

EMC TEST REPORT

FCC 47 CFR Part 15B
Industry Canada RSS-Gen

Electromagnetic compatibility - Unintentional radiators

Report Reference No. : G0M-1502-4503-EF0115B-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 : SMT & Hybrid GmbH

Address : An der Priessnitzau 22
01328 Dresden
GERMANY

Test specification:

Standard..... : 47 CFR Part 15 Subpart B
RSS-Gen, Issue 3, 2010-12
ANSI C63.4:2009

Equipment under test (EUT):

Product description	Datenlogger
Model No.	data link sensor
Additional Models	None
Hardware version	R3
Firmware / Software version	0.90
FCC-ID	2AELT-08MONILOG
CONTAINS IC	5123A-BGTBLE112; 5131A-HE910
Test result	Passed

Test Report No.: G0M-1502-4503-EF0115B-V02

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

Possible test case verdicts:

- not applicable to test object : N/A
- test object does meet the requirement..... : P (Pass)
- test object does not meet the requirement..... : F (Fail)

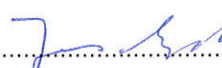
Testing:

Date of receipt of test item : 2015-03-23

Date (s) of performance of tests : 2015-04-13 - 2015-04-29

Compiled by : Steffen Zunke

Tested by (+ signature)..... : Steffen Zunke 

Approved by (+ signature) : Jens Marquardt 

Date of issue : 2015-06-19

Total number of pages : 56

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
V01	2015-04-30	Initial Release	
V02	2015-06-19	Page 5: FCC ID of the GSM/UMTS Module corrected.	S. Zunke

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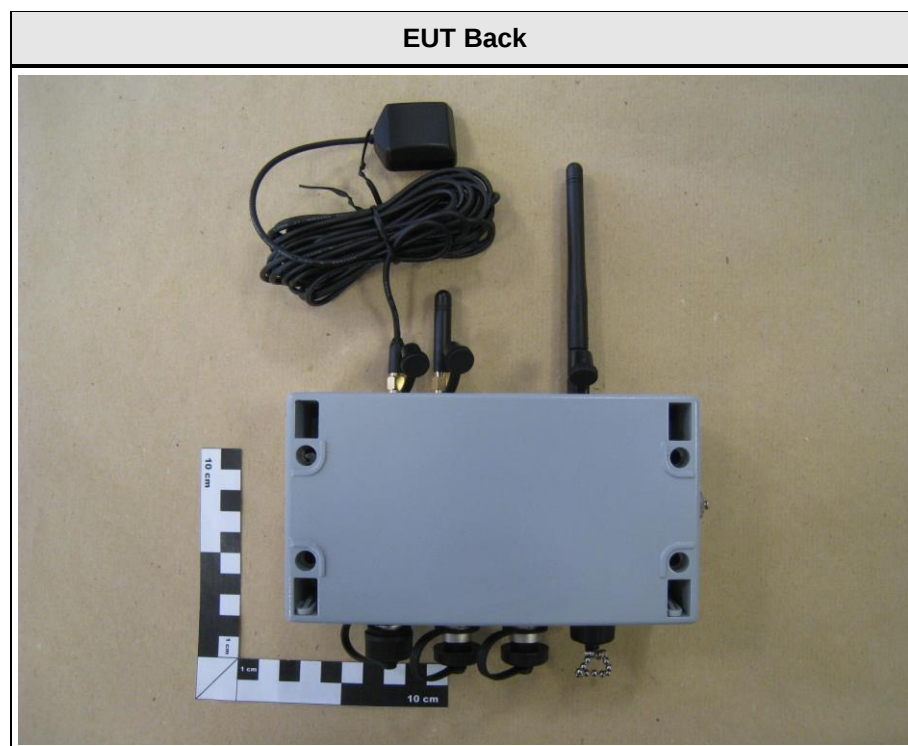
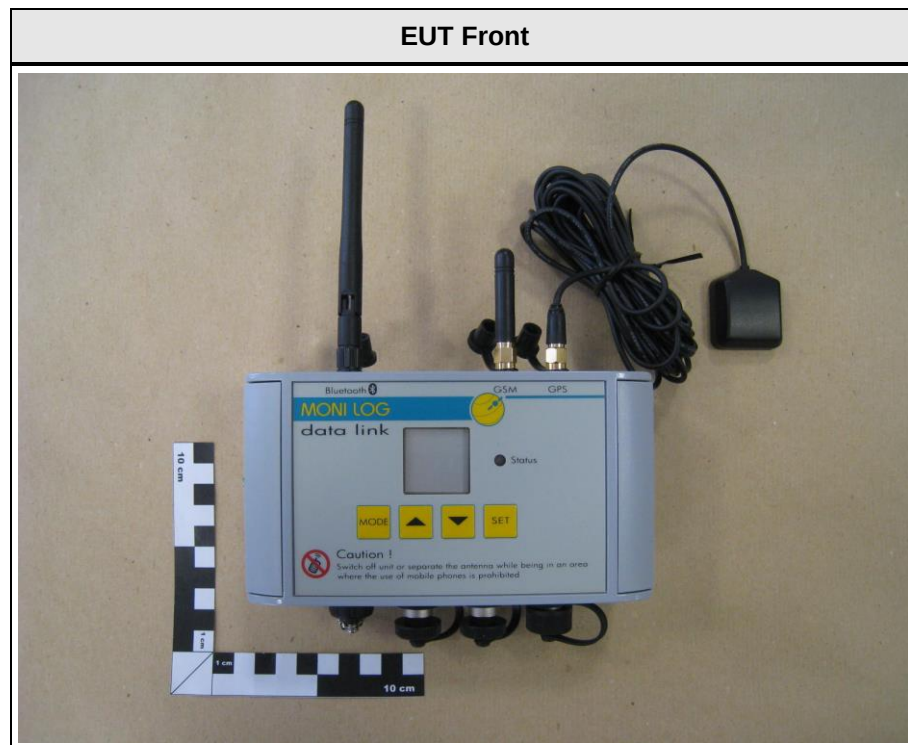
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1 Equipment (Test item) Description

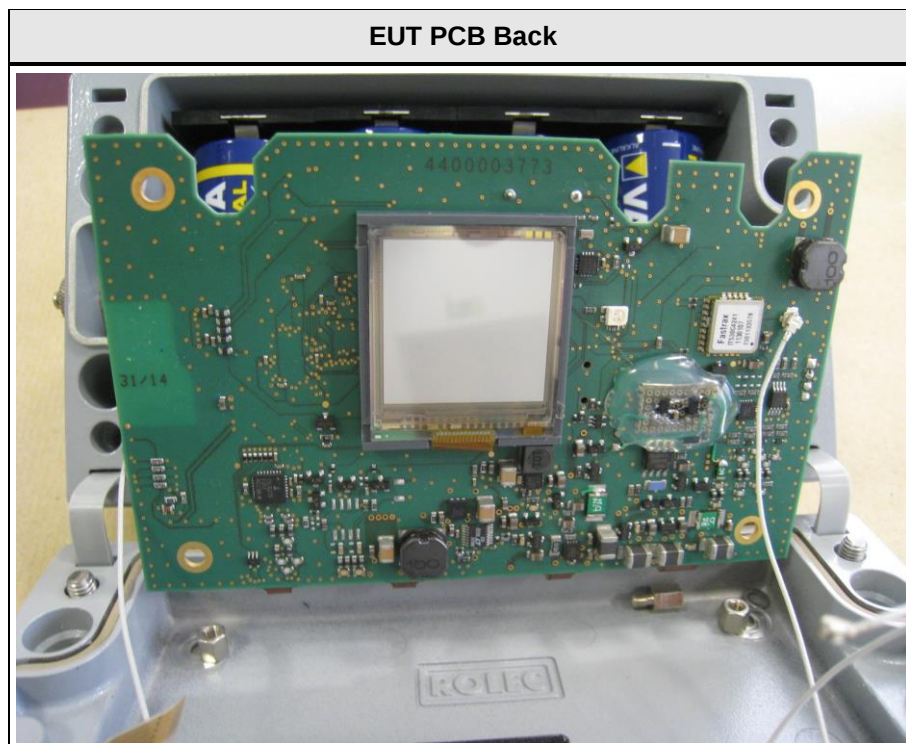
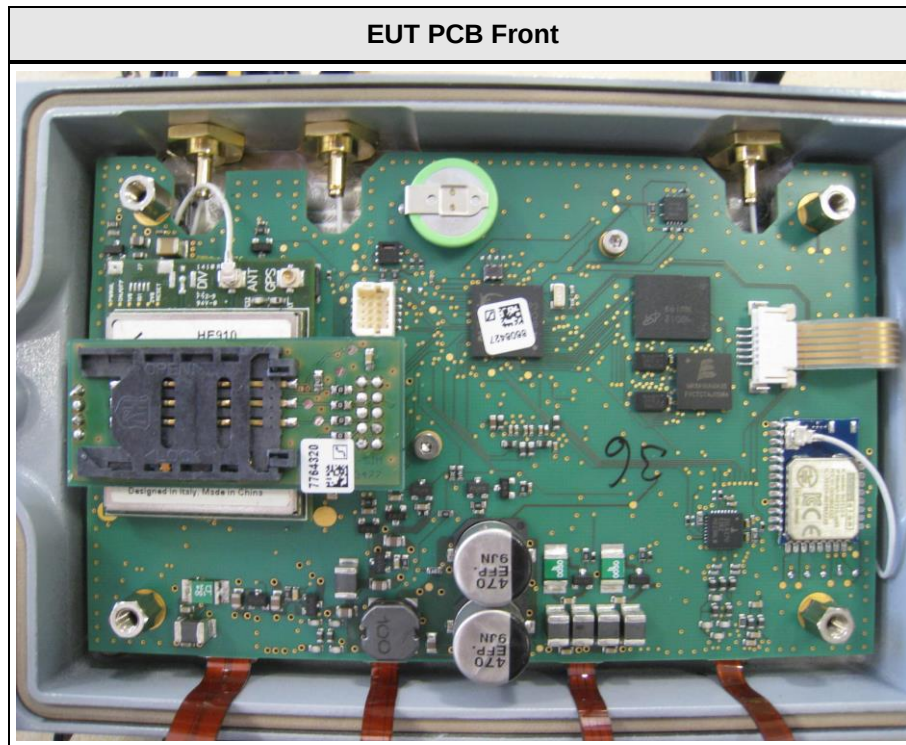
Description	Datenlogger	
Model	data link sensor	
Additional Models	None	
Serial number	20158xxx	
Hardware version	R3	
Software / Firmware version	0.90	
FCC-ID	2AELT-08MONILOG	
Contains IC Bluetooth Module	5123A-BGTBLE112	
Contains IC GSM / UMTS Module	5131A-HE910	
Power supply	6 VDC via Battery or 12VDC via external Battery	
AC/DC-Adaptor	None	
Radio module	Type	Bluetooth module
	Model	BLE112-E
	Manufacturer	Bluegiga
	HW Version	1
	SW Version	1.3
	FCC-ID	QOQBLE112
	IC	5123A-BGTBLE112
Radio module	Type	GSM / UMTS module
	Model	HE910 G
	Manufacturer	Telit Wireless Solutions
	HW Version	00
	SW Version	12.00.xx5
	FCC-ID	RI7HE910
	IC	5131A-HE910

Radio module	Type	SRD module
	Model	IT530
	Manufacturer	U-blox (formerly Fastrax)
	HW Version	-
	SW Version	C
	FCC-ID	-
	IC	-
Manufacturer	SMT & Hybrid GmbH An der Priessnitzau 22 01328 Dresden GERMANY	
Highest emission frequency	Fmax [MHz] = 2400	
Device classification	Class B	
Equipment type	Tabletop	
Number of tested samples	1	

1.1 Photos – Equipment external



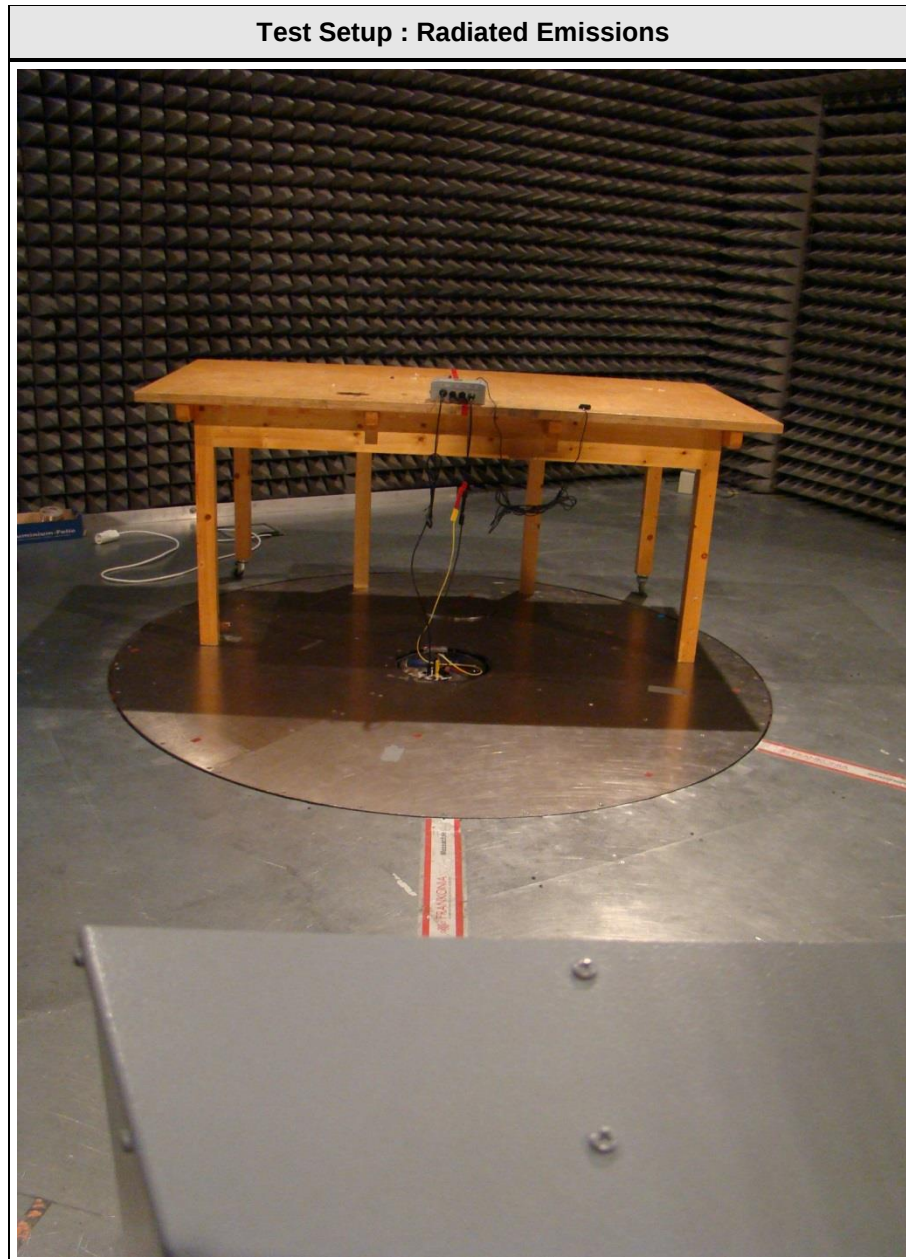
1.2 Photos – Equipment internal



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

1.3 Photos – Test setup



1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
SIM	Communication tester	Rohde & Schwarz	CMU 200	-
AE	Laptop	Dell	Latitude	-
AE	Bluetooth 2.4GHz antenna	Taoglas	GW.15.2113	-
AE	GSM/UMTS antennna	2J	2J010	-
AE	GPS antenna	Chinmore	GS-10DSMA3V-002	-
CABL	USB 1.1. mini AB	Haiying Electronics	-	-

***Note:** Use the following abbreviations:

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

1.5 Input / Output Ports

Port #	Name	Type*	Max. Cable Length	Cable Shielded	Comments
1	Power	DC	3m	No	-
2	USB	I/O	2m	Yes	-
3	RS232	I/O	6m	Yes	2 pieces, service only
4	External Input / Output	I/O	3m	Yes	service only

***Note:** Use the following abbreviations:

AC : AC power port

DC : DC power port

N/E : Non electrical

I/O : Signal input or output port

TP : Telecommunication port

1.6 Operating Modes and Configurations

Mode #	Description
1	GSM 850 link to CMU
2	GSM 1900 link to CMU
3	UMTS FDD II link to CMU
4	UMTS FDD V link to CMU
5	Bluetooth link to sensor module and data transmission every 1 second, USB connected to laptop

Configuration #	EUT Configuration
1	EUT fully assembled and powered with external 12VDC

1.7 Test Equipment Used During Testing

Measurement Software			
Description	Manufacturer	Name	Version
EMC Test Software	Dare Instruments	Radimation	2014.1.15

Radiated emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD-Antenne	R&S	HL 223	EF00187	2014-03	2017-03
Horn antenna	Schwarzbeck	BBHA 9120D	EF00018	2013-09	2016-09
EMI Test Receiver	R&S	ESU26	EF00887	2015-01	2016-01

1.8 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

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:

$$\begin{array}{rclclcl} \text{Reading} & + & \text{AF} & = & \text{Net Reading} & : & \text{Net reading - FCC limit} & = & \text{Margin} \\ 21.5 \text{ dB}\mu\text{V} & + & 26 \text{ dB} & = & 47.5 \text{ dB}\mu\text{V/m} & : & 47.5 \text{ dB}\mu\text{V/m} - 57.0 \text{ dB}\mu\text{V/m} & = & -9.5 \text{ dB} \end{array}$$

2 Result Summary

FCC 47 CFR Part 15B, Industry Canada RSS-Gen				
Product Specific Standard	Requirement – Test	Reference Method	Result	Remarks
47 CFR 15.109 RSS-Gen 4.9 & 4.10	Radiated emissions	ANSI C 63.4	PASS	-
47 CFR 15.107 RSS-Gen 7.2.4	AC power line conducted emissions	ANSI C63.4	N/A	No relevant port available
Remarks:				

3 Test Conditions and Results

3.1 Test Conditions and Results – Radiated emissions

Radiated emissions acc. FCC 47 CFR 15.109 / IC RSS-Gen					Verdict: PASS	
Laboratory Parameters:		Required prior to the test		During the test		
Ambient Temperature		15 to 35 °C		23°C		
Relative Humidity		30 to 60 %		35%		
Test according referenced standards		Reference Method				
		ANSI C63.4				
Sample is tested with respect to the requirements of the equipment class		Equipment class				
		Class B				
Test frequency range determined from highest emission frequency		Highest emission frequency				
		Fmax [MHz] = 2400				
Fully configured sample scanned over the following frequency range		Frequency range				
		30 MHz to 14 GHz				
Operating mode		1 / 2 / 3 / 4 / 5				
Configuration		1				
Limits and results Class B						
Frequency [MHz]	Quasi-Peak [dBµV/m]	Result	Average [dBµV/m]	Result	Peak [dBµV/m]	Result
30 – 88	40	PASS	-		-	-
88 – 216	43.5	PASS	-		-	-
216 – 960	46	PASS	-		-	-
960 – 1000	54	PASS	-		-	-
> 1000	-	-	54	PASS	74	PASS
Comments:						

Test Procedure:

The test site is in accordance with ANSI C63-4:2009 requirements and is listed by FCC.

The measurement procedure is as follows:

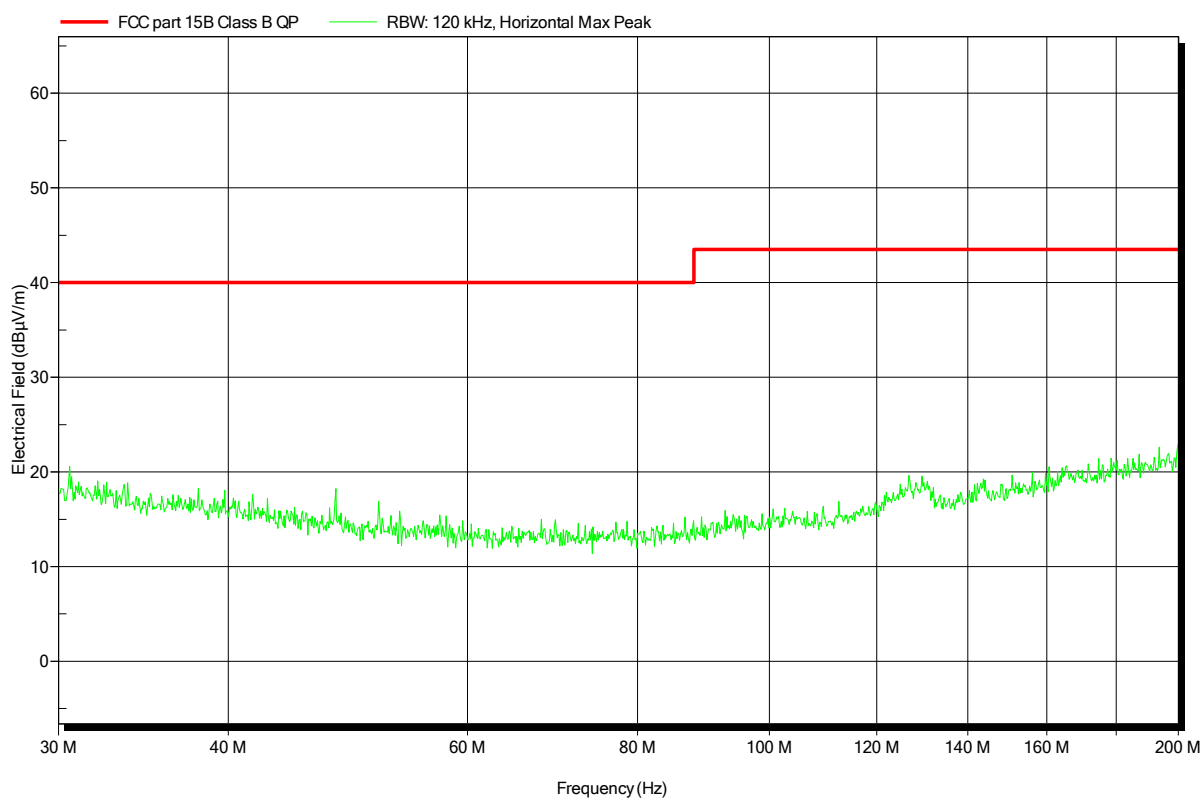
- 1) The EUT was placed on a 0.8 m non conductive table at a 3 m distance from the receive antenna (ANSI C63.4: 2009 item 6.2)
- 2) The antenna output was connected to the measurement receiver
- 3) A biconical antenna was used for the frequency range 30 – 200 MHz, a logarithmic periodical antenna was used for the frequency range from 200 – 1000 MHz. Above one 1 GHz a Double Ridged Broadband Horn antenna was used. The antenna was placed on an adjustable height antenna mast
- 4) Emissions were maximized at each frequency by rotating the EUT and adjusting the receive antenna height and polarization. The maximum values were recorded.

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	GSM850
Test Date:	2015-04-24
Note:	

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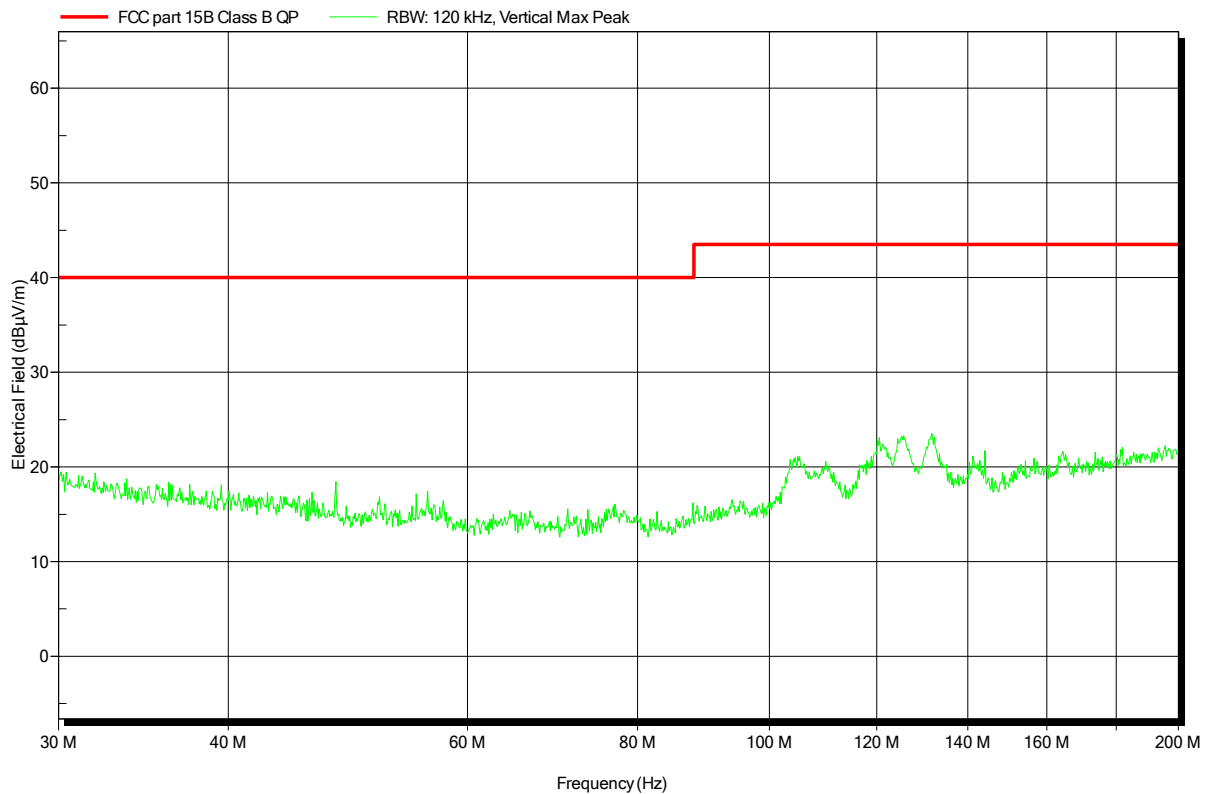
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

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EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	GSM850
Test Date:	2015-04-24
Note:	

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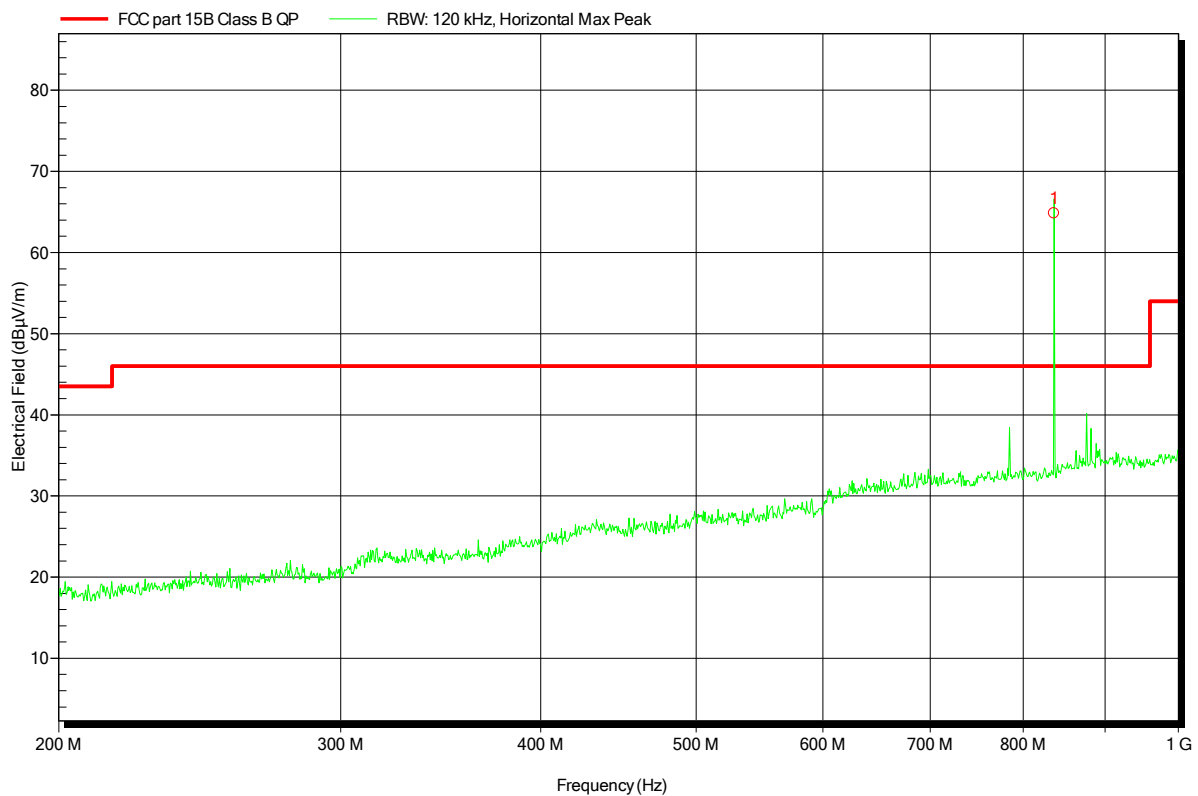


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3m
 Mode: GSM850
 Test Date: 2015-04-23
 Note:

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Frequency
836.196 MHz

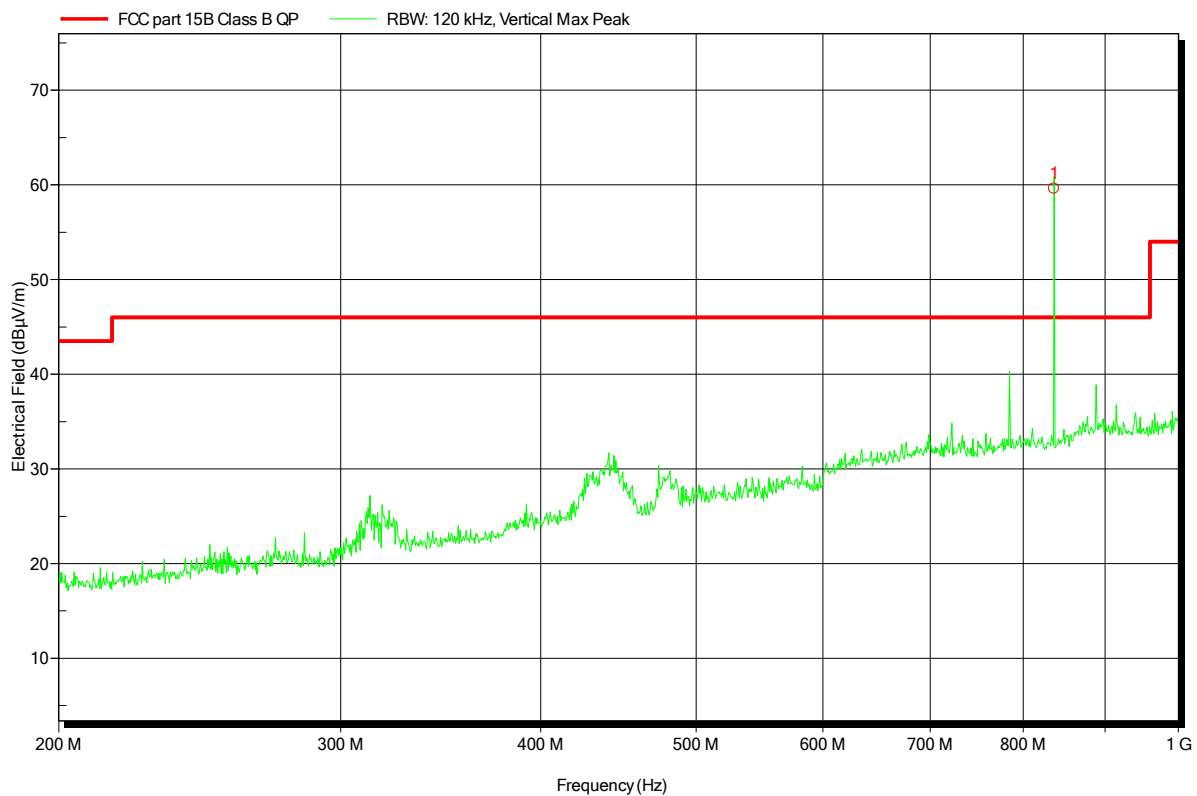
GSM 850

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 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3m
 Mode: GSM850
 Test Date: 2015-04-23
 Note:

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Frequency
836.18 MHz

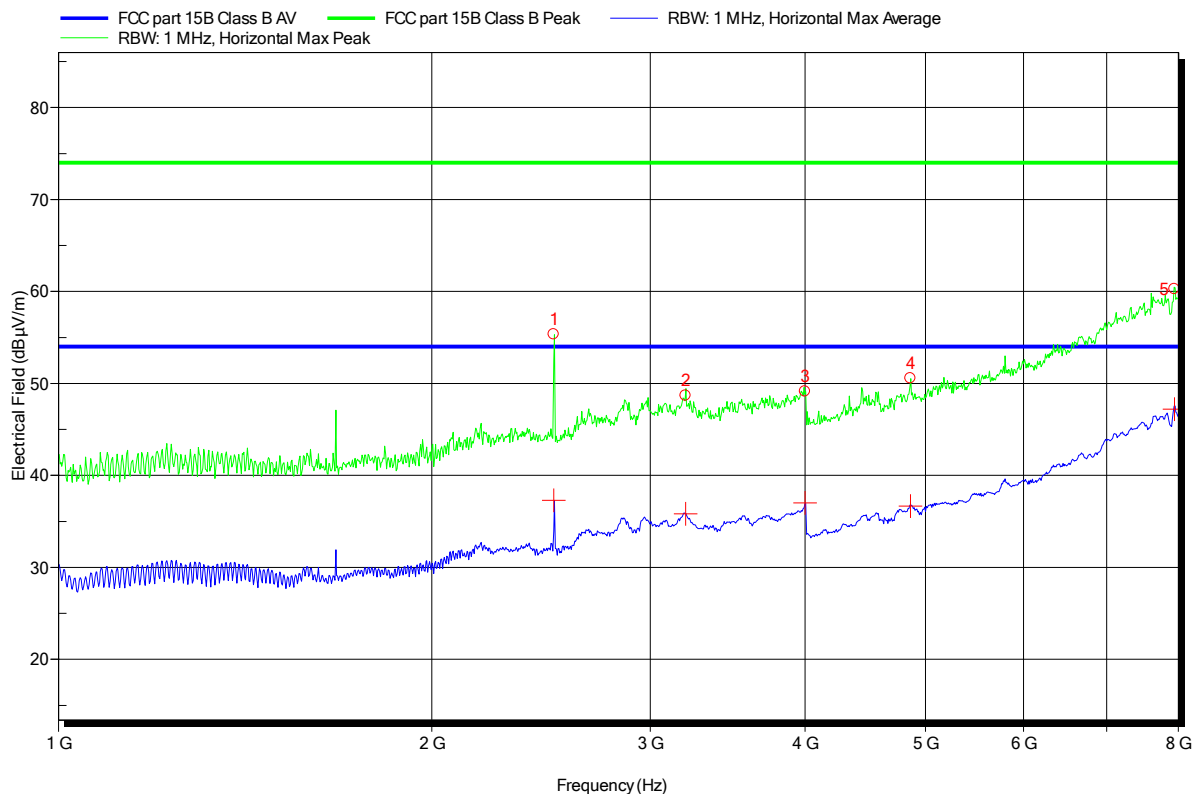
GSM 850

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: GSM850
 Test Date: 2015-04-23
 Note:

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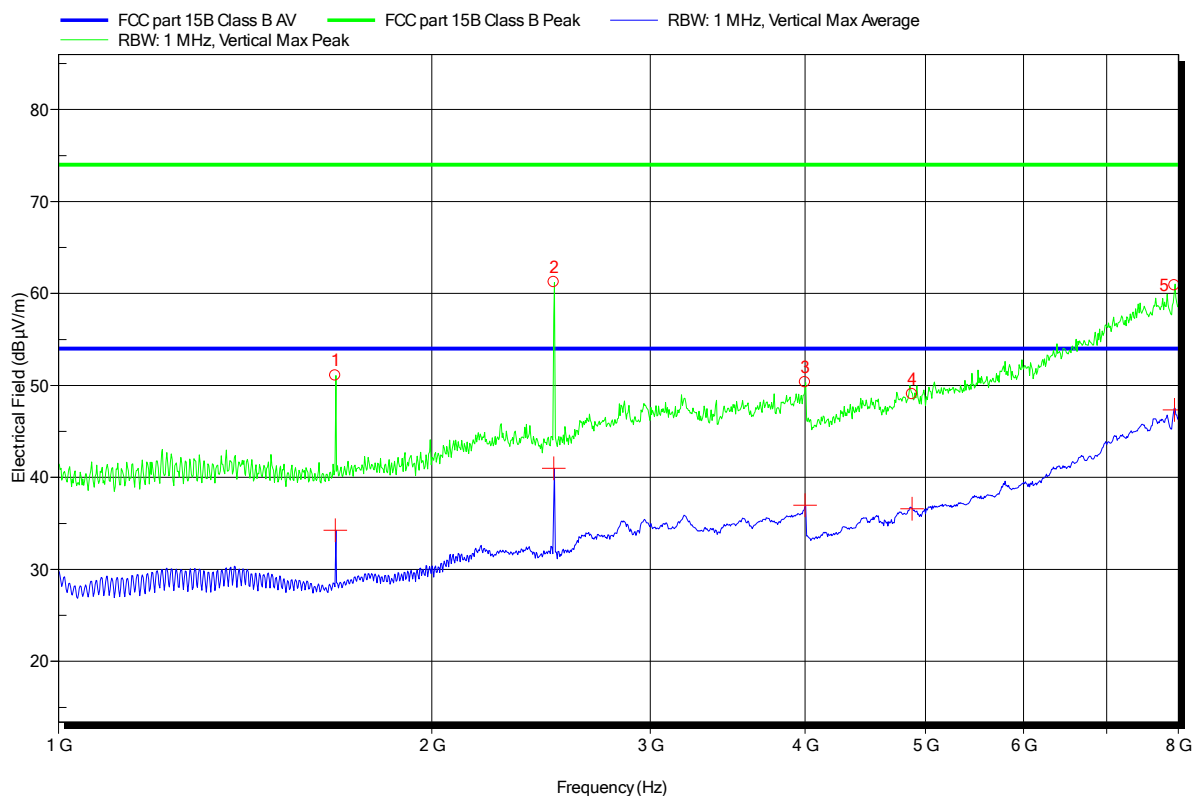
Frequency	Average	Average Limit	Average Difference	Average Status
2.509 GHz	37.3 dBµV/m	54 dBµV/m	-16.7 dB	Pass
3.205 GHz	35.82 dBµV/m	54 dBµV/m	-18.18 dB	Pass
4 GHz	37.02 dBµV/m	54 dBµV/m	-16.98 dB	Pass
4.864 GHz	36.66 dBµV/m	54 dBµV/m	-17.34 dB	Pass
7.943 GHz	47.2 dBµV/m	54 dBµV/m	-6.8 dB	Pass

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 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: GSM850
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 Note:

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Frequency	Average	Average Limit	Average Difference	Average Status
1.673 GHz	34.25 dBµV/m	54 dBµV/m	-19.75 dB	Pass
2.509 GHz	40.98 dBµV/m	54 dBµV/m	-13.02 dB	Pass
4 GHz	36.96 dBµV/m	54 dBµV/m	-17.04 dB	Pass
4.88 GHz	36.6 dBµV/m	54 dBµV/m	-17.4 dB	Pass
7.942 GHz	47.33 dBµV/m	54 dBµV/m	-6.67 dB	Pass

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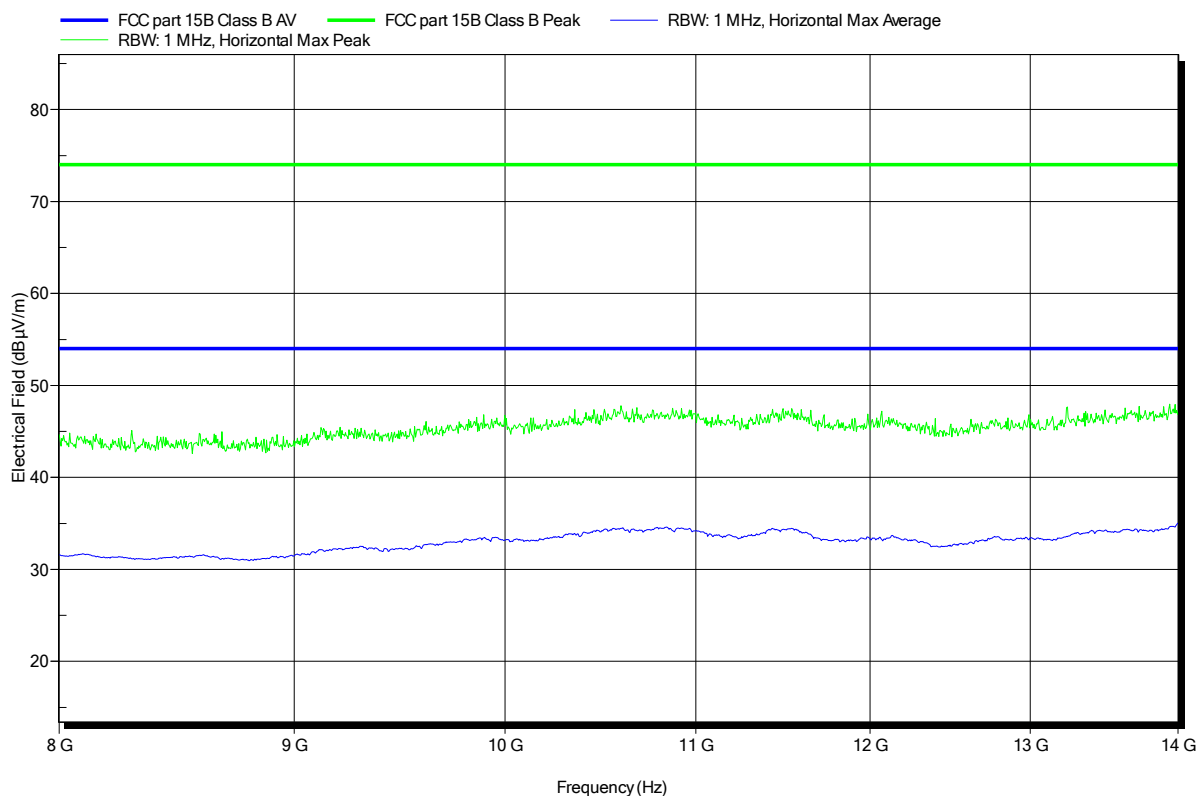
Eurofins Product Service GmbH
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 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: GSM850
 Test Date: 2015-04-27
 Note:

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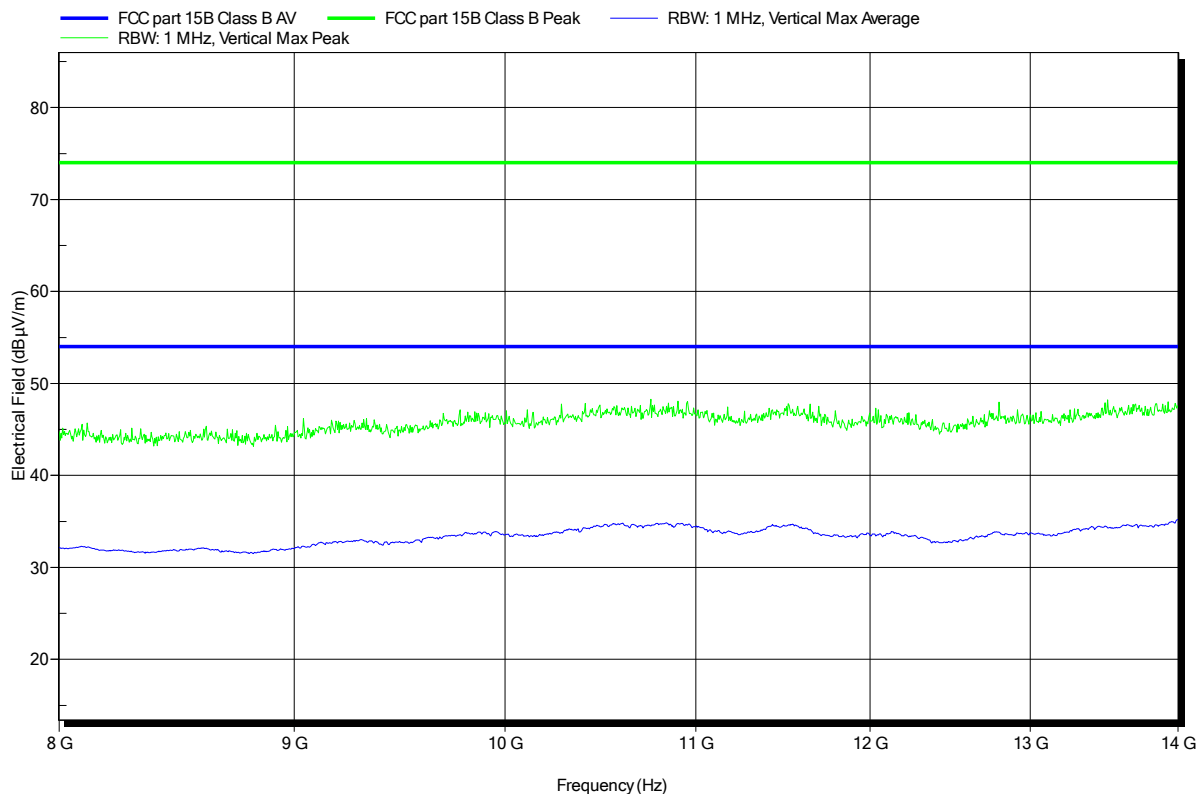


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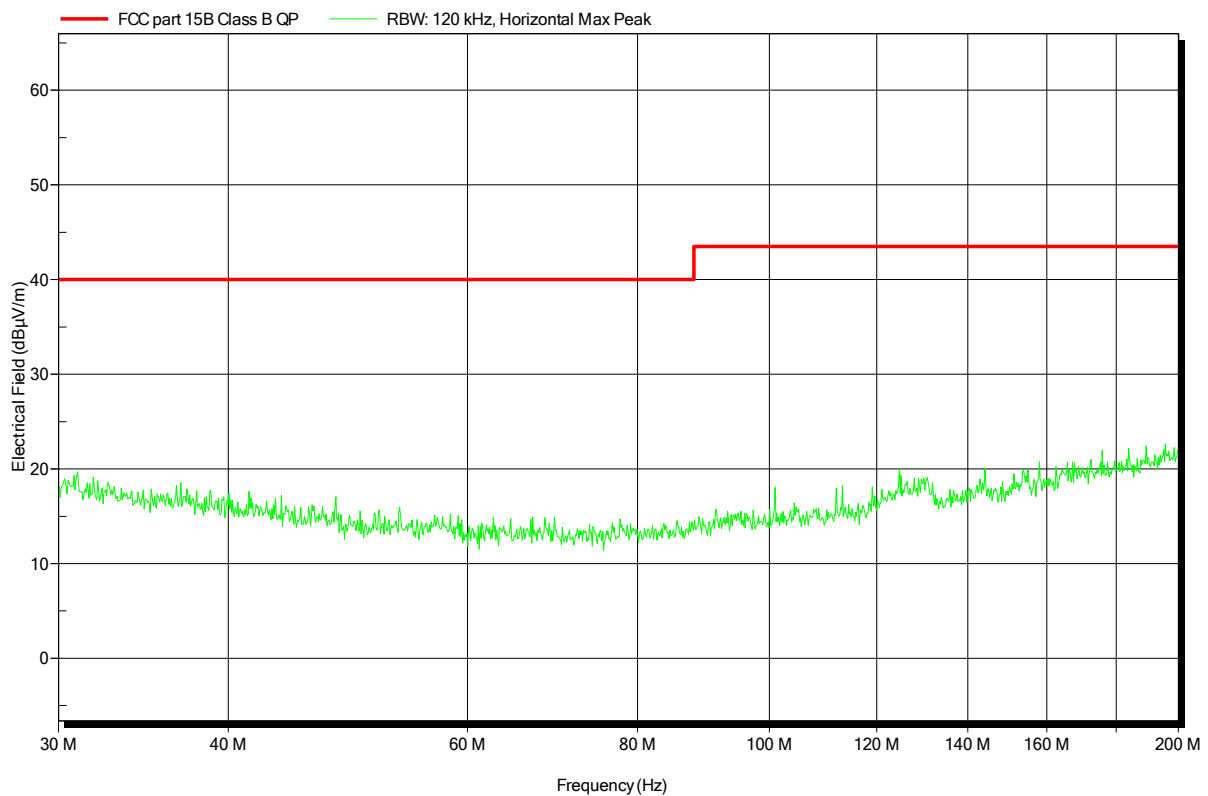


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Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	GSM1900
Test Date:	2015-04-24
Note:	

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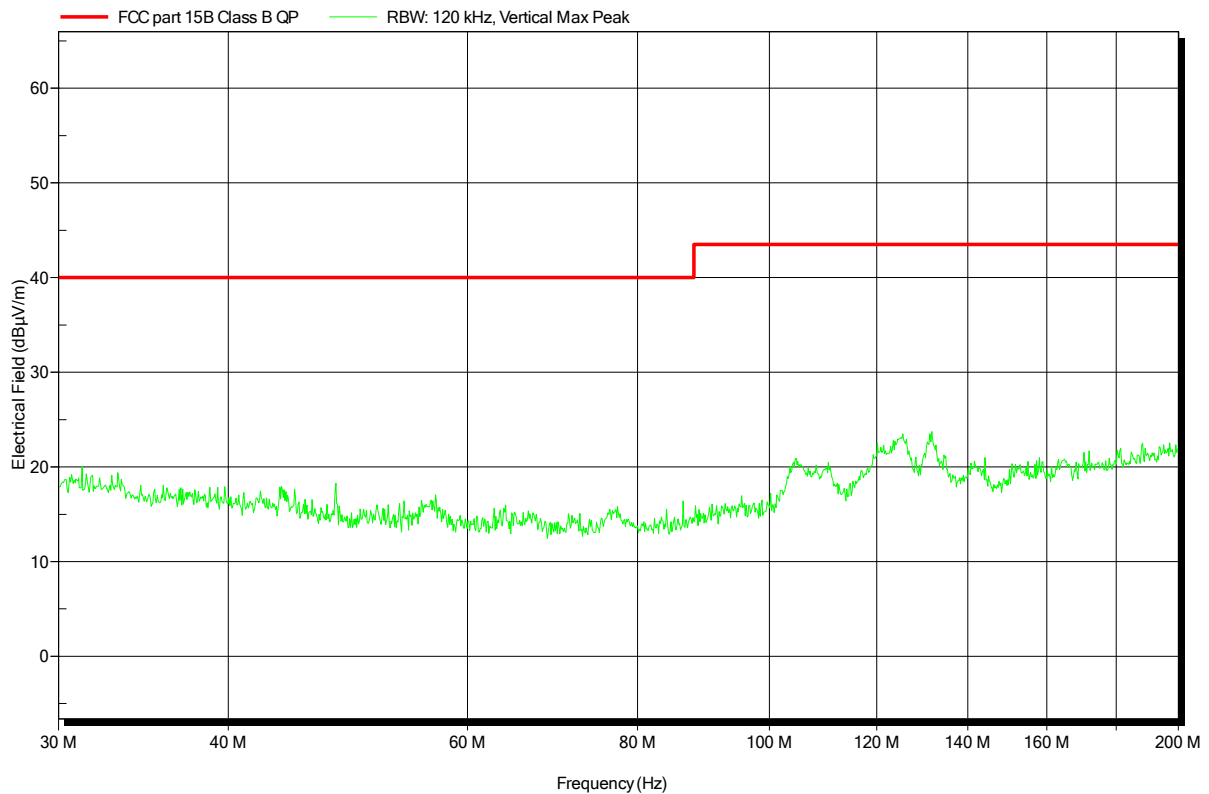
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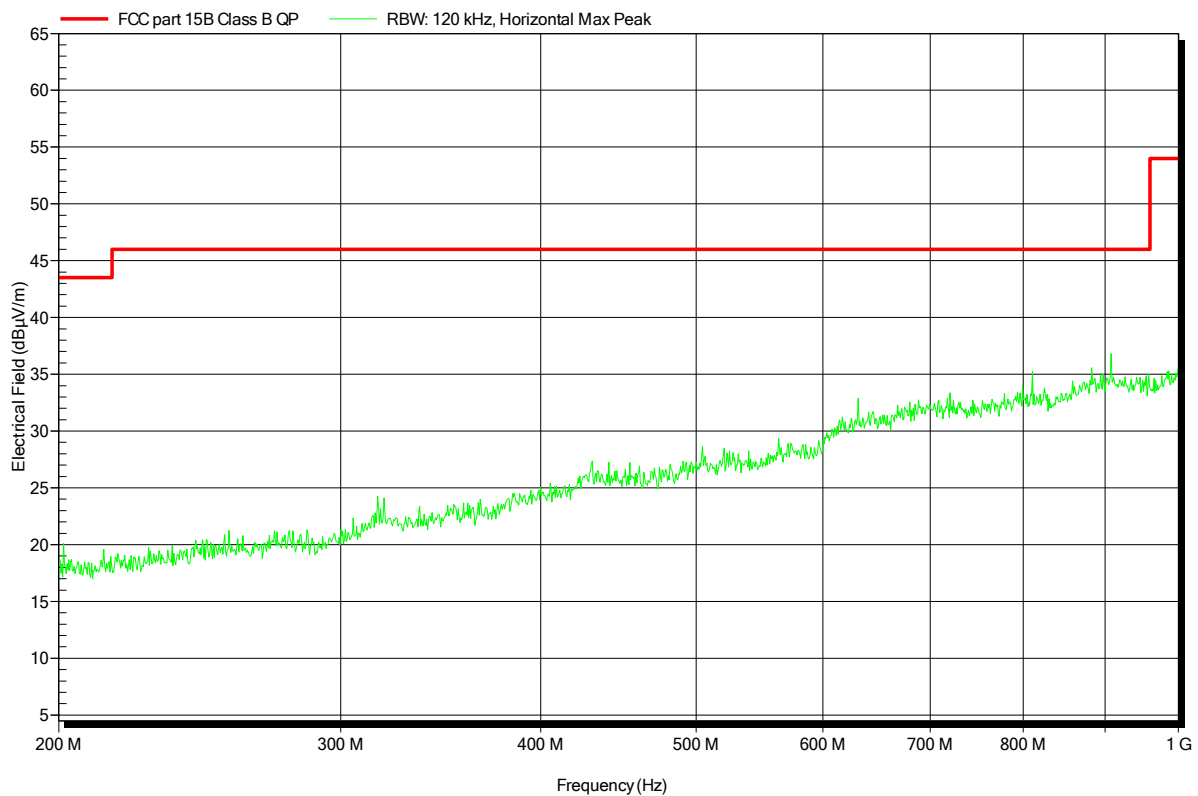
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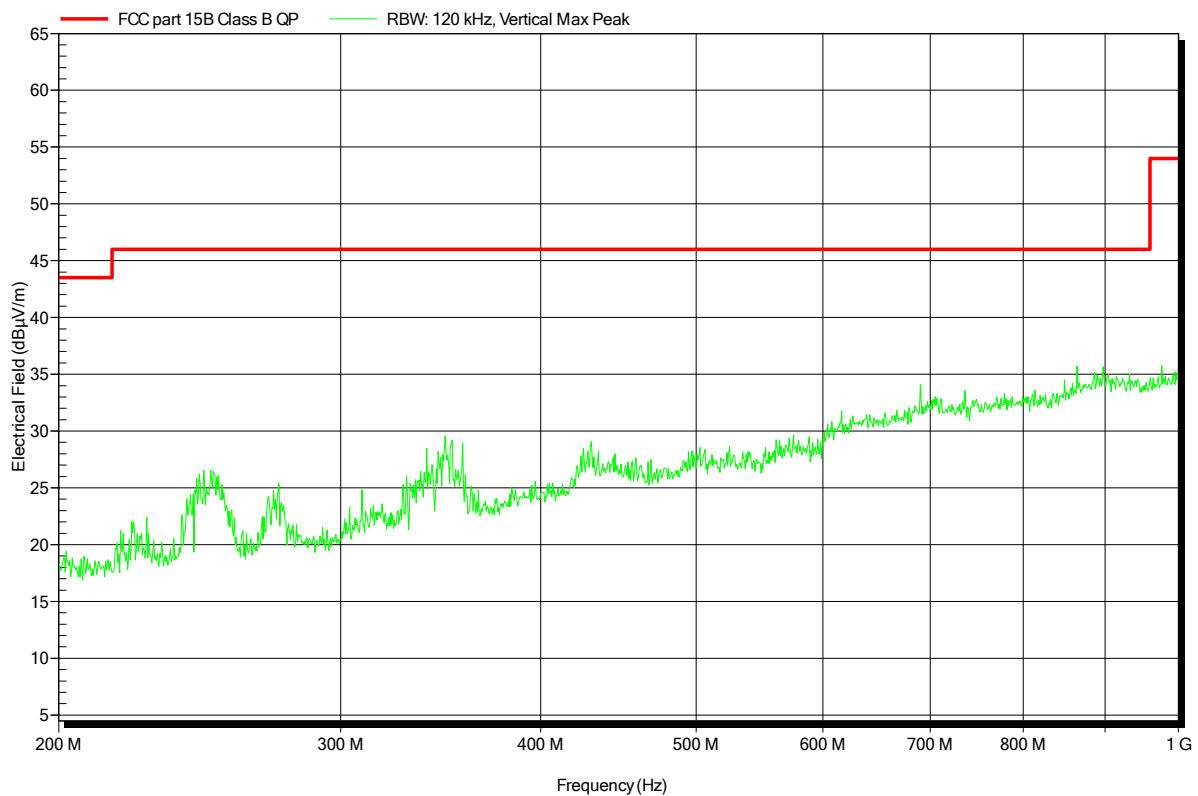
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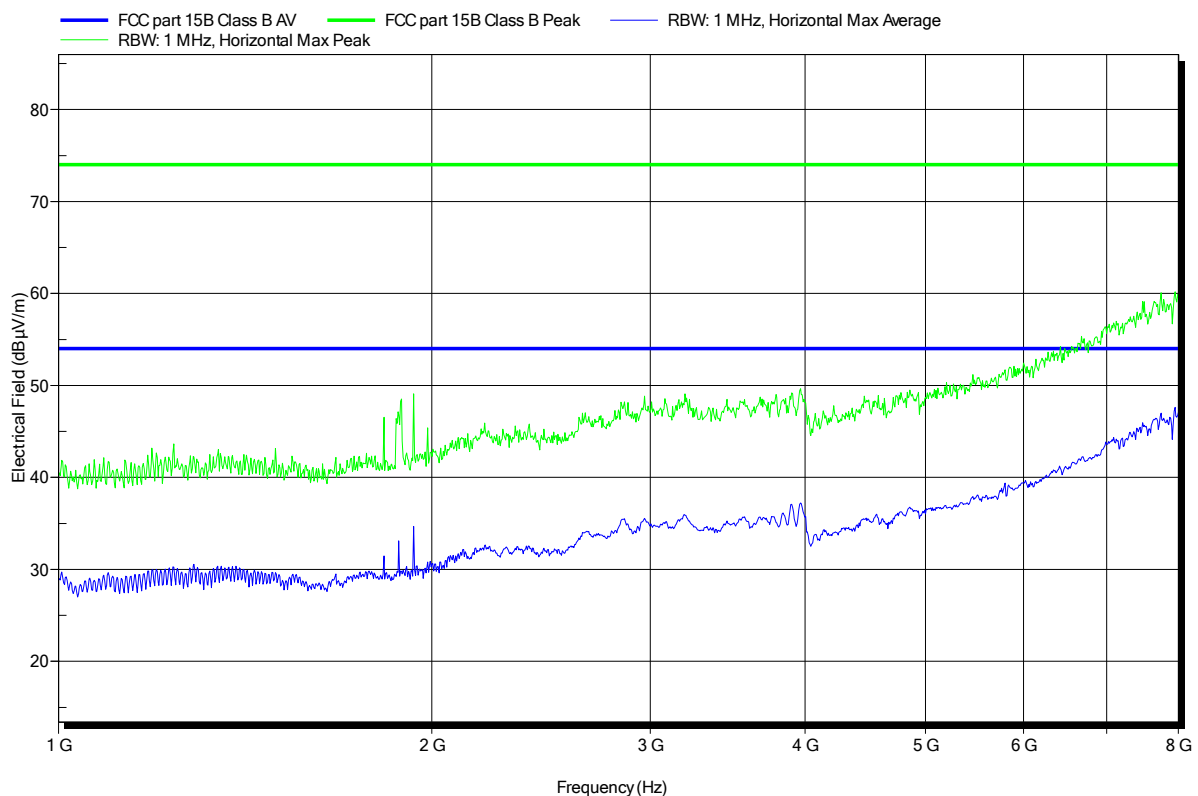
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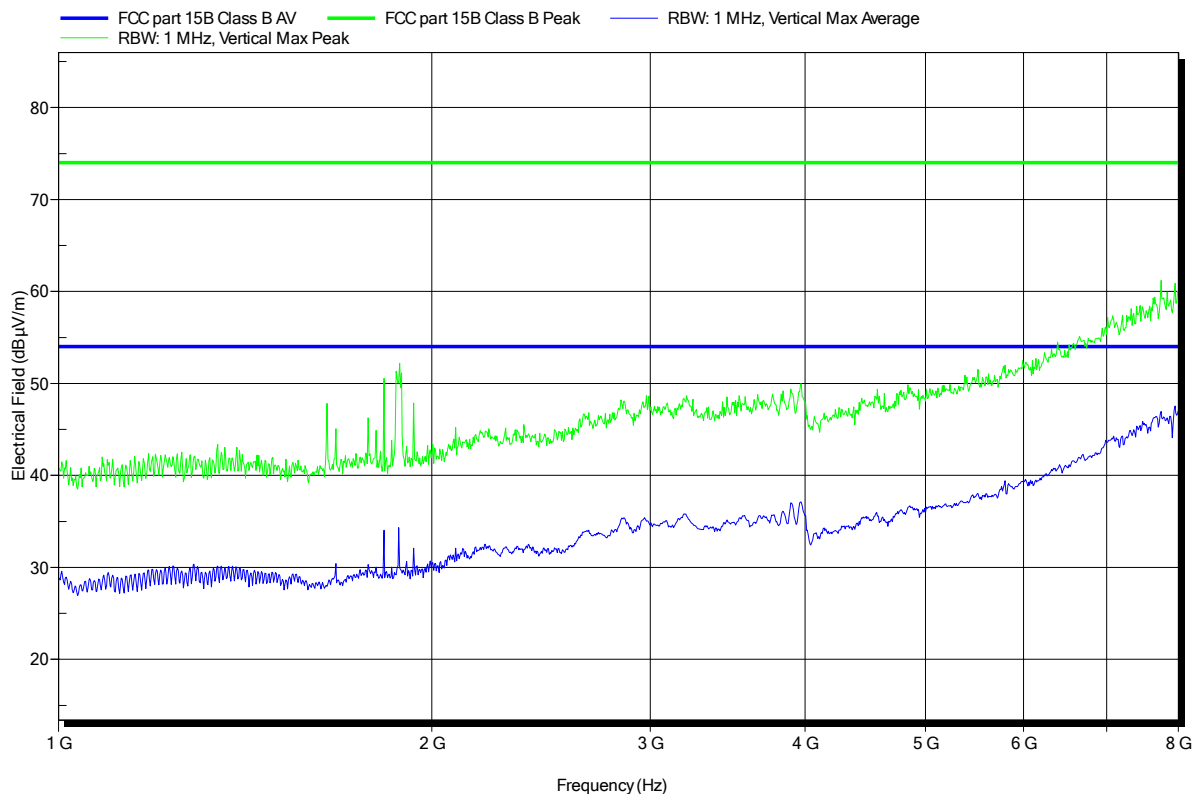
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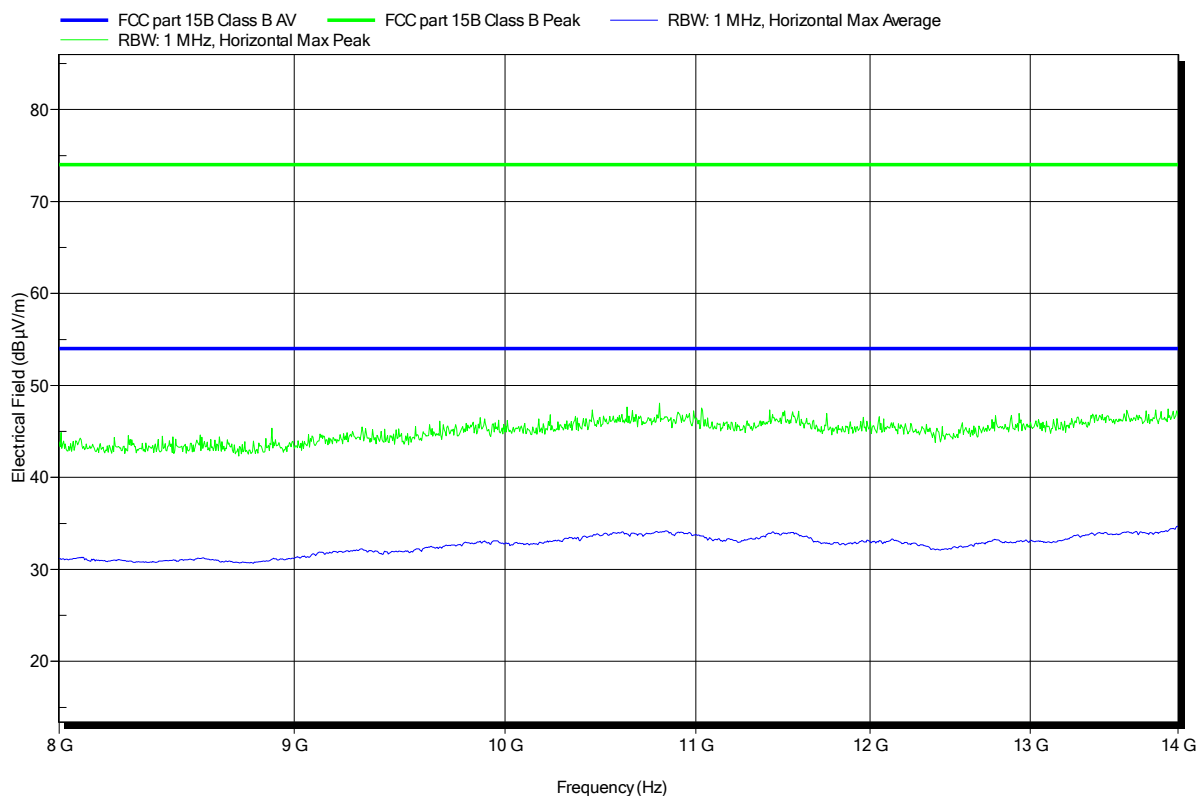


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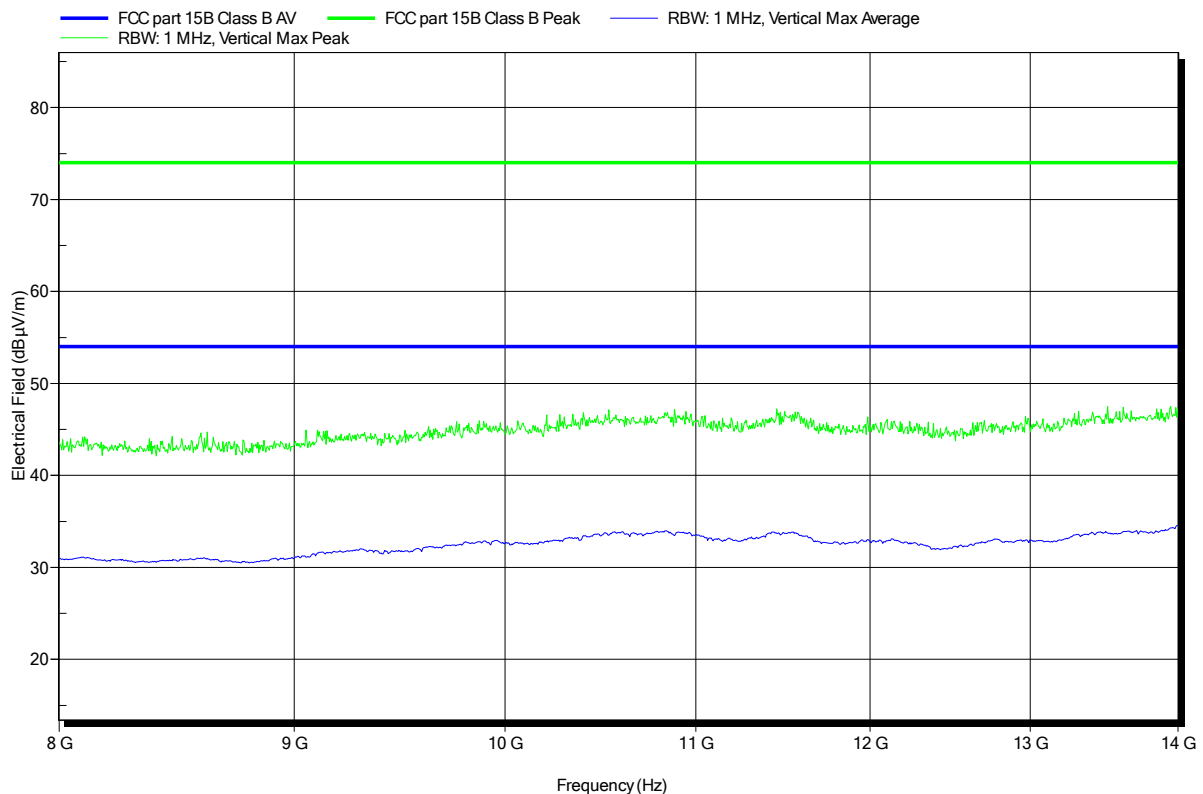


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 Note:

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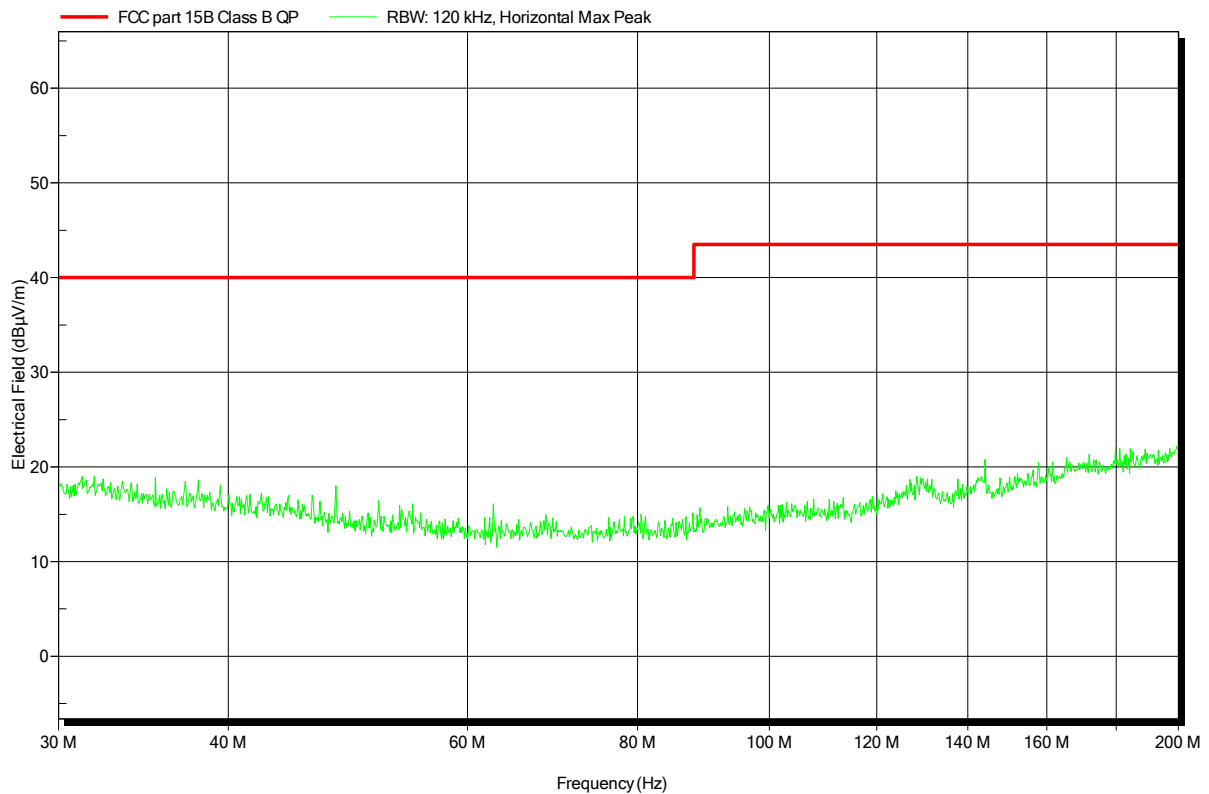


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	UMTS FDD II
Test Date:	2015-04-24
Note:	

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Test Report No.: G0M-1502-4503-EF0115B-V02

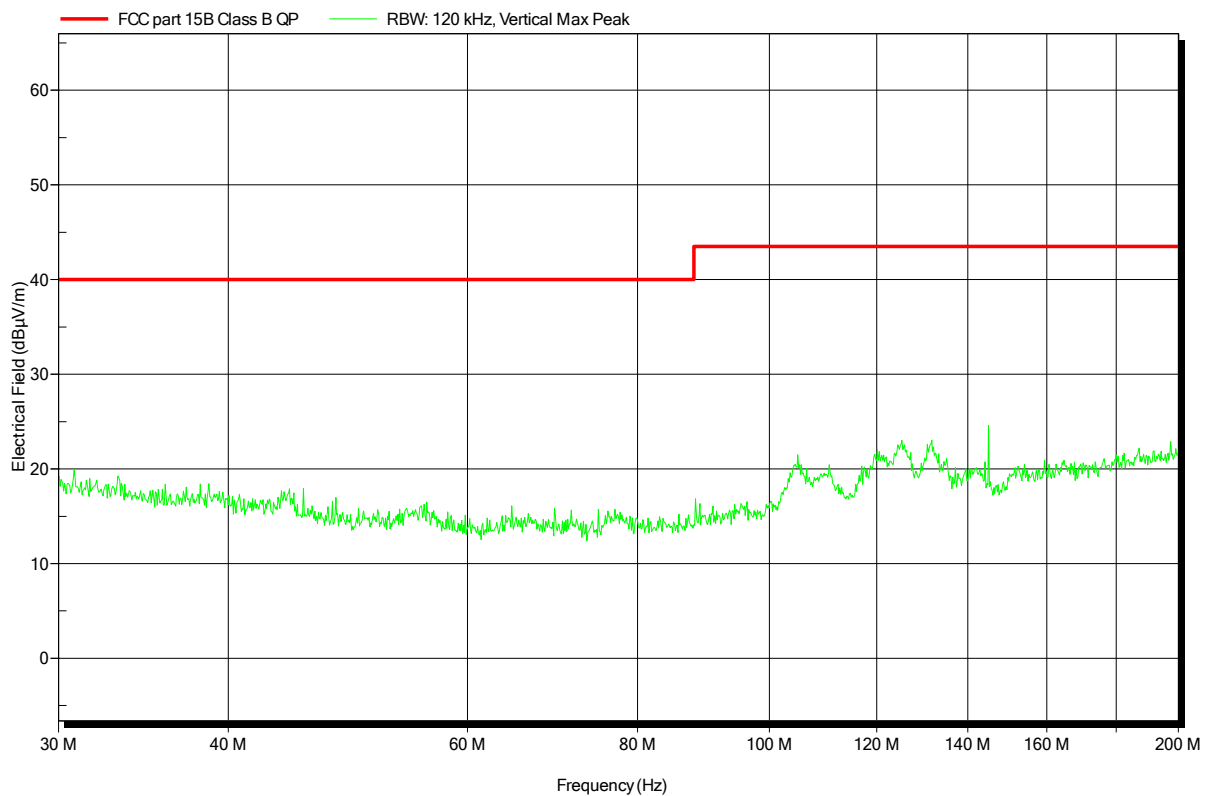
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	UMTS FDD II
Test Date:	2015-04-24
Note:	

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Test Report No.: G0M-1502-4503-EF0115B-V02

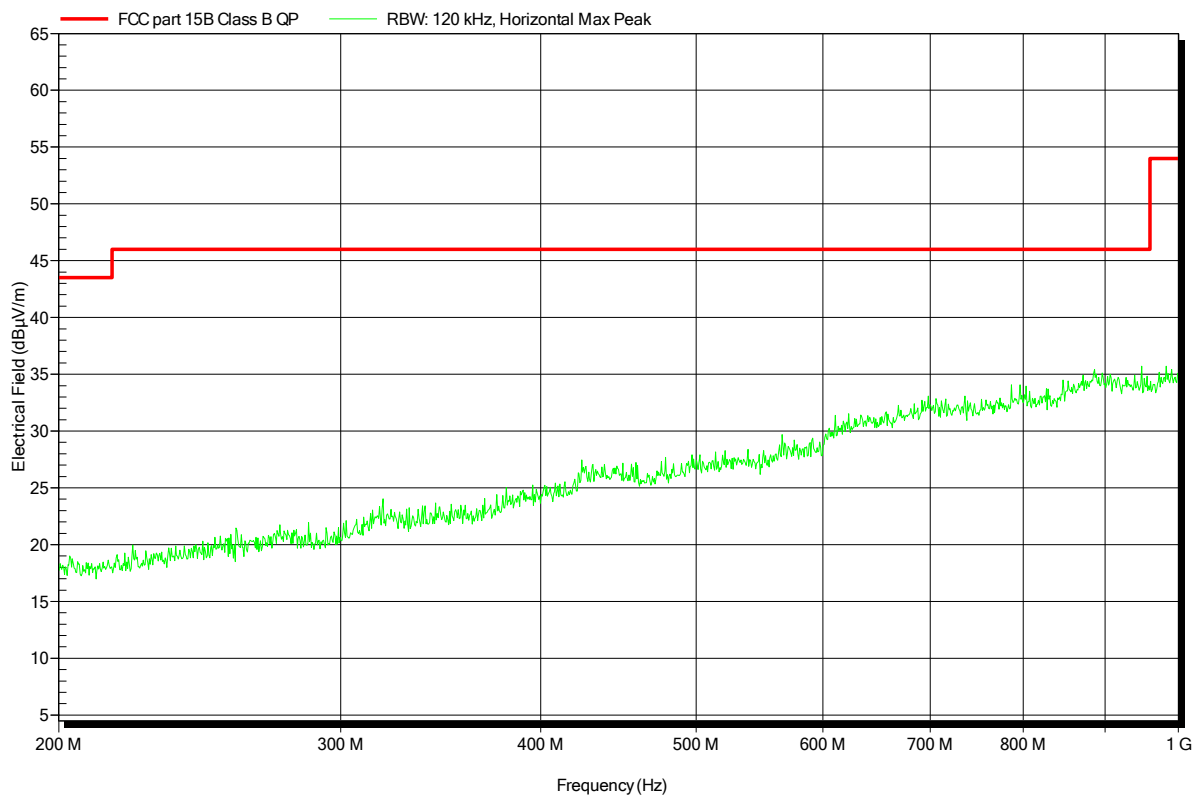
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	UMTS FDD II
Test Date:	2015-04-24
Note:	

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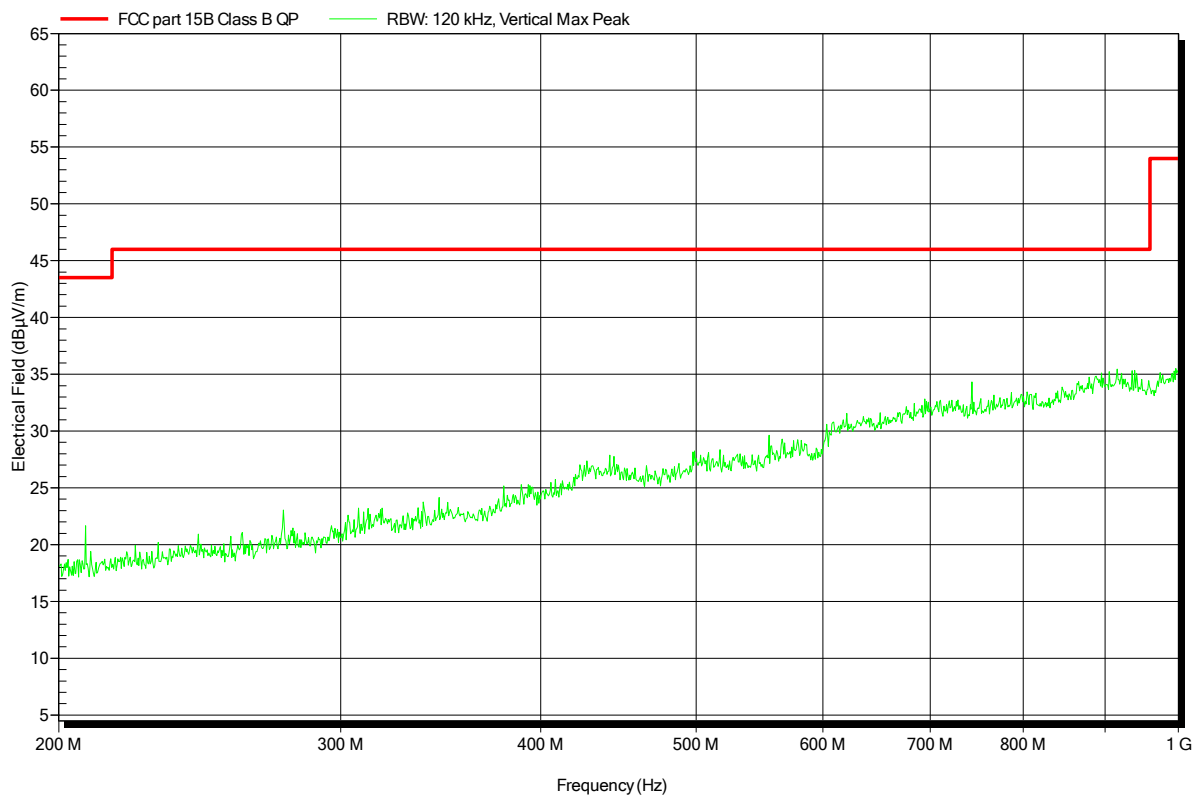


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3m
 Mode: UMTS FDD II
 Test Date: 2015-04-24
 Note:

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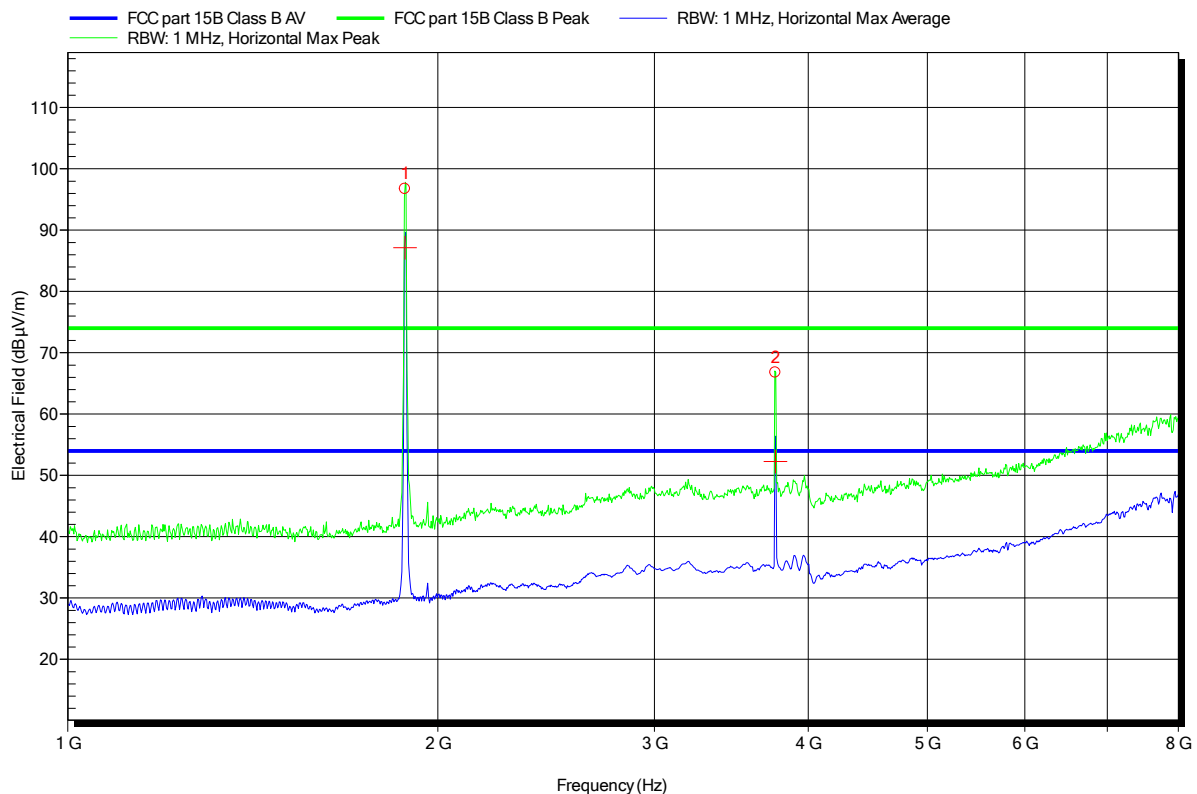


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD II
 Test Date: 2015-04-24
 Note:

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Frequency	Average	Average Limit	Average Difference	Average Status
1.881 GHz	87.12 dBµV/m	54 dBµV/m	33.12 dB	UMTS FDD II(1900)
3.763 GHz	52.27 dBµV/m	54 dBµV/m	-1.73 dB	Harmonics

Test Report No.: G0M-1502-4503-EF0115B-V02

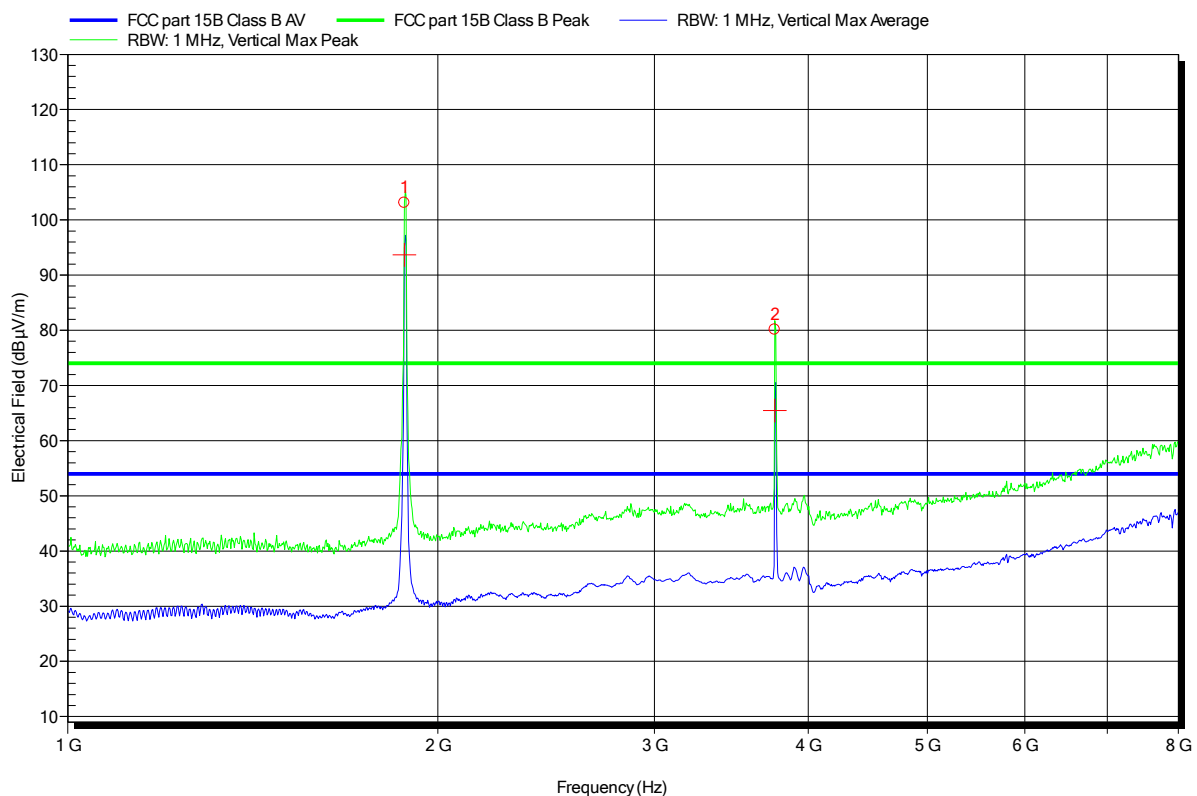
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: UMTS FDD II
 Test Date: 2015-04-24
 Note: UMTS FDD II and harmonics

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Frequency	Average	Average Limit	Average Difference	Average Status
1.879 GHz	93.65 dBµV/m	54 dBµV/m	39.65 dB	UMTS FDD II(1900)
3.758 GHz	65.48 dBµV/m	54 dBµV/m	11.48 dB	Harmonics

Test Report No.: G0M-1502-4503-EF0115B-V02

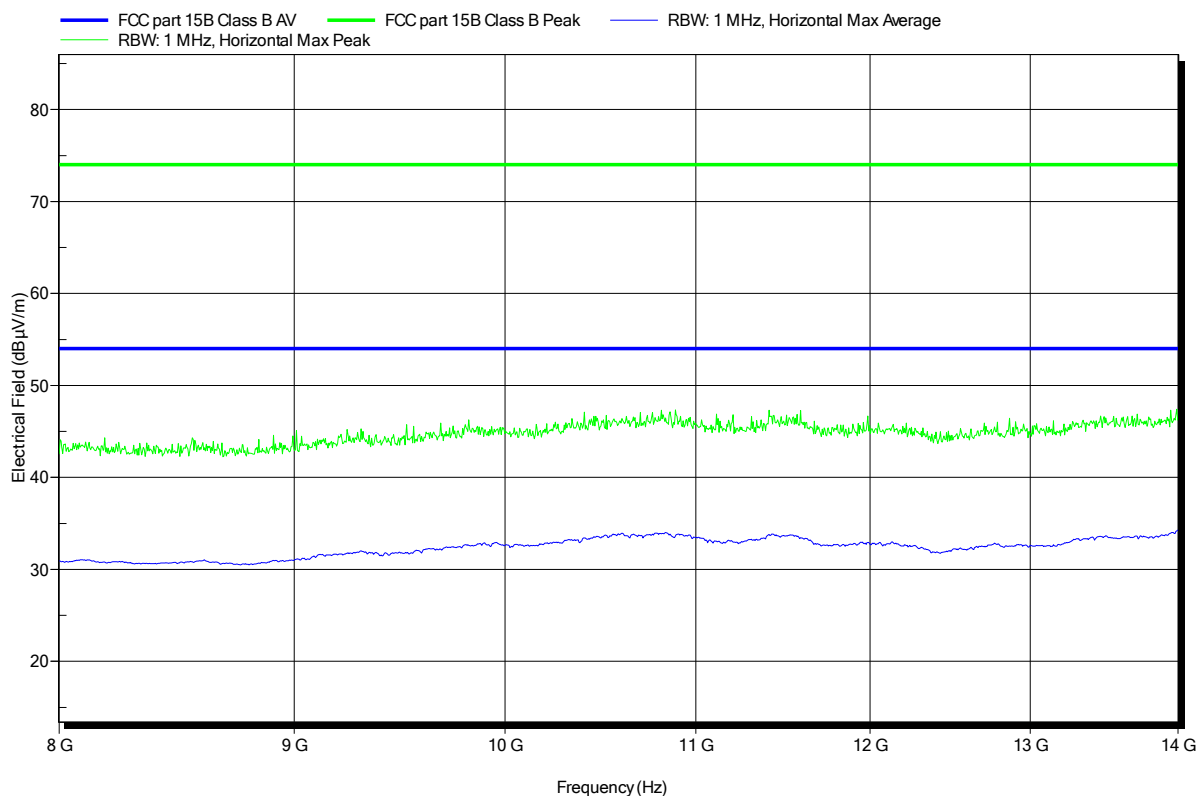
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD II
 Test Date: 2015-04-27
 Note:

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Test Report No.: G0M-1502-4503-EF0115B-V02

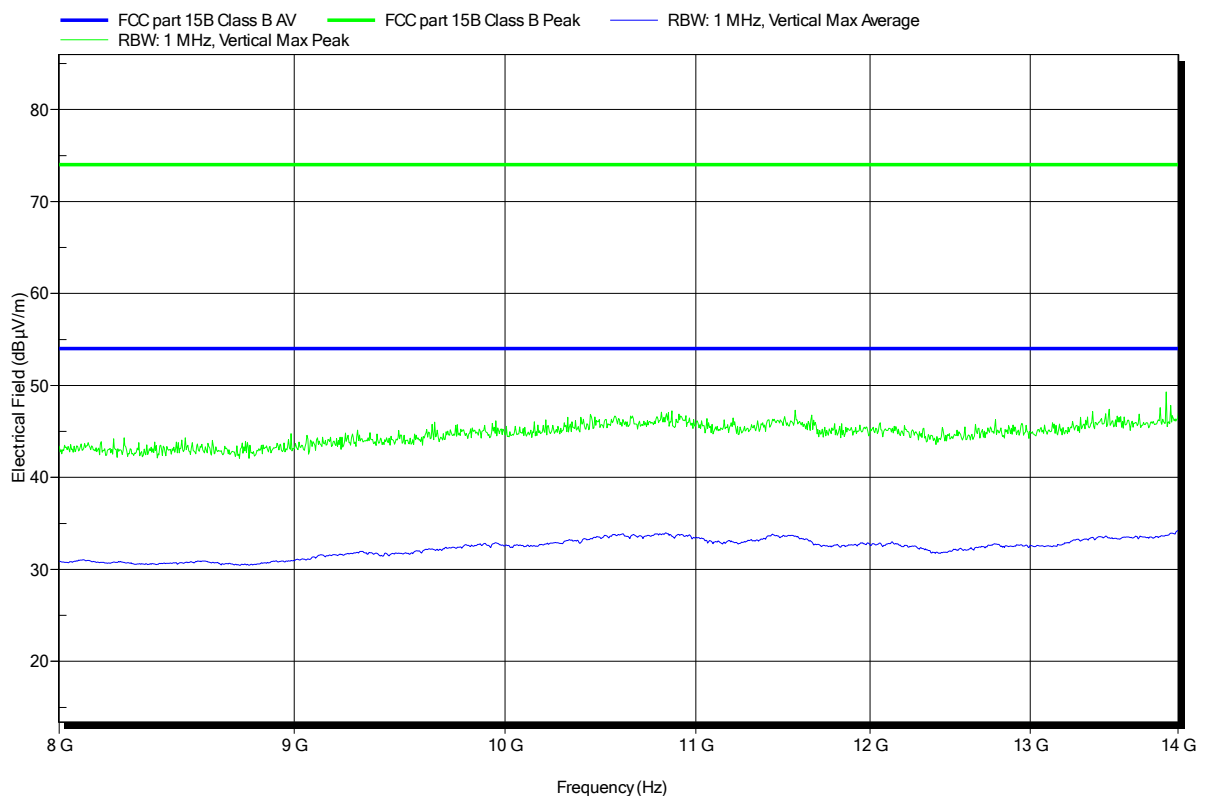
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: UMTS FDD II
 Test Date: 2015-04-27
 Note:

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Test Report No.: G0M-1502-4503-EF0115B-V02

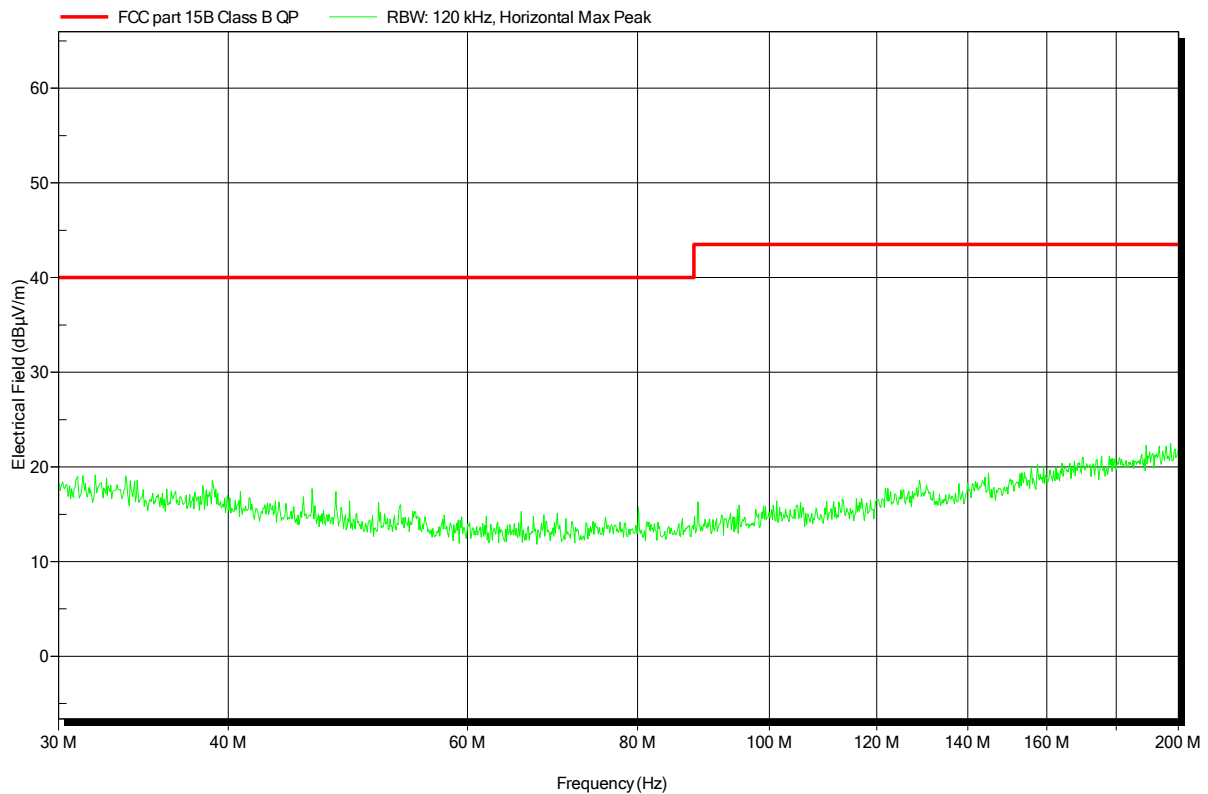
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-24
 Note:

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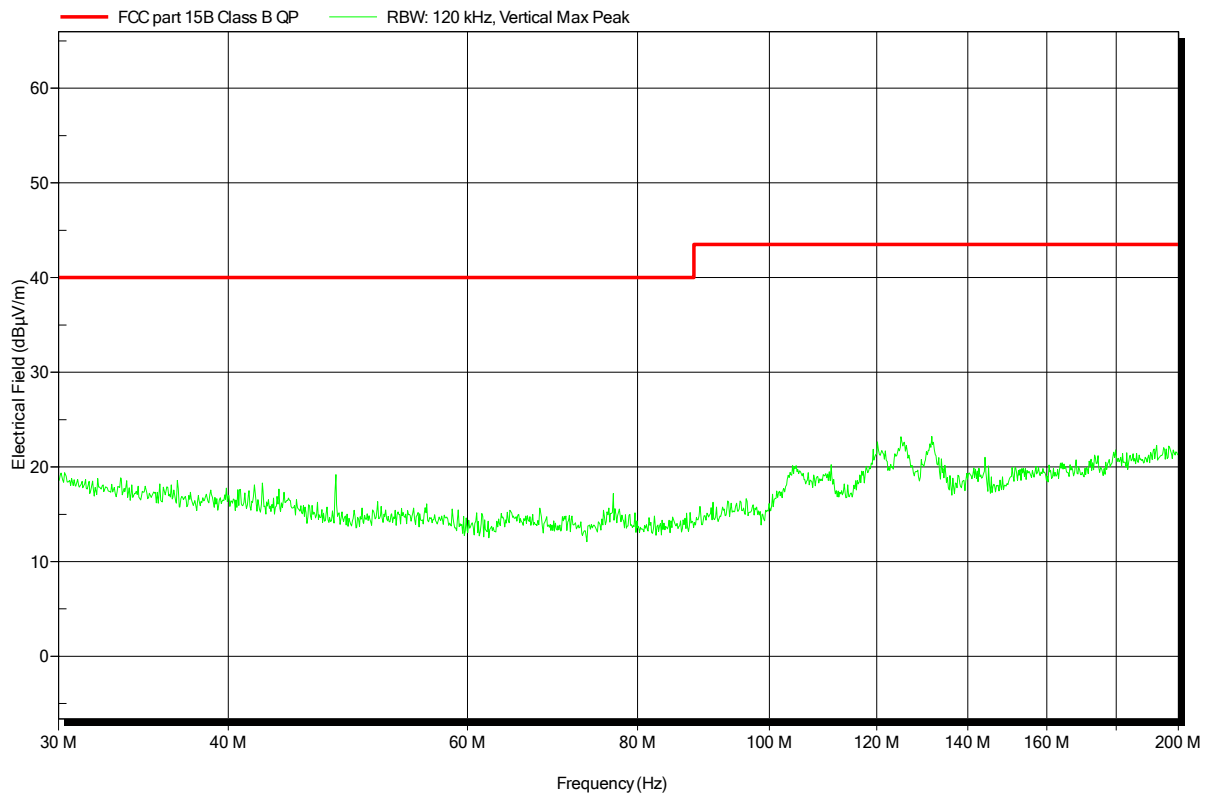


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	UMTS FDD V
Test Date:	2015-04-24
Note:	

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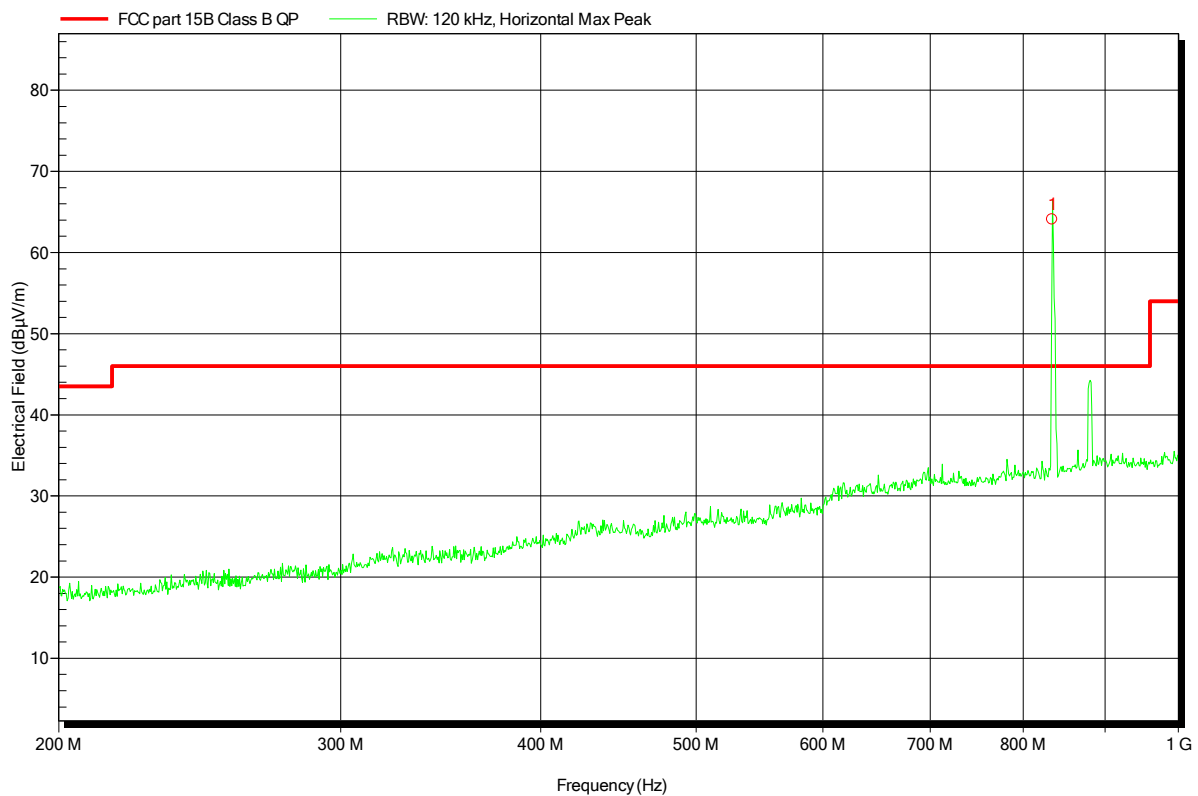


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-24
 Note:

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Frequency
834.15 MHz

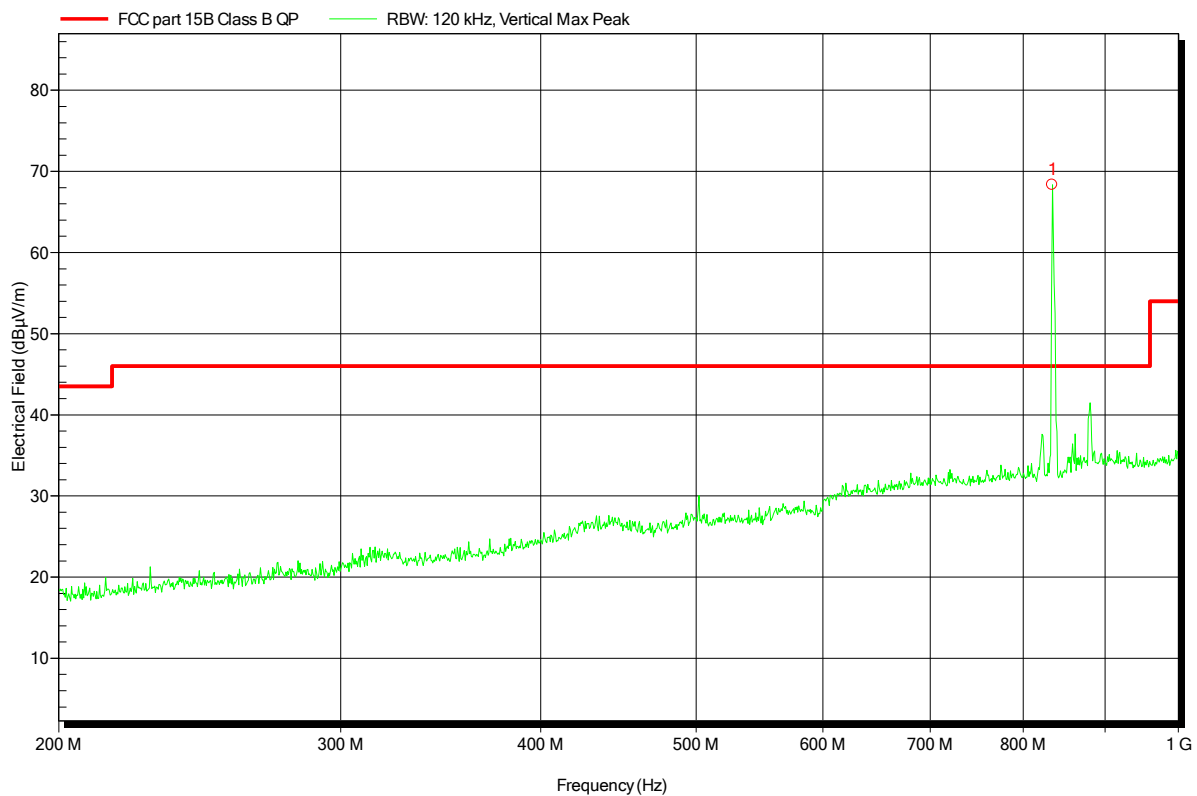
UMTS FDD V(850)

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	UMTS FDD V
Test Date:	2015-04-24
Note:	

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Frequency
834.099 MHz

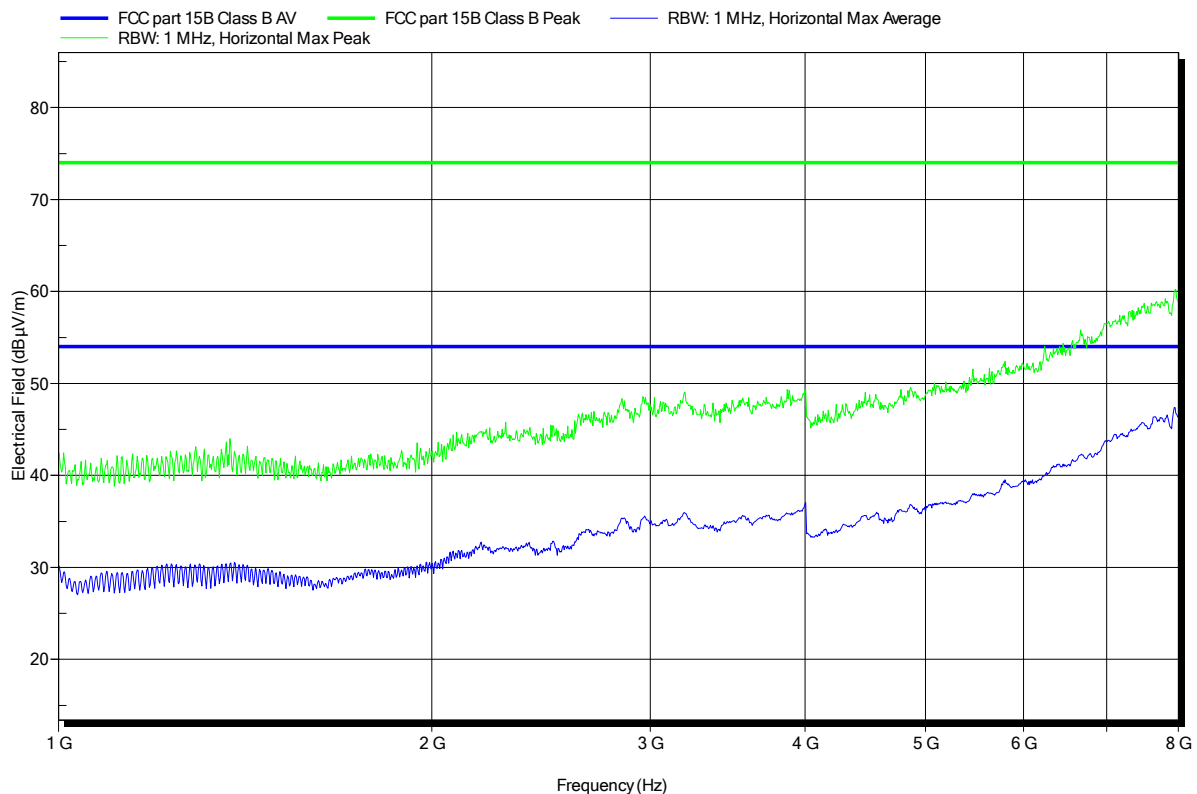
UMTS FDD V(850)

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-24
 Note:

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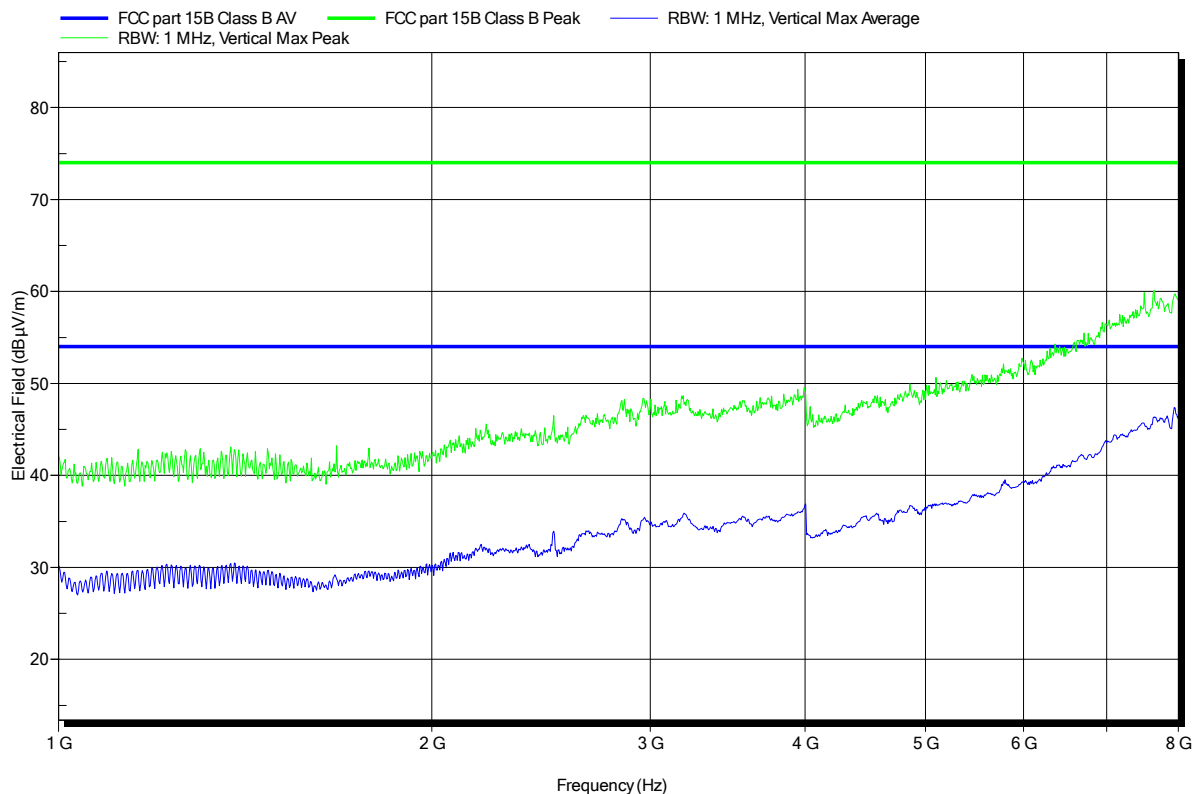


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-24
 Note:

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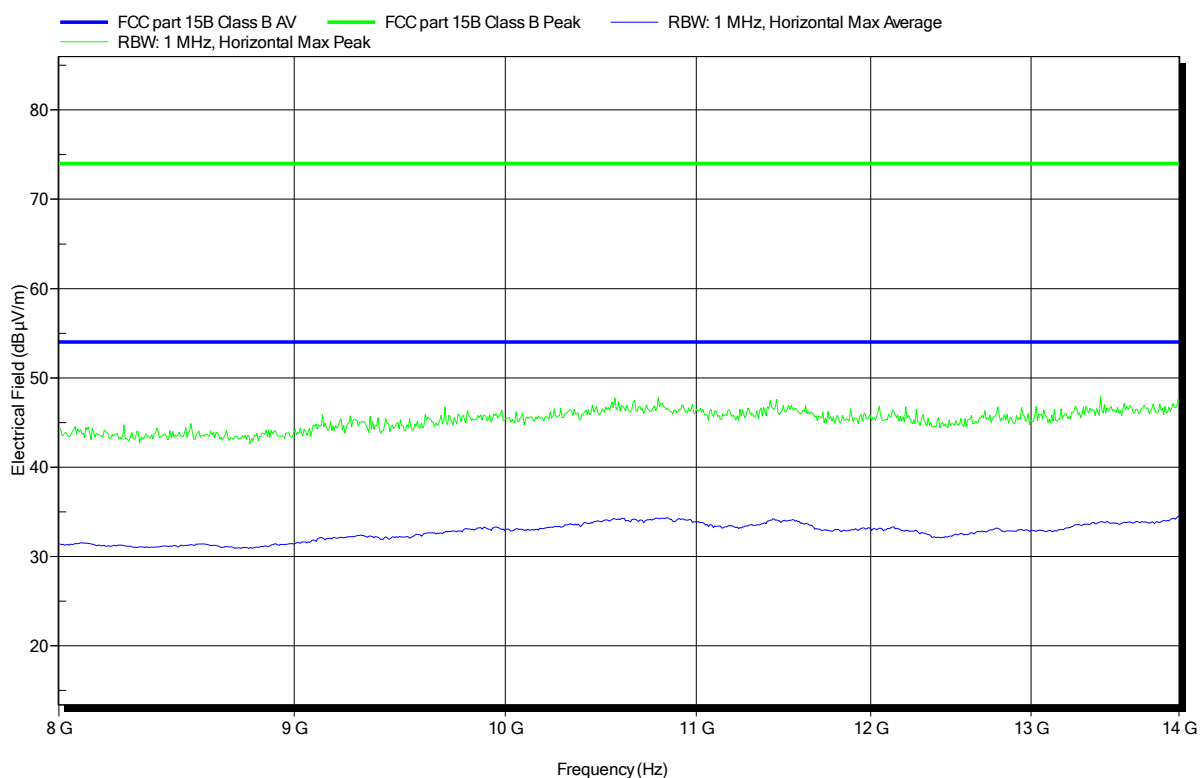


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-27
 Note:

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Test Report No.: G0M-1502-4503-EF0115B-V02

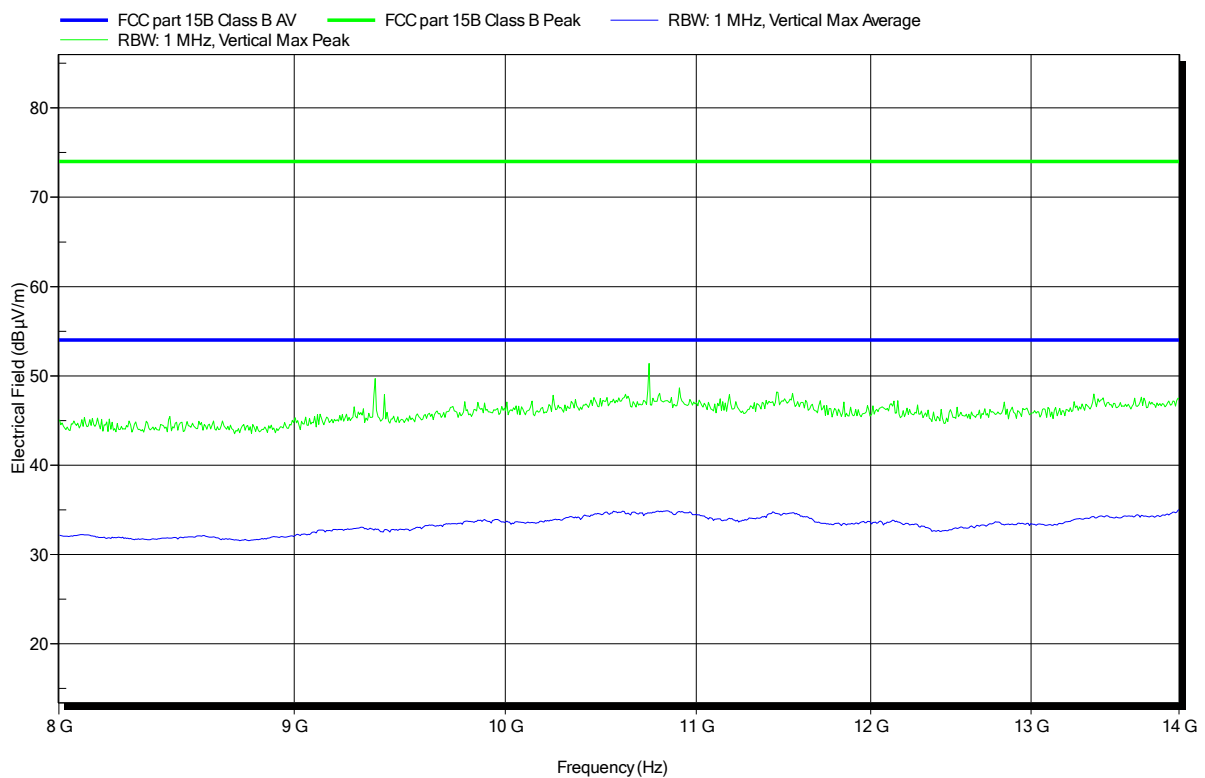
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: UMTS FDD V
 Test Date: 2015-04-27
 Note:

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Test Report No.: G0M-1502-4503-EF0115B-V02

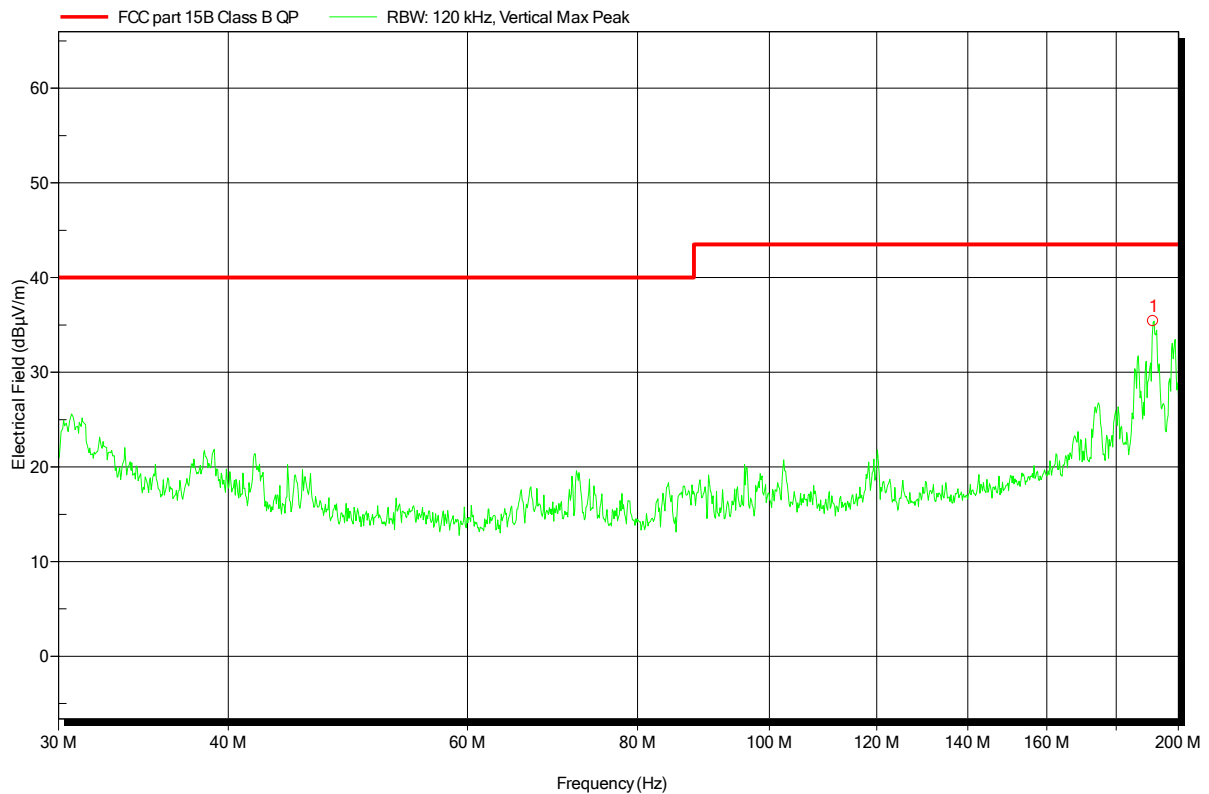
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	BLE+USB
Test Date:	2015-04-14
Note:	

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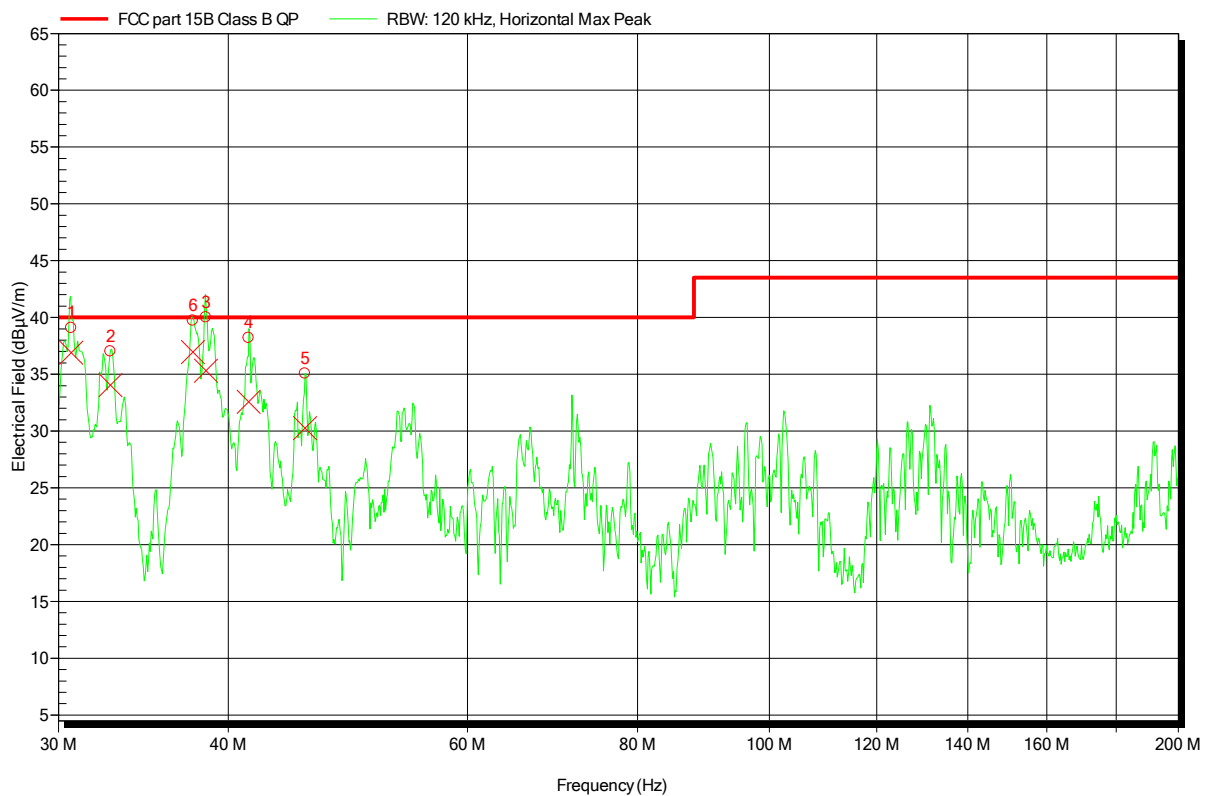
Frequency
191.64 MHz

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3m
 Mode: BLE+USB
 Test Date: 2015-04-14
 Note:

Index 2



Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
30.66 MHz	36.89 dBμV/m	40 dBμV/m	-3.11 dB	Pass
32.76 MHz	34.05 dBμV/m	40 dBμV/m	-5.95 dB	Pass
37.68 MHz	36.95 dBμV/m	40 dBμV/m	-3.05 dB	Pass
38.52 MHz	35.33 dBμV/m	40 dBμV/m	-4.67 dB	Pass
41.412 MHz	32.58 dBμV/m	40 dBμV/m	-7.42 dB	Pass
45.552 MHz	30.26 dBμV/m	40 dBμV/m	-9.74 dB	Pass

Test Report No.: G0M-1502-4503-EF0115B-V02

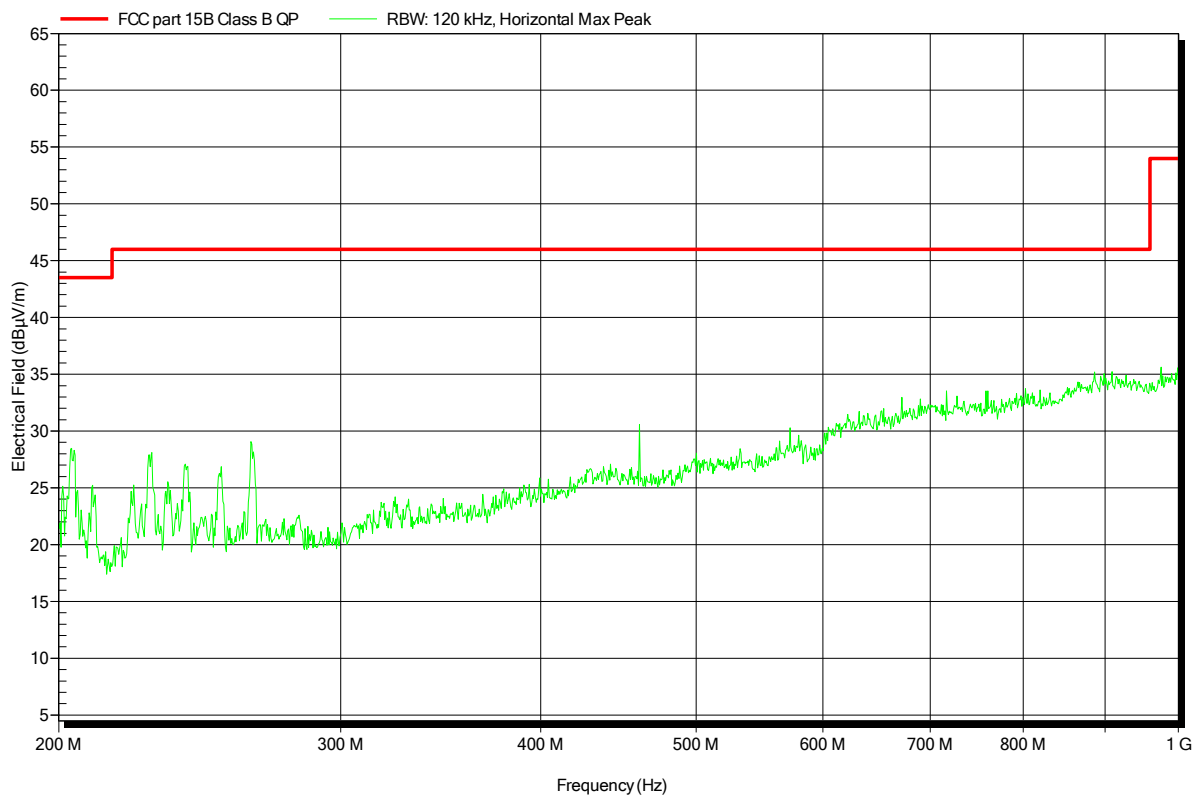
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	BLE+USB
Test Date:	2015-04-14
Note:	

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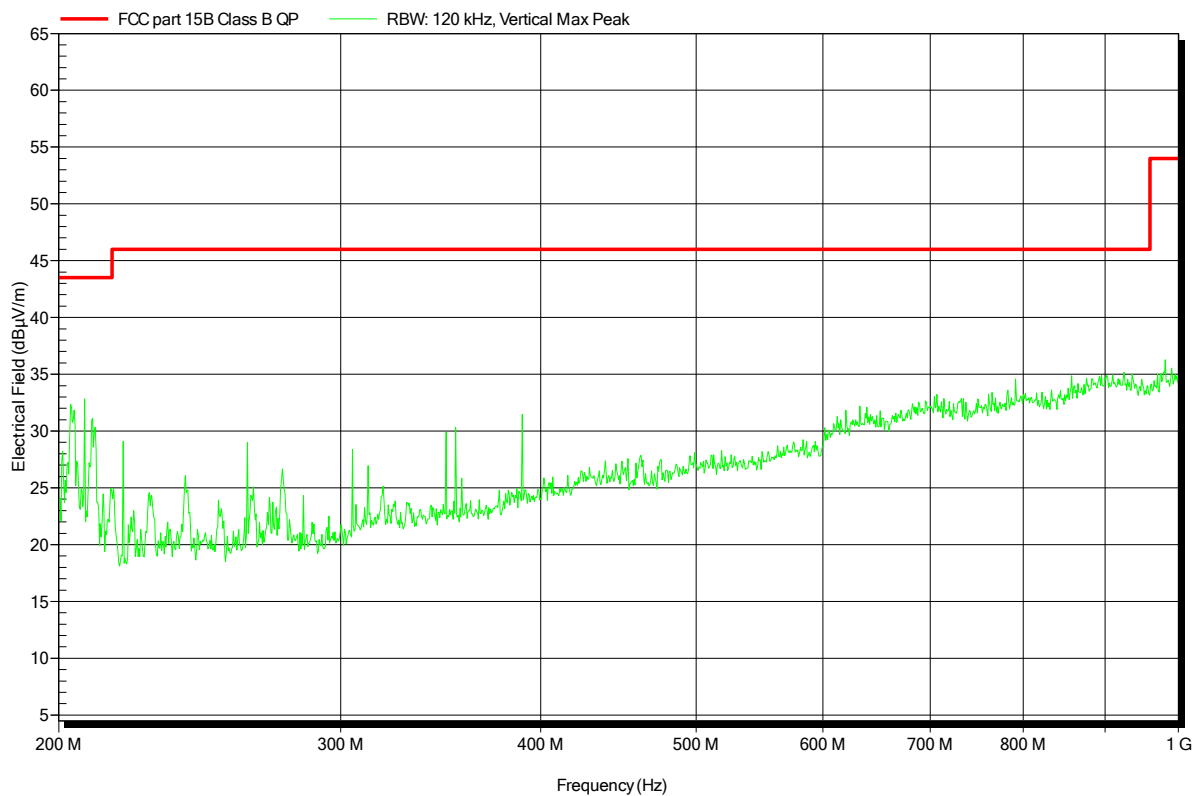


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant:	SMT&Hybrid GmbH
EUT Name:	Datenlogger
Model:	MONI LOG data link sensor
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Yu
Test Conditions:	Tnom: 23°C, Unom: 12VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	BLE+USB
Test Date:	2015-04-14
Note:	

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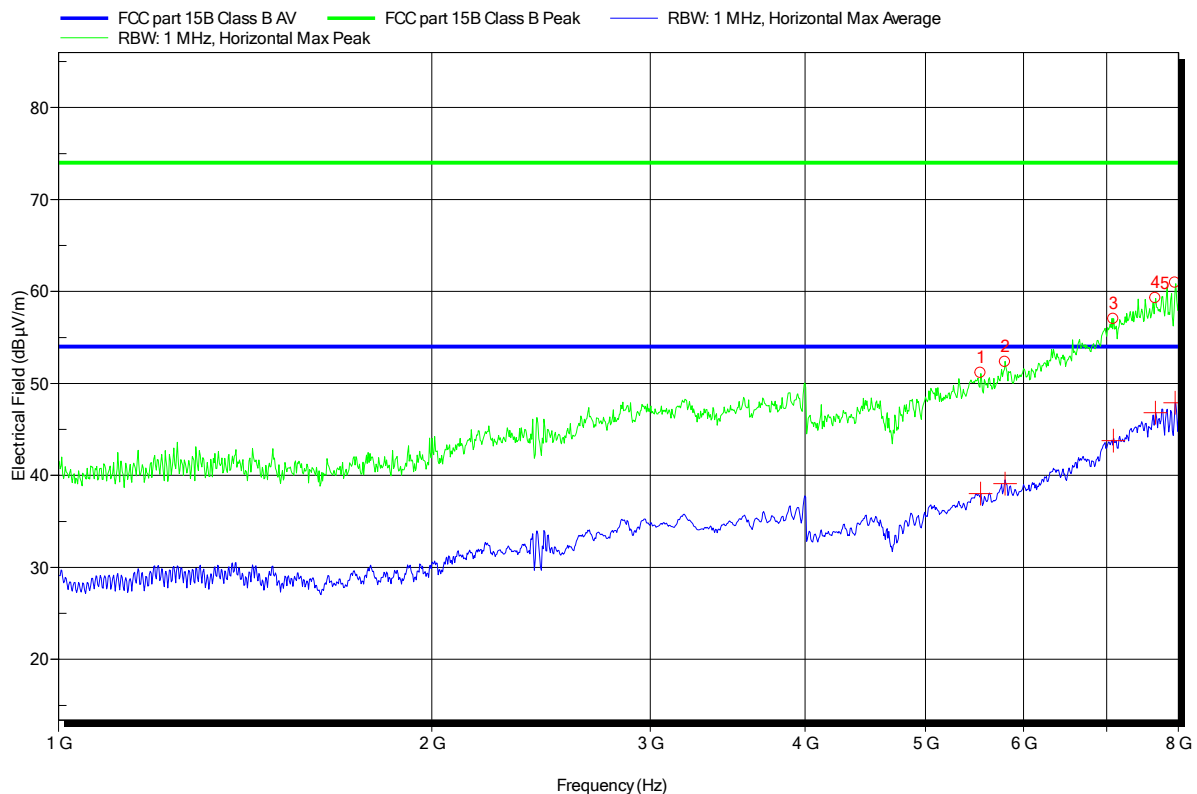


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: BLE+USB
 Test Date: 2015-04-14
 Note:

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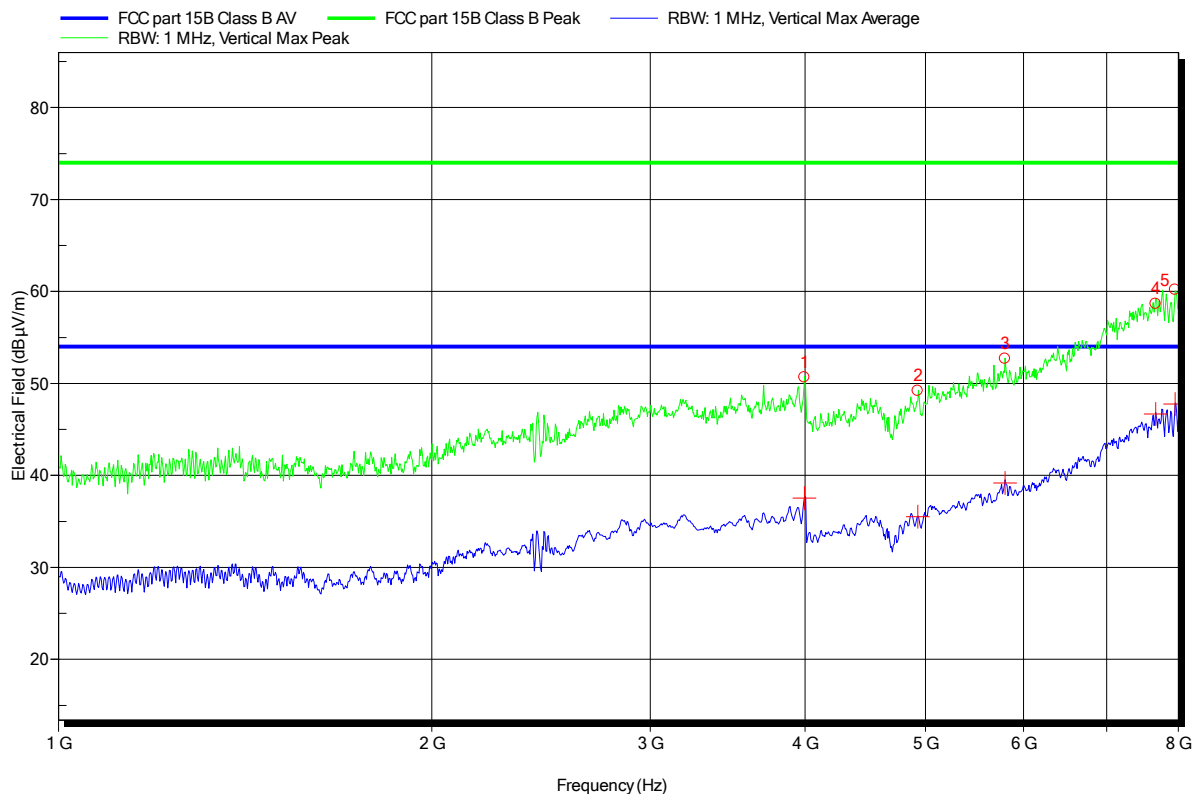
Frequency	Average	Average Limit	Average Difference	Average Status
5.54 GHz	38.02 dBµV/m	54 dBµV/m	-15.98 dB	Pass
5.798 GHz	39.12 dBµV/m	54 dBµV/m	-14.88 dB	Pass
7.09 GHz	43.77 dBµV/m	54 dBµV/m	-10.23 dB	Pass
7.663 GHz	46.81 dBµV/m	54 dBµV/m	-7.19 dB	Pass
7.949 GHz	47.9 dBµV/m	54 dBµV/m	-6.1 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: BLE+USB
 Test Date: 2015-04-14
 Note:

Index 6



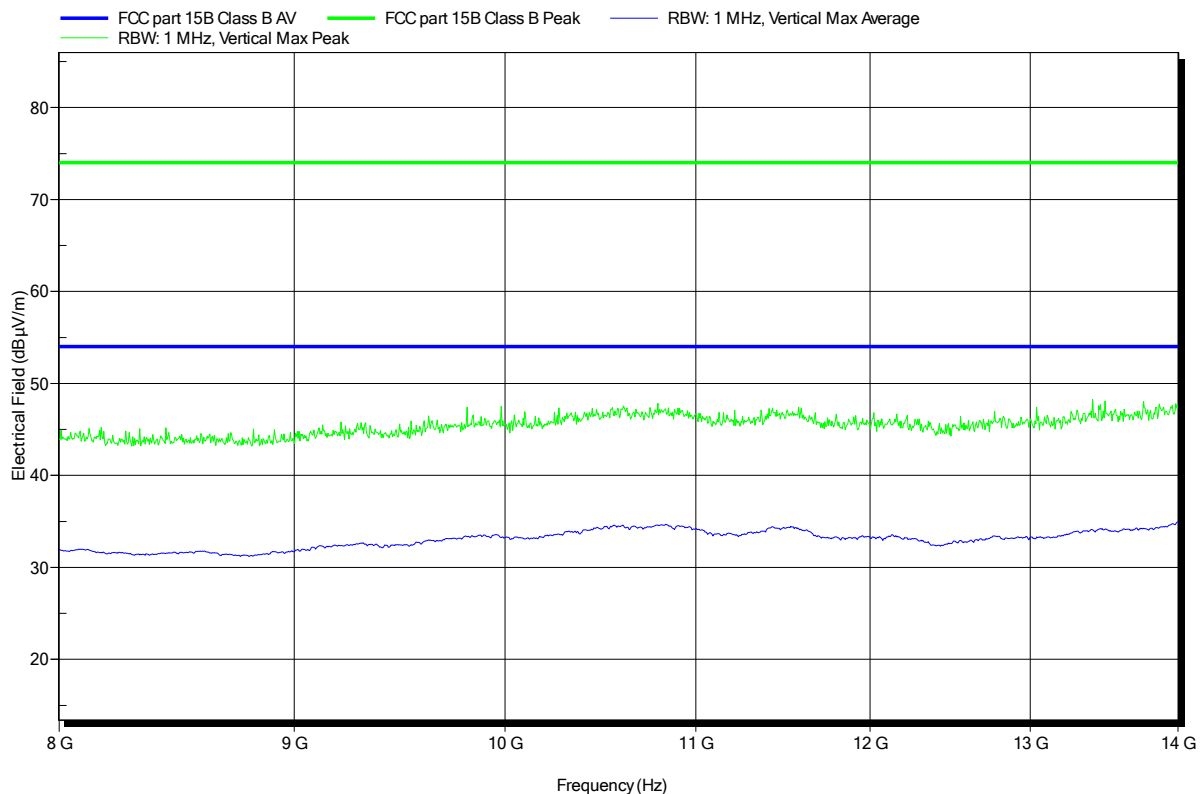
Frequency	Average	Average Limit	Average Difference	Average Status
3.995 GHz	37.55 dBµV/m	54 dBµV/m	-16.45 dB	Pass
4.931 GHz	35.53 dBµV/m	54 dBµV/m	-18.47 dB	Pass
5.797 GHz	39.18 dBµV/m	54 dBµV/m	-14.82 dB	Pass
7.668 GHz	46.68 dBµV/m	54 dBµV/m	-7.32 dB	Pass
7.95 GHz	47.75 dBµV/m	54 dBµV/m	-6.25 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3m
 Mode: BLE+USB
 Test Date: 2015-04-14
 Note:

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Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1502-4503

Applicant: SMT&Hybrid GmbH
 EUT Name: Datenlogger
 Model: MONI LOG data link sensor
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Yu
 Test Conditions: Tnom: 23°C, Unom: 12VDC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3m
 Mode: BLE+USB
 Test Date: 2015-04-14
 Note:

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