

FCC TEST REPORT FCC 47 CFR Part 15D Unlicensed Personal Communication Service Devices Industry Canada RSS-213 2GHz License-exempt Personal Communications Service Devices (LE-PCS)	
Report Reference No.:	G0M-1411-4308-TFC15DPP-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	Spectralink Europe ApS
Address:	Langmarksvej 34 8700 Horsens DENMARK
Test specification: Standard: 47 CFR Part 15D 47 CFR Part 15C 47 CFR Part 15B RSS-213, Issue 2, 2005-12 RSS-Gen, Issue 4, 2014-11 ANSI C63.17:2013 ANSI C63.4:2003	
Equipment under test (EUT): Product description DECT handset 7522 Model No. K022b Additional Model(s) None Brand Name(s) Spectralink Hardware version PCS 03 Firmware / Software version PCS 14BA FCC-ID: PXA-K022B IC: 4604A-K022B	
Test result	Passed

Test Report No.: G0M-1411-4308-TFC15DPP-V01

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

Possible test case verdicts:

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

Testing:

Test Lab Temperature: 20 – 23 °C

Test Lab Humidity: 32 – 38 %

Date of receipt of test item: 2014-11-13

Date (s) of performance of tests: 2015-01-19 - 2015-01-20

Compiled by: Wilfried Treffke

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

(Responsible for Test)

Approved by (+ signature): Christian Weber 

Date of issue: 2015-03-16

Total number of pages: 146

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Additional comments:

Version History

Version	Issue Date	Remarks	Revised by
01	2015-03-16	Initial Release	

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1 Equipment (Test item) Description

Description	DECT handset 7522	
Model	K022b	
Additional Model(s)	None	
Brand Name(s)	Spectralink	
Serial number	None	
Hardware version	PCS 03	
Software / Firmware version	PCS 14BA	
FCC-ID	PXA-K022B	
IC	4604A-K022B	
Equipment type	End Product	
Radio type	DECT Portable Part	
Number of Radios	1 transceivers is built into the device	
Radio technology	DECT 6.0	
Operating frequency range	1921.536 - 1928.448MHz	
Assigned frequency band	1920 - 1930MHz	
Number of RF channels	5	
Supported slots	even and odd	
Number of time slots	1 x Tx + 1 x RX = 2	
Channels	F ₀	Ch:0 / 1928.448MHz
	F ₁	Ch:1 / 1926.720MHz
	F ₂	Ch:2 / 1924.992MHz
	F ₃	Ch:3 / 1923.264MHz
	F ₄	Ch:4 / 1921.536MHz
Main test frequencies	F _{LOW}	Ch:4 / 1921.536MHz
	F _{MID}	Ch:2 / 1924.992MHz
	F _{HIGH}	Ch:0 / 1928.448MHz
Modulations	GFSK	
Emission designator	F7D	
Nominal emission bandwidth	1.42 MHz	
Nominal receive bandwidth	864 MHz	
Channel spacing	1728kHz	
Spectrum access	Listen before transmit	
Nominal lower threshold	N/A	
Nominal upper threshold	-60 dBm	
Number of antennas	2 per transceiver	

Antenna 1	Type	integrated
	Model	printed PCB antenna
	Manufacturer	see Manufacturer
	Gain	1 dBi
Antenna 2	Type	integrated
	Model	printed PCB antenna
	Manufacturer	see Manufacturer
	Gain	1 dBi
Manufacturer	Spectralink Europe ApS Langmarksvej 34 8700 Horsens DENMARK	
Power supply	V _{NOM}	3.70 VDC lithium battery
	V _{MIN}	3.05 VDC
	V _{MAX}	4.45 VDC
AC/DC-Adaptor 1	Model	UE08WCP-060100SPA
	Vendor	Fuhua
	Charger, single	75XX (84642472)
	Input	100 - 240 VAC
	Output	6.0 VDC
AC/DC-Adaptor 2	Model	UE08WCP-060100SPA
	Vendor	Fuhua
	Charger, single	75XX, USB (84642472)
	Input	100 - 240 VAC
	Output	6.0 VDC
Temperature	T _{NOM}	25°C
	T _{MIN}	-20°C
	T _{MAX}	85°C

1.1 Photos - Equipment external



EUT OPEN BATTERY CASE



CHARGER OVERVIEW



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POWER ADAPTOR



CHARGER TOP



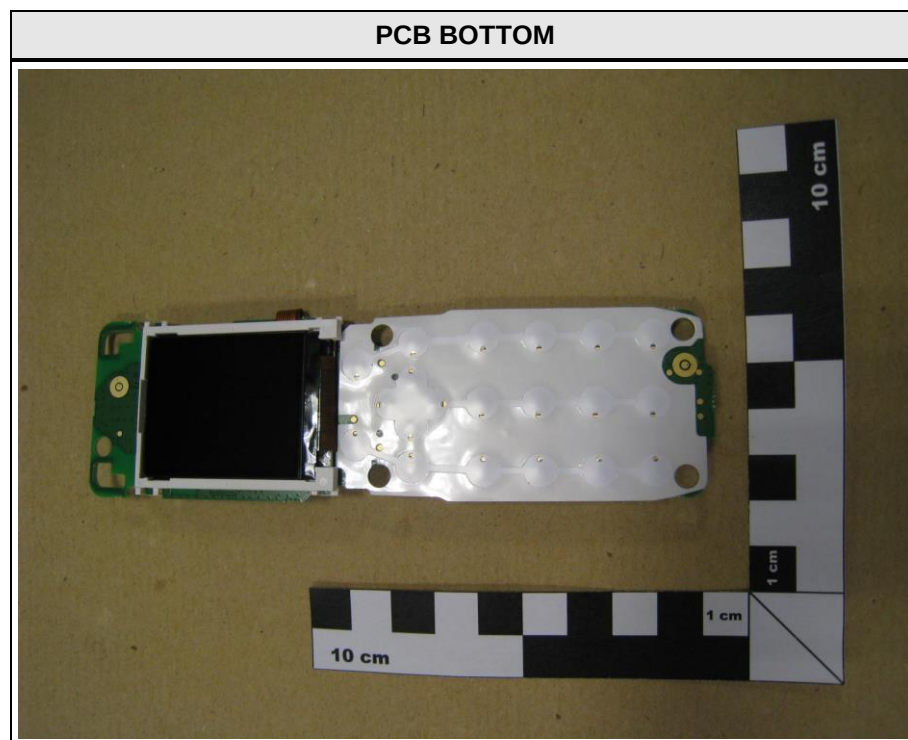
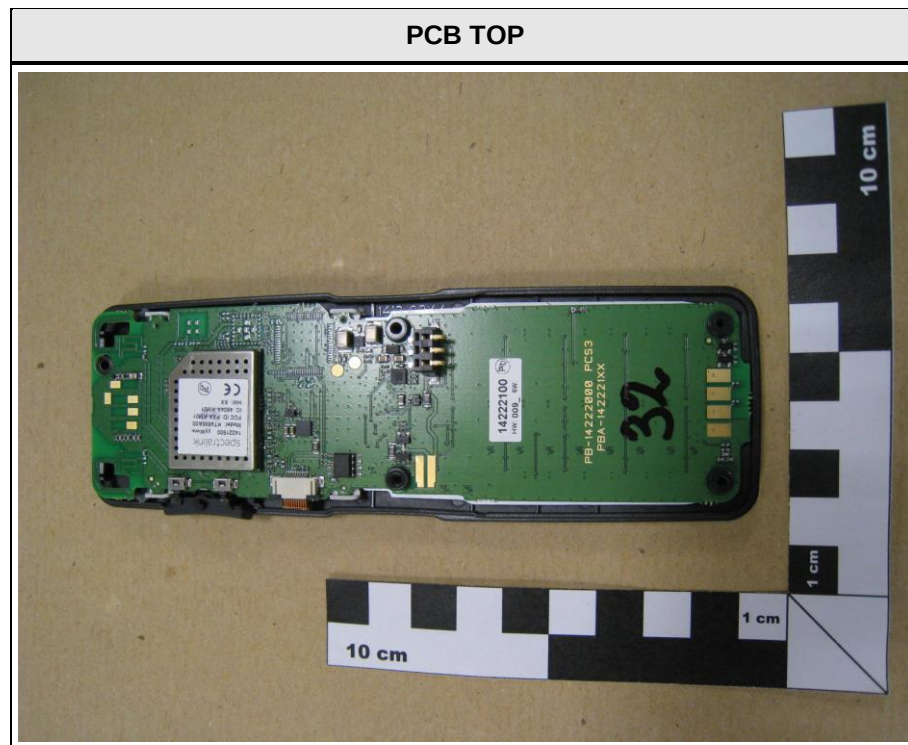
CHARGER 75XX,USB BOTTOM



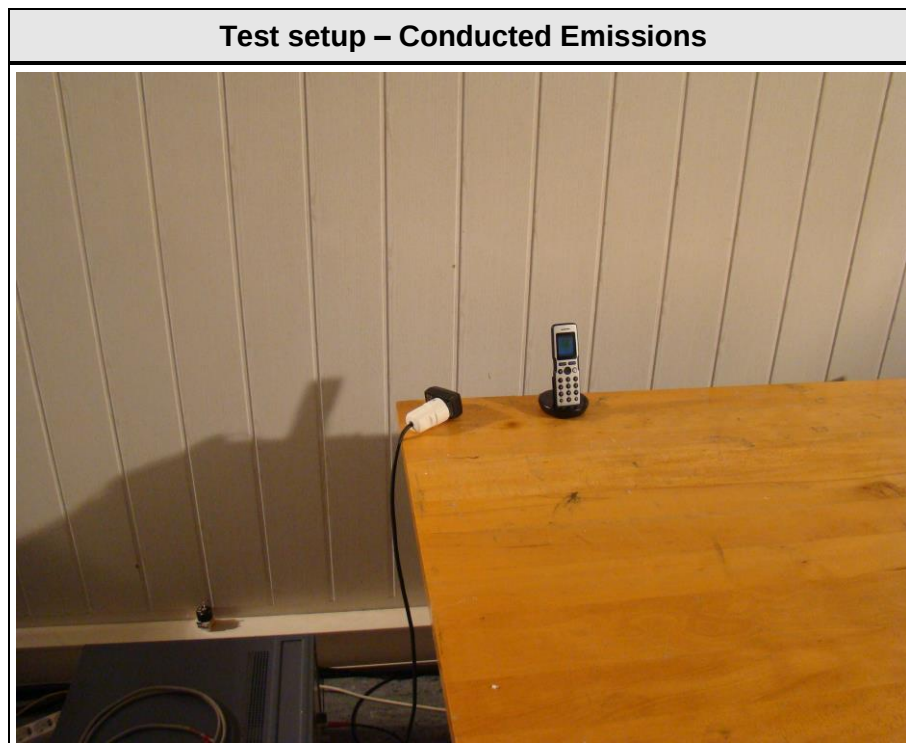
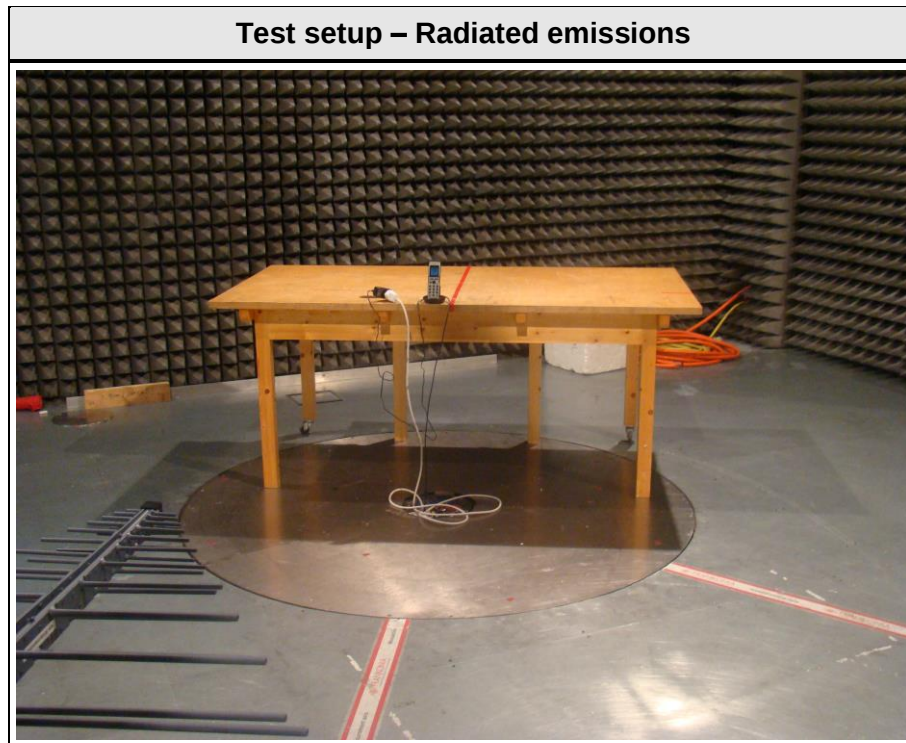
CHARGER 75XX BOTTOM



1.2 Photos - Equipment internal



1.1 Photos – Test setup



1.2 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
SIM	Communication Tester	R&S	CMD 60	DECT Signaling
*Note: Use the following abbreviations: AE : Auxiliary/Associated Equipment, or SIM : Simulator (Not Subjected to Test) CABL : Connecting cables				

1.3 Test Modes:

Mode #	Description	
TDMA	General conditions:	EUT powered by laboratory power supply. Active connection to companion device.
	Radio conditions:	Mode = Transmit mode Modulation = GFSK Duty cycle = 1/24 Power level = Maximum
TDMA Test Mode	General conditions:	EUT powered by battery. Active connection to CMD 60
	Radio conditions:	Mode = Transmit mode Modulation = GFSK Duty cycle = 1/24 Power level = Maximum
Receive	General conditions:	EUT powered by battery.
	Radio conditions:	Mode = standalone receive Modulation = GFSK
AC-Powerline	General conditions:	Active data connection between EUT and companion device. EUT powered by AC mains via AC/DC-Adaptor.
	Radio conditions:	Mode = Transmit mode Modulation = GFSK Duty cycle = 1/24 Power level = Maximum

1.4 Test Equipment Used During Testing

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

Conducted					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2014-02	2015-02
Signal Generator	R&S	SMP 02	EF00165	2013-05	2015-05
Signal Generator	R&S	SMIQ 03B	EF00153	2014-09	2016-09
Signal Generator	R&S	SMIQ 03B	EF00316	2013-06	2015-06
Signal Generator	R&S	SMIQ 03	EF00316	2013-06	2015-06
Signal Generator	R&S	SMT 03	EF00164	2013-04	2015-04
Step Attenuator	R&S	RSP	EF00155	2013-11	2015-11
Frequency Standard	EFRATOM Elektronik GmbH	MFS	EF00308	2013-05	2018-05
Power Meter	R&S	NRVD	EF00139	2014-07	2015-07
Diode Power Sensor	R&S	NRV-Z1	EF00314	2013-06	2015-06

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
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	ESH3-Z5	EF00036	2012-11	2016-12
EMI Test Receiver	R&S	ESCS 30	EF00295	2014-10	2015-10

1.5 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 dB μ V. 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 dB μ V/m). The FCC limits are given in units of μ V/m. The following formula is used to convert the units of μ V/m to dB μ V/m:

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

Margin:

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

Example only:

Reading	+	AF	=	Net Reading	:	Net reading - FCC limit	=	Margin
21.5 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 15D, 15C, IC RSS-213, IC RSS-Gen				
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks
FCC 15.309(b)	Cross reference to subpart B	declaration	N/A	
FCC 15.315 FCC 15.207 IC RSS-213 6.3 IC RSS-213 4.2 IC RSS-Gen 8.8	AC power line conducted emissions	ANSI C63.4	PASS	
FCC 15.317 FCC 15.203 IC RSS-213 4.1(e)	Antenna requirements	visual inspection	PASS	
FCC 15.319(b) IC RSS-213 6.1	Digital modulation	ANSI C63.17 6.1.4	PASS	
IC RSS-213 6.4 RSS-Gen 6.6	Occupied bandwidth	RSS-Gen 6.6	PASS	
FCC 15.323(a)	Emission Bandwidth	ANSI C63.17 6.1.3	PASS	
FCC 15.319(c) FCC 15.319(e) IC RSS-213 6.5 IC RSS-213 4.3.1	Peak transmit power	ANSI C63.17 6.1.2	PASS	
FCC 15.319(d) IC RSS-213 6.6 IC RSS-213 4.3.2	Power spectral density	ANSI C63.17 6.1.5	PASS	
FCC 15.323(f) IC RSS-213 6.2	Carrier frequency stability	ANSI C63.17 6.2.1	PASS	
FCC 15.323(d) IC RSS-213 6.7.2	Transmitter in-band unwanted emissions	ANSI C63.17 6.1.6.1	PASS	
FCC 15.323(d) IC RSS-213 6.7.1	Transmitter out-of-band emissions	ANSI C63.17 6.1.6.2 ANSI C63.4	PASS	
IC RSS-213 6.8 IC RSS-Gen 7.1	Receiver spurious emissions	ANSI C63.4	PASS	
FCC 15.319(f) IC RSS-213 4.3.4(a)	Automatic discontinuation of transmission	functional test	PASS	
FCC 15.319(i) RSS-102	Radiofrequency radiation exposure	dedicated report	PASS	
FCC 15.323(c)(5) IC RSS-213 4.3.4(b)(5)	LIC Confirmation	ANSI C63.17 7.3.2 / 7.3.3	PASS	
FCC 15.323(c)(5) IC RSS-213 4.3.4(b)(5)	LIC Procedure Test	ANSI C63.17 7.3.2	PASS	
FCC 15.323(c)(1) IC RSS-213 4.3.4(b)(1)	LIC Selected Channel Confirmation	ANSI C63.17 7.3.3	PASS	
FCC 15.323(c)(8) IC RSS-213 4.3.4(b)(8)	Monitoring antenna	ANSI C63.17 4	PASS	
FCC 15.323(c)(7) IC RSS-213 4.3.4(b)(7)	Monitoring bandwidth	ANSI C63.17 7.4	PASS	

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FCC 15.323(c)(7) IC RSS-213 4.3.4(b)(7)	Monitoring reaction time and monitoring interval	ANSI C63.17 7.5	PASS	
FCC 15.323(c)(6) IC RSS-213 4.3.4(b)(6)	Access criteria test interval	ANSI C63.17 8.1.1	N/A	Only FP
FCC 15.323(c)(6) IC RSS-213 4.3.4(b)(6)	Access criteria functional test	ANSI C63.17 8.1.2 / 8.1.3	N/A	Only FP
FCC 15.323(c)(4) IC RSS-213 4.3.4(b)(4)	Acknowledgements	ANSI C63.17 8.2.1	PASS	
FCC 15.323(c)(3) IC RSS-213 4.3.4(b)(3)	Transmission duration	ANSI C63.17 8.2.2	PASS	
FCC 15.323(c)(10) IC RSS-213 4.3.4(b)(10)	Duplex connections	ANSI C63.17 8.3	PASS	Only PP
FCC 15.323(c)(11) IC RSS-213 4.3.4(b)(11)	Alternative monitoring interval	ANSI C63.17 8.4	N/A	
FCC 15.323(c)(12) IC RSS-213 4.3.4(b)(12)	Fair access	declaration	PASS	
FCC 15.323(e) IC RSS-213 4.3.4(c)(1),(4),(5)	Frame period and Jitter	ANSI C63.17 6.2.3	PASS	
FCC 15.323(e) IC RSS-213 4.3.4(c)(2),(3)	Frame repetition stability	ANSI C63.17 6.2.2	PASS	
FCC 15.323(c)(5) IC RSS-213 4.3.4(b)(5)	Maximum spectrum occupancy	declaration	PASS	
Remarks:				

3 Test Conditions and Results

3.1 Test Conditions and Results – Cross reference to subpart B

Cross reference to subpart B acc. to FCC 47 CFR 15D		Verdict: N/A
EUT requirement rule parts and clause	Reference	
	FCC 15.309(b)	
Test according to measurement reference	Reference Method	
	Declaration	
Requirements		
The requirements of subpart D apply only to the radio transmitter contained in the PCS device. Other aspects of the operation of a PCS device may be subject to requirements contained elsewhere in this chapter. In particular, a PCS device that includes digital circuitry not directly associated with the radio transmitter also is subject to the requirements for unintentional radiators in subpart B.		
Result		
The test results related to subpart B are given in a dedicated test report		

3.2 Test Conditions and Results – AC power line conducted emissions

Conducted emissions acc. to FCC 47 CFR 15D / IC RSS-213				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.315 / FCC 15.207 / IC RSS-213 6.3, 4.2			
Test according referenced standards		Reference Method			
		ANSI C63.4			
Fully configured sample scanned over the following frequency range		Frequency range			
		0.15MHz to 30MHz			
Points of Application		Application Interface			
AC Mains		LISN			
EUT test mode		AC-Powerline			
Limits and results					
Frequency [MHz]	Quasi-Peak [dBμV]	Result	Average [dBμV]	Result	
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS	
0.5 to 5	56	PASS	46	PASS	
5 to 30	60	PASS	50	PASS	
Comments:					
* Limit decreases linearly with the logarithm of the frequency. Measured with EUT 7532 that contains also Bluetooth. Results represent worst case results for the actual EUT 7522 without Bluetooth.					

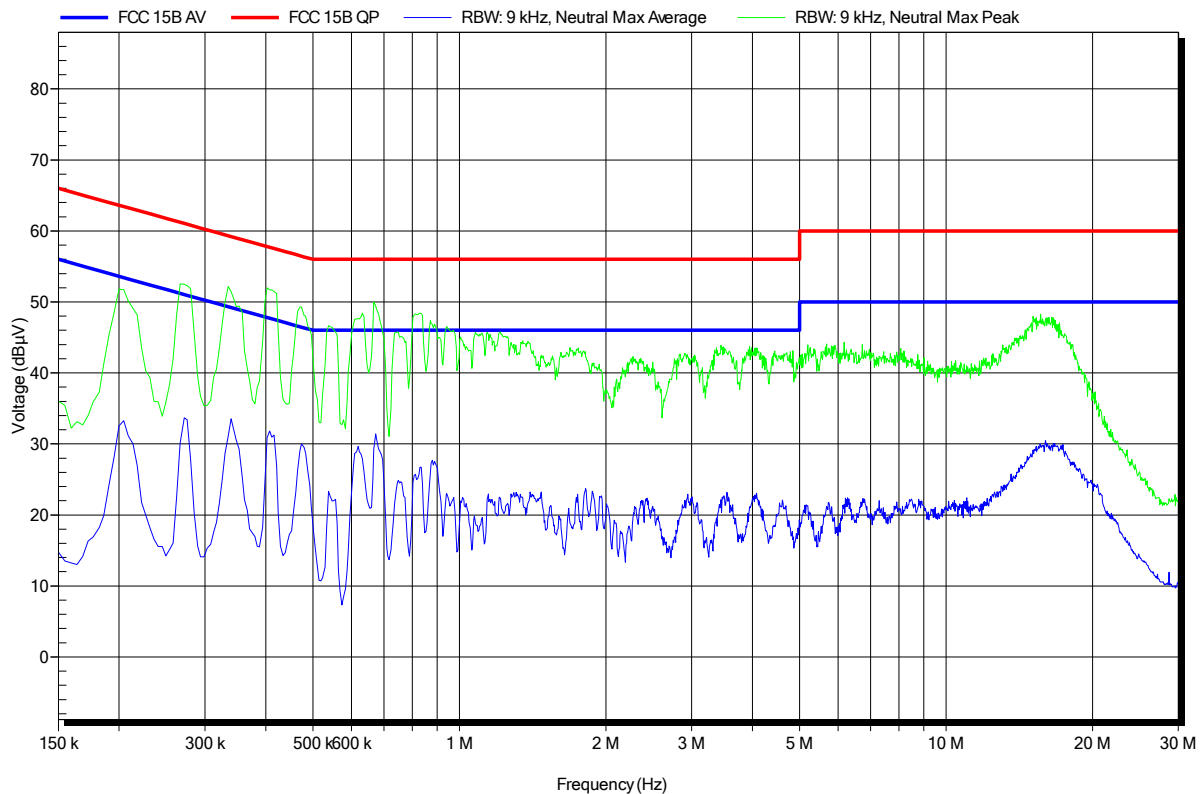
Conducted Emissions charger 84642472

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

Project number: G0M-1411-4306

Manufacturer: Spectralink Europe Aps
 EUT Name: DECT handset 7532
 Model: K022a
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Zunke
 Test Conditions: Tnom: 23°C, Unom: 6VDC via AC/DC Adapter
 LISN: ESH2-Z5 N
 Mode: DECT link to other phone
 Test Date: 2014-12-16
 Note: charger 84642472

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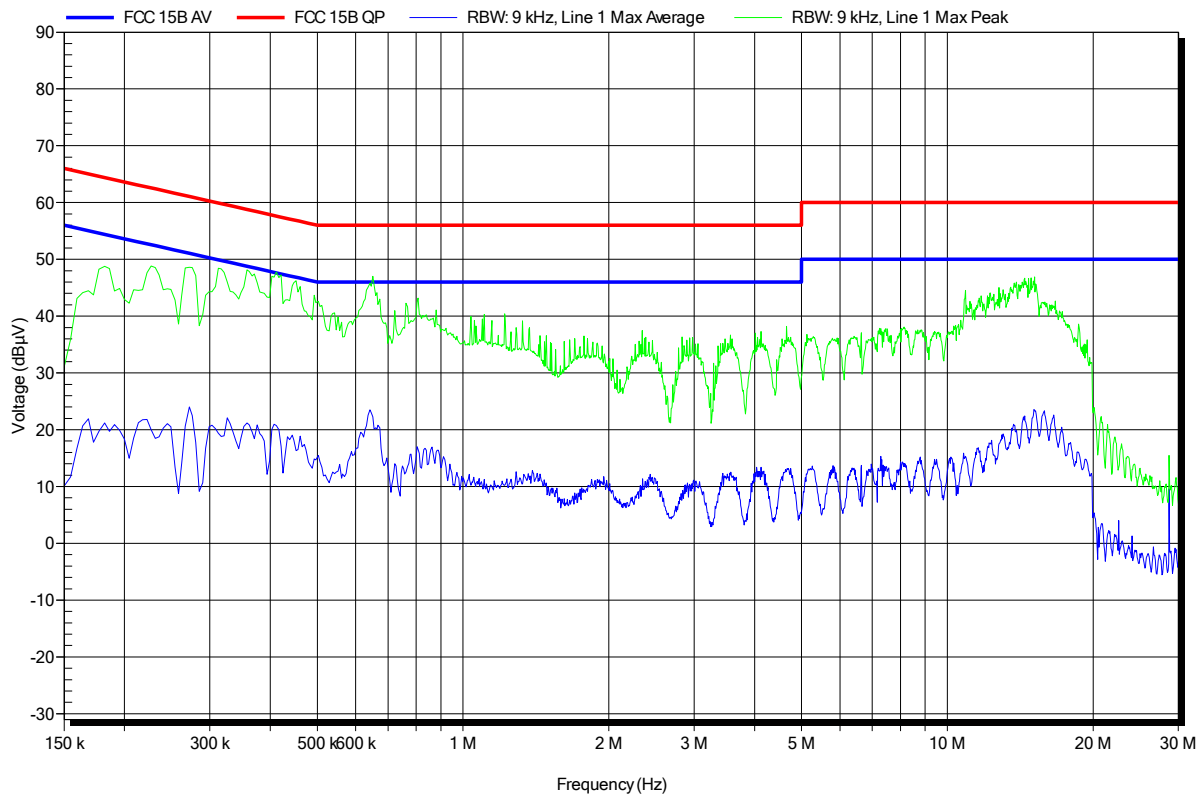
Conducted Emissions charger 84642472

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

Project number: G0M-1411-4306

Manufacturer: Spectralink Europe Aps
 EUT Name: DECT handset 7532
 Model: K022a
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Zunke
 Test Conditions: Tnom: 23°C, Unom: 6VDC via AC/DC Adapter
 LISN: ESH2-Z5 L
 Mode: DECT link to other phone, BT activ
 Test Date: 2014-12-16
 Note: charger 84642472

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Test Report No.: G0M-1411-4308-TFC15DPP-V01

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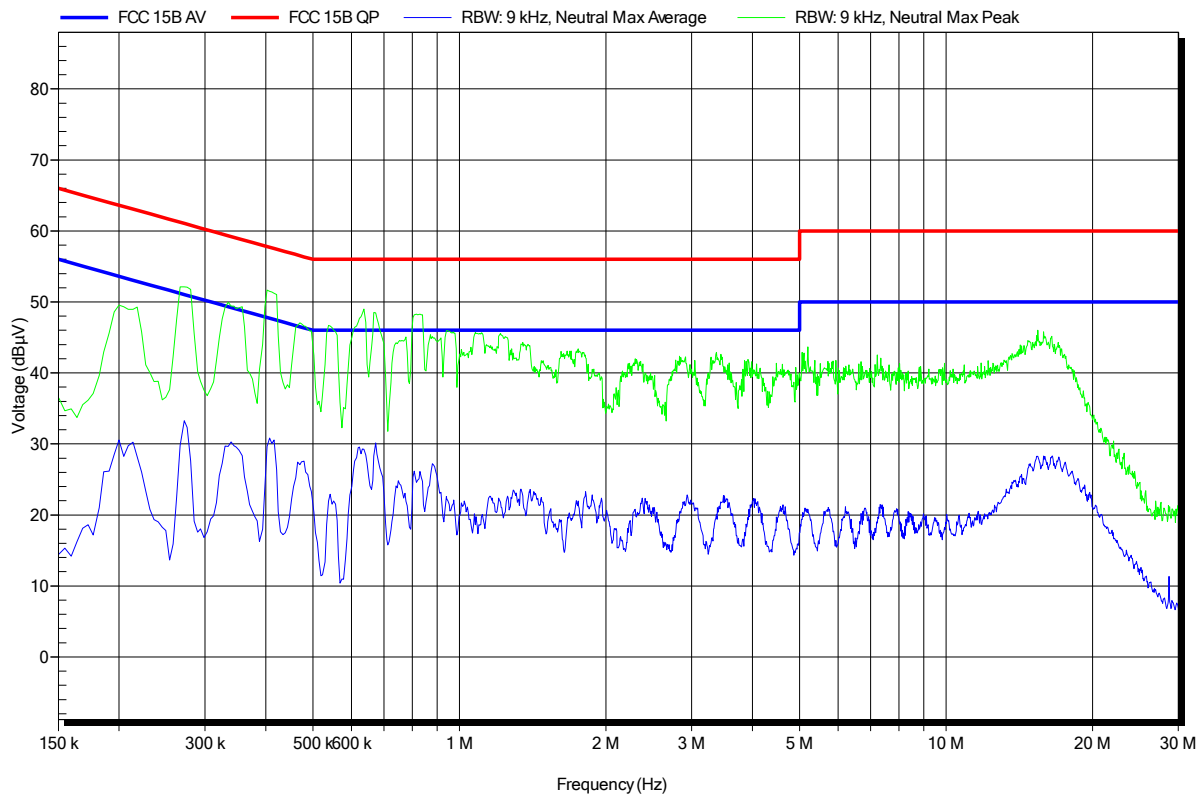
Conducted Emissions charger 84642473

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

Project number: G0M-1411-4306

Manufacturer: Spectralink Europe Aps
 EUT Name: DECT handset 7532
 Model: K022a
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Zunke
 Test Conditions: Tnom: 23°C, Unom: 6VDC via AC/DC Adapter
 LISN: ESH2-Z5 N
 Mode: DECT link to other phone
 Test Date: 2014-12-16
 Note: charger 84642473

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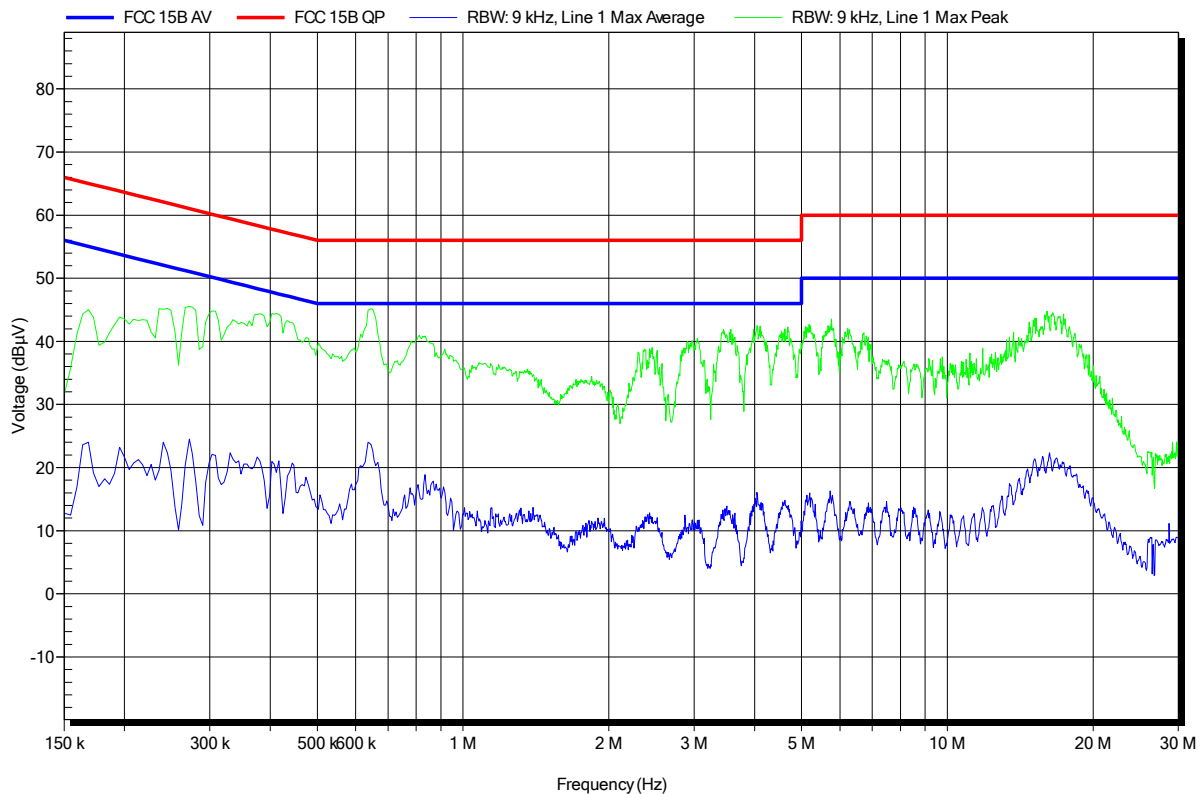
Conducted Emissions charger 84642473

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

Project number: G0M-1411-4306

Manufacturer: Spectralink Europe Aps
 EUT Name: DECT handset 7532
 Model: K022a
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Zunke
 Test Conditions: Tnom: 23°C, Unom: 6VDC via AC/DC Adapter
 LISN: ESH2-Z5 L
 Mode: DECT link to other phone
 Test Date: 2014-12-16
 Note: charger 84642473

Index 2



3.3 Test Conditions and Results – Antenna requirement

Antenna requirement acc. to FCC 47 CFR 15D / IC RSS-213			Verdict: PASS
EUT requirement rule parts and clause	Reference		
	FCC 15.317 / FCC 15.203 / IC RSS-213 4.1(e)		
Test according to measurement reference	Reference Method		
	visual inspection & declaration		
Requirements			
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. When an antenna conducted measurement is used to determine the RF output power of the device, the effective gain of the antenna intended for the device must be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 3 dBi (3 dB above isotropic gain) shall be added to the measured RF output power before using the power limits			
Results			
Antenna No.	Type	Antenna gain [dBi]	Antenna gain in excess of 3dBi
1	internal	1	0
2	internal	1	0

3.4 Test Conditions and Results – Digital modulation

Antenna requirement acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.319(b) / IC RSS-213 6.1	
Test according to measurement reference	Reference Method	
	Declaration	
Requirements		
All transmissions must use only digital modulation techniques.		
Results		
The test sample is an isochronous digital modulated device that operates in 1920-1930 MHz band. This device bases on DECT technology described in European Standards EN 300 175-2 and EN 300 175-3, now operating in frequency channels mentioned above. The operating modes are MC/TDMA/TDD (Multi carrier / Time Division Multiple Access / Time Division Duplex) using Digital GFSK modulation. For further details see operational description provided by manufacturer.		

3.5 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. to IC RSS-213				Verdict: PASS
Test according to measurement reference		Reference Method		
		IC RSS-213 4.3.2, 6.4 / IC RSS-Gen 6.6		
Tested frequencies		F _{LOW} / F _{MID} / F _{HIGH}		
EUT test mode		TDMA		
Limits				
0.05 MHz ≤ Occupied Bandwidth < 2.5 MHz				
Test setup				
EUT Companion device Splitter Spectrum analyzer Interferer Generators				
Test procedure				
1. EUT is restricted to test channel with the interferes 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	Center frequency [MHz]	Lower edge [MHz]	Upper edge [MHz]	Occupied Bandwidth [MHz]
F _{LOW}	1821.536	1920.920	1922.144	1.324
F _{MID}	1824.992	1924.384	1925.584	1.300
F _{HIGH}	1828.448	1927.840	1929.040	1.300
Comments:				

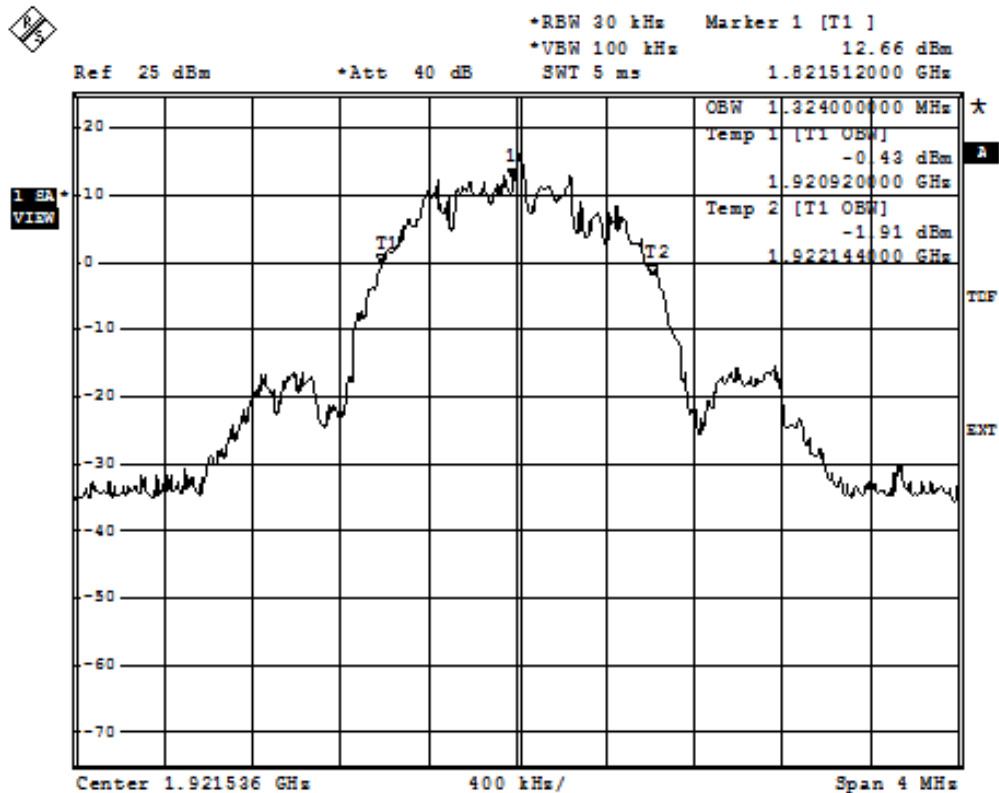
Occupied Bandwidth - F_{Low}

RSS Gen

Occupied Bandwidth

EUT DECT handset 7532
Model K022a
Approval Holder Spectralink Europe ApS
Temperature / Voltage 25°C / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. W. Treffke
Test Specification Occupied Bandwidth
Comment 1 Channel.: 4
Comment 2 A spectrum analyzer with an integrated 99% power BW function is used

Comment 3 OBW: 1.324 MHz



Comment: -
Date: 13.OCT.2014 11:12:03

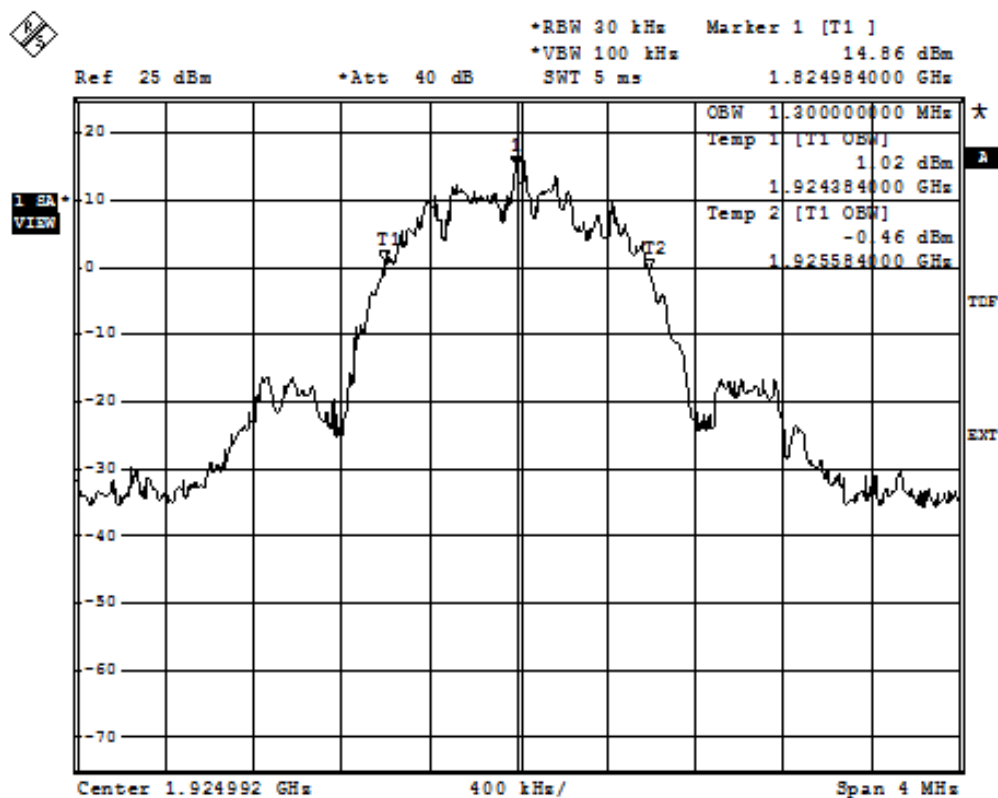
Occupied Bandwidth – F_{MID}

RSS Gen

Occupied Bandwidth

EUT DECT handset 7532
Model K022a
Approval Holder Spectralink Europe ApS
Temperature / Voltage 25°C / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. W. Treffke
Test Specification Occupied Bandwidth
Comment 1 Channel.: 2
Comment 2 A spectrum analyzer with an integrated 99% power BW function is used

Comment 3 OBW: 1.3 MHz



Comment: -
Date: 13.OCT.2014 11:14:30

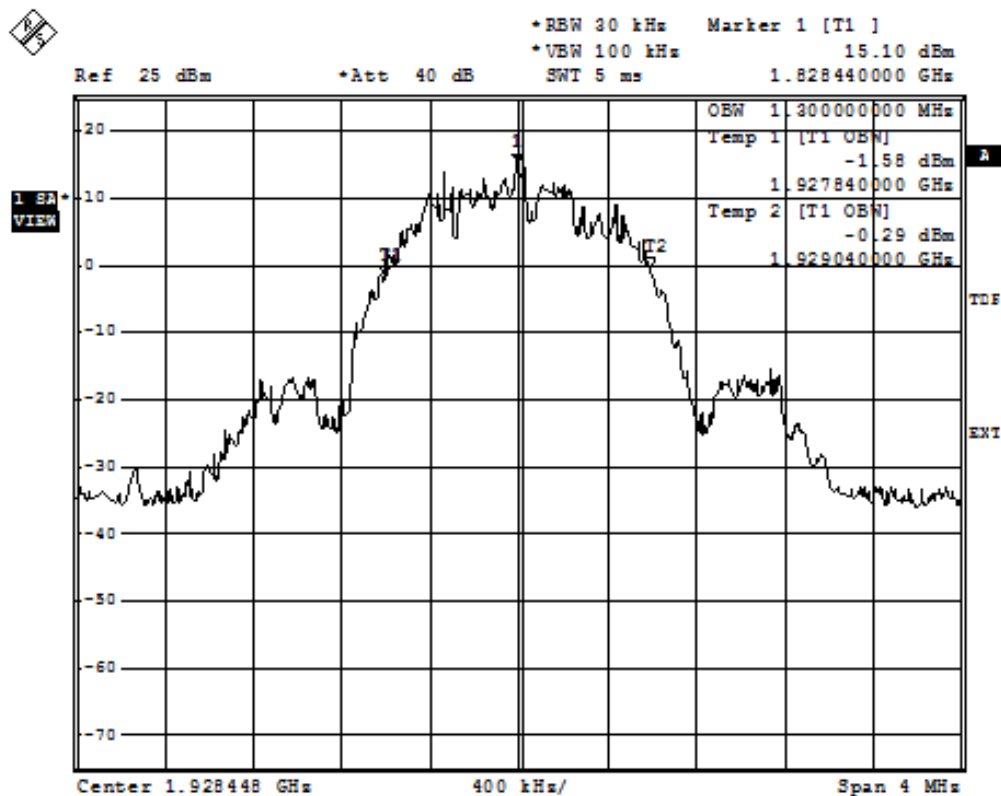
Occupied Bandwidth – F_{HIGH}

RSS Gen

Occupied Bandwidth

EUT DECT handset 7532
Model K022a
Approval Holder Spectralink Europe ApS
Temperature / Voltage 25°C / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. W. Treffke
Test Specification Occupied Bandwidth
Comment 1 Channel.: 0
Comment 2 A spectrum analyzer with an integrated 99% power BW function is used

Comment 3 OBW: 1.3 MHz



Comment: -
Date: 13.OCT.2014 11:08:57

3.6 Test Conditions and Results – Emission Bandwidth

Emission Bandwidth acc. to FCC 47 CFR 15D				Verdict: PASS	
EUT requirement rule parts and clause		Reference			
		FCC 15.323(a)			
Test according to measurement reference		Reference Method			
		ANSI C63.17 6.1.3			
Tested frequencies		F _{LOW} / F _{HIGH}			
EUT test mode		TDMA			
Limits					
0.05 MHz ≤ Emission Bandwidth < 2.5 MHz					
Test setup					
EUT Companion device Splitter Spectrum analyzer Interferer Generators					
Test procedure					
1. EUT set to test mode 2. Span set to at least twice the emission spectrum 3. Resolution bandwidth set to 1% of emission bandwidth and detector is set to peak with max hold 4. The emission bandwidth is determined by the two -26dB points left and right of the maximum emission level 5. (The emission bandwidth is determined by the two -12dB points left and right of the maximum emission level) 6. (The emission bandwidth is determined by the two -6dB points left and right of the maximum emission level)					
Test result					
Channel	Center frequency [MHz]	Mode	Lower edge [MHz]	Upper edge [MHz]	Bandwidth [MHz]
F _{LOW}	1921.536	-26 dB	1920.806	1922.266	1.460
F _{HIGH}	1928.448	-26 dB	1927.714	1929.174	1.460
F _{LOW}	1921.536	-12 dB	1920.962	1922.120	1.158
F _{HIGH}	1928.448	-12 dB	1927.872	1929.030	1.158
F _{LOW}	1921.536	-6 dB	1921.050	1922.028	0.978
F _{HIGH}	1928.448	-6 dB	1927.962	1928.936	0.962
Comments:					

Test Report No.: G0M-1411-4308-TFC15DPP-V01

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

Emission Bandwidth – F_{Low}

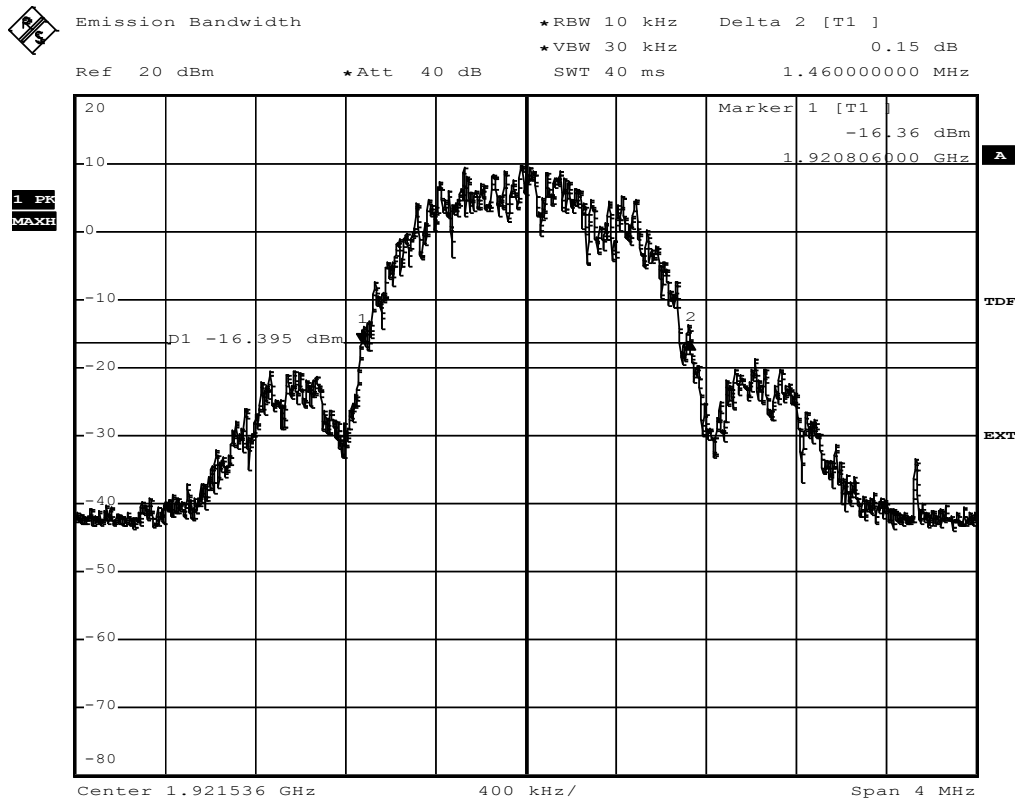
FCC Part 15.303 Emission bandwidth

Testprocedure ANSI 63.17
UPCS

EUT DECT handset 7532
Model K022a
Applicant Spectralink Europe ApS
Temperature 23°C
Test Site / Operator Eurofins Product Service GmbH
Test Specification Emission bandwidth

Measured Bandwidth Emission Bandwidth = 1.46MHz
Max. Permitted Power Limit = 2.5 MHz

Test result Verdict = PASS



Comment: Ansi C63.17-2006 6.1.3
Date: 13.OCT.2014 09:53:28

Emission Bandwidth – F_{Low}

**Additional values as required for the detailed threshold monitoring bandwidth test
ANSI C63.17-1988 7.4.2**

-6 dB points

Lower frequency : 1921.05MHz
Higher frequency : 1922.028MHz

-12 dB points

Lower frequency : 1920.962MHz
Higher frequency : 1922.12MHz

Emission Bandwidth – F_{HIGH}

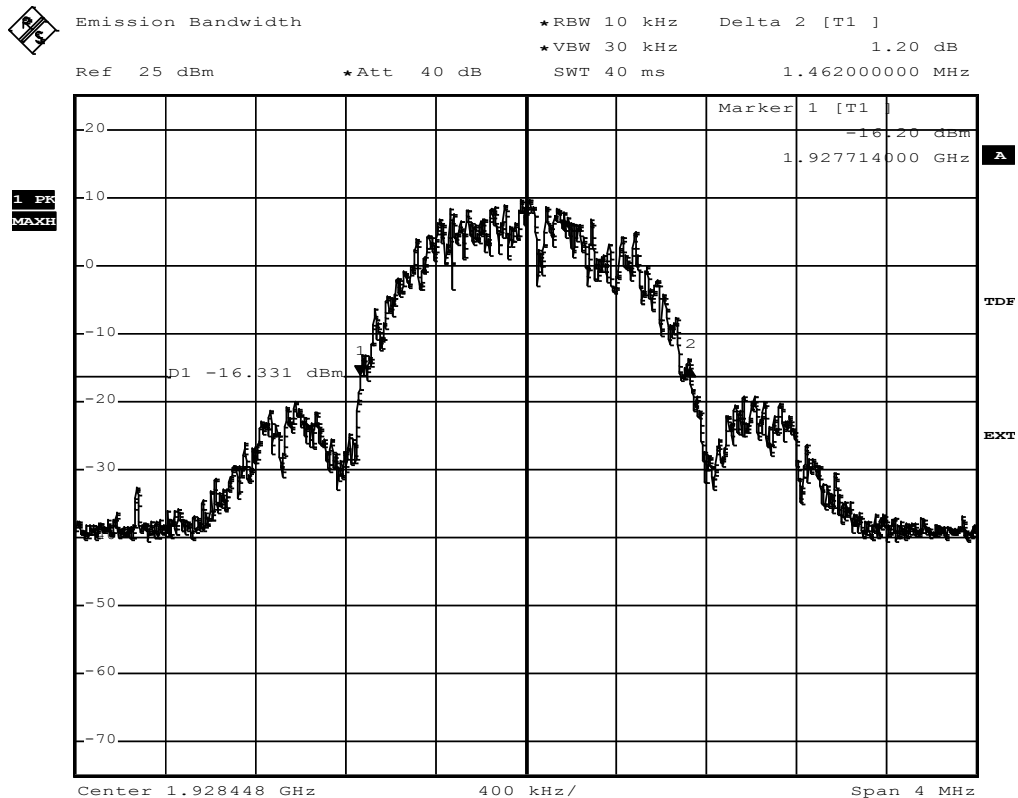
FCC Part 15.303 Emission bandwidth

Testprocedure ANSI 63.17
UPCS

EUT DECT handset 7532
Model K022a
Applicant Spectralink Europe ApS
Temperature 23°C
Test Site / Operator Eurofins Product Service GmbH
Test Specification Emission bandwidth

Measured Bandwidth Emission Bandwidth = 1.46MHz
Max. Permitted Power Limit = 2.5 MHz

Test result Verdict = PASS



Comment: Ansi C63.17-2006 6.1.3
Date: 13.OCT.2014 10:13:51

Emission Bandwidth – F_{HIGH}

**Additional values as required for the detailed threshold monitoring bandwidth test
ANSI C63.17-1988 7.4.2**

-6 dB points

Lower frequency : 1927.962MHz

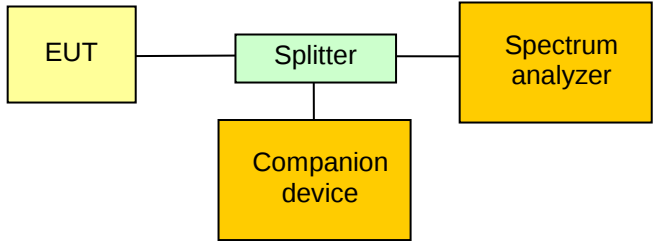
Higher frequency : 1928.936MHz

-12 dB points

Lower frequency : 1927.872MHz

Higher frequency : 1929.03MHz

3.7 Test Conditions and Results – Peak transmit power

Peak transmit power acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.319(c),(e) / IC RSS-213 4.3.1, 6.5	
Test according to measurement reference	Reference Method	
	ANSI C63.17 6.1.2	
Tested frequencies	$F_{\text{LOW}} / F_{\text{HIGH}}$	
EUT test mode	TDMA	
Antenna excess gain	0 dB	
Limits		
Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.		
$P_{EUT}[\text{dBm}] \leq P_{\text{limit}} \text{ where } P_{\text{limit}} = \begin{cases} P_{\text{max}} - (G_A - g), & \text{when } G_A > 3 \text{ dBi} \\ P_{\text{max}}, & G_A < 3 \text{ dBi} \end{cases}$		
$P_{\text{max}}[\text{dBm}] = 5 \log(\text{Emission/Occupied Bandwidth [Hz]}) - 10 \text{ dBm}$		
Test setup		
 <pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- SA[Spectrum analyzer] Splitter --- CD[Companion device] </pre>		
Test procedure		
1. EUT set to test mode 2. The RBW is set to be larger than the emission bandwidth and $\text{VBW} \geq \text{RBW}$ 3. Transmission burst is measured in zero span and peak detector 4. The maximum level in the burst is recorded as peak transmit power		

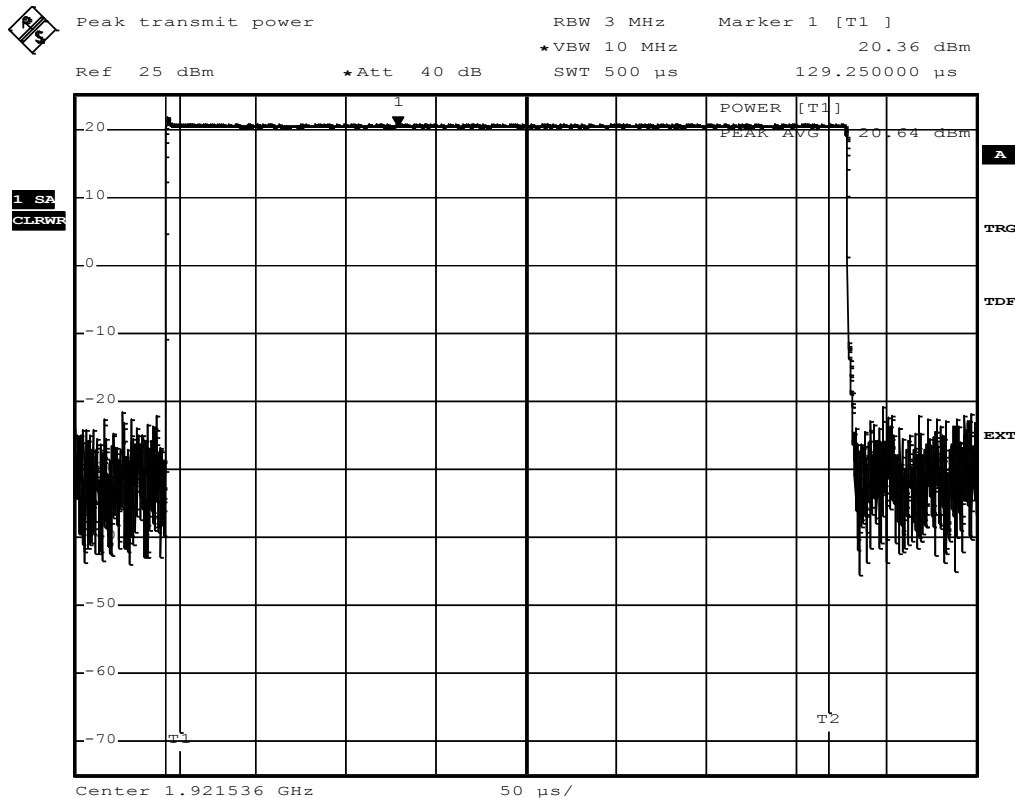
Test results - FCC						
Channel	Frequency [MHz]	Peak Power [dbm]	Emission Bandwidth [Hz]	Excess gain [dB]	Limit [dbm]	Margin [dB]
$F_{\text{LOW}}, V_{\text{NOM}}$	1921.536	20.54	1460000	0	20.82	-0.28
$F_{\text{LOW}}, V_{\text{MIN}}$	1921.536	20.53	1460000	0	20.82	-0.29
$F_{\text{LOW}}, V_{\text{MAX}}$	1921.536	20.54	1460000	0	20.82	-0.28
$F_{\text{HIGH}}, V_{\text{NOM}}$	1928.448	20.54	1460000	0	20.82	-0.28
$F_{\text{HIGH}}, V_{\text{MIN}}$	1921.536	20.54	1460000	0	20.82	-0.28
$F_{\text{HIGH}}, V_{\text{MAX}}$	1921.536	20.51	1460000	0	20.82	-0.31
Test results - IC						
Channel	Frequency [MHz]	Peak Power [dbm]	Occupied Bandwidth [Hz]	Excess gain [dB]	Limit [dbm]	Margin [dB]
$F_{\text{LOW}}, V_{\text{NOM}}$	1921.536	20.54	1324000	0	20.61	-0.07
$F_{\text{LOW}}, V_{\text{MIN}}$	1921.536	20.53	1324000	0	20.61	-0.08
$F_{\text{LOW}}, V_{\text{MAX}}$	1921.536	20.54	1324000	0	20.61	-0.07
$F_{\text{HIGH}}, V_{\text{NOM}}$	1928.448	20.54	1300000	0	20.57	-0.03
$F_{\text{HIGH}}, V_{\text{MIN}}$	1921.536	20.54	1300000	0	20.57	-0.03
$F_{\text{HIGH}}, V_{\text{MAX}}$	1921.536	20.51	1300000	0	20.57	-0.06
Comments:						

Peak Power – F_{LOW} , V_{NOM}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vnom
Measured Bandwidth	1.46MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,54 dBm at ant. port 3
Test result	Verdict = PASS



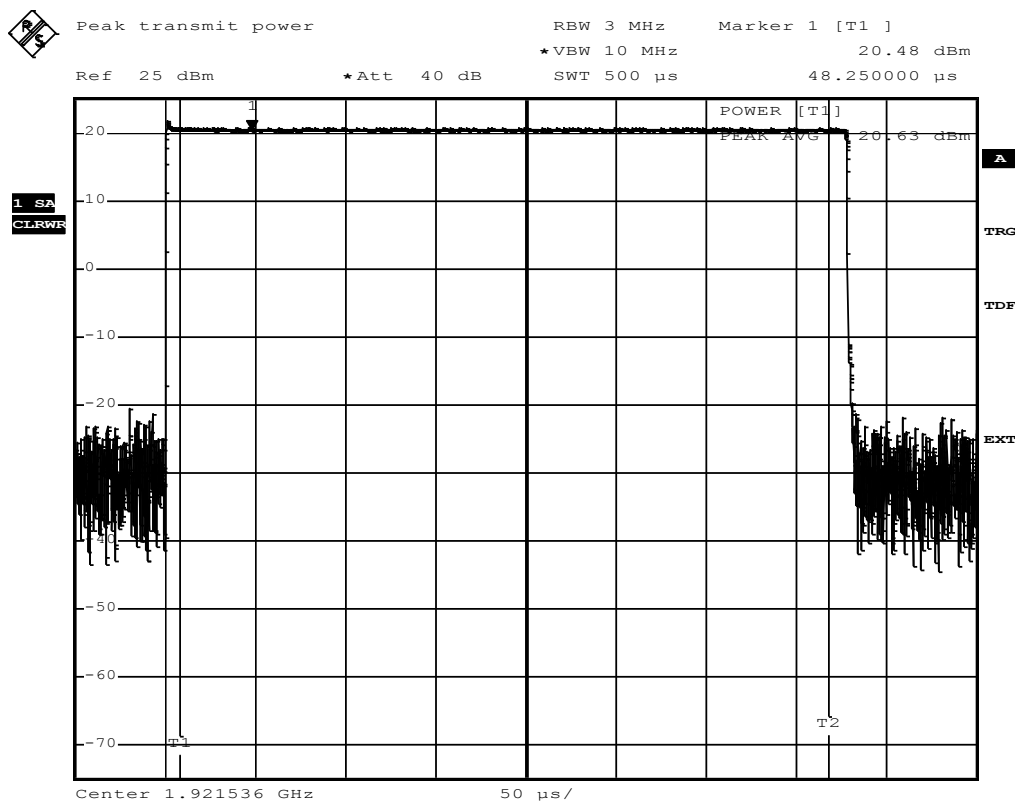
Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 09:59:58

Peak Power – F_{LOW} , V_{MIN}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmin
Measured Bandwidth	1.46MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,53 dBm at ant. port 3
Test result	Verdict = PASS



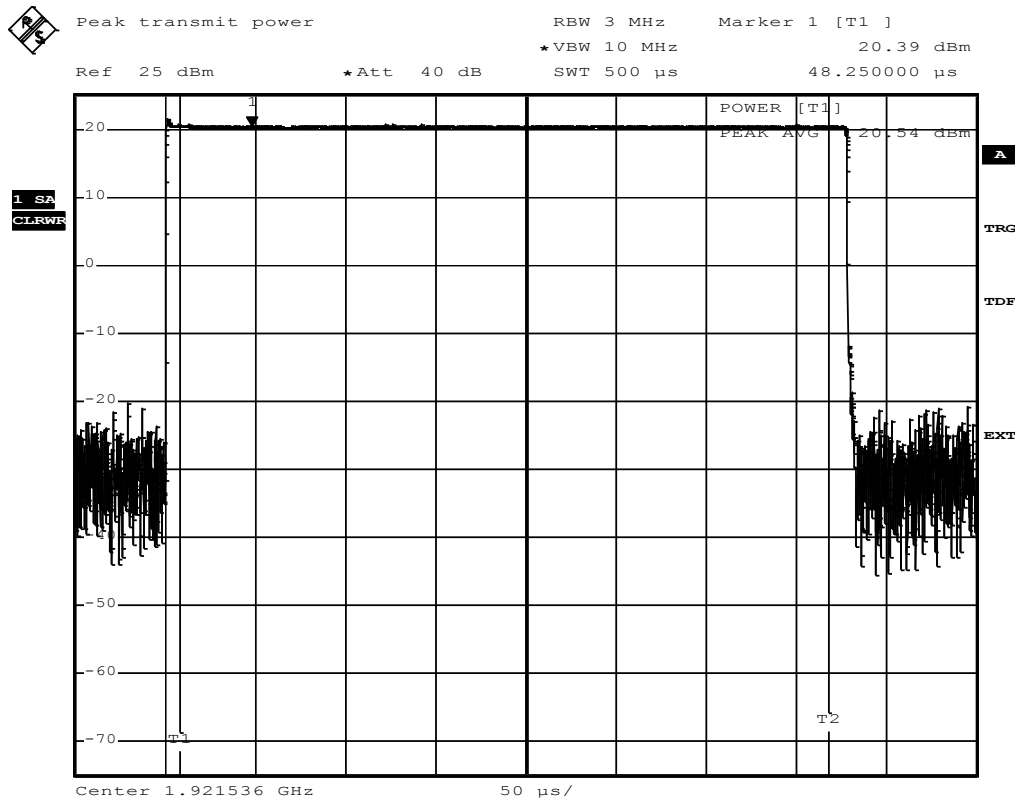
Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 10:57:20

Peak Power – F_{LOW} , V_{MAX}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmax
Measured Bandwidth	1.46MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,54 dBm at ant. port 3
Test result	Verdict = PASS



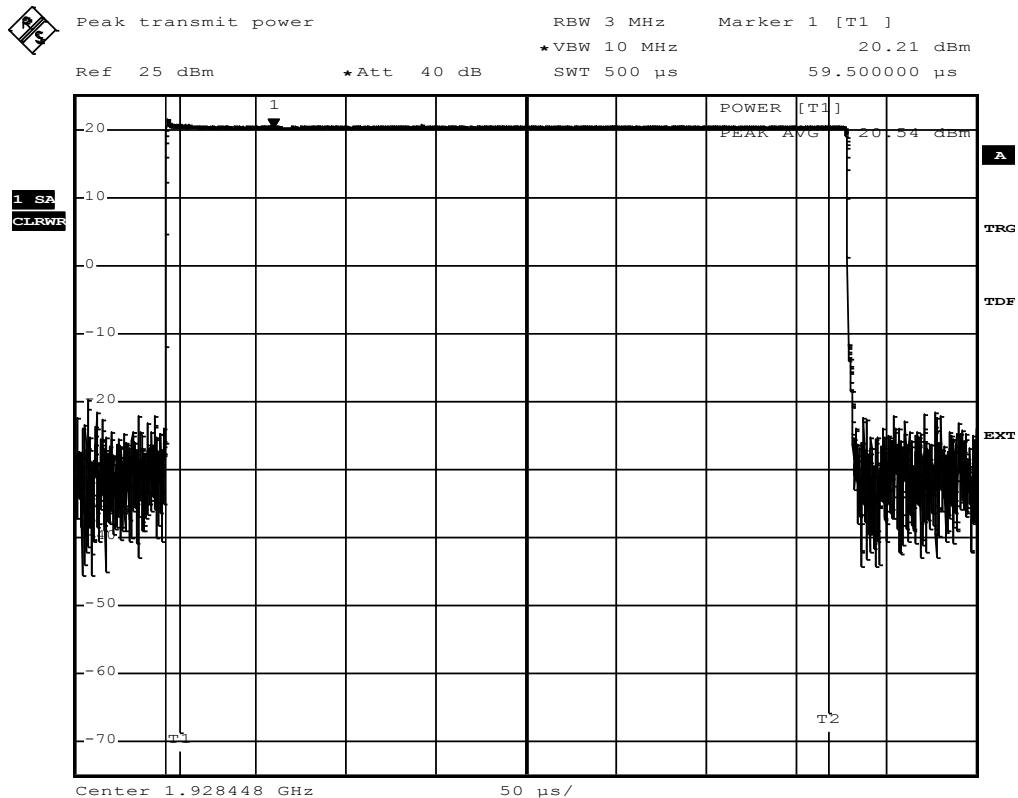
Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 10:58:45

Peak Power – F_{HIGH} , V_{NOM}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmom
Measured Bandwidth	1.462MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,54 dBm at ant. port 3
Test result	Verdict = PASS



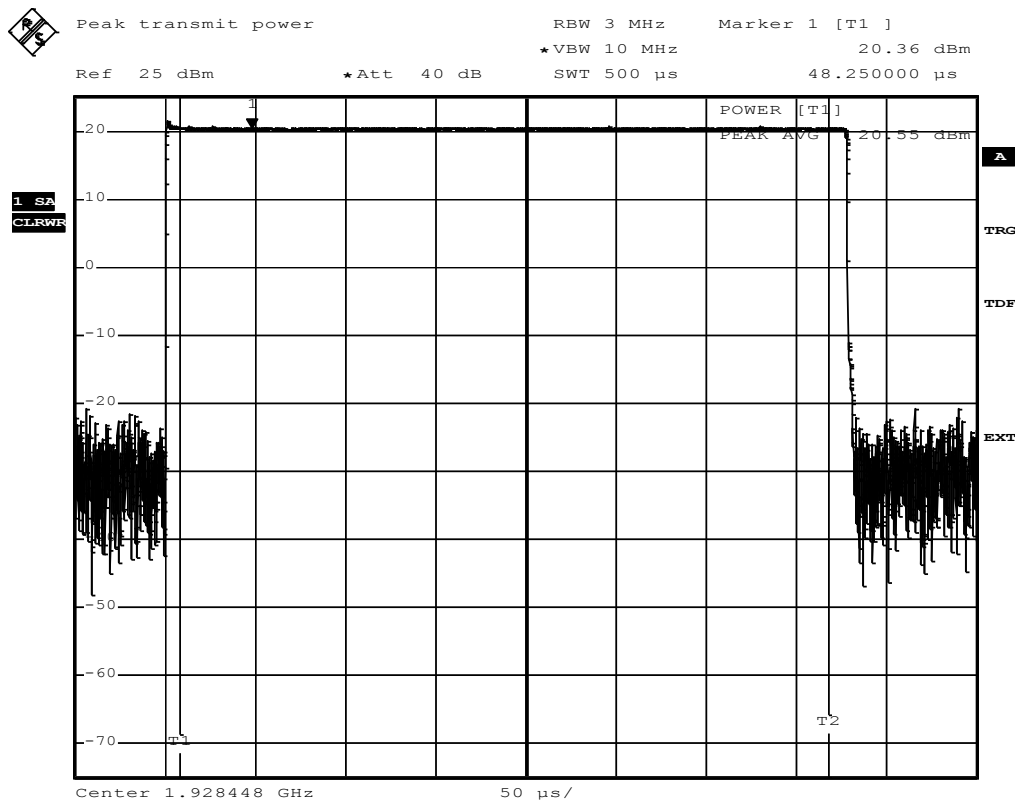
Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 10:19:51

Peak Power – F_{HIGH}, V_{MIN}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmin
Measured Bandwidth	1.46MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,54 dBm at ant. port 3
Test result	Verdict = PASS



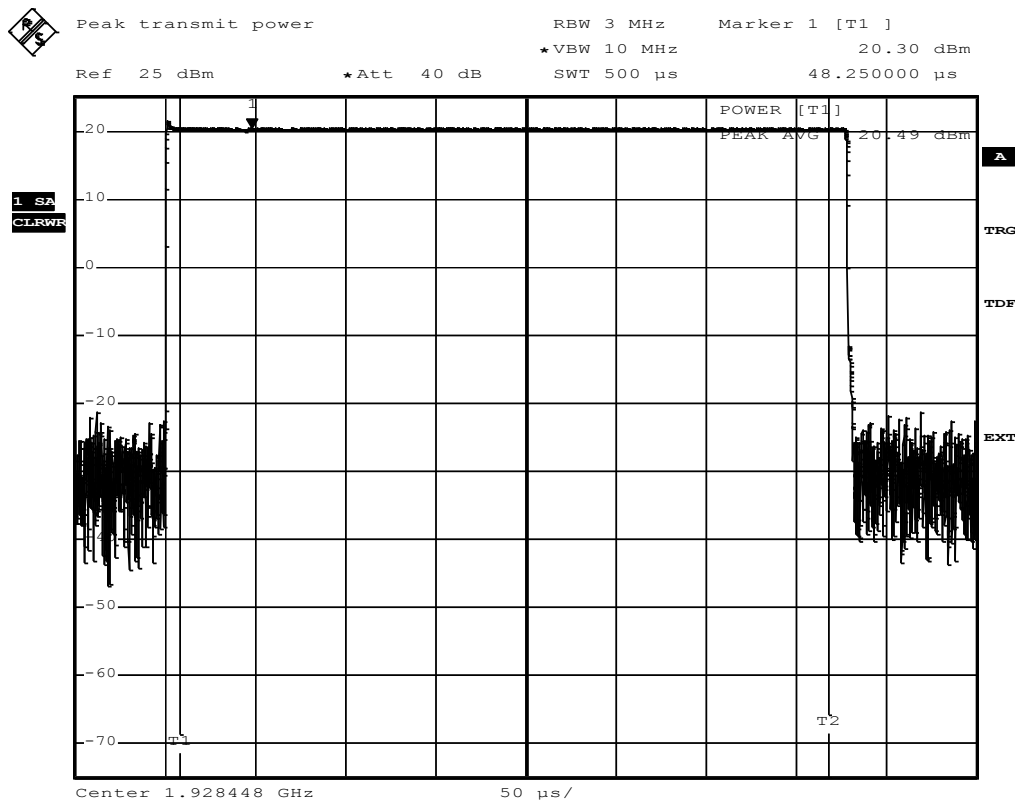
Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 10:53:49

Peak Power – F_{HIGH} , V_{MAX}

FCC Part 15.319 Peak Transmit Power limit

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmax
Measured Bandwidth	1.46MHz
Max. Permitted Power	20,82 dBm
Measured Power	20,51 dBm at ant. port 3
Test result	Verdict = PASS



Comment: Ansi C63.17-2006 6.1.2
Date: 13.OCT.2014 10:52:29

3.8 Test Conditions and Results – Power spectral density

Power spectral density acc. to FCC 47 CFR 15D / IC RSS-213				Verdict: PASS
EUT requirement rule parts and clause	Reference			
	FCC 15.319(d) / IC RSS-213 4.3.2, 6.6			
Test according to measurement reference	Reference Method			
	ANSI C63.17 6.1.5			
Tested frequencies	F _{LOW} / F _{HIGH}			
EUT test mode	TDMA			
Limits				
≤ 3 mW (4.77 dBm) / 3 kHz				
Test setup				
EUT Splitter Spectrum analyzer Companion device				
Test procedure				
1. EUT set to test mode 2. The RBW is set to 3 kHz and VBW ≥ 3 x RBW 3. The center frequency is set to the maximum of the emission envelope and the span is set to zero 4. With sample detector and a minimum of 100 sweeps the -20 dB points below the first peak are determined and the data points between the two -20 dB points are summed and normalized to get the average pulse power in a 3 kHz bandwidth				
Test results				
Channel	Frequency [MHz]	Peak Density [dbm/3kHz]	Limit [dBm/3kHz]	Margin [dB]
F _{LOW}	1921.536	2.7517	4.77	-2.02
F _{HIGH}	1928.448	3.6239	4.77	-1.15
Comments:				

Power Spectral Density – F_{Low}

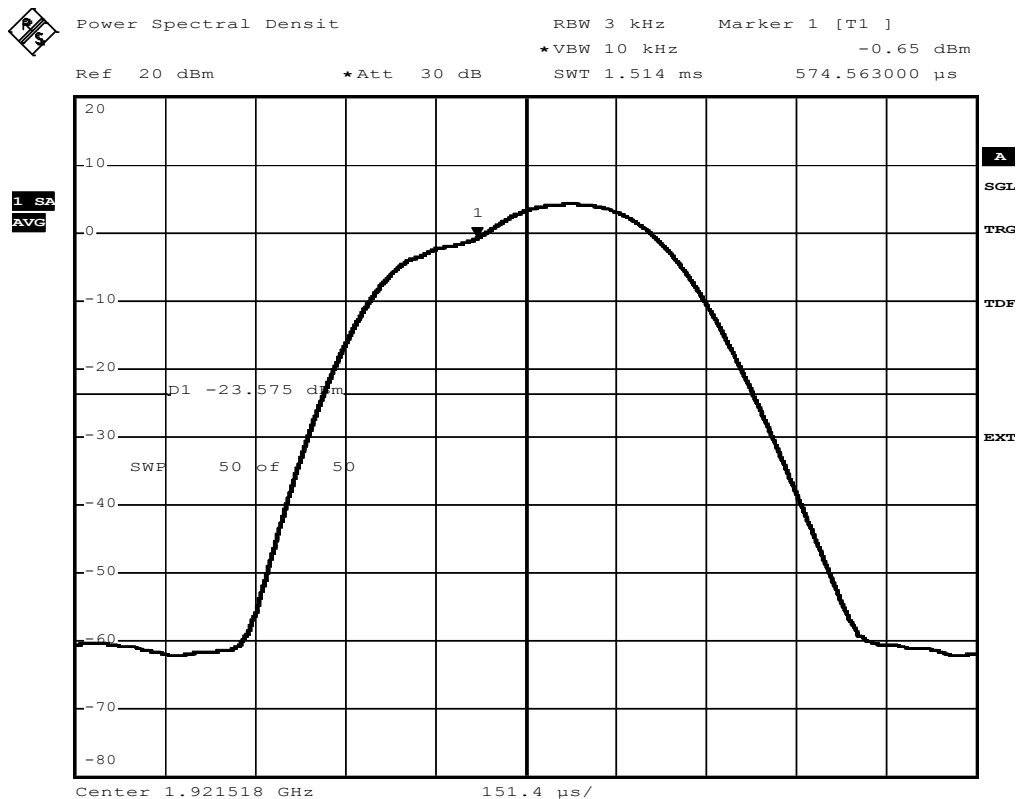
FCC Part 15.319 Power spectral density

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Power spectral density
Peak Frequency in MHz	1921,518000 MHz
Total pulse energy in mW	0,000713 mW
Wideband pulse duration in ms	0,378400 ms
PSD in mW	1,8844 mW
PSD in dBm	2,7517 dBm

Pass criteria: PSD is less than 3mW

Verdict = PASS



Comment: Ansi C63.17-2006 6.1.5
Date: 13.OCT.2014 09:57:22

Power Spectral Density – F_{HIGH}

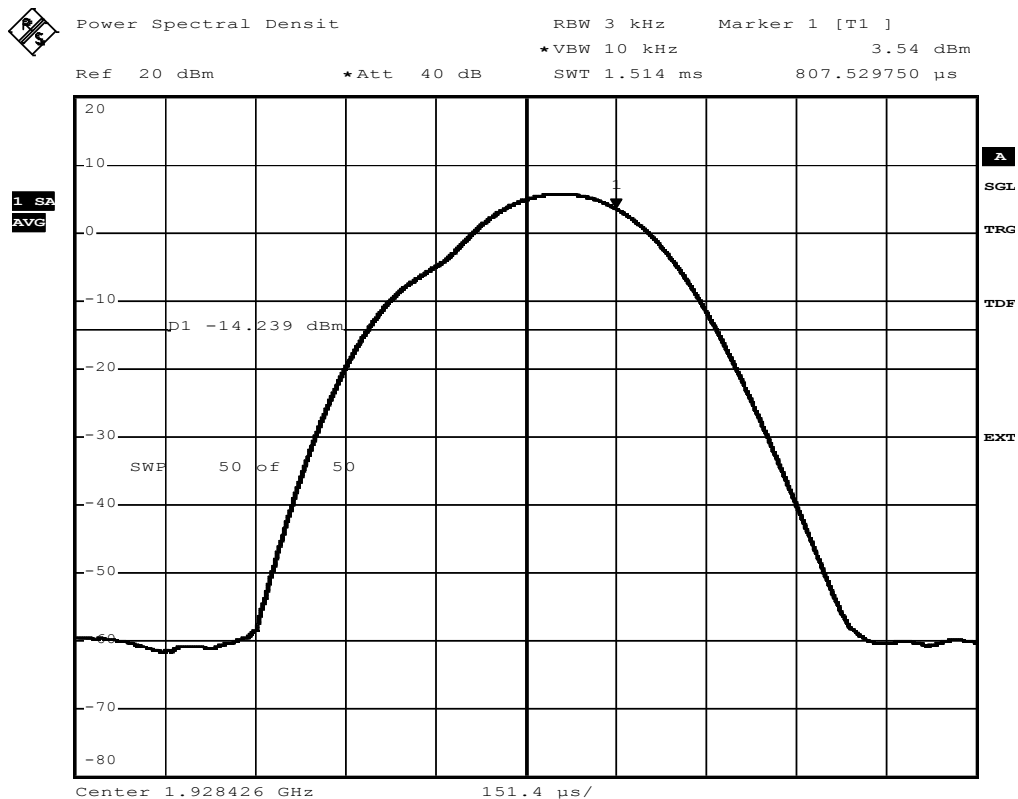
FCC Part 15.319 Power spectral density

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Power spectral density
Peak Frequency in MHz	1928,426000 MHz
Total pulse energy in mW	0,000872 mW
Wideband pulse duration in ms	0,378400 ms
PSD in mW	2,3035 mW
PSD in dBm	3,6239 dBm

Pass criteria: PSD is less than 3mW

Verdict = PASS



Comment: Ansi C63.17-2006 6.1.5
Date: 13.OCT.2014 10:26:13

3.9 Test Conditions and Results – Carrier Frequency stability

Carrier frequency stability acc. to FCC 47 CFR 15D / IC RSS-213				Verdict: PASS
EUT requirement rule parts and clause	Reference			
	FCC 15.323(f) / IC RSS-213 6.2			
Test according to measurement reference	Reference Method			
	ANSI C63.17 6.2.1			
Tested frequencies	F _{MID}			
EUT test mode	TDMA			
Limits				
± 10 ppm / hour				
Test setup				
EUT Companion device Splitter Spectrum analyzer Interferer Generators				
Test procedure				
1. With interferer signals the EUT is forced to center channel and communication to companion device is established. 2. The demodulated carrier EUT signal is captured over time 3. The mean frequency is determined under all supply voltage and temperature conditions				
Test results				
Voltage	Temperature	Maximum Frequency deviation [ppm]	Limit [ppm]	Margin [ppm]
3.70 VDC	25°C	reference	±10.0	0
3.05 VDC	25°C	0.09	±10.0	-9.91
4.45 VDC	25°C	0.13	±10.0	-9.87
3.70 VDC	-20°C	-0.22	±10.0	-9.78
3.70 VDC	85°C	-5.31	±10.0	-4.69
Comments:				

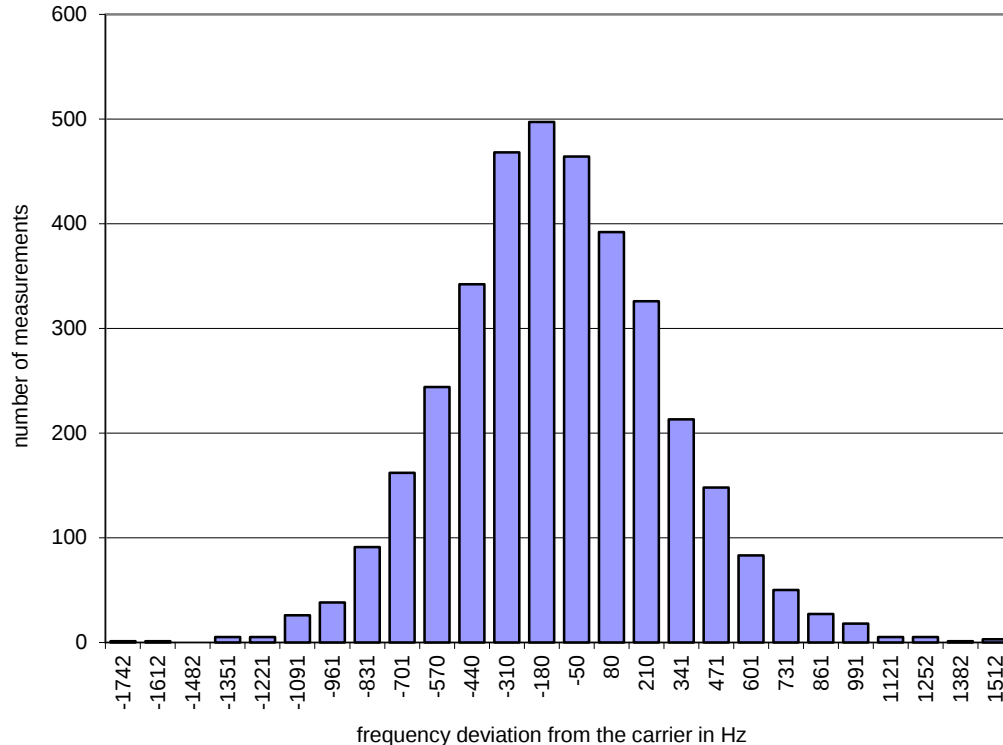
Carrier stability – Frequency stability – T_{NOM} V_{NOM}

FCC Part 15.323 Frequency Stability

Testprocedure ANSI 63.17

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	25 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vnom
Frequency of carrier	1924,989980 MHz
Measured mean	1924,989980 MHz
Stability (supply temp)	0,0 ppm (reference)
Result	Verdict = PASS
Stability over time	fmax : 0,85 ppm fmin : 0,84 ppm
Result	Verdict = PASS

Histogram



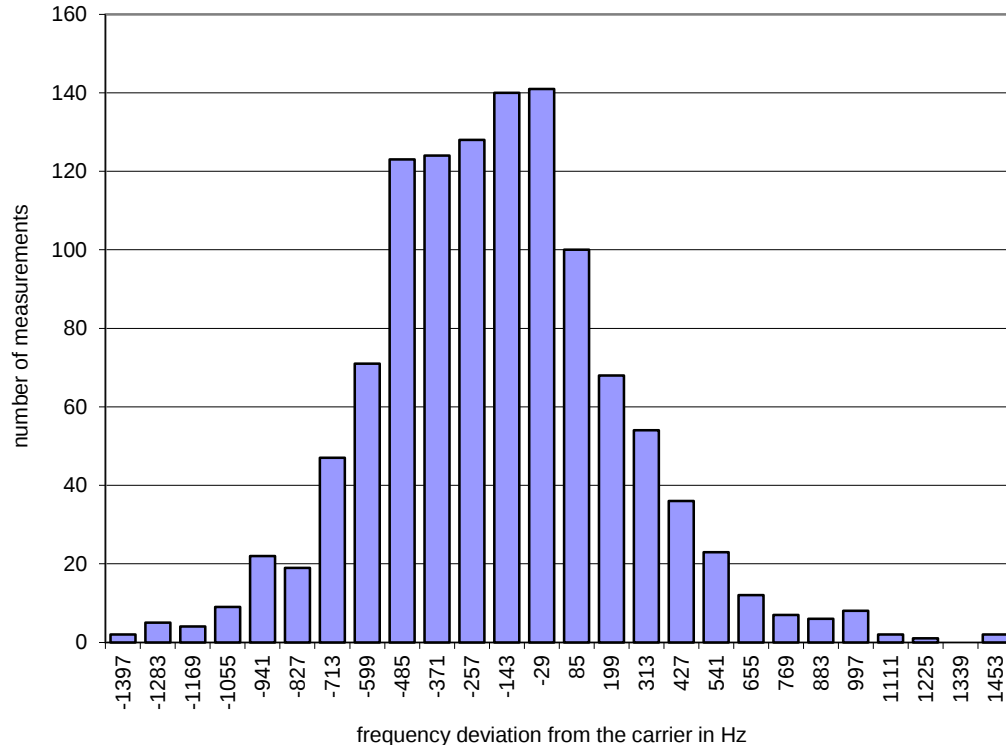
Carrier stability – Frequency stability – T_{NOM} V_{MIN}

FCC Part 15.323 Frequency Stability

Testprocedure ANSI 63.17

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	25 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vmin
Frequency of carrier	1924,989861 MHz
Measured mean	1924,989689 MHz
Stability (supply temp)	0,09 ppm
Result	Verdict = PASS
Stability over time	fmax : 0,84 ppm fmin : 0,64 ppm
Result	Verdict = PASS

Histogram



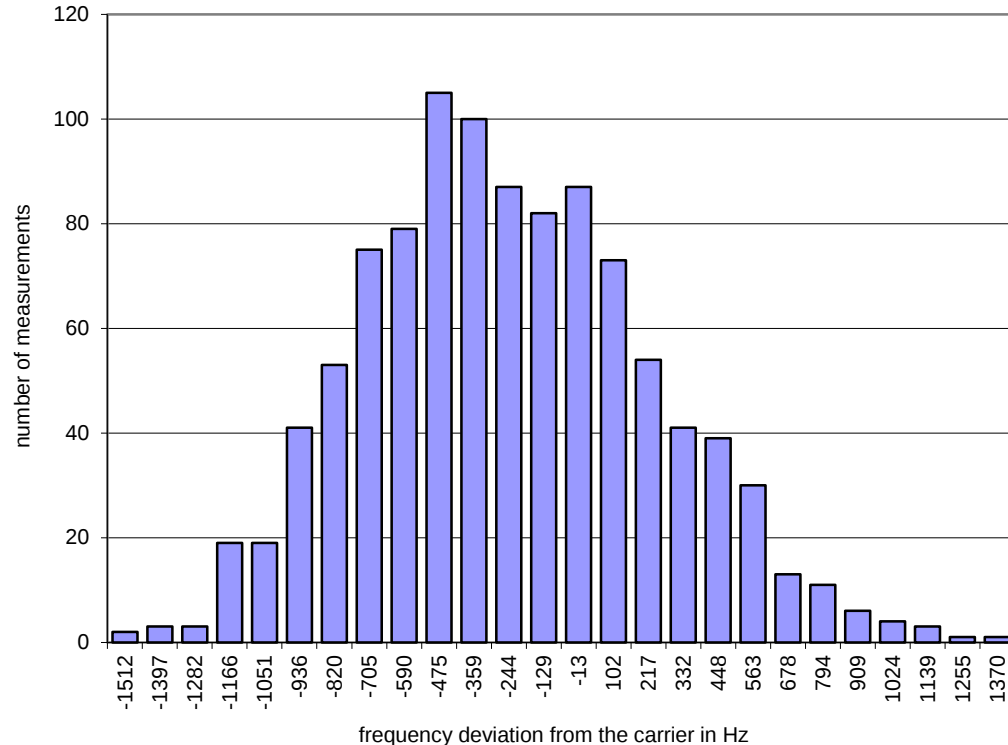
Carrier stability – Frequency stability – T_{NOM} V_{MAX}

FCC Part 15.323 Frequency Stability

Testprocedure ANSI 63.17

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	25 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vmax
Frequency of carrier	1924,989980 MHz
Measured mean	1924,989734 MHz
Stability (supply temp)	0,13 ppm
Result	Verdict = PASS
Stability over time	fmax : 0,84 ppm fmin : 0,66 ppm
Result	Verdict = PASS

Histogram



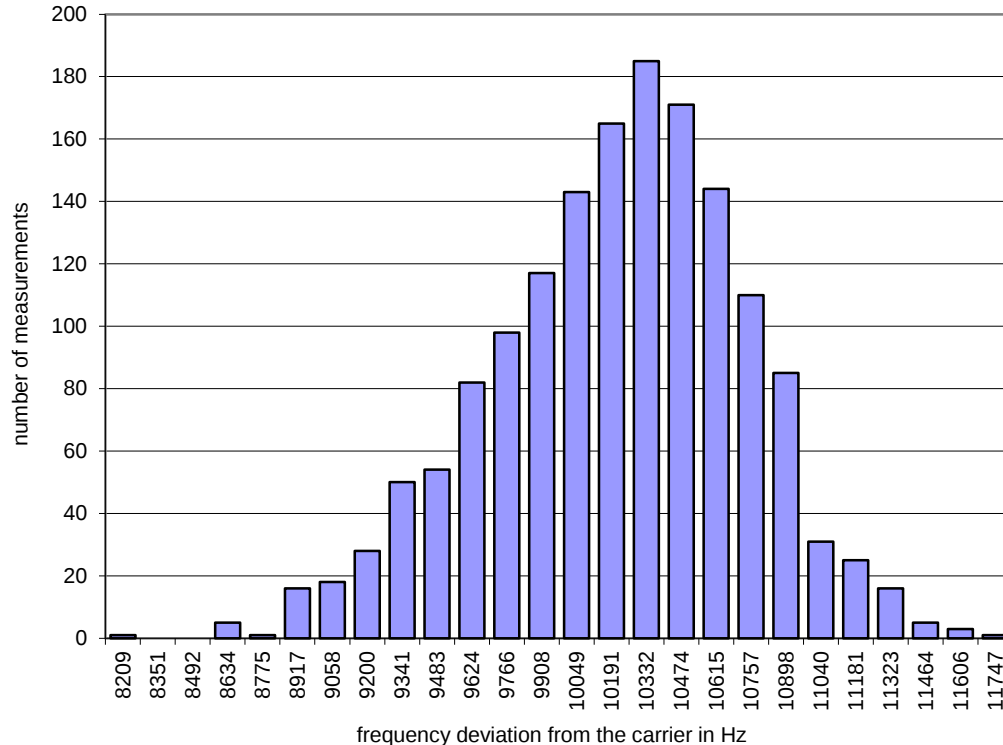
Carrier stability – Frequency stability – T_{MAX} V_{NOM}

FCC Part 15.323 Frequency Stability

Testprocedure ANSI 63.17

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	85 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vnom
Frequency of carrier	1924,989980 MHz
Measured mean	1925,000195 MHz
Stability (supply temp)	-5,31 ppm
Result	Verdict = PASS
Stability over time	fmax : 0,80 ppm fmin : 1,04 ppm
Result	Verdict = PASS

Histogram



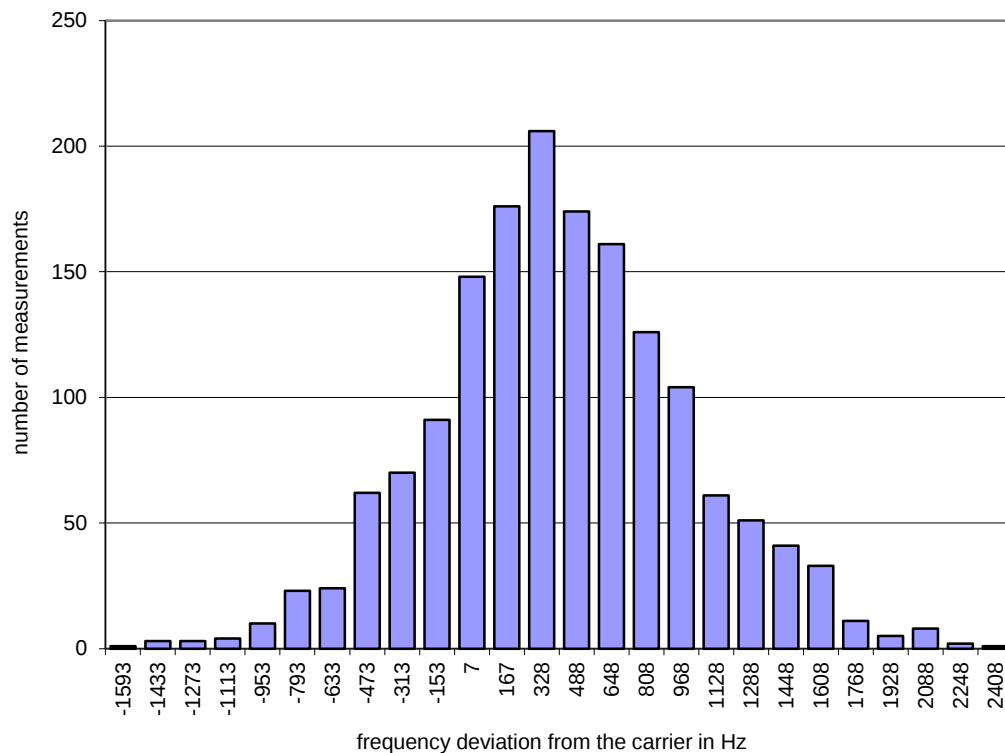
Carrier stability – Frequency stability – T_{MIN} V_{NOM}

FCC Part 15.323 Frequency Stability

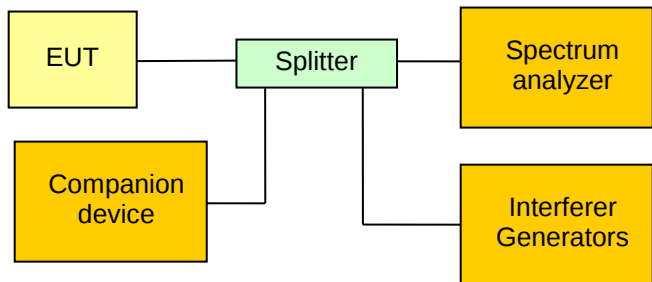
Testprocedure ANSI 63.17

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	-20 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vnom
Frequency of carrier	1924,989980 MHz
Measured mean	1924,990397 MHz
Stability (supply temp)	-0,22 ppm
Result	Verdict = PASS
Stability over time	fmax : 1,03 ppm fmin : 1,04 ppm
Result	Verdict = PASS

Histogram



3.10 Test Conditions and Results – Transmitter in-band unwanted emissions

Transmitter in-band unwanted emissions acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
Test according referenced standards	Reference Method	
	FCC 15.323(d) / IC RSS-213 6.7.2	
Test according to measurement reference	Reference Method	
	ANSI C63.17 6.1.6	
Tested frequencies	F _{LOW} / F _{HIGH}	
Tested frequency range	1920 – 1930 MHz	
Limits		
Frequency range [MHz]	Detector	Limit [dBc]
1920 MHz to (F _c – 3B)	Peak	-60
(F _c – 3B) to (F _c – 2B)	Peak	-50
(F _c – 2B) to (F _c – 1B)	Peak	-30
(F _c + 1B) to (F _c + 2B)	Peak	-30
(F _c + 2B) to (F _c + 3B)	Peak	-50
(F _c + 3B) to 1930 MHz	Peak	-60
B = emission / occupied bandwidth of selected channel F _c = Center frequency of selected channel		
Test setup		
 <pre>graph LR; EUT[EUT] --- Splitter[Splitter]; Splitter --- SA[Spectrum analyzer]; Splitter --- IG[Interferer Generators]; CD[Companion device] --- Splitter</pre>		
Test procedure		
1. With interferer signal the EUT is forced to the test channel and a communication session is established between the EUT and the companion device 2. The RBW of the spectrum analyzer is set to 1% of the emission bandwidth and the VBW is set to 3 times the RBW 3. With peak detector and max hold the emission spectrum is recorded over the corresponding frequency range		

Test results		
Channel	Frequency [MHz]	Verdict
F _{LOW}	1921.536	PASS
F _{HIGH}	1928.448	PASS
Comments:		

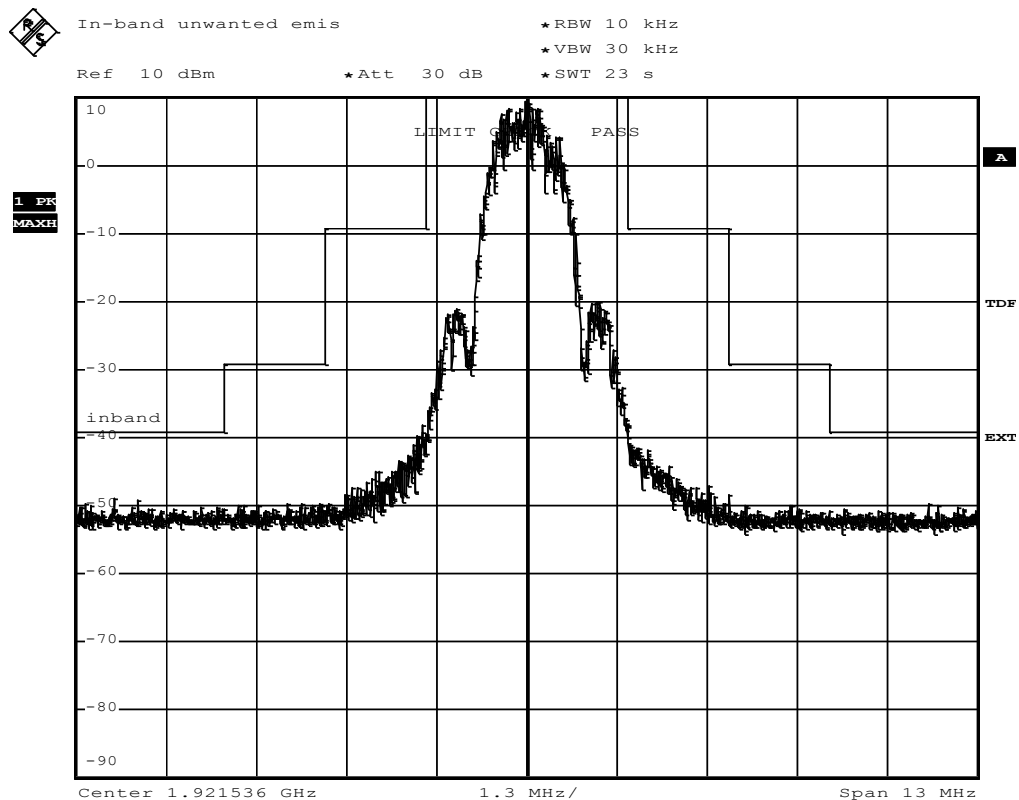
Transmitter in-band unwanted emissions – F_{Low}

FCC Part 15.323 In-band unwanted emission

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	In-band unwanted emission

1.46MHz



Comment: Ansi C63.17-2006 6.1.6.1
 Date: 13.OCT.2014 10:06:07

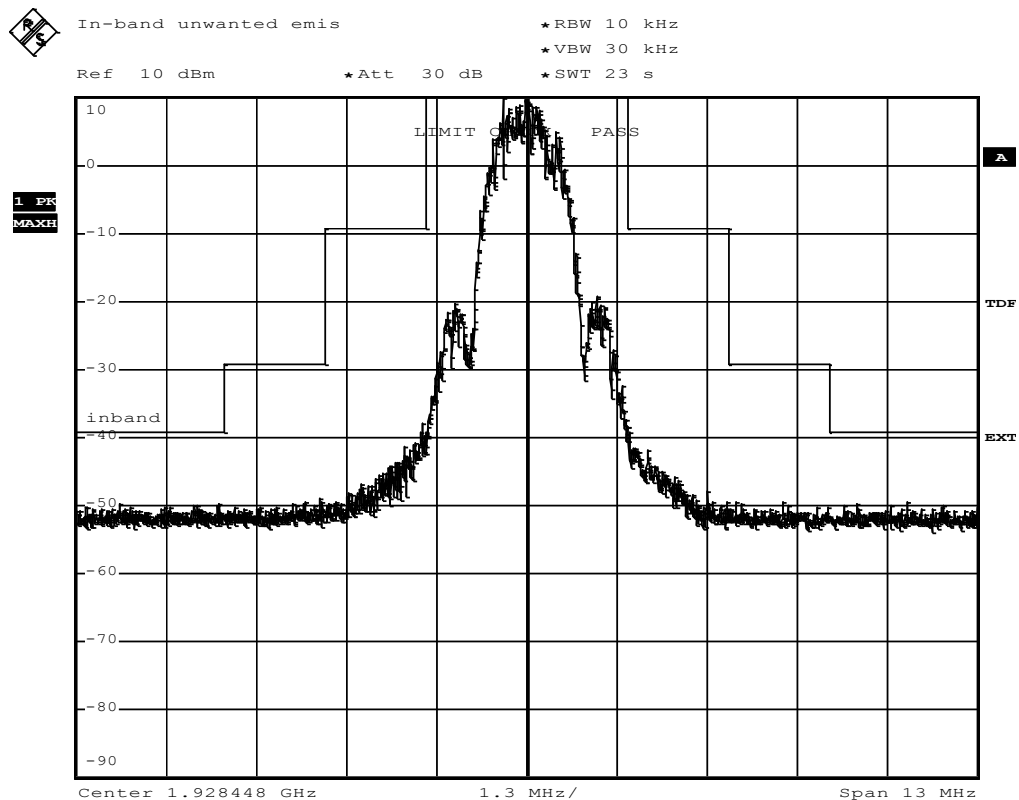
Transmitter in-band unwanted emissions – F_{HIGH}

FCC Part 15.323 In-band unwanted emission

**Testprocedure ANSI 63.17
UPCS**

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	In-band unwanted emission

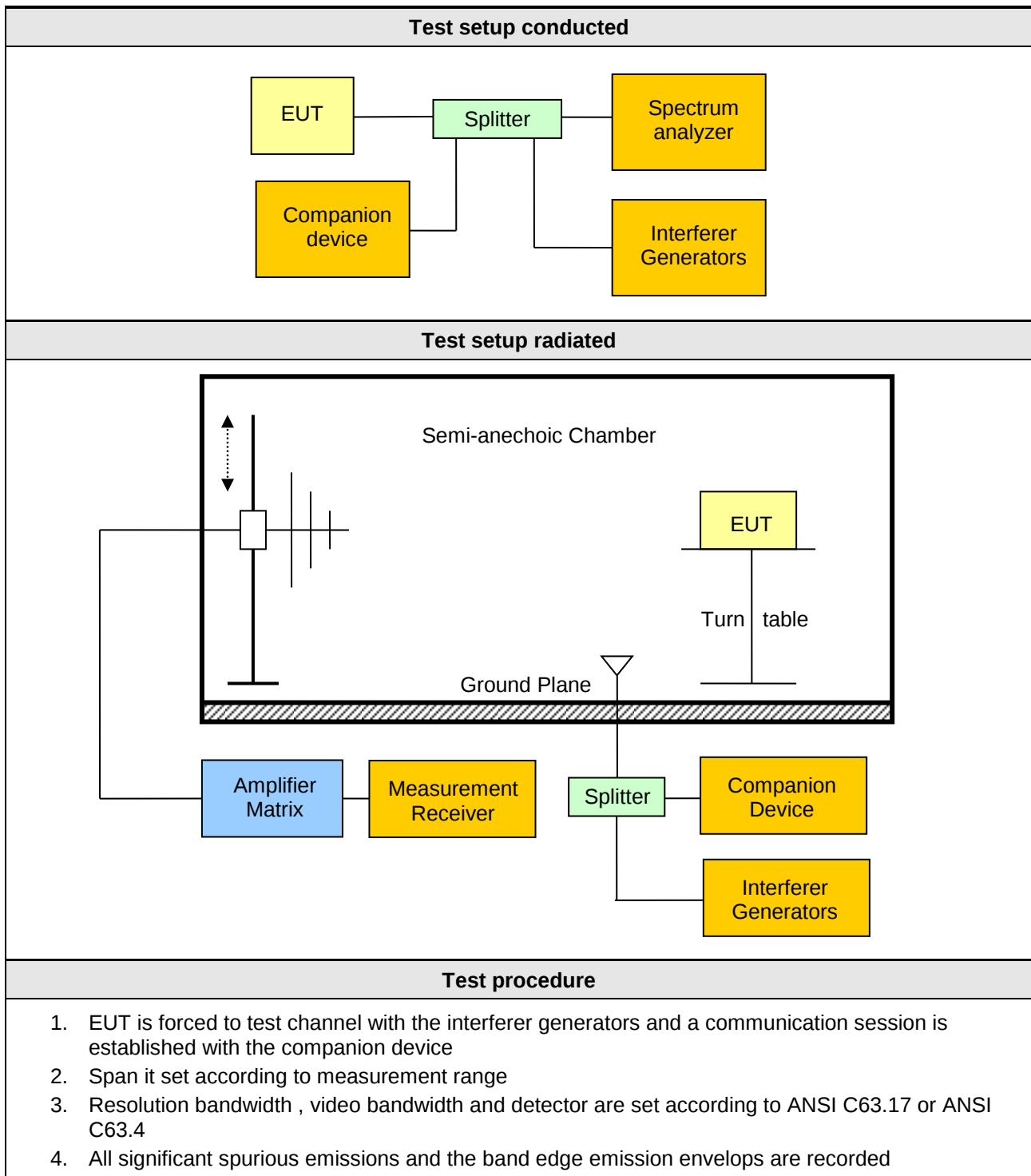
1.46MHz



Comment: Ansi C63.17-2006 6.1.6.1
Date: 13.OCT.2014 10:33:28

3.11 Test Conditions and Results – Transmitter out-of-band emissions

Transmitter out-of-band emissions acc. to FCC 47 CFR 15D / IC RSS-213			Verdict: PASS
Test according referenced standards		Reference Method	
		FCC 15.323(d) / IC RSS-213 6.7.1	
Test according to measurement reference		Reference Method	
		ANSI C63.17 6.1.6	
Tested frequencies		F _{LOW} / F _{HIGH}	
Tested frequency range		30 MHz – 10 th Harmonic	
Test option		Tested according to option a), b) and d) in C63.17 6.1.6.2	
Limits			
Frequency range [MHz]	Detector	Limit	Limit Distance [m]
30 – 88	Quasi-Peak	100 µV/m (40 dBµV/m)	3
88 – 216	Quasi-Peak	150 µV/m (43.5 dBµV/m)	3
216 – 960	Quasi-Peak	200 µV/m (46 dBµV/m)	3
960 – 1000	Quasi-Peak	500 µV/m (54 dBµV/m)	3
1000 – 1917.5	Average	500 µV/m (54 dBµV/m)	3
1917.5 – 1918.75	Peak	-39.5 dBm *	N/A
1918.75 – 1920	Peak	-29.5 dBm *	N/A
1930 – 1931.25	Peak	-29.5 dBm *	N/A
1931.25 – 1932.5	Peak	-39.5 dBm *	N/A
1932.5 - 20000	Average	500 µV/m (54 dBµV/m)	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. * Measurement is performed with conducted measurement setup			



Test results, internal antenna 1									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Limit dist. [m]*	Margin [dB]
0	1928.448	TX	1932.5	72.50	pk	hor	73.90	3	-01.40
0	1928.448	TX	1932.5	41.12	avg	hor	53.90	3	-12.78
0	1928.448	TX	1932.5	68.66	pk	ver	73.90	3	-05.24
0	1928.448	TX	1932.5	36.49	avg	ver	53.90	3	-17.41
0	1928.448	TX	3857.4	59.30	pk	ver	73.90	3	-14.60
0	1928.448	TX	3857.4	32.27	avg	ver	53.90	3	-21.63
0	1928.448	TX	3857.5	59.48	pk	hor	73.90	3	-14.42
0	1928.448	TX	3857.5	32.17	avg	hor	53.90	3	-21.73
0	1928.448	TX	5784	52.64	pk	ver	73.90	1	-21.26
0	1928.448	TX	5784	26.47	avg	ver	53.90	1	-27.43
0	1928.448	TX	5784	51.24	pk	ver	73.90	1	-22.66
0	1928.448	TX	5784	25.87	avg	ver	53.90	1	-28.03
4	1921.536	TX	1917.4	71.94	pk	hor	73.90	3	-01.96
4	1921.536	TX	1917.4	39.31	avg	hor	53.90	3	-14.59
4	1921.536	TX	1917.4	63.38	pk	ver	73.90	3	-10.52
4	1921.536	TX	1917.4	31.95	avg	ver	53.90	3	-21.95
4	1921.536	TX	3842.4	59.98	pk	hor	73.90	3	-13.92
4	1921.536	TX	3842.4	33.02	avg	hor	53.90	3	-20.88
4	1921.536	TX	3842.4	60.38	pk	ver	73.90	3	-13.52
4	1921.536	TX	3842.4	33.43	avg	ver	53.90	3	-20.47
4	1921.536	TX	5764	53.43	pk	ver	73.90	1	-20.47
4	1921.536	TX	5764	26.87	avg	ver	53.90	1	-27.03
4	1921.536	TX	5766	51.75	pk	ver	73.90	1	-22.15
4	1921.536	TX	5766	25.36	avg	ver	53.90	1	-28.54
4	1921.536	TX	7687	54.20	pk	ver	73.90	1	-19.70
4	1921.536	TX	7687	28.90	avg	ver	53.90	1	-25.00
Comments: * Physical distance between EUT and measurement antenna.									

Test results, internal antenna 2									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Limit dist. [m]*	Margin [dB]
0	1928.448	TX	881.836	28.98	pk	hor	46.00	3	-17.02
0	1928.448	TX	1932.5	66.50	pk	ver	73.90	3	-07.40
0	1928.448	TX	1932.5	35.54	avg	ver	53.90	3	-18.36
0	1928.448	TX	1932.6	71.34	pk	hor	73.90	3	-02.56
0	1928.448	TX	1932.6	40.54	avg	hor	53.90	3	-13.36
0	1928.448	TX	1947.7	50.87	pk	hor	73.90	3	-23.03
0	1928.448	TX	3856.3	49.75	pk	ver	73.90	3	-24.15
0	1928.448	TX	3856.3	29.58	avg	ver	53.90	3	-24.32
0	1928.448	TX	3856.8	55.03	pk	hor	73.90	3	-18.87
0	1928.448	TX	3856.8	31.04	avg	hor	53.90	3	-22.86
0	1928.448	TX	5784	53.22	pk	ver	73.90	1	-20.68
0	1928.448	TX	5784	26.93	avg	ver	53.90	1	-26.97
0	1928.448	TX	5786	53.31	pk	ver	73.90	1	-20.59
0	1928.448	TX	5786	26.11	avg	ver	53.90	1	-27.79
0	1928.448	TX	7713	54.31	pk	ver	73.90	1	-19.59
0	1928.448	TX	7713	29.59	avg	ver	53.90	1	-24.31
4	1921.536	TX	881.836	31.62	pk	ver	46.00	3	-14.38
4	1921.536	TX	1836.9	46.91	pk	hor	73.90	3	-26.99
4	1921.536	TX	1893.7	45.94	pk	hor	73.90	3	-27.96
4	1921.536	TX	1917.4	73.10	pk	hor	73.90	3	-00.80
4	1921.536	TX	1917.4	39.92	avg	hor	53.90	3	-13.98
4	1921.536	TX	1917.4	62.00	pk	ver	73.90	3	-11.90
4	1921.536	TX	1917.4	32.00	avg	ver	53.90	3	-21.90
4	1921.536	TX	3842.4	50.22	pk	ver	73.90	3	-23.68
4	1921.536	TX	3842.4	29.70	avg	ver	53.90	3	-24.20
4	1921.536	TX	5763	53.91	pk	ver	73.90	1	-19.99
4	1921.536	TX	5763	27.00	avg	ver	53.90	1	-26.90
4	1921.536	TX	5764	54.34	pk	ver	73.90	1	-19.56
4	1921.536	TX	5764	27.49	avg	ver	53.90	1	-26.41
4	1921.536	TX	7685	47.84	pk	ver	73.90	1	-26.06
4	1921.536	TX	7685	28.15	avg	ver	53.90	1	-25.75
4	1921.536	TX	7687	53.51	pk	ver	73.90	1	-20.39
Comments: * Physical distance between EUT and measurement antenna.									

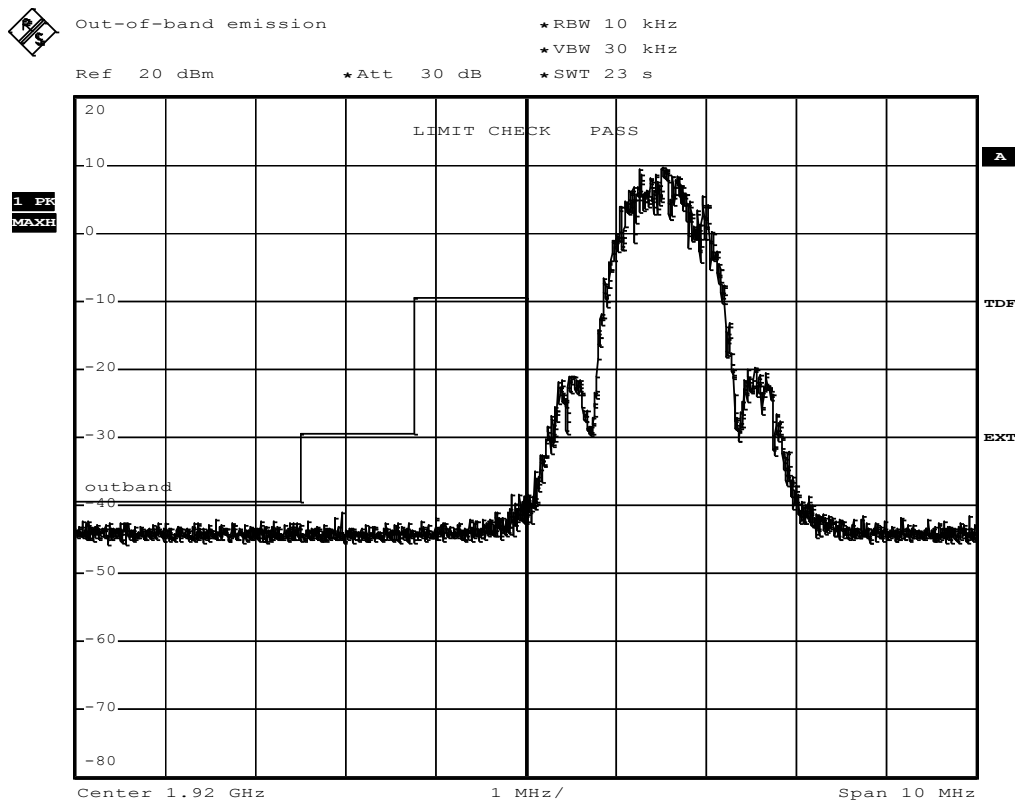
Transmitter out-of-band emissions – Band edge F_{Low}

FCC Part 15.323 Out-of-band emission

Testprocedure ANSI 63.17 UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Out-of-band emission

measurement on the lowest carrier
Carrier=1921.536MHz



Comment: Ansi C63.17-2006 6.1.6.2
Date: 13.OCT.2014 10:09:30

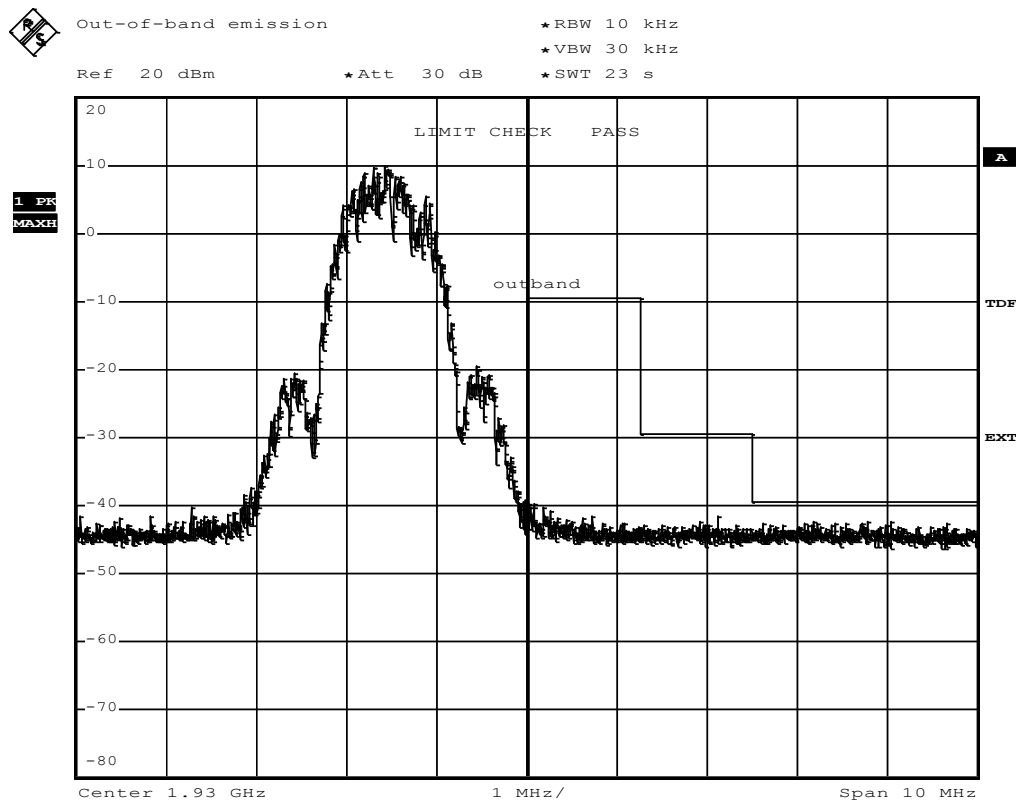
Transmitter out-of-band emissions – Band edge F_{HIGH}

FCC Part 15.323 Out-of-band emission

Testprocedure ANSI 63.17
UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Out-of-band emission

measurement on the highest carrier
Carrier=1928.448MHz



Comment: Ansi C63.17-2006 6.1.6.2
Date: 13.OCT.2014 11:02:36

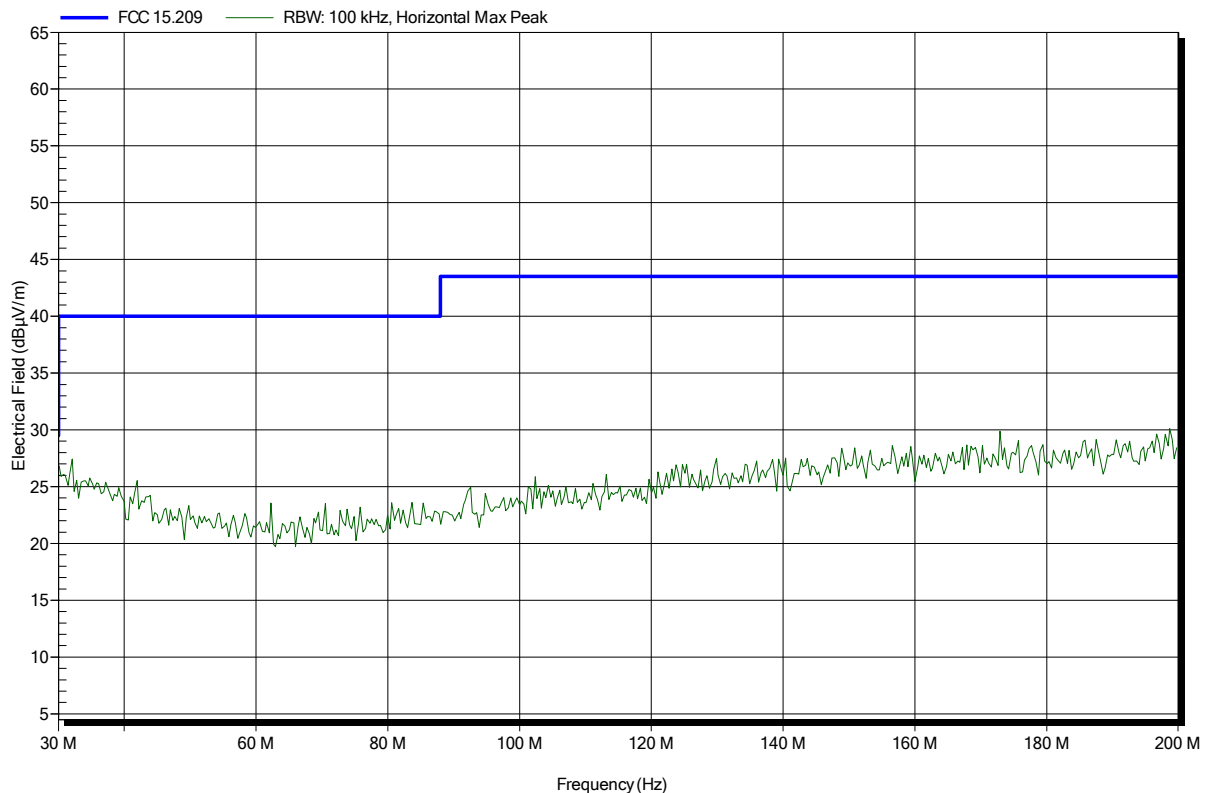
EMISSION PLOTS ANTENNA 1

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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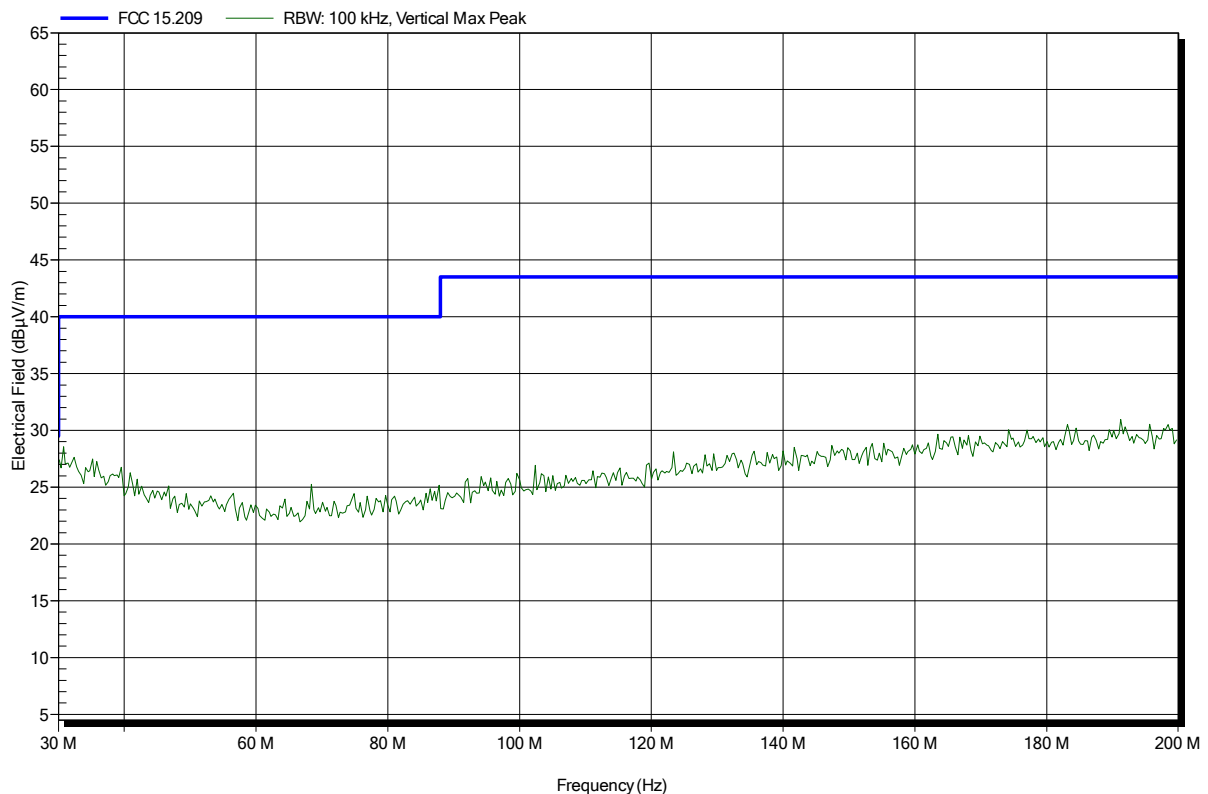


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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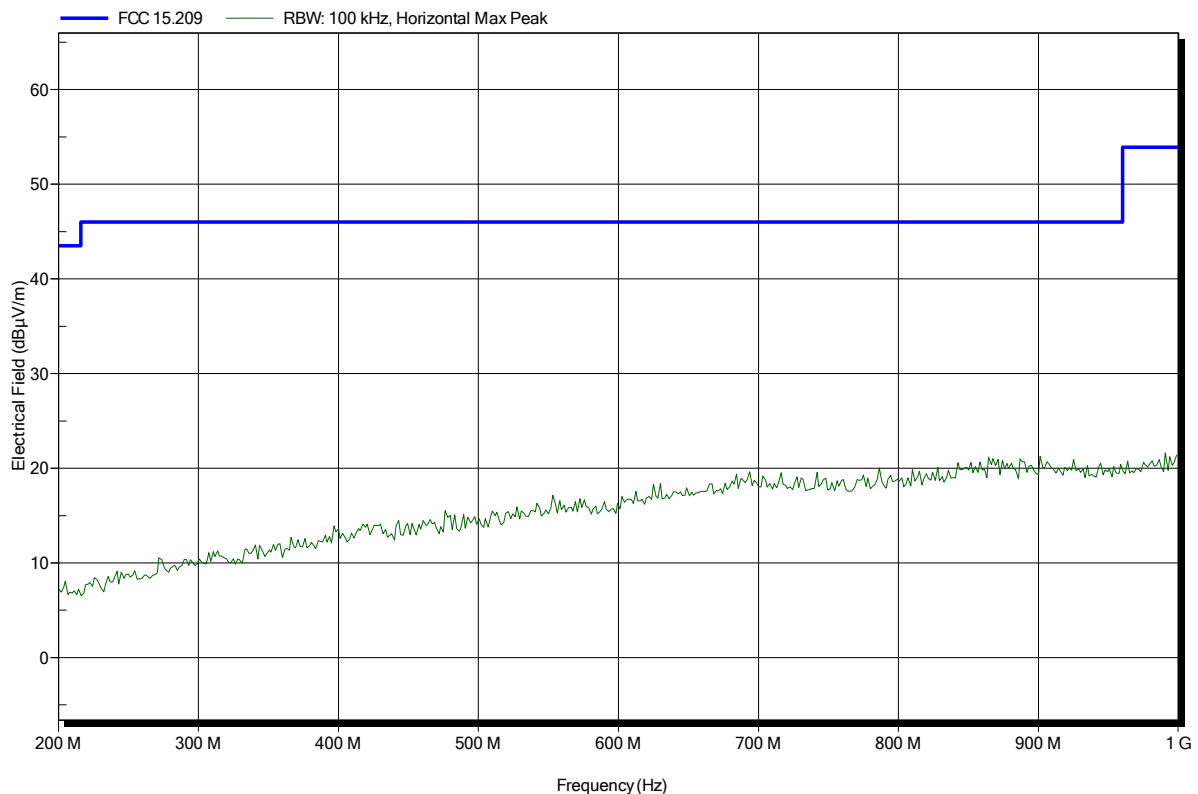


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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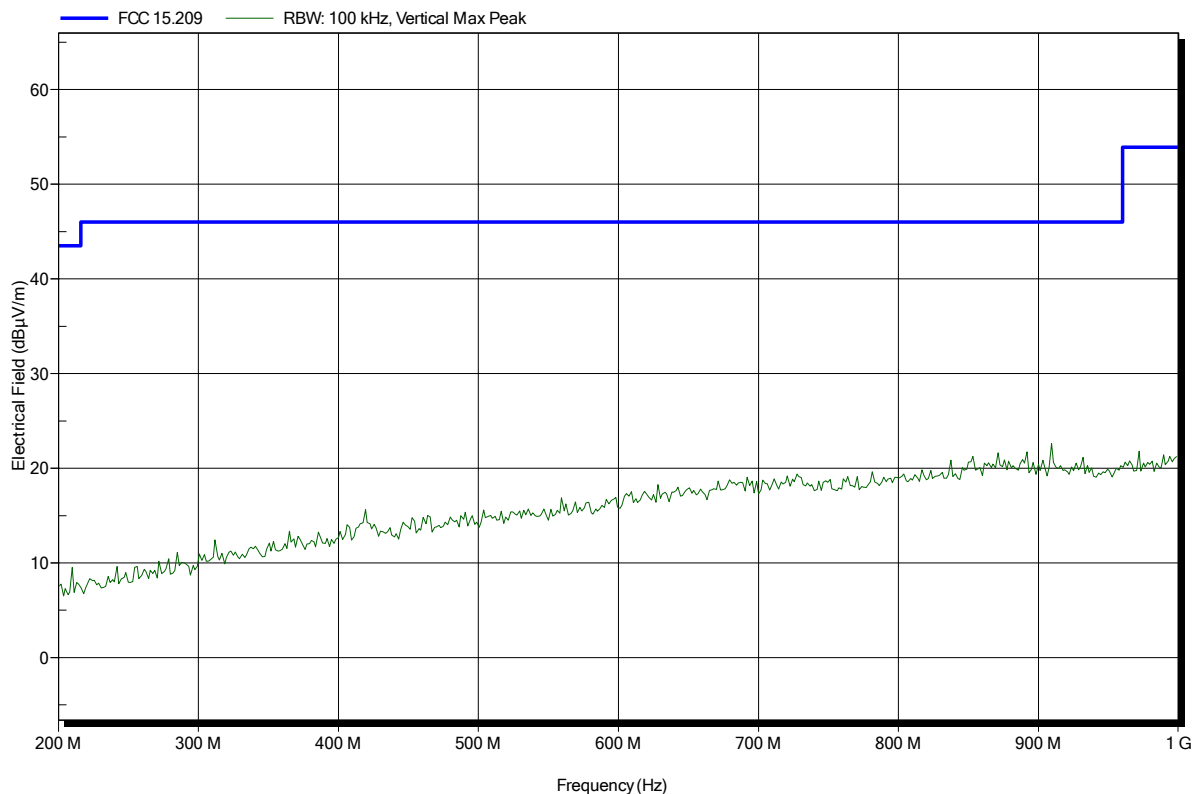


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; UPCS; ch.4; ant.1
Test Date:	2015-01-20
Note:	

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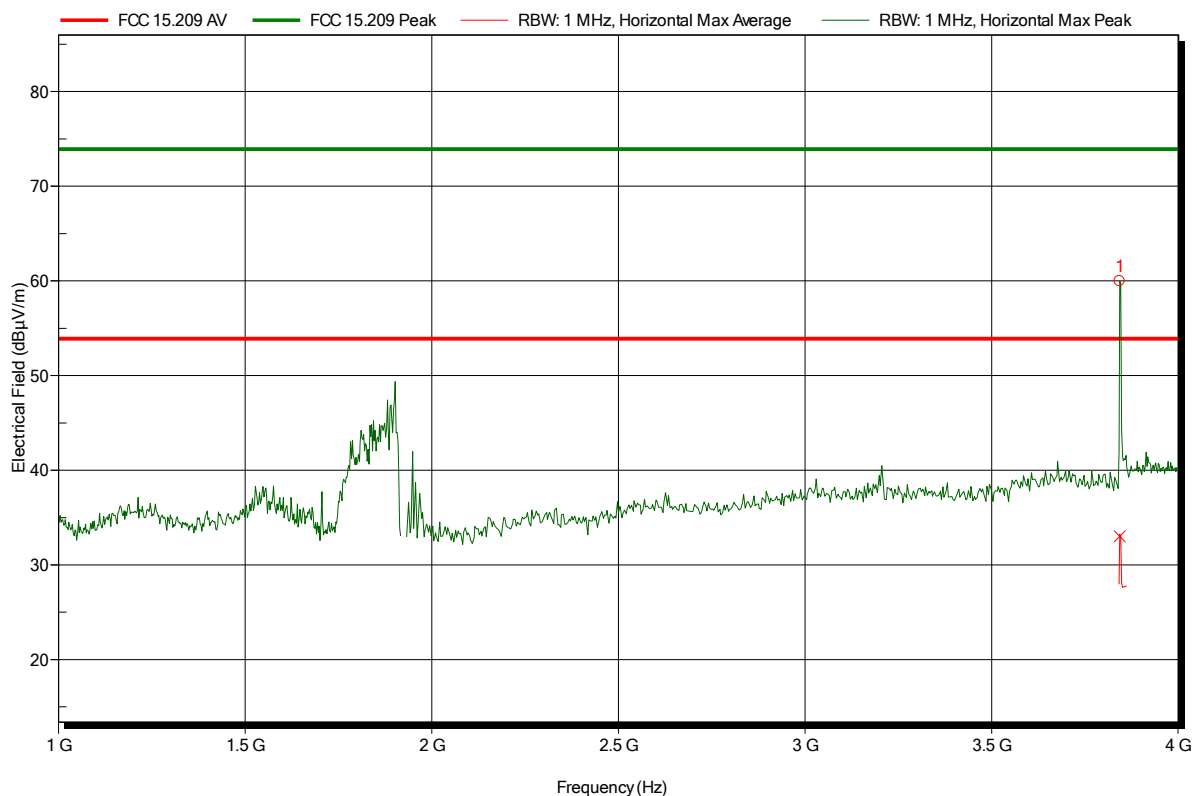


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-19
 Note: with notch-filter

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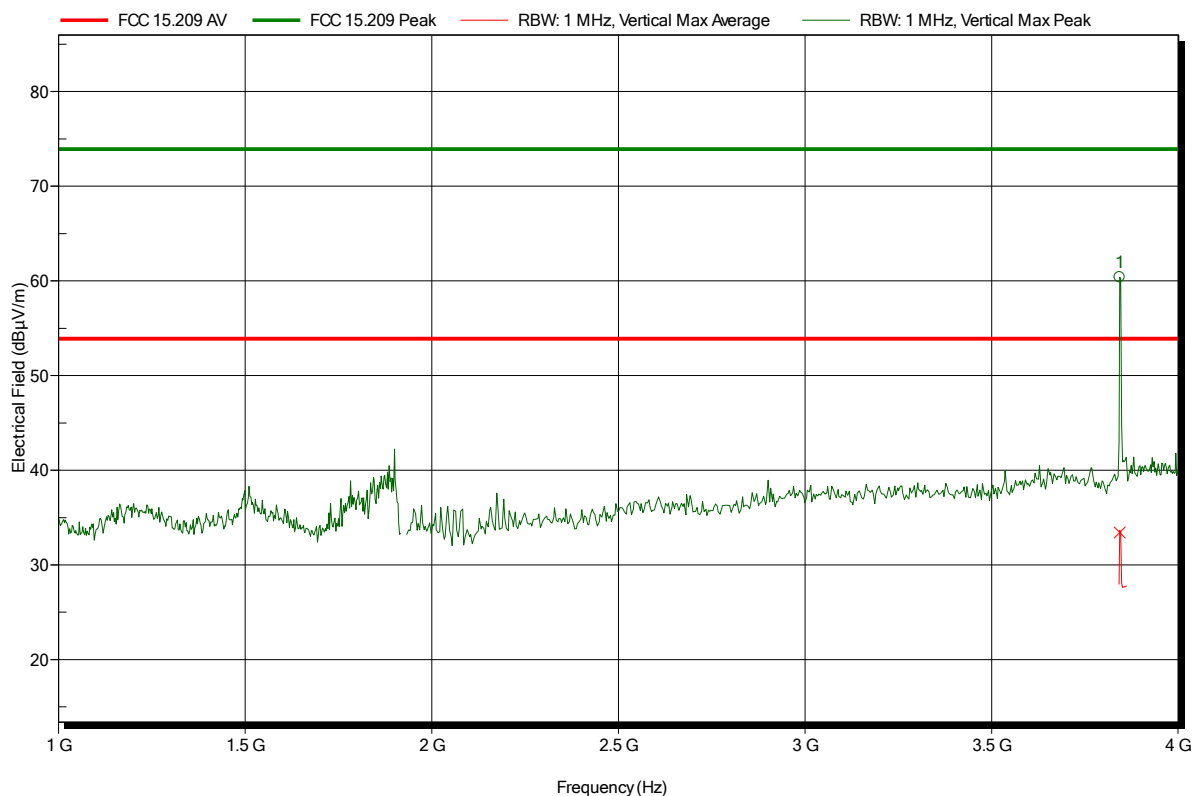
Frequency 3.8424 GHz	Peak 59.98 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -13.92 dB	Status Pass
Frequency 3.8424 GHz	Average 33.02 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -20.88 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-19
 Note: with notch-filter

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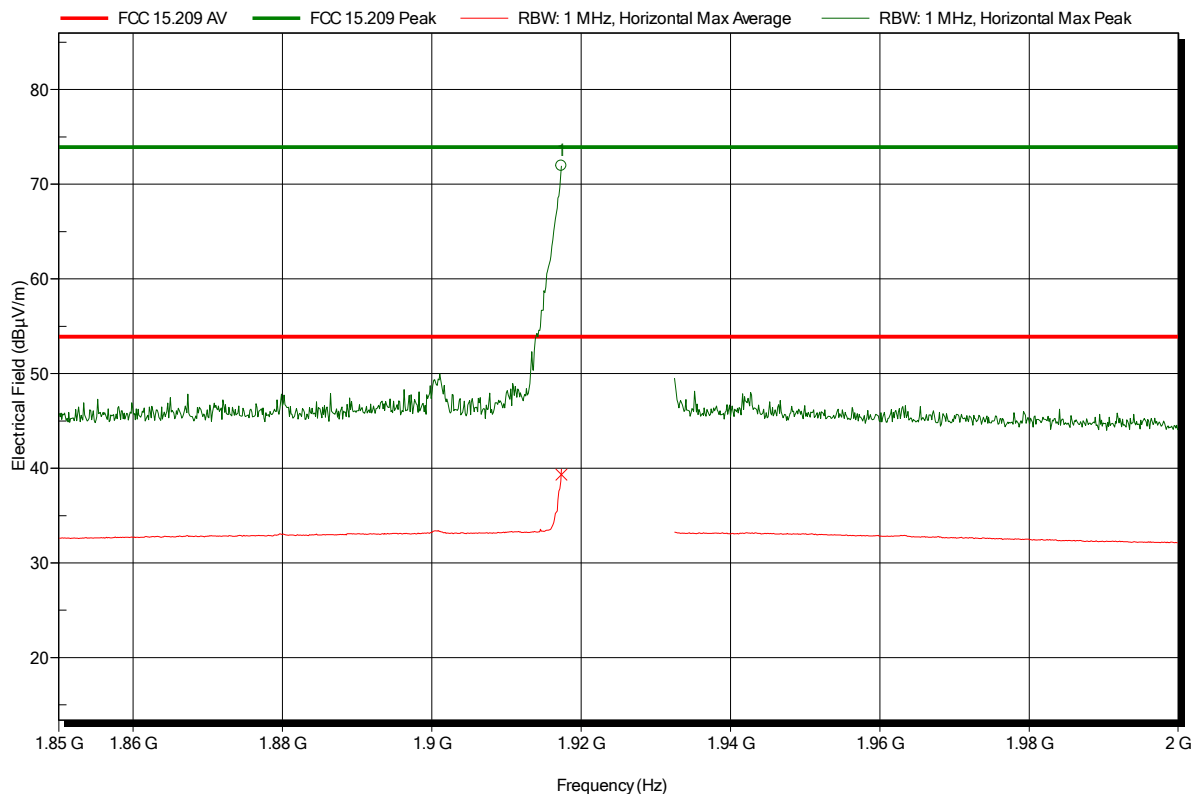
Frequency 3.8424 GHz	Peak 60.38 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -13.52 dB	Status Pass
Frequency 3.8424 GHz	Average 33.43 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -20.47 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-19
 Note:

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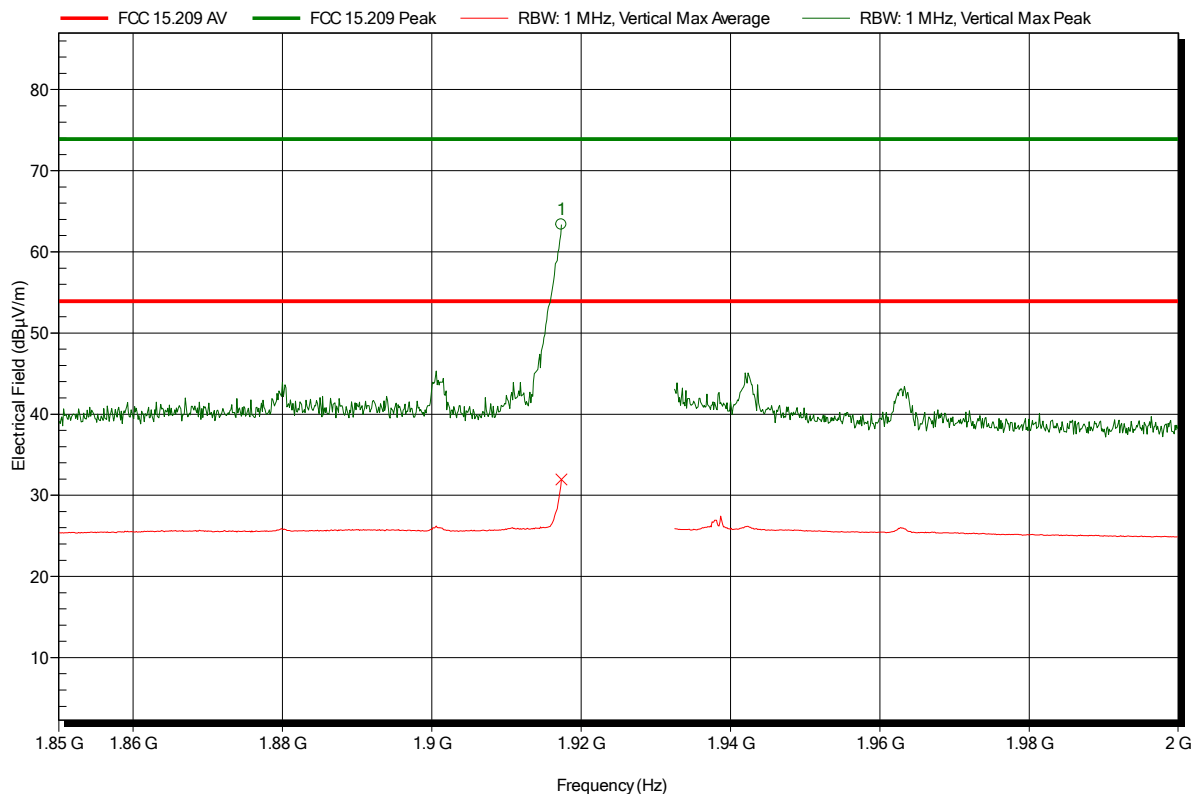
Frequency 1.9174 GHz	Peak 71.94 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -1.96 dB	Status Pass
Frequency 1.9174 GHz	Average 39.31 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -14.59 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-19
 Note:

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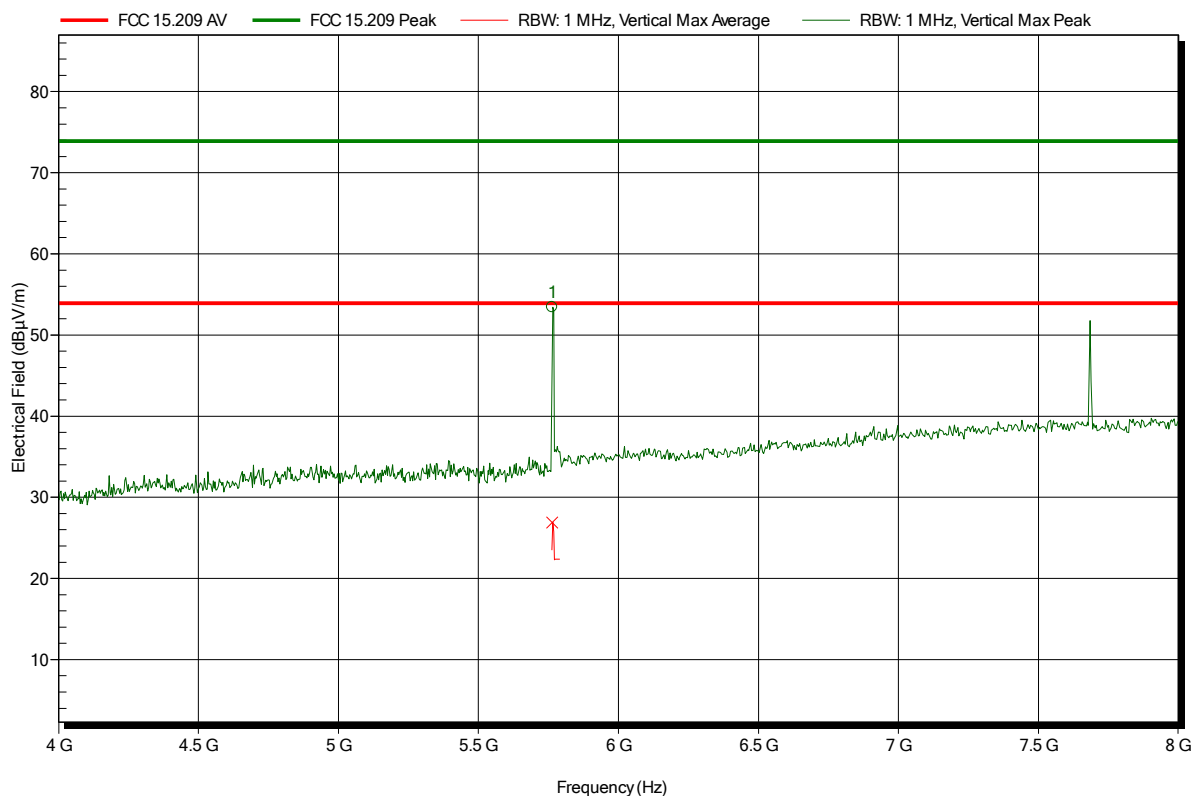
Frequency 1.9174 GHz	Peak 63.38 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -10.52 dB	Status Pass
Frequency 1.9174 GHz	Average 31.95 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -21.95 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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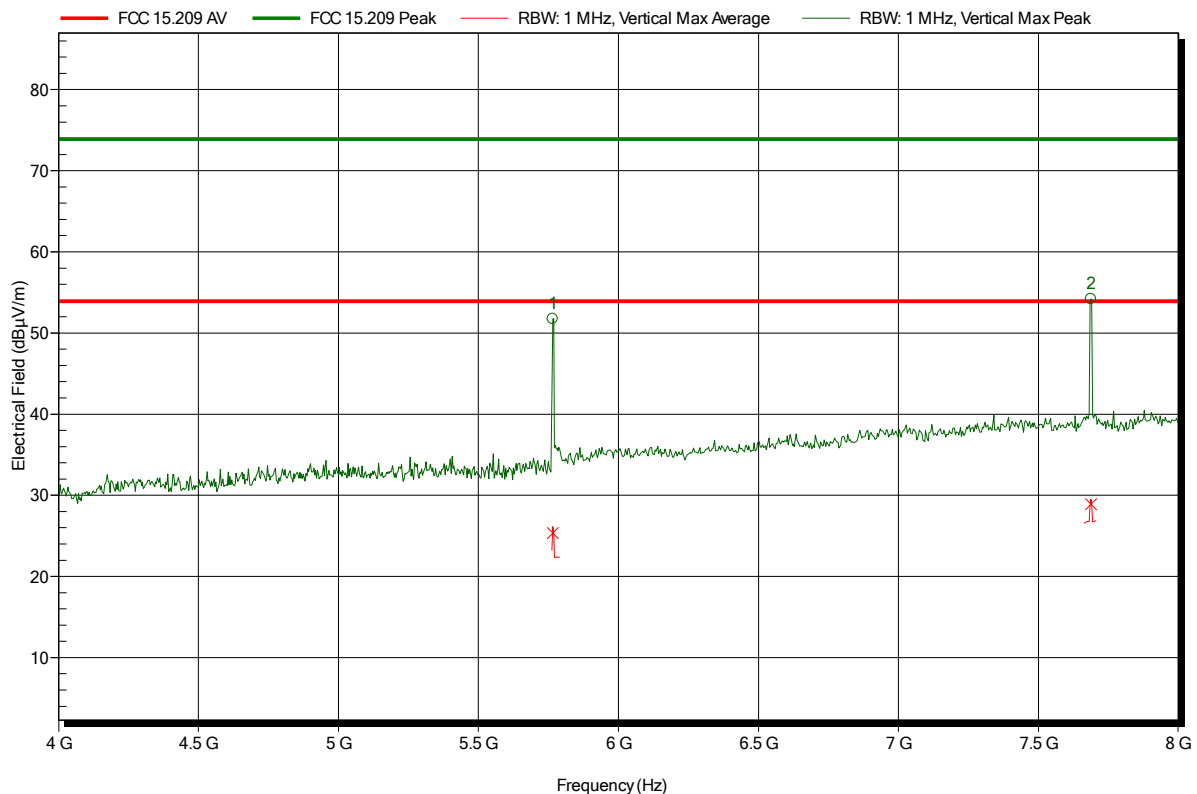
Frequency 5.764 GHz	Peak 53.43 dBμV/m	Peak Limit 73.9 dBμV/m	Peak Difference -20.47 dB	Status Pass
Frequency 5.764 GHz	Average 26.87 dBμV/m	Average Limit 53.9 dBμV/m	Average Difference -27.03 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.766 GHz	51.75 dBµV/m	73.9 dBµV/m	-22.15 dB	Pass
7.687 GHz	54.2 dBµV/m	73.9 dBµV/m	-19.7 dB	Pass

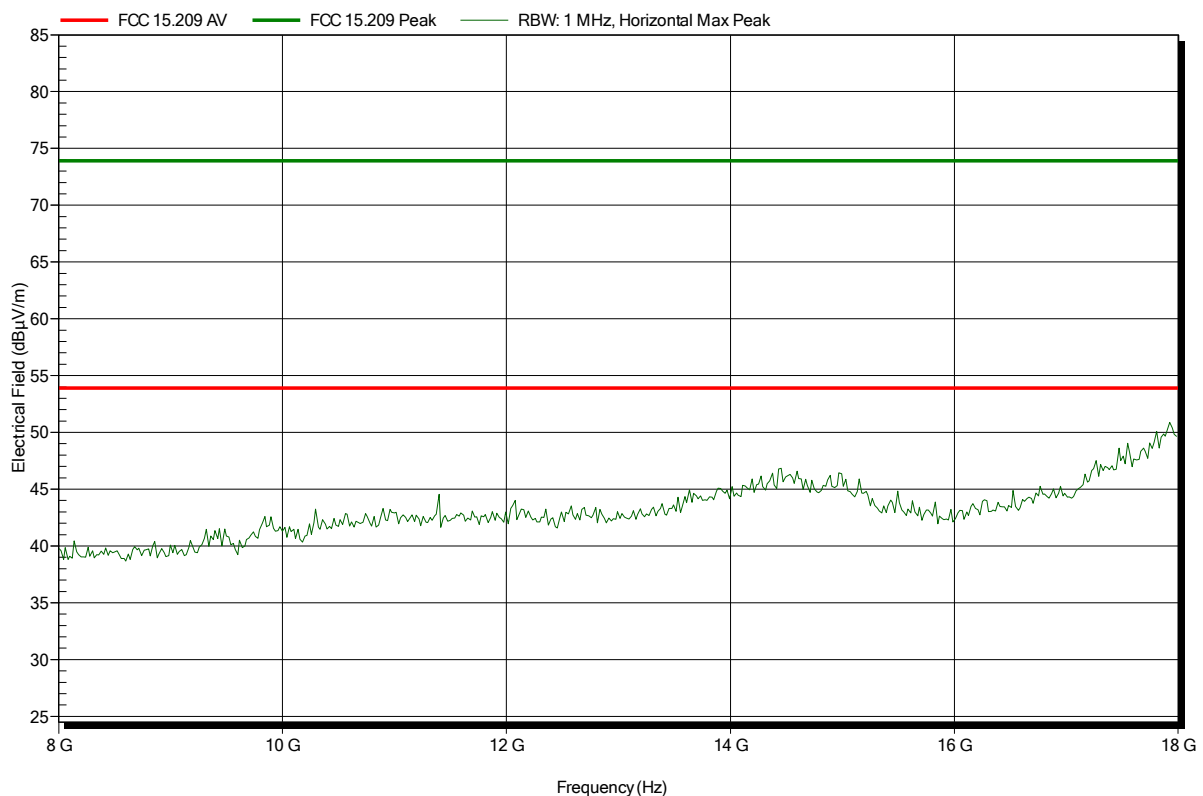
Frequency	Average	Average Limit	Average Difference	Average Status
5.766 GHz	25.36 dBµV/m	53.9 dBµV/m	-28.54 dB	Pass
7.687 GHz	28.9 dBµV/m	53.9 dBµV/m	-25 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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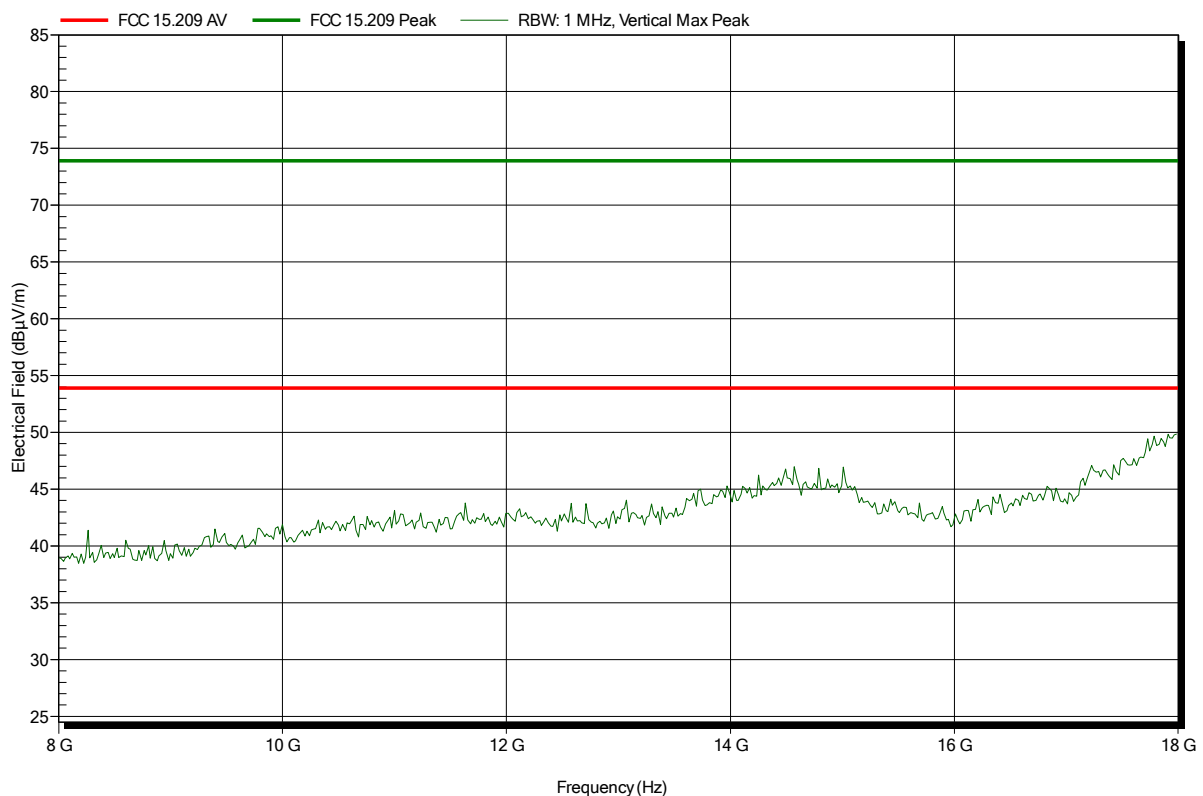


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.1
 Test Date: 2015-01-20
 Note:

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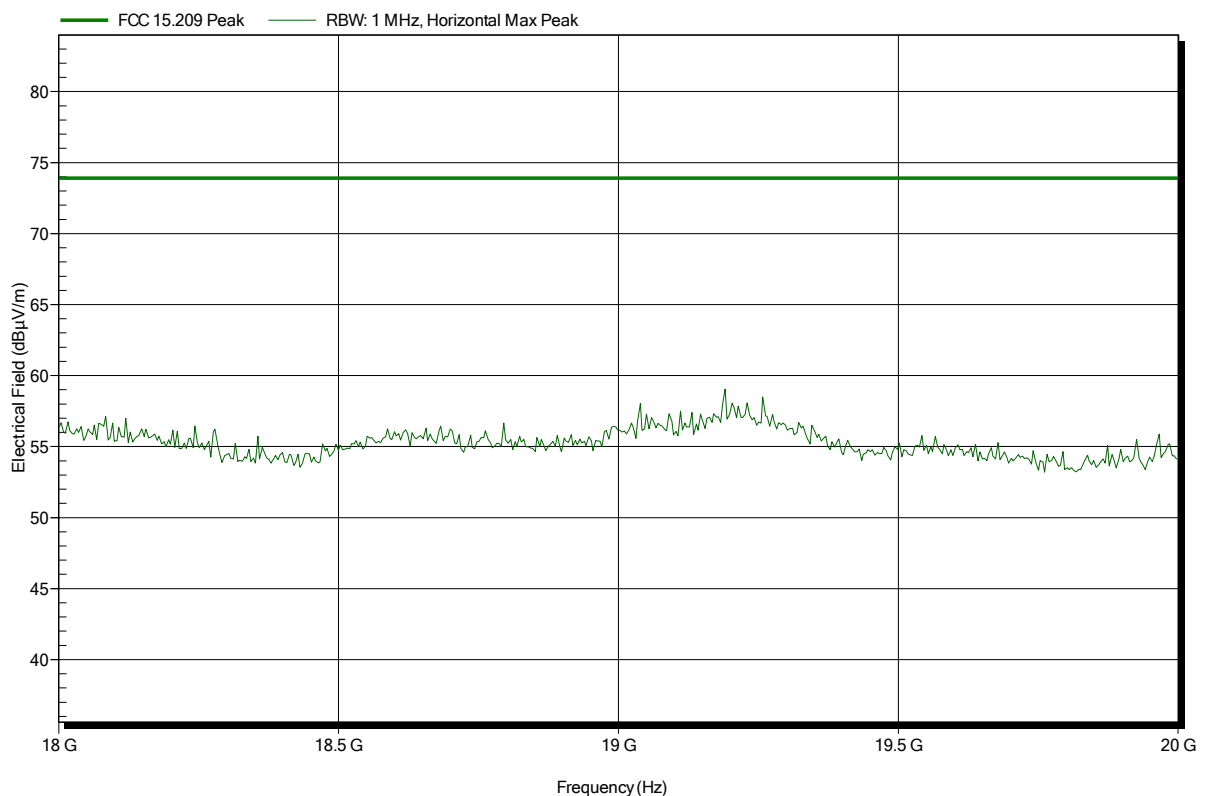


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.4; ant.1
Test Date:	2015-01-20
Note:	

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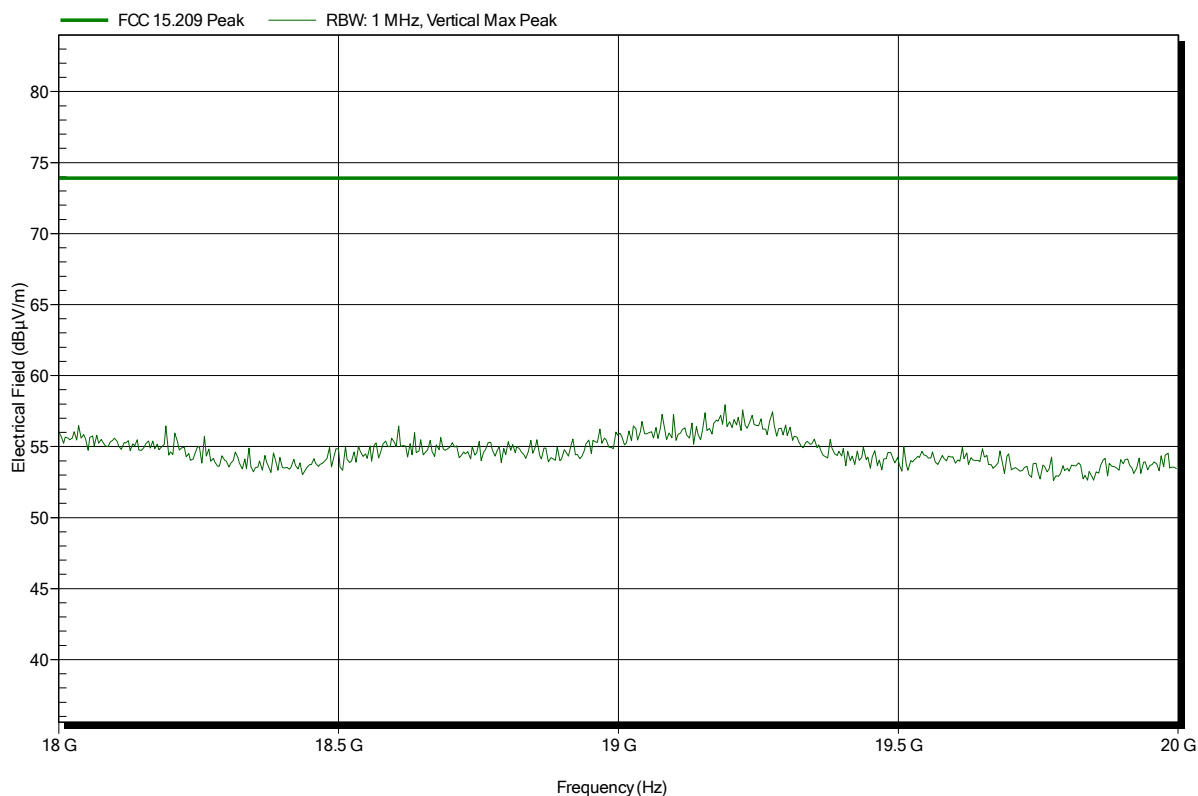


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.4; ant.1
Test Date:	2015-01-20
Note:	

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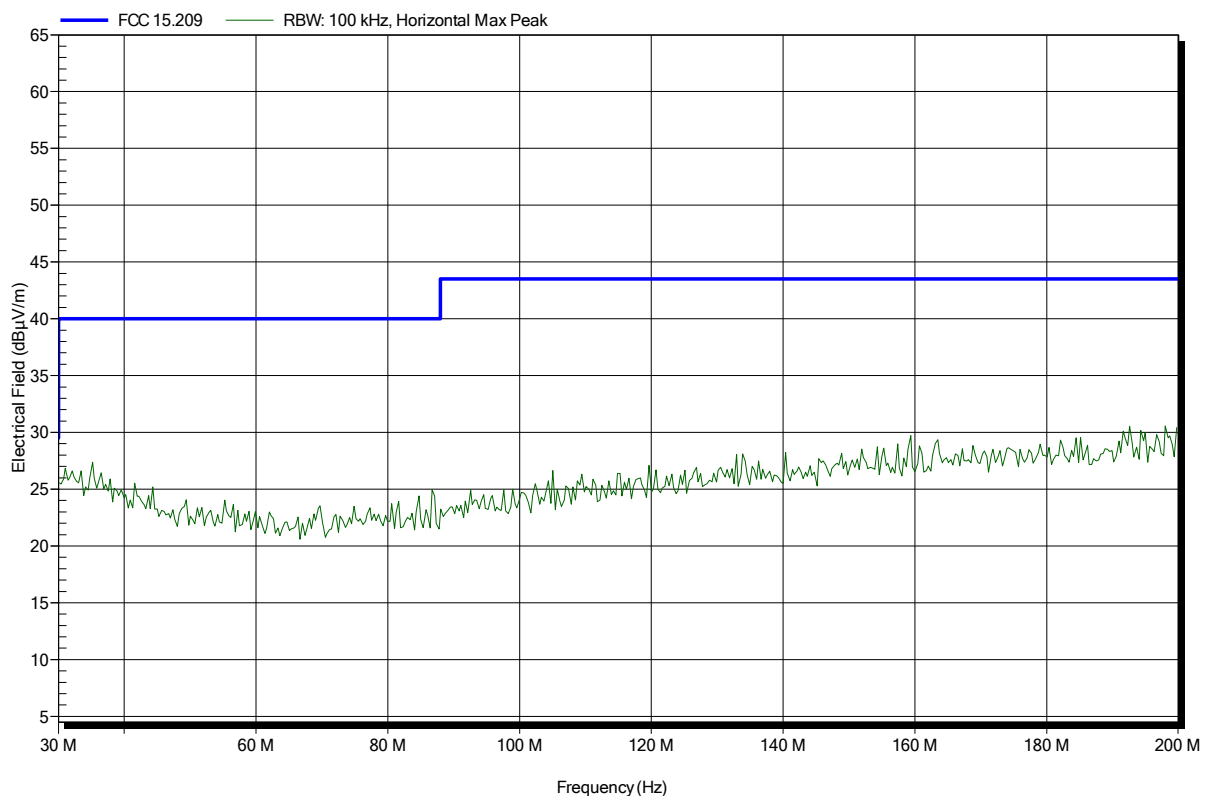


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; UPCS; ch.0; ant.1
Test Date:	2015-01-20
Note:	

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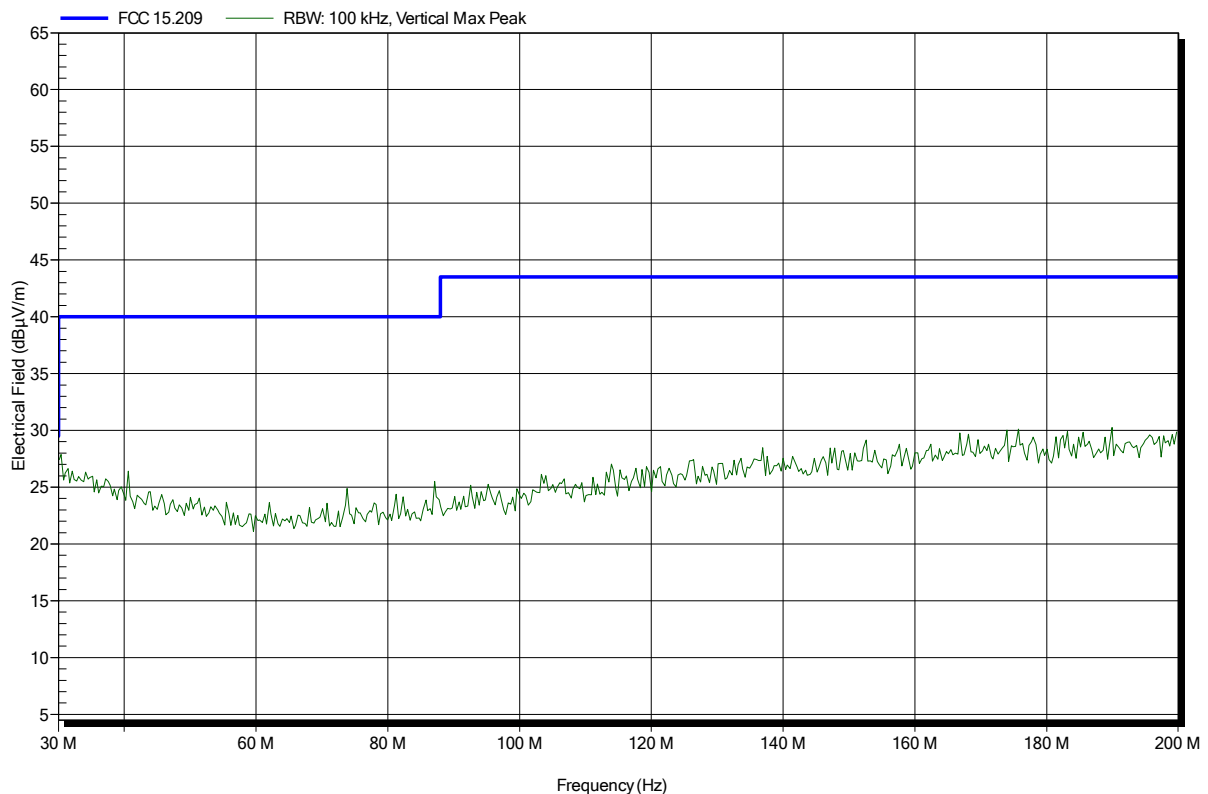


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; UPCS; ch.0; ant.1
Test Date:	2015-01-20
Note:	

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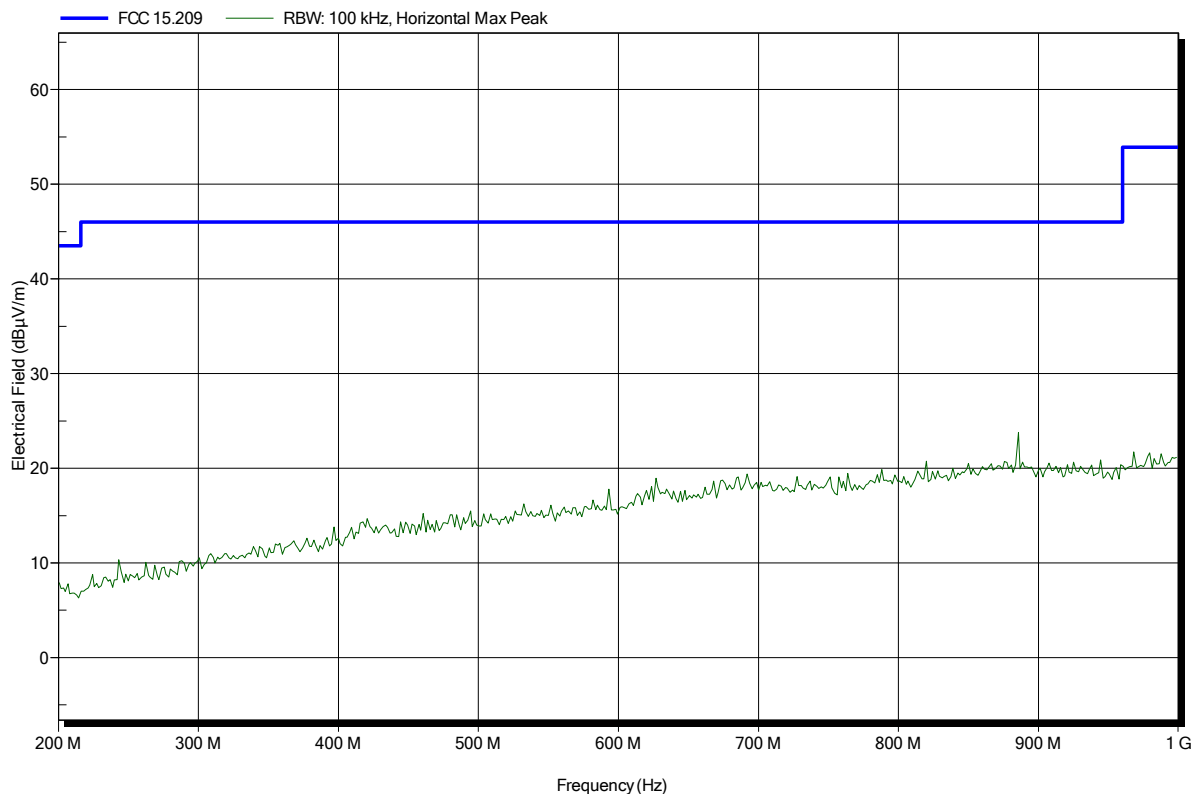


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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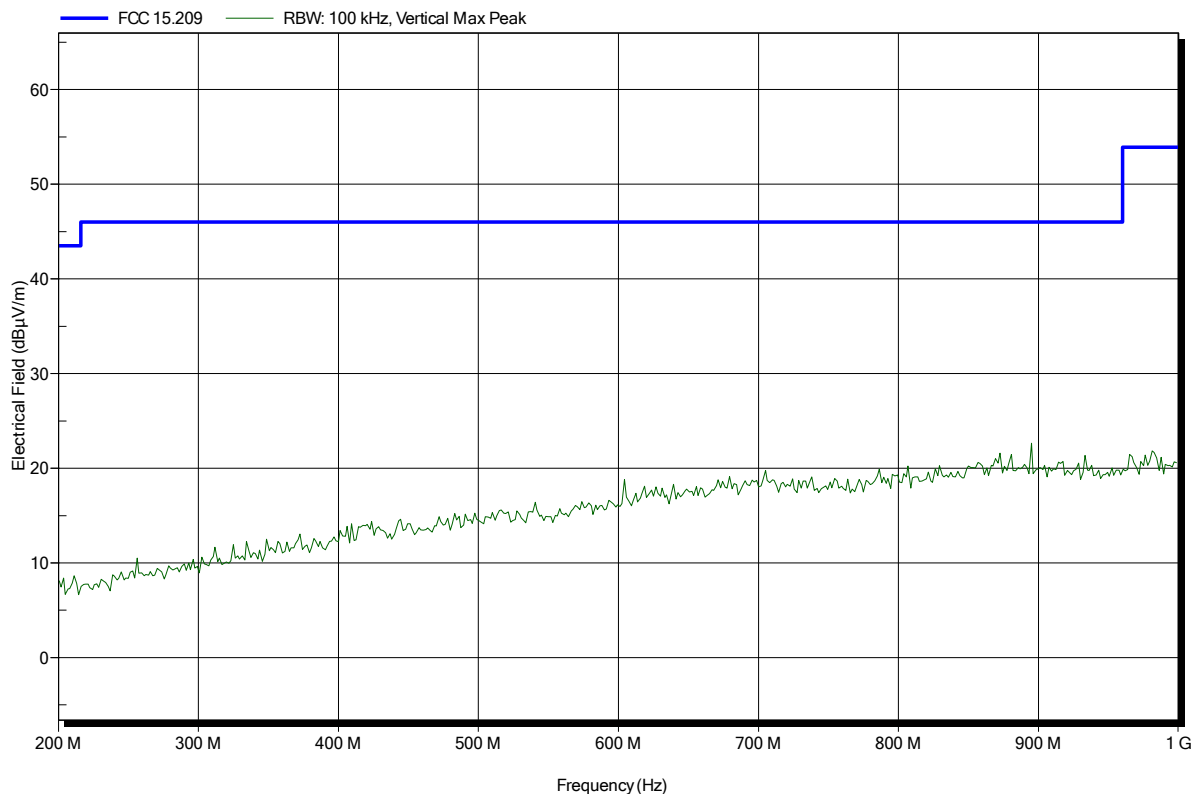


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; UPCS; ch.0; ant.1
Test Date:	2015-01-20
Note:	

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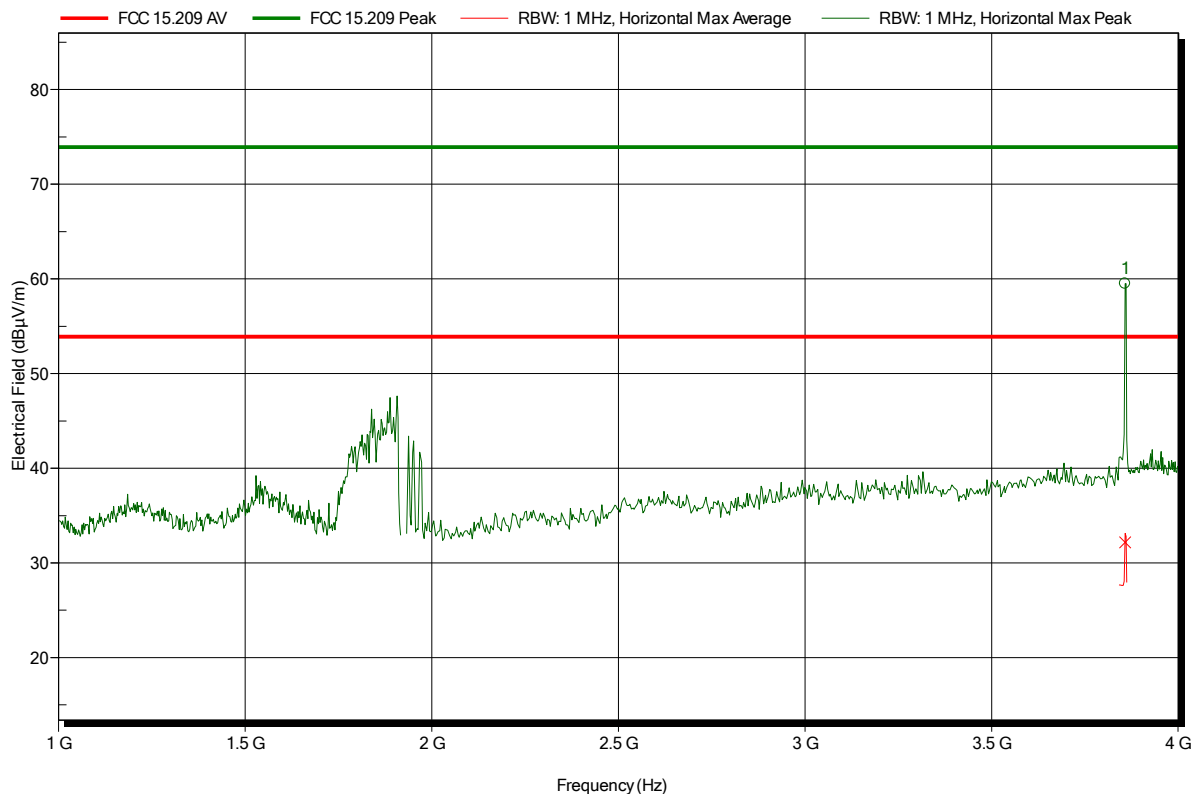


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-19
 Note: with notch-filter

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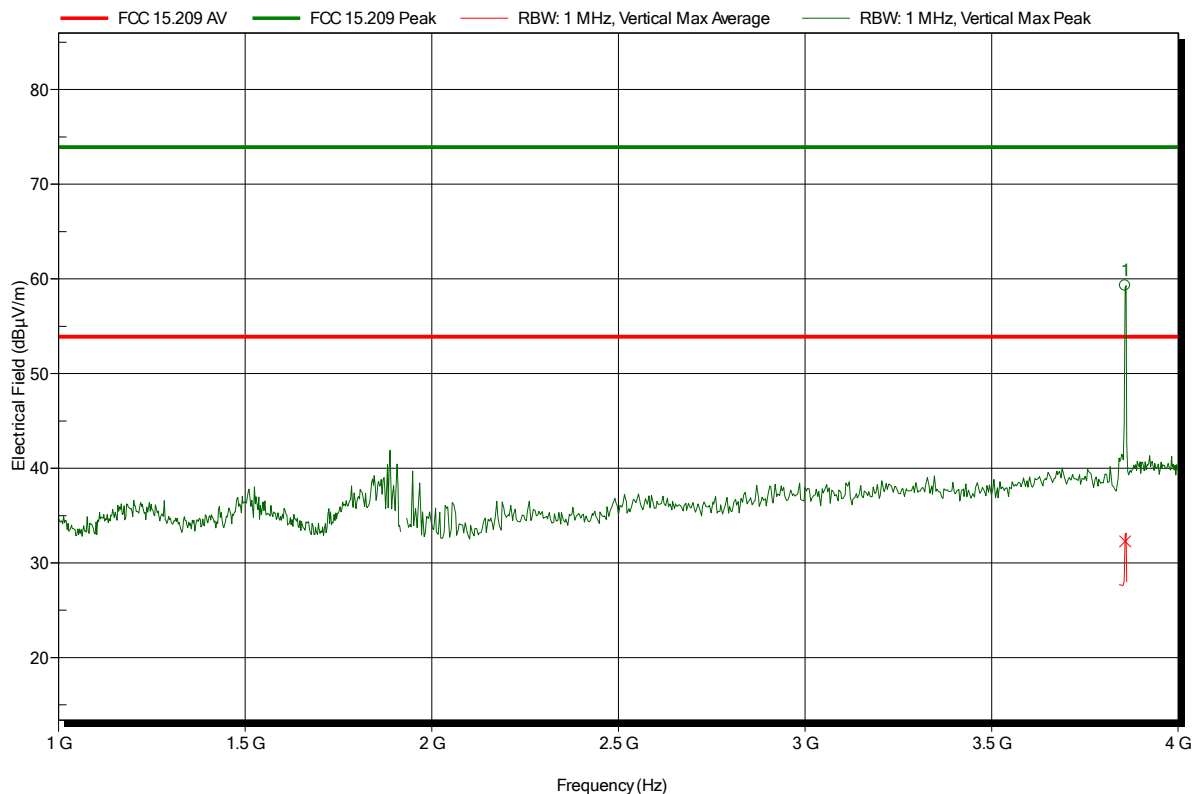
Frequency 3.8575 GHz	Peak 59.48 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -14.42 dB	Status Pass
Frequency 3.8575 GHz	Average 32.17 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -21.73 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
EUT Name: DECT handset 7522
Model: K022b
Test Site: Eurofins Product Service GmbH
Operator: Mr. Treffke
Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 3 m
Mode: TX; UPCS; ch.0; ant.1
Test Date: 2015-01-19
Note: with notch-filter

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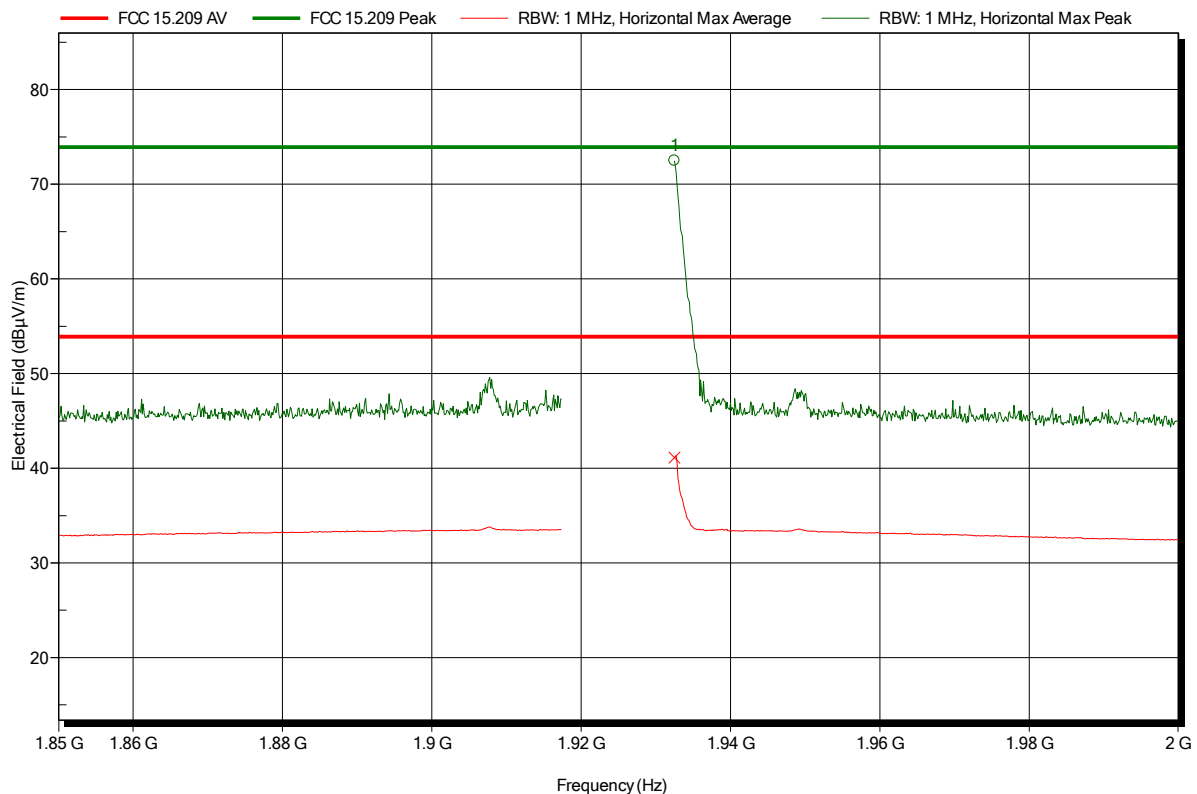
Frequency 3.8574 GHz	Peak 59.3 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -14.6 dB	Status Pass
Frequency 3.8574 GHz	Average 32.27 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -21.63 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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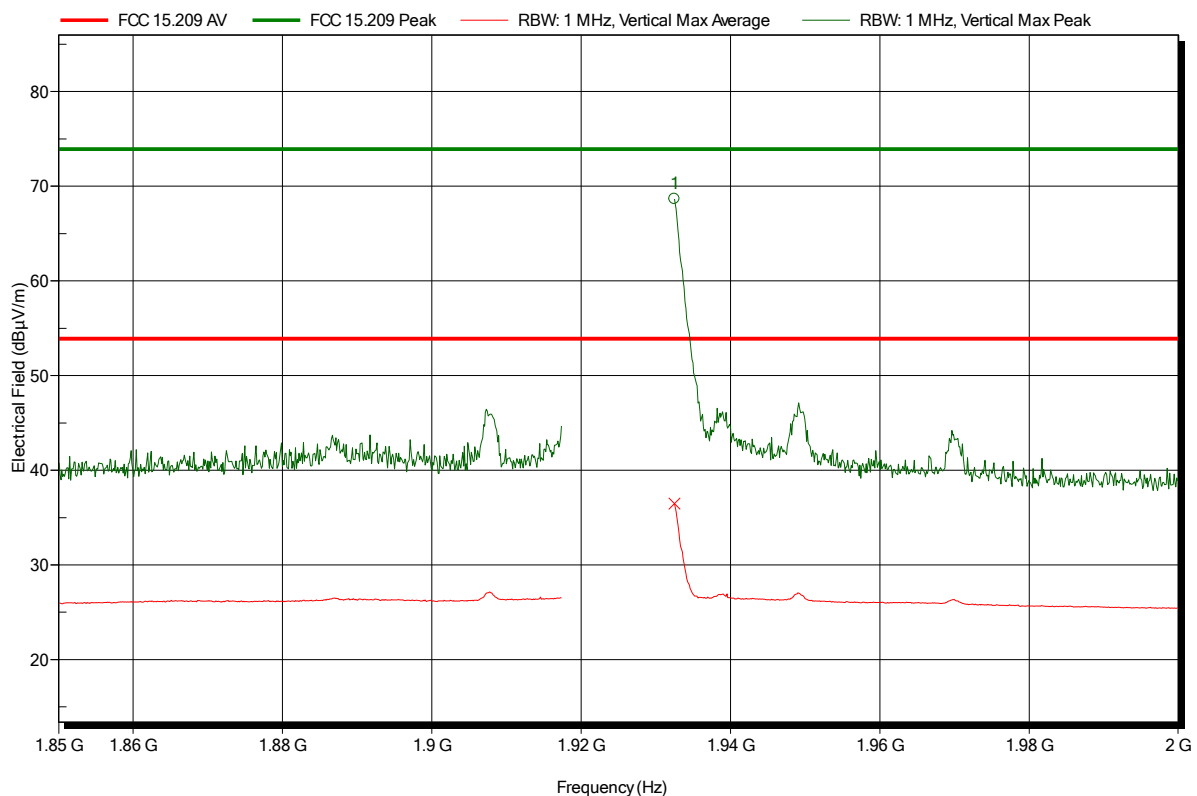
Frequency 1.9325 GHz	Peak 72.5 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -1.4 dB	Status Pass
Frequency 1.9325 GHz	Average 41.12 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -12.78 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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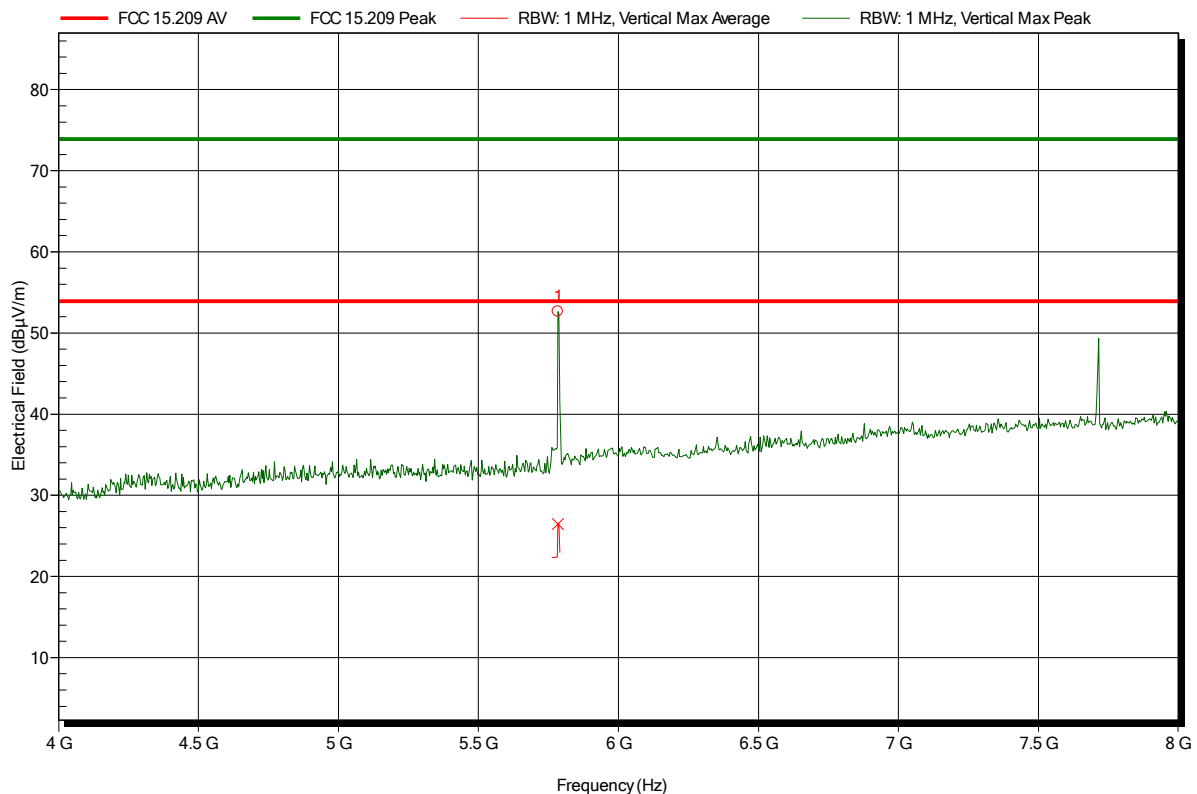
Frequency 1.9325 GHz	Peak 68.66 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -5.24 dB	Status Pass
Frequency 1.9325 GHz	Average 36.49 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -17.41 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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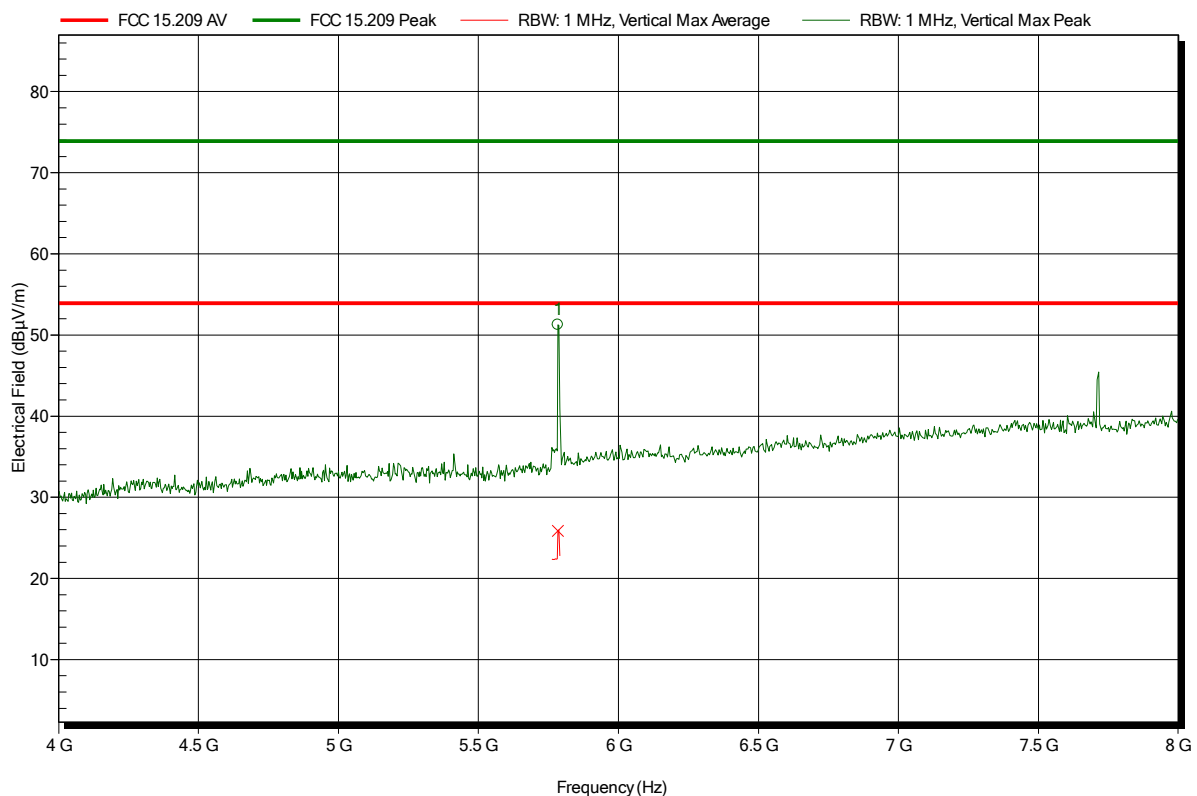
Frequency 5.784 GHz	Peak 52.64 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -21.26 dB	Status Pass
Frequency 5.784 GHz	Average 26.47 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -27.43 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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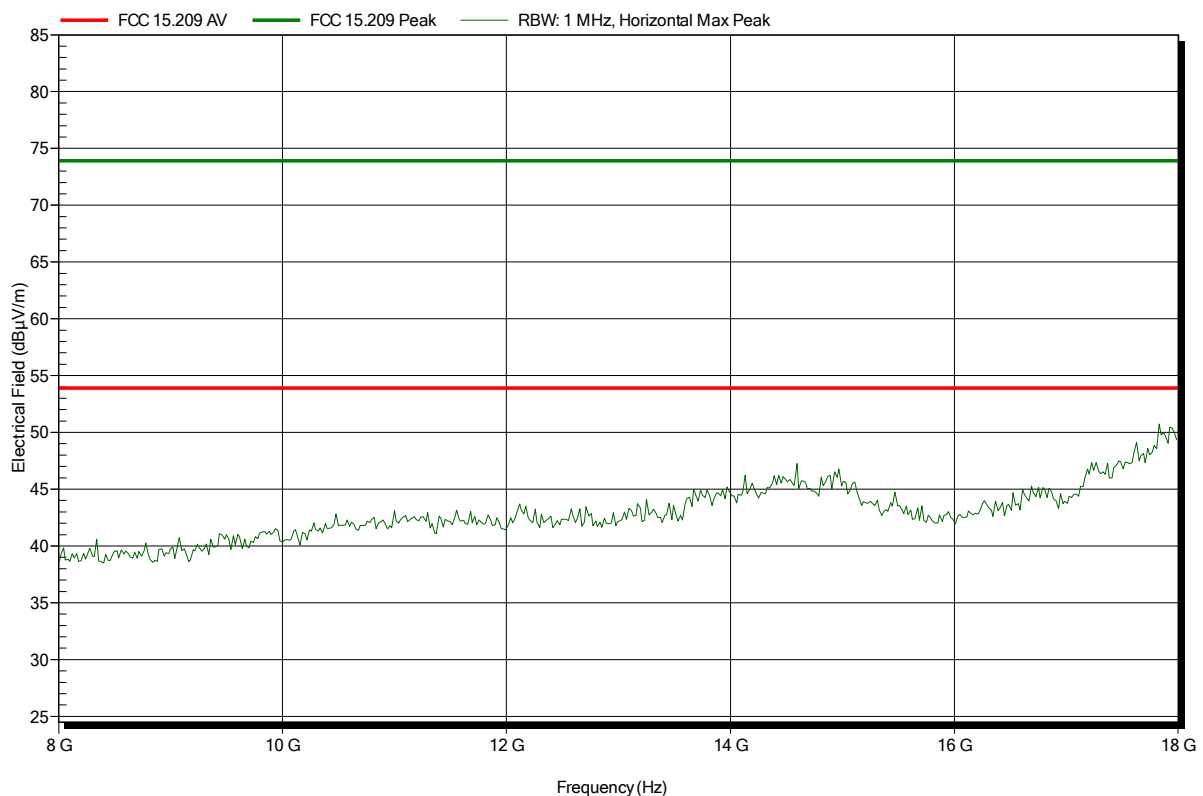
Frequency 5.784 GHz	Peak 51.24 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -22.66 dB	Status Pass
Frequency 5.784 GHz	Average 25.87 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -28.03 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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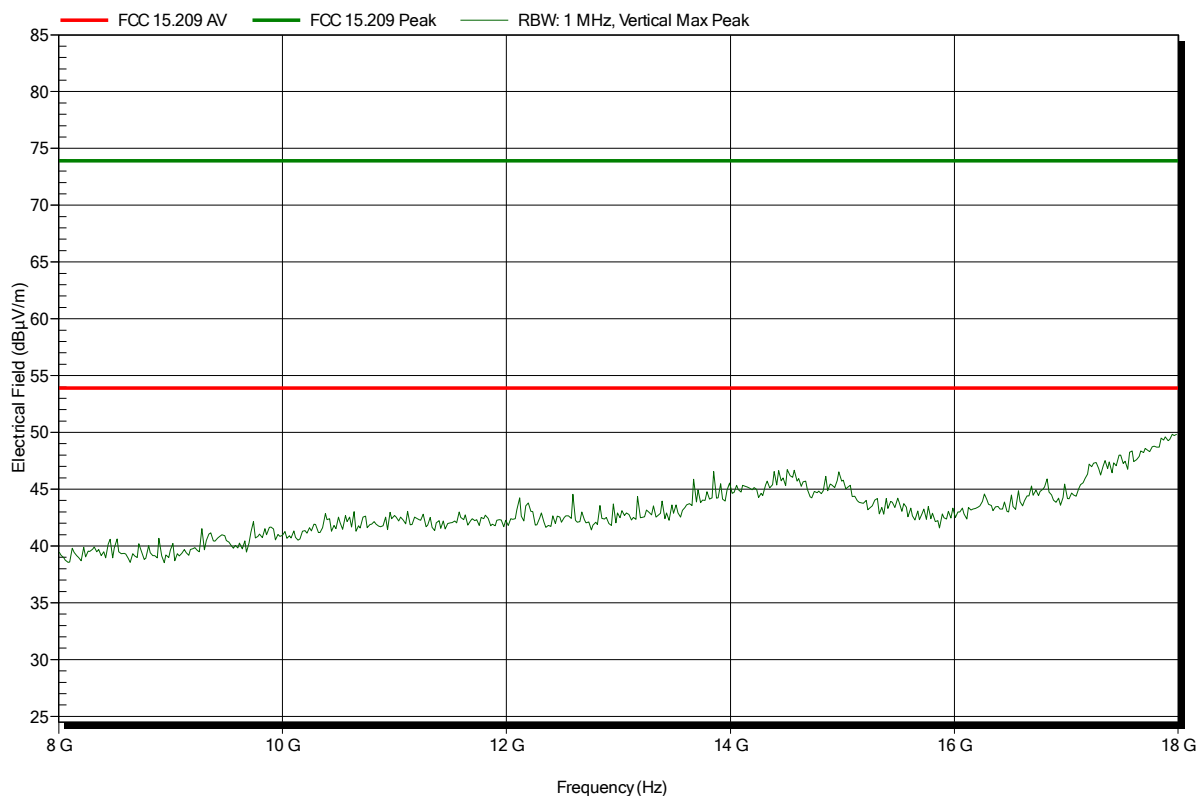


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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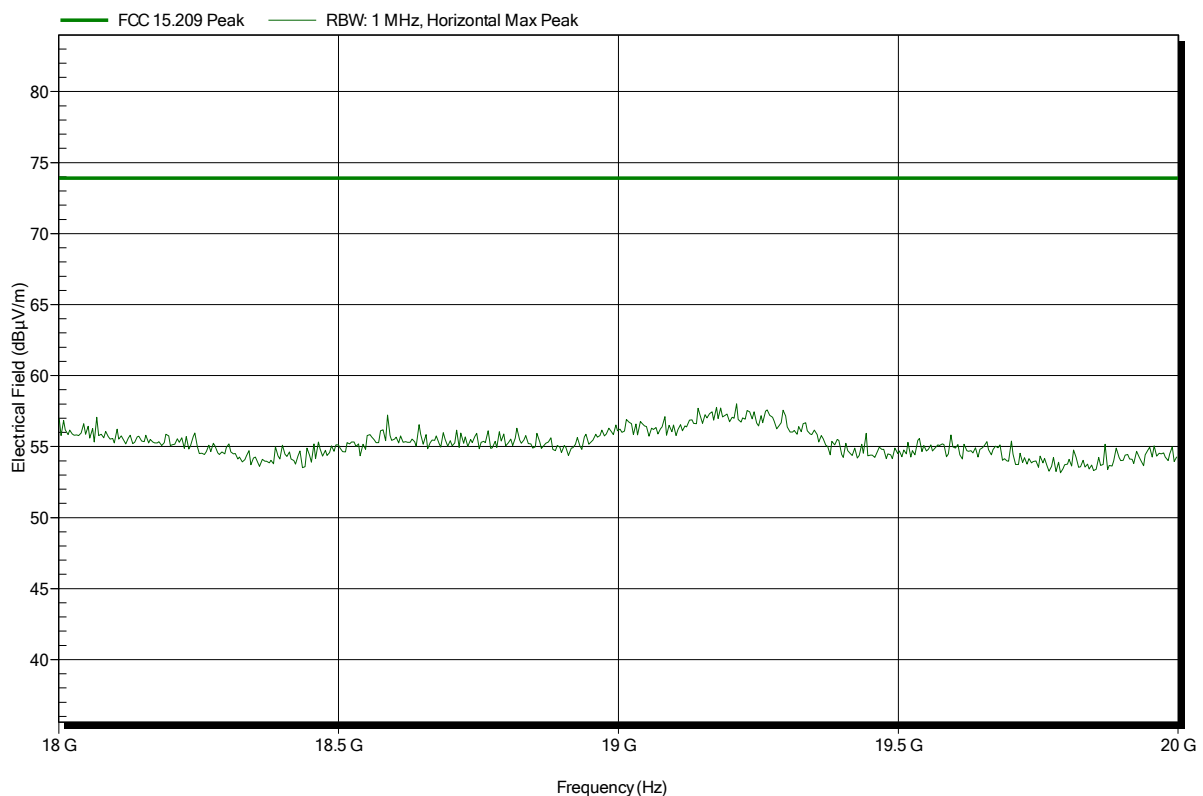


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 025, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.1
 Test Date: 2015-01-20
 Note:

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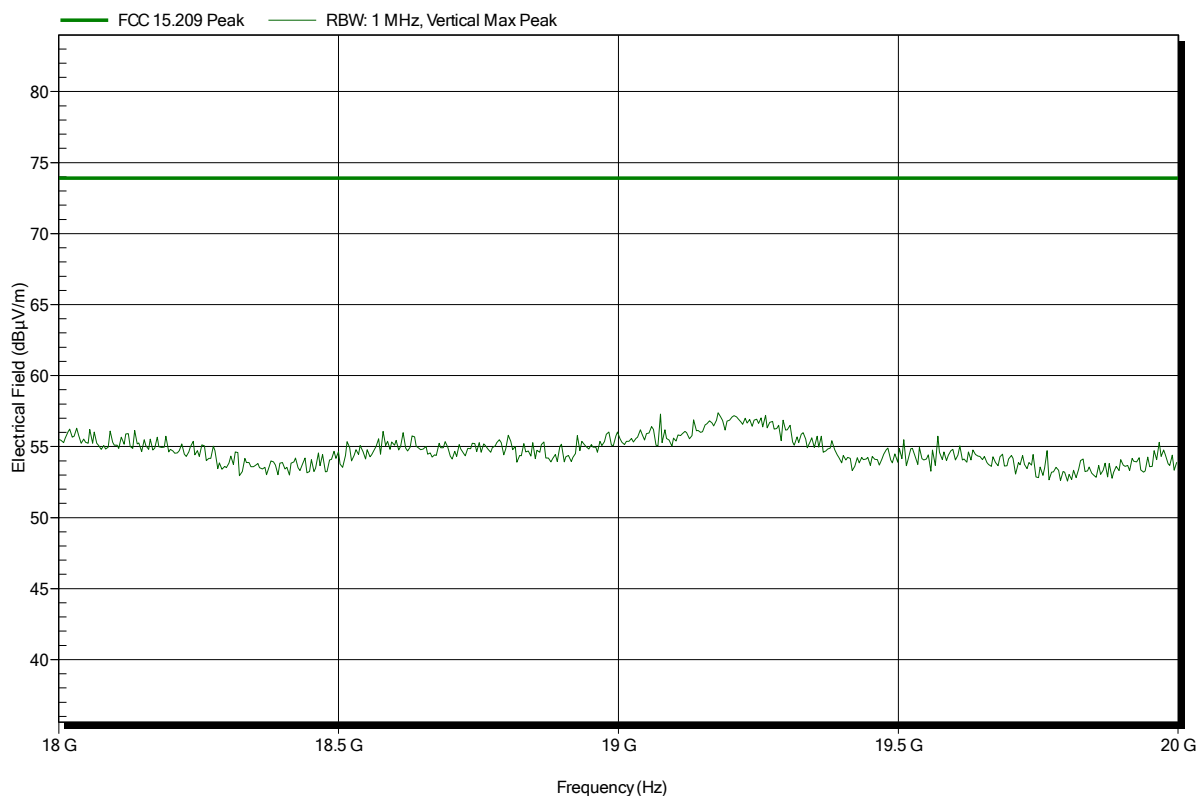


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.0; ant.1
Test Date:	2015-01-20
Note:	

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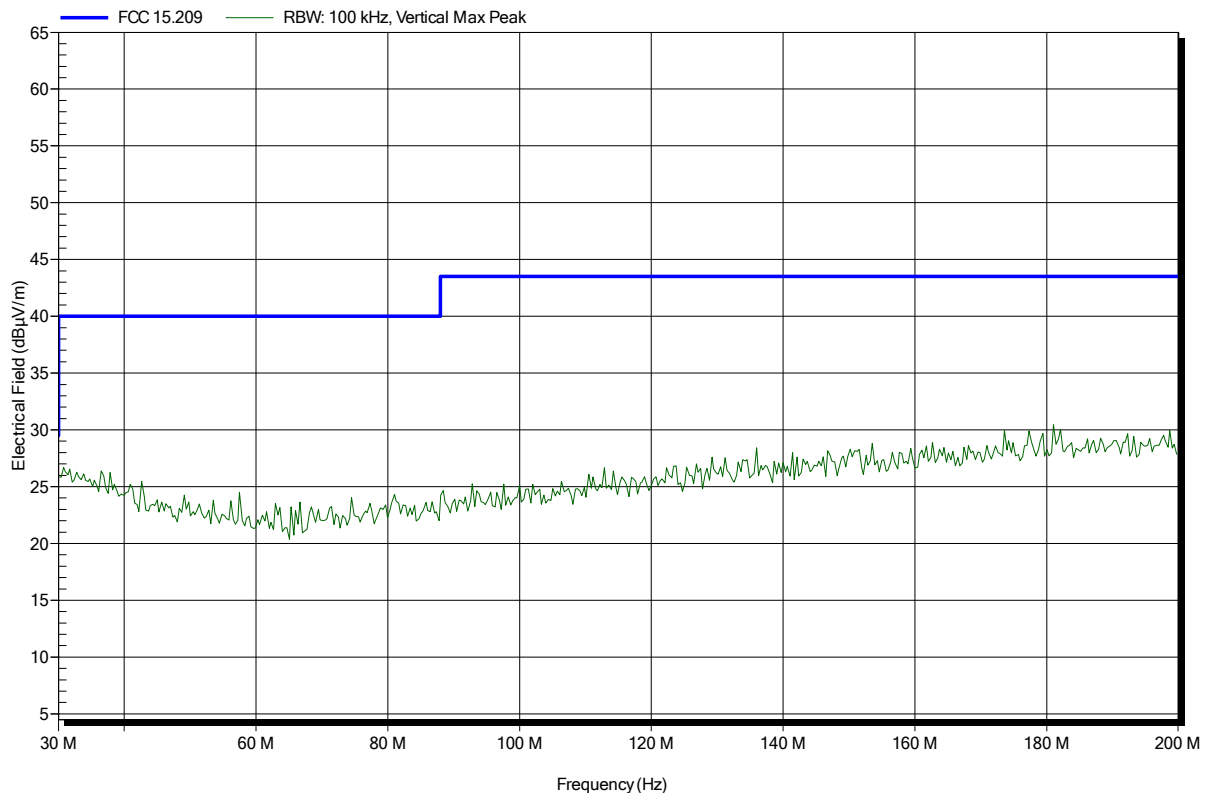
EMISSION PLOTS ANTENNA 2

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; UPCS; ch.4; ant.2
Test Date:	2015-01-20
Note:	

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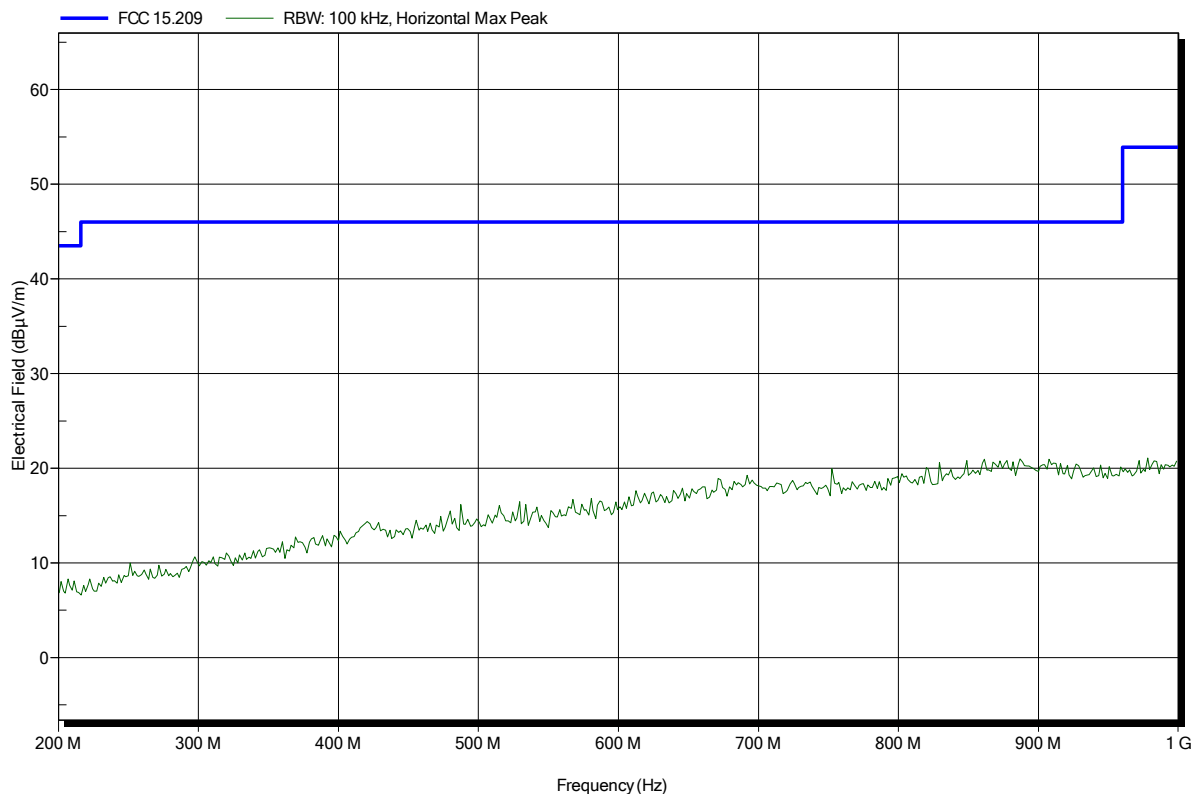


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-20
 Note:

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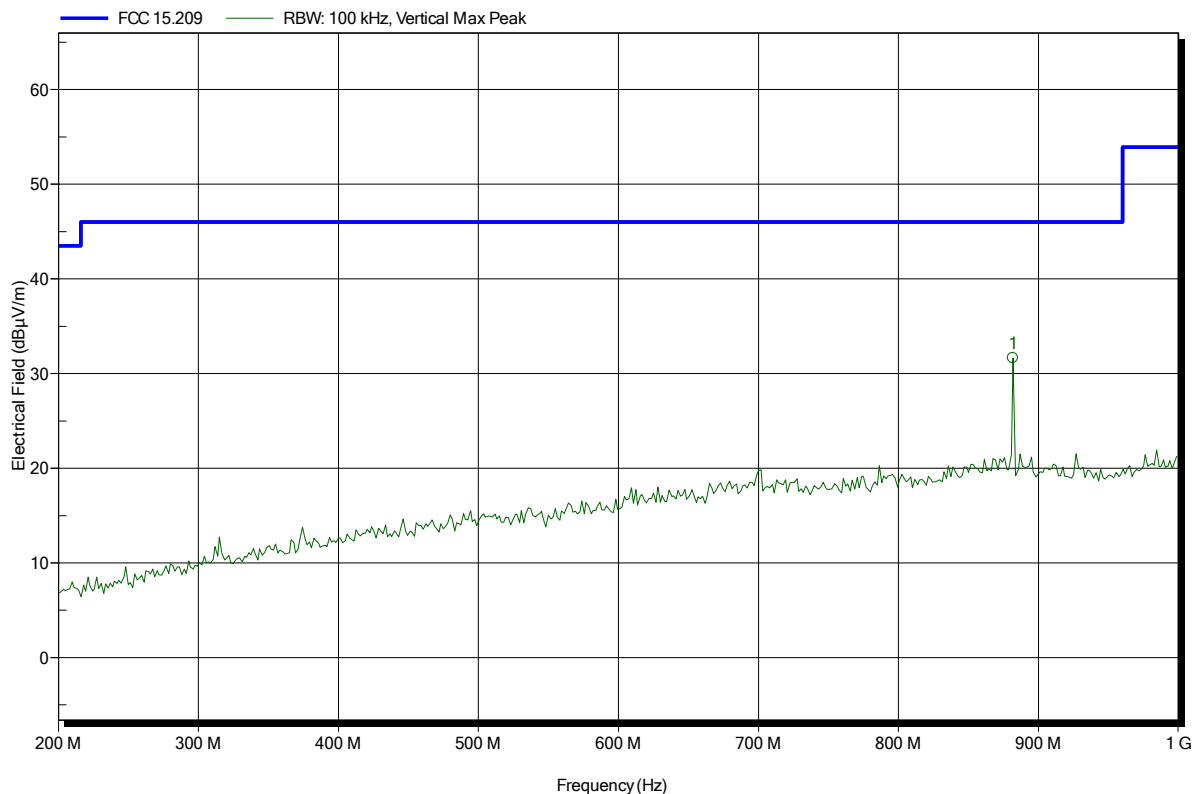


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-20
 Note:

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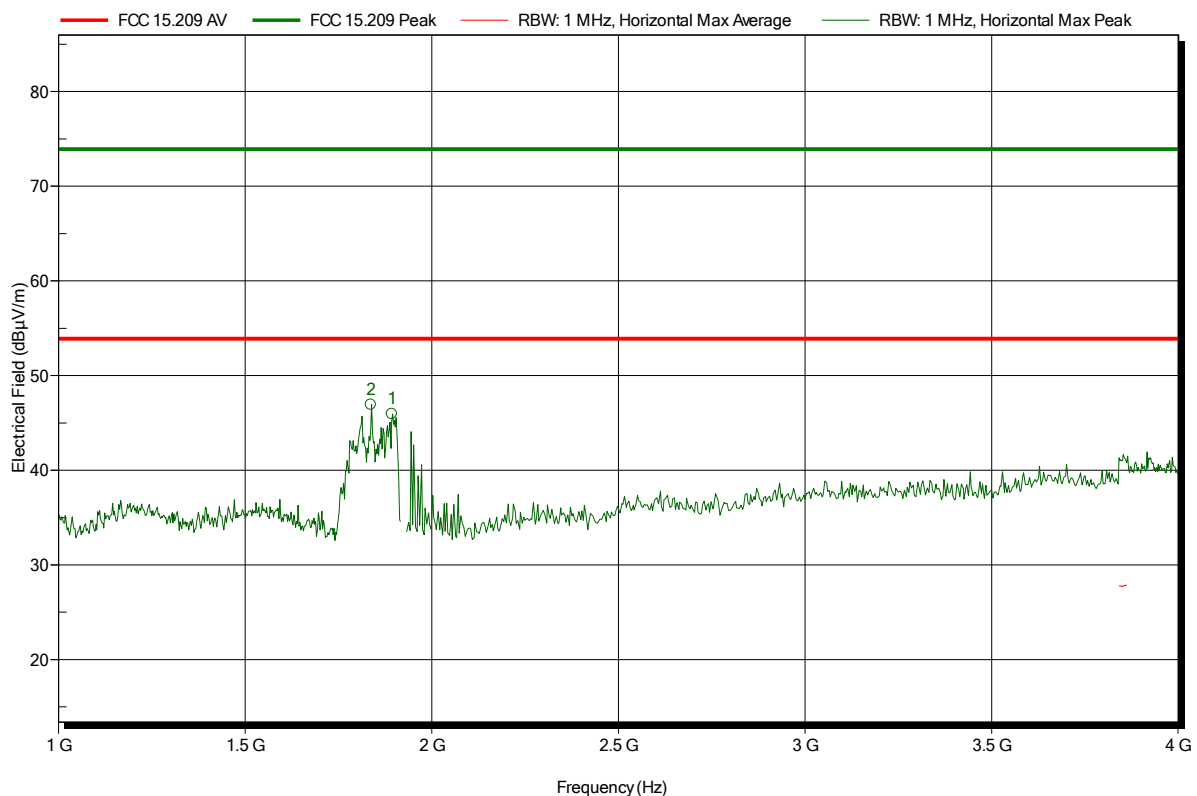
Frequency	Peak	Peak Limit	Peak Difference	Status
881.836 MHz	31.62 dBµV/m	46 dBµV/m	-14.38 dB	Pass

Spurious emissions according to FCC 15.247

Project number: GOM-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-14
 Note: with notch-filter

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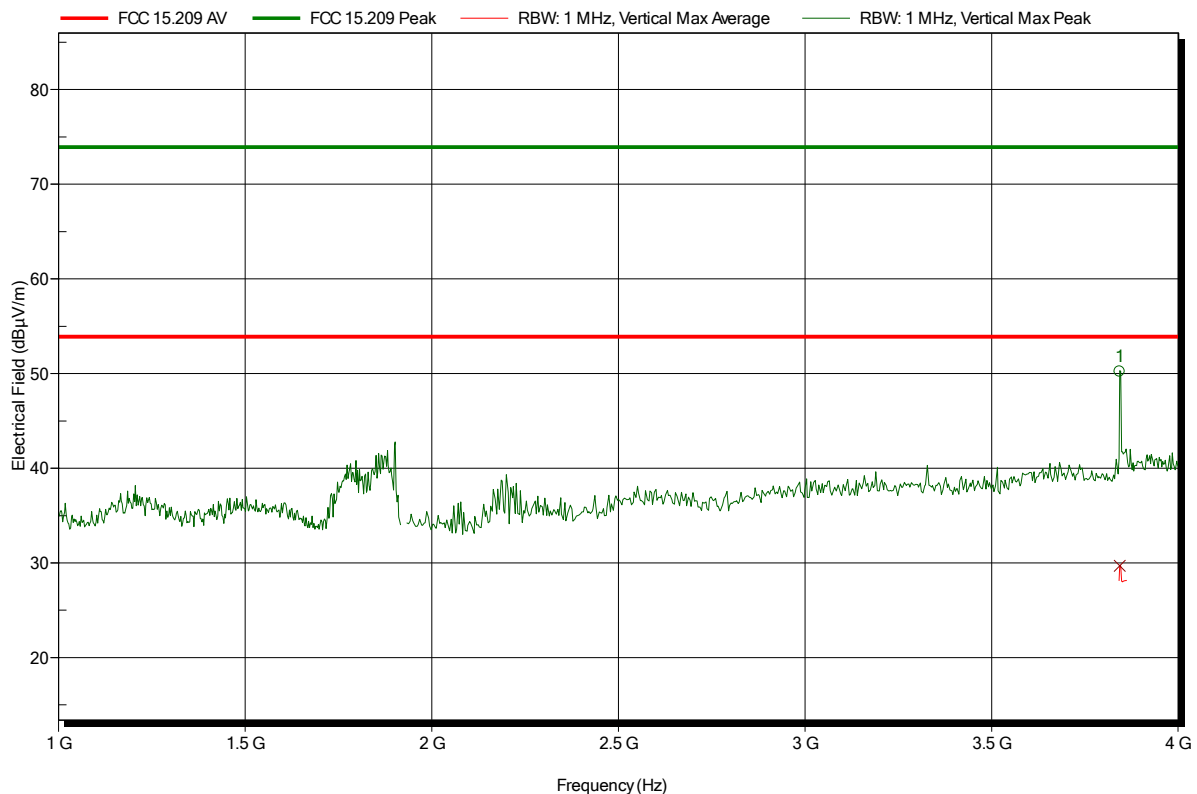
Frequency	Peak	Peak Limit	Peak Difference	Status
1.8369 GHz	46.91 dBµV/m	73.9 dBµV/m	-26.99 dB	Pass
1.8937 GHz	45.94 dBµV/m	73.9 dBµV/m	-27.96 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note: with notch-filter

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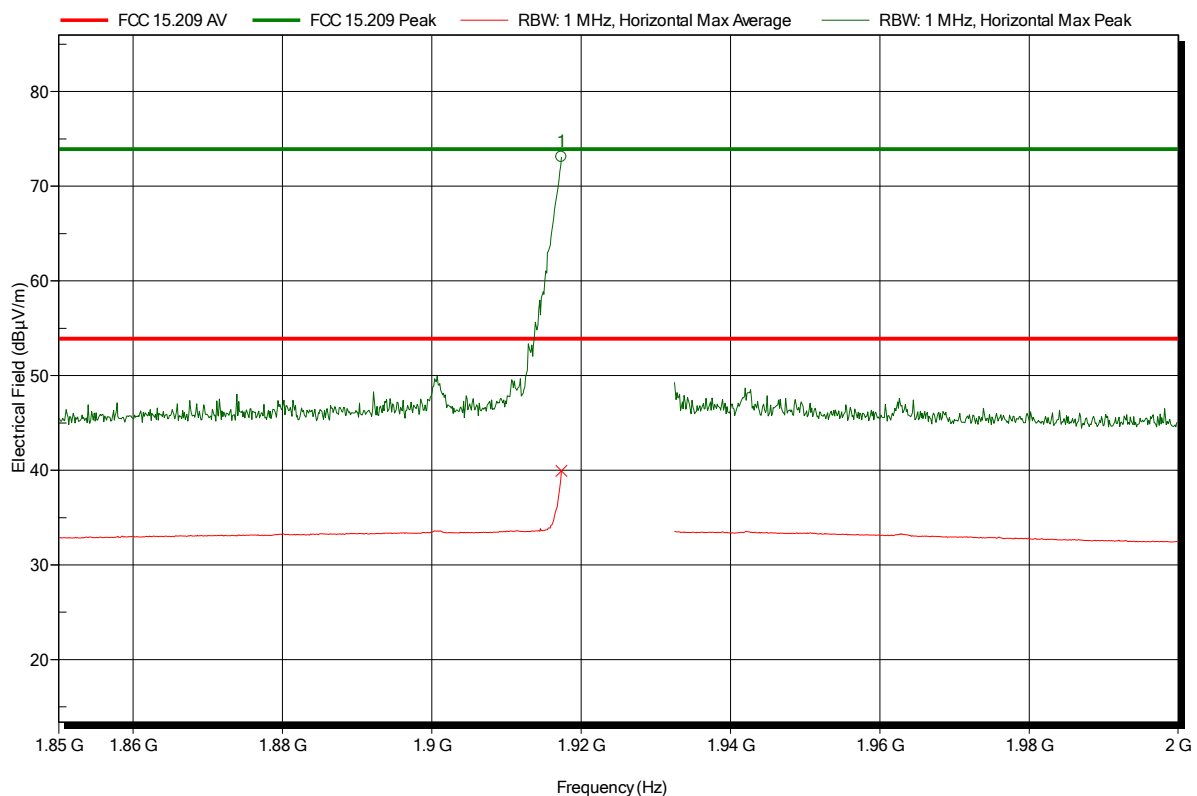
Frequency 3.8424 GHz	Peak 50.22 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -23.68 dB	Status Pass
Frequency 3.8424 GHz	Average 29.7 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -24.2 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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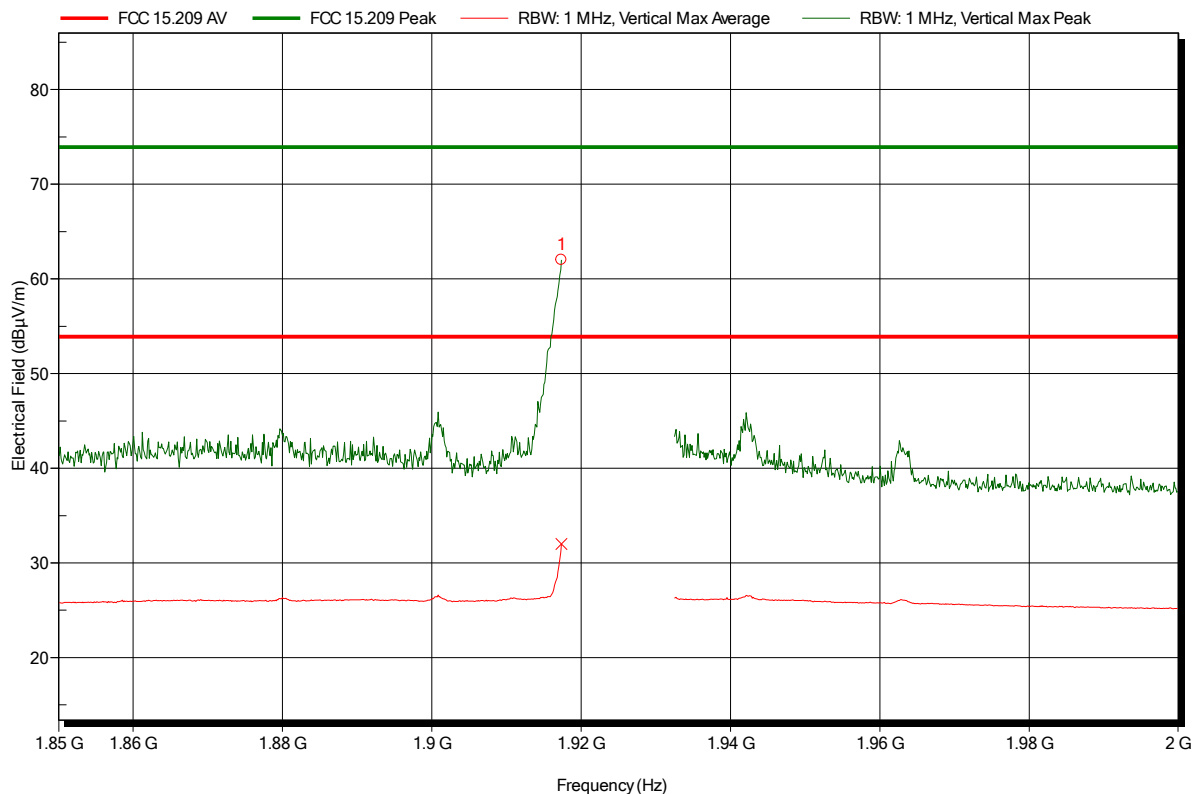
Frequency 1.9174 GHz	Peak 73.1 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -0.8 dB	Status Pass
Frequency 1.9174 GHz	Average 39.92 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -13.98 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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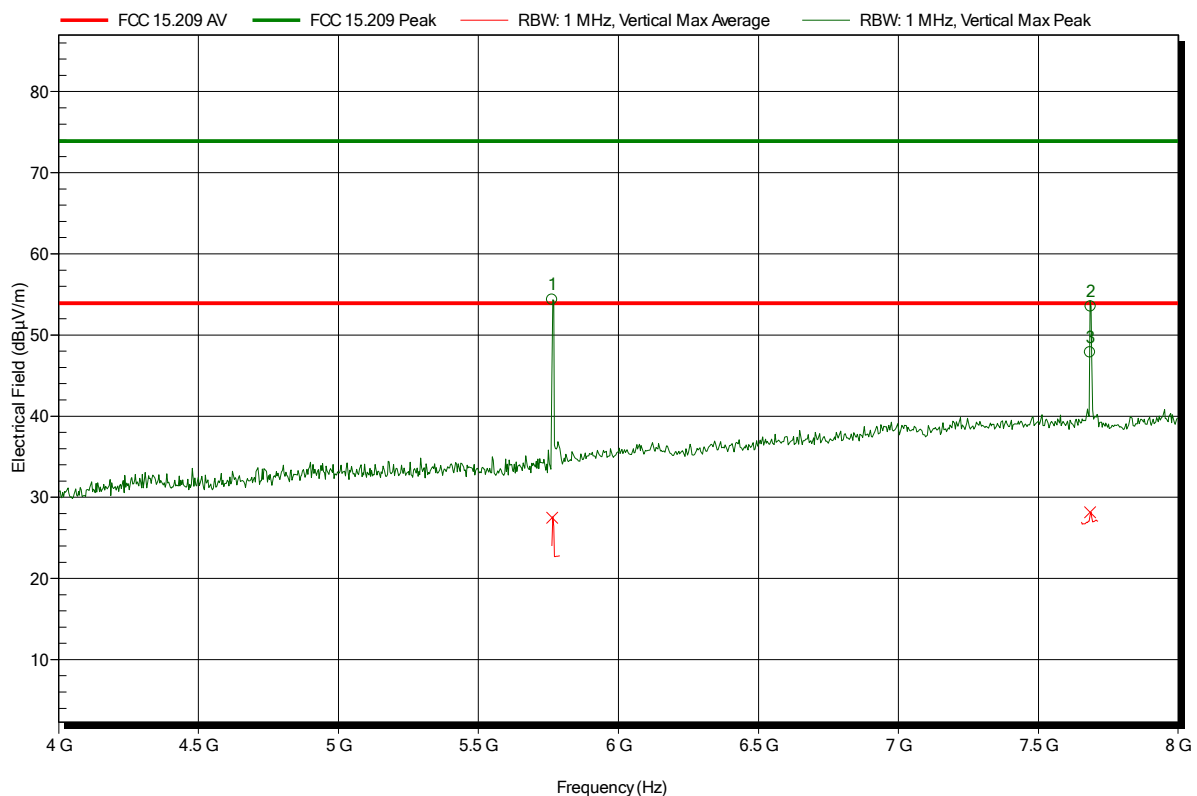
Frequency 1.9174 GHz	Peak 62 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -11.9 dB	Status Pass
Frequency 1.9174 GHz	Average 32 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -21.9 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
EUT Name: DECT handset 7522
Model: K022b
Test Site: Eurofins Product Service GmbH
Operator: Mr. Treffke
Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m converted to 3m
Mode: TX; UPCS; ch.4; ant.2
Test Date: 2015-01-15
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.764 GHz	54.34 dBµV/m	73.9 dBµV/m	-19.56 dB	Pass
7.685 GHz	47.84 dBµV/m	73.9 dBµV/m	-26.06 dB	Pass
7.687 GHz	53.51 dBµV/m	73.9 dBµV/m	-20.39 dB	Pass

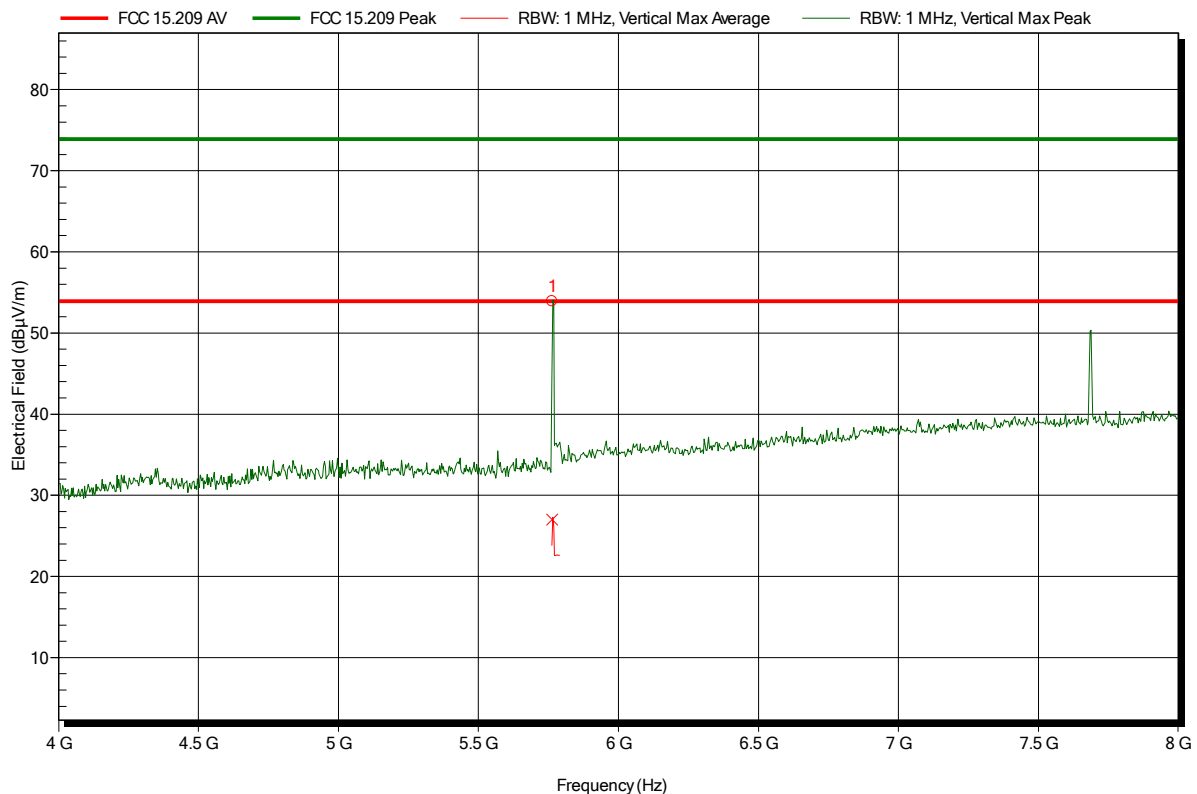
Frequency	Average	Average Limit	Average Difference	Average Status
5.764 GHz	27.49 dBµV/m	53.9 dBµV/m	-26.41 dB	Pass
7.685 GHz	28.15 dBµV/m	53.9 dBµV/m	-25.75 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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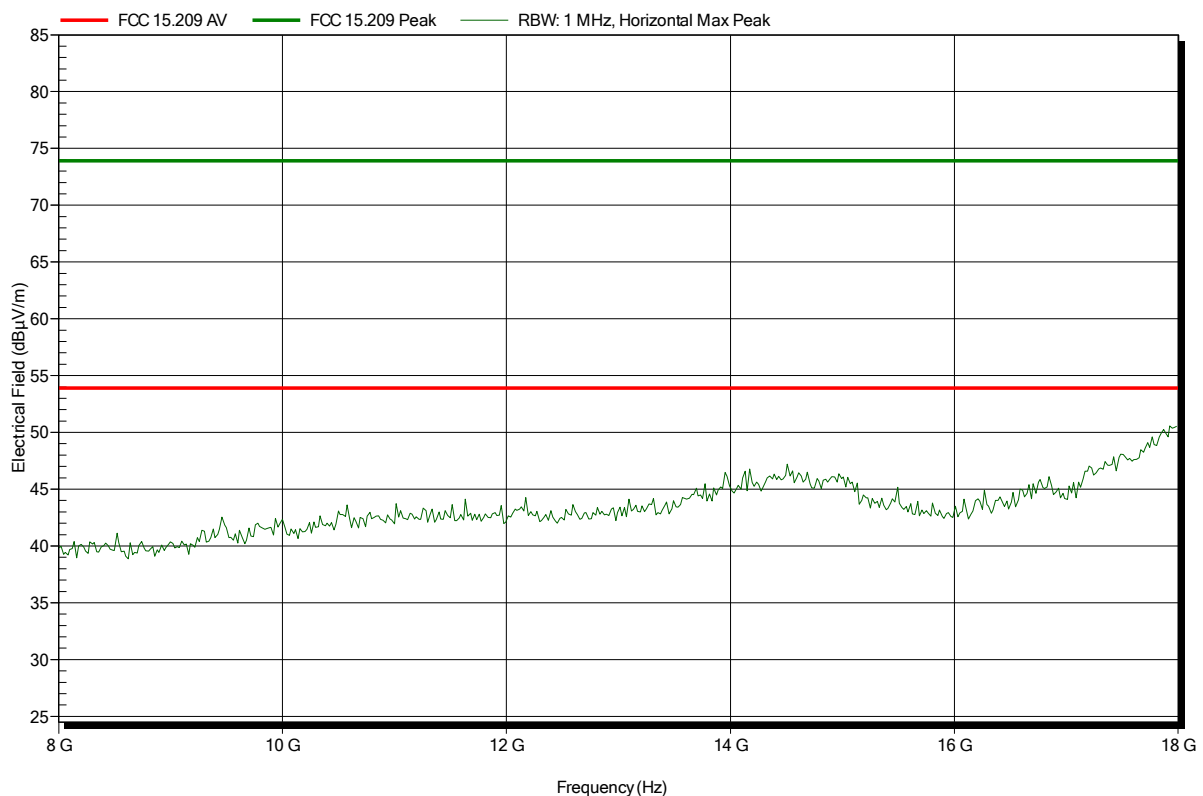
Frequency 5.763 GHz	Peak 53.91 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -19.99 dB	Status Pass
Frequency 5.763 GHz	Average 27 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -26.9 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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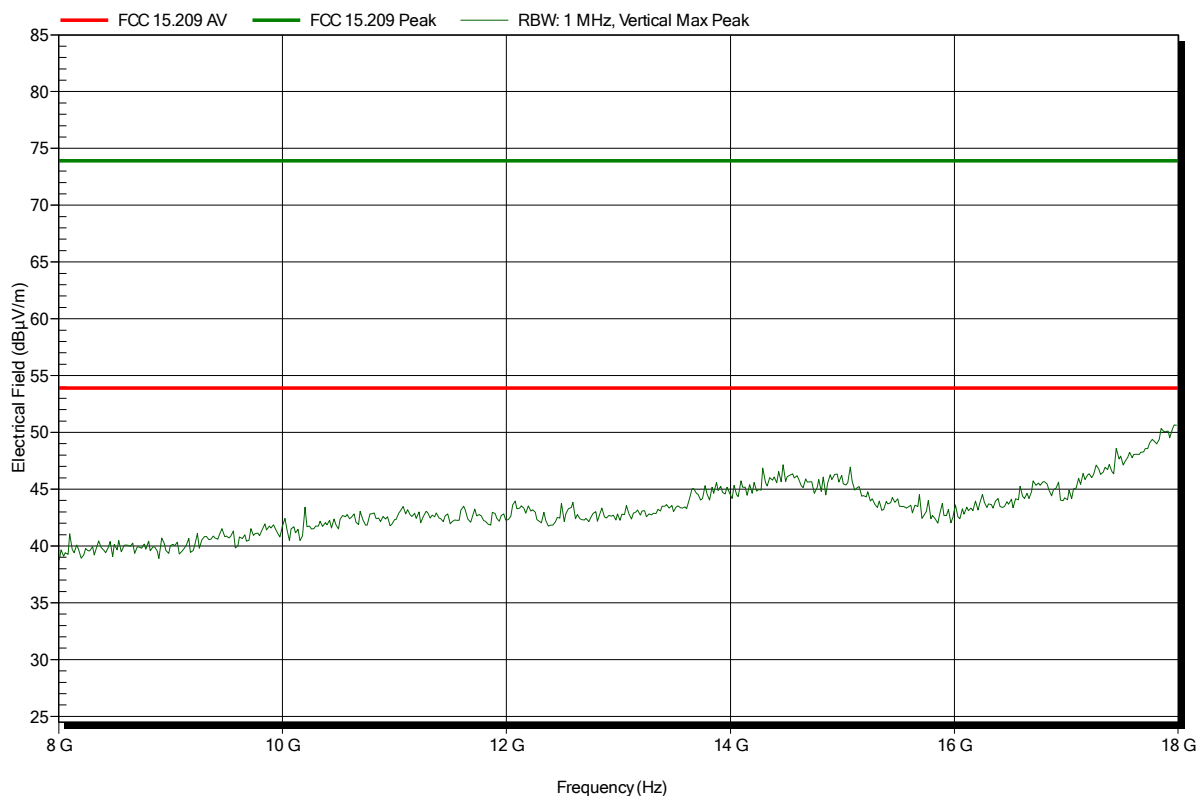


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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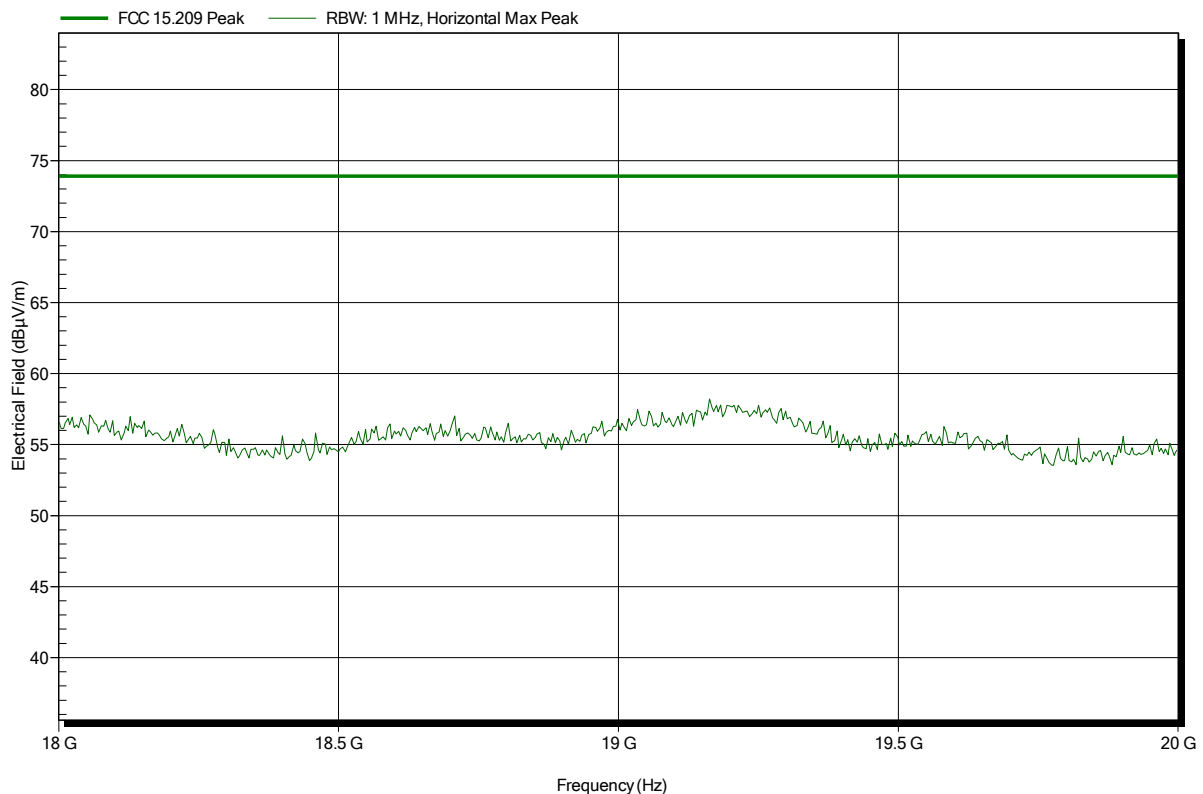


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.4; ant.2
Test Date:	2015-01-15
Note:	

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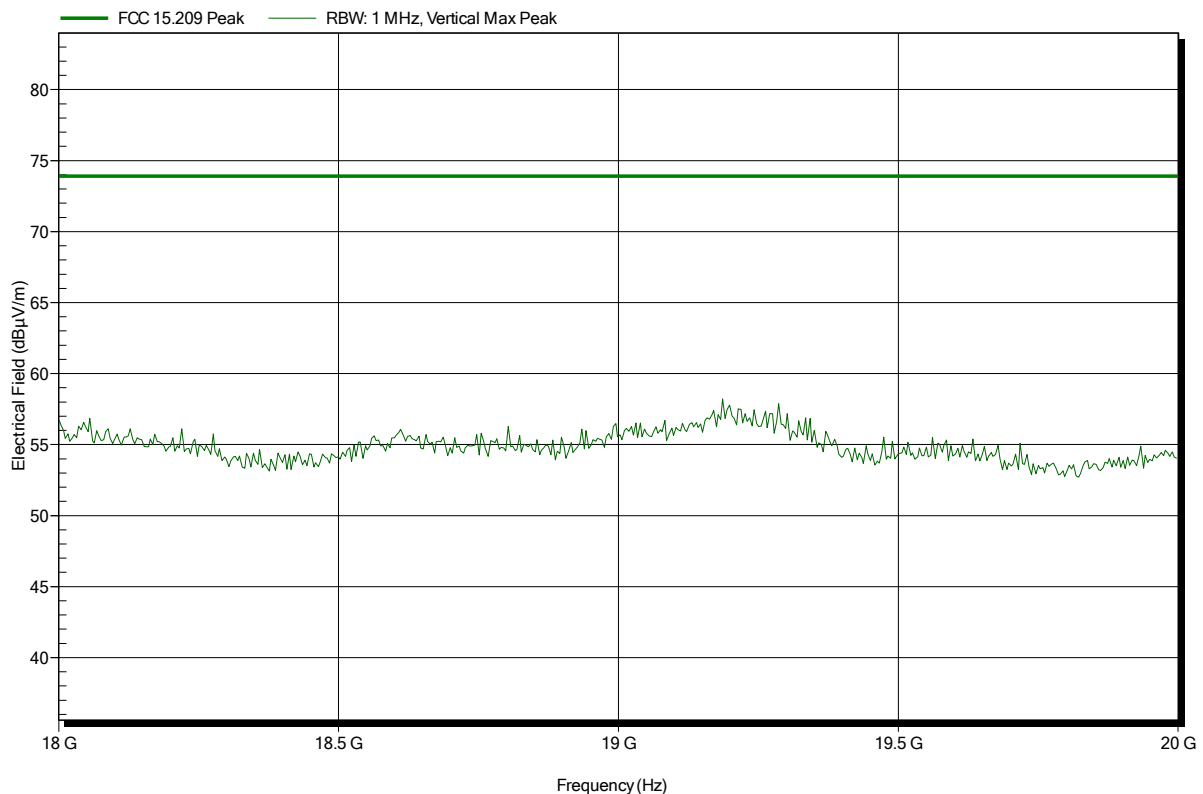


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 025, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.4; ant.2
 Test Date: 2015-01-15
 Note:

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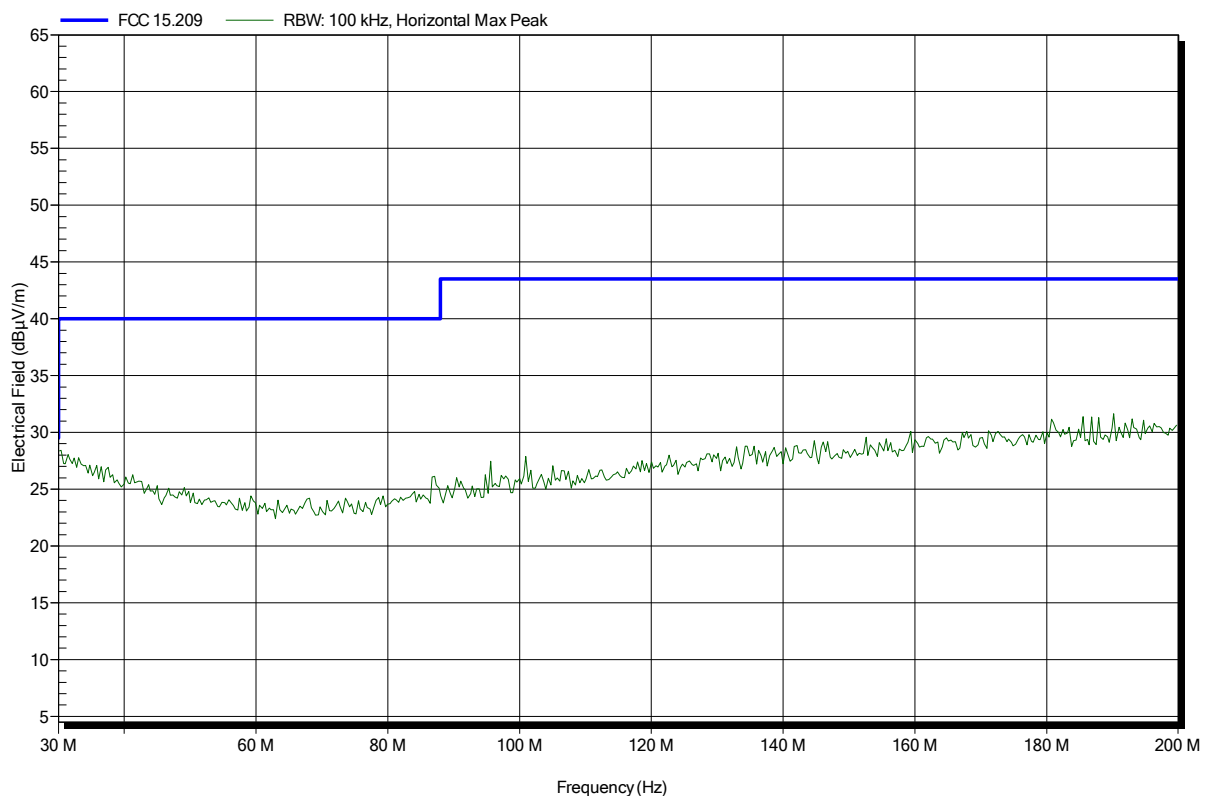


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; UPCS; ch.0; ant.2
Test Date:	2015-01-20
Note:	

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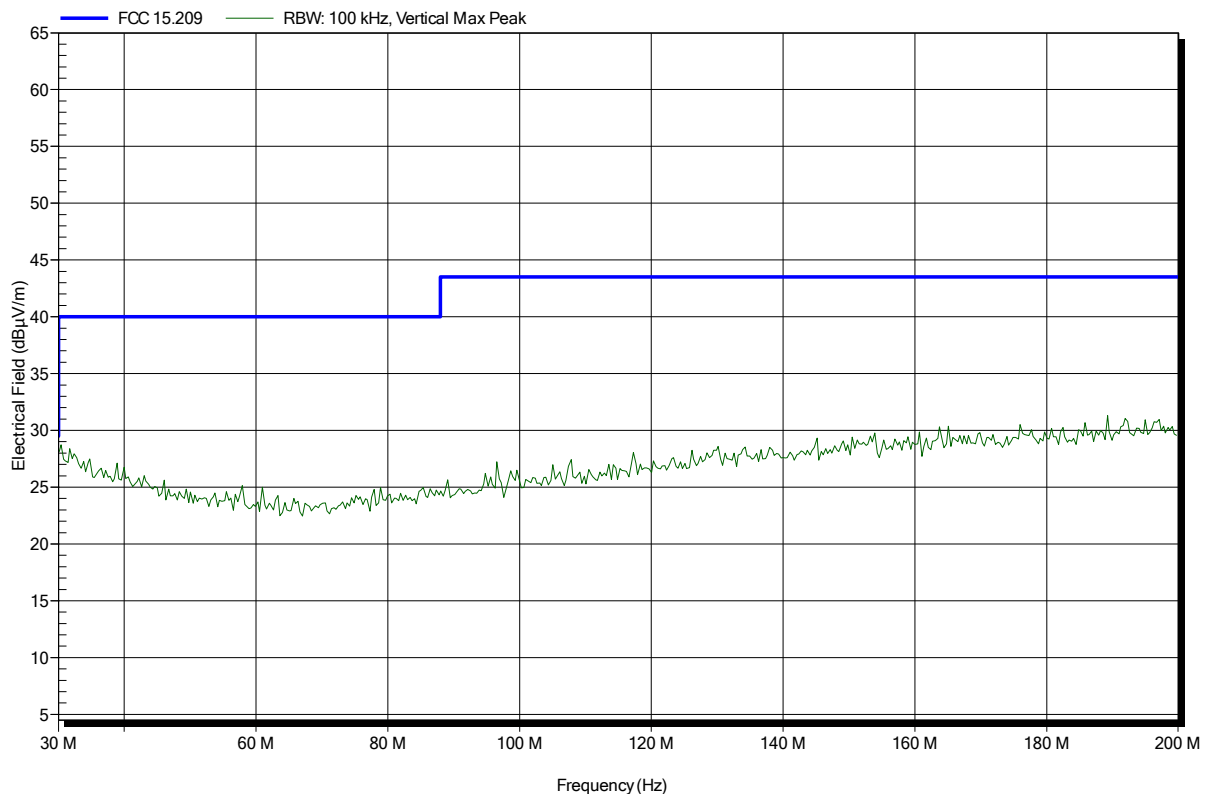


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-20
 Note:

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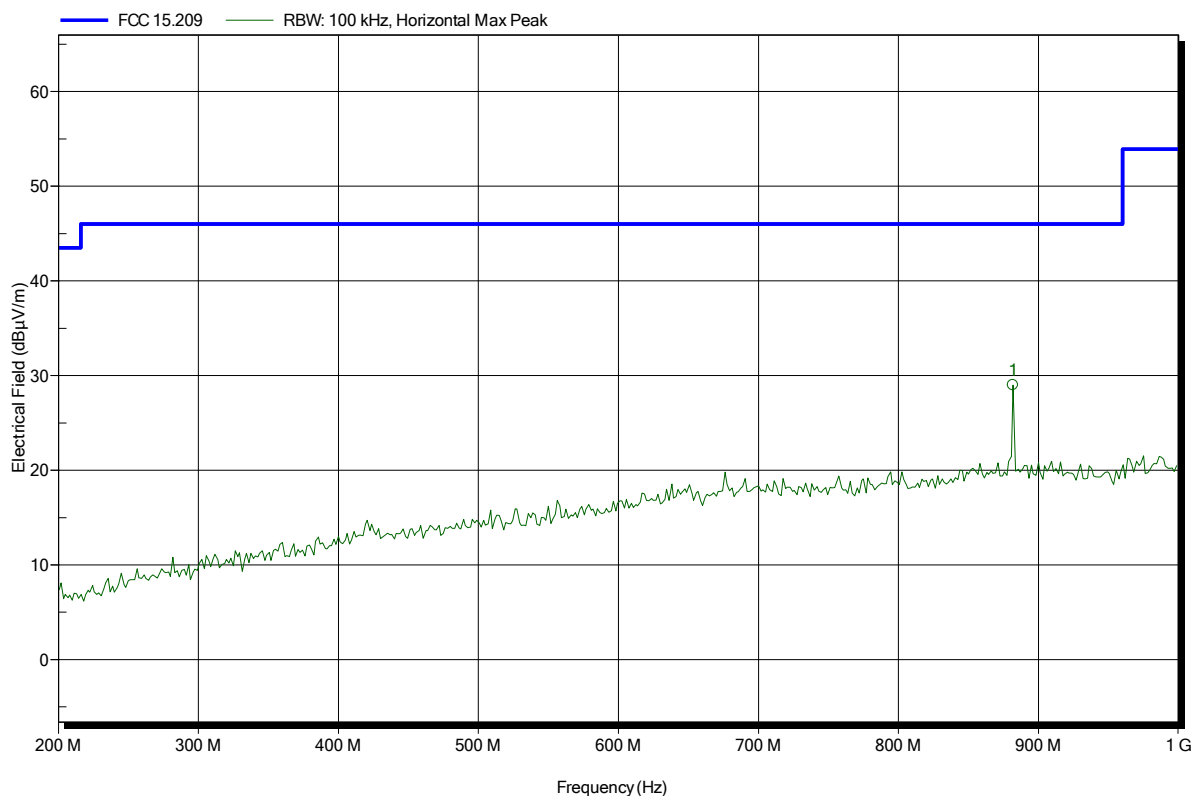


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-20
 Note:

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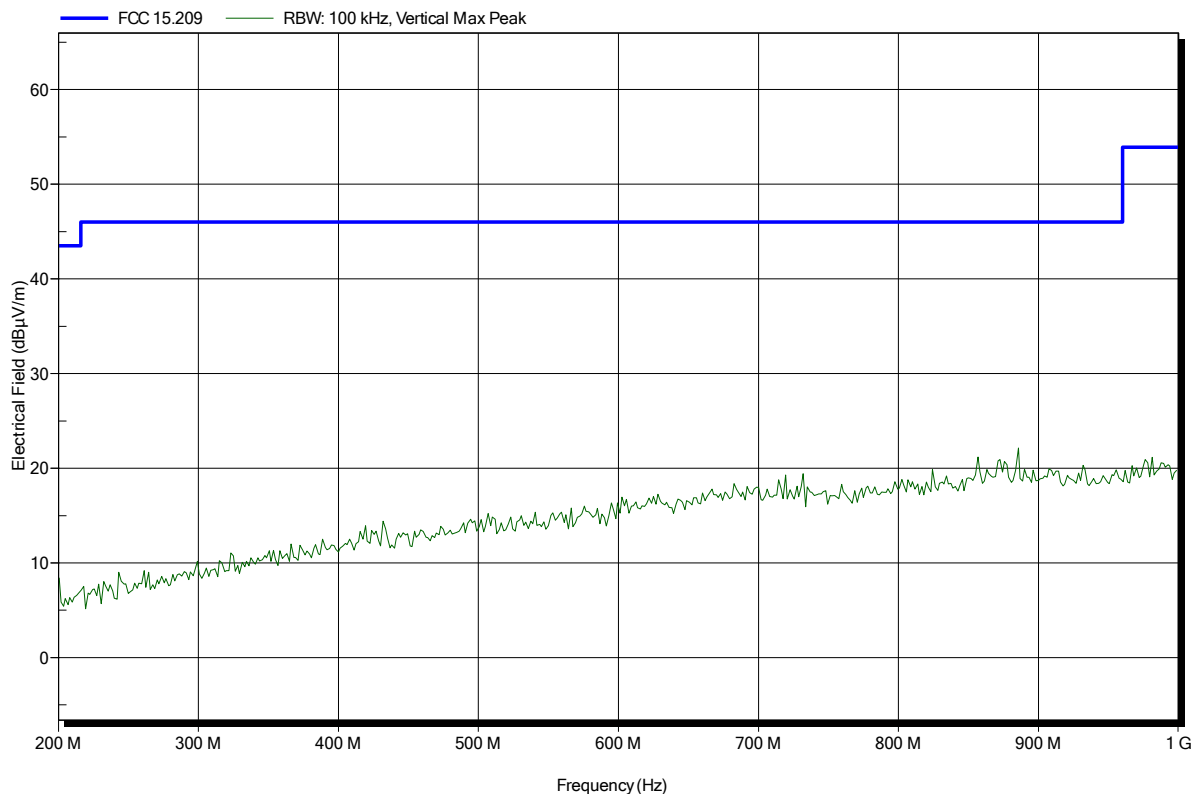
Frequency	Peak	Peak Limit	Peak Difference	Status
881.836 MHz	28.98 dBµV/m	46 dBµV/m	-17.02 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-20
 Note:

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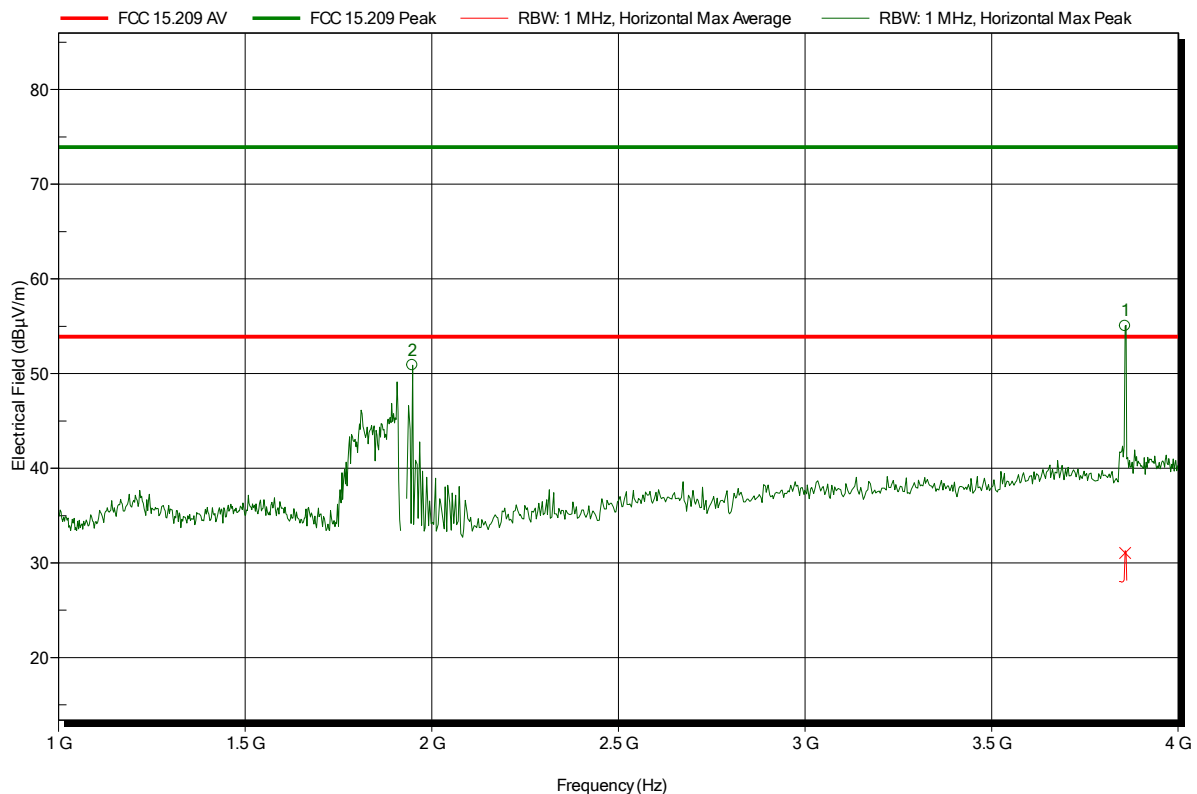


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
EUT Name: DECT handset 7522
Model: K022b
Test Site: Eurofins Product Service GmbH
Operator: Mr. Treffke
Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 3 m
Mode: TX; UPCS; ch.0; ant.2
Test Date: 2015-01-15
Note: with notch-filter

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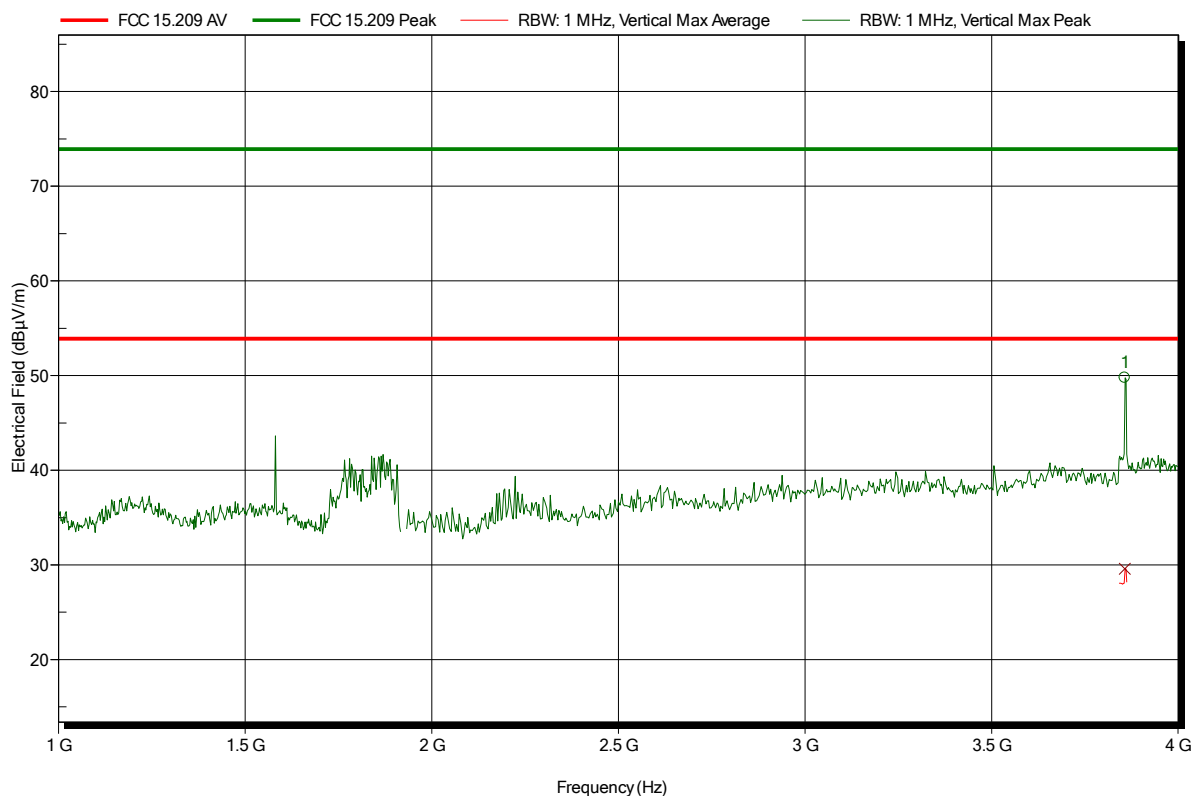
Frequency	Peak	Peak Limit	Peak Difference	Status
1.9477 GHz	50.87 dBµV/m	73.9 dBµV/m	-23.03 dB	Pass
3.8568 GHz	55.03 dBµV/m	73.9 dBµV/m	-18.87 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8568 GHz	31.04 dBµV/m	53.9 dBµV/m	-22.86 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note: with notch-filter

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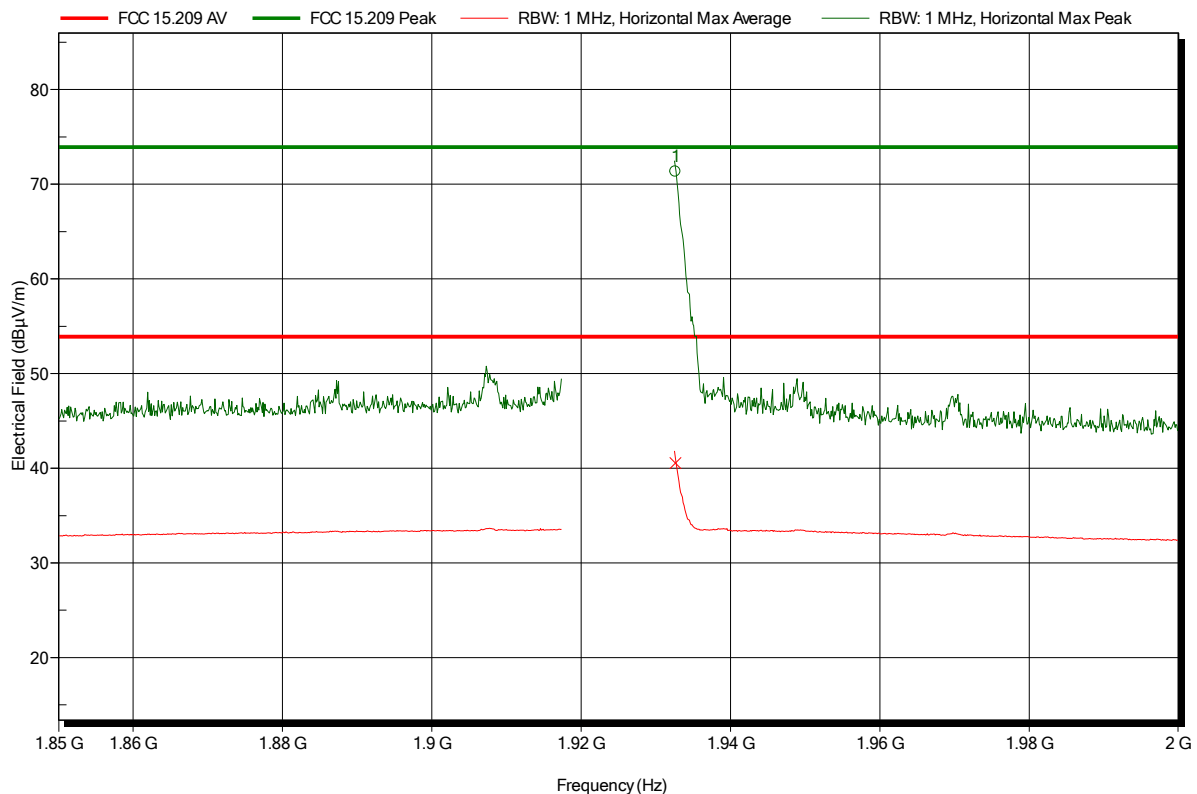
Frequency 3.8563 GHz	Peak 49.75 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -24.15 dB	Status Pass
Frequency 3.8563 GHz	Average 29.58 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -24.32 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note:

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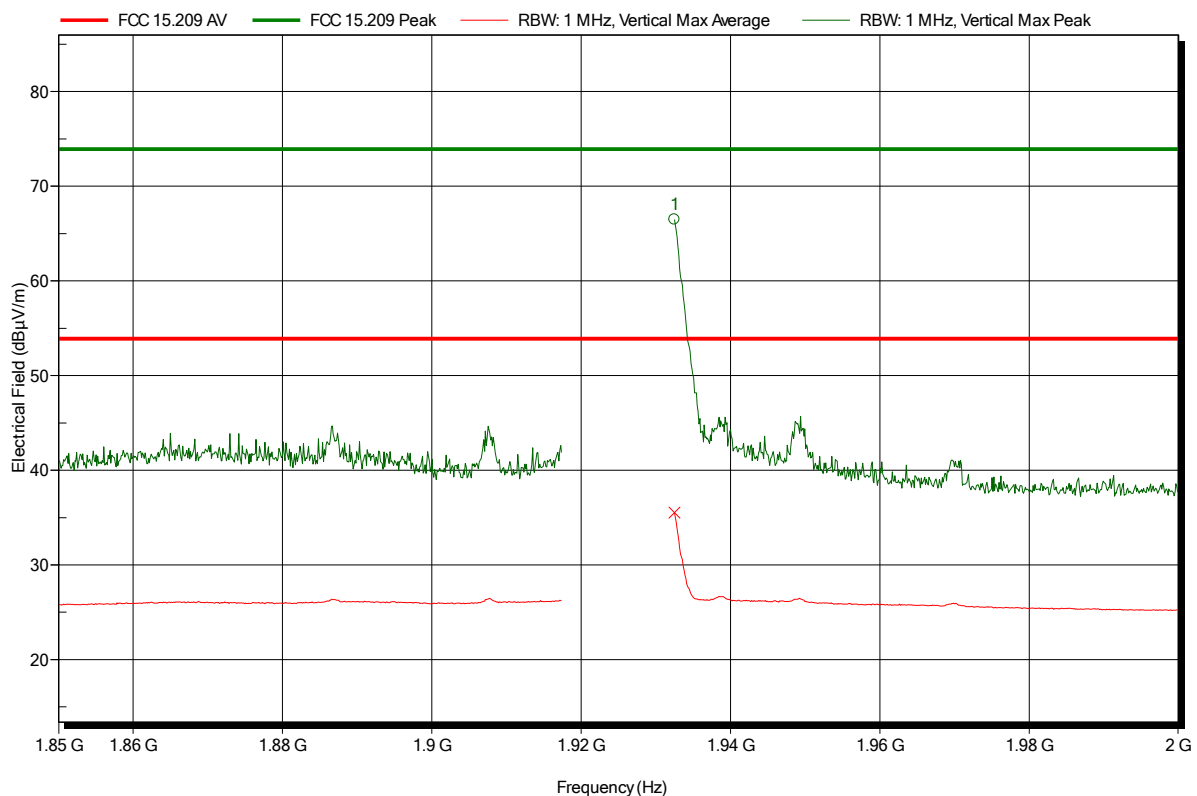
Frequency 1.9326 GHz	Peak 71.34 dBμV/m	Peak Limit 73.9 dBμV/m	Peak Difference -2.56 dB	Status Pass
Frequency 1.9326 GHz	Average 40.54 dBμV/m	Average Limit 53.9 dBμV/m	Average Difference -13.36 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 3 m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note:

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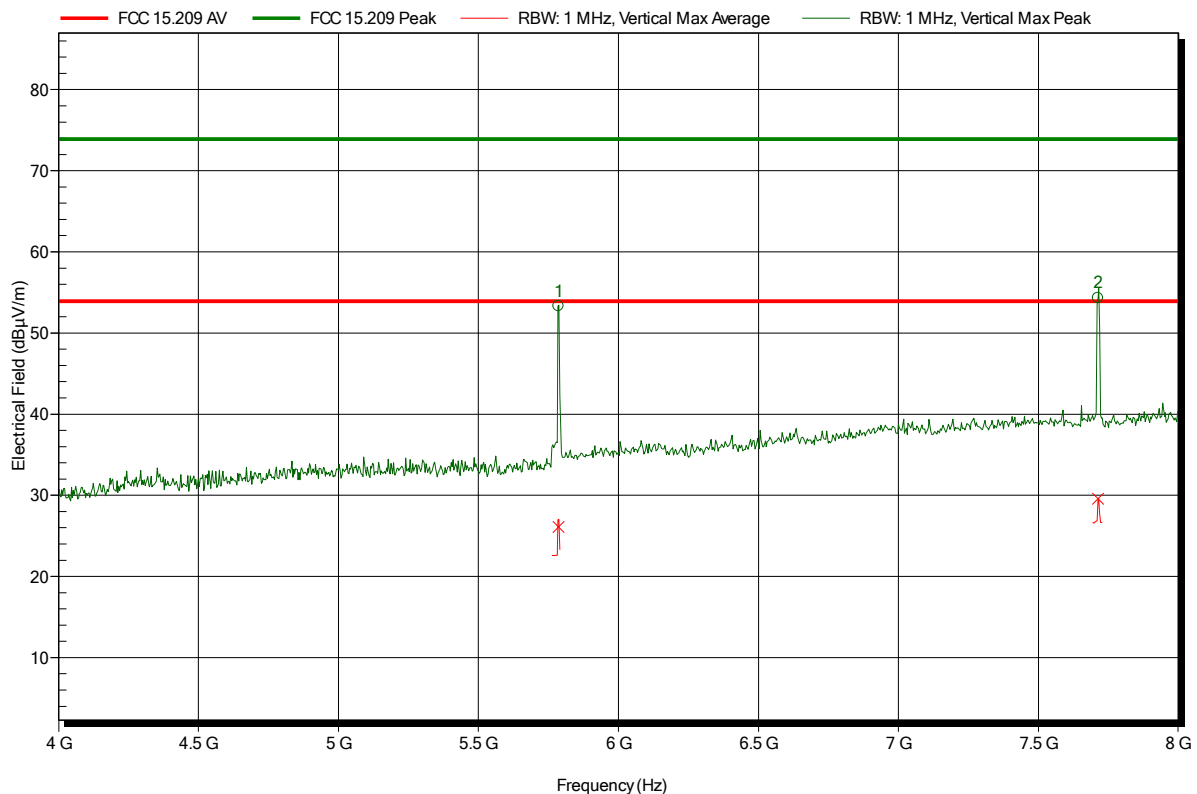
Frequency 1.9325 GHz	Peak 66.5 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -7.4 dB	Status Pass
Frequency 1.9325 GHz	Average 35.54 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -18.36 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.786 GHz	53.31 dBµV/m	73.9 dBµV/m	-20.59 dB	Pass
7.713 GHz	54.31 dBµV/m	73.9 dBµV/m	-19.59 dB	Pass

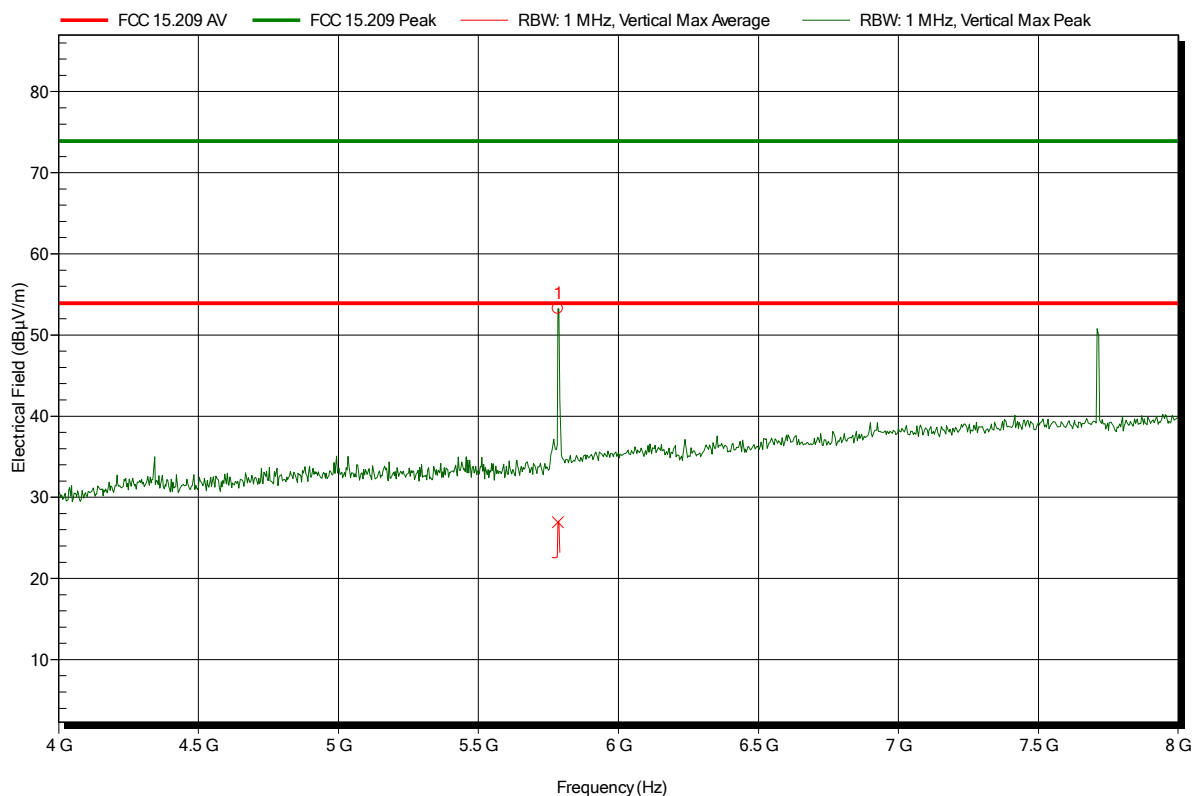
Frequency	Average	Average Limit	Average Difference	Average Status
5.786 GHz	26.11 dBµV/m	53.9 dBµV/m	-27.79 dB	Pass
7.713 GHz	29.59 dBµV/m	53.9 dBµV/m	-24.31 dB	Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note:

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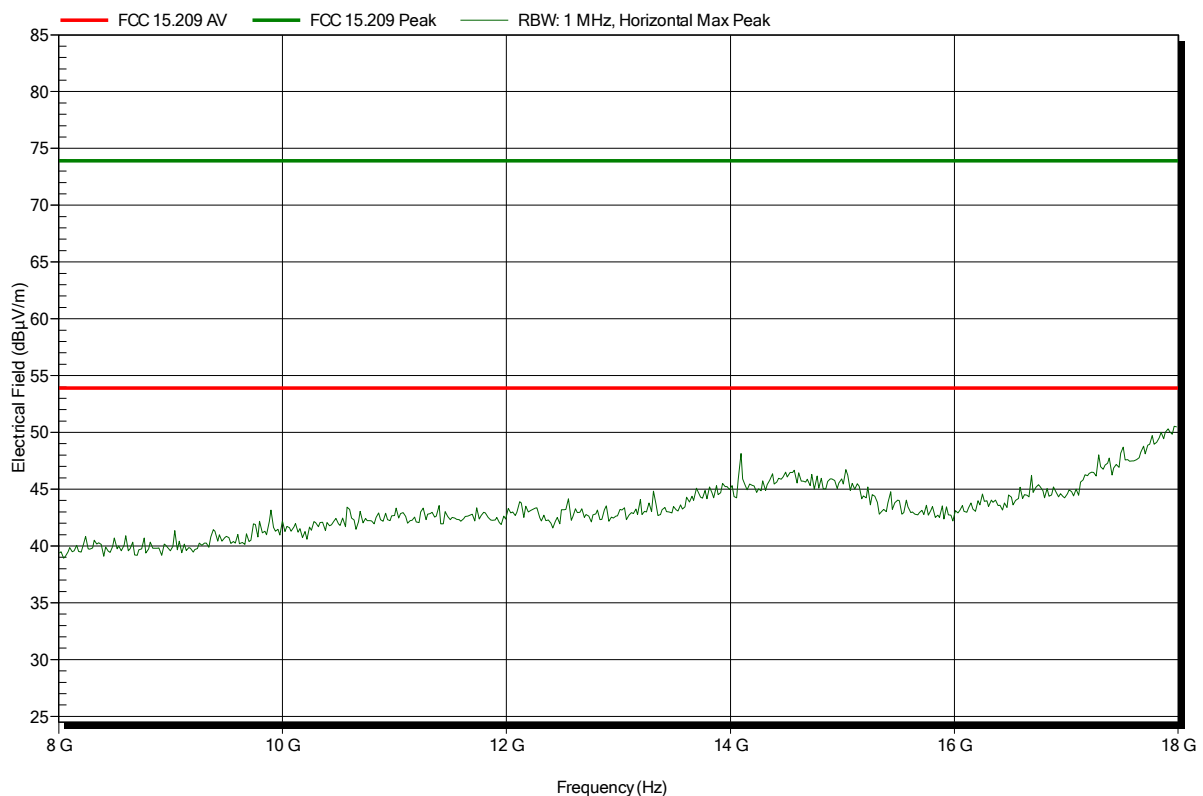
Frequency 5.784 GHz	Peak 53.22 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -20.68 dB	Status Pass
Frequency 5.784 GHz	Average 26.93 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -26.97 dB	Average Status Pass

Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement distance: 1 m converted to 3m
 Mode: TX; UPCS; ch.0; ant.2
 Test Date: 2015-01-15
 Note:

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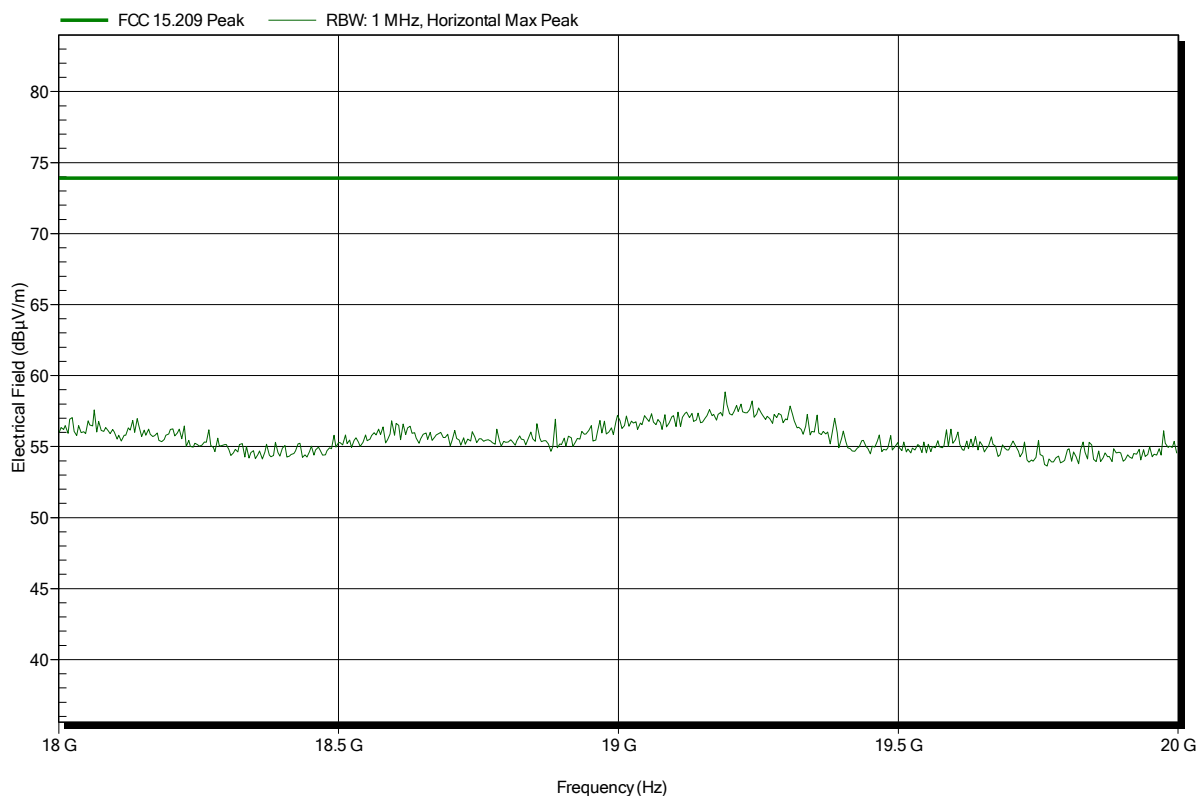


Spurious emissions according to FCC 15.247

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.0; ant.2
Test Date:	2015-01-15
Note:	

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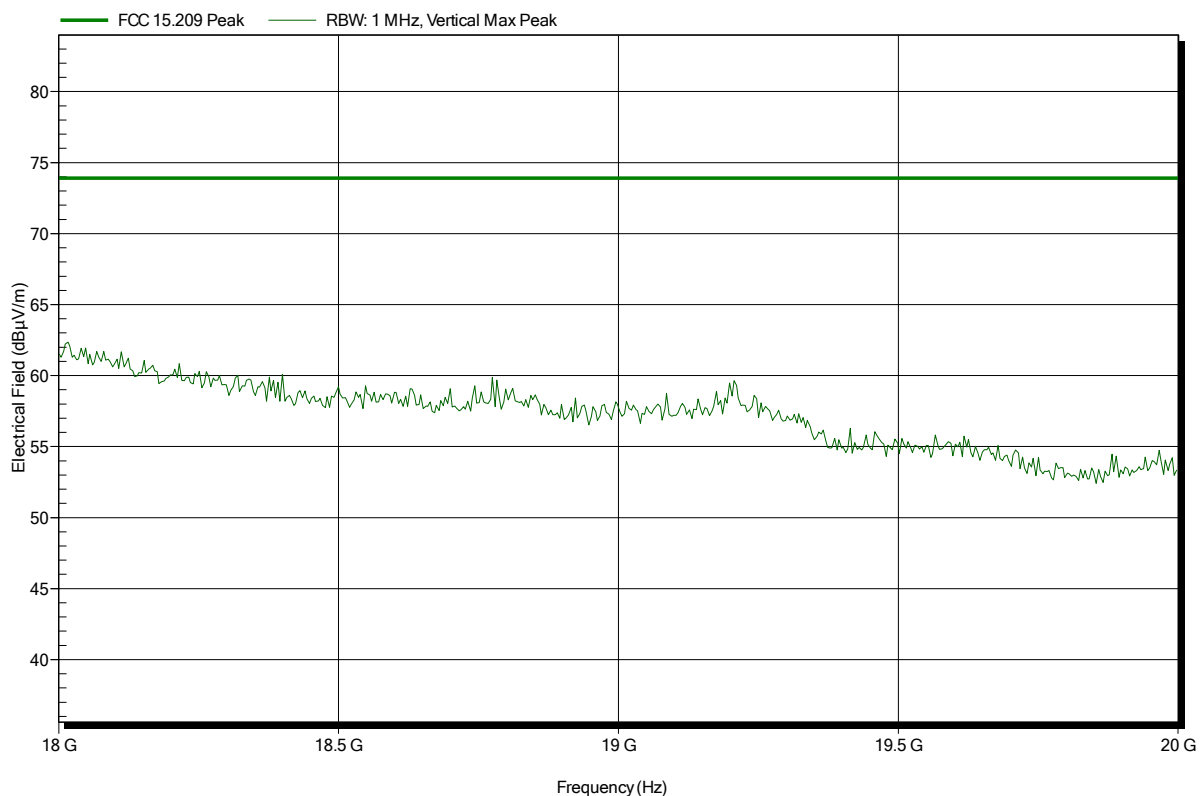


Spurious emissions according to FCC 15.247

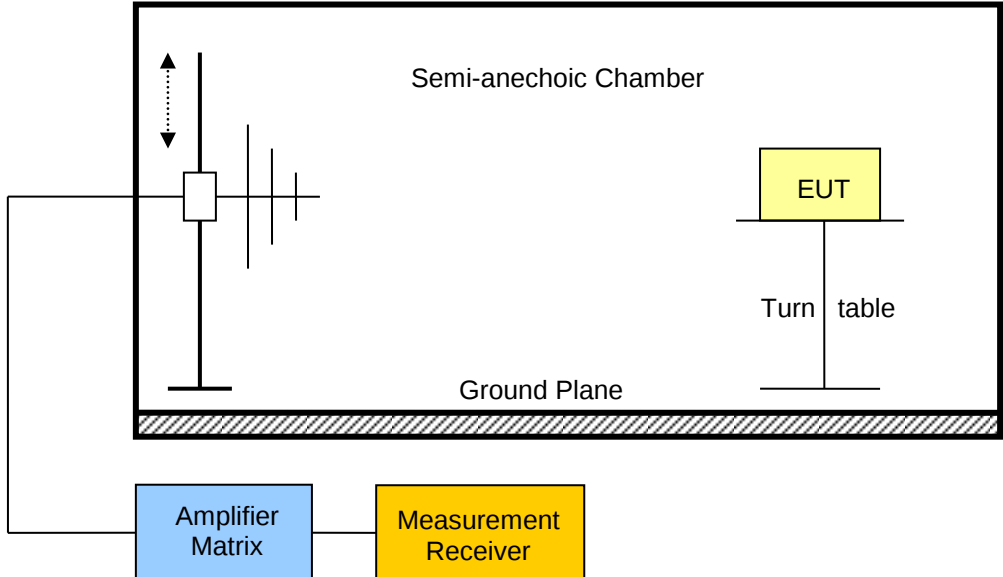
Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; UPCS; ch.0; ant.2
Test Date:	2015-01-15
Note:	

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3.12 Test Conditions and Results – Receiver spurious emissions

Receiver spurious emissions acc. to IC RSS-213				Verdict: PASS
Test according referenced standards	Reference Method			
	IC RSS-213 6.8			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Tested frequencies	Scan (All)			
Tested frequency range	30 MHz – 3 th Harmonic			
EUT test mode	Receive			
Limits				
Frequency range [MHz]	Detector	Limit [μV/m]	Limit [dBμV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Test setup				
				

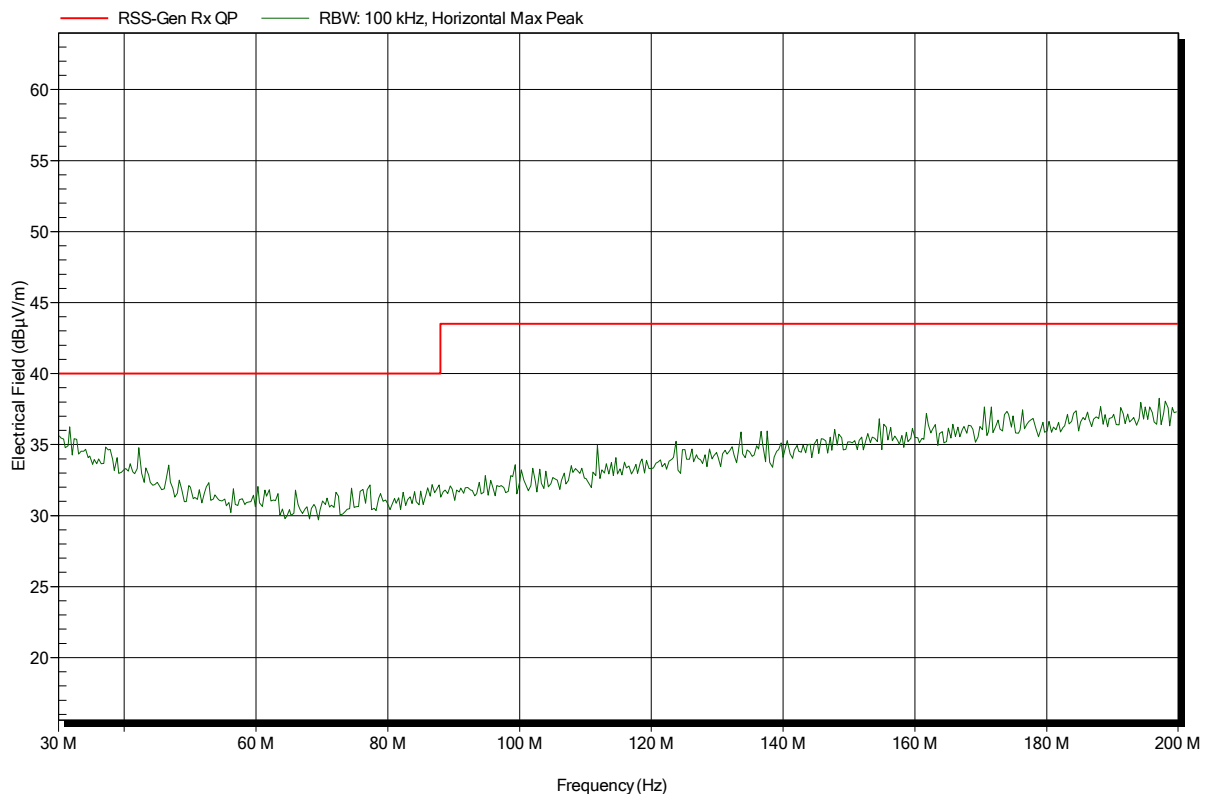
Test procedure							
1. EUT set to receive mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels							
Test results							
Channel	Frequency [MHz]	Emission [MHz]	Emission Level [dBμV/m]	Pol.	Det.	Limit [dBμV/m]	Margin [dB]
2	1924.992	885.03	24.16	hor	pk	46.00	-21.84
2	1924.992	889.82	23.09	hor	pk	46.00	-22.91
2	1924.992	889.82	24.31	ver	pk	46.00	-21.69
Comments: * Physical distance between EUT and measurement antenna. ** Emission level corresponds to ambient noise floor							

Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement distance: 3 m
 Mode: RX; UPCS; ch. 2
 Test Date: 2015-01-20
 Note:

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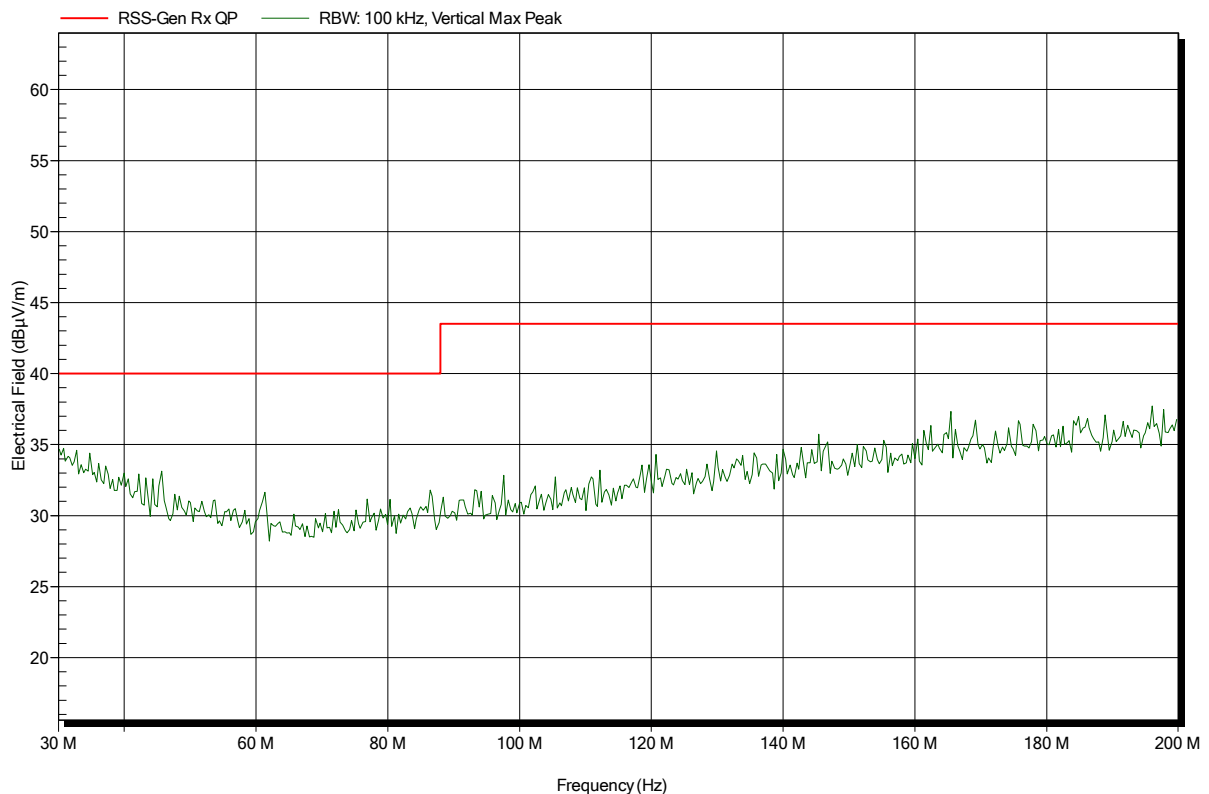


Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement distance: 3 m
 Mode: RX; UPCS; ch. 2
 Test Date: 2015-01-20
 Note:

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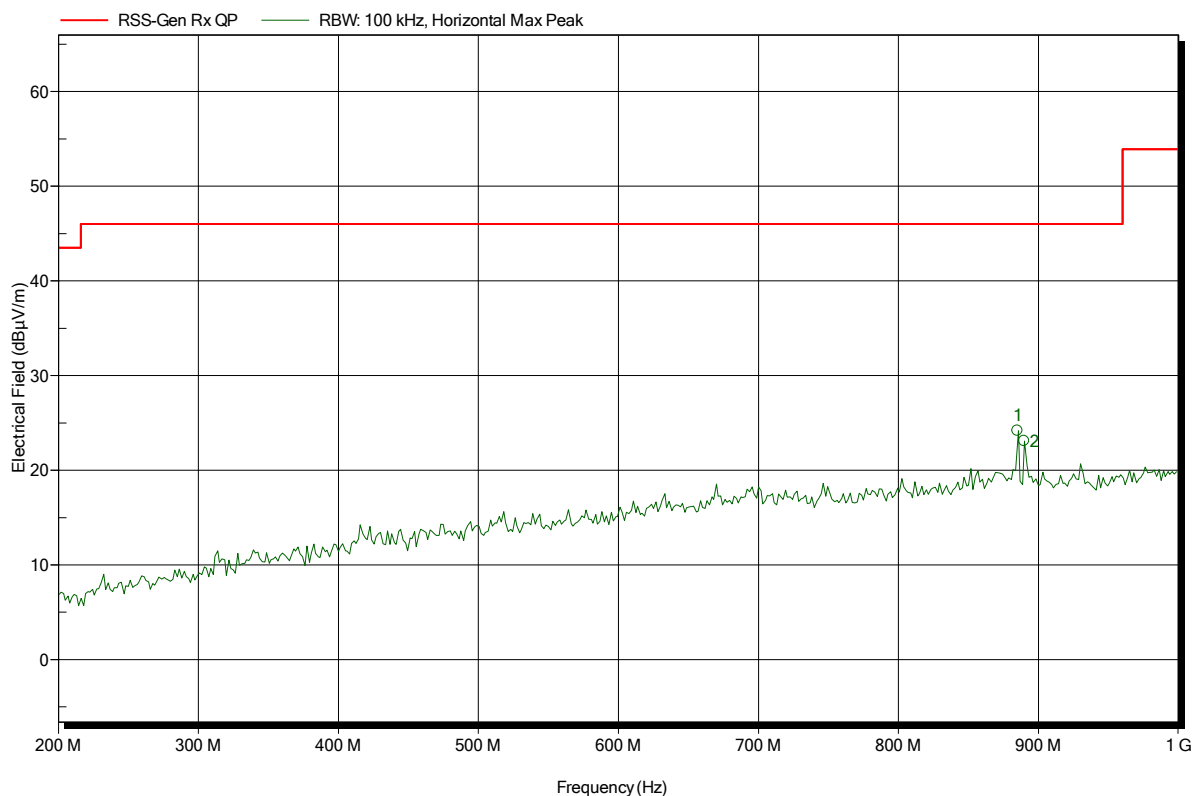


Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement distance: 3 m
 Mode: RX; UPCS; ch. 2
 Test Date: 2015-01-20
 Note:

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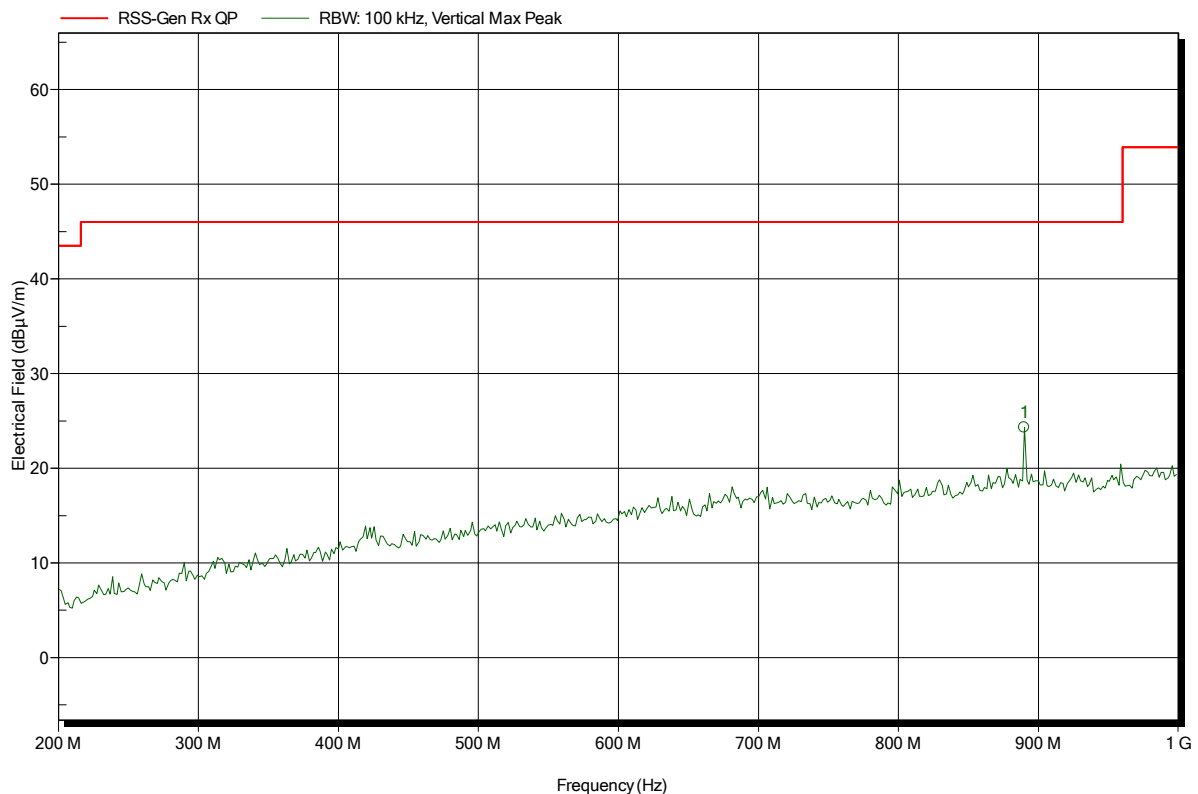
Frequency	Peak	Peak Limit	Peak Difference	Status
885.03 MHz	24.16 dBµV/m	46 dBµV/m	-21.84 dB	Pass
889.82 MHz	23.09 dBµV/m	46 dBµV/m	-22.91 dB	Pass

Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant: Spectralink Europe Aps
 EUT Name: DECT handset 7522
 Model: K022b
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Treffke
 Test Conditions: Tnom: 25°C, Vnom: 3.7VDC battery
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement distance: 3 m
 Mode: RX; UPCS; ch. 2
 Test Date: 2015-01-20
 Note:

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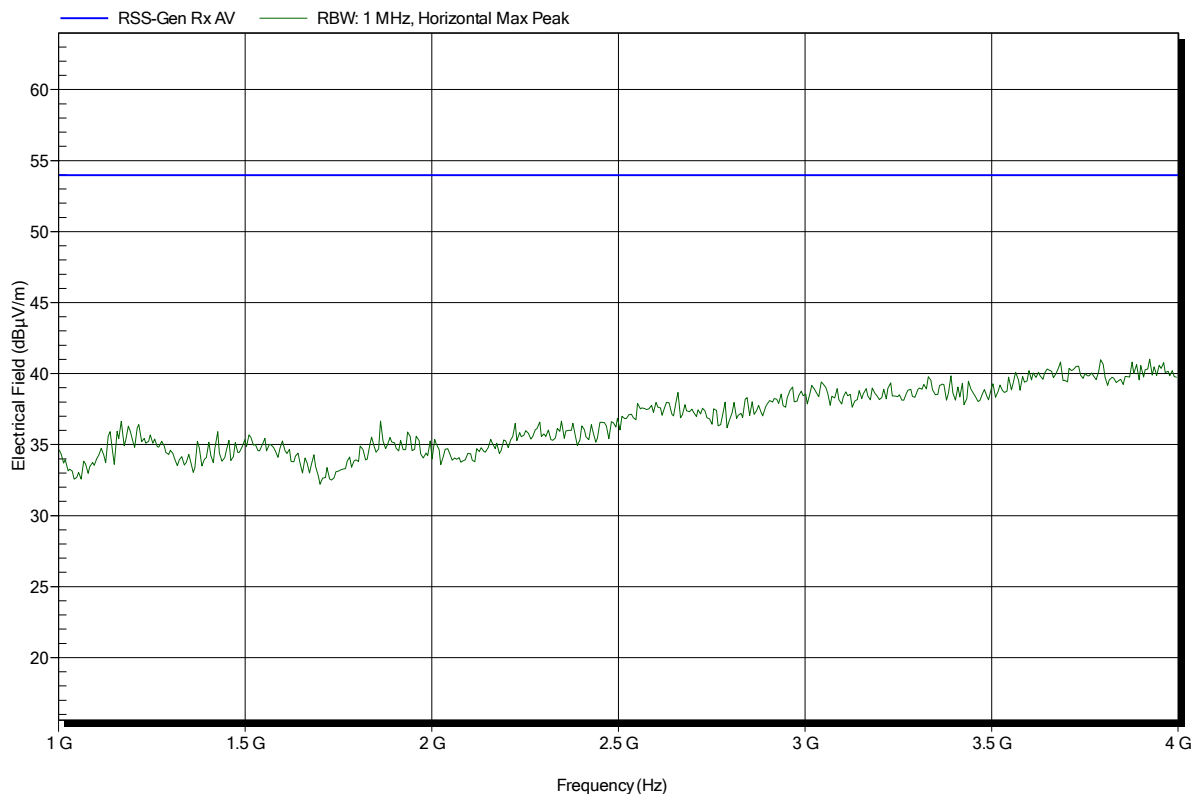
Frequency	Peak	Peak Limit	Peak Difference	Status
889.82 MHz	24.31 dBµV/m	46 dBµV/m	-21.69 dB	Pass

Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; UPCS; ch. 2
Test Date:	2015-01-20
Note:	

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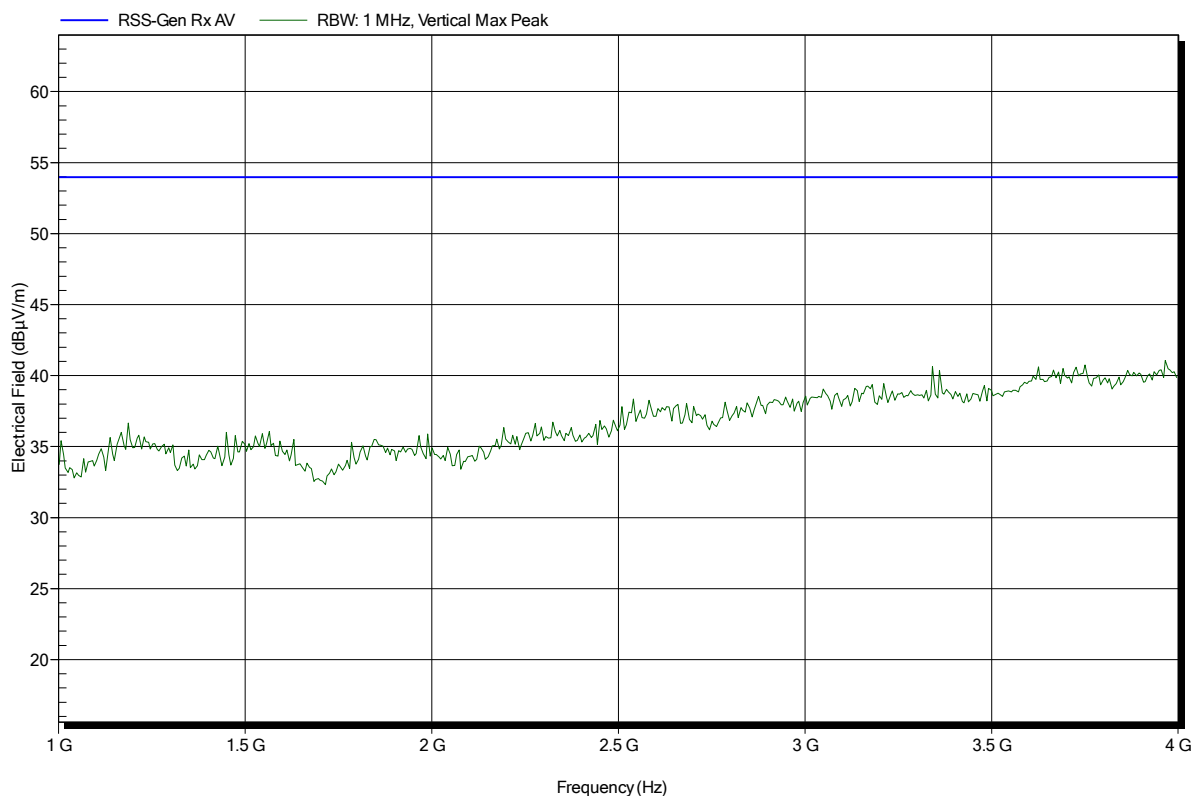


Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; UPCS; ch. 2
Test Date:	2015-01-20
Note:	

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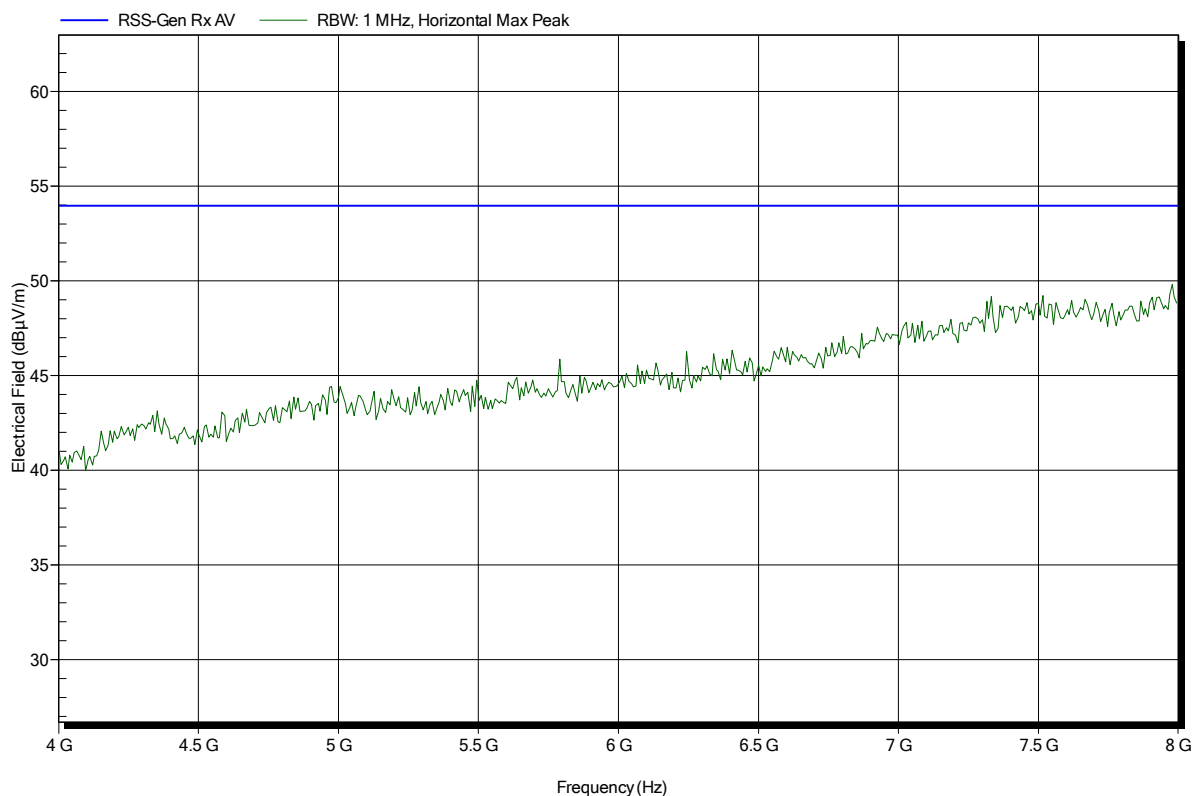


Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; UPCS; ch. 2
Test Date:	2015-01-20
Note:	

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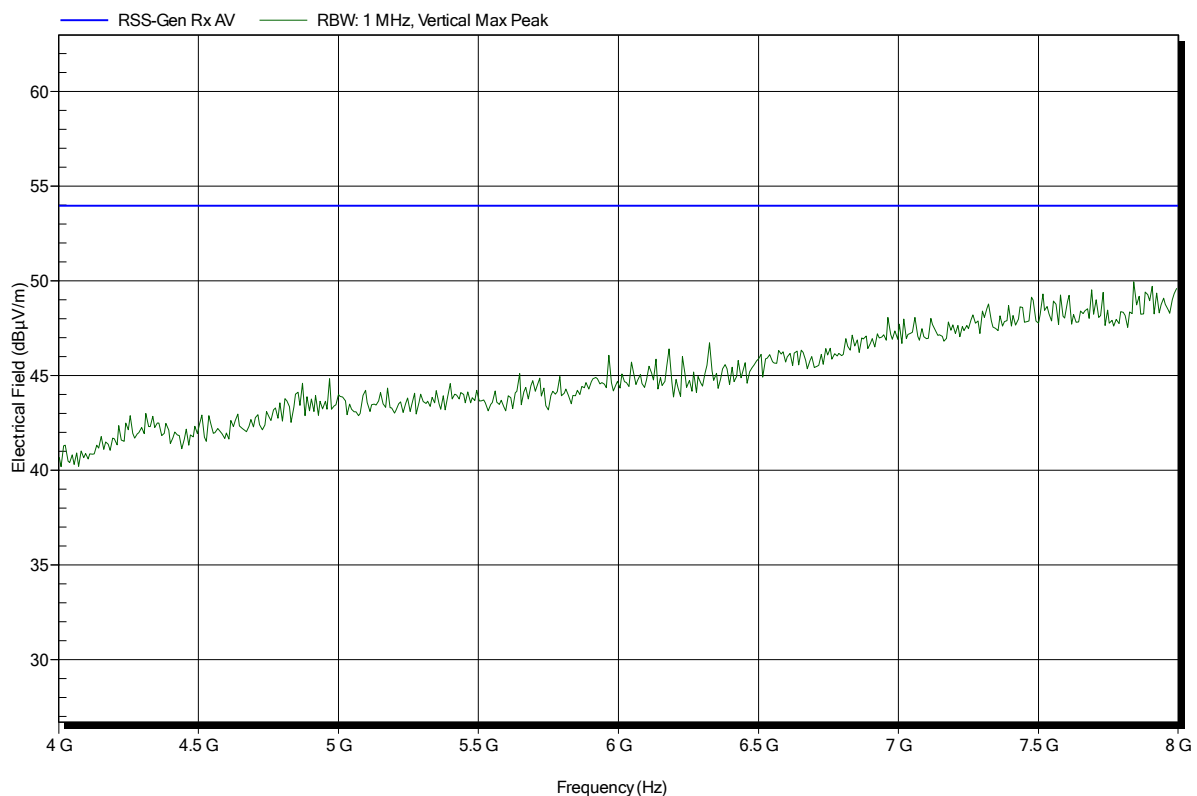


Spurious emissions according to RSS-GEN

Project number: G0M-1411-4308

Applicant:	Spectralink Europe Aps
EUT Name:	DECT handset 7522
Model:	K022b
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 25°C, Vnom: 3.7VDC battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; UPCS; ch. 2
Test Date:	2015-01-20
Note:	

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3.13 Test Conditions and Results – Automatic discontinuation of Transmission

Automatic discontinuation of transmission acc. to FCC 15D / RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.319(f) / IC RSS-213 4.3.4(a)	
Test according to measurement reference	Reference Method	
	Manual evaluation	
EUT equipment type	Portable part	
Requirements		
The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. This is not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.		
Test setup		
EUT Splitter Spectrum analyzer Companion device		
Test procedure		
The following situations were simulated to test the reaction of the EUT: - EUT power removed - EUT switched –off - Companion device switched off - Hook-on by companion device - Hook-on by EUT - Power removed from companion device The reaction of the EUT is recorded by the following results: A – Connection breakdown, cease of all transmissions B – Connection breakdown, EUT transmits control and signalling information C – Connection breakdown, Companion device transmits control and signalling information N/A – Not applicable (the EUT or companion device does not have an on/off switch or cannot perform hook on		
Result		
Test	Reaction	Verdict
Power removed : EUT	A	PASS
Power removed : Companion device	A	PASS
Switch –off : EUT	A	PASS
Switch –off : Companion device	A	PASS
Hook-on : EUT	A	PASS
Hook-on : Companion device	A	PASS

3.14 Test Conditions and Results – Radiofrequency radiation exposure

Radiofrequency radiation exposre acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.319(i) / IC RSS-Gen 3.2	
Requirements		
FCC : Unlicensed PCS devices are subject to the radiofrequency radiation exposure requirements specified in §§ 1.1307(b), 2.1091 and 2.1093. All equipment shall be considered to operate in a “general population/uncontrolled” environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.		
IC : Category I and Category II equipment shall comply with the applicable requirements of RSS-102.		
Result		
Reference		Verdict
see dedicated report : G0M-1411-4308-TFC093SR-V01 issued by Eurofins Product Service GmbH		PASS

3.15 Test Conditions and Results – LIC confirmation

LIC confirmation acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(5) / IC RSS-213 4.3.4(b)(5)	
Test according referenced standards	Reference Method	
	ANSI C63.17 7.3.2 / 7.3.3	
Requirements		
A device utilizing the provisions of FCC 47 CFR 15.323(c)(5) / IC RSS-213(b)(5) must have monitored all access channels defined for its system within the last 10 seconds and must verify, within the 20 milliseconds (40 milliseconds for devices designed to use a 20 millisecond frame period) immediately preceding actual channel access, that the detected power of the selected time and spectrum windows is no higher than the previously detected value.		
Test result		
Evaluation		Verdict
The requirement is verified using the “LIC Selected Channel Confirmation” and “LIC Procedure Test” test.		PASS
Comments:		

3.16 Test Conditions and Results – LIC Procedure Test

LIC Procedure Test acc. to FCC 47 CFR 15D / IC RSS-213			Verdict: PASS
EUT requirement rule parts and clause	Reference		
	FCC 15.323(c)(5) / IC RSS-213 4.3.4(b)(5)		
Test according referenced standards	Reference Method		
	ANSI C63.17 7.3.2		
Requirements			
FCC: If access to spectrum is not available as determined by the above, and a minimum of 20 duplex system access channels are defined for the system, the time and spectrum windows with the lowest power level may be accessed.			
IC: If access to spectrum is not available as determined by the above, and a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with a power level below a monitoring threshold of 50 dB above the thermal noise power determined for the occupied bandwidth may be accessed.			
Test setup			
EUT Companion device Splitter Spectrum analyzer Interferer Generators			
Test procedure			
1. The EUT is forced to two carrier frequencies f_1 and f_2 only by the use of interferer generators with power levels higher than the threshold T_L plus the measurement uncertainty U_M of 6 dB 2. Additional interferer signals are applied to the channels f_1 and f_2 according to the result table below 3. A communication session with the companion device is initiated 4. Transmission on the least interfered channel is verified 5. The communication session is terminated 6. The communications session is established another 4 times			
Test results			
Interferer Level f_1	Interferer Level f_2	Communication channel	Verdict
$T_L + U_M + 7\text{ dB}$	$T_L + U_M$	f_2	PASS
$T_L + U_M$	$T_L + U_M + 7\text{ dB}$	f_1	PASS
$T_L + U_M + 1\text{ dB}$	$T_L + U_M - 6\text{ dB}$	f_2	PASS
$T_L + U_M - 6\text{ dB}$	$T_L + U_M + 1\text{ dB}$	f_1	PASS
Comments:			

3.17 Test Conditions and Results – LIC Selected Channel Confirmation

LIC Selected Channel Confirmation acc. to FCC 47 CFR 15D / IC RSS-213			Verdict: PASS
EUT requirement rule parts and clause	Reference		
	FCC 15.323(c)(1) / IC RSS-213 4.3.4(b)(1)		
Test according referenced standards	Reference Method		
	ANSI C63.17 7.3.3		
Requirements			
Immediately prior to initiating transmission, devices must monitor the combined time and spectrum windows in which they intend to transmit for a period of at least 10 milliseconds for systems designed to use a 10 milliseconds or shorter frame period or at least 20 milliseconds for systems designed to use a 20 milliseconds frame period.			
Test setup			
EUT Companion device Splitter Spectrum analyzer Interferer Generators			
Test procedure			
1. The EUT is forced to two carrier frequencies f_1 and f_2 only by the use of interferer generators with power levels 20 dB higher than the threshold T_L plus the measurement uncertainty U_M of 6 dB 2. The interferer level on channel frequency f_1 is also set to $T_L + U_M + 20\text{dB}$ and channel f_2 has no interferer 3. A communication session is initiated on f_2 and transmission on f_2 is verified 4. An interferer level of $T_L + U_M + 20\text{ dB}$ is applied to f_2 and the interferer on channel f_1 is removed 20ms after the interferer on f_2 is applied 5. Transmission on f_1 and f_2 is monitored with the spectrum analyzer and it is verified that the EUT does not transmit on f_2.			
Test results			
Initial transmit channel	Interferer level	Final transmit channel	Verdict
f_2	0	f_2	PASS
f_2	$T_L + U_M + 20\text{ dB}$	f_1	PASS
Comments:			

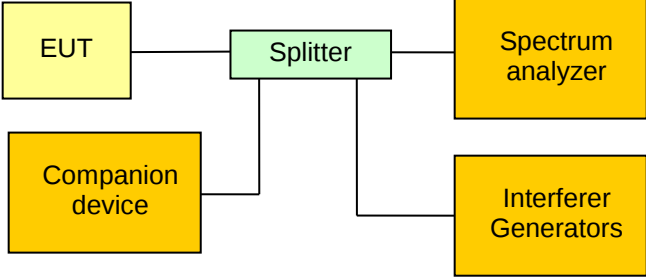
3.18 Test Conditions and Results – Monitoring antenna

Monitoring antenna acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(8) / IC RSS-213 (b)(8)	
Test according to measurement reference	Reference Method	
	ANSI C63.17 4	
Monitoring antenna	The same as transmitting antenna	
Requirements		
The monitoring system shall use the same antenna used for transmission, or an antenna that yields equivalent reception at that location.		
Results		
Connection status		Verdict
N/A (monitoring antenna identical to transmitting antenna)		PASS

3.19 Test Conditions and Results – Monitoring Bandwidth

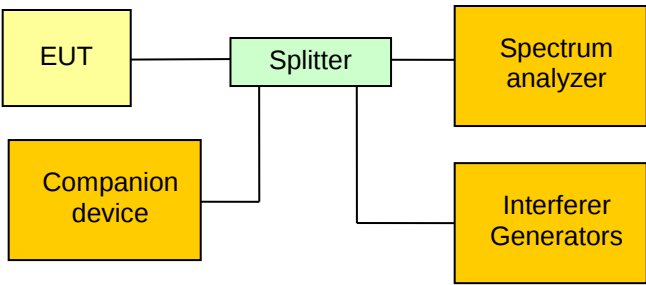
Monitoring Bandwidth acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(7) / IC RSS-213 4.3.4(b)(7)	
Test according to measurement reference	Reference Method	
	ANSI C63.17 7.4	
Requirements		
The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission		
Results		
Monitoring receiver		Verdict
The same as used for communication		PASS

3.20 Test Conditions and Results – Monitoring reaction time and monitoring interval

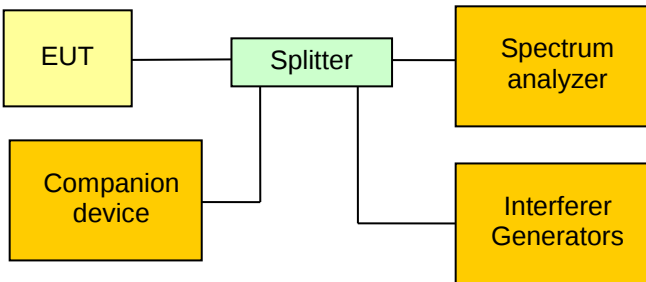
Monitoring reaction time and monitoring interval acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(7) / IC RSS-213 4.3.4(b)(7)	
Test according referenced standards	Reference Method	
	ANSI C63.17 7.5	
Requirements		
The monitor shall have a maximum reaction time less than $50 \times \text{SQRT}(1.25/\text{emission(occupied) bandwidth in MHz})$ microseconds for signals at the applicable threshold level but shall not be required to be less than 50 microseconds. If a signal is detected that is 6 dB or more above the applicable threshold level, the maximum reaction time shall be $35 \times \text{SQRT}(1.25/\text{emission(occupied) bandwidth in MHz})$ microseconds but shall not be required to be less than 35 microseconds.		
Test setup		
 <pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- SA[Spectrum analyzer] Splitter --- IG[Interferer Generators] CD[Companion device] --- Splitter </pre>		
Test procedure		
- Using interferer signals operation is restricted to channel f_1 - A time-synchronized, pulsed interference is applied to f_1 with a power level of $T_L + U_M$ - For systems with a 10 ms frame time and N timeslots per frame, a channel interferer with N pulses in a 10 ms repetition period is applied - On f_2 a CW interferer with level equal to T_L is activated - The pulse width of the interferer pulses on f_1 is set to the largest of 50 μs and $50 \cdot \sqrt{1.25/\text{Bandwidth[MHz]}}$ μs - It is verified that the connection to the companion device is established on f_2 only - The level of the interferer pulses on f_1 is set to 6 dB above $T_L + U_M$ - The pulse width on f_1 is set to the largest of 35 μs and $35 \cdot \sqrt{1.25/\text{Bandwidth[MHz]}}$ μs - It is verified that the connection to the companion device is established on f_2 only		

Test results - FCC					
Channel	Emission bandwidth [MHz]	Pulse width from Bandwidth [μ s]	Pulse width for test [μ s]	Connection possible	Verdict
F _{LOW}	1.46	$50 \cdot \sqrt{1.25/B[MHz]} = 46.3$	50	No	PASS
F _{LOW}	1.46	$35 \cdot \sqrt{1.25/B[MHz]} = 32.4$	35	No	PASS
F _{HIGH}	1.46	$50 \cdot \sqrt{1.25/B[MHz]} = 46.3$	50	No	PASS
F _{HIGH}	1.46	$35 \cdot \sqrt{1.25/B[MHz]} = 32.4$	35	No	PASS
Test results - IC					
Channel	Emission bandwidth [MHz]	Pulse width from Bandwidth [μ s]	Pulse width for test [μ s]	Connection possible	Verdict
F _{LOW}	1.324	$50 \cdot \sqrt{1.25/B[MHz]} = 48.6$	50	No	PASS
F _{LOW}	1.324	$35 \cdot \sqrt{1.25/B[MHz]} = 34$	35	No	PASS
F _{HIGH}	1.300	$50 \cdot \sqrt{1.25/B[MHz]} = 49$	50	No	PASS
F _{HIGH}	1.300	$35 \cdot \sqrt{1.25/B[MHz]} = 34.3$	35	No	PASS
Comments:					

3.21 Test Conditions and Results – Acknowledgements

Acknowledgements acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(4) / IC RSS-213 4.3.4(b)(4)	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.2.1	
EUT can initiate a communication session	Yes	
Requirements		
Once access to specific combined time and spectrum windows is obtained, an acknowledgement from a system participant must be received by the initiating transmitter within one second or transmission must cease. Periodic acknowledgements must be received at least every 30 seconds or transmission must cease.		
Test setup		
 <pre> graph LR EUT[EUT] --- Splitter[Splitter] Splitter --- SA[Spectrum analyzer] Splitter --- IG[Interferer Generators] CD[Companion device] --- Splitter </pre>		
Test procedure		
(Applies to EUTs that can initiate a communication session (e.g. portable parts)) The acknowledgement timeslots are blocked by interferer signals - An attempt to establish communication session is started from the EUT - The emissions from the EUT are monitored to verify that the EUT does not transmit for more than 1s - Next the acknowledgements are unblocked and another communication session is established between the EUT and the companion device - It is verified that the communication session is successful (Applies to all EUTs) With all acknowledges unblocked, an communication session is initiated between the EUT and the companion device - The acknowledgements were blocked and the time the EUT continues to transmit is recorded		
Test results		
Maximum initial transmission [s]	Transmission time limit [s]	Verdict
0.624	1	PASS
Maximum transmission time [s]	Transmission time limit [s]	Verdict
7	30	PASS
Comments:		

3.22 Test Conditions and Results – Transmission duration

Transmission duration acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: N/A
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(3) / IC RSS-213 4.3.4(b)(3)	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.2.2	
Requirements		
If no signal above the threshold level is detected, transmission may commence and continue with the same emission bandwidth in the monitored time and spectrum windows without further monitoring. However, occupation of the same combined time and spectrum windows by a device or group of cooperating devices continuously over a period of time longer than 8 hours is not permitted without repeating the access criteria.		
Test setup		
 <pre>graph LR; EUT[EUT] --- Splitter[Splitter]; Splitter --- SA[Spectrum analyzer]; Splitter --- IG[Interferer Generators]; CD[Companion device] --- Splitter</pre>		
Test procedure		
1. A communication session is established between the EUT and the companion device. 2. With the beginning of the communication session a counter is started 3. An interferer is introduced on the communication channel to force the EUT to select a different communication channel if the communications has to be reestablished 4. As soon as the communication session switches to a different channel the time measurement is stopped		
Test results		
Total transmission time [h]	Transmission time limit	Verdict
0.5	8 hours	PASS
Comments:		
For the DECT system the communication session is established by the portable part and the fixed part simply follows the portable part. Hence it's the responsibility of the portable part to control the maximum transmit period.		

3.23 Test Conditions and Results – Duplex connections

Duplex connections acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(10) / IC RSS-213 4.3.4(b)(10)	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.3	
EUT implements LIC algorithm	Yes	
Number of duplex channels	> 20	
Requirements		
An initiating device may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows. If both the intended transmit and receive time and spectrum windows meet the access criteria, then the initiating device can initiate a transmission in the intended transmit time and spectrum window. If the power detected by the responding device can be decoded as a duplex connection signal from the initiating device, then the responding device may immediately begin transmitting on the receive time and spectrum window monitored by the initiating device.		
Test setup		
EUT Companion device Splitter Spectrum analyzer Interferer Generators		

Test procedure (EUT implements LIC algorithm and offer at least 20 duplex channels)

1. The path loss between the EUT and the companion device is adjusted such that the received signal to the EUT is at least 40 dB above $T_L + U_M$
2. By the use of interference signals the EUT is restricted to channel f_1
3. An interference of level $T_L + U_M$ is applied per carrier on the enabled carriers on all its transmit time/spectrum windows except one, which has interference at least 10 dB below T_L
4. An interference of level $T_L + U_M + 7\text{dB}$ is applied per carrier on the enabled carriers on all its receive time/spectrum windows except one, which has interference at least 10 dB below T_L . The interference free receive time/spectrum window must not be the duplex mate of the interference-free transmit time/spectrum window
5. It is verified that the interference levels at the companion device are at least 10 dB below T_L for all time/spectrum windows
6. An attempt is made to establish a connection and it is verified that the connection is established on the interference-free receive time/spectrum window and its duplex mate
7. Next an interference of level $T_L + U_M + 7\text{dB}$ is applied per carrier on the enabled carriers on all its transmit time/spectrum windows except one, which has interference at least 10 dB below T_L
8. An interference of level $T_L + U_M$ is applied per carrier on the enabled carriers on all its receive time/spectrum windows except one, which has interference at least 10 dB below T_L . The interference free receive time/spectrum window must not be the duplex mate of the interference-free transmit time/spectrum window
9. It is verified that the interference levels at the companion device are at least 10 dB below T_L for all time/spectrum windows
10. An attempt is made to establish a connection and it is verified that the connection is established on the interference-free transmit time/spectrum window and its duplex mate

Test results

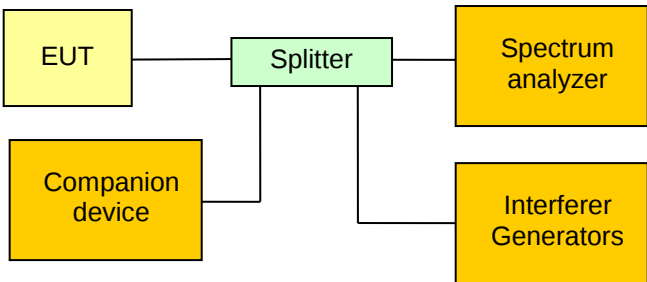
Transmit time/spectrum windows	Receive time/spectrum windows	Connection time/spectrum window	Verdict
$T_L + U_M$	$T_L + U_M + 7\text{dB}$	Receive	PASS
$T_L + U_M + 7\text{dB}$	$T_L + U_M$	Transmit	PASS

Comments:

3.24 Test Conditions and Results – Fair access

Fair access acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(11) / IC RSS-213 4.3.4(b)(11)	
Test according to measurement reference	Reference Method	
	Customer declaration	
Requirements		
The provisions of FCC 47 CRF 15.323(c)(10), IC RSS-213(b)(10) or FCC 47 CRF 15.323(c)(11), IC RSS-213(b)(11) shall not be used to extend the range of spectrum occupied over space or time for the purpose of denying fair access to spectrum to other devices.		
Declaration		
The manufacturer declares that is device does not work in a mode which denies fair access to spectrum for other participants		

3.25 Test Conditions and Results – Frame period and Jitter

Frame period and Jitter acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(e)(1),(4) / IC RSS-213 4.3.4(c)(1),(4)	
Test according referenced standards	Reference Method	
	ANSI C63.17 6.2.3	
Requirements		
The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of an intentional radiator operating in this sub-band shall be 20 milliseconds/X where X is a positive whole number. The jitter (time-related, abrupt, spurious variations in the duration of the frame interval) introduced at the two ends of such a communication link shall not exceed 25 microseconds for any two consecutive transmissions.		
Test setup		
 <pre>graph LR; EUT[EUT] --- Splitter[Splitter]; Splitter --- SA[Spectrum analyzer]; Splitter --- IG[Interferer Generators]; CD[Companion device] --- Splitter</pre>		
Test procedure		
1. With a spectrum analyzer the frame periods are measured over time 2. 100 000 frames are measured 3. The the peak-to-peak, mean and standard deviation values are computed		
Test results – Frame period		
Mean value [ms]	Divider X (10ms/X)	Verdict
9.999888 = 10.00 – 0.000112	1	PASS
Test results – Jitter		
Maximum difference between frames [µs]	Limit [µs]	Verdict
0.055	25 – 0.000112 = 24.999888	PASS
Comments:		

Frame period and Jitter

FCC Part 15.323 Frame Period and jitter

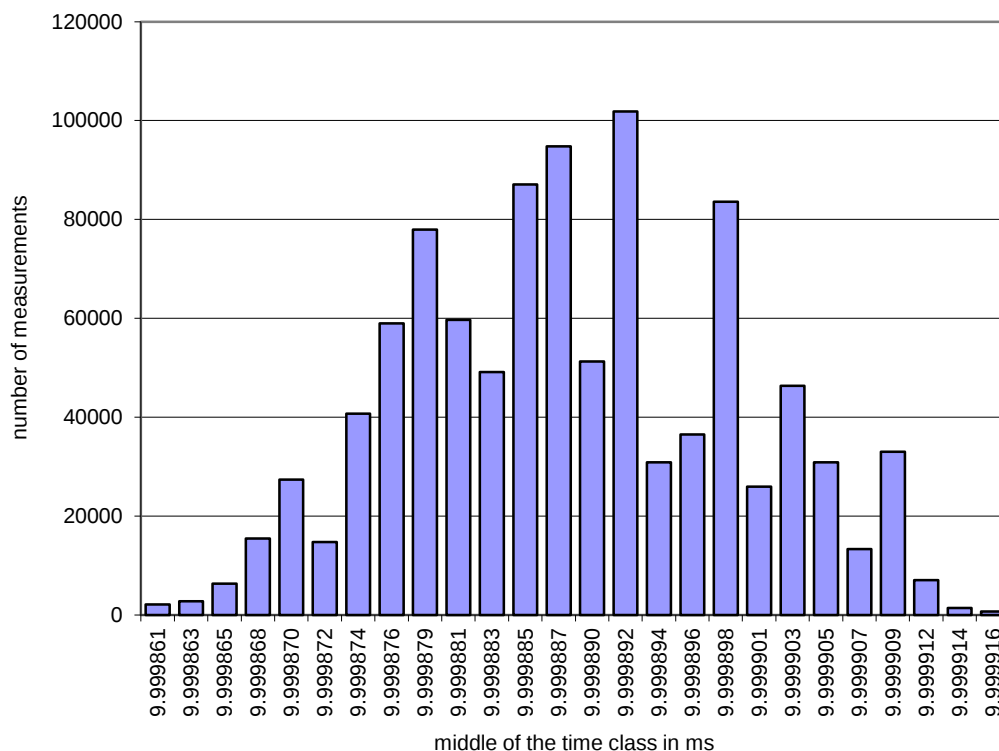
Testprocedure ANSI 63.17

UPCS

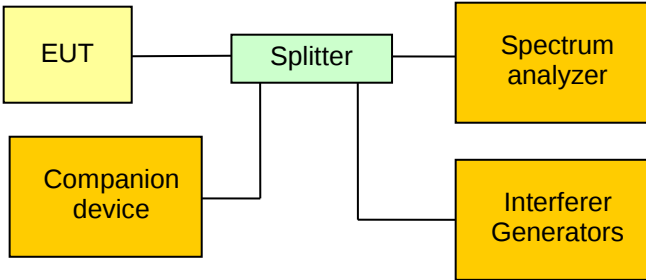
EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frame Period and jitter

Width of the time class	0.002198 μ s
Mean	9.999888 ms
Deviation	0.000011
Max-Min	0.054948 μ s
Test result	Verdict = PASS

Histogram



3.26 Test Conditions and Results – Frame repetition stability

Frame repetition stability acc. to FCC 47 CFR 15D / IC RSS-213			Verdict: PASS
EUT requirement rule parts and clause	Reference		
	FCC 15.323(e)(2),(3) / IC RSS-213 4.3.4(c)(2),(3)		
Test according referenced standards	Reference Method		
	ANSI C63.17 6.2.2		
Access scheme used	Time Division Multiple Access		
Requirements			
Each device that implements time division for the purpose of maintaining a duplex connection on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 50 parts per millions (ppm). Each device which further divides access in time in order to support multiple communication links on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 10 ppm.			
Test setup			
			
Test procedure			
1. With a spectrum analyzer the frame repetition periods are measured over time 2. 1 000 frame repetitions are measured 3. The mean and standard deviation values are computed			
Test results			
Access scheme	Error [ppm]	Limit [ppm]	Verdict
Time Division Access	N/A	50	N/A
Time Division Multiple Access	0.132718	10	PASS
Comments:			

Frame and TDMA repetition stability

FCC Part 15.323 Frame repetition

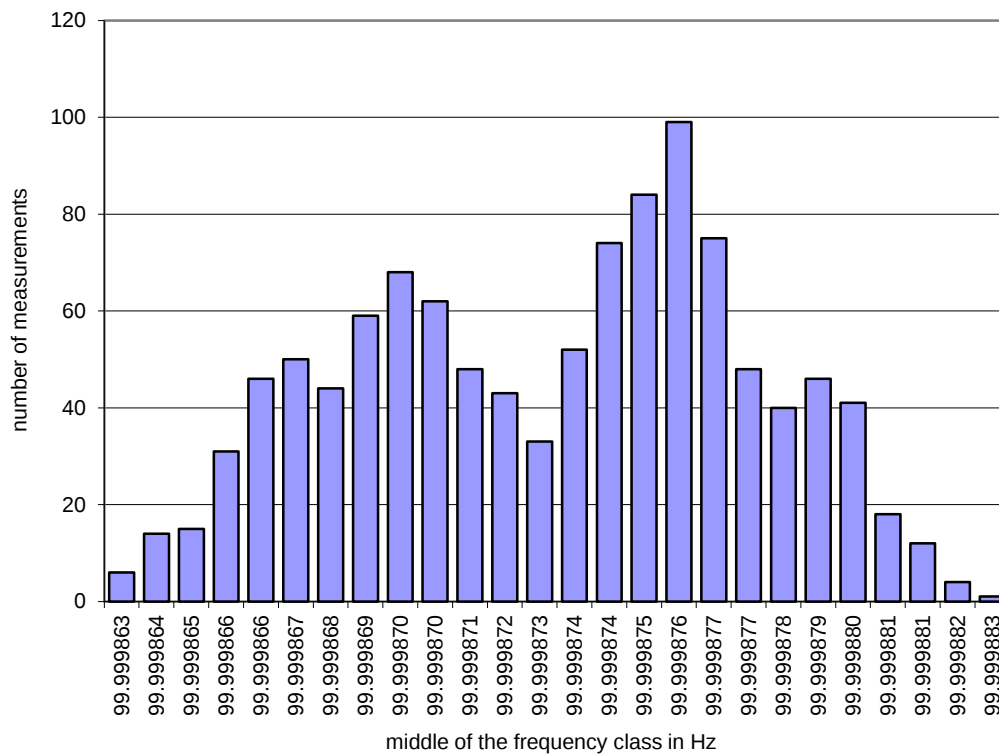
Testprocedure ANSI 63.17

UPCS

EUT	DECT handset 7532
Model	K022a
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frame repetition

Width of the frequency class	0,000001 Hz
Mean	99,999873 Hz
Deviation	0,000004
Stability in ppm	0,132718 ppm
Test result	Verdict = PASS

Histogram



3.27 Test Conditions and Results – Maximum spectral occupancy

Maximum spectral occupancy acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(5) / IC RSS-213 4.3.4(b)(5)	
Test according referenced standards	Reference Method	
	Customer declaration	
Requirements		
No device or group of co-operating devices located within 1 meter of each other shall during any frame period occupy more than 6 MHz of aggregate bandwidth, or alternatively, more than one third of the time and spectrum windows defined by the system.		
Test result		
Evaluation		Verdict
According to the technical documentation the total number of time and spectrum windows is: 5 x 12 = 60 According to customer declaration the total number of concurrent time and spectrum windows is: 12 The number of concurrent allocated time and spectrum windows is less than one third of the total time and spectrum windows of the EUT		PASS
Comments:		