FCC TEST REPORT

Co-Location

Report Reference No	G0M-2103-9685-TFCCOLOC-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	Dräger Safety AG & Co. KGaA
Address	Revalstraße 1 23560 Lübeck GERMANY
Test Specification	47 CFR Part 15C RSS-247, Issue 2, 2017-02
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Fixed Gas Detector
Model(s)	Polytron 6100 EC WL
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	RC003
Software Version(s)	Transmitter: P6100 V1.5.0, Centero FW v1.5.02c, Bootloader V2.5.0, SW Telit BLT V3.12.002
FCC ID	X6O-RC003
IC	5895F-RC003
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	2021-04-06	
Report:		
Compiled by	Florian Voigt	
Tested by (+ signature) (Responsible for Test)	Florian Voigt	F. Voigt .....
Approved by (+ signature) (Deputy Head of Lab)	Toralf Jahn	.....
Date of Issue	2021-11-18	
Total number of pages	47	
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:		
There are multiple Wireless HART antennas associated to the EUT. EUT is tested with antenna Yokogawa, F9915KW. There are 2 more additional antennas listed, which are of same kind.		

ADDITIONAL VARIANTS

Additional Variants (not tested and not evaluated variants)		
Not-tested Variant	**Description**	
1	Product Type Description	Polytron Repeater WirelessHART
	Model name	Polytron Repeater WirelessHART
	Brand name	
	Hardware Version	RC003
	Software Version	Polytron Repeater V1.5.0, Centero FW v1.5.02c, Bootloader V2.5.0, SW Telit BLT V3.12.002
Comment: Those named additional variants above have not been tested. Those additional variants of the series have been declared by the manufacturer. The test report explicitly states that those variants were neither tested nor assessed nor evaluated.		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2021-11-18	Initial Release	

ABBREVIATIONS AND ACRONYMS

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

REPORT INDEX

1 Equipment (Test Item) Under Test

Common EUT information		
Description	Fixed Gas Detector	
Model	Polytron 6100 EC WL	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	ARNK-0038	
Test Sample Id(s)	35065	
Hardware Version(s)	RC003	
Software Version(s)	Transmitter: P6100 V1.5.0, Centero FW v1.5.02c, Bootloader V2.5.0, SW Telit BLT V3.12.002	
PMN	Polytron Repeater WirelessHART + Polytron 6100 EC WL	
HVIN	RC003	
FVIN	n/a	
HMN	n/a	
FCC ID	X6O-RC003	
IC	5895F-RC003	
Equipment type	End Product	
Supply Voltage	V_{NOM}	14.4 VDC VDC
Operating Temperature	T_{NOM}	20 °C
AC/DC-Adaptor	None	
Manufacturer	Dräger Safety AG & Co. KGaA Revalstraße 1 23560 Lübeck GERMANY	

IEEE 802.15.4 EUT information		
Radio type	Transceiver	
Assigned frequency bands	2400.0 MHz - 2483.5 MHz	
Radio technology	IEEE 802.15.4	
Modulation	QPSK	
Number of antenna ports	1	
Radio Module	Type	Wireless HART radio module
	Model	CW24-012
	Manufacturer	Centero LLC
	HW Version	2
	SW Version	v1.5.02c
	FCC-ID	2ANDP-CW24-012
	IC	23069-CW24012
Antenna (tested)	Type	External rod antenna
	Model	F9915KW
	Manufacturer	Yokogawa
	Gain	2 dBi
Antenna (additionally listed)	Type	External rod antenna
	Model	1399.17.0237
	Manufacturer	Huber+Suhner
	Gain	2 dBi
Antenna (additionally listed)	Type	External rod antenna
	Model	1399.17.0232
	Manufacturer	Huber+Suhner
	Gain	2 dBi

Bluetooth LE EUT information		
Radio type	Transceiver	
Assigned frequency bands	2400.0 MHz - 2483.5 MHz	
Radio technology	Bluetooth LE 4.2	
Bluetooth Specification	LE 1M PHY	Yes
	LE 2M PHY	No
	LE Coded PHY S=8 (125 kbit)	No
	LE Coded PHY S=2 (500 kbit)	No
	Stable Modulation Index - Transmitter	No
	Stable Modulation Index - Receiver	No
Modulation	2-GFSK	
Number of antenna ports	1	
Radio Module	Type	Bluetooth LE module
	Model	BlueMod + S42 ATEX
	Manufacturer	Telit Communication
	HW Version	BE890D2SY3ATAI1
	SW Version	3.012.0002
	FCC ID	RFRMS42
	IC	4957A-MS42
Antenna	Type	Module integrated chip antenna
	Model	Not specified
	Manufacturer	Not specified
	Gain	2 dBi (customer declaration)

1.1 Photos – Equipment External

EUT perspective A


EUT perspective B


EUT perspective C

EUT top side view

EUT front side view

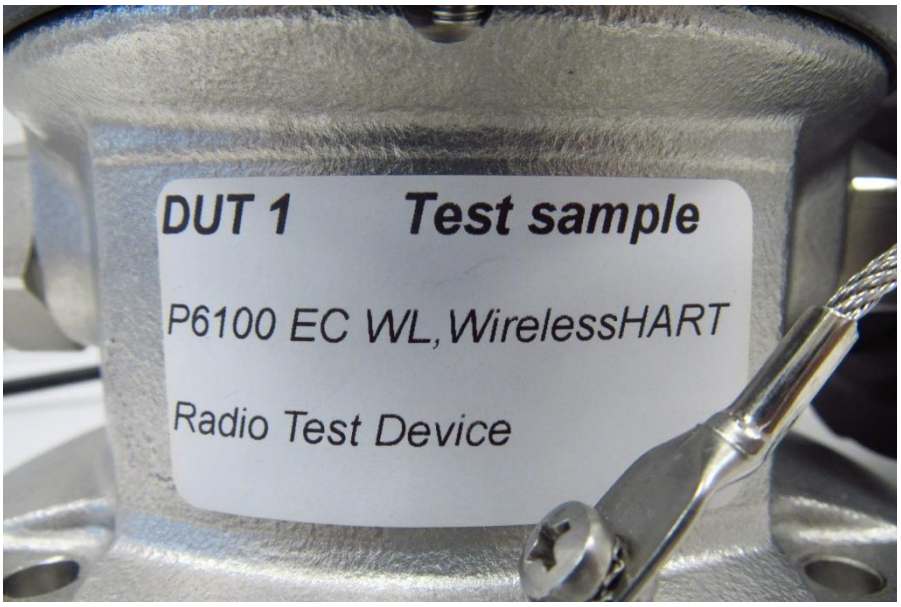
EUT back side view

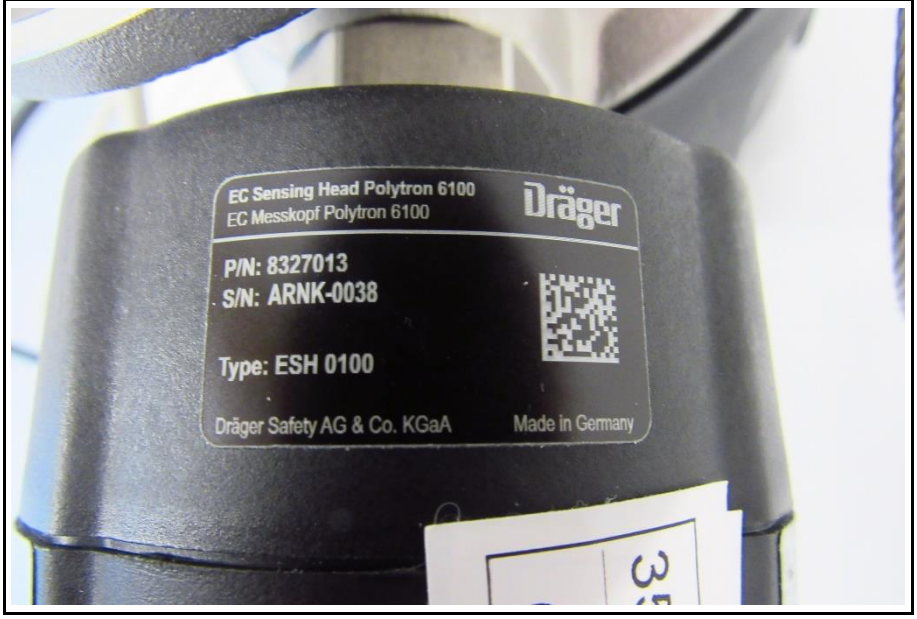
EUT left side view


EUT right side view

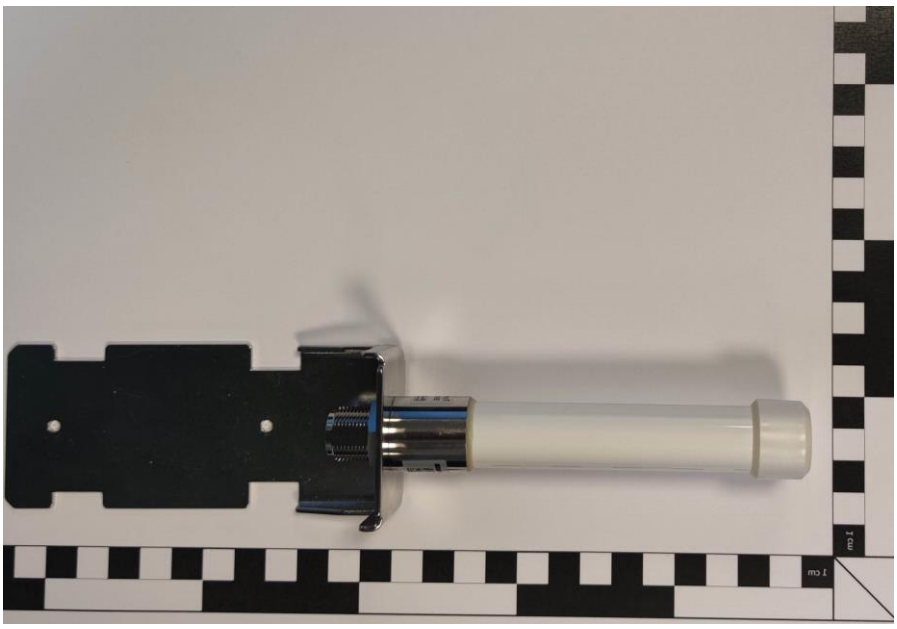

EUT bottom side view


EUT battery housing


EUT label


EUT sensor label


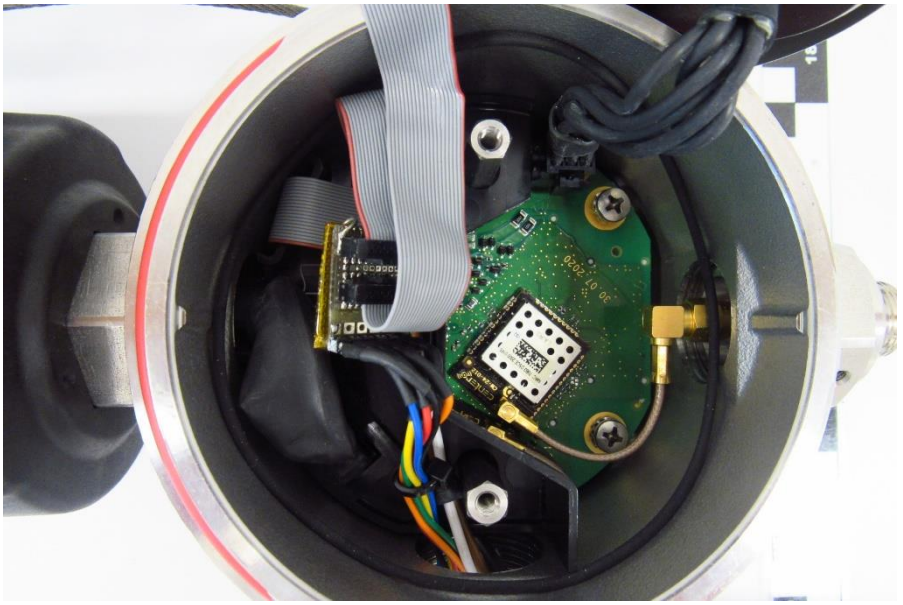
Wireless HART Antenna F9915KW

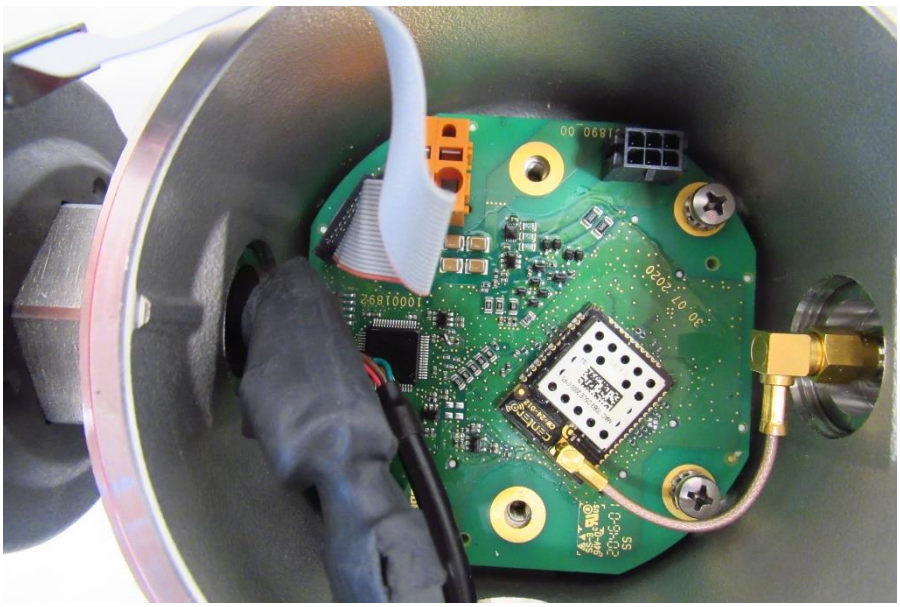

Wireless HART Antenna 1399.17.0237

Note: Image is made by customer

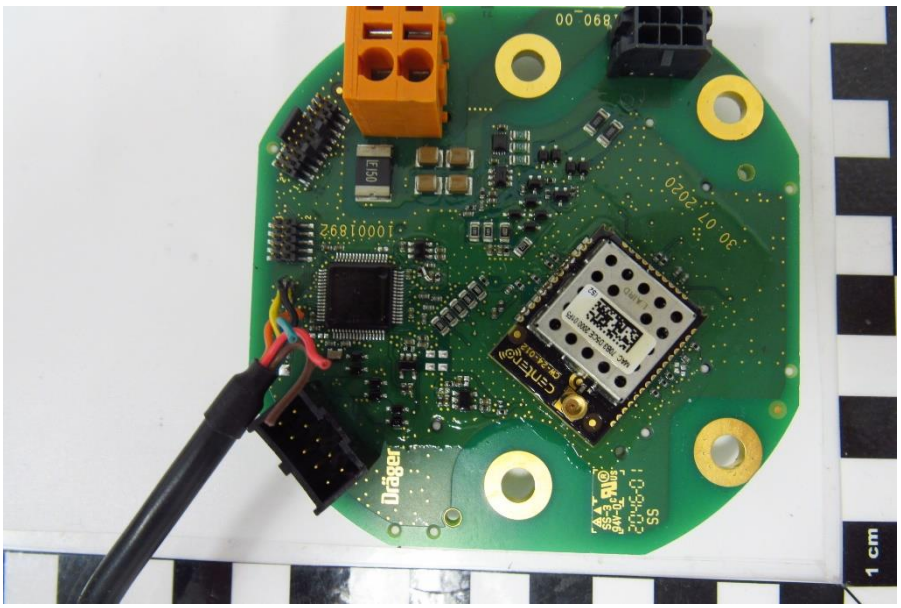
Wireless HART Antenna 1399.17.0237

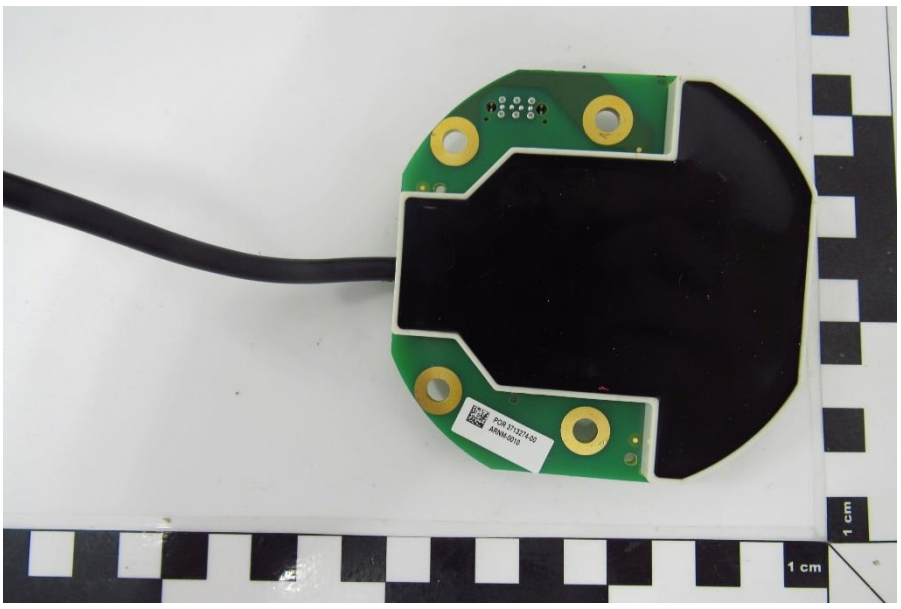

EUT with ancilary equipment ACDC-Adapter

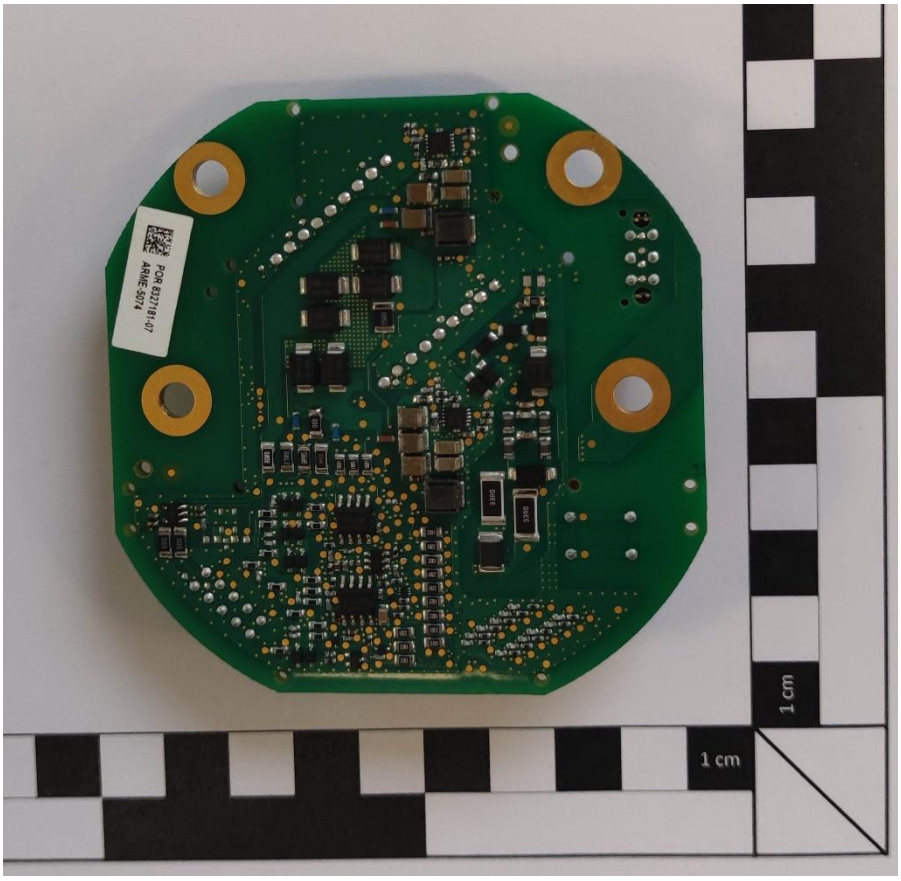

1.2 Photos – Equipment Internal

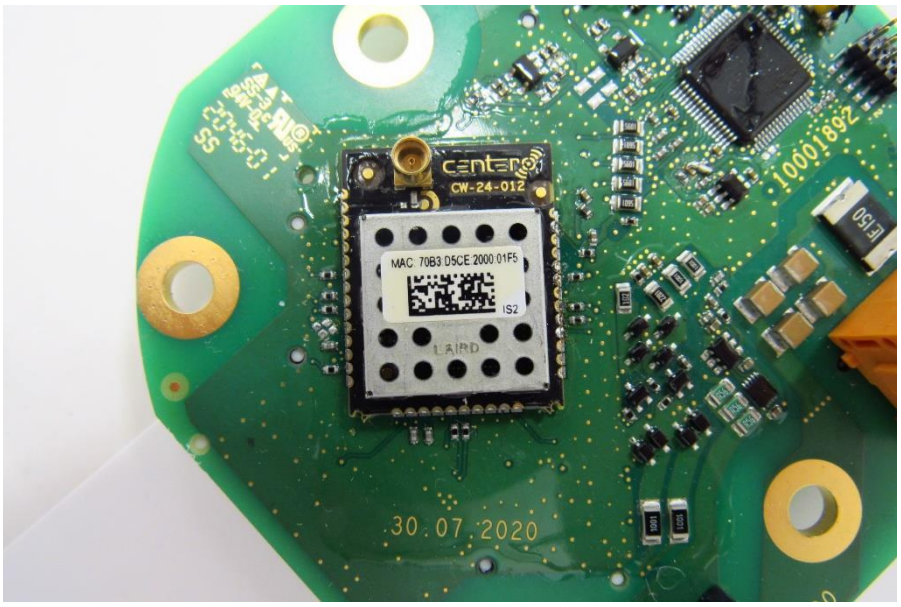
Interior view A


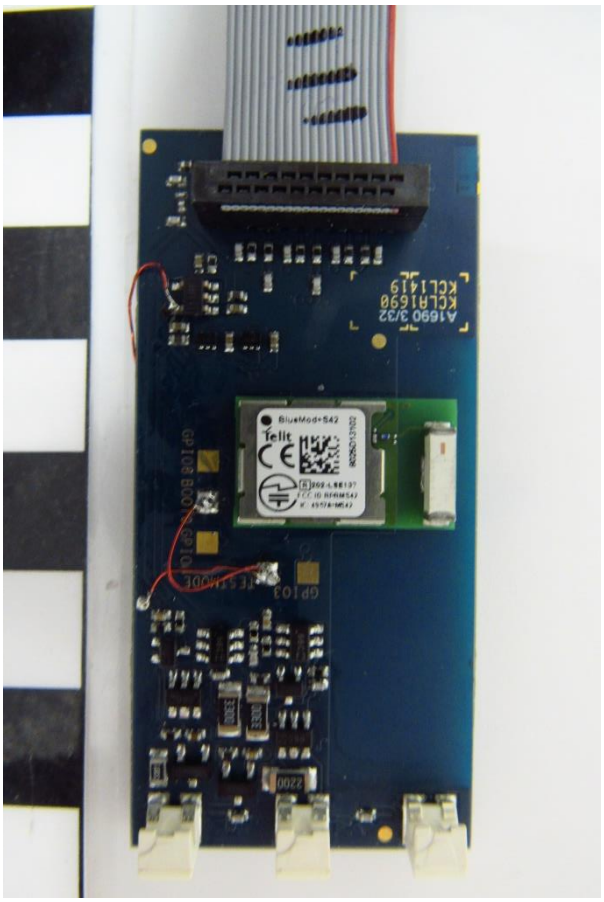
Interior view B


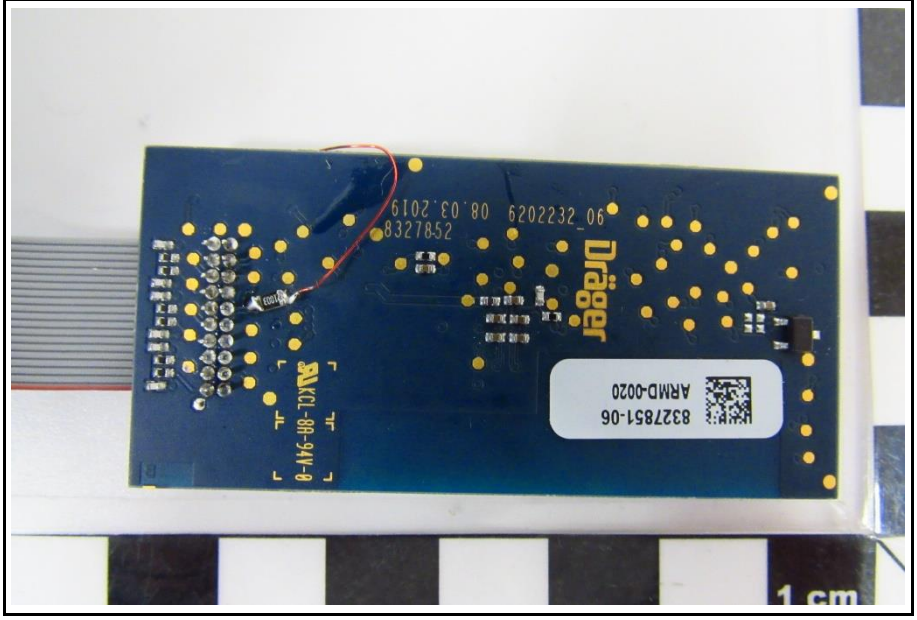
Main PCB top side view


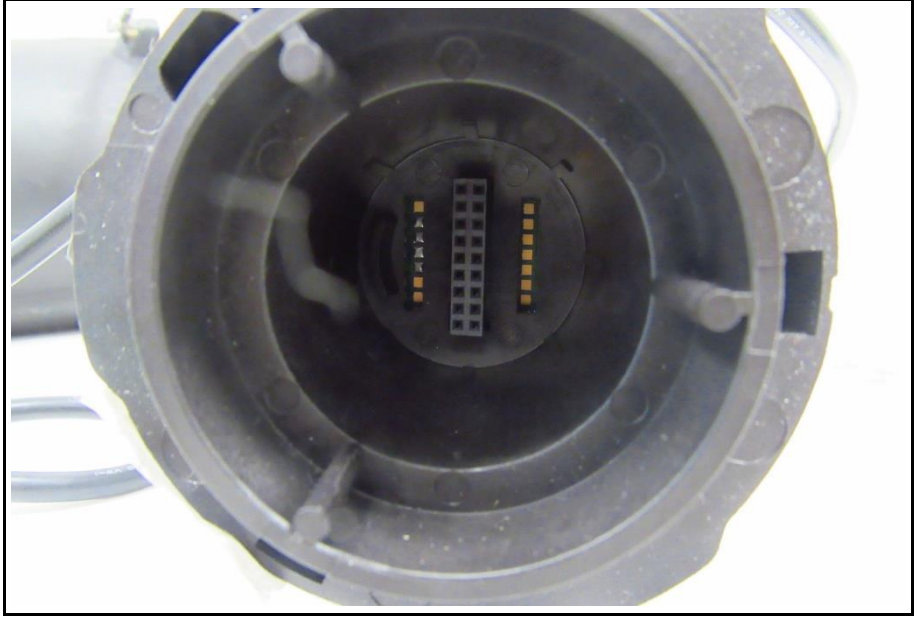
Main PCB bottom side view


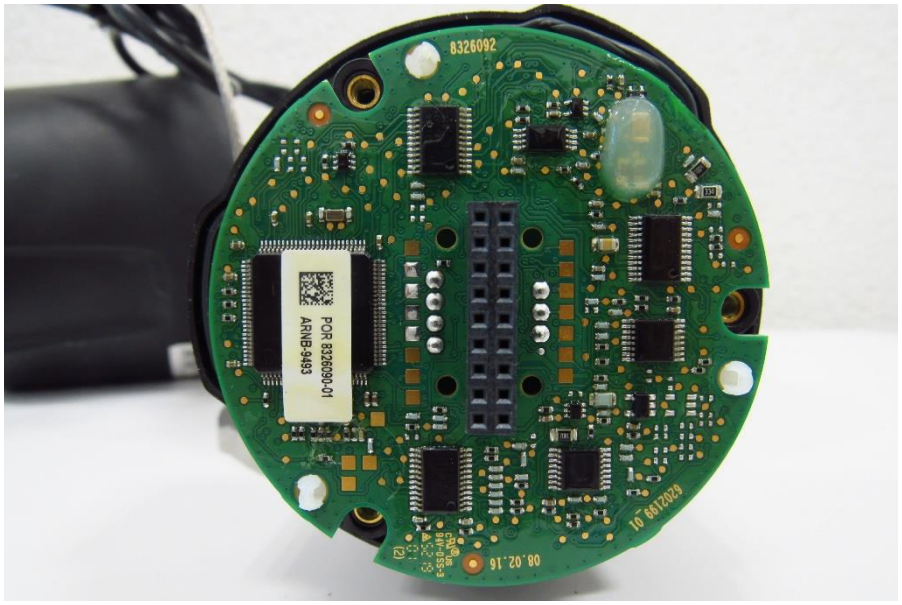
Main PCB bottom side view without casting compound

Note: Image is made by customer

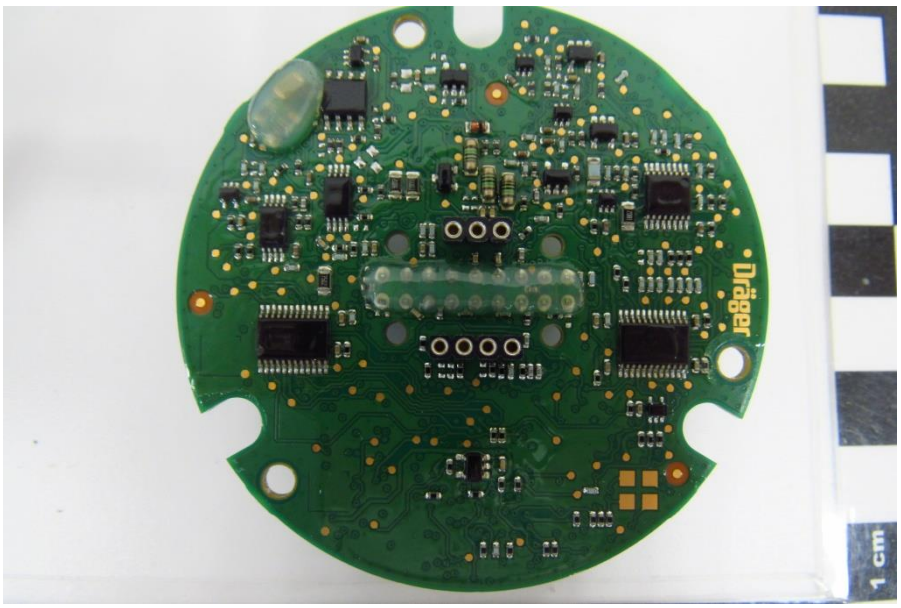
Zigbee radio


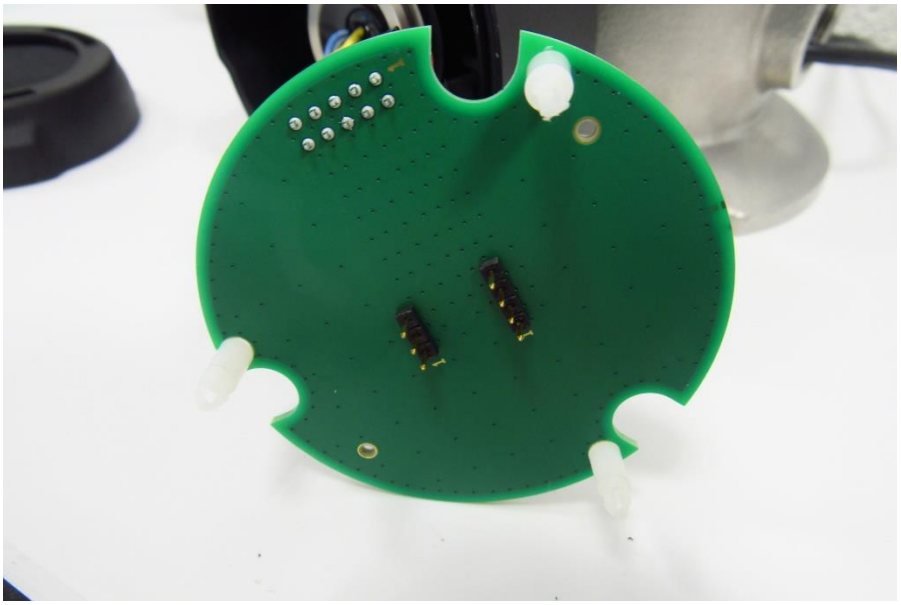
LE PCB top view


LE PCB bottom view


Sensor connector view


Sensor logic PCB top side view


Sensor logic PCB bottom side view


Sensor interface PCB top side view


Sensor interface PCB bottom side view


1.3 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	AC/DC adapter	Phoenix Contact	UNO-PS/1AC/24DC/30W	
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.4 Test Modes

Mode	Description
DSSS QPSK	Mode = Transmit Modulation = QPSK Spreading = DSSS Data rate = 250 kbps Chip rate = 2000 kbps Duty cycle = 100% Powersetting = 10dBm (Software setting)
GFSK	Mode = Transmit Modulation = 2-GFSK Spreading = None Test mode duty cycle = 95% Power setting = 0 Data rate = 1 Mbit/s
Comment: Test modes “DSSS QPSK” and “GFSK” were tested simultaneously.	

1.5 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	DSSS QPSK	11	2405
F2	GFSK	80	2480
Comment: Test frequencies F1 and F2 were concurrently emitted by the EUT during testing. Channel 11 was selected for the highest conducted output power from test report 17-0343, issued by US Tech on 2017-11-04. Channel 80 was selected for the highest conducted output power from test report 1-2078/16-01-05-A issued by CETECOM ICT Services.			

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 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/m) = 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/m	= 47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
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) 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	N/T	See technology specific test reports: G0M-2103-9685-TFC247BL-V01 G0M-2103-9685-TFC247ZB-V01
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 - Transmitter radiated emissions

3.1.1 Information

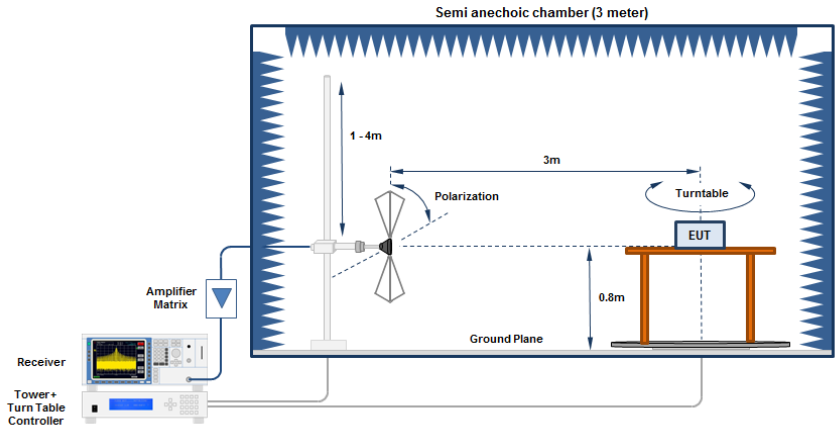
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISED RSS-Gen, Issue 5 A2 (section 6.13)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Florian Voigt
Date	2021-09-23 - 2021-09-24

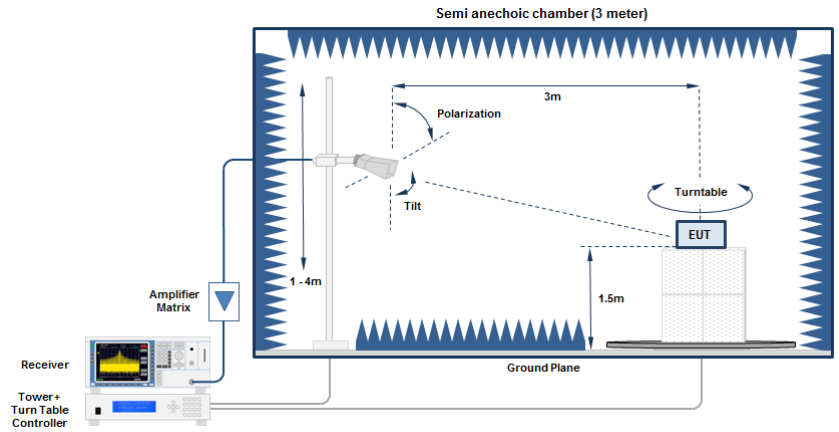
3.1.2 Limits

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

3.1.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz


3.1.4 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	EF00187	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
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10
Antenna	Schwarzbeck	HWRD 650	EF01679	2021-03	2022-03
Antenna	Amplifier Research	AT4560	EF00302	2021-06	2023-06

3.1.5 Procedure

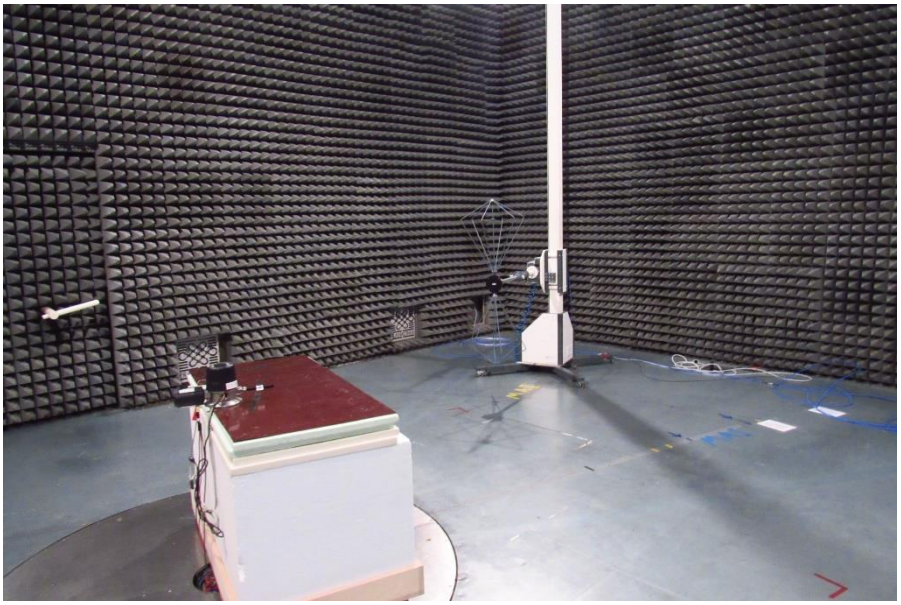
Test Procedure 30 - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground
2. EUT set to test mode
3. The receiver is set to peak detection with max hold
4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m
5. All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

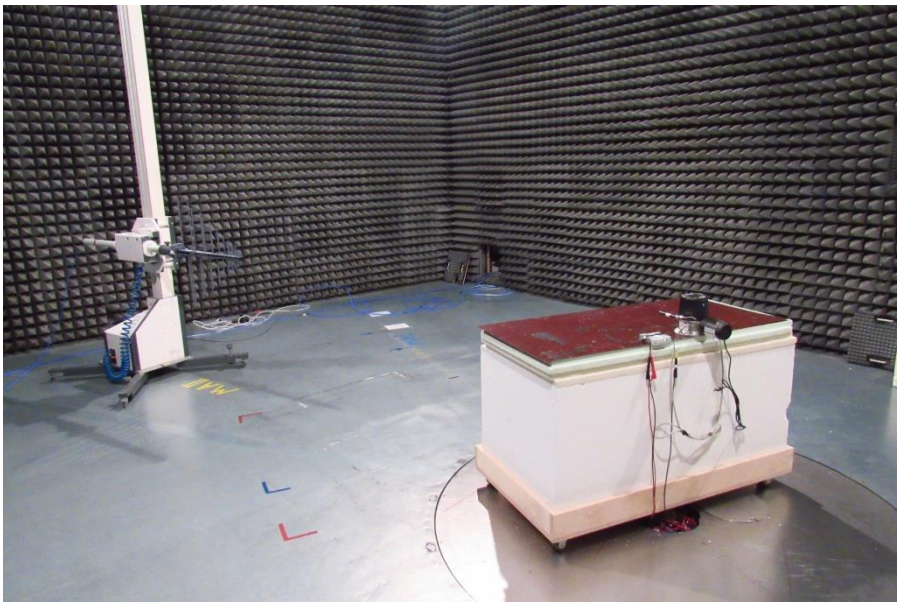
Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground
2. EUT set to test mode
3. The receiver is set to peak detection with max hold
4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m
5. All significant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

3.1.6 Results

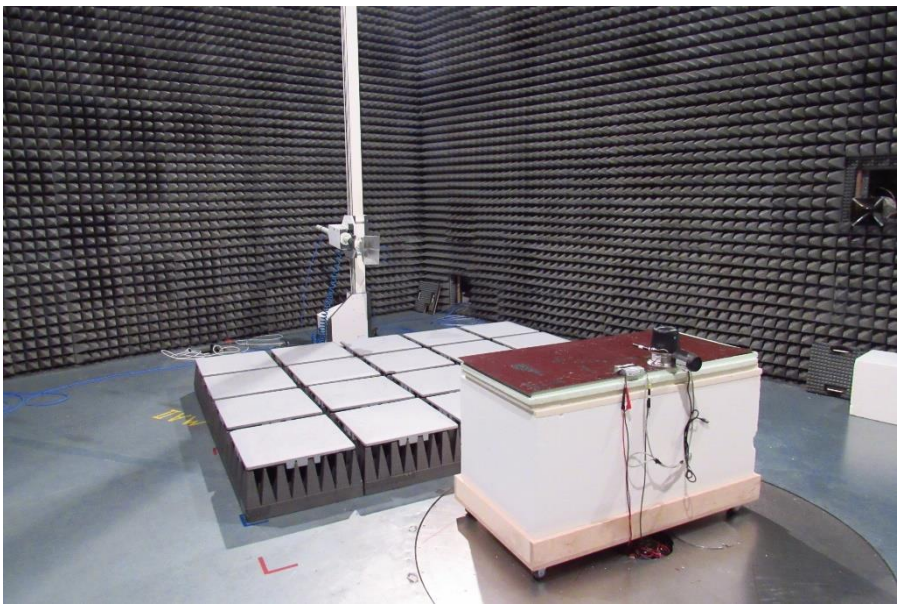
Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2405 + 2480	2277.4	44.52	pk	hor	74.00	-29.48
2405 + 2480	2277.4	37.40	avg	hor	54.00	-16.60
2405 + 2480	2341.1	49.91	pk	ver	74.00	-24.09
2405 + 2480	2341.1	44.36	avg	ver	54.00	-09.64
2405 + 2480	2365	44.53	pk	ver	74.00	-29.47
2405 + 2480	2365	36.21	avg	ver	54.00	-17.79
2405 + 2480	2373	55.23	pk	ver	74.00	-18.77
2405 + 2480	2373	51.21	avg	ver	54.00	-02.79
2405 + 2480	2373.1	46.41	pk	hor	74.00	-27.59
2405 + 2480	2373.1	39.16	avg	hor	54.00	-14.84
2405 + 2480	2373.2	55.54	pk	hor	74.00	-18.46
2405 + 2480	2373.2	51.80	avg	hor	54.00	-02.20
2405 + 2480	2496	40.70	pk	hor	74.00	-33.30
2405 + 2480	2496	33.13	avg	hor	54.00	-20.87
2405 + 2480	7440	36.06	pk	ver	74.00	-37.94
2405 + 2480	7440	29.51	avg	ver	54.00	-24.49
2405 + 2480	7441	40.42	pk	hor	74.00	-33.58
2405 + 2480	7441	34.36	avg	hor	54.00	-19.64
2405 + 2480	7441	37.85	pk	ver	74.00	-36.15
2405 + 2480	7441	33.87	avg	ver	54.00	-20.13
2405 + 2480	12023	51.65	pk	ver	74.00	-22.35
2405 + 2480	12023	48.33	avg	ver	54.00	-05.67
2405 + 2480	12027	50.73	pk	ver	74.00	-23.27
2405 + 2480	12027	44.82	avg	ver	54.00	-09.18
2405 + 2480	12027	54.25	pk	hor	74.00	-19.75
2405 + 2480	12027	48.82	avg	hor	54.00	-05.18

3.1.7 Setup photos

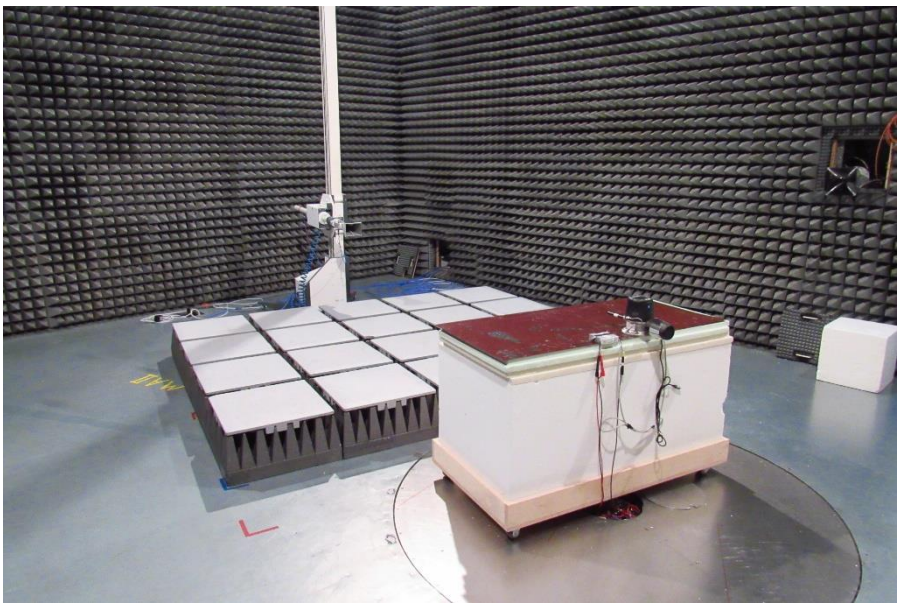
Setup 30 to 200 MHz


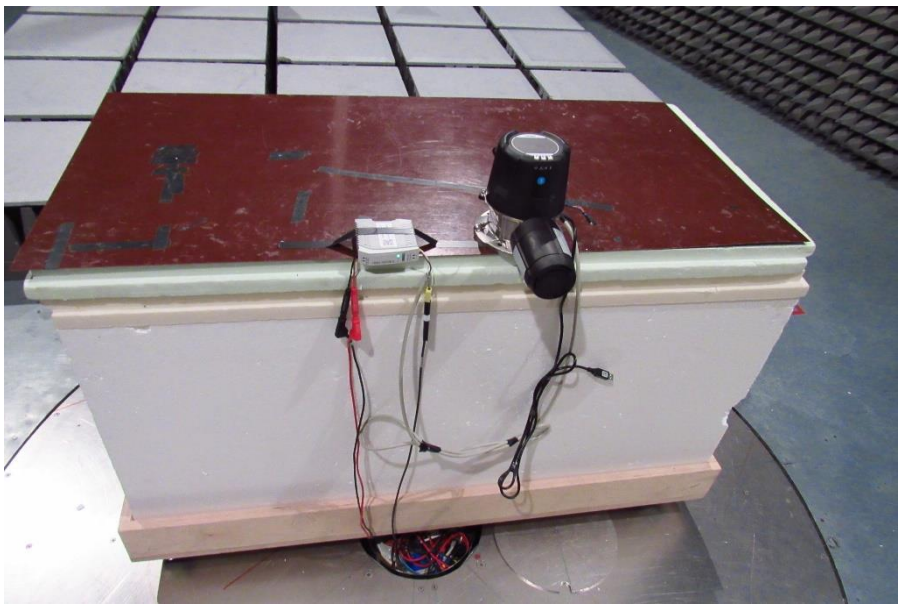
Setup 0.2 to 1 GHz


Setup 1 to 6.5 GHz



Setup 6.5 to 18 GHz



Setup EUT view


3.2 Test Conditions and Results - AC powerline conducted emissions

3.2.1 Information

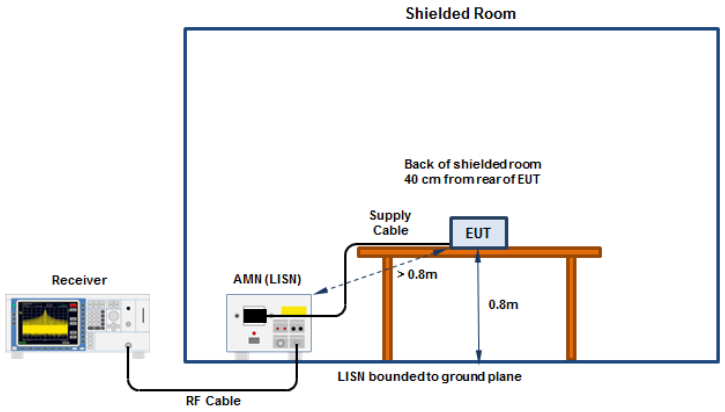
Test Information	
Reference	FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.2
Measurement Uncertainty	± 3.82 dB
Operator	Florian Voigt
Date	2021-09-27

3.2.2 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		

3.2.3 Setup

Test Setup



3.2.4 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

3.2.5 Results

Conducted emissions at the mains power port according to RSS-247, 47 CFR Part 15.247

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Test Date:	2021-09-27
Operating Conditions:	ambient temperature: 23 °Celsius power input: 120 VAC converted to 24 VDC
LISN:	Schwarzbeck NSLK 8127 RC N
Operational Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Applied to Port:	Mains
Note 1:	

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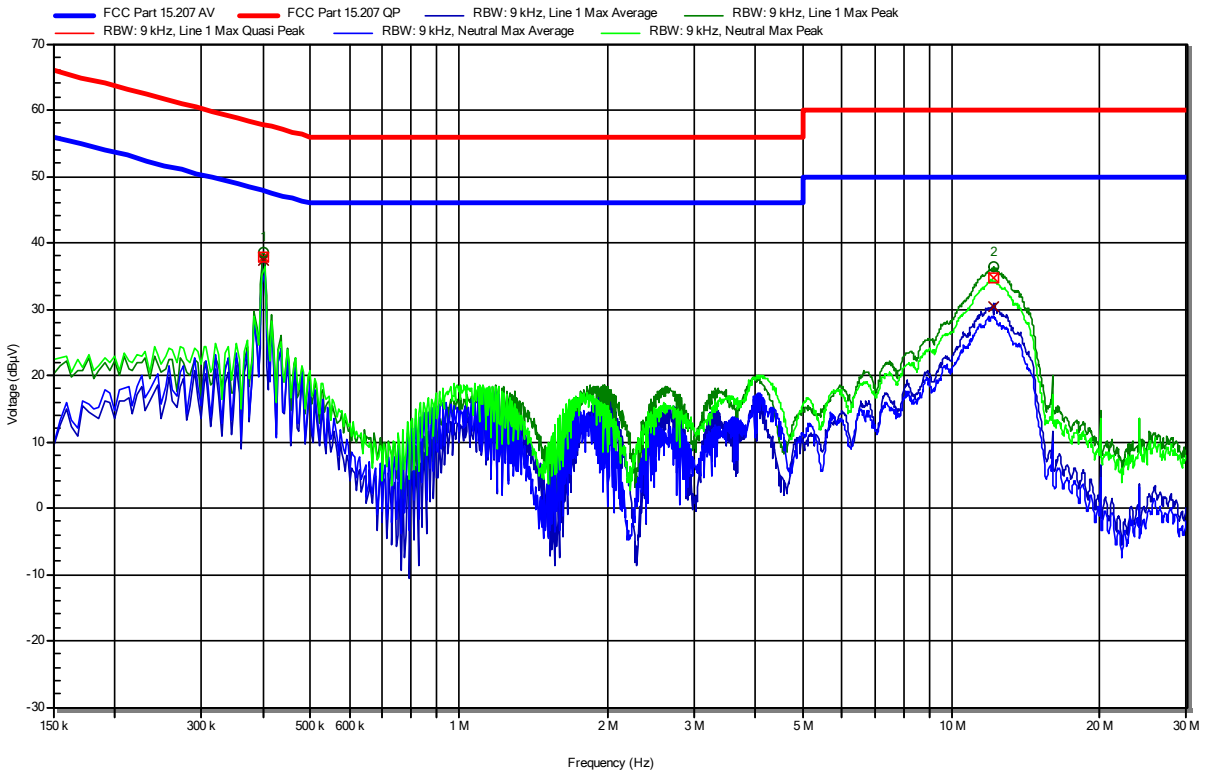
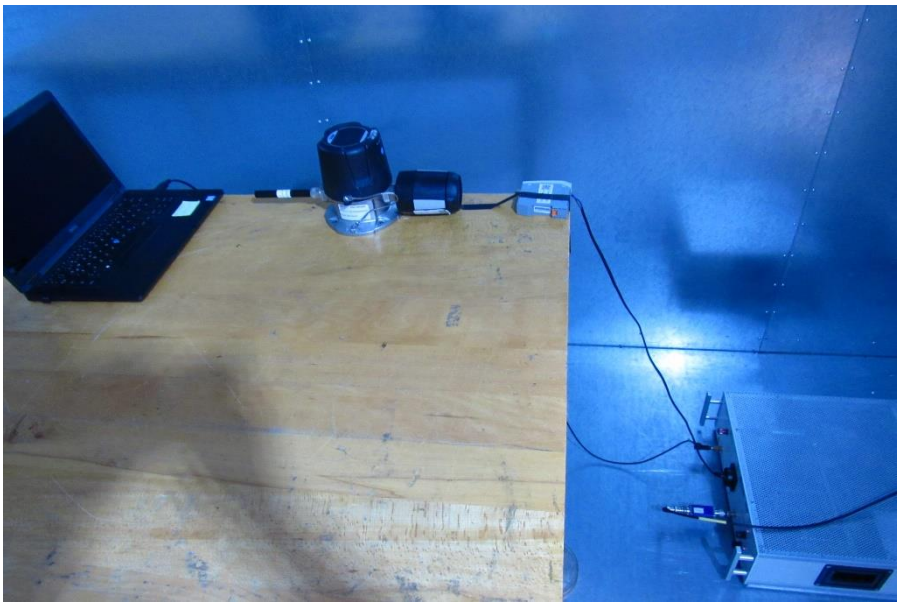
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	400.65 kHz	37.84 dBµV	57.84 dBµV	-20 dB	Pass	Line 1
2	12.156 MHz	34.7 dBµV	60 dBµV	-25.3 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	400.65 kHz	37.32 dBµV	47.84 dBµV	-10.52 dB	Pass	Line 1
2	12.156 MHz	30.4 dBµV	50 dBµV	-19.6 dB	Pass	Line 1

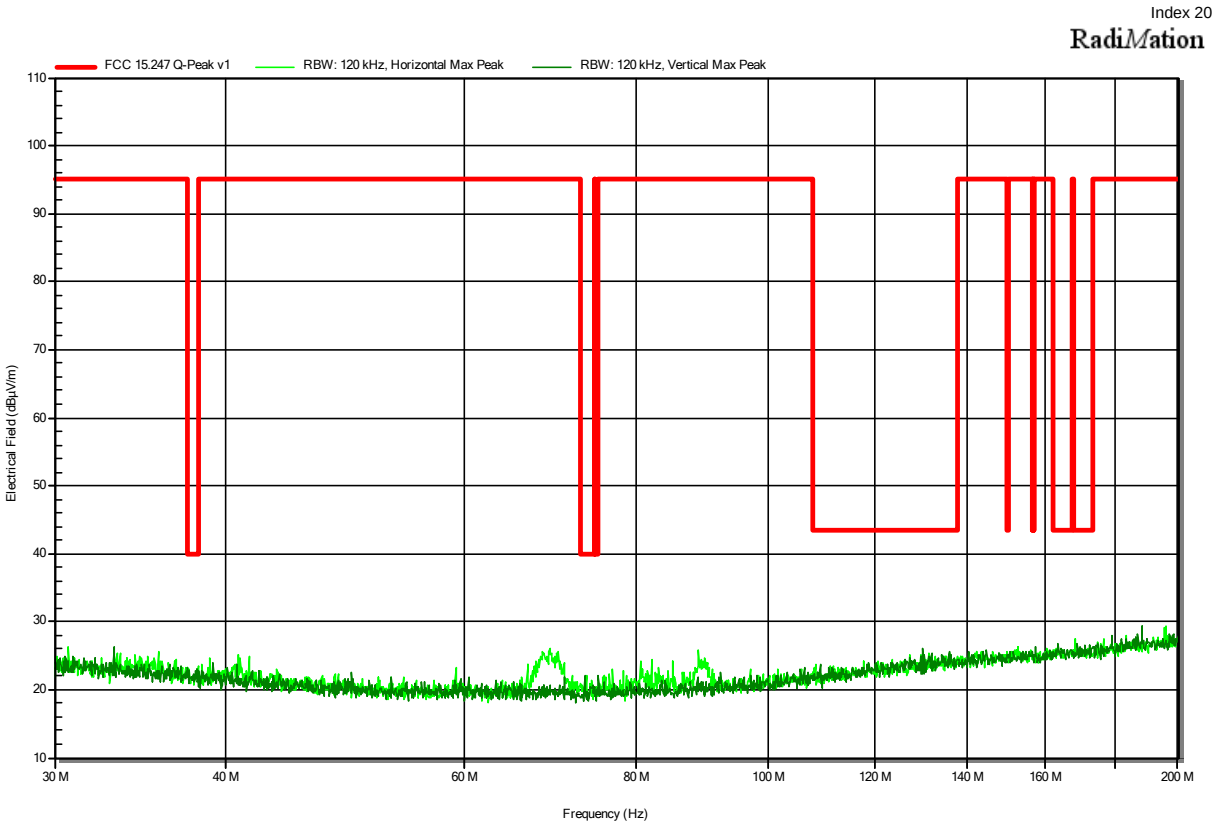
3.2.6 Setup photos

Setup CE


ANNEX A Transmitter spurious emissions

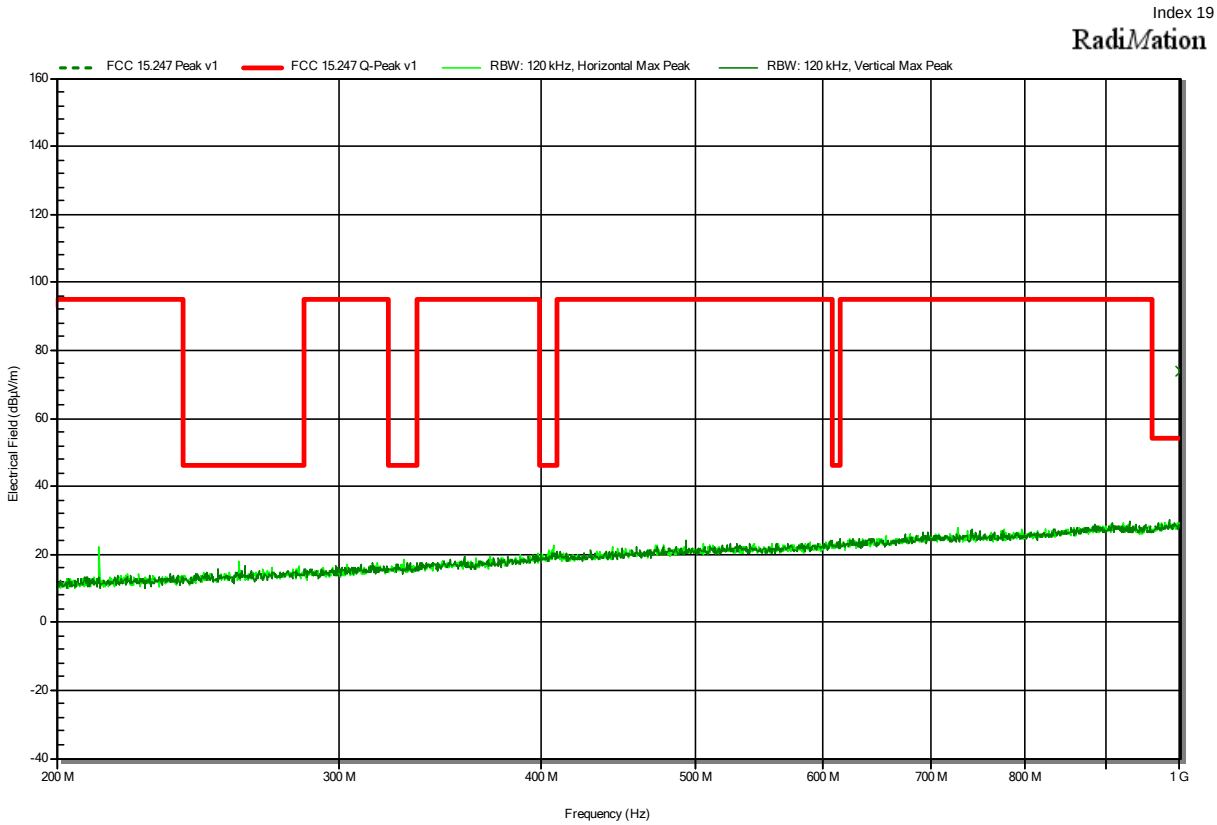
Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Rohde & Schwarz HK 116
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-24
Note:	



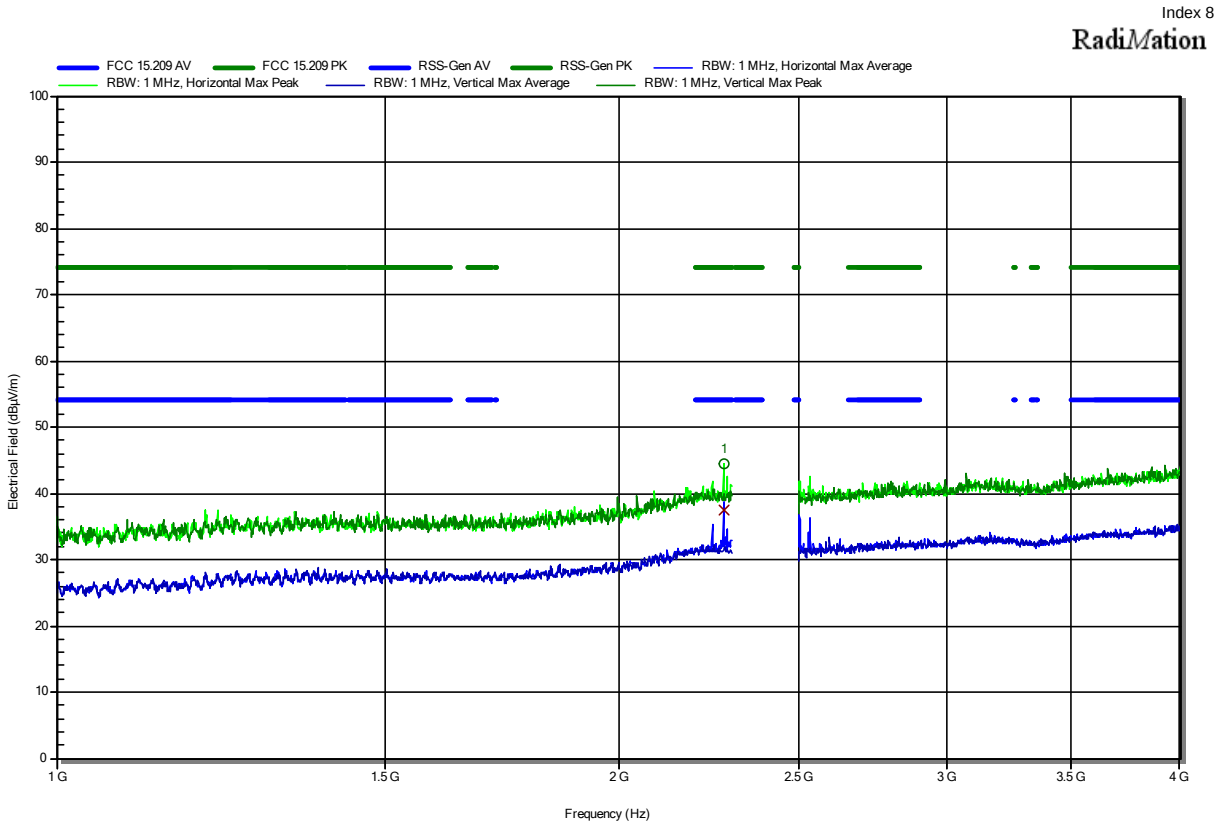
Radiated Spurious Emissions according to RSS-247, 47 CFR Part 15.247

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Rohde & Schwarz HL 223
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-24
Note:	



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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23
Note:	

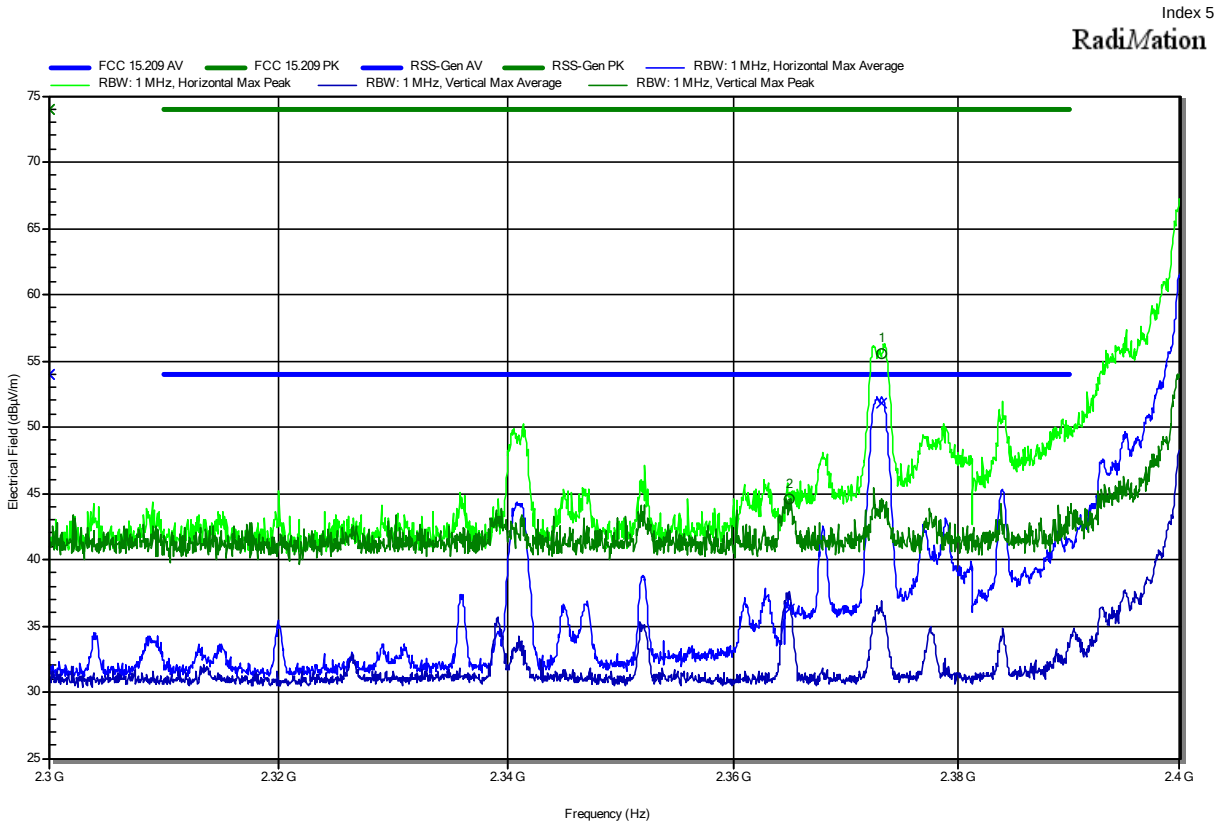


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.2774 GHz	44.52 dBµV/m	74 dBµV/m	-29.48 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.2774 GHz	37.4 dBµV/m	54 dBµV/m	-16.6 dB	Pass	Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23
Note:	Lower band edge

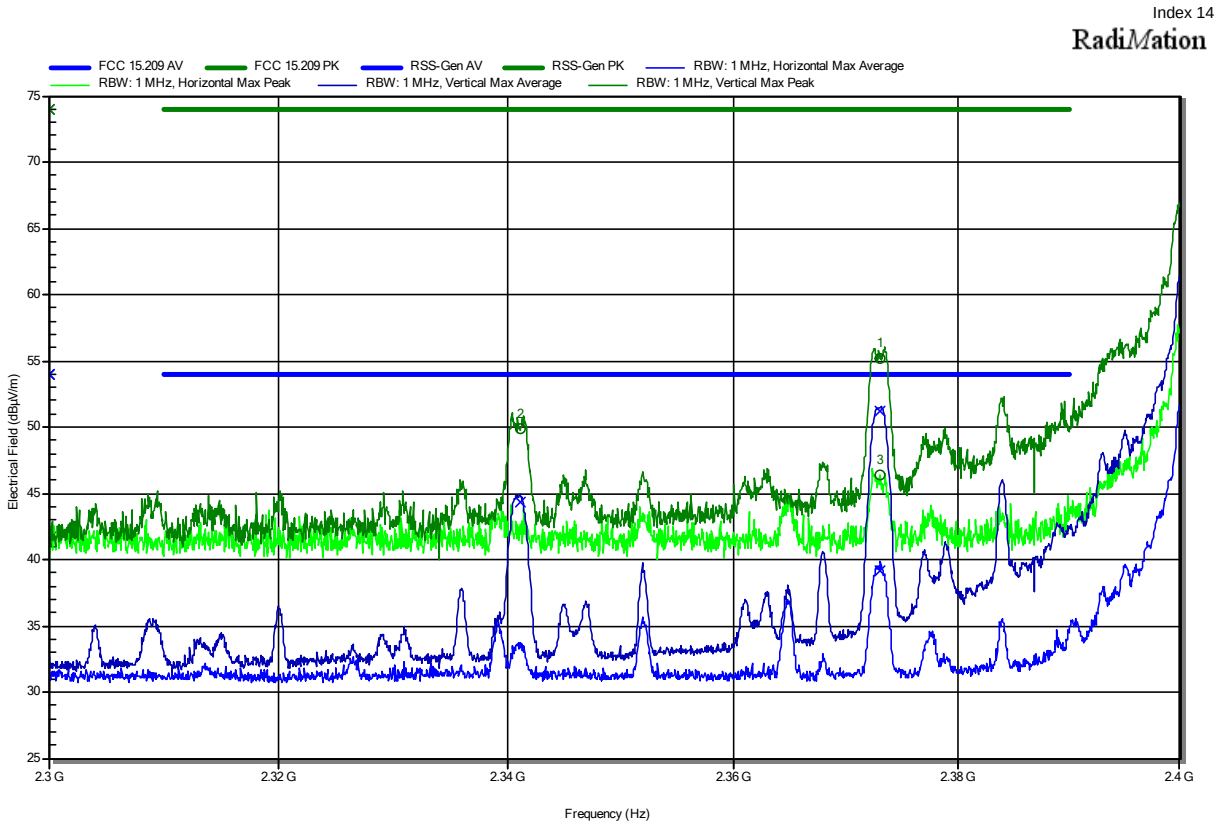


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.365 GHz	44.53 dBµV/m	74 dBµV/m	-29.47 dB	Pass	Vertical
2.3732 GHz	55.54 dBµV/m	74 dBµV/m	-18.46 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.365 GHz	36.21 dBµV/m	54 dBµV/m	-17.79 dB	Pass	Vertical
2.3732 GHz	51.8 dBµV/m	54 dBµV/m	-2.2 dB	Pass	Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-24
Note:	Lower band edge, EUT vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.3411 GHz	49.91 dBµV/m	74 dBµV/m	-24.09 dB	Pass	Vertical
2.373 GHz	55.23 dBµV/m	74 dBµV/m	-18.77 dB	Pass	Vertical
2.3731 GHz	46.41 dBµV/m	74 dBµV/m	-27.59 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.3411 GHz	44.36 dBµV/m	54 dBµV/m	-9.64 dB	Pass	Vertical
2.373 GHz	51.21 dBµV/m	54 dBµV/m	-2.79 dB	Pass	Vertical
2.3731 GHz	39.16 dBµV/m	54 dBµV/m	-14.84 dB	Pass	Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23
Note:	

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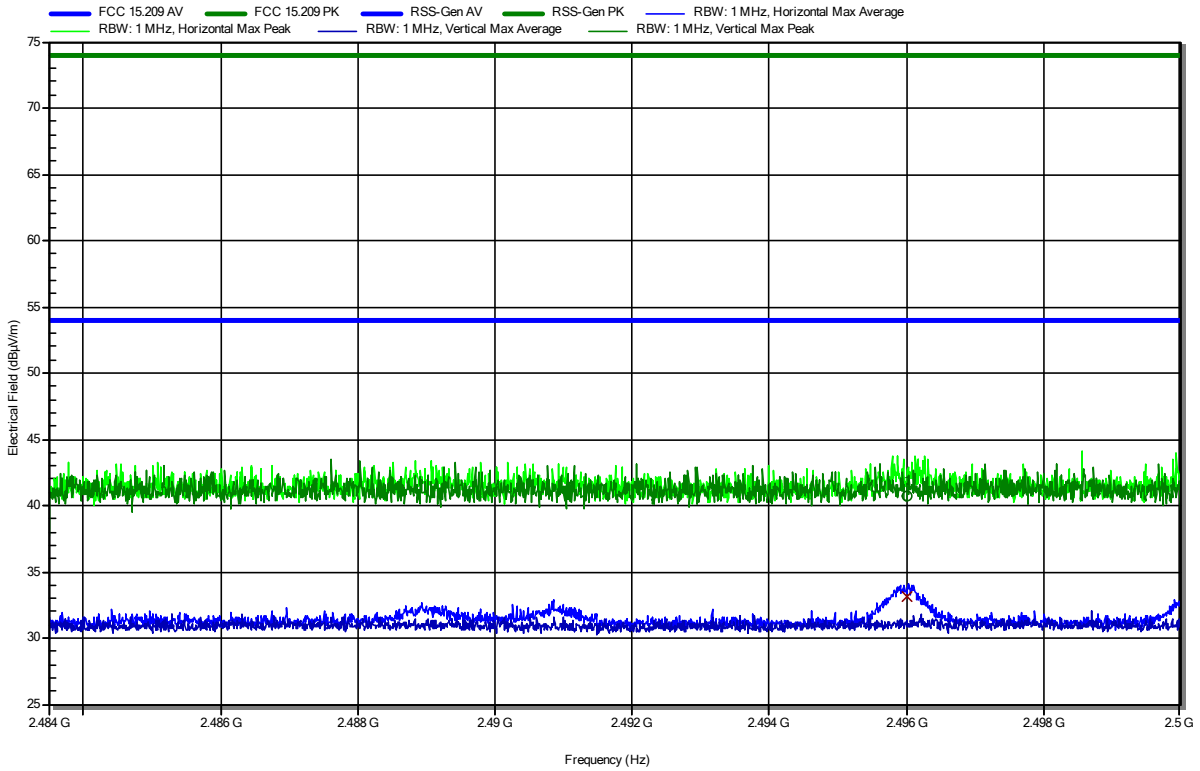

Frequency 2.496 GHz	Peak 40.7 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -33.3 dB	Peak Status Pass	Polarization Horizontal
Frequency 2.496 GHz	Average 33.13 dBµV/m	Average Limit 54 dBµV/m	Average Difference -20.87 dB	Average Status Pass	Polarization Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23
Note:	

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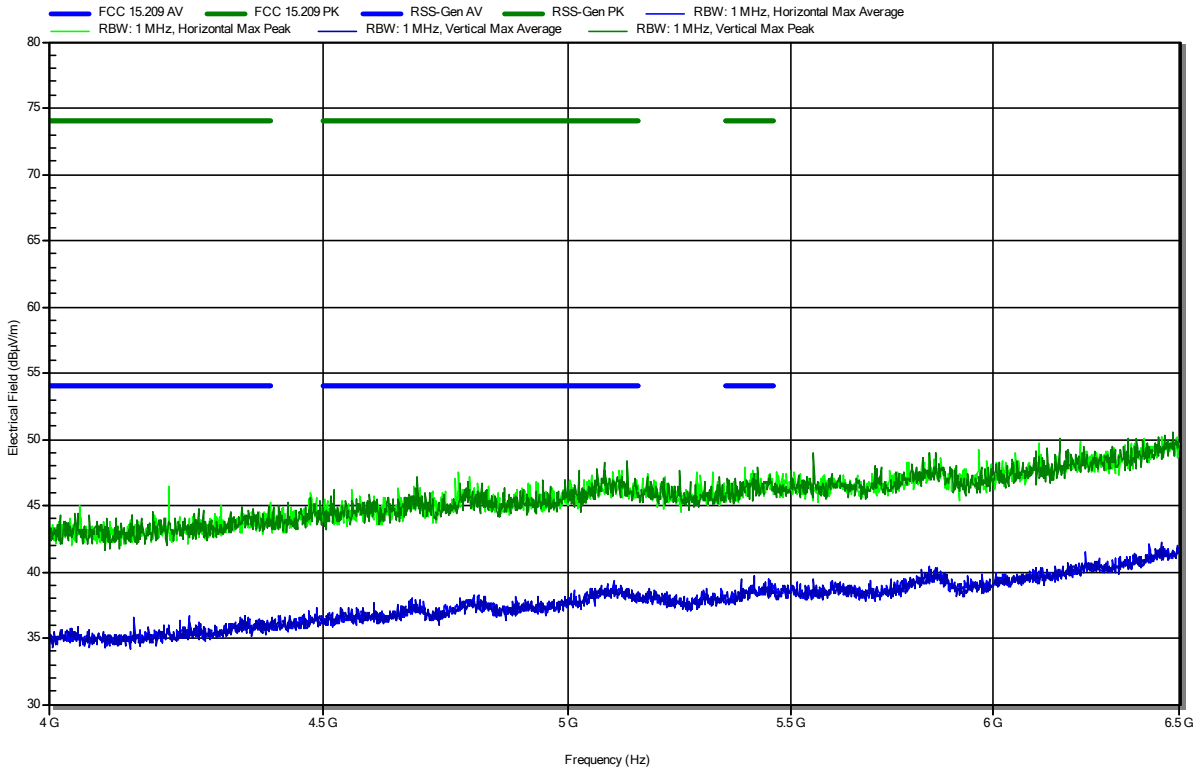
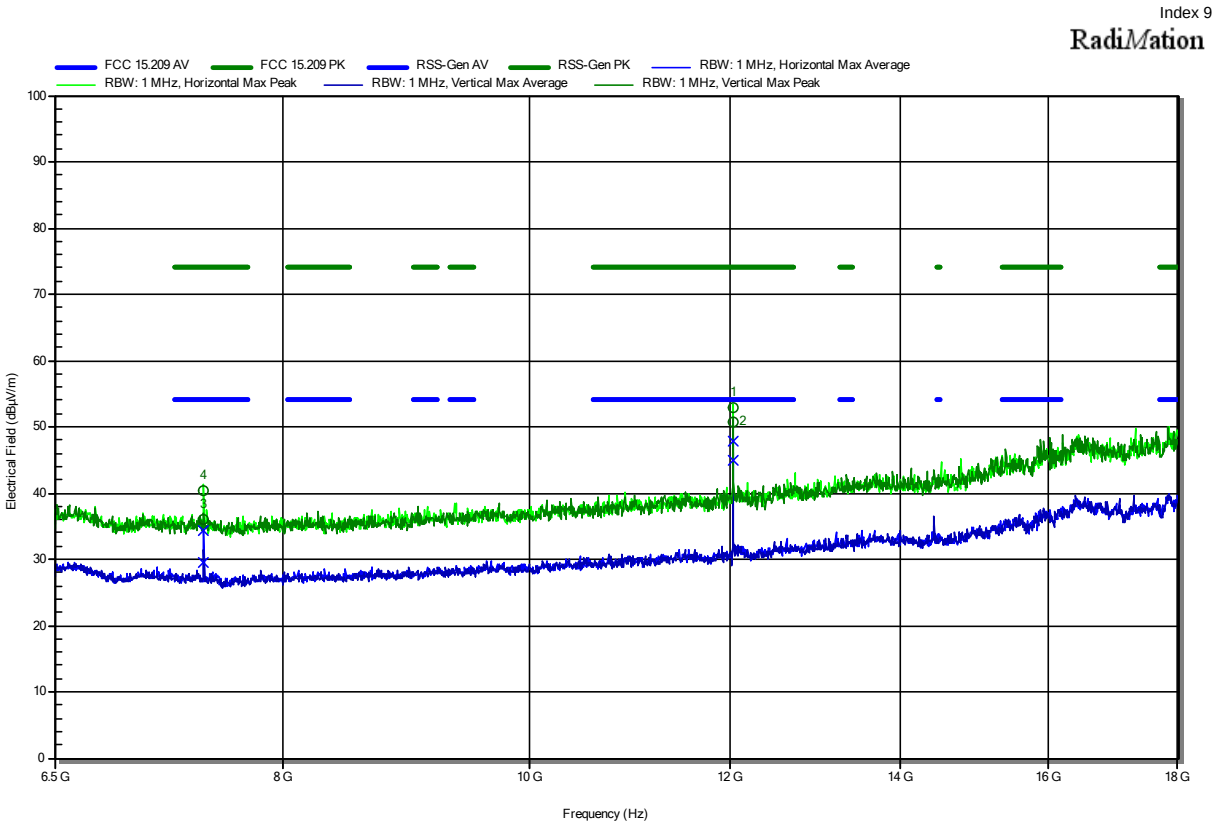
RadiMation



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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23

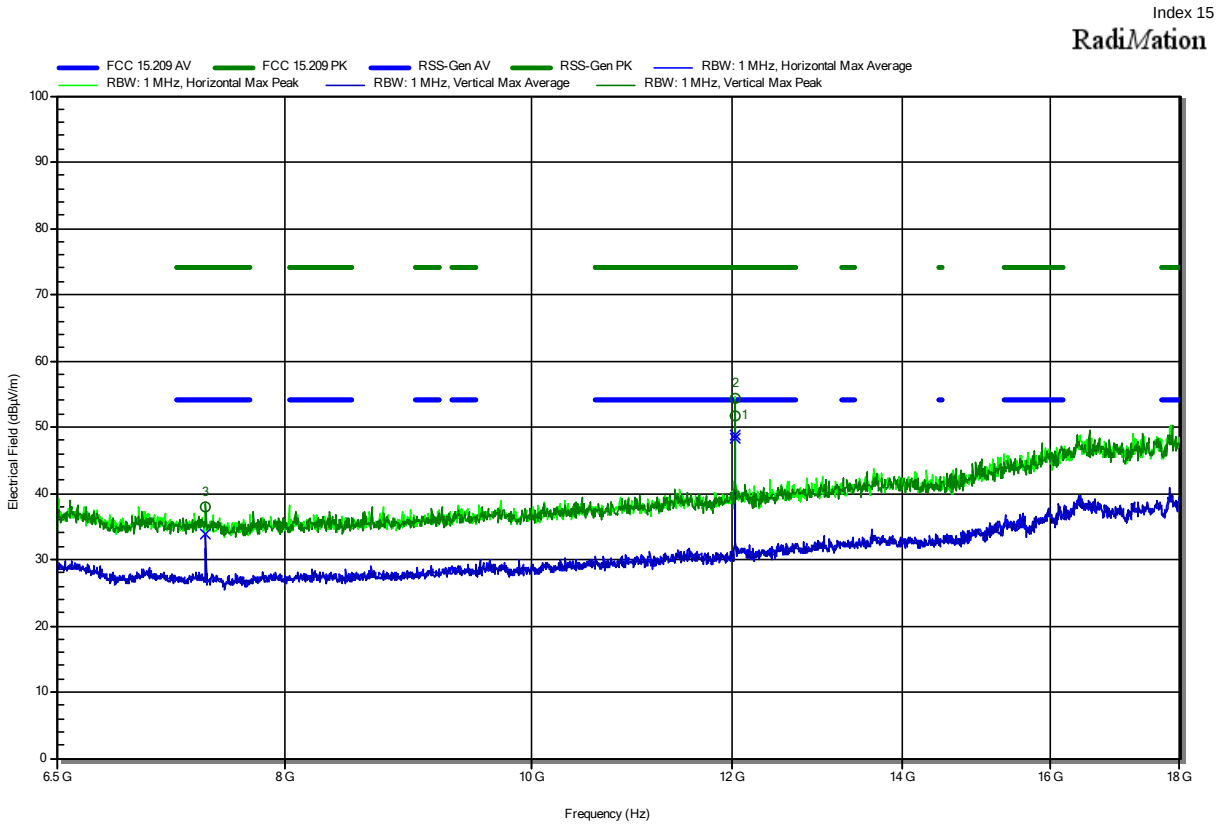


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
7.44 GHz	36.06 dBµV/m	74 dBµV/m	-37.94 dB	Pass	Vertical
7.441 GHz	40.42 dBµV/m	74 dBµV/m	-33.58 dB	Pass	Horizontal
12.027 GHz	50.73 dBµV/m	74 dBµV/m	-23.27 dB	Pass	Vertical
12.027 GHz	52.99 dBµV/m	74 dBµV/m	-21.01 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
7.44 GHz	29.51 dBµV/m	54 dBµV/m	-24.49 dB	Pass	Vertical
7.441 GHz	34.36 dBµV/m	54 dBµV/m	-19.64 dB	Pass	Horizontal
12.027 GHz	44.82 dBµV/m	54 dBµV/m	-9.18 dB	Pass	Vertical
12.027 GHz	47.91 dBµV/m	54 dBµV/m	-6.09 dB	Pass	Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Schwarzbeck Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-24
Note:	EUT vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
7.441 GHz	37.85 dBµV/m	74 dBµV/m	-36.15 dB	Pass	Vertical
12.023 GHz	51.65 dBµV/m	74 dBµV/m	-22.35 dB	Pass	Vertical
12.027 GHz	54.25 dBµV/m	74 dBµV/m	-19.75 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
7.441 GHz	33.87 dBµV/m	54 dBµV/m	-20.13 dB	Pass	Vertical
12.023 GHz	48.33 dBµV/m	54 dBµV/m	-5.67 dB	Pass	Vertical
12.027 GHz	48.82 dBµV/m	54 dBµV/m	-5.18 dB	Pass	Horizontal

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

Project Number:	G0M-2103-9685
Applicant:	Dräger Safety AG & Co. KGaA
Model Description:	Fixed Gas Detector
Model:	Polytron 6100 EC WL
Test Sample ID:	35067
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Voigt
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120 VAC converted to 24 VDC
Antenna:	Configurable Antenna
Measurement distance:	3 m
Mode:	Tx; GFSK, 2480MHz; DSSS QPSK, 2405MHz
Test Date:	2021-09-23
Note:	

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RadiMation