RADIO REPORT

FCC 47 CFR Part 15C
ISED Canada RSS-247

Digital transmission systems operating within the 902.0 MHz - 928.0 MHz band

Report Reference No	G0M-2009-9331-TFC247DT-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	DAkkS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A-2 DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Kamstrup A/S
Address	Industrivej 28 8660 Skanderborg DENMARK
Test Specification	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, Amendment 1, 2019-03
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Ultrasonic water meter
Model(s)	KWM2220
Additional Model(s)	None
Brand Name(s)	Kamstrup
Hardware Version(s)	Unit: 6201-210-04, rev 4.00; RF PCB BOM: 55501900, rev. B1; Flow PCB BOM: 55501813, rev. B3
Software Version(s)	RF: 50981336, rev. N1; Meter: 50981595, rev. D1
FCC ID	OUY-KWMX220
IC	-/-
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	2020-12-01
Report:	

Compiled by	Toralf Jahn	
Tested by (+ signature) (Responsible for Test)	Toralf Jahn	T. J .....
Approved by (+ signature) (Test Lab Engineer)	Wilfried Treffke	W. Treffke .....
Date of Issue	2021-01-15	
Total number of pages	78	

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.

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Additional Comments:

ADDITIONAL VARIANTS

Additional Comments:		
Additional variants have been declared by the manufacturer. The listed models were not tested, evaluated or assessed in no way.		
Additional Model 1	Product Type Description	Ultrasonic water meter
	Model Name	KWM2220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6201-210-01, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501813, rev. B3
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 2	Product Type Description	Ultrasonic water meter
	Model Name	KWM2220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6201-210-02, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501813, rev. B3
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 3	Product Type Description	Ultrasonic water meter
	Model Name	KWM2220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6201-210-03, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501813, rev. B3
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 4	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6201-204-01, rev. A1 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1

Additional Model 5	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-205-01, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 6	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-02, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 7	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-03, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 8	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-04, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 9	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-05, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1

Additional Model 10	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-06, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 11	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-07, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1
Additional Model 12	Product Type Description	Ultrasonic water meter
	Model Name	KWM3220
	Brand Name (optional)	Kamstrup
	Hardware Version	Unit: 6202-103-08, rev. 00 RF PCB BOM: 55501900, rev. B1 Flow PCB BOM: 55501817, rev. B1
	Software Version	RF: 50981336, rev. N1 Meter: 50981595, rev. D1

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2020-01-15	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

Description	Ultrasonic water meter	
Model	KWM2220	
Additional Model(s)	None	
Brand Name(s)	Kamstrup	
Serial Number(s)	KAM21142842/20 Radiated Test Sample ID 32341 KAM21142842/20 Conducted Test Sample ID 32344	
Hardware Version(s)	Unit: 6201-210-04, rev 4.00; RF PCB BOM: 55501900, rev. B1; Flow PCB BOM: 55501813, rev. B3	
Software Version(s)	RF: 50981336, rev. N1; Meter: 50981595, rev. D1	
PMN	None	
HVIN	None	
FVIN	None	
HMN	None	
FCC ID	OUY-KWMX220	
IC	-/-	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	902.0 MHz - 928.0 MHz	
Radio technology	Digital Modulation	
Modulation	2-FSK	
Number of antenna ports	1	
Antenna 1	Type	External antenna
	Model	30261216 A1
	Manufacturer	Kamstrup
	Gain	-1.7 dBi
Antenna 2	Type	External antenna
	Model	6699490
	Manufacturer	Kamstrup
	Gain	-1.6 dBi
Antenna 3	Type	External antenna
	Model	6697902
	Manufacturer	Kamstrup
	Gain	2.2 dBi
Antenna 4	Type	External antenna
	Model	6697916
	Manufacturer	Kamstrup
	Gain	1.2 dBi
Antenna 5	Type	External antenna
	Model	30261216 B1
	Manufacturer	Kamstrup
	Gain	-2.1 dBi
Comment	Only antenna 3 was at the lab premisses during testing.	
Supply Voltage	V_{NOM}	3.66 VDC
Operating Temperature	T_{NOM}	25 °C
AC/DC-Adaptor	None	
Manufacturer	Kamstrup A/S Industrivej 28 8660 Skanderborg DENMARK	

1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Optical readout head	Kamstrup	140711	Programming interface
AE	Laboratory power supply	KORAD	KD6005P	The EUT battery does not last to perform the tests. Therefore an external power supply was necessary.
CBL	Auxillary cable			To connect EUT and power supply.
SFT	Device Control Tool	Kamstrup	ver. 0.05	Tool for controlling RF modules and meters
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.5 Test mode duty cycle

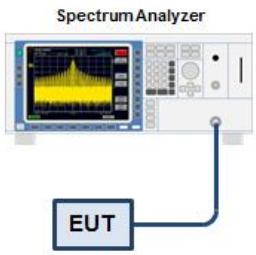
1.5.1 Information

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	FSW 43	EF00896	2020-09	2021-03

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}))

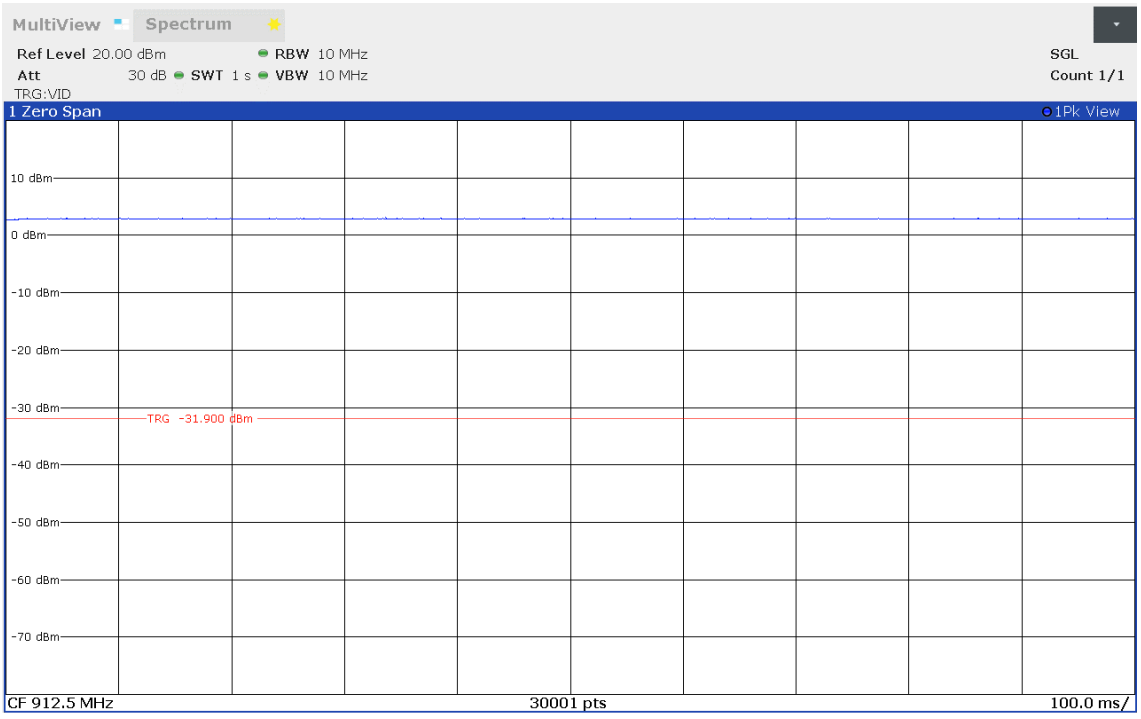
1.5.6 Results

Duty Cycle Results		
Mode	Duty Cycle	Correction Factor [dB]
Transmit	100%	0.0

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

Duty Cycle

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	ANSI C63.10:2013
Reference Method:	ANSI C63.10:2013, Section 7.5
Operating Frequency:	912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Duty Cycle Period:	100
Maximum Duty Cycle:	1.00
Maximum Duty Cycle [%]:	100
Duty Cycle Correction [dB]:	0.00



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1.6 Test Modes

Mode	Description
Transmit	Mode = Transmit Modulation = 2-FSK Duty cycle = 100 %
Receive	Mode = Receive Modulation = 2-FSK
Comment:	

1.7 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	1	912.5
F2	Tx / Rx	2	915.0
F3	Tx / Rx	3	918.5

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/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**
ISED RSS-Gen, Issue 5 (section 6.7)	Occupied Bandwidth	ANSI C63.10-2013	N/T	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	PASS	
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	N/R	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	N/T	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 (section 6.13)	Transmitter radiated spurious emissions	ANSI C63.10-2013	PASS	
ISED RSS-247, Issue 2 (section 3.1)	Receiver radiated spurious emissions	ANSI C63.10-2013	PASS	
Comment:				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

3 Test Conditions and Results

3.1 Test Conditions and Results - Maximum peak conducted output power

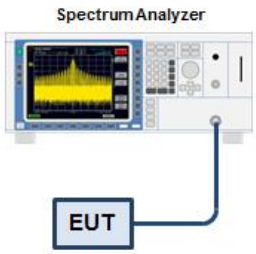
3.1.1 Information

Test Information	
Reference	FCC § 15.247(b); ISED RSS-247, Issue 2 (section 5.4)
Measurement Method	ANSI C63.10 11.9.1
Measurement Uncertainty	± 2.86 dB
Operator	Toralf Jahn
Date	2021-01-07

3.1.2 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.

3.1.3 Setup

Test Setup


3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2020-09	2021-03
Cable	Gigalane	SMS111B	EF00779	2020-12	2021-12

3.1.5 Procedure

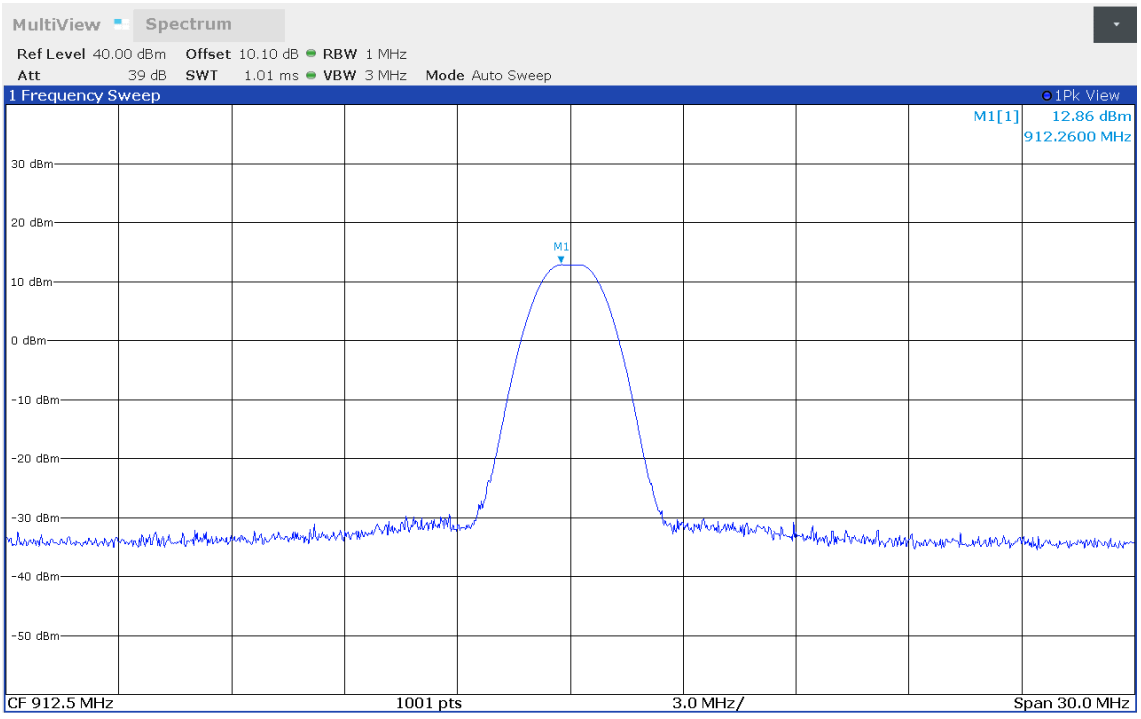
Test Procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Analyzer resolution bandwidth is set ≥ DTS bandwidth 3. Detector set to peak and max hold 4. Sweep time is set to auto 5. After the trace has stabilized a marker is set to peak of envelope

3.1.6 Results

Test Results				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
912.5	12.864	0.0193	1.0	PASS
915.0	12.818	0.0191	1.0	PASS
918.5	12.731	0.0188	1.0	PASS

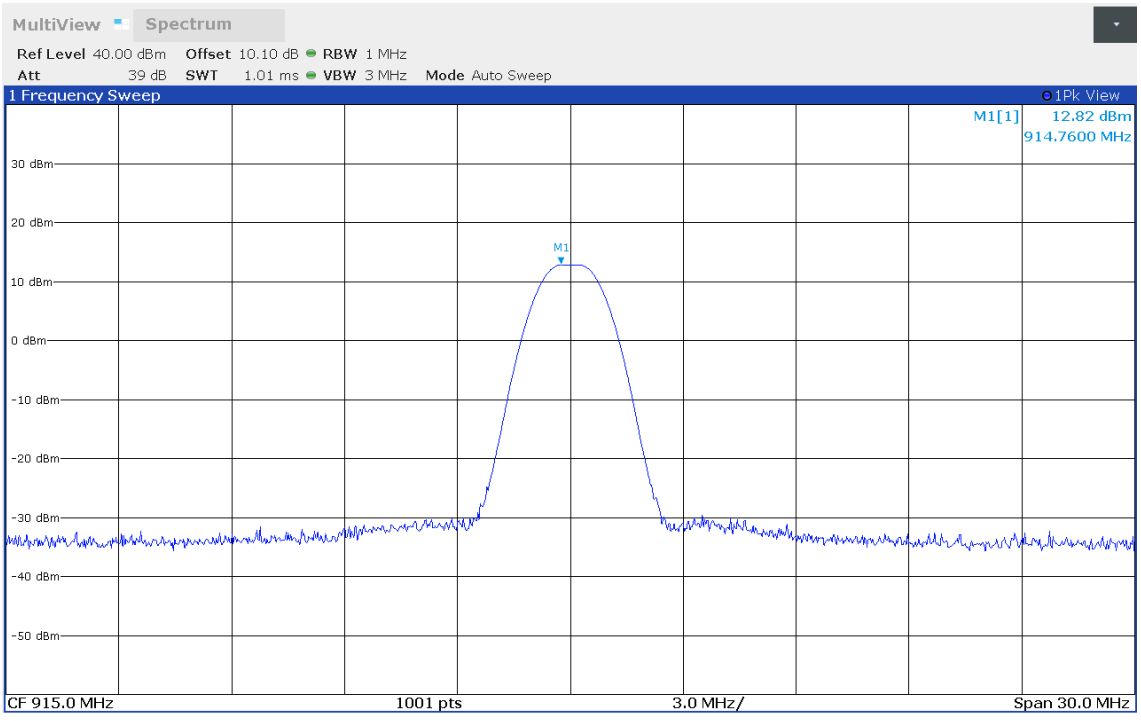
Peak Conducted Output Power

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.9.1.1
Operational Mode:	2-FSK, Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Peak Power [dBm]:	12.864
Peak Power [W]:	0.0193



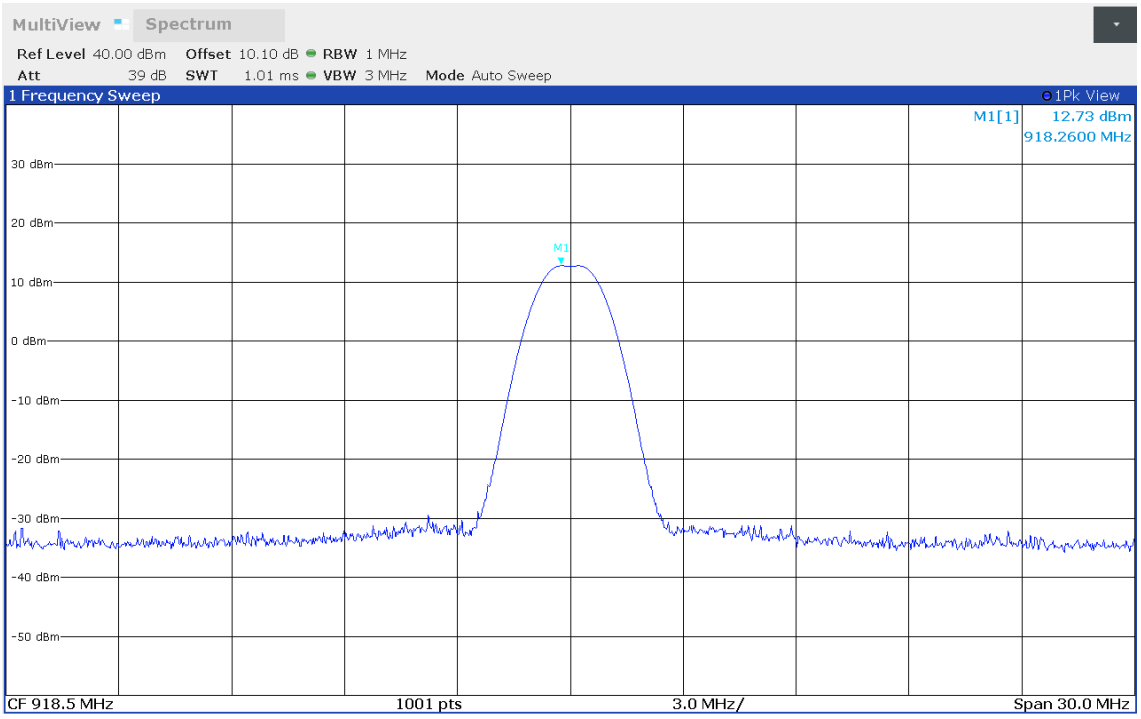
Peak Conducted Output Power

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.9.1.1
Operational Mode:	2-FSK, Channel: 915.0 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Peak Power [dBm]:	12.818
Peak Power [W]:	0.0191



Peak Conducted Output Power

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.9.1.1
Operational Mode:	2-FSK, Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Peak Power [dBm]:	12.731
Peak Power [W]:	0.0188



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3.2 Test Conditions and Results - Band-edge compliance

3.2.1 Information

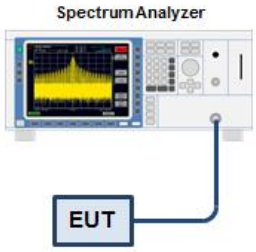
Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Uncertainty	± 3.64 dB
Measurement Method	ANSI C63.10 11.13
Operator	Toralf Jahn
Date	2021-01-07

3.2.2 Limits

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

3.2.3 Setup

Test Setup



3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2020-09	2021-03
Cable	Gigalane	SMS111B	EF00779	2020-12	2021-12

3.2.5 Procedure

Test Procedure

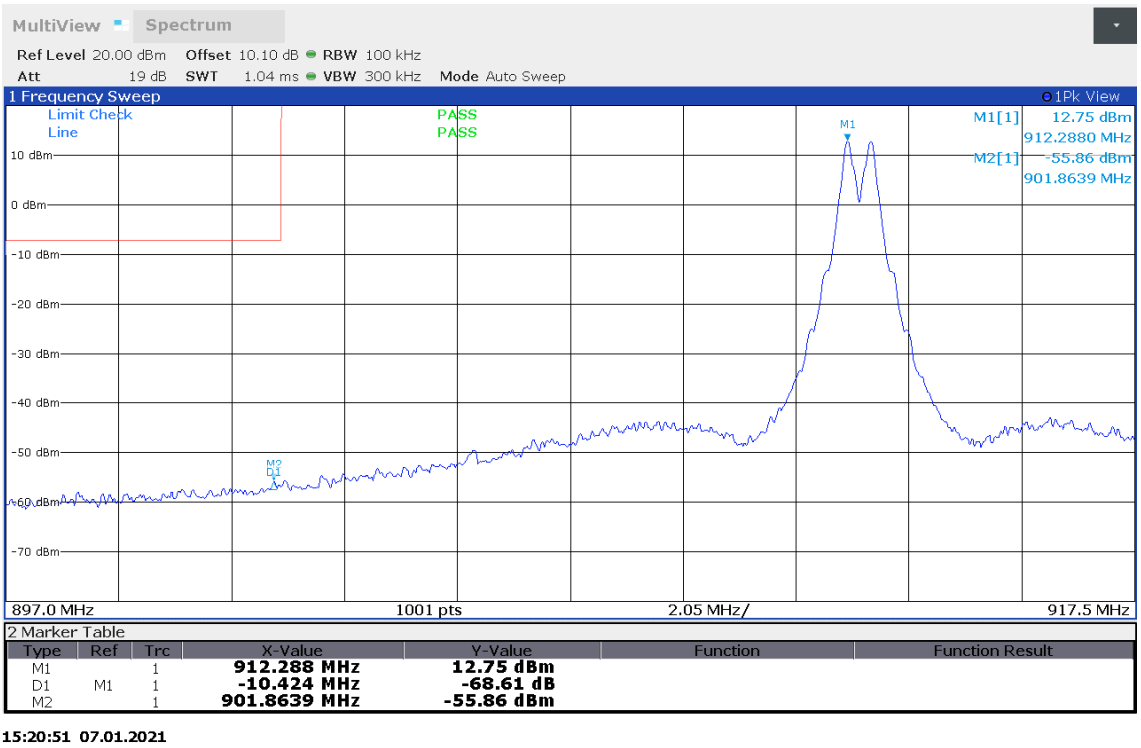
1. EUT set to test mode (Communication tester is used if needed)
2. Span set around lower band edge and detector is set to peak and max hold
3. Resolution bandwidth is set to 100 kHz
4. Markers are set to peak emission levels within frequency band and outside frequency band
5. Band edge attenuation is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

3.2.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
Single	912.5	-68	-20	PASS
Single	918.5	-68	-20	PASS

Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.10
Operational Mode:	single frequency, Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Band-edge	Lower
In-band Frequency [MHz]:	912.288
Max. in-band Level [dBm/100 kHz]:	12.747
Out-of-band Frequency [MHz]:	901.864
Max. out-of-band Level [dBm/100 kHz]:	-55.865
Attenuation [dB]:	-68.61



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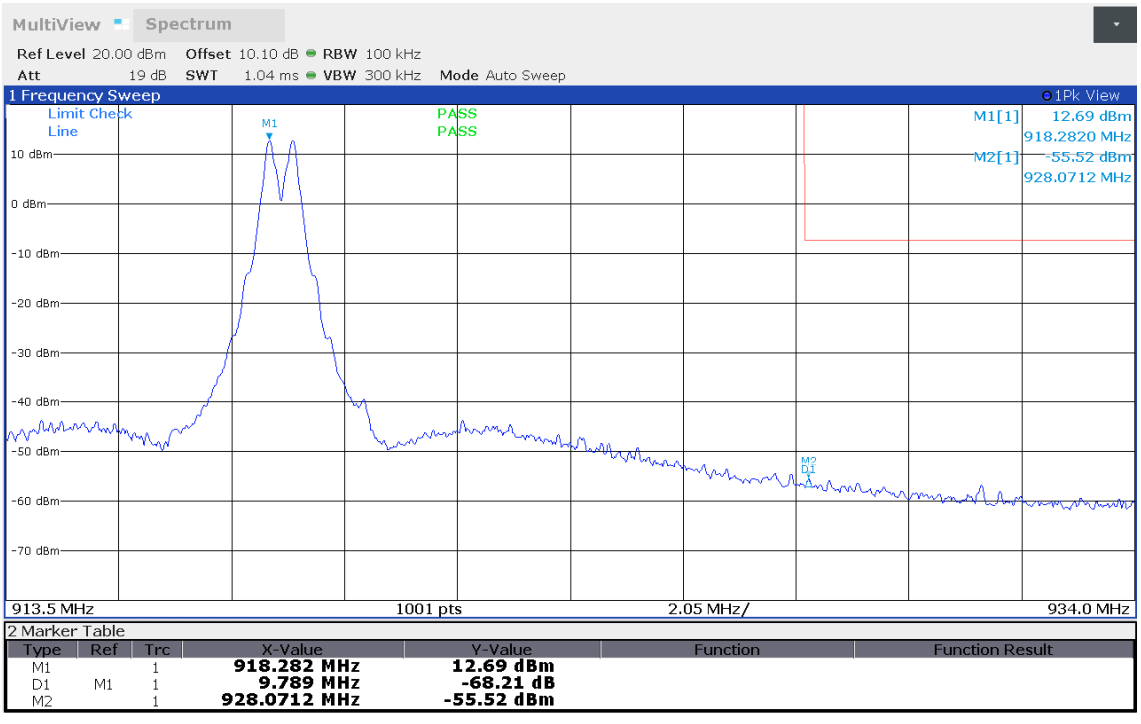
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32344
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.10
Operational Mode:	single frequency, Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Toralf Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2021-01-07
Band-edge	Upper
In-band Frequency [MHz]:	918.282
Max. in-band Level [dBm/100 kHz]:	12.686
Out-of-band Frequency [MHz]:	928.071
Max. out-of-band Level [dBm/100 kHz]:	-55.524
Attenuation [dB]:	-68.21



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3.3 Test Conditions and Results - Transmitter radiated emissions

3.3.1 Information

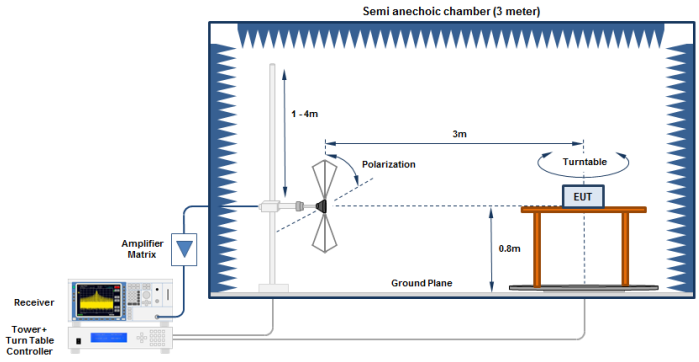
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISED RSS-Gen, Issue 5 (section 6.13)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Toralf Jahn
Date	2021-01-08

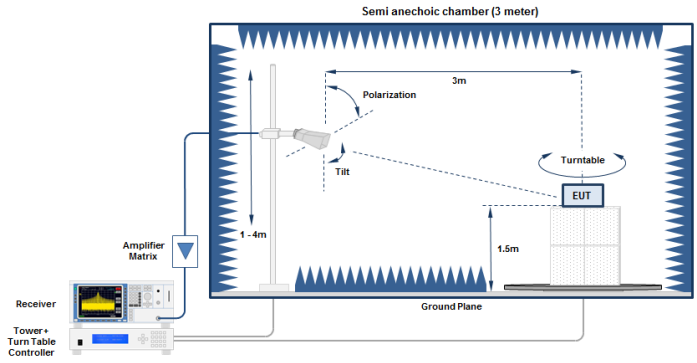
3.3.2 Limits

Limits			
Frequency range [MHz]	Detector	Field strength [µV/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

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz


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	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	R&S	HK 116	EF00030	2019-04	2022-04
Antenna	R&S	HL 223	EF00187	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10

3.3.5 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

3.3.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
912.5	1184.5	41.55	pk	ver	74.00	-32.45
915.0	1178.5	41.65	pk	ver	74.00	-32.35

3.4 Test Conditions and Results - Receiver radiated emissions

3.4.1 Information

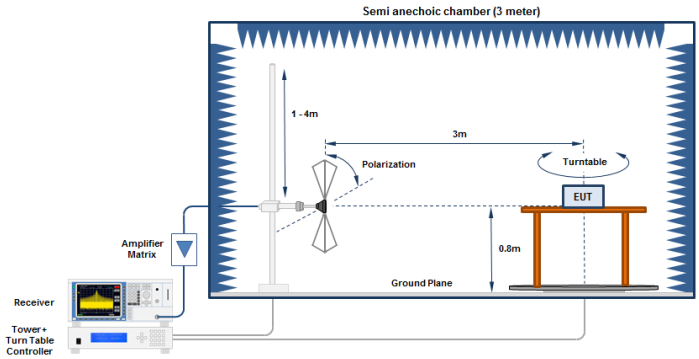
Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Toralf Jahn
Date	2021-01-08

3.4.2 Limits

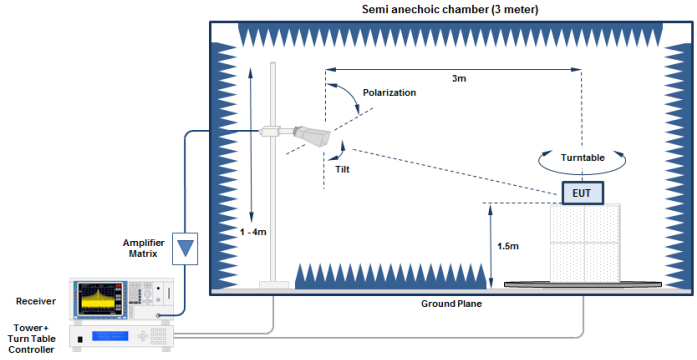
Limits			
Frequency range [MHz]	Detector	Field strength [µV/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.4.3 Setup

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz



3.4.4 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	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	R&S	HK 116	EF00030	2019-04	2022-04
Antenna	R&S	HL 223	EF00187	2019-05	2022-05

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2020-06	2021-06
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10

3.4.5 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

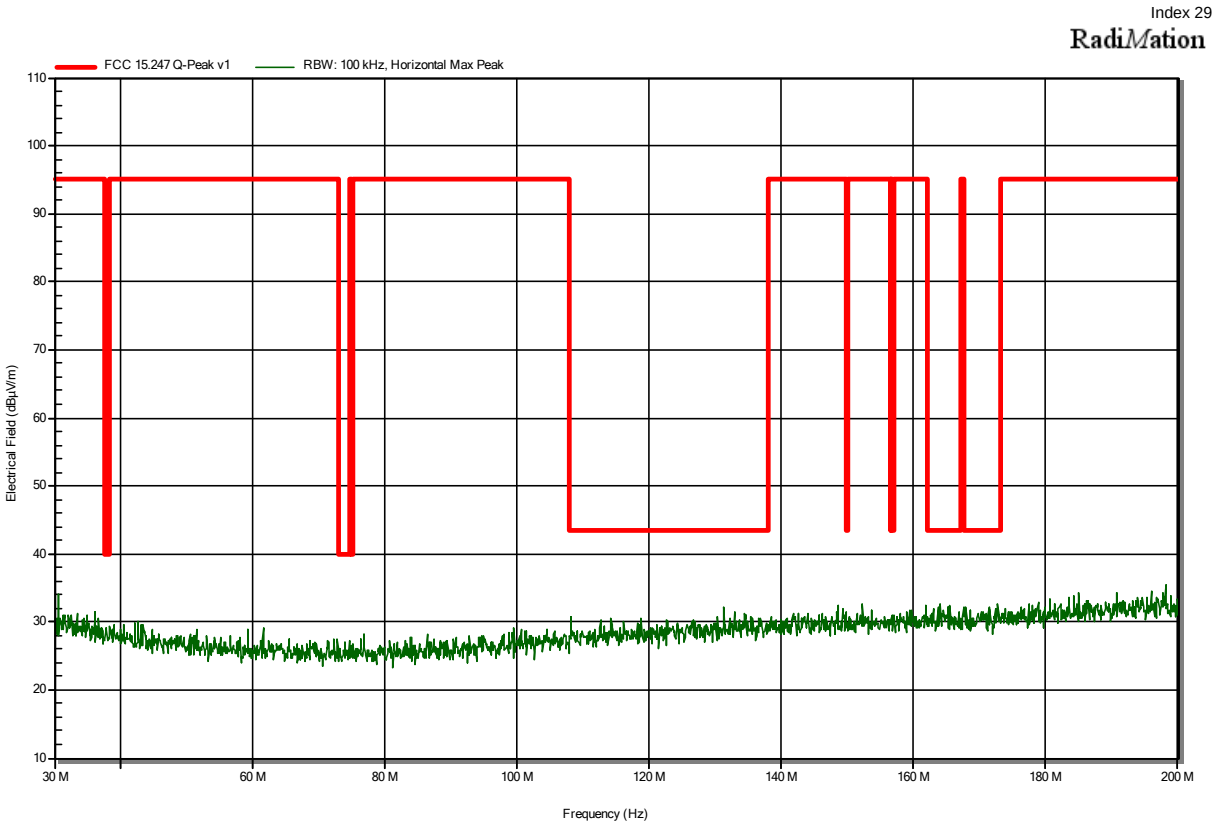
3.4.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
No significant emissions detected						

ANNEX A Transmitter spurious emissions

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-11
Note:	



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915 MHz
Test Date:	2021-01-11
Note:	

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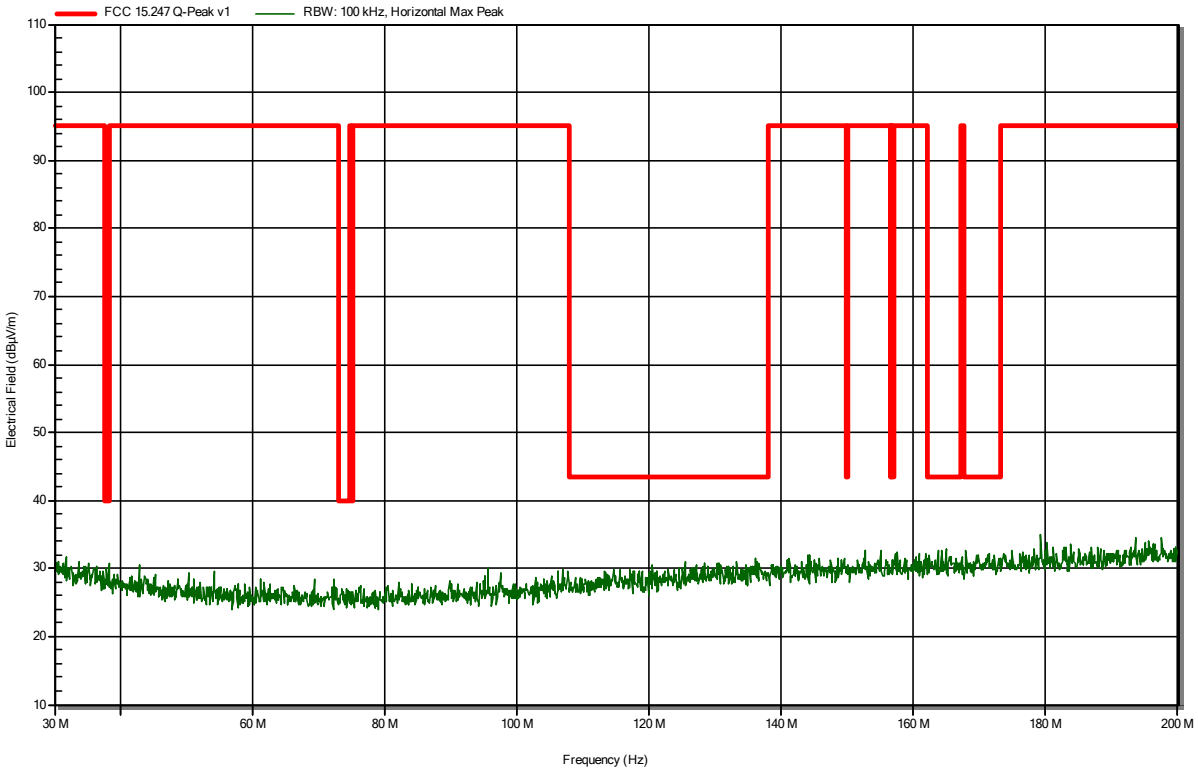
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-11
Note:	

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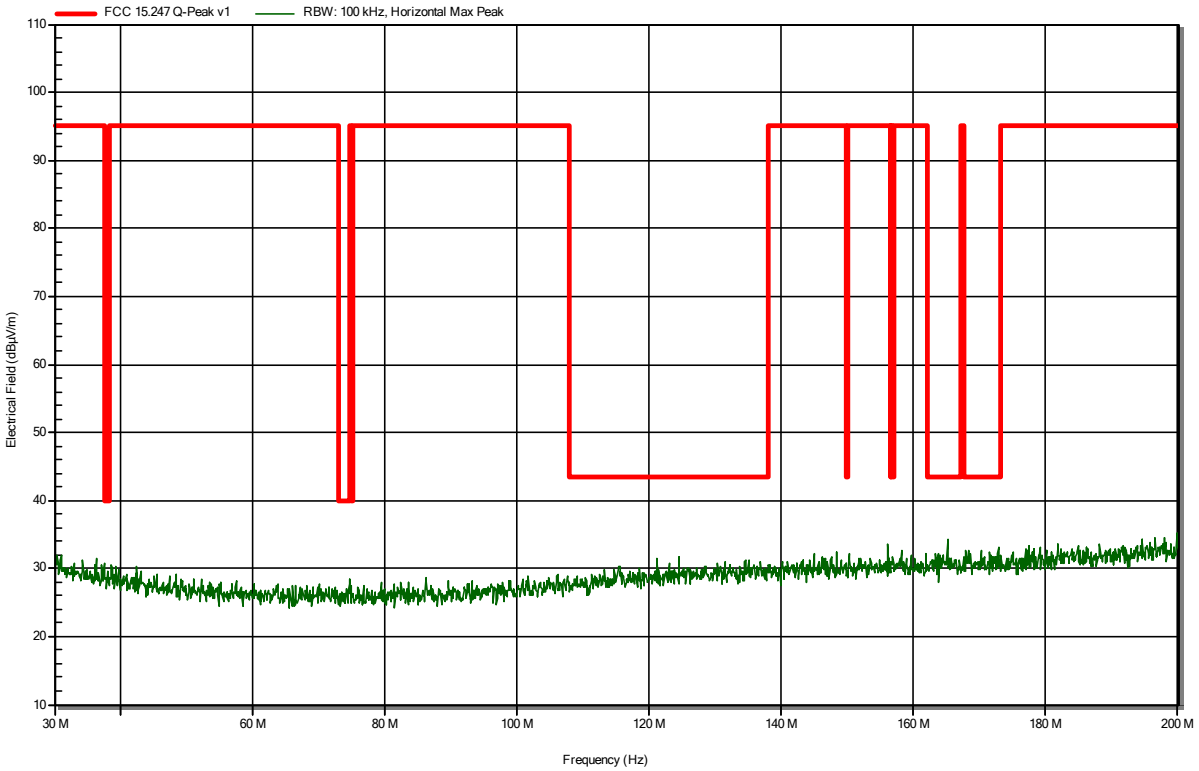
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-11
Note:	

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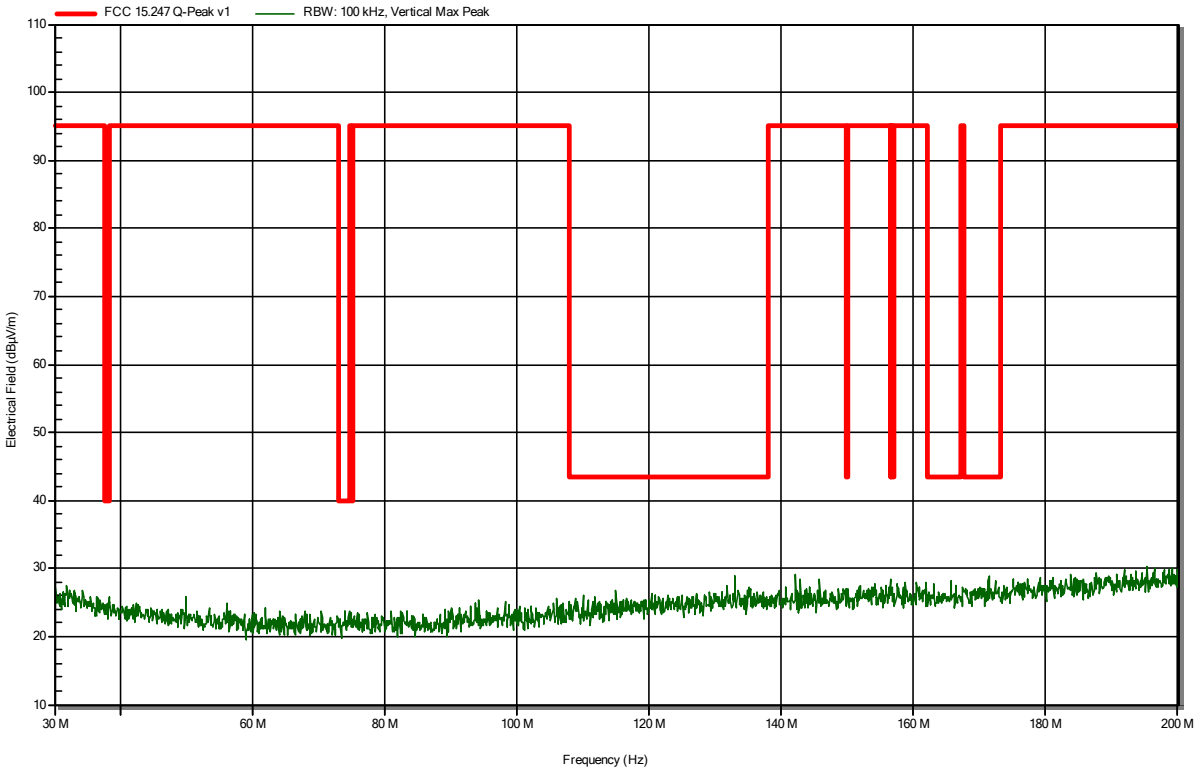
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915 MHz
Test Date:	2021-01-11
Note:	

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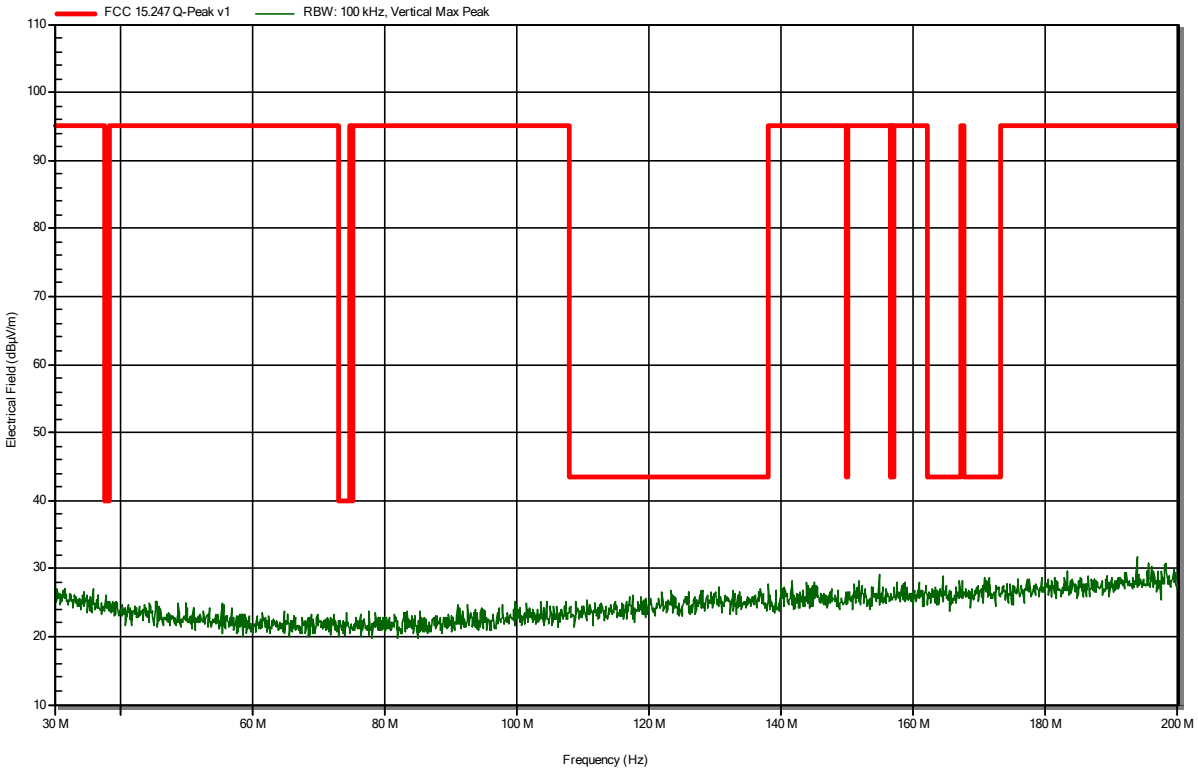
RadiMation



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Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-11
Note:	

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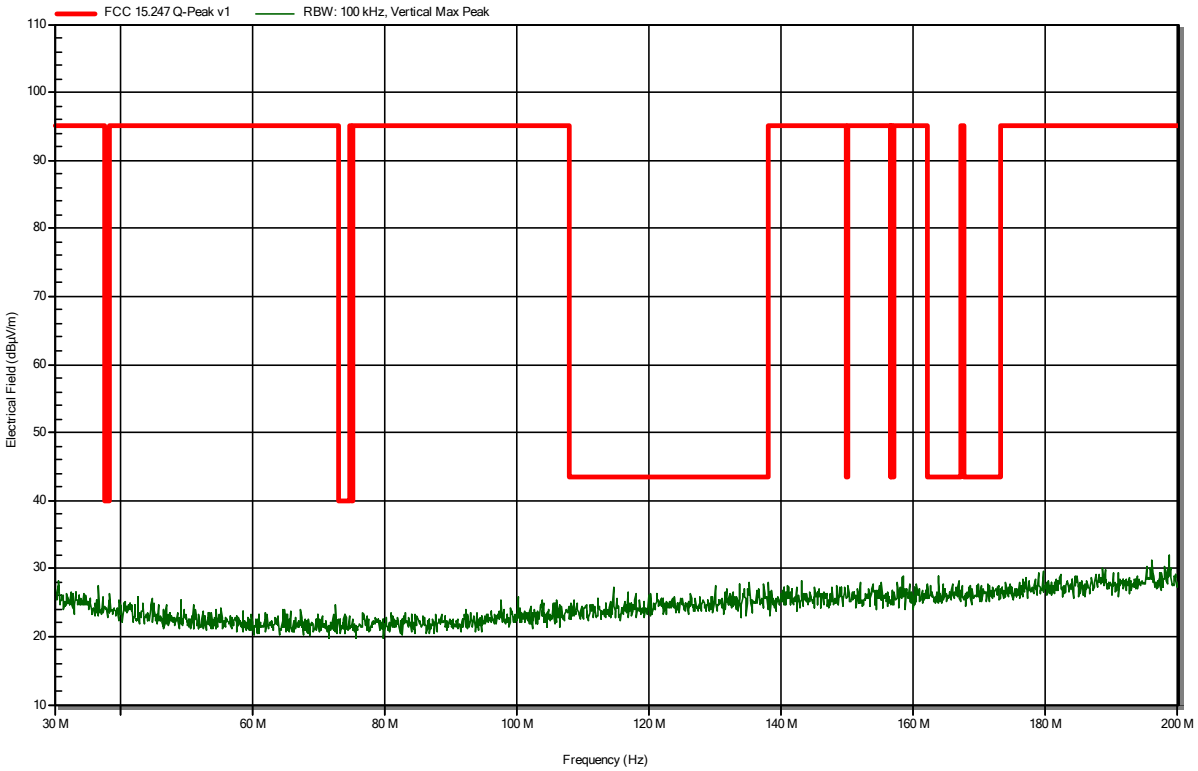
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Applicant:	Kamstrup A/S
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Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-11
Note:	

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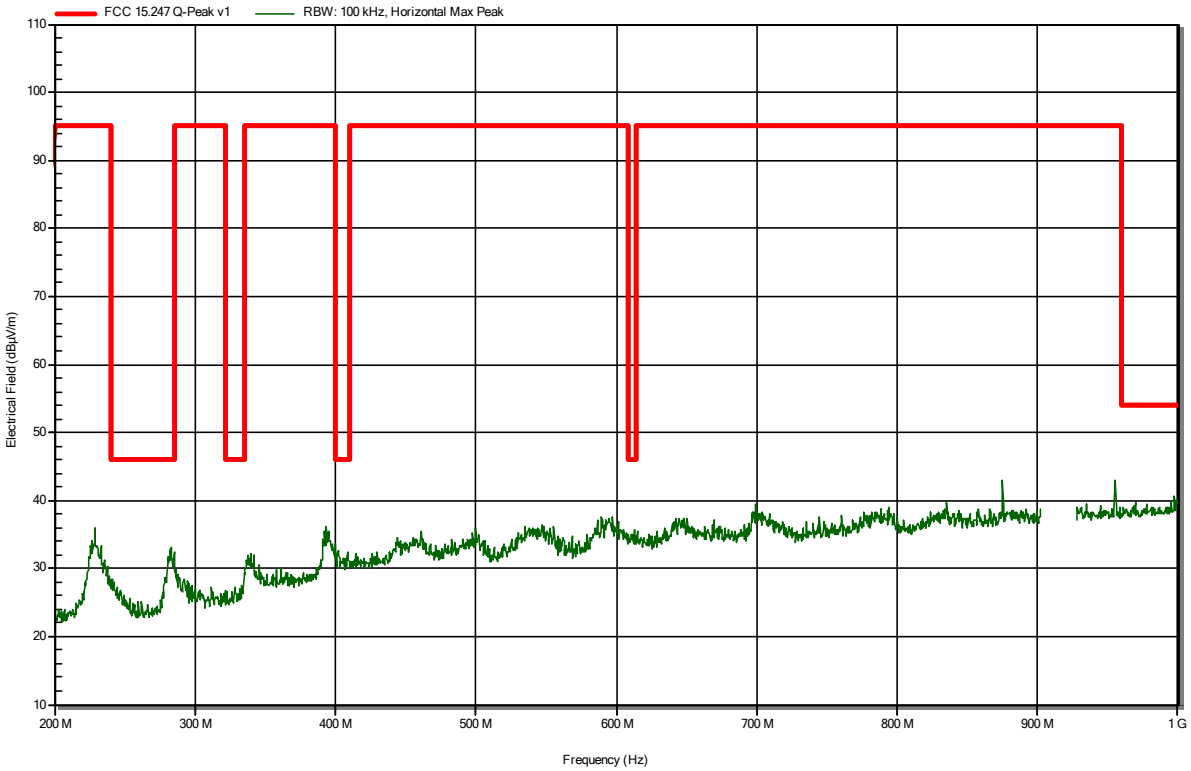
RadiMation



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Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	

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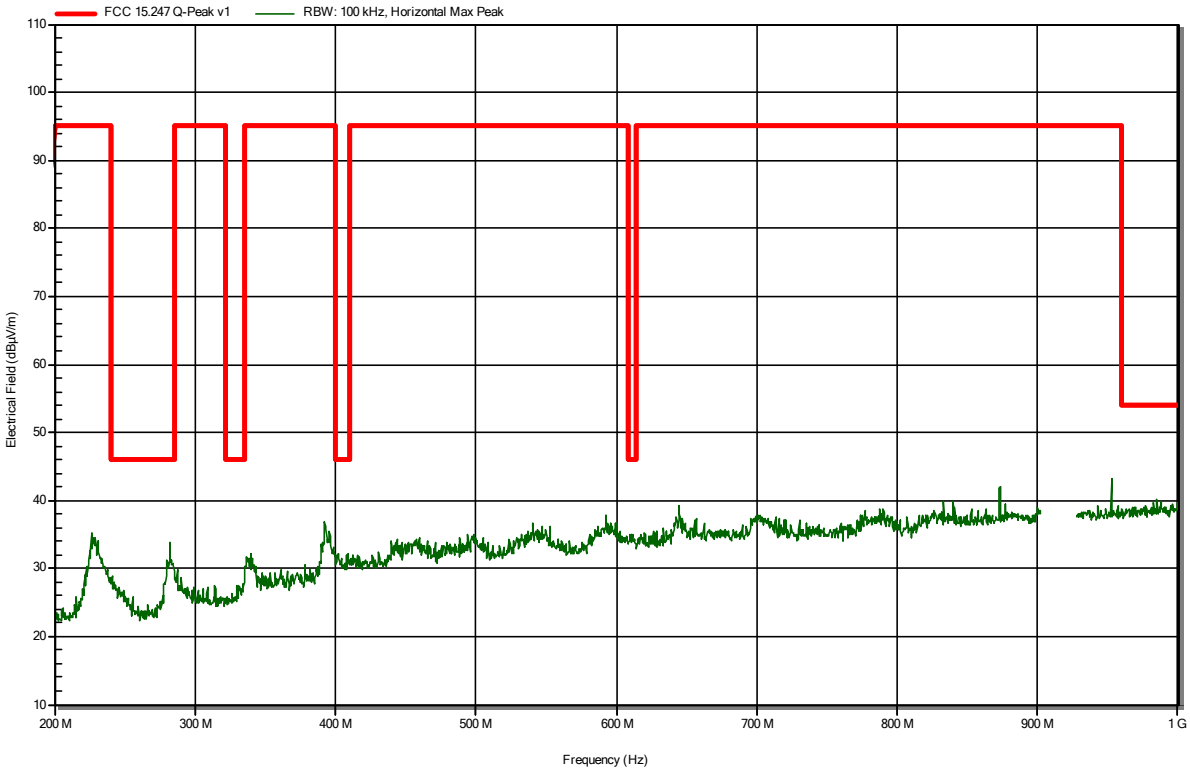
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-11
Note:	

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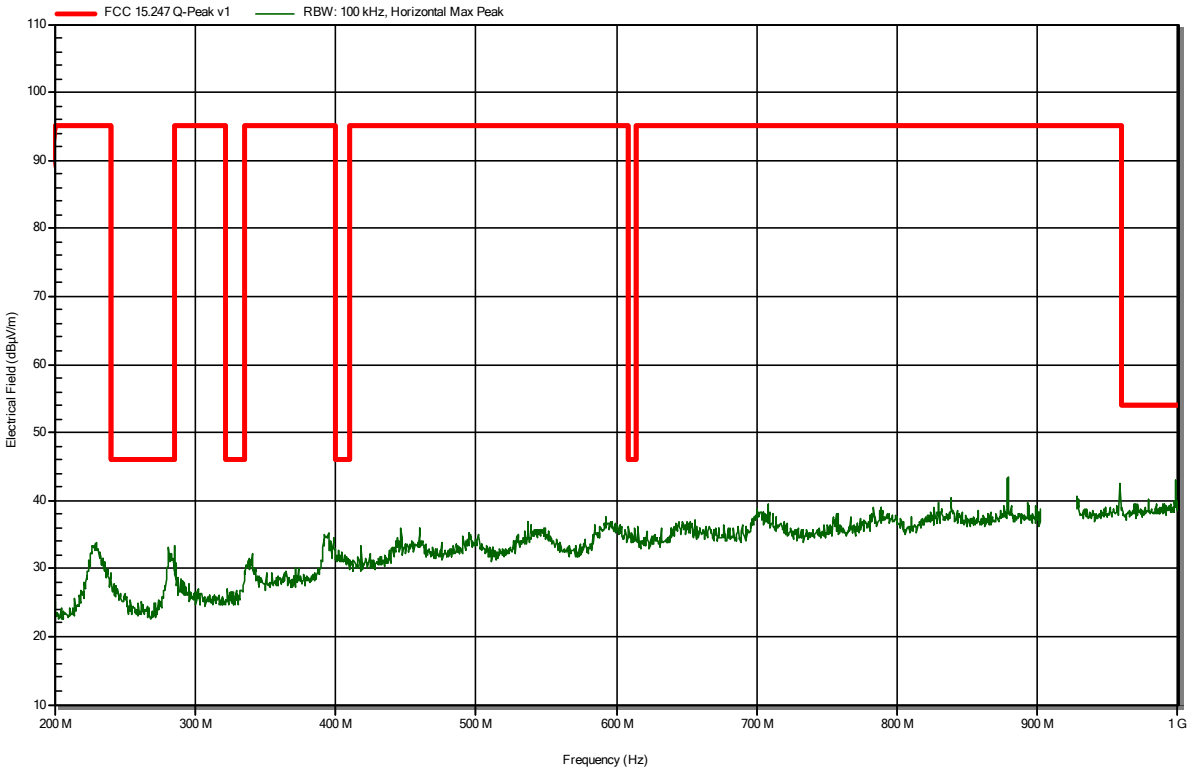
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-11
Note:	

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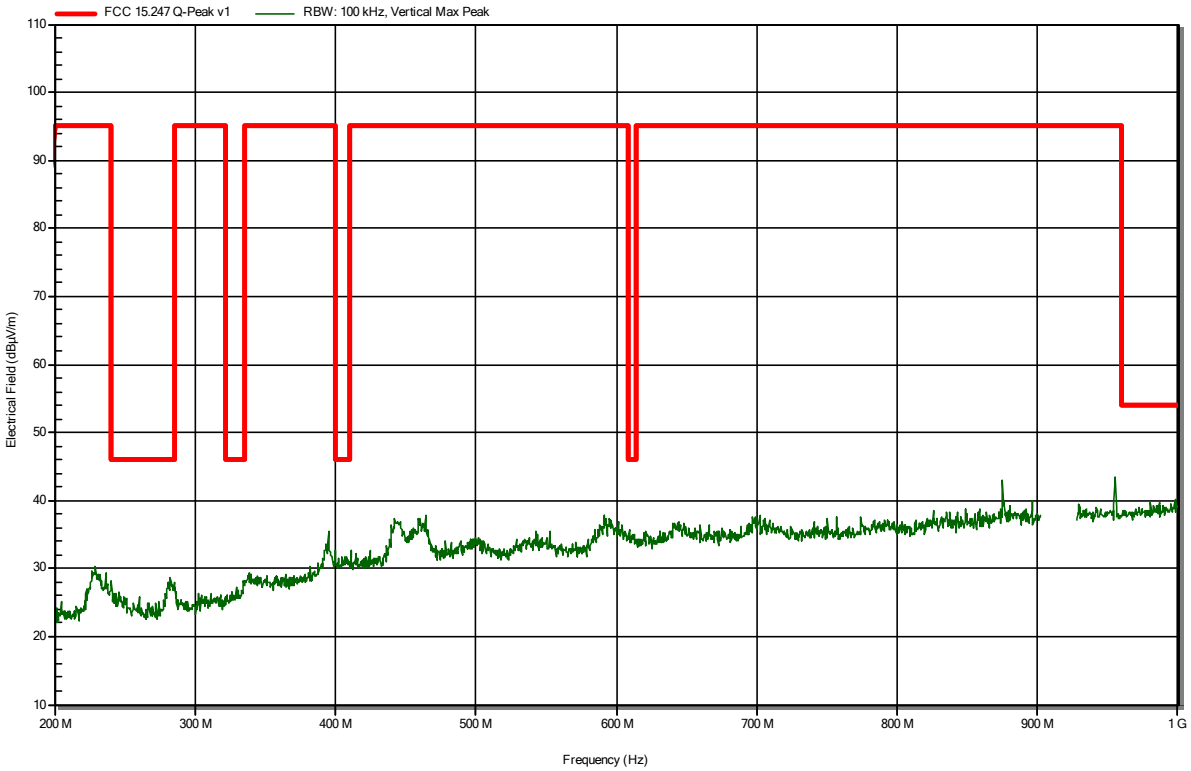
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	

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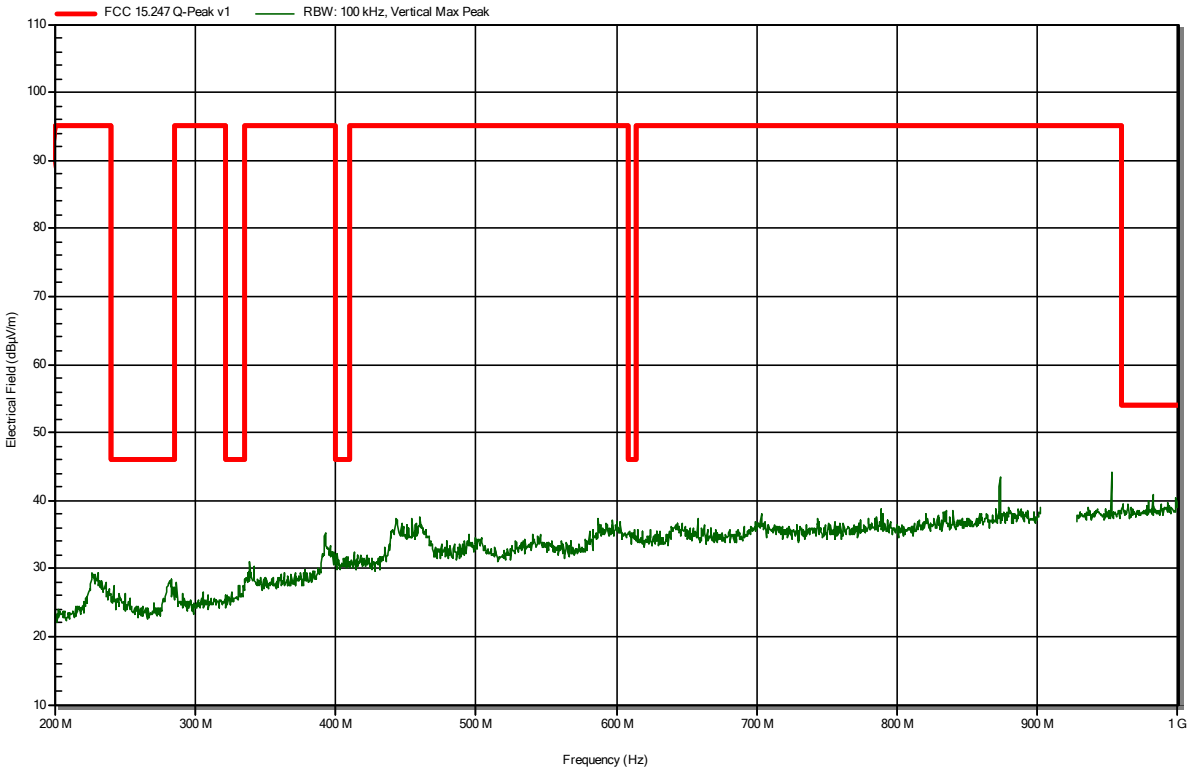
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Model:	KWM2220
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Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-11
Note:	

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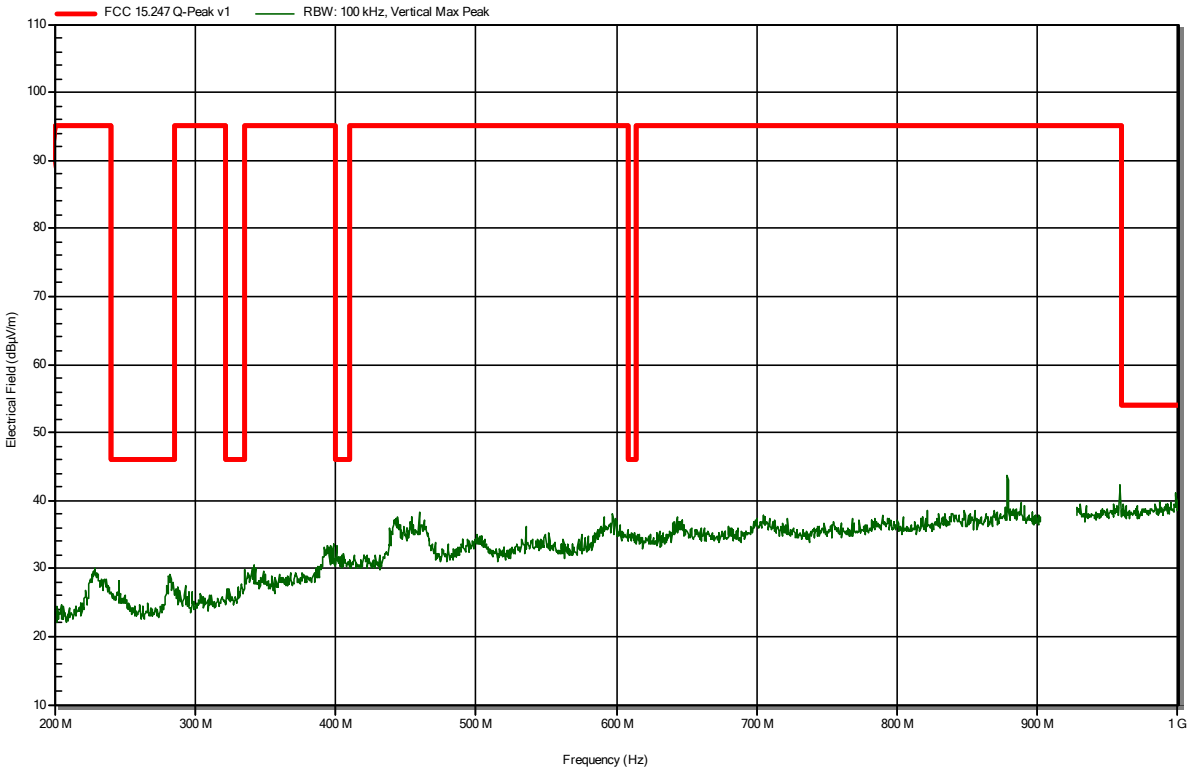
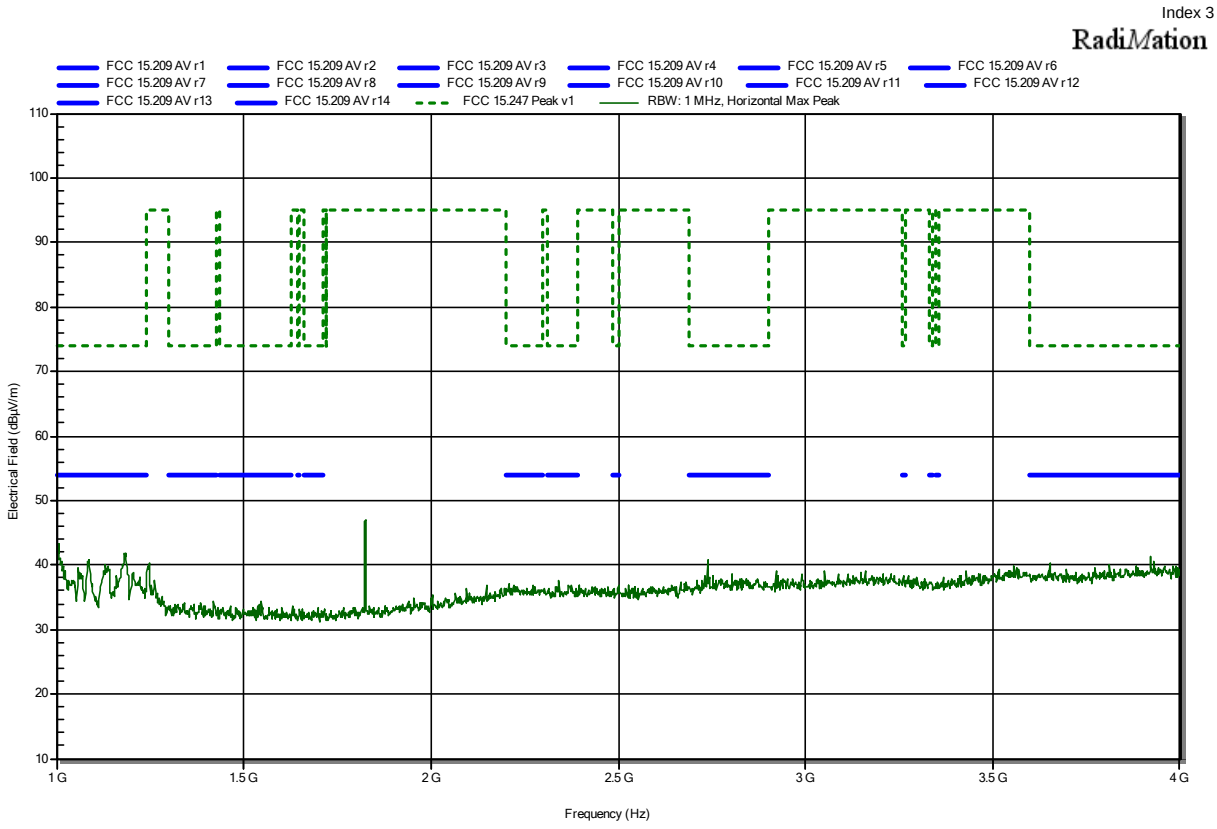
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	



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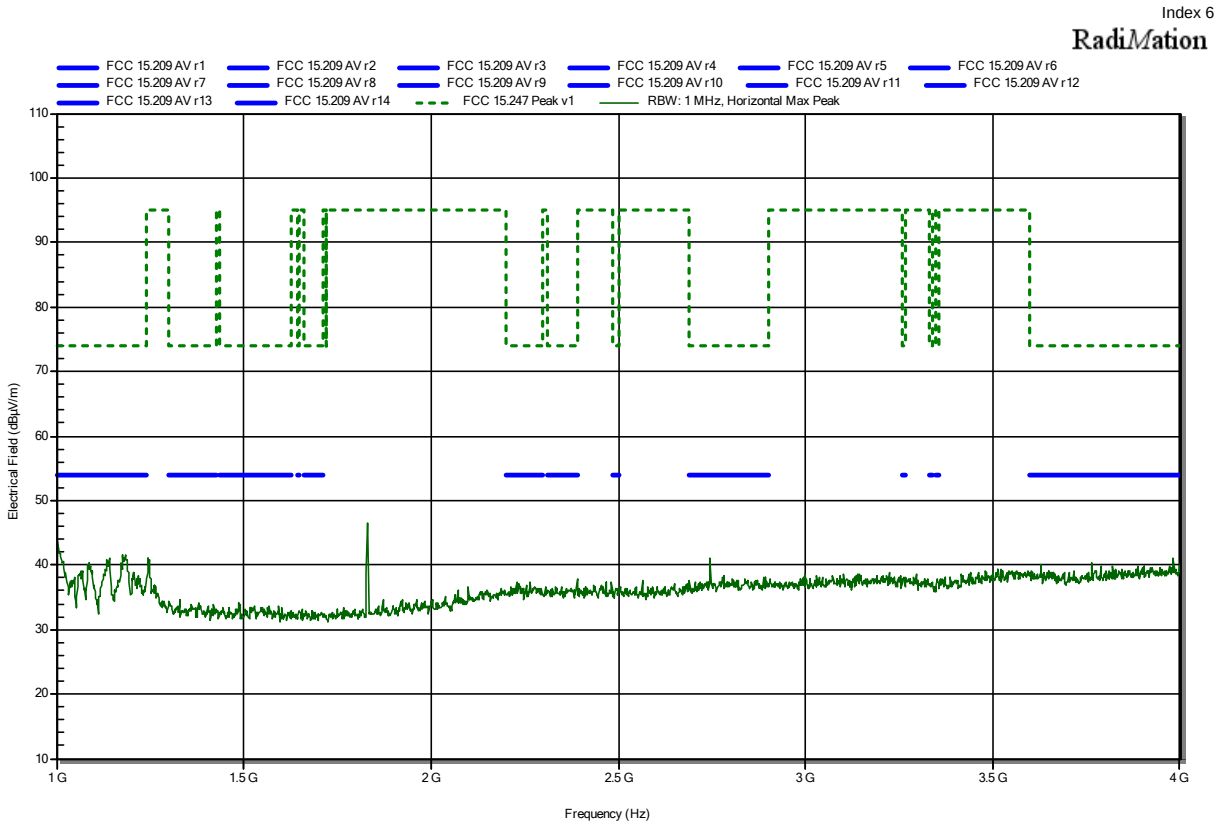
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	



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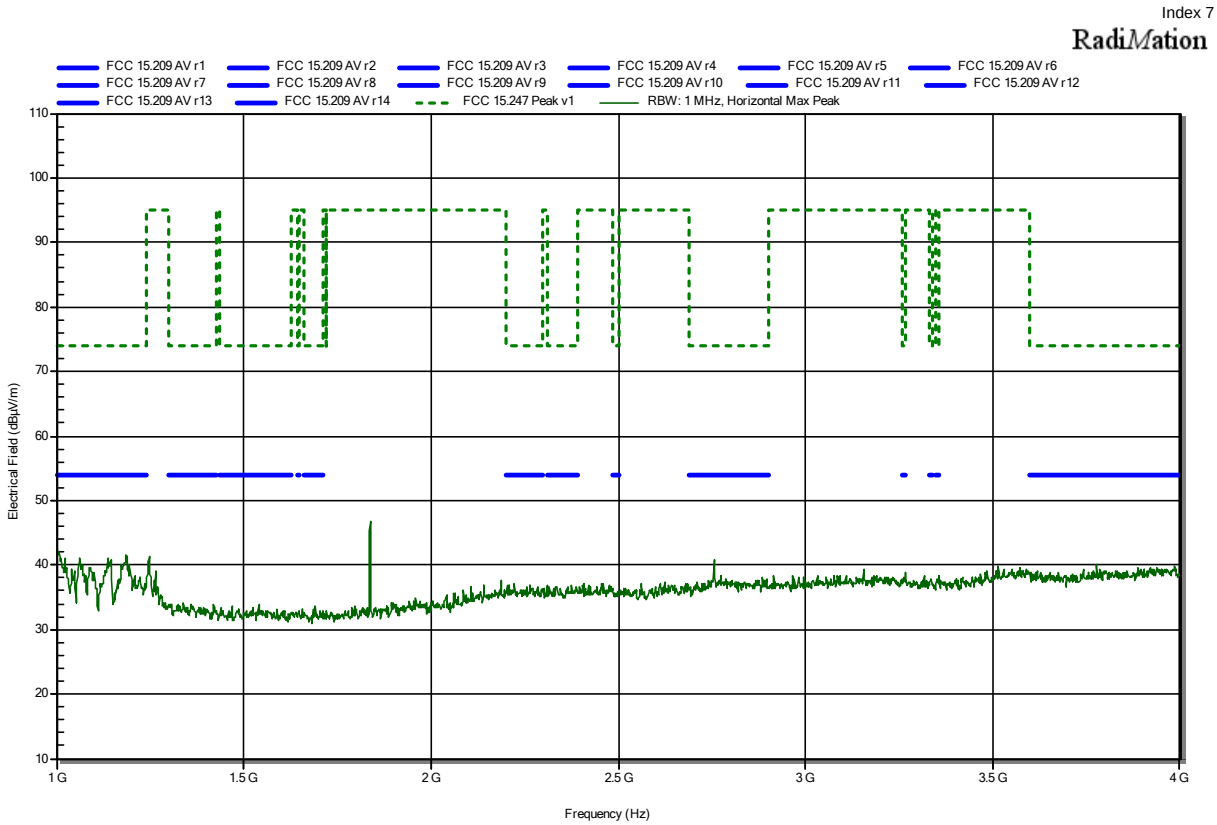
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	



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Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
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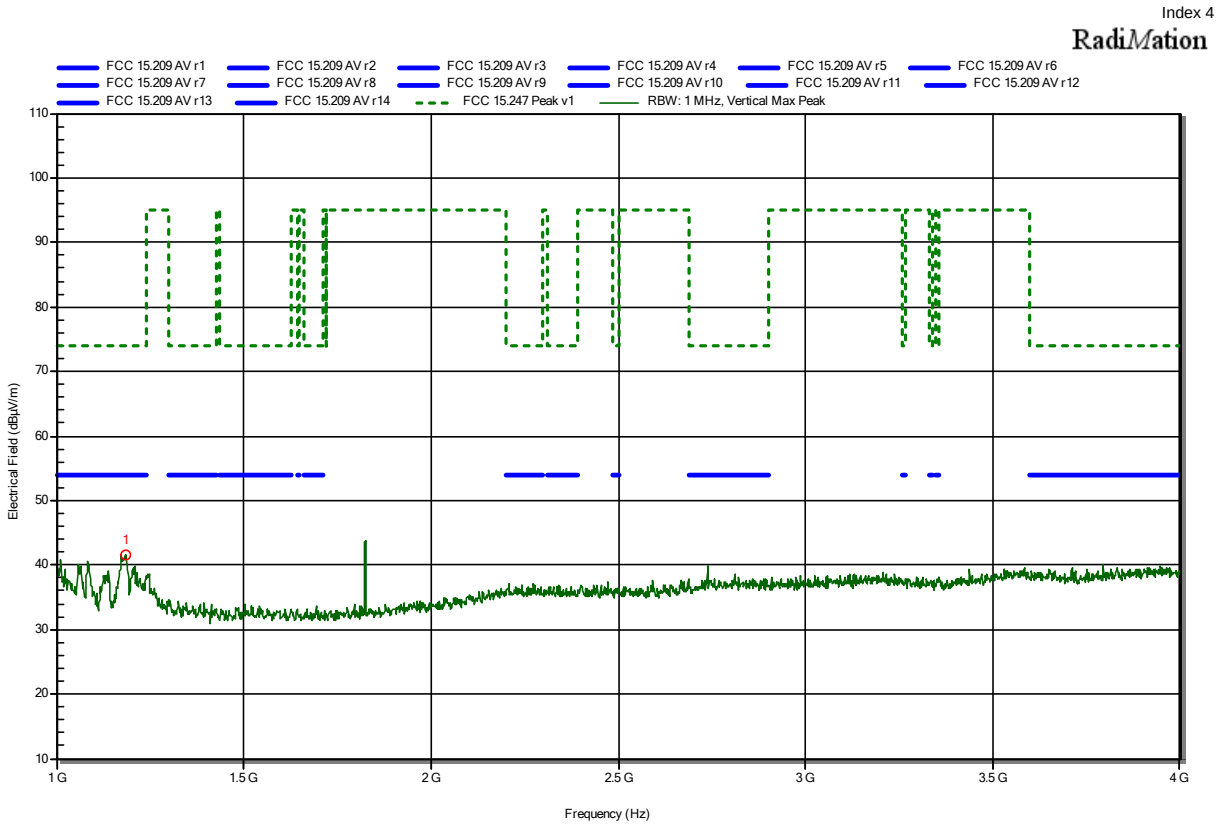
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.1845 GHz	41.55 dBµV/m	74 dBµV/m	-32.45 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
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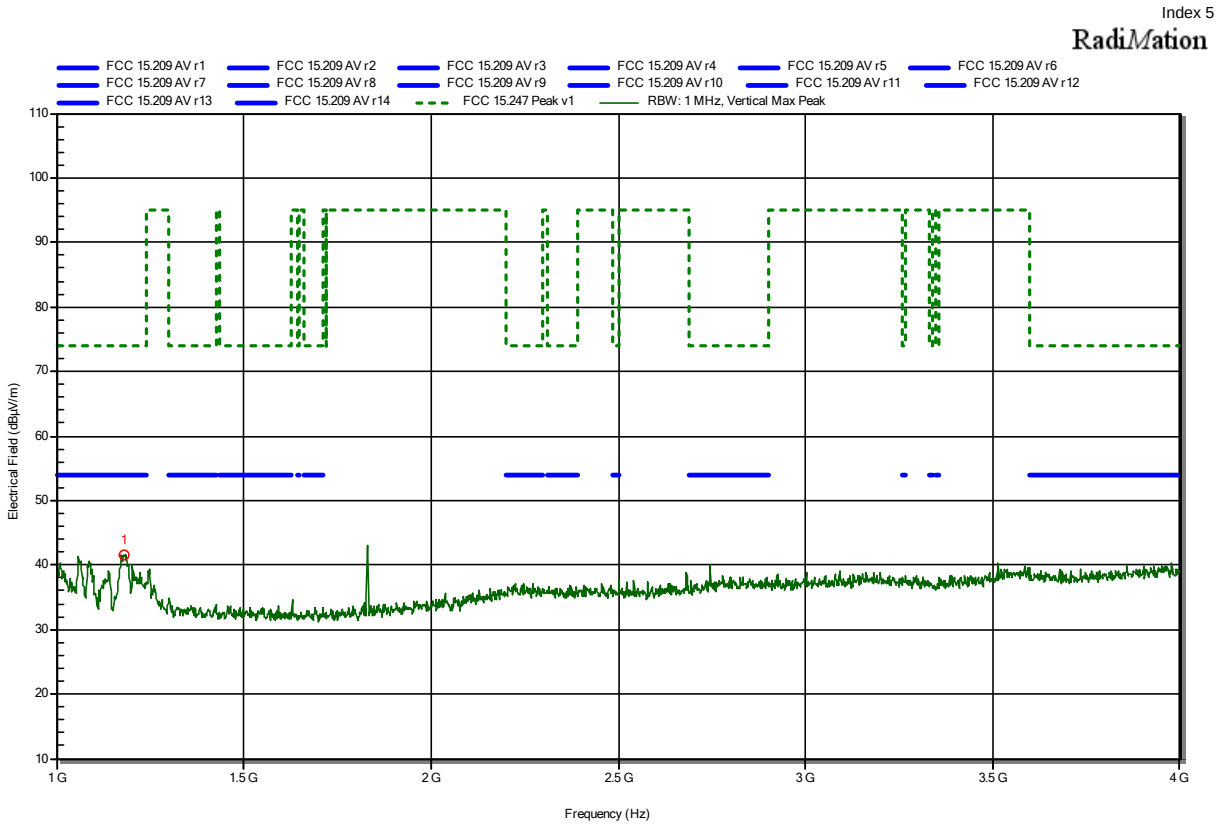
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.1785 GHz	41.65 dBµV/m	74 dBµV/m	-32.35 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
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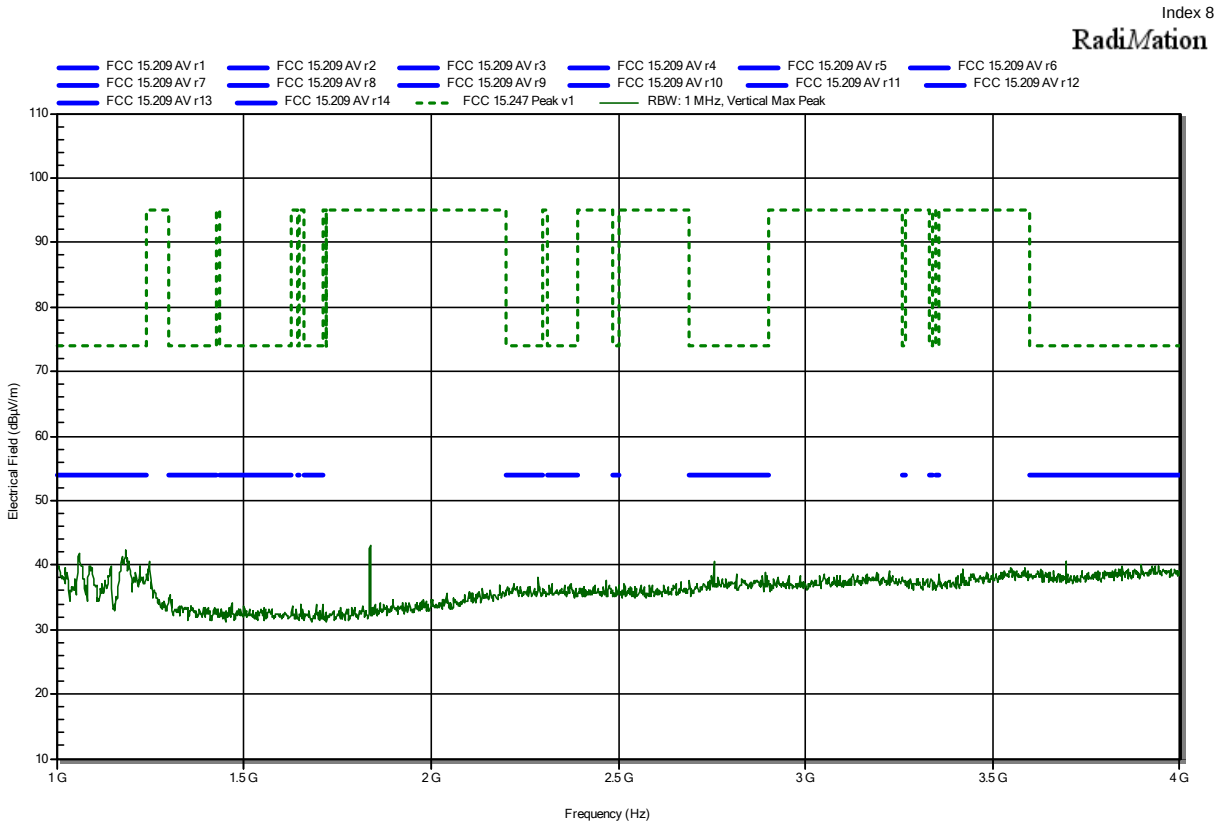
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	



Radiated Spurious Emissions according to FCC 47 CFR 15.247

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Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	

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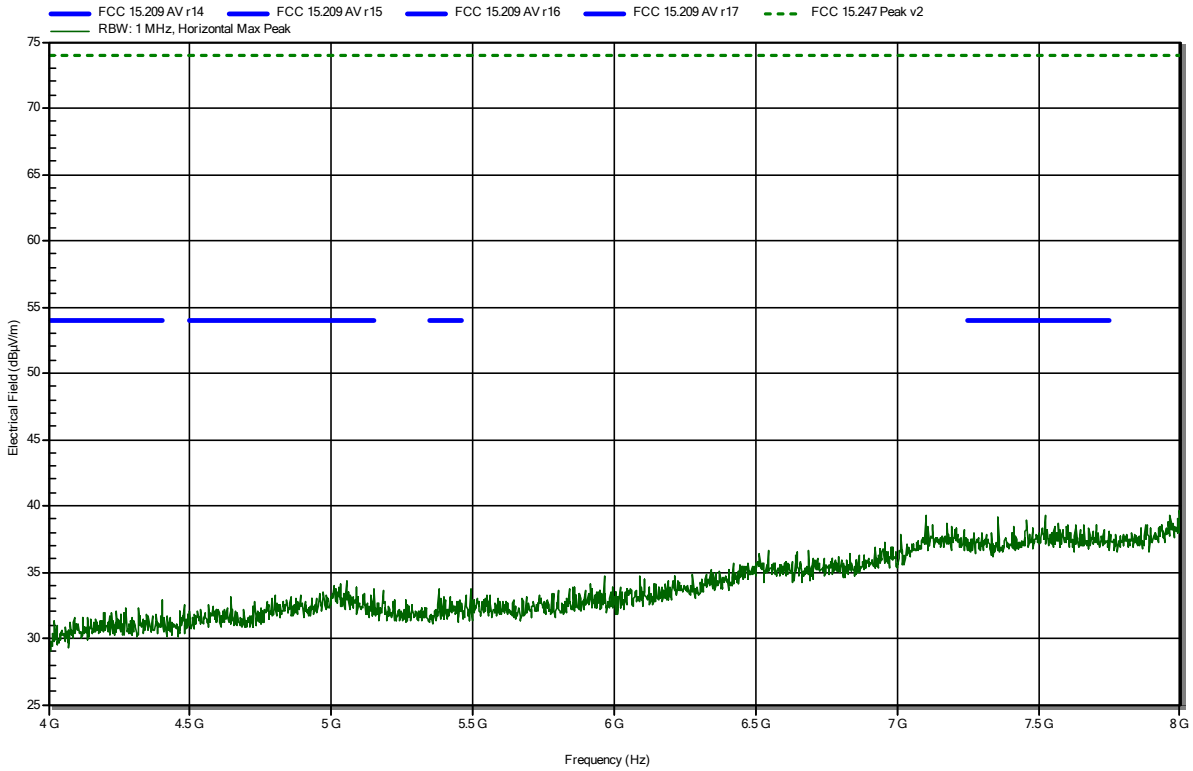
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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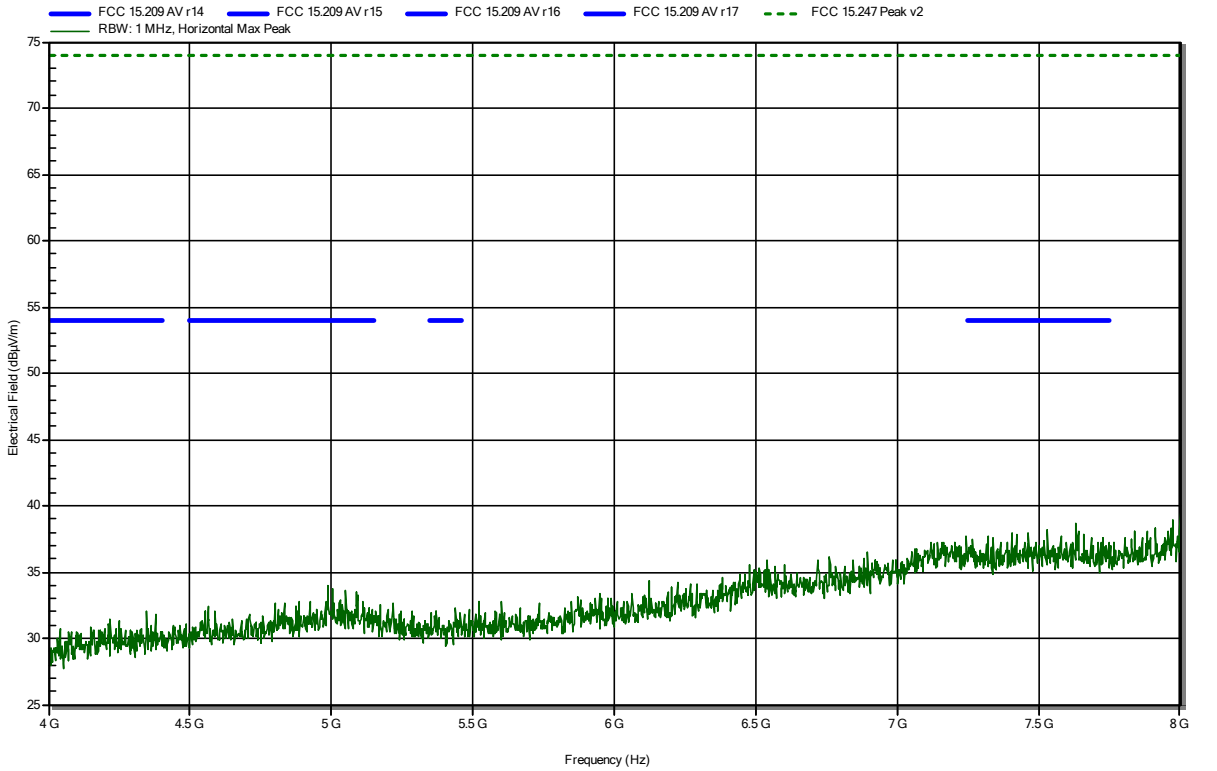
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	

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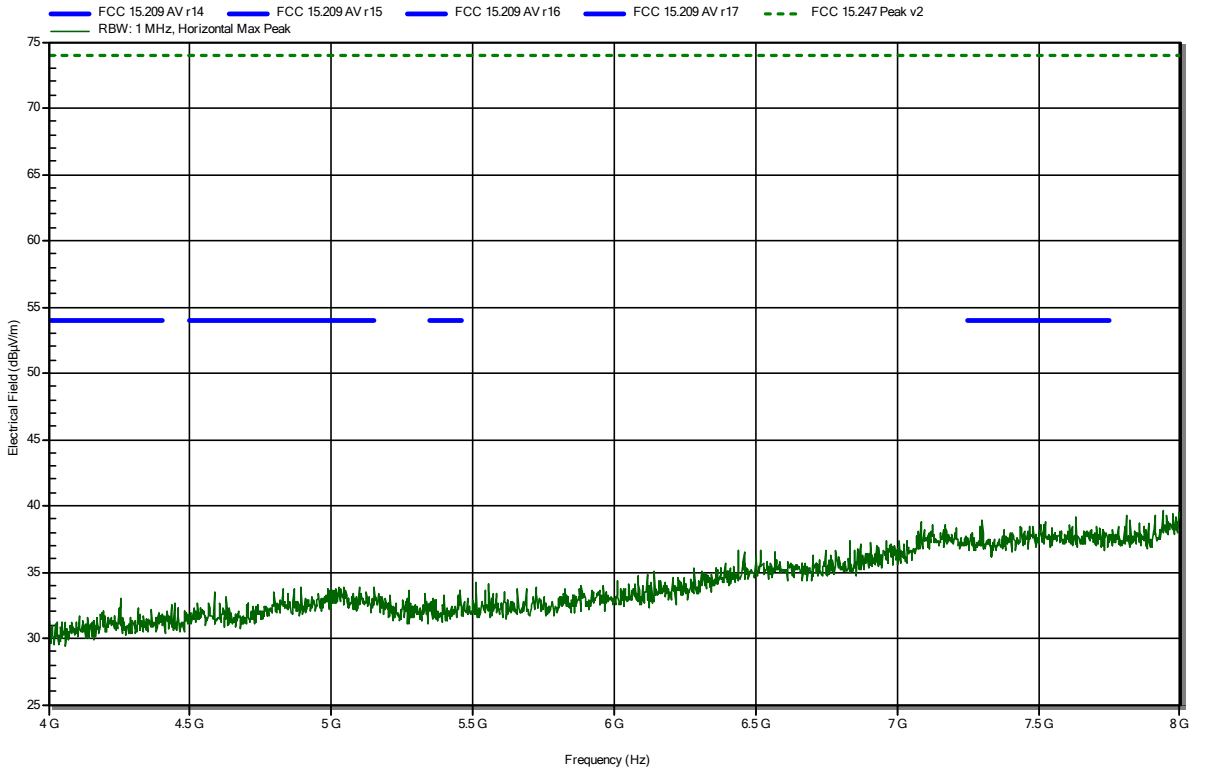
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	

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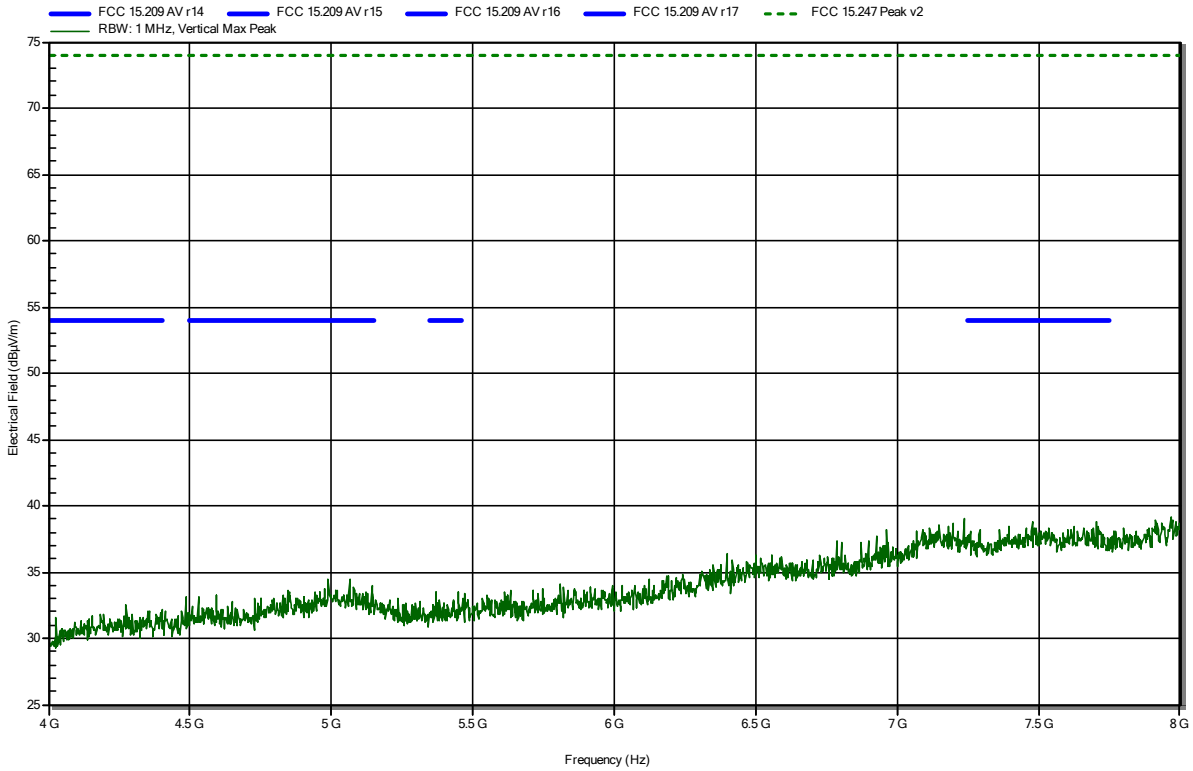
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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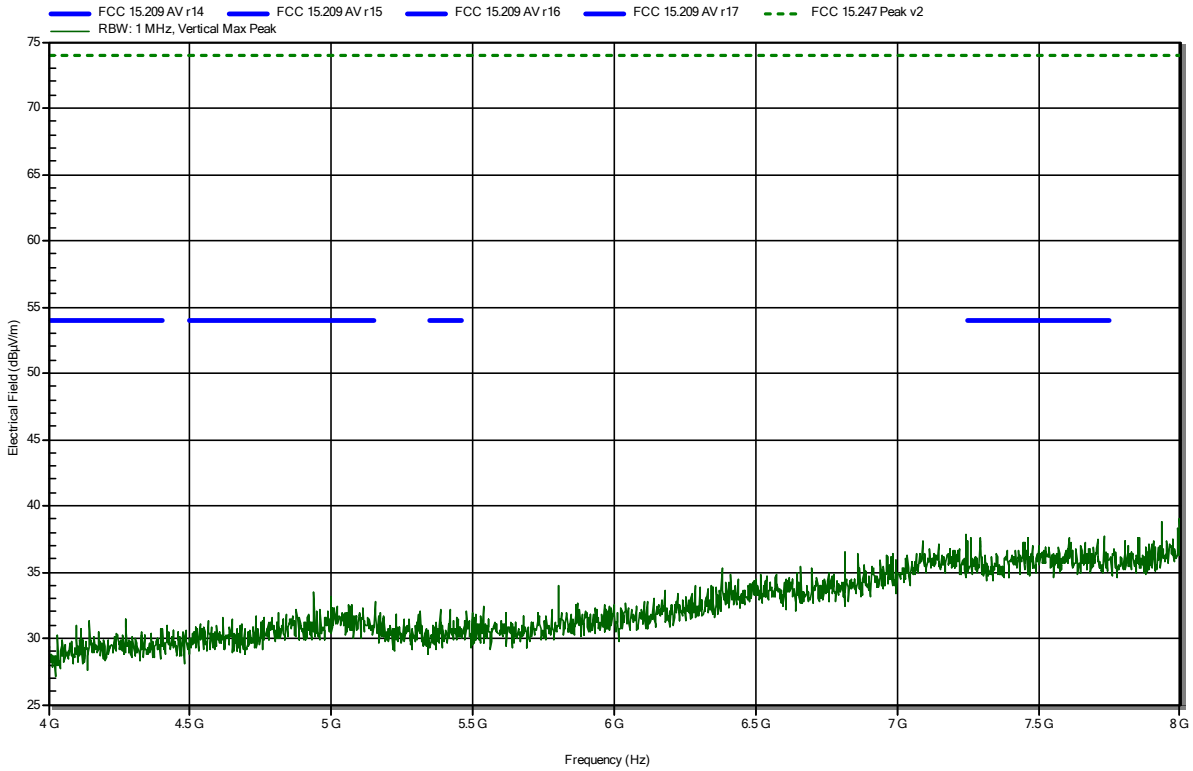
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	

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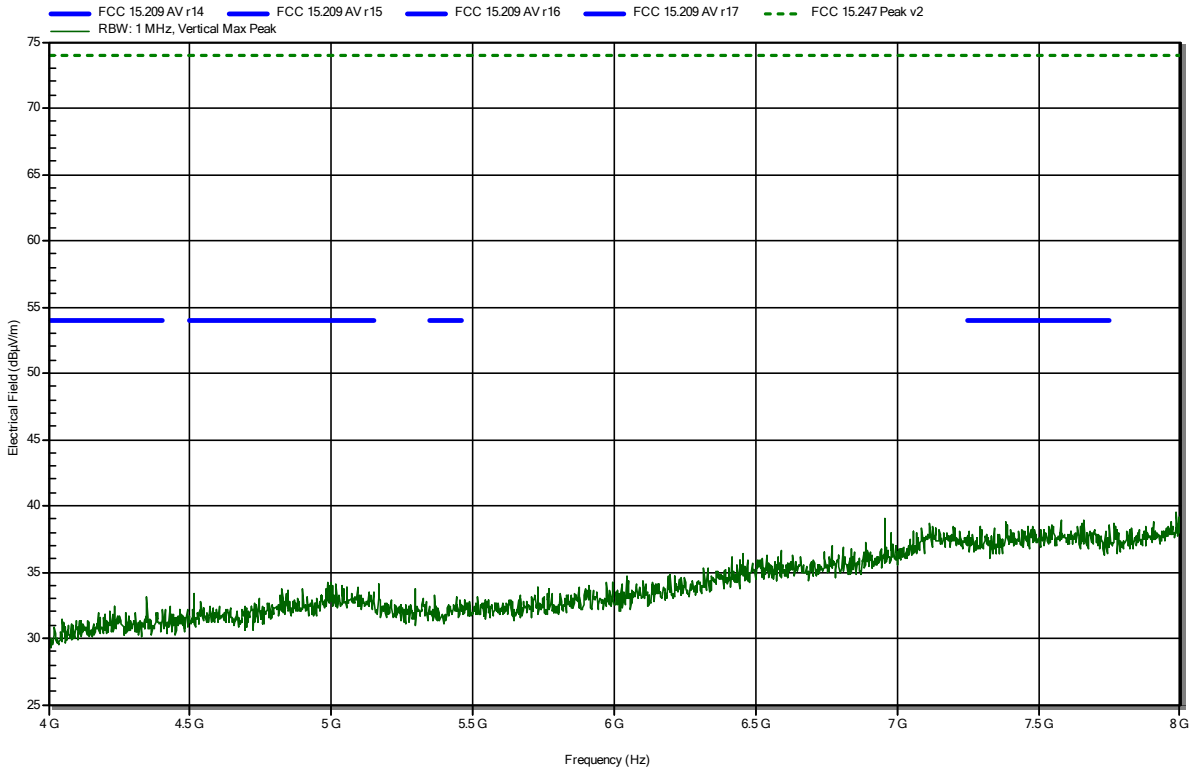
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	

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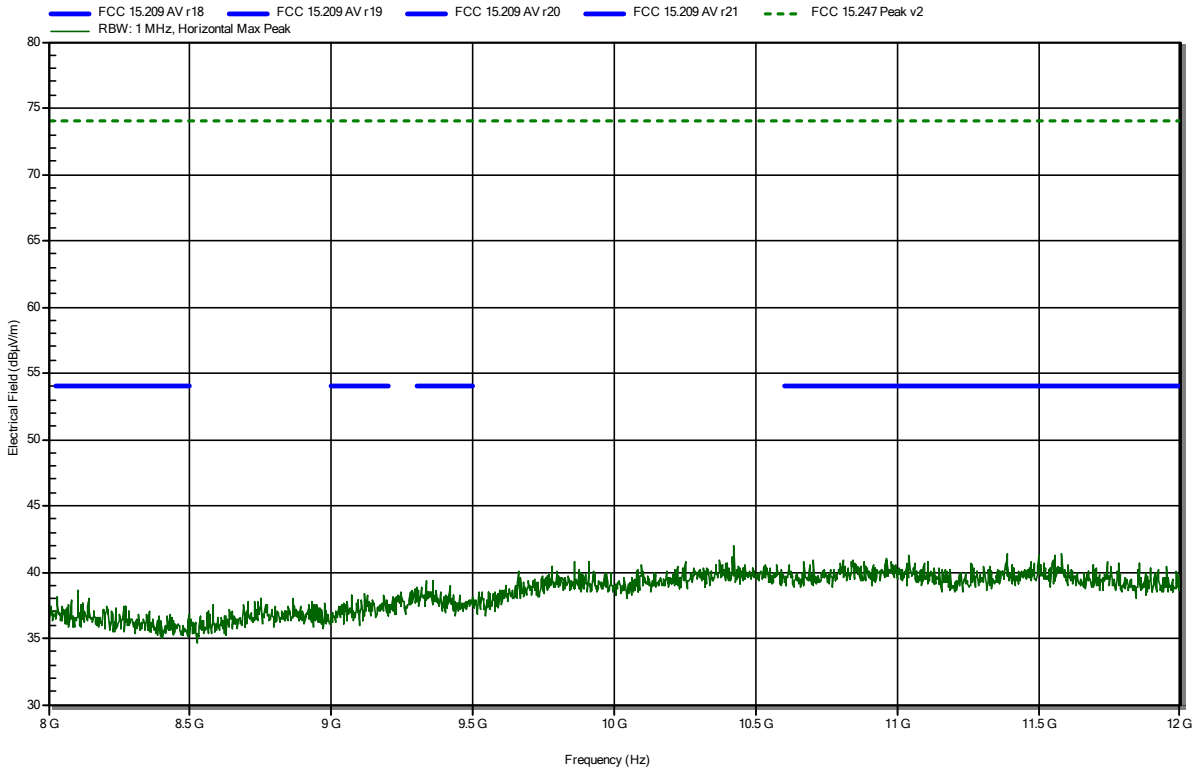
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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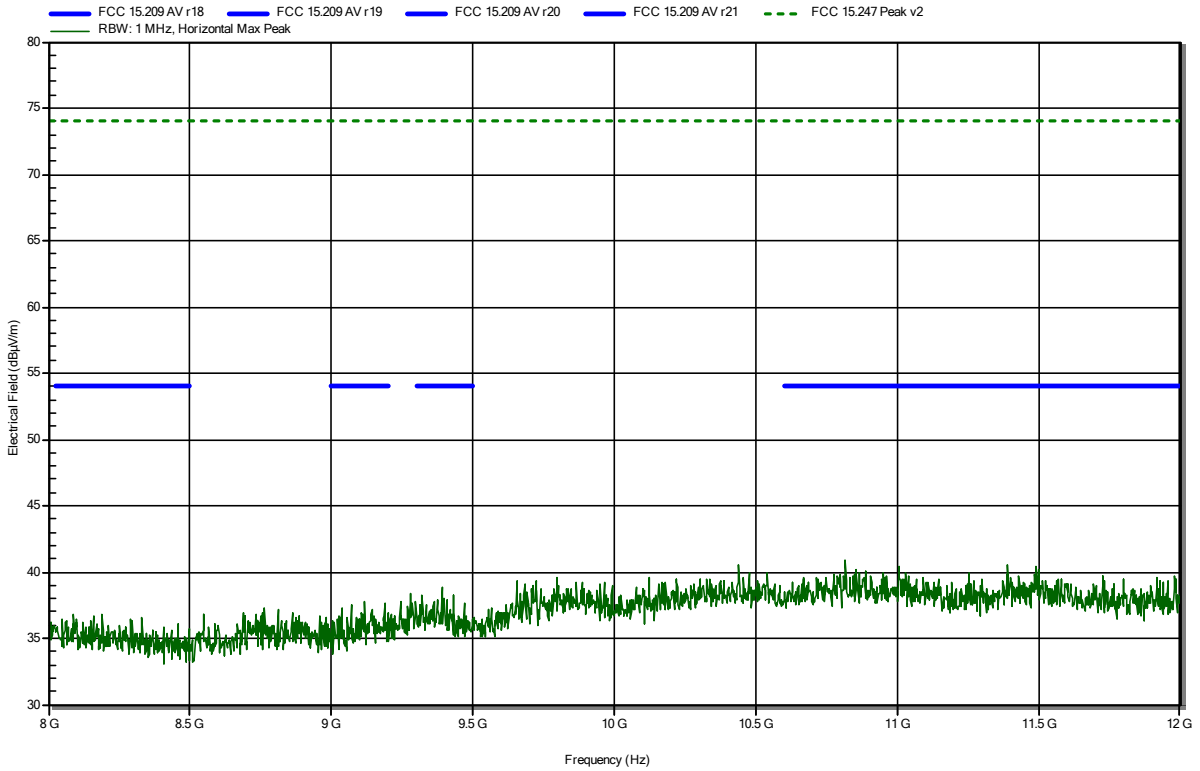
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	

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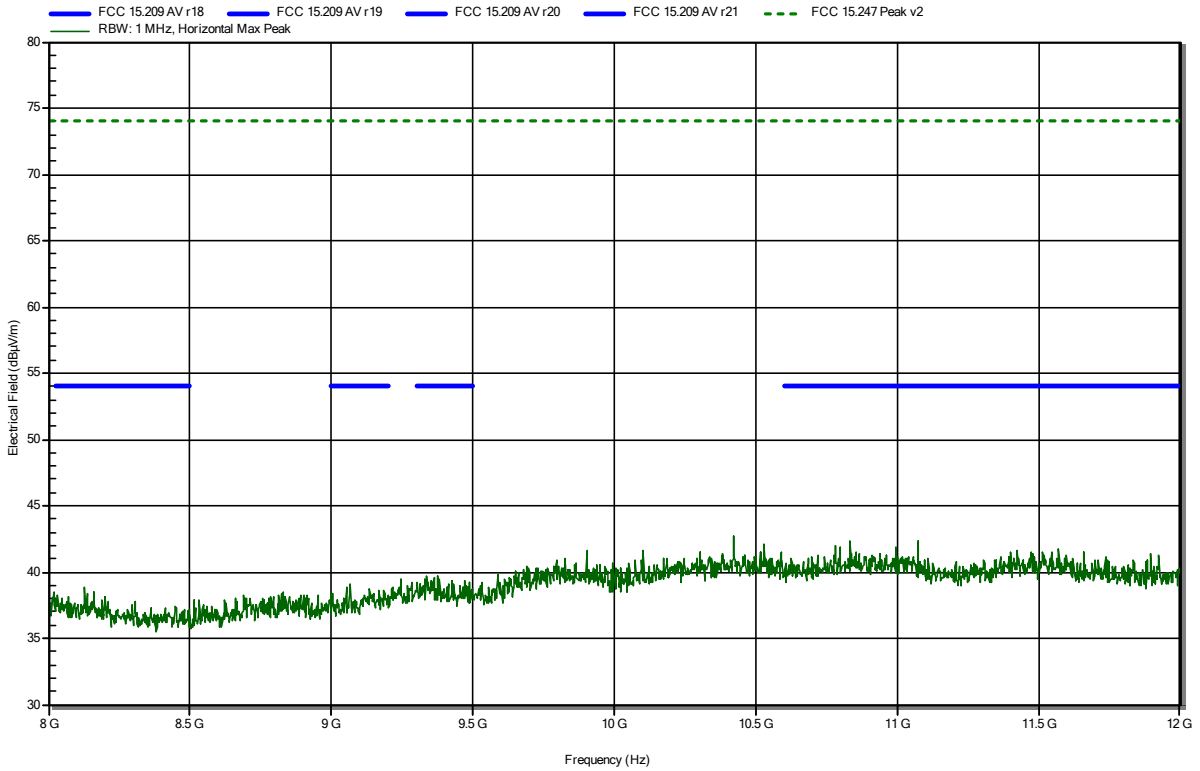
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 912.5 MHz
Test Date:	2021-01-08
Note:	

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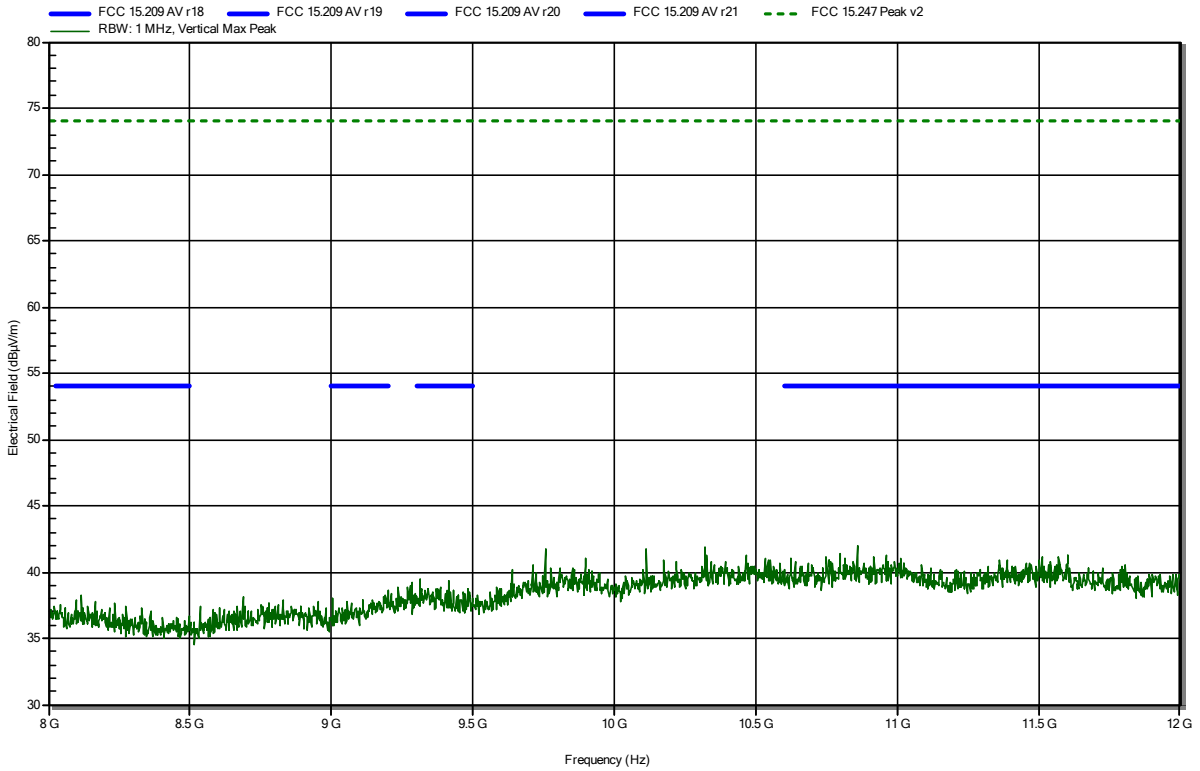
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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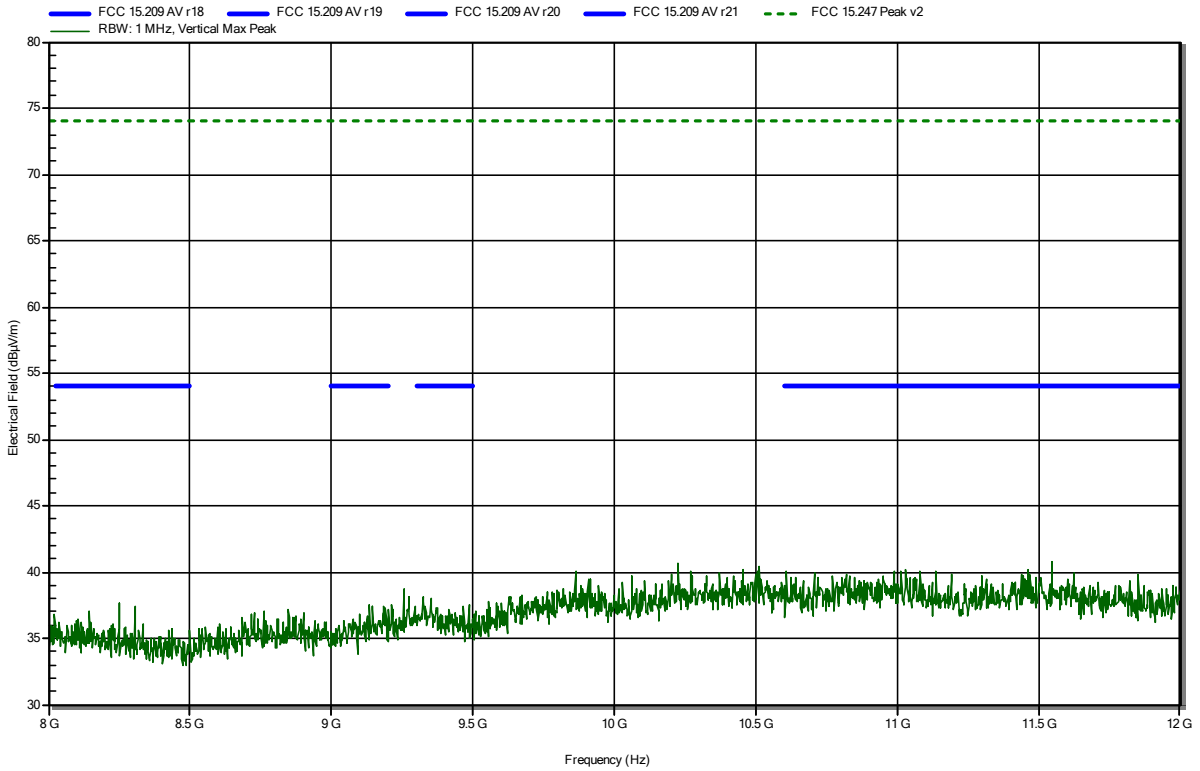
RadiMation



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; Pit antenna, 918.5 MHz
Test Date:	2021-01-08
Note:	

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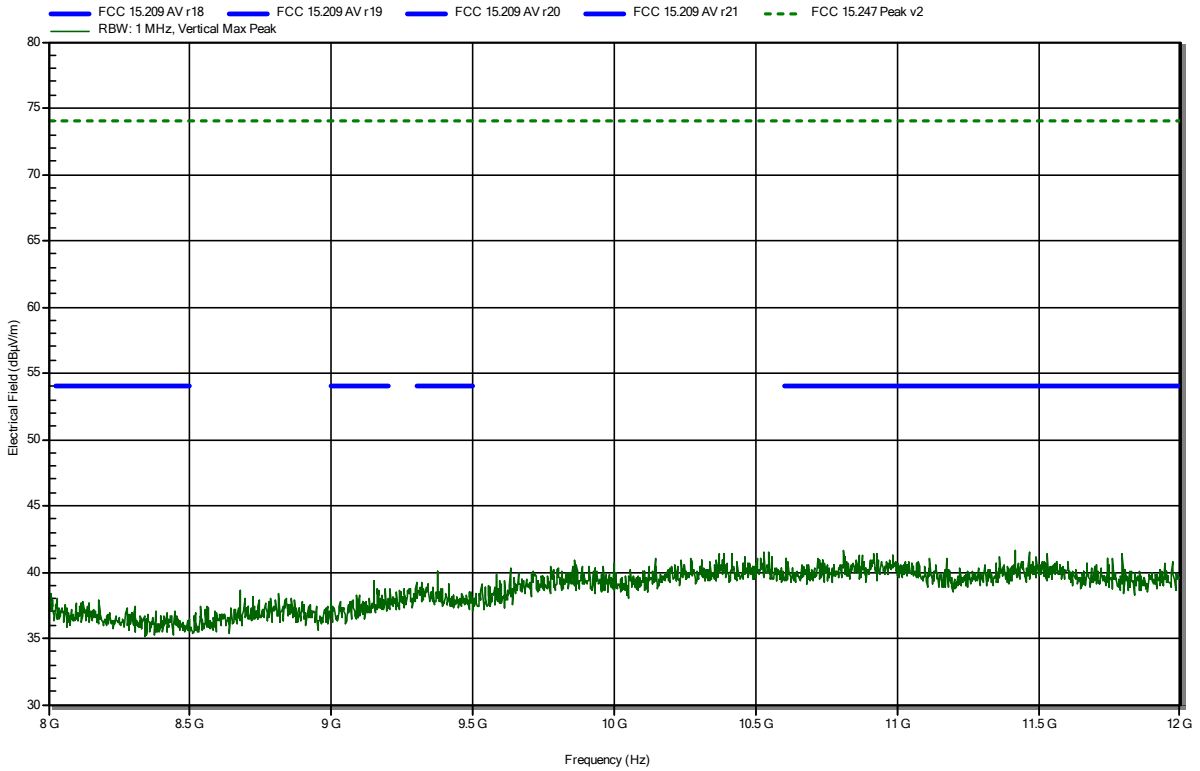
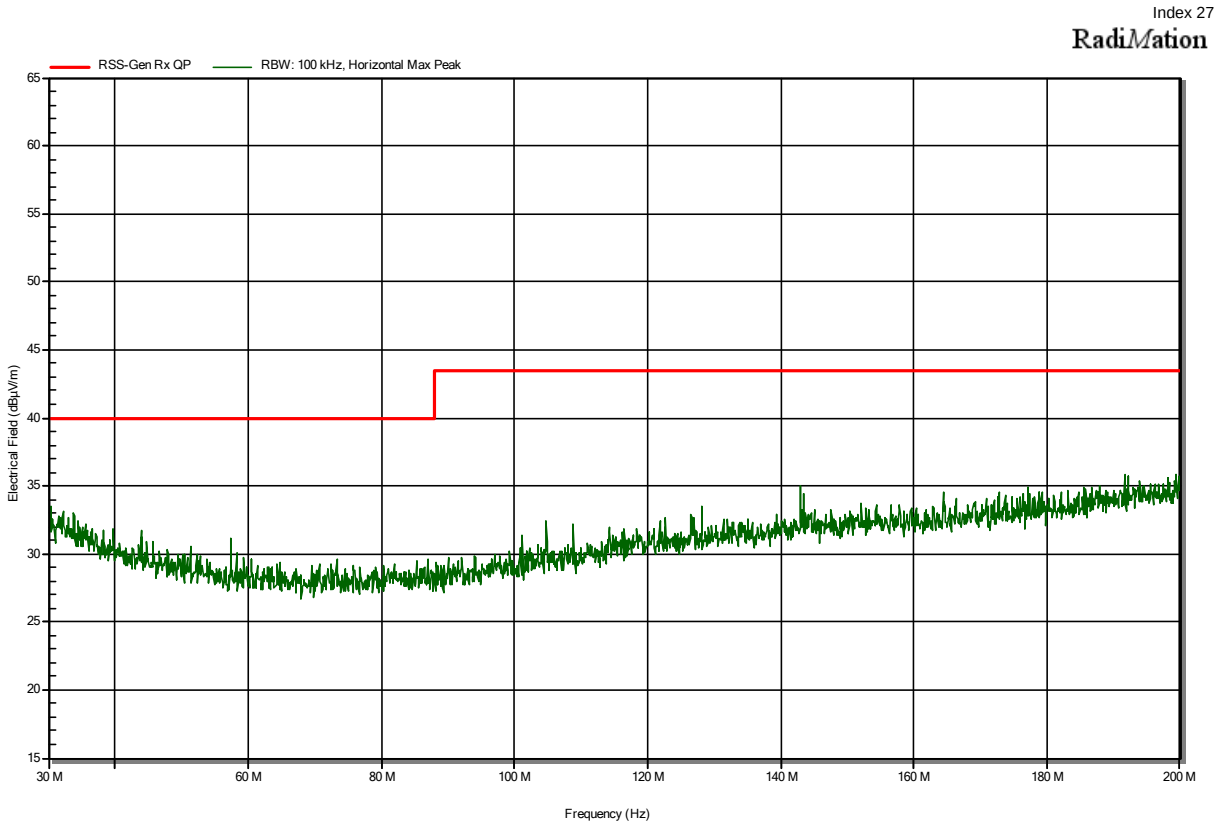
RadiMation



ANNEX B Receiver spurious emissions

Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Horizontal
Measurement distance:	3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HK116, Vertical
Measurement distance:	3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	

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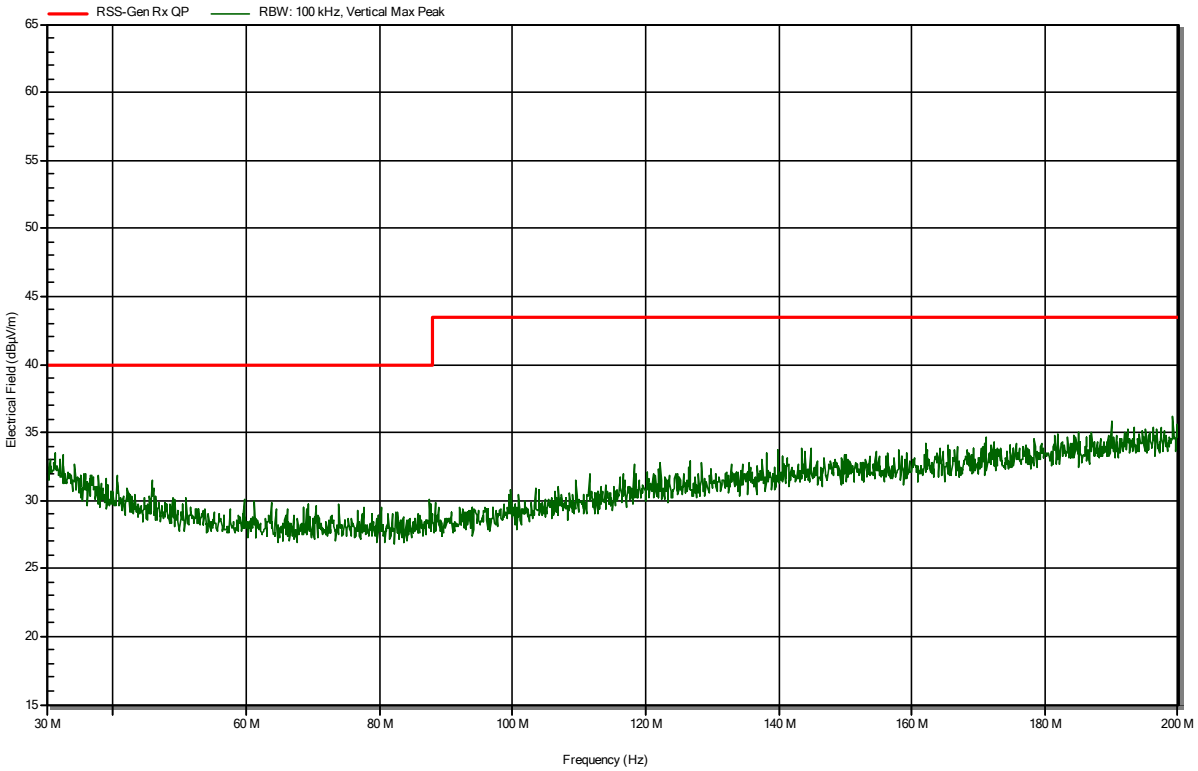
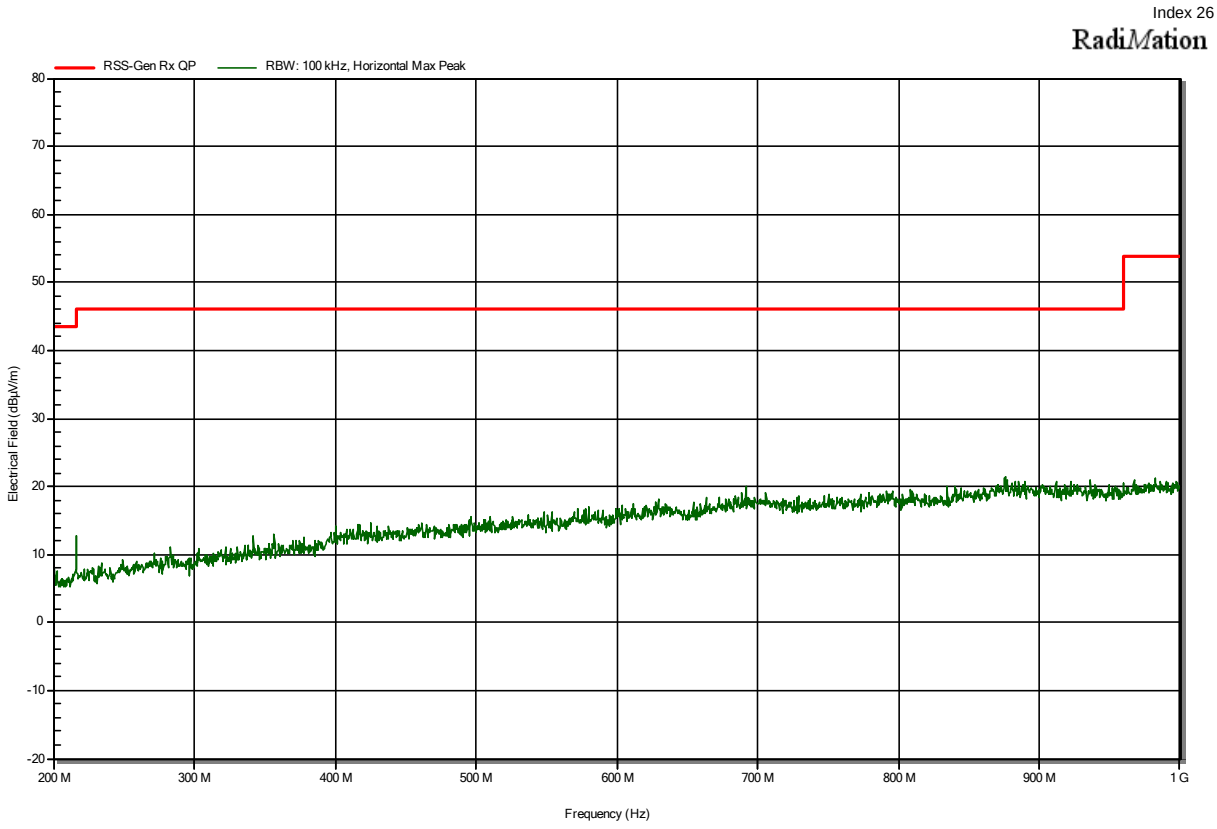
RadiMation



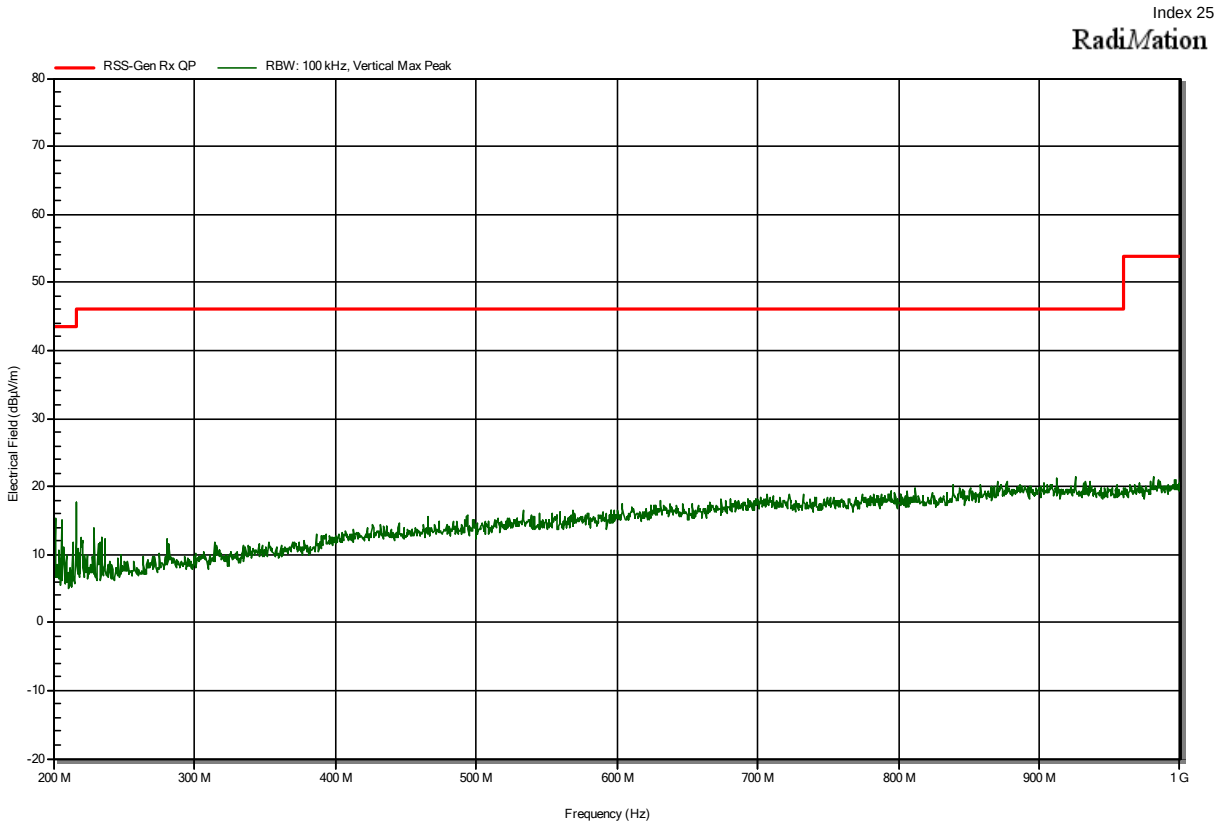
Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-11
Note:	



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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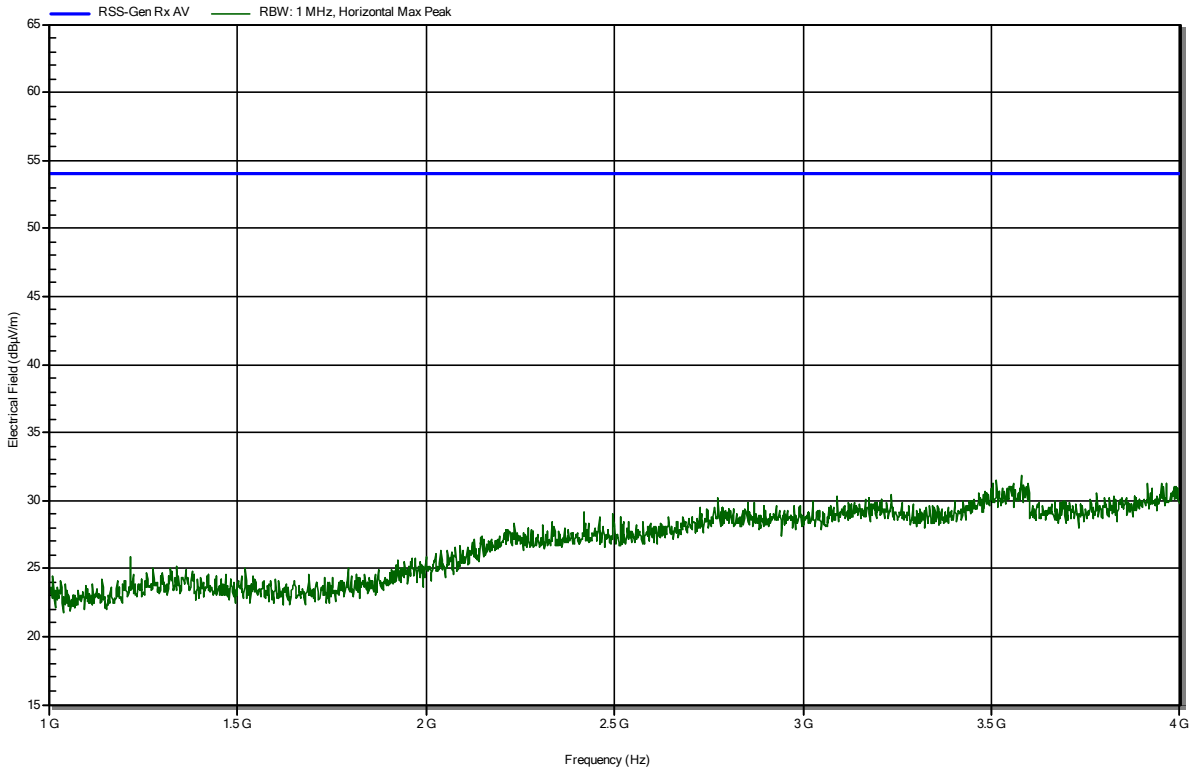
RadiMation



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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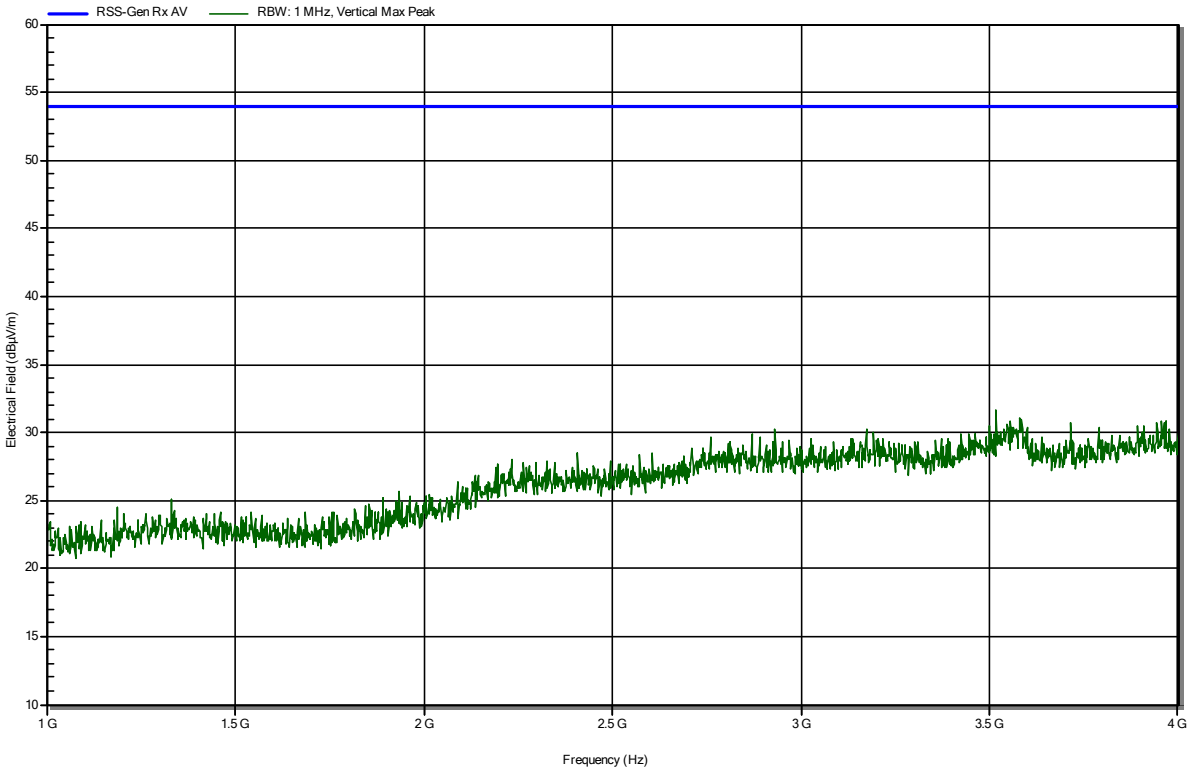
RadiMation



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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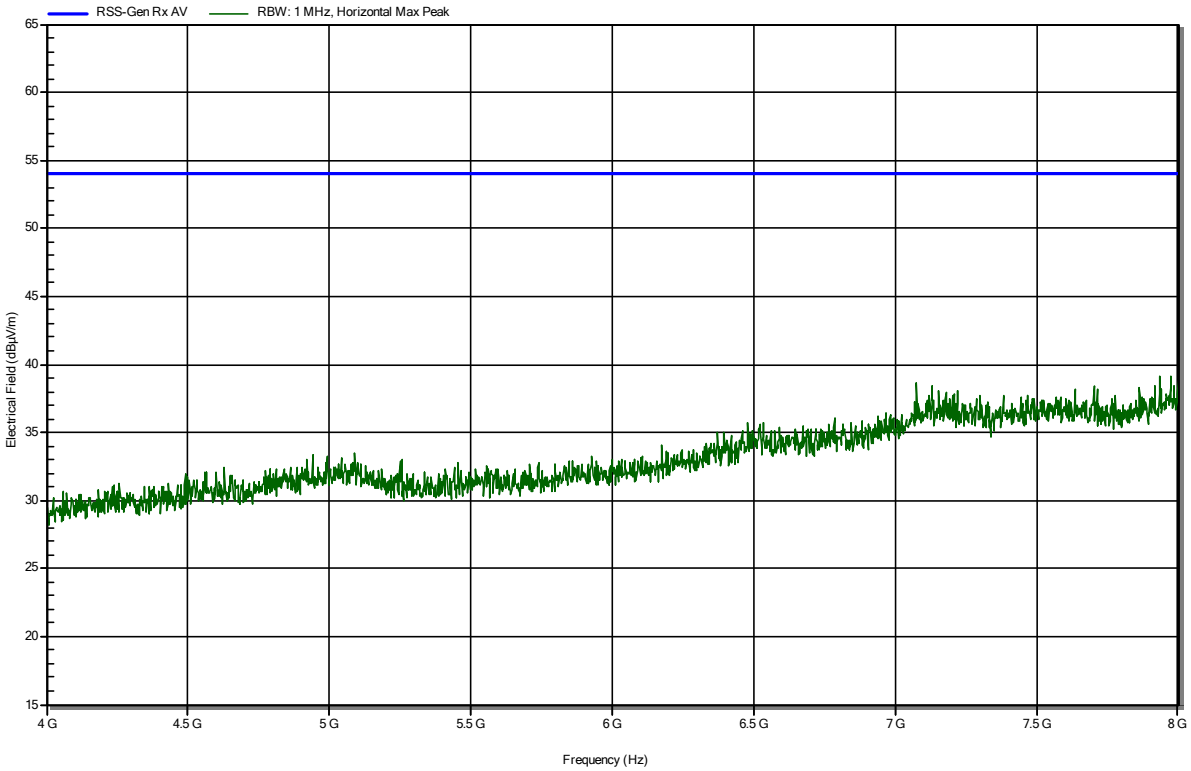
RadiMation



Radiated Spurious Emissions according to ISED RSS-Gen

Project Number:	G0M-2009-9331
Applicant:	Kamstrup A/S
Model Description:	Ultrasonic water meter
Model:	KWM2220
Test Sample ID:	32341
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 24 °Celsius, Vnom: 3.66 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; Pit antenna, 915.0 MHz
Test Date:	2021-01-08
Note:	

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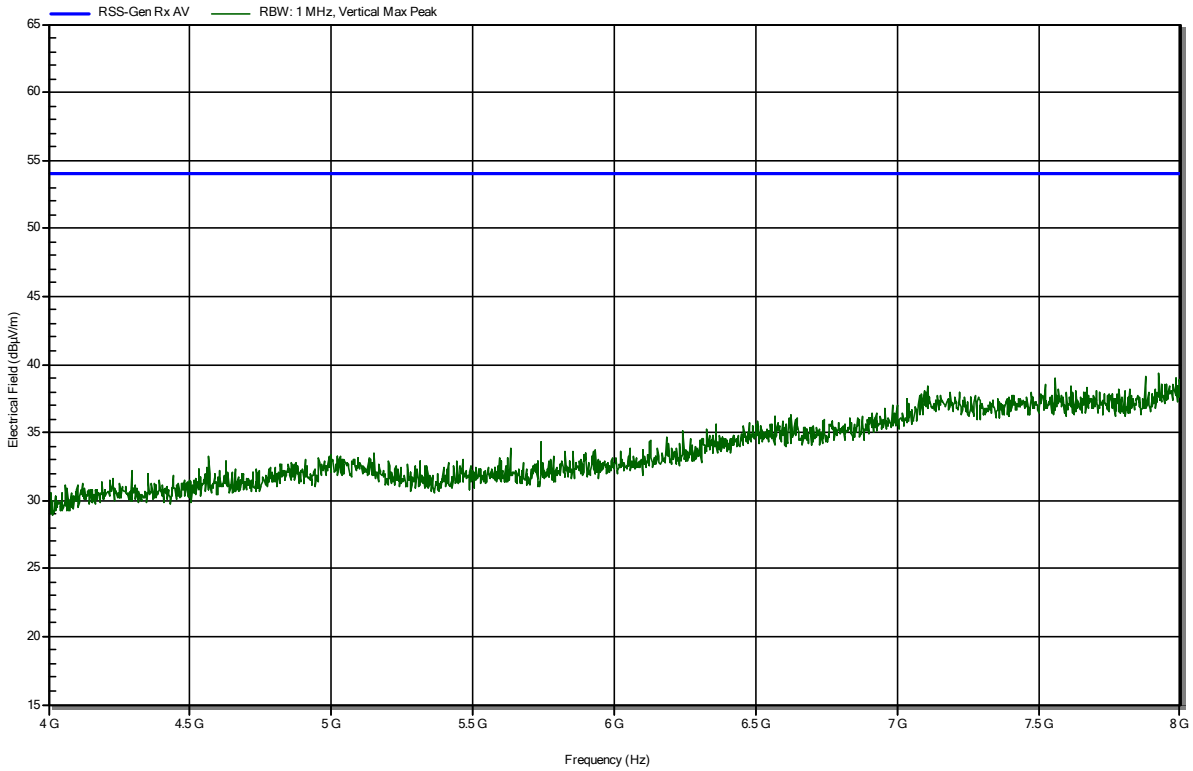
RadiMation



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