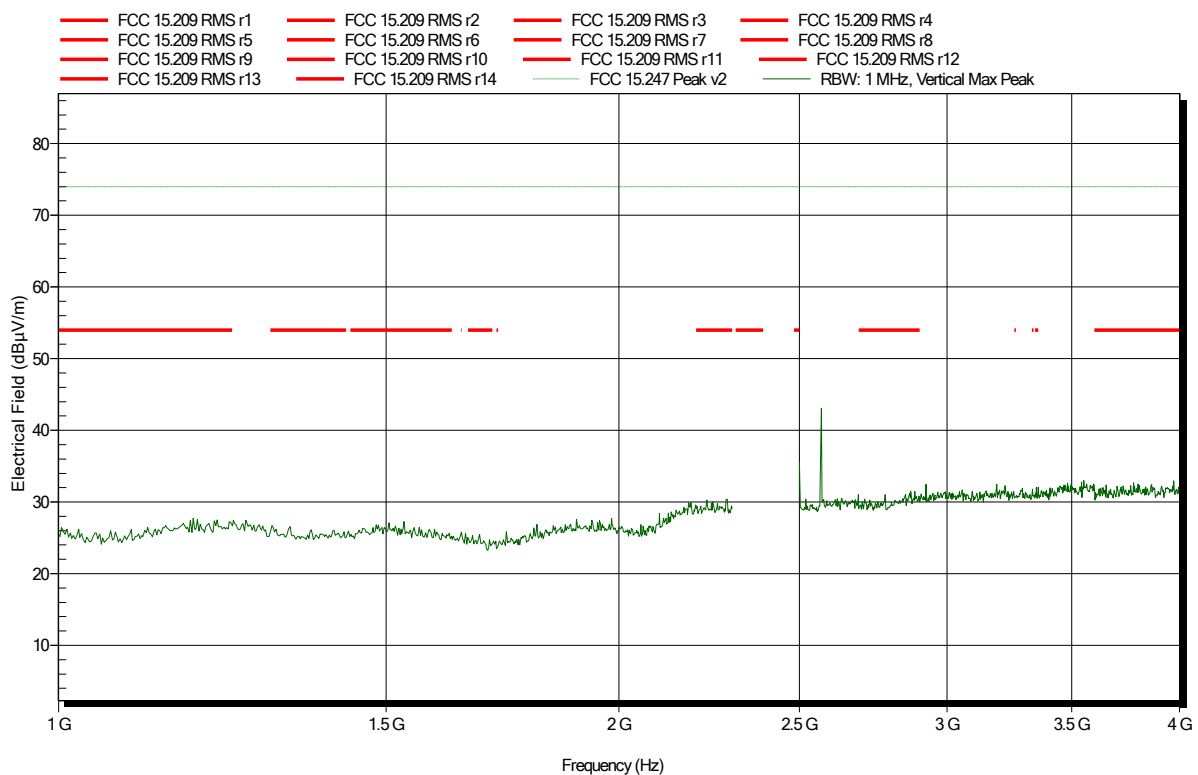
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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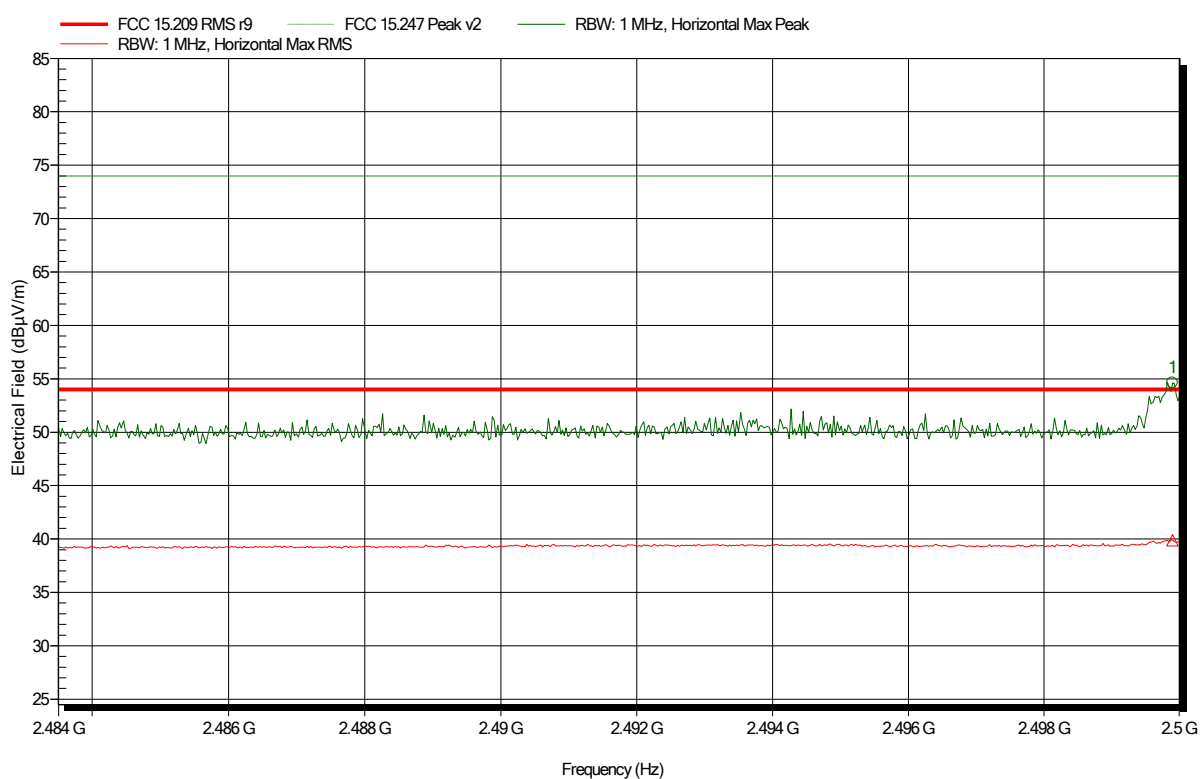


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note: upper bandedge

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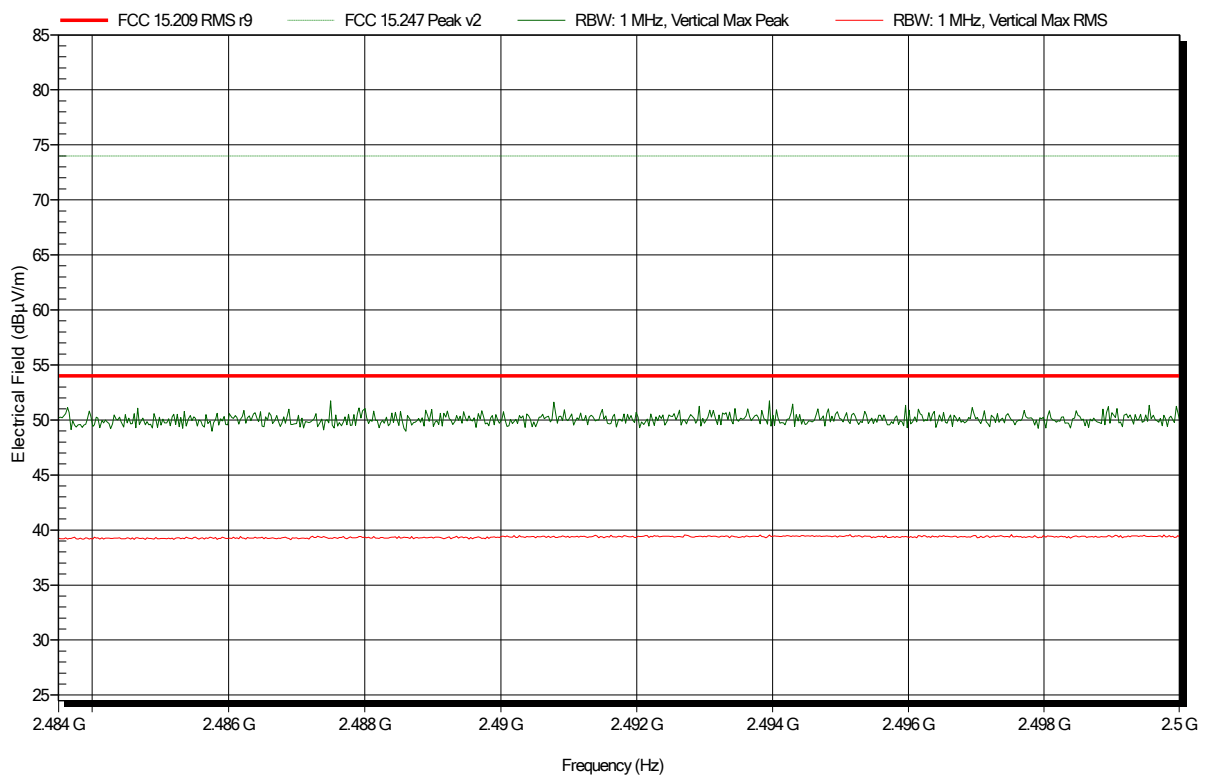
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.4999 GHz	54.62 dBµV/m	74 dBµV/m	-19.38 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.4999 GHz	39.9 dBµV/m	54 dBµV/m	-14.1 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note: upper bandedge

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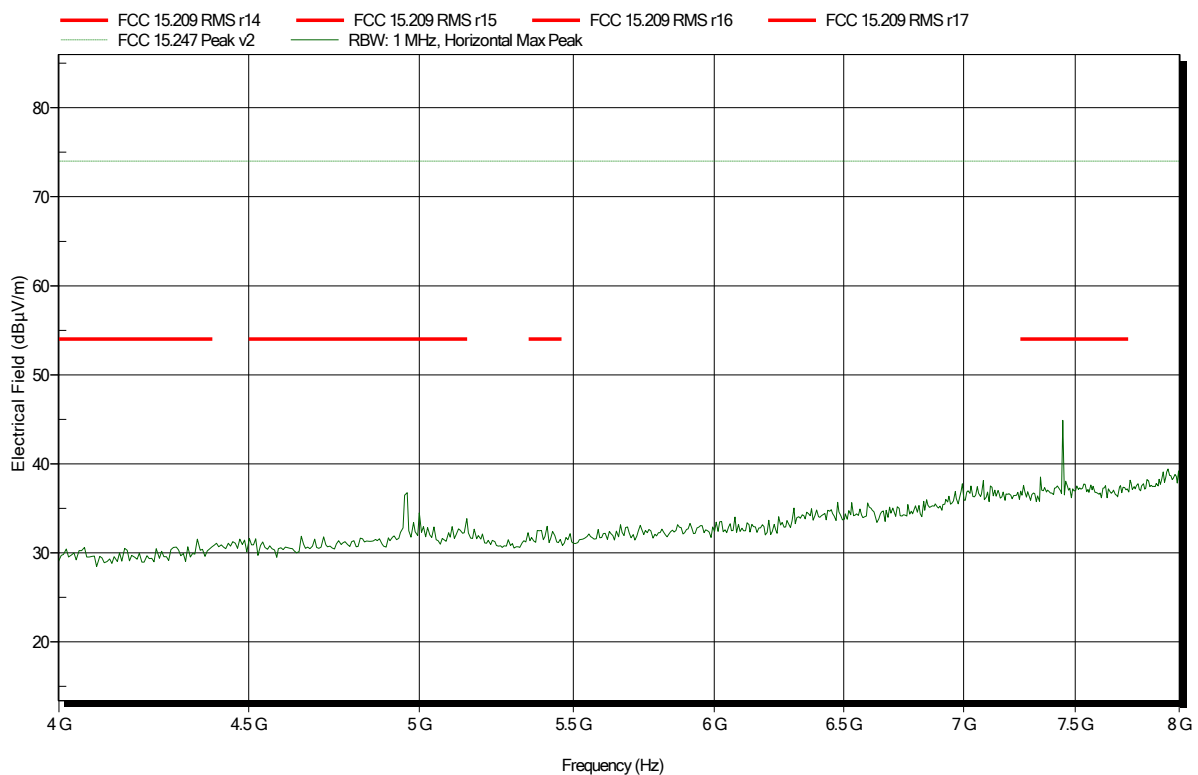


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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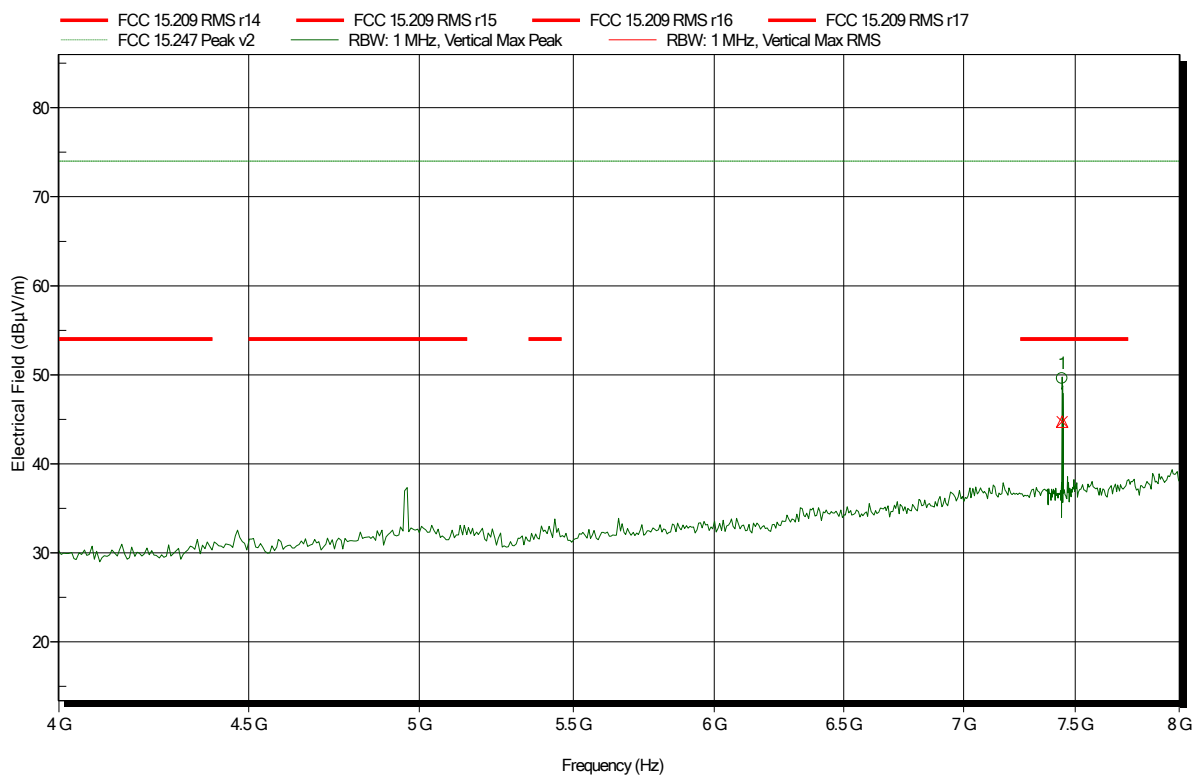


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-16
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.439 GHz	49.61 dBµV/m	74 dBµV/m	-24.39 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
7.439 GHz	44.75 dBµV/m	54 dBµV/m	-9.25 dB	Pass

Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

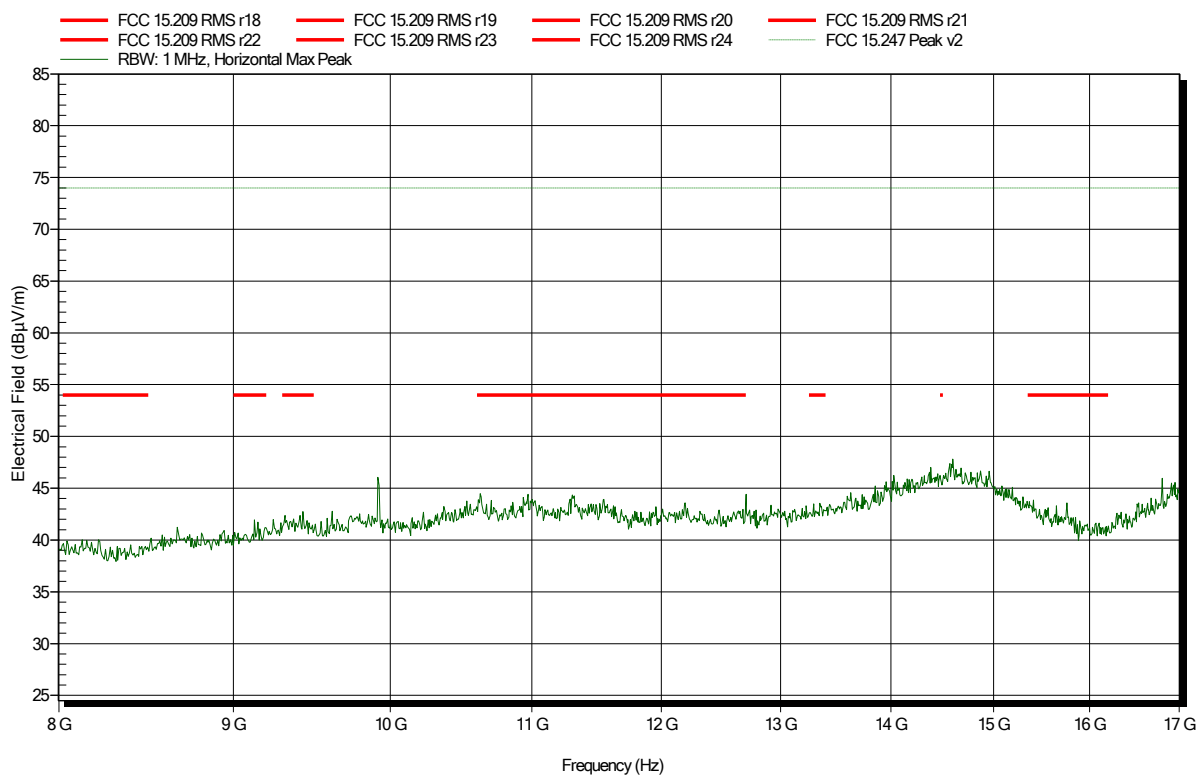
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG

EUT Name: Wireless single-use tracking system

Model: iVation Camera

Test Site: Eurofins Product Service GmbH

Operator: Florian Voigt

Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

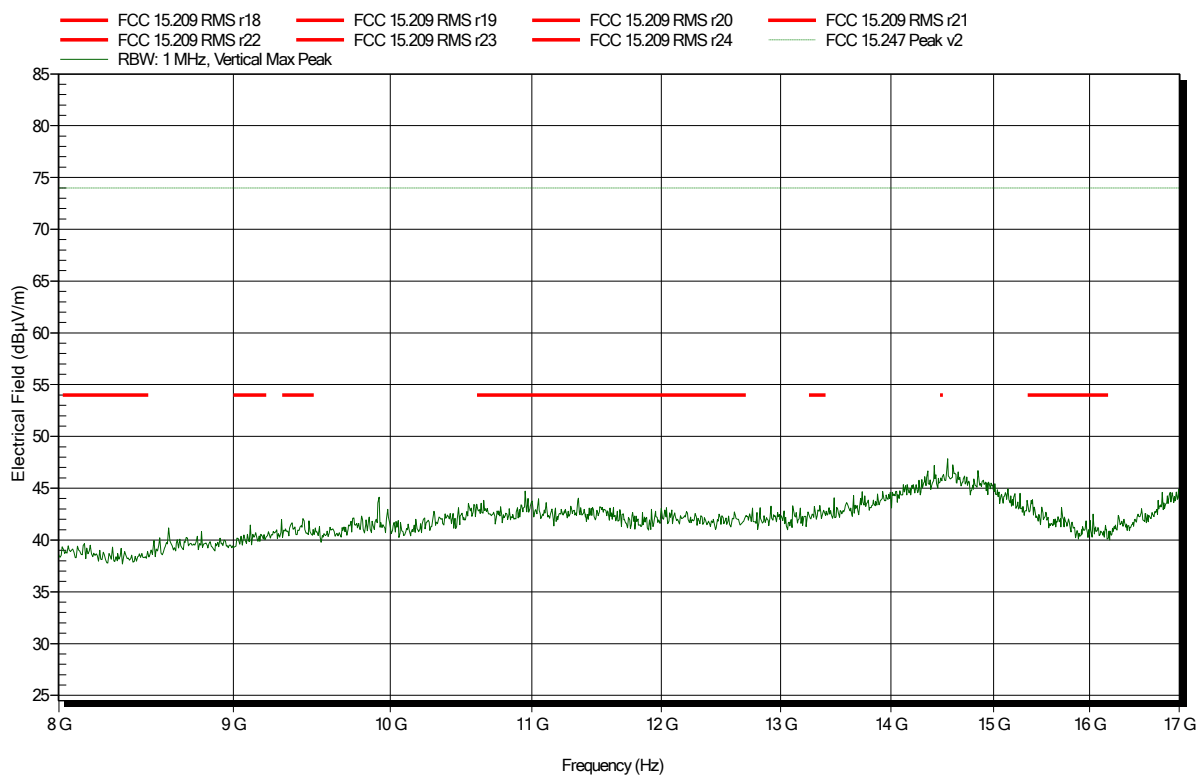
Measurement distance: 1 m converted to 3m

Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver

Test Date: 2019-12-17

Note:

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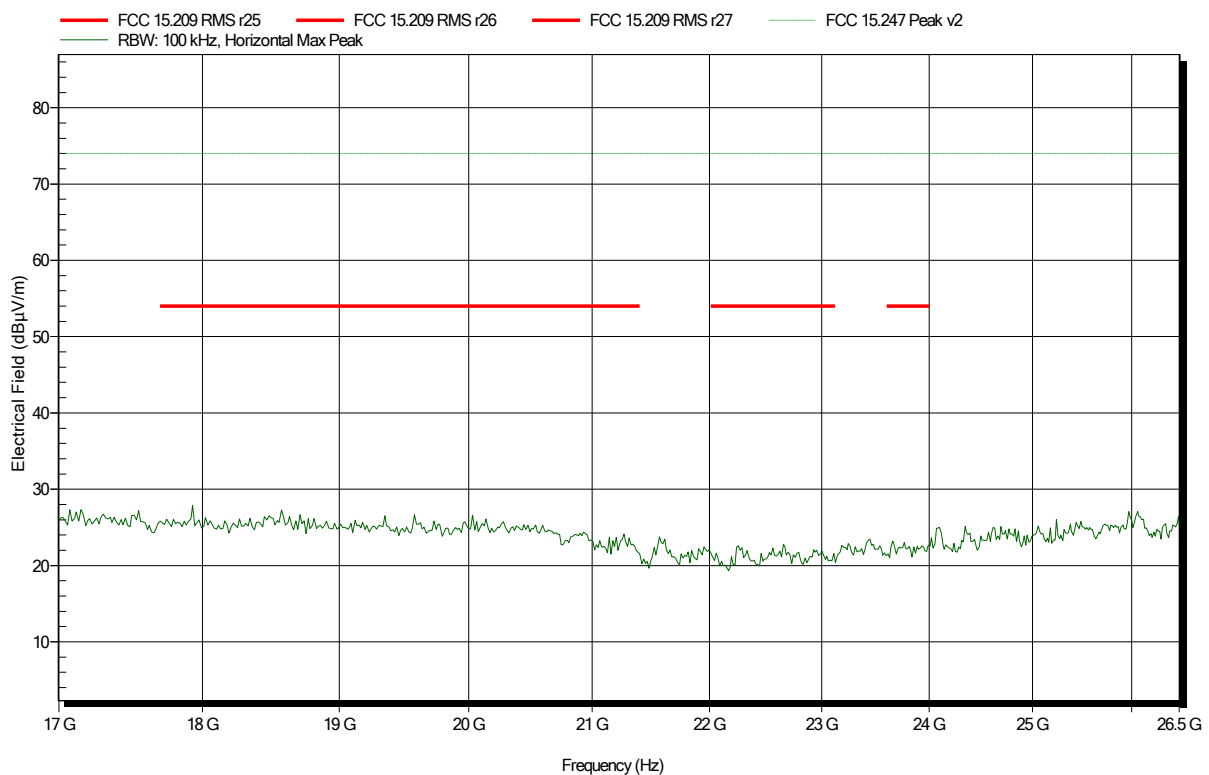


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

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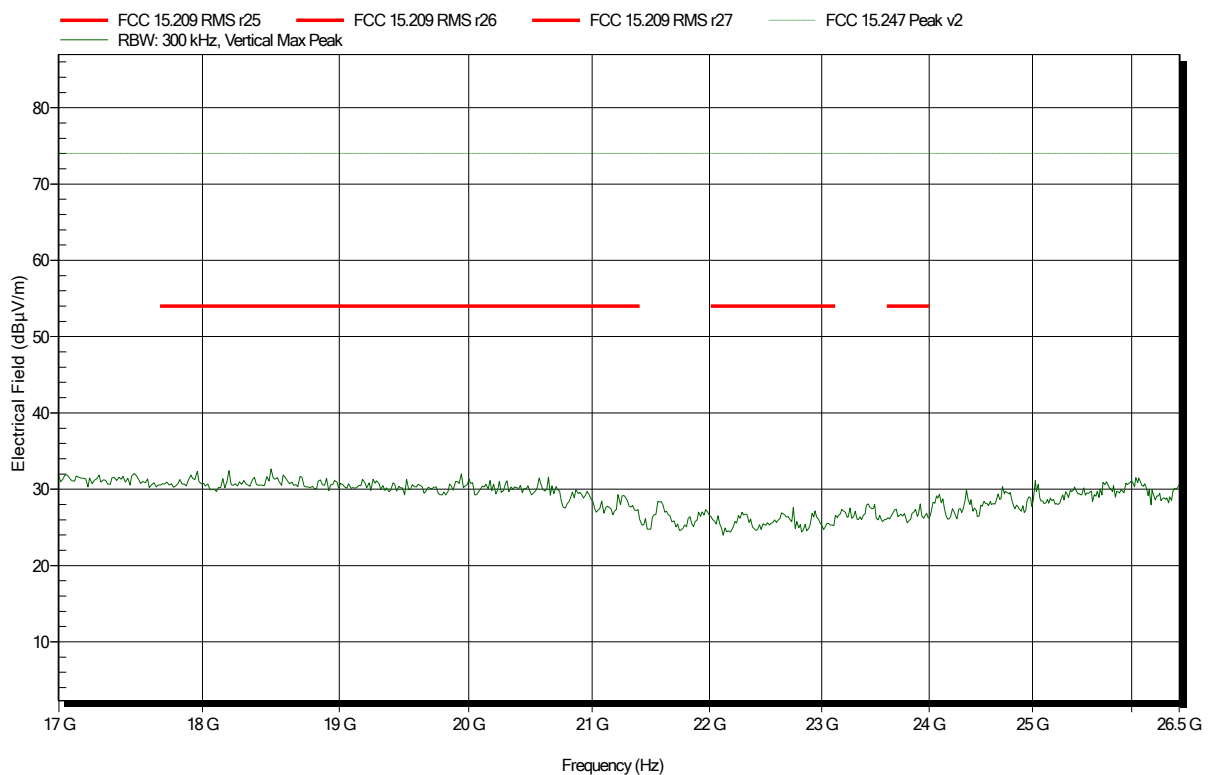


Spurious emissions according to FCC 47 e-CFR §15.247, RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.0 VDC
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BTLE, 2480MHz, 1Mbps GFSK, EUT ver
Test Date: 2019-12-17
Note:

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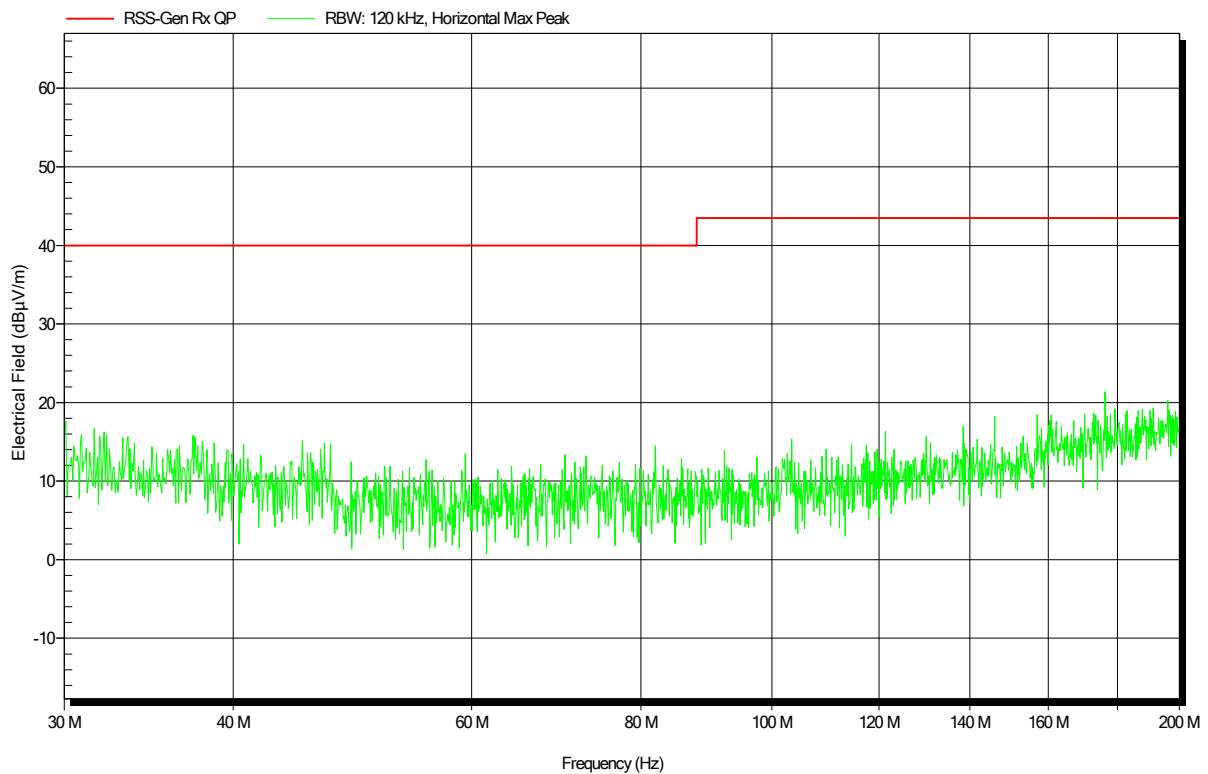
ANNEX B Receiver spurious emissions

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Mr. Voigt
Test Conditions: Tnom: 22.3°C, Vnom: 3.3 VDC
Antenna: Rohde & Schwarz HK 116, Horizontal
Measurement distance: 3 m
Mode: RX; BTLE, 2440MHz, EUT ver
Test Date: 2019-12-16
Note:

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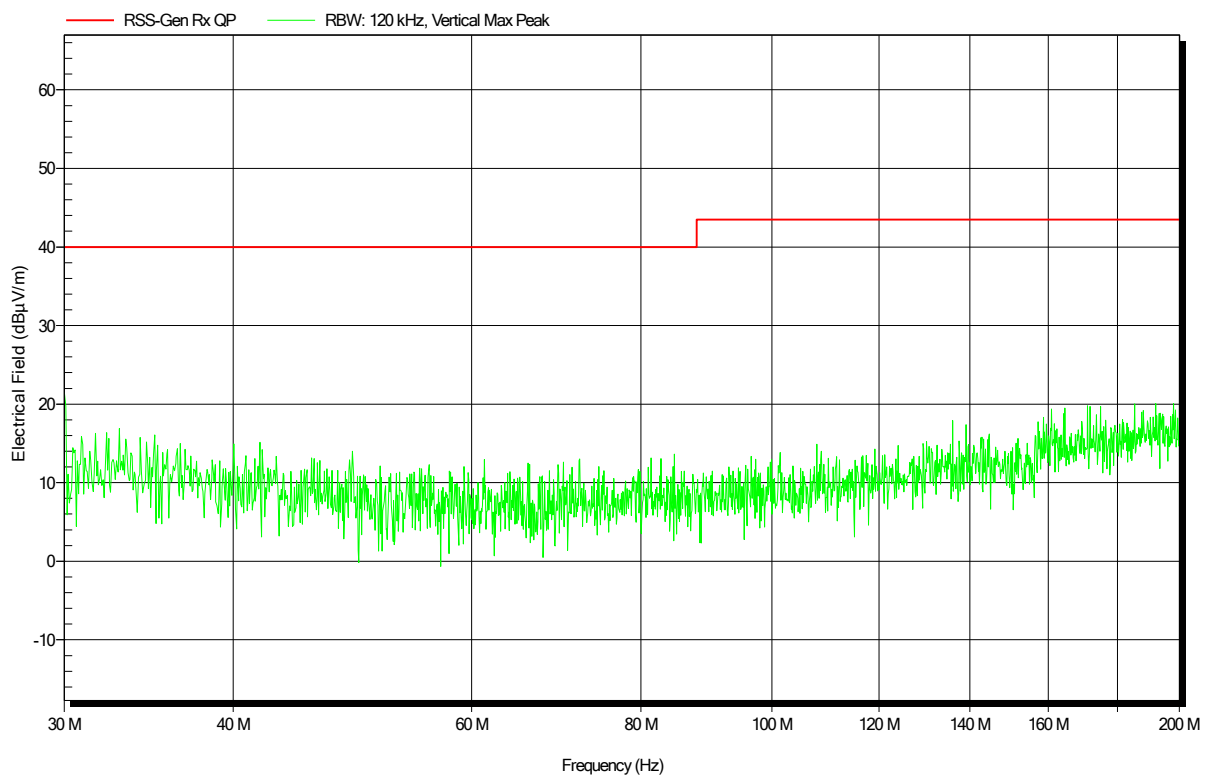


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.3°C, Vnom: 3.3 VDC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-16
 Note:

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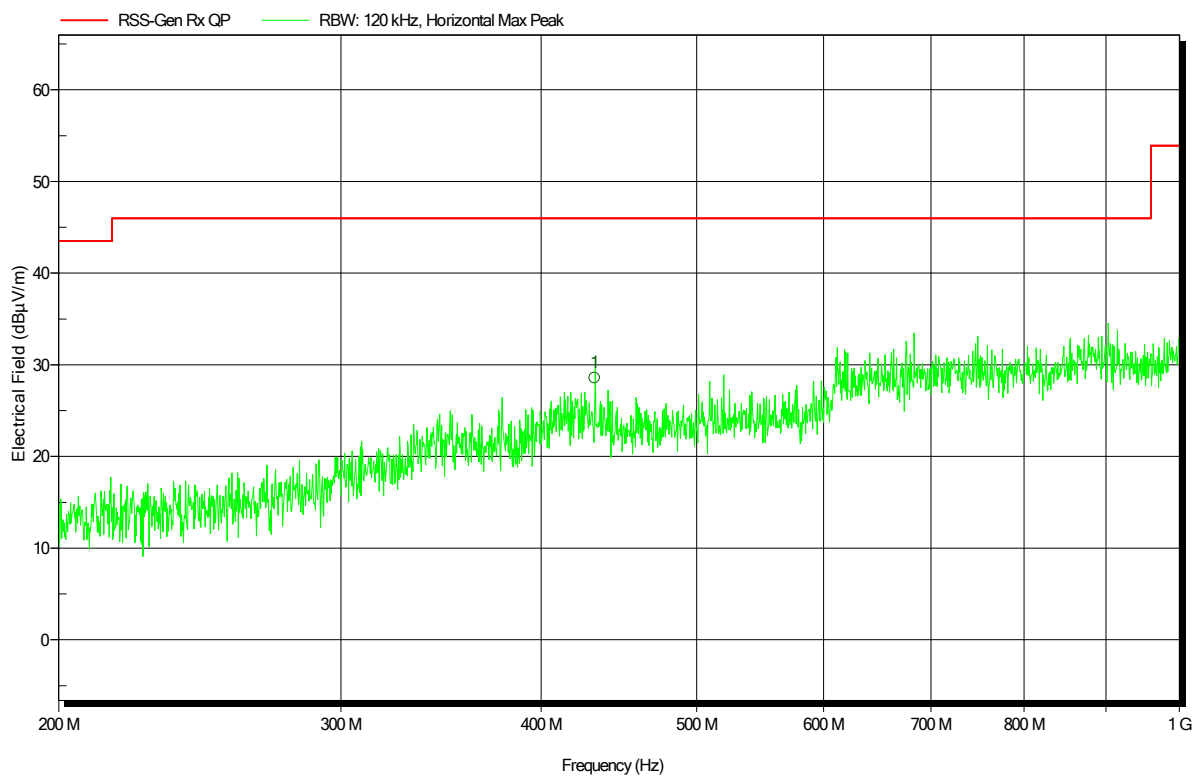


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-18
 Note:

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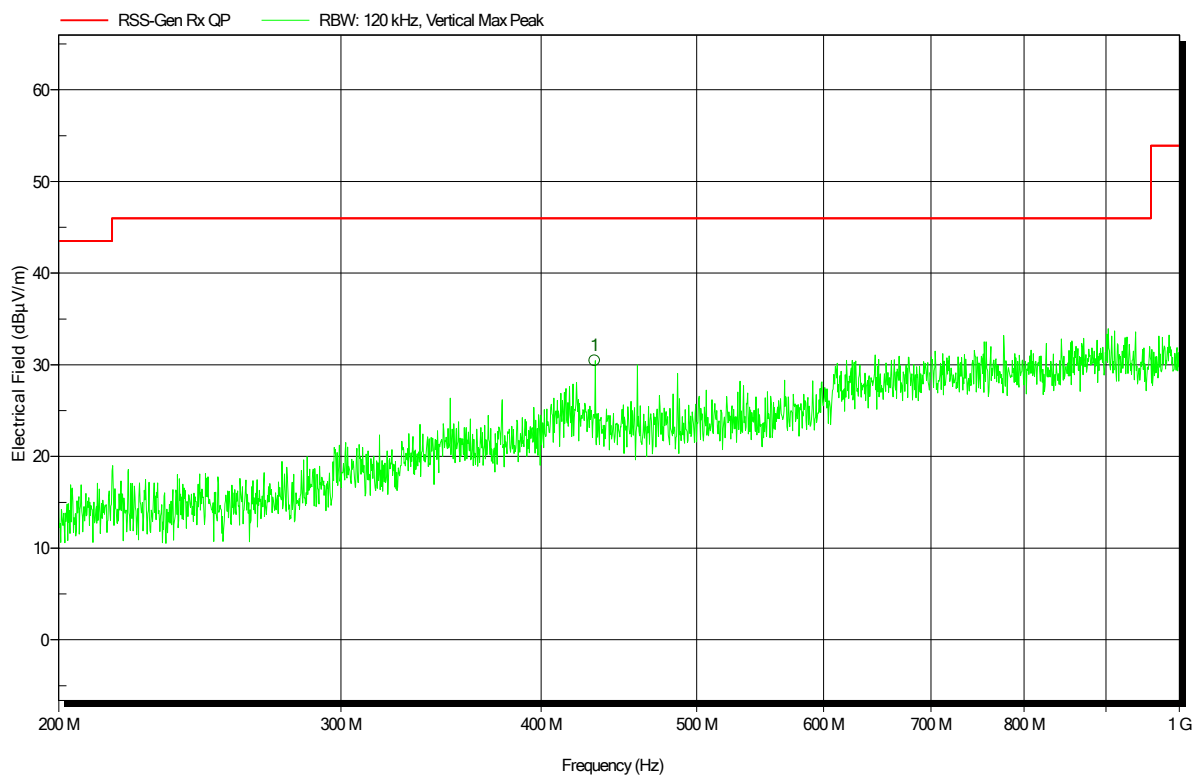
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
431.9424 MHz	28.6 dBµV/m	46 dBµV/m	-17.42 dB	Pass	0 Degree	1 m

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Voigt
 Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-18
 Note:

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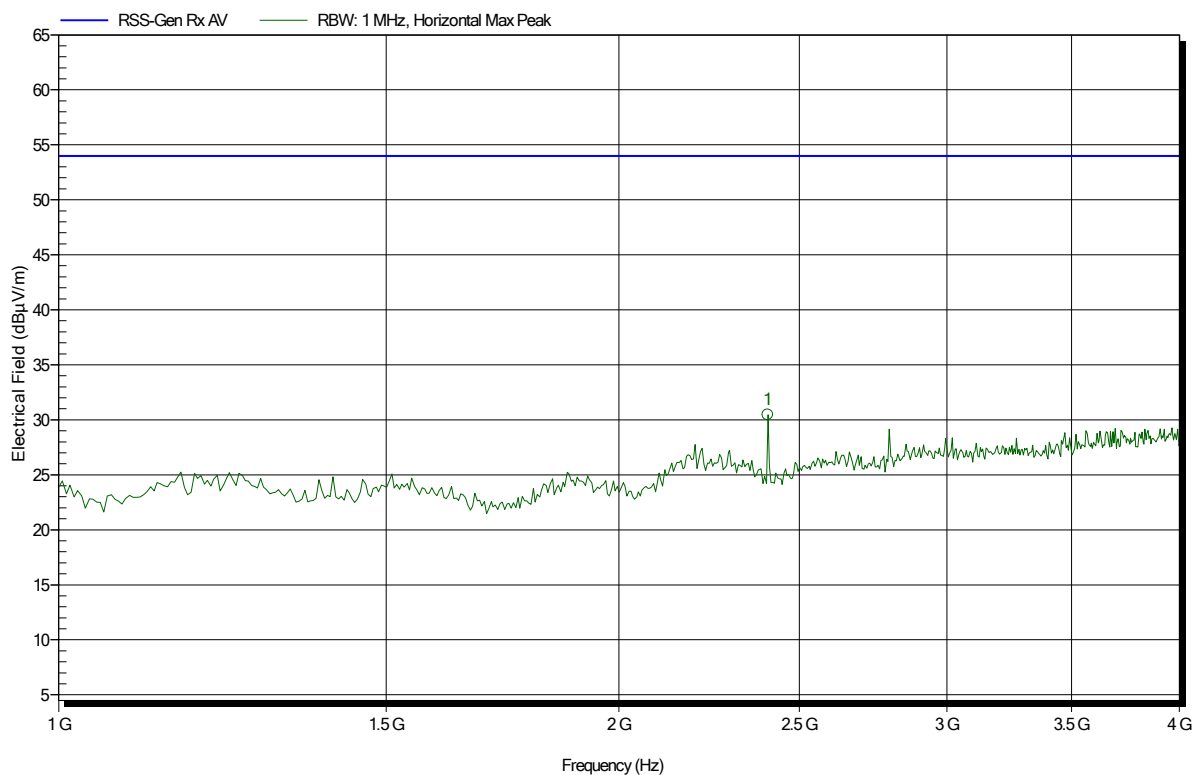
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
432.0024 MHz	30.5 dBµV/m	46 dBµV/m	-15.55 dB	Pass	0 Degree	1 m

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Florian Voigt
 Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-17
 Note:

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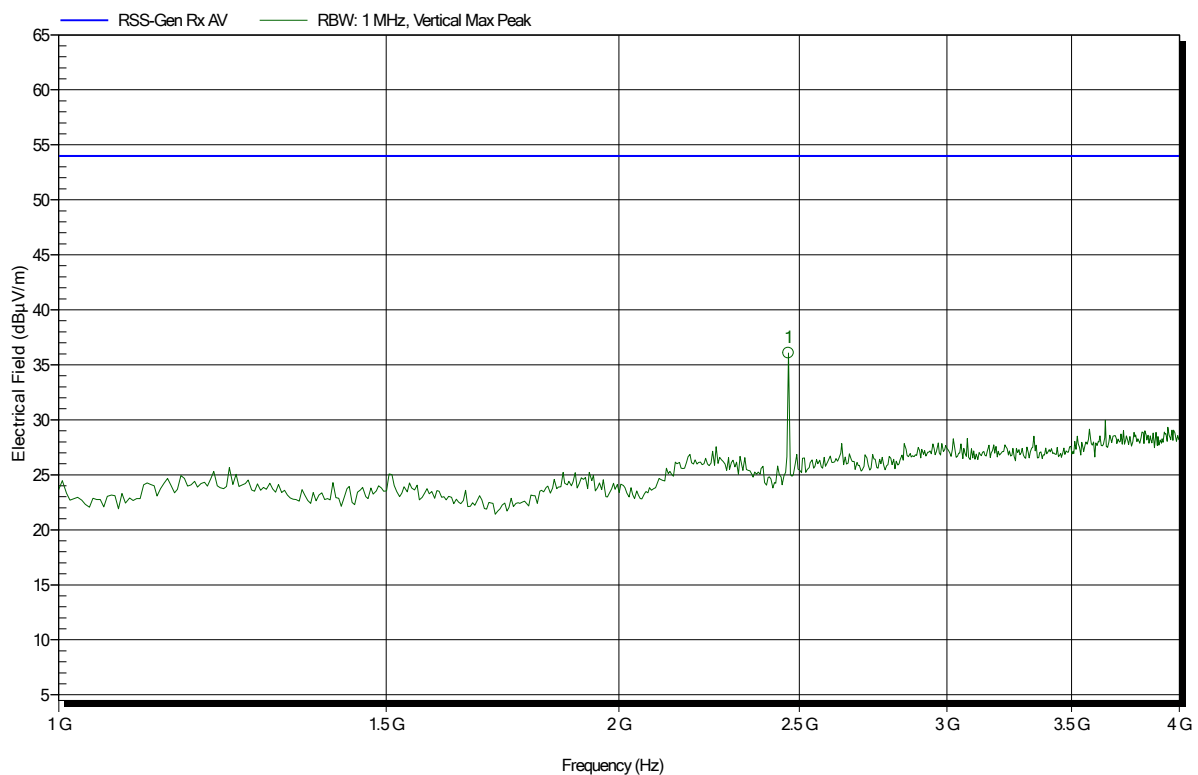
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.404 GHz	30.45 dBµV/m	53.98 dBµV/m	-23.53 dB	Pass

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m
Mode: RX; BTLE, 2440MHz, EUT ver
Test Date: 2019-12-17
Note:

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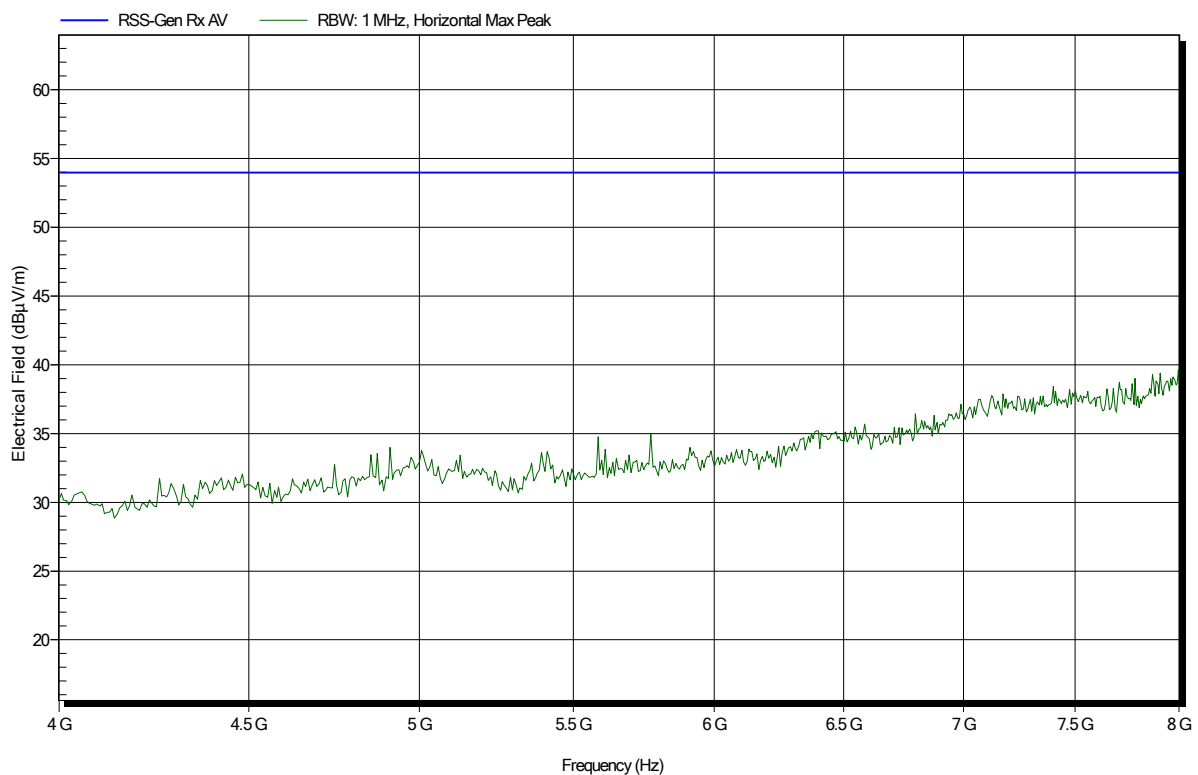
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.466 GHz	36.06 dBµV/m	53.98 dBµV/m	-17.92 dB	Pass

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Florian Voigt
 Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-17
 Note:

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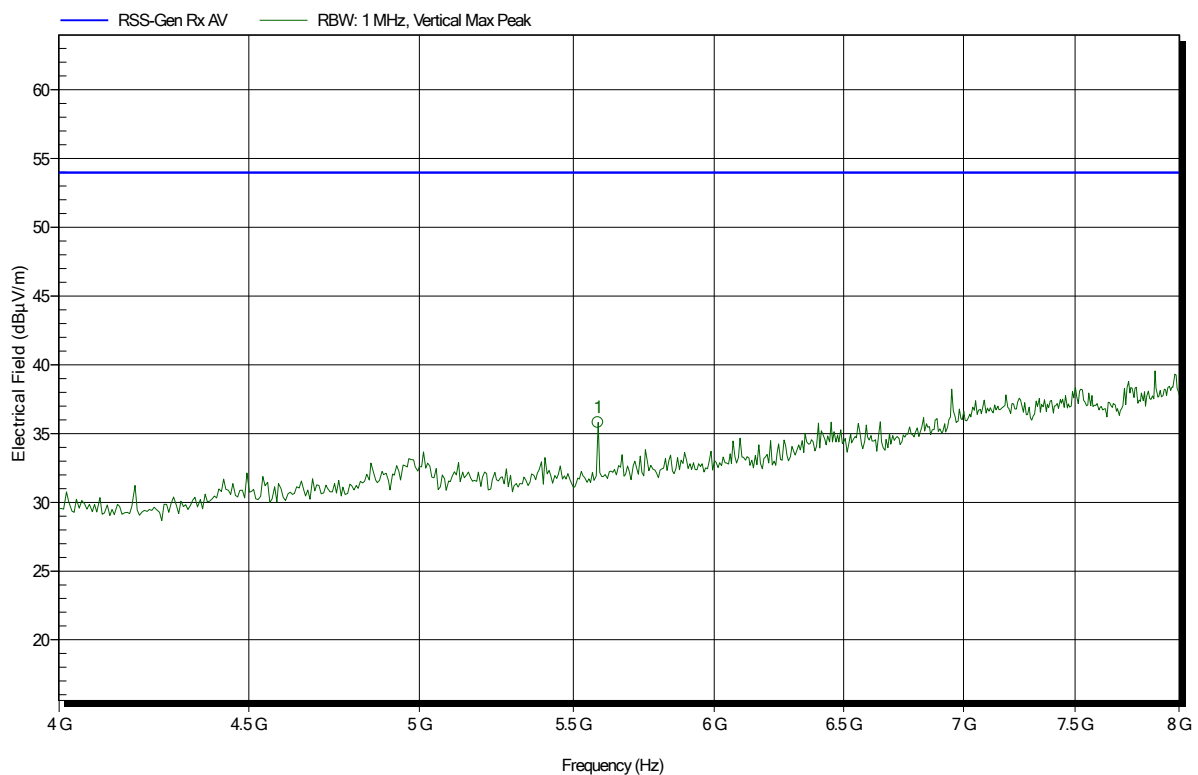


Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m
Mode: RX; BTLE, 2440MHz, EUT ver
Test Date: 2019-12-17
Note:

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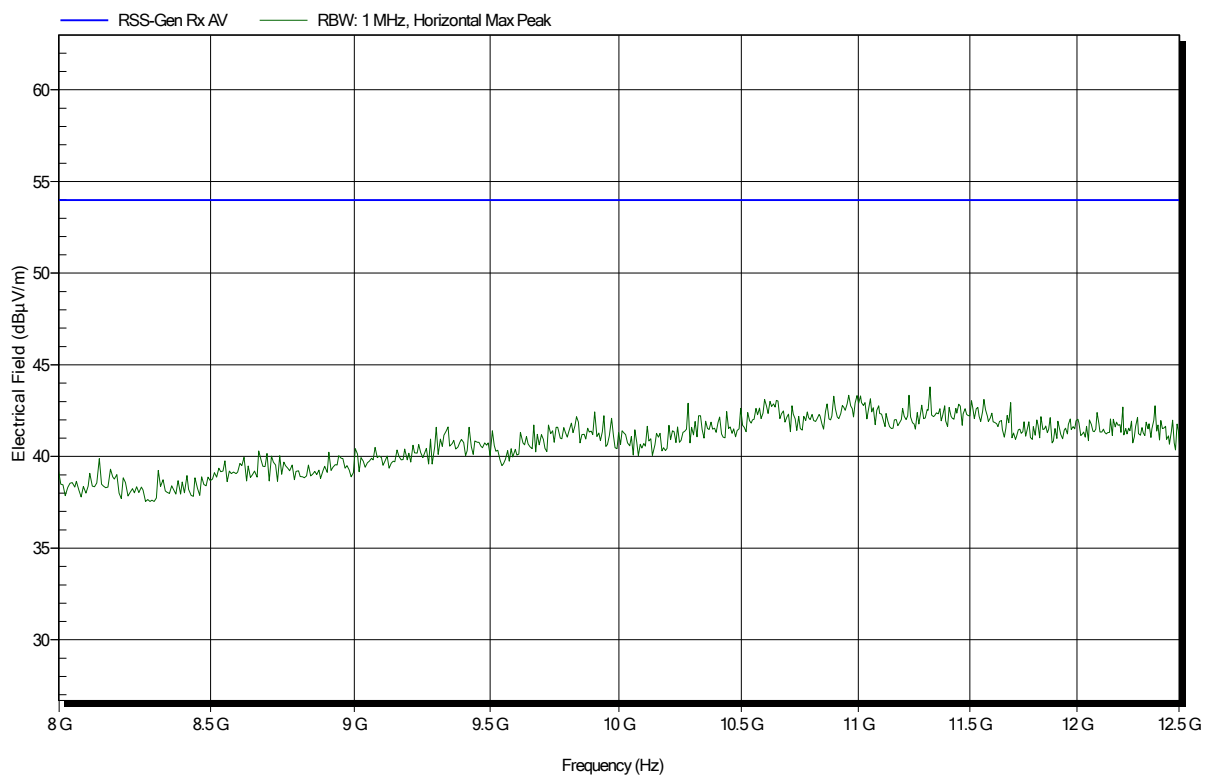


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.583 GHz	35.8 dBµV/m	53.98 dBµV/m	-18.18 dB	Pass

Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600
 Applicant: Medivation AG
 EUT Name: Wireless single-use tracking system
 Model: iVation Camera
 Test Site: Eurofins Product Service GmbH
 Operator: Florian Voigt
 Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: RX; BTLE, 2440MHz, EUT ver
 Test Date: 2019-12-17
 Note:

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Spurious emissions according to RSS-247 Issue 2

Project number: G0M-1911-8600

Applicant: Medivation AG
EUT Name: Wireless single-use tracking system
Model: iVation Camera
Test Site: Eurofins Product Service GmbH
Operator: Florian Voigt
Test Conditions: Tnom: 22.9°C, Vnom: 3.3 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: RX; BTLE, 2440MHz, EUT ver
Test Date: 2019-12-17
Note:

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