



<b>FCC TEST REPORT</b> <b>FCC 47 CFR Part 15C</b> <b>Industry Canada RSS-210</b> <b>Periodic operation in the 40.66-40.70 MHz and above 70 MHz</b>	
<b>Report Reference No.</b> .....	G0M-1306-2916-TFC231P-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> .....	Marantec
Address .....	5705 Centerpoint Court 60031 Gurnee USA
<b>Test specification:</b>	
Standard.....	47 CFR Part 15C RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
<b>Equipment under test (EUT):</b>	
Product description	Wireless Keyless Entry System (Funk-Codetaster für USA und Kanada)
Model No.	M13-631
Hardware version	99818 V03
Firmware / Software version	Prüf-Software
	FCC-ID: NKPWK13315                      IC: 3126A-M13631
<b>Test result</b>	<b>Passed</b>

**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:**

Date of receipt of test item .....: 2013-06-18

Date (s) of performance of tests .....: 2013-06-18 – 2013-06-19

Compiled by ..... : Antje Bartusch

Tested by (+ signature).....: Burghard Pudell   
 (Testing Manager) .....

Approved by (+ signature) .....: Jens Zimmermann   
 (Test Lab Manager) .....

Date of issue ..... : 2013-07-24

Total number of pages ..... : 38

**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:**

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## Version History

Version	Issue Date	Remarks	Revised by
01	2013-07-24	Initial Release	

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## 1 Equipment (Test item) Description

<b>Description</b>	Wireless Keyless Entry System (Funk-Codetaster für USA und Kanada)	
<b>Model</b>	M13-631	
<b>Serial number</b>	None	
<b>Hardware version</b>	99818 V03	
<b>Software / Firmware version</b>	Prüf-Software	
<b>FCC-ID</b>	NKPWK13315	
<b>IC</b>	3126A-M13631	
<b>Equipment type</b>	End product	
<b>Radio type</b>	Transceiver	
<b>Radio technology</b>	custom	
<b>Operating frequency range</b>	315 MHz	
<b>Frequency range</b>	$F_{MID}$	315 MHz
<b>Spreading</b>	None	
<b>Modulations</b>	ASK	
<b>Number of channels</b>	1	
<b>Channel spacing</b>	N/A	
<b>Number of antennas</b>	1	
<b>Antenna</b>	Type	integrated
	Model	printed pcb antenna
	Manufacturer	see Manufacturer
	Gain	-17.0 dBi
<b>Manufacturer</b>	ELDAT GmbH Im Gewerbepark 14 15711 Königs Wusterhausen Germany	
<b>Power supply</b>	$V_{NOM}$	3.0 VDC (Lithium-Battery)
	$V_{MIN}$	3.2 VDC
	$V_{MIN}$	1.8 VDC
<b>AC/DC-Adaptor</b>	Model	N/A
	Vendor	N/A
	Input	N/A
	Output	N/A

#### 1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				
<b>*Note:</b> Use the following abbreviations: AE : Auxiliary/Associated Equipment, or SIM : Simulator (Not Subjected to Test) CABL : Connecting cables				

**1.5 Test Modes**

Mode #	Description	
Transmit	General conditions:	EUT powered by fully charged battery
	Radio conditions:	Mode = manual transmit Modulation = On Power level = Maximum
Receive	General conditions:	EUT powered by fully charged battery
	Radio conditions:	Mode = standalone receive

**1.6 Test Equipment Used During Testing**

<b>Occupied Bandwidth</b>					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

<b>Emission Bandwidth</b>					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

<b>Automatic deactivation of transmitter</b>					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

<b>Duty Cycle</b>					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2013-01	2014-01

<b>Field strength emissions</b>					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 5	EF00395	calibration	calibration
Spectrum Analyzer	R&S	FSIQ26	EF00151	2012-12	2013-12
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD Antenna	R&S	HL 223	EF00187	2011-02	2014-02
LPD Antenna	R&S	HL 025	EF00327	2013-02	2016-02



## 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 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:

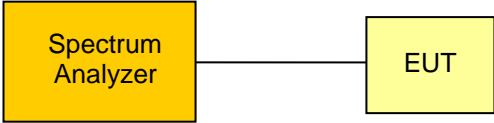
$$\begin{array}{rclcl} \text{Reading} & + & \text{AF} & = & \text{Net Reading} & : & \text{Net reading - FCC limit} & = & \text{Margin} \\ 21.5 \text{ dB}\mu\text{V} & + & 26 \text{ dB} & = & 47.5 \text{ dB}\mu\text{V/m} & : & 47.5 \text{ dB}\mu\text{V/m} - 57.0 \text{ dB}\mu\text{V/m} & = & -9.5 \text{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

## 2 Result Summary

<b>FCC 47 CFR Part 15C, IC RSS-210</b>				
<b>Product Specific Standard Section</b>	<b>Requirement – Test</b>	<b>Reference Method</b>	<b>Result</b>	<b>Remarks</b>
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/R	Informational only
FCC 15.231(a)(1) IC RSS-210 A1.1.1(a)	Deactivation of manually operated transmitter	non specific	PASS	
FCC 15.231(a)(2) IC RSS-210 A1.1.1(b)	Cease of transmission of automatically operated transmitter	non specific	N/R	manually operated transmitter
FCC 15.231(a)(3) IC RSS-210 A1.1.1(c)	Total transmission time	non specific	PASS	manually operated transmitter
FCC 15.231(a)(4) IC RSS-210 A1.1.1(d)	Radio control during emergencies	non specific	N/R	EUT not for emergencies
FCC 15.231(a)(5)	Transmission of set-up information for security systems	non specific	N/R	EUT not for security systems
FCC 15.249(b) FCC 15.205 IC RSS-210 A1.1.2(1)	Field strength of fundamental and spurious emissions	ANSI C63.4	PASS	
FCC 15.231(b)(2) FCC 15.205 IC RSS-210 A1.1.2(2)	Duty cycle	non specific	N/R	for duty cycle correction only
FCC 15.231(c) IC RSS-210 A1.1.3	Emission bandwidth	non specific	PASS	
FCC 15.231(d) IC RSS-210 A1.1.3	Emission bandwidth for the 40.66-40.70 MHz band	non specific	N/R	EUT is not operating in the 40.66-40-70 MHz band
FCC 15.231(d) IC RSS-210 A1.1.4	Frequency Stability for the 40.66-40.70 MHz band	non specific	N/R	EUT is not operating in the 40.66-40-70 MHz band
FCC 15.231(e) IC RSS-210 A1.1.5	Reduced field strength and spurious emissions of radiators operating at a rate exceeding 15.231(a)	ANSI C63.4	N/R	Not reduction used
IC RSS-210 Section 2.3 IC RSS-Gen 4.10 6.1	Receiver radiated spurious emissions	ANSI C63.4	PASS	
FCC § 15.107 FCC § 15.207 IC RSS-Gen 7.2.4	AC power line conducted emissions	ANSI C63.4	N/R	EUT exclusively battery powered
<b>Remarks:</b>				
The spurious emissions according to 15.231 also fulfills the general emission limits according to 15.109.				

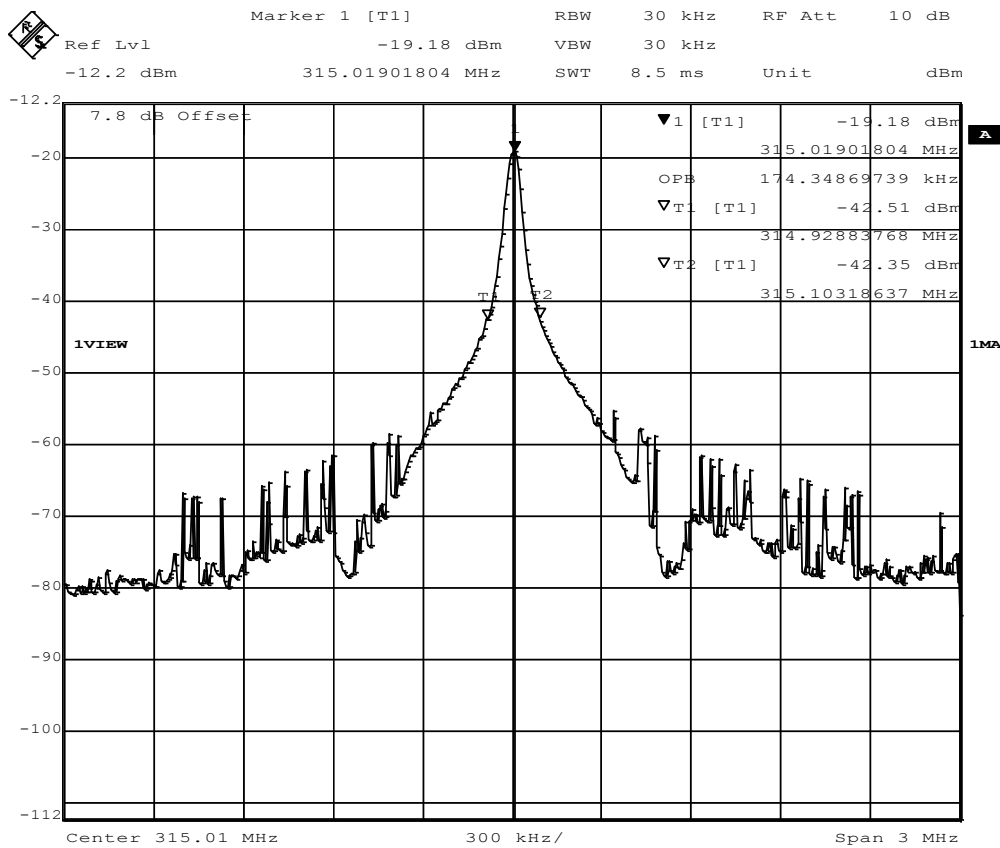
### 3 Test Conditions and Results

#### 3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. IC RSS-Gen		Verdict: PASS
Test according to measurement reference	Reference Method	
	RSS-Gen 4.6.1	
Test frequency range	Tested frequencies	
	$F_{MID}$	
EUT test mode	Transmit	
Limits		
None (Informational only)		
Test setup		
		
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 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]	Occupied Bandwidth [kHz]
$F_{MID}$	315.019	174.348
Comments: Measurement is applicable to all variants		


**Occupied Bandwidth - F<sub>MID</sub>**
**RSS Gen  
Occupied Bandwidth**

EUT	Wireless Keyless Entry System
Model	M13-631 - G0M-1306-2916
Approval Holder	ELDAT GmbH
Temperature / Voltage	24°C / Unom: 3.0 V DC
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	SRD / CH: 315 MHz / ASK / Pmax
Comment 2	TX-Testmode
Comment 3	Spectrum Analyzer with an integrated 99% Power Bandwidth Function is used



Comment A: Occupied\_Bandwidth\_\_:\_\_174.3487\_kHz  
Date: 19.JUN.2013 09:14:44

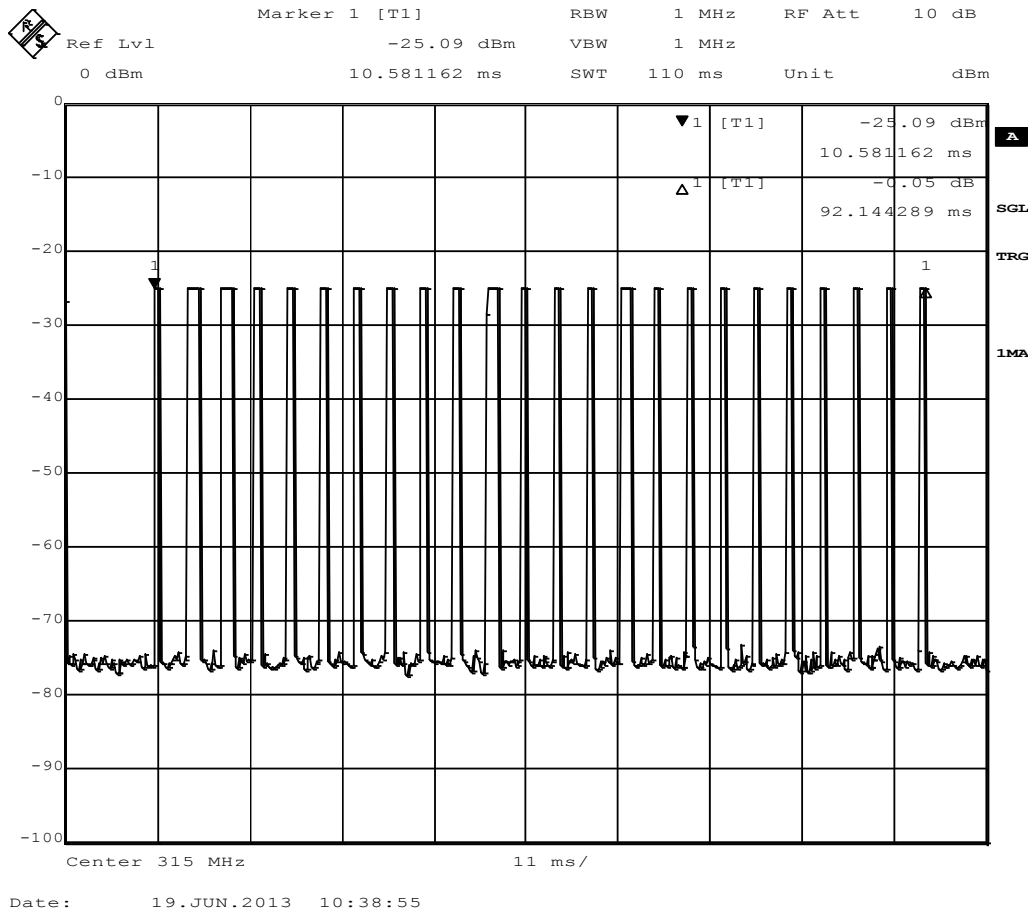
3.2 Test Conditions and Results – Deactivation of manually operated Transmitter

Deactivation of manually operated transmitter acc. FCC 47 CFR 15.231 / IC RSS-210				Verdict: PASS
Test according referenced standards	Reference Method			
	FCC 15.231(a)(1) / IC RSS-210 A1.1.1(a)			
Test according to measurement reference	Reference Method			
	non specific			
Test frequency range	Tested frequencies			
	$F_{MID}$			
EUT test mode	Transmit			
Limits				
Manually operated transmitter shall employ a switch that will automatically cease transmission within 5 seconds after activation				
Test setup				
 <pre> graph LR     SA[Spectrum Analyzer] --- EUT[EUT]             </pre>				
Test procedure				
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. Center frequency is set to test frequency</li> <li>3. Span it set to zero span</li> <li>4. Resolution bandwidth is set large enough to accurately capture transmission burts</li> <li>5. Transmission time after activation is measured</li> </ol>				
Test results				
Channel	Frequency [MHz]	Transmission time [s]	Limit [s]	Margin [s]
$F_{MID}$	315	0.092	5	-04.91
Comments:				

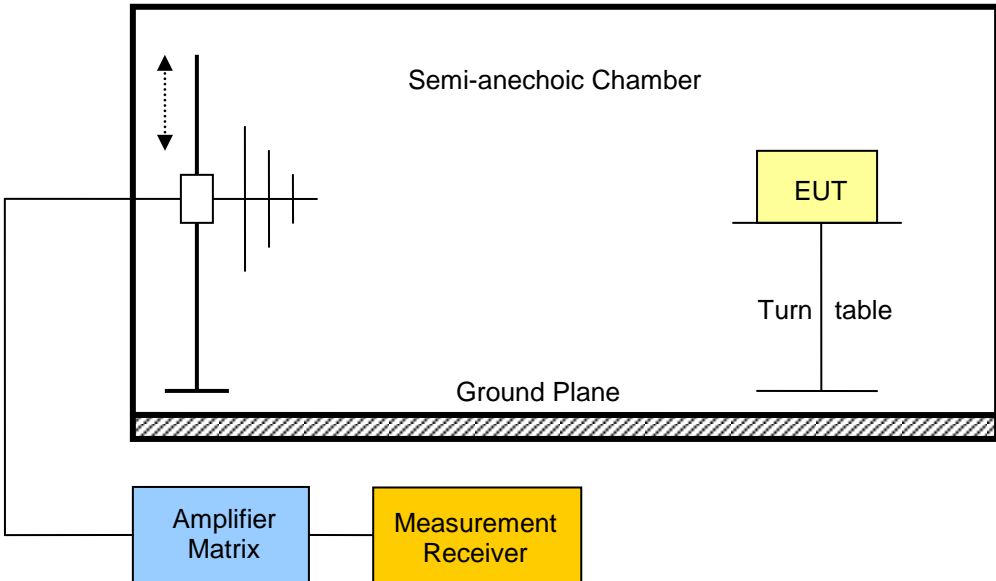
Deactivation of manually operated transmitter - F<sub>MID</sub>

FCC part 15 Subpart C & 15.231  
deactivation of manually operated transmitter

EUT Wireless Keyless Entry System  
 Model M13-631 - G0M-1306-2916  
 Approval Holder ELDAT GmbH  
 Temperature / Voltage 24°C / Unom: 3.0 V DC  
 Test Site / Operator Eurofins Product Service GmbH  
 Test Specification FCC part 15 Subpart C & 15.231(a1)  
 Comment 1 SRD / CH: 315 MHz / ASK / Pmax  
 Comment 2 TX-mode  
 Comment 3 transmitter stops transmissions after each telegram



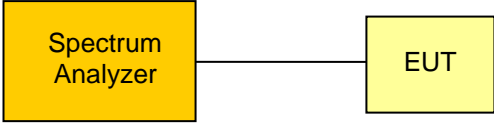
3.3 Test Conditions and Results – Field strength of fundamental and spurious emissions

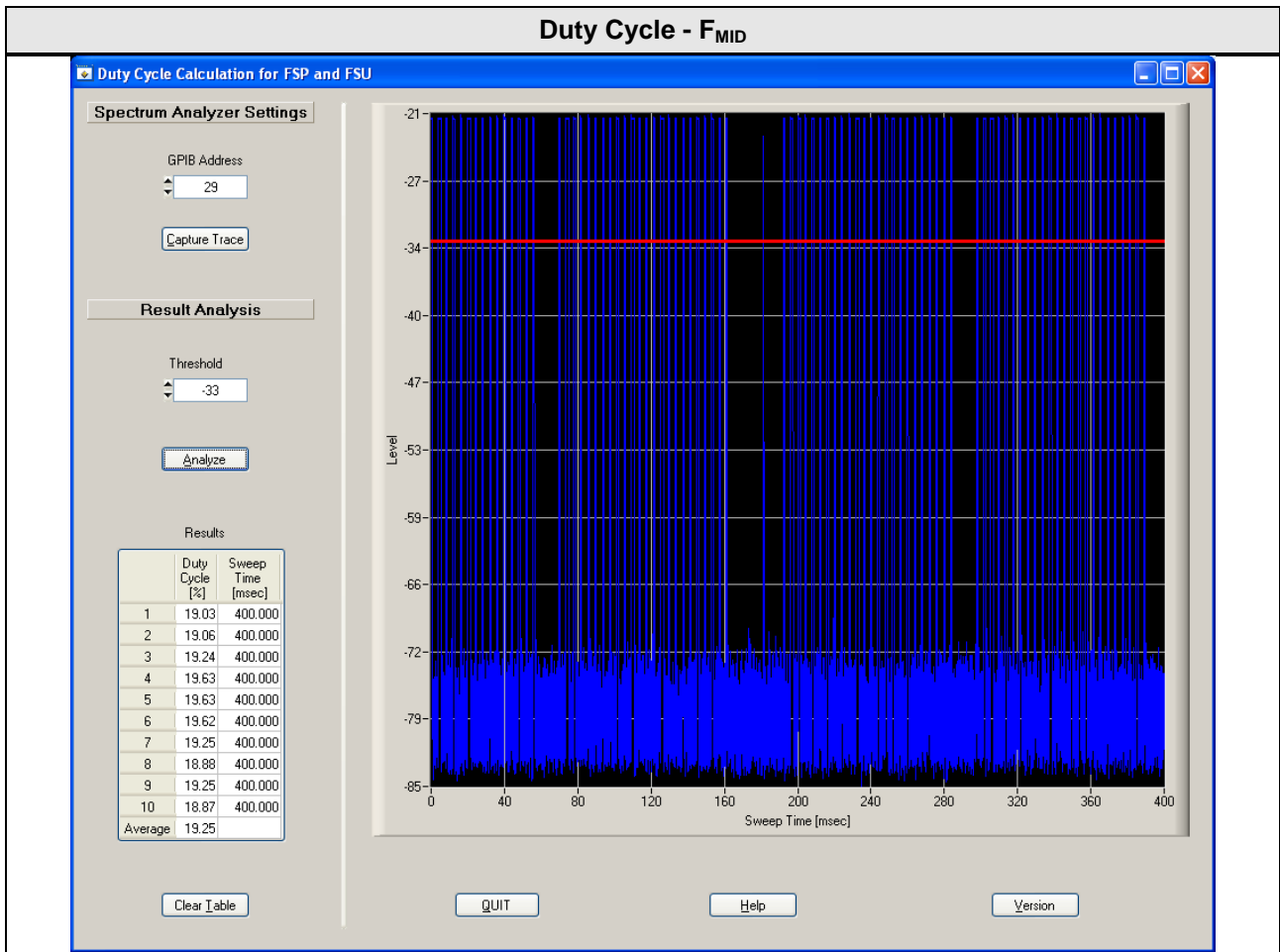
Field strength of fundamental and spurious emissions acc. FCC 47 CFR 15.231 / IC RSS-210				Verdict: PASS
Test according referenced standards		Reference Method		
		FCC 15.231(b) / IC RSS-210 A1.1.2(b)		
Test according to measurement reference		Reference Method		
		ANSI C63.4		
Test frequency range		Tested frequencies		
		30 MHz – 10 <sup>th</sup> harmonic		
EUT test mode		Transmit		
Limits				
Fundamental Frequency [MHz]	Fundamental Limit [ $\mu$ V/m]	Fundamental Limit [dB $\mu$ V/m]	Spurious Limit [dB $\mu$ V/m]	Limit Distance [m]
40.66-40.70	2250	66.95	46.95	3
70-130	1250	61.94	41.94	3
130-174	1250-3750	61.94 – 71.48	41.94 – 51.48	3
174-260	3750	71.48	51.48	3
260-470	3750-12500	71.48 – 81.94	51.48 – 61.94	3
> 470	12500	81.94	61.94	3
Detector = Quasi-Peak or Average				
Test setup				
				

Test procedure								
1. EUT set to test mode 2. Span it set according to measurement range 3. Resolution bandwidth below 1GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1MHz with peak/average detector is used above 1GHz 4. Markers are set to maximum emission levels								
Test results								
EUT Fundamental frequency			315 MHz					
EUT Fundamental Limit			Average = 75.62 db $\mu$ V/m / Peak = 95.62 db $\mu$ V/m					
EUT Spurious Limit			Average = 55.62 db $\mu$ V/m / Peak = 75.62 db $\mu$ V/m					
Channel	Frequency [MHz]	Emission [MHz]	Level [db $\mu$ V/m]	Detector	Pol.	Limit [db $\mu$ V/m]	Limit distance [m]*	Margin [dB]
F <sub>MID</sub>	315	315	88.3	pk	ver	95.62	3	-07.32
F <sub>MID</sub>	315	315	74.0**	avg	ver	75.62	3	-01.62
F <sub>MID</sub>	315	315	74.9	pk	hor	95.62	3	-20.72
F <sub>MID</sub>	315	315	60.6**	avg	hor	75.62	3	-15.02
F <sub>MID</sub>	315	630	38.01	pk	ver	61.94	3	-23.93
F <sub>MID</sub>	315	630	36.34	pk	hor	61.94	3	-25.60
F <sub>MID</sub>	315	945	40.67	pk	ver	61.94	3	-21.27
F <sub>MID</sub>	315	945	49.29	pk	hor	61.94	3	-12.65
F <sub>MID</sub>	315	1260	59.28	pk	ver	73.98	3	-14.70
F <sub>MID</sub>	315	2205	60.22	pk	ver	73.98	3	-13.76
Comments: * Physical distance between EUT and measurement antenna. ** Average value determined by duty cycle correction *** General 15.209 emission limits used as spurious emission limit. (Hence the requirements of 15.109 are also fulfilled)								




**3.4 Test Conditions and Results – Duty Cycle**

Total transmission time acc. FCC 47 CFR 15.231 / IC RSS-210		Verdict: PASS	
Test according referenced standards	Reference Method		
	FCC 15.231(a)(3) / IC RSS-210 A1.1.1(c)		
Test according to measurement reference	Reference Method		
	non specific		
Test frequency range	Tested frequencies		
	F <sub>MID</sub>		
EUT test mode	Transmit		
<b>Limits</b>			
None (only for peak to average correction, 20dB max)			
<b>Test setup</b>			
 <pre> graph LR     SA[Spectrum Analyzer] --- EUT[EUT]             </pre>			
<b>Test procedure</b>			
<ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. Center frequency is set to test frequency</li> <li>3. Span it set to zero span</li> <li>4. Resolution bandwidth is set large enough to accurately capture transmission burts</li> <li>5. Total transmission time is measured</li> </ol>			
<b>Test results</b>			
Channel	Frequency [MHz]	Duty Cycle [% @ 100ms]	Duty Cycle correction [dB]
F <sub>MID</sub>	315	19.25	14.31
Comments: * Physical distance between EUT and measurement antenna.			



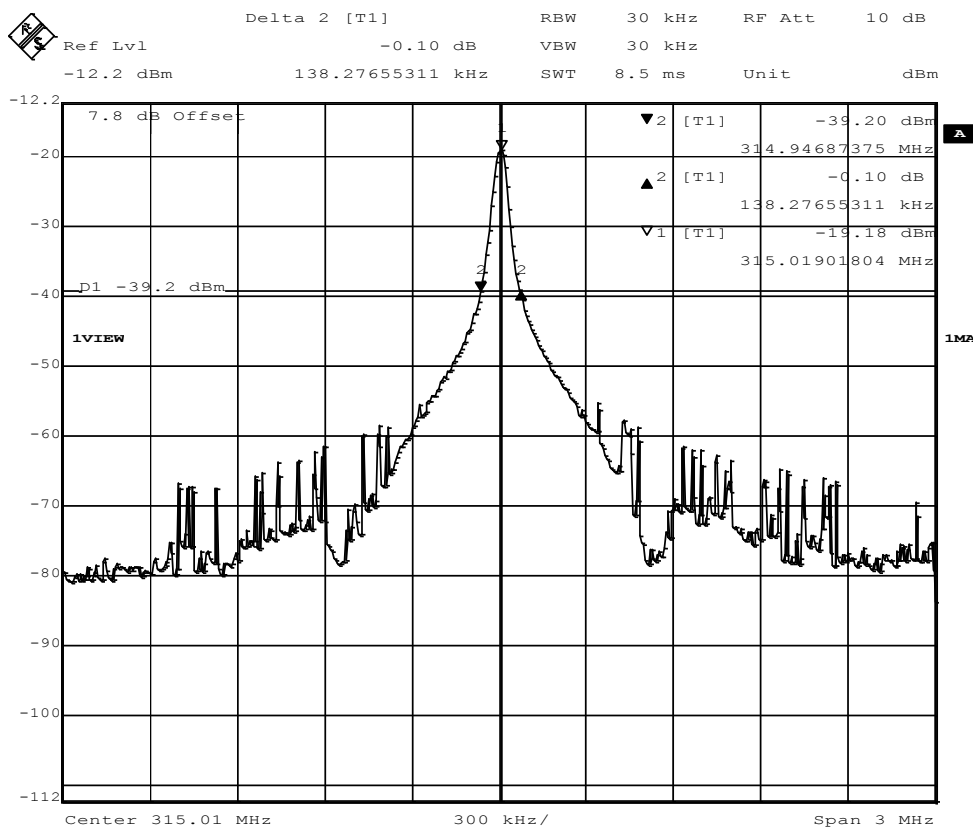
3.5 Test Conditions and Results – Emission Bandwidth

Emission Bandwidth acc. FCC 15.231 / IC RSS-210		Verdict: PASS		
Test according to measurement reference	Reference Method			
	FCC 15.231(c) / IC RSS-210 A1.1.3			
Test frequency range	Tested frequencies			
	F <sub>MID</sub>			
EUT test mode	Transmit			
<b>Limits</b>				
0.25 % of center frequency				
<b>Test setup</b>				
				
<b>Test procedure</b>				
<ol style="list-style-type: none"> <li>EUT set to test mode (Communication tester is used if needed)</li> <li>Span set to at least twice the emission spectrum</li> <li>Resolution bandwidth set to 1% of span</li> <li>For Industry Canada the occupied bandwidth (99%) is measurement with spectrum analyzer built in measurement function</li> <li>For FCC the 20 dB bandwidth is measurement with spectrum analyzer</li> </ol>				
<b>Test results - FCC</b>				
Channel	Frequency [MHz]	Emission Bandwidth [kHz]	Limit [kHz]	Margin [kHz]
F <sub>MID</sub>	315	138.277	787.5	-649.22
<b>Test results – IC</b>				
Channel	Frequency [MHz]	Emission Bandwidth [kHz]	Limit [kHz]	Margin [kHz]
F <sub>MID</sub>	315	174.349	787.5	-613.15
Comments: Measurement is applicable to all variants				

FCC Emission Bandwidth - F<sub>MID</sub>

FCC part 15 Subpart C & 15.231(c)  
20dB Bandwidth

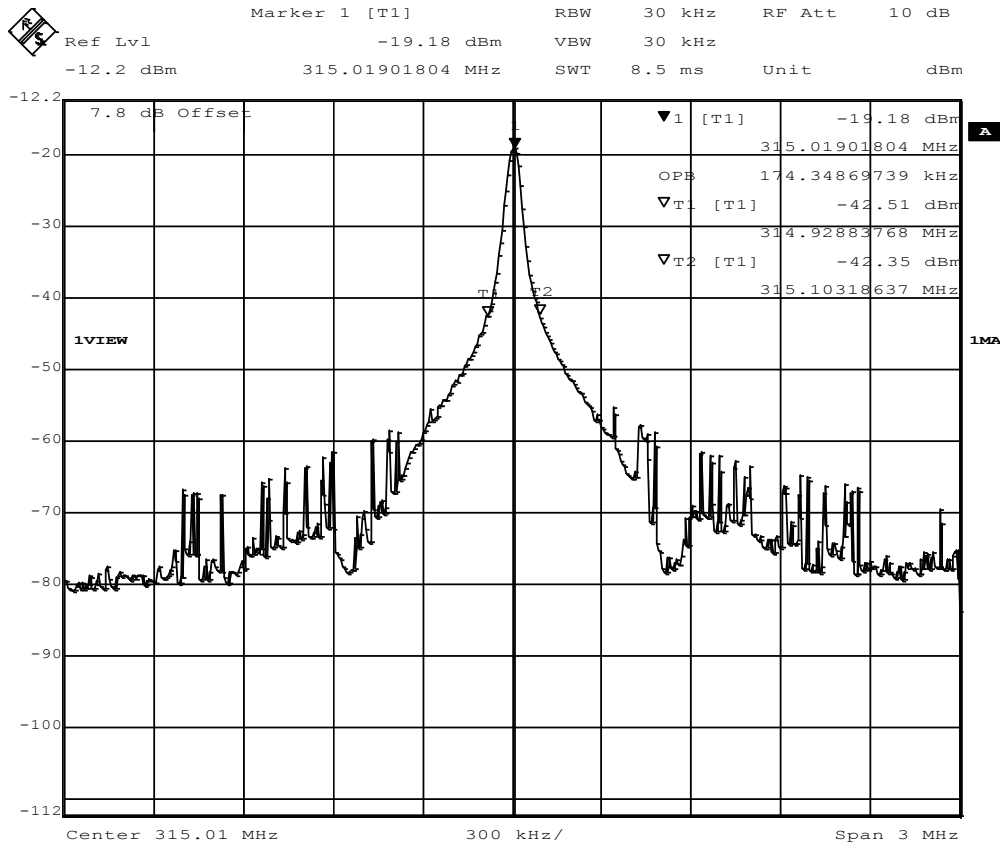
EUT Wireless Keyless Entry System  
 Model M13-631 - G0M-1306-2916  
 Approval Holder ELDAT GmbH  
 Temperature / Voltage 24°C / Unom: 3.0 V DC  
 Test Site / Operator Eurofins Product Service GmbH  
 Test Specification 20dB Bandwidth  
 Comment 1 SRD / CH: 315 MHz / ASK / Pmax  
 Comment 2 TX-Testmode  
 Comment 3



Comment A: 20dB\_Bandwidth\_:138.277\_kHz\_<\_787.5\_kHz\_(0.0025\*\_315MHz)  
 PASS  
 Date: 19.JUN.2013 09:41:23

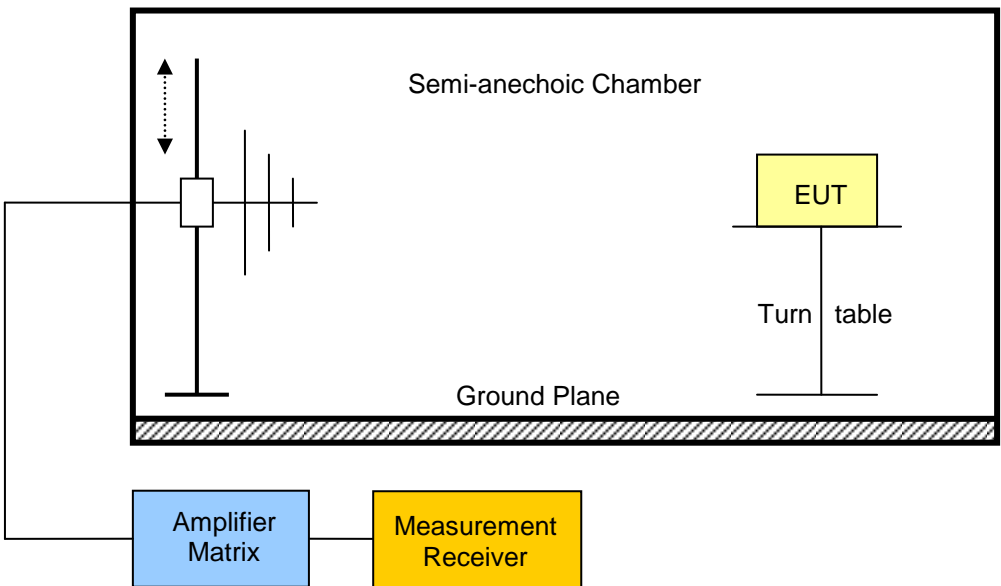
**IC Emission Bandwidth - F<sub>MID</sub>**
**RSS Gen  
Occupied Bandwidth**

EUT	Wireless Keyless Entry System
Model	M13-631 - G0M-1306-2916
Approval Holder	ELDAT GmbH
Temperature / Voltage	24°C / Unom: 3.0 V DC
Test Site / Operator	Eurofins Product Service GmbH
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	SRD / CH: 315 MHz / ASK / Pmax
Comment 2	TX-Testmode
Comment 3	Spectrum Analyzer with an integrated 99% Power Bandwidth Function is used



Comment A: Occupied\_Bandwidth\_\_:\_\_174.3487\_kHz  
Date: 19.JUN.2013 09:14:44

3.6 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210		Verdict: PASS		
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30MHz – 3 <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				
 <p>The diagram illustrates the test setup within a Semi-anechoic Chamber. A Ground Plane is located at the base of the chamber. An EUT (Equipment Under Test) is placed on a Turn table. An Amplifier Matrix is connected to the chamber, and its output is fed into a Measurement Receiver. A vertical antenna is positioned to receive signals from the EUT, with a dashed arrow indicating its vertical movement.</p>				

**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 1GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1MHz with peak/average detector is used above 1GHz
4. Markers are set to peak emission levels

**Test results**

Channel	Frequency [MHz]	Emission [MHz]	Emission Level [db $\mu$ V/m]	Emission Level [ $\mu$ V/m]	Det.	Limit [ $\mu$ V/m]	Margin [ $\mu$ V/m]
F <sub>MID</sub>	315	197	32.1	40.27	pk	150.00	-109.73

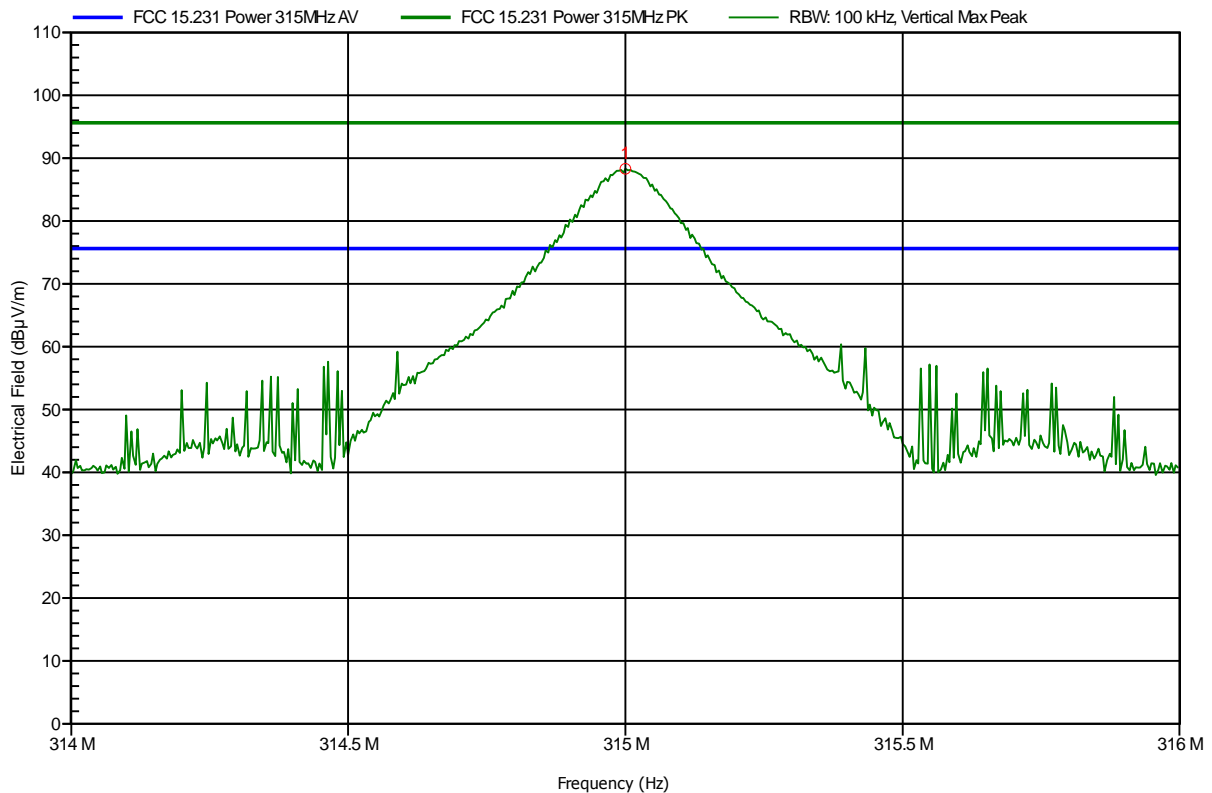
Comments: \* Physical distance between EUT and measurement antenna.  
The stated emission level corresponds to ambient noise floor. No real spurious emission has been measured.

## ANNEX A Transmitter fundamental field strength

**Carrier power (Field Strength); according to FCC part 15 Subpart C & 15.231**

Order number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Mode: Tx; SRD; 315MHz; ASK; Pmax  
 Test Date: 2013-06-18



Frequency	Peak	Peak Limit	Peak Difference	Status
315 MHz	88.3 dBµV/m	95.62 dBµV/m	-7.32 dB	Pass

Test Report No.: G0M-1306-2916-TFC231P-V01

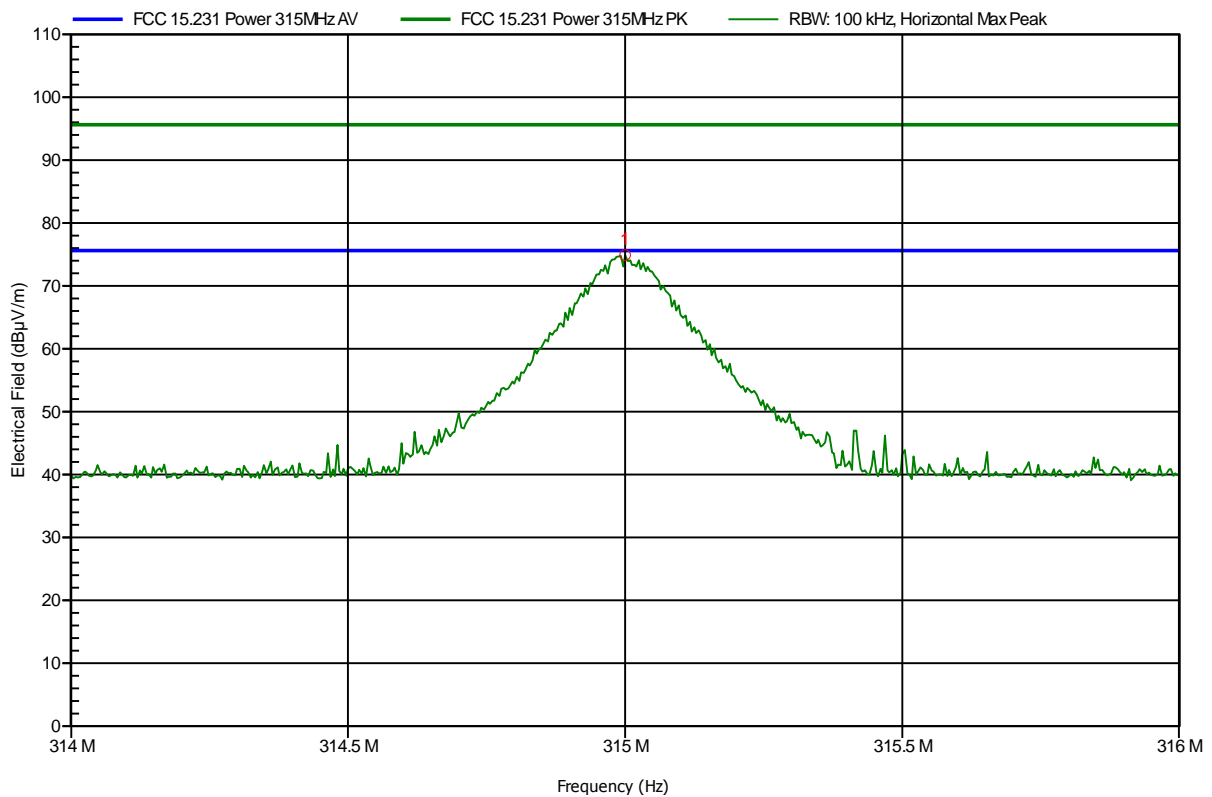
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany



**Carrier power (Field Strength); according to FCC part 15 Subpart C & 15.231**

Order number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Mode: Tx; SRD; 315MHz; ASK; Pmax  
 Test Date: 2013-06-18



Frequency	Peak	Peak Limit	Peak Difference	Status
315 MHz	74.9 dBµV/m	95.62 dBµV/m	-20.72 dB	Pass

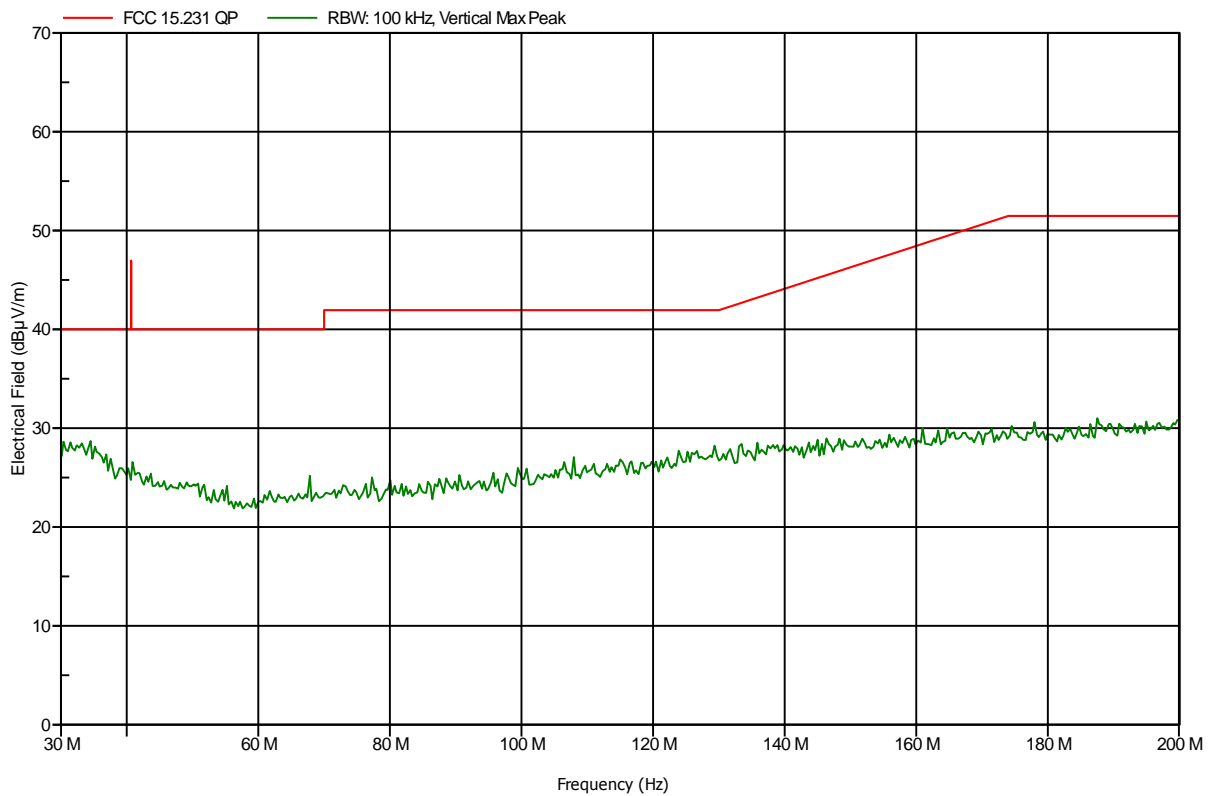
## ANNEX B Transmitter radiated spurious emissions

### Spurious emissions according to FCC part 15 Subpart C & 15.231

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; SRD; 315MHz; ASK; Pmax
Test Date:	2013-06-18
Note:	EUT vertical

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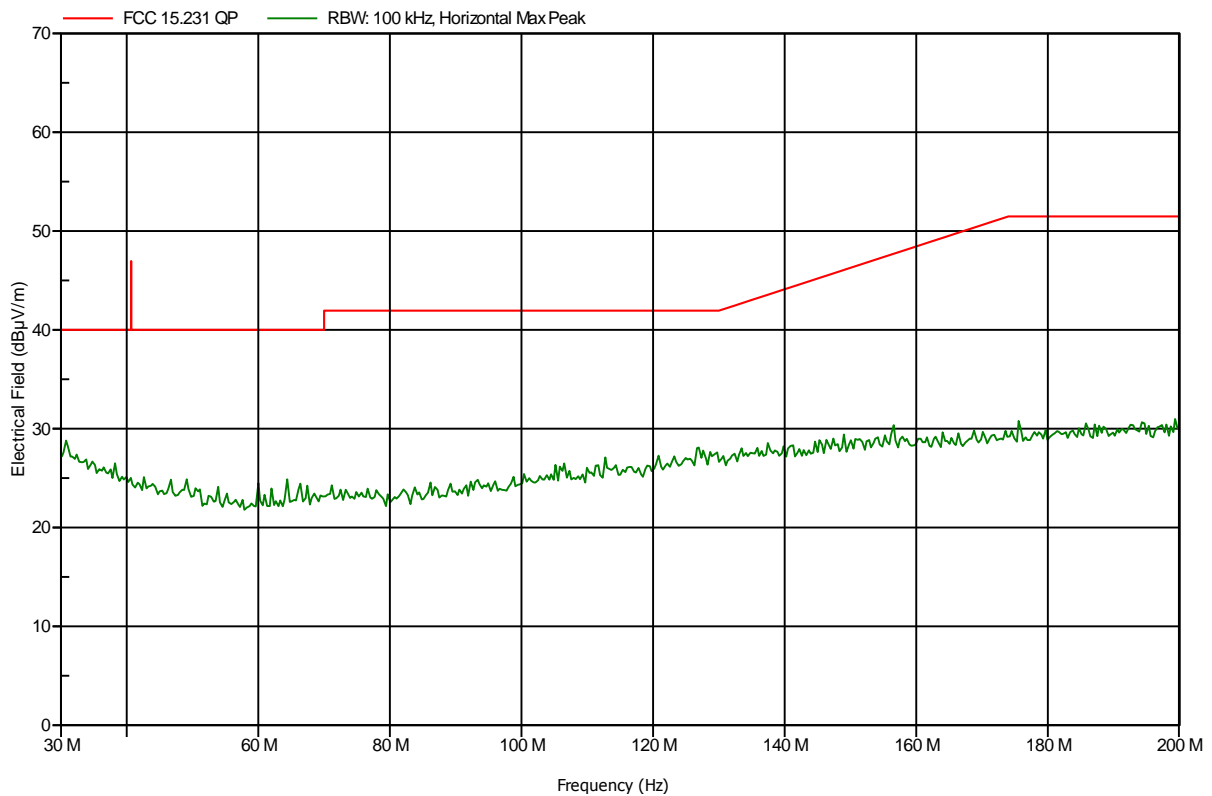


**Spurious emissions according to FCC part 15 Subpart C & 15.231**

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; SRD; 315MHz; ASK; Pmax
Test Date:	2013-06-18
Note:	EUT vertical

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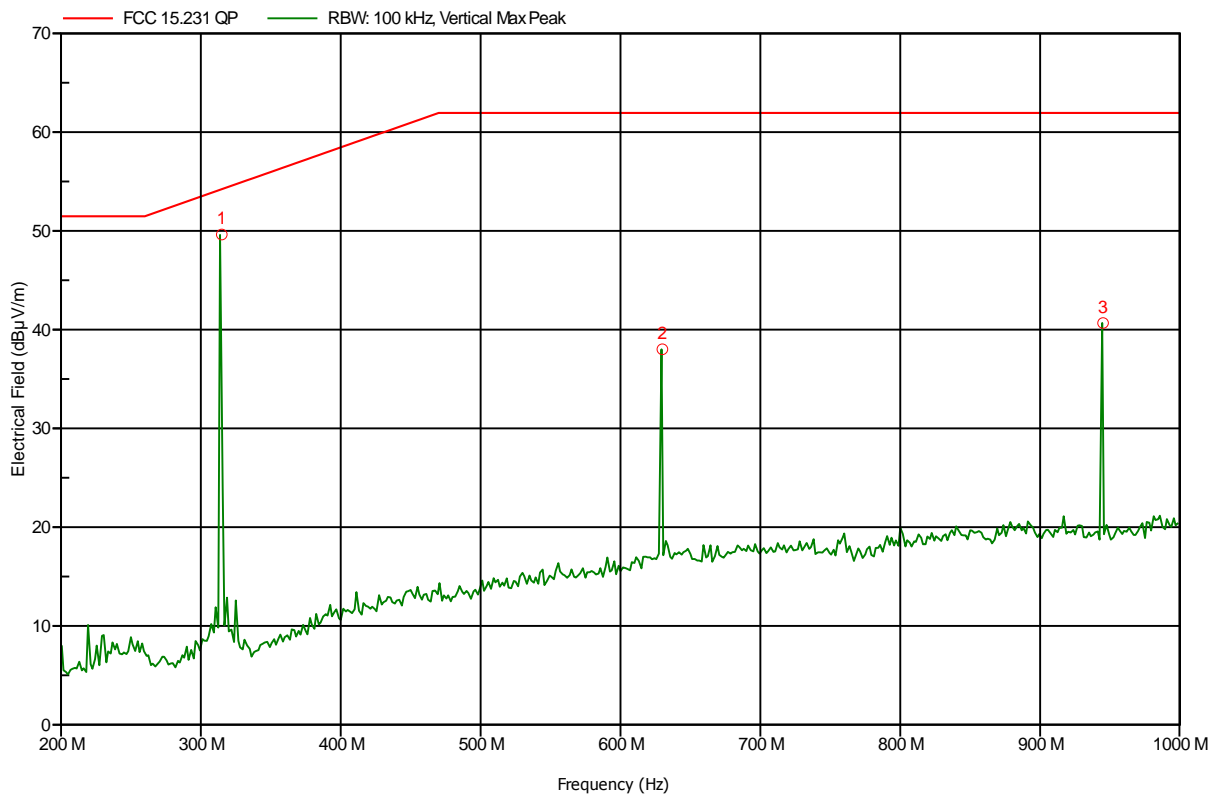


**Spurious emissions according to FCC part 15 Subpart C & 15.231**

Project number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3 m  
 Mode: TX; SRD; 315MHz; ASK; Pmax  
 Test Date: 2013-06-18  
 Note: EUT vertical; Notch-Filter 315MHz

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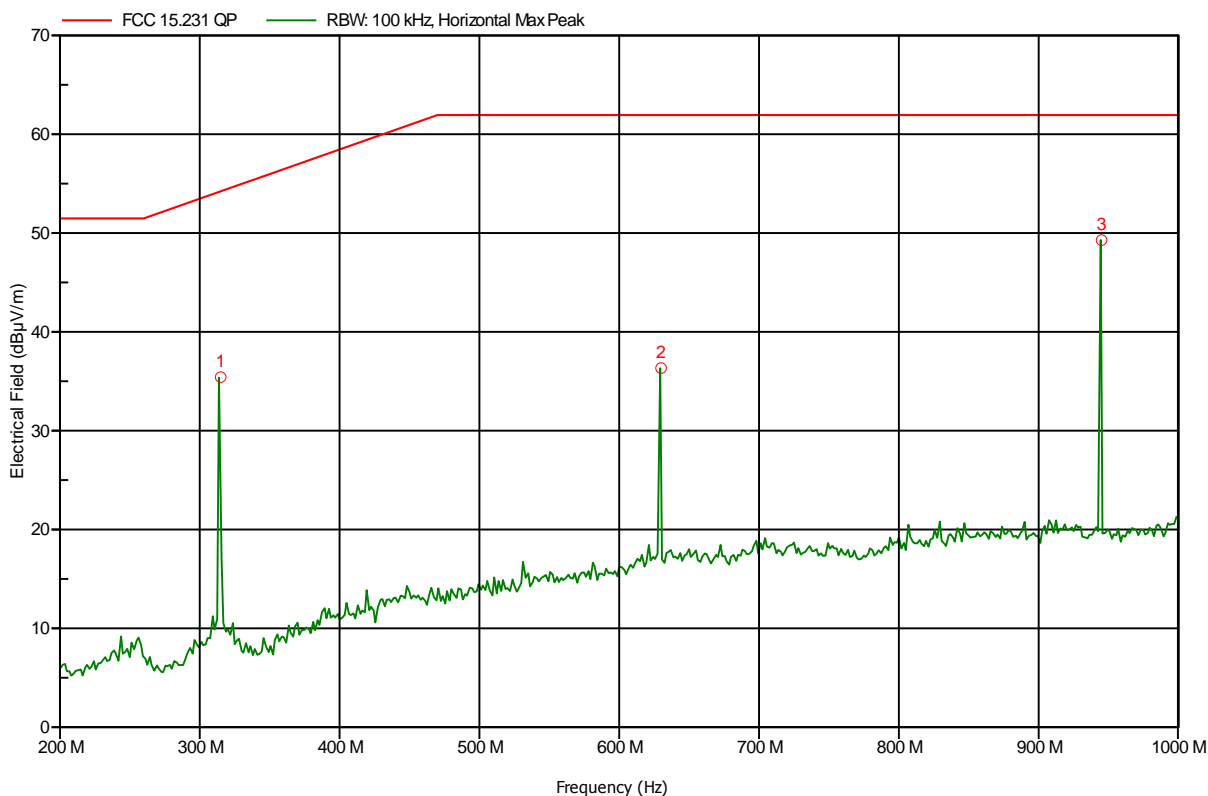
Frequency	Peak	Peak Limit	Peak Difference	Status
315 MHz	49.64 dBµV/m	54.22 dBµV/m	-4.58 dB	Carrier
630 MHz	38.01 dBµV/m	61.94 dBµV/m	-23.93 dB	Pass
945 MHz	40.67 dBµV/m	61.94 dBµV/m	-21.27 dB	Pass

**Spurious emissions according to FCC part 15 Subpart C & 15.231**

Project number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3 m  
 Mode: TX; SRD; 315MHz; ASK; Pmax  
 Test Date: 2013-06-18  
 Note: EUT vertical; Notch-Filter 315MHz

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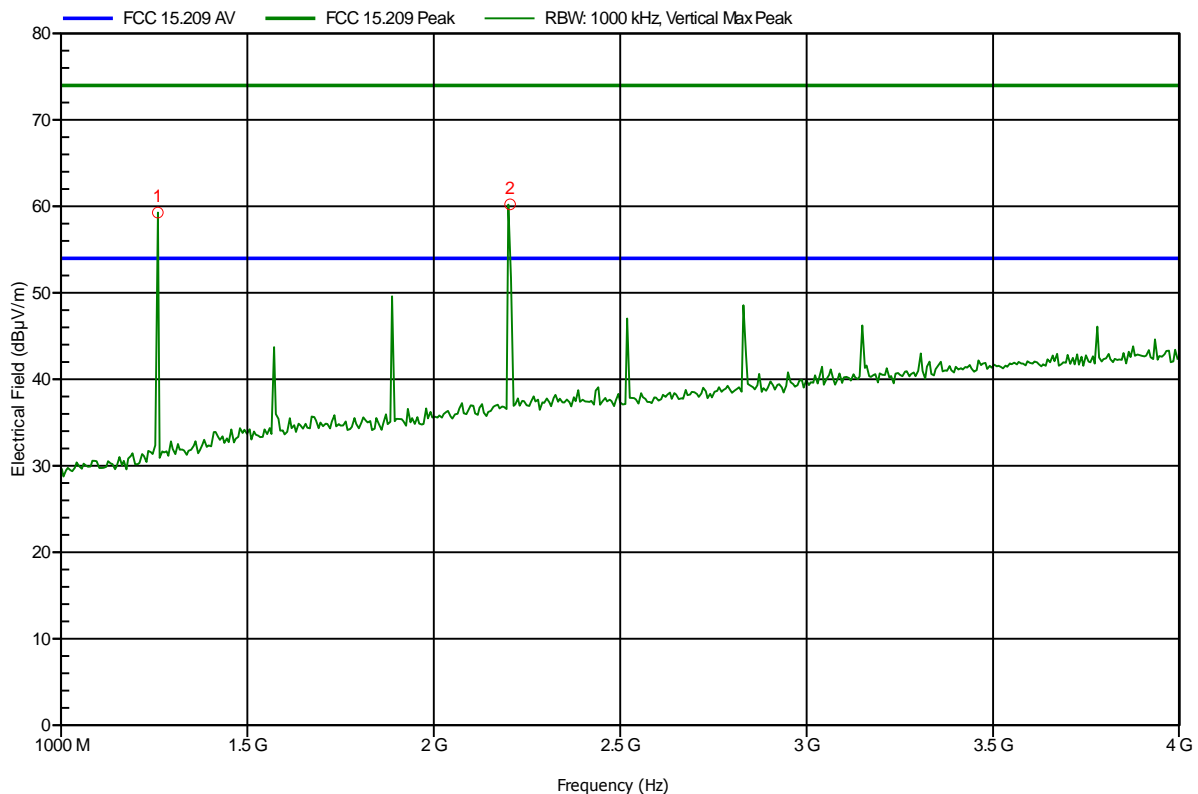
Frequency	Peak	Peak Limit	Peak Difference	Status
315 MHz	35.42 dBµV/m	54.22 dBµV/m	-18.80 dB	Carrier
630 MHz	36.34 dBµV/m	61.94 dBµV/m	-25.60 dB	Pass
945 MHz	49.29 dBµV/m	61.94 dBµV/m	-12.65 dB	Pass

**Spurious emissions according to FCC part 15 Subpart C & 15.231**

Project number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HL 025, Vertical  
 Measurement distance: 3 m  
 Mode: TX; SRD; 315MHz; ASK; Pmax  
 Test Date: 2013-06-19  
 Note: EUT vertical

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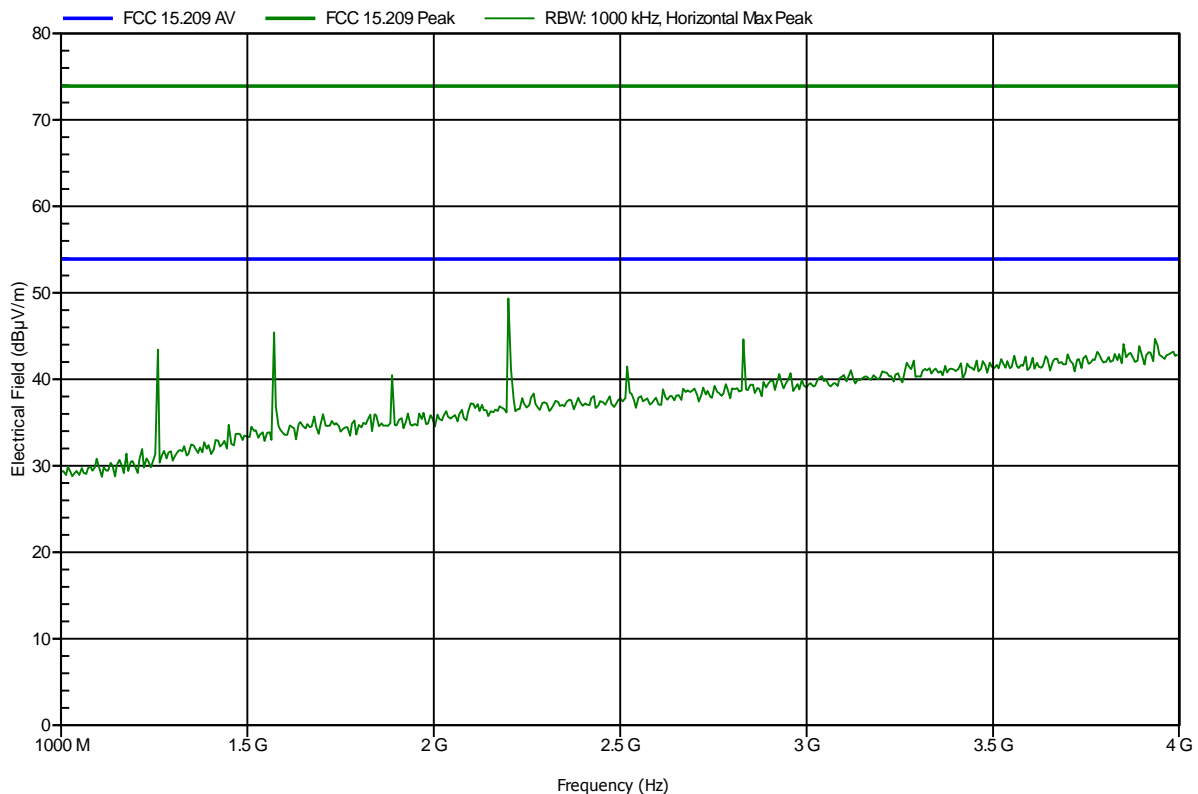
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.260 GHz	59.28 dBµV/m	73.98 dBµV/m	-14.70 dB	Pass
2.205 GHz	60.22 dBµV/m	73.98 dBµV/m	-13.76 dB	Pass

**Spurious emissions according to FCC part 15 Subpart C & 15.231**

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; SRD; 315MHz; ASK; Pmax
Test Date:	2013-06-19
Note:	EUT vertical

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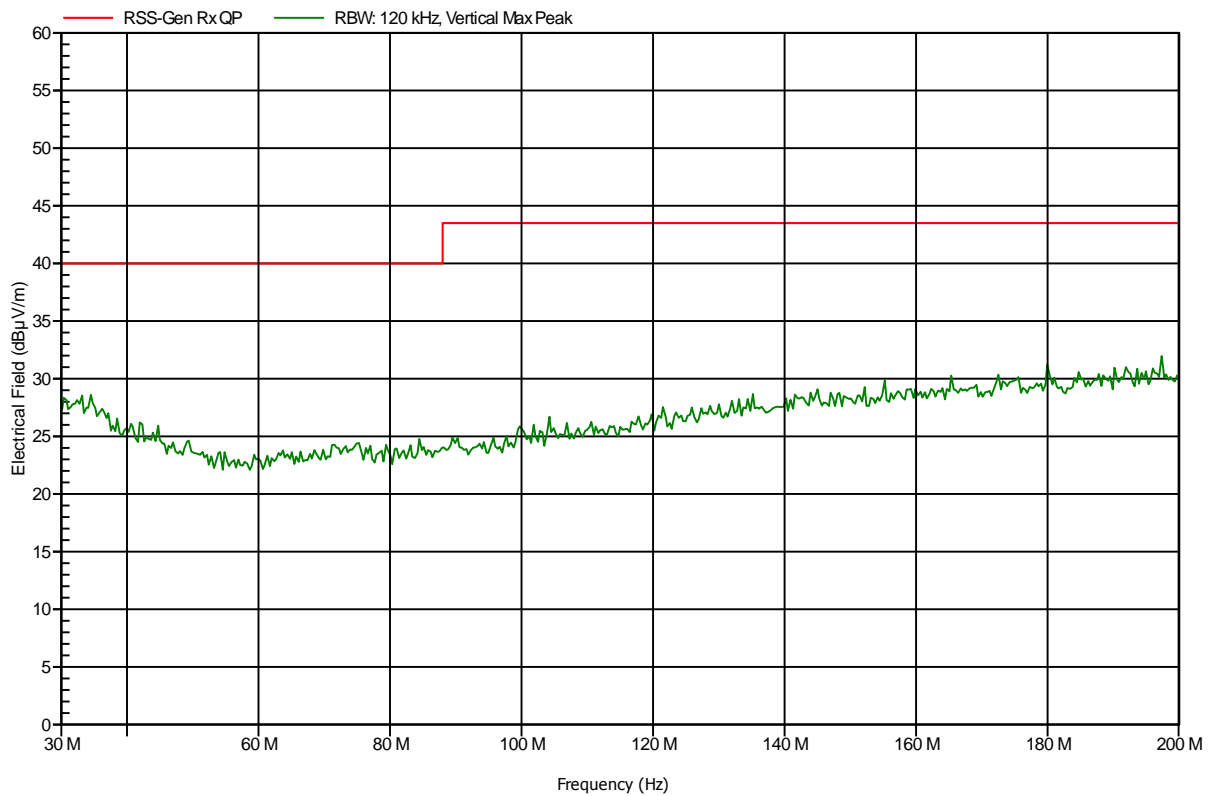
## ANNEX C Receiver radiated spurious emissions

### Spurious emissions according to IC RSS-210

Project number: G0M-1306-2916

Manufacturer: ELDAT GmbH  
 EUT Name: Wireless Keyless Entry System  
 Model: M13-631  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Pudell  
 Test Conditions: Tnom: 24°C, Vnom: 3.0V DC (2xAAA)  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3 m  
 Mode: RX; SRD; 315MHz; ASK; Standby  
 Test Date: 2013-06-19  
 Note: EUT vertical

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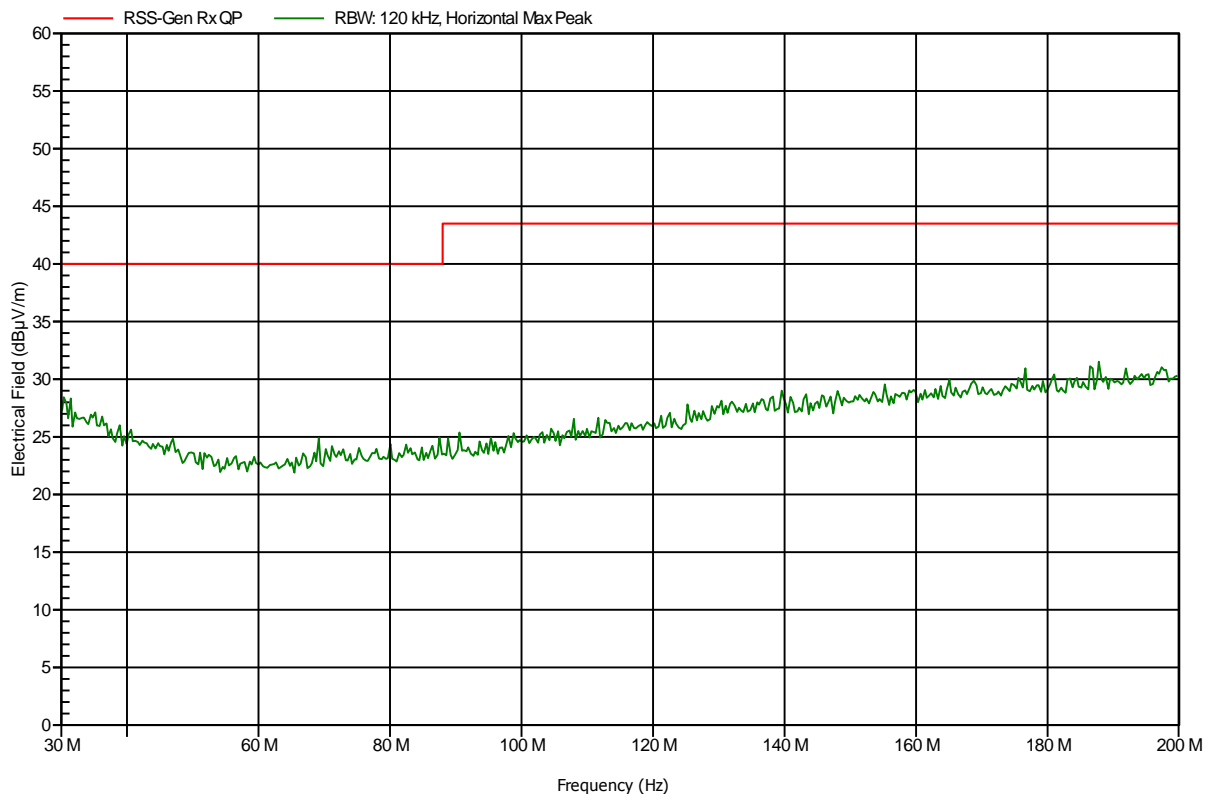


**Spurious emissions according to IC RSS-210**

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; SRD; 315MHz; ASK; Standby
Test Date:	2013-06-19
Note:	EUT vertical

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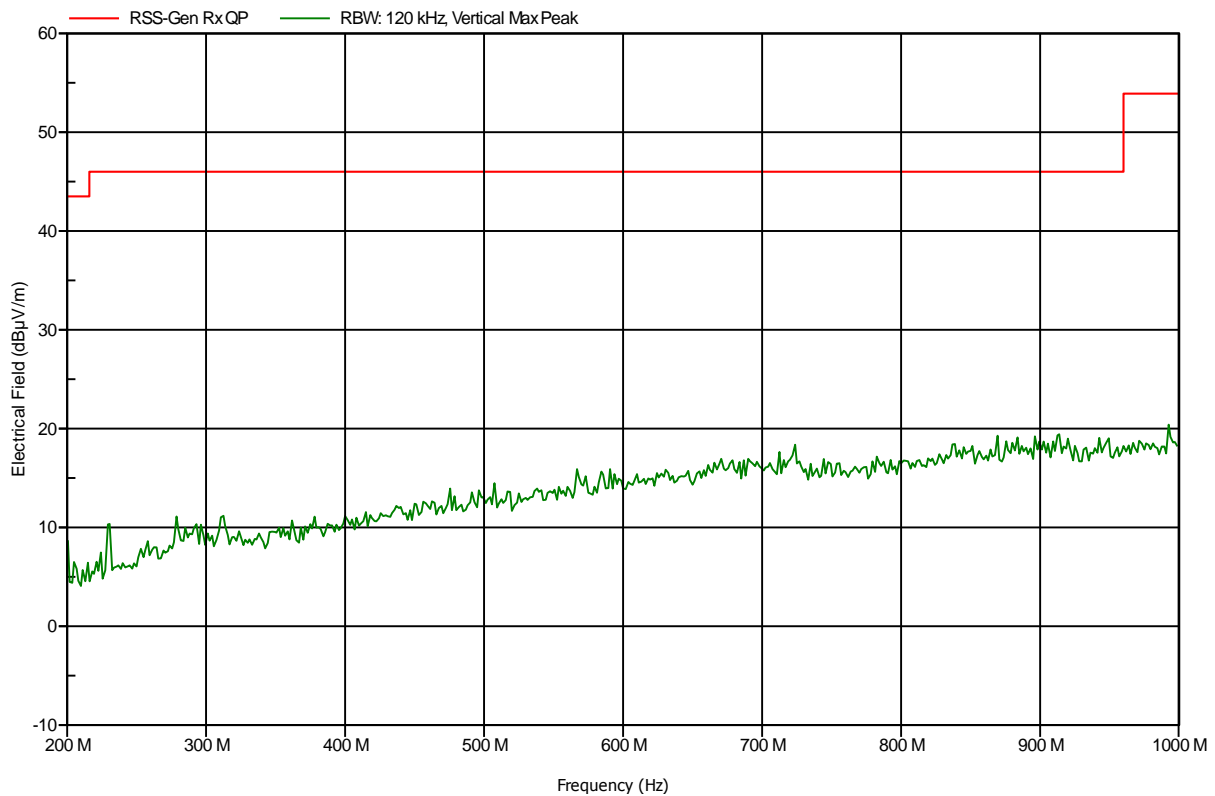


**Spurious emissions according to IC RSS-210**

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; SRD; 315MHz; ASK; Standby
Test Date:	2013-06-19
Note:	EUT vertical

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**Spurious emissions according to IC RSS-210**

Project number: G0M-1306-2916

Manufacturer:	ELDAT GmbH
EUT Name:	Wireless Keyless Entry System
Model:	M13-631
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pudell
Test Conditions:	Tnom: 24°C, Vnom: 3.0V DC (2xAAA)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; SRD; 315MHz; ASK; Standby
Test Date:	2013-06-19
Note:	EUT vertical

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