



FCC TEST REPORT FCC 47 CFR Part 15C Industry Canada RSS-210 Digital transmission systems operating within the 2400 – 2483.5 MHz band	
Report Reference No.	G0M-1310-3347-TFC247Z-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	  A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Applicant's name	Saxonar GmbH
Address	Hauptstr. 54 02906 Waldhufen OT Nieder Seifersdorf GERMANY
Test specification:	
Standard	47 CFR Part 15C KDB Publication No. 558074 RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Equipment under test (EUT):	
Product description	powermeter for bicycle
Model No.	power2max / P0004-7-C
Hardware version	BG0004-7-C
Firmware / Software version	None
	FCC-ID: ZQ2-P0004-7-C IC: 9766A-P000407C
Test result	Passed

Possible test case verdicts:

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

Testing:

Date of receipt of test item: 2013-12-11

Date (s) of performance of tests: 2013-12-11

Compiled by: Antje Bartusch

Tested by (+ signature).....: Wilfried Treffke

.....*W. Treffke*.....

Approved by (+ signature): Christian Weber

.....*C. Weber*.....

Date of issue: 2014-01-10

Total number of pages.....: 50

General remarks:

The test results presented in this report relate only to the object tested.

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

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

Additional comments:

Version History

Version	Issue Date	Remarks	Revised by
01	2014-01-10	Initial Release	

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1 Equipment (Test item) Description

Description	powermeter for bicycle	
Model	power2max / P0004-7-C	
Serial number	3.3.0.83	
Hardware version	BG0004-7-C	
Software / Firmware version	None	
FCC-ID	ZQ2-P0004-7-C	
IC	9766A-P000407C	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	ANT+	
Operating frequency range	2457 MHz	
Assigned frequency band	2400 - 2483.5 MHz	
Main test frequencies	F _{MID}	2457 MHz
Spreading	None	
Modulations	GFSK	
Number of channels	1	
Channel spacing	N/A	
Number of antennas	1	
Antenna	Type	integrated
	Model	printed inverted F-Antenna
	Manufacturer	unspecified
	Gain	-5.0 dBi (manufacturer declaration)
Manufacturer	Saxonar GmbH Hauptstr. 54 02906 Waldhufen OT Nieder Seifersdorf GERMANY	
Power supply	V _{NOM}	3.0 VDC
	V _{MIN}	2.7 VDC
	V _{MAX}	3.3 VDC
AC/DC-Adaptor	Model	N/A
	Vendor	N/A
	Input	N/A
	Output	N/A

1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				
<p>*Note: Use the following abbreviations:</p> <p>AE : Auxiliary/Associated Equipment, or</p> <p>SIM : Simulator (Not Subjected to Test)</p> <p>CABL : Connecting cables</p>				

1.5 Test Modes

Mode	Description	
GFSK	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Modulation = GFSK Duty cycle = 78 % Power level = Maximum
Receive	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone receive

1.6 Test Equipment Used During Testing

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

6dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Power spectral density					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 5	EF00395	--	--
Spectrum Analyzer	R&S	FSIQ26	EF00242	2013-06	2014-06
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD Antenna	R&S	HL 223	EF00187	2011-02	2014-02
LPD Antenna	R&S	HL 025	EF00327	2013-02	2016-02

1.7 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

Net:

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

Limit:

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

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

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:

$$\begin{array}{rclcl} \text{Reading} & + & \text{AF} & = & \text{Net Reading} & : & \text{Net reading - FCC limit} & = & \text{Margin} \\ 21.5 \text{ dB}\mu\text{V} & + & 26 \text{ dB} & = & 47.5 \text{ dB}\mu\text{V/m} & : & 47.5 \text{ dB}\mu\text{V/m} - 57.0 \text{ dB}\mu\text{V/m} & = & -9.5 \text{ dB} \end{array}$$

2 Result Summary

FCC 47 CFR Part 15C, IC RSS-210				
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/R	Informational only
FCC § 15.247(a)(2) IC RSS-210 § A8.2	6dB Bandwidth	KDB Publication No. 558074	PASS	
FCC § 15.247(b)(3) IC RSS-210 § A8.4	Maximum peak conducted power	KDB Publication No. 558074	PASS	
FCC § 15.247(e) IC RSS-210 § A8.2	Power spectral density	KDB Publication No. 558074	PASS	
47 CFR 15.207 RSS-Gen 7.2.4	AC power line conducted emissions	KDB Publication No. 558074 / ANSI C63.4	N/A	
FCC § 15.247(d) IC RSS-210 § A8.5	Band edge compliance	KDB Publication No. 558074	PASS	
FCC § 15.247(d) IC RSS-210 § A8.5	Conducted spurious emissions	KDB Publication No. 558074	PASS	
FCC § 15.247(d) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 4.9 IC RSS-Gen 7.2.5	Transmitter radiated spurious emissions	KDB Publication No. 558074 / ANSI C 63.4	PASS	
IC RSS-Gen 4.10 IC RSS-Gen 6.1	Receiver radiated spurious emissions	ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

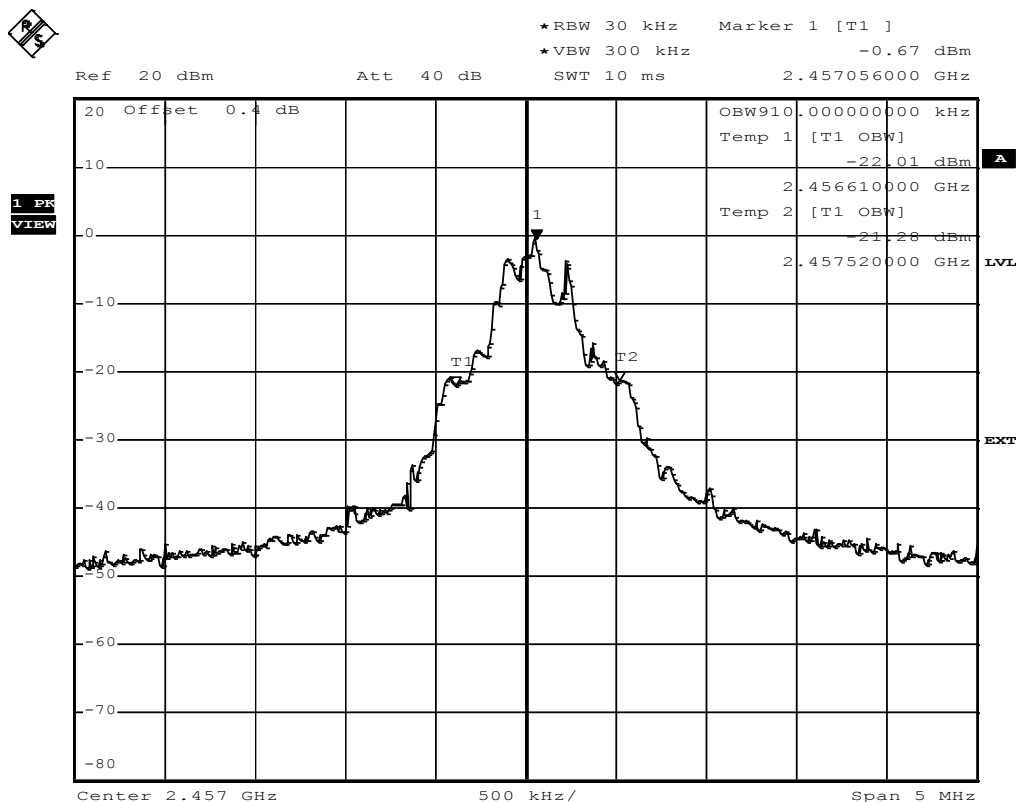
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. IC RSS-Gen			Verdict: PASS
Test according to measurement reference	Reference Method		
	RSS-Gen 4.6.1		
Test frequency range	Tested frequencies		
	F _{MID}		
Limits			
None (Informational only)			
Test setup			
<div><div>Spectrum Analyzer</div><div>EUT</div></div>			
Test procedure			
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to at least twice the emission spectrum 3. Resolution bandwidth set to 1 % of span 4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function			
Test results			
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [MHz]
F _{MID}	2457	GFSK	0.910
Comments:			

Occupied Bandwidth – F_{MID}

RSS Gen Occupied Bandwidth

EUT powermeter for bicycle
Model power2max
Approval Holder Saxonar GmbH / Ord.: G0M-1310-3347
Temperature / Voltage Tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 2457 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 GFSK



Comment: Occupied bandwidth: 952 KHz
Date: 12.DEC.2013 11:29:24

3.2 Test Conditions and Results – 6 dB Bandwidth

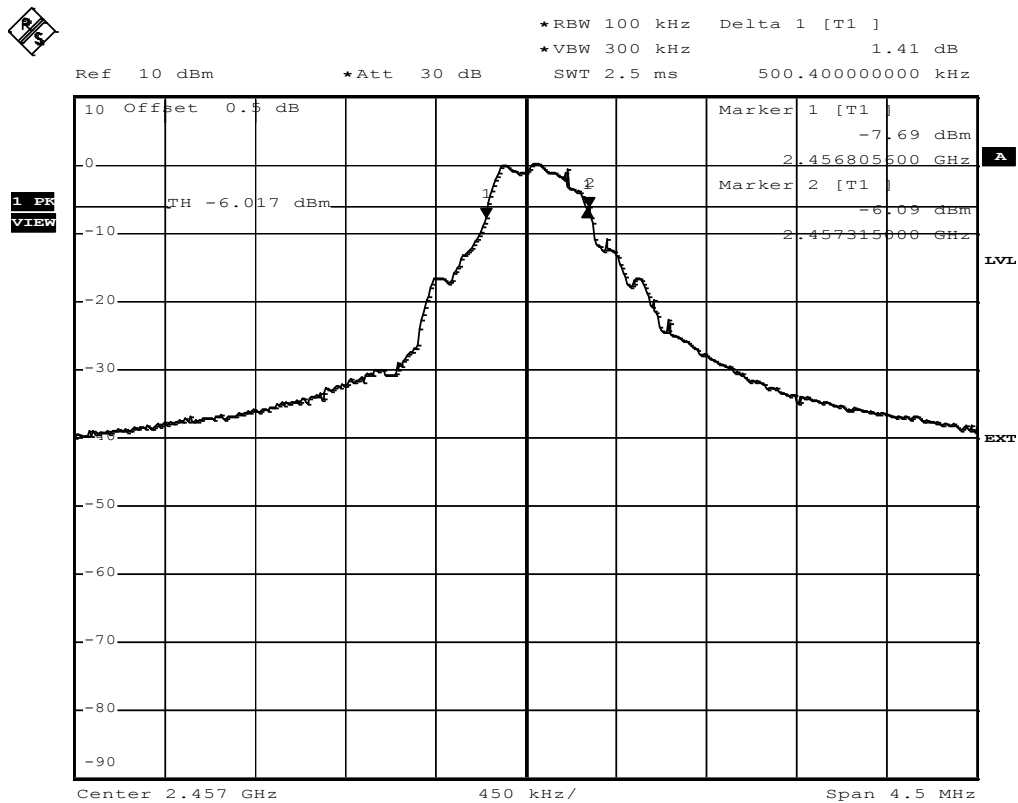
6dB Bandwidth acc. FCC 15.247 / IC RSS-210				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.247(a)(2) / IC RSS-210 A8.2			
Test according to measurement reference		Reference Method			
		FCC KDB Publication No. 558074			
Test frequency range		Tested frequencies			
		F _{MID}			
Limits					
≥ 500kHz					
Test setup					
<div><div>Spectrum Analyzer</div><div>EUT</div></div>					
Test procedure					
<div>1. EUT set to test mode</div> <div>2. Span set to at least twice the emission spectrum</div> <div>3. Detector set to peak and max hold and RBW is set to 100 kHz</div> <div>4. Envelope peak value of emission spectrum is selected</div> <div>5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak</div> <div>6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak</div> <div>7. 6 dB Bandwidth is determined by marker frequency separation</div>					
Test results					
Channel	Frequency [MHz]	Mode	6 dB Bandwidth [kHz]	Limit [kHz]	Result
F _{MID}	2457	GFSK	500.4	500	PASS
Comments:					

6 dB Bandwidth – F_{MID}

FCC part 15.247 (a)2

Minimum 6 dB Bandwidth

EUT powermeter for bicycle
 Model power2max
 Approval Holder Saxonar GmbH / Ord.: G0M-1310-3347
 Temperature / Voltage Tnom / Vnom
 Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
 Test Specification FCC part 15.247 (a)2
 Comment 1 Minimum 6 dB Bandwidth
 Comment 2 Channel 2457 MHz, GFSK
 Comment 3 procedure 8.1 DTS BW (558074 D01 DTS)



Comment: 6 dB bandwidth: 527.4 KHz > 500 KHz; verdict: PASS
 Date: 12.DEC.2013 10:41:47

Test Report No.: G0M-1310-3347-TFC247Z-V01

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

3.3 Test Conditions and Results – Maximum peak conducted power

Maximum peak conducted power acc. FCC 15.247 / IC RSS-210						Verdict: PASS	
EUT requirement rule parts and clause			Reference				
			FCC 15.247(b)(3) / IC RSS-210 A8.4				
Test according to measurement reference			Reference Method				
			FCC KDB Publication No. 558074				
Test frequency range			Tested frequencies				
			F _{MID}				
Measurement mode			Peak				
Maximum antenna gain			-5 dBi ⇒ Limit correction = 0 dB				
Limits							
1 W (30 dBm)							
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.							
Test setup							
<div><div>Spectrum Analyzer</div><div>EUT</div></div>							
Test procedure							
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to twice the 20 dB bandwidth and detector to peak and max hold 4. Resolution bandwidth is set to 3 MHz 5. Peak conducted power is determined from peak of spectrum envelope							
Test results							
Channel	Frequency [MHz]	Voltage [VDC]	Mode	Peak power [dbm]	Peak power [mW]	Limit [dBm]	Margin [dB]
F _{MID}	2457	V _{NOM} = 2.7	GFSK	0.03	1.01	30	-29.97
Comments:							

3.4 Test Conditions and Results – Power spectral density

Power spectral density acc. FCC 15.247 / IC RSS-210					Verdict: PASS	
EUT requirement rule parts and clause		Reference				
		FCC 15.247(e) / IC RSS-210 A8.2				
Test according to measurement reference		Reference Method				
		FCC KDB Publication No. 558074				
Test frequency range		Tested frequencies				
		F _{MID}				
Measurement mode		Peak				
Limits						
8 dBm / 3 kHz						
Test setup						
<div><div>Spectrum Analyzer</div><div>EUT</div></div>						
Test procedure						
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span is set large enough to capture maximum emissions in passband, RBW is set to 3kHz 4. Peak power density is determined from peak emission of envelope						
Test results						
Channel	Frequency [MHz]	Test mode	Peak frequency [MHz]	Peak power density [dBm]	Limit [dBm/3kHz]	Margin [dB]
F _{MID}	2457	GFSK	2457.048	-0.06	8.0	-08.06
Comments:						

3.5 Test Conditions and Results – Band edge compliance

Band-edge compliance acc. FCC 15.247 / IC RSS-210					Verdict: PASS
EUT requirement rule parts and clause		Reference			
		FCC 15.247(d) / IC RSS-210 A8.5			
Test according to measurement reference		Reference Method			
		FCC KDB Publication No. 558074			
Test frequency range		Tested frequencies			
		F _{LOW} / F _{HIGH}			
Measurement mode		Peak			
Limits					
Limit			Condition		
≤ -20 dB / 100 kHz			Peak power measurement detector = Peak		
≤ -30 dB / 100 kHz			Peak power measurement detector = RMS		
Test setup					
<div><div>Spectrum Analyzer</div><div>EUT</div></div>					
Test procedure					
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference					
Test results					
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]
F _{LOW}	2457	GFSK	-41.93	-20	-21.93
F _{HIGH}	2457	GFSK	-33.25	-20	-13.25
Comments:					

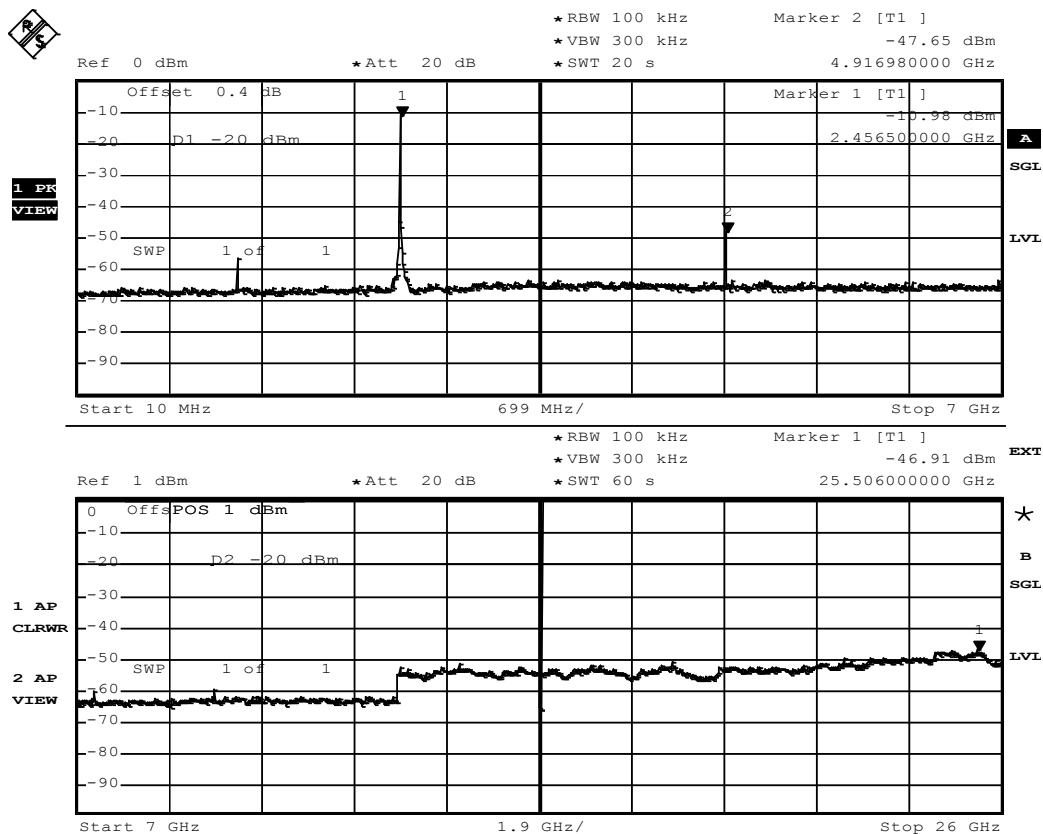
3.6 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. FCC 15.247 / IC RSS-210						Verdict: PASS	
EUT requirement rule parts and clause			Reference				
			FCC 15.247(d) / IC RSS-210 A8.5				
Test according to measurement reference			Reference Method				
			FCC KDB Publication No. 558074				
Test frequency range			Tested frequencies				
			10 MHz – 10 th Harmonic				
Measurement mode			Peak				
Limits							
Limit				Condition			
≤ -20 dB / 100 kHz				Peak power measurement detector = Peak			
≤ -30 dB /100 kHz				Peak power measurement detector = RMS			
Test setup							
<div><div>Spectrum Analyzer</div><div>EUT</div></div>							
Test procedure							
<div>1. EUT set to test mode (Communication tester is used if needed)</div> <div>2. Span it set according to measurement range</div> <div>3. Resolution bandwidth is set to 100 kHz and detector to peak and max hold</div> <div>4. Markers are set to peak emission levels within frequency band</div> <div>5. Emission level is determined by second marker on emission peak</div> <div>6. Attenuation is determined from level difference</div>							
Test results							
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]
F _{MID}	2457	GFSK	4916.98	-47.65	-10.98	-20	-27.65
Comments:							

Conducted spurious emissions – F_{MID}

FCC part 15.247 (d)
Spurious Emissions

EUT powermeter for bicycle
Model power2max
Approval Holder Saxonar GmbH / Ord.: G0M-1310-3347
Temperature / Voltage Tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification FCC part 15.247 (d)
Comment 1 Spurious Emissions conducted
Comment 2 Channel 2457 MHz
Comment 3 Emissions in non-restricted frequency bands 558074 D01 Meas. Guidance

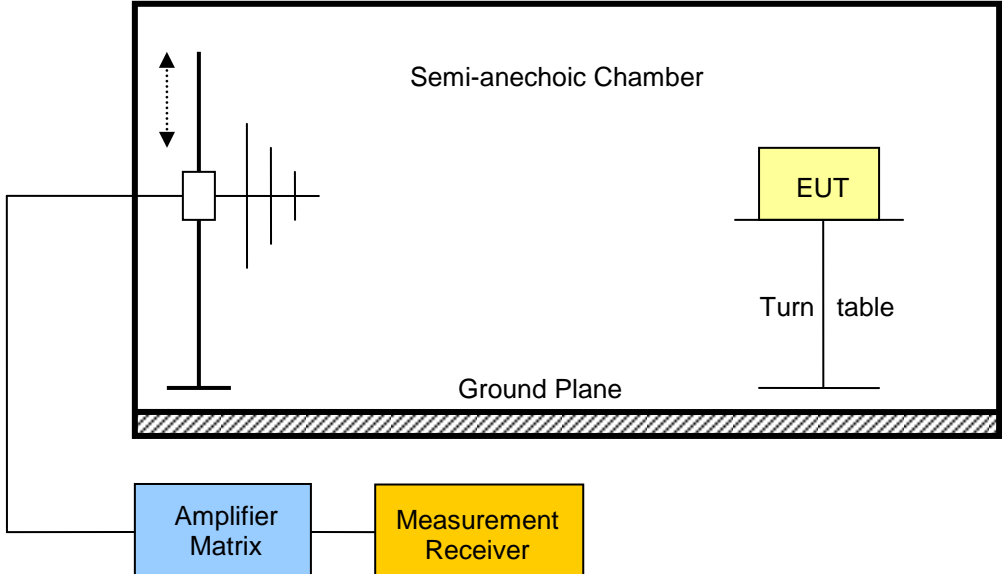


Date: 12.DEC.2013 11:13:20

Test Report No.: G0M-1310-3347-TFC247Z-V01

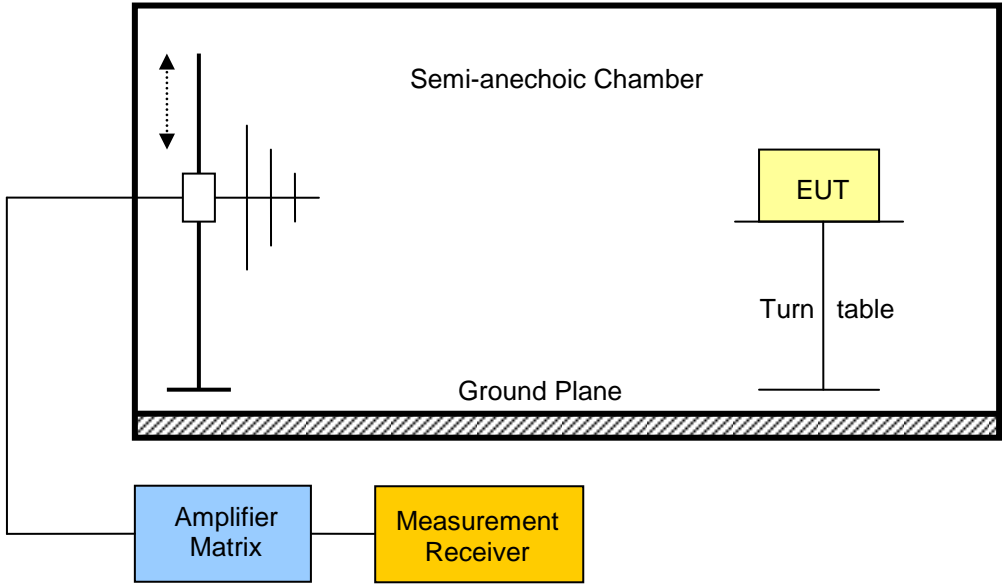
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

3.7 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. FCC 47 CFR 15.247 / IC RSS-210				Verdict: PASS	
Test according referenced standards	Reference Method				
	FCC 15.247(d) / IC RSS-210 A8.5				
Test according to measurement reference	Reference Method				
	FCC KDB Publication No. 558074 / ANSI C63.4				
Test frequency range	Tested frequencies				
	30 MHz – 10 th Harmonic				
Limits					
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]	
30 – 88	Quasi-Peak	100	40	3	
88 – 216	Quasi-Peak	150	43.5	3	
216 – 960	Quasi-Peak	200	46	3	
960 – 1000	Quasi-Peak	500	54	3	
> 1000	Average	500	54	3	
<p>Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).</p> <p>When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.</p>					
Test setup					
					

Test procedure									
<ol style="list-style-type: none"> 1. EUT set to test mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels within restricted bands 									
Test results – Internal Antenna									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Limit dist. [m]*	Margin [dB]
F _{MID}	2457	GFSK	2389	42.32	pk	hor	74	3	-31.68
F _{MID}	2457	GFSK	2389	24.56	RMS	hor	54	3	-29.44
F _{MID}	2457	GFSK	2483.8	51.00	pk	hor	74	3	-23.00
F _{MID}	2457	GFSK	2483.8	25.96	RMS	hor	54	3	-28.04
F _{MID}	2457	GFSK	4914	56.06	pk	ver	74	3	-17.94
F _{MID}	2457	GFSK	4914	51.85	avg	ver	54	3	-02.15
F _{MID}	2457	GFSK	4915	54.80	pk	hor	74	3	-19.20
F _{MID}	2457	GFSK	4915	49.58	avg	hor	54	3	-04.42
Comments: * Physical distance between EUT and measurement antenna.									

3.8 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210				Verdict: PASS
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 3 th Harmonic			
EUT test mode	Receive			
Limits				
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Test setup				
				

Test procedure							
<ol style="list-style-type: none"> 1. EUT set to receive mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels 							
Test results							
Channel	Frequency [MHz]	Emission [MHz]	Emission Level [db μ V/m]	Emission Level [μ V/m]	Det.	Limit [μ V/m]	Margin [μ V/m]
F _{MID}	2457	2806	39.16	90.78	pk	500	409.22
Comments: * Physical distance between EUT and measurement antenna. ** Emission level corresponds to ambient noise floor							

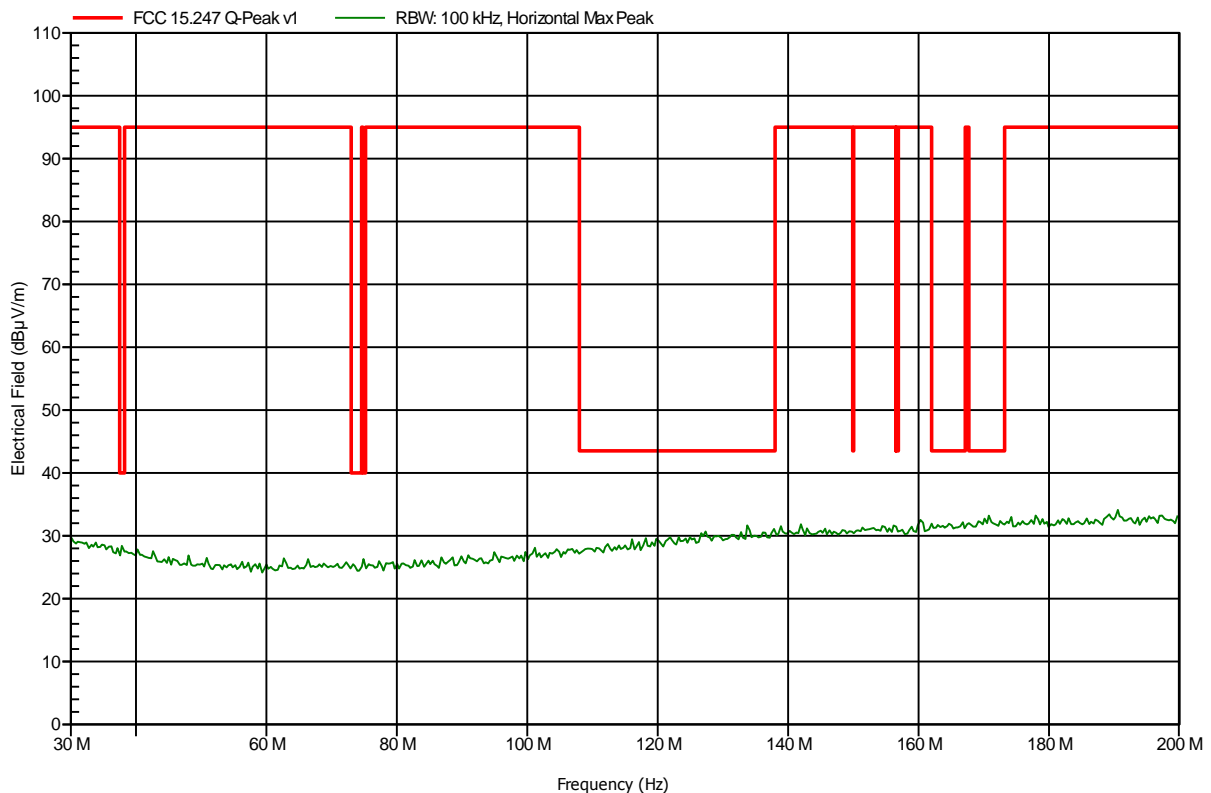
ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer:	Saxonar GmbH
EUT Name:	powermeter for bicycle
Model:	power2max typ: p2mFSA24110-4
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; GFSK, 2457 MHz
Test Date:	2013-12-11
Note:	worst case

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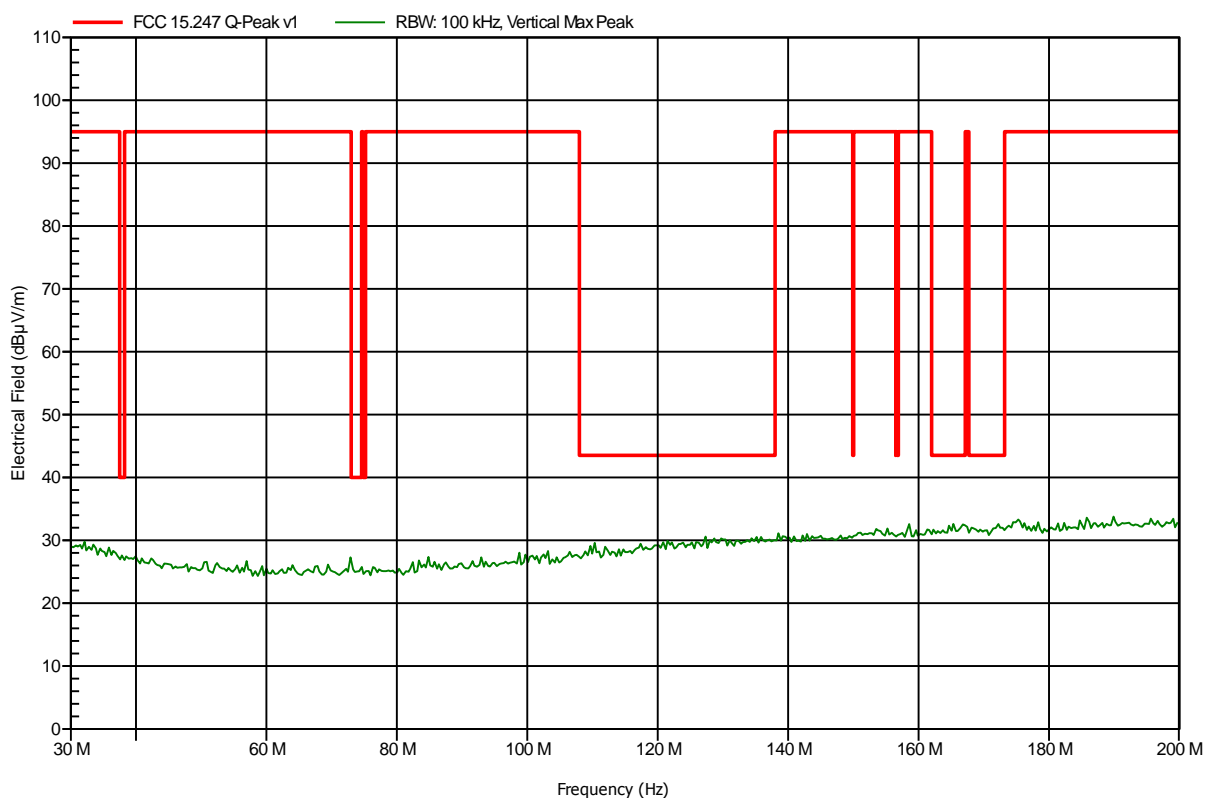


Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer:	Saxonar GmbH
EUT Name:	powermeter for bicycle
Model:	power2max typ: p2mFSA24110-4
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; GFSK, 2457 MHz
Test Date:	2013-12-11
Note:	worst case

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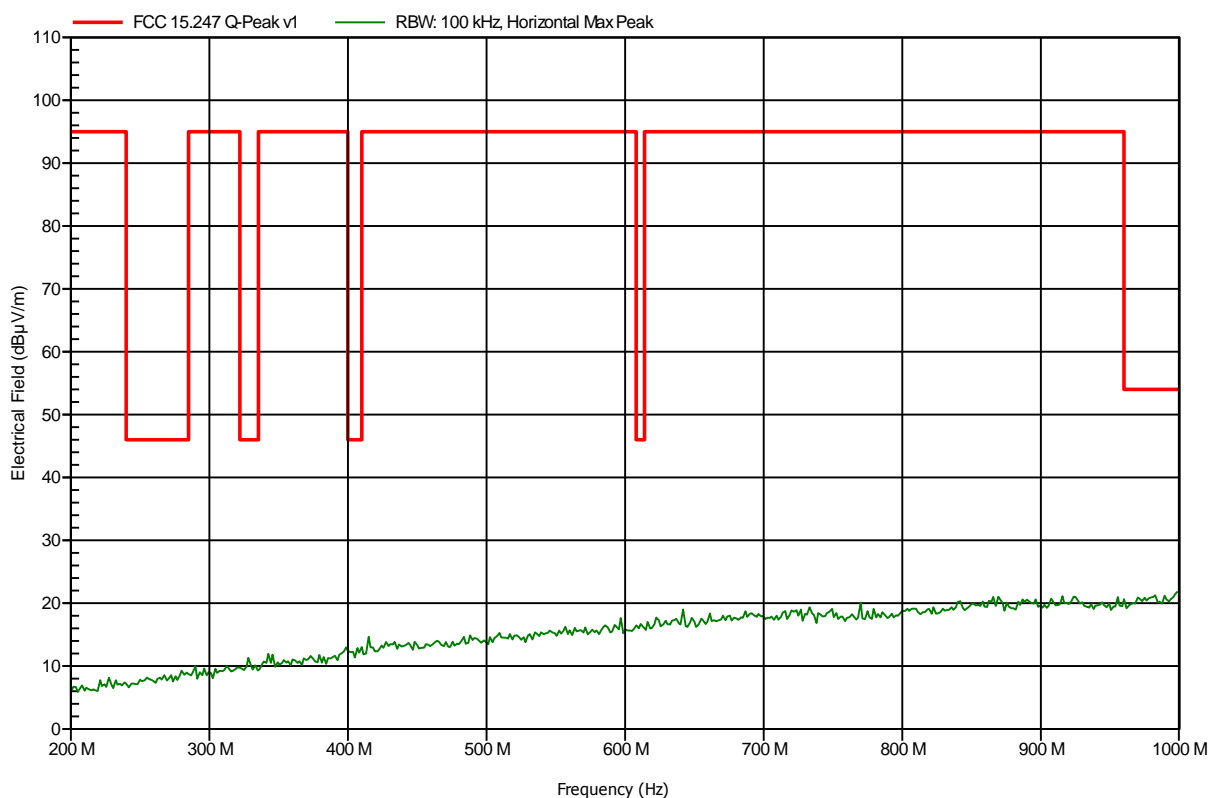
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer:	Saxonar GmbH
EUT Name:	powermeter for bicycle
Model:	power2max typ: p2mFSA24110-4
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.0 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; GFSK, 2457 MHz
Test Date:	2013-12-11
Note:	worst case

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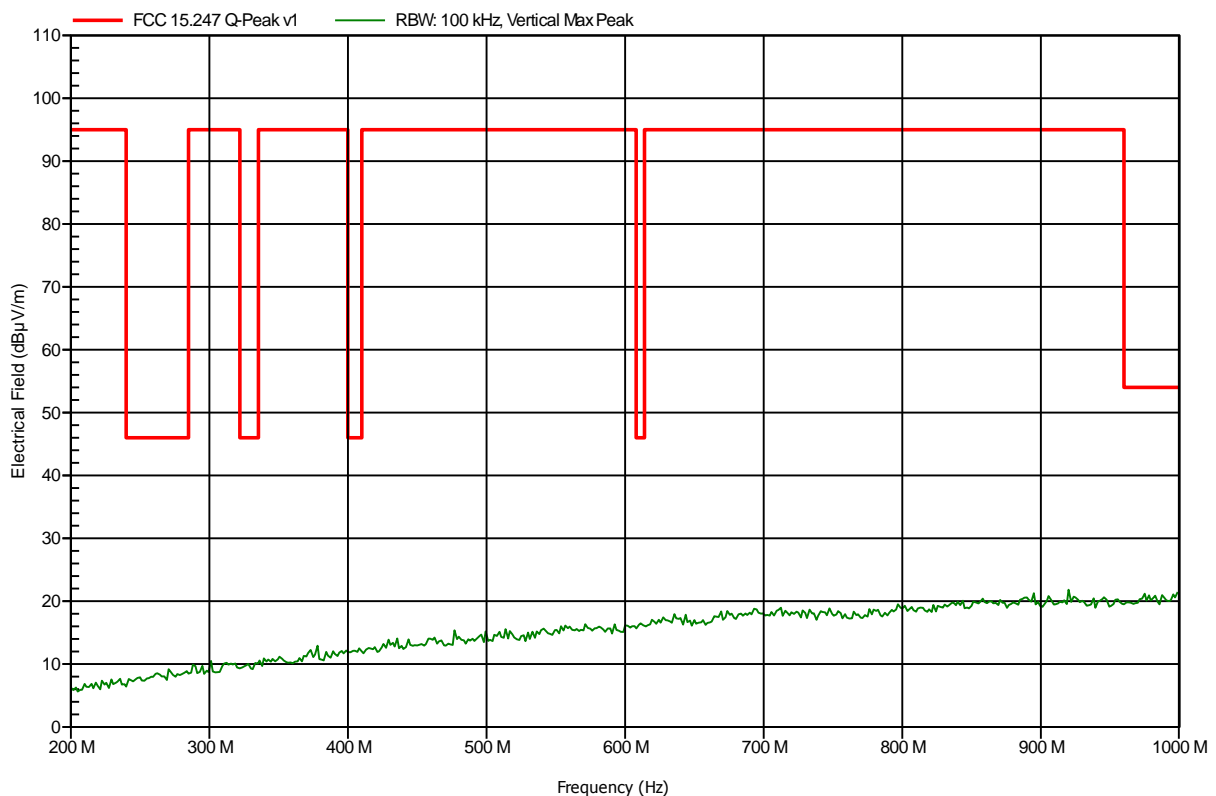


Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note: worst case

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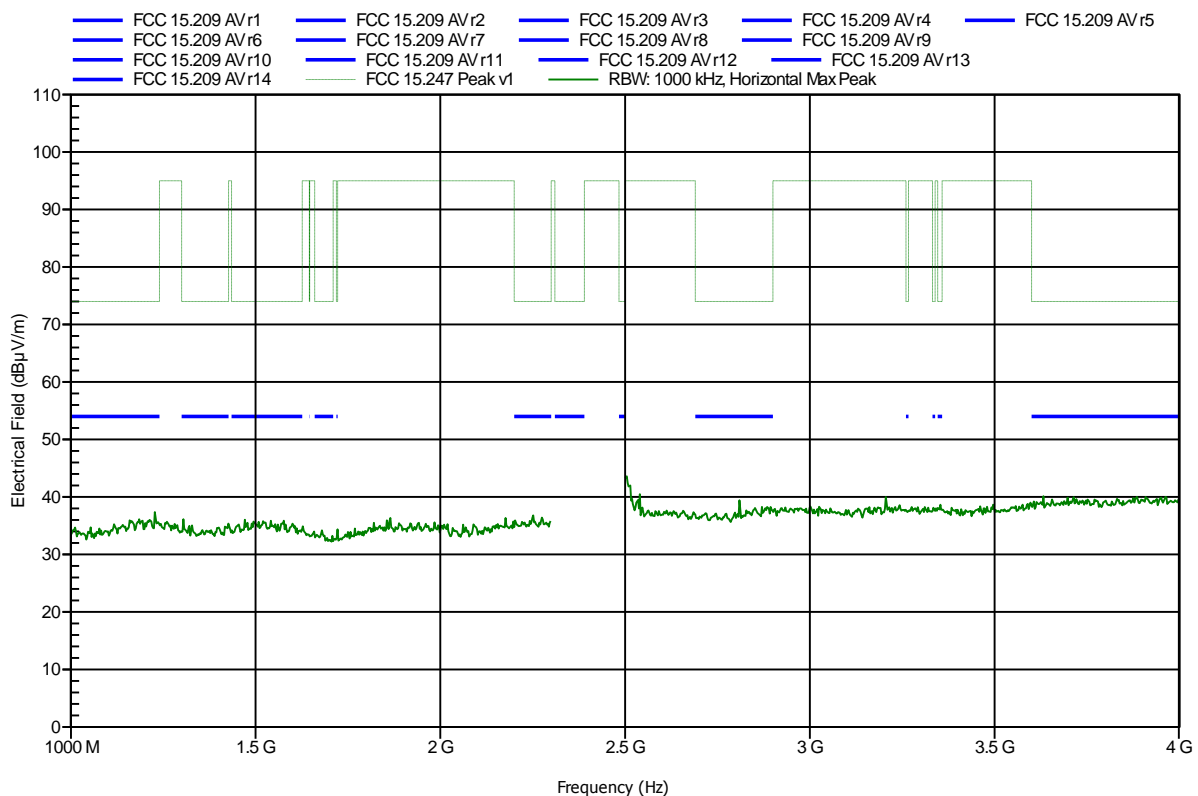


Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

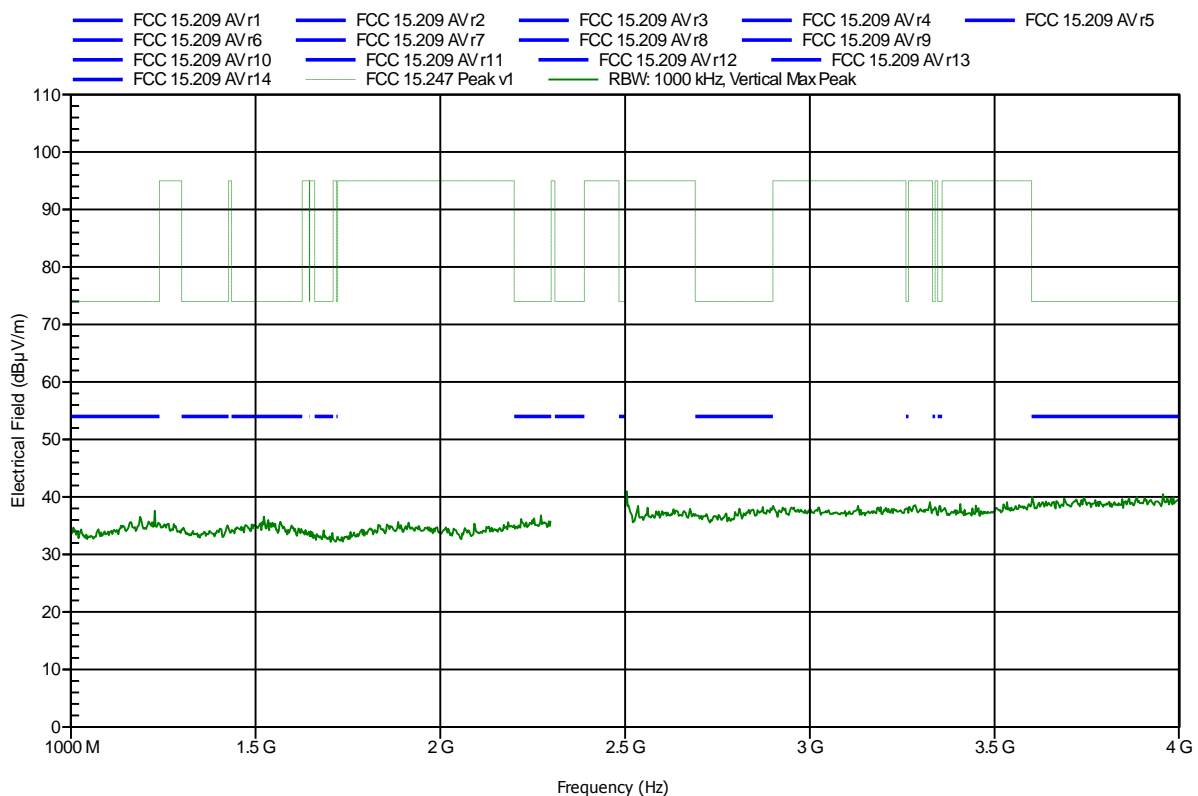
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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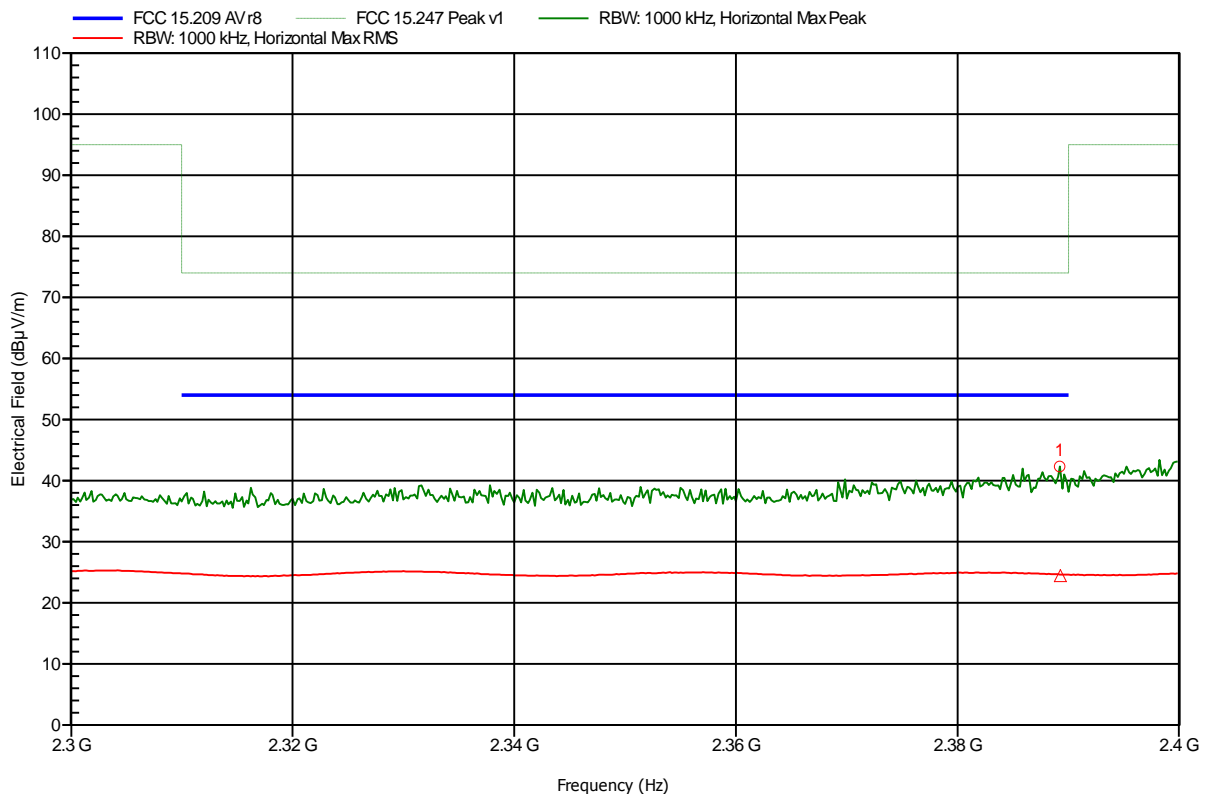


Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note: lower bandedge

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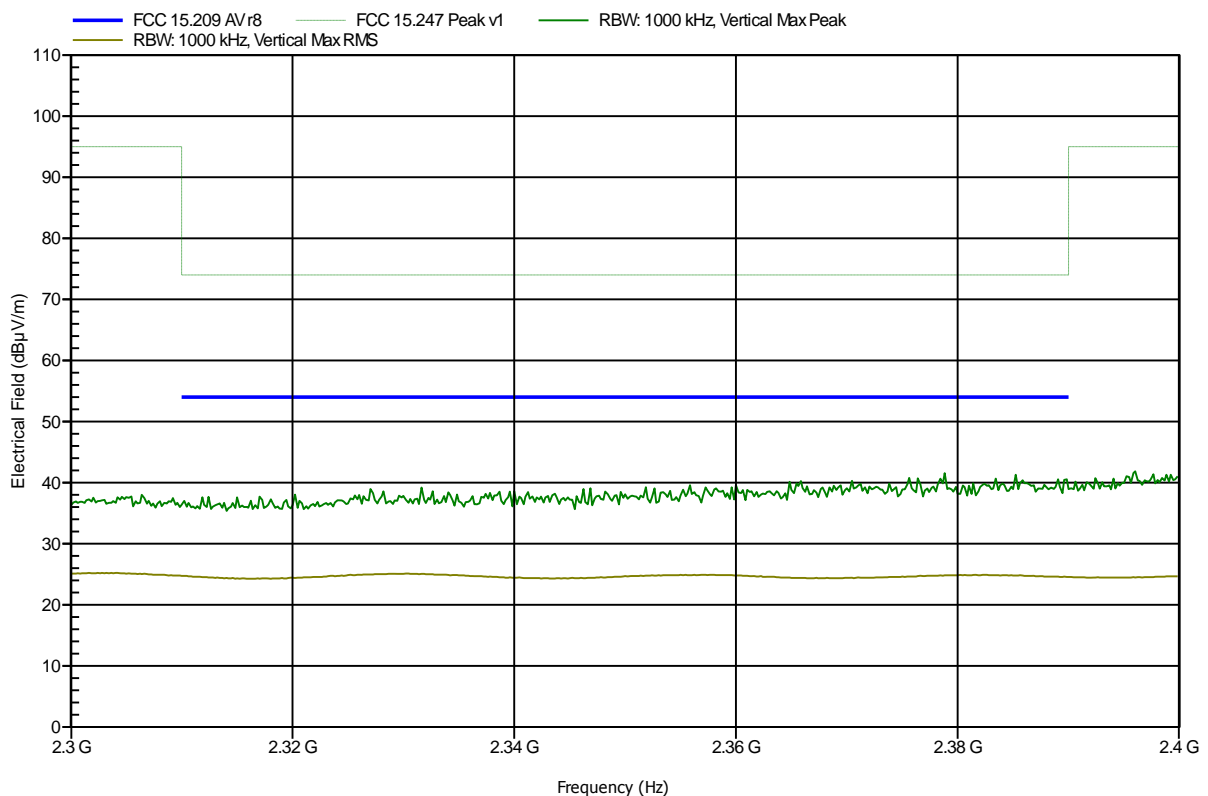
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.389 GHz	42.32 dBuV/m	74 dBuV/m	-31.68 dB	Pass
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.389 GHz	24.56 dBuV/m	54 dBuV/m	-29.44 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note: lower bandedge

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Test Report No.: G0M-1310-3347-TFC247Z-V01

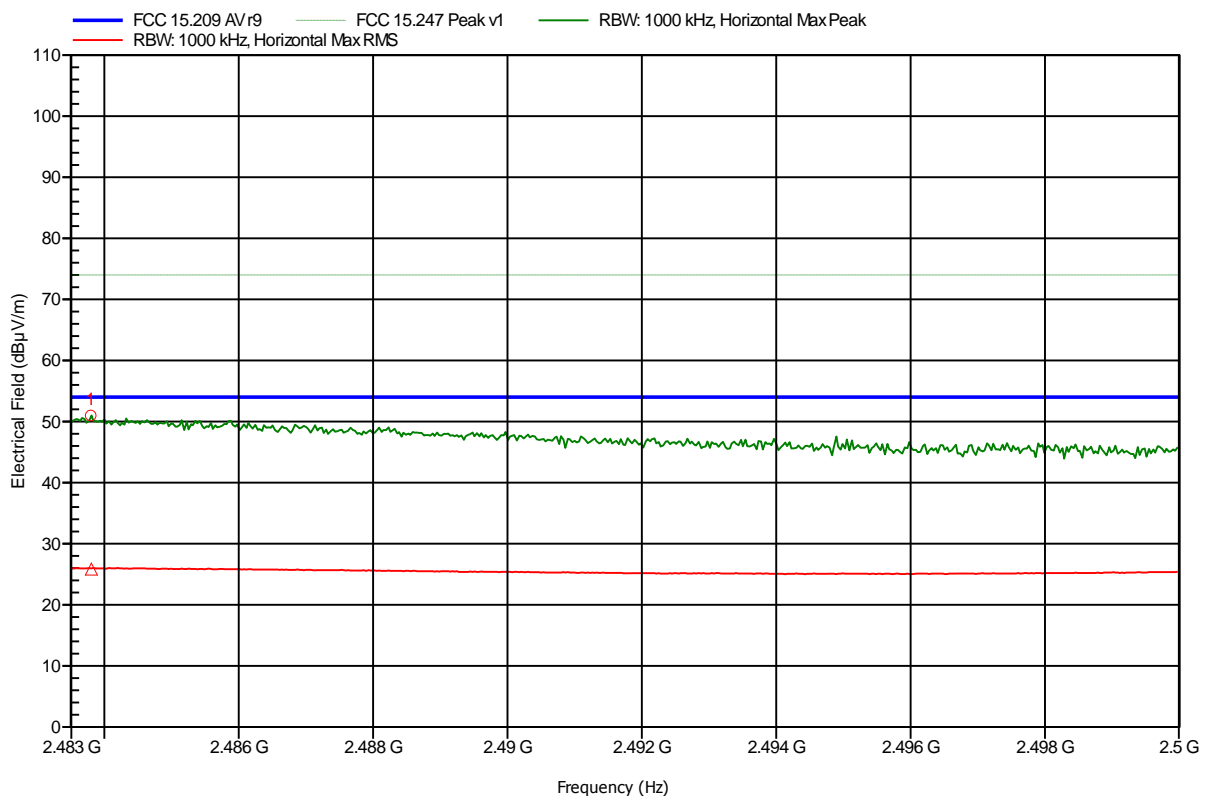
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note: upper bandedge

Index 5



Frequency 2.4838 GHz	Peak 51 dBuV/m	Peak Limit 74 dBuV/m	Peak Difference -23 dB	Peak Status Pass
Frequency 2.4838 GHz	RMS 25.96 dBuV/m	RMS Limit 54 dBuV/m	RMS Difference -28.04 dB	RMS Status Pass

Test Report No.: G0M-1310-3347-TFC247Z-V01

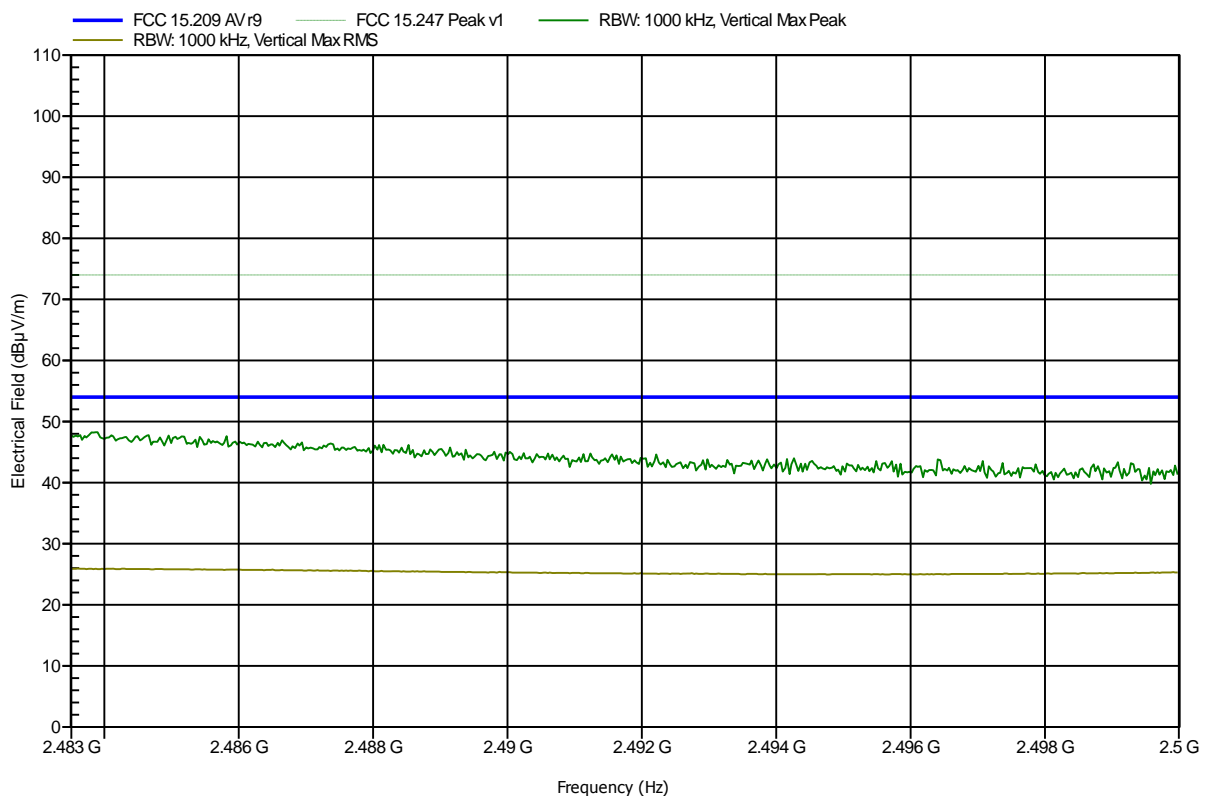
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note: upper bandedge

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Test Report No.: G0M-1310-3347-TFC247Z-V01

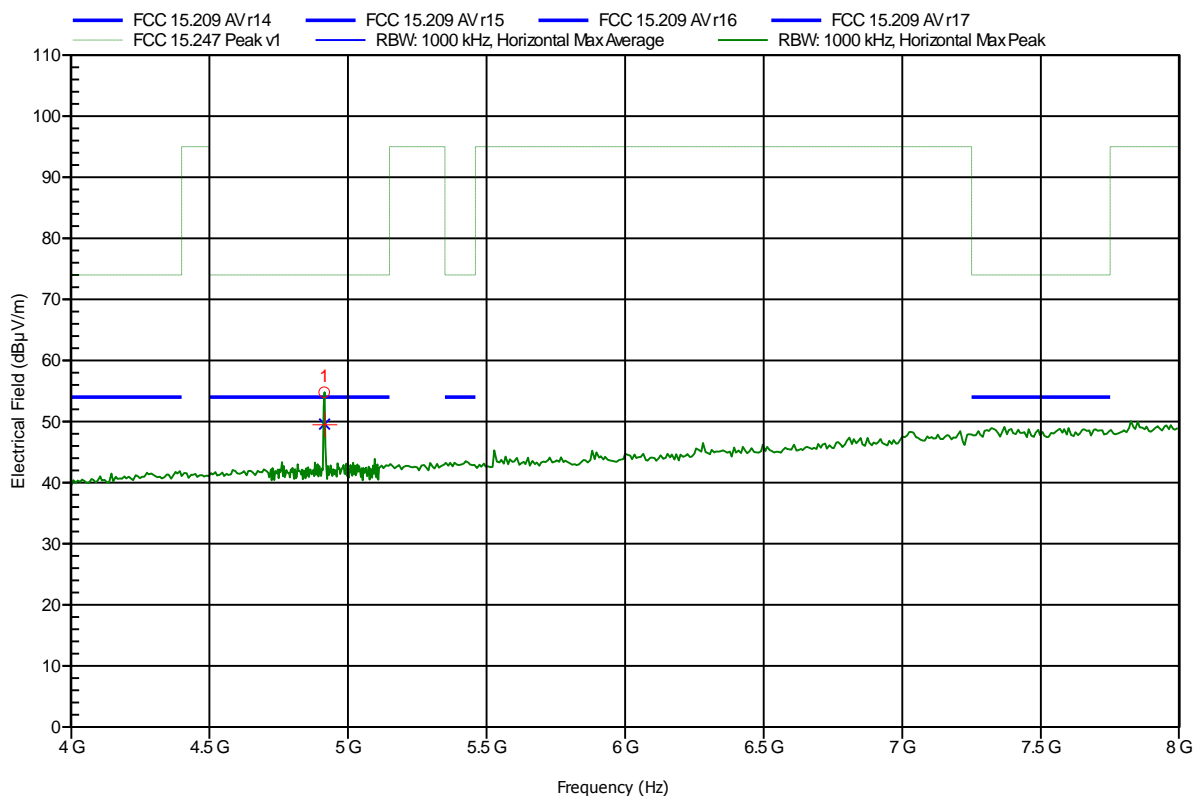
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Frequency 4.915 GHz	Peak 54.8 dBuV/m	Peak Limit 74 dBuV/m	Peak Difference -19.2 dB	Peak Status Pass
Frequency 4.915 GHz	Average 49.58 dBuV/m	Average Limit 54 dBuV/m	Average Difference -4.42 dB	Average Status Pass

Test Report No.: G0M-1310-3347-TFC247Z-V01

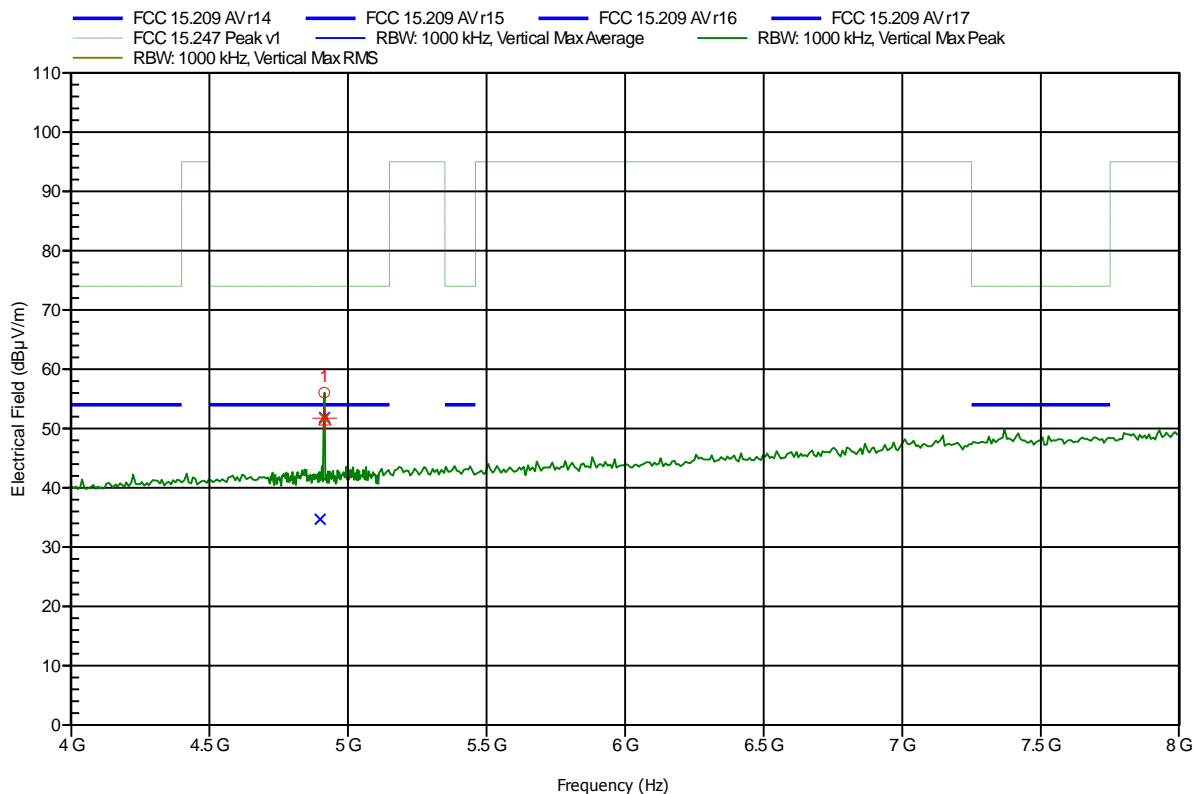
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Frequency 4.914 GHz	Peak 56.06 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -17.94 dB	Peak Status Pass
Frequency 4.914 GHz	Average 51.85 dBµV/m	Average Limit 54 dBµV/m	Average Difference -2.15 dB	Average Status Pass

Test Report No.: G0M-1310-3347-TFC247Z-V01

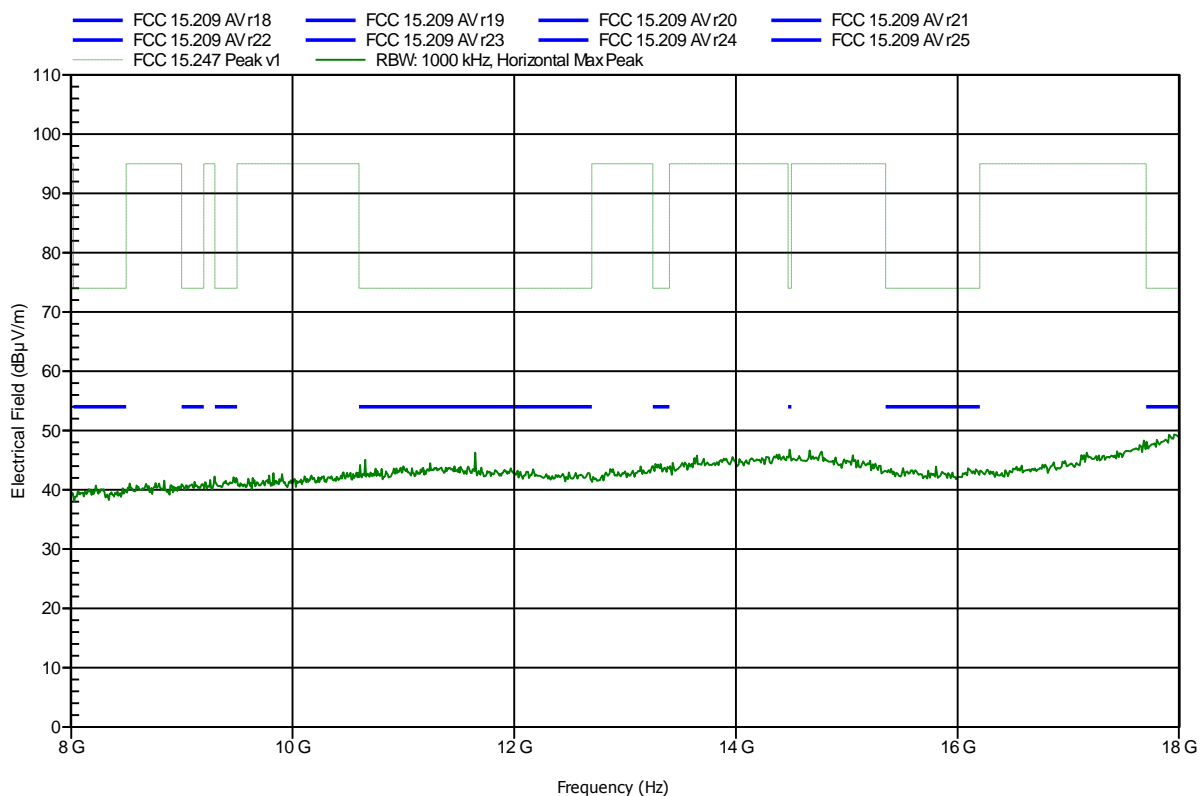
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

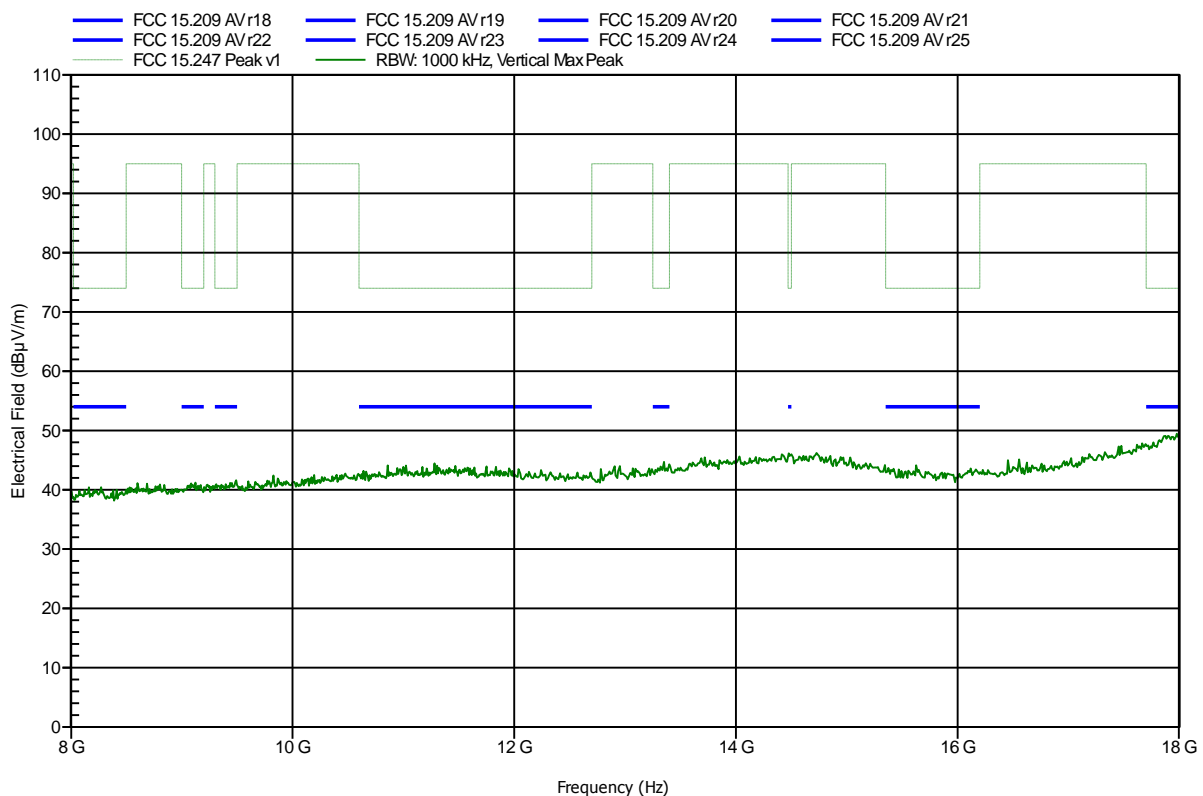
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

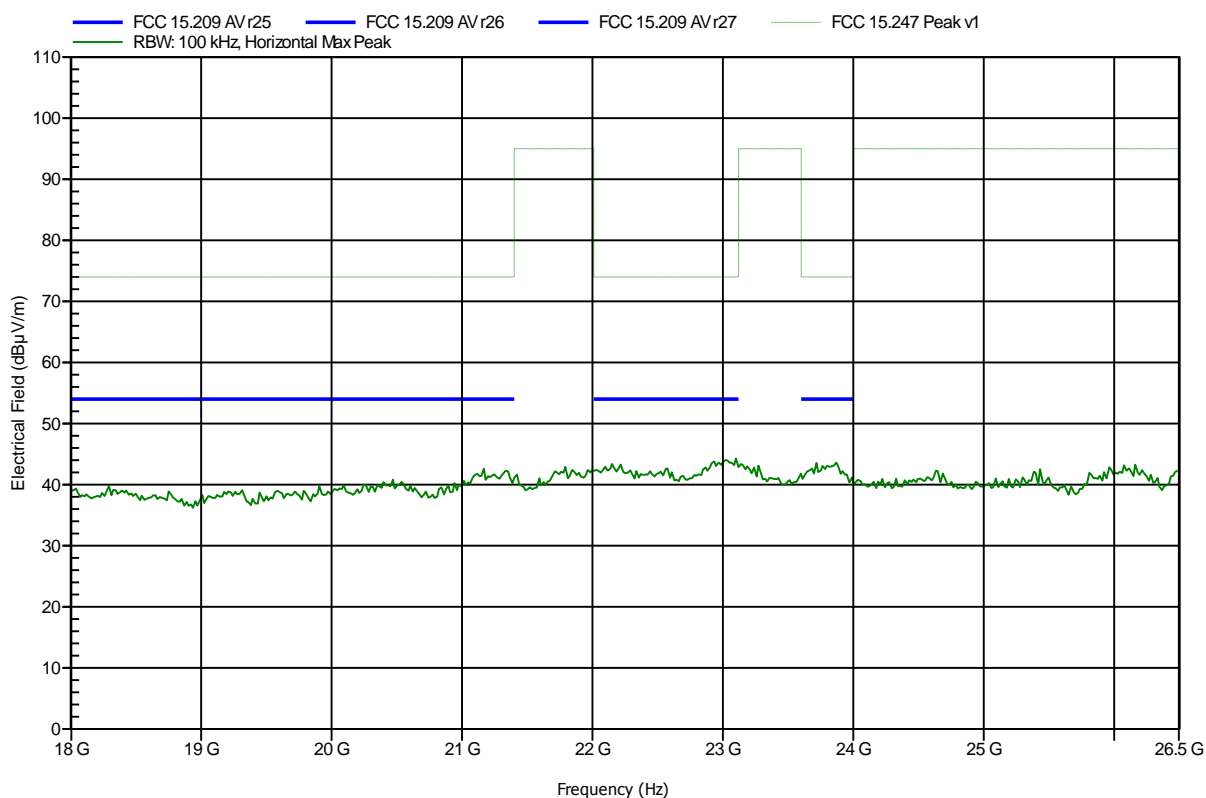
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 100 cm
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

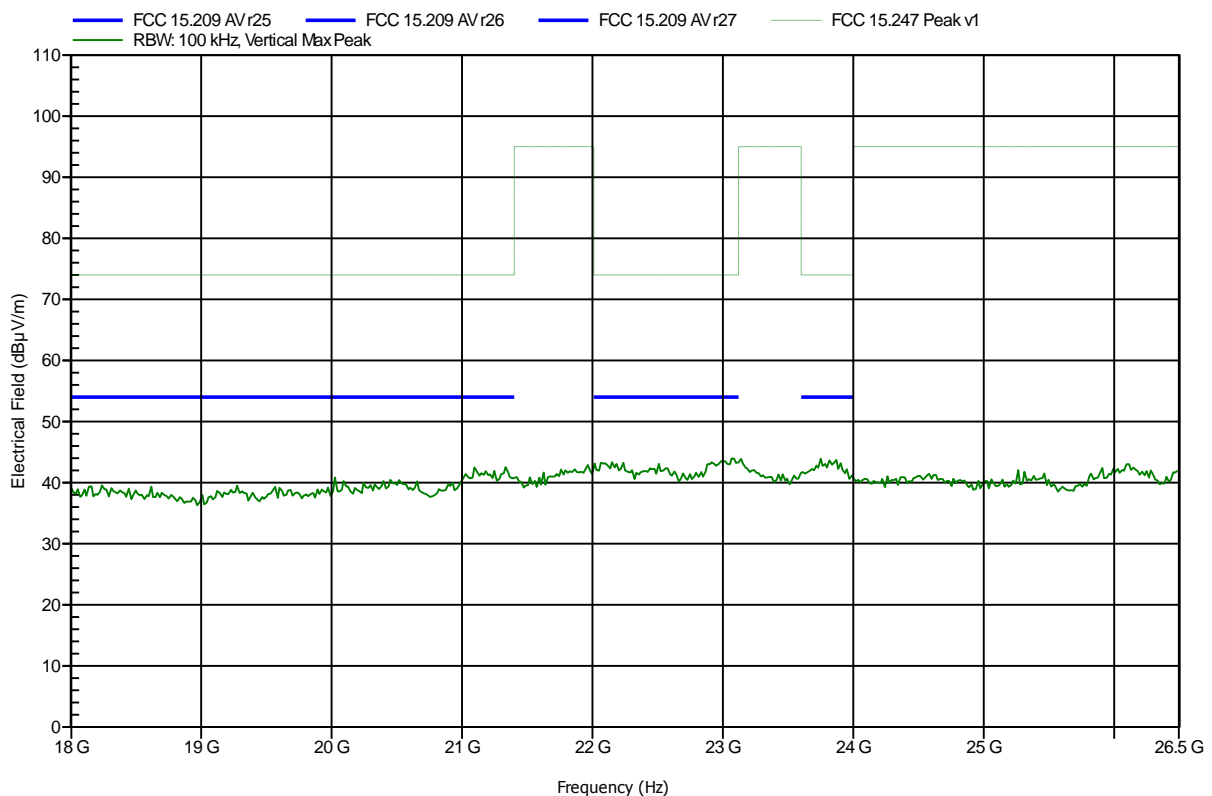
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 100 cm
 Mode: TX; GFSK, 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

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

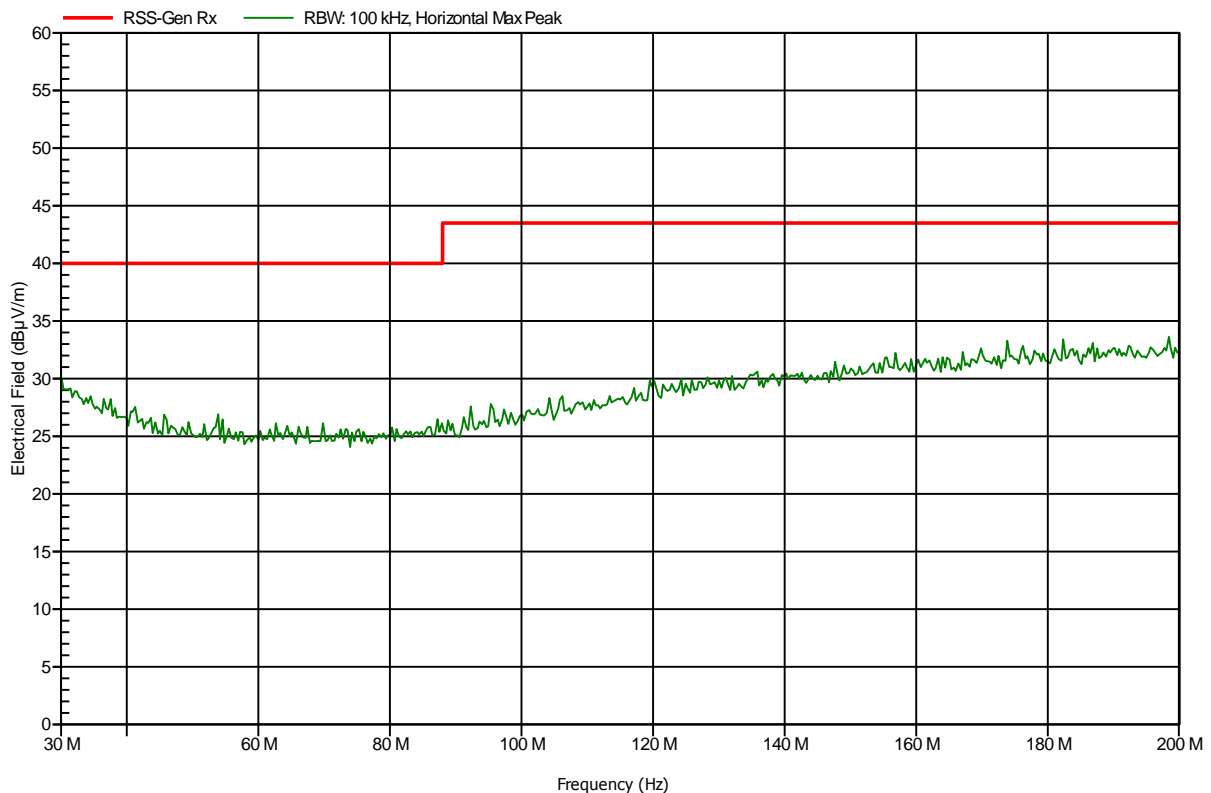
ANNEX B Receiver radiated spurious emissions

Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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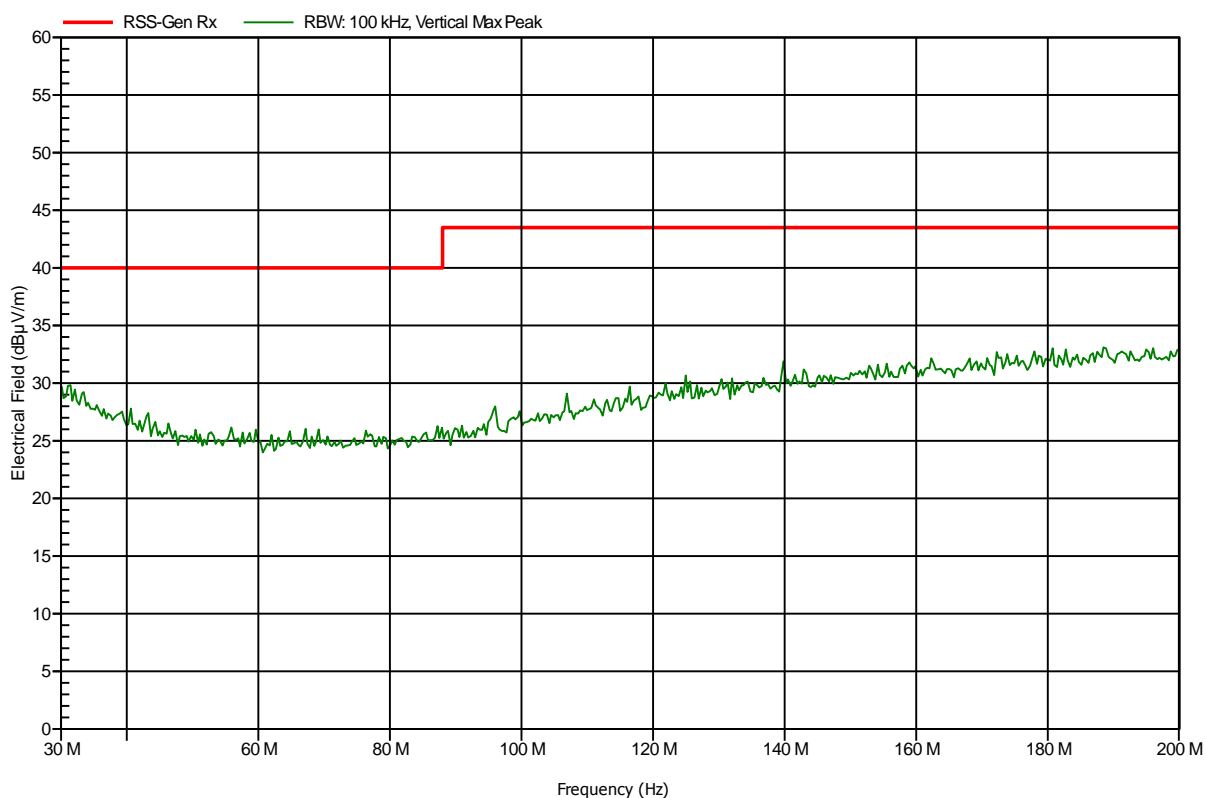


Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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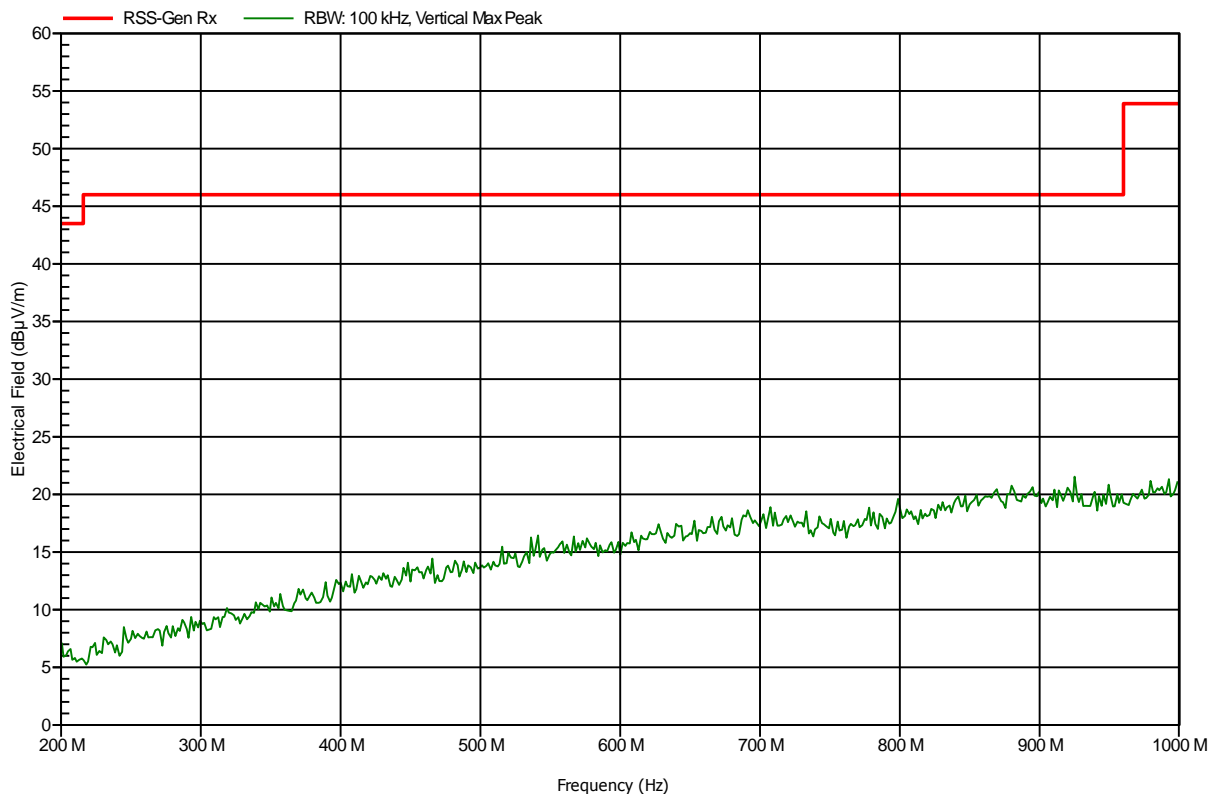


Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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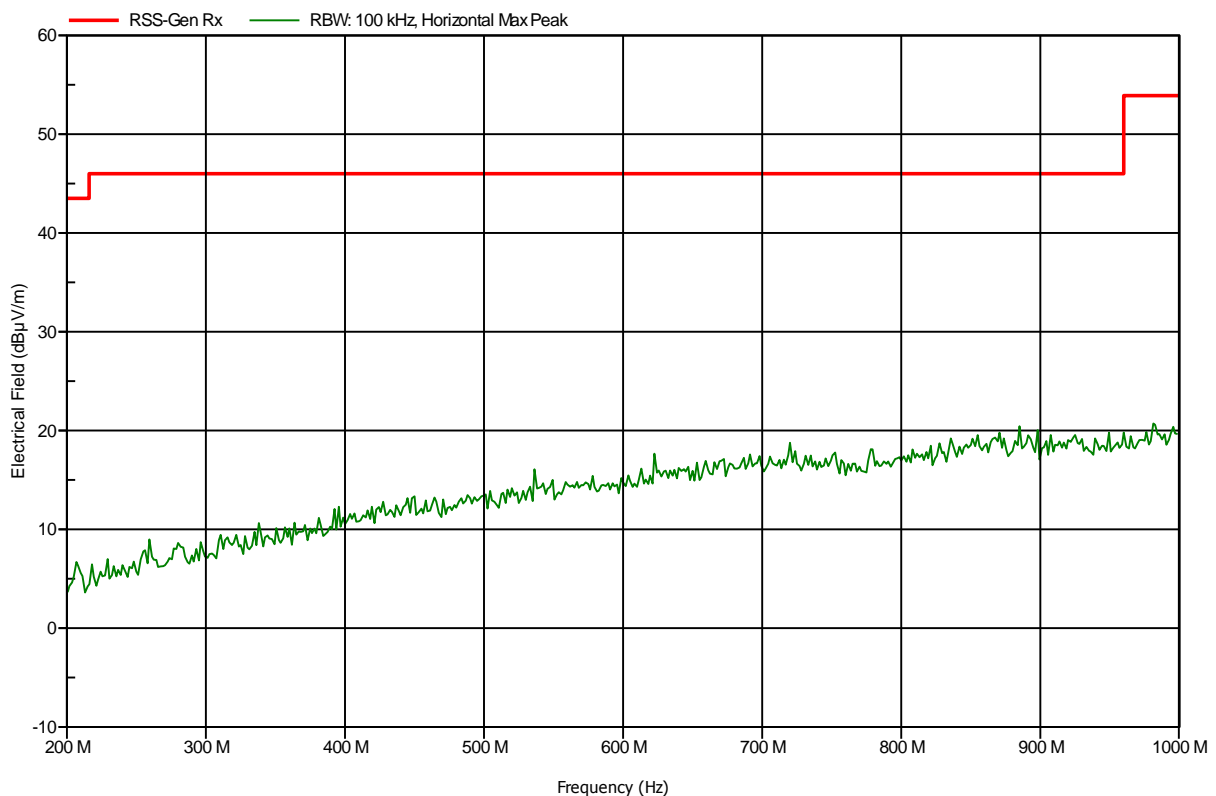


Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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Test Report No.: G0M-1310-3347-TFC247Z-V01

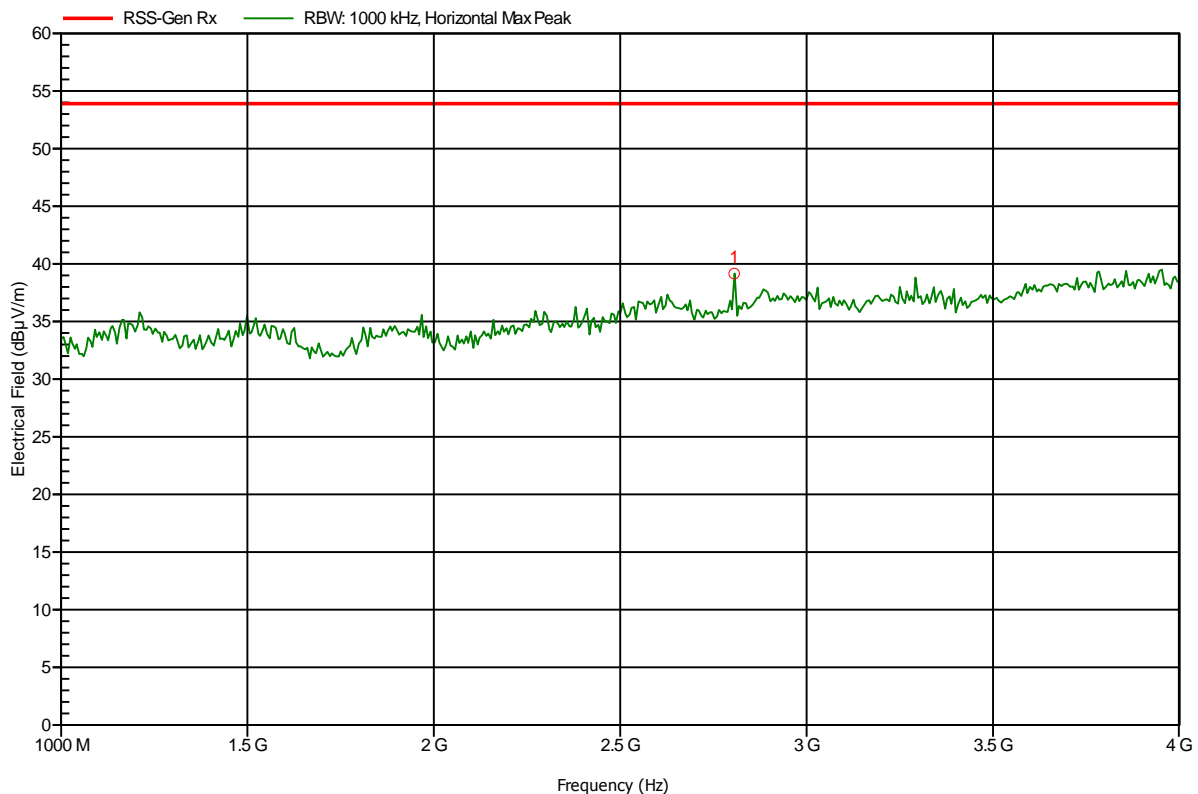
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
2.806 GHz	39.16 dBuV/m	53.9 dBuV/m	-14.74 dB	Pass

Test Report No.: G0M-1310-3347-TFC247Z-V01

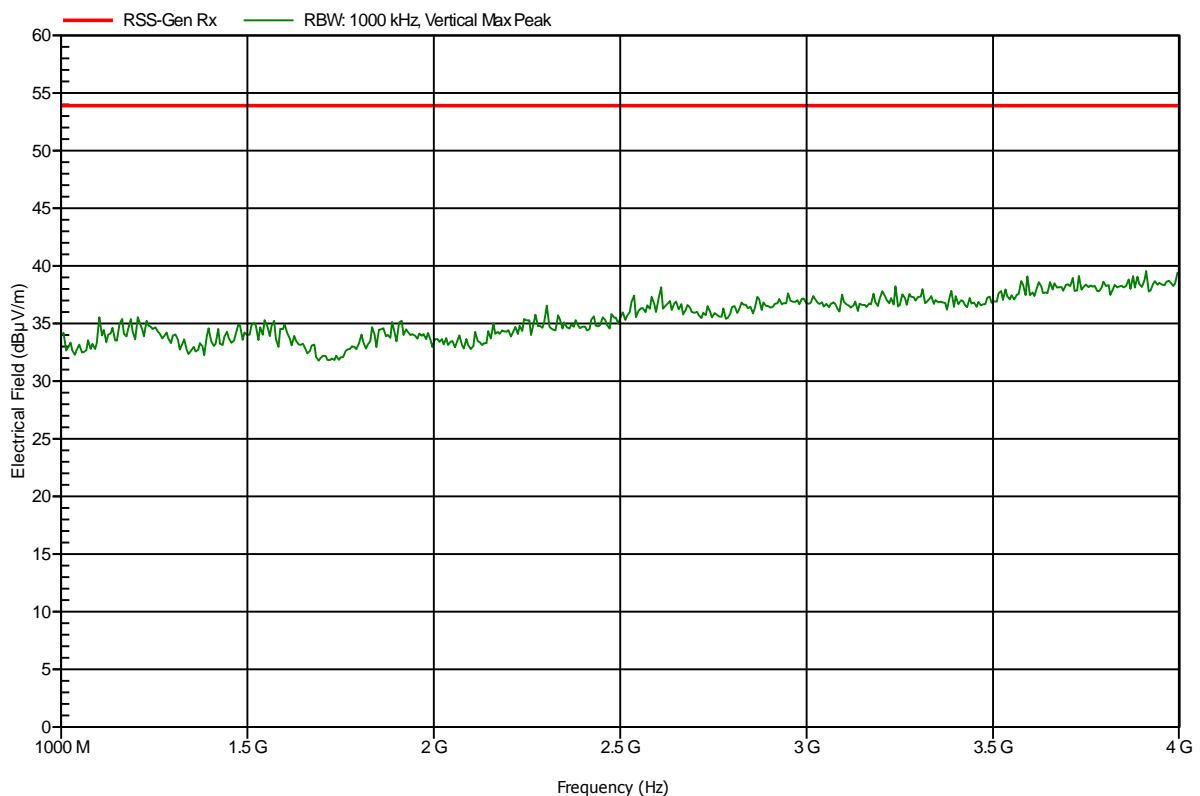
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

Index 3



Test Report No.: G0M-1310-3347-TFC247Z-V01

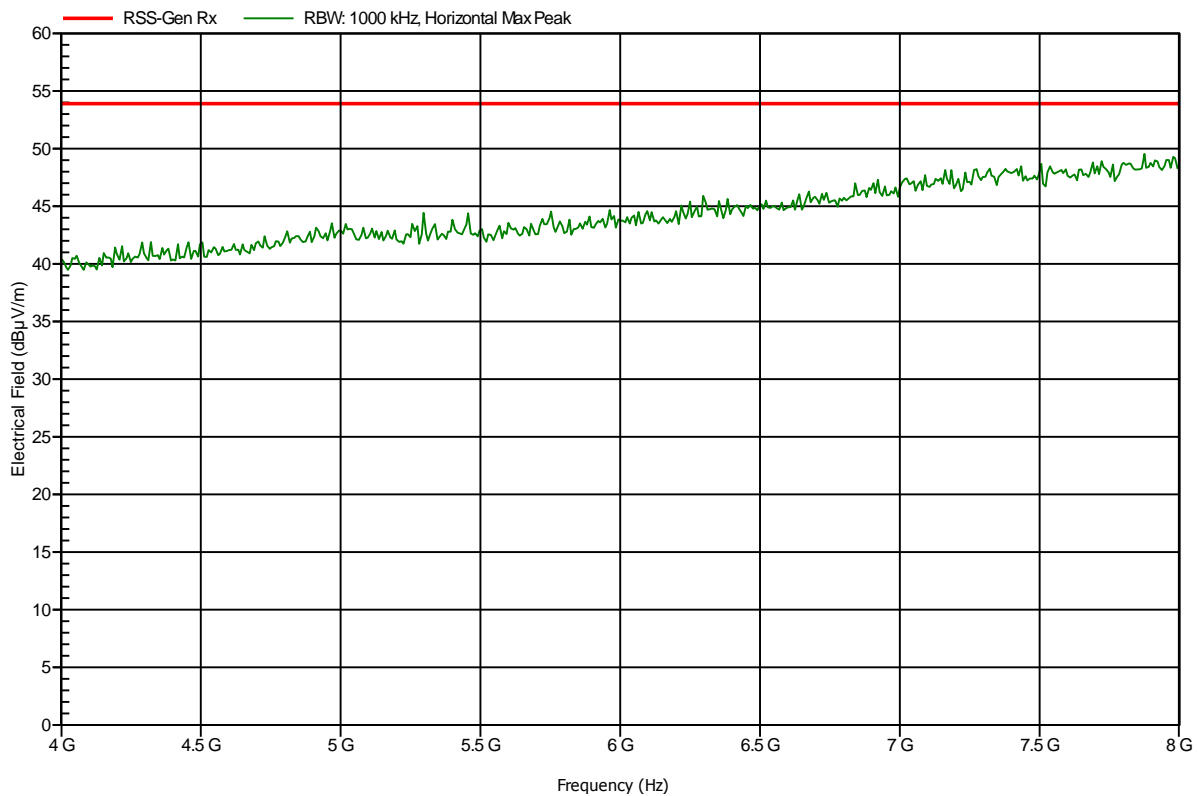
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

Index 2



Spurious emissions according to RSS-GEN

Project number: G0M-1310-3347

Manufacturer: Saxonar GmbH
 EUT Name: powermeter for bicycle
 Model: power2max, typ: p2mFSA24110-4
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.0 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: RX; 2457 MHz
 Test Date: 2013-12-11
 Note:

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