

FCC TEST REPORT

FCC 47 CFR Part 15C
Industry Canada RSS-210

Frequency hopping systems operating within the 2400 – 2483.5 MHz band

Report Reference No. : G0M-1211-2402-TFC247B-V02

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

Applicant's name : Robert Bosch GmbH

Address : Postfach 10 01 56
70745 Leinfelden-Echterdingen
GERMANY

Test specification:

Standard..... : 47 CFR Part 15C
RSS-210, Issue 8, 2010-12
RSS-Gen, Issue 3, 2010-12
ANSI C63.4:2009

Equipment under test (EUT):

Product description Industrial Controler with Bluetooth Access Point

Model No. Bosch EXAConnect II (0 602 491 003)

Hardware version E

Firmware / Software version 2.00.3

FCC-ID: TD8-EXACONNECT-II IC: 3887B-491003

Test result Passed

Test Report No.: G0M-1211-2402-TFC247B-V02

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

Possible test case verdicts:

- neither assessed nor tested: N/N
- required by standard but not appl. to test object.....: N/A
- required by standard but not tested.....: N/T
- not required by standard for the test object: N/R
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

Testing:

Date of receipt of test item: 2013-07-23

Date (s) of performance of tests: 2013-08-08

Compiled by: Antje Bartusch

Tested by (+ signature).....: Wilfried Treffke
(Testing Manager)



Approved by (+ signature): Christian Weber
(Test Lab Manager)



Date of issue: 2013-12-09

Total number of pages: 96

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	Issue Date	Remarks	Revised by
01	2013-09-11	Initial Release	
02	2013-12-09	Replaced document: G0M-1211-2402-TFC247B-V01 Replaced by: G0M-1211-2402-TFC247B-V02 Reason: Page 5: The FCC ID for the Radio module was added.	A. Bartusch

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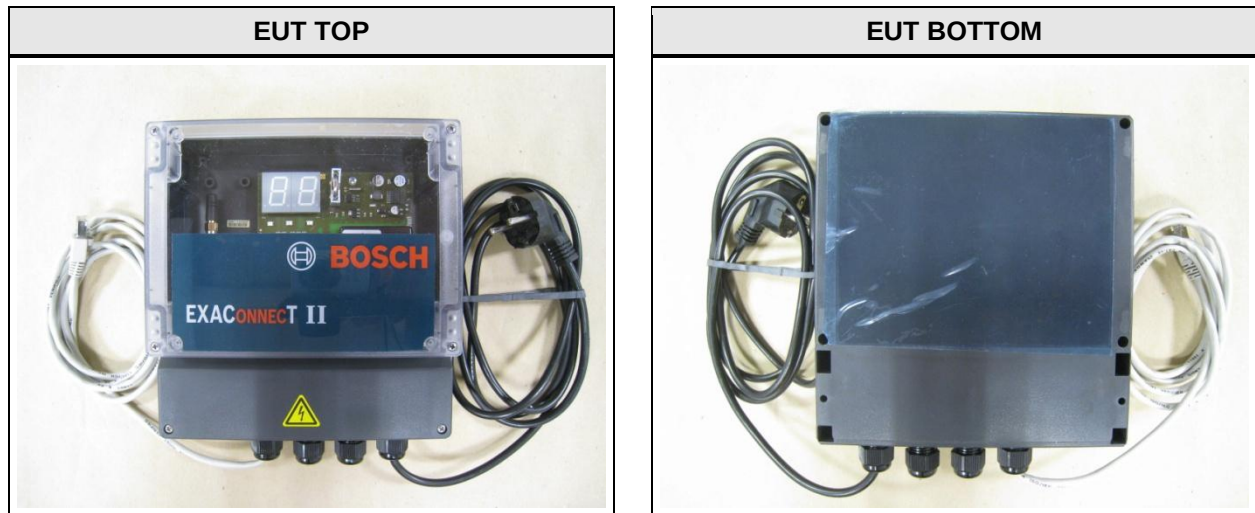
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1 Equipment (Test item) Description:

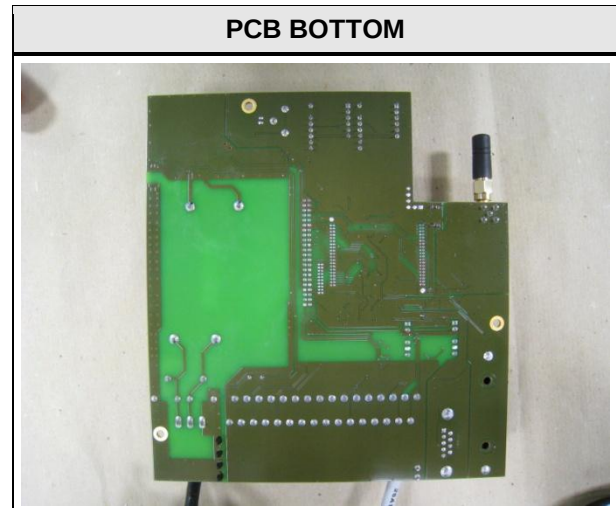
Description	Industrial Controller with Bluetooth Access Point	
Model	Bosch EXACONNECT II (0 602 491 003)	
Serial number	None	
Hardware version	E	
Software / Firmware version	2.00.3	
FCC-ID	TD8-EXACONNECT-II	
IC	3887B-491003	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	Bluetooth	
Operating frequency range	2402 - 2480 MHz	
Assigned frequency band	2400 - 2483.5 MHz	
Main test frequencies	F _{LOW}	2402 MHz
	F _{MID}	2441 MHz
	F _{HIGH}	2480 MHz
Spreading	FHSS	
Modulations	GFSK, PI/4-DQPSK, 8-PSK	
Number of channels	79 hopping channels at all	
Channel spacing	1 MHz	
Number of antennas	1	
Radio module	Type	Bluetooth Module
	Model	PAN 1315
	Manufacturer	Panasonic
	HW Version	unspecified
	SW Version	unspecified
	FCC ID	T7V1315
Antenna	Type	external dedicated
	Model	RN-SMA-S
	Manufacturer	Roving Networks
	Gain	0.56 dBi
Manufacturer	MSC Vertriebs GmbH Industriestraße 16 76297 Stutensee Germany	

Power supply	V _{NOM}	120 VAC
	V _{MIN}	--
	V _{MIN}	--
AC/DC-Adaptor	Model	
	Vendor	
	Input	
	Output	

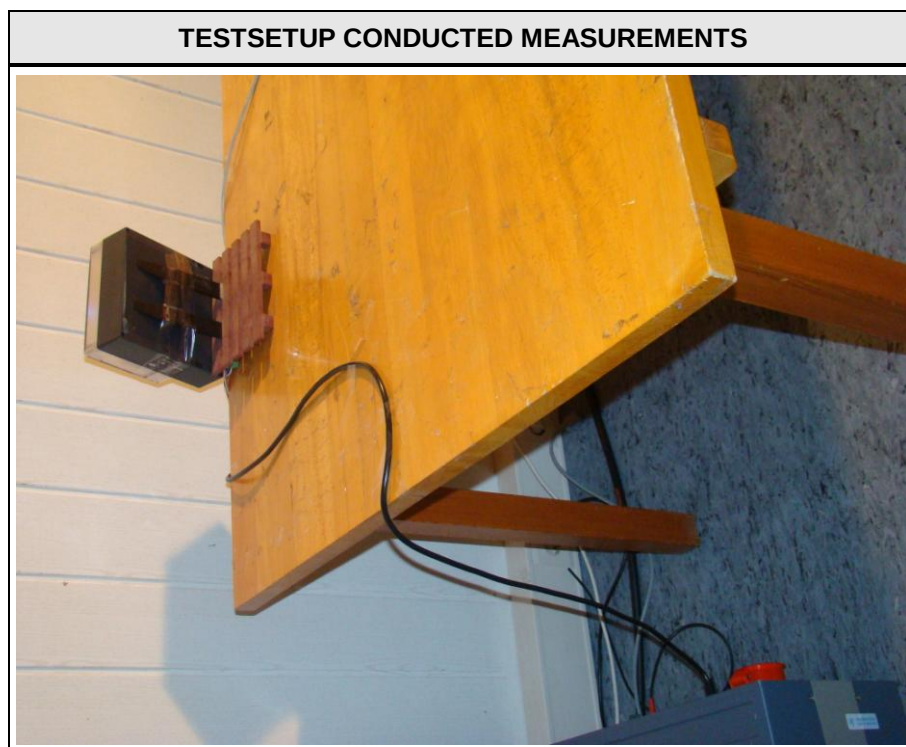
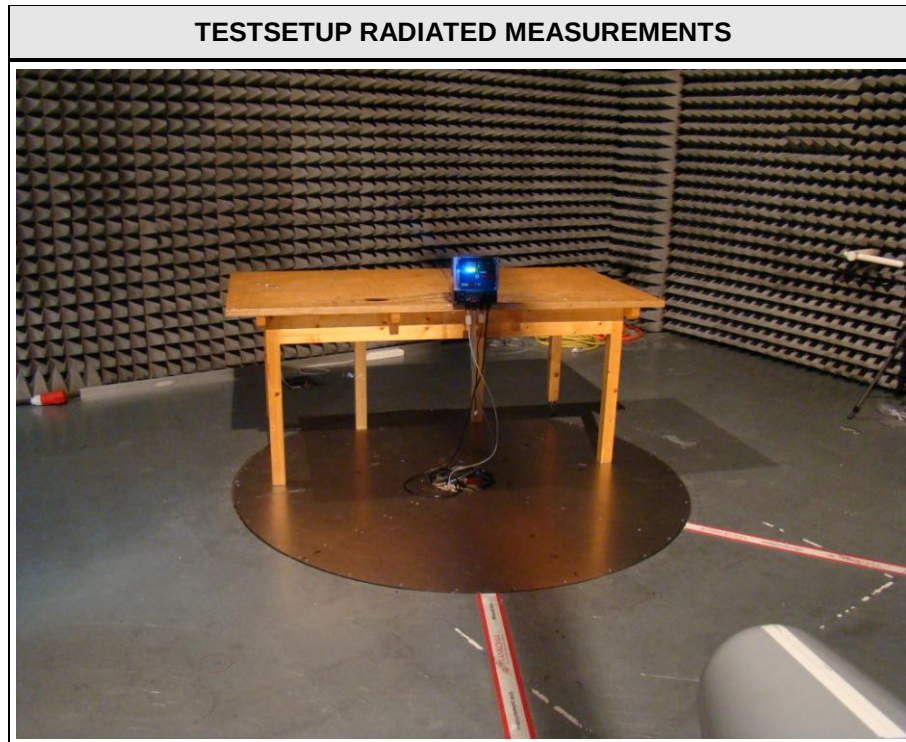
1.1 Photos – Equipment External



1.2 Photos – Equipment internal



1.3 Photos – Test setup



1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				
*Note: Use the following abbreviations: AE : Auxiliary/Associated Equipment, or SIM : Simulator (Not Subjected to Test) CABL : Connecting cables				

1.5 Test Modes

Mode #	Description	
DH5	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = GFSK Packet type = DH5 Data rate = 1 Mbps Power level = Maximum
2DH5	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = $\pi/4$ -DQPSK Packet type = 2DH5 Data rate = 2 Mbps Power level = Maximum
3DH5	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = 8-DPSK Packet type = 3DH5 Data rate = 3 Mbps Power level = Maximum
Receive	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone receive Spreading = Hopping
AC-Powerline	General conditions:	EUT powered by commercial AC/DC-Adapter
	Radio conditions:	Mode = standalone transmit Spreading = Hopping Power level = Maximum

1.6 Test Equipment Used During Testing

20dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 5	EF00395	--	--
Spectrum Analyzer	R&S	FSIQ26	EF00242	2013-06	2014-06
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD Antenna	R&S	HL 223	EF00187	2011-02	2014-02
LPD Antenna	R&S	HL 025	EF00327	2013-02	2016-02

AC powerline conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2012-10	2014-10
AMN	R&S	ESH3-Z5	EF00036	2012-11	2014-11
EMI Test Receiver	R&S	ESCS 30	EF00297	2012-09	2013-09

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:

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

Net:

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

Limit:

This is the FCC Class B radiated emission limit (in units of 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:

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

Margin:

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

Example only:

Reading	+	AF	=	Net Reading	:	Net reading - FCC limit	=	Margin
21.5 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, IC RSS-210				
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/R	Informational only
FCC § 15.247(a)(1) IC RSS-210 § A8.1	20 dB Bandwidth	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Number of hopping frequencies	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(a)(1) IC RSS-210 § A8.1	Frequency hopping channel separation	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Time of occupancy (Dwell time)	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(b)(1) IC RSS-210 § A8.4	Maximum peak conducted power	Public notice DA 00-705	N/N	Testing based on valid modular approval
47 CFR 15.207 RSS-Gen 7.2.4	AC power line conducted emissions	ANSI C63.4	PASS	
FCC § 15.247(d) IC RSS-210 § A8.5	Band edge compliance	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(d) IC RSS-210 § A8.5	Conducted spurious emissions	Public notice DA 00-705	N/N	Testing based on valid modular approval
FCC § 15.247(d) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 4.9 IC RSS-Gen 7.2.5	Transmitter radiated spurious emissions	Public notice DA 00-705 / ANSI C 63.4	PASS	
IC RSS-Gen 4.10 IC RSS-Gen 6.1	Receiver radiated spurious emissions	ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

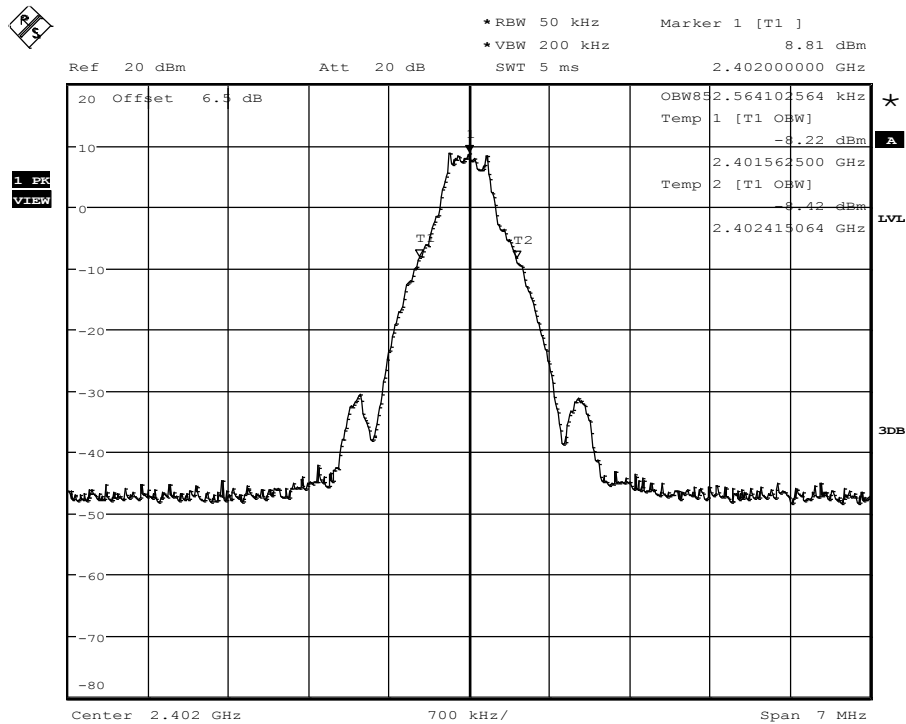
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. IC RSS-Gen			Verdict: PASS
Test according to measurement reference	Reference Method		
	RSS-Gen 4.6.1		
Test frequency range	Tested frequencies		
	F _{LOW} / F _{MID} / F _{HIGH}		
Limits			
None (Informational only)			
Test setup			
Spectrum Analyzer EUT			
Test procedure			
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to at least twice the emission spectrum 3. Resolution bandwidth set to 1 % of span 4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function			
Test results			
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [kHz]
F _{LOW}	2402	DH5-Sngl	852.564
F _{MID}	2441	DH5-Sngl	852.564
F _{HIGH}	2480	DH5-Sngl	852.564
F _{LOW}	2402	2DH5-Sngl	1211.538
F _{MID}	2441	2DH5-Sngl	1200.320
F _{HIGH}	2480	2DH5-Sngl	1211.538
F _{LOW}	2402	3DH5-Sngl	1222.756
F _{MID}	2441	3DH5-Sngl	1200.320
F _{HIGH}	2480	3DH5-Sngl	1200.320
Comments:			

Occupied Bandwidth – DH5-Sngl F_{Low}

RSS Gen Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
Model Bosch EXAConnect
Approval Holder MSC Vertriebs GmbH
Temperature / Voltage 24 °C
Test Site / Operator Eurofins Product Service GmbH / Christian Weber
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 0 / 2402 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 DH5 / GFSK



Occupied bandwidth: 852.6 KHz

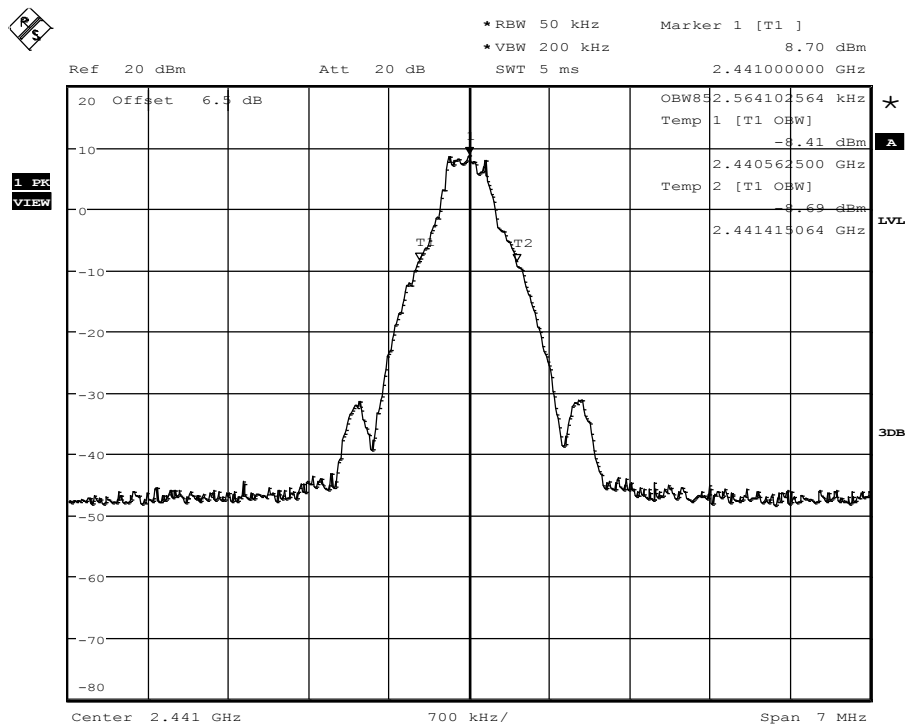
Date: 23.AUG.2013 17:39:09

Occupied Bandwidth – DH5-Sngl F_{MID}

RSS Gen

Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
Model Bosch EXAConnect
Approval Holder MSC Vertriebs GmbH
Temperature / Voltage 24 °C
Test Site / Operator Eurofins Product Service GmbH / Christian Weber
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 39 / 2441 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 DH5 / GFSK



Occupied bandwidth: 852.6 KHz

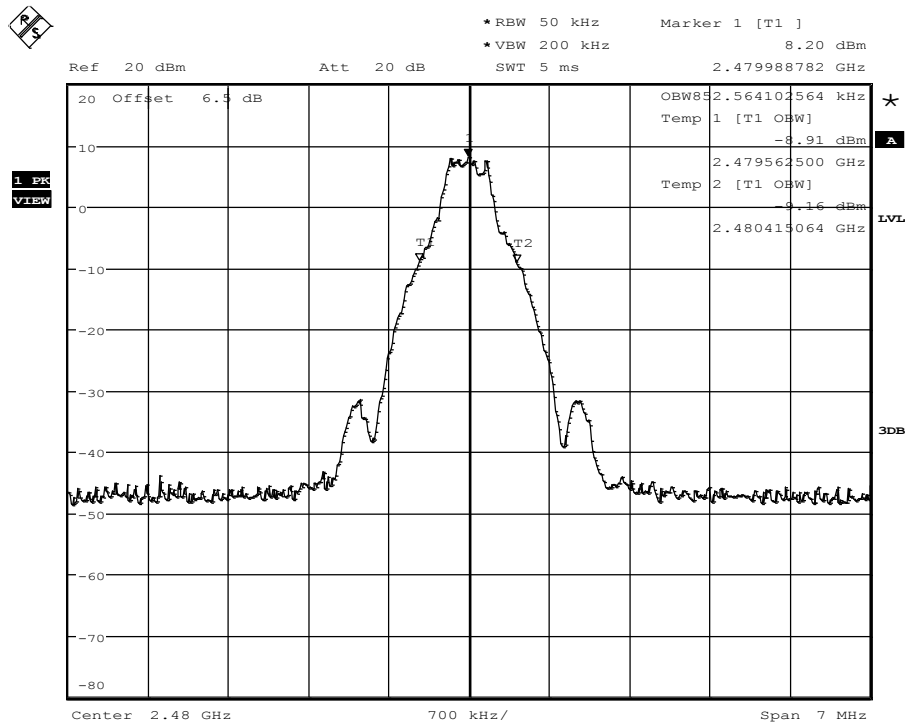
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Occupied Bandwidth – DH5-Sngl F_{HIGH}

RSS Gen

Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
Model Bosch EXAConnect
Approval Holder MSC Vertriebs GmbH
Temperature / Voltage 24 °C
Test Site / Operator Eurofins Product Service GmbH / Christian Weber
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 78 / 2480 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 DH5 / GFSK



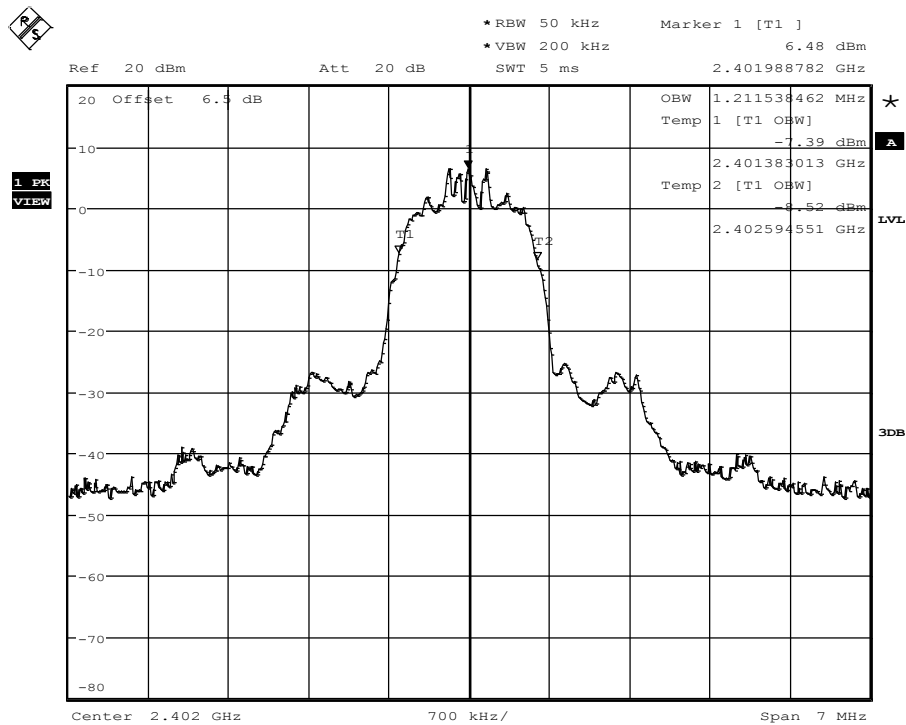
Occupied bandwidth: 852.6 KHz

Date: 23.AUG.2013 17:46:02

Occupied Bandwidth – 2-DH5-Sngl F_{LOW}

RSS Gen Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
Model Bosch EXAConnect
Approval Holder MSC Vertriebs GmbH
Temperature / Voltage 24 °C
Test Site / Operator Eurofins Product Service GmbH / Christian Weber
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 0 / 2402 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 2-DH5 / PI/4-DQPSK



Occupied bandwidth: 1211.5 KHz

Date: 23.AUG.2013 17:47:17

Test Report No.: G0M-1211-2402-TFC247B-V02

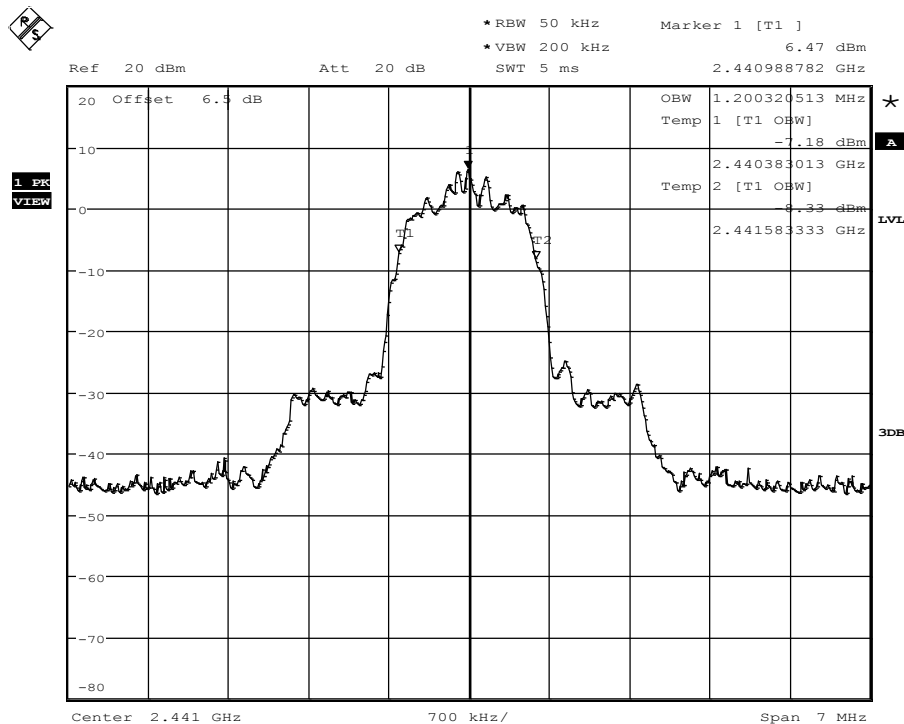
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Occupied Bandwidth – 2-DH5-Sngl F_{MID}

RSS Gen

Occupied Bandwidth

EUT	Industrial Controller with Bluetooth Access Point
Model	Bosch EXAConnect
Approval Holder	MSC Vertriebs GmbH
Temperature / Voltage	24 °C
Test Site / Operator	Eurofins Product Service GmbH / Christian Weber
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 39 / 2441 MHz
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	2-DH5 / PI/4-DQPSK



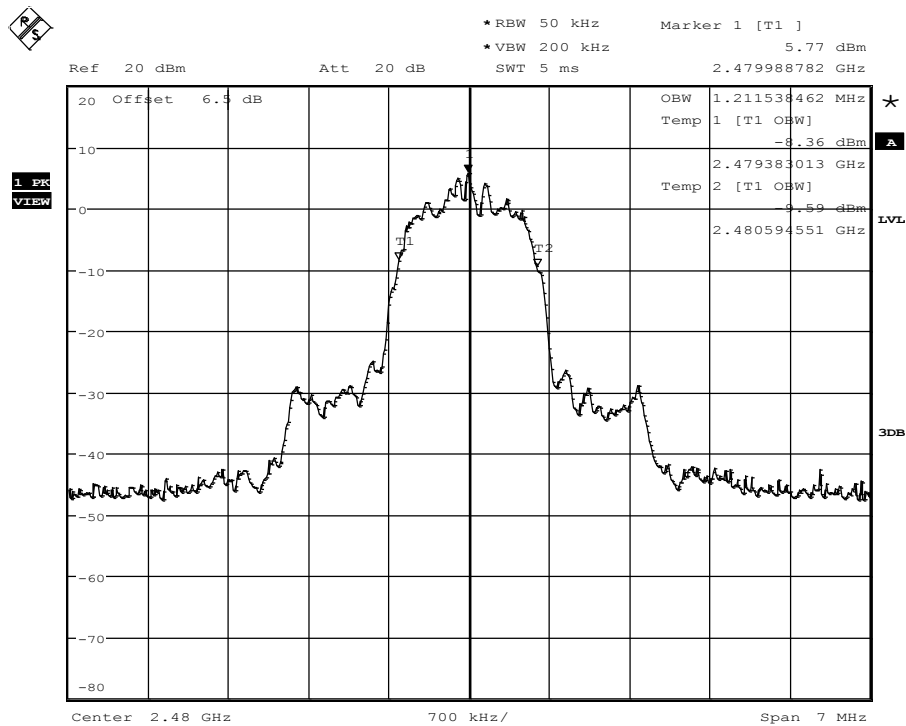
Occupied bandwidth: 1200.3 KHz

Date: 23.AUG.2013 17:48:51

Occupied Bandwidth – 2-DH5-Sngl F_{HIGH}

RSS Gen Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
 Model Bosch EXAConnect
 Approval Holder MSC Vertriebs GmbH
 Temperature / Voltage 24 °C
 Test Site / Operator Eurofins Product Service GmbH / Christian Weber
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 78 / 2480 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 2-DH5 / PI/4-DQPSK



Occupied bandwidth: 1211.5 KHz

Date: 23.AUG.2013 17:50:13

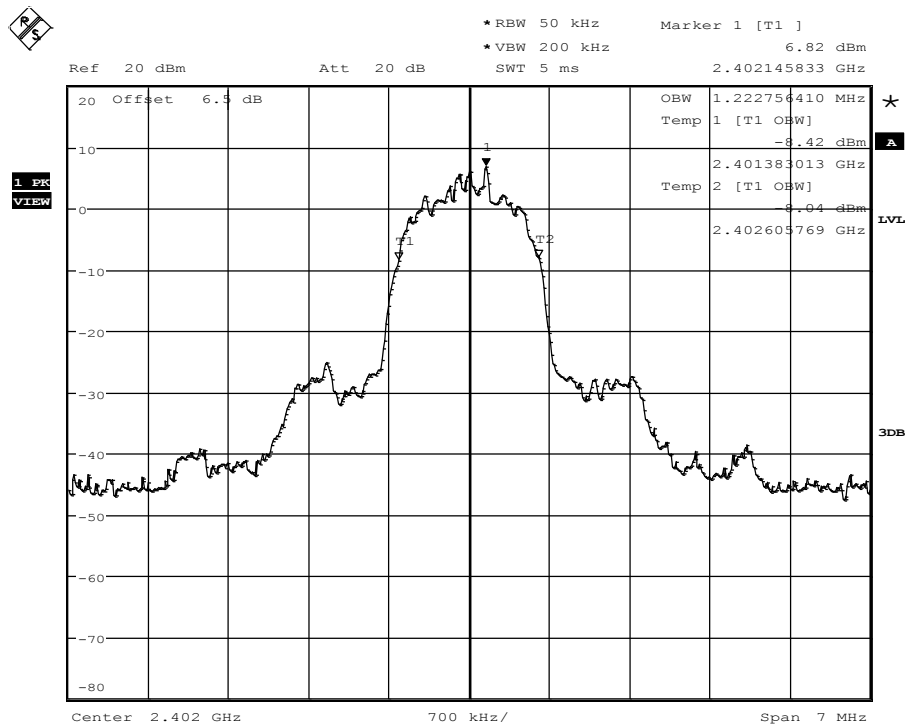
Test Report No.: G0M-1211-2402-TFC247B-V02

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 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Occupied Bandwidth – 3-DH5-Sngl F_{LOW}

RSS Gen Occupied Bandwidth

EUT Industrial Controller with Bluetooth Access Point
Model Bosch EXAConnect
Approval Holder MSC Vertriebs GmbH
Temperature / Voltage 24 °C
Test Site / Operator Eurofins Product Service GmbH / Christian Weber
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 0 / 2402 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 3-DH5 / 8-DPSK



Occupied bandwidth: 1222.8 KHz

Date: 23.AUG.2013 17:51:27

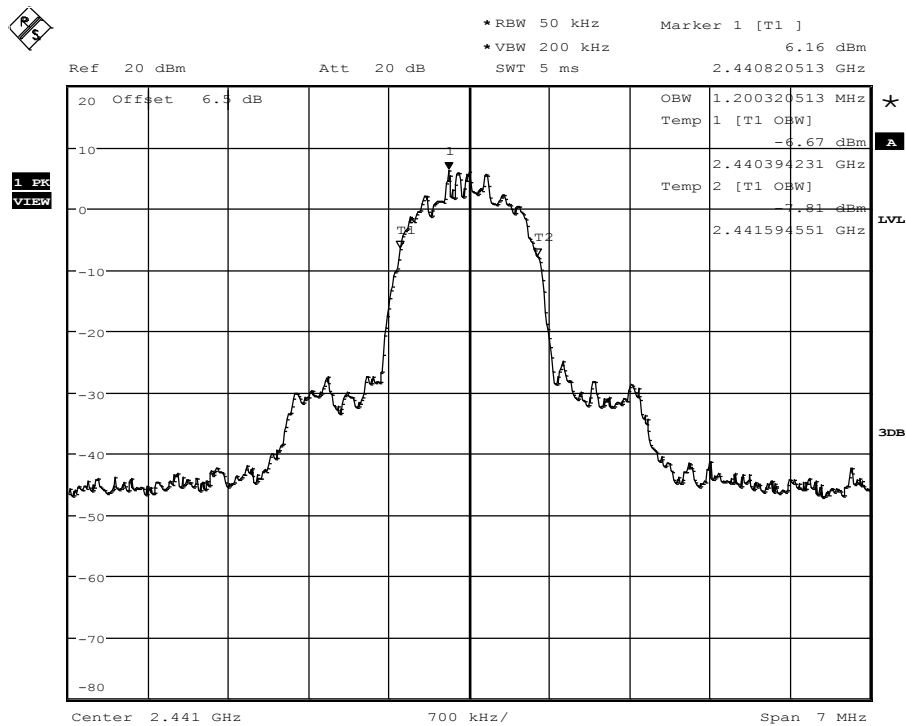
Test Report No.: G0M-1211-2402-TFC247B-V02

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

Occupied Bandwidth – 3-DH5-Sngl F_{MD}

RSS Gen Occupied Bandwidth

EUT	Industrial Controller with Bluetooth Access Point
Model	Bosch EXAConnect
Approval Holder	MSC Vertriebs GmbH
Temperature / Voltage	24 °C
Test Site / Operator	Eurofins Product Service GmbH / Christian Weber
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 39 / 2441 MHz
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	3-DH5 / 8-DPSK



Occupied bandwidth: 1200.3 KHz

Date: 23.AUG.2013 17:52:43

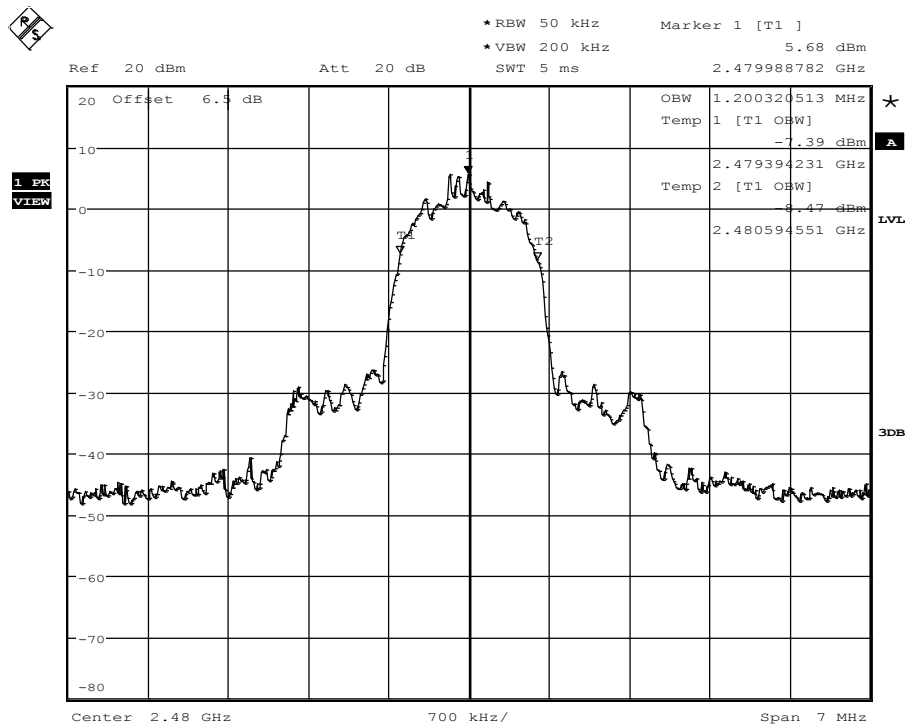
Test Report No.: G0M-1211-2402-TFC247B-V02

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

Occupied Bandwidth – 3-DH5-Sngl F_{HIGH}

RSS Gen Occupied Bandwidth

EUT	Industrial Controller with Bluetooth Access Point
Model	Bosch EXAConnect
Approval Holder	MSC Vertriebs GmbH
Temperature / Voltage	24 °C
Test Site / Operator	Eurofins Product Service GmbH / Christian Weber
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 78 / 2480 MHz
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	3-DH5 / 8-DPSK



Occupied bandwidth: 1200.3 KHz

Date: 23.AUG.2013 17:53:51

Test Report No.: G0M-1211-2402-TFC247B-V02

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

3.2 Test Conditions and Results – AC power line conducted emissions

Power line conducted emissions acc. FCC 47 CFR 15.207 / IC RSS-Gen				Verdict: PASS	
Test according referenced standards		Reference Method			
		ANSI C63.4			
Fully configured sample scanned over the following frequency range		Frequency range			
		0.15 MHz to 30 MHz			
Points of Application		Application Interface			
AC Mains		LISN			
EUT test mode		AC-Powerline			
Limits and results					
Frequency [MHz]	Quasi-Peak [dBμV]	Result	Average [dBμV]	Result	
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS	
0.5 to 5	56	PASS	46	PASS	
5 to 30	60	PASS	50	PASS	
Comments:					
* Limit decreases linearly with the logarithm of the frequency.					

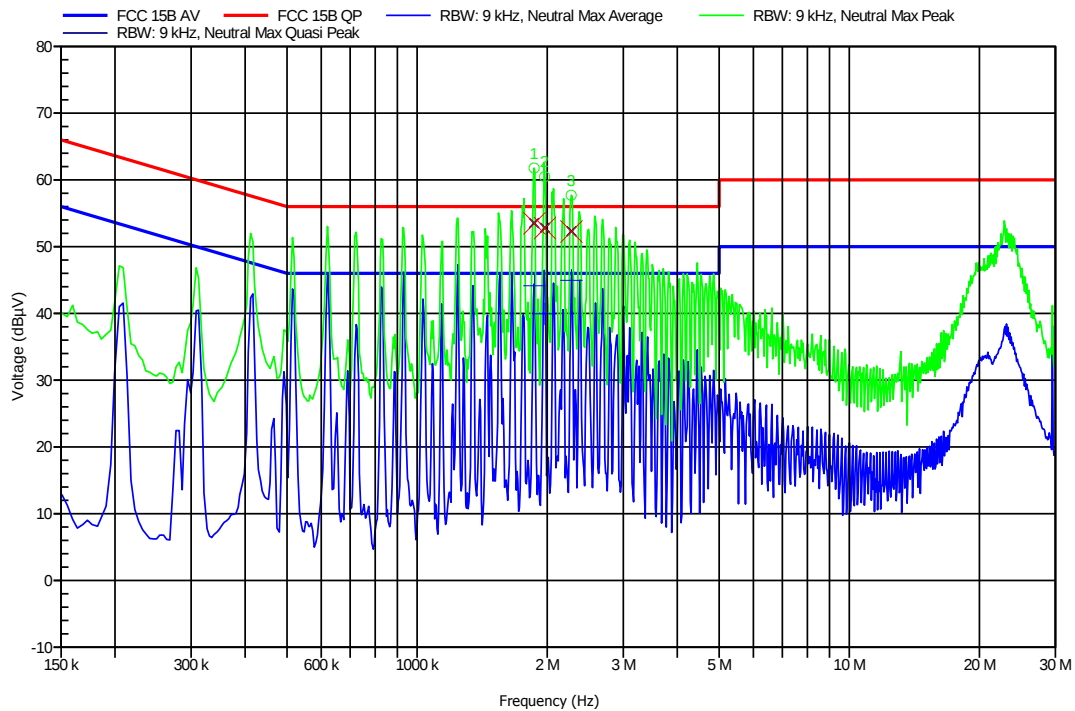
Conducted Emissions

EMI voltage test in the ac-mains according to FCC part 15B

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Bluetooth Access Point EXAConnectT Typ:0 602 491 003
 Model: Bosch EXAConnect Ser.No.306000049
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pflug
 Test Conditions: Tnom: 23°C, Unom: 120 VAC
 LISN: ESH2-Z5 N
 Mode: link
 Test Date: 2013-07-31
 Note:

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Nr	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
1	1.865 MHz	53.53 dBμV	56 dBμV	-2.47 dB	Pass
2	1.972 MHz	52.82 dBμV	56 dBμV	-3.18 dB	Pass
3	2.273 MHz	52.31 dBμV	56 dBμV	-3.69 dB	Pass

Nr	Frequency	Average	Average Limit	Average Difference	Average Status
1	1.865 MHz	44.19 dBμV	46 dBμV	-1.81 dB	Pass
2	1.972 MHz	39.99 dBμV	46 dBμV	-6.01 dB	Pass
3	2.273 MHz	45 dBμV	46 dBμV	-1 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

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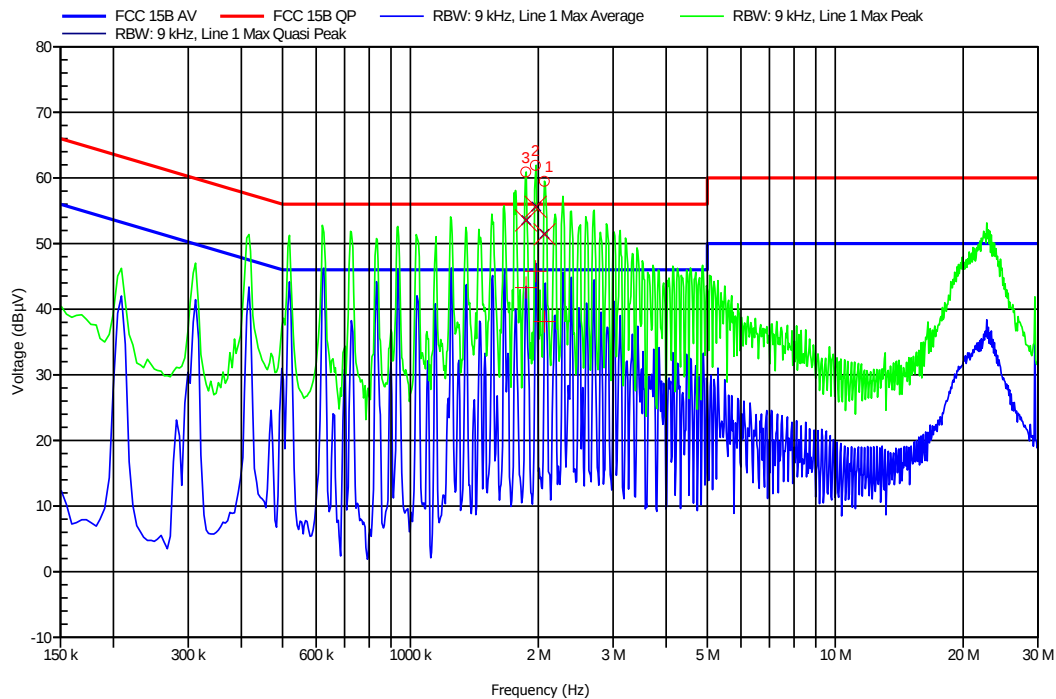
Conducted Emissions

EMI voltage test in the ac-mains according to FCC part 15B

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Bluetooth Access Point EXAConnect Typ:0 602 491 003
 Model: Bosch EXAConnect Ser.No.306000049
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Pflug
 Test Conditions: Tnom: 23°C, Unom: 120 VAC
 LISN: ESH2-Z5 L
 Mode: link
 Test Date: 2013-07-31
 Note:

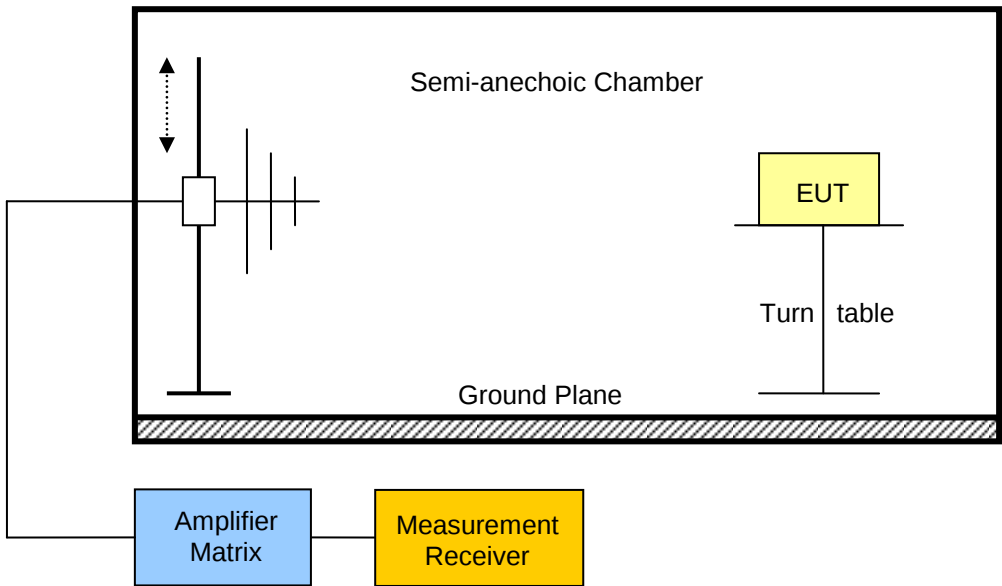
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Nr	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
3	1.869 MHz	53.56 dBμV	56 dBμV	-2.44 dB	Pass
2	1.969 MHz	55.64 dBμV	56 dBμV	-0.36 dB	Pass
1	2.067 MHz	51.45 dBμV	56 dBμV	-4.55 dB	Pass

Nr	Frequency	Average	Average Limit	Average Difference	Average Status
3	1.869 MHz	43.33 dBμV	46 dBμV	-2.67 dB	Pass
2	1.969 MHz	45.82 dBμV	46 dBμV	-0.18 dB	Pass
1	2.067 MHz	38.16 dBμV	46 dBμV	-7.84 dB	Pass

3.3 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. FCC 47 CFR 15.247 / IC RSS-210				Verdict: PASS	
Test according referenced standards		Reference Method			
		FCC 15.247(d) / IC RSS-210 A8.5			
Test according to measurement reference		Reference Method			
		FCC Public Notice DA 00-705 / ANSI C63.4			
Test frequency range		Tested frequencies			
		30 MHz – 10 th Harmonic			
Limits					
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]	
30 – 88	Quasi-Peak	100	40	3	
88 – 216	Quasi-Peak	150	43.5	3	
216 – 960	Quasi-Peak	200	46	3	
960 – 1000	Quasi-Peak	500	54	3	
> 1000	Average	500	54	3	
Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)). When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.					
Test setup					
					

Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span it set according to measurement range
3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz
4. Markers are set to peak emission levels within restricted bands

Test results – Internal Antenna

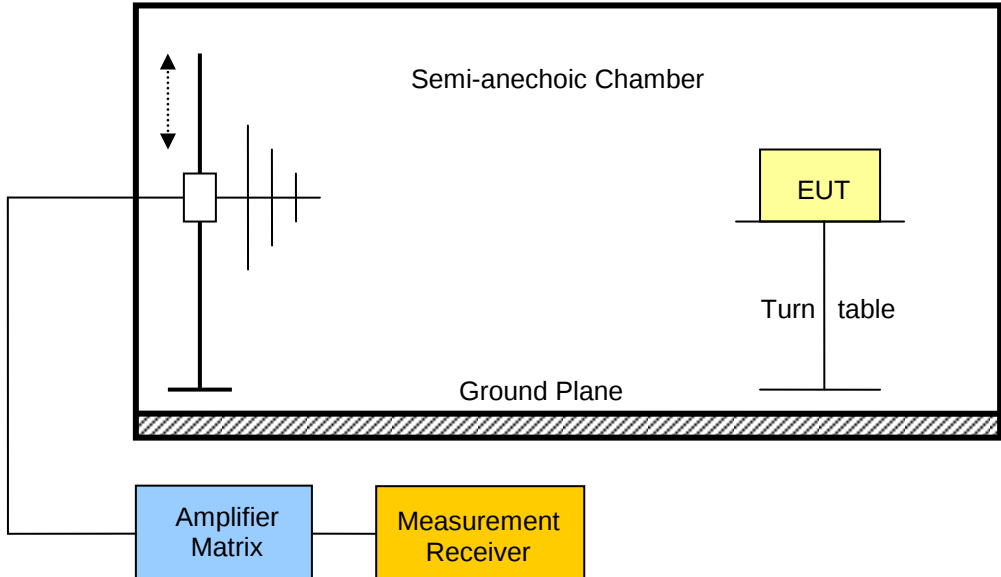
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Limit dist. [m]*	Margin [dB]
F _{LOW}	2402	DH5-Sngl	2335	60.35	pk	ver	74.00	3	-13.65
F _{LOW}	2402	DH5-Sngl	2336	56.66	pk	hor	74.00	3	-17.34
F _{LOW}	2402	DH5-Sngl	2373	56.11	pk	hor	74.00	3	-17.89
F _{LOW}	2402	DH5-Sngl	2373	60.54	pk	ver	74.00	3	-13.46
F _{LOW}	2402	DH5-Sngl	2376	55.86	pk	ver	74.00	3	-18.14
F _{LOW}	2402	DH5-Sngl	2377	54.40	pk	hor	74.00	3	-19.60
F _{LOW}	2402	DH5-Sngl	2377	59.32	pk	ver	74.00	3	-14.68
F _{LOW}	2402	DH5-Sngl	2400	75.00	pk	hor	95.00	3	-20.00
F _{LOW}	2402	DH5-Sngl	2400	75.85	pk	ver	95.00	3	-19.15
F _{LOW}	2402	DH5-Sngl	117.38	39.40	pk	hor	43.52	3	-04.12
F _{LOW}	2402	DH5-Sngl	117.38	37.98	pk	ver	43.52	3	-05.54
F _{LOW}	2402	DH5-Sngl	117.72	37.67	pk	ver	43.52	3	-05.85
F _{LOW}	2402	DH5-Sngl	118.06	37.58	pk	ver	43.52	3	-05.94
F _{LOW}	2402	DH5-Sngl	264	28.78	pk	hor	46.00	3	-17.22
F _{LOW}	2402	DH5-Sngl	264	26.97	pk	ver	46.00	3	-19.03
F _{LOW}	2402	DH5-Sngl	323.2	29.24	pk	hor	46.00	3	-16.76
F _{LOW}	2402	DH5-Sngl	4804	56.98	pk	hor	74.00	3	-17.02
F _{LOW}	2402	DH5-Sngl	4804	51.81	avg	hor	54.00	3	-02.19
F _{LOW}	2402	DH5-Sngl	4804	58.04	pk	ver	74.00	3	-15.96
F _{LOW}	2402	DH5-Sngl	4804	53.16	avg	ver	54.00	3	-00.84
F _{MID}	2441	DH5-Sngl	2235	41.21	pk	ver	74.00	3	-32.79
F _{MID}	2441	DH5-Sngl	2287	39.31	pk	hor	74.00	3	-34.69
F _{MID}	2441	DH5-Sngl	2287	41.83	pk	ver	74.00	3	-32.17
F _{MID}	2441	DH5-Sngl	2692	39.46	pk	ver	74.00	3	-34.54
F _{MID}	2441	DH5-Sngl	4882	56.35	pk	hor	74.00	3	-17.65
F _{MID}	2441	DH5-Sngl	4882	51.00	avg	hor	54.00	3	-03.00
F _{MID}	2441	DH5-Sngl	4882	58.03	pk	ver	74.00	3	-15.97
F _{MID}	2441	DH5-Sngl	4882	53.25	avg	ver	54.00	3	-00.75

Test Report No.: G0M-1211-2402-TFC247B-V02

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

F _{MID}	2441	DH5-Sngl	7323	55.83	pk	hor	74.00	3	-18.17
F _{MID}	2441	DH5-Sngl	7323	47.77	avg	hor	54.00	3	-06.23
F _{MID}	2441	DH5-Sngl	12204	55.36	pk	ver	74.00	3	-18.64
F _{MID}	2441	DH5-Sngl	12204	46.78	avg	ver	54.00	3	-07.22
F _{HIGH}	2480	DH5-Sngl	2271	40.15	pk	hor	74.00	3	-33.85
F _{HIGH}	2480	DH5-Sngl	2271	41.24	pk	ver	74.00	3	-32.76
F _{HIGH}	2480	DH5-Sngl	2297	40.36	pk	hor	74.00	3	-33.64
F _{HIGH}	2480	DH5-Sngl	2297	42.87	pk	ver	74.00	3	-31.13
F _{HIGH}	2480	DH5-Sngl	2483.5	57.11	pk	hor	74.00	3	-16.89
F _{HIGH}	2480	DH5-Sngl	2483.5	49.00	RMS	hor	54.00	3	-05.00
F _{HIGH}	2480	DH5-Sngl	2483.5	59.65	pk	ver	74.00	3	-14.35
F _{HIGH}	2480	DH5-Sngl	2483.5	52.50	RMS	ver	54.00	3	-01.50
F _{HIGH}	2480	DH5-Sngl	2503	53.11	pk	hor	95.00	3	-41.89
F _{HIGH}	2480	DH5-Sngl	4960	55.01	pk	hor	74.00	3	-18.99
F _{HIGH}	2480	DH5-Sngl	4960	49.95	avg	hor	54.00	3	-04.05
F _{HIGH}	2480	DH5-Sngl	4960	55.53	pk	ver	74.00	3	-18.47
F _{HIGH}	2480	DH5-Sngl	4960	49.55	avg	ver	54.00	3	-04.45
F _{HIGH}	2480	DH5-Sngl	7440	58.20	pk	hor	74.00	3	-15.80
F _{HIGH}	2480	DH5-Sngl	7440	51.78	avg	hor	54.00	3	-02.22
F _{HIGH}	2480	DH5-Sngl	12401	54.84	pk	ver	74.00	3	-19.16
F _{HIGH}	2480	DH5-Sngl	12401	46.66	avg	ver	54.00	3	-07.34
Comments: * Physical distance between EUT and measurement antenna.									

3.4 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210				Verdict: PASS
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 3 th Harmonic			
EUT test mode	Receive			
Limits				
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Test setup				
				

Test procedure							
1. EUT set to receive mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels							
Test results							
Channel	Frequency [MHz]	Emission [MHz]	Emission Level [dBμV/m]	Emission Level [μV/m]	Det.	Limit [μV/m]	Margin [μV/m]
F _{MID}	2441	86.44	39.76	97.27	pk	100	-2.73
F _{MID}	2441	88.48	41.10	113.50	pk	150	-36.50
F _{MID}	2441	89.84	39.68	96.38	pk	150	-53.62
F _{MID}	2441	124.86	37.07	71.37	pk	150	-78.63
F _{MID}	2441	174.84	36.45	66.45	pk	150	-83.55
F _{MID}	2441	224	35.19	57.48	pk	200	-142.52
F _{MID}	2441	235.2	45.71	192.97	pk	200	-7.03
F _{MID}	2441	235.2	39.45	93.86	pk	200	-106.14
F _{MID}	2441	294.4	36.60	67.61	pk	200	-132.39
F _{MID}	2441	412.8	35.26	57.94	pk	200	-142.06
F _{MID}	2441	470.4	36.20	64.57	pk	200	-135.43
F _{MID}	2441	529.6	35.32	58.34	pk	200	-141.66
F _{MID}	2441	648	36.44	66.37	pk	200	-133.63
Comments: * Physical distance between EUT and measurement antenna. ** Emission level corresponds to ambient noise floor							

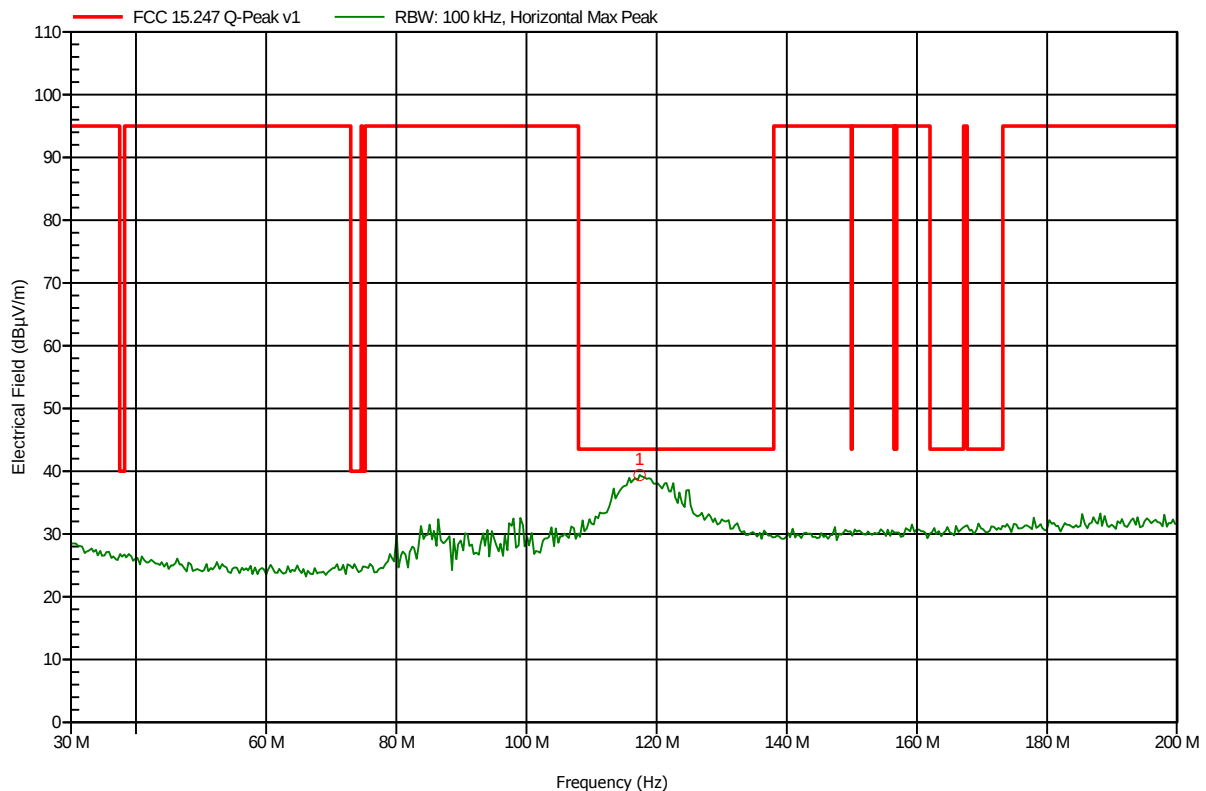
ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnecT
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-09
 Note: worst case

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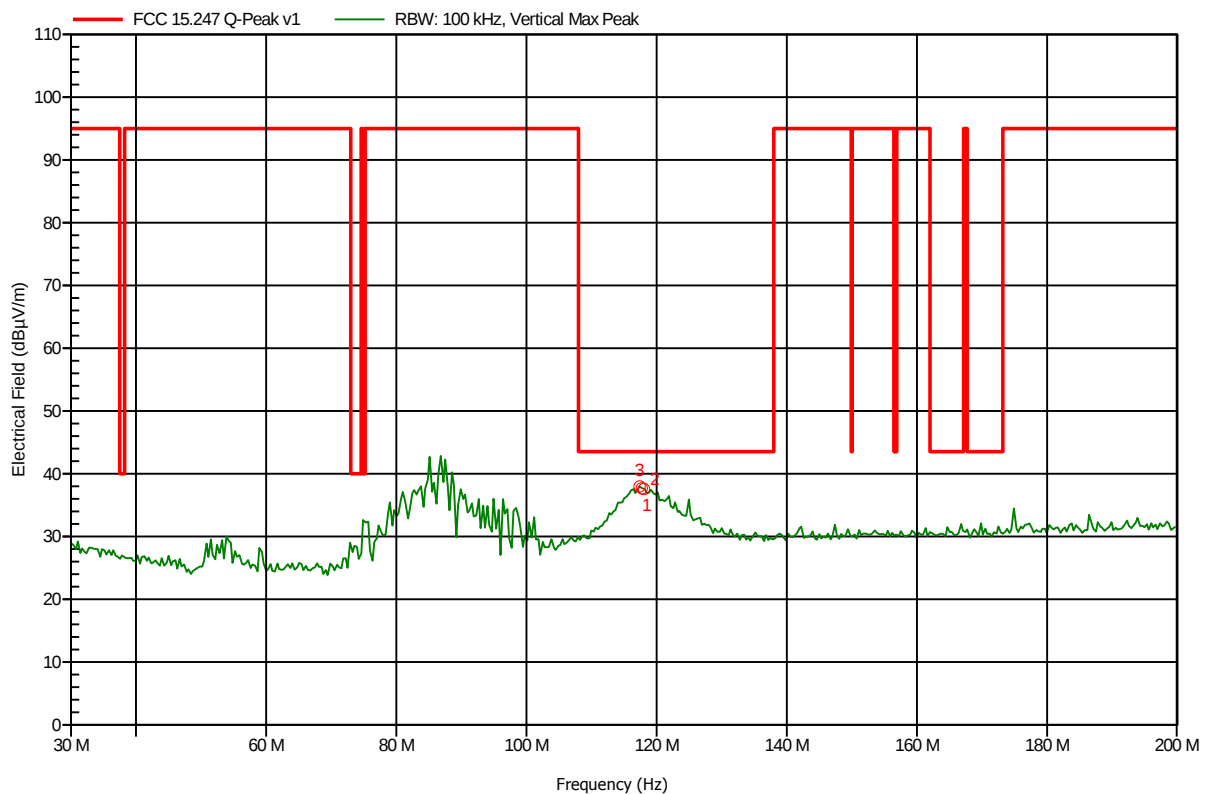
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
117.38 MHz	39.4 dBµV/m	43.52 dBµV/m	-4.12 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-09
 Note: worst case

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
117.38 MHz	37.98 dBµV/m	43.52 dBµV/m	-5.54 dB	Pass
117.72 MHz	37.67 dBµV/m	43.52 dBµV/m	-5.85 dB	Pass
118.06 MHz	37.58 dBµV/m	43.52 dBµV/m	-5.94 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

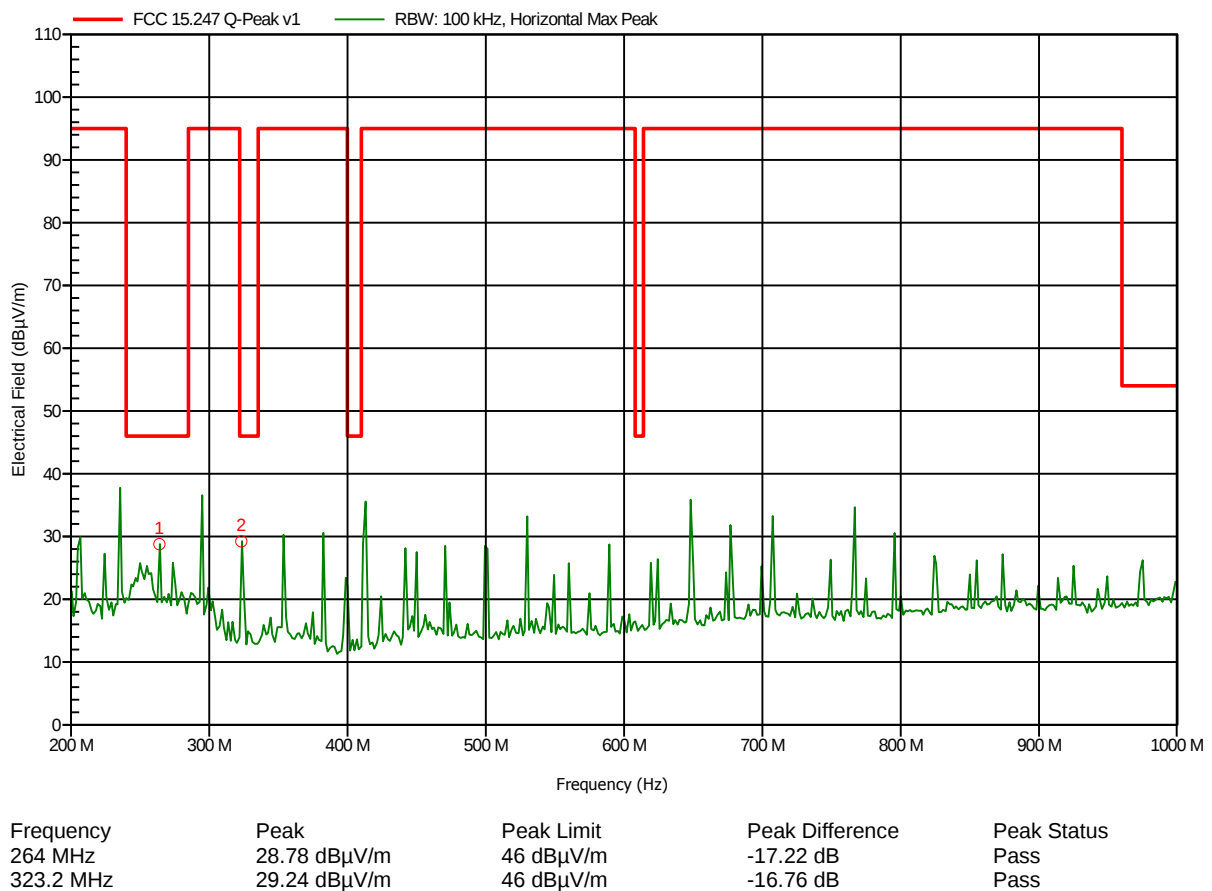
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-09
 Note: worst case

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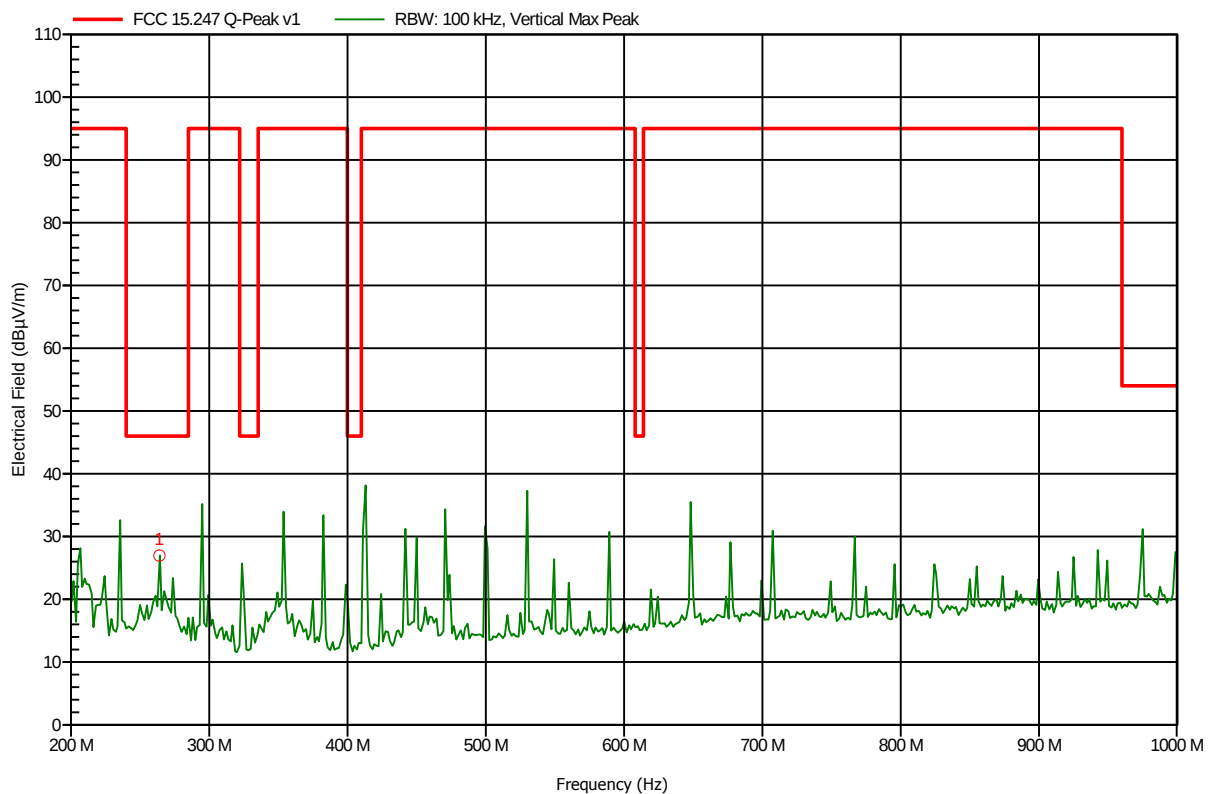


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-09
 Note: worst case

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
264 MHz	26.97 dBµV/m	46 dBµV/m	-19.03 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

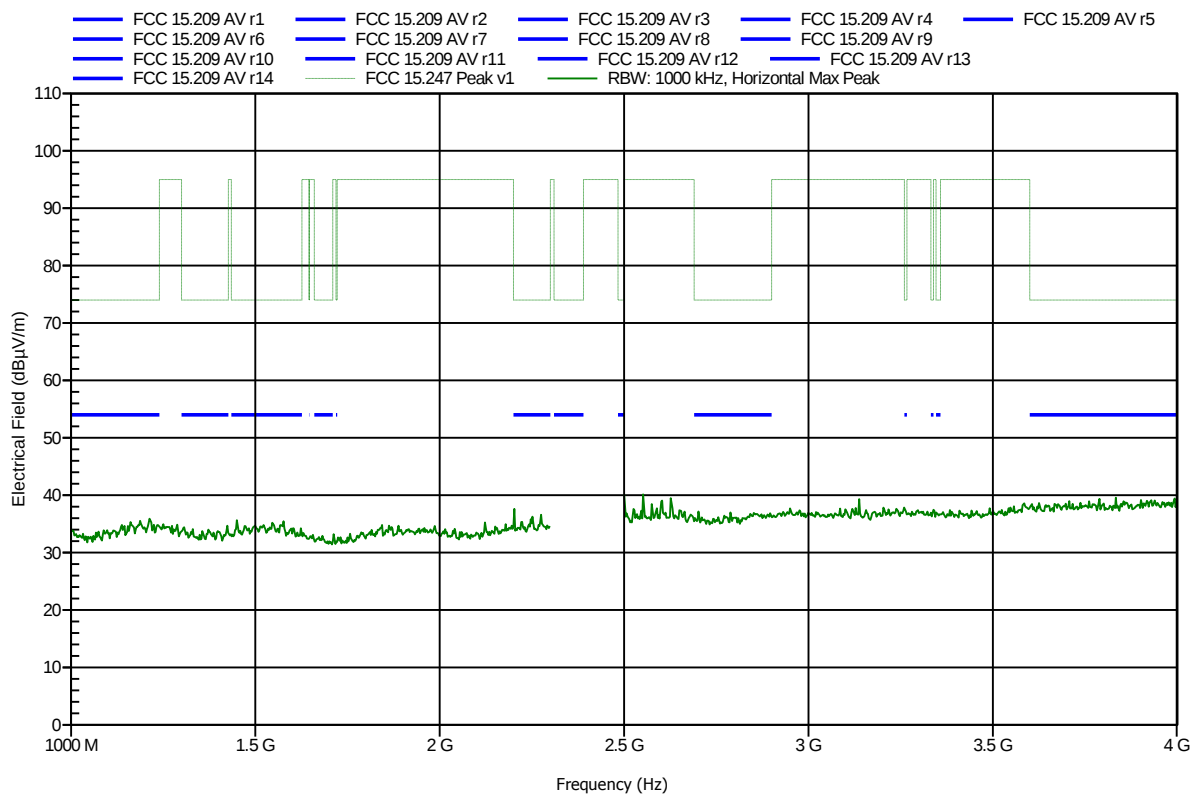
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch. 0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-07
 Note:

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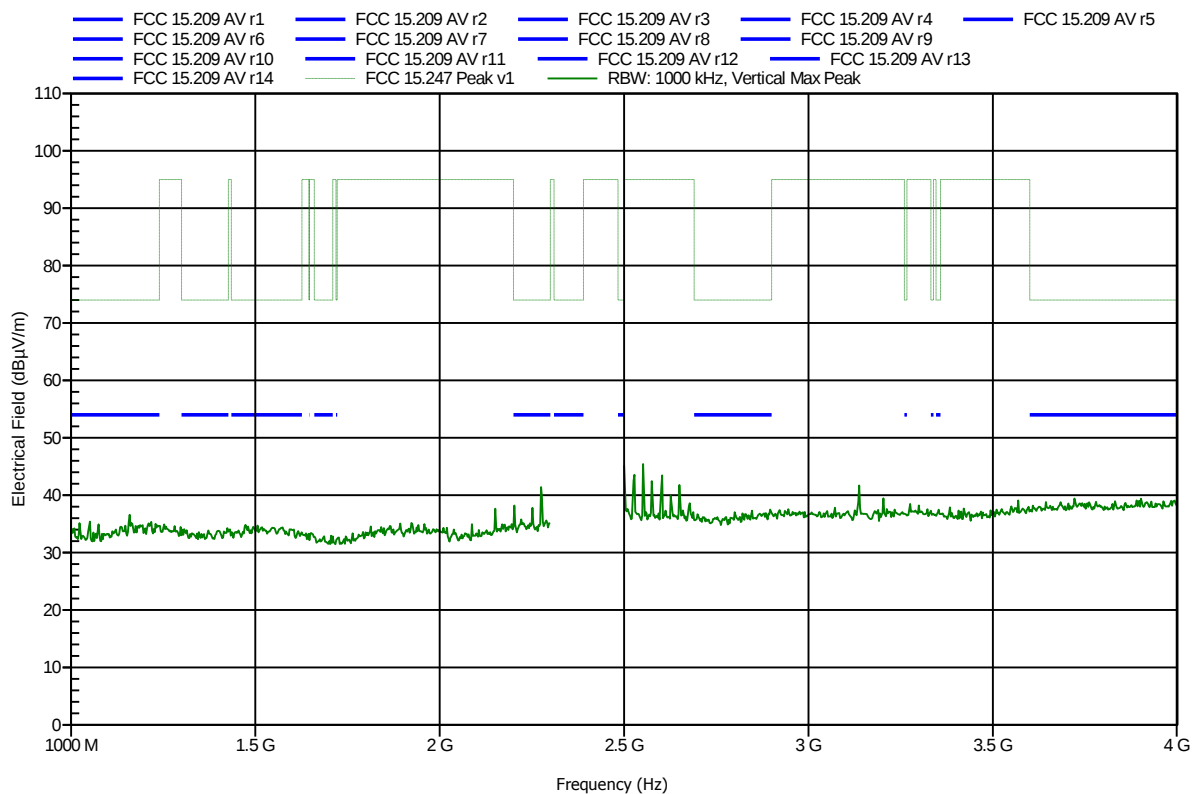


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch. 0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-07
 Note:

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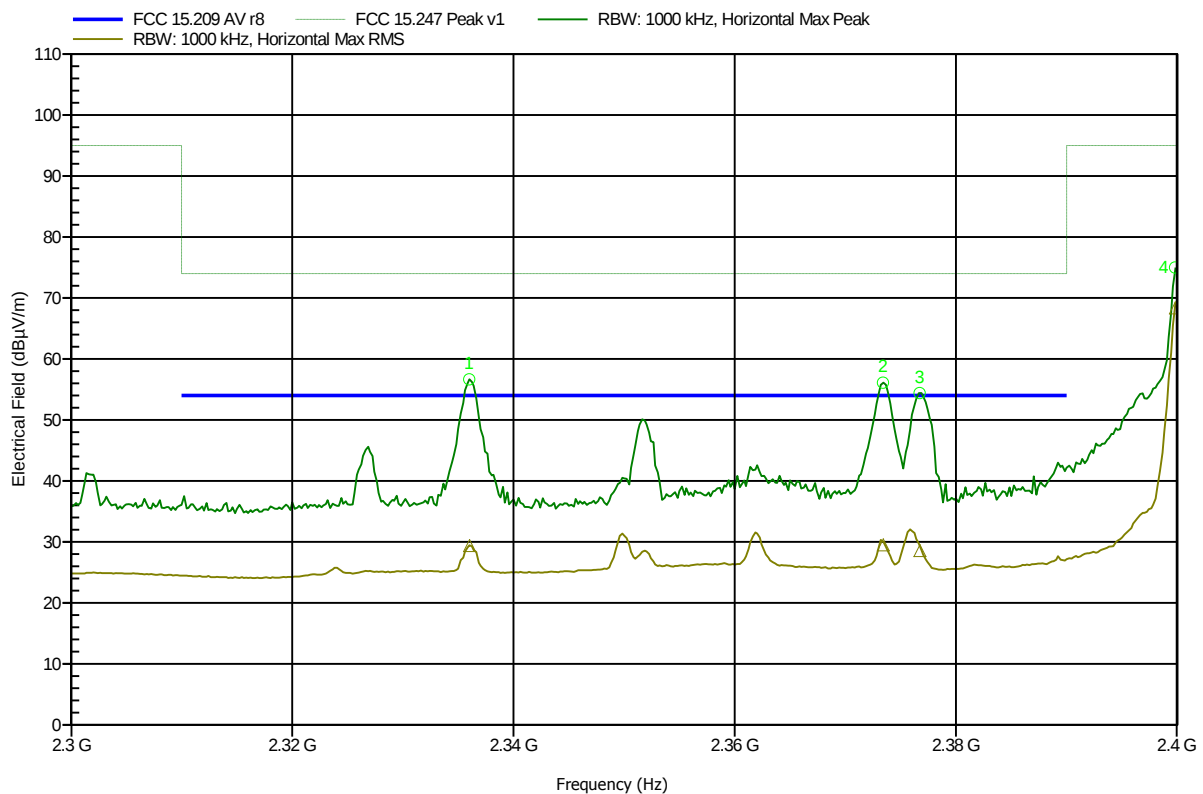


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch. 0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-07
 Note: lower bandedge

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.336 GHz	56.66 dBμV/m	74 dBμV/m	-17.34 dB	Pass
2.373 GHz	56.11 dBμV/m	74 dBμV/m	-17.89 dB	Pass
2.377 GHz	54.4 dBμV/m	74 dBμV/m	-19.6 dB	Pass
2.4 GHz	75 dBμV/m	95 dBμV/m	-20 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

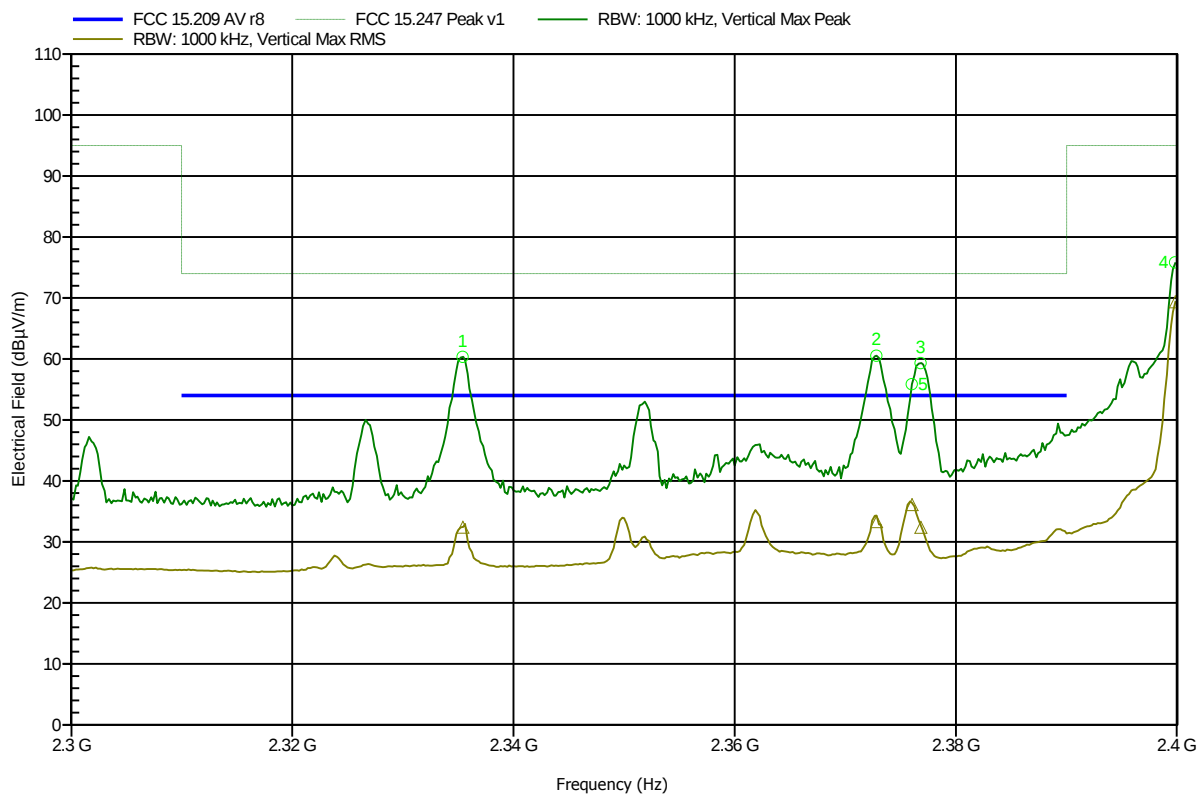
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch. 0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-07
 Note: lower bandedge

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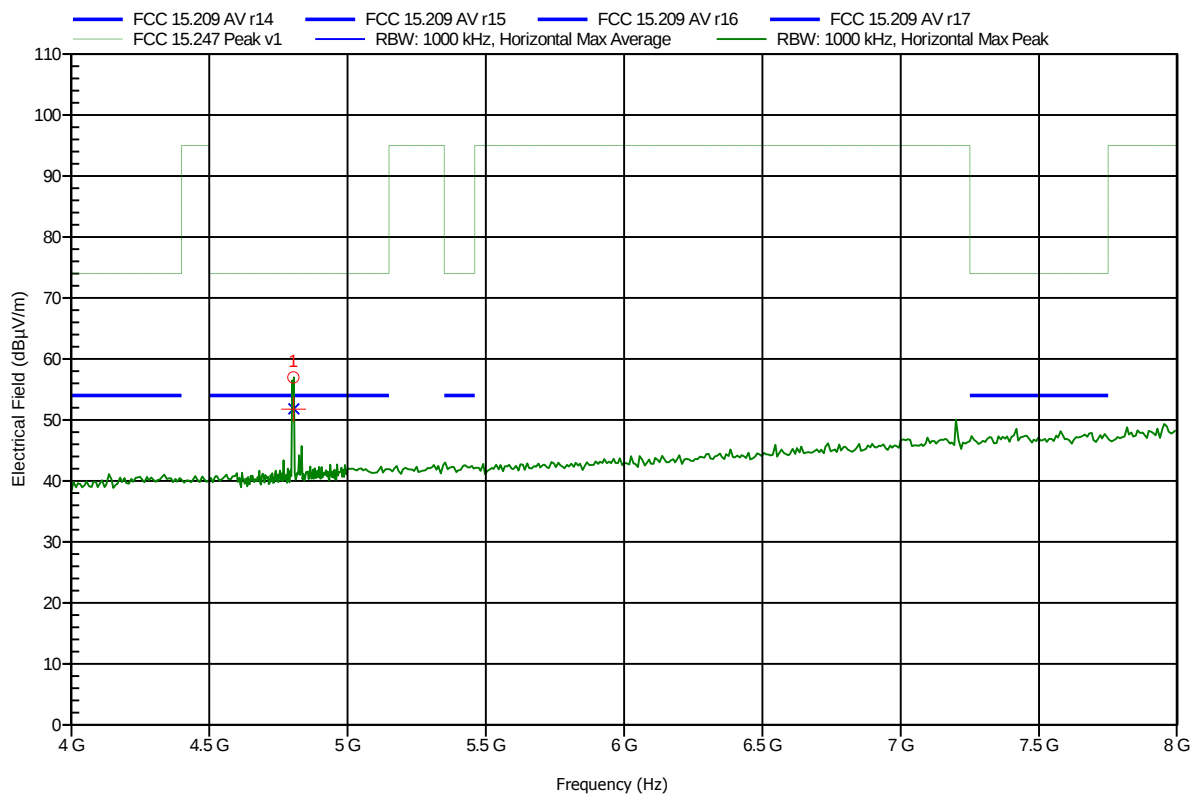
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.335 GHz	60.35 dBμV/m	74 dBμV/m	-13.65 dB	Pass
2.373 GHz	60.54 dBμV/m	74 dBμV/m	-13.46 dB	Pass
2.376 GHz	55.86 dBμV/m	74 dBμV/m	-18.14 dB	Pass
2.377 GHz	59.32 dBμV/m	74 dBμV/m	-14.68 dB	Pass
2.4 GHz	75.85 dBμV/m	95 dBμV/m	-19.15 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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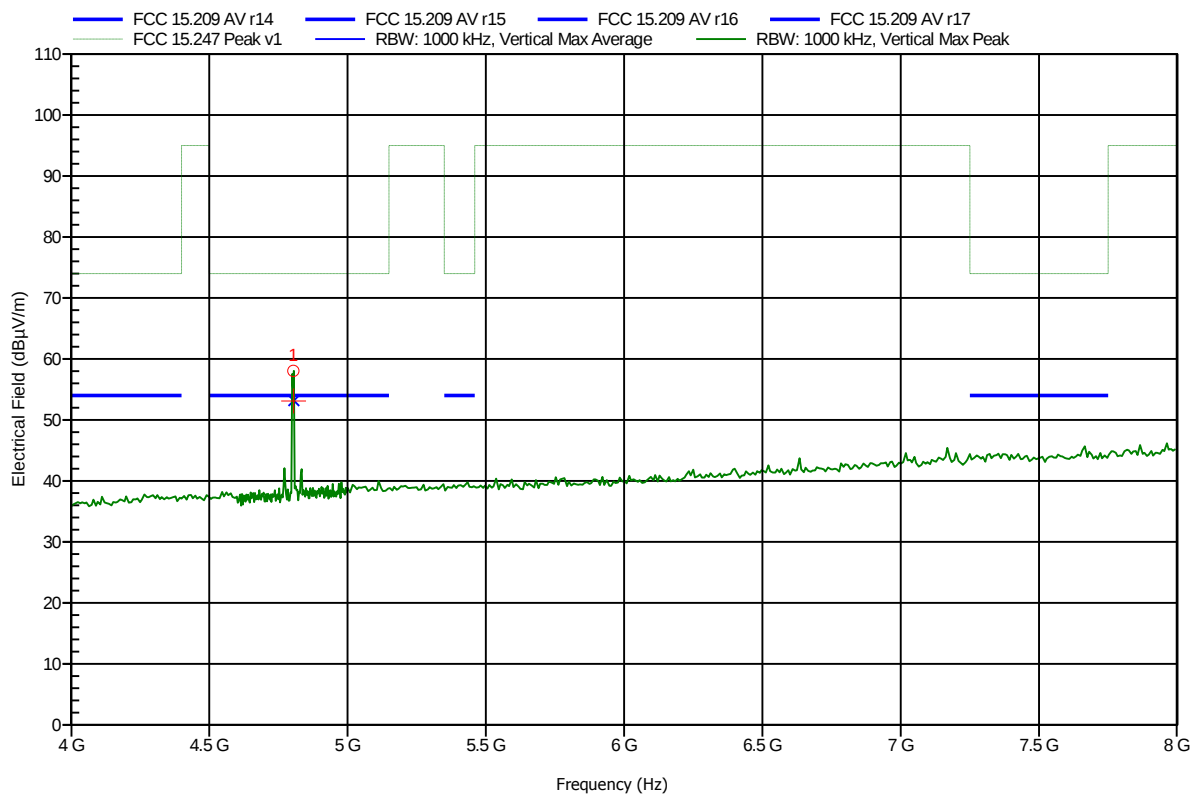
Frequency 4.804 GHz	Peak 56.98 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -17.02 dB	Peak Status Pass
Frequency 4.804 GHz	Average 51.81 dBμV/m	Average Limit 54 dBμV/m	Average Difference -2.19 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.804 GHz	Peak 58.04 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -15.96 dB	Peak Status Pass
Frequency 4.804 GHz	Average 53.16 dBµV/m	Average Limit 54 dBµV/m	Average Difference -0.84 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

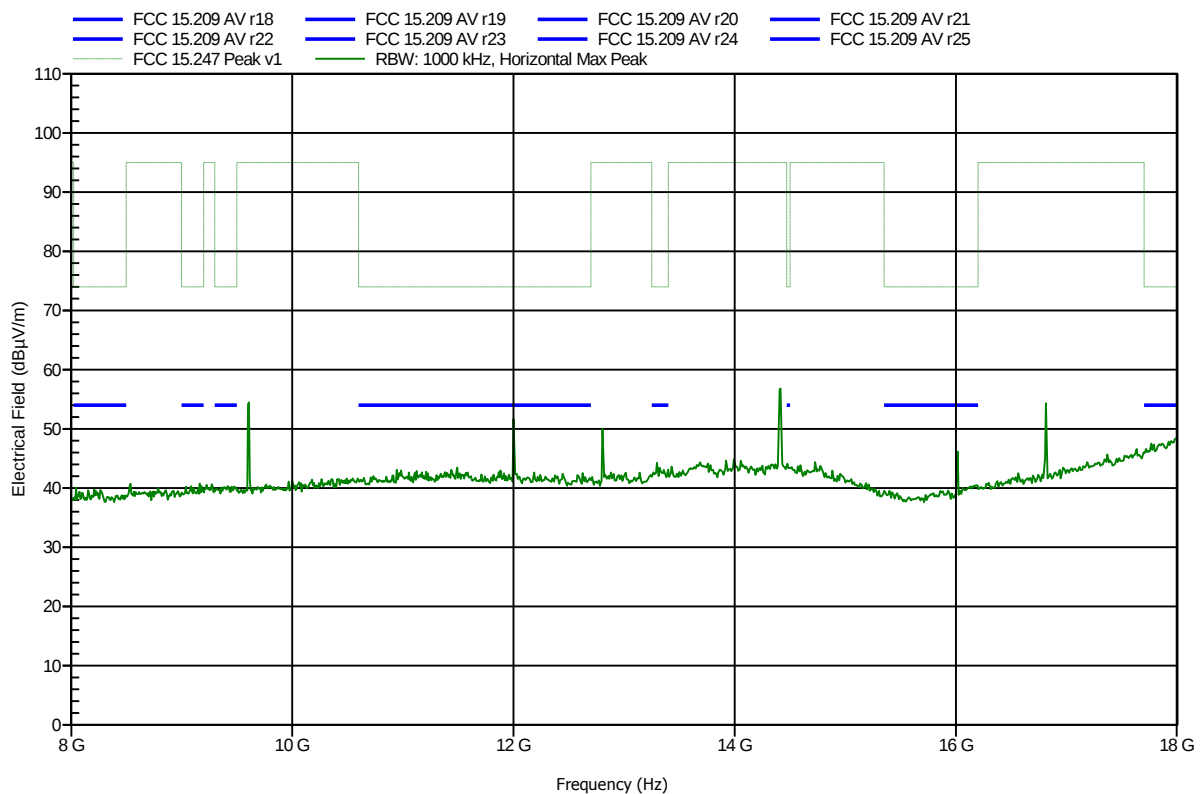
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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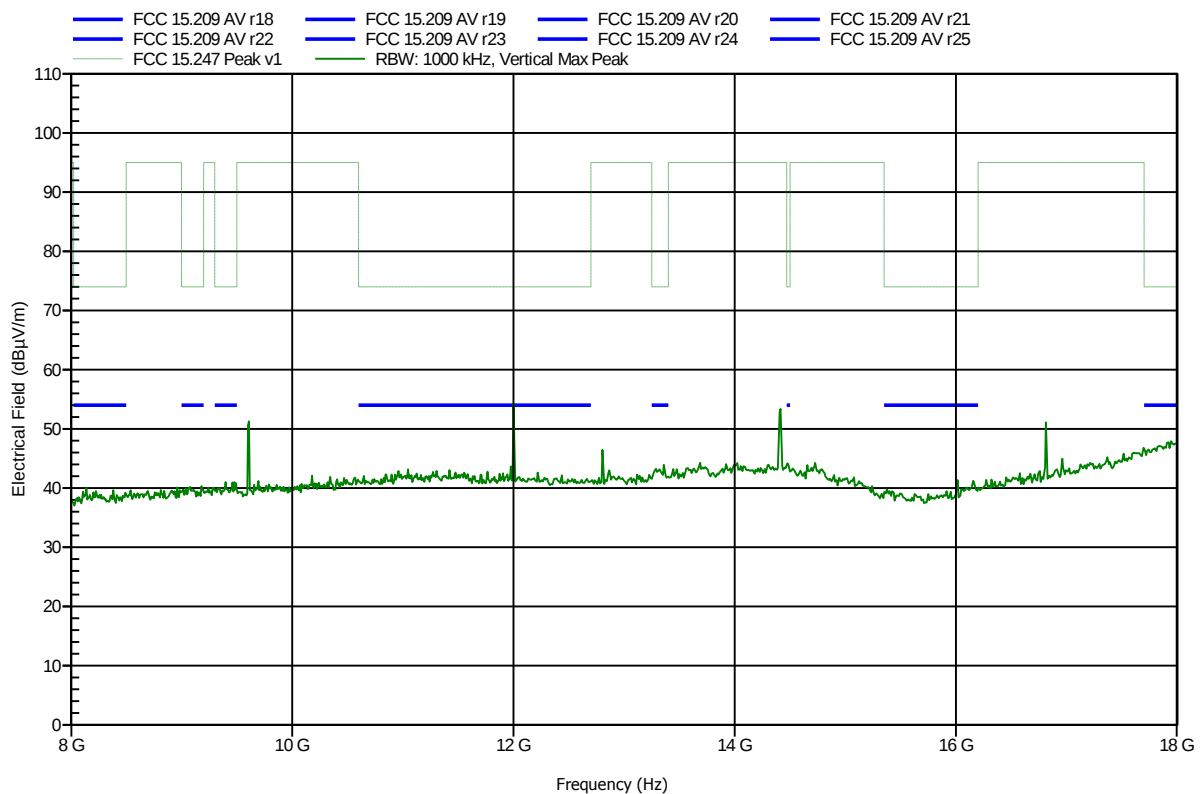


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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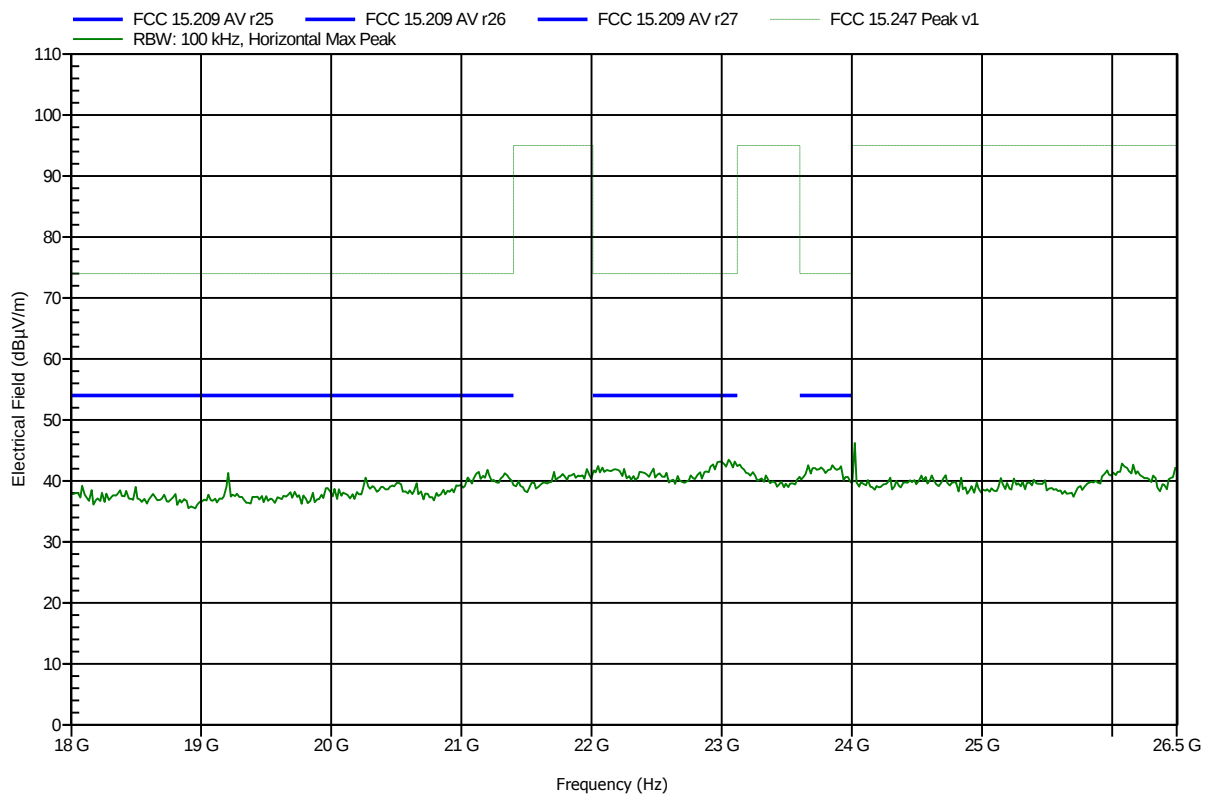


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXACConnecT
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 100 cm
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

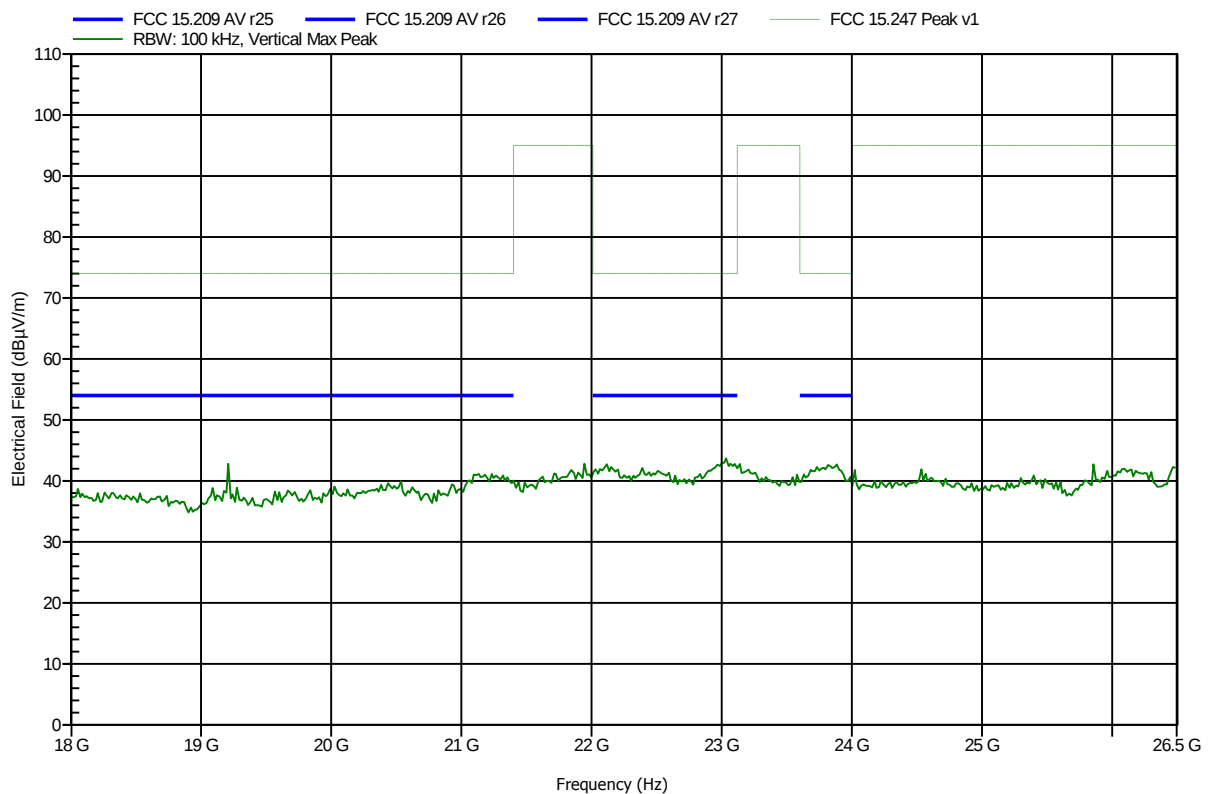
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 100 cm
 Mode: TX; Ch.0 (2402 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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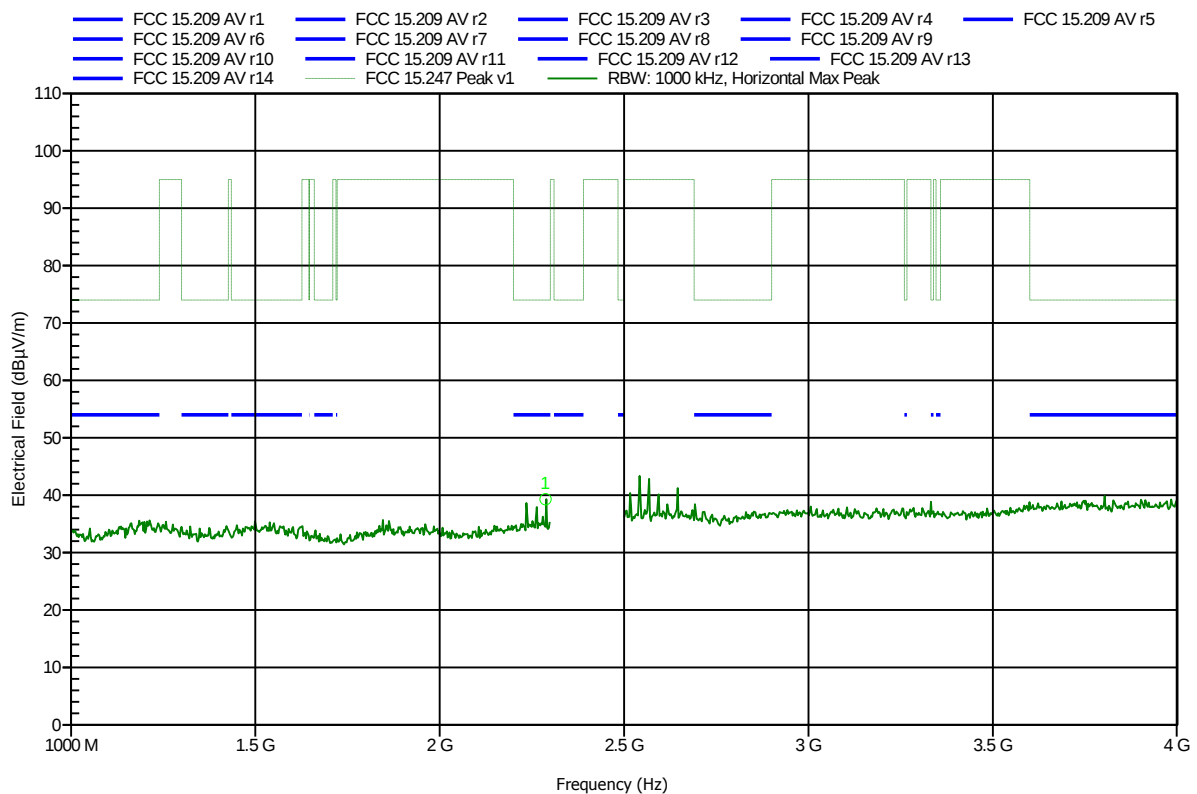


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.287 GHz	39.31 dBμV/m	74 dBμV/m	-34.69 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

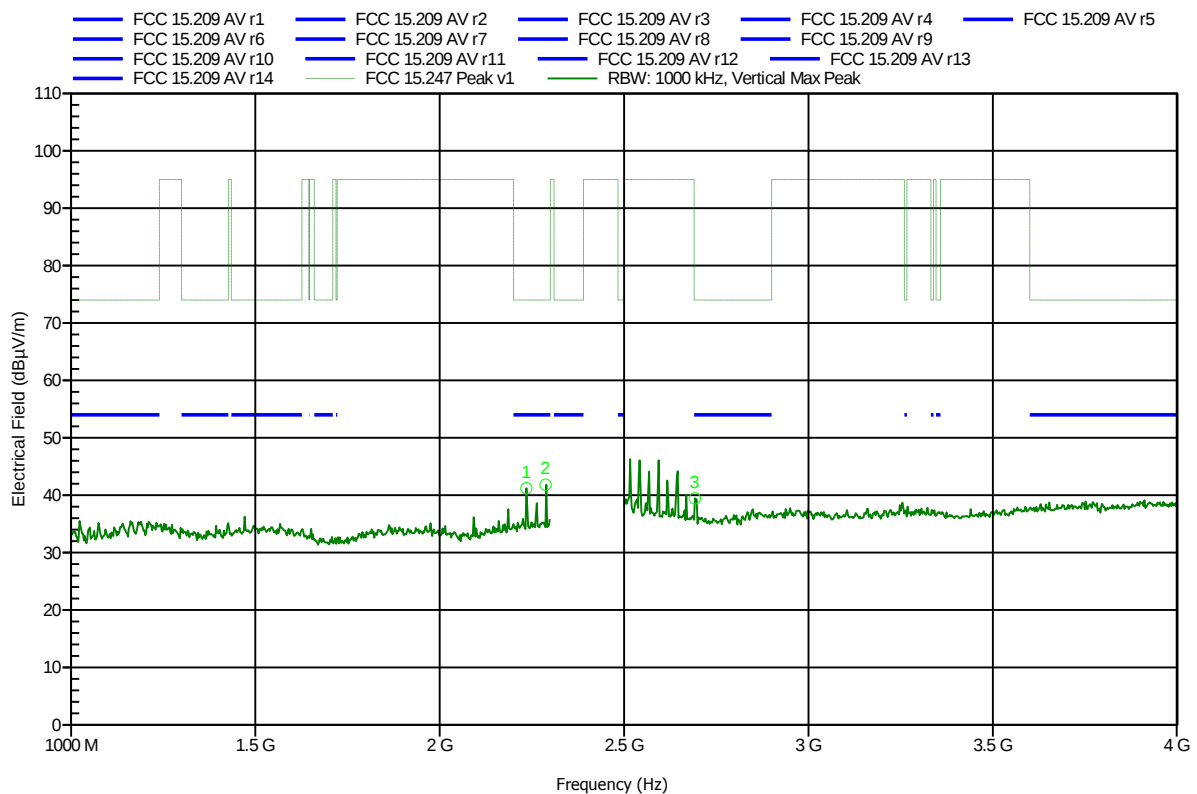
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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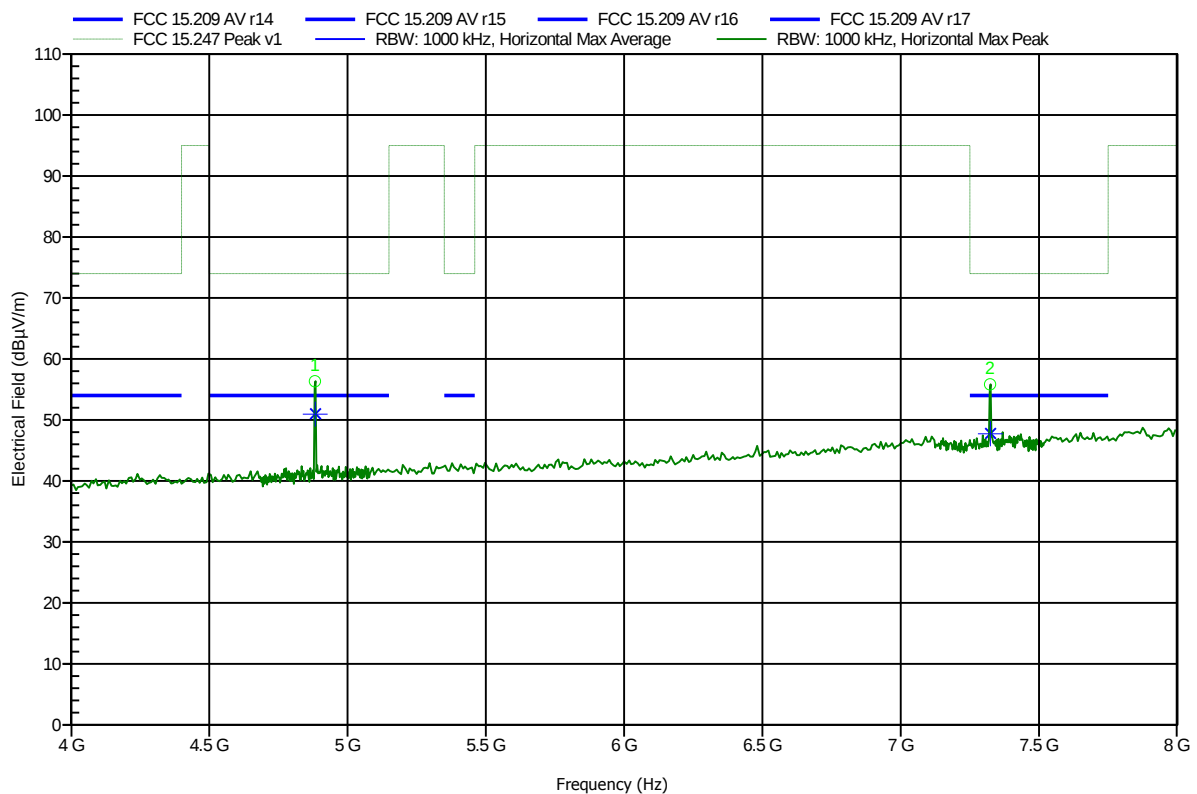
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.235 GHz	41.21 dBμV/m	74 dBμV/m	-32.79 dB	Pass
2.287 GHz	41.83 dBμV/m	74 dBμV/m	-32.17 dB	Pass
2.692 GHz	39.46 dBμV/m	74 dBμV/m	-34.54 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.882 GHz	56.35 dBμV/m	74 dBμV/m	-17.65 dB	Pass
7.323 GHz	55.83 dBμV/m	74 dBμV/m	-18.17 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.882 GHz	51 dBμV/m	54 dBμV/m	-3 dB	Pass
7.323 GHz	47.77 dBμV/m	54 dBμV/m	-6.23 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

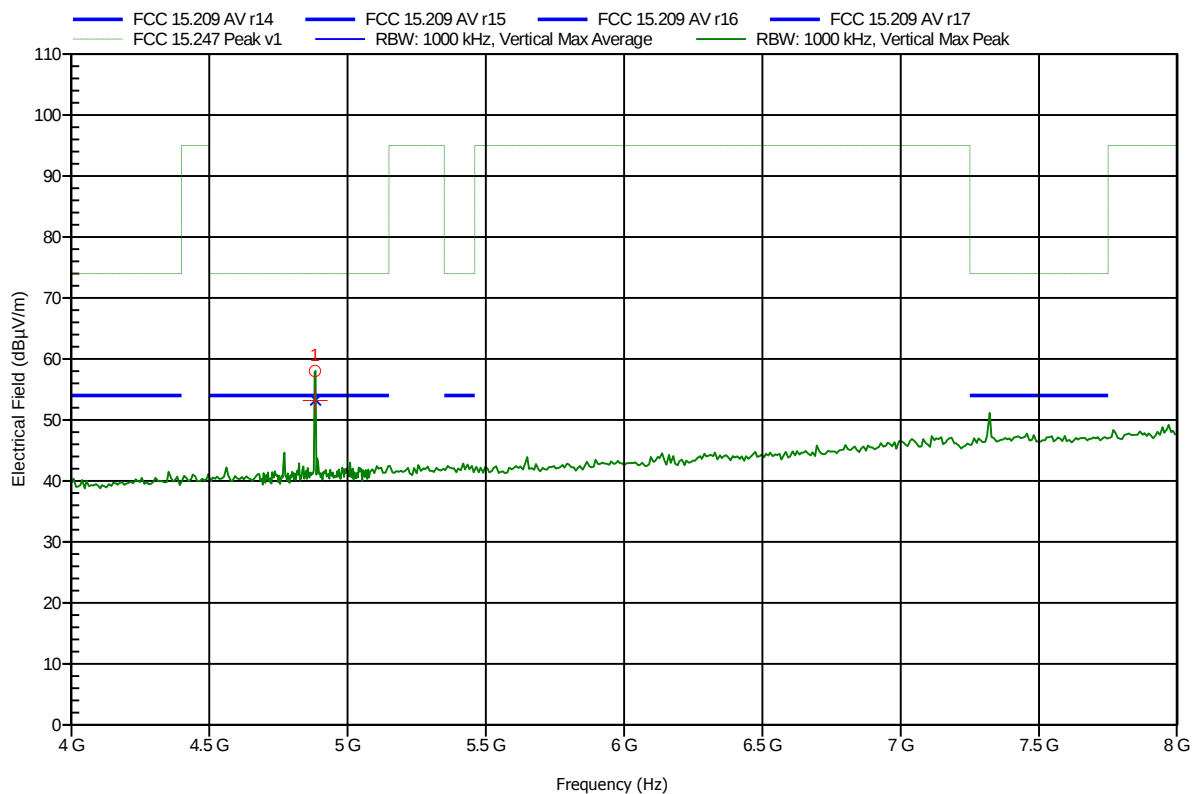
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.882 GHz	Peak 58.03 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -15.97 dB	Peak Status Pass
Frequency 4.882 GHz	Average 53.25 dBµV/m	Average Limit 54 dBµV/m	Average Difference -0.75 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

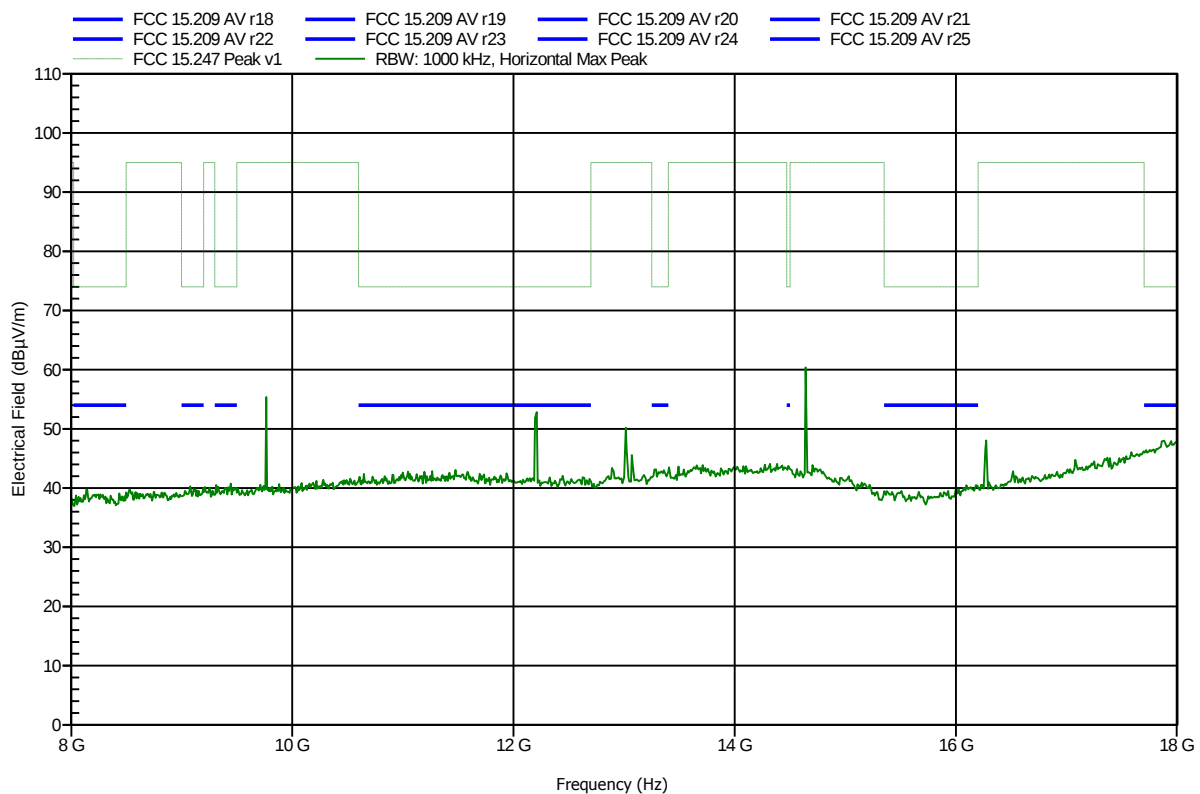
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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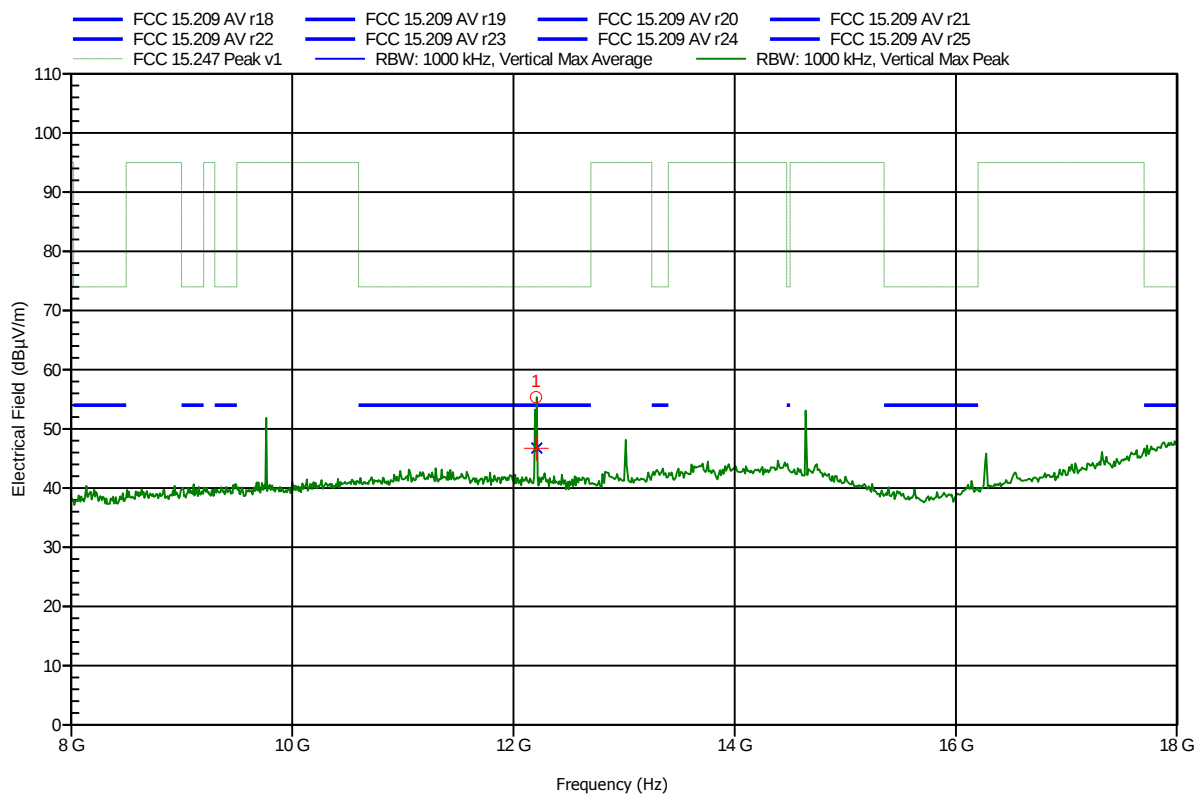


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 12.204 GHz	Peak 55.36 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -18.64 dB	Peak Status Pass
Frequency 12.204 GHz	Average 46.78 dBμV/m	Average Limit 54 dBμV/m	Average Difference -7.22 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

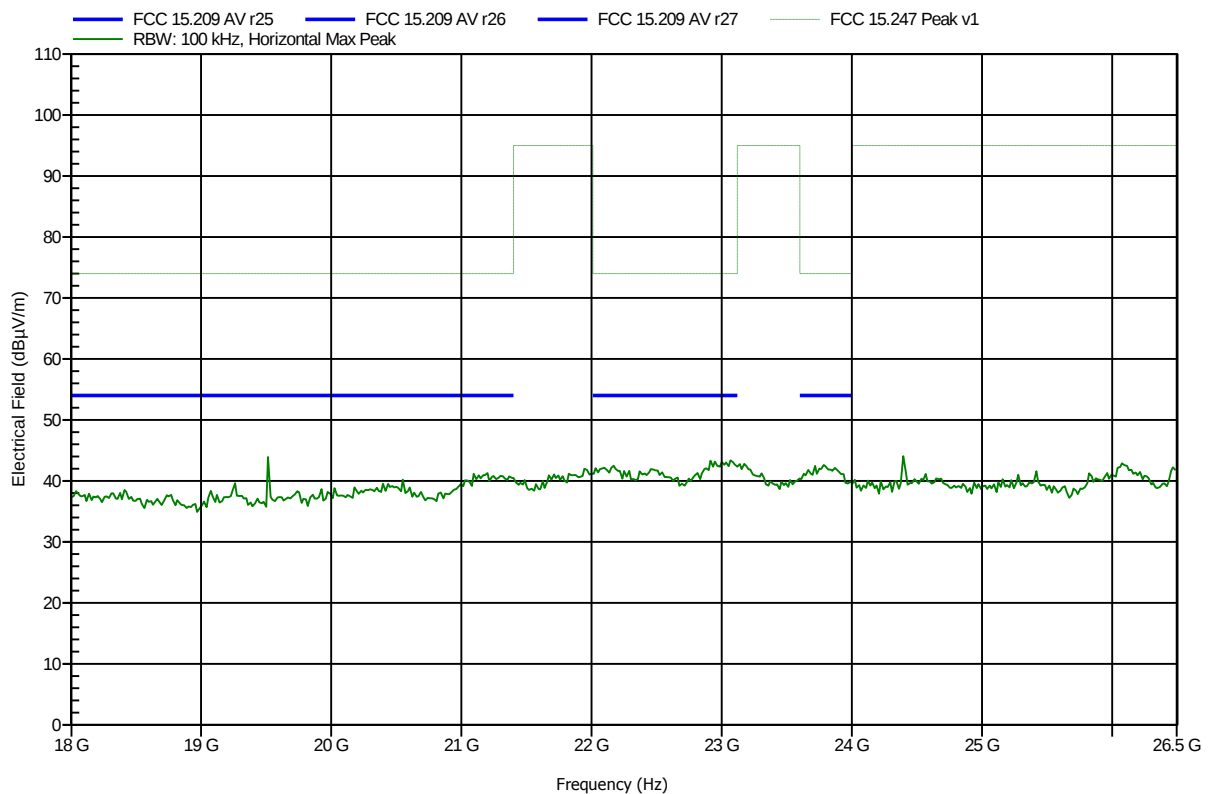
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 100 cm
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

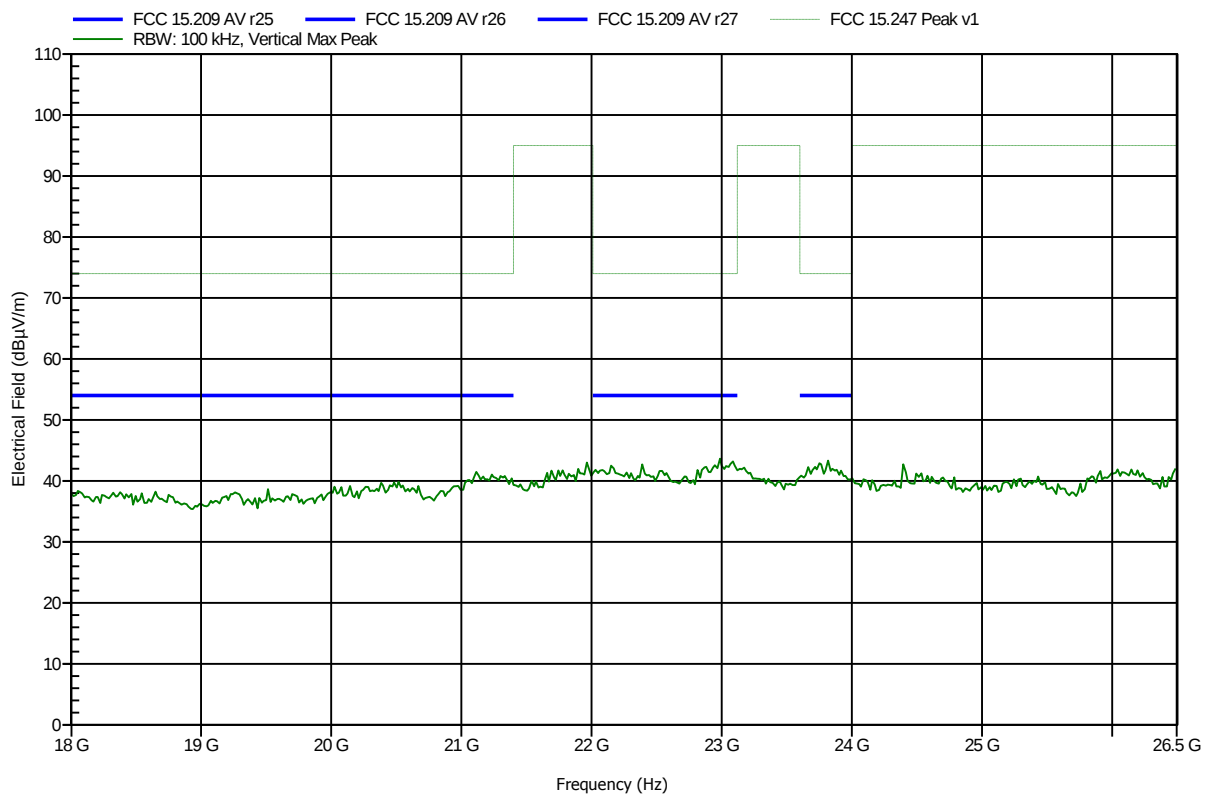
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 100 cm
 Mode: TX; Ch.39 (2441 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

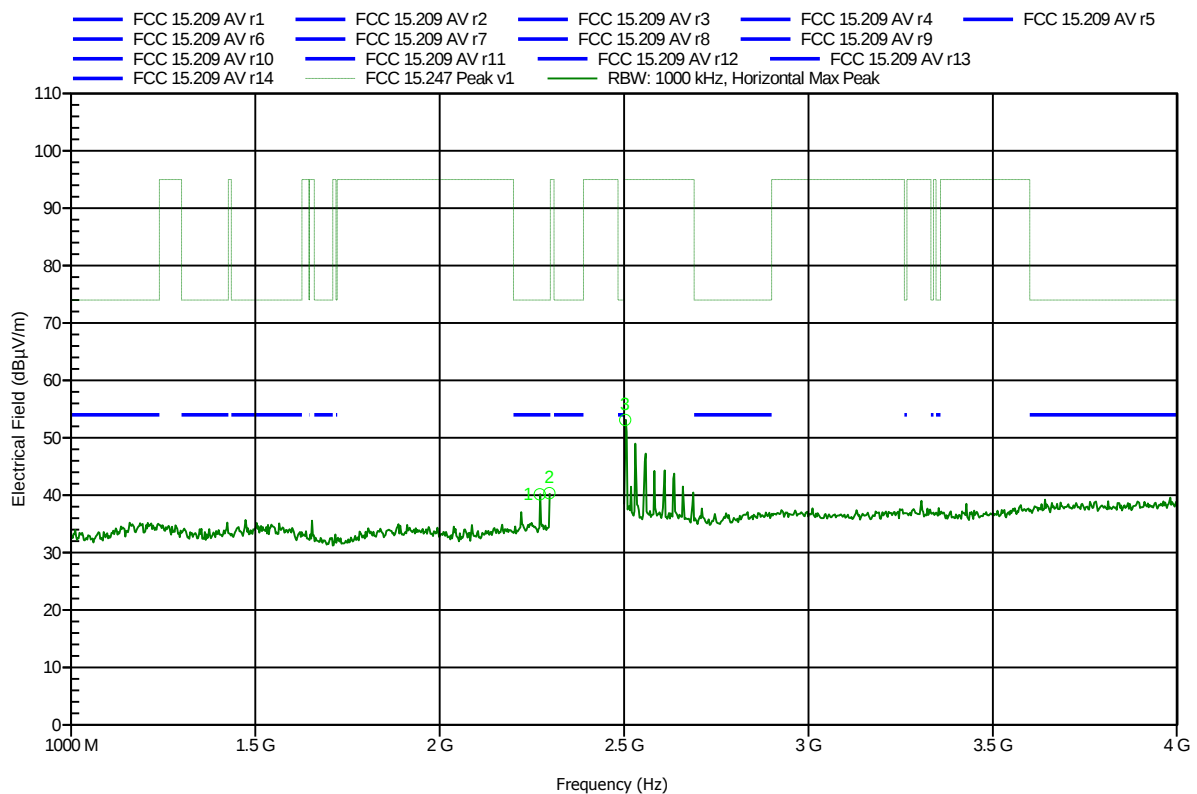
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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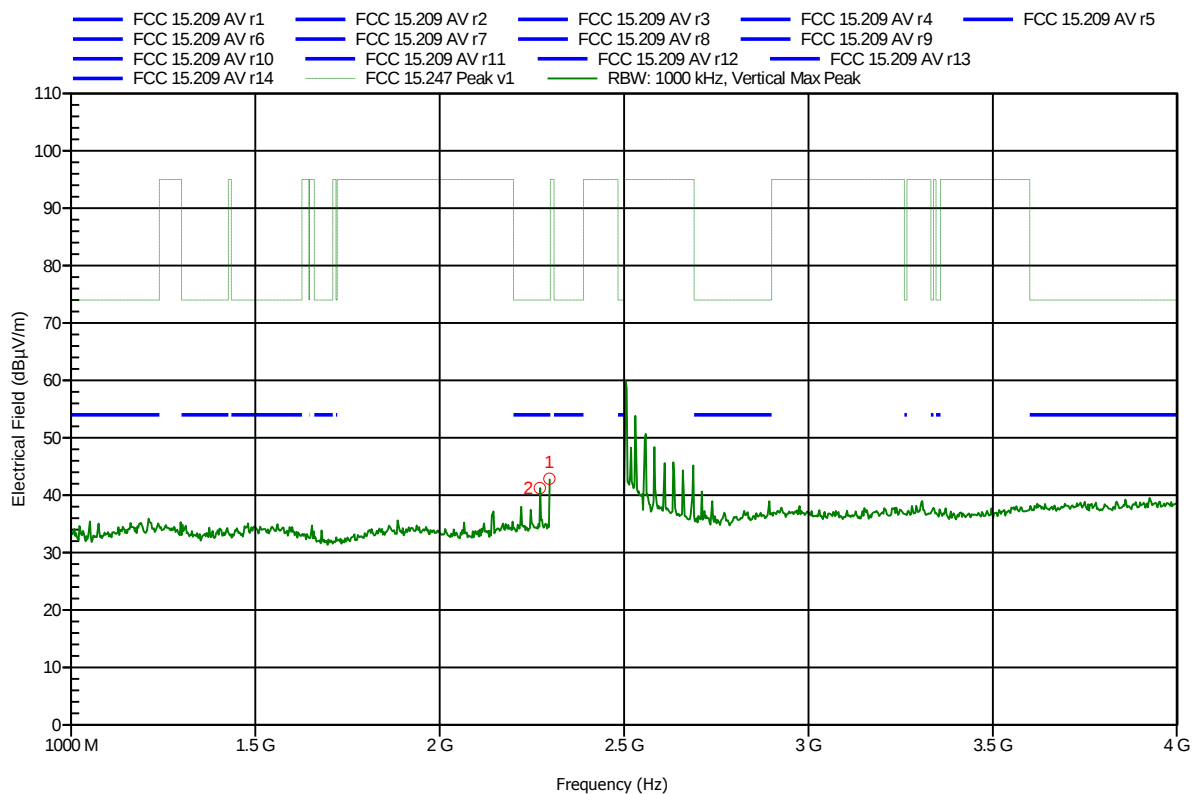
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.271 GHz	40.15 dBμV/m	74 dBμV/m	-33.85 dB	Pass
2.297 GHz	40.36 dBμV/m	74 dBμV/m	-33.64 dB	Pass
2.503 GHz	53.11 dBμV/m	95 dBμV/m	-41.89 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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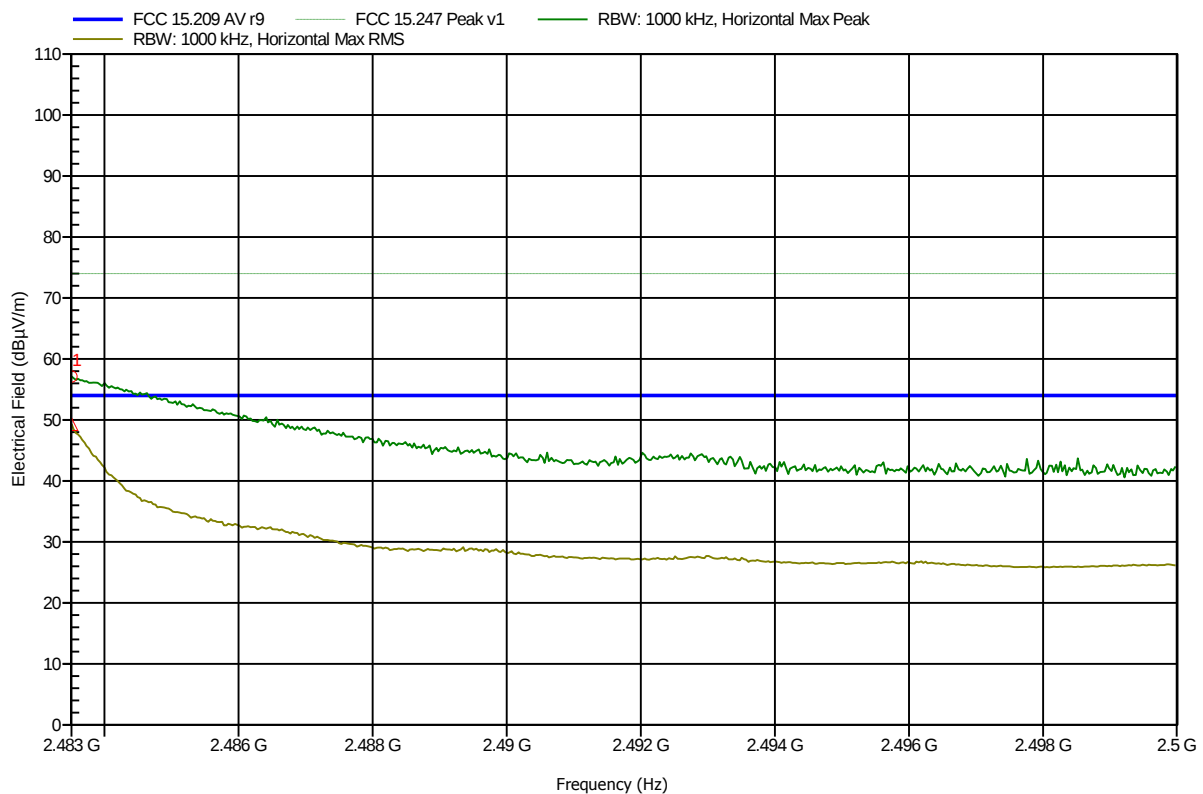
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.271 GHz	41.24 dBμV/m	74 dBμV/m	-32.76 dB	Pass
2.297 GHz	42.87 dBμV/m	74 dBμV/m	-31.13 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note: upper bandedge

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Frequency 2.4835 GHz	Peak 57.11 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -16.89 dB	Peak Status Pass
Frequency 2.4835 GHz	RMS 49.0 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -5.0 dB	RMS Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

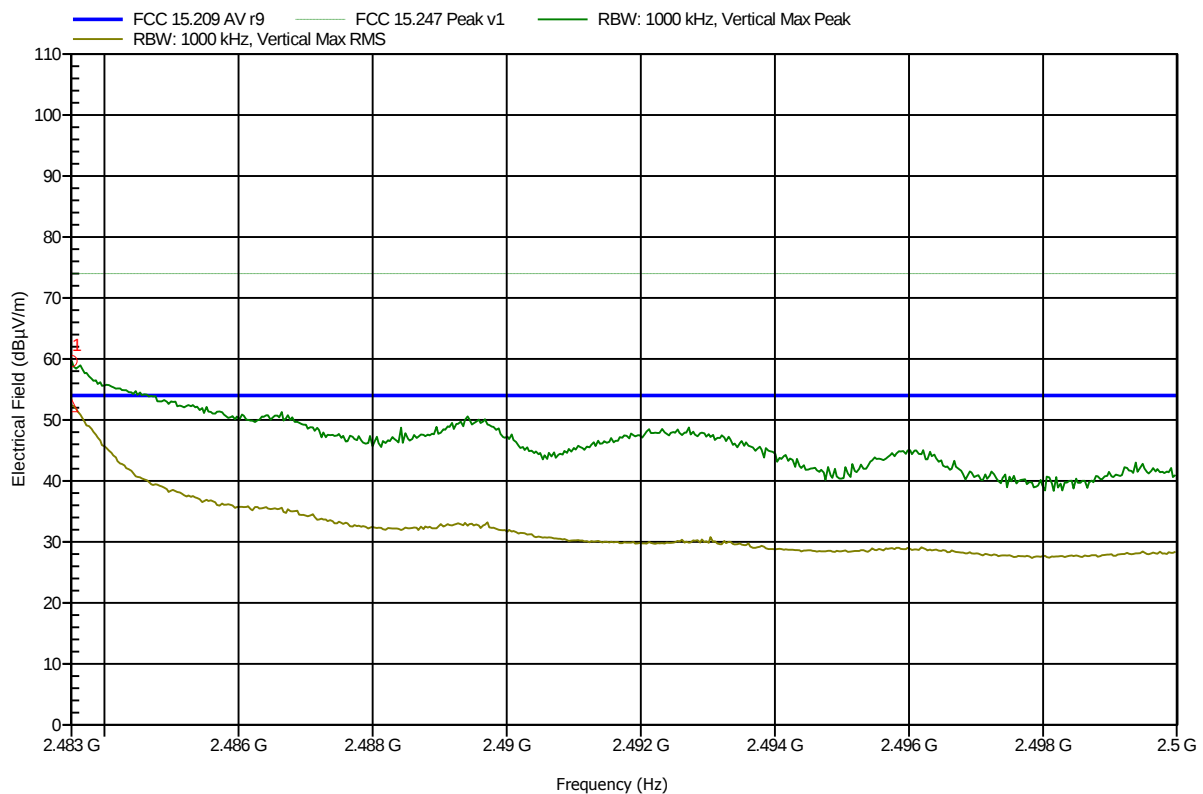
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note: upper bandedge

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Frequency 2.4835 GHz	Peak 59.65 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -14.35 dB	Peak Status Pass
Frequency 2.4835 GHz	RMS 52.5 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -1.5 dB	RMS Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

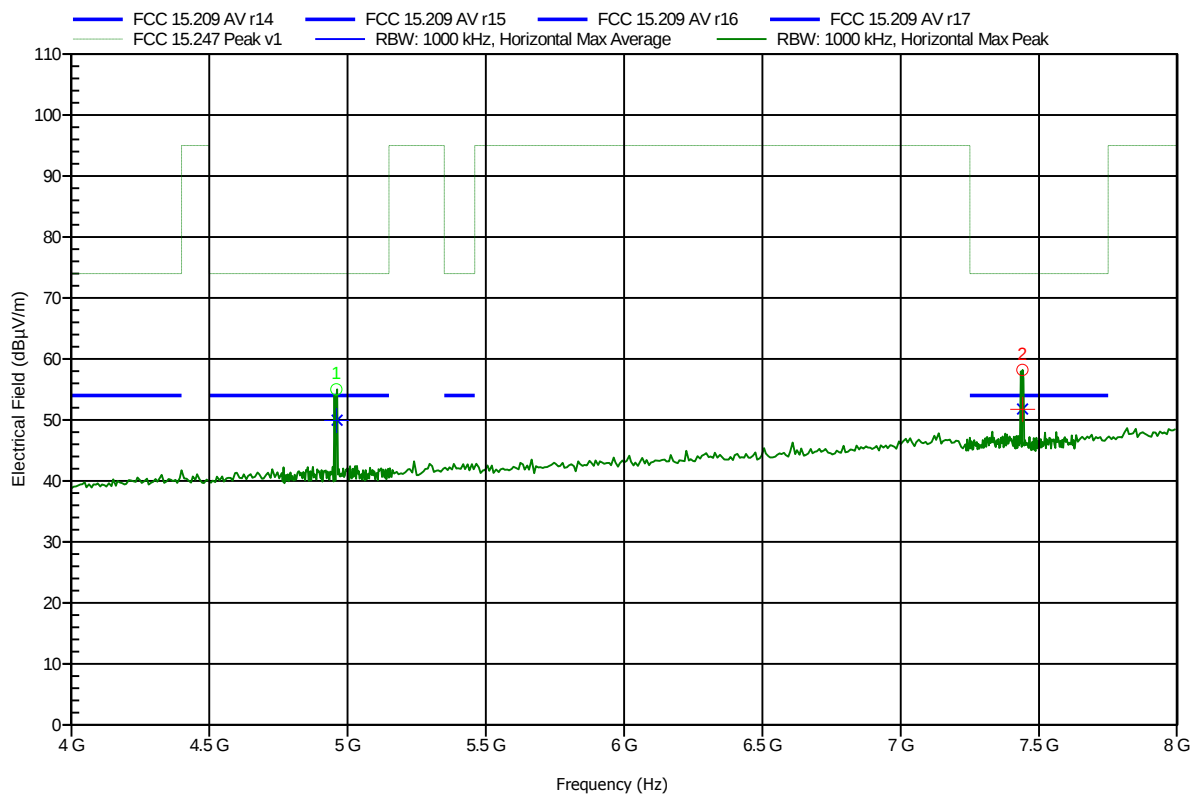
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.96 GHz	55.01 dBμV/m	74 dBμV/m	-18.99 dB	Pass
7.44 GHz	58.2 dBμV/m	74 dBμV/m	-15.8 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
4.96 GHz	49.95 dBμV/m	54 dBμV/m	-4.05 dB	Pass
7.44 GHz	51.78 dBμV/m	54 dBμV/m	-2.22 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

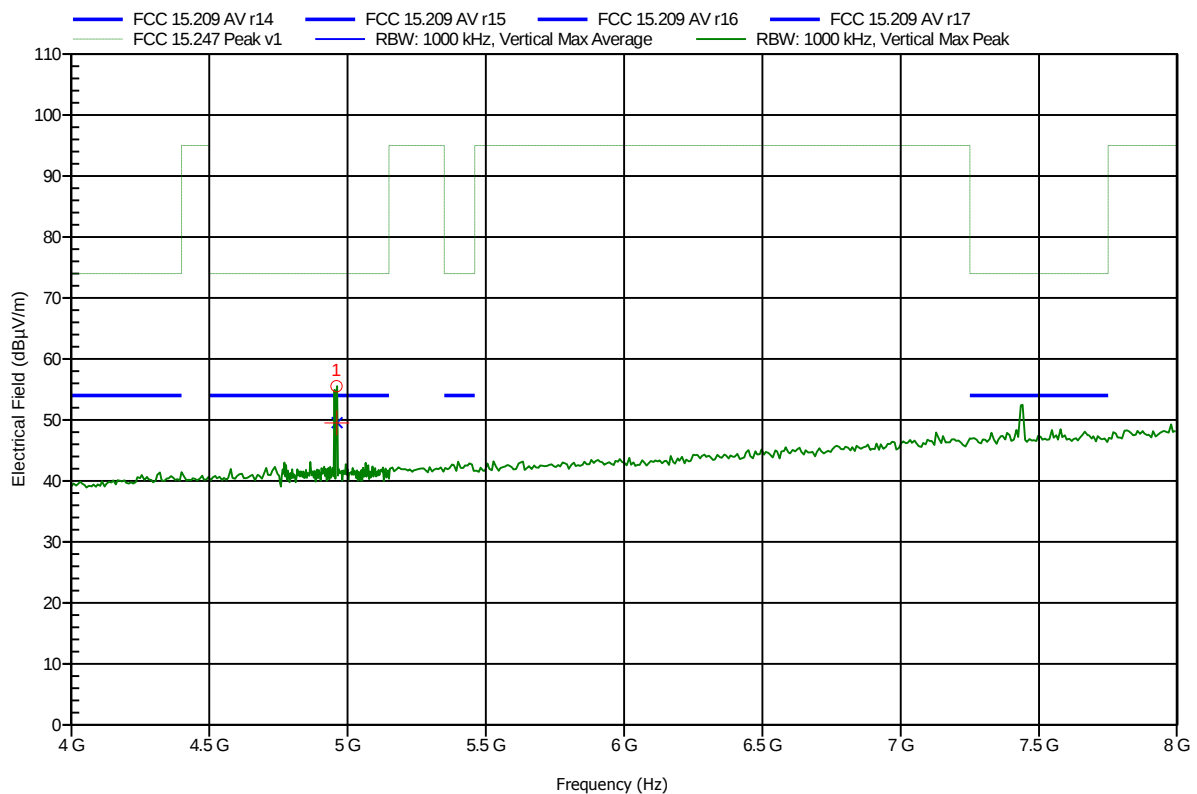
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.96 GHz	Peak 55.53 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -18.47 dB	Peak Status Pass
Frequency 4.96 GHz	Average 49.55 dBμV/m	Average Limit 54 dBμV/m	Average Difference -4.45 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

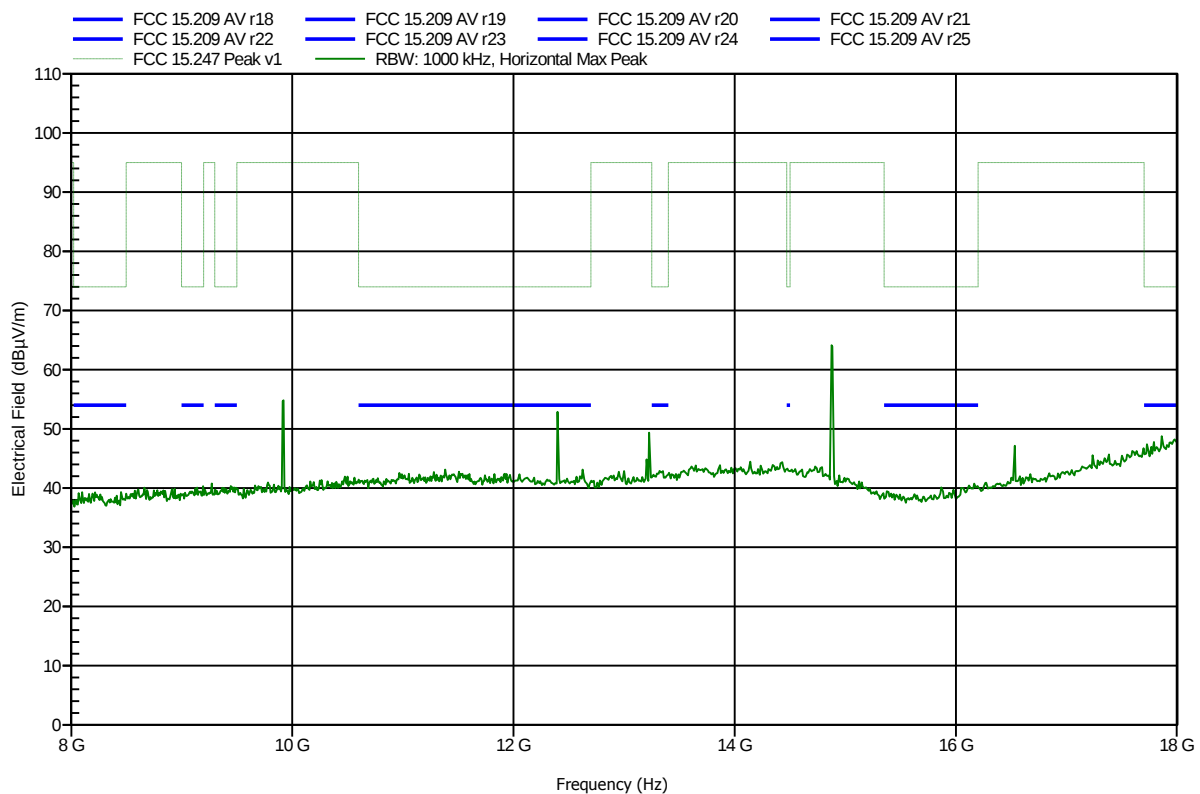
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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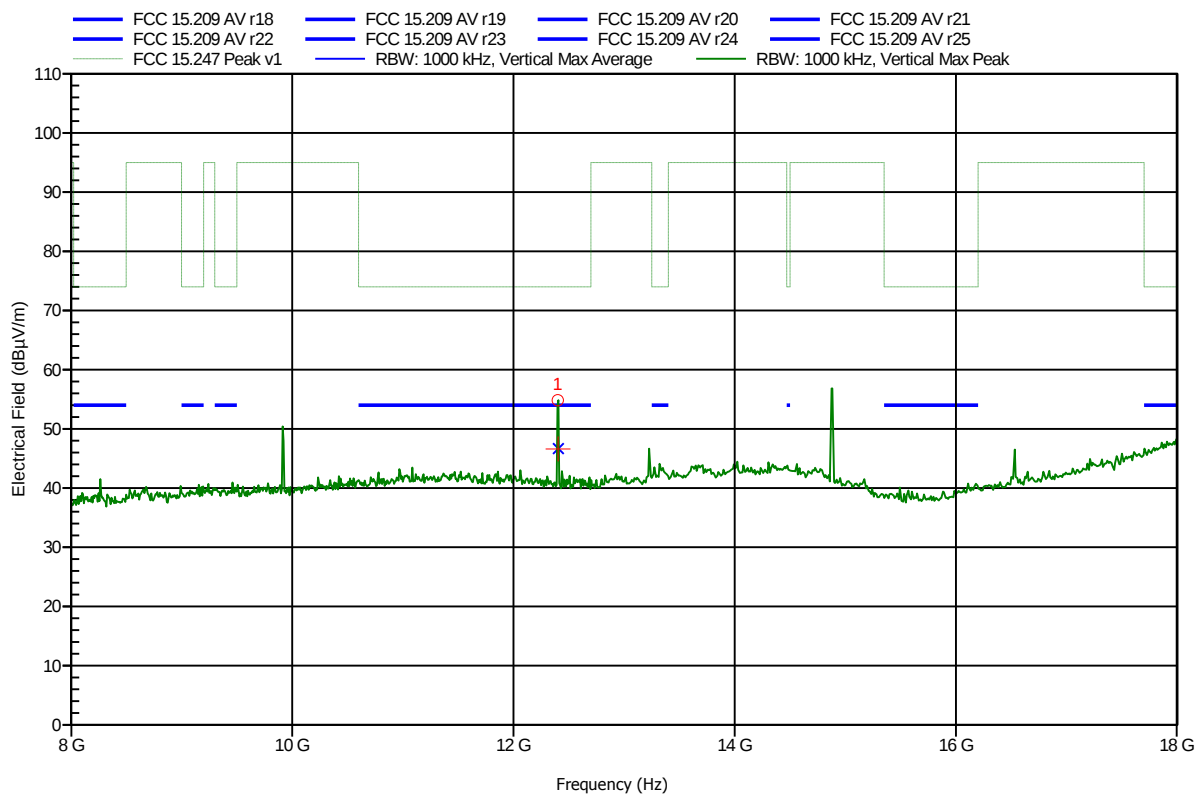


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.401 GHz	54.84 dBµV/m	74 dBµV/m	-19.16 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
12.401 GHz	46.66 dBµV/m	54 dBµV/m	-7.34 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

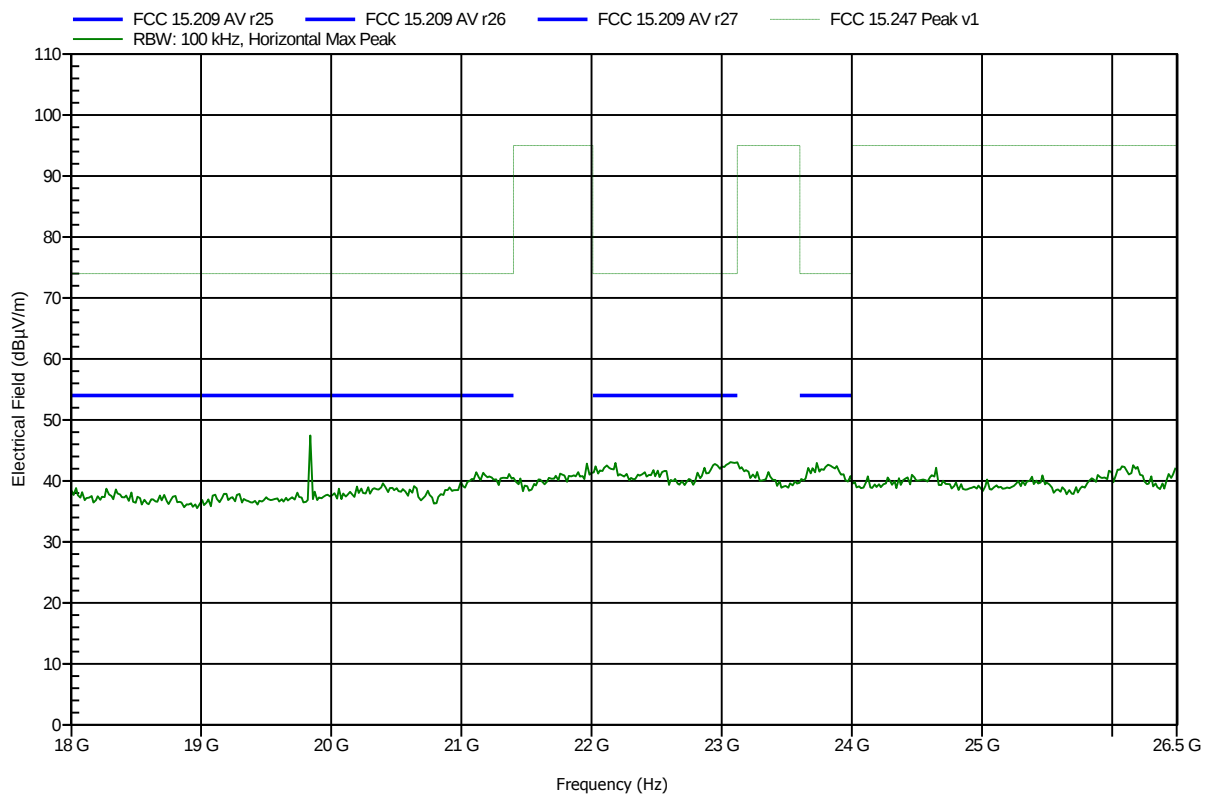
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 100 cm
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

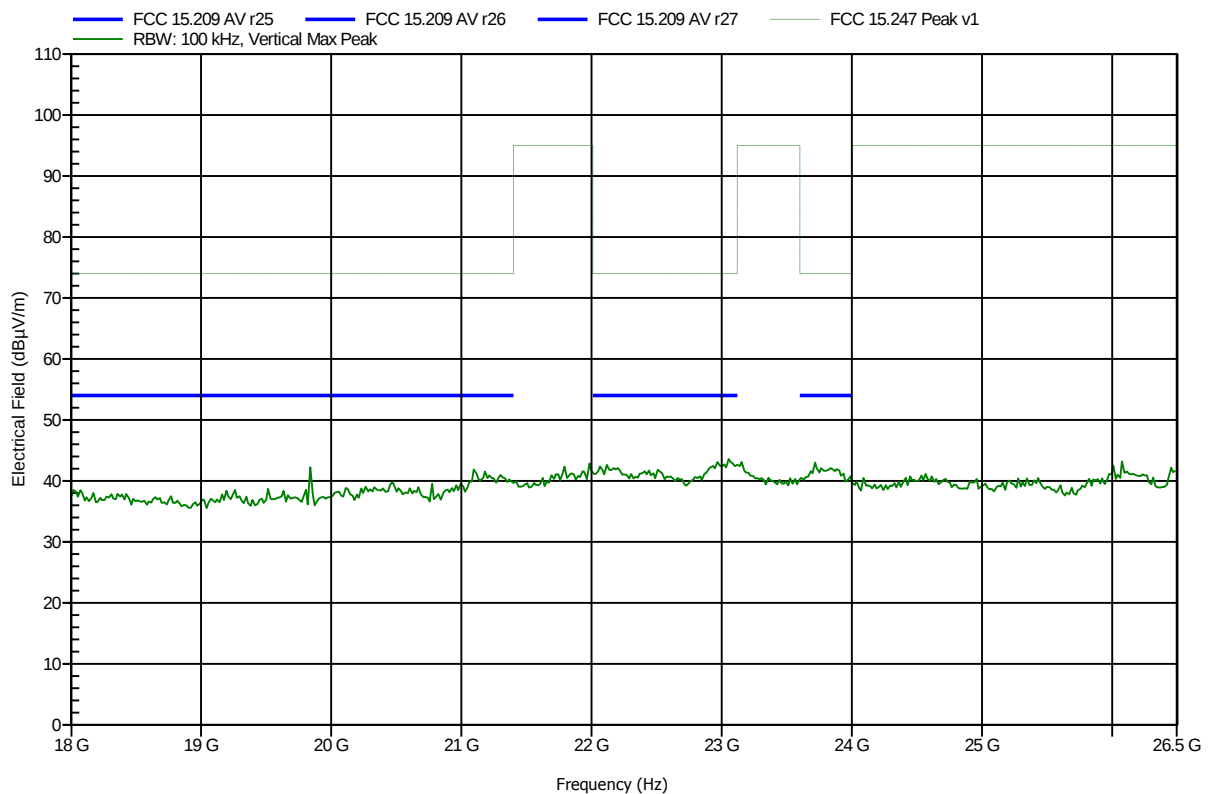
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 100 cm
 Mode: TX; Ch.78 (2480 MHz), DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

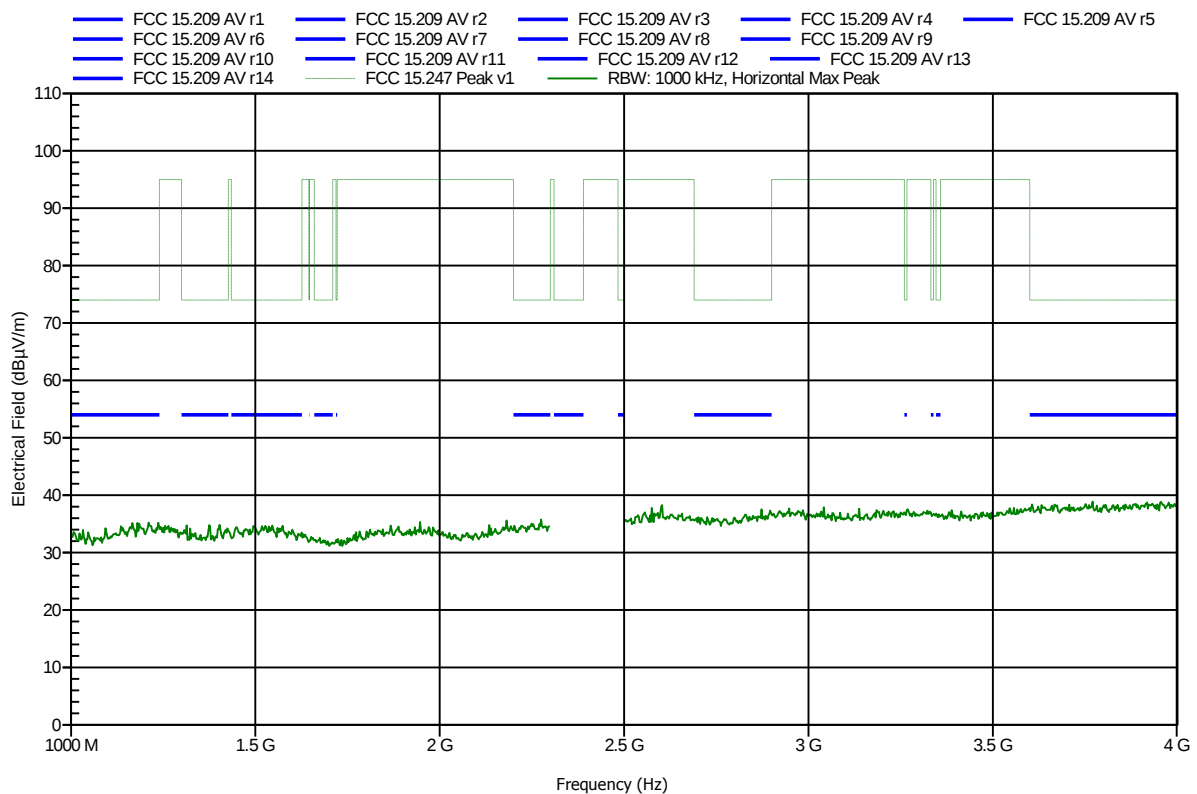
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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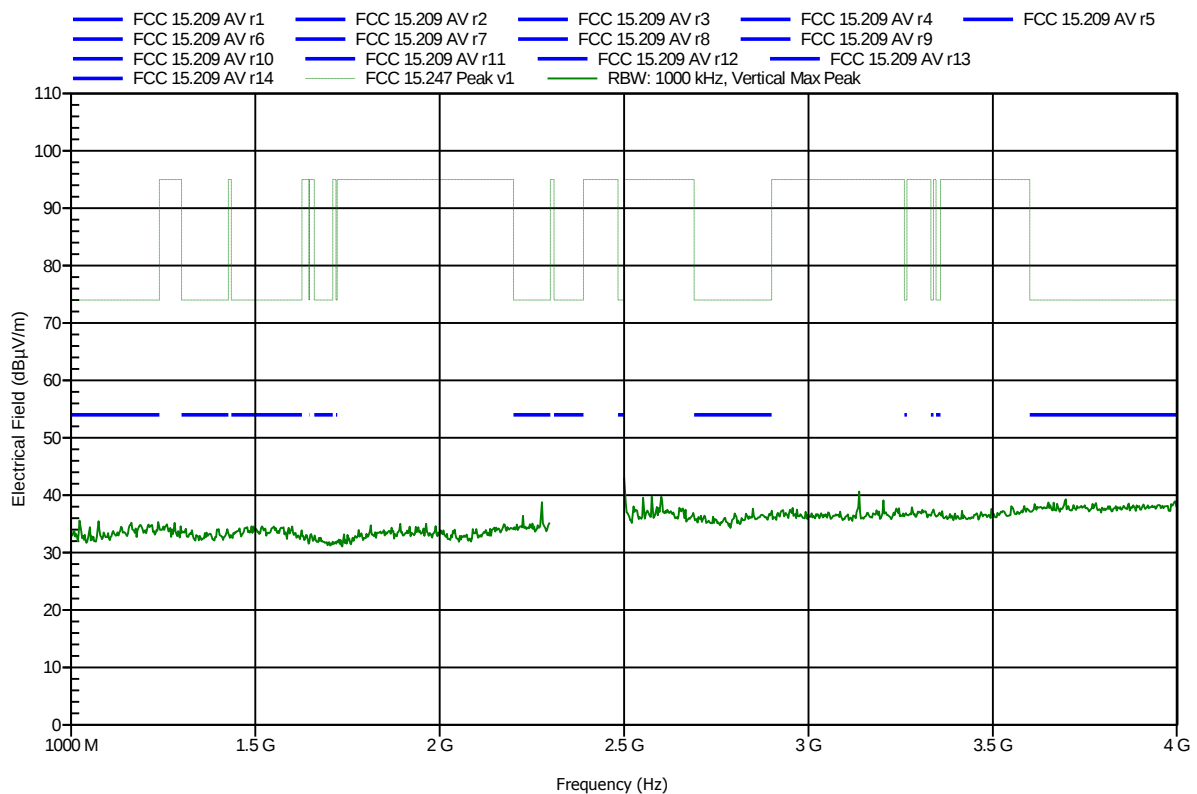


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

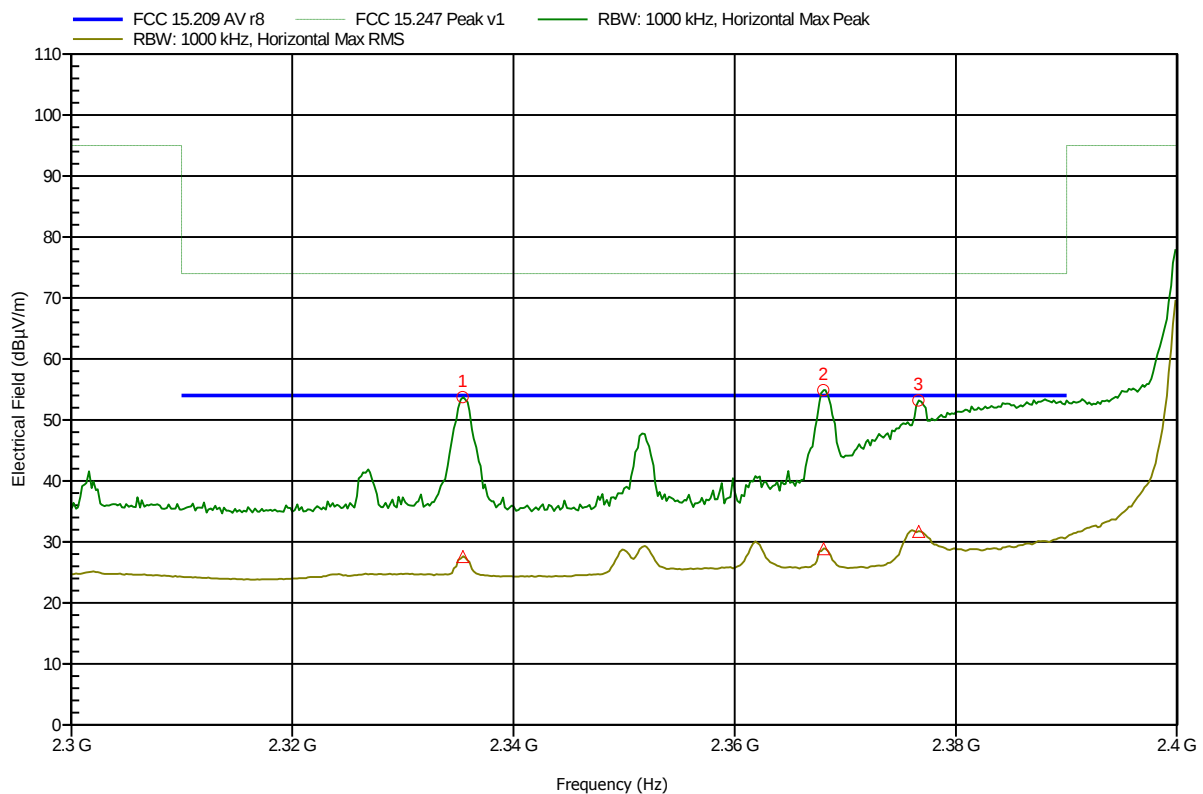
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: lower bandedge

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.335 GHz	53.75 dBμV/m	74 dBμV/m	-20.25 dB	Pass
2.368 GHz	54.89 dBμV/m	74 dBμV/m	-19.11 dB	Pass
2.377 GHz	53.19 dBμV/m	74 dBμV/m	-20.81 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.335 GHz	28.3 dBμV/m	54 dBμV/m	-25.7 dB	Pass
2.368 GHz	29.1 dBμV/m	54 dBμV/m	-24.9 dB	Pass
2.377 GHz	31.0 dBμV/m	54 dBμV/m	-23.0 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

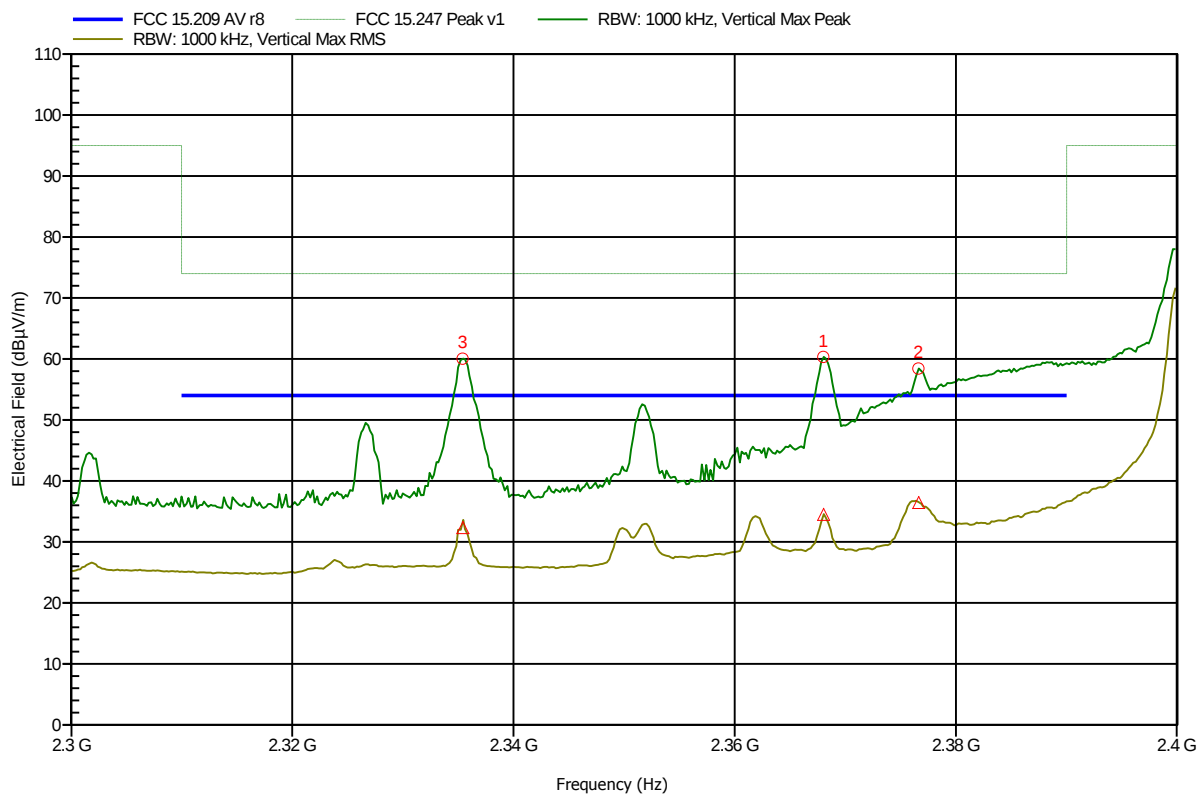
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: lower bandedge

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.335 GHz	60.05 dBμV/m	74 dBμV/m	-13.95 dB	Pass
2.368 GHz	60.33 dBμV/m	74 dBμV/m	-13.67 dB	Pass
2.377 GHz	58.42 dBμV/m	74 dBμV/m	-15.58 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.335 GHz	32.3 dBμV/m	54 dBμV/m	-21.7 dB	Pass
2.368 GHz	34.8 dBμV/m	54 dBμV/m	-19.2 dB	Pass
2.377 GHz	37.4 dBμV/m	54 dBμV/m	-16.6 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

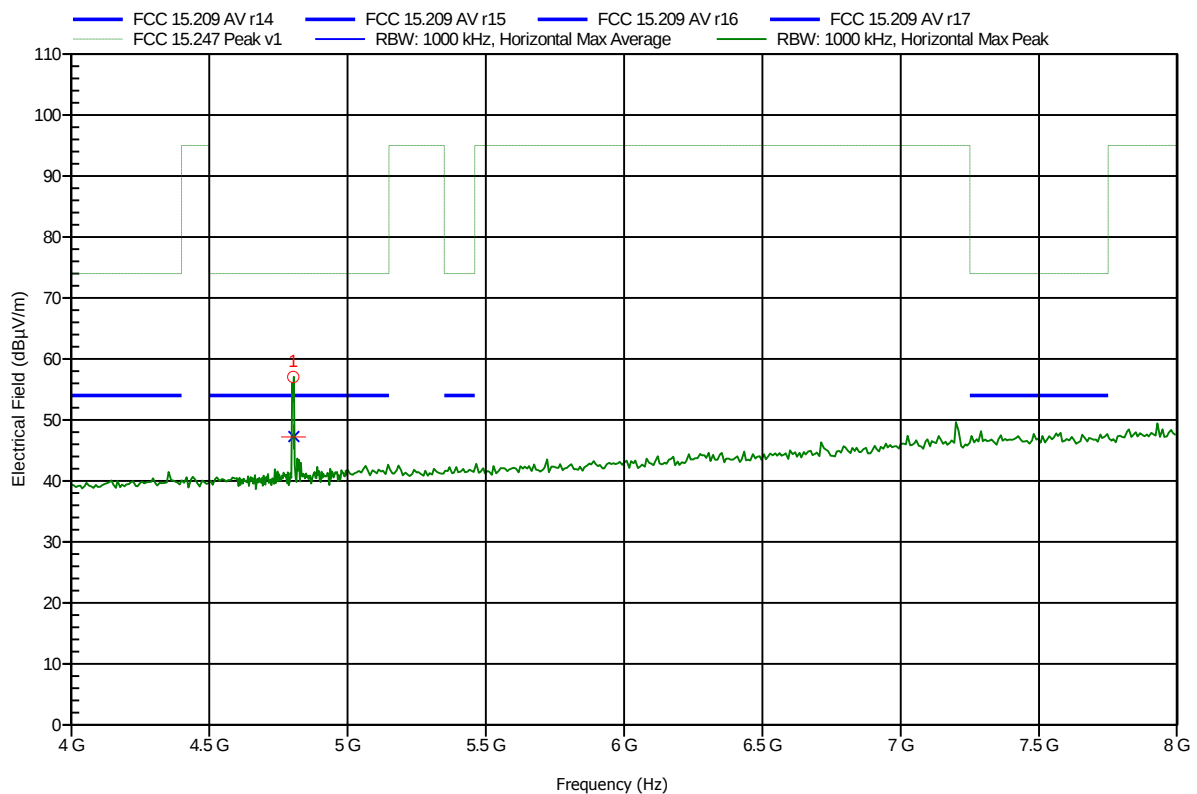
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.804 GHz	Peak 57.05 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -16.95 dB	Peak Status Pass
Frequency 4.804 GHz	Average 47.26 dBμV/m	Average Limit 54 dBμV/m	Average Difference -6.74 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

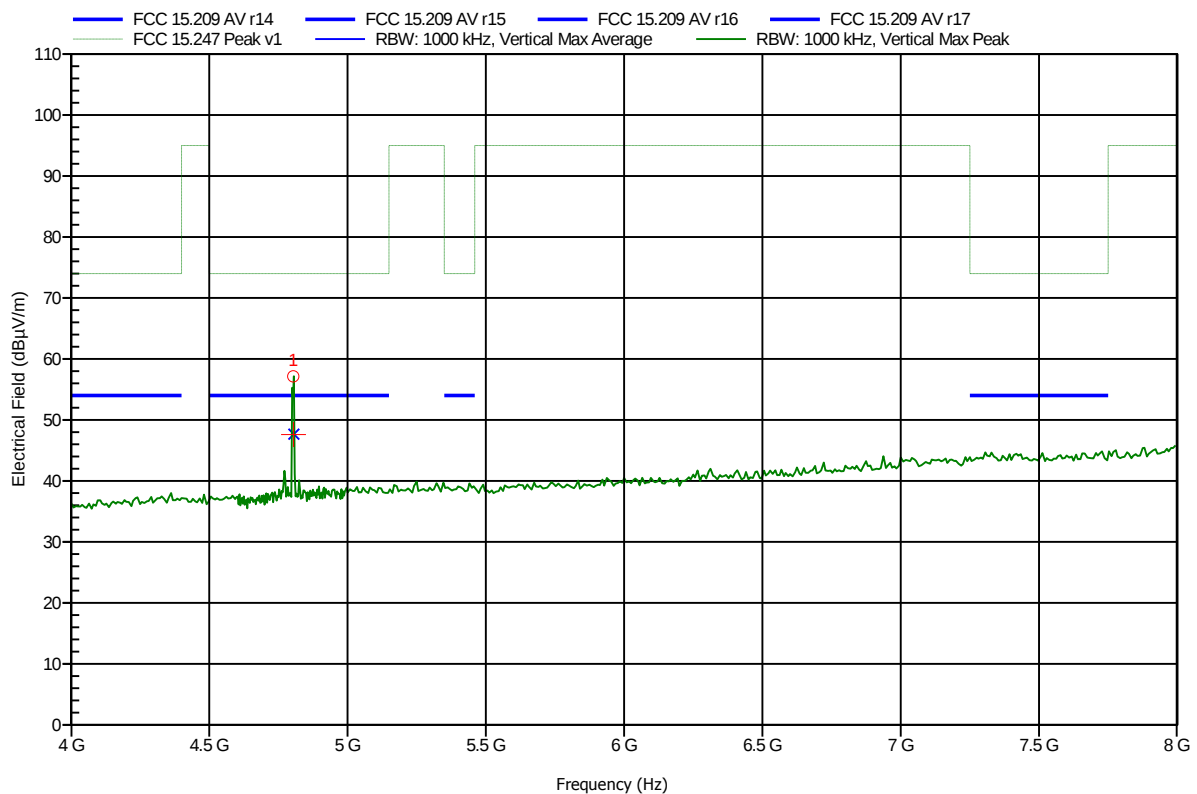
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.804 GHz	Peak 57.15 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -16.85 dB	Peak Status Pass
Frequency 4.804 GHz	Average 47.65 dBµV/m	Average Limit 54 dBµV/m	Average Difference -6.35 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

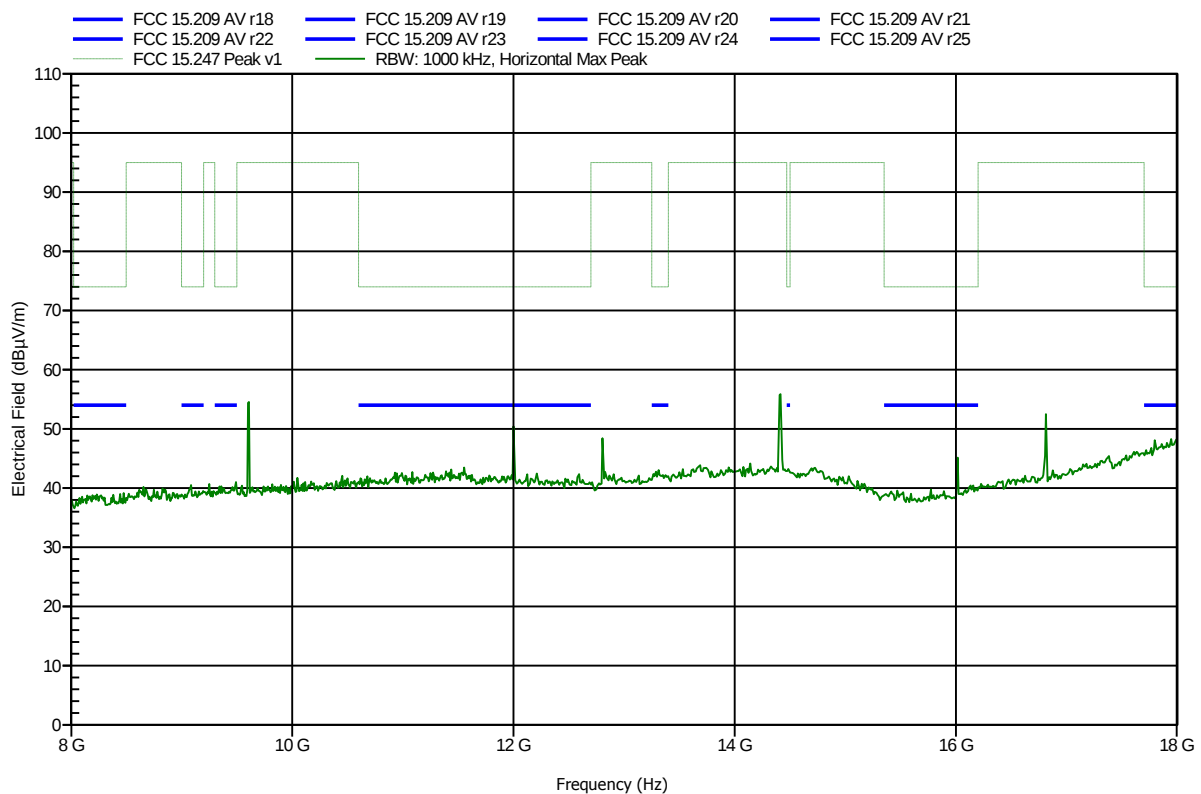
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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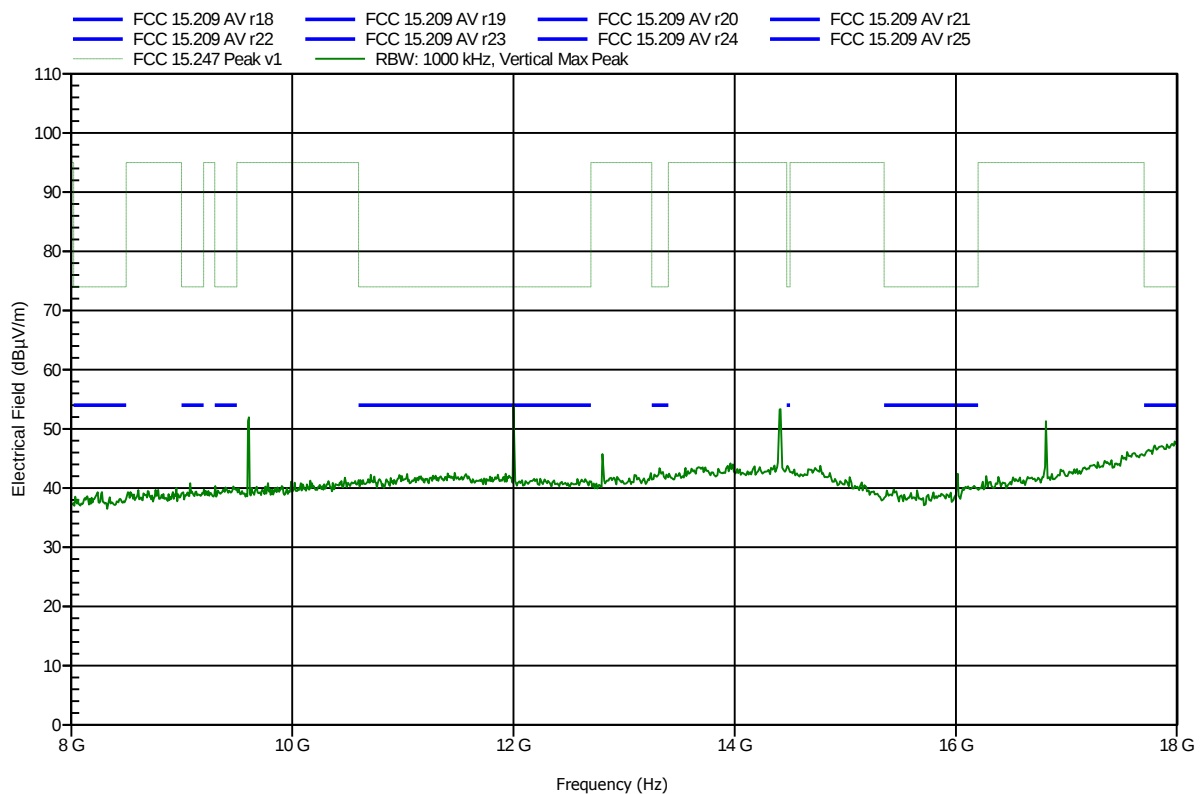


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.0 (2402 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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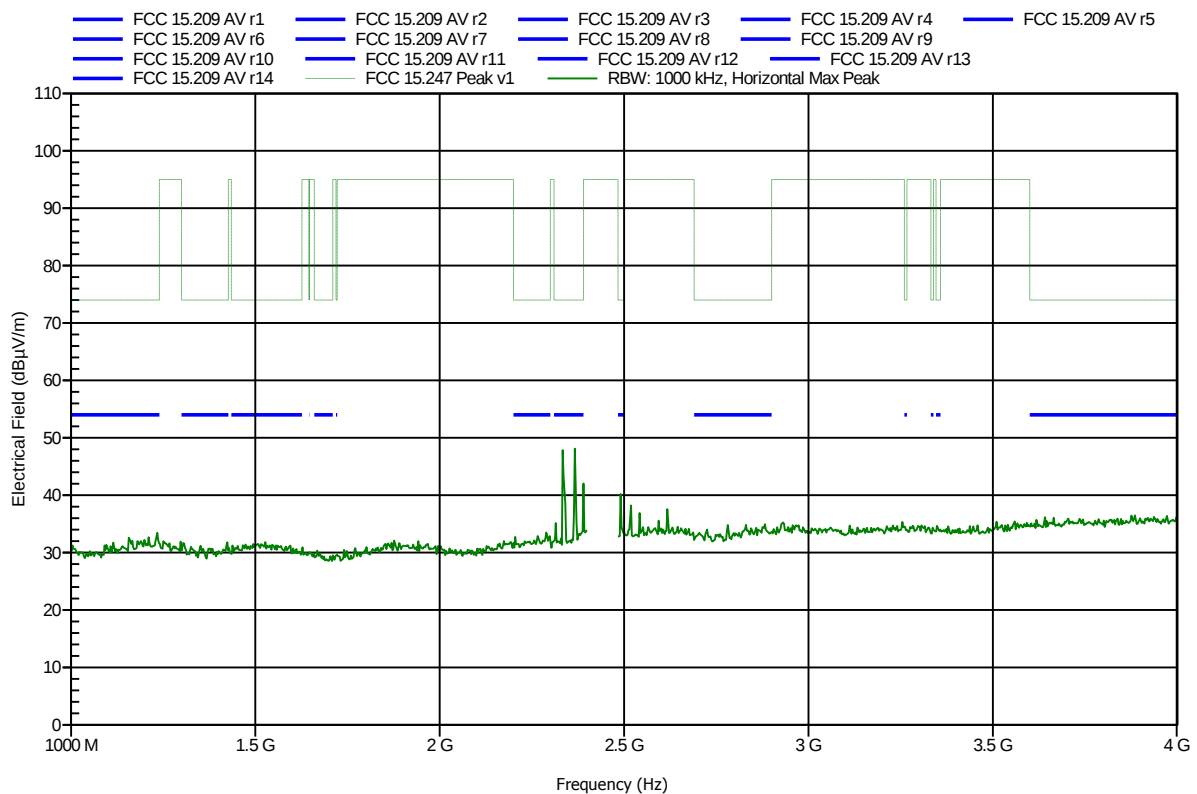


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

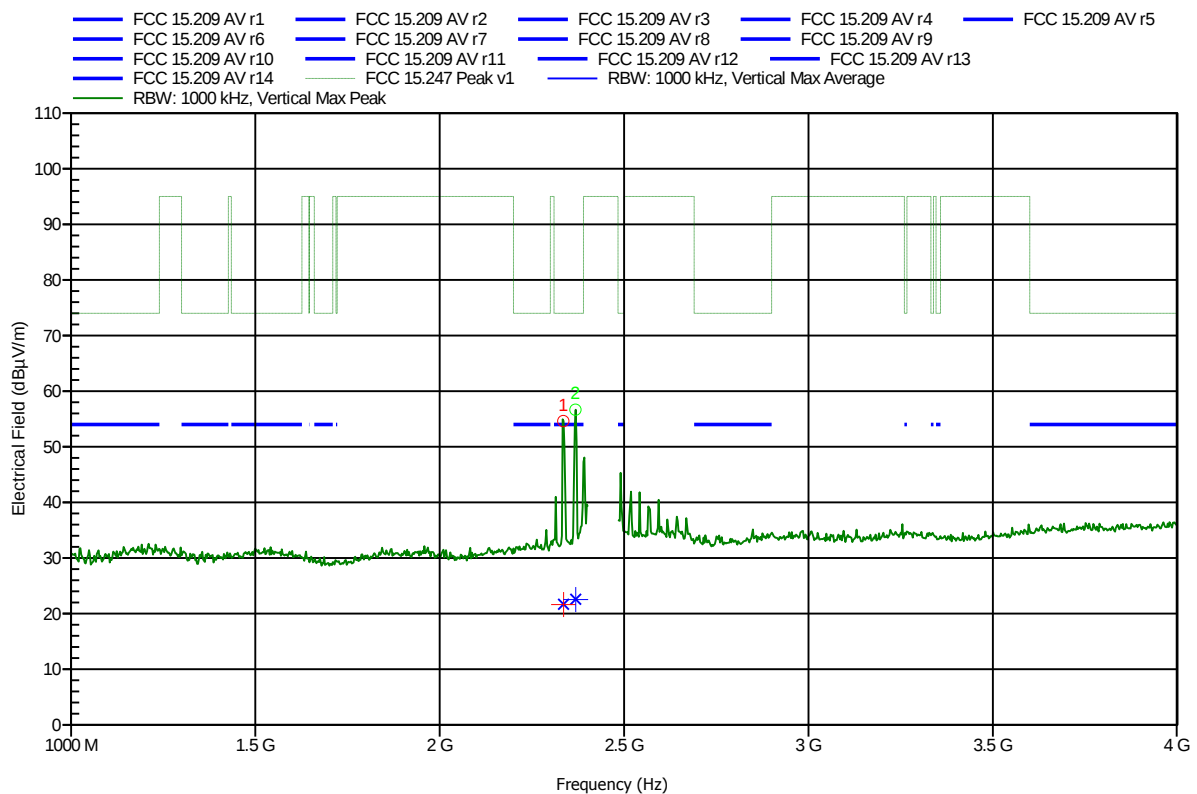
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.335 GHz	54.62 dBµV/m	74 dBµV/m	-19.38 dB	Pass
2.368 GHz	56.66 dBµV/m	74 dBµV/m	-17.34 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
2.335 GHz	21.69 dBµV/m	54 dBµV/m	-32.31 dB	Pass
2.368 GHz	22.58 dBµV/m	54 dBµV/m	-31.42 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

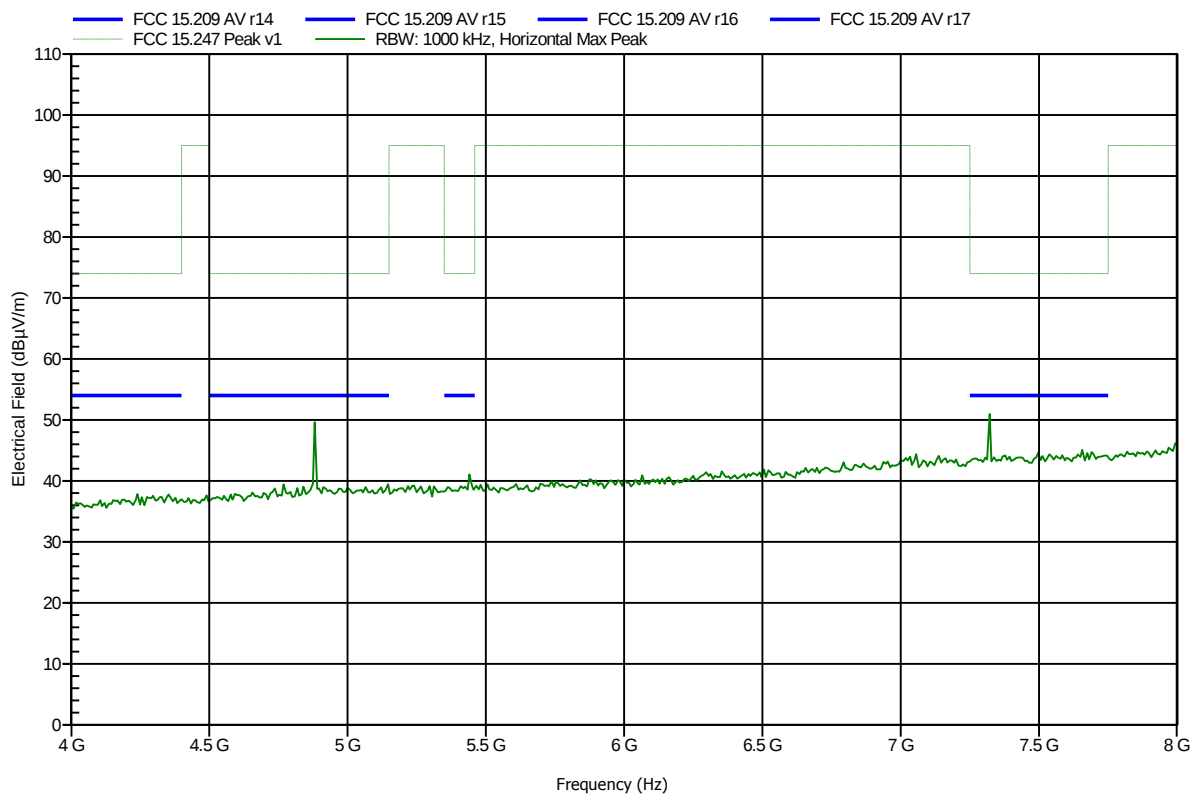
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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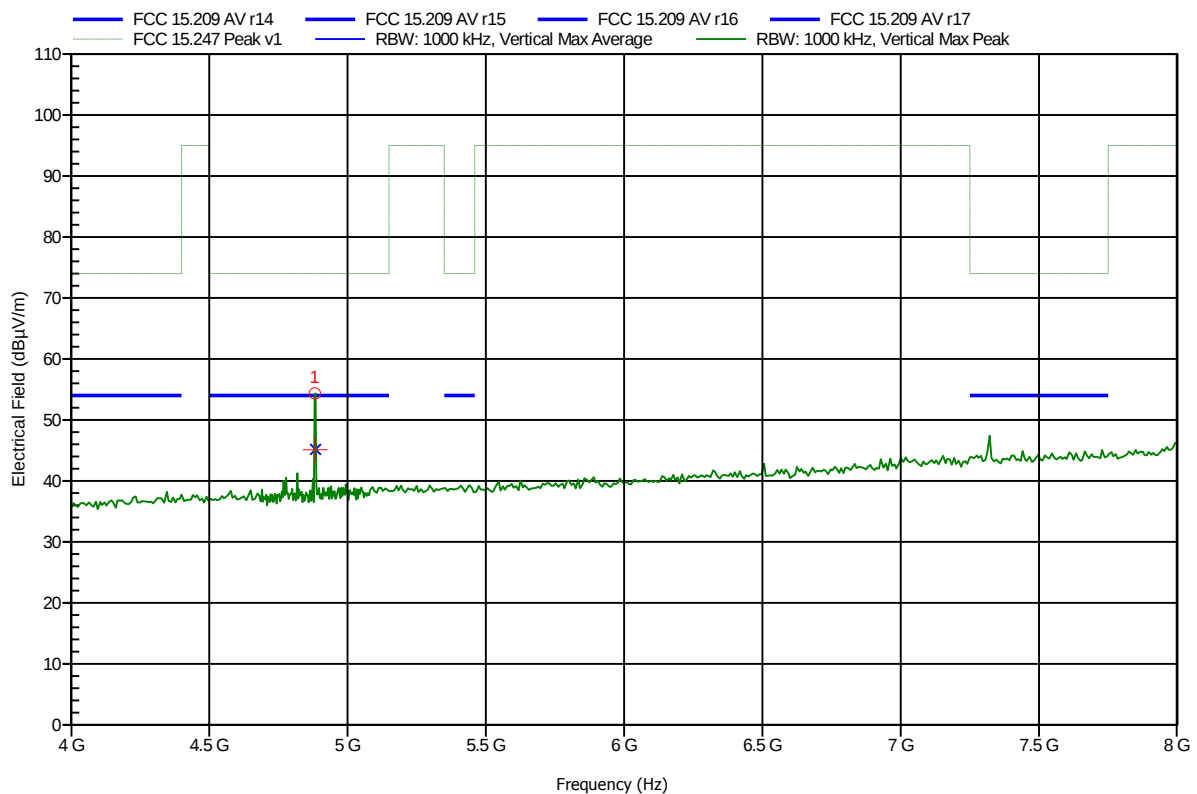


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 4.882 GHz	Peak 54.35 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -19.65 dB	Peak Status Pass
Frequency 4.882 GHz	Average 45.16 dBμV/m	Average Limit 54 dBμV/m	Average Difference -8.84 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

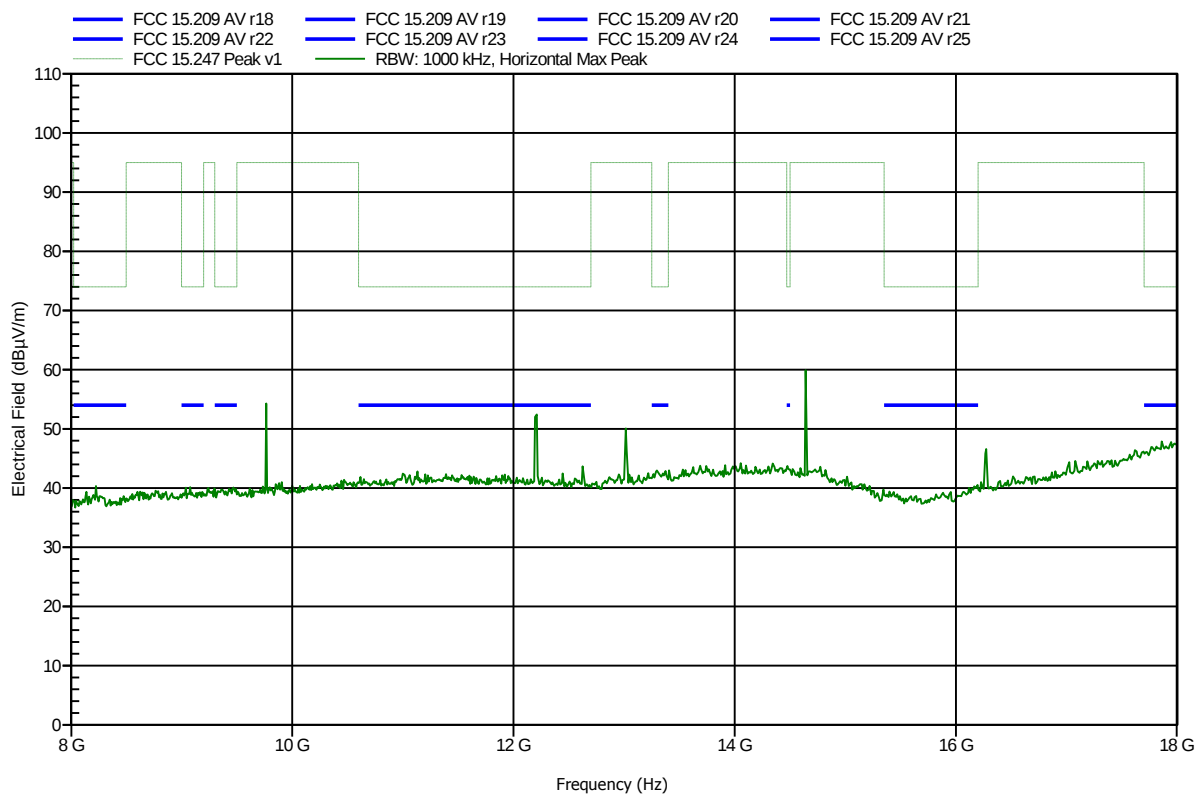
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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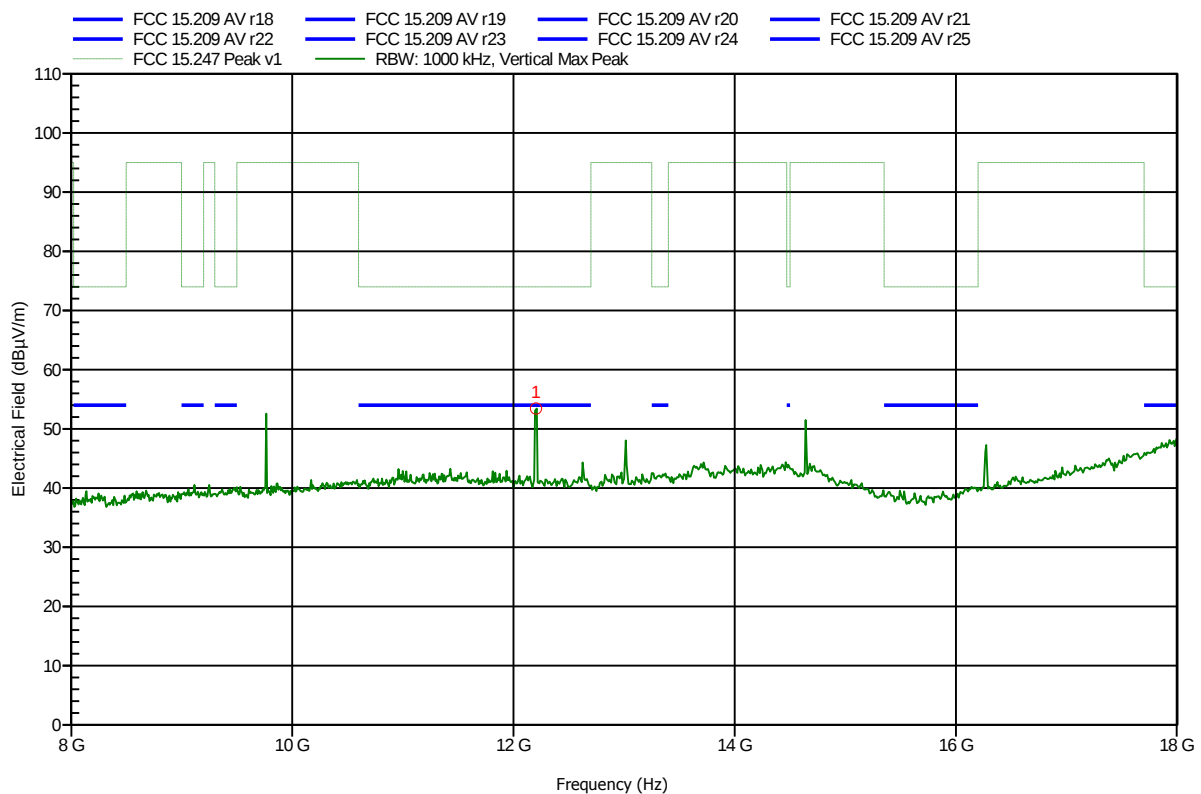


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.39 (2441 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.204 GHz	53.44 dBμV/m	74 dBμV/m	-20.56 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

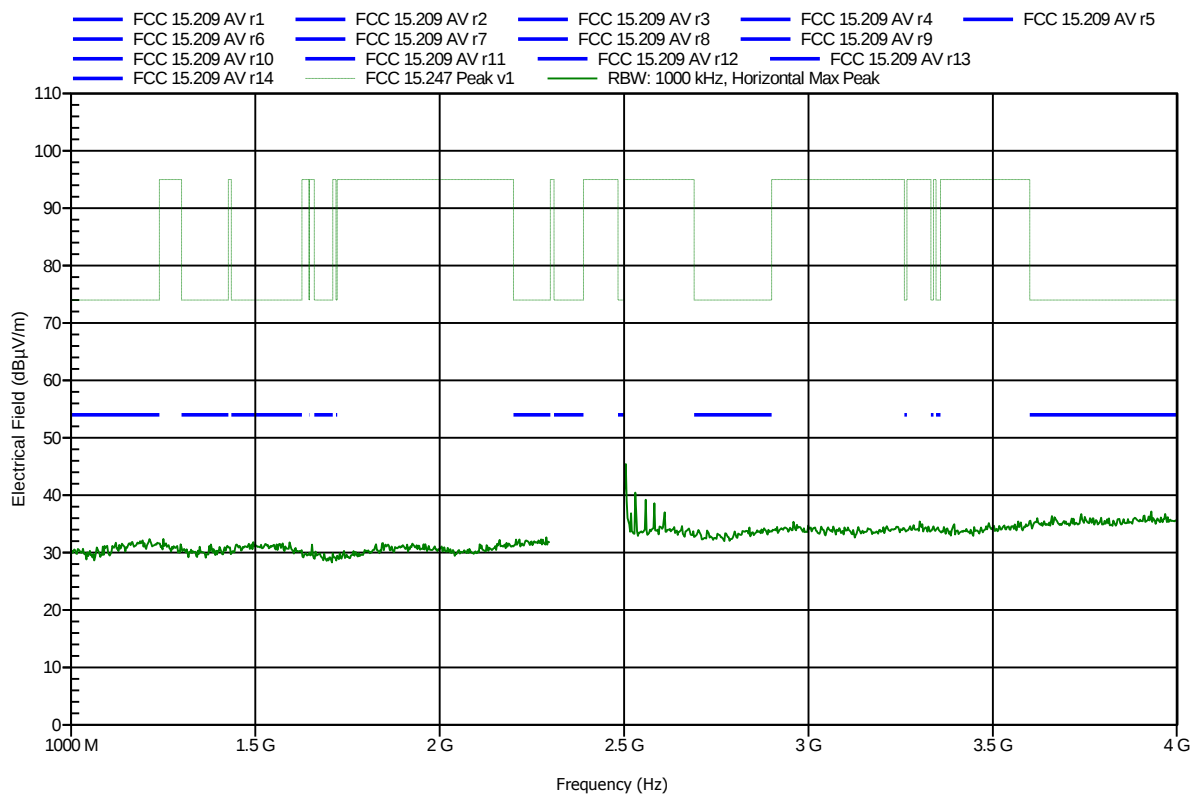
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

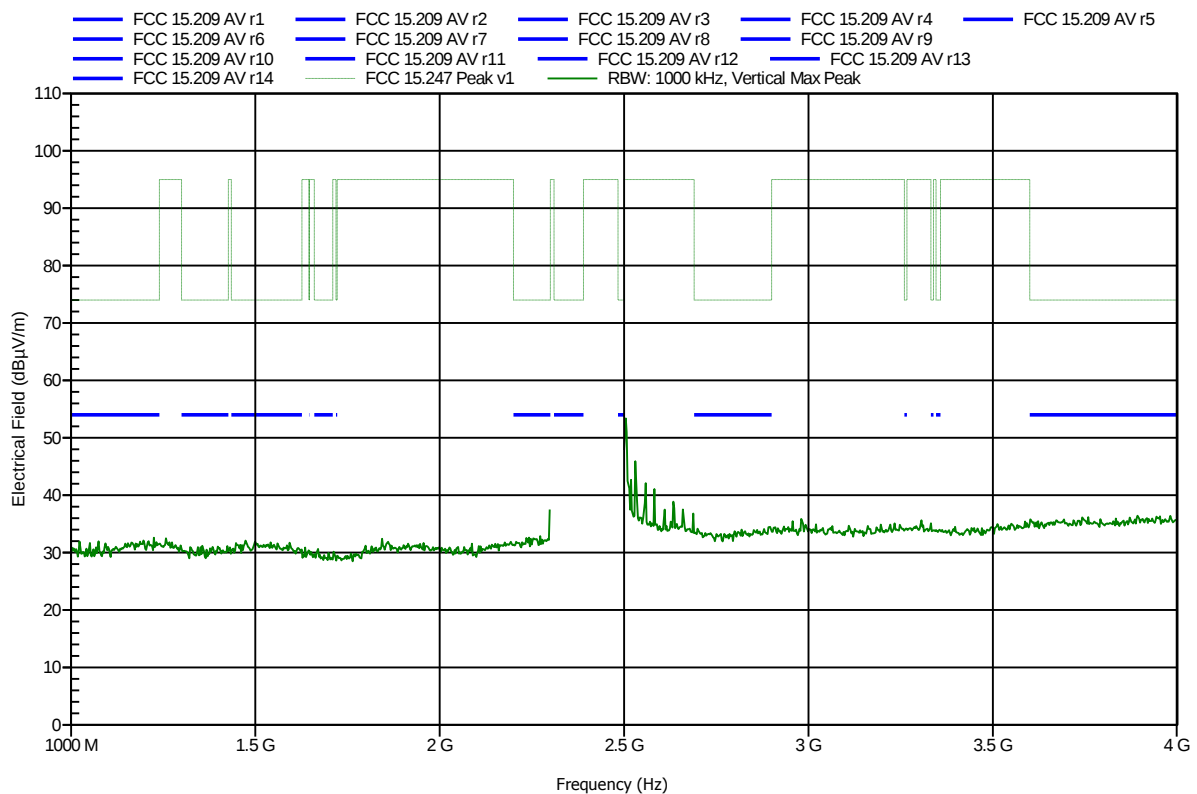
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Test Report No.: G0M-1211-2402-TFC247B-V02

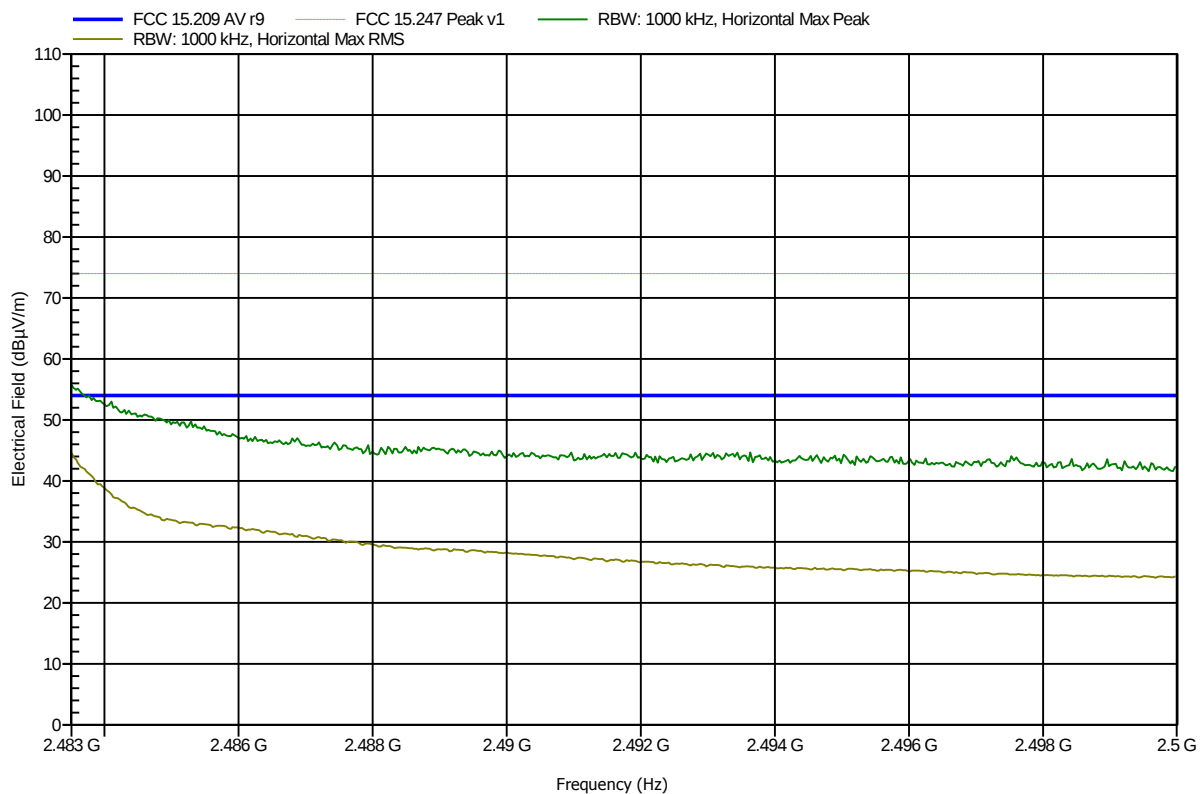
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: upper bandedge

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Frequency 2.4835 GHz	Peak 62.80 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -11.2 dB	Peak Status Pass
Frequency 2.4835 GHz	RMS 42.11 dBμV/m	RMS Limit 54 dBμV/m	RMS Difference -11.89 dB	RMS Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

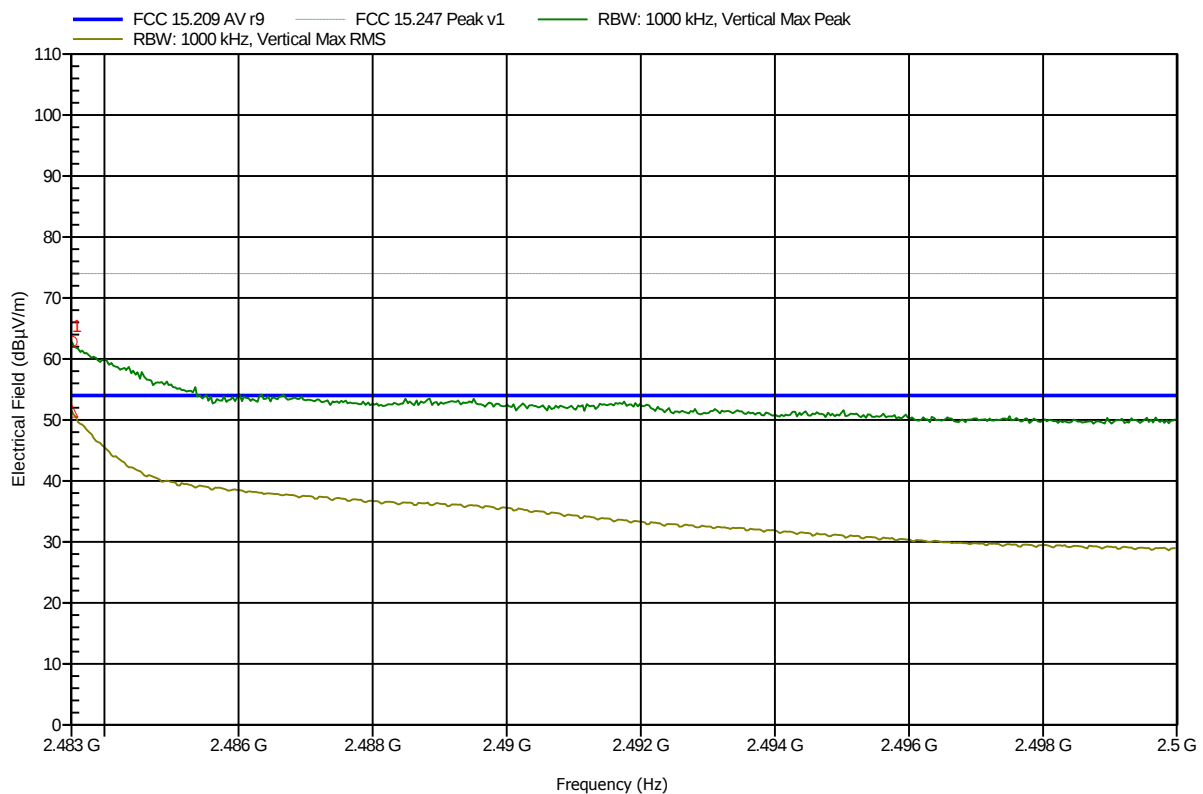
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: upper bandedge

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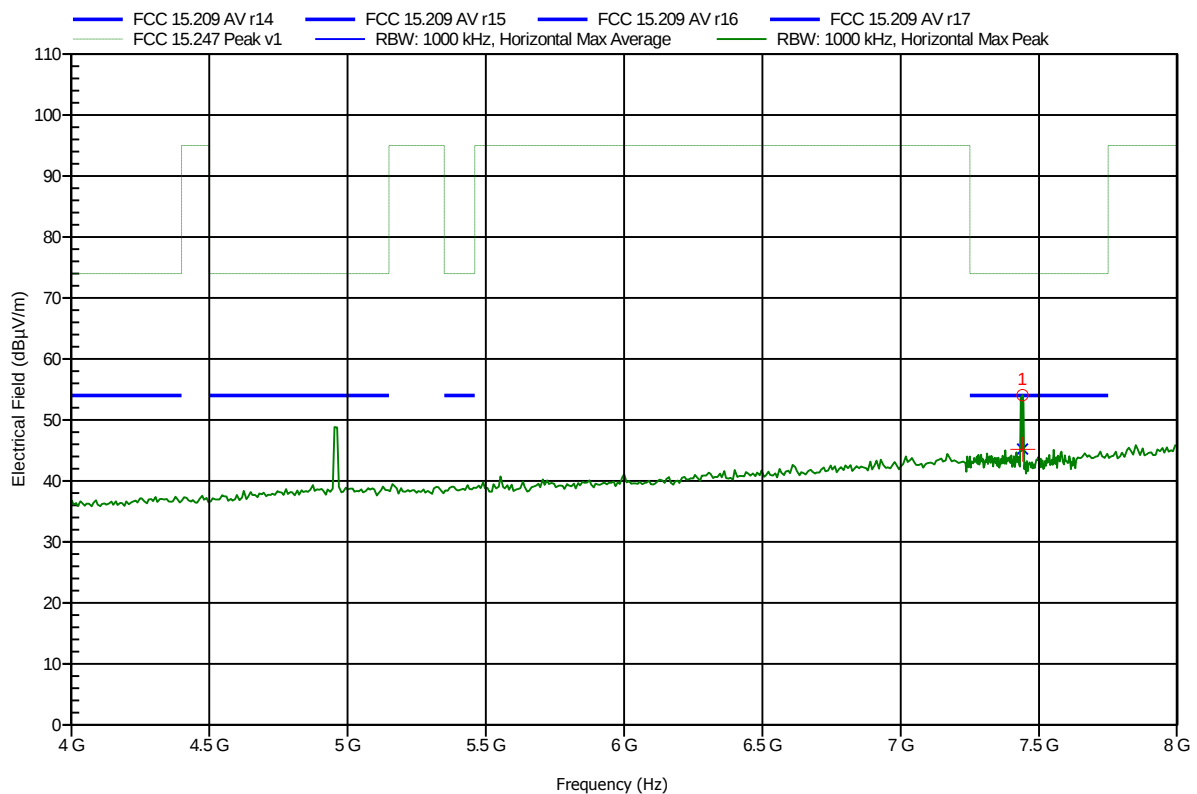
Frequency 2.4835 GHz	Peak 62.81 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -11.19 dB	Peak Status Pass
Frequency 2.4835 GHz	RMS 50.9 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -3.1 dB	RMS Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency 7.44 GHz	Peak 54.06 dBμV/m	Peak Limit 74 dBμV/m	Peak Difference -19.94 dB	Peak Status Pass
Frequency 7.44 GHz	Average 45.23 dBμV/m	Average Limit 54 dBμV/m	Average Difference -8.77 dB	Average Status Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

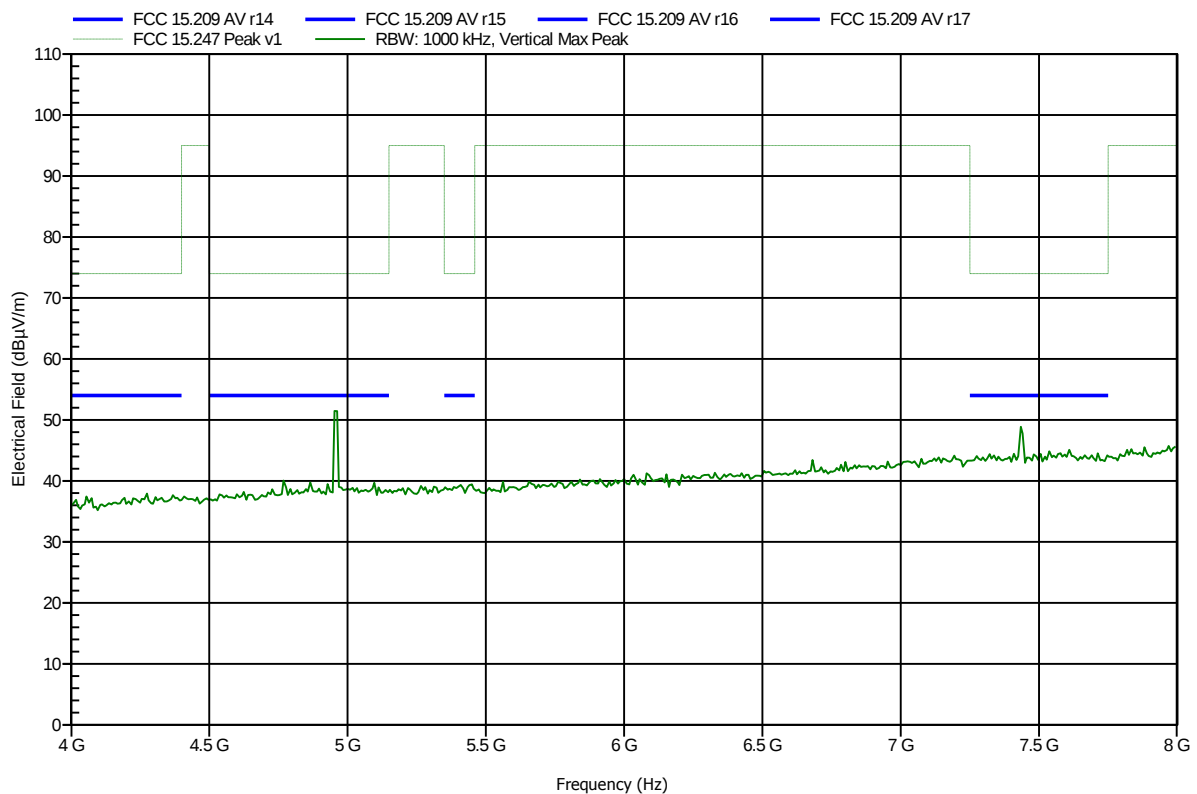
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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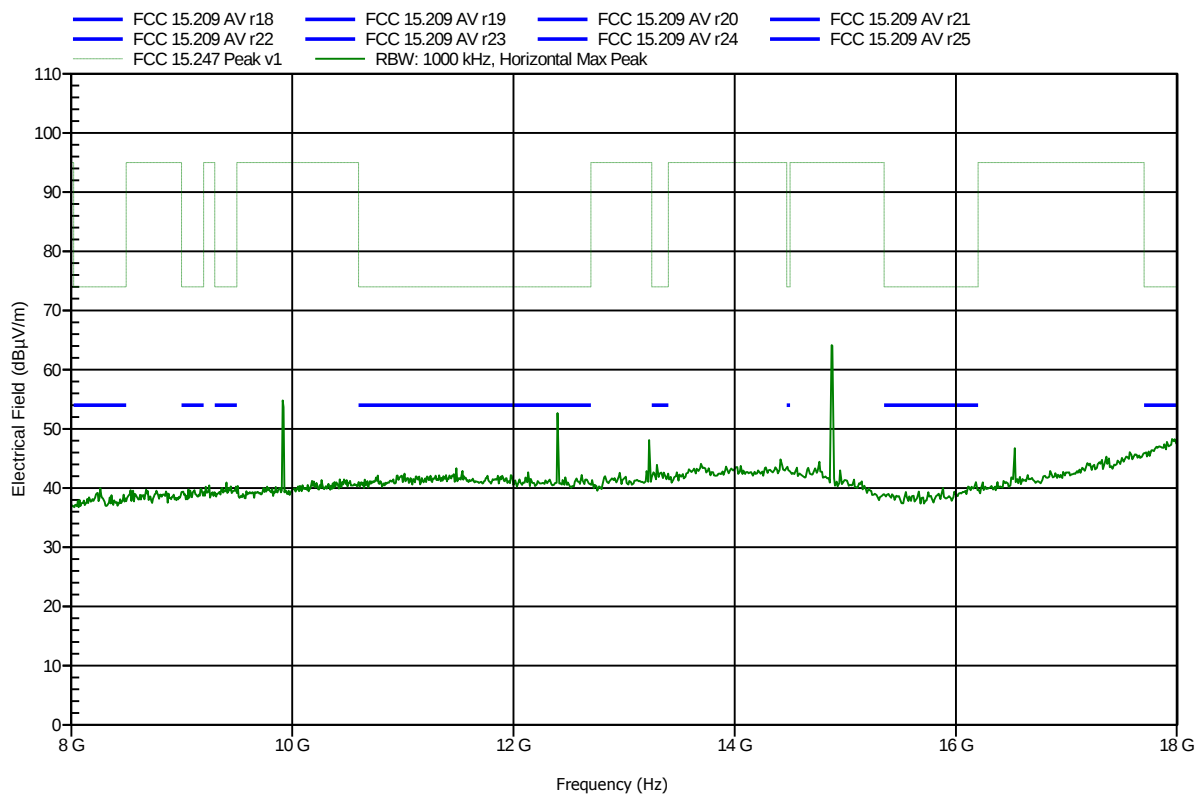


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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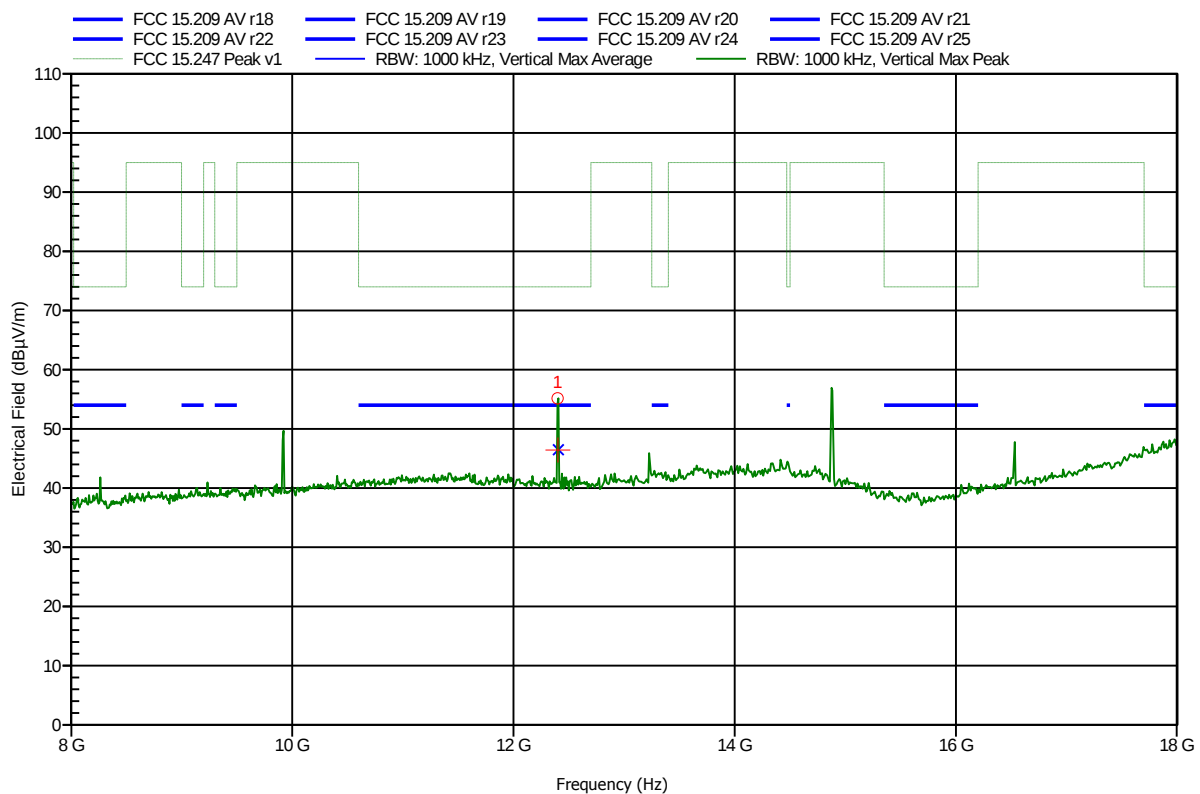


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 100 cm converted to 3m
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
12.399 GHz	55.16 dBµV/m	74 dBµV/m	-18.84 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
12.399 GHz	46.48 dBµV/m	54 dBµV/m	-7.52 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

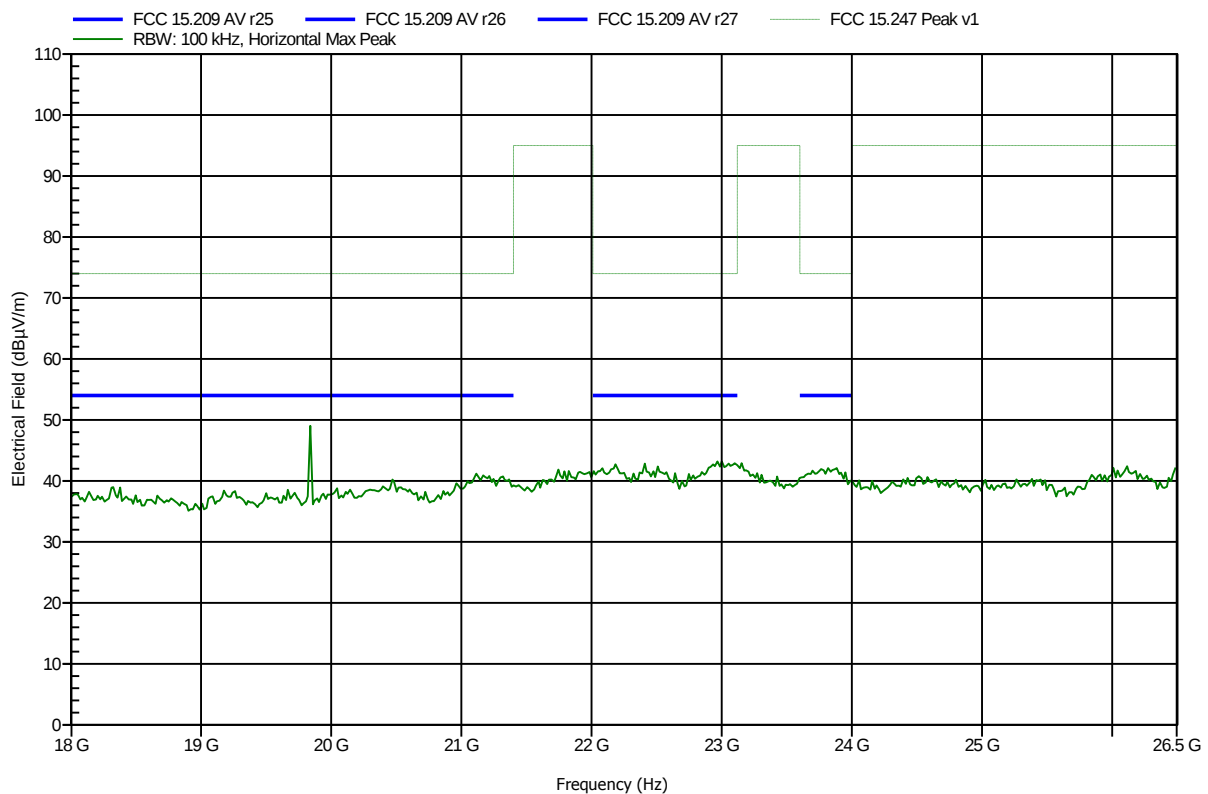
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 100 cm
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: wors case

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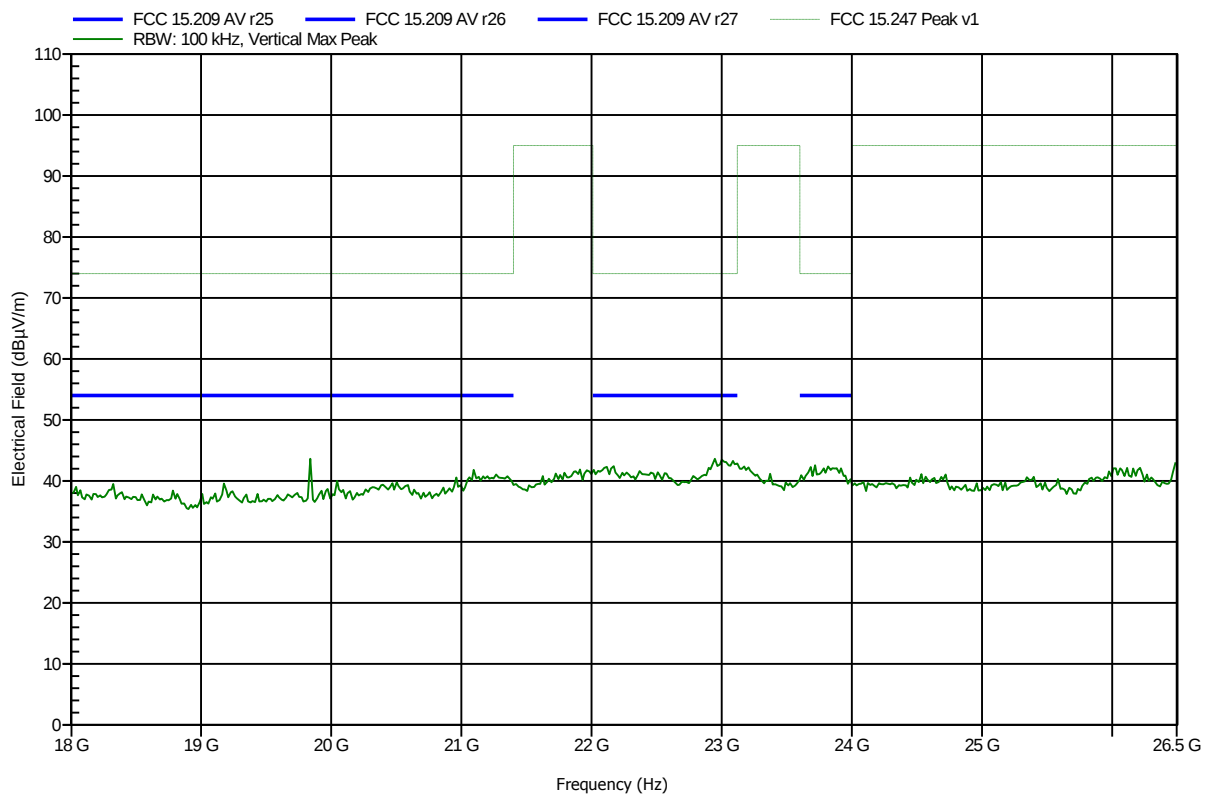


Spurious emissions according to FCC 15.247

Project number: G0M-1211-2404

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 100 cm
 Mode: TX; Ch.78 (2480 MHz), 3DH5, Pmax
 Test Date: 2013-08-08
 Note: wors case

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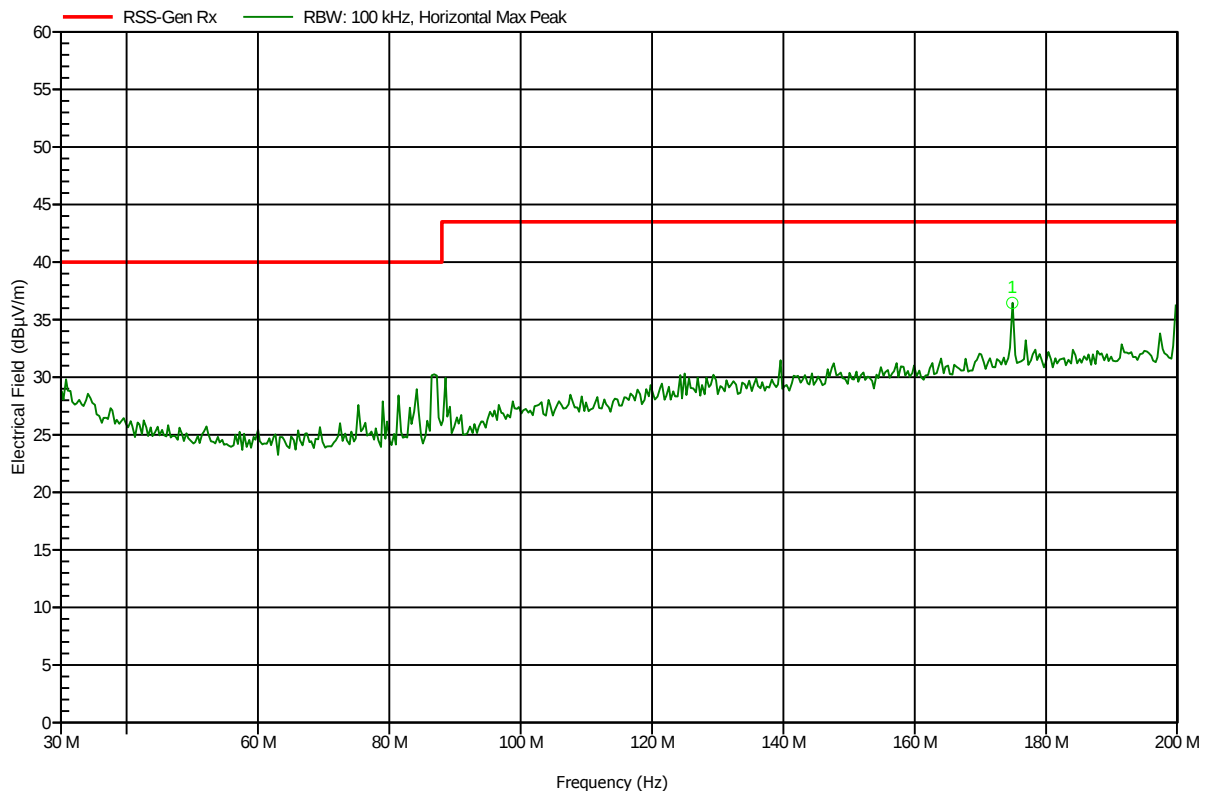
ANNEX B Receiver radiated spurious emissions

Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnecT
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

Index 2



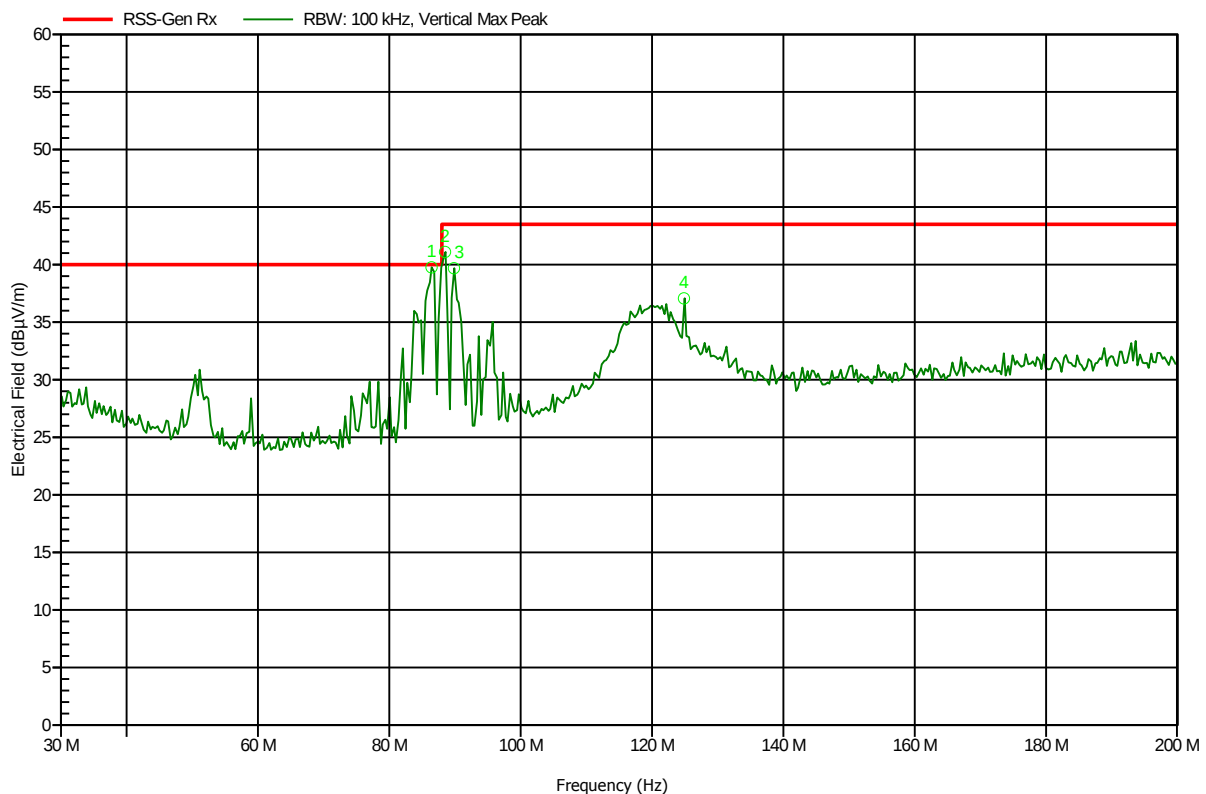
Frequency	Peak	Peak Limit	Peak Difference	Status
174.84 MHz	36.45 dBµV/m	43.5 dBµV/m	-7.05 dB	Pass

Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

Index 1



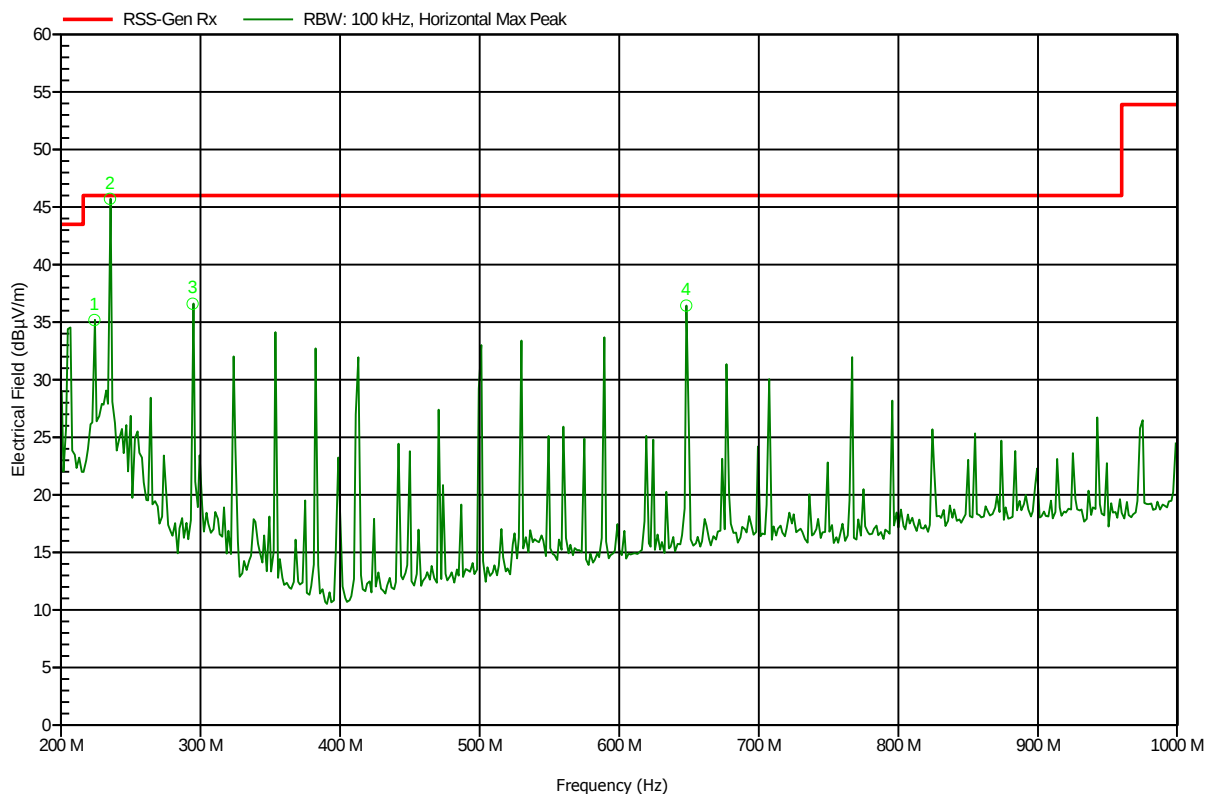
Frequency	Peak	Peak Limit	Peak Difference	Status
86.44 MHz	39.76 dBµV/m	40 dBµV/m	-0.24 dB	Pass
88.48 MHz	41.1 dBµV/m	43.5 dBµV/m	-2.4 dB	Pass
89.84 MHz	39.68 dBµV/m	43.5 dBµV/m	-3.82 dB	Pass
124.86 MHz	37.07 dBµV/m	43.5 dBµV/m	-6.43 dB	Pass

Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

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Frequency	Peak	Peak Limit	Peak Difference	Status
224 MHz	35.19 dBµV/m	46 dBµV/m	-10.81 dB	Pass
235.2 MHz	45.71 dBµV/m	46 dBµV/m	-0.29 dB	Pass
294.4 MHz	36.6 dBµV/m	46 dBµV/m	-9.4 dB	Pass
648 MHz	36.44 dBµV/m	46 dBµV/m	-9.56 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

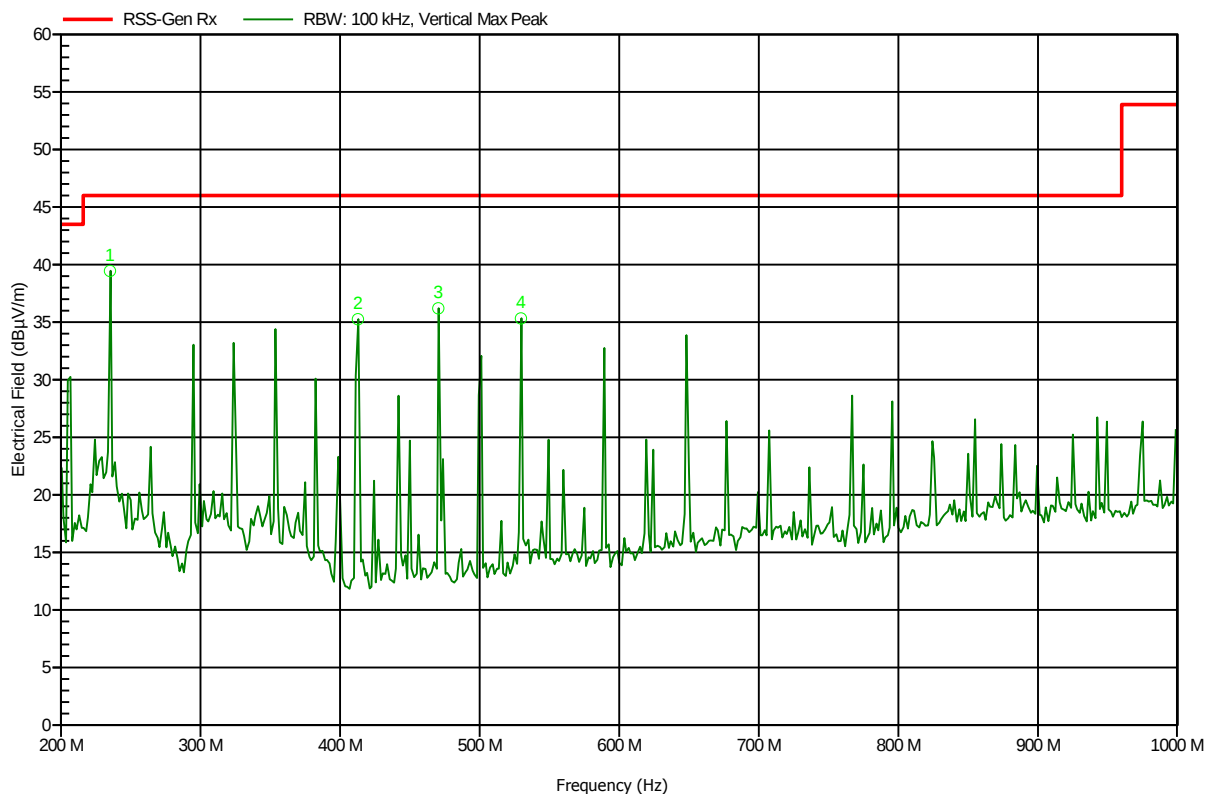
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

Index 3



Frequency	Peak	Peak Limit	Peak Difference	Status
235.2 MHz	39.45 dBµV/m	46 dBµV/m	-6.55 dB	Pass
412.8 MHz	35.26 dBµV/m	46 dBµV/m	-10.74 dB	Pass
470.4 MHz	36.2 dBµV/m	46 dBµV/m	-9.8 dB	Pass
529.6 MHz	35.32 dBµV/m	46 dBµV/m	-10.68 dB	Pass

Test Report No.: G0M-1211-2402-TFC247B-V02

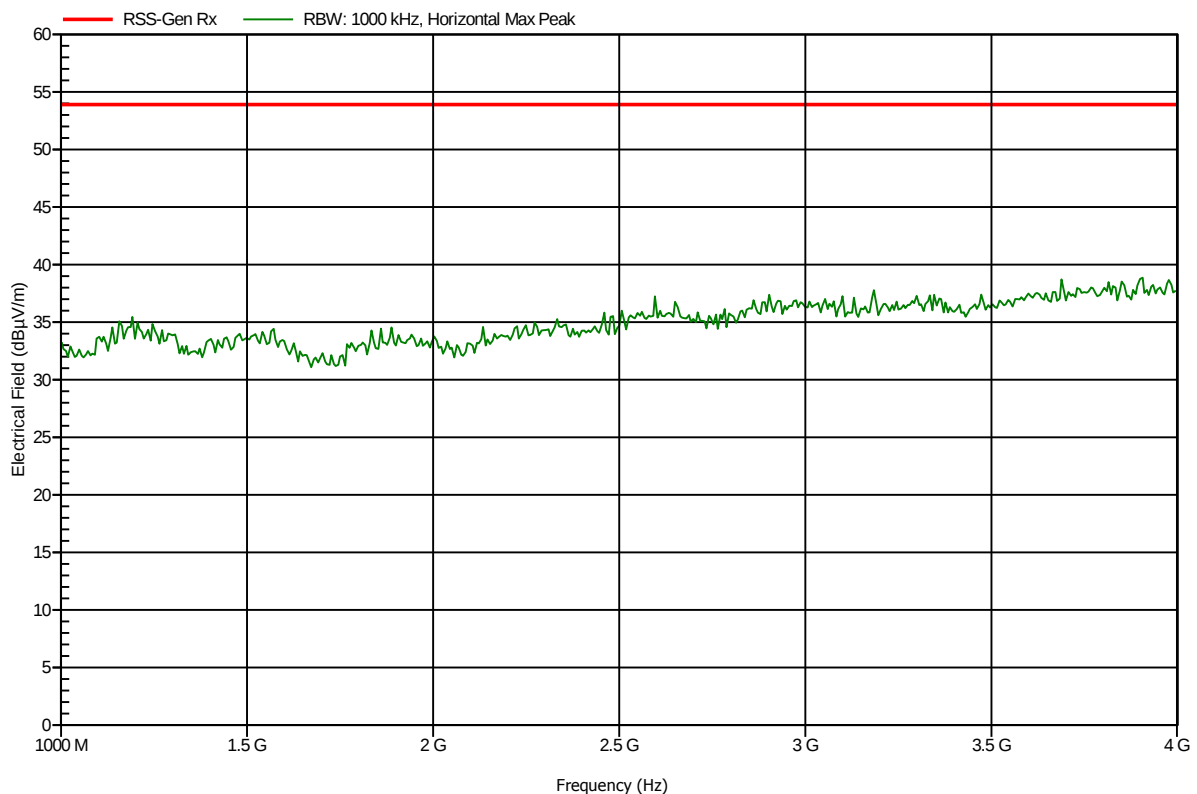
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer:	MSC Vertriebs GmbH
EUT Name:	Industrial Controller with Bluetooth Access Point
Model:	Bosch EXAConnect
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Weber
Test Conditions:	Tnom: 24°C, Vnom: 120 VAC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Scan mode
Test Date:	2013-08-23
Note:	EUT vertical

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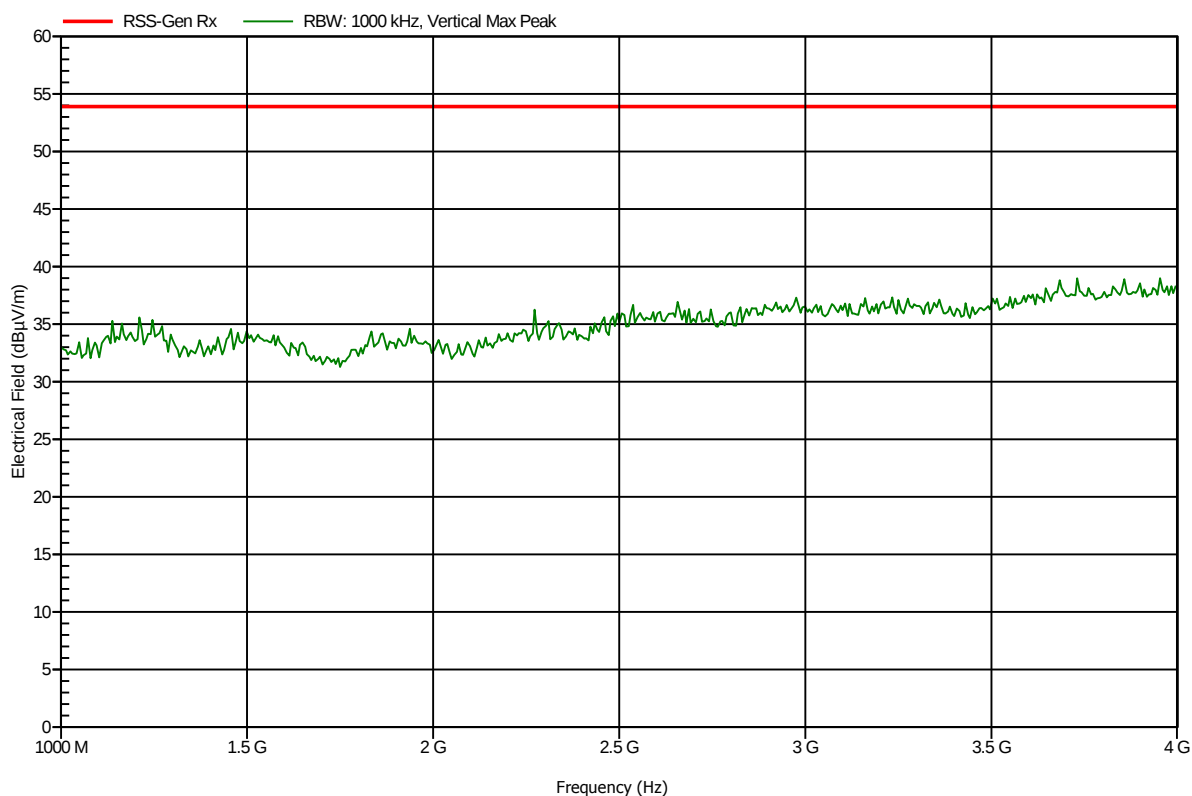


Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

Index 5

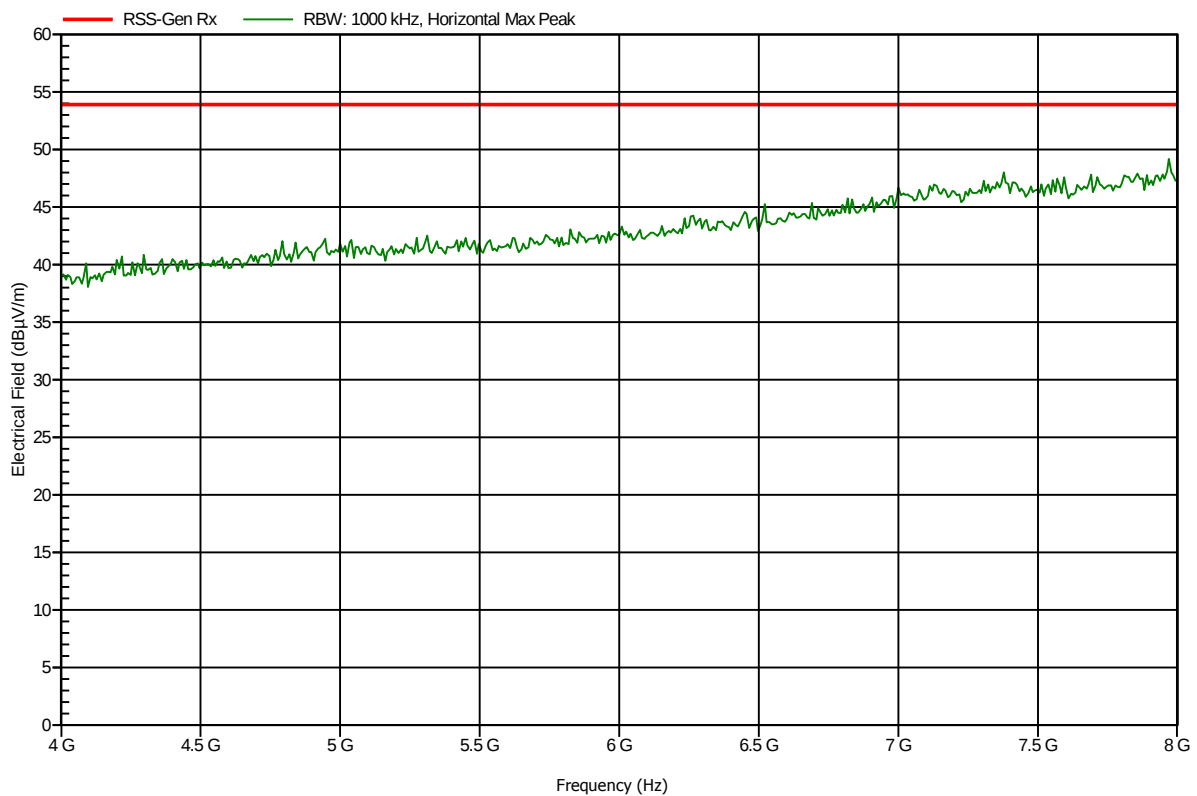


Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer: MSC Vertriebs GmbH
 EUT Name: Industrial Controller with Bluetooth Access Point
 Model: Bosch EXAConnect
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Weber
 Test Conditions: Tnom: 24°C, Vnom: 120 VAC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: RX; Scan mode
 Test Date: 2013-08-23
 Note: EUT vertical

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Spurious emissions according to RSS-Gen

Project number: G0M-1211-2402

Manufacturer:	MSC Vertriebs GmbH
EUT Name:	Industrial Controller with Bluetooth Access Point
Model:	Bosch EXAConnect
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Weber
Test Conditions:	Tnom: 24°C, Vnom: 120 VAC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Scan mode
Test Date:	2013-08-23
Note:	EUT vertical

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