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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-1611-6033-TFC247DT-V02
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Applicant	Artis GmbH
Address	Buchenring 40 21272 Egestorf GERMANY
Test Specification	According to FCC/IC rules
Standard	47 CFR Part 15C RSS-247, Issue 1, 2015-05
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	4K-WISY-Rotor
Model(s)	4K-WISY-Rotor
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	A00475A
Software Version(s)	42.2.1.7
FCC-ID	2AKIJ-4KROTOR
IC	22197-4KROTOR
Test Result	**PASSED**

Possibe test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2017-02-02	
Date (s) of performance of tests	2017-02-02 – 2017-02-09	
Report:		
Compiled by	Wilfried Treffke	
Tested by (+ signature) (Responsible for Test)	Wilfried Treffke	W. Treffke .....
Approved by (+ signature) (Deputy Head of Lab)	Toralf Jahn	T. J .....
Date of Issue	2017-03-15	
Total number of pages	92	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2017-02-14	Initial Release	
02	2017-03-15	Software version corrected.	W. Treffke

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

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	4K-WISY-Rotor	
Model	4K-WISY-Rotor	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	11884 / 11883	
Hardware Version(s)	A00475A	
Software Version(s)	42.2.1.7	
FCC-ID	2AKIJ-4KROTOR	
IC	22197-4KROTOR	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400 - 2483.5 MHz	
Radio technology	Digital Modulation	
Modulation	GFSK	
Number of antenna ports	1	
Antenna	Type	Monopol
	Model	CU-Wire, 31 mm
	Manufacturer	ARTIS GmbH
	Gain	2.0 dBi
Supply Voltage 1	V_{NOM}	3.7 VDC (battery)
Supply Voltage 2	V_{NOM}	5.0 VDC (USB, charging)
Operating Temperature	T_{NOM}	25 °C
AC/DC-Adaptor	Model	FW7710/US/0.7
	Vendor	Friwo GeräteBau GmbH
	Input	100 - 240 V AC 50/60 Hz
	Output	5.0
Manufacturer	Artis GmbH Buchenring 40 ManufacturerPOCode Egestorf ManufacturerCountry	

1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
none				
Description:				
AE	Auxillary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
Comment:				

1.5 Test mode duty cycle

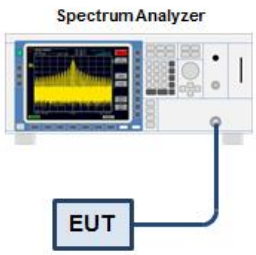
1.5.1 Information

Test Information	
Measurement Method	ANSI C63.10 11.6

1.5.2 Requirements

Requirements	
Duty cycle	Duty cycle correction
≥ 98 %	No correction required
< 98 %	Correction required (10 x Log_{10}(1/DC)

1.5.3 Setup

Test Setup


1.5.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

1.5.5 Procedure

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

1.5.6 Results

Duty Cycle Results		
Mode	Duty Cycle	Correction Factor [dB]
Transmit-PS / Transmit-BAT	100	0

1.6 Test Modes

Mode	Description	
Transmit-PS	General Conditions:	EUT powered by laboratory power supply
	Radio Conditions:	Mode = Transmit Modulation = GFSK Duty cycle = 100 %
Transmit-Bat	General Conditions:	EUT powered by fully charged battery
	Radio Conditions:	Mode = Transmit Modulation = GFSK Duty cycle = 100 %
Receive-PS	General Conditions:	EUT powered by laboratory power supply
	Radio Conditions:	Mode = Receive Modulation = GFSK
Receive-Bat	General Conditions:	EUT powered by fully charged battery
	Radio Conditions:	Mode = Receive Modulation = GFSK
Comment:		

1.7 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	1	2402
F2	Tx / Rx	2	2436
F3	Tx / Rx	3	2472

1.8 Sample emission level calculation

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

Reading:

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

A.F.:

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

Reading on Analyzer (dBµV) + A.F. (dB) = Net field strength (dBµV/m)

Net:

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

Limit:

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

Limit (dBµV/m) = 20*log (µV/m)

Margin:

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

Example only:

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

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-210				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 6.6	Occupied Bandwidth	ANSI C63.10	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247 § 5.2	6 dB Bandwidth	ANSI C63.10	PASS	
FCC § 15.247(b)(3) ISED RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	PASS	
FCC § 15.247(e) ISED RSS-247 § 5.2	Power spectral density	ANSI C63.10	PASS	
FCC § 15.207 ISED RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.10	N/R	No powered (directly or indirectly) via AC-Mains
FCC § 15.247(d) ISED RSS-247 § 5.5	Band edge compliance	ANSI C63.10	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-247 § 5.5	Transmitter radiated spurious emissions	ANSI C63.10	PASS	
ISED RSS-247 § 3.1	Receiver radiated spurious emissions	ANSI C63.10	PASS	
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

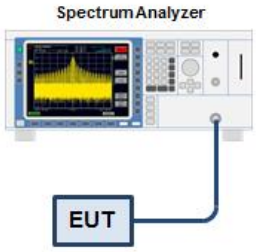
3.1.1 Information

Test Information	
Reference	ISED RSS-Gen 6.6
Measurement Method	ANSI C63.10 6.9.3

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup

Test Setup


3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

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 1 % of the bandwidth 4. The occupied bandwidth is measured with the build-in analyzer function

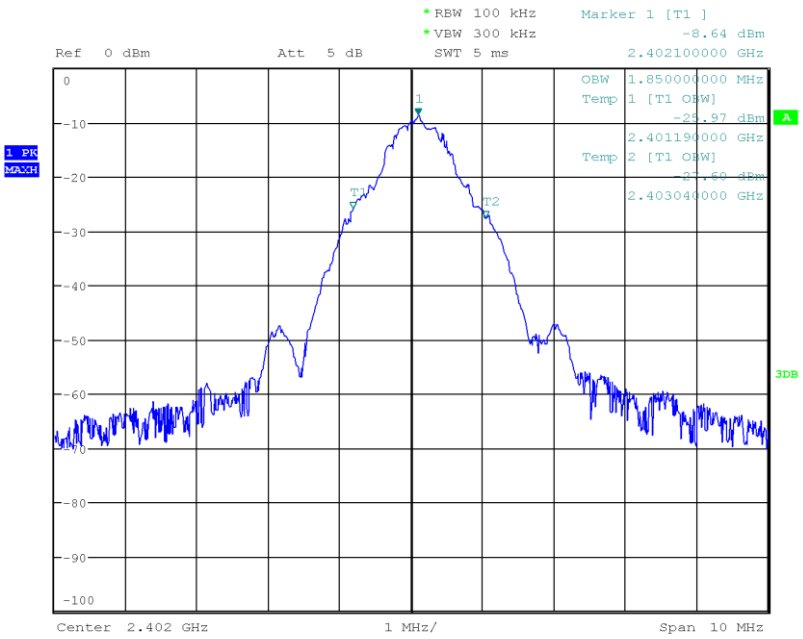
3.1.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
Transmit	2402	1.850
Transmit	2436	1.840
Transmit	2472	1.830

Occupied bandwidth – 2402 MHz

Occupied Bandwidth

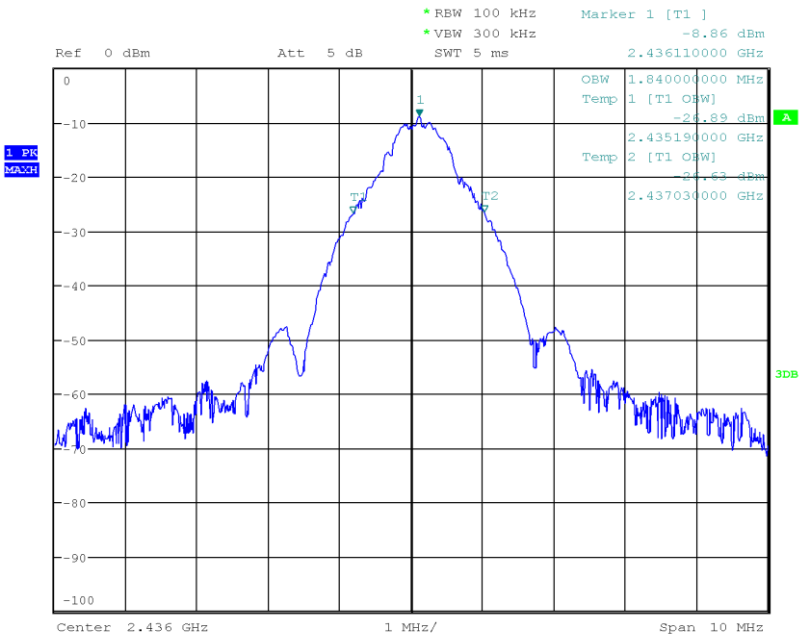
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 2402.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Occupied Bandwidth [MHz]:	1.850



Occupied bandwidth – 2436 MHz

Occupied Bandwidth

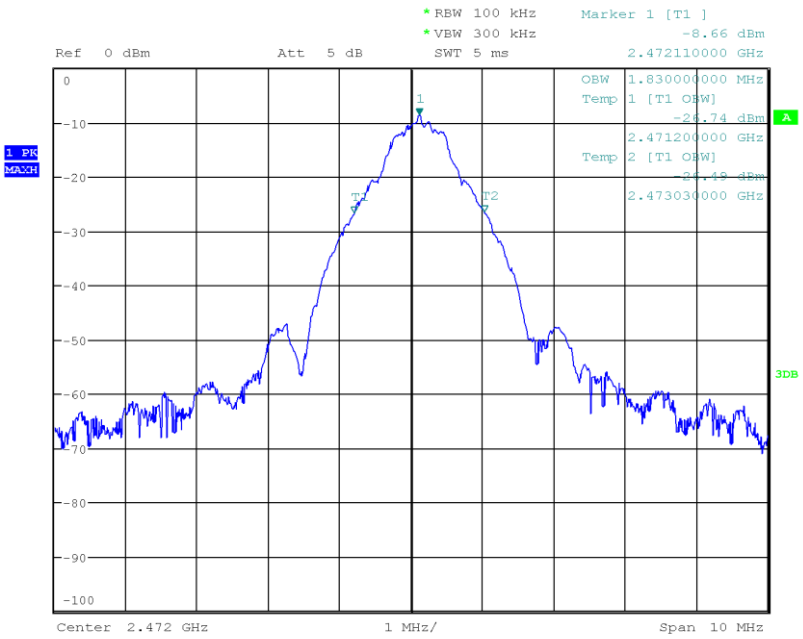
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 2436.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Occupied Bandwidth [MHz]:	1.840



Occupied bandwidth – 2472 MHz

Occupied Bandwidth

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	GFSK, Channel: 2472.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Occupied Bandwidth [MHz]:	1.830



3.2 Test Conditions and Results - 6 dB bandwidth

3.2.1 Information

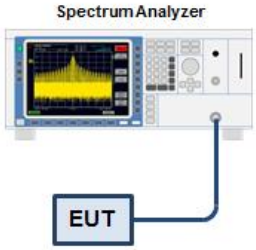
Test Information	
Reference	FCC 15.247(a)(2) / ISED RSS-247 5.2
Measurement Method	ANSI C63.10 11.8

3.2.2 Limits

Limits
≥ 500kHz

3.2.3 Setup

Test Setup



3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

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

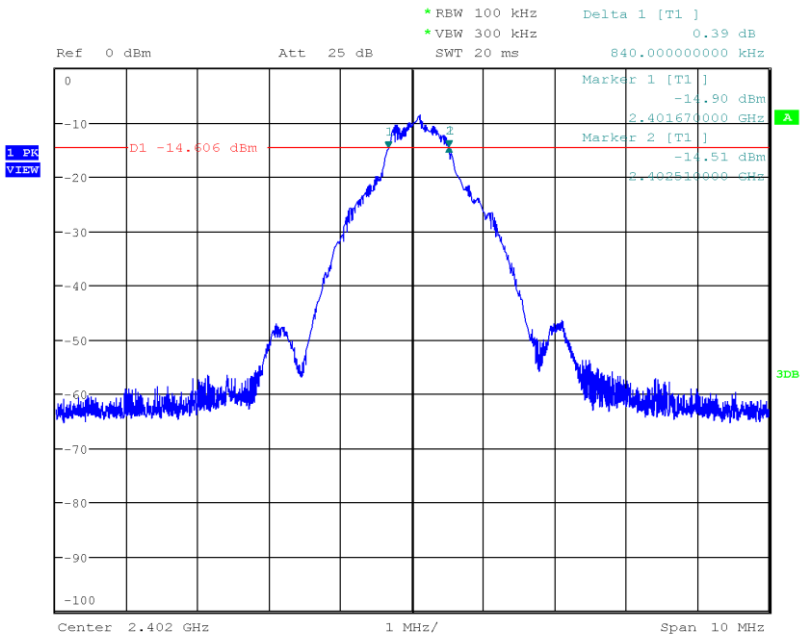
3.2.6 Results

Test Results				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
Transmit	2402	840	500	PASS
Transmit	2436	815	500	PASS
Transmit	2472	847	500	PASS

6 dB bandwidth – 2402 MHz

DTS (6 dB) Bandwidth

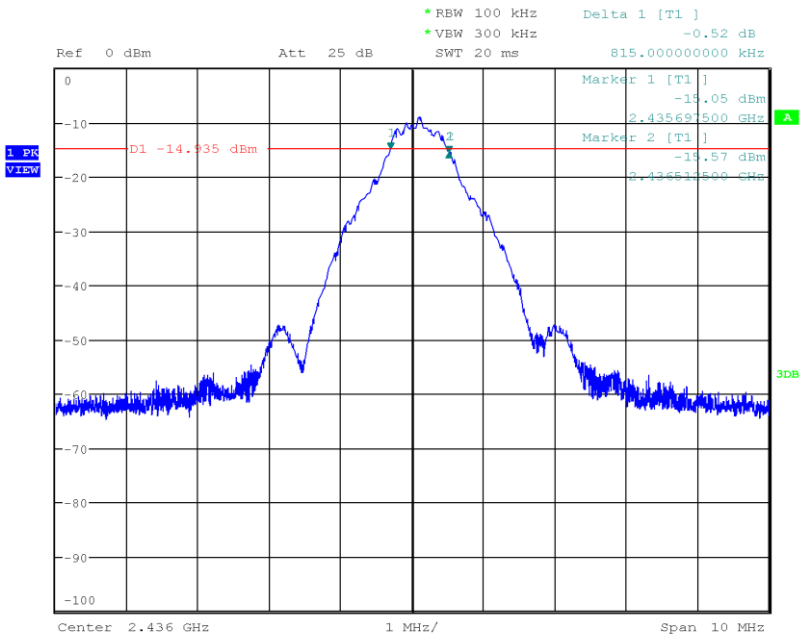
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.8.1 Option 1
Operational Mode:	GFSK, Channel: 2402.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Lower Frequency [MHz]:	2401.670
Upper Frequency [MHz]:	2402.510
6 dB Bandwidth [kHz]:	840



6 dB bandwidth – 2436 MHz

DTS (6 dB) Bandwidth

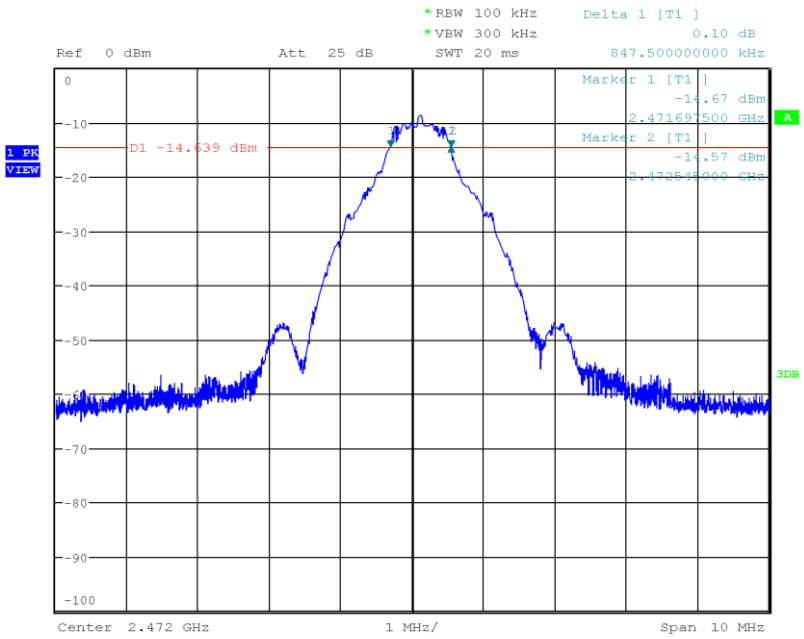
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.8.1 Option 1
Operational Mode:	GFSK, Channel: 2436.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Lower Frequency [MHz]:	2435.698
Upper Frequency [MHz]:	2436.512
6 dB Bandwidth [kHz]:	815



6 dB bandwidth – 2472 MHz

DTS (6 dB) Bandwidth

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.8.1 Option 1
Operational Mode:	GFSK, Channel: 2472.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Lower Frequency [MHz]:	2471.698
Upper Frequency [MHz]:	2472.545
6 dB Bandwidth [kHz]:	847



Date: 3.FEB.2017 14:07:15

3.3 Test Conditions and Results - Maximum peak conducted output power

3.3.1 Information

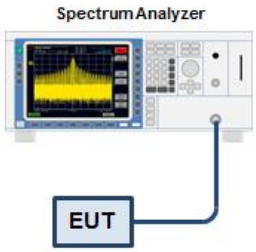
Test Information	
Reference	FCC 15.247(b)(1) / ISED RSS-247 5.4
Measurement Method	ANSI C63.10 11.9.1

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

Test Setup



3.3.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

3.3.5 Procedure

Test Procedure

1. EUT set to test hopping mode (Communication tester is used if needed)
2. Analyzer resolution bandwidth is set ≥ 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	1.00	0.00126	1.0	PASS
2436	0.60	0.00115	1.0	PASS
2472	0.92	0.00124	1.0	PASS

3.4 Test Conditions and Results - Power spectral density

3.4.1 Information

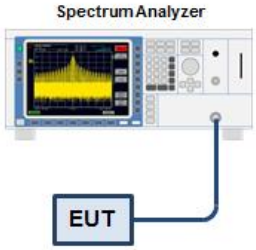
Test Information	
Reference	FCC 15.247(e) / ISED RSS-247 5.2
Measurement Method	ANSI C63.10 11.10.2, 14.3.2

3.4.2 Limits

Limits
8 dBm / 3 kHz

3.4.3 Setup

Test Setup



3.4.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

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 ≥ 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

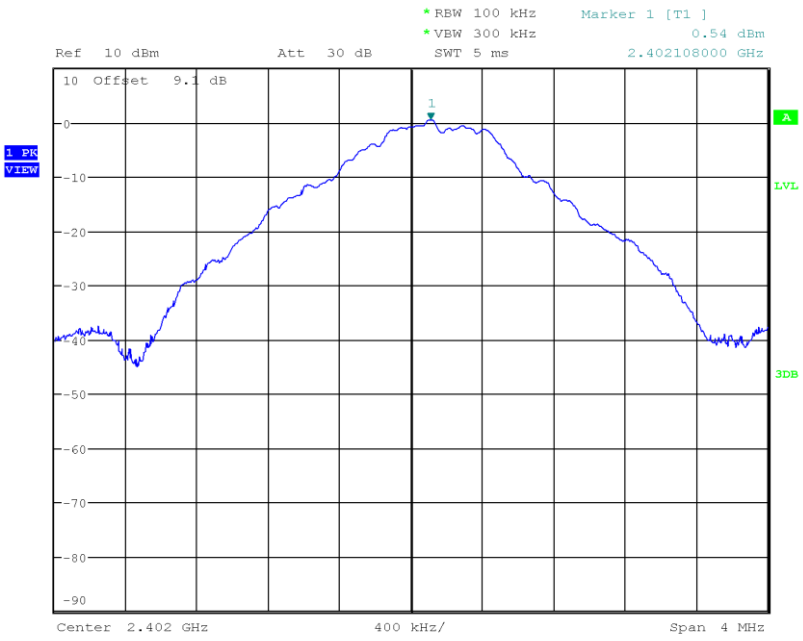
3.4.6 Results

Test Results			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
2402	0.544	8.0	PASS
2436	0.134	8.0	PASS
2472	0.407	8.0	PASS
RBW = 100 kHz			

PSD conducted – 2402 MHz

Peak Power Spectral Density

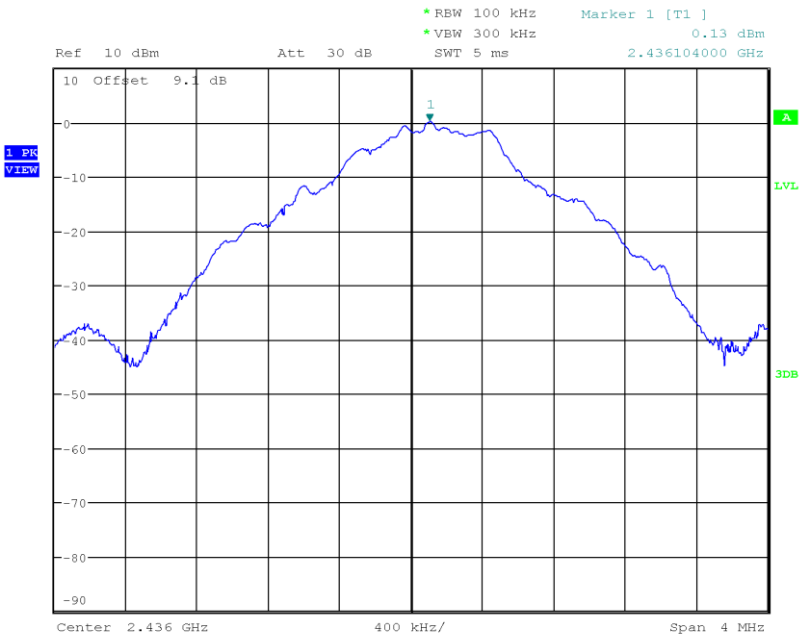
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.10.2
Operational Mode:	GFSK, Channel: 2402.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Peak Frequency [MHz]:	2402.108
Spectral Density [dBm/RBW]:	0.544
Resolution Bandwidth [kHz]:	100 kHz



PSD conducted – 2436 MHz

Peak Power Spectral Density

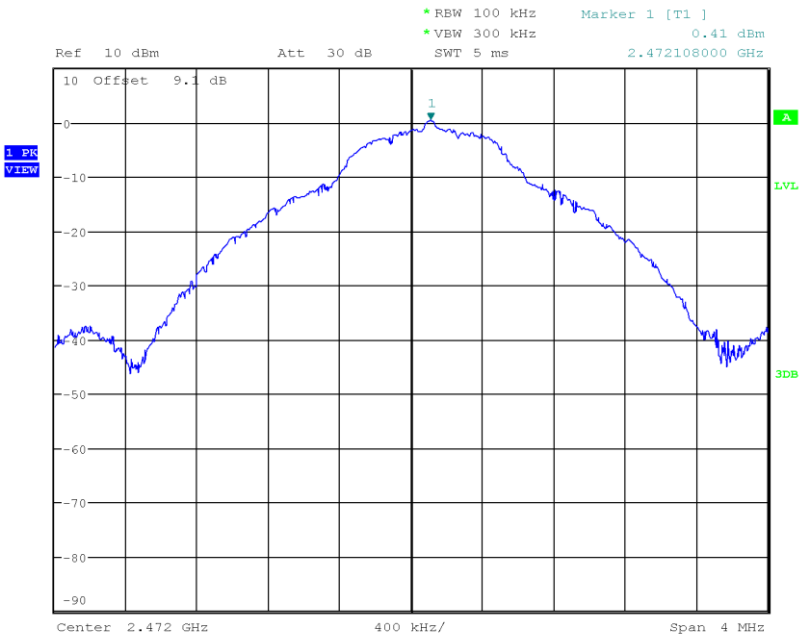
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.10.2
Operational Mode:	GFSK, Channel: 2436.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Peak Frequency [MHz]:	2436.104
Spectral Density [dBm/RBW]:	0.134
Resolution Bandwidth [kHz]:	100 kHz



PSD conducted – 2472 MHz

Peak Power Spectral Density

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.10.2
Operational Mode:	GFSK, Channel: 2472.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-03
Peak Frequency [MHz]:	2472.108
Spectral Density [dBm/RBW]:	0.407
Resolution Bandwidth [kHz]:	100 kHz



3.5 Test Conditions and Results - Band-edge compliance

3.5.1 Information

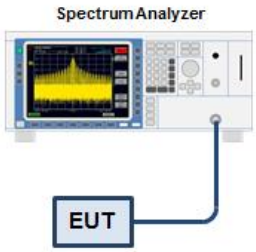
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 11.11

3.5.2 Limits

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

3.5.3 Setup

Test Setup



3.5.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

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

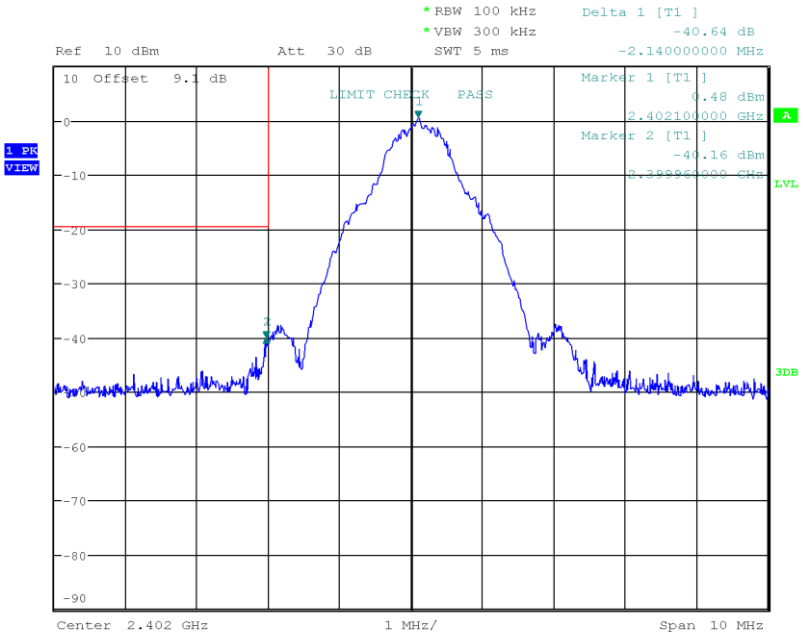
3.5.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
Transmit-PS	2402	-40.64	-20	PASS
Transmit-PS	2472	-45.31	-20	PASS

Band-edge compliance - 2402 MHz

Band-edge Compliance

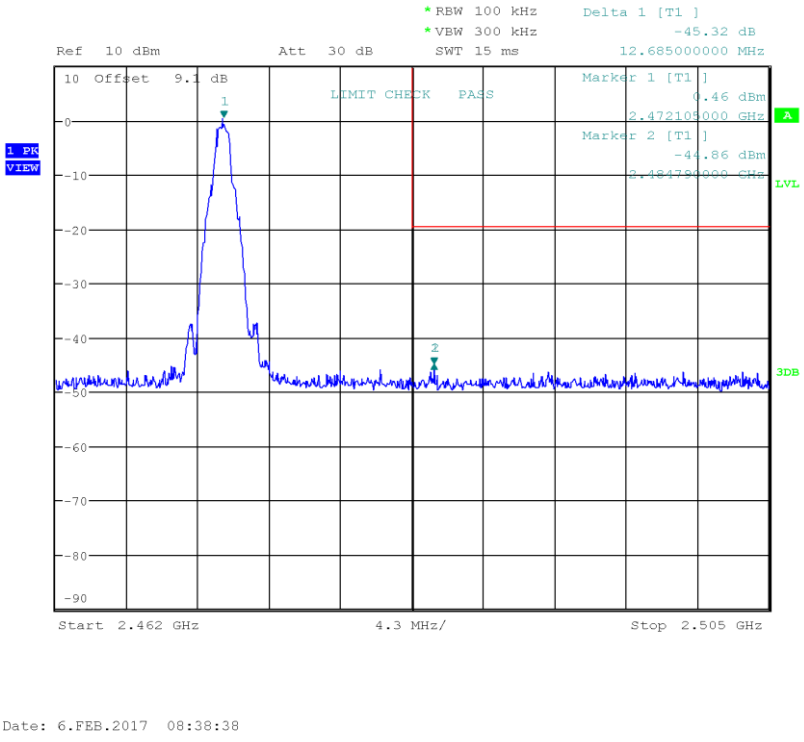
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	GFSK, Channel: 2402.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-06
Band-edge	Lower
In-band Frequency [MHz]:	2402.1
Max. in-band Level [dBm/100 kHz]:	0.483
Out-of-band Frequency [MHz]:	2399.96
Max. out-of-band Level [dBm/100 kHz]:	-40.158
Attenuation [dB]:	-40.64



Band-edge compliance - 2472 MHz

Band-edge Compliance

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	GFSK, Channel: 11, 2472 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-06
Band-edge	Upper
In-band Frequency [MHz]:	2472.105
Max. in-band Level [dBm/100 kHz]:	0.457
Out-of-band Frequency [MHz]:	2484.79
Max. out-of-band Level [dBm/100 kHz]:	-44.858
Attenuation [dB]:	-45.31



3.6 Test Conditions and Results - Conducted spurious emissions

3.6.1 Information

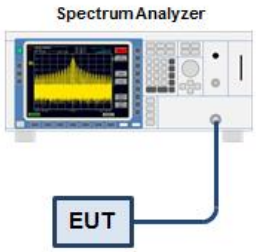
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 11.11

3.6.2 Limits

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

3.6.3 Setup

Test Setup



3.6.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2016-03	2017-03

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

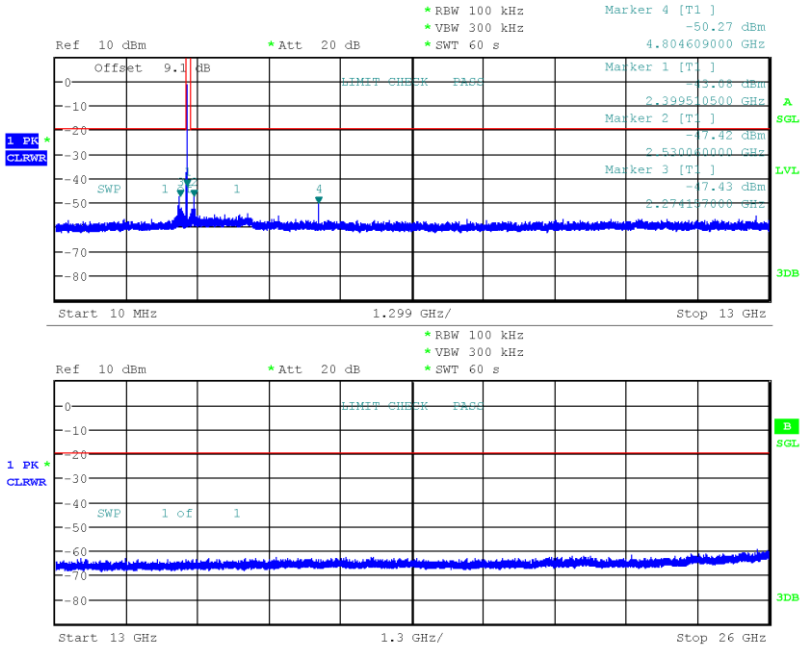
3.6.6 Results

Test Results		
Mode	Channel [MHz]	Verdict
Transmit-PS	2402	PASS
Transmit-PS	2436	PASS
Transmit-PS	2472	PASS

CSE - 2402 MHz

Conducted Spurious Emissions

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	GFSK, Channel: 2402.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-07
Max. in-band Frequency [MHz]:	2402.1
Max. in-band Level [dBm/100 kHz]:	0.6
Out-of-band Limit [dBm/100 kHz]:	-19.4

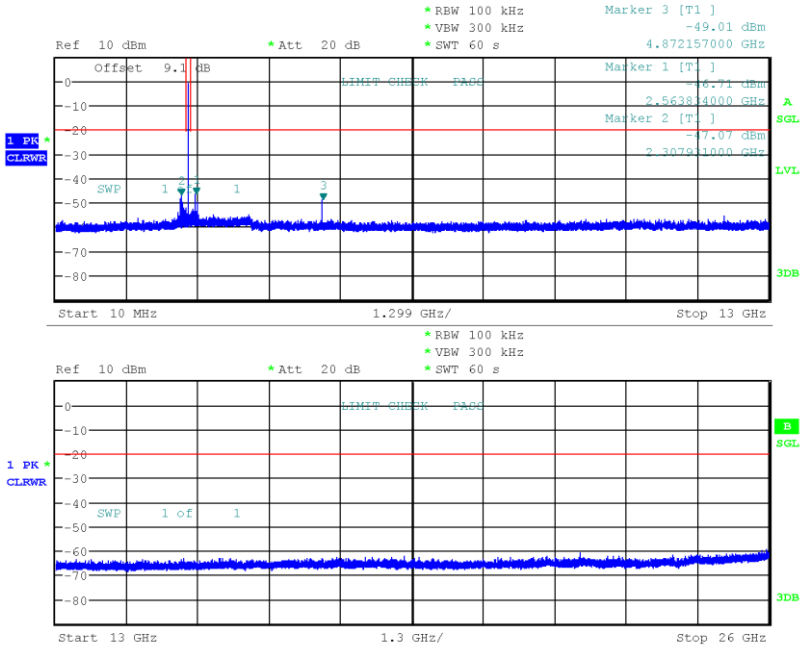


Date: 7.FEB.2017 15:45:32

CSE - 2436 MHz

Conducted Spurious Emissions

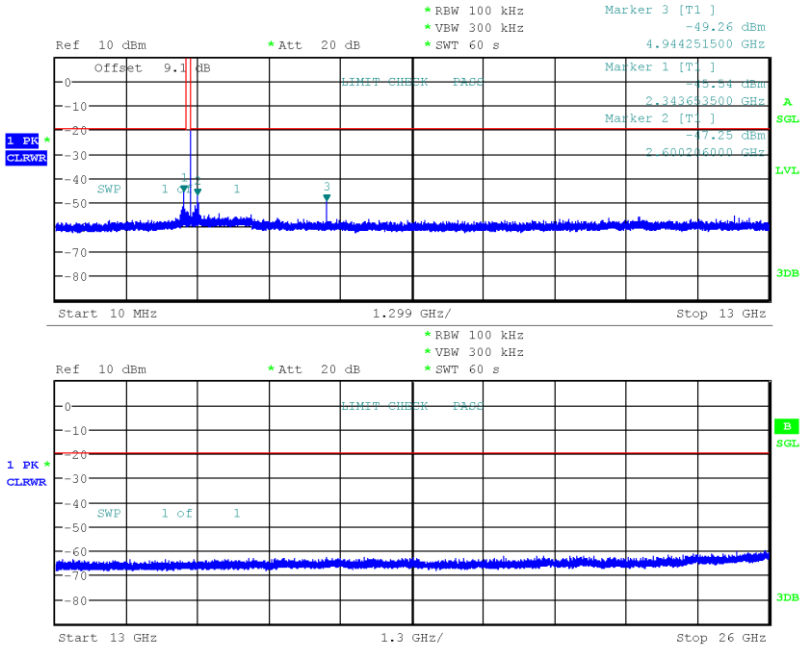
Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	GFSK, Channel: 2436.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-07
Max. in-band Frequency [MHz]:	2436.1
Max. in-band Level [dBm/100 kHz]:	0.1
Out-of-band Limit [dBm/100 kHz]:	-19.9



CSE - 2472 MHz

Conducted Spurious Emissions

Project Number:	G0M-1611-6033
Applicant	Artis GmbH
Model Description	4K-WISY-Rotor
Model:	4K-WISY-Rotor
Test Sample ID:	11884
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	GFSK, Channel: 2472.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	W. Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-02-07
Max. in-band Frequency [MHz]:	2472.1
Max. in-band Level [dBm/100 kHz]:	0.3
Out-of-band Limit [dBm/100 kHz]:	-19.7



Date: 7.FEB.2017 15:55:16

3.7 Test Conditions and Results - Transmitter radiated emissions

3.7.1 Information

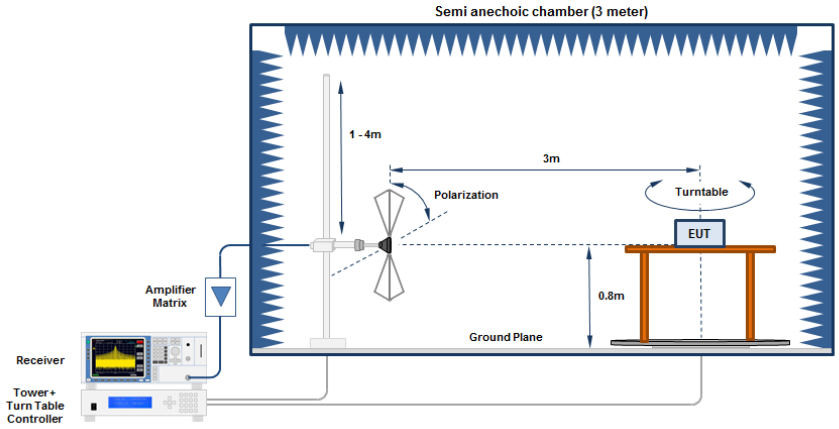
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12

3.7.2 Limits

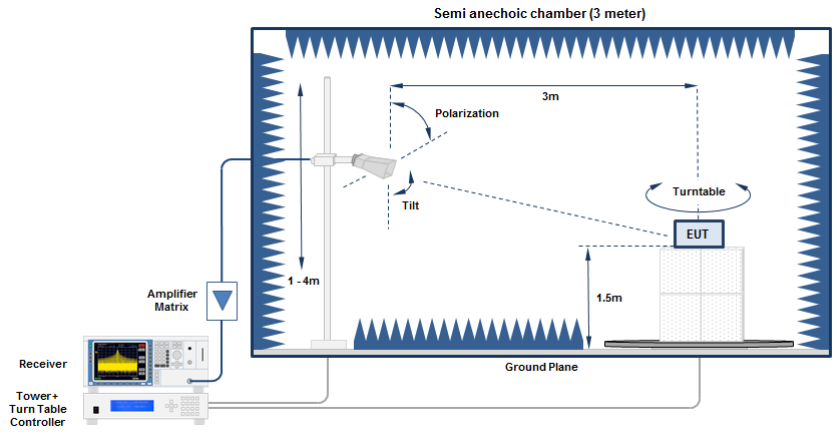
Limits		
Frequency [MHz]	Field strength [dBµV/m]	Measurement distance [m]
0.009 - 0.490	2400/F[kHz]	300
0.490 - 1.705	24000/F[kHz]	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
> 960	500	3

3.7.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz



3.7.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
Biconical Antenna	R&S	HK 116	EF00012	2016-05	2019-05
LPD Antenna	R&S	HL 223	EF00187	2016-05	2019-05
Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
LPD Antenna	R&S	HL 025	EF00327	2015-10	2018-10

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	4804	48.49	pk	ver	74.00	-25.51
2402	4804	45.43	RMS	ver	54.00	-08.57
2402	4804	52.29	pk	hor	74.00	-21.71
2402	4804	49.83	RMS	hor	54.00	-04.17
2402	12009	54.79	pk	hor	74.00	-19.21
2402	12009	50.34	RMS	hor	54.00	-03.66
2436	4871	54.13	pk	hor	74.00	-19.87
2436	4871	51.62	RMS	hor	54.00	-02.38
2436	4872	50.12	pk	ver	74.00	-23.88
2436	4872	47.24	RMS	ver	54.00	-06.76
2436	12179	48.80	pk	hor	74.00	-25.20
2436	12179	41.02	RMS	hor	54.00	-12.98
2472	4944	49.98	pk	ver	74.00	-24.02
2472	4944	46.78	RMS	ver	54.00	-07.22
2472	4945	53.61	pk	hor	74.00	-20.39
2472	4945	50.54	RMS	hor	54.00	-03.46

3.8 Test Conditions and Results - Receiver radiated emissions

3.8.1 Information

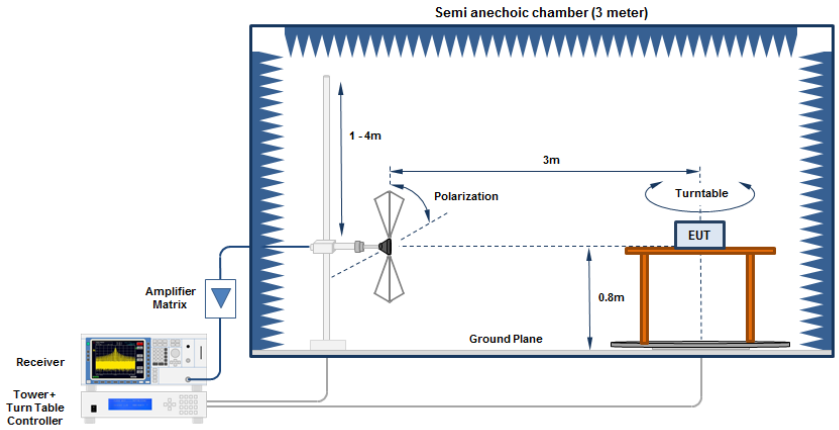
Test Information	
Reference	ISED RSS-247 3.1
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12

3.8.2 Limits

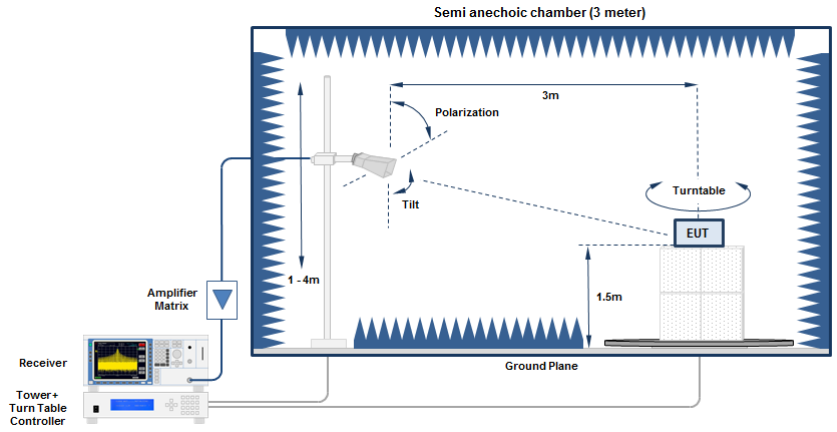
Limits		
Frequency [MHz]	Field strength [dBµV/m]	Measurement distance [m]
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
> 960	500	3

3.8.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz



3.8.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
Biconical Antenna	R&S	HK 116	EF00012	2016-05	2019-05
LPD Antenna	R&S	HL 223	EF00187	2016-05	2019-05
Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
LPD Antenna	R&S	HL 025	EF00327	2015-10	2018-10

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]
2436		*				
Note: * no significant spurious emission						

ANNEX A Transmitter sprurious emissions

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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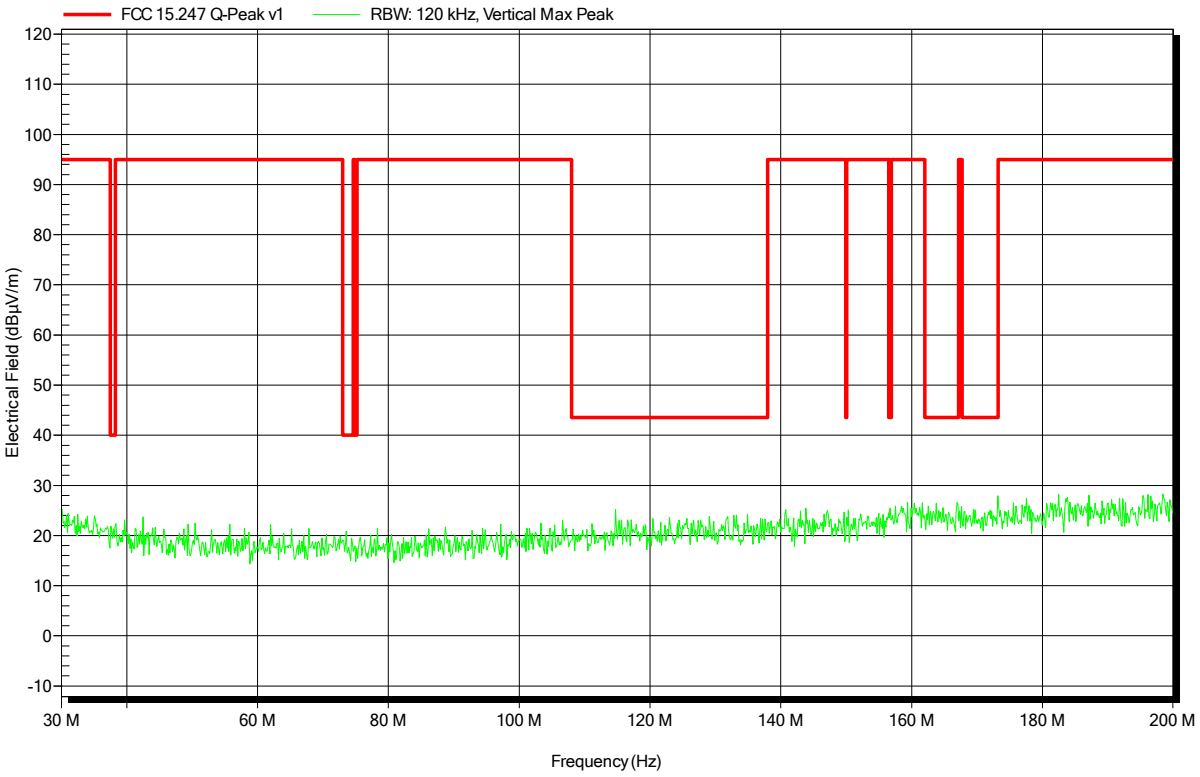

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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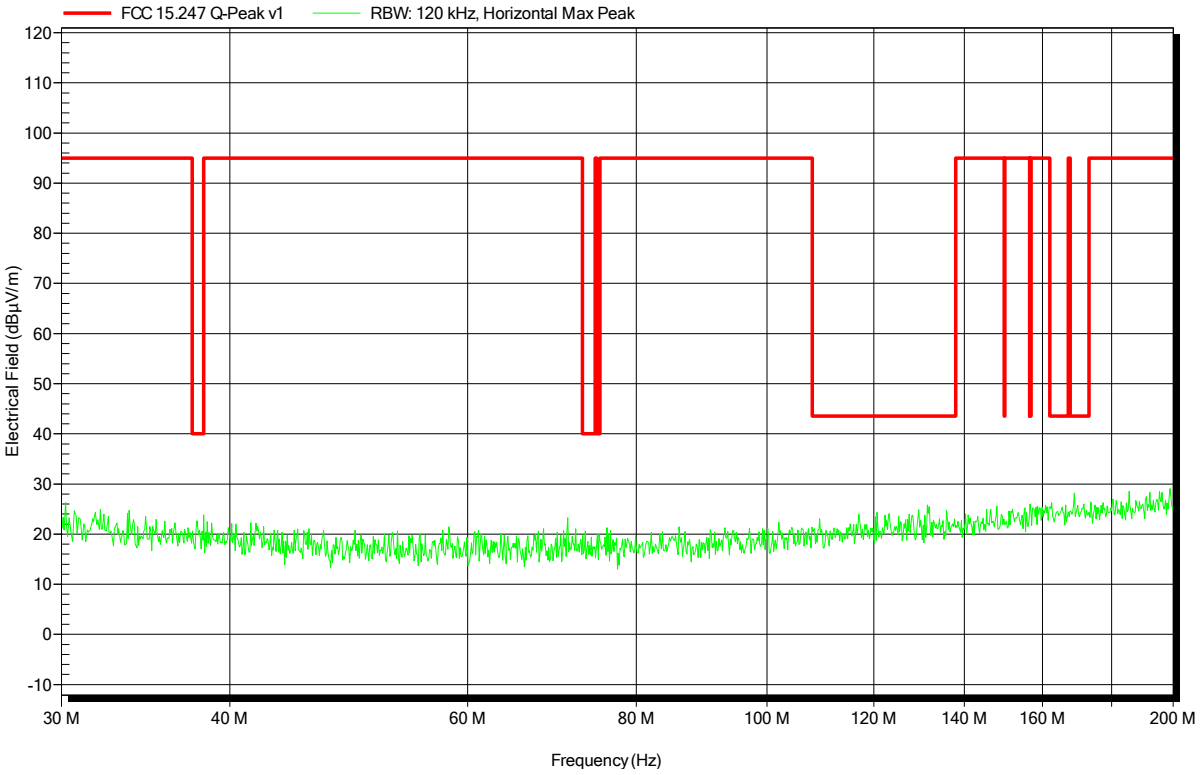

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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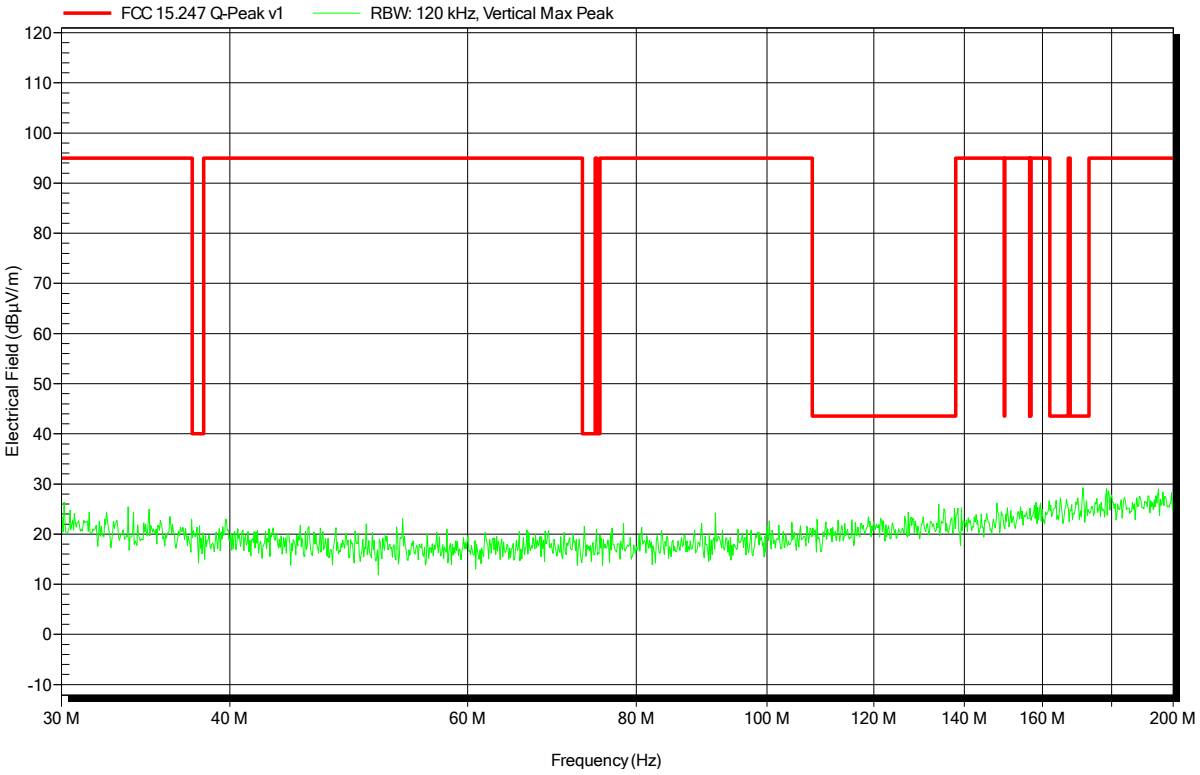

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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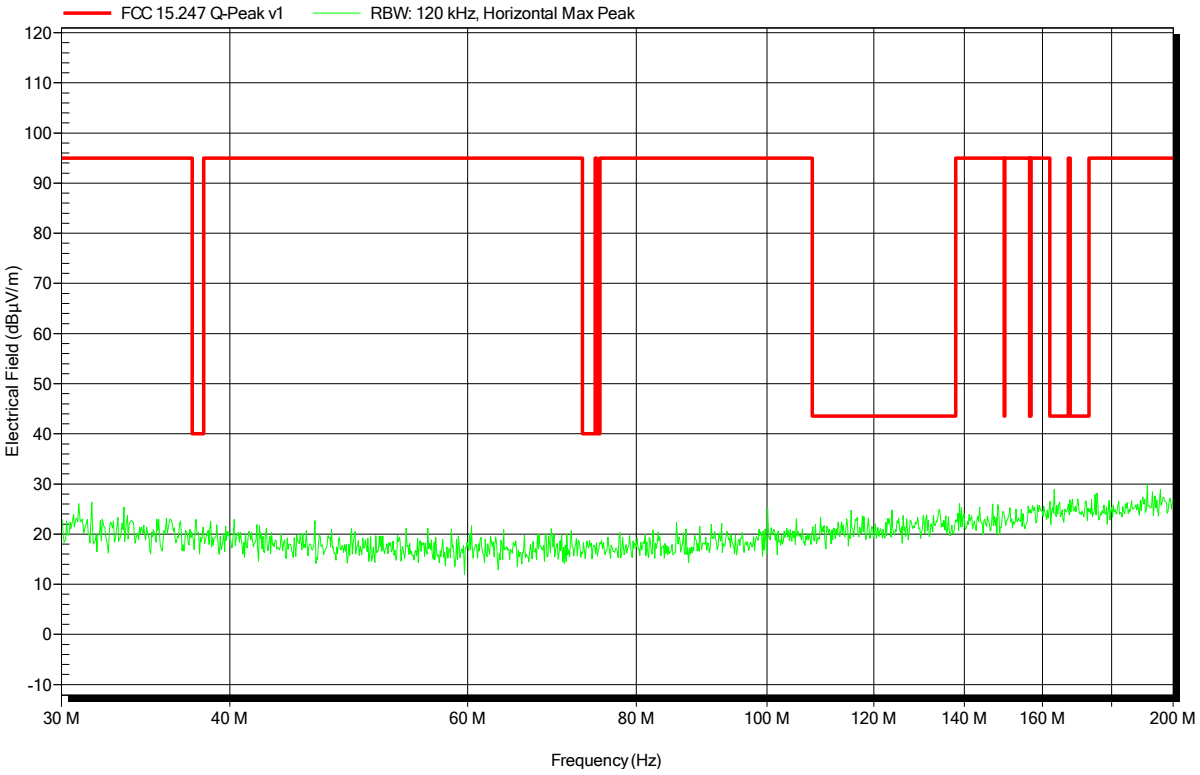

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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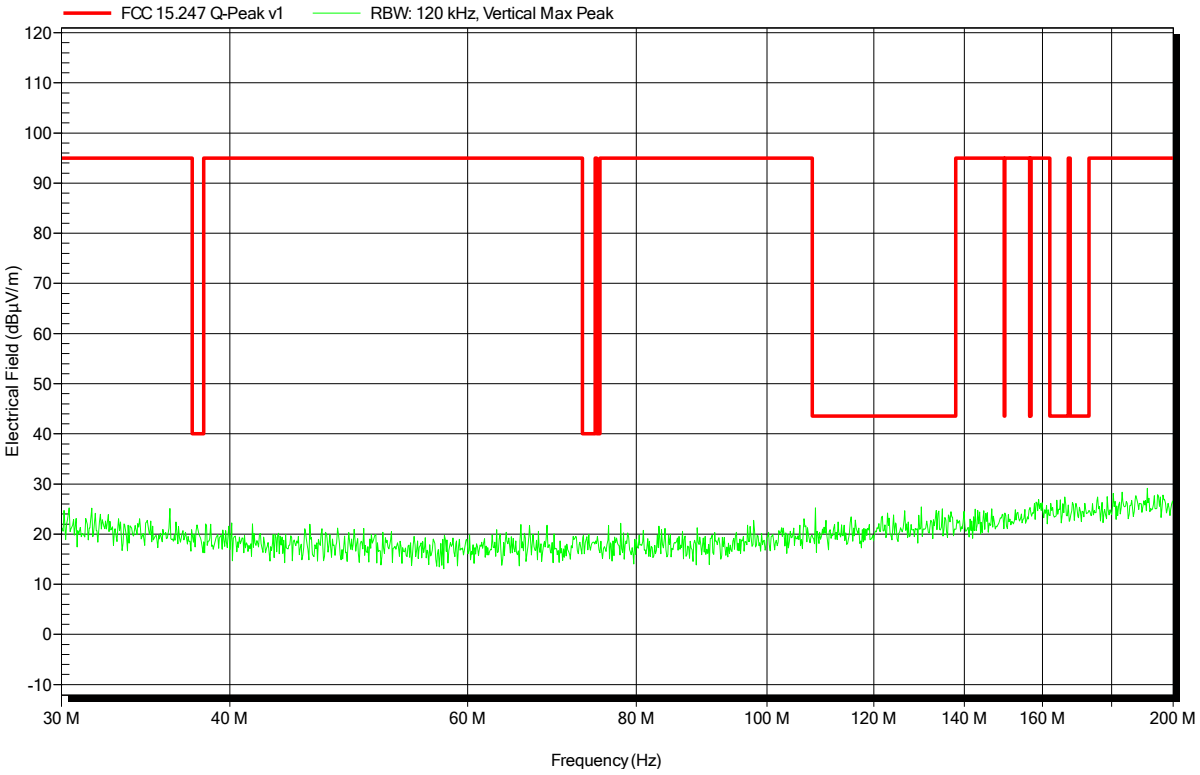

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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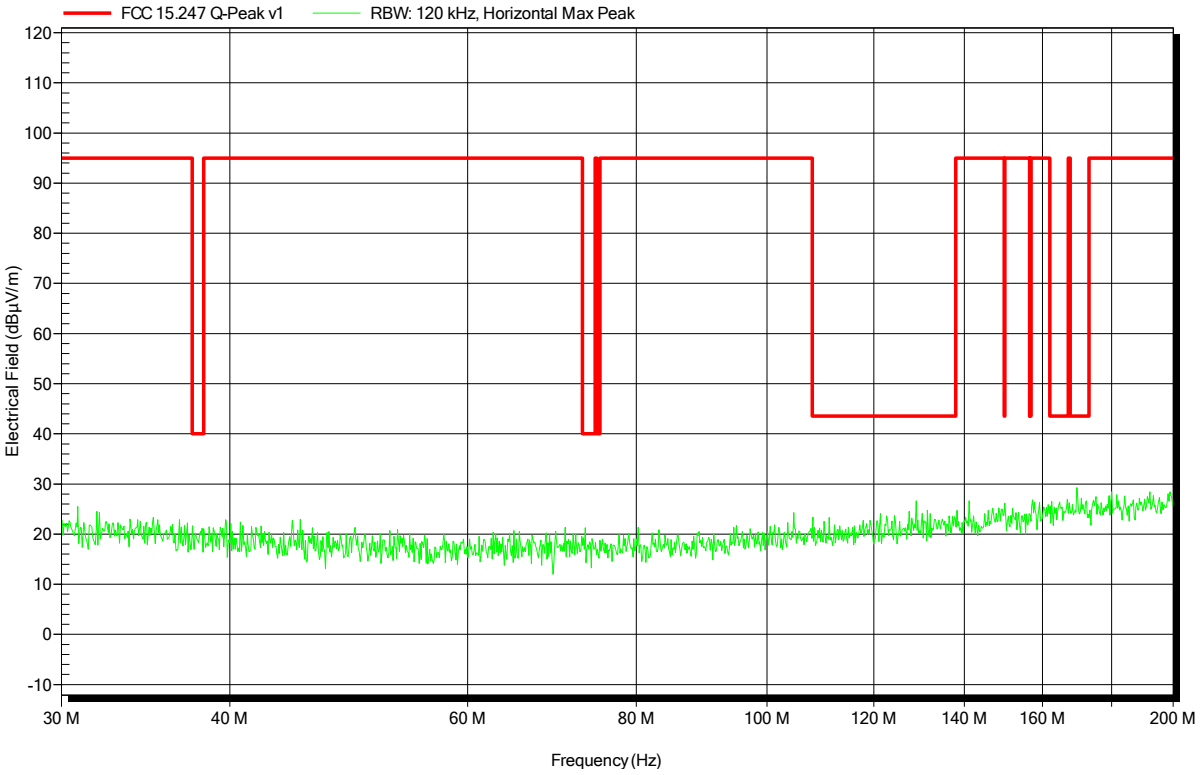

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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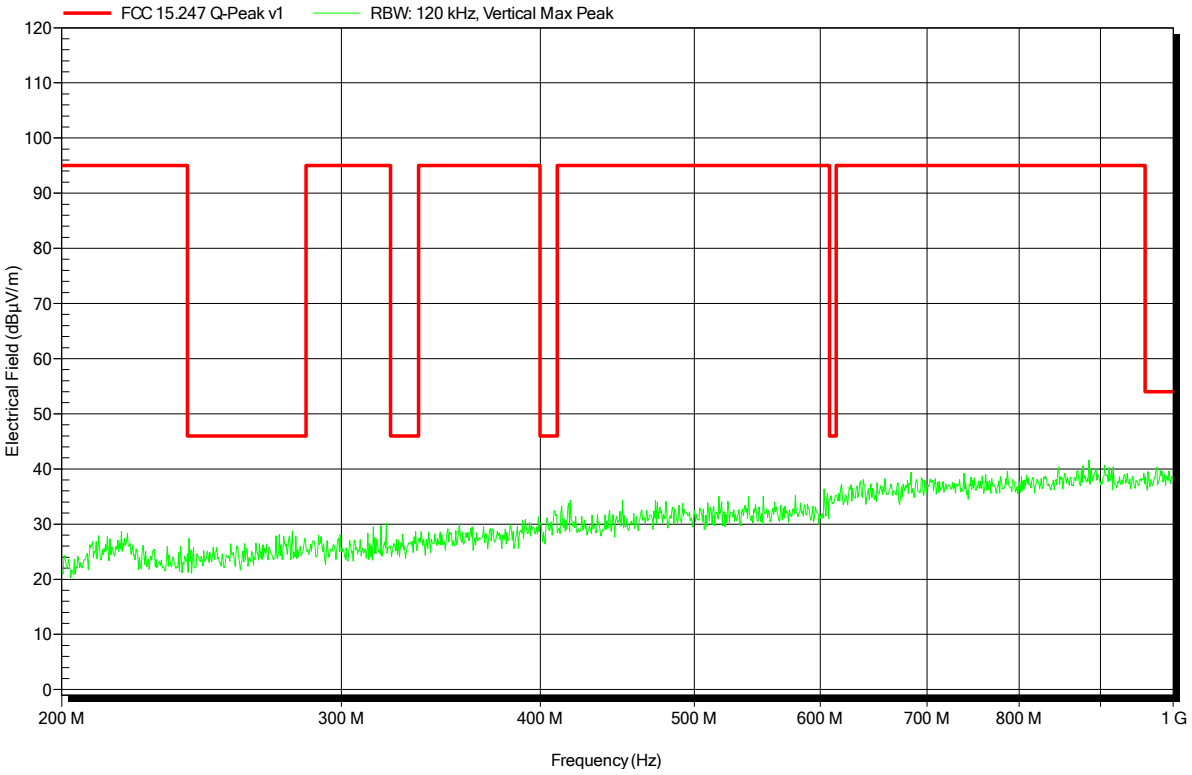

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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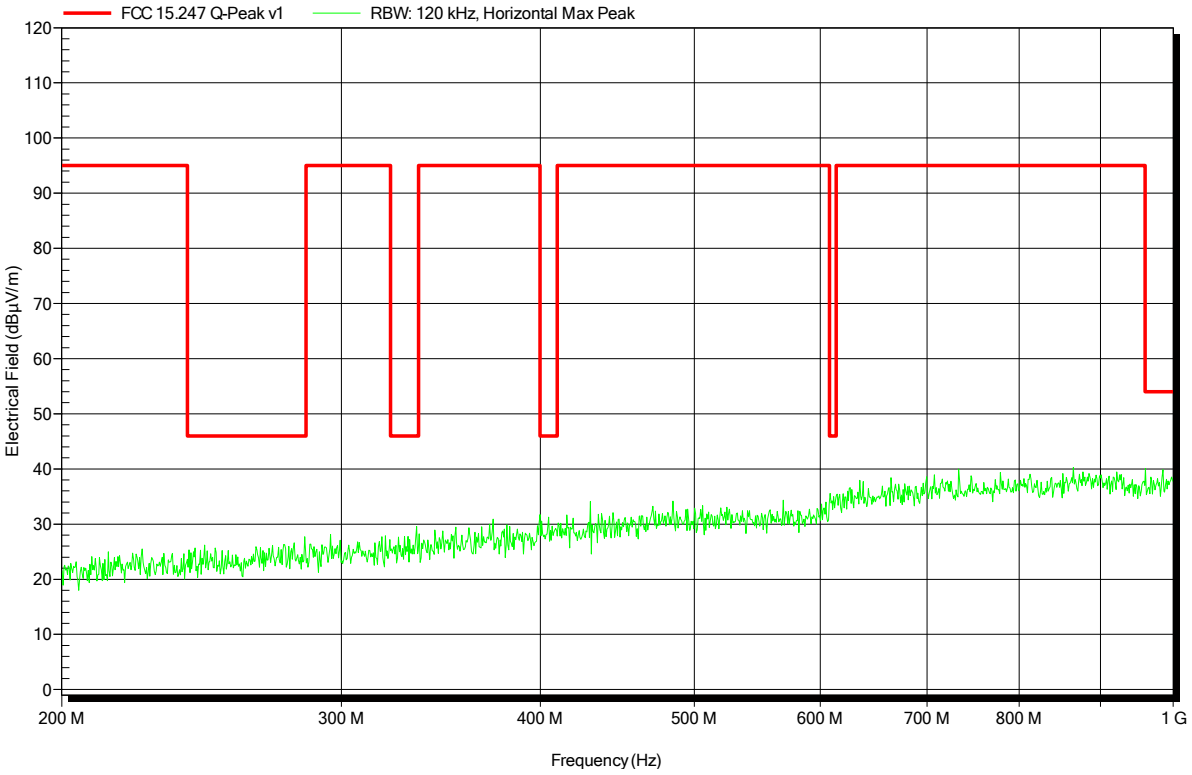

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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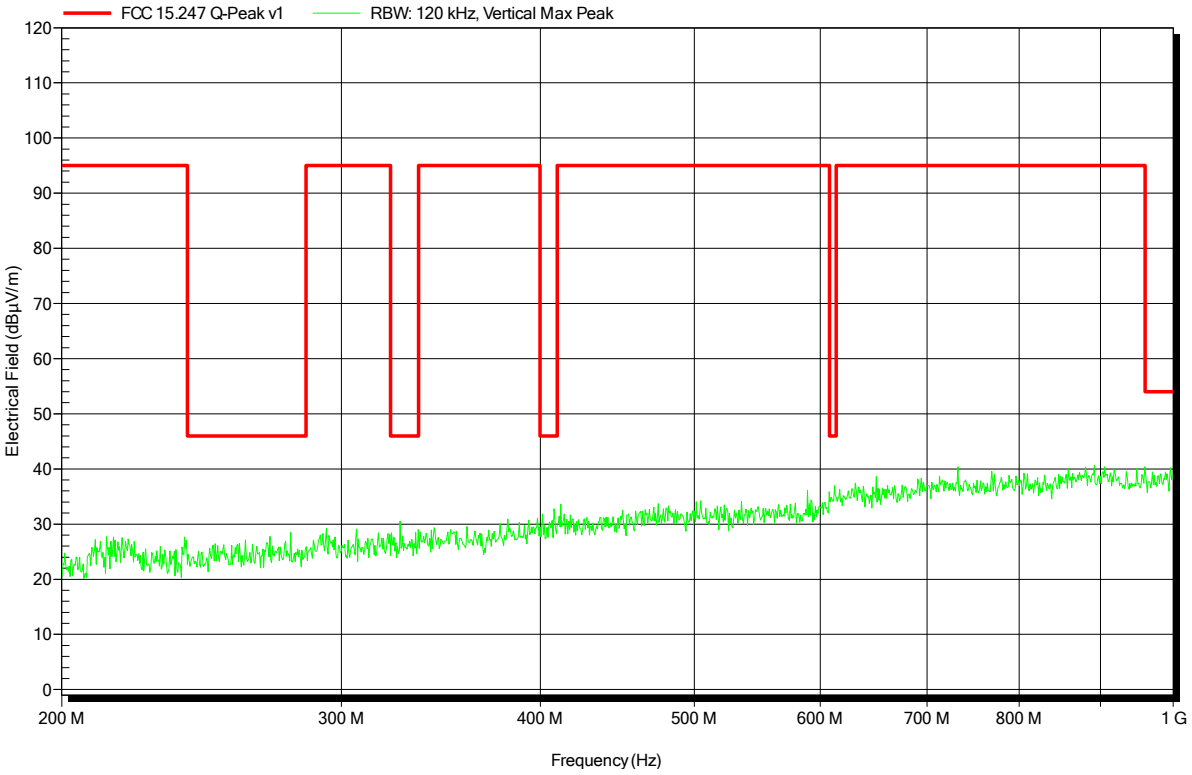

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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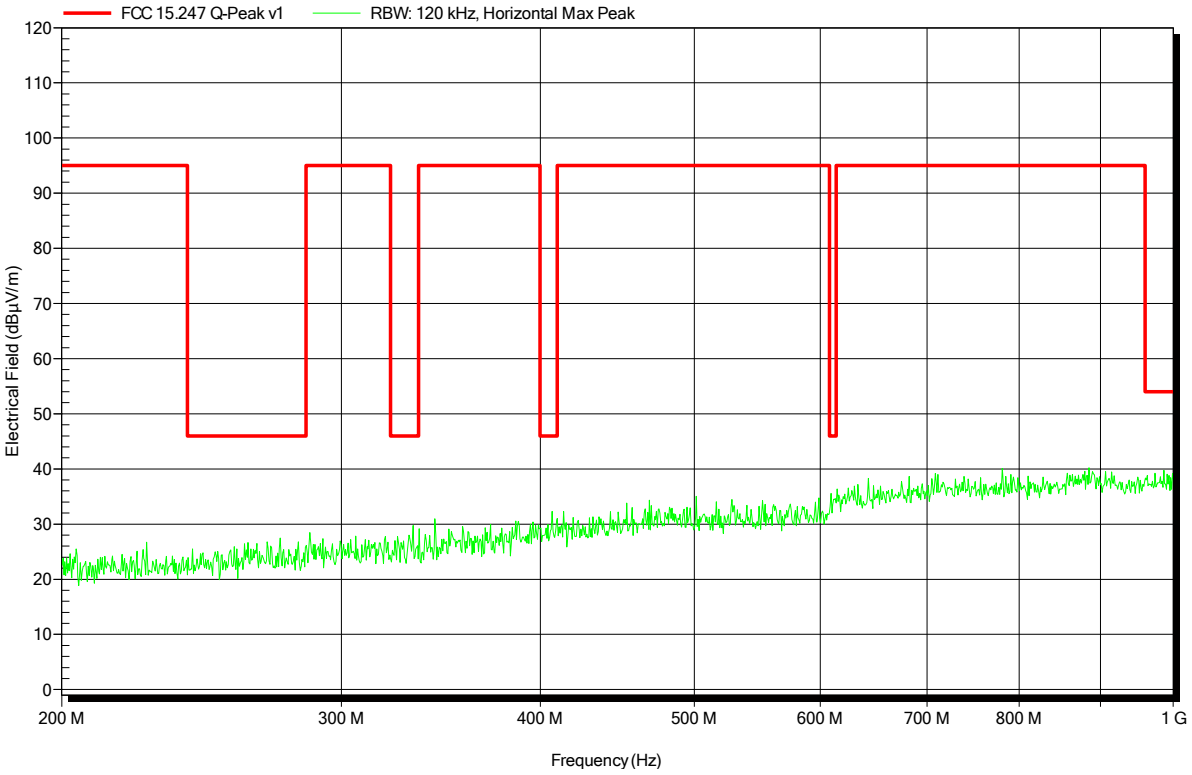

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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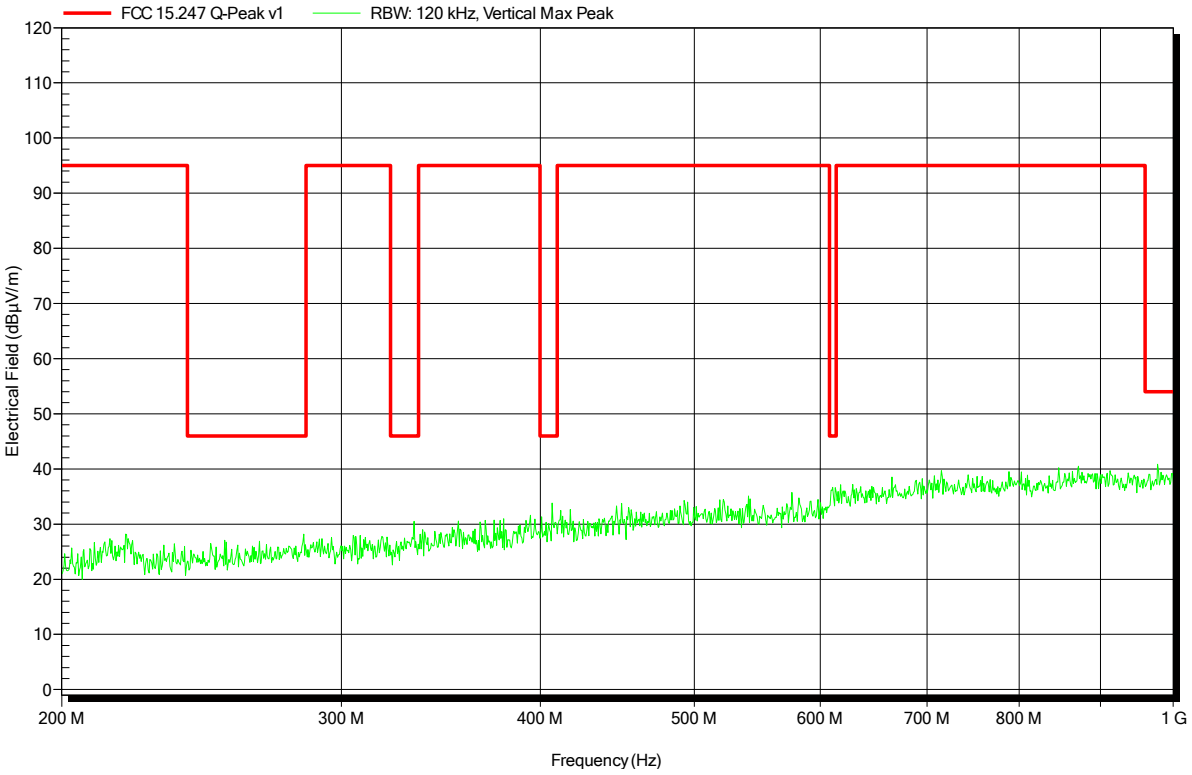

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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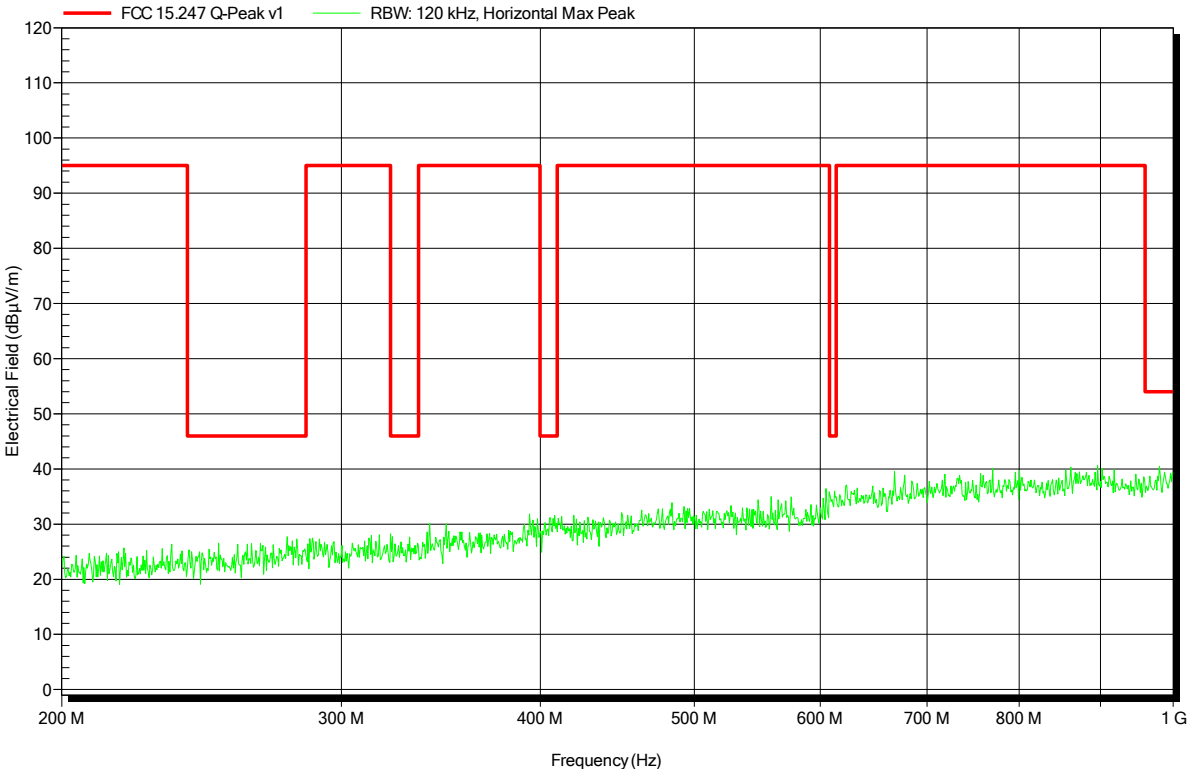

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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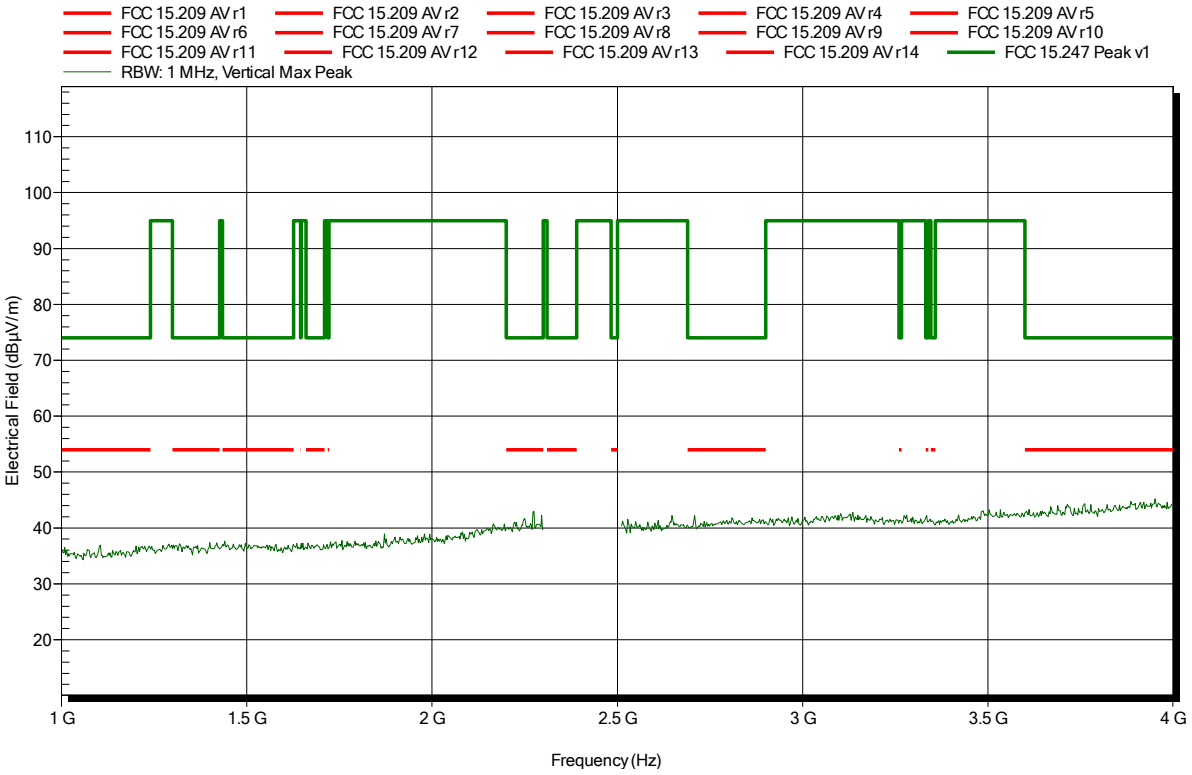

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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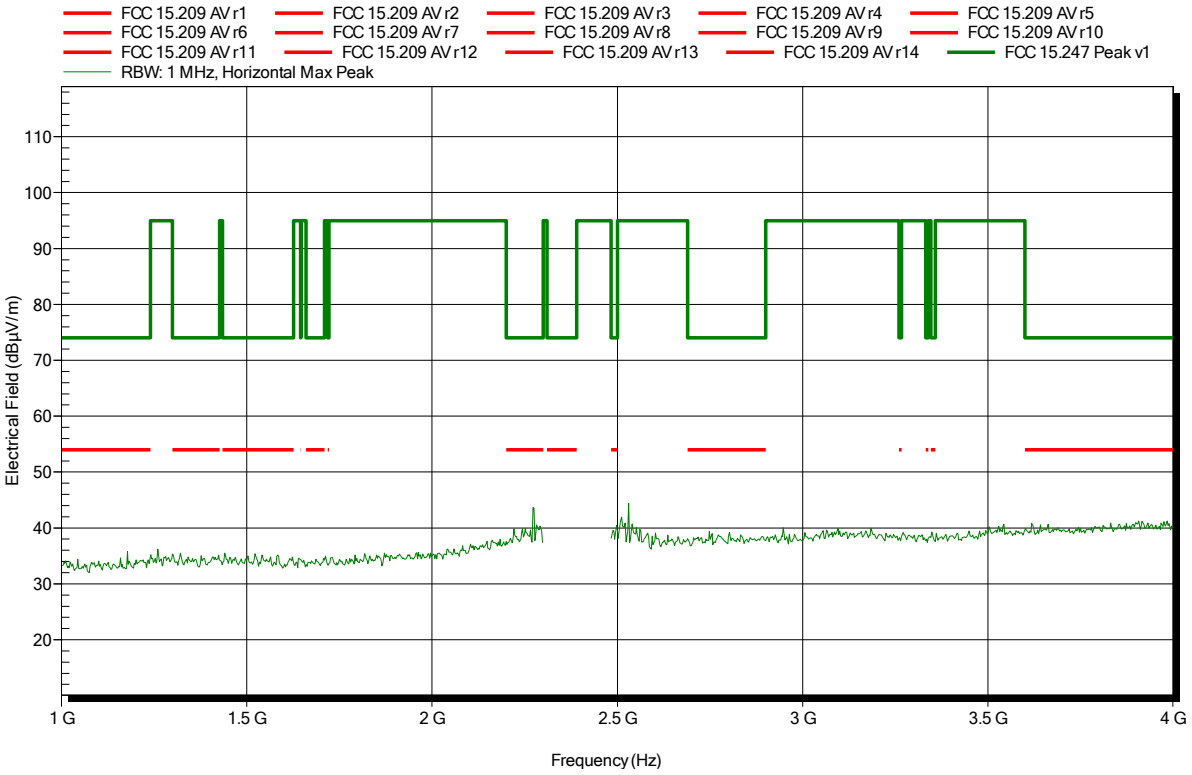

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical; lower bandedge

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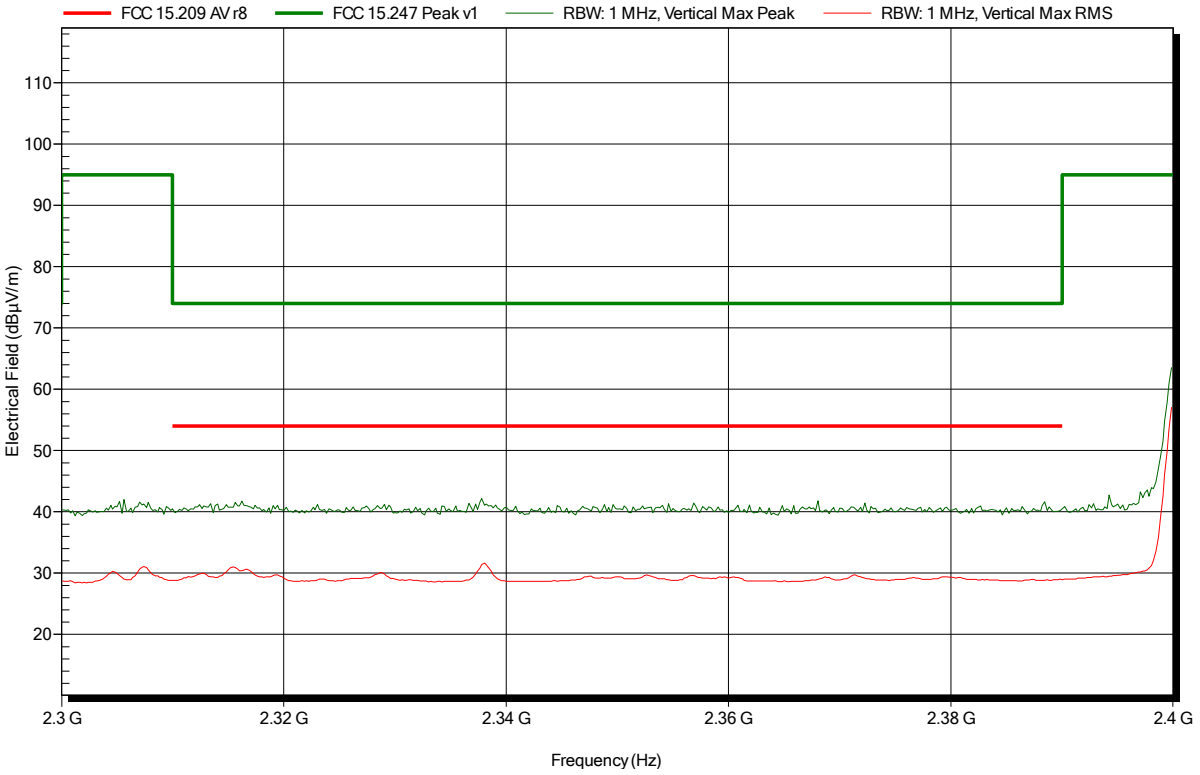

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical; lower bandedge

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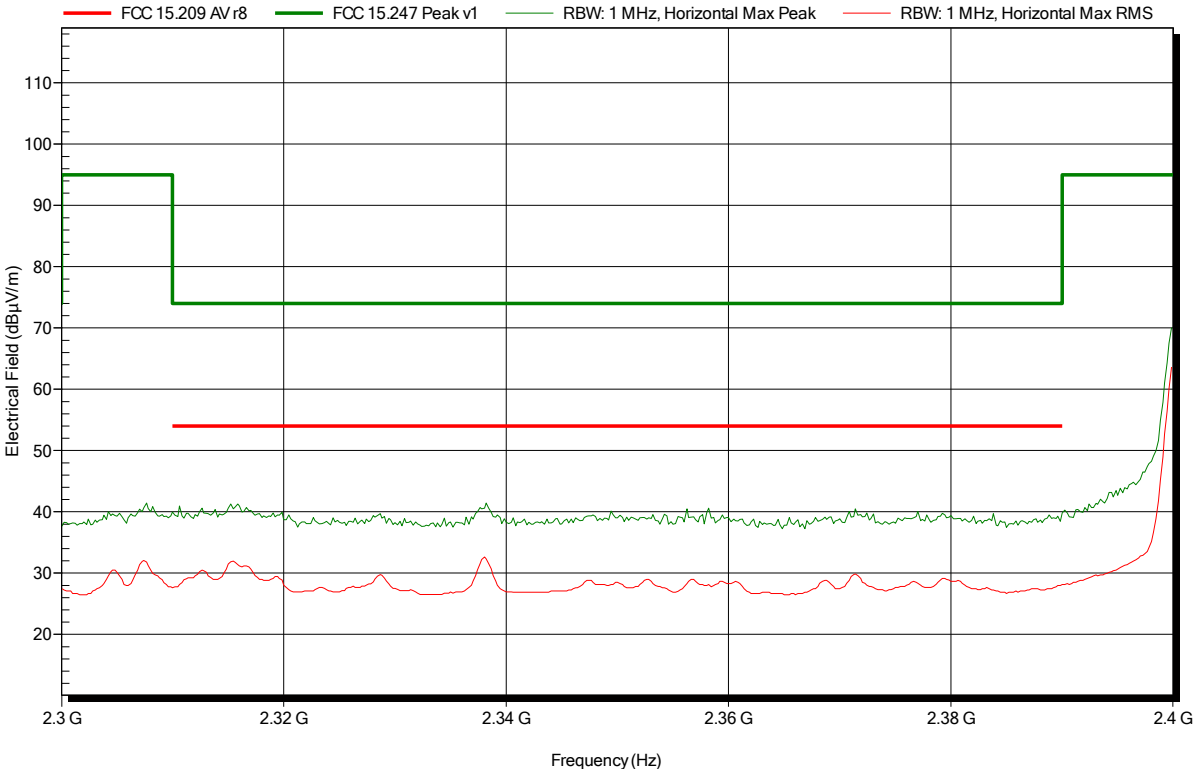

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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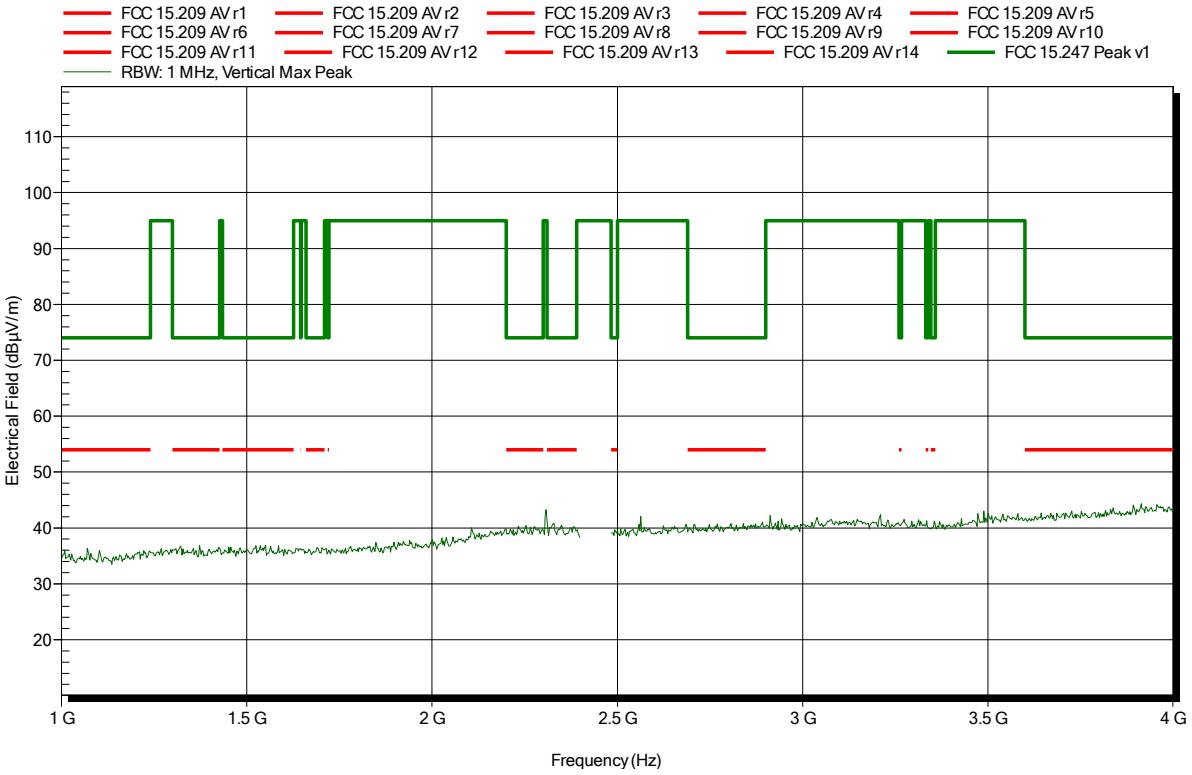

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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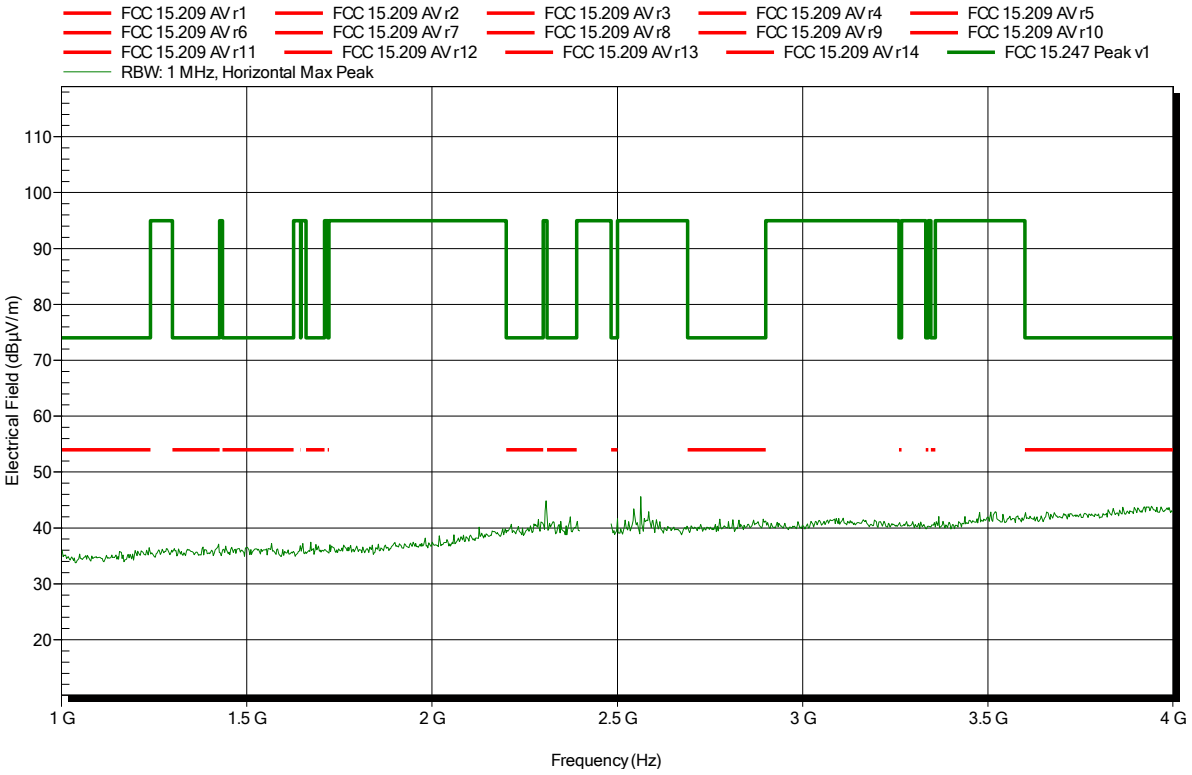

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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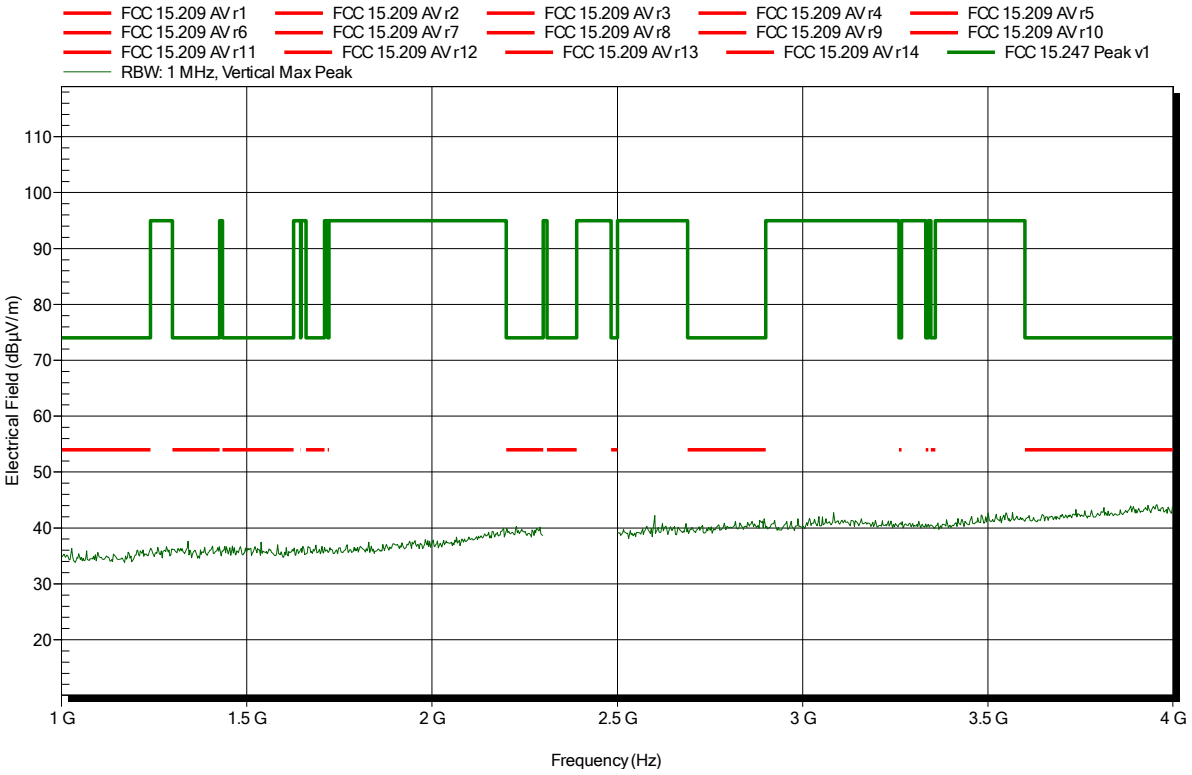

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical

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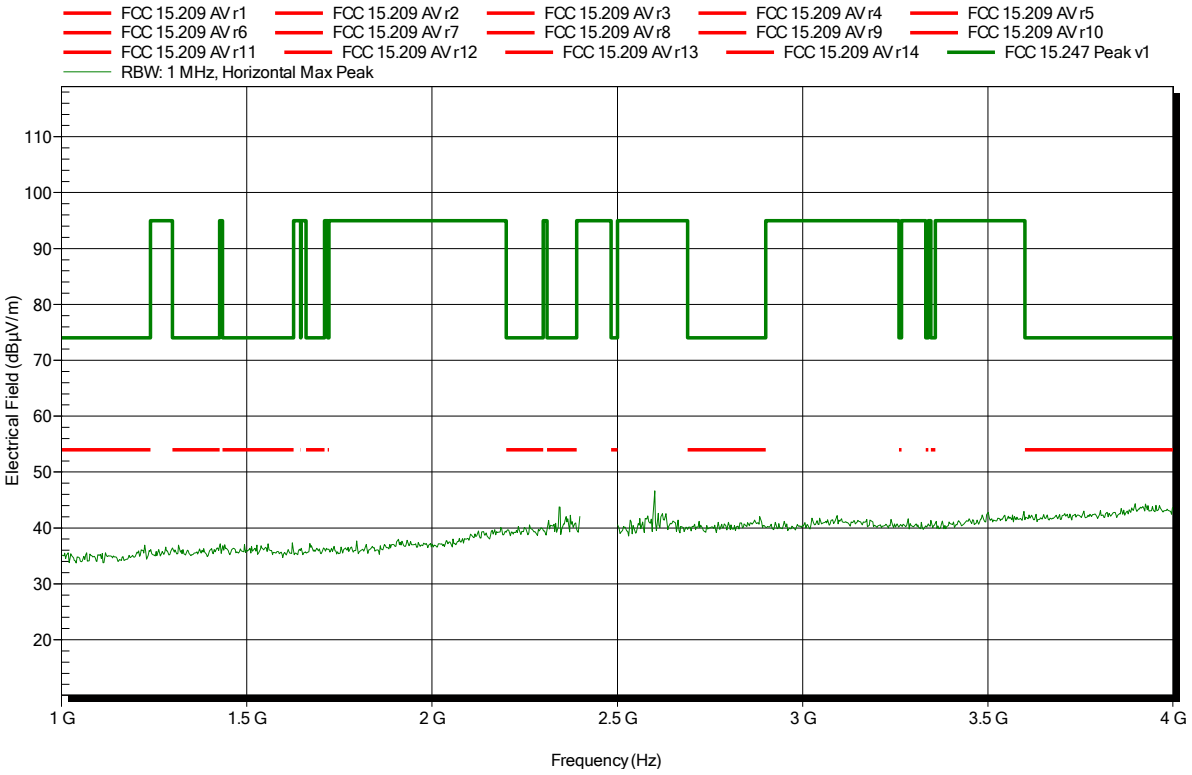

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical; higher bandedge

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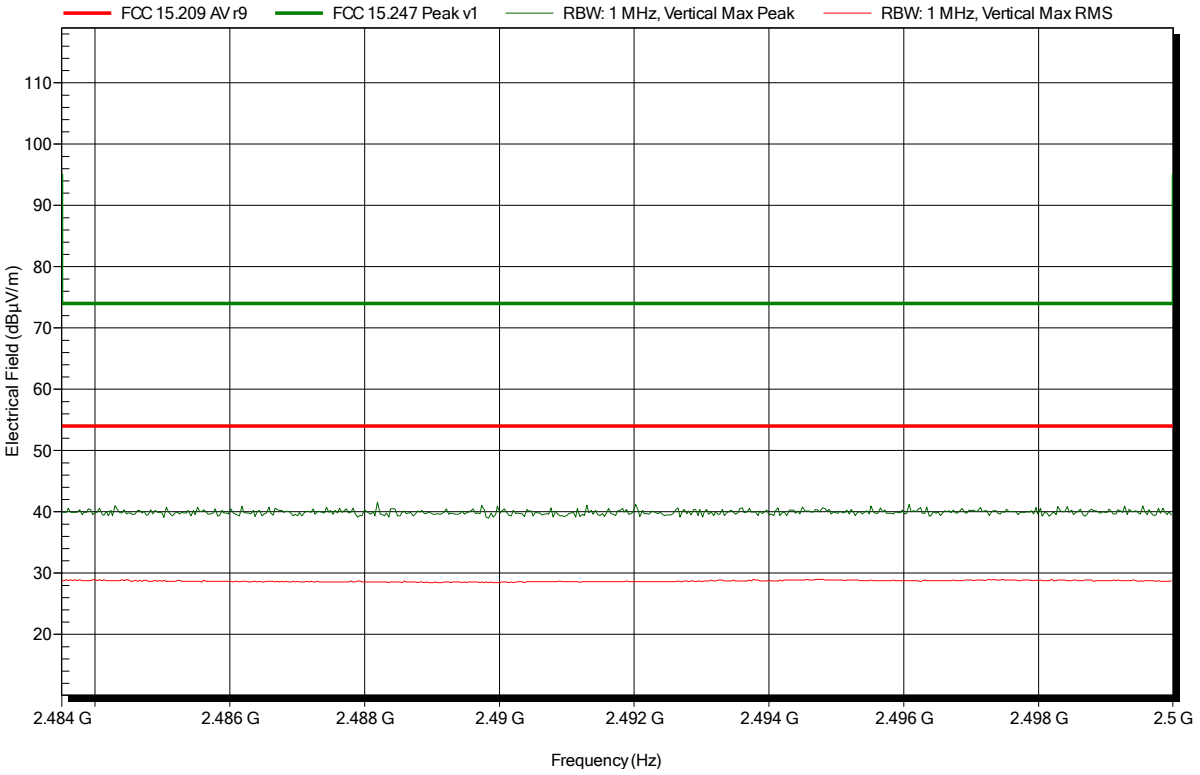

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-02
Note:	EUT vertical; higher bandedge

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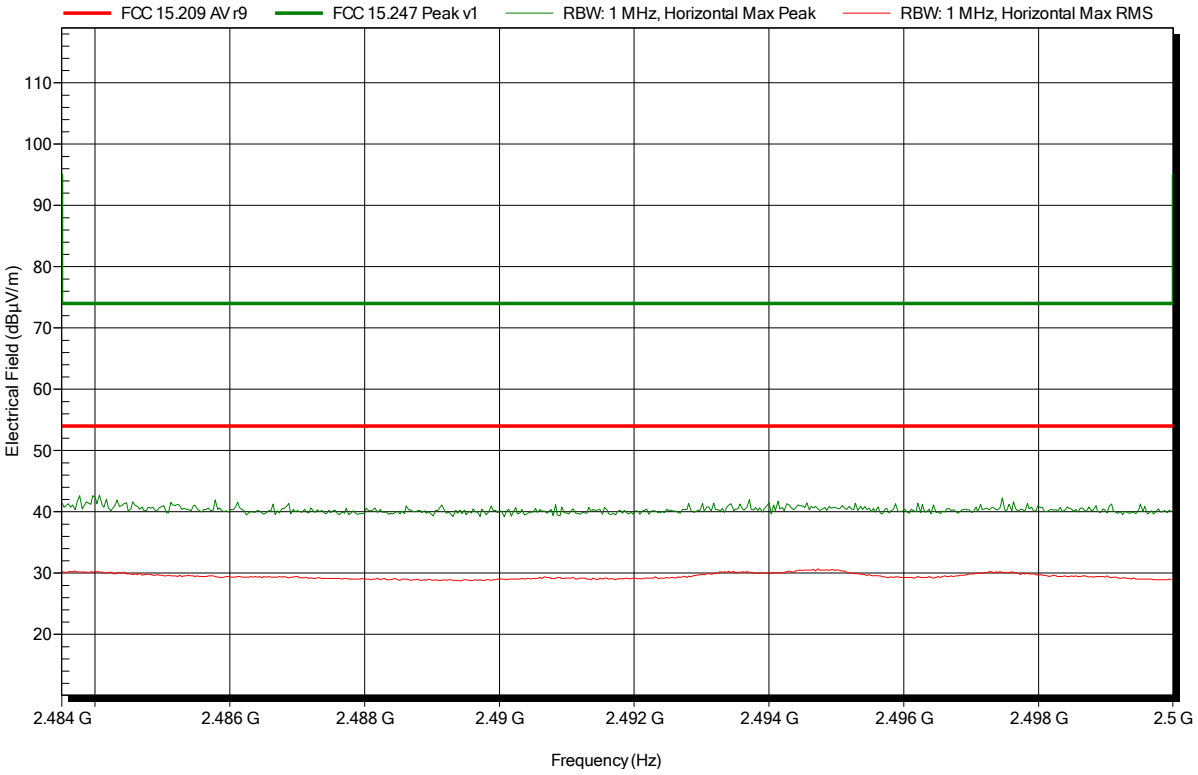

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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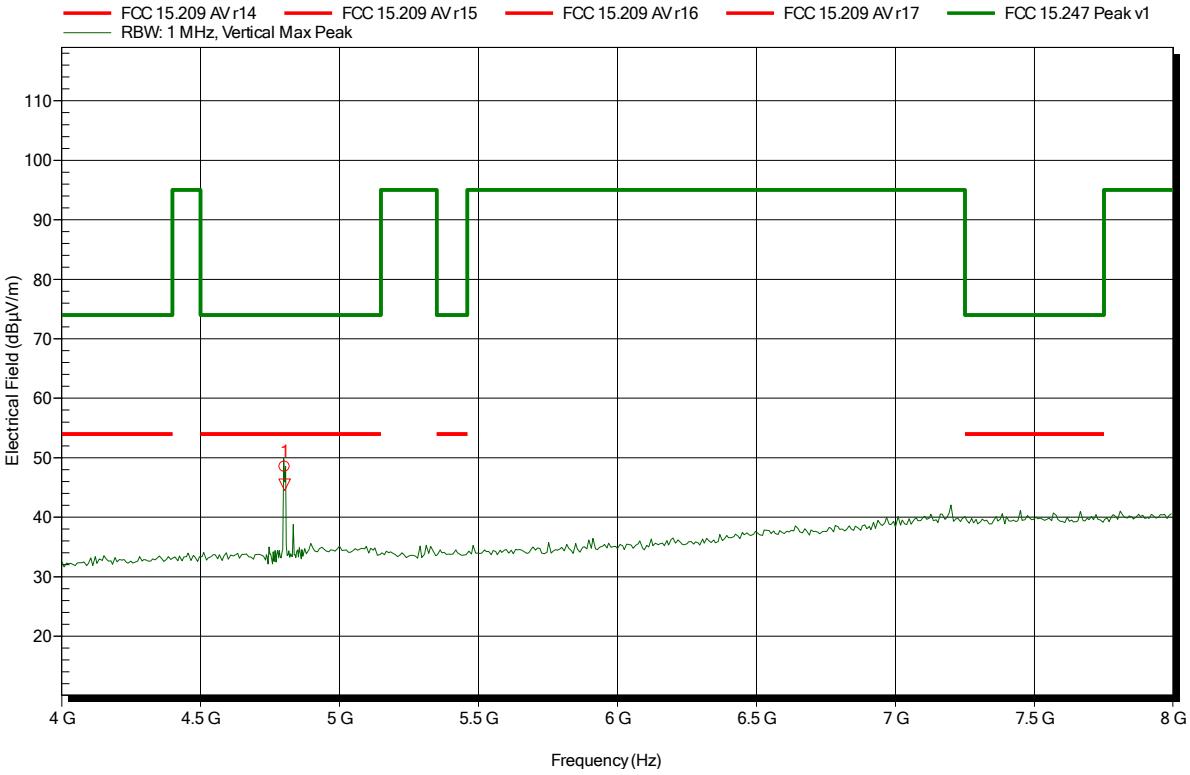

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.804 GHz	48.49 dBµV/m	74 dBµV/m	-25.51 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.804 GHz	45.43 dBµV/m	54 dBµV/m	-8.57 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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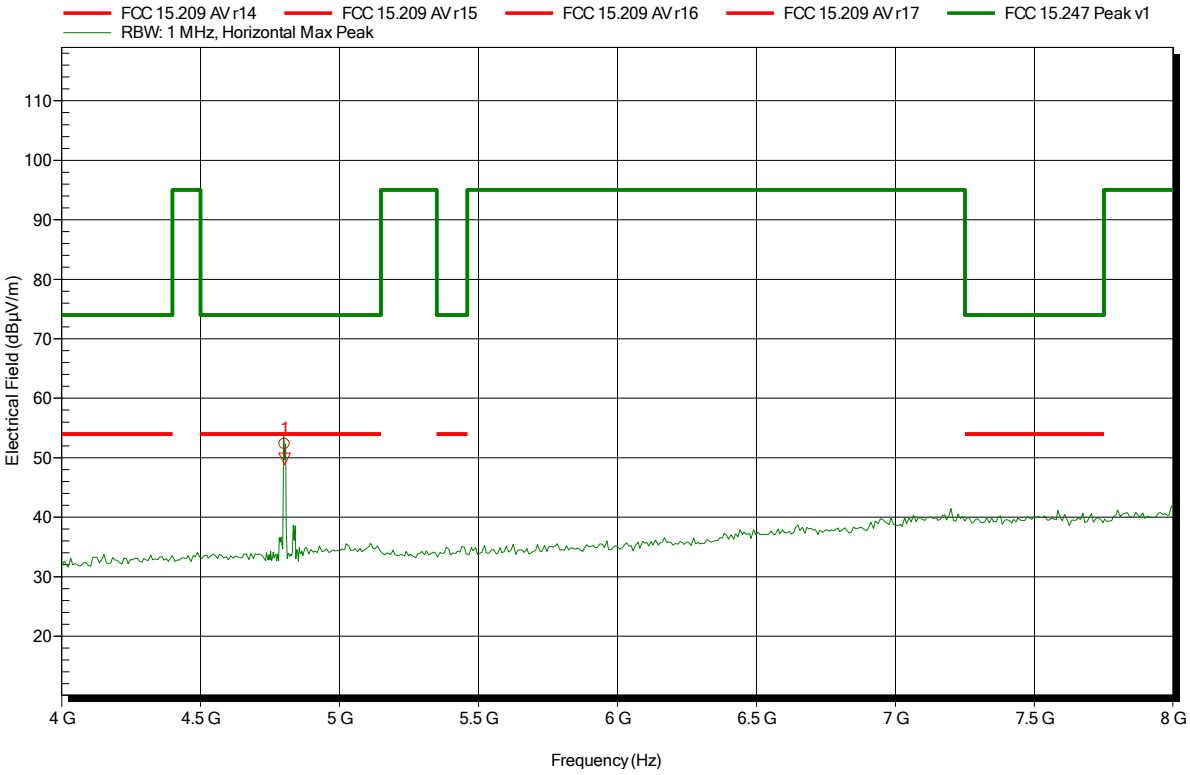

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.804 GHz	52.29 dBµV/m	74 dBµV/m	-21.71 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.804 GHz	49.83 dBµV/m	54 dBµV/m	-4.17 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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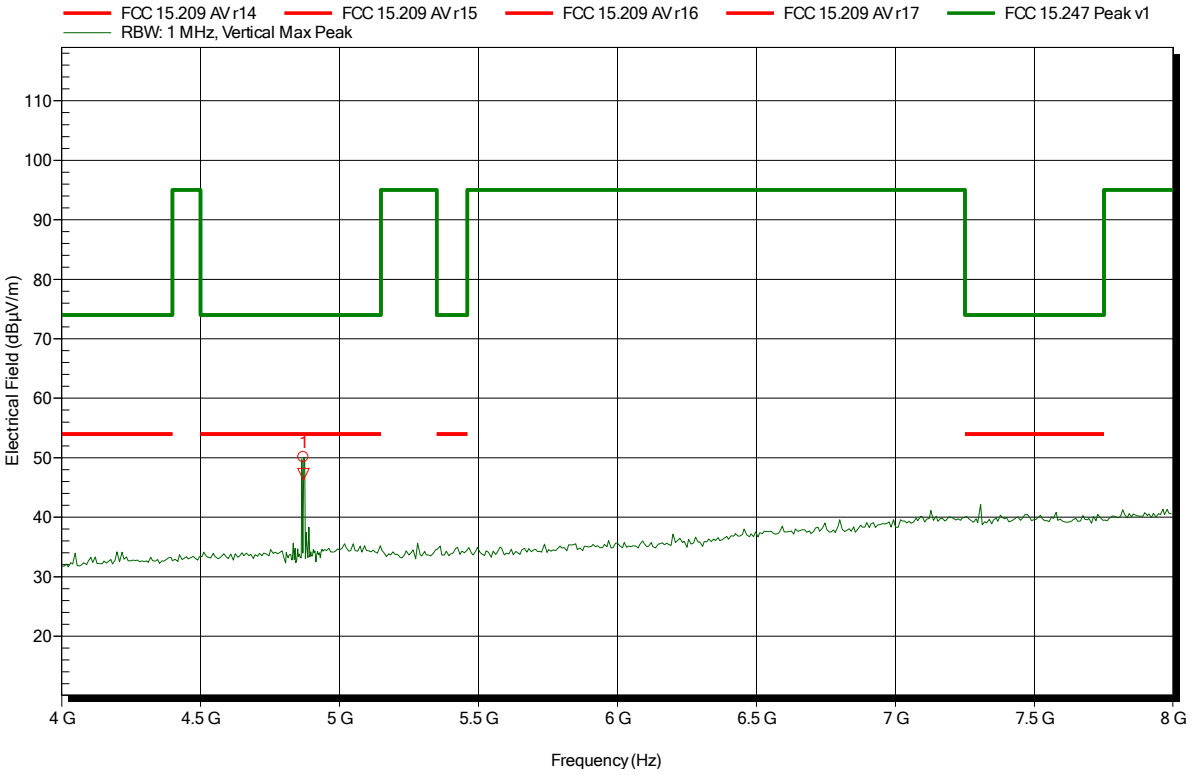

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.872 GHz	50.12 dBµV/m	74 dBµV/m	-23.88 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.872 GHz	47.24 dBµV/m	54 dBµV/m	-6.76 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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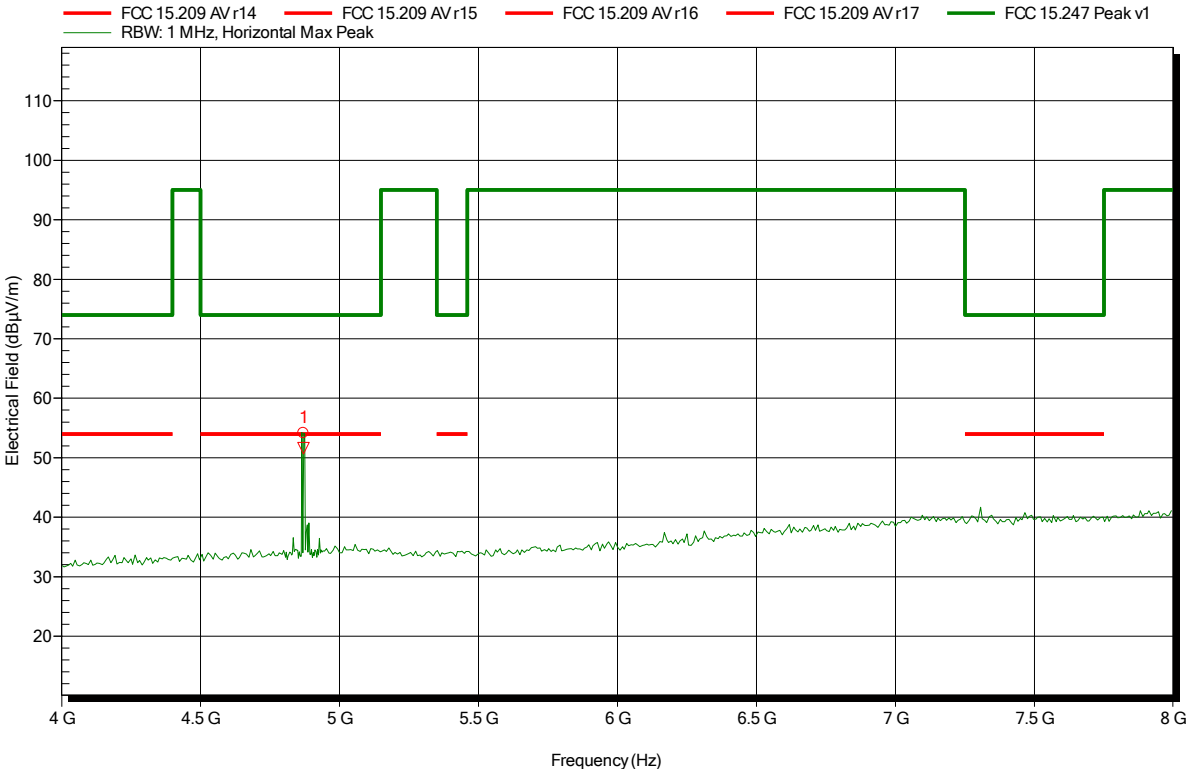

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.871 GHz	54.13 dBµV/m	74 dBµV/m	-19.87 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.871 GHz	51.62 dBµV/m	54 dBµV/m	-2.38 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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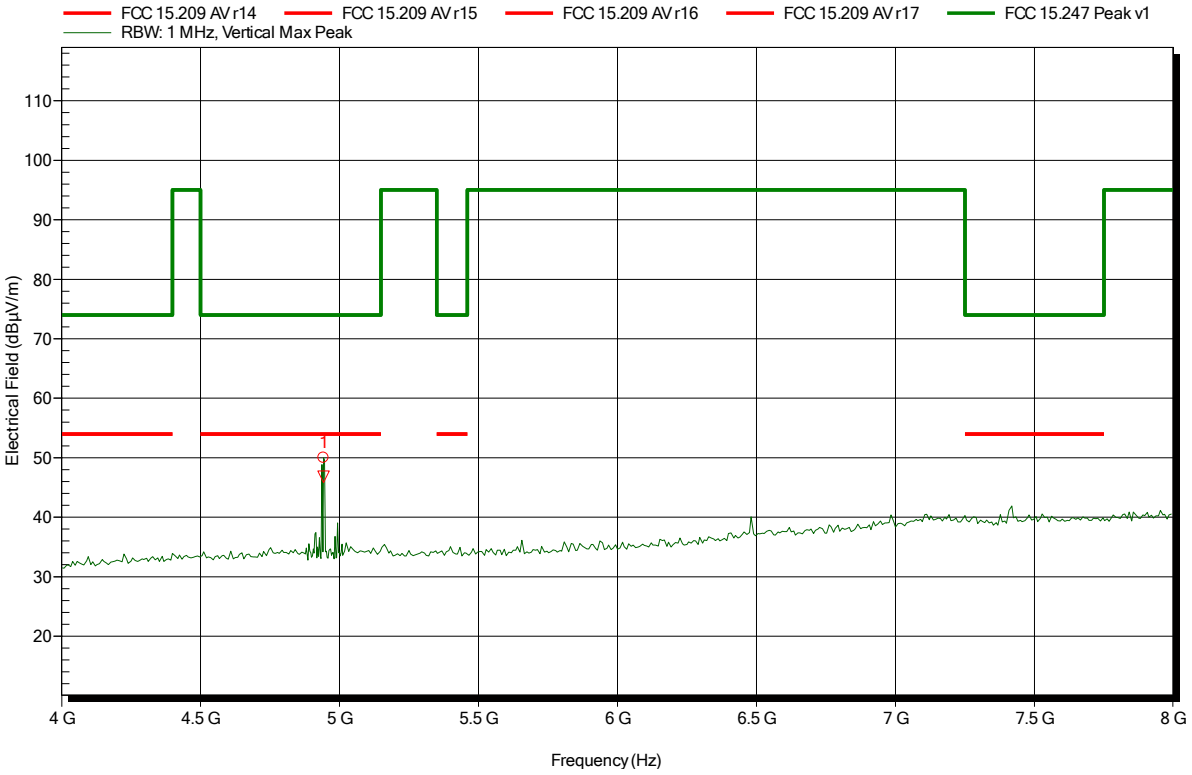

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.944 GHz	49.98 dBµV/m	74 dBµV/m	-24.02 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.944 GHz	46.78 dBµV/m	54 dBµV/m	-7.22 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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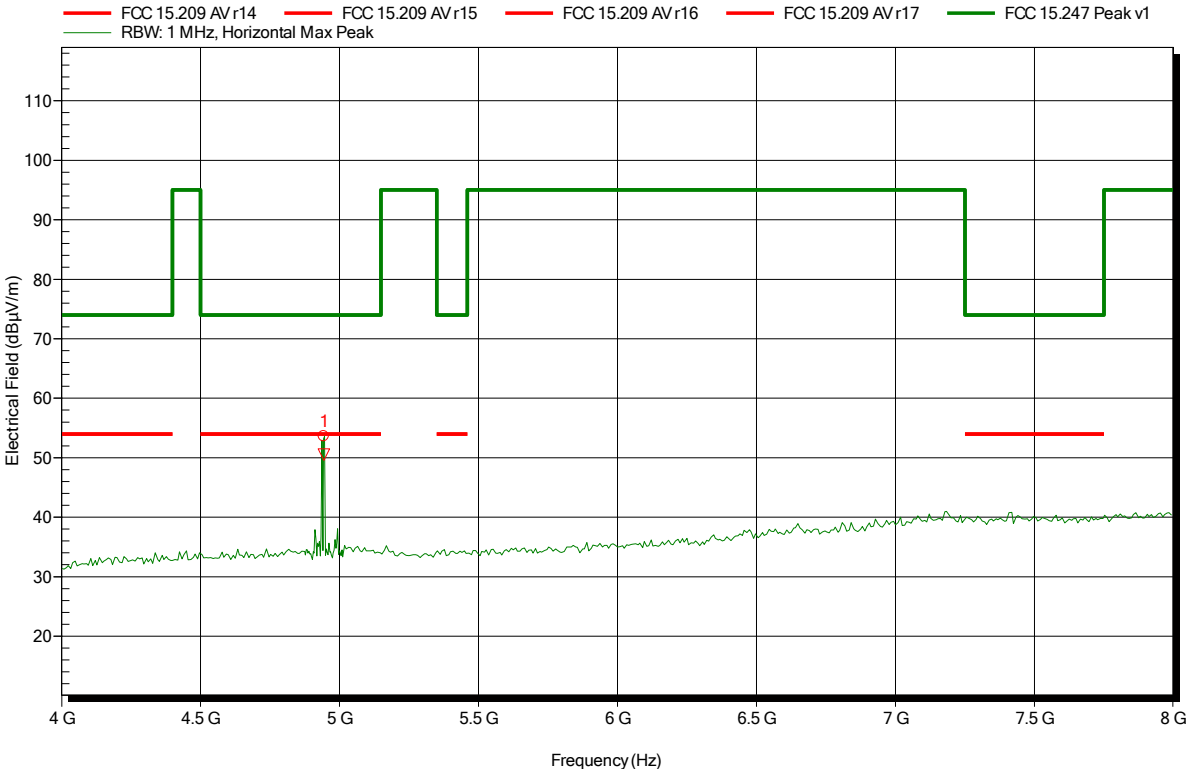

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.945 GHz	53.61 dBµV/m	74 dBµV/m	-20.39 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
4.945 GHz	50.54 dBµV/m	54 dBµV/m	-3.46 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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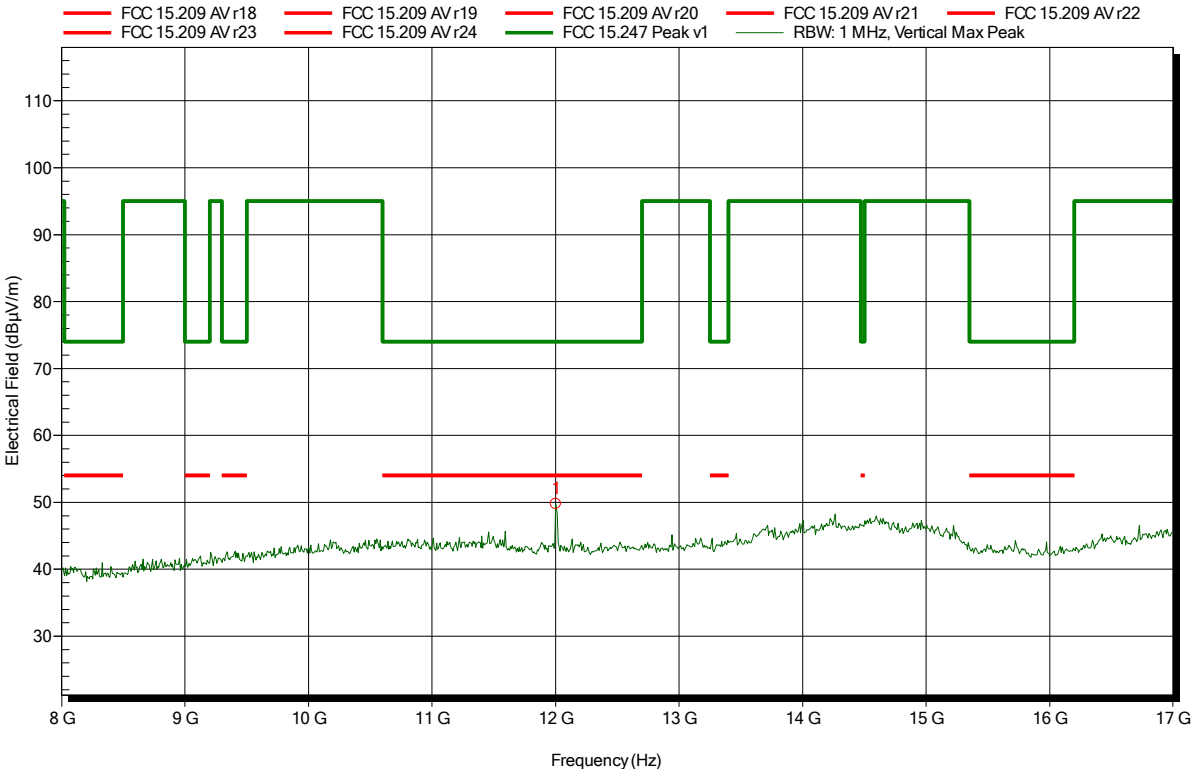

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.004 GHz	49.77 dBµV/m	74 dBµV/m	-24.23 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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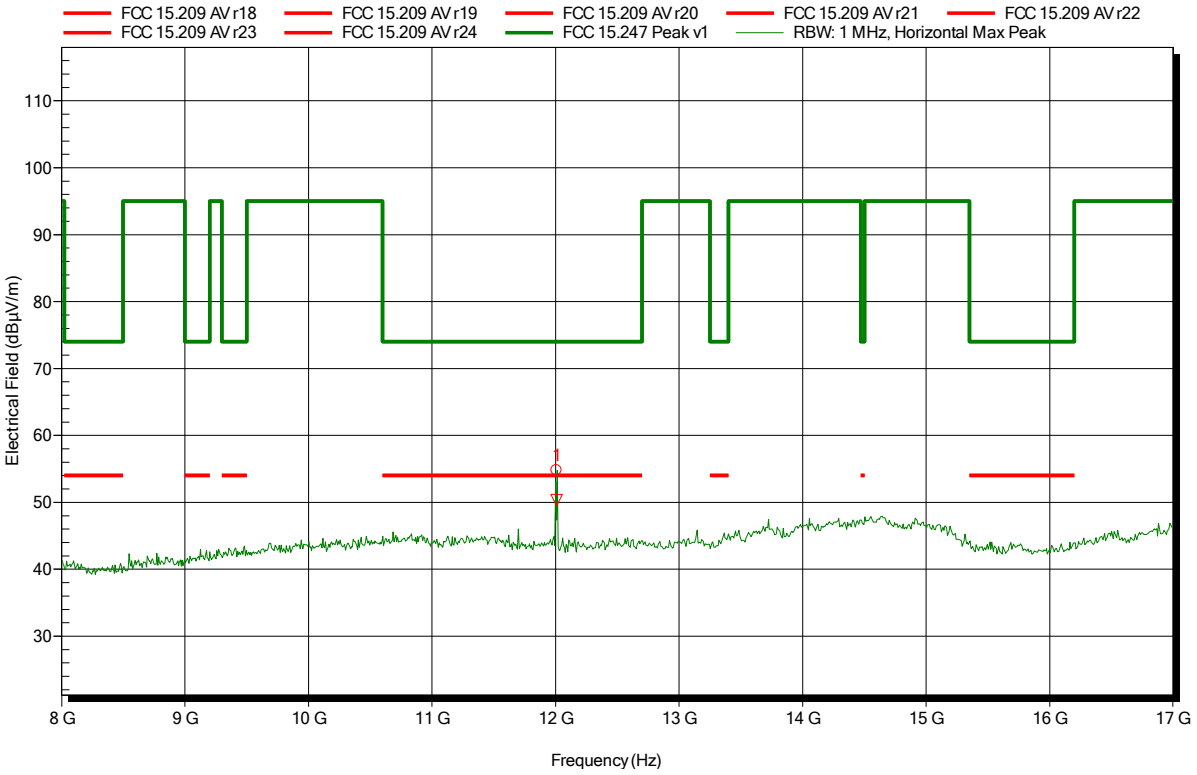

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.009 GHz	54.79 dBµV/m	74 dBµV/m	-19.21 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.009 GHz	50.34 dBµV/m	54 dBµV/m	-3.66 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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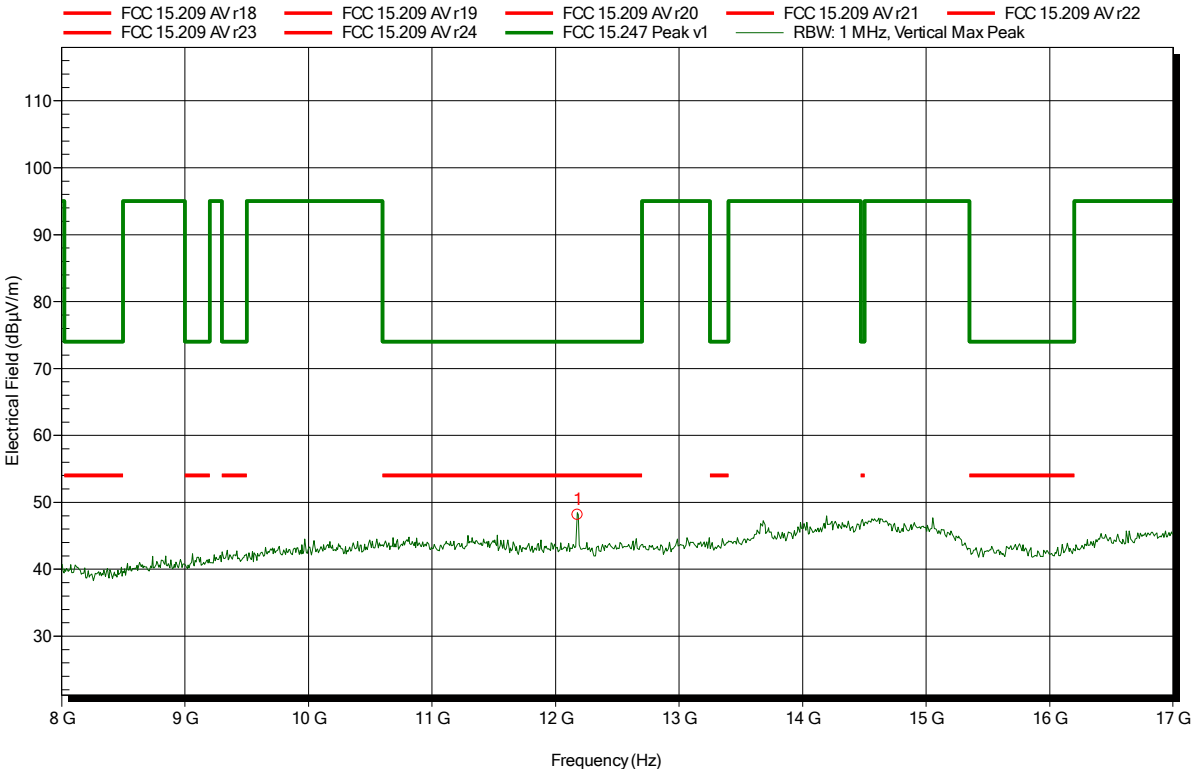

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.18 GHz	48.14 dBµV/m	74 dBµV/m	-25.86 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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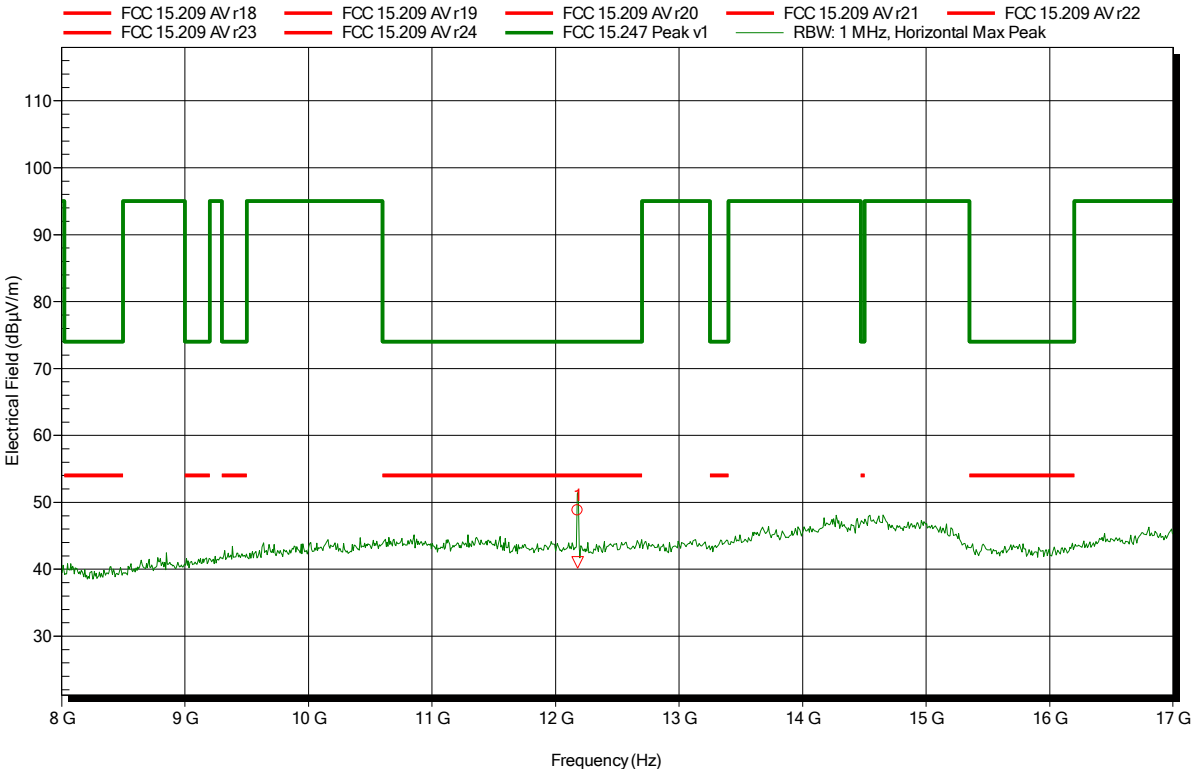

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.179 GHz	48.8 dBµV/m	74 dBµV/m	-25.2 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
12.179 GHz	41.02 dBµV/m	54 dBµV/m	-12.98 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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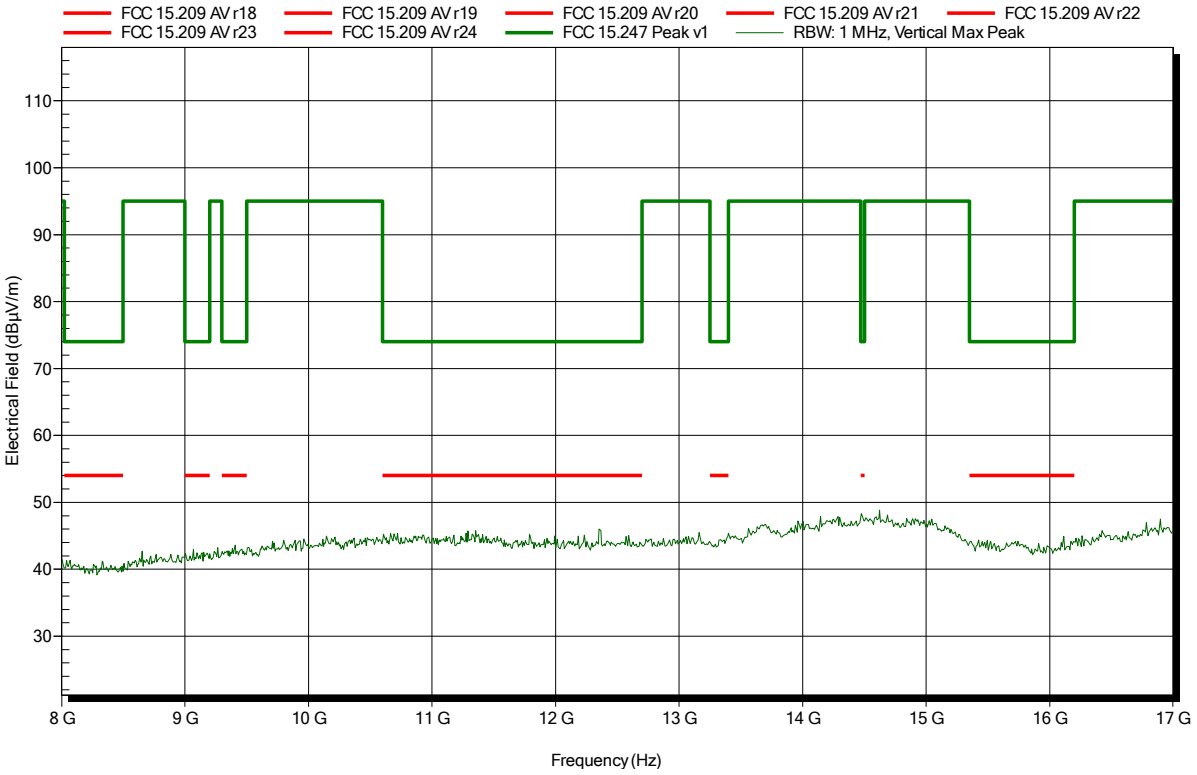

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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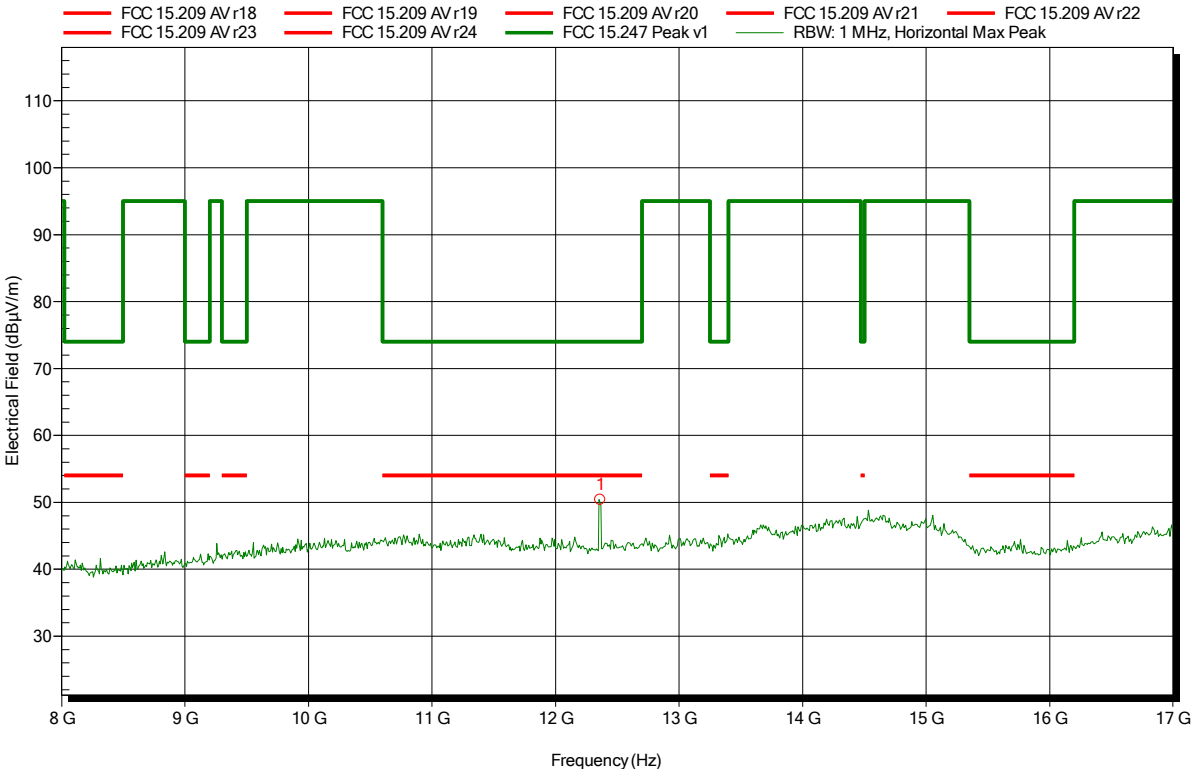

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.363 GHz	50.38 dBµV/m	74 dBµV/m	-23.62 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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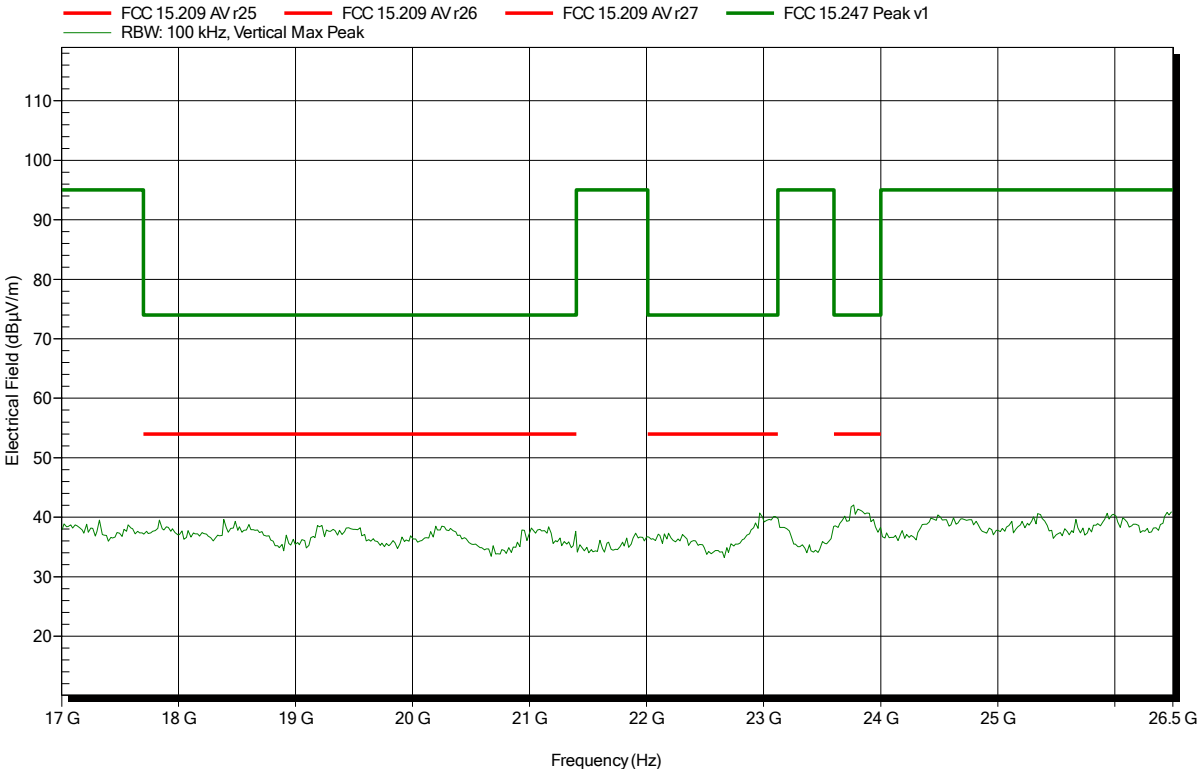

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2402 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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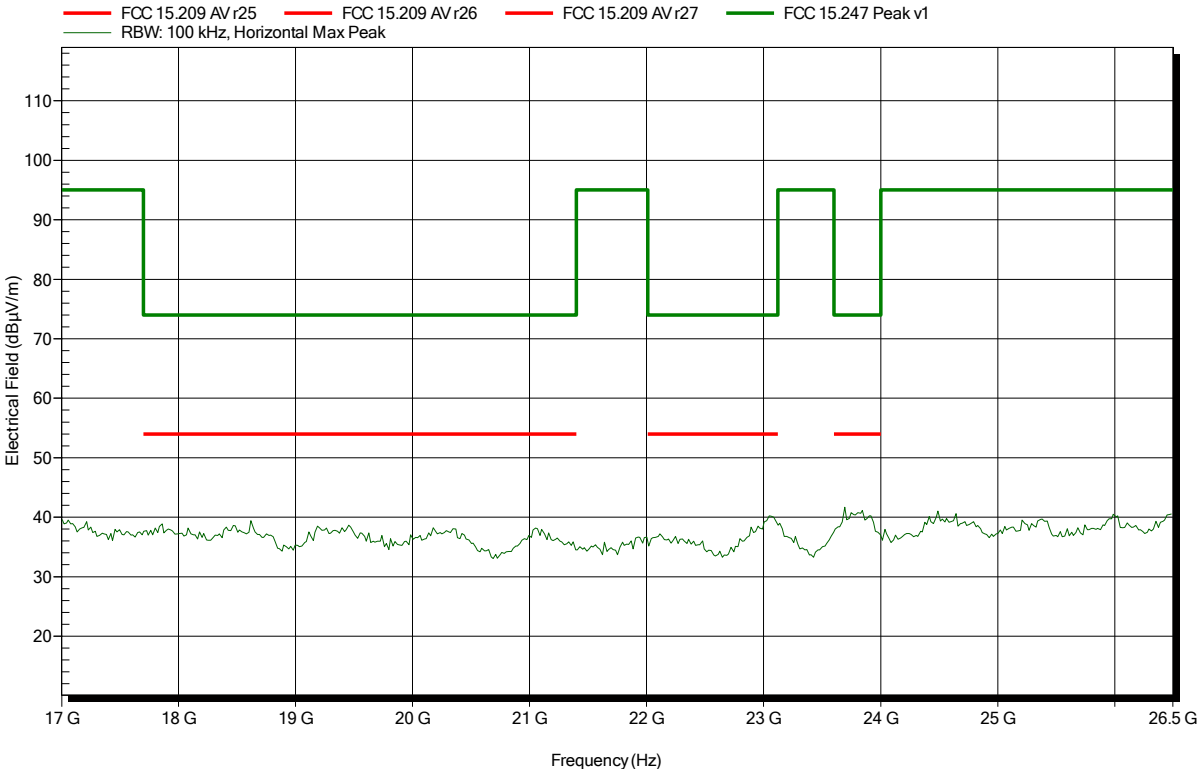

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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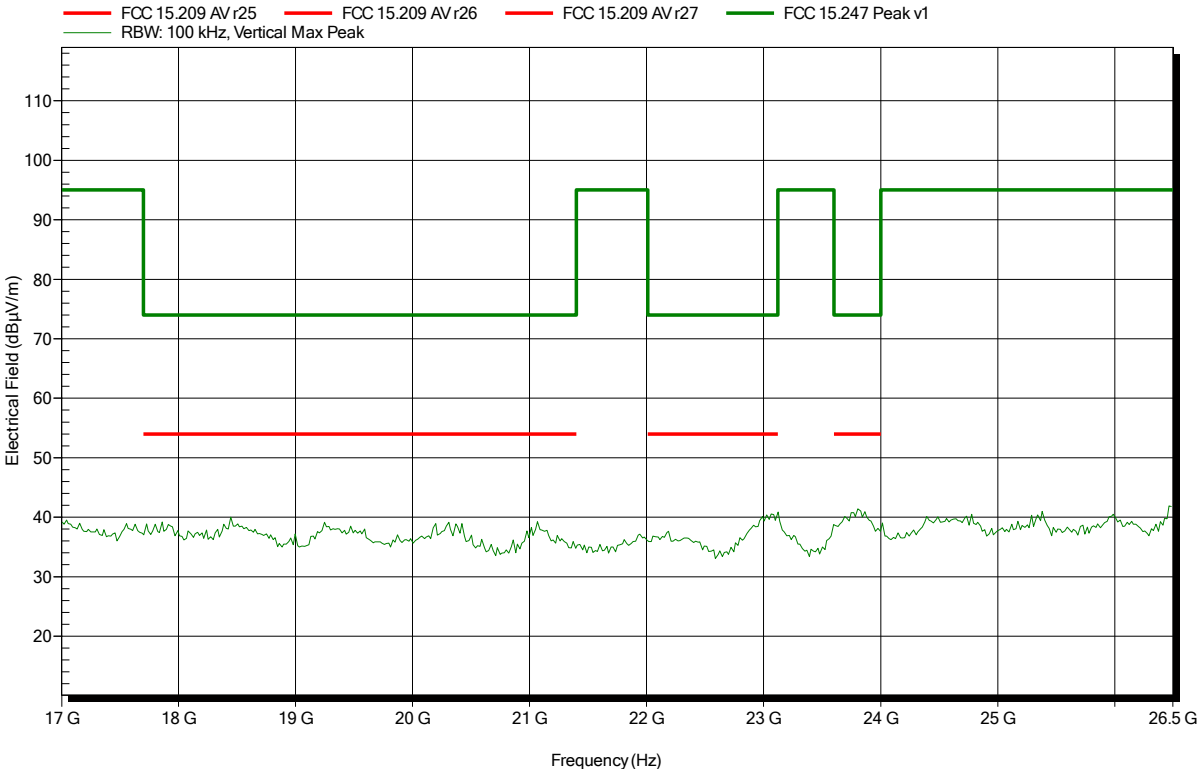

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2436 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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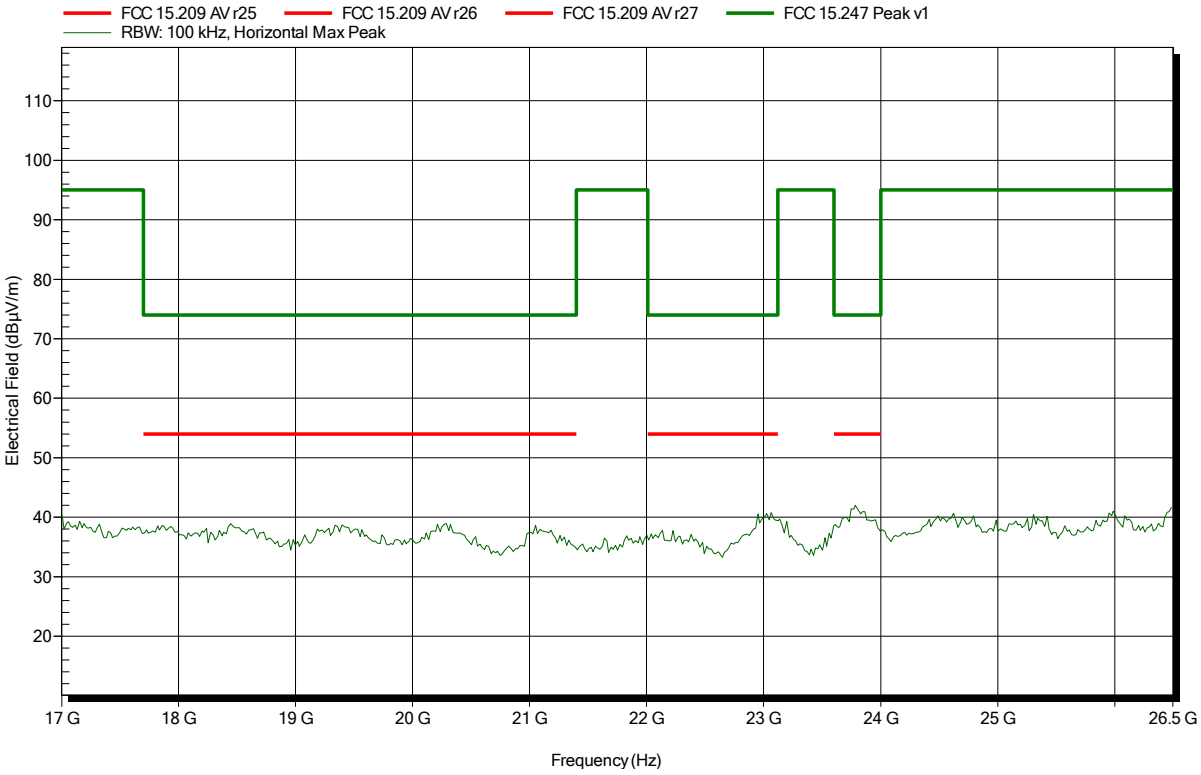

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-06
Note:	EUT vertical

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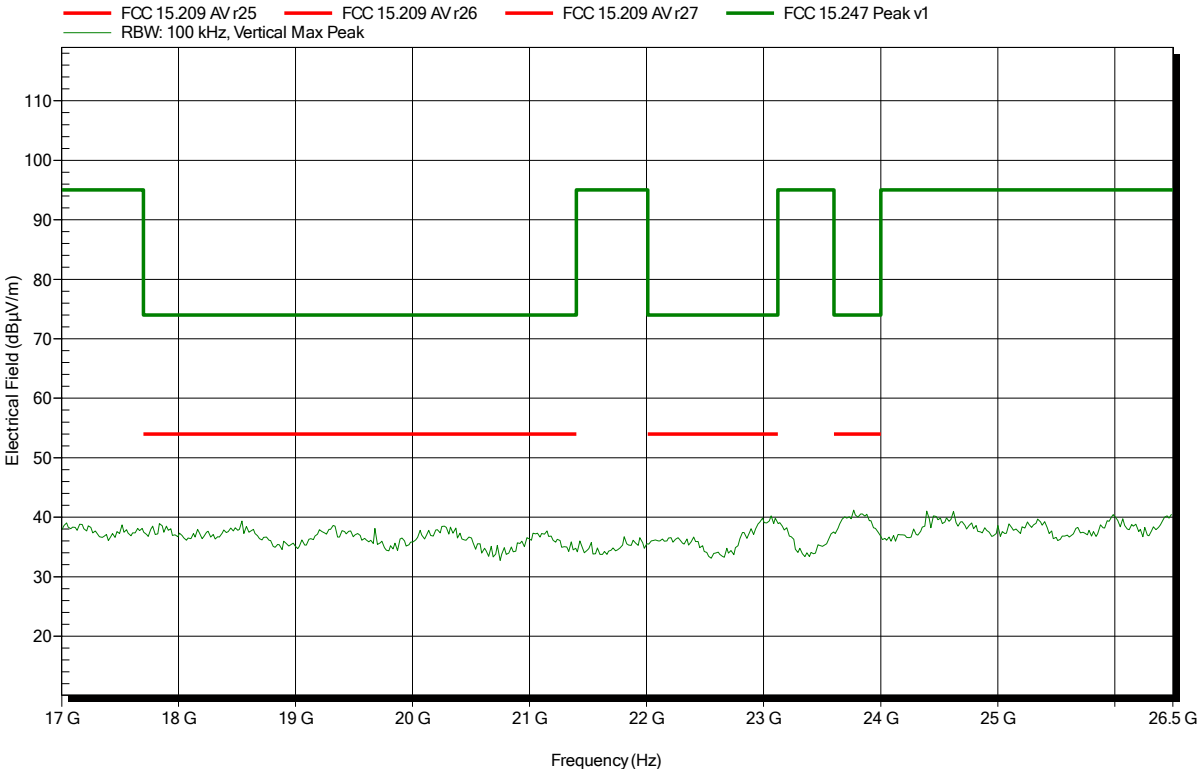

Spurious emissions according to FCC part 15 Subpart C § 15.247, ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	ATH18G40, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; XBee; Ch: 2472 MHz; GFSK; Pmax; ANT integral
Test Date:	2017-02-03
Note:	EUT vertical

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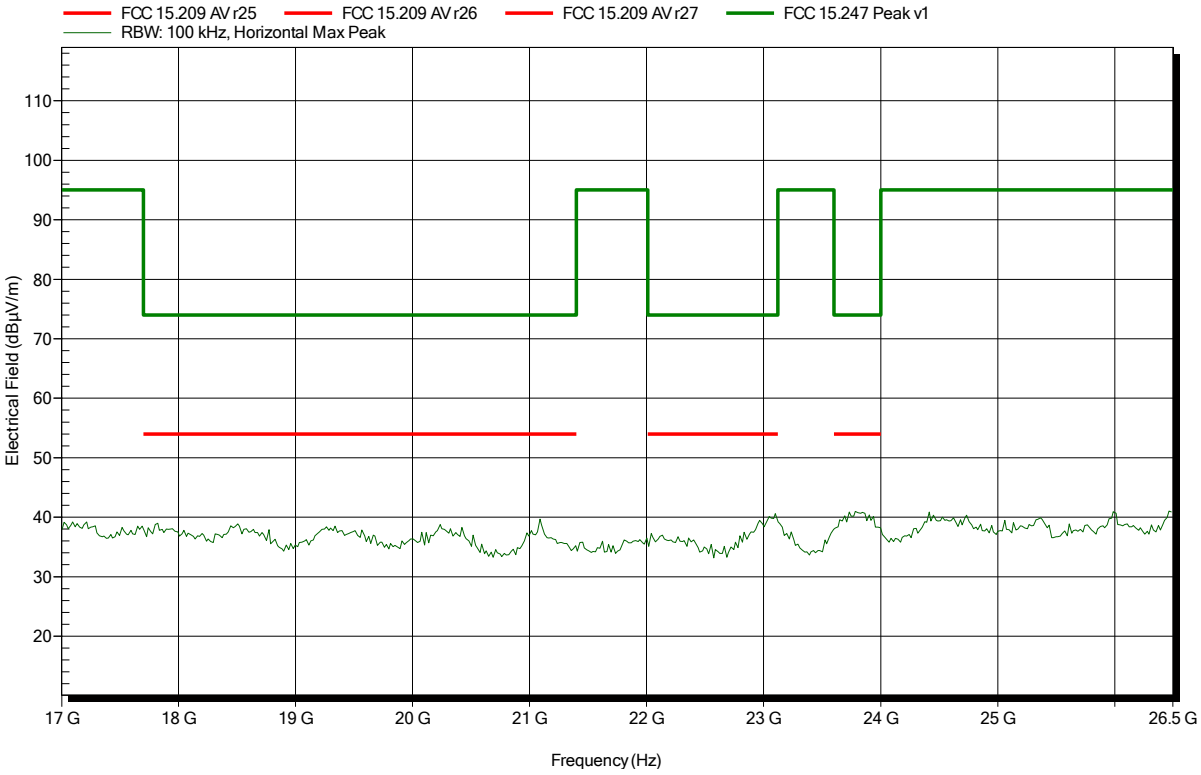

ANNEX B Receiver sprurious emissions

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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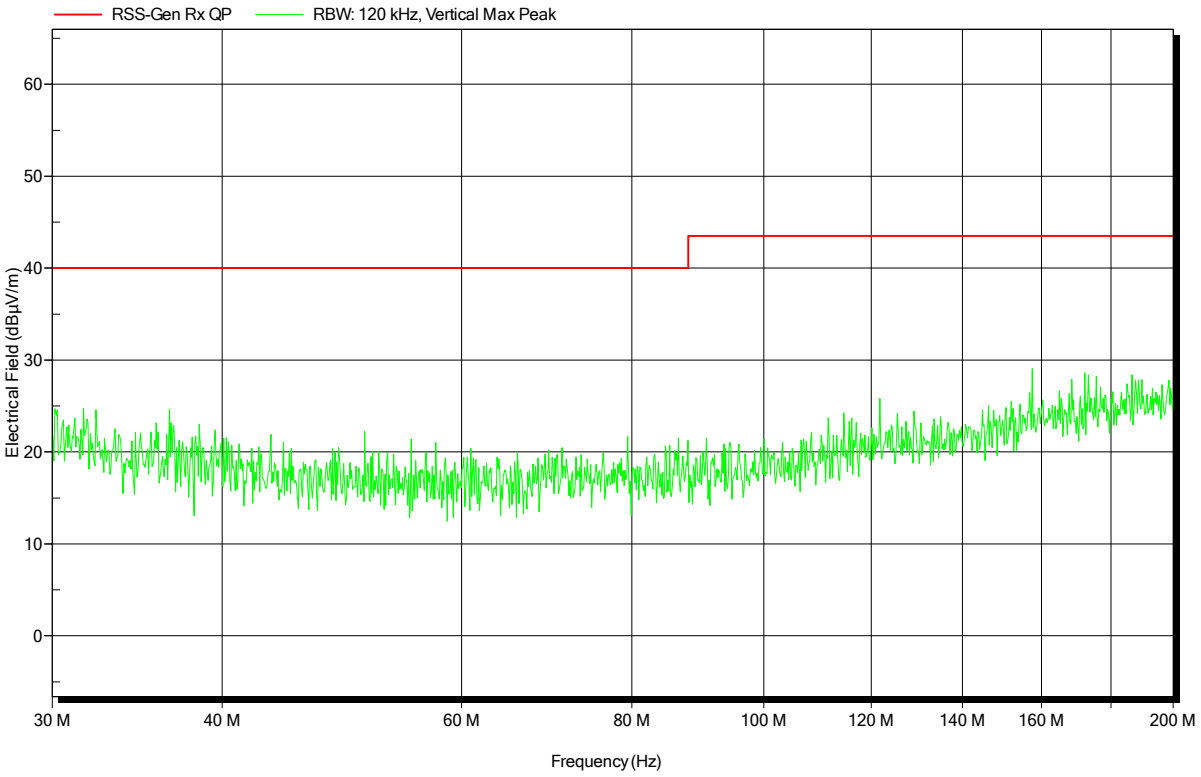

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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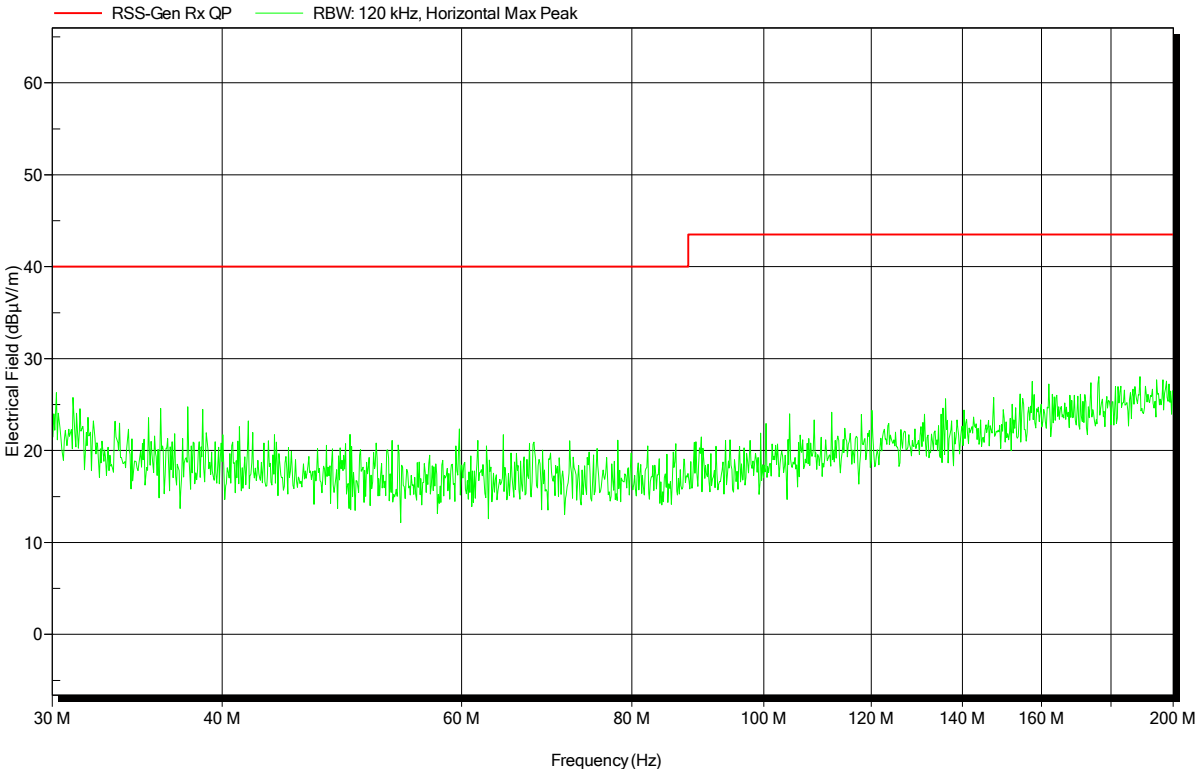

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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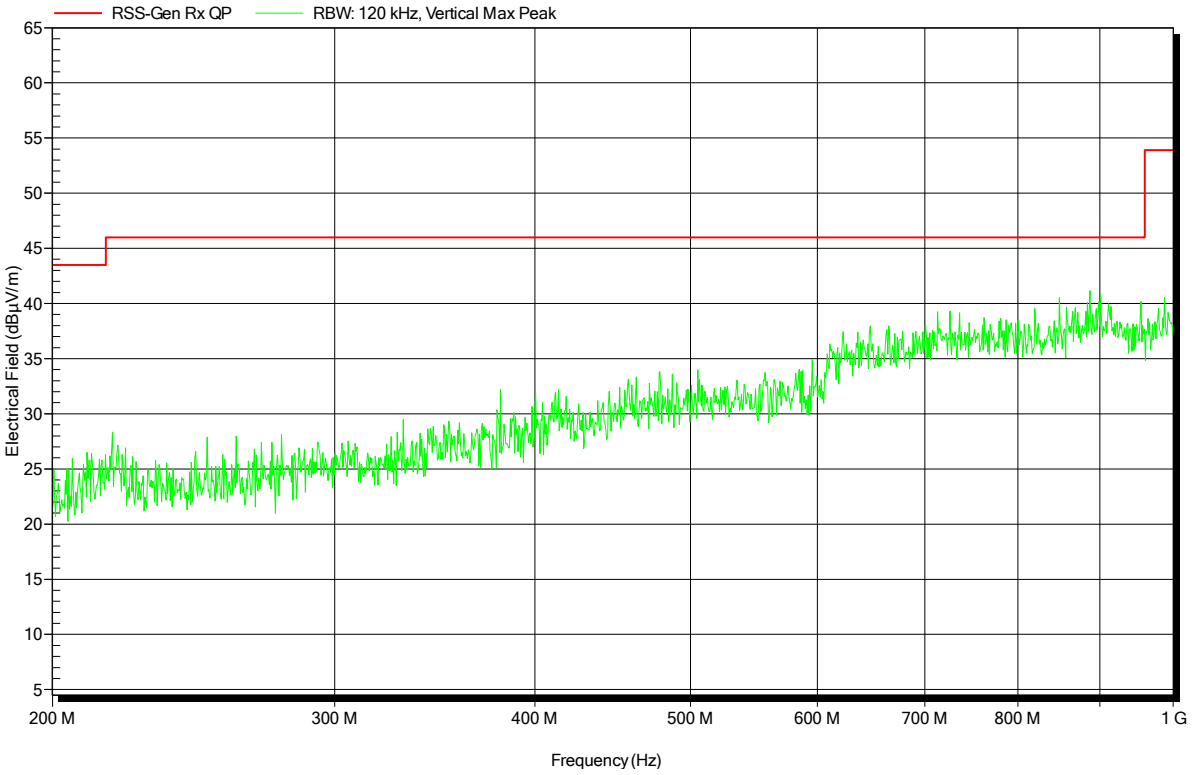

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-07
Note:	EUT vertical

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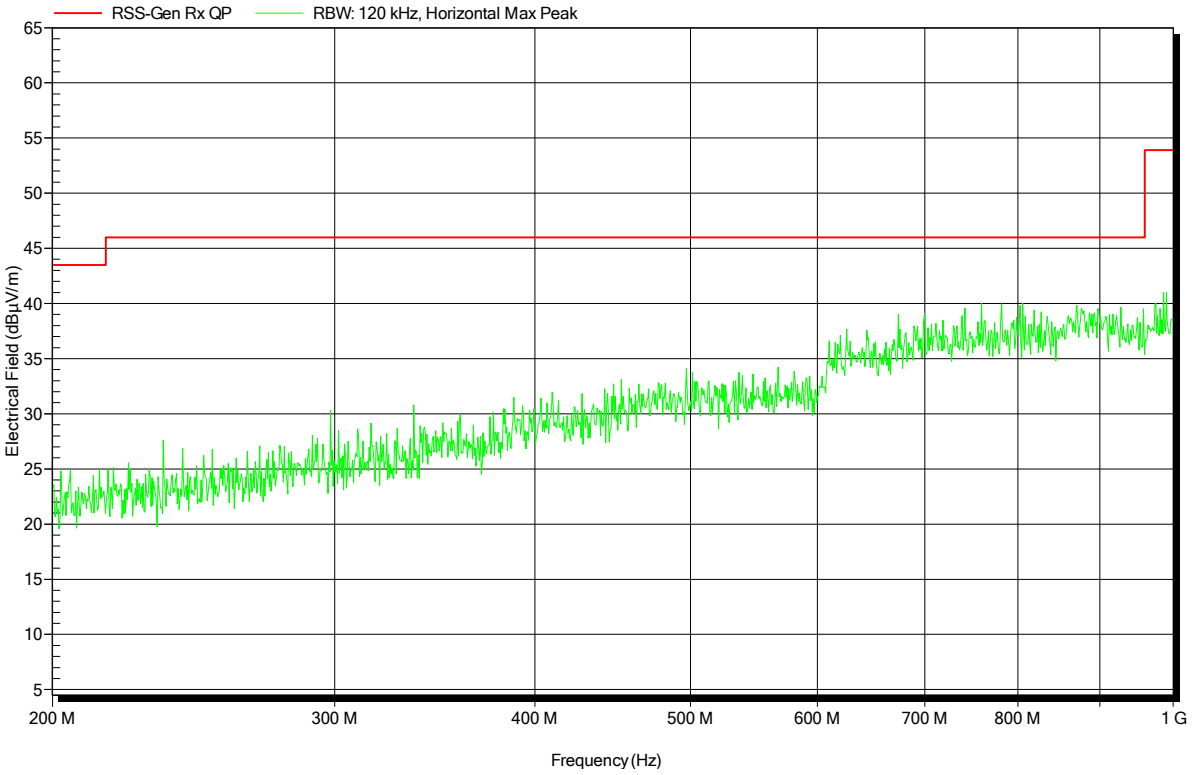

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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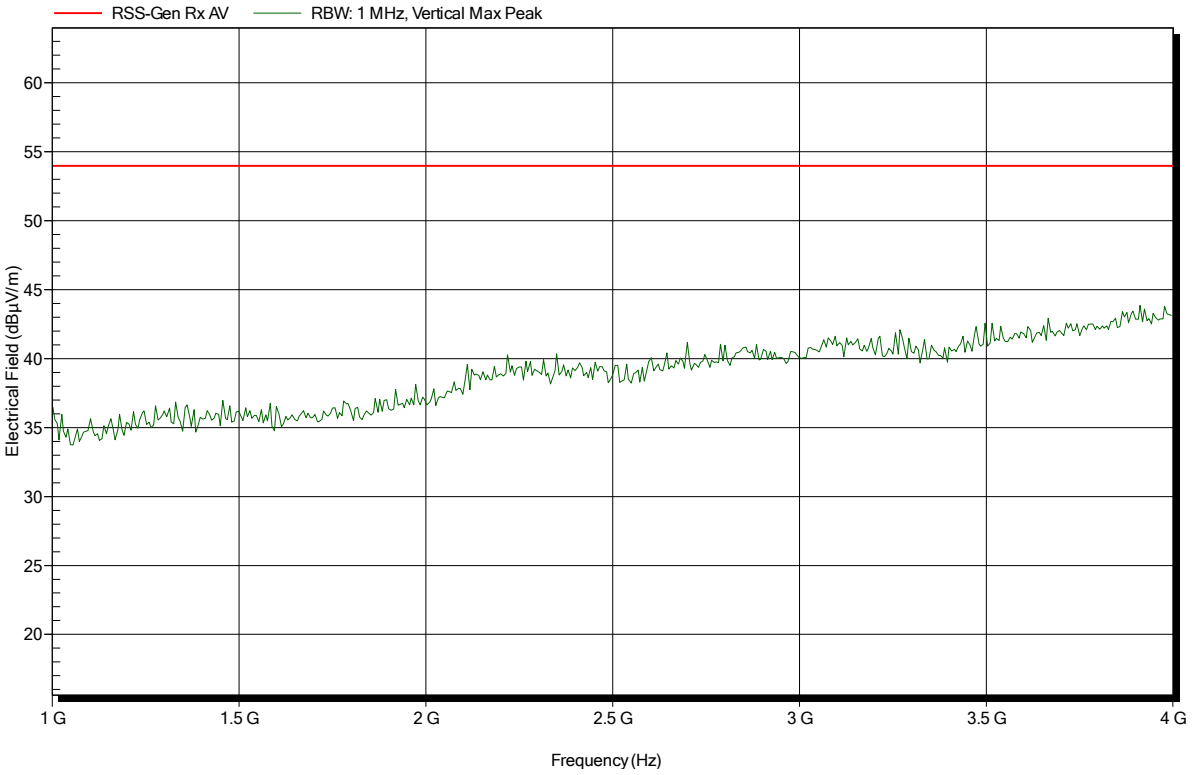

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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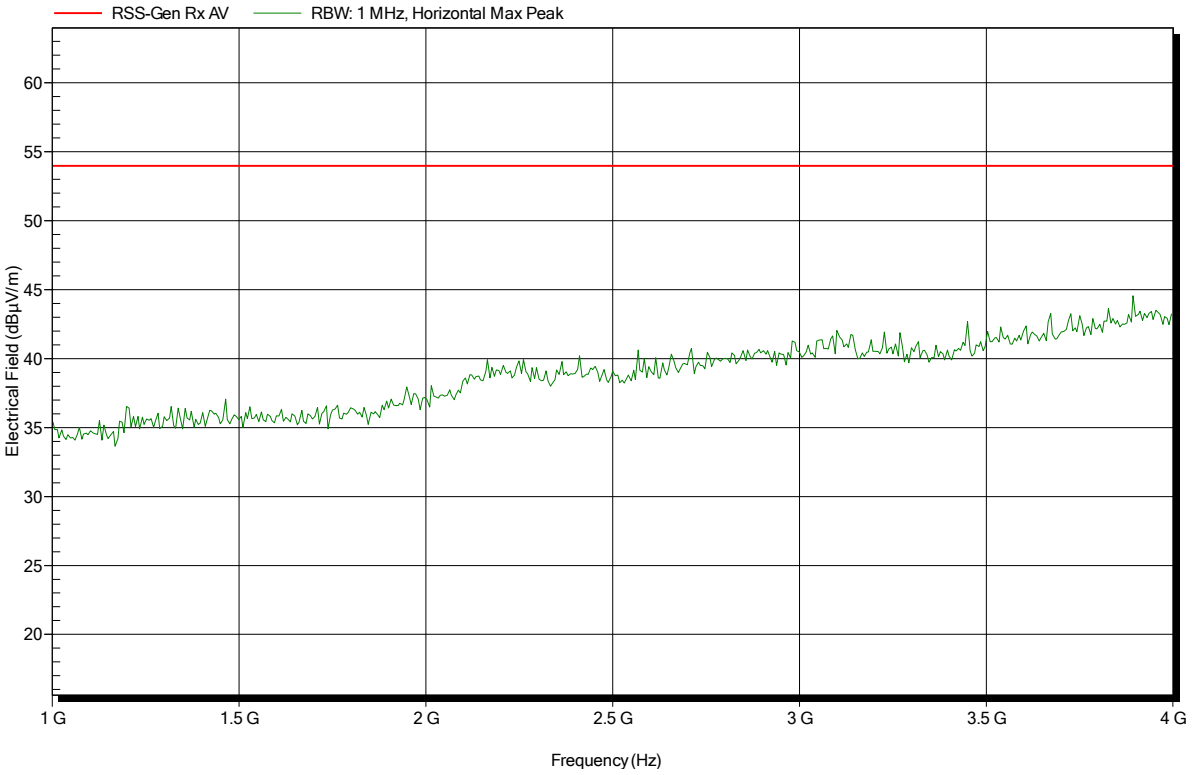

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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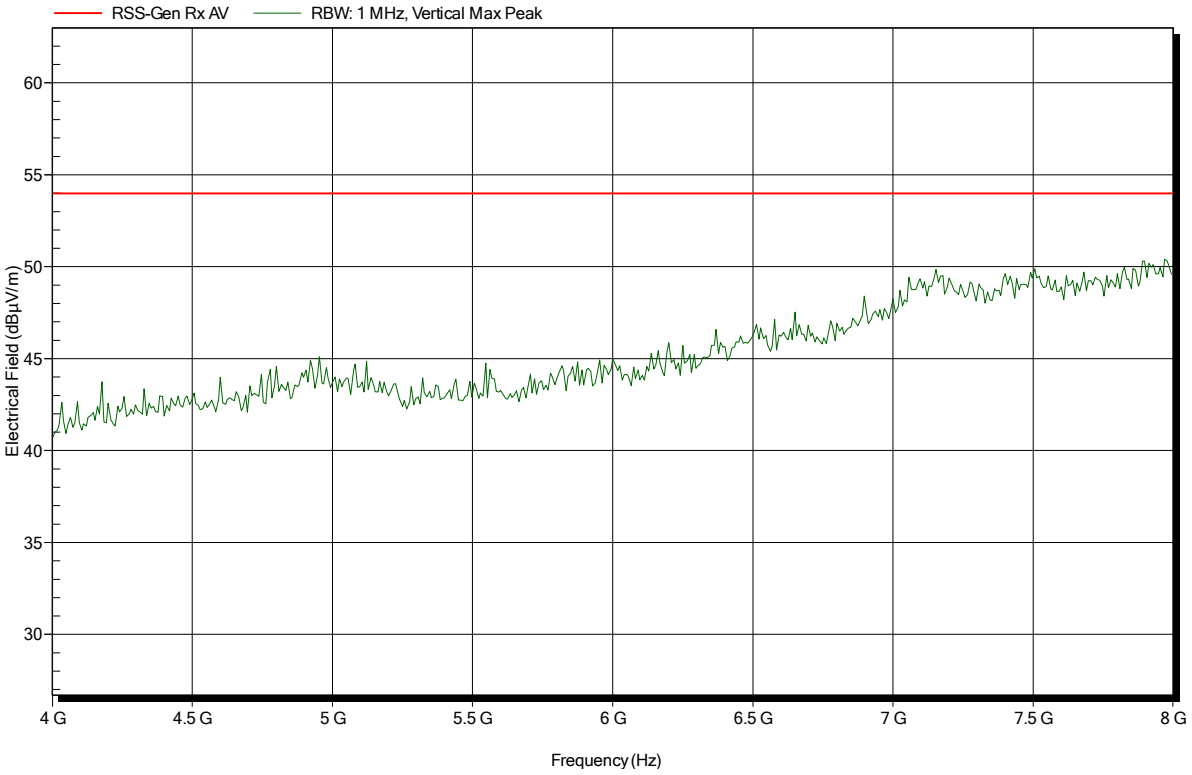

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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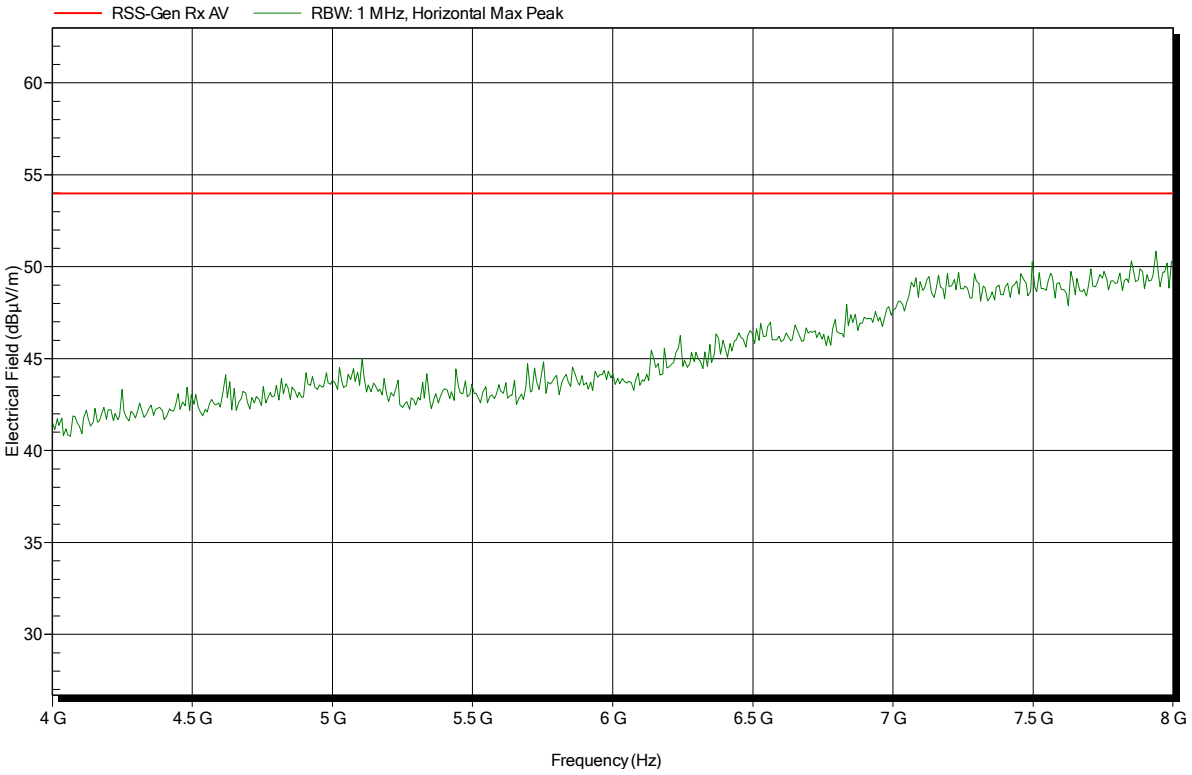

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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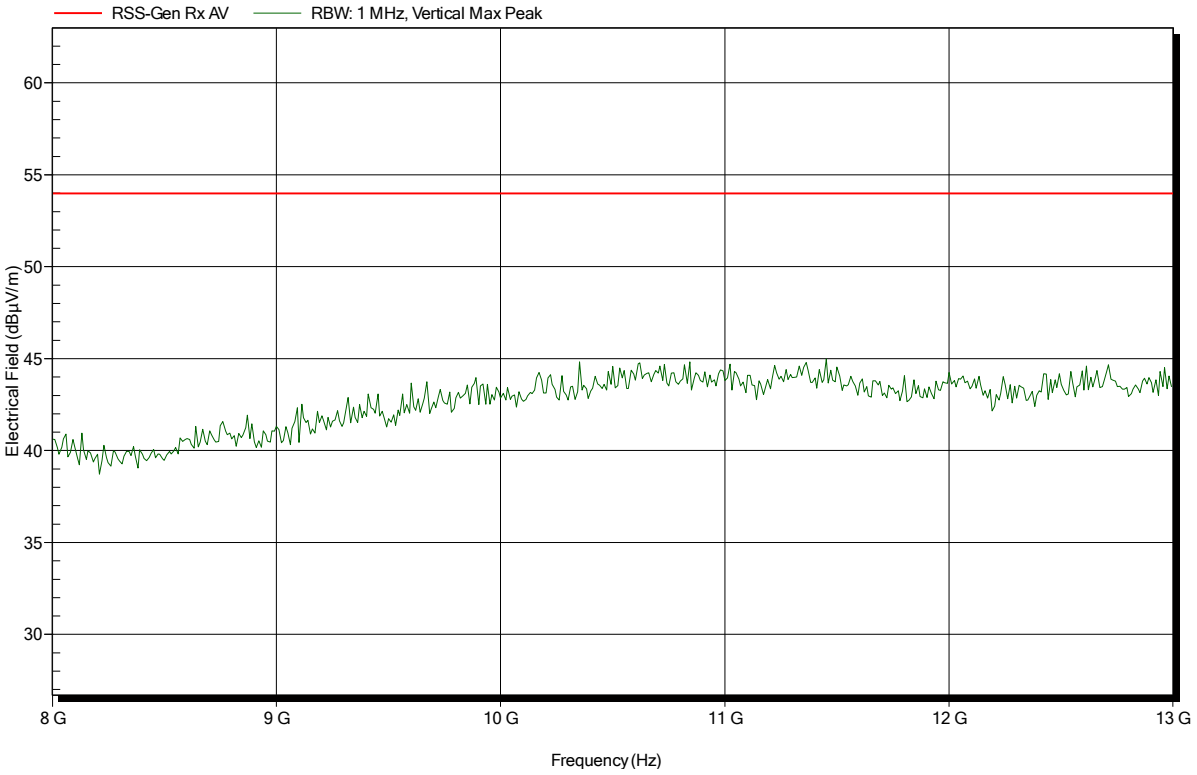

Spurious emissions according to ISED RSS-247, I1

Project number: G0M-1611-6033

Applicant:	Artis GmbH
EUT Name:	4-K WISY Rotor und Sensorsystem
Model:	4K-WISY-Rotor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; XBee; Ch: 2436 MHz; GFSK; ANT integral
Test Date:	2017-02-09
Note:	EUT vertical

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