

<b>FCC TEST REPORT</b> <b>FCC 47 CFR Part 15D</b> <b>Unlicensed Personal Communication Service Devices</b> <b>Industry Canada RSS-213</b> <b>2GHz License-exempt Personal Communications Service Devices (LE-PCS)</b>	
<b>Report Reference No.</b> .....	G0M-1505-4754-TFC15DPP2-V01
<b>Testing Laboratory</b> .....	Eurofins Product Service GmbH
Address.....	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation .....	<div style="display: flex; justify-content: center; align-items: center;">   </div> <p style="text-align: center; margin-top: 5px;"> A2LA Accredited Testing Laboratory, Certificate No.: 1983.01  FCC Filed Test Laboratory, Reg.-No.: 96970  IC OATS Filing assigned code: 3470A </p>
<b>Applicant's name</b> .....	Spectralink Europe ApS
Address.....	Langmarksvej 34 8700 Horsens DENMARK
<b>Test specification:</b>	
Standard .....	47 CFR Part 15D 47 CFR Part 15C 47 CFR Part 15B RSS-213, Issue 3, 2015-03 RSS-Gen, Issue 4, 2014-11 ANSI C63.17:2013 ANSI C63.4:2014
<b>Equipment under test (EUT):</b>	
Product description	DECT handset 7212
Model No.	K23e
Additional Model(s)	DECT handset 7202 (K23f)
Brand Name(s)	Spectralink
Hardware version	PCS 04
Firmware / Software version	PCS 15J_
	FCC-ID: PXA-K023B                      IC: 4604A-K023B
<b>Test result</b>	<b>Passed</b>

Test Report No.: G0M-1505-4754-TFC15DPP2-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 .....: 2015-06-01

Date (s) of performance of tests .....: 2015-06-08 – 2015-06-09

Compiled by ..... Wilfried Treffke

Tested by (+ signature) ..... Matthias Handrik  
(Responsible for Test)

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

Date of issue ..... 2015-08-17

Total number of pages ..... 145

  
 .....  
  
 .....

**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:****Declaration of changes due to variant creation.**

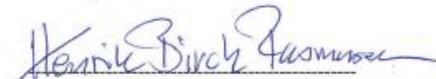
Applicant: Spectralink Europe ApS  
Project No(s): G0M-1505-4753, G0M-1505-4754  
EUT (Product): Spectralink 7722 (K023c), Spectralink 7622 (K023d)  
Spectralink 7212 (K023e), Spectralink 7202 (K023f)

The difference between 7722 and 7622 is the keyboard type with corresponding plastic.  
7722 use Foil-keyboard with ESD protection circuit.  
7622 use Key-buttons with keyfoil.  
All other components and firmware are the same.

The difference between 7722 and 7212 is the keyboard type with corresponding plastic, DECT module and EEPROM.  
7722 use DECT module KT4588A00, Foil-keyboard with ESD protection circuit and 1M EEPROM.  
7212 use DECT module KT4588A30, Key-buttons with keyfoil and 64K EEPROM.  
All other components and firmware are the same.

The difference between 7722 and 7202 is the keyboard type, DECT module, EEPROM, headset port and vibrator.  
7722 use DECT module KT4588A00, Foil-keyboard with ESD protection circuit, 1M EEPROM, headset port and vibrator.  
7202 use DECT module KT4588A30, Key-buttons with keyfoil and 64K EEPROM.  
7202 do not have headset port and vibrator with associated components.  
All other components and firmware are the same.

Date: 2015-06-11

  
Henrik Birch Rasmussen

Spectralink Europe Aps.  
Langmarksvej 34  
8700 Horsens  
Denmark

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[spectralink.com](http://spectralink.com) | 2560 55<sup>th</sup> Street | Boulder CO 80301 | +1 800-775-5330

**Note:**

The test for all radiated spurious emission was performed on the fully version 7712 (K023e)

## Version History

Version	Issue Date	Remarks	Revised by
01	2015-08-17	Initial Release	

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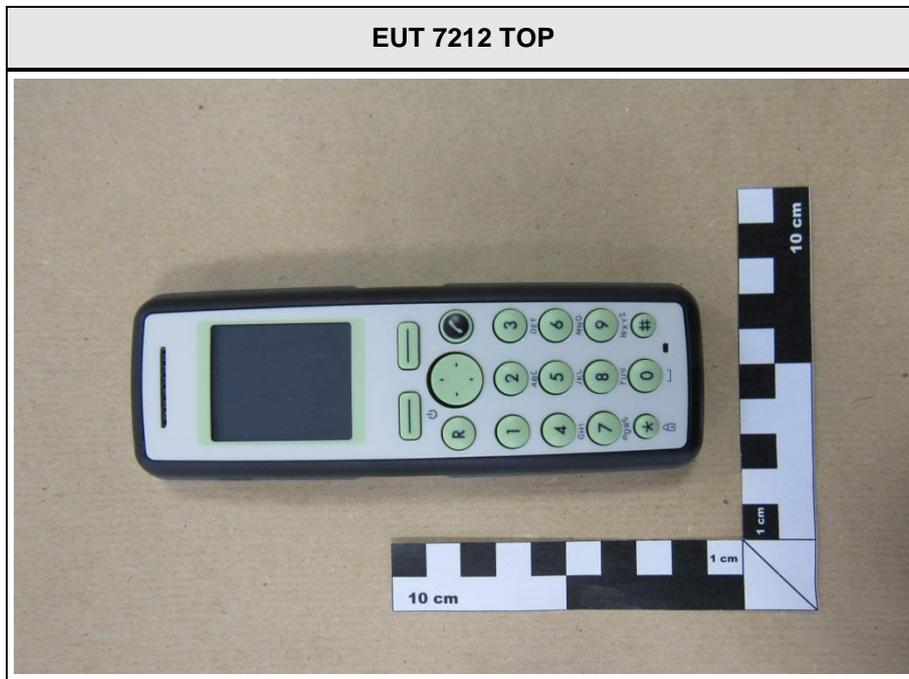
## 1 Equipment (Test item) Description

<b>Description</b>	DECT handset 7212	
<b>Model</b>	K23e	
<b>Additional Model(s)</b>	DECT handset 7202 (K23f)	
<b>Brand Name(s)</b>	Spectralink	
<b>Serial number</b>	None	
<b>Hardware version</b>	PCS 04	
<b>Software / Firmware version</b>	PCS 15J_	
<b>FCC-ID</b>	PXA-K023B	
<b>IC</b>	4604A-K023B	
<b>Equipment type</b>	End Product	
<b>Radio type</b>	DECT Portable Part	
<b>Number of Radios</b>	1 transceivers is built into the device	
<b>Radio technology</b>	DECT 6.0	
<b>Operating frequency range</b>	1921.536 - 1928.448MHz	
<b>Assigned frequency band</b>	1920 - 1930MHz	
<b>Number of RF channels</b>	5	
<b>Supported slots</b>	even and odd	
<b>Number of time slots</b>	12 x Tx + 12 x RX = 24	
<b>Channels</b>	F <sub>0</sub>	Ch:0 / 1928.448MHz
	F <sub>1</sub>	Ch:1 / 1926.720MHz
	F <sub>2</sub>	Ch:2 / 1924.992MHz
	F <sub>3</sub>	Ch:3 / 1923.264MHz
	F <sub>4</sub>	Ch:4 / 1921.536MHz
<b>Main test frequencies</b>	F <sub>LOW</sub>	Ch:4 / 1921.536MHz
	F <sub>MID</sub>	Ch:2 / 1924.992MHz
	F <sub>HIGH</sub>	Ch:0 / 1928.448MHz
<b>Modulations</b>	GFSK	
<b>Emission designator</b>	F7D	
<b>Nominal emission bandwidth</b>	1.44 MHz	
<b>Nominal receive bandwidth</b>	864 MHz	
<b>Channel spacing</b>	1728kHz	
<b>Spectrum access</b>	Listen before transmit	
<b>Nominal lower threshold</b>	N/A	
<b>Nominal upper threshold</b>	-60 dBm	
<b>Number of antennas</b>	2 per transceiver	

<b>Antenna 1</b>	Type	integrated
	Model	PCB ant.
	Manufacturer	Spectralink
	Gain	1.0 dBi
<b>Antenna 2</b>	Type	integrated
	Model	PCB ant.
	Manufacturer	Spectralink
	Gain	1.0 dBi
<b>Manufacturer</b>	Spectralink Europe ApS Langmarksvej 34 8700 Horsens DENMARK	
<b>Power supply</b>	V <sub>NOM</sub>	3.7 VDC (lithium battery)
	V <sub>MIN</sub>	3.05 VDC
	V <sub>MAX</sub>	4.45 VDC
<b>AC/DC-Adaptor</b>	Model	UE08WCP-060100SPA
	Vendor	Fuhua
	Input	110 - 240 VAC 50/60 Hz
	Output	6,0VDC Used for charging the 3.7V cell
<b>Temperature</b>	T <sub>NOM</sub>	25°C
	T <sub>MIN</sub>	-20°C
	T <sub>MAX</sub>	55°C



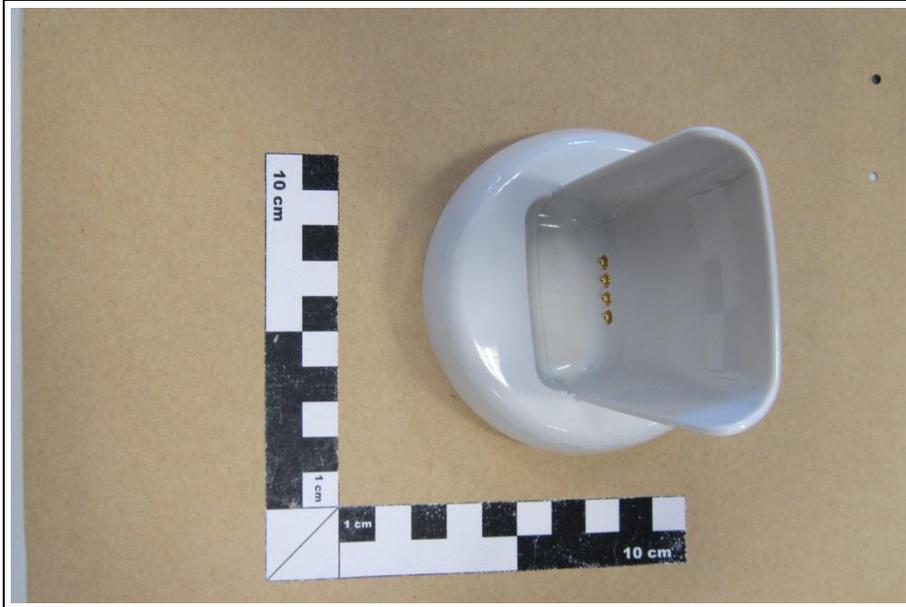
1.1 Photos - Equipment external







**AE1: Charger, single 84642493, TOP**



**AE1: Charger, single 84642493, CONNECTOR**



**AE1: Charger, single 84642493, LABEL**



**AE2: Charger, USB 84642494, TOP**



**AE2: Charger, USB 84642494, CONNECTORS**



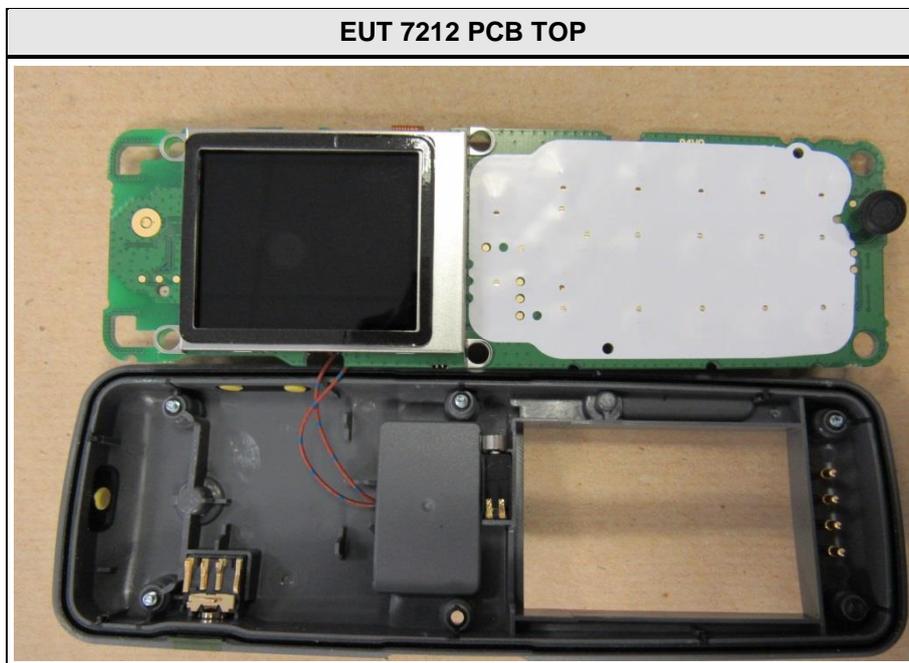
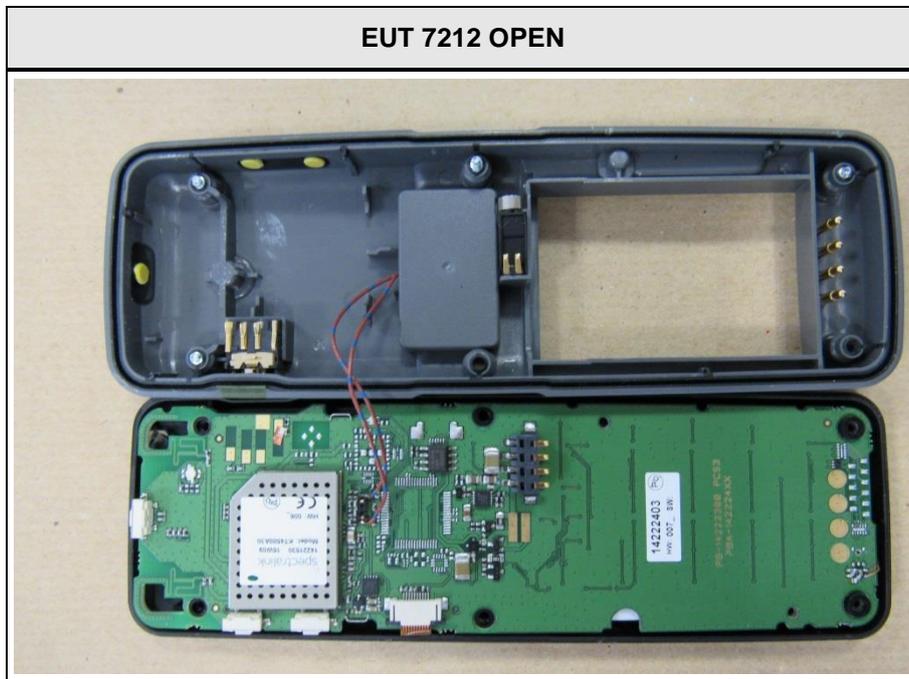
**AE2: Charger, USB 84642494, LABEL**



AE3: Power adaptor



1.3 Photos - Equipment internal





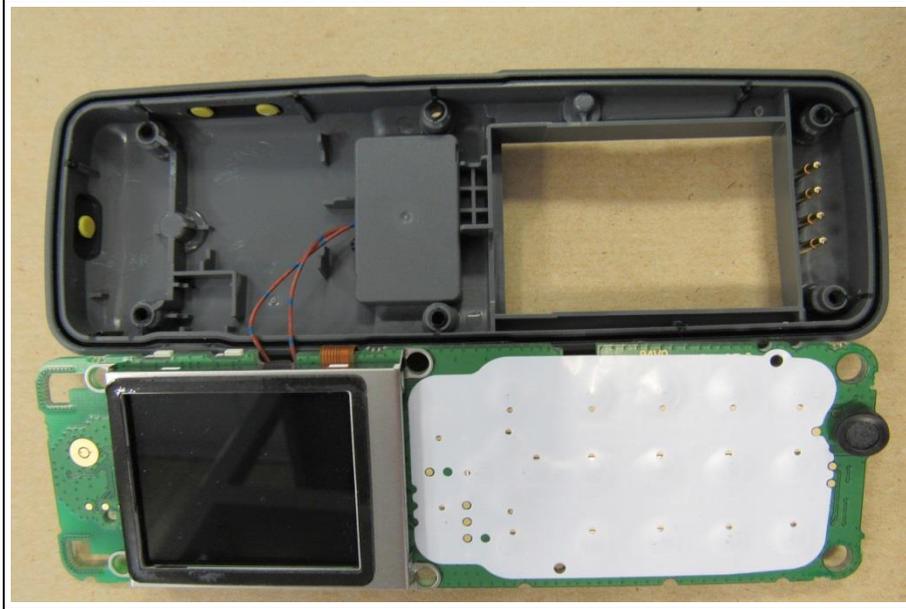
**EUT 7212 PCB BOTTOM**



**VARIANT 7202 OPEN**



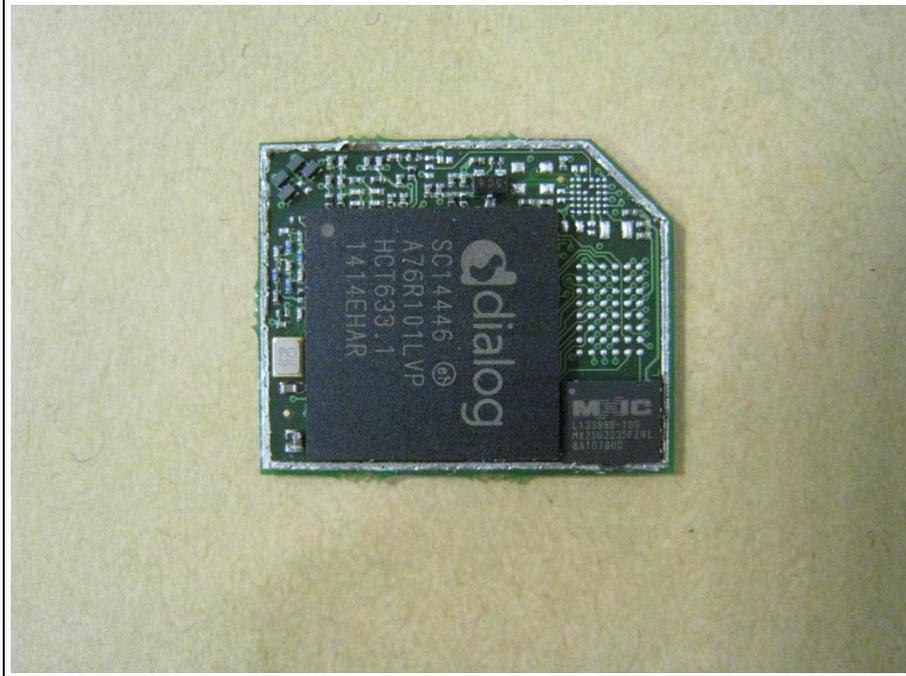
VARIANT 7202 PCB TOP



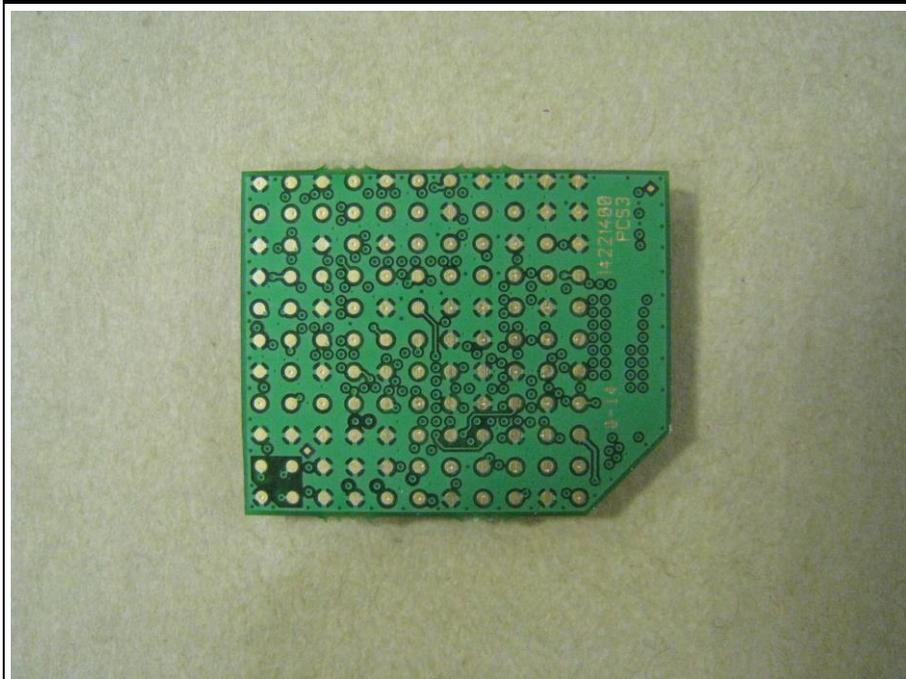
VARIANT 7202 PCB BOTTOM



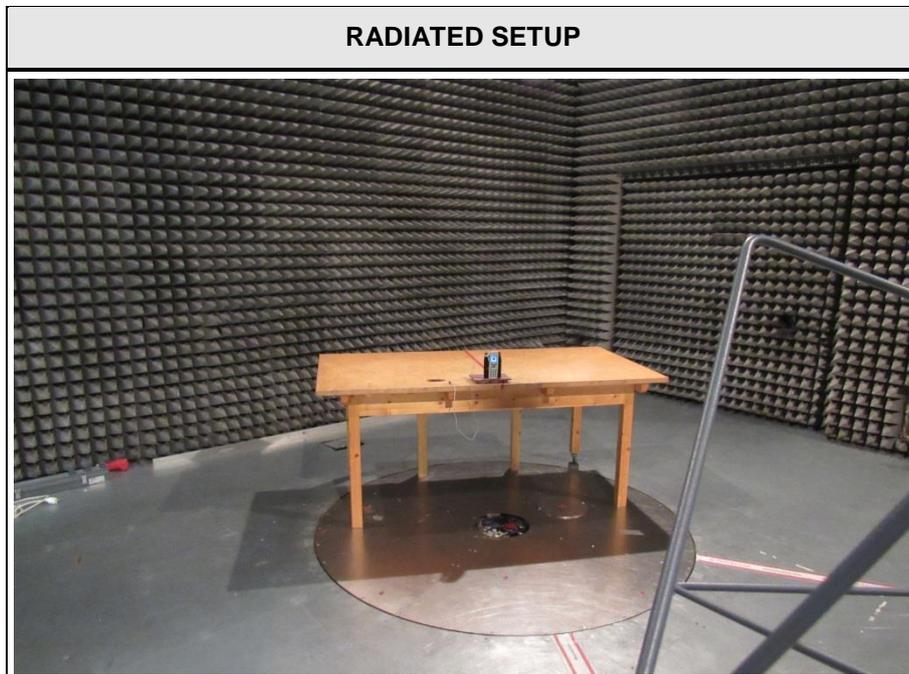
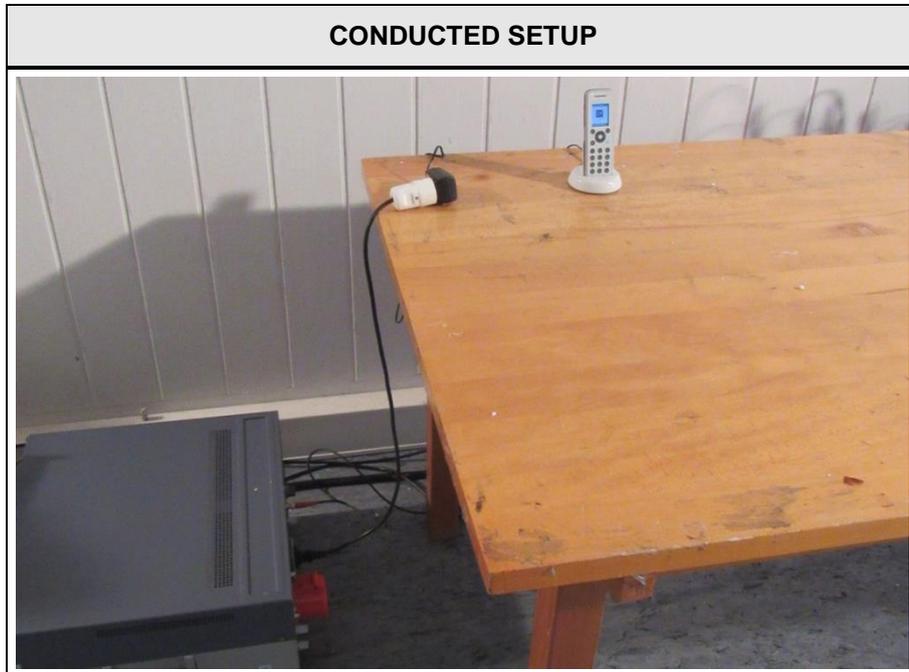
**RADIO PART WITHOUT SHIELDING TOP**



**RADIO PART WITHOUT SHIELDING BOTTOM**



1.4 Photos – Test setup



**1.5 Supporting Equipment Used During Testing**

Product Type*	Device	Manufacturer	Model No.	Comments
SIM	Communication Tester	R&S	CMD 60	DECT Signaling
AE1	Charger, single	Spectralink	84642493	
AE2	Charger, single, USB	Spectralink	84642494	
AE3	Power adaptor	Fuhua	UE08WCP-060100SPA	

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

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

**1.6 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 fully charged 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 fully charged 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

### 1.7 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	2015-02	2016-02
Signal Generator	R&S	SMP 02	EF00165	2015-05	2017-05
Signal Generator	R&S	SMIQ 03B	EF00153	2014-09	2016-09
Signal Generator	R&S	SMIQ 03B	EF00316	2015-06	2017-06
Signal Generator	R&S	SMIQ 03	EF00316	2015-06	2017-06
Signal Generator	R&S	SMT 03	EF00164	2015-04	2017-04
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	2015-06	2017-06

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242	2015-04	2016-04
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 power line conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2014-11	2016-11
EMI Test Receiver	R&S	ESCS 30	EF00295	2014-10	2015-10

## 1.8 Sample emission level calculation

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

Reading:

This is the reading obtained on the spectrum analyzer in dB $\mu$ 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 $\mu$ V/m). The FCC limits are given in units of  $\mu$ V/m. The following formula is used to convert the units of  $\mu$ V/m to dB $\mu$ V/m:

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

Margin:

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

Example only:

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



## 2 Result Summary

FCC 47 CFR Part 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	dedicated report	PASS	
FCC 15.315 FCC 15.207 IC RSS-213 5.4 IC RSS-Gen 8.8	AC power line conducted emissions	ANSI C63.4	PASS	
FCC 15.317 FCC 15.203	Antenna requirements	visual inspection	PASS	
FCC 15.319(b) IC RSS-213 5.1	Digital modulation	ANSI C63.17 6.1.4	PASS	
IC RSS-213 3.1 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 5.6	Peak transmit power	ANSI C63.17 6.1.2	PASS	
FCC 15.319(d) IC RSS-213 5.7	Power spectral density	ANSI C63.17 6.1.5	PASS	
FCC 15.323(f) IC RSS-213 5.3	Carrier frequency stability	ANSI C63.17 6.2.1	PASS	
FCC 15.323(d) IC RSS-213 5.8	Transmitter in-band unwanted emissions	ANSI C63.17 6.1.6.1	PASS	
FCC 15.323(d) IC RSS-213 5.8	Transmitter out-of-band emissions	ANSI C63.17 6.1.6.2 ANSI C63.4	PASS	
IC RSS-213 3.1 IC RSS-Gen 7.1	Receiver spurious emissions	ANSI C63.4	PASS	
FCC 15.319(f) IC RSS-213 5.2	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 5.2	LIC Confirmation	ANSI C63.17 7.3.2 / 7.3.3	PASS	
FCC 15.323(c)(5) IC RSS-213 5.2	LIC Procedure Test	ANSI C63.17 7.3.2	PASS	
FCC 15.323(c)(1) IC RSS-213 5.2	LIC Selected Channel Confirmation	ANSI C63.17 7.3.3	PASS	
FCC 15.323(c)(8) IC RSS-213 5.2	Monitoring antenna	ANSI C63.17 4	PASS	
FCC 15.323(c)(7) IC RSS-213 5.2	Monitoring bandwidth	ANSI C63.17 7.4	PASS	
FCC 15.323(c)(7) IC RSS-213 5.2	Monitoring reaction time and monitoring interval	ANSI C63.17 7.5	PASS	

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Test Report No.: G0M-1505-4754-TFC15DPP2-V01

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

FCC 15.323(c)(6) IC RSS-213 5.2	Access criteria test interval	ANSI C63.17 8.1.1	N/A	Only FP
FCC 15.323(c)(6) IC RSS-213 5.2	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 5.2	Acknowledgements	ANSI C63.17 8.2.1	PASS	
FCC 15.323(c)(3) IC RSS-213 5.2	Transmission duration	ANSI C63.17 8.2.2	PASS	
FCC 15.323(c)(10) IC RSS-213 5.2	Duplex connections	ANSI C63.17 8.3	N/A	Only PP
FCC 15.323(c)(11) IC RSS-213 5.2	Alternative monitoring interval	ANSI C63.17 8.4	N/A	
FCC 15.323(c)(12) IC RSS-213 5.2	Fair access	declaration	PASS	
FCC 15.323(e) IC RSS-213 5.2	Frame period and Jitter	ANSI C63.17 6.2.3	PASS	
FCC 15.323(e) IC RSS-213 5.2	Frame repetition stability	ANSI C63.17 6.2.2	PASS	
FCC 15.323(c)(5) IC RSS-213 5.2	Maximum spectrum occupancy	declaration	PASS	
<b>Remarks:</b>				

### 3 Test Conditions and Results

#### 3.1 Test Conditions and Results – Cross reference to subpart B

<b>Cross reference to subpart B acc. to FCC 47 CFR 15D</b>		<b>Verdict: N/A</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.309(b)	
Test according to measurement reference	Reference Method	
	Declaration	
<b>Requirements</b>		
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.		
<b>Result</b>		
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**

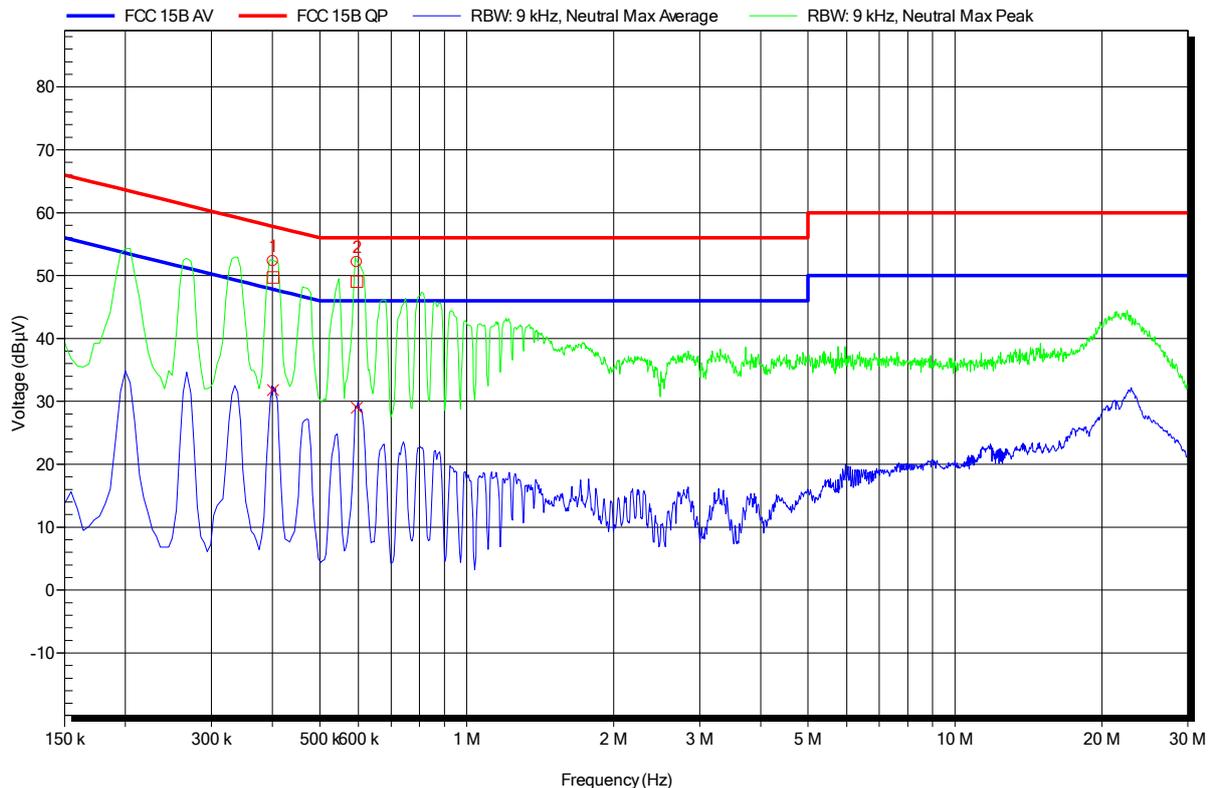
<b>Conducted emissions acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>		
EUT requirement rule parts and clause	Reference			
	FCC 15.315 / FCC 15.207 / IC RSS-213 5.4			
Test according referenced standards	Reference Method			
	ANSI C63.4			
Fully configured sample scanned over the following frequency range	Frequency range			
	0.15 MHz to 30 MHz			
Points of Application	Application Interface			
AC Mains	LISN			
EUT test mode	AC-Powerline			
<b>Limits and results</b>				
Frequency [MHz]	Quasi-Peak [dB $\mu$ V]	Result	Average [dB $\mu$ V]	Result
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS
0.5 to 5	56	PASS	46	PASS
5 to 30	60	PASS	50	PASS
Comments: * Limit decreases linearly with the logarithm of the frequency.				

**Conducted Emissions 1**
**EMI voltage test in the ac-mains according to FCC Part 15b**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7712/7202  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Klein  
 Test Conditions: Tnom: 24°C, Unom: 120 VAC / Battery  
 LISN: ESH2-Z5 N  
 Mode: 7722, Sample B04, DECT link to Base and Companion device, charging  
 Test Date: Mittwoch, 3. Juni 2015  
 Note:

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Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
401,1 kHz	49,69 dBµV	57,83 dBµV	-8,14 dB	Pass
595,5 kHz	49,02 dBµV	56 dBµV	-6,98 dB	Pass

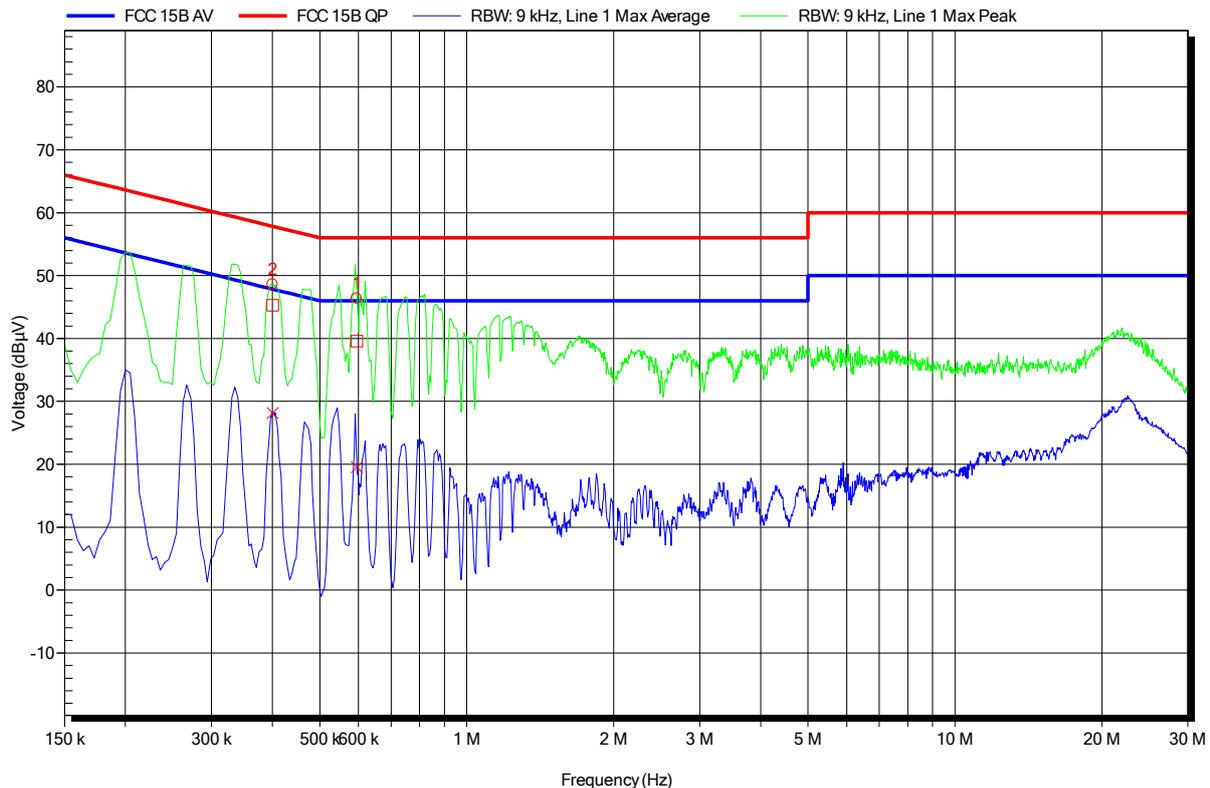
Frequency	Average	Average Limit	Average Difference	Average Status
401,1 kHz	31,8 dBµV	47,83 dBµV	-16,03 dB	Pass
595,5 kHz	29,02 dBµV	46 dBµV	-16,98 dB	Pass

**Conducted Emissions 2**
**EMI voltage test in the ac-mains according to FCC Part 15b**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212/7202  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Klein  
 Test Conditions: Tnom: 24°C, Unom: 120 VAC / Battery  
 LISN: ESH2-Z5 L  
 Mode: 7722, Sample B04, DECT link to Base and Companion device, charging  
 Test Date: Mittwoch, 3. Juni 2015  
 Note:

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Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
400,2 kHz	45,28 dBµV	57,85 dBµV	-12,57 dB	Pass
595,5 kHz	39,57 dBµV	56 dBµV	-16,43 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
400,2 kHz	28,15 dBµV	47,85 dBµV	-19,7 dB	Pass
595,5 kHz	19,55 dBµV	46 dBµV	-26,45 dB	Pass

**3.3 Test Conditions and Results – Antenna requirement**

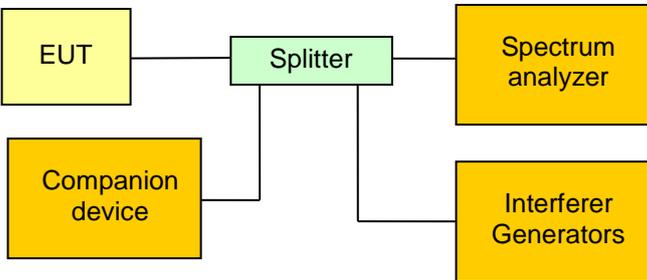
<b>Antenna requirement acc. to FCC 47 CFR 15D</b>		<b>Verdict: PASS</b>	
EUT requirement rule parts and clause	Reference		
	FCC 15.317 / FCC 15.203		
Test according to measurement reference	Reference Method		
	visual inspection & declaration		
<b>Requirements</b>			
<p>An intentional radiator shall be 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.</p> <p>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</p>			
<b>Results</b>			
Antenna No.	Type	Antenna gain [dBi]	Antenna gain in excess of 3dBi
1	internal	1.0	0
2	internal	1.0	0

**3.4 Test Conditions and Results – Digital modulation**

<b>Antenna requirement acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.319(b) / IC RSS-213 5.1	
Test according to measurement reference	Reference Method	
	Declaration	
<b>Requirements</b>		
All transmissions must use only digital modulation techniques.		
<b>Results</b>		
<p>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.</p> <p>The operating modes are MC/TDMA/TDD (Multi carrier / Time Division Multiple Access / Time Division Duplex) using Digital GFSK modulation.</p> <p>For further details see operational description provided by manufacturer.</p>		



**3.5 Test Conditions and Results – Occupied Bandwidth**

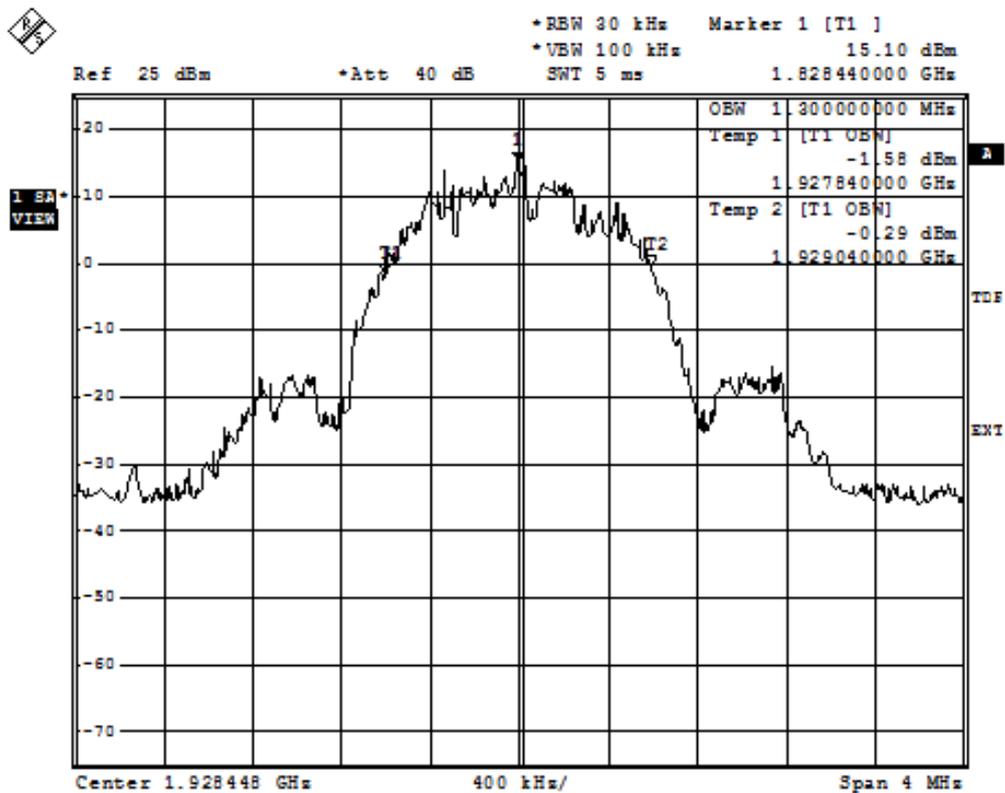
Occupied Bandwidth acc. to IC RSS-213		Verdict: PASS	
Test according to measurement reference	Reference Method		
	IC RSS-Gen 6.6		
Tested frequencies	F <sub>LOW</sub> / F <sub>MID</sub> / F <sub>HIGH</sub>		
EUT test mode	TDMA		
Limits			
0.05 MHz ≤ Occupied Bandwidth < 2.5 MHz			
Test setup			
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Splitter --- Companion[Companion device]     Splitter --- Interferer[Interferer Generators]     Splitter --- SA[Spectrum analyzer]             </pre>			
Test procedure			
<ol style="list-style-type: none"> <li>1. EUT is restricted to test channel with the interferes</li> <li>2. Span set to at least twice the emission spectrum</li> <li>3. Resolution bandwidth set to 1% of span</li> <li>4. Occupied Bandwidth (99%) measurement with spectrum analyzer built in measurement function</li> </ol>			
Test results			
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [kHz]
F <sub>LOW</sub>	1921.536	TDMA	1.324
F <sub>MID</sub>	1924.992	TDMA	1.300
F <sub>HIGH</sub>	1928.448	TDMA	1.300
Comments:			



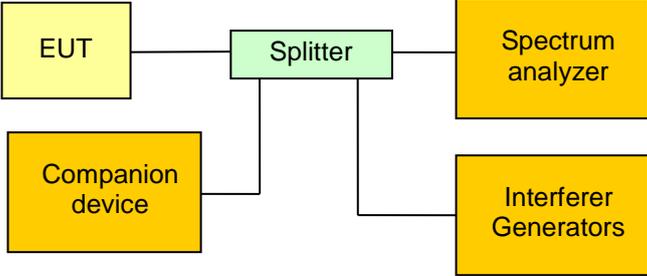


**Occupied Bandwidth – F<sub>HIGH</sub>**
**RSS Gen  
Occupied Bandwidth**

EUT	DECT handset 7212
Model	K023e
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



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					
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]         </pre>					
Test procedure					
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. Span set to at least twice the emission spectrum</li> <li>3. Resolution bandwidth set to 1% of emission bandwidth and detector is set to peak with max hold</li> <li>4. The emission bandwidth is determined by the two -26dB points left and right of the maximum emission level</li> <li>5. (The emission bandwidth is determined by the two -12dB points left and right of the maximum emission level)</li> <li>6. (The emission bandwidth is determined by the two -6dB points left and right of the maximum emission level)</li> </ol>					
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:					

**Emission Bandwidth – F<sub>Low</sub>**
**FCC Part 15.303 Emission bandwidth**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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



Emission Bandwidth

\*RBW 10 kHz Delta 2 [T1 ]

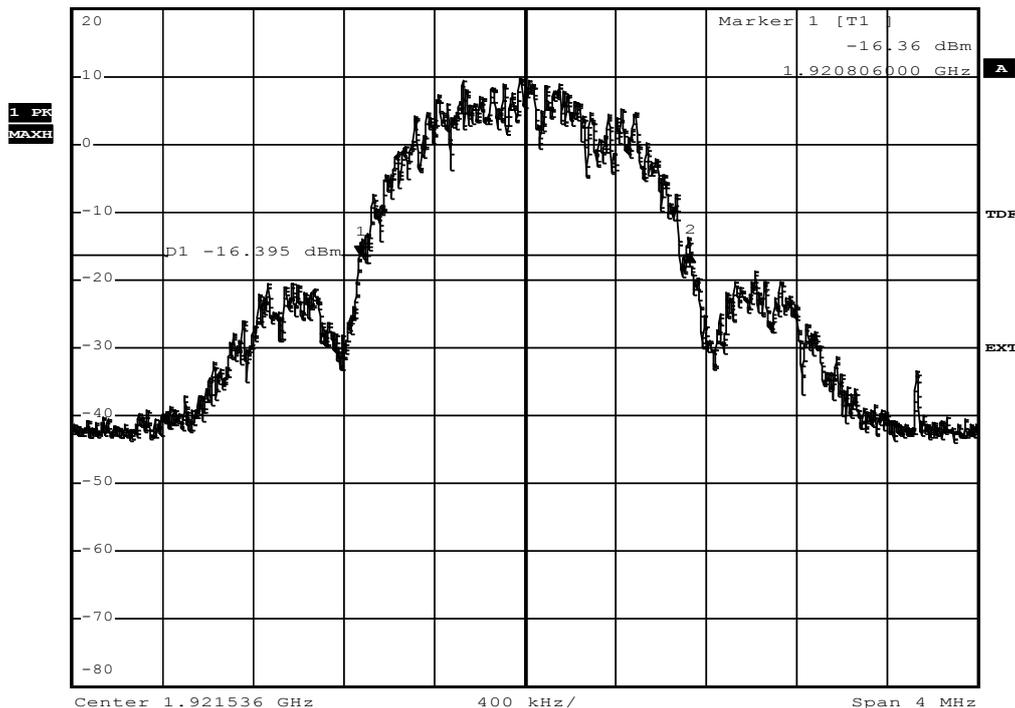
\*VBW 30 kHz 0.15 dB

Ref 20 dBm

\*Att 40 dB

SWT 40 ms

1.460000000 MHz



**Emission Bandwidth – F<sub>Low</sub>****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<sub>HIGH</sub>

FCC Part 15.303 Emission bandwidth

Testprocedure ANSI 63.17  
UPCS

EUT DECT handset 7212  
 Model K023e  
 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



Emission Bandwidth

\*RBW 10 kHz Delta 2 [T1 ]

\*VBW 30 kHz 1.20 dB

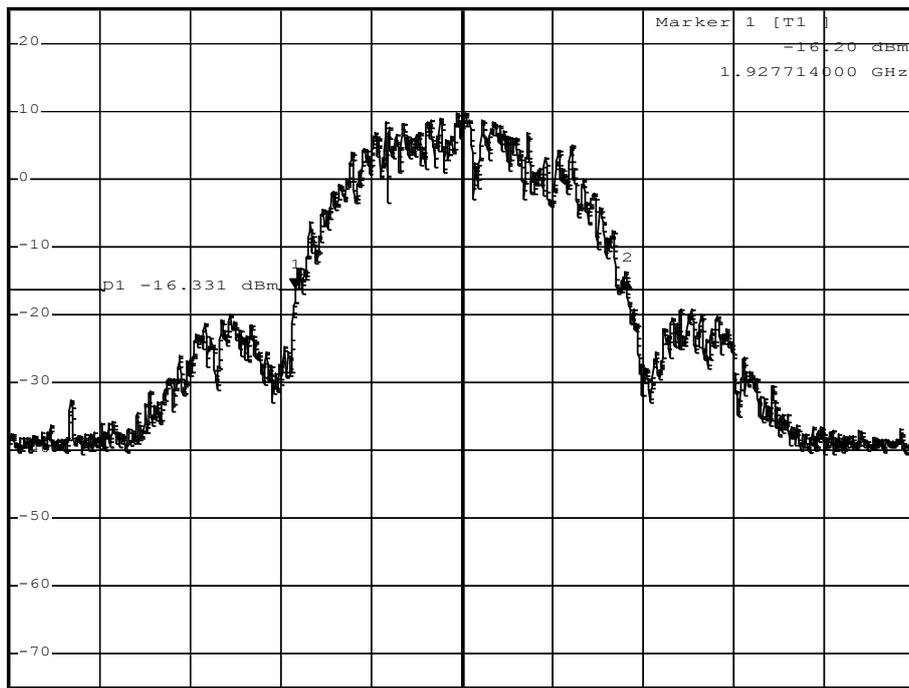
Ref 25 dBm

\*Att 40 dB

SWT 40 ms

1.462000000 MHz

1 PR  
MAX



Center 1.928448 GHz

400 kHz/

Span 4 MHz



**Emission Bandwidth – F<sub>HIGH</sub>****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

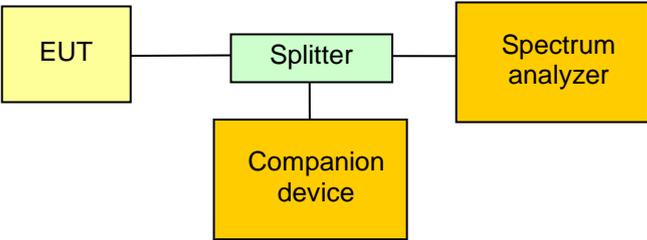
Higher frequency : 1928.936MHz

-12 dB points

Lower frequency : 1927.872MHz

Higher frequency : 1929.03MHz

**3.7 Test Conditions and Results – Peak transmit power**

<b>Peak transmit power acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.319(c),(e) / IC RSS-213 5.6	
Test according to measurement reference	Reference Method	
	ANSI C63.17 6.1.2	
Tested frequencies	$F_{LOW} / F_{HIGH}$	
EUT test mode	TDMA	
Antenna excess gain	0 dB	
<b>Limits</b>		
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.		
$P_{EUT}[dBm] \leq P_{limit} \text{ where } P_{limit} = \begin{cases} P_{max} - (G_A - g), & \text{when } G_A > 3 \text{ dBi} \\ P_{max}, & G_A < 3 \text{ dBi} \end{cases}$		
$P_{max}[dBm] = 5 \log(\text{Emission/Occupied Bandwidth [Hz]}) - 10 \text{ dBm}$		
<b>Test setup</b>		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Splitter --- SA[Spectrum analyzer]     Splitter --- CD[Companion device]           </pre>		
<b>Test procedure</b>		
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. The RBW is set to be larger than the emission bandwidth and <math>VBW \geq RBW</math></li> <li>3. Transmission burst is measured in zero span and peak detector</li> <li>4. The maximum level in the burst is recorded as peak transmit power</li> </ol>		

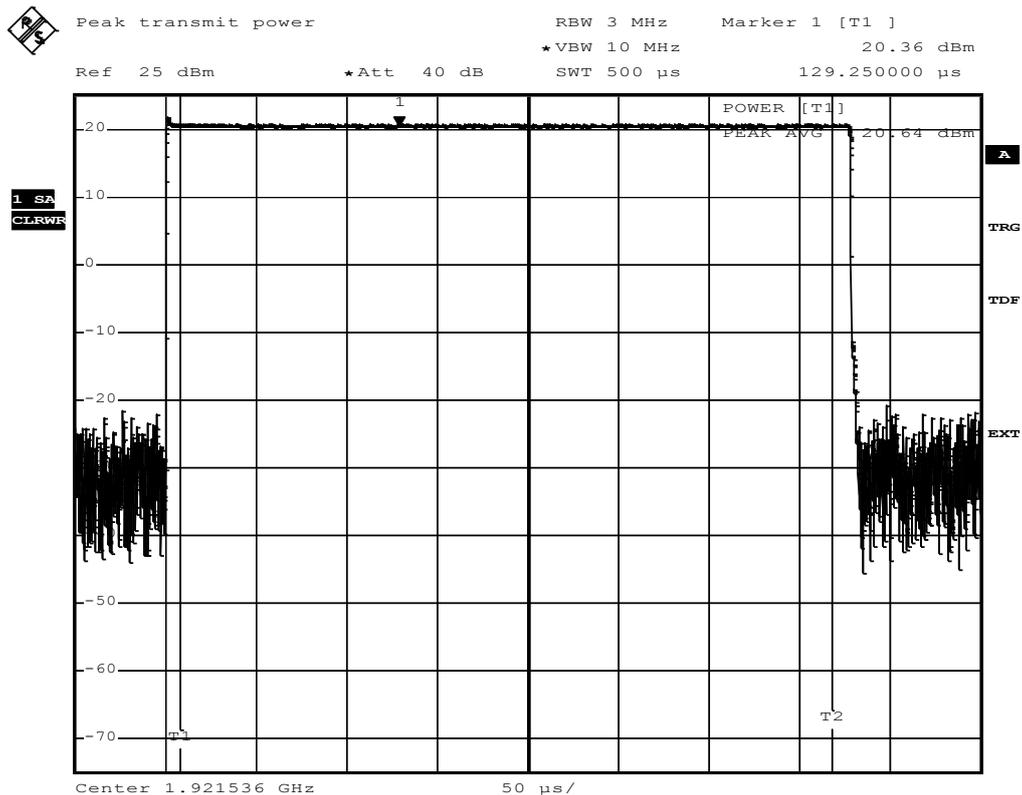
<b>Test results - FCC</b>						
Channel	Frequency [MHz]	Peak Power [dbm]	Emission Bandwidth [Hz]	Excess gain [dB]	Limit [dbm]	Margin [dB]
F <sub>LOW</sub> , V <sub>NOM</sub>	1921.536	20.54	1460000	0	20.82	-0.28
F <sub>LOW</sub> , V <sub>MIN</sub>	1921.536	20.53	1460000	0	20.82	-0.29
F <sub>LOW</sub> , V <sub>MAX</sub>	1921.536	20.54	1460000	0	20.82	-0.28
F <sub>HIGH</sub> , V <sub>NOM</sub>	1928.448	20.54	1460000	0	20.82	-0.28
F <sub>HIGH</sub> , V <sub>MIN</sub>	1921.536	20.54	1460000	0	20.82	-0.28
F <sub>HIGH</sub> , V <sub>MAX</sub>	1921.536	20.51	1460000	0	20.82	-0.31
<b>Test results - IC</b>						
Channel	Frequency [MHz]	Peak Power [dbm]	Occupied Bandwidth [Hz]	Excess gain [dB]	Limit [dbm]	Margin [dB]
F <sub>LOW</sub> , V <sub>NOM</sub>	1921.536	20.54	1324000	0	20.61	-0.07
F <sub>LOW</sub> , V <sub>MIN</sub>	1921.536	20.53	1324000	0	20.61	-0.08
F <sub>LOW</sub> , V <sub>MAX</sub>	1921.536	20.54	1324000	0	20.61	-0.07
F <sub>HIGH</sub> , V <sub>NOM</sub>	1928.448	20.54	1300000	0	20.57	-0.03
F <sub>HIGH</sub> , V <sub>MIN</sub>	1921.536	20.54	1300000	0	20.57	-0.03
F <sub>HIGH</sub> , V <sub>MAX</sub>	1921.536	20.51	1300000	0	20.57	-0.06
Comments:						

Peak Power – F<sub>LOW</sub>, V<sub>NOM</sub>

FCC Part 15.319 Peak Transmit Power limit

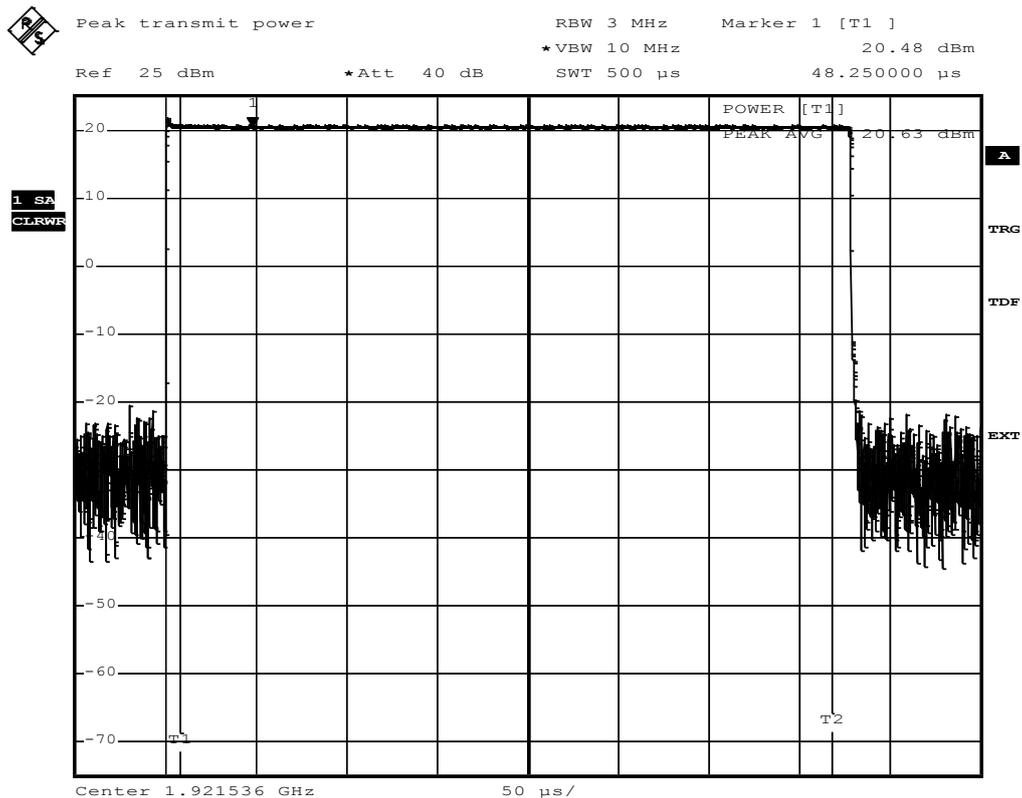
Testprocedure ANSI 63.17  
UPCS

EUT	DECT handset 7212
Model	K023e
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



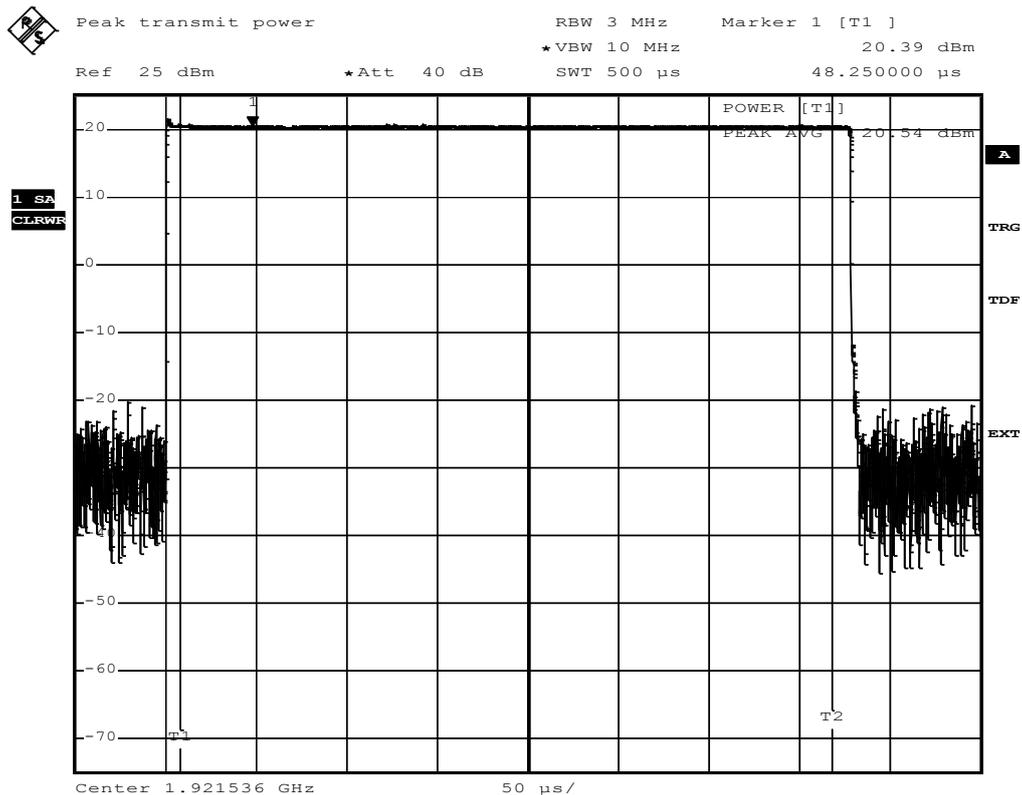
**Peak Power – F<sub>LOW</sub>, V<sub>MIN</sub>**
**FCC Part 15.319 Peak Transmit Power limit**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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



**Peak Power – F<sub>LOW</sub>, V<sub>MAX</sub>**
**FCC Part 15.319 Peak Transmit Power limit**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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

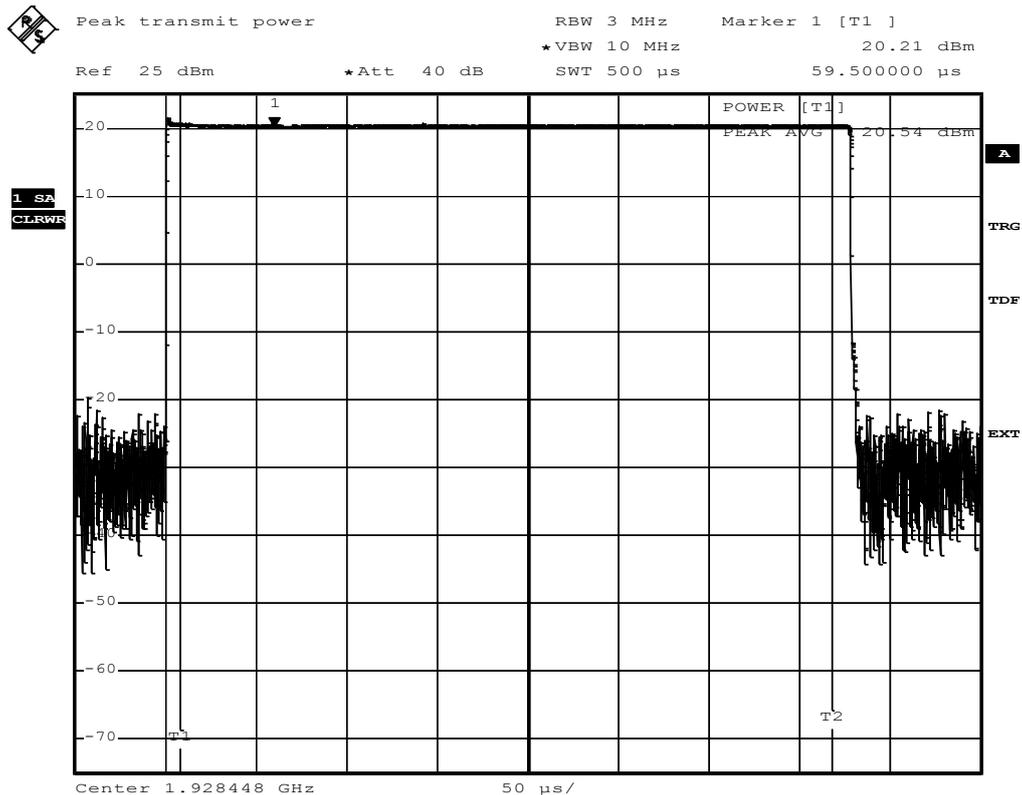


Peak Power – F<sub>HIGH</sub>, V<sub>NOM</sub>

**FCC Part 15.319 Peak Transmit Power limit**

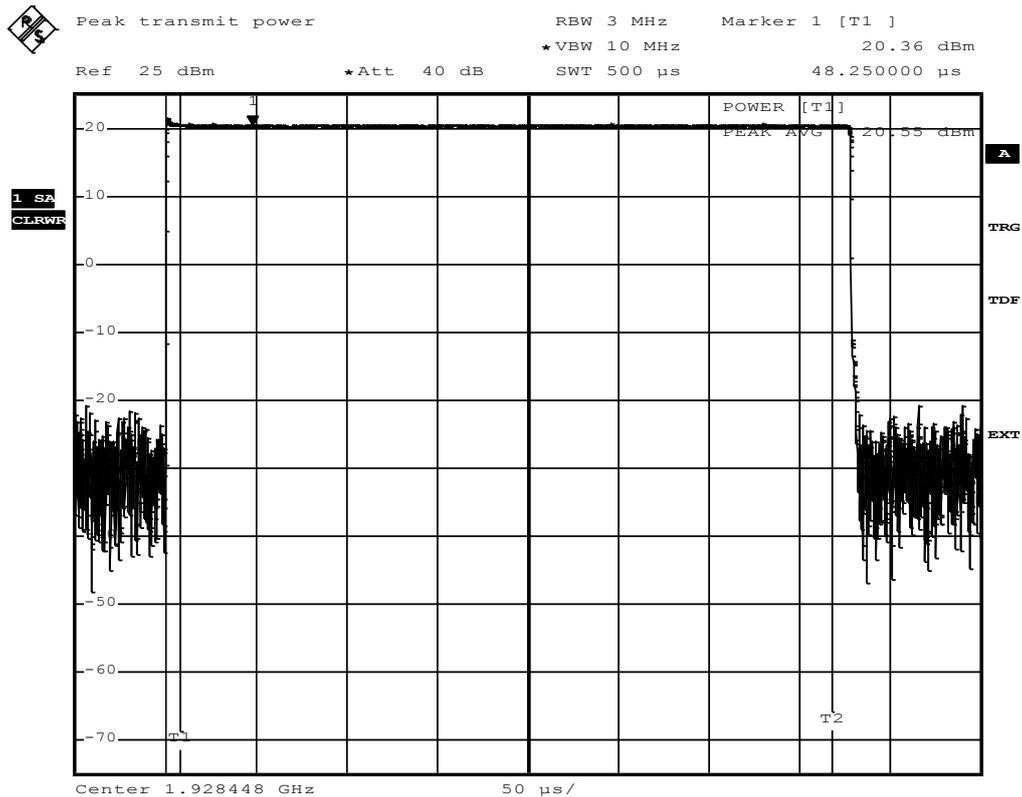
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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



**Peak Power – F<sub>HIGH</sub>, V<sub>MIN</sub>**
**FCC Part 15.319 Peak Transmit Power limit**
**Testprocedure ANSI 63.17  
UPCS**

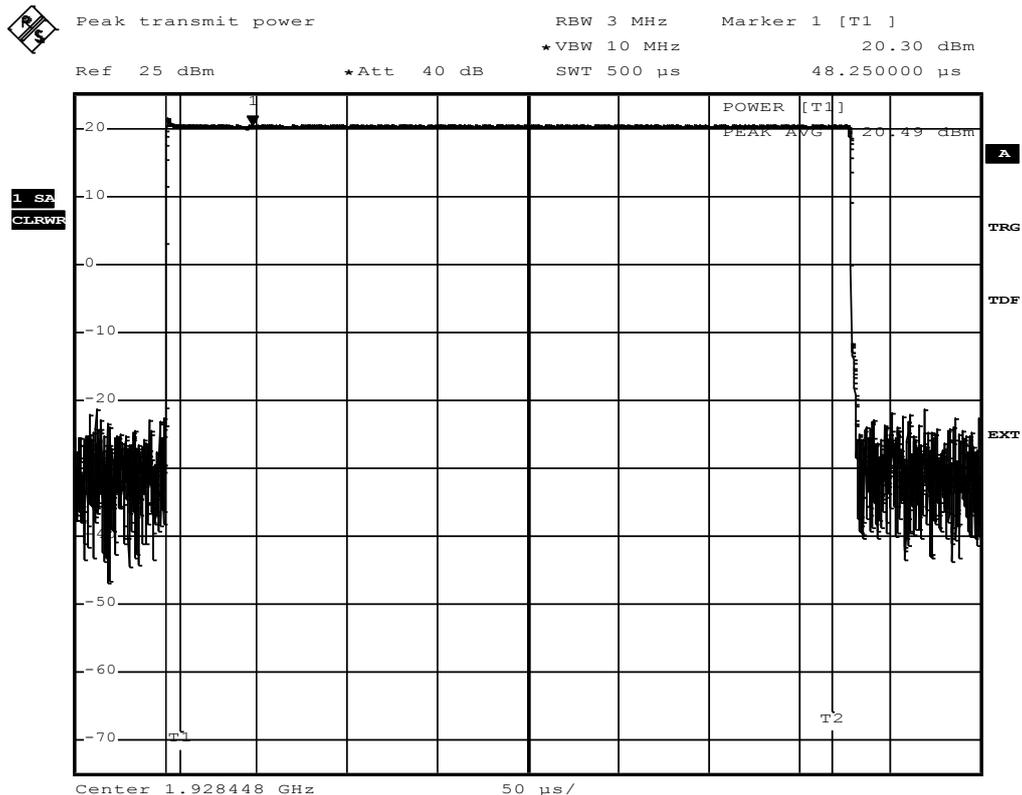
EUT	DECT handset 7212
Model	K023e
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Peak transmit power
Supply	Vmin
Measured Bandwidth	1.46MHz
Max. Permitted Power	20.82 dBm
Measured Power	20.54 dBm at ant. port 3
Test result	Verdict = PASS



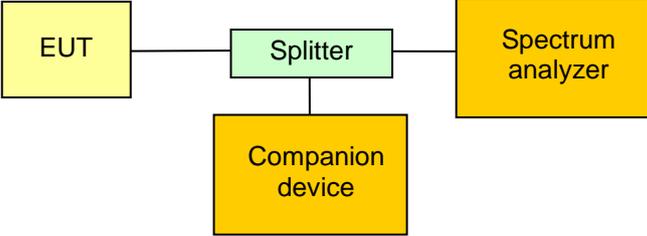


**Peak Power – F<sub>HIGH</sub>, V<sub>MAX</sub>**
**FCC Part 15.319 Peak Transmit Power limit**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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



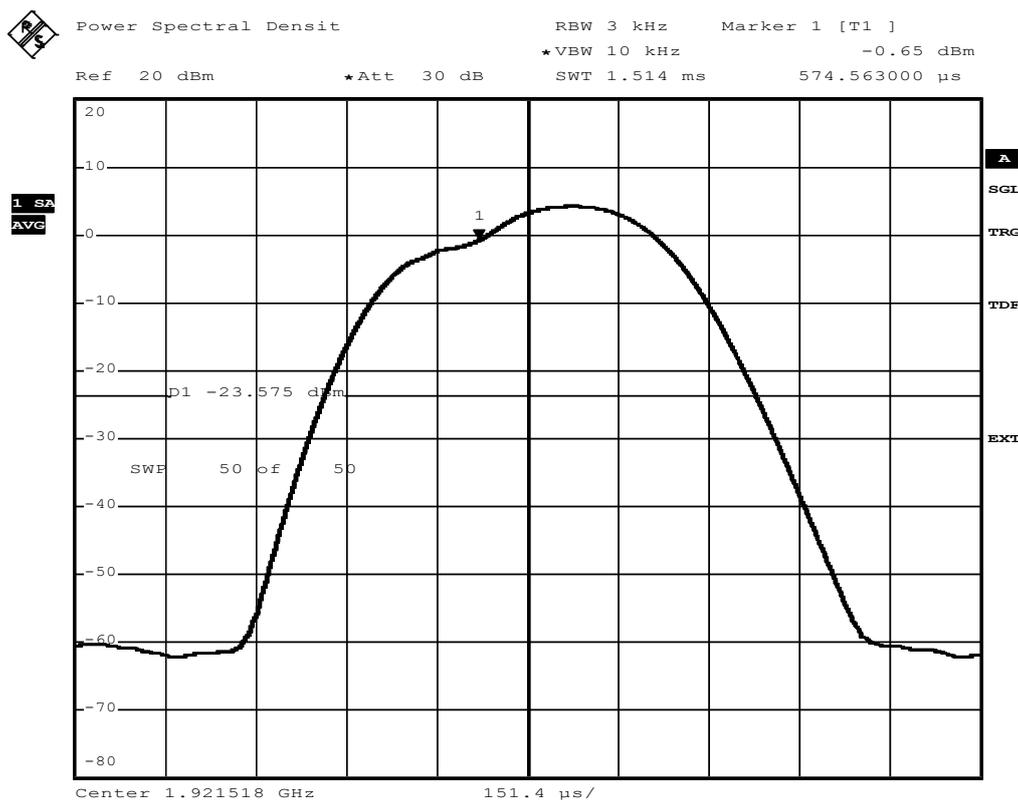
3.8 Test Conditions and Results – Power spectral density

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 5.7			
Test according to measurement reference	Reference Method			
	ANSI C63.17 6.1.2			
Tested frequencies	$F_{LOW} / F_{HIGH}$			
EUT test mode	TDMA			
Limits				
$\leq 3 \text{ mW (4.77 dBm) / 3 kHz}$				
Test setup				
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Splitter --- SA[Spectrum analyzer]     Splitter --- CD[Companion device]             </pre>				
Test procedure				
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. The RBW is set to 3 kHz and VBW <math>\geq 3 \times</math> RBW</li> <li>3. The center frequency is set to the maximum of the emission envelope and the span is set to zero</li> <li>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</li> </ol>				
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<sub>Low</sub>**
**FCC Part 15.319 Power spectral density**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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

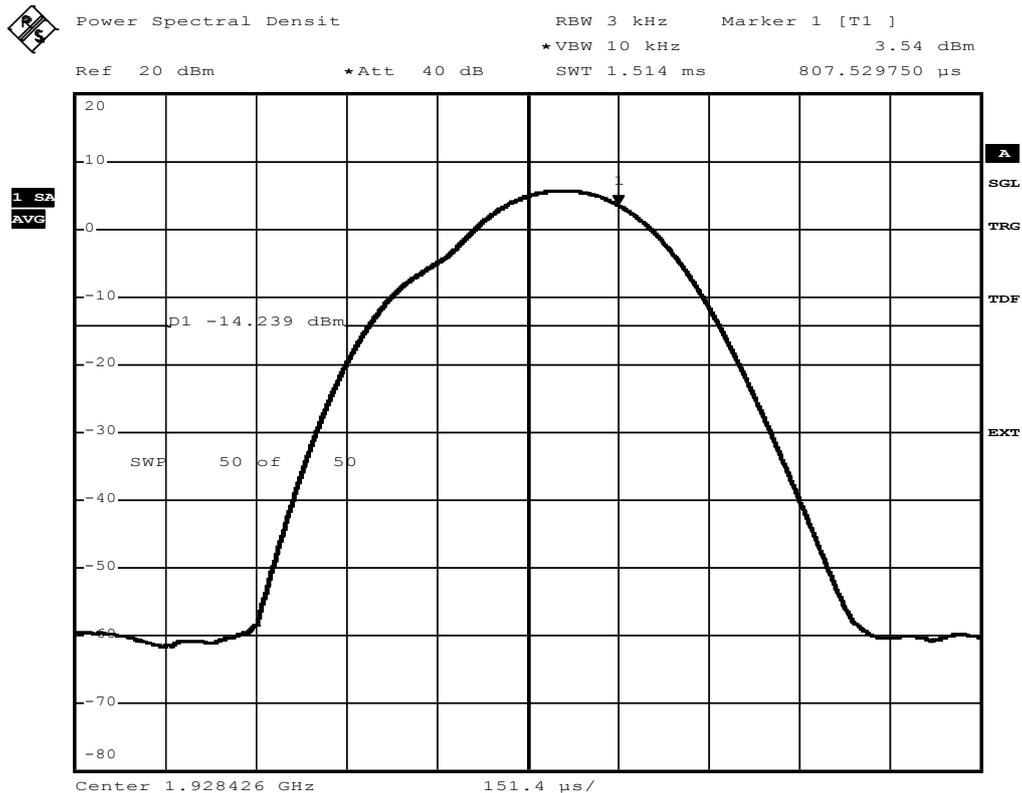
Pass criteria: PSD is less than 3mW      Verdict = PASS



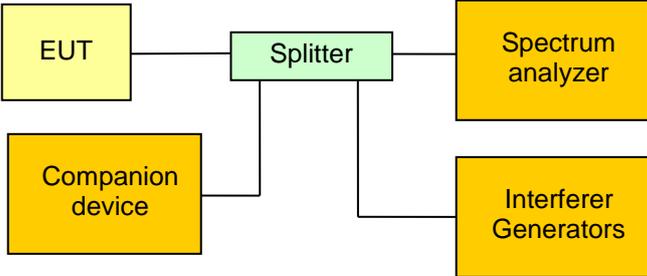
**Power Spectral Density – F<sub>HIGH</sub>**
**FCC Part 15.319 Power spectral density**
**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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



3.9 Test Conditions and Results – Frequency stability

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 5.3			
Test according to measurement reference	Reference Method			
	ANSI C63.17 6.2			
Tested frequencies	F <sub>MID</sub>			
EUT test mode	TDMA			
<b>Limits</b>				
± 10 ppm / hour				
<b>Test setup</b>				
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>				
<b>Test procedure</b>				
<ol style="list-style-type: none"> <li>1. With interferer signals the EUT is forced to center channel and communication to companion device is established.</li> <li>2. The demodulated carrier EUT signal is captured over time</li> <li>3. The mean frequency is determined under all supply voltage and temperature conditions</li> </ol>				
<b>Test results</b>				
Voltage	Temperature	Maximum Frequency deviation [ppm]	Limit [ppm]	Margin [ppm]
3.7 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
3.7 VDC	-20°C	-0.22	±10.0	-9.78
3.7 VDC	55°C	-5.31	±10.0	-4.69
Comments:				

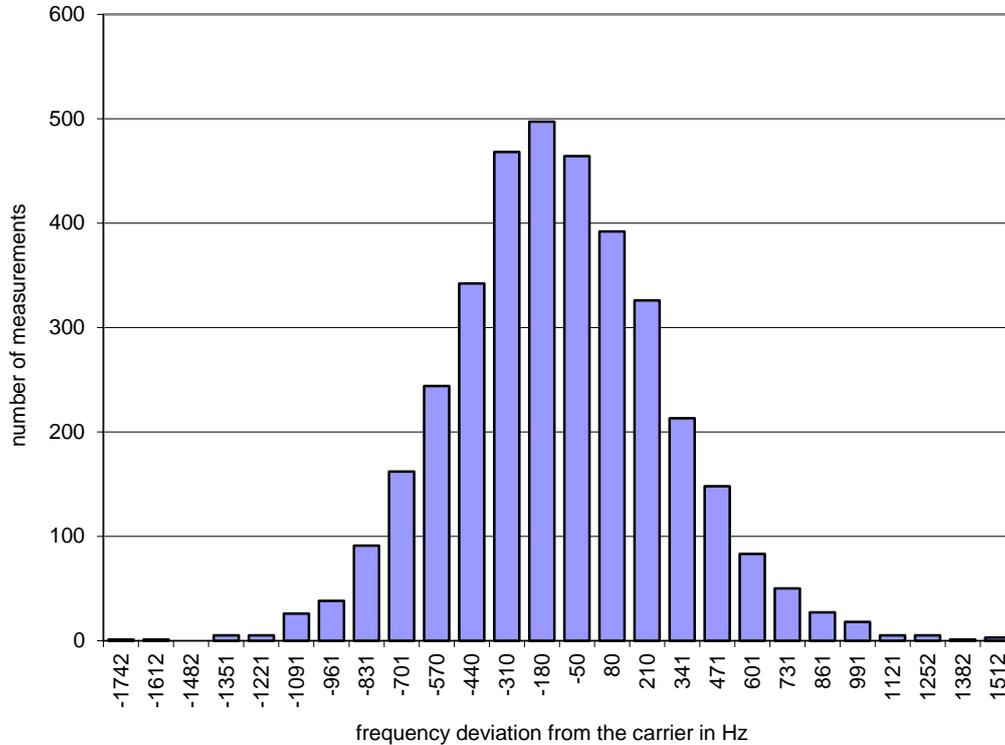
Carrier stability – Frequency stability – T<sub>NOM</sub> V<sub>NOM</sub>

**FCC Part 15.323 Frequency Stability**

**Testprocedure ANSI 63.17**

EUT	DECT handset 7212
Model	K023e
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

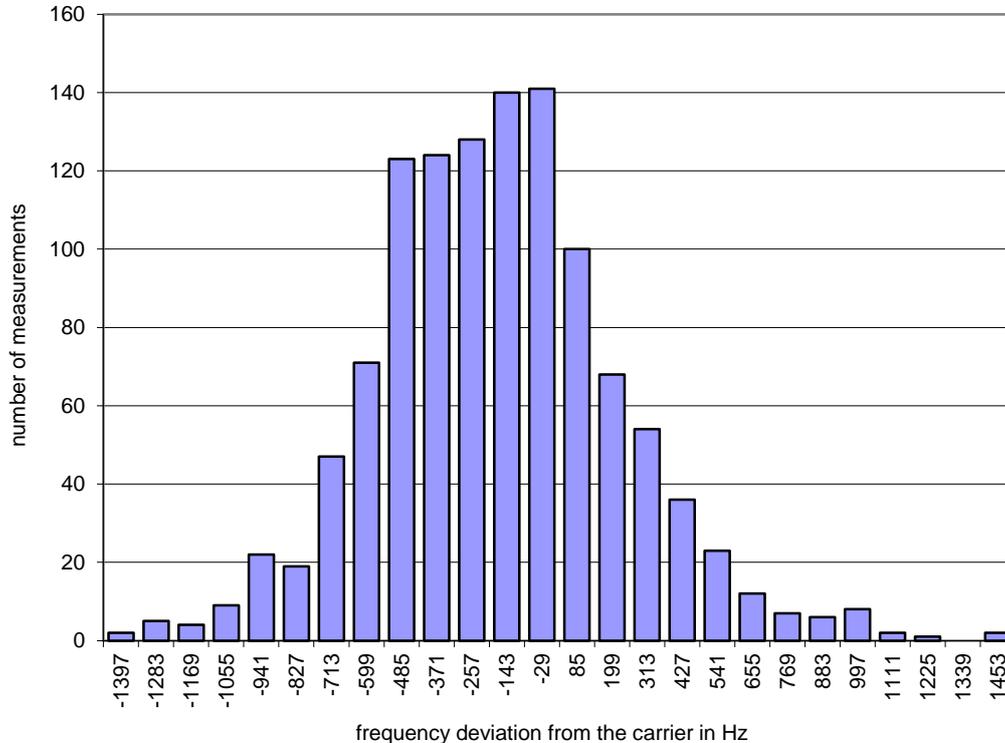
**Histogram**



**Carrier stability – Frequency stability – T<sub>NOM</sub> V<sub>MIN</sub>**
**FCC Part 15.323 Frequency Stability**
**Testprocedure ANSI 63.17**

EUT	DECT handset 7212
Model	K023e
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<sub>NOM</sub> V<sub>MAX</sub>

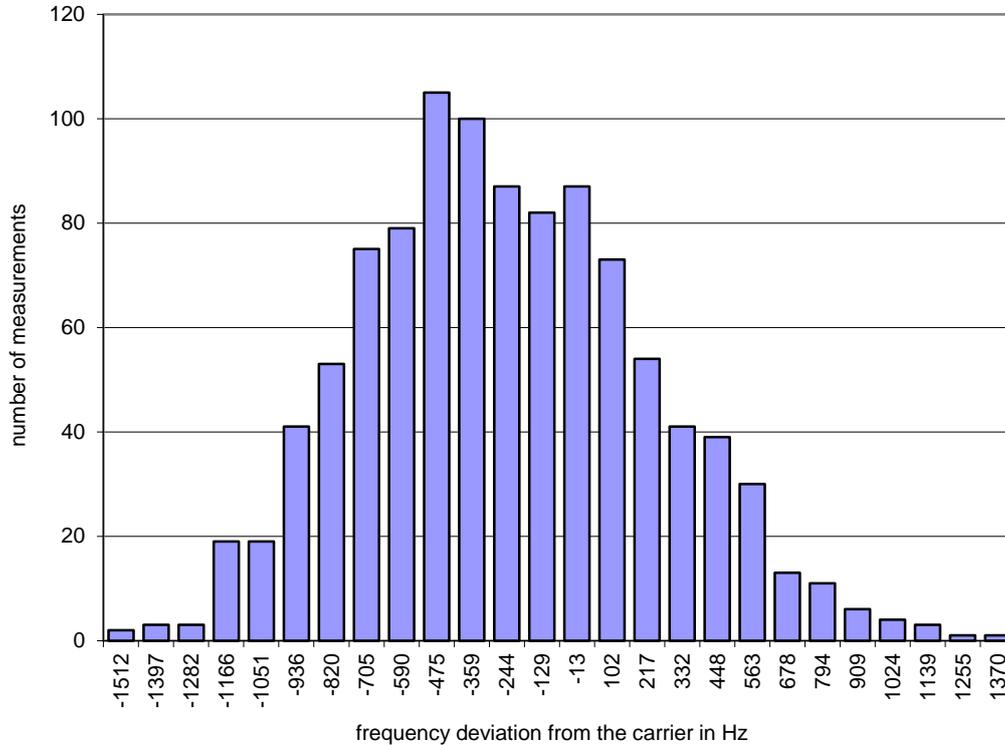
**FCC Part 15.323 Frequency Stability**

**Testprocedure ANSI 63.17**

EUT	DECT handset 7212
Model	K023e
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

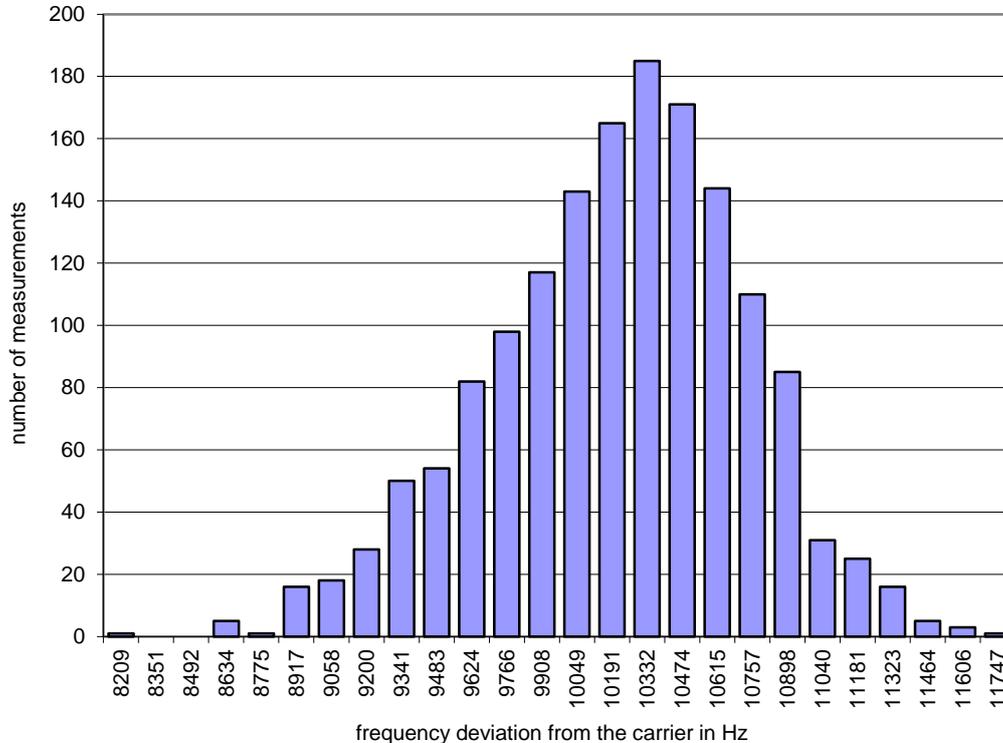
**Histogram**





**Carrier stability – Frequency stability –  $T_{MAX} V_{NOM}$** 
**FCC Part 15.323 Frequency Stability**
**Testprocedure ANSI 63.17**

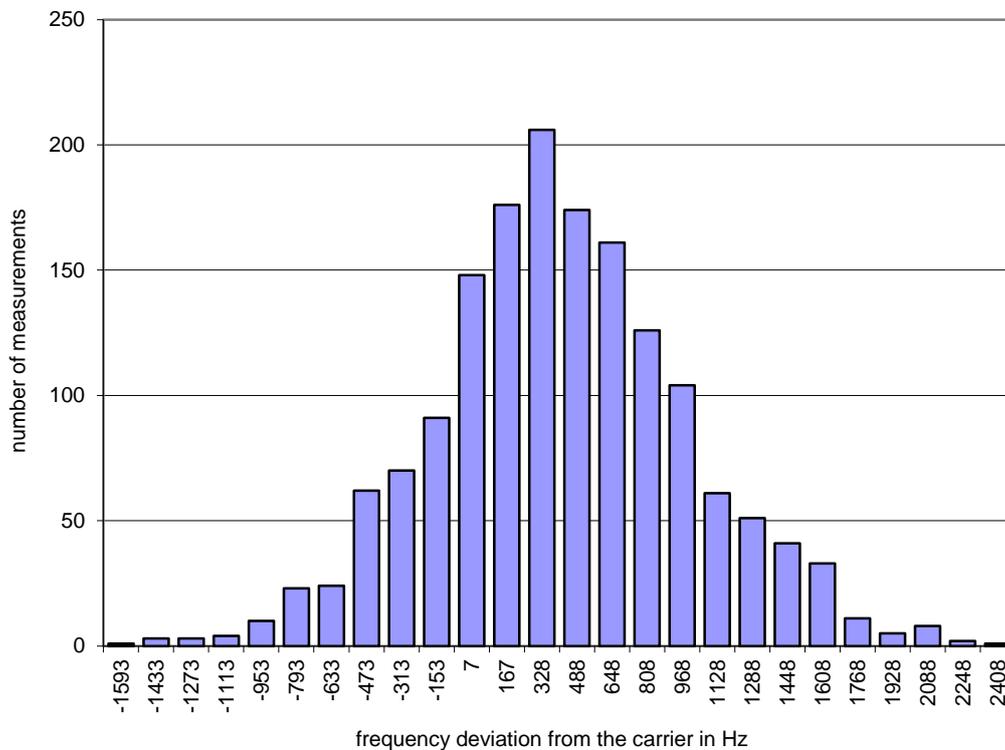
EUT	DECT handset 7212
Model	K023e
Applicant	Spectralink Europe ApS
Temperature	85 °C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	Frequency stability
Power supply	Vnom
Frequency of carrier	1924,989980 MHz
Measured mean	1925,000195 MHz
Stability (supply temp)	-5,31 ppm
Result	Verdict = PASS
Stability over time	fmax : 0,80 ppm fmin : 1,04 ppm
Result	Verdict = PASS

**Histogram**


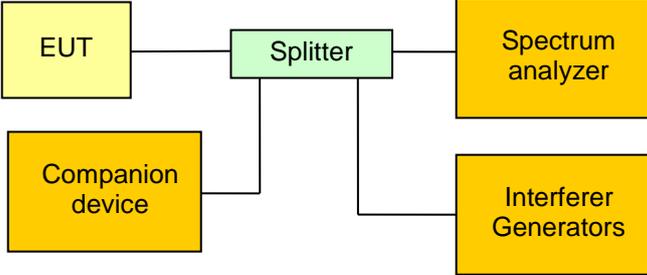
**Carrier stability – Frequency stability – T<sub>MIN</sub> V<sub>NOM</sub>**
**FCC Part 15.323 Frequency Stability**
**Testprocedure ANSI 63.17**

EUT	DECT handset 7212
Model	K023e
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 5.8	
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]                         Companion[Companion device] --- Splitter                         Splitter --- SA[Spectrum analyzer]                         Splitter --- IG[Interferer Generators]                     </pre>		
Test procedure		
<ol style="list-style-type: none"> <li>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</li> <li>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</li> <li>3. With peak detector and max hold the emission spectrum is recorded over the corresponding frequency range</li> </ol>		

Test results		
Channel	Frequency [MHz]	Verdict
F <sub>LOW</sub>	1921.536	PASS
F <sub>HIGH</sub>	1928.448	PASS
Comments:		

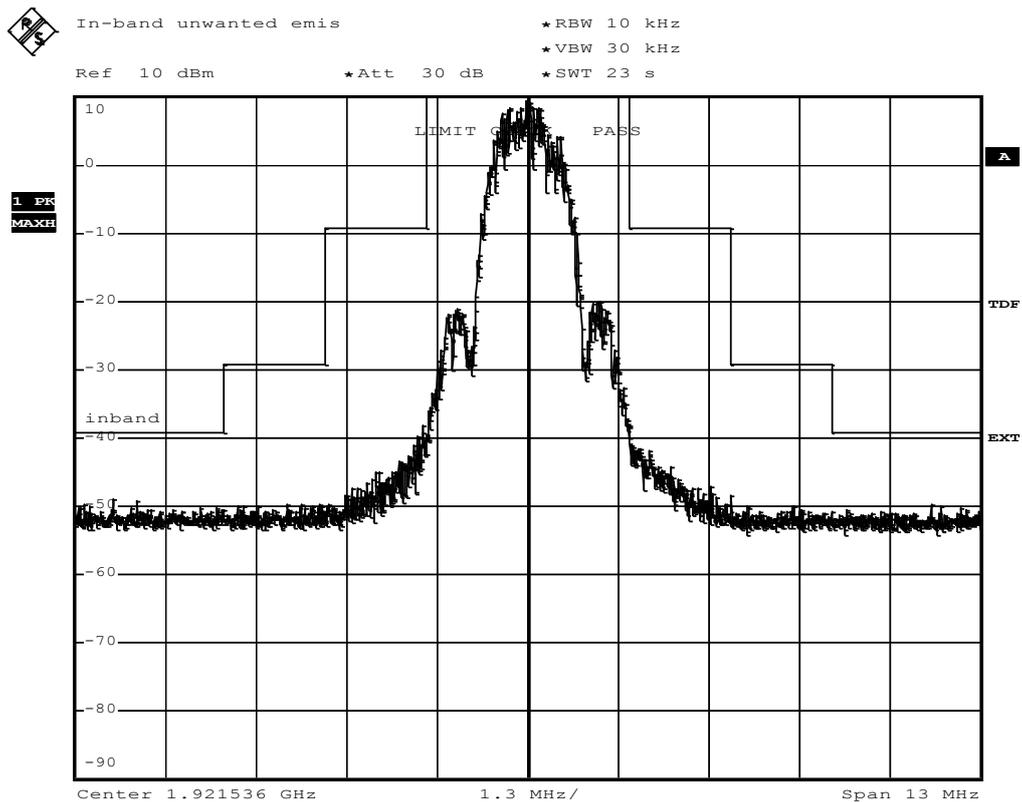
Transmitter in-band unwanted emissions – F<sub>Low</sub>

FCC Part 15.323 In-band unwanted emission

Testprocedure ANSI 63.17  
UPCS

EUT	DECT handset 7212
Model	K023e
Applicant	Spectralink Europe ApS
Temperature	23°C
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	In-band unwanted emission

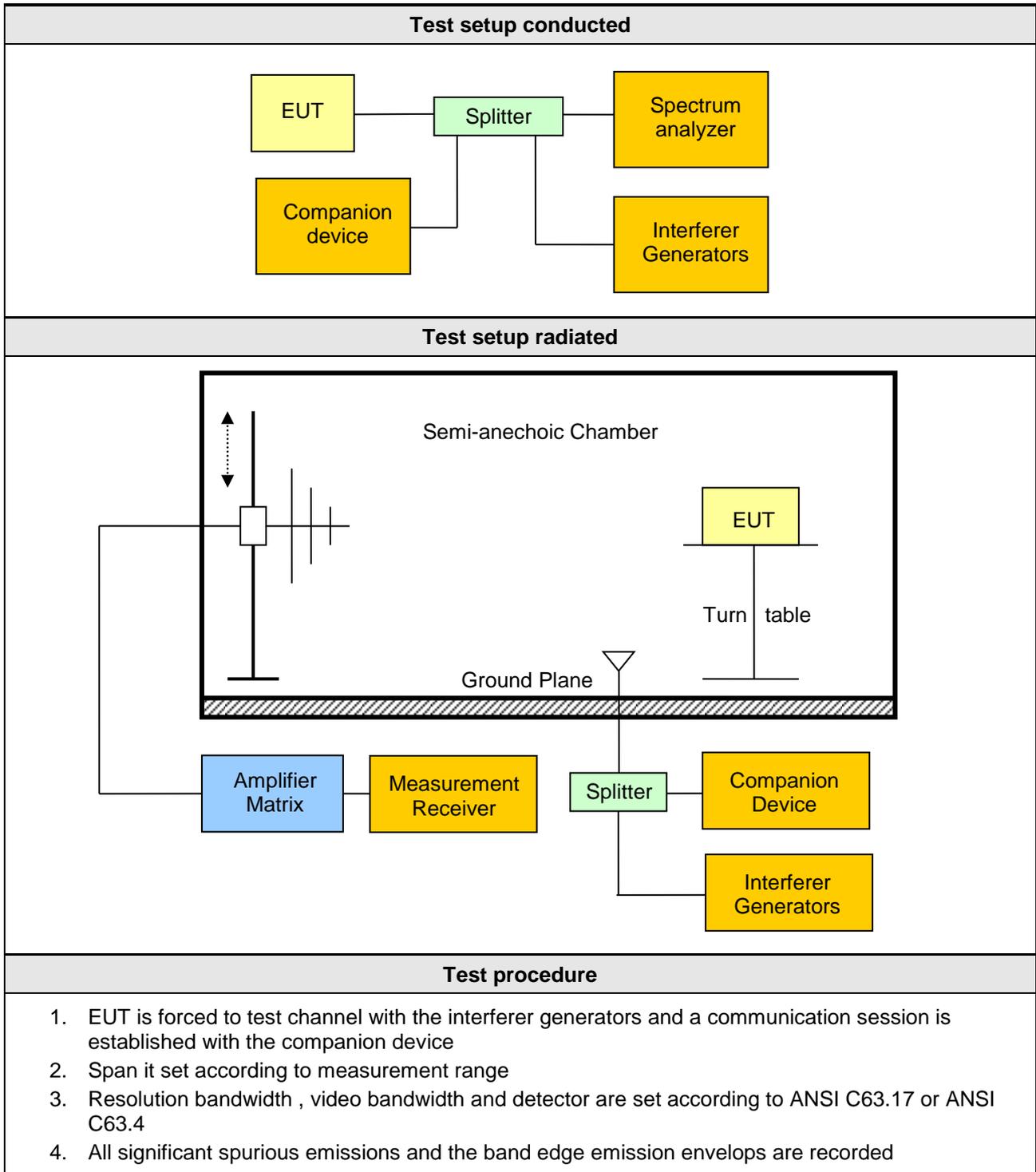
1.46MHz





**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 5.8		
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 <sup>th</sup> 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 $\mu$ V/m (40 dB $\mu$ V/m)	3
88 – 216	Quasi-Peak	150 $\mu$ V/m (43.5 dB $\mu$ V/m)	3
216 – 960	Quasi-Peak	200 $\mu$ V/m (46 dB $\mu$ V/m)	3
960 – 1000	Quasi-Peak	500 $\mu$ V/m (54 dB $\mu$ V/m)	3
1000 – 1917.5	Average	500 $\mu$ V/m (54 dB $\mu$ V/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 $\mu$ V/m (54 dB $\mu$ V/m)	3
<p>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)).</p> <p>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.</p> <p>* Measurement is performed with conducted measurement setup</p>			





Test results, Antenna 1								
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [db $\mu$ V/m]	Det.	Pol.	Limit [db $\mu$ V/m]	Margin [dB]
0	1928.448	TDMA	1893.6	46.07	pk	hor	73.90	-27.83
0	1928.448	TDMA	1907.4	48.74	pk	hor	73.90	-25.16
0	1928.448	TDMA	1907.4	26.22	avg	hor	53.90	-27.68
0	1928.448	TDMA	1932.5	64.76	pk	hor	73.90	-09.14
0	1928.448	TDMA	1932.5	30.23	avg	hor	53.90	-23.67
0	1928.448	TDMA	1932.5	54.51	pk	ver	73.90	-19.39
0	1928.448	TDMA	1932.5	26.73	avg	ver	53.90	-27.17
0	1928.448	TDMA	1966.8	46.60	pk	hor	73.90	-27.30
0	1928.448	TDMA	1969.9	47.59	pk	hor	73.90	-26.31
0	1928.448	TDMA	1969.9	26.86	avg	hor	53.90	-27.04
0	1928.448	TDMA	3856.2	51.32	pk	ver	73.90	-22.58
0	1928.448	TDMA	3856.2	29.07	avg	ver	53.90	-24.83
0	1928.448	TDMA	3856.3	57.12	pk	hor	73.90	-16.78
0	1928.448	TDMA	3856.3	31.38	avg	hor	53.90	-22.52
0	1928.448	TDMA	5784	40.98	pk	ver	73.90	-32.92
0	1928.448	TDMA	5784	22.56	avg	ver	53.90	-31.34
0	1928.448	TDMA	5785	43.39	pk	ver	73.90	-30.51
0	1928.448	TDMA	5785	23.20	avg	ver	53.90	-30.70
4	1921.536	TDMA	1888.1	51.05	pk	hor	73.90	-22.85
4	1921.536	TDMA	1900.8	49.36	pk	hor	73.90	-24.54
4	1921.536	TDMA	1900.8	26.75	avg	hor	53.90	-27.15
4	1921.536	TDMA	1917.4	70.00	pk	hor	73.90	-03.90
4	1921.536	TDMA	1917.4	27.92	avg	hor	53.90	-25.98
4	1921.536	TDMA	1917.4	57.29	pk	ver	73.90	-16.61
4	1921.536	TDMA	1917.4	25.60	avg	ver	53.90	-28.30
4	1921.536	TDMA	3842.4	58.03	pk	hor	73.90	-15.87
4	1921.536	TDMA	3842.4	31.54	avg	hor	53.90	-22.36
4	1921.536	TDMA	3842.4	50.95	pk	ver	73.90	-22.95
4	1921.536	TDMA	3842.4	28.70	avg	ver	53.90	-25.20
4	1921.536	TDMA	5766	44.14	pk	ver	73.90	-29.76
4	1921.536	TDMA	5766	23.07	avg	ver	53.90	-30.83
4	1921.536	TDMA	7682	44.25	pk	ver	73.90	-29.65
Comments:								

Test results, Antenna 2								
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [db $\mu$ V/m]	Det.	Pol.	Limit [db $\mu$ V/m]	Margin [dB]
0	1928.448	TDMA	1917.4	55.70	pk	hor	73.90	-18.20
0	1928.448	TDMA	1917.4	25.35	avg	hor	53.90	-28.55
0	1928.448	TDMA	1932.5	64.38	pk	hor	73.90	-09.52
0	1928.448	TDMA	1932.5	32.79	avg	hor	53.90	-21.11
0	1928.448	TDMA	1932.5	49.62	pk	ver	73.90	-24.28
0	1928.448	TDMA	1932.5	26.42	avg	ver	53.90	-27.48
0	1928.448	TDMA	1936.3	48.26	pk	hor	73.90	-25.64
0	1928.448	TDMA	3856.2	58.15	pk	hor	73.90	-15.75
0	1928.448	TDMA	3856.2	32.08	avg	hor	53.90	-21.82
0	1928.448	TDMA	3856.3	52.34	pk	ver	73.90	-21.56
0	1928.448	TDMA	3856.3	29.80	avg	ver	53.90	-24.10
0	1928.448	TDMA	5784	45.69	pk	ver	73.90	-28.21
0	1928.448	TDMA	5784	23.92	avg	ver	53.90	-29.98
0	1928.448	TDMA	5784	48.82	pk	ver	73.90	-25.08
0	1928.448	TDMA	5784	24.68	avg	ver	53.90	-29.22
0	1928.448	TDMA	7708	46.47	pk	ver	73.90	-27.43
4	1921.536	TDMA	7713	48.26	pk	ver	73.90	-25.64
4	1921.536	TDMA	1904.7	47.33	pk	hor	73.90	-26.57
4	1921.536	TDMA	1917.4	64.47	pk	hor	73.90	-09.43
4	1921.536	TDMA	1917.4	27.32	avg	hor	53.90	-26.58
4	1921.536	TDMA	1917.4	52.65	pk	ver	73.90	-21.25
4	1921.536	TDMA	1917.4	24.89	avg	ver	53.90	-29.01
4	1921.536	TDMA	3842.5	58.43	pk	hor	73.90	-15.47
4	1921.536	TDMA	3842.5	32.09	avg	hor	53.90	-21.81
4	1921.536	TDMA	3843.7	52.48	pk	ver	73.90	-21.42
4	1921.536	TDMA	3843.7	29.27	avg	ver	53.90	-24.63
4	1921.536	TDMA	5764	46.79	pk	ver	73.90	-27.11
4	1921.536	TDMA	5764	24.13	avg	ver	53.90	-29.77
4	1921.536	TDMA	5764	49.57	pk	ver	73.90	-24.33
4	1921.536	TDMA	5764	24.83	avg	ver	53.90	-29.07
4	1921.536	TDMA	7682	48.30	pk	ver	73.90	-25.60
Comments:								



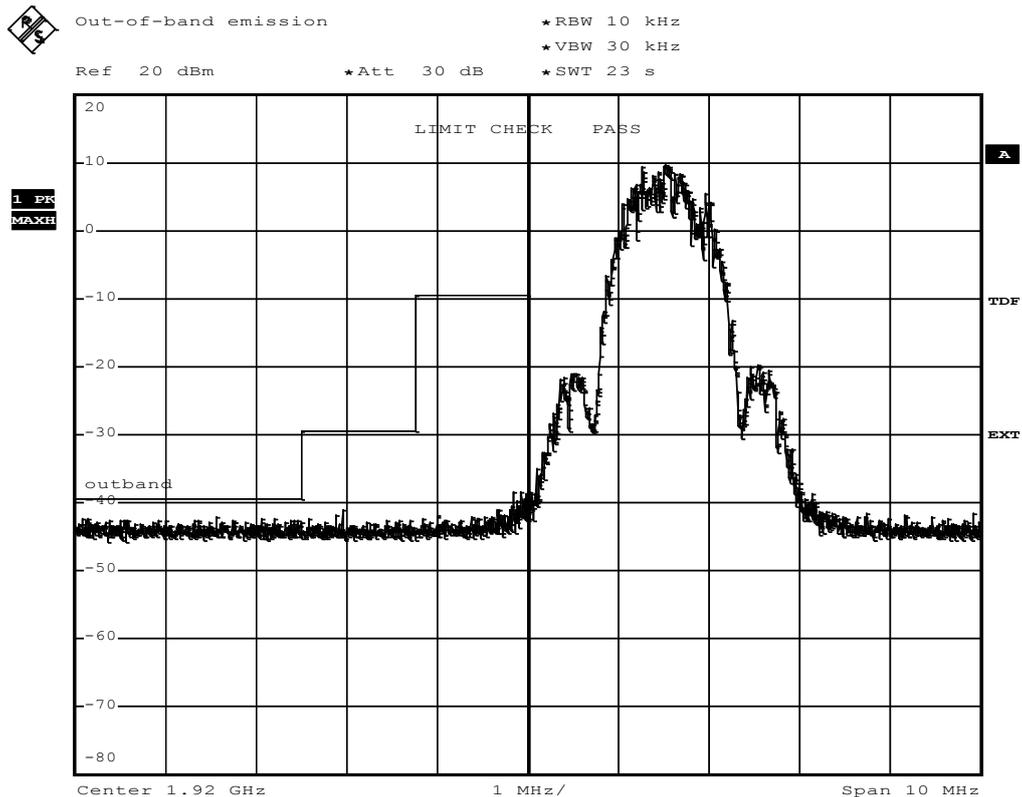
Transmitter out-of-band emissions – Band edge F<sub>Low</sub>

**FCC Part 15.323 Out-of-band emission**

**Testprocedure ANSI 63.17  
UPCS**

EUT	DECT handset 7212
Model	K023e
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





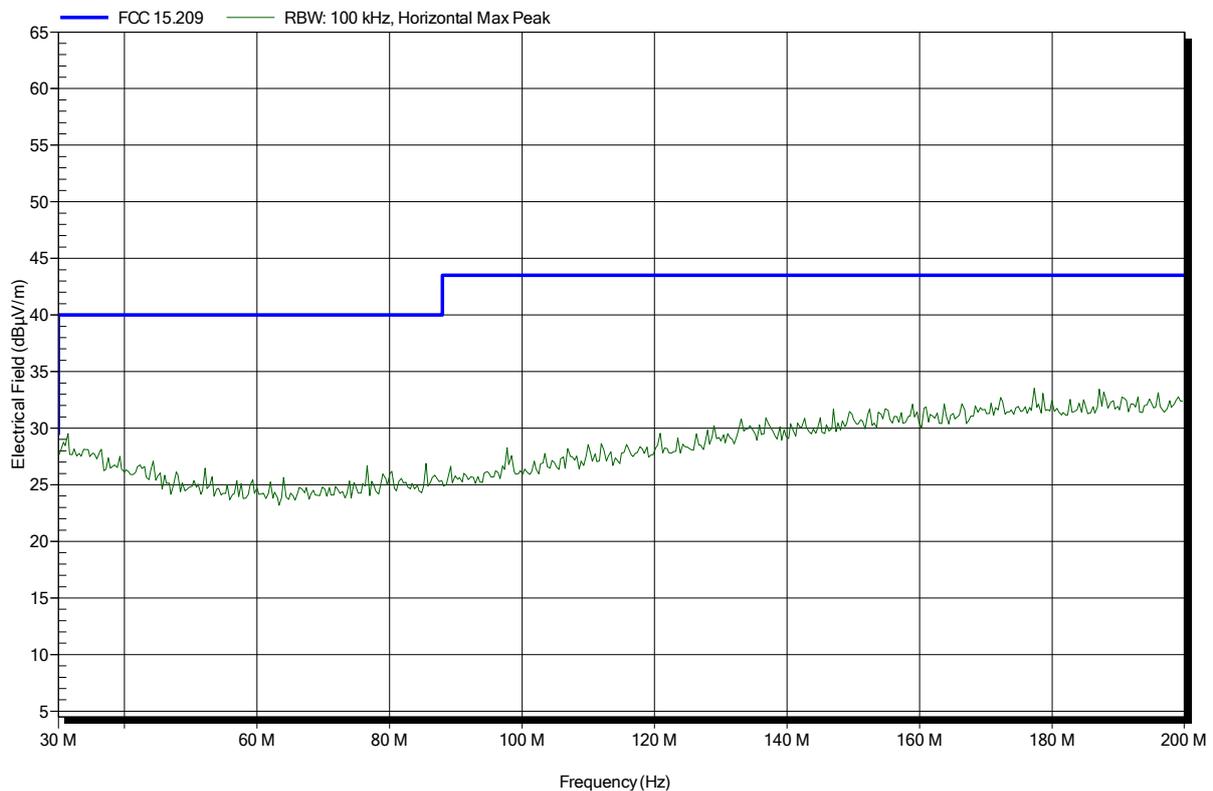
## **EMISSION PLOTS 7212 (K023E)**

### **Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-09
Note:	

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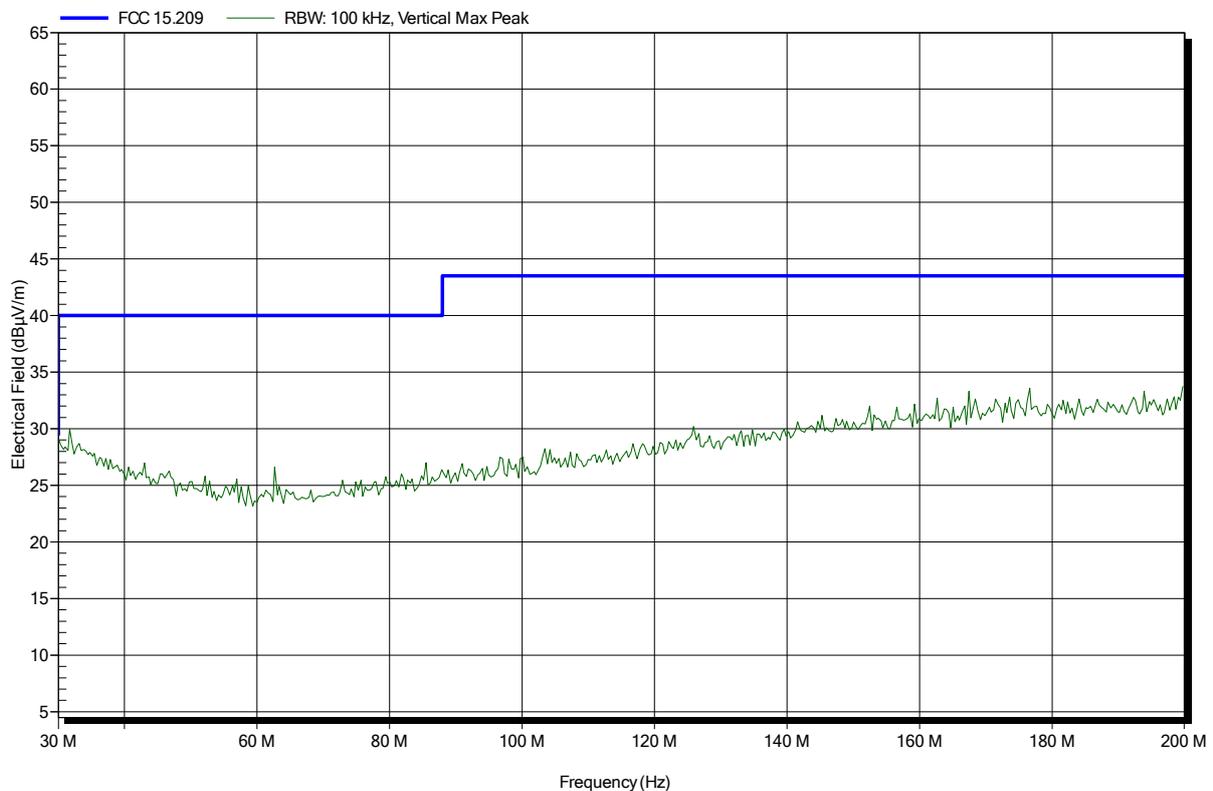


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-09
Note:	

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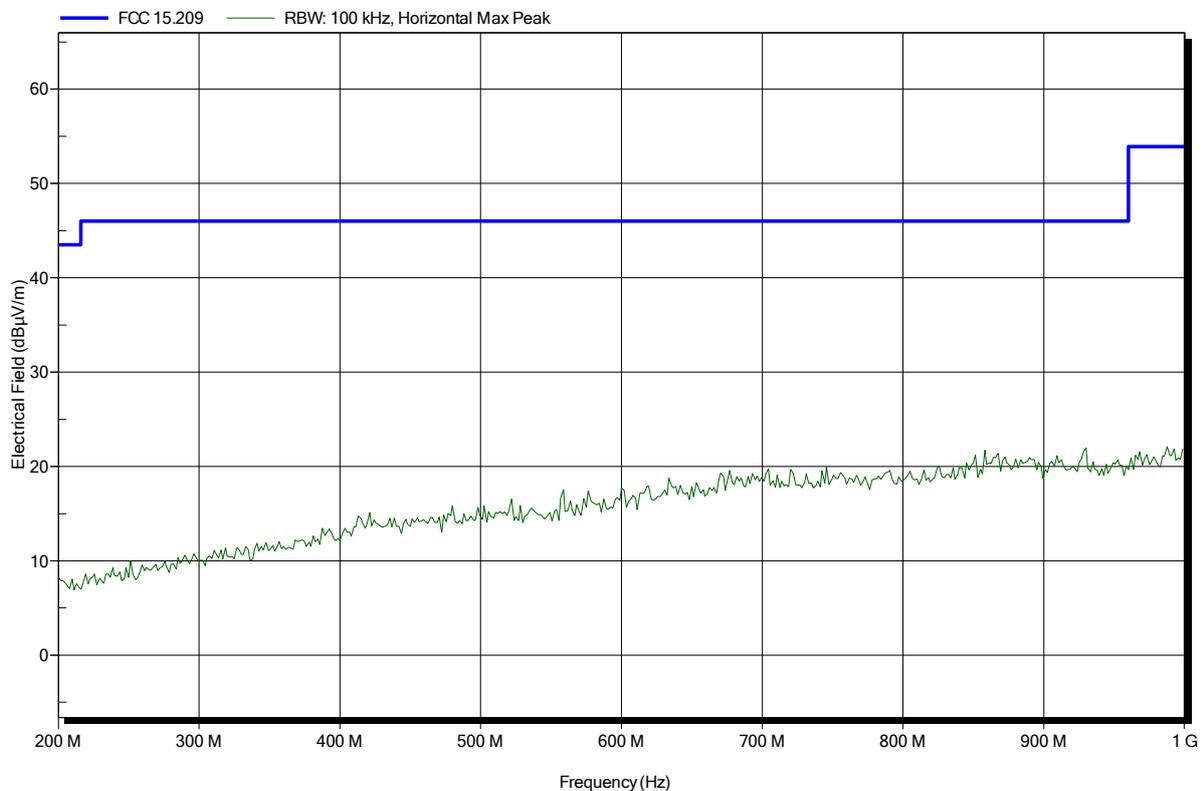


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-09
Note:	

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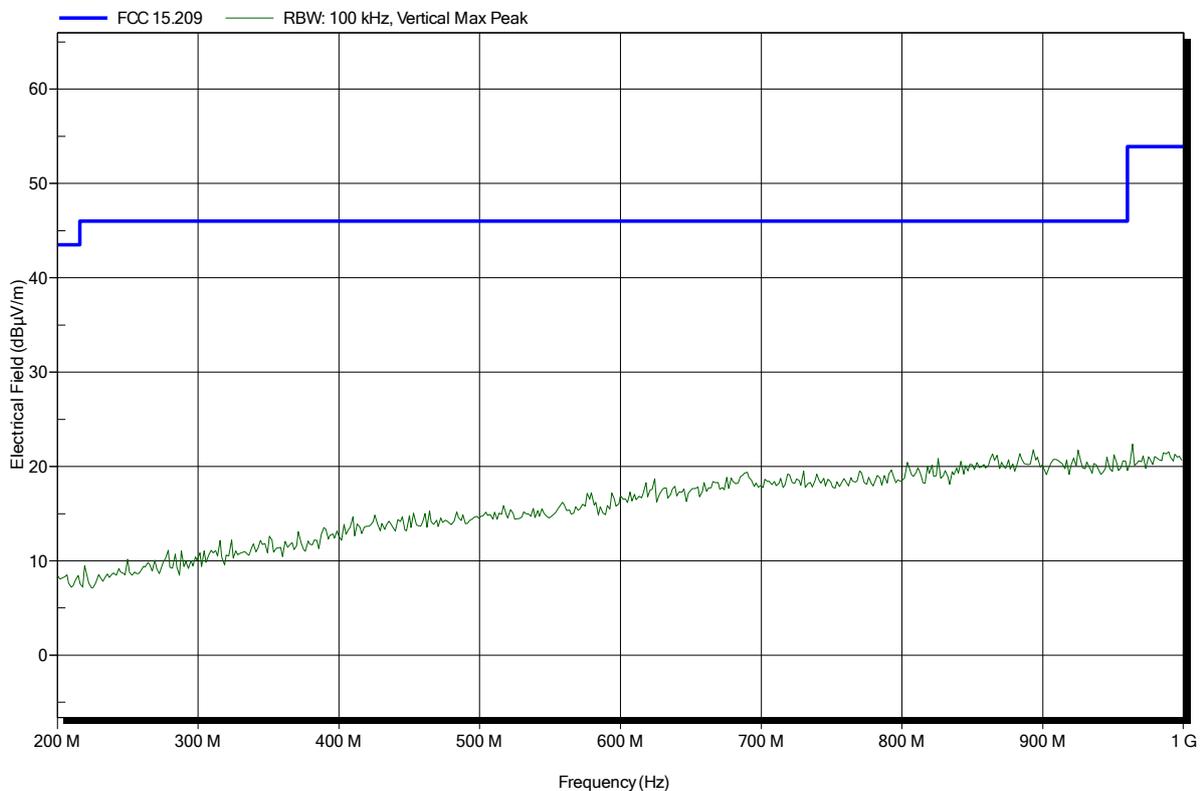


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-09
Note:	

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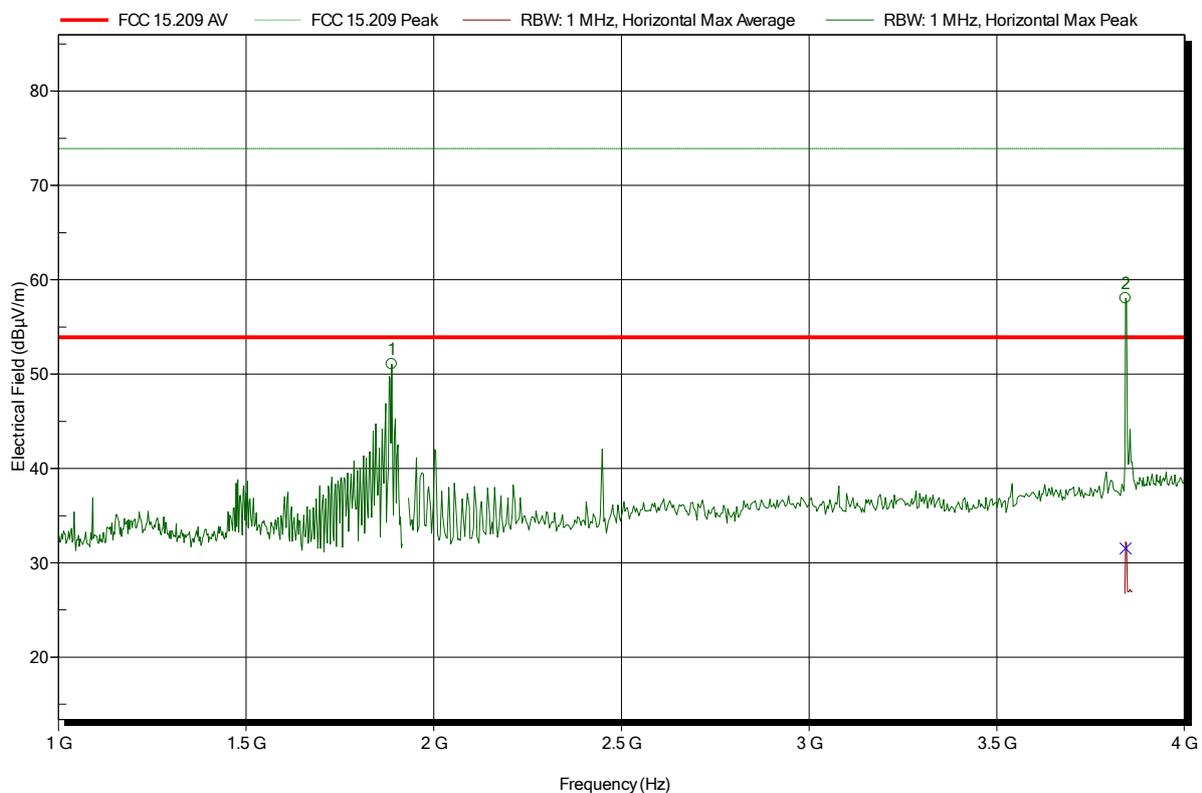


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.8881 GHz	51.05 dBµV/m	73.9 dBµV/m	-22.85 dB	Pass
3.8424 GHz	58.03 dBµV/m	73.9 dBµV/m	-15.87 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8424 GHz	31.54 dBµV/m	53.9 dBµV/m	-22.36 dB	Pass

Test Report No.: GOM-1505-4754-TFC15DPP2-V01

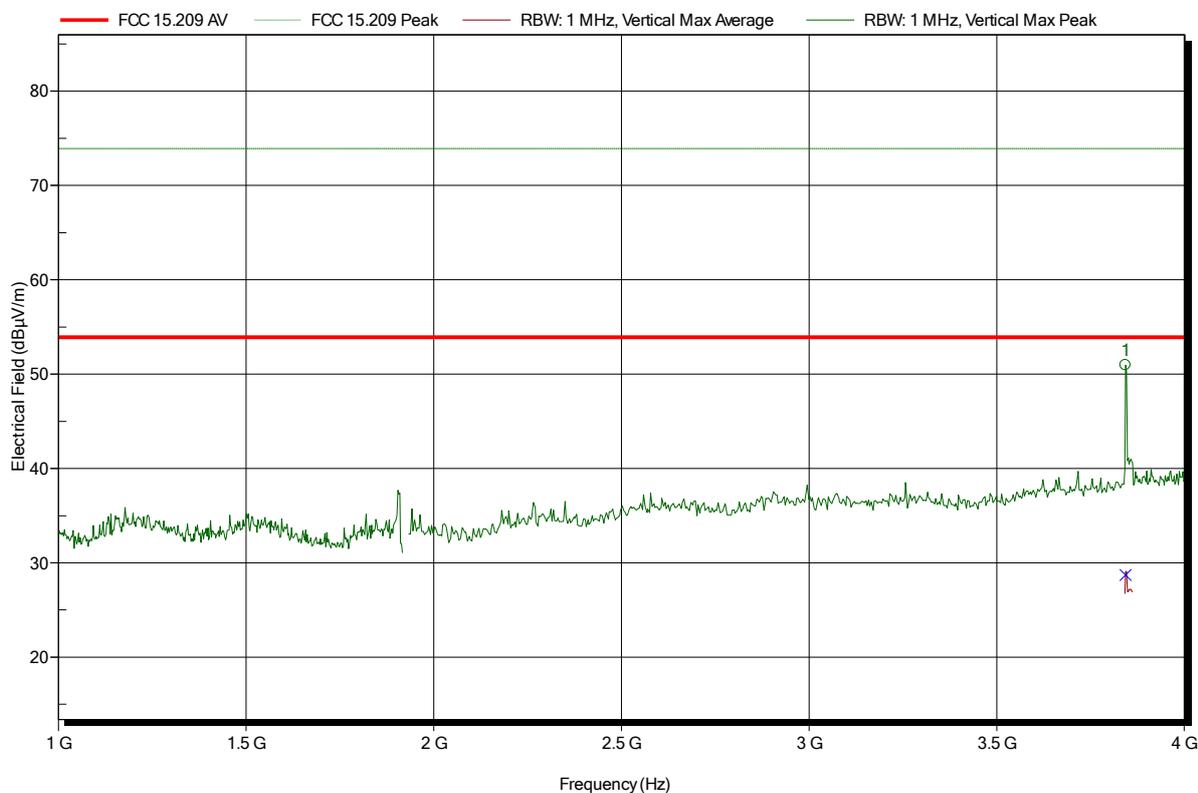
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.8424 GHz	50.95 dBµV/m	73.9 dBµV/m	-22.95 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8424 GHz	28.7 dBµV/m	53.9 dBµV/m	-25.2 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

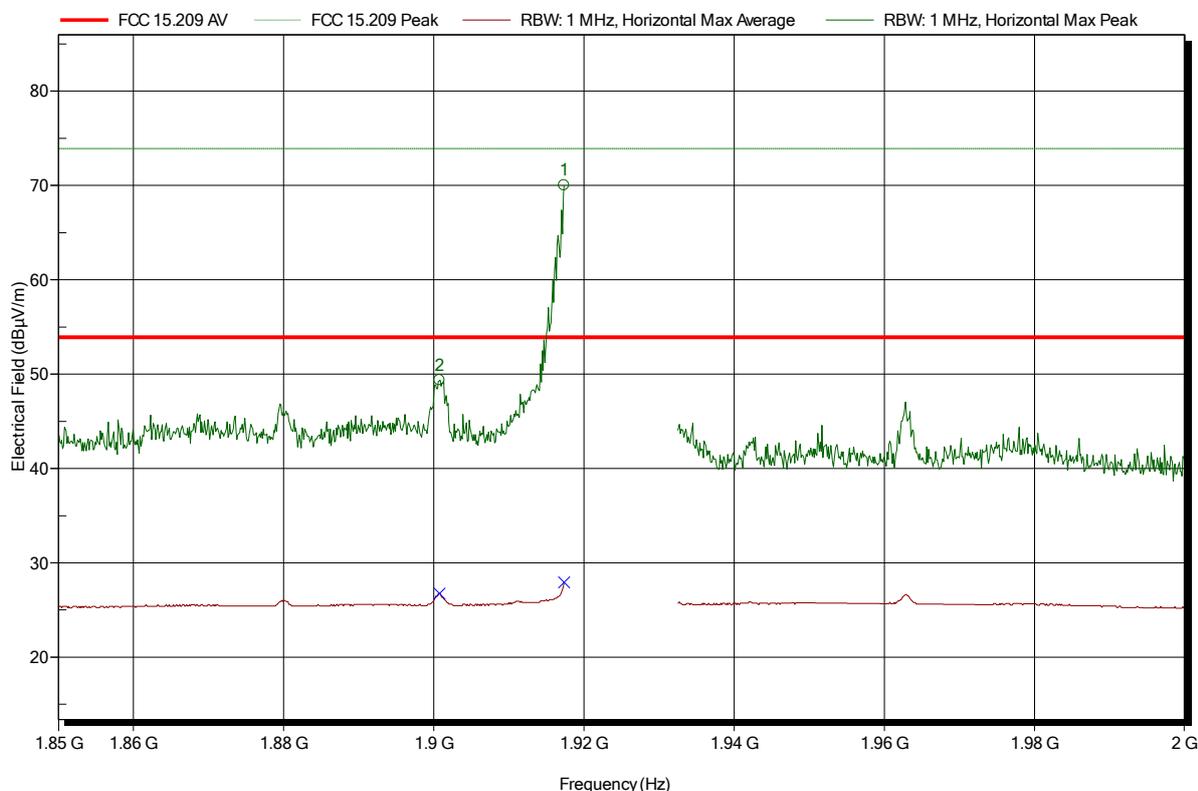
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9008 GHz	49.36 dBµV/m	73.9 dBµV/m	-24.54 dB	Pass
1.9174 GHz	70 dBµV/m	73.9 dBµV/m	-3.9 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
1.9008 GHz	26.75 dBµV/m	53.9 dBµV/m	-27.15 dB	Pass
1.9174 GHz	27.92 dBµV/m	53.9 dBµV/m	-25.98 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

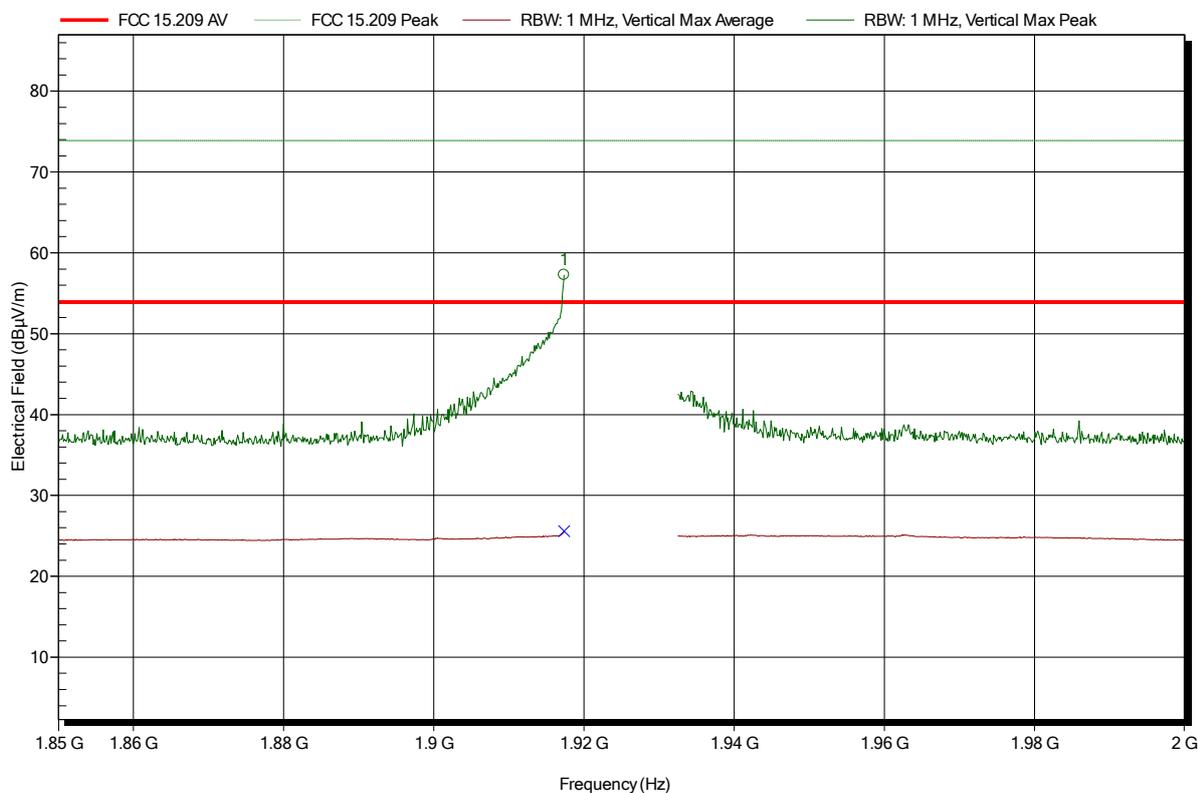
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9174 GHz	57.29 dBµV/m	73.9 dBµV/m	-16.61 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
1.9174 GHz	25.6 dBµV/m	53.9 dBµV/m	-28.3 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

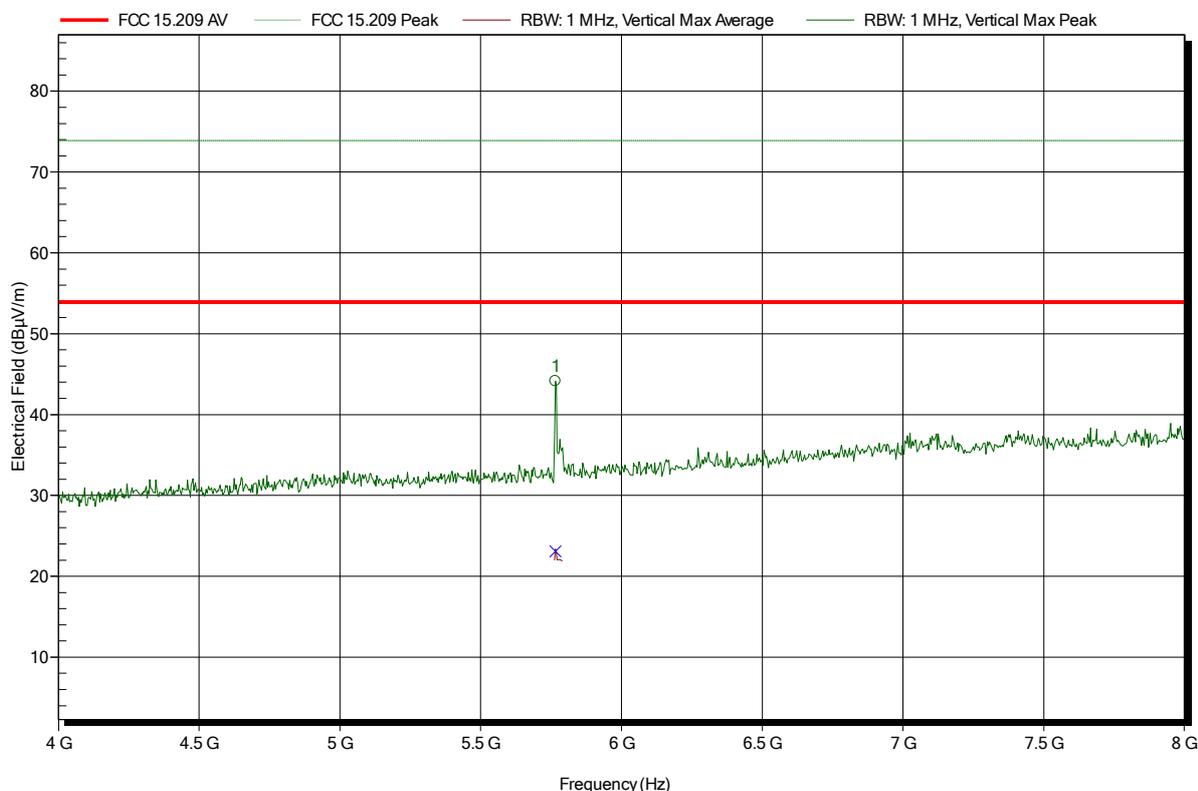
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note:

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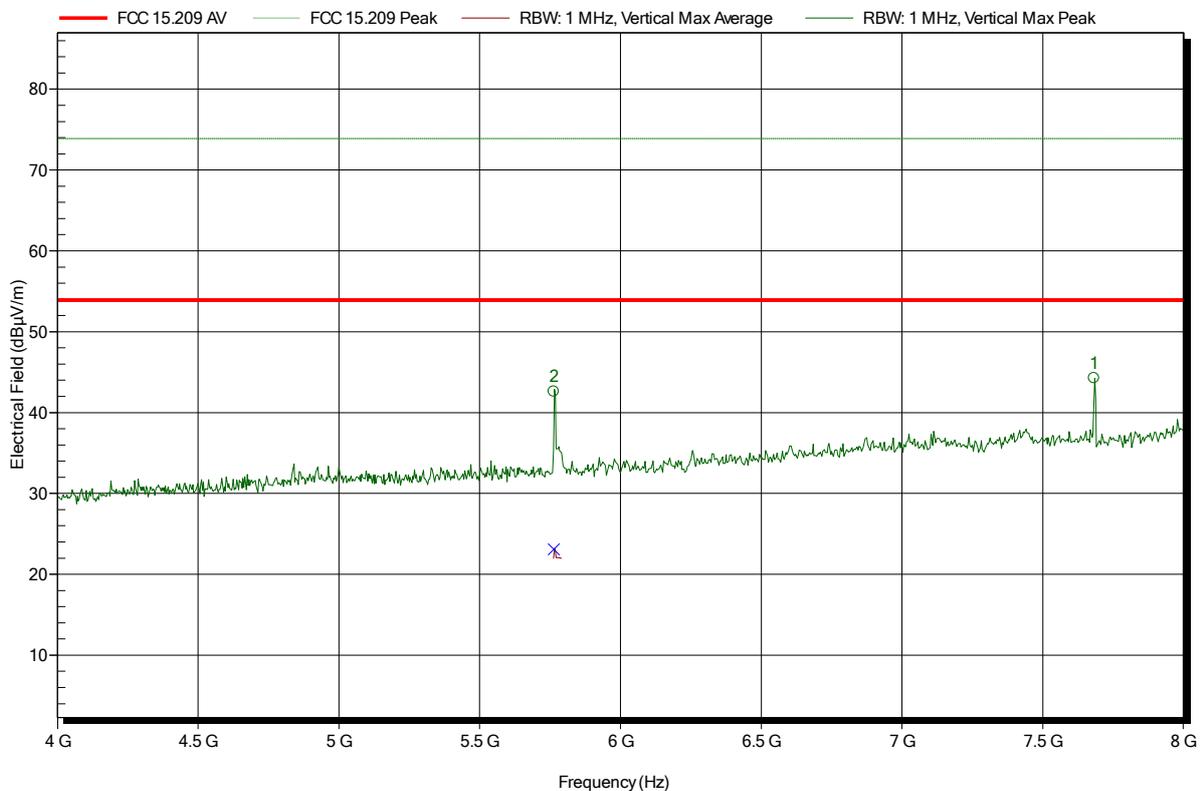
Frequency	Peak	Peak Limit	Peak Difference	Status
5.766 GHz	44.14 dBµV/m	73.9 dBµV/m	-29.76 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
5.766 GHz	23.07 dBµV/m	53.9 dBµV/m	-30.83 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.1  
 Test Date: 2015-06-08  
 Note:

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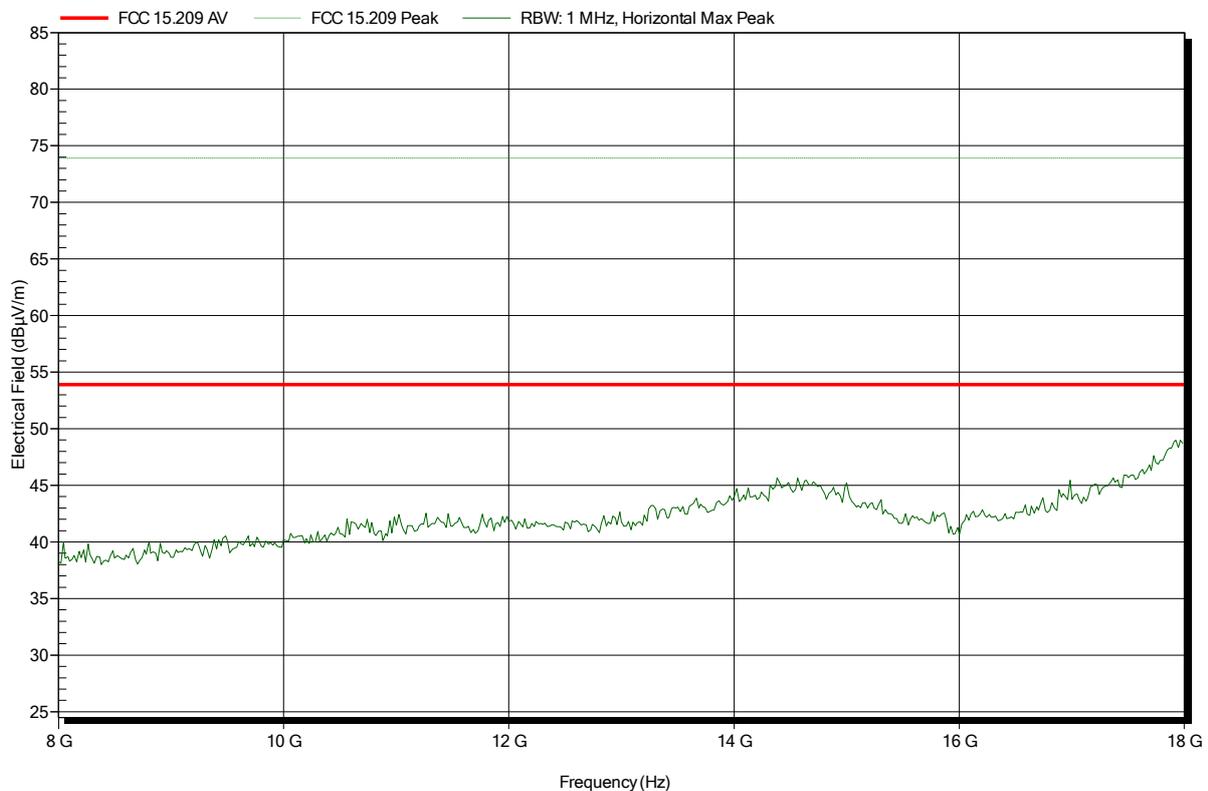
Frequency	Peak	Peak Limit	Peak Difference	Status
5.764 GHz	42.6 dBµV/m	73.9 dBµV/m	-31.3 dB	Pass
7.682 GHz	44.25 dBµV/m	73.9 dBµV/m	-29.65 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
5.764 GHz	23.07 dBµV/m	53.9 dBµV/m	-30.83 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-08
Note:	

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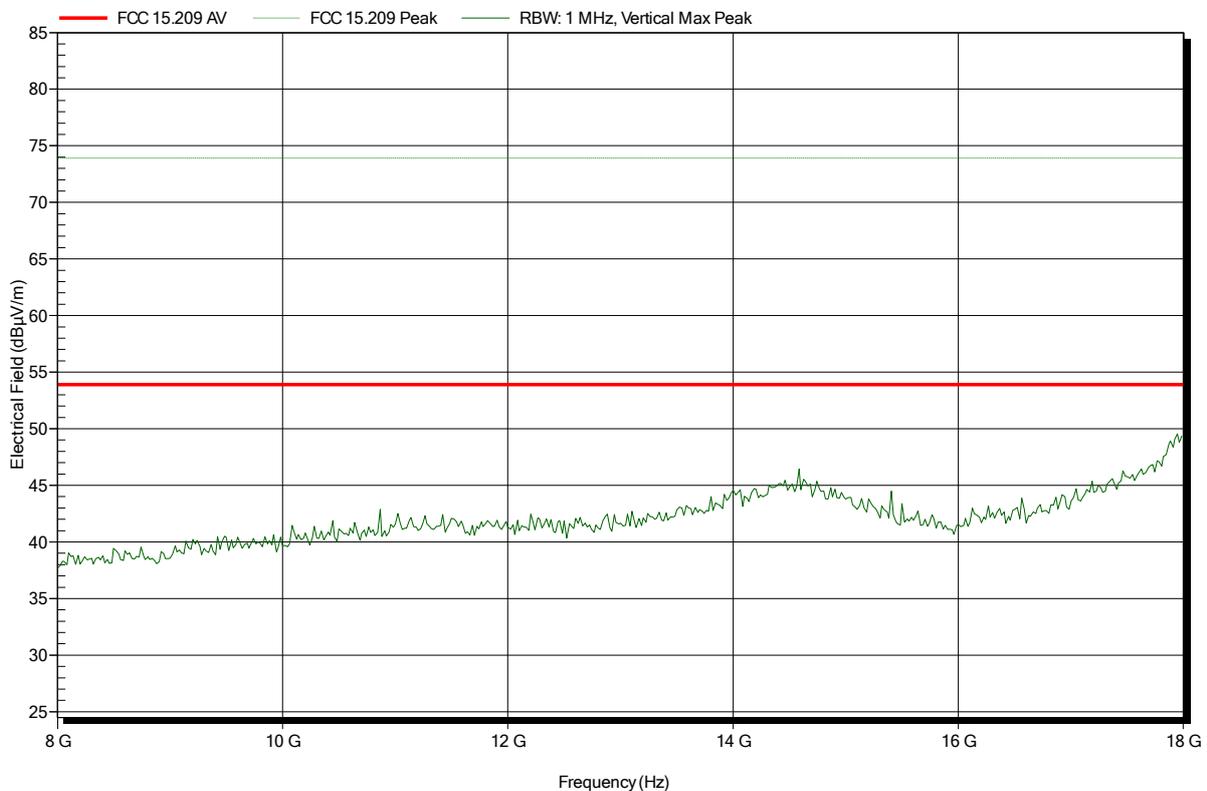


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-08
Note:	

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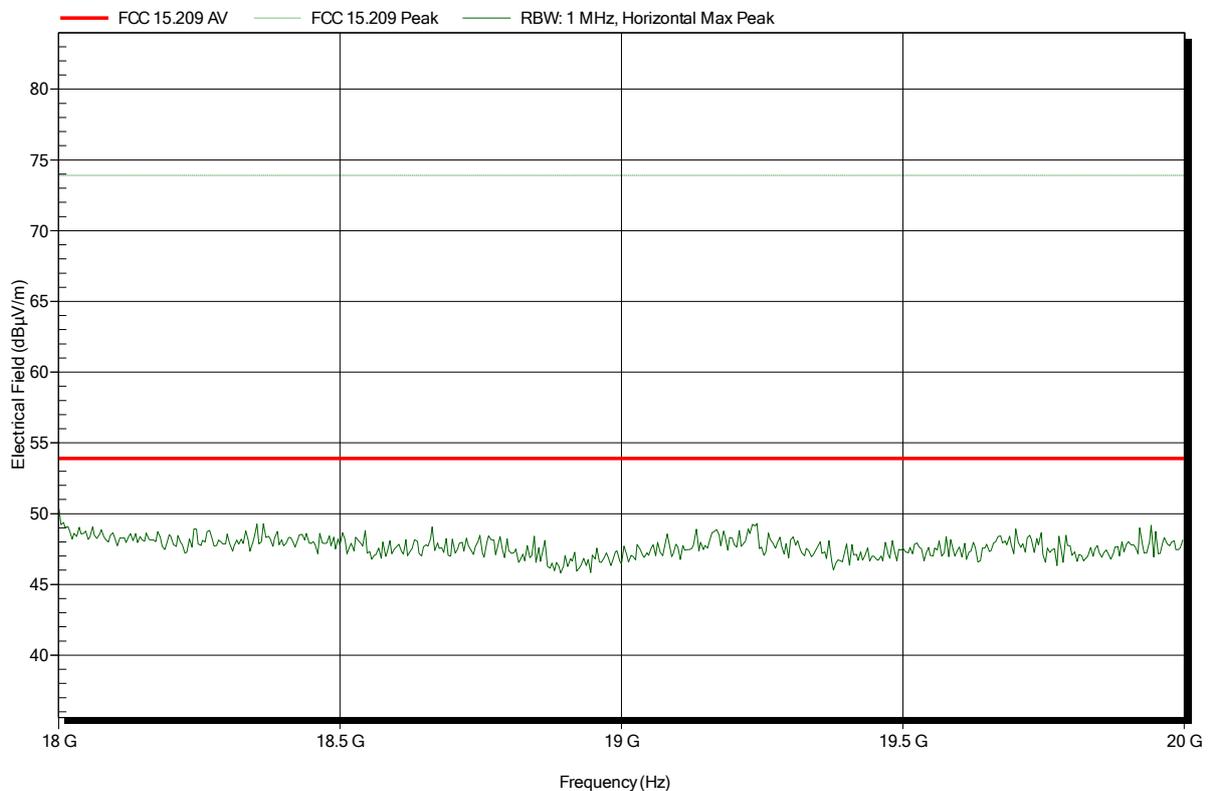


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-08
Note:	

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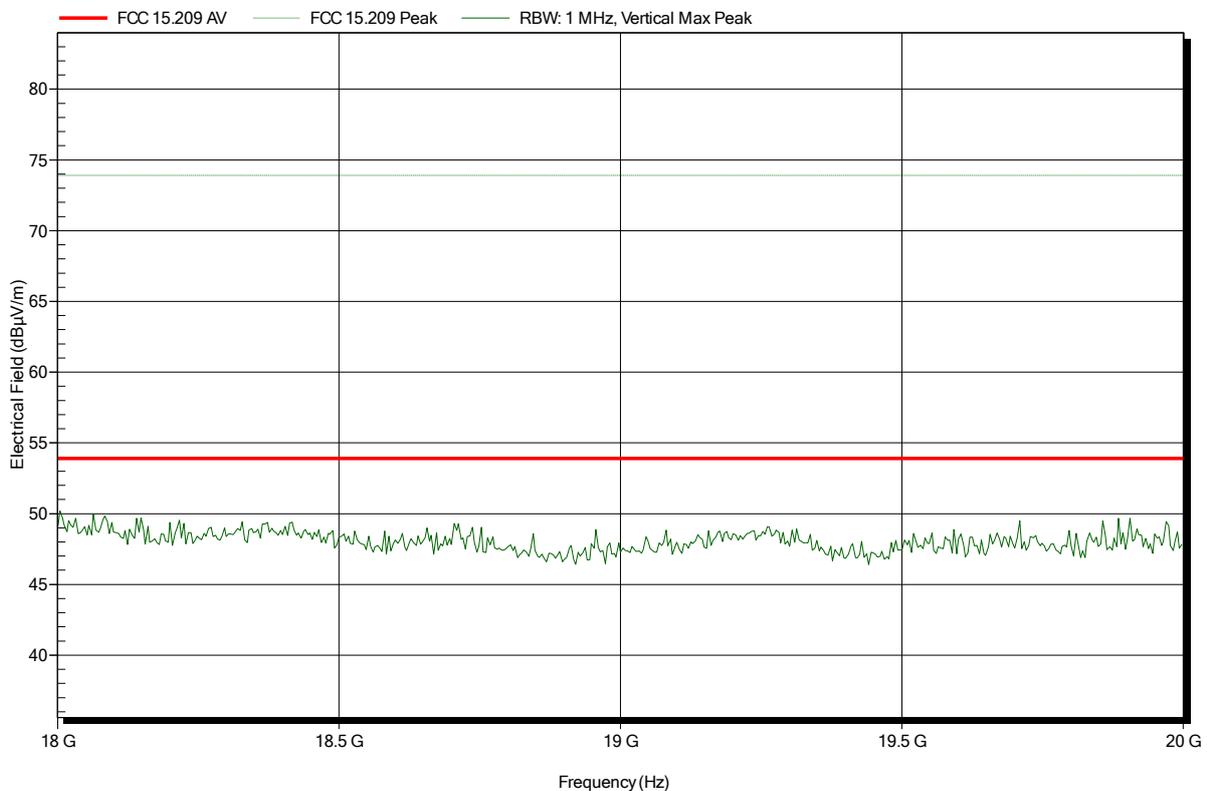


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.1
Test Date:	2015-06-08
Note:	

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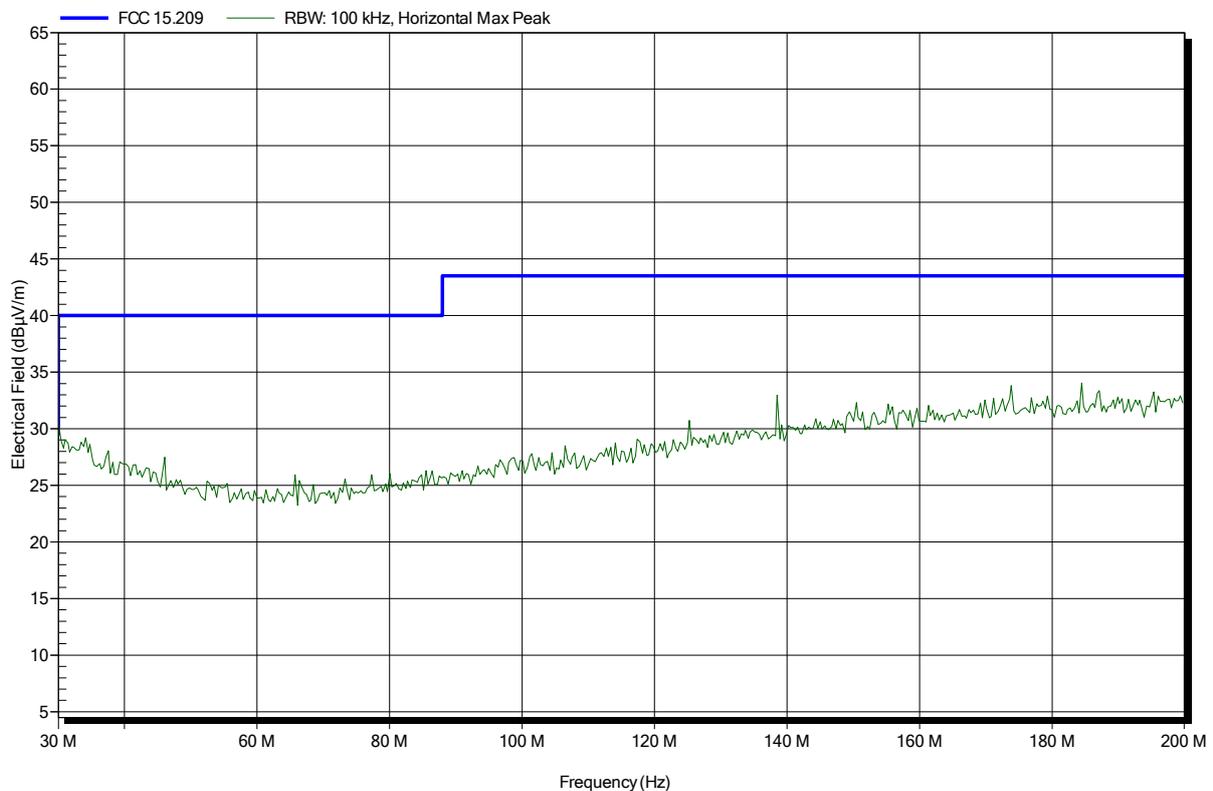


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-09
Note:	

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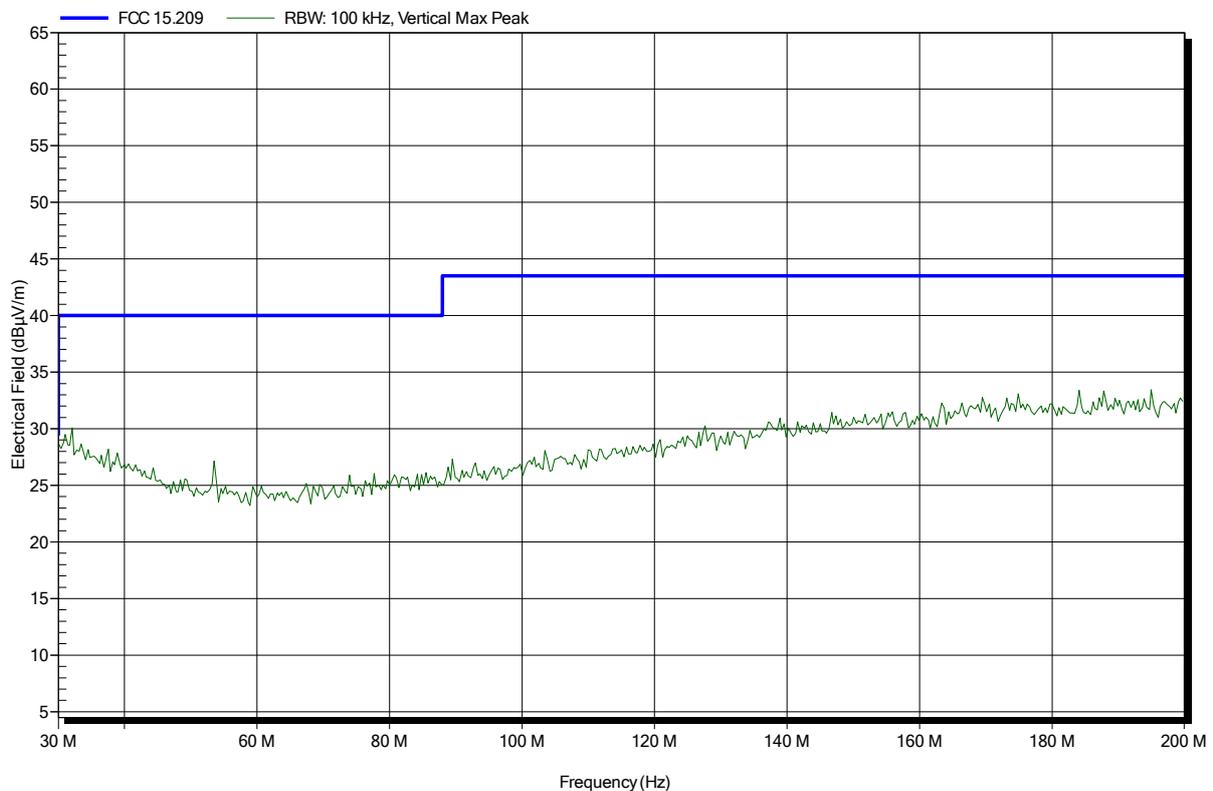


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-09
Note:	

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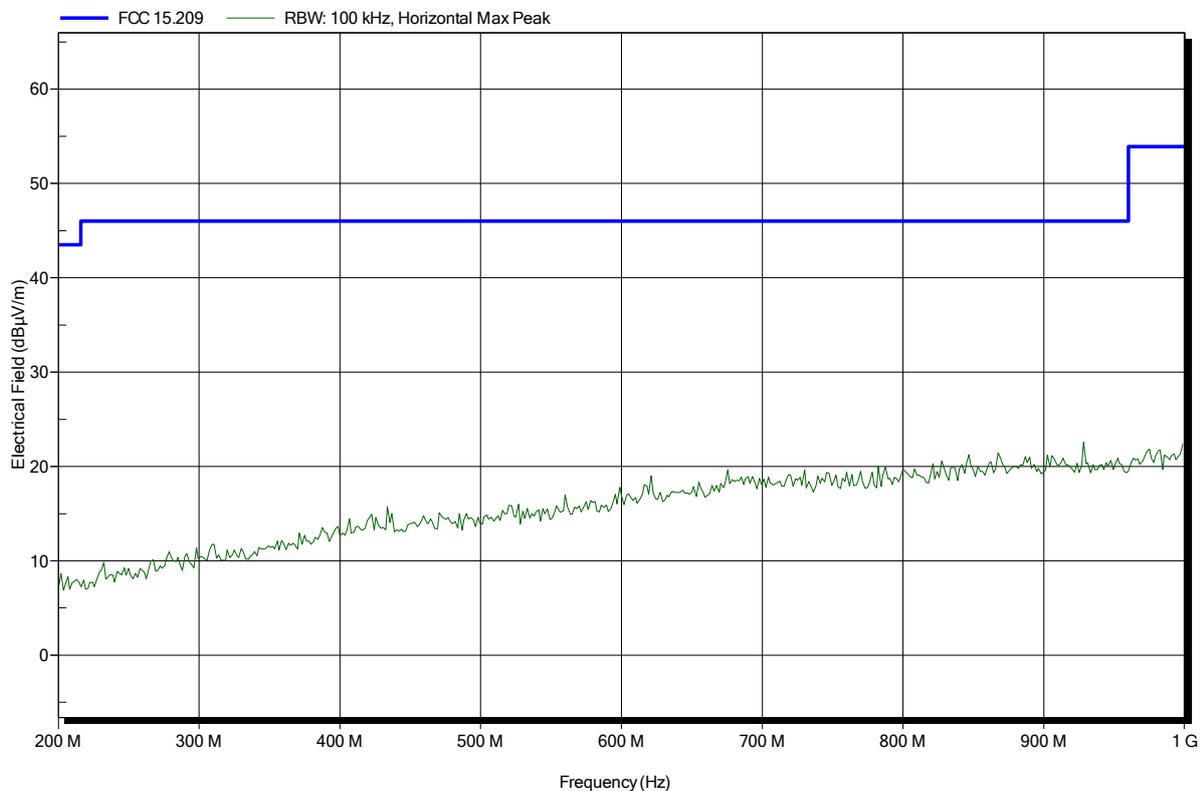


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-09
Note:	

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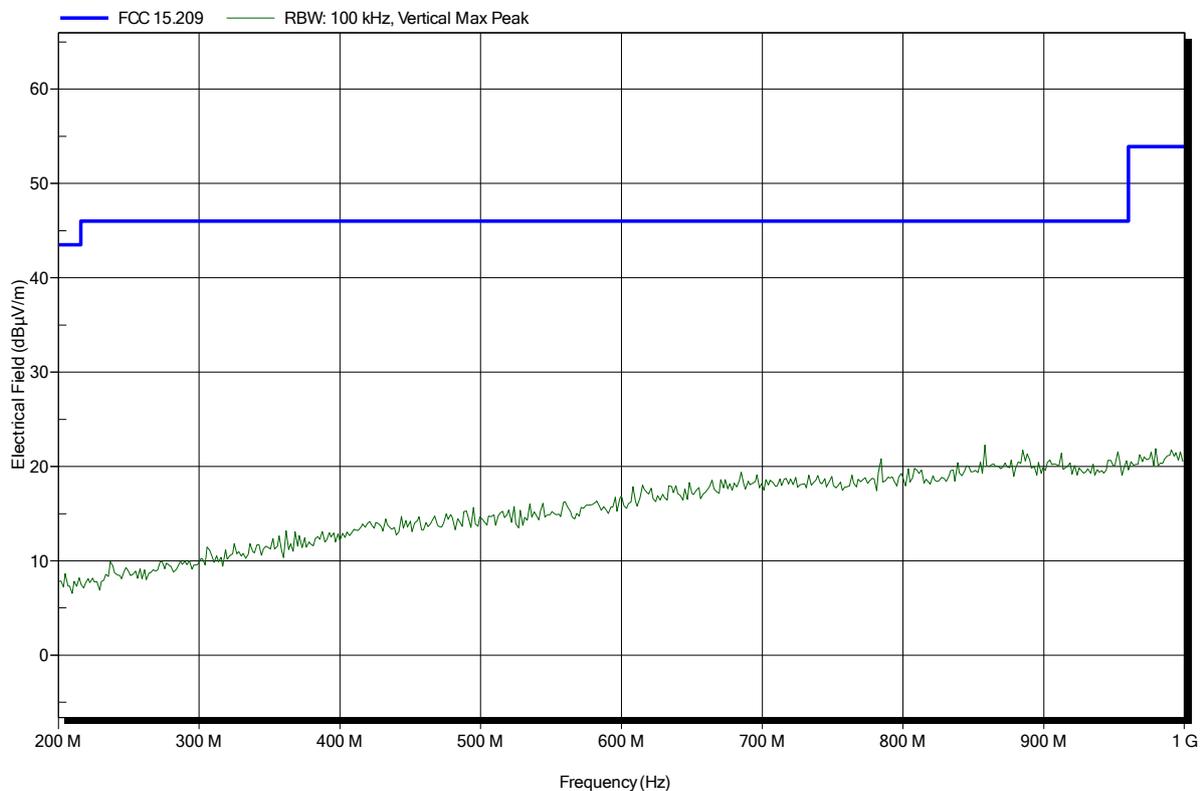


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-09
Note:	

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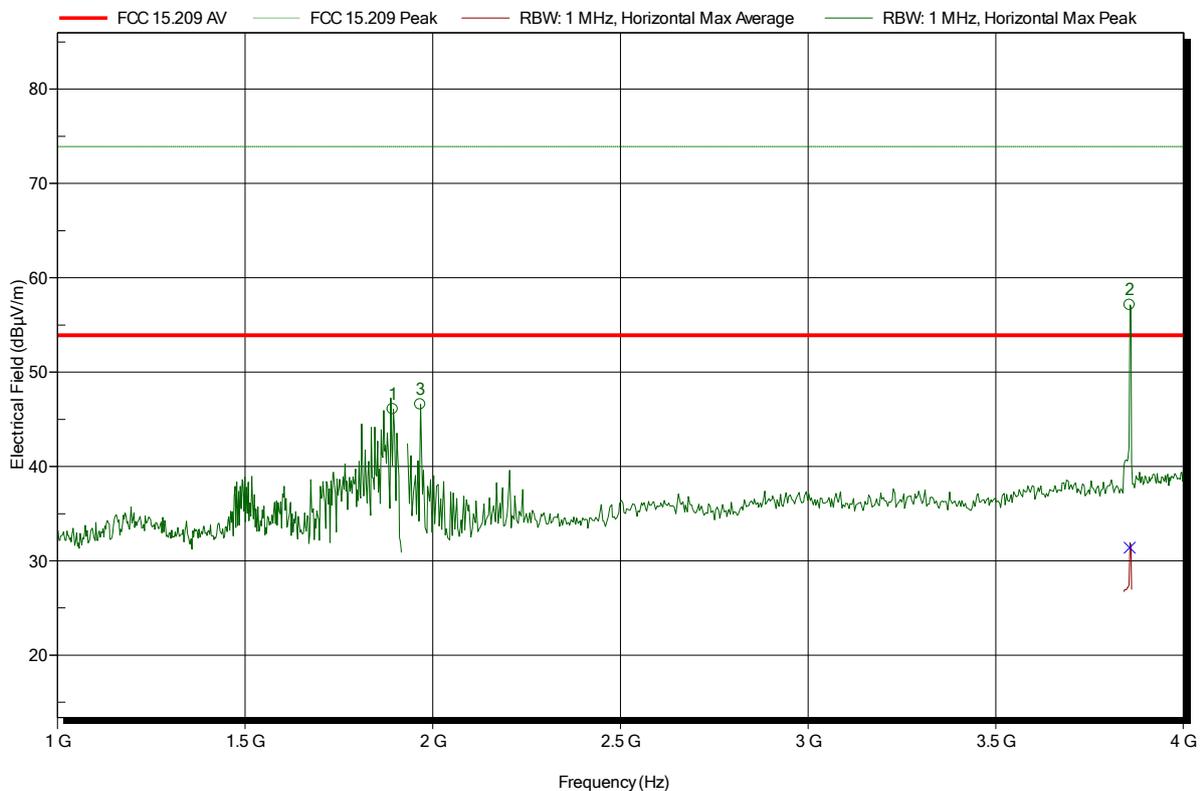


**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.1  
 Test Date: 2015-06-08  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.8936 GHz	46.07 dBµV/m	73.9 dBµV/m	-27.83 dB	Pass
1.9668 GHz	46.6 dBµV/m	73.9 dBµV/m	-27.3 dB	Pass
3.8563 GHz	57.12 dBµV/m	73.9 dBµV/m	-16.78 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
3.8563 GHz	31.38 dBµV/m	53.9 dBµV/m	-22.52 dB	Pass

Test Report No.: GOM-1505-4754-TFC15DPP2-V01

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

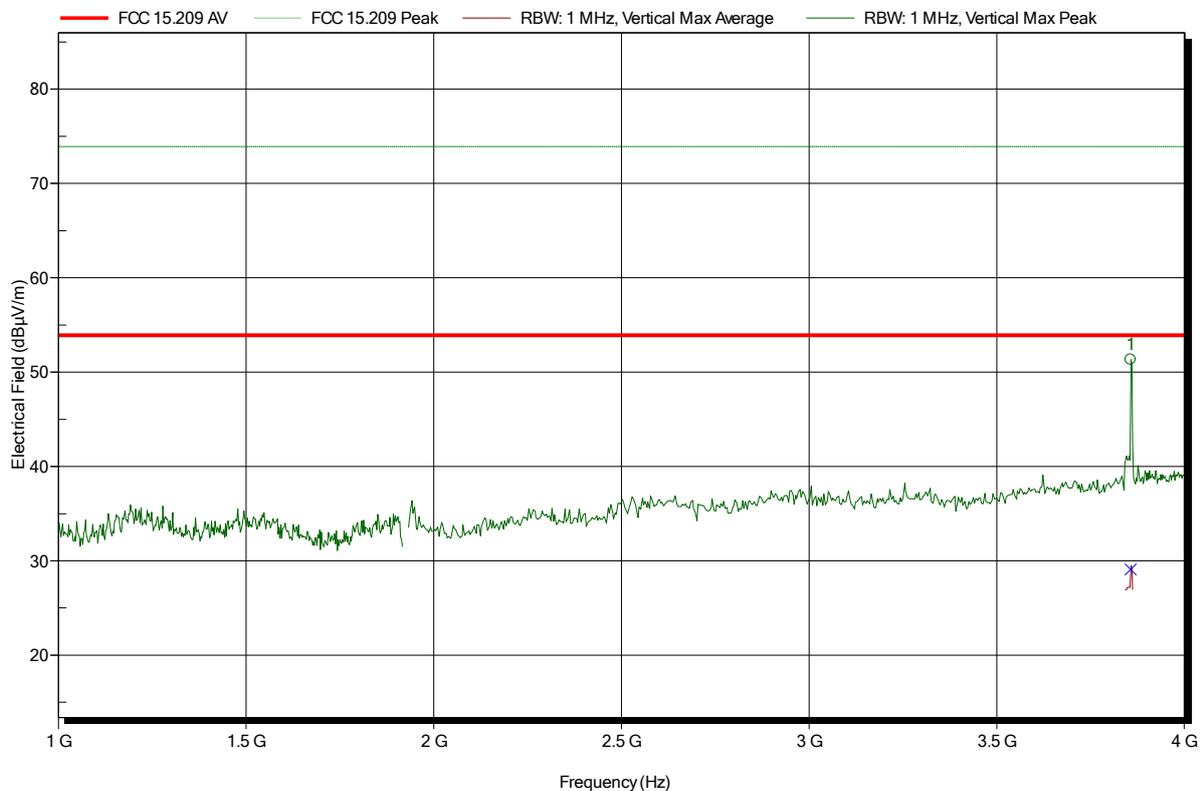


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-08
Note:	with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.8562 GHz	51.32 dBµV/m	73.9 dBµV/m	-22.58 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8562 GHz	29.07 dBµV/m	53.9 dBµV/m	-24.83 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

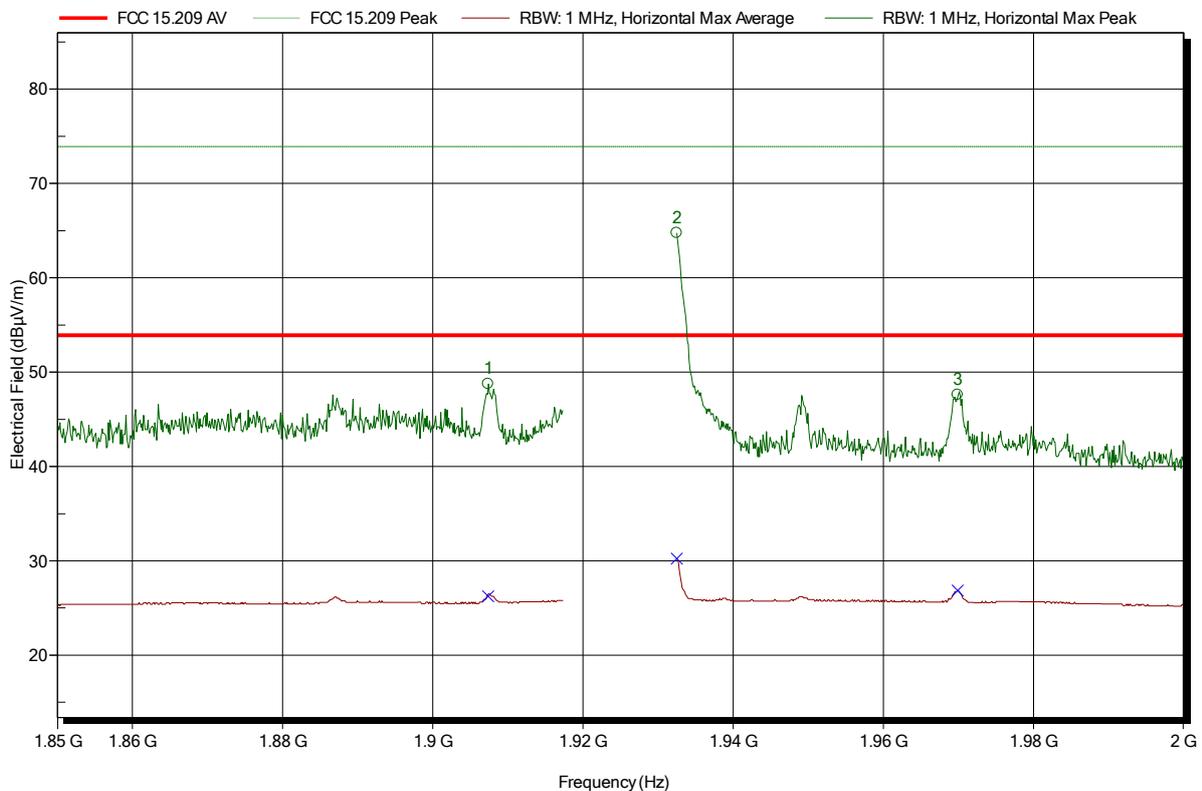
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: GOM-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.1  
 Test Date: 2015-06-08  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9074 GHz	48.74 dBµV/m	73.9 dBµV/m	-25.16 dB	Pass
1.9325 GHz	64.76 dBµV/m	73.9 dBµV/m	-9.14 dB	Pass
1.9699 GHz	47.59 dBµV/m	73.9 dBµV/m	-26.31 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
1.9074 GHz	26.22 dBµV/m	53.9 dBµV/m	-27.68 dB	Pass
1.9325 GHz	30.23 dBµV/m	53.9 dBµV/m	-23.67 dB	Pass
1.9699 GHz	26.86 dBµV/m	53.9 dBµV/m	-27.04 dB	Pass

Test Report No.: GOM-1505-4754-TFC15DPP2-V01

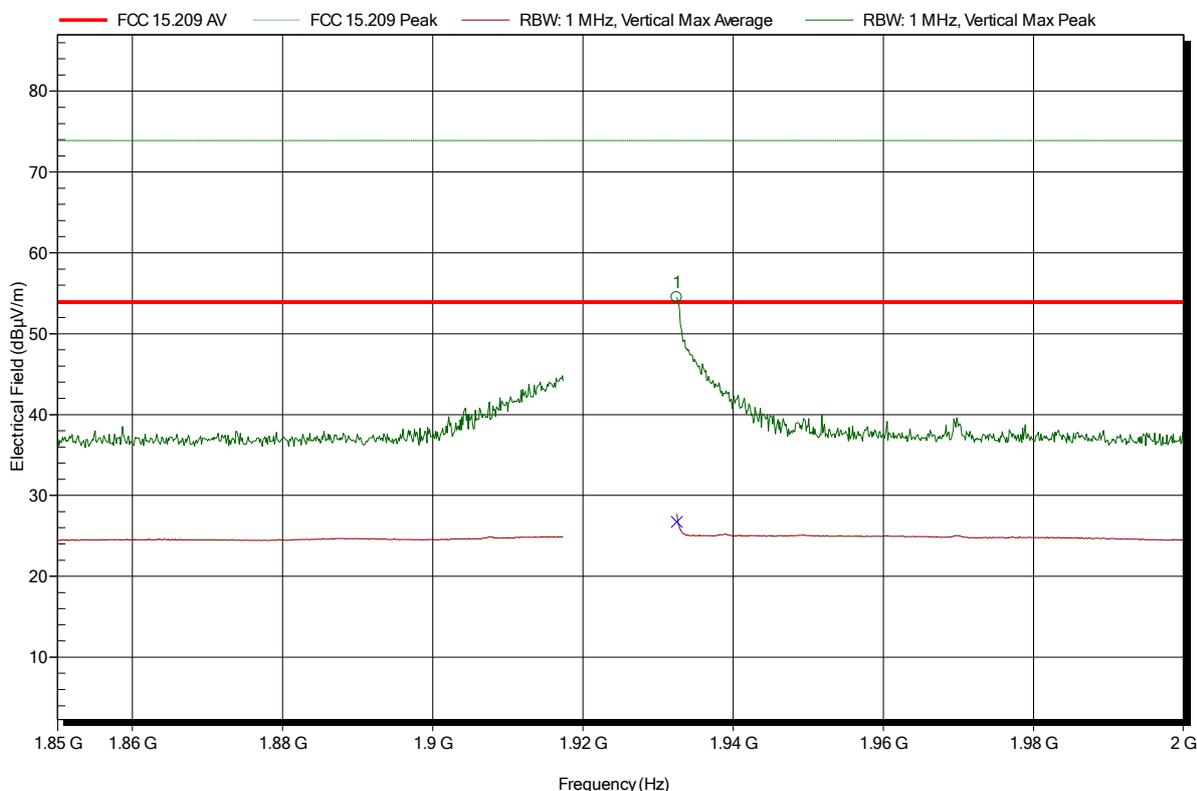
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.1  
 Test Date: 2015-06-08  
 Note:

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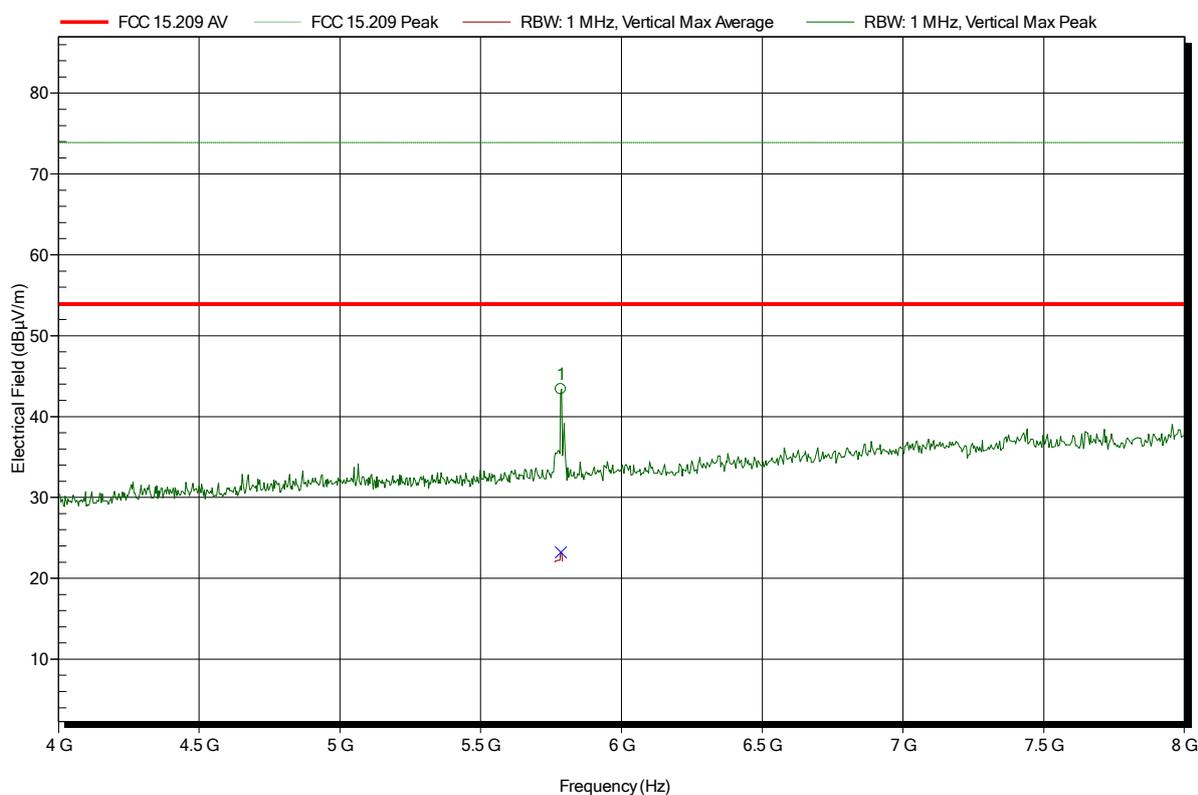
Frequency 1.9325 GHz	Peak 54.51 dBµV/m	Peak Limit 73.9 dBµV/m	Peak Difference -19.39 dB	Peak Status Pass
Frequency 1.9325 GHz	Average 26.73 dBµV/m	Average Limit 53.9 dBµV/m	Average Difference -27.17 dB	Average Status Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.1  
 Test Date: 2015-06-08  
 Note:

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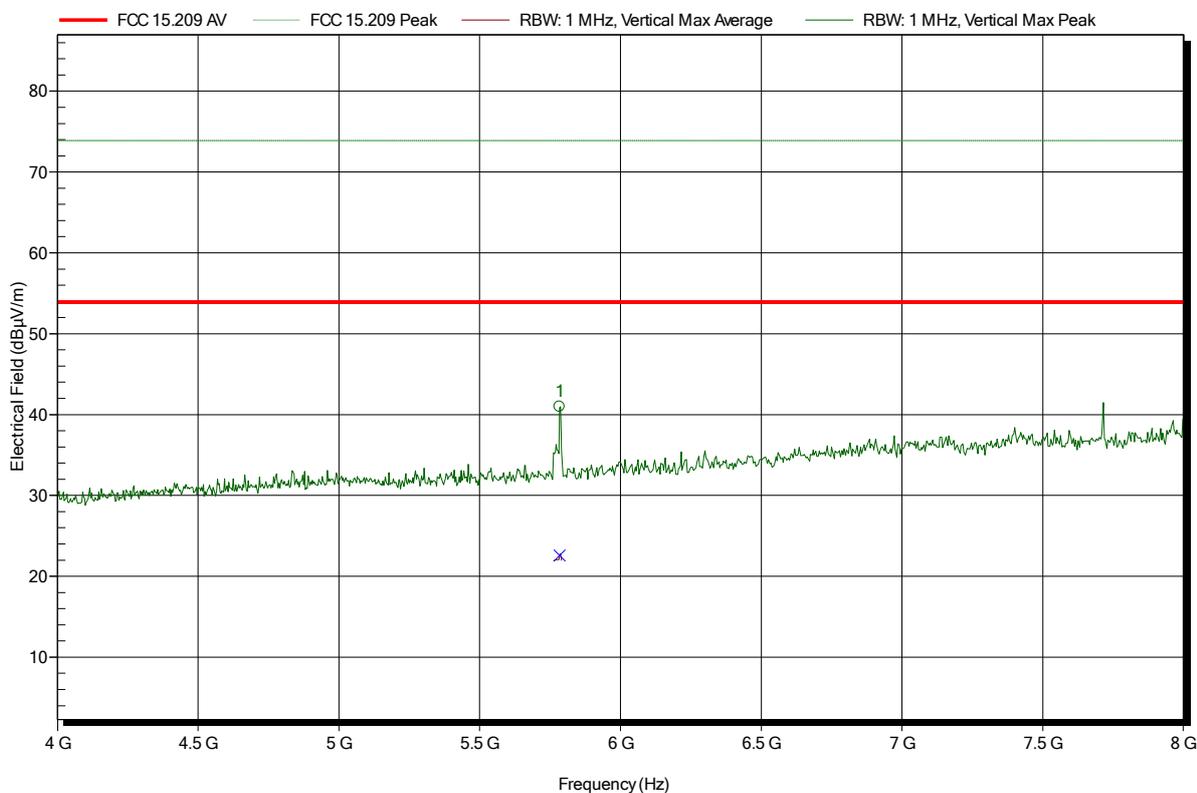
Frequency	Peak	Peak Limit	Peak Difference	Status
5.785 GHz	43.39 dBµV/m	73.9 dBµV/m	-30.51 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
5.785 GHz	23.2 dBµV/m	53.9 dBµV/m	-30.7 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.1  
 Test Date: 2015-06-08  
 Note:

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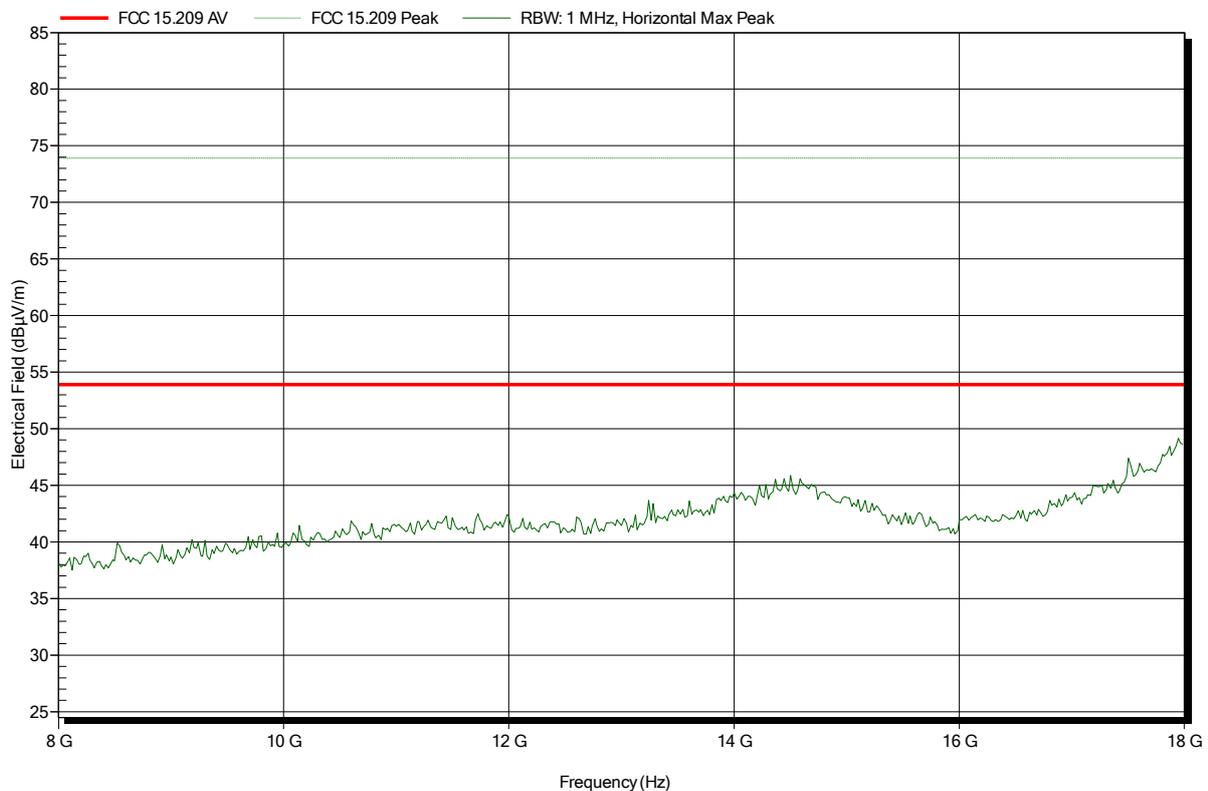
Frequency	Peak	Peak Limit	Peak Difference	Status
5.784 GHz	40.98 dBµV/m	73.9 dBµV/m	-32.92 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
5.784 GHz	22.56 dBµV/m	53.9 dBµV/m	-31.34 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-08
Note:	

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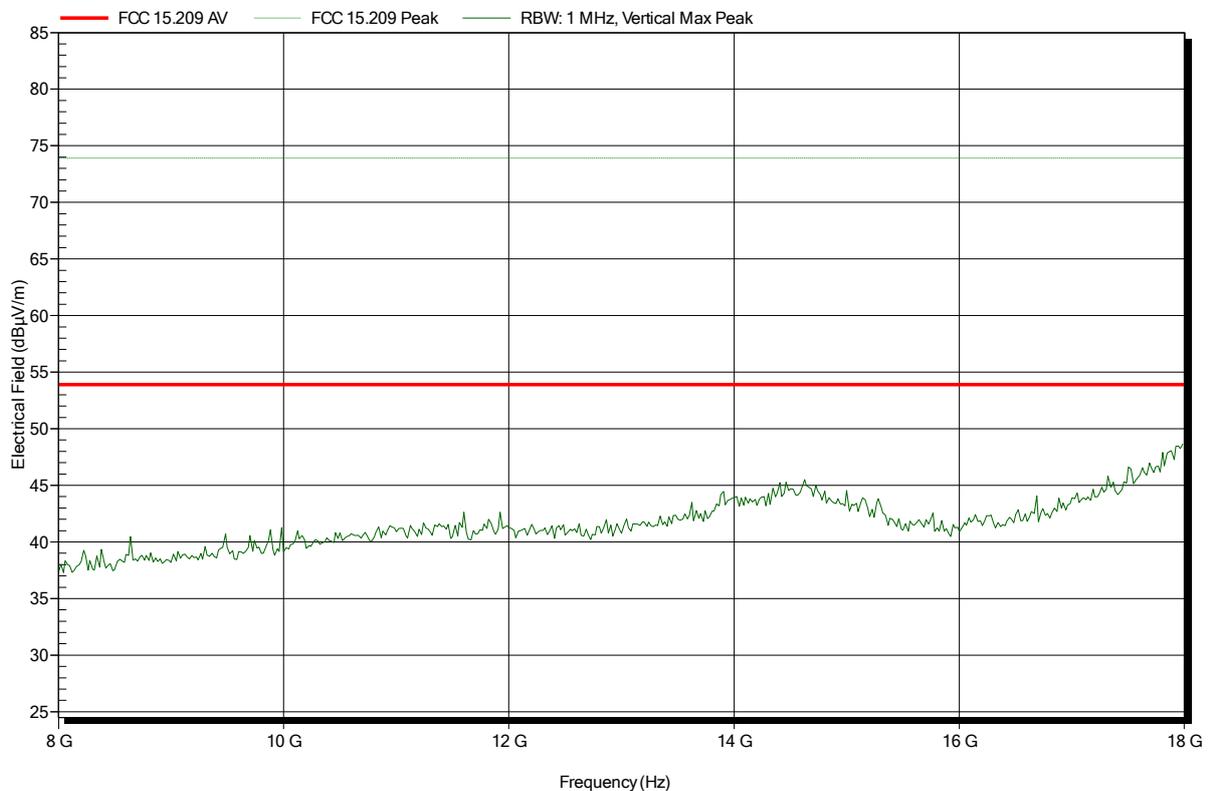


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-08
Note:	

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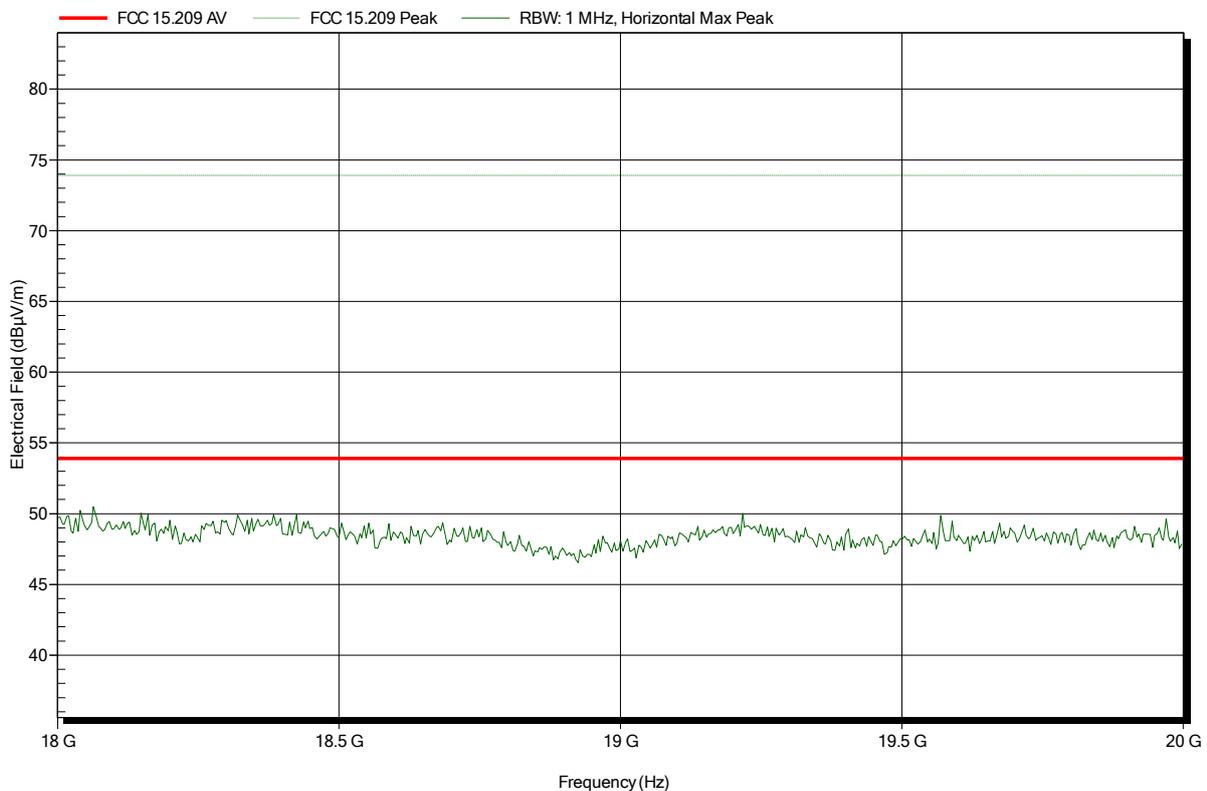


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-08
Note:	

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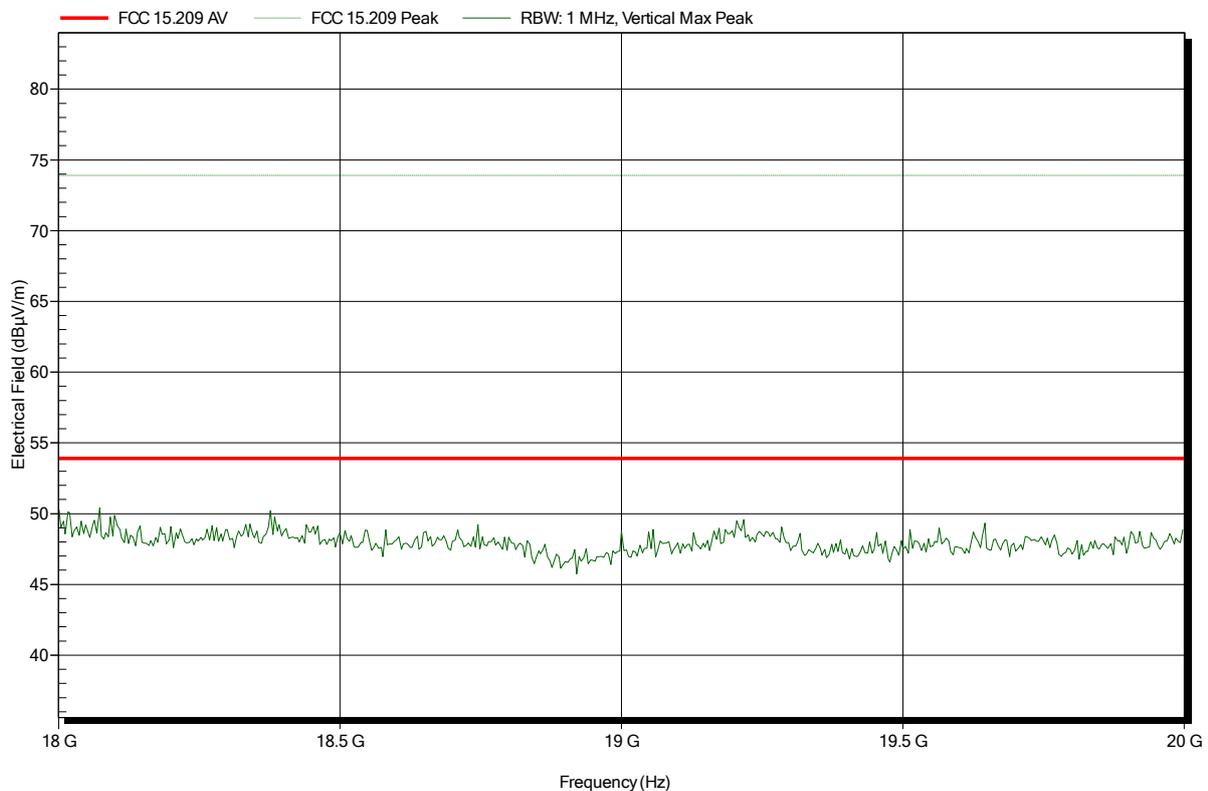


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.1
Test Date:	2015-06-08
Note:	

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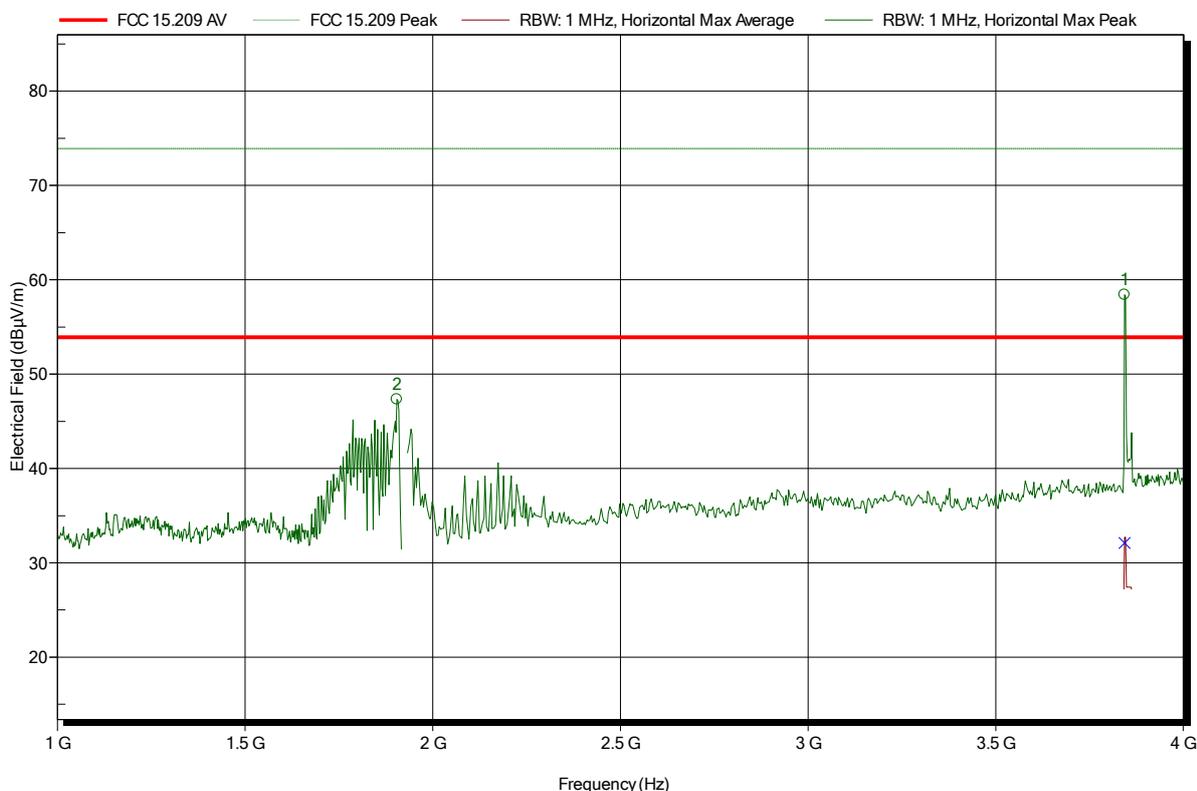


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; #B11, UPCS; Ch.4; Ant.2
Test Date:	2015-06-09
Note:	with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9047 GHz	47.33 dBµV/m	73.9 dBµV/m	-26.57 dB	Pass
3.8425 GHz	58.43 dBµV/m	73.9 dBµV/m	-15.47 dB	Pass

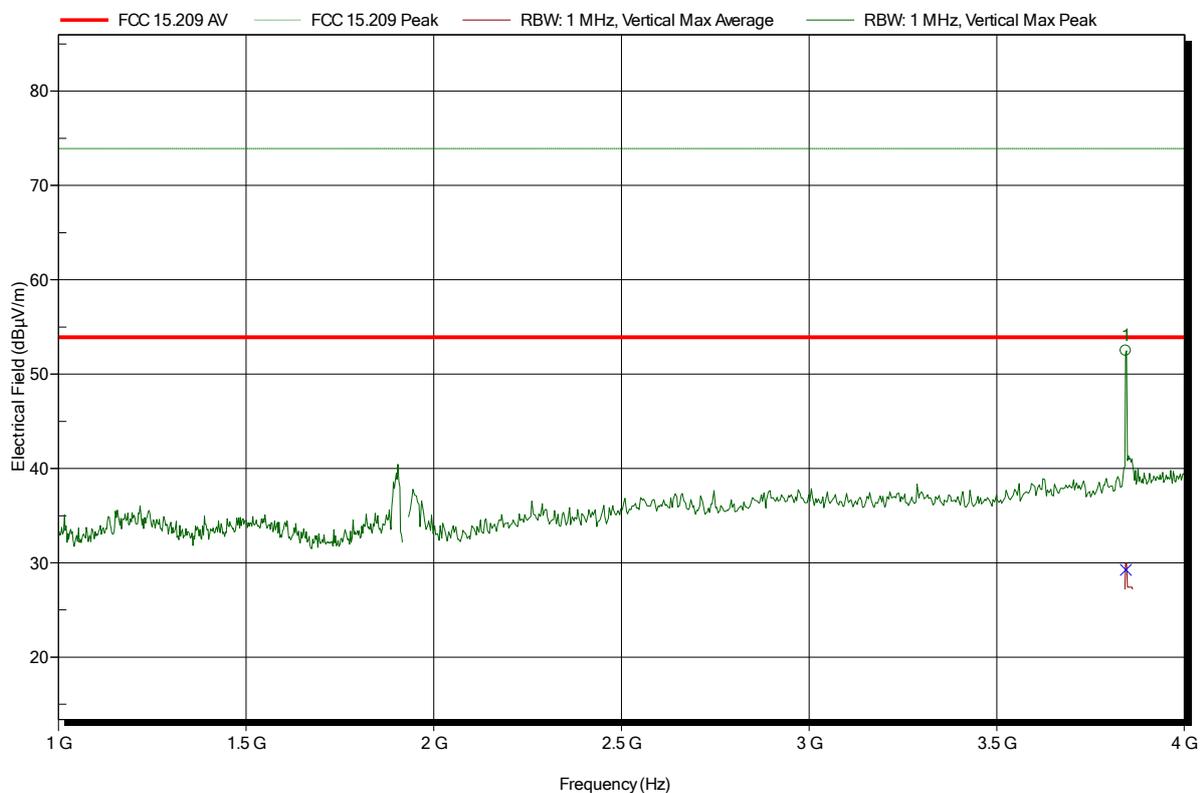
Frequency	Average	Average Limit	Average Difference	Average Status
3.8425 GHz	32.09 dBµV/m	53.9 dBµV/m	-21.81 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.2  
 Test Date: 2015-06-09  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.8437 GHz	52.48 dBµV/m	73.9 dBµV/m	-21.42 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8437 GHz	29.27 dBµV/m	53.9 dBµV/m	-24.63 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

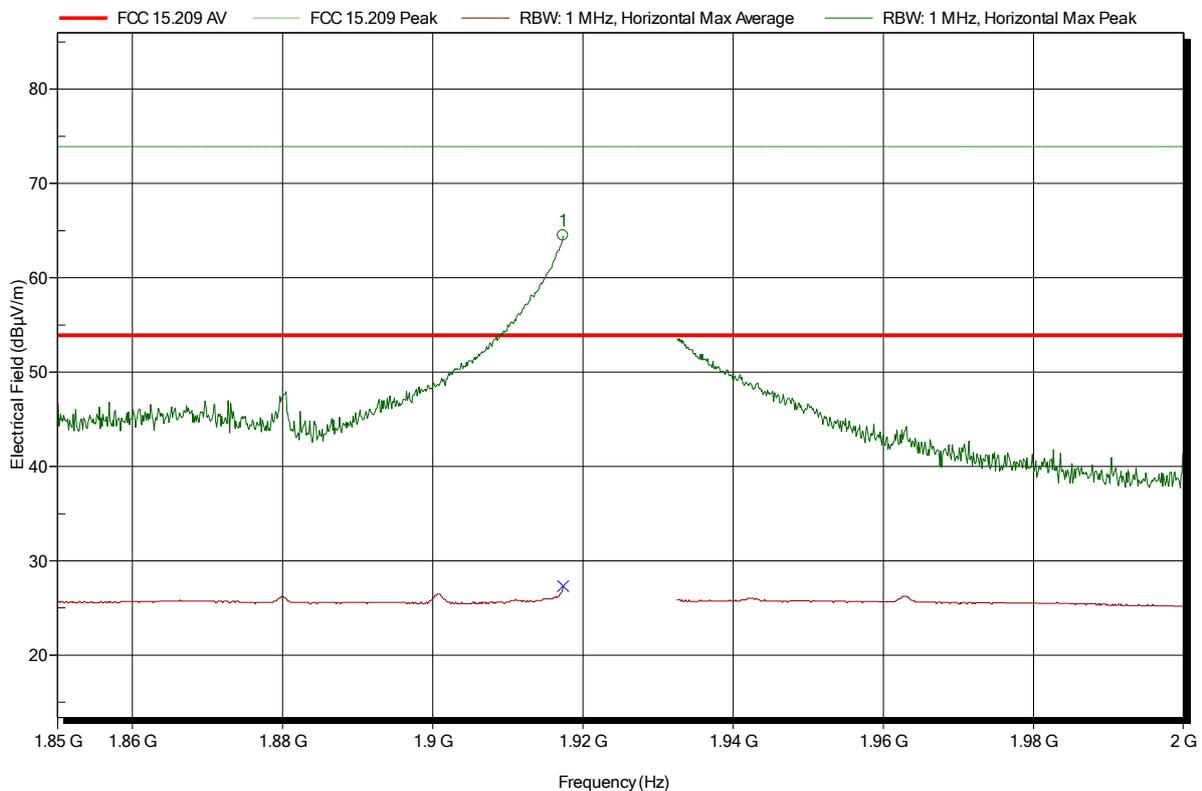
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9174 GHz	64.47 dBµV/m	73.9 dBµV/m	-9.43 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
1.9174 GHz	27.32 dBµV/m	53.9 dBµV/m	-26.58 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

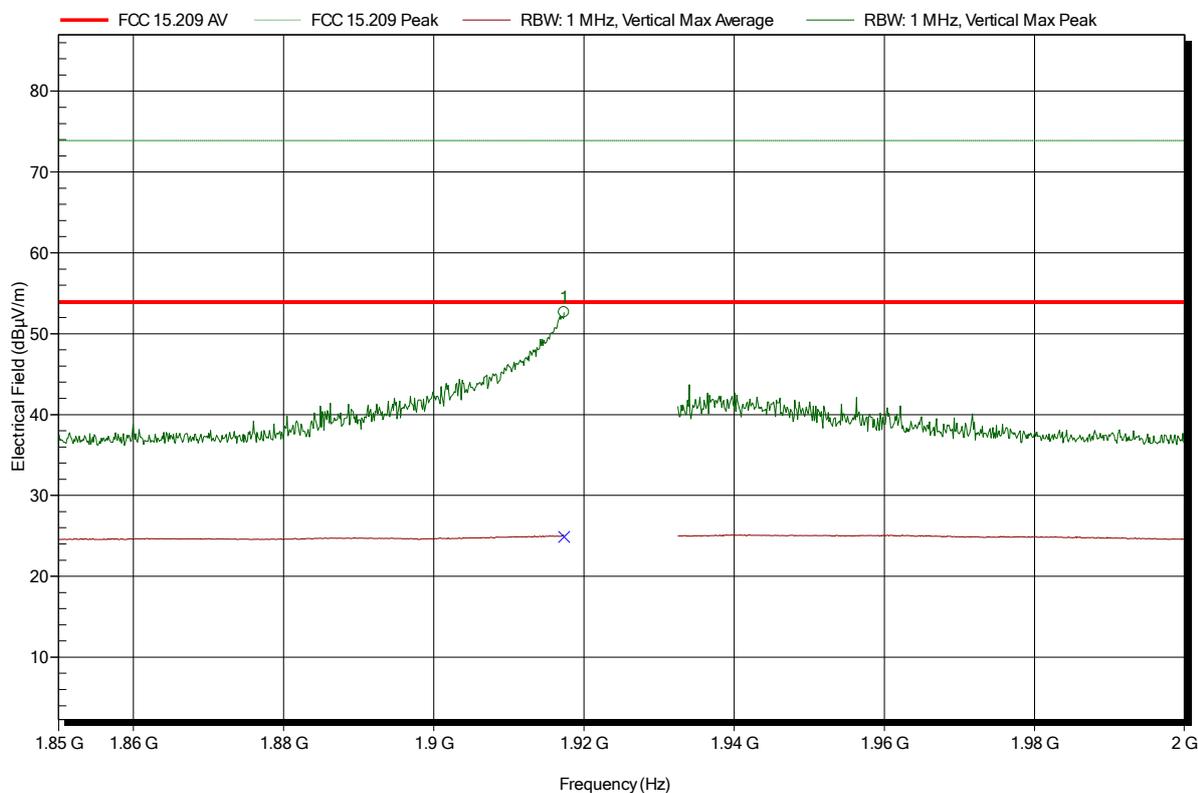
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9174 GHz	52.65 dBµV/m	73.9 dBµV/m	-21.25 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
1.9174 GHz	24.89 dBµV/m	53.9 dBµV/m	-29.01 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

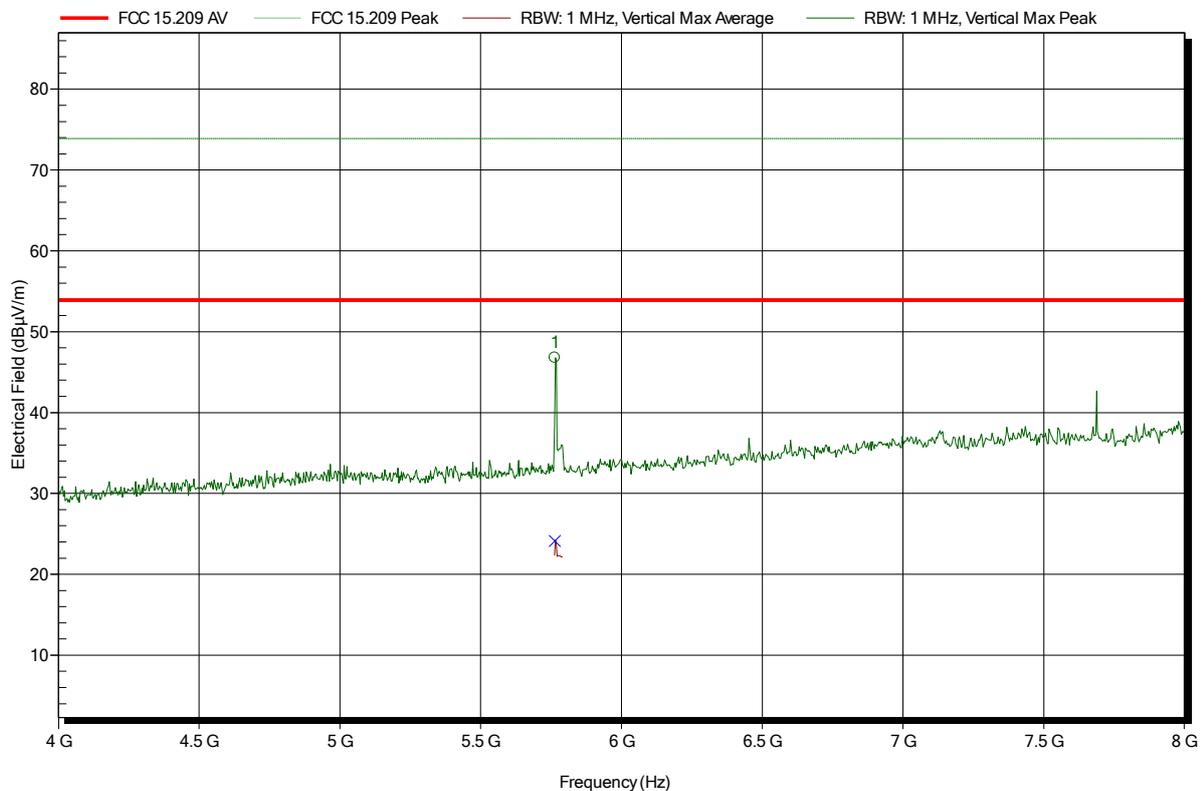
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.2  
 Test Date: 2015-06-09  
 Note:

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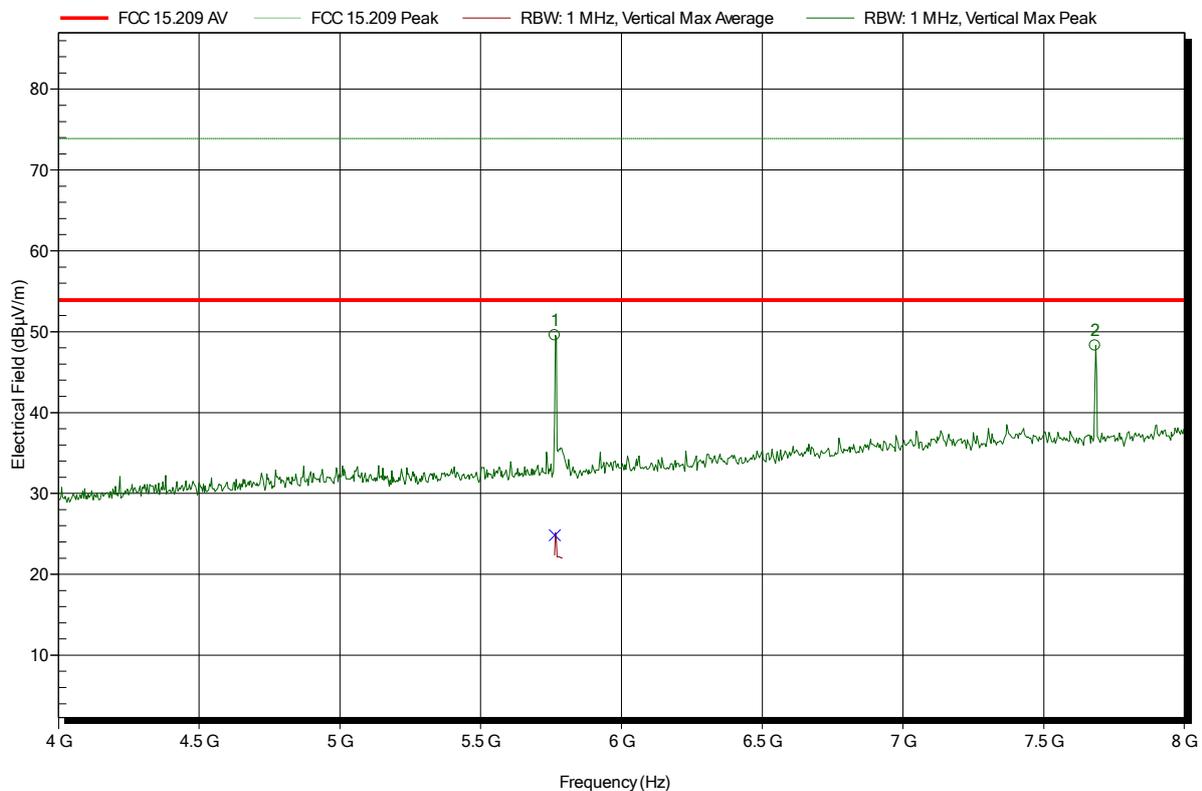
Frequency	Peak	Peak Limit	Peak Difference	Status
5.764 GHz	46.79 dBµV/m	73.9 dBµV/m	-27.11 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
5.764 GHz	24.13 dBµV/m	53.9 dBµV/m	-29.77 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.4; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.764 GHz	49.57 dBµV/m	73.9 dBµV/m	-24.33 dB	Pass
7.682 GHz	48.3 dBµV/m	73.9 dBµV/m	-25.6 dB	Pass

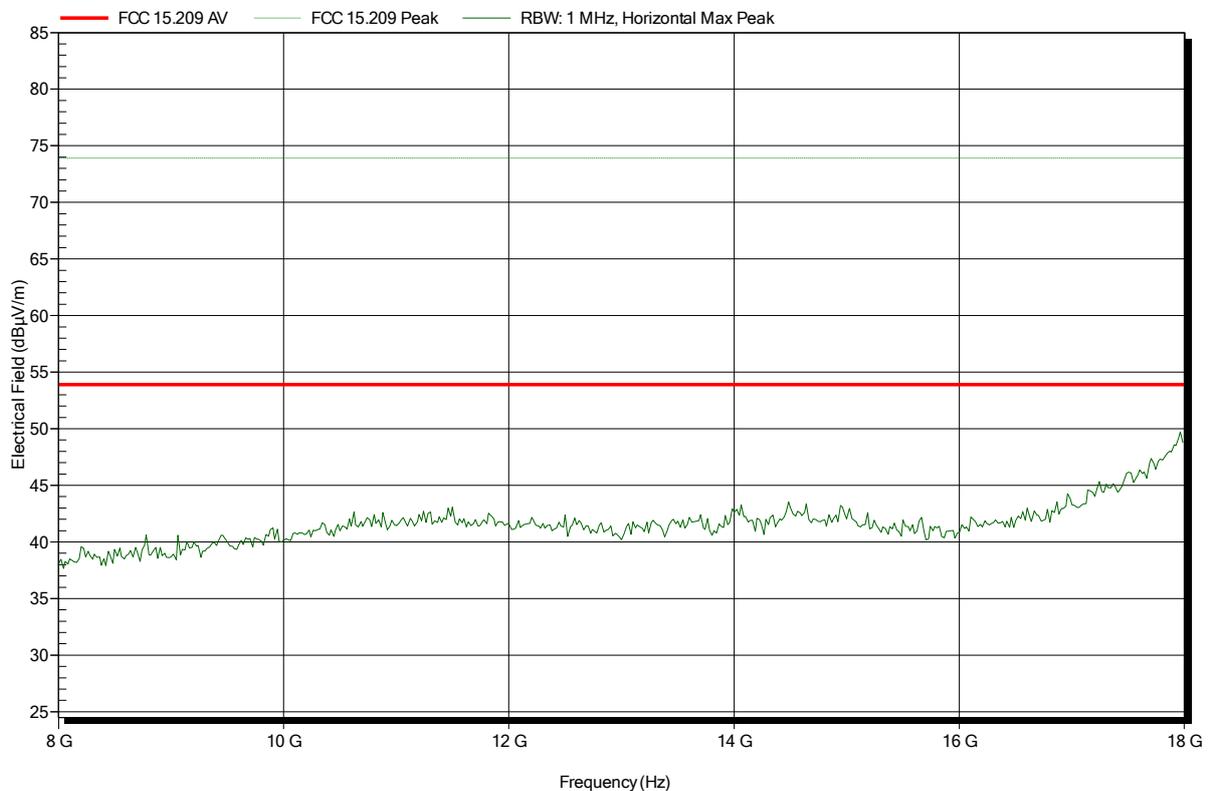
Frequency	Average	Average Limit	Average Difference	Average Status
5.764 GHz	24.83 dBµV/m	53.9 dBµV/m	-29.07 dB	Pass
7.682 GHz				

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.2
Test Date:	2015-06-09
Note:	

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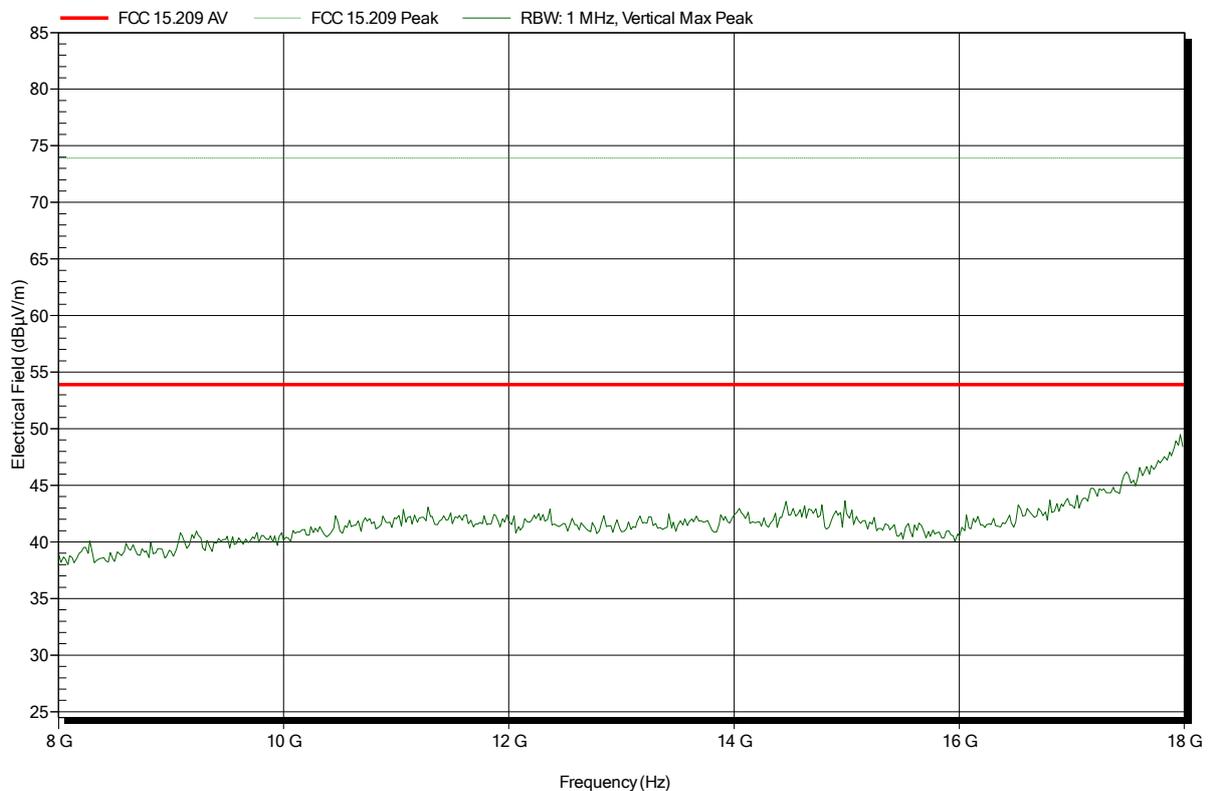


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.4; Ant.2
Test Date:	2015-06-09
Note:	

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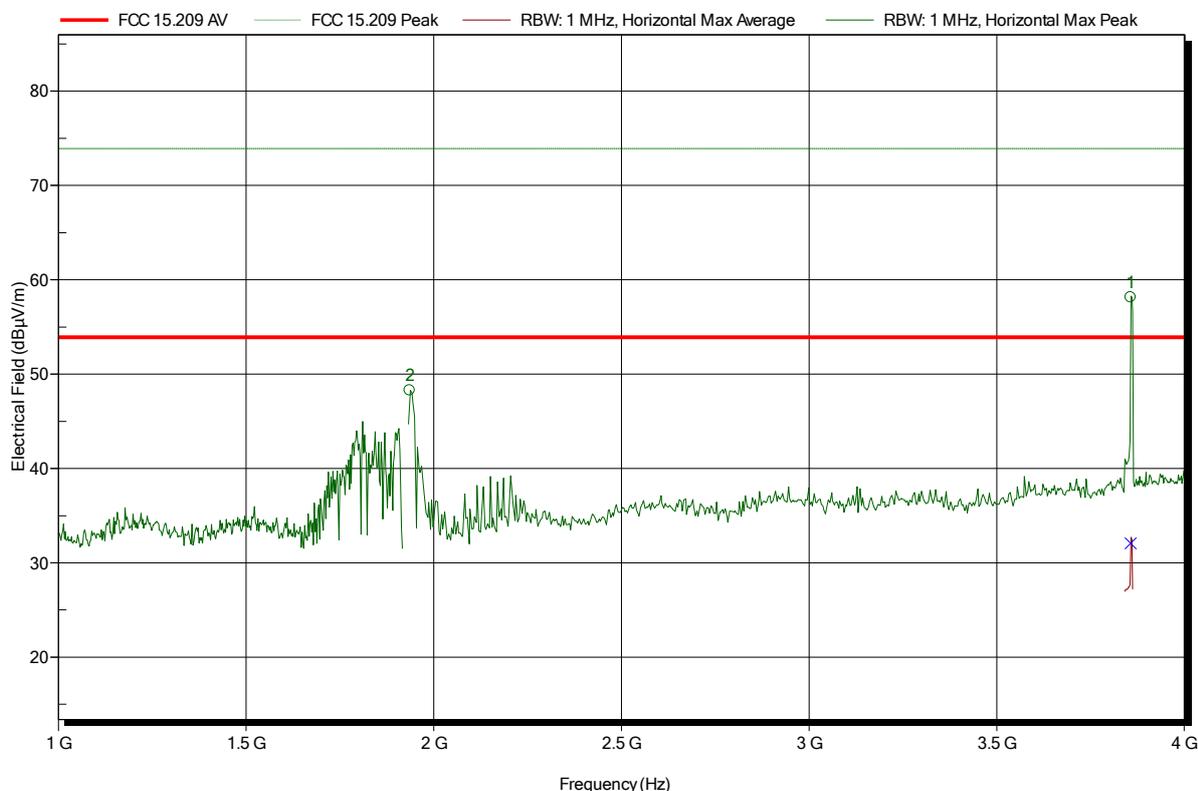


**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9363 GHz	48.26 dBµV/m	73.9 dBµV/m	-25.64 dB	Pass
3.8562 GHz	58.15 dBµV/m	73.9 dBµV/m	-15.75 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8562 GHz	32.08 dBµV/m	53.9 dBµV/m	-21.82 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

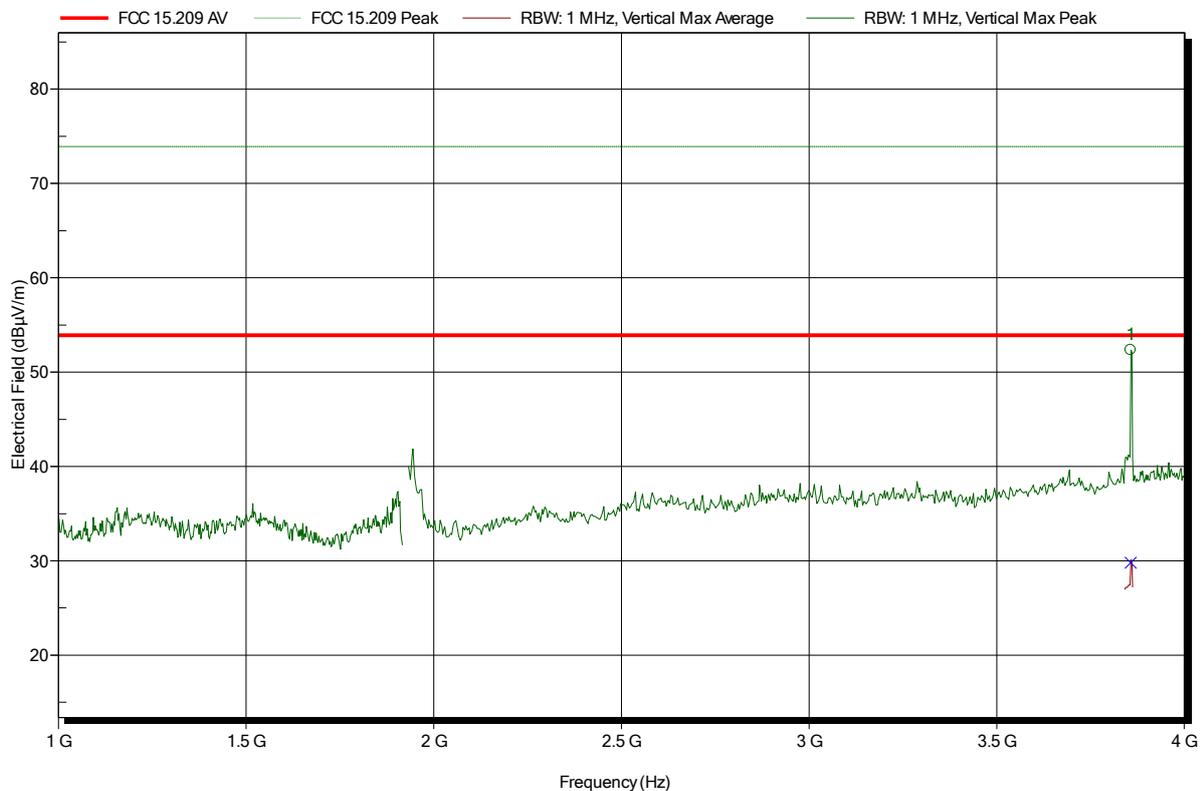
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note: with notch-filter

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.8563 GHz	52.34 dBµV/m	73.9 dBµV/m	-21.56 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
3.8563 GHz	29.8 dBµV/m	53.9 dBµV/m	-24.1 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

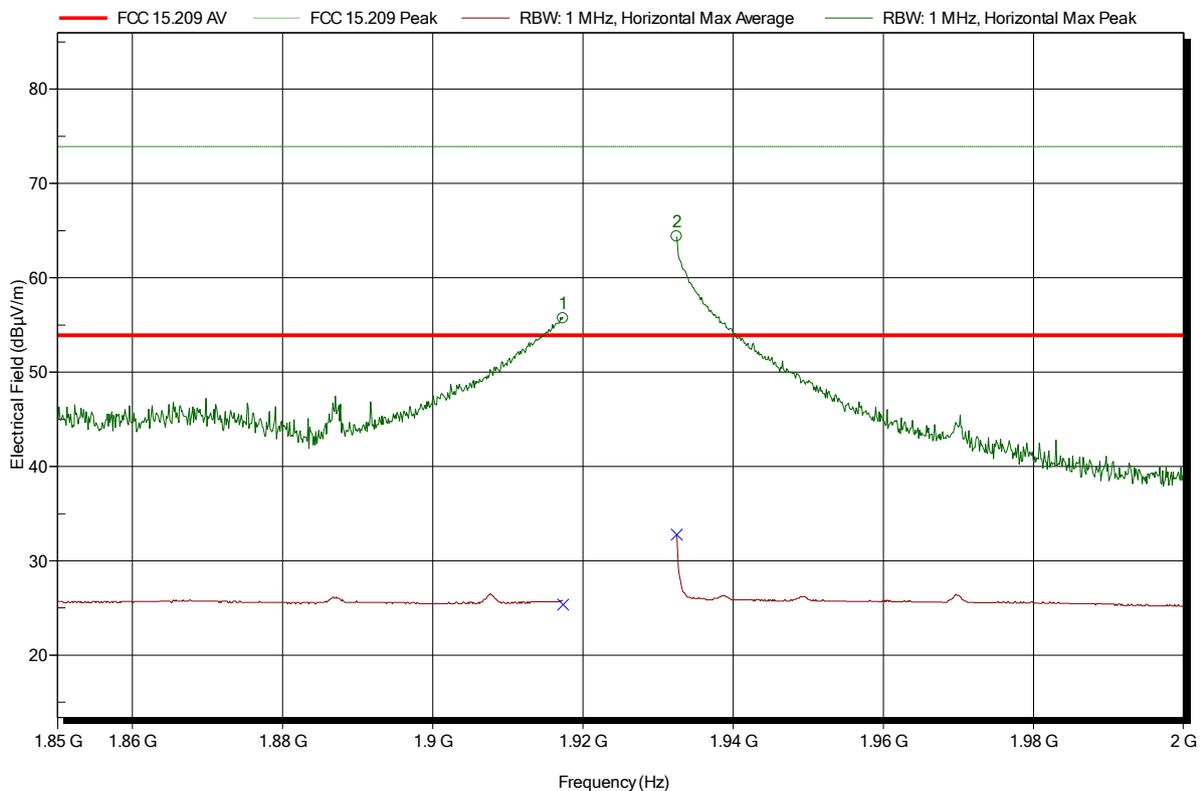
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9174 GHz	55.7 dBµV/m	73.9 dBµV/m	-18.2 dB	Pass
1.9325 GHz	64.38 dBµV/m	73.9 dBµV/m	-9.52 dB	Pass

Frequency	Average	Average Limit	Average Difference	Average Status
1.9174 GHz	25.35 dBµV/m	53.9 dBµV/m	-28.55 dB	Pass
1.9325 GHz	32.79 dBµV/m	53.9 dBµV/m	-21.11 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

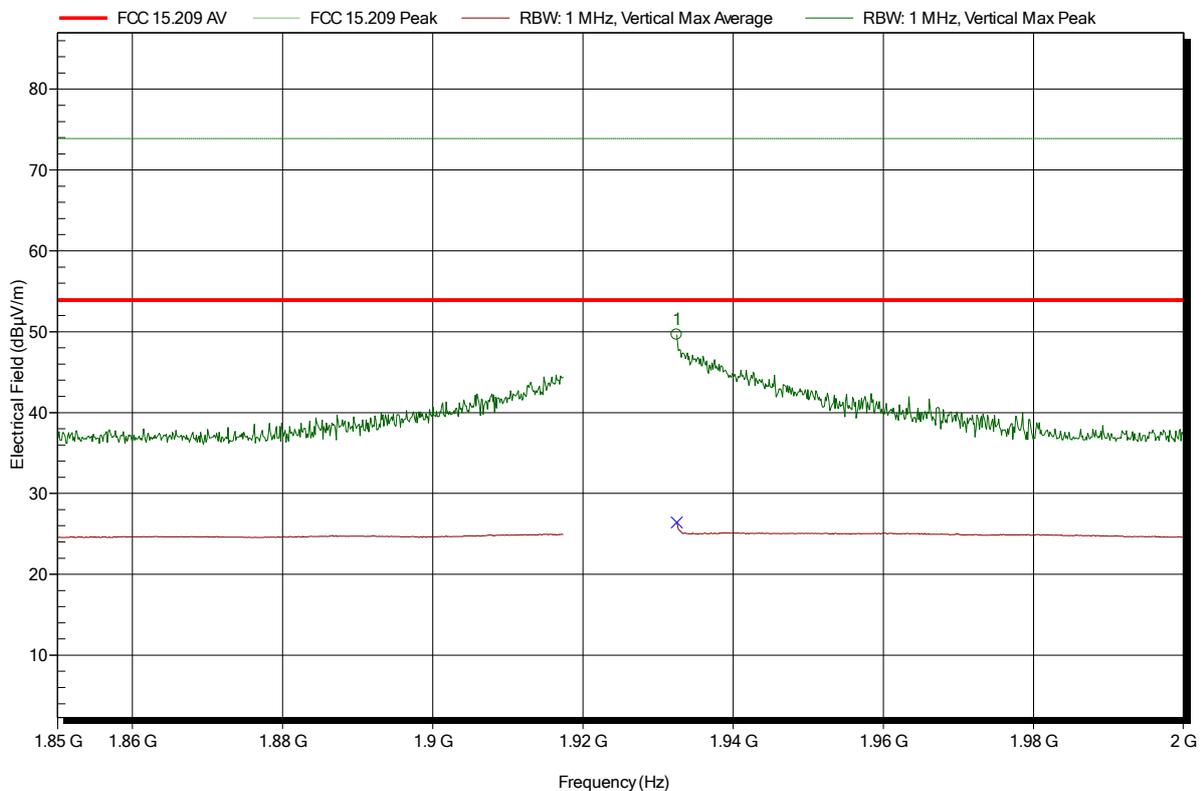
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3 m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note:

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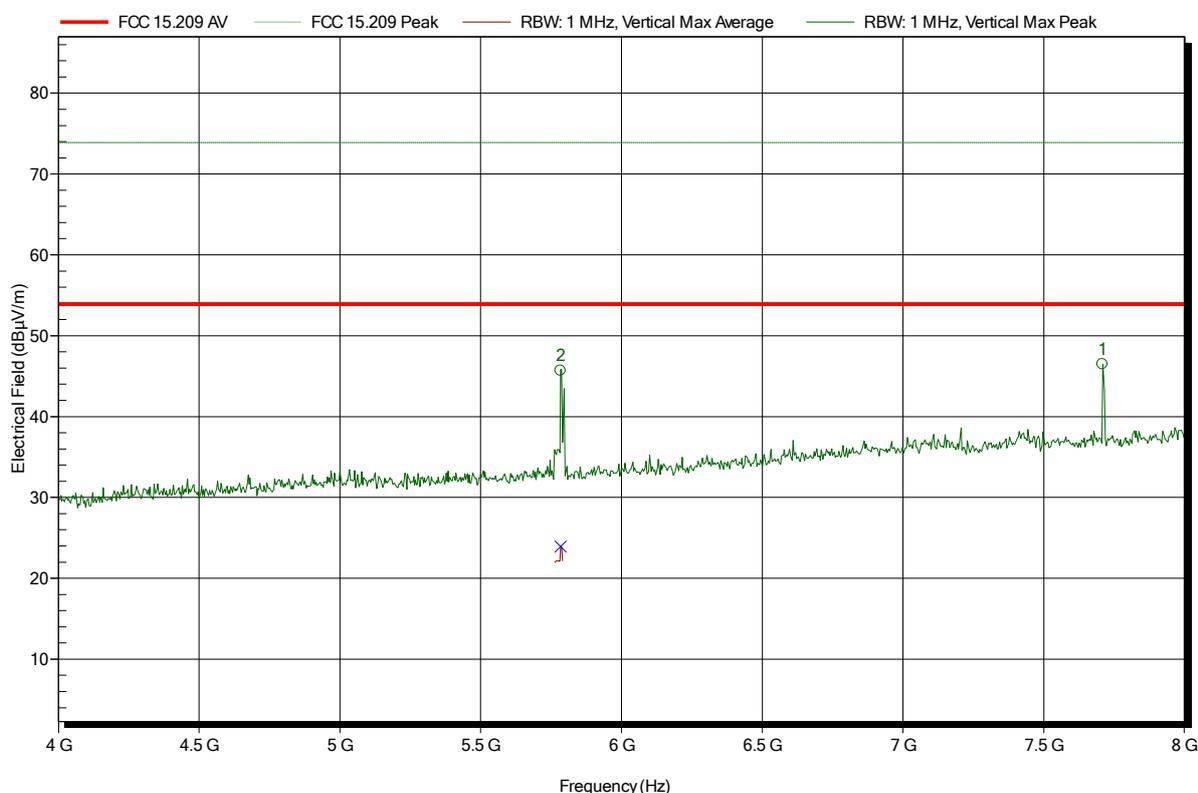
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.9325 GHz	49.62 dBµV/m	73.9 dBµV/m	-24.28 dB	Pass
Frequency	Average	Average Limit	Average Difference	Average Status
1.9325 GHz	26.42 dBµV/m	53.9 dBµV/m	-27.48 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.784 GHz	45.69 dBµV/m	73.9 dBµV/m	-28.21 dB	Pass
7.708 GHz	46.47 dBµV/m	73.9 dBµV/m	-27.43 dB	Pass

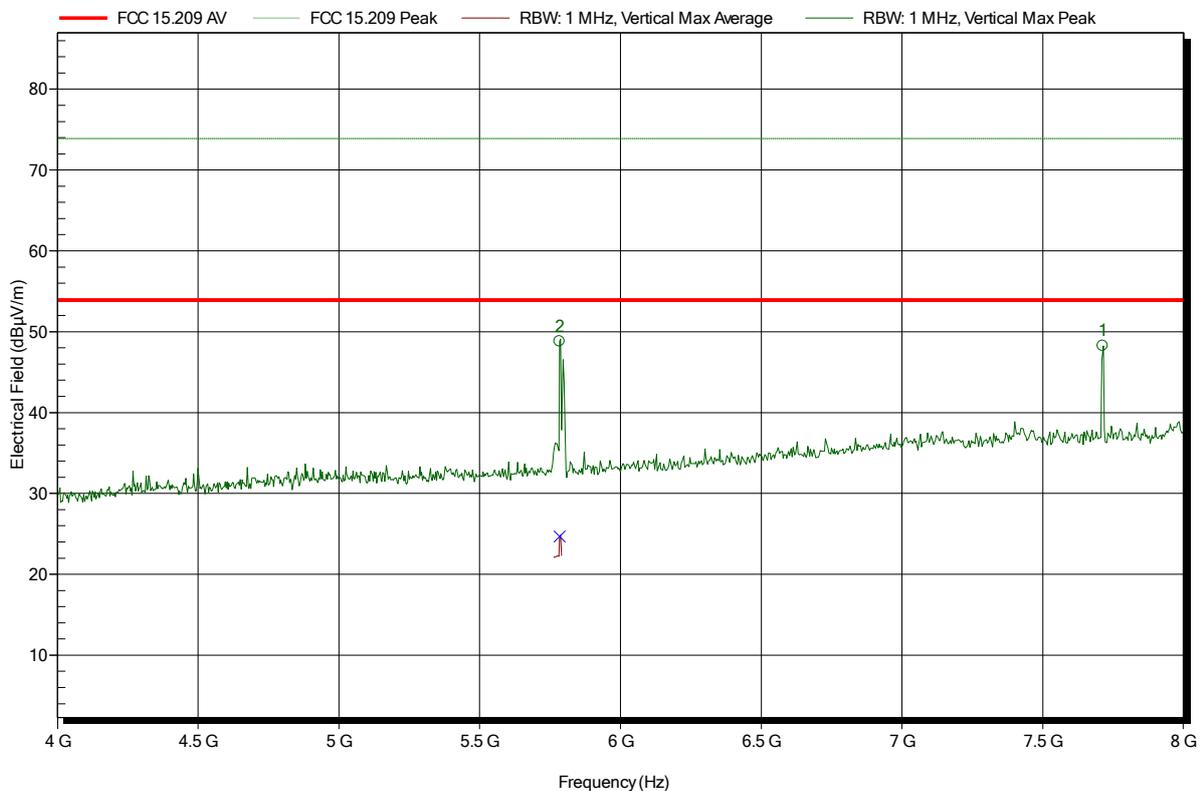
Frequency	Average	Average Limit	Average Difference	Average Status
5.784 GHz	23.92 dBµV/m	53.9 dBµV/m	-29.98 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; #B11, UPCS; Ch.0; Ant.2  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
5.784 GHz	48.82 dBµV/m	73.9 dBµV/m	-25.08 dB	Pass
7.713 GHz	48.26 dBµV/m	73.9 dBµV/m	-25.64 dB	Pass

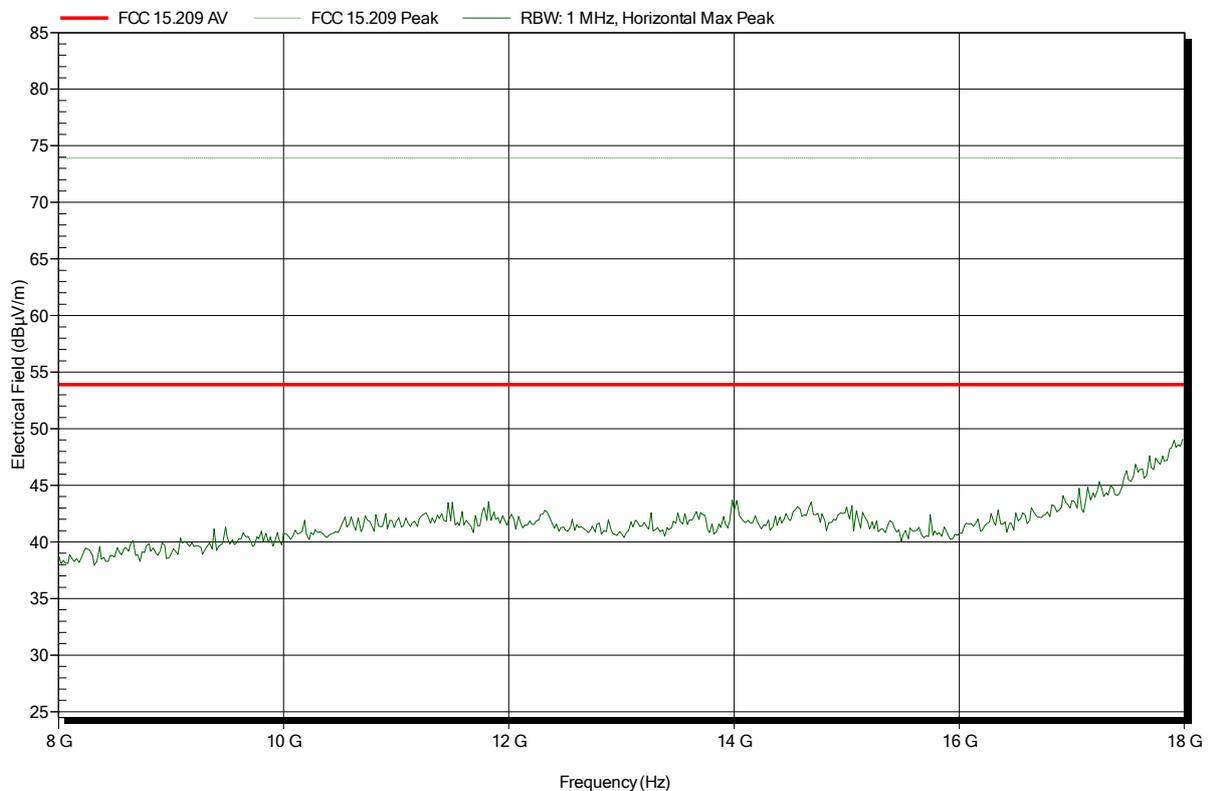
Frequency	Average	Average Limit	Average Difference	Average Status
5.784 GHz	24.68 dBµV/m	53.9 dBµV/m	-29.22 dB	Pass

**Spurious emissions according to FCC 15.209**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.2
Test Date:	2015-06-09
Note:	

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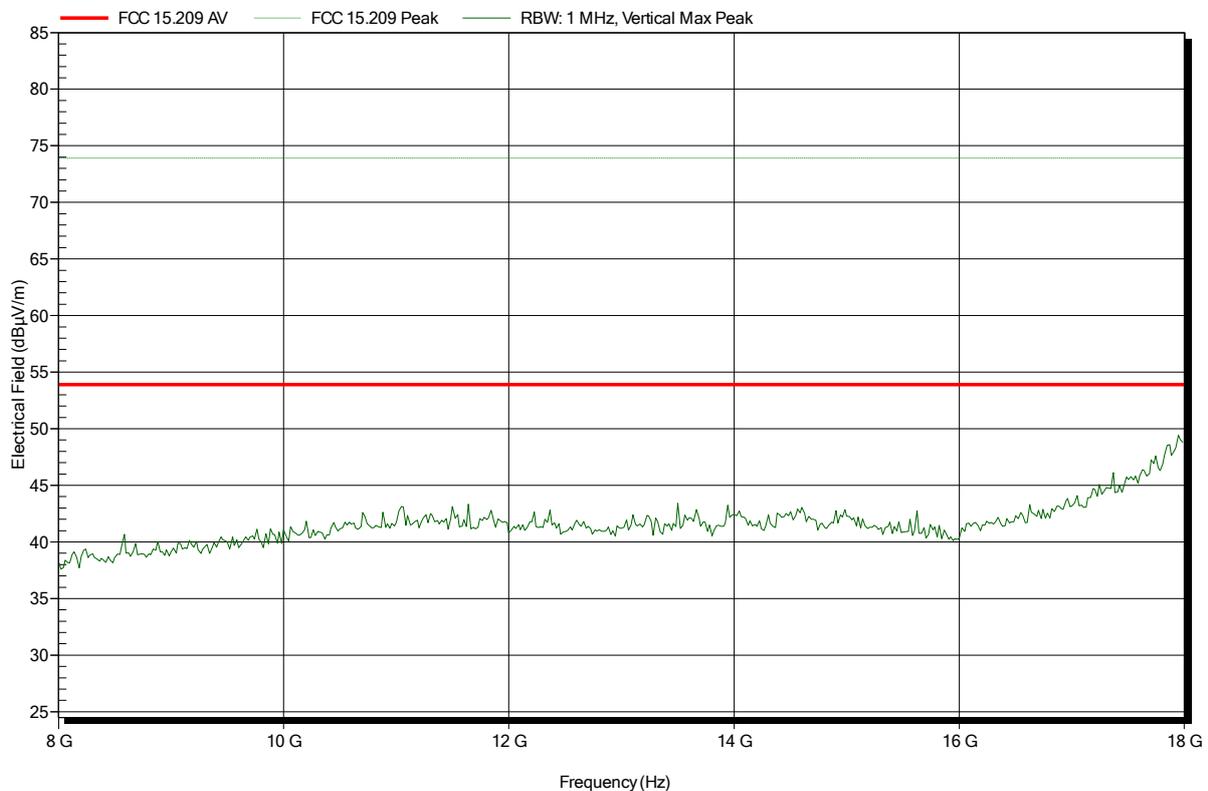


**Spurious emissions according to FCC 15.209**

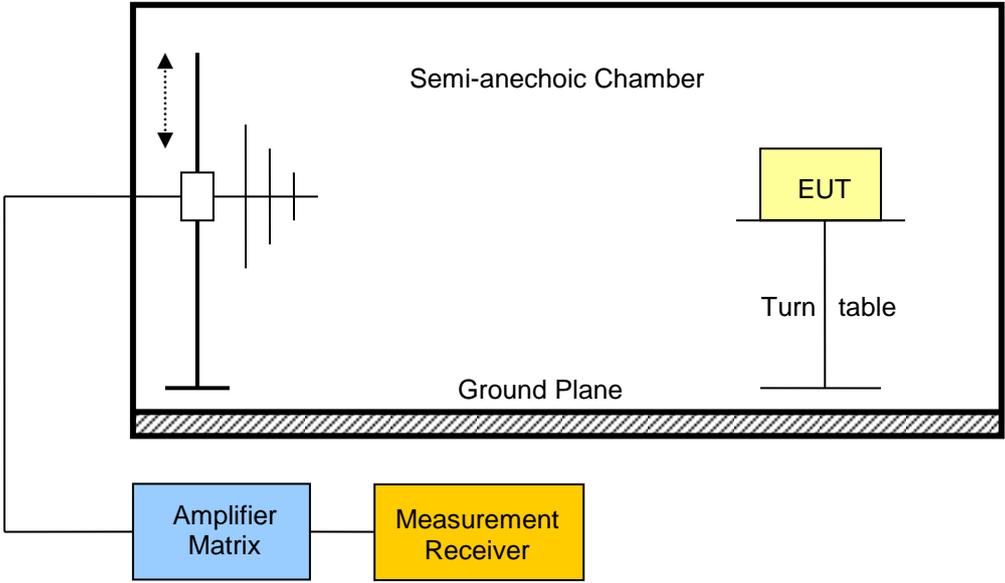
Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; #B11, UPCS; Ch.0; Ant.2
Test Date:	2015-06-09
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 3.1			
Test according to measurement reference		Reference Method			
		ANSI C63.4			
Tested frequencies		Scan (All)			
Tested frequency range		30 MHz – 5 <sup>th</sup> Harmonic			
EUT test mode		Receive			
Limits					
Frequency range [MHz]	Detector	Limit [ $\mu$ V/m]	Limit [dB $\mu$ V/m]	Limit Distance [m]	
30 – 88	Quasi-Peak	100	40	3	
88 – 216	Quasi-Peak	150	43.5	3	
216 – 960	Quasi-Peak	200	46	3	
960 – 1000	Quasi-Peak	500	54	3	
> 1000	Average	500	54	3	
Test setup					
					

**Test procedure**

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

**Test results**

Channel	Frequency [MHz]	Emission [MHz]	Emission Level [dB $\mu$ V/m]	Pol.	Det.	Limit [dB $\mu$ V/m]	Margin [dB]
scan mode	1921.536 – 1928.448	912	24.76	ver	pk	46.00	-21.24
scan mode	1921.536 – 1928.448	7824	49.33	hor	pk	53.98	-04.65
scan mode	1921.536 – 1928.448	12086	43.39	hor	pk	53.98	-10.59

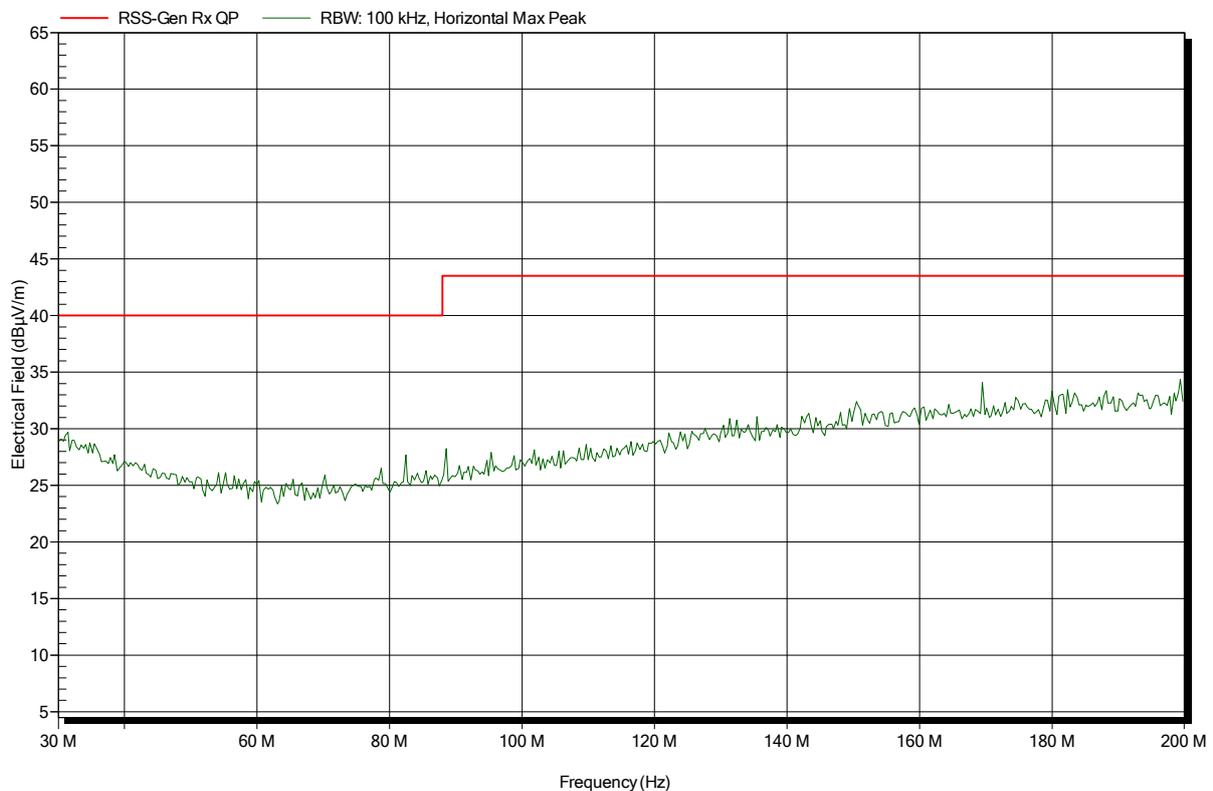
Comments:

**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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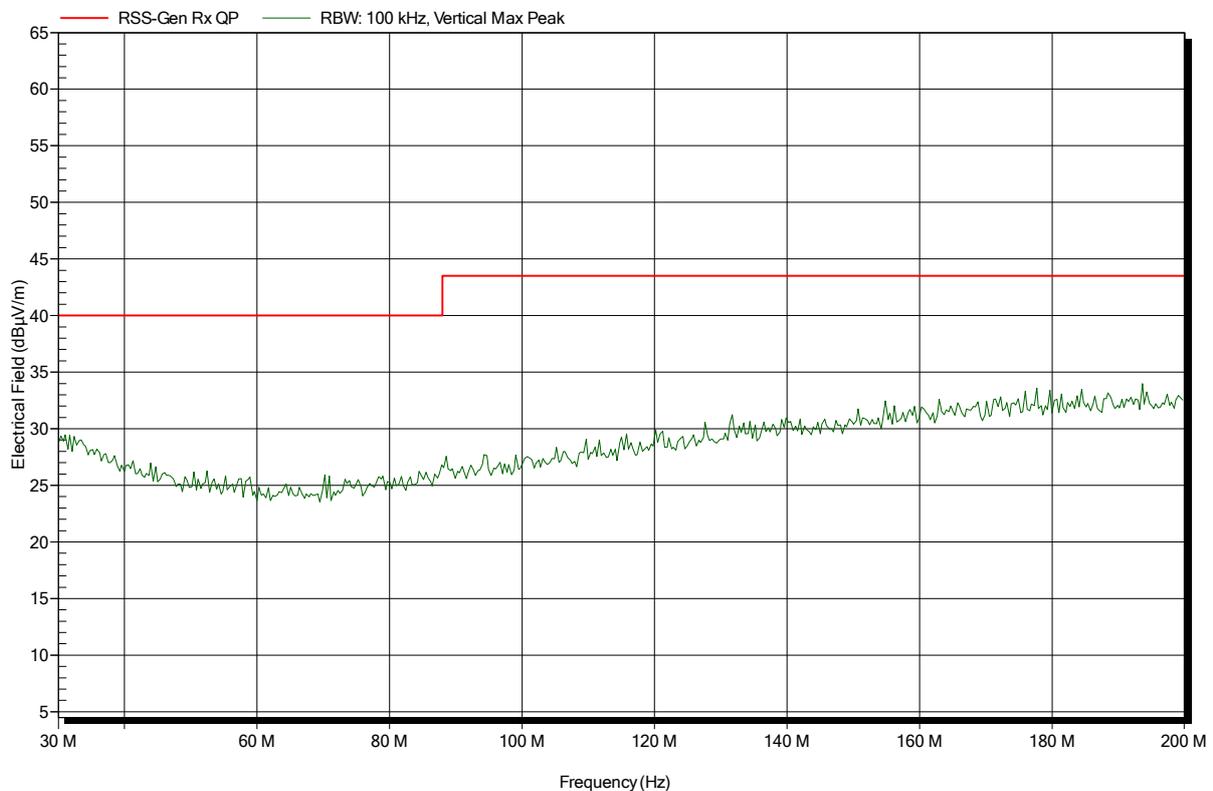


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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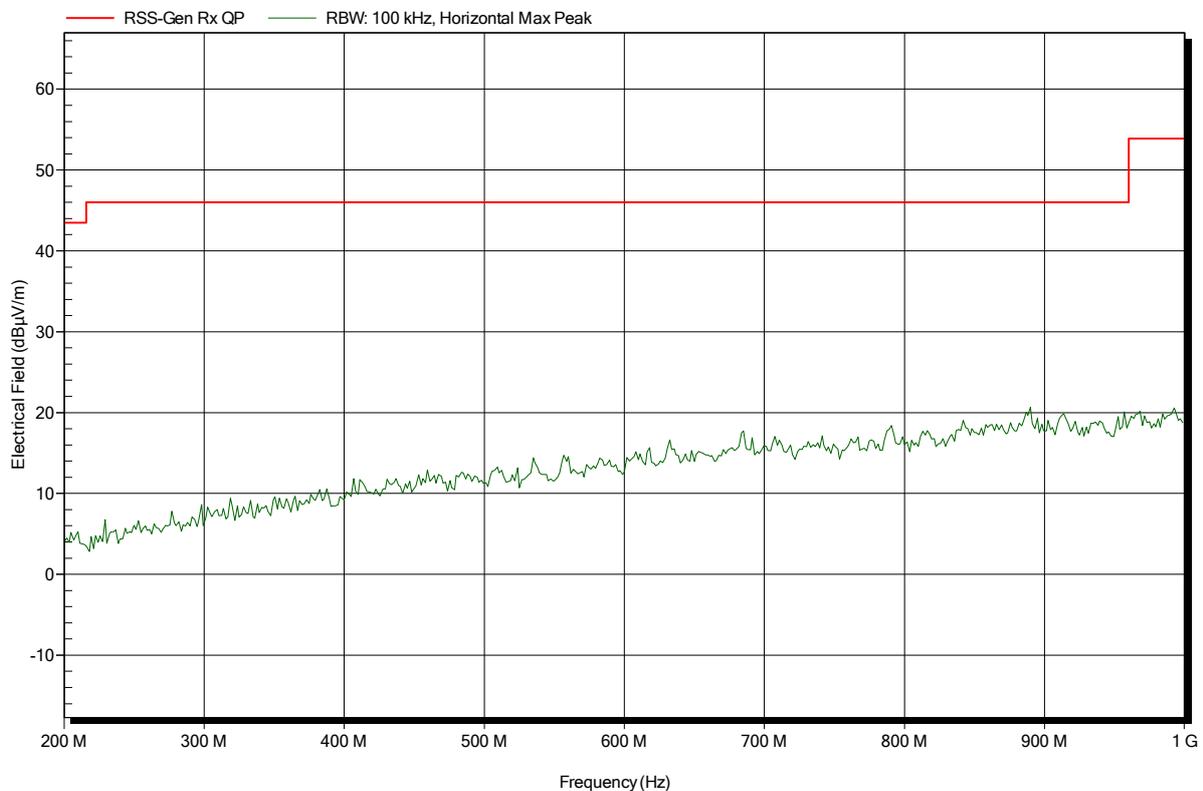


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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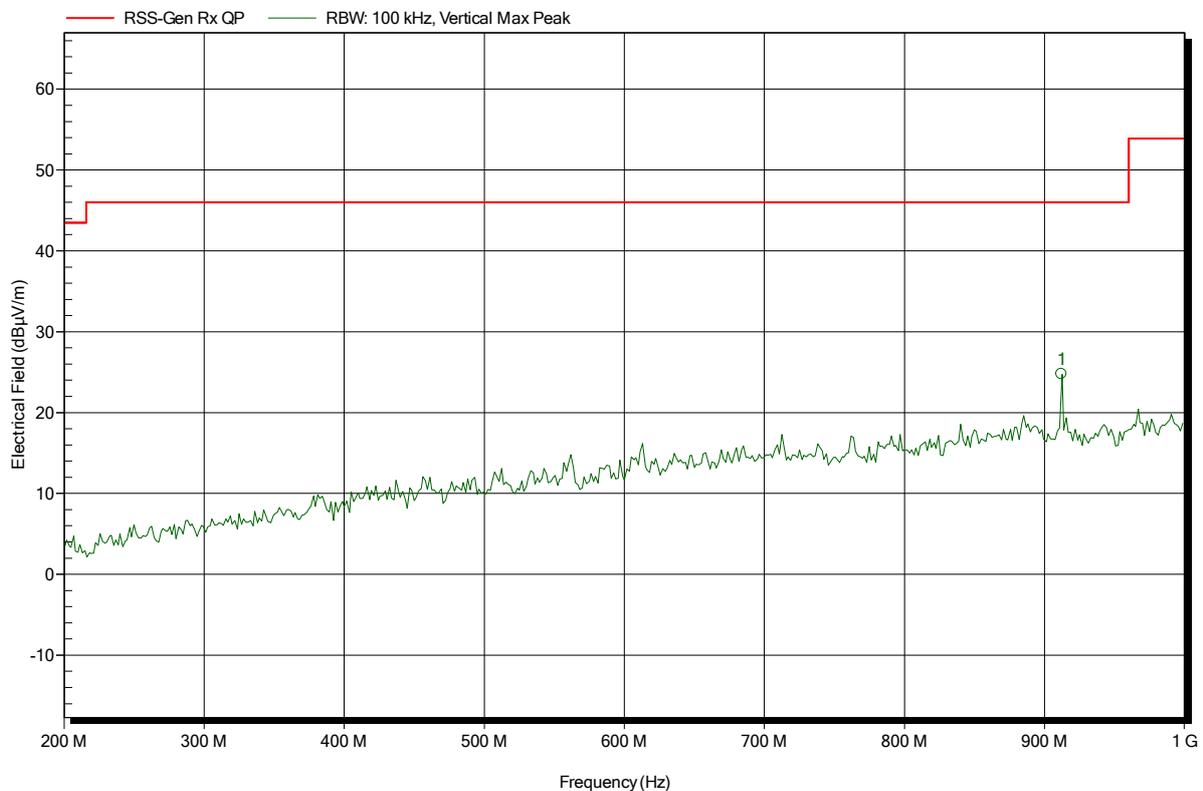


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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Frequency	Peak	Peak Limit	Peak Difference	Status
912 MHz	24.76 dBµV/m	46 dBµV/m	-21.24 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

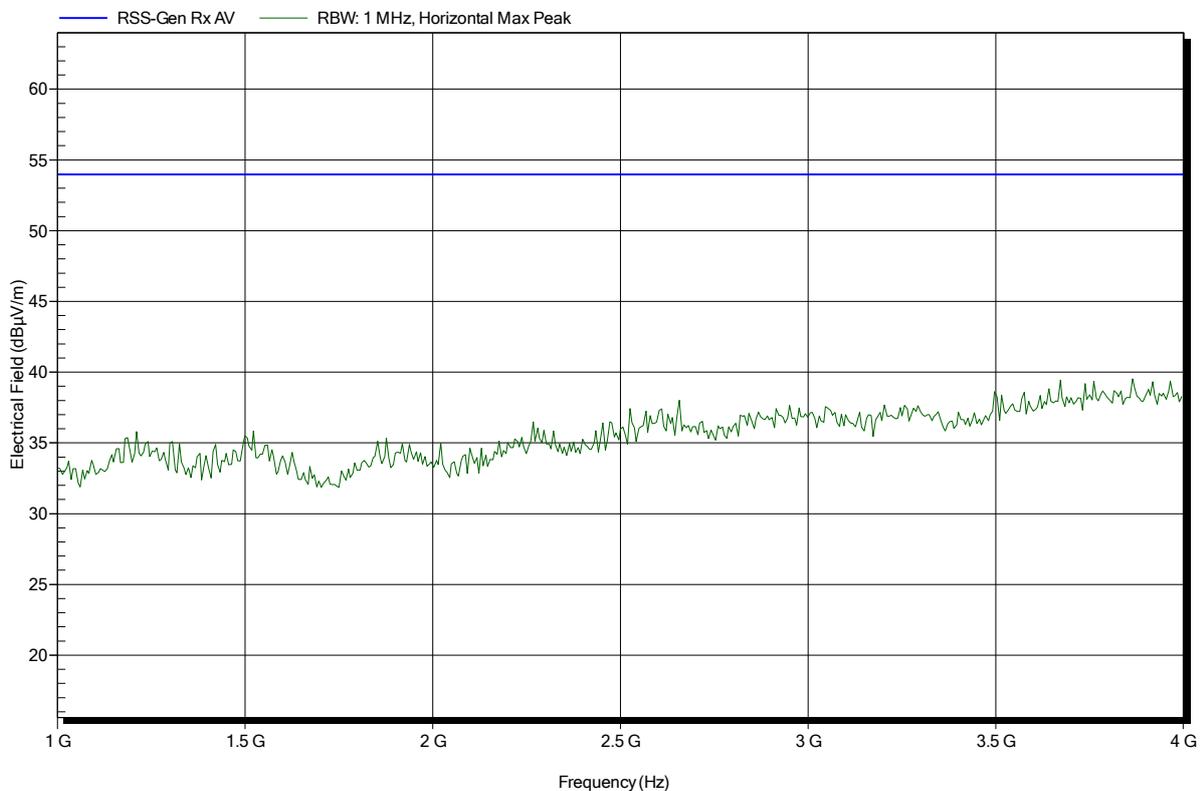
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to RSS-GEN**

Project number: GOM-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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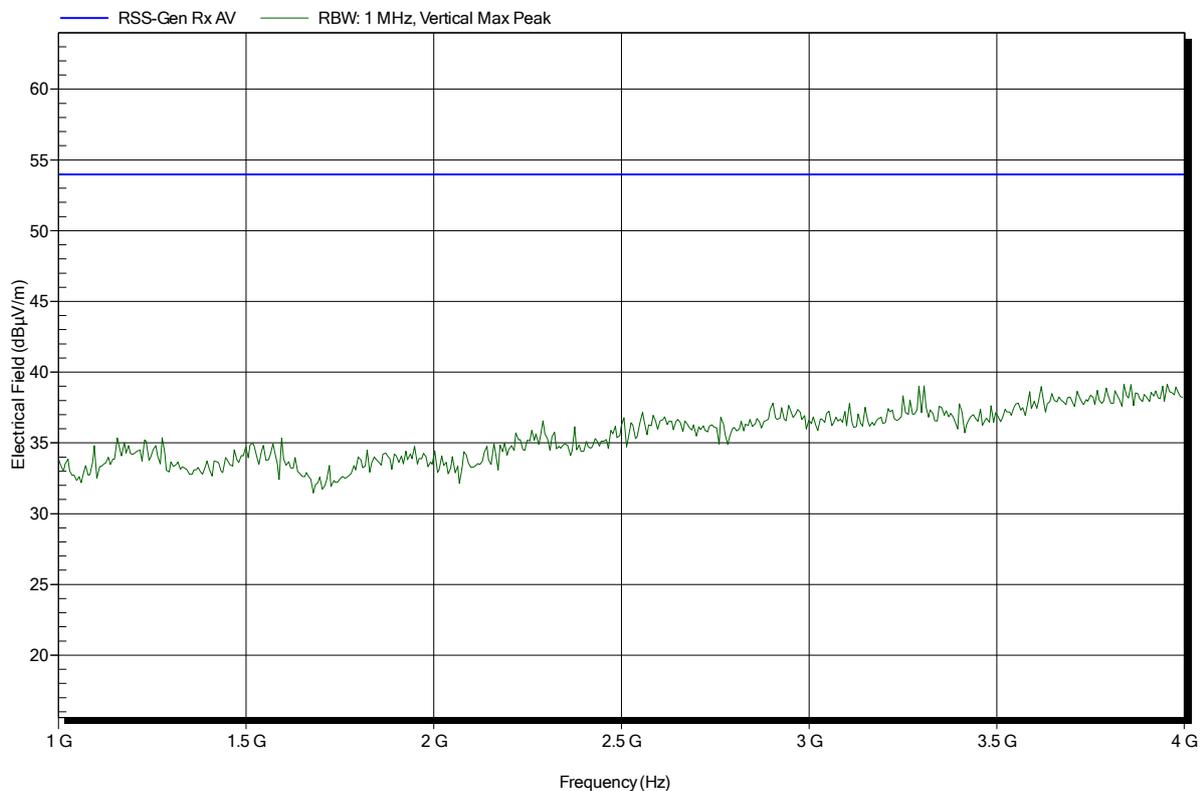


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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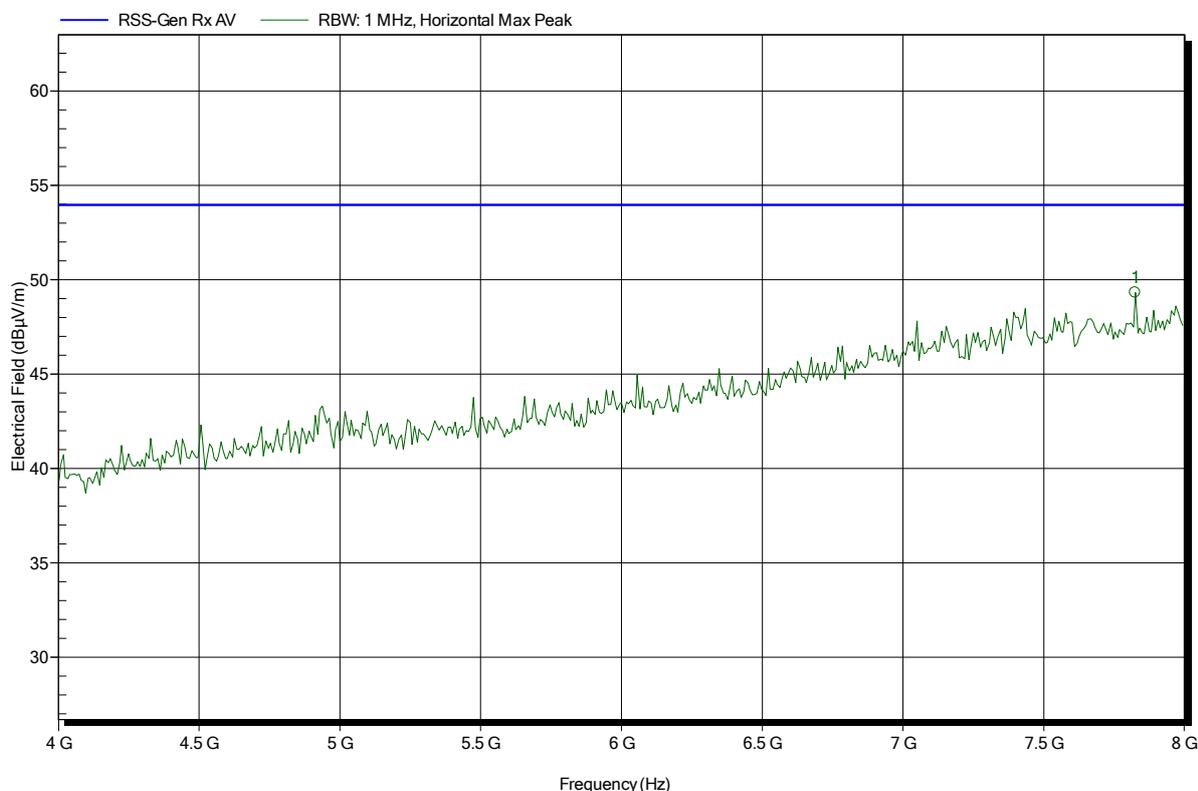


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3 m  
 Mode: RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode  
 Test Date: 2015-06-09  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.824 GHz	49.33 dBµV/m	53.98 dBµV/m	-4.65 dB	Pass

Test Report No.: G0M-1505-4754-TFC15DPP2-V01

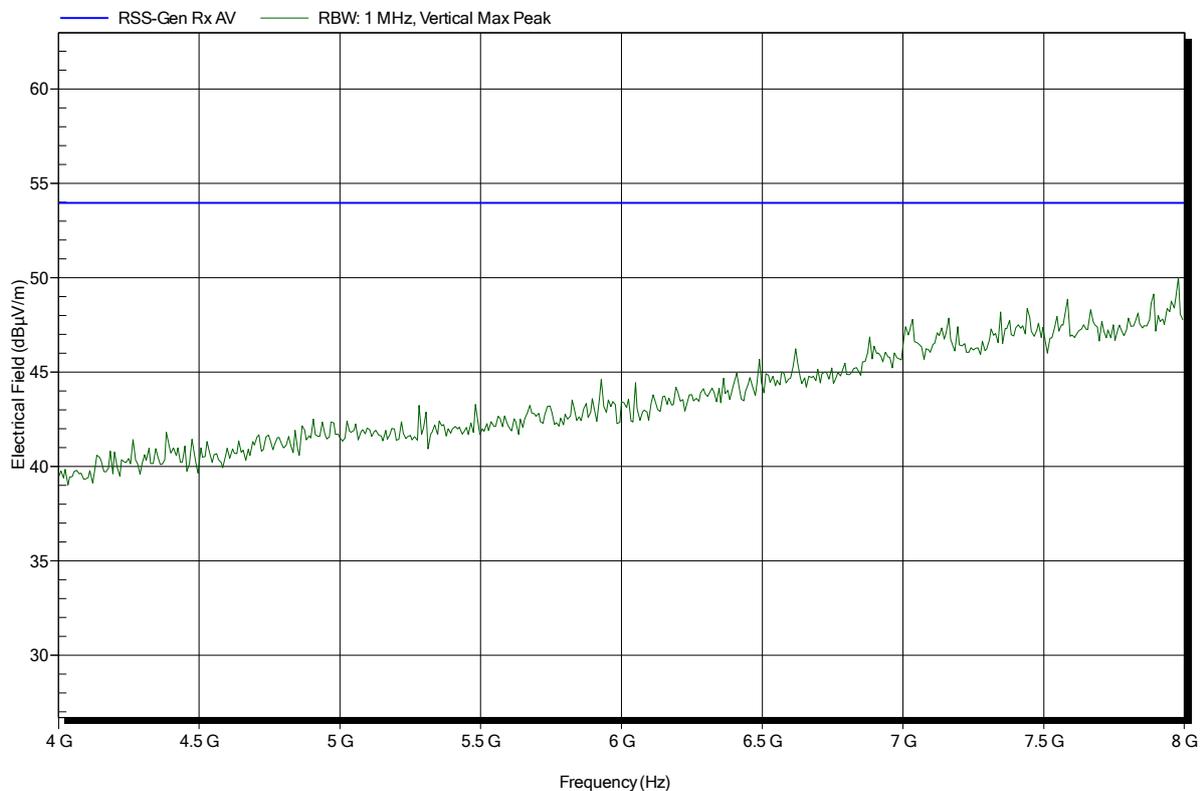
 Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
Note:	

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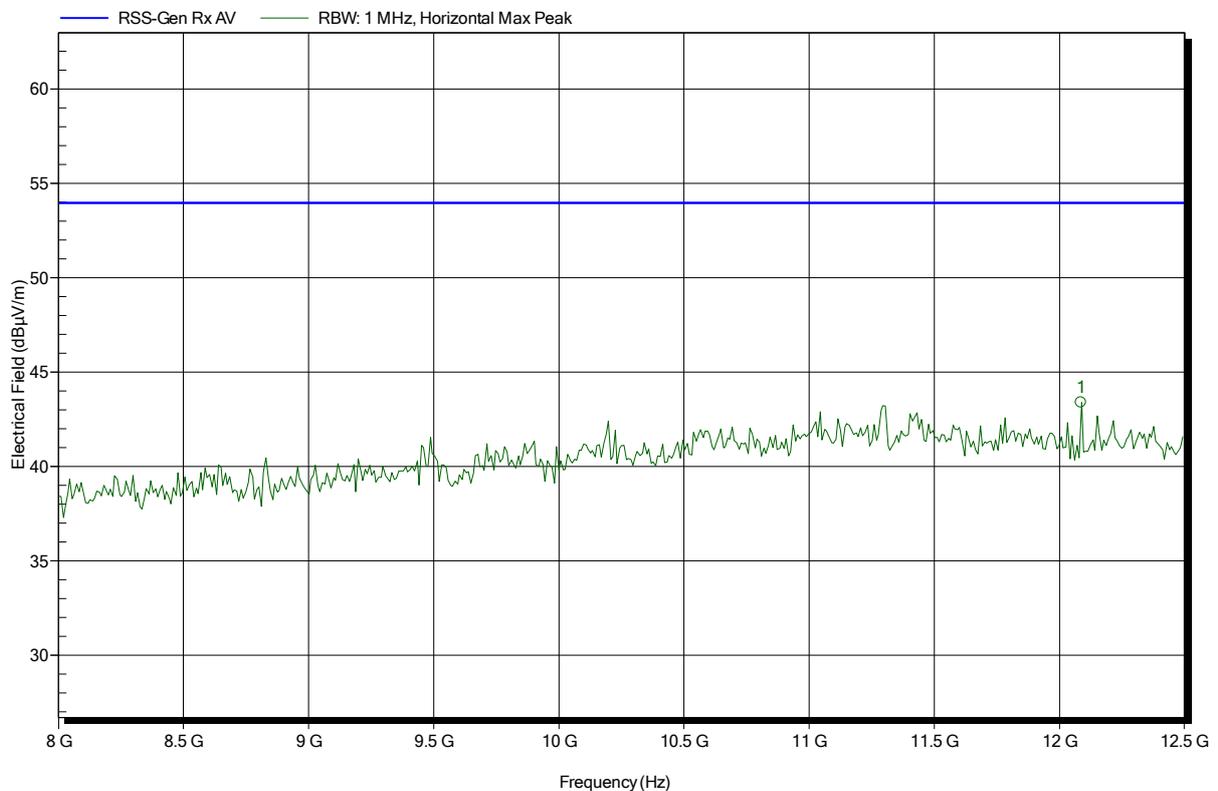


**Spurious emissions according to RSS-GEN**

Project number: G0M-1505-4754

Applicant: Spectralink Europe ApS  
 EUT Name: DECT handset 7212  
 Model: K023e  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Treffke  
 Test Conditions: Tnom: 24°C, Vnom: 3.7 V DC lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode  
 Test Date: 2015-06-09  
 Note:

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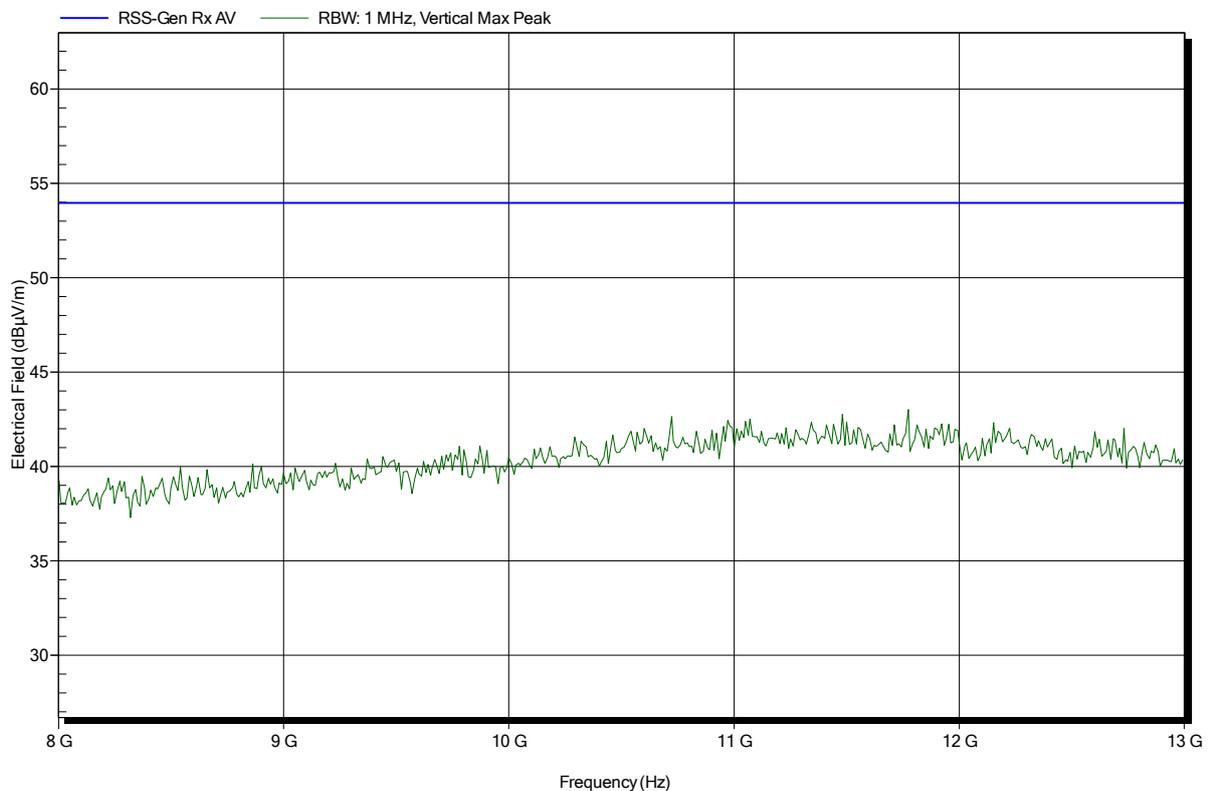
Frequency	Peak	Peak Limit	Peak Difference	Status
12.086 GHz	43.39 dBµV/m	53.98 dBµV/m	-10.59 dB	Pass

**Spurious emissions according to RSS-GEN**

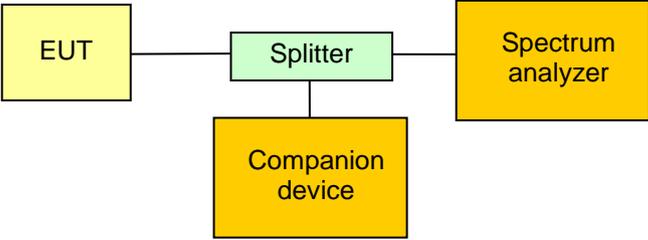
Project number: G0M-1505-4754

Applicant:	Spectralink Europe ApS
EUT Name:	DECT handset 7212
Model:	K023e
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 24°C, Vnom: 3.7 V DC lithium battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; #B11, UPCS; Ant.1+2, ant. diversity; scan mode
Test Date:	2015-06-09
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 5.2	
Test according to measurement reference	Reference Method	
	Manual evaluation	
EUT equipment type	Fixed 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		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Splitter --- Companion[Companion device]     Splitter --- SA[Spectrum analyzer]             </pre>		
Test procedure		
<p>The following situations were simulated to test the reaction of the EUT:</p> <ul style="list-style-type: none"> <li>• EUT power removed</li> <li>• EUT switched –off</li> <li>• Companion device switched off</li> <li>• Hook-on by companion device</li> <li>• Hook-on by EUT</li> <li>• Power removed from companion device</li> </ul> <p>The reaction of the EUT is recorded by the following results:</p> <p>A – Connection breakdown, cease of all transmissions</p> <p>B – Connection breakdown, EUT transmits control and signalling information</p> <p>C – Connection breakdown, Companion device transmits control and signalling information</p> <p>N/A – Not applicable (the EUT or companion device does not have an on/off switch or cannot perform hook on</p>		
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**

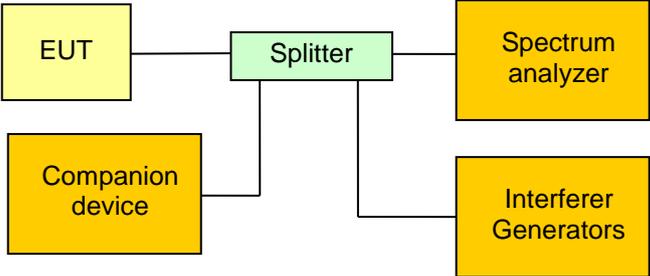
<b>Radiofrequency radiation exposure acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.319(c)(i) / IC RSS-102	
<b>Requirements</b>		
<p>FCC : Unlicensed PCS devices are subject to the radiofrequency radiation exposure requirements specified 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.</p> <p>IC : Category I and Category II equipment shall comply with the applicable requirements of RSS-102.</p>		
<b>Result</b>		
	Reference	Verdict
	see dedicated report : G0M-1505-4754-TFC093SR-7722-V01 issued by Eurofins Product Service GmbH	PASS

**3.15 Test Conditions and Results – LIC confirmation**

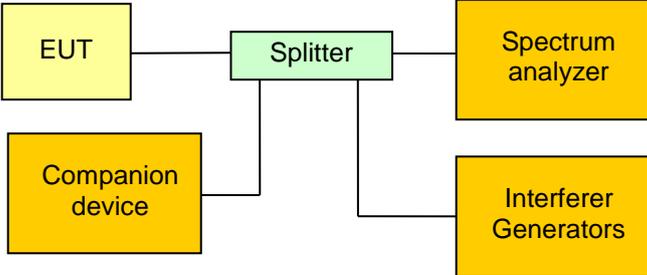
<b>LIC confirmation acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(5) / IC RSS-213 4.3.4(b)(5)	
Test according referenced standards	Reference Method	
	ANSI C63.17 7.3.4	
<b>Requirements</b>		
A device utilizing the provisions 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.		
<b>Test result</b>		
Evaluation		Verdict
The requirement is verified using the “Monitoring time” and “LIC Selection” 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 5.2		
Test according referenced standards	Reference Method		
	ANSI C63.17 7.3.2		
<b>Requirements</b>			
<p>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.</p> <p>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.</p>			
<b>Test setup</b>			
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]           </pre>			
<b>Test procedure</b>			
<ol style="list-style-type: none"> <li>1. The EUT is forced to two carrier frequencies <math>f_1</math> and <math>f_2</math> only by the use of interferer generators with power levels higher than the threshold <math>T_L</math> plus the measurement uncertainty <math>U_M</math> of 6 dB</li> <li>2. Additional interferer signals are applied to the channels <math>f_1</math> and <math>f_2</math> according to the result table below</li> <li>3. A communication session with the companion device is initiated</li> <li>4. Transmission on the least interfered channel is verified</li> <li>5. The communication session is terminated</li> <li>6. The communications session is established another 4 times</li> </ol>			
<b>Test results</b>			
Interferer Level $f_1$	Interferer Level $f_2$	Communication channel	Verdict
$T_L + U_M + 7$ dB	$T_L + U_M$	$f_2$	PASS
$T_L + U_M$	$T_L + U_M + 7$ dB	$f_1$	PASS
$T_L + U_M + 1$ dB	$T_L + U_M - 6$ dB	$f_2$	PASS
$T_L + U_M - 6$ dB	$T_L + U_M + 1$ 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 5.2		
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			
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]         </pre>			
Test procedure			
<ol style="list-style-type: none"> <li>1. The EUT is forced to two carrier frequencies <math>f_1</math> and <math>f_2</math> only by the use of interferer generators with power levels 20 dB higher than the threshold <math>T_L</math> plus the measurement uncertainty <math>U_M</math> of 6 dB</li> <li>2. The interferer level on channel frequency <math>f_1</math> is also set to <math>T_L + U_M + 20\text{dB}</math> and channel <math>f_2</math> has no interferer</li> <li>3. A communication session is initiated on <math>f_2</math> and transmission on <math>f_2</math> is verified</li> <li>4. An interferer level of <math>T_L + U_M + 20</math> dB is applied to <math>f_2</math> and the interferer on channel <math>f_1</math> is removed 20ms after the interferer on <math>f_2</math> is applied</li> <li>5. Transmission on <math>f_1</math> and <math>f_2</math> is monitored with the spectrum analyzer and it is verified that the EUT does not transmit on <math>f_2</math>.</li> </ol>			
Test results			
Initial transmit channel	Interferer level	Final transmit channel	Verdict
$f_2$	0	$f_2$	PASS
$f_2$	$T_L + U_M + 20$ dB	$f_1$	PASS
Comments:			

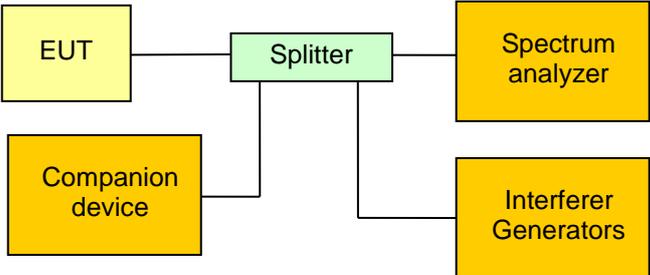
**3.18 Test Conditions and Results – Monitoring antenna**

<b>Monitoring antenna acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(8) / IC RSS-213 5.2	
Test according to measurement reference	Reference Method	
	ANSI C63.17 4	
Monitoring antenna	The same as transmitting antenna	
<b>Requirements</b>		
The monitoring system shall use the same antenna used for transmission, or an antenna that yields equivalent reception at that location.		
<b>Results</b>		
Connection status		Verdict
N/A (monitoring antenna identical to transmitting antenna)		PASS

**3.19 Test Conditions and Results – Monitoring Bandwidth**

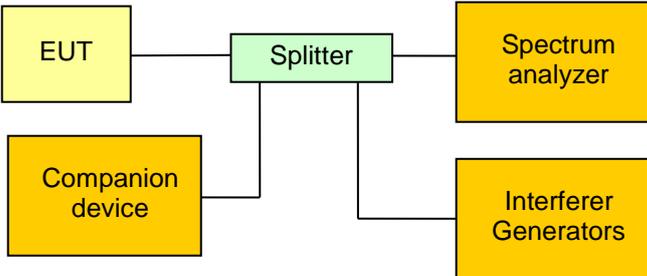
<b>Monitoring Bandwidth acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(7) / IC RSS-213 5.2	
Test according to measurement reference	Reference Method	
	ANSI C63.17 7.4	
<b>Requirements</b>		
The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission		
<b>Results</b>		
Monitoring receiver	Verdict	
The same as used for communication	PASS	

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

<b>Monitoring reaction time and monitoring interval acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference FCC 15.323(c)(7) / IC RSS-213 5.2	
Test according referenced standards	Reference Method ANSI C63.17 7.5	
<b>Requirements</b>		
<p>The monitor shall have a maximum reaction time less than <math>50 \times \text{SQRT}(1.25/\text{emission(occupied) bandwidth in MHz})</math> 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 <math>35 \times \text{SQRT}(1.25/\text{emission(occupied) bandwidth in MHz})</math> microseconds but shall not be required to be less than 35 microseconds.</p>		
<b>Test setup</b>		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>		
<b>Test procedure</b>		
<ol style="list-style-type: none"> <li>1. Using interferer signals operation is restricted to channel <math>f_1</math></li> <li>2. A time-synchronized, pulsed interference is applied to <math>f_1</math> with a power level of <math>T_L + U_M</math></li> <li>3. 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</li> <li>4. On <math>f_2</math> a CW interferer with level equal to <math>T_L</math> is activated</li> <li>5. The pulse width of the interferer pulses on <math>f_1</math> is set to the largest of 50 <math>\mu\text{s}</math> and <math>50 \cdot \sqrt{1.25/\text{Bandwidth}[\text{MHz}]}</math> <math>\mu\text{s}</math></li> <li>6. It is verified that the connection to the companion device is established on <math>f_2</math> only</li> <li>7. The level of the interferer pulses on <math>f_1</math> is set to 6 dB above <math>T_L + U_M</math></li> <li>8. The pulse width on <math>f_1</math> is set to the largest of 35 <math>\mu\text{s}</math> and <math>35 \cdot \sqrt{1.25/\text{Bandwidth}[\text{MHz}]}</math> <math>\mu\text{s}</math></li> <li>9. It is verified that the connection to the companion device is established on <math>f_2</math> only</li> </ol>		

Test results - FCC					
Channel	Emission bandwidth [MHz]	Pulse width from Bandwidth [ $\mu$ s]	Pulse width for test [ $\mu$ s]	Connection on channel $f_2$	Verdict
F <sub>LOW</sub>	1.46	$50 \cdot \sqrt{1.25/B[MHz]} = 46.3$	50	No	PASS
F <sub>LOW</sub>	1.46	$35 \cdot \sqrt{1.25/B[MHz]} = 32.4$	35	No	PASS
F <sub>HIGH</sub>	1.46	$50 \cdot \sqrt{1.25/B[MHz]} = 46.3$	50	No	PASS
F <sub>HIGH</sub>	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 [ $\mu$ s]	Pulse width for test [ $\mu$ s]	Connection possible	Verdict
F <sub>LOW</sub>	1.324	$50 \cdot \sqrt{1.25/B[MHz]} = 48.6$	50	No	PASS
F <sub>LOW</sub>	1.324	$35 \cdot \sqrt{1.25/B[MHz]} = 34.0$	35	No	PASS
F <sub>HIGH</sub>	1.300	$50 \cdot \sqrt{1.25/B[MHz]} = 49.0$	50	No	PASS
F <sub>HIGH</sub>	1.300	$35 \cdot \sqrt{1.25/B[MHz]} = 34.3$	35	No	PASS
Comments:					

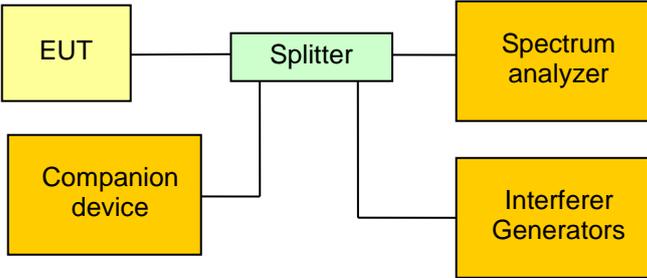
**3.21 Test Conditions and Results – Acknowledgements**

<b>Acknowledgements acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(4) / IC RSS-213 5.2	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.2.1	
EUT can initiate a communication session	Yes	
<b>Requirements</b>		
<p>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.</p> <p>Periodic acknowledgements must be received at least every 30 seconds or transmission must cease.</p>		
<b>Test setup</b>		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>		
<b>Test procedure</b>		
<ol style="list-style-type: none"> <li>1. (Applies to EUTs that can initiate a communication session (e.g. portable parts)) The acknowledgement timeslots are blocked by interferer signals</li> <li>2. An attempt to establish communication session is started from the EUT</li> <li>3. The emissions from the EUT are monitored to verify that the EUT does not transmit for more than 1s</li> <li>4. Next the acknowledgements are unblocked and another communication session is established between the EUT and the companion device</li> <li>5. It is verified that the communication session is successful</li> <li>6. (Applies to all EUTs) With all acknowledges unblocked, an communication session is initiated between the EUT and the companion device</li> <li>7. The acknowledgements were blocked and the time the EUT continues to transmit is recorded</li> </ol>		

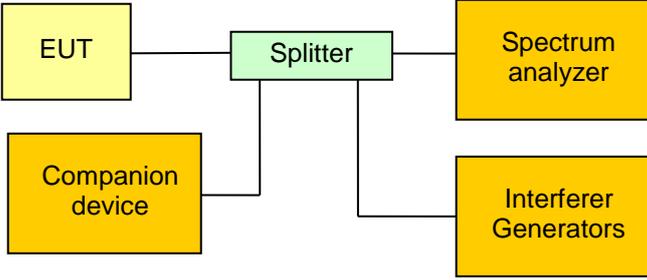
Test results		
Maximum initial transmission [s]	Transmission time limit [s]	Verdict
0.624	1	PASS
Maximum transmission time [s]	Transmission time limit [s]	Verdict
7	30	PASS
Comments:		



**3.22 Test Conditions and Results – Transmission duration**

<b>Transmission duration acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: N/A</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(3) / IC RSS-213 5.2	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.2.2	
<b>Requirements</b>		
<p>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.</p>		
<b>Test setup</b>		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>		
<b>Test procedure</b>		
<ol style="list-style-type: none"> <li>1. A communication session is established between the EUT and the companion device.</li> <li>2. With the beginning of the communication session a counter is started</li> <li>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</li> <li>4. As soon as the communication session switches to a different channel the time measurement is stopped</li> </ol>		
<b>Test results</b>		
Total transmission time [h]	Transmission time limit	Verdict
0.5 hours	8 hours	PASS
<p>Comments:</p> <p>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.</p>		

**3.23 Test Conditions and Results – Duplex connections**

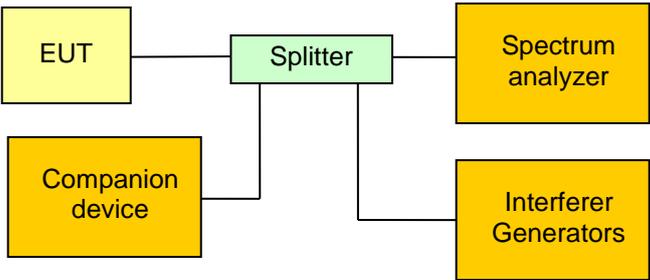
<b>Duplex connections acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(10) / IC RSS-213 5.2	
Test according referenced standards	Reference Method	
	ANSI C63.17 8.3	
EUT implements LIC algorithm	Yes	
Number of duplex channels	> 20	
<b>Requirements</b>		
<p>An initiating device may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows.</p> <p>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.</p> <p>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.</p>		
<b>Test setup</b>		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>		

<b>Test procedure (EUT implements LIC algorithm and offer at least 20 duplex channels)</b>			
<ol style="list-style-type: none"> <li>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 <math>T_L + U_M</math></li> <li>2. By the use of interference signals the EUT is restricted to channel <math>f_1</math></li> <li>3. An interference of level <math>T_L + U_M</math> 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 <math>T_L</math></li> <li>4. An interference of level <math>T_L + U_M + 7\text{dB}</math> 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 <math>T_L</math>. The interference free receive time/spectrum window must not be the duplex mate of the interference-free transmit time/spectrum window</li> <li>5. It is verified that the interference levels at the companion device are at least 10 dB below <math>T_L</math> for all time/spectrum windows</li> <li>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</li> <li>7. Next an interference of level <math>T_L + U_M + 7\text{dB}</math> 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 <math>T_L</math></li> <li>8. An interference of level <math>T_L + U_M</math> 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 <math>T_L</math>. The interference free receive time/spectrum window must not be the duplex mate of the interference-free transmit time/spectrum window</li> <li>9. It is verified that the interference levels at the companion device are at least 10 dB below <math>T_L</math> for all time/spectrum windows</li> <li>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</li> </ol>			
<b>Test results</b>			
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**

<b>Fair access acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(12) / IC RSS-213 5.2	
Test according to measurement reference	Reference Method	
	Customer declaration	
<b>Requirements</b>		
The provisions of FCC 47 CFR 15.323(c)(10), IC RSS-213(b)(10) or FCC 47 CFR 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.		
<b>Declaration</b>		
The manufacturer declares that is device does not work in a mode which denies fair access to spectrum for other participants		

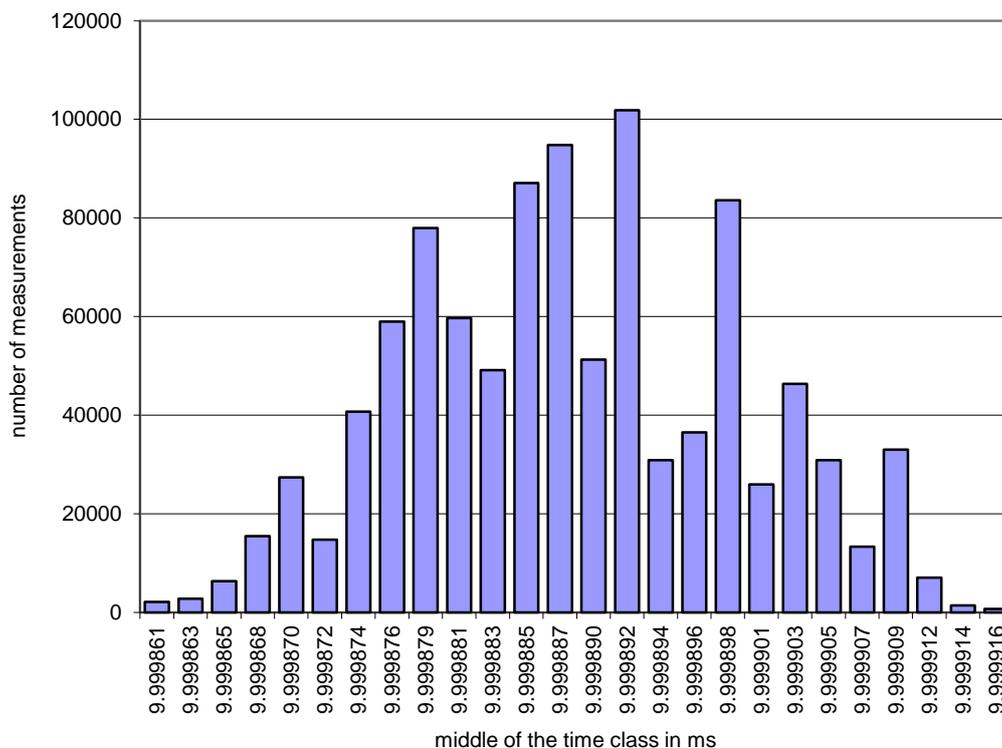
## 3.25 Test Conditions and Results – Frame period and Jitter

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) / IC RSS-213 5.2	
Test according referenced standards	Reference Method	
	ANSI C63.17 6.2.3	
Requirements		
<p>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.</p> <p>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.</p>		
Test setup		
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]           </pre>		
Test procedure		
<ol style="list-style-type: none"> <li>1. With a spectrum analyzer the frame periods are measured over time</li> <li>2. 100 000 frames are measured</li> <li>3. The peak-to-peak, mean and standard deviation values are computed</li> </ol>		
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:		

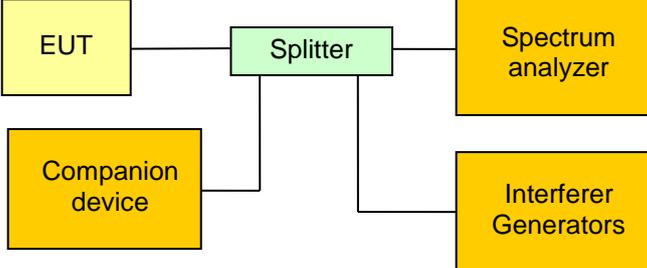
**Frame period and Jitter**
**FCC Part 15.323 Frame Period and jitter**
**Testprocedure ANSI 63.17**
**UPCS**

EUT	DECT handset 7212
Model	K023e
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 $\mu$ s
Mean	9.999888 ms
Deviation	0.000011
Max-Min	0.054948 $\mu$ s
Test result	Verdict = PASS

**Histogram**


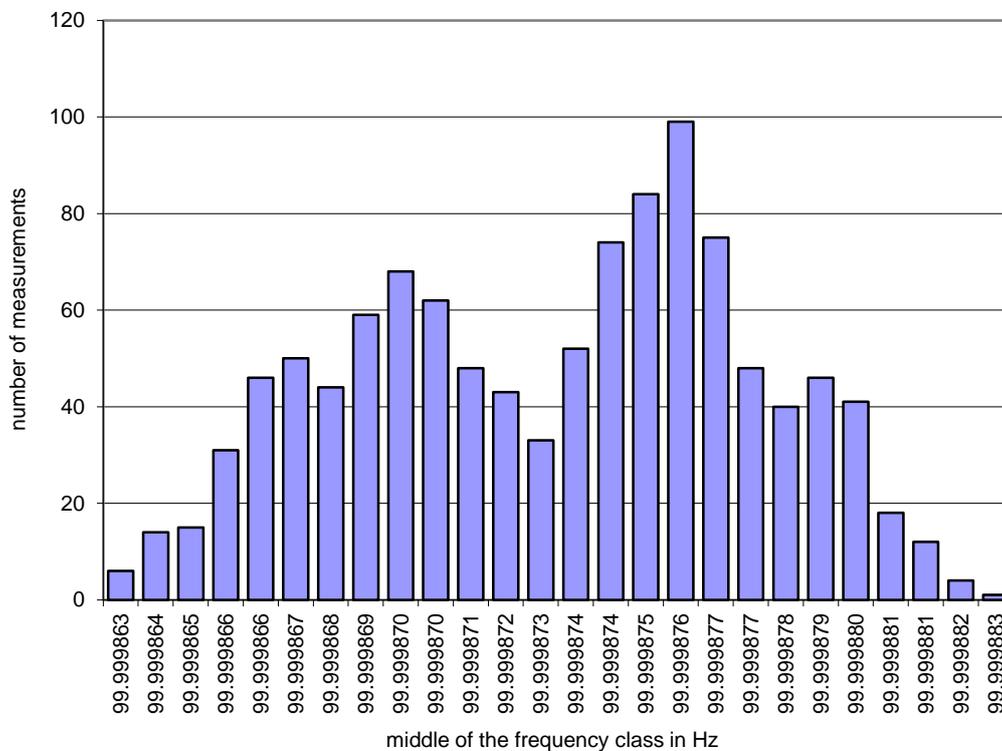
**3.26 Test Conditions and Results – Frame repetition stability**

<b>Frame repetition stability acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>	
EUT requirement rule parts and clause	Reference		
	FCC 15.323(e) / IC RSS-213 5.2		
Test according referenced standards	Reference Method		
	ANSI C63.17 6.2.2		
Access scheme used	Time Division Multiple Access		
<b>Requirements</b>			
<p>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).</p> <p>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.</p>			
<b>Test setup</b>			
 <pre> graph LR     EUT[EUT] --- Splitter[Splitter]     Companion[Companion device] --- Splitter     Splitter --- SA[Spectrum analyzer]     Splitter --- IG[Interferer Generators]             </pre>			
<b>Test procedure</b>			
<ol style="list-style-type: none"> <li>1. With a spectrum analyzer the frame repetition periods are measured over time</li> <li>2. 1 000 frame repetitions are measured</li> <li>3. The mean and standard deviation values are computed</li> </ol>			
<b>Test results</b>			
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 7212
Model	K023e
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**

<b>Maximum spectral occupancy acc. to FCC 47 CFR 15D / IC RSS-213</b>		<b>Verdict: PASS</b>
EUT requirement rule parts and clause	Reference	
	FCC 15.323(c)(5) / IC RSS-213 5.2	
Test according referenced standards	Reference Method	
	Customer declaration	
<b>Requirements</b>		
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.		
<b>Test result</b>		
Evaluation		Verdict
According to the technical documentation the total number of time and spectrum windows is: $5 \times 12 = 60$ 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:		