eurofins | Product Service

# FCC TEST REPORT

**FCC 47 CFR Part 15C**
**Industry Canada RSS-247**

**Digital transmission systems operating within the 2400 – 2483.5 MHz band**

| | |
|---|---|
| **Report Reference No.** ..... : | G0M-1506-4852-TFC247BL-V01 |
| **Testing Laboratory** ..... : | Eurofins Product Service GmbH |
| Address ..... : | Storkower Str. 38c<br>15526 Reichenwalde<br>Germany |
| Accreditation ..... : | A2LA Accredited Testing Laboratory, Certificate No.: 1983.01<br>FCC Filed Test Laboratory, Reg.-No.: 96970<br>IC OATS Filing assigned code: 3470A |
| **Applicant's name** ..... : | BEACONinside GmbH |
| Address ..... : | Czeminskistr. 7<br>10829 Berlin<br>GERMANY |
| **Test specification:** | |
| Standard..... : | 47 CFR Part 15C<br>RSS-247, Issue 1, 2015-05<br>RSS-Gen, Issue 4, 2014-11<br>ANSI C63.10:2013<br>ANSI C63.4:2014 |
| Test scope…….. ..... : | complete Radio compliance test |
| **Equipment under test (EUT):** | |
| Product description | Bluetooth low energy transceiver |
| Model No. | B0002-A |
| Additional Model(s) | None |
| Brand Name(s) | BeaconInside GmbH |
| Hardware version | 2.0 |
| Firmware / Software version | 1.0 |
| | FCC-ID: 2ACCT-B0002-A IC: 11976A-B0002A |
| **Test result** | **Passed** |

**Possible test case verdicts:**

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

**Testing:**

| | | |
|---|---|---|
| Test Lab Temperature ..... : | 20 – 23 °C | |
| Test Lab Humidity ..... : | 32 – 38 % | |
| Date of receipt of test item ..... : | 2015-10-02 | |
| Date (s) of performance of tests ..... : | 2015-10-02 – 2015-10-05 | |
| Compiled by ..... : | Matthias Handrik | |
| Tested by (+ signature) ..... : (Responsible for Test) | Matthias Handrik | ..... |
| Approved by (+ signature) ..... : (Head of Lab) | Christian Weber | ..... |
| Date of issue ..... : | 2015-10-22 | |
| Total number of pages ..... : | 84 | |

**General remarks:**

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

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

**Additional comments:**

# Version History

| Version | Issue Date | Remarks | Revised by |
|---|---|---|---|
| 01 | 2015-10-22 | Initial Release | |

## REPORT INDEX


| | | |
|---|---|---|
| **1** | **EQUIPMENT (TEST ITEM) DESCRIPTION** | **5** |
| 1.1 | Photos – Equipment External | 6 |
| 1.2 | Photos – Equipment internal | 7 |
| 1.3 | Photos – Test setup | 8 |
| 1.4 | Supporting Equipment Used During Testing | 9 |
| 1.5 | Test Modes | 10 |
| 1.6 | Test Equipment Used During Testing | 11 |
| 1.7 | Sample emission level calculation | 12 |
| **2** | **RESULT SUMMARY** | **13** |
| **3** | **TEST CONDITIONS AND RESULTS** | **14** |
| 3.1 | Test Conditions and Results – Occupied Bandwidth | 14 |
| 3.2 | Test Conditions and Results – 6 dB Bandwidth | 18 |
| 3.3 | Test Conditions and Results – Maximum peak conducted power | 22 |
| 3.4 | Test Conditions and Results – Power spectral density | 23 |
| 3.5 | Test Conditions and Results – Band edge compliance | 24 |
| 3.6 | Test Conditions and Results – Conducted spurious emissions | 27 |
| 3.7 | Test Conditions and Results – Transmitter radiated emissions | 31 |
| 3.8 | Test Conditions and Results – Receiver radiated emissions | 33 |
| ANNEX A | Transmitter radiated spurious emissions | 35 |
| ANNEX B | Receiver radiated spurious emissions | 75 |

# 1 Equipment (Test item) Description

| | | |
|---|---|---|
| **Description** | Bluetooth low energy transceiver | |
| **Model** | B0002-A | |
| **Additional Model(s)** | None | |
| **Brand Name(s)** | BeaconInside GmbH | |
| **Serial number** | None | |
| **Hardware version** | 2.0 | |
| **Software / Firmware version** | 1.0 | |
| **FCC-ID** | 2ACCT-B0002-A | |
| **IC** | 11976A-B0002A | |
| **Equipment type** | End product | |
| **Radio type** | Transceiver | |
| **Radio technology** | Bluetooth 4.0 Low Energy | |
| **Operating frequency range** | 2402 - 2480 MHz | |
| **Assigned frequency band** | 2400 - 2483.5 MHz | |
| **Main test frequencies** | $F_{LOW}$ | 2402 MHz |
| | $F_{MID}$ | 2440 MHz |
| | $F_{HIGH}$ | 2480 MHz |
| **Spreading** | Frequency Hopping | |
| **Modulations** | GFSK | |
| **Number of channels** | 40 | |
| **Channel spacing** | 2MHz | |
| **Number of antennas** | 1 | |
| **Antenna** | Type | integrated |
| | Model | pcb antenna |
| | Manufacturer | TI reference design |
| | Gain | 3.3 dBi (from declaration) |
| **Manufacturer** | BEACONinside GmbH<br>Czeminskistr. 7<br>10829 Berlin<br>GERMANY | |
| **Power supply** | $V_{NOM}$ | 3.0VDC (Battery only) |
| | $V_{MIN}$ | 2.1VDC |
| | $V_{MAX}$ | 3.7VDC |
| **AC/DC-Adaptor** | none | |

## 1.4 Supporting Equipment Used During Testing

| Product Type* | Device | Manufacturer | Model No. | Comments |
|---|---|---|---|---|
| AE | Laptop | DELL | Latitude E5530 | |
| AE : Auxiliary/Associated Equipment | | | | |

## 1.5 Test Modes

| Mode # | Description | |
|---|---|---|
| Transmit | General conditions: | EUT powered via laboratory power supply and controlled by laptop. |
| | Radio conditions: | Mode = standalone transmit<br>Spreading = Hopping stopped (single hopping channel)<br>Modulation = GFSK<br>Data rate = 1 Mbps<br>Bandwidth = 2 MHz<br>Duty cycle = 100 %<br>Power level = Maximum |
| Receive | General conditions: | EUT powered by laboratory power supply. |
| | Radio conditions: | Mode = standalone receive (scan mode)<br>Spreading = On<br>Modulation = GFSK |

## 1.6 Test Equipment Used During Testing

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

| Occupied Bandwidth | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| 6dB Bandwidth | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| Maximum peak conducted power | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| Power spectral density | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| Band edge compliance | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| Conducted spurious emissions | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Spectrum analyzer | R&S | FSU 26 | EF01003 | 2015-04 | 2016-04 |

| Radiated spurious emissions | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
| Semi-anechoic chamber | Frankonia | AC 1 | EF00062 | - | - |
| Spectrum Analyzer | R&S | FSIQ26 | EF00242 | 2015-04 | 2016-04 |
| Biconical Antenna | R&S | HK 116 | EF00012 | 2013-02 | 2016-02 |
| LPD Antenna | R&S | HL 223 | EF00187 | 2014-03 | 2017-03 |
| LPD Antenna | R&S | HL 025 | EF00327 | 2013-02 | 2016-02 |

## 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:

Reading on Analyzer (dBµV) + A.F. (dB) = Net field strength (dBµV/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:

Limit (dBµV/m) = 20*log (µV/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 | = | 47.5 dBµV/m | : | 47.5 dBµV/m - 57.0 dBµV/m = -9.5 dB |

## 2 Result Summary

| FCC 47 CFR Part 15C, IC RSS-247 | | | | |
|---|---|---|---|---|
| **Product Specific Standard Section** | **Requirement – Test** | **Reference Method** | **Result** | **Remarks** |
| RSS-Gen 6.6 | Occupied Bandwidth | ANSI C63.10 | N/R | Informational only |
| FCC § 15.247(a)(2)<br>IC RSS-247 § 5.2 | 6dB Bandwidth | ANSI C63.10 | PASS | |
| FCC § 15.247(b)(3)<br>IC RSS-247 § 5.4 | Maximum peak conducted power | ANSI C63.10 | PASS | |
| FCC § 15.247(e)<br>IC RSS-247 § 5.2 | Power spectral density | ANSI C63.10 | PASS | |
| 47 CFR 15.207<br>IC RSS-247 § 3.1 | AC power line conducted emissions | ANSI C63.4 | N/A | No powered direct or indirectly via AC-Mains |
| FCC § 15.247(d)<br>IC RSS-247 § 5.5 | Band edge compliance | ANSI C63.10 | PASS | |
| FCC § 15.247(d)<br>IC RSS-247 § 5.5 | Conducted spurious emissions | ANSI C63.10 | PASS | |
| FCC § 15.247(d)<br>FCC § 15.209<br>IC RSS-247 § 5.5 | Transmitter radiated spurious emissions | ANSI C63.10 | PASS | |
| IC RSS-247 § 3.1 | Receiver radiated spurious emissions | ANSI C63.10 | PASS | |
| **Remarks:** | | | | |

# 3 Test Conditions and Results

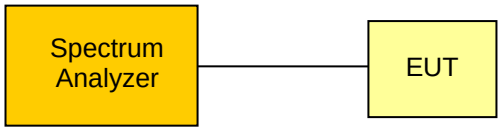
## 3.1 Test Conditions and Results – Occupied Bandwidth

| **Occupied Bandwidth acc. to IC RSS-Gen** | **Verdict: PASS** |
|---|---|
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | $F_{LOW}$ / $F_{MID}$ / $F_{HIGH}$ |

**Limits**

None (Informational only)

**Test setup**




**Test procedure**

1. EUT set to test mode (Communication tester is used if needed)
2. Span set to at least twice the emission spectrum
3. Resolution bandwidth set to 1 % of span
4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function

**Test results**

| Channel | Frequency [MHz] | Mode | Occupied Bandwidth [kHz] |
|---|---|---|---|
| $F_{LOW}$ | 2402 | Transmit | 1040 |
| $F_{MID}$ | 2440 | Transmit | 1046 |
| $F_{HIGH}$ | 2480 | Transmit | 1042 |

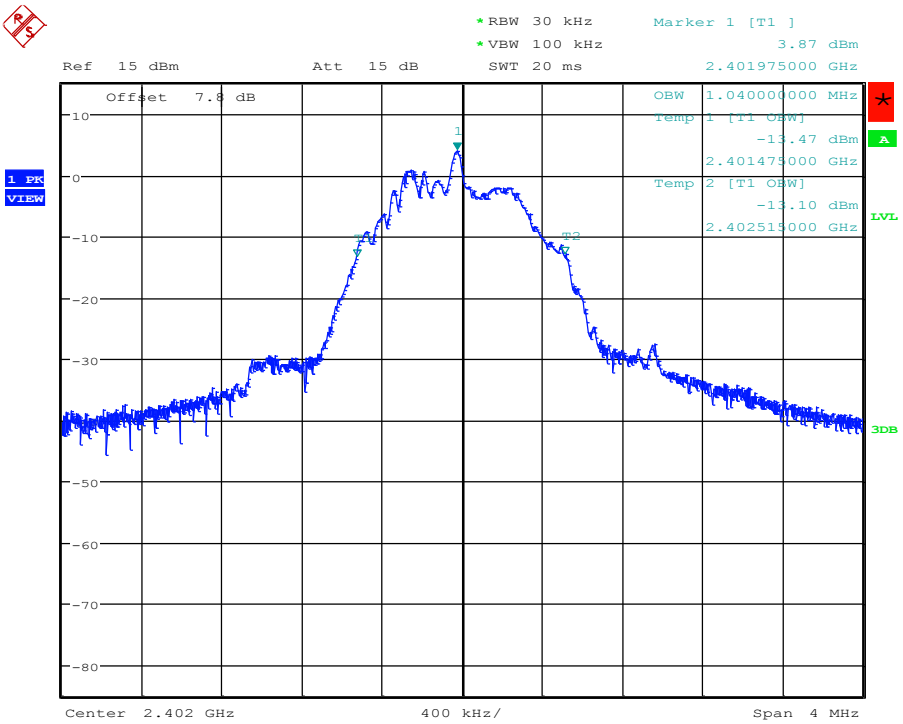
Comments:

**Occupied Bandwidth – $F_{LOW}$**

## Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BT-LE, 2402 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | NONE (INFORMATION ONLY) |
| Note 1: | A spectrum analyzer with an integrated 99% power bandwidth function is used |
| Note 2: | - |




Occupied bandwidth: 1040 KHz

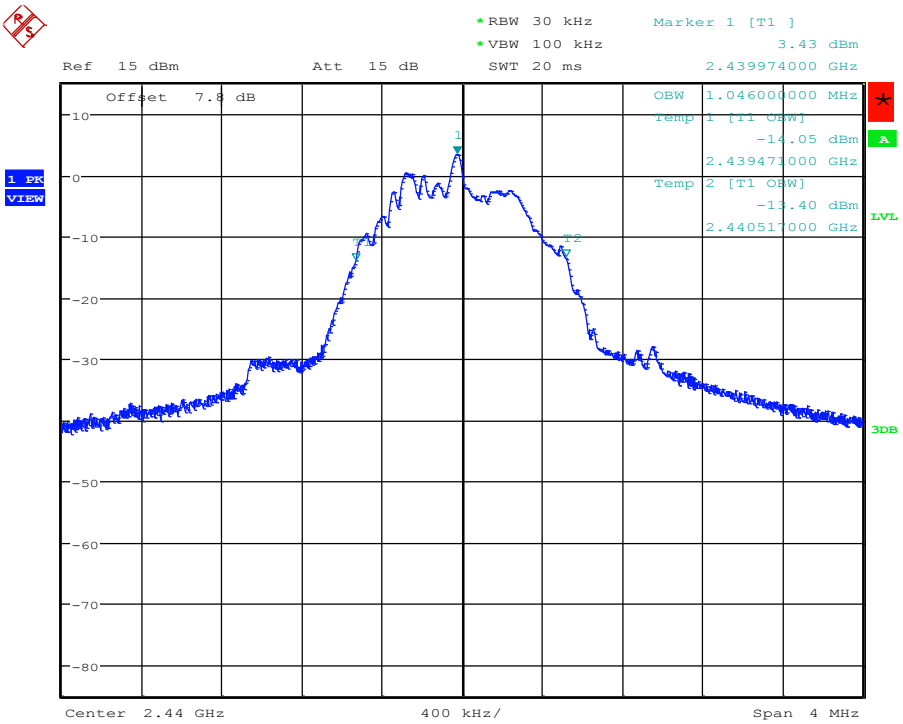
Date: 2.OCT.2015 14:48:25

**Occupied Bandwidth – $F_{MID}$**

## Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BT-LE, 2440 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | NONE (INFORMATION ONLY) |
| Note 1: | A spectrum analyzer with an integrated 99% power bandwidth function is used |
| Note 2: | - |




Occupied bandwidth: 1046 KHz

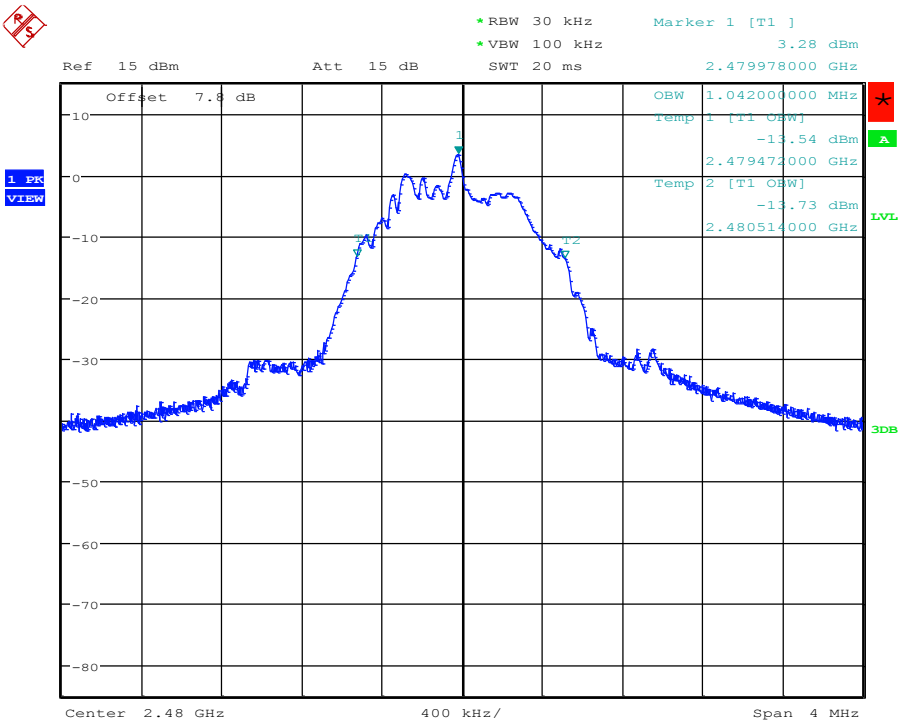
Date: 2.OCT.2015 14:55:03

**Occupied Bandwidth – $F_{HIGH}$**

## Occupied Bandwidth acc. to RSS-Gen

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BT-LE, 2480 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | NONE (INFORMATION ONLY) |
| Note 1: | A spectrum analyzer with an integrated 99% power bandwidth function is used |
| Note 2: | - |




Occupied bandwidth: 1042 KHz

Date: 2.OCT.2015 14:56:47

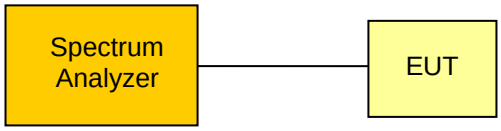
### 3.2 Test Conditions and Results – 6 dB Bandwidth

| **6dB Bandwidth acc. to FCC 15.247 / IC RSS-247** | **Verdict: PASS** |
|---|---|
| EUT requirement rule parts and clause | Reference |
| | FCC 15.247(a)(2) / IC RSS-247 5.2 |
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | $F_{LOW}$ / $F_{MID}$ / $F_{HIGH}$ |

**Limits**

| Limit |
|---|
| ≥ 500kHz |

**Test setup**




**Test procedure**

1. EUT set to test mode
2. Span set to at least twice the emission spectrum
3. Detector set to peak and max hold and RBW is set to 100 kHz
4. Envelope peak value of emission spectrum is selected
5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak
6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak
7. 6 dB Bandwidth is determined by marker frequency separation

**Test results**

| Channel | Frequency [MHz] | Mode | 6 dB Bandwidth [kHz] | Limit [kHz] | Result |
|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | Transmit | 675 | 500 | PASS |
| $F_{MID}$ | 2440 | Transmit | 696 | 500 | PASS |
| $F_{HIGH}$ | 2480 | Transmit | 702 | 500 | PASS |

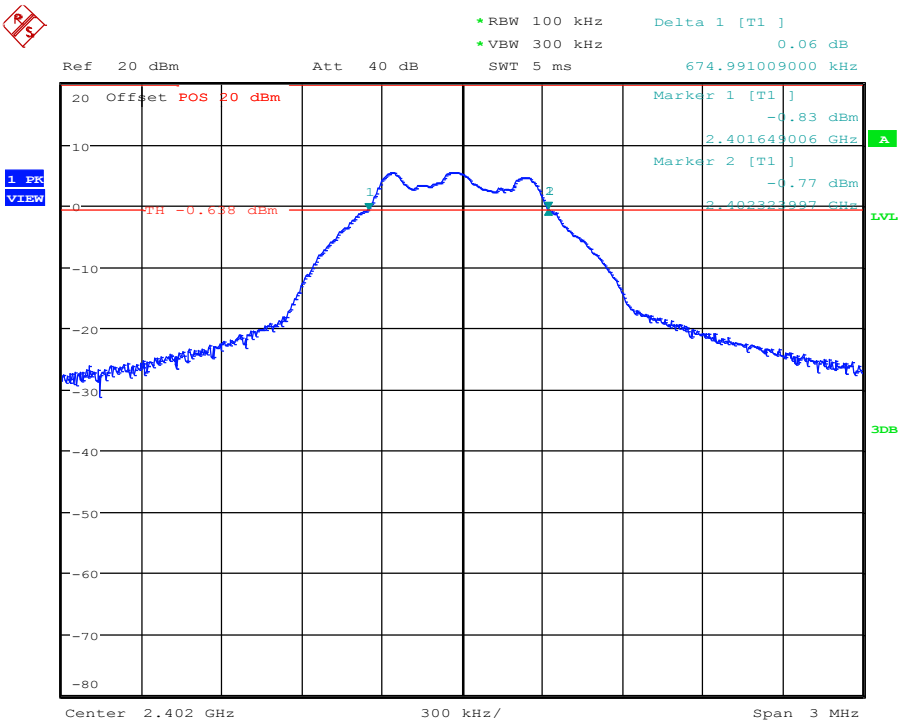
Comments:

**6 dB Bandwidth – $F_{LOW}$**

## Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2402 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Procedure according to ANSI C63.10 |
| Note 2: | Minimum 6 dB Bandwidth conducted |




6 dB bandwidth: 675 KHz > 500 KHz; verdict: PASS

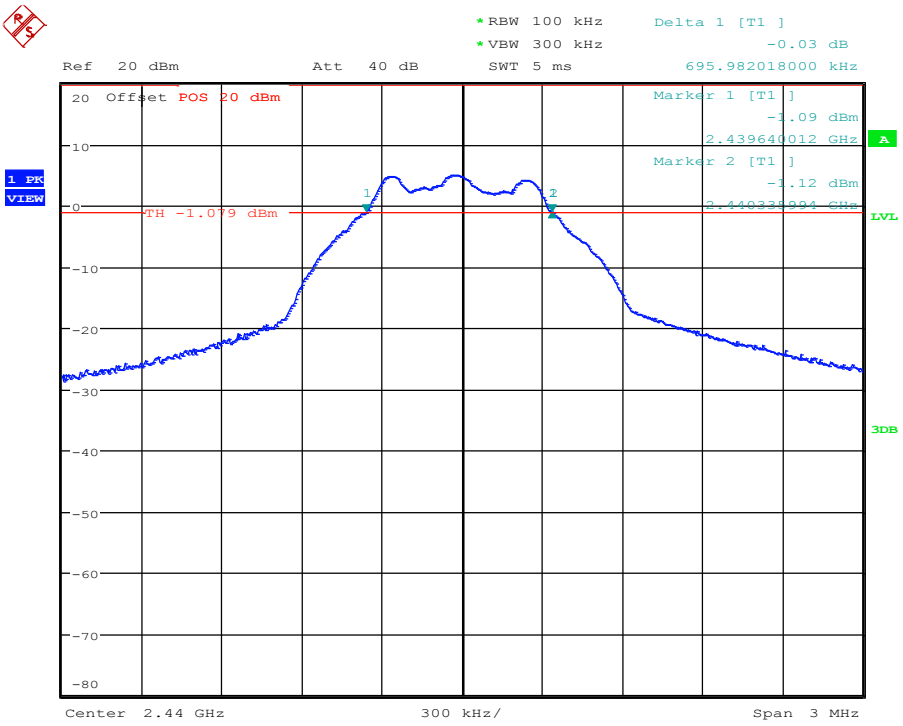
Date: 2.OCT.2015 15:00:09

## 6 dB Bandwidth – $F_{MID}$

# Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2440 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Procedure according to ANSI C63.10 |
| Note 2: | Minimum 6 dB Bandwidth conducted |




6 dB bandwidth: 696 KHz > 500 KHz; verdict: PASS

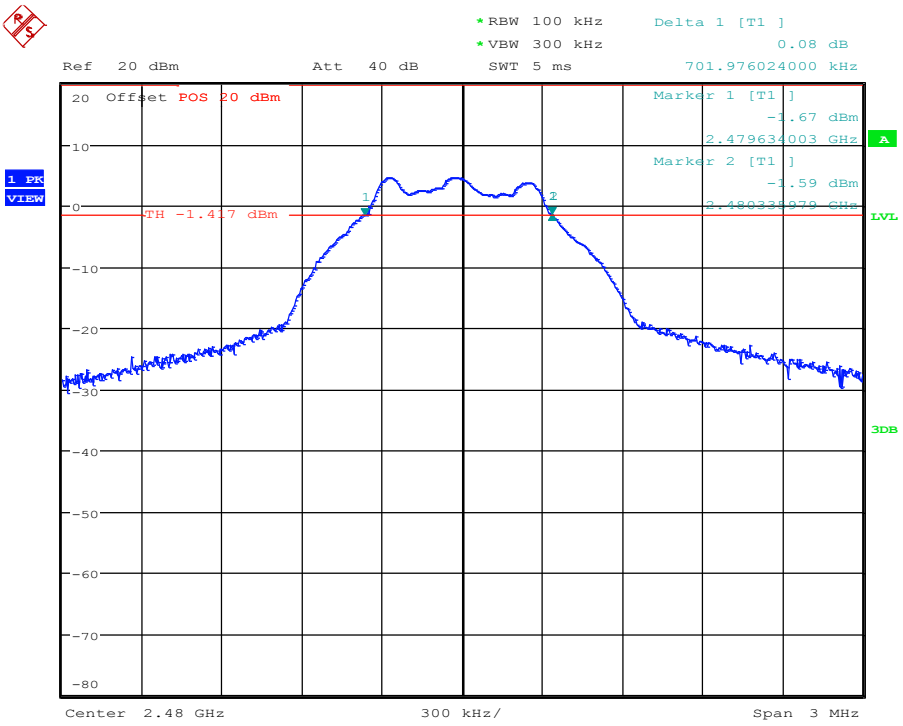
Date: 2.OCT.2015 15:02:40

## 6 dB Bandwidth – $F_{HIGH}$

# Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2480 MHz |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Procedure according to ANSI C63.10 |
| Note 2: | Minimum 6 dB Bandwidth conducted |




6 dB bandwidth: 702 KHz > 500 KHz; verdict: PASS

Date: 2.OCT.2015 15:04:24

### 3.3 Test Conditions and Results – Maximum peak conducted power

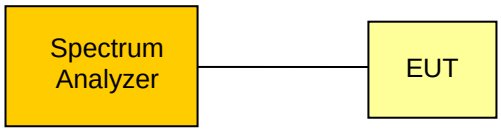
| **Maximum peak conducted power acc. to FCC 15.247 / IC RSS-247** | **Verdict: PASS** |
|---|---|
| EUT requirement rule parts and clause | Reference |
| | FCC 15.247(b)(3) / IC RSS-247 5.4 |
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | $F_{LOW}$ / $F_{MID}$ / $F_{HIGH}$ |
| Measurement mode | Peak |
| Maximum antenna gain | 3.3 dBi ⇒ Limit correction = 0 dB |

**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.

**Test setup**




**Test procedure**

1. EUT set to test mode (Communication tester is used if needed)
2. Center frequency set to test channel center frequency
3. Span set to twice the 20 dB bandwidth and detector to peak and max hold
4. Resolution bandwidth is set to 3 MHz
5. Peak conducted power is determined from peak of spectrum envelope

**Test results**

| Channel | Frequency [MHz] | Voltage | Mode | Peak power [dBm] | Peak power [W] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | $V_{nom}$ = 3.0V | Transmit | 5.68 | 0.004 | 30 | -24.32 |
| $F_{MID}$ | 2440 | $V_{nom}$ = 3.0V | Transmit | 5.23 | 0.003 | 30 | -24.77 |
| $F_{HIGH}$ | 2480 | $V_{nom}$ = 3.0V | Transmit | 4.87 | 0.003 | 30 | -25.13 |

Comment:

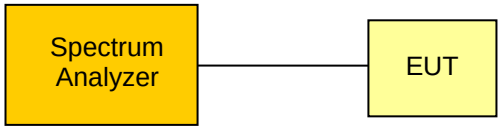
### 3.4 Test Conditions and Results – Power spectral density

| **Power spectral density acc. to FCC 15.247 / IC RSS-247** | **Verdict: PASS** |
|---|---|
| EUT requirement rule parts and clause | Reference |
| | FCC 15.247(e) / IC RSS-247 5.2 |
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | $F_{LOW}$ / $F_{MID}$ / $F_{HIGH}$ |
| Measurement mode | Peak |

**Limits**

8 dBm / 3 kHz

**Test setup**




**Test procedure**

1. EUT set to test mode (Communication tester is used if needed)
2. Center frequency set to test channel center frequency
3. Span is set large enough to capture maximum emissions in passband, RBW is set to 3kHz
4. Peak power density is determined from peak emission of envelope

**Test results**

| Channel | Frequency [MHz] | Test mode | Peak frequency [MHz] | Peak power density [dBm] | Limit [dBm/3kHz] | Margin [dB] |
|---|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | Transmit | 2401.966 | 5.28 | 8.0 | -02.72 |
| $F_{MID}$ | 2440 | Transmit | 2439.971 | 4.83 | 8.0 | -03.17 |
| $F_{HIGH}$ | 2480 | Transmit | 2479.971 | 4.49 | 8.0 | -03.51 |

Comments:

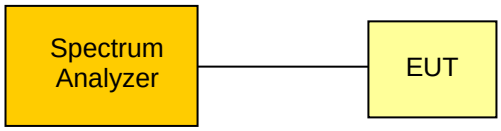
### 3.5 Test Conditions and Results – Band edge compliance

| **Band-edge compliance acc. to FCC 15.247 / IC RSS-247** | **Verdict: PASS** |
|---|---|
| EUT requirement rule parts and clause | Reference |
| | FCC 15.247(d) / IC RSS-247 5.5 |
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | $F_{LOW}$ / $F_{HIGH}$ |
| Measurement mode | Peak |

**Limits**

| Limit | Condition |
|---|---|
| ≤ -20 dB / 100 kHz | Peak power measurement detector = Peak |
| ≤ -30 dB / 100 kHz | Peak power measurement detector = RMS |

**Test setup**




**Test procedure**

1. EUT set to test mode (Communication tester is used if needed)
2. Span set around lower band edge and detector is set to peak and max hold
3. Resolution bandwidth is set to 100 kHz
4. Markers are set to peak emission levels within frequency band and outside frequency band
5. Band edge attenuation is determined from level difference

**Test results**

| Channel | Frequency [MHz] | Mode | Level [dBc] | Limit [dBc] | Margin [dB] |
|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | Transmit | -41.74 | -20 | -21.74 |
| $F_{HIGH}$ | 2480 | Transmit | -47.58 | -20 | -27.58 |

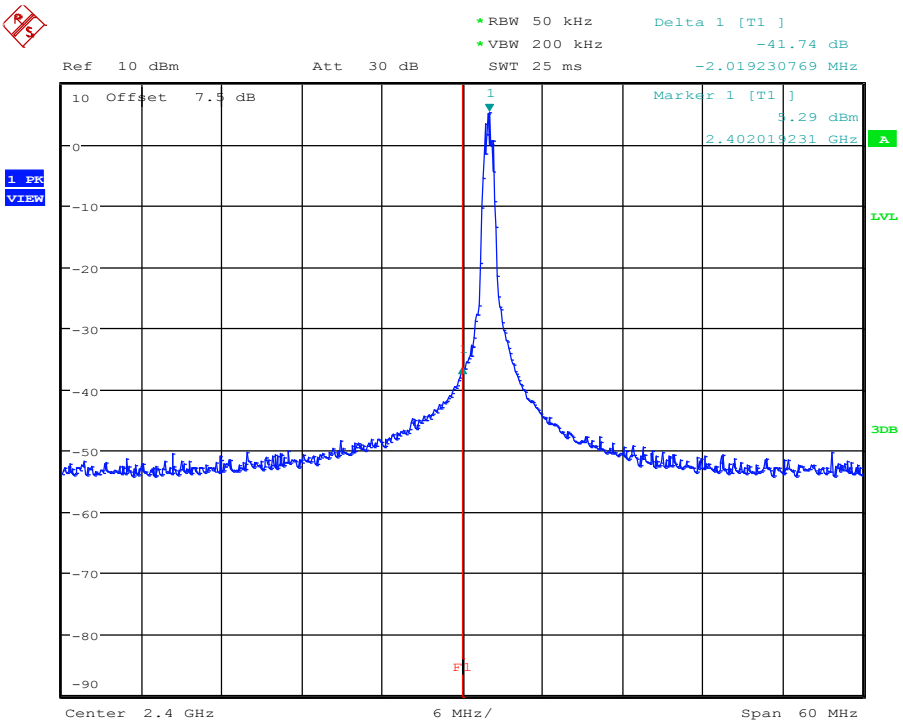
Comments:

**Band-edge compliance**

## Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2402 MHz, modulated |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Reference Method according to ANSI C63.10 |
| Note 2: | lower Band-edge, conducted measurement |




Limit: Marker Delta value >20 dB; Result: PASS

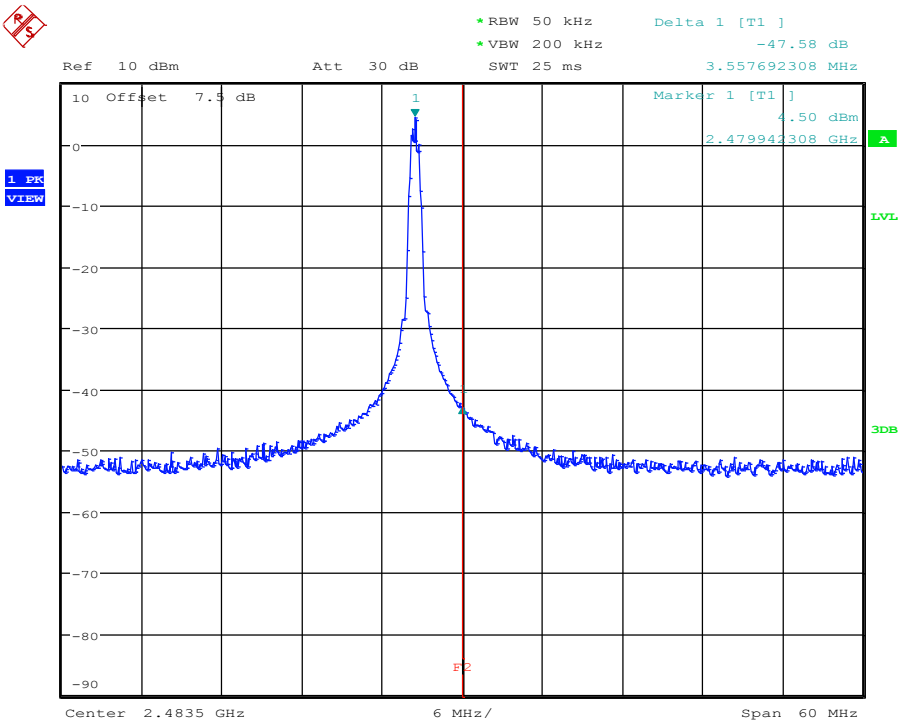
Date: 2.OCT.2015 15:26:09

**Band-edge compliance**

## Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2480 MHz, modulated |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Reference Method according to ANSI C63.10 |
| Note 2: | lower Band-edge, conducted measurement |




Limit: Marker Delta value >20 dB; Result: PASS

Date: 2.OCT.2015 15:27:29

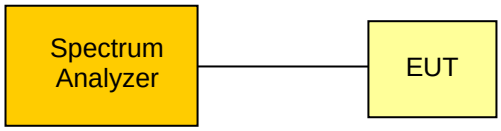
### 3.6 Test Conditions and Results – Conducted spurious emissions

| **Conducted spurious emissions acc. to FCC 15.247 / IC RSS-247** | **Verdict: PASS** |
|---|---|
| EUT requirement rule parts and clause | Reference |
| | FCC 15.247(d) / IC RSS-247 5.5 |
| Test according to measurement reference | Reference Method |
| | ANSI C63.10 |
| Test frequency range | Tested frequencies |
| | 10 MHz – 10th Harmonic |
| Measurement mode | Peak |

**Limits**

| Limit | Condition |
|---|---|
| ≤ -20 dB / 100 kHz | Peak power measurement detector = Peak |
| ≤ -30 dB /100 kHz | Peak power measurement detector = RMS |

**Test setup**




**Test procedure**

1. EUT set to test mode (Communication tester is used if needed)
2. Span it set according to measurement range
3. Resolution bandwidth is set to 100 kHz and detector to peak and max hold
4. Markers are set to peak emission levels within frequency band
5. Emission level is determined by second marker on emission peak
6. Attenuation is determined from level difference

**Test results**

| Channel | Frequency [MHz] | Mode | Emission [MHz] | Emission Level [dBm] | Peak power [dBm] | Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | BLE | 9588.141 | -47.70 | 5.3 | -14.7 | -33.00 |
| $F_{MID}$ | 2442 | BLE | 9740.385 | -40.64 | 4.8 | -15.2 | -25.44 |
| $F_{HIGH}$ | 2480 | BLE | 9923.077 | -46.42 | 4.5 | -15.5 | -30.92 |

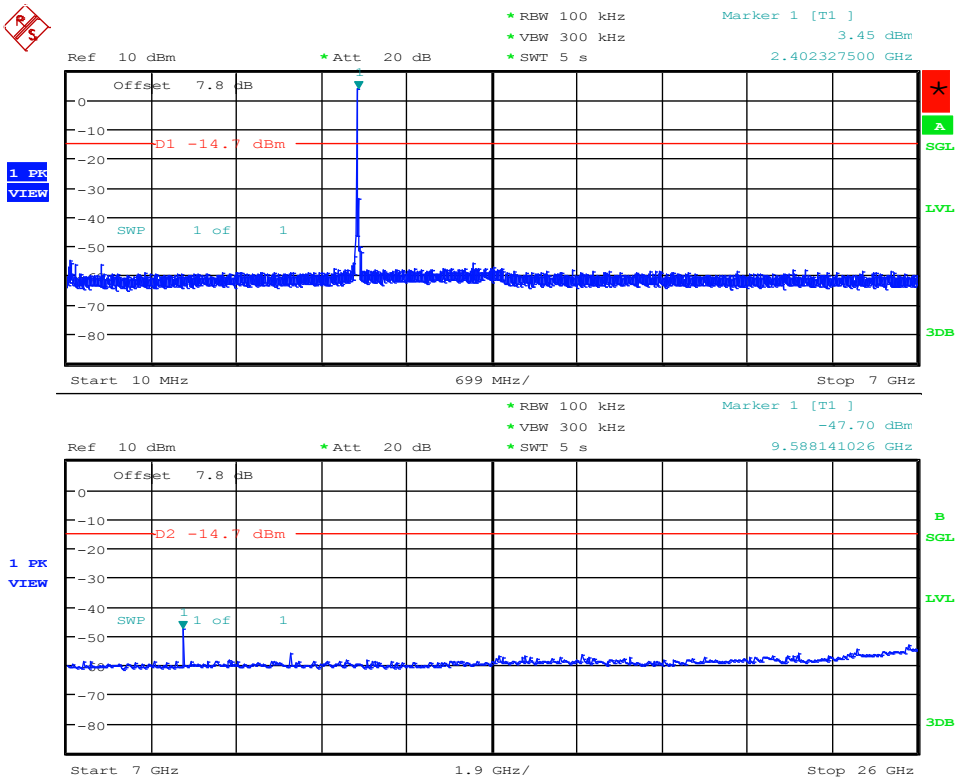
Comments:

**Conducted spurious emissions – $F_{LOW}$**

## Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2402 MHz, modulated |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Spurious in non-restricted frequency bands (ANSI C63.10) |
| Note 2: | conducted measurement |



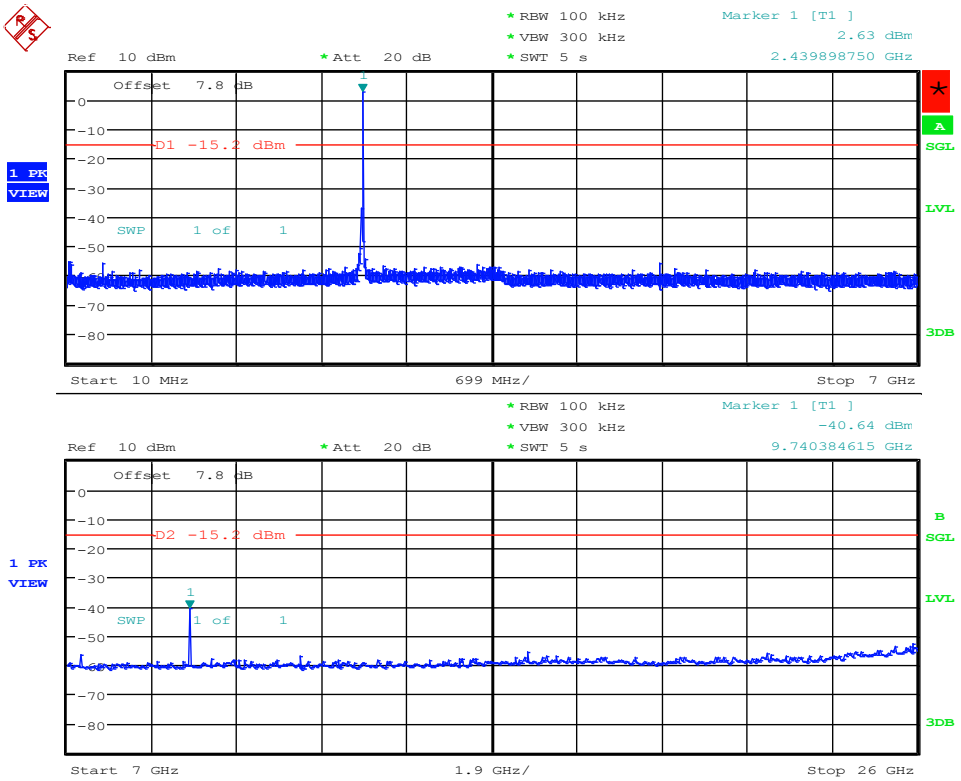

Date: 2.OCT.2015 15:33:03

**Conducted spurious emissions – $F_{MID}$**

## Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2440 MHz, modulated |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Spurious in non-restricted frequency bands (ANSI C63.10) |
| Note 2: | conducted measurement |



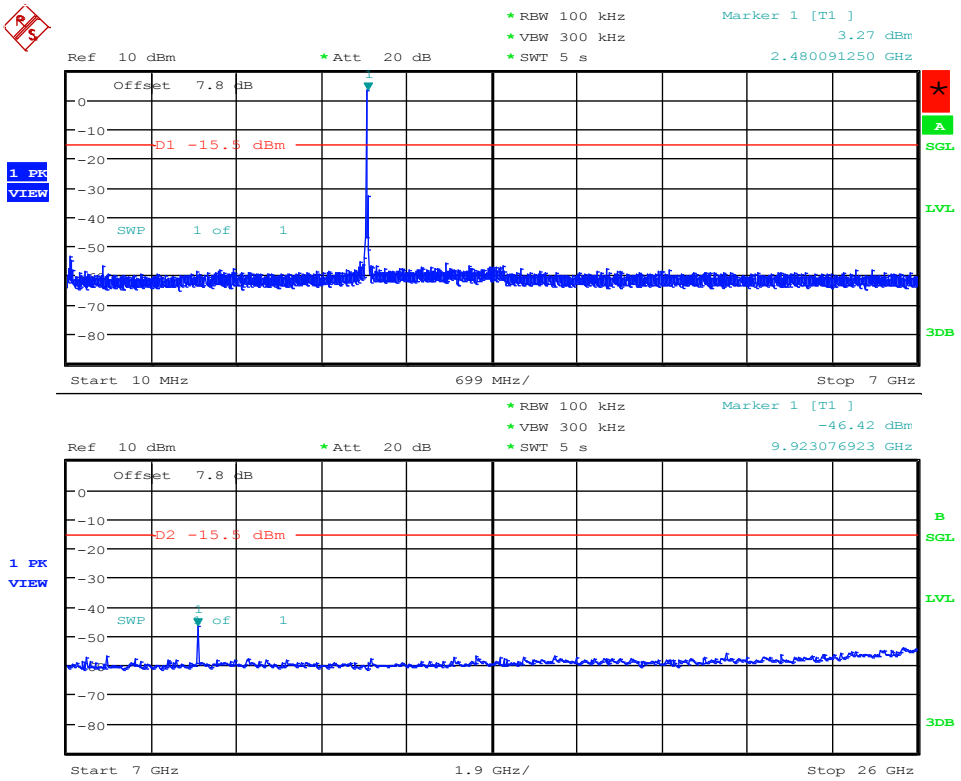

Date: 2.OCT.2015 15:34:36

**Conducted spurious emissions – $F_{HIGH}$**

## Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1506-4852

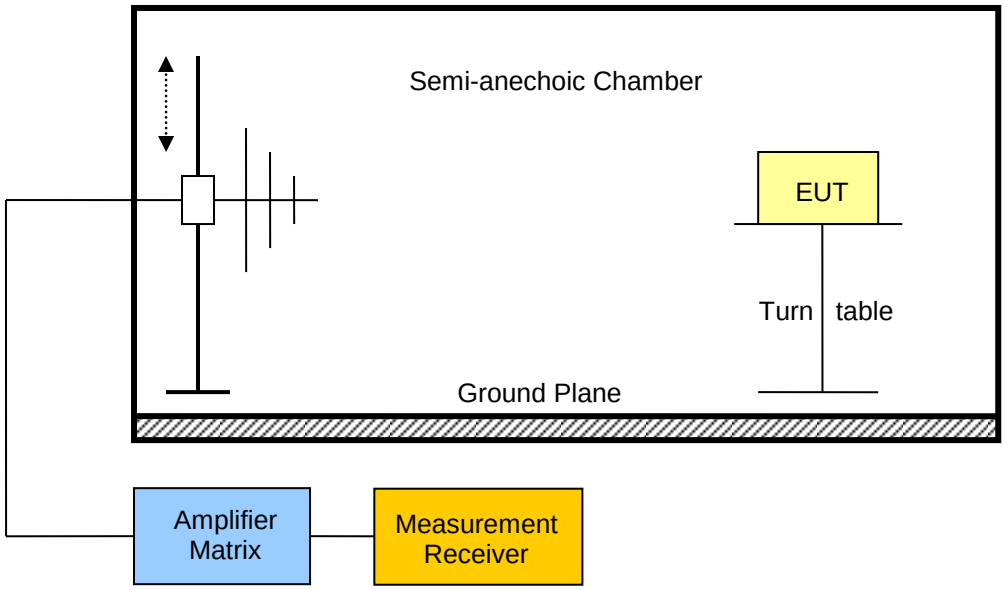
| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Handrik |
| Test Conditions: | Tnom / Vnom |
| Mode: | Tx, BLE, 2480 MHz, modulated |
| Test Date: | 2015-10-02 |
| Verdict: | PASS |
| Note 1: | Spurious in non-restricted frequency bands (ANSI C63.10) |
| Note 2: | conducted measurement |




Date: 2.OCT.2015 15:36:08

### 3.7 Test Conditions and Results – Transmitter radiated emissions

| **Transmitter radiated emissions acc. to FCC 47 CFR 15.247 / IC RSS-247** | | | | **Verdict: PASS** |
|---|---|---|---|---|
| Test according referenced standards | | Reference Method | | |
| | | FCC 15.247(d) / IC RSS-247 5.5 | | |
| Test according to measurement reference | | Reference Method | | |
| | | ANSI C63.10 | | |
| Test frequency range | | Tested frequencies | | |
| | | 30 MHz – 10th Harmonic | | |
| **Limits** | | | | |
| Frequency range [MHz] | Detector | Limit [µV/m] | Limit [dBµV/m] | Limit Distance [m] |
| 30 – 88 | Quasi-Peak | 100 | 40 | 3 |
| 88 – 216 | Quasi-Peak | 150 | 43.5 | 3 |
| 216 – 960 | Quasi-Peak | 200 | 46 | 3 |
| 960 – 1000 | Quasi-Peak | 500 | 54 | 3 |
| > 1000 | Average | 500 | 54 | 3 |
| Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)). When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. | | | | |
| **Test setup** | | | | |



**Test procedure**

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

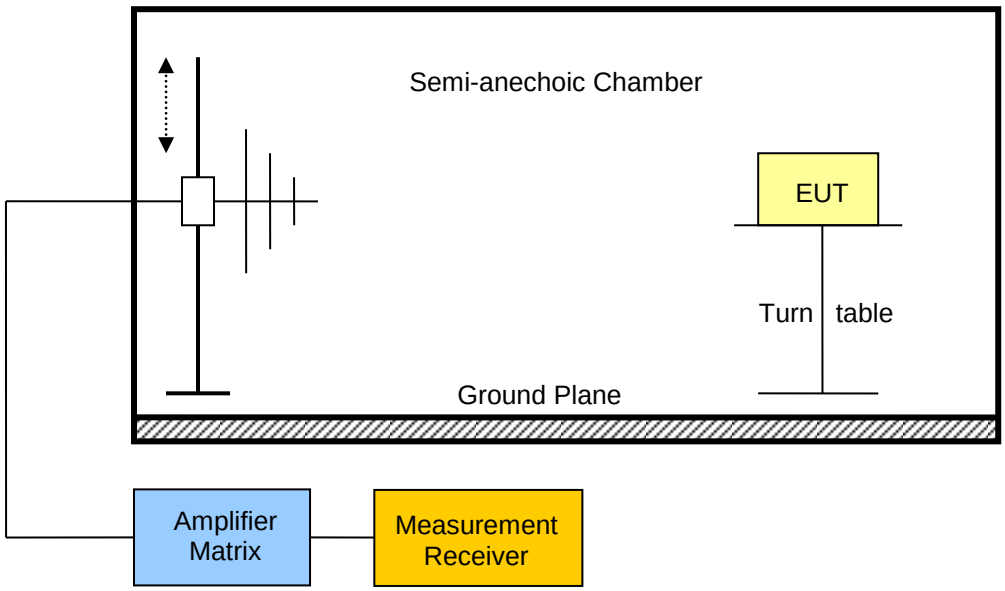
**Test results**

| Channel | Frequency [MHz] | Mode | Emission [MHz] | Level [dbµV/m] | Det. | Pol. | Limit [dbµV/m] | Limit dist. [m]* | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| $F_{LOW}$ | 2402 | BT-LE | 2324 | 53.84 | pk | hor | 74.00 | 3 | -20.16 |
| $F_{LOW}$ | 2402 | BT-LE | 2324 | 28.46 | RMS | hor | 54.00 | 3 | -25.54 |
| $F_{LOW}$ | 2402 | BT-LE | 2379 | 54.12 | pk | ver | 74.00 | 3 | -19.88 |
| $F_{LOW}$ | 2402 | BT-LE | 2379 | 28.72 | RMS | ver | 54.00 | 3 | -25.28 |
| $F_{LOW}$ | 2402 | BT-LE | 2390 | 60.85 | pk | ver | 74.00 | 3 | -13.15 |
| $F_{LOW}$ | 2402 | BT-LE | 2390 | 31.80 | RMS | ver | 54.00 | 3 | -22.20 |
| $F_{LOW}$ | 2402 | BT-LE | 2390 | 64.72 | pk | hor | 74.00 | 3 | -09.28 |
| $F_{LOW}$ | 2402 | BT-LE | 2390 | 34.90 | RMS | hor | 54.00 | 3 | -19.10 |
| $F_{MID}$ | 2440 | BT-LE | 2390 | 53.05 | pk | hor | 74.00 | 3 | -20.95 |
| $F_{MID}$ | 2440 | BT-LE | 7319 | 54.86 | pk | ver | 74.00 | 3 | -19.14 |
| $F_{MID}$ | 2440 | BT-LE | 7319 | 47.85 | RMS | ver | 54.00 | 3 | -06.15 |
| $F_{MID}$ | 2440 | BT-LE | 7321 | 58.16 | pk | hor | 74.00 | 3 | -15.84 |
| $F_{MID}$ | 2440 | BT-LE | 7321 | 51.17 | RMS | hor | 54.00 | 3 | -02.83 |
| $F_{HIGH}$ | 2480 | BT-LE | 2484 | 72.25 | pk | ver | 74.00 | 3 | -01.75 |
| $F_{HIGH}$ | 2480 | BT-LE | 2484 | 45.37 | RMS | ver | 54.00 | 3 | -08.63 |
| $F_{HIGH}$ | 2480 | BT-LE | 2484 | 73.57 | pk | hor | 74.00 | 3 | -00.43 |
| $F_{HIGH}$ | 2480 | BT-LE | 2484 | 46.53 | RMS | hor | 54.00 | 3 | -07.47 |
| $F_{HIGH}$ | 2480 | BT-LE | 2497 | 54.28 | pk | ver | 74.00 | 3 | -19.72 |
| $F_{HIGH}$ | 2480 | BT-LE | 2497 | 29.14 | RMS | ver | 54.00 | 3 | -24.86 |
| $F_{HIGH}$ | 2480 | BT-LE | 2500 | 55.09 | pk | hor | 74.00 | 3 | -18.91 |
| $F_{HIGH}$ | 2480 | BT-LE | 2500 | 30.46 | RMS | hor | 54.00 | 3 | -23.54 |
| $F_{HIGH}$ | 2480 | BT-LE | 7439 | 59.48 | pk | hor | 74.00 | 3 | -14.52 |
| $F_{HIGH}$ | 2480 | BT-LE | 7439 | 50.62 | RMS | hor | 54.00 | 3 | -03.38 |

Comments: * Physical distance between EUT and measurement antenna.

### 3.8 Test Conditions and Results – Receiver radiated emissions

| **Receiver radiated emissions acc. to IC RSS-247** | | | | **Verdict: PASS** |
|---|---|---|---|---|
| Test according referenced standards | Reference Method | | | |
| | IC RSS-247 3.1 | | | |
| Test according to measurement reference | Reference Method | | | |
| | ANSI C63.10 | | | |
| Test frequency range | Tested frequencies | | | |
| | 30 MHz – 5th Harmonic | | | |
| EUT test mode | Receive | | | |
| **Limits** | | | | |
| Frequency range [MHz] | Detector | Limit [µV/m] | Limit [dBµV/m] | Limit Distance [m] |
| 30 – 88 | Quasi-Peak | 100 | 40 | 3 |
| 88 – 216 | Quasi-Peak | 150 | 43.5 | 3 |
| 216 – 960 | Quasi-Peak | 200 | 46 | 3 |
| 960 – 1000 | Quasi-Peak | 500 | 54 | 3 |
| > 1000 | Average | 500 | 54 | 3 |
| **Test setup** | | | | |



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

**Test results**

| Channel | Frequency [MHz] | Emission [MHz] | Emission Level [dbµV/m] | Pol. | Det. | Limit [dBµV/m] | Margin [dBµV/m] |
|---|---|---|---|---|---|---|---|
| $F_{MID}$ | 2440 | 7832 | 51.55 | hor | pk | 53.98 | -2.43 dB |
| $F_{MID}$ | 2440 | 7928 | 52.04 | ver | pk | 53.98 | -1.94 dB |
| Comments: | | | | | | | |

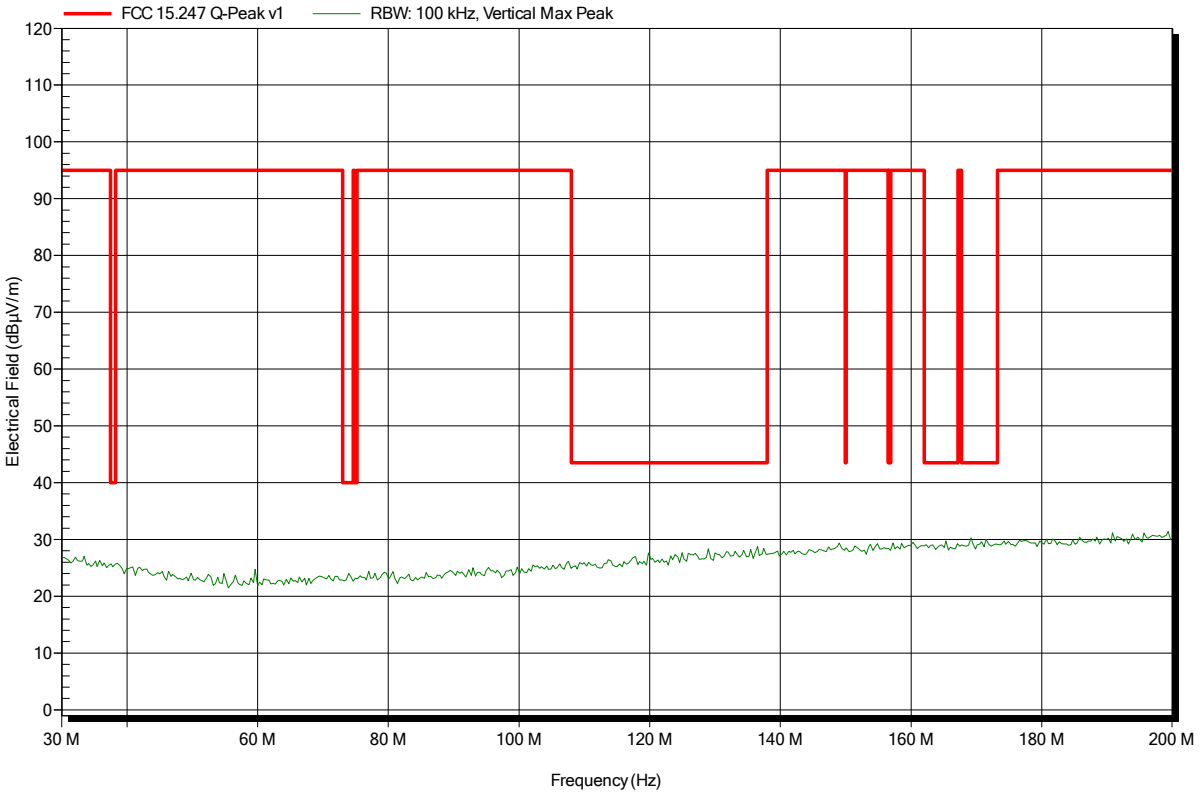
# ANNEX A Transmitter radiated spurious emissions

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 5

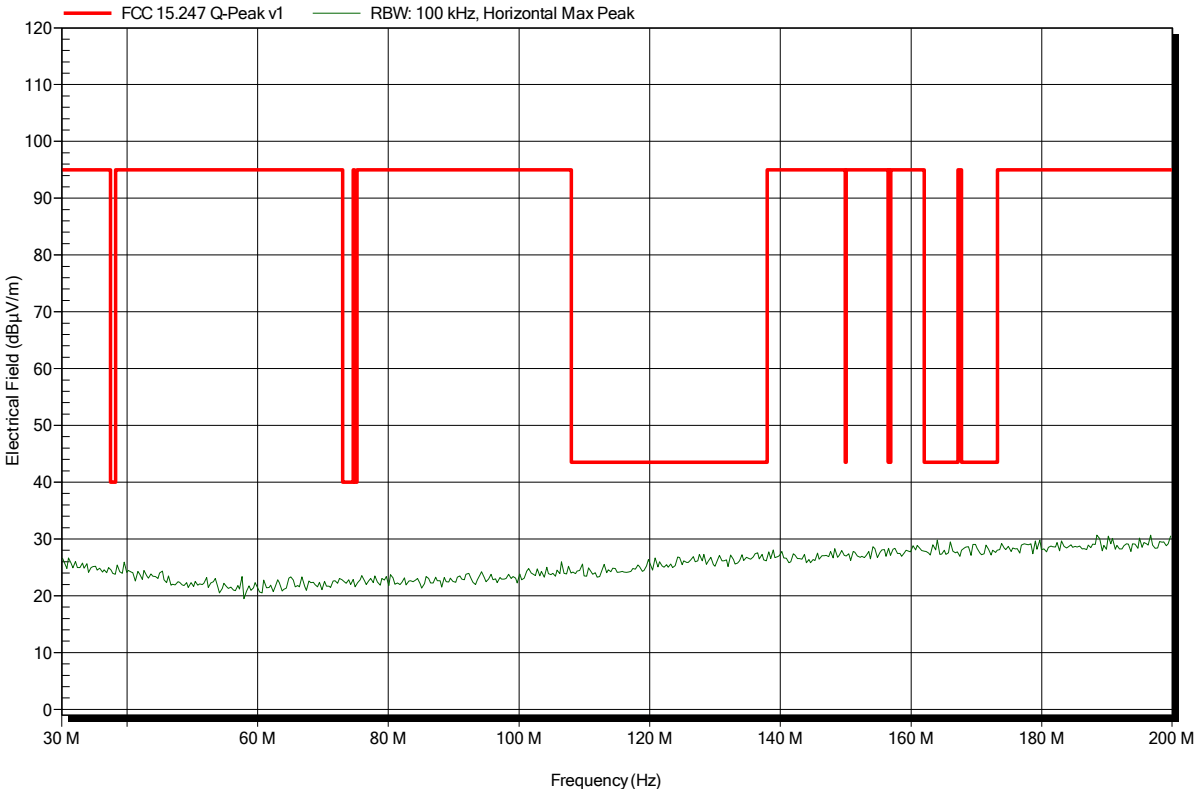


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 17

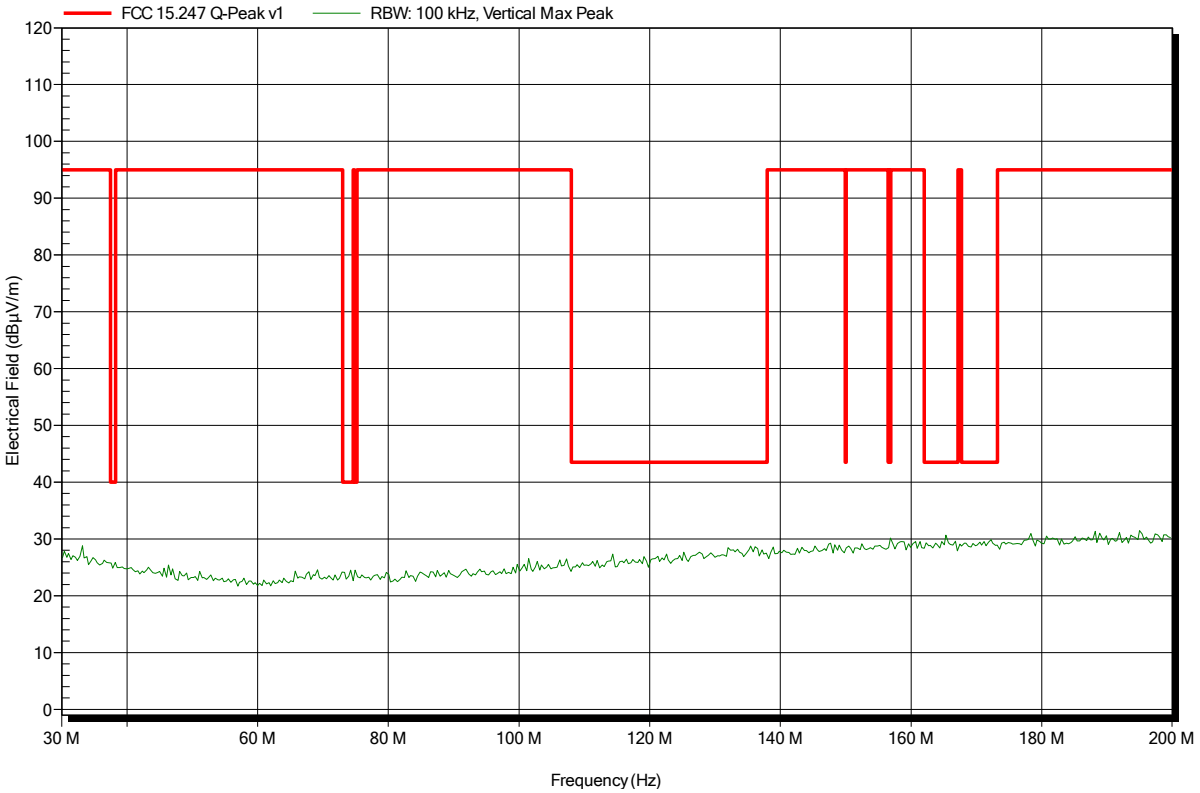


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 6

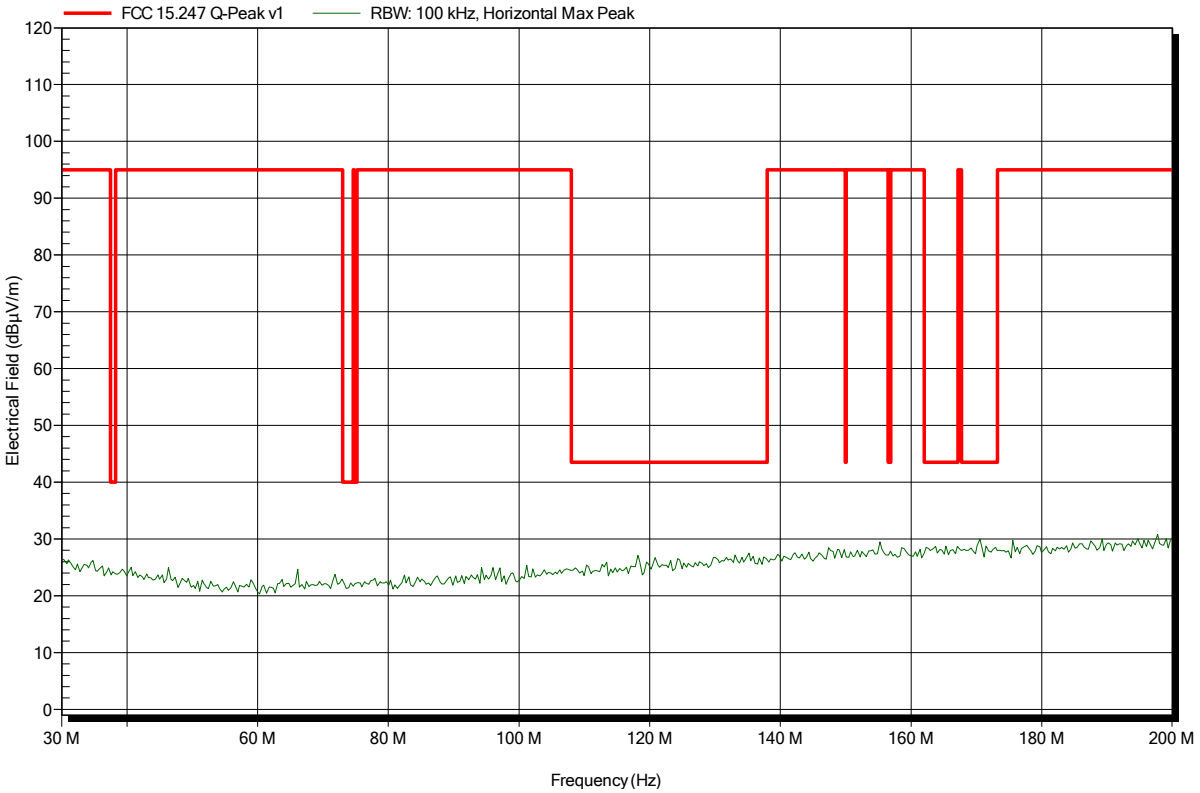


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 18

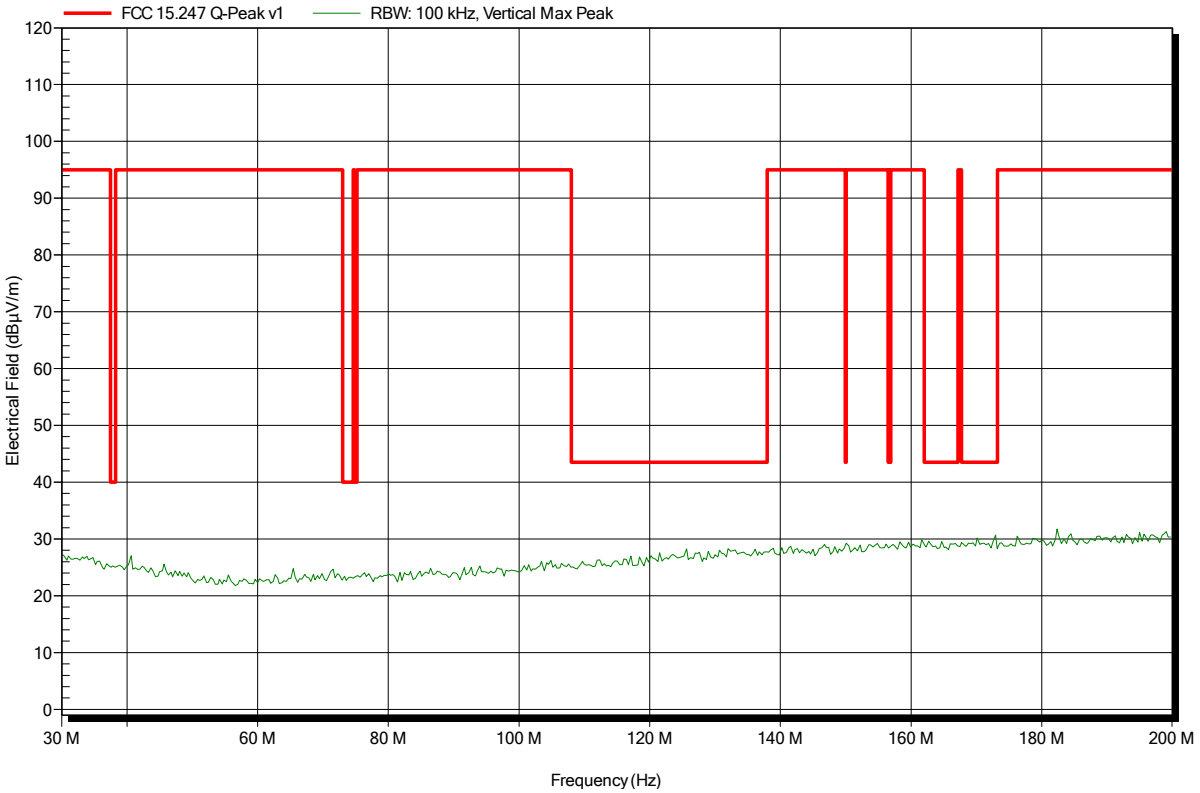


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 7

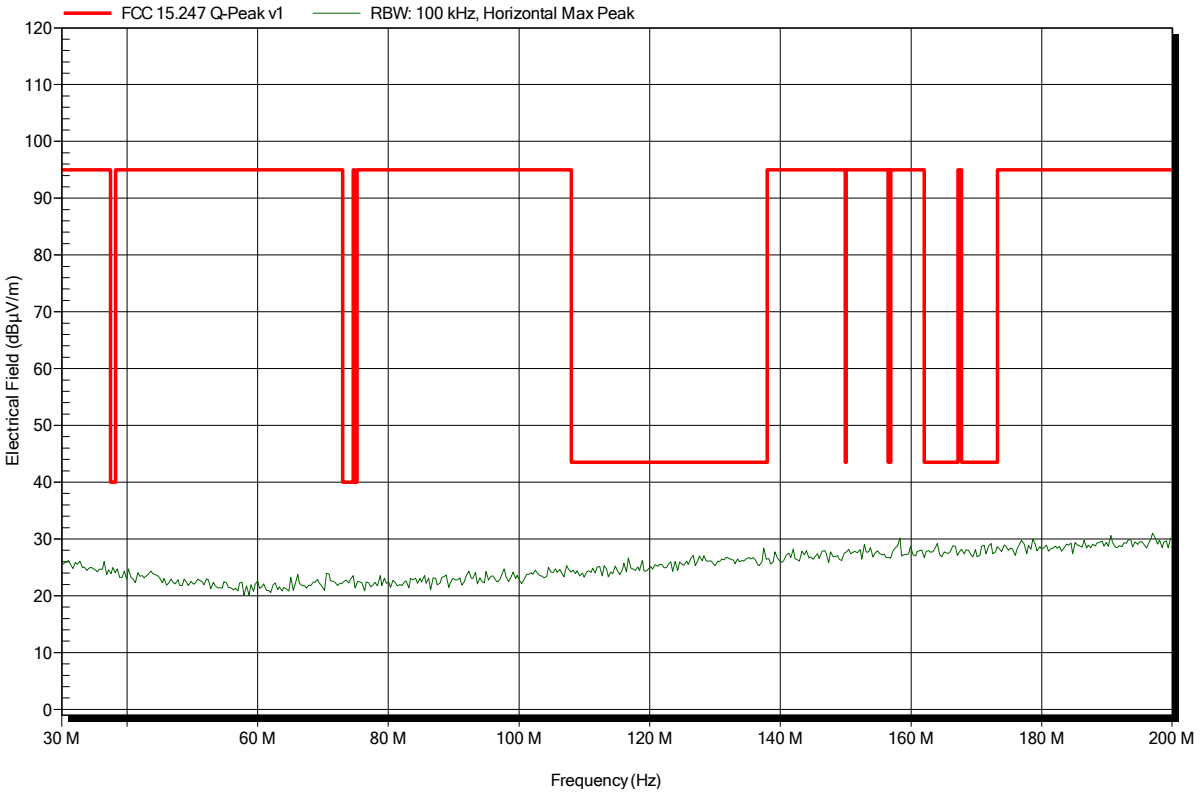


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 19

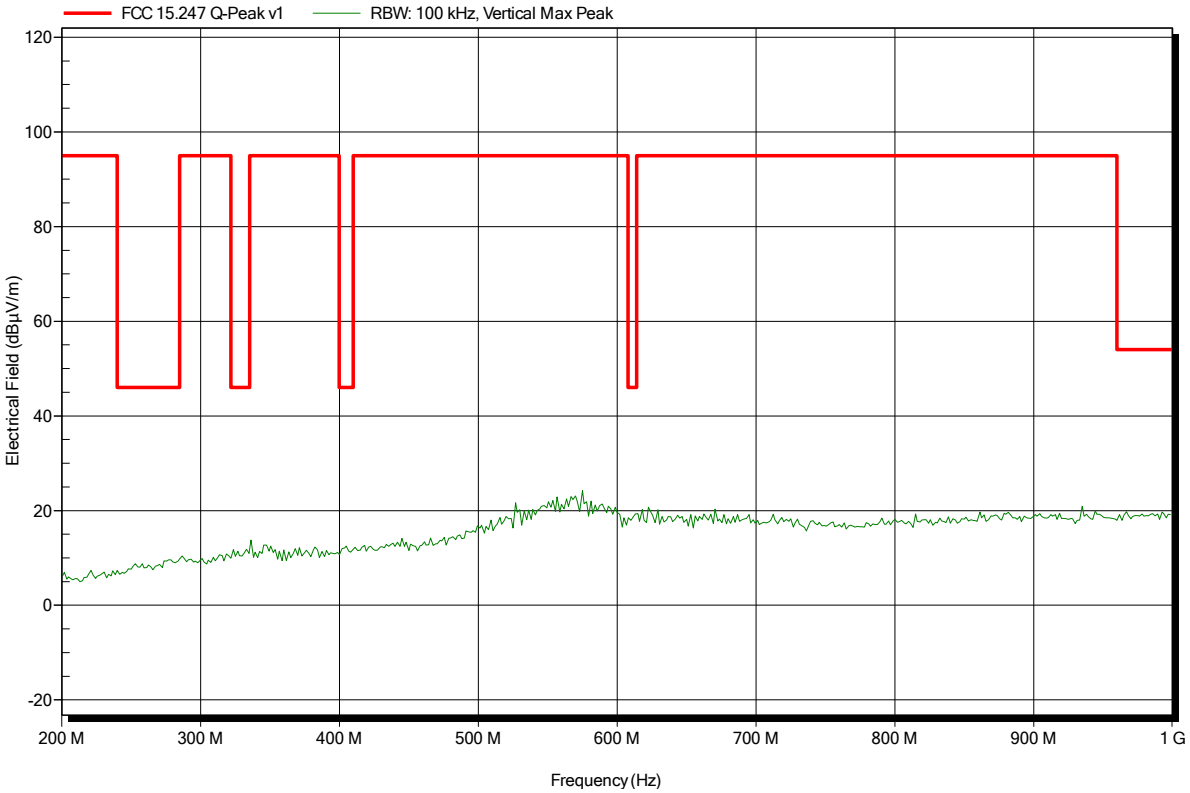


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 35

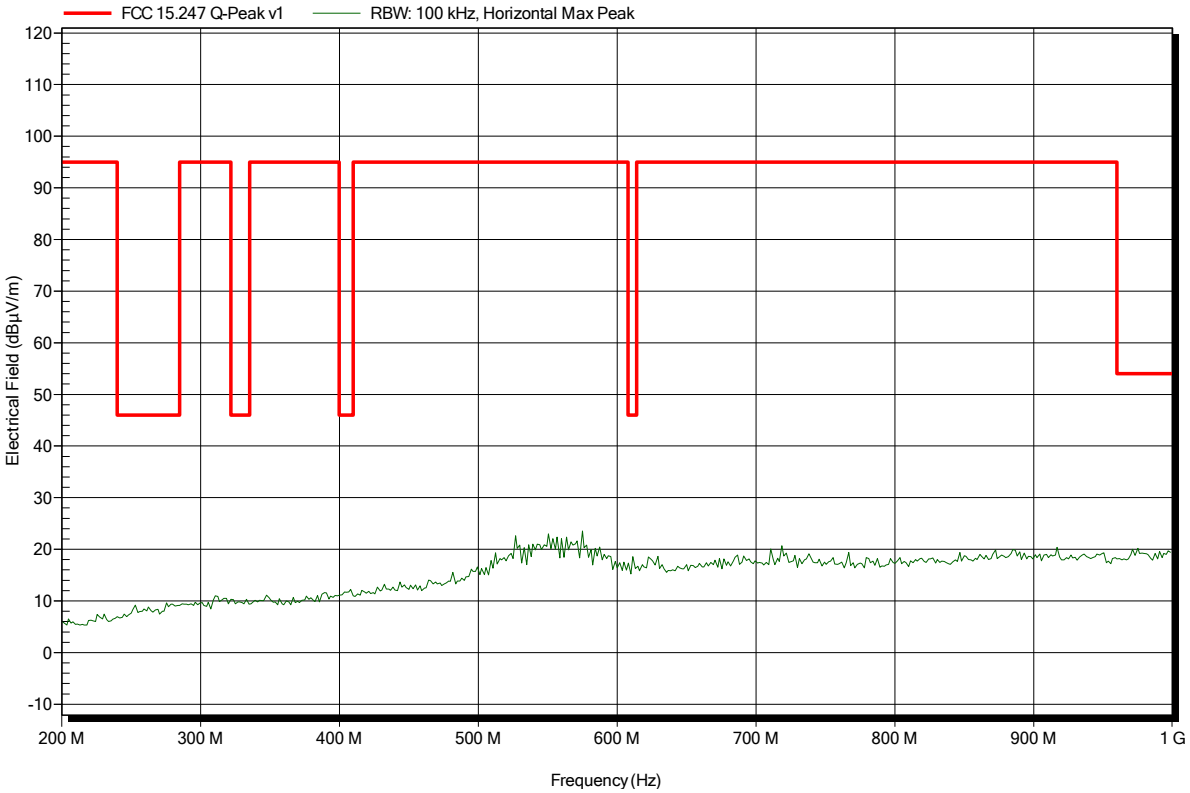


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 38

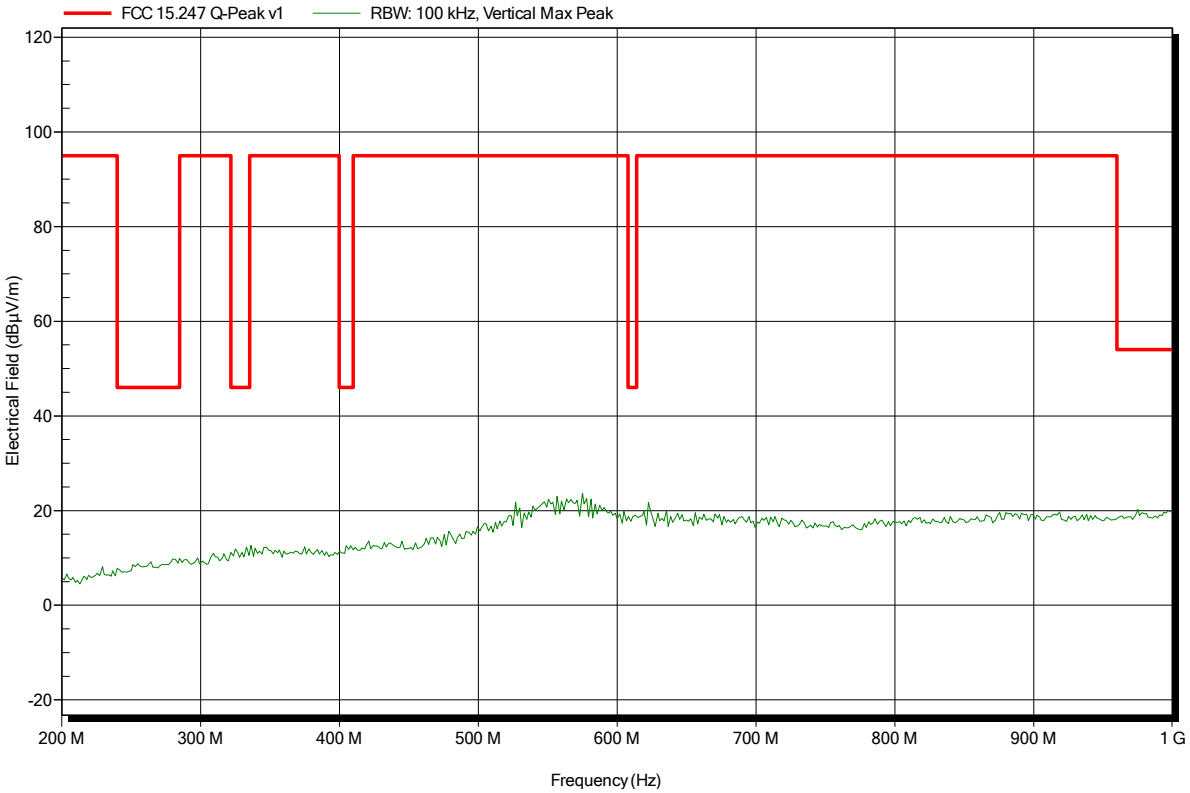


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 36

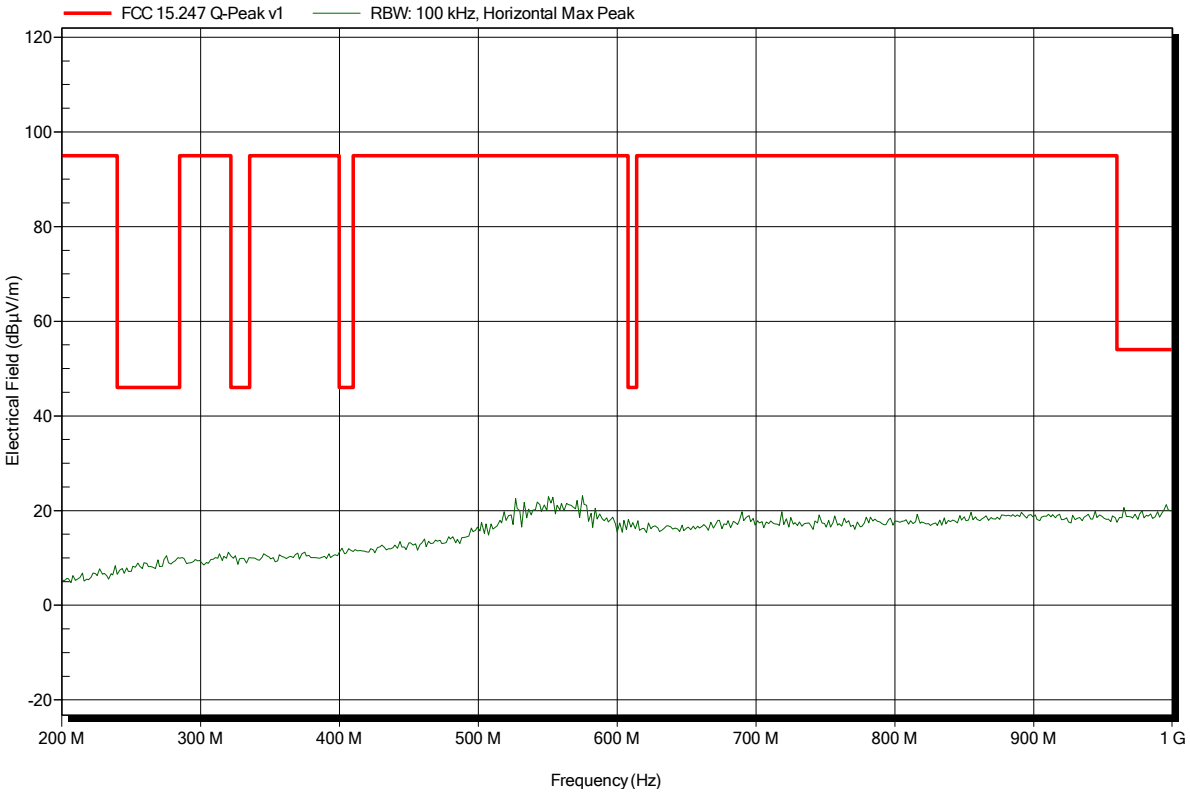


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 39

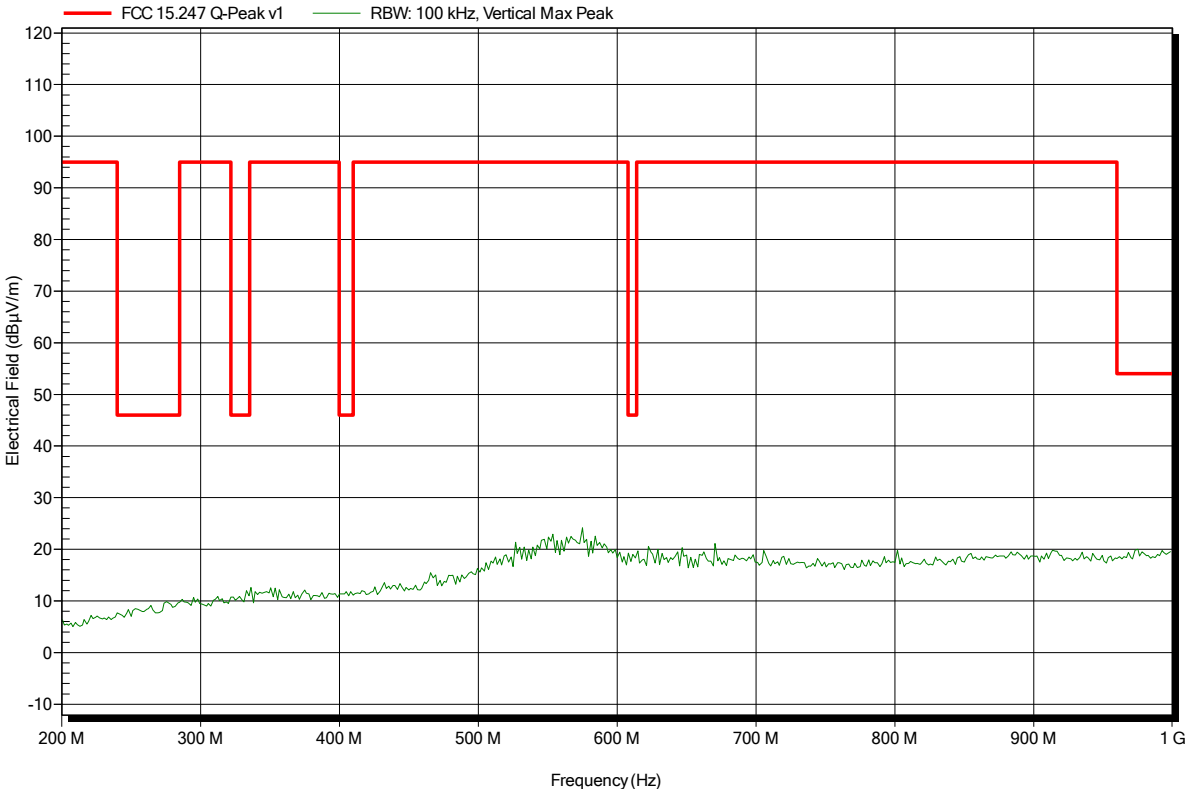


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 37

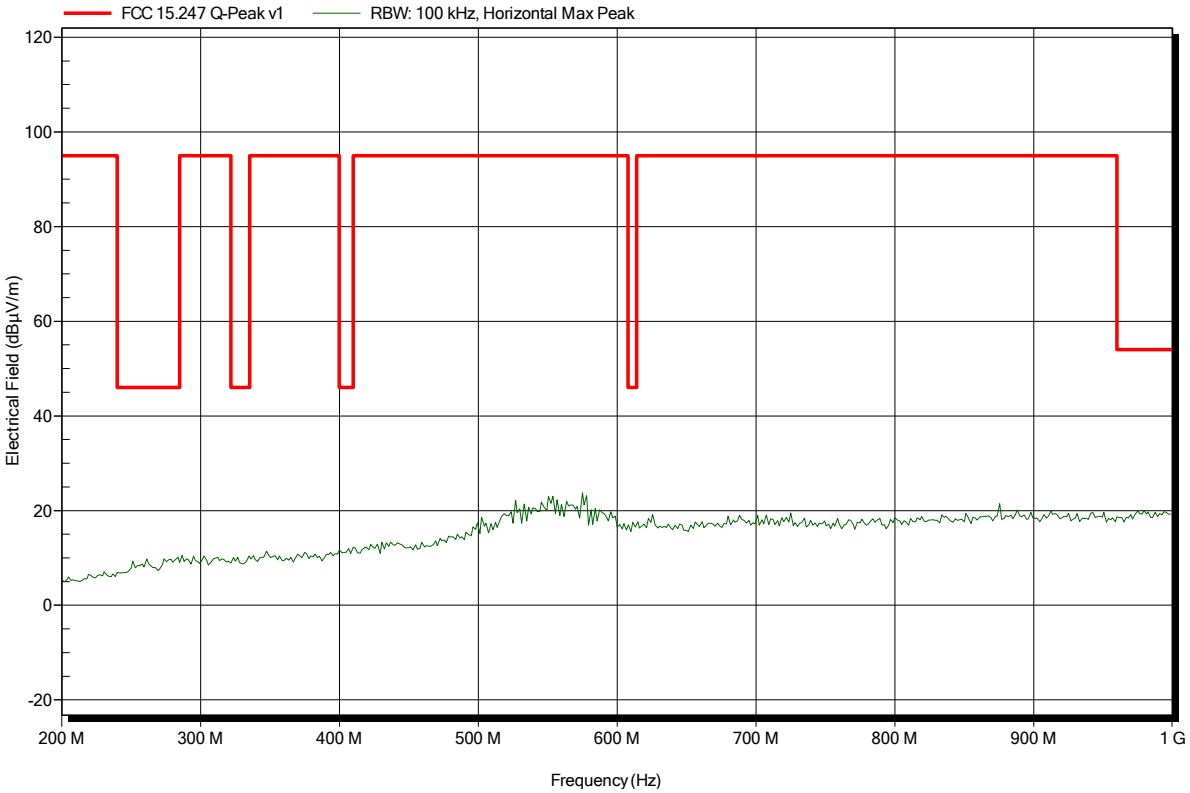


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 40

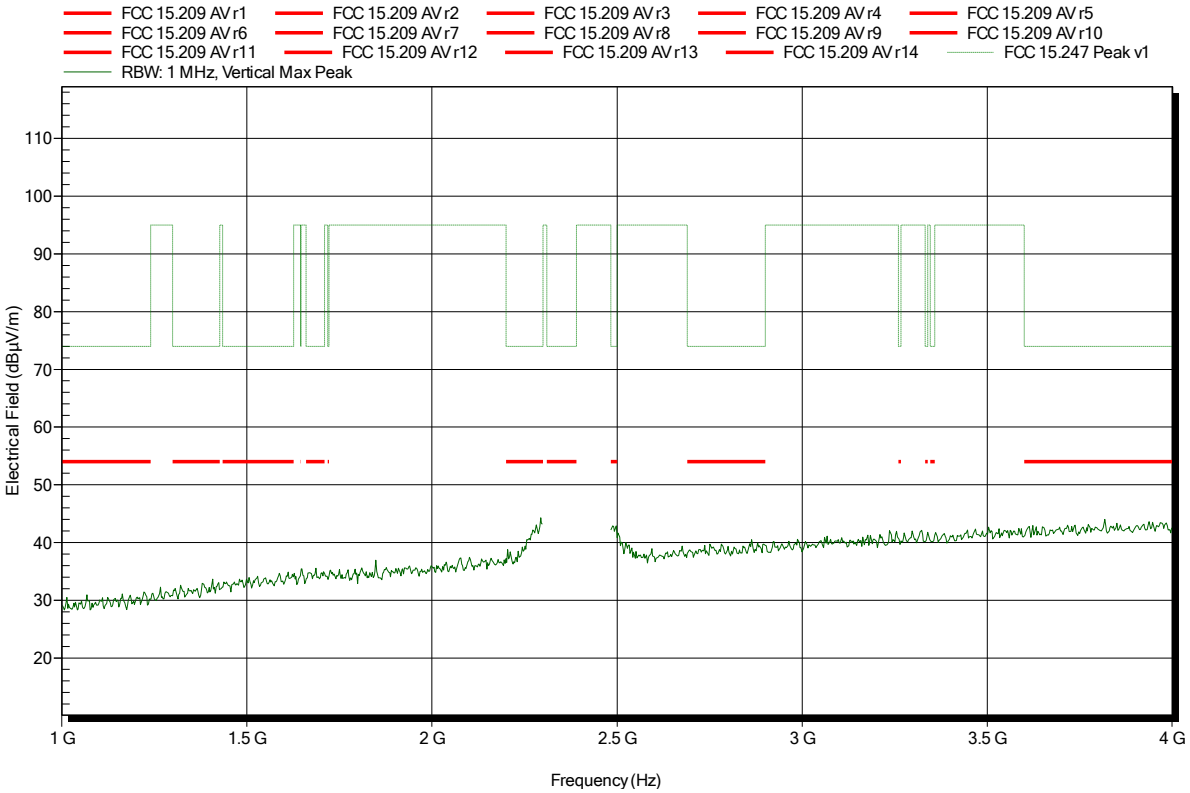


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 52

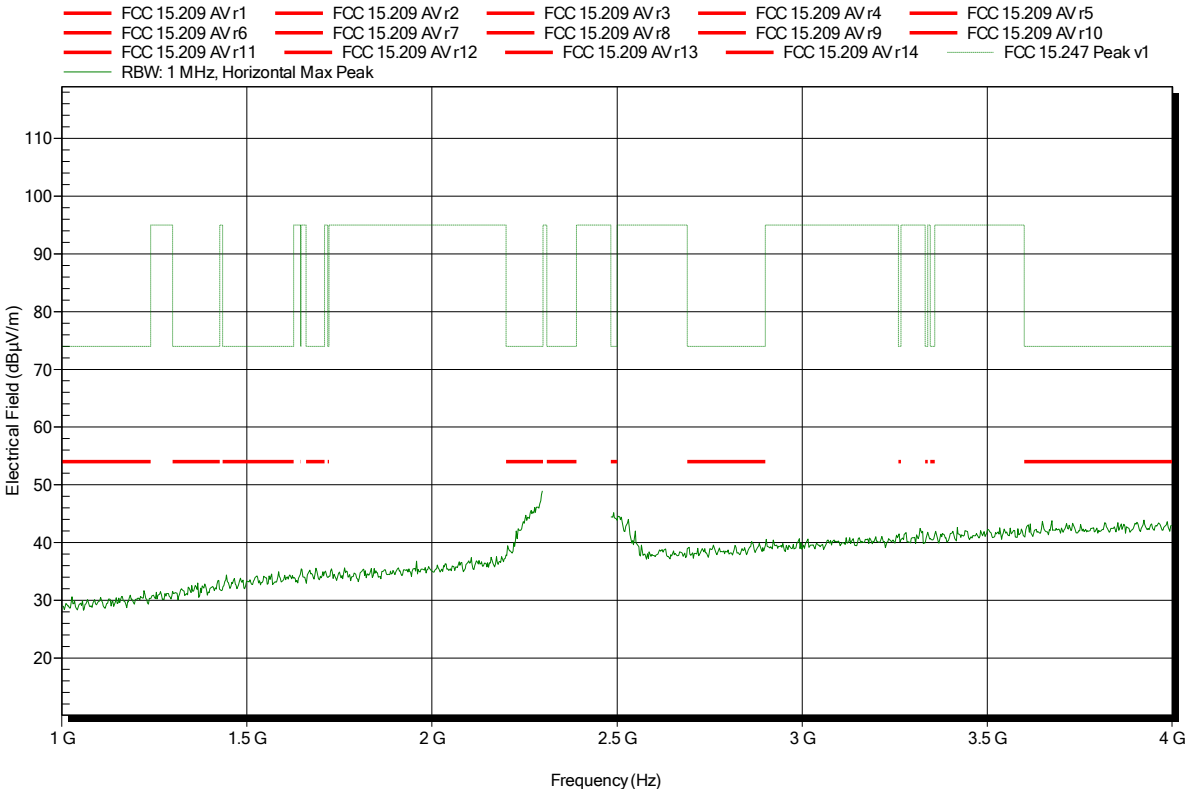


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 53

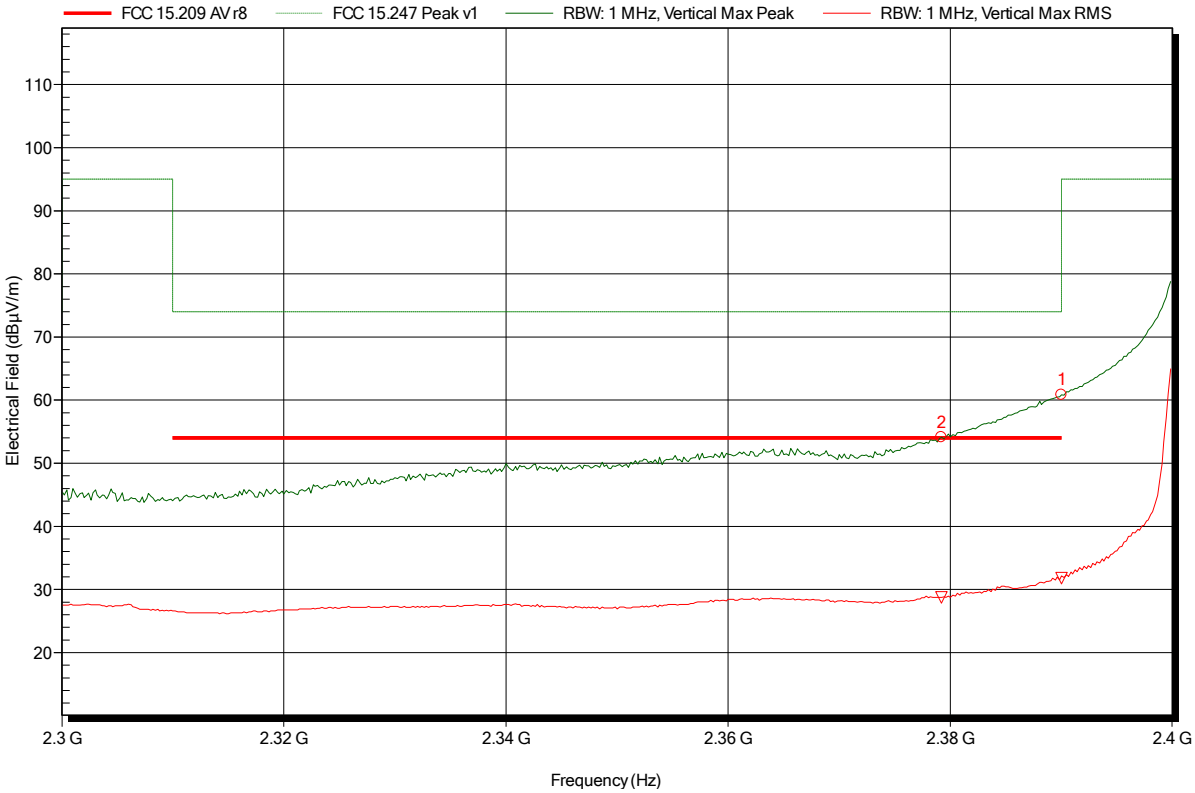


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical; lower bandedge |

Index 55




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 2.379 GHz | 54.12 dBµV/m | 74 dBµV/m | -19.88 dB | Pass |
| 2.39 GHz | 60.85 dBµV/m | 74 dBµV/m | -13.15 dB | Pass |

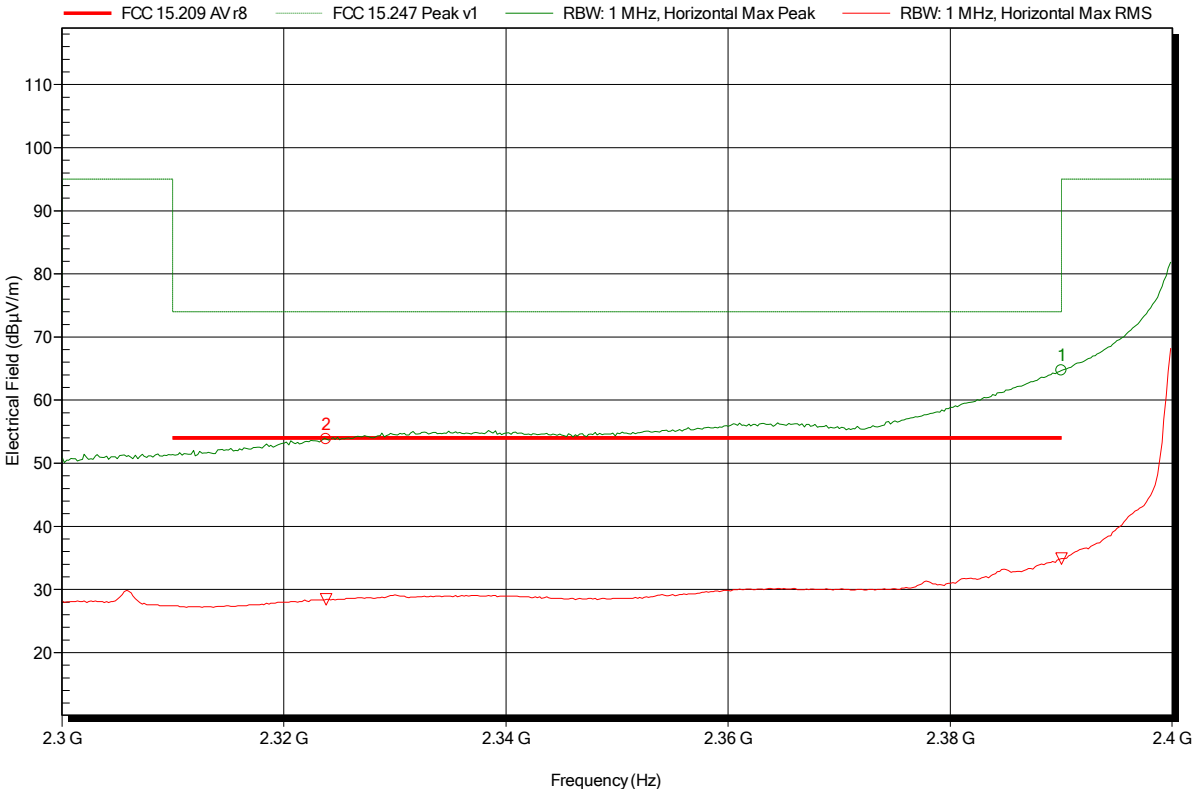
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 2.379 GHz | 28.72 dBµV/m | 54 dBµV/m | -25.28 dB | Pass |
| 2.39 GHz | 31.8 dBµV/m | 54 dBµV/m | -22.2 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT verticall; lower bandedge |

Index 54




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 2.324 GHz | 53.84 dBµV/m | 74 dBµV/m | -20.16 dB | Pass |
| 2.39 GHz | 64.72 dBµV/m | 74 dBµV/m | -9.28 dB | Pass |

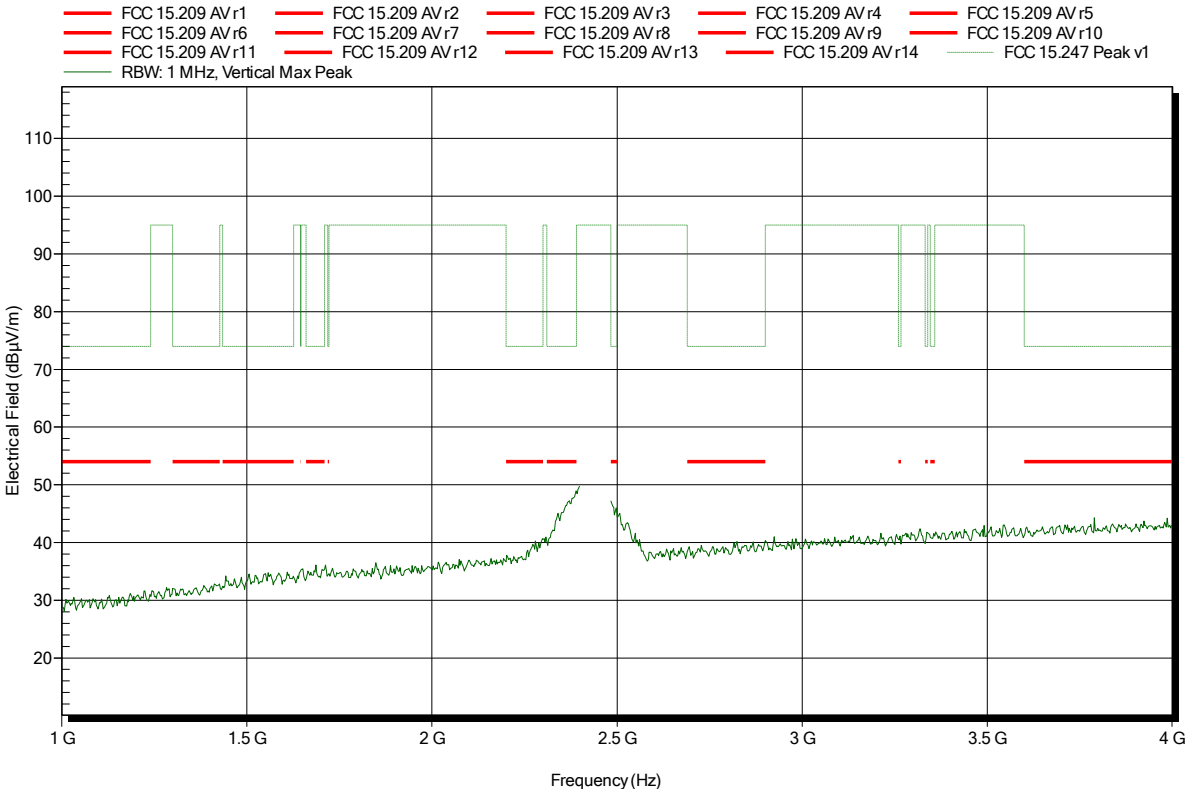
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 2.324 GHz | 28.46 dBµV/m | 54 dBµV/m | -25.54 dB | Pass |
| 2.39 GHz | 34.9 dBµV/m | 54 dBµV/m | -19.1 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 65

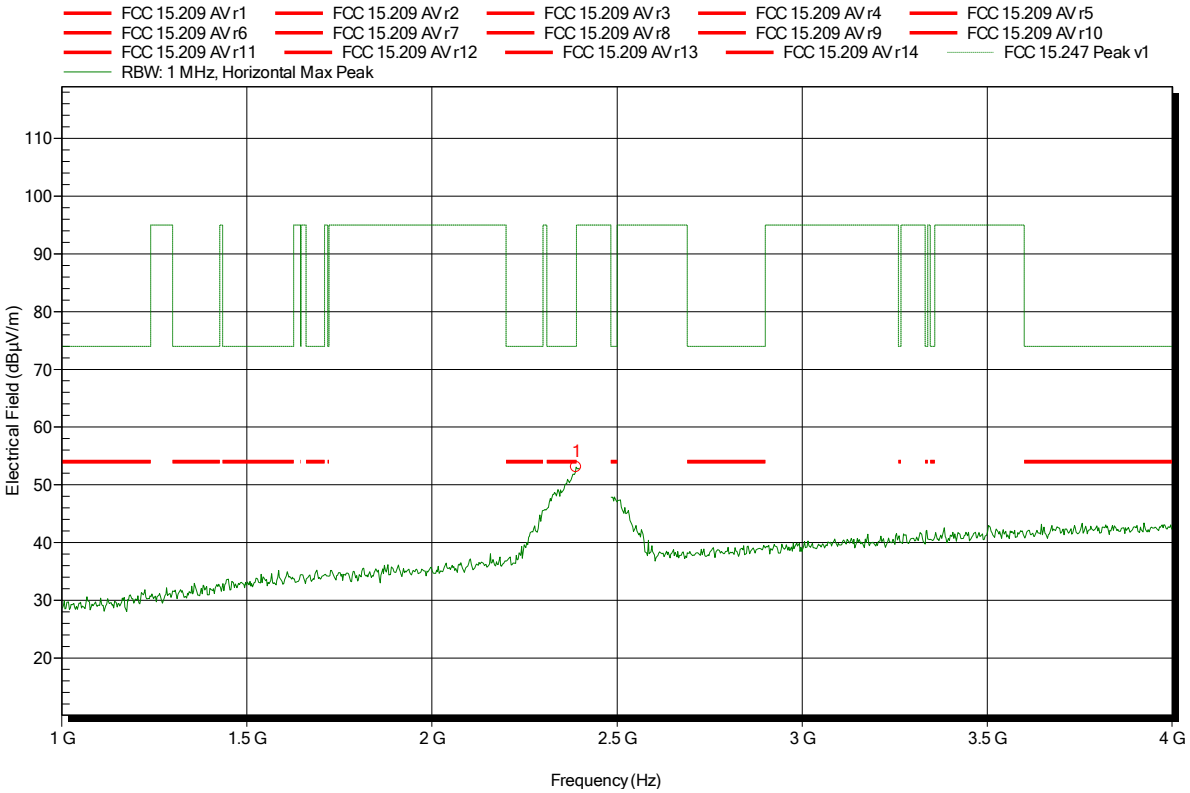


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 69



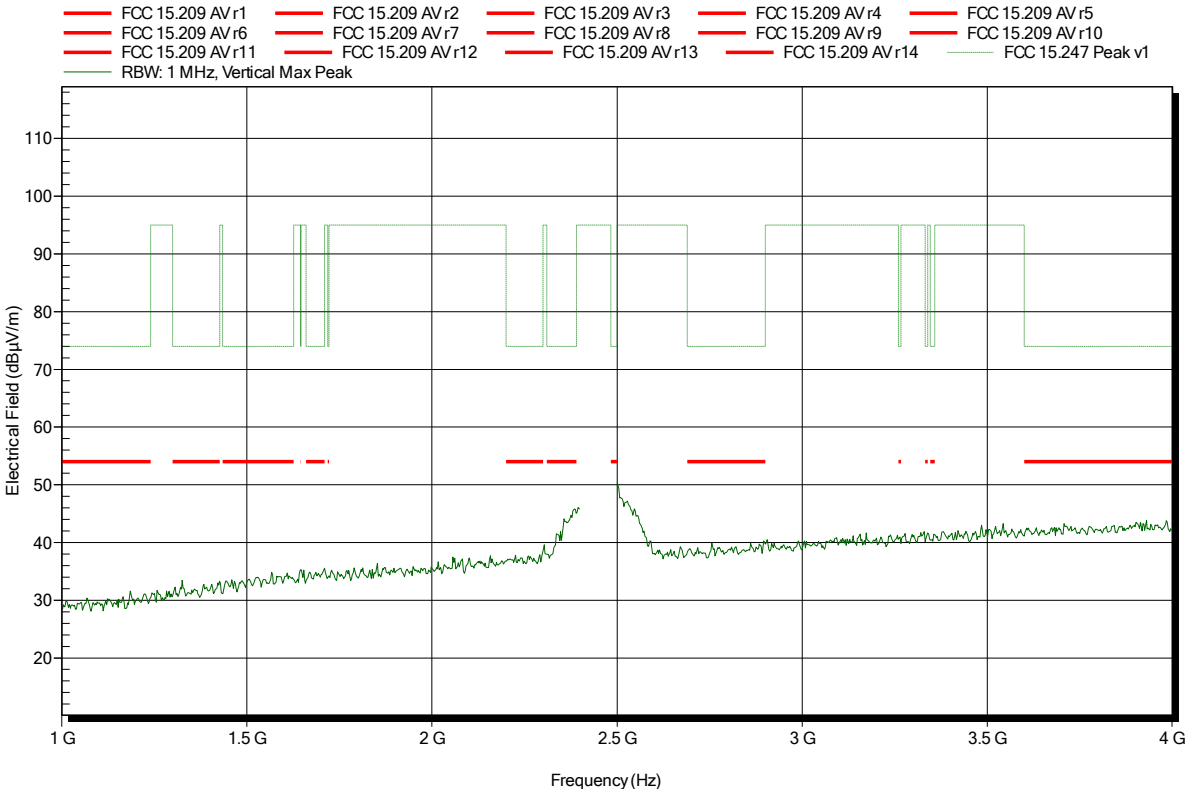

| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 2.39 GHz | 53.05 dBµV/m | 74 dBµV/m | -20.95 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 41

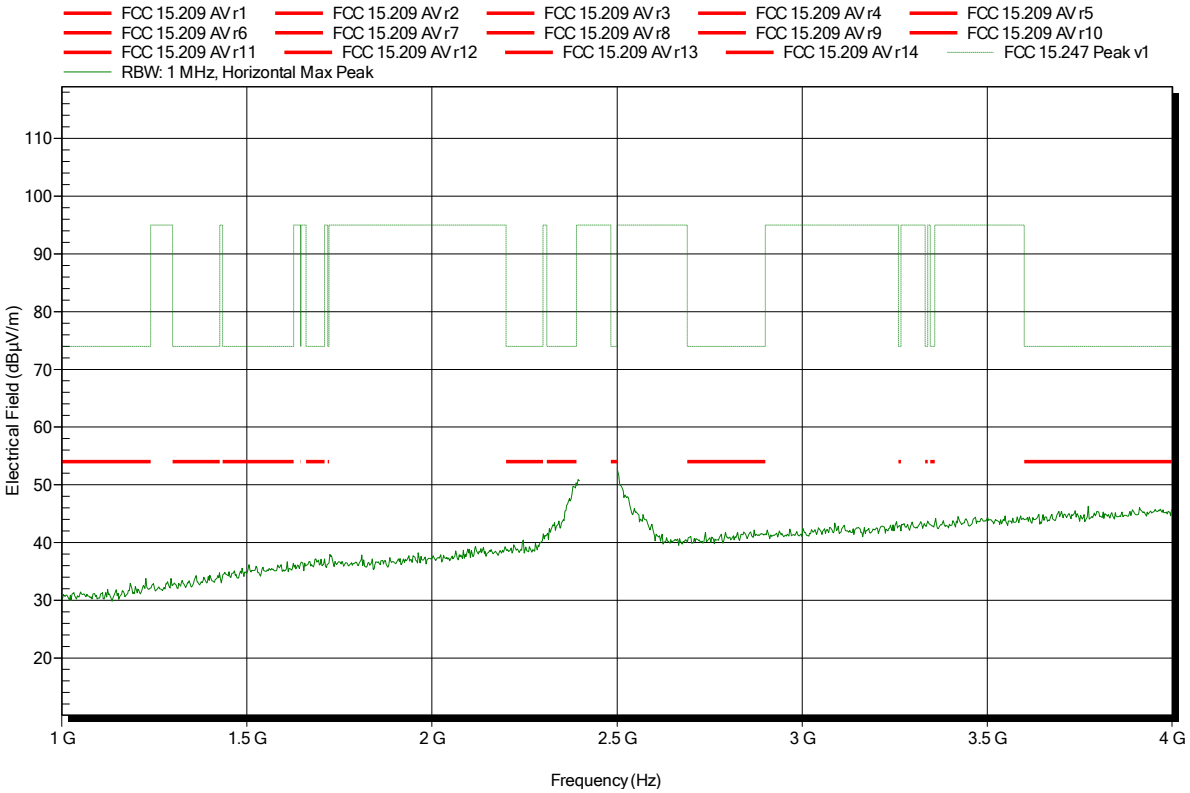


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 42

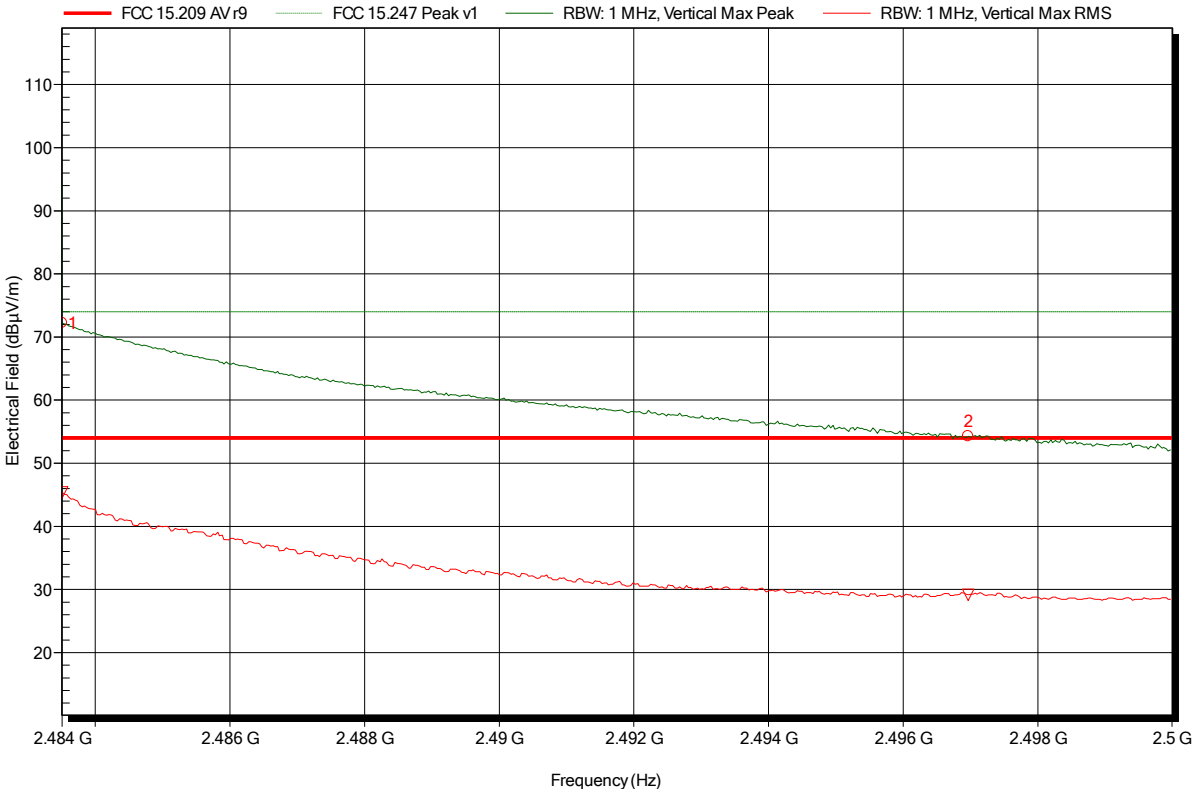


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical; higher bandedge |

Index 56




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 2.484 GHz | 72.25 dBµV/m | 74 dBµV/m | -1.75 dB | Pass |
| 2.497 GHz | 54.28 dBµV/m | 74 dBµV/m | -19.72 dB | Pass |

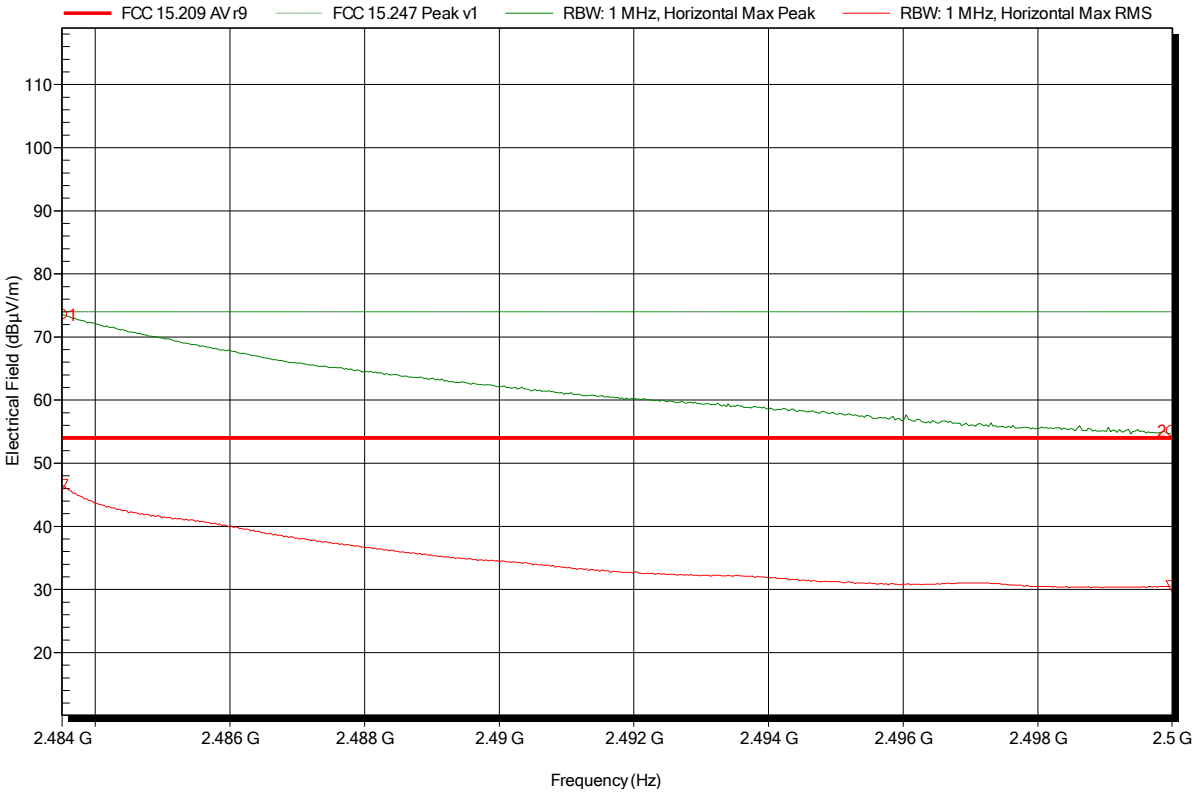
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 2.484 GHz | 45.37 dBµV/m | 54 dBµV/m | -8.63 dB | Pass |
| 2.497 GHz | 29.14 dBµV/m | 54 dBµV/m | -24.86 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical; higher bandedge |

Index 57




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 2.484 GHz | 73.57 dBµV/m | 74 dBµV/m | -0.43 dB | Pass |
| 2.5 GHz | 55.09 dBµV/m | 74 dBµV/m | -18.91 dB | Pass |

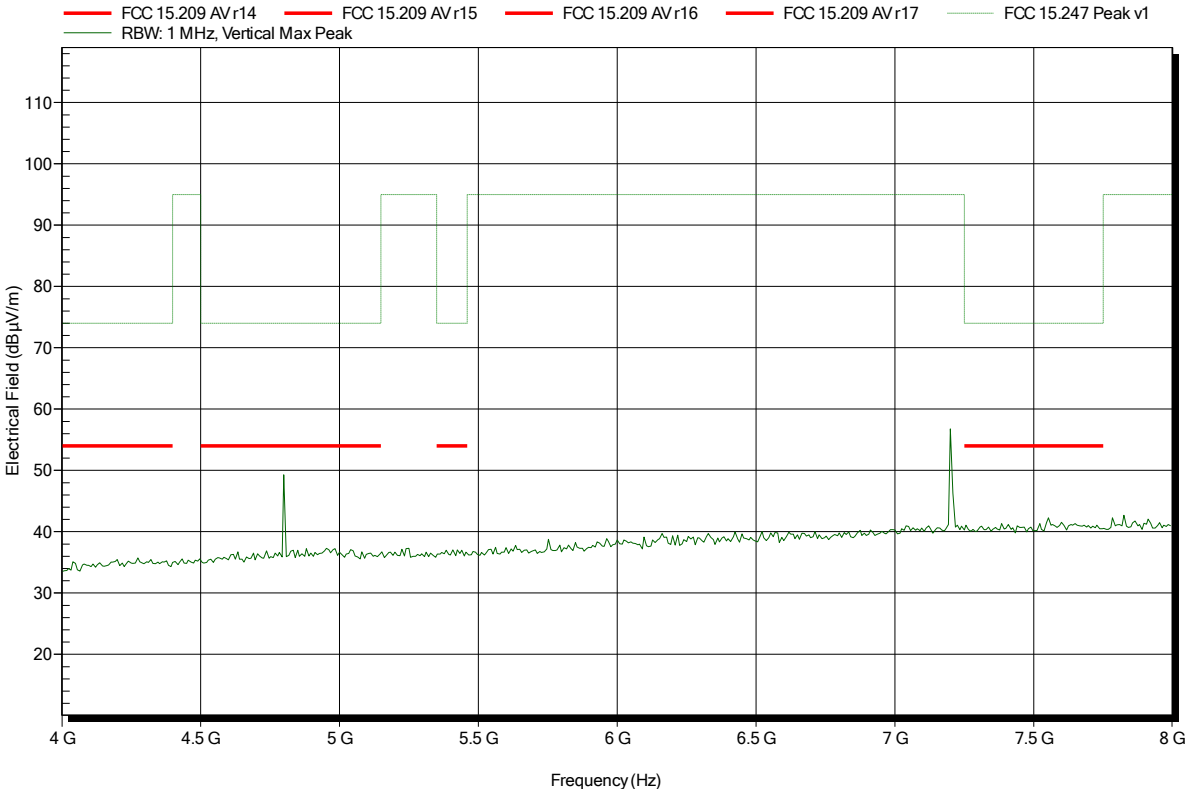
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 2.484 GHz | 46.53 dBµV/m | 54 dBµV/m | -7.47 dB | Pass |
| 2.5 GHz | 30.46 dBµV/m | 54 dBµV/m | -23.54 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 58

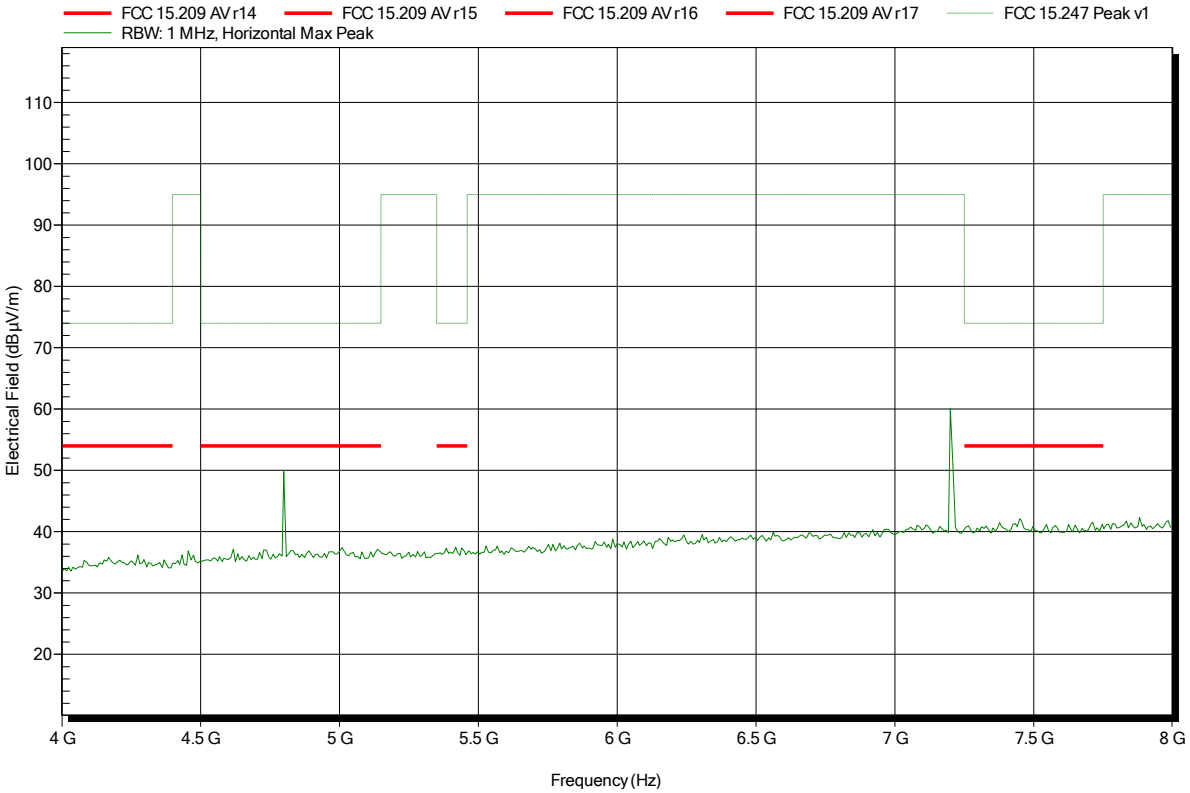


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 62

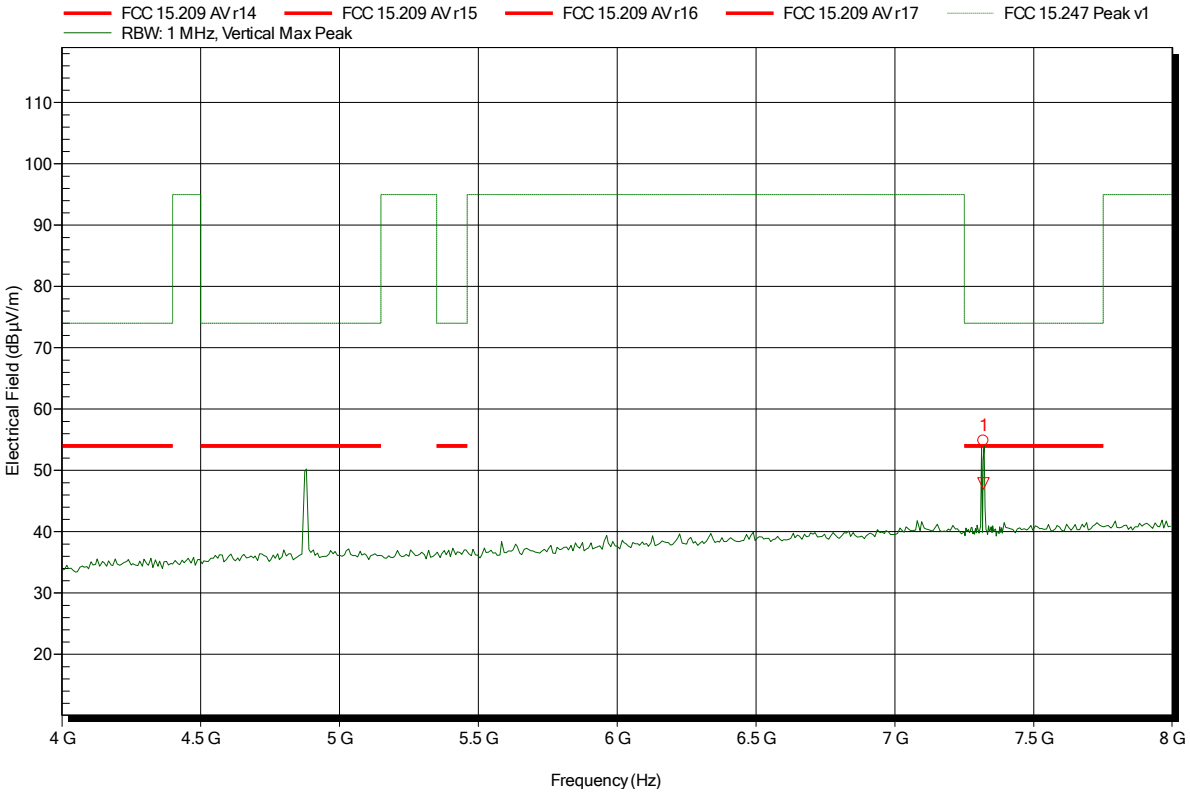


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 76




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 7.319 GHz | 54.86 dBµV/m | 74 dBµV/m | -19.14 dB | Pass |

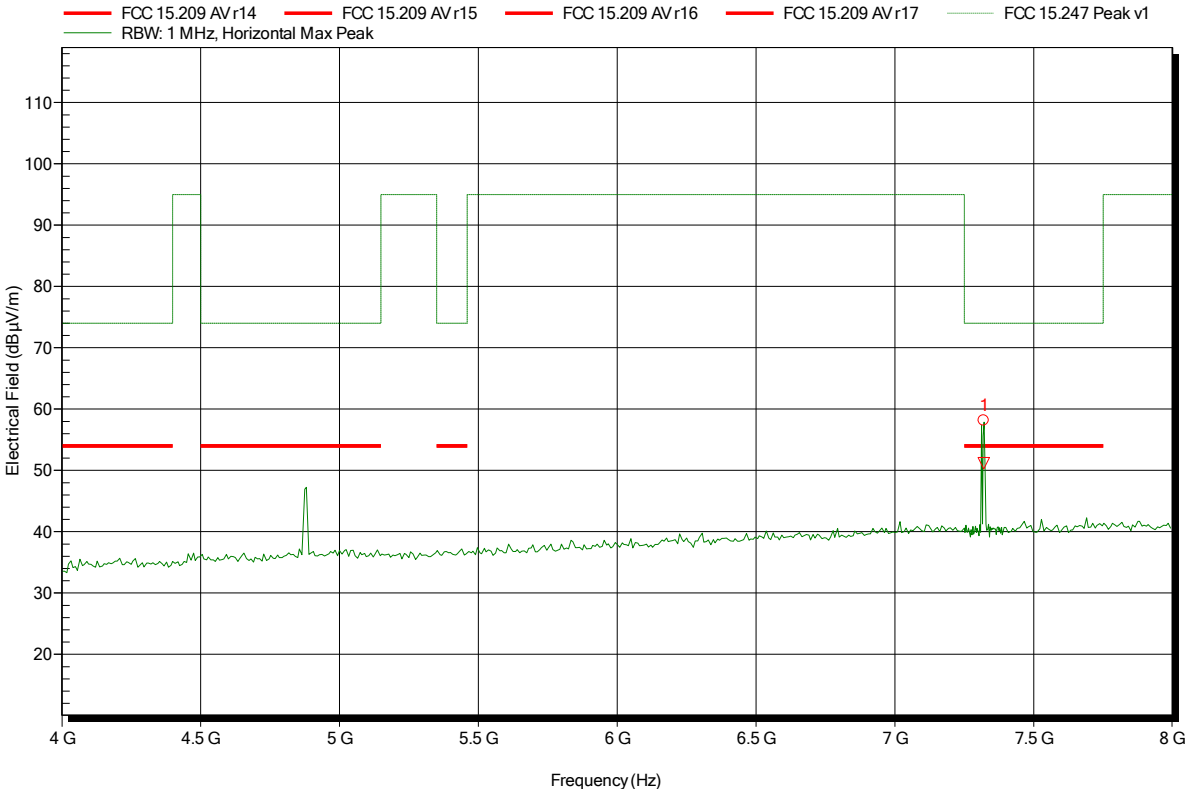
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 7.319 GHz | 47.85 dBµV/m | 54 dBµV/m | -6.15 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 75




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 7.321 GHz | 58.16 dBµV/m | 74 dBµV/m | -15.84 dB | Pass |

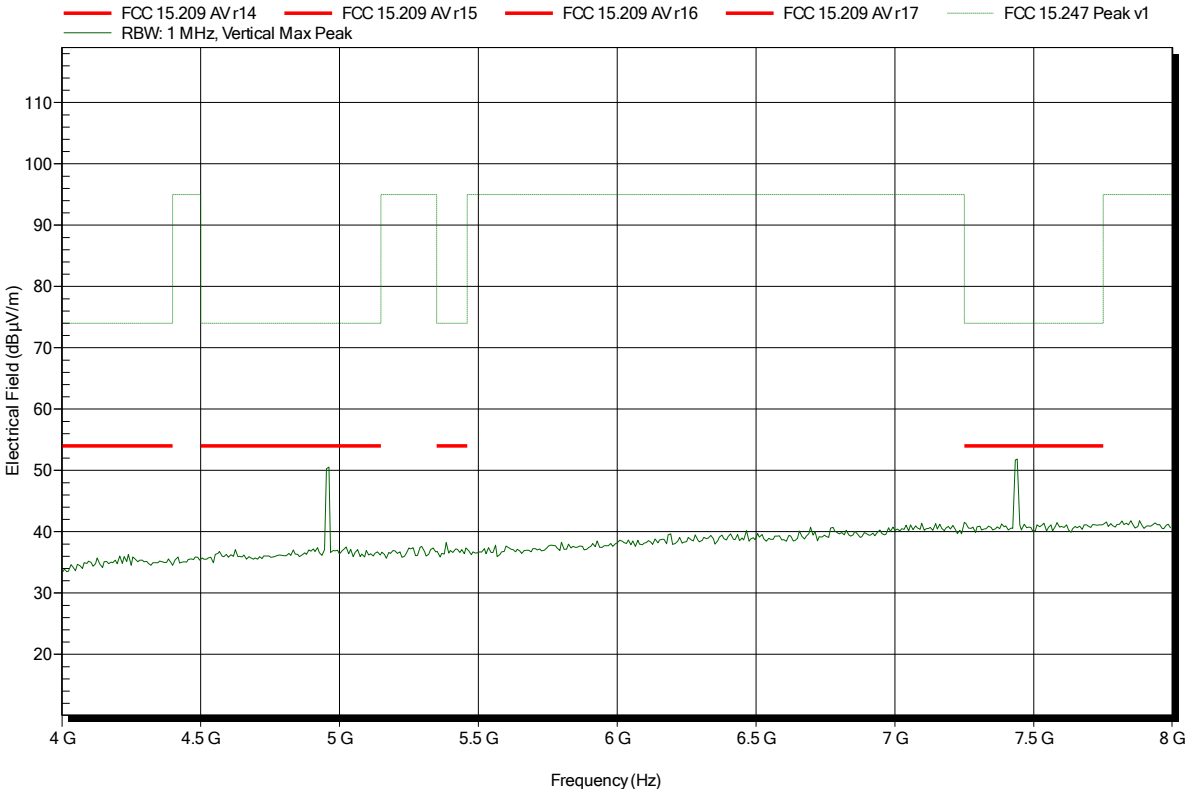
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 7.321 GHz | 51.17 dBµV/m | 54 dBµV/m | -2.83 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 45

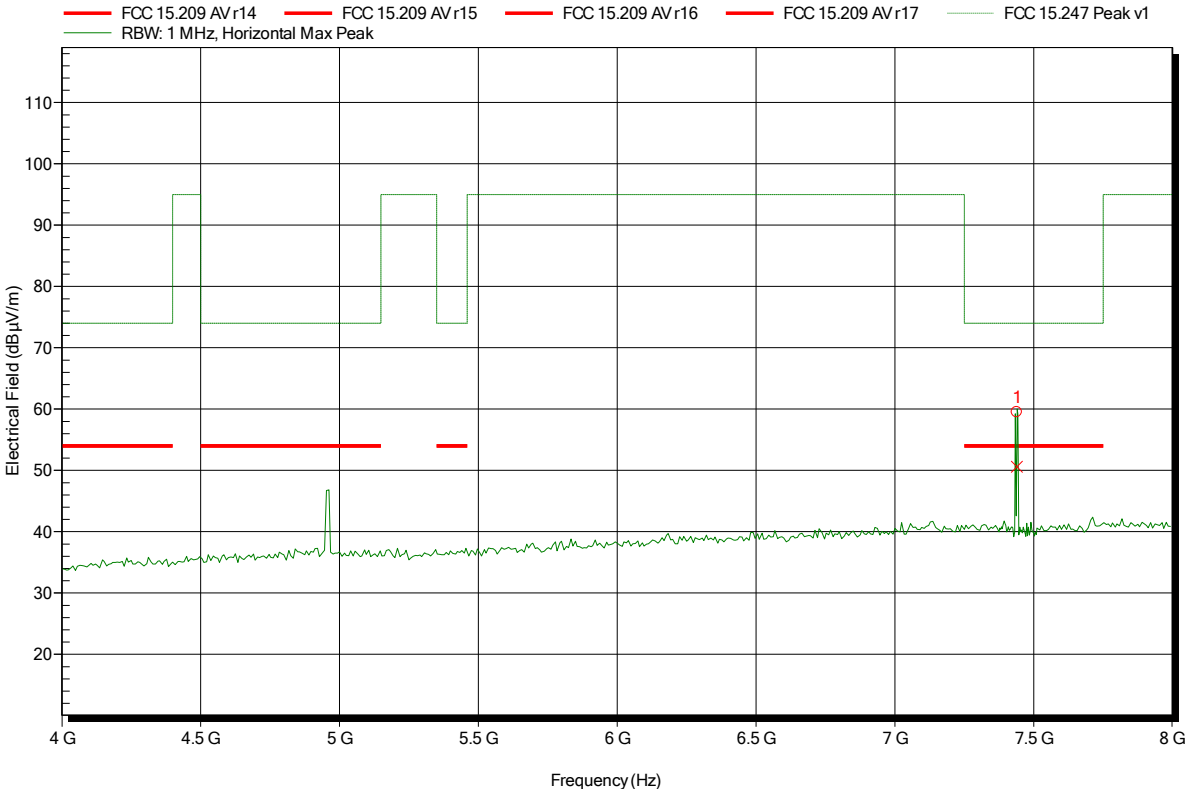


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 48




| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 7.439 GHz | 59.48 dBµV/m | 74 dBµV/m | -14.52 dB | Pass |

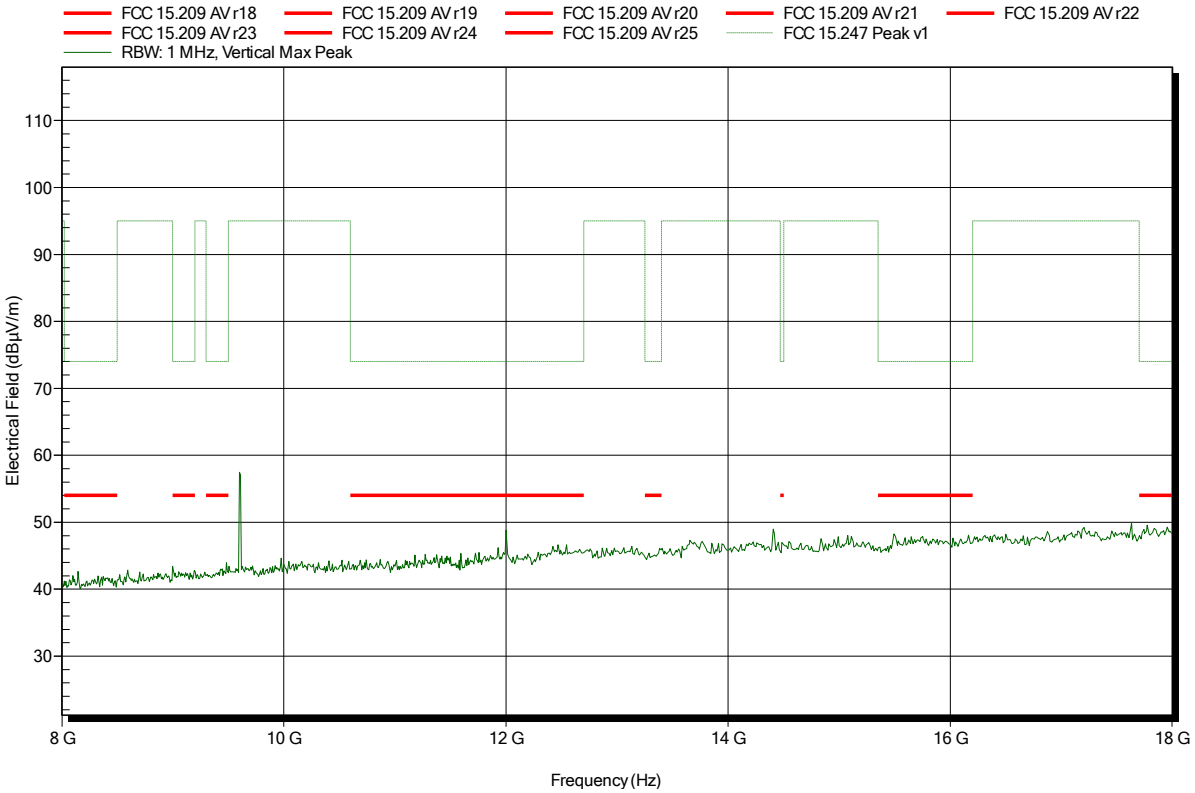
| Frequency | RMS | RMS Limit | RMS Difference | RMS Status |
|---|---|---|---|---|
| 7.439 GHz | 50.62 dBµV/m | 54 dBµV/m | -3.38 dB | Pass |

**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 60

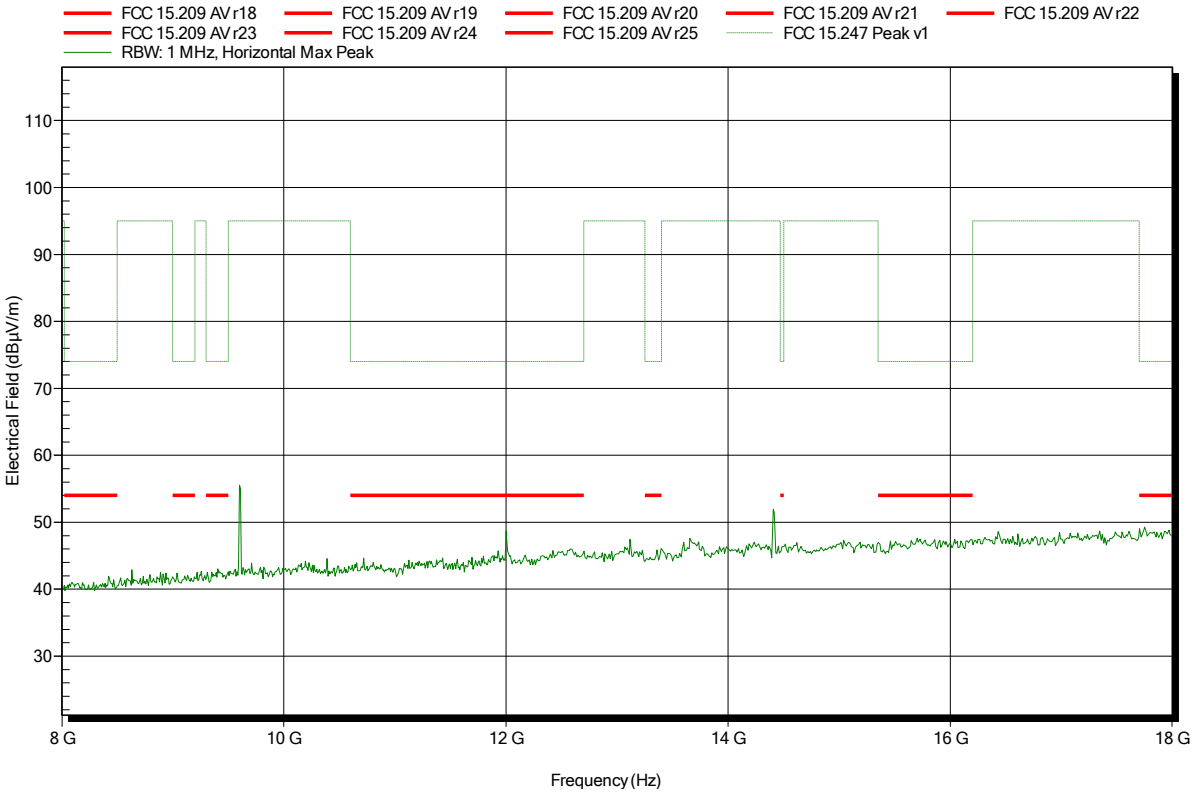


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 63

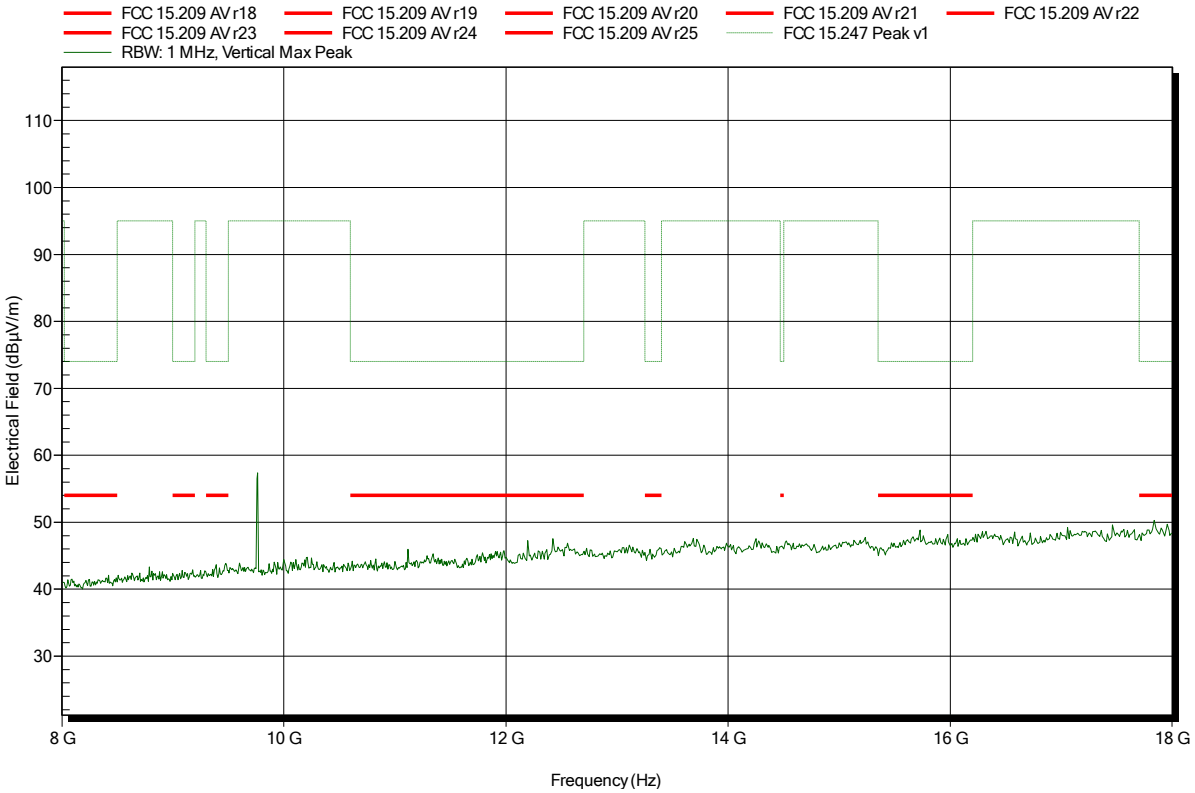


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 77

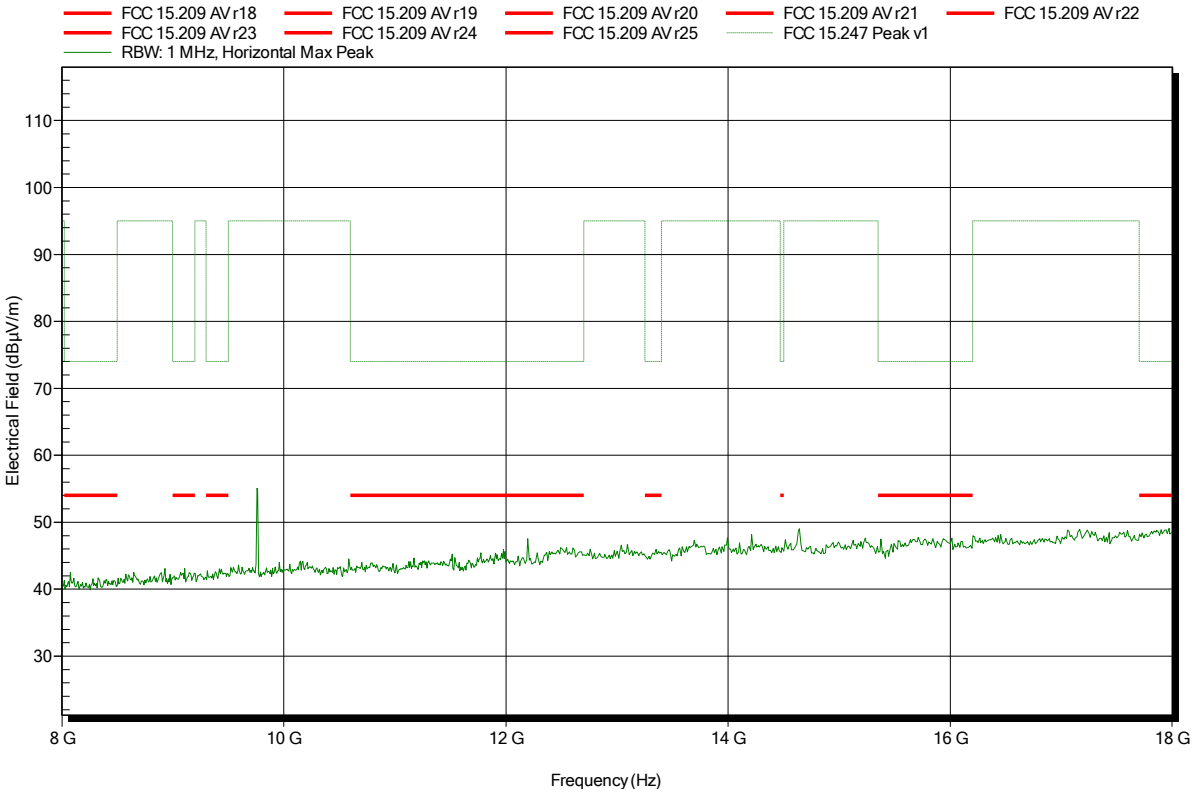


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 79

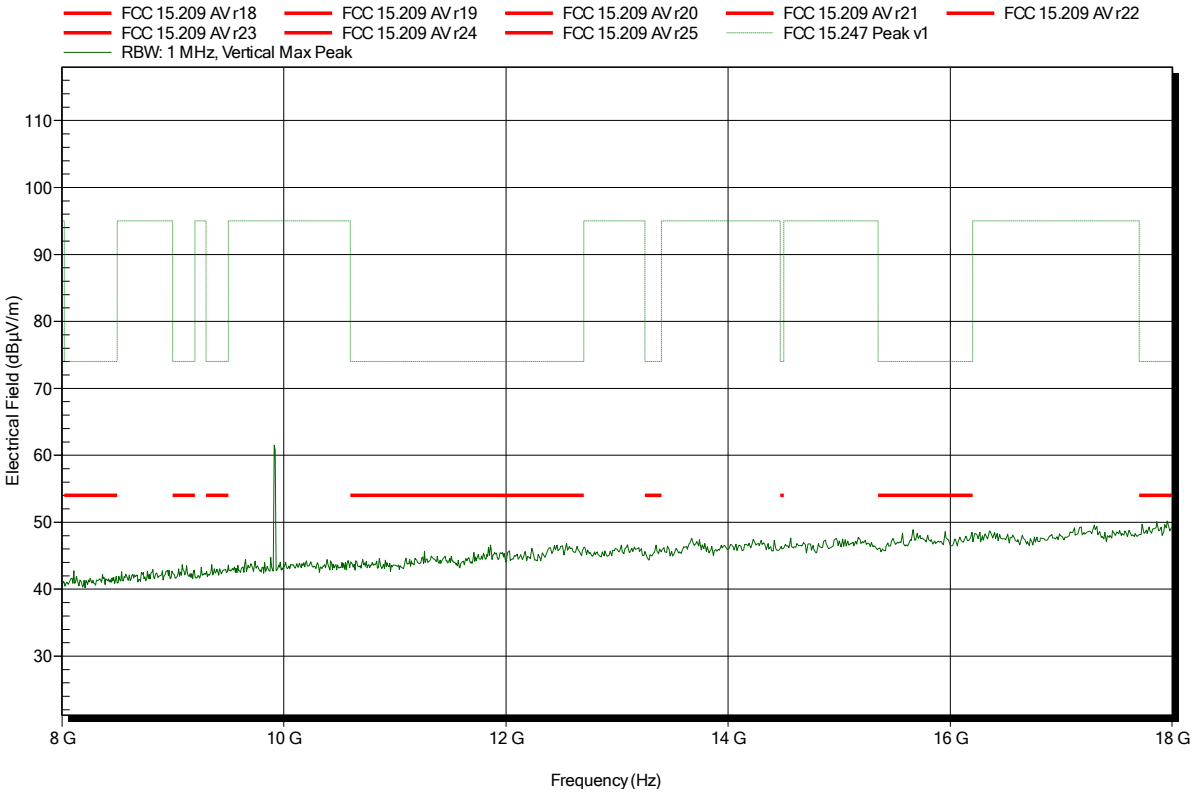


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 46

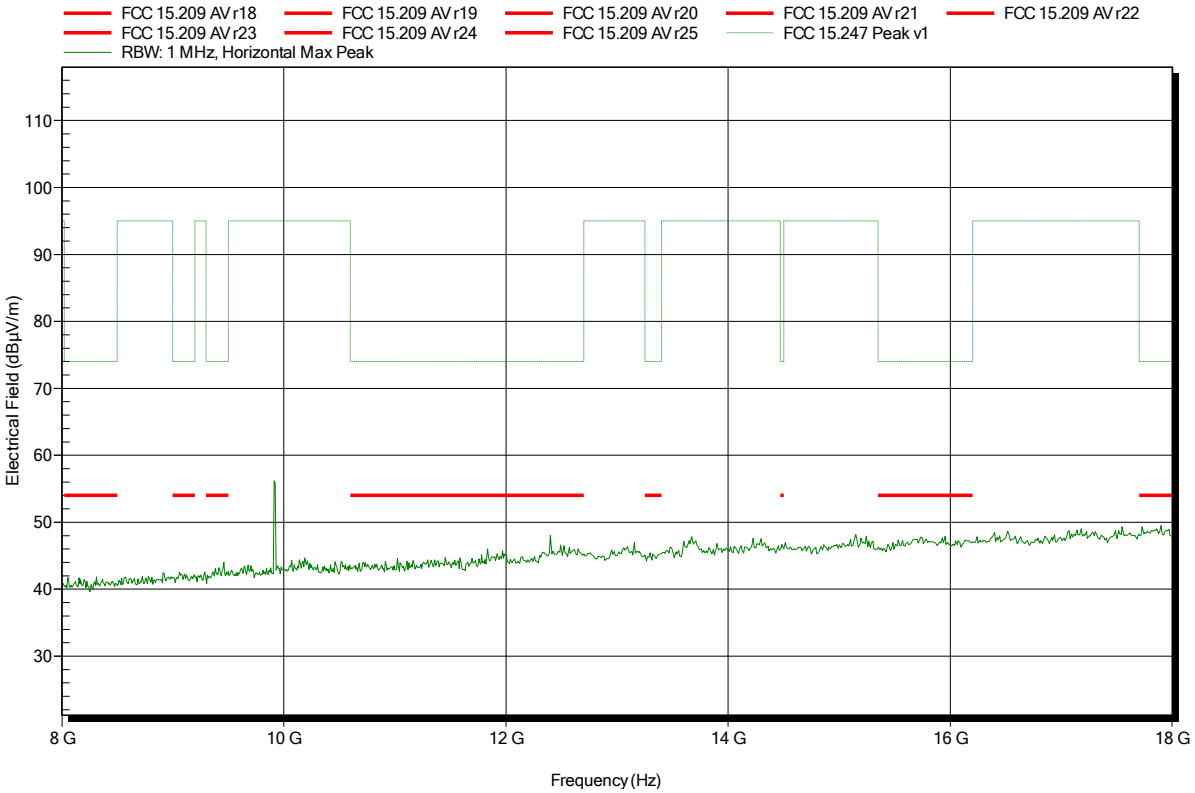


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 49

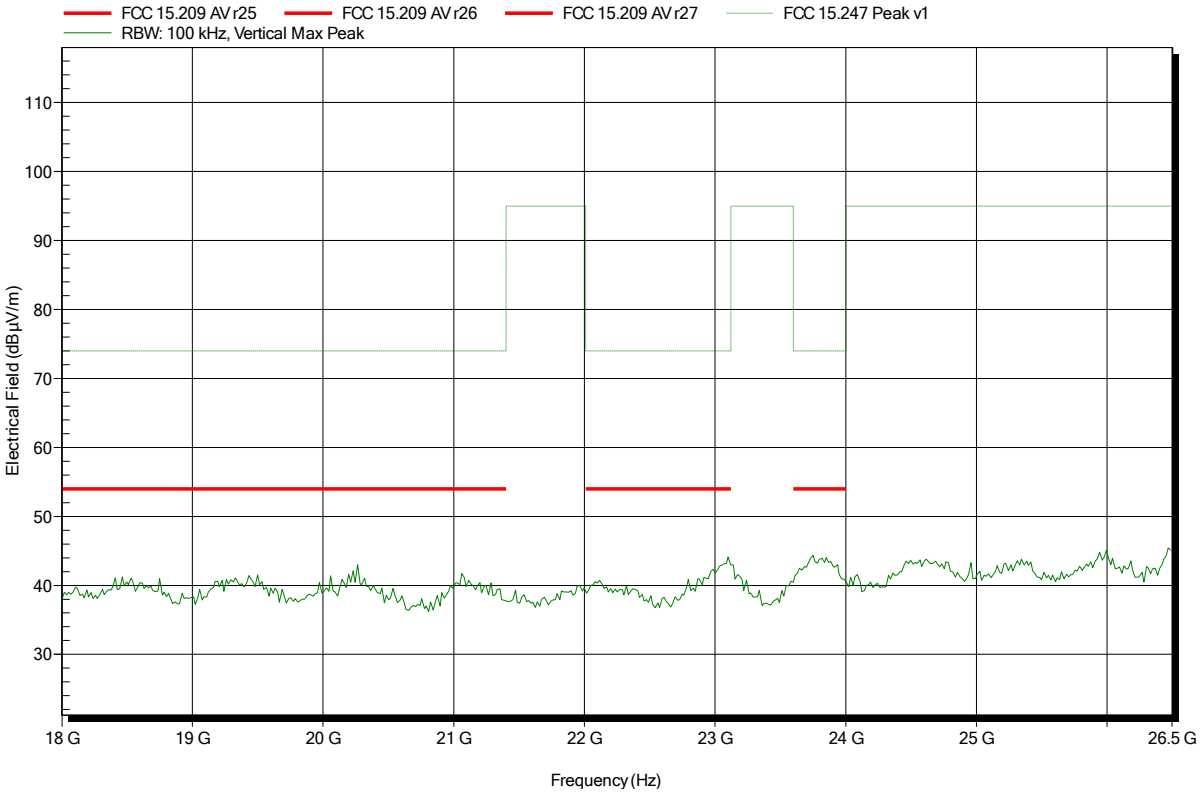


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 61

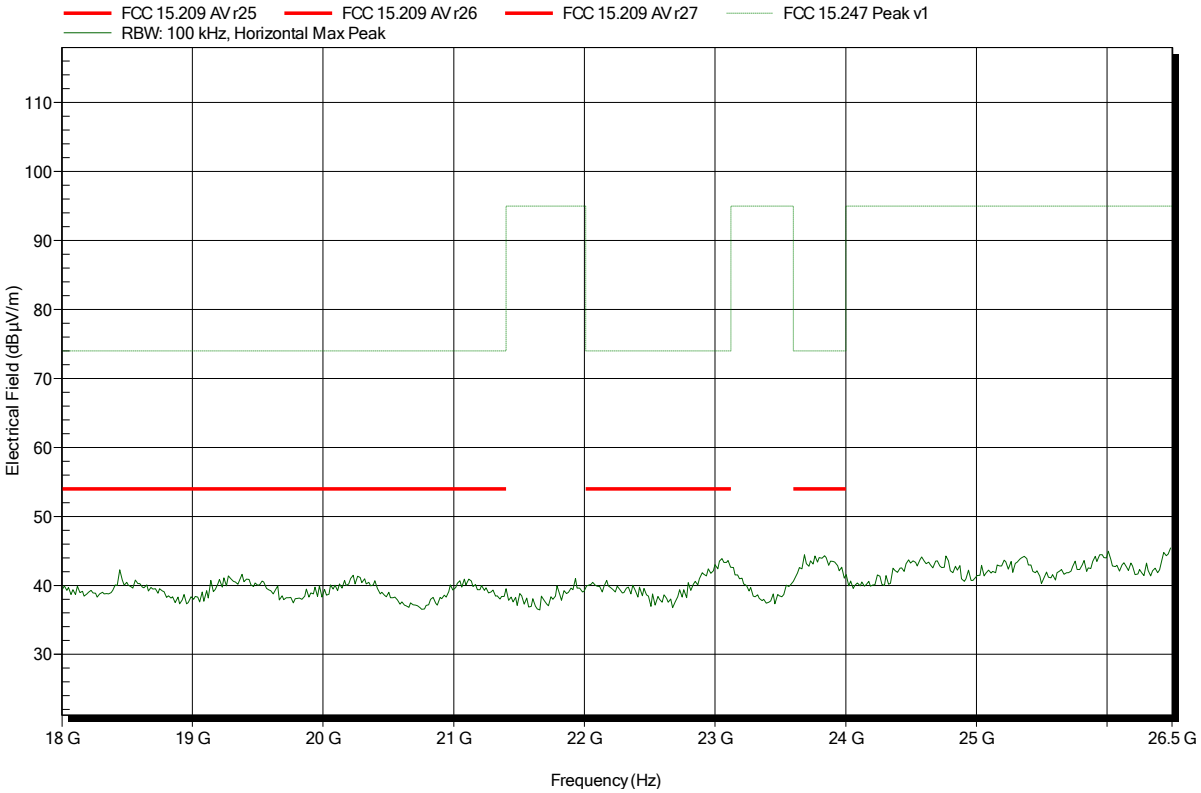


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 0; 2402 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-05 |
| Note: | EUT vertical |

Index 64

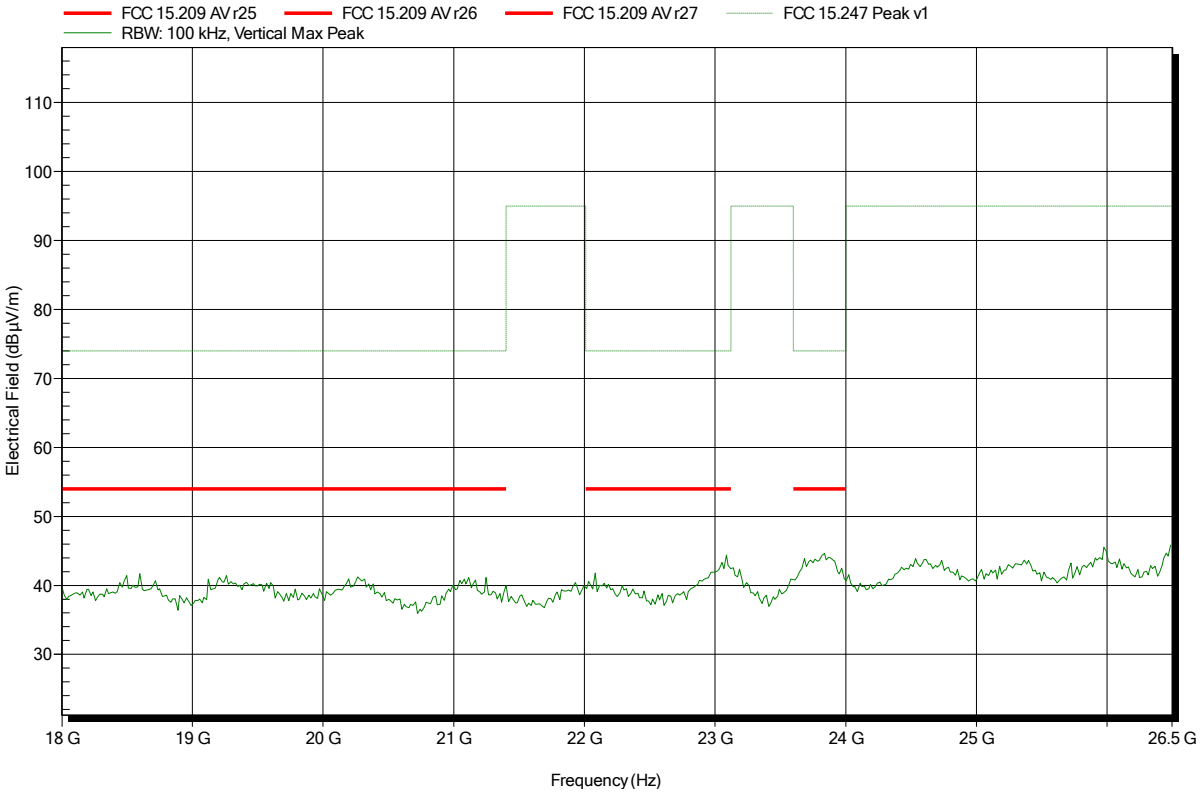


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 78

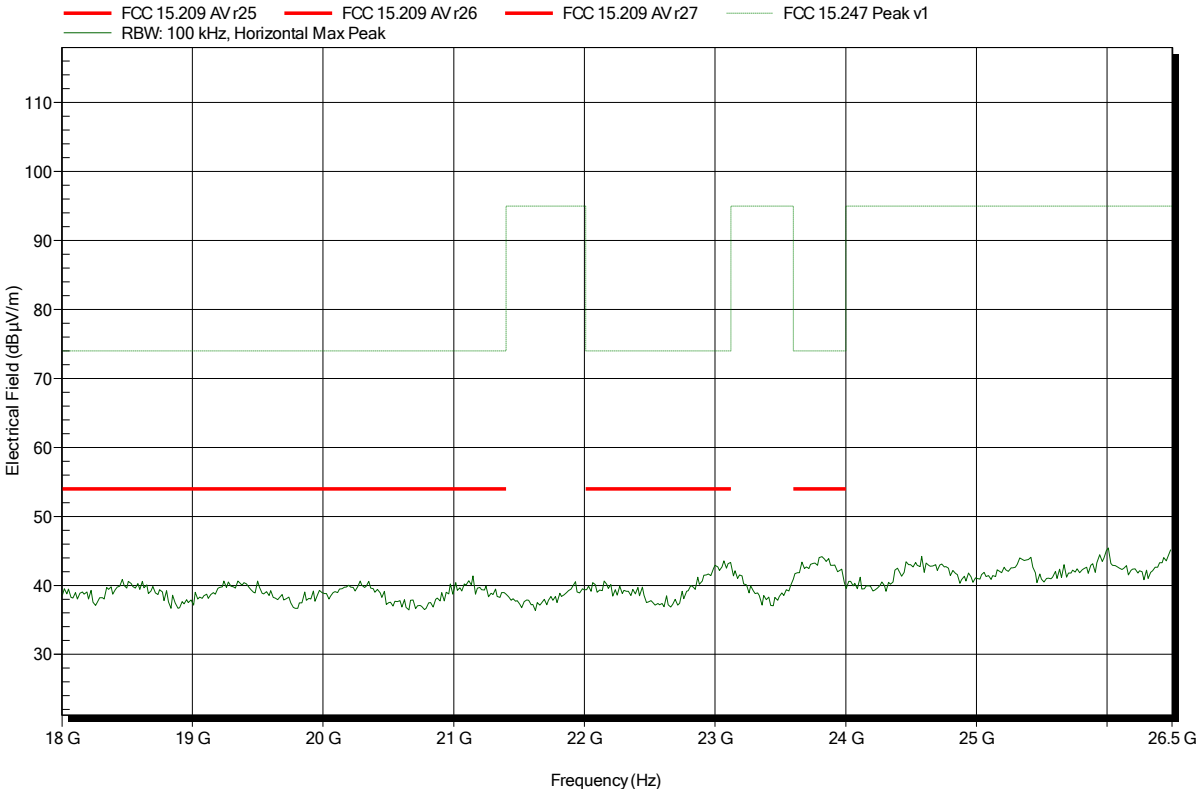


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 19; 2440 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 80

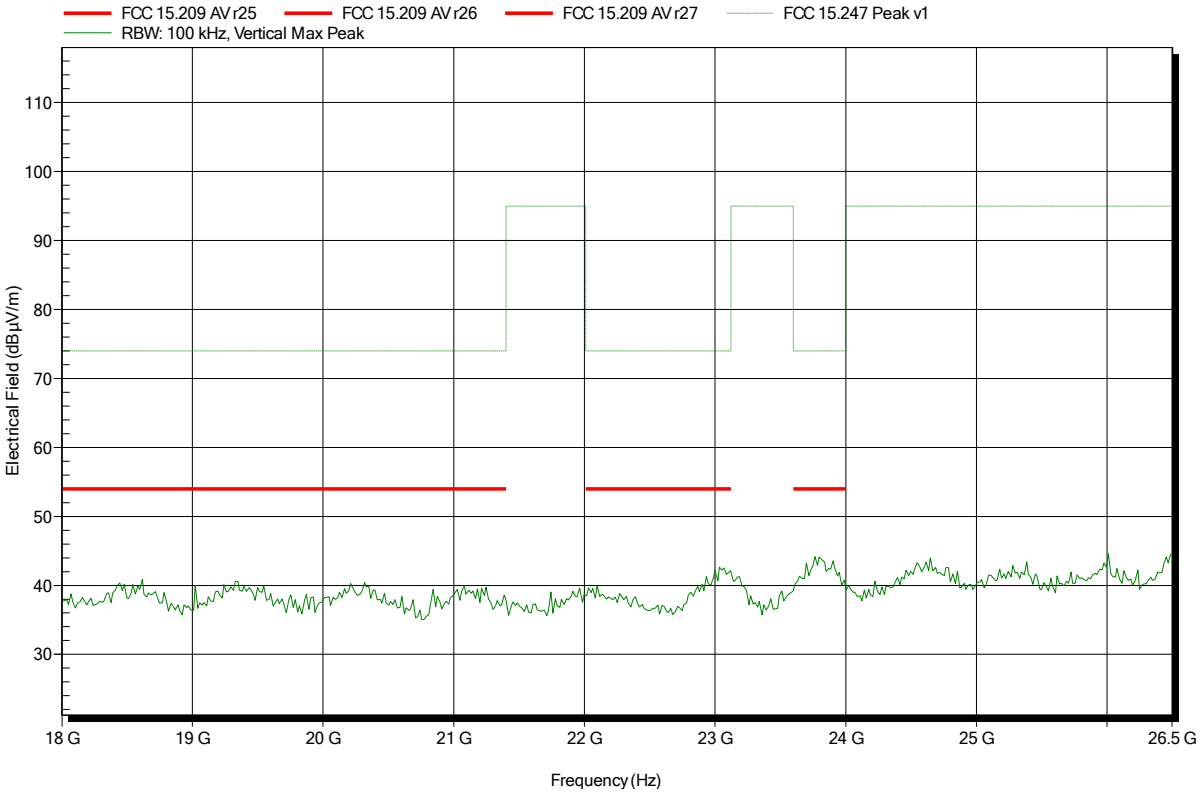


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 47

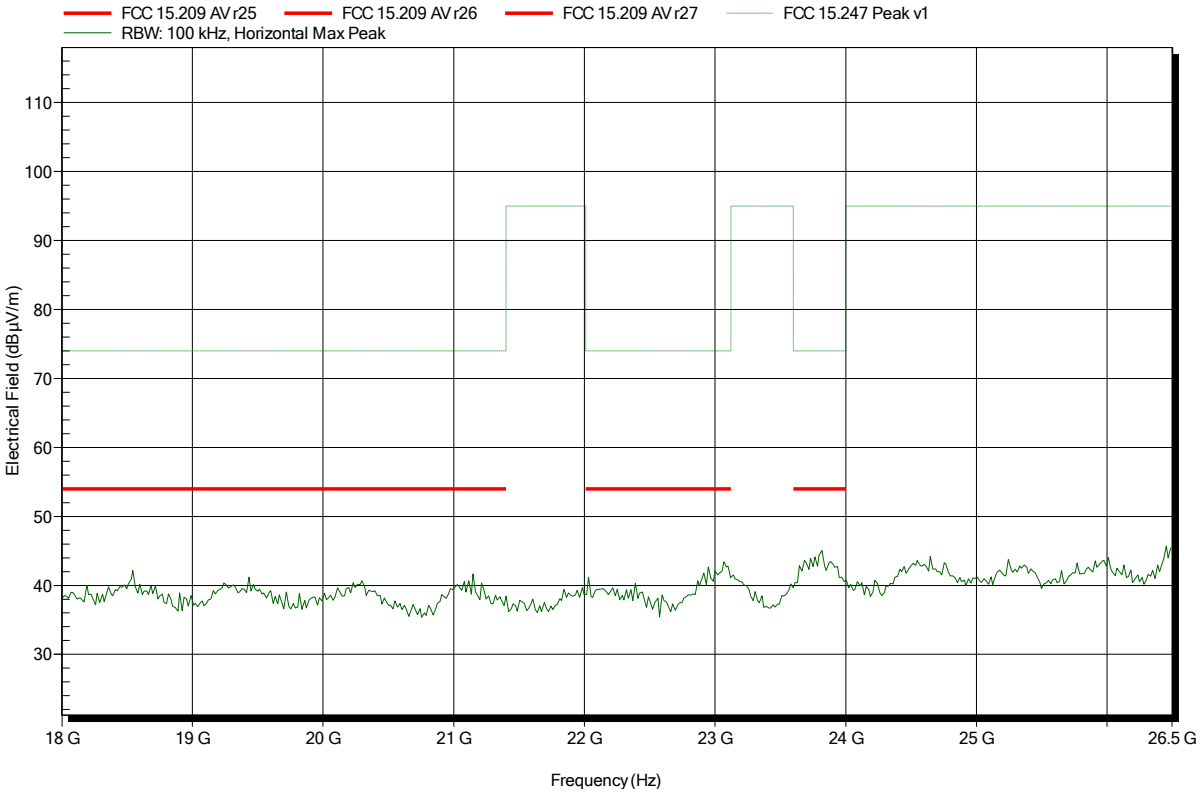


**Spurious emissions according to FCC part 15 Subpart C § 15.247, IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | TX; BT-LE; CH: 39; 2480 MHz; TX_Testmode; GFSK |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 50



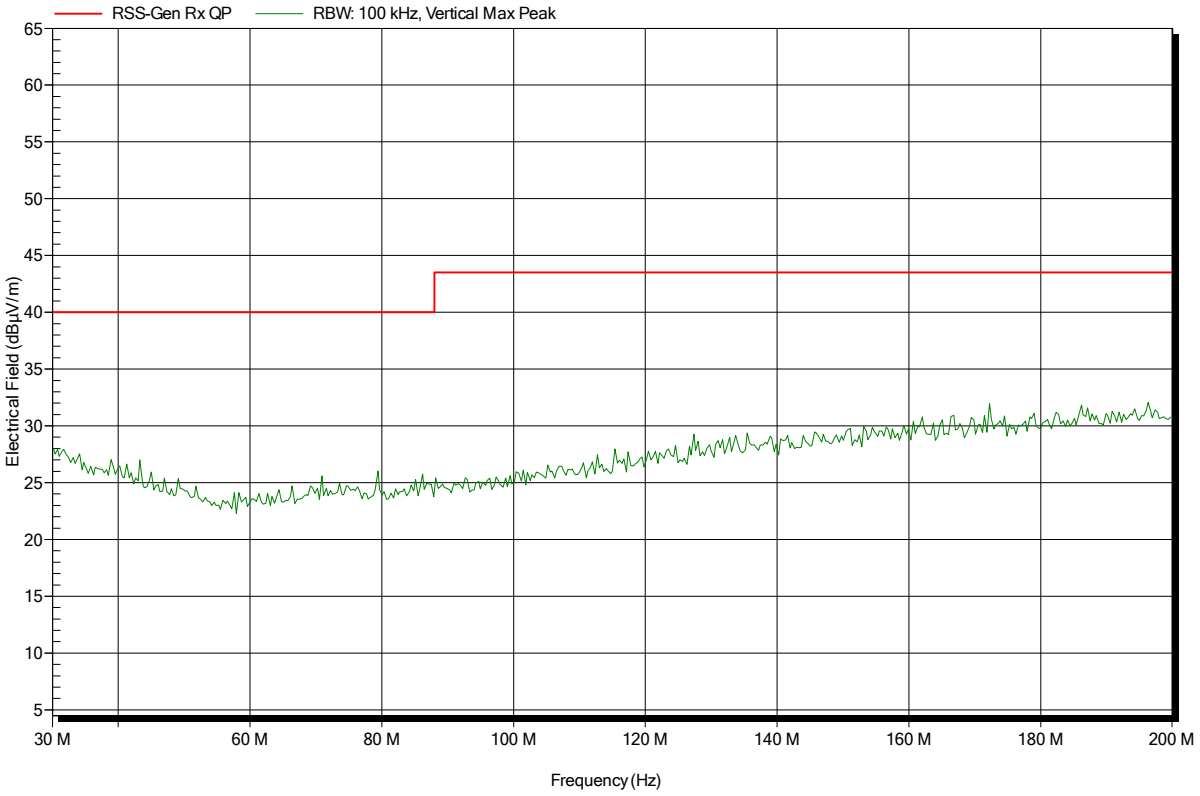
# ANNEX B Receiver radiated spurious emissions

**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 12

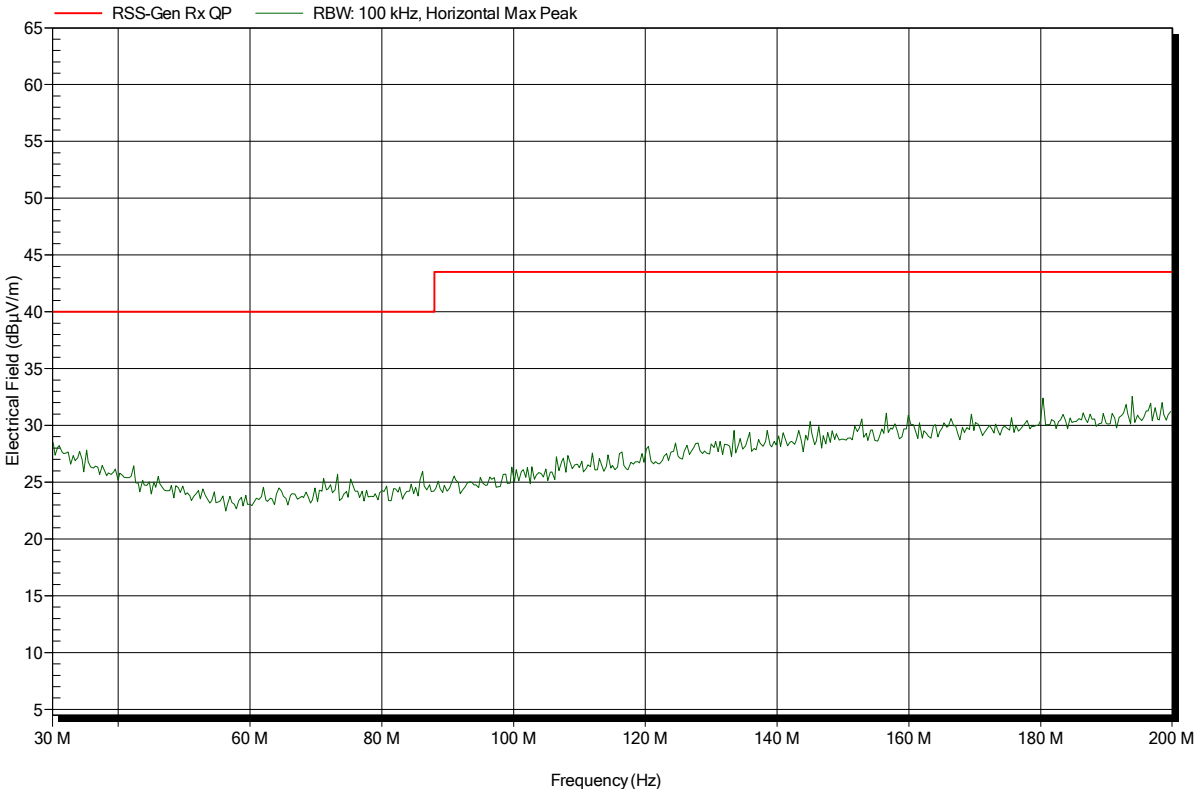


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 13

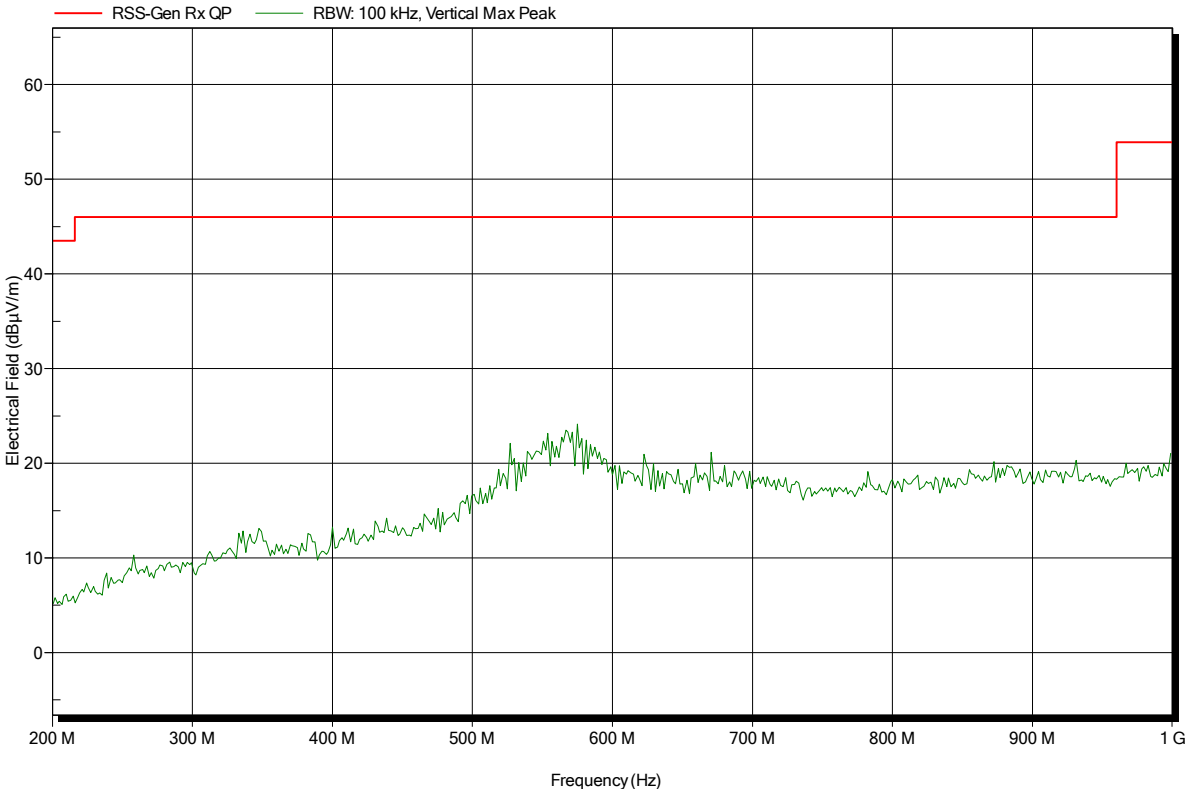


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 16

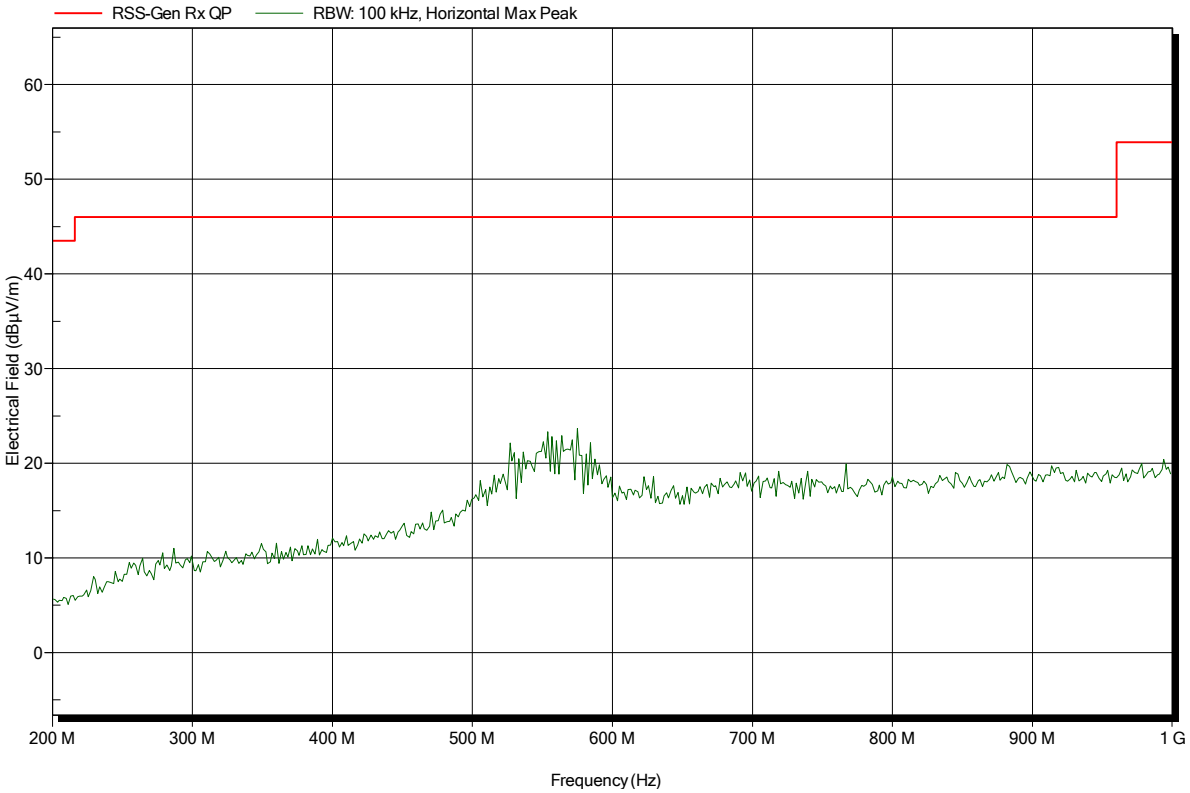


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-02 |
| Note: | EUT vertical |

Index 17

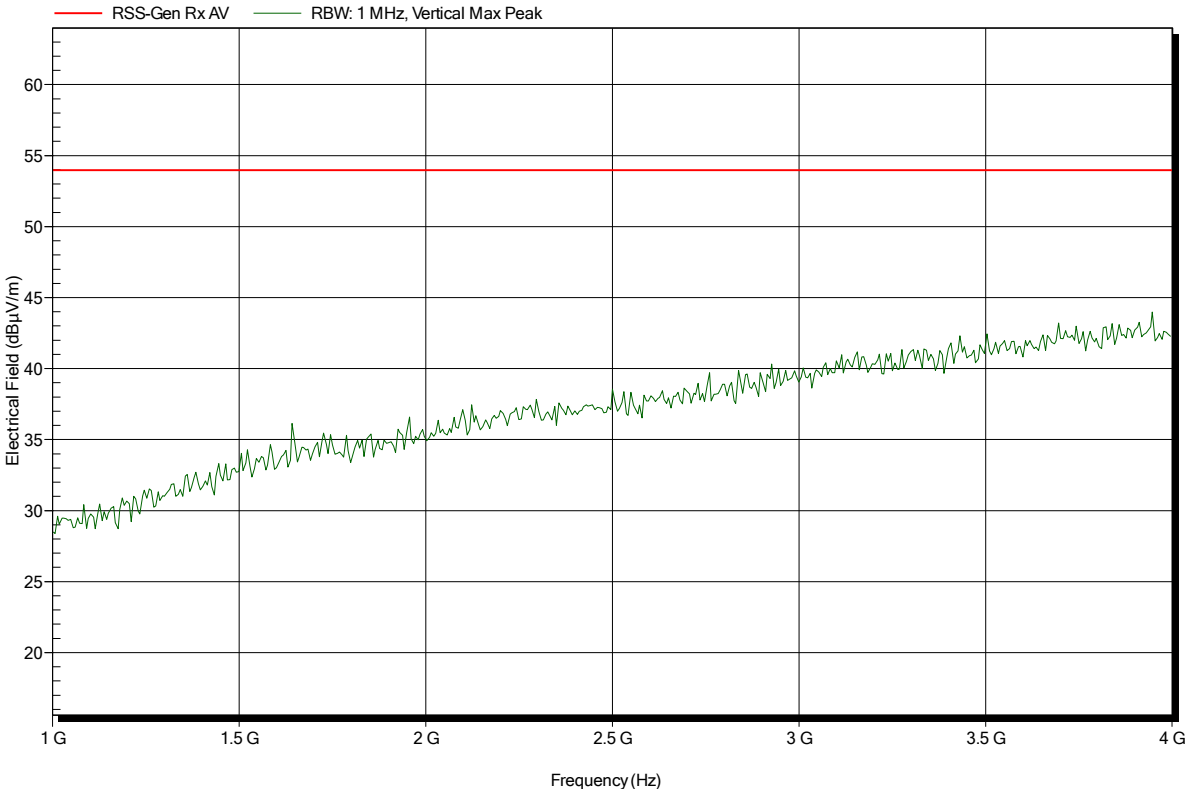


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 5

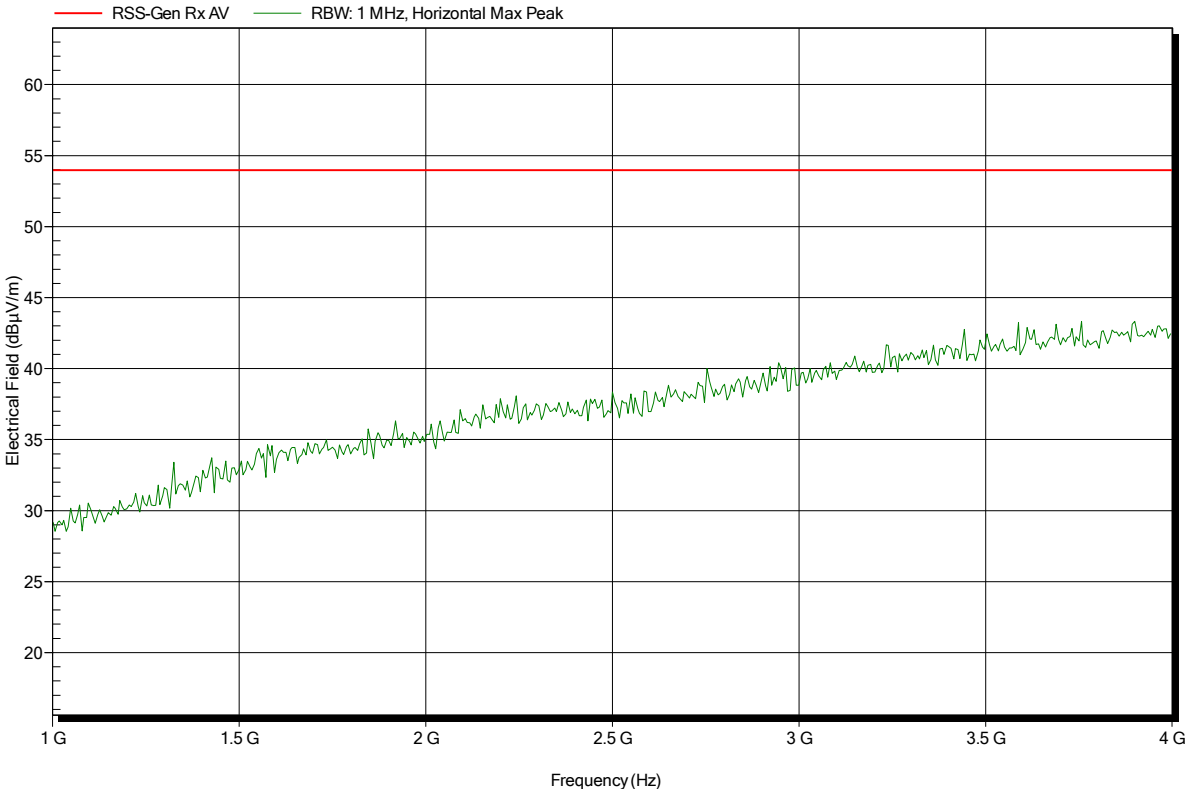


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 8

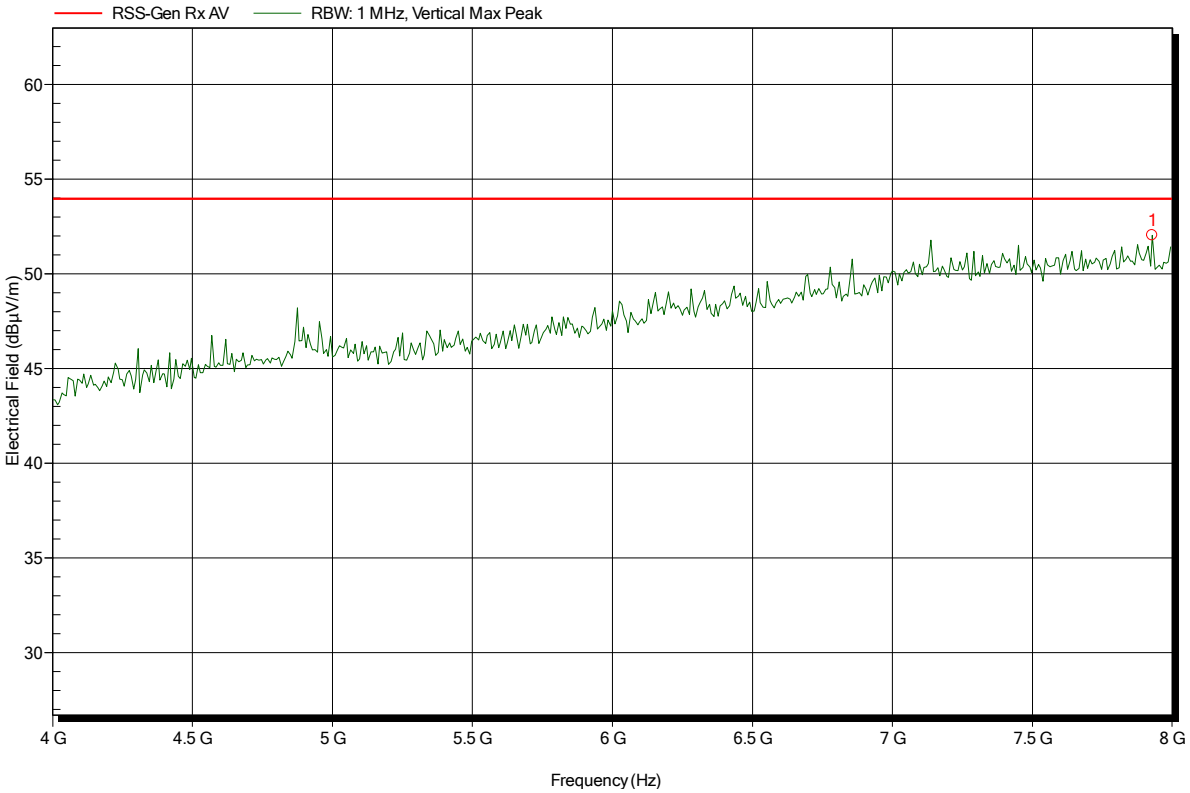


**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 18



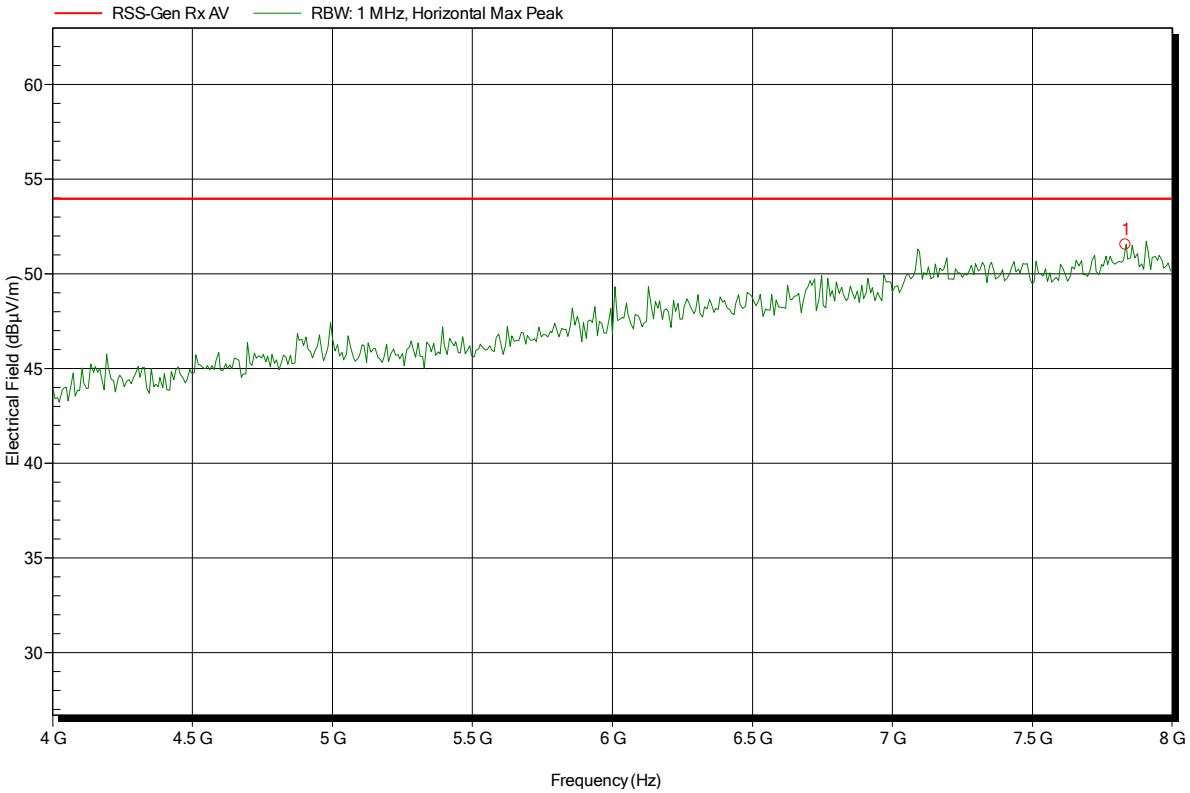

| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 7.928 GHz | 52.04 dBµV/m | 53.98 dBµV/m | -1.94 dB | Pass |

**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 3 m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-06 |
| Note: | EUT vertical |

Index 19



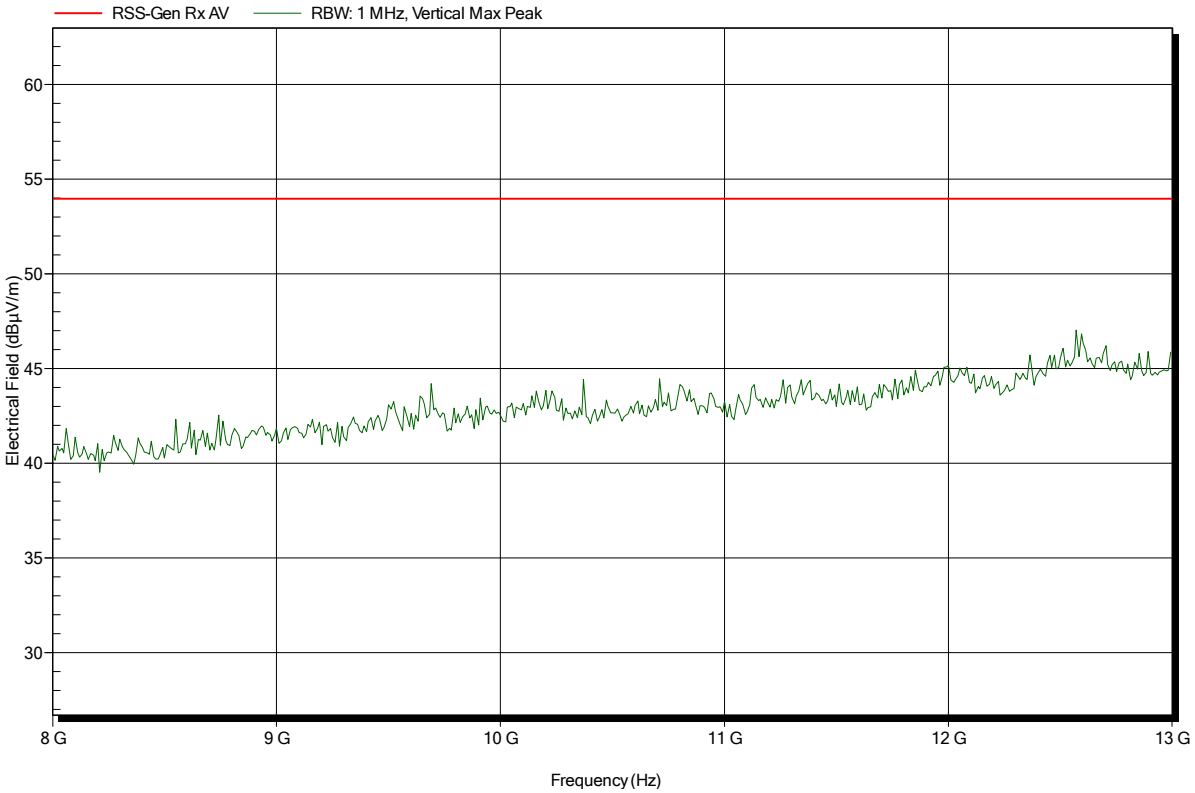

| Frequency | Peak | Peak Limit | Peak Difference | Peak Status |
|---|---|---|---|---|
| 7.832 GHz | 51.55 dBµV/m | 53.98 dBµV/m | -2.43 dB | Pass |

**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

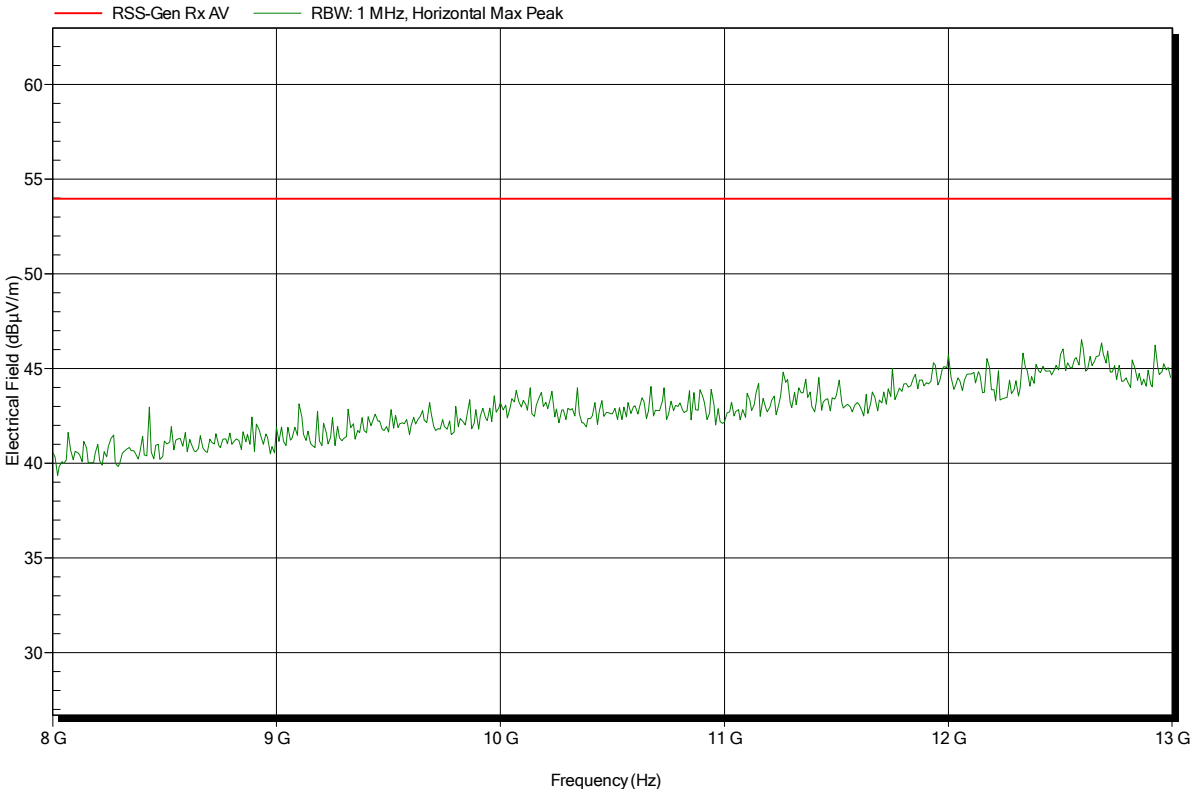
| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Vertical |
| Measurement distance: | 1 m converted to 3m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 10



**Spurious emissions according to IC RSS-247**

Project number: G0M-1506-4852

| | |
|---|---|
| Applicant: | BEACONinside GmbH |
| EUT Name: | Bluetooth low energy transceiver |
| Model: | B0002-A |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Pudell |
| Test Conditions: | Tnom: 24°C, Vnom: 3.0 V DC |
| Antenna: | Rohde & Schwarz HL 025, Horizontal |
| Measurement distance: | 1 m converted to 3m |
| Mode: | RX; BT-LE; CH: 19; 2440 MHz; RX_Testmode |
| Test Date: | 2015-10-01 |
| Note: | EUT vertical |

Index 11