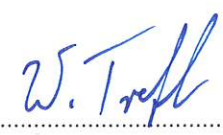


RADIO REPORT FCC 47 CFR Part 15C ISED Canada RSS-247 Digital transmission systems operating within the 2400.0 MHz - 2483.5 MHz band	
Report Reference No	G0M-2112-1198-TFC247WF-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	    DAkkS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	AiSight GmbH
Address	Gertraudenstraße 10-12 10178 Berlin GERMANY
Test Specification	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, Amendment 2, 2021-02
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
Model(s)	Aion
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	V4R8
Software Version(s)	v0.7.0-margherita
FCC ID	2A34W-V4R8
IC	28248-V4R8
Test Result	PASSED

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of receipt of test item	2022-03-16	
Report:		
Compiled by	Odai Qawasmeh	
Tested by (+ signature)	Odai Qawasmeh	
Supervised by (+ signature) (Responsible for Test)	Wilfried Treffke	
Approved by (+ signature) (Deputy Head of Lab)	Toralf Jahn	
Date of Issue	2022-04-05	
Total number of pages	43	
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	2022-04-05	Initial Release	

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
BPSK	Binary Phase Shift Keying
DSSS	Direct Sequence Spread Spectrum
EUT	Equipment Under Test
FCC	Federal Communications Commission
HT	High Throughput
IEEE 802.11	MAC and PHY Layer for WiFi
ISED	Innovation, Science and Economic Development Canada
OFDM	Orthogonal Frequency Division Multiplexing
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature Phase Shift Keying
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V _{NOM}	Nominal supply voltage

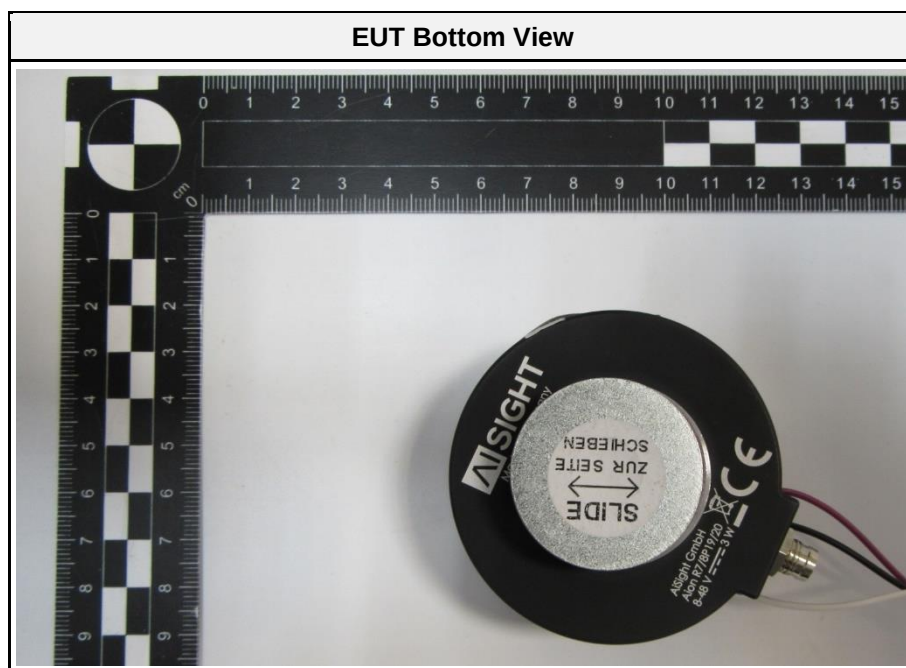
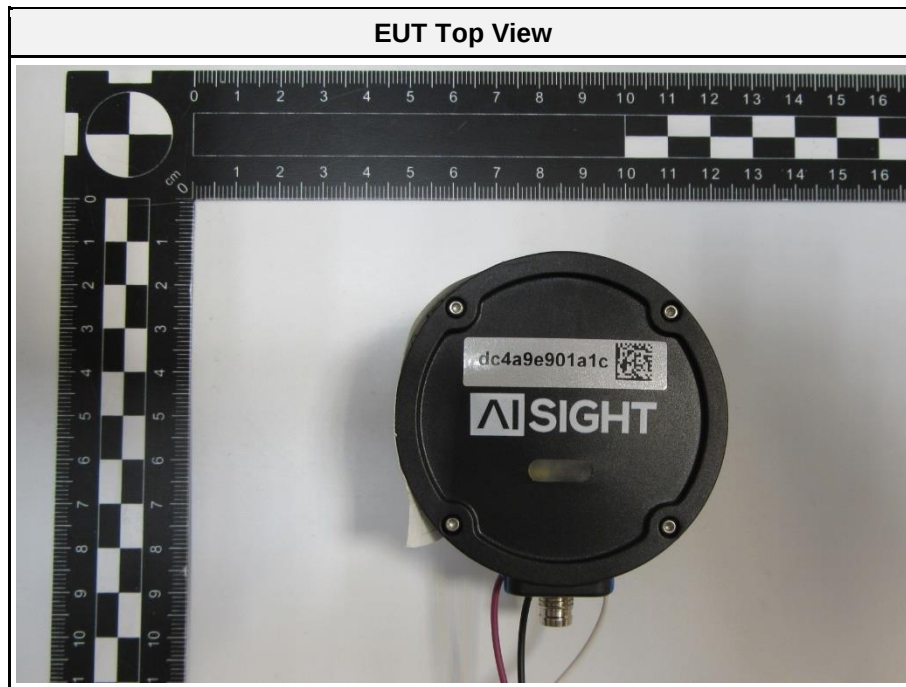
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1 Equipment (Test Item) Under Test

Description	Industrial vibration, geomagnetic and temperature sensor node for condition monitoring	
Model	Aion	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	dc4a9e901a1c	
Hardware Version(s)	V4R8	
Software Version(s)	v0.7.0-margherita	
PMN	V4R8	
HVIN	V4R8	
FVIN	N/A	
HMN	N/A	
FCC ID	2A34W-V4R8	
IC	28248-V4R8	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400.0 MHz - 2483.5 MHz	
Radio technology	IEEE 802.11 b/g/n (HT20)	
Modulation	BPSK, QPSK, 16-QAM, 64-QAM	
Number of antenna ports	1	
Radio Module	Type	Bluetooth and WLAN module
	Model	WROVER-E
	Manufacturer	Espressif
	HW Version	V1.2
	SW Version	V4.3
	FCC ID	2AC7Z-ESP32WROVERE
	IC	21098-ESPWROVERE
Antenna	Type	Integrated
	Model	PCB Antenna
	Manufacturer	Espressif
	Gain	3.4 dBi
Supply Voltage	V _{NOM}	24 VDC
Operating Temperature	T _{NOM}	25 °C
AC/DC-Adaptor	Model	TRE25R240
	Vendor	CINCON
	Input	90 – 264 VAC
	Output	24V / 1.05A
Manufacturer	AiSight GmbH Gertraudenstraße 10-12 10178 Berlin GERMANY	

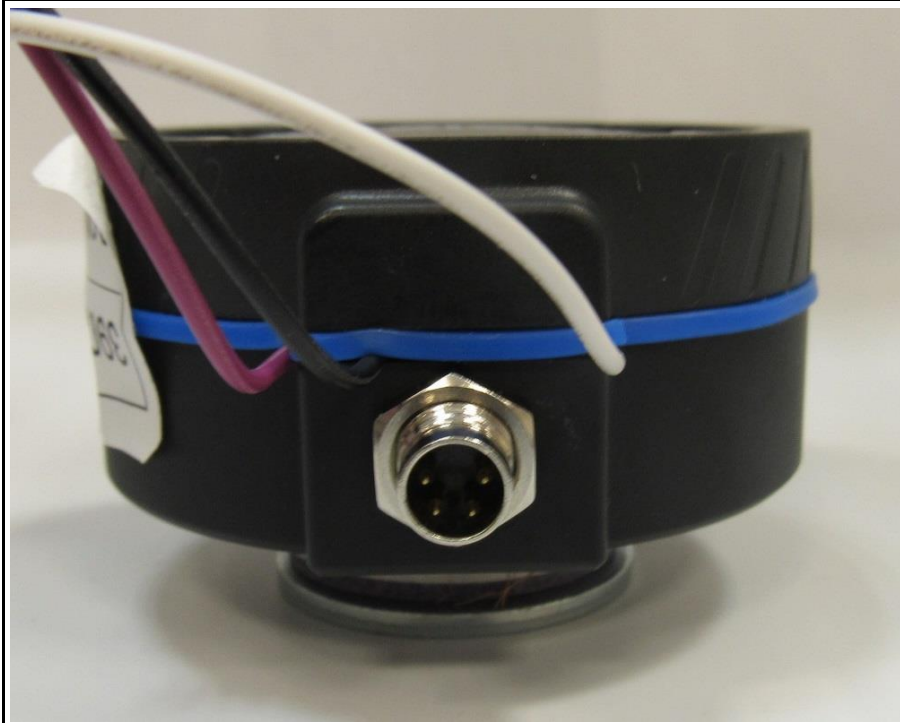
1.1 Photos – Equipment External



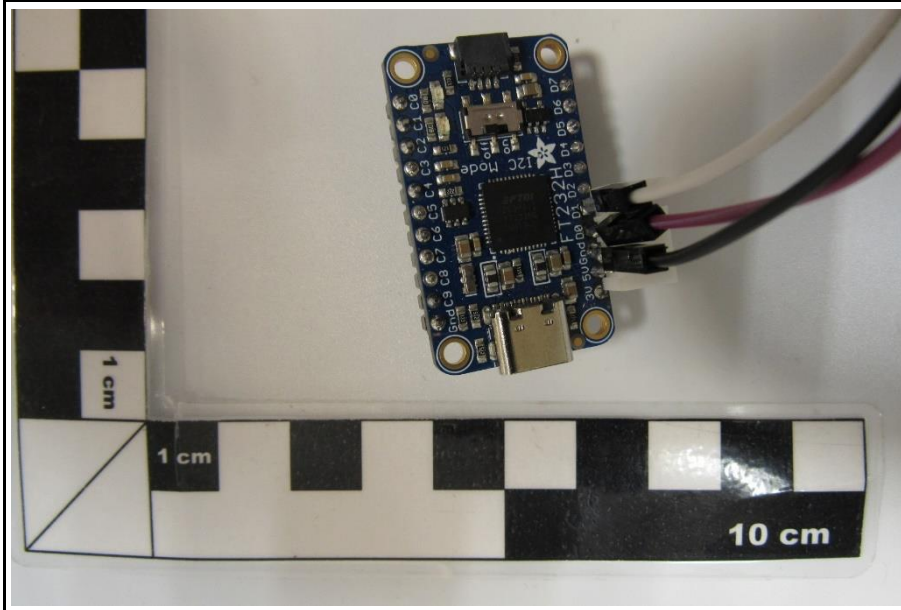
EUT Side View



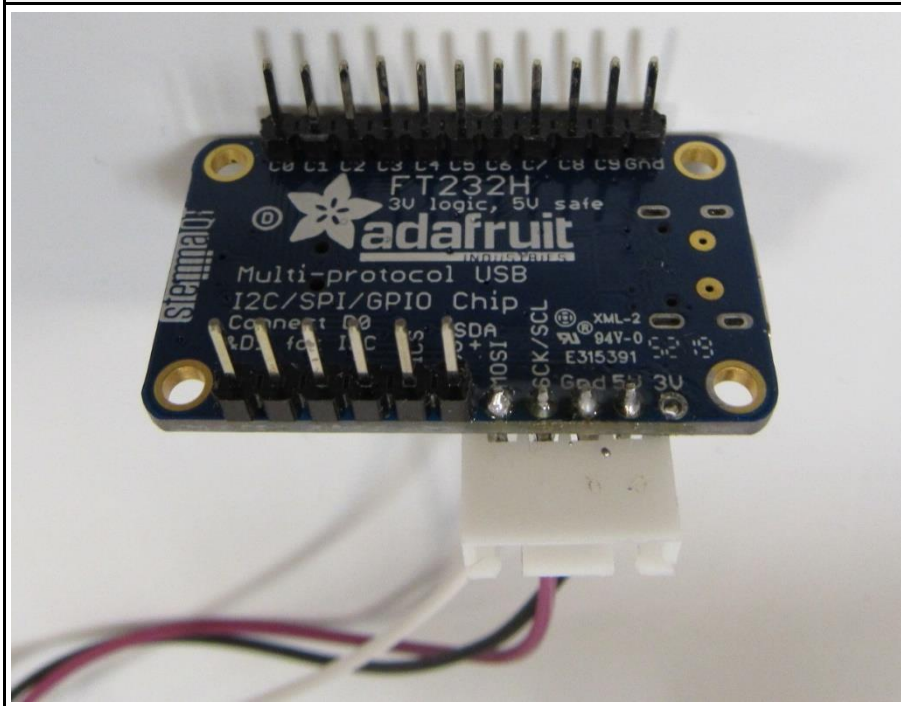
EUT Port



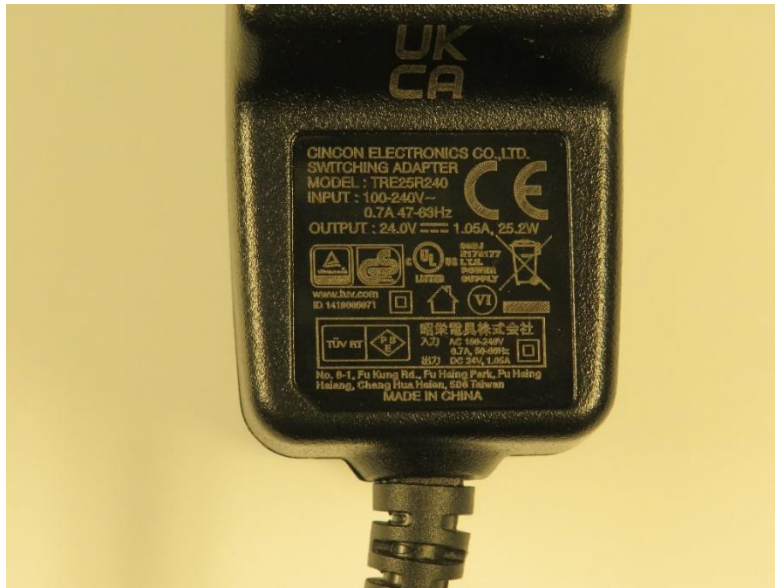
Evaluation Board Top View



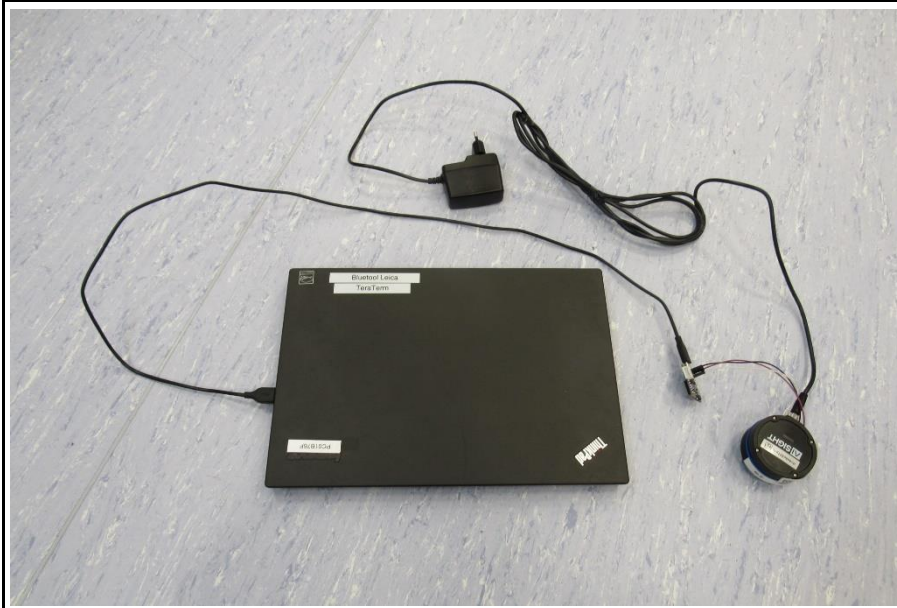
Evaluation Board Bottom View



AC/DC Adaptor

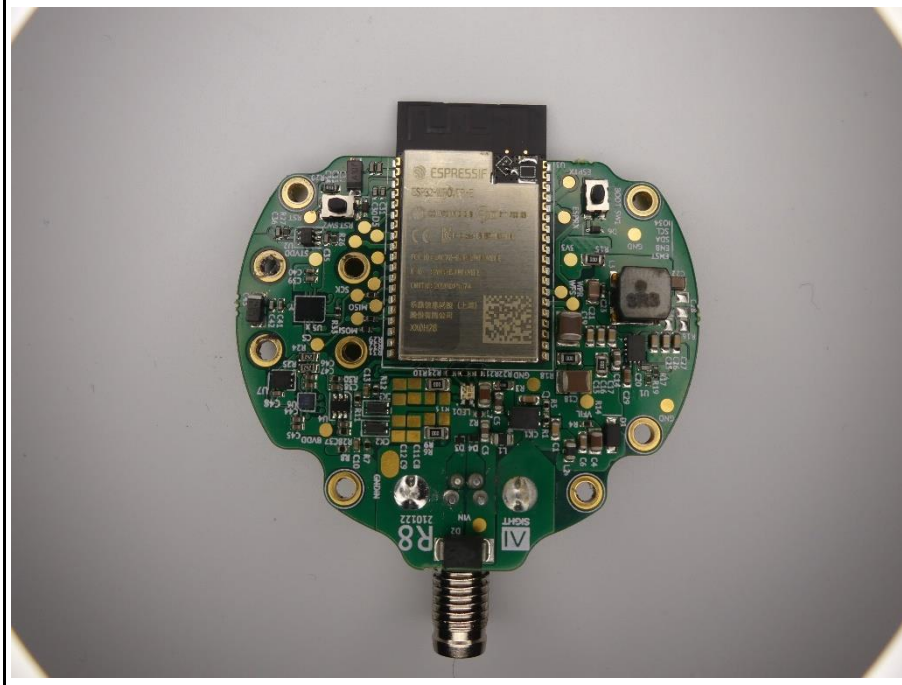


EUT with auxiliary equipment

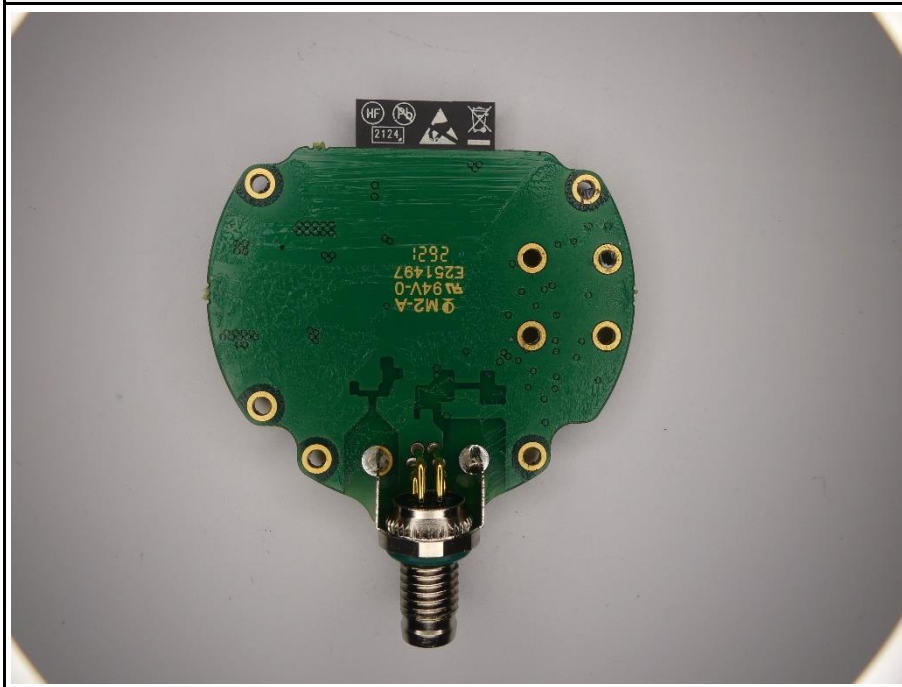


1.2 Photos – Equipment Internal

PCB with radio module (Top View)



PCB with radio module (Bottom View)



1.3 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	AC / DC Adaptor	CINCON	TRE25R240	Sample ID: 39094
AE	Notebook	-	-	For configuring test modes
AE	Evaluation Board	-	-	Used as USB - UART adapter
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.4 Test Modes

Mode	Description
DSSS (IEEE 802.11b)	Mode = Transmit Modulation = BPSK Spreading = DSSS Bandwidth = 20 MHz Duty cycle = 100% Power setting = Maximum Data rate = 1 Mbps Channel = 6 (2437 MHz)
Receive	Mode = Receive
Comment: Worst case was found in module test report number RSHD200116001-00A issued by Bay Area Compliance Laboratories Corp. on 04/12/2020.	

1.5 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	6	2437

1.6 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 dB μ V. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

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

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

Net:

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

Limit:

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

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

Margin:

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

Example only:

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

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	Requirement	Reference Method	Result	Remarks
ISED RSS-Gen, Issue 5 A2 (section 6.7)	Occupied Bandwidth	ANSI C63.10-2013	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247, Issue 2 (section 5.2)	6 dB Bandwidth	ANSI C63.10-2013	N/T	
FCC § 15.247(b) ISED RSS-247, Issue 2 (section 5.4)	Maximum peak conducted power	ANSI C63.10-2013	N/T	
FCC § 15.247(e) ISED RSS-247, Issue 2 (section 5.2)	Power spectral density	ANSI C63.10-2013	N/T	
FCC § 15.207 ISED RSS-247, Issue 2 (section 3.1)	AC power line conducted emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	N/T	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	N/T	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 A2 (section 6.13)	Transmitter radiated spurious emissions	ANSI C63.10-2013	PASS	
ISED RSS-247, Issue 2 (section 3.1)	Receiver radiated spurious emissions	ANSI C63.4-2014	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 - AC powerline conducted emissions

3.1.1 Information

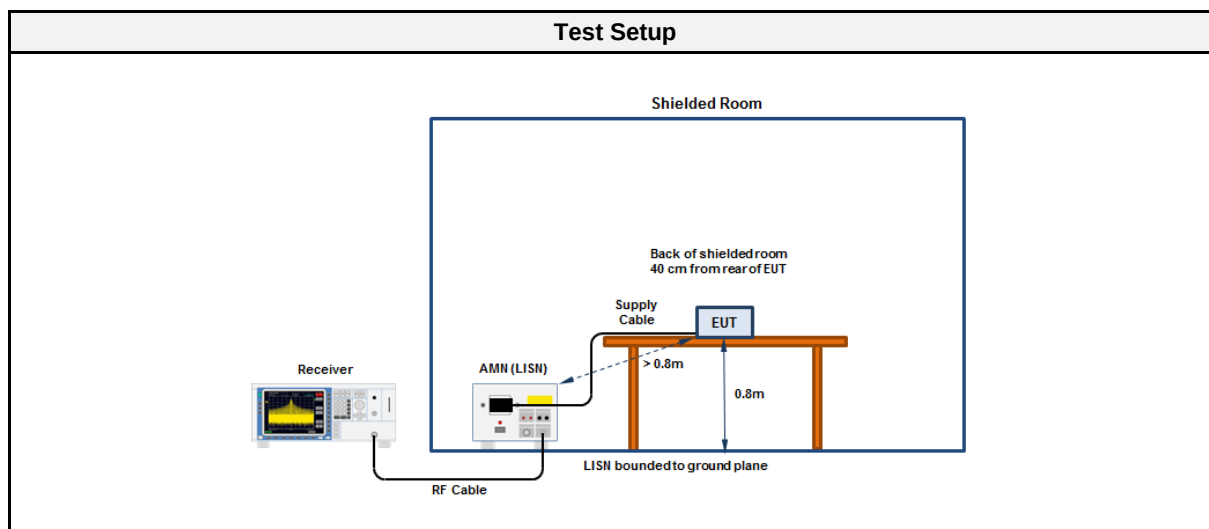
Test Information	
Reference	FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.2
Measurement Uncertainty	± 3.82 dB
Operator	Odai Qawasmeh
Date	2022-03-17

3.1.2 Limits

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

* Limit decreases linearly with the logarithm of the frequency

3.1.3 Setup

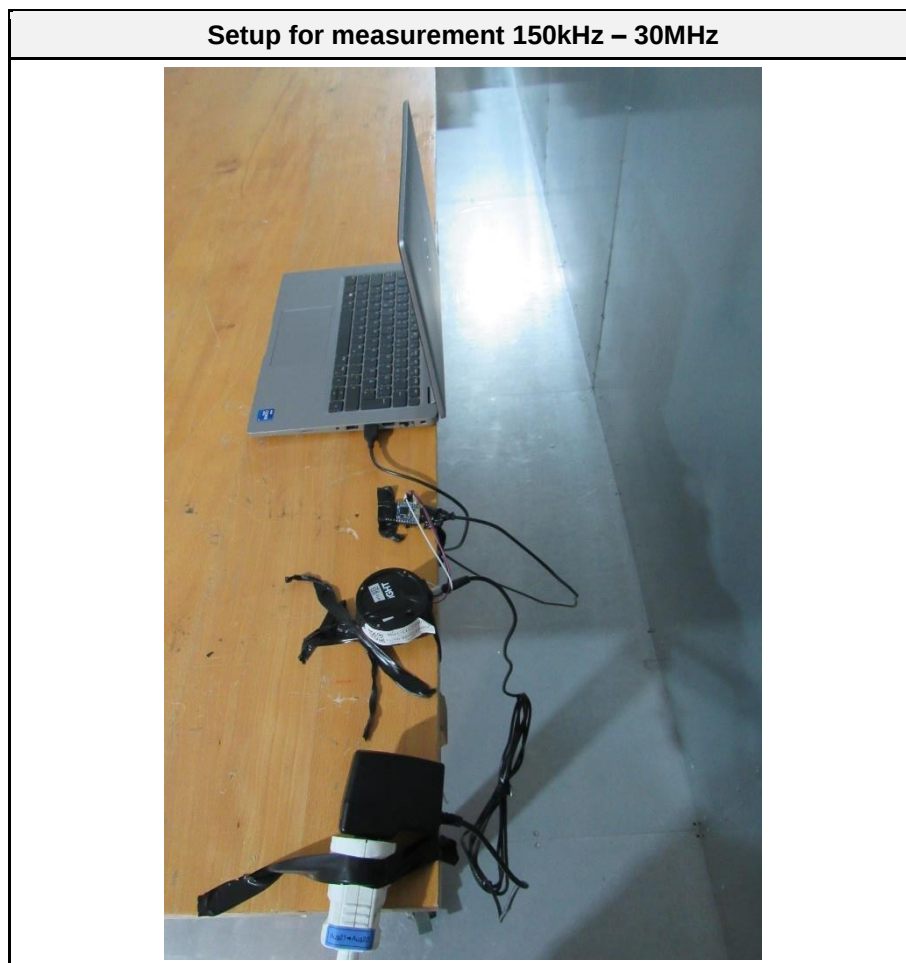
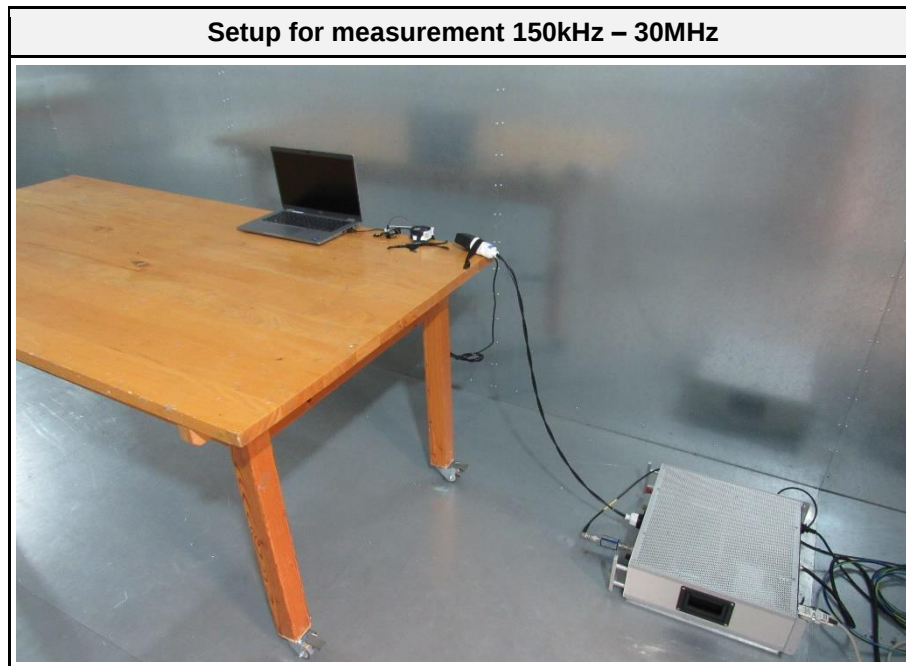


3.1.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

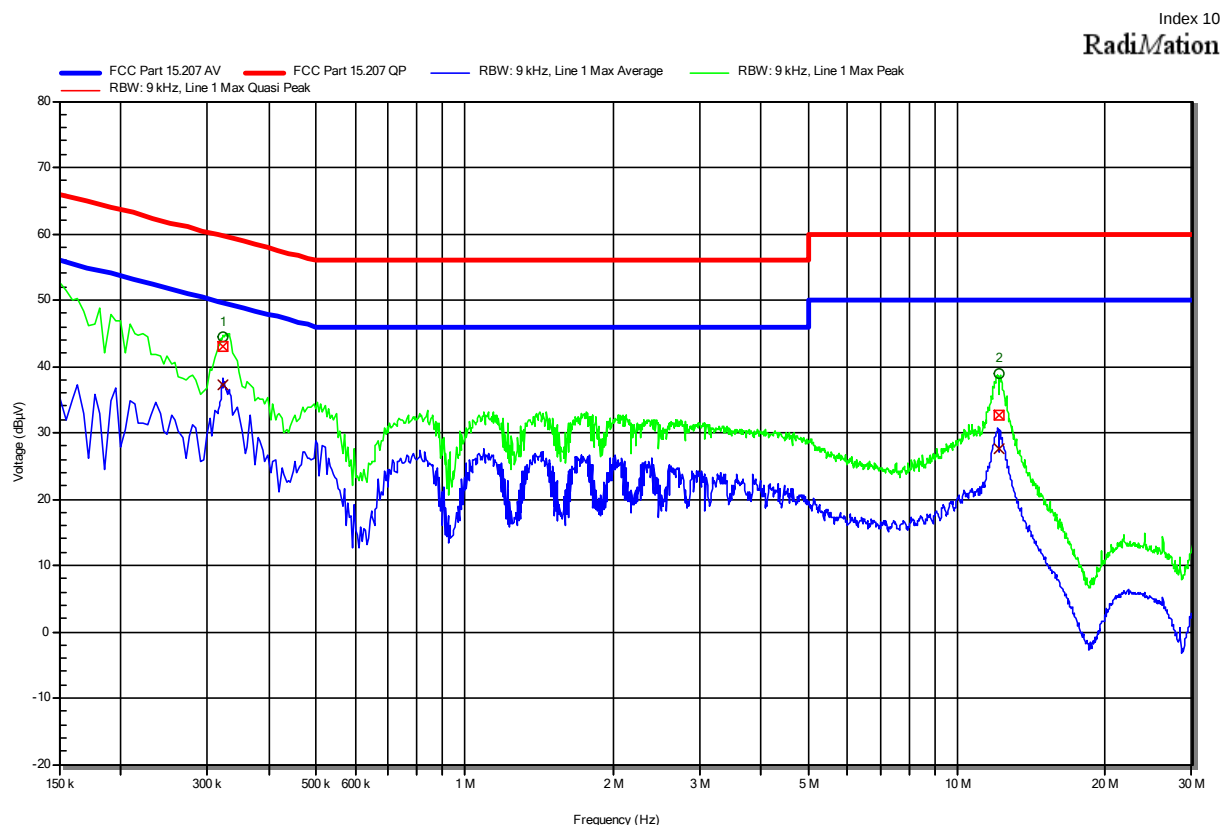
Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESR7	EF00943	2021-08	2022-08
Pulse Limiter	R&S	ESH3-Z2	EF01222	2021-07	2022-07
LISN	Schwarzbeck	NSLK 8127 RC	EF01592	2021-07	2022-07

3.1.5 Setup Photos



Conducted emissions at the mains power port according to 47 CFR Part 15.207

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Test Date: 2022-03-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 24 VDC (120 V AC-DC Adaptor)
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode: 802.11b; 1 Mbps; 2437 MHz
 EUT Configuration:
 Applied to Port: AC/DC Adapter to EUT (120V/60Hz to 24VDC)
 Note 1:



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	322.8 kHz	43.01 dBµV	59.63 dBµV	-16.62 dB	Pass	Line 1
2	12.147 MHz	32.69 dBµV	60 dBµV	-27.31 dB	Pass	Line 1

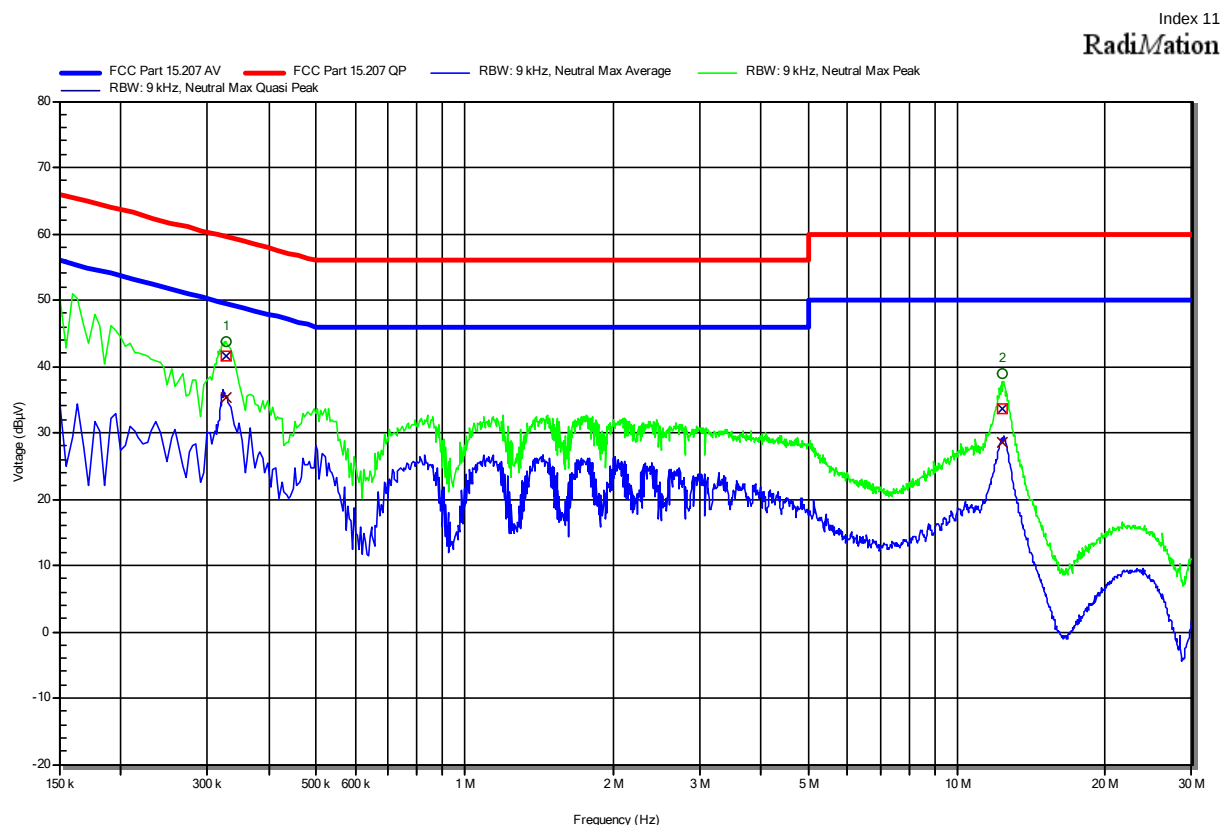
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	322.8 kHz	37.28 dBµV	49.63 dBµV	-12.36 dB	Pass	Line 1
2	12.147 MHz	27.66 dBµV	50 dBµV	-22.34 dB	Pass	Line 1

Test Report No.: G0M-2112-1198-TFC247WF-V01

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

Conducted emissions at the mains power port according to 47 CFR Part 15.207

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Test Date: 2022-03-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 24 VDC (120 V AC-DC Adaptor)
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode: 802.11b; 1 Mbps; 2437 MHz
 EUT Configuration:
 Applied to Port: AC/DC Adapter to EUT (120V/60Hz to 24VDC)
 Note 1:



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	326.85 kHz	41.48 dBµV	59.53 dBµV	-18.05 dB	Pass	Neutral
2	12.35 MHz	33.72 dBµV	60 dBµV	-26.28 dB	Pass	Neutral

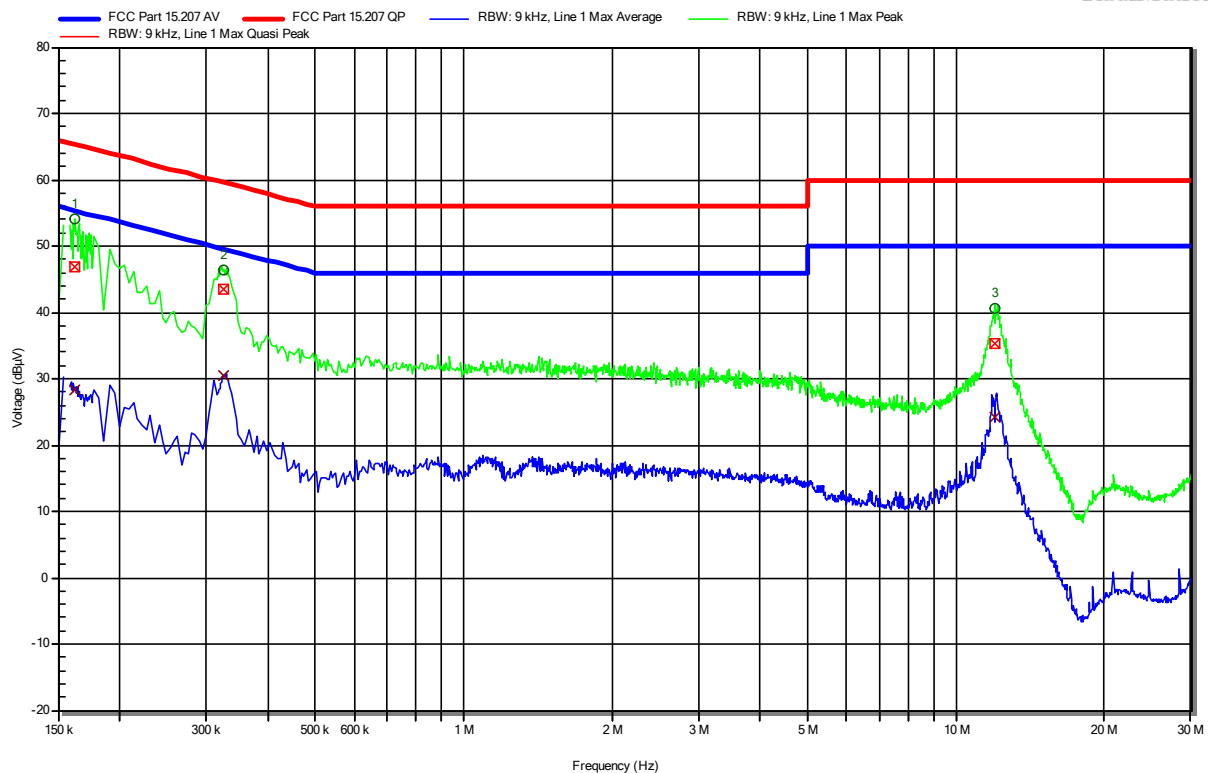
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	326.85 kHz	35.19 dBµV	49.53 dBµV	-14.35 dB	Pass	Neutral
2	12.35 MHz	28.54 dBµV	50 dBµV	-21.46 dB	Pass	Neutral

Conducted emissions at the mains power port according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Test Date: 2022-03-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 24 VDC (120 V AC-DC Adaptor)
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode: IEEE 802.11, 2437 MHz
 EUT Configuration:
 Applied to Port: AC/DC Adapter to EUT (120V/60Hz to 24VDC)
 Note 1:

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Radiation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	162.15 kHz	46.88 dBμV	65.35 dBμV	-18.48 dB	Pass	Line 1
2	325.95 kHz	43.4 dBμV	59.55 dBμV	-16.16 dB	Pass	Line 1
3	11.967 MHz	35.26 dBμV	60 dBμV	-24.74 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	162.15 kHz	28.43 dBμV	55.35 dBμV	-26.92 dB	Pass	Line 1
2	325.95 kHz	30.46 dBμV	49.55 dBμV	-19.1 dB	Pass	Line 1
3	11.967 MHz	24.24 dBμV	50 dBμV	-25.76 dB	Pass	Line 1

Test Report No.: G0M-2112-1198-TFC247WF-V01

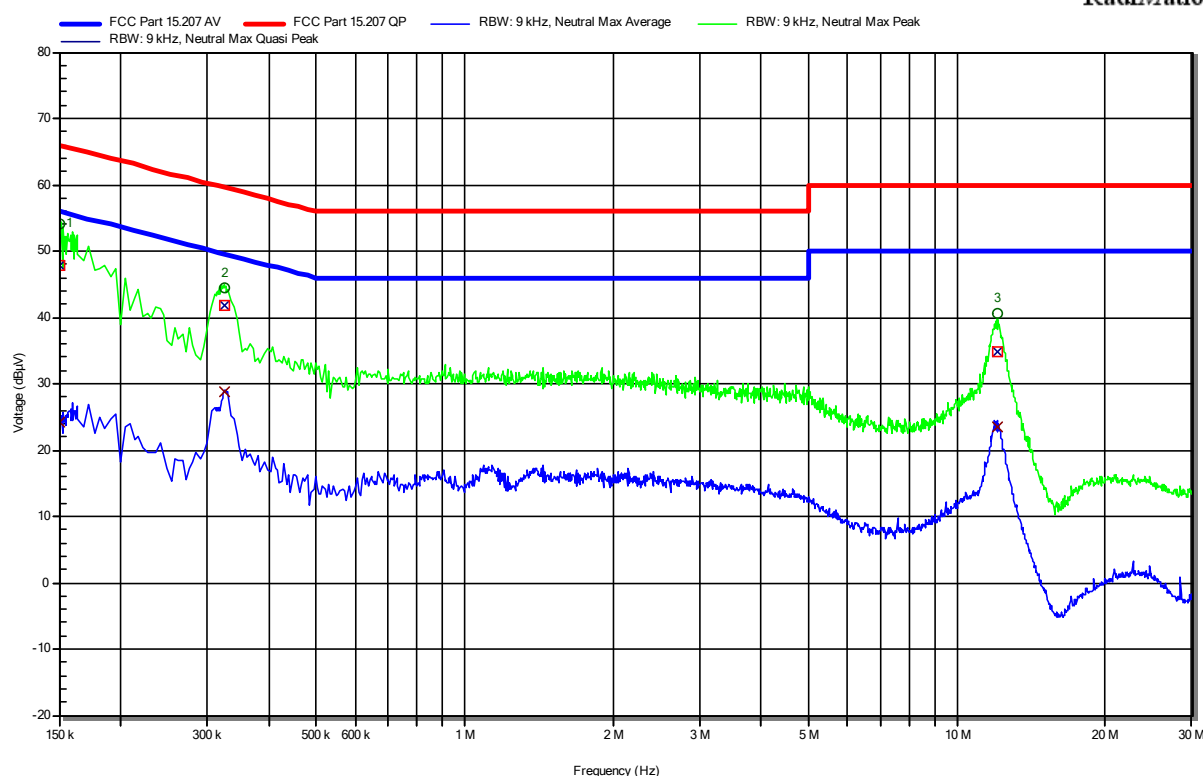
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Conducted emissions at the mains power port according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Test Date: 2022-03-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 24 VDC (120 V AC-DC Adaptor)
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode: IEEE 802.11, 2437 MHz
 EUT Configuration:
 Applied to Port: AC/DC Adapter to EUT (120V/60Hz to 24VDC)
 Note 1:

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Radiation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	47.85 dBμV	66 dBμV	-18.15 dB	Pass	Neutral
2	325.5 kHz	41.74 dBμV	59.57 dBμV	-17.82 dB	Pass	Neutral
3	12.044 MHz	34.85 dBμV	60 dBμV	-25.15 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	24.16 dBμV	56 dBμV	-31.84 dB	Pass	Neutral
2	325.5 kHz	28.84 dBμV	49.57 dBμV	-20.73 dB	Pass	Neutral
3	12.044 MHz	23.56 dBμV	50 dBμV	-26.44 dB	Pass	Neutral

Test Report No.: G0M-2112-1198-TFC247WF-V01

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

3.2 Test Conditions and Results - Transmitter radiated emissions

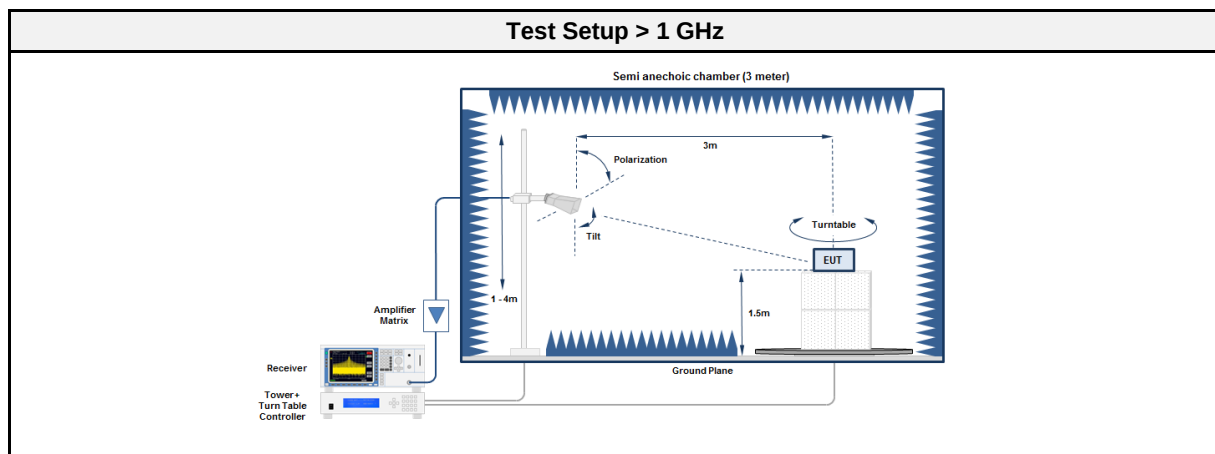
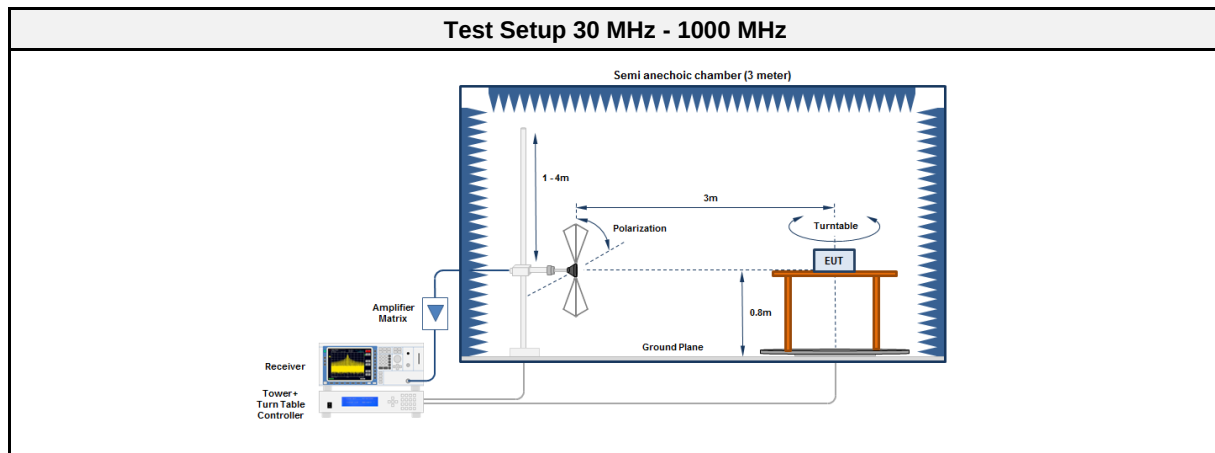
3.2.1 Information

Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISSED RSS-Gen, Issue 5 A2 (section 6.13)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Odai Qawasmeh
Date	2022-03-16
Comment	The EUT was not supplied by AC/DC Adaptor but via Notebook with 5 VDC.

3.2.2 Limits

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

3.2.3 Setup



3.2.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2021-02	2024-02
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2021-07	2022-07
Antenna	R&S	HK 116	EF00030	2021-05	2024-05
Antenna	R&S	HL 223	EF00212	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic chamber	Frankonia	AC 2	EF01616	2021-09	2022-09
Spectrum analyzer	R&S	FSU43	EF01631	2021-07	2022-07
Horn antenna	Schwarzbeck	BBHA 9120B	EF01678	2021-03	2022-03
Horn Antenna	Schwarzbeck	HWRD 650	EF01679	2021-03	2022-03
Antenna	Amplifier Research	AT4560	EF00302	2021-06	2023-06

3.2.5 Procedure

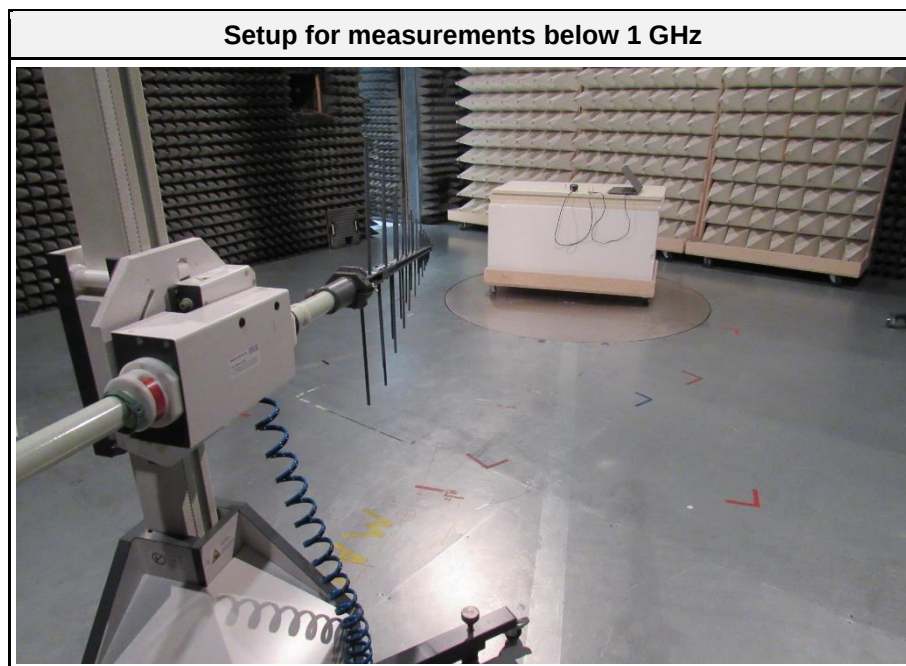
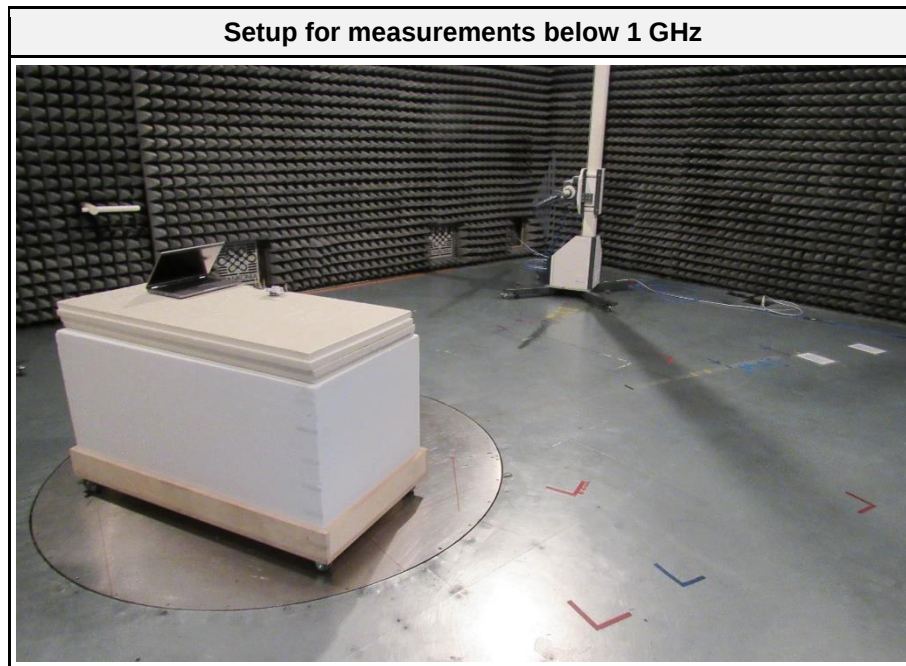
Test Procedure 30 MHz - 1000 MHz	
1.	EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground
2.	EUT set to test mode
3.	The receiver is set to peak detection with max hold
4.	The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m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

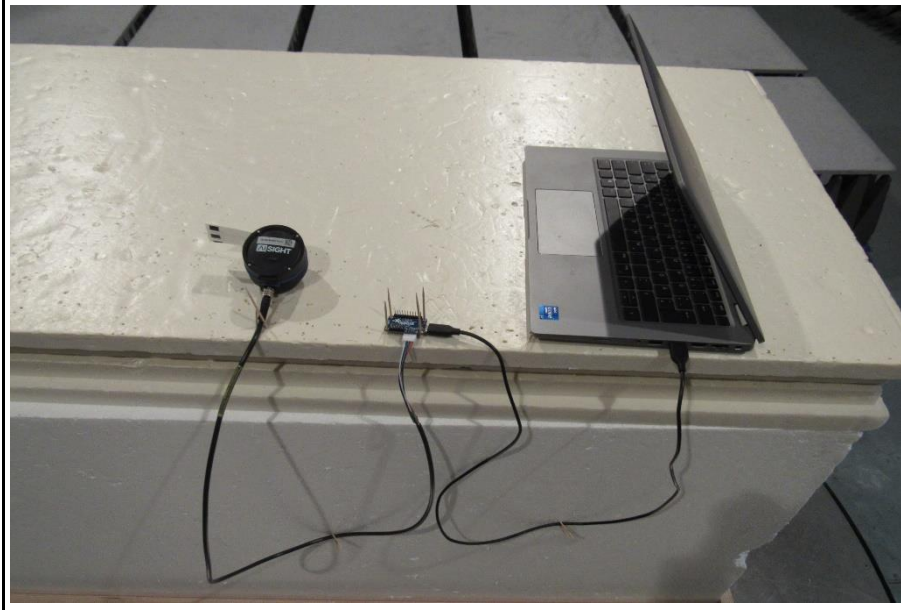
3.2.6 Results

Test Results - DSSS						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2437	119.8492	32.30	pk	ver	43.50	-11.23
2437	166.153	22.10	pk	ver	43.50	-21.45
2437	239.72	33.90	pk	ver	95.00	-61.11
2437	263.66	24.60	pk	ver	46.00	-21.37
2437	958.78	35.00	pk	ver	95.00	-60.00
2437	4874	49.53	pk	ver	74.00	-24.47
2437	4874	45.20	avg	ver	54.00	-08.80
2437	7749.5	43.01	pk	ver	74.00	-30.99
2437	7749.5	32.04	avg	ver	54.00	-21.96
2437	17820	45.31	pk	ver	74.00	-28.69
2437	17820	32.51	avg	ver	54.00	-21.49
2437	18410	47.09	pk	ver	74.00	-26.91
2437	18410	37.60	avg	ver	54.00	-16.40

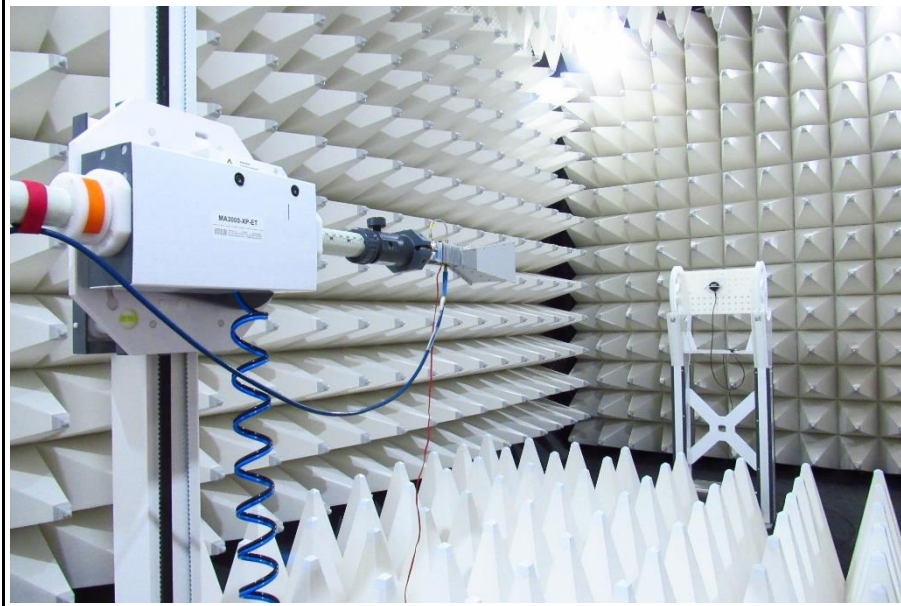
3.2.7 Setup Photos



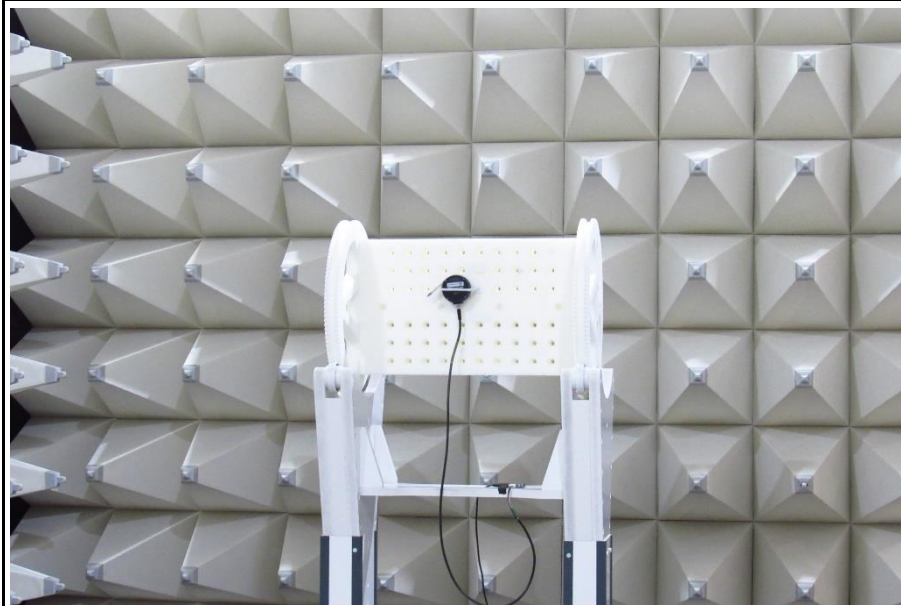
Test Setup



Setup for measurements above 1GHz



Test Setup



3.3 Test Conditions and Results - Receiver radiated emissions

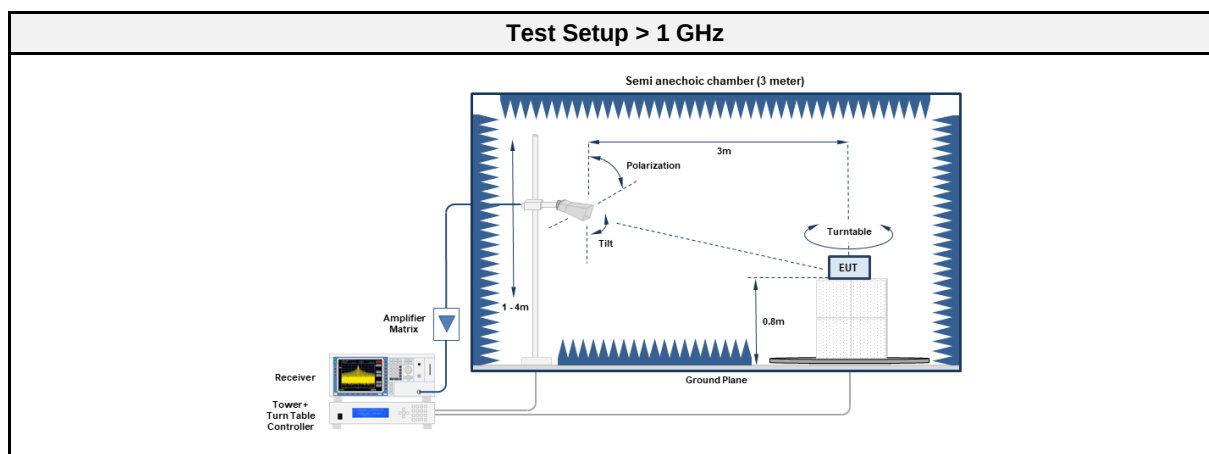
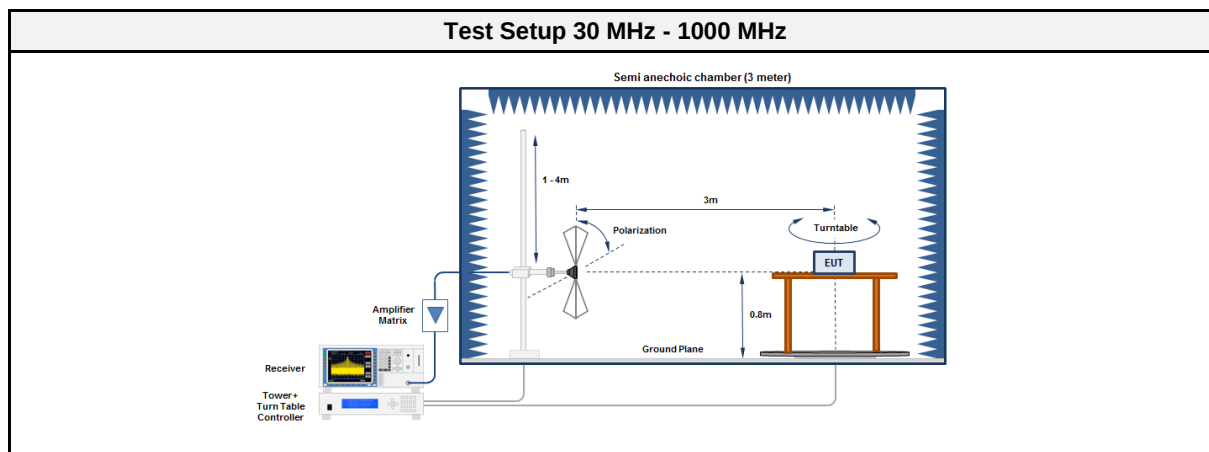
3.3.1 Information

Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.4-2014 8.1-8.3
Operator	Odai Qawasmeh
Date	2022-03-17
Comment	The EUT was not supplied by AC/DC Adaptor but via Notebook with 5 VDC.

3.3.2 Limits

Limits			
Frequency range [MHz]	Detector	Field strength [$\mu\text{V/m}$]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.3.3 Setup



3.3.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2021-02	2024-02
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2021-07	2022-07
Antenna	R&S	HK 116	EF00030	2021-05	2024-05
Antenna	R&S	HL 223	EF00212	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2021-02	2024-02
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2021-07	2022-07
Horn antenna	Schwarzbeck	BBHA 9120B	EF01678	2021-03	2022-03
Horn Antenna	Schwarzbeck	HWRD 650	EF01679	2021-03	2022-03

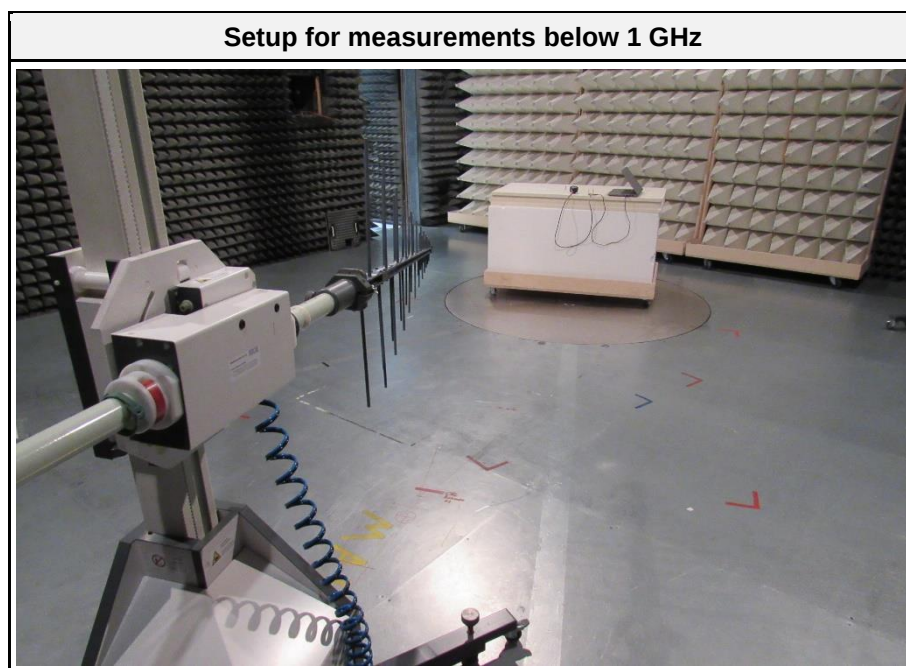
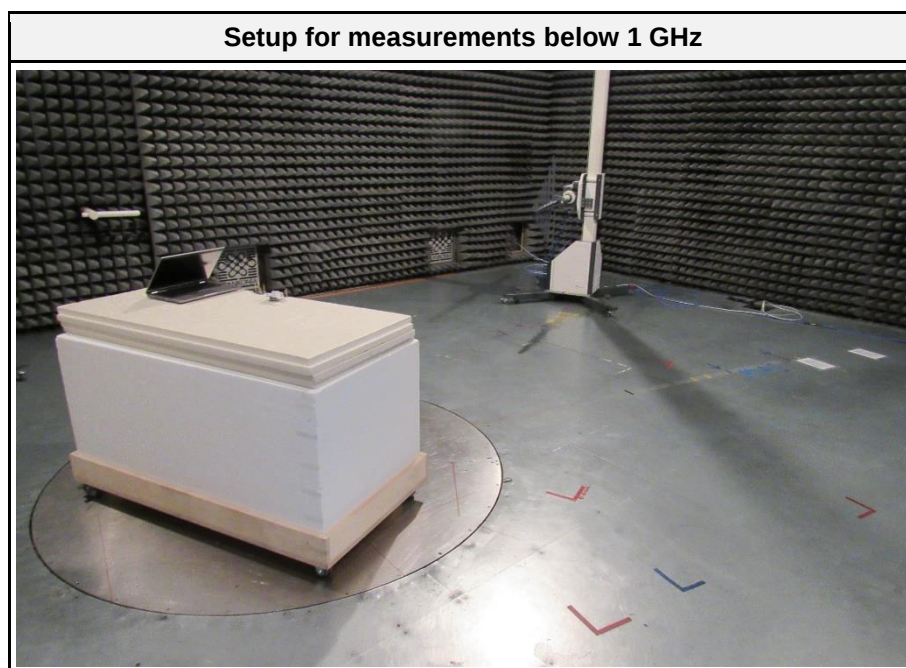
3.3.5 Procedure

Test Procedure
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground 2. EUT is 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

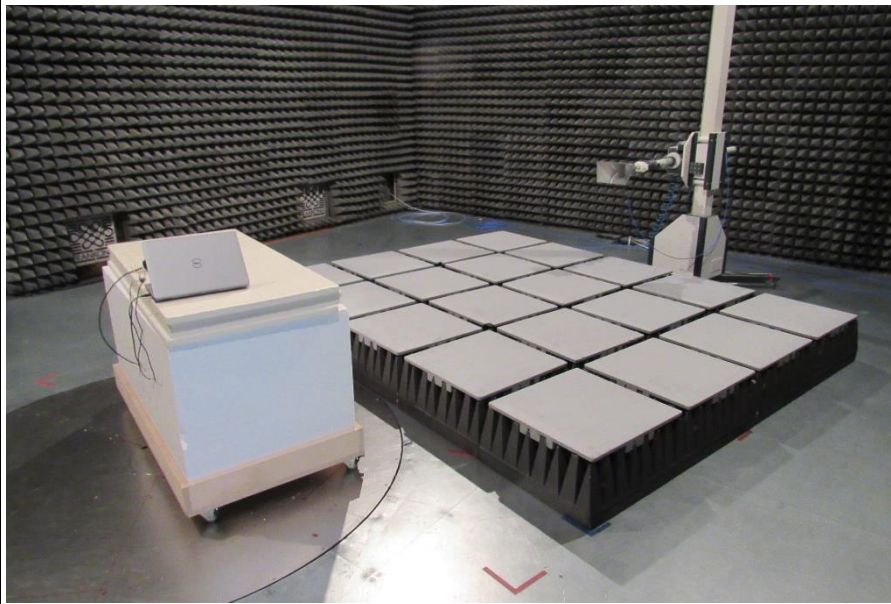
3.3.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2437	46.541	24.00	pk	ver	40.00	-15.95
2437	85.0035	19.70	pk	ver	40.00	-20.28
2437	95.8707	28.80	pk	ver	43.50	-14.70
2437	119.8407	32.60	pk	ver	43.50	-10.89
2437	143.8363	25.60	pk	ver	43.50	-17.91
2437	147.2235	27.10	pk	ver	43.50	-16.44
2437	156.1783	24.20	pk	ver	43.50	-19.33
2437	239.68	34.60	pk	ver	46.00	-11.39
2437	263.66	25.60	pk	ver	46.00	-20.40
2437	359.52	31.50	pk	ver	46.00	-14.46
2437	599.2	31.80	pk	ver	46.00	-14.16
2437	719.06	30.50	pk	ver	46.00	-15.52
2437	958.72	33.60	pk	ver	46.00	-12.44
2437	1438	41.13	pk	ver	74.00	-32.87
2437	1438	36.88	avg	ver	53.98	-17.10
2437	3249	42.79	pk	ver	74.00	-31.21
2437	3249	39.15	avg	ver	53.98	-14.83
2437	16410	45.21	pk	ver	74.00	-28.79
2437	16410	38.48	avg	ver	53.98	-15.50

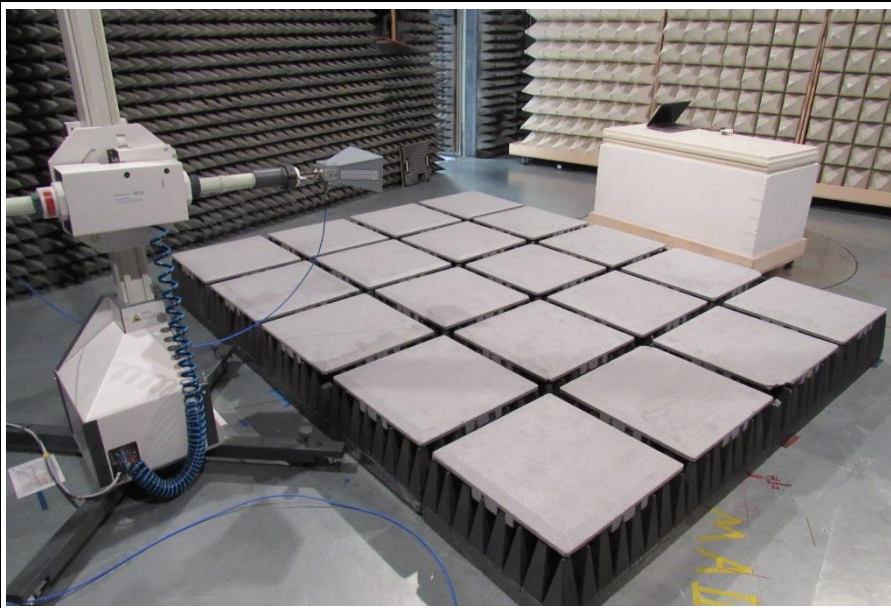
3.3.7 Setup Photos



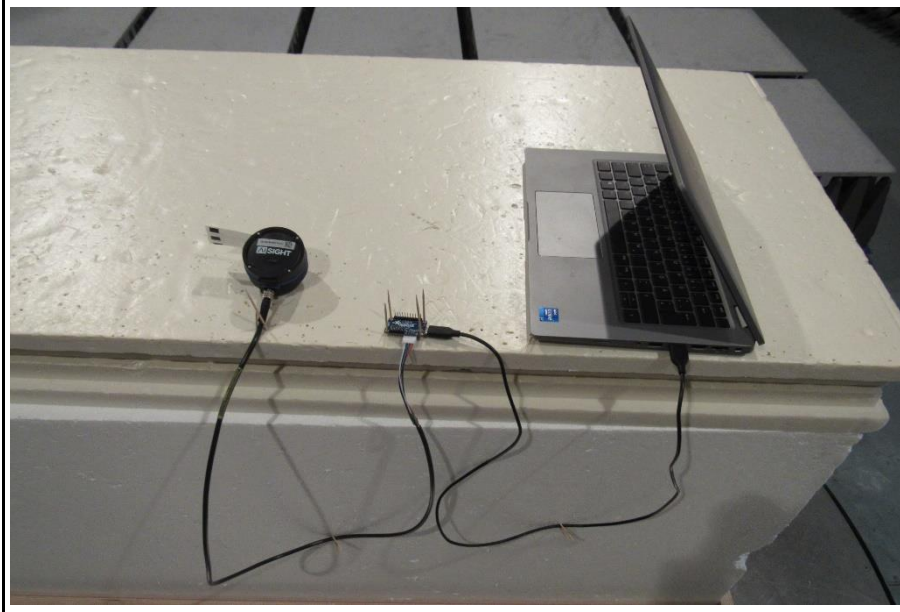
Setup for measurements above 1 GHz



Setup for measurements above 1 GHz



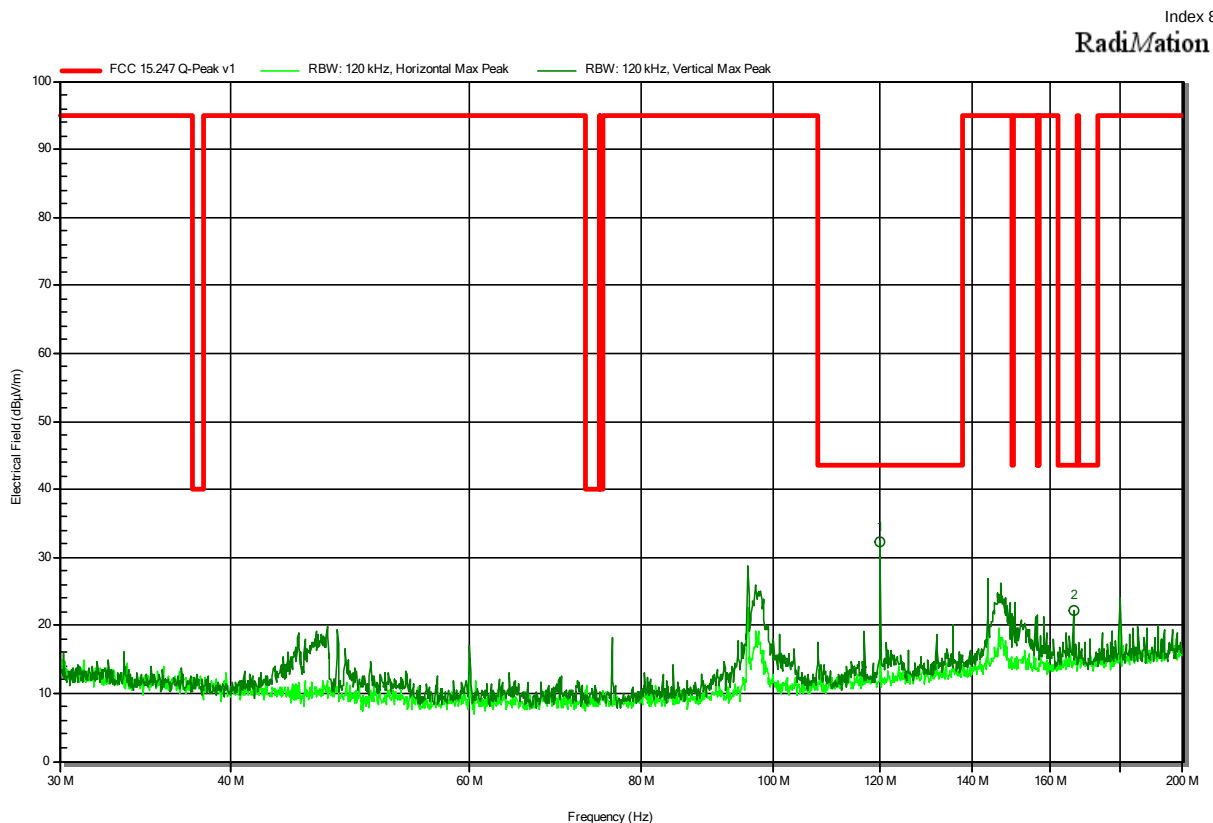
Test Setup



ANNEX A Transmitter spurious emissions

Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

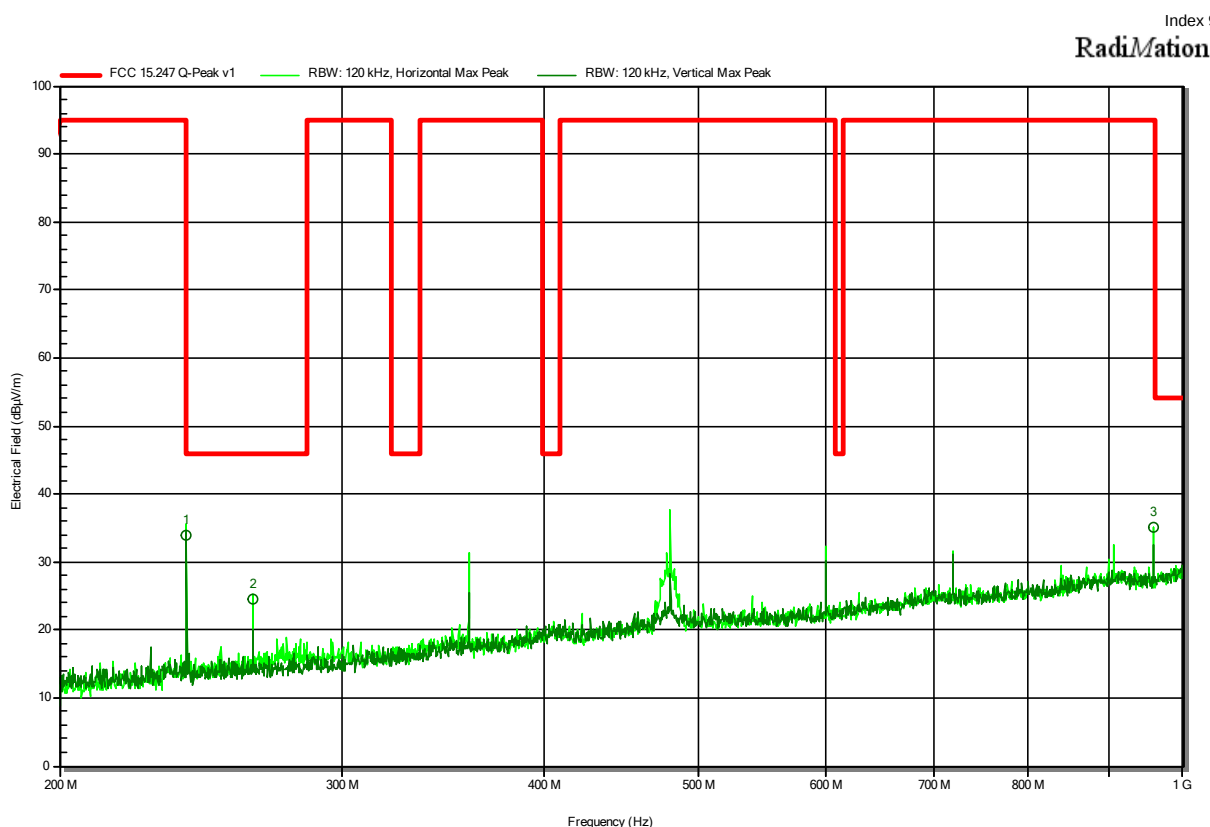
Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Rohde & Schwarz HK 116
 Measurement distance: 3 m
 Mode: Tx; 802.11b; 1 Mbps; 2437 MHz
 Test Date: 2022-03-17
 Note:



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
119.8492 MHz	32.3 dBμV/m	43.5 dBμV/m	-11.23 dB	Pass	Vertical
166.153 MHz	22.1 dBμV/m	43.5 dBμV/m	-21.45 dB	Pass	Vertical

Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

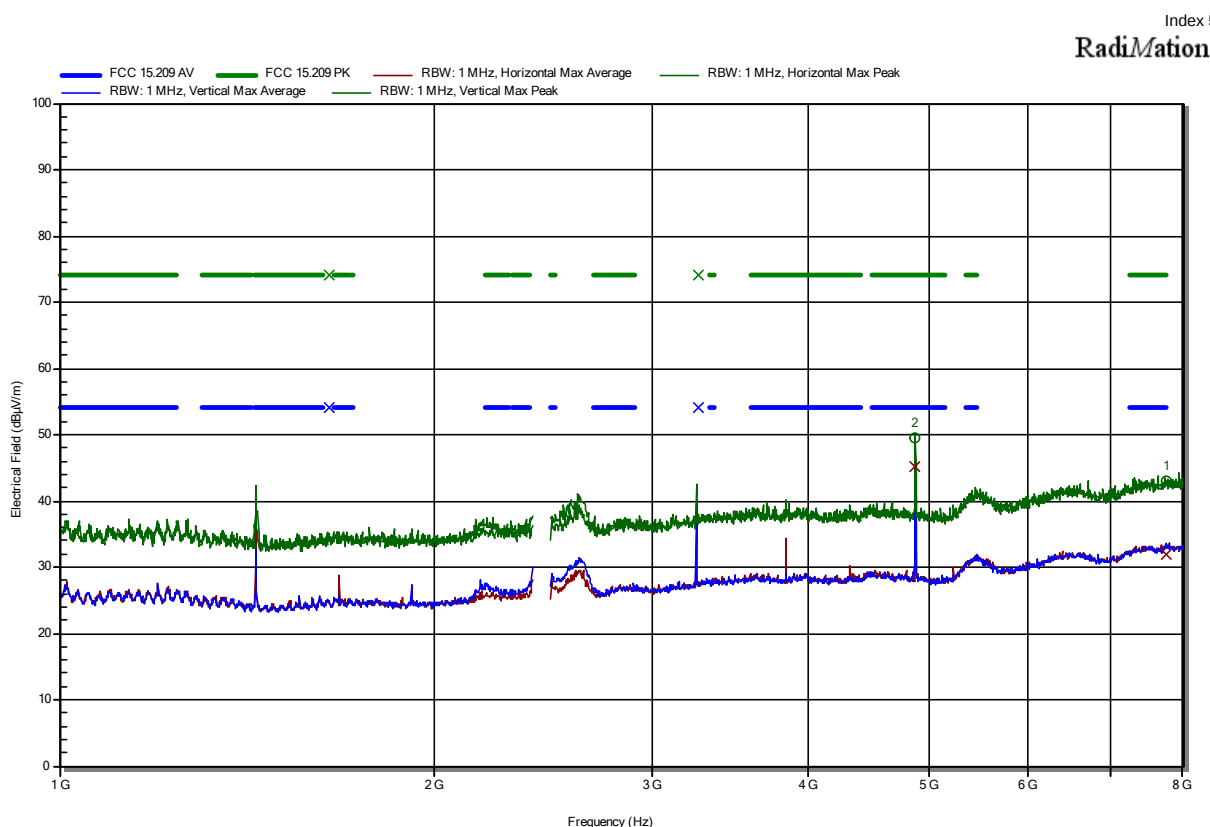
Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Rohde & Schwarz HL 223
 Measurement distance: 3 m
 Mode: Tx; 802.11b; 1 Mbps; 2437 MHz
 Test Date: 2022-03-17
 Note:



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
239.72 MHz	33.9 dBμV/m	95 dBμV/m	-61.11 dB	Pass	Vertical
263.66 MHz	24.6 dBμV/m	46 dBμV/m	-21.37 dB	Pass	Horizontal
958.78 MHz	35 dBμV/m	95 dBμV/m	-60 dB	Pass	Horizontal

Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.11b; 1 Mbps; 2437 MHz
 Test Date: 2022-03-16
 Note:



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
4.874 GHz	49.53 dBµV/m	74 dBµV/m	-24.47 dB	Pass	Vertical
7.7495 GHz	43.01 dBµV/m	74 dBµV/m	-30.99 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
4.874 GHz	45.2 dBµV/m	54 dBµV/m	-8.8 dB	Pass	Vertical
7.7495 GHz	32.04 dBµV/m	54 dBµV/m	-21.96 dB	Pass	Vertical

Test Report No.: G0M-2112-1198-TFC247WF-V01

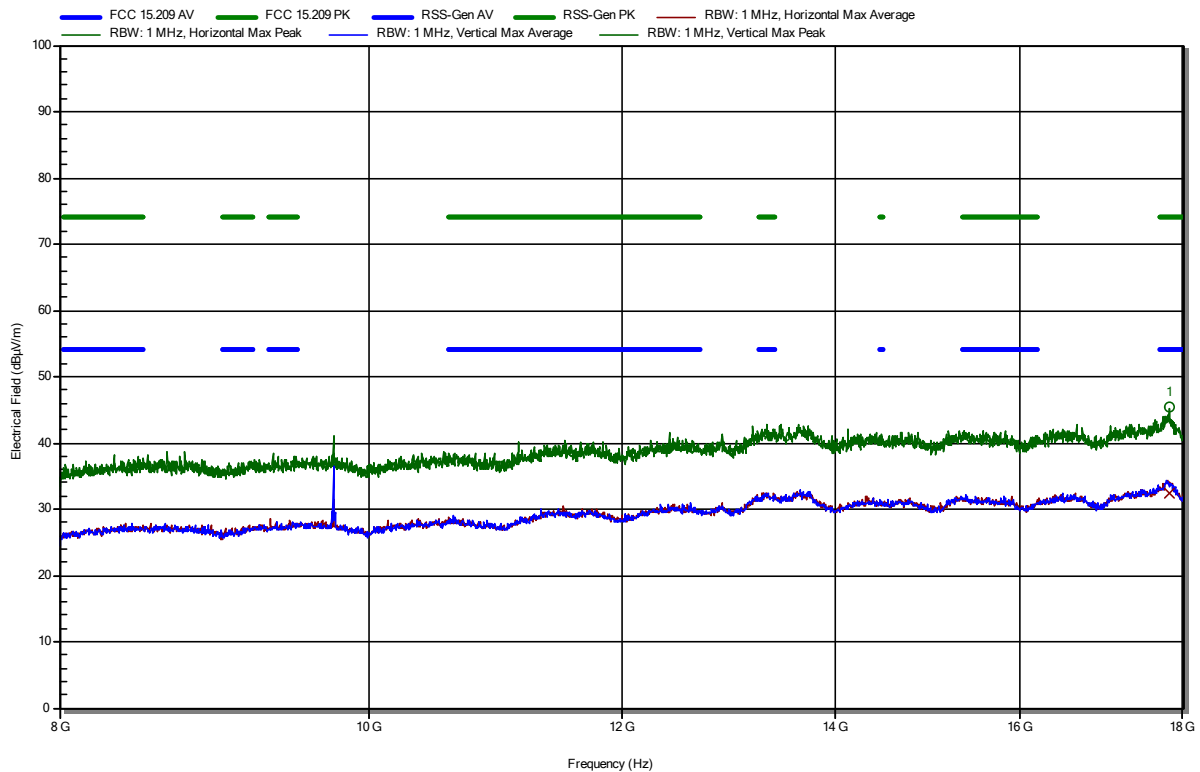
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Schwarzbeck HWRD 650
 Measurement distance: 3 m
 Mode: Tx; 802.11b; 1 Mbps; 2437 MHz
 Test Date: 2022-03-16
 Note:

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RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
17.82 GHz	45.31 dBμV/m	74 dBμV/m	-28.69 dB	Pass	Vertical
Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
17.82 GHz	32.51 dBμV/m	54 dBμV/m	-21.49 dB	Pass	Vertical

Test Report No.: G0M-2112-1198-TFC247WF-V01

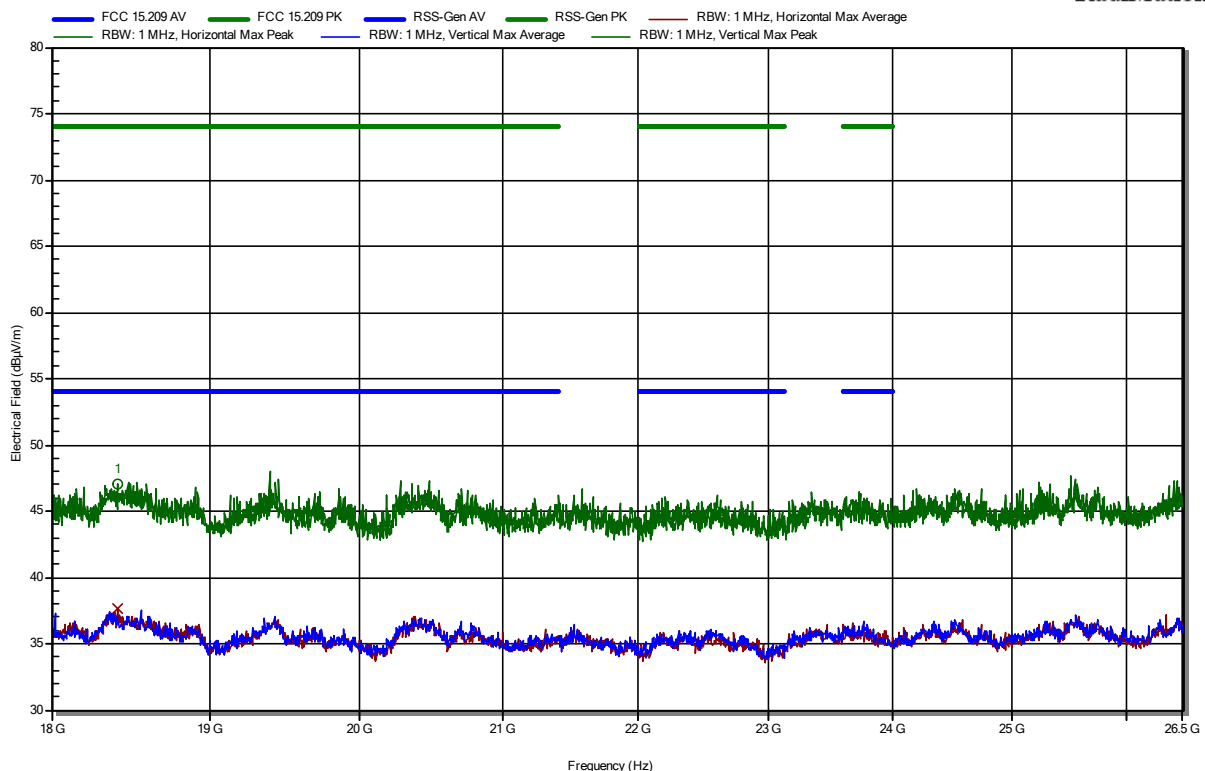
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Amplifier Research AT4560
 Measurement distance: 3 m
 Mode: Tx; 802.11b; 1 Mbps; 2437 MHz
 Test Date: 2022-03-16
 Note:

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RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
18.41 GHz	47.09 dBμV/m	74 dBμV/m	-26.91 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
18.41 GHz	37.6 dBμV/m	54 dBμV/m	-16.4 dB	Pass	Horizontal

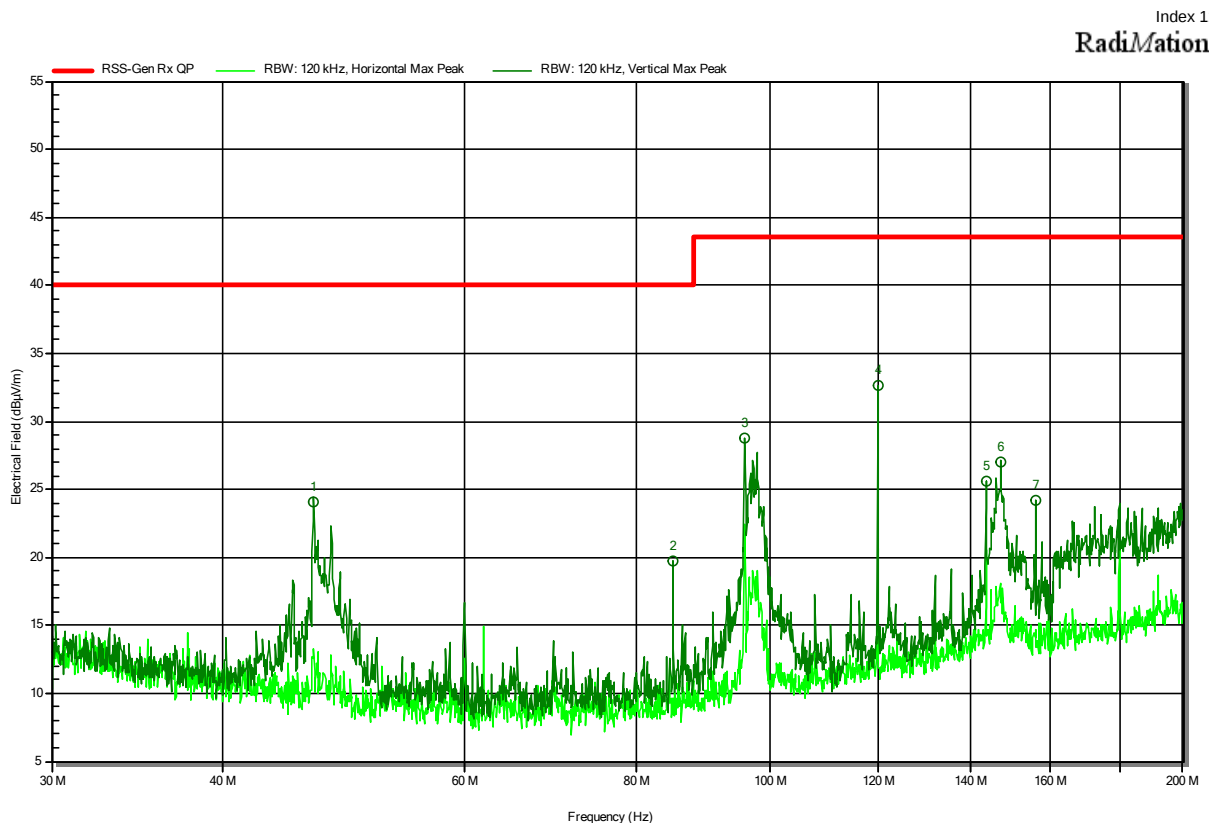
Test Report No.: G0M-2112-1198-TFC247WF-V01

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

ANNEX B Receiver spurious emissions

Radiated Spurious Emissions according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Rohde & Schwarz HK 116
 Measurement distance: 3 m
 Mode: RX; IEEE 802.11, 2437 MHz
 Test Date: 2022-03-17
 Note:



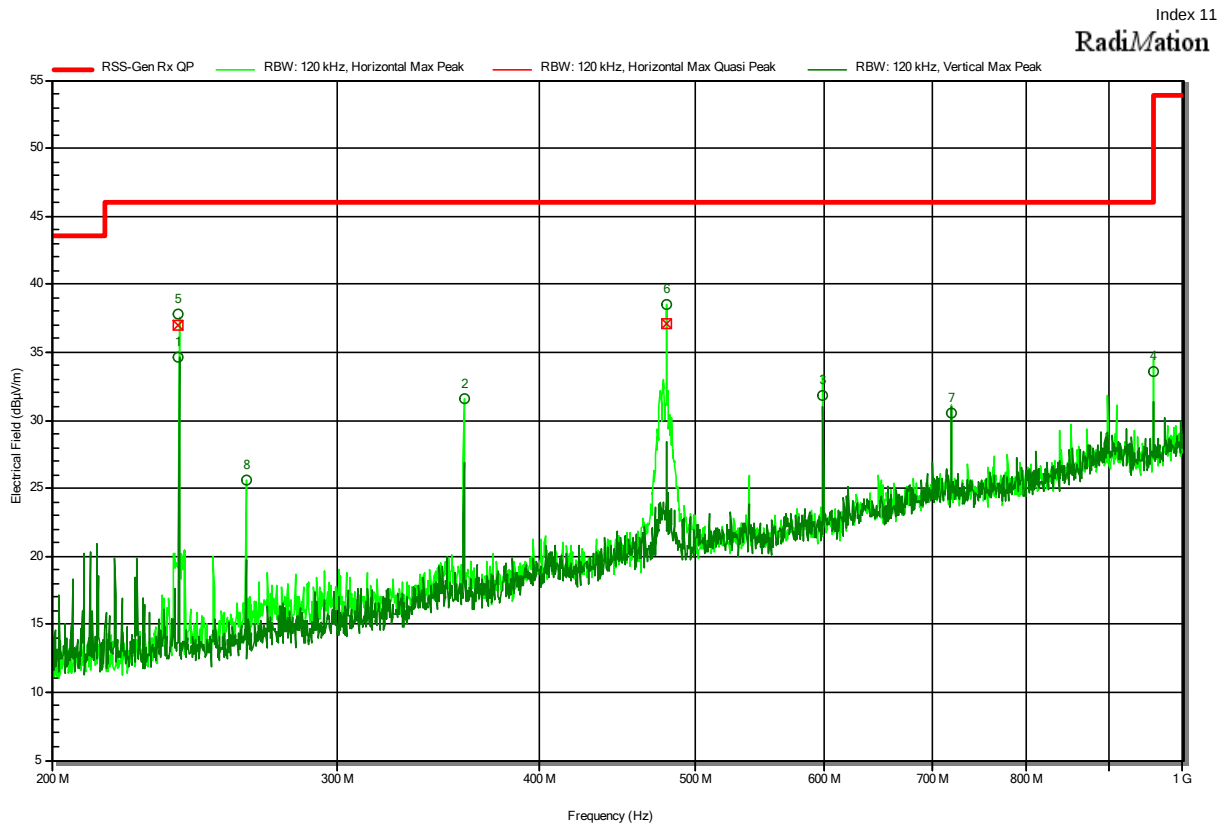
Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
46.541 MHz	24 dBµV/m	40 dBµV/m	-15.95 dB	Pass	Vertical
85.0035 MHz	19.7 dBµV/m	40 dBµV/m	-20.28 dB	Pass	Vertical
95.8707 MHz	28.8 dBµV/m	43.5 dBµV/m	-14.7 dB	Pass	Vertical
119.8407 MHz	32.6 dBµV/m	43.5 dBµV/m	-10.89 dB	Pass	Vertical
143.8363 MHz	25.6 dBµV/m	43.5 dBµV/m	-17.91 dB	Pass	Vertical
147.2235 MHz	27.1 dBµV/m	43.5 dBµV/m	-16.44 dB	Pass	Vertical
156.1783 MHz	24.2 dBµV/m	43.5 dBµV/m	-19.33 dB	Pass	Vertical

Test Report No.: G0M-2112-1198-TFC247WF-V01

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

Radiated Spurious Emissions according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Rohde & Schwarz HL 223
 Measurement distance: 3 m
 Mode: Rx; IEEE 802.11, 2437 MHz
 Test Date: 2022-03-17
 Note:



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
239.68 MHz	34.6 dBµV/m	46 dBµV/m	-11.39 dB	Pass	Vertical
263.66 MHz	25.6 dBµV/m	46 dBµV/m	-20.4 dB	Pass	Horizontal
359.52 MHz	31.5 dBµV/m	46 dBµV/m	-14.46 dB	Pass	Horizontal
599.2 MHz	31.8 dBµV/m	46 dBµV/m	-14.16 dB	Pass	Horizontal
719.06 MHz	30.5 dBµV/m	46 dBµV/m	-15.52 dB	Pass	Vertical
958.72 MHz	33.6 dBµV/m	46 dBµV/m	-12.44 dB	Pass	Horizontal
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Polarization
239.6777 MHz	37 dBµV/m	46 dBµV/m	-8.96 dB	Pass	Horizontal
479.3819 MHz	37.1 dBµV/m	46 dBµV/m	-8.93 dB	Pass	Horizontal

Test Report No.: G0M-2112-1198-TFC247WF-V01

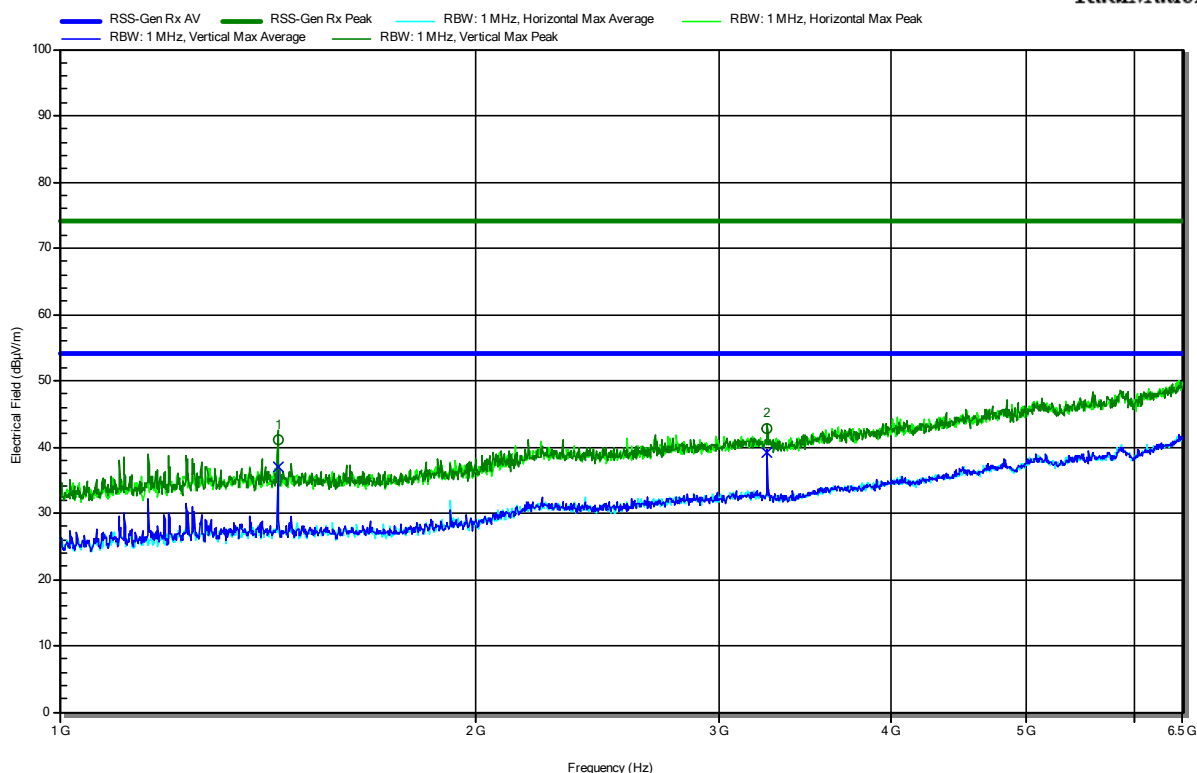
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated Spurious Emissions according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Schwarzbeck BBHA 9120D
 Measurement distance: 3 m
 Mode: Rx; IEEE 802.11, 2437 MHz
 Test Date: 2022-03-17
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
1.438 GHz	41.13 dBµV/m	74 dBµV/m	-32.87 dB	Pass	Vertical
3.249 GHz	42.79 dBµV/m	74 dBµV/m	-31.21 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
1.438 GHz	36.88 dBµV/m	53.98 dBµV/m	-17.1 dB	Pass	Vertical
3.249 GHz	39.15 dBµV/m	53.98 dBµV/m	-14.83 dB	Pass	Vertical

Test Report No.: G0M-2112-1198-TFC247WF-V01

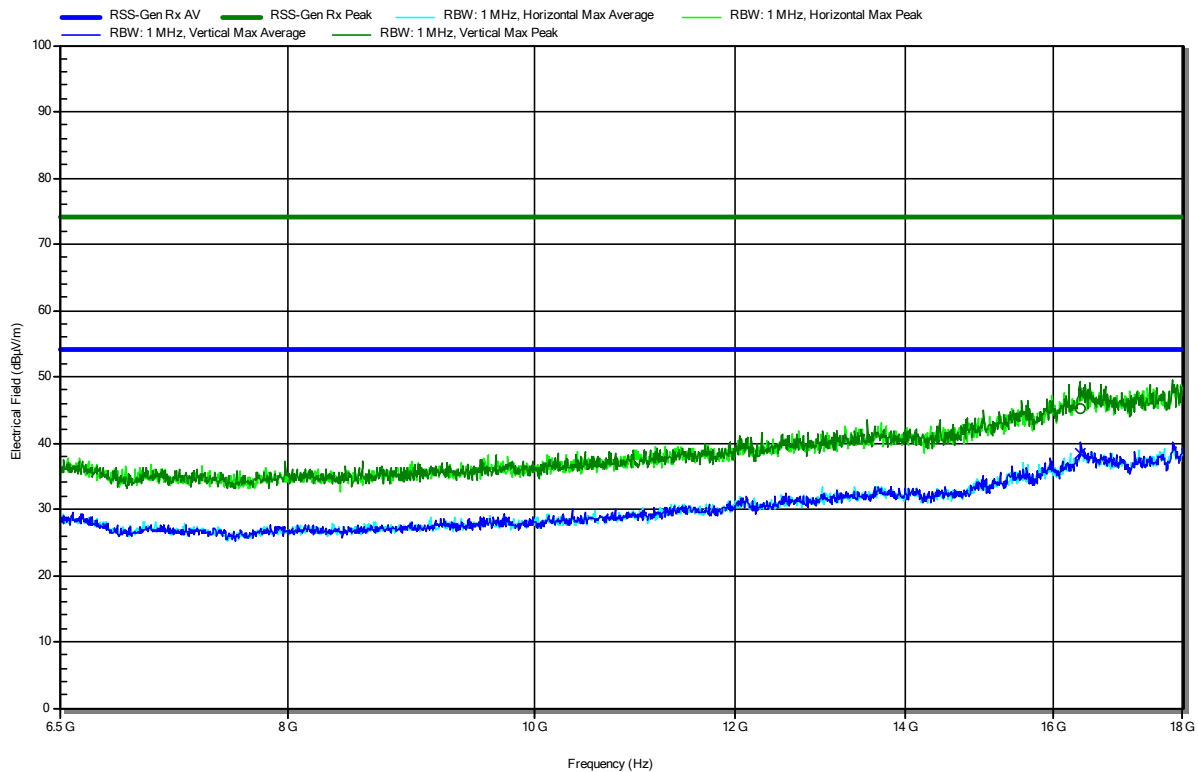
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated Spurious Emissions according to RSS-247

Project Number: G0M-2112-1198
 Applicant: AiSight GmbH
 Model Description: Industrial vibration, geomagnetic and temperature sensor node for condition monitoring
 Model: Aion
 Test Sample ID: 39092
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Qawasmeh
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 21 °Celsius, Vnom: 24 VDC (120 V AC-DC Adaptor)
 Antenna: Schwarzbeck HWRD 650
 Measurement distance: 3 m
 Mode: Rx; IEEE 802.11, 2437 MHz
 Test Date: 2022-03-17
 Note:

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RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
16.41 GHz	45.21 dBµV/m	74 dBµV/m	-28.79 dB	Pass	Vertical
Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
16.41 GHz	38.48 dBµV/m	53.98 dBµV/m	-15.5 dB	Pass	Vertical

== = END OF TEST REPORT == =

Test Report No.: G0M-2112-1198-TFC247WF-V01

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