

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-1408-4062-TFC247BT79-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	  A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Applicant's name	Sonetics Corporation
Address	7340 SW Durham Road OR 97224 Portland USA
Test specification:	
Standard	47 CFR Part 15C RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Test scope	complete Radio compliance test
Equipment under test (EUT):	
Product description	Communication Headsets
Model No.	APX379
Additional Model(s)	None
Brand Name(s)	Sonetics
Hardware version	APX379 Rev A (See Additional Information)
Firmware / Software version	Revision A (See Additional Information)
	FCC-ID: V9N950325200V1 IC: 7895A-95032520
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: 2014-09-22

Date (s) of performance of tests: 2014-09-30 - 2014-10-10

Compiled by: Antje Bartusch

Tested by (+ signature).....: Wilfried Treffke
(Responsible for Test) *Wi. Treffke*

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

Date of issue: 2014-12-18

Total number of pages: 90

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:

Page 1 of 2



Subject: Hardware Software/Firmware Declaration

Date: December 01, 2014

Model Number: APX379 DECT & Bluetooth Headset, Revision A

The APX379 Headset shares the same common hardware and software as represented in table A

Table A: Common and Un-common Communication Headset Ear Muff Features	300 Series Model Number		
	APX379	APX377	APX375
Convertible Design: Overhead and Underhelmet	X	X	X
Identical Materials and Headset Muff Design	X	X	X
Waterproof Design	X	X	X
Wired Aux Line In	X	X	X
Internal Sound Dosimeter	X	X	X
Stereo Listen Thru	X	X	X
Automatic Noise Gate	X	X	X
Passive Noise Reduction	X	X	X
Automatic Active Noise Reduction	X	X	X
Voice Prompts	X	X	X
Wireless Bluetooth (Line in)	X		X
Wireless DECT (2 way radio)	X	X	

Sonetics Corporation hereby declares that the above referenced model, submitted to Eurofins for FCC and IC testing, has the following firmware and hardware installed.

APX379 DECT & Bluetooth Headset Revision A (No Headband PIN: 950-3257-00 Revision A)					
Item Reference	Part Number	Description	Qty	BOM Version Revision	Firmware Radio Related?
10	490-4006-00	Firmware, GEN-3 BOOT LOADER	1	A	No
15	490-4016-00	Firmware, APX379, DECT, BT	1	A	Yes
20	490-4009-00	Firmware, BLUETOOTH CONFIG	1	A	Yes
25	490-4012-00	Firmware, RTX1040 RADIO RTX Release Ver 7.0	1	A	Yes
35	490-4015-00	Firmware, VOICEPROMPTS, PP, ENGLISH	1	A	No
40	490-4017-00	Firmware, APX379, CONFIGURATION	1	A	No
5	121-4030-G1	PCBA, APX379, HS, MAIN BOARD	1	G	Hardware
0	121-4031-J1	PCBA, HS-7X, BATTERY BOARD	1	J	Hardware

The above is declares accurate and true as of 12 01, 2014.

Sincerely,



Michael Heade
Quality Assurance Engineer
Regulatory & Product Compliance Engineer
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Version History

Version	Issue Date	Remarks	Revised by
01	2014-12-18	Initial Release	

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1 Equipment (Test item) Description

Description	Communication Headsets	
Model	APX379	
Additional Model(s)	None	
Brand Name(s)	Sonetics	
Serial number	None	
Hardware version	APX379 Rev A (See Additional Information)	
Software / Firmware version	Revision A (See Additional Information)	
FCC-ID	V9N950325200V1	
IC	7895A-95032520	
Equipment type	Radio module	
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	
Number of channels	79 hopping channels at all	
Channel spacing	1 MHz	
Number of antennas	1	
Antenna	Type	integrated
	Model	W3008
	Manufacturer	Pulse
	Gain	1.7
Manufacturer	Sonetics Corporation 7340 SW Durham Road OR 97224 Portland USA	
Power supply	V _{NOM}	3.7 VDC
	V _{MIN}	N/R
	V _{MIN}	N/R
AC/DC-Adaptor	Model	YMC06-3U
	Vendor	Ji Ming
	Input	100-240 VAC
	Output	12.0 VDC / 0.5A

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-Sngl	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 Duty cycle = 78 % Power level = Maximum
DH5-Hop	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Spreading = Hopping Modulation = GFSK Packet type = DH5 Data rate = 1 Mbps Duty cycle = 78 % 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

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

20dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Number of hopping frequencies					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Time of occupancy					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	2013-01	2015-01
Spectrum Analyzer	R&S	FSIQ26	EF00242	2014-03	2015-03
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD Antenna	R&S	HL 223	EF00187	2014-03	2017-03
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
EMI Test Receiver	R&S	ESCS 30	EF00295	2014-10	2015-10

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:

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

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 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	PASS	
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Number of hopping frequencies	Public notice DA 00-705	PASS	
FCC § 15.247(a)(1) IC RSS-210 § A8.1	Frequency hopping channel separation	Public notice DA 00-705	PASS	
FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	Time of occupancy (Dwell time)	Public notice DA 00-705	PASS	
FCC § 15.247(b)(1) IC RSS-210 § A8.4	Maximum peak conducted power	Public notice DA 00-705	PASS	
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	PASS	
FCC § 15.247(d) IC RSS-210 § A8.5	Conducted spurious emissions	Public notice DA 00-705	PASS	
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

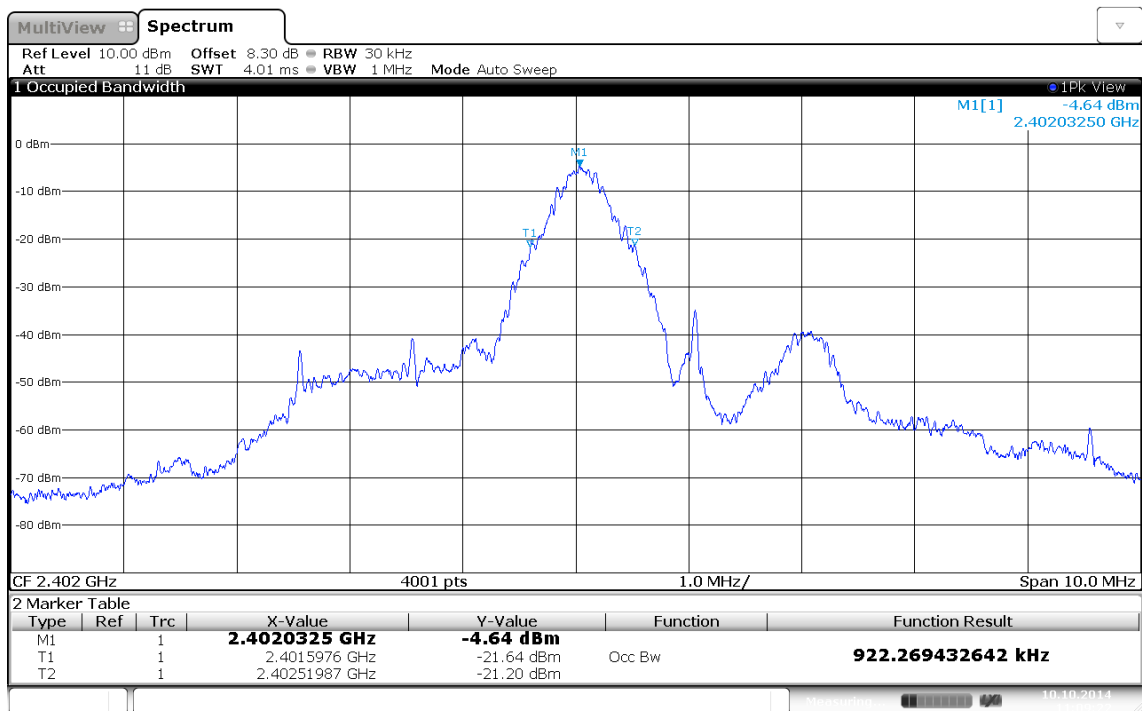
Occupied Bandwidth acc. IC RSS-Gen				Verdict: PASS
Test according to measurement reference		Reference Method		
		RSS-Gen 4.6.1		
Test frequency range		Tested frequencies		
		$F_{\text{LOW}} / F_{\text{MID}} / F_{\text{HIGH}}$		
Limits				
None (Informational only)				
Test setup				
Spectrum Analyzer 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	922.3	
F_{MID}	2441	DH5-Sngl	909.8	
F_{HIGH}	2480	DH5-Sngl	912.3	
Comments:				

Occupied Bandwidth – DH5-Sngl F_{Low}

Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, 2402 MHz, modulated
 Test Date: 2014-10-10
 Verdict: NONE (INFORMATION ONLY)
 Note 1: A spectrum analyzer with an integrated 99% power bandwidth function is used
 Note 2: conducted measurement

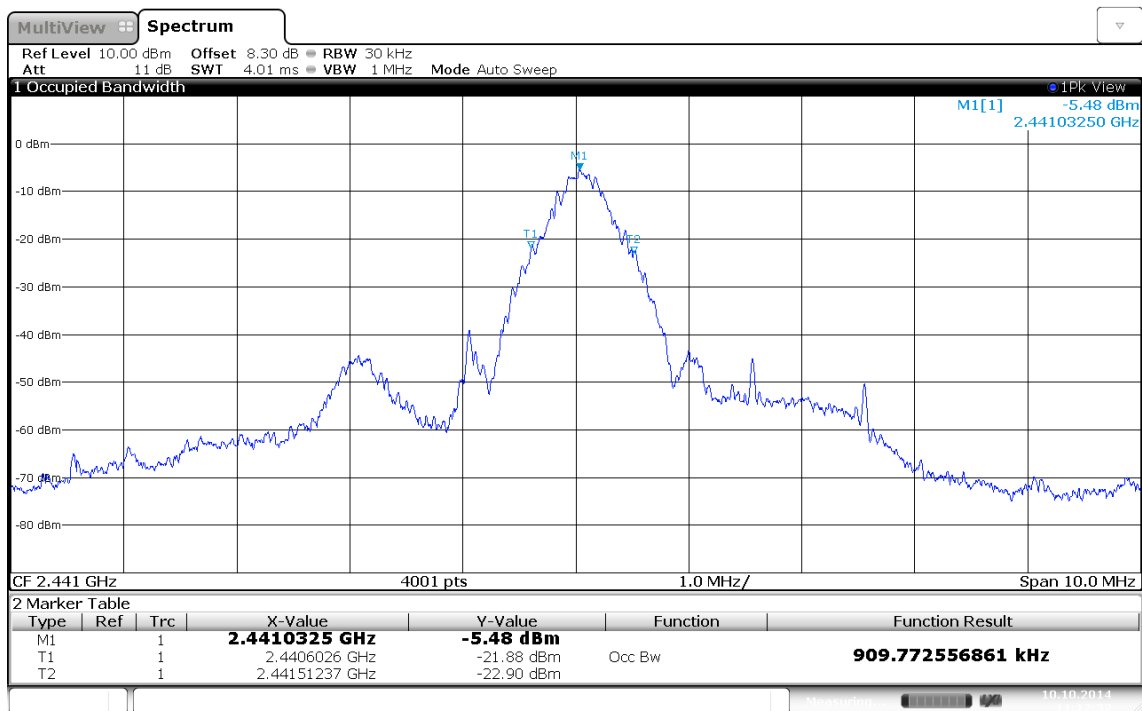


Occupied Bandwidth – DH5-Sngl F_{MID}

Occupied Bandwidth acc. to RSS-Gen

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, 2441 MHz, modulated
Test Date: 2014-10-10
Verdict: NONE (INFORMATION ONLY)
Note 1: A spectrum analyzer with an integrated 99% power bandwidth function is used
Note 2: conducted measurement

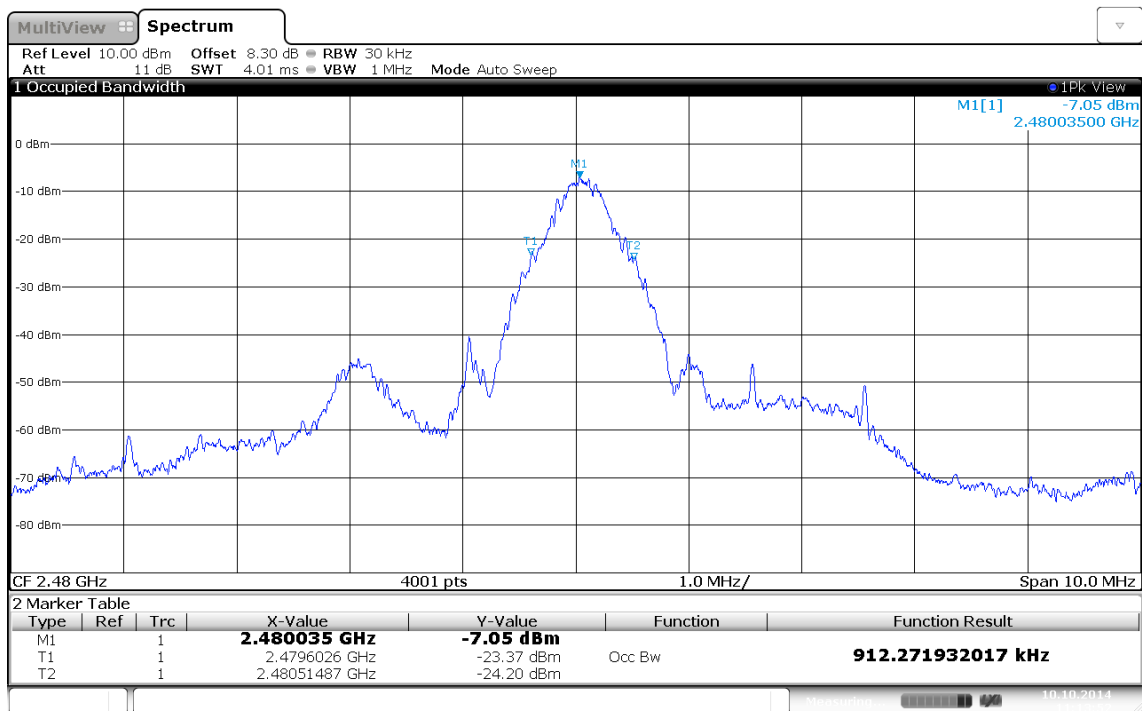


Occupied Bandwidth – DH5-Sngl F_{HIGH}

Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, 2480 MHz, modulated
Test Date: 2014-10-10
Verdict: NONE (INFORMATION ONLY)
Note 1: A spectrum analyzer with an integrated 99% power bandwidth function is used
Note 2: conducted measurement



Occupied bandwidth: 912.3 kHz

Date: 10.OCT.2014 11:13:52

3.2 Test Conditions and Results – 20 dB Bandwidth

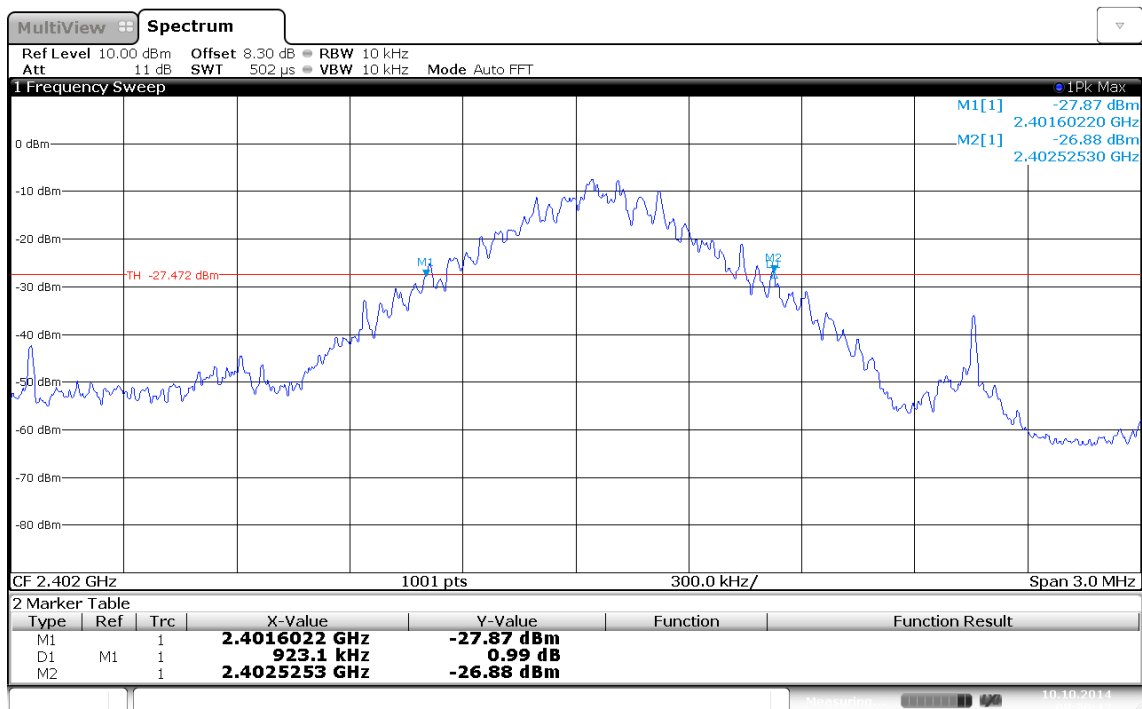
20 dB Bandwidth acc. FCC 15.247 / IC RSS-210				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.247(a)(1) / IC RSS-210 A8.1			
Test according to measurement reference		Reference Method			
		FCC Public Notice DA 00-705			
Test frequency range		Tested frequencies			
		F _{LOW} / F _{MID} / F _{HIGH}			
Limits					
Limit			Condition		
1.5 · Carrier spacing			Output power ≤ 125 mW / 21 dBm		
1.0 · Carrier spacing			125 mW / 21 dBm < Output power ≤ 1 W / 30 dBm		
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. Detector set to peak and max hold 4. Envelope peak value of emission spectrum is selected 5. Marker on envelope of spectrum is set to level of -20 dB to the left of the peak 6. Marker on envelope of spectrum is set to level of -20 dB to the right of the peak 7. 20dB Bandwidth is determined by marker frequency separation					
Test results					
Channel	Frequency [MHz]	Mode	20 dB Bandwidth [MHz]	Limit [MHz]	Result
F _{LOW}	2402	DH5-Sngl	0.923	1.5	PASS
F _{MID}	2441	DH5-Sngl	0.925	1.5	PASS
F _{HIGH}	2480	DH5-Sngl	0.923	1.5	PASS
Comments:					

20 dB Bandwidth – DH5-Sngl F_{LOW}

20 dB Bandwidth acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, BT, 2402 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: FCC part 15 section 247 (a)
 Note 2: GFSK



Date: 10.OCT.2014 09:36:42

Test Report No.: GOM-1408-4062-TFC247BT79-V01

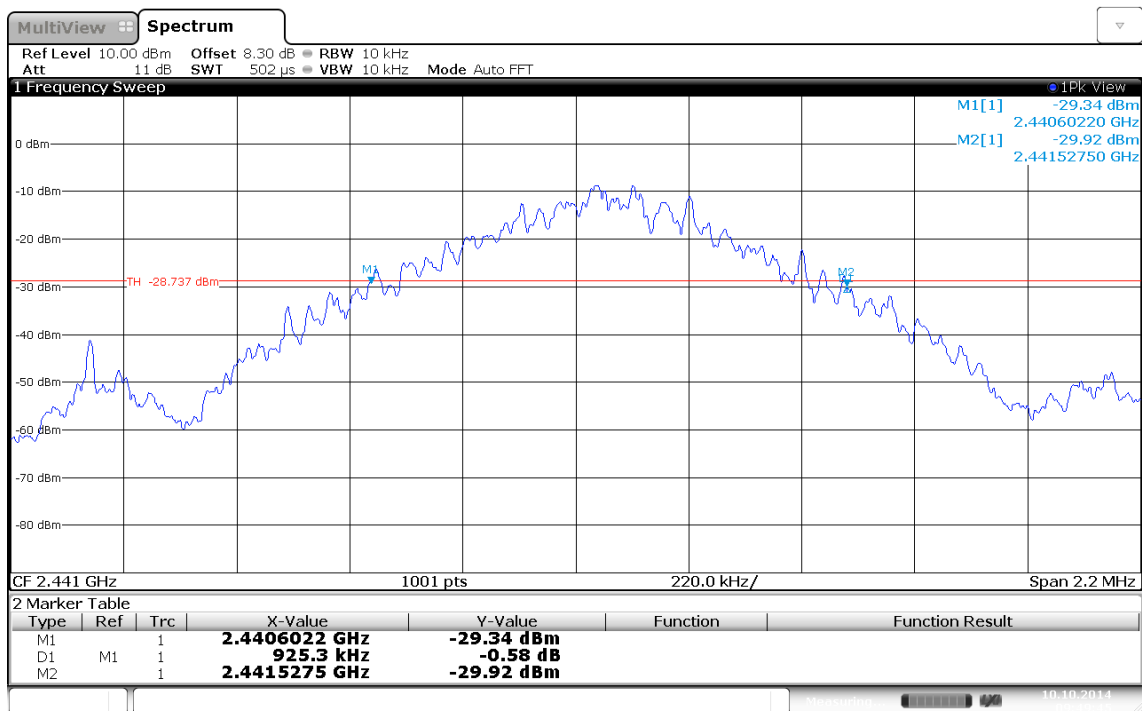
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

20 dB Bandwidth – DH5-Sngl F_{MID}

20 dB Bandwidth acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, BT, 2440 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: FCC part 15 section 247 (a)
 Note 2: GFSK



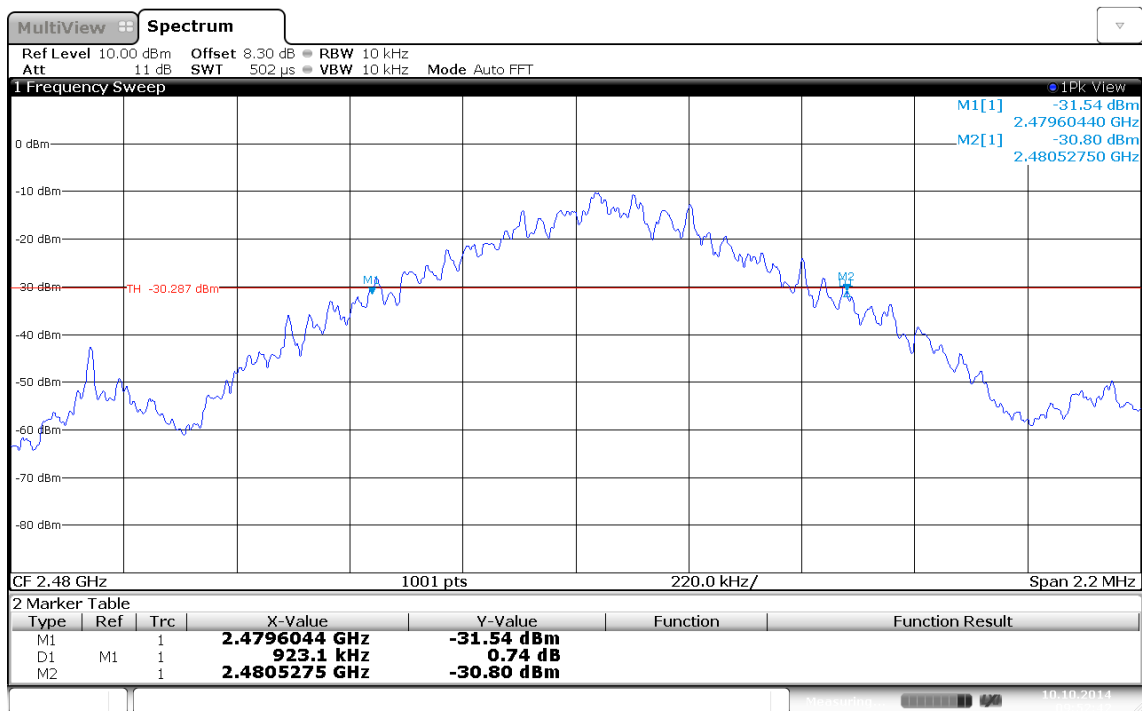
20 dB bandwidth: 925.3 KHz
 Date: 10.OCT.2014 09:49:45

20 dB Bandwidth – DH5-Sngl F_{HIGH}

20 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, BT, 2480 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: FCC part 15 section 247 (a)
 Note 2: GFSK



20 dB bandwidth: 923.1 KHz
 Date: 10.OCT.2014 09:52:42

3.3 Test Conditions and Results – Number of hopping frequencies

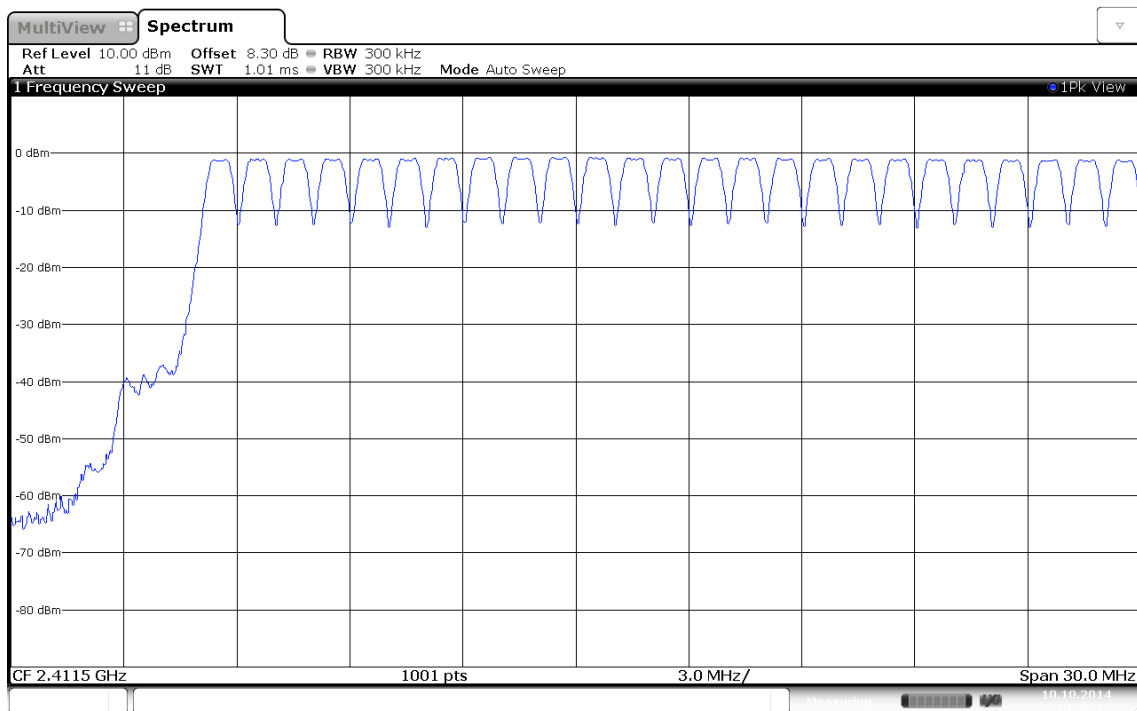
Number of hopping frequencies acc. FCC 15.247 / IC RSS-210		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.247(a)(1)(iii) / IC RSS-210 A8.1	
Test according to measurement reference	Reference Method	
	FCC Public Notice DA 00-705	
Test frequency range	Tested frequencies	
	F _{LOW} - F _{HIGH}	
EUT test mode	DH5-Hop	
Limits		
Limit	Condition	
Number of hopping channels ≥ 15	Output power ≤ 125 mW / 21 dBm	
Number of hopping channels ≥ 75	125 mW / 21 dBm < Output power ≤ 1 W / 30 dBm	
Test setup		
Spectrum Analyzer EUT		
Test procedure		
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to measurement frequency range 3. Detector set to peak and max hold 4. Resolution bandwidth is set small enough to resolve hopping channel emission spectra 5. The number of peaks is counted to determine number of hopping frequencies		
Test results		
Number of hopping frequencies	Limit	Result
79	≥ 15	PASS
Comments:		

Number of hopping frequencies - Range A

Number of Hopping Frequencies acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, hopping mode
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Number of Hopping Frequencies (DA 00-705 Meas Guidance)
 Note 2: conducted measurement, channel 0-24



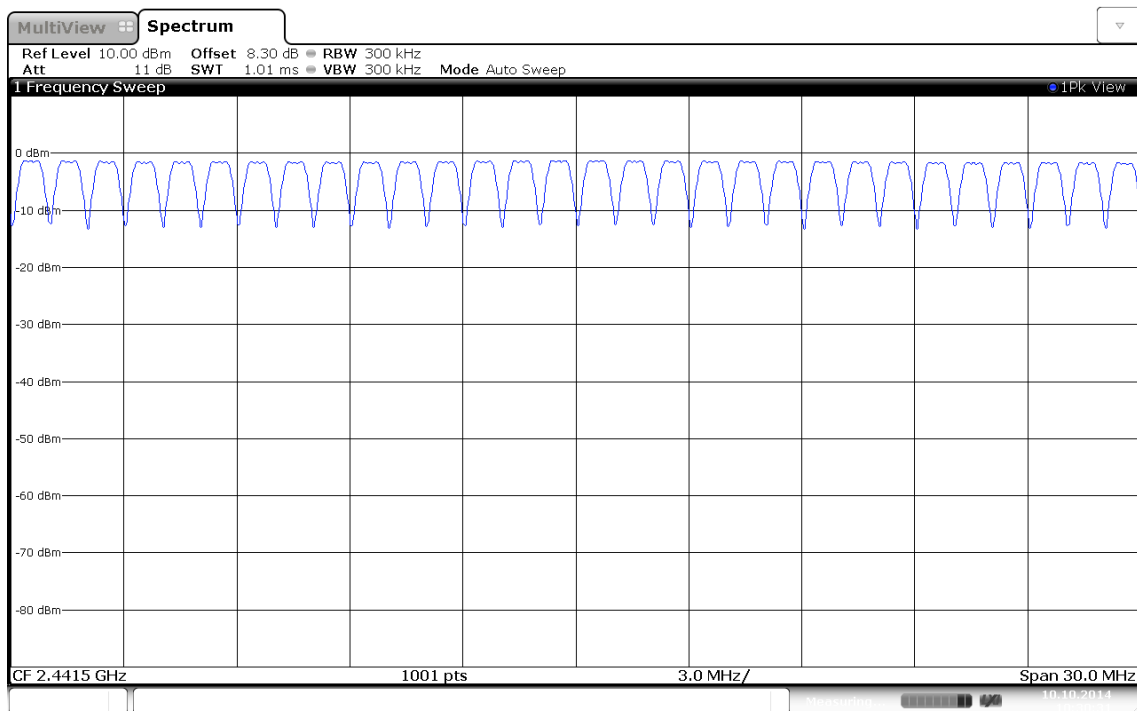
Number of hopping frequencies
 Date: 10.OCT.2014 10:22:15

Number of hopping frequencies - Range B

Number of Hopping Frequencies acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, hopping mode
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Number of Hopping Frequencies (DA 00-705 Meas Guidance)
 Note 2: conducted measurement, channel 25-54



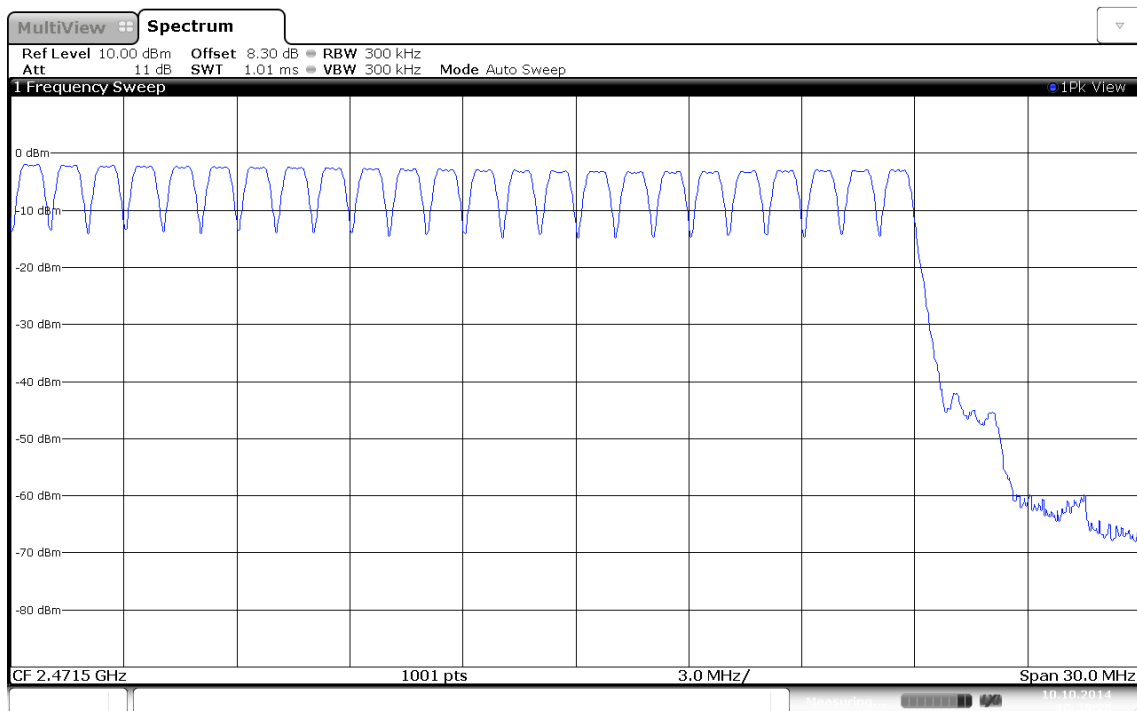
Number of hopping frequencies
 Date: 10.OCT.2014 10:30:31

Number of hopping frequencies - Range C

Number of Hopping Frequencies acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, hopping mode
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Number of Hopping Frequencies (DA 00-705 Meas Guidance)
 Note 2: conducted measurement, channel 55-78



Number of hopping frequencies
 Date: 10.OCT.2014 10:35:28

3.4 Test Conditions and Results – Frequency hopping channel separation

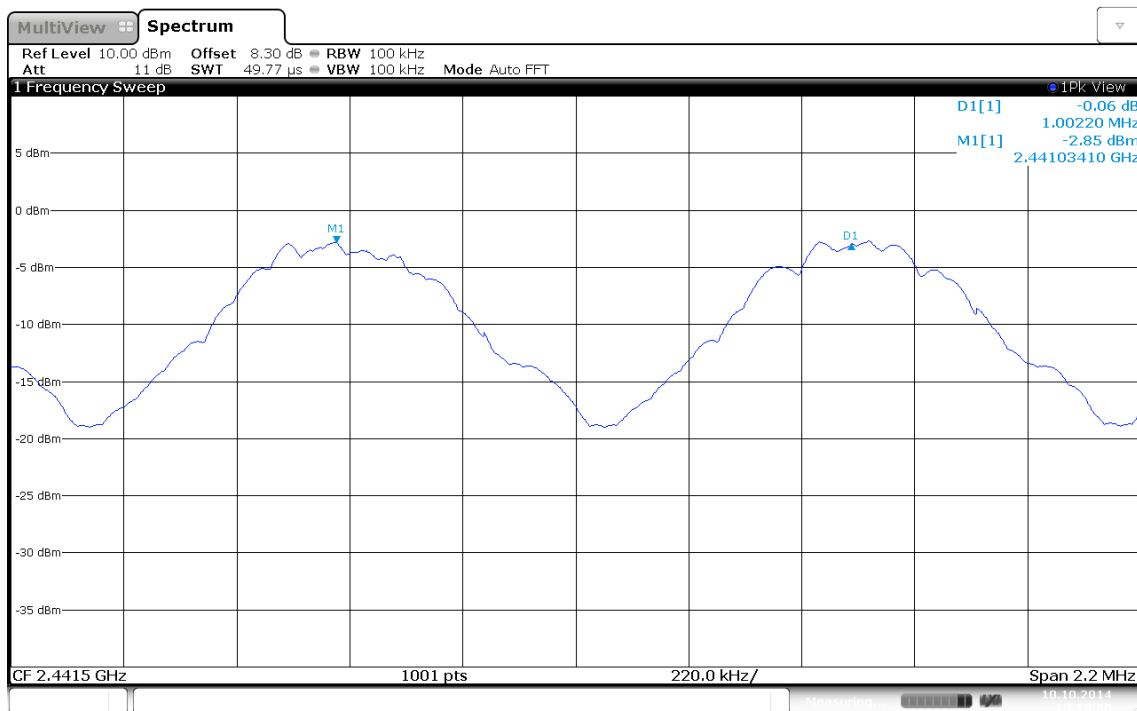
Frequency hopping channel separation acc. FCC 15.247 / IC RSS-210		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.247(a)(1) / IC RSS-210 A8.1	
Test according to measurement reference	Reference Method	
	FCC Public Notice DA 00-705	
Test frequency range	Tested frequencies	
	2441 & 2442 MHz	
EUT test mode	DH5-Hop	
Limits		
Limit	Condition	
≥ 25 kHz or ⅔ of 20 dB bandwidth	Output power ≤ 125 mW / 21 dBm	
≥ 25 kHz or 20 dB bandwidth	125 mW / 21 dBm < Output power ≤ 1 W / 30 dBm	
Test setup		
Spectrum Analyzer EUT		
Test procedure		
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to measurement frequency range 3. Detector set to peak and max hold 4. Resolution bandwidth is set small enough to resolve hopping channel emission spectra 5. The two adjacent channel peaks are marked 6. Channel separation is determined from frequency separation of markers		
Test results		
Channel separation [kHz]	Limit [kHz]	Result
1002.20	≥ ⅔ · 925 = 616.66	PASS
Comments:		

Frequency hopping channel separation

Carrier Frequency Separation acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, hopping mode
Test Date: 2014-10-10
Verdict: PASS
Note 1: Carrier Frequency Separation (DA 00-705 Meas Guidance)
Note 2: conducted measurement



Limit: > two-thirds of the 20 dB bandwidth ; Result: Pass
Date: 10.OCT.2014 10:18:51

Test Report No.: GOM-1408-4062-TFC247BT79-V01

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

3.5 Test Conditions and Results – Time of occupancy (Dwell Time)

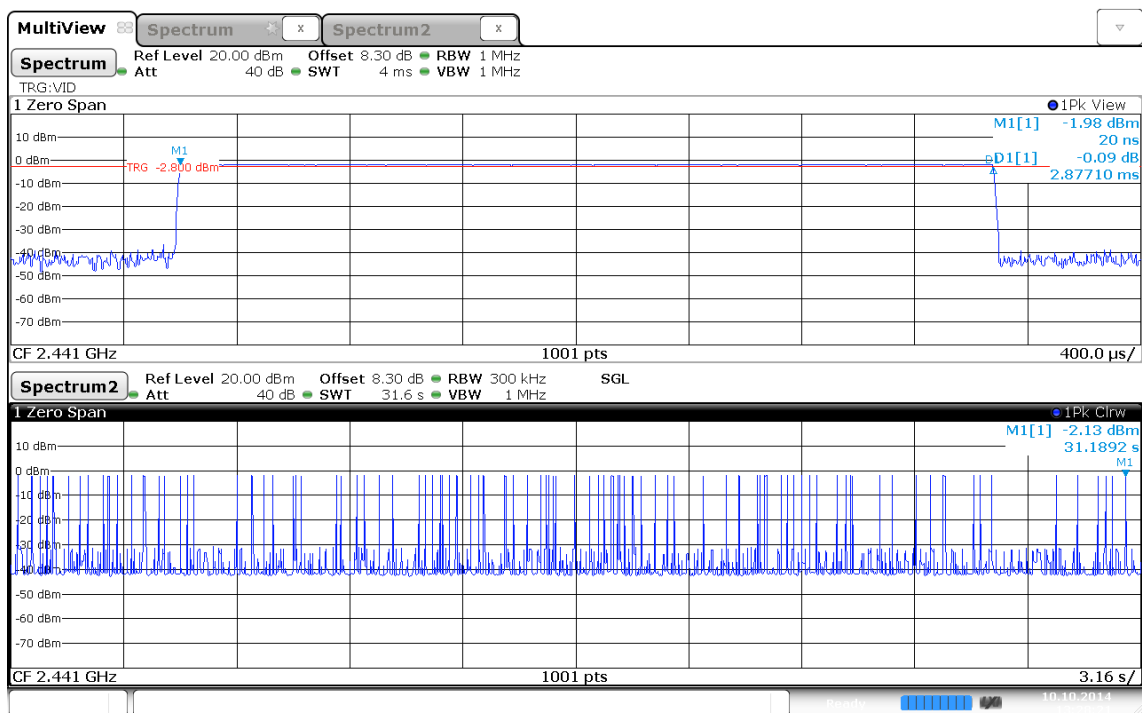
Time of occupancy (Dwell time) acc. FCC 15.247 / IC RSS-210				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.247(a)(1)(iii) / IC RSS-210 A8.1			
Test according to measurement reference		Reference Method			
		FCC Public Notice DA 00-705			
Test frequency range		Tested frequencies			
		2441 MHz			
EUT test mode		DH5-Hop			
Limits					
Limit					
Time of occupancy ≤ 0.4 s within 0.4 s · Number of hopping channels					
Test setup					
Spectrum Analyzer EUT					
Test procedure					
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to zero span and detector to peak and max hold 4. Resolution bandwidth is set to 100kHz and sweep time to observation period 5. Time of occupancy determined from number of peaks multiplied by single hop dwell time					
Test results					
Observation period [s]	No. of hops	Dwell time/hop [s]	Time of occupancy [s]	Limit [s]	Result
31.6	92	0.002877	0.264	≤ 0.4	PASS
Comments:					

Time of occupancy

Time of Occupancy acc. to FCC 15.247

Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, channel 2441MHz, hopping mode
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: 92 events * 2.877ms; Result: 264.7ms Limit<0.4s
 Note 2: conducted measurement, (DA 00-705 Meas Guidance)



Burst length=2.8771 ms
 Date: 10.OCT.2014 13:28:21

Test Report No.: G0M-1408-4062-TFC247BT79-V01

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

3.6 Test Conditions and Results – Maximum peak conducted power

Maximum peak conducted power acc. FCC 15.247 / IC RSS-210		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.247(b)(1) / IC RSS-210 A8.4	
Test according to measurement reference	Reference Method	
	FCC Public Notice DA 00-705	
Test frequency range	Tested frequencies	
	F _{LOW} / F _{MID} / F _{HIGH}	
Measurement mode	Peak	
Maximum antenna gain	1.7 dBi ⇒ Limit correction = 0 dB	
Limits		
Limit	Condition	
1 W (30 dBm)	Number of hopping channels ≥ 75	
0.125 W (21 dBm)	75 > Number of hopping channels ≥ 15	
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.		
Test setup		
Spectrum Analyzer EUT		
Test procedure		
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to twice the 20 dB bandwidth and detector to peak and max hold 4. Resolution bandwidth is set to 3 MHz 5. Peak conducted power is determined from peak of spectrum envelope		

Test results								
Channel	Frequency [MHz]	Voltage	Mode	Peak power [dbm]	Peak power [W]	Limit [dBm]	Margin [dB]	Result
F _{LOW}	2402	3.7 VDC	DH5-Sngl	-0.8	0.0008	30	-30.80	PASS
F _{MID}	2441	3.7 VDC	DH5-Sngl	-1.9	0.0006	30	-31.90	PASS
F _{HIGH}	2480	3.7 VDC	DH5-Sngl	-3.4	0.0005	30	-33.40	PASS
Comments:								

3.7 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-Power line			
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.					

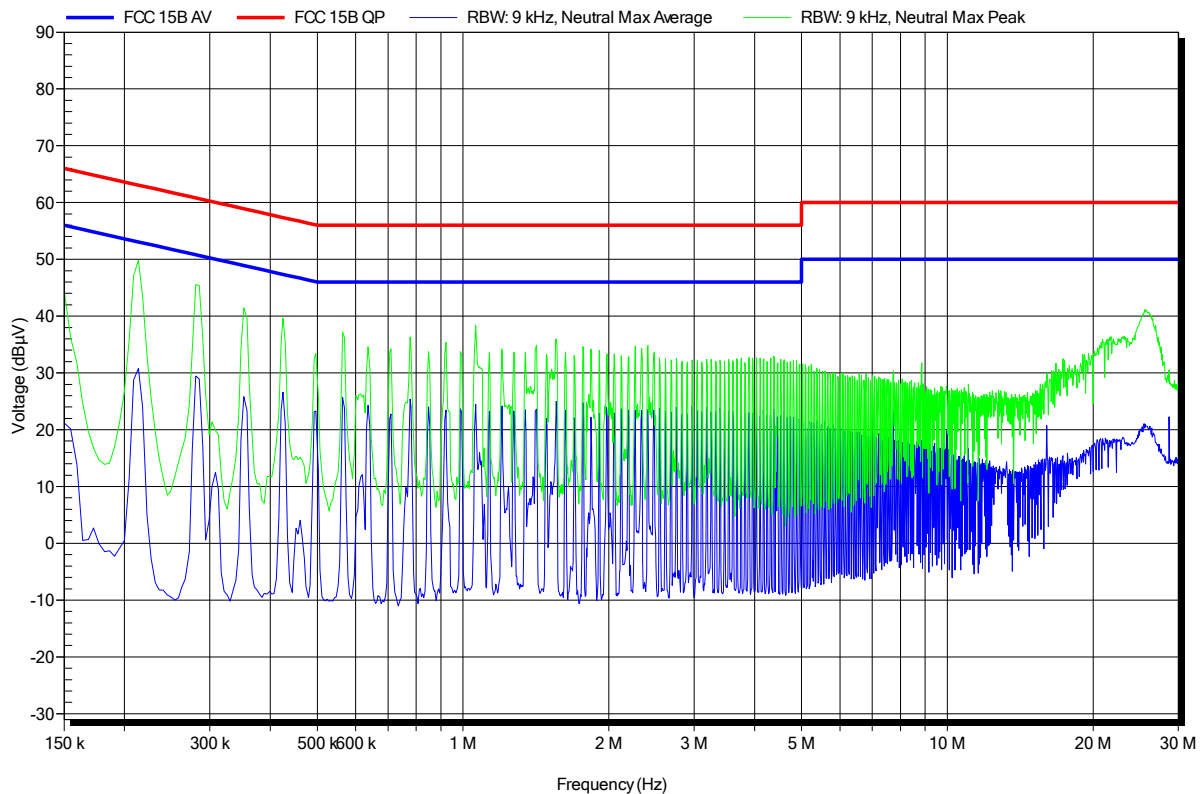
Conducted Emissions

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

Project number: GOM-1408-4062

Manufacturer: Sonetics Corporation
 EUT Name: Communication Headsets
 Model: APX379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Marquardt
 Test Conditions: Tnom: 23°C, Unom: 120 VAC (AC/DC adapter)
 LISN: ESH2-Z5 N
 Mode: charging
 Test Date: 2014-11-18
 Note:

Index 2



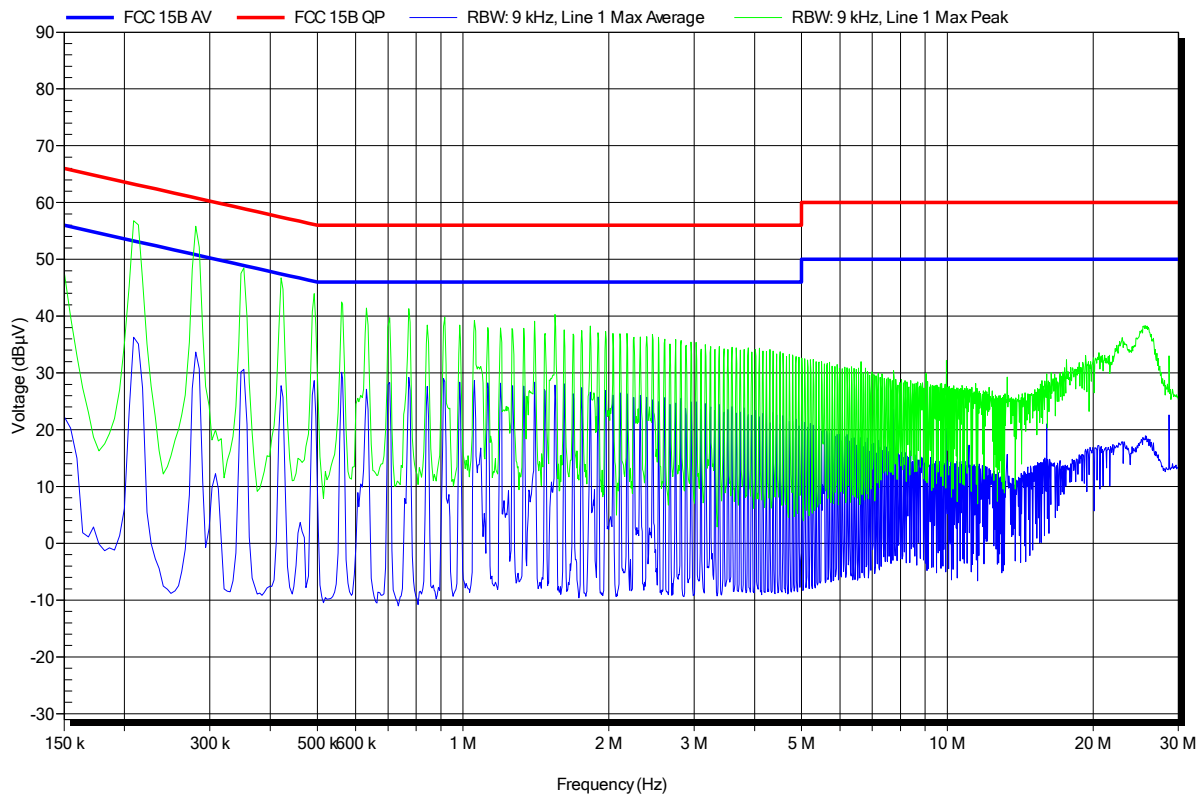
Conducted Emissions

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

Project number: GOM-1408-4062

Manufacturer: Sonetics Corporation
 EUT Name: Communication Headsets
 Model: APX379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Marquardt
 Test Conditions: Tnom: 23°C, Unom: 120 VAC (AC/DC adapter)
 LISN: ESH2-Z5 L
 Mode: charging
 Test Date: 2014-11-18
 Note:

Index 1



3.8 Test Conditions and Results – Band edge compliance

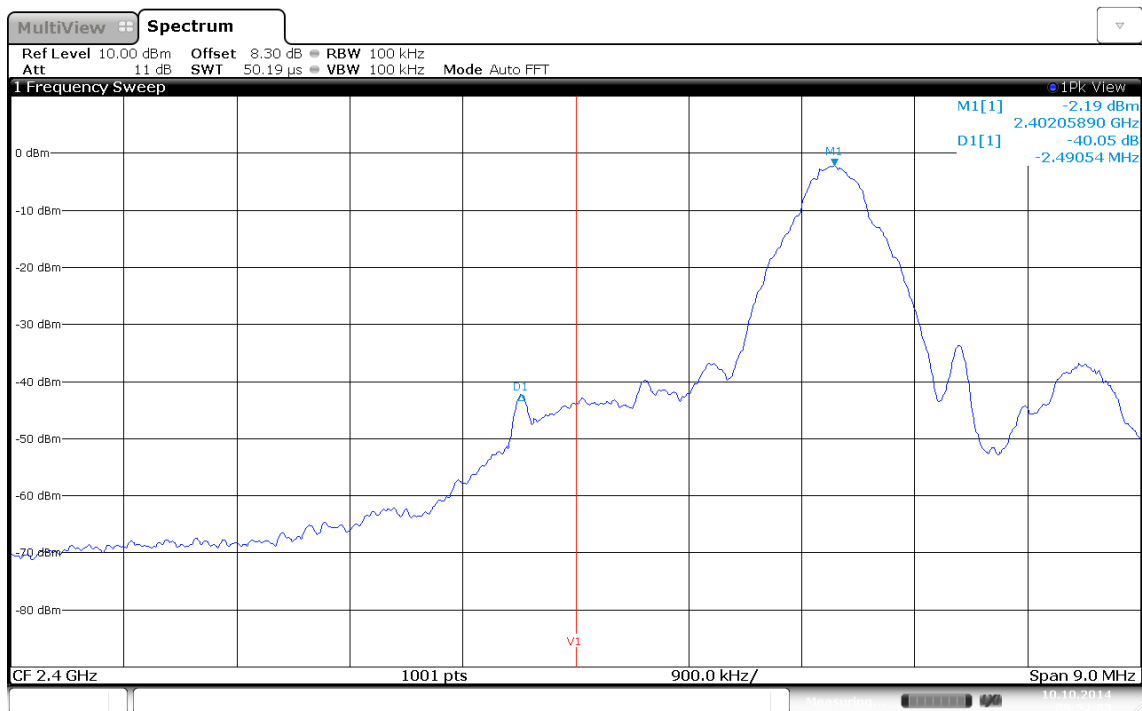
Band-edge compliance acc. FCC 15.247 / IC RSS-210				Verdict: PASS		
EUT requirement rule parts and clause		Reference				
		FCC 15.247(d) / IC RSS-210 A8.5				
Test according to measurement reference		Reference Method				
		FCC Public Notice DA 00-705				
Test frequency range		Tested frequencies				
		F _{LOW} / F _{HIGH}				
Measurement mode		Peak				
Limits						
Limit			Condition			
≤ -20 dB/100 kHz			Peak power measurement detector = Peak			
≤ -30 dB/100 kHz			Peak power measurement detector = RMS			
Test setup						
Spectrum Analyzer EUT						
Test procedure						
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference						
Test results						
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]	Result
F _{LOW}	2402	DH5-Sngl	-40.05	-20	-20.05	PASS
F _{HIGH}	2480	DH5-Sngl	-60.09	-20	-40.09	PASS
F _{LOW}	2402	DH5-Hop	-62.05	-20	-42.05	PASS
F _{HIGH}	2480	DH5-Hop	-40.98	-20	-20.98	PASS
Comments:						

Band-edge compliance – DH5-Sngl F_{Low}

Band-edge compliance acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, 2402 MHz, single frequency
Test Date: 2014-10-10
Verdict: PASS
Note 1: Marker-delta method (DA 00-705 Meas Guidance)
Note 2: lower Band-edge, conducted measurement



Limit: Marker Delta value >20 dB; Result: PASS
Date: 10.OCT.2014 09:54:53

Test Report No.: GOM-1408-4062-TFC247BT79-V01

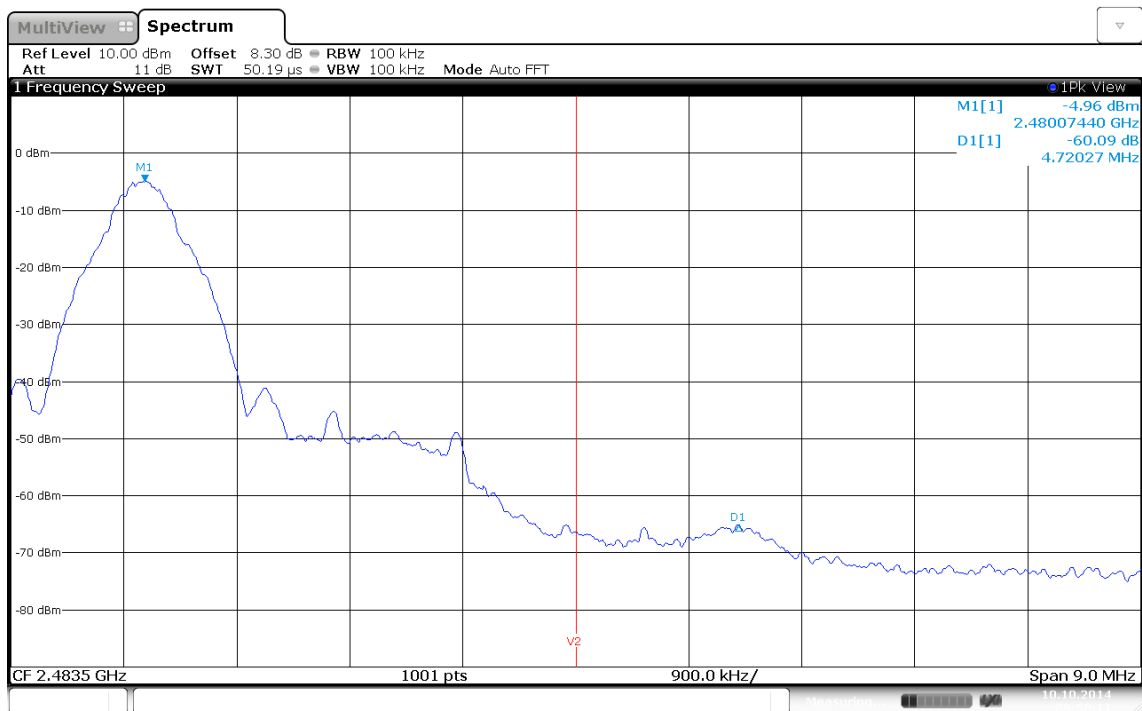
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Band-edge compliance – DH5-Sngl F_{HIGH}

Band-edge compliance acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, 2480 MHz, single frequency
Test Date: 2014-10-10
Verdict: PASS
Note 1: Marker-delta method (DA 00-705 Meas Guidance)
Note 2: upper Band-edge, conducted measurement



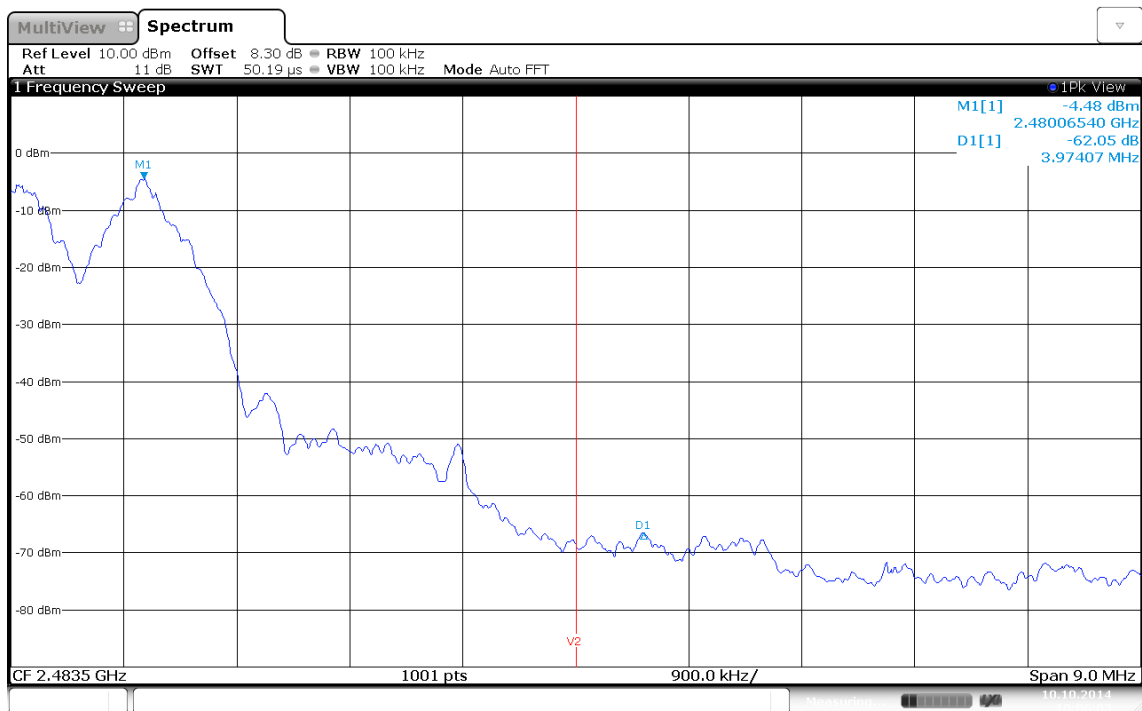
Limit: Marker Delta value >20 dB; Result: PASS
Date: 10.OCT.2014 09:58:11

Band-edge compliance – DH5-Hop F_{Low}

Band-edge compliance acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, hopping mode
Test Date: 2014-10-10
Verdict: PASS
Note 1: Marker-delta method (DA 00-705 Meas Guidance)
Note 2: upper Band-edge, conducted measurement



Limit: Marker Delta value >20 dB; Result: PASS
Date: 10.OCT.2014 10:06:03

Test Report No.: GOM-1408-4062-TFC247BT79-V01

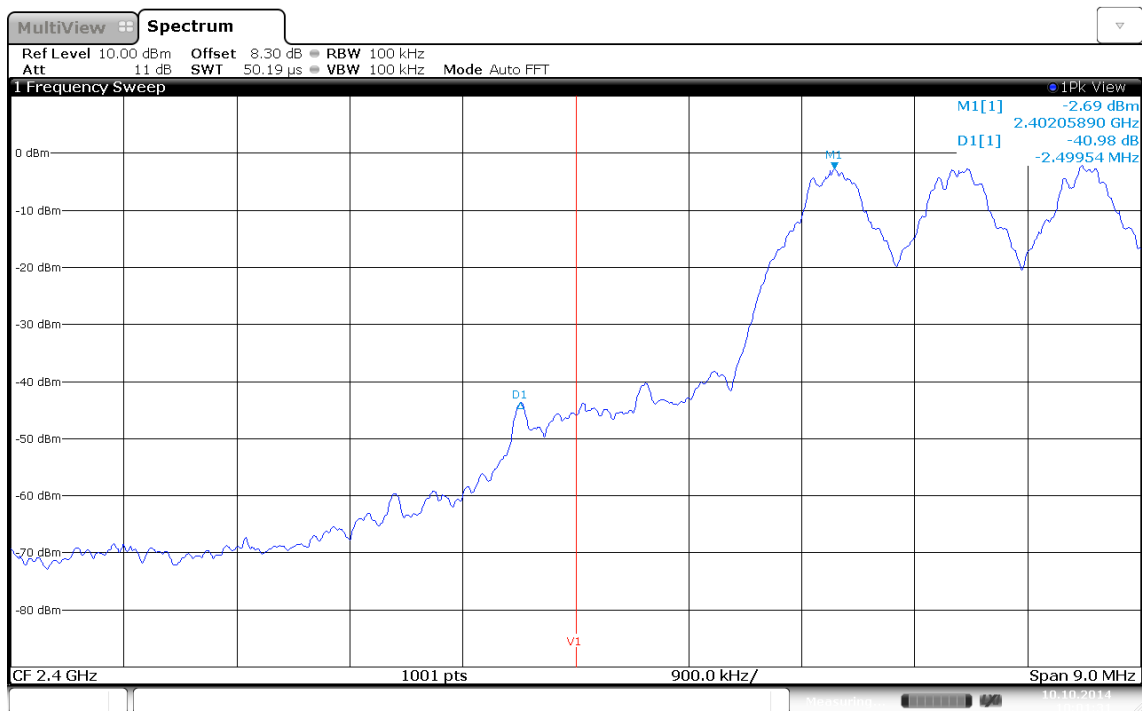
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Band-edge compliance – DH5-Hop F_{HIGH}

Band-edge compliance acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
EUT Name: Communications Headset
Model: AXP379
Test Site: Eurofins Product Service GmbH
Operator: Wilfried Treffke
Test Conditions: Tnom / Vnom
Mode: Tx, GFSK, hopping mode
Test Date: 2014-10-10
Verdict: PASS
Note 1: Marker-delta method (DA 00-705 Meas Guidance)
Note 2: lower Band-edge, conducted measurement



Limit: Marker Delta value >20 dB; Result: PASS
Date: 10.OCT.2014 10:01:31

Test Report No.: GOM-1408-4062-TFC247BT79-V01

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

3.9 Test Conditions and Results – Conducted spurious emissions

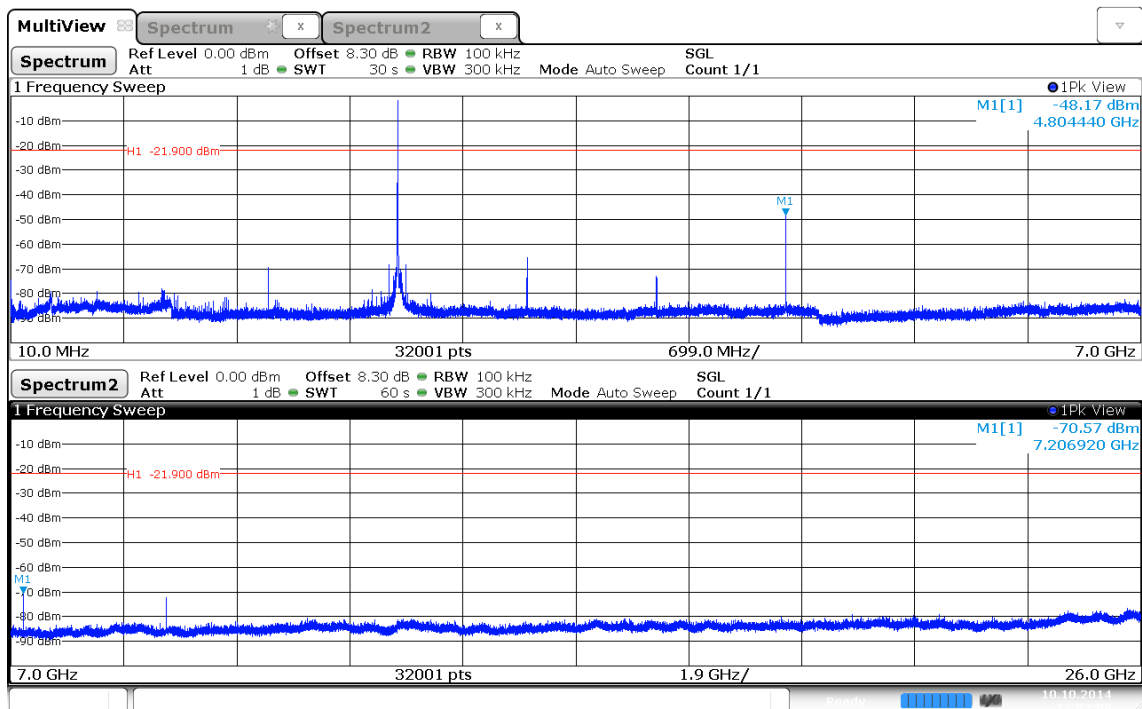
Conducted spurious emissions acc. FCC 15.247 / IC RSS-210							Verdict: PASS	
EUT requirement rule parts and clause			Reference					
			FCC 15.247(d) / IC RSS-210 A8.5					
Test according to measurement reference			Reference Method					
			FCC Public Notice DA 00-705					
Test frequency range			Tested frequencies					
			10 MHz – 10 th Harmonic					
Measurement mode			Peak					
Limits								
Limit				Condition				
≤ -20 dB/100 kHz				Peak power measurement detector = Peak				
≤ -30 dB/100 kHz				Peak power measurement detector = RMS				
Test setup								
Spectrum Analyzer EUT								
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 is set to 100 kHz and detector to peak and max hold 4. Markers are set to peak emission levels within frequency band 5. Emission level is determined by second marker on emission peak 6. Attenuation is determined from level difference								
Test results								
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]	Result
F _{LOW}	2402	DH5-Sngl	4804	-48.17	-1.9	-21.9	-26.27	PASS
F _{MID}	2441	DH5-Sngl	4882	-57.89	-2.9	-22.9	-34.99	PASS
F _{HIGH}	2480	DH5-Sngl	4960	-56.53	-4.2	-24.2	-32.33	PASS
Comments:								

Conducted spurious emissions – DH5-Sngl F_{Low}

Spurious Emissions acc. to FCC 15.247

Project Number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, 2402 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Spurious in non-restricted frequency bands (DA 00-705 Meas Guidance)
 Note 2: conducted measurement



Date: 10.OCT.2014 14:02:10

Test Report No.: GOM-1408-4062-TFC247BT79-V01

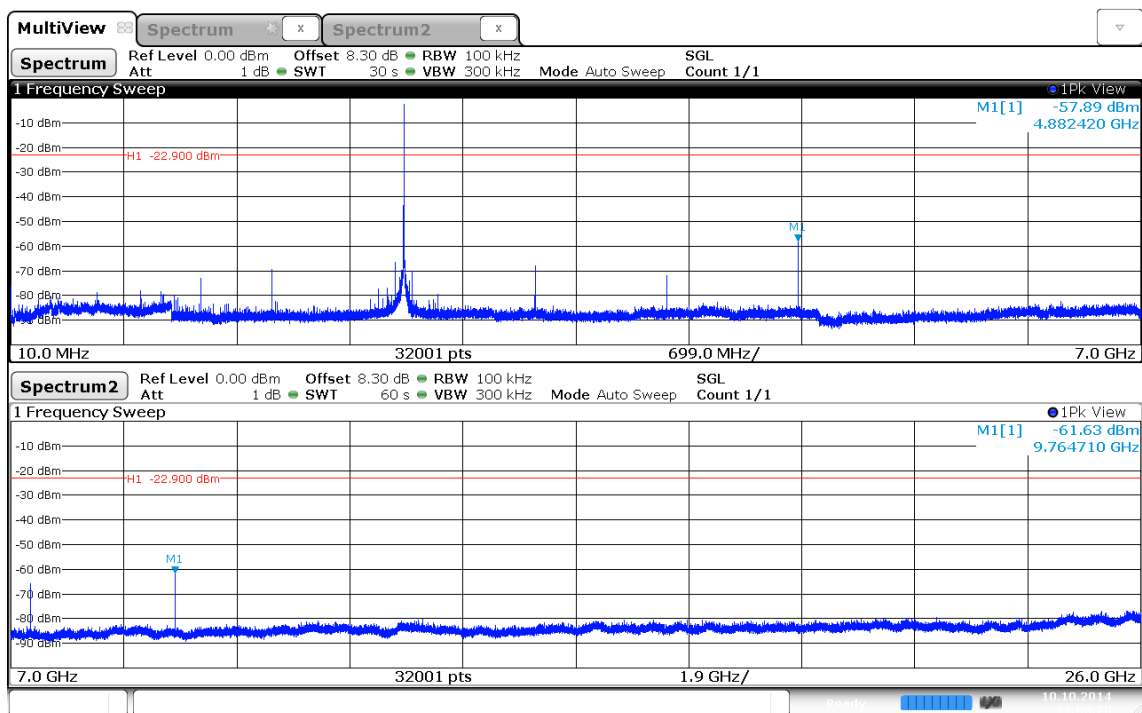
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Conducted spurious emissions – DH5-Sngl F_{MID}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, 2441 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Spurious in non-restricted frequency bands (DA 00-705 Meas Guidance)
 Note 2: conducted measurement



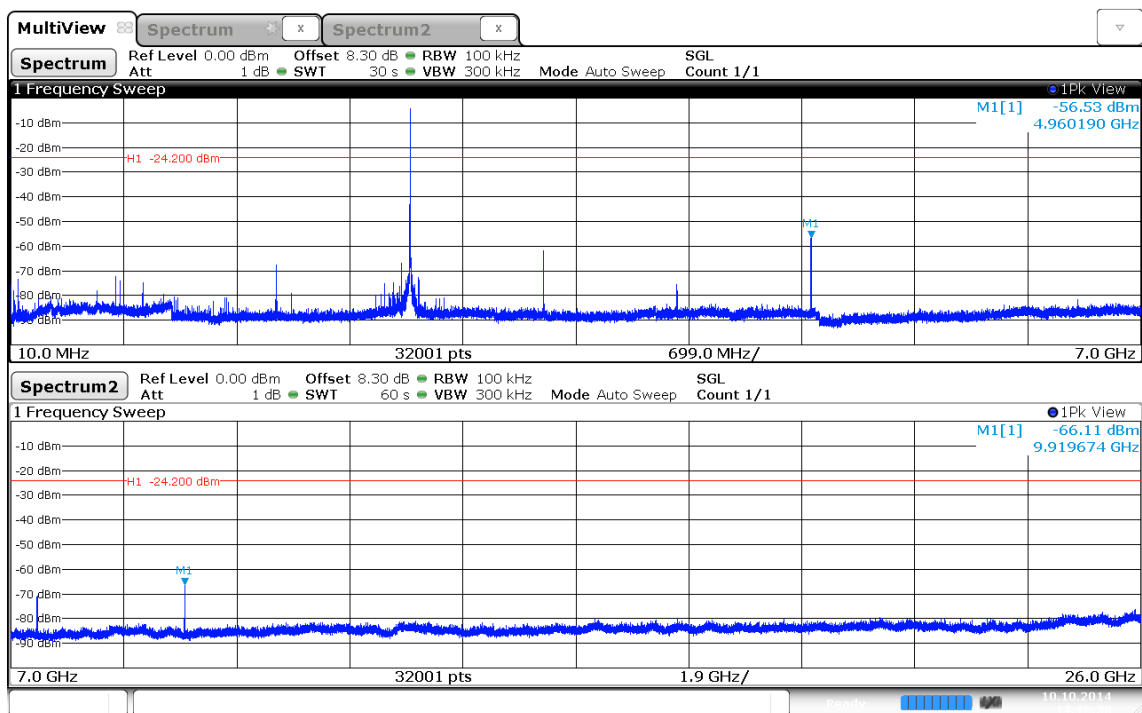
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Conducted spurious emissions – DH5-Sngl F_{HIGH}

Spurious Emissions acc. to FCC 15.247

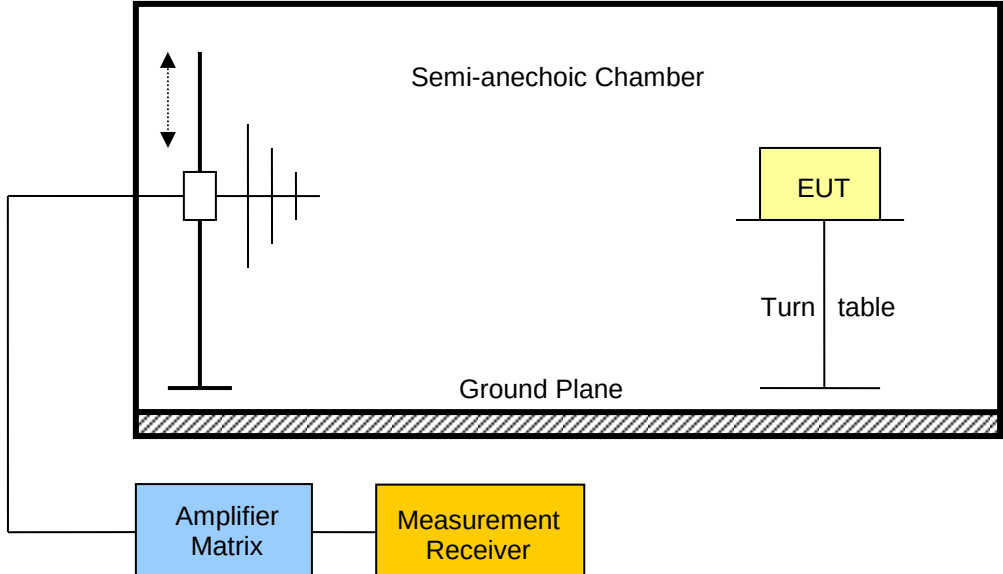
Project Number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Wilfried Treffke
 Test Conditions: Tnom / Vnom
 Mode: Tx, GFSK, 2480 MHz, modulated
 Test Date: 2014-10-10
 Verdict: PASS
 Note 1: Spurious in non-restricted frequency bands (DA 00-705 Meas Guidance)
 Note 2: conducted measurement



Date: 10.OCT.2014 14:10:39

3.10 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

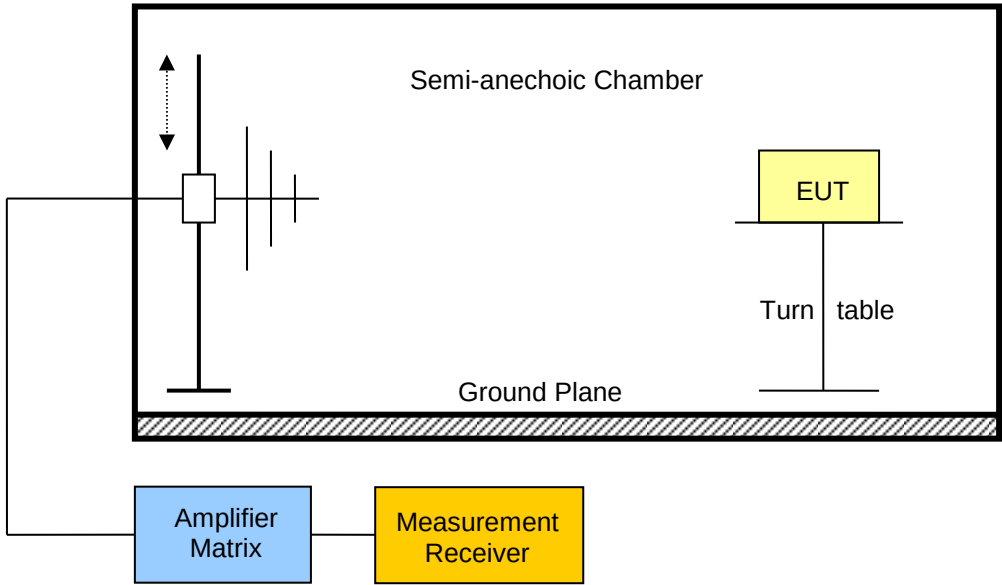
1. EUT set to test mode (Communication tester is used if needed)
2. Span it set according to measurement range
3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz
4. Markers are set to peak emission 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	4804	56.97	pk	hor	74.00	3	-17.03
F _{LOW}	2402	DH5-Sngl	4804	52.81	avg	hor	54.00	3	-01.19
F _{LOW}	2402	DH5-Sngl	4804	58.03	pk	ver	74.00	3	-15.97
F _{LOW}	2402	DH5-Sngl	4804	50.99	avg	ver	54.00	3	-03.01
F _{MID}	2441	DH5-Sngl	4882	54.28	pk	hor	74.00	3	-19.72
F _{MID}	2441	DH5-Sngl	4882	50.86	avg	hor	54.00	3	-03.14
F _{MID}	2441	DH5-Sngl	4882	56.40	pk	ver	74.00	3	-17.60
F _{MID}	2441	DH5-Sngl	4882	52.04	avg	ver	54.00	3	-01.96
F _{HIGH}	2480	DH5-Sngl	2483.5	55.82	pk	hor	74.00	3	-18.18
F _{HIGH}	2480	DH5-Sngl	2483.5	33.29	RMS	hor	54.00	3	-20.71
F _{HIGH}	2480	DH5-Sngl	4960	54.38	pk	ver	74.00	3	-19.62
F _{HIGH}	2480	DH5-Sngl	4960	49.41	avg	ver	54.00	3	-04.59

Comments: * Physical distance between EUT and measurement antenna.

3.11 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 [db μ V/m]	Emission Level [μ V/m]	Det.	Limit [μ V/m]	Margin [μ V/m]
F _{MID}	2441	419.2	30.24	32.51	pk	200	167.49
Comments: * Physical distance between EUT and measurement antenna. ** Emission level corresponds to ambient noise floor							

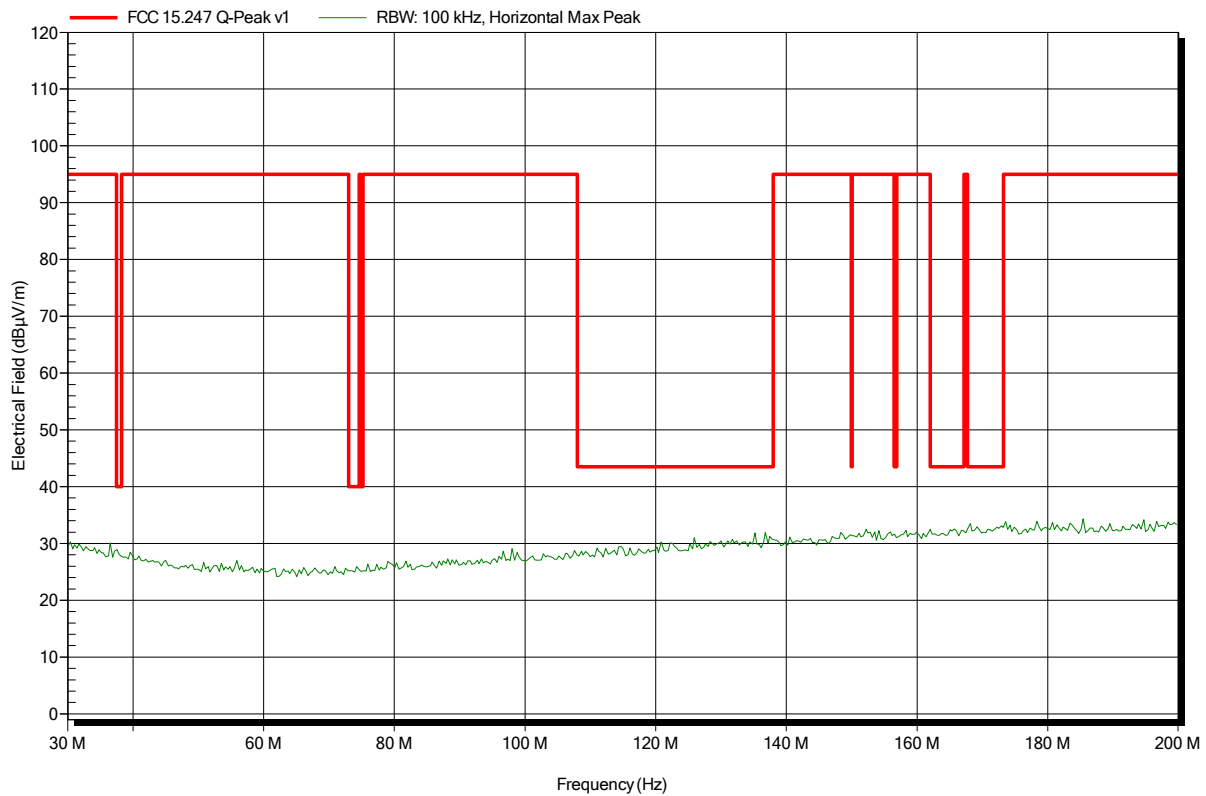
ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	worst case

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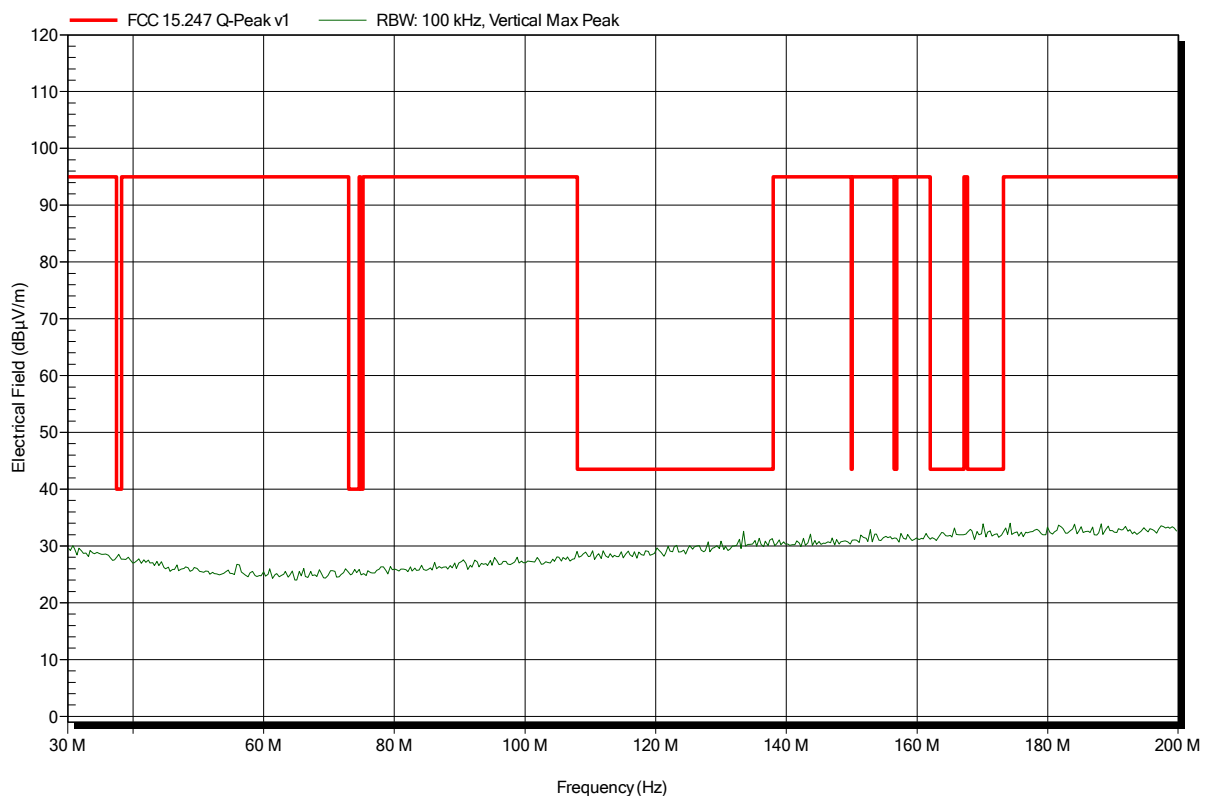


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	worst case

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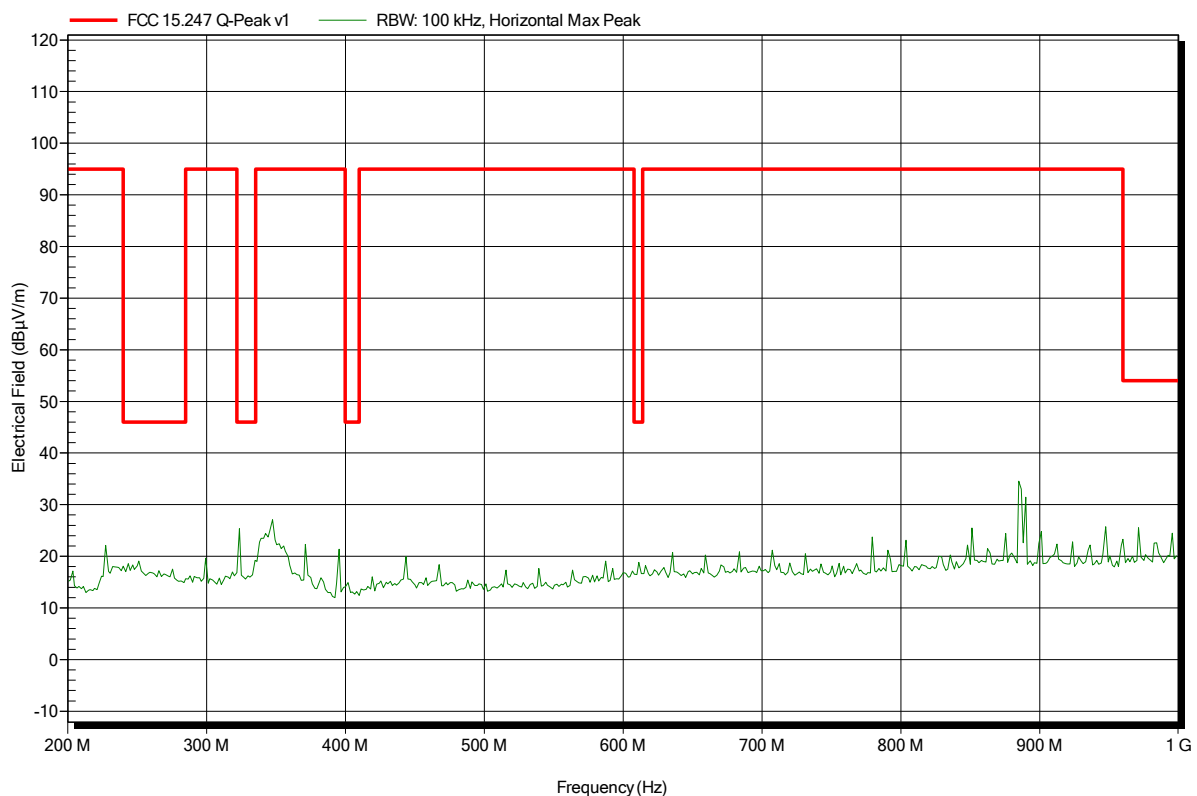


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	worst case

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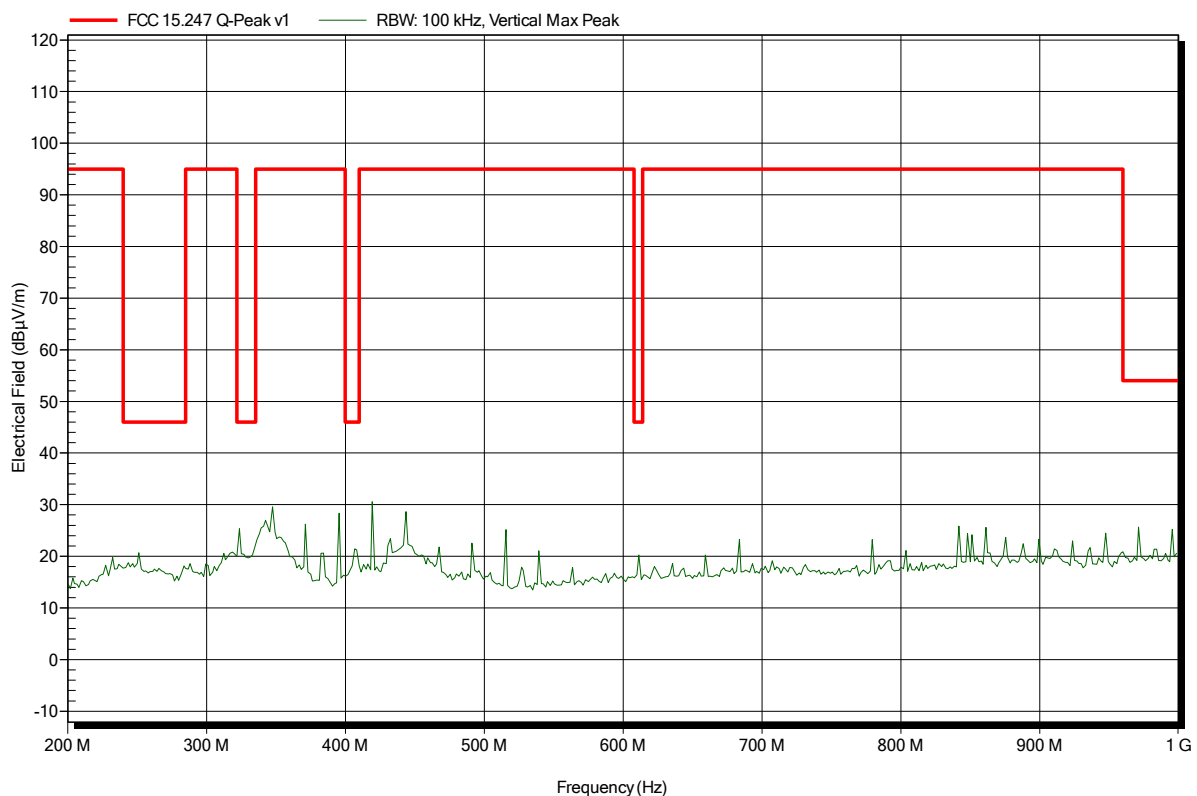


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	worst case

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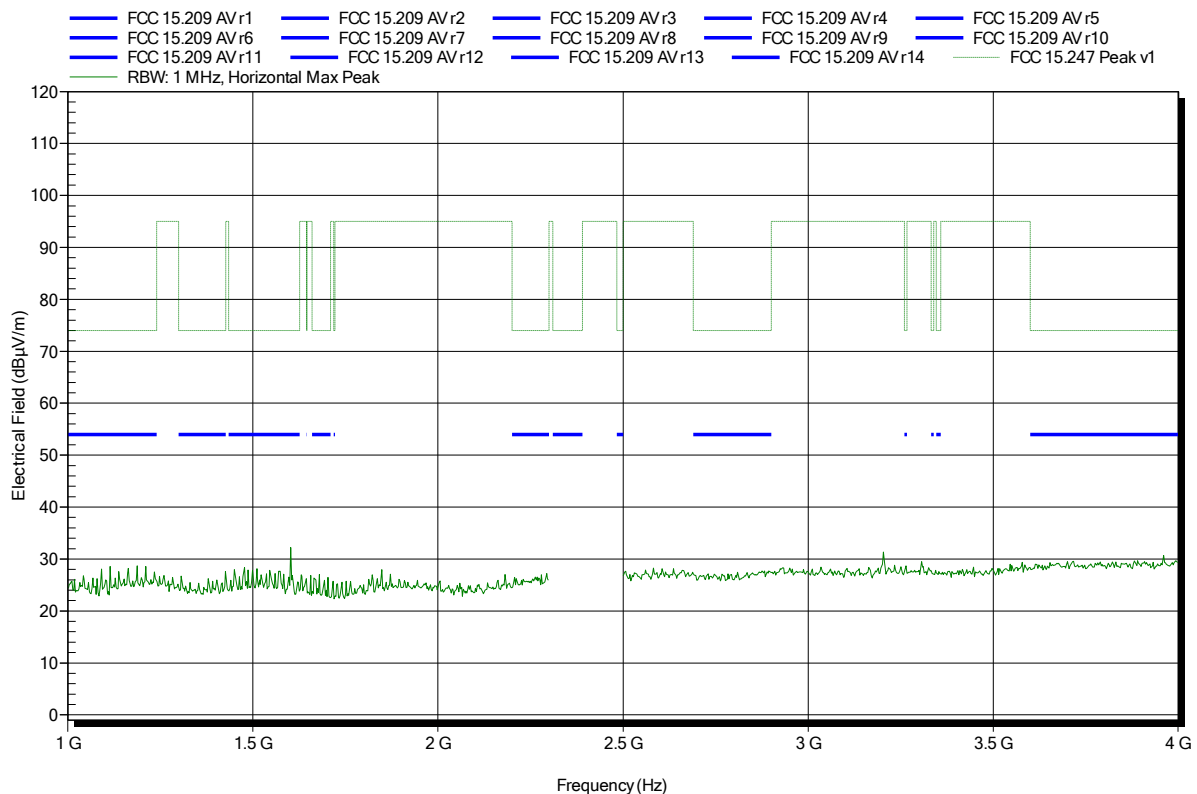


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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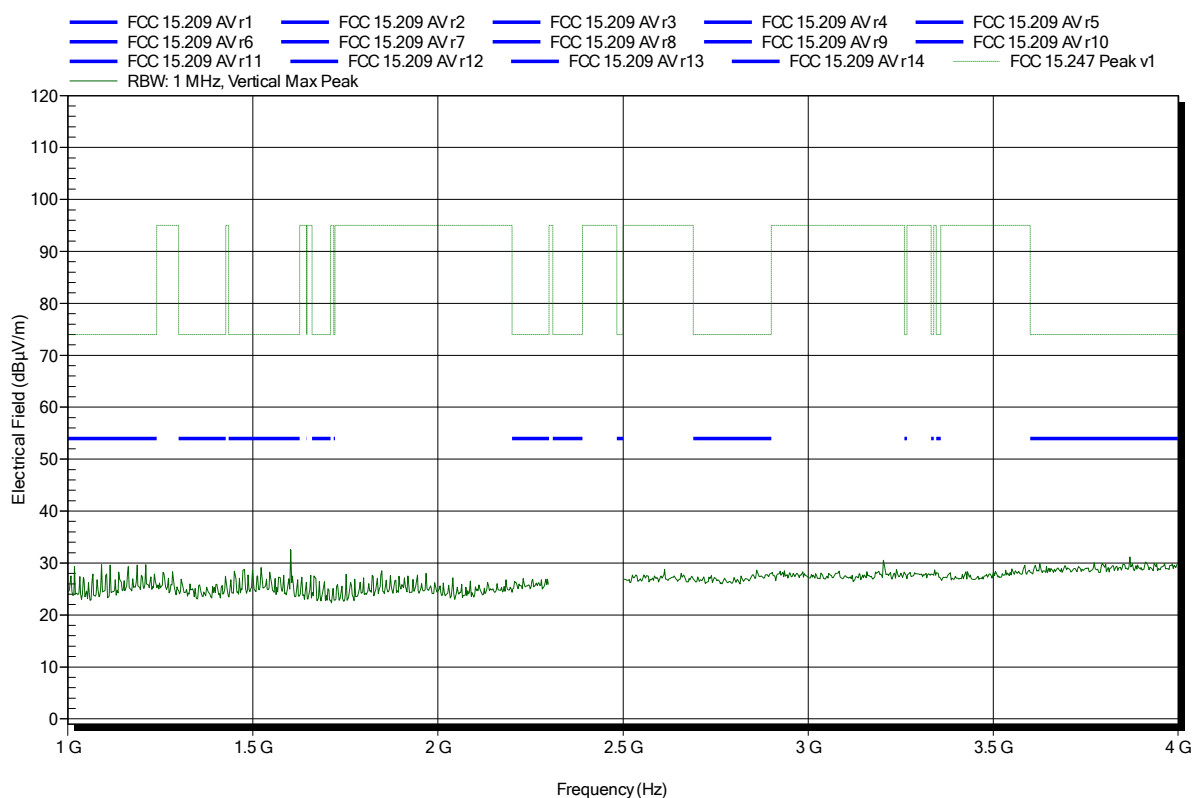


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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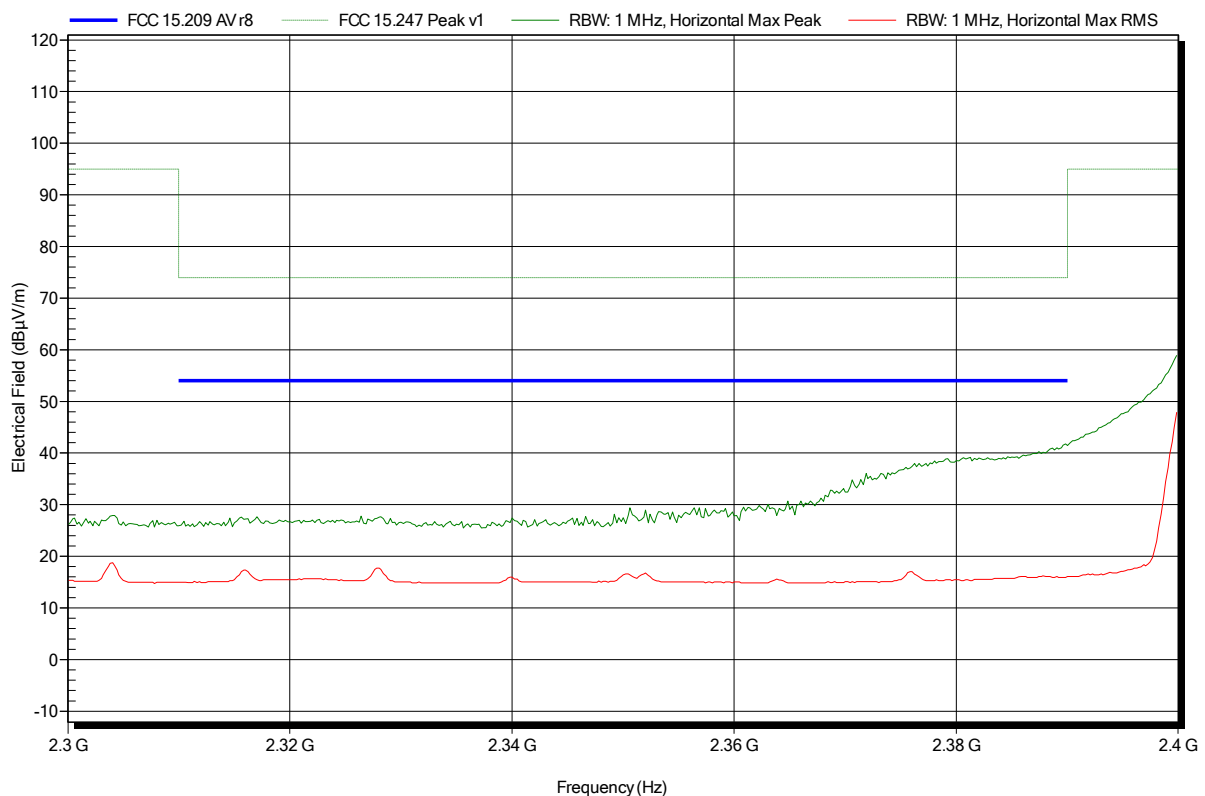


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	lower bandedge

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Test Report No.: GOM-1408-4062-TFC247BT79-V01

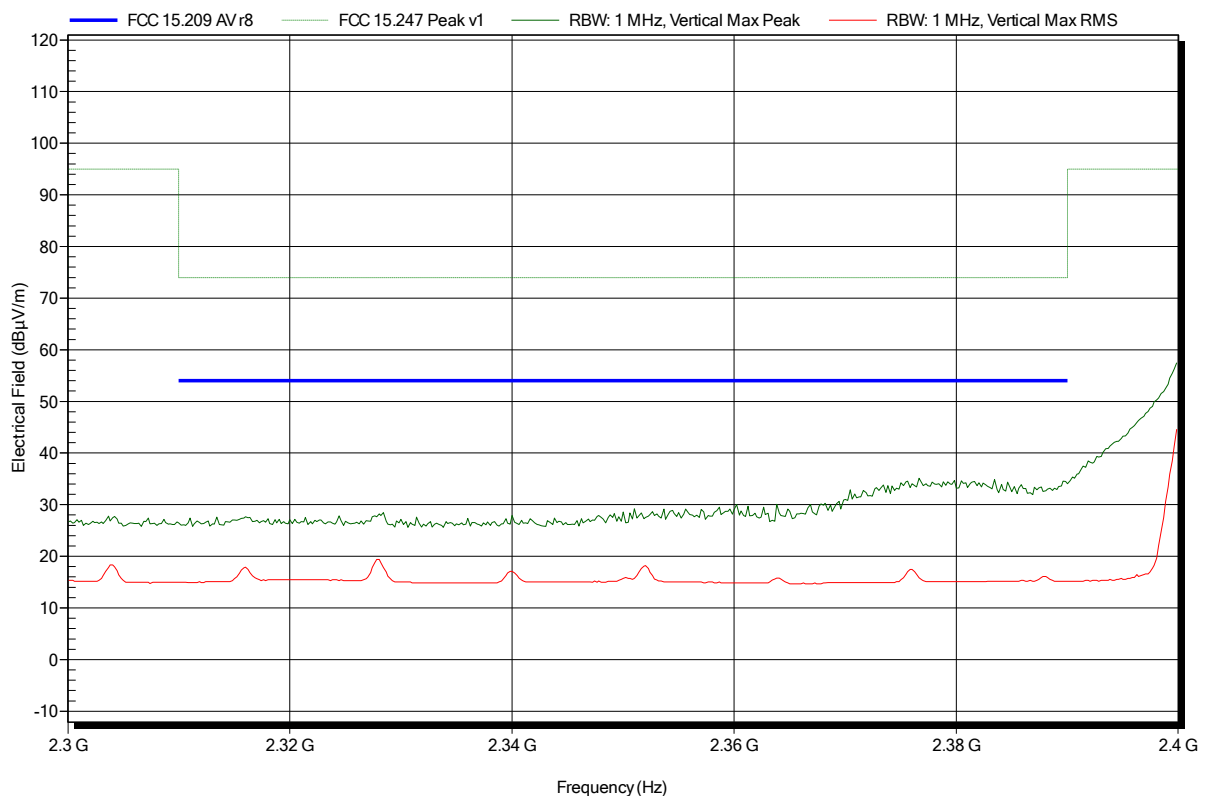
Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; GFSK; DH5; 2402 MHz
Test Date:	2014-10-02
Note:	lower bandedge

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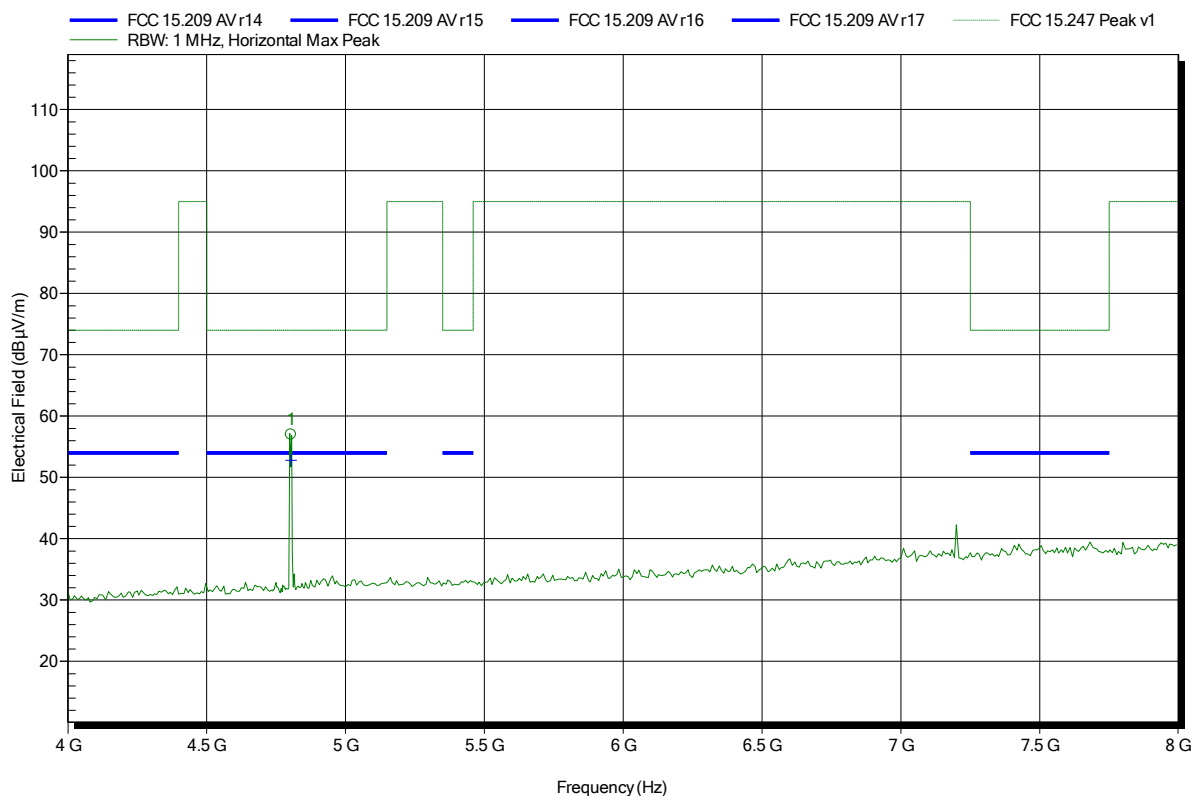


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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Frequency 4.804 GHz	Peak 56.97 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -17.03 dB	Peak Status Pass
Frequency 4.804 GHz	Average 52.81 dBµV/m	Average Limit 54 dBµV/m	Average Difference -1.19 dB	Average Status Pass

Test Report No.: G0M-1408-4062-TFC247BT79-V01

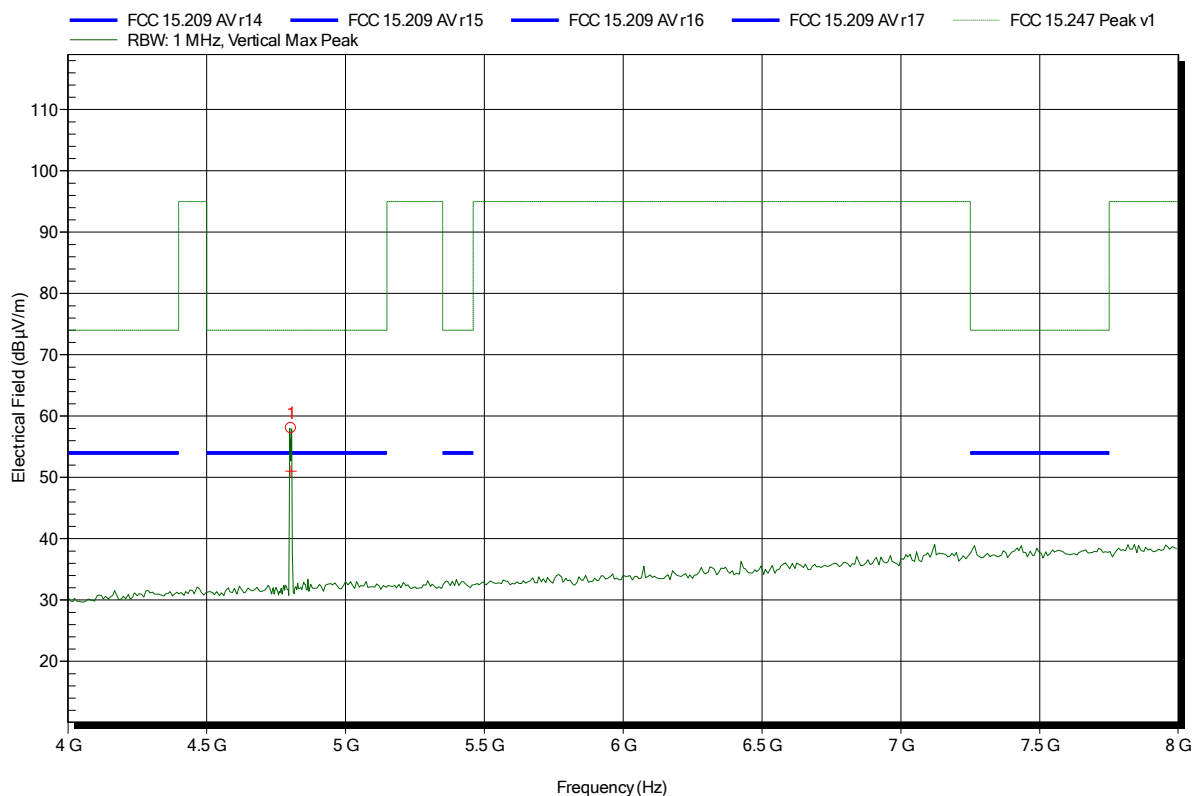
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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Frequency 4.804 GHz	Peak 58.03 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -15.97 dB	Peak Status Pass
Frequency 4.804 GHz	Average 50.99 dBµV/m	Average Limit 54 dBµV/m	Average Difference -3.01 dB	Average Status Pass

Test Report No.: GOM-1408-4062-TFC247BT79-V01

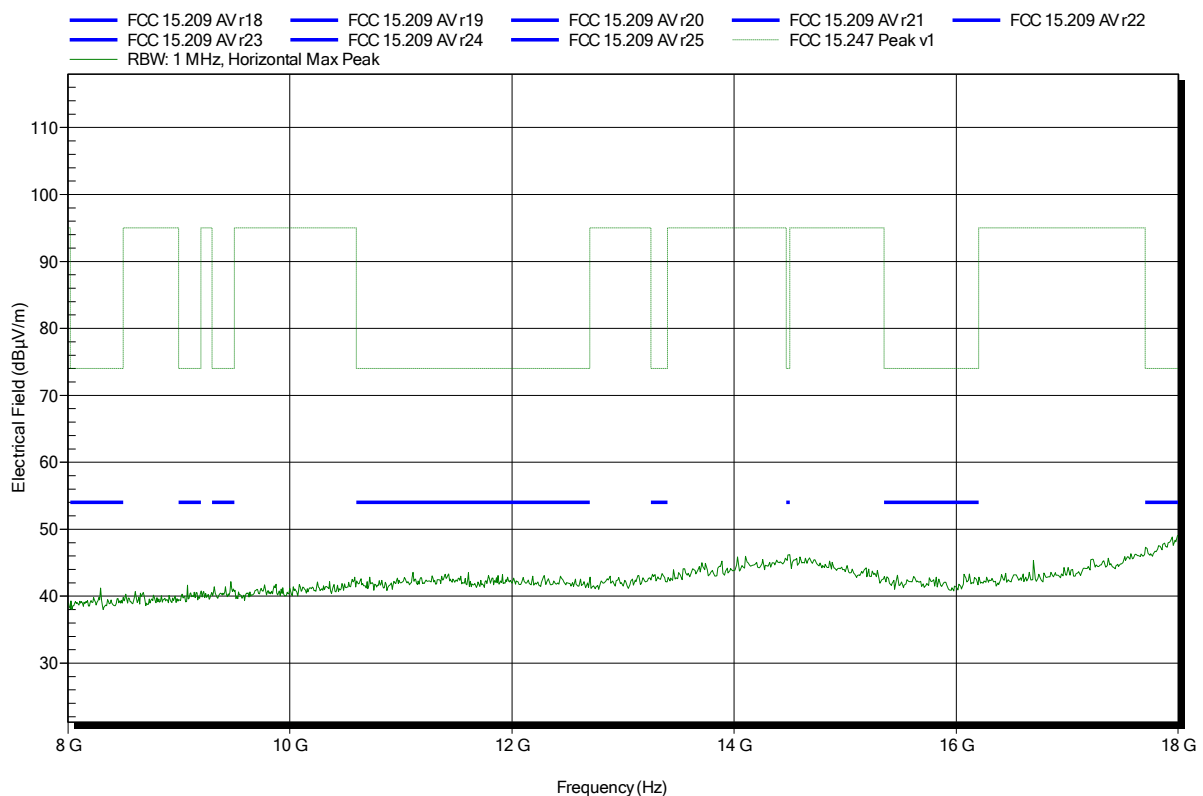
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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Test Report No.: GOM-1408-4062-TFC247BT79-V01

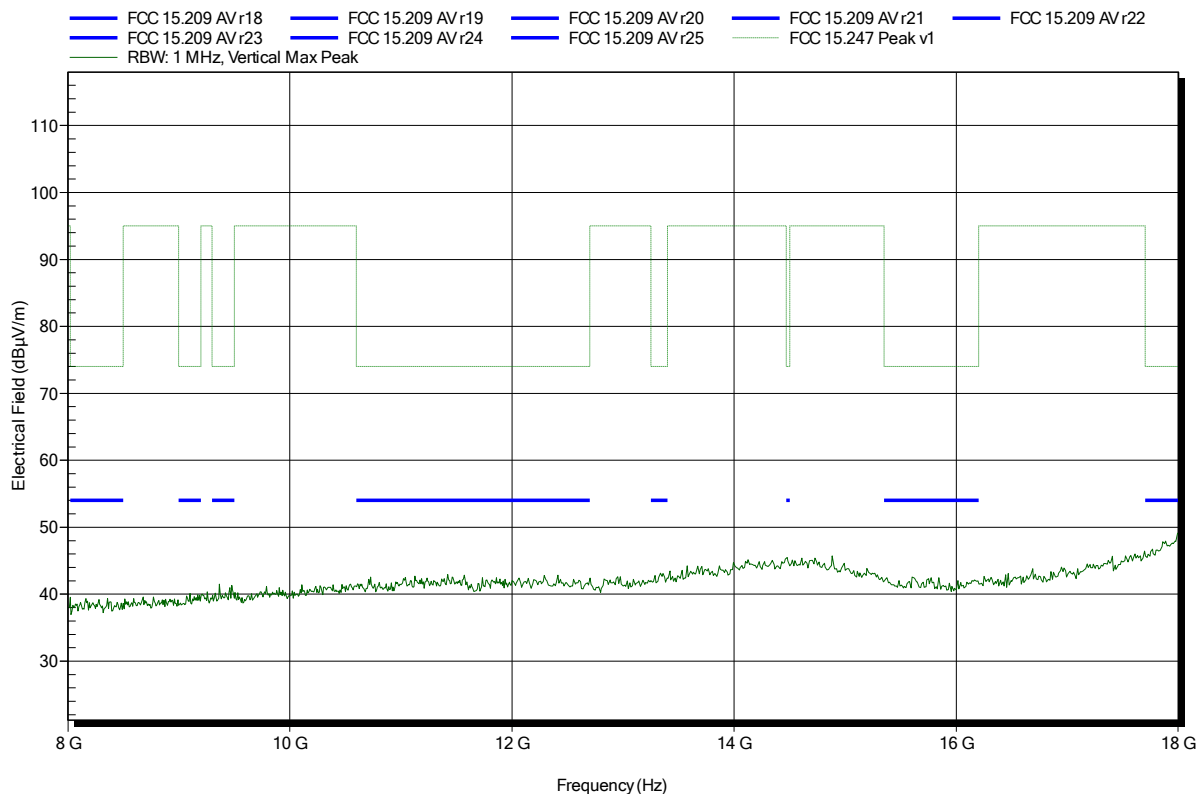
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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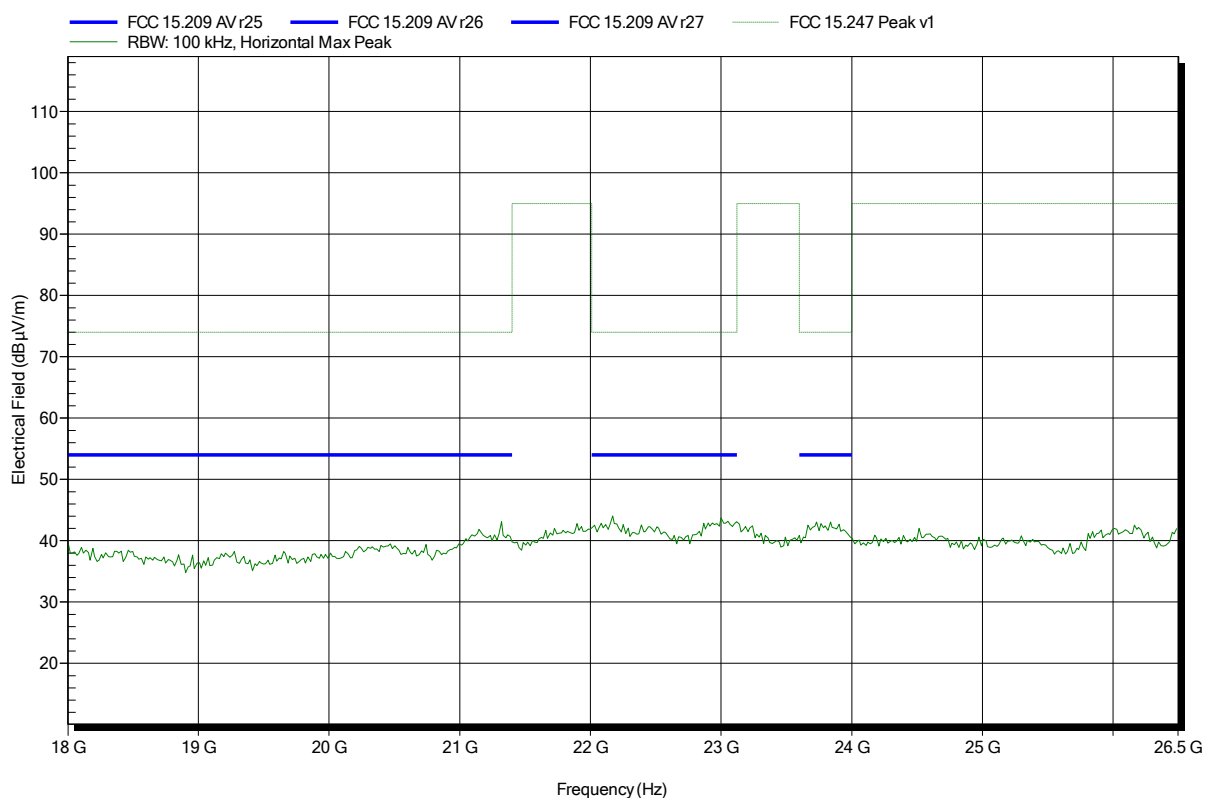


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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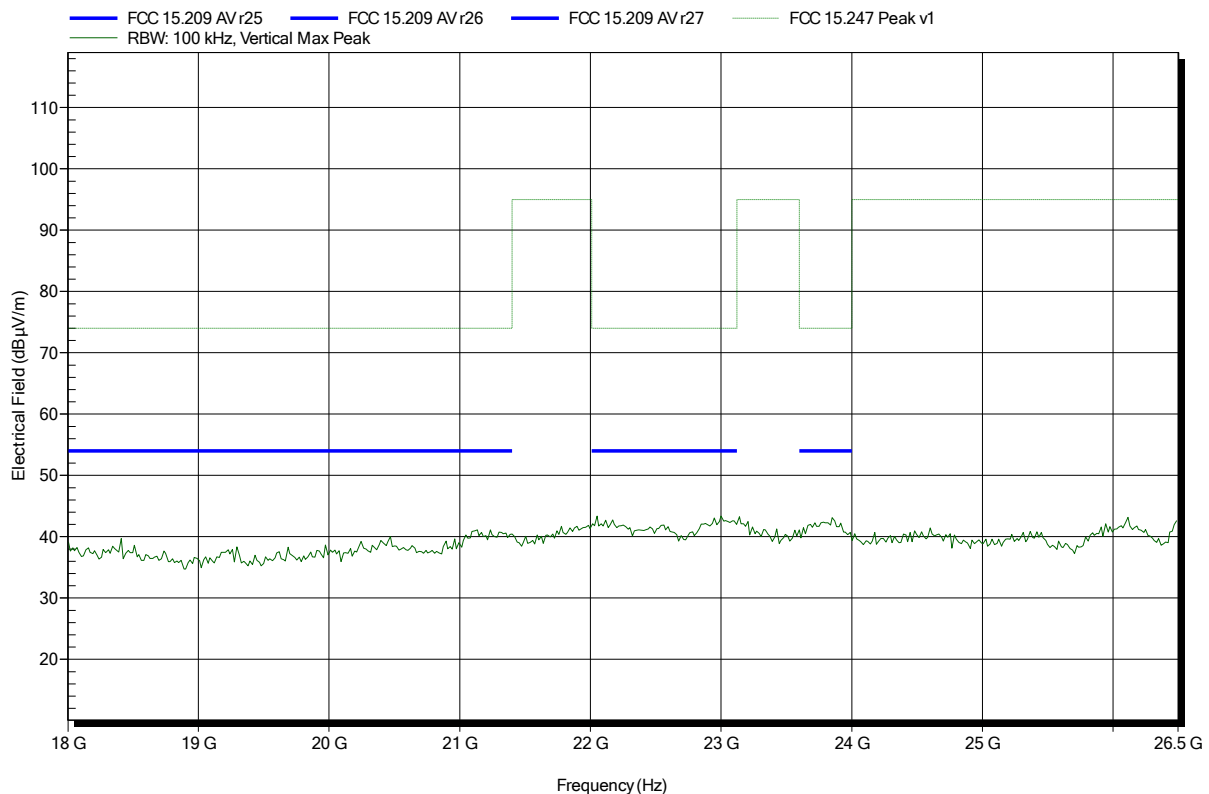


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2402 MHz
 Test Date: 2014-10-02
 Note:

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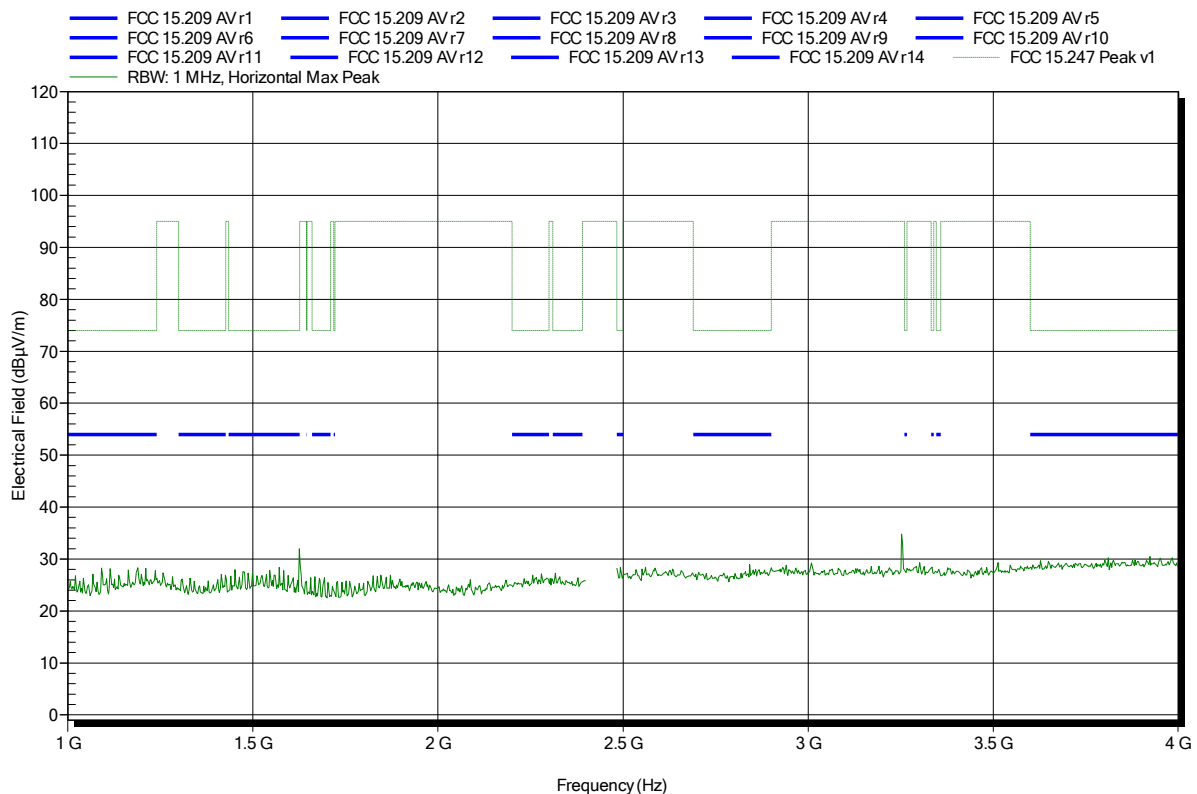


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1m converted to 3m
 Mode: TX; GFSK; DH5; 2441 mHz
 Test Date: 2014-10-02
 Note:

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Test Report No.: GOM-1408-4062-TFC247BT79-V01

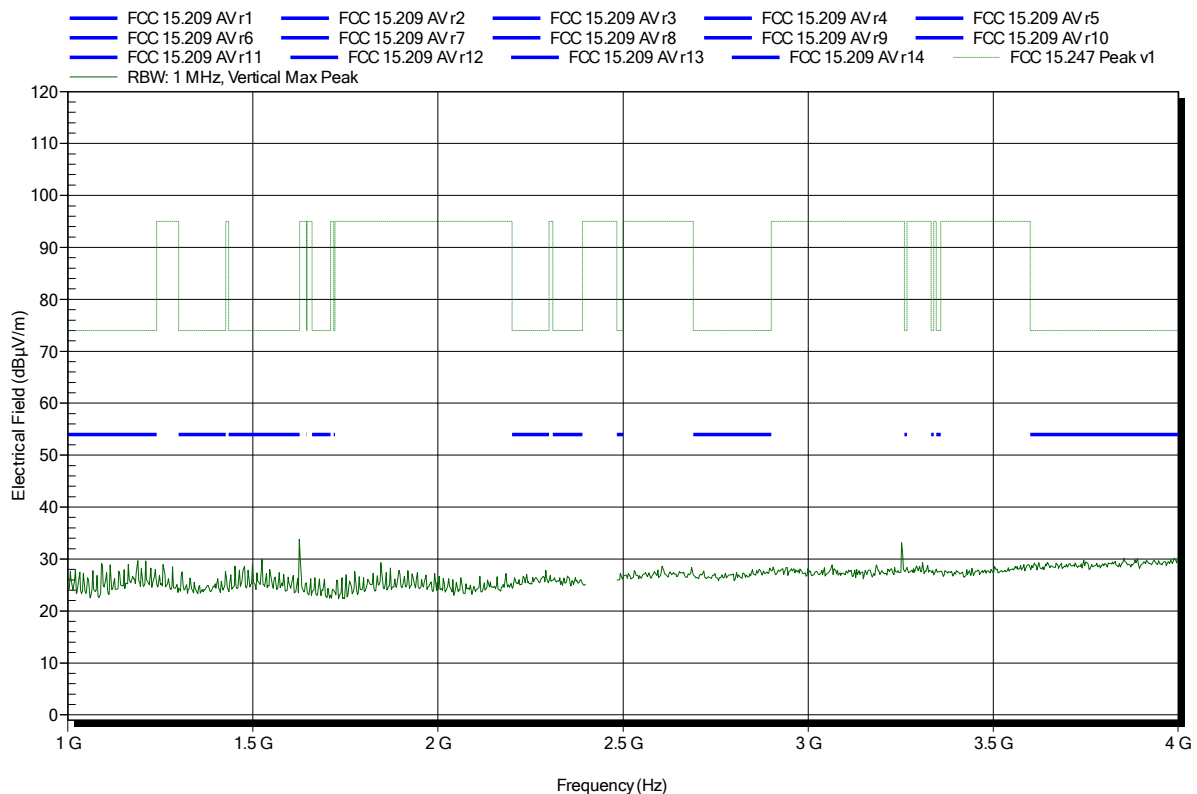
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2441 MHz
 Test Date: 2014-10-02
 Note:

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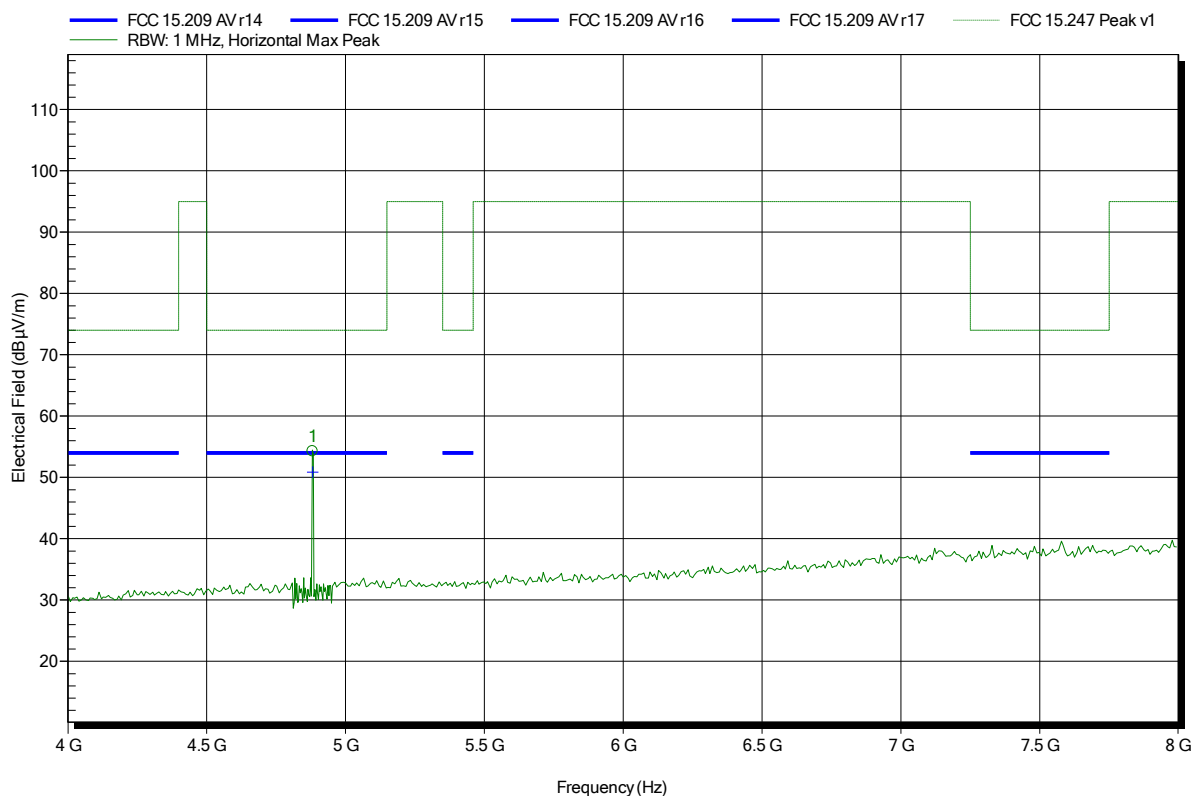


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2441 MHz
 Test Date: 2014-10-02
 Note:

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Frequency 4.882 GHz	Peak 54.28 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -19.72 dB	Peak Status Pass
Frequency 4.882 GHz	Average 50.86 dBµV/m	Average Limit 54 dBµV/m	Average Difference -3.14 dB	Average Status Pass

Test Report No.: GOM-1408-4062-TFC247BT79-V01

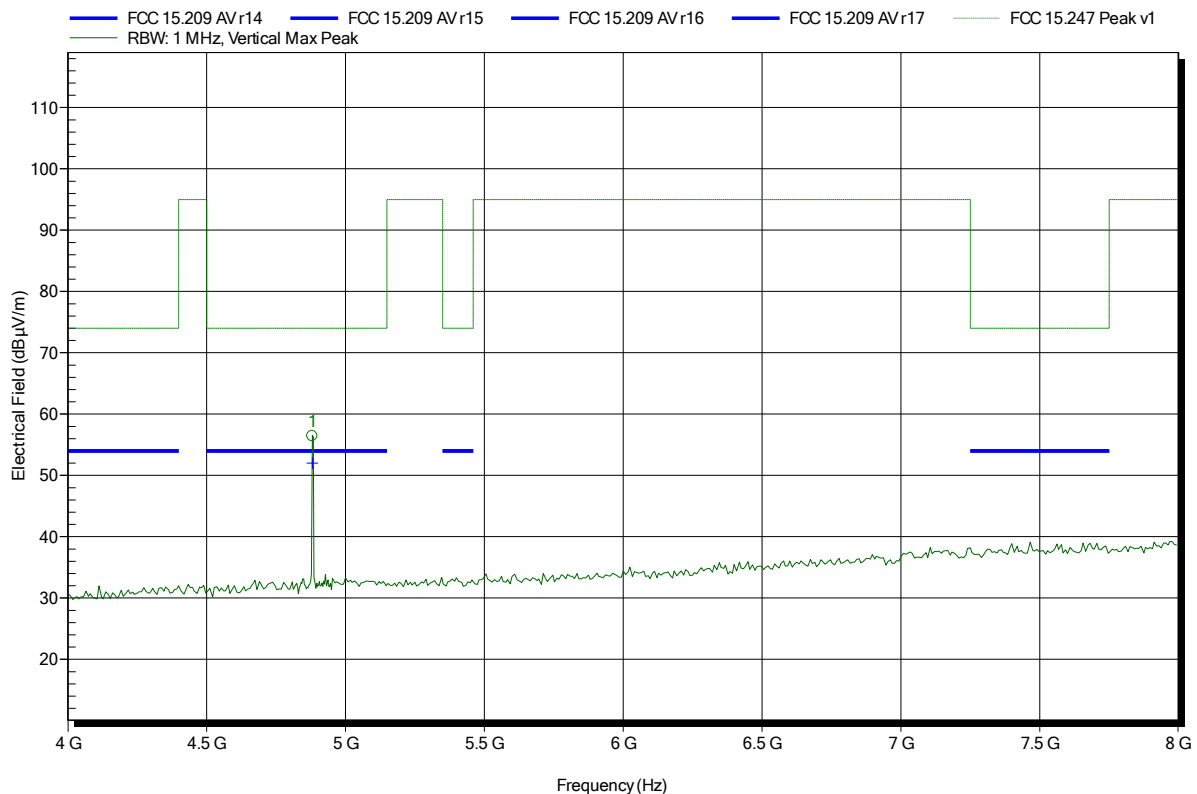
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2441 MHz
 Test Date: 2014-10-02
 Note:

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Frequency 4.882 GHz	Peak 56.4 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -17.6 dB	Peak Status Pass
Frequency 4.882 GHz	Average 52.04 dBµV/m	Average Limit 54 dBµV/m	Average Difference -1.96 dB	Average Status Pass

Test Report No.: GOM-1408-4062-TFC247BT79-V01

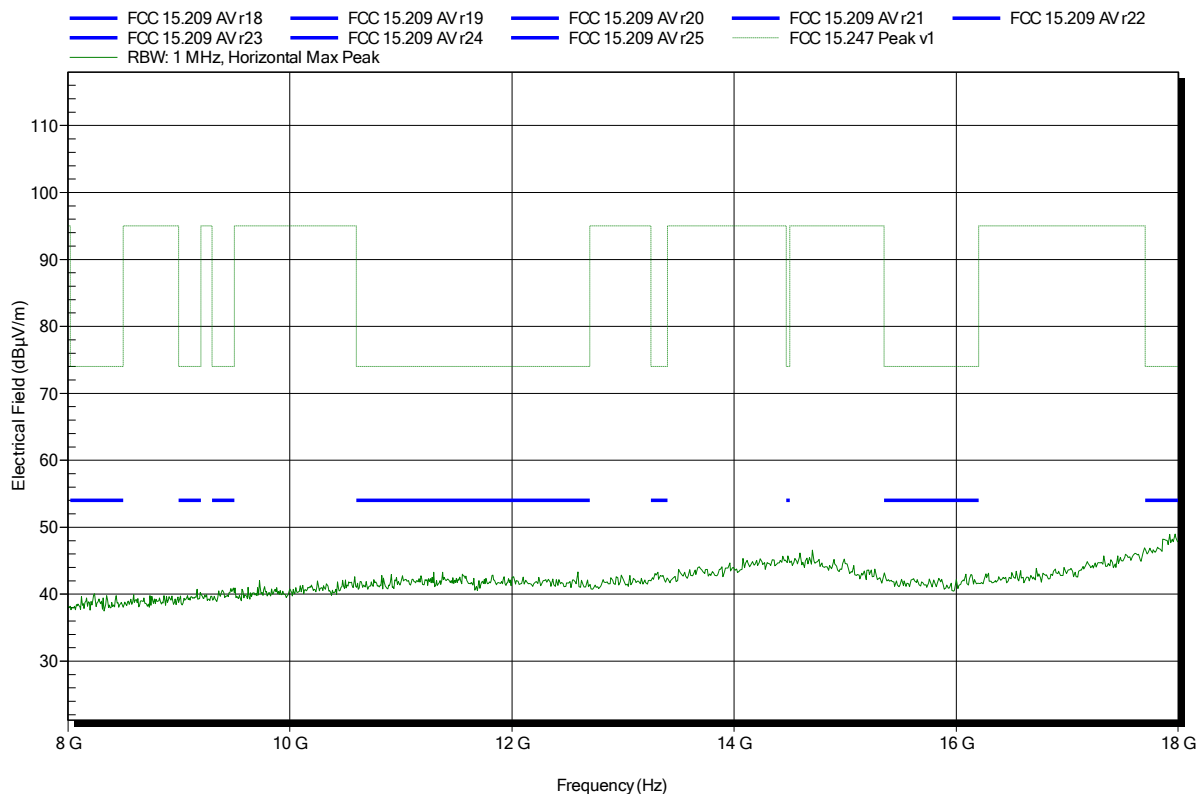
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2441 MHz
 Test Date: 2014-10-02
 Note:

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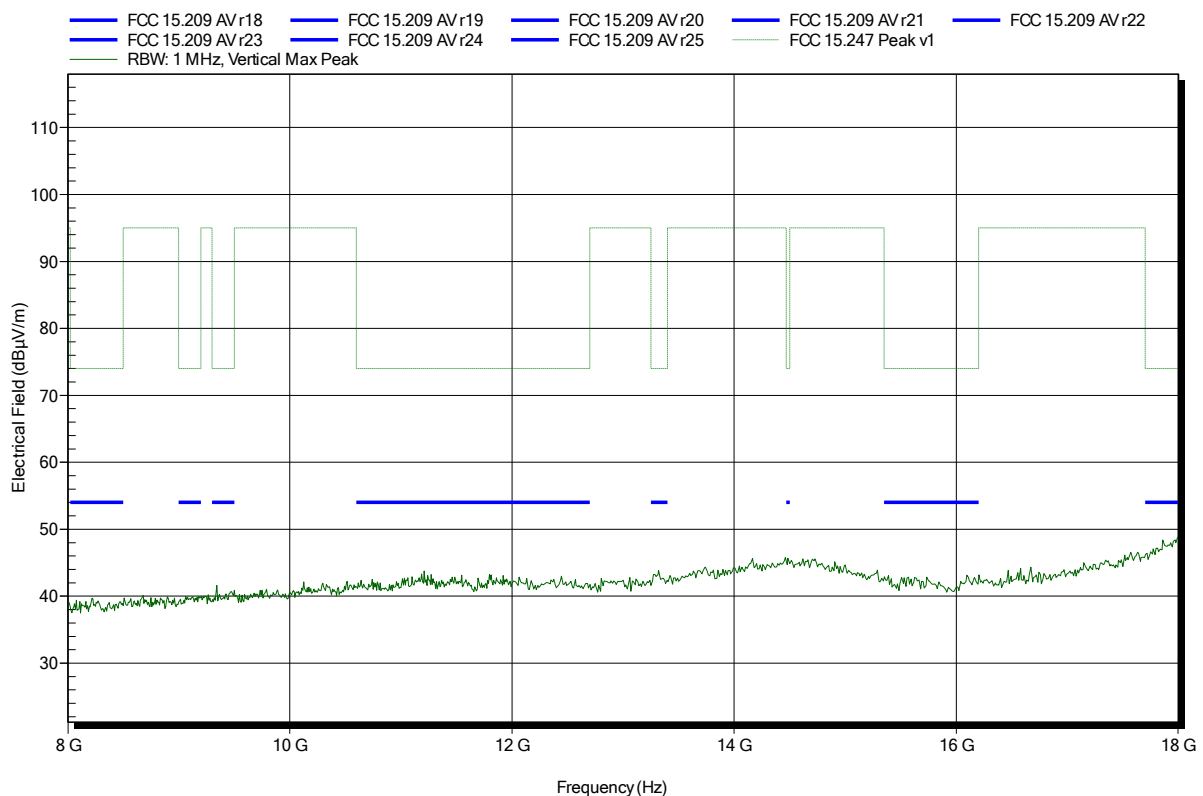


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2441 MHz
 Test Date: 2014-10-02
 Note:

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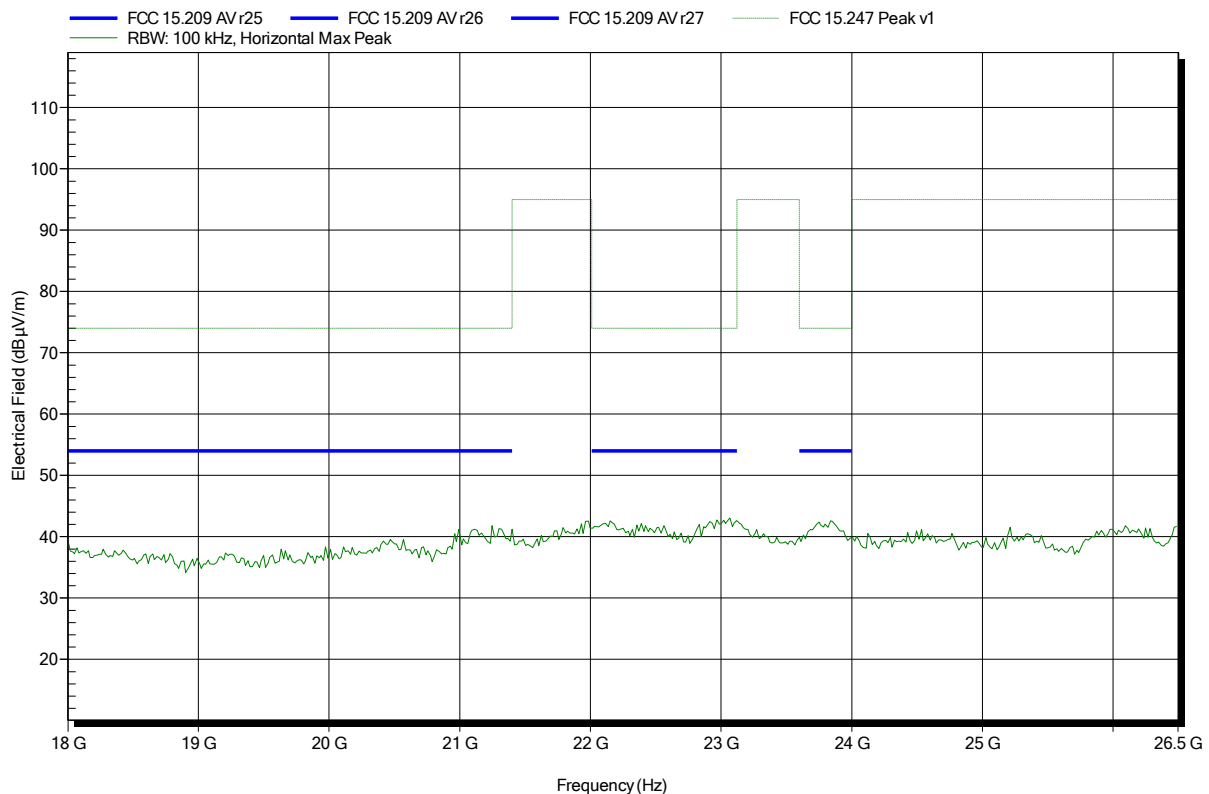


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; GFSK; DH5; 2441 MHz
Test Date:	2014-10-02
Note:	

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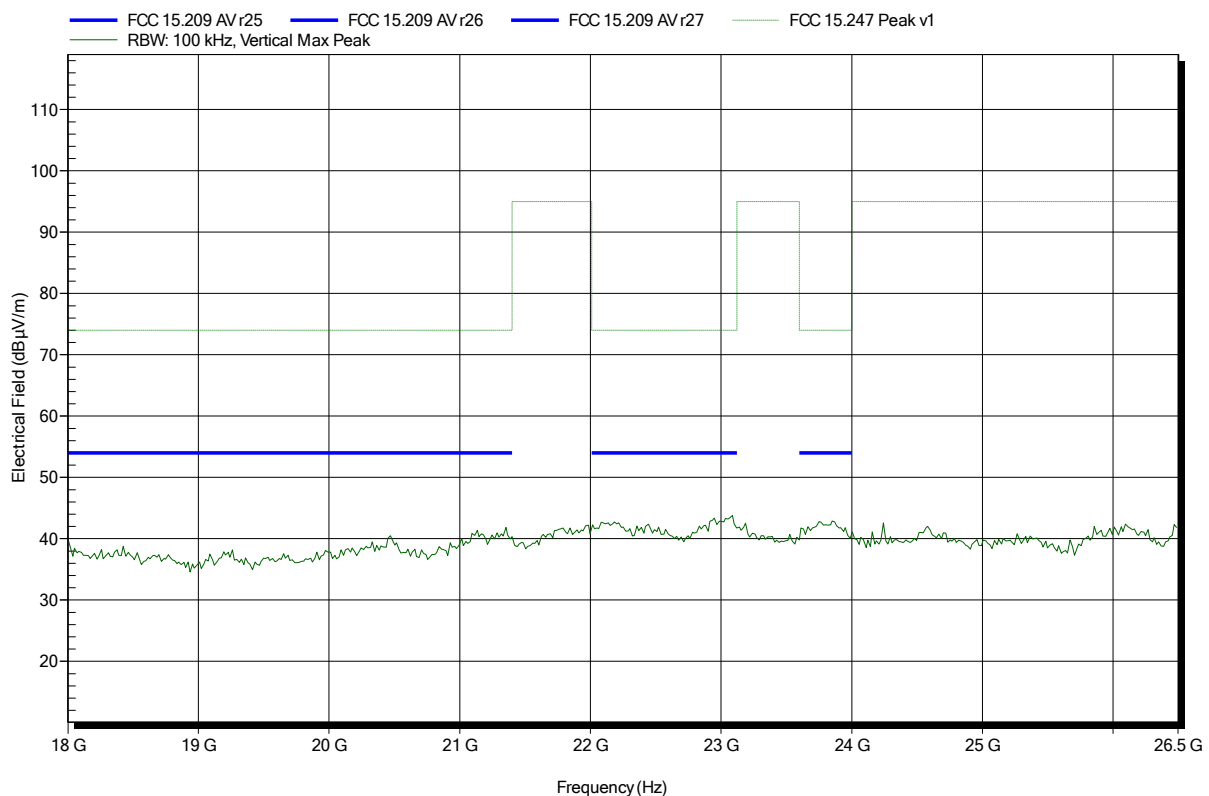


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; GFSK; DH5; 2441 MHz
Test Date:	2014-10-02
Note:	

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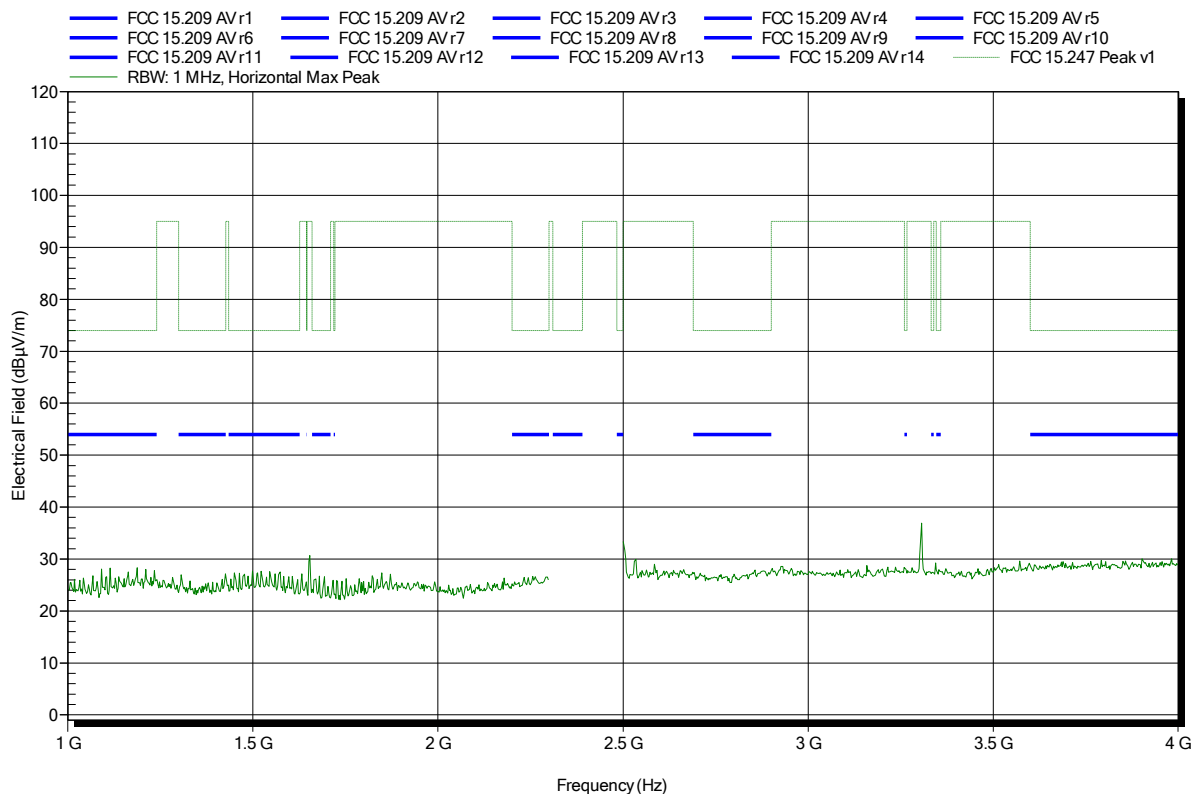


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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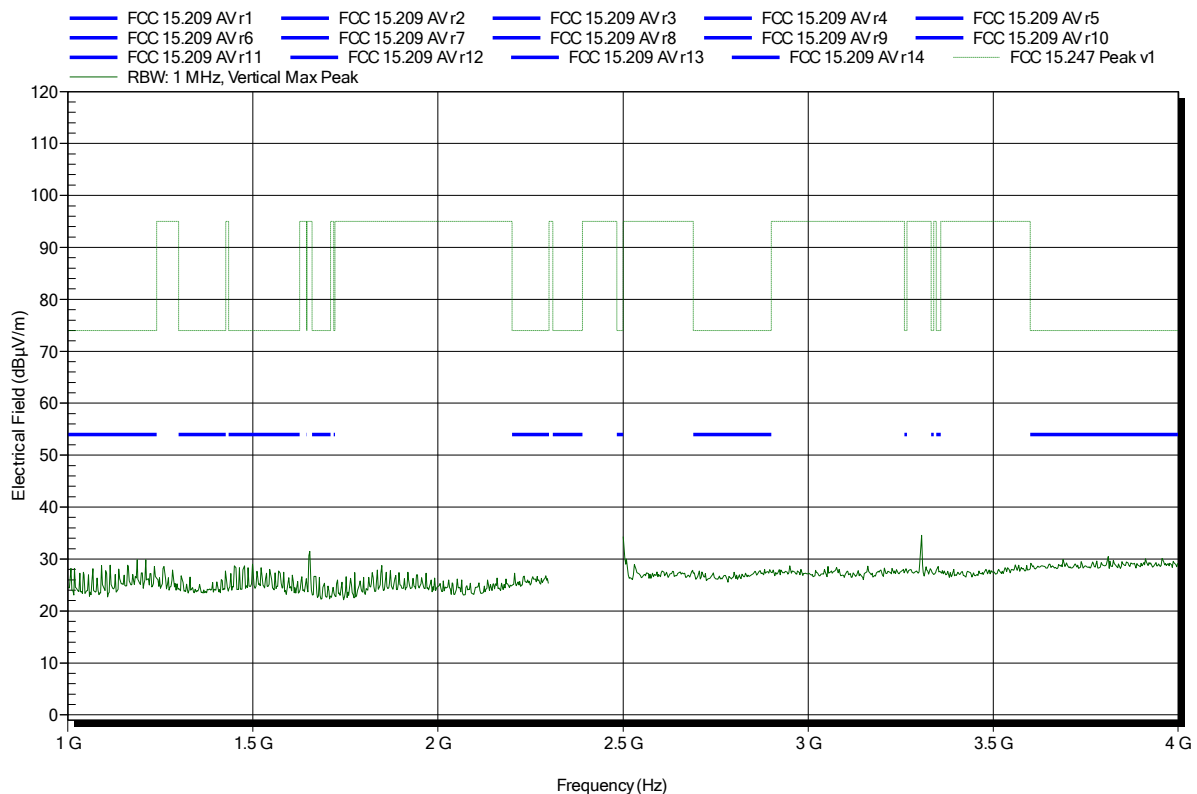


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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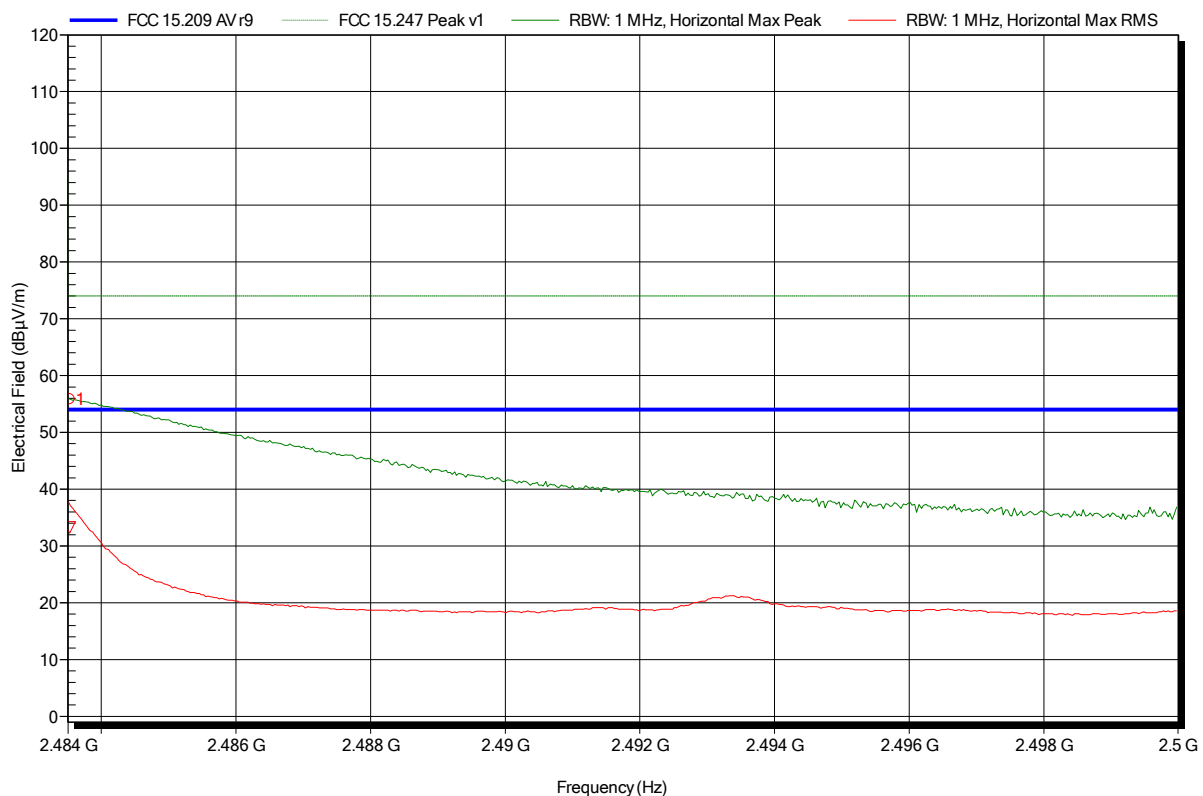


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note: upper bandedge

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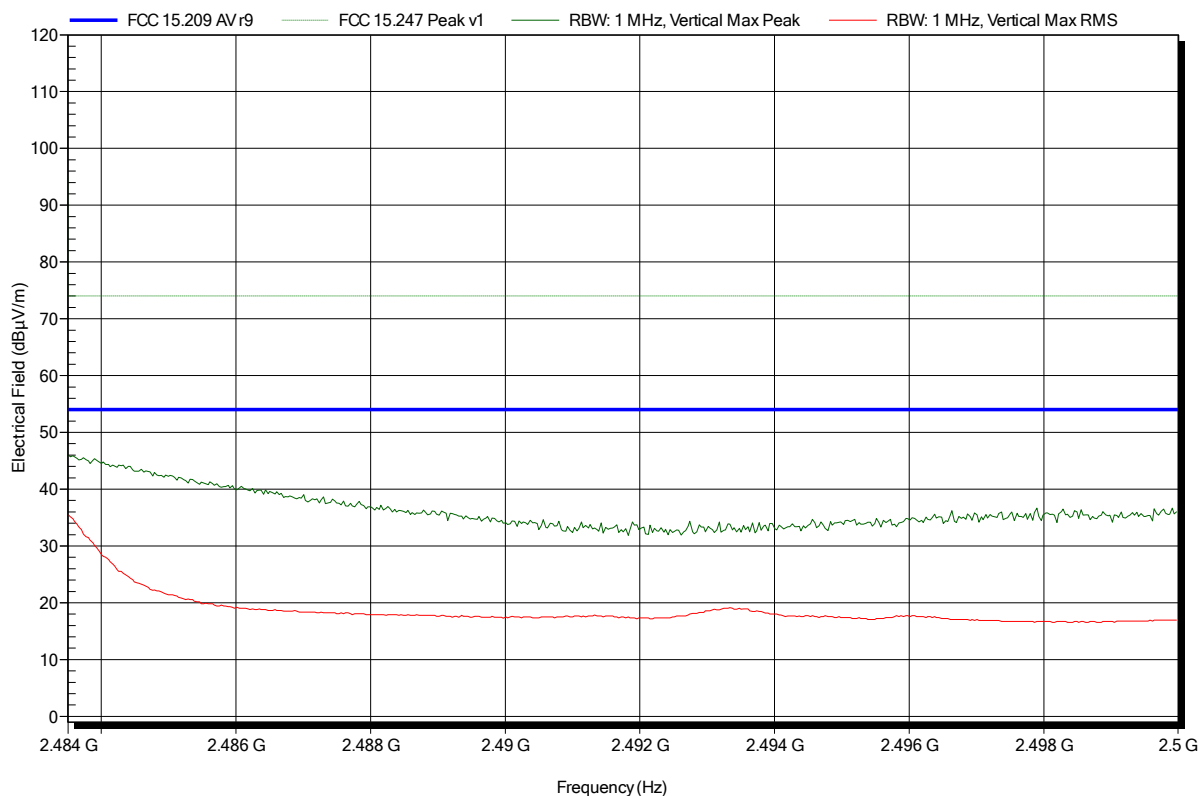
Frequency 2.4835 GHz	Peak 55.82 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -18.18 dB	Peak Status Pass
Frequency 2.4835 GHz	RMS 33.29 dBµV/m	RMS Limit 54 dBµV/m	RMS Difference -20.71 dB	RMS Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; GFSK; DH5; 2480 MHz
Test Date:	2014-10-02
Note:	upper bandedge

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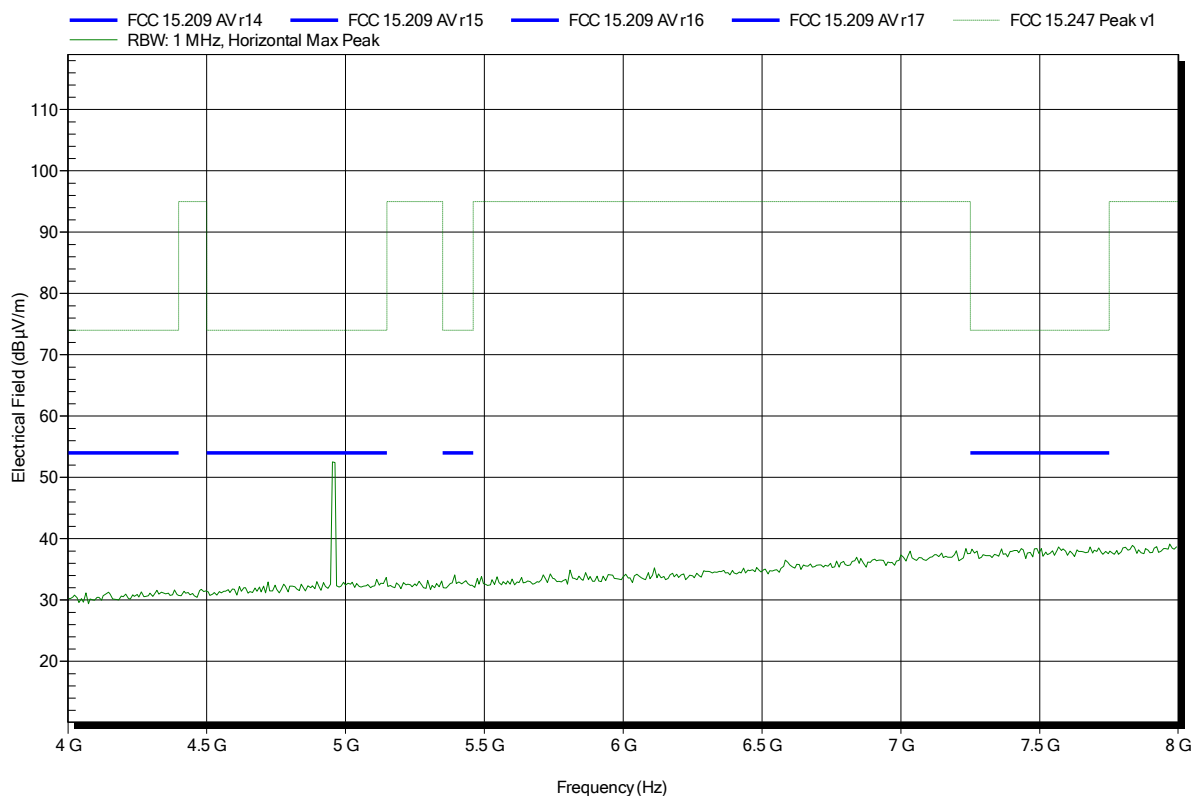


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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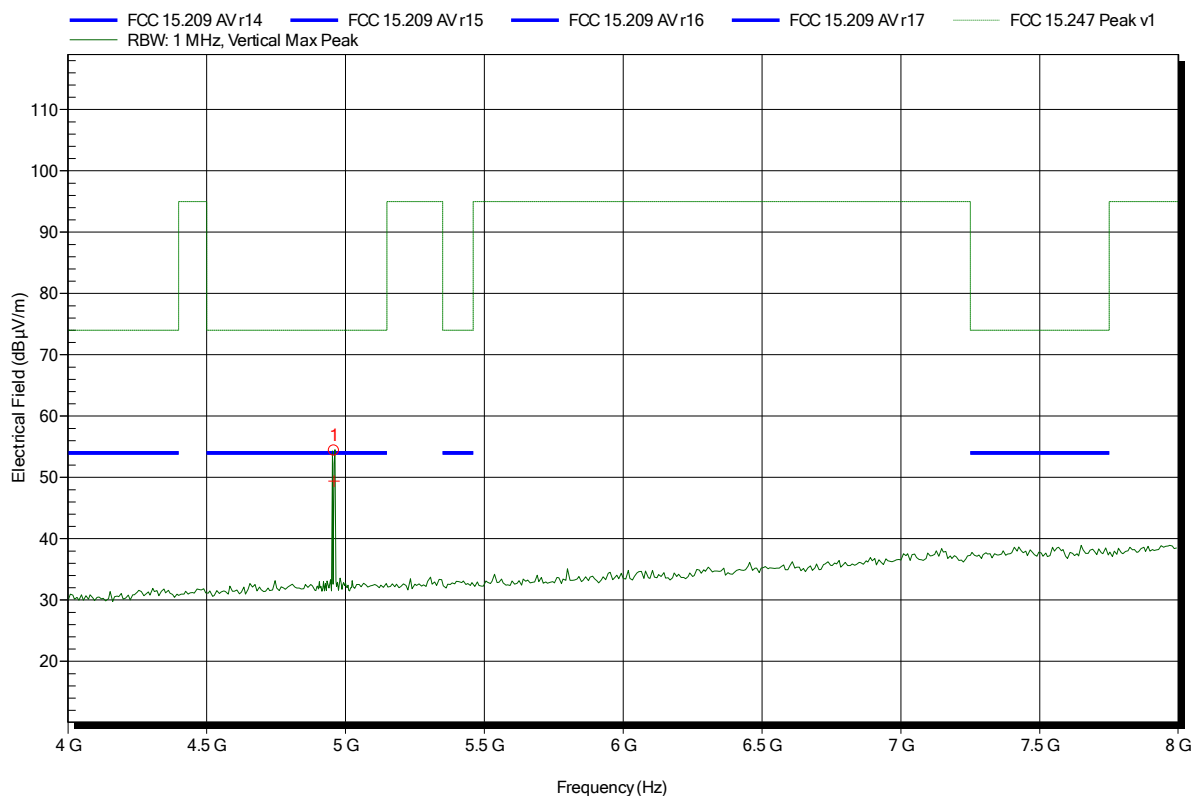


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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Frequency 4.96 GHz	Peak 54.38 dBµV/m	Peak Limit 74 dBµV/m	Peak Difference -19.62 dB	Peak Status Pass
Frequency 4.96 GHz	Average 49.41 dBµV/m	Average Limit 54 dBµV/m	Average Difference -4.59 dB	Average Status Pass

Test Report No.: GOM-1408-4062-TFC247BT79-V01

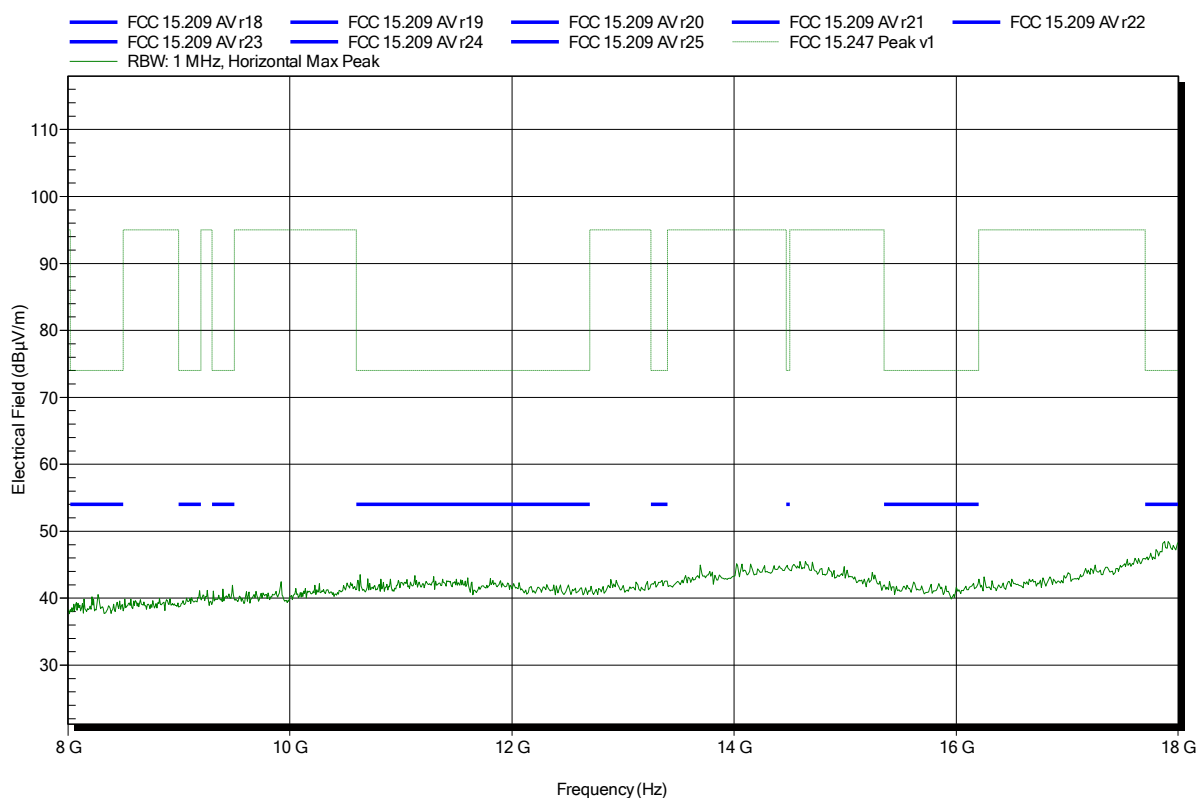
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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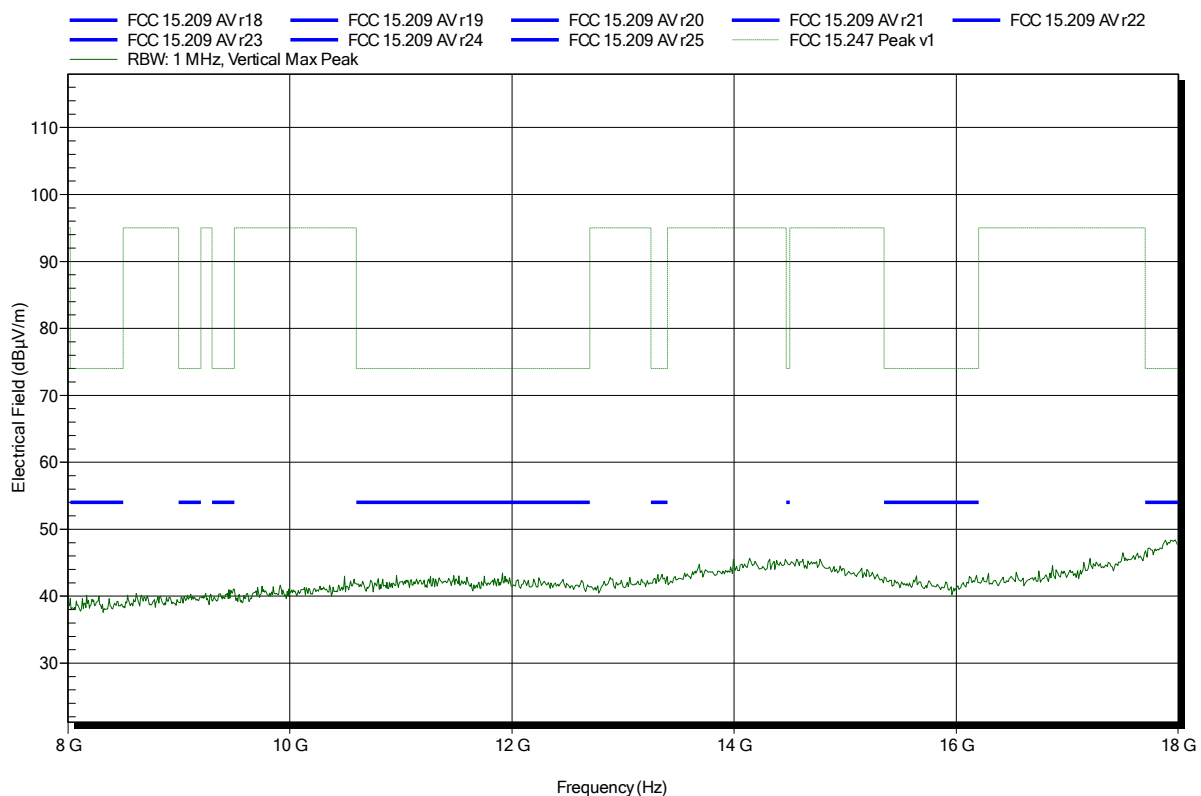


Spurious emissions according to FCC 15.247

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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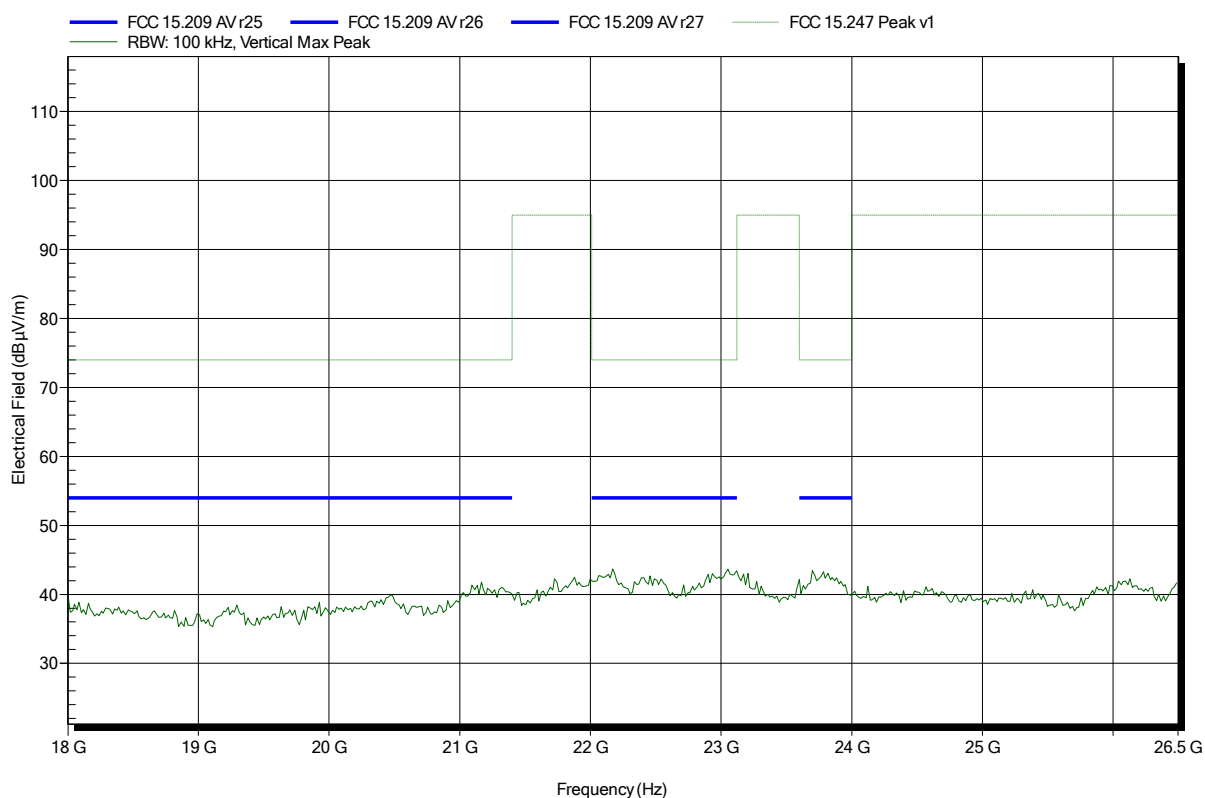


Spurious emissions according to FCC 15.247

Project number: G0M-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; GFSK; DH5; 2480 MHz
 Test Date: 2014-10-02
 Note:

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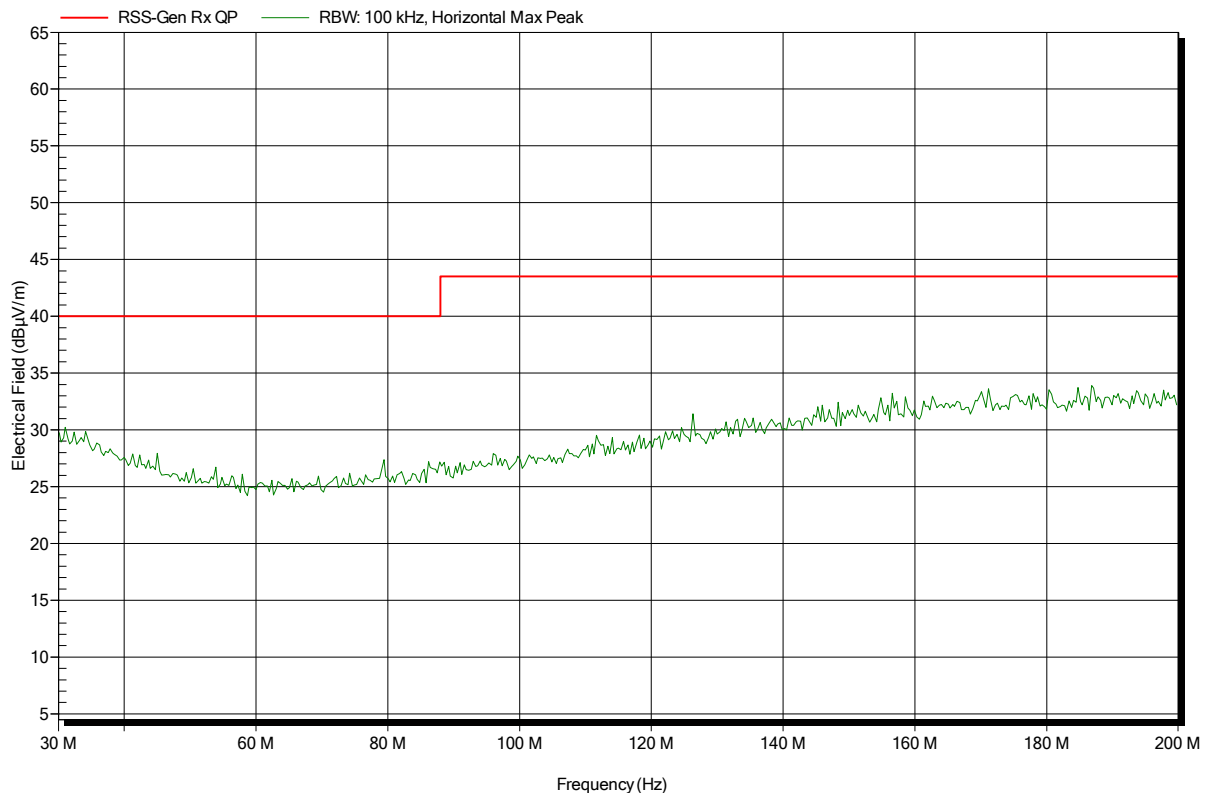
ANNEX B Receiver radiated spurious emissions

Spurious emissions according to RSS-GEN

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; DECT ch.2 and BT ch.39 active
Test Date:	2014-10-02
Note:	

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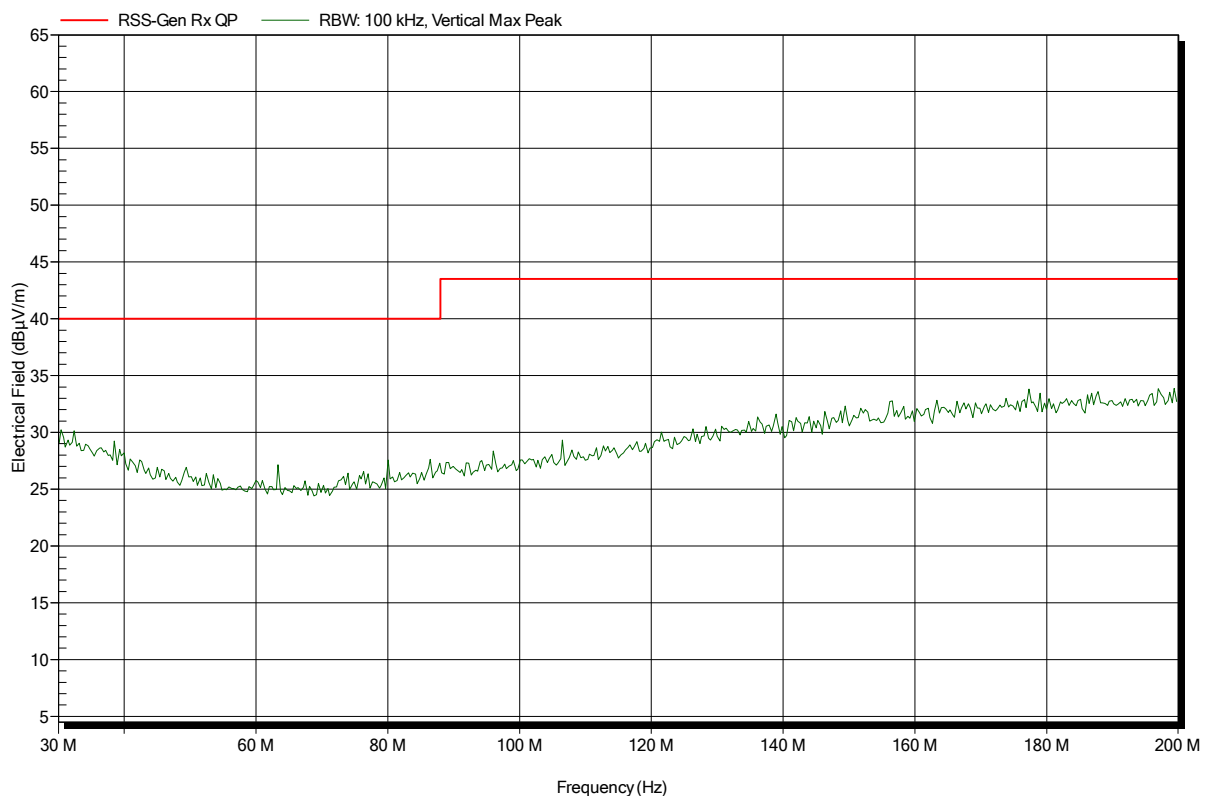


Spurious emissions according to RSS-GEN

Project number: GOM-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; DECT ch.2 and BT ch.39 active
Test Date:	2014-10-02
Note:	

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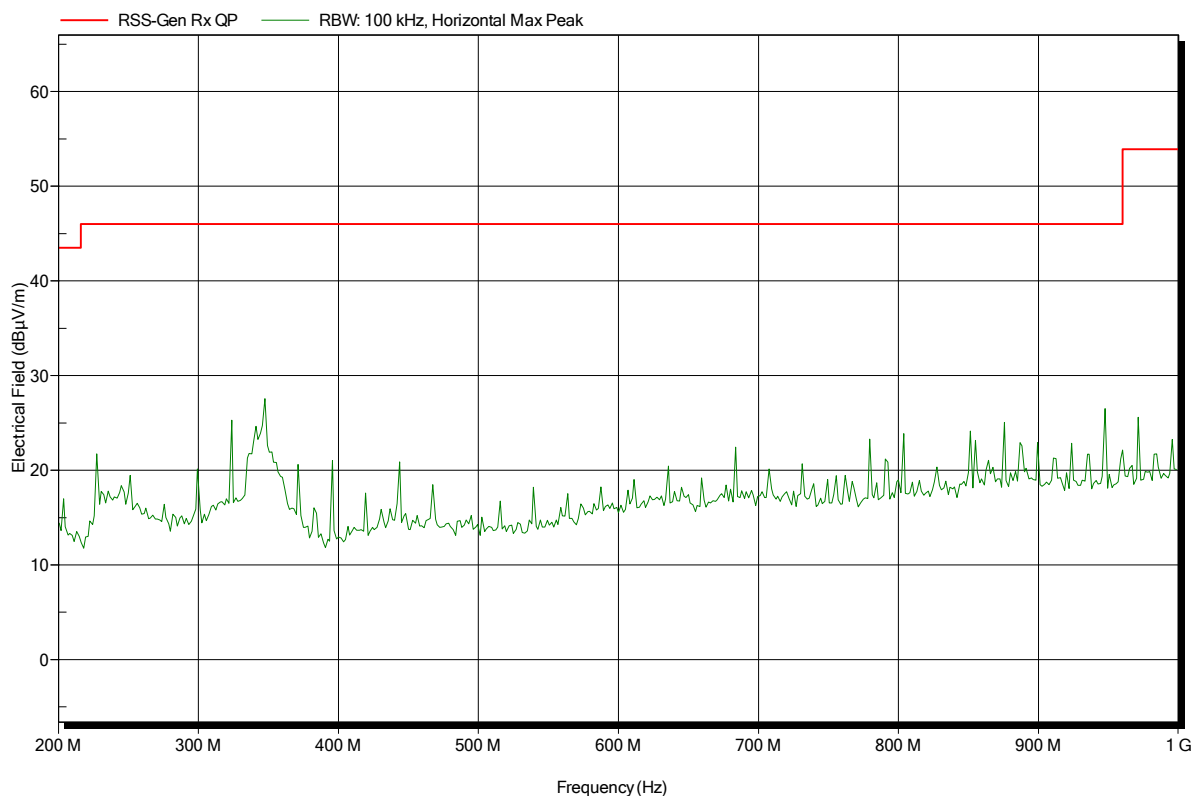


Spurious emissions according to RSS-GEN

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; DECT ch.2 and BT ch.39 active
Test Date:	2014-10-02
Note:	

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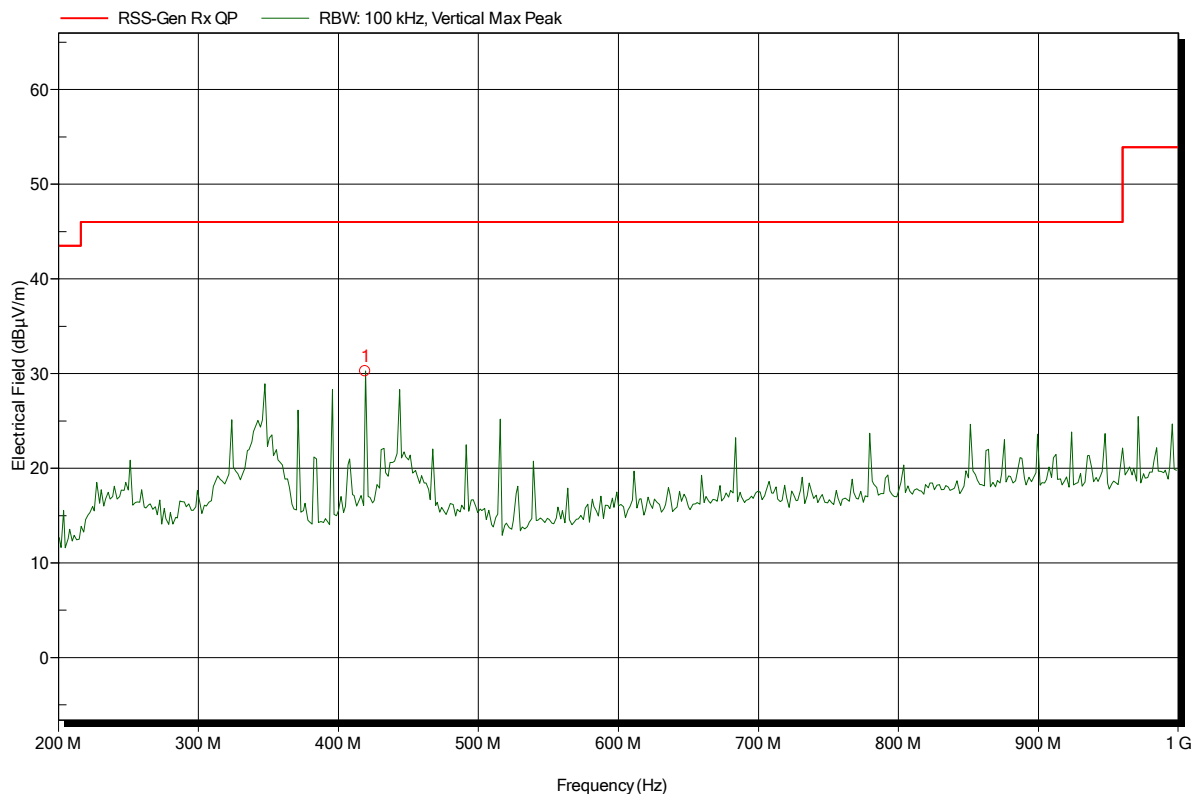


Spurious emissions according to RSS-GEN

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; DECT ch.2 and BT ch.39 active
 Test Date: 2014-10-02
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
419.2 MHz	30.24 dBµV/m	46 dBµV/m	-15.76 dB	Pass

Test Report No.: GOM-1408-4062-TFC247BT79-V01

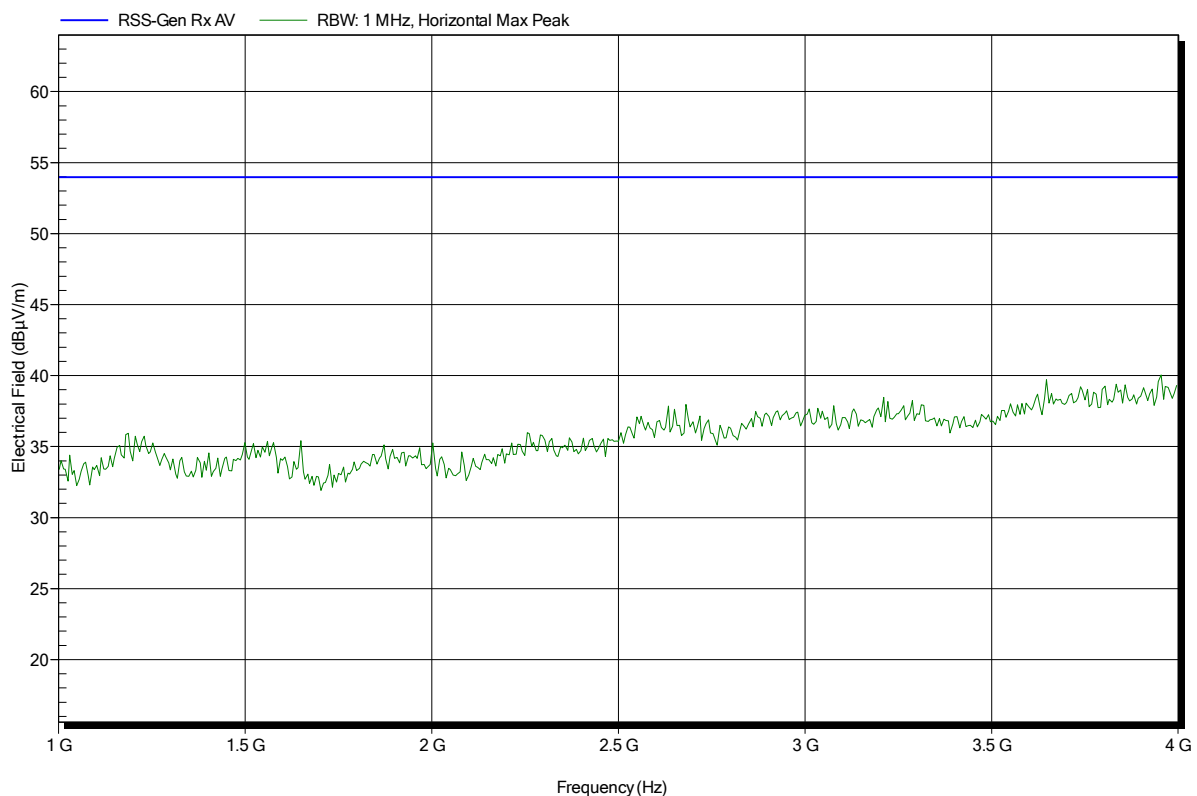
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Spurious emissions according to RSS-GEN

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; DECT ch.2 and BT ch.39 active
Test Date:	2014-10-02
Note:	

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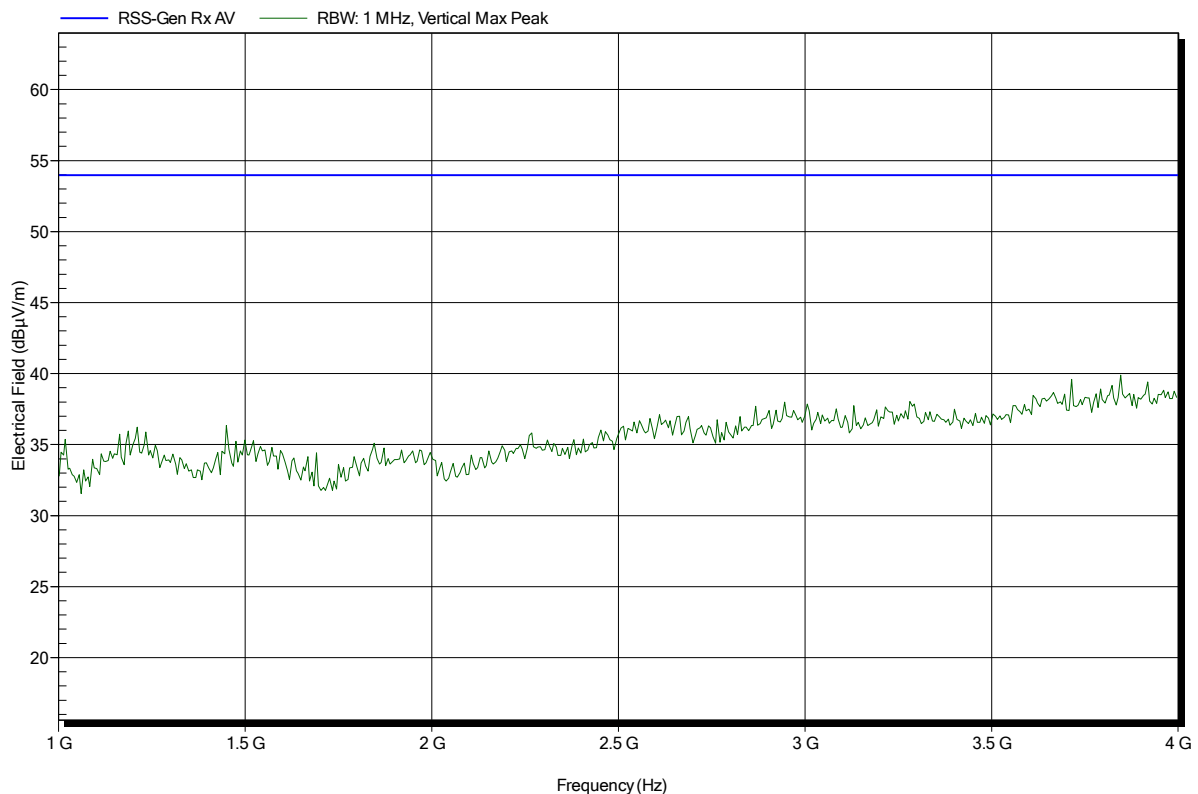


Spurious emissions according to RSS-GEN

Project number: GOM-1408-4062

Applicant: Sonetics Corporation
 EUT Name: Communications Headset
 Model: AXP379
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7 VDC lithium battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: RX; DECT ch.2 and BT ch.39 active
 Test Date: 2014-10-02
 Note:

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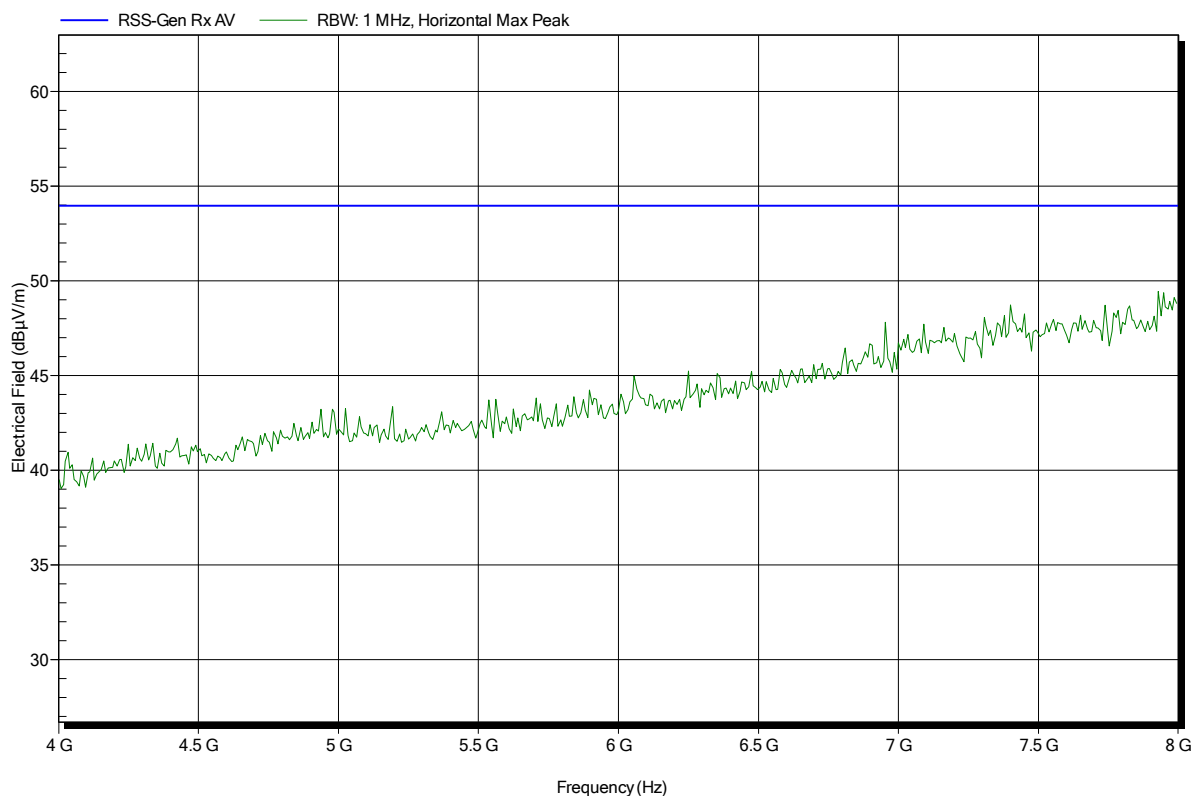


Spurious emissions according to RSS-GEN

Project number: G0M-1408-4062

Applicant:	Sonetics Corporation
EUT Name:	Communications Headset
Model:	AXP379
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7 VDC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; DECT ch.2 and BT ch.39 active
Test Date:	2014-10-02
Note:	

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Note:	

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