RADIO REPORT

FCC 47 CFR Part 15C
ISED Canada RSS-247

Frequency hopping systems operating within the 902.0 MHz - 928.0 MHz band

Report Reference No	G0M-2004-8955-TFC247FH C2P-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	HBC-radiomatic GmbH
Address	Haller Str. 45-53 74564 Crailsheim GERMANY
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	Radio module for industrial application
Model(s)	TC792.1
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	TC792110
Software Version(s)	SC107001
FCC ID	NO9TC792-1
IC	2977A-TC7921
Test Result	**PASSED**

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of receipt of test item	2021-01-04	
Report:		
Compiled by	Wilfried Treffke	
Tested by (+ signature) (Responsible for Test)	Wilfried Treffke	W. Treffke .....
Approved by (+ signature) (Deputy Head of Lab)	Toralf Jahn	T. J .....
Date of Issue	2021-01-22	
Total number of pages	98	
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:		
Class 2 Permissive Change (module report G0M-2004-8955-TFC247FH-V01) Two additional antennas listed, antenna 1 (MU 911-LX) and antenna 2 (CXL 900-1)		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2021-01-22	Initial Release	

ABBREVIATIONS AND ACRONYMS

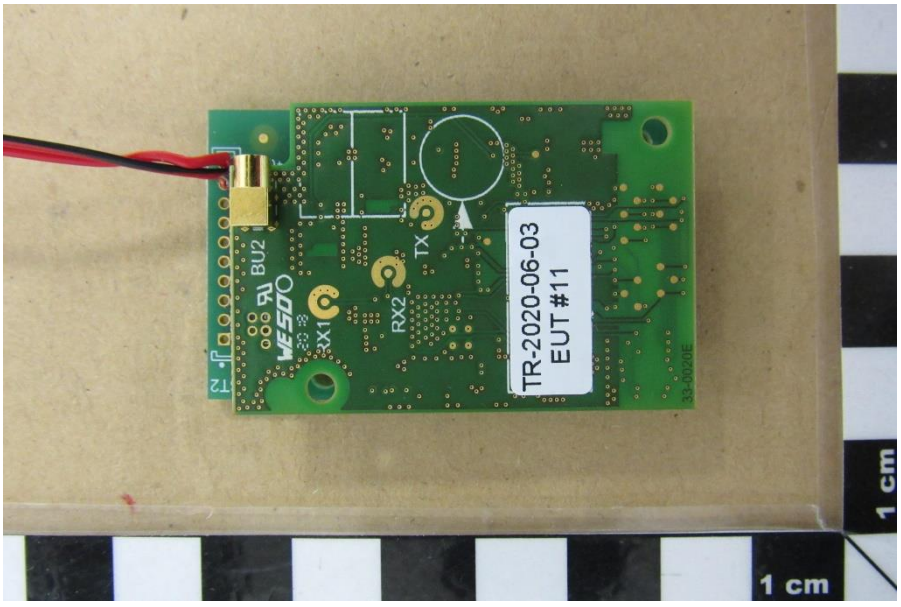
Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V_{NOM}	Nominal supply voltage

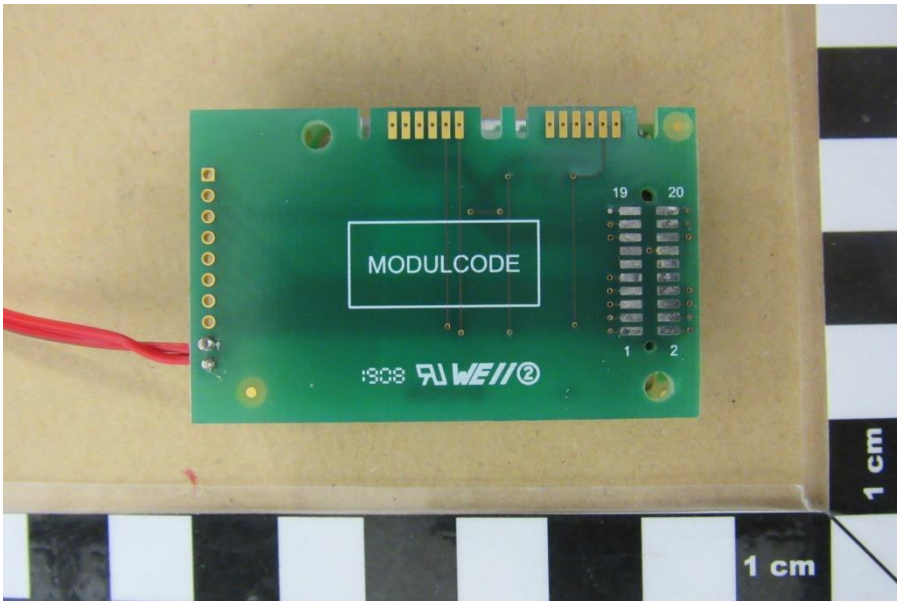
REPORT INDEX

1 Equipment (Test Item) Under Test

Description	Radio module for industrial application	
Model	TC792.1	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	# 11 Test Sample ID 30914	
Hardware Version(s)	TC792110	
Software Version(s)	SC107001	
PMN	TC792.1	
HVIN	TC792.1	
FVIN	N/A	
HMN	N/A	
FCC ID	NO9TC792-1	
IC	2977A-TC7921	
Equipment type	Radio Module	
Radio type	Transceiver	
Assigned frequency bands	902.0 MHz - 928.0 MHz	
Radio technology	FHSS	
Modulation	GFSK	
Number of antenna ports	1	
Radio Module	Type	Radio module for industrial application
	Model	TC792.1
	Manufacturer	HBC-radiomatic GmbH
	HW Version	TC792110
	SW Version	SC107001
Antenna 1	Type	External dedicated, Monopole
	Model	MU 911-LX
	Manufacturer	Procom
	Gain	6.0 dBi
Antenna 2	Type	External dedicated, λ/2 dipole
	Model	CXL 900-1
	Manufacturer	Procom
	Gain	2.15 dBi
Supply Voltage	V_{NOM}	3.6 VDC
Operating Temperature	T_{NOM}	20 °C
AC/DC-Adaptor	Model	None
Manufacturer	HBC-radiomatic GmbH Haller Str. 45-53 74564 Crailsheim GERMANY	

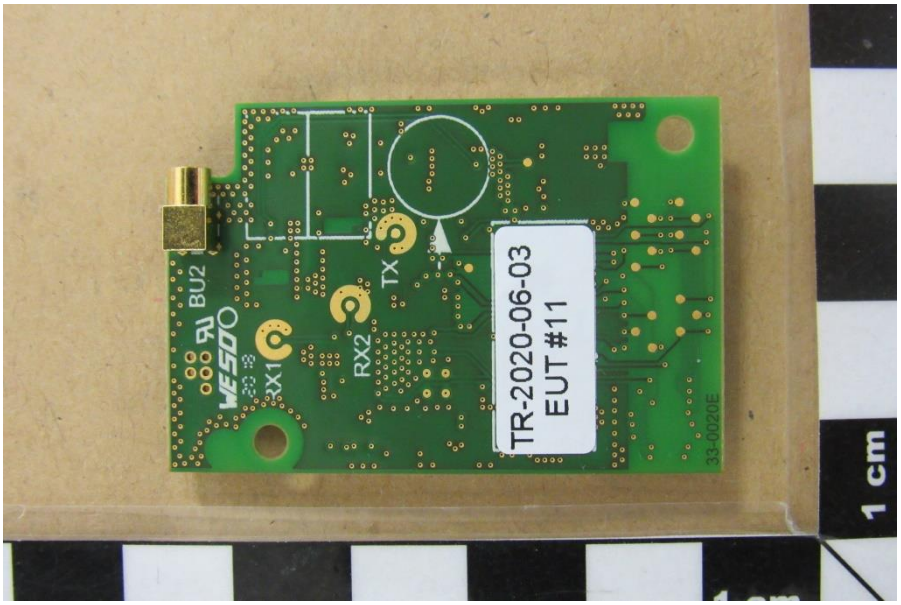
1.1 Photos – Equipment External

EUT with Evaluation Board Top View


EUT with Evaluation Board Bottom View


EUT Top View

EUT Bottom View



Antenna Monopole MU 911-LX Overview

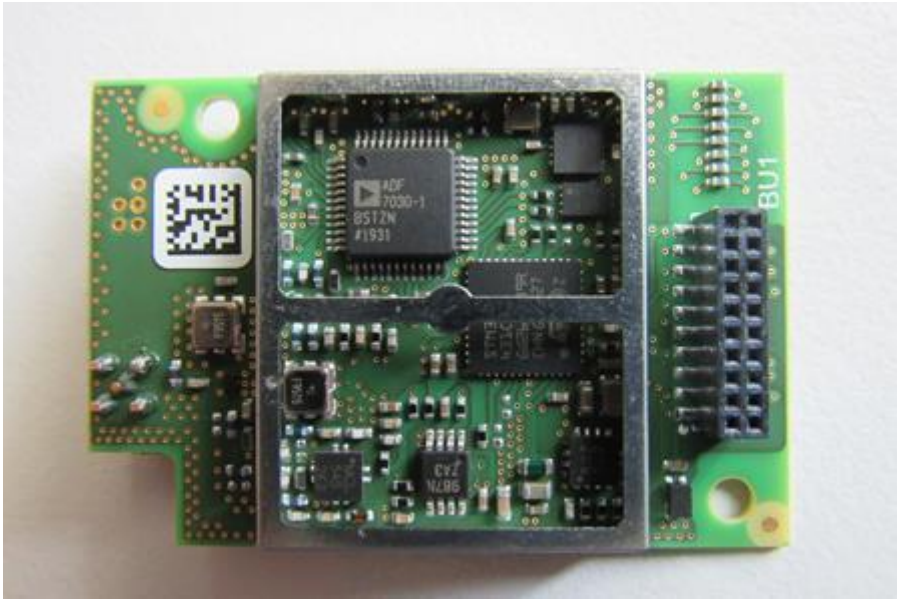

Antenna Monopole MU 911-LX


Antenna λ/2 dipole CXL 900-1 Overview

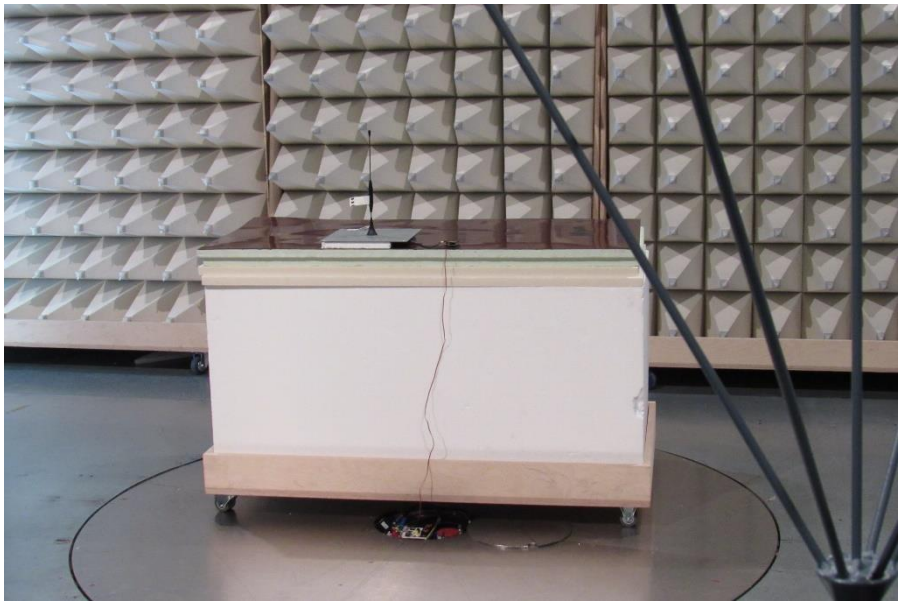

Antenna λ/2 dipole CXL 900-1

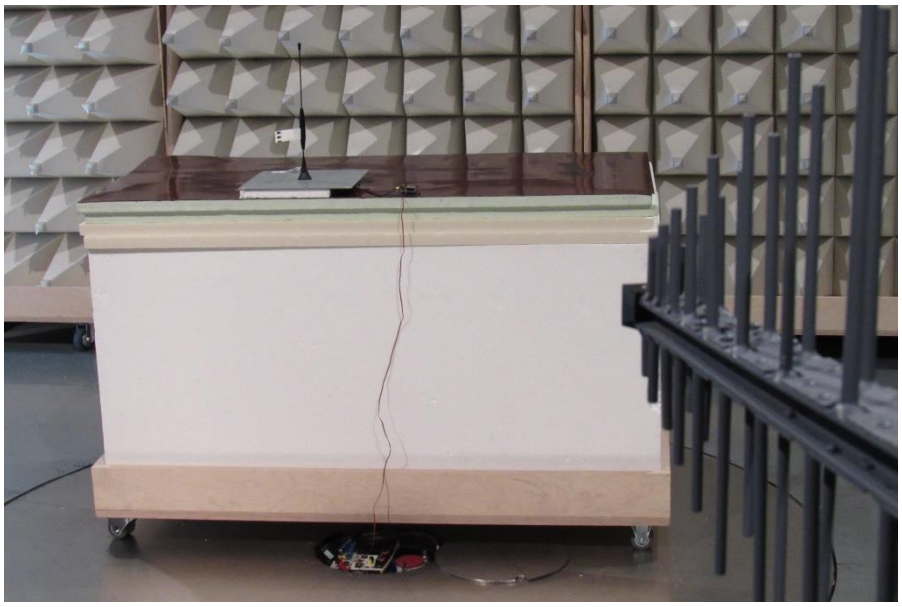

Antenna λ/2 dipole CXL 900-1 Label


1.2 Photos – Equipment Internal

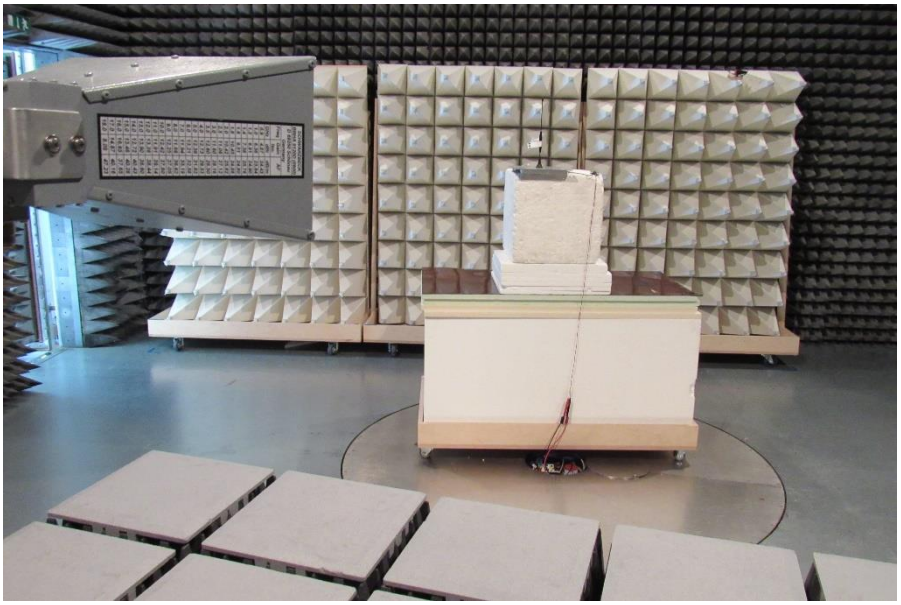
EUT without shielding


1.3 Photos – Test Setup

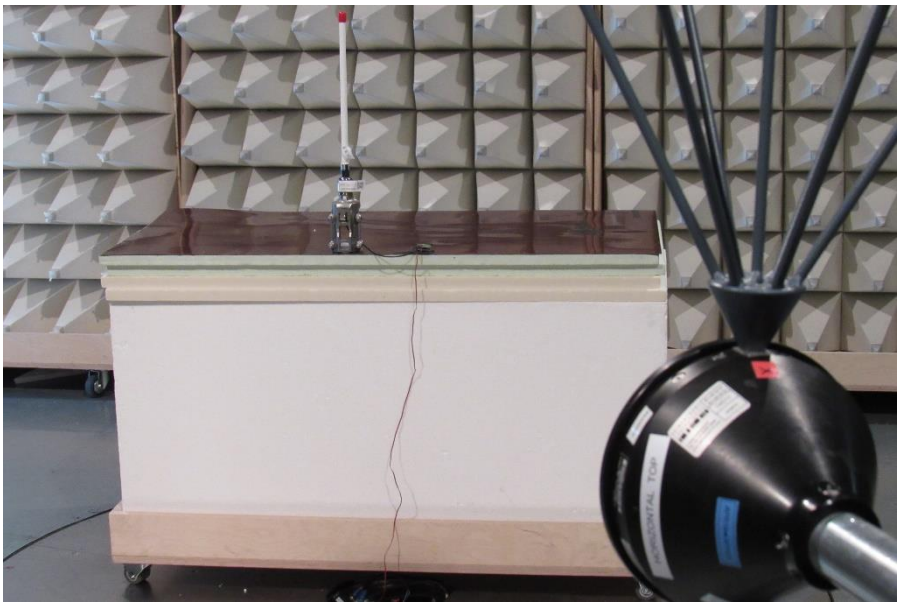
Radiated Setup A, Monopole MU 911-LX


Radiated Setup B, Monopole MU 911-LX


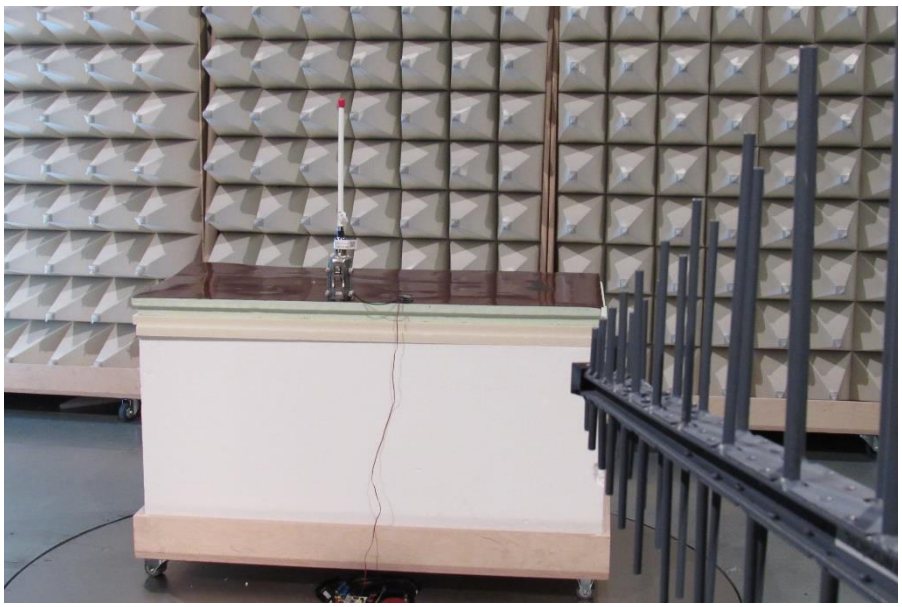
Radiated Setup C, Monopole MU 911-LX



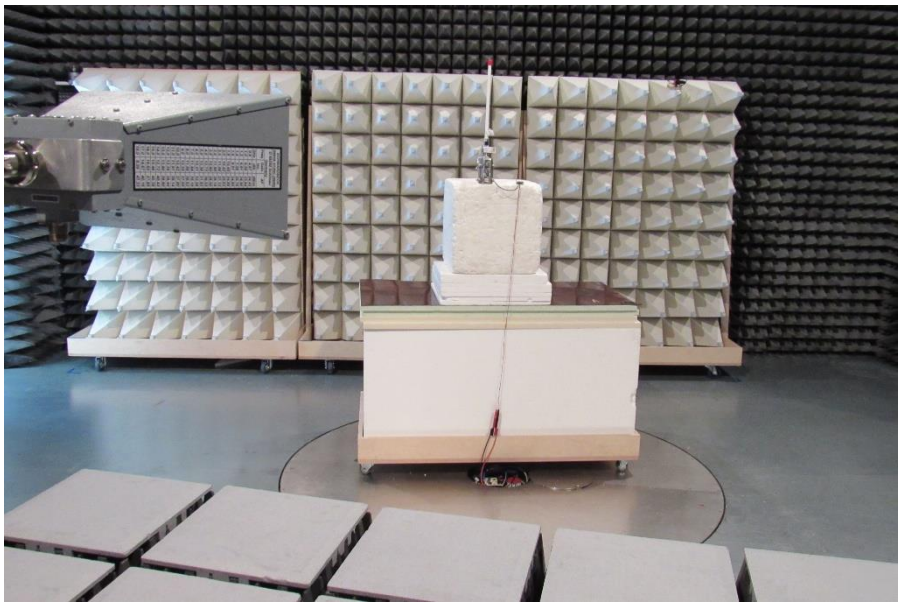
Radiated Setup A, λ/2 dipole CXL 900-1



Radiated Setup B, λ/2 dipole CXL 900-1



Radiated Setup C, λ/2 dipole CXL 900-1



1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laptop	Lenovo	T450	S/N PC-06YGMD
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.5 Test Modes

Mode	Description
Transmit Single	Mode = Transmit, single frequency Modulation = GFSK Duty cycle = 100 %
Receive	Mode = Receive Modulation = GFSK
Comment:	

1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	1	903.050
F2	Tx / Rx	160	914.975
F3	Tx / Rx	320	926.975

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/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	
FCC § 15.247(a)(1) ISED RSS-247 § 5.1 Issue 2	20 dB Bandwidth	ANSI C63.10-2013	N/T	
FCC § 15.247(a)(1)(i) ISED RSS-247, Issue 2 (section 5.1)	Number of hopping frequencies	ANSI C63.10-2013	N/T	
FCC § 15.247(a)(1) ISED RSS-247, Issue 2 (section 5.1)	Frequency hopping channel separation	ANSI C63.10-2013	N/T	
FCC § 15.247(a)(1)(i) ISED RSS-247, Issue 2 (section 5.1)	Time of occupancy (Dwell time)	ANSI C63.10-2013	N/T	
FCC § 15.247(b) ISED RSS-247, Issue 2 (section 5.4)	Maximum peak conducted power	ANSI C63.10-2013	N/T	
FCC § 15.207 ISED RSS-247, Issue 2 (section 3.1)	AC power line conducted emissions	ANSI C63.10-2013	N/T	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	N/T	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	N/T	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 (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 - Transmitter radiated emissions

3.1.1 Information

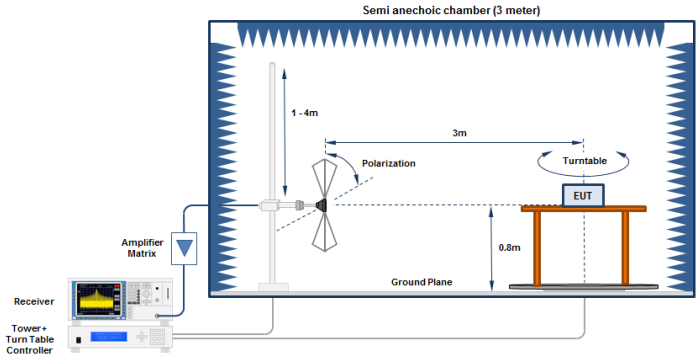
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISED RSS-Gen, Issue 5 (section 6.13)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Wilfried Treffke
Date	2021-01-13

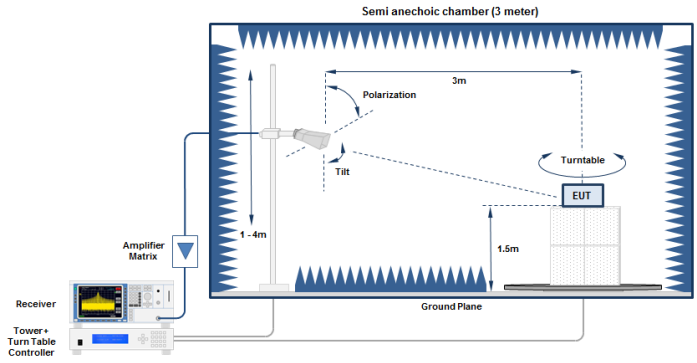
3.1.2 Limits

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

3.1.3 Setup

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz


3.1.4 Equipment

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

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	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

3.1.5 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

3.1.6 Results

Test Results - Monopole MU 911-LX						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
903.050	2709	41.56	pk	hor	74.00	-32.44
903.050	2709	38.75	avg	hor	54.00	-15.25
903.050	2709	40.44	pk	ver	74.00	-33.56
903.050	2709	38.43	avg	ver	54.00	-15.57
914.975	2745	42.49	pk	hor	74.00	-31.51
914.975	2745	39.96	avg	hor	54.00	-14.04
914.975	2745	41.61	pk	ver	74.00	-32.39
914.975	2745	39.96	avg	ver	54.00	-14.04
914.975	3660	41.31	pk	ver	74.00	-32.69
914.975	3660	38.90	avg	ver	54.00	-15.10
914.975	7320	46.59	pk	hor	74.00	-27.41
914.975	7320	43.03	avg	hor	54.00	-10.97
914.975	7320	47.13	pk	ver	74.00	-26.87
914.975	7320	43.78	avg	ver	54.00	-10.22
926.975	2781	45.95	pk	hor	74.00	-28.05
926.975	2781	45.03	avg	hor	54.00	-08.97
926.975	2781	46.12	pk	ver	74.00	-27.88
926.975	2781	45.19	avg	ver	54.00	-08.81
926.975	4635	39.85	pk	hor	74.00	-34.15
926.975	4635	36.32	avg	hor	54.00	-17.68

Test Results - Antenna λ/2 dipole CXL 900-1						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
903.050	2709	41.35	pk	hor	74.00	-32.65
903.050	2709	39.69	avg	hor	54.00	-14.31
903.050	2709	39.86	pk	ver	74.00	-34.14
903.050	2709	37.82	avg	ver	54.00	-16.18
903.050	3612	40.01	pk	hor	74.00	-33.99
903.050	3612	37.67	avg	hor	54.00	-16.33
903.050	3612	40.04	pk	ver	74.00	-33.96
903.050	3612	37.47	avg	ver	54.00	-16.53
914.975	2745	43.26	pk	ver	74.00	-30.74
914.975	2745	41.94	avg	ver	54.00	-12.06
914.975	3660	41.27	pk	ver	74.00	-32.73
914.975	3660	39.06	avg	ver	54.00	-14.94
914.975	4575	41.43	pk	hor	74.00	-32.57
914.975	4575	38.41	avg	hor	54.00	-15.59
914.975	4575	39.23	pk	ver	74.00	-34.77
914.975	4575	35.33	avg	ver	54.00	-18.67
926.975	2781	45.06	pk	hor	74.00	-28.94
926.975	2781	42.17	avg	hor	54.00	-11.83
926.975	2781	44.33	pk	ver	74.00	-29.67
926.975	2781	43.16	avg	ver	54.00	-10.84
926.975	4635	40.49	pk	hor	74.00	-33.51
926.975	4635	37.01	avg	hor	54.00	-16.99

3.2 Test Conditions and Results - Receiver radiated emissions

3.2.1 Information

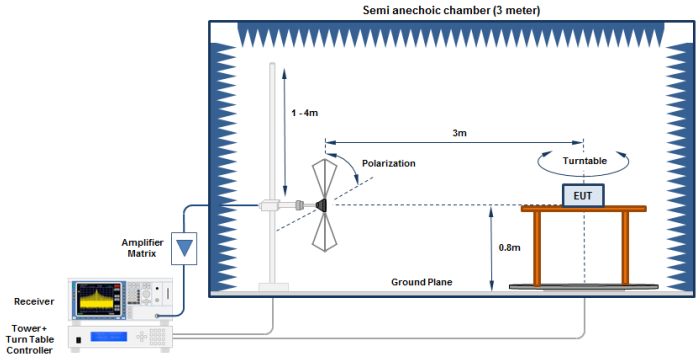
Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Wilfried Treffke
Date	2021-01-14

3.2.2 Limits

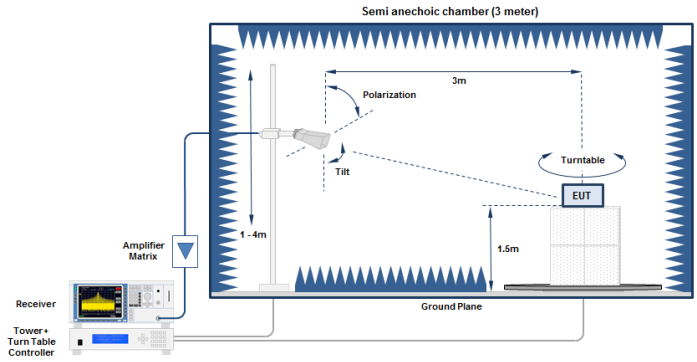
Limits			
Frequency range [MHz]	Detector	Field strength [µV/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.2.3 Setup

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz



3.2.4 Equipment

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

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	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

3.2.5 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

3.2.6 Results

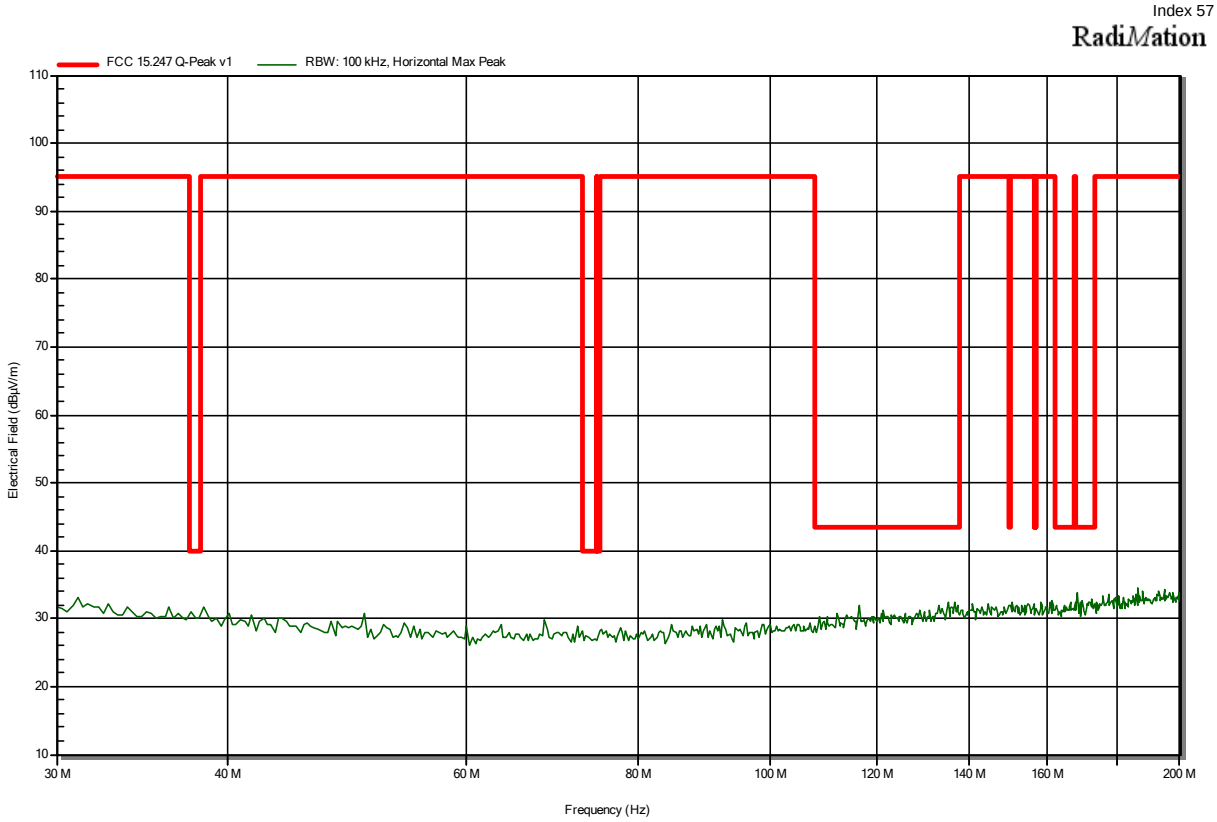
Test Results - Antenna Monopole MU 911-LX						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
914.975	207.692	15.30	pk	hor	43.50	-28.20
914.975	207.692	12.85	pk	ver	43.50	-30.65
914.975	1827	35.65	pk	hor	53.98	-18.33
914.975	1827	32.22	pk	ver	53.98	-21.76
914.975	7365	38.85	pk	ver	53.98	-15.13
914.975	7987	38.86	pk	hor	53.98	-15.12
914.975	8942	40.52	pk	hor	53.98	-13.46

Test Results - Antenna λ/2 dipole CXL 900-1						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
914.975	207.692	20.34	pk	ver	43.50	-23.16
914.975	1827	32.12	pk	hor	53.98	-21.86
914.975	1827	31.64	pk	ver	53.98	-22.34
914.975	7987	39.78	pk	hor	53.98	-14.20
914.975	10387	44.04	pk	hor	53.98	-09.94
914.975	10596	24.74	pk	ver	53.98	-29.24

ANNEX A Transmitter spurious emissions Antenna Monopole MU 911-LX

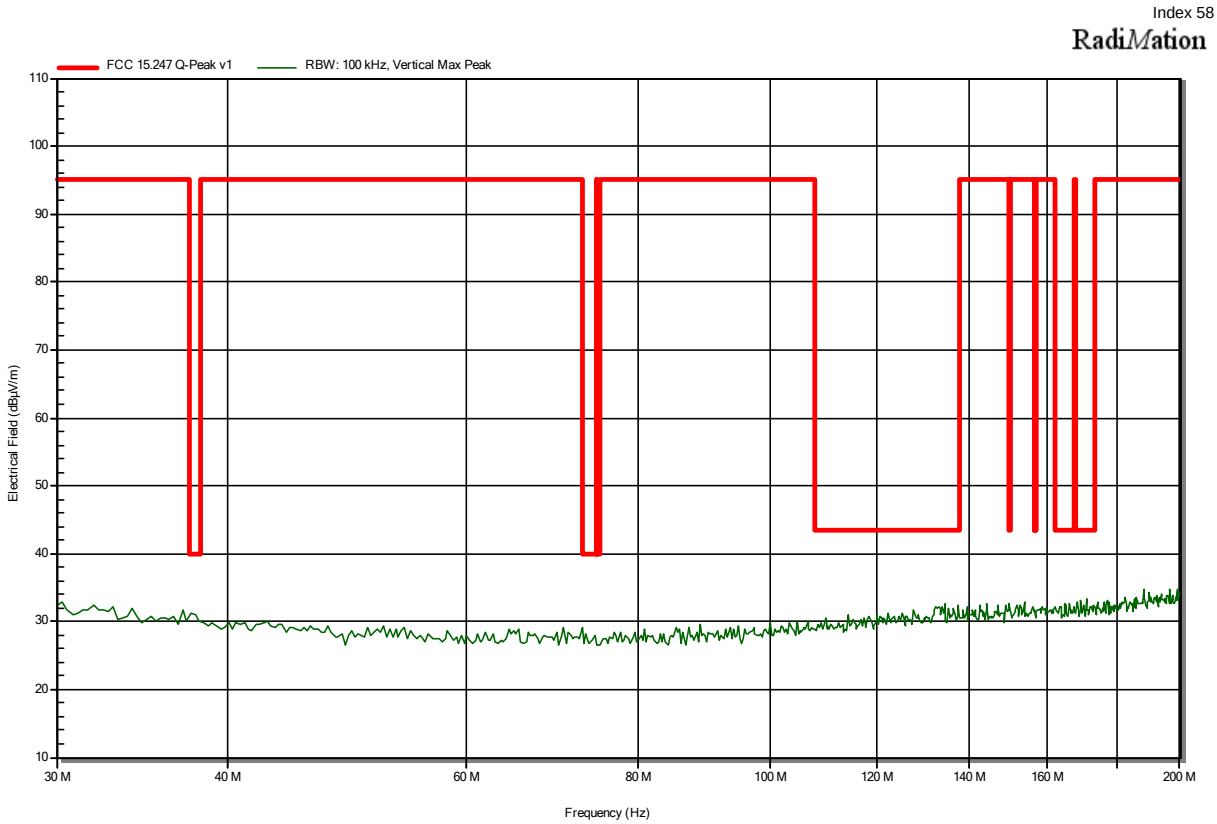
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



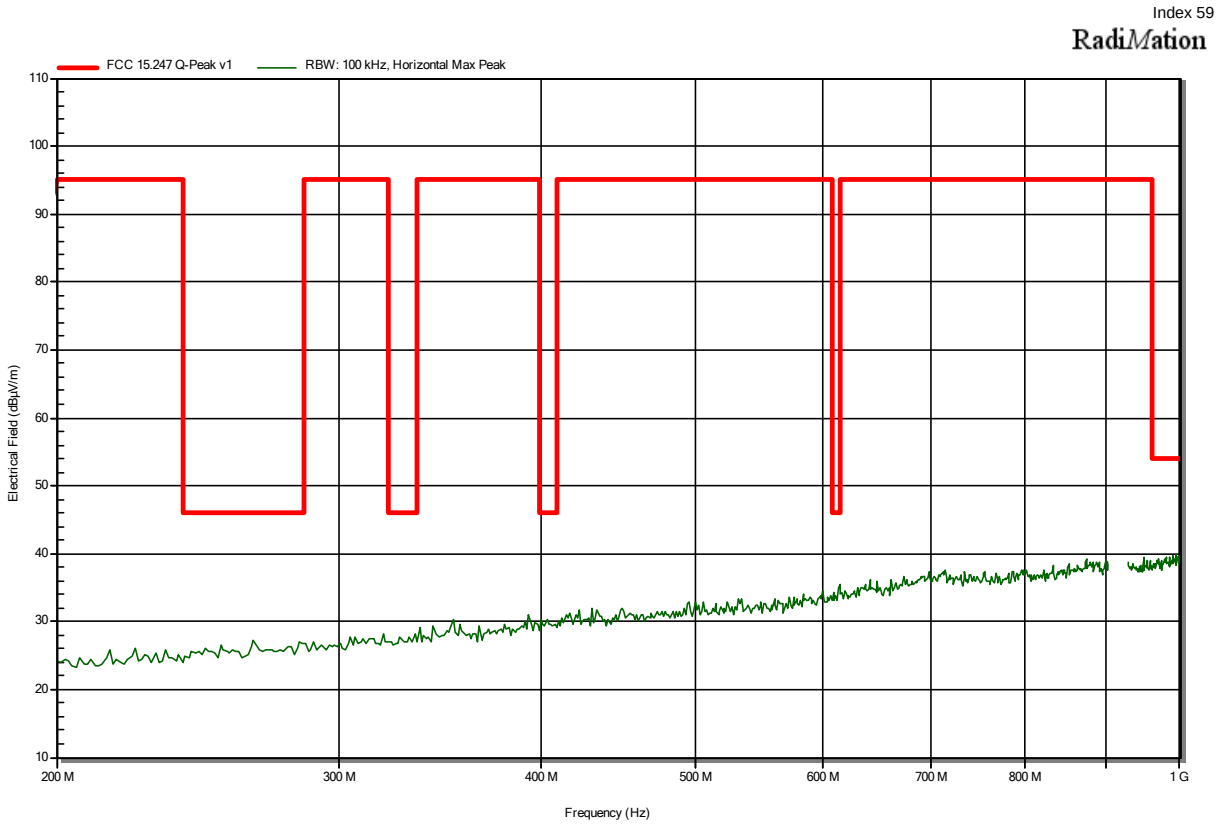
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



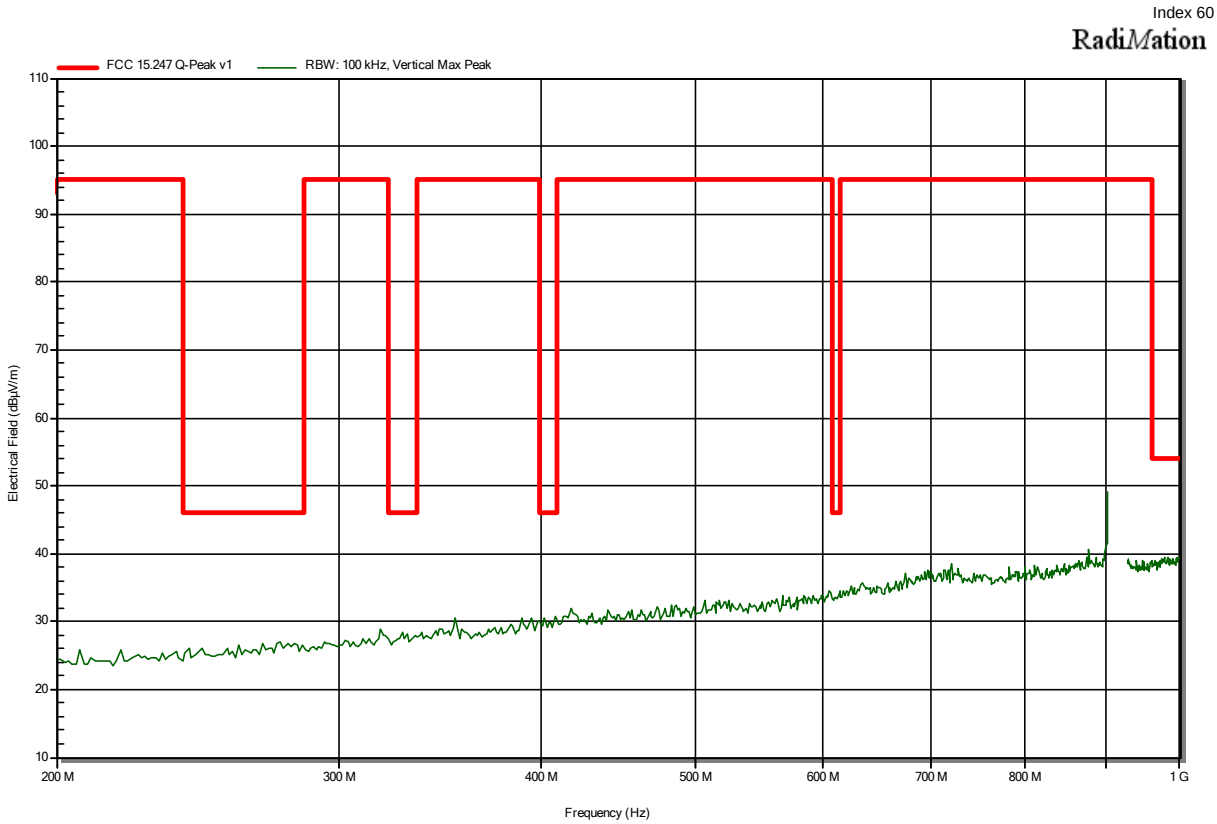
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



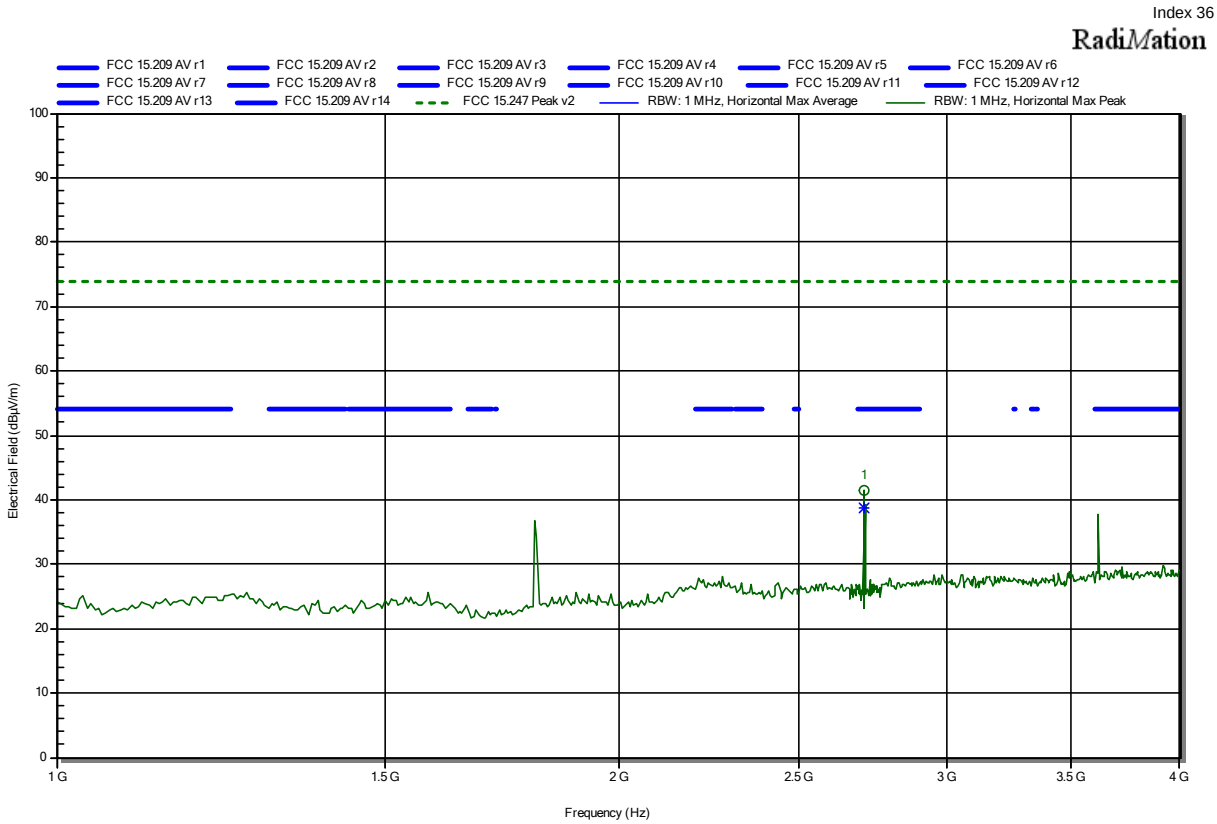
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.709 GHz	41.56 dBµV/m	74 dBµV/m	-32.44 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.709 GHz	38.75 dBµV/m	54 dBµV/m	-15.25 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
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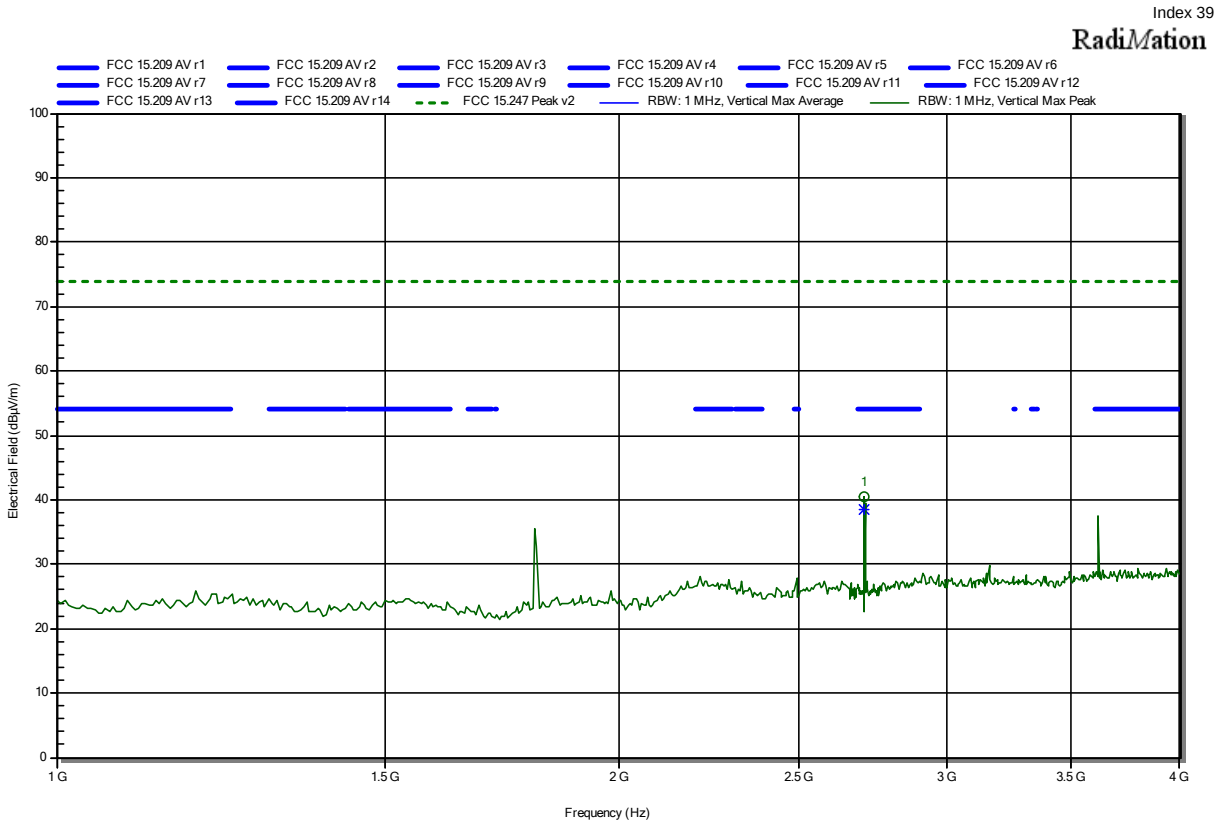
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.709 GHz	40.44 dBµV/m	74 dBµV/m	-33.56 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.709 GHz	38.43 dBµV/m	54 dBµV/m	-15.57 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical

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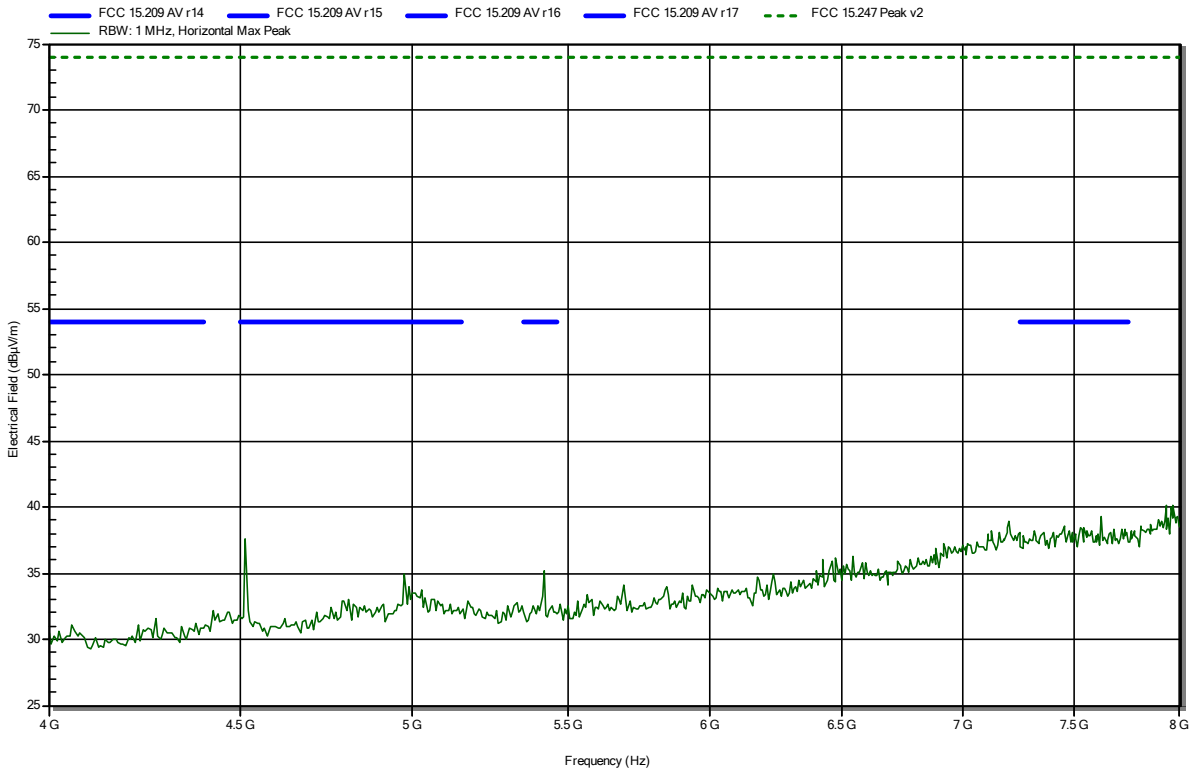
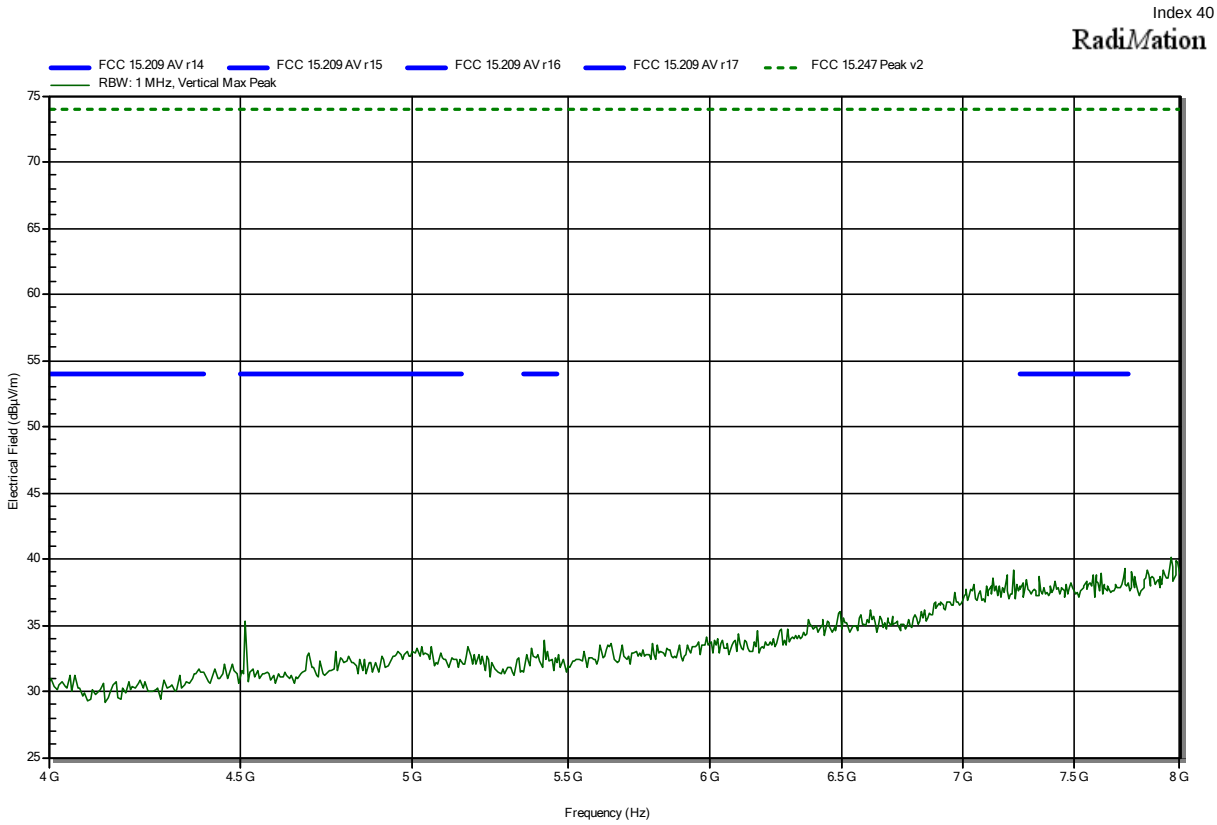


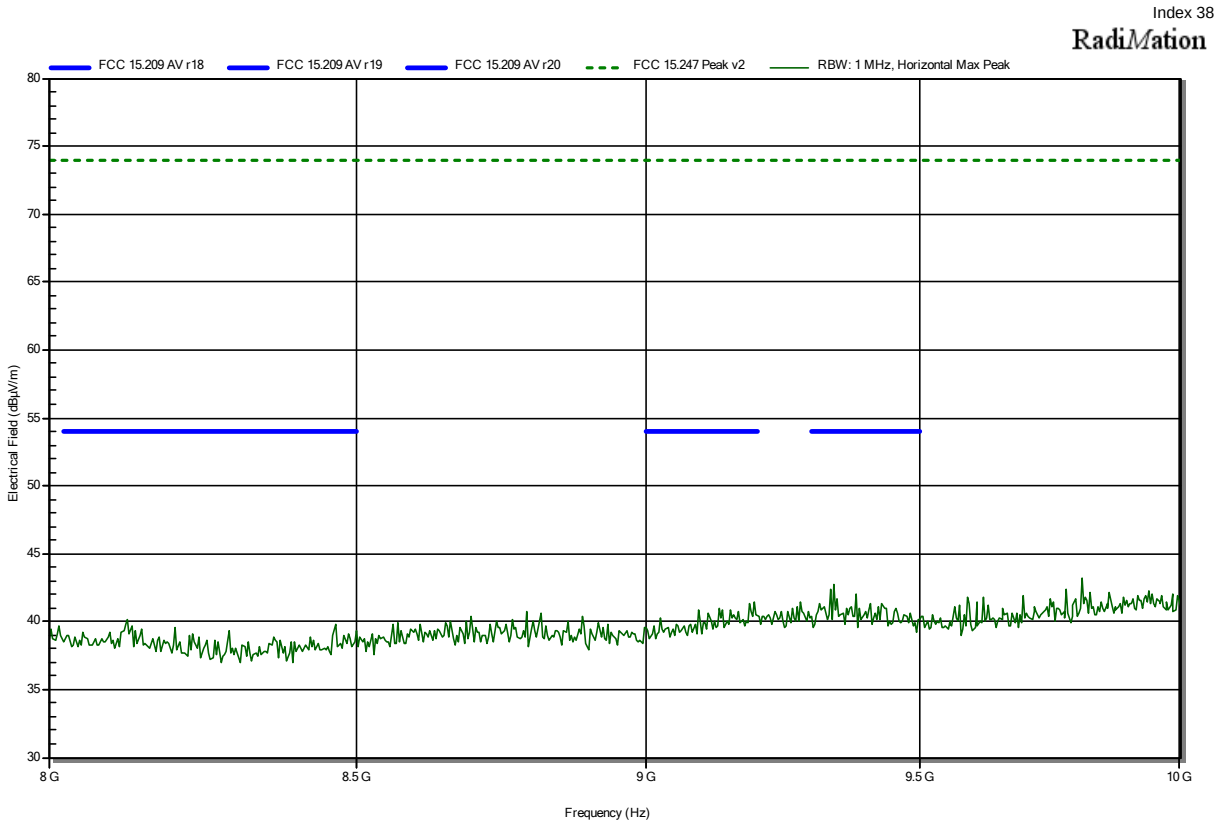
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
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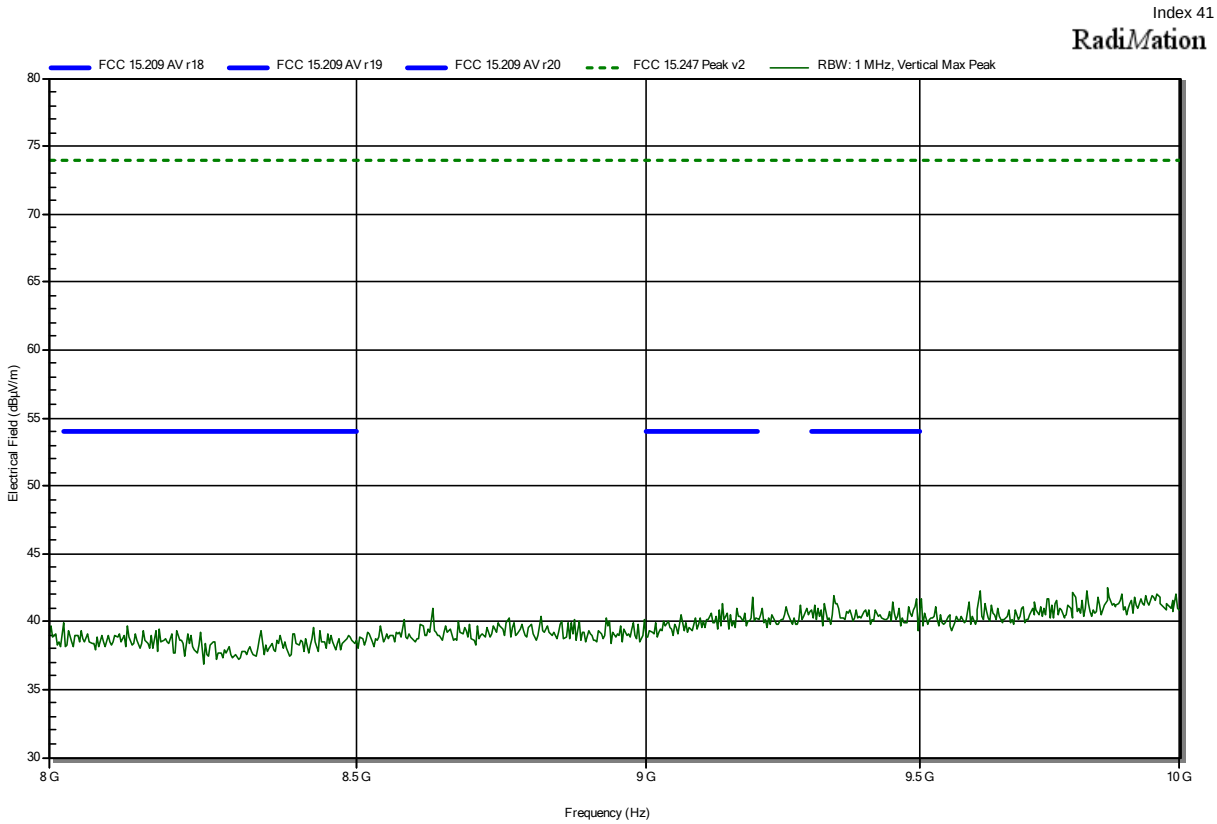
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical

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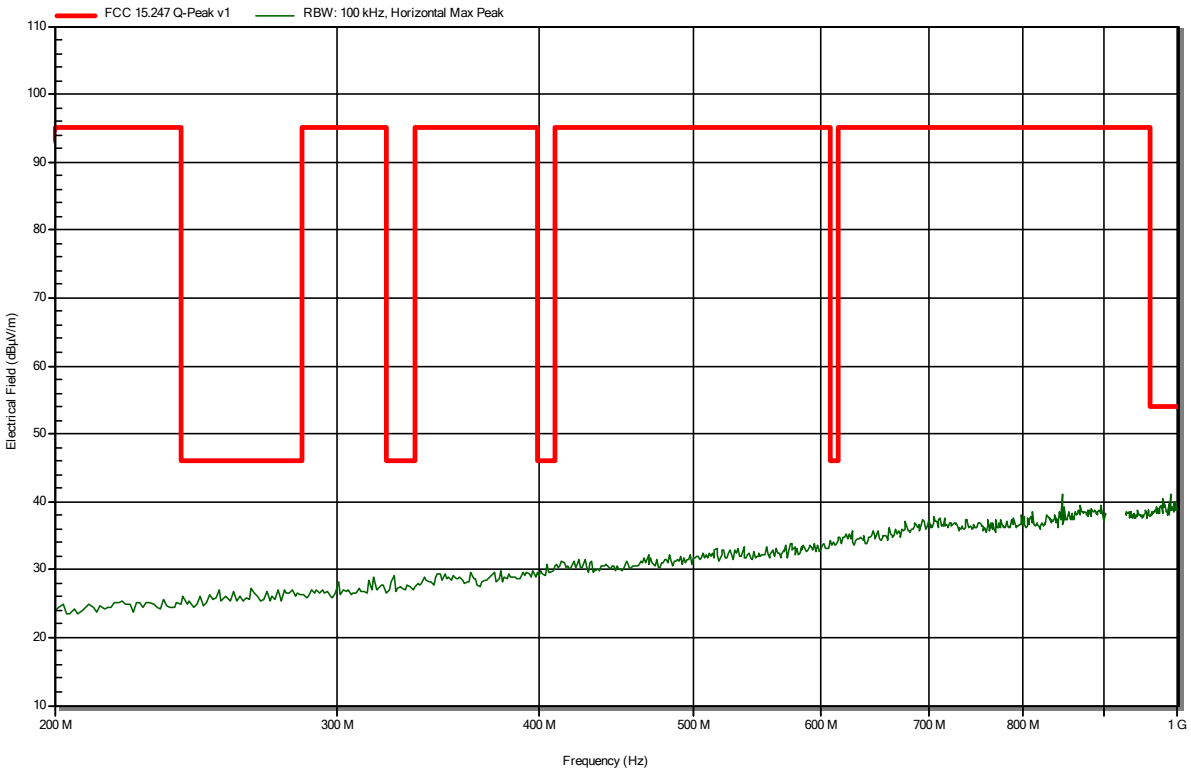
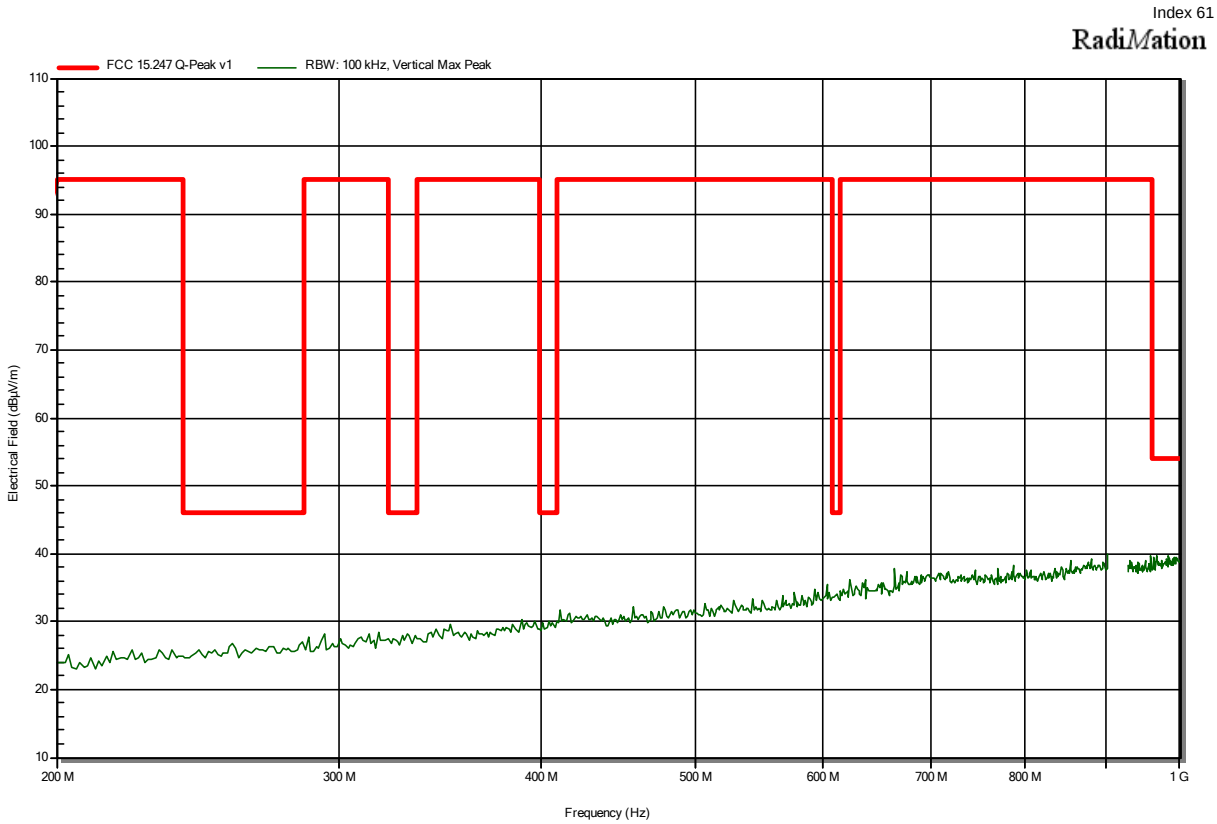
RadiMation



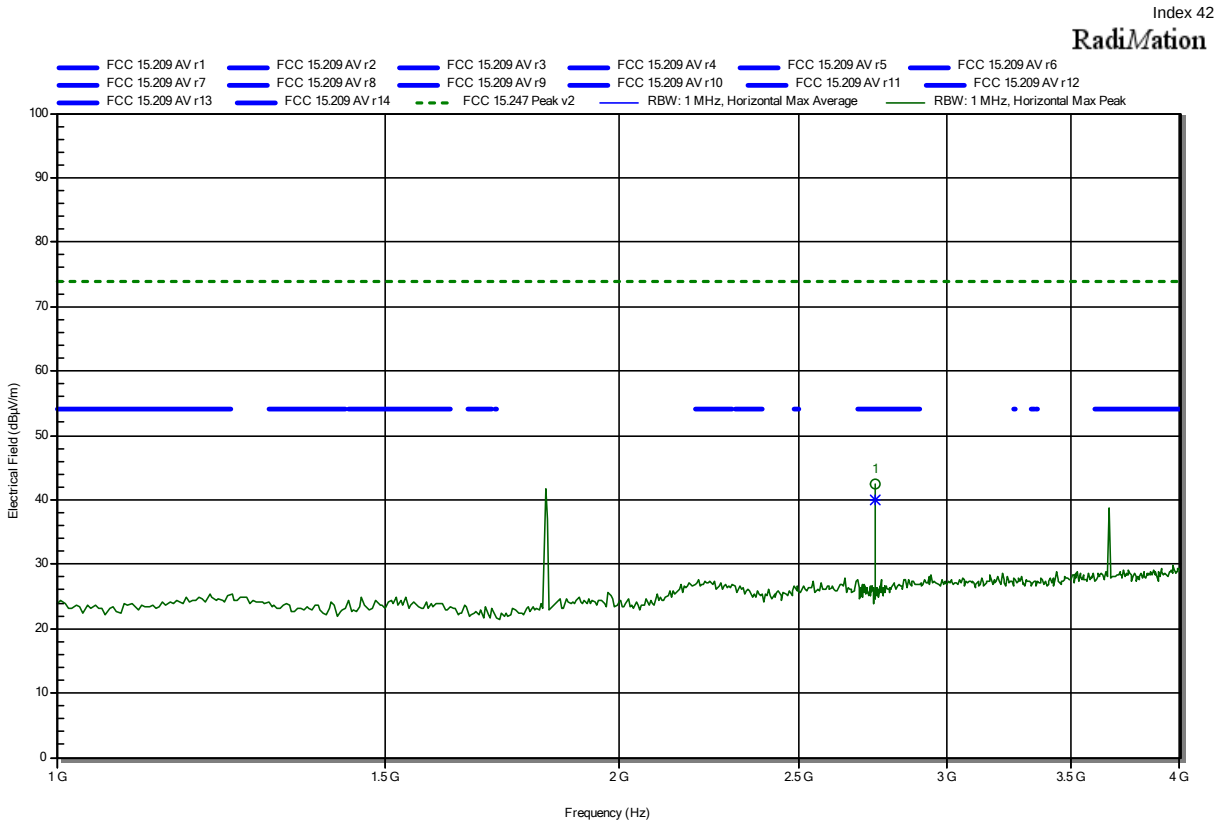
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.745 GHz	42.49 dBµV/m	74 dBµV/m	-31.51 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.745 GHz	39.96 dBµV/m	54 dBµV/m	-14.04 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
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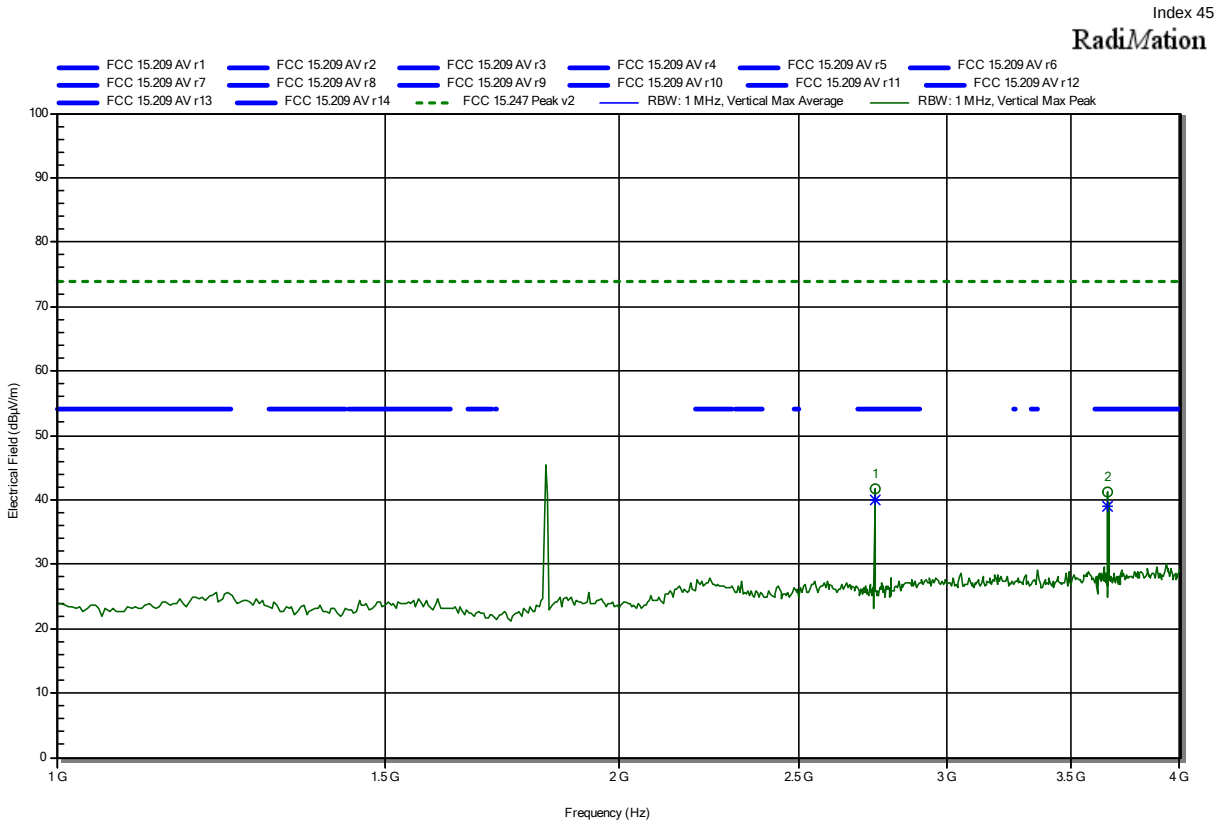
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical

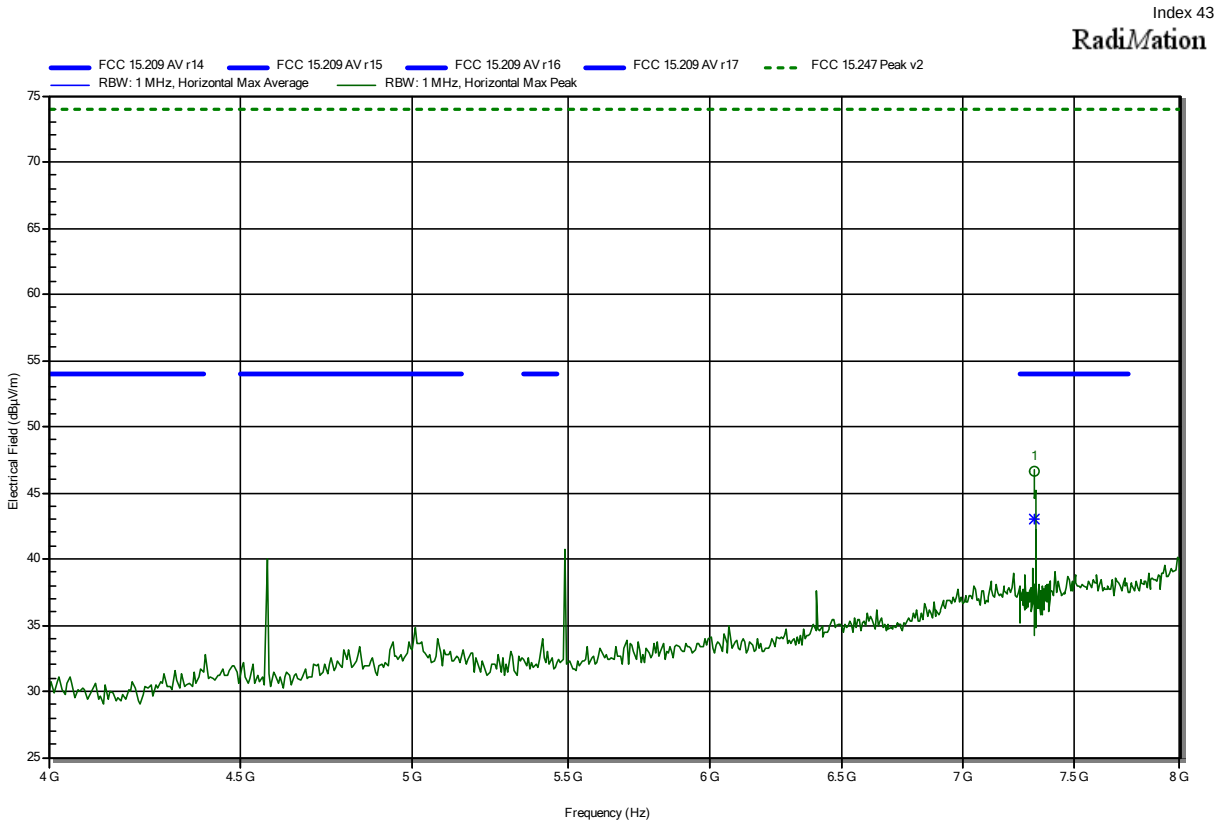


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.745 GHz	41.61 dBµV/m	74 dBµV/m	-32.39 dB	Pass
3.66 GHz	41.31 dBµV/m	74 dBµV/m	-32.69 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.745 GHz	39.96 dBµV/m	54 dBµV/m	-14.04 dB	Pass
3.66 GHz	38.9 dBµV/m	54 dBµV/m	-15.1 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.32 GHz	46.59 dBµV/m	74 dBµV/m	-27.41 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
7.32 GHz	43.03 dBµV/m	54 dBµV/m	-10.97 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
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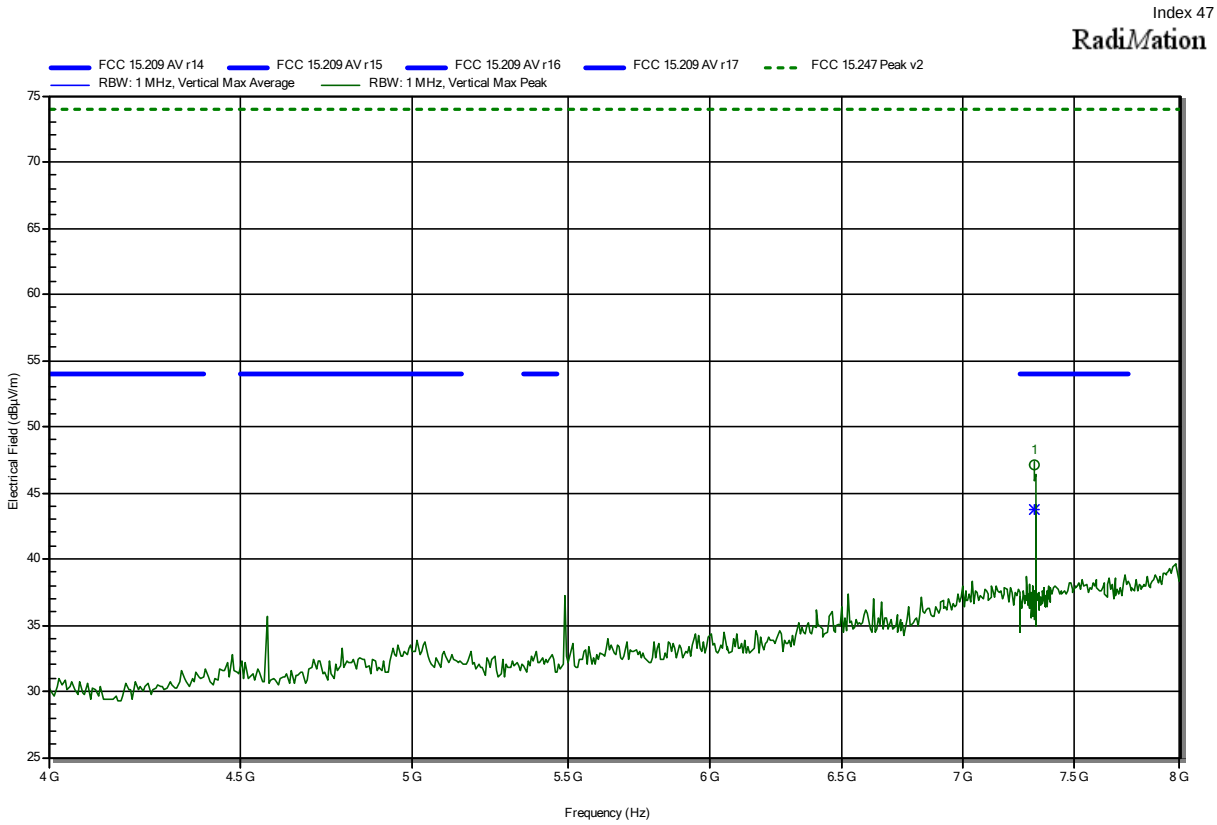
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.32 GHz	47.13 dBµV/m	74 dBµV/m	-26.87 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
7.32 GHz	43.78 dBµV/m	54 dBµV/m	-10.22 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
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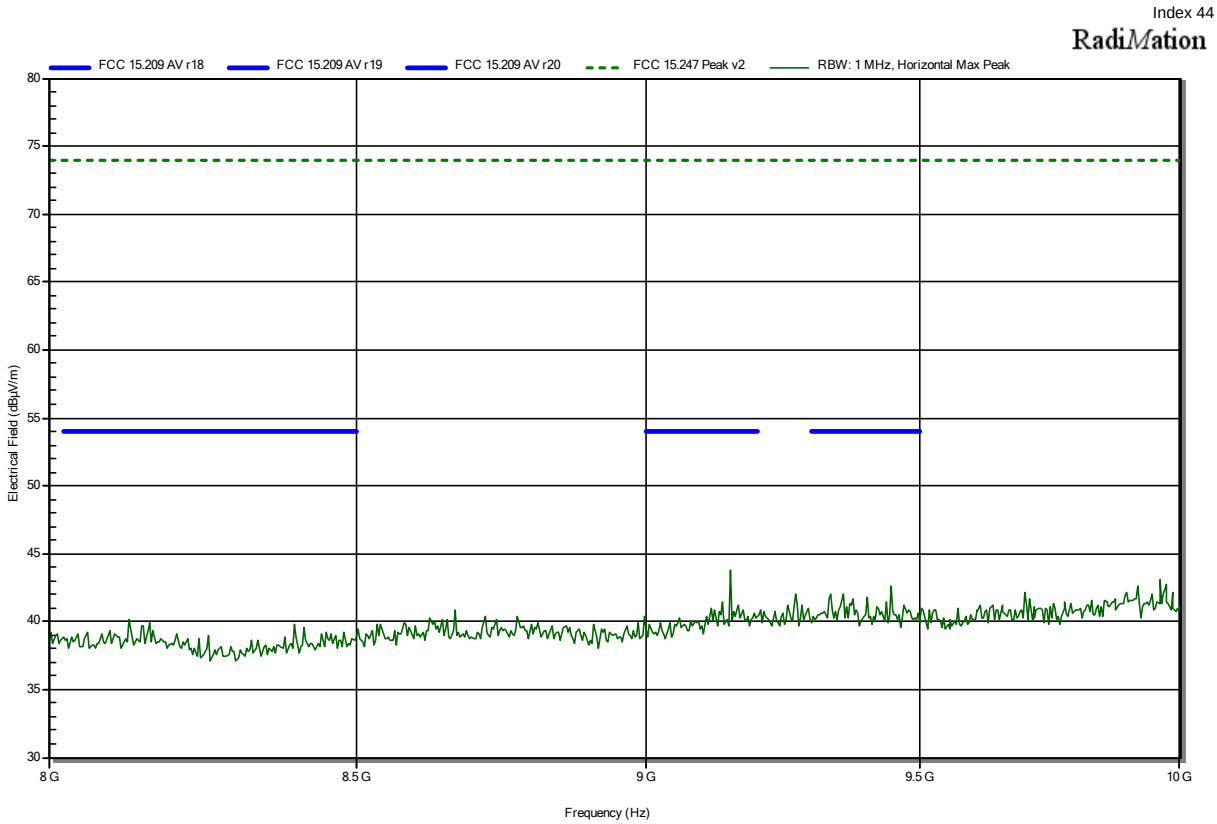
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
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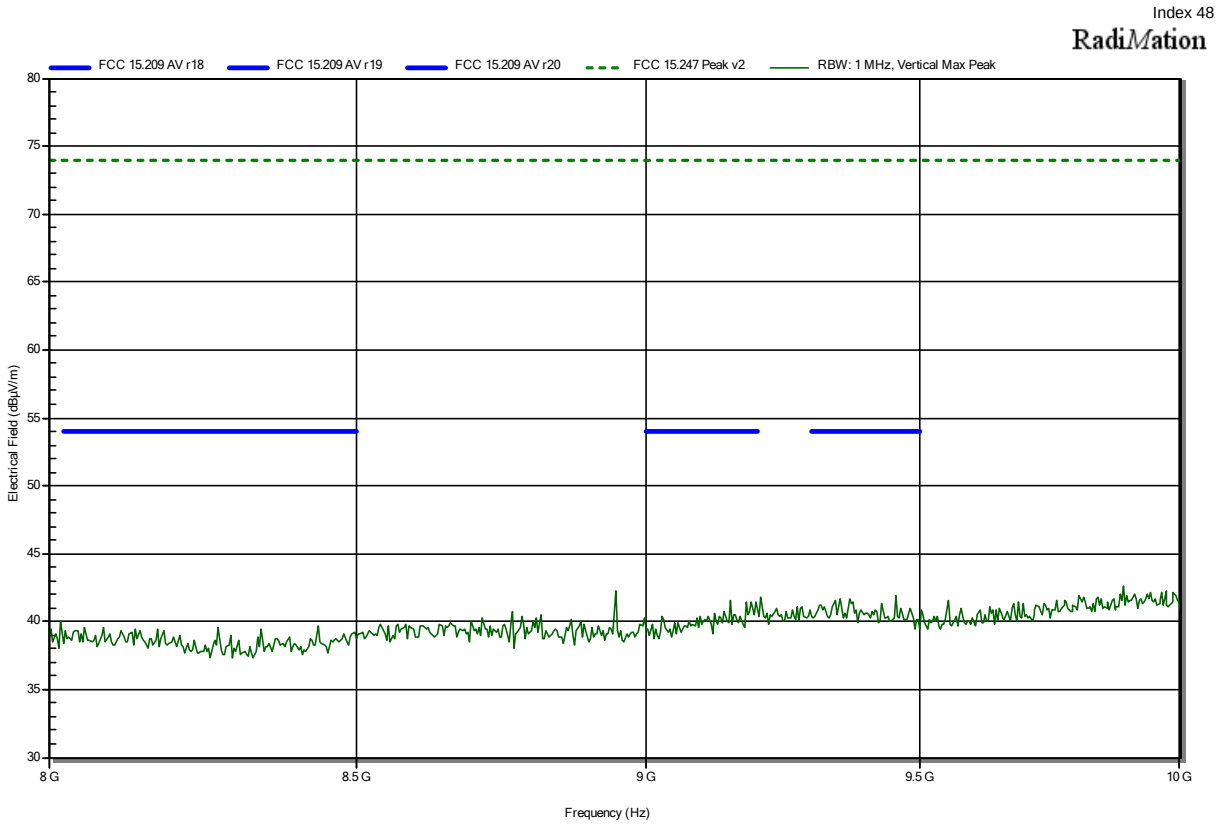
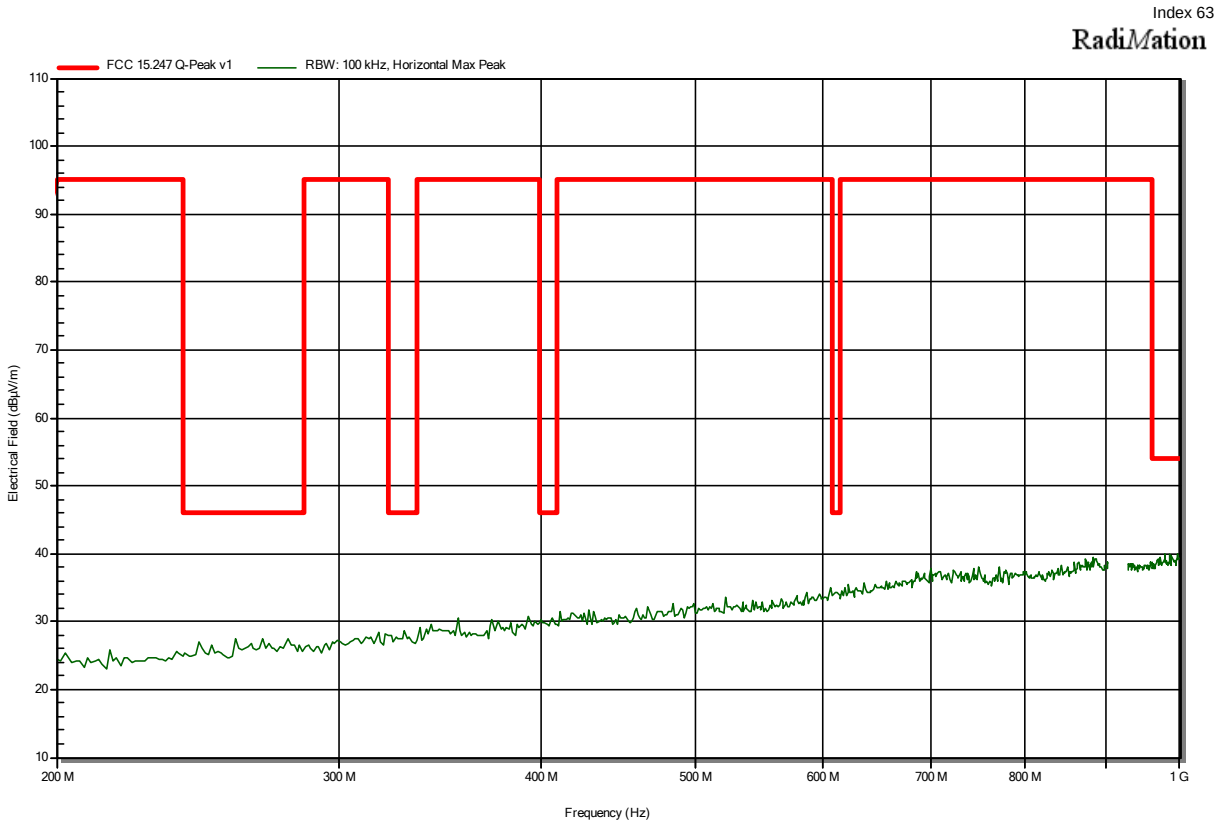
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



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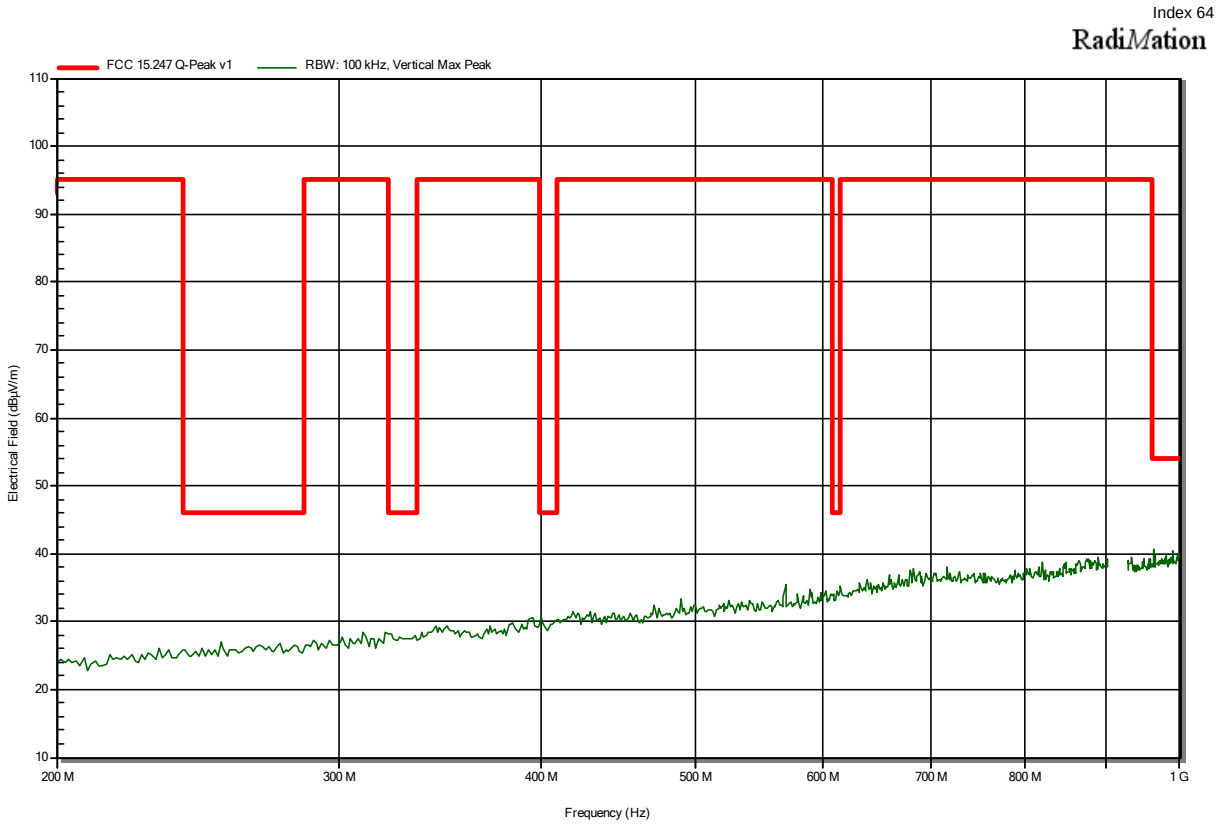
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



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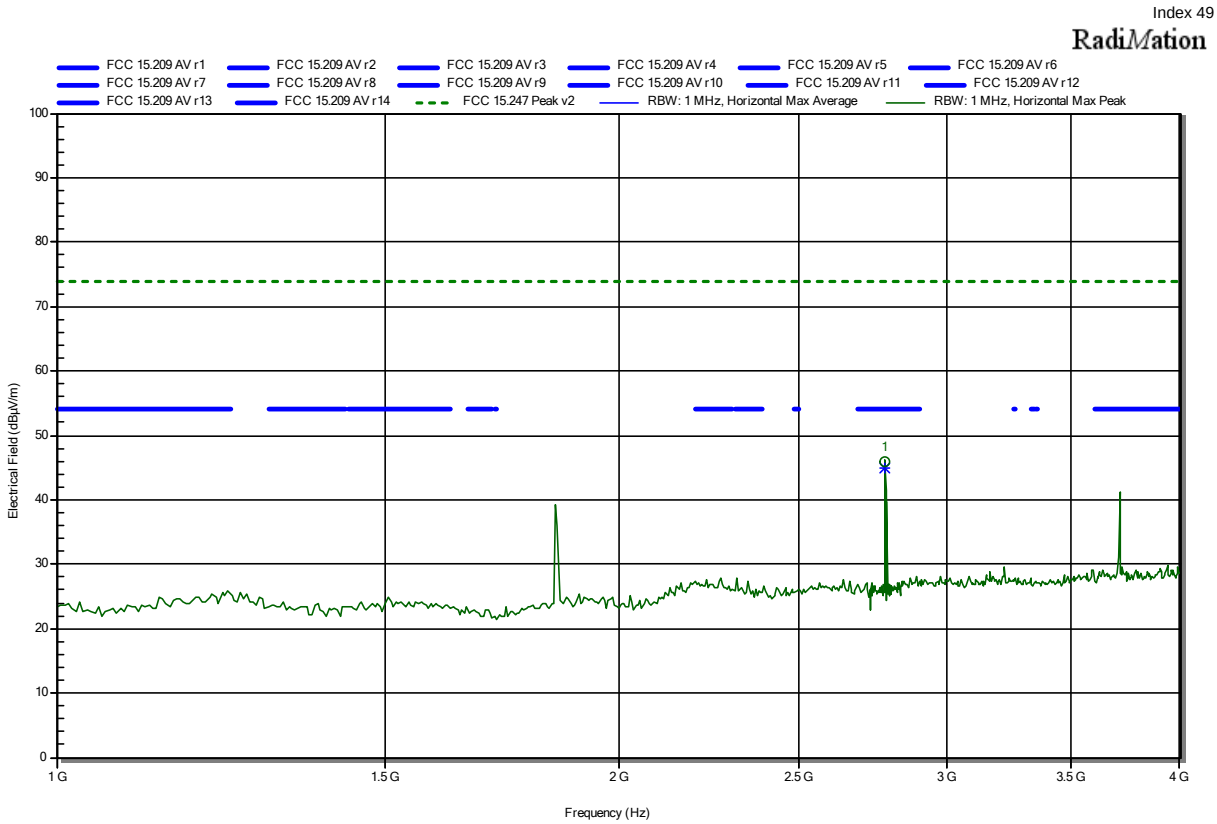
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.781 GHz	45.95 dBµV/m	74 dBµV/m	-28.05 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.781 GHz	45.03 dBµV/m	54 dBµV/m	-8.97 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
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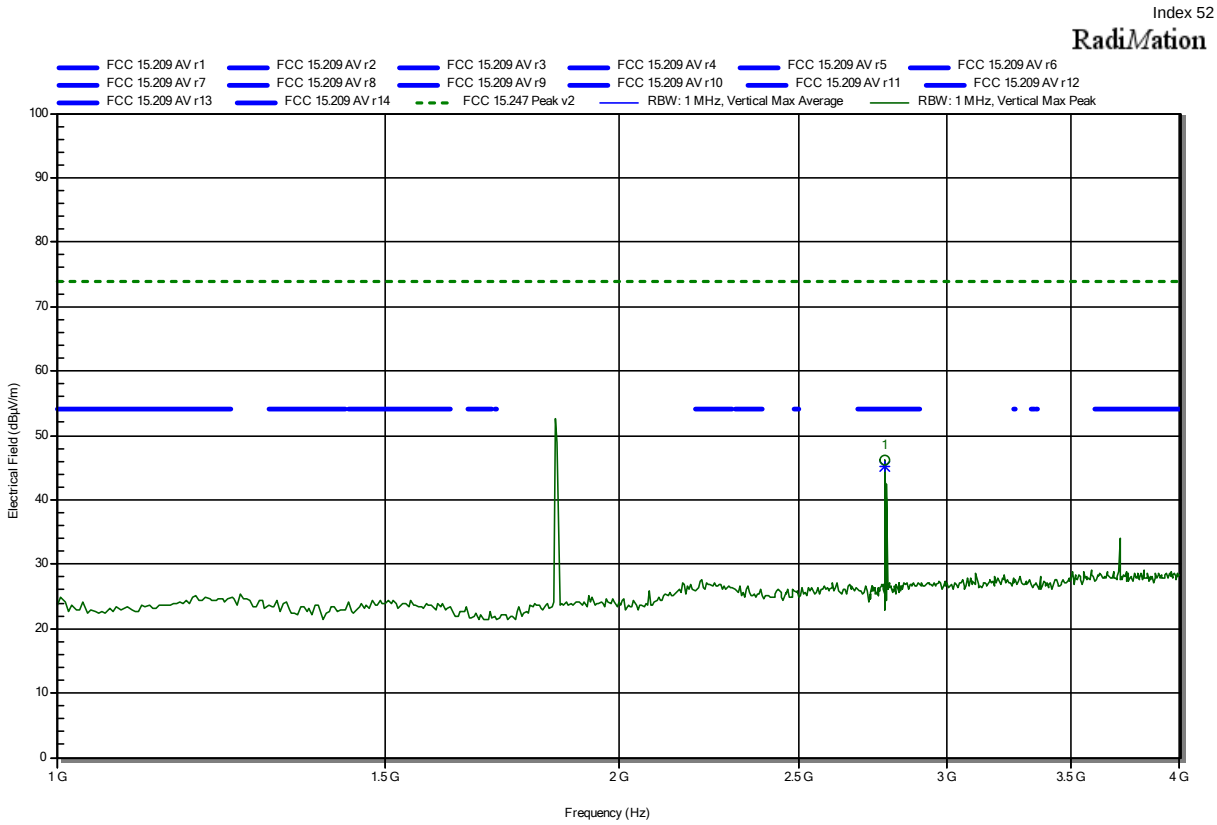
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.781 GHz	46.12 dBµV/m	74 dBµV/m	-27.88 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.781 GHz	45.19 dBµV/m	54 dBµV/m	-8.81 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
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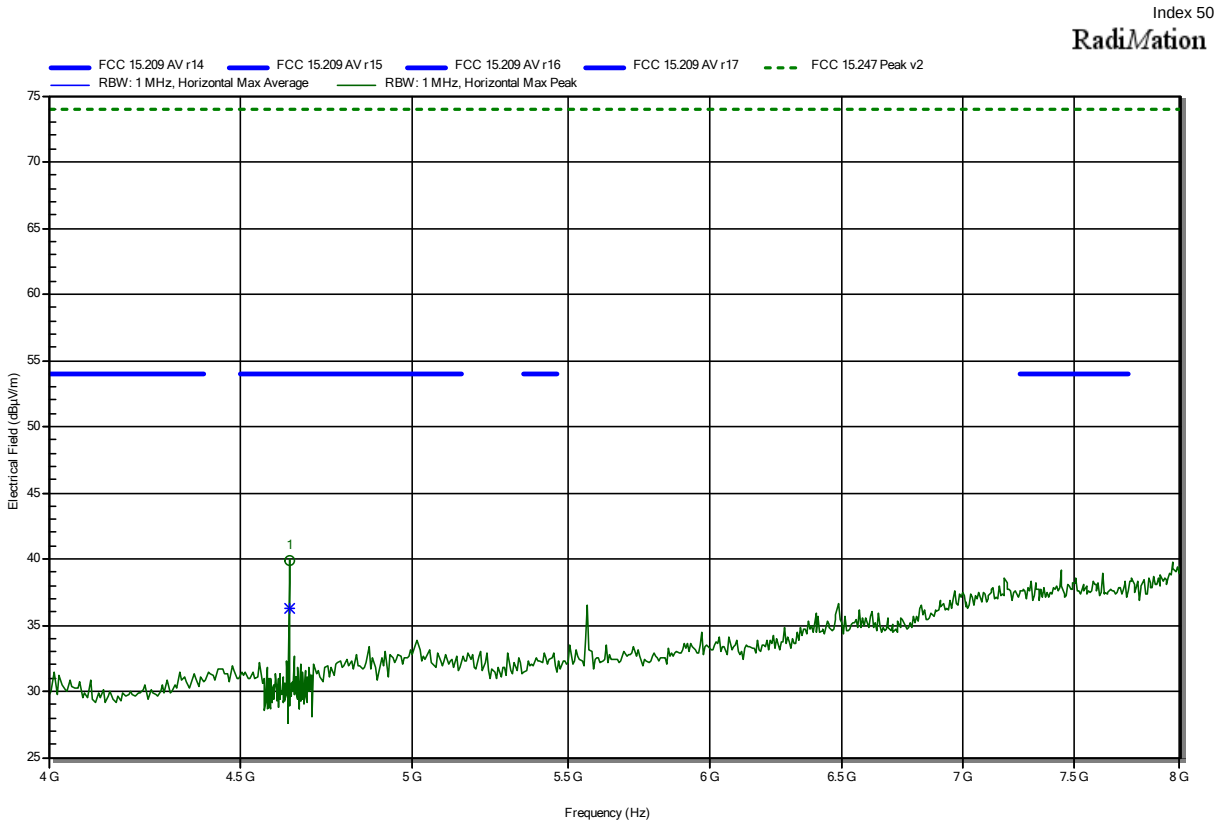
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.635 GHz	39.85 dBµV/m	74 dBµV/m	-34.15 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.635 GHz	36.32 dBµV/m	54 dBµV/m	-17.68 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical

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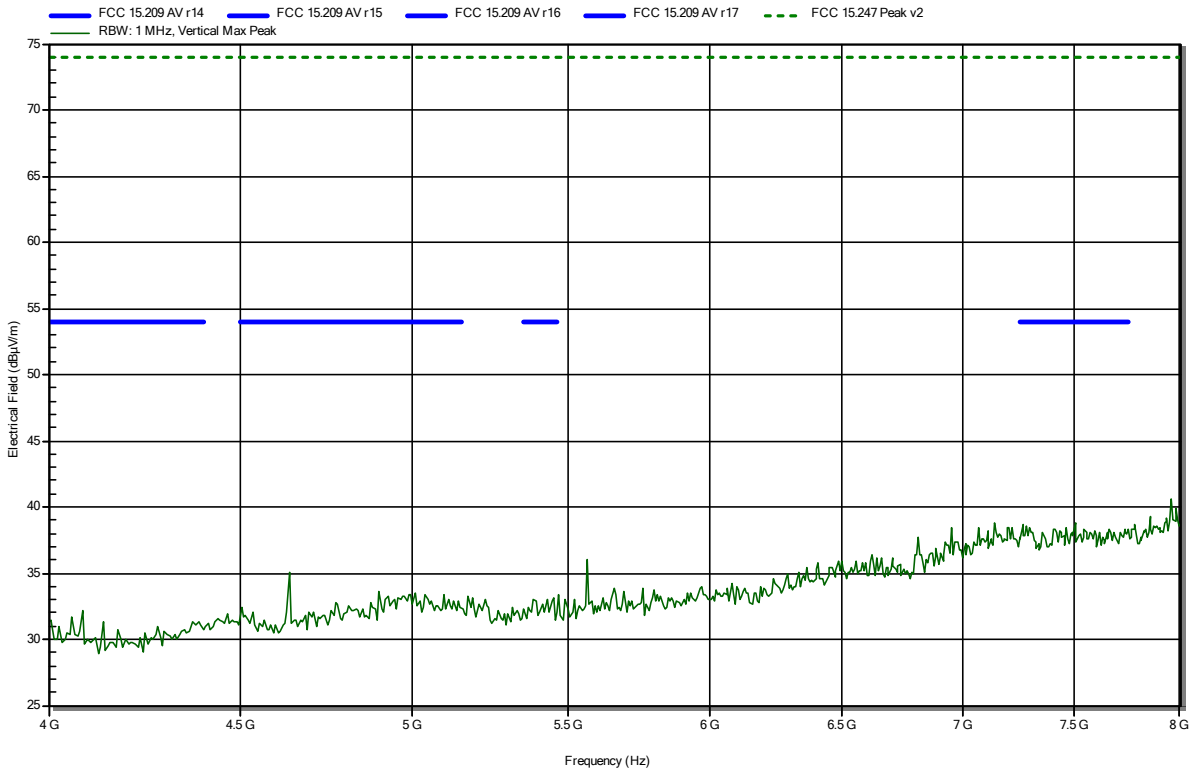
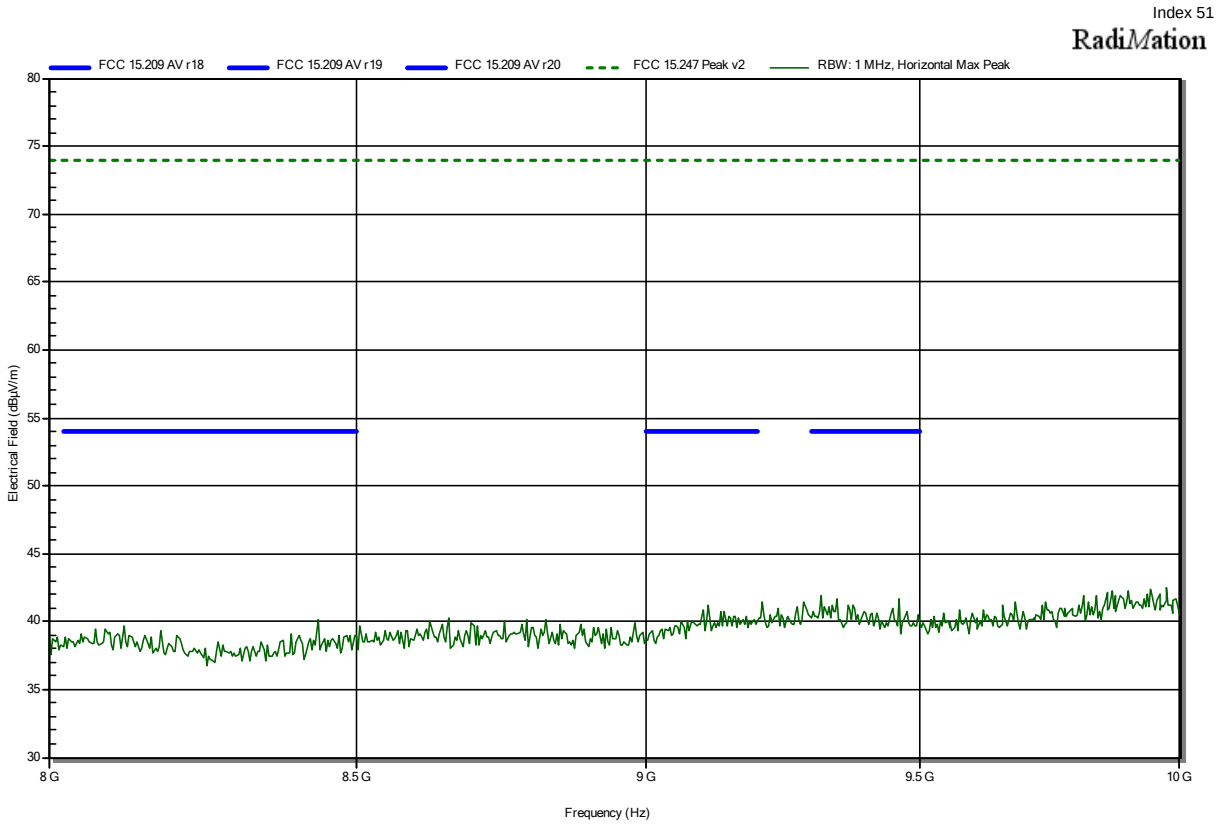
RadiMation



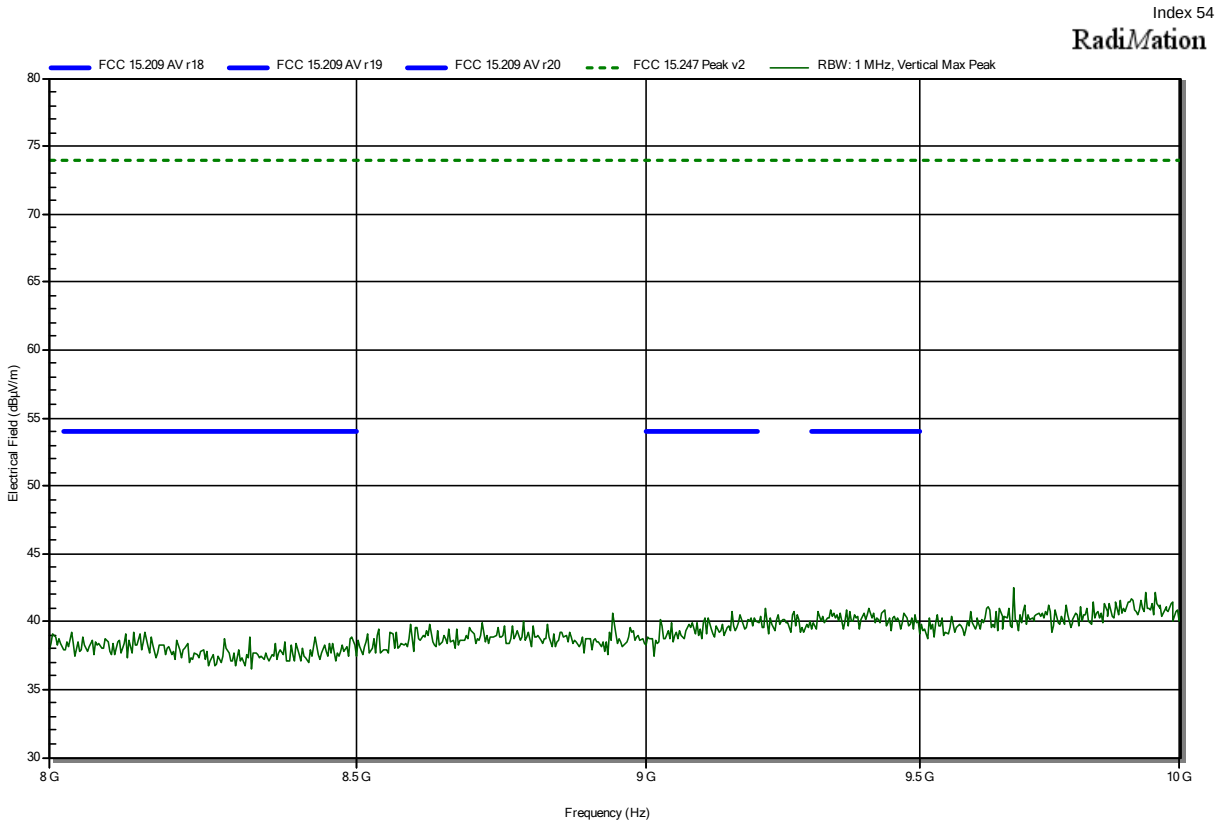
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

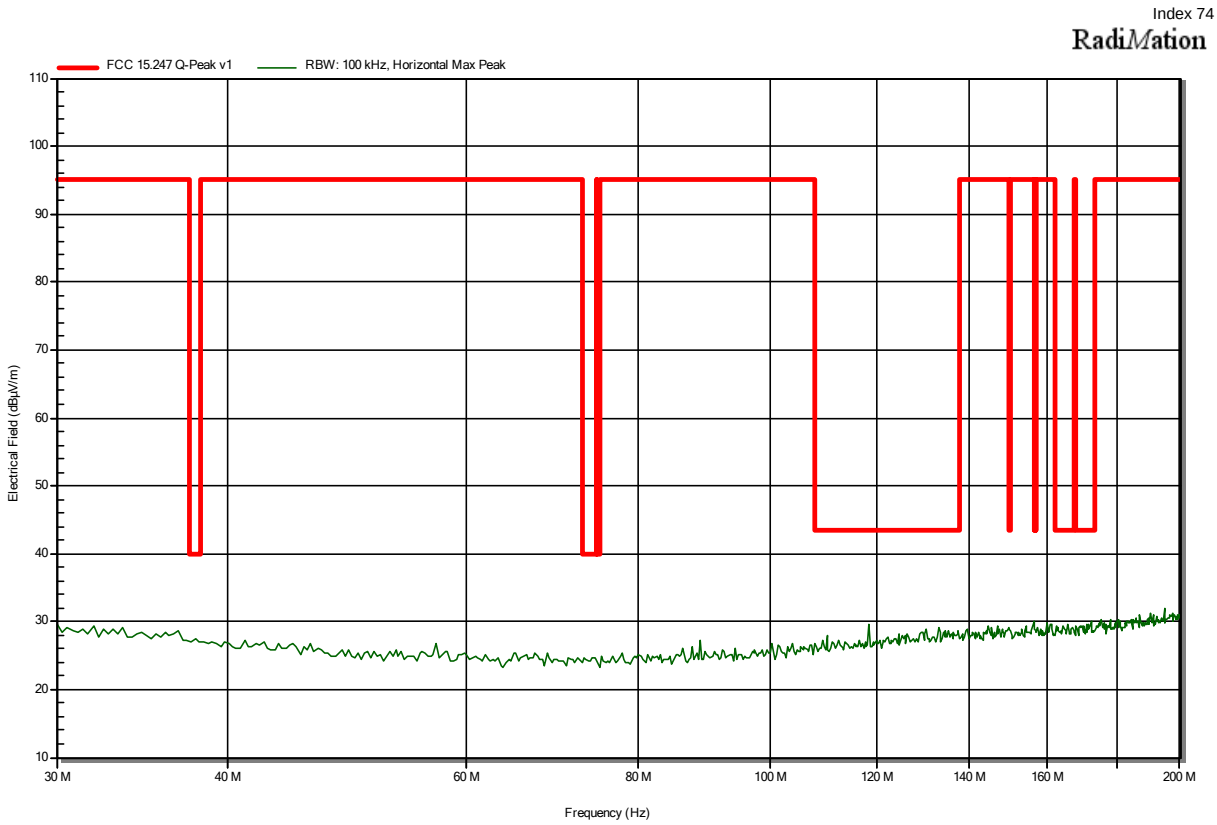
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



ANNEX B Transmitter spurious emissions Antenna λ/2 dipole CXL 900-1

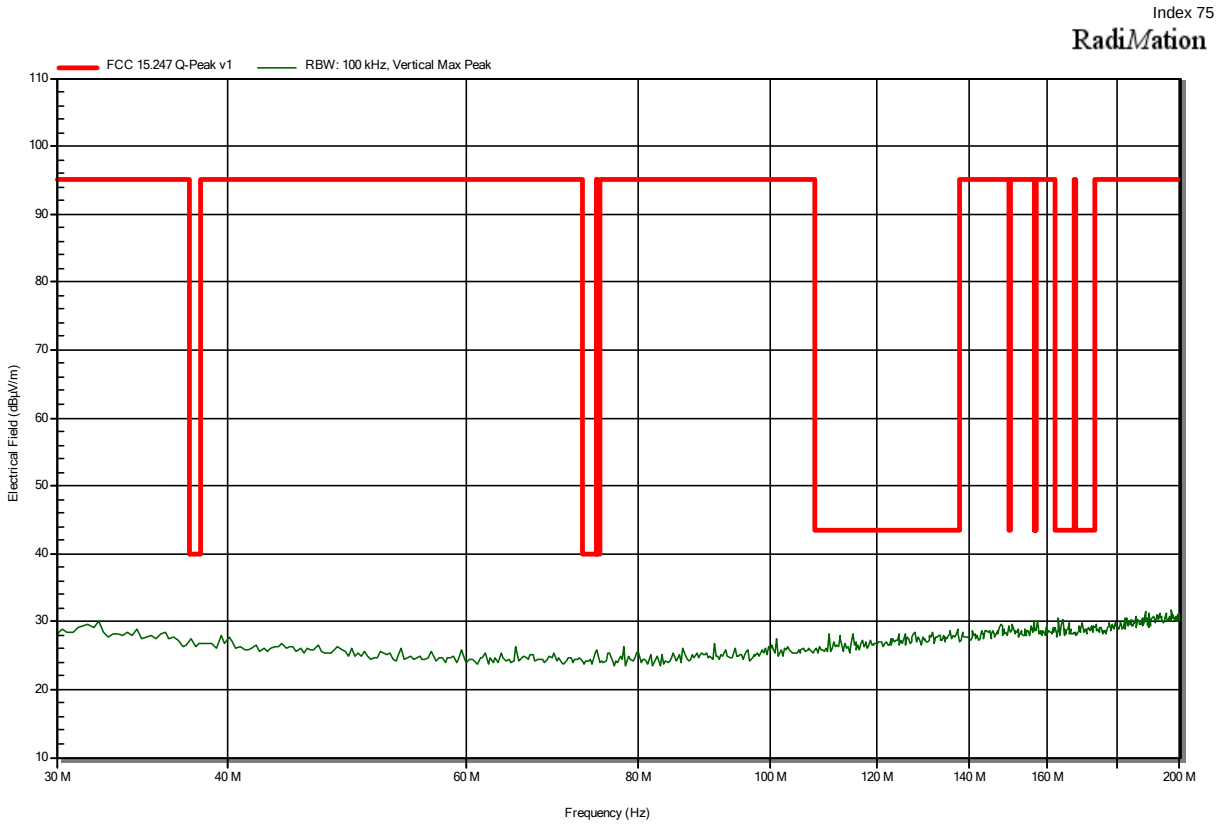
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



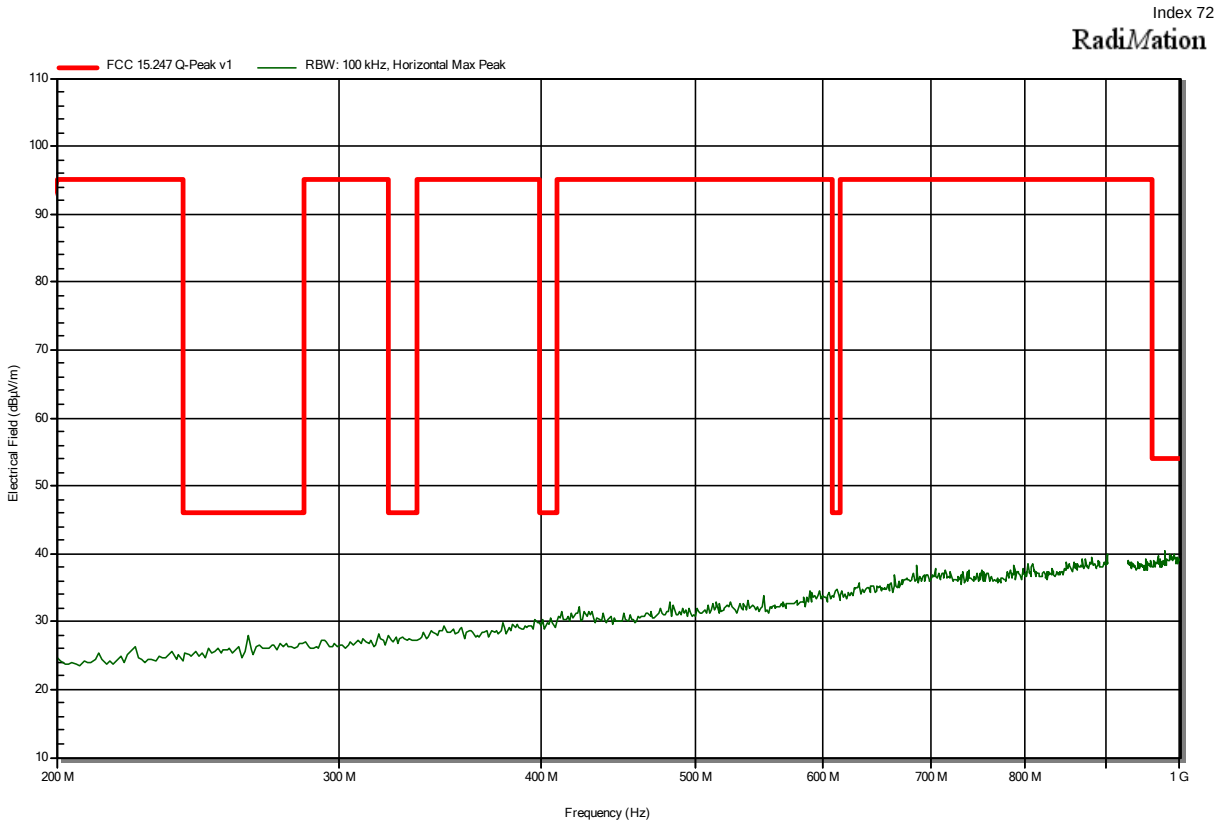
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



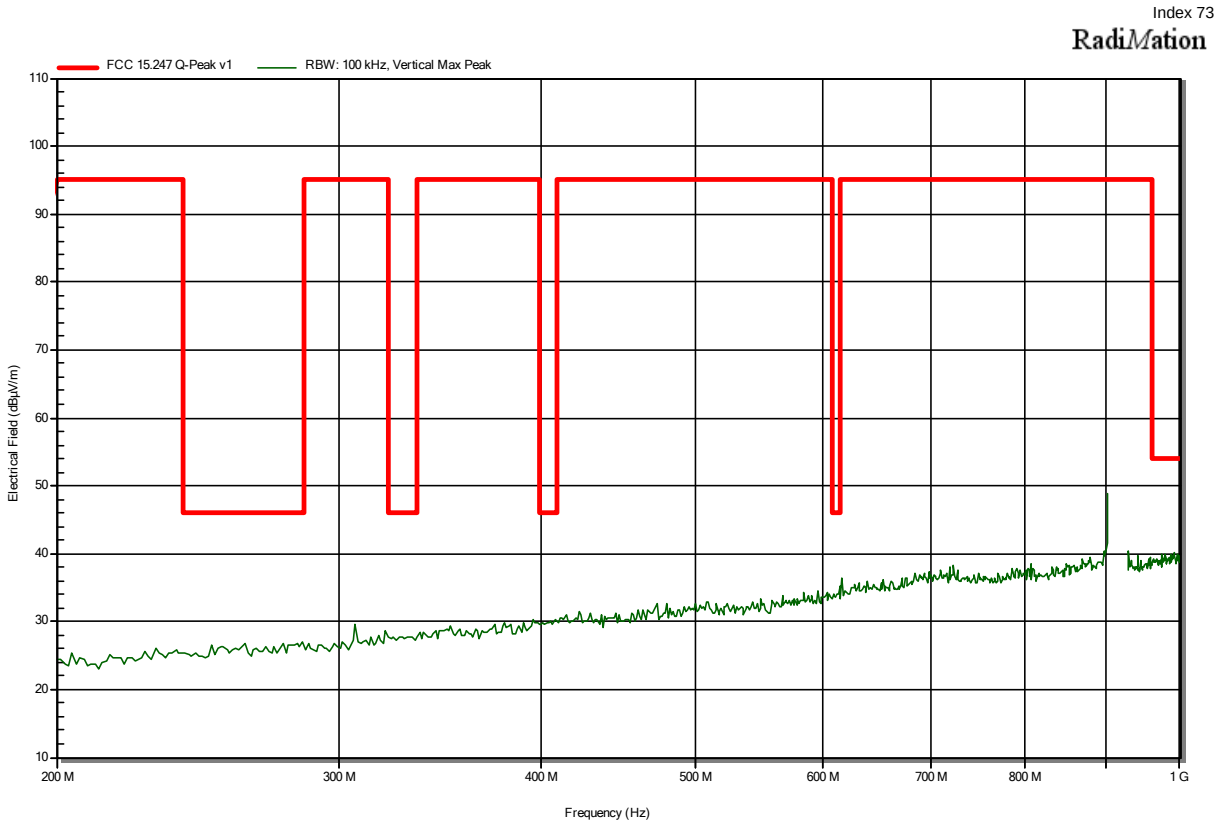
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



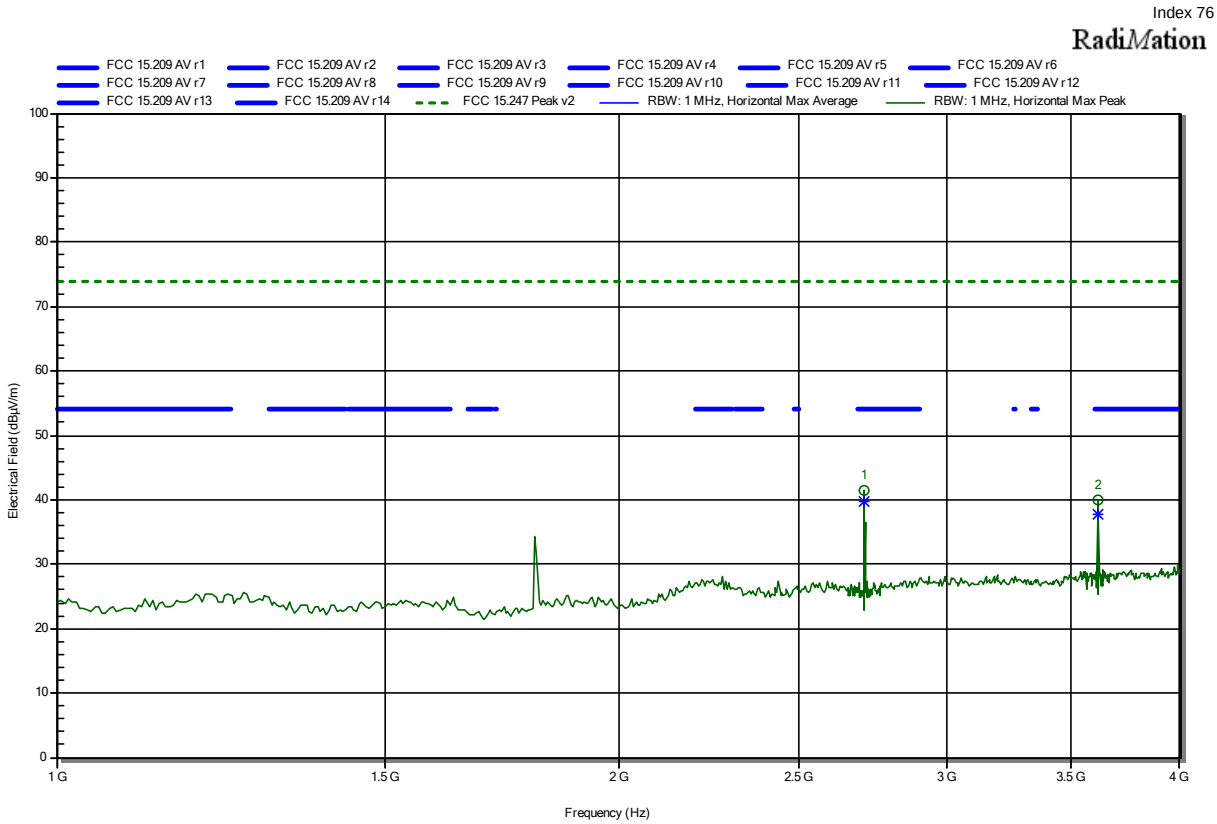
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

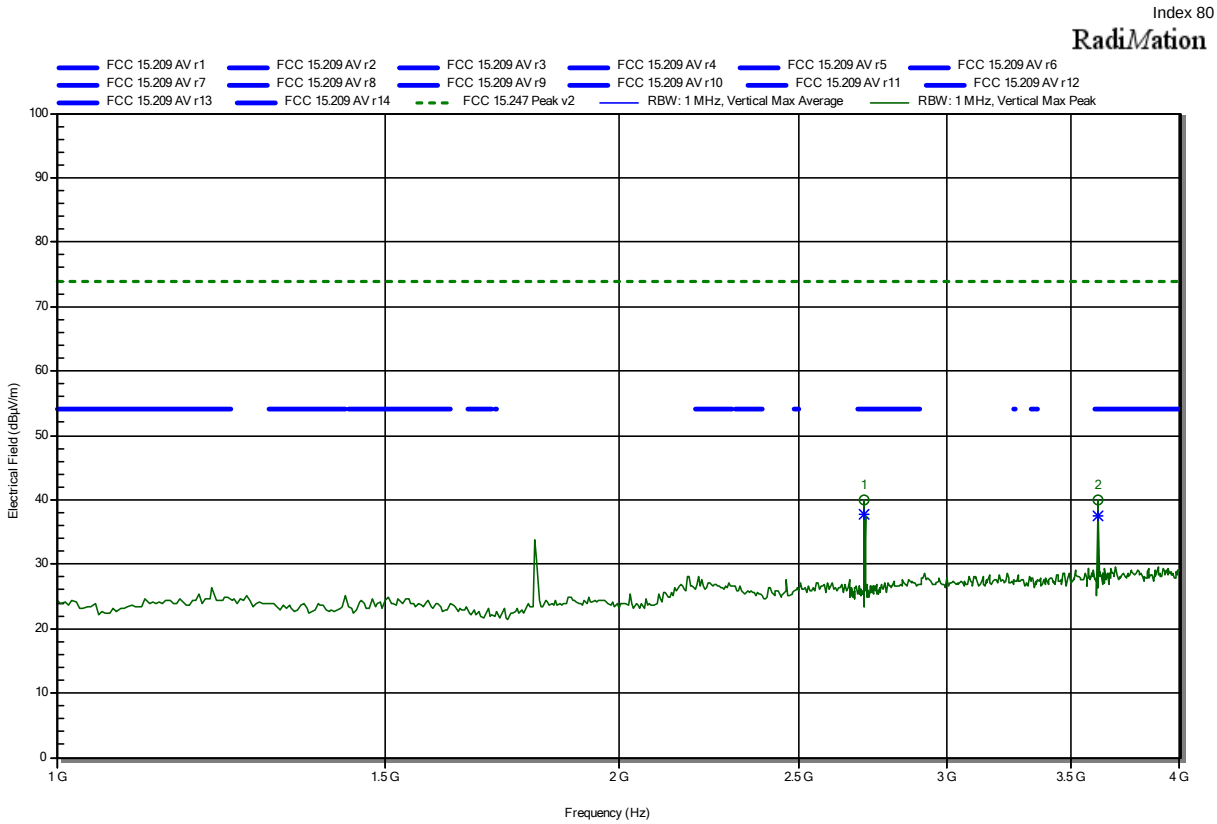


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.709 GHz	41.35 dBµV/m	74 dBµV/m	-32.65 dB	Pass
3.612 GHz	40.01 dBµV/m	74 dBµV/m	-33.99 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.709 GHz	39.69 dBµV/m	54 dBµV/m	-14.31 dB	Pass
3.612 GHz	37.67 dBµV/m	54 dBµV/m	-16.33 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

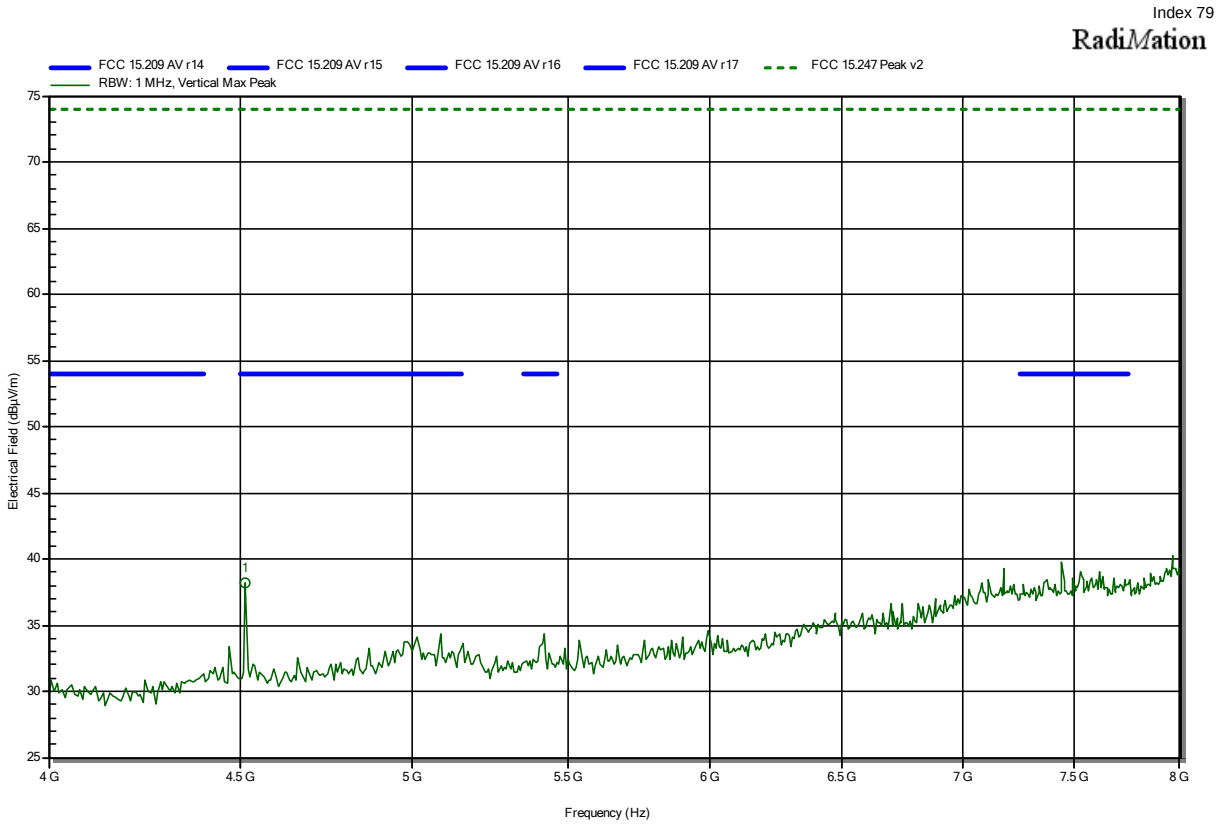


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.709 GHz	39.86 dBµV/m	74 dBµV/m	-34.14 dB	Pass
3.612 GHz	40.04 dBµV/m	74 dBµV/m	-33.96 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.709 GHz	37.82 dBµV/m	54 dBµV/m	-16.18 dB	Pass
3.612 GHz	37.47 dBµV/m	54 dBµV/m	-16.53 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.513 GHz	38.13 dBµV/m	74 dBµV/m	-35.87 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

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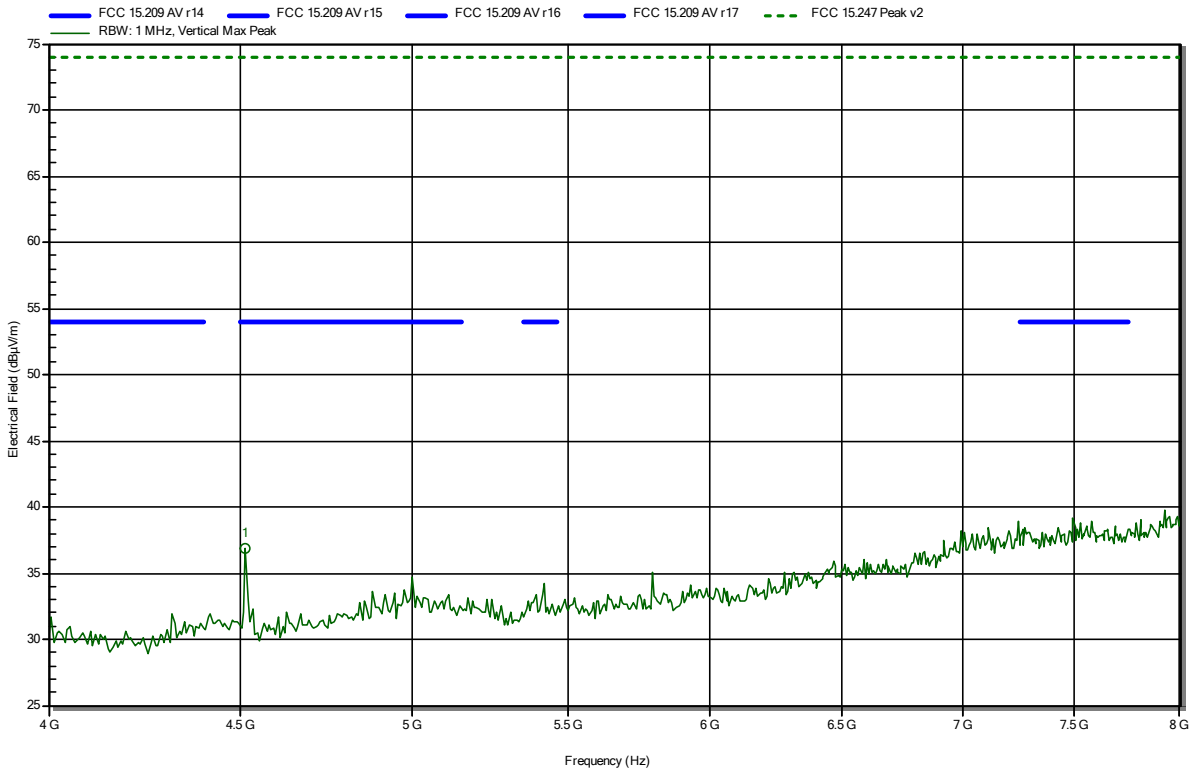
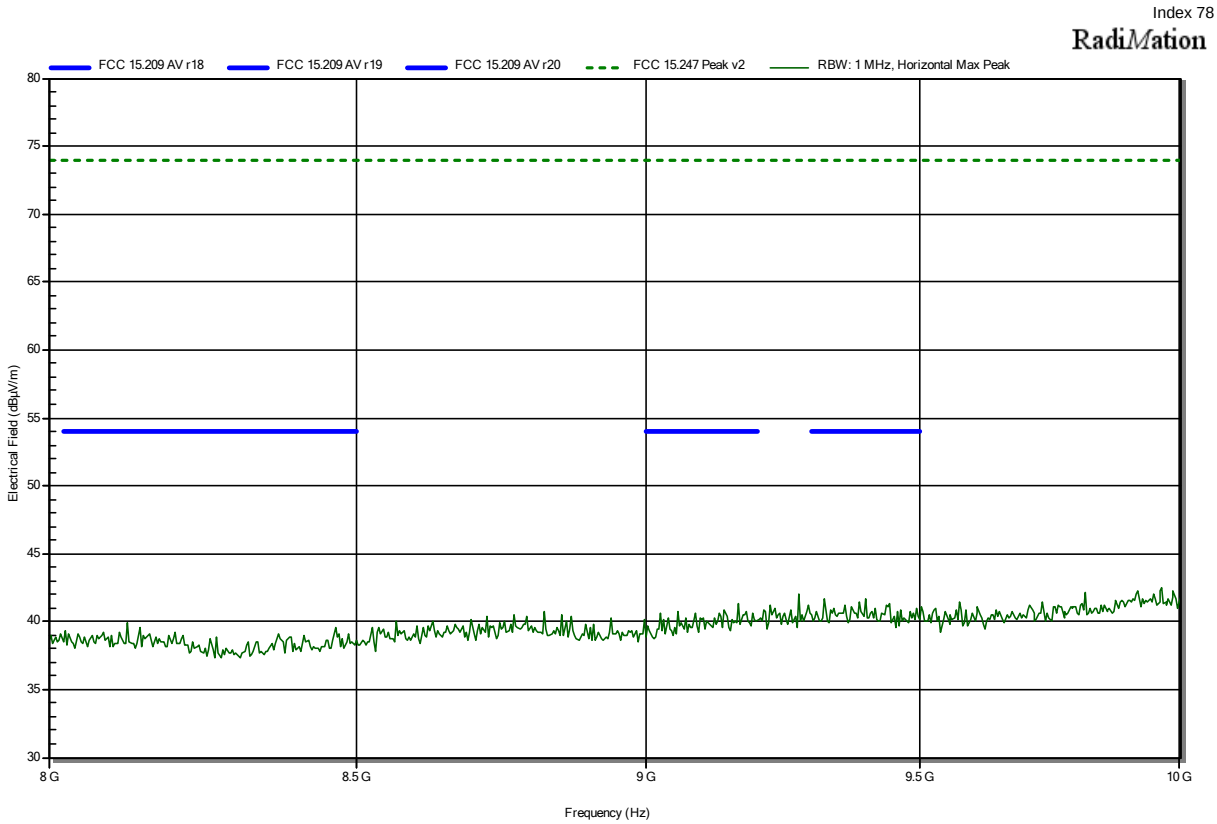
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.513 GHz	36.86 dBµV/m	74 dBµV/m	-37.14 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 903.050 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

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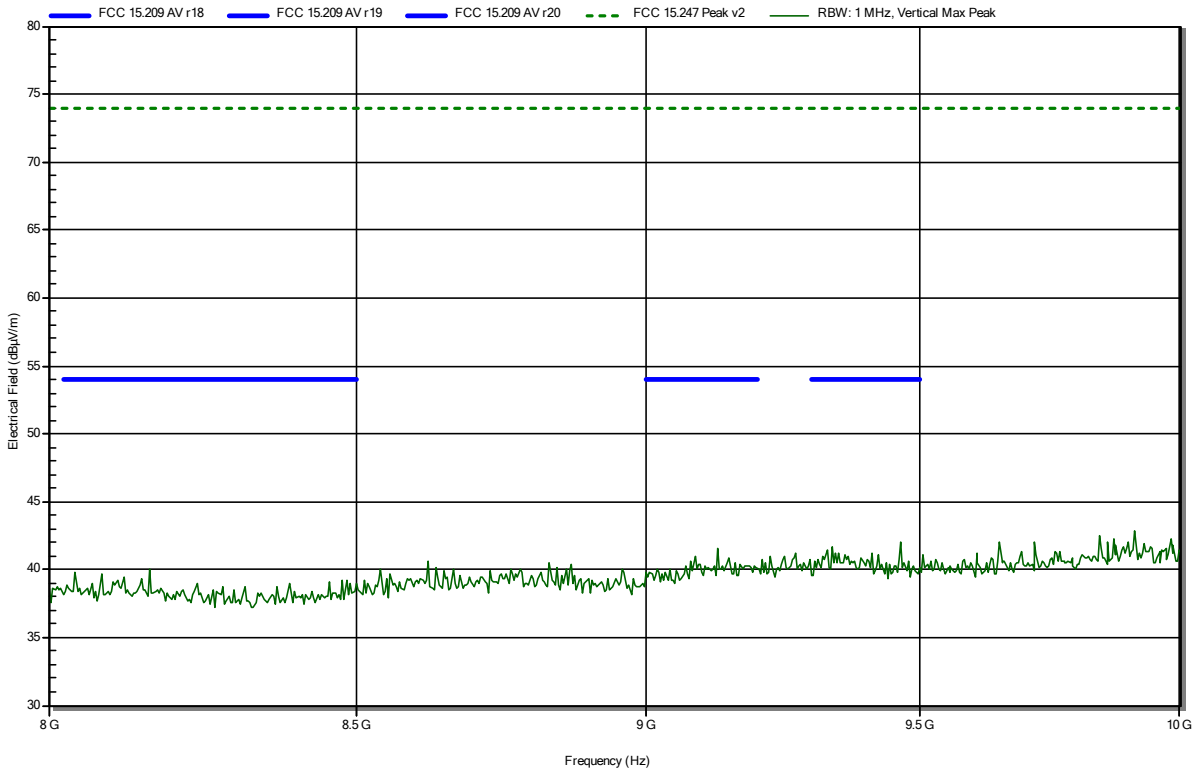
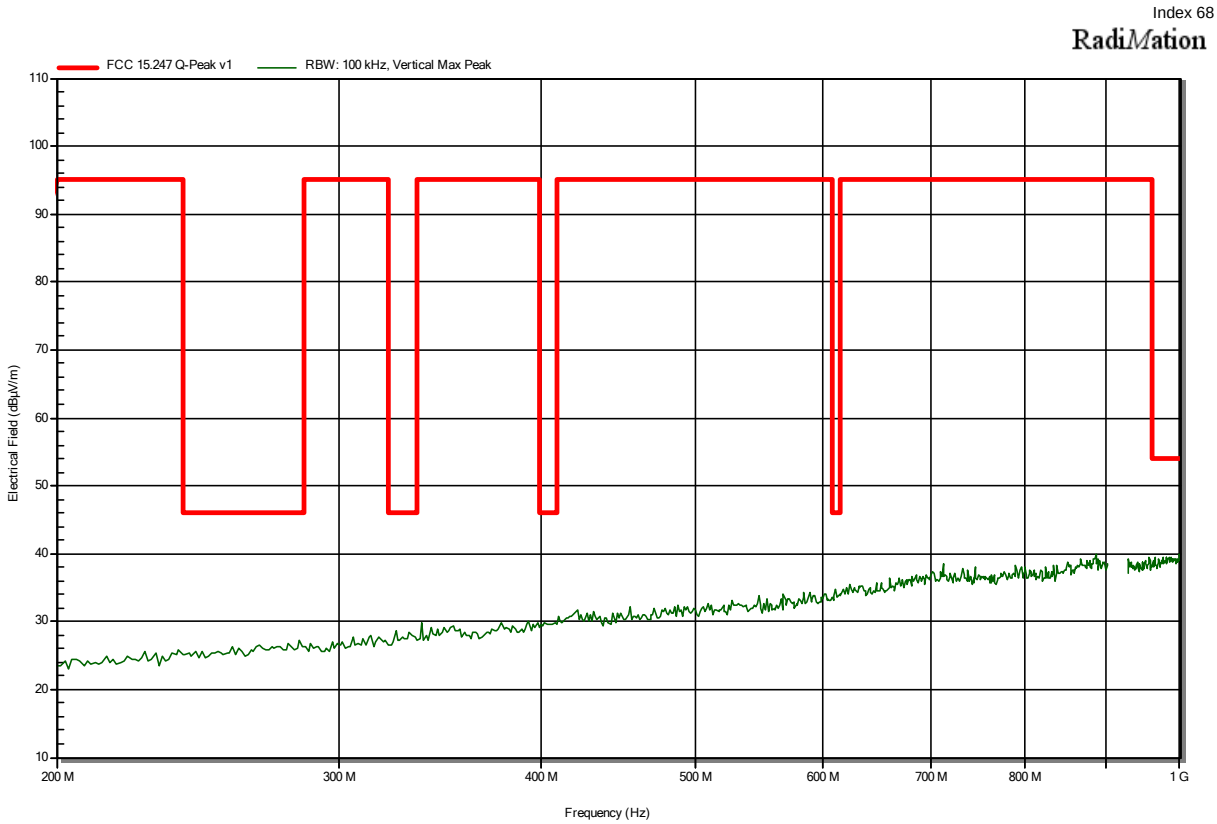
RadiMation



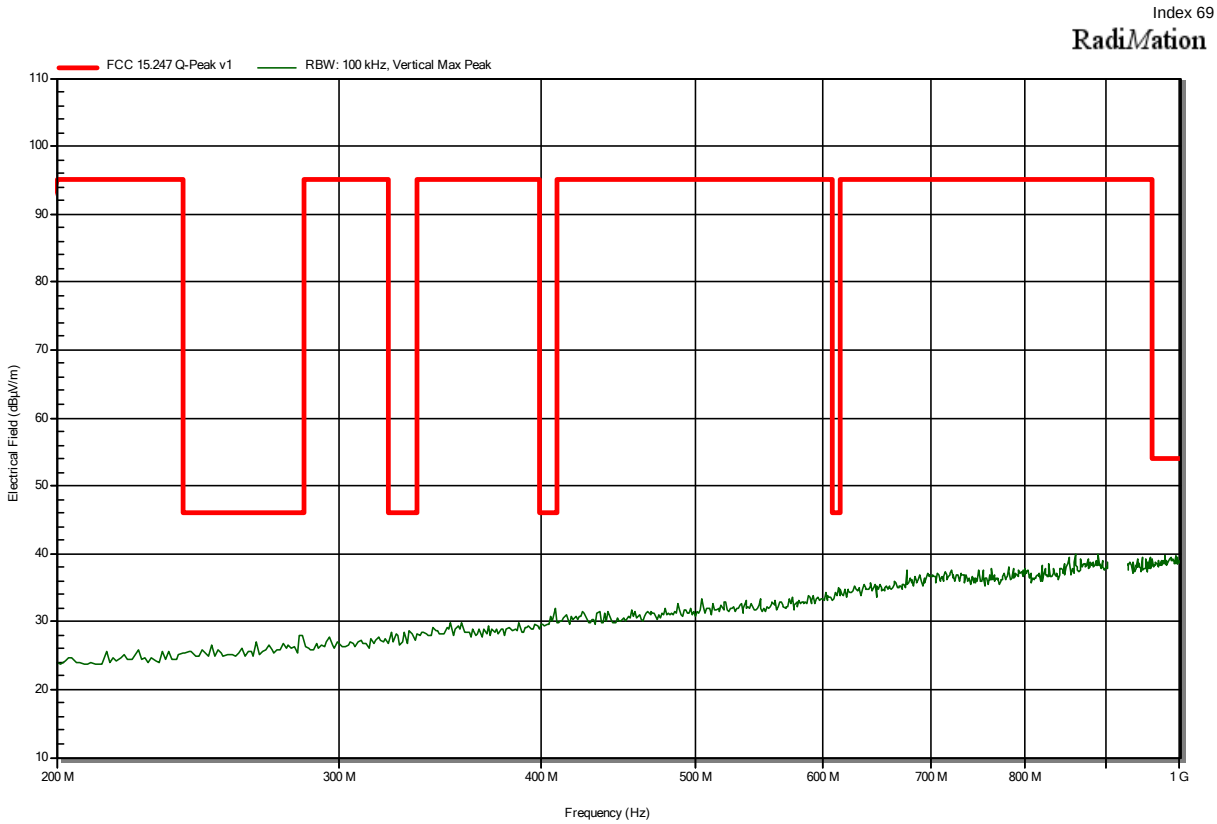
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



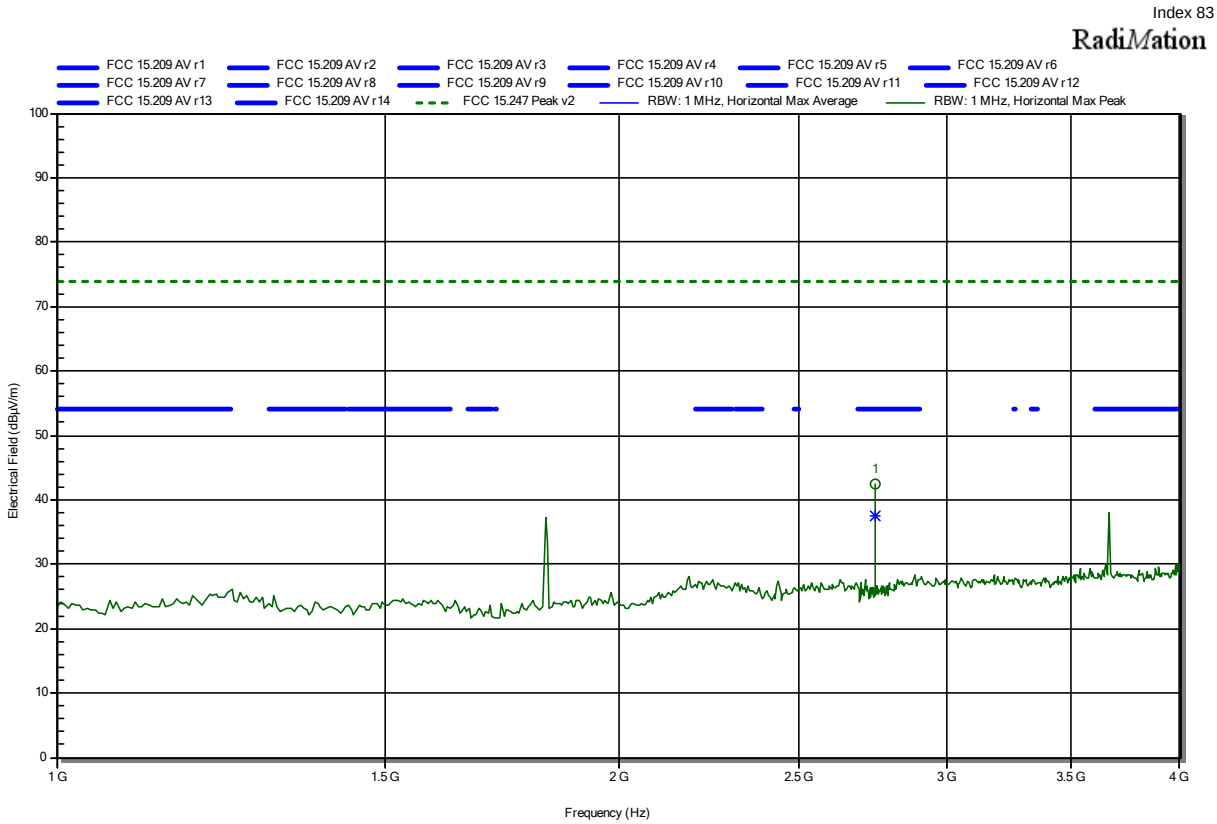
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

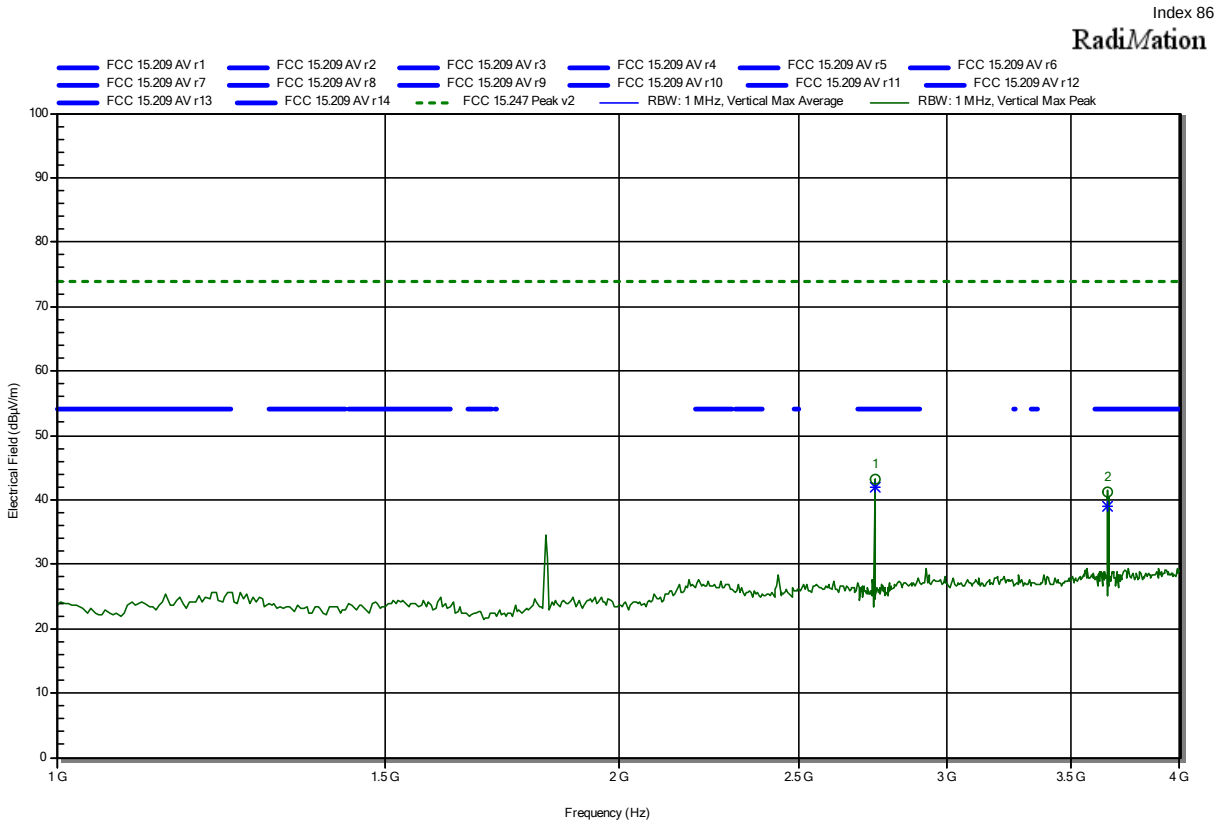


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.745 GHz	42.54 dBµV/m	74 dBµV/m	-31.46 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.745 GHz	37.47 dBµV/m	54 dBµV/m	-16.53 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

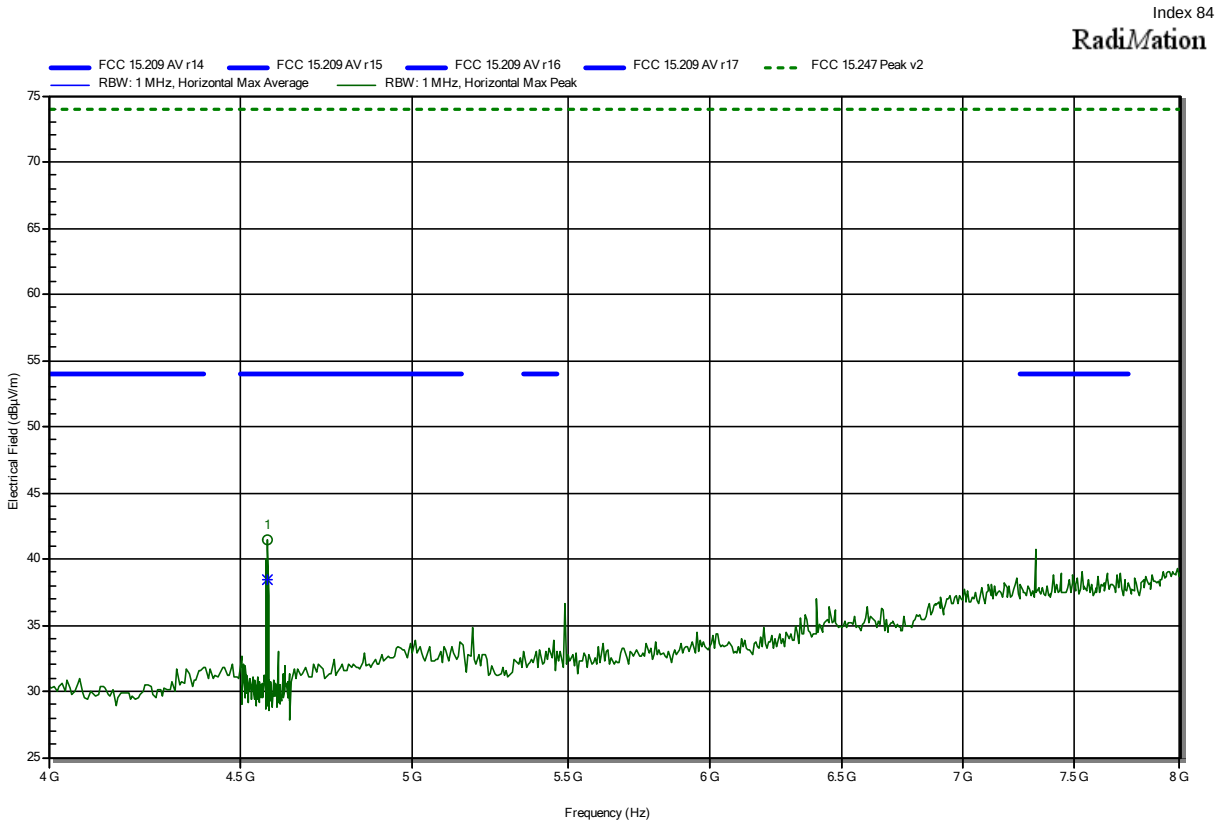


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.745 GHz	43.26 dBµV/m	74 dBµV/m	-30.74 dB	Pass
3.66 GHz	41.27 dBµV/m	74 dBµV/m	-32.73 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.745 GHz	41.94 dBµV/m	54 dBµV/m	-12.06 dB	Pass
3.66 GHz	39.06 dBµV/m	54 dBµV/m	-14.94 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

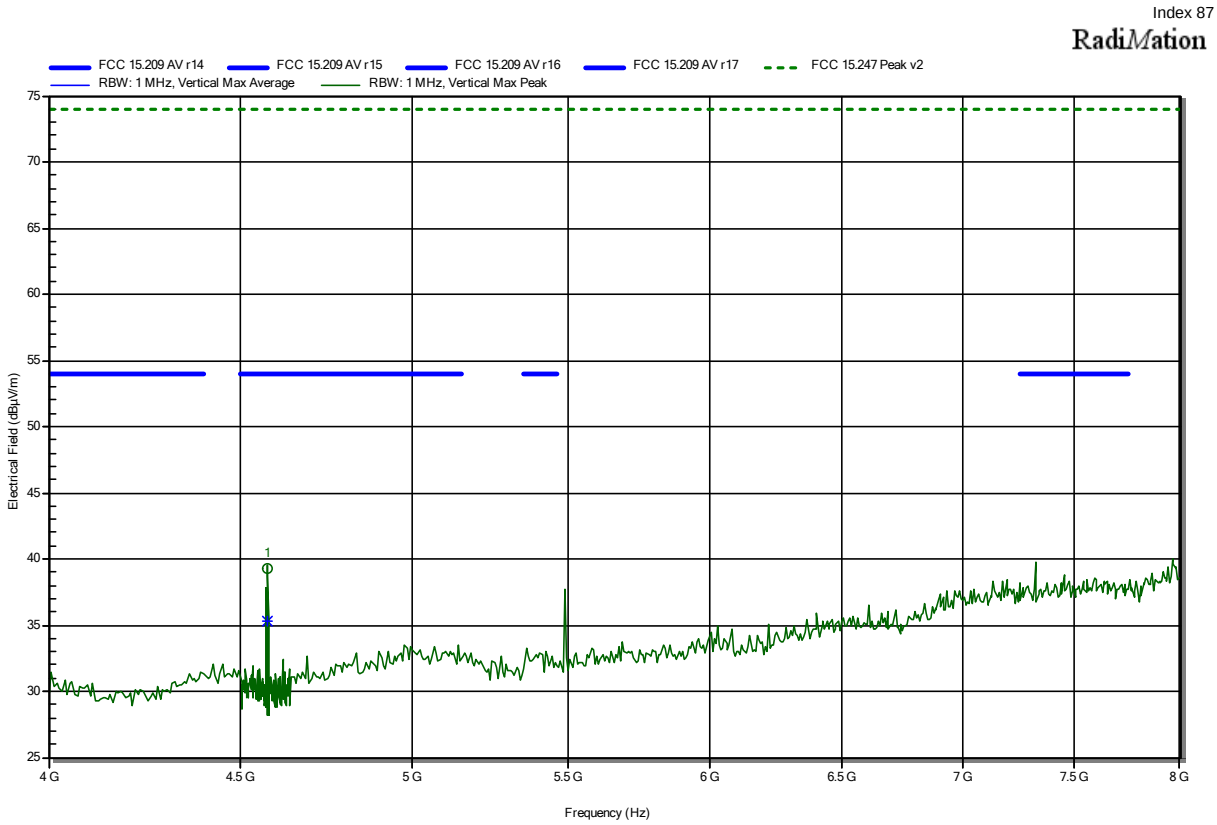


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.575 GHz	41.43 dBµV/m	74 dBµV/m	-32.57 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.575 GHz	38.41 dBµV/m	54 dBµV/m	-15.59 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

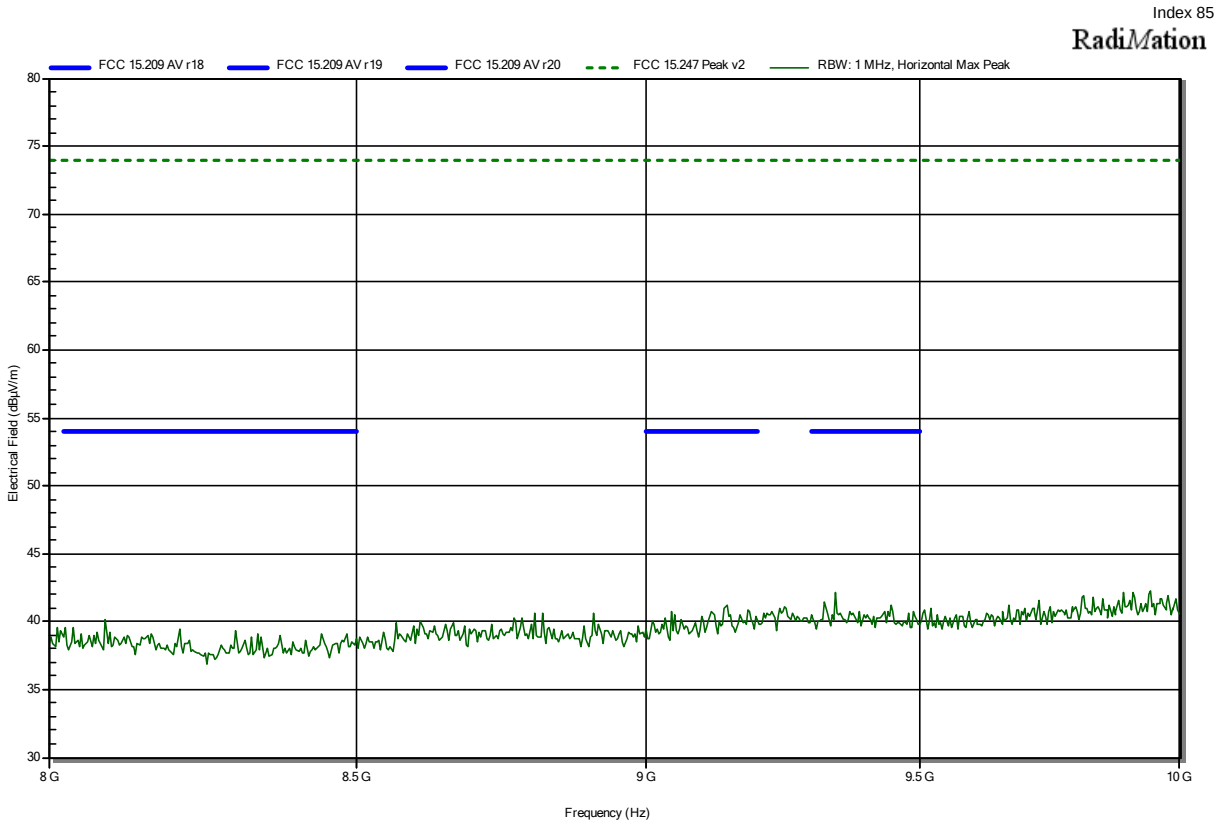


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.575 GHz	39.23 dBµV/m	74 dBµV/m	-34.77 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.575 GHz	35.33 dBµV/m	54 dBµV/m	-18.67 dB	Pass

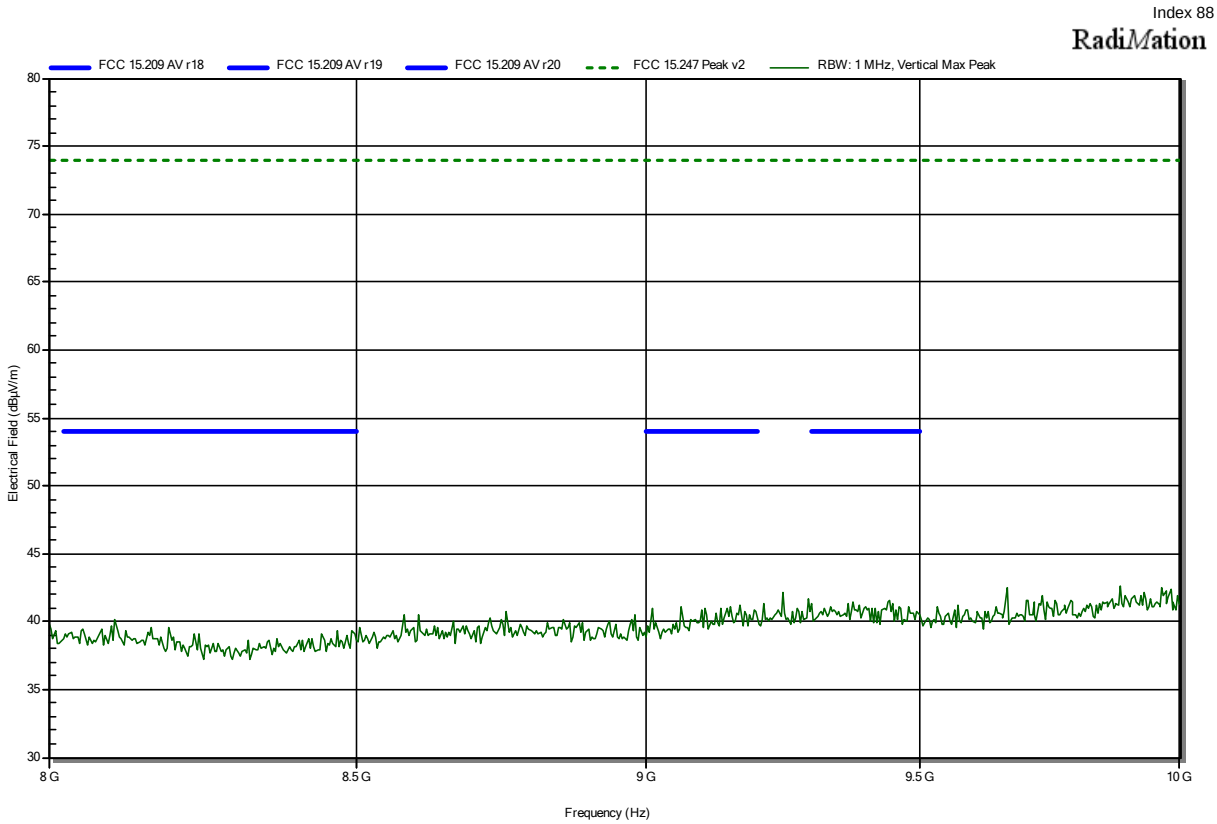
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



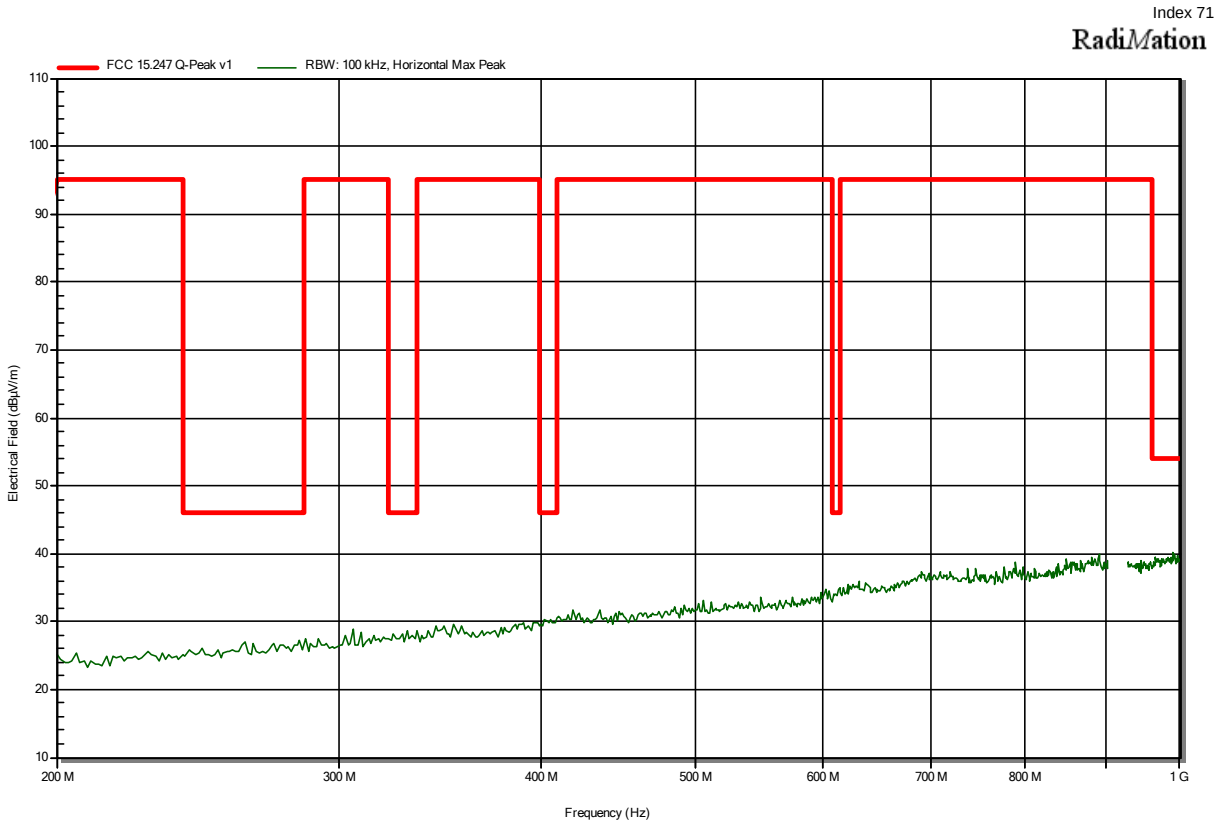
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



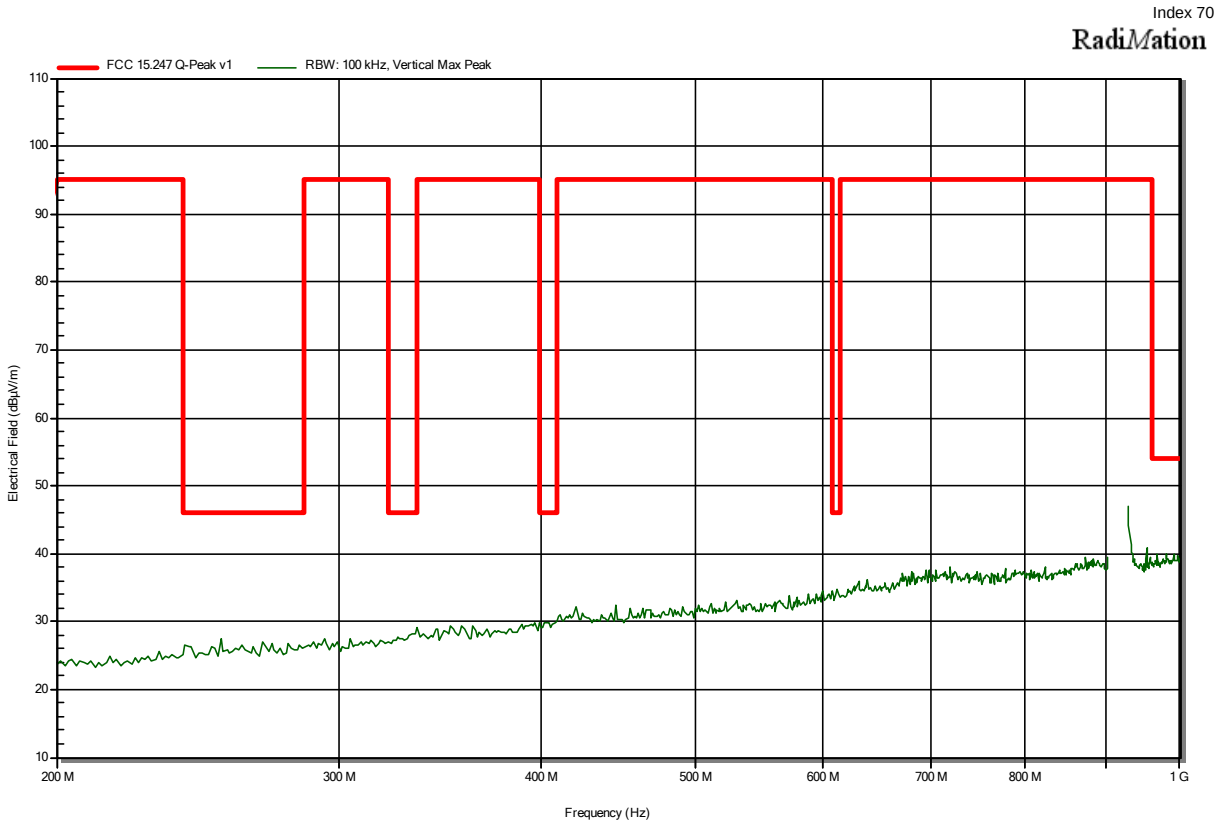
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



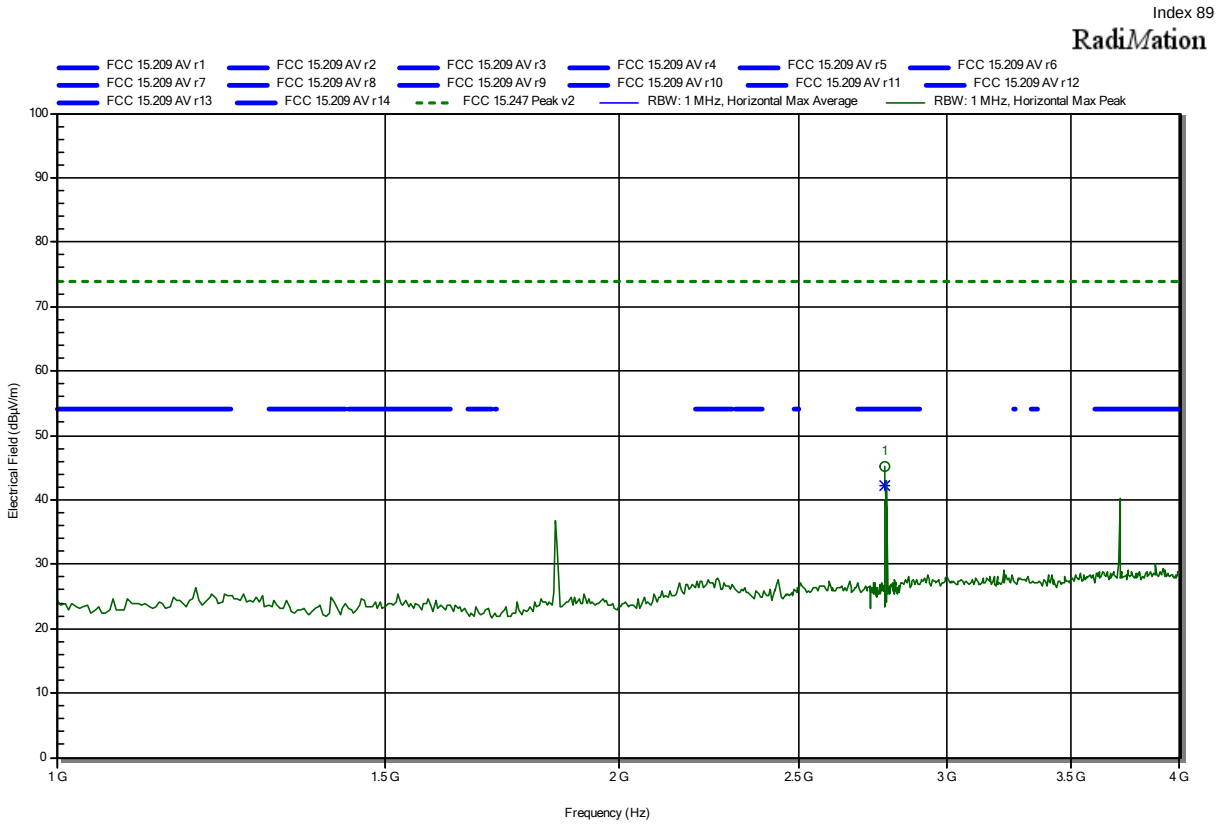
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

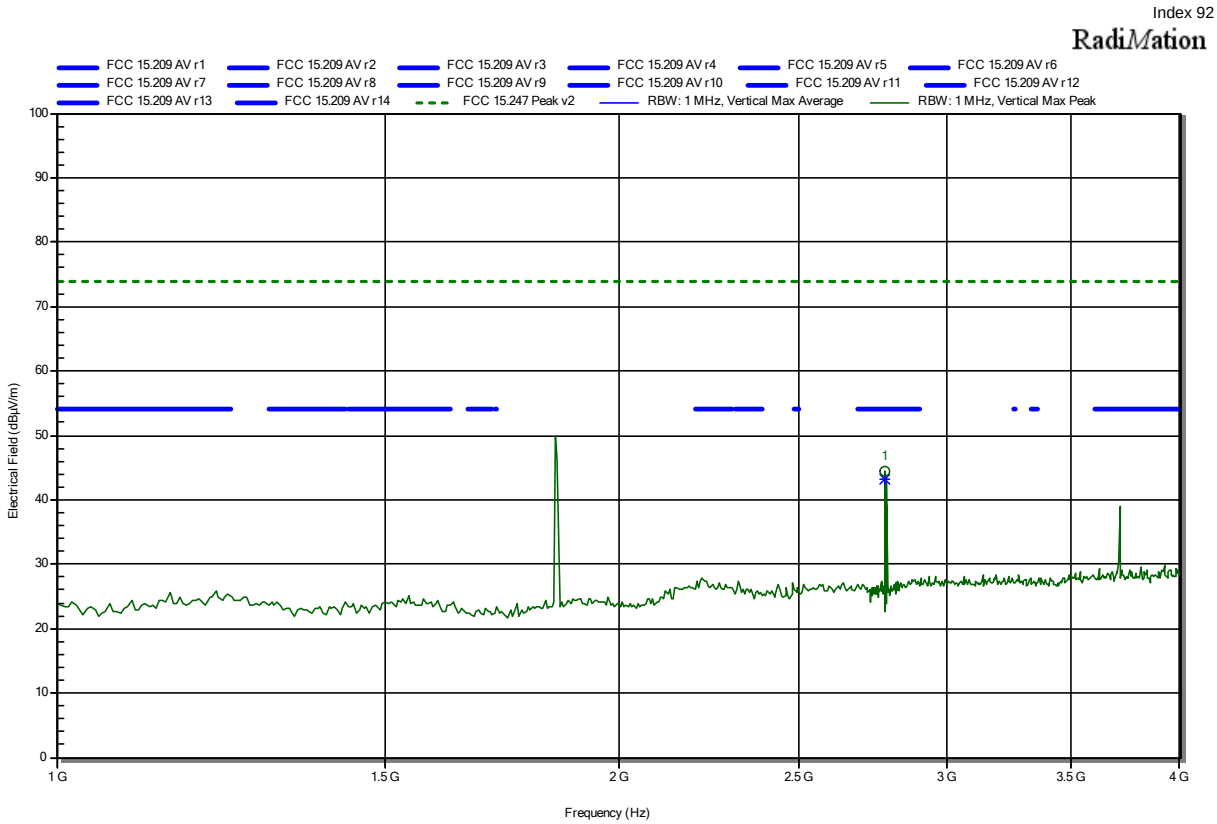


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.781 GHz	45.06 dBµV/m	74 dBµV/m	-28.94 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.781 GHz	42.17 dBµV/m	54 dBµV/m	-11.83 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

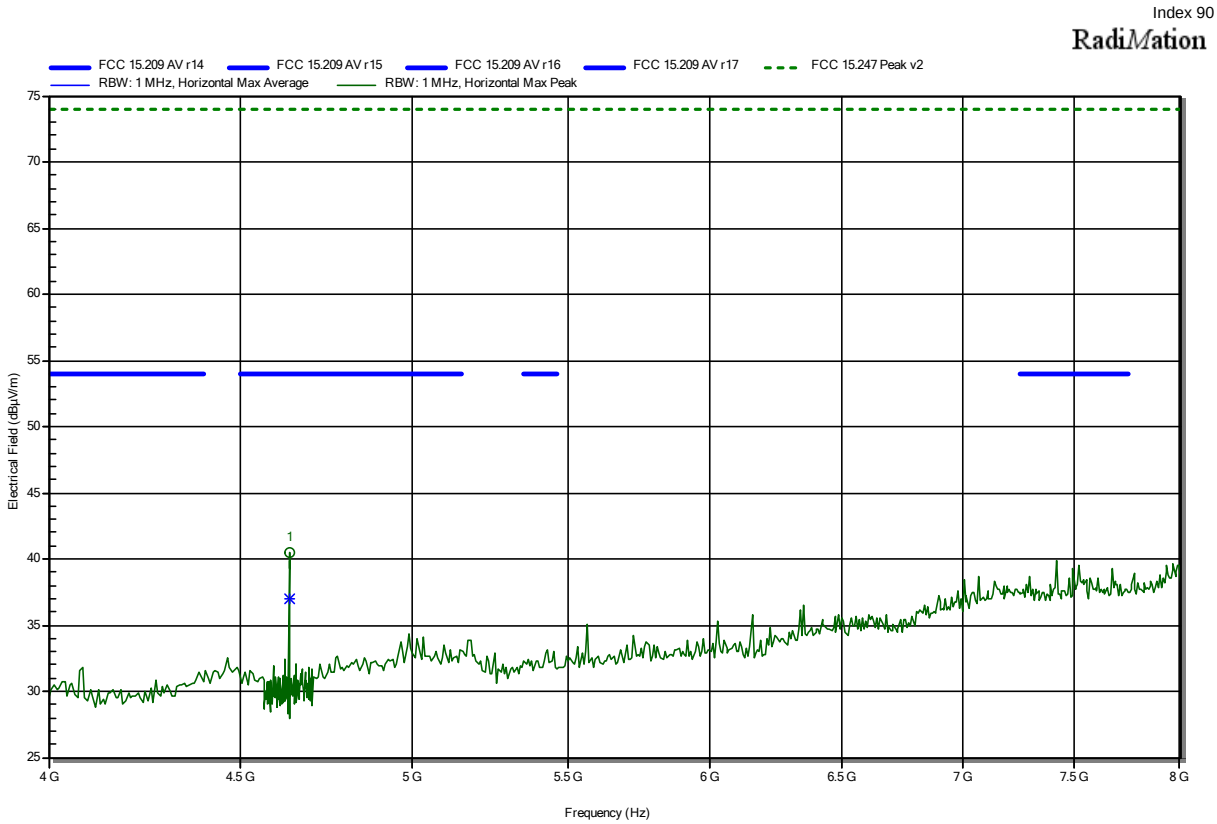


Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.781 GHz	44.33 dBµV/m	74 dBµV/m	-29.67 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.781 GHz	43.16 dBµV/m	54 dBµV/m	-10.84 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.635 GHz	40.49 dBµV/m	74 dBµV/m	-33.51 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.635 GHz	37.01 dBµV/m	54 dBµV/m	-16.99 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

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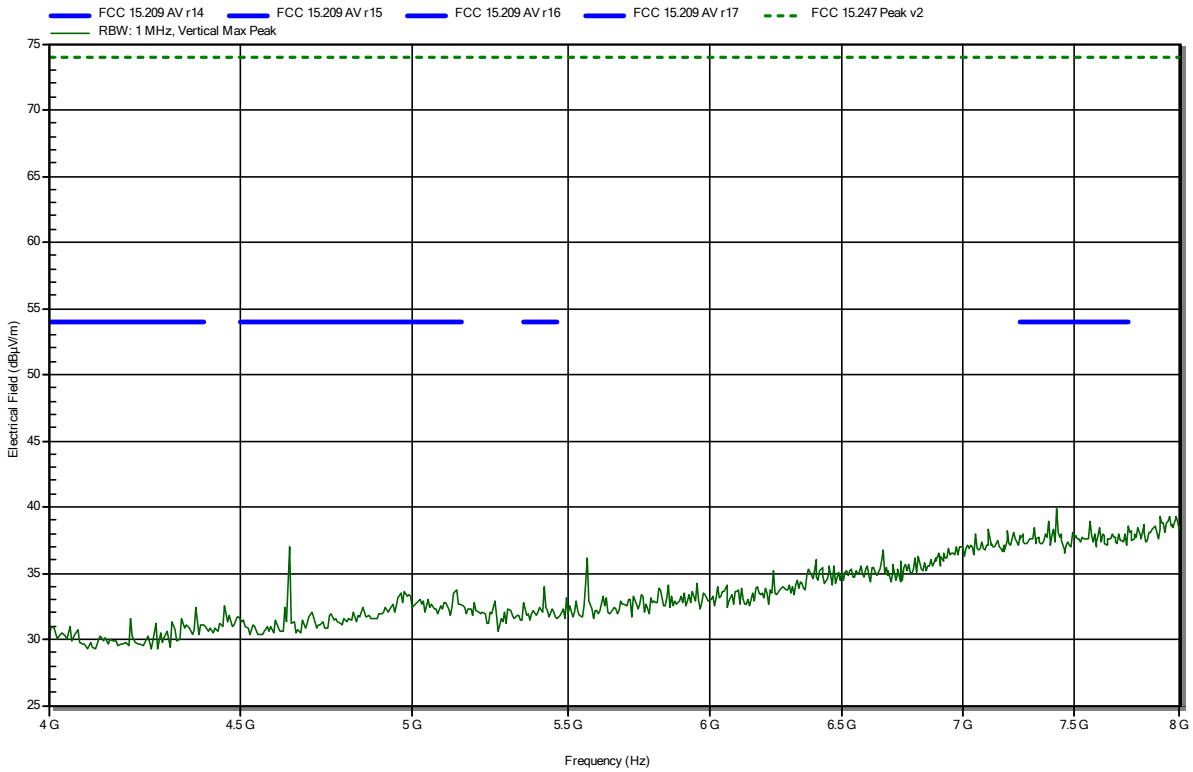
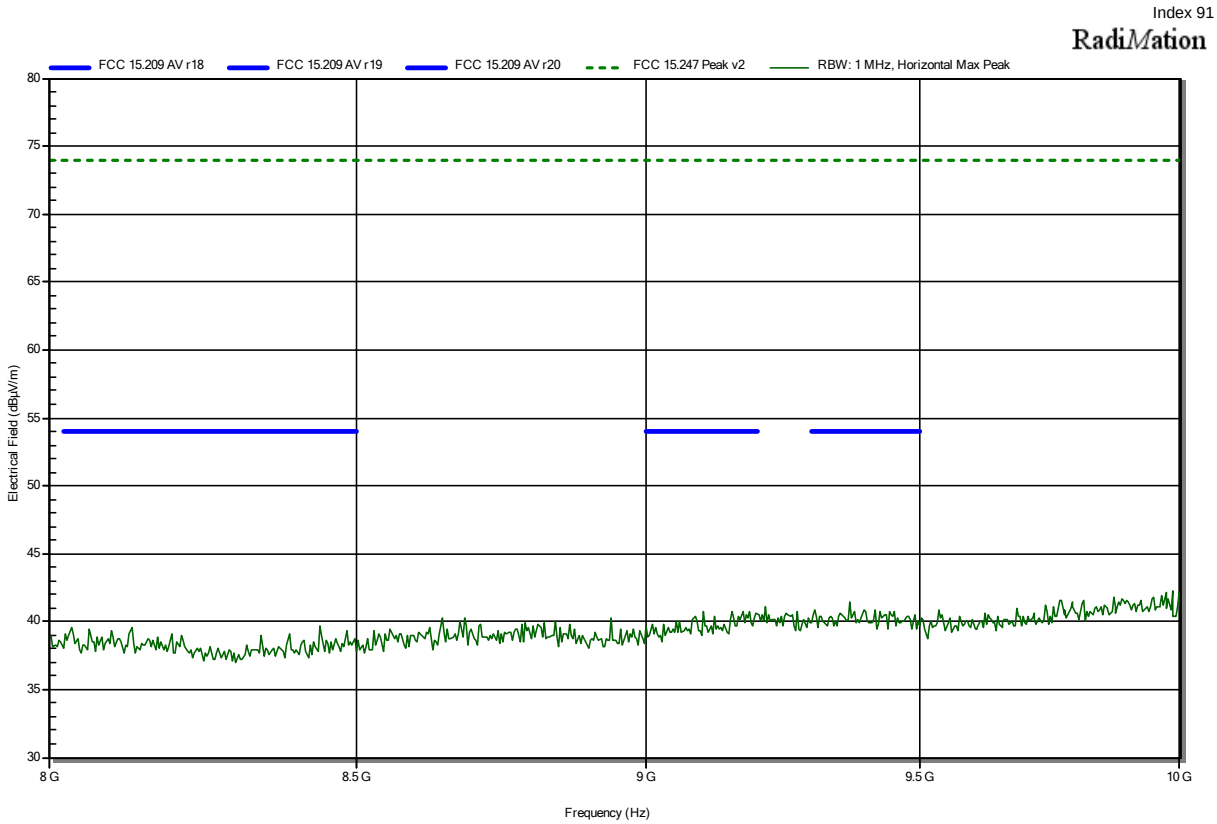
RadiMation



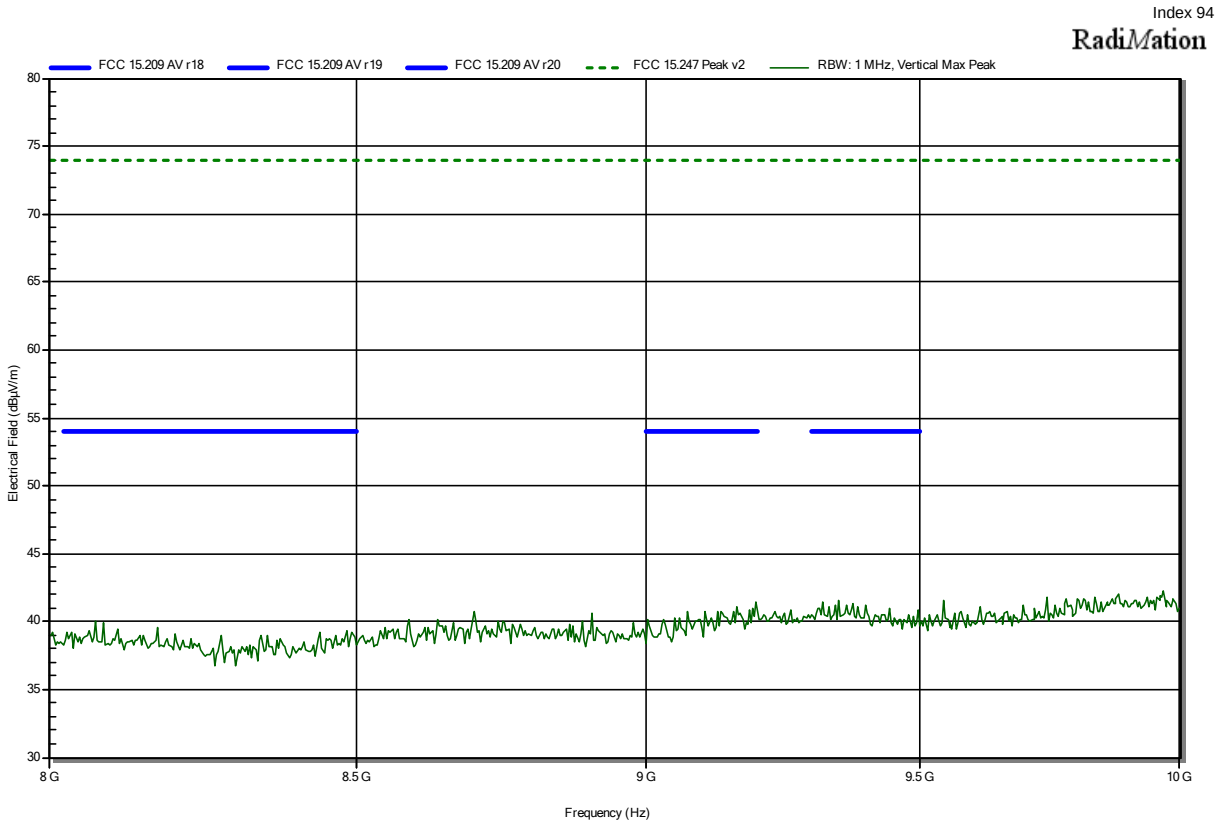
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

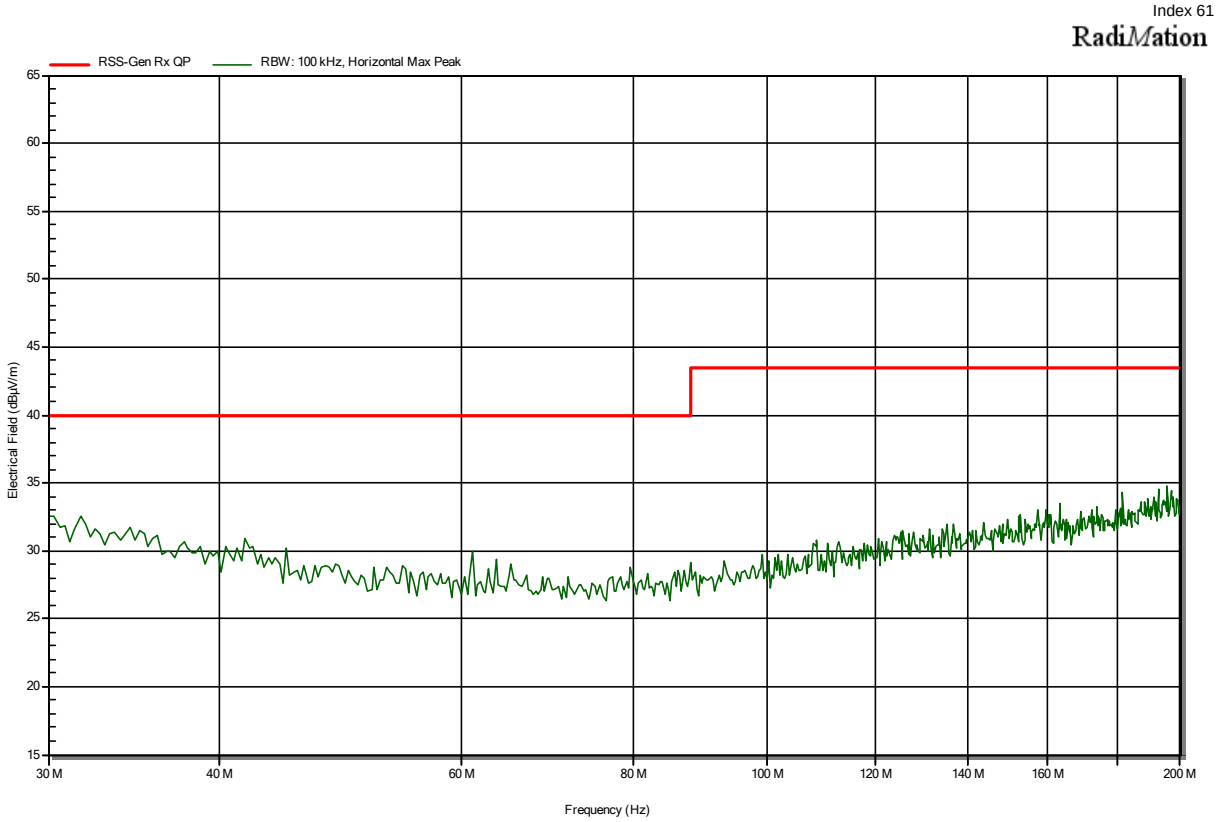
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Tx; GFSK; 926.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



ANNEX C Receiver spurious emissions Antenna Monopole MU 911-LX

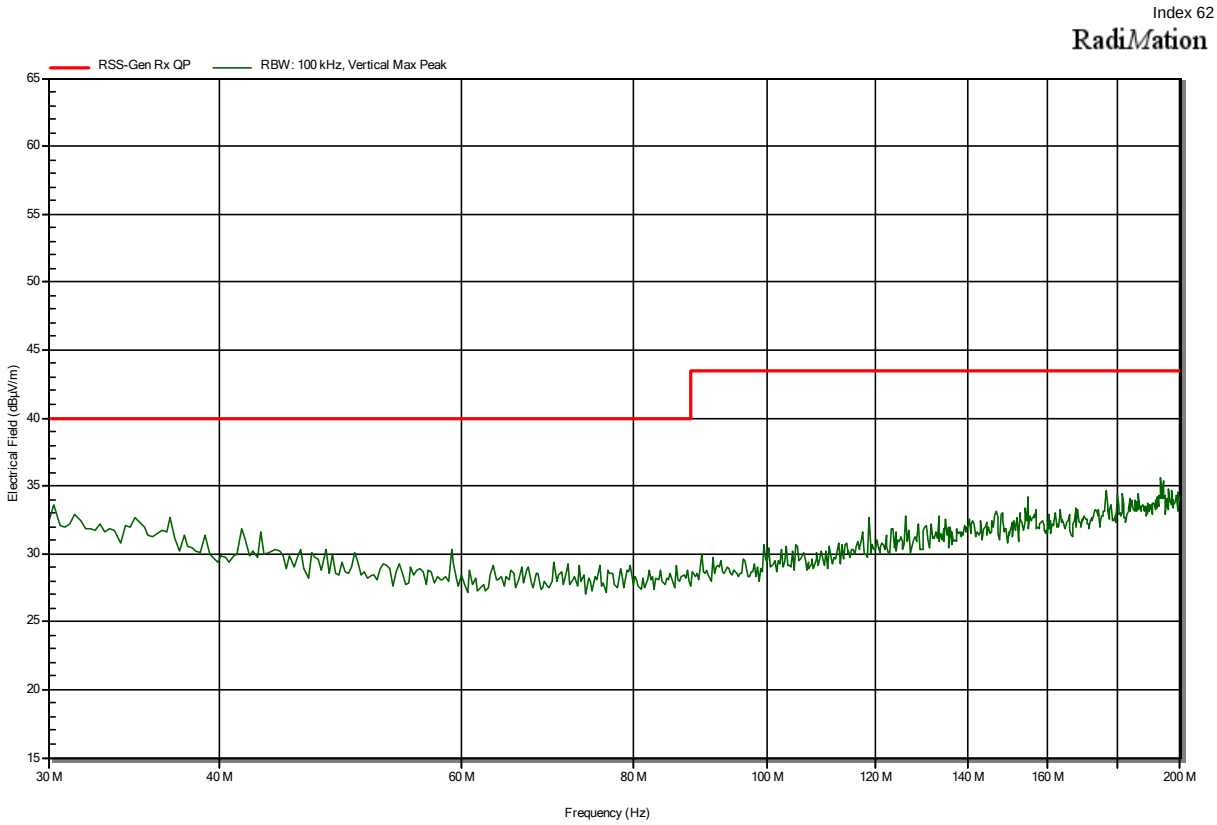
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



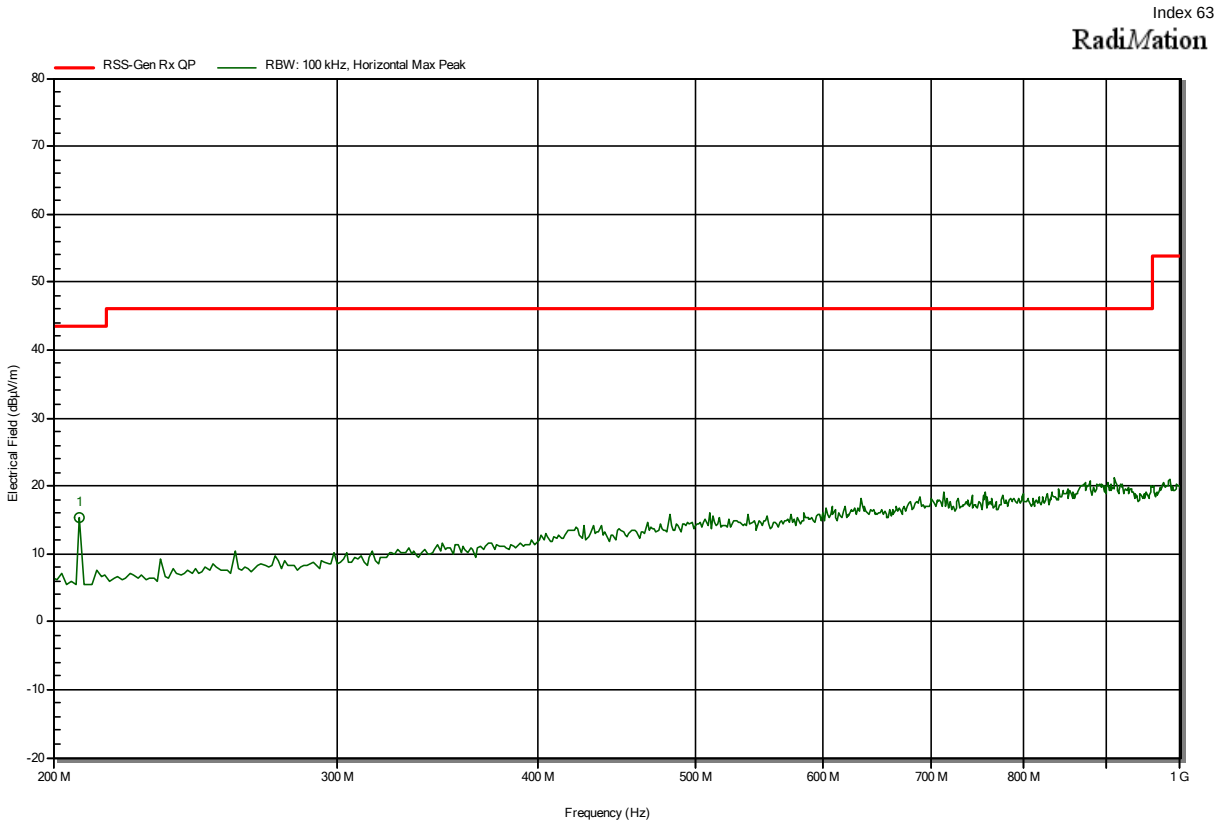
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Radiated Spurious Emissions according to FCC 47 CFR 15.247

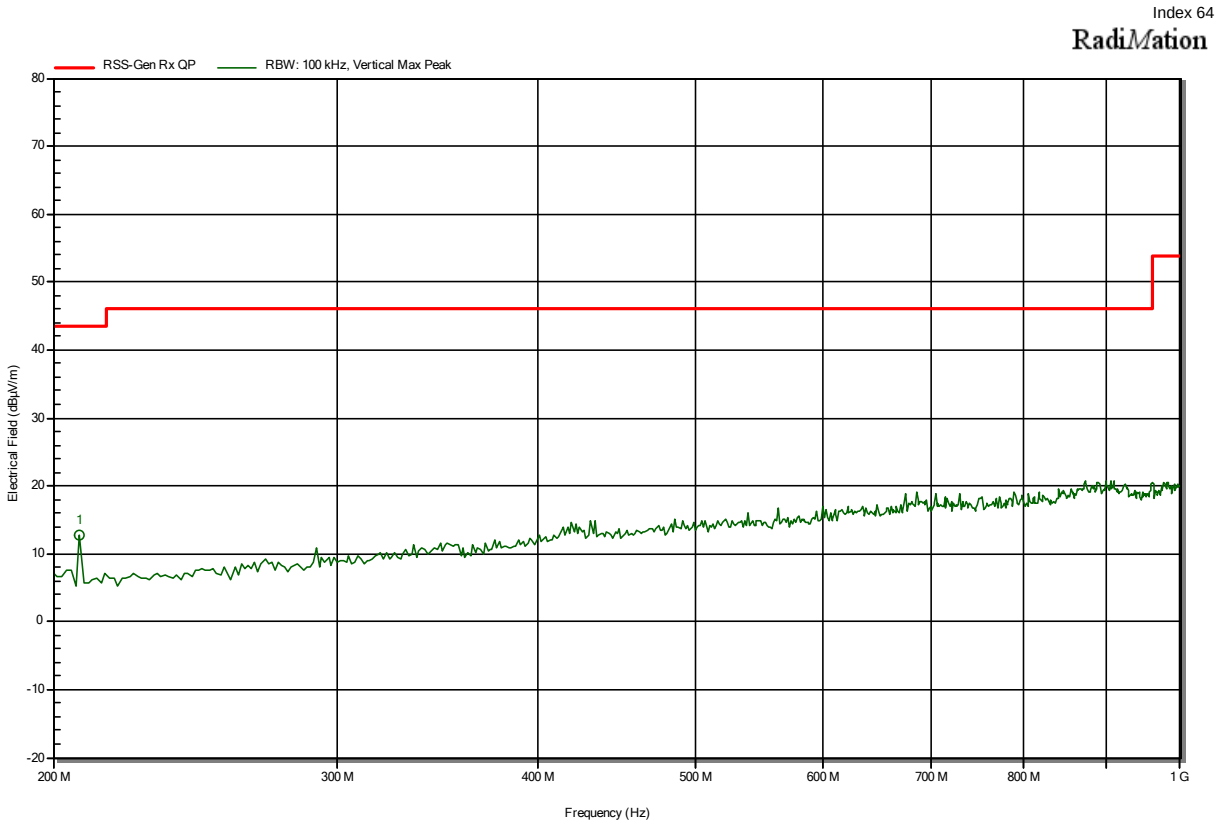
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
207.692 MHz	15.3 dBµV/m	43.5 dBµV/m	-28.2 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

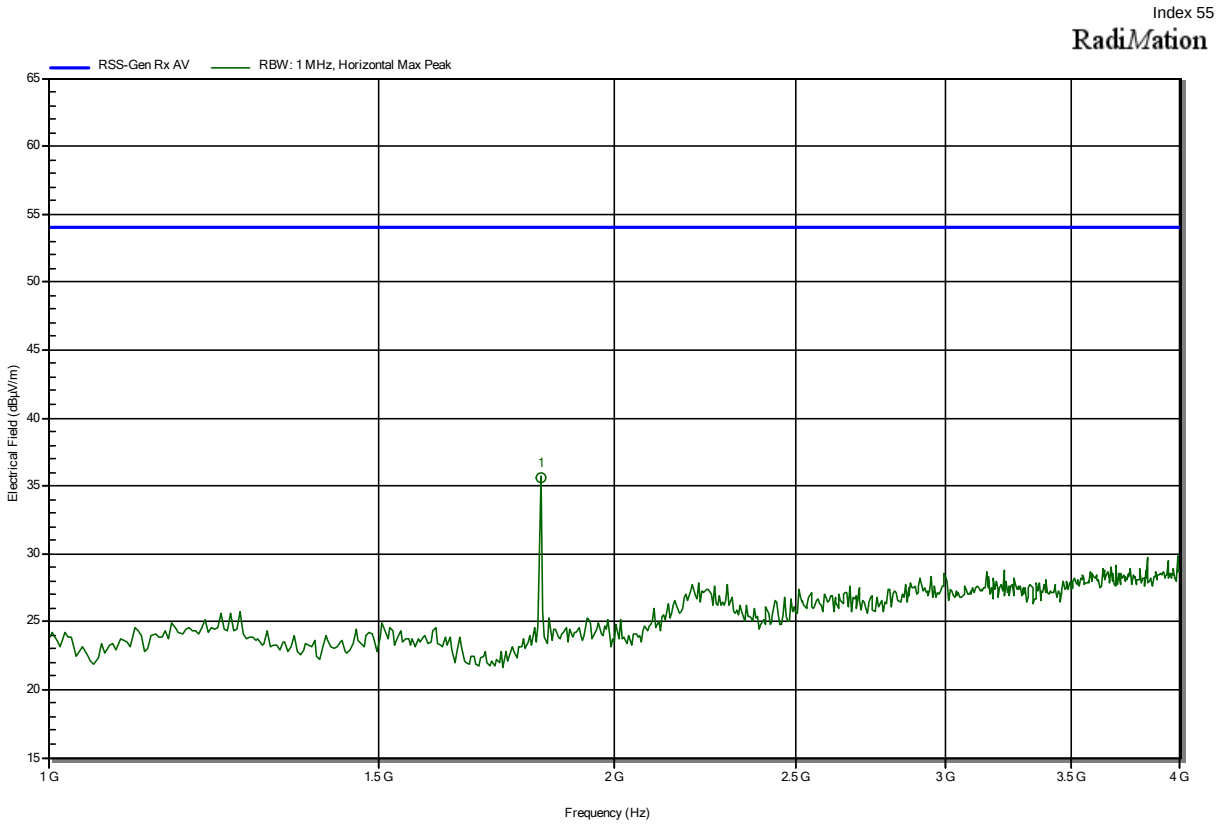
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
207.692 MHz	12.85 dBµV/m	43.5 dBµV/m	-30.65 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

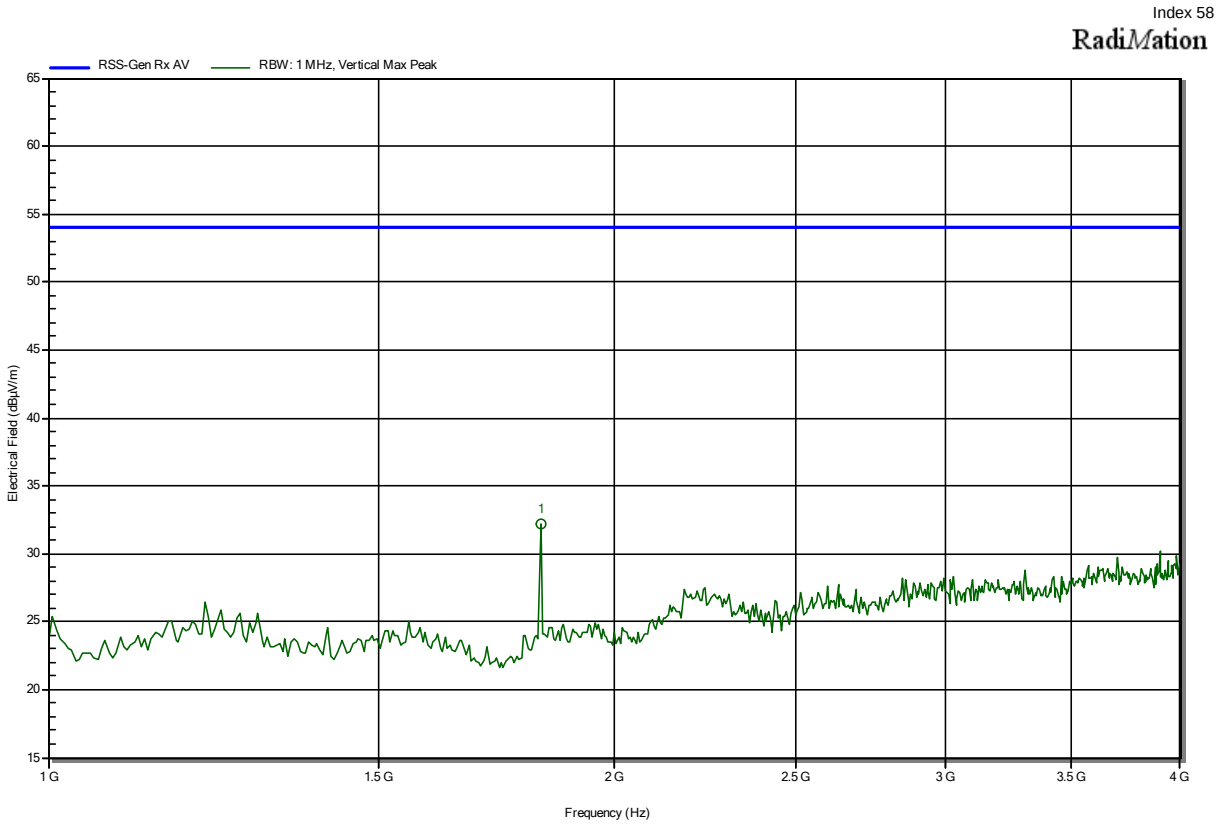
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.827 GHz	35.65 dBµV/m	53.98 dBµV/m	-18.33 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

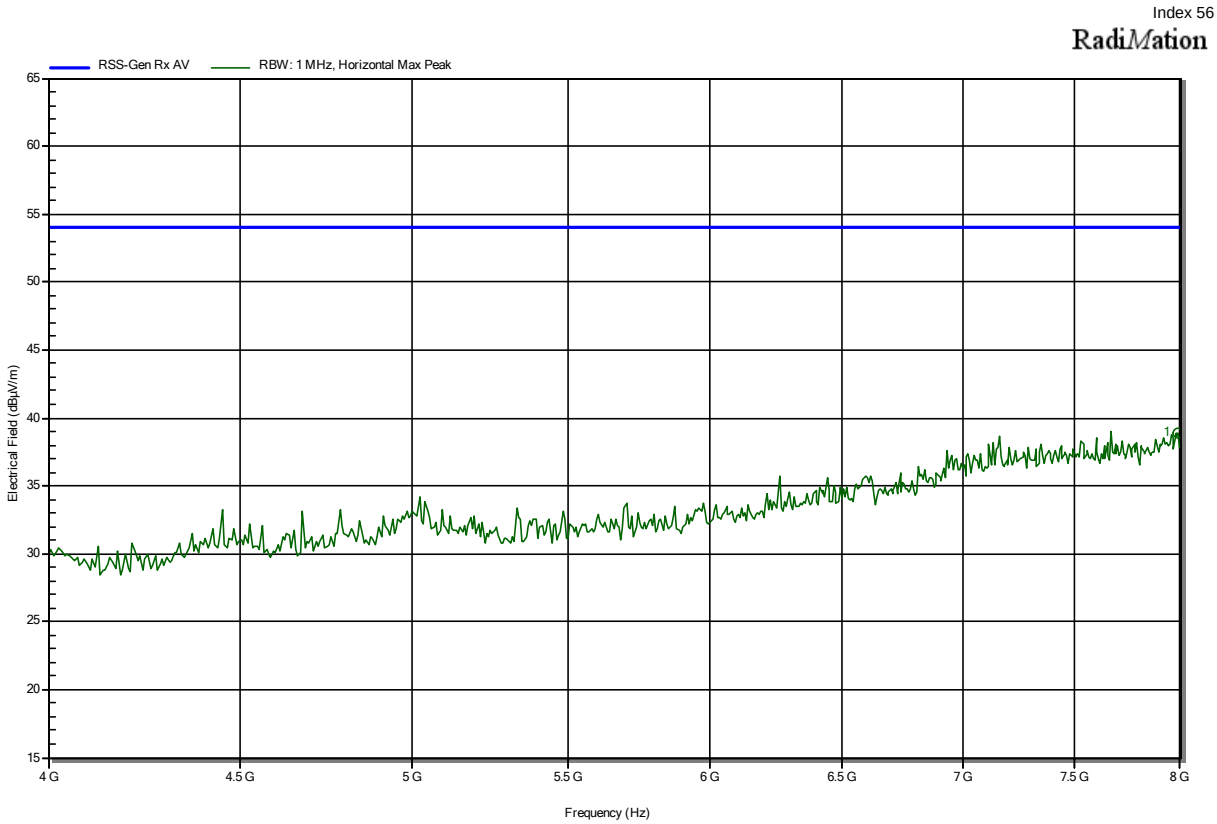
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.827 GHz	32.22 dBµV/m	53.98 dBµV/m	-21.76 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

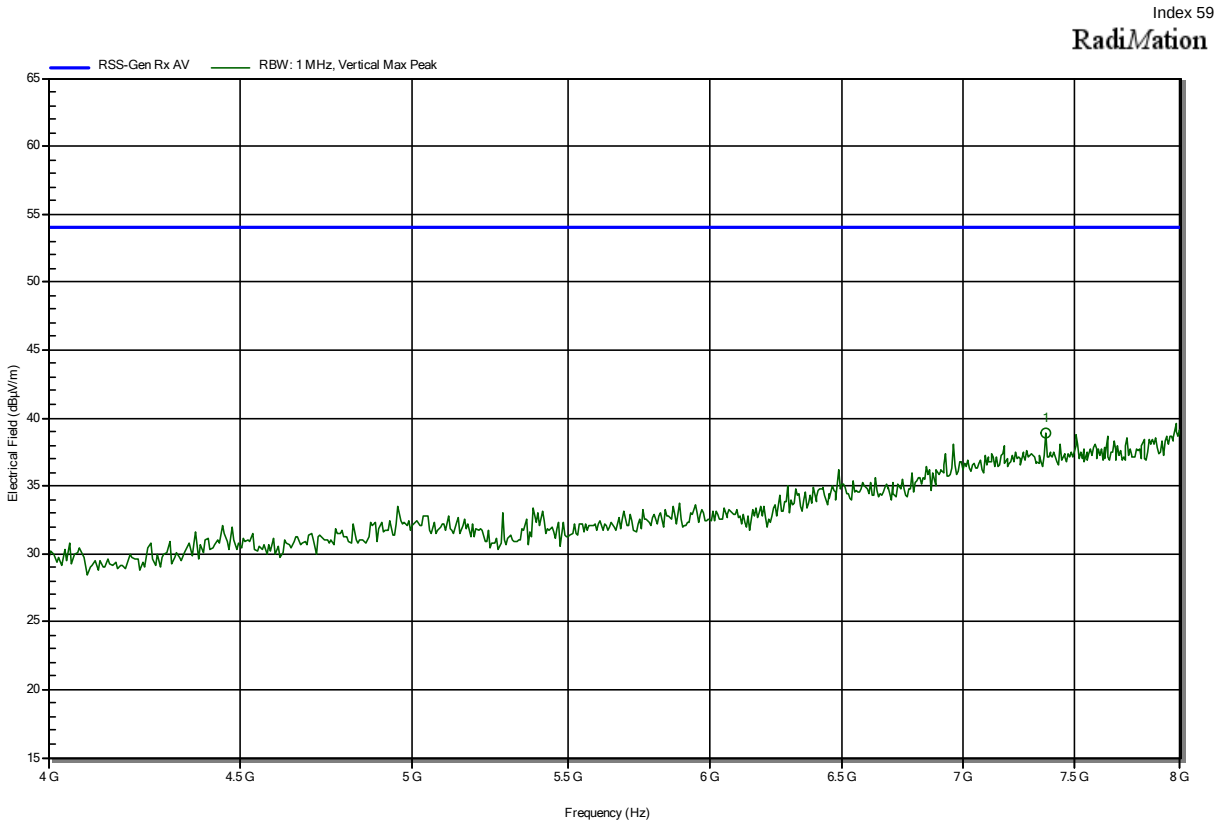
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.987 GHz	38.86 dBµV/m	53.98 dBµV/m	-15.12 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

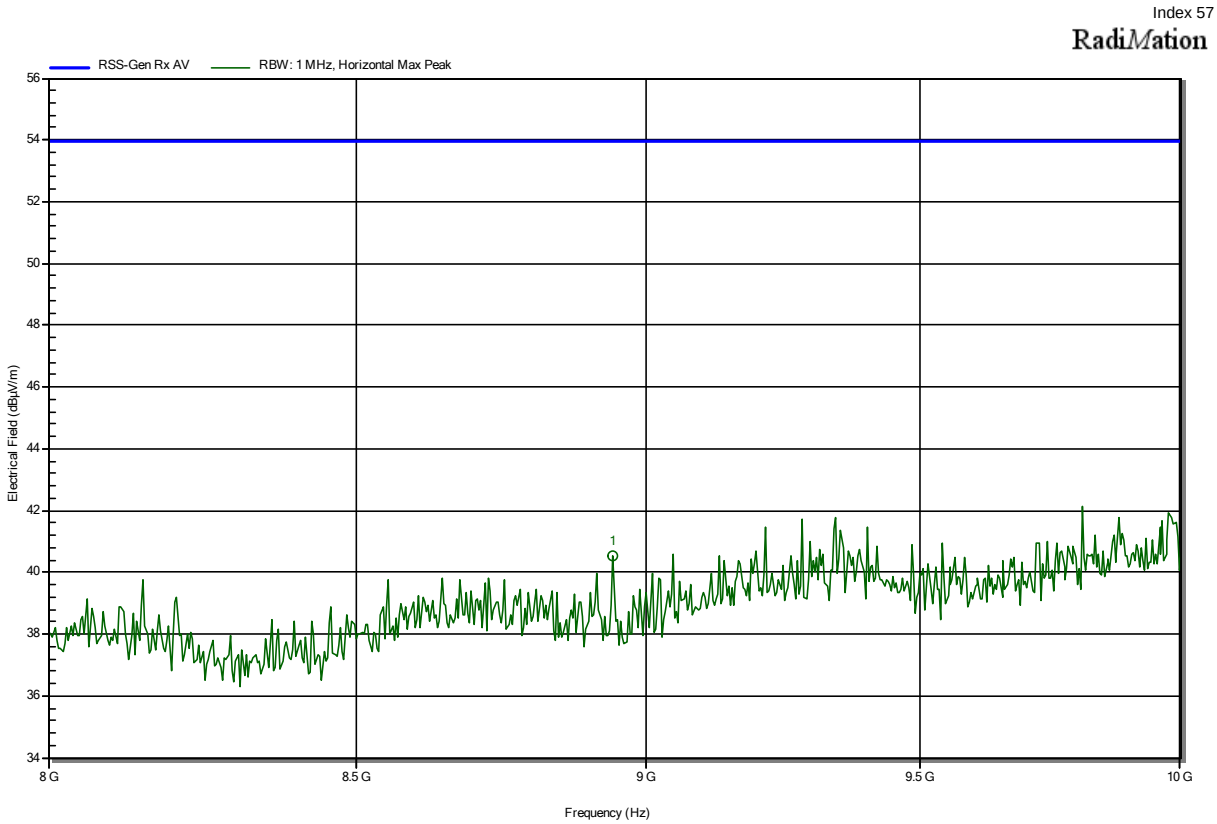
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.365 GHz	38.85 dBµV/m	53.98 dBµV/m	-15.13 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

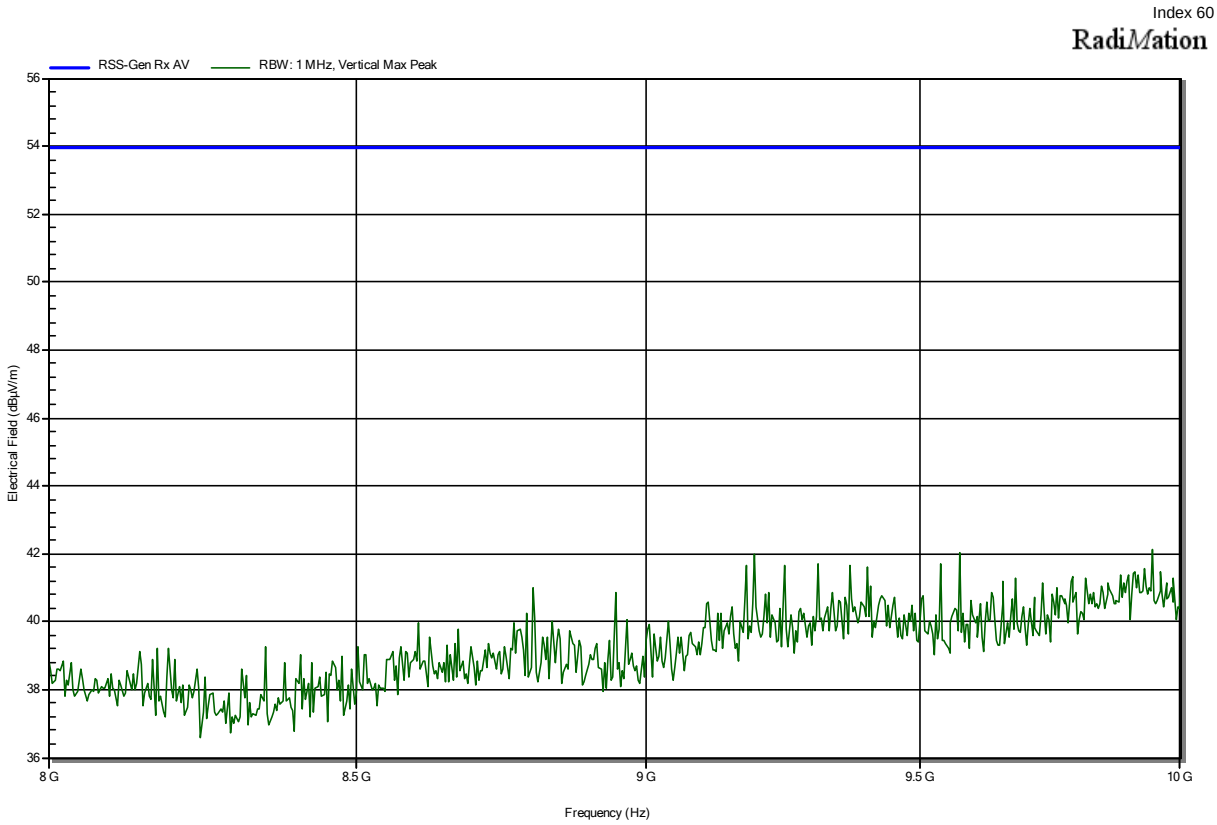
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
8.942 GHz	40.52 dBµV/m	53.98 dBµV/m	-13.46 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

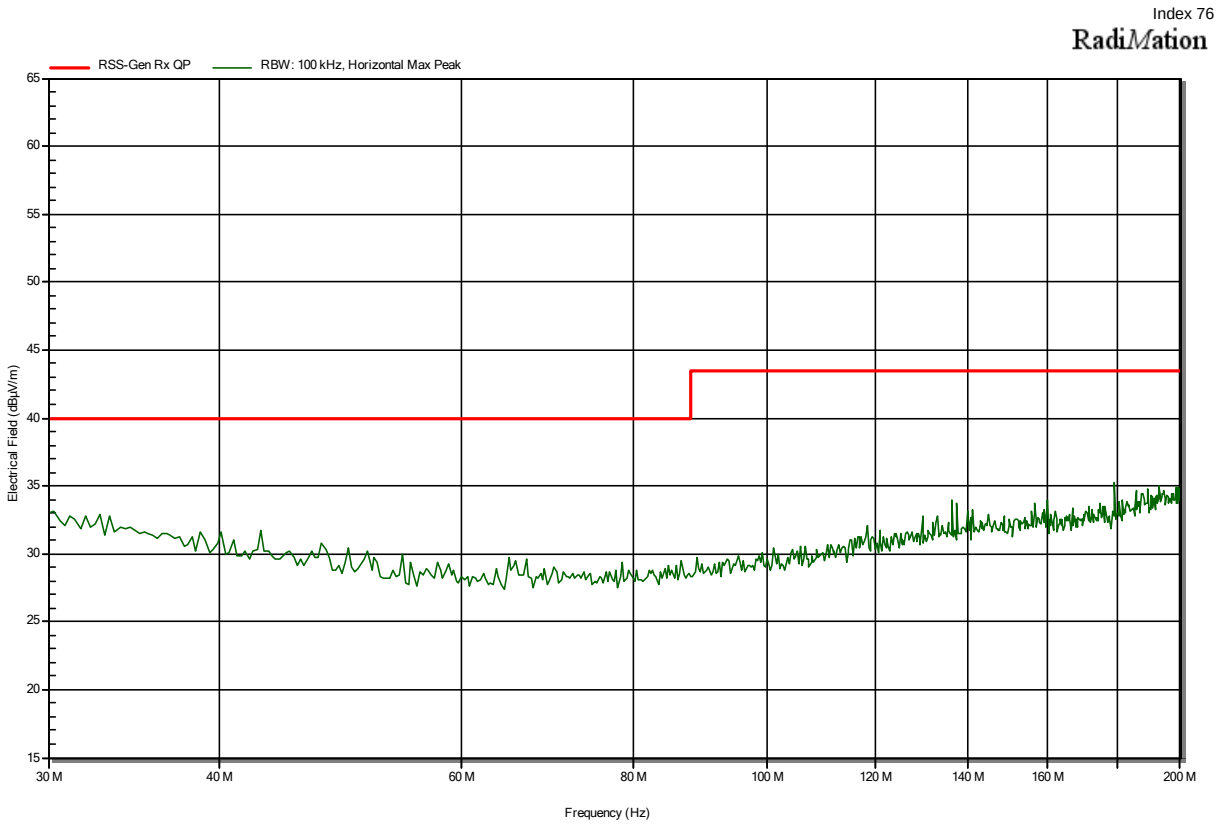
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. MU 911-LX
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-13
Note:	EUT horizontal, Antenna vertical



ANNEX D Receiver spurious emissions Antenna λ/2 dipole CXL 900-1

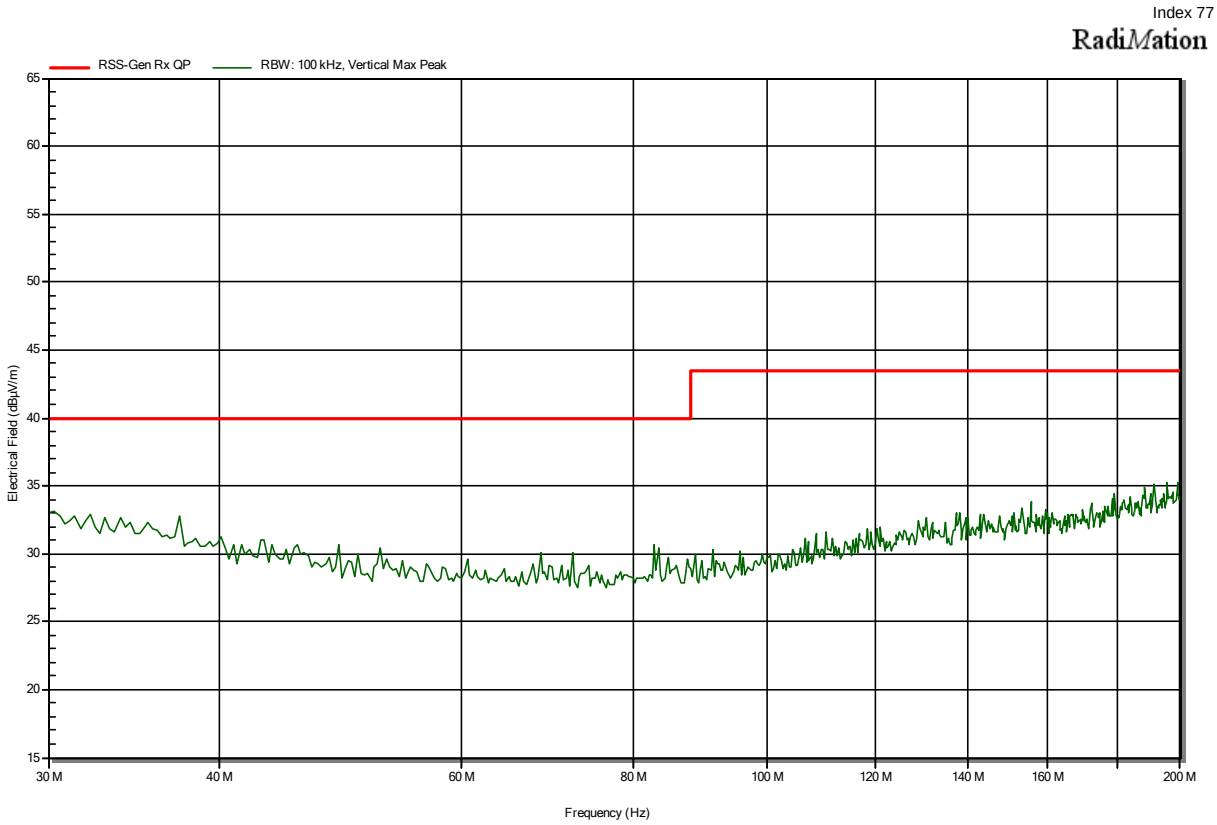
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



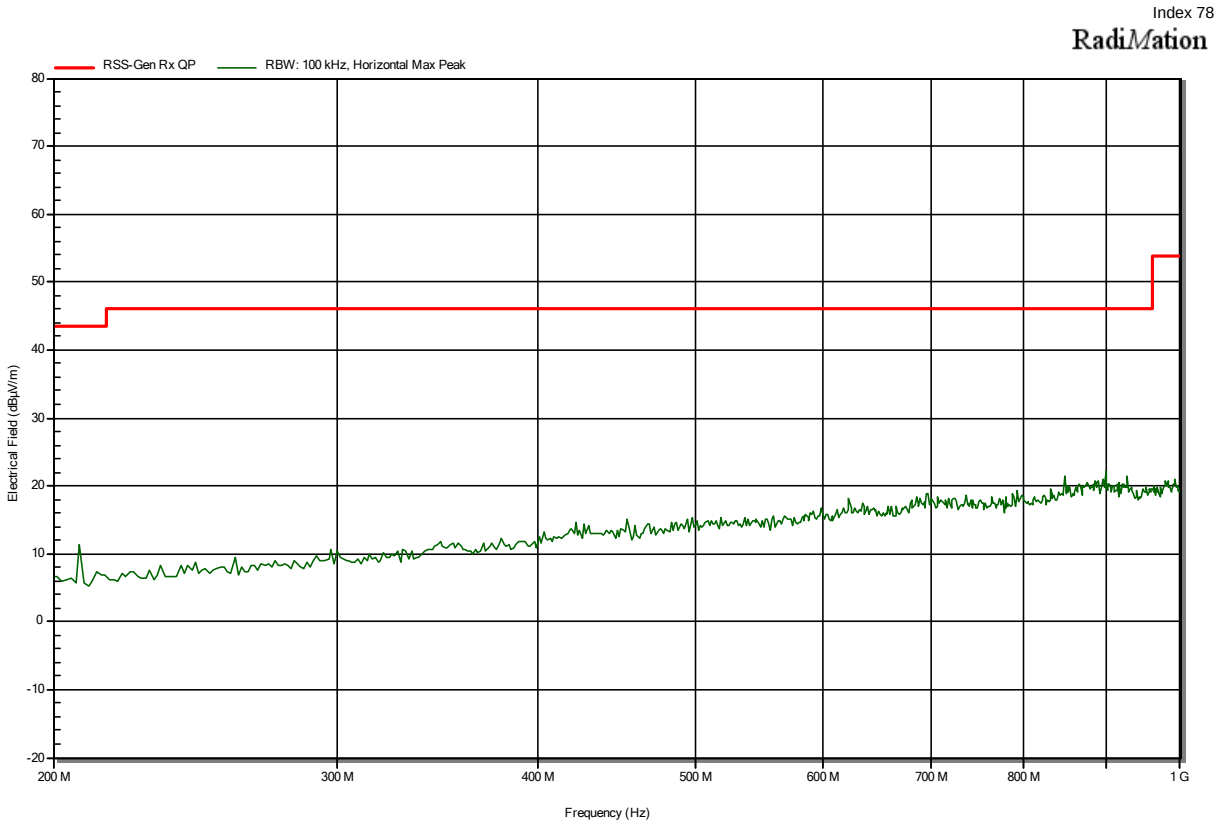
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



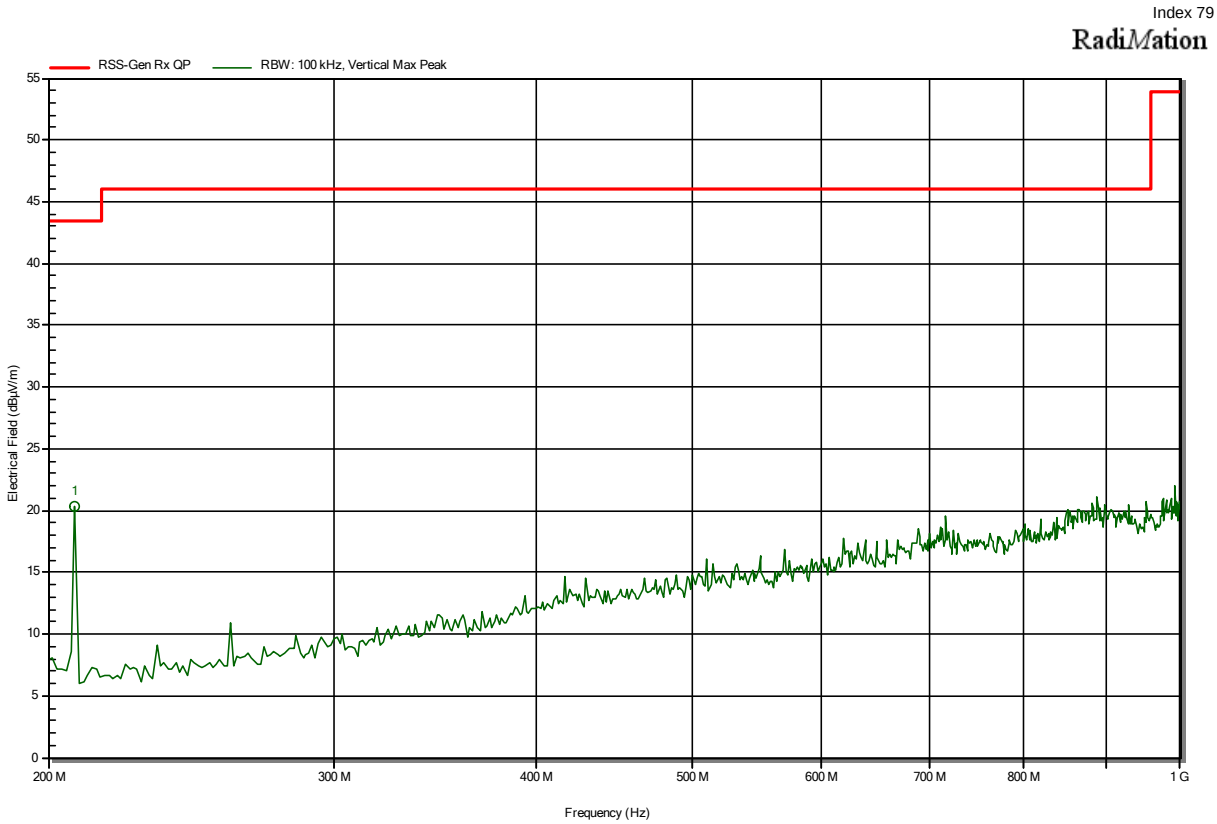
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

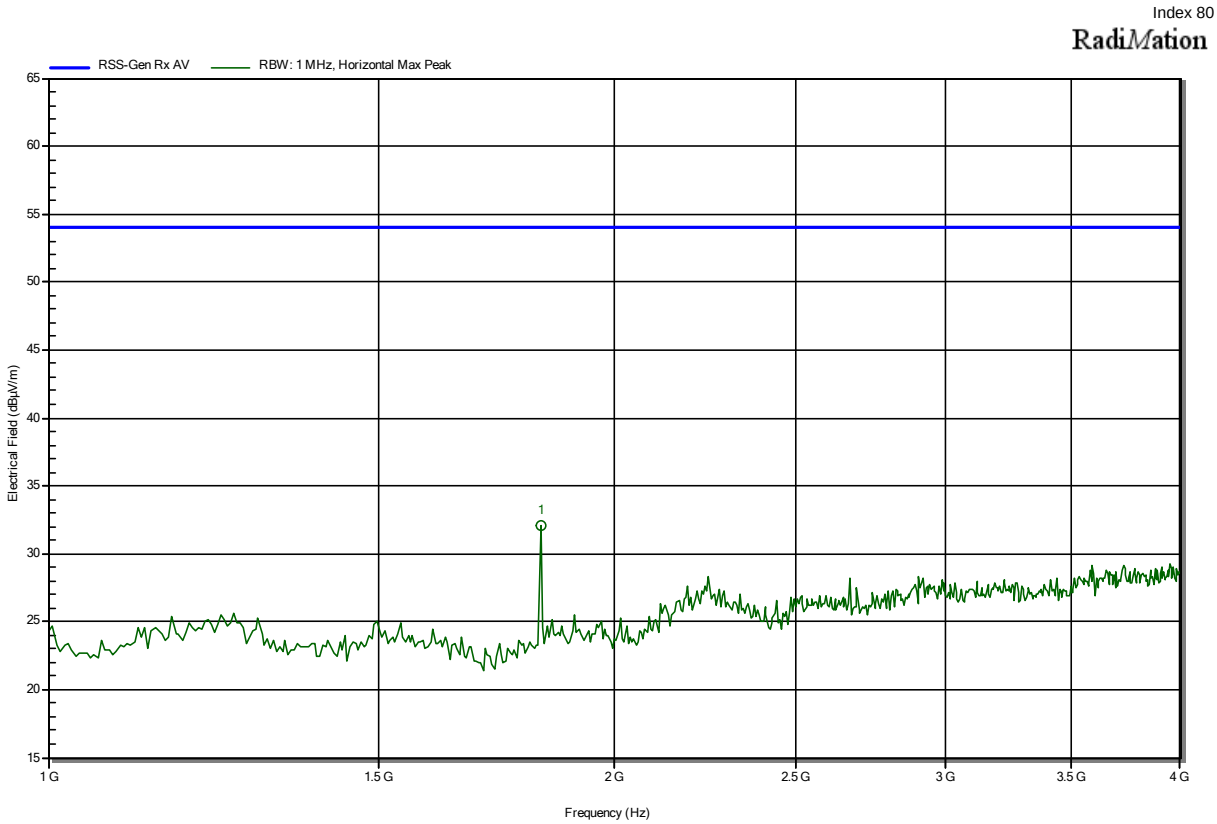
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
207.692 MHz	20.34 dBµV/m	43.5 dBµV/m	-23.16 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.827 GHz	32.12 dBµV/m	53.98 dBµV/m	-21.86 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

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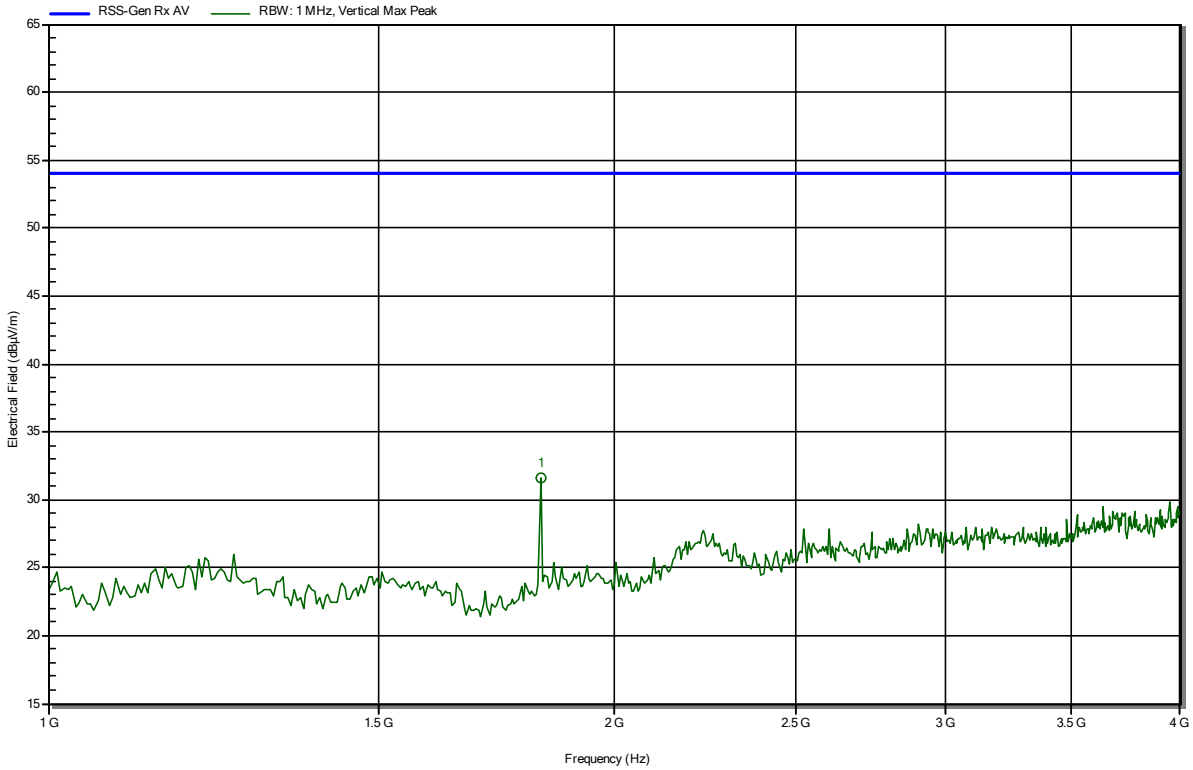
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.827 GHz	31.64 dBµV/m	53.98 dBµV/m	-22.34 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal

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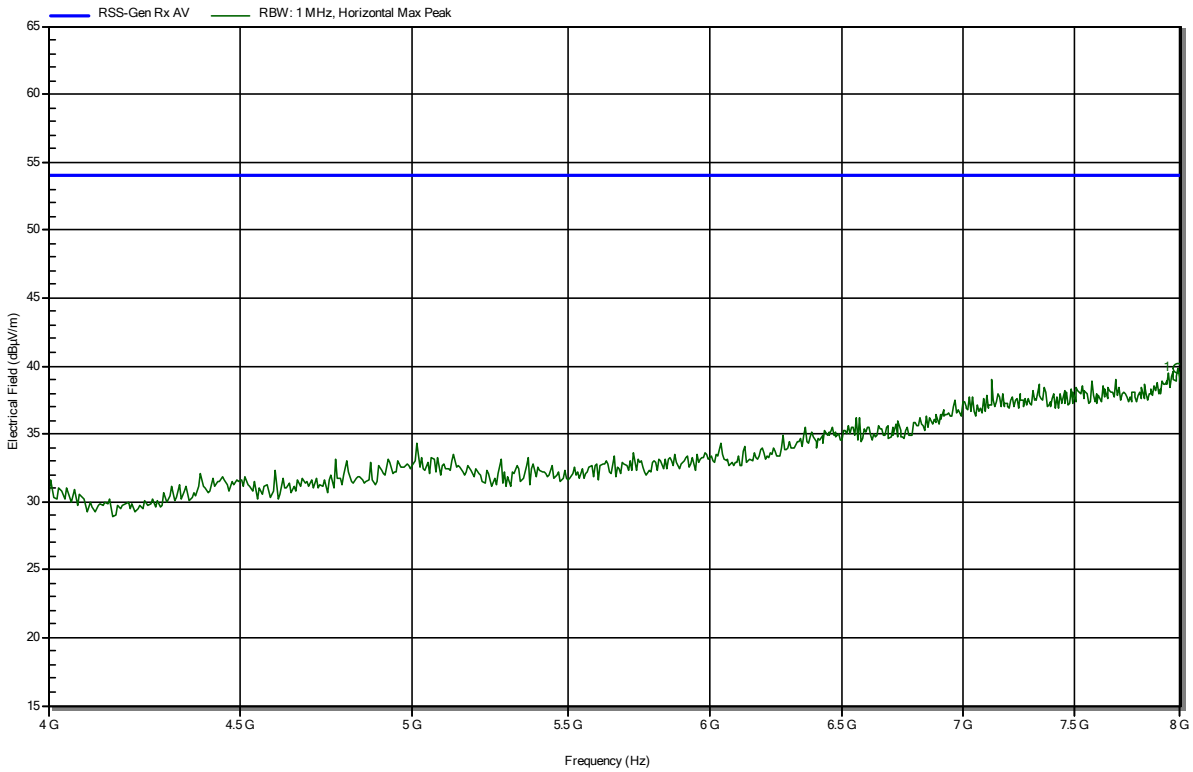
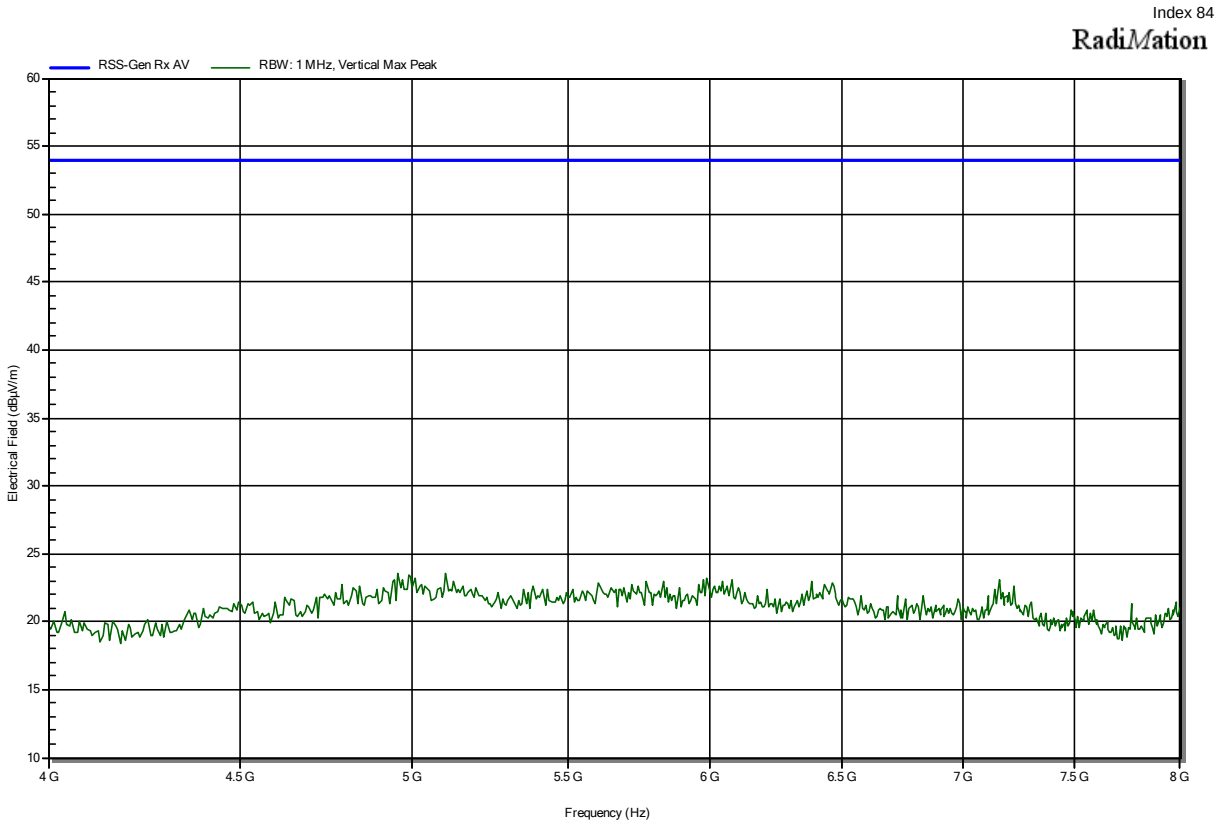
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.987 GHz	39.78 dBµV/m	53.98 dBµV/m	-14.2 dB	Pass

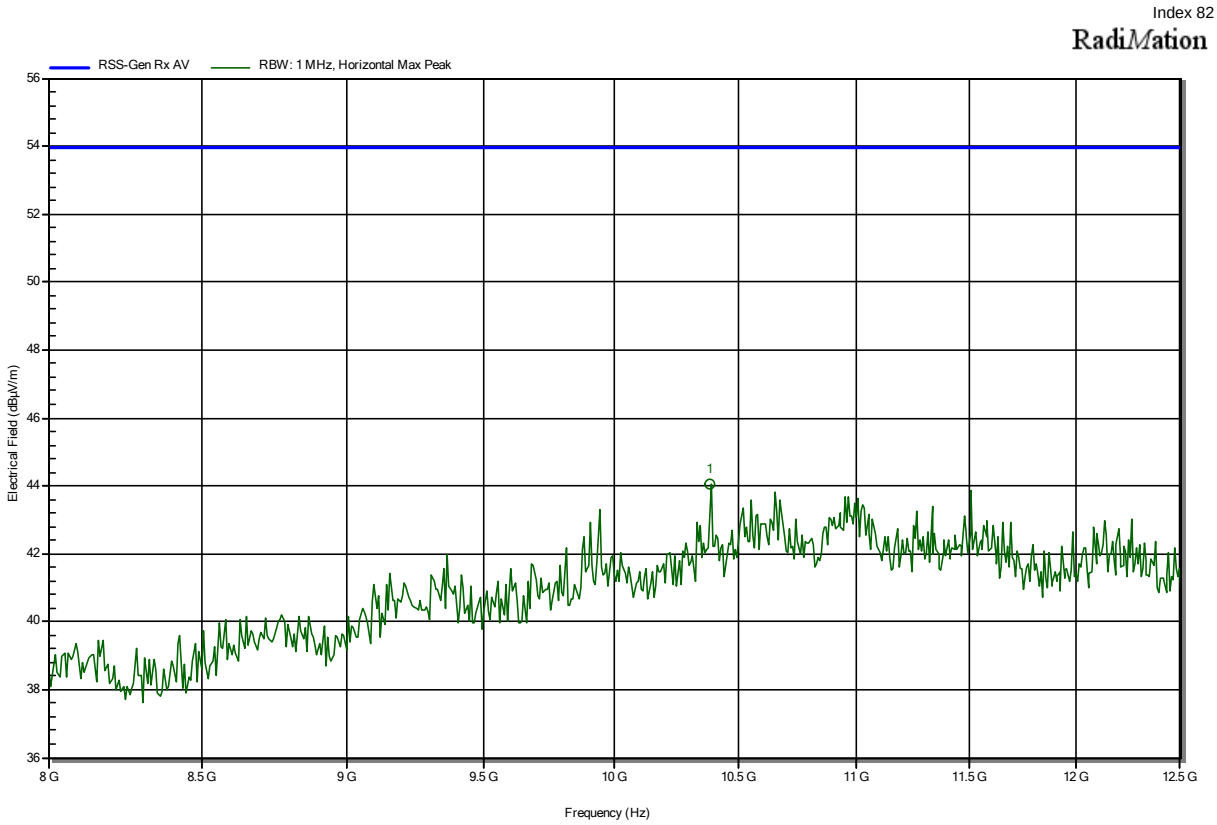
Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Radiated Spurious Emissions according to FCC 47 CFR 15.247

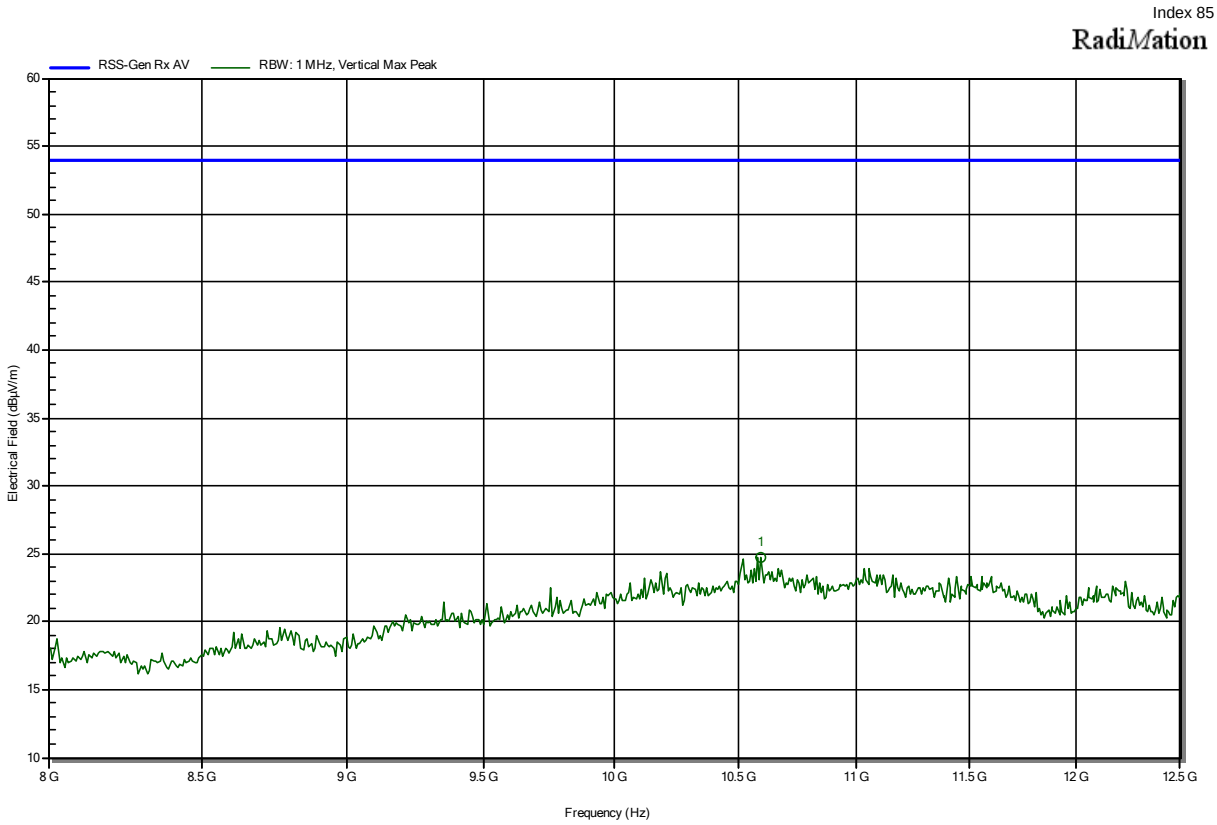
Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
10.387 GHz	44.04 dBµV/m	53.98 dBµV/m	-9.94 dB	Pass

Radiated Spurious Emissions according to FCC 47 CFR 15.247

Project Number:	G0M-2004-8955
Applicant:	HBC-radiomatic GmbH
Model Description:	Radio module for industrial application
Model:	TC792.1 + ant. CXL 900-1
Test Sample ID:	32600
Test Site:	Eurofins Product Service GmbH
Operator:	Wilfried Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.6 V DC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m, converted to 3 m
Mode:	Rx; 914.975 MHz
Test Date:	2021-01-14
Note:	EUT horizontal



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
10.596 GHz	24.74 dBµV/m	53.98 dBµV/m	-29.24 dB	Pass

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