




<b>RADIO REPORT</b> <b>FCC 47 CFR Part 15C</b> <b>ISED Canada RSS-247</b> <b>Digital transmission systems operating within the 2400 – 2483.5 MHz band</b>	
<b>Report Reference No</b>	G0M-1905-8256-TFC247BL-V01
<b>Testing Laboratory</b>	Eurofins Product Service GmbH
<b>Address</b>	Storkower Str. 38c 15526 Reichenwalde Germany
<b>Accreditation</b>	 <p>DAkkS - Registration number : D-PL-12092-01-03 (ISED)                      ISED Testing Laboratory site: 3470A-2                      DAkkS - Registration number : D-PL-12092-01-04 (FCC)                      FCC Filed Test Laboratory, Reg.-No.: 96970</p>
<b>Applicant</b>	BIOTRONIK SE & Co. KG
<b>Address</b>	Woermannkehre 1 12359 Berlin GERMANY
<b>Test Specification</b>	According to FCC/ISED rules
<b>Standard</b>	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, Amendment 1, 2019-03
<b>Non-Standard Test Method</b>	None
<b>Equipment under Test (EUT):</b>	
<b>Product Description</b>	programming device for BIOTRONIK pacemakers, ICDs, CRT-devices and ICMs
<b>Model(s)</b>	Renamic Neo
<b>Additional Model(s)</b>	None
<b>Brand Name(s)</b>	BIOTRONIK
<b>Hardware Version(s)</b>	A.x
<b>Software Version(s)</b>	Porto_BT: 15.68.7.p167
<b>FCC-ID</b>	QRI-RENAMICNEO
<b>IC</b>	4708A-RENAMICNEO
<b>Test Result</b>	<b>PASSED</b>

<b>Possible test case verdicts:</b>		
required by standard but not tested	N/T	
not required by standard	N/R	
not applicable to EUT	N/A	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
<b>Testing:</b>		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2019-05-22	
<b>Report:</b>		
Compiled by	Abdullah Al Jamal	
Tested by (+ signature) (Responsible for Test)	Abdullah Al Jamal	
Approved by (+ signature) (Head of Lab)	Christian Weber	
Date of Issue	2019-12-17	
Total number of pages	112	
<b>General Remarks:</b>		
<p>The test results presented in this report relate only to the object tested.</p> <p>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.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p>		
<b>Additional Comments:</b>		
Internal equipment photos provided by applicant.		

**VERSION HISTORY**

Version History			
Version	Issue Date	Remarks	Revised By
01	2019-12-17	Initial Release	

## ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V <sub>NOM</sub>	Nominal supply voltage

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## 1 Equipment (Test Item) Under Test

Description	programming device for BIOTRONIK pacemakers, ICDs, CRT-devices and ICMs	
Model	Renamic Neo	
Additional Model(s)	None	
Brand Name(s)	BIOTRONIK	
Serial Number(s)	80001072 (Test sample 24167) 80001091 (Test sample 24164)	
Hardware Version(s)	A.x	
Software Version(s)	Porto_BT: 15.68.7.p167	
PMN	Renamic Neo	
HVIN	Renamic Neo	
FVIN	N/A	
HMN	N/A	
FCC-ID	QRI-RENAMICNEO	
IC	4708A-RENAMICNEO	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	2400 - 2483.5 MHz	
Radio technology	Bluetooth LE	
Modulation	GFSK	
Number of antenna ports	1	
Antenna	Type	Integrated antenna
	Model	Not specified
	Manufacturer	Not specified
	Gain	4.22 dBi
Supply Voltage	$V_{NOM}$	120 VAC
Operating Temperature	$T_{NOM}$	23 °C
AC/DC-Adaptor	Model	ATM090T-P190
	Vendor	Adapter Tech
	Input	100 VAC – 240 VDC
	Output	19 VDC
Manufacturer	BIOTRONIK SE & Co. KG Woermannkehre 1 12359 Berlin GERMANY	

#### 1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
None.				
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment: None.				

**1.5 Test Modes**

Mode	Description
GFSK	Mode = Transmit Modulation = GFSK Spreading = None Duty cycle = 64%
Receive	Mode = Receive
Comment: None.	



## 1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx / Rx	0	2402
F2	Tx / Rx	19	2440
F3	Tx / Rx	39	2480

### 1.7 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

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

Margin:

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

Example only:

Reading + AF	=	Net Reading	:	Net reading - FCC limit	=	Margin
+21.5 dBµV + 26 dB/m		= 47.5 dBµV/m		47.5 dBµV/m - 57.0 dBµV/m		= -9.5 dB

## 2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	Requirement	Reference Method	Result	Remarks
ISED RSS-Gen, Issue 5 (section 6.6)	Occupied Bandwidth	ANSI C63.10-2013	N/R	Informational only
FCC § 15.247(a)(2) ISED RSS-247, Issue 2 (section 5.2)	6 dB Bandwidth	ANSI C63.10-2013	PASS	
FCC § 15.247(b)(1) ISED RSS-247, Issue 2 (section 5.4)	Maximum peak conducted power	ANSI C63.10-2013	PASS	
FCC § 15.247(e) ISED RSS-247, Issue 2 (section 5.2)	Power spectral density	ANSI C63.10-2013	PASS	
FCC § 15.207 ISED RSS-247, Issue 2 (section 3.1)	AC power line conducted emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 (section 6.13)	Transmitter radiated spurious emissions	ANSI C63.10-2013	PASS	
ISED RSS-247, Issue 2 (section 3.1)	Receiver radiated spurious emissions	ANSI C63.10-2013	PASS	
Comment: None.				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

### 3 Test Conditions and Results

#### 3.1 Test Conditions and Results - Occupied bandwidth

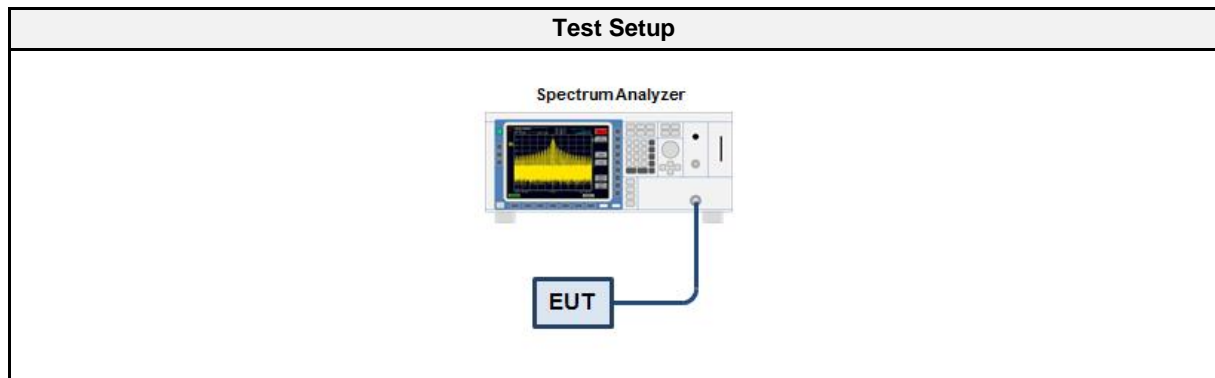
##### 3.1.1 Information

Test Information	
Reference	ISED RSS-Gen, Issue 5 (section 6.6)
Measurement Method	ANSI C63.10 6.9.3
Operator	Abdullah Al Jamal
Date	2019-06-06

##### 3.1.2 Limits

Limits
None (Informational only)

##### 3.1.3 Setup



##### 3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

##### 3.1.5 Procedure

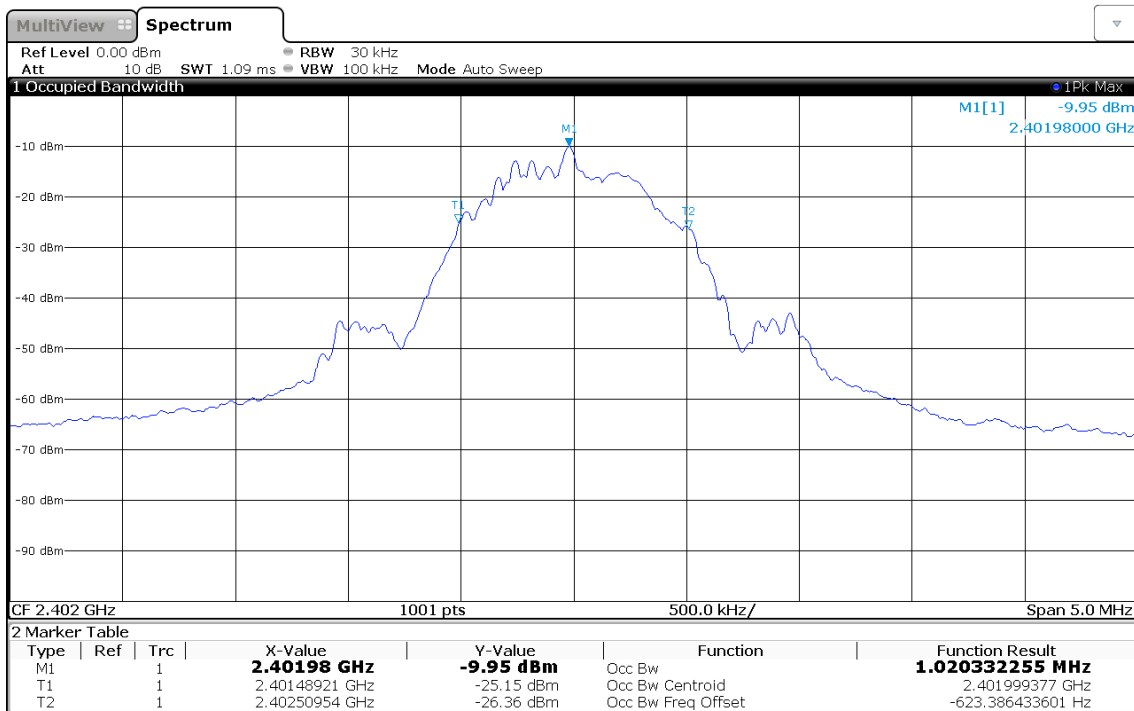
Test Procedure
<ol style="list-style-type: none"> <li>1. EUT transmitter is activated in test mode under normal conditions</li> <li>2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum</li> <li>3. The resolution bandwidth is set to the range of 1 % to 5 % of the occupied bandwidth</li> <li>4. The occupied bandwidth is measured with the build-in analyzer function</li> </ol>

##### 3.1.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
GFSK	2402	1.020
GFSK	2440	1.021
GFSK	2480	1.023

### Occupied Bandwidth

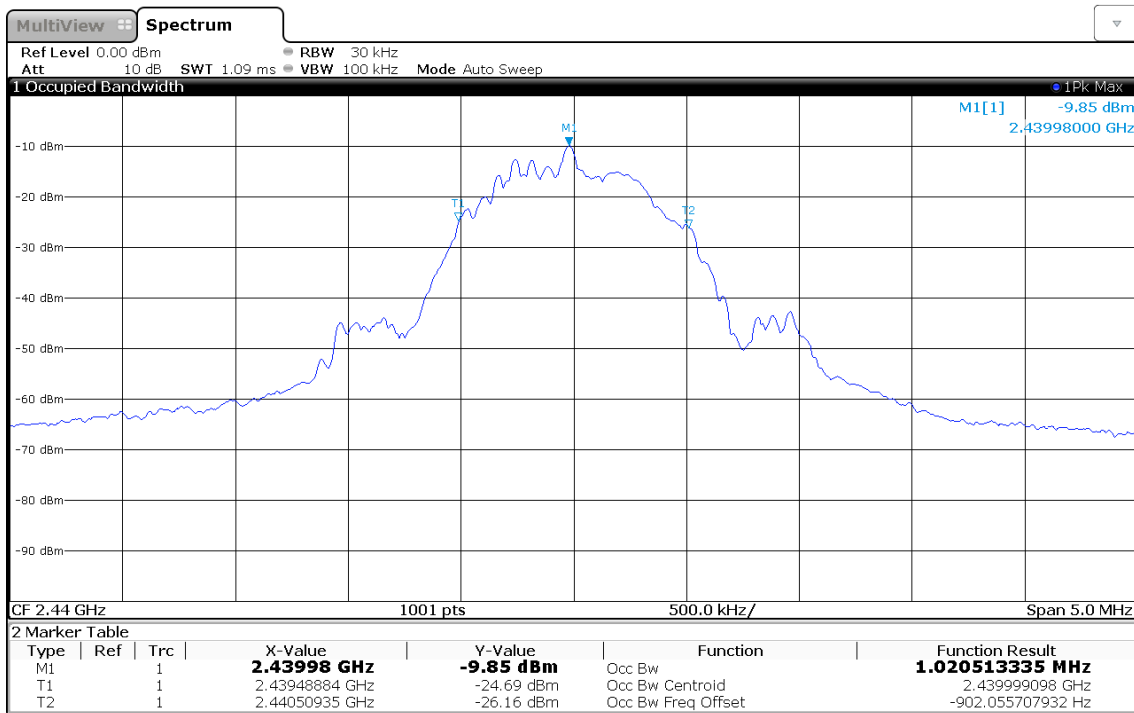
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Occupied Bandwidth [MHz]: 1.020



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### Occupied Bandwidth

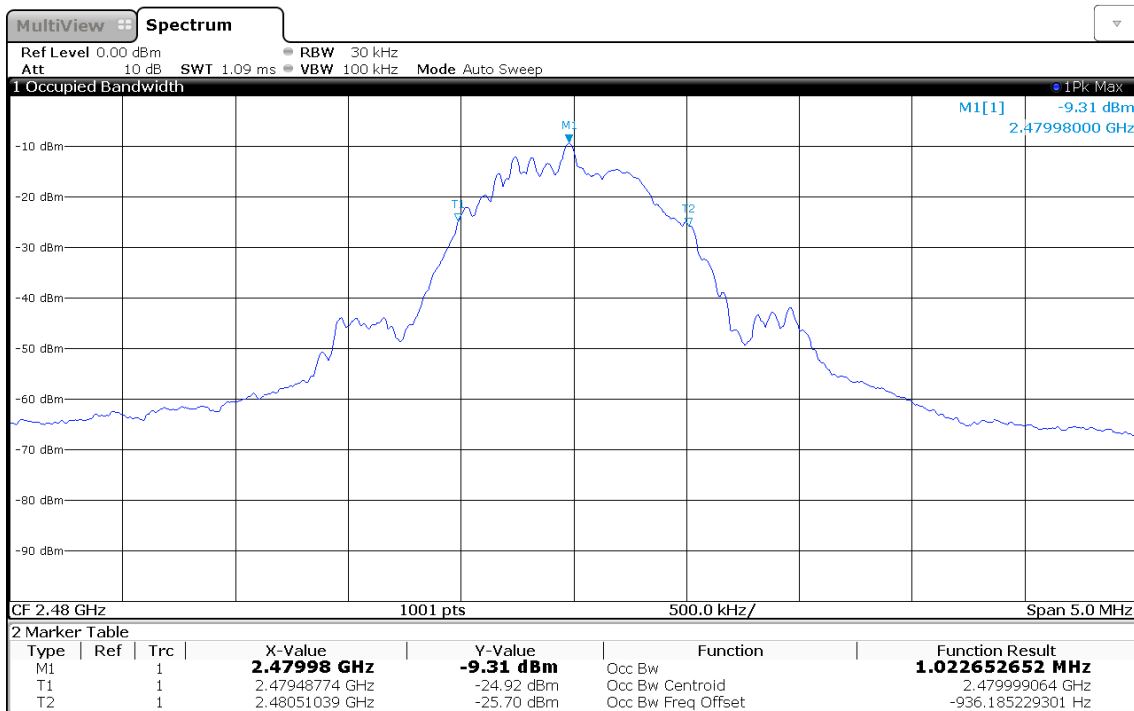
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Occupied Bandwidth [MHz]: 1.021



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### Occupied Bandwidth

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Occupied Bandwidth [MHz]: 1.023



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### 3.2 Test Conditions and Results - 6 dB bandwidth

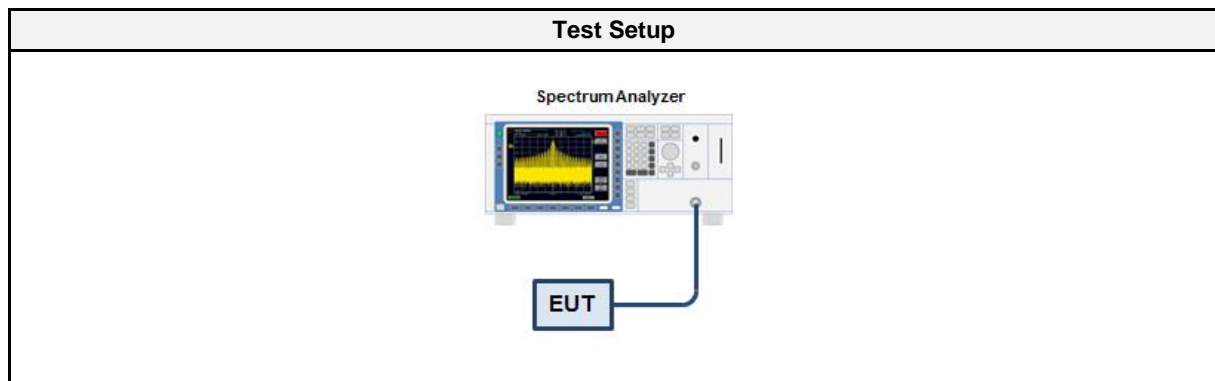
#### 3.2.1 Information

Test Information	
Reference	FCC § 15.247(a)(2); ISED RSS-247, Issue 2 (section 5.2)
Measurement Method	ANSI C63.10 11.8
Operator	Abdullah Al Jamal
Date	2019-06-06

#### 3.2.2 Limits

Limits
≥ 500kHz

#### 3.2.3 Setup



#### 3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

#### 3.2.5 Procedure

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. Detector set to peak and max hold and RBW is set to 100 kHz</li> <li>4. Envelope peak value of emission spectrum is selected</li> <li>5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak</li> <li>6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak</li> <li>7. 6 dB Bandwidth is determined by marker frequency separation</li> </ol>

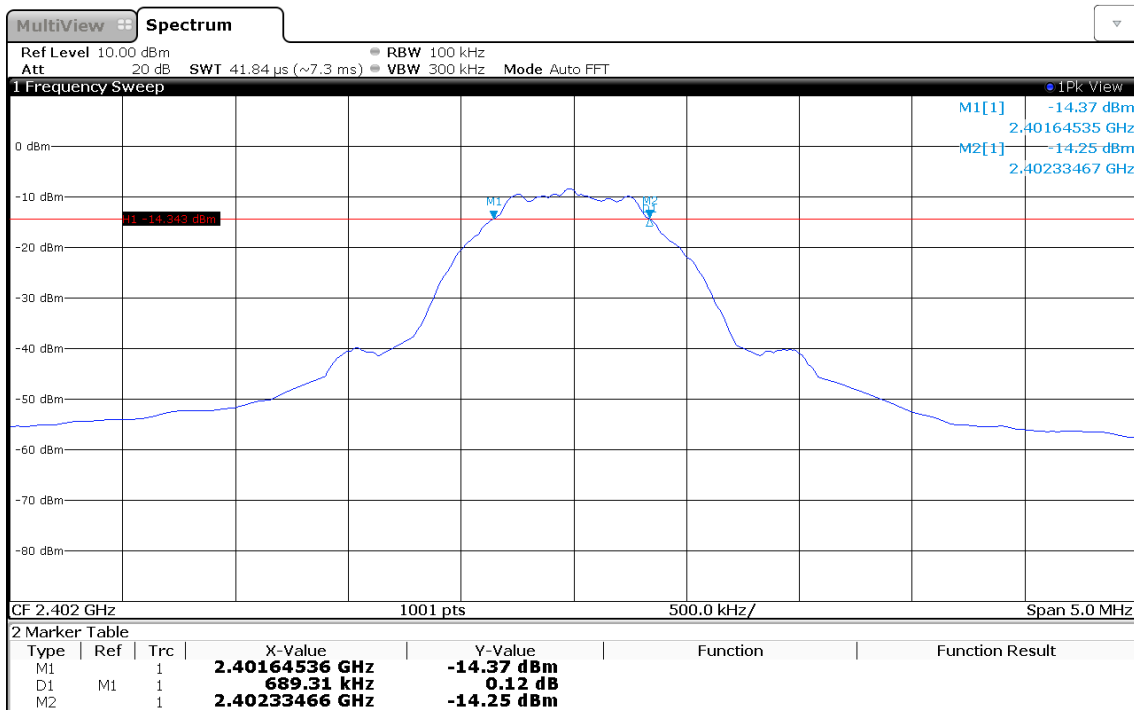
#### 3.2.6 Results

Test Results				
Mode	Frequency [MHz]	Bandwidth [kHz]	Limit [kHz]	Verdict
GFSK	2402	689	500	PASS
GFSK	2440	679	500	PASS
GFSK	2480	709	500	PASS



### DTS (6 dB) Bandwidth

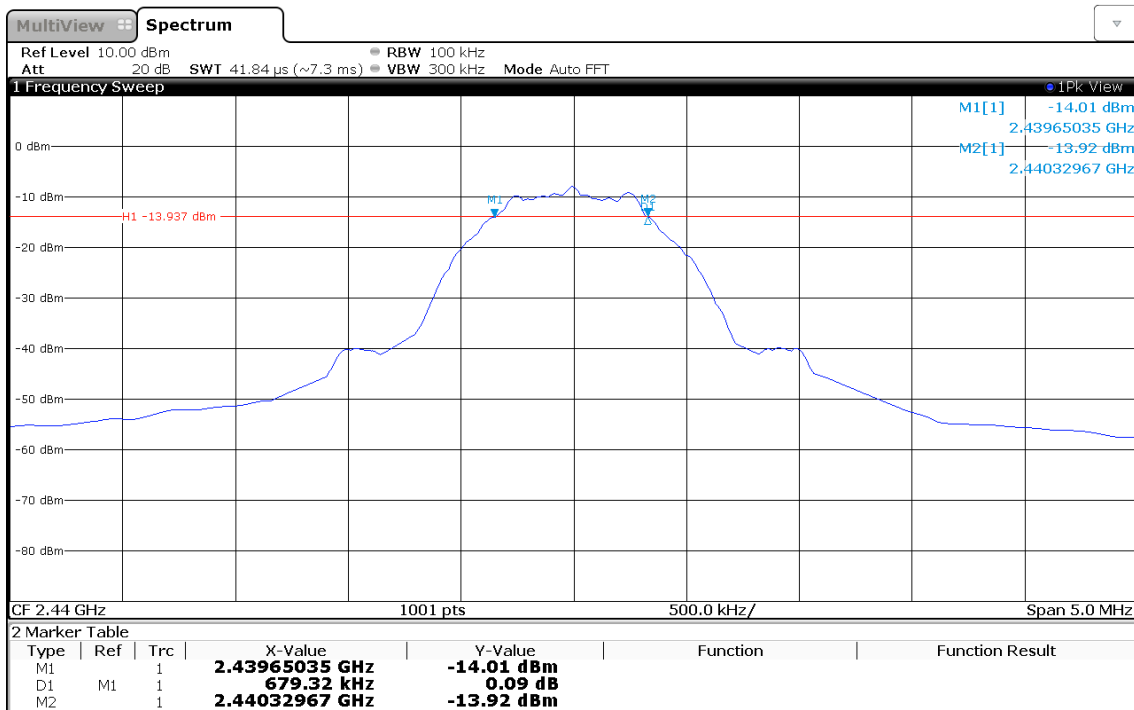
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Lower Frequency [MHz]: 2401.645  
 Upper Frequency [MHz]: 2402.335  
 6 dB Bandwidth [kHz]: 689



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### DTS (6 dB) Bandwidth

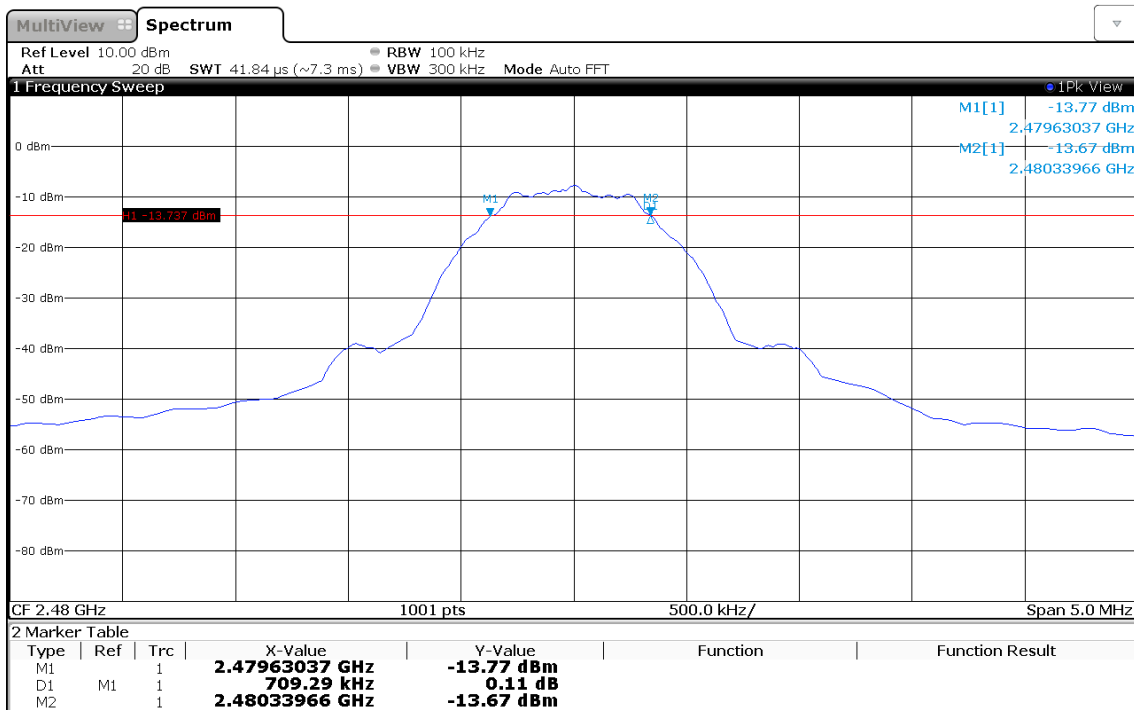
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Lower Frequency [MHz]: 2439.650  
 Upper Frequency [MHz]: 2440.330  
 6 dB Bandwidth [kHz]: 679



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### DTS (6 dB) Bandwidth

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Lower Frequency [MHz]: 2479.630  
 Upper Frequency [MHz]: 2480.340  
 6 dB Bandwidth [kHz]: 709



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### 3.3 Test Conditions and Results - Maximum peak conducted output power

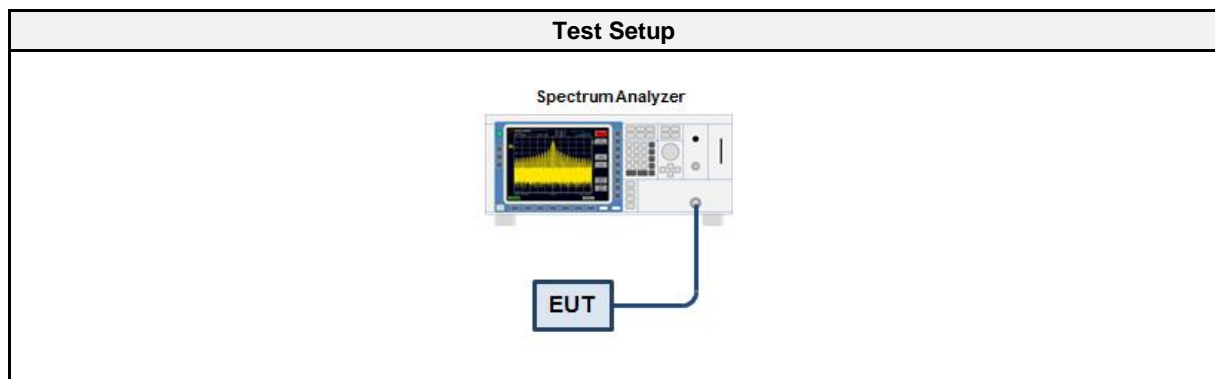
#### 3.3.1 Information

Test Information	
Reference	FCC § 15.247(b)(1); ISED RSS-247, Issue 2 (section 5.4)
Measurement Method	ANSI C63.10 11.9.1
Operator	Abdullah Al Jamal
Date	2019-06-06

#### 3.3.2 Limits

Limits
1 W (30 dBm)
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 3.3.3 Setup



#### 3.3.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

#### 3.3.5 Procedure

Test Procedure
<ol style="list-style-type: none"> <li>1. EUT set to test mode (Communication tester is used if needed)</li> <li>2. Analyzer resolution bandwidth is set <math>\geq</math> DTS bandwidth</li> <li>3. Detector set to peak and max hold</li> <li>4. Sweep time is set to auto</li> <li>5. After the trace has stabilized a marker is set to peak of envelope</li> </ol>

## 3.3.6 Results

Test Results				
Channel [MHz]	Power [dBm]	Power [W]	Limit [W]	Verdict
2402	0.977	0.0013	1.0	PASS
2440	1.235	0.0013	1.0	PASS
2480	2.481	0.0018	1.0	PASS

### 3.4 Test Conditions and Results - Power spectral density

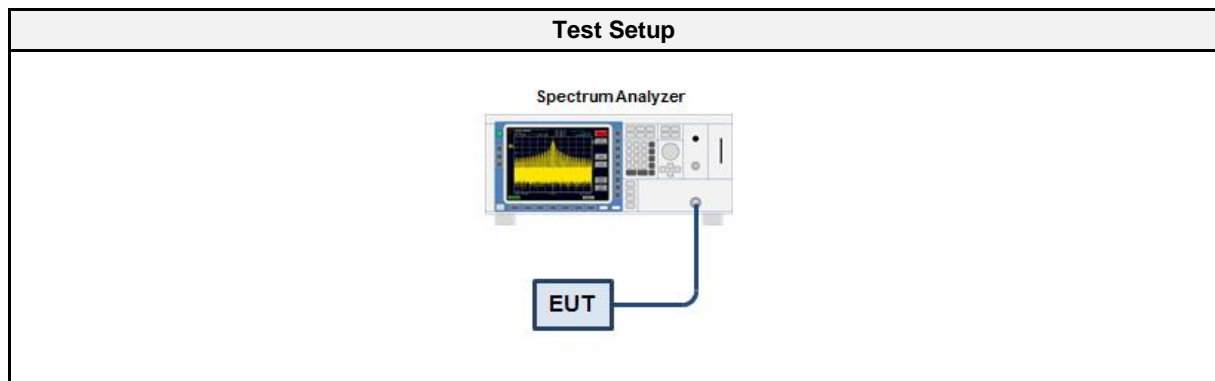
#### 3.4.1 Information

Test Information	
Reference	FCC § 15.247(e); ISED RSS-247, Issue 2 (section 5.2)
Measurement Method	ANSI C63.10 11.10.2, 14.3.2
Operator	Abdullah Al Jamal
Date	2019-06-06

#### 3.4.2 Limits

Limits
8 dBm / 3 kHz

#### 3.4.3 Setup



#### 3.4.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

#### 3.4.5 Procedure

Test Procedure
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. The analyzer is set to DTS channel center frequency with a span of 1.5 times the DTS bandwidth</li> <li>3. The RBW is set to 100 kHz with VBW <math>\geq</math> RBW and the detector is set to peak with max hold</li> <li>4. After the trace has stabilized a marker is set to the envelope maximum</li> <li>5. If the power spectral density is above the limit the RBW is reduced (not lower than 3 kHz) and the measurement is repeated</li> <li>6. If the EUT has more than one transmit chain the procedure is repeated for each transmit chain</li> </ol>

#### 3.4.6 Results

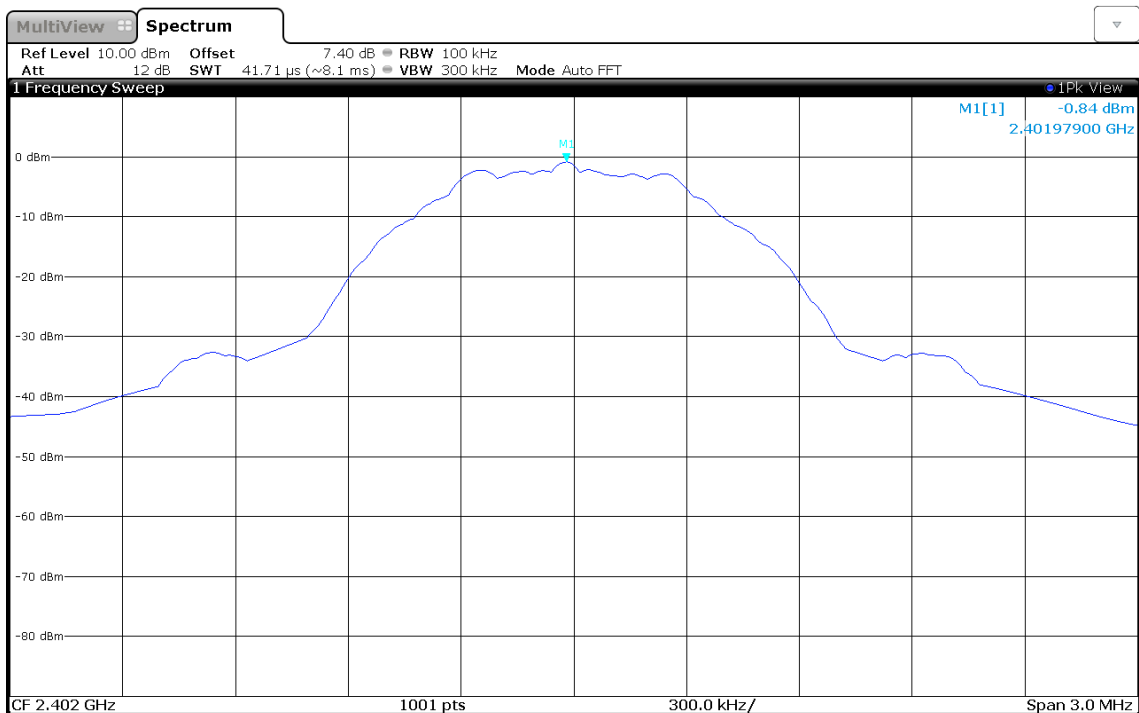
Test Results			
Channel [MHz]	PSD [dBm/RBW]	Limit [dBm/3kHz]	Verdict
2402	-0.844	8.0	PASS
2440	-0.459	8.0	PASS
2480	-0.155	8.0	PASS
RBW = 100 kHz			

Test Report No.: G0M-1905-8256-TFC247BL-V01

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

### Peak Power Spectral Density

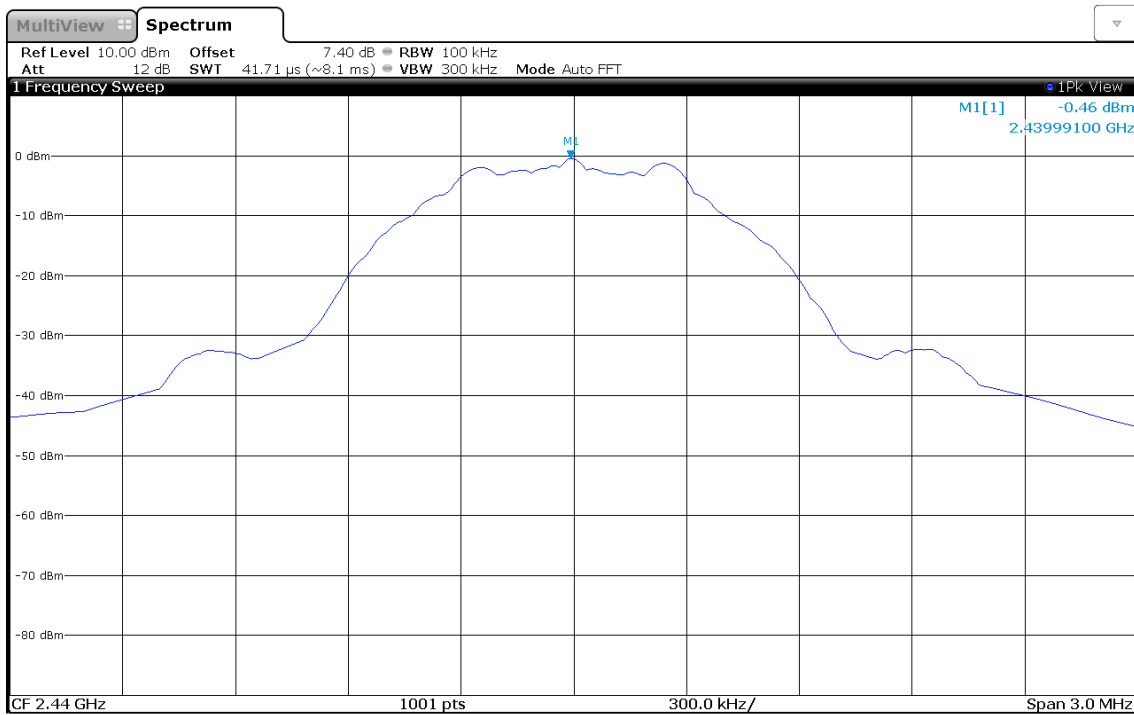
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Peak Frequency [MHz]: 2401.979  
 Spectral Density [dBm/RBW]: -0.844  
 Resolution Bandwidth [kHz]: 100 kHz



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### Peak Power Spectral Density

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Peak Frequency [MHz]: 2439.991  
 Spectral Density [dBm/RBW]: -0.459  
 Resolution Bandwidth [kHz]: 100 kHz

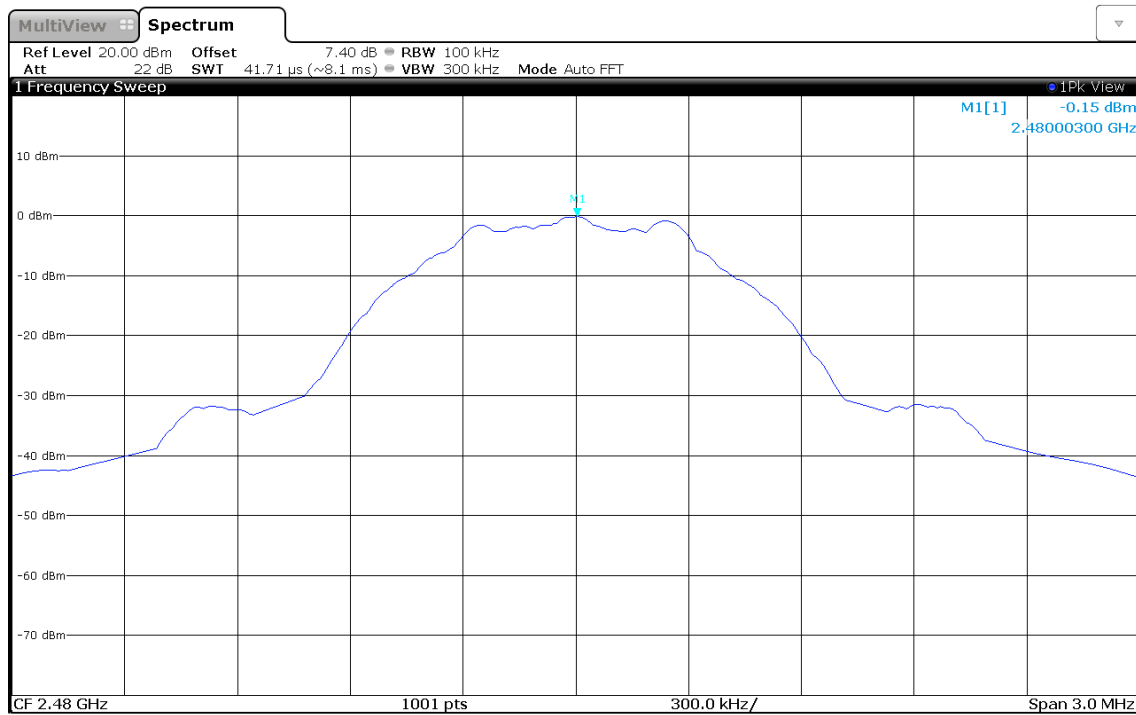


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### Peak Power Spectral Density

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Peak Frequency [MHz]: 2480.003  
 Spectral Density [dBm/RBW]: -0.155  
 Resolution Bandwidth [kHz]: 100 kHz



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### 3.5 Test Conditions and Results - AC powerline conducted emissions

#### 3.5.1 Information

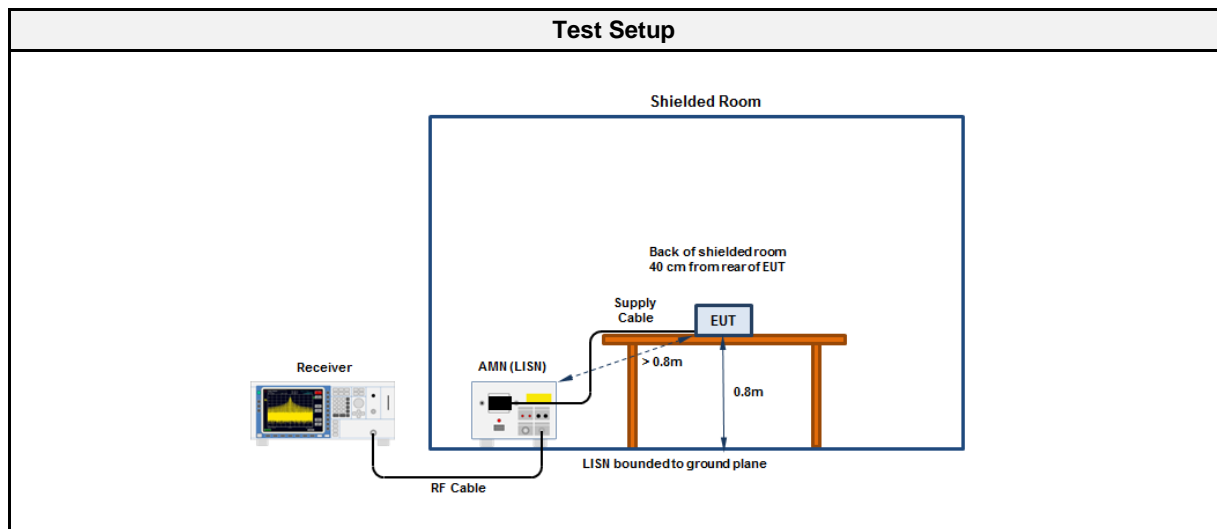
Test Information	
Reference	FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.2
Operator	Abdullah Al Jamal
Date	2019-06-24

#### 3.5.2 Limits

Limits		
Frequency [MHz]	Quasi-Peak [dBµV]	Average [dBµV]
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50

\* Limit decreases linearly with the logarithm of the frequency

#### 3.5.3 Setup



#### 3.5.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2016.1.10

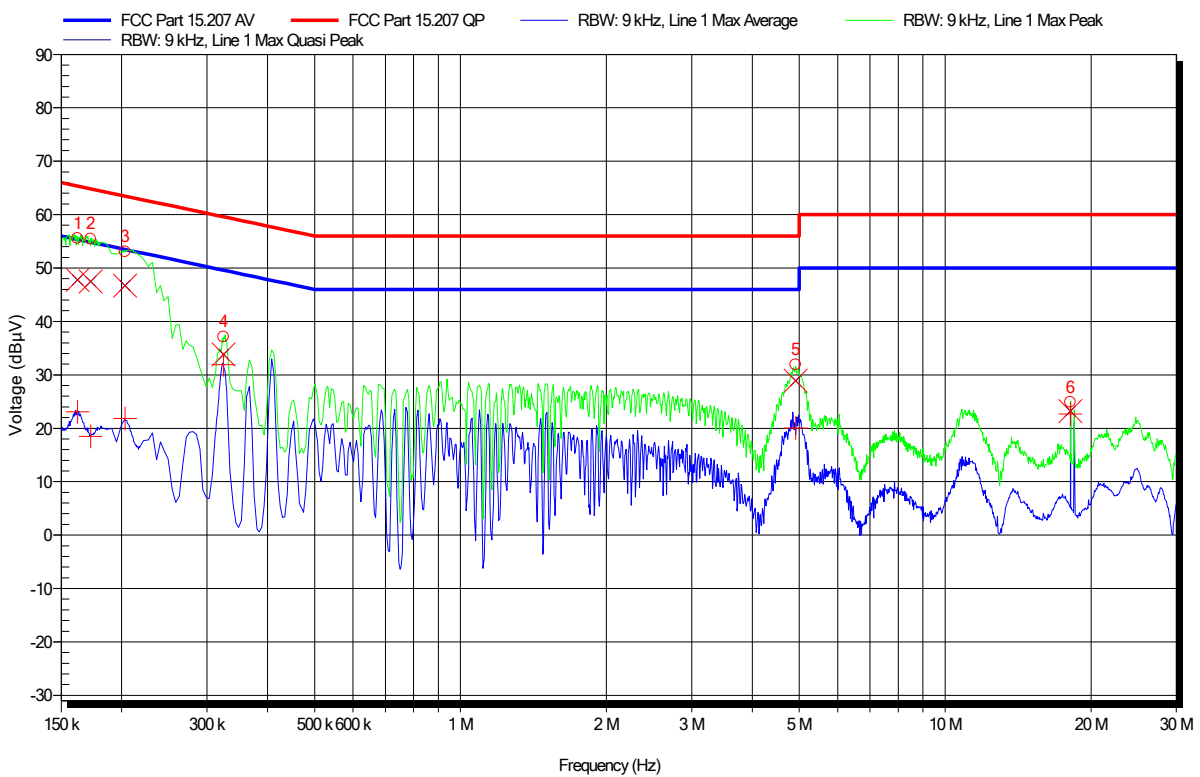
Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Receiver	R&S	ESU 26	EF00241	2017-07	2019-07
LISN	R&S	ESH3-Z5	EF00036	2017-01	2019-07

**EMI voltage test in the ac-mains according to FCC 47 CFR §15.207**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Unom: 120 VAC (external power supply)  
 LISN: ESH3-Z5 (L)  
 Mode: 2440 MHz  
 Test Date: 2019-06-24  
 Note:

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Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
1	162.15 kHz	47.81 dBµV	65.35 dBµV	-17.55 dB	Pass
2	172.5 kHz	47.47 dBµV	64.84 dBµV	-17.37 dB	Pass
3	203.1 kHz	46.72 dBµV	63.48 dBµV	-16.76 dB	Pass
4	324.6 kHz	33.79 dBµV	59.59 dBµV	-25.8 dB	Pass
5	4.916 MHz	28.91 dBµV	56 dBµV	-27.09 dB	Pass
6	18.139 MHz	23.22 dBµV	60 dBµV	-36.78 dB	Pass

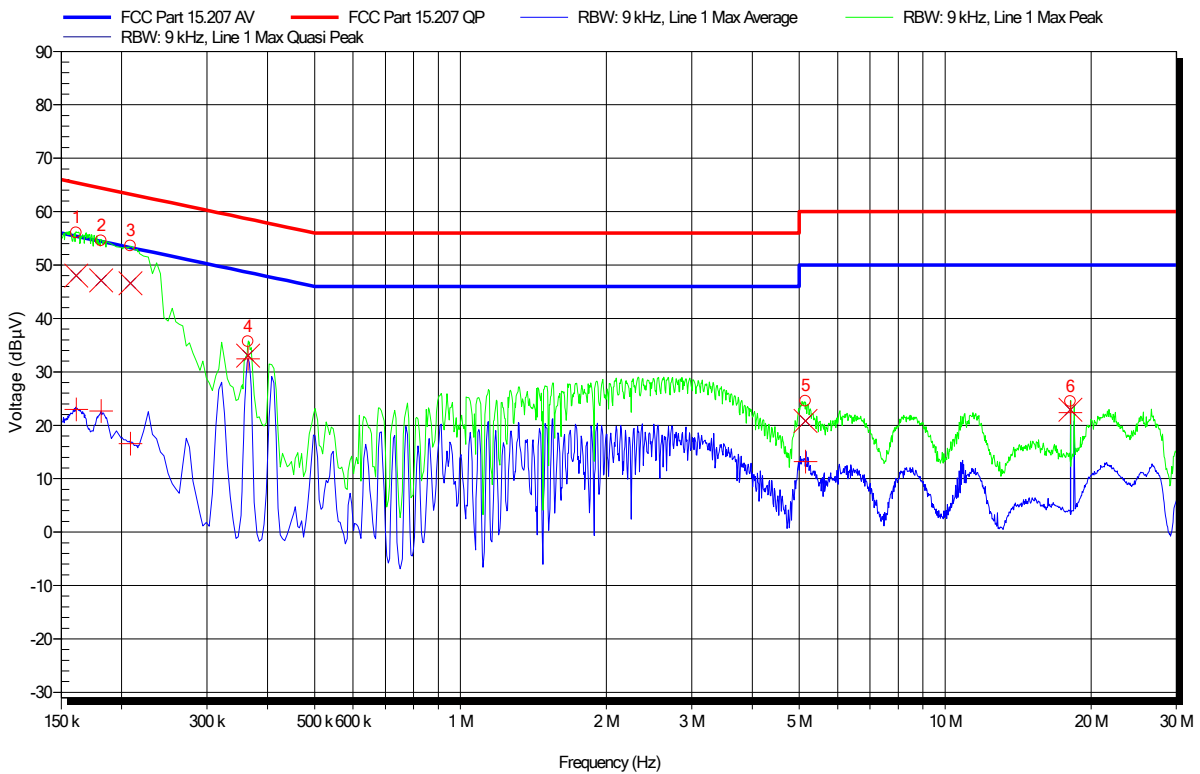
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status
1	162.15 kHz	23.08 dBµV	55.35 dBµV	-32.27 dB	Pass
2	172.5 kHz	18.45 dBµV	54.84 dBµV	-36.38 dB	Pass
3	203.1 kHz	21.82 dBµV	53.48 dBµV	-31.67 dB	Pass
4	324.6 kHz	31.88 dBµV	49.59 dBµV	-17.71 dB	Pass
5	4.916 MHz	20.04 dBµV	46 dBµV	-25.96 dB	Pass
6	18.139 MHz	22.64 dBµV	50 dBµV	-27.36 dB	Pass

**EMI voltage test in the ac-mains according to FCC 47 CFR §15.207**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Unom: 120 VAC (external power supply)  
 LISN: ESH3-Z5 (N)  
 Mode: 2440 MHz  
 Test Date: 2019-06-24  
 Note:

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Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
1	161.25 kHz	48.02 dBµV	65.4 dBµV	-17.38 dB	Pass
2	181.5 kHz	47.13 dBµV	64.42 dBµV	-17.29 dB	Pass
3	208.5 kHz	46.58 dBµV	63.26 dBµV	-16.69 dB	Pass
4	364.65 kHz	33.03 dBµV	58.62 dBµV	-25.59 dB	Pass
5	5.15 MHz	20.78 dBµV	60 dBµV	-39.22 dB	Pass
6	18.139 MHz	22.93 dBµV	60 dBµV	-37.07 dB	Pass

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status
1	161.25 kHz	22.98 dBµV	55.4 dBµV	-32.42 dB	Pass
2	181.5 kHz	22.67 dBµV	54.42 dBµV	-31.75 dB	Pass
3	208.5 kHz	16.55 dBµV	53.26 dBµV	-36.71 dB	Pass
4	364.65 kHz	32.45 dBµV	48.62 dBµV	-16.17 dB	Pass
5	5.15 MHz	13.19 dBµV	50 dBµV	-36.81 dB	Pass
6	18.139 MHz	22.39 dBµV	50 dBµV	-27.61 dB	Pass

### 3.6 Test Conditions and Results - Band-edge compliance

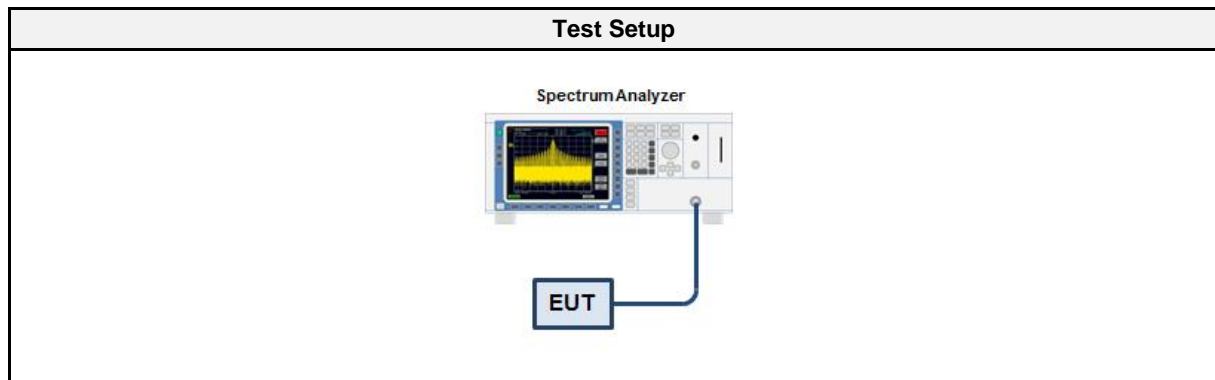
#### 3.6.1 Information

Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.13
Operator	Abdullah Al Jamal
Date	2019-06-06

#### 3.6.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

#### 3.6.3 Setup



#### 3.6.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

#### 3.6.5 Procedure

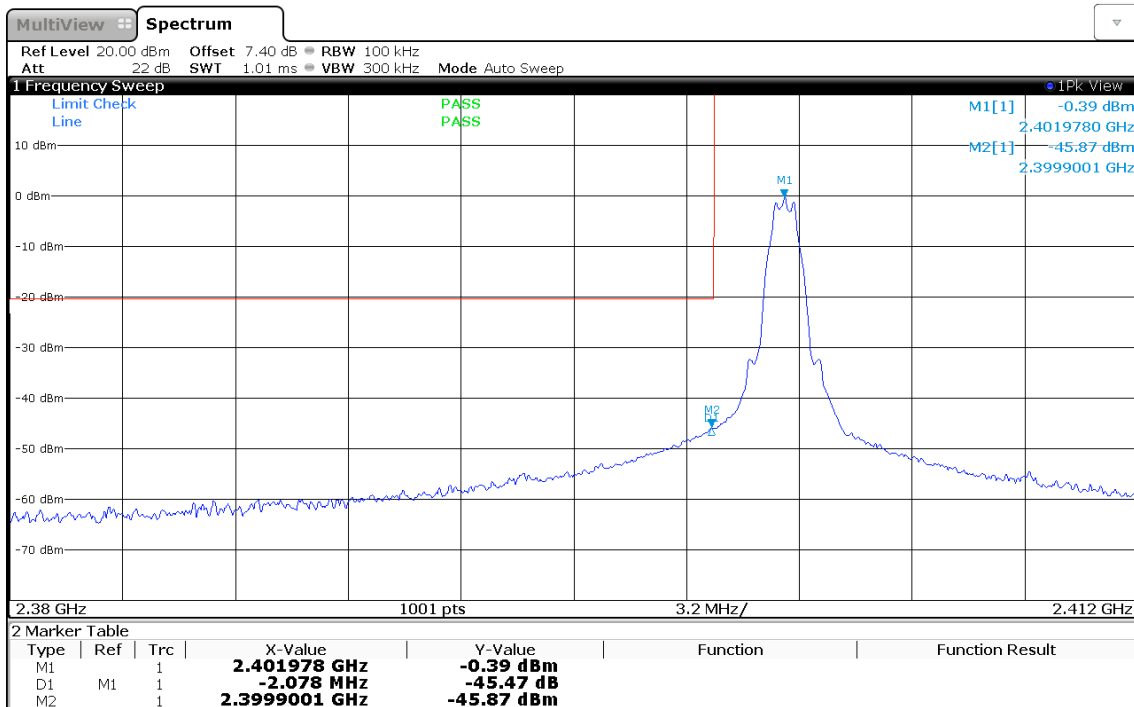
Test Procedure
<ol style="list-style-type: none"> <li>1. EUT set to test mode (Communication tester is used if needed)</li> <li>2. Span set around lower band edge and detector is set to peak and max hold</li> <li>3. Resolution bandwidth is set to 100 kHz</li> <li>4. Markers are set to peak emission levels within frequency band and outside frequency band</li> <li>5. Band edge attenuation is determined from level difference</li> </ol>

#### 3.6.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
GFSK	2402	-45.48	-20	PASS
GFSK	2480	-52.09	-20	PASS

### Emissions in nonrestricted frequency bands at the Band-edge

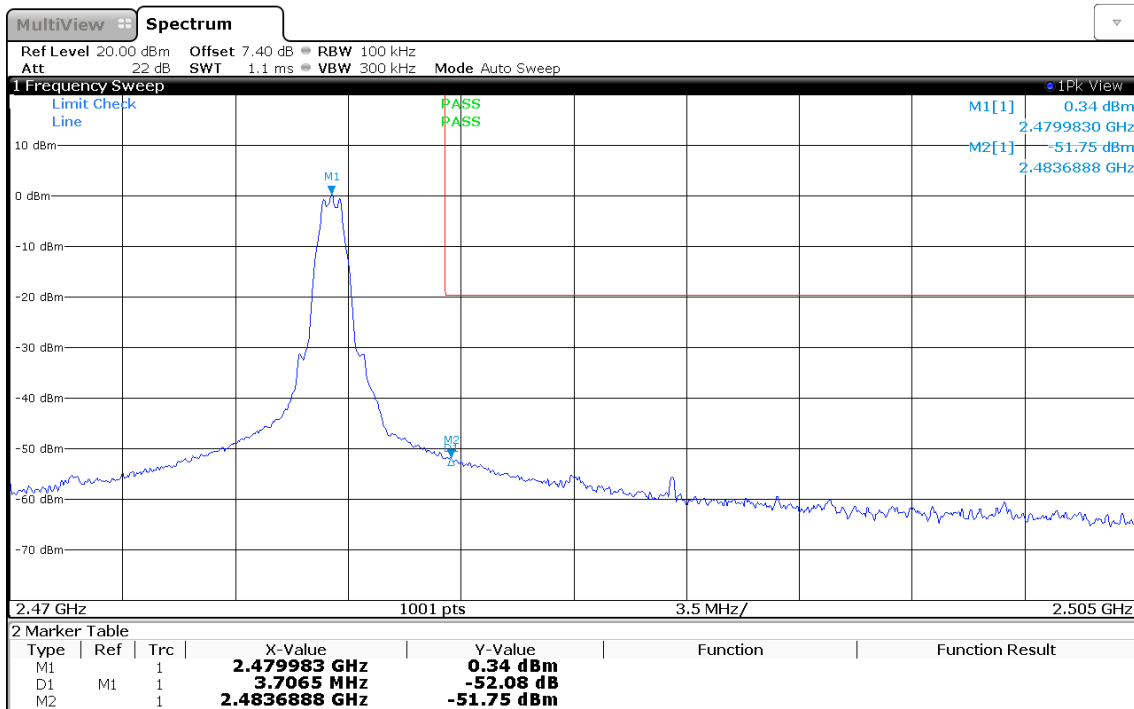
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Band-edge: Lower  
 In-band Frequency [MHz]: 2401.978  
 Max. in-band Level [dBm/100 kHz]: -0.39  
 Out-of-band Frequency [MHz]: 2399.9  
 Max. out-of-band Level [dBm/100 kHz]: -45.865  
 Attenuation [dB]: -45.48



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### Emissions in nonrestricted frequency bands at the Band-edge

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Band-edge: Upper  
 In-band Frequency [MHz]: 2479.983  
 Max. in-band Level [dBm/100 kHz]: 0.339  
 Out-of-band Frequency [MHz]: 2483.689  
 Max. out-of-band Level [dBm/100 kHz]: -51.746  
 Attenuation [dB]: -52.09



15:29:21 06.06.2019

### 3.7 Test Conditions and Results - Conducted spurious emissions

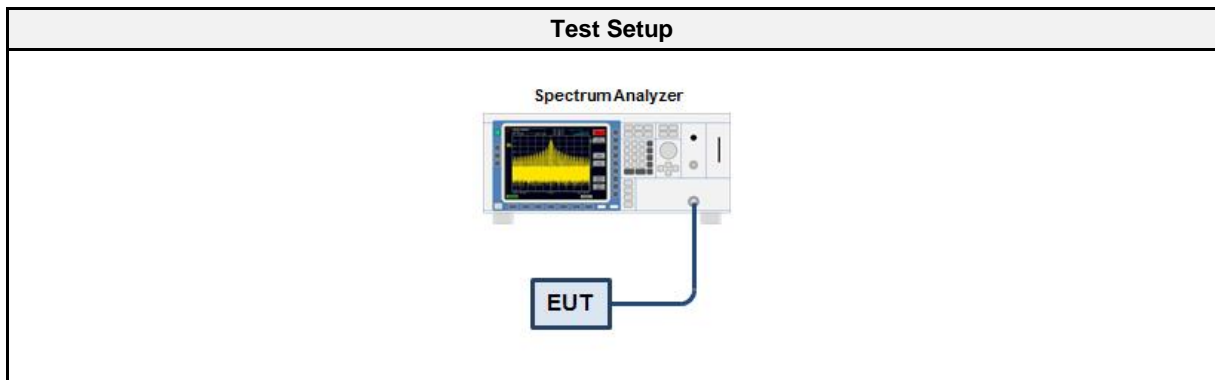
#### 3.7.1 Information

Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Method	ANSI C63.10 11.11
Operator	Abdullah Al Jamal
Date	2019-06-06

#### 3.7.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

#### 3.7.3 Setup



#### 3.7.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2018-07	2019-07

#### 3.7.5 Procedure

Test Procedure
<ol style="list-style-type: none"> <li>1. EUT set to test mode (Communication tester is used if needed)</li> <li>2. Span set around lower band edge and detector is set to peak and max hold</li> <li>3. Resolution bandwidth is set to 100 kHz</li> <li>4. Markers are set to peak emission levels within frequency band and outside frequency band</li> <li>5. Band edge attenuation is determined from level difference</li> </ol>

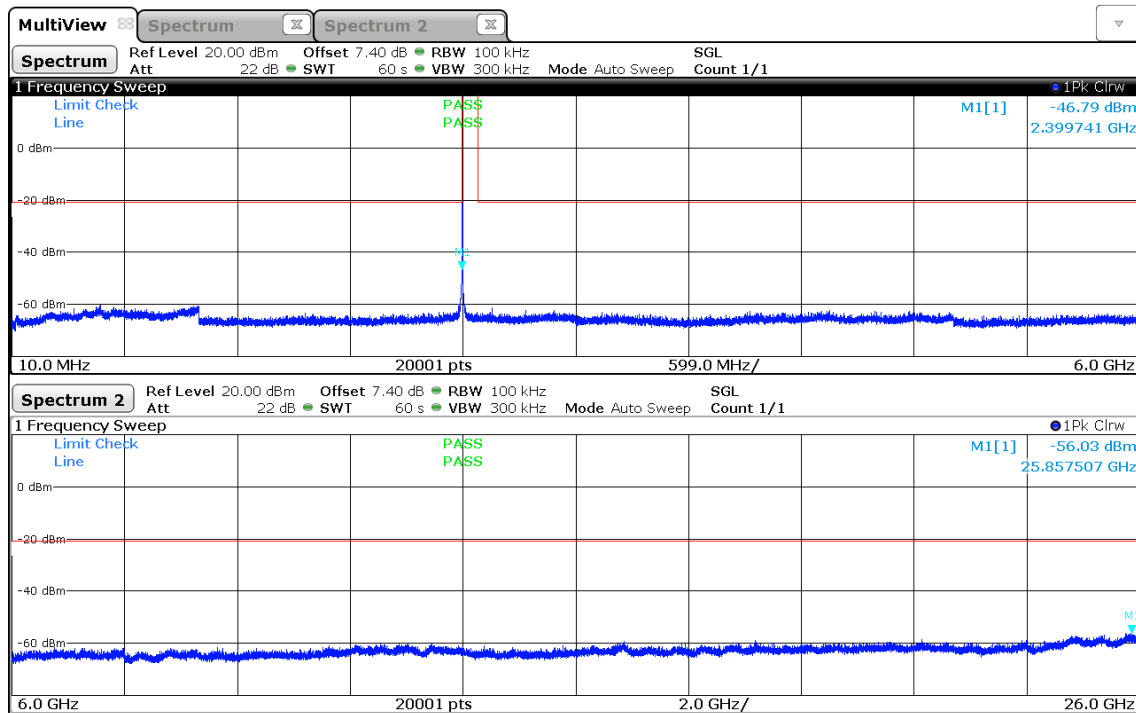


## 3.7.6 Results

Test Results		
Mode	Channel [MHz]	Verdict
GFSK	2402	PASS
GFSK	2440	PASS
GFSK	2480	PASS

### Conducted Spurious Emissions

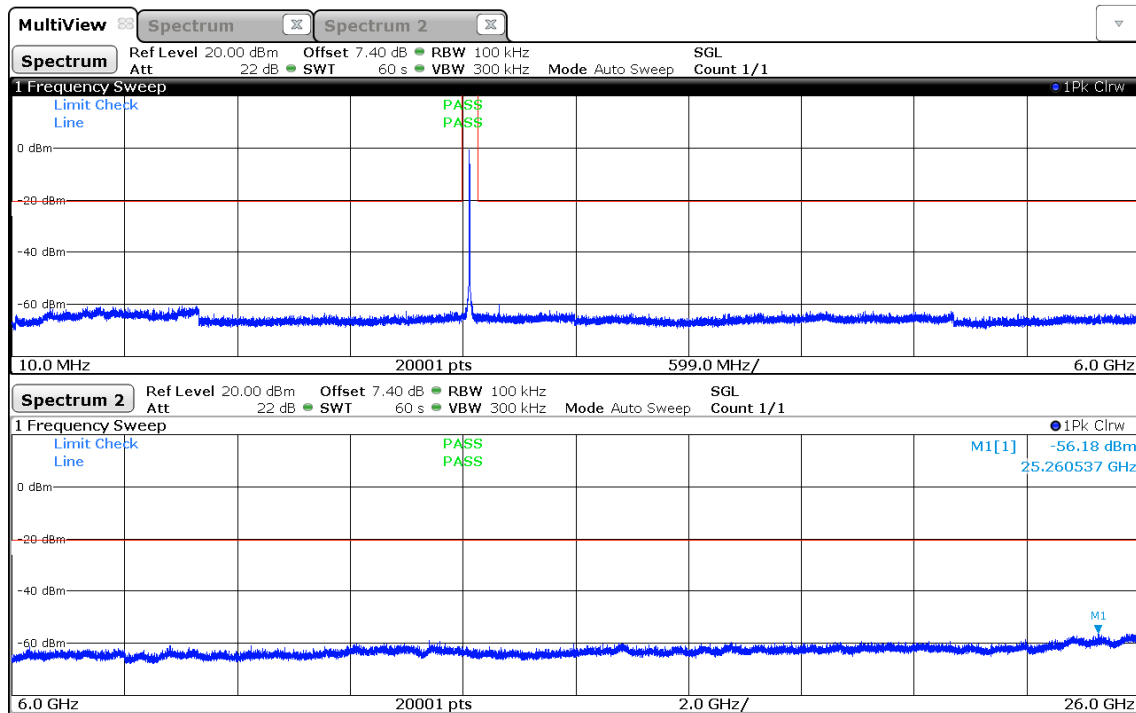
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Max. in-band Frequency [MHz]: 2402.0  
 Max. in-band Level [dBm/100 kHz]: -0.7  
 Out-of-band Limit [dBm/100 kHz]: -20.7



15:42:40 06.06.2019

### Conducted Spurious Emissions

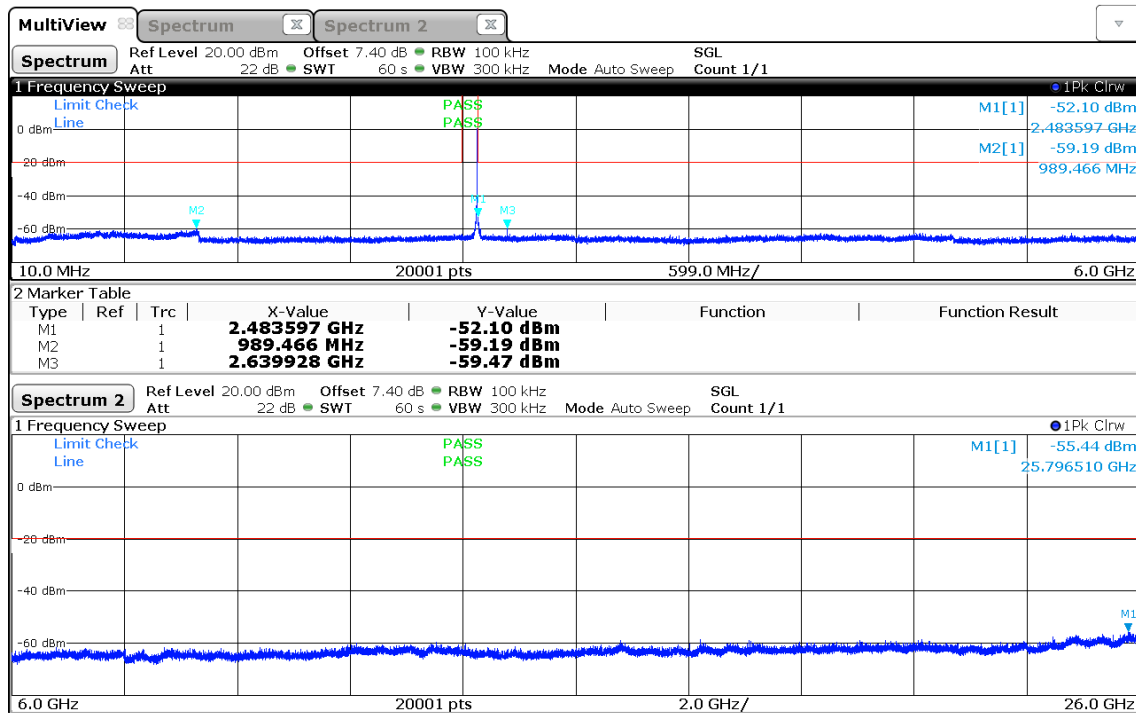
Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Max. in-band Frequency [MHz]: 2440.0  
 Max. in-band Level [dBm/100 kHz]: -0.5  
 Out-of-band Limit [dBm/100 kHz]: -20.5



15:37:12 06.06.2019

### Conducted Spurious Emissions

Project Number: G0M-1905-8256  
 Applicant: BIOTRONIK SE & Co. KG  
 Model Description: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Sample ID: 24167  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Abdullah Al Jamal  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2019-06-06  
 Max. in-band Frequency [MHz]: 2480.0  
 Max. in-band Level [dBm/100 kHz]: 0.2  
 Out-of-band Limit [dBm/100 kHz]: -19.8



15:34:13 06.06.2019

### 3.8 Test Conditions and Results - Transmitter radiated emissions

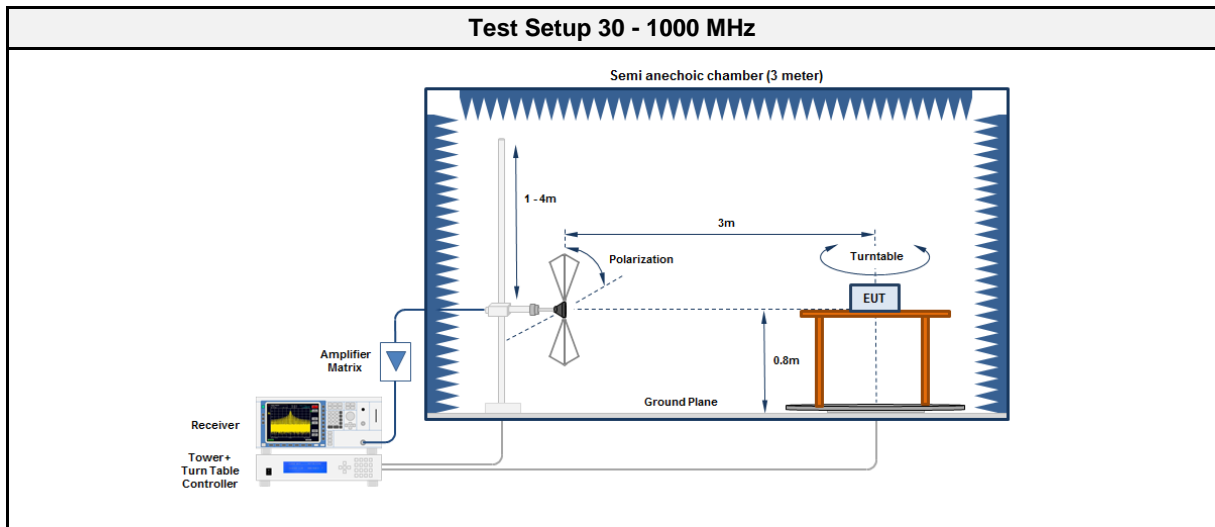
#### 3.8.1 Information

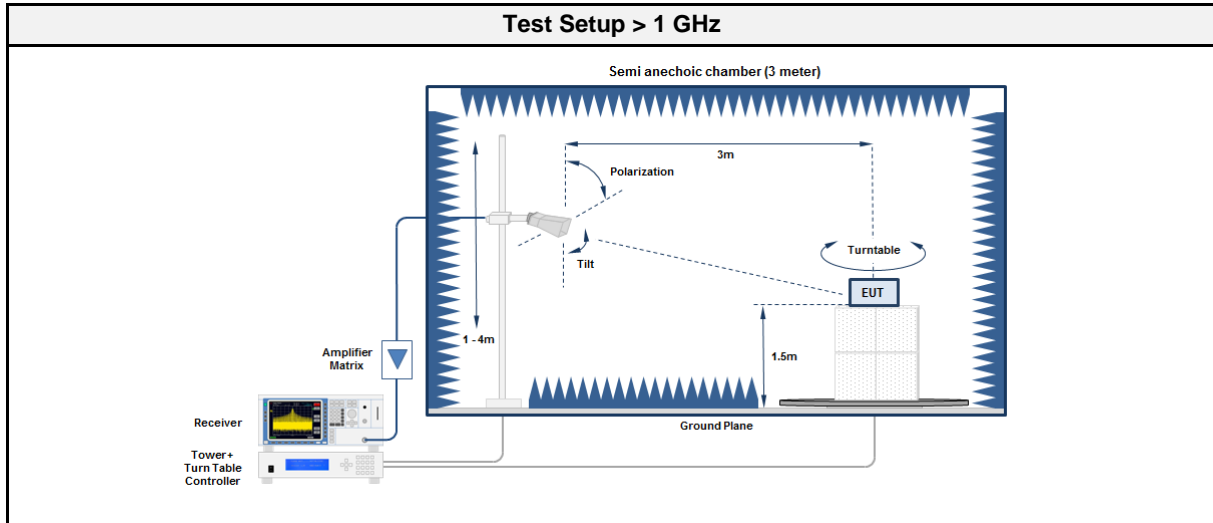
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISED RSS-Gen, Issue 5 (section 6.13)
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6, 11.12
Operator	Abdullah Al Jamal
Date	2019-06-20

#### 3.8.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [ $\mu\text{V}/\text{m}$ ]	Measurement distance [m]
0.009 - 0.09	Average	2400/F[kHz]	300
0.09 - 0.110	Quasi-Peak	2400/F[kHz]	300
0.110 - 0.490	Average	2400/F[kHz]	300
0.490 - 1.705	Quasi-Peak	24000/F[kHz]	30
1.705 - 30.0	Quasi-Peak	30	30
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

#### 3.8.3 Setup





### 3.8.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2015.2.4

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	R&S	ESU 26	EF00887	2018-08	2019-08
Antenna	R&S	VULB 9162	EF00978	2016-11	2019-11

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	R&S	ESU 26	EF00887	2018-08	2019-08
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2016-09	2019-09
Antenna	Amplifier Research	AT4560	EF01152	2018-10	2019-10

### 3.8.5 Procedure

Test Procedure 30 - 1000 MHz	
<ol style="list-style-type: none"> <li>1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground</li> <li>2. EUT set to test mode</li> <li>3. The receiver is set to peak detection with max hold</li> <li>4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m</li> <li>5. All significant emissions are measured again using the corresponding final detector</li> </ol>	

Test Procedure > 1 GHz	
<ol style="list-style-type: none"> <li>1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground</li> <li>2. EUT set to test mode</li> <li>3. The receiver is set to peak detection with max hold</li> <li>4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m</li> <li>5. All significant emissions are measured again using the corresponding final detector</li> </ol>	

### 3.8.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dB $\mu$ V/m]	Det.	Pol.	Limit [dB $\mu$ V/m]	Margin [dB]
2402	No significant emissions detected.					
2440						
2480	168.942	33.74	pk	hor	43.52	-09.78

### 3.9 Test Conditions and Results - Receiver radiated emissions

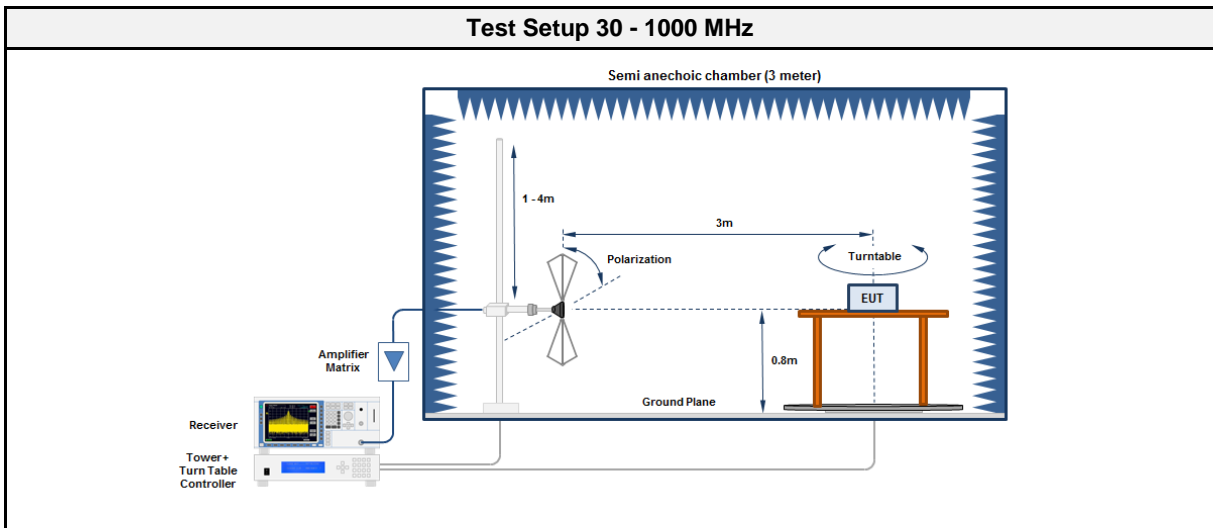
#### 3.9.1 Information

Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.5, 6.6, 11.12
Operator	Abdullah Al Jamal
Date	2019-06-17

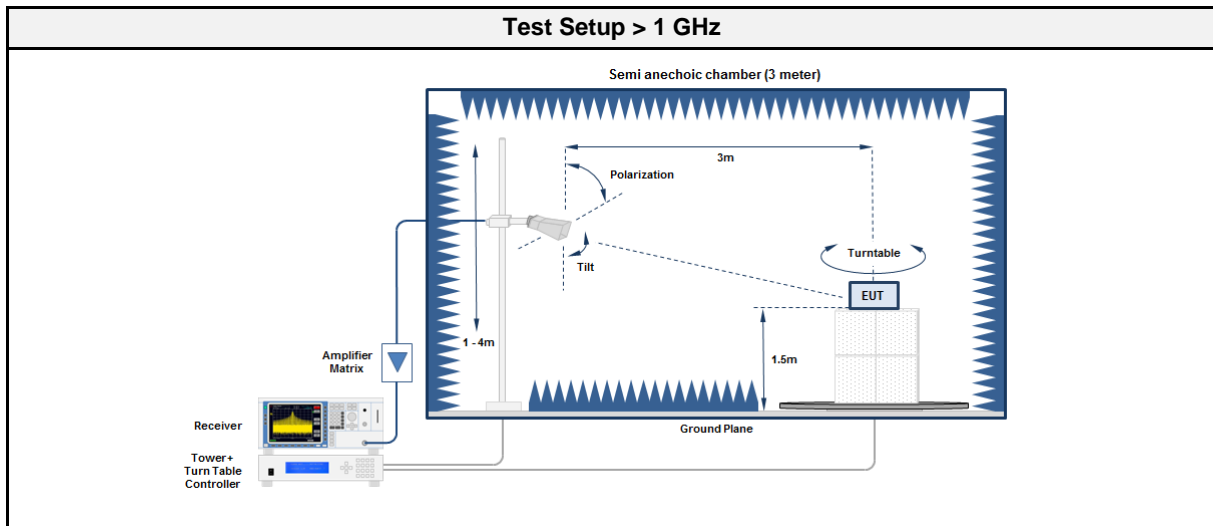
#### 3.9.2 Limits

Limits			
Frequency [MHz]	Detector	Field strength [dB $\mu$ V/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

#### 3.9.3 Setup







### 3.9.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2015.2.4

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	R&S	ESU 26	EF00887	2018-08	2019-08
Antenna	R&S	VULB 9162	EF00978	2016-11	2019-11

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	R&S	ESU 26	EF00887	2018-08	2019-08
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2016-09	2019-09
Antenna	Amplifier Research	AT4560	EF01152	2018-10	2019-10

### 3.9.5 Procedure

Test Procedure 30 - 1000 MHz
<ol style="list-style-type: none"> <li>1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground</li> <li>2. EUT set to test mode</li> <li>3. The receiver is set to peak detection with max hold</li> <li>4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m</li> <li>5. All significant emissions are measured again using the corresponding final detector</li> </ol>

Test Procedure > 1 GHz
<ol style="list-style-type: none"> <li>1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground</li> <li>2. EUT set to test mode</li> <li>3. The receiver is set to peak detection with max hold</li> <li>4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m</li> <li>5. All significant emissions are measured again using the corresponding final detector</li> </ol>

## 3.9.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dB $\mu$ V/m]	Det.	Pol.	Limit [dB $\mu$ V/m]	Margin [dB]
2440	31.088	33.15	pk	ver	40.00	-06.85
2440	182.048	34.90	pk	hor	43.50	-08.60
2440	319.04	35.38	pk	hor	46.00	-10.62
2440	319.04	31.86	pk	ver	46.00	-14.14
2440	531.52	31.91	pk	ver	46.00	-14.09
2440	637.76	38.76	pk	hor	46.00	-07.24
2440	639.04	30.72	pk	ver	46.00	-15.28
2440	1307	46.81	pk	hor	53.98	-07.17
2440	1331	41.54	pk	ver	53.98	-12.44
2440	14451	47.75	pk	ver	53.98	-06.23

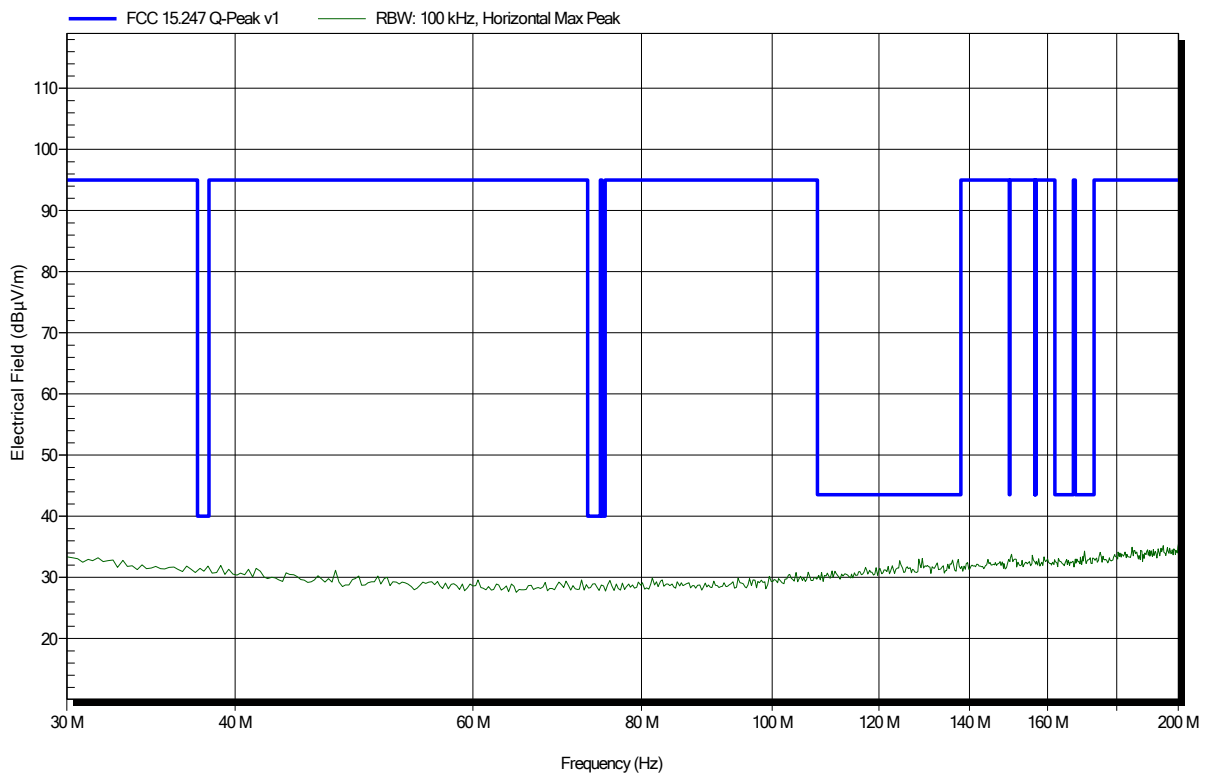
## ANNEX A Transmitter spurious emissions

### Spurious emissions according to FCC 47 CFR §15.247

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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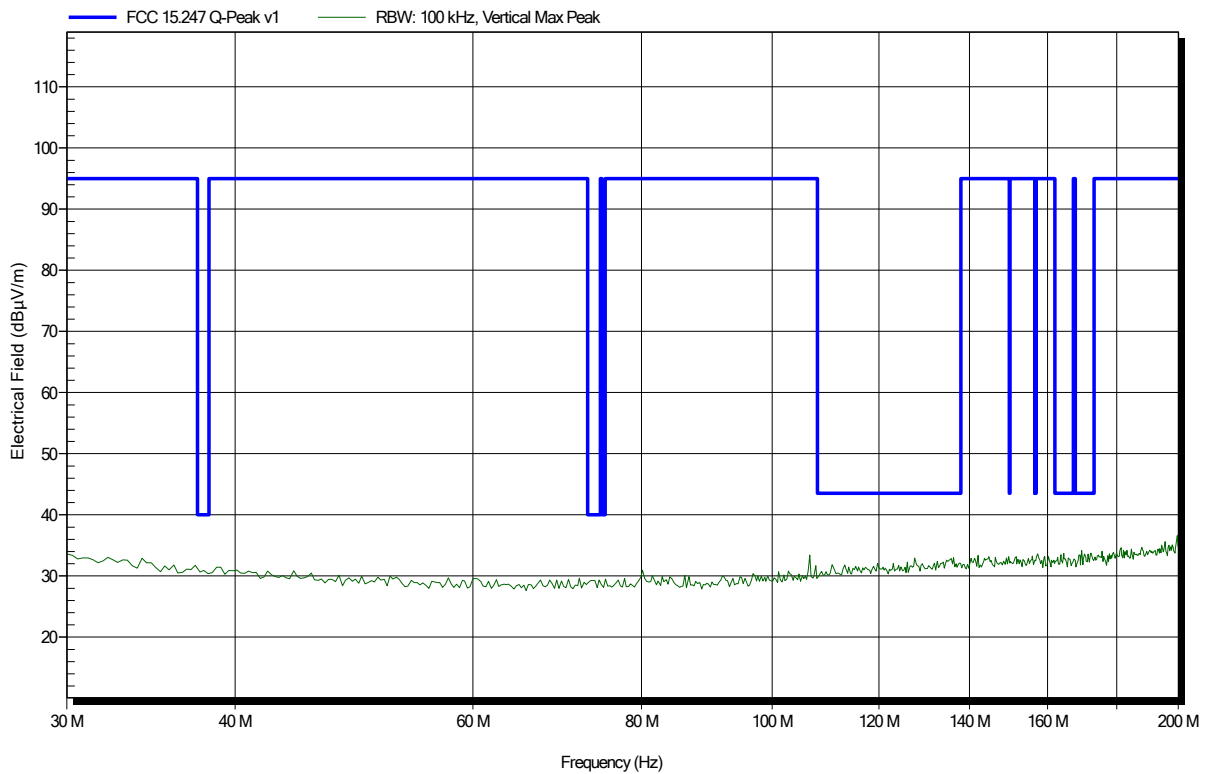


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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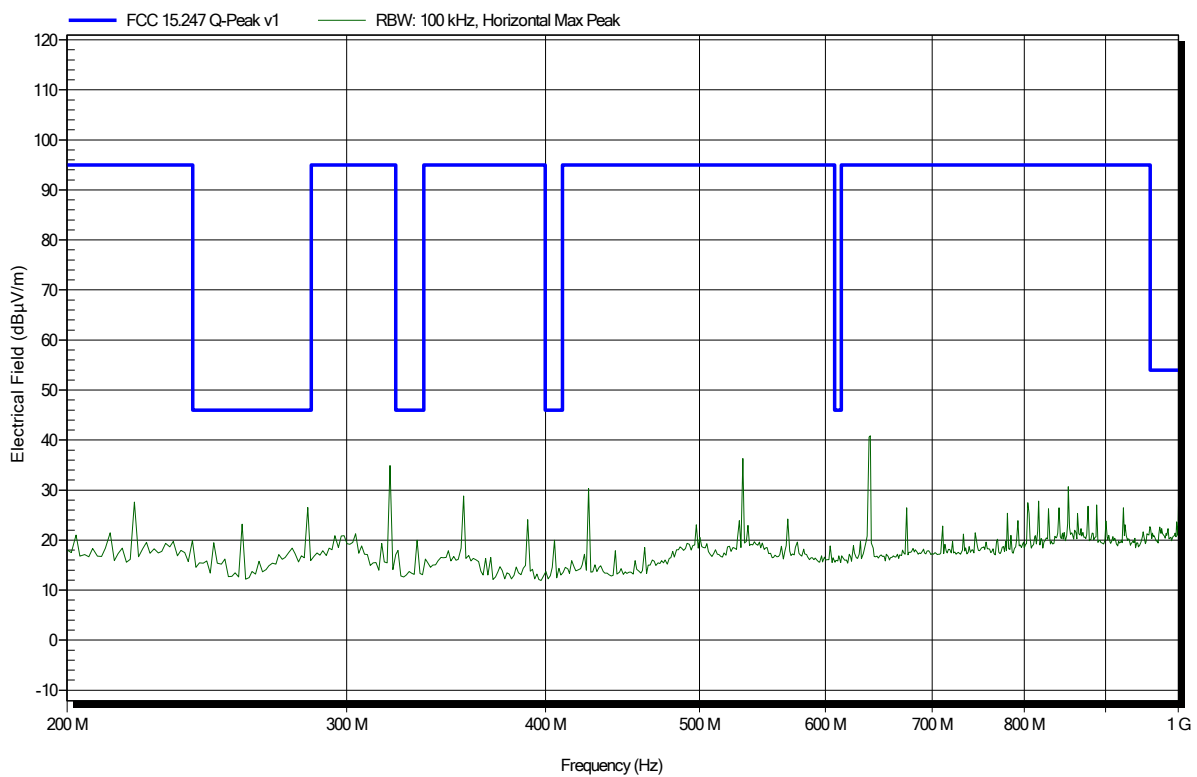


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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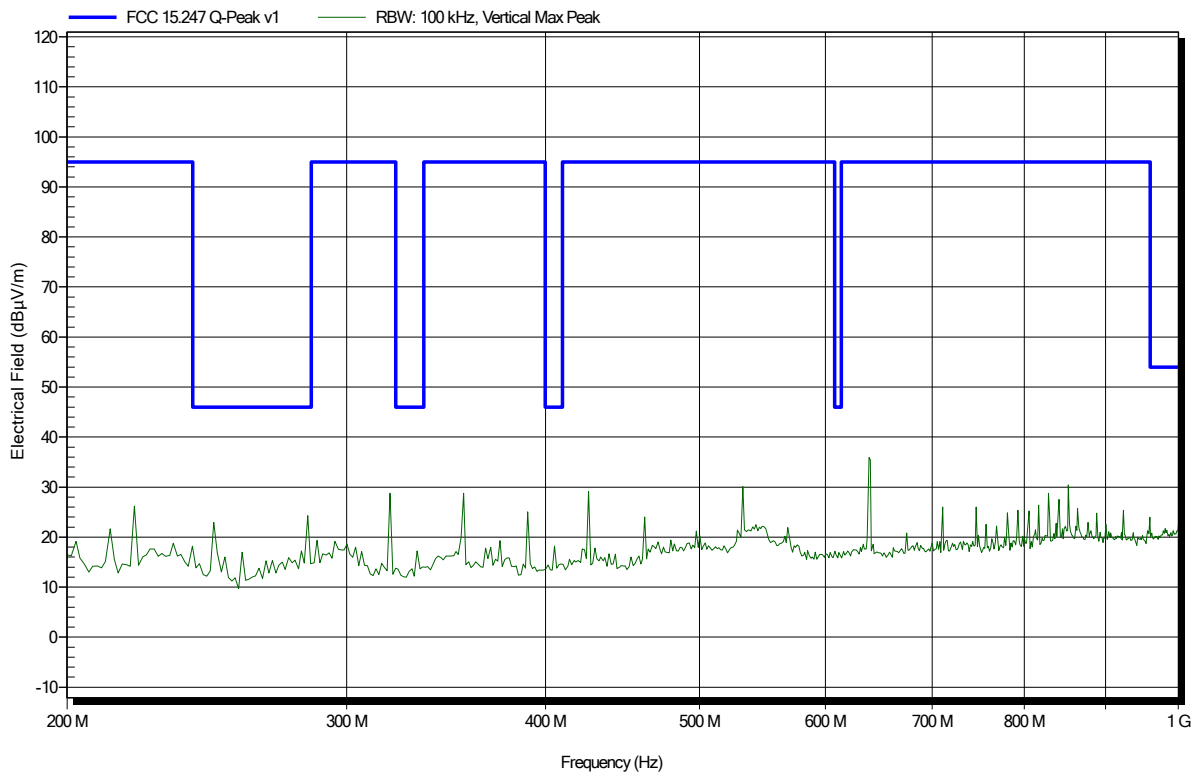


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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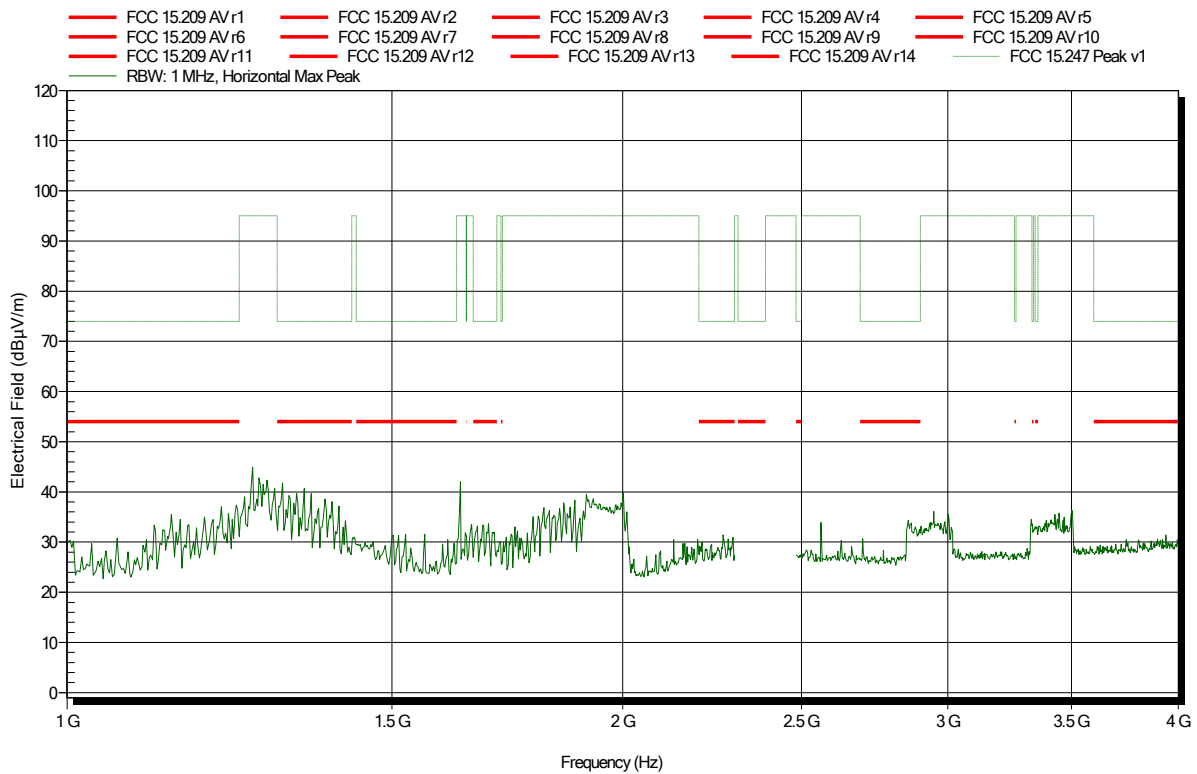


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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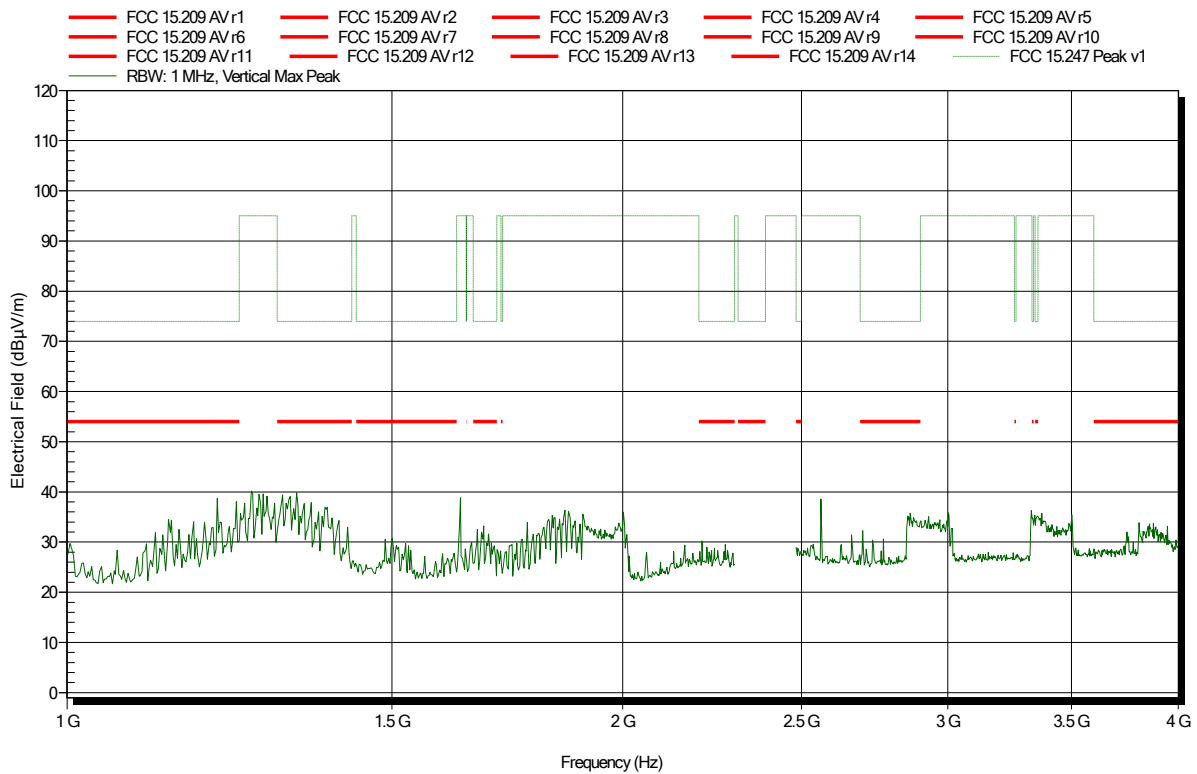


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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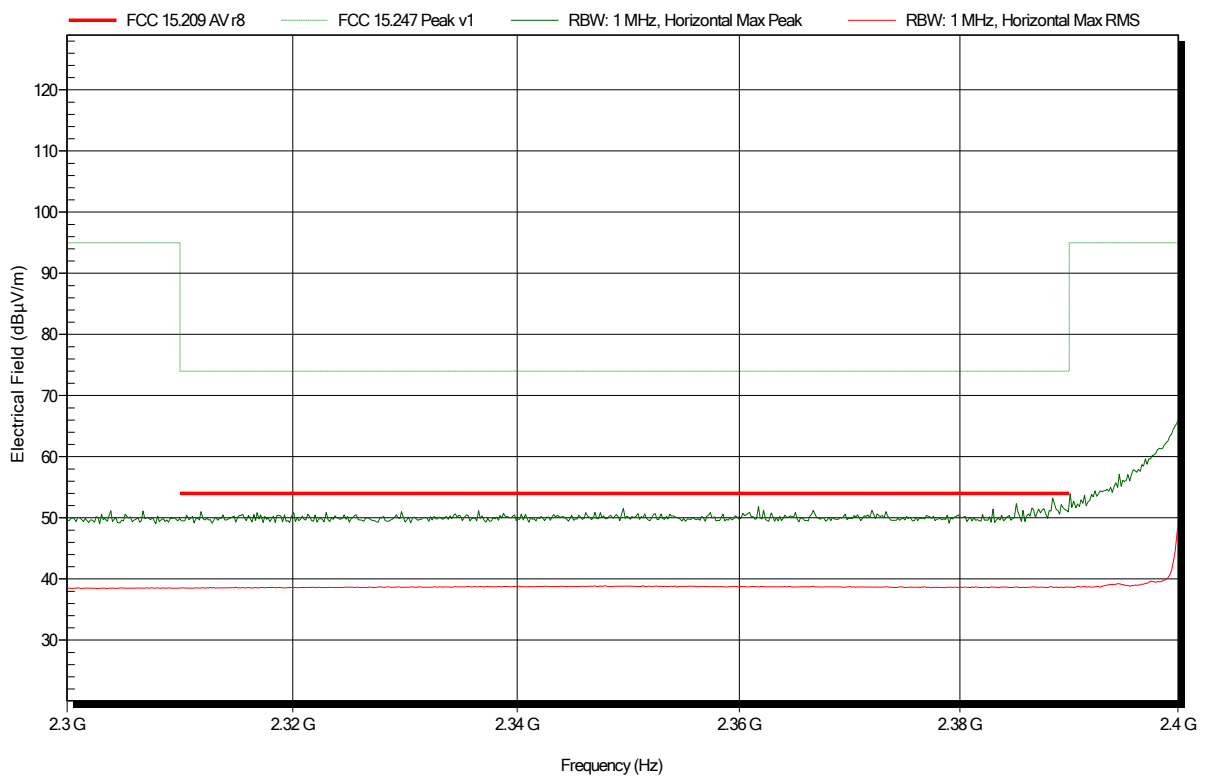


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note: lower bandedge

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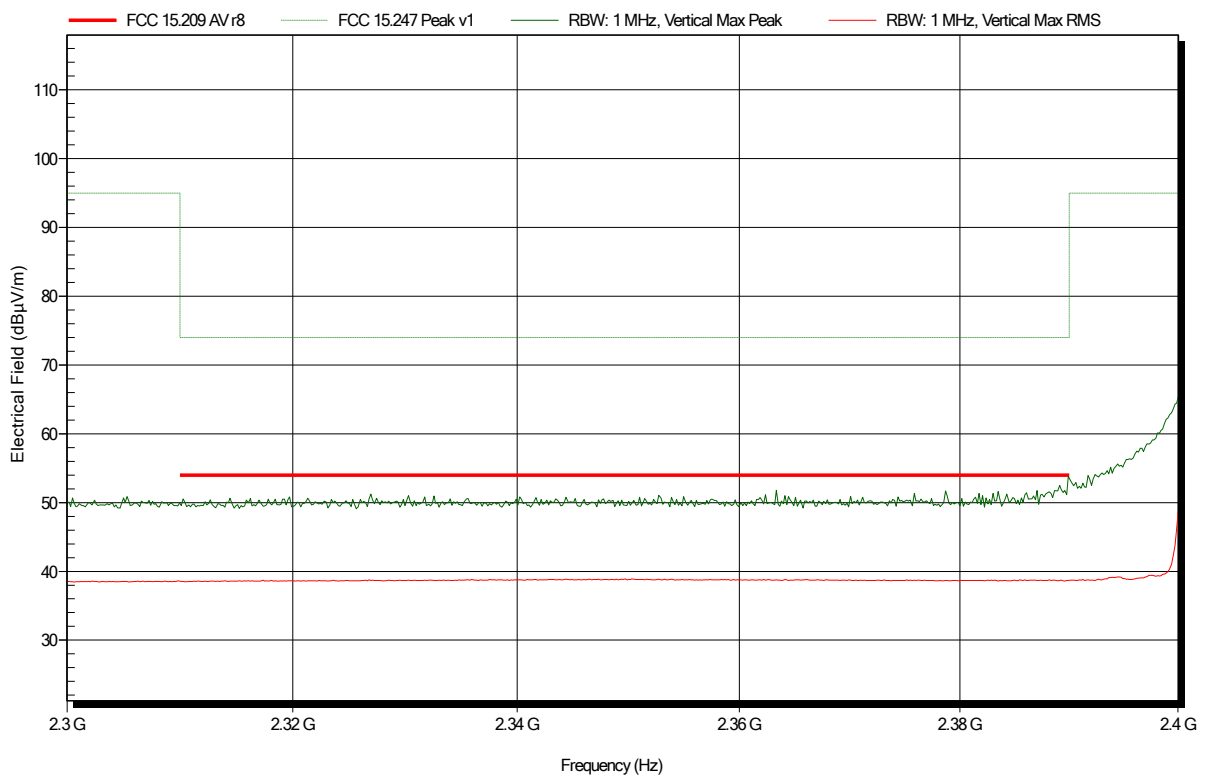


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note: lower bandedge

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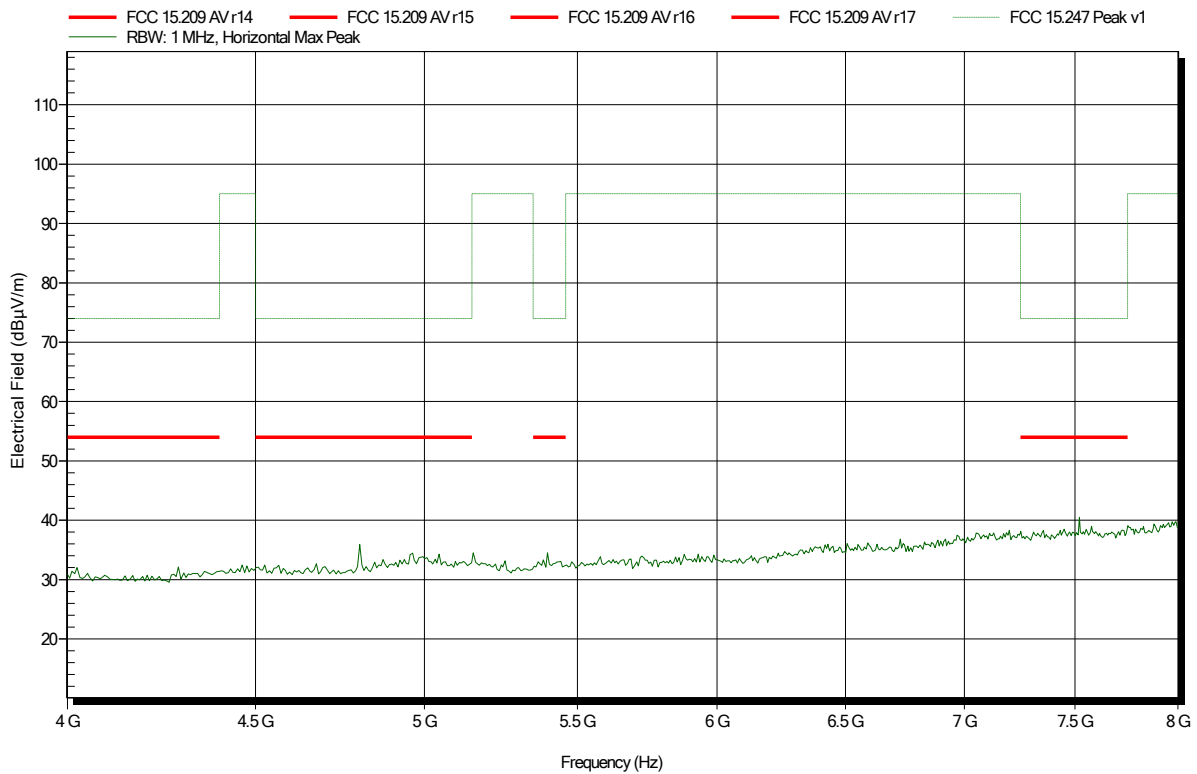


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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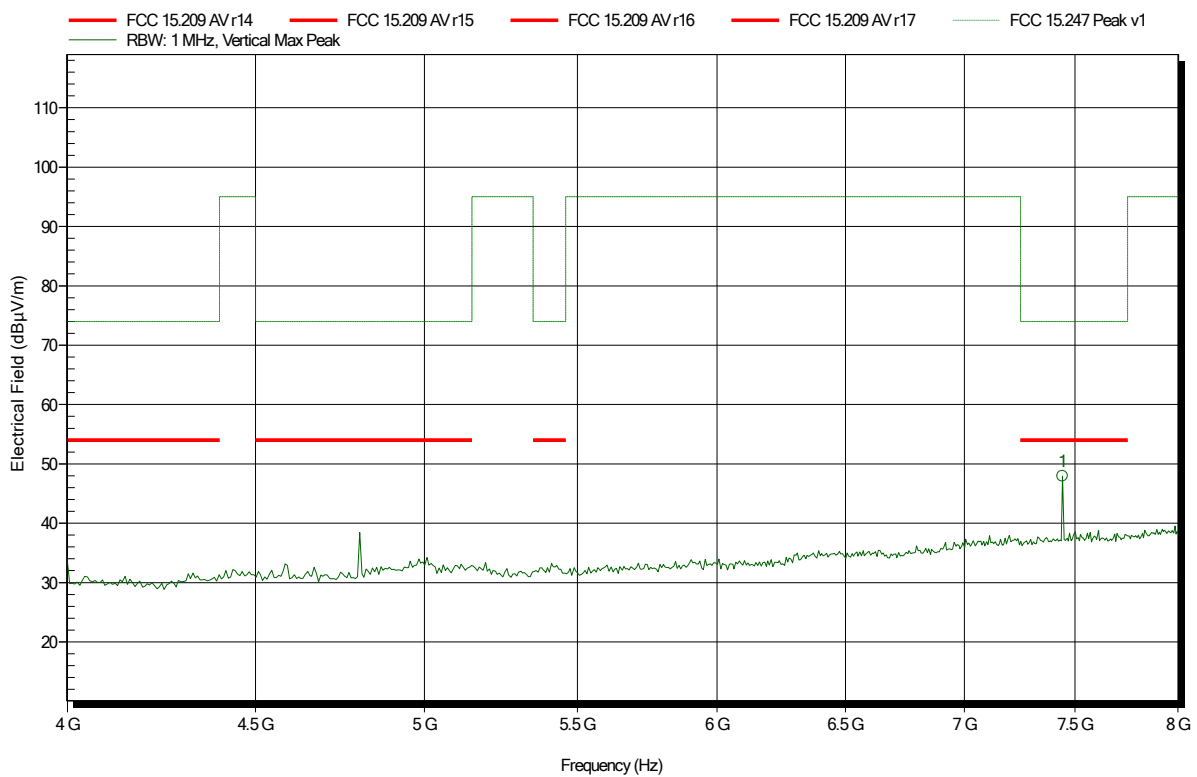


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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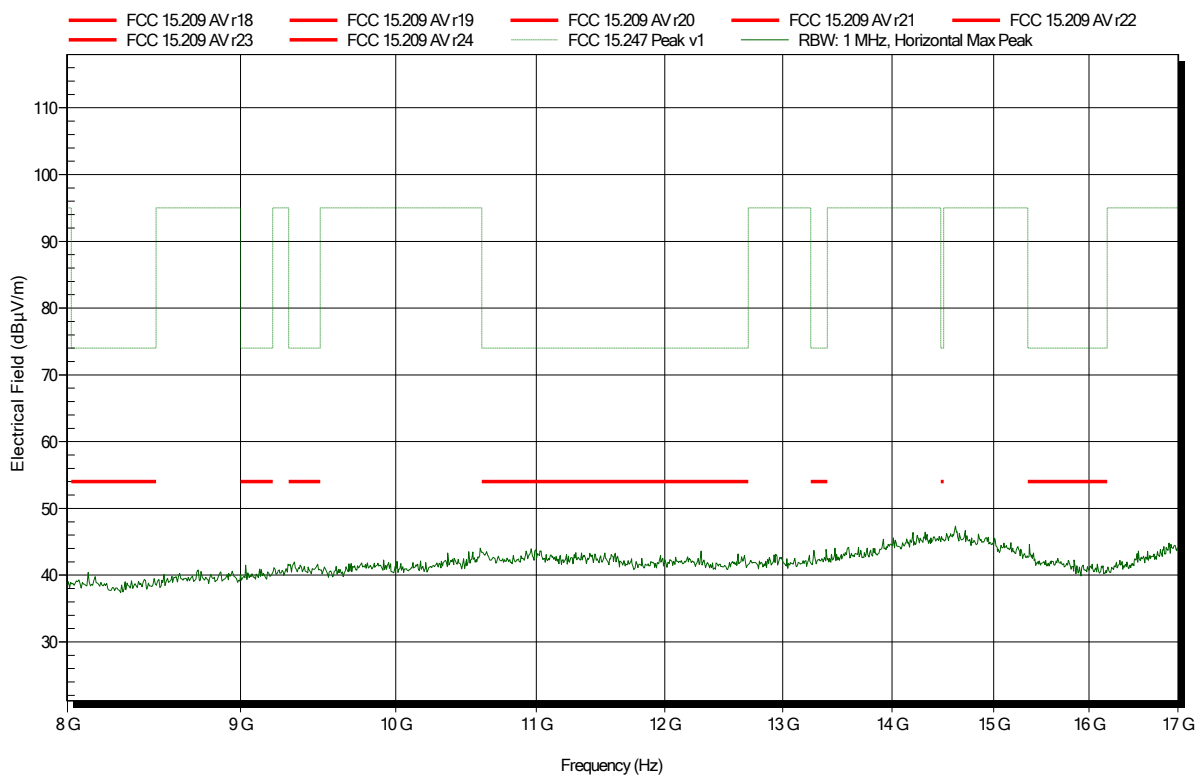
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.442 GHz	47.95 dBµV/m	74 dBµV/m	-26.05 dB	Pass

**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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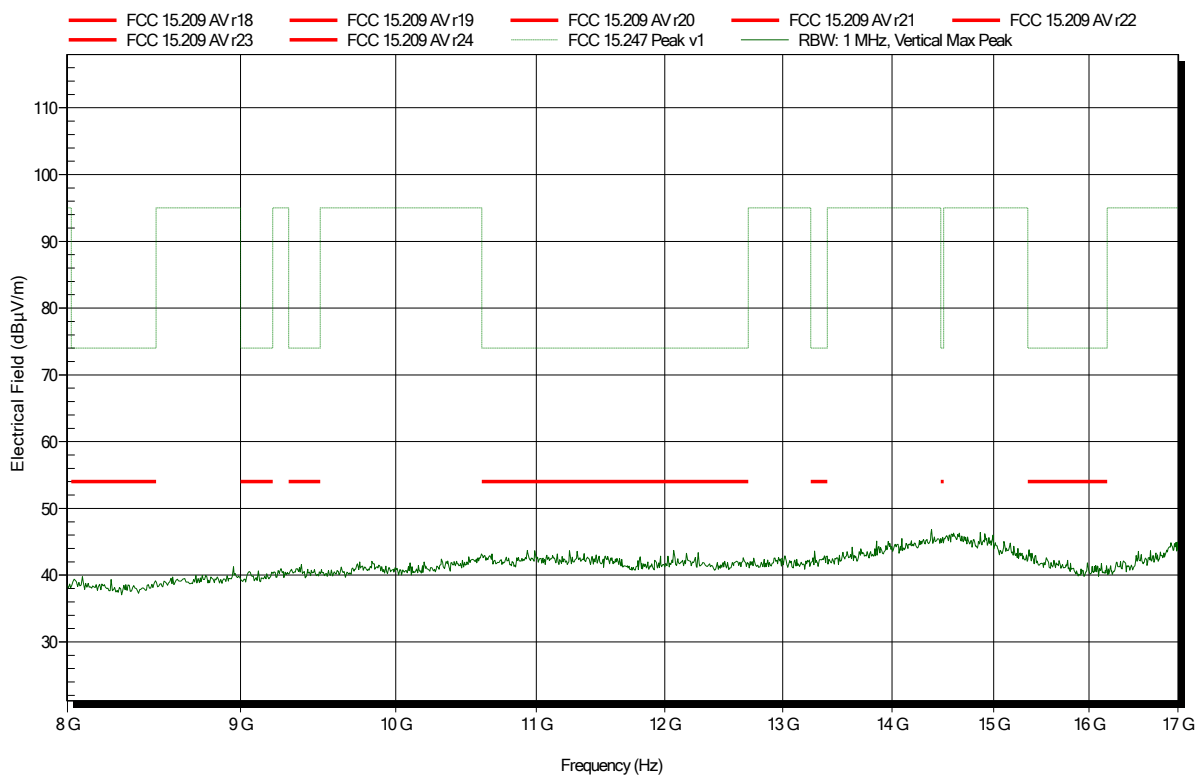


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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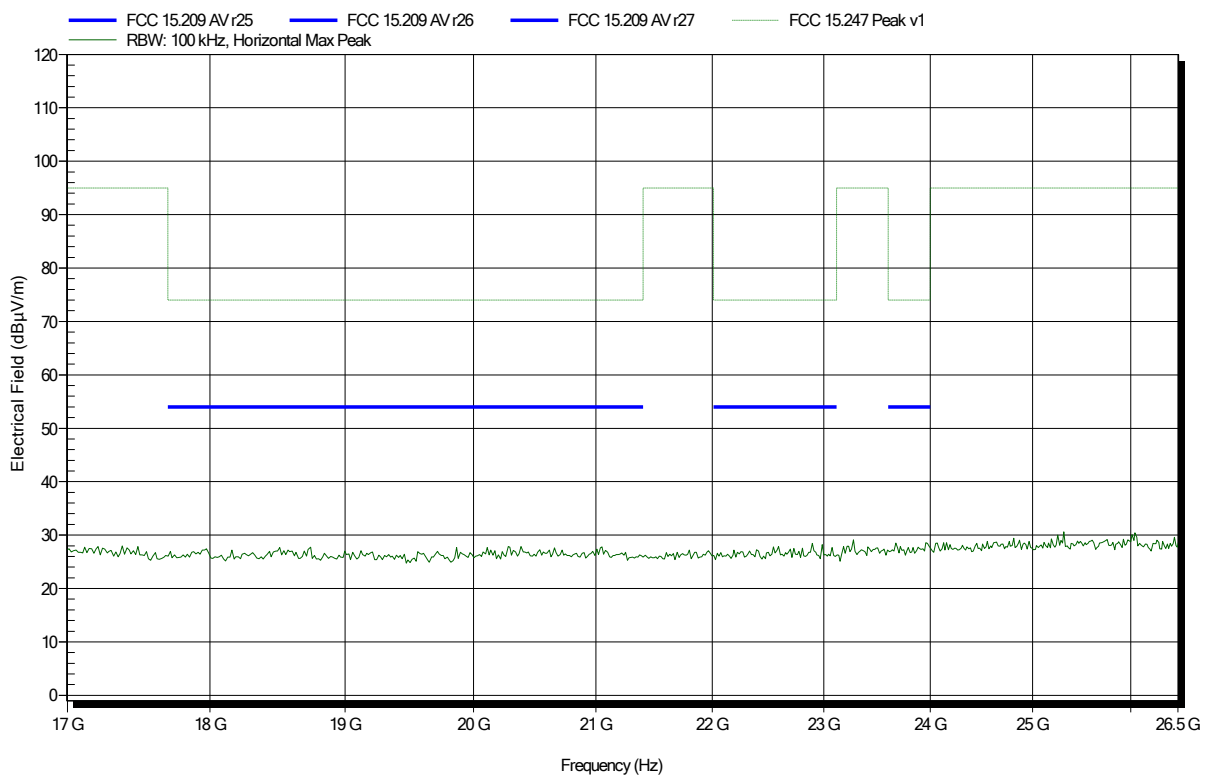


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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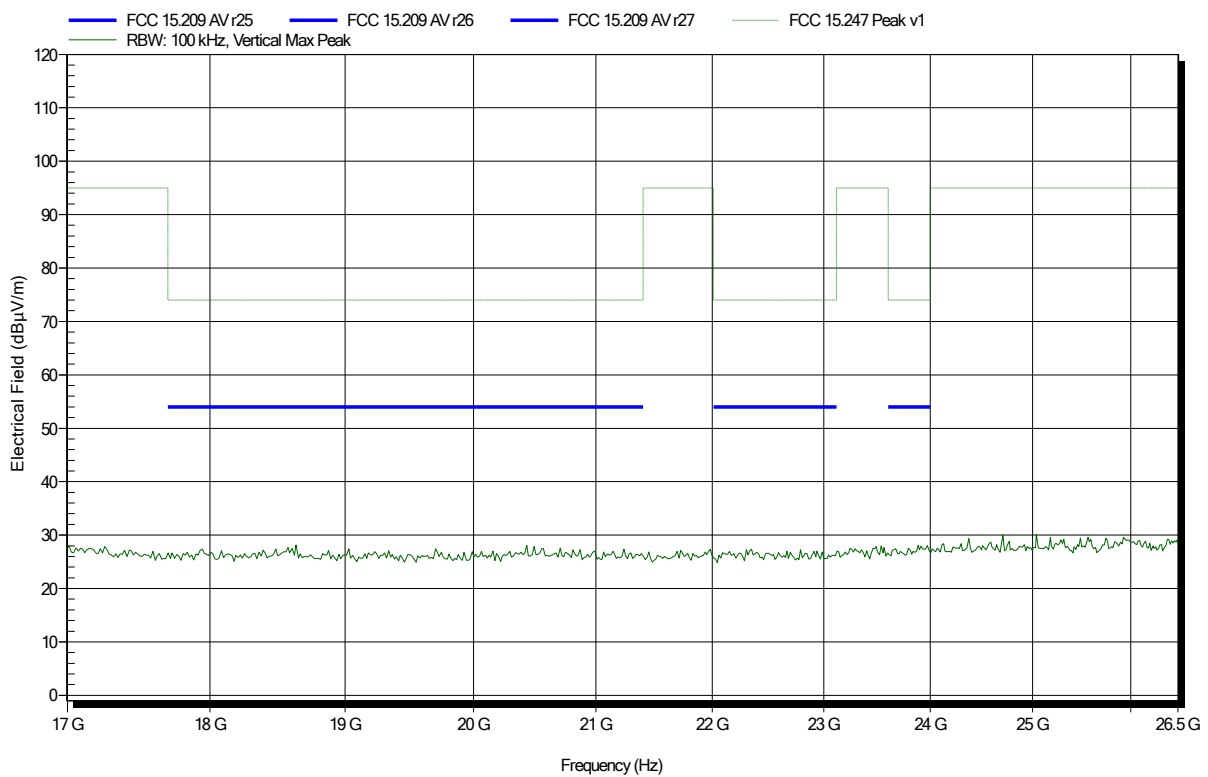


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2402 MHz  
 Test Date: 2019-06-20  
 Note:

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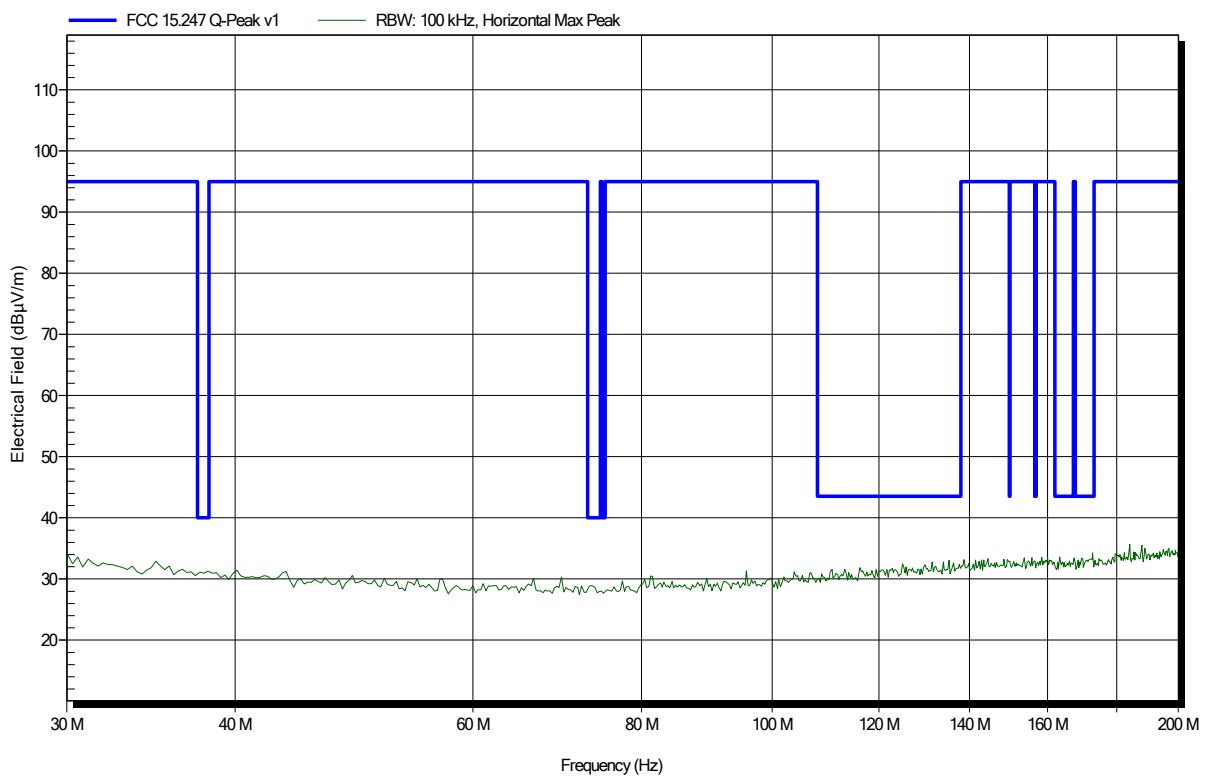


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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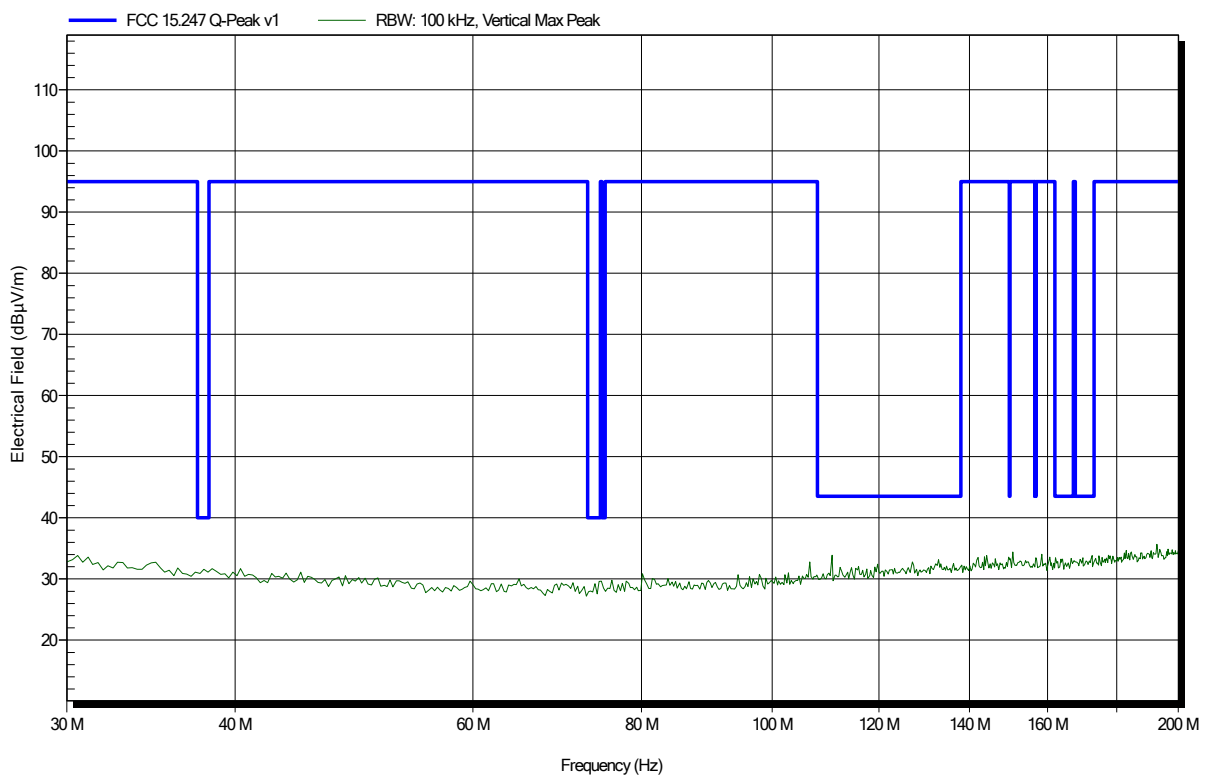


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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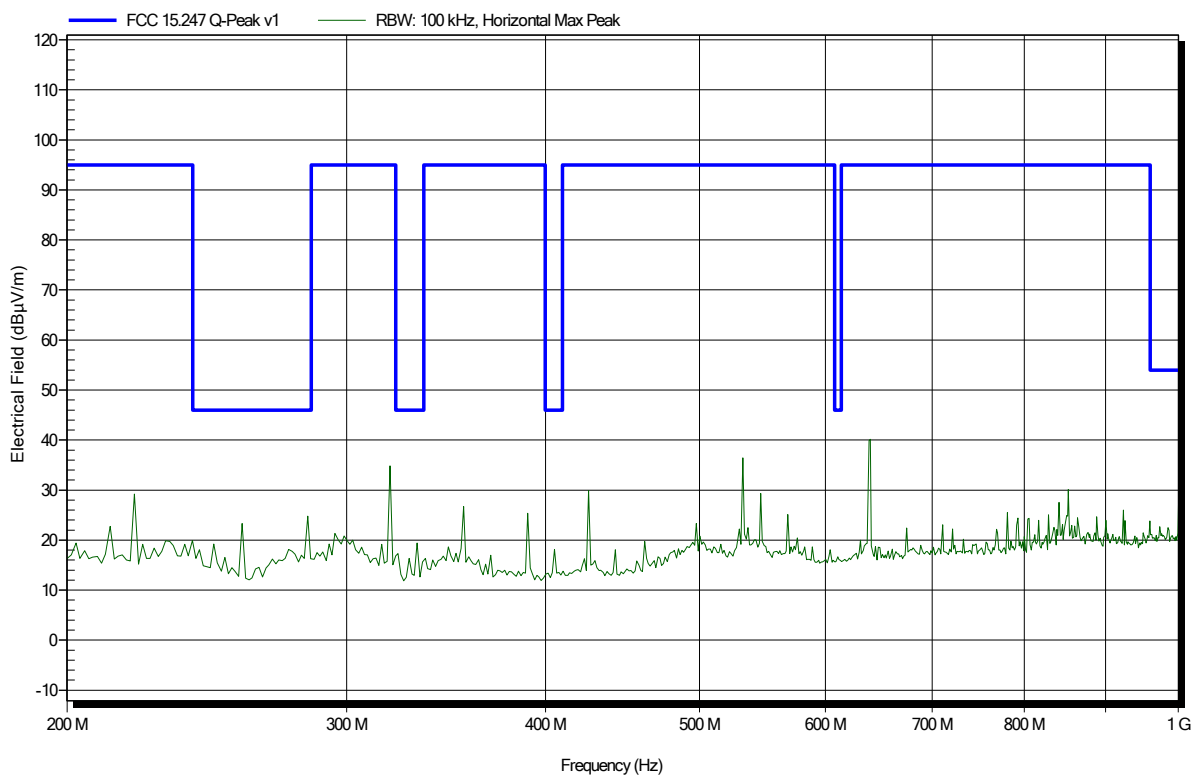


### Spurious emissions according to FCC 47 CFR §15.247

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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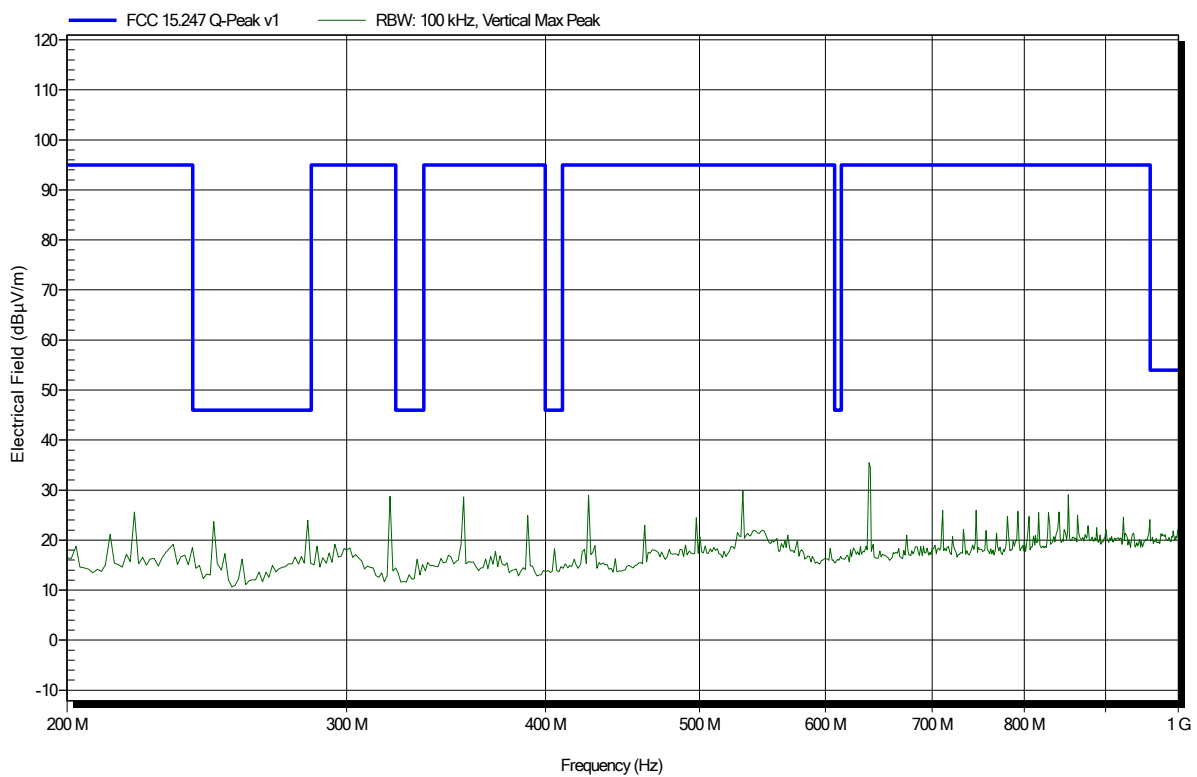


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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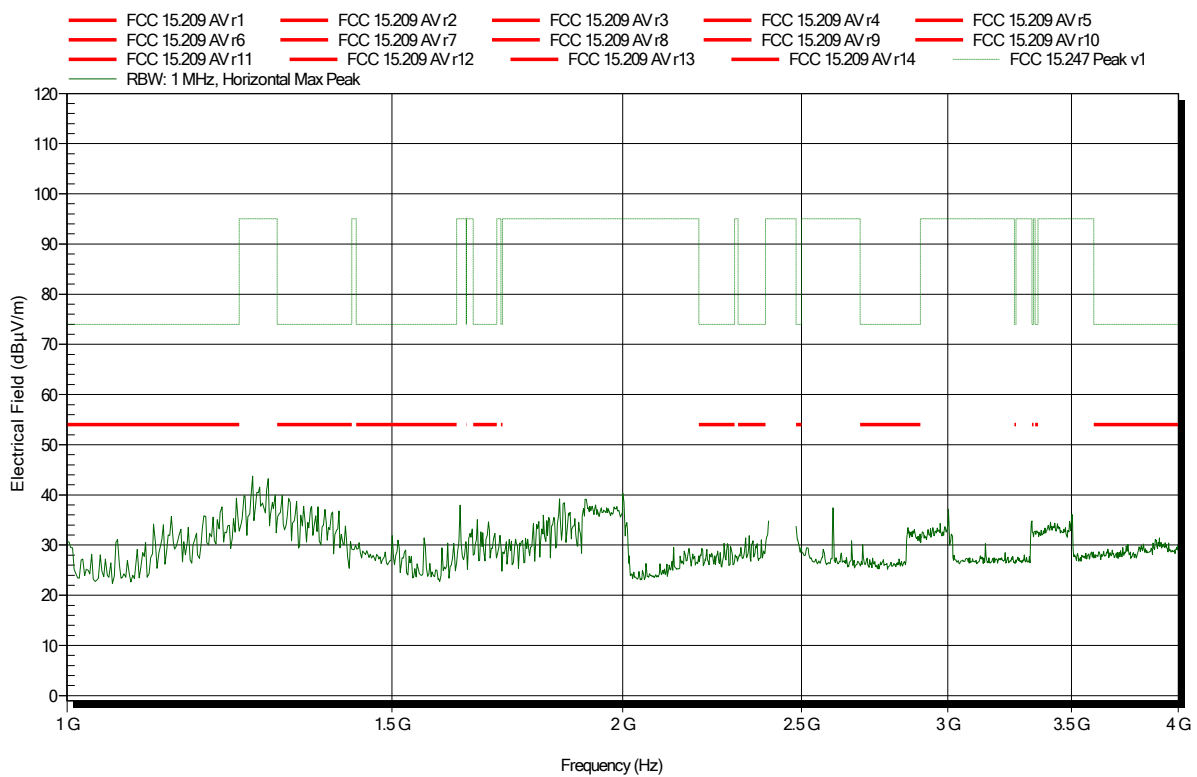


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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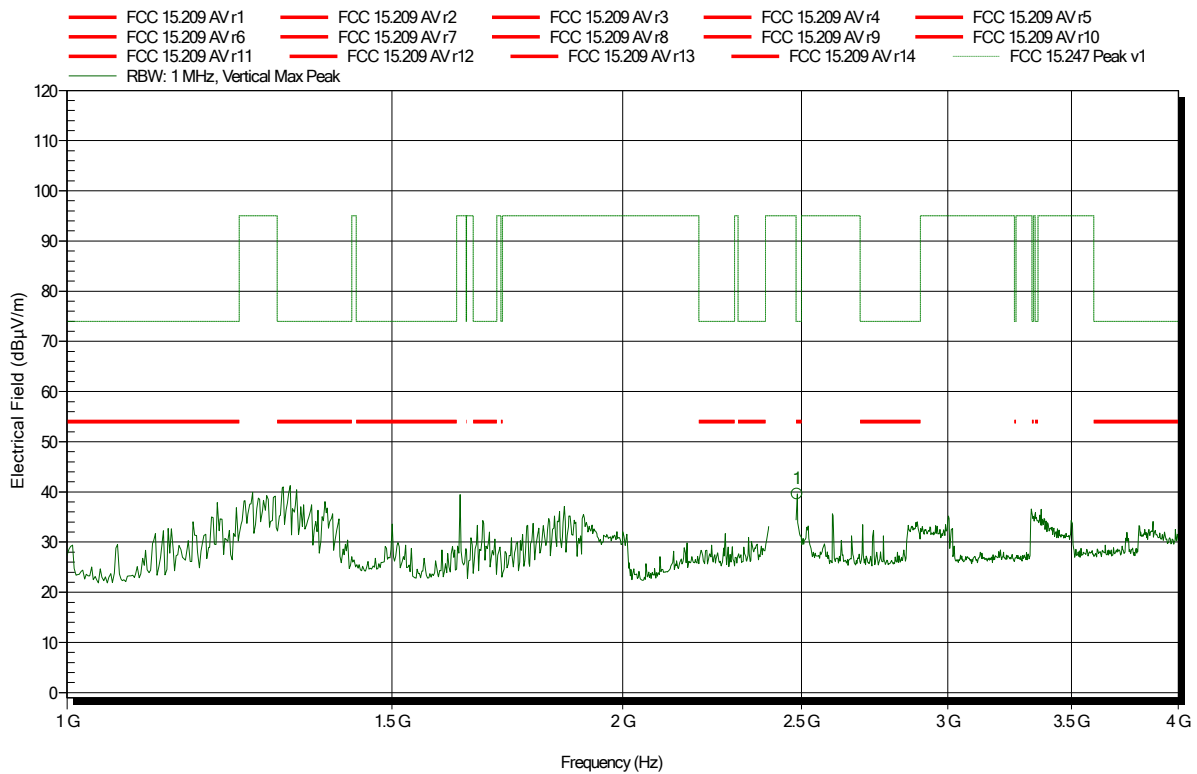


### Spurious emissions according to FCC 47 CFR §15.247

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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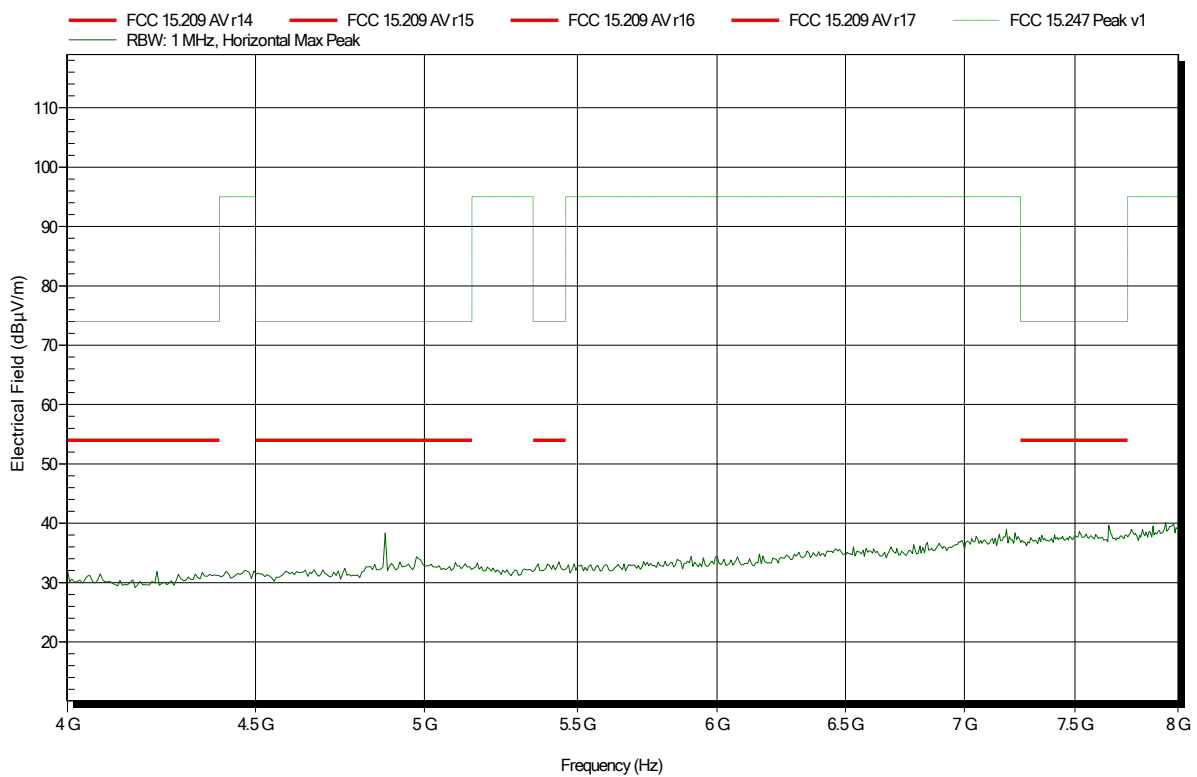


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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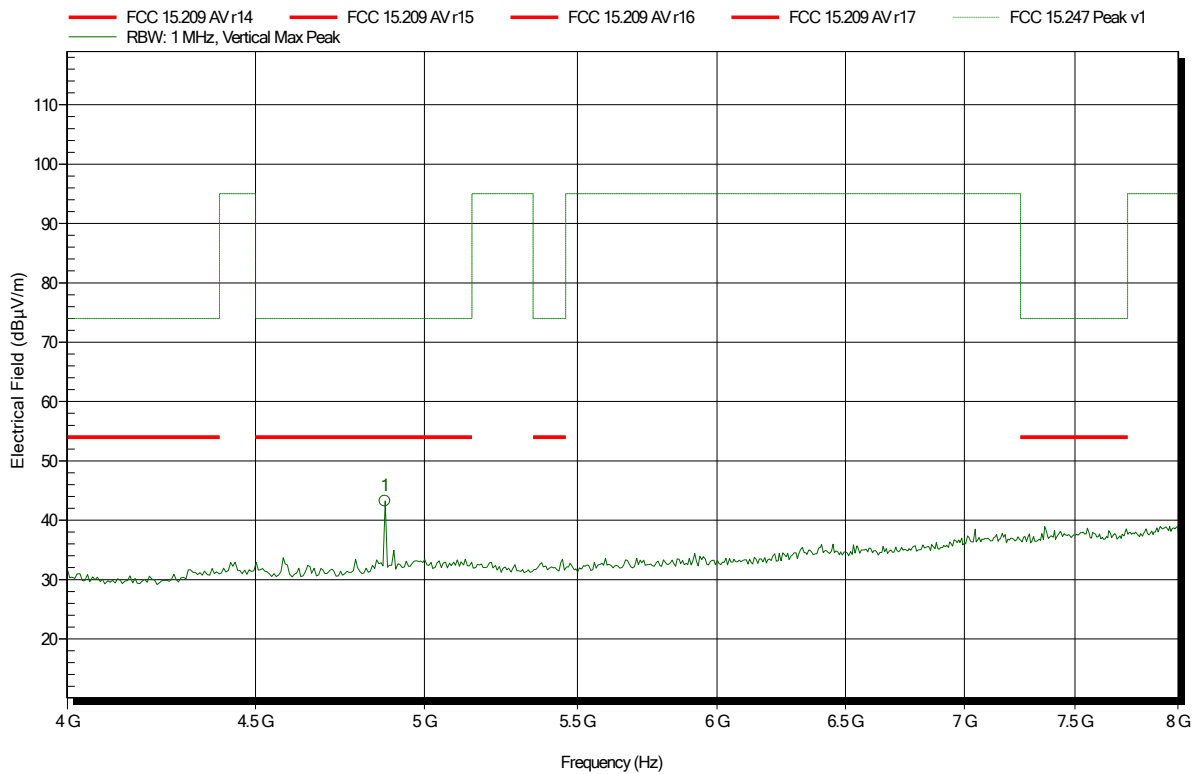


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.878 GHz	43.24 dBµV/m	74 dBµV/m	-30.76 dB	Pass

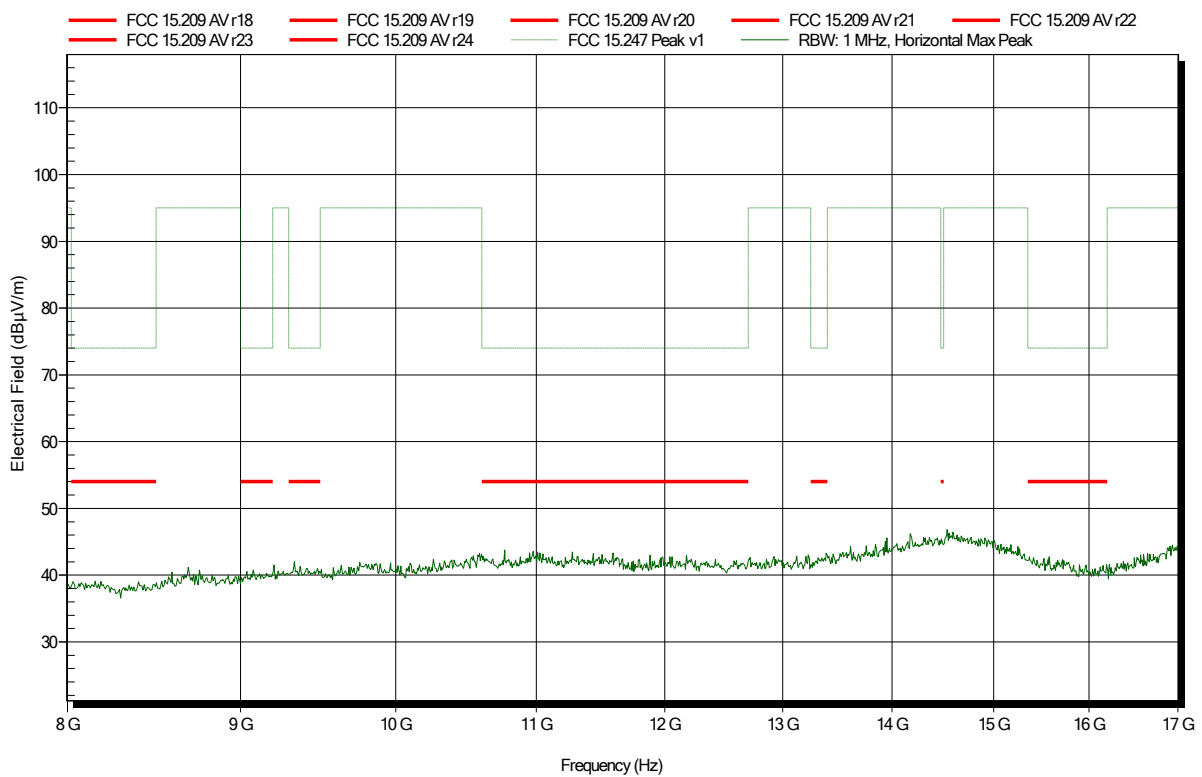


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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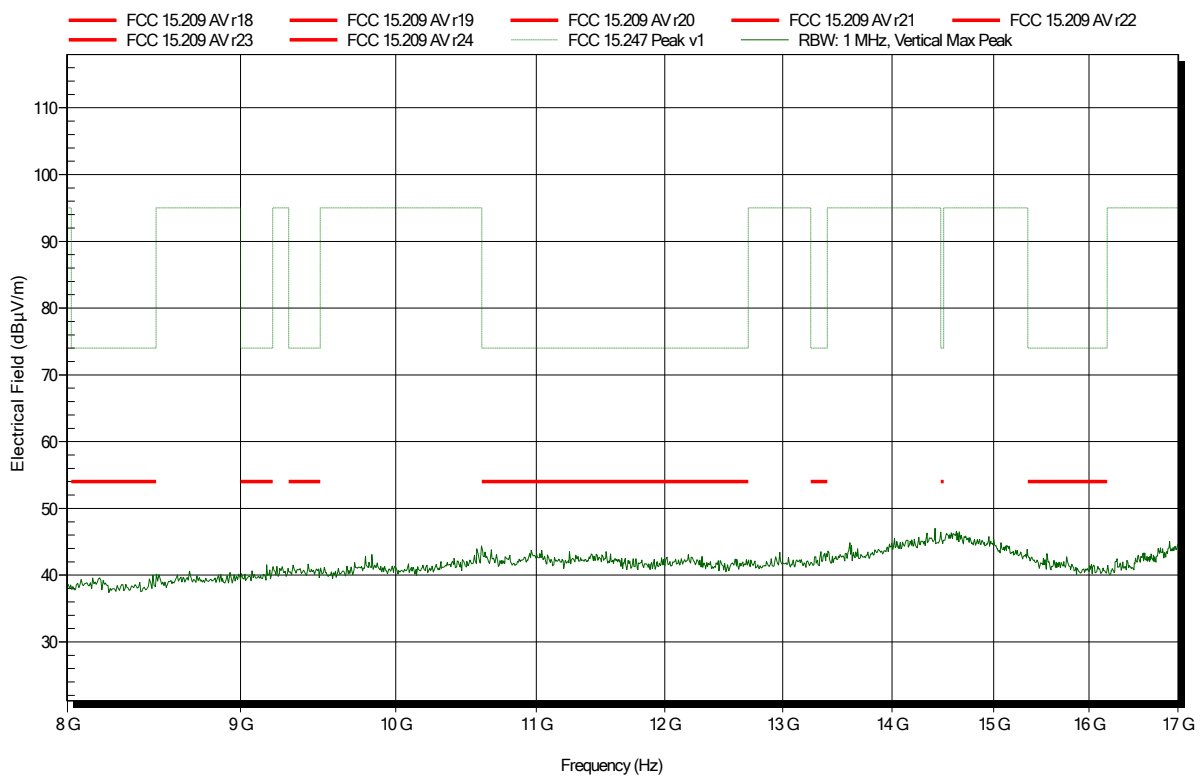


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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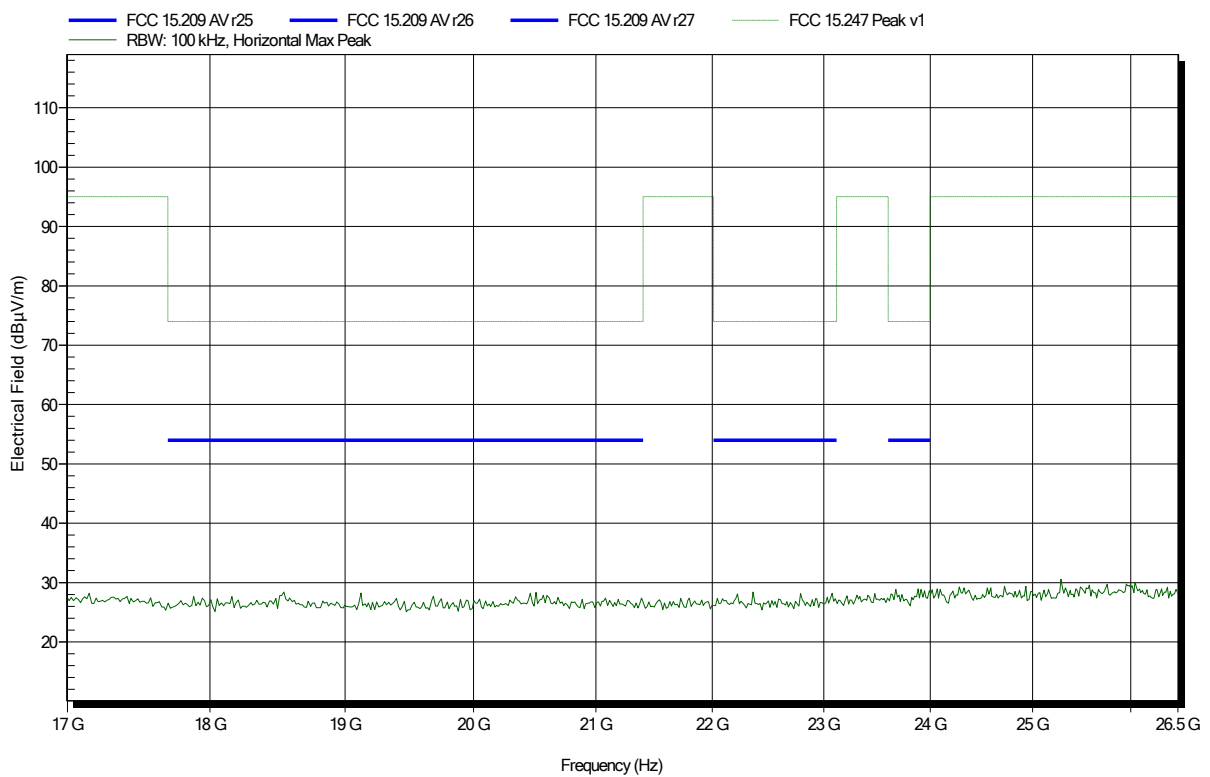


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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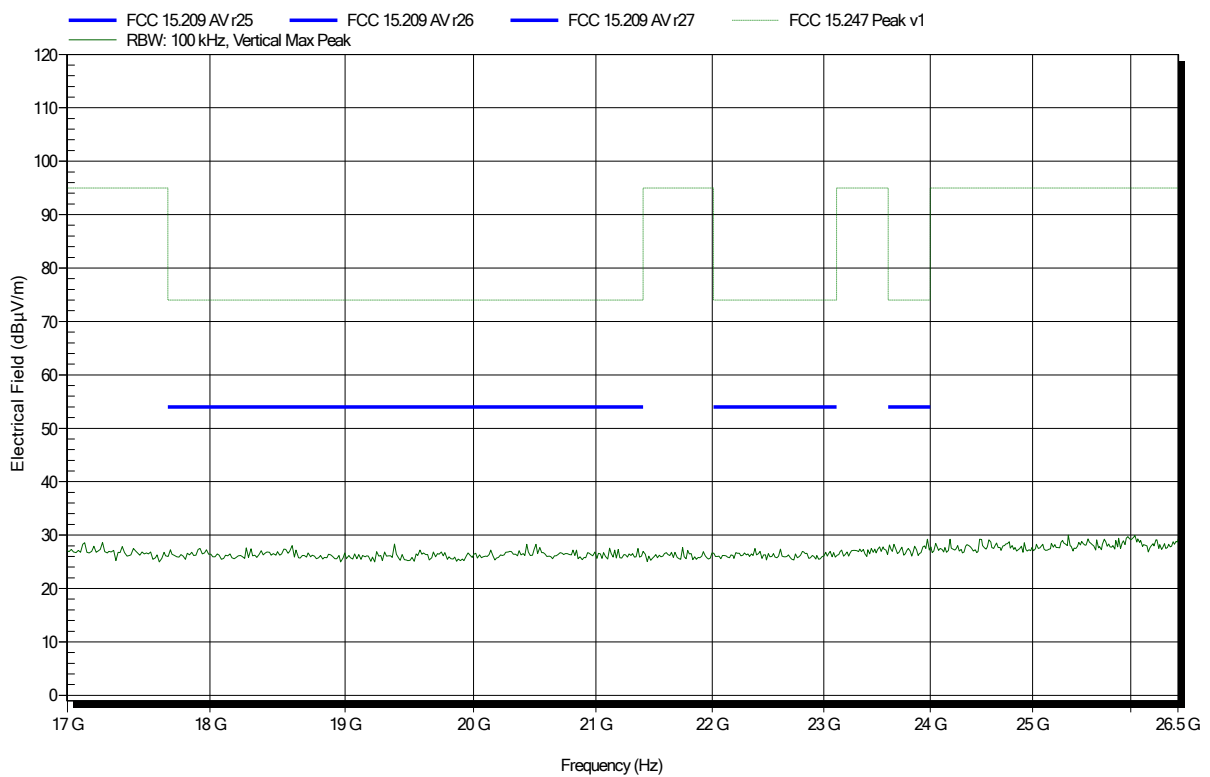


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2440 MHz  
 Test Date: 2019-06-20  
 Note:

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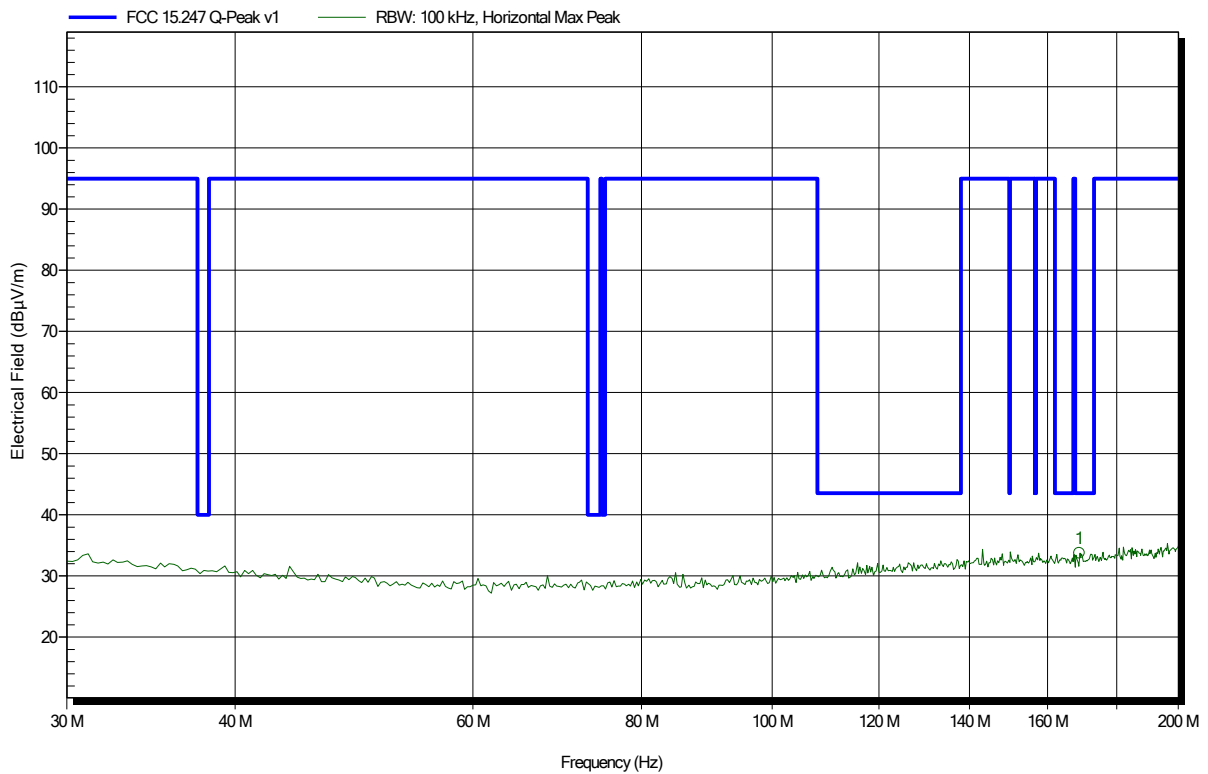


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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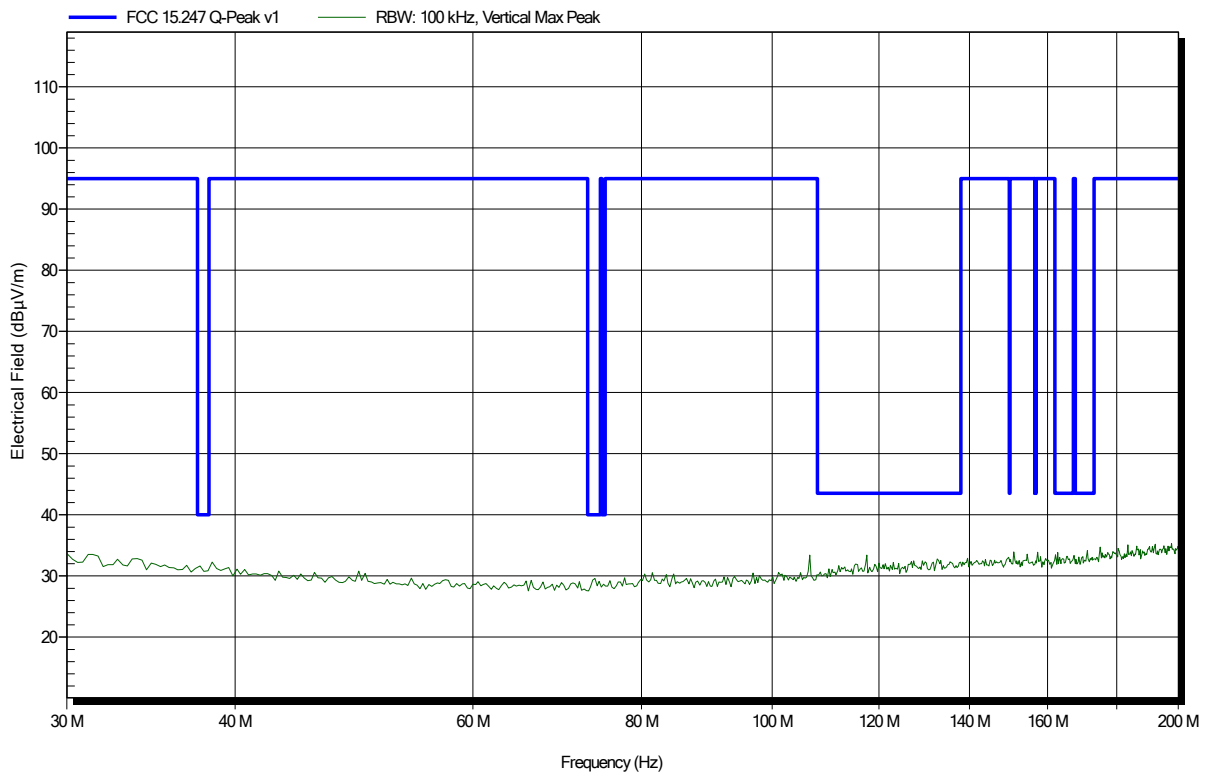
Frequency	Peak	Peak Limit	Peak Difference	Status
168.942 MHz	33.74 dBµV/m	43.52 dBµV/m	-9.78 dB	Pass

**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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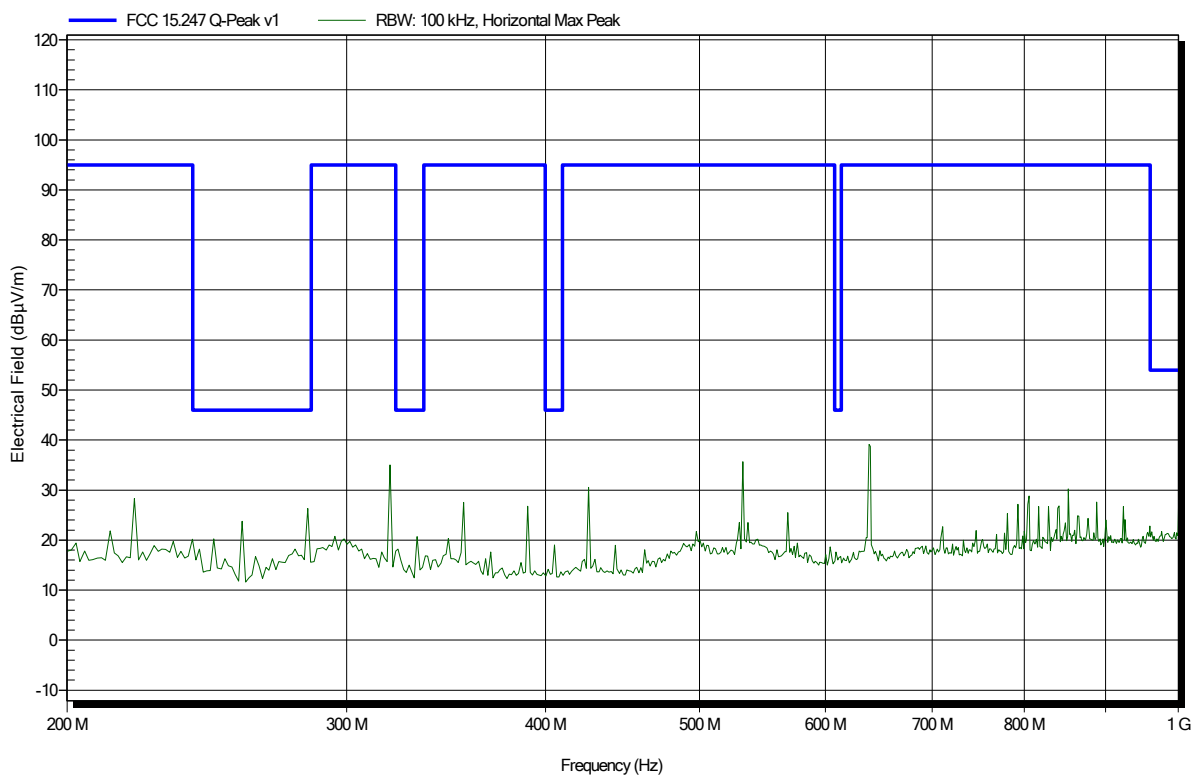


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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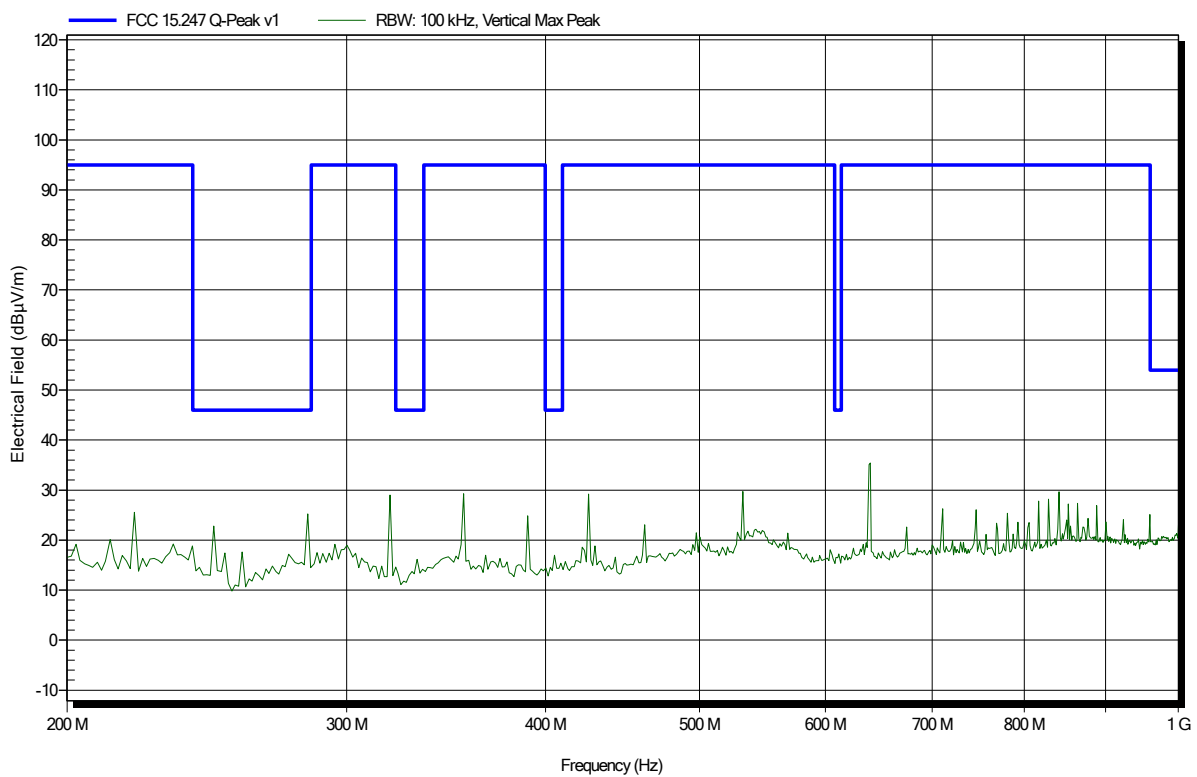


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3 m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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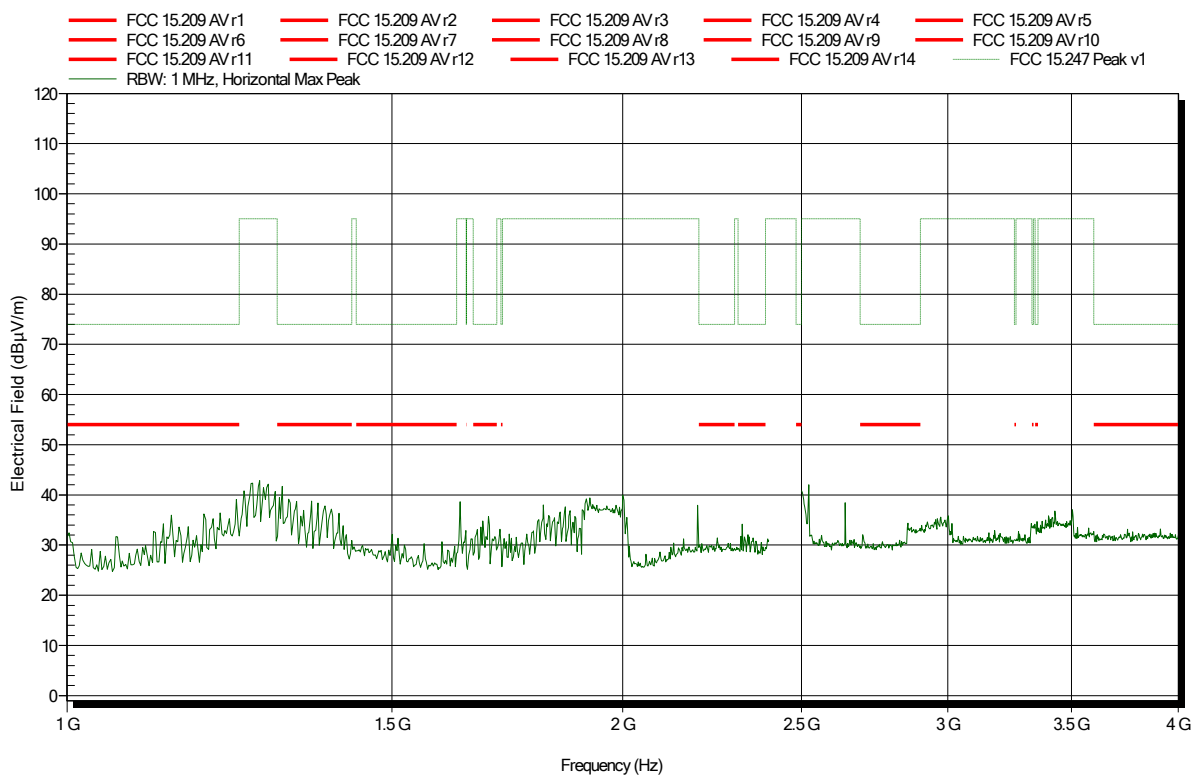


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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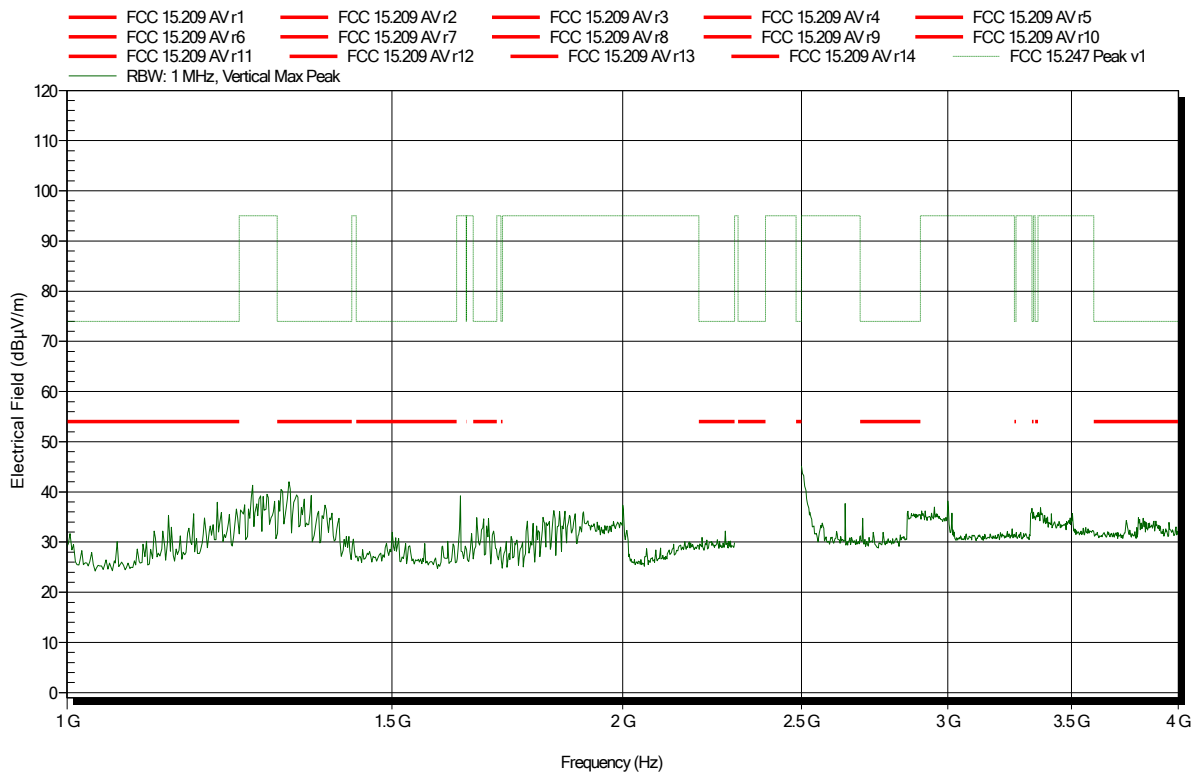


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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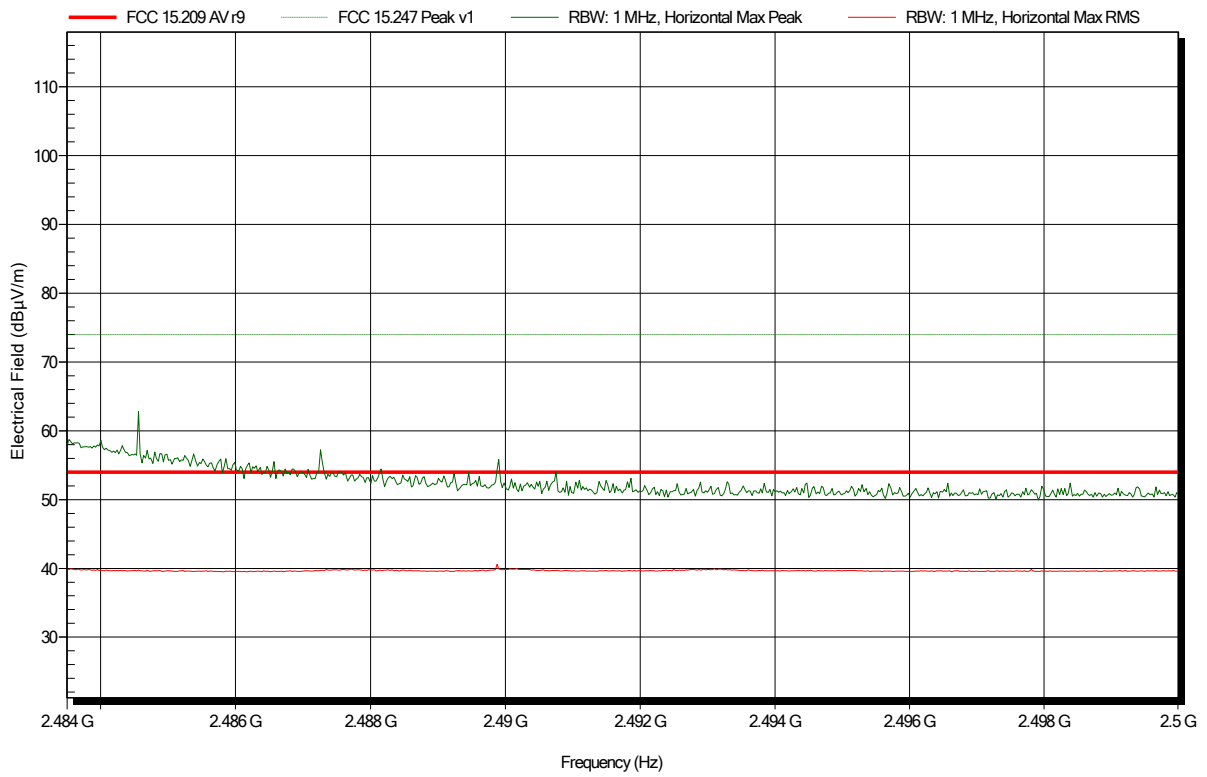


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note: upper bandedge

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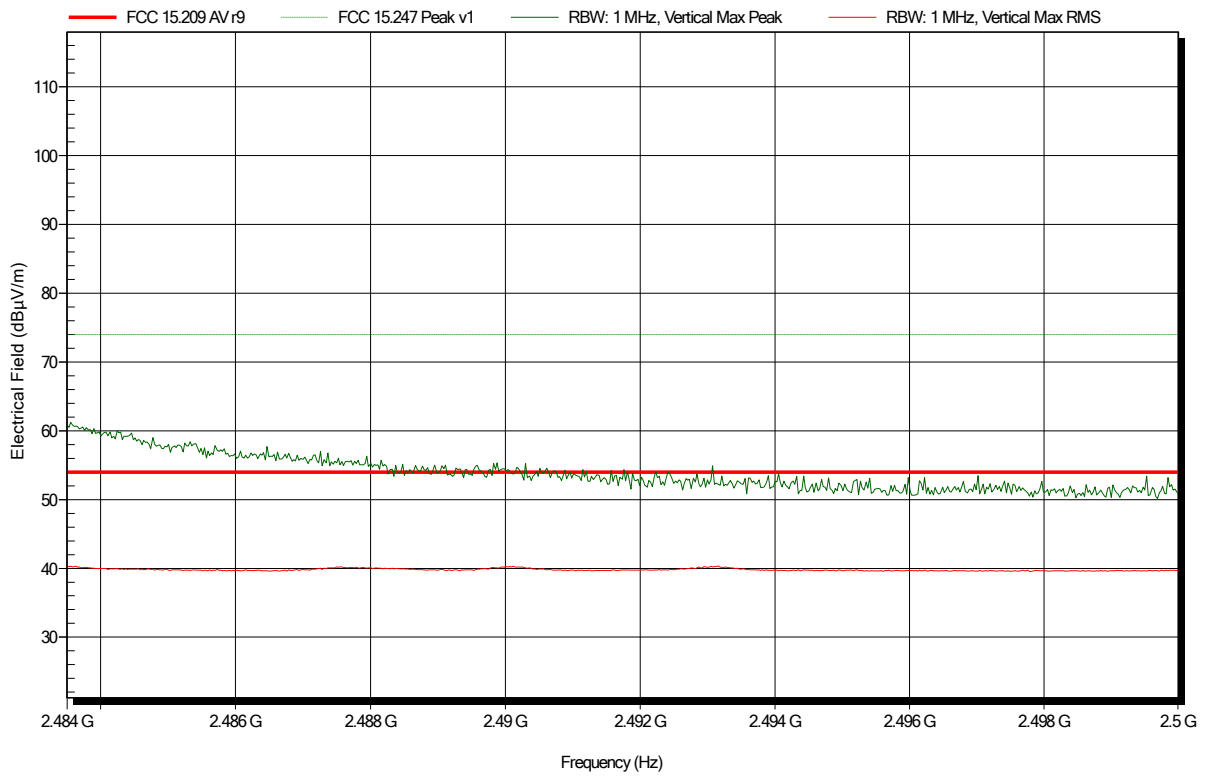


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note: upper bandedge

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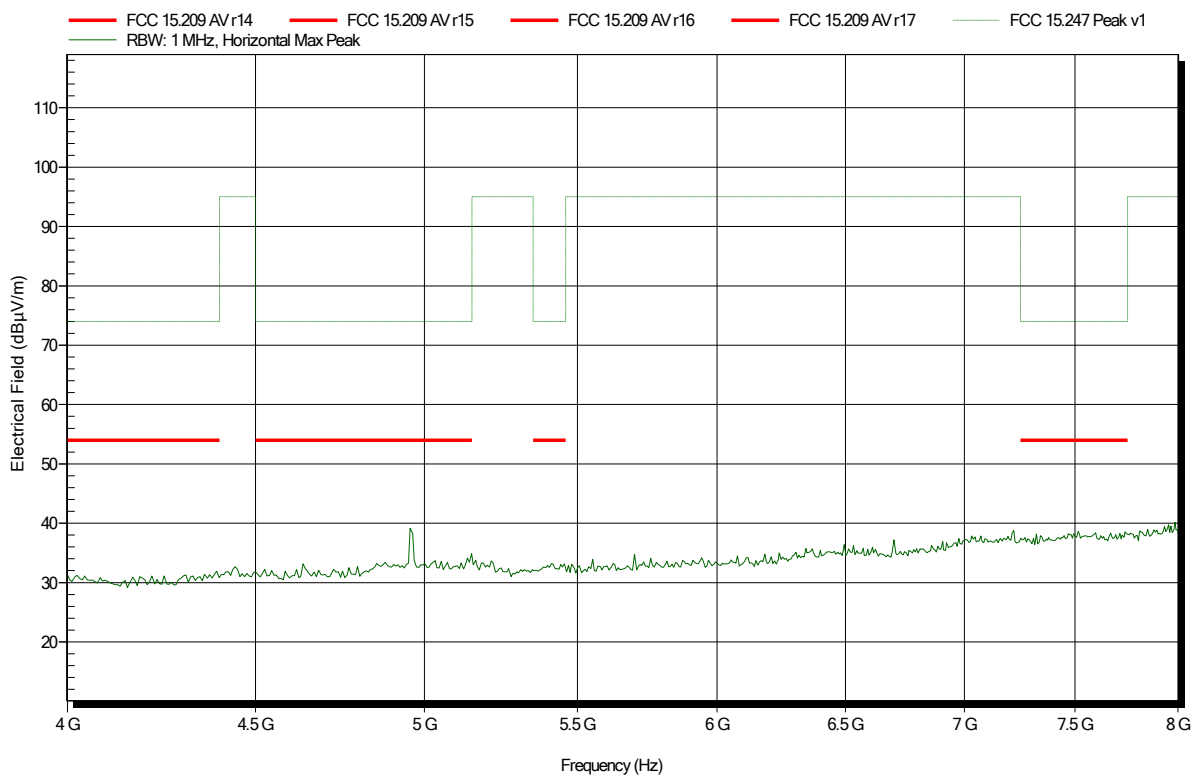


### Spurious emissions according to FCC 47 CFR §15.247

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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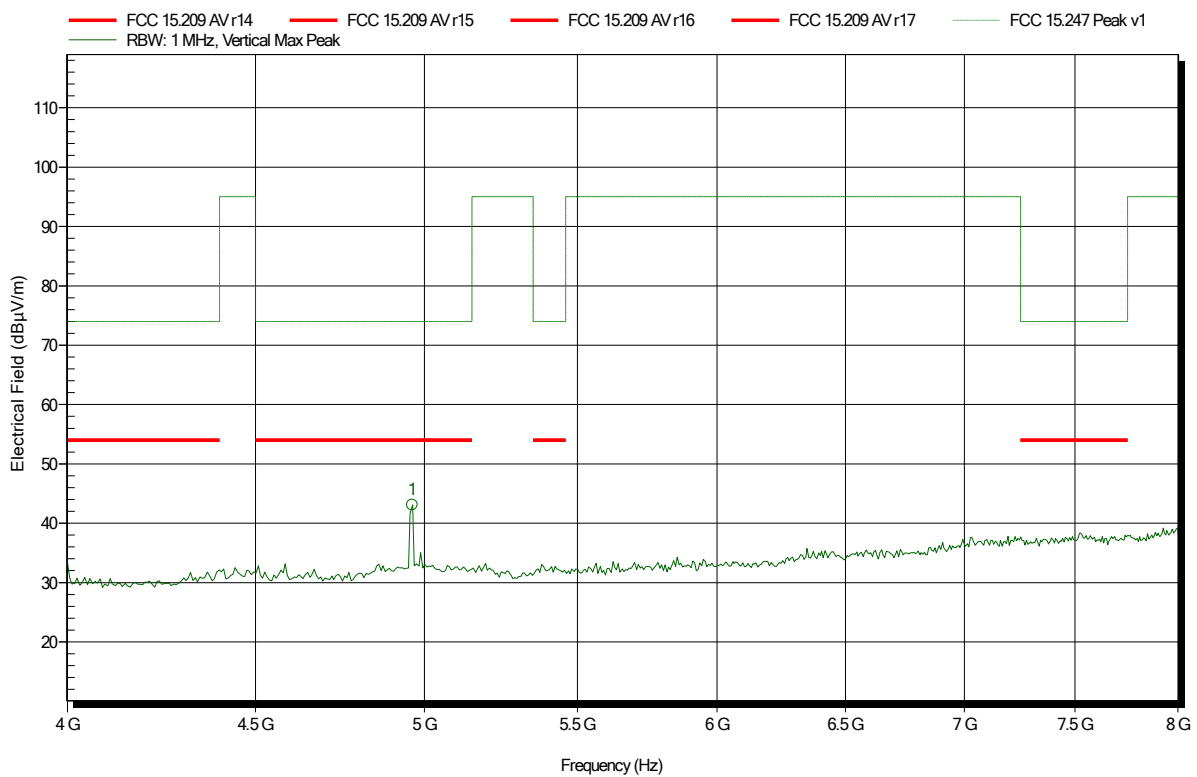


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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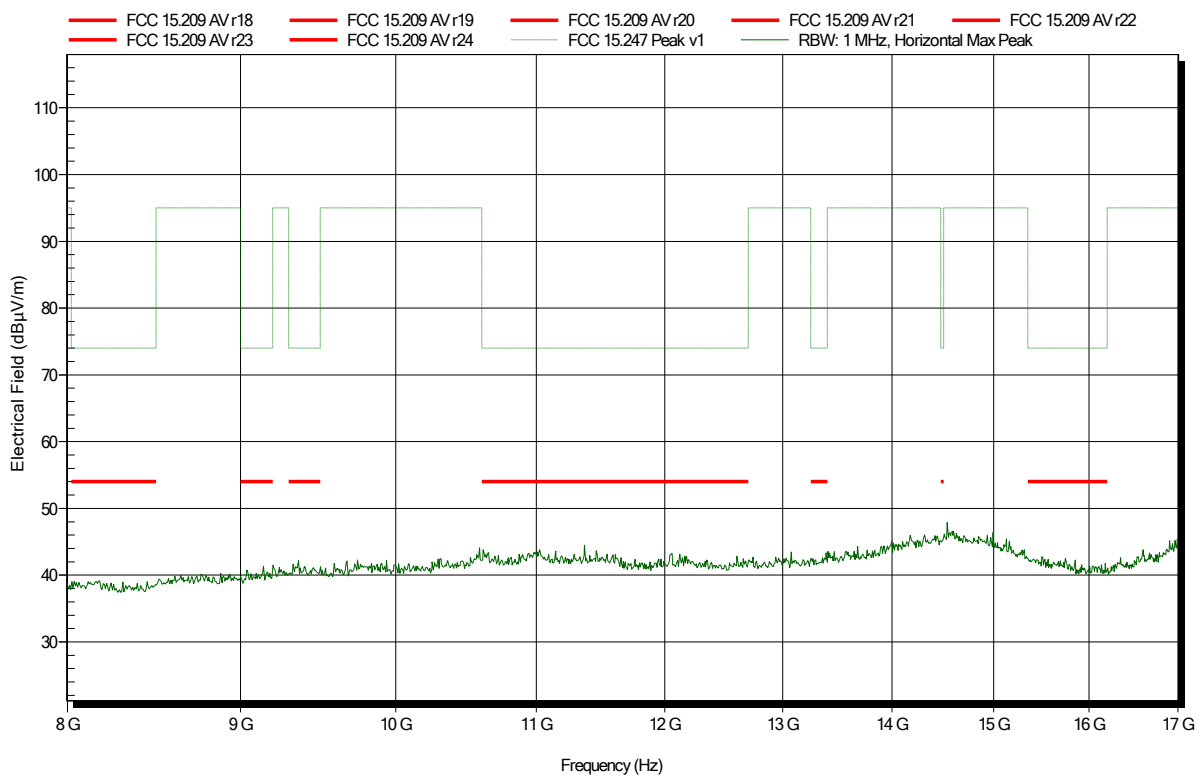
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.962 GHz	43.08 dBµV/m	74 dBµV/m	-30.92 dB	Pass

**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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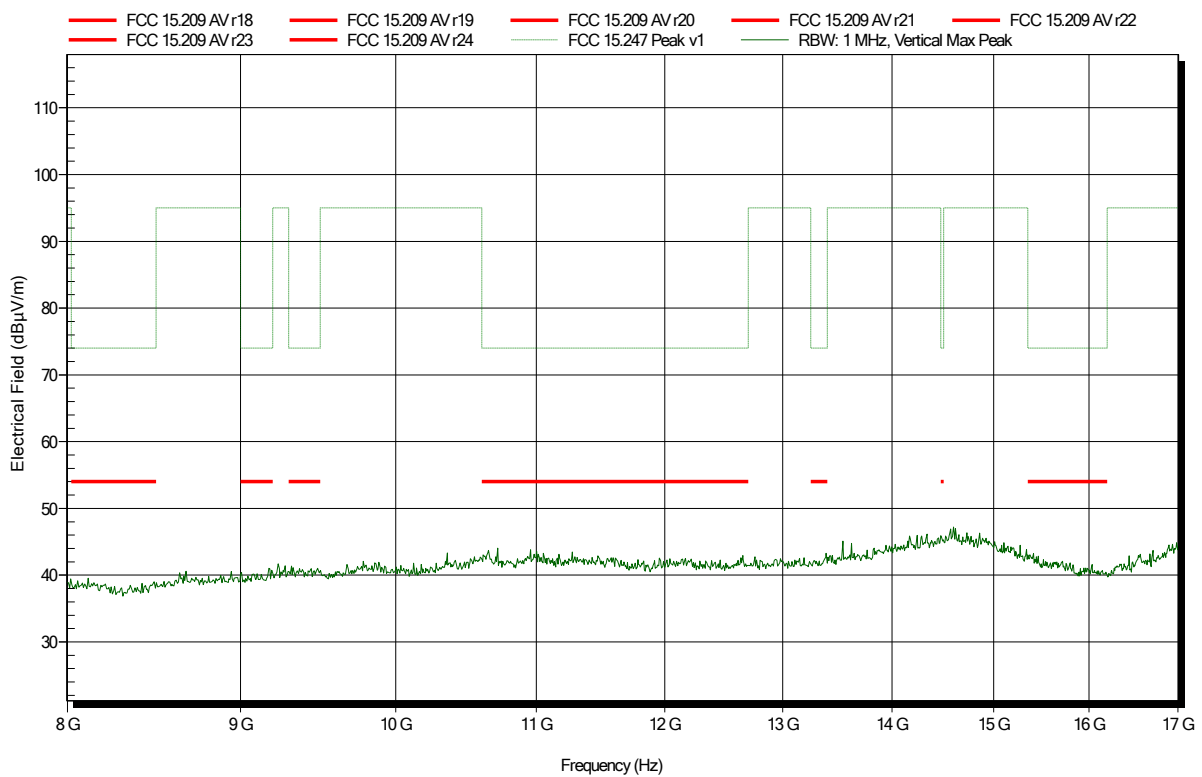


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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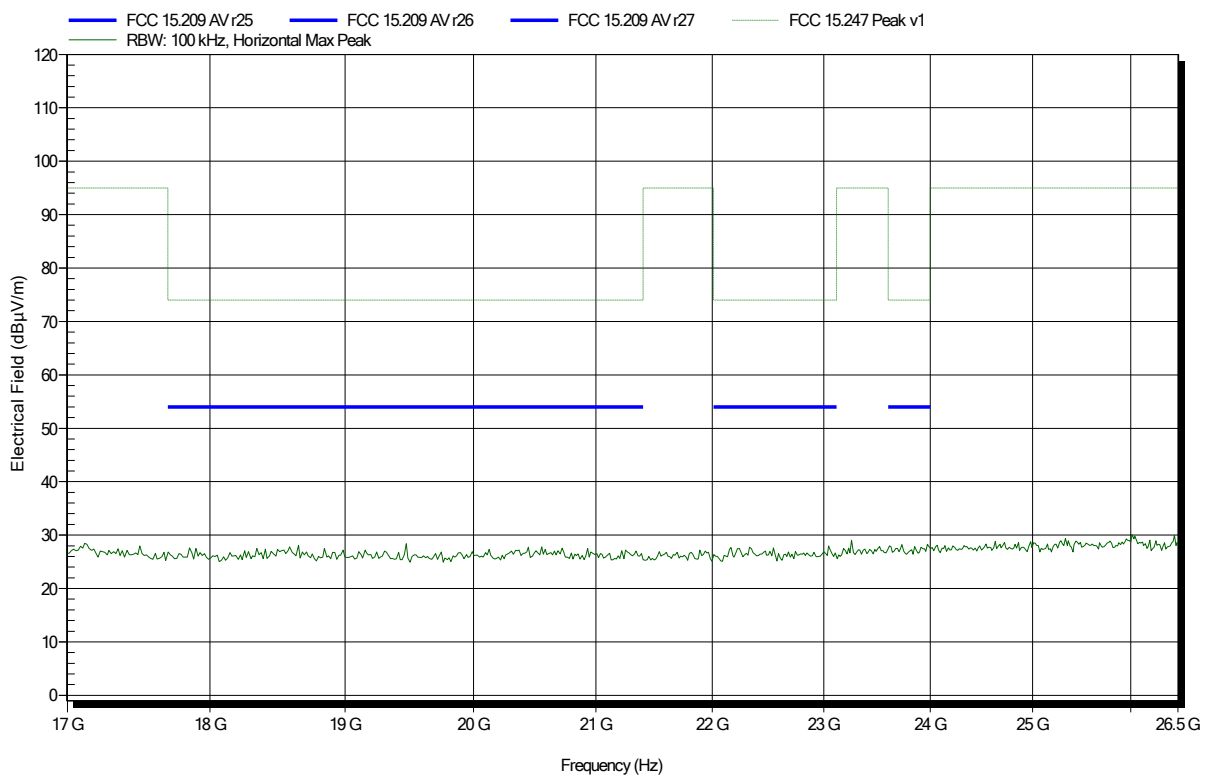


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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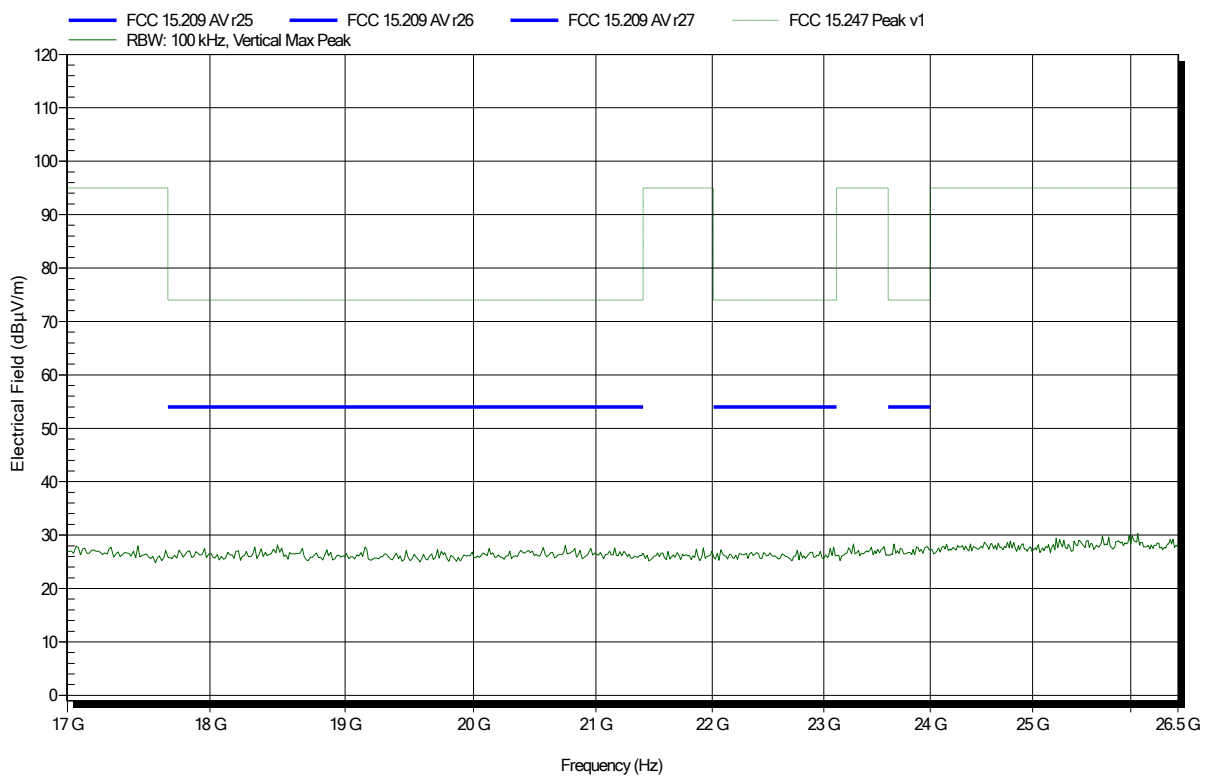


**Spurious emissions according to FCC 47 CFR §15.247**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Amplifier Research AT4560, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: TX; LE -- 2480 MHz  
 Test Date: 2019-06-20  
 Note:

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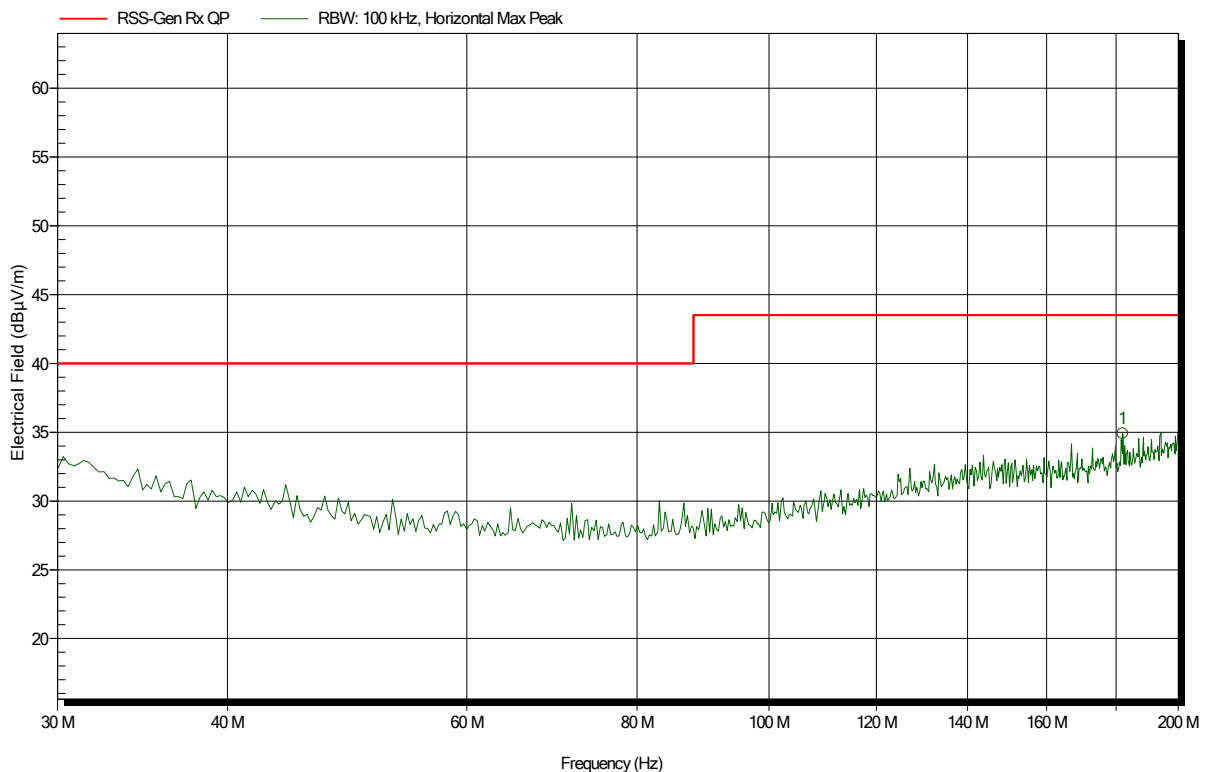
## ANNEX B Receiver spurious emissions

### Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

Index 1



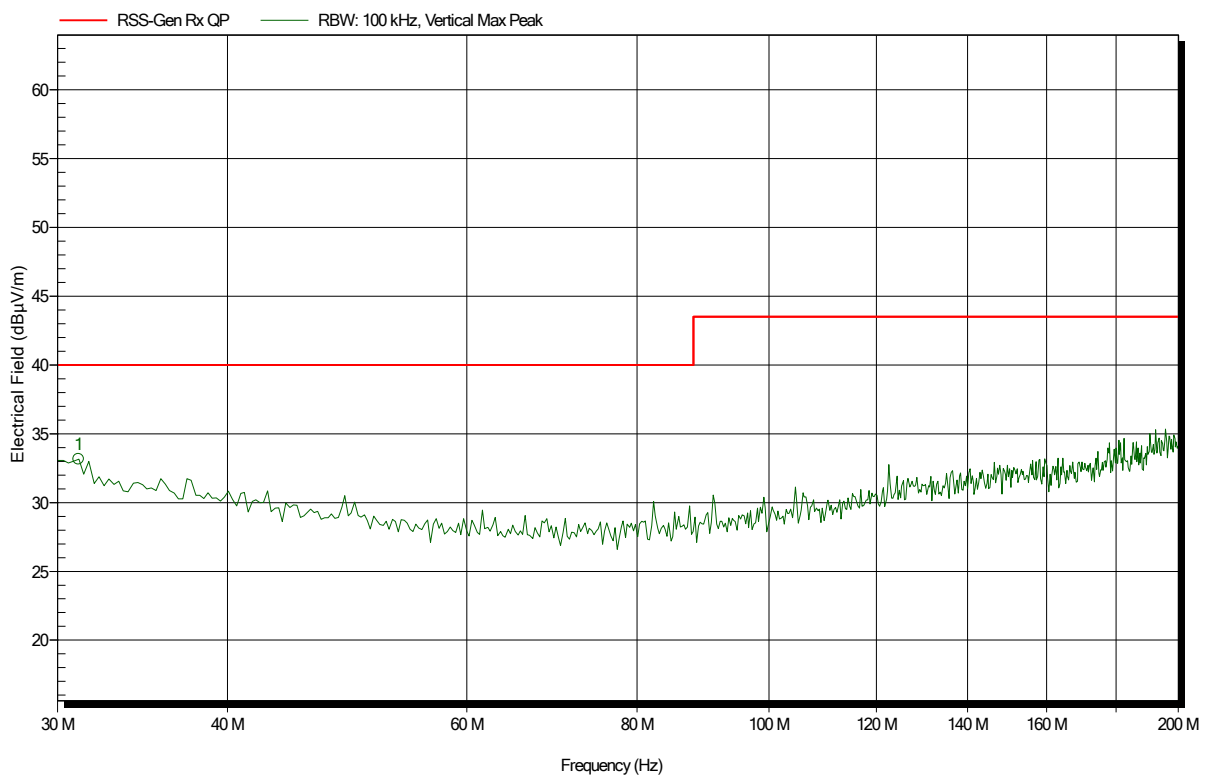
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
182.048 MHz	34.9 dBµV/m	43.5 dBµV/m	-8.6 dB	Pass	180 Degree	1.2 m

**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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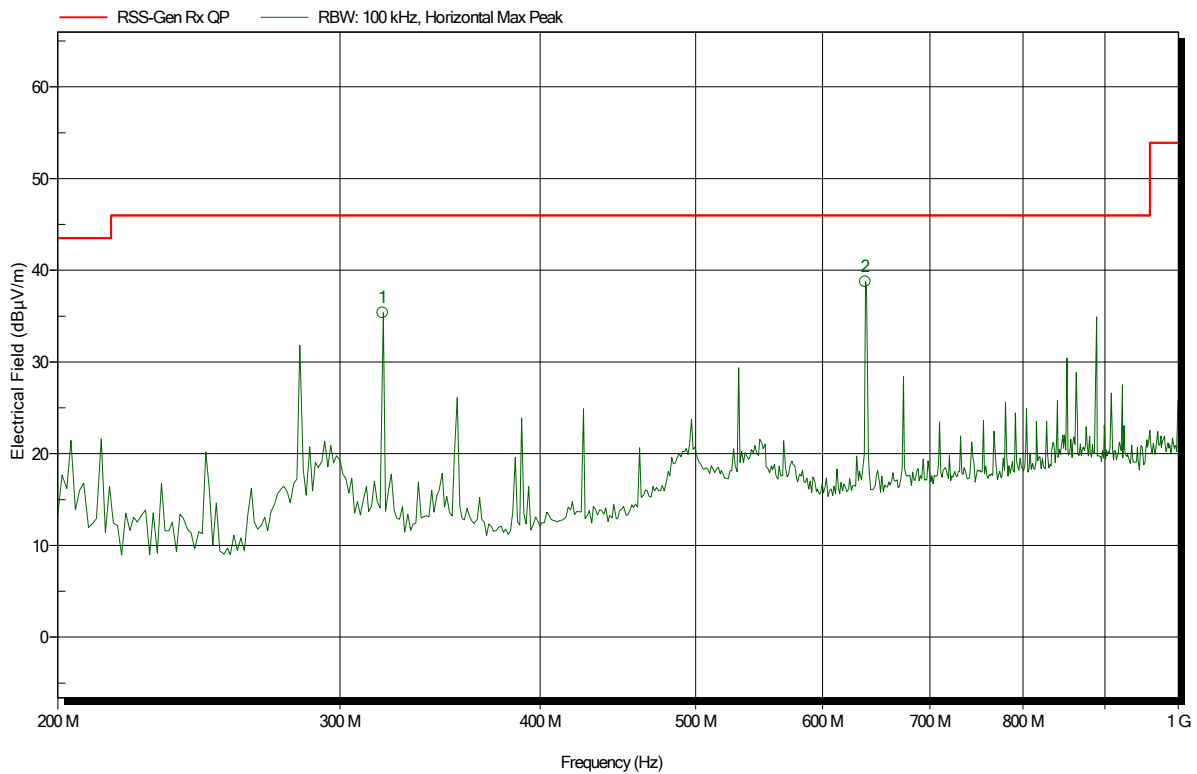
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
31.088 MHz	33.15 dBµV/m	40 dBµV/m	-6.85 dB	Pass	225 Degree	1.2 m

**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

Index 3



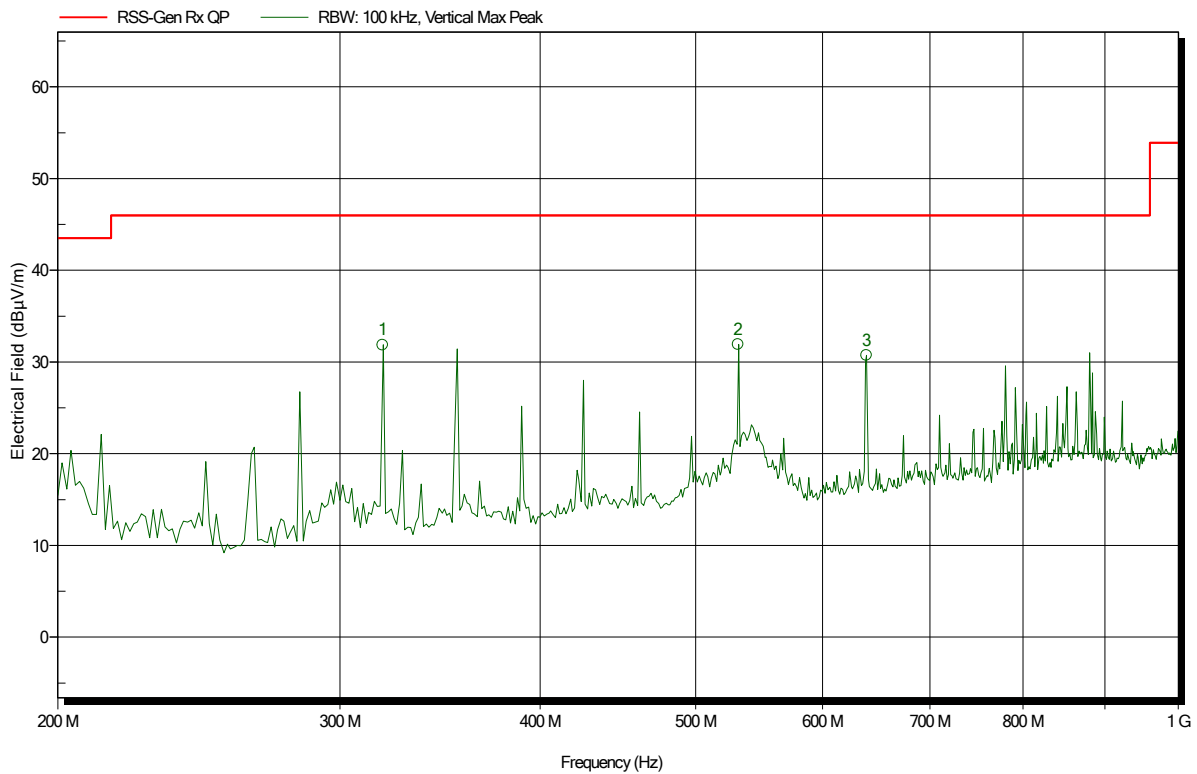
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
319.04 MHz	35.38 dBµV/m	46 dBµV/m	-10.62 dB	Pass	112 Degree	1.2 m
637.76 MHz	38.76 dBµV/m	46 dBµV/m	-7.24 dB	Pass	247 Degree	1.2 m

**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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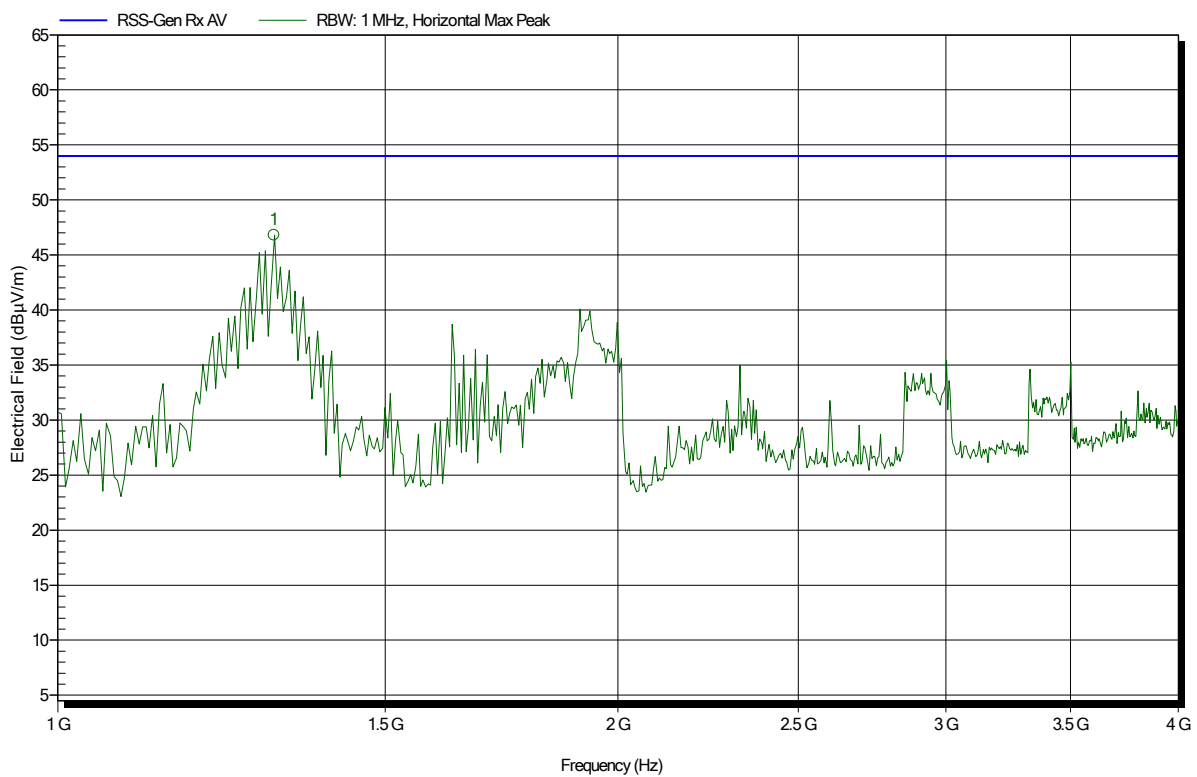
Frequency	Peak	Peak Limit	Peak Difference	Status	Angle	Height
319.04 MHz	31.86 dBµV/m	46 dBµV/m	-14.14 dB	Pass	112 Degree	1.2 m
531.52 MHz	31.91 dBµV/m	46 dBµV/m	-14.09 dB	Pass	337 Degree	1.2 m
639.04 MHz	30.72 dBµV/m	46 dBµV/m	-15.28 dB	Pass	247 Degree	1.2 m

**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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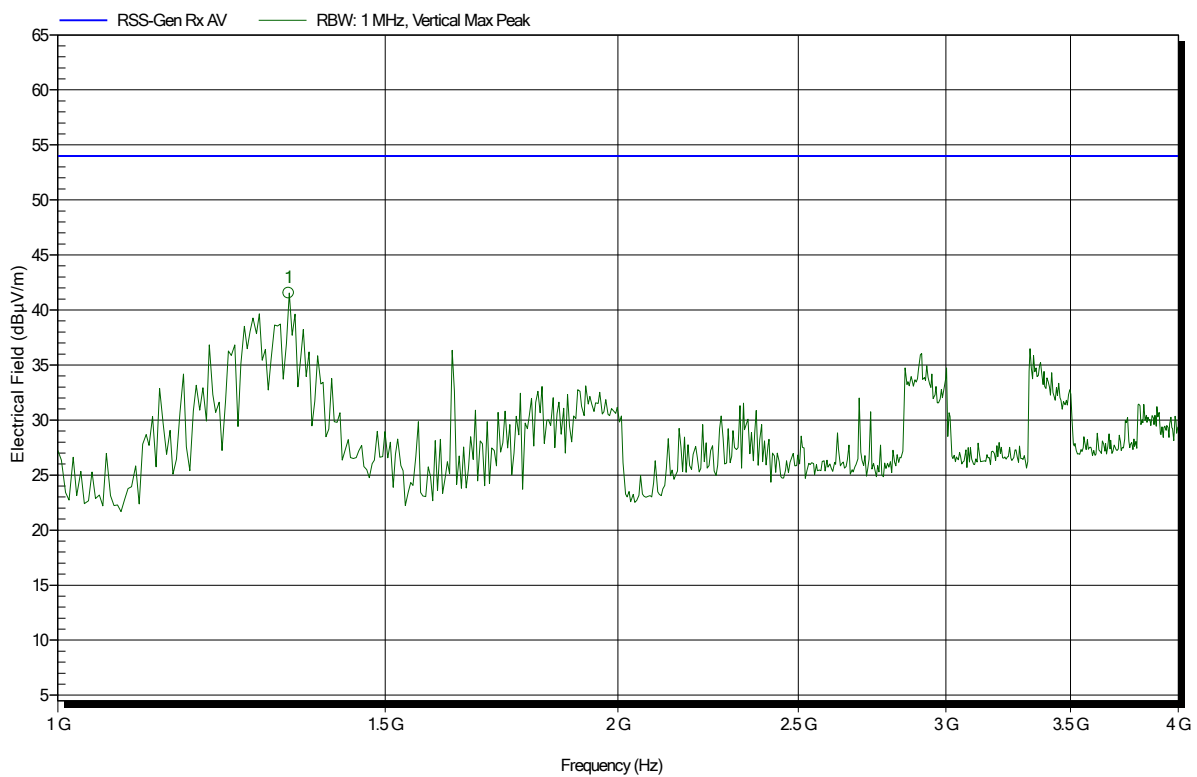
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.307 GHz	46.81 dBµV/m	53.98 dBµV/m	-7.17 dB	Pass

**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.331 GHz	41.54 dBµV/m	53.98 dBµV/m	-12.44 dB	Pass

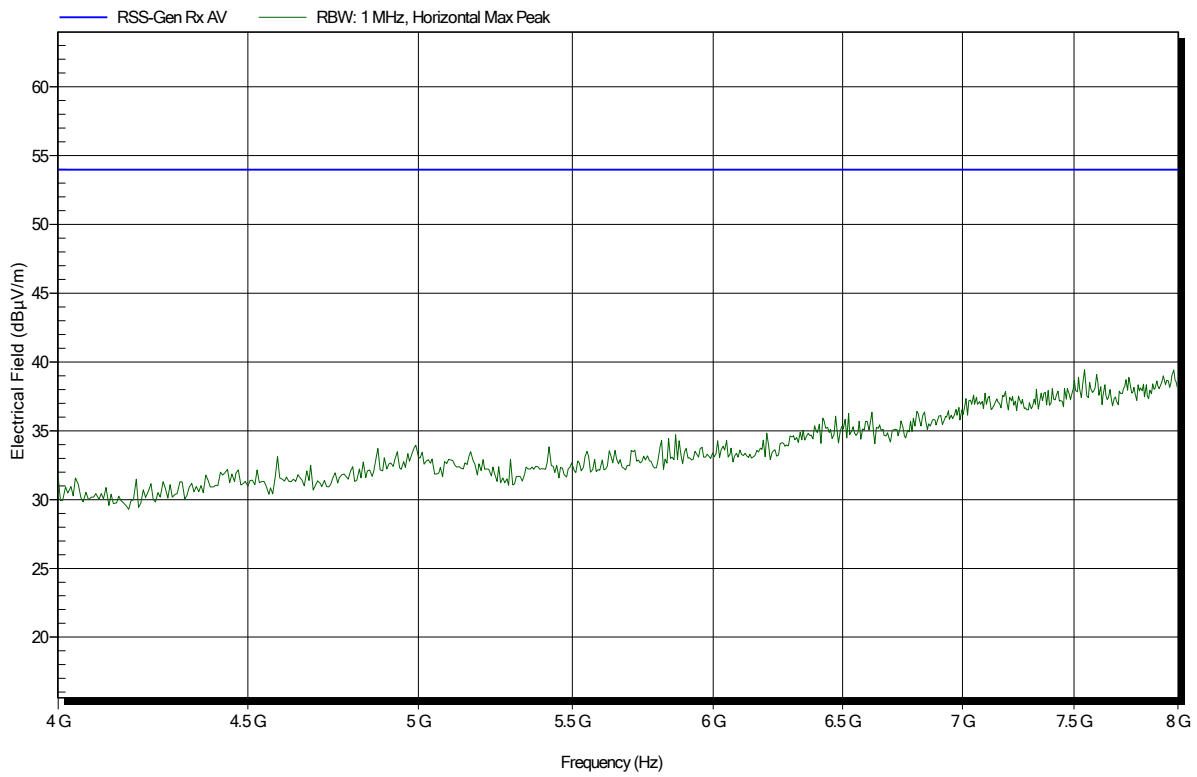


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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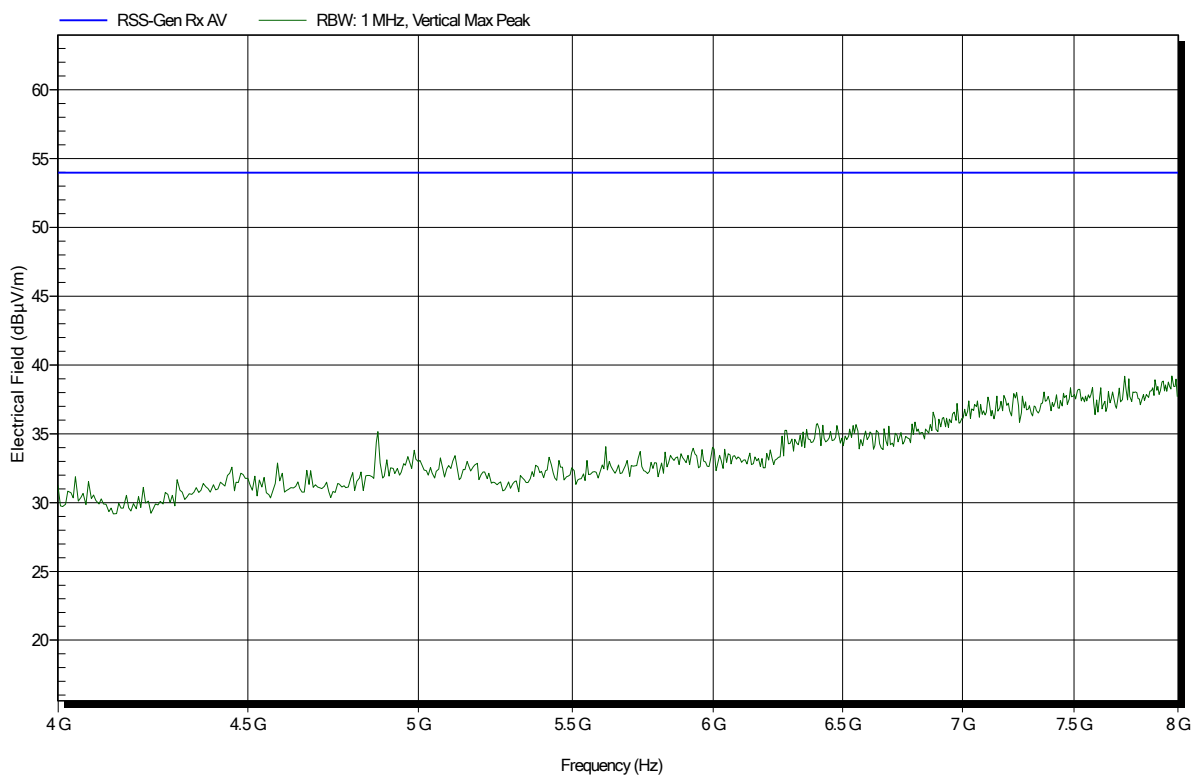


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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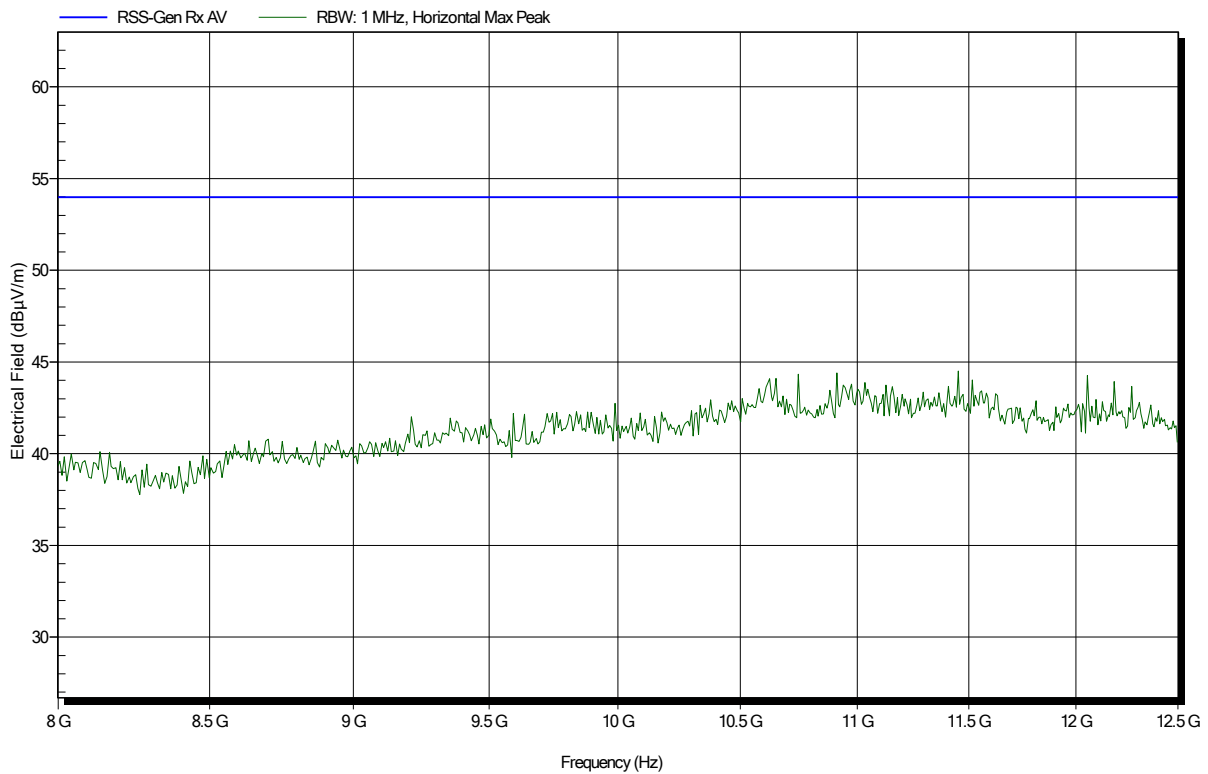


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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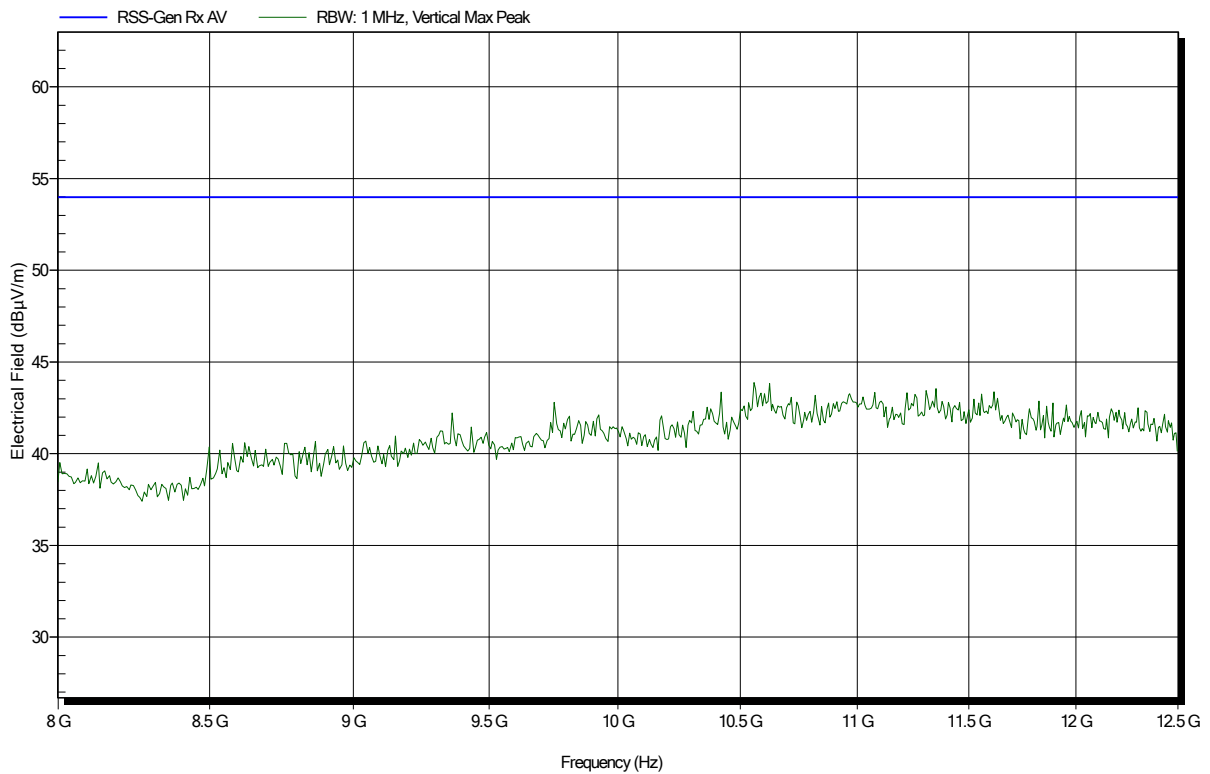


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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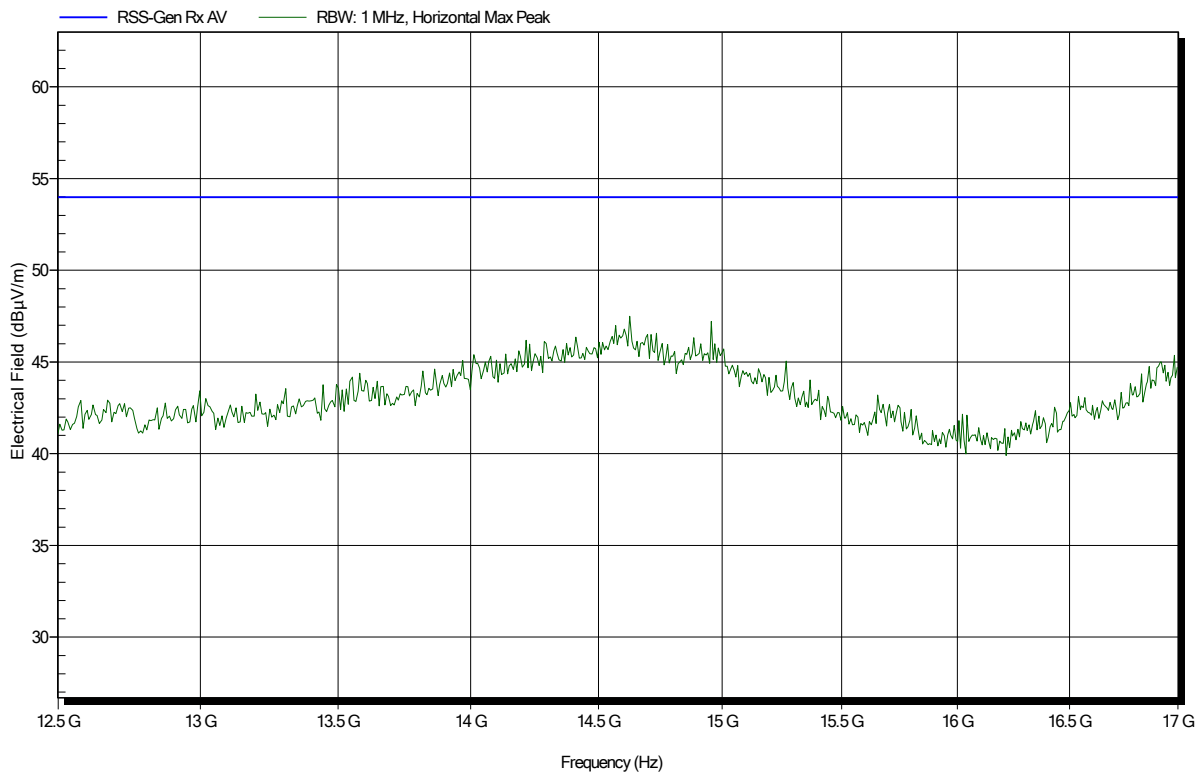


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 1 m converted to 3m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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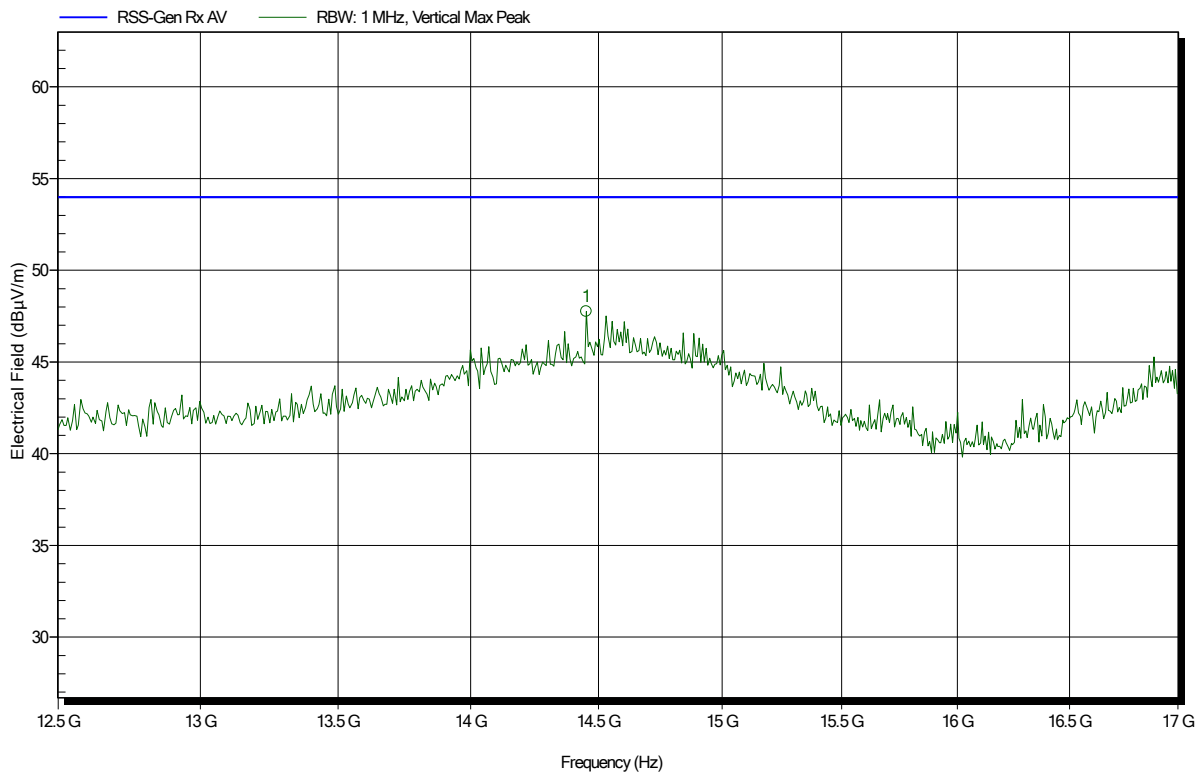


**Spurious emissions according to ISED RSS-247 Issue 2 (February 2017)**

Project number: G0M-1905-8256

Applicant: BIOTRONIK SE & Co. KG  
 EUT Name: Renamic Neo Programming Device  
 Model: Renamic Neo  
 Test Site: Eurofins Product Service GmbH  
 Operator: Abdullah Al Jamal  
 Test Conditions: Tnom: 25.6°C, Vnom: 120 VAC (external power supply)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 1 m converted to 3m  
 Mode: RX; 2440 MHz  
 Test Date: 2019-06-17  
 Note:

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Frequency	Peak	Peak Limit	Peak Difference	Status
14.451 GHz	47.75 dBµV/m	53.98 dBµV/m	-6.23 dB	Pass