RADIO REPORT

FCC 47 CFR Part 15C
ISED Canada RSS-247

Digital transmission systems operating within the 902 – 928 MHz band

Report Reference No	G0M-1612-6135-TFC247DT-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Applicant	Kamstrup A/S
Address	Industrivej 28 8660 Skanderborg DENMARK
Test Specification	According to FCC/ISED rules
Standard	47 CFR Part 15C RSS-247, Issue 1, 2015-05
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Ultrasonic water meter
Model(s)	FlowIQ 2250
Additional Model(s)	None
Brand Name(s)	Kamstrup
Hardware Version(s)	620120102 rev 00
Software Version(s)	12790101 rev 00
FCC-ID	OUY-FLOW2250
IC	N/A
Test Result	**PASSED**

Possibe test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2017-02-27	
Date (s) of performance of tests	2017-03-01	
Report:		
Compiled by	Toralf Jahn	
Tested by (+ signature) (Responsible for Test)	Toralf Jahn	
Approved by (+ signature) (Head of Lab)	Christian Weber	
Date of Issue	2017-03-16	
Total number of pages	104	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2017-03-16	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	FlowIQ 2250	
Additional Model(s)	None	
Brand Name(s)	Kamstrup	
Serial Number(s)	77100054	
Hardware Version(s)	620120102 rev 00	
Software Version(s)	12790101 rev 00	
FCC-ID	OUY-FLOW2250	
IC	N/A	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	902 – 928 MHz	
Radio technology	Digital Modulation	
Modulation	2-FSK	
Number of antenna ports	1	
Antenna 1	Type	external, rod antenna
	Model	1653094
	Manufacturer	Kamstrup A/S
	Gain	-2 dBi
Antenna 2	Type	external, 1 meter cable length
	Model	6699490
	Manufacturer	Kamstrup A/S
	Gain	-1.6 dBi
Antenna 3	Type	external (as Antenna 2), up to 20 meter cable length
	Model	6699491
	Manufacturer	Kamstrup A/S
	Gain	-6.6 dBi
Supply Voltage	V_{NOM}	3.6 VDC (lithium battery)
Operating Temperature	T_{NOM}	20 °C
AC/DC-Adaptor	Model	none
	Vendor	none
	Input	none
	Output	none
Manufacturer	Kamstrup A/S Industrivej 28 ManufacturerPOCode Skanderborg ManufacturerCountry	

1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laboratory power supply	Statron	2224.2	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.
Description:				
AE	Auxillary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
Comment: The EUT was prepared just for testing with a connection to be supported by an external power supply.				

1.5 Test Modes

Mode	Description	
Transmit-PS	General Conditions:	EUT powered by laboratory power supply
	Radio Conditions:	Mode = Transmit Modulation = 2-FSK Duty cycle = 100 %
Receive-PS	General Conditions:	EUT powered by laboratory power supply
	Radio Conditions:	Mode = Receive Modulation = 2-FSK
Comment:		

1.6 Test Frequencies

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

1.7 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

Net:

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

Limit:

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

Limit (dBµV/m) = 20*log (µV/m)

Margin:

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

Example only:

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

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-210				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 6.6	Occupied Bandwidth	ANSI C63.10	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247 § 5.2	6 dB Bandwidth	ANSI C63.10	PASS	
FCC § 15.247(b)(3) ISED RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	PASS	
FCC § 15.247(e) ISED RSS-247 § 5.2	Power spectral density	ANSI C63.10	PASS	
FCC § 15.207 ISED RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.10	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Band edge compliance	ANSI C63.10	PASS	
FCC § 15.247(d) ISED RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-247 § 5.5	Transmitter radiated spurious emissions	ANSI C63.10	PASS	
ISED RSS-247 § 3.1	Receiver radiated spurious emissions	ANSI C63.10	PASS	
Comment:				

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

3 Test Conditions and Results

3.1 Test Conditions and Results - Occupied bandwidth

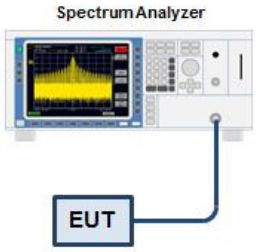
3.1.1 Information

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

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup

Test Setup


3.1.4 Equipment

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

3.1.5 Procedure

Test Procedure
1. EUT transmitter is activated in test mode under normal conditions 2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum 3. The resolution bandwidth is set to 1 % of the bandwidth 4. The occupied bandwidth is measured with the build-in analyzer function

3.1.6 Results

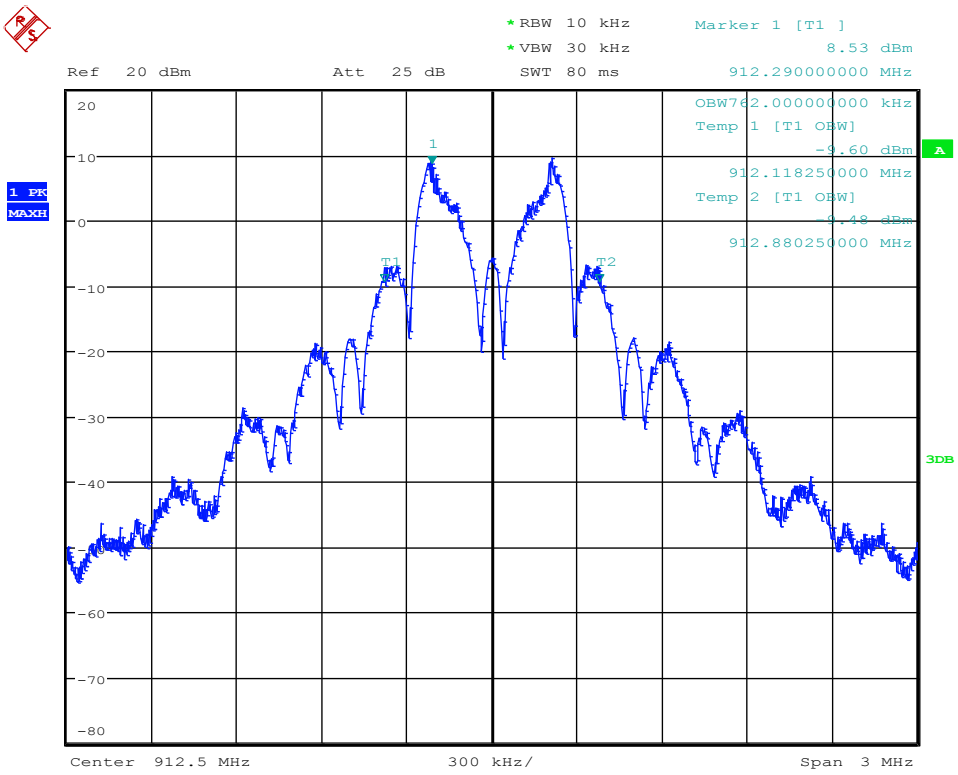
Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
Transmit	912.5	0.762
Transmit	918.5	0.760

Occupied bandwidth – 912.5 MHz

Occupied bandwidth

Project Number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	912.5 MHz
Test Date:	2017-03-01
Verdict:	NONE (INFORMATION ONLY)

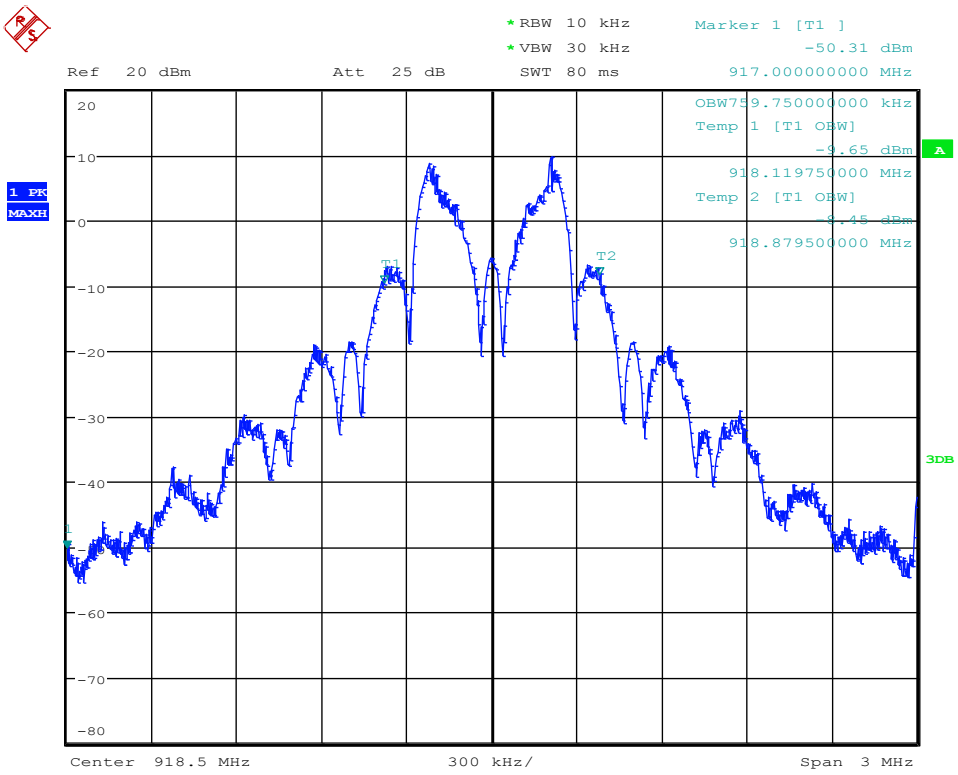


Occupied bandwidth – 918.5 MHz

Occupied bandwidth

Project Number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	918.5 MHz
Test Date:	2017-03-01
Verdict:	NONE (INFORMATION ONLY)



3.2 Test Conditions and Results - 6 dB bandwidth

3.2.1 Information

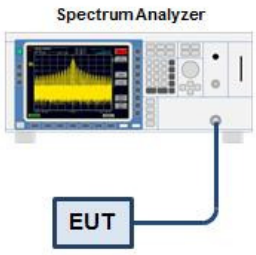
Test Information	
Reference	FCC 15.247(a)(2) / ISED RSS-247 5.2
Measurement Method	ANSI C63.10 11.8

3.2.2 Limits

Limits
≥ 500kHz

3.2.3 Setup

Test Setup



3.2.4 Equipment

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

3.2.5 Procedure

Test Procedure

1. EUT set to test mode
2. Span set to at least twice the emission spectrum
3. Detector set to peak and max hold and RBW is set to 100 kHz
4. Envelope peak value of emission spectrum is selected
5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak
6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak
7. 6 dB Bandwidth is determined by marker frequency separation

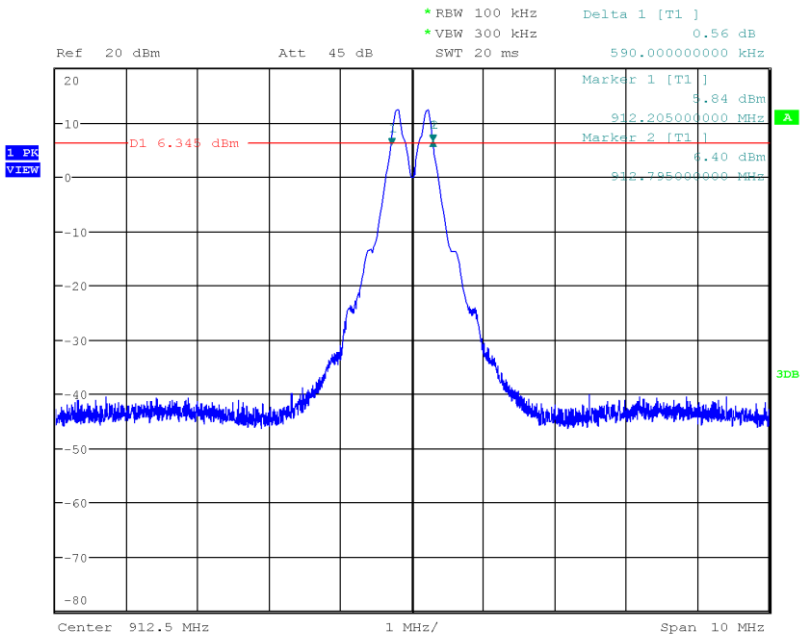
3.2.6 Results

Test Results				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
Transmit	912.5	587.0	500	PASS
Transmit	918.5	590.0	500	PASS

6 dB bandwidth – 912.5 MHz

DTS (6 dB) Bandwidth

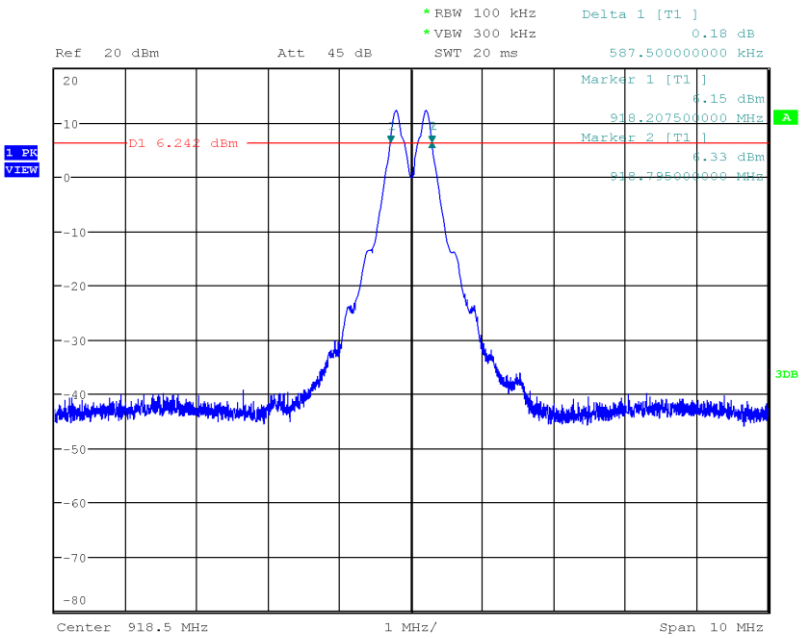
Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.8.1 Option 1
Operational Mode:	Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Lower Frequency [MHz]:	912.205
Upper Frequency [MHz]:	912.795
6 dB Bandwidth [kHz]:	590.0



6 dB bandwidth – 918.5 MHz

DTS (6 dB) Bandwidth

Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.8.1 Option 1
Operational Mode:	Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Lower Frequency [MHz]:	918.207
Upper Frequency [MHz]:	918.795
6 dB Bandwidth [kHz]:	587.0



3.3 Test Conditions and Results - Maximum peak conducted output power

3.3.1 Information

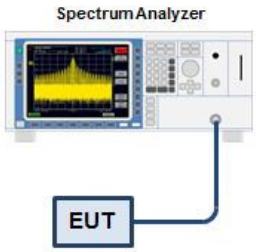
Test Information	
Reference	FCC 15.247(b)(1) / ISED RSS-247 5.4
Measurement Method	ANSI C63.10 11.9.1

3.3.2 Limits

Limits
1 W (30 dBm)
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.3 Setup

Test Setup



3.3.4 Equipment

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

3.3.5 Procedure

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

3.3.6 Results

Test Results				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
912.5	12.874	0.0194	1.0	PASS
918.5	12.816	0.0191	1.0	PASS

3.4 Test Conditions and Results - Power spectral density

3.4.1 Information

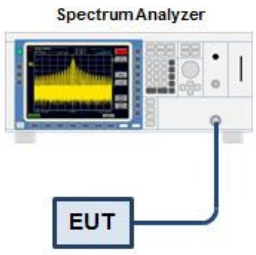
Test Information	
Reference	FCC 15.247(e) / ISED RSS-247 5.2
Measurement Method	ANSI C63.10 11.10.2, 14.3.2

3.4.2 Limits

Limits
8 dBm / 3 kHz

3.4.3 Setup

Test Setup



3.4.4 Equipment

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

3.4.5 Procedure

Test Procedure

1. EUT set to test mode
2. The analyzer is set to DTS channel center frequency with a span of 1.5 times the DTS bandwidth
3. The RBW is set to 100 kHz with VBW ≥ RBW and the detector is set to peak with max hold
4. After the trace has stabilized a marker is set to the envelope maximum
5. If the power spectral density is above the limit the RBW is reduced (not lower than 3 kHz) and the measurement is repeated
6. If the EUT has more than one transmit chain the procedure is repeated for each transmit chain

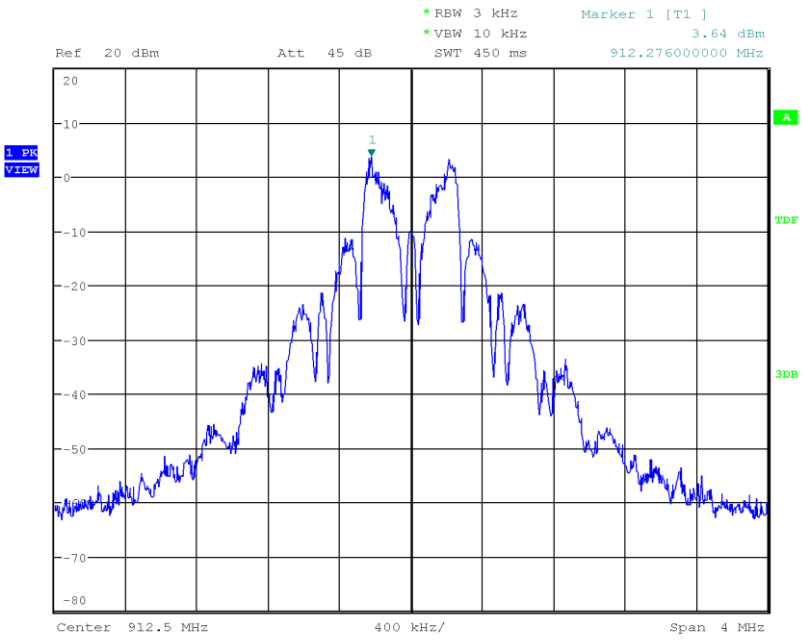
3.4.6 Results

Test Results			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
912.5	3.605	8.0	PASS
918.5	3.639	8.0	PASS
RBW = 3 kHz			

PSD conducted – 912.5 MHz

Peak Power Spectral Density

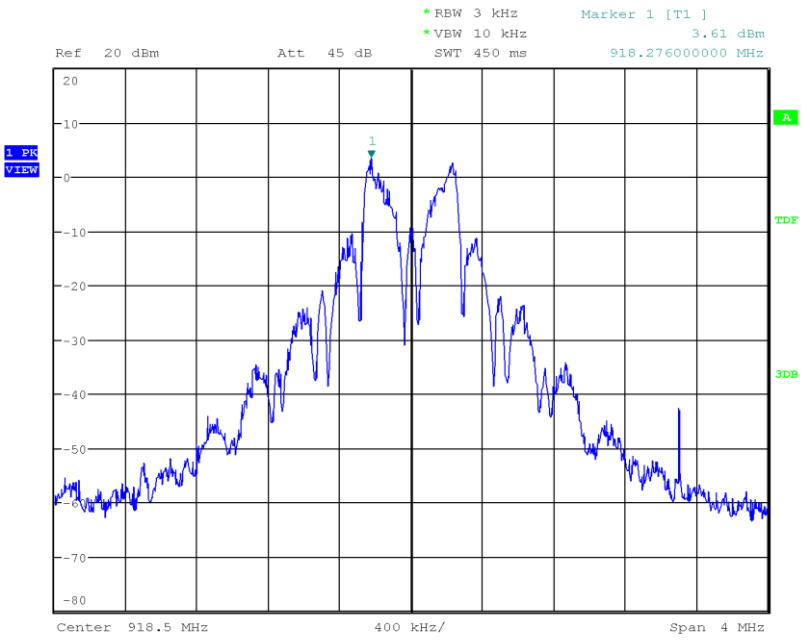
Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.10.2
Operational Mode:	Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Peak Frequency [MHz]:	912.276
Spectral Density [dBm/RBW]:	3.639
Resolution Bandwidth [kHz]:	3 kHz



PSD conducted – 918.5 MHz

Peak Power Spectral Density

Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.10.2
Operational Mode:	Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Peak Frequency [MHz]:	918.276
Spectral Density [dBm/RBW]:	3.605
Resolution Bandwidth [kHz]:	3 kHz



3.5 Test Conditions and Results - Band-edge compliance

3.5.1 Information

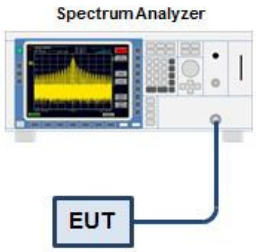
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 11.11

3.5.2 Limits

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

3.5.3 Setup

Test Setup



3.5.4 Equipment

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

3.5.5 Procedure

Test Procedure

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

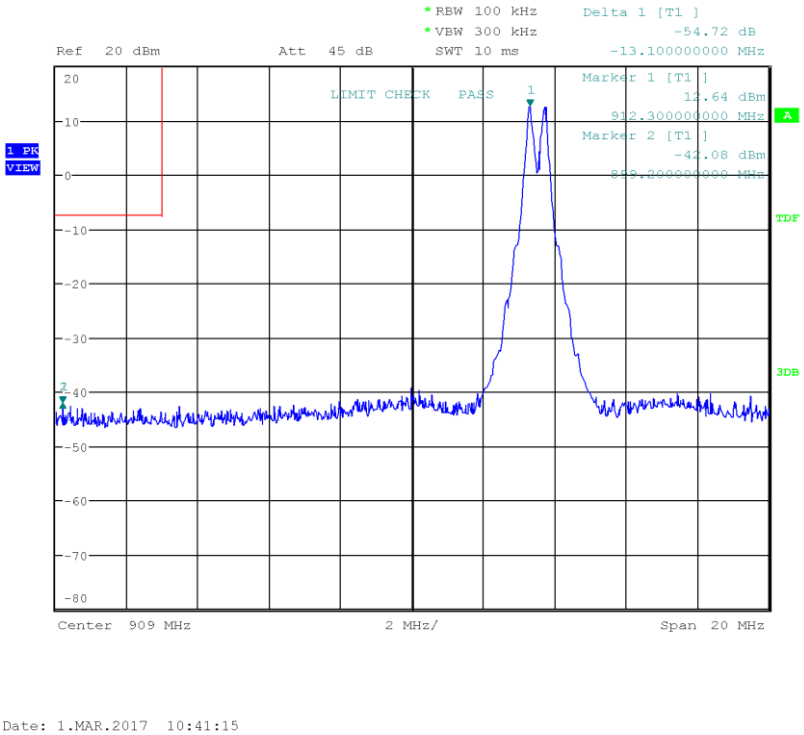
3.5.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
Transmit-PS	912.5	-54.72	-20	PASS
Transmit-PS	918.5	-54.59	-20	PASS

Band-edge compliance - 912.5 MHz

Band-edge Compliance

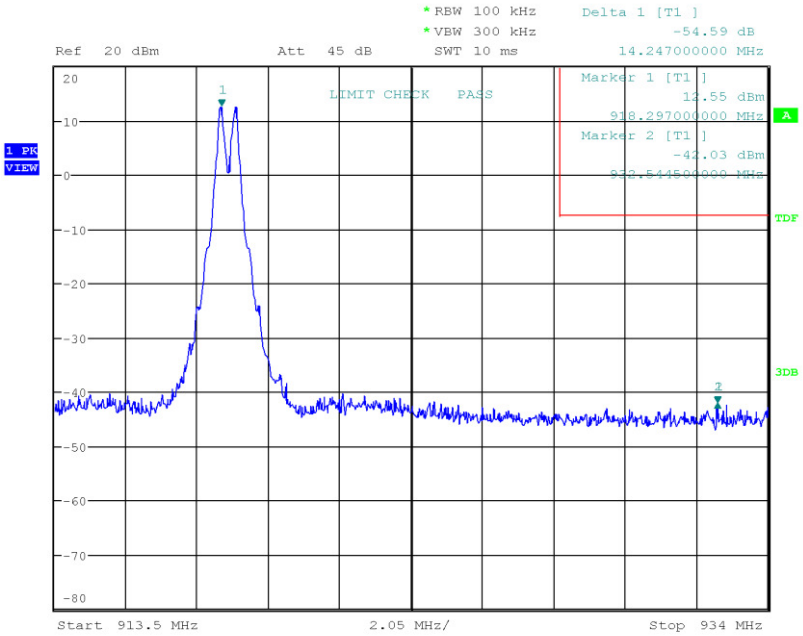
Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Band-edge	Lower
In-band Frequency [MHz]:	912.3
Max. in-band Level [dBm/100 kHz]:	12.635
Out-of-band Frequency [MHz]:	899.2
Max. out-of-band Level [dBm/100 kHz]:	-42.081
Attenuation [dB]:	-54.72



Band-edge compliance – 918.5 MHz

Band-edge Compliance

Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Band-edge	Upper
In-band Frequency [MHz]:	918.297
Max. in-band Level [dBm/100 kHz]:	12.553
Out-of-band Frequency [MHz]:	932.544
Max. out-of-band Level [dBm/100 kHz]:	-42.033
Attenuation [dB]:	-54.59



3.6 Test Conditions and Results - Conducted spurious emissions

3.6.1 Information

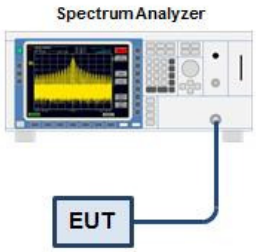
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 11.11

3.6.2 Limits

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

3.6.3 Setup

Test Setup



3.6.4 Equipment

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

3.6.5 Procedure

Test Procedure

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

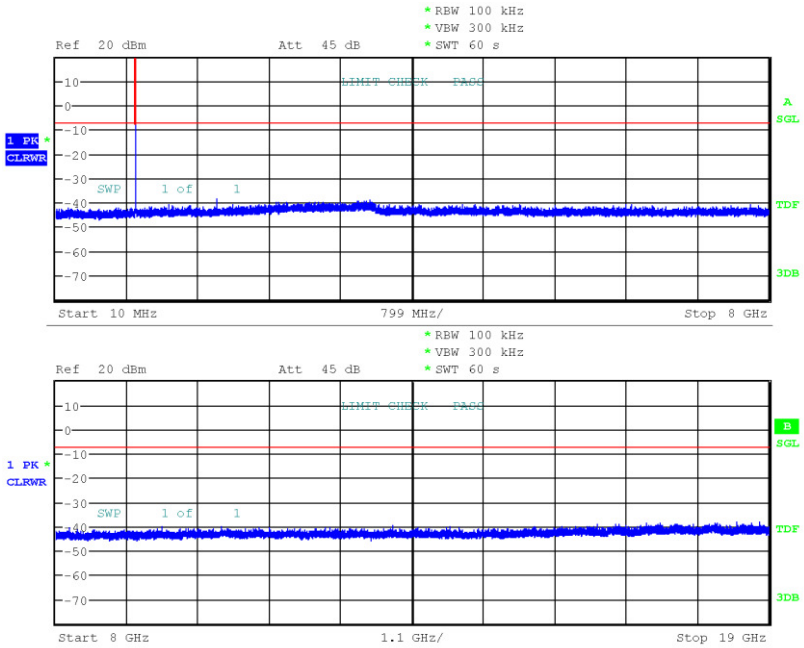
3.6.6 Results

Test Results		
Mode	Channel [MHz]	Verdict
Transmit-PS	912.5	PASS
Transmit-PS	918.5	PASS

CSE - 912.5 MHz

Conducted Spurious Emissions

Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	Channel: 912.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Max. in-band Frequency [MHz]:	912.3
Max. in-band Level [dBm/100 kHz]:	12.7
Out-of-band Limit [dBm/100 kHz]:	-7.3

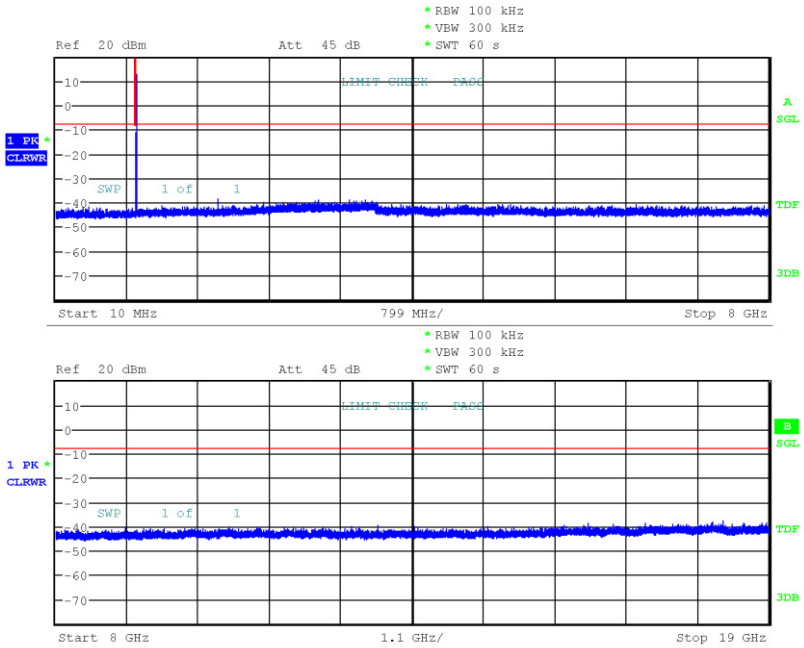


Date: 1.MAR.2017 11:06:48

CSE - 918.5 MHz

Conducted Spurious Emissions

Project Number:	G0M-1612-6135
Applicant	Kamstrup A/S
Model Description	Ultrasonic water meter
Model:	FlowIQ 2250
Test Sample ID:	12116
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 11.11
Operational Mode:	Channel: 918.5 MHz
Operating Conditions:	Tnom/Vnom
Operator:	T. Jahn
Test Site:	Eurofins Product Service GmbH
Test Date:	2017-03-01
Max. in-band Frequency [MHz]:	918.3
Max. in-band Level [dBm/100 kHz]:	12.5
Out-of-band Limit [dBm/100 kHz]:	-7.5



3.7 Test Conditions and Results - Transmitter radiated emissions

3.7.1 Information

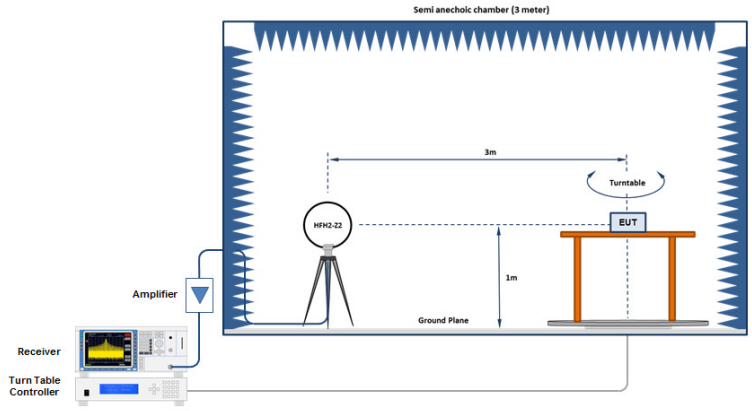
Test Information	
Reference	FCC 15.247(d) / ISED RSS-247 5.5
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12

3.7.2 Limits

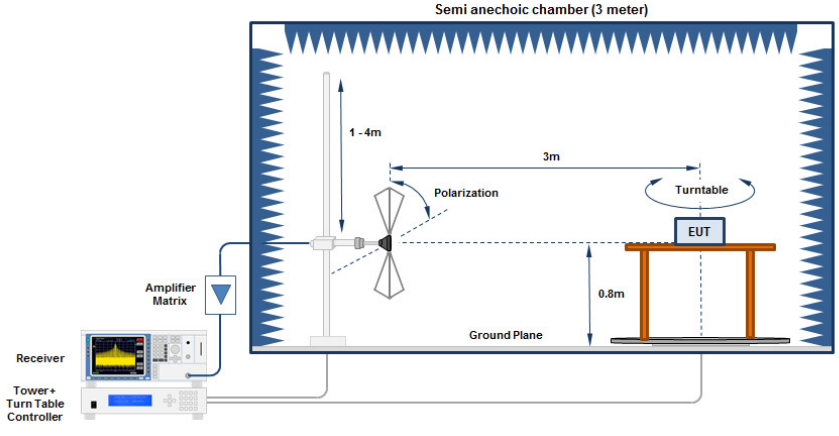
Limits		
Frequency [MHz]	Field strength [dBµV/m]	Measurement distance [m]
0.009 - 0.490	2400/F[kHz]	300
0.490 - 1.705	24000/F[kHz]	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
> 960	500	3

3.7.3 Setup

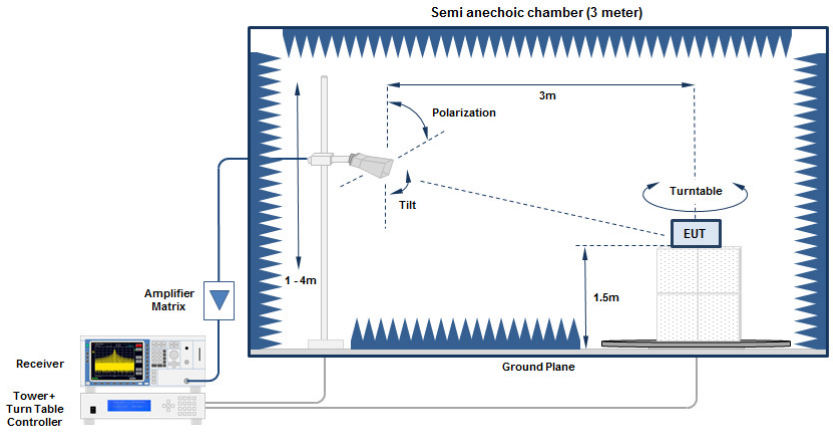
Test Setup < 30 MHz



Test Setup 30 - 1000 MHz



Test Setup > 1 GHz



3.7.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08

3.7.5 Procedure

Test Procedure < 30 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 EUT is rotated through 360° 4. The emissions are measured with peak detector and max hold 5. All significant emissions are measured again using the corresponding final detector
Test Procedure 30 - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector
Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

3.7.6 Results

Test Results Antenna 1						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
912.5	1822	41.60	pk	hor	95.00	-53.40
912.5	1822	36.59	pk	ver	95.00	-58.41
912.5	2734	31.51	pk	hor	74.00	-42.49
918.5	1834	42.00	pk	hor	95.00	-53.00
918.5	1834	37.90	pk	ver	95.00	-57.10

Test Results Antenna 2						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
912.5	1822	44.12	pk	hor	95.00	-50.88
912.5	1822	49.63	pk	ver	95.00	-45.37
918.5	1054	30.83	RMS	hor	54.00	-23.17
918.5	1054	31.40	RMS	ver	54.00	-22.60

3.8 Test Conditions and Results - Receiver radiated emissions

3.8.1 Information

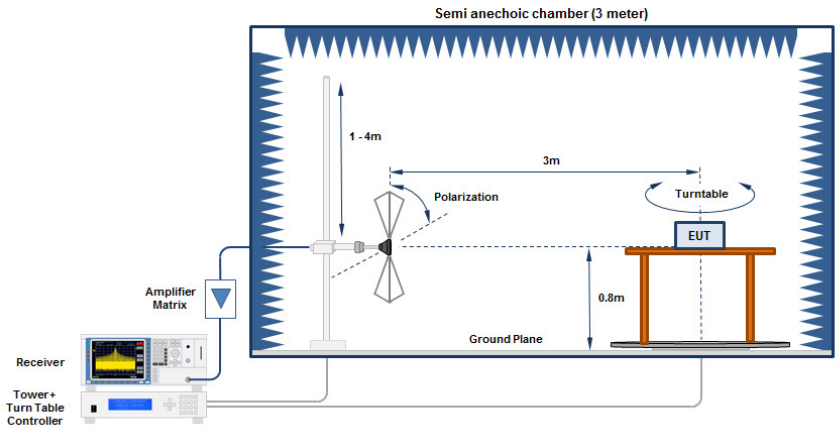
Test Information	
Reference	ISED RSS-247 3.1
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12

3.8.2 Limits

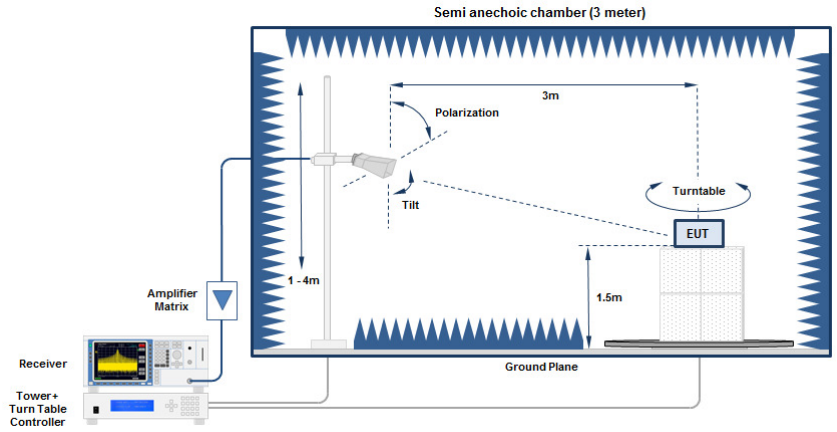
Limits		
Frequency [MHz]	Field strength [dBµV/m]	Measurement distance [m]
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
> 960	500	3

3.8.3 Setup

Test Setup 30 - 1000 MHz



Test Setup > 1 GHz



3.8.4 Equipment

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08
Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2016-01	2019-01
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2016-08	2017-08

3.8.5 Procedure

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

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

3.8.6 Results

Test Results Antenna 1						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
915.0	899.2	25.71	pk	ver	46.00	-20.29

Test Results Antenna 2						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
915.0	881.6	21.84	pk	ver	46.00	-24.16

ANNEX A Transmitter sprurious emissions

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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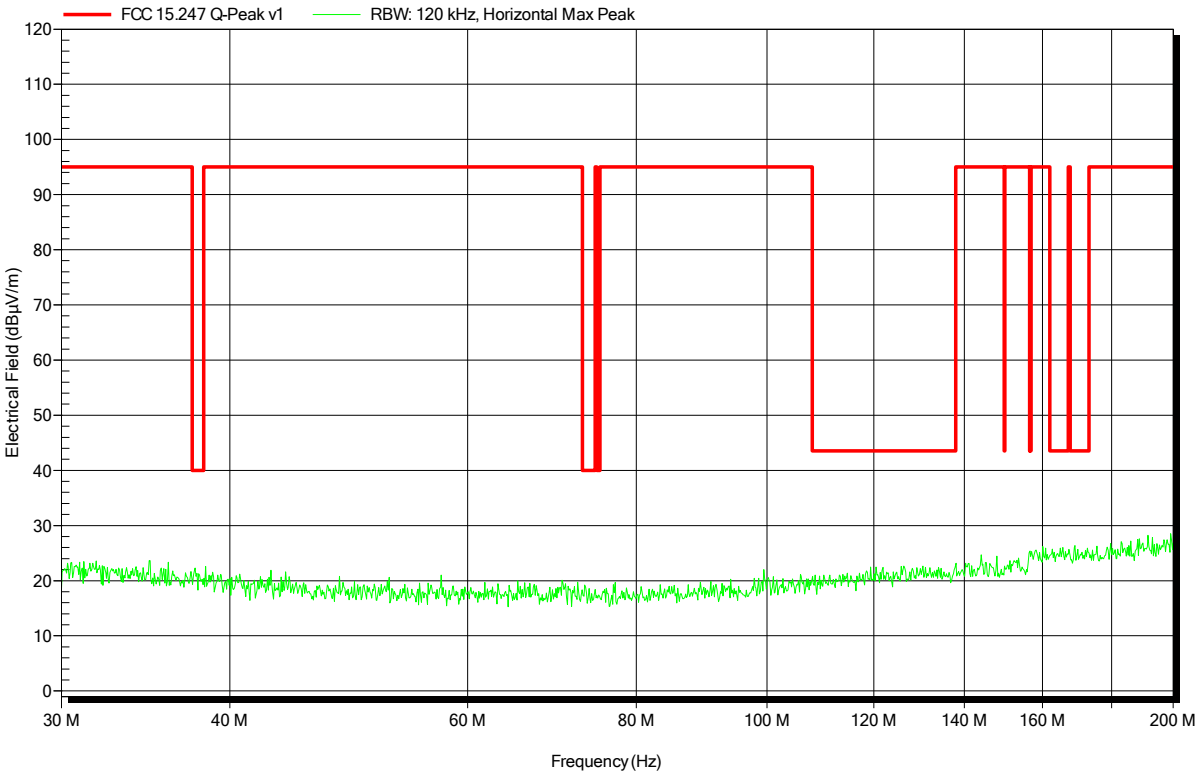

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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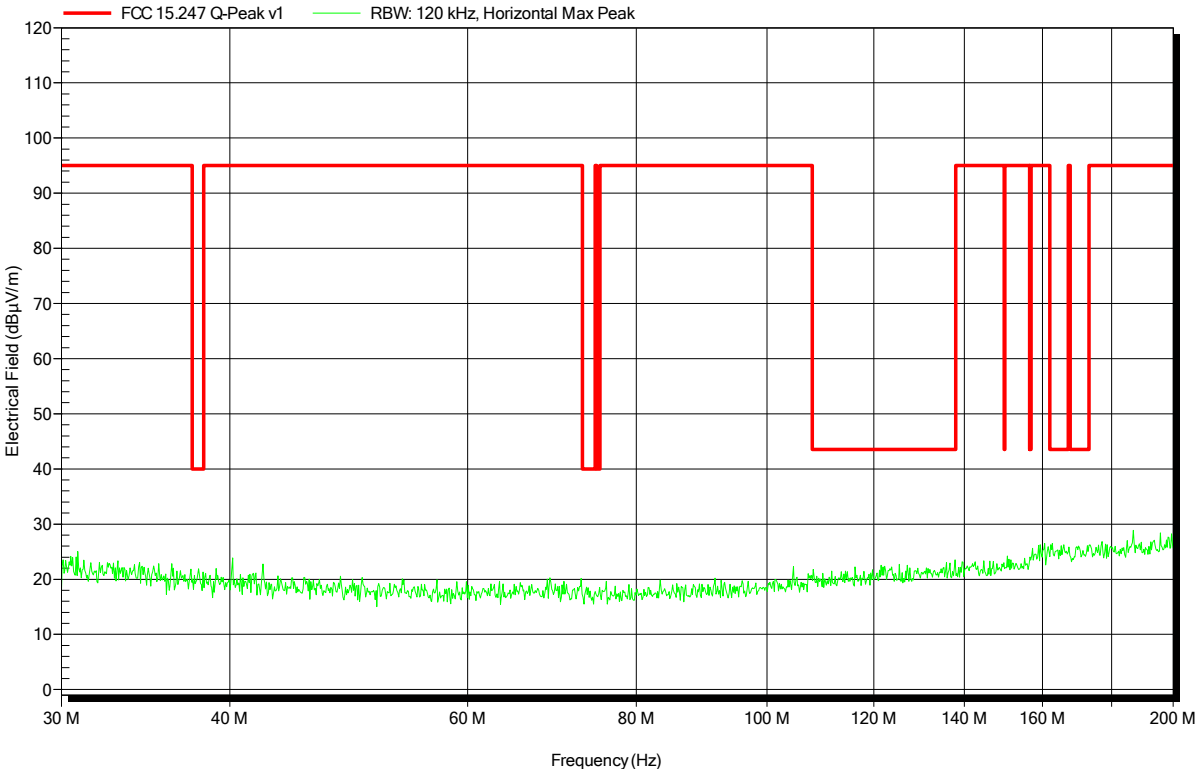

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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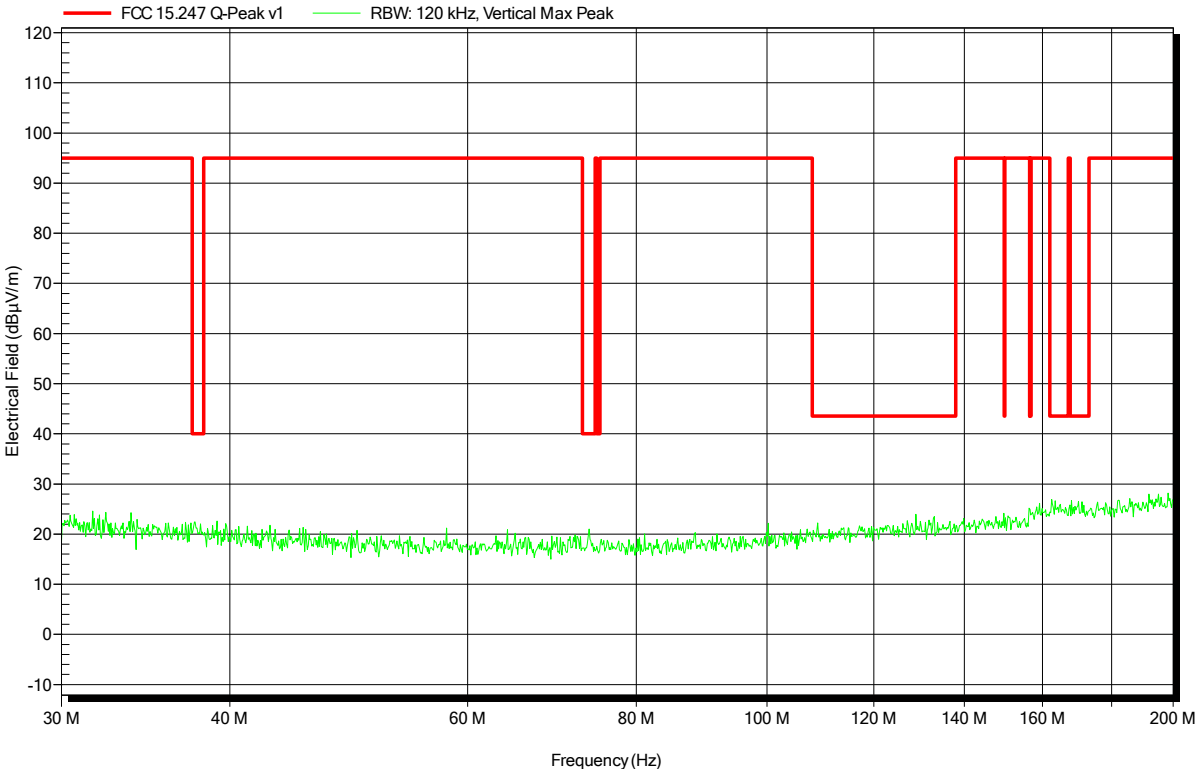

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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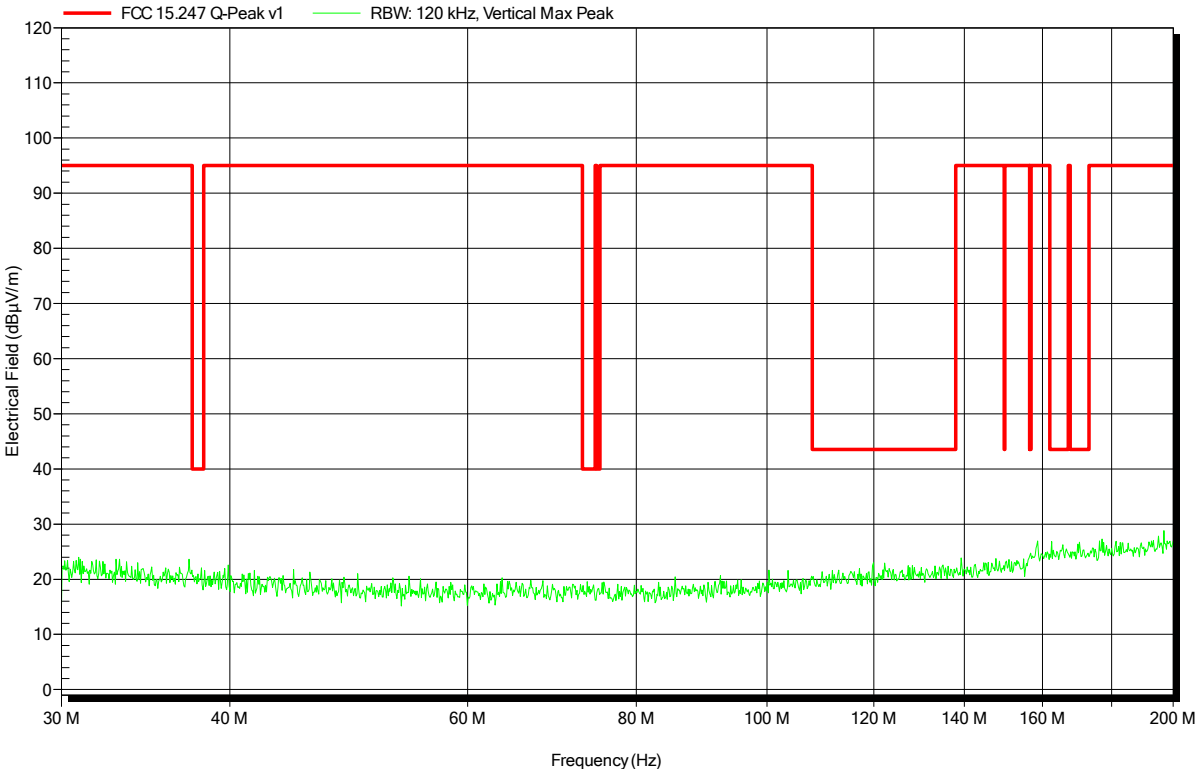

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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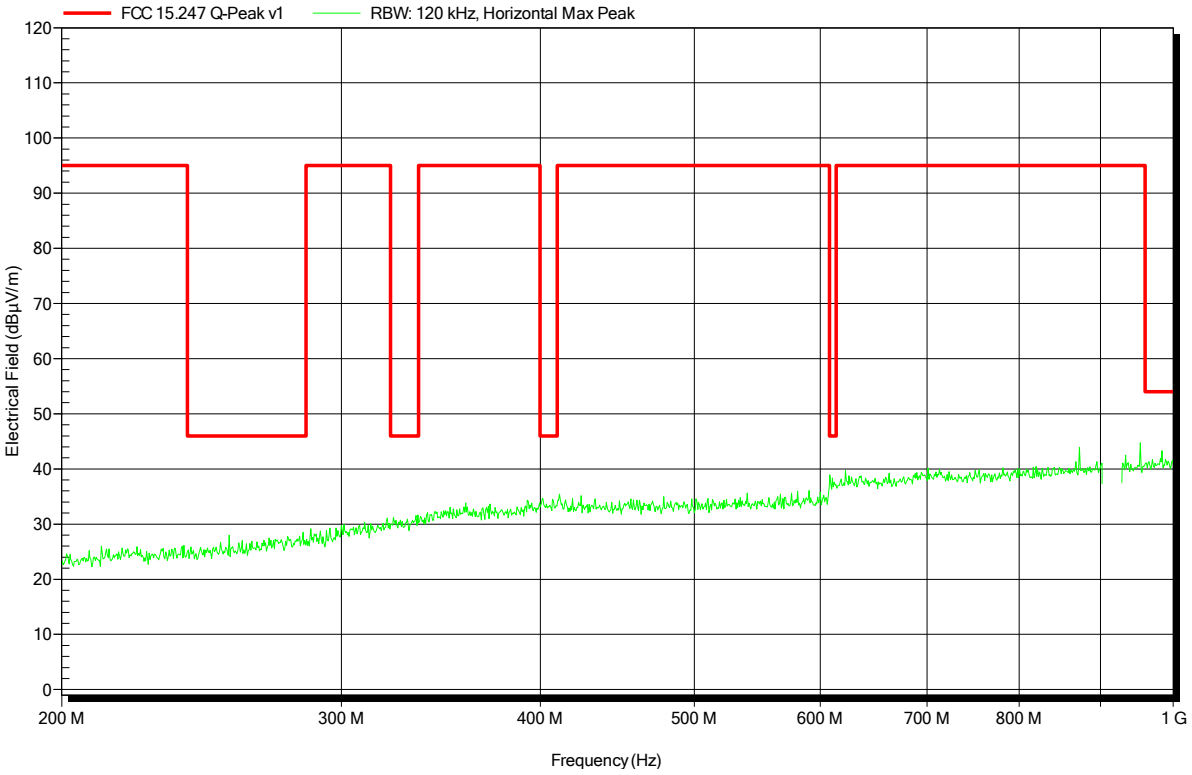

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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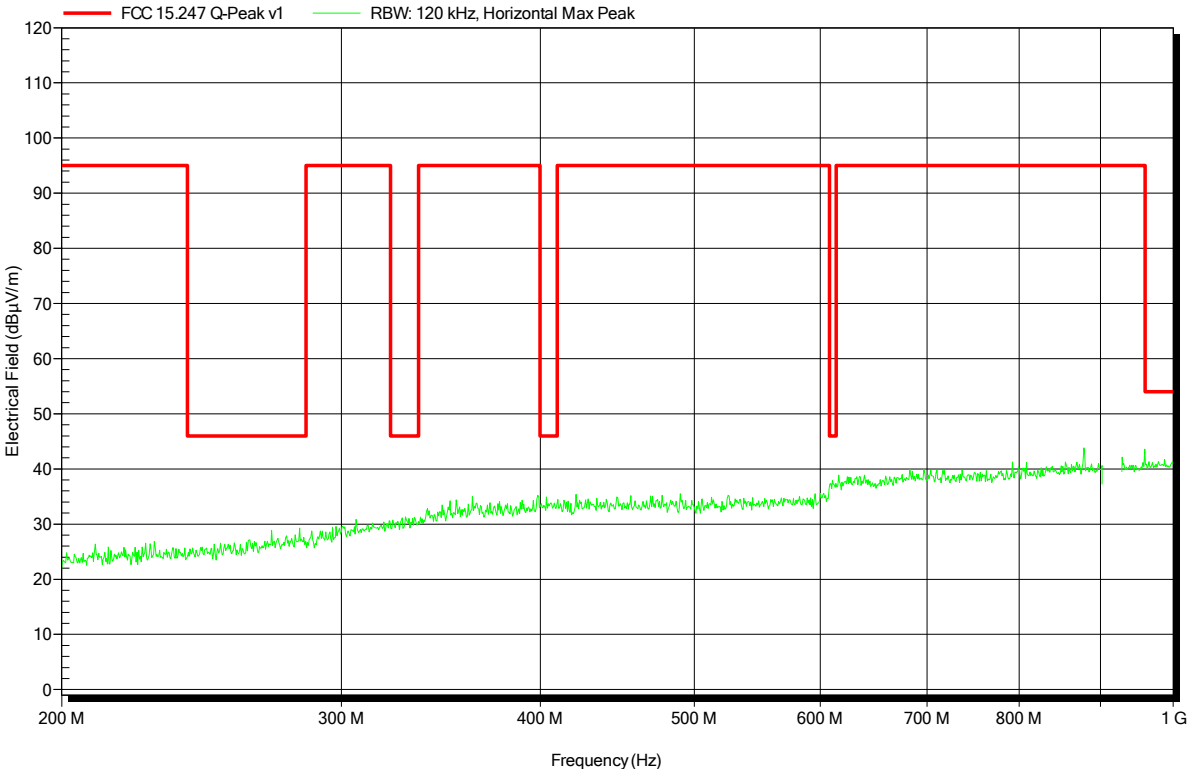

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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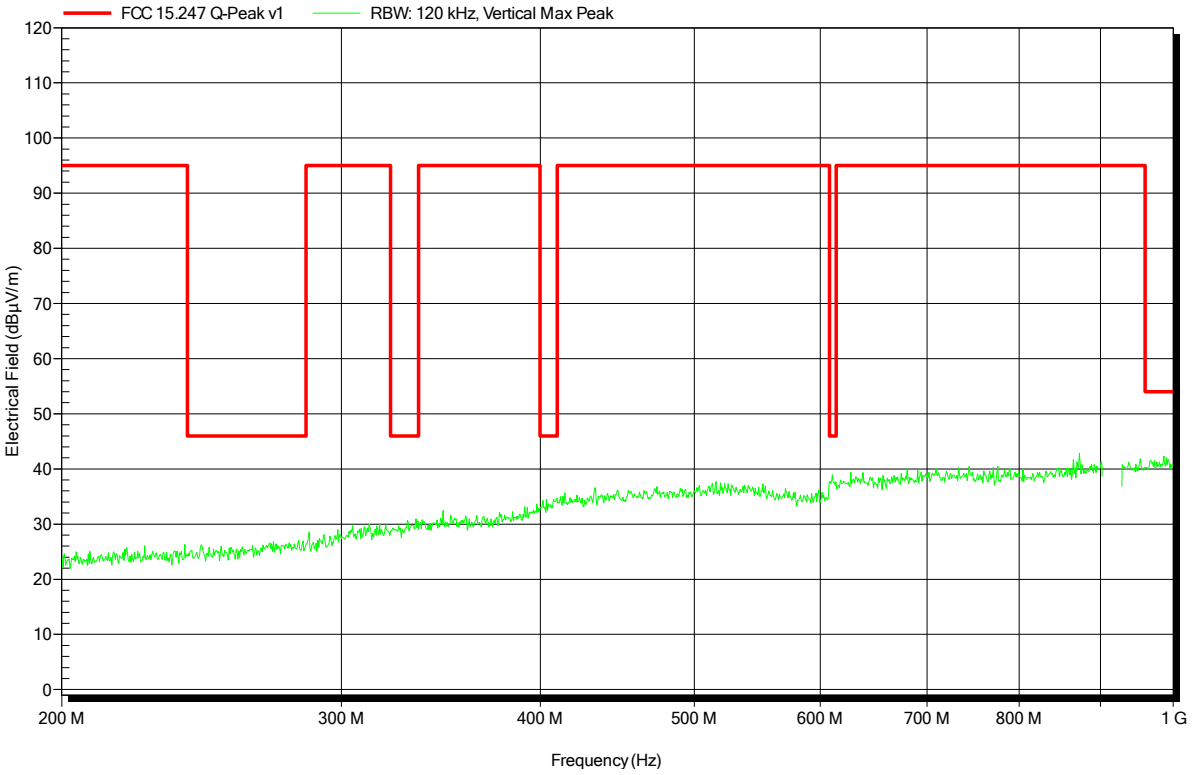

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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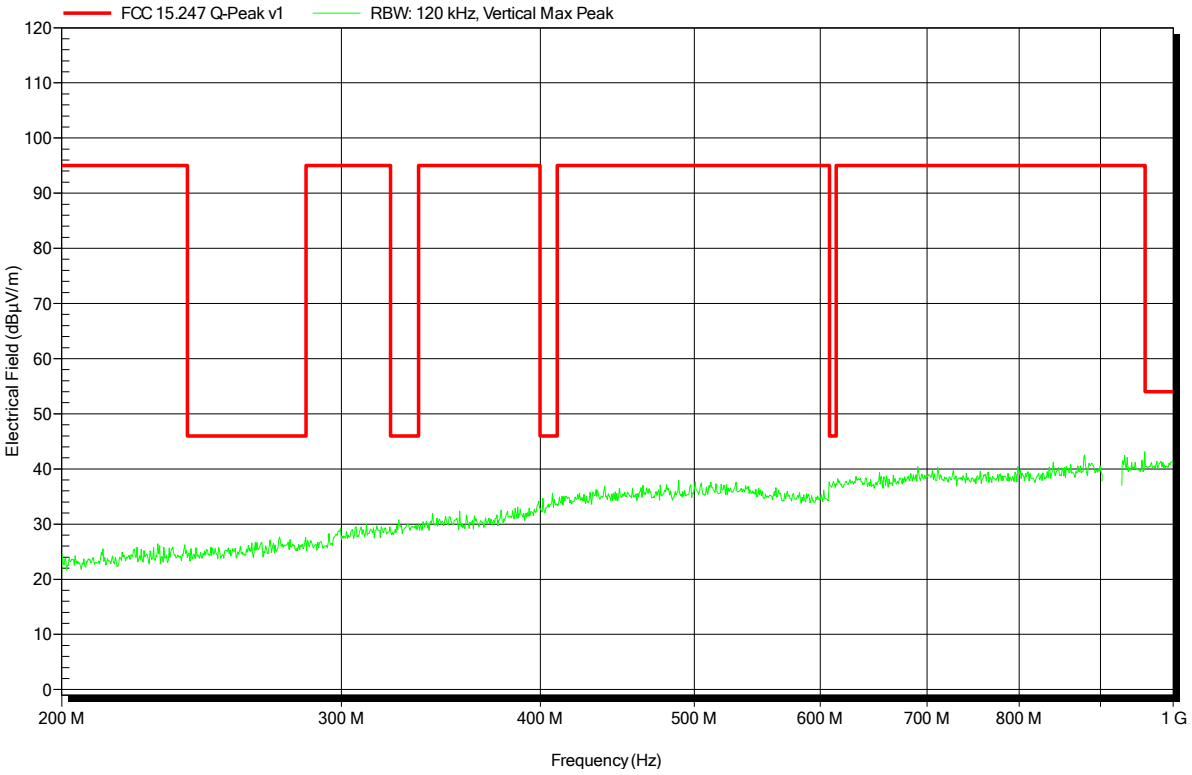
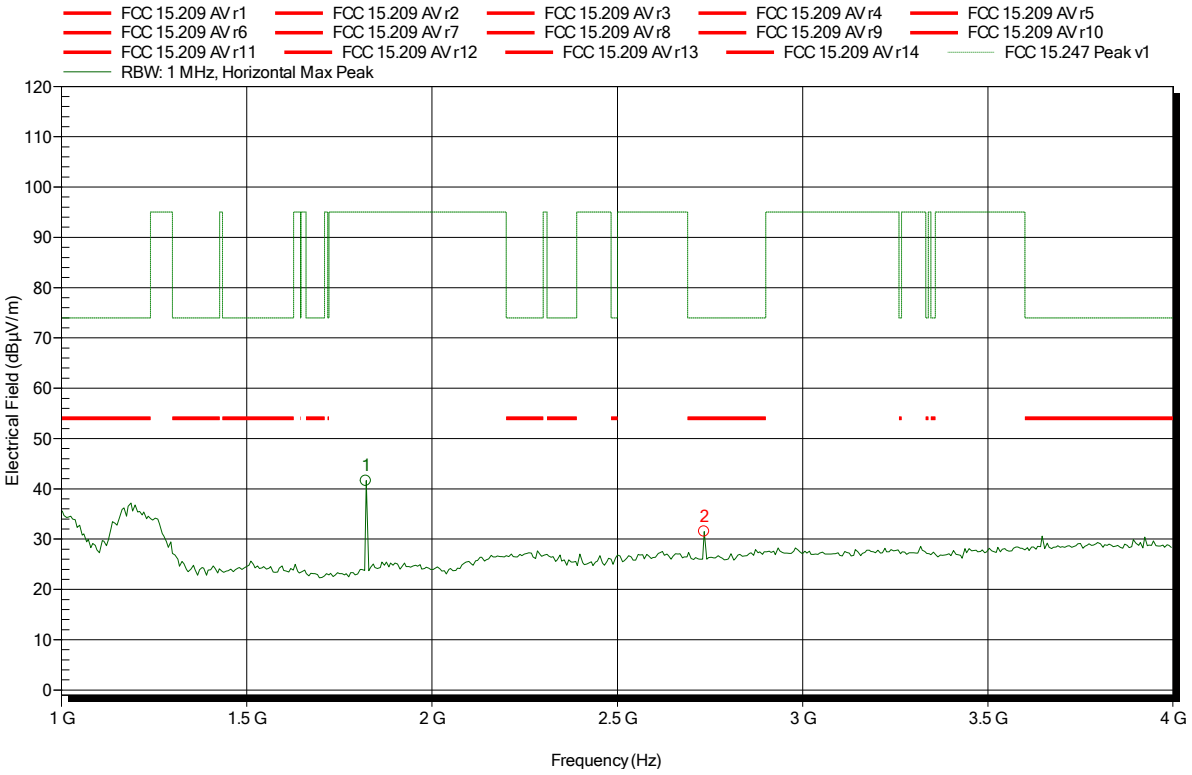


Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

Index 1



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.822 GHz	41.6 dBµV/m	95 dBµV/m	-53.4 dB	Pass
2.734 GHz	31.51 dBµV/m	74 dBµV/m	-42.49 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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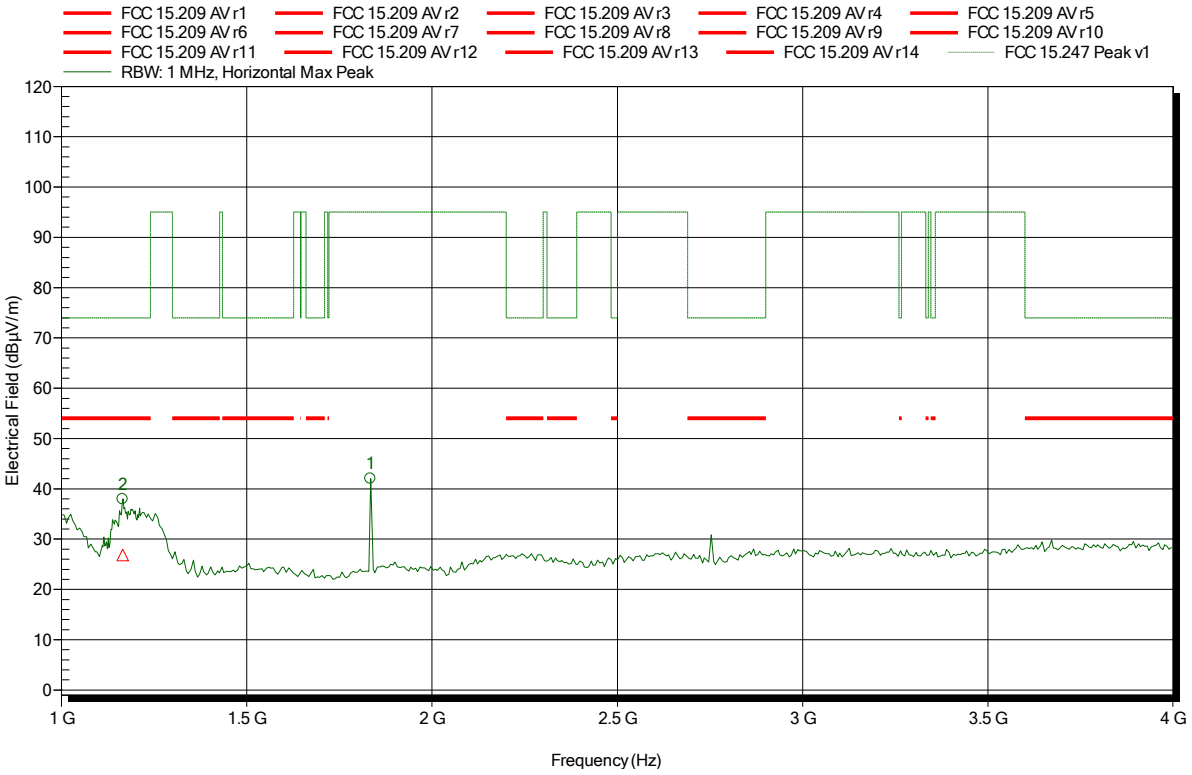

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.834 GHz	42 dBµV/m	95 dBµV/m	-53 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.166 GHz	26.84 dBµV/m	54 dBµV/m	-27.16 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

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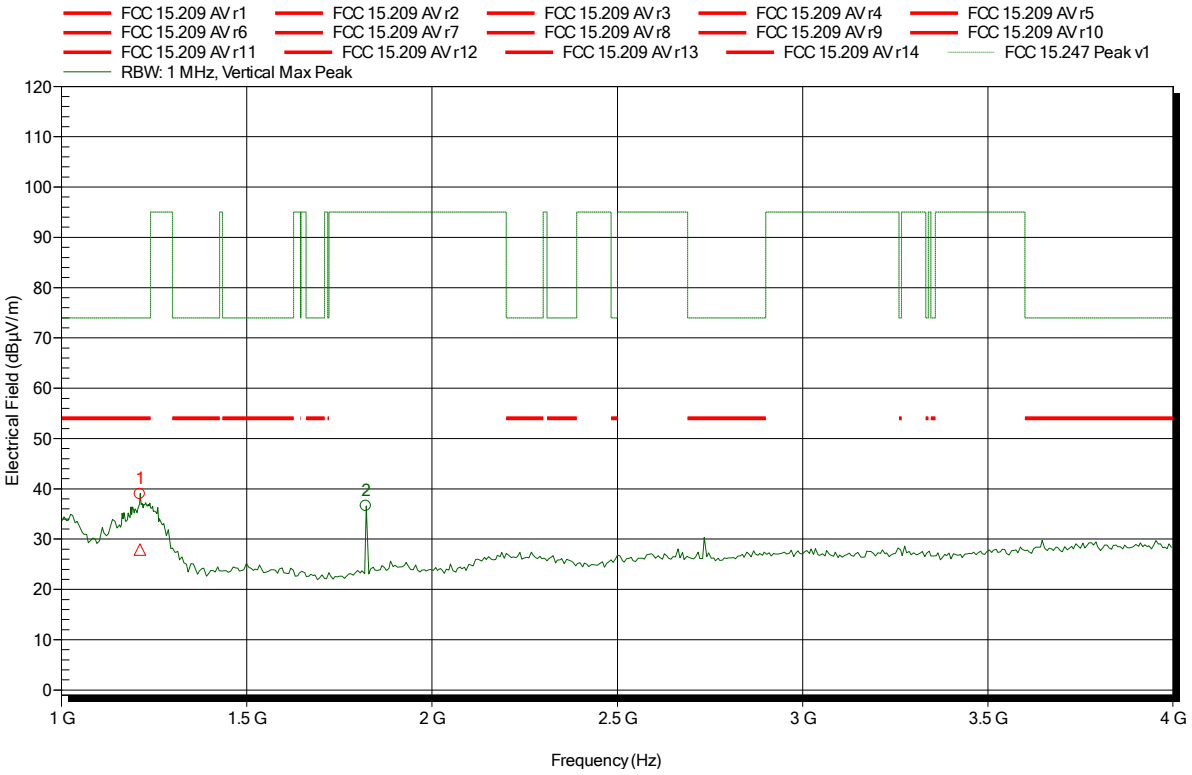

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.822 GHz	36.59 dBµV/m	95 dBµV/m	-58.41 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.212 GHz	27.92 dBµV/m	54 dBµV/m	-26.08 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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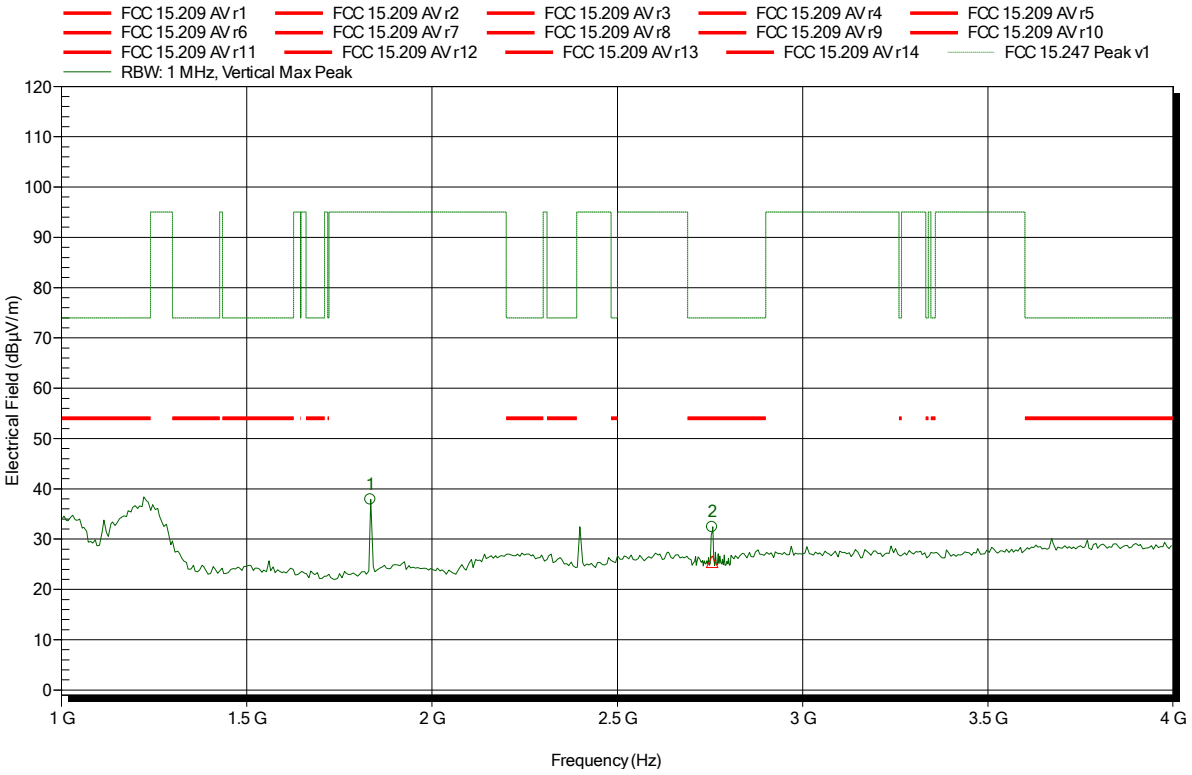


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.834 GHz	37.9 dBµV/m	95 dBµV/m	-57.1 dB	Pass

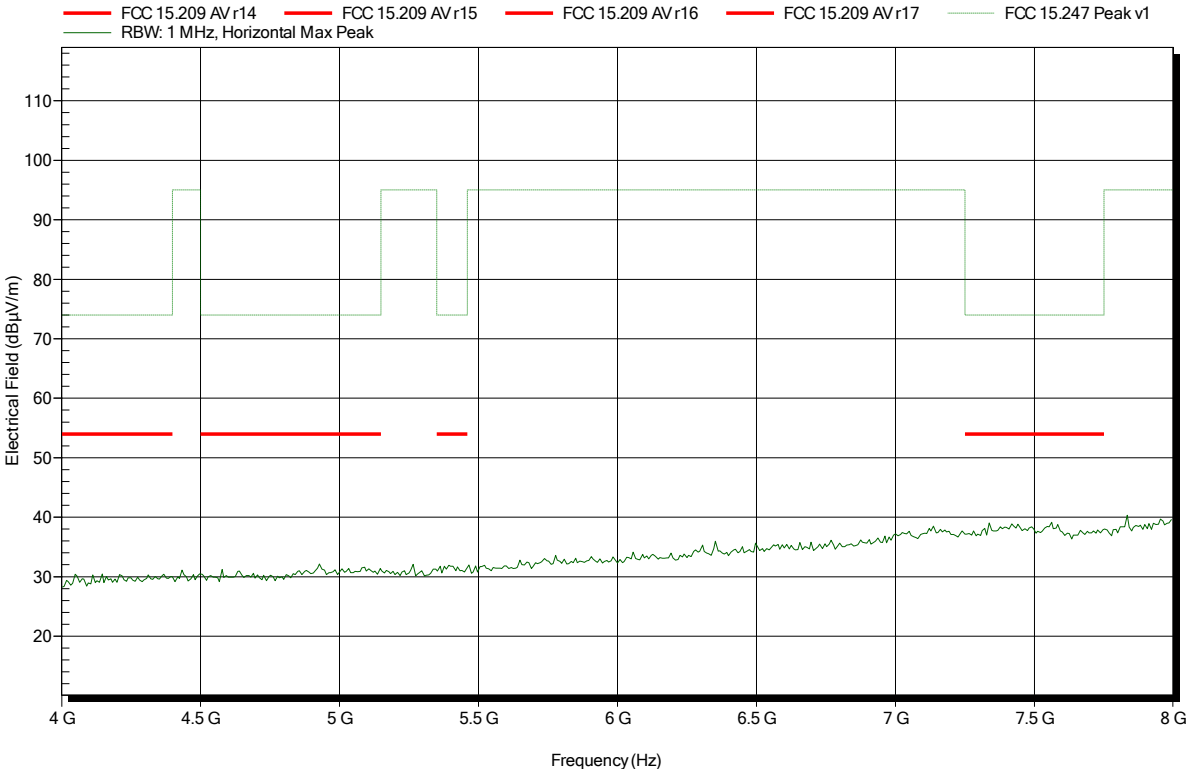
Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.756 GHz	25.51 dBµV/m	54 dBµV/m	-28.49 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

Index 2



Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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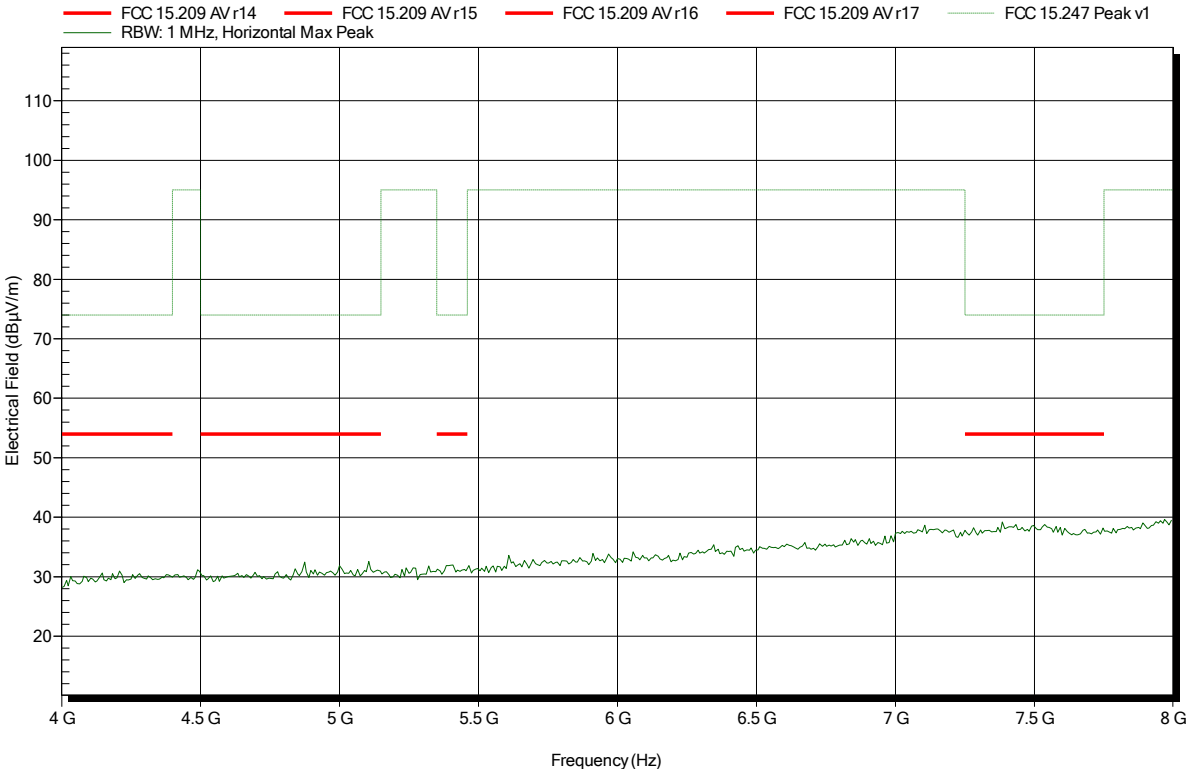

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

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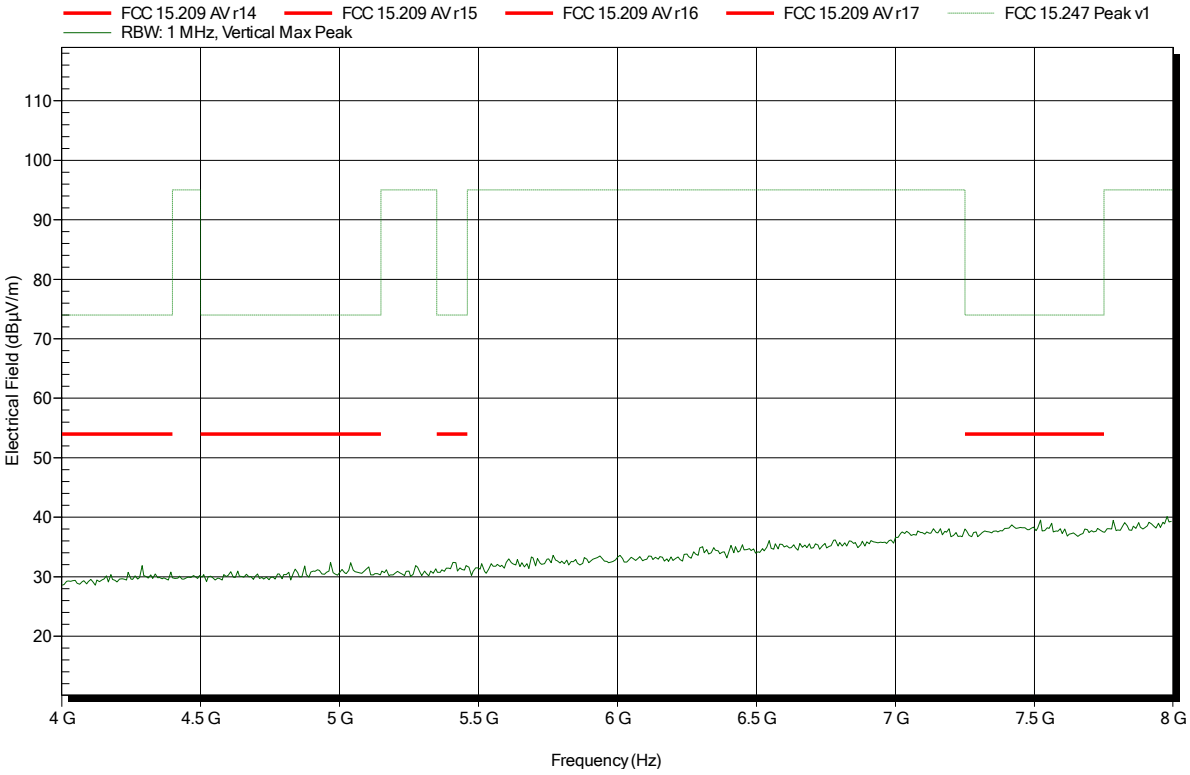

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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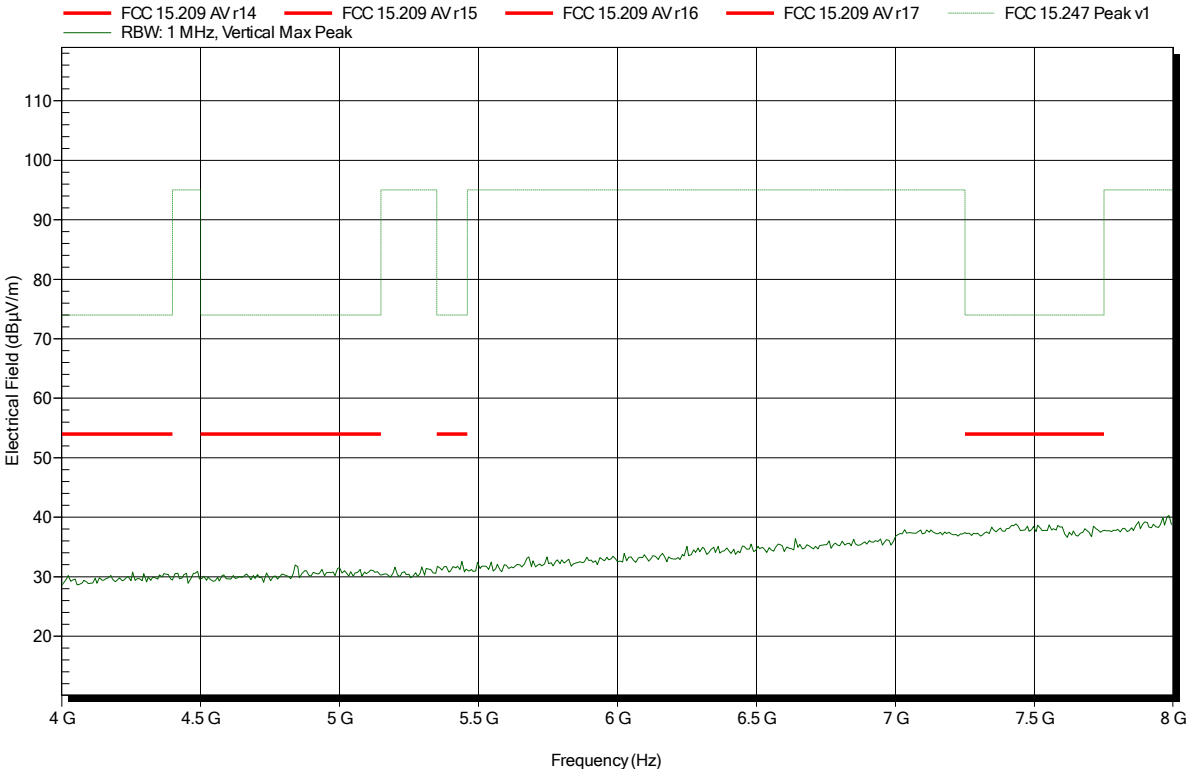

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

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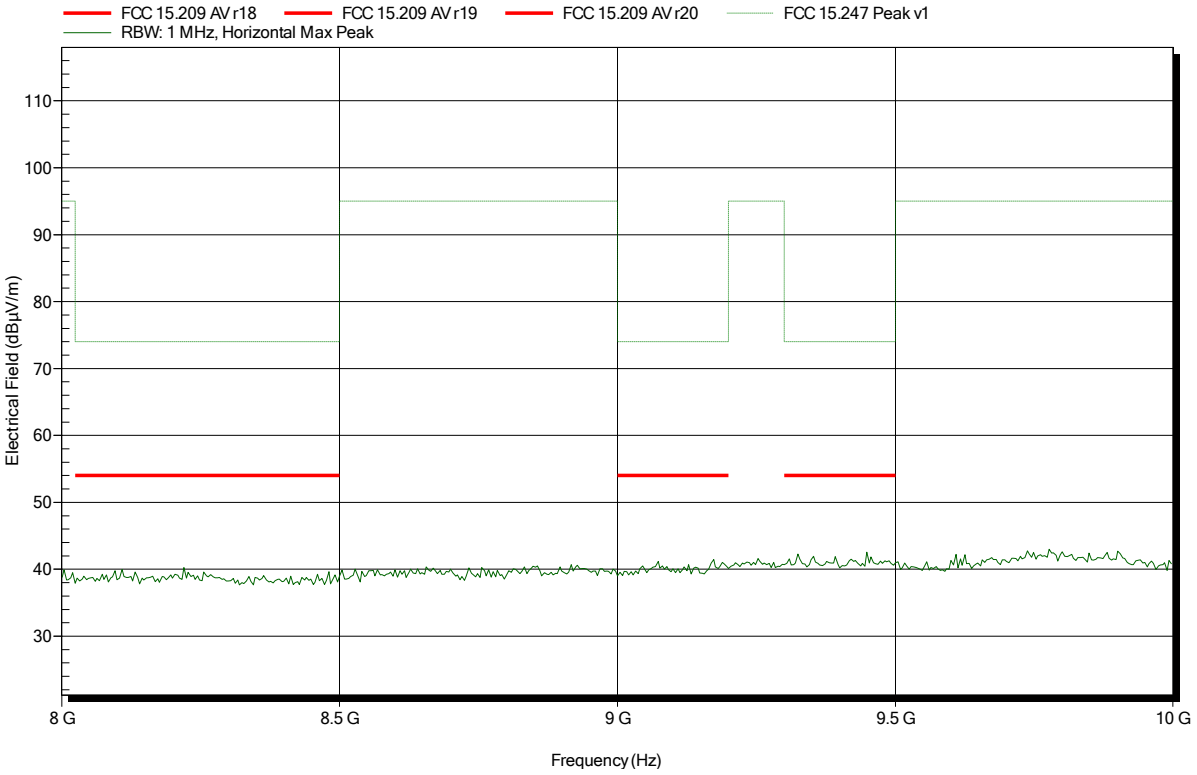

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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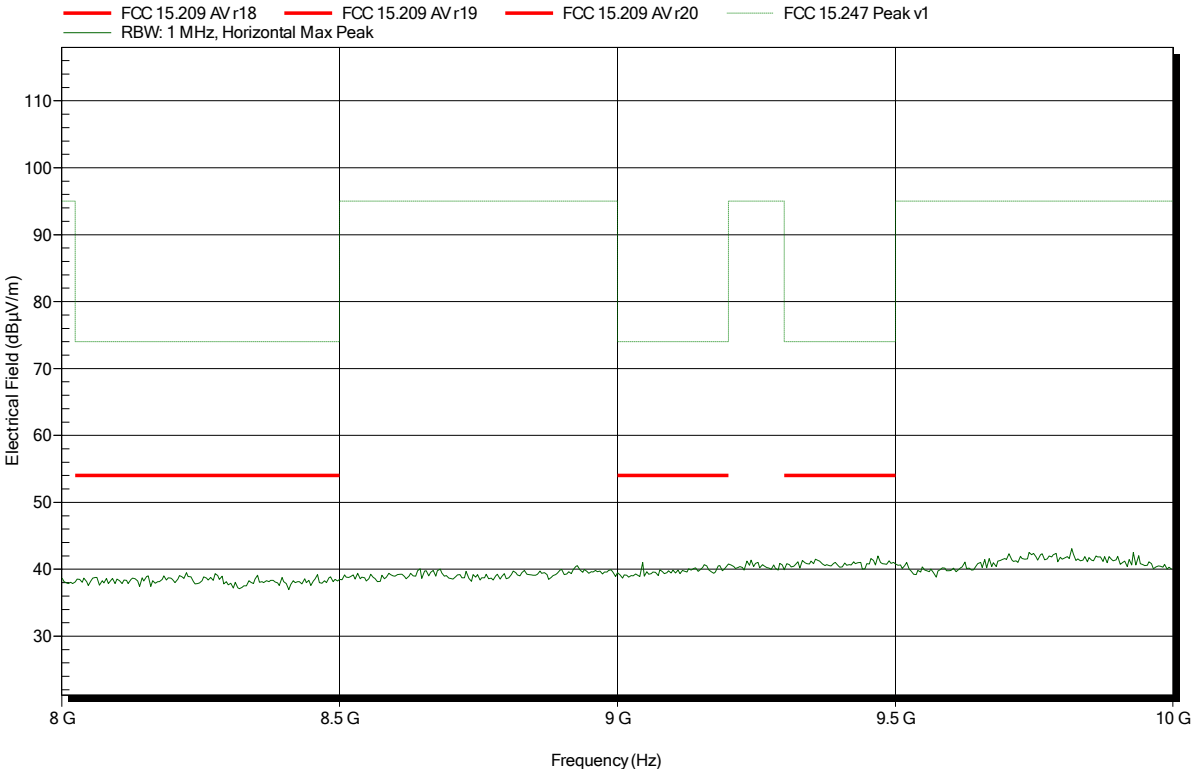

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-02-27
Note:	

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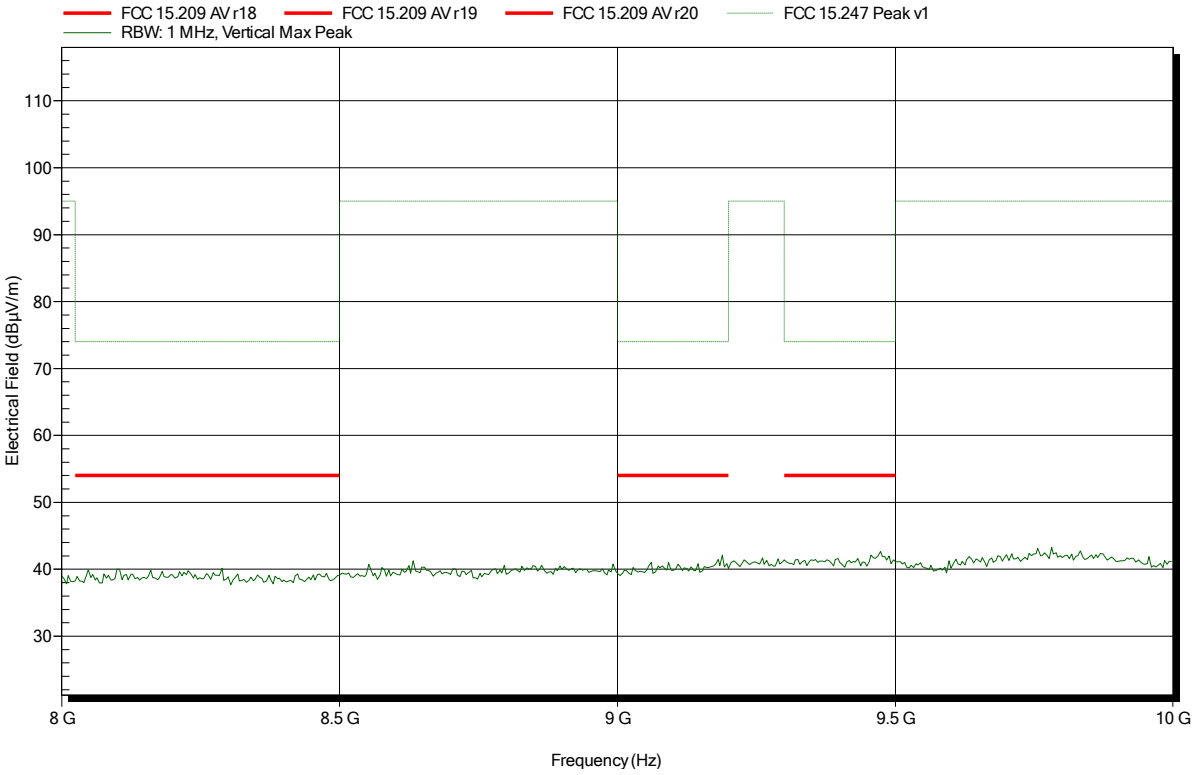

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-02-27
Note:	

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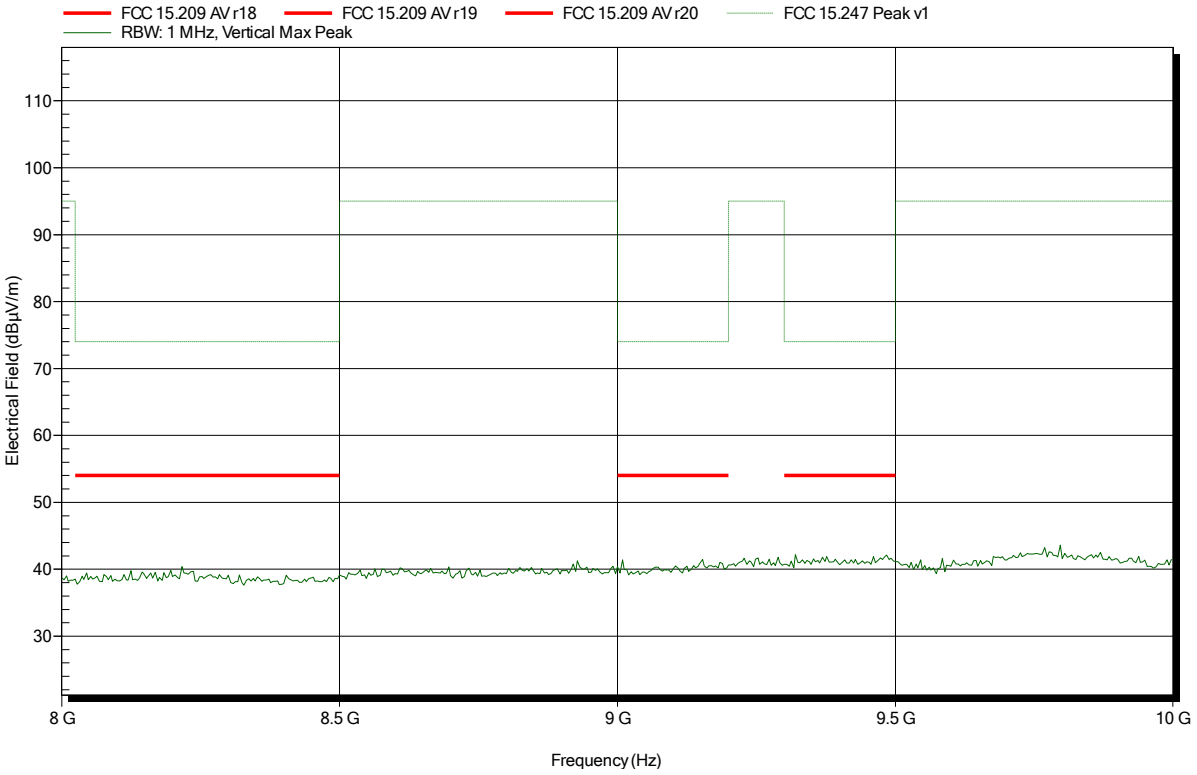

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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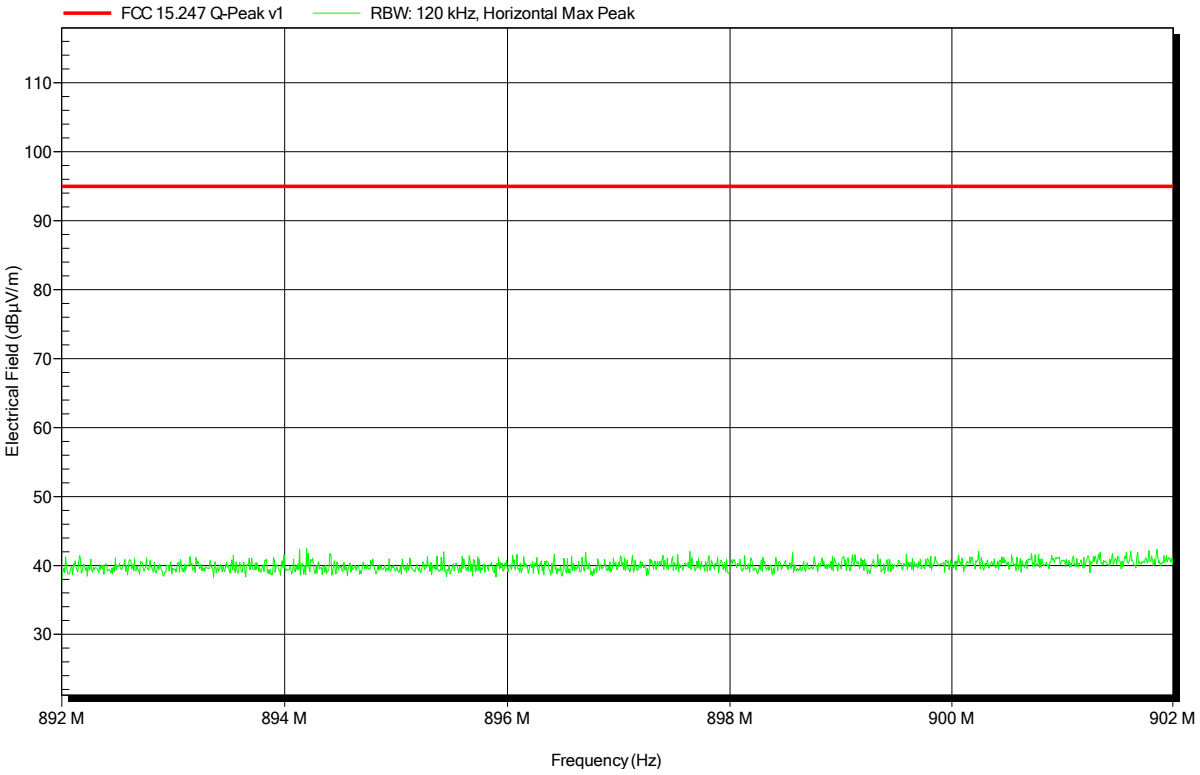

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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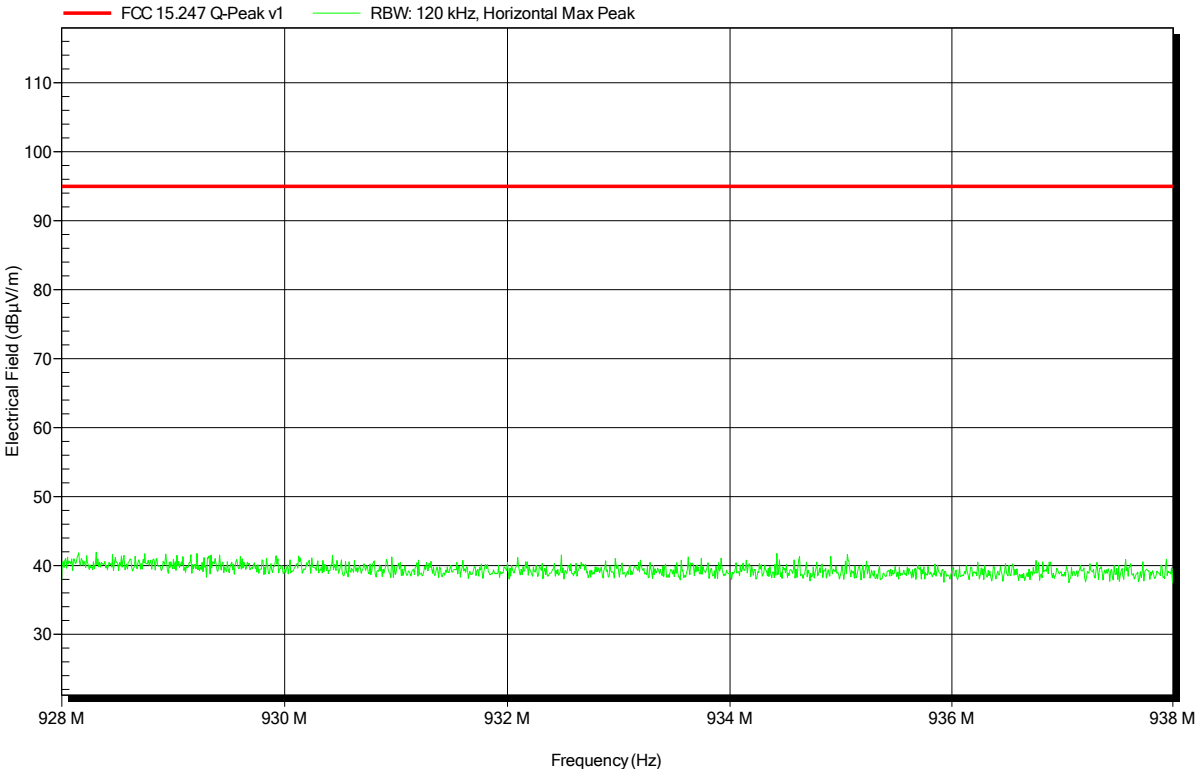

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
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Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 912.5 MHz
Test Date:	2017-03-01
Note:	

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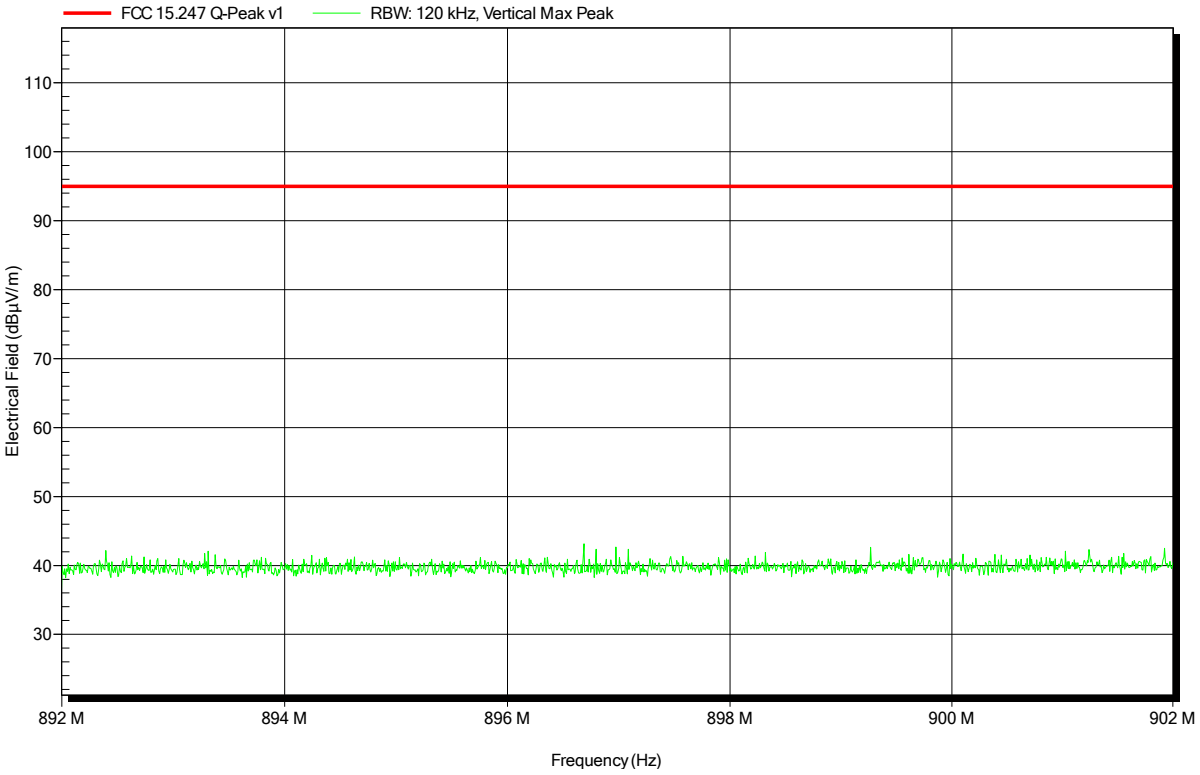

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 1653094; 918.5 MHz
Test Date:	2017-03-01
Note:	

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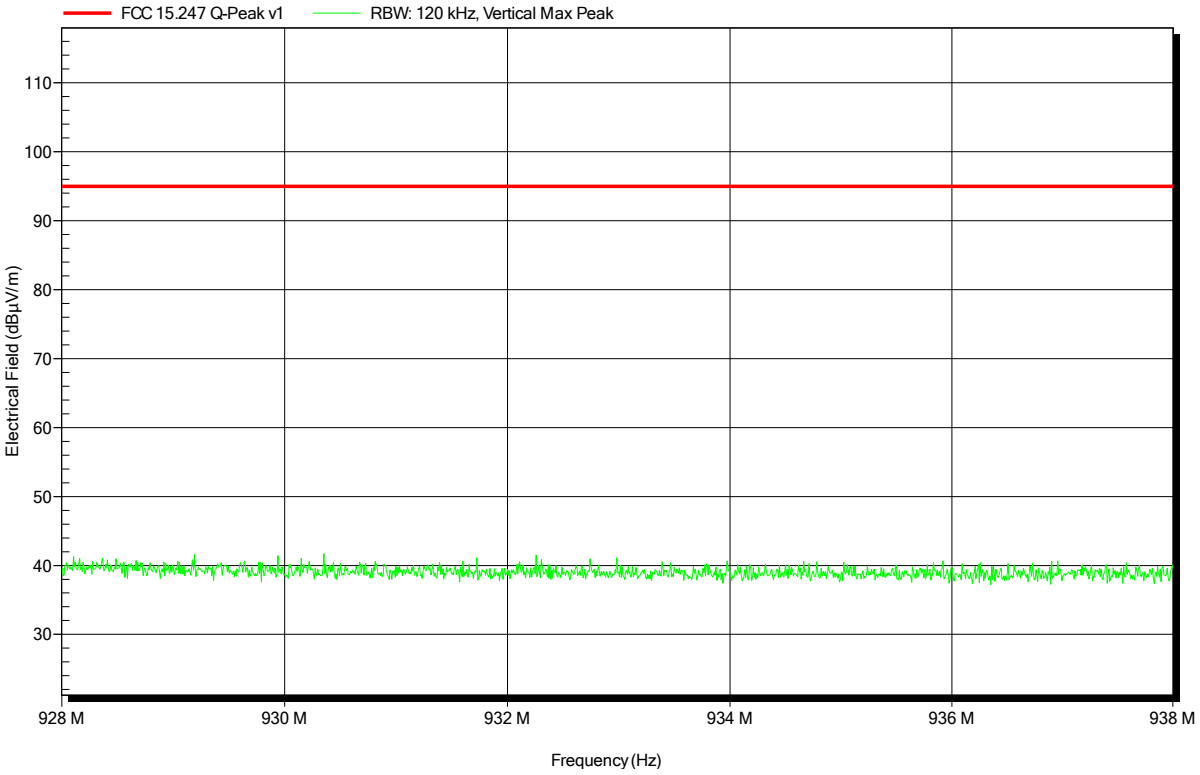

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

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EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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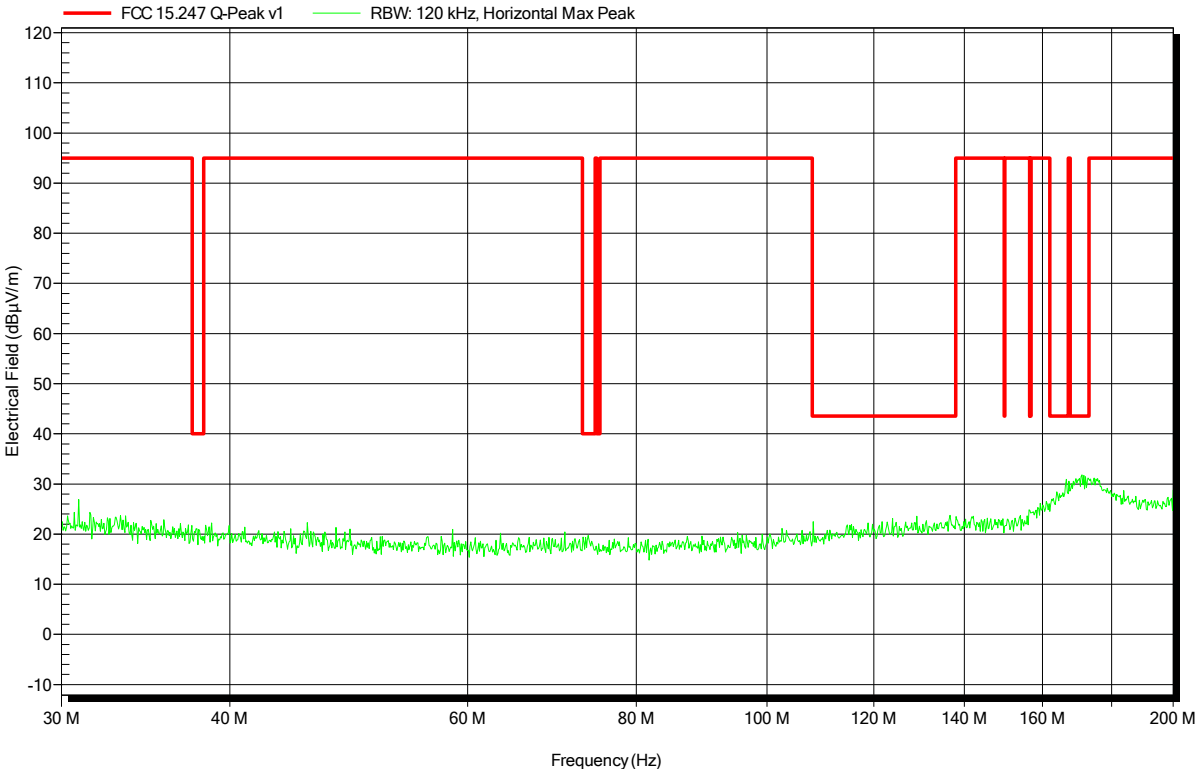

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
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Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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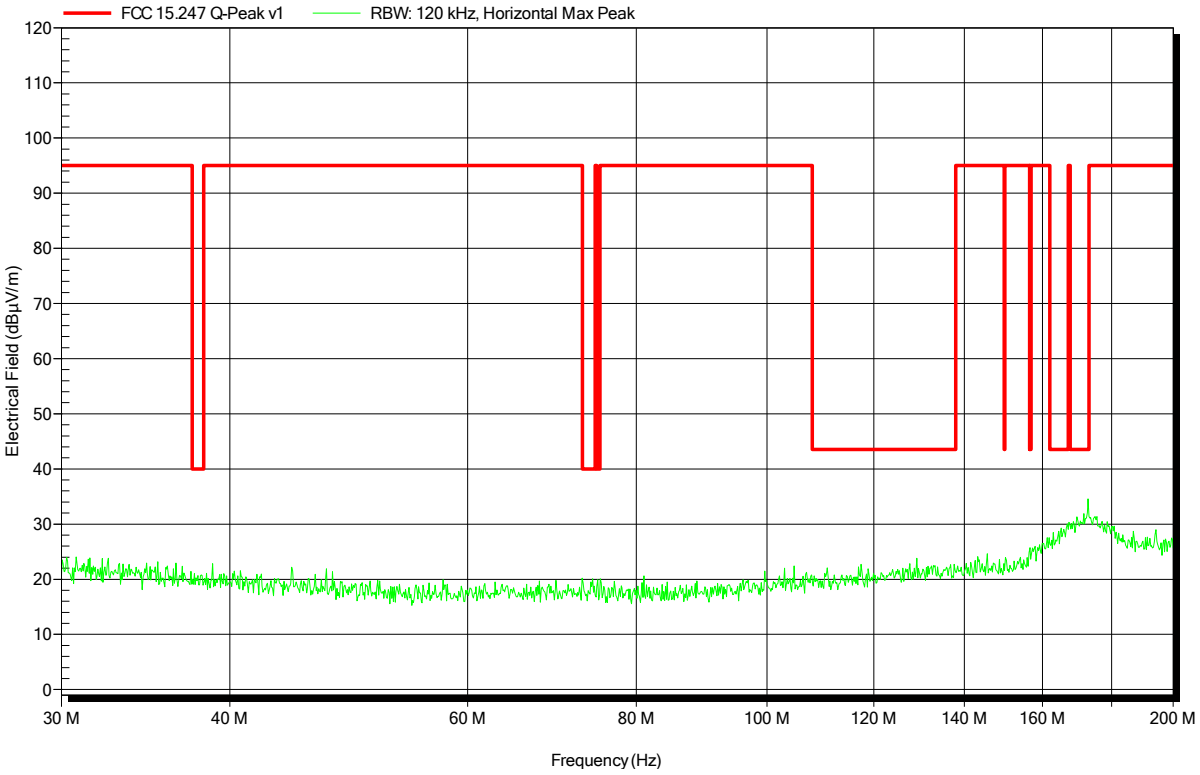

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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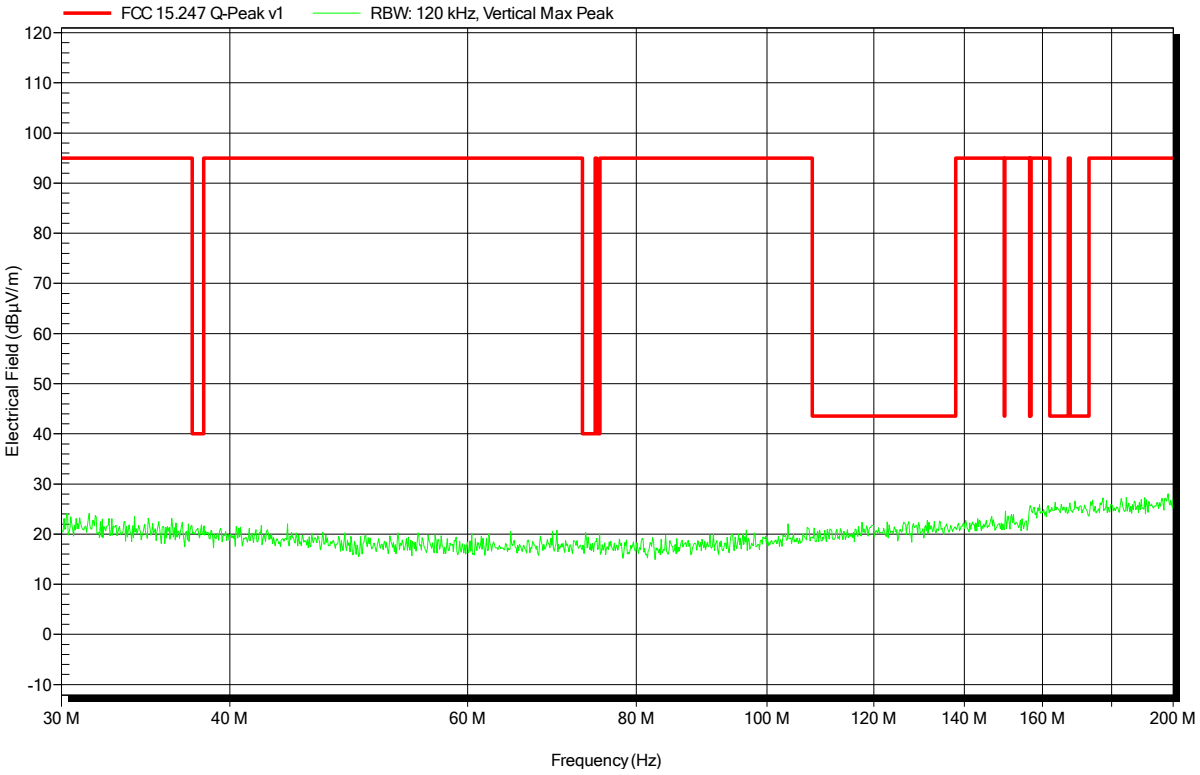

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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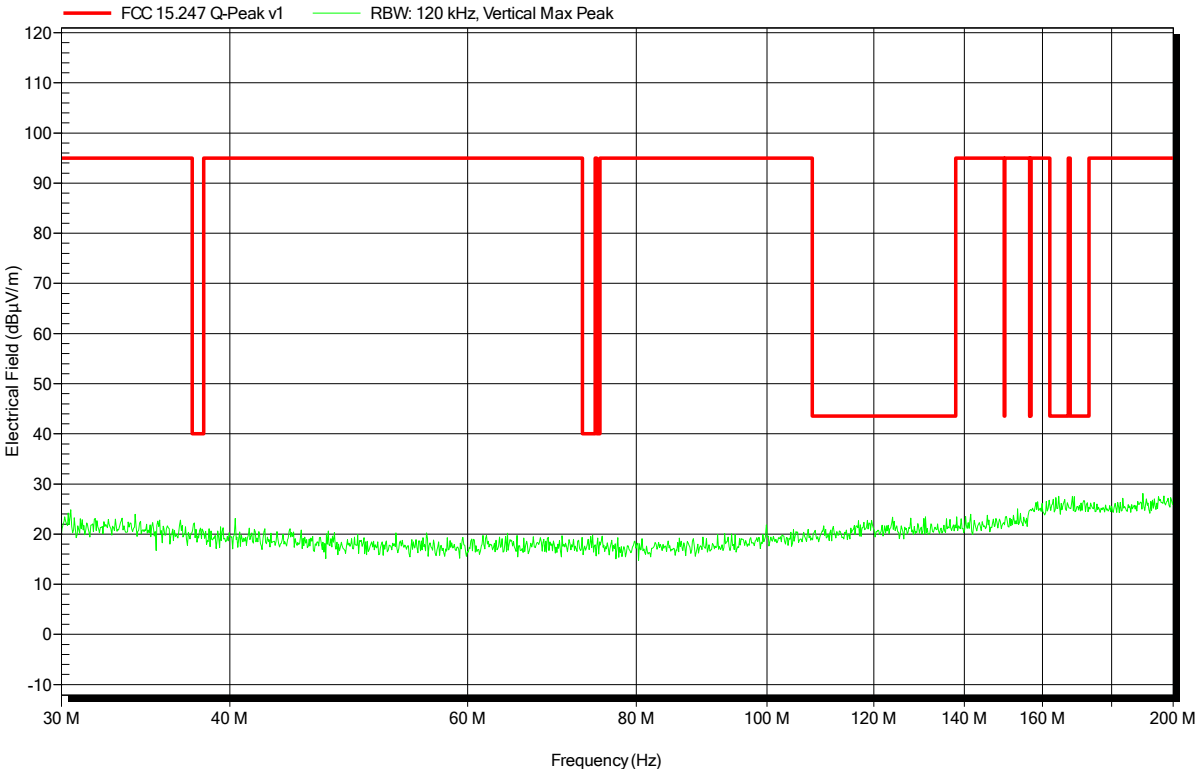

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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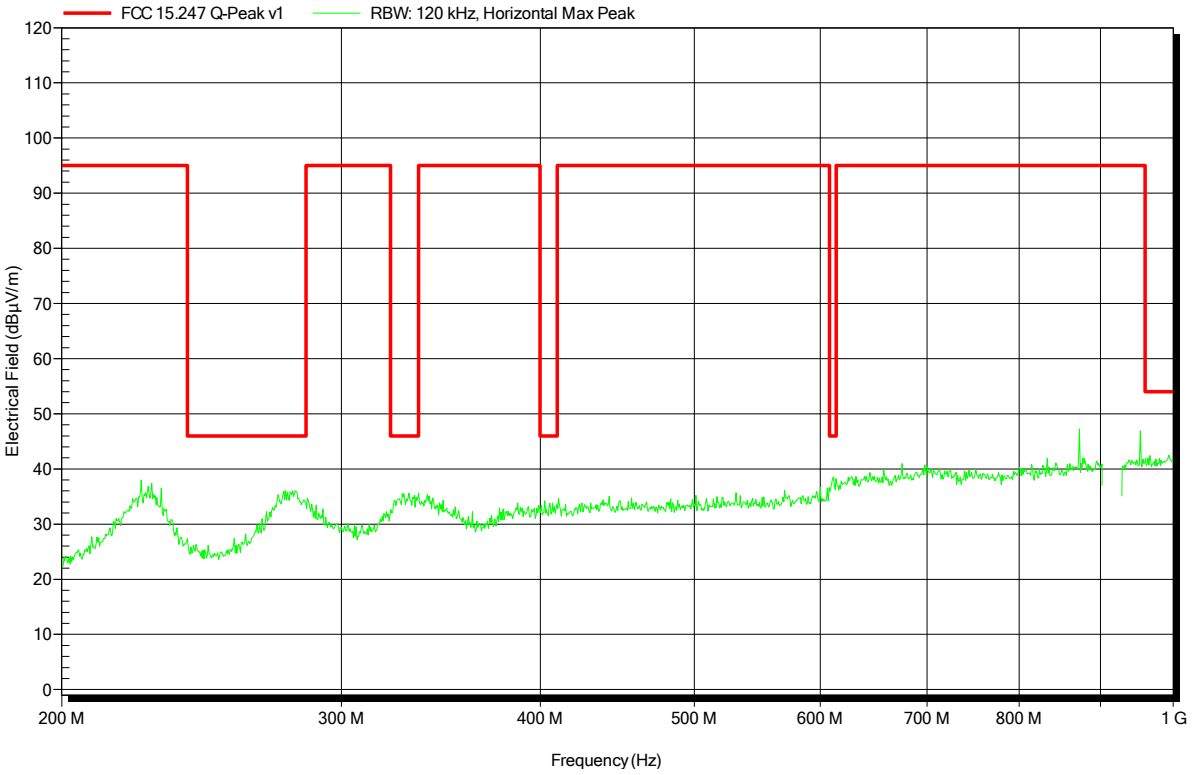

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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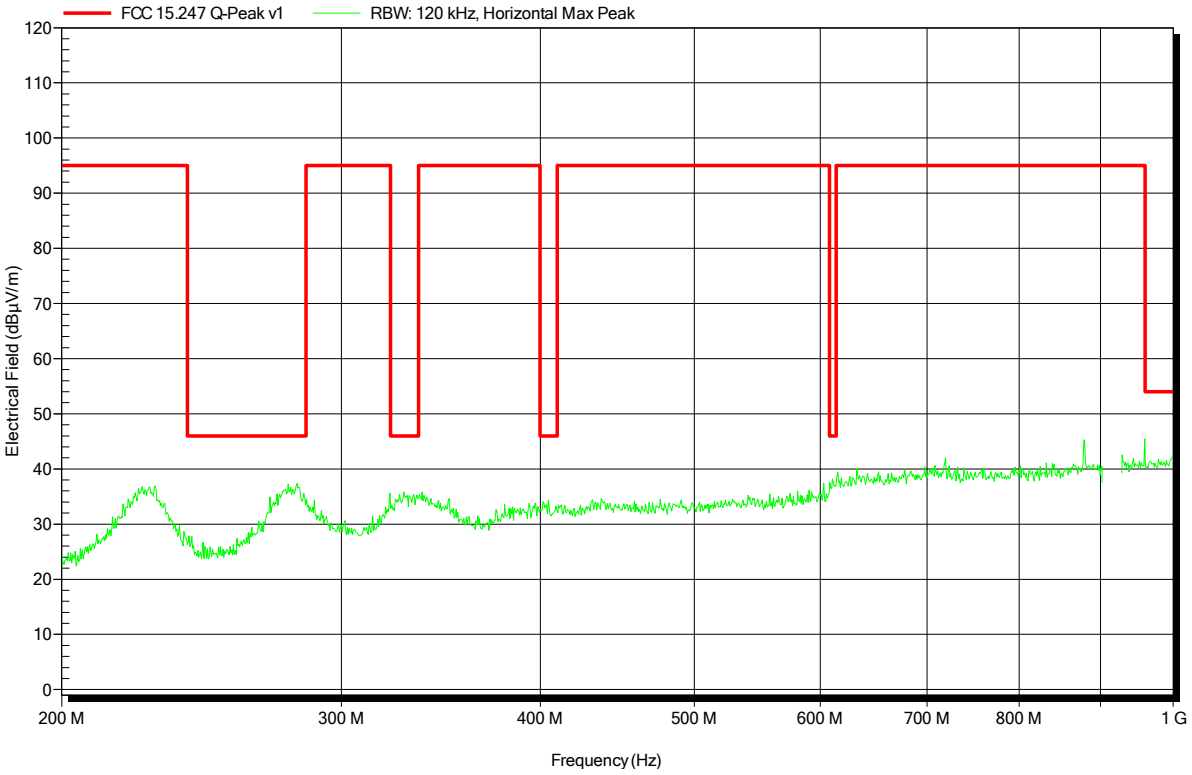

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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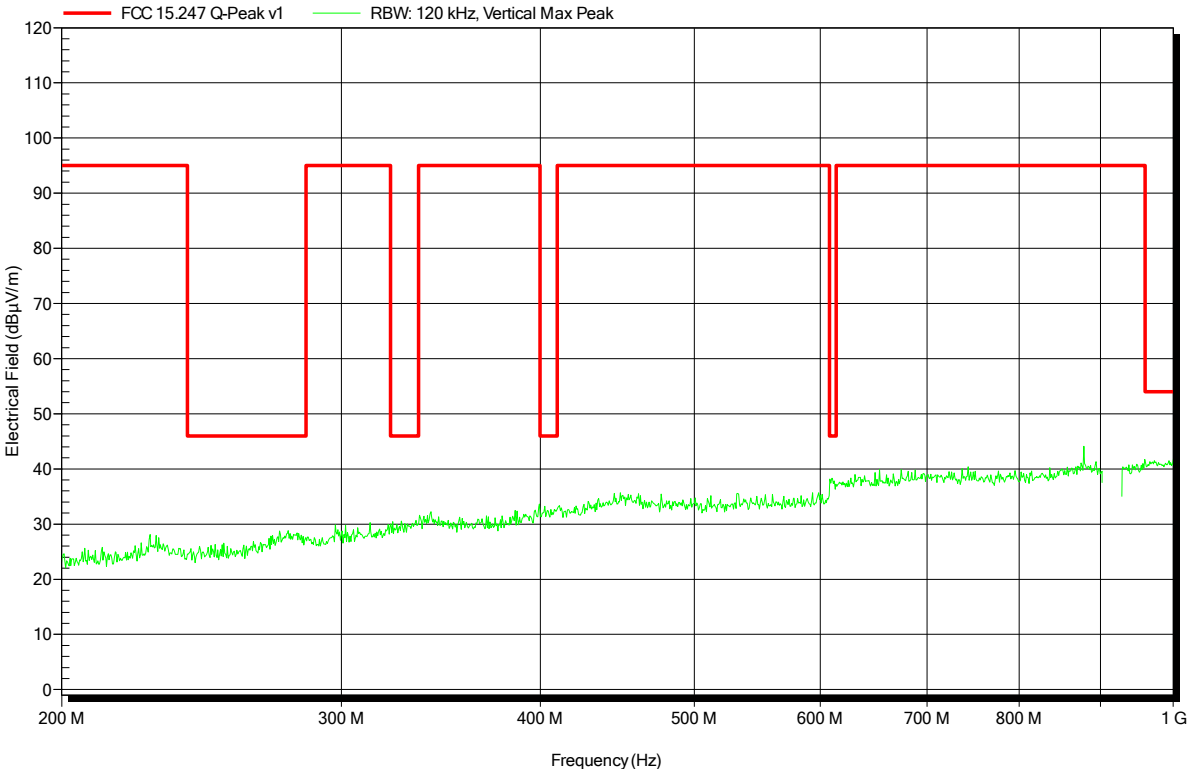

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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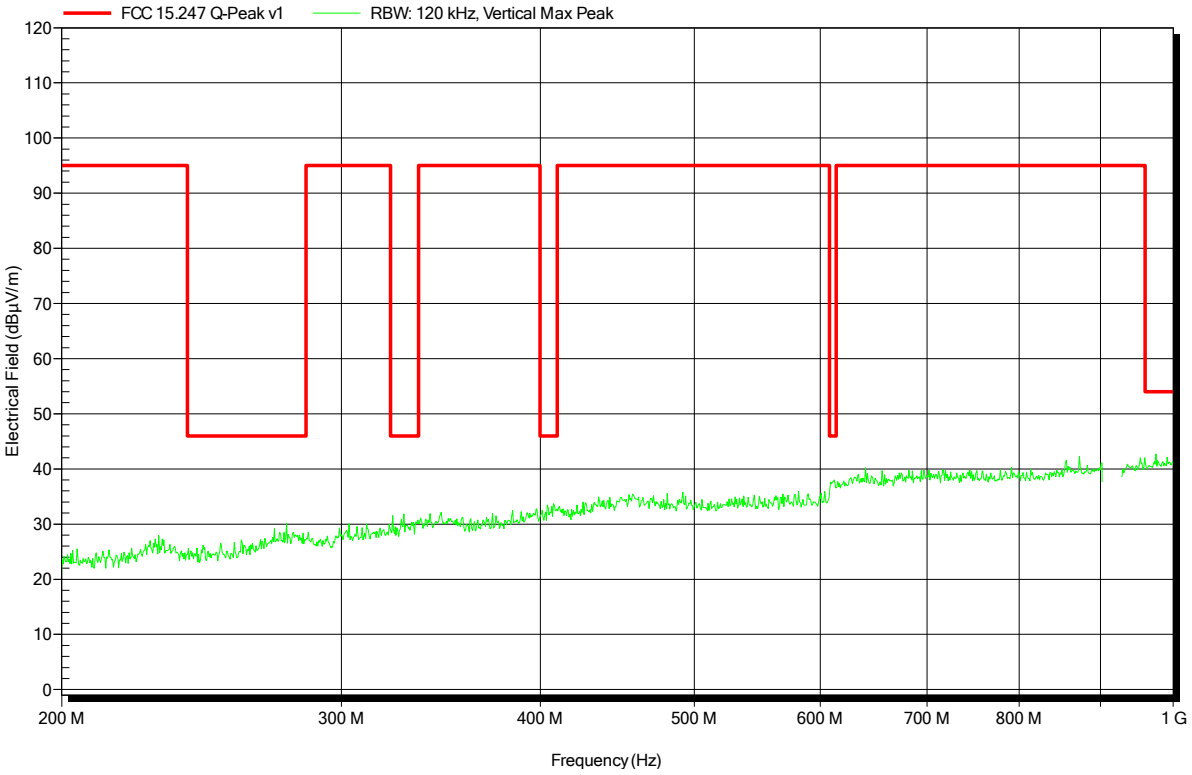

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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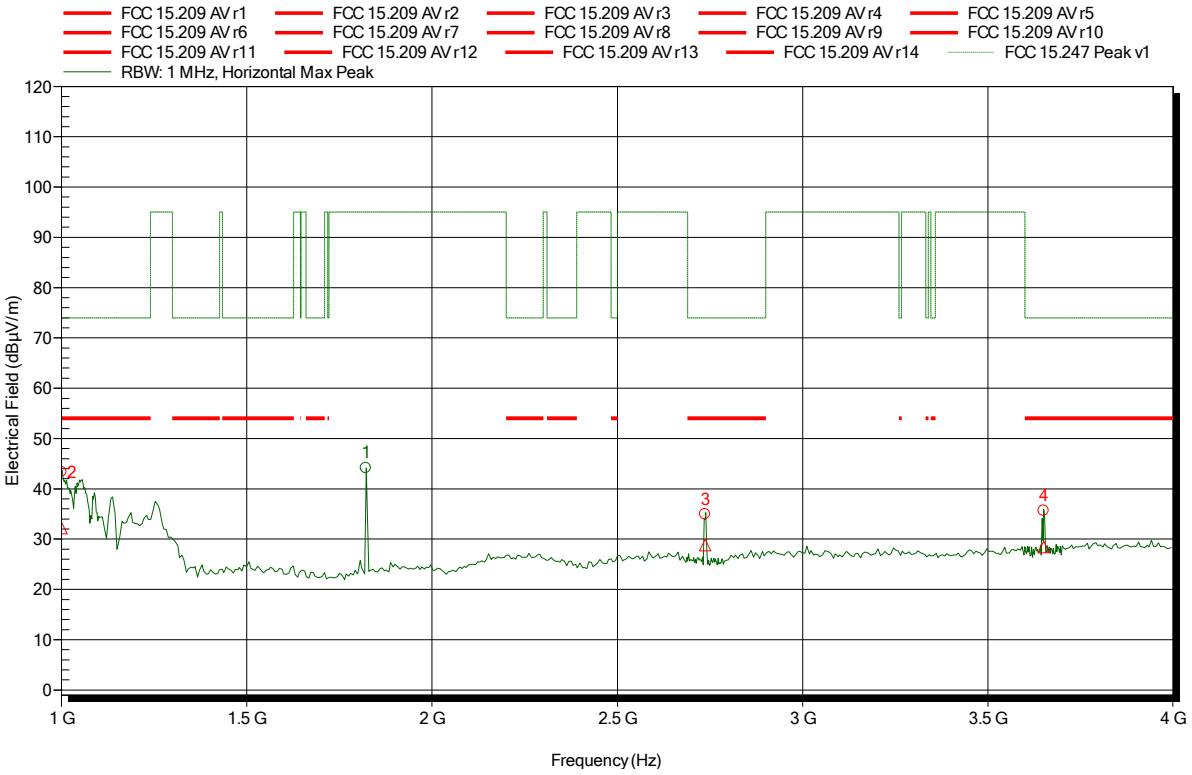

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.822 GHz	44.12 dBµV/m	95 dBµV/m	-50.88 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1 GHz	32.18 dBµV/m	54 dBµV/m	-21.82 dB	Pass
2.737 GHz	28.83 dBµV/m	54 dBµV/m	-25.17 dB	Pass
3.651 GHz	28.44 dBµV/m	54 dBµV/m	-25.56 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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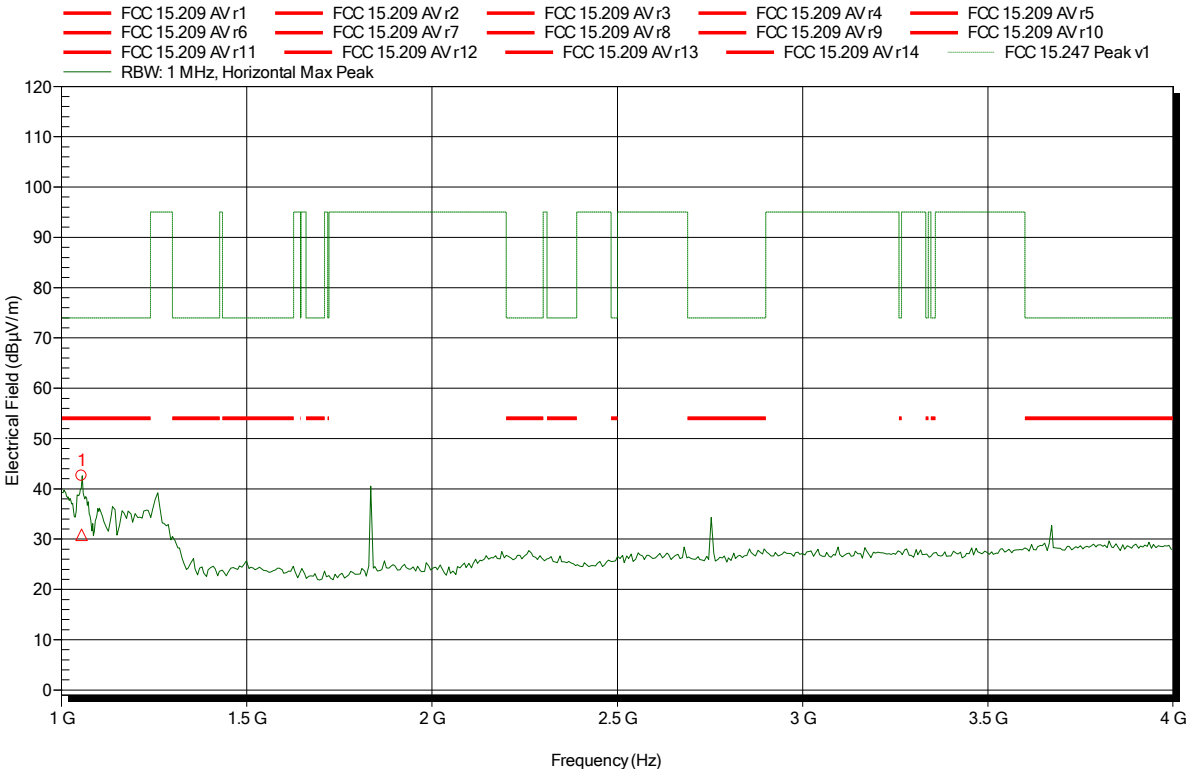

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.054 GHz	30.83 dBµV/m	54 dBµV/m	-23.17 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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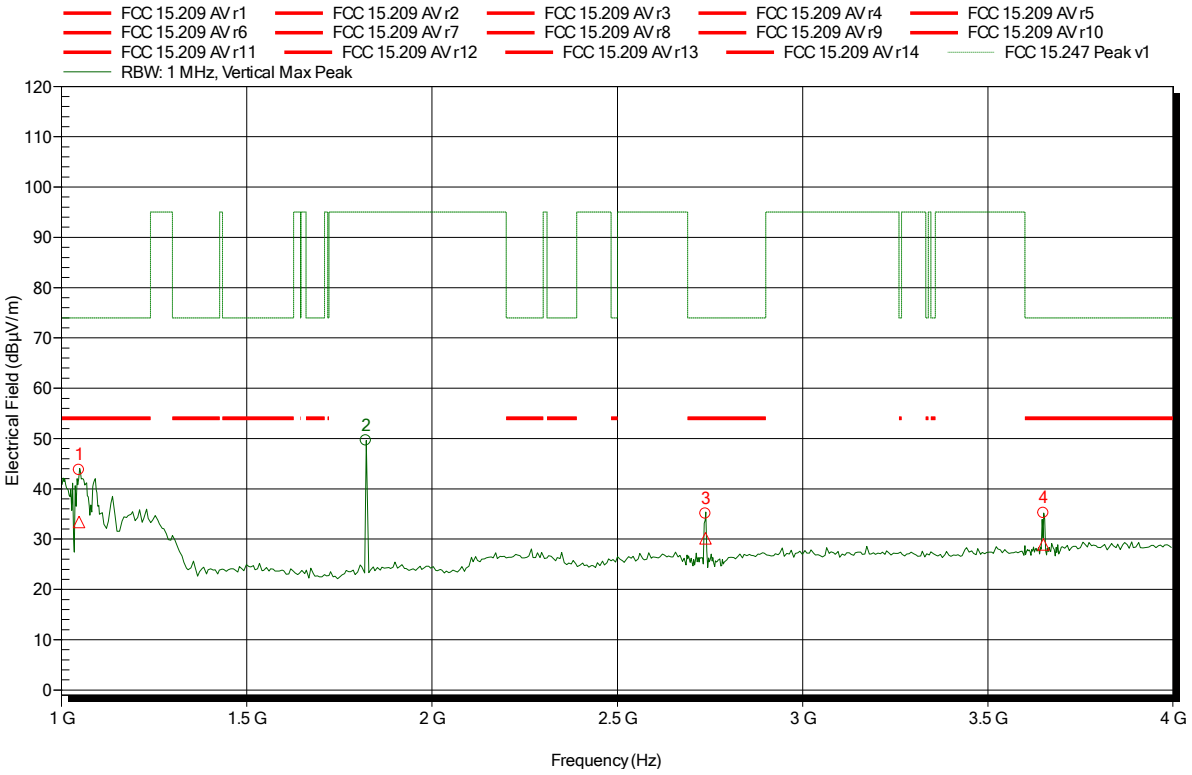

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.822 GHz	49.63 dBµV/m	95 dBµV/m	-45.37 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.048 GHz	33.41 dBµV/m	54 dBµV/m	-20.59 dB	Pass
2.738 GHz	30.17 dBµV/m	54 dBµV/m	-23.83 dB	Pass
3.649 GHz	28.97 dBµV/m	54 dBµV/m	-25.03 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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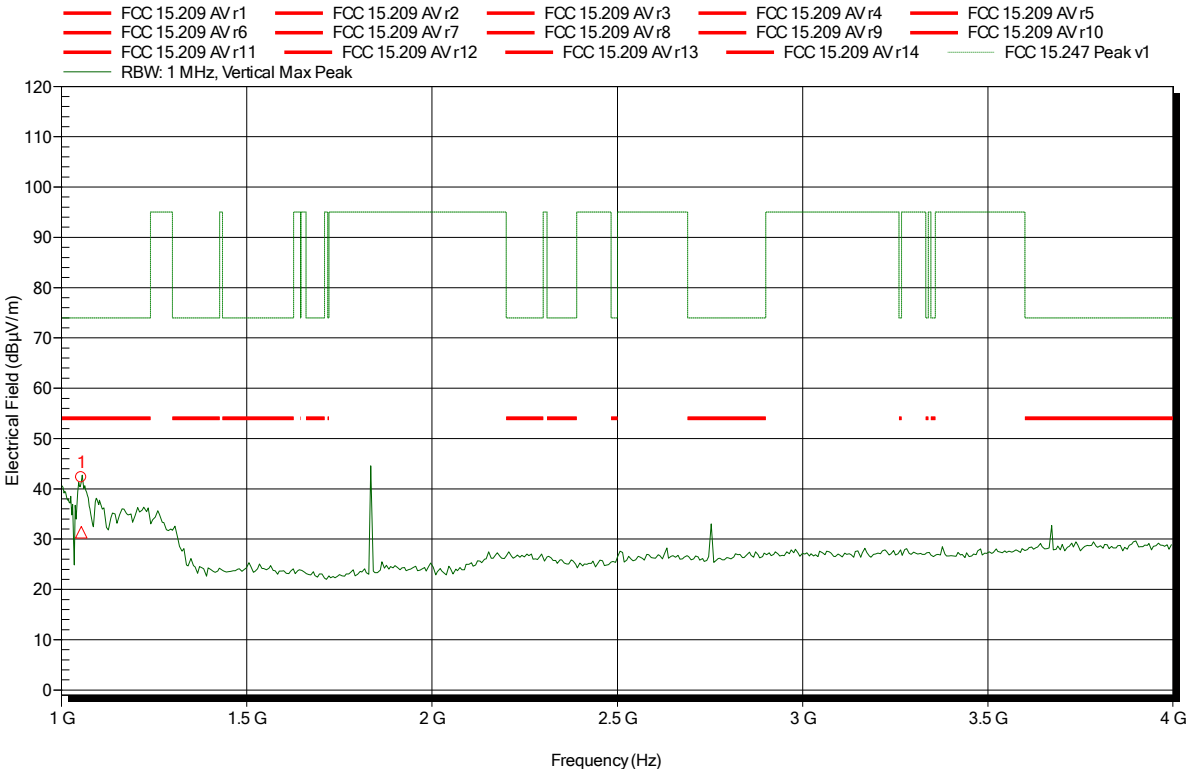

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
1.054 GHz	31.4 dBµV/m	54 dBµV/m	-22.6 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
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Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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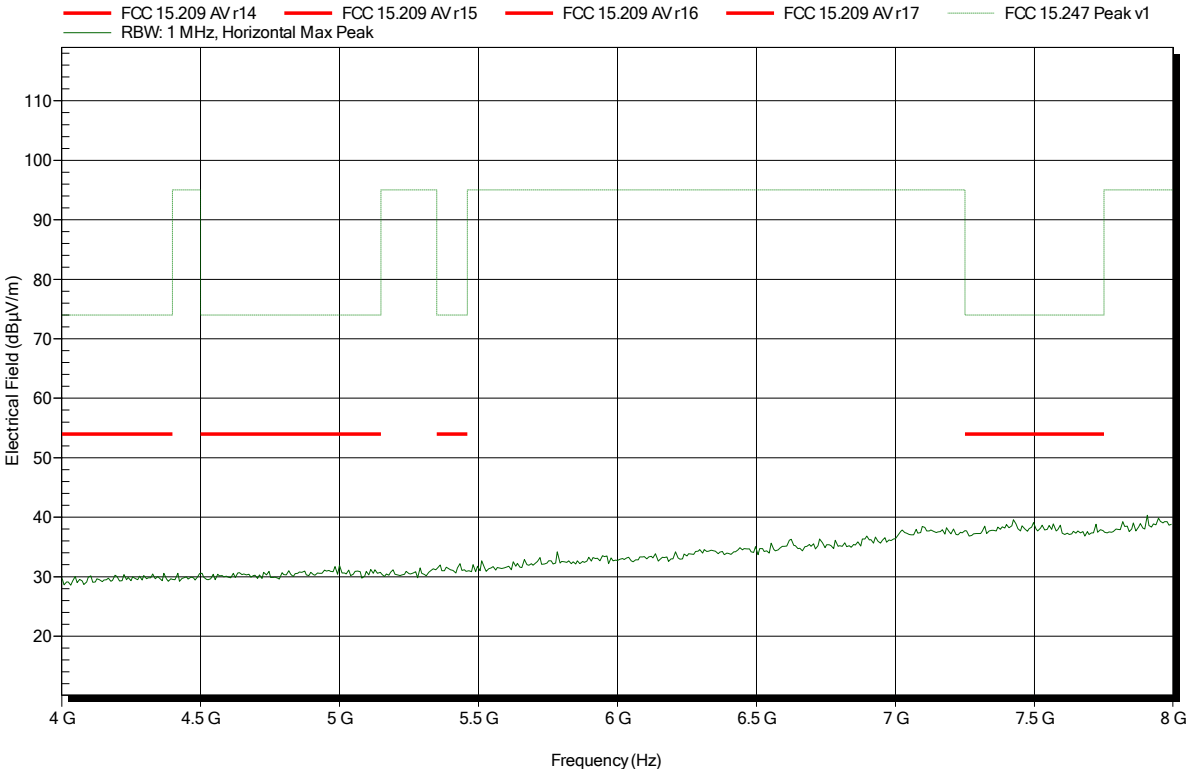

Spurious emissions according to FCC 15.247

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Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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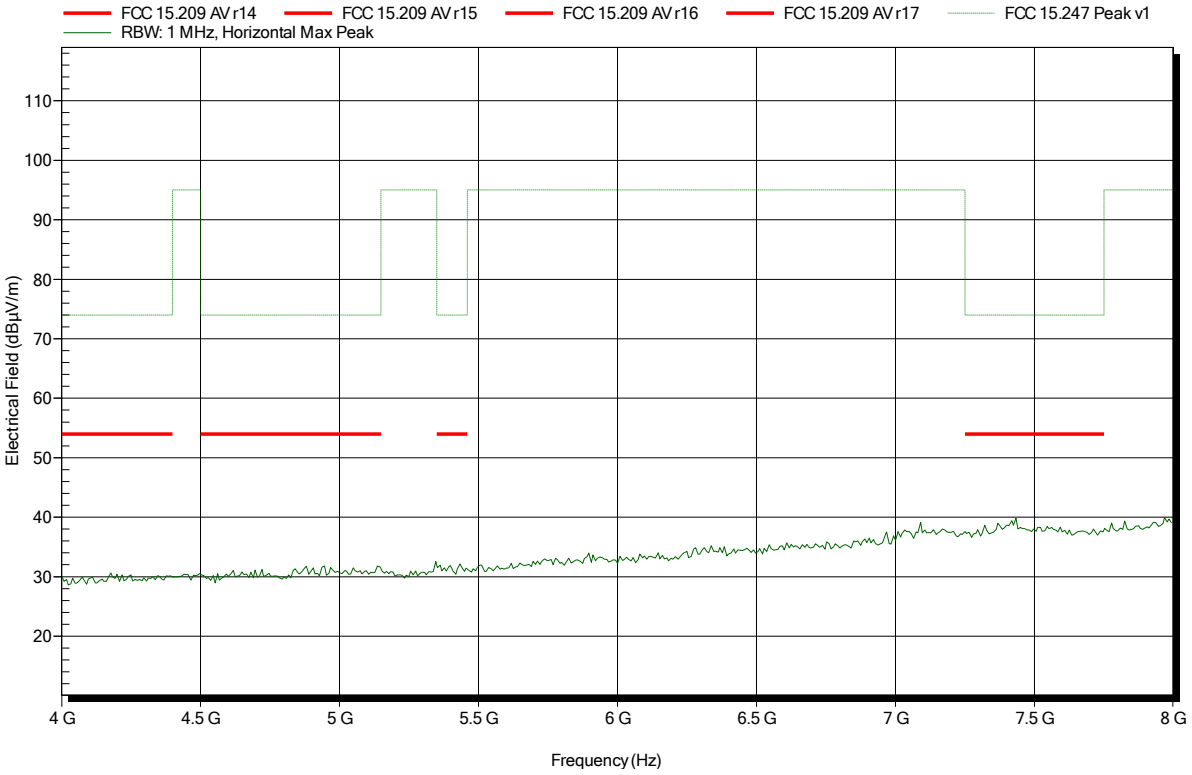

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

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EUT Name:	Ultrasonic water meter
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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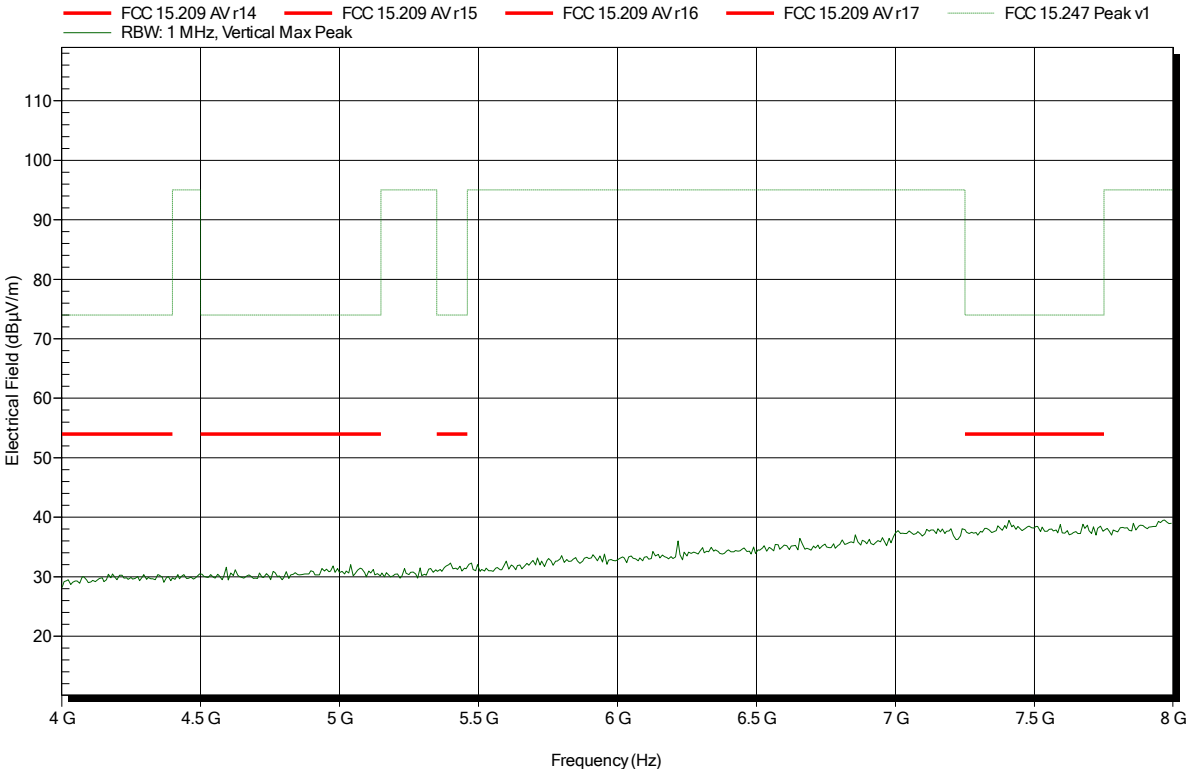

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

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Model:	FlowIQ 2250
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Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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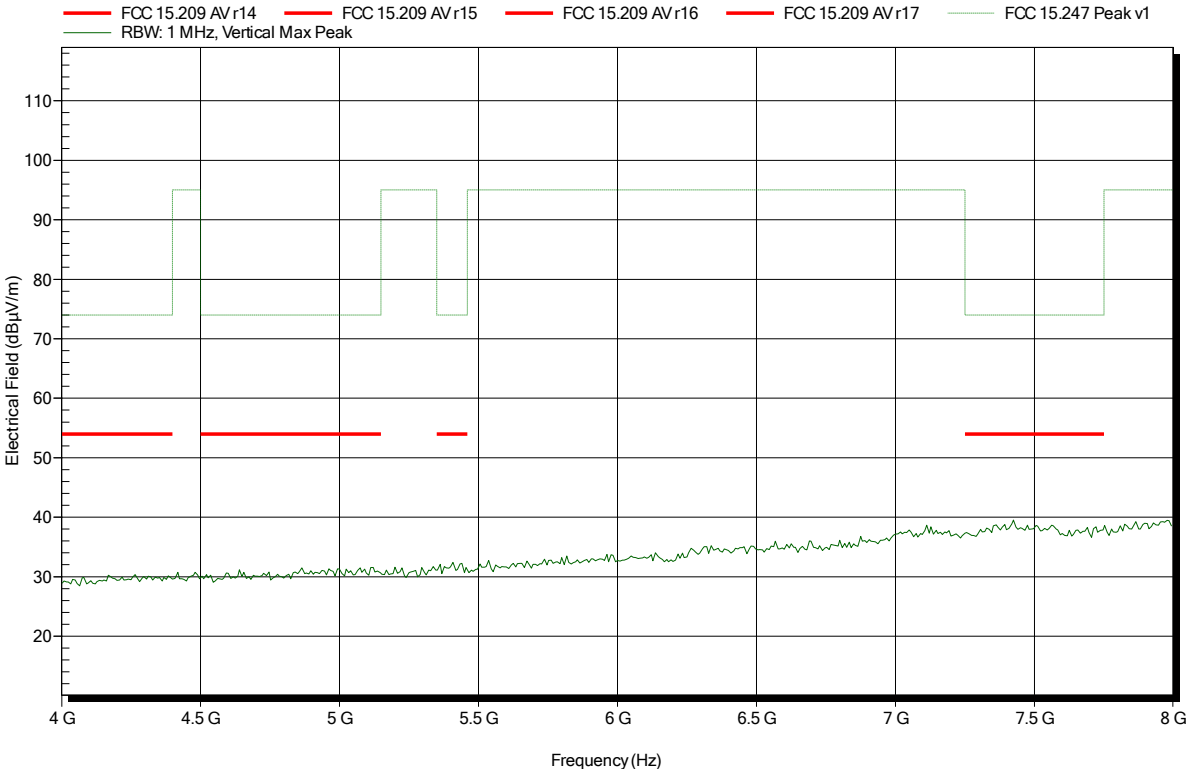

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Model:	FlowIQ 2250
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Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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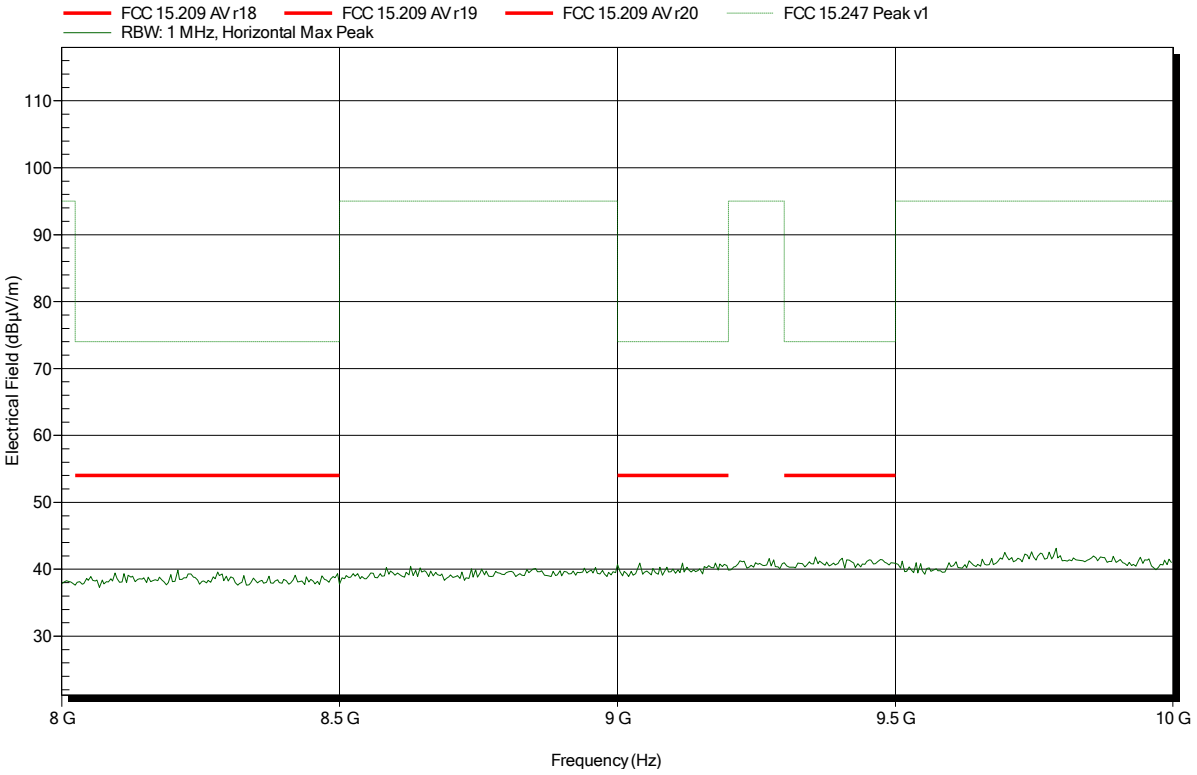

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

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Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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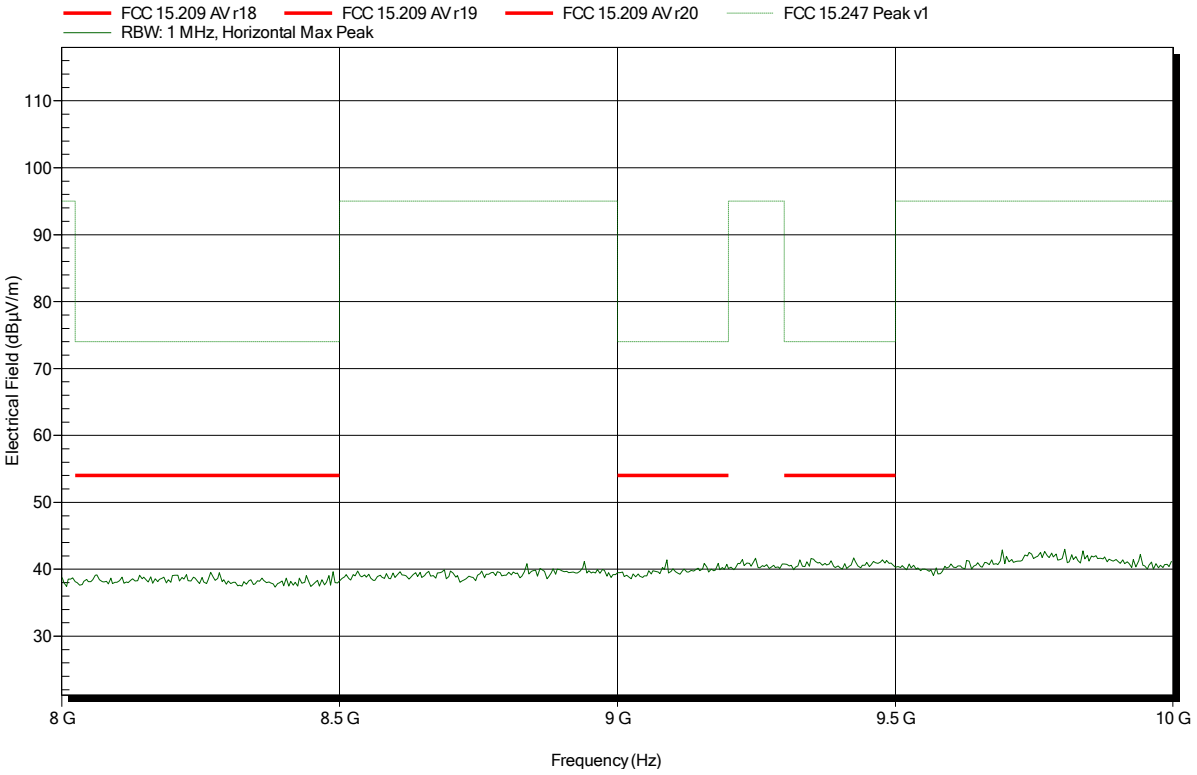

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-02-27
Note:	

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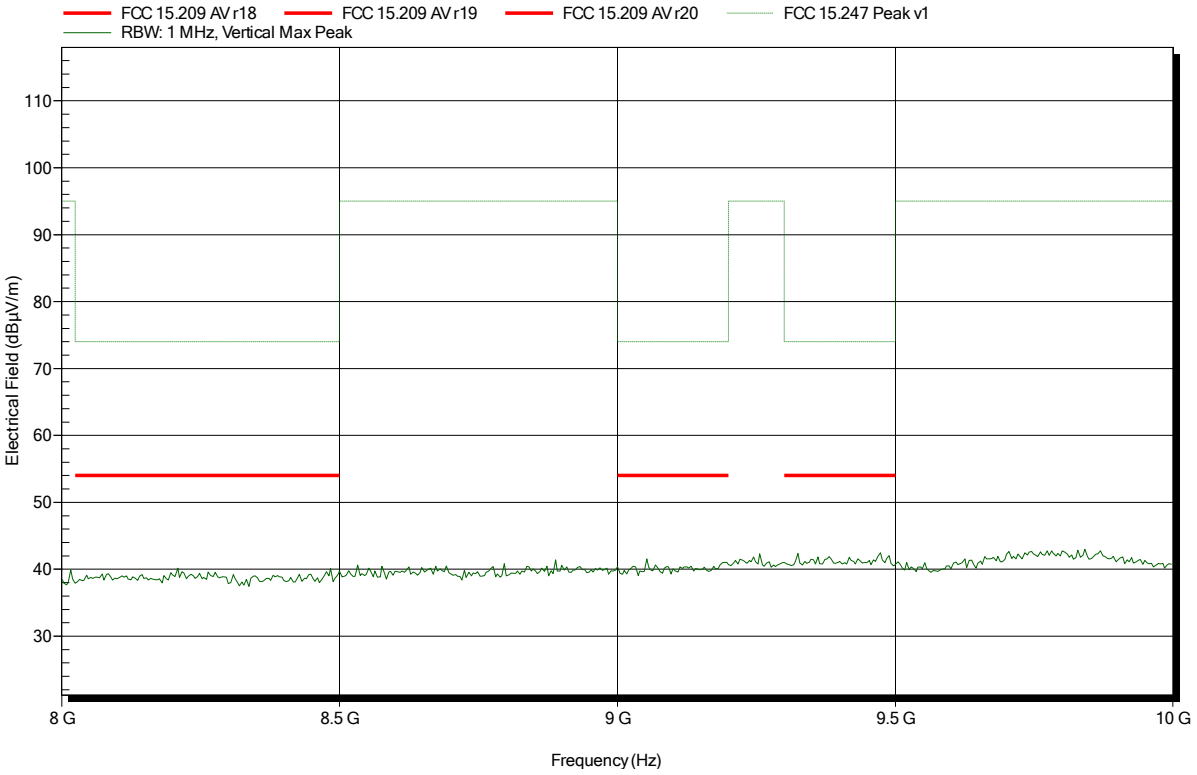

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-02-27
Note:	

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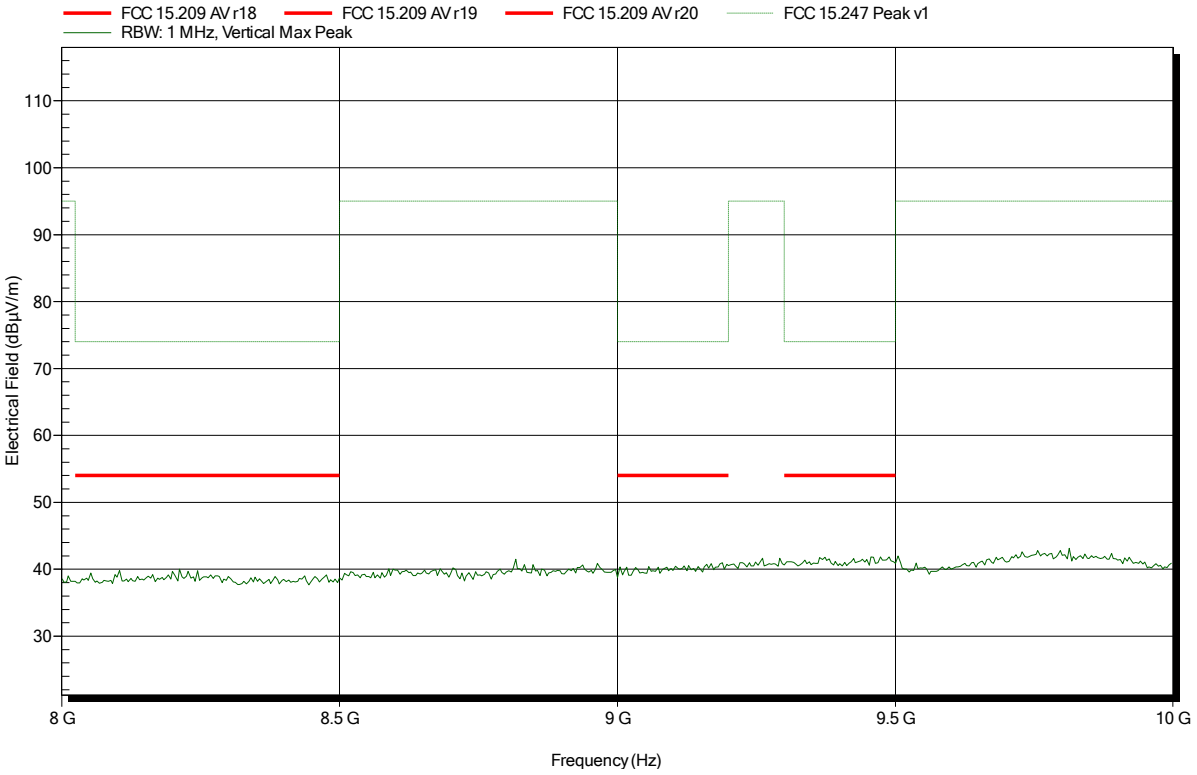

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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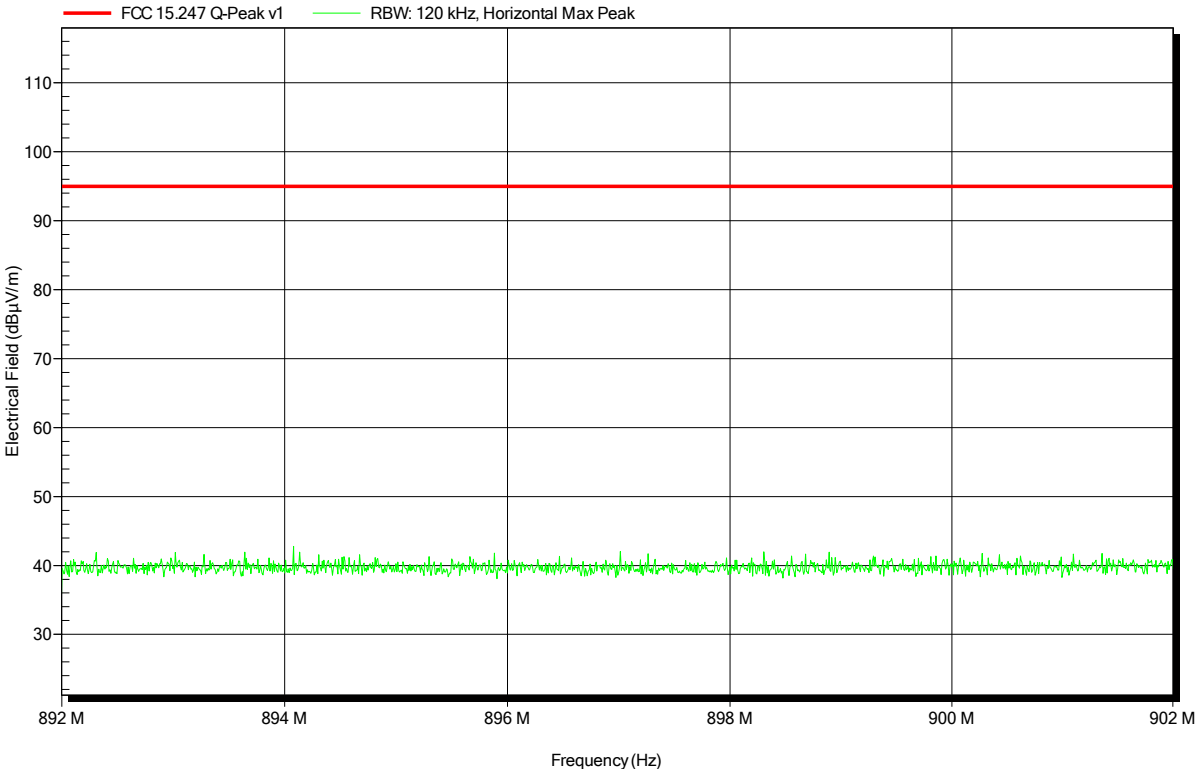

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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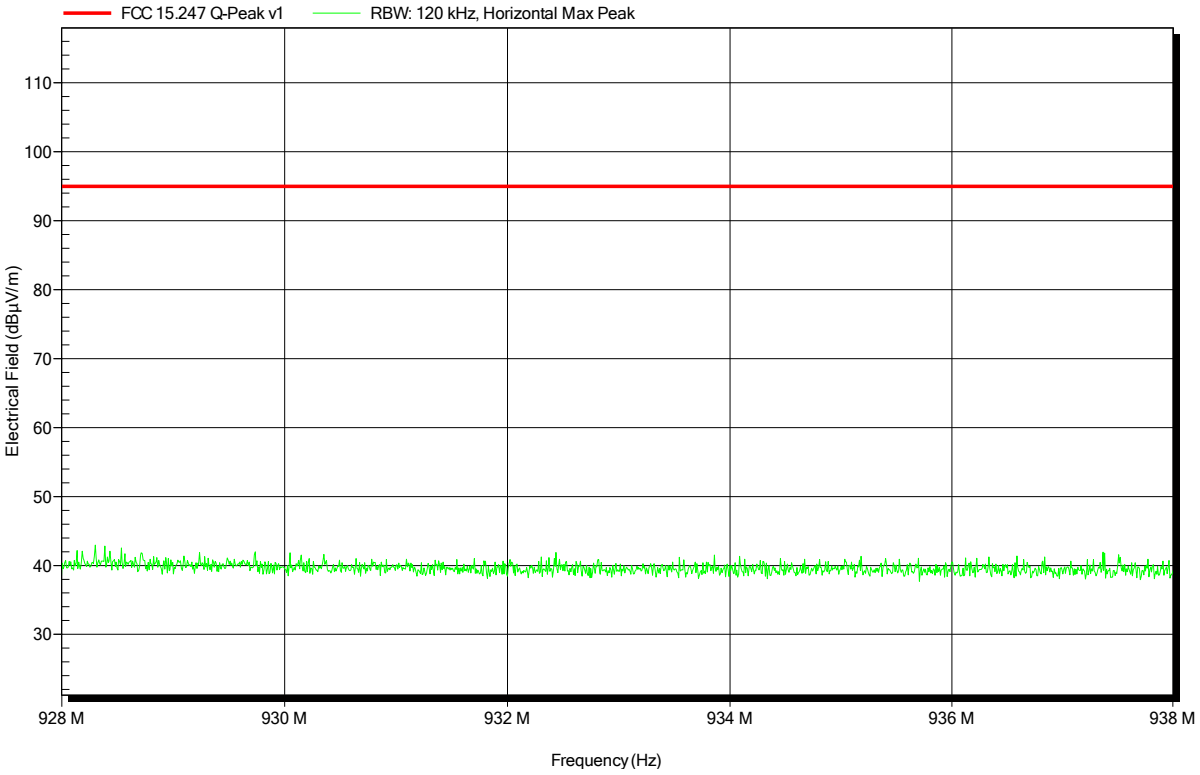

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 912.5 MHz
Test Date:	2017-03-01
Note:	

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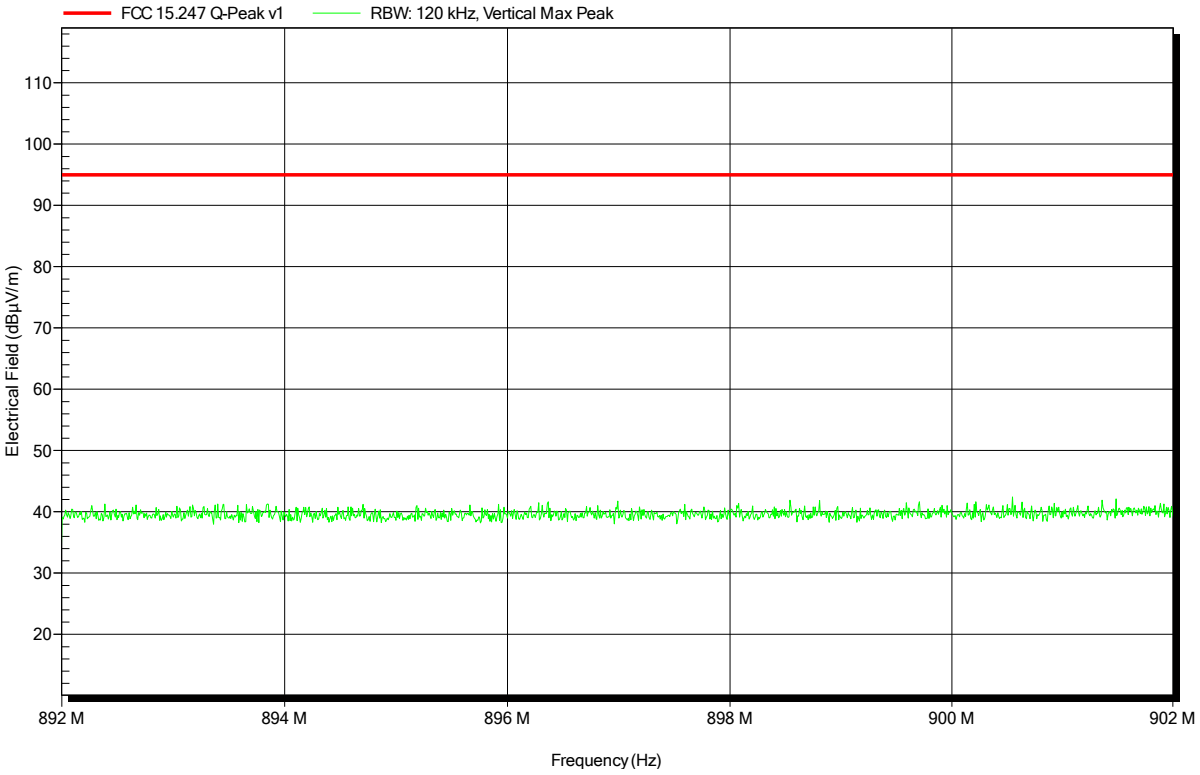

Spurious emissions according to FCC 15.247

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; Ant. 6699490; 918.5 MHz
Test Date:	2017-03-01
Note:	

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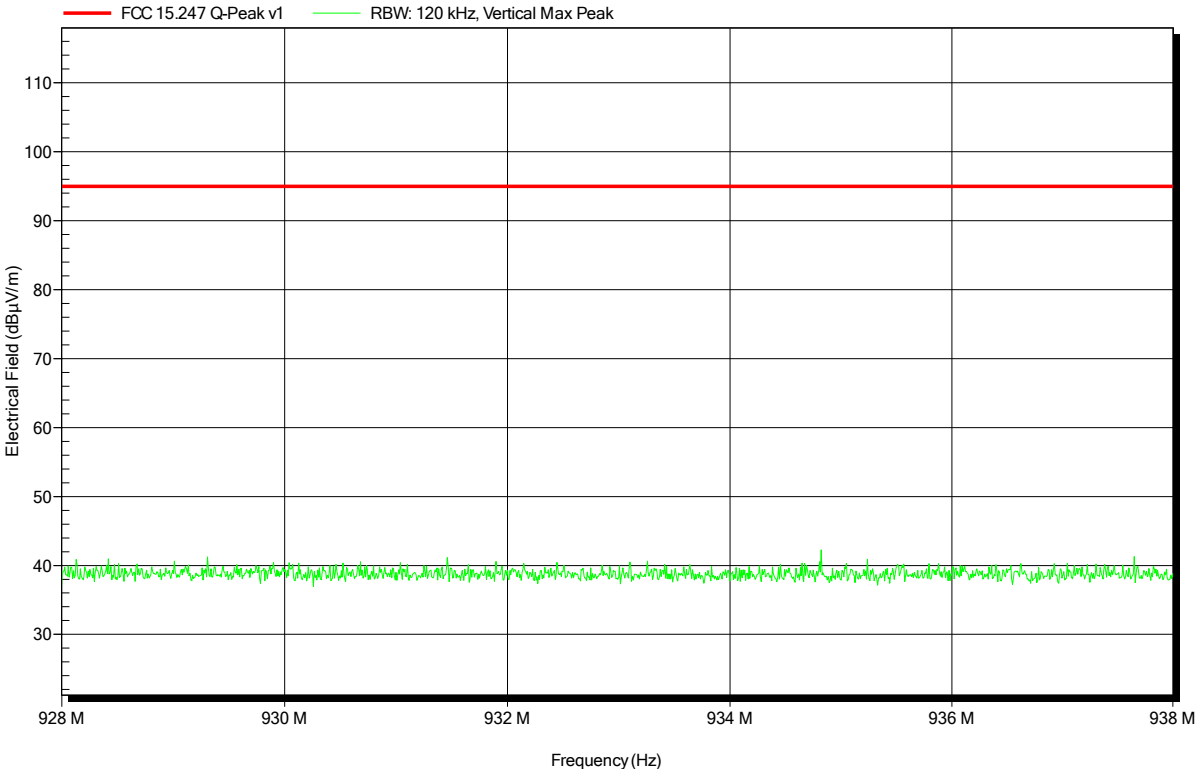

ANNEX B Receiver sprurious emissions

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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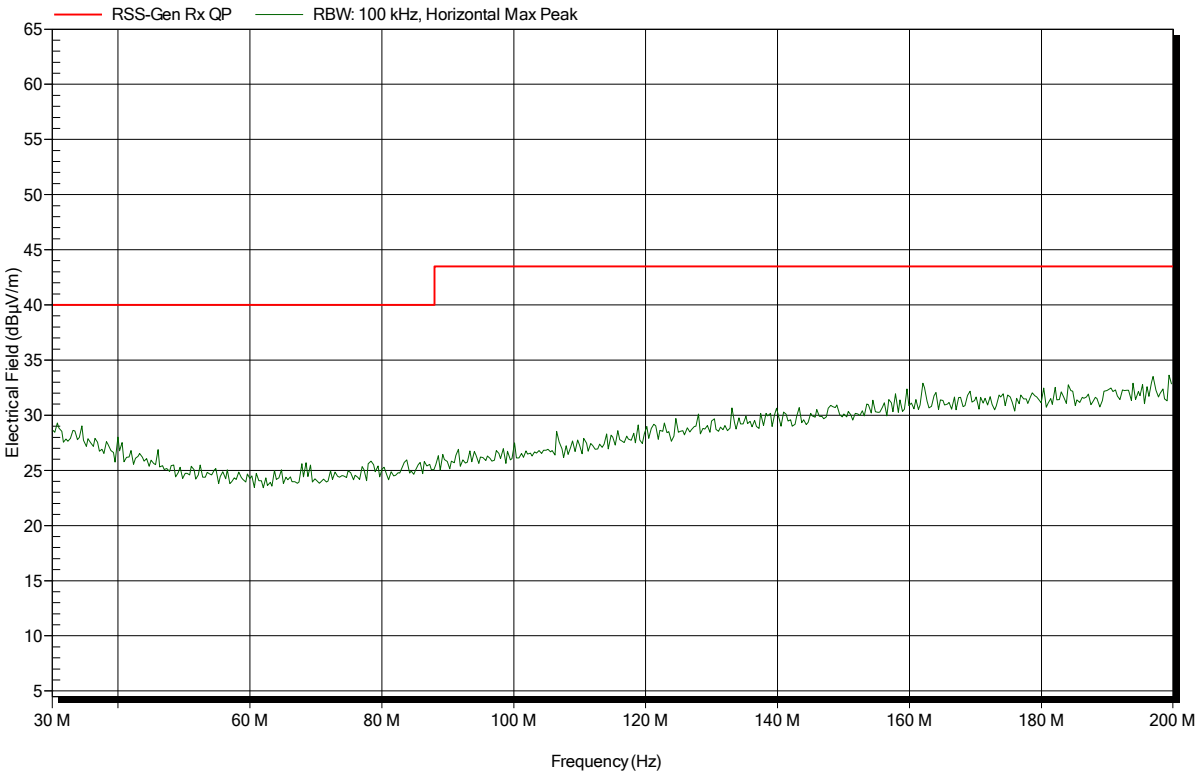

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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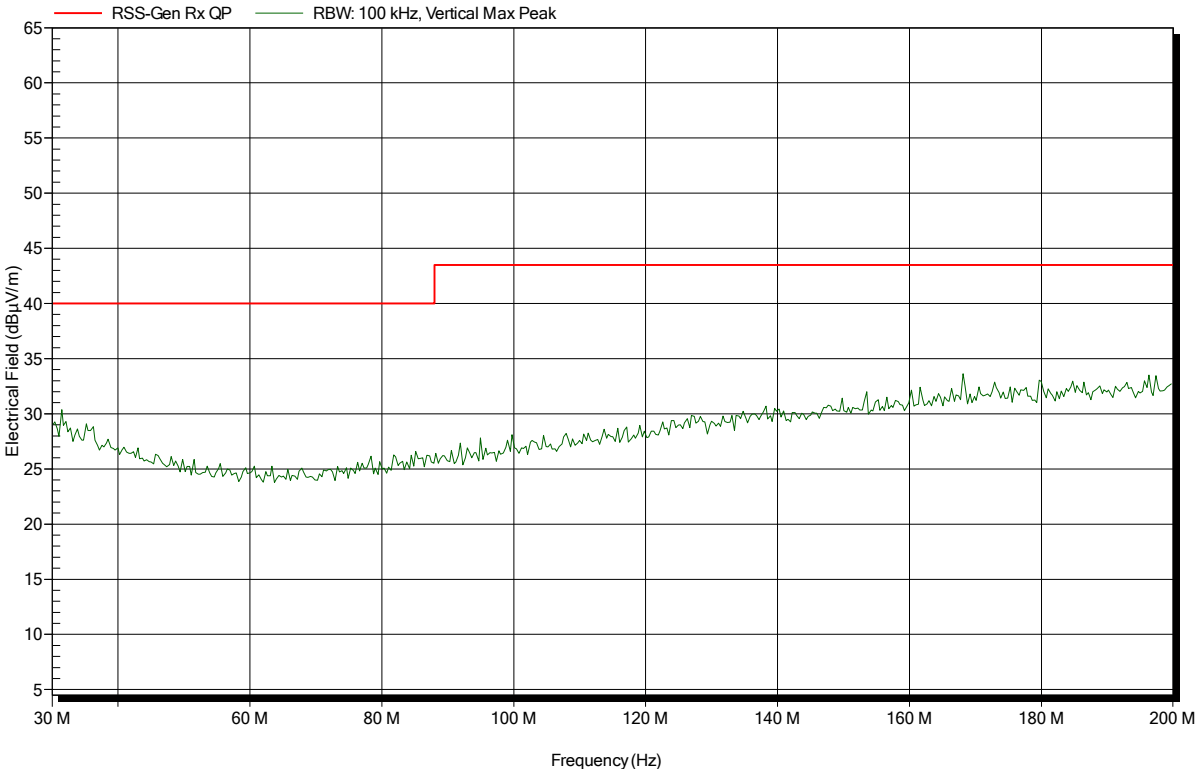

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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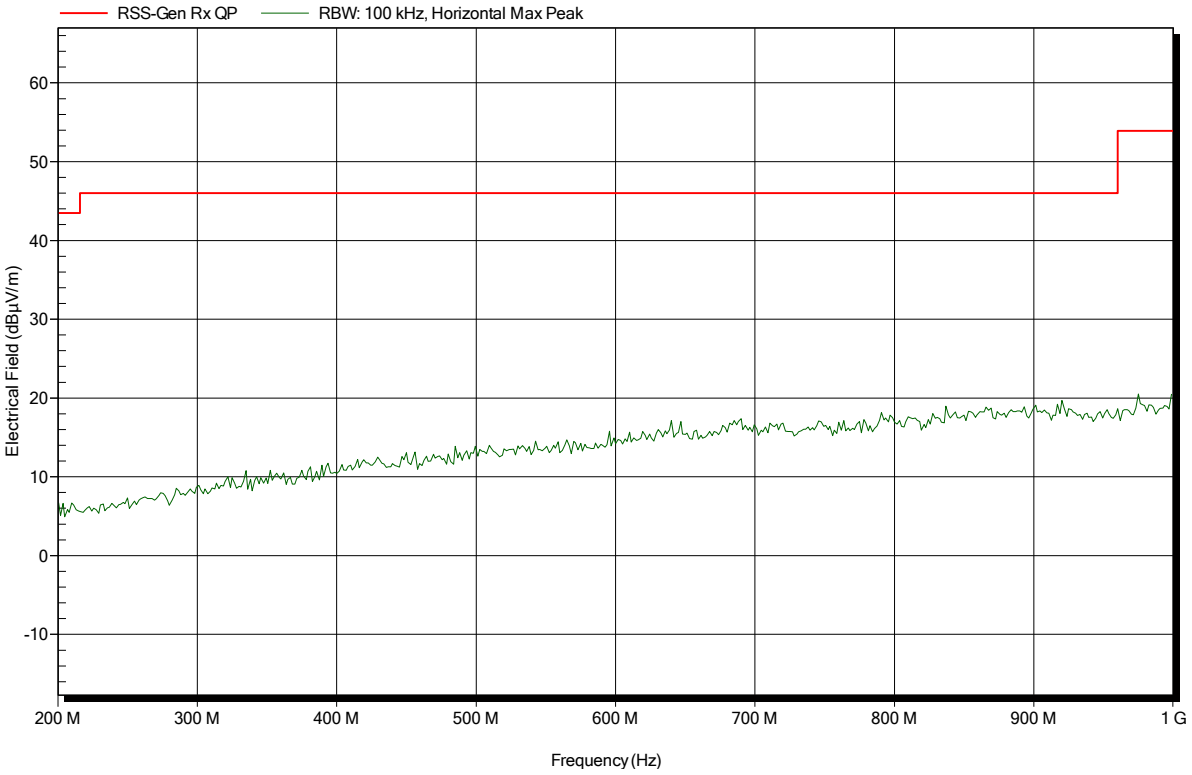

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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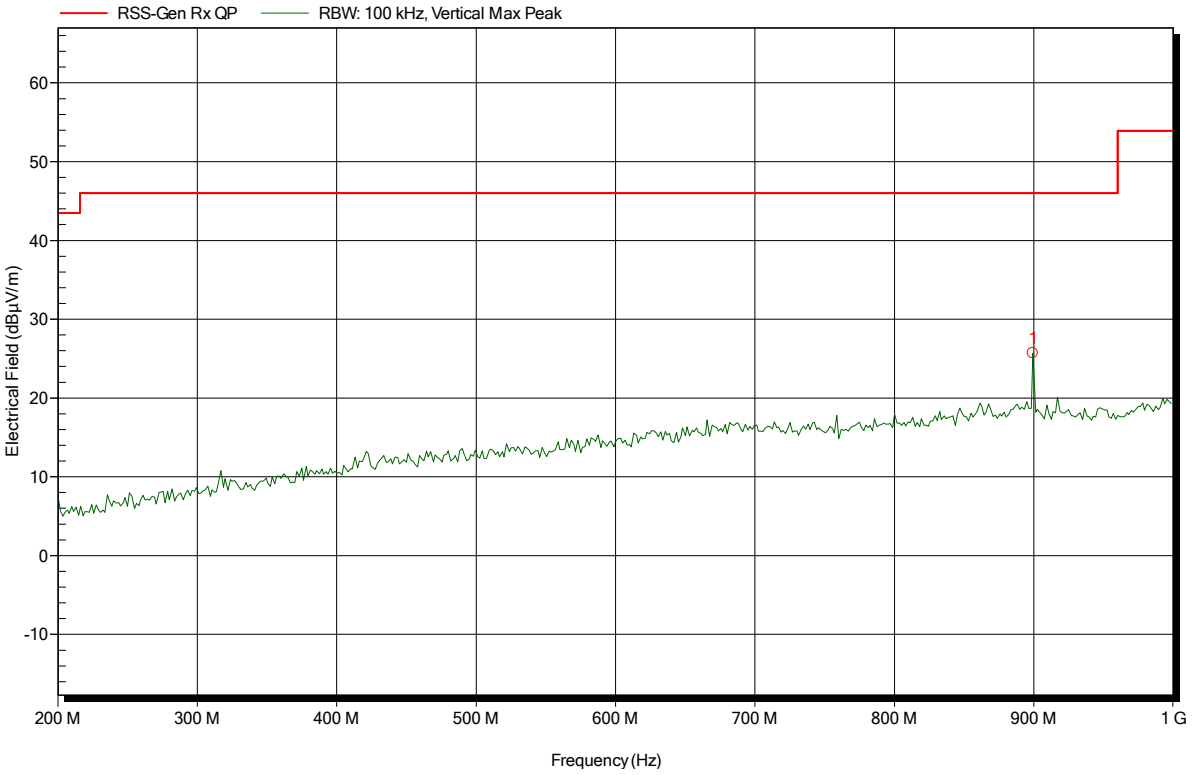

Frequency	Peak	Peak Limit	Peak Difference	Status
899.2 MHz	25.71 dBµV/m	46 dBµV/m	-20.29 dB	Pass

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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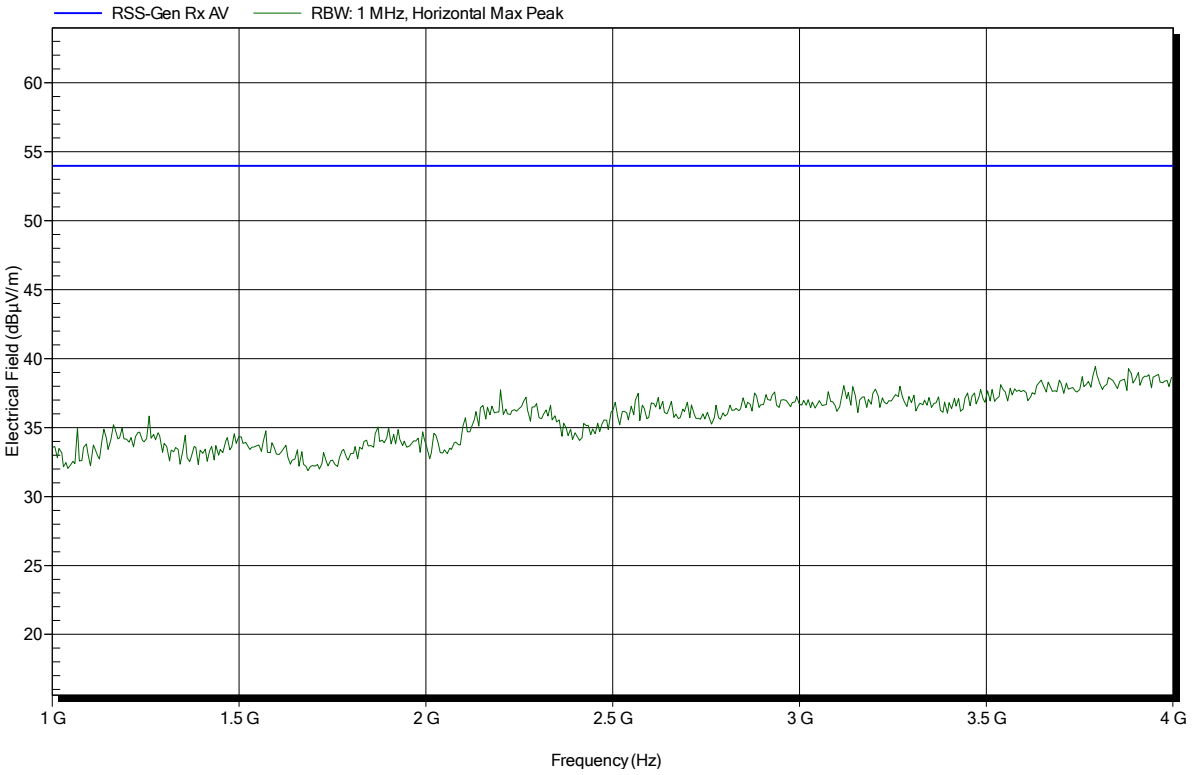

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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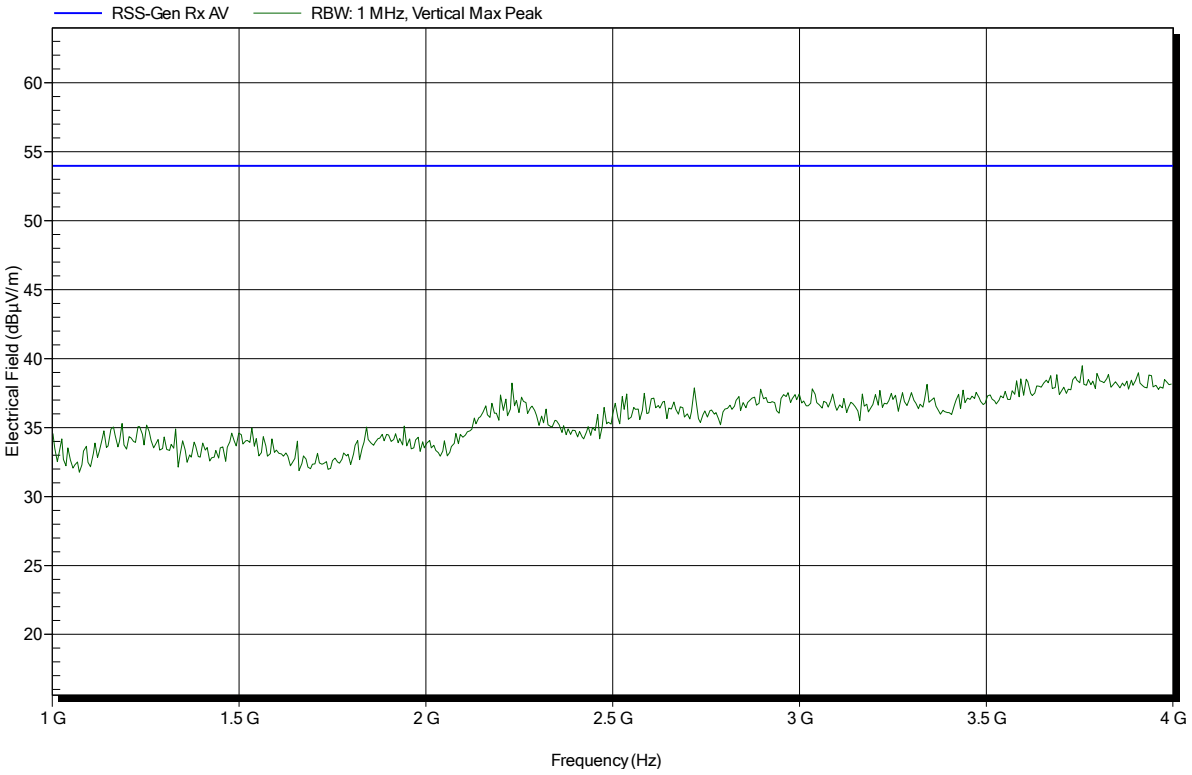

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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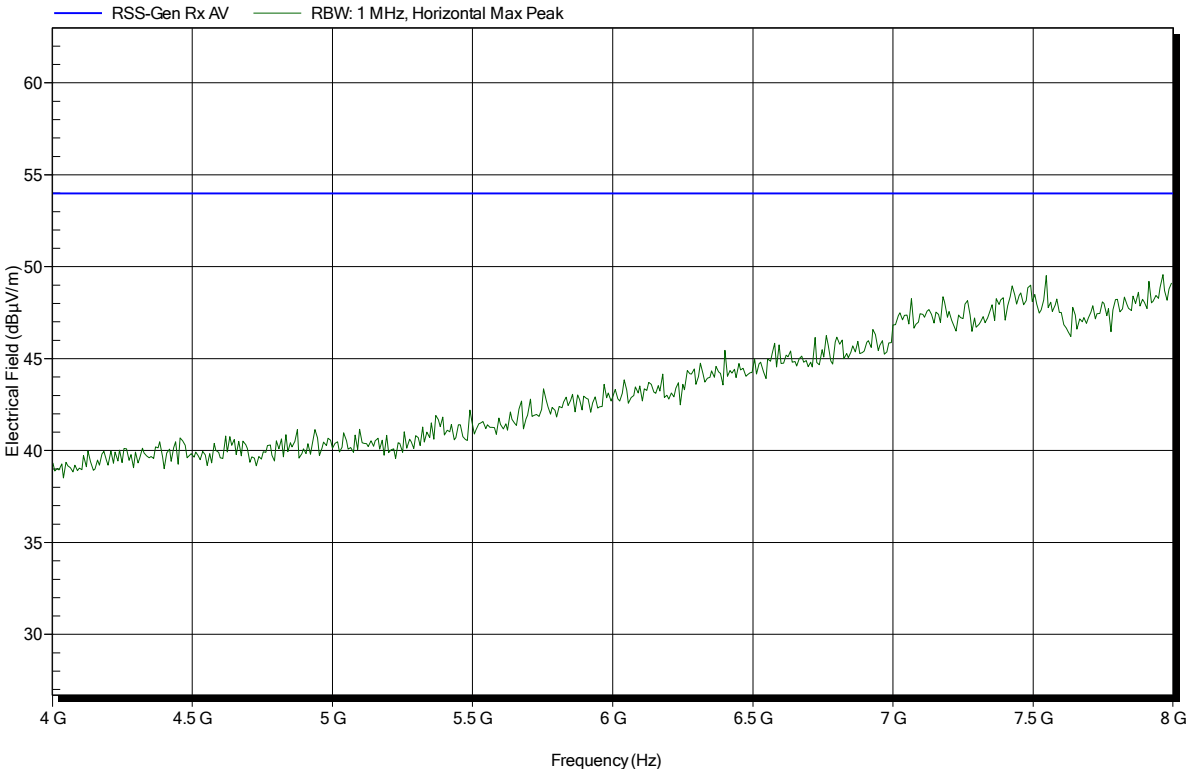

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 1653094; 915 MHz
Test Date:	2017-02-28
Note:	

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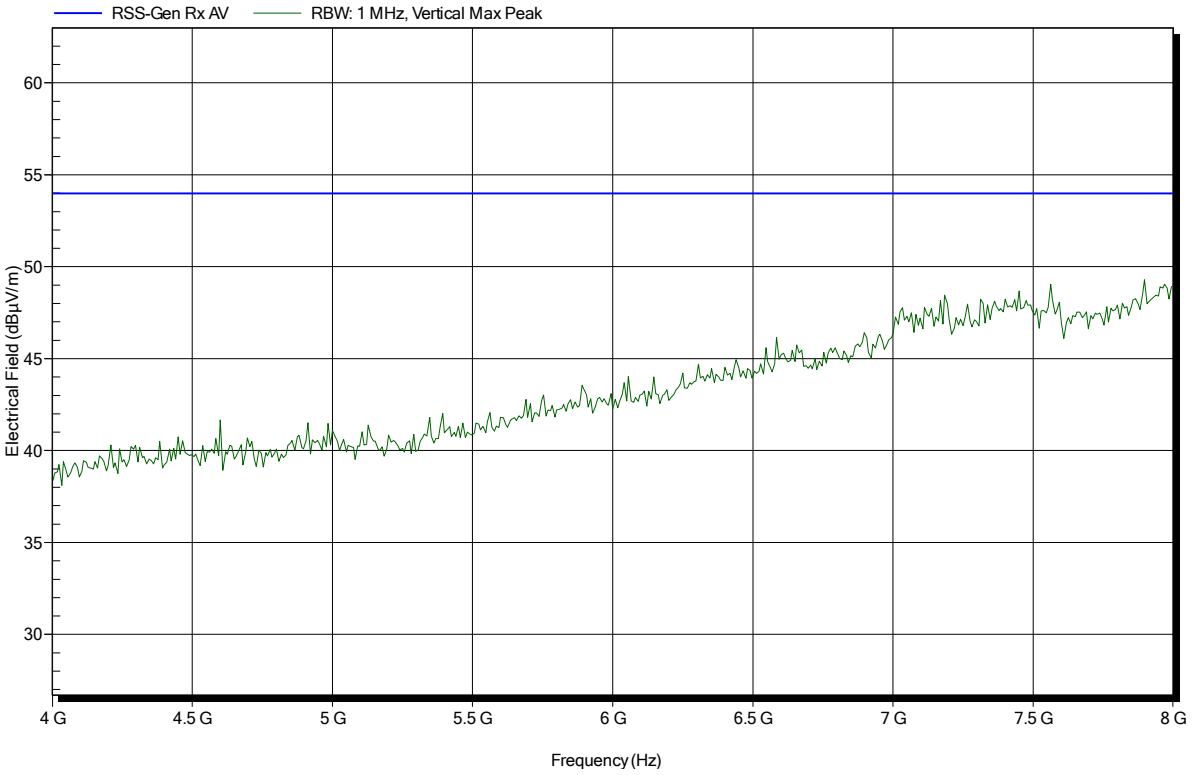

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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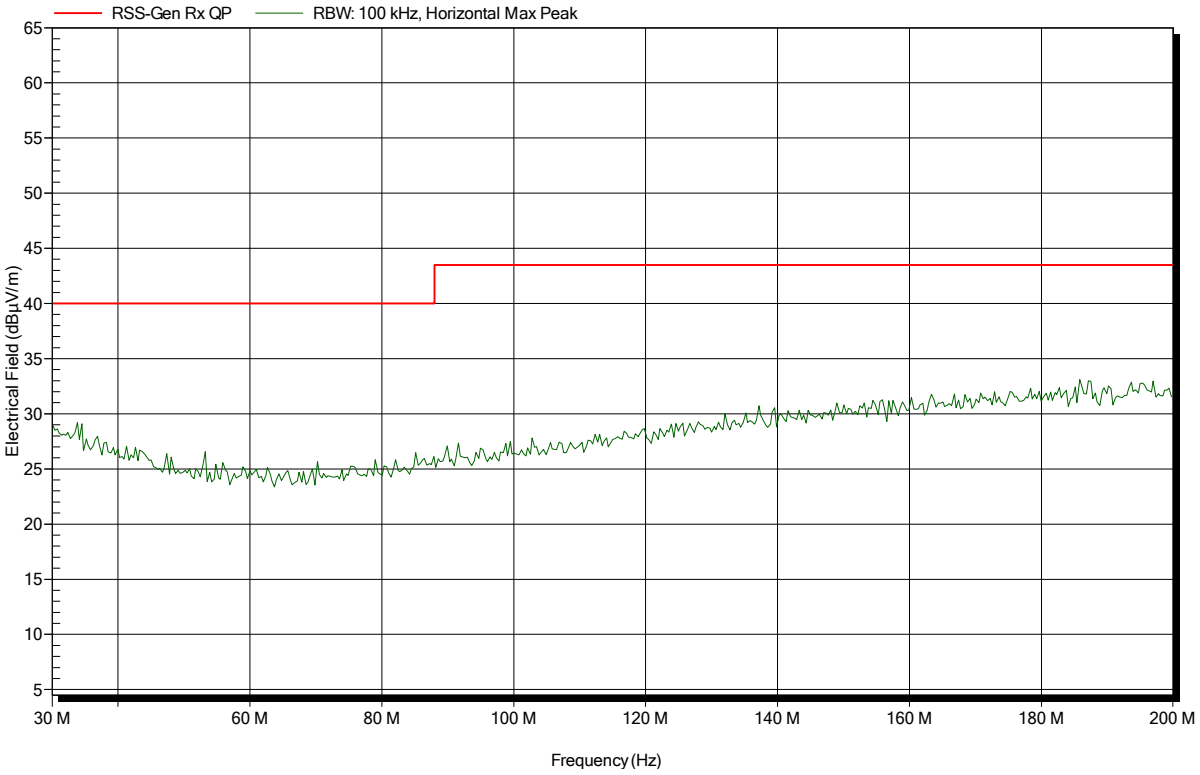

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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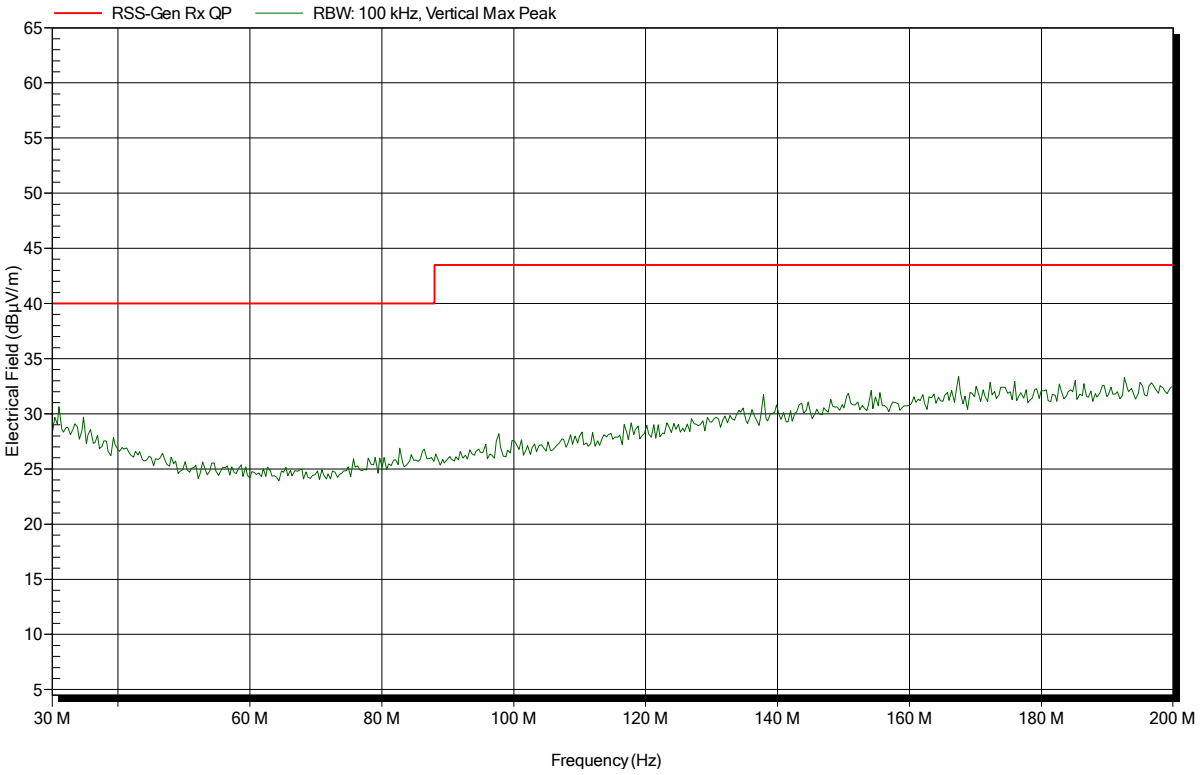

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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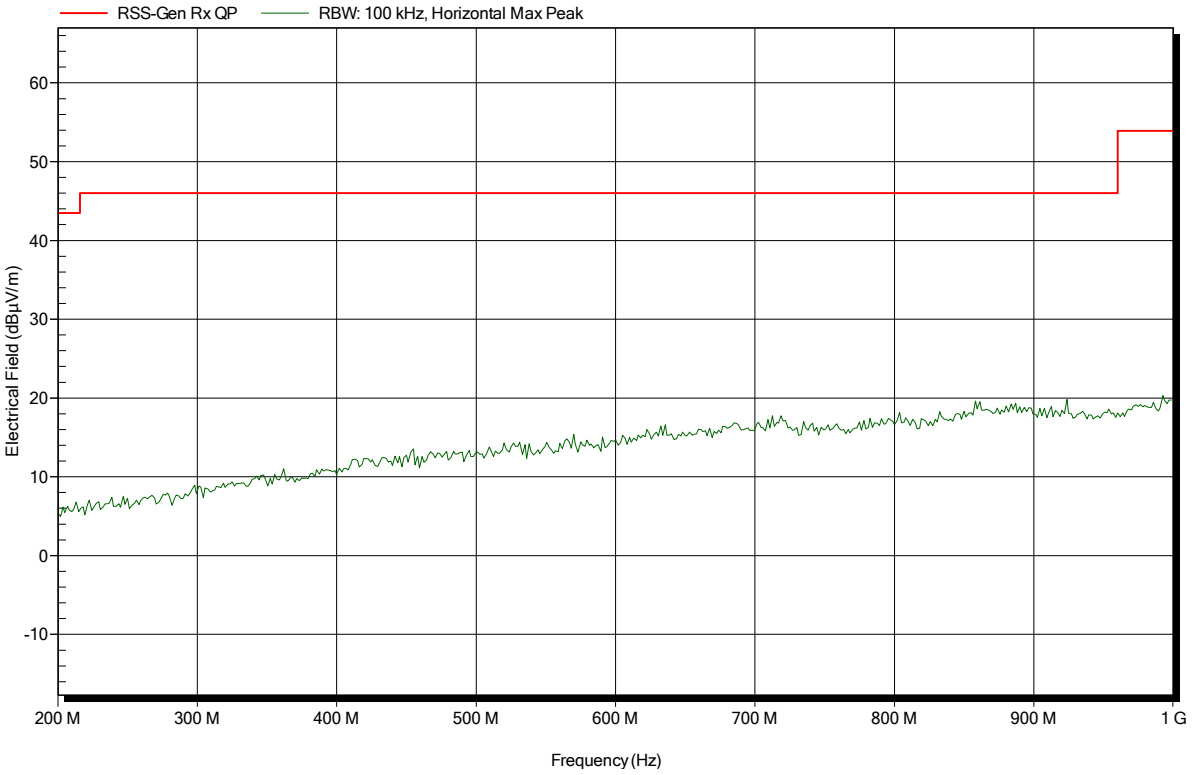

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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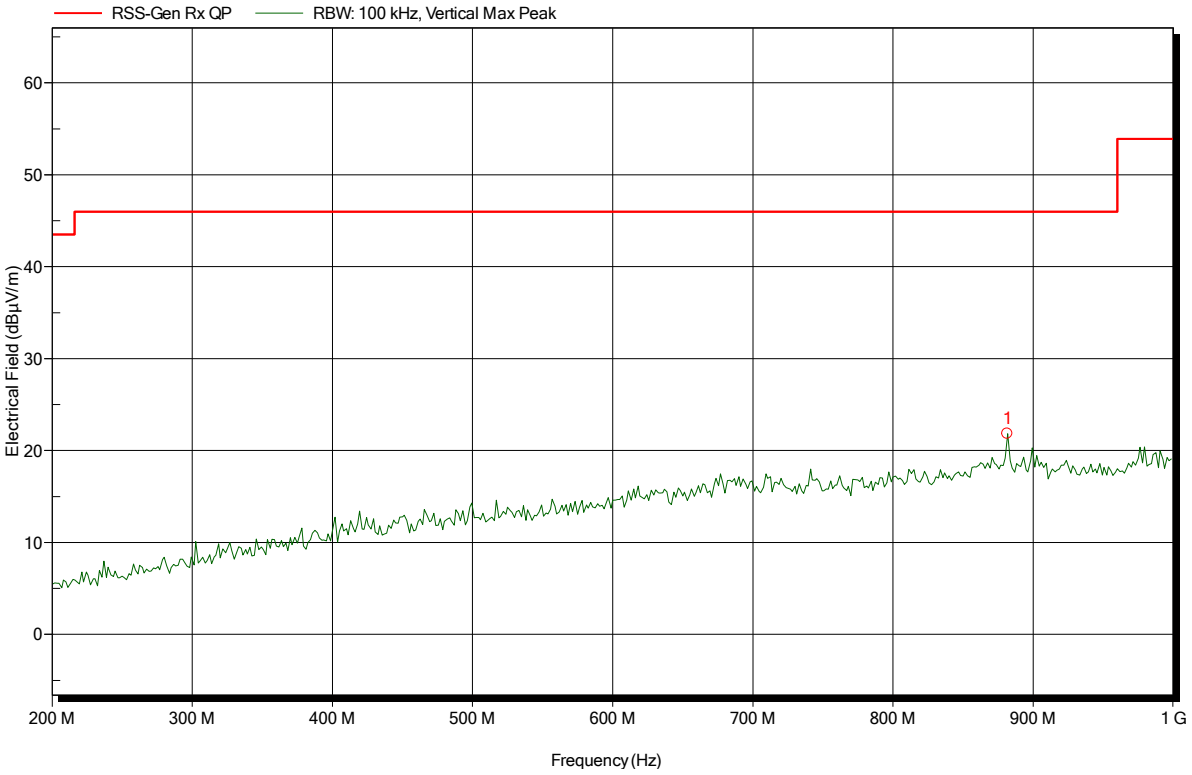

Frequency	Peak	Peak Limit	Peak Difference	Status
881.6 MHz	21.84 dBµV/m	46 dBµV/m	-24.16 dB	Pass

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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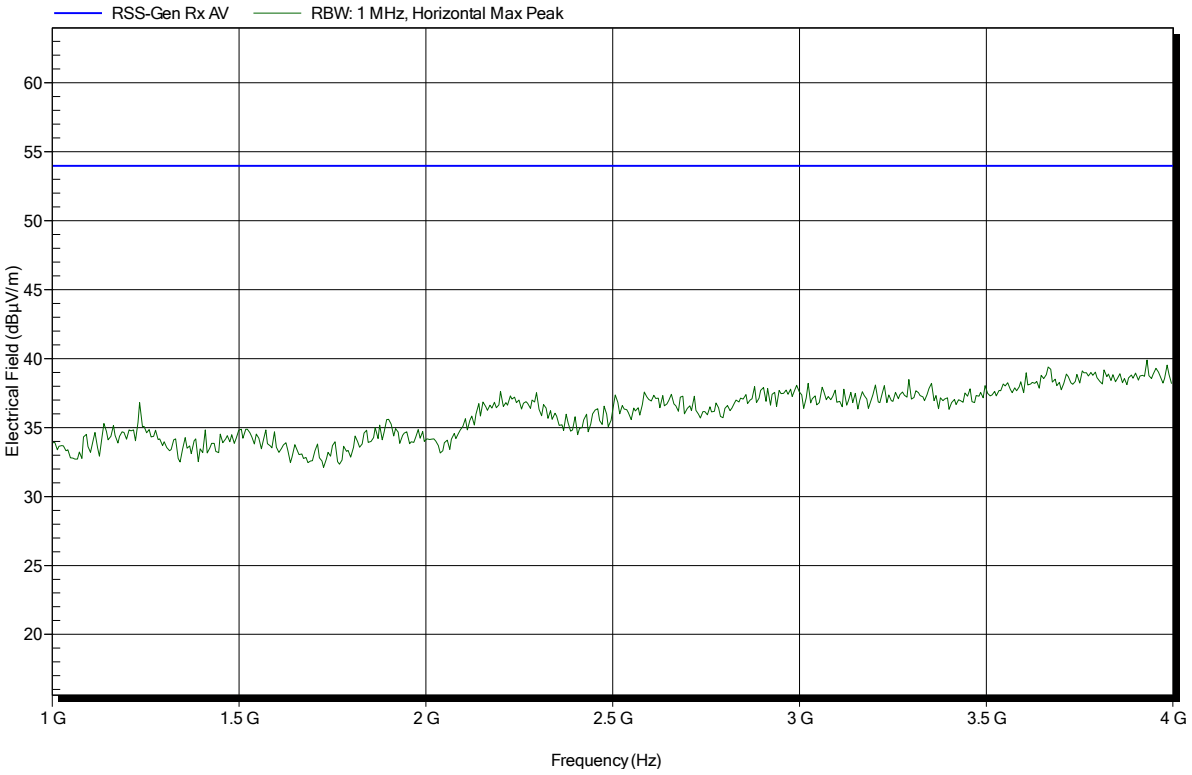

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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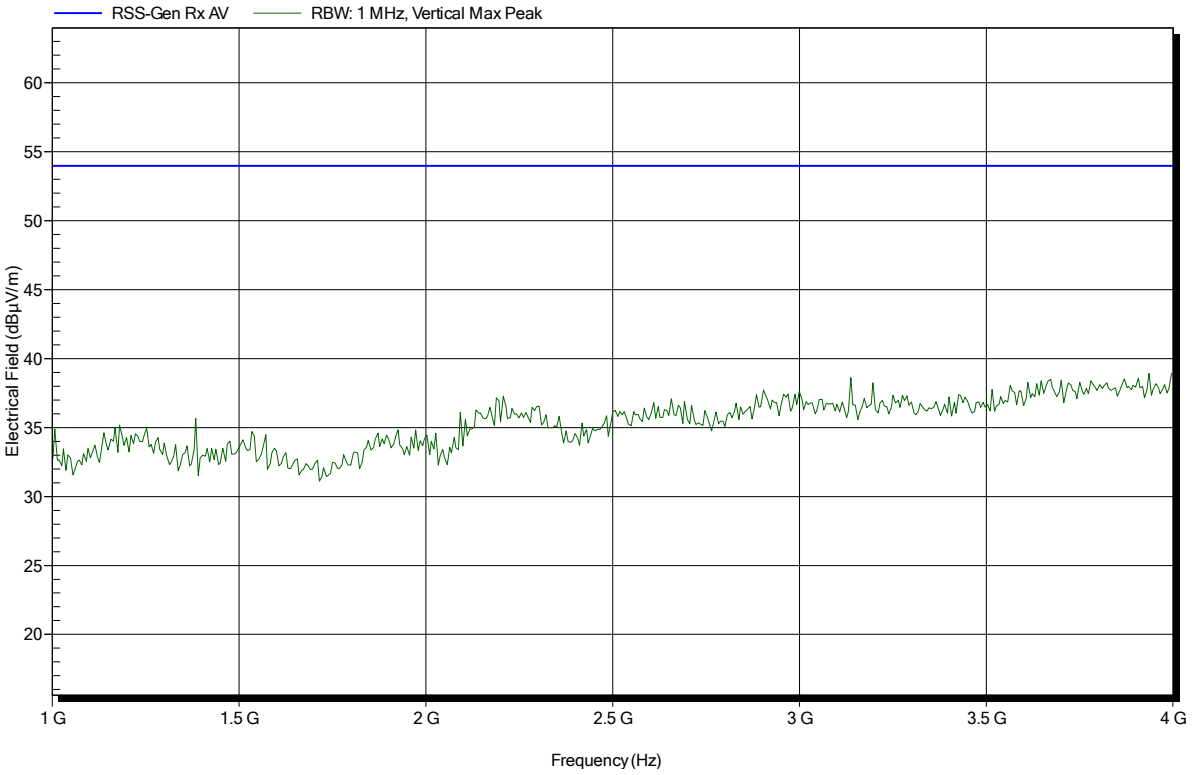

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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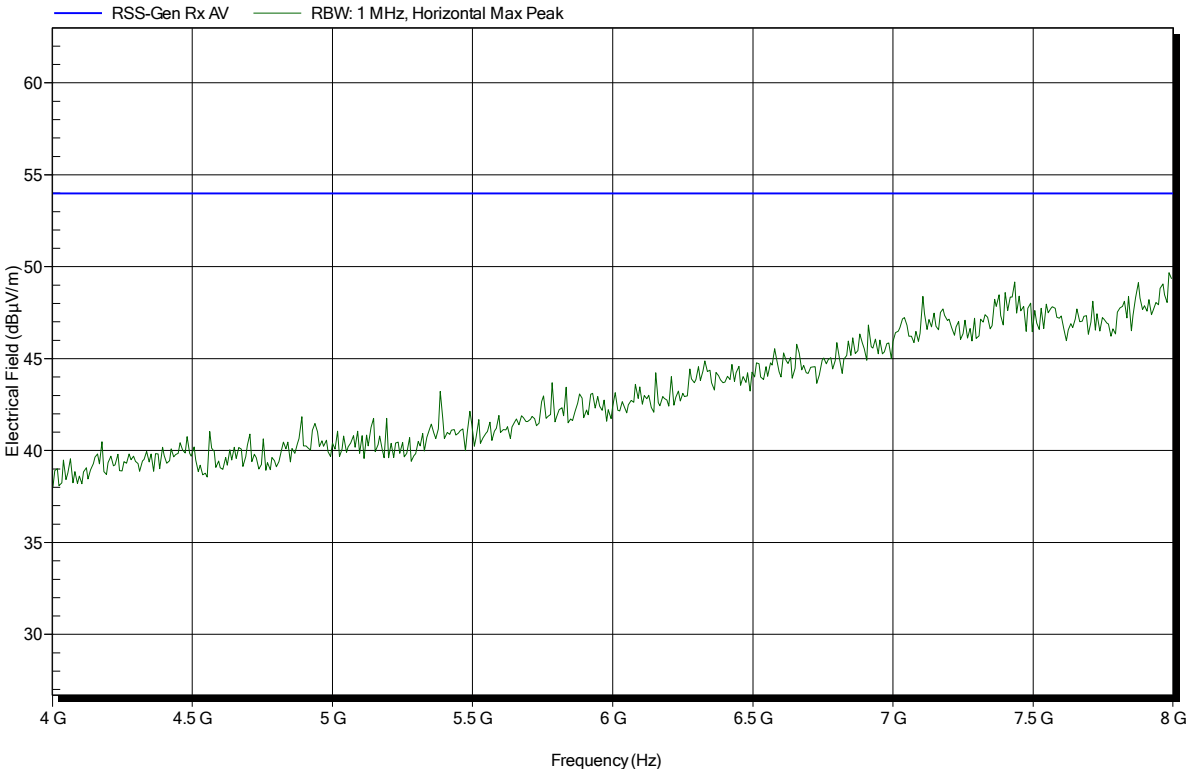

Spurious emissions according to RSS-247 Issue 1

Project number: G0M-1612-6135

Applicant:	Kamstrup A/S
EUT Name:	Ultrasonic water meter
Model:	FlowIQ 2250
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 20°C, Vnom: 3.6 VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Rx; Ant. 6699490; 915 MHz
Test Date:	2017-02-28
Note:	

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