

| <b>RADIO REPORT</b><br><b>FCC 47 CFR Part 15C</b><br><b>ISED Canada RSS-247</b><br><b>Digital transmission systems operating within the 2400.0 MHz - 2483.5 MHz band</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Reference No</b>                                                                                                                                               | G0M-2112-1200-TFC247BL-V02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Testing Laboratory</b>                                                                                                                                                | Eurofins Product Service GmbH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Address</b>                                                                                                                                                           | Storkower Str. 38c<br>15526 Reichenwalde<br>Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Accreditation</b>                                                                                                                                                     |    <br>DAkkS - Registration number : D-PL-12092-01-03 (ISED)<br>ISED Testing Laboratory site: 3470A<br>DAkkS - Registration number : D-PL-12092-01-04 (FCC)<br>FCC Filed Test Laboratory, Reg.-No.: 96970 |
| <b>Applicant</b>                                                                                                                                                         | Robert Bosch GmbH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Address</b>                                                                                                                                                           | Markwiesenstraße 58<br>72770 Reutlingen<br>Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Specification</b>                                                                                                                                                | 47 CFR Part 15C<br>RSS-247, Issue 2, 2017-02<br>RSS-Gen, Issue 5, Amendment 2, 2021-02                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Non-Standard Test Method</b>                                                                                                                                          | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Equipment under Test (EUT):</b>                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Product Description</b>                                                                                                                                               | System controller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Model(s)</b>                                                                                                                                                          | BRC3100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Additional Model(s)</b>                                                                                                                                               | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Brand Name(s)</b>                                                                                                                                                     | Bosch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Hardware Version(s)</b>                                                                                                                                               | H-PCB V3.0.1 V-PCB V4.1.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Software Version(s)</b>                                                                                                                                               | AppSW V4.1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>FCC ID</b>                                                                                                                                                            | 2AWRC-BRC3100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>IC</b>                                                                                                                                                                | 26294-BRC3100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Test Result</b>                                                                                                                                                       | <b>PASSED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------|
| <b>Possible test case verdicts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |                                                                                                |
| Required by standard but not tested                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/T              |                                                                                                |
| Not required by standard                                                                                                                                                                                                                                                                                                                                                                                                                                                       | N/R              |                                                                                                |
| Not applicable to EUT                                                                                                                                                                                                                                                                                                                                                                                                                                                          | N/A              |                                                                                                |
| Test object does meet the requirement                                                                                                                                                                                                                                                                                                                                                                                                                                          | P(PASS)          |                                                                                                |
| Test object does not meet the requirement                                                                                                                                                                                                                                                                                                                                                                                                                                      | F(FAIL)          |                                                                                                |
| <b>Testing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |                                                                                                |
| Test Lab Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20 °C - 30 °C    |                                                                                                |
| Test Lab Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 25 % - 55 %      |                                                                                                |
| Date of receipt of test item                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2022-02-18       |                                                                                                |
| <b>Report:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |                                                                                                |
| Compiled by                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Odai Qawasmeh    |                                                                                                |
| Tested by                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Odai Qawasmeh    |                                                                                                |
| Supervised by (+ signature)<br>(Responsible for Test)                                                                                                                                                                                                                                                                                                                                                                                                                          | Wilfried Treffke | <br>..... |
| Approved by (+ signature)<br>(Deputy Head of Lab)                                                                                                                                                                                                                                                                                                                                                                                                                              | Toralf Jahn      | <br>..... |
| Date of Issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2022-07-26       |                                                                                                |
| Total number of pages                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 90               |                                                                                                |
| <b>General Remarks:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                                                                                                |
| <p>The test results presented in this report relate only to the object tested.</p> <p>The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> |                  |                                                                                                |
| <b>Additional Comments:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |                                                                                                |

## VERSION HISTORY

| Version History |            |                                                                                                                                                                                               |            |
|-----------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Version         | Issue Date | Remarks                                                                                                                                                                                       | Revised By |
| 01              | 2022-05-10 | Initial Release                                                                                                                                                                               |            |
| 02              | 2022-07-26 | <p>Replaced document: G0M-2112-1200-TFC247BL-V01<br/> Replaced by: G0M-2112-1200-TFC247BL-V02</p> <p>Reason:<br/> Hardware version and Product description changed upon customer request.</p> | T. Jahn    |

## ABBREVIATIONS AND ACRONYMS

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

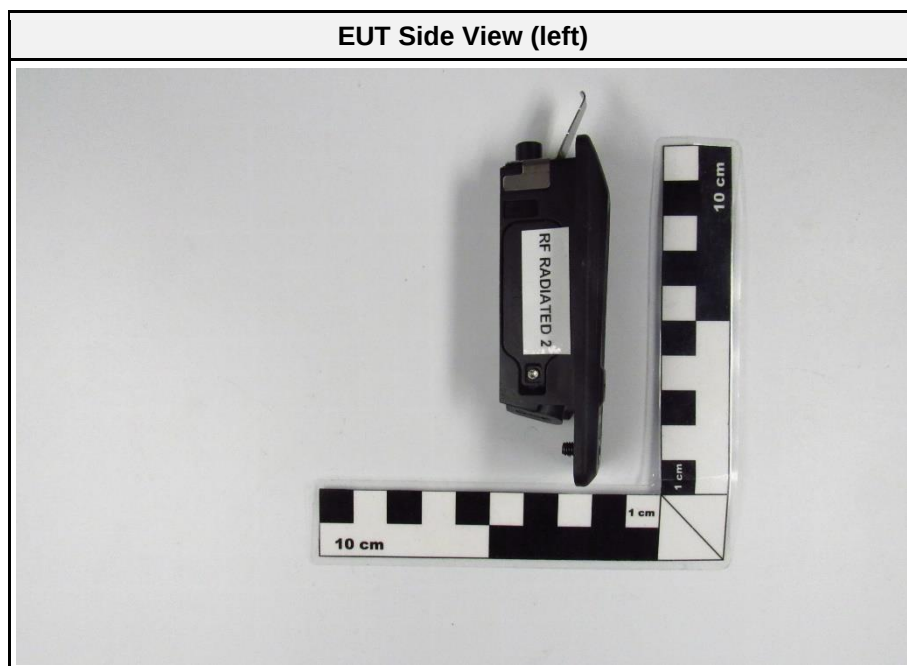
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## 1 Equipment (Test Item) Under Test

|                          |                                                                                                                    |                                                                 |
|--------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Description              | System controller                                                                                                  |                                                                 |
| Model                    | BRC3100                                                                                                            |                                                                 |
| Additional Model(s)      | None                                                                                                               |                                                                 |
| Brand Name(s)            | Bosch                                                                                                              |                                                                 |
| Serial Number(s)         | Prototype<br>Prototype                                                                                             | Radiated Test Sample ID 38816<br>Conducted Test Sample ID 38501 |
| Hardware Version(s)      | H-PCB V3.0.1 V-PCB V4.1.3                                                                                          |                                                                 |
| Software Version(s)      | AppSW V4.1.0                                                                                                       |                                                                 |
| PMN                      | BRC3100                                                                                                            |                                                                 |
| HVIN                     | BRC3100                                                                                                            |                                                                 |
| FVIN                     | Application SW 4.1.0                                                                                               |                                                                 |
| HMN                      | n/a                                                                                                                |                                                                 |
| FCC ID                   | 2AWRC-BRC3100                                                                                                      |                                                                 |
| IC                       | 26294-BRC3100                                                                                                      |                                                                 |
| Equipment type           | End Product                                                                                                        |                                                                 |
| Radio type               | Transceiver                                                                                                        |                                                                 |
| Assigned frequency bands | 2400.0 MHz - 2483.5 MHz                                                                                            |                                                                 |
| Radio technology         | Bluetooth LE 5.0                                                                                                   |                                                                 |
| Bluetooth Specification  | LE 1M PHY                                                                                                          | Yes                                                             |
|                          | LE 2M PHY                                                                                                          | No                                                              |
|                          | LE Coded PHY S=8 (125 kbit)                                                                                        | No                                                              |
|                          | LE Coded PHY S=2 (500 kbit)                                                                                        | No                                                              |
|                          | Stable Modulation Index - Transmitter                                                                              | No                                                              |
|                          | Stable Modulation Index - Receiver                                                                                 | No                                                              |
| Modulation               | GFSK                                                                                                               |                                                                 |
| Number of antenna ports  | 1                                                                                                                  |                                                                 |
| Antenna                  | Type                                                                                                               | Integrated                                                      |
|                          | Model                                                                                                              | M310220                                                         |
|                          | Manufacturer                                                                                                       | Ethertronics                                                    |
|                          | Gain                                                                                                               | 1.7 dBi (declared by manufacturer)                              |
| Supply Voltage           | V <sub>NOM</sub>                                                                                                   | 12 VDC                                                          |
| Operating Temperature    | T <sub>NOM</sub>                                                                                                   | 20 °C                                                           |
| Manufacturer             | Bosch (Zhuhai) Security Systems Ltd.<br>20 Ji Chang Bei Road- Qingwan Indu. Est. Sanzaio<br>519070 Zhuhai<br>China |                                                                 |

## 1.1 Photos – Equipment External



**EUT Side View (right)**



**EUT Bottom View**



**EUT USB Port**



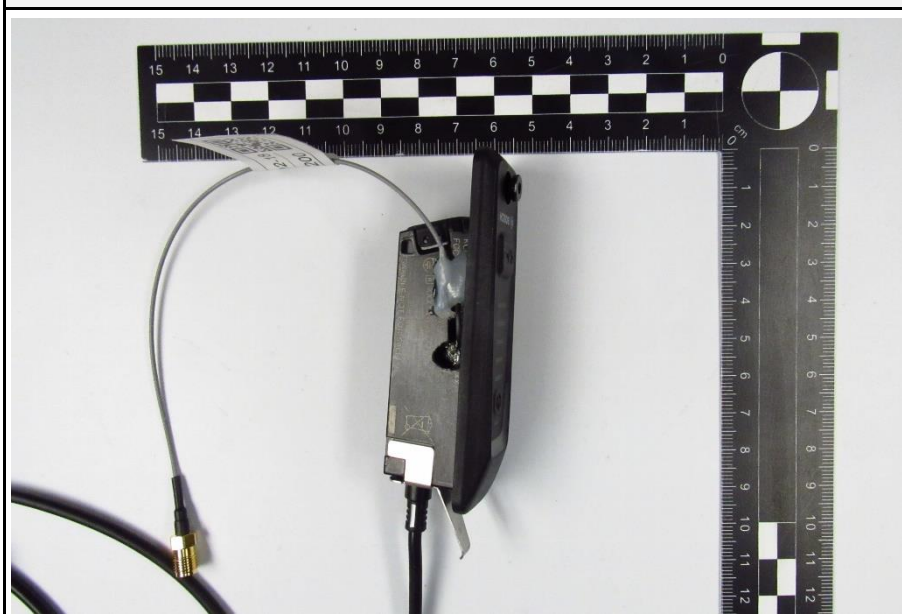
**EUT Supply Port**



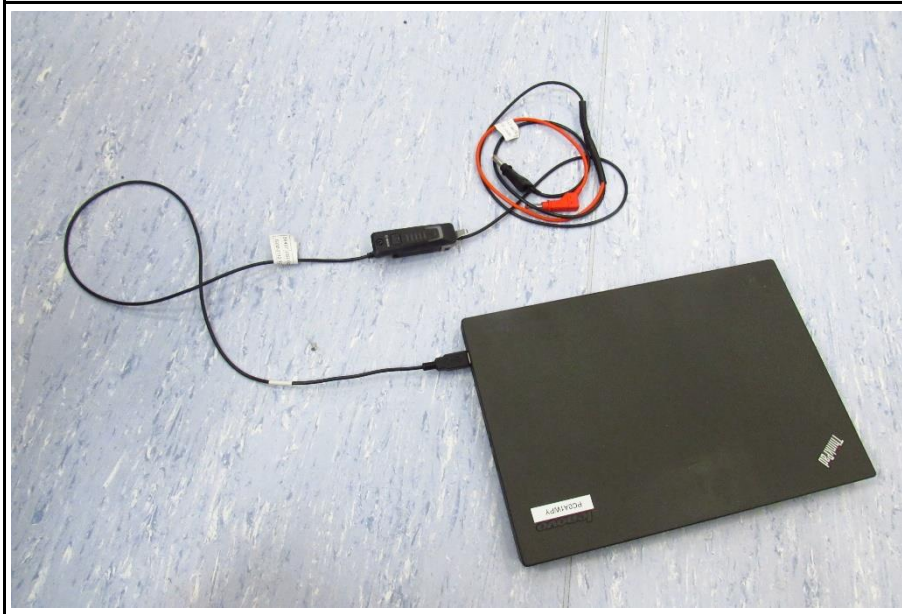
EUT Conducted Sample



EUT Conducted Sample

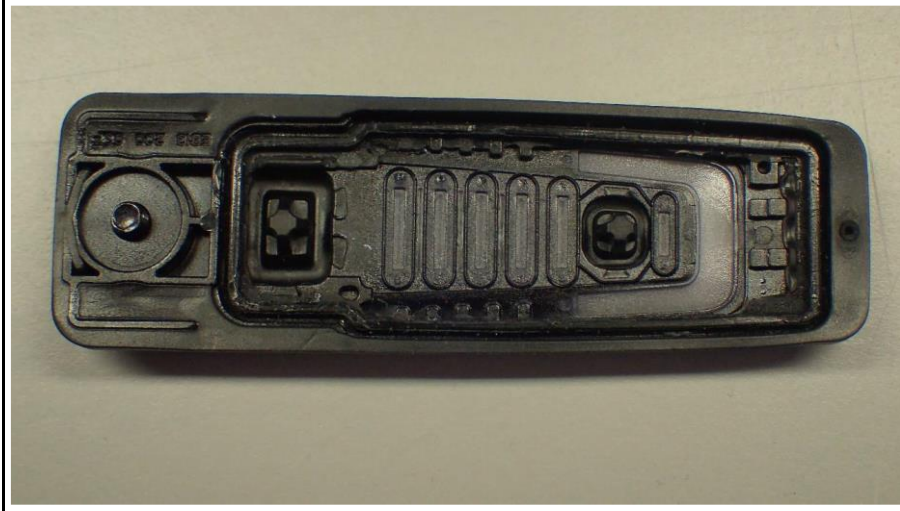


EUT with auxiliary equipment

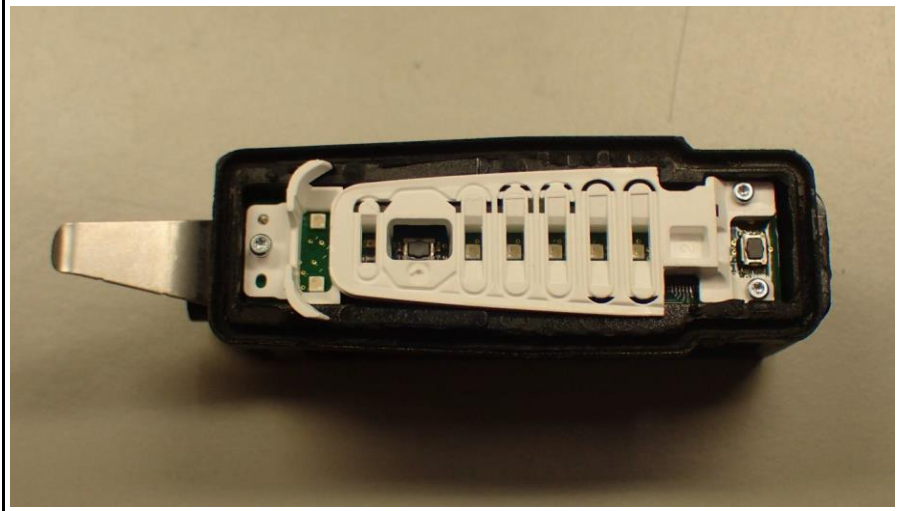


## 1.2 Photos – Equipment Internal (provided by client)

**EUT Bottom Side of Top Cover**



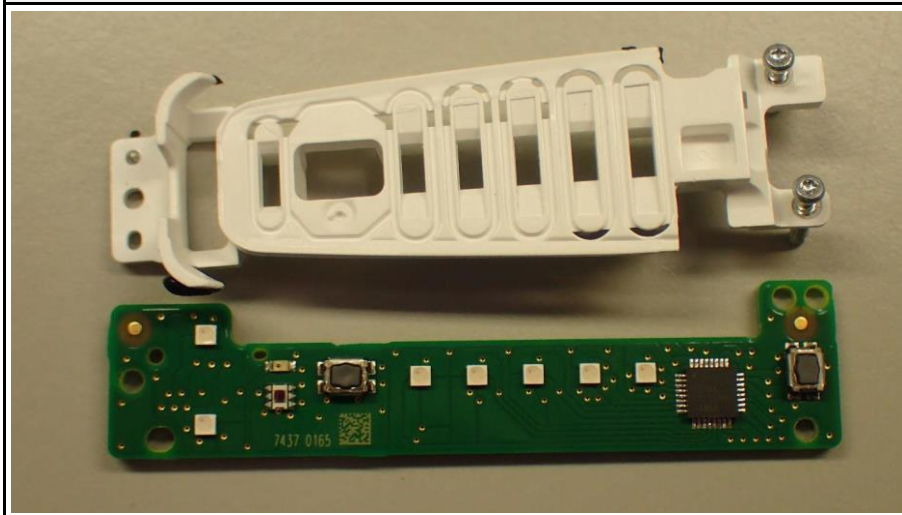
**EUT housing without top cover**



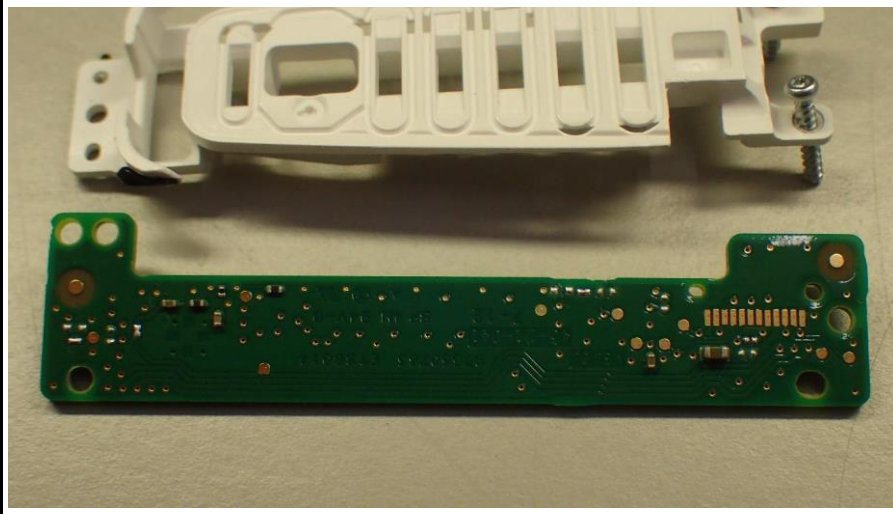
**EUT Battery**



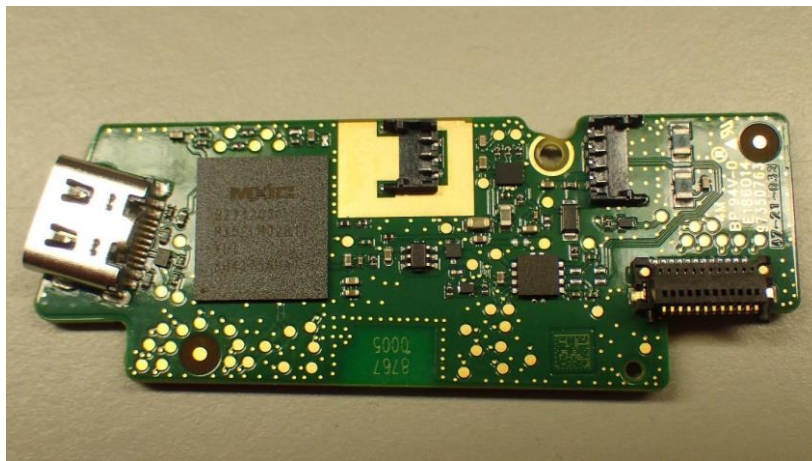
**EUT Horizontal PCB, Upside**



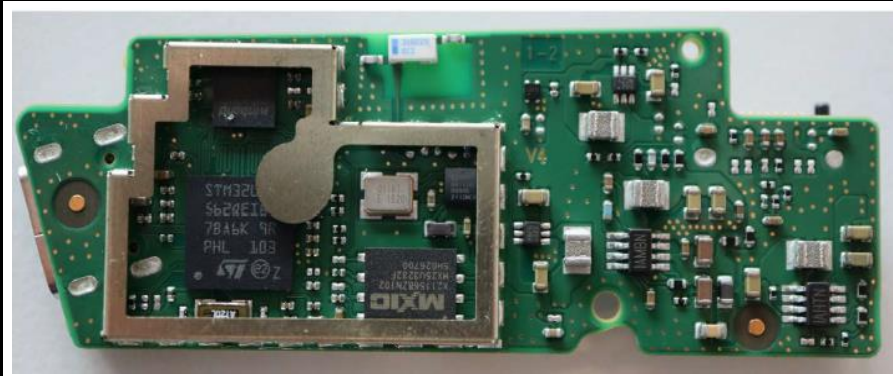
**EUT Horizontal PCB, Downside**



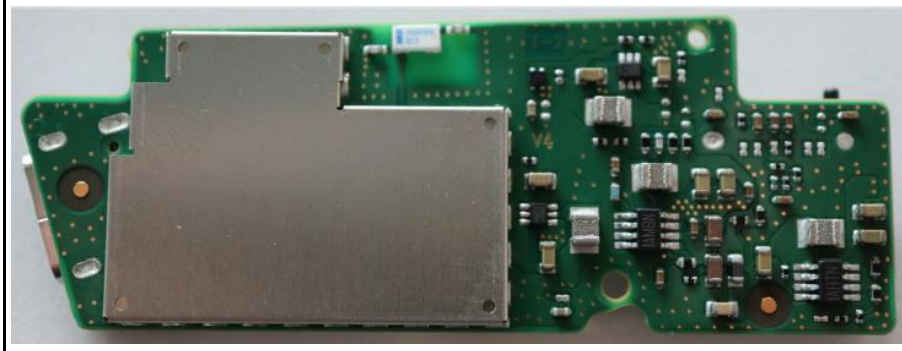
**EUT Vertical PCB, bottom side**



**EUT Vertical PCB, Downside, Radio components**



EUT Vertical PCB, Downside



### 1.3 Support Equipment

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

#### 1.4 Test Modes

| Mode     | Description                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------|
| GFSK     | Mode = Transmit<br>Modulation = GFSK<br>Spreading = None<br>Data Rate = 1Mbit/s<br>Duty cycle = 64% |
| Receive  | Mode = Receive                                                                                      |
| Comment: |                                                                                                     |

## 1.5 Test Frequencies

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

## 1.6 Sample emission level calculation

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

Reading:

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

A.F.:

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

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

Net:

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

Limit:

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

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

Margin:

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

Example only:

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

## 2 Result Summary

| FCC 47 CFR Part 15C, ISED RSS-247                                          |                                         |                  |        |                    |
|----------------------------------------------------------------------------|-----------------------------------------|------------------|--------|--------------------|
| Product Standard Reference                                                 | Requirement                             | Reference Method | Result | Remarks            |
| ISED RSS-Gen, Issue 5 A2 (section 6.7)                                     | Occupied Bandwidth                      | ANSI C63.10-2013 | N/R    | Informational only |
| FCC § 15.247(a)(2)<br>ISED RSS-247, Issue 2 (section 5.2)                  | 6 dB Bandwidth                          | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.247(b)<br>ISED RSS-247, Issue 2 (section 5.4)                     | Maximum peak conducted power            | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.247(e)<br>ISED RSS-247, Issue 2 (section 5.2)                     | Power spectral density                  | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.207<br>ISED RSS-247, Issue 2 (section 3.1)                        | AC power line conducted emissions       | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.247(d)<br>ISED RSS-247, Issue 2 (section 5.5)                     | Band edge compliance                    | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.247(d)<br>ISED RSS-247, Issue 2 (section 5.5)                     | Conducted spurious emissions            | ANSI C63.10-2013 | PASS   |                    |
| FCC § 15.247(d)<br>FCC § 15.209<br>ISED RSS-Gen, Issue 5 A2 (section 6.13) | Transmitter radiated spurious emissions | ANSI C63.10-2013 | PASS   |                    |
| ISED RSS-247, Issue 2 (section 3.1)                                        | Receiver radiated spurious emissions    | ANSI C63.4-2014  | PASS   |                    |
| Comment:                                                                   |                                         |                  |        |                    |

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

### 3 Test Conditions and Results

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

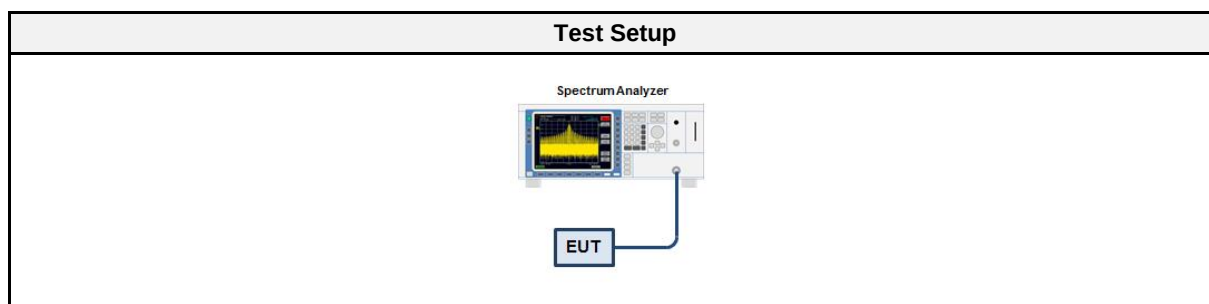
##### 3.1.1 Information

| Test Information        |                                        |
|-------------------------|----------------------------------------|
| Reference               | ISED RSS-Gen, Issue 5 A2 (section 6.7) |
| Measurement Method      | ANSI C63.10 6.9.3                      |
| Measurement Uncertainty | $\pm 1.26 \%$                          |
| Test Sample ID          | 38816                                  |
| Operator                | Odai Qawasmeh                          |
| Date                    | 2022-03-30                             |

##### 3.1.2 Limits

| Limits                    |
|---------------------------|
| None (Informational only) |

##### 3.1.3 Setup



##### 3.1.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAAxy | 2022-02   | 2023-02  |

##### 3.1.5 Procedure

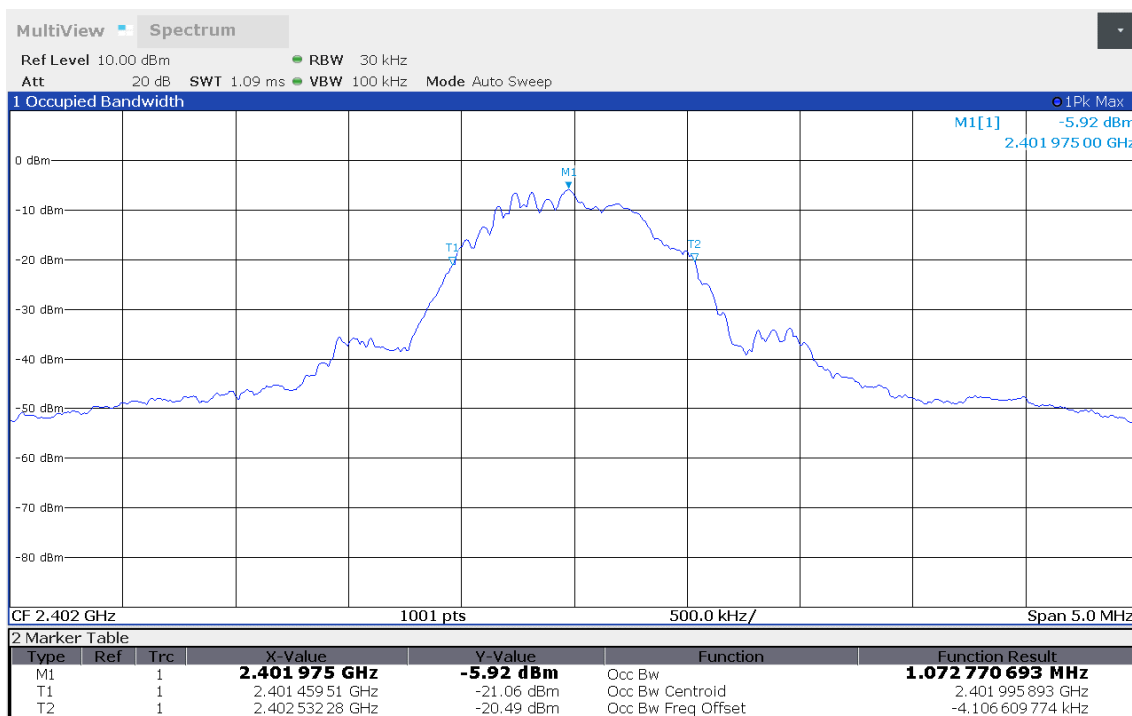
| Test Procedure                                                                                                                                                                                                                                                                                            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

### 3.1.6 Results

| Test Results |                    |                    |
|--------------|--------------------|--------------------|
| Mode         | Frequency<br>[MHz] | Bandwidth<br>[MHz] |
| GFSK         | 2402               | 1.073              |
| GFSK         | 2440               | 1.072              |
| GFSK         | 2480               | 1.076              |

## Occupied Bandwidth

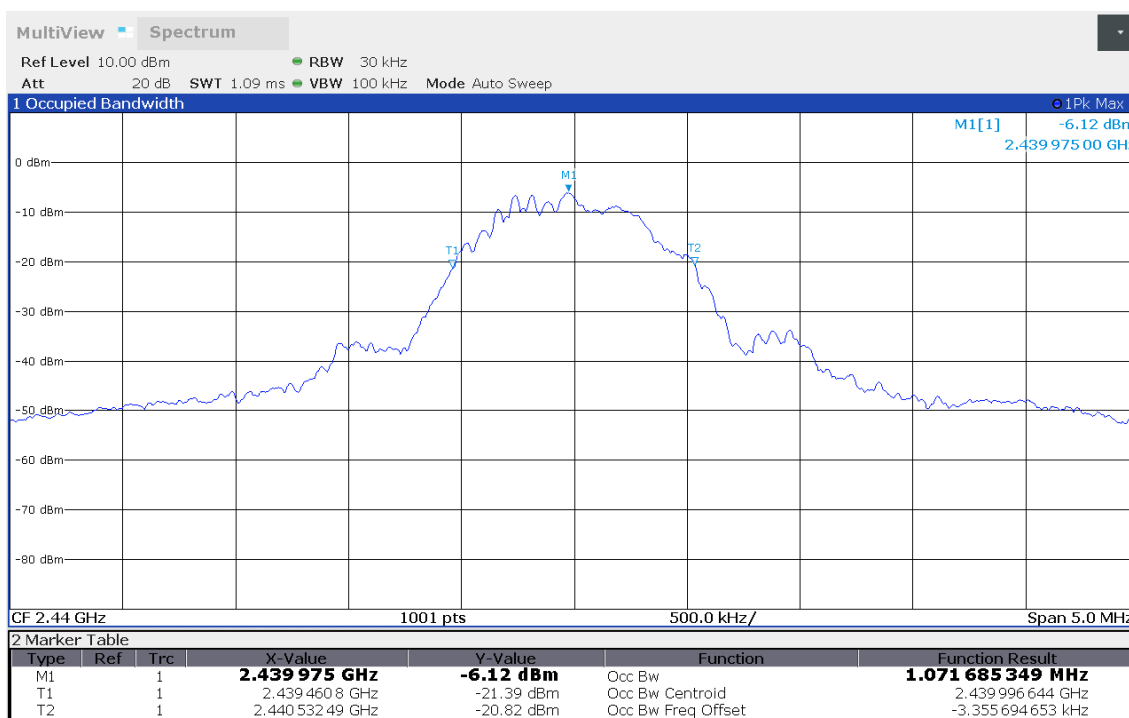
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Occupied Bandwidth [MHz]: 1.073



11:51:08 30.03.2022

## Occupied Bandwidth

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Occupied Bandwidth [MHz]: 1.072



11:59:39 30.03.2022

## Occupied Bandwidth

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 6.9.3  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Occupied Bandwidth [MHz]: 1.076



12:10:31 30.03.2022

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

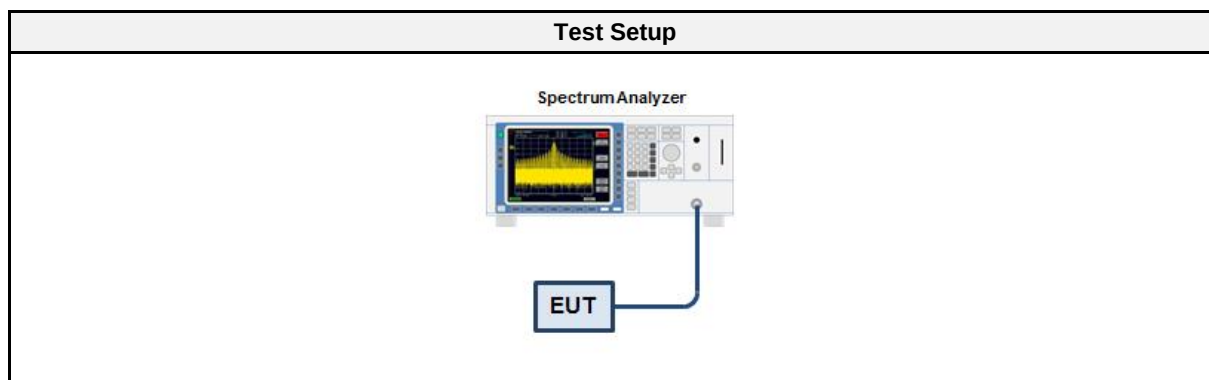
#### 3.2.1 Information

| Test Information        |                                                          |
|-------------------------|----------------------------------------------------------|
| Reference               | FCC § 15.247(a)(2); ISSED RSS-247, Issue 2 (section 5.2) |
| Measurement Method      | ANSI C63.10 11.8                                         |
| Measurement Uncertainty | ± 1.26 %                                                 |
| Operator                | Odai Qawasmeh                                            |
| Date                    | 2022-03-30                                               |

#### 3.2.2 Limits

| Limits   |
|----------|
| ≥ 500kHz |

#### 3.2.3 Setup



#### 3.2.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAAxy | 2022-02   | 2023-02  |

#### 3.2.5 Procedure

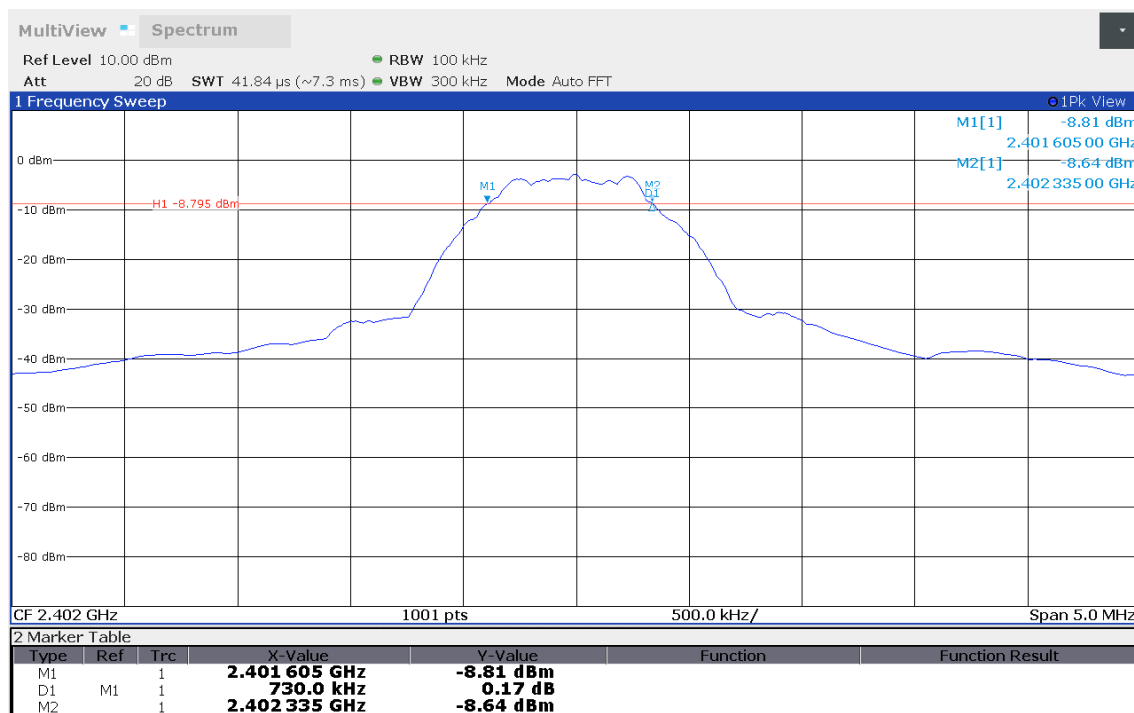
| Test Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. EUT set to test mode</li> <li>2. Span set to at least twice the emission spectrum</li> <li>3. Detector set to peak and max hold and RBW is set to 100 kHz</li> <li>4. Envelope peak value of emission spectrum is selected</li> <li>5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak</li> <li>6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak</li> <li>7. 6 dB Bandwidth is determined by marker frequency separation</li> </ol> |

### 3.2.6 Results

| Test Results |                    |                    |                |         |
|--------------|--------------------|--------------------|----------------|---------|
| Mode         | Frequency<br>[MHz] | Bandwidth<br>[kHz] | Limit<br>[kHz] | Verdict |
| GFSK         | 2402               | 730                | 500            | PASS    |
| GFSK         | 2440               | 730                | 500            | PASS    |
| GFSK         | 2480               | 735                | 500            | PASS    |

## DTS (6 dB) Bandwidth

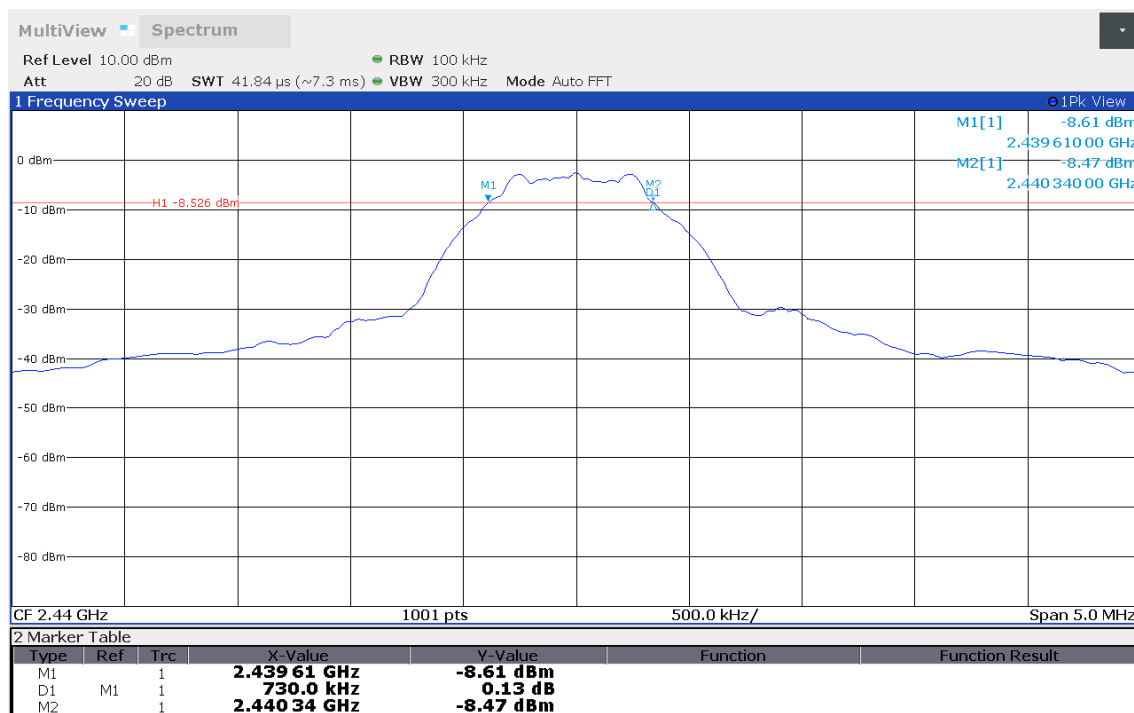
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Lower Frequency [MHz]: 2401.605  
 Upper Frequency [MHz]: 2402.335  
 6 dB Bandwidth [kHz]: 730



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## DTS (6 dB) Bandwidth

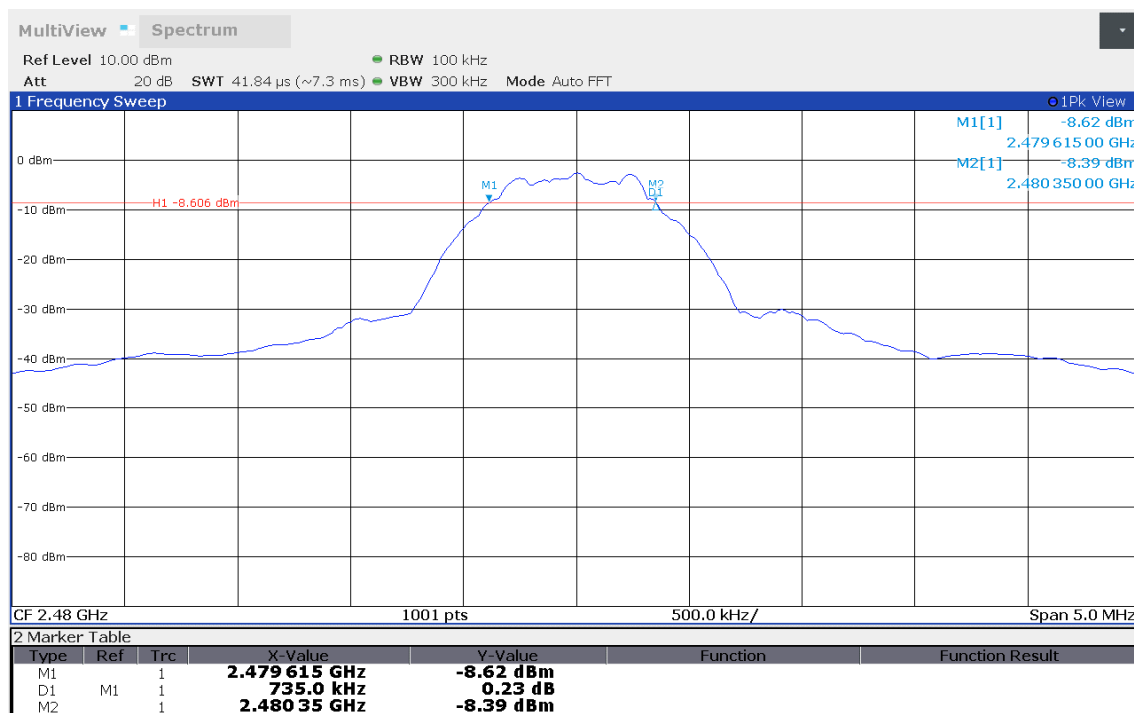
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Lower Frequency [MHz]: 2439.610  
 Upper Frequency [MHz]: 2440.340  
 6 dB Bandwidth [kHz]: 730



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## DTS (6 dB) Bandwidth

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.8.1 Option 1  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Lower Frequency [MHz]: 2479.615  
 Upper Frequency [MHz]: 2480.350  
 6 dB Bandwidth [kHz]: 735



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

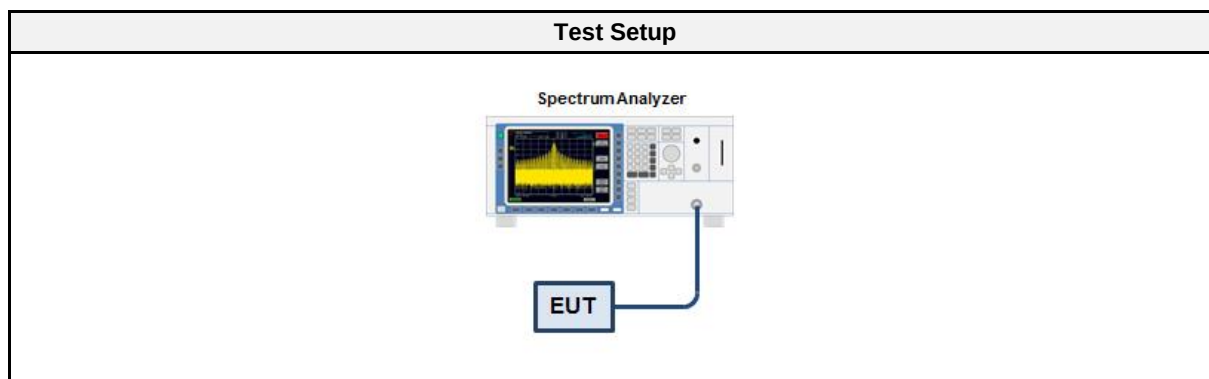
#### 3.3.1 Information

| Test Information        |                                                       |
|-------------------------|-------------------------------------------------------|
| Reference               | FCC § 15.247(b); ISSED RSS-247, Issue 2 (section 5.4) |
| Measurement Method      | ANSI C63.10 11.9.1                                    |
| Measurement Uncertainty | ± 2.86 dB                                             |
| Operator                | Odai Qawasmeh                                         |
| Date                    | 2022-03-30                                            |

#### 3.3.2 Limits

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

#### 3.3.3 Setup



#### 3.3.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAAxy | 2022-02   | 2023-02  |

#### 3.3.5 Procedure

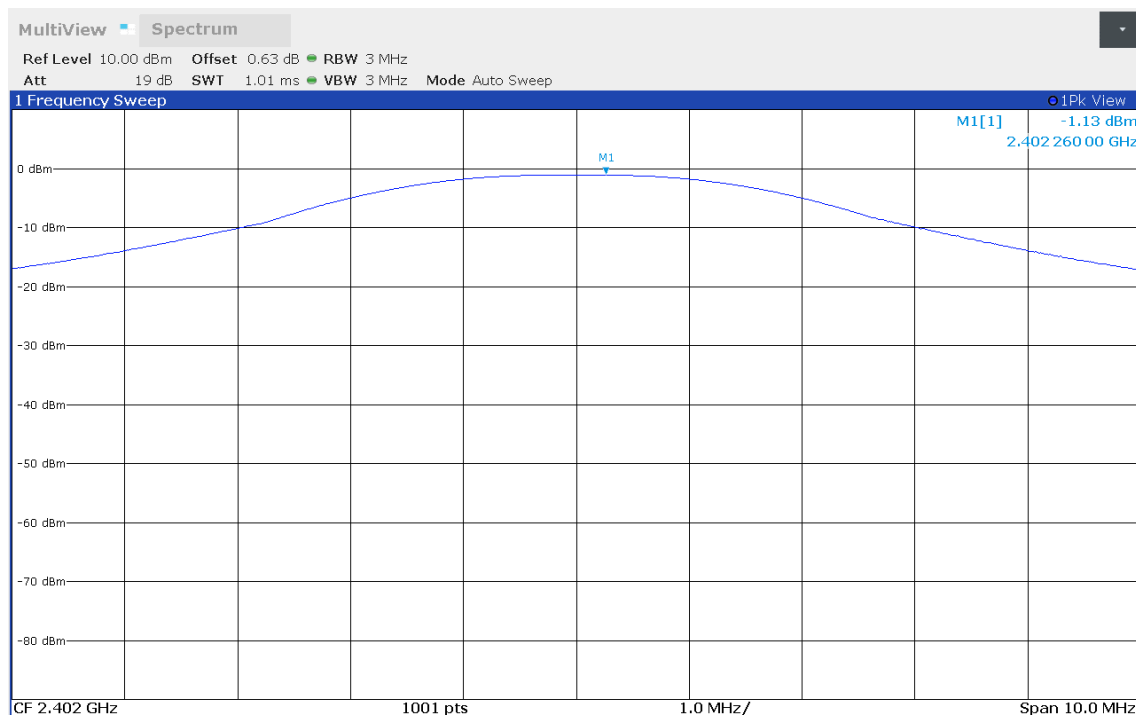
| Test Procedure                                                                                                                                                                                                                                                                                            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

### 3.3.6 Results

| Test Results     |                |              |              |         |
|------------------|----------------|--------------|--------------|---------|
| Channel<br>[MHz] | Power<br>[dBm] | Power<br>[W] | Limit<br>[W] | Verdict |
| 2402             | -1.132         | 0.0008       | 1.0          | PASS    |
| 2440             | -1.252         | 0.0007       | 1.0          | PASS    |
| 2480             | -1.455         | 0.0007       | 1.0          | PASS    |

## Peak Conducted Output Power

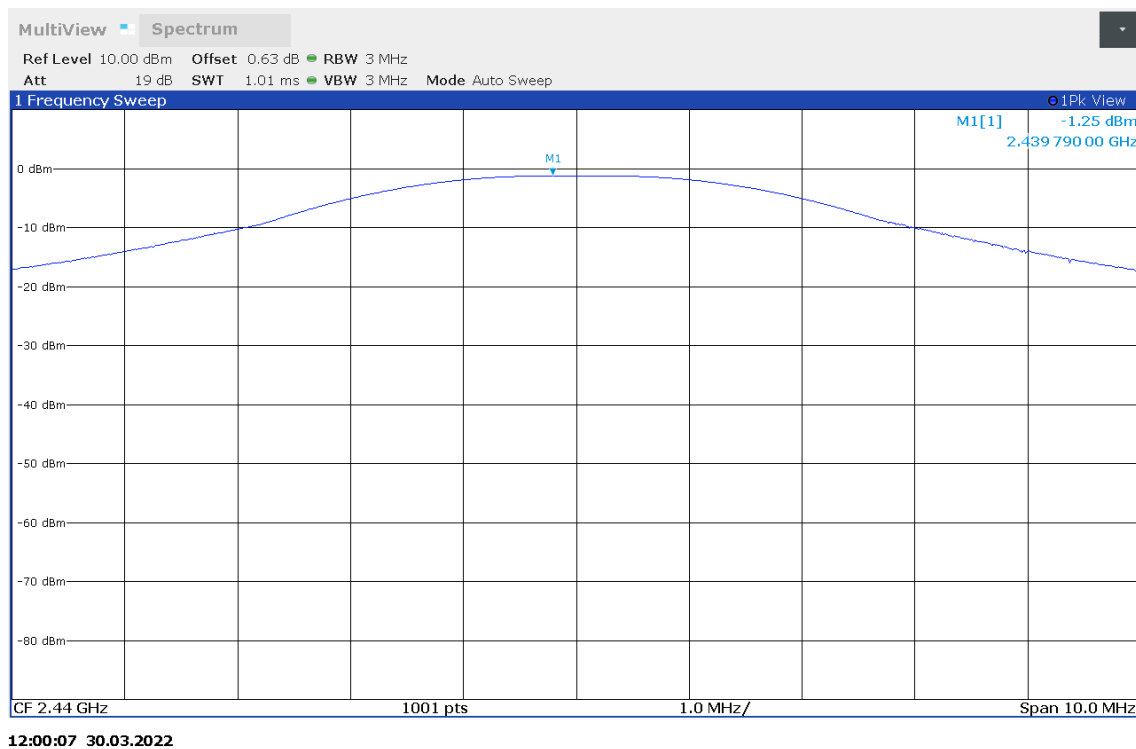
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.9.1.1  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Power [dBm]: -1.132  
 Peak Power [W]: 0.0008



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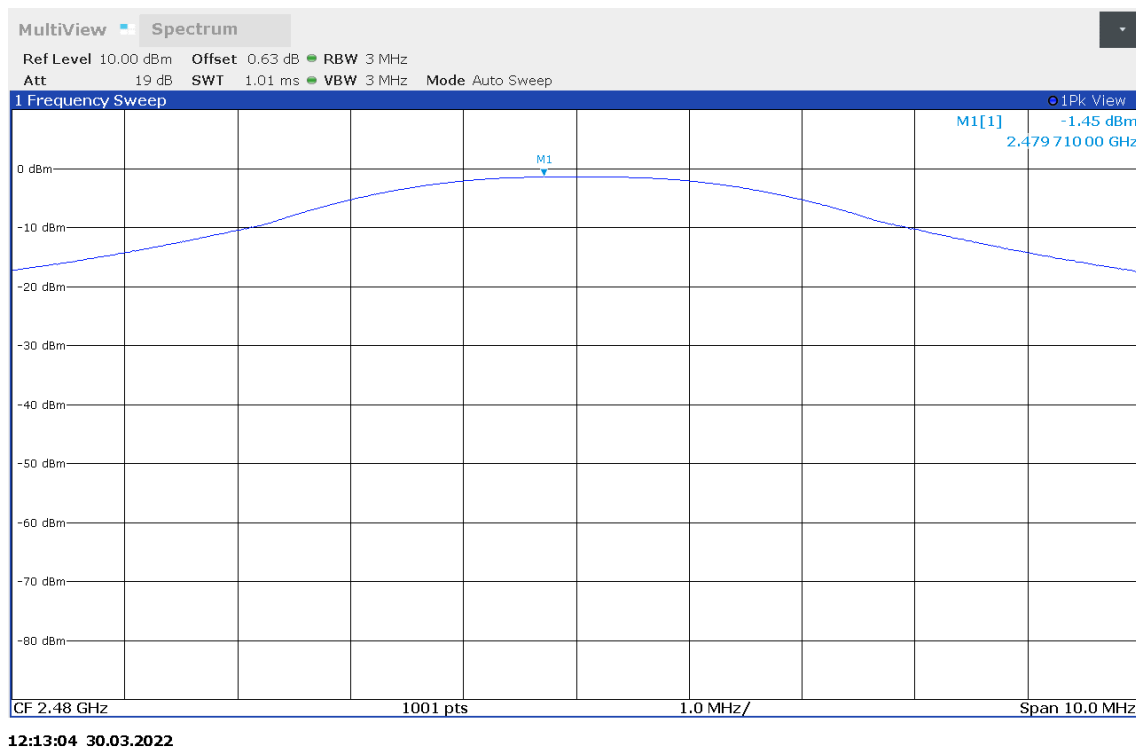
## Peak Conducted Output Power

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.9.1.1  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Power [dBm]: -1.252  
 Peak Power [W]: 0.0007



## Peak Conducted Output Power

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.9.1.1  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Power [dBm]: -1.455  
 Peak Power [W]: 0.0007



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

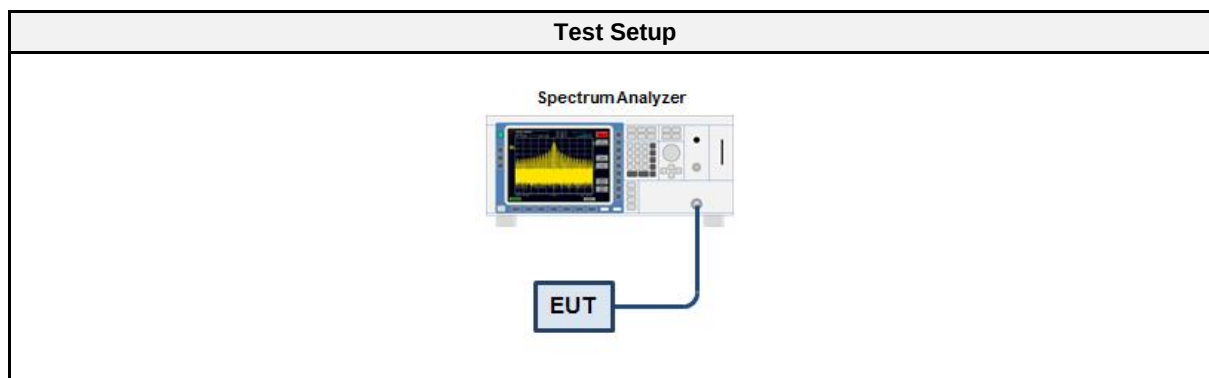
#### 3.4.1 Information

| Test Information        |                                                       |
|-------------------------|-------------------------------------------------------|
| Reference               | FCC § 15.247(e); ISSED RSS-247, Issue 2 (section 5.2) |
| Measurement Method      | ANSI C63.10 11.10.2, 14.3.2                           |
| Measurement Uncertainty | $\pm 2.86$ dB                                         |
| Operator                | Odai Qawasmeh                                         |
| Date                    | 2022-03-30                                            |

#### 3.4.2 Limits

| Limits        |
|---------------|
| 8 dBm / 3 kHz |

#### 3.4.3 Setup



#### 3.4.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAaxy | 2022-02   | 2023-02  |

#### 3.4.5 Procedure

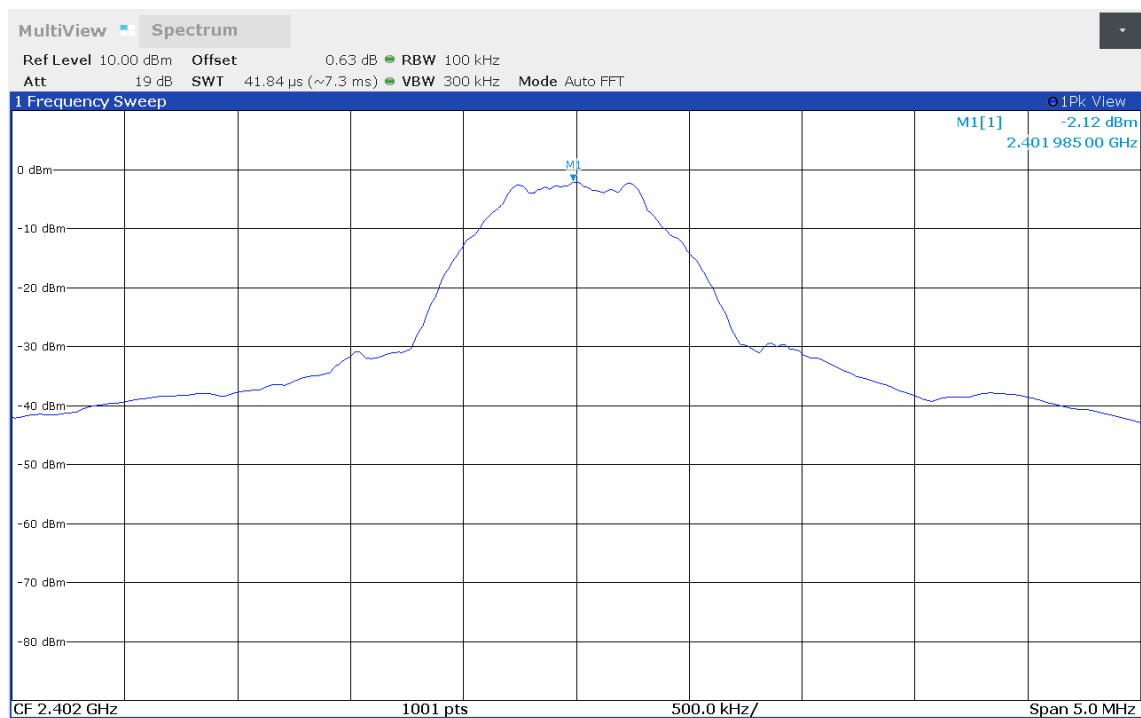
| Test Procedure                                                                                                                                                                                                                                                                                            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

### 3.4.6 Results

| Test Results     |                  |                     |         |
|------------------|------------------|---------------------|---------|
| Channel<br>[MHz] | PSD<br>[dBm/RBW] | Limit<br>[dBm/3kHz] | Verdict |
| 2402             | -2.121           | 8.0                 | PASS    |
| 2440             | -1.878           | 8.0                 | PASS    |
| 2480             | -2.177           | 8.0                 | PASS    |
| RBW = 100 kHz    |                  |                     |         |

## Peak Power Spectral Density

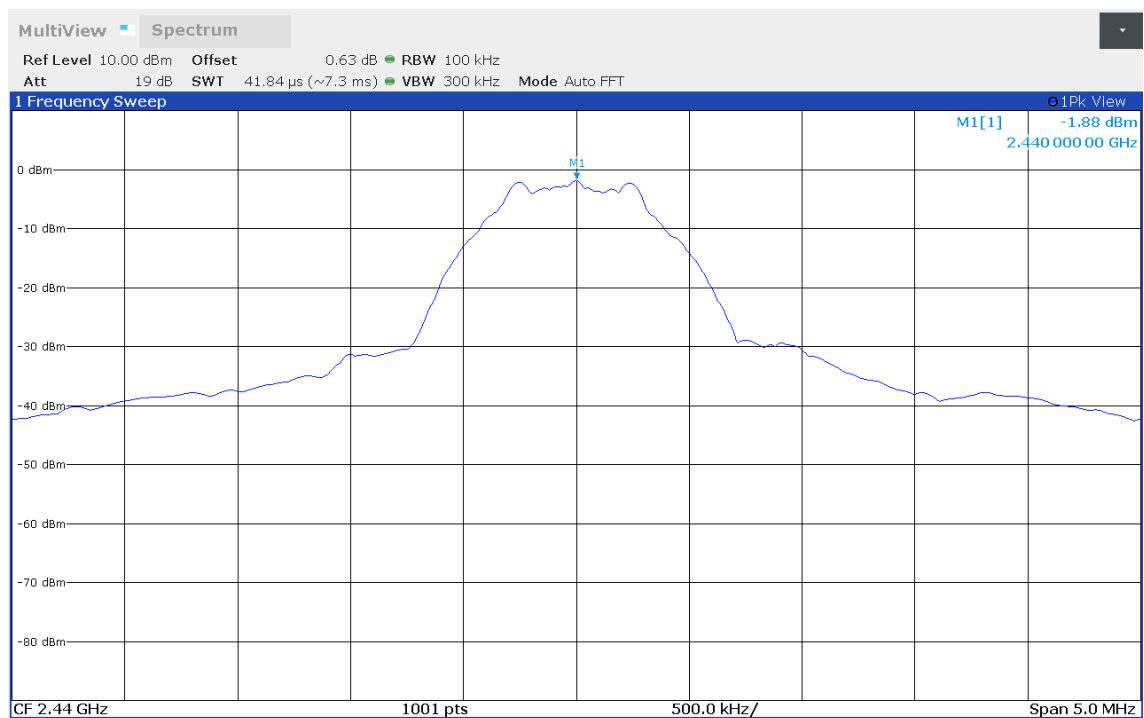
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Frequency [MHz]: 2401.985  
 Spectral Density [dBm/RBW]: -2.121  
 Resolution Bandwidth [kHz]: 100 kHz



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## Peak Power Spectral Density

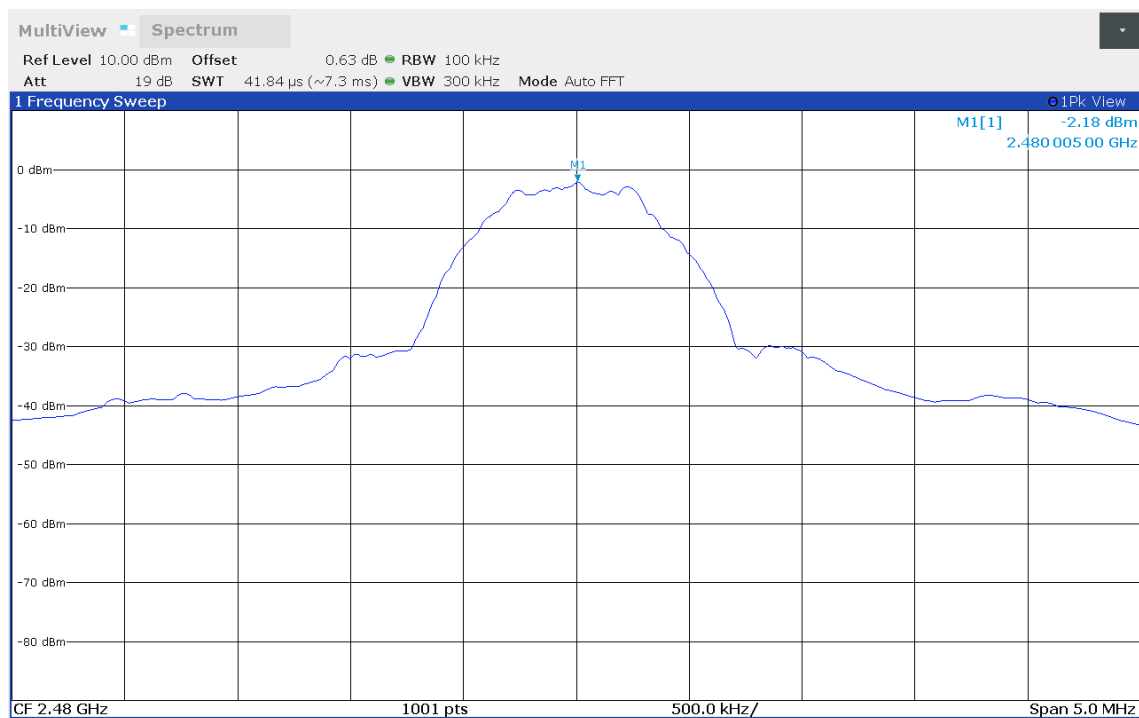
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Frequency [MHz]: 2440.000  
 Spectral Density [dBm/RBW]: -1.878  
 Resolution Bandwidth [kHz]: 100 kHz



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## Peak Power Spectral Density

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.10.2  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Peak Frequency [MHz]: 2480.005  
 Spectral Density [dBm/RBW]: -2.177  
 Resolution Bandwidth [kHz]: 100 kHz



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

#### 3.5.1 Information

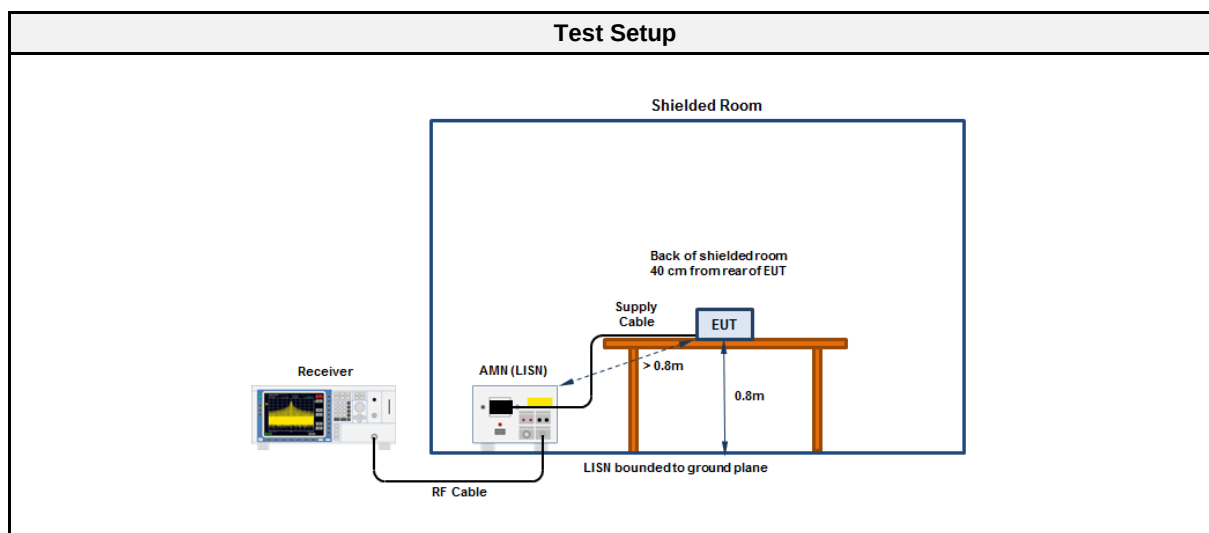
| Test Information        |                                                   |
|-------------------------|---------------------------------------------------|
| Reference               | FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1) |
| Measurement Method      | ANSI C63.10 6.2                                   |
| Measurement Uncertainty | ± 3.82 dB                                         |
| Operator                | Odai Qawasmeh                                     |
| Date                    | 2022-04-05                                        |

#### 3.5.2 Limits

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

\* Limit decreases linearly with the logarithm of the frequency

#### 3.5.3 Setup



#### 3.5.4 Equipment

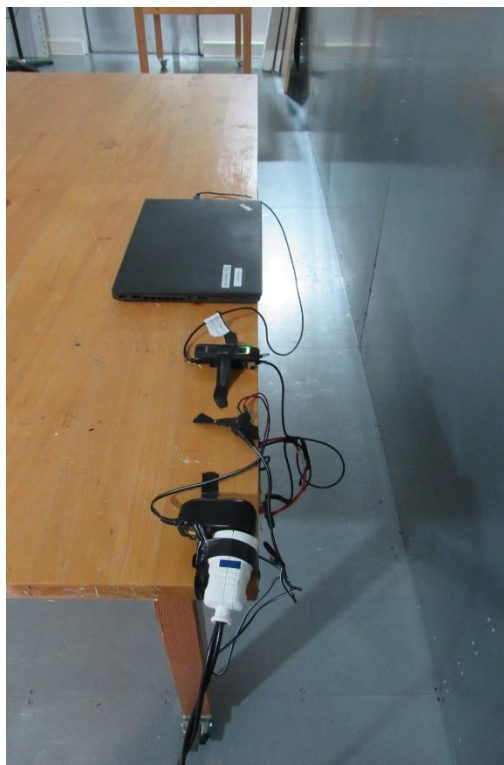
| Test Software |                  |            |          |
|---------------|------------------|------------|----------|
| Description   | Manufacturer     | Name       | Version  |
| EMC Software  | DARE Instruments | RadiMation | 2020.1.8 |

| Test Equipment    |              |              |            |           |          |
|-------------------|--------------|--------------|------------|-----------|----------|
| Description       | Manufacturer | Model        | Identifier | Cal. Date | Cal. Due |
| EMI Test Receiver | R&S          | ESR7         | EF00943    | 2021-08   | 2022-08  |
| Pulse Limiter     | R&S          | ESH3-Z2      | EF01222    | 2021-07   | 2022-07  |
| LISN              | Schwarzbeck  | NSLK 8127 RC | EF01592    | 2021-07   | 2022-07  |

**Setup for measurements 150 kHz - 30 MHz**



**Setup for measurements 150 kHz - 30 MHz**

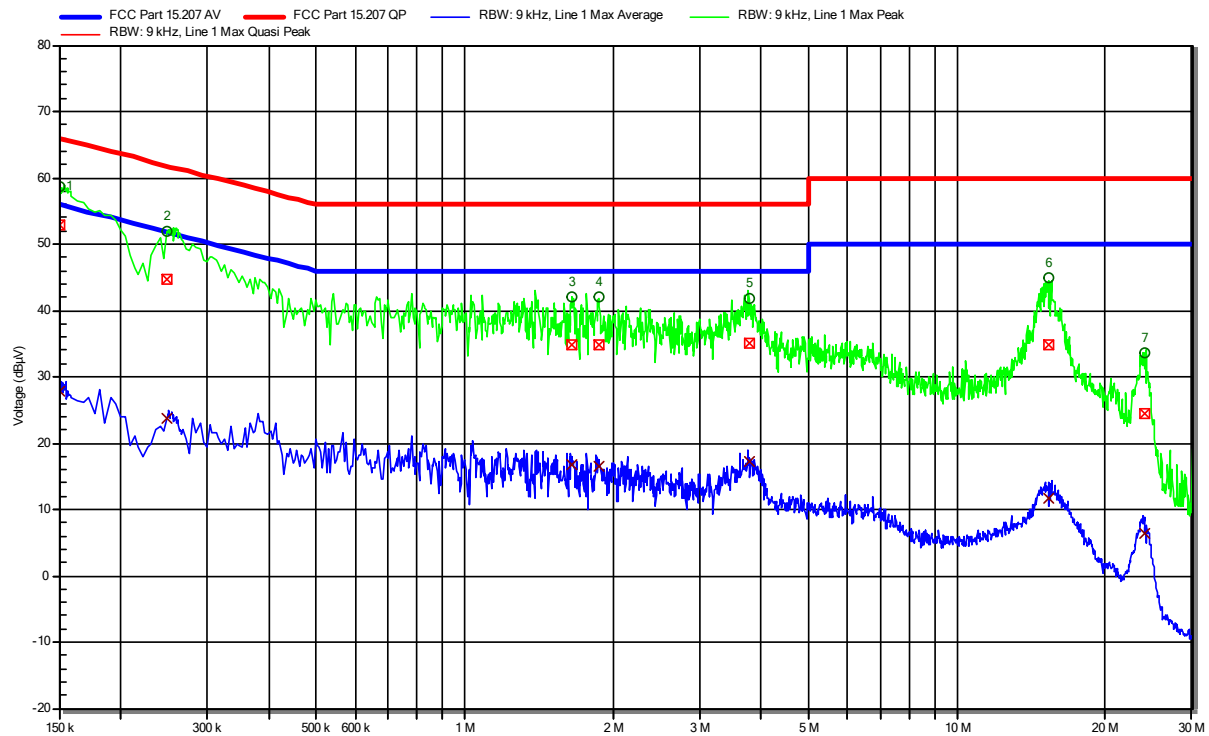


## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC L  
 Operational Mode: BLE; 1 Mbps; 2402 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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RadiMation



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN   |
|-------------|------------|------------|------------------|-----------------------|-------------------|--------|
| 1           | 150 kHz    | 52.88 dBμV | 66 dBμV          | -13.12 dB             | Pass              | Line 1 |
| 2           | 249 kHz    | 44.61 dBμV | 61.79 dBμV       | -17.19 dB             | Pass              | Line 1 |
| 3           | 1.648 MHz  | 34.91 dBμV | 56 dBμV          | -21.09 dB             | Pass              | Line 1 |
| 4           | 1.869 MHz  | 34.75 dBμV | 56 dBμV          | -21.25 dB             | Pass              | Line 1 |
| 5           | 3.777 MHz  | 35.09 dBμV | 56 dBμV          | -20.91 dB             | Pass              | Line 1 |
| 6           | 15.392 MHz | 34.88 dBμV | 60 dBμV          | -25.12 dB             | Pass              | Line 1 |
| 7           | 24.144 MHz | 24.53 dBμV | 60 dBμV          | -35.47 dB             | Pass              | Line 1 |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN   |
| 1           | 150 kHz    | 27.75 dBμV | 56 dBμV          | -28.25 dB             | Pass              | Line 1 |
| 2           | 249 kHz    | 23.69 dBμV | 51.79 dBμV       | -28.1 dB              | Pass              | Line 1 |
| 3           | 1.648 MHz  | 16.76 dBμV | 46 dBμV          | -29.24 dB             | Pass              | Line 1 |
| 4           | 1.869 MHz  | 16.5 dBμV  | 46 dBμV          | -29.5 dB              | Pass              | Line 1 |
| 5           | 3.777 MHz  | 17.27 dBμV | 46 dBμV          | -28.73 dB             | Pass              | Line 1 |
| 6           | 15.392 MHz | 11.78 dBμV | 50 dBμV          | -38.22 dB             | Pass              | Line 1 |
| 7           | 24.144 MHz | 6.33 dBμV  | 50 dBμV          | -43.67 dB             | Pass              | Line 1 |

Test Report No.: G0M-2112-1200-TFC247BL-V02

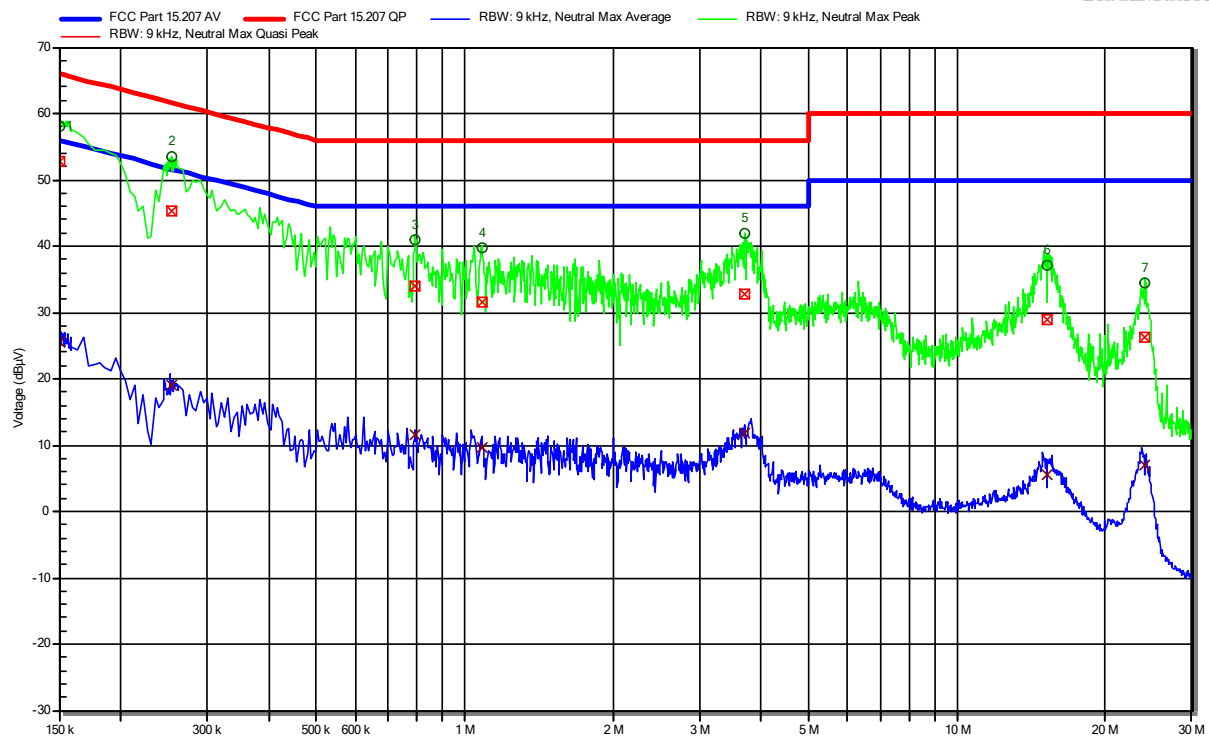
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC N  
 Operational Mode: BLE; 1 Mbps; 2402 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN    |
|-------------|------------|------------|------------------|-----------------------|-------------------|---------|
| 1           | 150 kHz    | 52.7 dBμV  | 66 dBμV          | -13.3 dB              | Pass              | Neutral |
| 2           | 253.5 kHz  | 45.23 dBμV | 61.64 dBμV       | -16.41 dB             | Pass              | Neutral |
| 3           | 791.7 kHz  | 33.91 dBμV | 56 dBμV          | -22.09 dB             | Pass              | Neutral |
| 4           | 1.084 MHz  | 31.45 dBμV | 56 dBμV          | -24.55 dB             | Pass              | Neutral |
| 5           | 3.702 MHz  | 32.8 dBμV  | 56 dBμV          | -23.2 dB              | Pass              | Neutral |
| 6           | 15.241 MHz | 28.81 dBμV | 60 dBμV          | -31.19 dB             | Pass              | Neutral |
| 7           | 23.996 MHz | 26.25 dBμV | 60 dBμV          | -33.75 dB             | Pass              | Neutral |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN    |
| 1           | 150 kHz    | 25.57 dBμV | 56 dBμV          | -30.43 dB             | Pass              | Neutral |
| 2           | 253.5 kHz  | 19.03 dBμV | 51.64 dBμV       | -32.61 dB             | Pass              | Neutral |
| 3           | 791.7 kHz  | 11.46 dBμV | 46 dBμV          | -34.54 dB             | Pass              | Neutral |
| 4           | 1.084 MHz  | 9.56 dBμV  | 46 dBμV          | -36.44 dB             | Pass              | Neutral |
| 5           | 3.702 MHz  | 11.85 dBμV | 46 dBμV          | -34.15 dB             | Pass              | Neutral |
| 6           | 15.241 MHz | 5.56 dBμV  | 50 dBμV          | -44.44 dB             | Pass              | Neutral |
| 7           | 23.996 MHz | 6.99 dBμV  | 50 dBμV          | -43.01 dB             | Pass              | Neutral |

Test Report No.: G0M-2112-1200-TFC247BL-V02

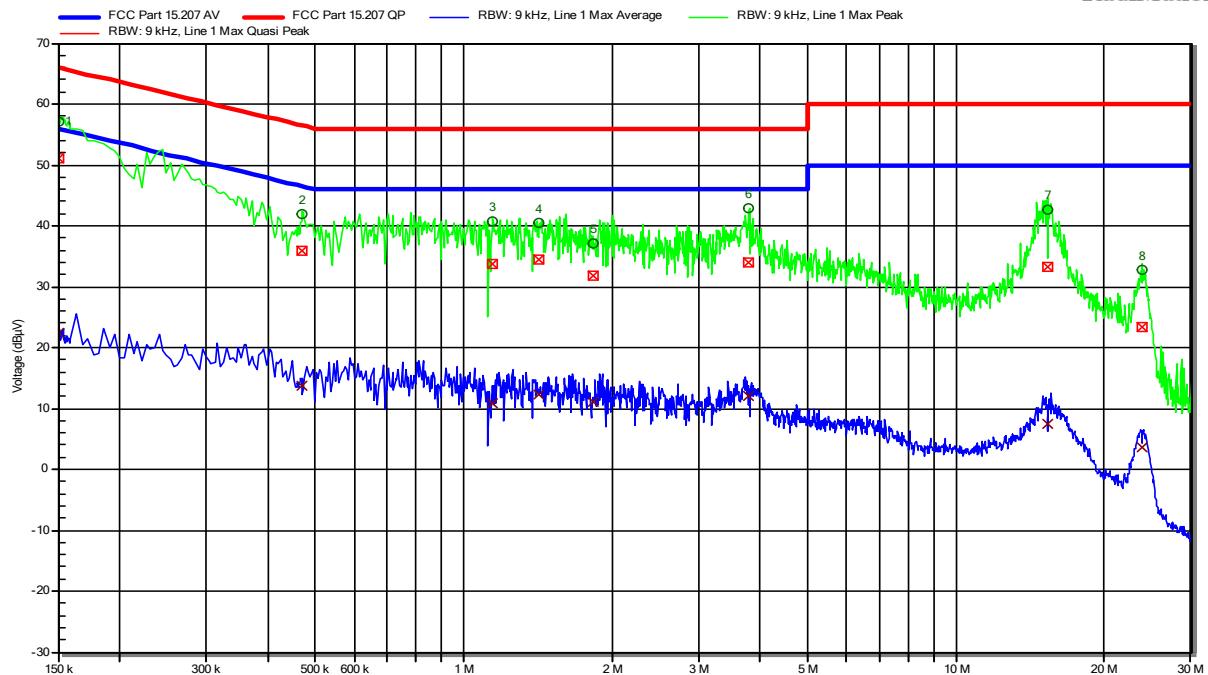
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC L  
 Operational Mode: BLE; 1 Mbps; 2440 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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RadiMation



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN   |
|-------------|------------|------------|------------------|-----------------------|-------------------|--------|
| 1           | 150 kHz    | 51.02 dBμV | 66 dBμV          | -14.98 dB             | Pass              | Line 1 |
| 2           | 470.4 kHz  | 35.84 dBμV | 56.51 dBμV       | -20.67 dB             | Pass              | Line 1 |
| 3           | 1.144 MHz  | 33.71 dBμV | 56 dBμV          | -22.29 dB             | Pass              | Line 1 |
| 4           | 1.426 MHz  | 34.36 dBμV | 56 dBμV          | -21.64 dB             | Pass              | Line 1 |
| 5           | 1.833 MHz  | 31.76 dBμV | 56 dBμV          | -24.24 dB             | Pass              | Line 1 |
| 6           | 3.801 MHz  | 34.02 dBμV | 56 dBμV          | -21.98 dB             | Pass              | Line 1 |
| 7           | 15.405 MHz | 33.29 dBμV | 60 dBμV          | -26.71 dB             | Pass              | Line 1 |
| 8           | 23.928 MHz | 23.37 dBμV | 60 dBμV          | -36.63 dB             | Pass              | Line 1 |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN   |
| 1           | 150 kHz    | 22.52 dBμV | 56 dBμV          | -33.48 dB             | Pass              | Line 1 |
| 2           | 470.4 kHz  | 13.63 dBμV | 46.51 dBμV       | -32.87 dB             | Pass              | Line 1 |
| 3           | 1.144 MHz  | 10.86 dBμV | 46 dBμV          | -35.14 dB             | Pass              | Line 1 |
| 4           | 1.426 MHz  | 12.35 dBμV | 46 dBμV          | -33.65 dB             | Pass              | Line 1 |
| 5           | 1.833 MHz  | 10.98 dBμV | 46 dBμV          | -35.02 dB             | Pass              | Line 1 |
| 6           | 3.801 MHz  | 12.06 dBμV | 46 dBμV          | -33.94 dB             | Pass              | Line 1 |
| 7           | 15.405 MHz | 7.48 dBμV  | 50 dBμV          | -42.52 dB             | Pass              | Line 1 |
| 8           | 23.928 MHz | 3.57 dBμV  | 50 dBμV          | -46.43 dB             | Pass              | Line 1 |

Test Report No.: G0M-2112-1200-TFC247BL-V02

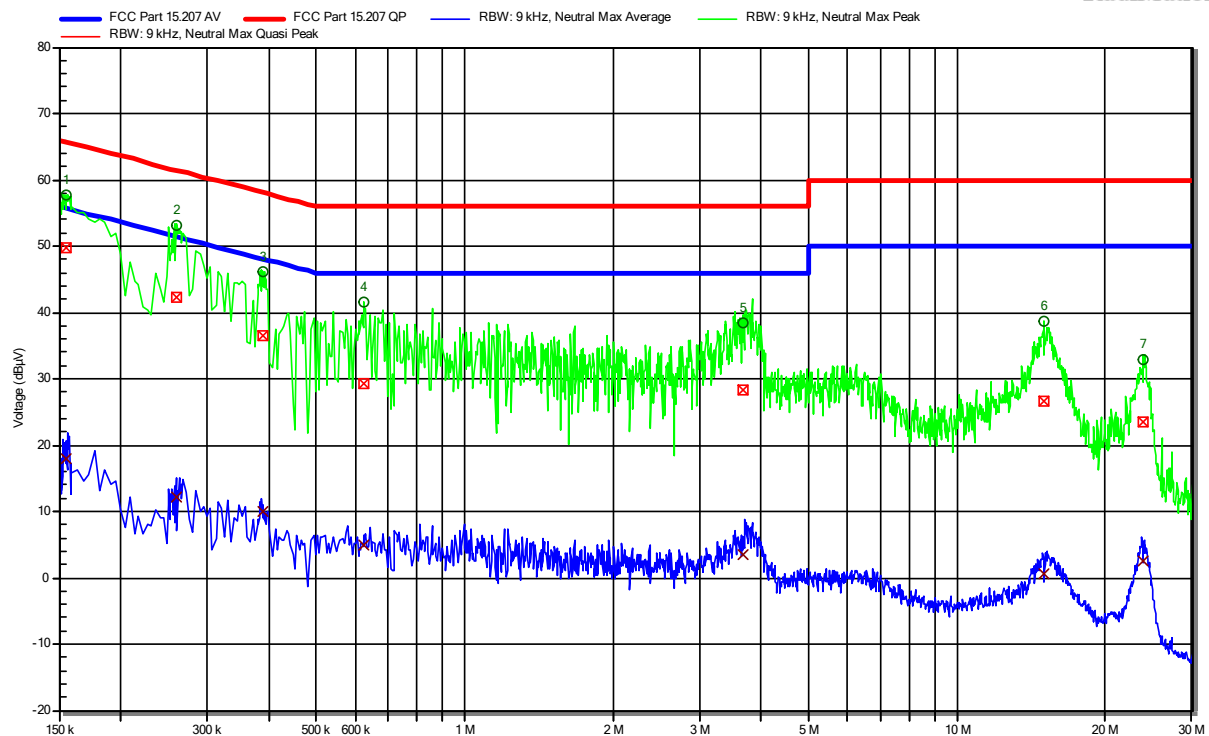
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC N  
 Operational Mode: BLE; 1 Mbps; 2440 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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**RadiMation**



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN    |
|-------------|------------|------------|------------------|-----------------------|-------------------|---------|
| 1           | 155.4 kHz  | 49.68 dBμV | 65.71 dBμV       | -16.03 dB             | Pass              | Neutral |
| 2           | 260.25 kHz | 42.25 dBμV | 61.42 dBμV       | -19.17 dB             | Pass              | Neutral |
| 3           | 388.5 kHz  | 36.61 dBμV | 58.1 dBμV        | -21.49 dB             | Pass              | Neutral |
| 4           | 623.4 kHz  | 29.38 dBμV | 56 dBμV          | -26.62 dB             | Pass              | Neutral |
| 5           | 3.665 MHz  | 28.29 dBμV | 56 dBμV          | -27.71 dB             | Pass              | Neutral |
| 6           | 15.029 MHz | 26.7 dBμV  | 60 dBμV          | -33.3 dB              | Pass              | Neutral |
| 7           | 23.865 MHz | 23.38 dBμV | 60 dBμV          | -36.62 dB             | Pass              | Neutral |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN    |
| 1           | 155.4 kHz  | 17.91 dBμV | 55.71 dBμV       | -37.8 dB              | Pass              | Neutral |
| 2           | 260.25 kHz | 12.06 dBμV | 51.42 dBμV       | -39.36 dB             | Pass              | Neutral |
| 3           | 388.5 kHz  | 9.89 dBμV  | 48.1 dBμV        | -38.2 dB              | Pass              | Neutral |
| 4           | 623.4 kHz  | 4.84 dBμV  | 46 dBμV          | -41.16 dB             | Pass              | Neutral |
| 5           | 3.665 MHz  | 3.5 dBμV   | 46 dBμV          | -42.5 dB              | Pass              | Neutral |
| 6           | 15.029 MHz | 0.58 dBμV  | 50 dBμV          | -49.42 dB             | Pass              | Neutral |
| 7           | 23.865 MHz | 2.48 dBμV  | 50 dBμV          | -47.52 dB             | Pass              | Neutral |

Test Report No.: G0M-2112-1200-TFC247BL-V02

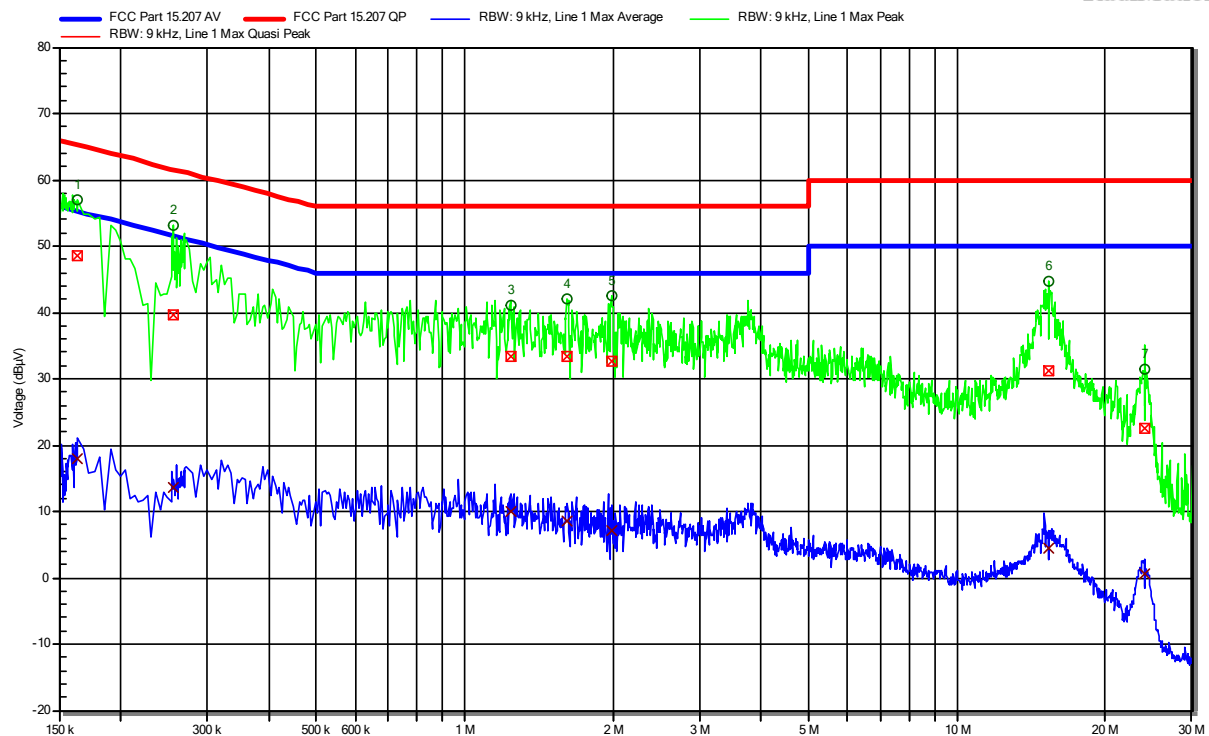
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC L  
 Operational Mode: BLE; 1 Mbps; 2480 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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RadiMation



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN   |
|-------------|------------|------------|------------------|-----------------------|-------------------|--------|
| 1           | 163.5 kHz  | 48.48 dBμV | 65.28 dBμV       | -16.8 dB              | Pass              | Line 1 |
| 2           | 255.75 kHz | 39.58 dBμV | 61.57 dBμV       | -21.99 dB             | Pass              | Line 1 |
| 3           | 1.243 MHz  | 33.44 dBμV | 56 dBμV          | -22.56 dB             | Pass              | Line 1 |
| 4           | 1.612 MHz  | 33.32 dBμV | 56 dBμV          | -22.68 dB             | Pass              | Line 1 |
| 5           | 1.985 MHz  | 32.66 dBμV | 56 dBμV          | -23.34 dB             | Pass              | Line 1 |
| 6           | 15.346 MHz | 31.3 dBμV  | 60 dBμV          | -28.7 dB              | Pass              | Line 1 |
| 7           | 24 MHz     | 22.43 dBμV | 60 dBμV          | -37.57 dB             | Pass              | Line 1 |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN   |
| 1           | 163.5 kHz  | 17.88 dBμV | 55.28 dBμV       | -37.4 dB              | Pass              | Line 1 |
| 2           | 255.75 kHz | 13.51 dBμV | 51.57 dBμV       | -38.06 dB             | Pass              | Line 1 |
| 3           | 1.243 MHz  | 9.89 dBμV  | 46 dBμV          | -36.11 dB             | Pass              | Line 1 |
| 4           | 1.612 MHz  | 8.65 dBμV  | 46 dBμV          | -37.35 dB             | Pass              | Line 1 |
| 5           | 1.985 MHz  | 7.09 dBμV  | 46 dBμV          | -38.91 dB             | Pass              | Line 1 |
| 6           | 15.346 MHz | 4.42 dBμV  | 50 dBμV          | -45.58 dB             | Pass              | Line 1 |
| 7           | 24 MHz     | 0.6 dBμV   | 50 dBμV          | -49.4 dB              | Pass              | Line 1 |

Test Report No.: G0M-2112-1200-TFC247BL-V02

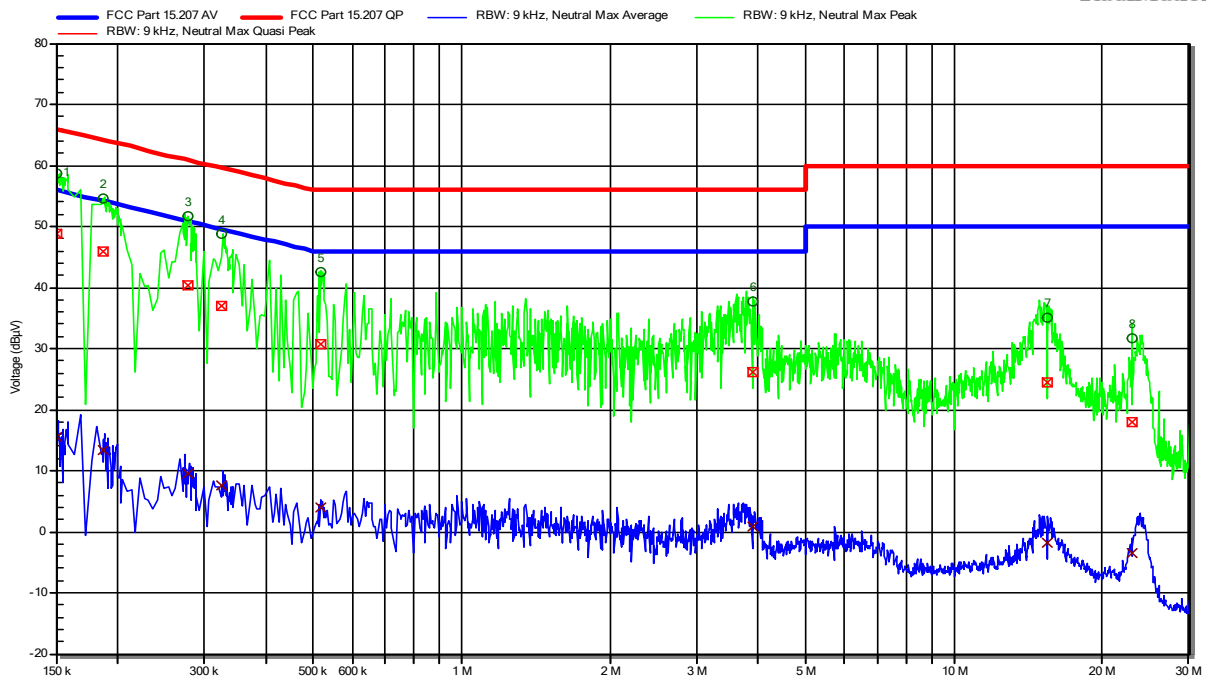
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC N  
 Operational Mode: BLE; 1 Mbps; 2480 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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**Radiation**



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN    |
|-------------|------------|------------|------------------|-----------------------|-------------------|---------|
| 1           | 150 kHz    | 48.69 dBμV | 66 dBμV          | -17.31 dB             | Pass              | Neutral |
| 2           | 186.45 kHz | 46 dBμV    | 64.19 dBμV       | -18.19 dB             | Pass              | Neutral |
| 3           | 277.35 kHz | 40.45 dBμV | 60.89 dBμV       | -20.45 dB             | Pass              | Neutral |
| 4           | 326.4 kHz  | 36.98 dBμV | 59.54 dBμV       | -22.56 dB             | Pass              | Neutral |
| 5           | 518.55 kHz | 30.77 dBμV | 56 dBμV          | -25.23 dB             | Pass              | Neutral |
| 6           | 3.909 MHz  | 26.08 dBμV | 56 dBμV          | -29.92 dB             | Pass              | Neutral |
| 7           | 15.447 MHz | 24.54 dBμV | 60 dBμV          | -35.46 dB             | Pass              | Neutral |
| 8           | 23.049 MHz | 18.02 dBμV | 60 dBμV          | -41.98 dB             | Pass              | Neutral |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN    |
| 1           | 150 kHz    | 15.51 dBμV | 56 dBμV          | -40.49 dB             | Pass              | Neutral |
| 2           | 186.45 kHz | 13.28 dBμV | 54.19 dBμV       | -40.91 dB             | Pass              | Neutral |
| 3           | 277.35 kHz | 9.43 dBμV  | 50.89 dBμV       | -41.46 dB             | Pass              | Neutral |
| 4           | 326.4 kHz  | 7.56 dBμV  | 49.54 dBμV       | -41.99 dB             | Pass              | Neutral |
| 5           | 518.55 kHz | 4.09 dBμV  | 46 dBμV          | -41.91 dB             | Pass              | Neutral |
| 6           | 3.909 MHz  | 0.87 dBμV  | 46 dBμV          | -45.13 dB             | Pass              | Neutral |
| 7           | 15.447 MHz | -1.91 dBμV | 50 dBμV          | -51.91 dB             | Pass              | Neutral |
| 8           | 23.049 MHz | -3.38 dBμV | 50 dBμV          | -53.38 dB             | Pass              | Neutral |

Test Report No.: G0M-2112-1200-TFC247BL-V02

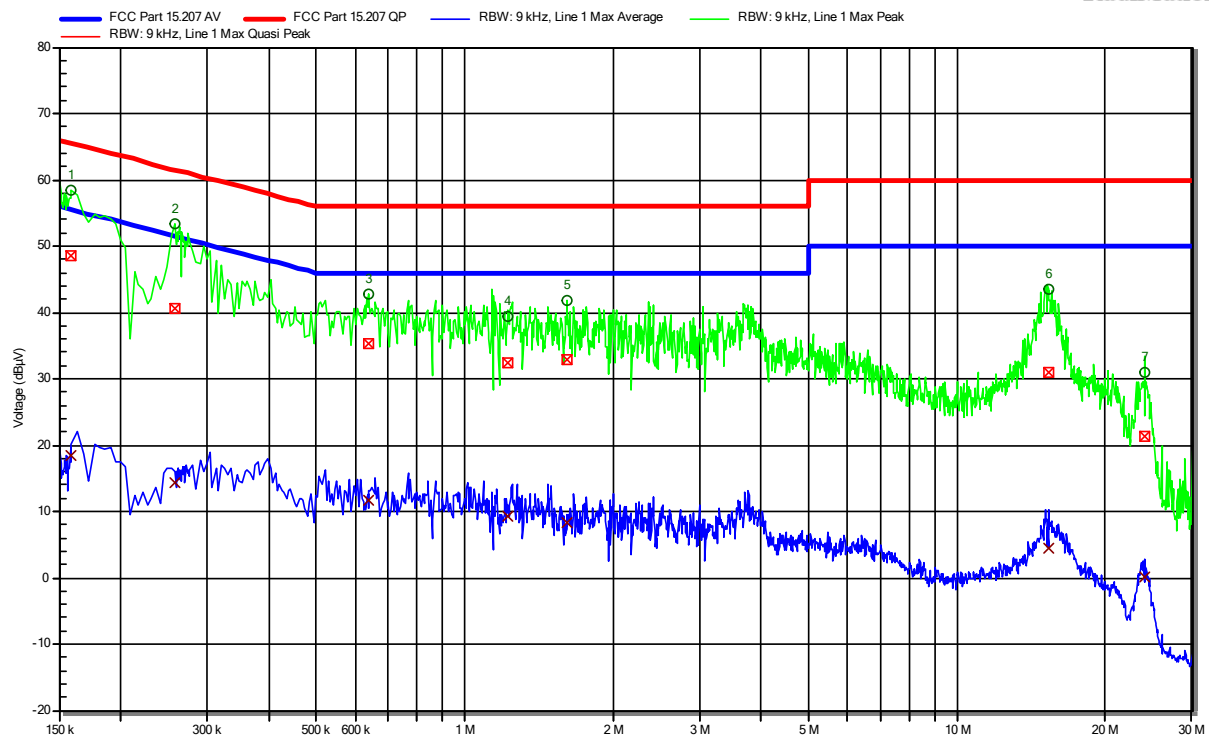
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC L  
 Operational Mode: BLE; 2440 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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**RadiMation**



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN   |
|-------------|------------|------------|------------------|-----------------------|-------------------|--------|
| 1           | 159 kHz    | 48.65 dBμV | 65.52 dBμV       | -16.87 dB             | Pass              | Line 1 |
| 2           | 258 kHz    | 40.71 dBμV | 61.5 dBμV        | -20.79 dB             | Pass              | Line 1 |
| 3           | 638.25 kHz | 35.28 dBμV | 56 dBμV          | -20.72 dB             | Pass              | Line 1 |
| 4           | 1.221 MHz  | 32.43 dBμV | 56 dBμV          | -23.57 dB             | Pass              | Line 1 |
| 5           | 1.616 MHz  | 32.86 dBμV | 56 dBμV          | -23.14 dB             | Pass              | Line 1 |
| 6           | 15.3 MHz   | 30.93 dBμV | 60 dBμV          | -29.07 dB             | Pass              | Line 1 |
| 7           | 23.987 MHz | 21.41 dBμV | 60 dBμV          | -38.59 dB             | Pass              | Line 1 |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN   |
| 1           | 159 kHz    | 18.37 dBμV | 55.52 dBμV       | -37.15 dB             | Pass              | Line 1 |
| 2           | 258 kHz    | 14.31 dBμV | 51.5 dBμV        | -37.18 dB             | Pass              | Line 1 |
| 3           | 638.25 kHz | 11.8 dBμV  | 46 dBμV          | -34.2 dB              | Pass              | Line 1 |
| 4           | 1.221 MHz  | 9.17 dBμV  | 46 dBμV          | -36.83 dB             | Pass              | Line 1 |
| 5           | 1.616 MHz  | 8.37 dBμV  | 46 dBμV          | -37.63 dB             | Pass              | Line 1 |
| 6           | 15.3 MHz   | 4.47 dBμV  | 50 dBμV          | -45.53 dB             | Pass              | Line 1 |
| 7           | 23.987 MHz | 0.09 dBμV  | 50 dBμV          | -49.91 dB             | Pass              | Line 1 |

Test Report No.: G0M-2112-1200-TFC247BL-V02

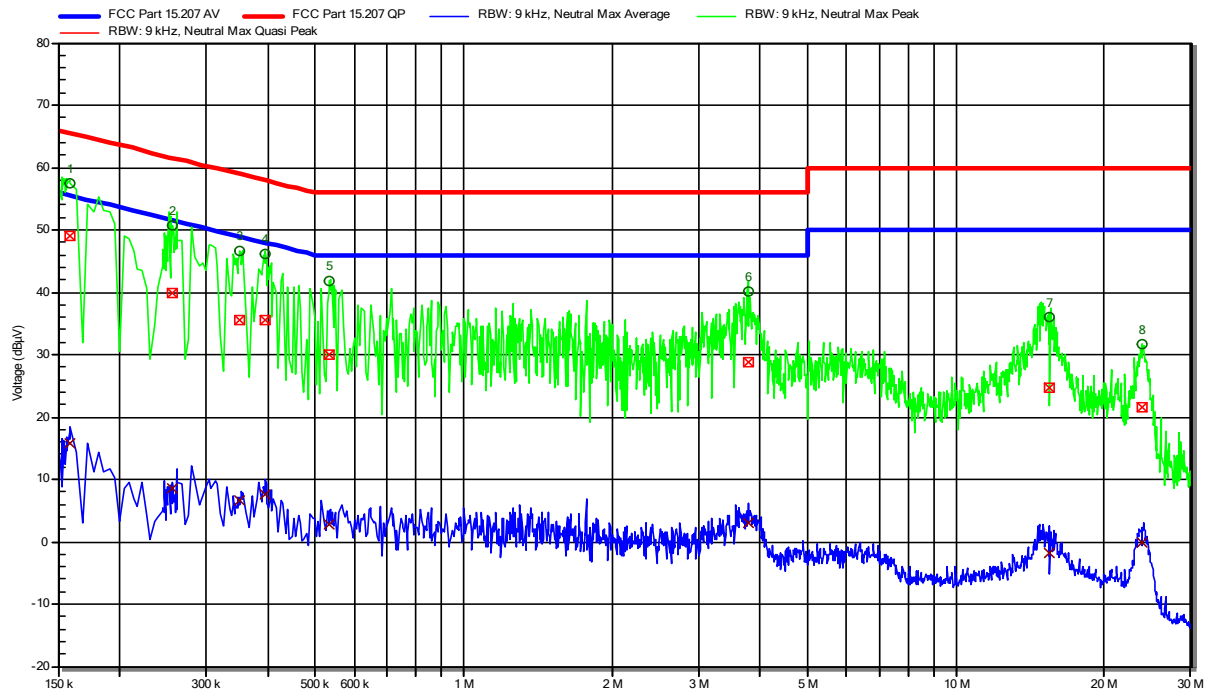
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Conducted emissions at the mains power port according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Test Date: 2022-04-05  
 Operating Conditions: ambient temperature: 20 °Celsius  
 power input: 13.5 VDC  
 LISN: Schwarzbeck NSLK 8127 RC N  
 Operational Mode: BLE; 2440 MHz  
 Applied to Port: 120 VAC / 60 Hz  
 Note 1:

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RadiMation



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN    |
|-------------|------------|------------|------------------|-----------------------|-------------------|---------|
| 1           | 159 kHz    | 49.04 dBμV | 65.52 dBμV       | -16.48 dB             | Pass              | Neutral |
| 2           | 256.2 kHz  | 39.89 dBμV | 61.55 dBμV       | -21.66 dB             | Pass              | Neutral |
| 3           | 350.25 kHz | 35.51 dBμV | 58.96 dBμV       | -23.44 dB             | Pass              | Neutral |
| 4           | 393.9 kHz  | 35.65 dBμV | 57.98 dBμV       | -22.33 dB             | Pass              | Neutral |
| 5           | 532.95 kHz | 30.09 dBμV | 56 dBμV          | -25.91 dB             | Pass              | Neutral |
| 6           | 3.775 MHz  | 28.83 dBμV | 56 dBμV          | -27.17 dB             | Pass              | Neutral |
| 7           | 15.503 MHz | 24.66 dBμV | 60 dBμV          | -35.34 dB             | Pass              | Neutral |
| 8           | 23.93 MHz  | 21.46 dBμV | 60 dBμV          | -38.54 dB             | Pass              | Neutral |
| Peak Number | Frequency  | Average    | Average Limit    | Average Difference    | Average Status    | LISN    |
| 1           | 159 kHz    | 15.77 dBμV | 55.52 dBμV       | -39.75 dB             | Pass              | Neutral |
| 2           | 256.2 kHz  | 8.61 dBμV  | 51.55 dBμV       | -42.95 dB             | Pass              | Neutral |
| 3           | 350.25 kHz | 6.53 dBμV  | 48.96 dBμV       | -42.42 dB             | Pass              | Neutral |
| 4           | 393.9 kHz  | 7.63 dBμV  | 47.98 dBμV       | -40.35 dB             | Pass              | Neutral |
| 5           | 532.95 kHz | 2.79 dBμV  | 46 dBμV          | -43.21 dB             | Pass              | Neutral |
| 6           | 3.775 MHz  | 2.95 dBμV  | 46 dBμV          | -43.05 dB             | Pass              | Neutral |
| 7           | 15.503 MHz | -1.77 dBμV | 50 dBμV          | -51.77 dB             | Pass              | Neutral |
| 8           | 23.93 MHz  | -0.09 dBμV | 50 dBμV          | -50.09 dB             | Pass              | Neutral |

Test Report No.: G0M-2112-1200-TFC247BL-V02

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

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

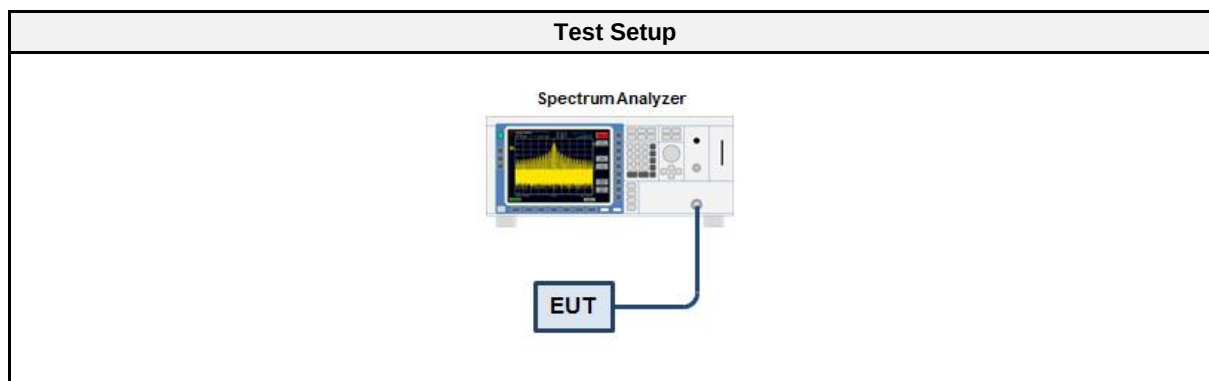
#### 3.6.1 Information

| Test Information        |                                                      |
|-------------------------|------------------------------------------------------|
| Reference               | FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5) |
| Measurement Uncertainty | $\pm 3.64$ dB                                        |
| Measurement Method      | ANSI C63.10 11.13                                    |
| Operator                | Odai Qawasmeh                                        |
| Date                    | 2022-03-30                                           |

#### 3.6.2 Limits

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

#### 3.6.3 Setup



#### 3.6.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAAxy | 2022-02   | 2023-02  |

#### 3.6.5 Procedure

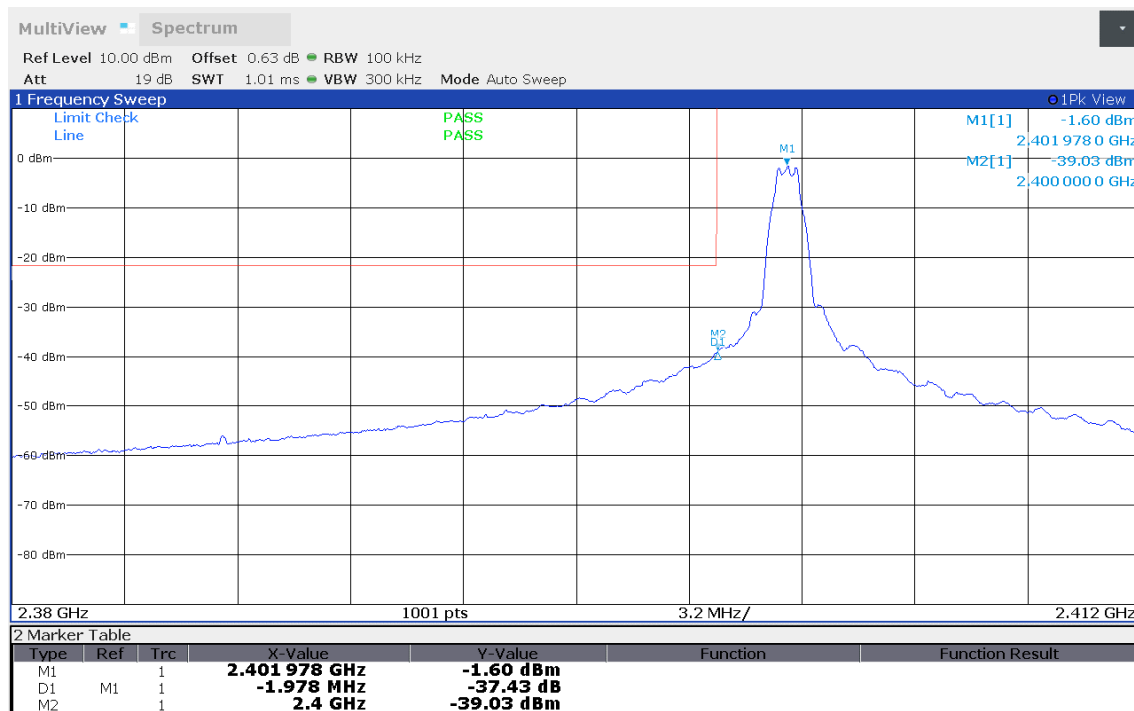
| Test Procedure                                                                                                                                                                                                                                                                                            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

### 3.6.6 Results

| Test Results |               |                              |            |         |
|--------------|---------------|------------------------------|------------|---------|
| Mode         | Channel [MHz] | Out-of-band Attenuation [dB] | Limit [dB] | Verdict |
| GFSK         | 2402          | -37.43                       | -20        | PASS    |
| GFSK         | 2480          | -42.77                       | -20        | PASS    |

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

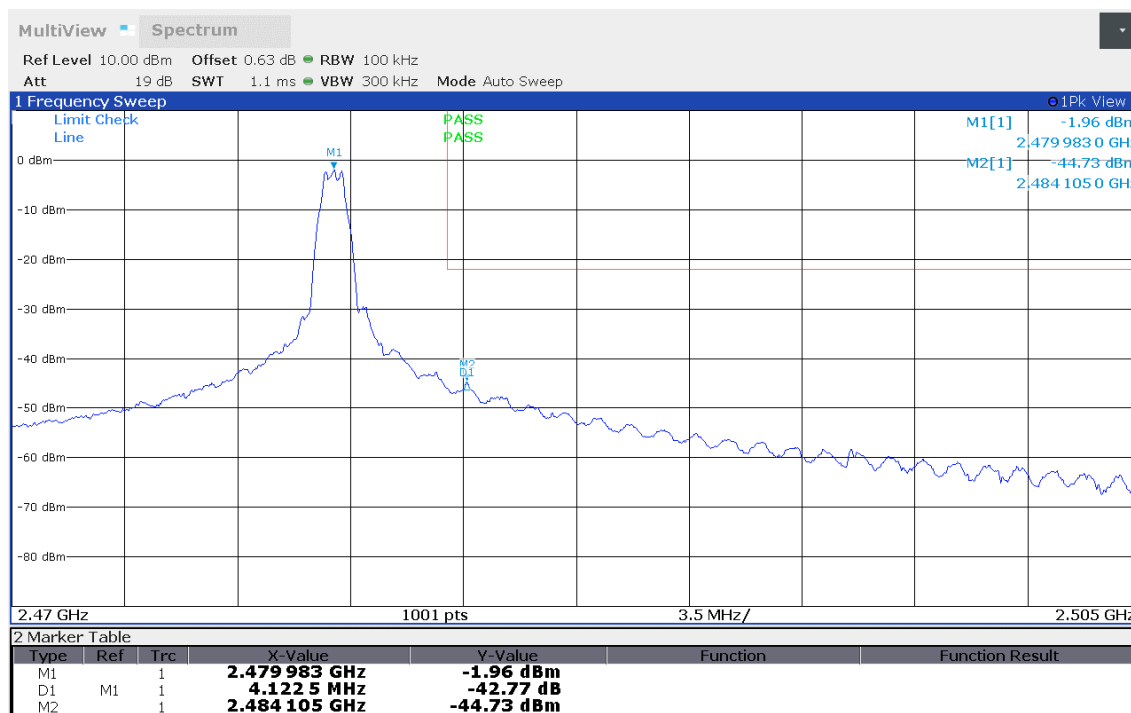
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Band-edge: Lower  
 In-band Frequency [MHz]: 2401.978  
 Max. in-band Level [dBm/100 kHz]: -1.603  
 Out-of-band Frequency [MHz]: 2400.0  
 Max. out-of-band Level [dBm/100 kHz]: -39.035  
 Attenuation [dB]: -37.43



11:43:34 30.03.2022

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

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 7.8.6, 6.10.4  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Band-edge: Upper  
 In-band Frequency [MHz]: 2479.983  
 Max. in-band Level [dBm/100 kHz]: -1.959  
 Out-of-band Frequency [MHz]: 2484.105  
 Max. out-of-band Level [dBm/100 kHz]: -44.728  
 Attenuation [dB]: -42.77



12:05:09 30.03.2022

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

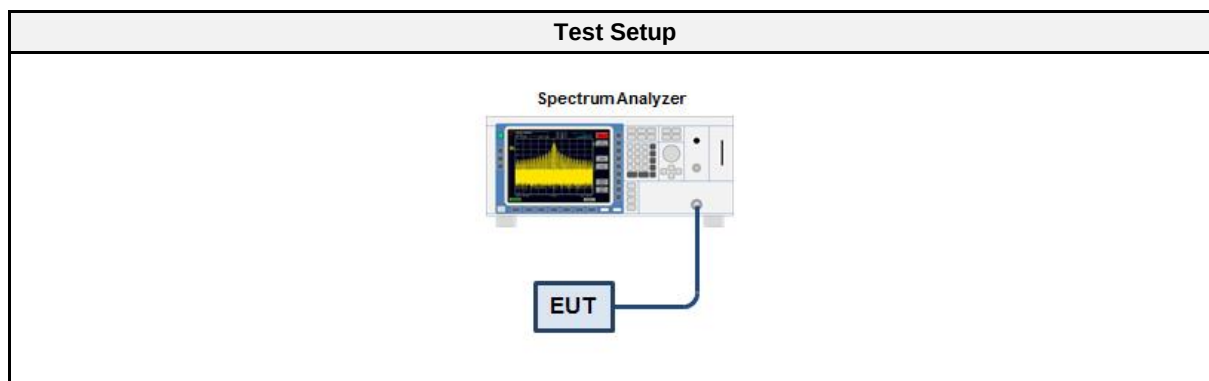
#### 3.7.1 Information

| Test Information        |                                                      |
|-------------------------|------------------------------------------------------|
| Reference               | FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5) |
| Measurement Uncertainty | ± 4.25 dB                                            |
| Measurement Method      | ANSI C63.10 11.11                                    |
| Operator                | Odai Qawasmeh                                        |
| Date                    | 2022-03-30                                           |

#### 3.7.2 Limits

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

#### 3.7.3 Setup



#### 3.7.4 Equipment

| Test Equipment    |              |             |               |           |          |
|-------------------|--------------|-------------|---------------|-----------|----------|
| Description       | Manufacturer | Model       | Identifier    | Cal. Date | Cal. Due |
| Spectrum Analyser | R&S          | FSW 43      | EF00896       | 2021-07   | 2022-07  |
| Cable (diverse)   | – (diverse)  | – (diverse) | EF00779 CAAxy | 2022-02   | 2023-02  |

#### 3.7.5 Procedure

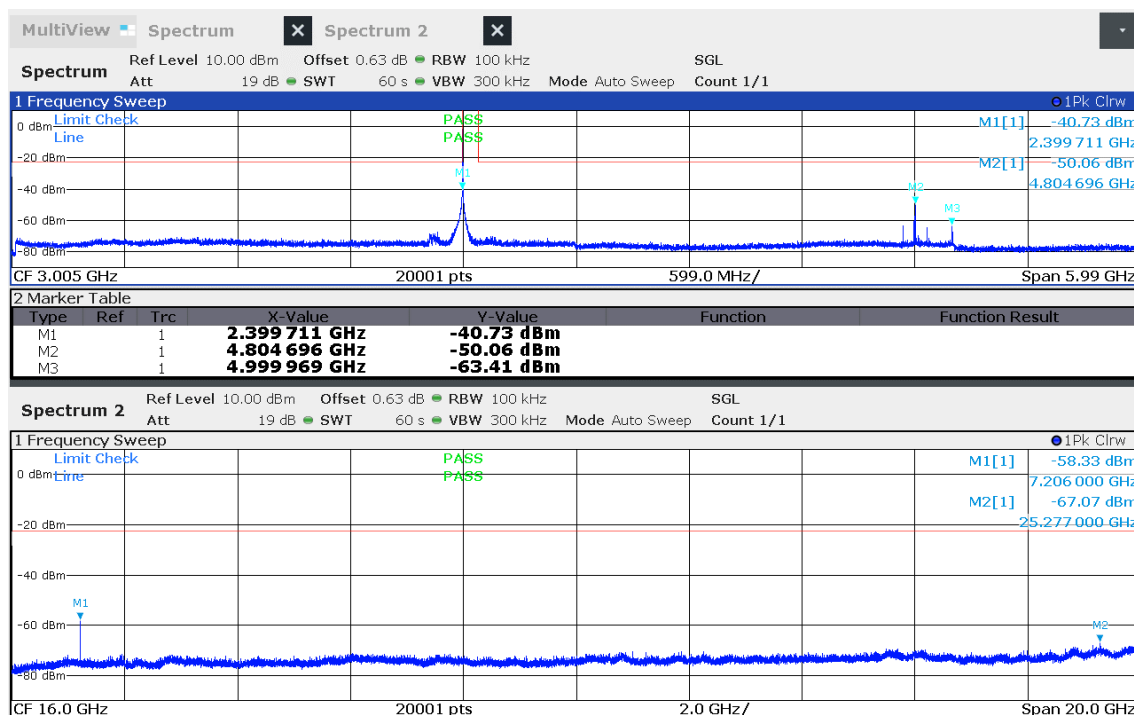
| Test Procedure                                                                                                                                                                                                                                                                                            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

### 3.7.6 Results

| Test Results |                  |         |
|--------------|------------------|---------|
| Mode         | Channel<br>[MHz] | Verdict |
| GFSK         | 2402             | PASS    |
| GFSK         | 2440             | PASS    |
| GFSK         | 2480             | PASS    |

## Conducted Spurious Emissions

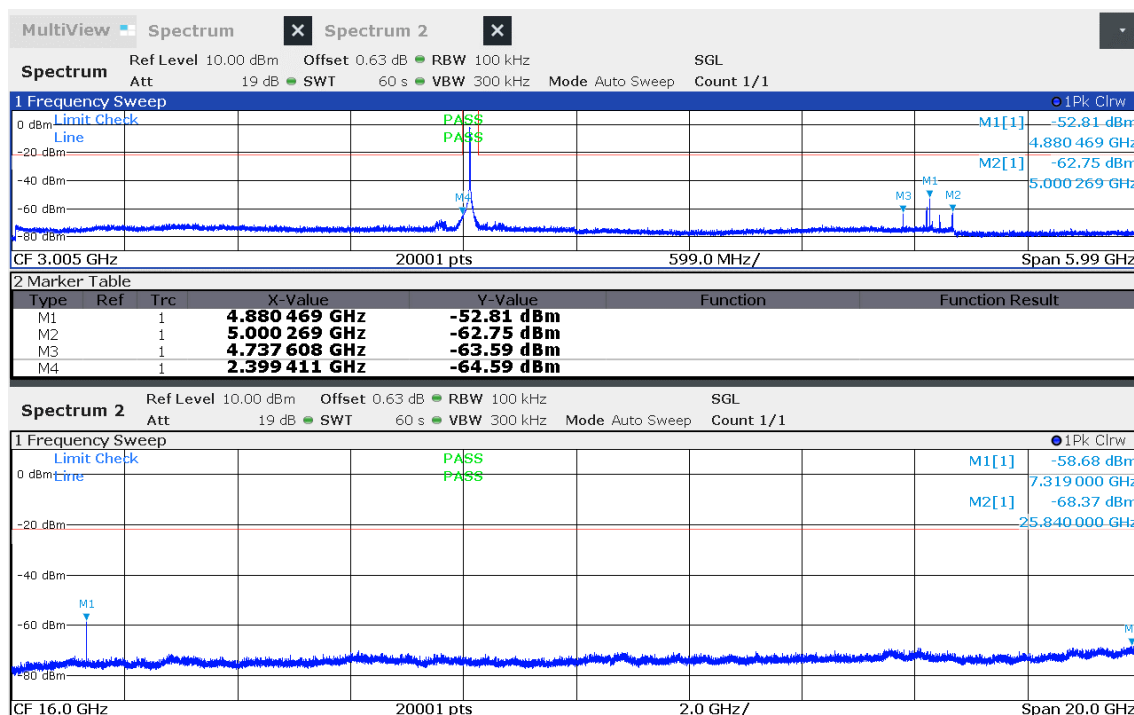
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 0, 2402 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Max. in-band Frequency [MHz]: 2402.0  
 Max. in-band Level [dBm/100 kHz]: -2.6  
 Out-of-band Limit [dBm/100 kHz]: -22.6



11:48:26 30.03.2022

## Conducted Spurious Emissions

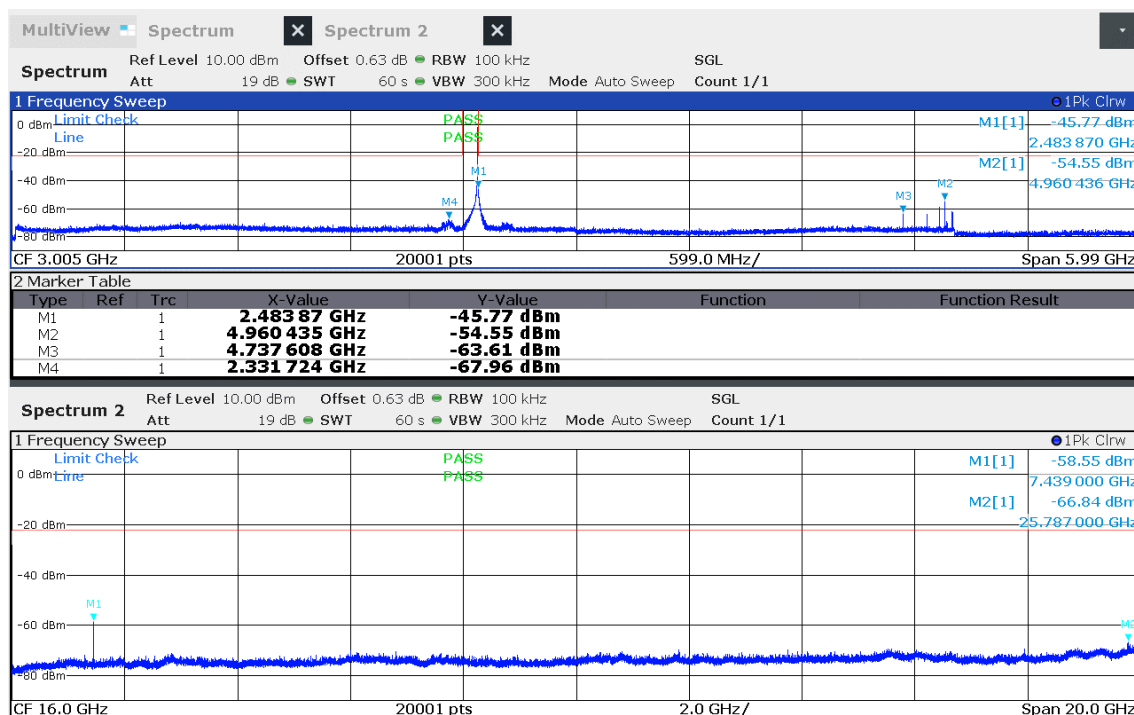
Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 19, 2440 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Max. in-band Frequency [MHz]: 2440.0  
 Max. in-band Level [dBm/100 kHz]: -1.8  
 Out-of-band Limit [dBm/100 kHz]: -21.8



11:58:39 30.03.2022

## Conducted Spurious Emissions

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38501  
 Reference Standards: FCC 15.247, RSS-247  
 Reference Method: ANSI C63.10:2013, Section 11.11  
 Operational Mode: GFSK, Channel: 39, 2480 MHz  
 Operating Conditions: Tnom/Vnom  
 Operator: Odai Qawasmeh  
 Test Site: Eurofins Product Service GmbH  
 Test Date: 2022-03-30  
 Max. in-band Frequency [MHz]: 2480.0  
 Max. in-band Level [dBm/100 kHz]: -2.1  
 Out-of-band Limit [dBm/100 kHz]: -22.1



12:09:13 30.03.2022

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

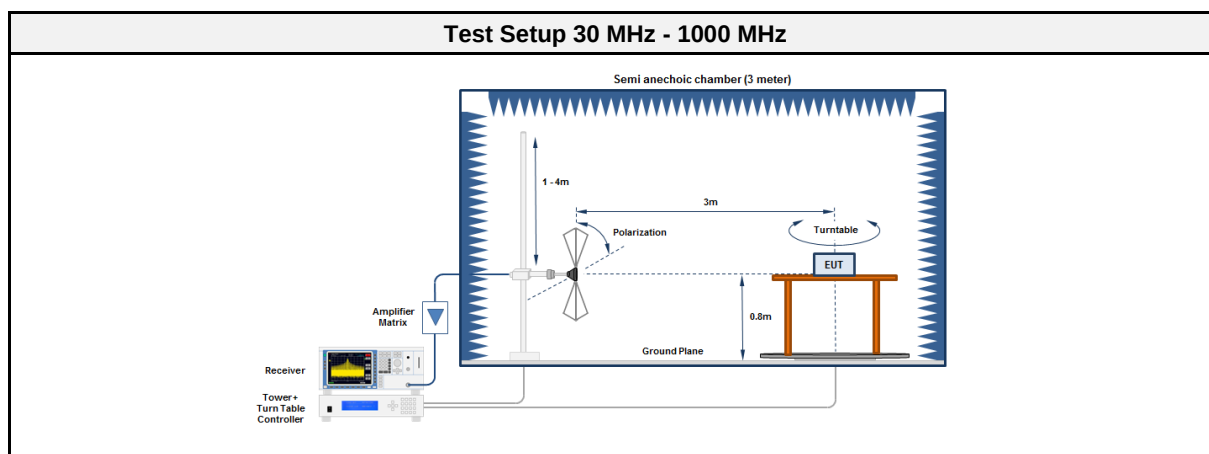
#### 3.8.1 Information

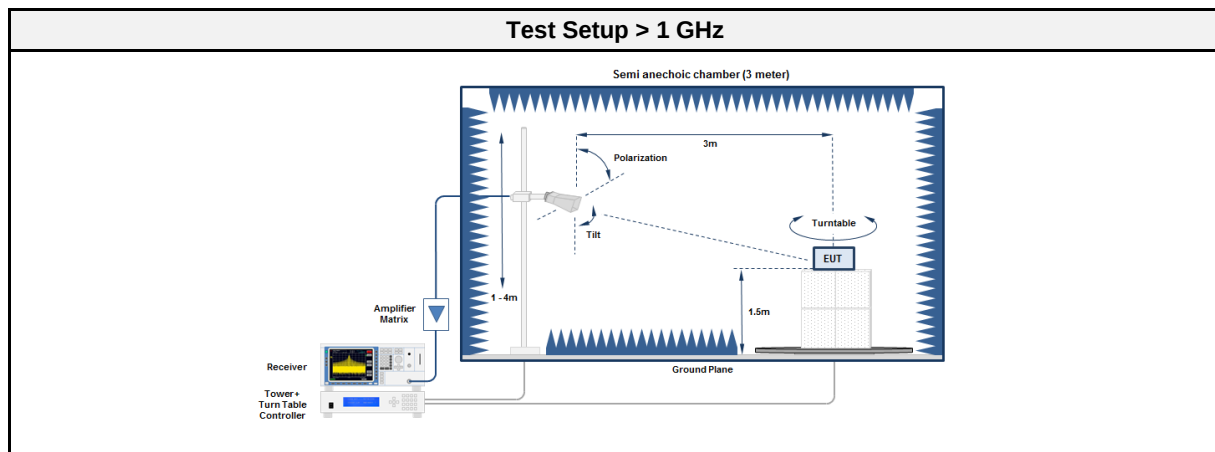
| Test Information        |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| Reference               | FCC § 15.247(d); FCC § 15.209; ISSED RSS-Gen, Issue 5 A2 (section 6.13) |
| Measurement Uncertainty | ± 5.95 dB                                                               |
| Measurement Method      | ANSI C63.10 6.4, 6.5, 6.6, 11.12                                        |
| Operator                | Odai Qawasmeh                                                           |
| Date                    | 2022-03-18                                                              |

#### 3.8.2 Limits

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

#### 3.8.3 Setup





### 3.8.4 Equipment

| Test Software |                  |            |          |
|---------------|------------------|------------|----------|
| Description   | Manufacturer     | Name       | Version  |
| EMC Software  | DARE Instruments | RadiMation | 2020.1.8 |

| Test Equipment 30 MHz - 1000 MHz |              |                |            |           |          |
|----------------------------------|--------------|----------------|------------|-----------|----------|
| Description                      | Manufacturer | Model          | Identifier | Cal. Date | Cal. Due |
| Anechoic Chamber                 | Frankonia    | AC1            | EF00062    | 2021-02   | 2024-02  |
| Measurement Receiver             | Agilent      | N9038A-526/WXP | EF01070    | 2021-07   | 2022-07  |
| Antenna                          | R&S          | HK 116         | EF00030    | 2021-05   | 2024-05  |
| Antenna                          | R&S          | HL 223         | EF00212    | 2019-05   | 2022-05  |

| Test Equipment > 1 GHz |                    |            |            |           |          |
|------------------------|--------------------|------------|------------|-----------|----------|
| Description            | Manufacturer       | Model      | Identifier | Cal. Date | Cal. Due |
| Anechoic chamber       | Frankonia          | AC 2       | EF01616    | 2021-09   | 2022-09  |
| Spectrum analyzer      | R&S                | FSU43      | EF01631    | 2021-07   | 2022-07  |
| Horn antenna           | Schwarzbeck        | BBHA 9120B | EF01678    | 2021-03   | 2022-03  |
| Horn Antenna           | Schwarzbeck        | HWRD 650   | EF01679    | 2021-03   | 2022-03  |
| Horn Antenna           | Amplifier Research | AT4560     | EF00302    | 2021-06   | 2023-06  |

### 3.8.5 Procedure

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

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

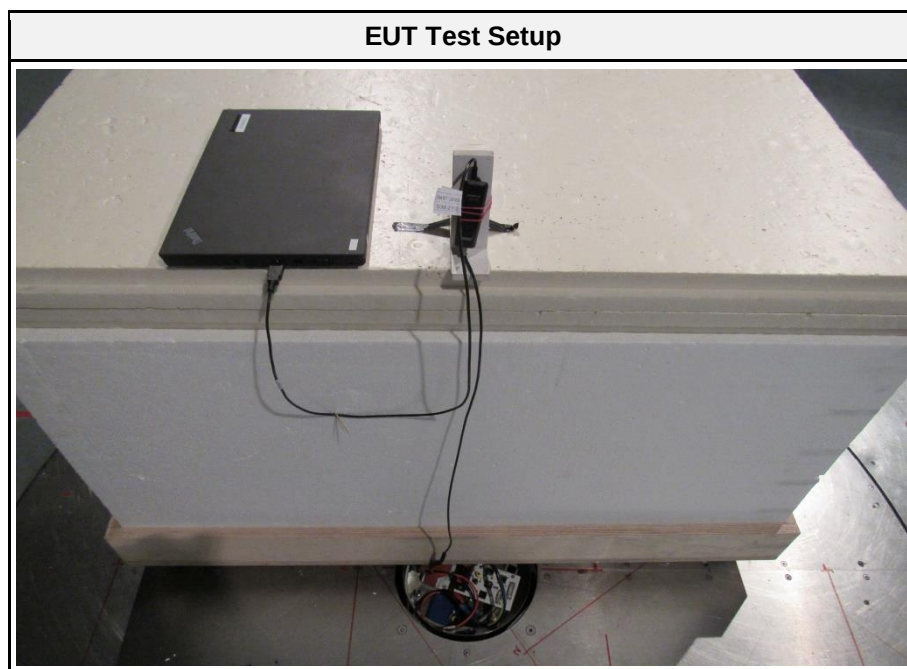
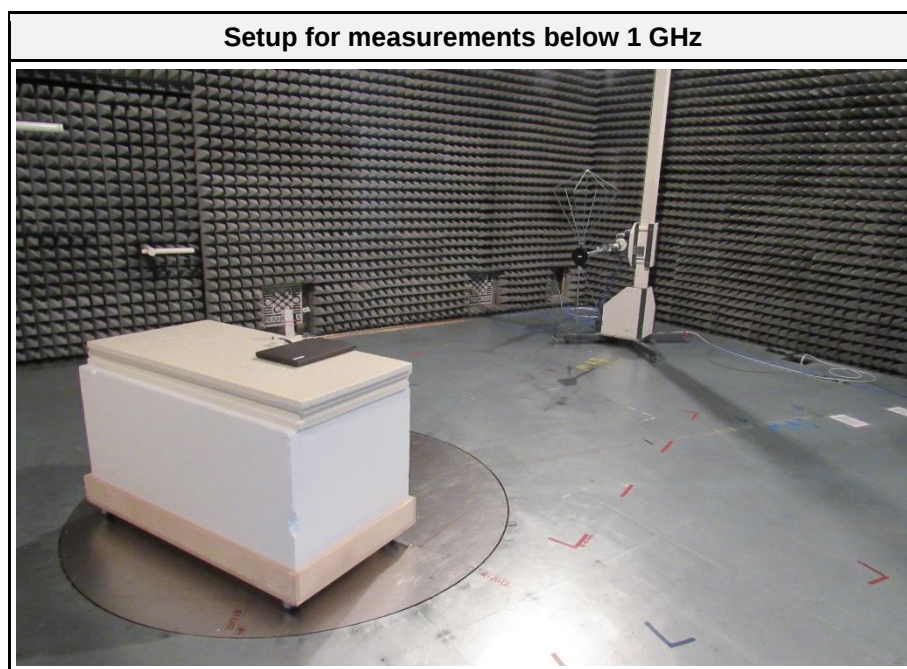
## 3.8.6 Results

| Test Results  |                |                |      |      |                |             |
|---------------|----------------|----------------|------|------|----------------|-------------|
| Channel [MHz] | Emission [MHz] | Level [dBμV/m] | Det. | Pol. | Limit [dBμV/m] | Margin [dB] |
| 2402          | 165.0523       | 22.50          | pk   | ver  | 43.50          | -21.04      |
| 2402          | 996.6          | 29.20          | pk   | ver  | 54.00          | -24.82      |
| 2402          | 2388.4         | 61.08          | pk   | ver  | 74.00          | -12.92      |
| 2402          | 2388.4         | 44.21          | avg  | ver  | 54.00          | -09.79      |
| 2402          | 2389.7         | 60.45          | pk   | ver  | 74.00          | -13.55      |
| 2402          | 2389.7         | 45.03          | avg  | ver  | 54.00          | -08.97      |
| 2402          | 7700.3         | 43.60          | pk   | ver  | 74.00          | -30.40      |
| 2402          | 7700.3         | 33.29          | avg  | ver  | 54.00          | -20.71      |
| 2402          | 17846          | 44.57          | pk   | ver  | 74.00          | -29.43      |
| 2402          | 17846          | 31.98          | avg  | ver  | 54.00          | -22.02      |
| 2402          | 20841          | 47.97          | pk   | ver  | 74.00          | -26.03      |
| 2402          | 20841          | 35.04          | avg  | ver  | 54.00          | -18.96      |
| 2440          | 164.6868       | 21.50          | pk   | ver  | 43.50          | -21.99      |
| 2440          | 992.02         | 29.20          | pk   | ver  | 54.00          | -24.84      |
| 2440          | 2272.7         | 41.42          | pk   | ver  | 74.00          | -32.58      |
| 2440          | 2272.7         | 24.13          | avg  | ver  | 54.00          | -29.87      |
| 2440          | 2388.3         | 43.65          | pk   | ver  | 74.00          | -30.35      |
| 2440          | 2388.3         | 25.66          | avg  | ver  | 54.00          | -28.34      |
| 2440          | 4880.1         | 41.57          | pk   | ver  | 74.00          | -32.43      |
| 2440          | 4880.1         | 32.97          | avg  | ver  | 54.00          | -21.03      |
| 2440          | 7320.3         | 44.47          | pk   | ver  | 74.00          | -29.53      |
| 2440          | 7320.3         | 33.89          | avg  | ver  | 54.00          | -20.11      |
| 2440          | 17798          | 44.81          | pk   | ver  | 74.00          | -29.19      |
| 2440          | 17798          | 34.68          | avg  | ver  | 54.00          | -19.32      |
| 2440          | 20483          | 47.48          | pk   | ver  | 74.00          | -26.52      |
| 2440          | 20483          | 36.00          | avg  | ver  | 54.00          | -18.00      |
| 2480          | 38.0537        | 17.00          | pk   | ver  | 40.00          | -23.03      |
| 2480          | 122.8072       | 20.90          | pk   | ver  | 43.50          | -22.64      |
| 2480          | 156.7648       | 19.90          | pk   | ver  | 43.50          | -23.66      |
| 2480          | 335.84         | 23.60          | pk   | ver  | 95.00          | -71.38      |
| 2480          | 997.12         | 28.90          | pk   | ver  | 54.00          | -25.08      |
| 2480          | 2336           | 41.61          | pk   | ver  | 74.00          | -32.39      |
| 2480          | 2336           | 24.03          | avg  | ver  | 54.00          | -29.97      |
| 2480          | 2483.5         | 65.27          | pk   | ver  | 74.00          | -08.73      |
| 2480          | 2483.5         | 45.50          | avg  | ver  | 54.00          | -08.50      |
| 2480          | 2488.3         | 60.86          | pk   | ver  | 74.00          | -13.14      |
| 2480          | 2488.3         | 45.94          | avg  | ver  | 54.00          | -08.06      |
| 2480          | 2500           | 43.03          | pk   | ver  | 74.00          | -30.97      |
| 2480          | 2500           | 24.69          | avg  | ver  | 54.00          | -29.31      |
| 2480          | 7439           | 46.06          | pk   | ver  | 74.00          | -27.94      |
| 2480          | 7439           | 36.75          | avg  | ver  | 54.00          | -17.25      |
| 2480          | 17816          | 43.91          | pk   | ver  | 74.00          | -30.09      |
| 2480          | 17816          | 33.33          | avg  | ver  | 54.00          | -20.67      |
| 2480          | 20383          | 48.20          | pk   | ver  | 74.00          | -25.80      |
| 2480          | 20383          | 36.15          | avg  | ver  | 54.00          | -17.85      |

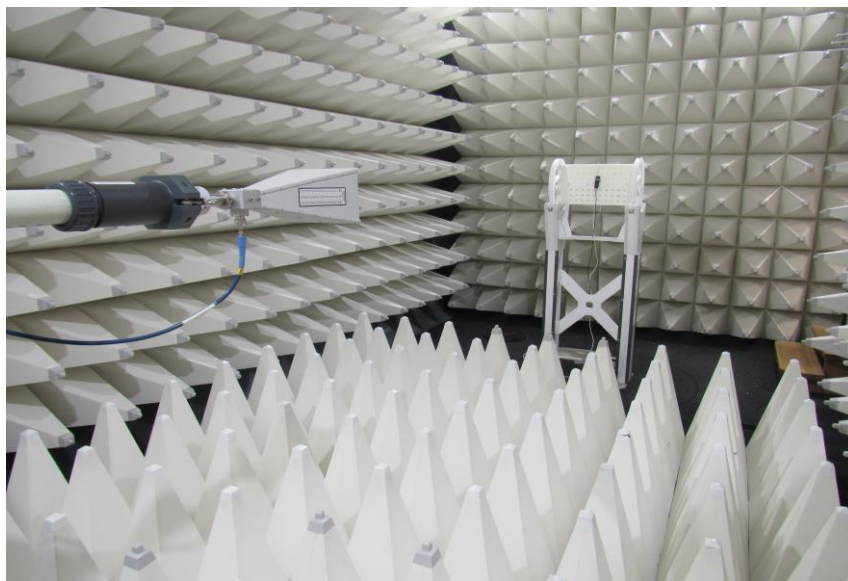
Test Report No.: G0M-2112-1200-TFC247BL-V02

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

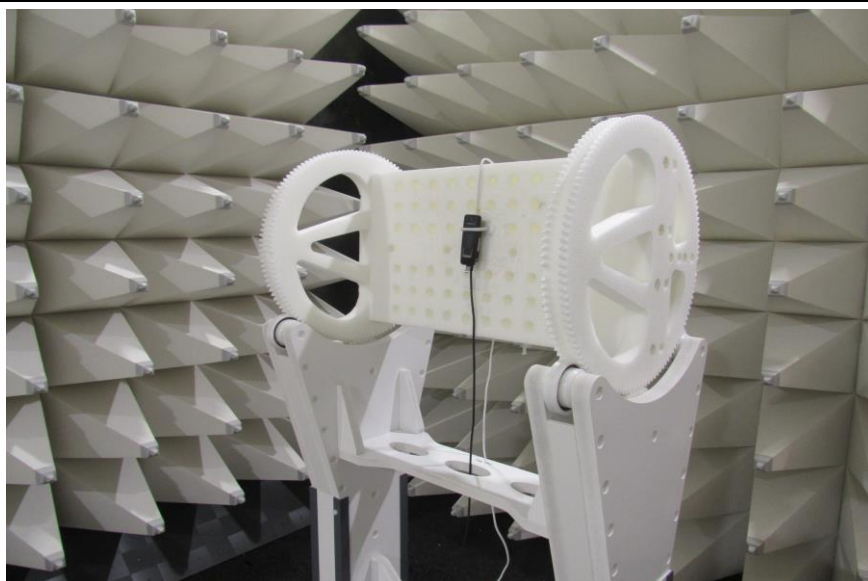
### 3.8.7 Setup Photos



**Setup for measurements above 1 GHz**



**EUT Test Setup**



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

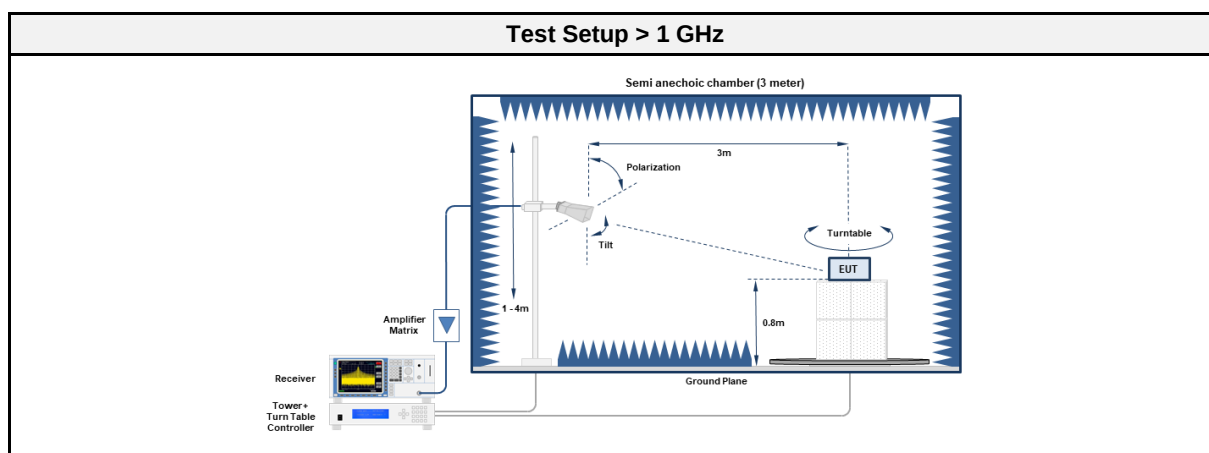
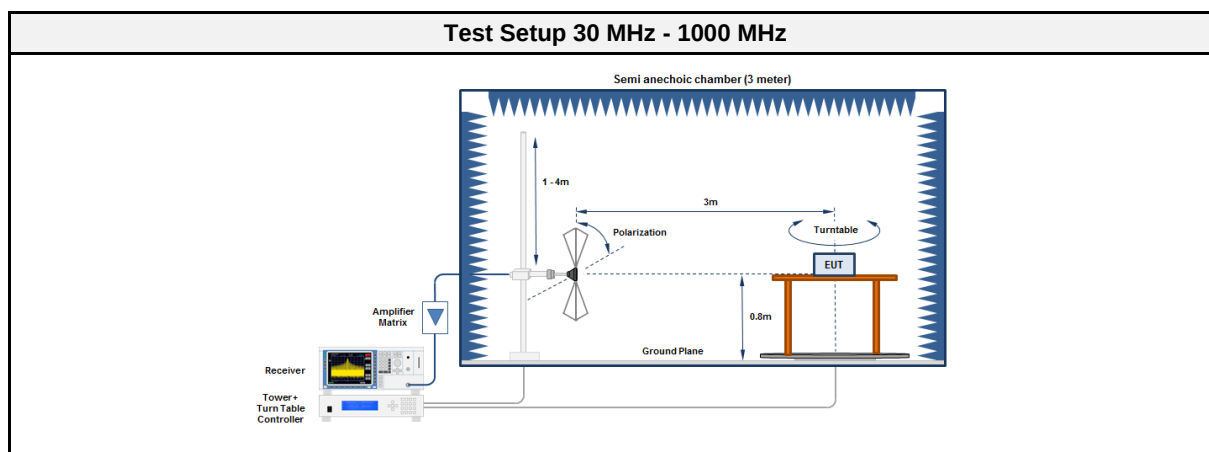
#### 3.9.1 Information

| Test Information        |                                     |
|-------------------------|-------------------------------------|
| Reference               | ISED RSS-247, Issue 2 (section 3.1) |
| Measurement Uncertainty | $\pm 5.95$ dB                       |
| Measurement Method      | ANSI C63.4-2014 8.1-8.3             |
| Operator                | Odai Qawasmeh                       |
| Date                    | 2022-03-29                          |

#### 3.9.2 Limits

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

#### 3.9.3 Setup



### 3.9.4 Equipment

| Test Software |                  |            |          |
|---------------|------------------|------------|----------|
| Description   | Manufacturer     | Name       | Version  |
| EMC Software  | DARE Instruments | RadiMation | 2020.1.8 |

| Test Equipment 30 MHz - 1000 MHz |              |                |            |           |          |
|----------------------------------|--------------|----------------|------------|-----------|----------|
| Description                      | Manufacturer | Model          | Identifier | Cal. Date | Cal. Due |
| Anechoic Chamber                 | Frankonia    | AC1            | EF00062    | 2021-02   | 2024-02  |
| Measurement Receiver             | Agilent      | N9038A-526/WXP | EF01070    | 2021-07   | 2022-07  |
| Antenna                          | R&S          | HK 116         | EF00030    | 2021-05   | 2024-05  |
| Antenna                          | R&S          | HL 223         | EF00212    | 2019-05   | 2022-05  |

| Test Equipment > 1 GHz |              |                |            |           |          |
|------------------------|--------------|----------------|------------|-----------|----------|
| Description            | Manufacturer | Model          | Identifier | Cal. Date | Cal. Due |
| Anechoic Chamber       | Frankonia    | AC1            | EF00062    | 2021-02   | 2024-02  |
| Measurement Receiver   | Agilent      | N9038A-526/WXP | EF01070    | 2021-07   | 2022-07  |
| Horn antenna           | Schwarzbeck  | BBHA 9120B     | EF01678    | 2021-03   | 2022-03  |
| Horn Antenna           | Schwarzbeck  | HWRD 650       | EF01679    | 2021-03   | 2022-03  |

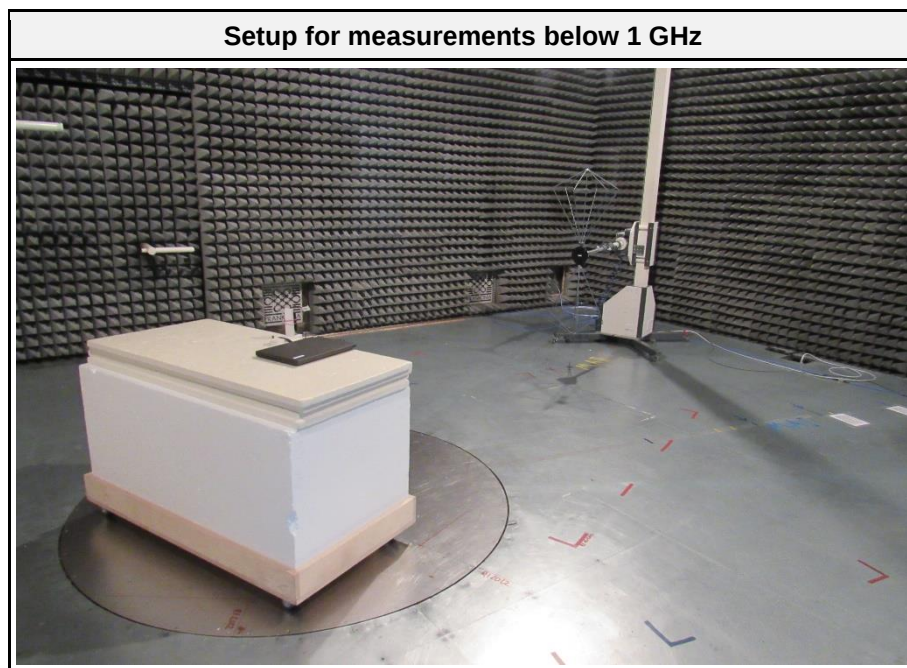
### 3.9.5 Procedure

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

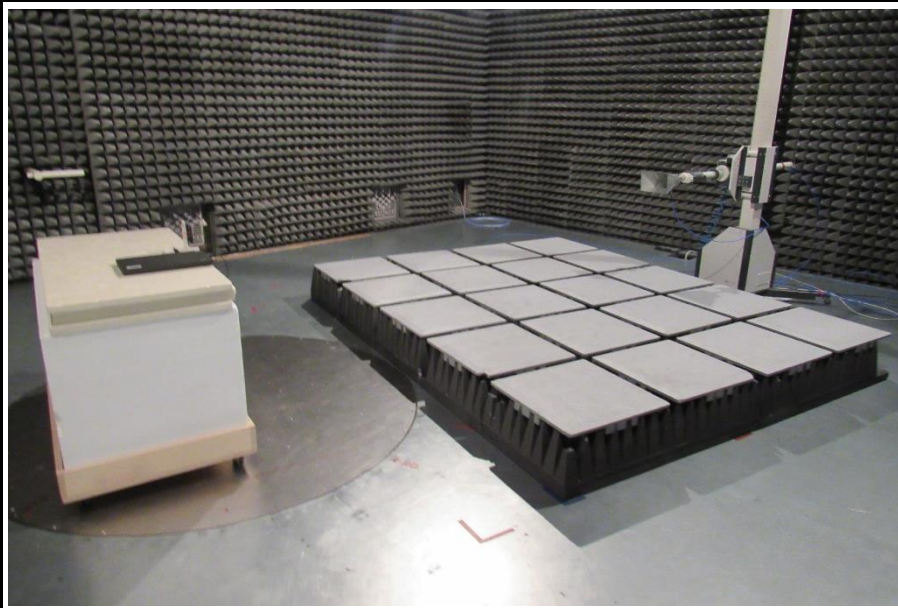
### 3.9.6 Results

| Test Results  |                |                |      |      |                |             |
|---------------|----------------|----------------|------|------|----------------|-------------|
| Channel [MHz] | Emission [MHz] | Level [dBμV/m] | Det. | Pol. | Limit [dBμV/m] | Margin [dB] |
| 2440          | 42.852         | 23.70          | pk   | ver  | 40.00          | -16.30      |
| 2440          | 91.982         | 23.80          | pk   | ver  | 43.50          | -19.70      |
| 2440          | 922.16         | 29.50          | pk   | ver  | 46.00          | -16.55      |
| 2440          | 17895          | 47.46          | pk   | ver  | 74.00          | -26.54      |
| 2440          | 17895          | 36.59          | avg  | ver  | 53.98          | -17.39      |

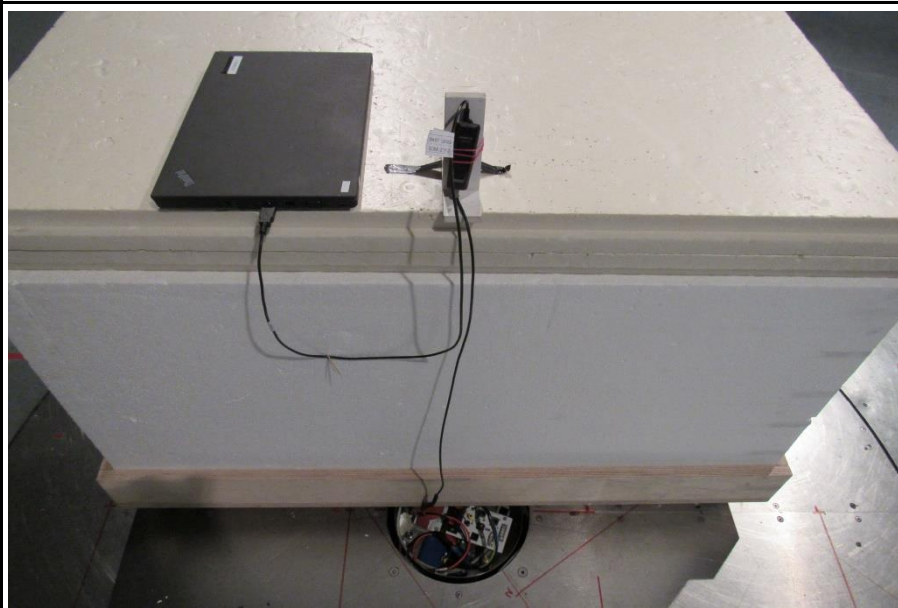
### 3.9.7 Setup Photos



**Setup for measurements above 1 GHz**



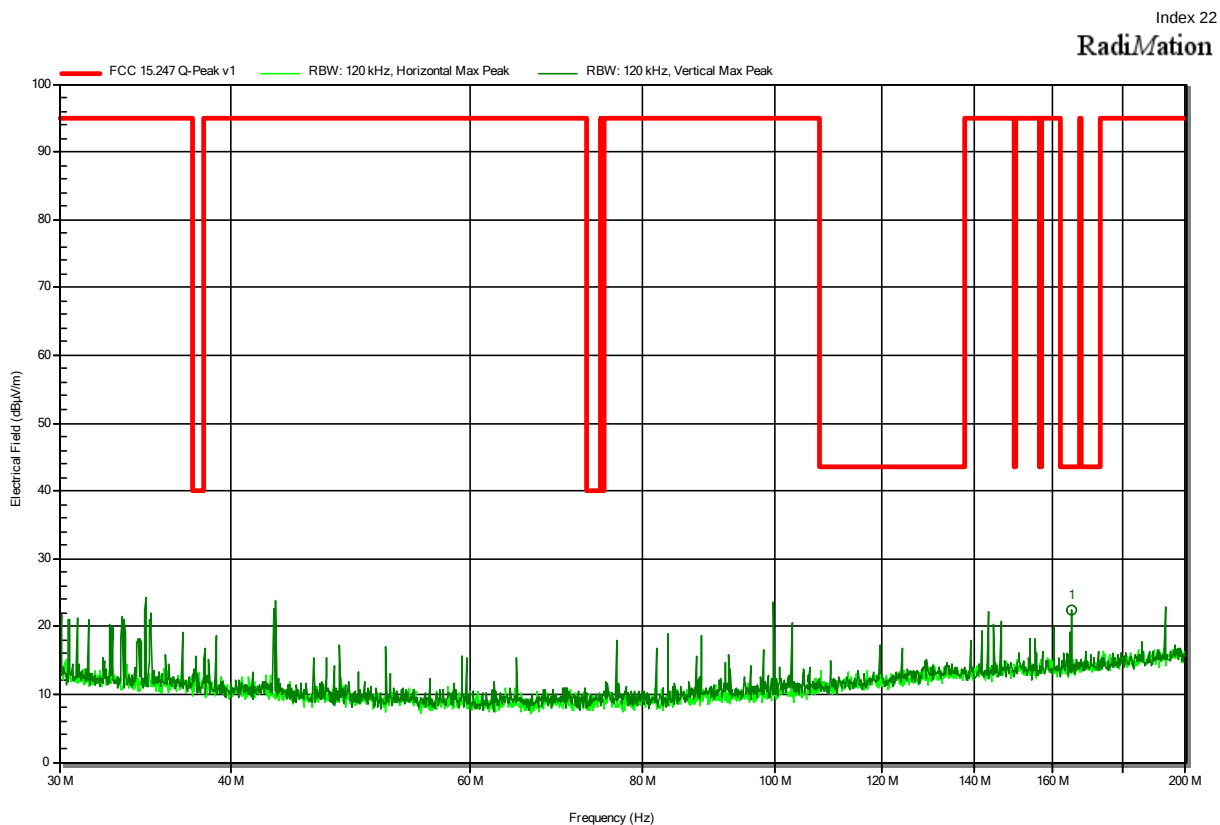
**EUT Setup**



## ANNEX A Transmitter spurious emissions

### Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HK 116  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical



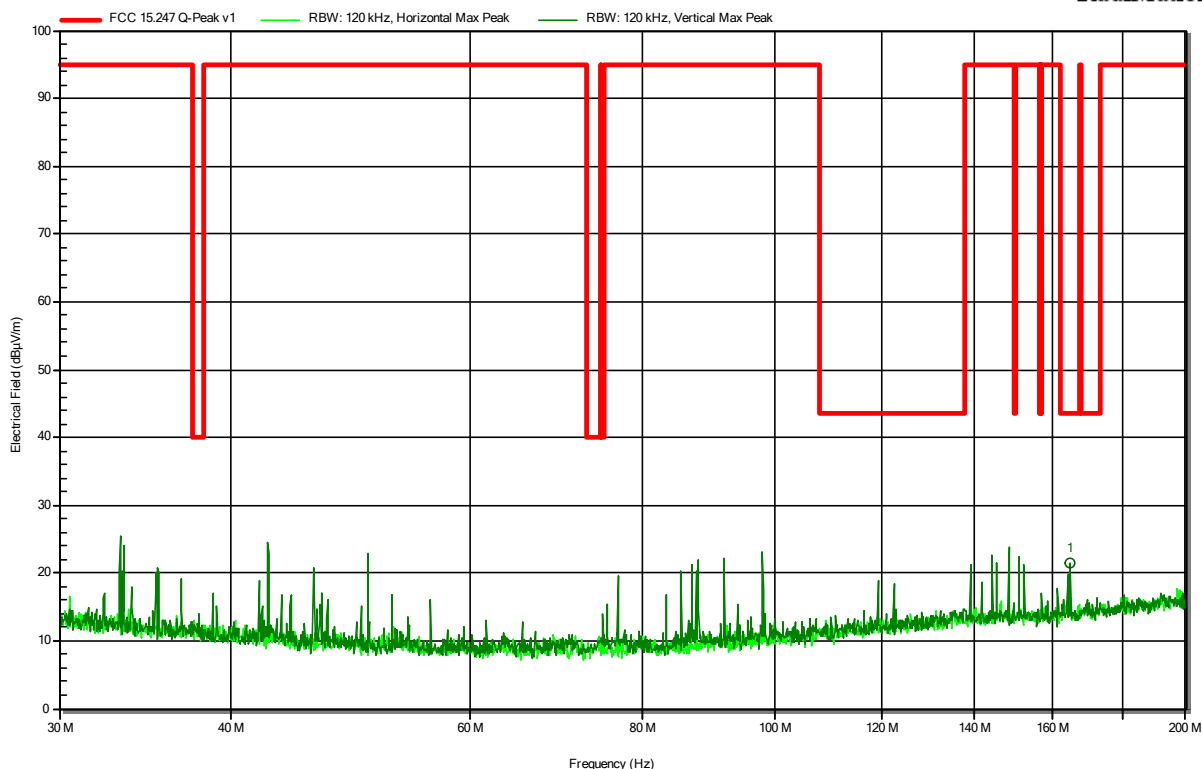
| Frequency    | Peak        | Peak Limit  | Peak Difference | Peak Status | Polarization |
|--------------|-------------|-------------|-----------------|-------------|--------------|
| 165.0523 MHz | 22.5 dBµV/m | 43.5 dBµV/m | -21.04 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HK 116  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation



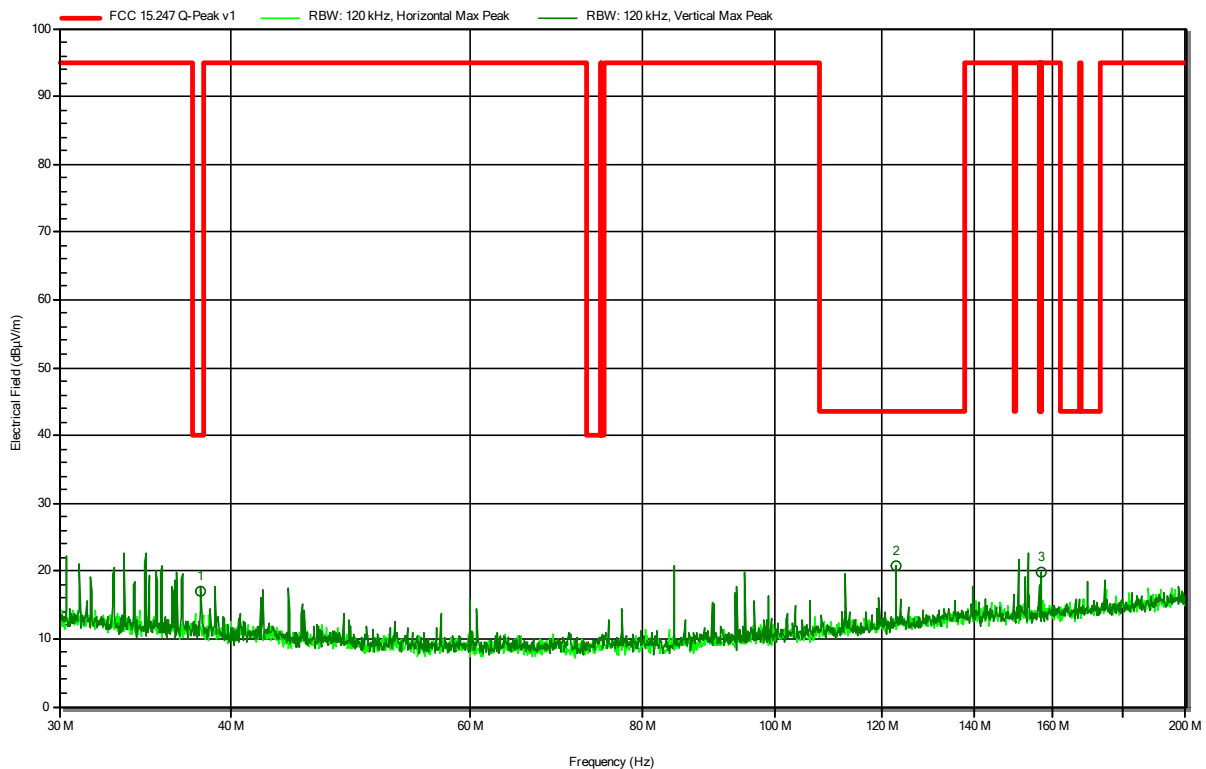
| Frequency    | Peak        | Peak Limit  | Peak Difference | Peak Status | Polarization |
|--------------|-------------|-------------|-----------------|-------------|--------------|
| 164.6868 MHz | 21.5 dBµV/m | 43.5 dBµV/m | -21.99 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HK 116  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation



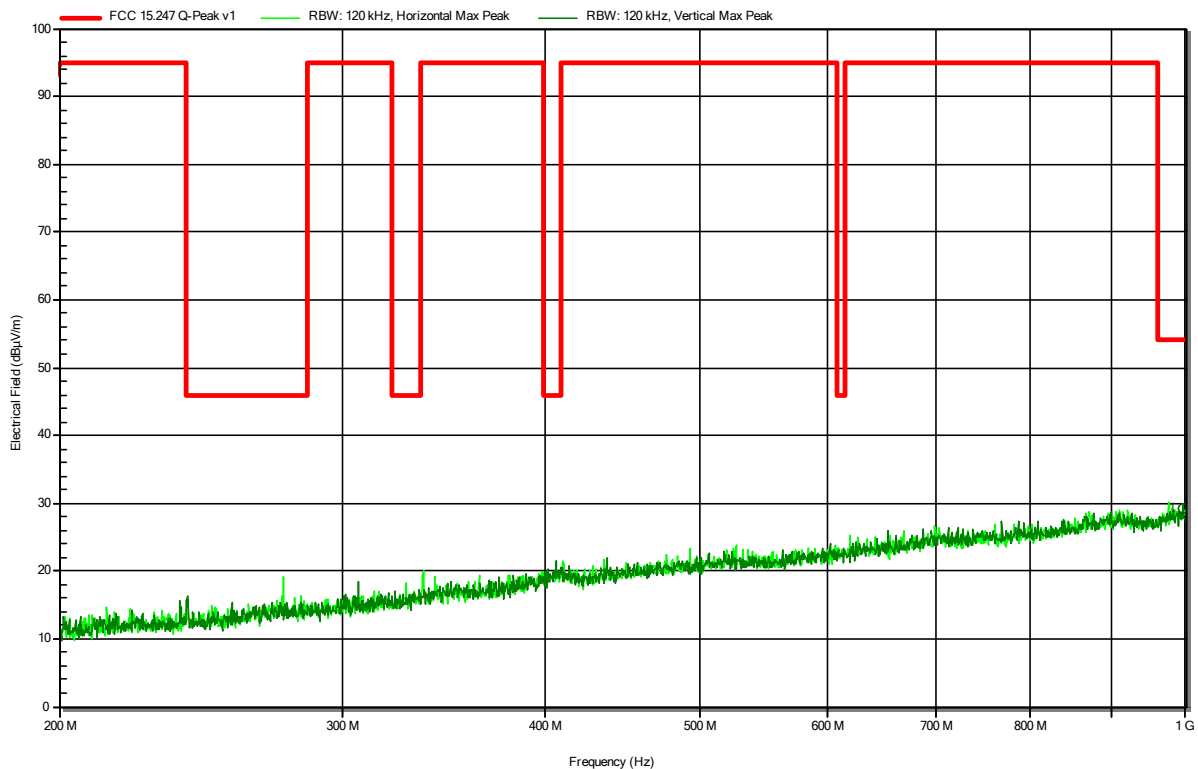
| Frequency    | Peak        | Peak Limit  | Peak Difference | Peak Status | Polarization |
|--------------|-------------|-------------|-----------------|-------------|--------------|
| 38.0537 MHz  | 17 dBμV/m   | 40 dBμV/m   | -23.03 dB       | Pass        | Vertical     |
| 122.8072 MHz | 20.9 dBμV/m | 43.5 dBμV/m | -22.64 dB       | Pass        | Vertical     |
| 156.7648 MHz | 19.9 dBμV/m | 43.5 dBμV/m | -23.66 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HL 223  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation



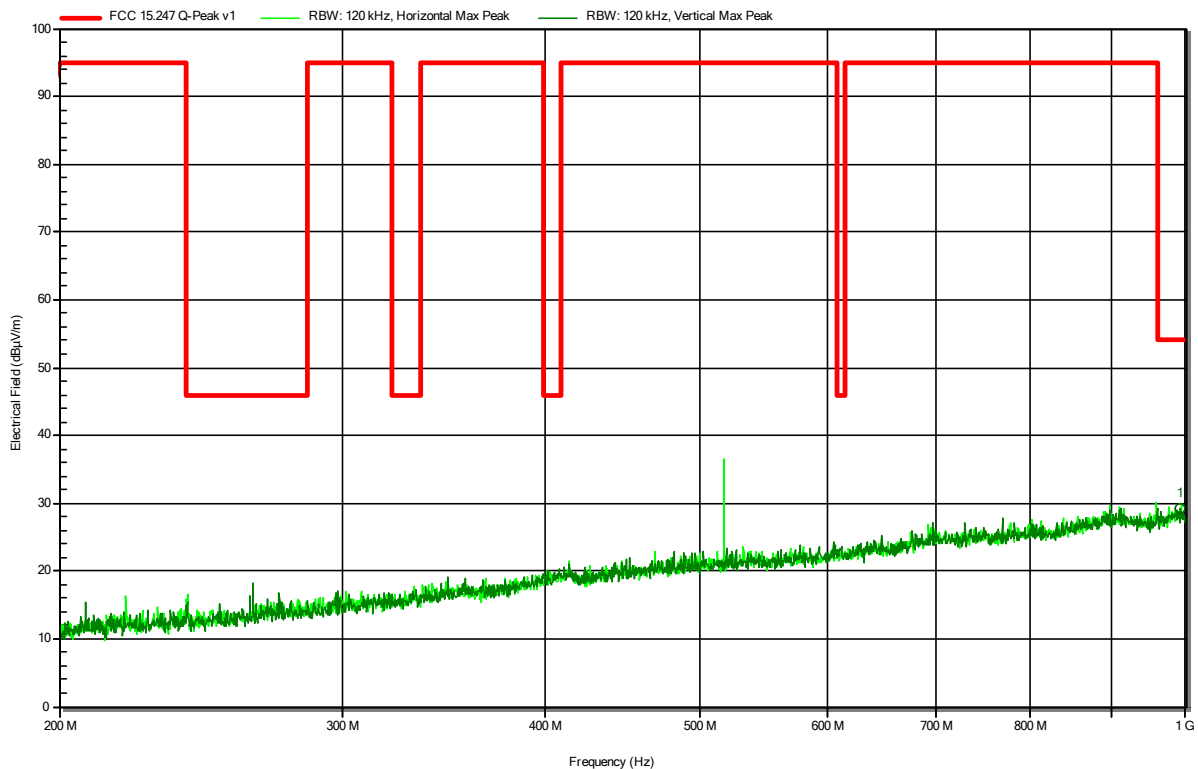
| Frequency | Peak        | Peak Limit | Peak Difference | Peak Status | Polarization |
|-----------|-------------|------------|-----------------|-------------|--------------|
| 996.6 MHz | 29.2 dBµV/m | 54 dBµV/m  | -24.82 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HL 223  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation



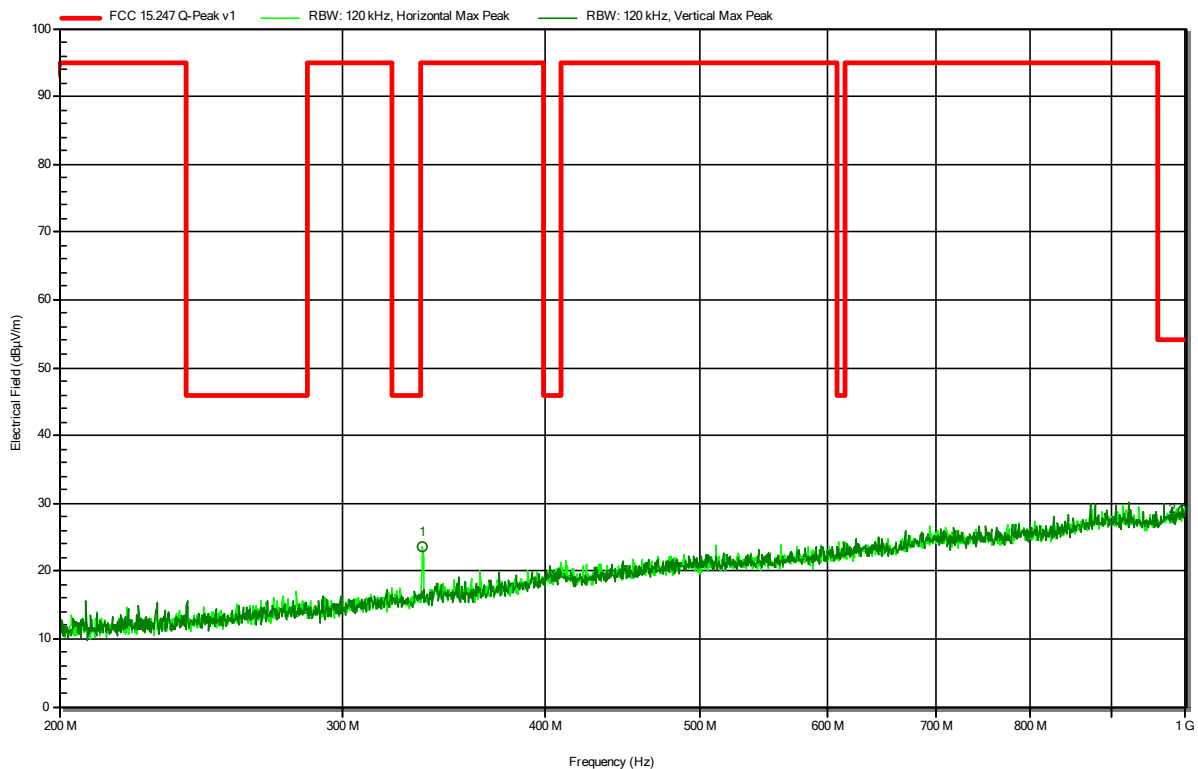
| Frequency  | Peak        | Peak Limit | Peak Difference | Peak Status | Polarization |
|------------|-------------|------------|-----------------|-------------|--------------|
| 992.02 MHz | 29.2 dBµV/m | 54 dBµV/m  | -24.84 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HL 223  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation



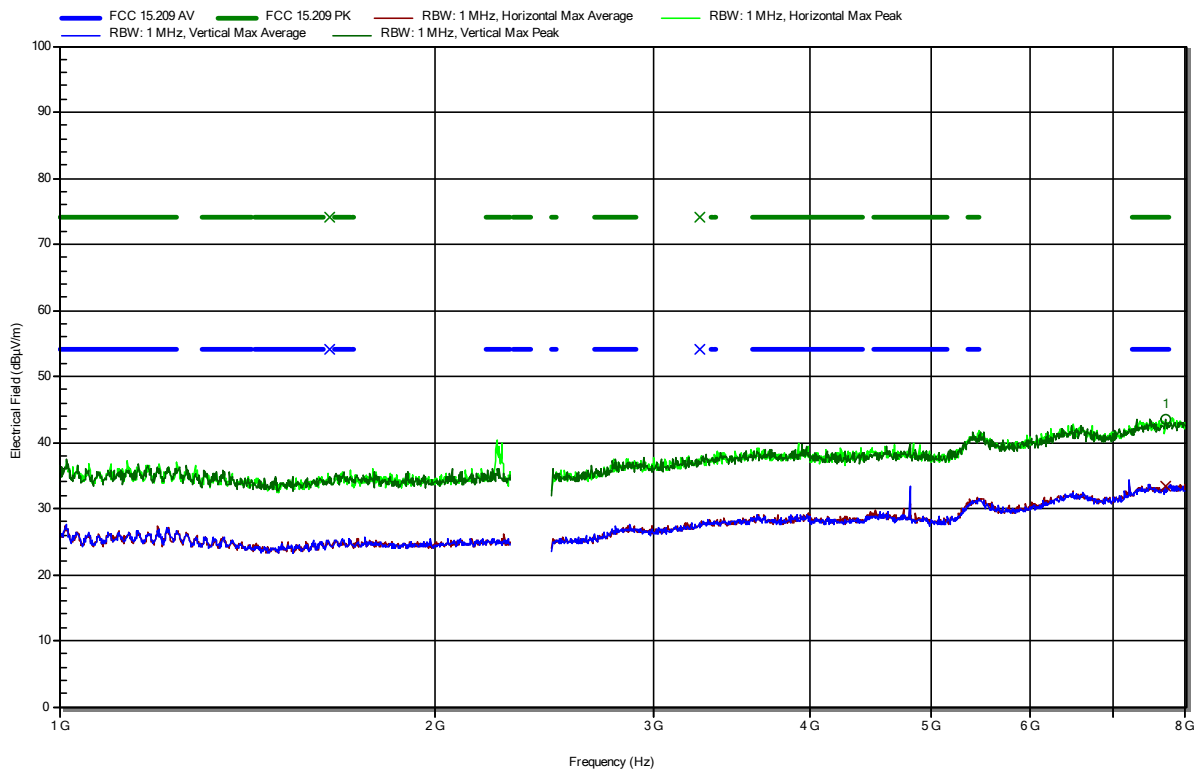
| Frequency  | Peak        | Peak Limit | Peak Difference | Peak Status | Polarization |
|------------|-------------|------------|-----------------|-------------|--------------|
| 335.84 MHz | 23.6 dBµV/m | 95 dBµV/m  | -71.38 dB       | Pass        | Horizontal   |
| 997.12 MHz | 28.9 dBµV/m | 54 dBµV/m  | -25.08 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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RadiMation



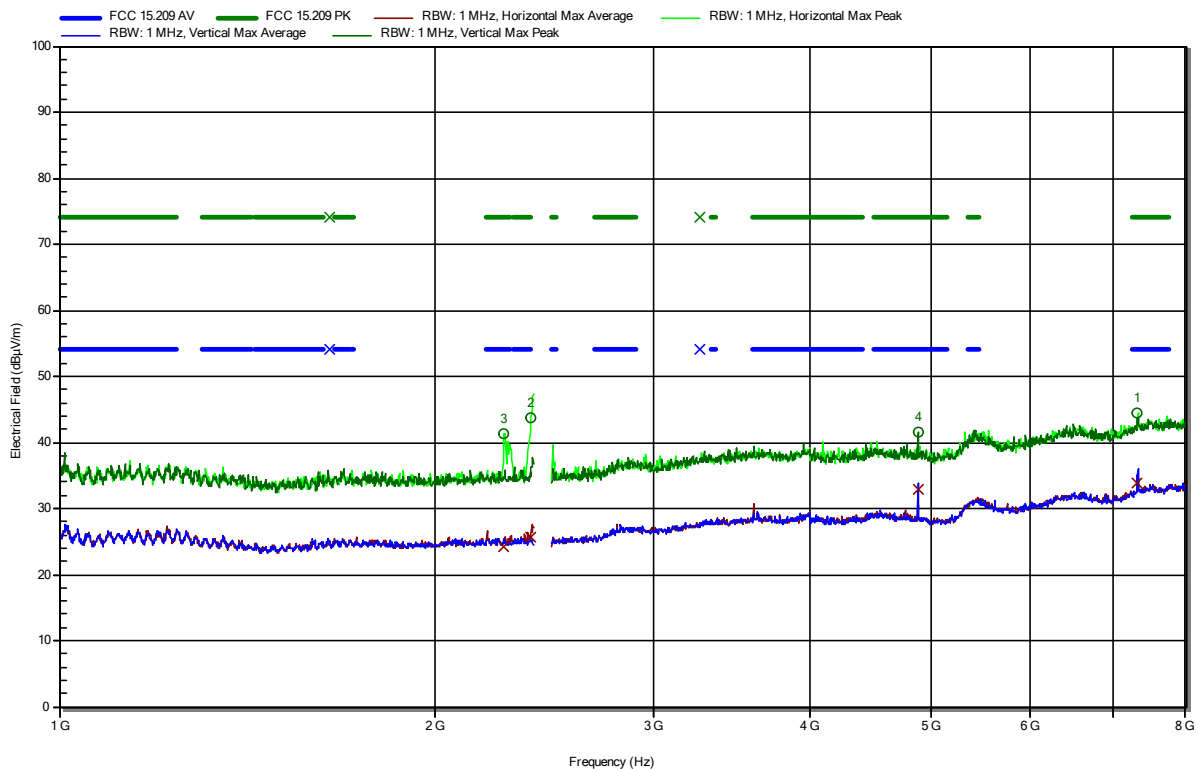
|            |              |               |                    |                |              |
|------------|--------------|---------------|--------------------|----------------|--------------|
| Frequency  | Peak         | Peak Limit    | Peak Difference    | Peak Status    | Polarization |
| 7.7003 GHz | 43.6 dBμV/m  | 74 dBμV/m     | -30.4 dB           | Pass           | Vertical     |
| Frequency  | Average      | Average Limit | Average Difference | Average Status | Polarization |
| 7.7003 GHz | 33.29 dBμV/m | 54 dBμV/m     | -20.71 dB          | Pass           | Vertical     |

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2440 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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RadiMation



| Frequency  | Peak         | Peak Limit | Peak Difference | Peak Status | Polarization |
|------------|--------------|------------|-----------------|-------------|--------------|
| 2.2727 GHz | 41.42 dBµV/m | 74 dBµV/m  | -32.58 dB       | Pass        | Horizontal   |
| 2.3883 GHz | 43.65 dBµV/m | 74 dBµV/m  | -30.35 dB       | Pass        | Horizontal   |
| 4.8801 GHz | 41.57 dBµV/m | 74 dBµV/m  | -32.43 dB       | Pass        | Vertical     |
| 7.3203 GHz | 44.47 dBµV/m | 74 dBµV/m  | -29.53 dB       | Pass        | Horizontal   |

| Frequency  | Average      | Average Limit | Average Difference | Average Status | Polarization |
|------------|--------------|---------------|--------------------|----------------|--------------|
| 2.2727 GHz | 24.13 dBµV/m | 54 dBµV/m     | -29.87 dB          | Pass           | Horizontal   |
| 2.3883 GHz | 25.66 dBµV/m | 54 dBµV/m     | -28.34 dB          | Pass           | Horizontal   |
| 4.8801 GHz | 32.97 dBµV/m | 54 dBµV/m     | -21.03 dB          | Pass           | Vertical     |
| 7.3203 GHz | 33.89 dBµV/m | 54 dBµV/m     | -20.11 dB          | Pass           | Horizontal   |

Test Report No.: G0M-2112-1200-TFC247BL-V02

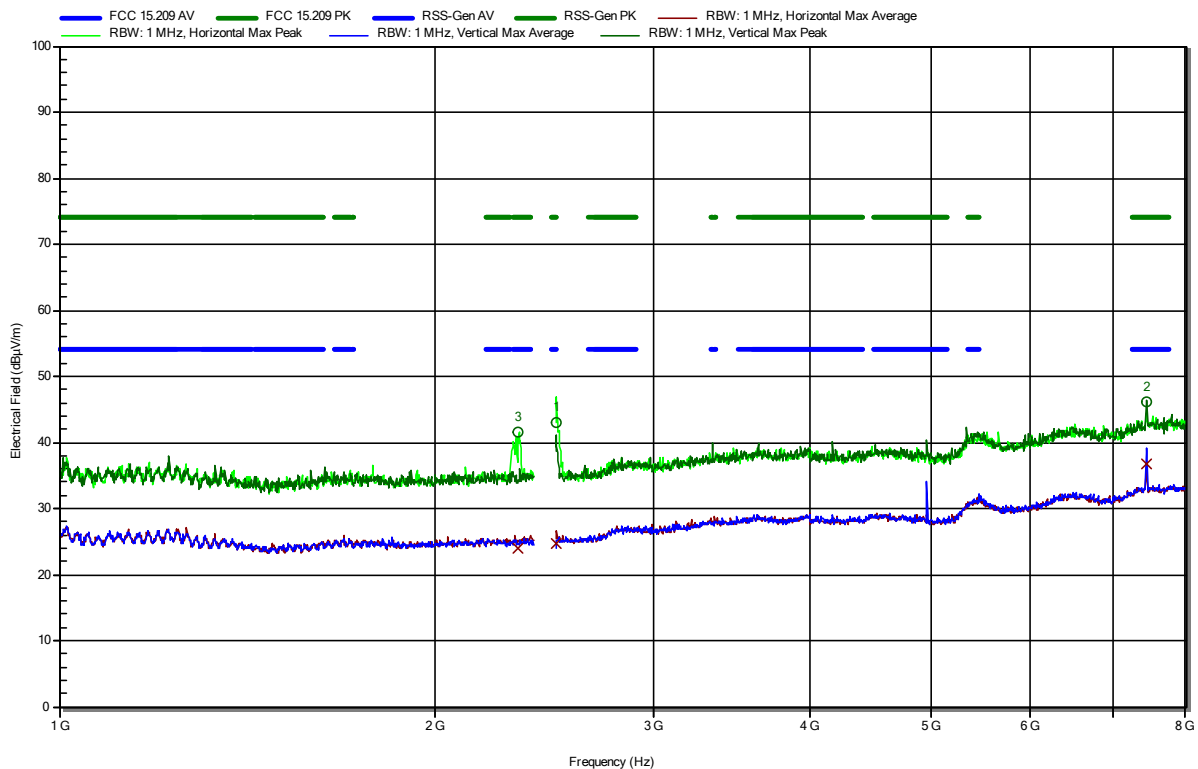
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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RadiMation



| Frequency | Peak         | Peak Limit | Peak Difference | Peak Status | Polarization |
|-----------|--------------|------------|-----------------|-------------|--------------|
| 2.336 GHz | 41.61 dBµV/m | 74 dBµV/m  | -32.39 dB       | Pass        | Horizontal   |
| 2.5 GHz   | 43.03 dBµV/m | 74 dBµV/m  | -30.97 dB       | Pass        | Horizontal   |
| 7.439 GHz | 46.06 dBµV/m | 74 dBµV/m  | -27.94 dB       | Pass        | Vertical     |

| Frequency | Average      | Average Limit | Average Difference | Average Status | Polarization |
|-----------|--------------|---------------|--------------------|----------------|--------------|
| 2.336 GHz | 24.03 dBµV/m | 54 dBµV/m     | -29.97 dB          | Pass           | Horizontal   |
| 2.5 GHz   | 24.69 dBµV/m | 54 dBµV/m     | -29.31 dB          | Pass           | Horizontal   |
| 7.439 GHz | 36.75 dBµV/m | 54 dBµV/m     | -17.25 dB          | Pass           | Vertical     |

Test Report No.: G0M-2112-1200-TFC247BL-V02

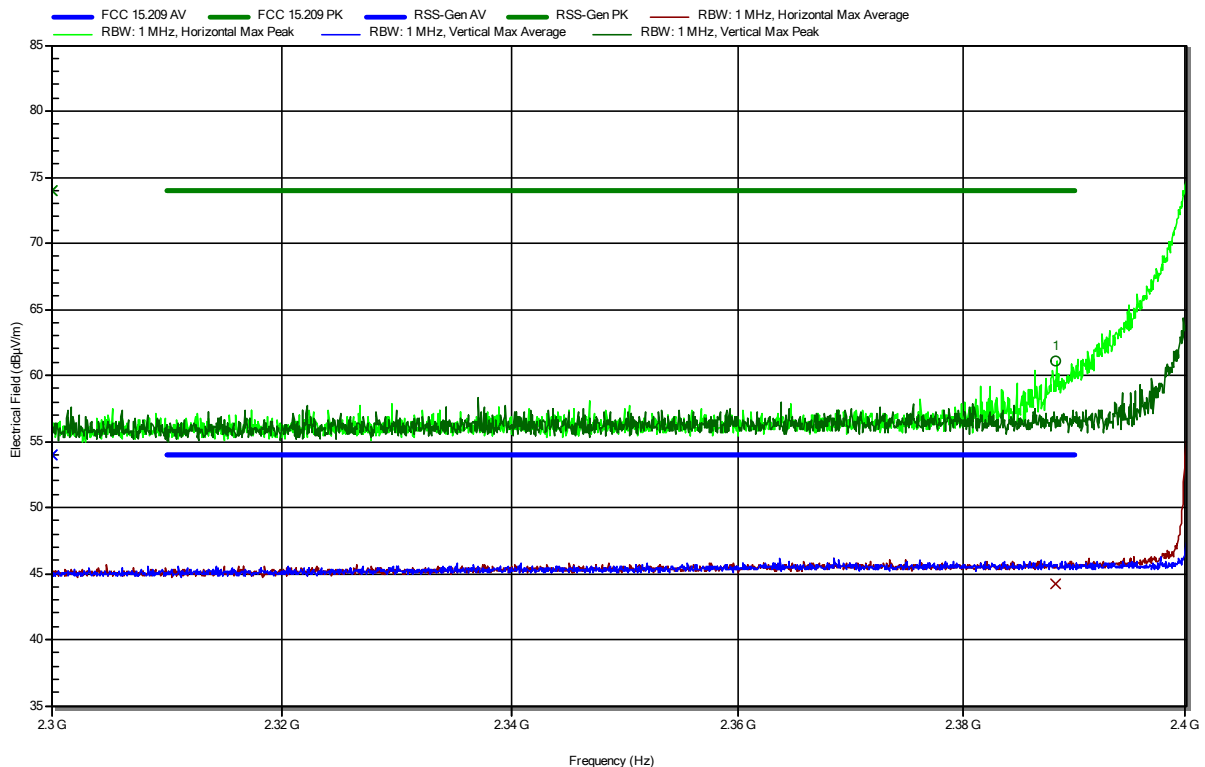
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-18  
 Note: lower bandedge EUT vertical

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RadiMation



|                         |                         |                            |                                |                        |                            |
|-------------------------|-------------------------|----------------------------|--------------------------------|------------------------|----------------------------|
| Frequency<br>2.3884 GHz | Peak<br>61.08 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-12.92 dB   | Peak Status<br>Pass    | Polarization<br>Horizontal |
| Frequency<br>2.3884 GHz | Average<br>44.21 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-9.79 dB | Average Status<br>Pass | Polarization<br>Horizontal |

Test Report No.: G0M-2112-1200-TFC247BL-V02

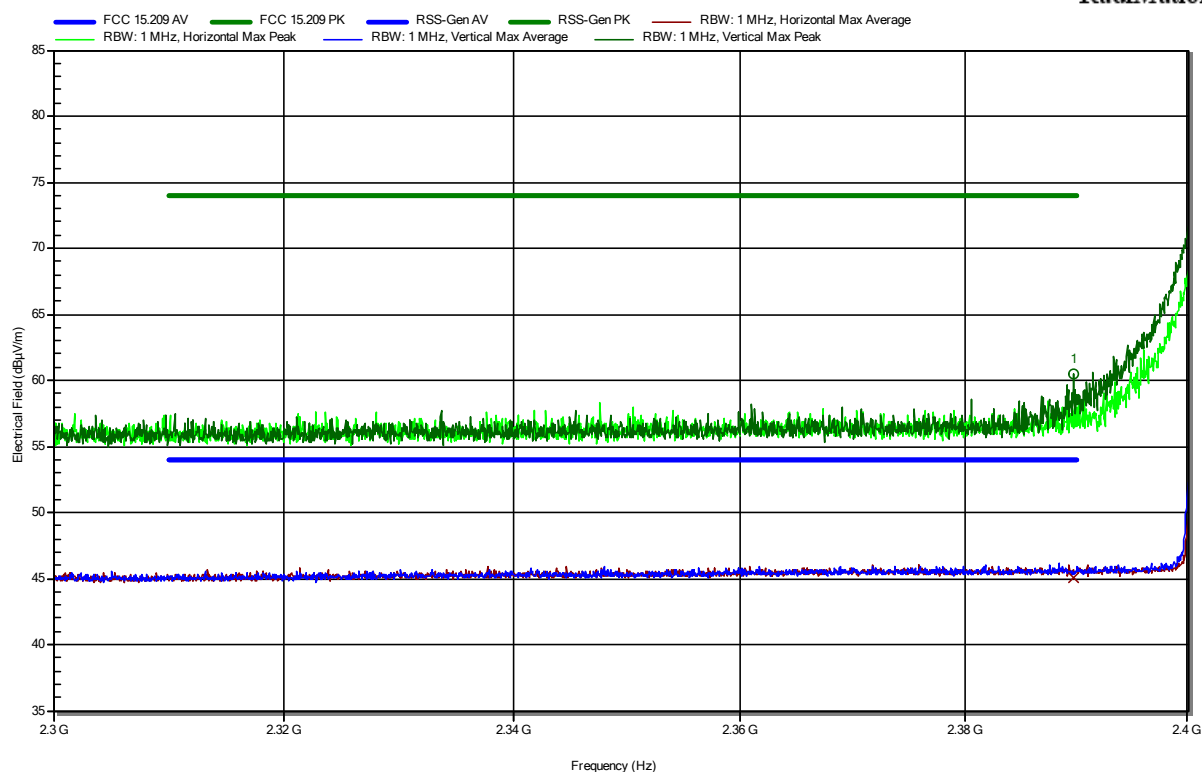
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-18  
 Note: lower bandedge  
 EUT horizontal

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RadiMation



|                         |                         |                            |                                |                        |                          |
|-------------------------|-------------------------|----------------------------|--------------------------------|------------------------|--------------------------|
| Frequency<br>2.3897 GHz | Peak<br>60.45 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-13.55 dB   | Peak Status<br>Pass    | Polarization<br>Vertical |
| Frequency<br>2.3897 GHz | Average<br>45.03 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-8.97 dB | Average Status<br>Pass | Polarization<br>Vertical |

Test Report No.: G0M-2112-1200-TFC247BL-V02

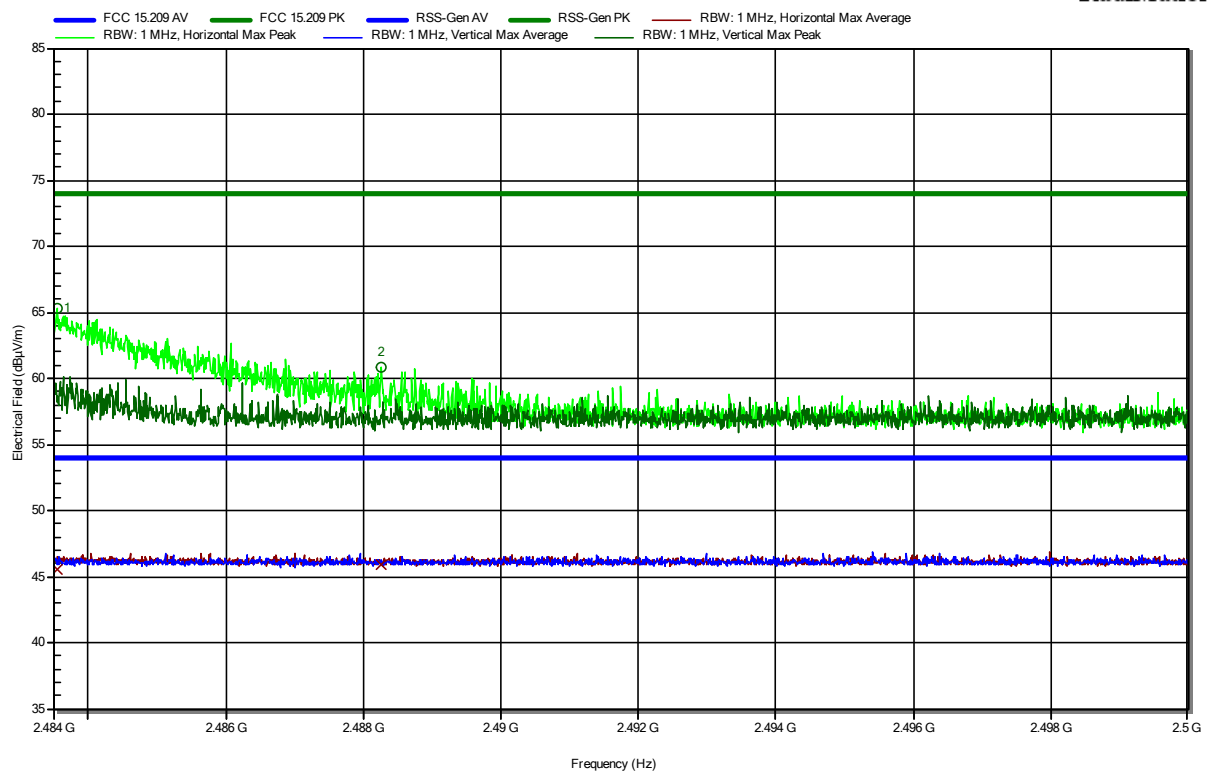
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120B  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-18  
 Note: upper bandedge EUT vertical

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RadiMation



| Frequency  | Peak         | Peak Limit | Peak Difference | Peak Status | Polarization |
|------------|--------------|------------|-----------------|-------------|--------------|
| 2.4835 GHz | 65.27 dBµV/m | 74 dBµV/m  | -8.73 dB        | Pass        | Horizontal   |
| 2.4883 GHz | 60.86 dBµV/m | 74 dBµV/m  | -13.14 dB       | Pass        | Horizontal   |

| Frequency  | Average      | Average Limit | Average Difference | Average Status | Polarization |
|------------|--------------|---------------|--------------------|----------------|--------------|
| 2.4835 GHz | 45.5 dBµV/m  | 54 dBµV/m     | -8.5 dB            | Pass           | Horizontal   |
| 2.4883 GHz | 45.94 dBµV/m | 54 dBµV/m     | -8.06 dB           | Pass           | Horizontal   |

Test Report No.: G0M-2112-1200-TFC247BL-V02

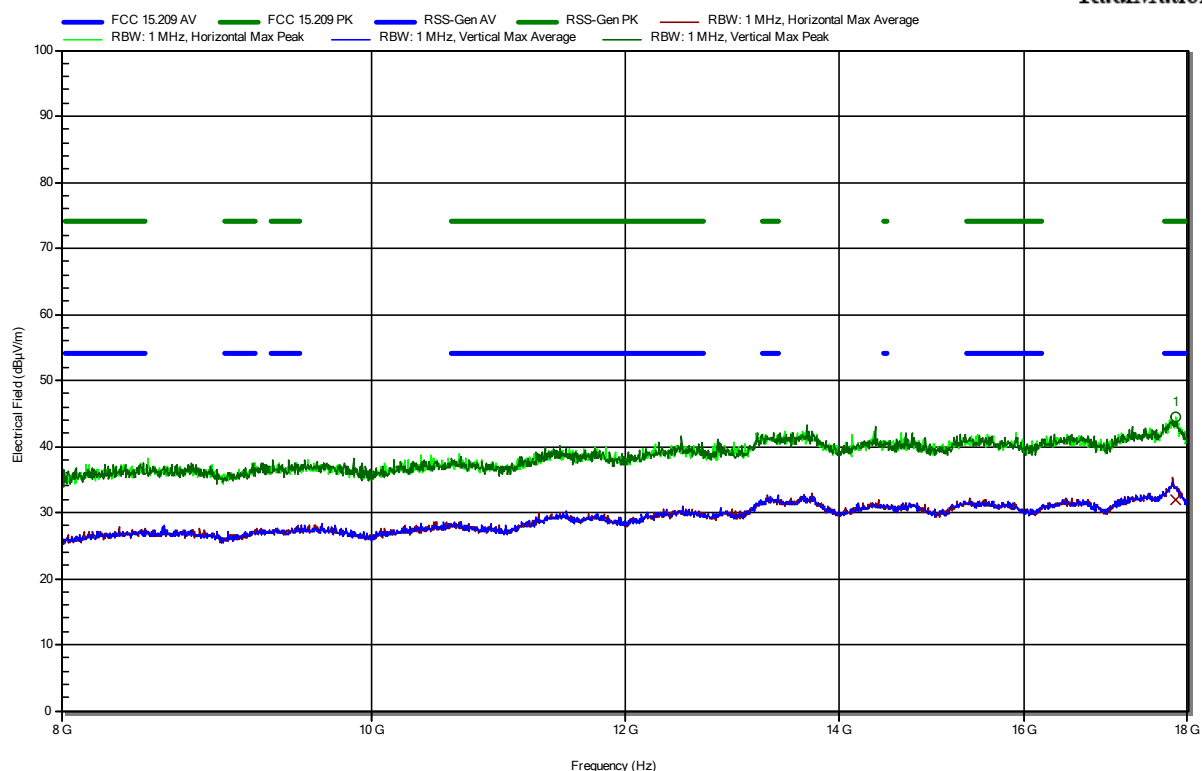
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck HWRD 650  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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**RadiMation**



|                         |                         |                            |                                 |                        |                            |
|-------------------------|-------------------------|----------------------------|---------------------------------|------------------------|----------------------------|
| Frequency<br>17.846 GHz | Peak<br>44.57 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-29.43 dB    | Peak Status<br>Pass    | Polarization<br>Horizontal |
| Frequency<br>17.846 GHz | Average<br>31.98 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-22.02 dB | Average Status<br>Pass | Polarization<br>Horizontal |

Test Report No.: G0M-2112-1200-TFC247BL-V02

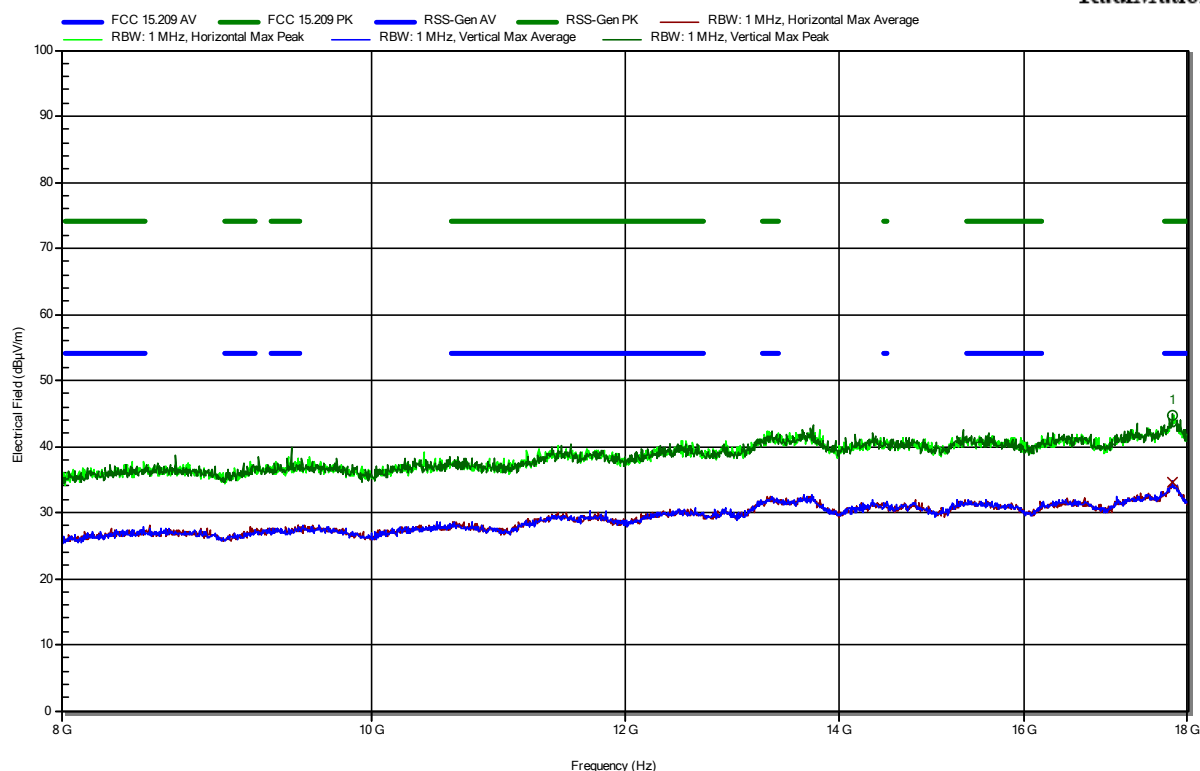
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck HWRD 650  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2440 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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**RadiMation**



|                         |                         |                            |                                 |                        |                          |
|-------------------------|-------------------------|----------------------------|---------------------------------|------------------------|--------------------------|
| Frequency<br>17.798 GHz | Peak<br>44.81 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-29.19 dB    | Peak Status<br>Pass    | Polarization<br>Vertical |
| Frequency<br>17.798 GHz | Average<br>34.68 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-19.32 dB | Average Status<br>Pass | Polarization<br>Vertical |

Test Report No.: G0M-2112-1200-TFC247BL-V02

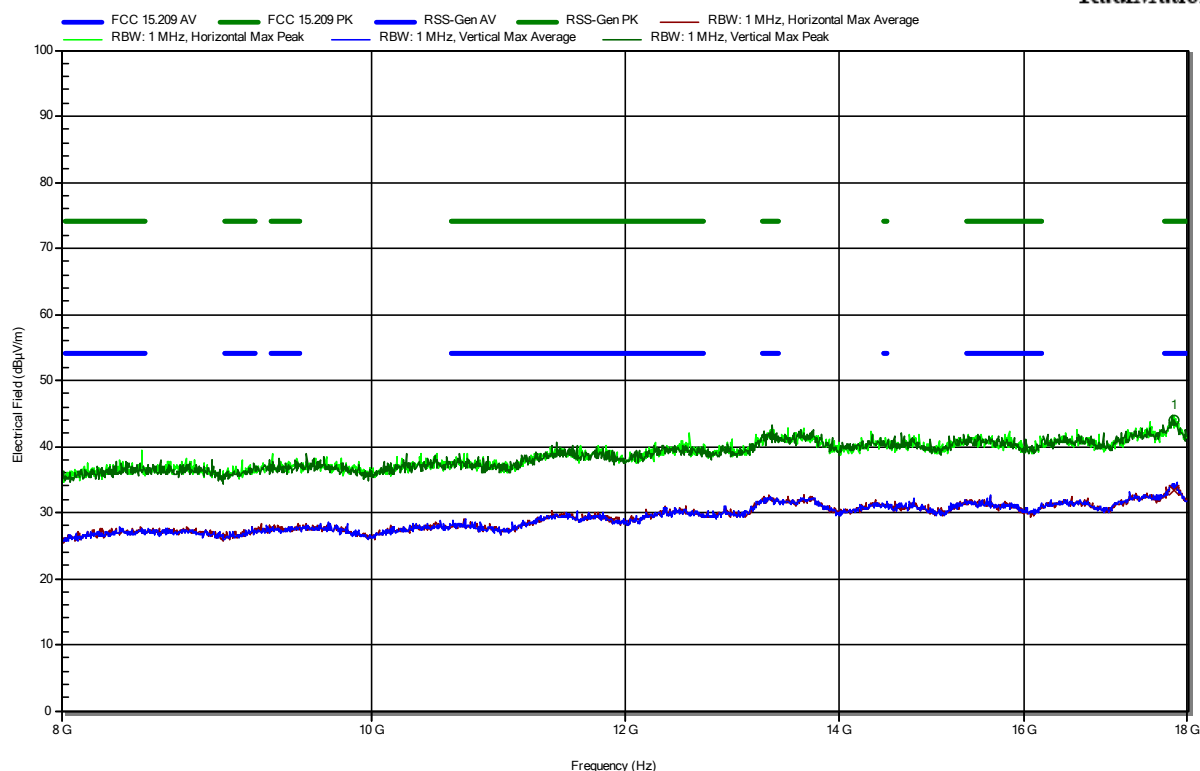
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck HWRD 650  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-18  
 Note: EUt vertical

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**RadiMation**



|                         |                         |                            |                                 |                        |                          |
|-------------------------|-------------------------|----------------------------|---------------------------------|------------------------|--------------------------|
| Frequency<br>17.816 GHz | Peak<br>43.91 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-30.09 dB    | Peak Status<br>Pass    | Polarization<br>Vertical |
| Frequency<br>17.816 GHz | Average<br>33.33 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-20.67 dB | Average Status<br>Pass | Polarization<br>Vertical |

Test Report No.: G0M-2112-1200-TFC247BL-V02

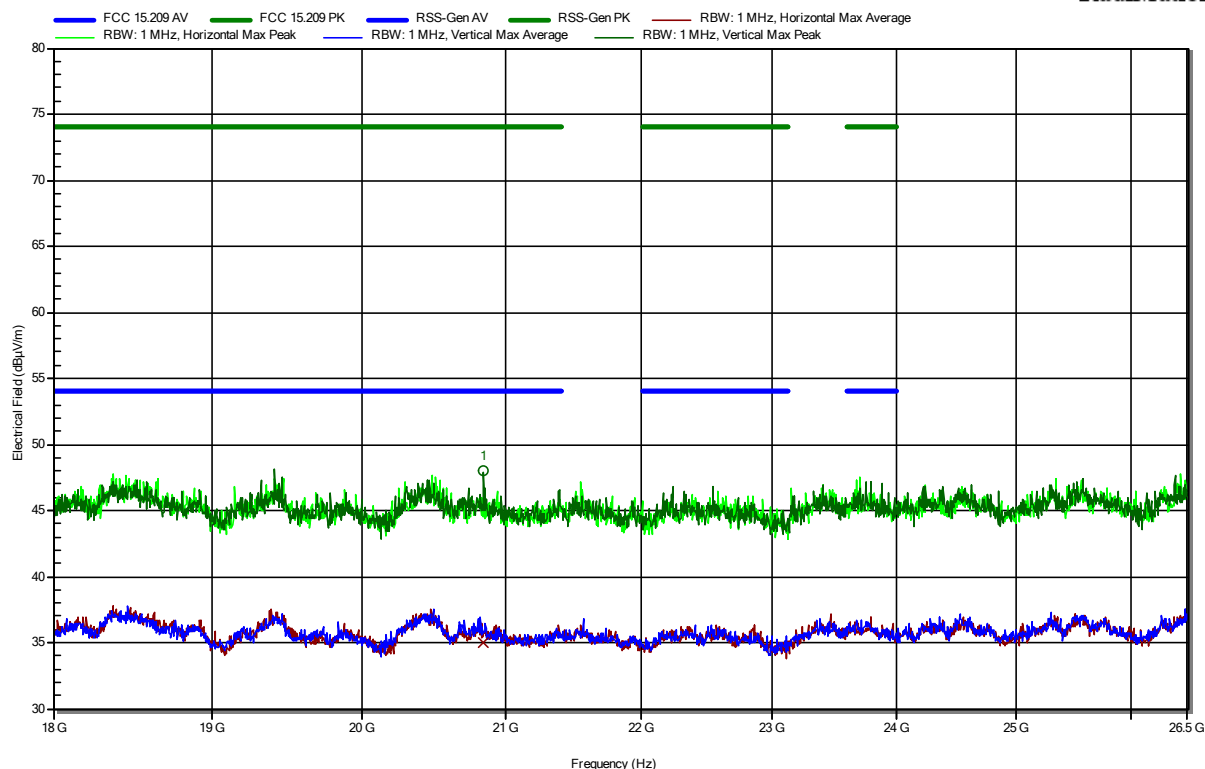
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Amplifier Research AT4560  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2402 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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**RadiMation**



|                         |                         |                            |                                 |                        |                          |
|-------------------------|-------------------------|----------------------------|---------------------------------|------------------------|--------------------------|
| Frequency<br>20.841 GHz | Peak<br>47.97 dBµV/m    | Peak Limit<br>74 dBµV/m    | Peak Difference<br>-26.03 dB    | Peak Status<br>Pass    | Polarization<br>Vertical |
| Frequency<br>20.841 GHz | Average<br>35.04 dBµV/m | Average Limit<br>54 dBµV/m | Average Difference<br>-18.96 dB | Average Status<br>Pass | Polarization<br>Vertical |

Test Report No.: G0M-2112-1200-TFC247BL-V02

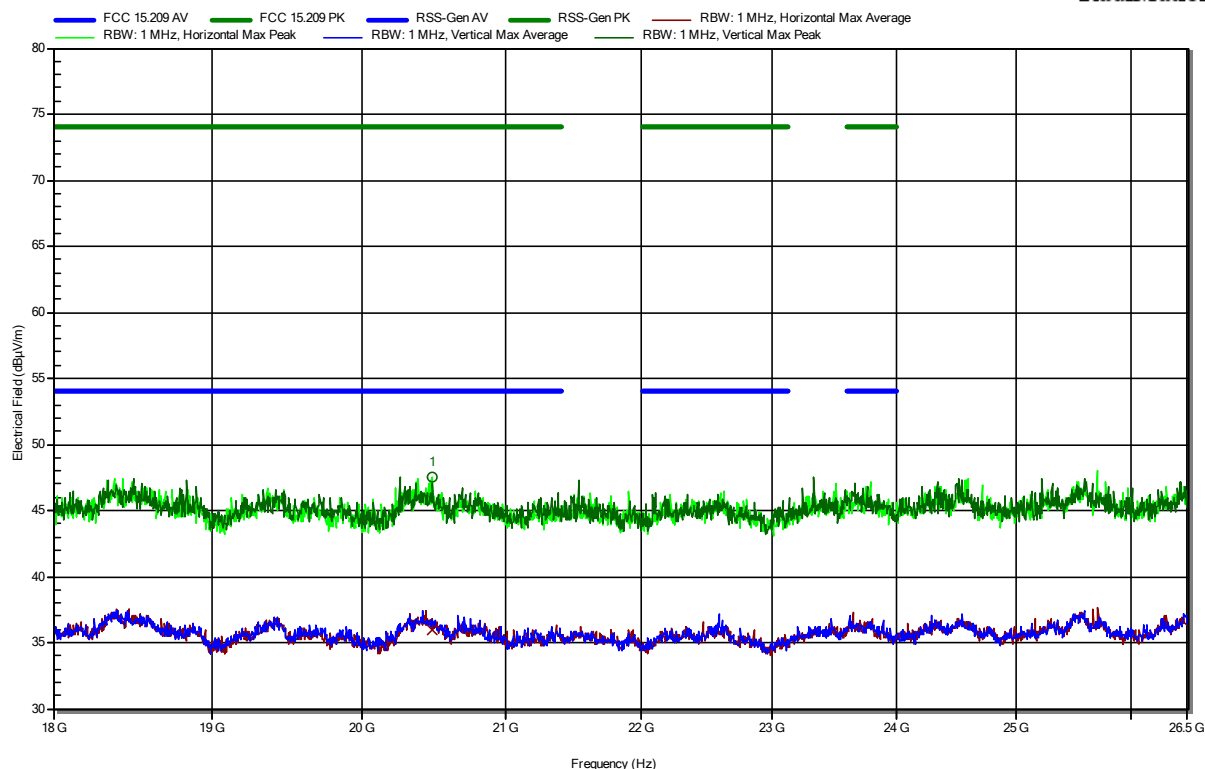
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Amplifier Research AT4560  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2440 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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**RadiMation**



|                         |                      |                            |                              |                        |                            |
|-------------------------|----------------------|----------------------------|------------------------------|------------------------|----------------------------|
| Frequency<br>20.483 GHz | Peak<br>47.48 dBμV/m | Peak Limit<br>74 dBμV/m    | Peak Difference<br>-26.52 dB | Peak Status<br>Pass    | Polarization<br>Horizontal |
| Frequency<br>20.483 GHz | Average<br>36 dBμV/m | Average Limit<br>54 dBμV/m | Average Difference<br>-18 dB | Average Status<br>Pass | Polarization<br>Horizontal |

Test Report No.: G0M-2112-1200-TFC247BL-V02

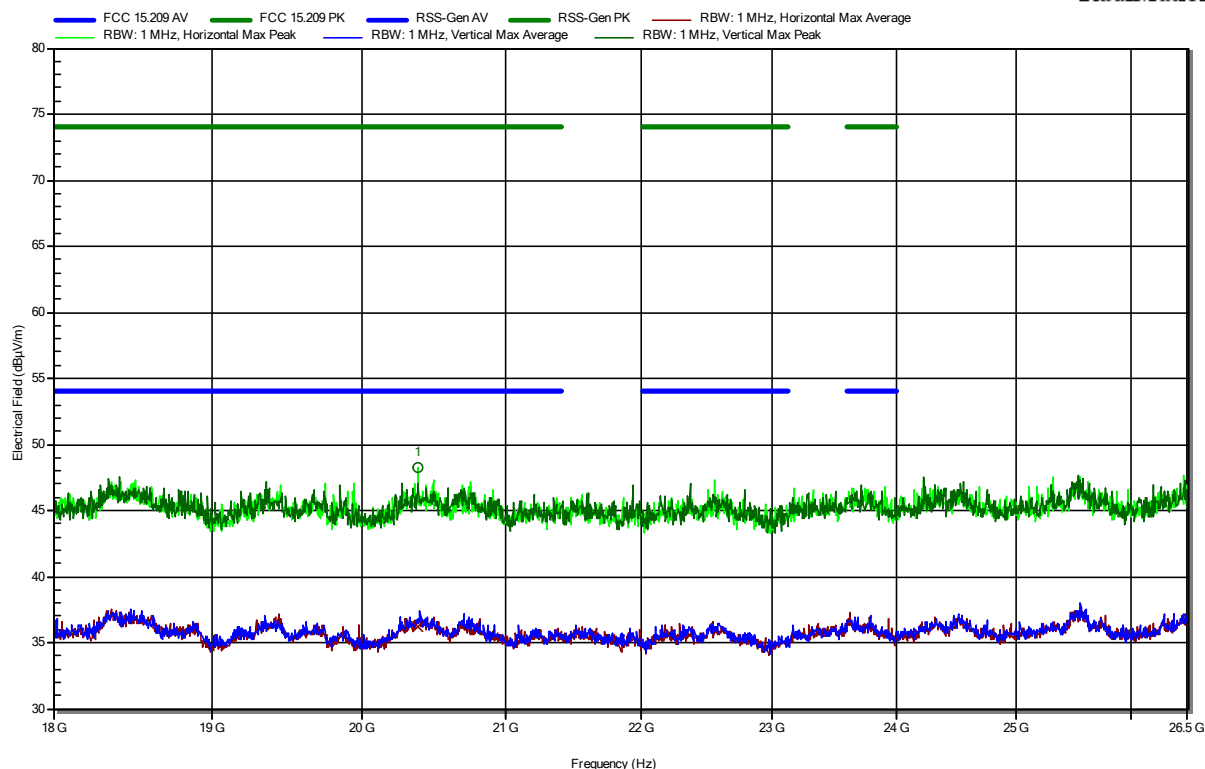
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mrs Hoang  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 23 °Celsius, Vnom: 13.5 VDC  
 Antenna: Amplifier Research AT4560  
 Measurement distance: 3 m  
 Mode: Tx; BLE; 1 Mbps; 2480 MHz  
 Test Date: 2022-03-18  
 Note: EUT vertical

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**RadiMation**



| Frequency  | Peak         | Peak Limit    | Peak Difference    | Peak Status    | Polarization |
|------------|--------------|---------------|--------------------|----------------|--------------|
| 20.383 GHz | 48.2 dBμV/m  | 74 dBμV/m     | -25.8 dB           | Pass           | Horizontal   |
| Frequency  | Average      | Average Limit | Average Difference | Average Status | Polarization |
| 20.383 GHz | 36.15 dBμV/m | 54 dBμV/m     | -17.85 dB          | Pass           | Horizontal   |

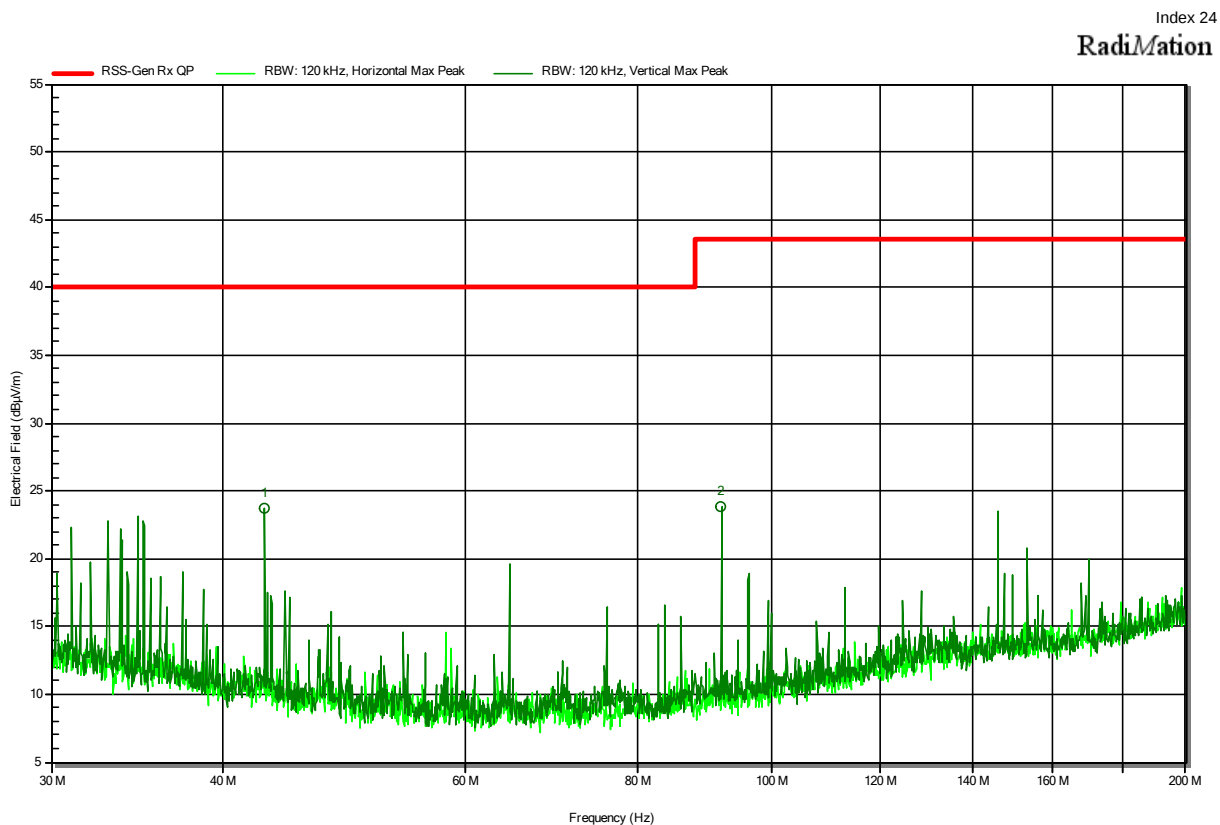
Test Report No.: G0M-2112-1200-TFC247BL-V02

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

## ANNEX B Receiver spurious emissions

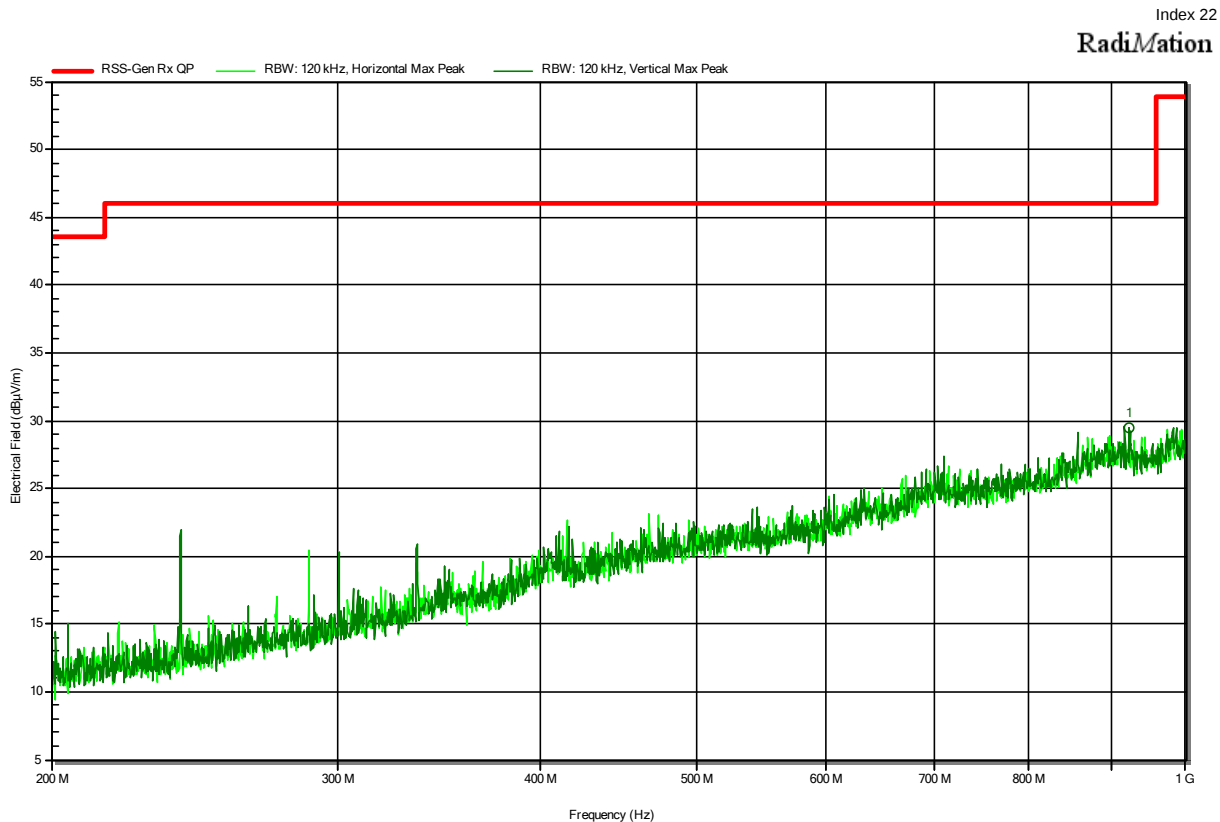
### Radiated Spurious Emissions according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HK 116  
 Measurement distance: 3 m  
 Mode: Rx; BLE; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical



## Radiated Spurious Emissions according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Rohde & Schwarz HL 223  
 Measurement distance: 3 m  
 Mode: Rx; BLE; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical



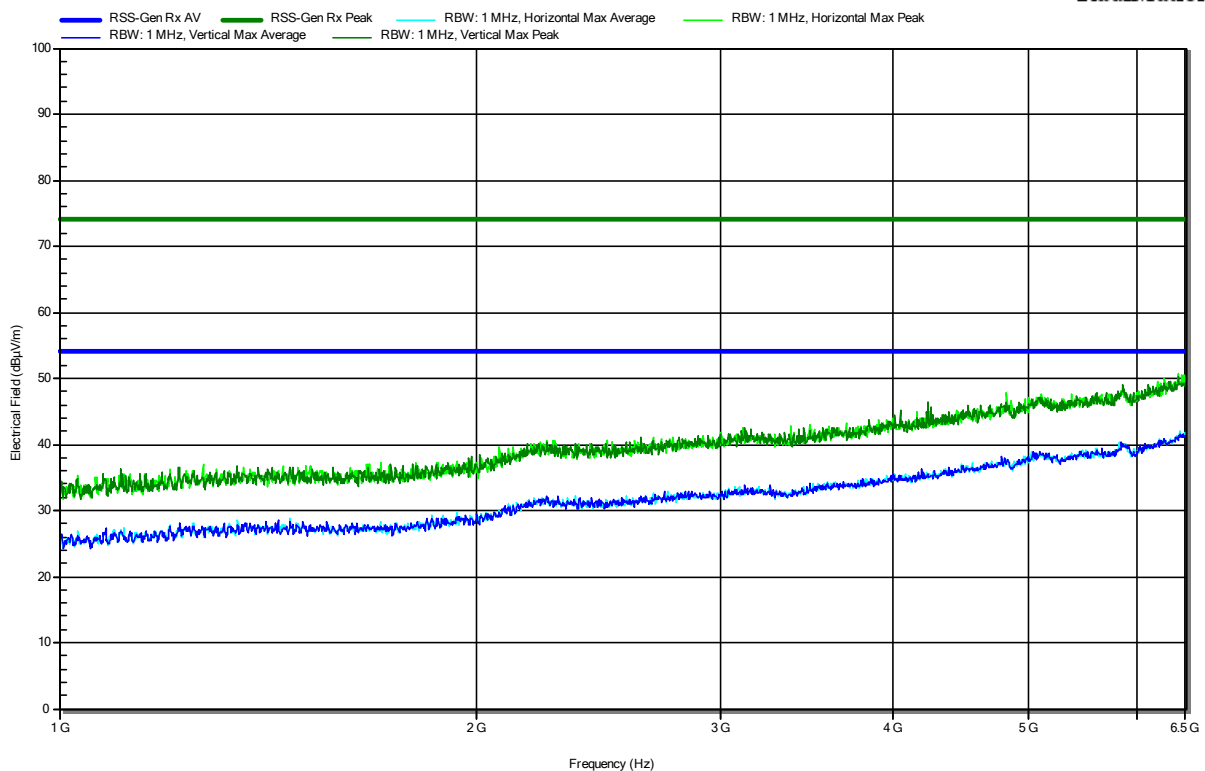
| Frequency  | Peak        | Peak Limit | Peak Difference | Peak Status | Polarization |
|------------|-------------|------------|-----------------|-------------|--------------|
| 922.16 MHz | 29.5 dBµV/m | 46 dBµV/m  | -16.55 dB       | Pass        | Vertical     |

## Radiated Spurious Emissions according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck BBHA 9120D  
 Measurement distance: 3 m  
 Mode: Rx; BLE; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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RadiMation

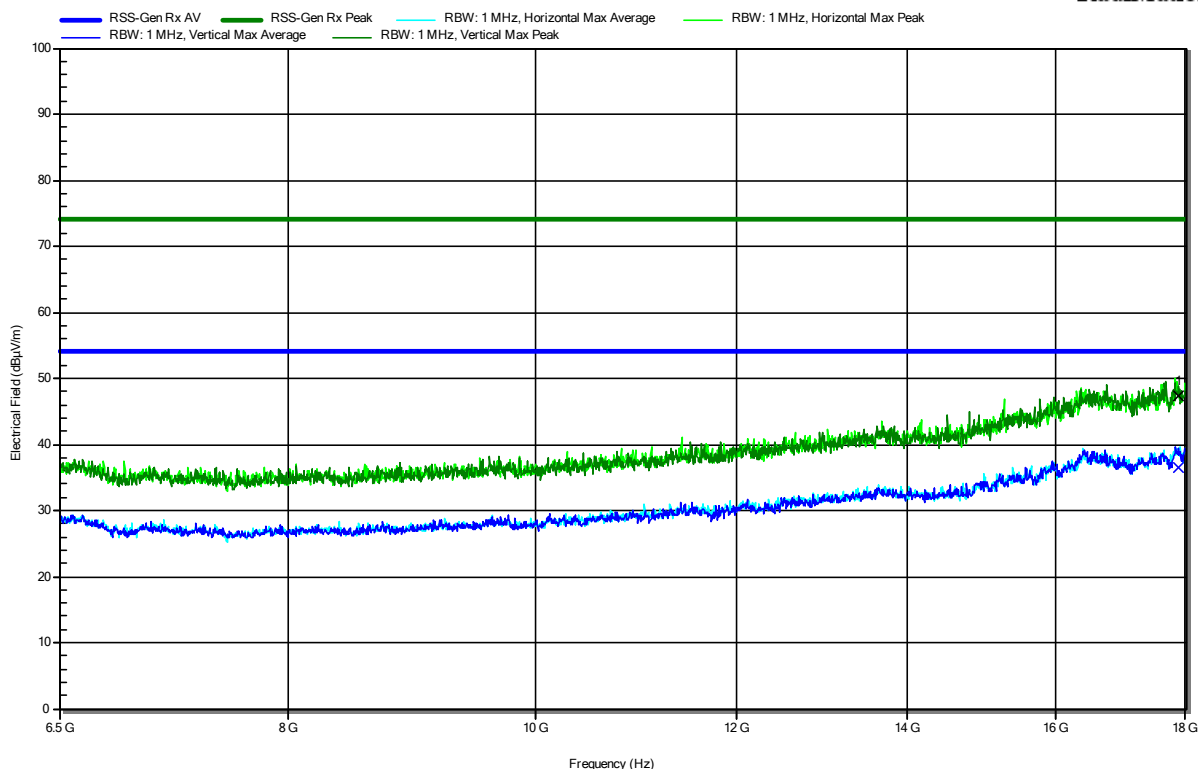


## Radiated Spurious Emissions according to RSS-247 Issue 2

Project Number: G0M-2112-1200  
 Applicant: Robert Bosch GmbH  
 Model Description: C-Sample  
 Model: BRC3100  
 Test Sample ID: 38816 (Serial number 18023-0012-01-368-00-0000)  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Qawasmeh  
 Measurement software: RadiMation, version 2020.1.8  
 Test Conditions: Tnom: 22 °Celsius, Vnom: 13.5 VDC  
 Antenna: Schwarzbeck HWRD 650  
 Measurement distance: 3 m  
 Mode: Rx; BLE; 2440 MHz  
 Test Date: 2022-03-29  
 Note: EUT vertical

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**RadiMation**



|                         |                         |                               |                                 |                        |                            |
|-------------------------|-------------------------|-------------------------------|---------------------------------|------------------------|----------------------------|
| Frequency<br>17.895 GHz | Peak<br>47.46 dBµV/m    | Peak Limit<br>74 dBµV/m       | Peak Difference<br>-26.54 dB    | Peak Status<br>Pass    | Polarization<br>Horizontal |
| Frequency<br>17.895 GHz | Average<br>36.59 dBµV/m | Average Limit<br>53.98 dBµV/m | Average Difference<br>-17.39 dB | Average Status<br>Pass | Polarization<br>Horizontal |

=== END OF TEST REPORT ===

Test Report No.: G0M-2112-1200-TFC247BL-V02

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