

FCC TEST REPORT

FCC 47 CFR Part 15C **ISED RSS-247**

Frequency hopping systems operating within the 2400 - 2483.5 MHz band

Report Reference No.: G0M-1612-6168-TFC247BT-V01

Testing Laboratory Eurofins Product Service GmbH

Storkower Str. 38c Address:

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 eResearch Technology GmbH

Address: Sieboldstrasse 3

> 97230 Estenfeld **GERMANY**

Test specification:

Standard.....: 47 CFR Part 15C

RSS-247, Issue 1, 2015-05

Test scope.....: partial Radio compliance test

Equipment under test (EUT):

Product description Asthma Monitor AM3

Model No. AM3 Option G+

Additional Model(s) None Brand Name(s) None Hardware version 1.0 Firmware / Software version 9.40

> IC: 11335A-AM3G02 FCC-ID: 2AAUFAM3G02

Test result **Passed**



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:

Test Lab Temperature 20 – 23 °C

Test Lab Humidity.....: 32 – 38 %

Date of receipt of test item...... 2016-12-23

Compiled by Sebastian Suckow

Tested by (+ signature) Sebastian Suckow

(Responsible for Test)

Approved by (+ signature).....: Christian Weber

Date of issue 2017-01-31

Total number of pages 76

General remarks:

(Head of Lab)

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:

Test case reduction on radiated measurements only is based on the requirements for host integration for full modular approved transmitter modules (KDB 996369 D02) used by the EUT. The EUT uses a module with full modular approval according to FCC and ISED rules. For details about the radio module see EUT description in section 1.

C. Weser



Version History

Version	Issue Date	Remarks	Revised by
01	2017-01-31	Initial Release	



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1 Equipment (Test item) Description

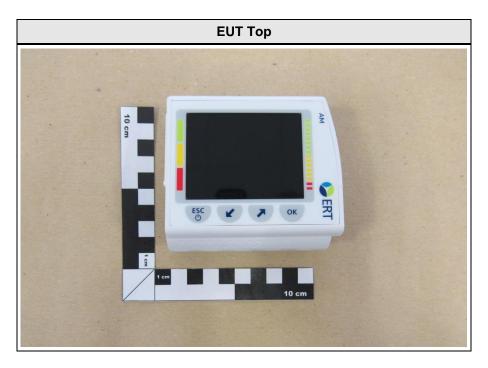
Description	Asthma Monitor	AM3	
Model	AM3 Option G+		
Additional Model(s)	None		
Brand Name(s)	None		
Serial number	None		
Hardware version	1.0		
Software / Firmware version	9.40		
PMN	N/A		
HVIN	AM3 Option G+		
FVIN	N/A		
HMN	N/A		
FCC-ID	2AAUFAM3G02		
IC	11335A-AM3G0	2	
Equipment type	End product		
Radio type	Transceiver		
Radio technology	Bluetooth		
Operating frequency range	2402 - 2480 MHz		
Assigned frequency band	2400 - 2483.5 MHz		
	F _{LOW}	2402 MHz	
Main test frequencies	F _{MID}	2441 MHz	
	F _{HIGH}	2480 MHz	
Spreading	FHSS		
Modulations	GFSK, PI/4-DQI	PSK, 8-PSK	
Number of channels	79 hopping char	nnels at all	
Channel spacing	1 MHz		
Number of antennas	1		
	Туре	Bluetooth Module	
	Model	BT121	
	Manufacturer	Silicon Labs (former Blue Giga)	
Radio module	HW Version	unspecified	
	SW Version	unspecified	
	FCC-ID	QOQBT121	
	IC	5123A-BGTBT121	
	Туре	integrated	
Antenna	Model	BT121	
Antellia	Manufacturer	Silicon Labs	
	Gain	+1 dBi (manufacturer declaration)	

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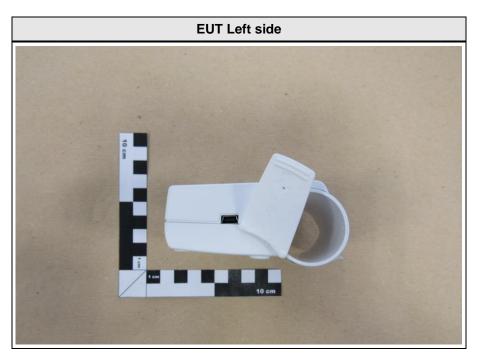
Manufacturer	eResearch Technology GmbH Sieboldstrasse 3 97230 Estenfeld GERMANY	
Power supply	V _{NOM} V _{MIN} V _{MAX}	3.7 VDC N/R N/R
AC/DC-Adaptor	Model Vendor Input Output	WR9QA1200MUNMRVG2773 GlobTek Inc. 100 - 240 5.0

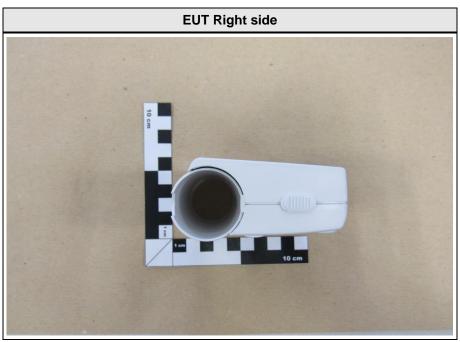


1.1 Photos – Equipment External







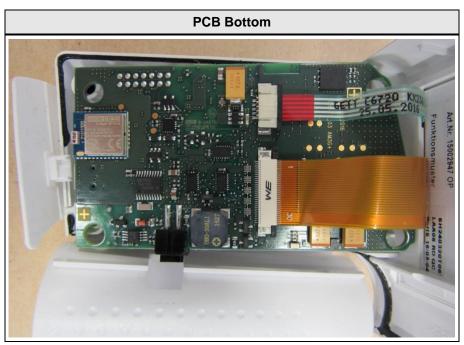


Test Report No.: G0M-1612-6168-TFC247BT-V01



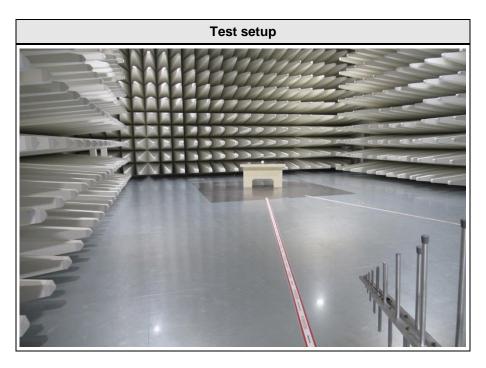
1.2 Photos – Equipment internal

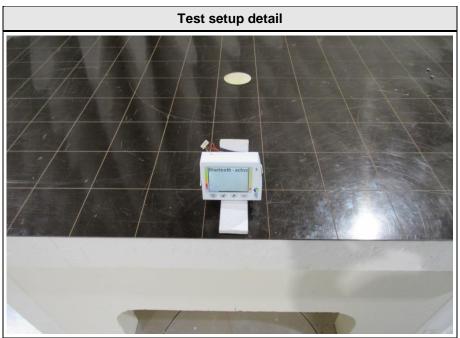






1.3 Photos – Test setup







1.4 Supporting Equipment Used During Testing

Product Type*	Device Mani		Model No.	Comments
AE	Notebook	DELL	S/N 2FMM5R1	Used for signaling

*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
	General conditions:	EUT powered by laboratory power supply.
DH5-Sngl	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = GFSK Packet type = DH5 Data rate = 1 Mbps Duty cycle = 77 % Power level = Maximum
	General conditions:	EUT powered by laboratory power supply.
2DH5-Sngl	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = π/4-DQPSK Packet type = 2DH5 Data rate = 2 Mbps Duty cycle = 77 % Power level = Maximum
	General conditions:	EUT powered by laboratory power supply.
3DH5-Sngl	Radio conditions:	Mode = standalone transmit Spreading = Hopping stopped (single hopping channel) Modulation = 8-DPSK Packet type = 3DH5 Data rate = 3 Mbps Duty cycle = 77 % Power level = Maximum
	General conditions:	EUT powered by laboratory power supply.
Receive	Radio conditions:	Mode = standalone receive Spreading = Hopping



1.6 Test Equipment Used During Testing

Measurement Software					
Description	Manufacturer	Name	Version		
EMC Test Software	Dare Instruments	Radimation	2015.2.4		

Occupied Bandwidth						
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due	
Spectrum Analyzer	R&S	FSP 30	EF00312	2016-02	2017-02	

Radiated spurious emissions							
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due		
Semi-anechoic chamber	Frankonia	AC 6	EF00899	-	-		
Spectrum Analyzer	R&S	FSIQ26	EF00242	2016-04	2017-04		
Biconical Antenna	R&S	HK 116	EF00012	2016-05	2019-05		
LPD Antenna	R&S	HL 223	EF00187	2016-05	2019-05		
LPD Antenna	R&S	HL 025	EF00327	2015-10	2018-10		



1.7 Sample emission level calculation

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

Reading:

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

A.F.:

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

Reading on Analyzer (dB μ V) + A.F. (dB) = Net field strength (dB μ 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 $dB\mu V/m$). The FCC limits are given in units of $\mu V/m$. The following formula is used to convert the units of $\mu V/m$ to $dB\mu V/m$:

Limit (dB μ V/m) = 20*log (μ 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 dB μ V + 26 dB = 47.5 dB μ V/m : 47.5 dB μ V/m - 57.0 dB μ V/m = -9.5 dB



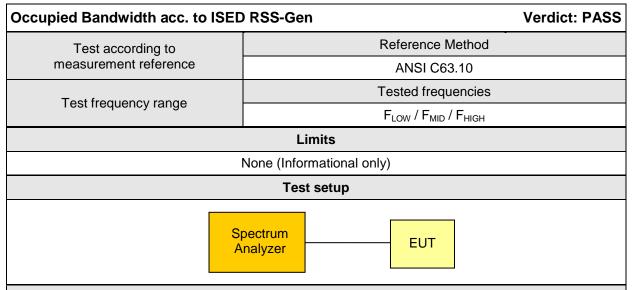
2 Result Summary

	FCC 47 CFR Part 15C, ISED RSS-247						
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks			
RSS-Gen 6.6	Occupied Bandwidth	ANSI C63.10	N/R	Informational only			
FCC § 15.247(a)(1) ISED RSS-247 § 5.1	20 dB Bandwidth	ANSI C63.10	N/T				
FCC § 15.247(a)(1)(iii) ISED RSS-247 § 5.1	Number of hopping frequencies	ANSI C63.10	N/T				
FCC § 15.247(a)(1) ISED RSS-247 § 5.1	Frequency hopping channel separation	ANSI C63.10	N/T				
FCC § 15.247(a)(1)(iii) ISED RSS-247 § 5.1	Time of occupancy (Dwell time)	ANSI C63.10	N/T				
FCC § 15.247(b)(1) ISED RSS-247 § 5.4	Maximum peak conducted power	ANSI C63.10	N/T				
47 CFR 15.207 ISED RSS-247 § 3.1	AC power line conducted emissions	ANSI C63.4	N/R	No powered (directly or indirectly) via AC-Mains			
FCC § 15.247(d) ISED RSS-247 § 5.5	Band edge compliance	ANSI C63.10	N/T				
FCC § 15.247(d) ISED RSS-247 § 5.5	Conducted spurious emissions	ANSI C63.10	N/T				
FCC § 15.247(d) FCC § 15.209 ISED RSS-247 § 5.5	Transmitter radiated spurious emissions	ANSI C63.10	PASS				
ISED RSS-247 § 3.1	Receiver radiated spurious emissions	ANSI C63.10	PASS				
Remarks:							



3 Test Conditions and Results

3.1 Test Conditions and Results - Occupied Bandwidth



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 [MHz]				
F _{LOW}	2402	DH5-Sngl	0.831				
F _{MID}	2441	DH5-Sngl	0.832				
F _{HIGH}	2480	DH5-Sngl	0.832				
F _{LOW}	2402	2DH5-Sngl	1.202				
F _{MID}	2441	2DH5-Sngl	1.192				
F _{HIGH}	2480	2DH5-Sngl	1.202				
F _{LOW}	2402	3DH5-Sngl	1.192				
F _{MID}	2441	3DH5-Sngl	1.192				
F _{HIGH}	2480	3DH5-Sngl	1.202				
Comments:							



Occupied Bandwidth - DH5-Sngl F_{Low}

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

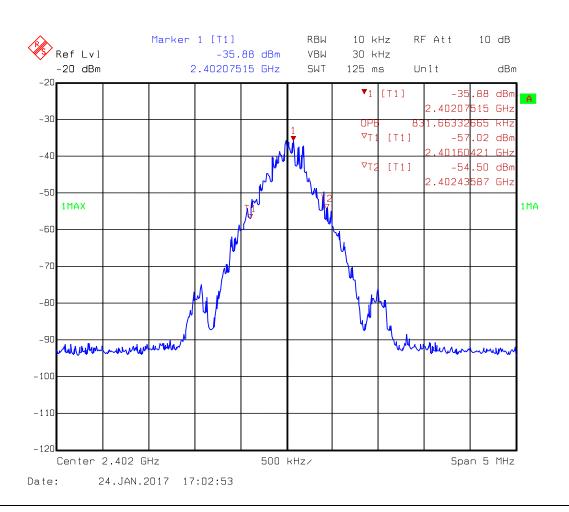
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT DH5 2402 MHz

Test Date: 2017-01-24





Occupied Bandwidth - DH5-Sngl F_{MID}

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

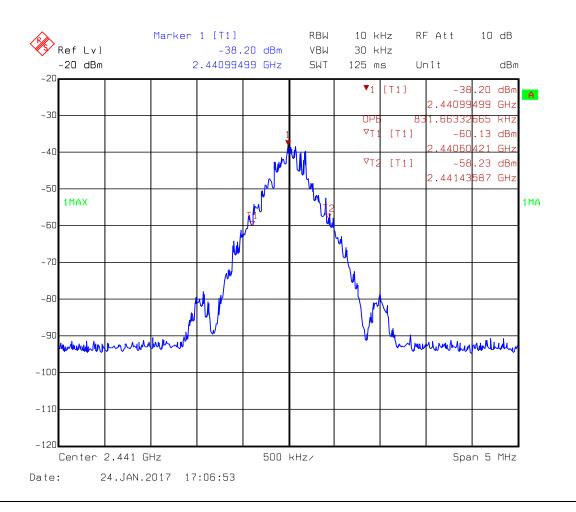
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT DH5 2441 MHz

Test Date: 2017-01-24





Occupied Bandwidth - DH5-Sngl F_{HIGH}

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

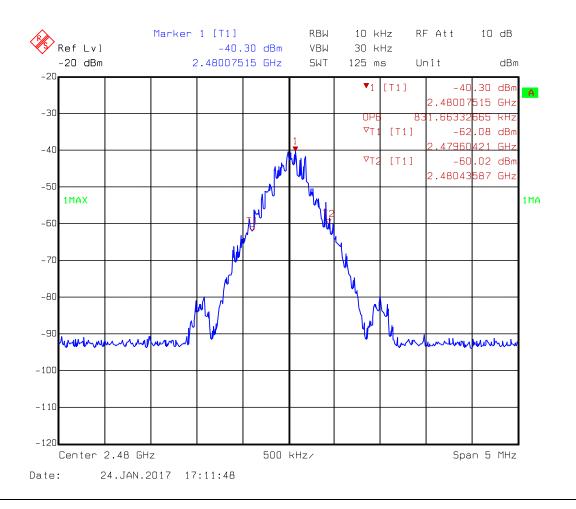
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT DH5 2480 MHz

Test Date: 2017-01-24





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

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 2DH5 2402 MHz

Test Date: 2017-01-24





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

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 2DH5 2441 MHz

Test Date: 2017-01-24





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

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

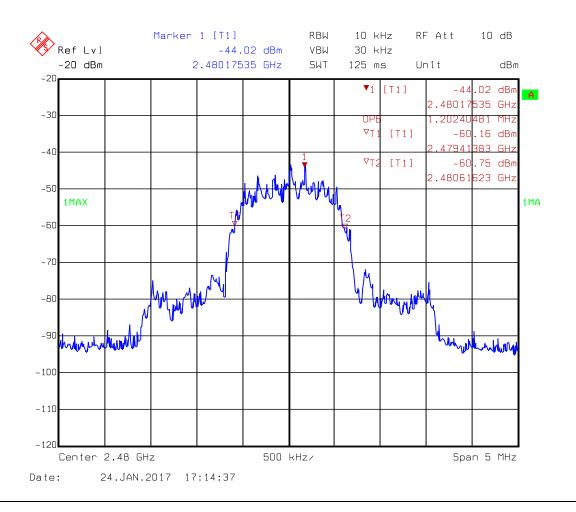
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 2DH5 2480 MHz

Test Date: 2017-01-24





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

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 3DH5 2402 MHz

Test Date: 2017-01-24





Occupied Bandwidth - 3-DH5-Sngl F_{MID}

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

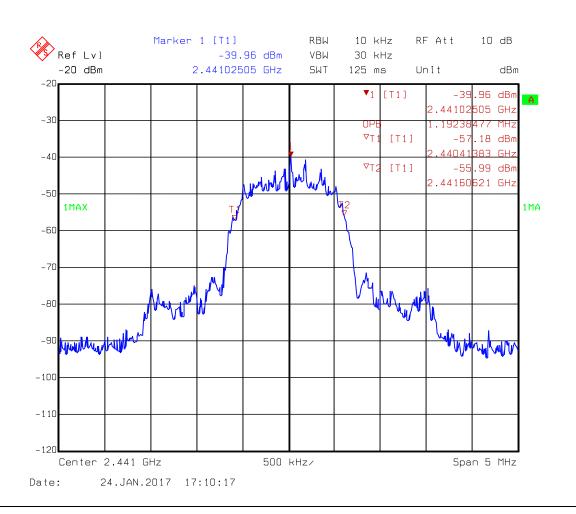
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 3DH5 2441 MHz

Test Date: 2017-01-24





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

Occupied Bandwidth

Project Number: G0M-1612-6168

Applicant: eResearch Technology GmbH

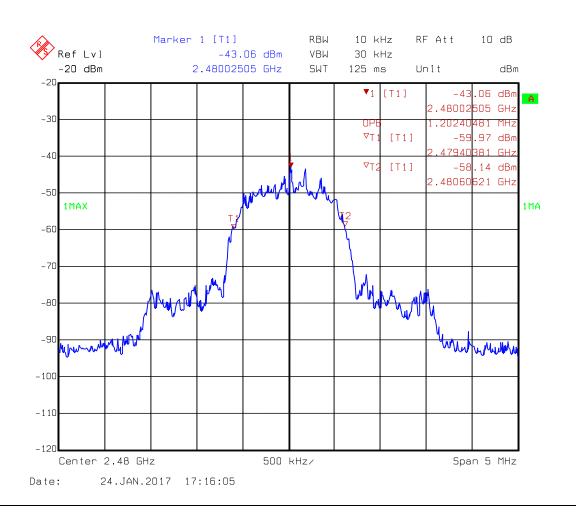
EUT Name: Asthma Monitor AM3

Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Sebastian Suckow
Test Conditions: Tnom / Vnom
Mode: BT 3DH5 2480 MHz

Test Date: 2017-01-24

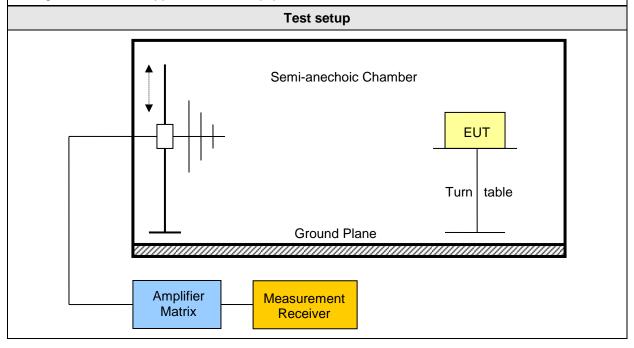




3.2 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated er FCC 47 CFR 15.247 / IS		to		Verdict: PASS	
Test according refe	renced	Re	ference Me	ethod	
standards		FCC 15.24	7(d) / ISED	RSS-247 5.5	
Test according	to	Re	ference Me	thod	
measurement refe	rence		ANSI C63.	10	
Toot fraguancy re	2000	Tested frequencies			
Test frequency ra	ange	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.



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Product Service

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									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2402	3DH5-Sngl	2499	64.03	pk	hor	74.00	3	-09.97
F_{LOW}	2402	3DH5-Sngl	2499	49.95	avg	hor	54.00	3	-04.05
F_{LOW}	2402	3DH5-Sngl	7504	48.87	pk	ver	74.00	3	-25.13
F_{LOW}	2402	3DH5-Sngl	17974	54.84	pk	ver	74.00	3	-19.16
F_{LOW}	2402	3DH5-Sngl	17974	42.13	avg	ver	54.00	3	-11.87
F_{LOW}	2402	3DH5-Sngl	17989	54.78	pk	hor	74.00	3	-19.22
F_{LOW}	2402	3DH5-Sngl	17989	42.43	avg	hor	54.00	3	-11.57
F_{LOW}	2402	3DH5-Sngl	19207	48.99	pk	ver	74.00	3	-25.01
F_{LOW}	2402	3DH5-Sngl	19215	49.72	pk	hor	74.00	3	-24.28
F_{LOW}	2402	3DH5-Sngl	19215	30.51	avg	hor	54.00	3	-23.49
F _{MID}	2441	3DH5-Sngl	2330	47.78	pk	ver	74.00	3	-26.22
F _{MID}	2441	3DH5-Sngl	2383	49.02	pk	hor	74.00	3	-24.98
F _{MID}	2441	3DH5-Sngl	2385	53.19	pk	ver	74.00	3	-20.81
F_{MID}	2441	3DH5-Sngl	2385	26.36	avg	ver	54.00	3	-27.64
F_{MID}	2441	3DH5-Sngl	7320	51.42	pk	ver	74.00	3	-22.58
F _{MID}	2441	3DH5-Sngl	7408	50.62	pk	hor	74.00	3	-23.38
F _{MID}	2441	3DH5-Sngl	14640	56.46	pk	hor	95.00	3	-38.54
F _{MID}	2441	3DH5-Sngl	17992	55.43	pk	ver	74.00	3	-18.57
F_{MID}	2441	3DH5-Sngl	17992	42.35	avg	ver	54.00	3	-11.65
F _{MID}	2441	3DH5-Sngl	17999	54.91	pk	hor	74.00	3	-19.09
F_{MID}	2441	3DH5-Sngl	17999	42.23	avg	hor	54.00	3	-11.77
F _{MID}	2441	3DH5-Sngl	19513	44.61	pk	hor	74.00	3	-29.39
F _{MID}	2441	3DH5-Sngl	19513	47.74	pk	ver	74.00	3	-26.26
F _{HIGH}	2480	3DH5-Sngl	2330	50.09	pk	ver	74.00	3	-23.91
F _{HIGH}	2480	3DH5-Sngl	2389	49.19	pk	hor	74.00	3	-24.81
F _{HIGH}	2480	3DH5-Sngl	2389	51.74	pk	ver	74.00	3	-22.26
F _{HIGH}	2480	3DH5-Sngl	2484	63.31	pk	ver	74.00	3	-10.69
F _{HIGH}	2480	3DH5-Sngl	2484	49.89	avg	ver	54.00	3	-04.11

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Product Service

F_{HIGH}	2480	3DH5-Sngl	2488	62.61	pk	hor	74.00	3	-11.39
F _{HIGH}	2480	3DH5-Sngl	2488	49.90	avg	hor	54.00	3	-04.10
F _{HIGH}	2480	3DH5-Sngl	2506	52.66	pk	ver	95.00	3	-42.34
F _{HIGH}	2480	3DH5-Sngl	7440	50.16	pk	hor	74.00	3	-23.84
F _{HIGH}	2480	3DH5-Sngl	7440	51.33	pk	ver	74.00	3	-22.67
F _{HIGH}	2480	3DH5-Sngl	14868	55.16	pk	hor	95.00	3	-39.84
F _{HIGH}	2480	3DH5-Sngl	14880	51.74	pk	ver	95.00	3	-43.26
F _{HIGH}	2480	3DH5-Sngl	17988	55.41	pk	hor	74.00	3	-18.59
F _{HIGH}	2480	3DH5-Sngl	17988	42.31	avg	hor	54.00	3	-11.69
F _{HIGH}	2480	3DH5-Sngl	17992	54.44	pk	ver	74.00	3	-19.56
F _{HIGH}	2480	3DH5-Sngl	17992	42.30	avg	ver	54.00	3	-11.70
F _{HIGH}	2480	3DH5-Sngl	19831	39.62	pk	hor	74.00	3	-34.38
Comments: * Physical distance between EUT and measurement antenna.									



3.3 Test Conditions and Results - Receiver radiated emissions

ceiver radiated emis	sions acc. to l	SED RSS-247		Verdict: PASS				
Test according refere	enced	Reference Method						
standards		ISED RSS-247 3.1						
Test according to)	Reference Method						
measurement refere	ence	ANSI C63.10						
Toot frequency ren			Tested frequencies					
Test frequency ran	ge	30) MHz – 5 th Harmon	ic				
EUT test mode			Receive					
	<u> </u>	Limits						
requency 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						
		Semi-anechoic Ch	EUT	able				
<u></u> -	_ 	Ground Plane		— ////////////////////////////////////				



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]	Polarisation	Det.	Limit [dbµV/m]	Margin [dbµV/m]		
F _{MID}	No significant spurious emissions								

Comments:

^{*} Physical distance between EUT and measurement antenna.

^{**} Emission level corresponds to ambient noise floor



ANNEX A Transmitter radiated spurious emissions

Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Unom: 3.7 VDC

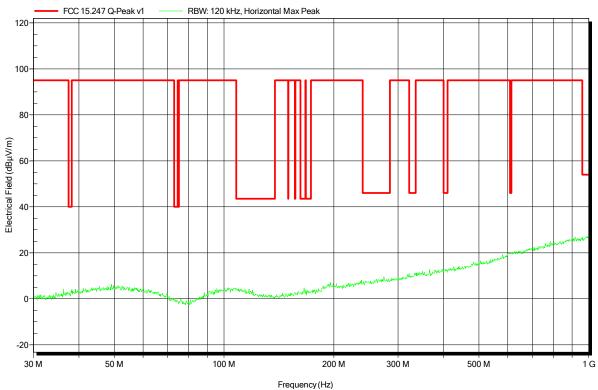
Antenna: Schwarzbeck VULB 9162, Horizontal

Measurement distance: 3 m

Mode: BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

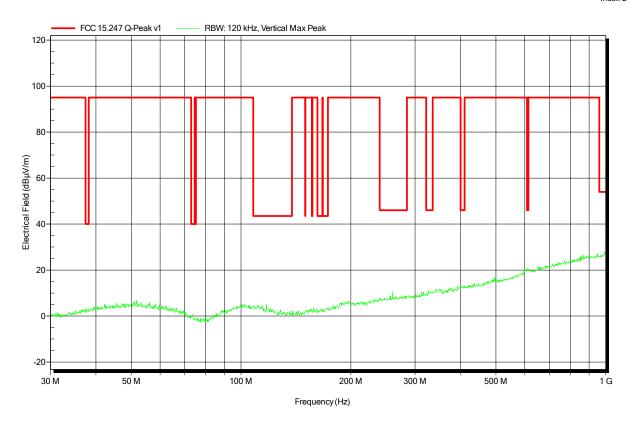
Test Conditions: Tnom: 20°C, Unom: 3.7 VDC
Antenna: Schwarzbeck VULB 9162, Vertical

Measurement distance: 3 n

Mode: BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

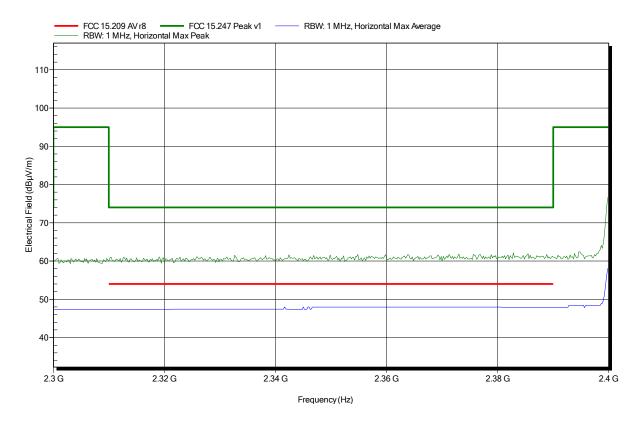
Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

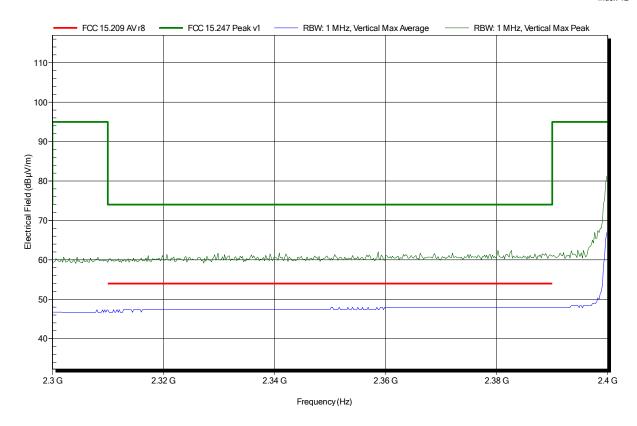
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

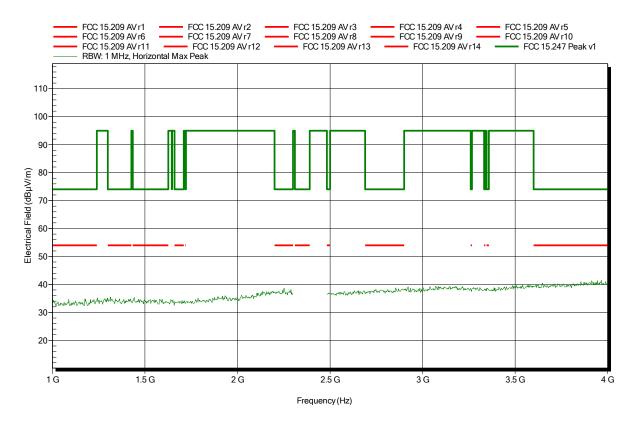
Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

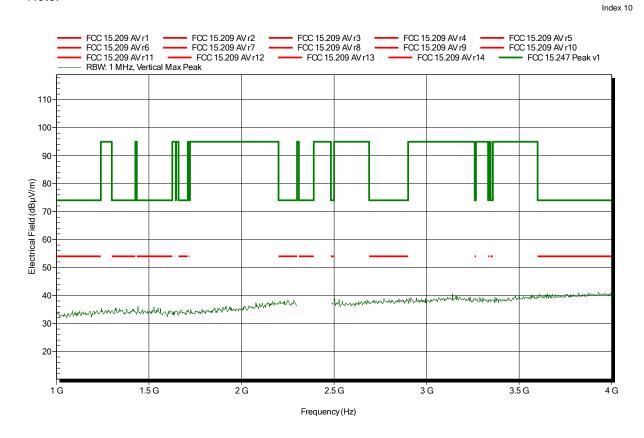
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

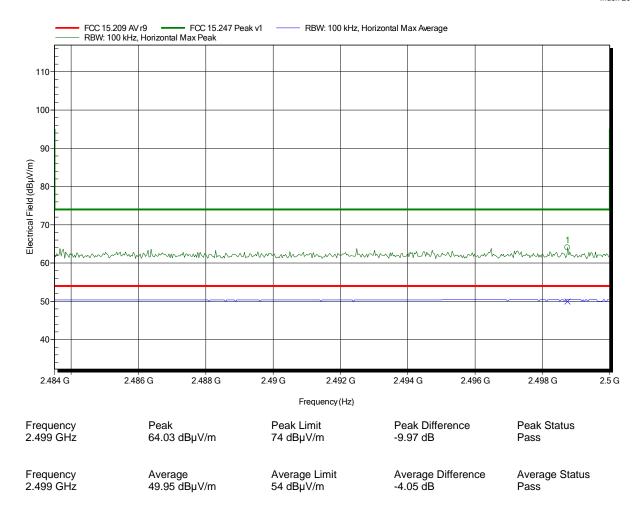
Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

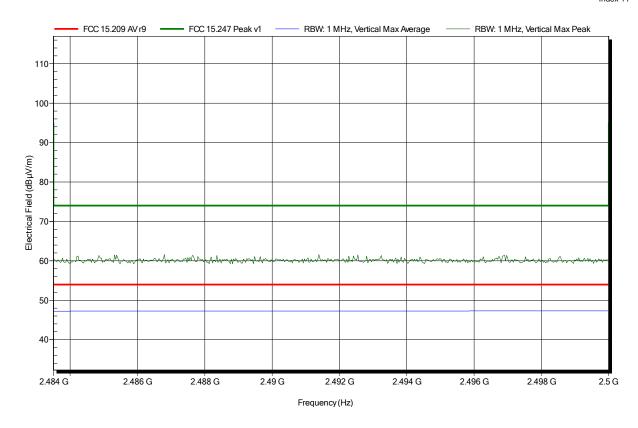
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

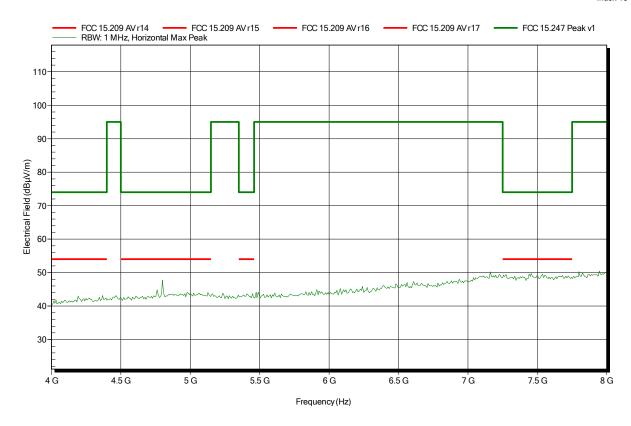
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

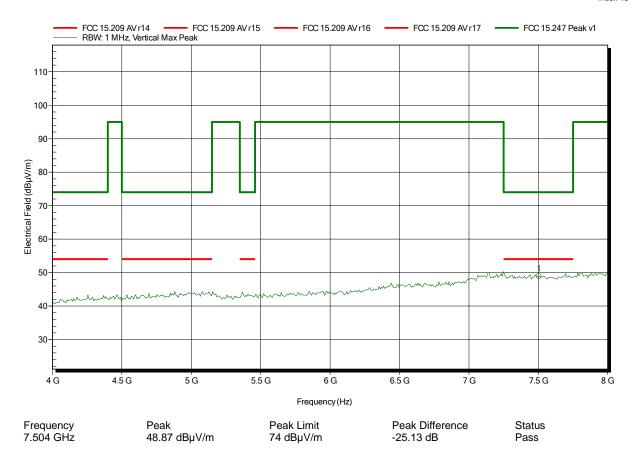
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

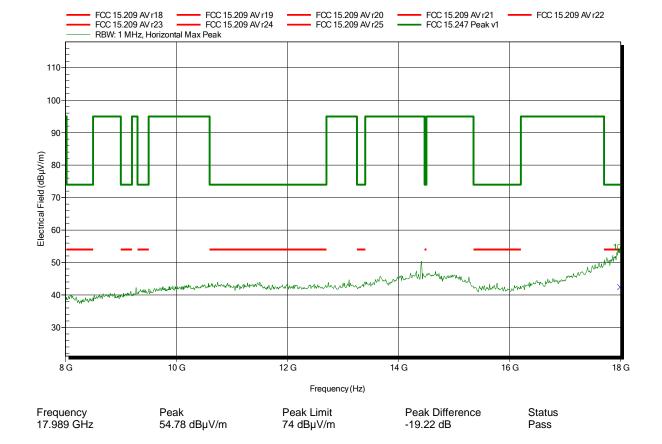
Average

42.43 dBµV/m

Frequency

17.989 GHz

Note:



Average Limit

54 dBµV/m

Average Difference -11.57 dB

Average Status

Pass



Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

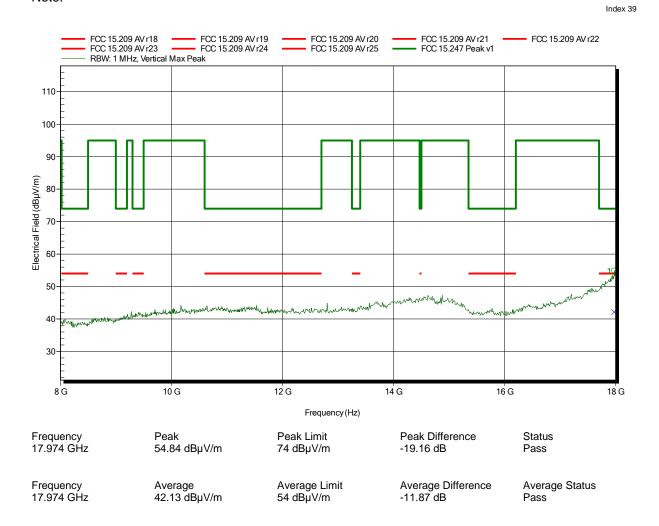
Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions:

Antenna:

Measurement distance:

Mode:

Tnom: 20°C, Vnom: 3.7 VDC

ATH18G40, Horizontal

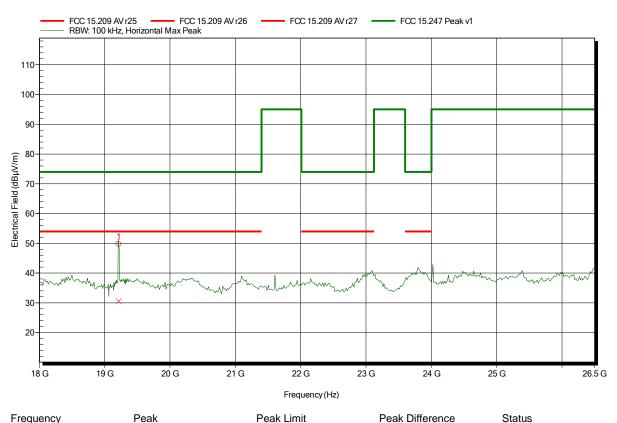
1 m converted to 3m

TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:

Index 48



19.215 GHz 49.72 dB μ V/m 74 dB μ V/m -24.28 dB Pass

Frequency Average Average Limit Average Difference Average Status 19.215 GHz 30.51 dB μ V/m 54 dB μ V/m -23.49 dB Pass



Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

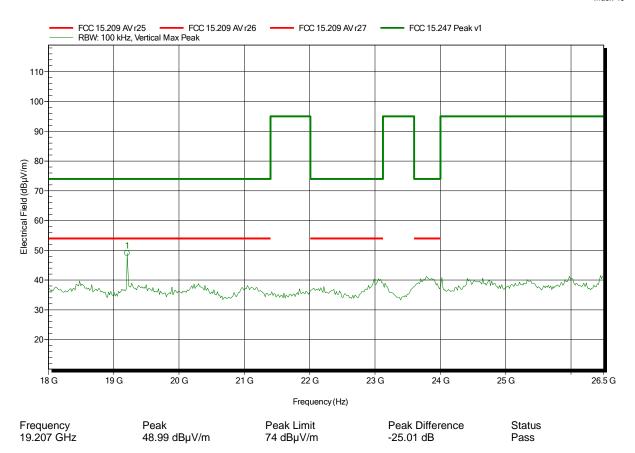
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: ATH18G40, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BT 3DH5 2402 MHz

Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Unom: 3.7 VDC

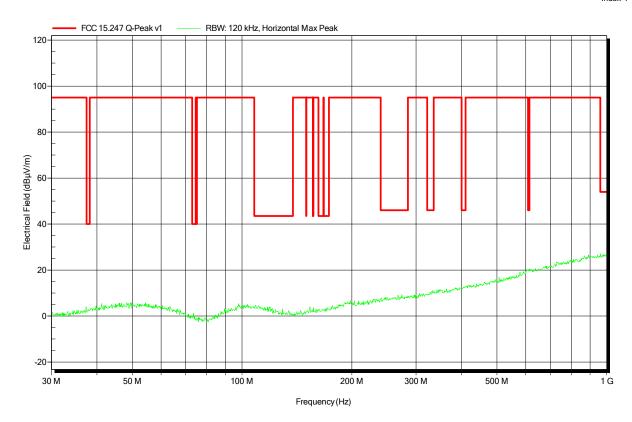
Antenna: Schwarzbeck VULB 9162, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

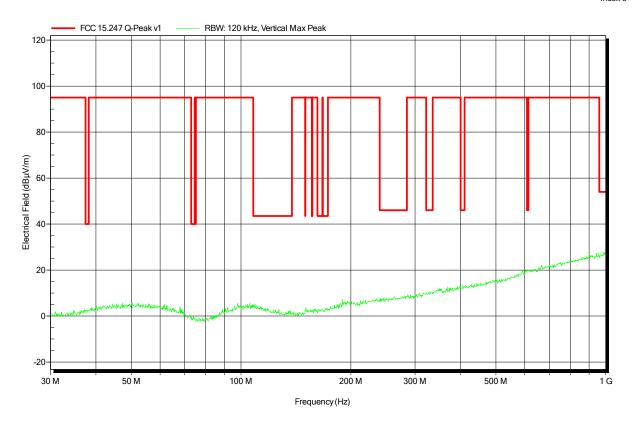
Test Conditions: Tnom: 20°C, Unom: 3.7 VDC
Antenna: Schwarzbeck VULB 9162, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

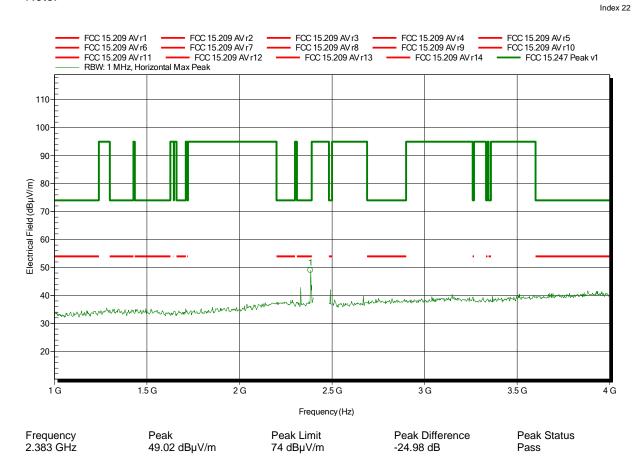
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

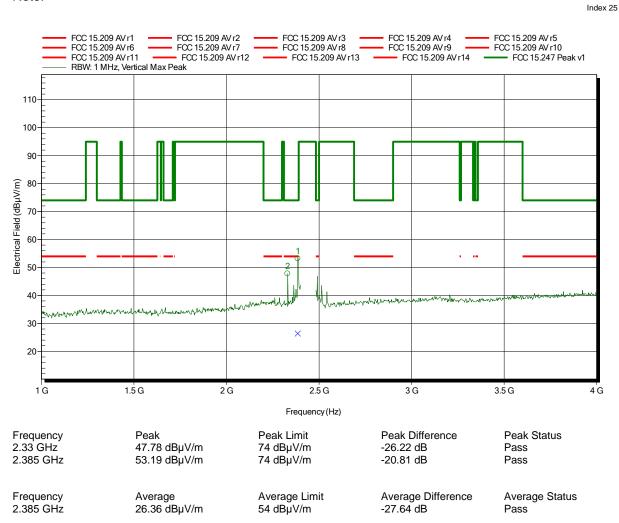
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

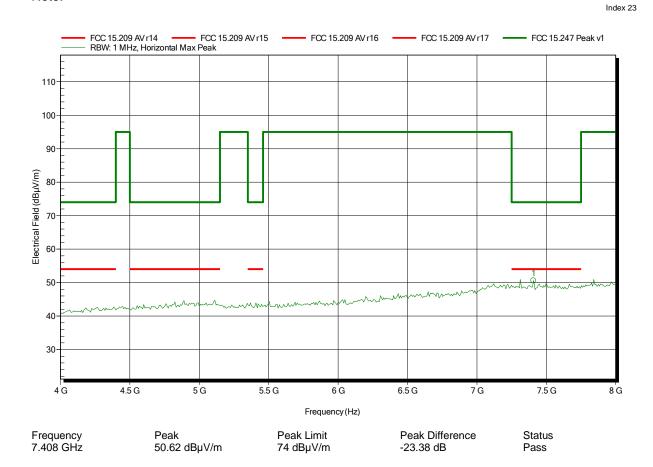
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

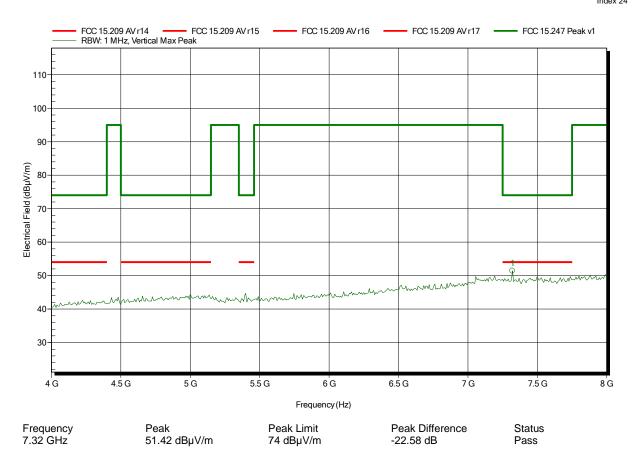
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

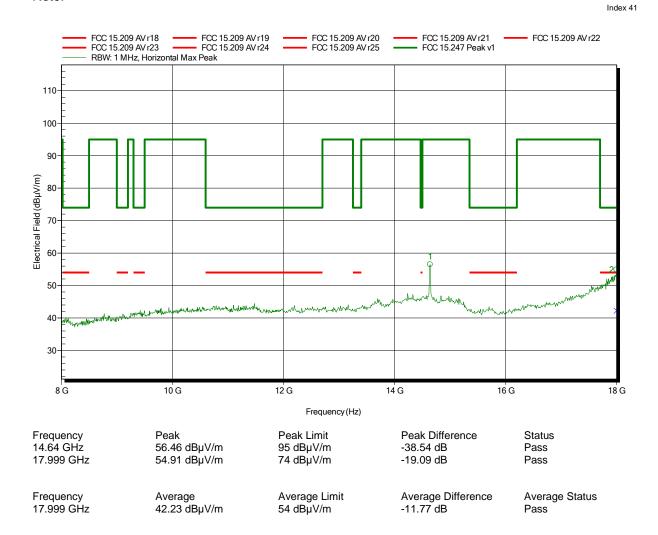
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

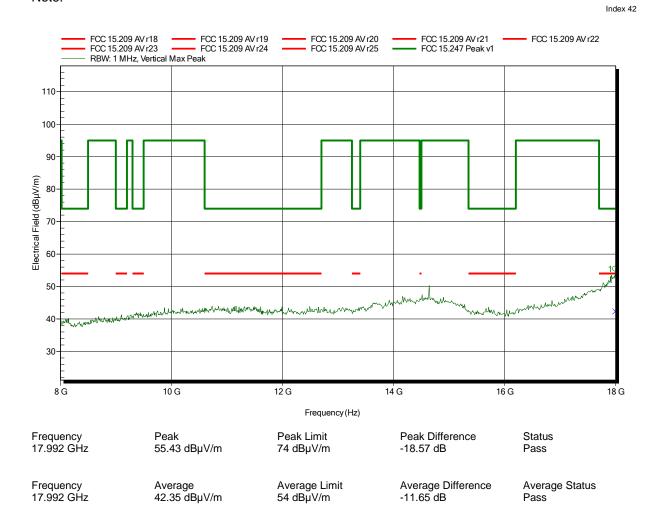
Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions:

Antenna:

Measurement distance:

Mode:

Tnom: 20°C, Vnom: 3.7 VDC

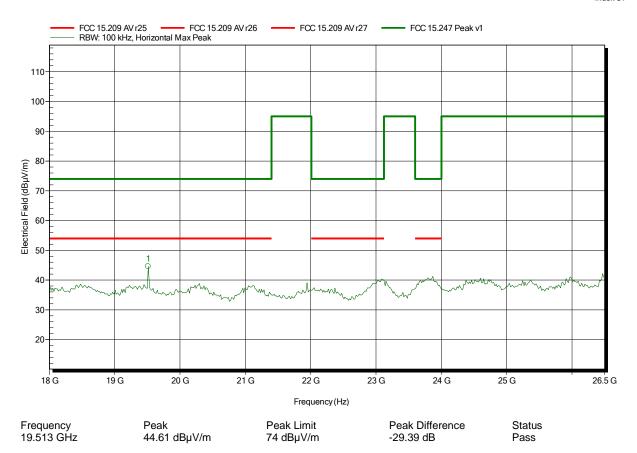
ATH18G40, Horizontal

1 m converted to 3m

TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

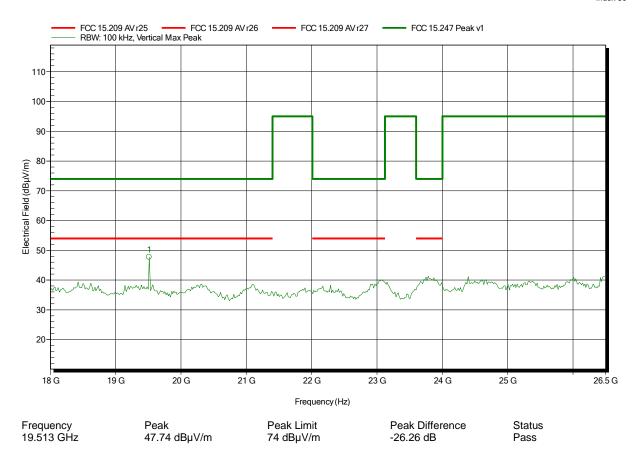
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: ATH18G40, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; BT 3DH5 2441 MHz

Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Unom: 3.7 VDC

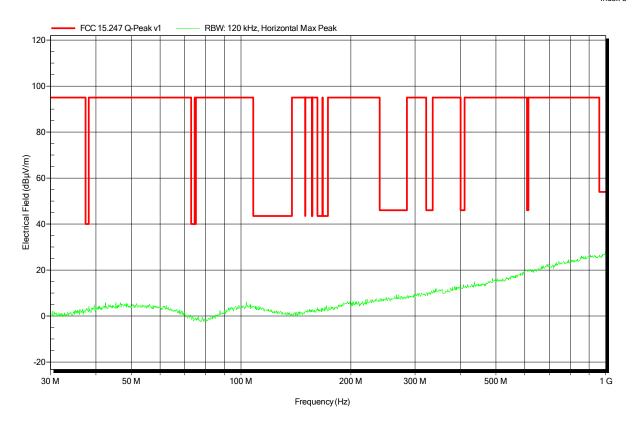
Antenna: Schwarzbeck VULB 9162, Horizontal

Measurement distance: 3 m

Mode: BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

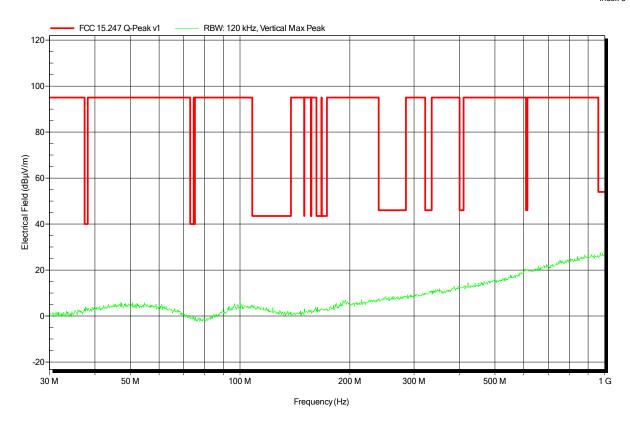
Test Conditions: Tnom: 20°C, Unom: 3.7 VDC
Antenna: Schwarzbeck VULB 9162, Vertical

Measurement distance: 3 n

Mode: BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

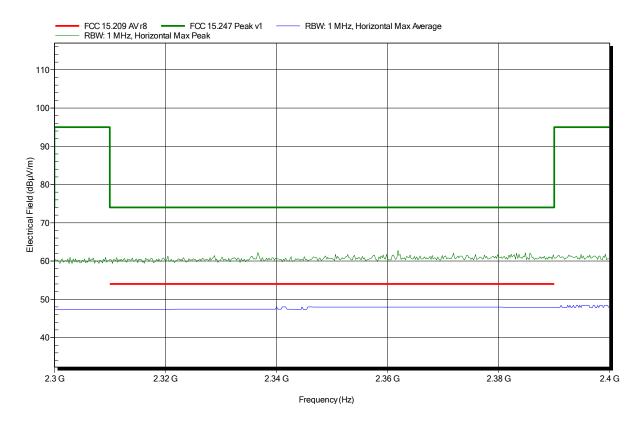
Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

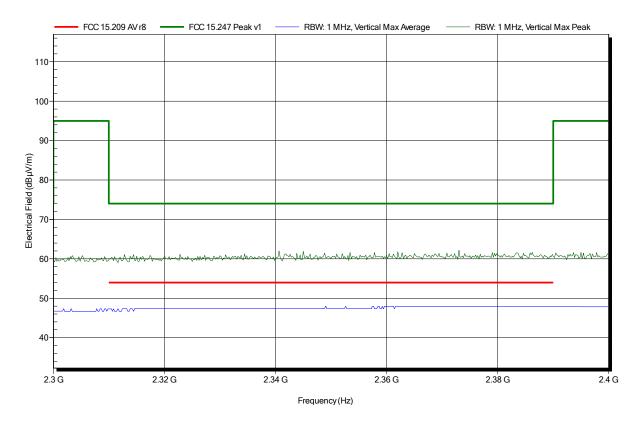
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

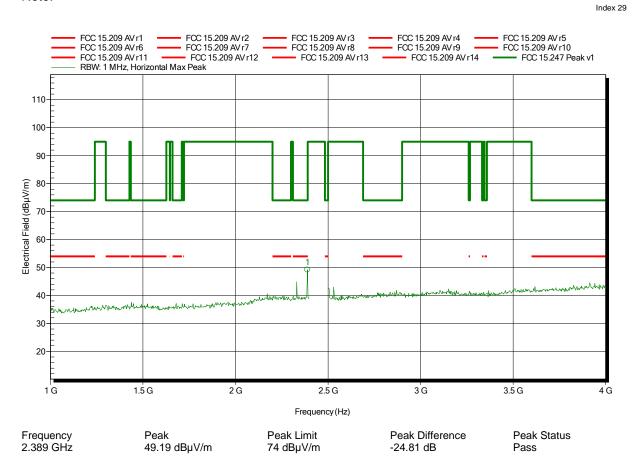
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

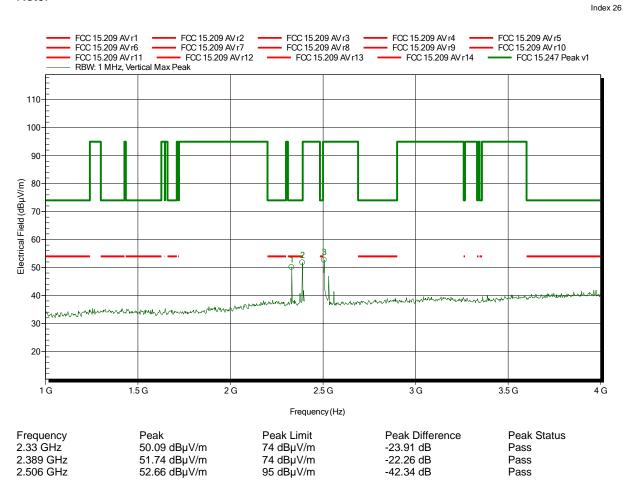
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

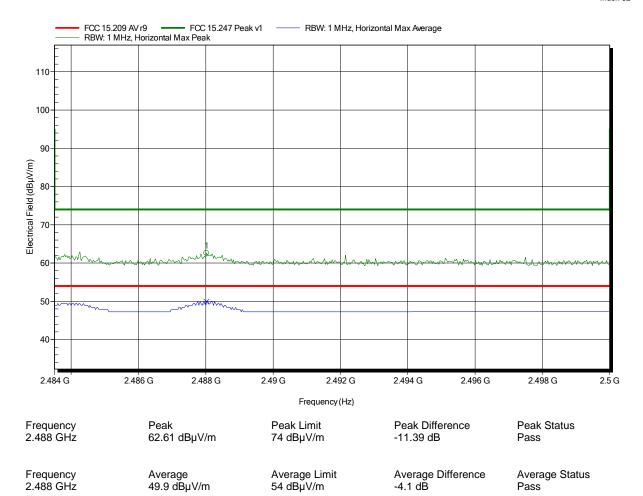
Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

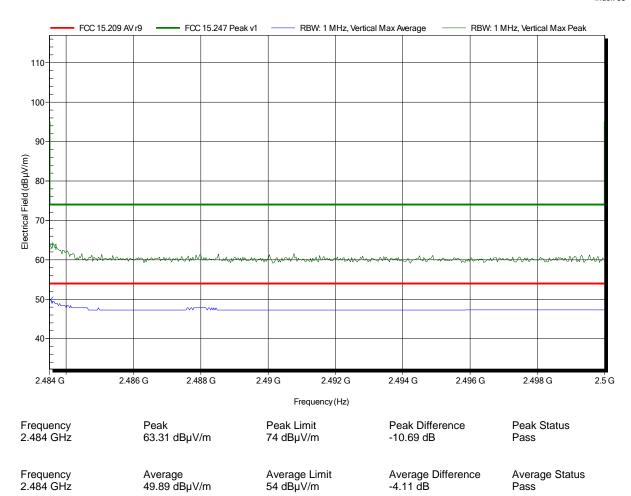
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

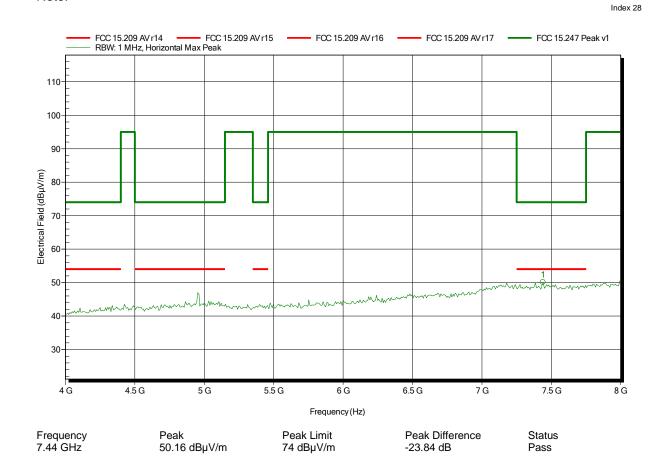
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

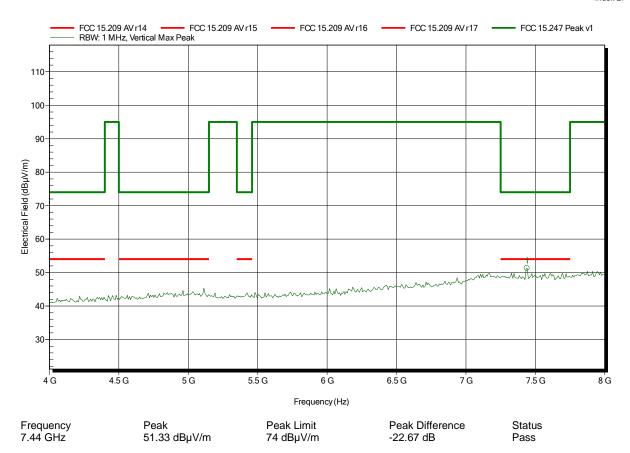
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

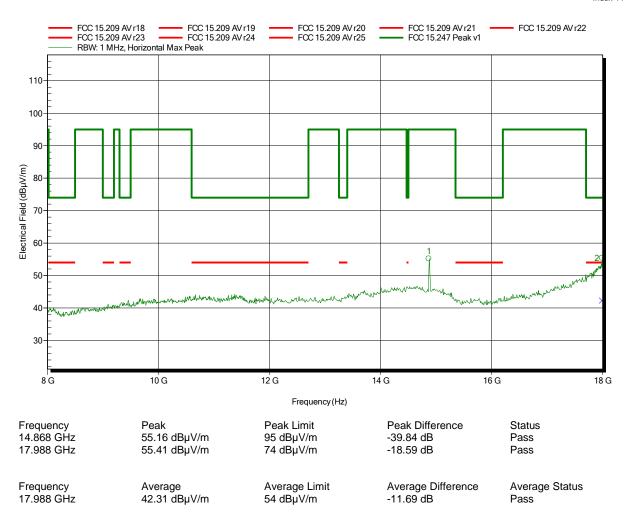
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

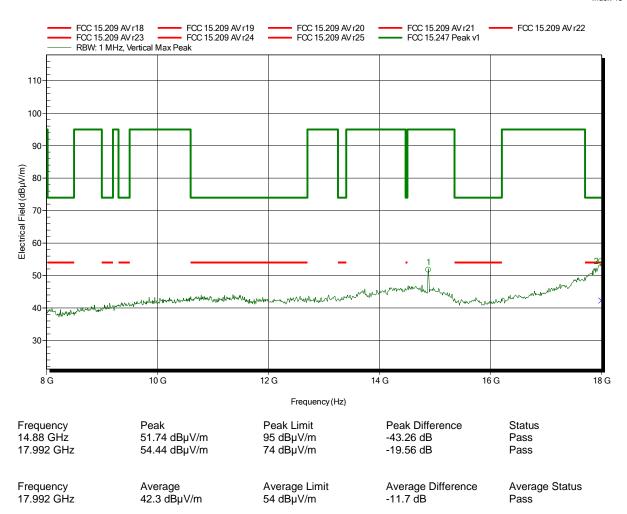
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

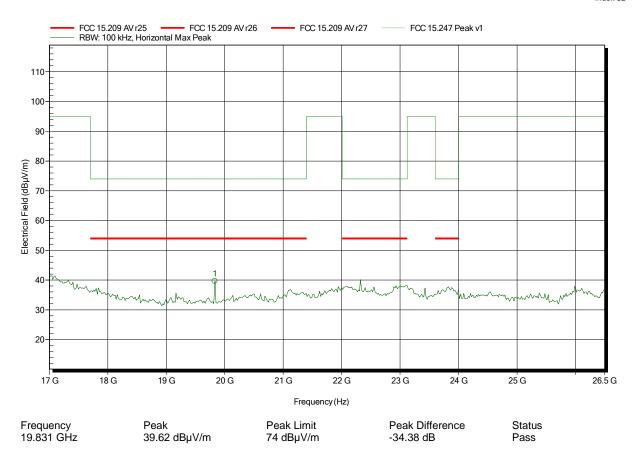
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Amplifier Research AT 4560, Horizontal

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-24

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

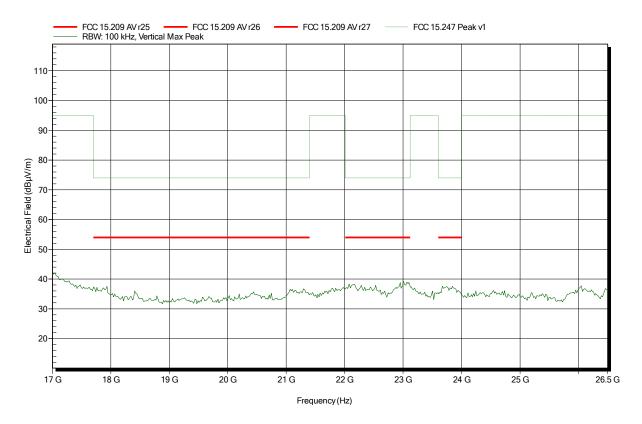
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Amplifier Research AT 4560, Vertical

Measurement distance: 1 m converted to 3m Mode: TX; BT 3DH5 2480 MHz

Test Date: 2017-01-24

Note:





ANNEX B Receiver radiated spurious emissions

Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

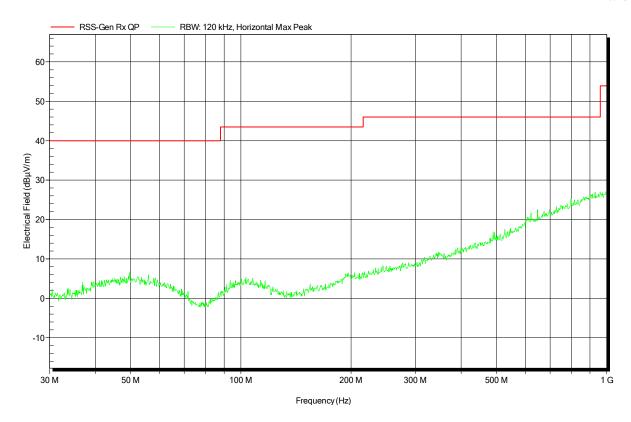
Test Conditions: Tnom: 20°C, Unom: 3.7 VDC

Antenna: Schwarzbeck VULB 9162, Horizontal

Measurement distance: 3 m

Mode: RX; BT 2441 MHz Test Date: 2017-01-23

Note:





Radiated emissions according to FCC 15.247

Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

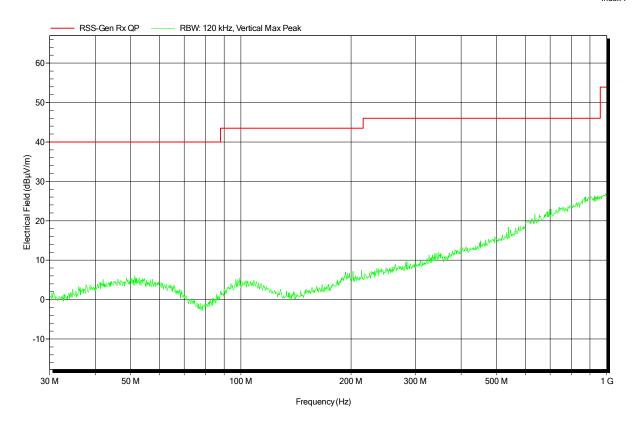
Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Unom: 3.7 VDC
Antenna: Schwarzbeck VULB 9162, Vertical

Measurement distance: 3 m

Mode: RX; BT 2441 MHz Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

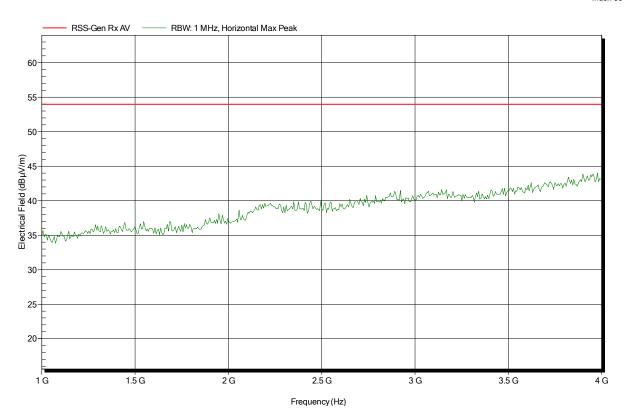
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: RX; BT 2441 MHz Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

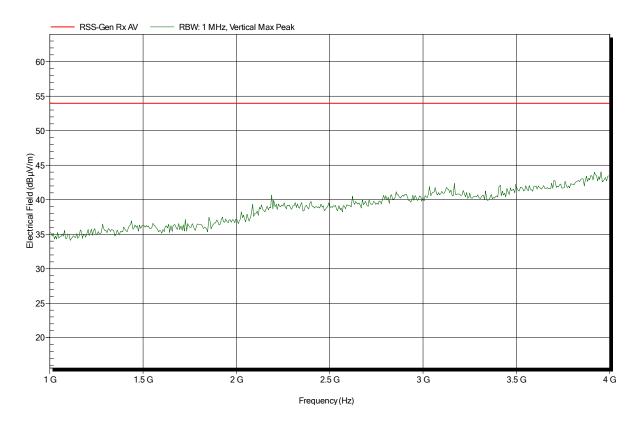
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: RX; BT 2441 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3
Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

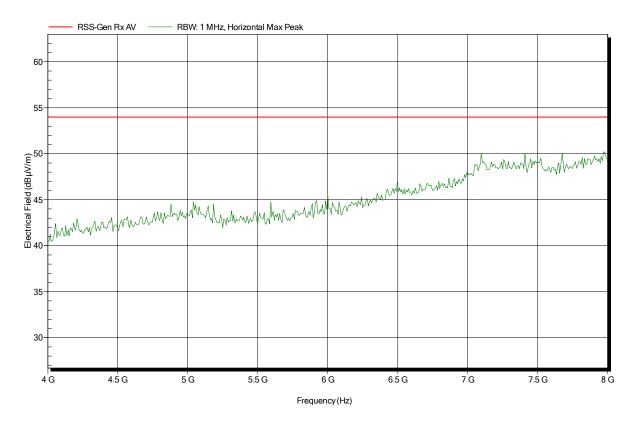
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 3 m

Mode: RX; BT 2441 MHz Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

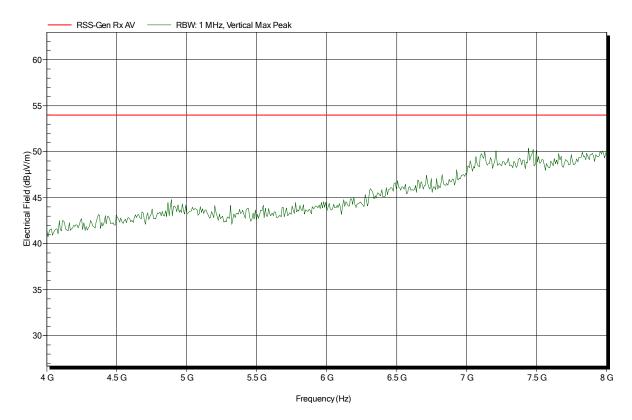
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 3 m

Mode: RX; BT 2441 MHz Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

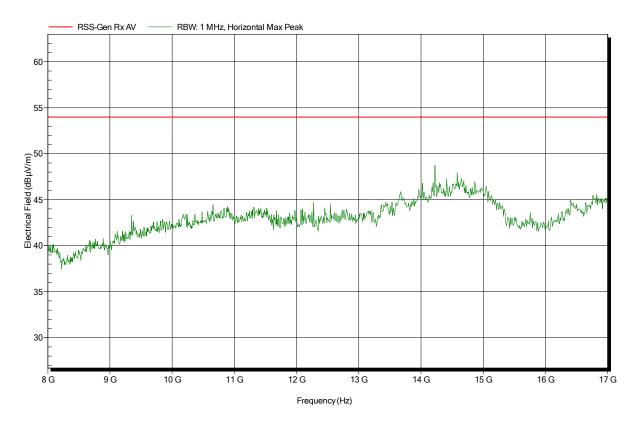
Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC

Antenna: Schwarzbeck BBHA 9120D, Horizontal

Measurement distance: 1 m converted to 3m Mode: RX; BT 2441 MHz

Test Date: 2017-01-23

Note:





Project number: G0M-1612-6168

Applicant: eResearch Technology GmbH

EUT Name: Asthma Monitor AM3 Model: AM3 Option G+

Test Site: Eurofins Product Service GmbH

Operator: Mr. Suckow

Test Conditions: Tnom: 20°C, Vnom: 3.7 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical

Measurement distance: 1 m converted to 3m Mode: RX; BT 2441 MHz

Test Date: 2017-01-23

Note:

