# EMC TEST REPORT

**FCC 47 CFR Part 15B, ISED ICES-003 Issue 7**

| | |
|---|---|
| **Report Reference No** | G0M-2104-9762-EF0115B-V01 |
| **Testing Laboratory** | Eurofins Product Service GmbH |
| Address | Storkower Str. 38c<br>15526 Reichenwalde<br>Germany |
| Accreditation | A2LA - Registration number: 1983.01 (ISED)<br>ISED wireless device testing laboratory: CN 3470A<br>DAkkS - Registration number : D-PL-12092-01-04 (FCC)<br>FCC Filed Test Laboratory, Reg.-No.: 96970 |
| **Applicant** | Webfleet Solutions B.V. |
| Address | De Ruijterkade 154<br>1011 AC Amsterdam<br>Netherlands |
| **Test Specification**<br>Standard(s) | Title 47 CFR Part 15 Subpart B<br>ISED ICES-003 Issue 7<br>ANSI C63.4:2014+A1:2017 |
| Non-Standard Test Method | None |
| **Equipment under Test (EUT):** | |
| Product Description | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model(s) | L0240 |
| Additional Model(s) | None |
| Brand Name(s) | LINK 240 |
| Hardware Version(s) | 48/2019 |
| Software Version(s) | 2.1 |
| FCC-ID | 2AGPAL0240 |
| IC | -/- |
| **Test Result** | **PASSED** |

| | | |
|---|---|---|
| **Possible test case verdicts:** | | |
| required by standard but not tested | N/T | |
| not required by standard | N/R | |
| required by standard but not appl. to test object | N/A | |
| test object does meet the requirement | P(PASS) | |
| test object does not meet the requirement | F(FAIL) | |
| **Testing:** | | |
| Date of receipt of test item | 2021-04-29 | |
| **Report:** | | |
| Compiled by | Matthias Handrik | |
| Tested by (+ signature)<br>(Responsible for Test) | Matthias Handrik | ..... |
| Approved by (+ signature)<br>(Test Lab Technician) | Andreas Pflug | ..... |
| Date of Issue | 2021-08-24 | |
| Total number of pages | 50 | |
| **General Remarks:** | | |
| **The test results presented in this report relate only to the object tested.**<br>**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.**<br>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. | | |
| **Additional Comments:** | | |
| | | |

## ABBREVIATIONS AND ACRONYMS

| Acronyms | |
|---|---|
| Acronym | Description |
| EUT | Equipment Under Test |
| FCC | Federal Communications Commission |
| ISED | Innovation, Science and Economic Development Canada |
| $T_{NOM}$ | Nominal operating temperature |
| $V_{NOM}$ | Nominal supply voltage |

## VERSION HISTORY

| Version History | | | |
|---|---|---|---|
| Version | Issue Date | Remarks | Revised By |
| 01 | 2021-08-24 | Initial Release | |

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# 1 Equipment (Test Item) Under Test

| | | |
|---|---|---|
| Description | Telematic Device with GSM+LTE+GNSS+OBD connector<br><br>The Model L0240 is a GPRS/LTE based telematics device with internal GSM/LTE and GNSS antennas and an integrated acceleration sensor to detect driving events. The device is designed and dedicated to be plugged onto the OBD connector of the vehicle. | |
| Model | L0240 | |
| Additional Model(s) | None | |
| Brand Name(s) | LINK 240 | |
| Serial Number(s) | WX4160I00008 | |
| Hardware Version(s) | 48/2019 | |
| Software Version(s) | 2.1 | |
| EUT Dimensions [cm] | 5.7 x 4.8 x 2.7 | |
| FCC-ID | 2AGPAL0240 | |
| IC | -/- | |
| Class | Class B | |
| Equipment type | Table top | |
| Highest internal frequency [MHz] | 2480 | |
| Radio Module I | Type | Mobil Communication Module |
| | Model | EXS82 |
| | Manufacturer | Gemalto (Thales) |
| | FCC-ID | QIPEXS82-W |
| | IC | 7830A-EXS82W |
| Radio Module II | Type | Bluetooth Module |
| | Model | Unspecified |
| | Manufacturer | Unspecified |
| | FCC-ID | Unspecified |
| Radio Module III | Type | GNSS Module |
| | Model | Unspecified |
| | Manufacturer | Unspecified |
| | FCC-ID | Unspecified |
| Supply Voltage | $V_{NOM}$ | 12/24 VDC |
| AC/DC-Adaptor | None | |
| Manufacturer | Webfleet Solutions B.V.<br>De Ruijterkade 154<br>1011 AC Amsterdam<br>Netherlands | |

## 1.1 Equipment Ports

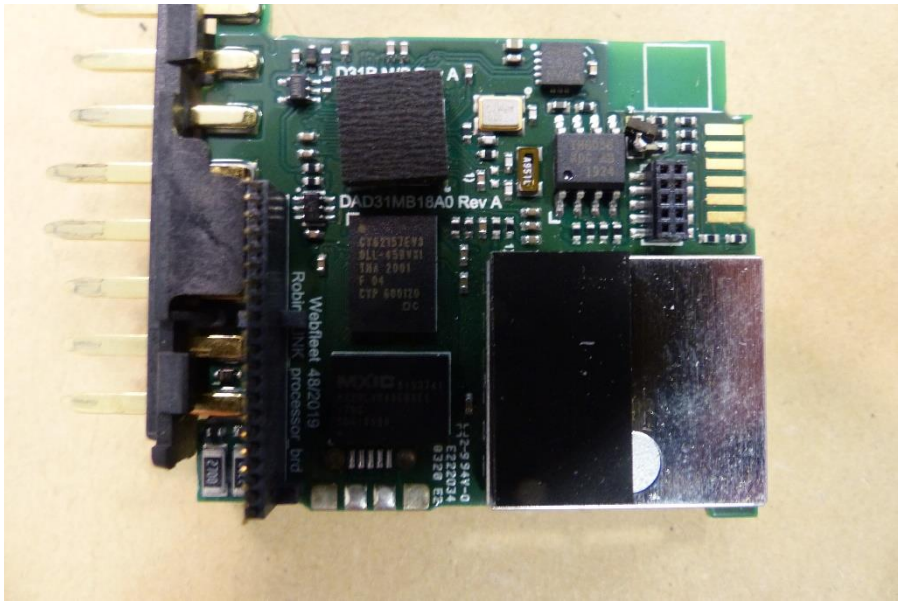
| Name | Type | Attributes | Comment |
|---|---|---|---|
| CAN bus | IO | Count: 1<br>Direction: IO<br>Max. cable length [m]: <3<br>Shielded: No<br>Service only: No | - |
| ISO 9141 (K-Line) | IO | Count: 1<br>Direction: In<br>Max. cable length [m]: <3<br>Shielded: No<br>Service only: No | Without communication |
| CAN bus single wire | IO | Count: 1<br>Direction: IO<br>Max. cable length [m]: <3<br>Shielded: No<br>Service only: No | - |
| Power | DC | Count: 1<br>Direction: In<br>Max. cable length [m]: 0.4<br>Shielded: No<br>Service only: No | extension wire |

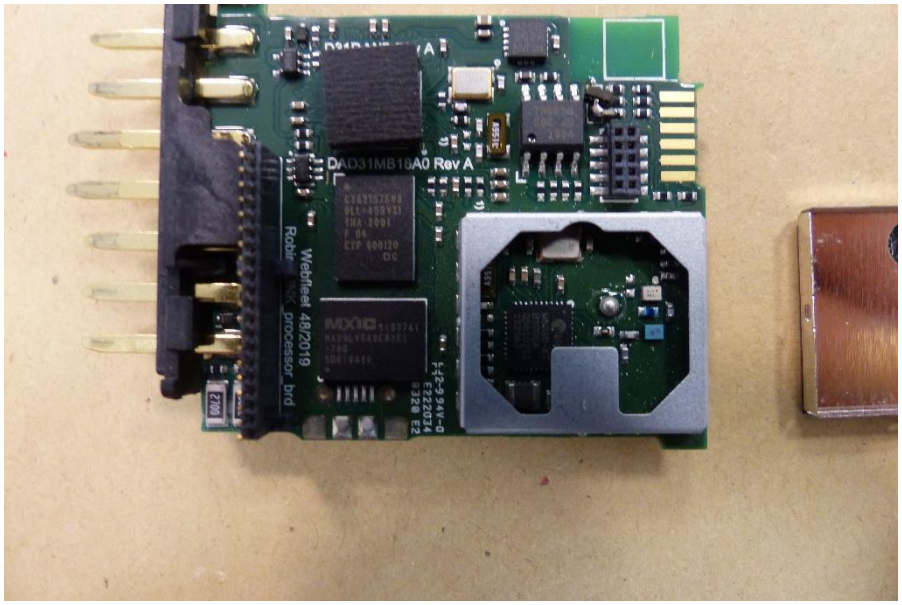
| Description: | |
|---|---|
| AC | AC mains power input/output port |
| DC | DC power input/output port |
| BAT | DC power input port connected to external battery |
| IO | Input/Output port |
| TP | Telecommunication port |
| NE | Non-electrical port |

## 1.2 Equipment Photos - Internal

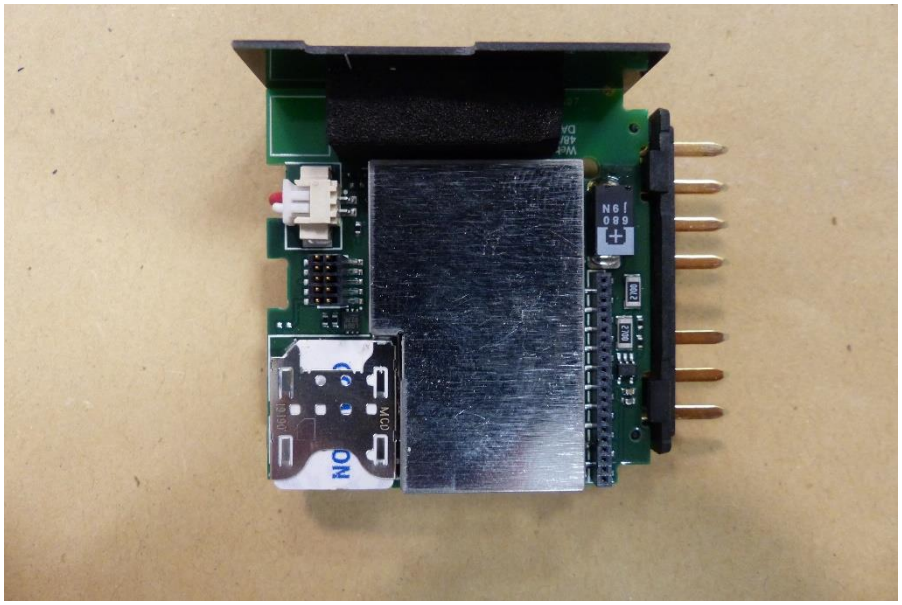
| EUT PCB I TOP |
|---|
| |

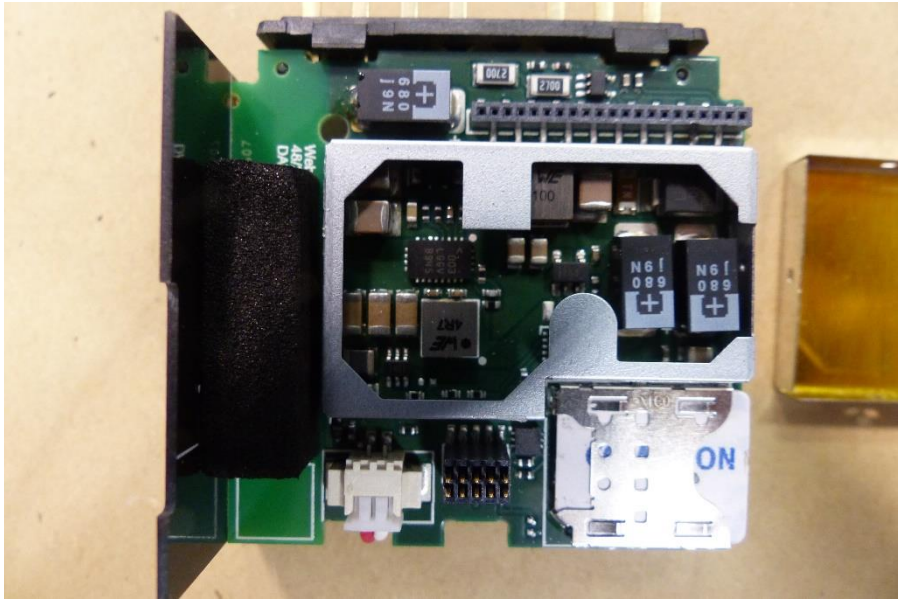


| EUT PCB I BOTTOM |
|---|
|  |

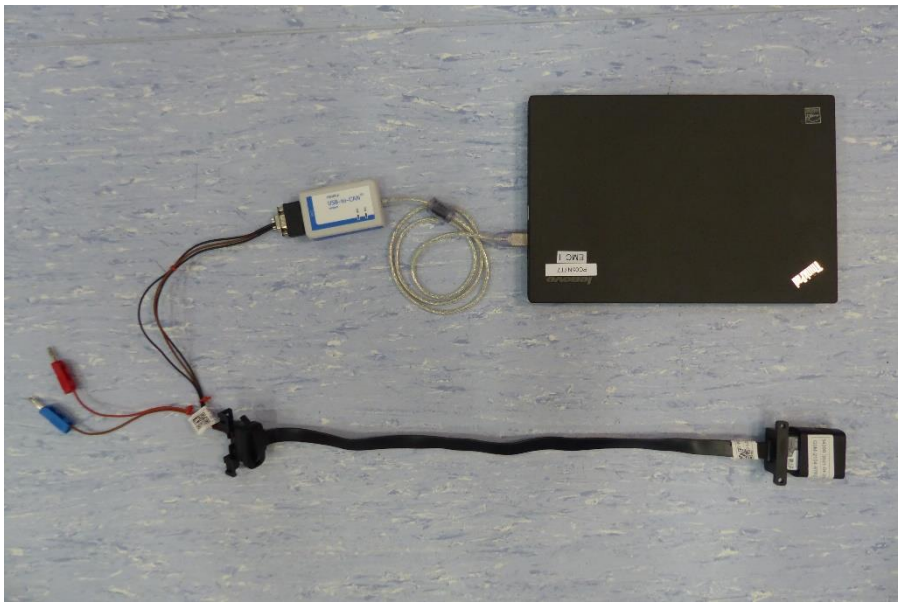
| EUT PCB I BOTTOM without cover |
| --- |
|  |

| EUT PCB II TOP |
| --- |
| |

| EUT PCB II BOTTOM |
| --- |
|  |

| EUT PCB II BOTTOM without cover |
| --- |
|  |

## 1.3 Equipment Photos - External

| EUT + extension wire and auxiliary equipment |
|---|
|  |

| EUT TOP |
|---|
| |

| EUT TOP label |
| --- |
| |

| EUT LEFT |
| --- |
| |

| EUT RIGHT |
| --- |
| |

| EUT FRONT |
| --- |
| |

| EUT BOTTOM |
| --- |
| |

| EUT BOTTOM label |
| --- |
| |

| EUT BACK |
| --- |
| |

## 1.4 Support Equipment

| Product Type | Device | Manufacturer | Model | Comment |
|---|---|---|---|---|
| AE | Laptop | Lenovo | ThinkPad X250 | - |
| AE | CAN-USB adaptor | IXXAT | IXXAT USB-to-CAN Converter | Customer Support Equipment |
| AE | OBD extension cable | Pan-I | - | Customer Support Equipment |
| AE | Software application | Webfleet Solution | - | Customer Support Equipment |
| Description: | | | | |
| AE | Auxiliary Equipment | | | |
| SIM | Simulator | | | |
| MON | Monitoring Equipment | | | |
| CBL | Connecting Cable | | | |
| Comment: | | | | |

## 1.5 Operational Modes

| Mode # | Description |
|---|---|
| 1 | GSM 850 transmission + BT(BT DUT mode) + GNSS receive local positon |
| 2 | GSM1900 transmission + BT(BT DUT mode) + GNSS receive local positon |
| 3 | LTE FDD 12 transmission +BT(BT DUT mode) + GNSS receive local positon |
| 4 | LTE FDD 13 transmission +BT(BT DUT mode) + GNSS receive local positon |
| Comment:<br>EUT operates in mobile communication band: GSM850; GSM1900; LTE FDD 2; 4; 12; 13.<br>After evaluation of worst case, measurements were performed in mobile communication band GSM 850, GSM 1900, LTE FDD 12 and FDD 13 | |

## 1.6 EUT Configuration

| Configuration # | Description |
|---|---|
| - | EUT powered up via from laboratory power supply.<br>CAN connection via CAN-USB adaptor, “Type: CAN; Interface: HW321925; Bitrate: 500000”.<br>Laptop controlled EUT via software application: “Device Communication Tool.”<br>Laptop and CAN-USB adaptor are positioned outside the measurement chamber.<br>Mobile communication tester provides the mobile communication connection.<br>Local external GNSS antenna provide the GNSS position for the EUT<br>Wireless connectivity tester provides the Bluetooth connection.<br>EUT operates in Bluetooth test mode (BT DUT).<br>TX-Test, basic rate, Channel 39, DH5, PRSB9, max power |
| 1 | 12V DC GSM 850: GPRS 2slots, Gamm 3, Ch.: 192 |
| 2 | 24V DC GSM 1900: GPRS 2slots, Gamm 3, Ch.: 661 |
| 3 | 12V DC LTE FDD 12: TPC „Max Power”, Ch.: 23095 |
| 4 | 24V DC LTE FDD 13: TPC „Max Power”; Ch.: 23230 |
| Comment: | |

## 1.7 Sample emission level calculation

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

Reading:

This is the reading obtained on the spectrum analyser in dBµV. Any external preamplifiers used are taken into account through internal analyser 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 analyser. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyser (dBµV) + A.F. (dB/m) = Net field strength (dBµV/m)

Net:

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

Limit:

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

Limit (dBµV/m) = 20*log (µV/m)

Margin:

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

Example only:

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

## 2 Result Summary

| FCC 47 CFR Part 15B, ISED ICES-003 Issue 7 | | | | |
|---|---|---|---|---|
| **Reference** | **Requirement** | **Reference Method** | **Result** | **Remarks** |
| Emission | | | | |
| FCC 15.109<br>ICES-003, 3.2.2 | Radiated emissions | ANSI C63.4:2014<br>+A1:2017 | PASS | - |
| FCC 15.107<br>ICES-003, 3.2.1 | AC power line conducted emissions | ANSI C63.4:2014<br>+A1:2017 | N/R | - |
| 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 |

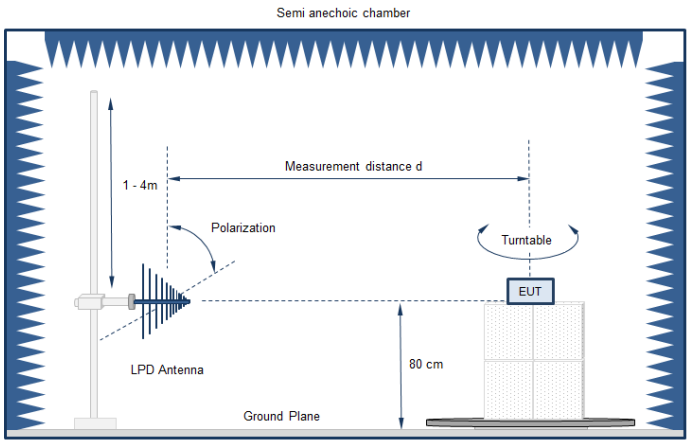
## 2.1 Test Conditions and Results - Radiated emissions acc. to ANSI C63.4

### 2.1.1 Information

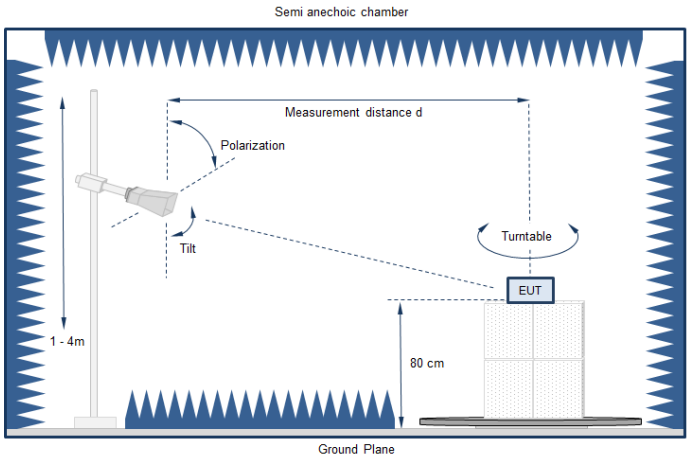
| Test Information | |
|---|---|
| Reference | FCC 15.109, ICES-003, 3.2.2 |
| Reference method | ANSI C63.4:2014+A1:2017 Section 8 |
| Equipment class | Class B |
| Equipment type | Table top |
| Highest internal frequency [MHz] | 2480 |
| Measurement range | 30 MHz to 12350 MHz |
| Temperature [°C] | 23 ±3 |
| Humidity [%] | 57 ±3 |
| Operator | Matthias Handrik |
| Date | 2021-07-22 |

### 2.1.2 Setup

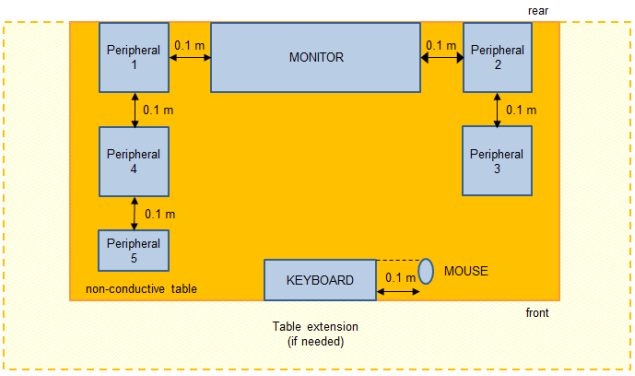
**Measurement up to 1 GHz**



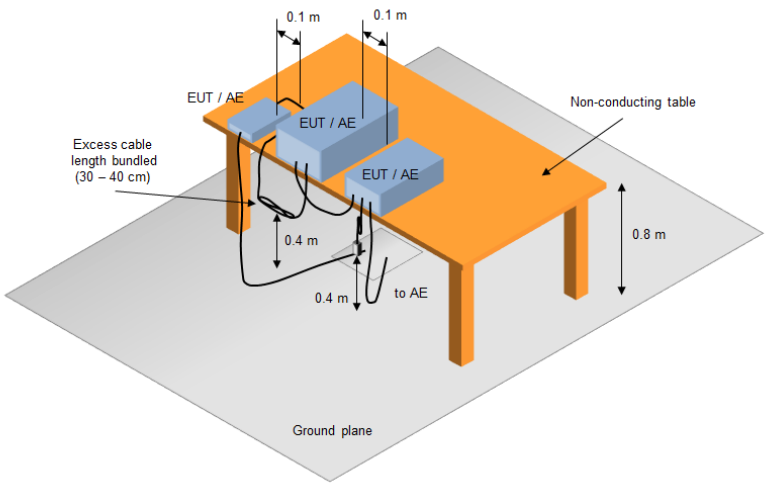

**Measurement above 1 GHz**



**Equipment placement - Table top**




**Test Setup**




2.1.3 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 |
| Anechoic chamber (NSA) | Frankonia | AC1 | EF00062 | 2021-02 | 2024-02 |
| Anechoic chamber (SVSWR) | Frankonia | AC 1 | EF01011 | 2019-06 | 2022-06 |
| Functional radio communication tester | Rohde & Schwarz GmbH & Co. KG | CMW290 | EF01367 | 2021-07 | 2022-07 |
| Wideband radio communication tester | Rohde & Schwarz GmbH & Co. KG - Vertrieb Berlin | CMW270 | EF01169 | 2021-03 | 2022-03 |
| Signalization Antenna | - | - | - | - | - |
| AC & DC Power Supply | Chroma ATE Inc. | 61604 | EF01380 | 2020-07 | 2021-07 |

| | | | | | |
|---|---|---|---|---|---|
| True RMS Multimeter | Fluke | Fluke-117 | EF00877 | 2020-08 | 2021-08 |
| EMI Test Receiver | Rohde & Schwarz Vertriebs GmbH | ESR7 | EF00943 | 2020-07 | 2021-07 |
| Spectrum analyzer | Rohde & Schwarz GmbH & Co. KG | FSU43 | EF01631 | 2020-07 | 2021-07 |
| Notch filter | Wainwright Instruments GmbH | WRCT 24000/2497-80-20SS | EF00098 | fucntional test | fucntional test |
| Notch filter 800-960 MHz | Wainwright Instruments GmbH | WTRCT5-800-960-0.3-2-40SSK | EF01000 | fucntional test | fucntional test |
| Network Analyzer | Rohde & Schwarz GmbH & Co. KG | ZVL6 | EF01198 | 2020-07 | 2021-07 |
| Biconical Antenna | R&S | HK 116 | EF00030 | 2021-05 | 2024-05 |
| LPD Antenna | R&S | HL 223 | EF00187 | 2019-05 | 2022-05 |
| Horn Antenna | Schwarzbeck | BBHA9120D | EF00018 | 2019-10 | 2022-10 |
| Climatic Sensor | Embedded Data Systems, LLC. | 280010000025417E | EF01054 | 2021-03 | 2022-03 |

### 2.1.4 Procedure

| Exploratory measurement |
|---|
| 1. The EUT was placed on a non-conductive table at a height of 0.8m.<br>2. The EUT and support equipment, if needed, were set up to simulate typical usage.<br>3. Cables, of type and length specified by the manufacturer, were connected to at least one port of each type and were terminated by a device or simulating load of actual usage.<br>4. The antenna was placed at a distance of 3 or 10 m.<br>5. The received signal was monitored at the measurement receiver.<br>6. This procedure has to be performed in both antenna polarizations, horizontal and vertical.<br>7. The arrangement of the equipment with the maximum emission level is shown on the setup picture at item 2.1.2 |

| Final measurement |
|---|
| 1. The EUT was placed on a 0.8 m non-conductive table at a 3 m distance from the receive antenna. The antenna output was connected to the measurement receiver.<br>2. A biconical antenna was used for the frequency range 30 – 200 MHz, a logarithmic periodical antenna was used for the frequency range from 200 – 1000 MHz. Above one 1 GHz a Double Ridged Broadband Horn antenna was used. The antenna was placed on an adjustable height antenna mast.<br>3. The EUT and cable arrangement were based on the exploratory measurement results.<br>4. Emissions were maximized at each frequency by rotating the EUT and adjusting the receive antenna height and polarization. The maximum values were recorded.<br>5. The test data of the worst-case conditions were recorded and shown on the next pages. |

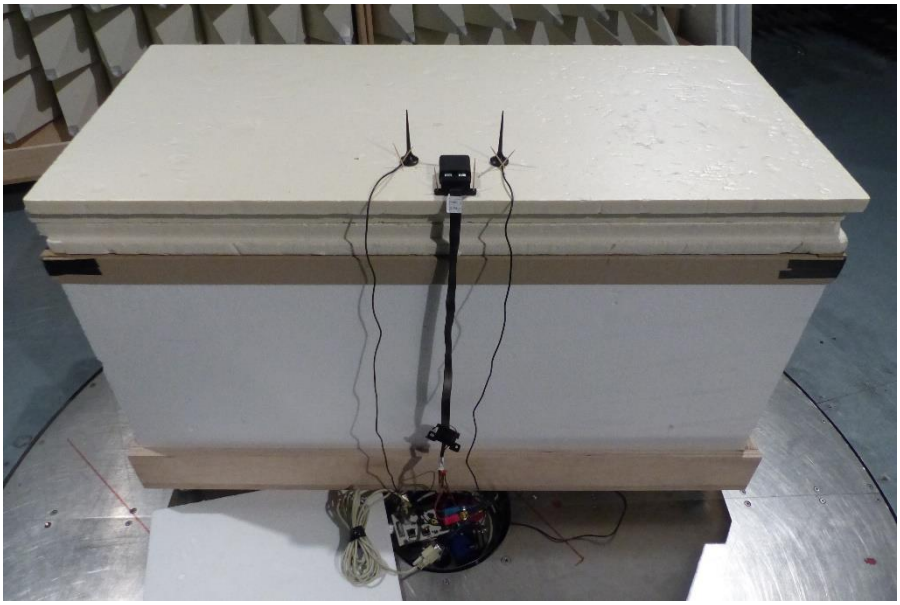
### 2.1.5 Limits

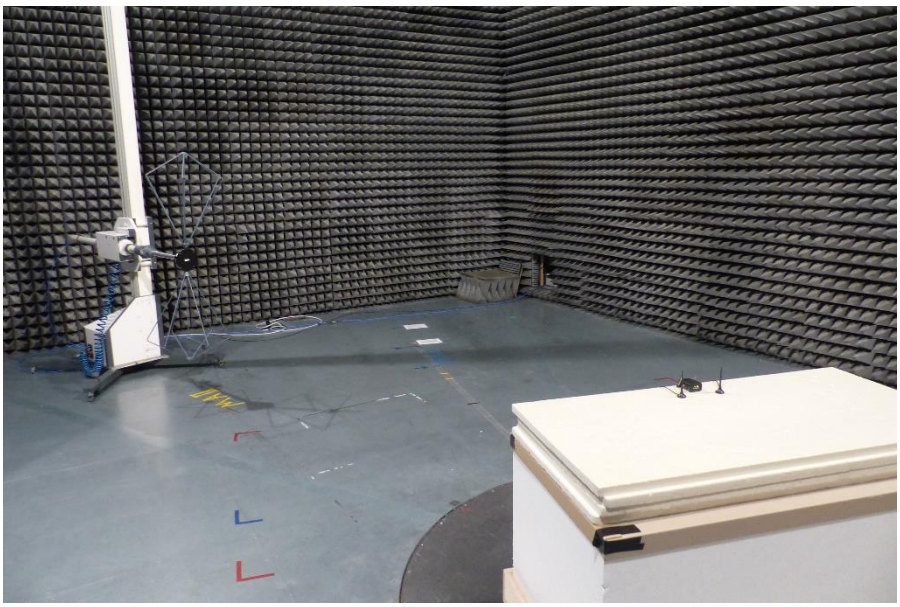
| Class B @ 3 m | | |
|---|---|---|
| Frequency [MHz] | Detector | Limit [dBµV/m] |
| 30 - 88 | Quasi-peak | 40 |
| 88 - 216 | Quasi-peak | 43.5 |
| 216 - 960 | Quasi-peak | 46 |
| 960 - 1000 | Quasi-peak | 54 |
| > 1000 | Peak<br>Average | 74<br>54 |

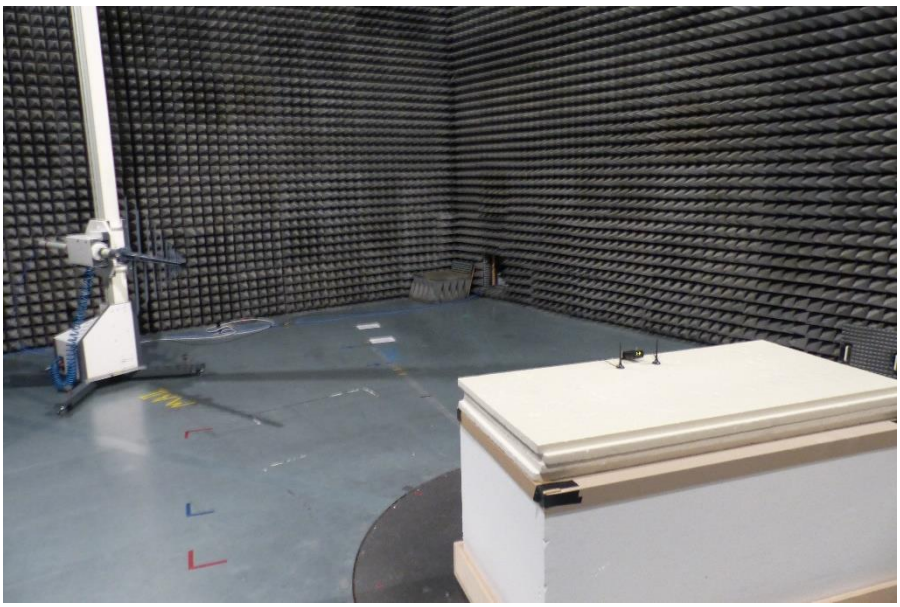
### 2.1.6 Results

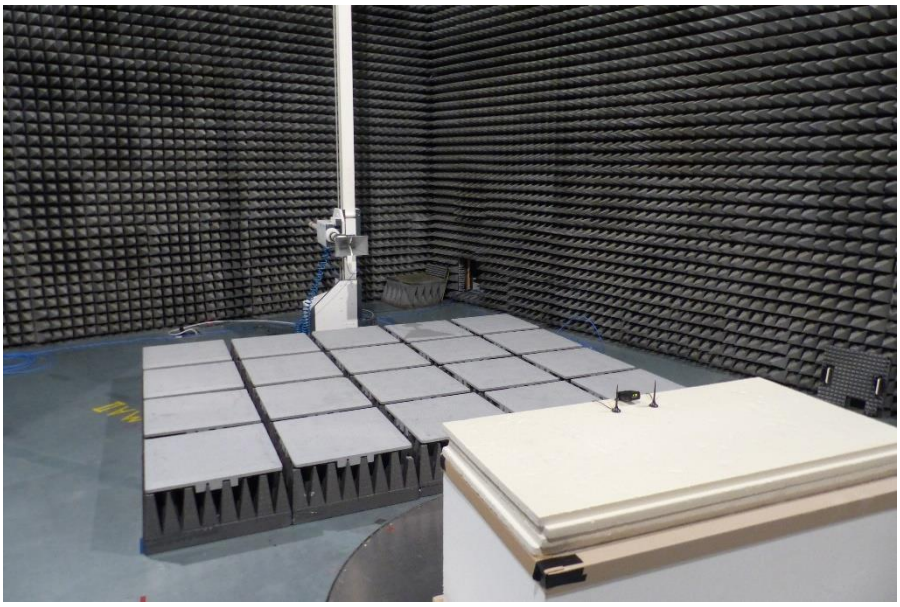
| Test Results | | | |
|---|---|---|---|
| Operational mode | EUT Configuration | Verdict | Remark |
| 1 | 1 | PASS | - |
| 2 | 2 | PASS | - |
| 3 | 3 | PASS | - |
| 4 | 4 | PASS | - |

### 2.1.7 Setup Photos

| Test setup |
| --- |
|  |

| Test setup 30-200MHz |
| --- |
|  |

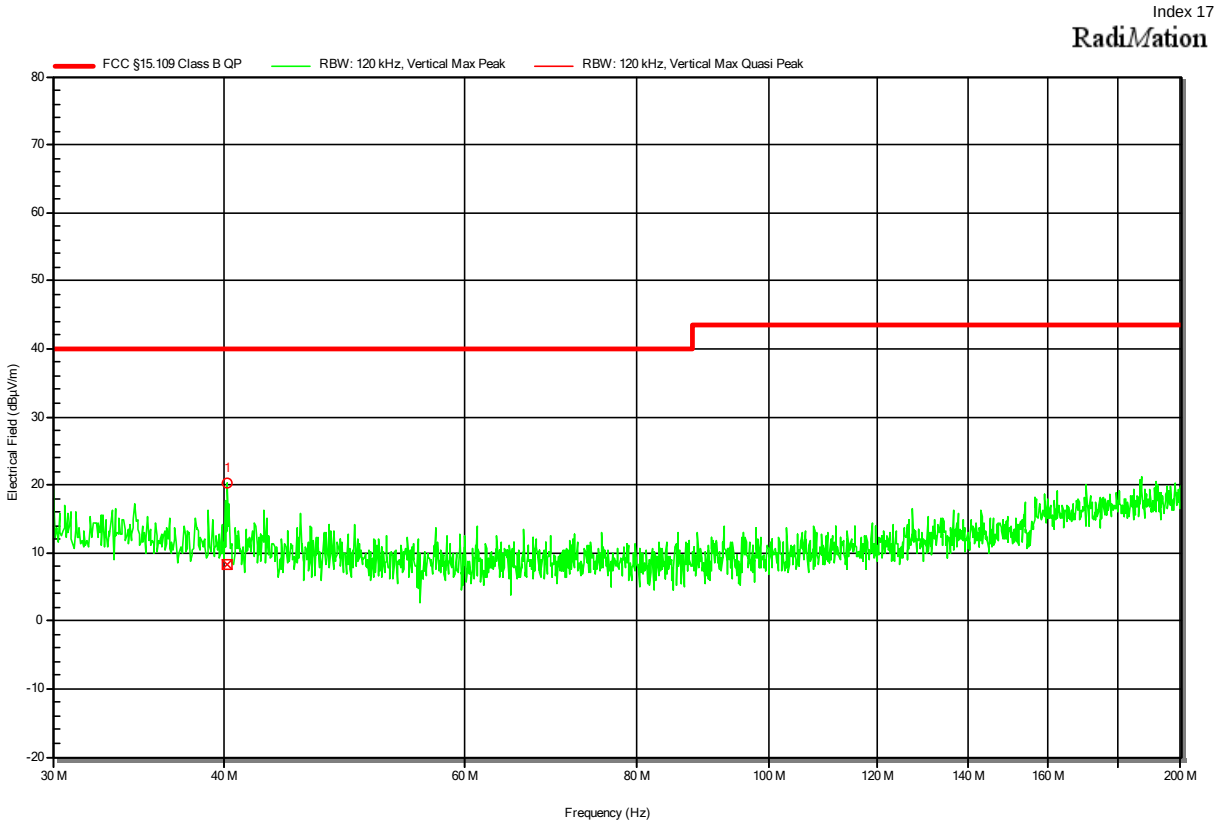
| Test setup 200-1000MHz |
| --- |
|  |

| Test setup 1-13GHz |
| --- |
|  |

### 2.1.8 Records

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 1 |
| EUT Configuration: | 1 |
| Note 1: | |




| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 40,226 MHz | 8,4 dBµV/m | 40 dBµV/m | -31,6 dB | Pass | 180 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 1 |
| EUT Configuration: | 1 |
| Note 1: | |

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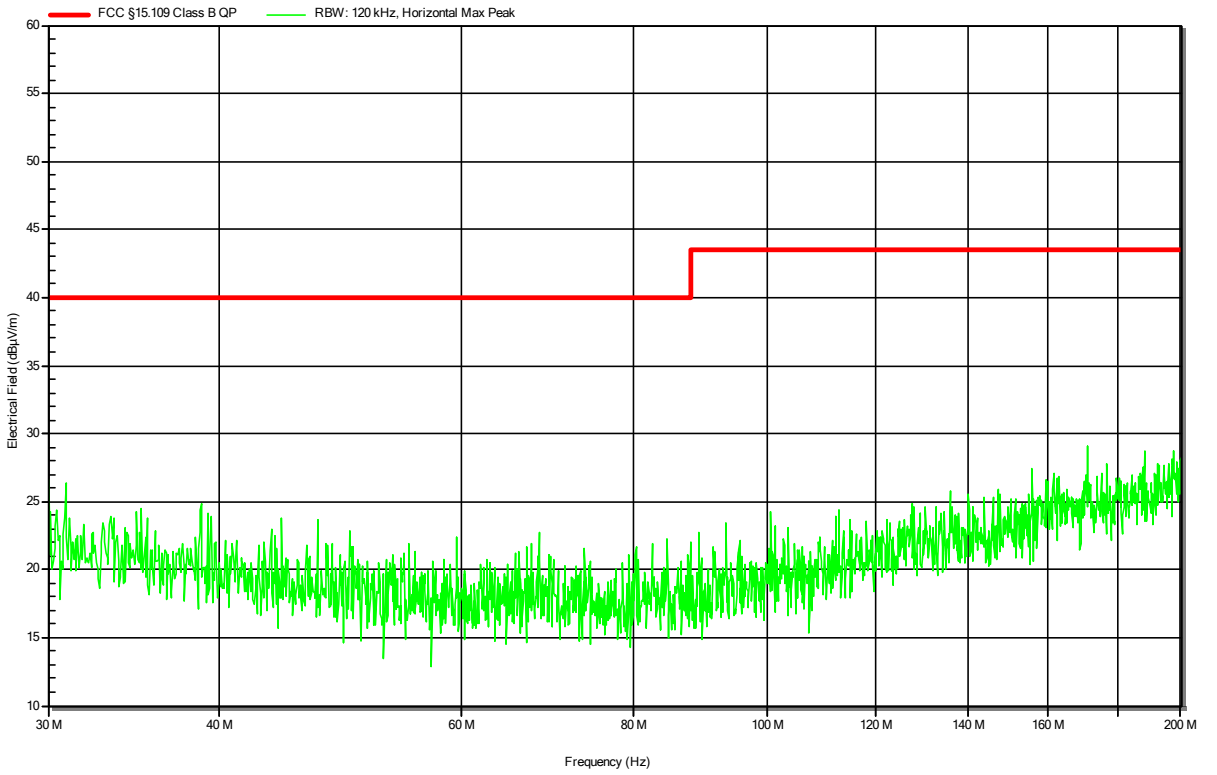

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement Distance: | 3m |
| Operational Mode &<br>EUT Configuration: | 1<br>1 |
| Note 1: | with notchfilter for GSM 850 |

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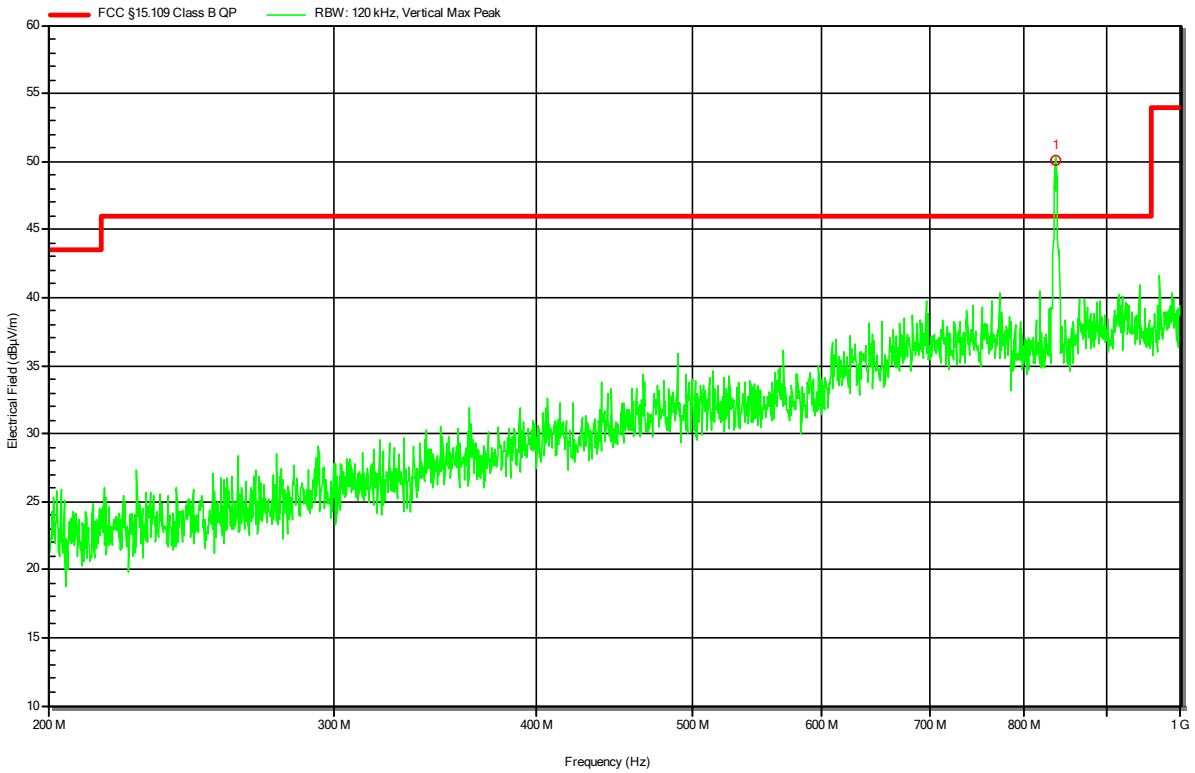
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | 837,786 MHz | GSM 850 carrier | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DCDC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode &<br>EUT Configuration: | 1<br>1 |
| Note 1: | with notchfilter for GSM 850 |

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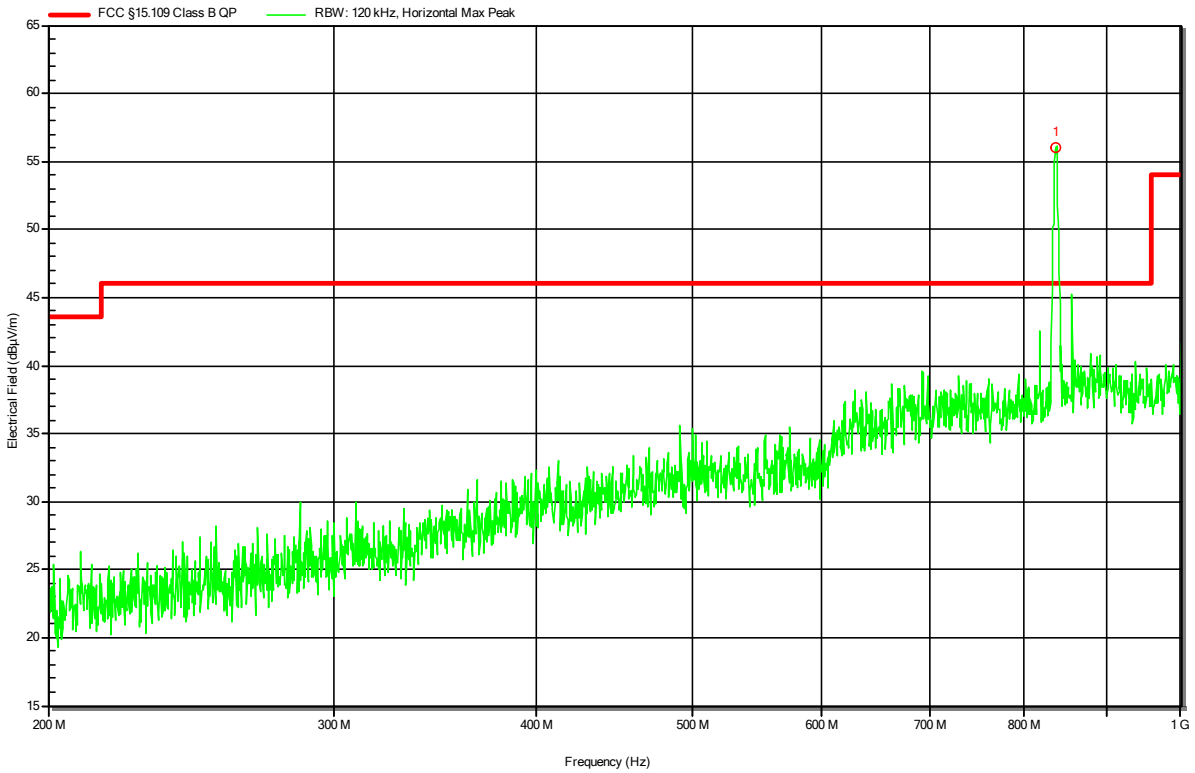
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | 837,766 MHz | 0 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Vertical |
| Measurement Distance: | 3 |
| Operational Mode & | 1 |
| EUT Configuration: | 1 |
| Note 1: | with notchfilter for 2.4GHz for Bluetooth |

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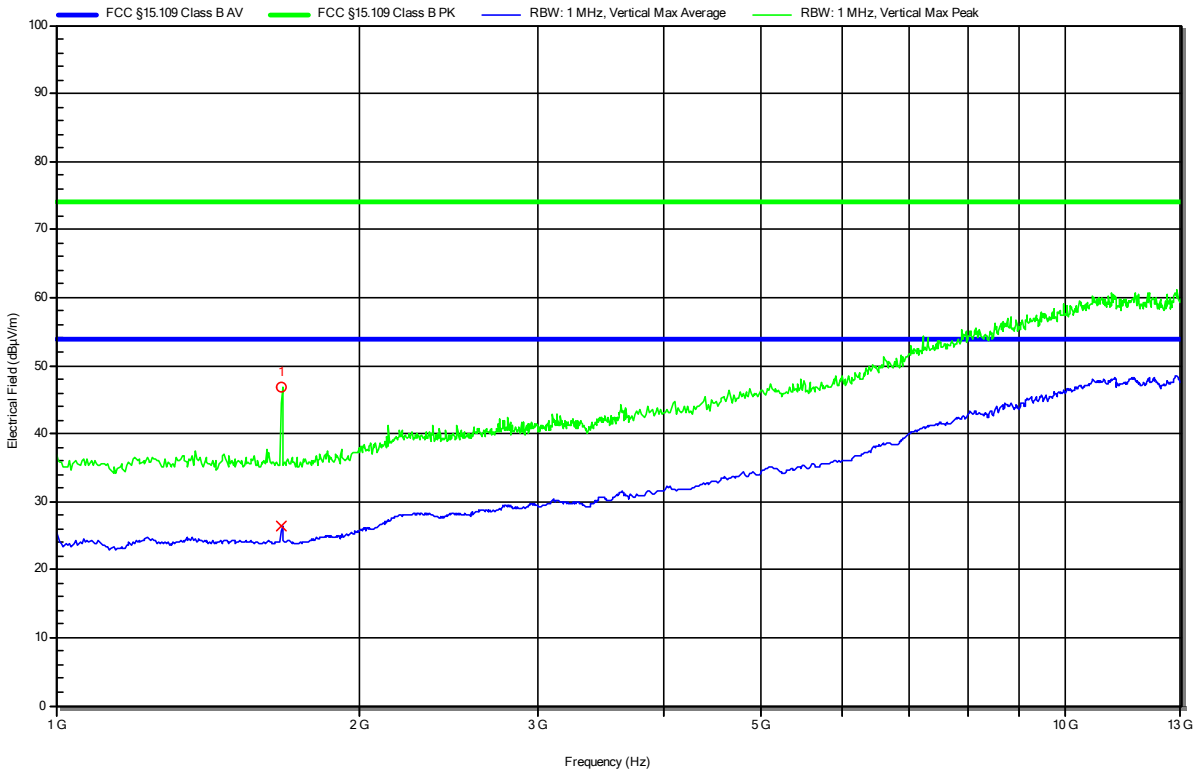
RadiMation




| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,675 GHz | 2nd Harmonic GSM 850 | | | | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode &<br>EUT Configuration: | 1<br>1 |
| Note 1: | with notchfilter for 2.4GHz for Bluetooth |

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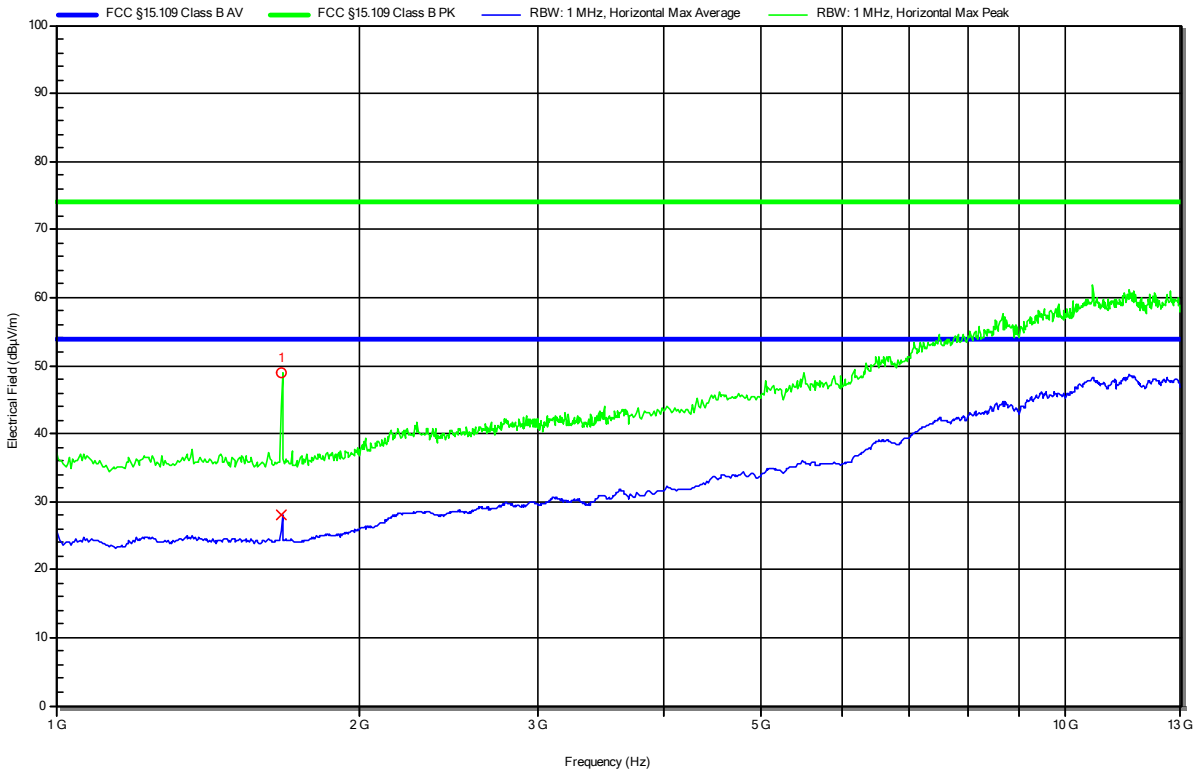
RadiMation




| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,675 GHz | 2nd Harmonic GSM 850 | | | | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | -<br>9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement Distance: | 3m |
| Operational Mode &<br>EUT Configuration: | 2<br>2 |
| Note 1: | |

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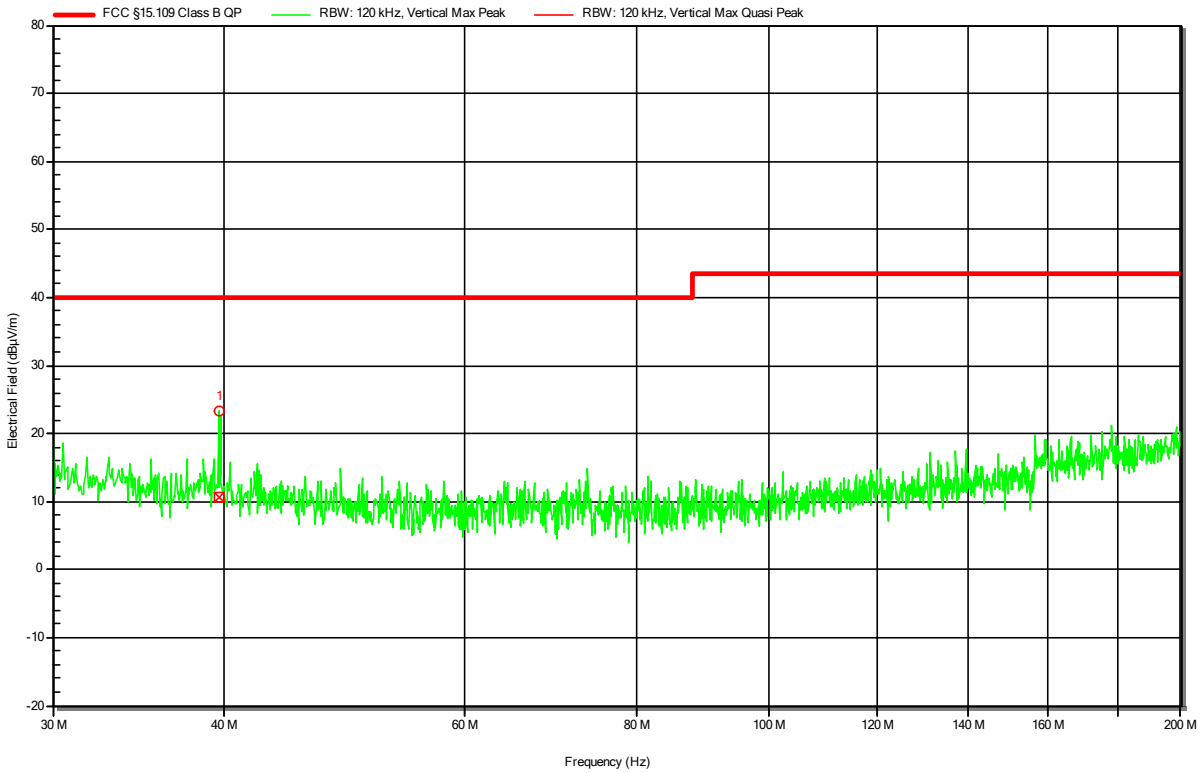
RadiMation




| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 39,656 MHz | 10,63 dBµV/m | 40 dBµV/m | -29,37 dB | Pass | 0 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 2 |
| EUT Configuration: | 2 |
| Note 1: | |

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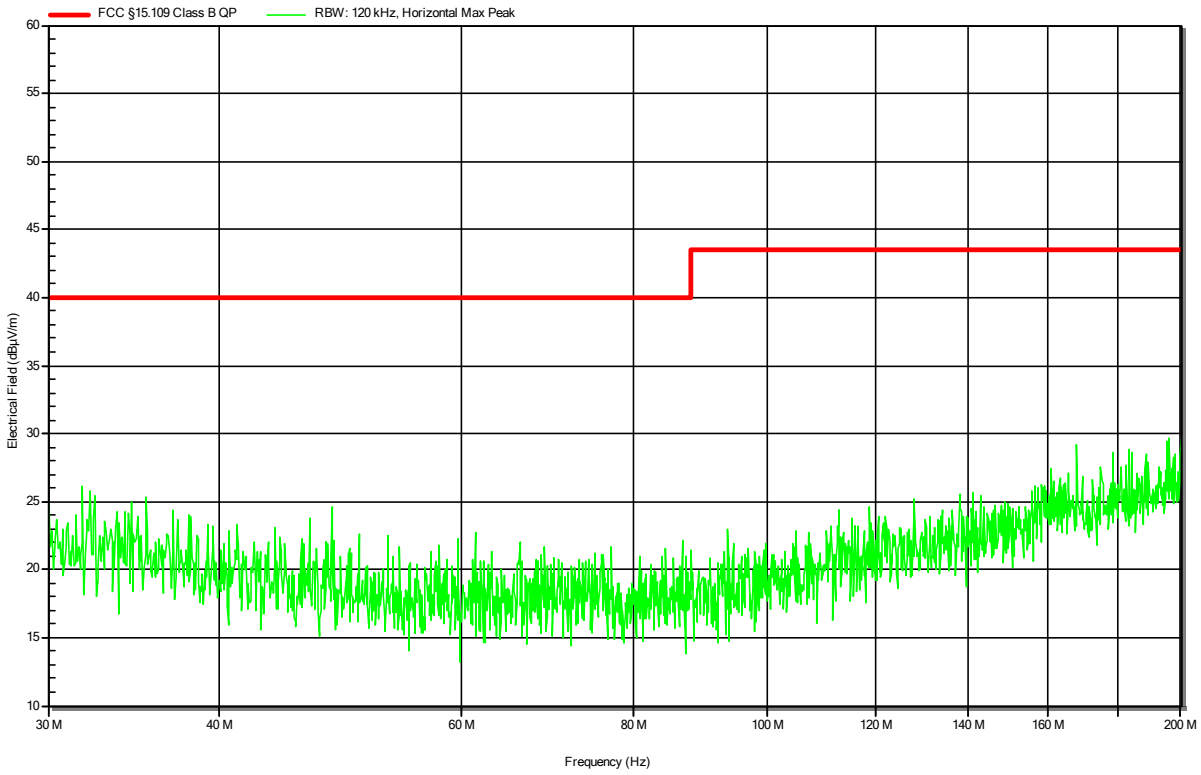
RadiMation



**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 2 |
| EUT Configuration: | 2 |
| Note 1: | |

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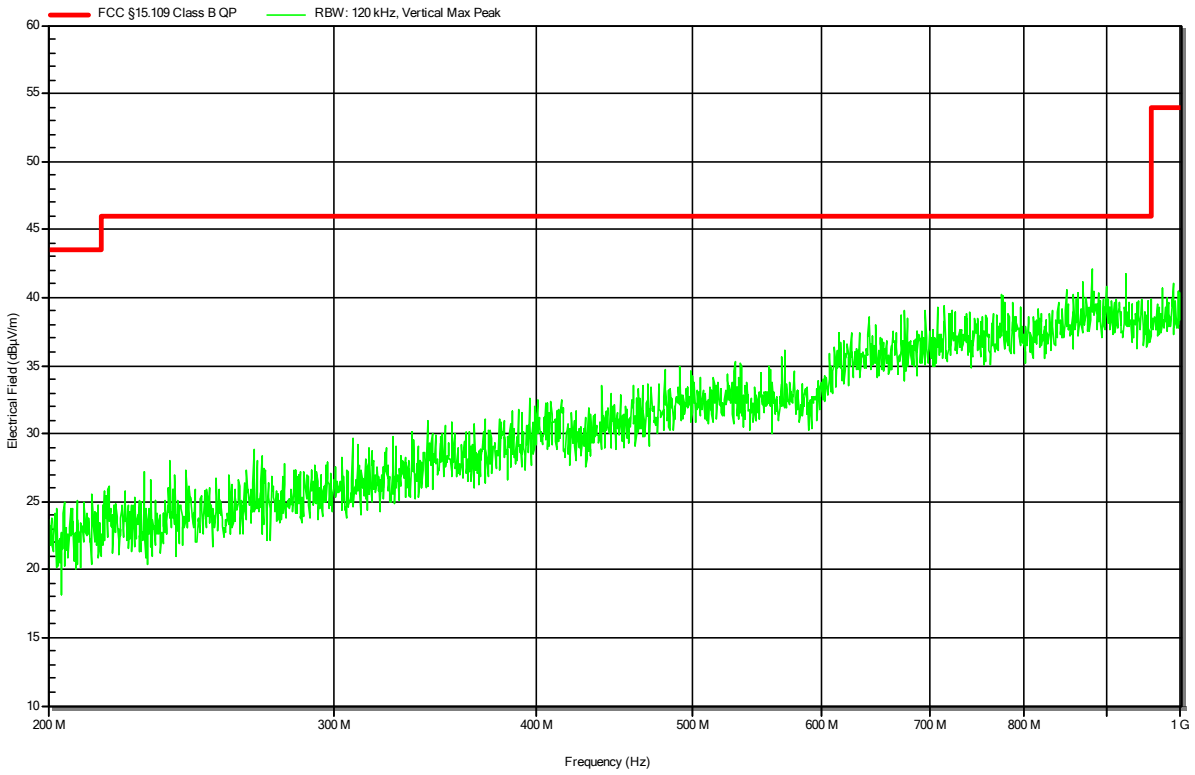
RadiMation



**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24 DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement Distance: | 3 |
| Operational Mode & | 2 |
| EUT Configuration: | 2 |
| Note 1: | |

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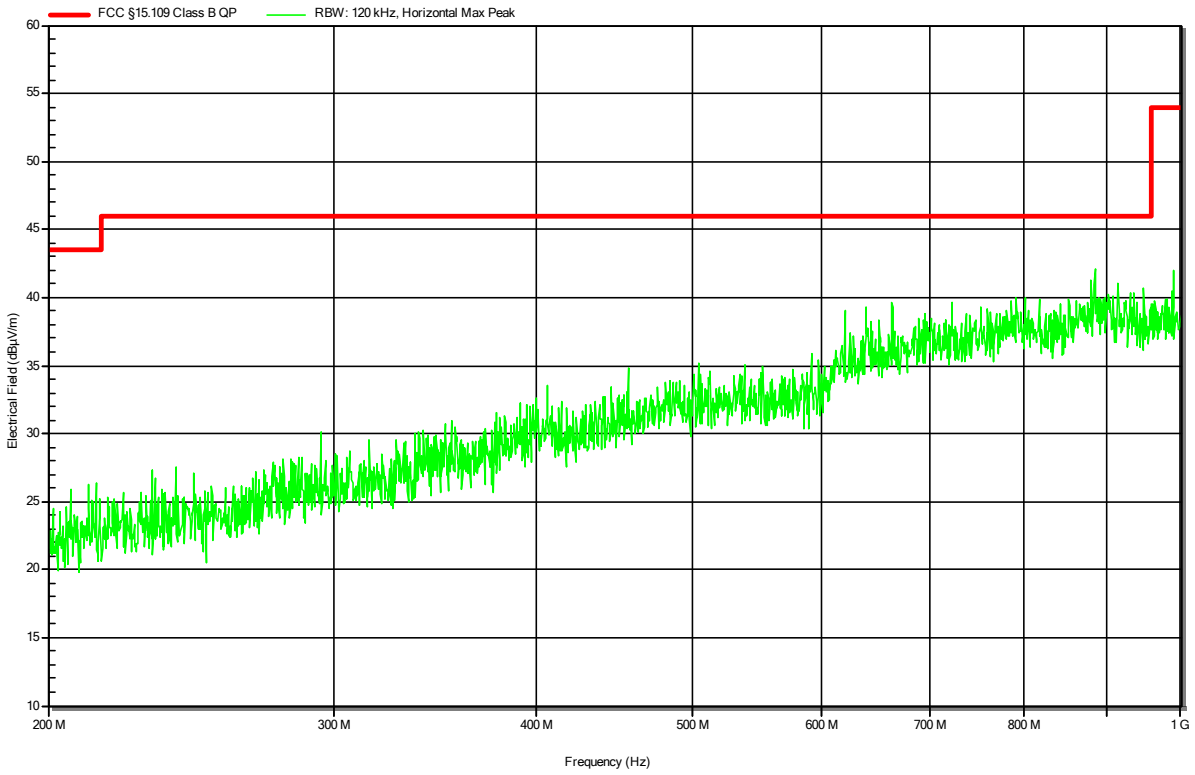
RadiMation



**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 2 |
| EUT Configuration: | 2 |
| Note 1: | With 2.4GHz notchfilter for Bluetooth |

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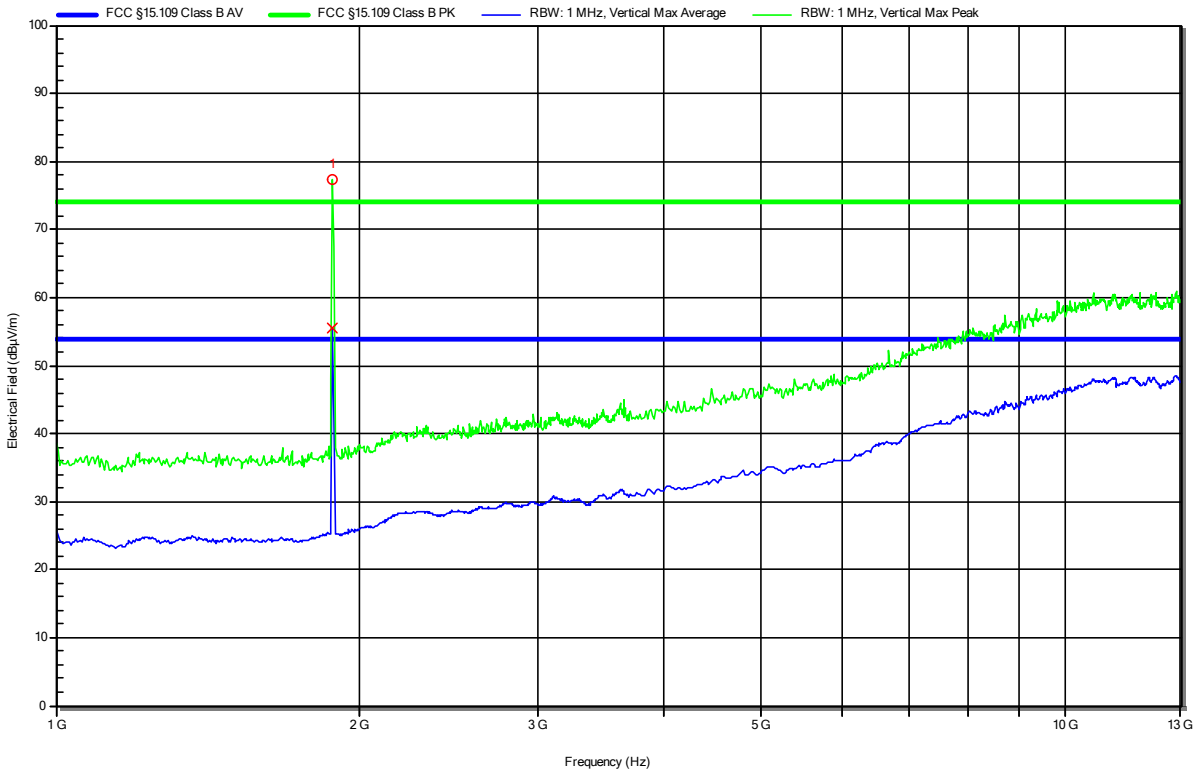
RadiMation




| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,878 GHz | GSM 1900 carrier | | | | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode &<br>EUT Configuration: | 2<br>2 |
| Note 1: | With 2.4GHz notchfilter for Bluetooth |

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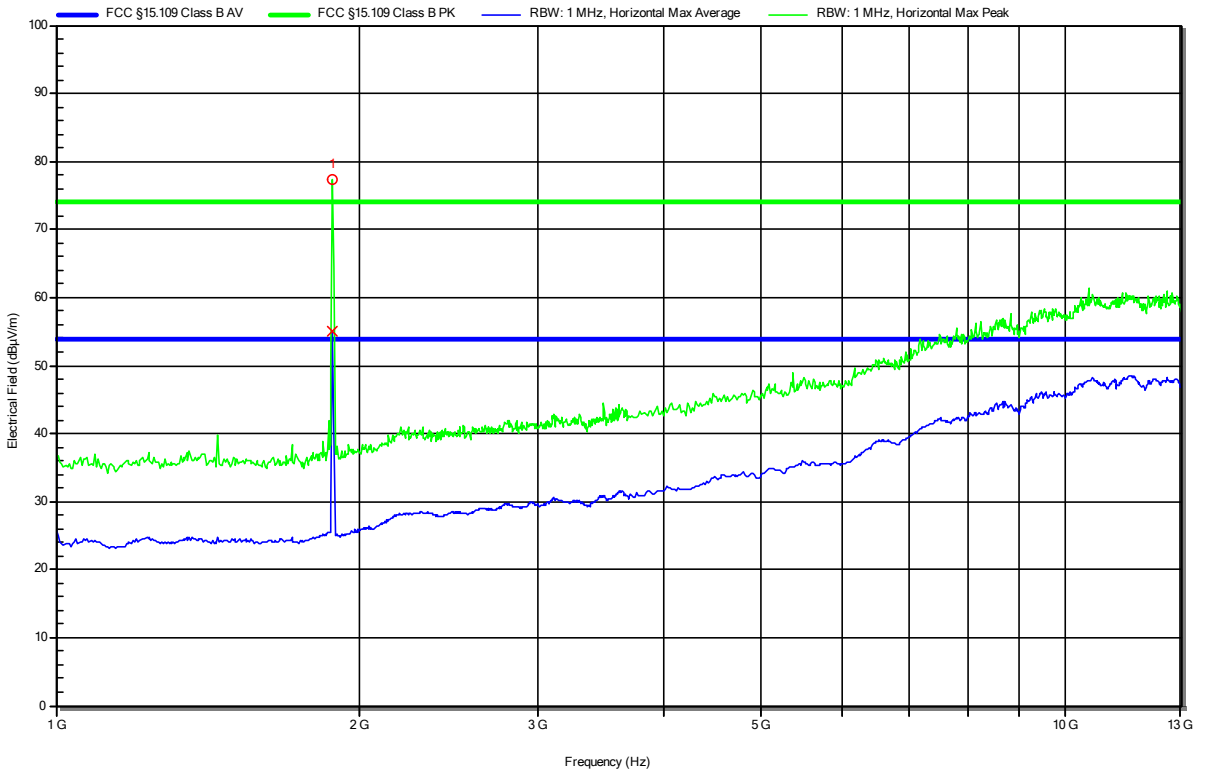


| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,878 GHz | GSM 1900 carrier | | | | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

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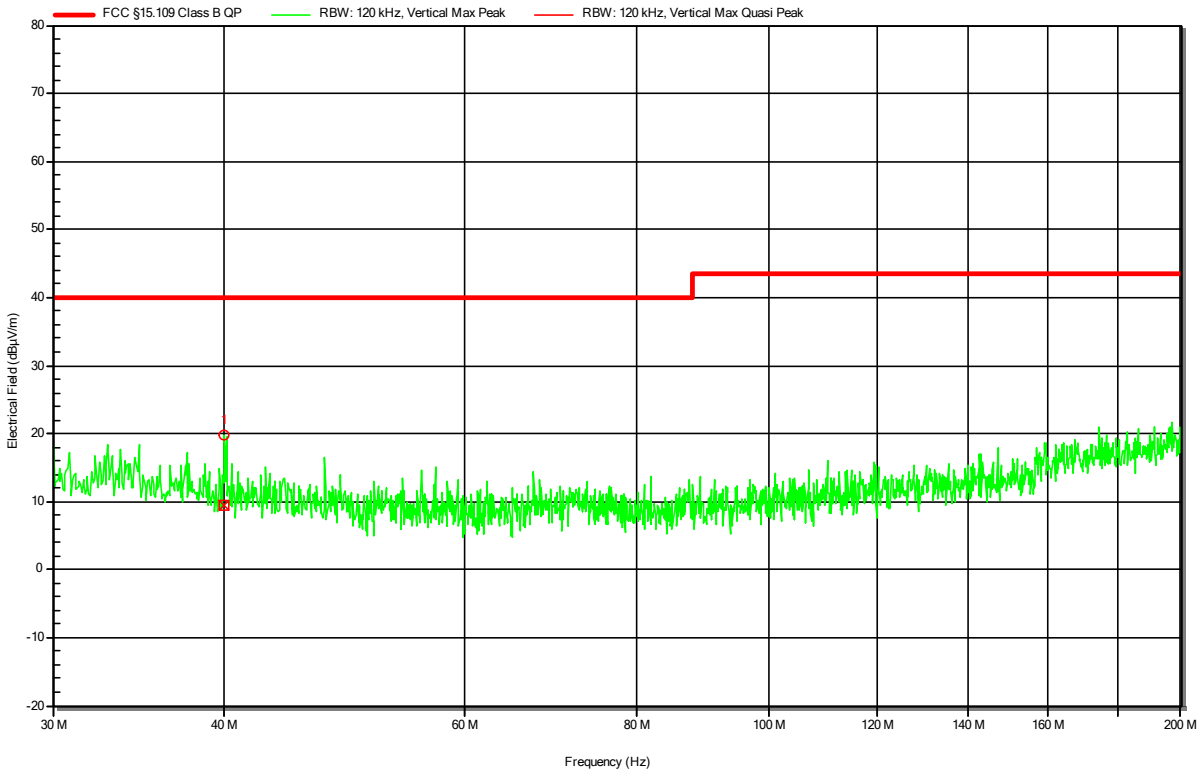
RadiMation

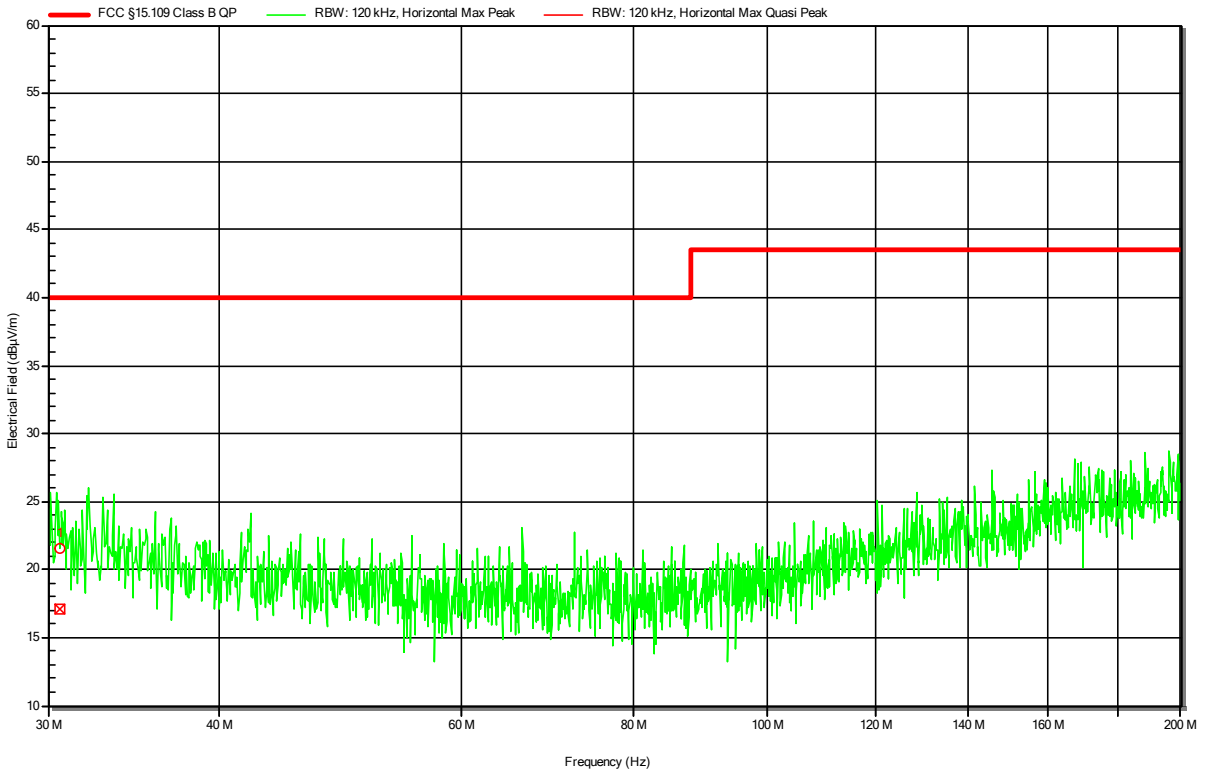



| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 40,034 MHz | 9,56 dBµV/m | 40 dBµV/m | -30,44 dB | Pass | 180 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

Index 3




| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 30,6 MHz | 17,13 dBµV/m | 40 dBµV/m | -22,87 dB | Pass | 0 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

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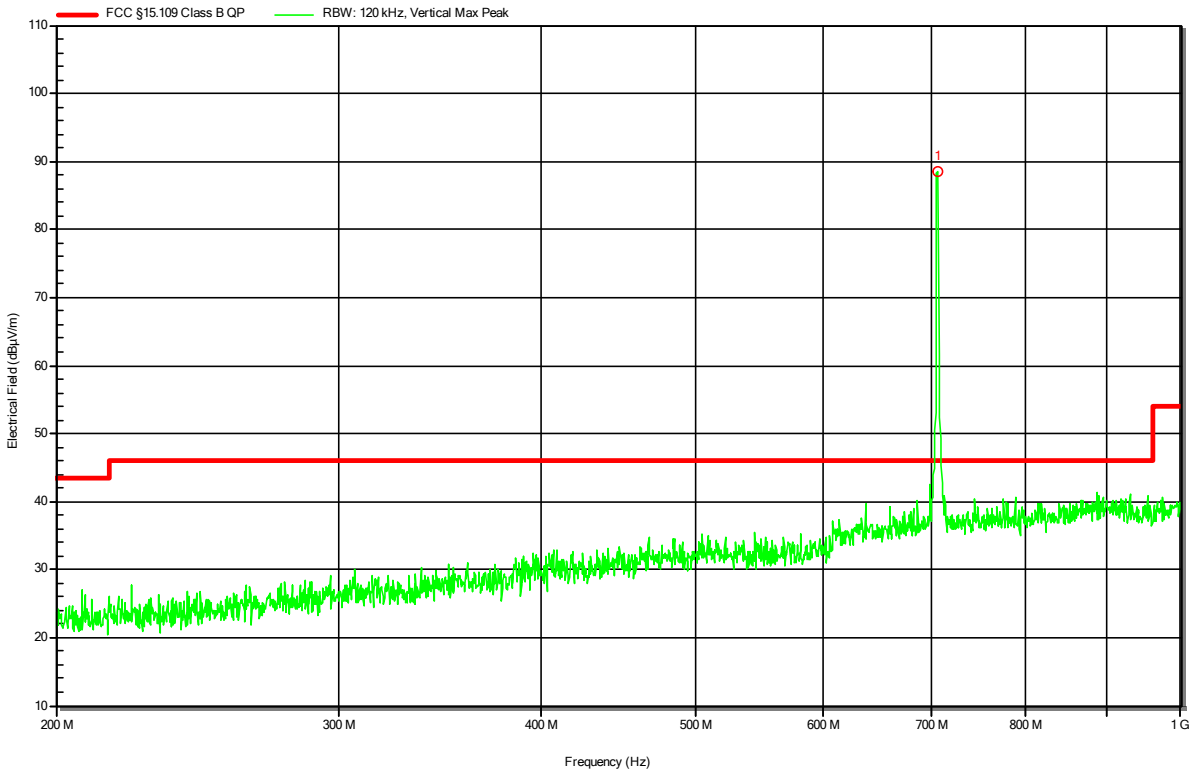
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | LTE FDD 12 carrier | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

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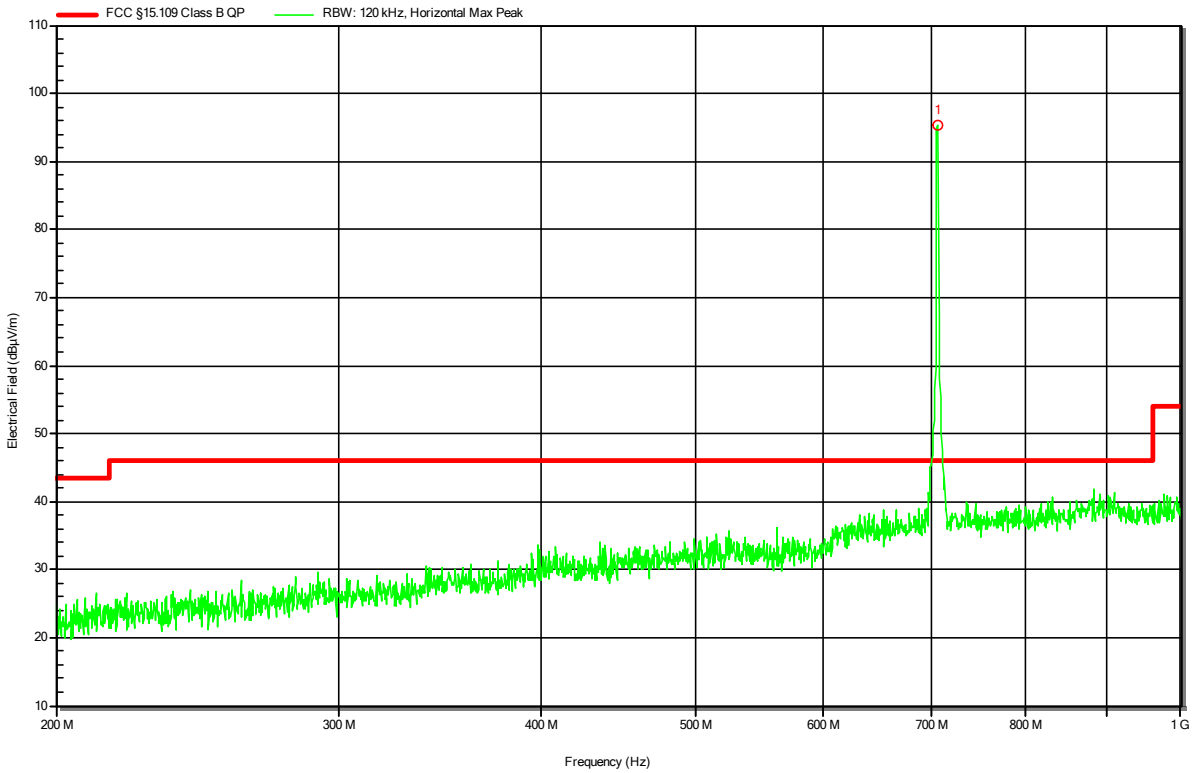
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | LTE FDD 12 carrier | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

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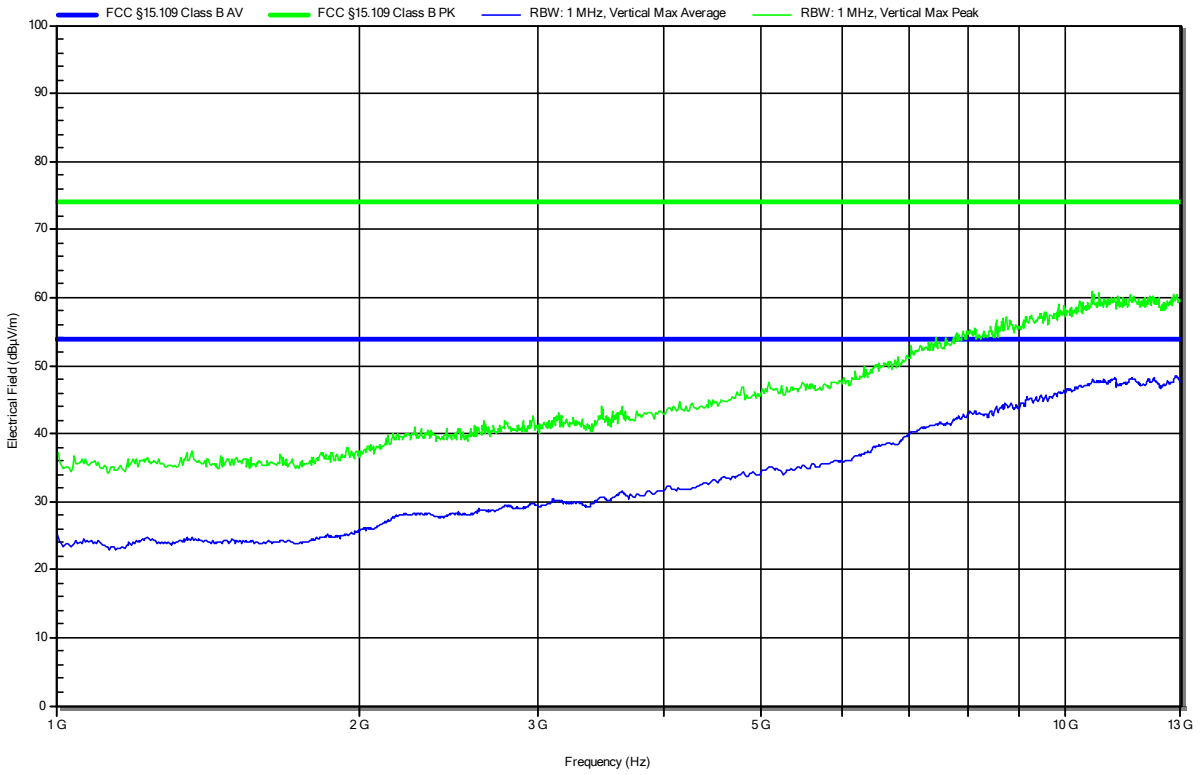
RadiMation



**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 12V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 3 |
| EUT Configuration: | 3 |
| Note 1: | |

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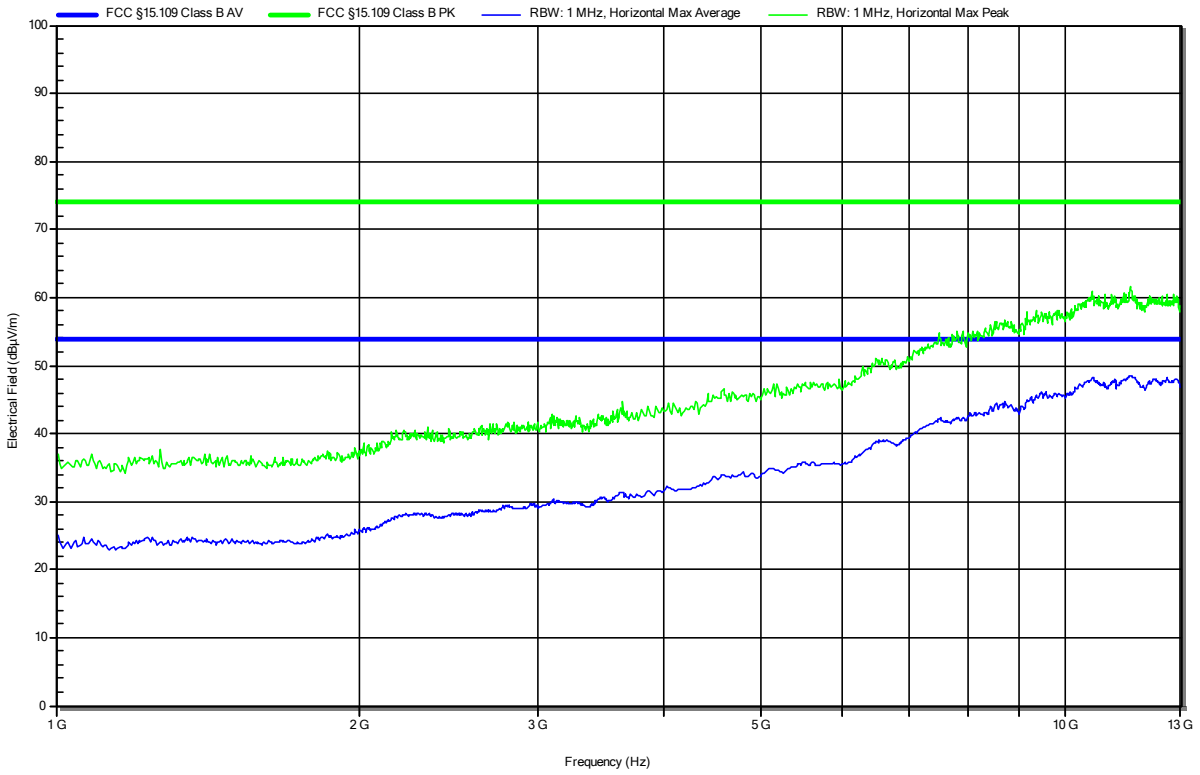
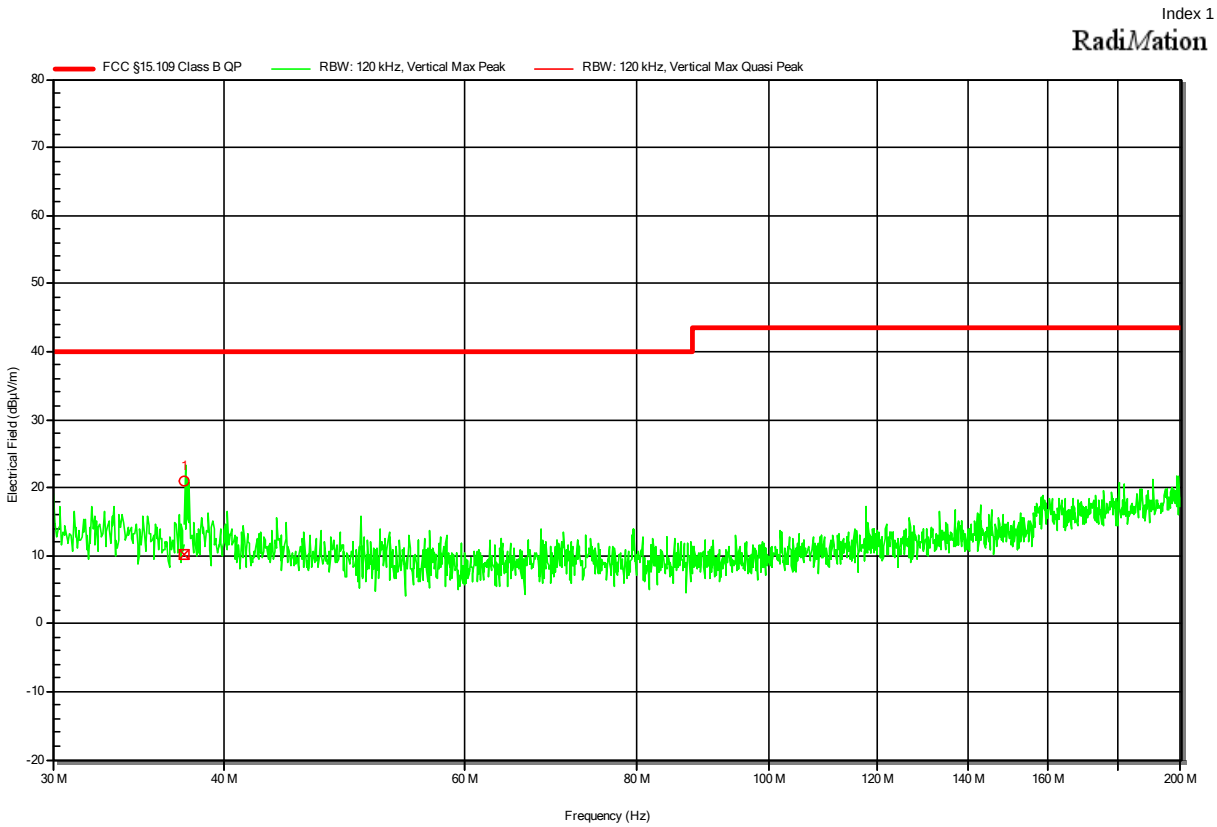
RadiMation



**Radiated emissions**
**according to FCC part 15B**

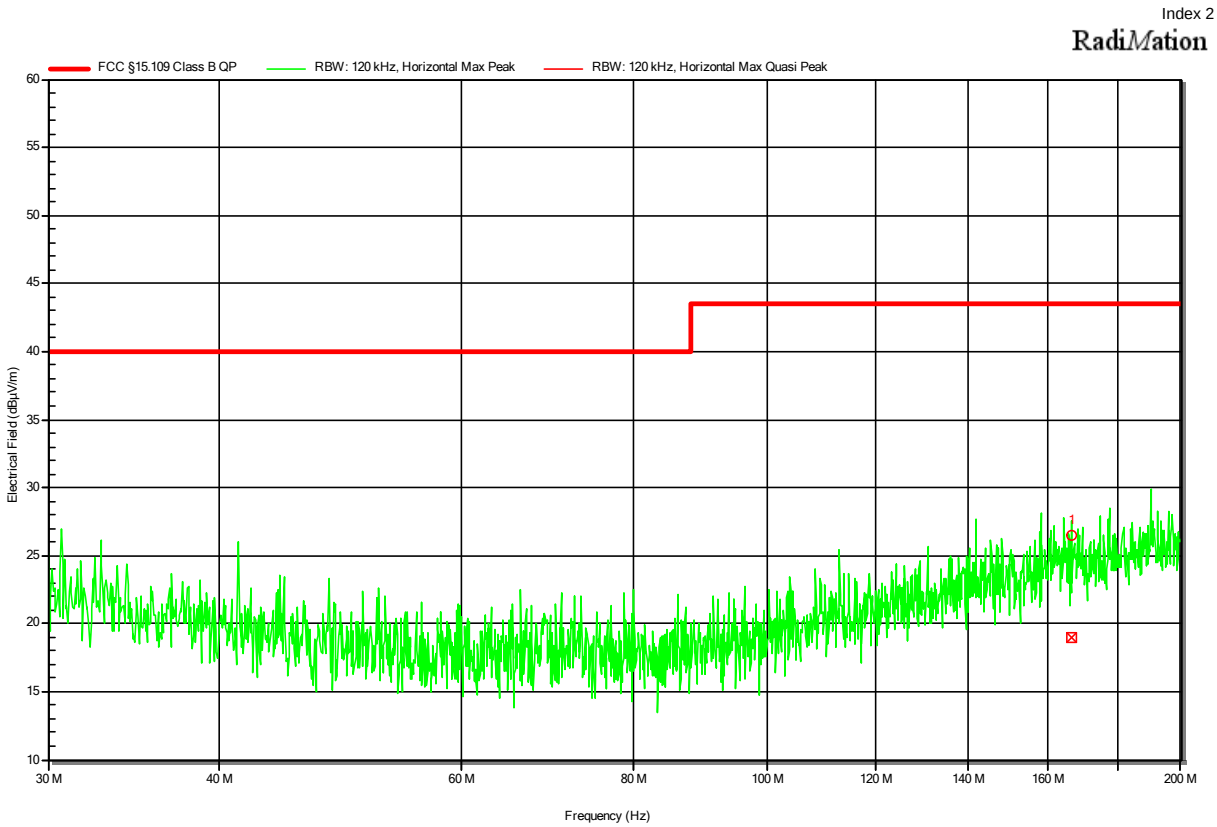
| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HK 116, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | |




| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 37,464 MHz | 10,14 dBµV/m | 40 dBµV/m | -29,86 dB | Pass | 0 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HK 116, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | |




| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 166,559 MHz | 18,96 dBµV/m | 43,52 dBµV/m | -24,56 dB | Pass | 0 degrees | 1 m |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HL 223, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | |

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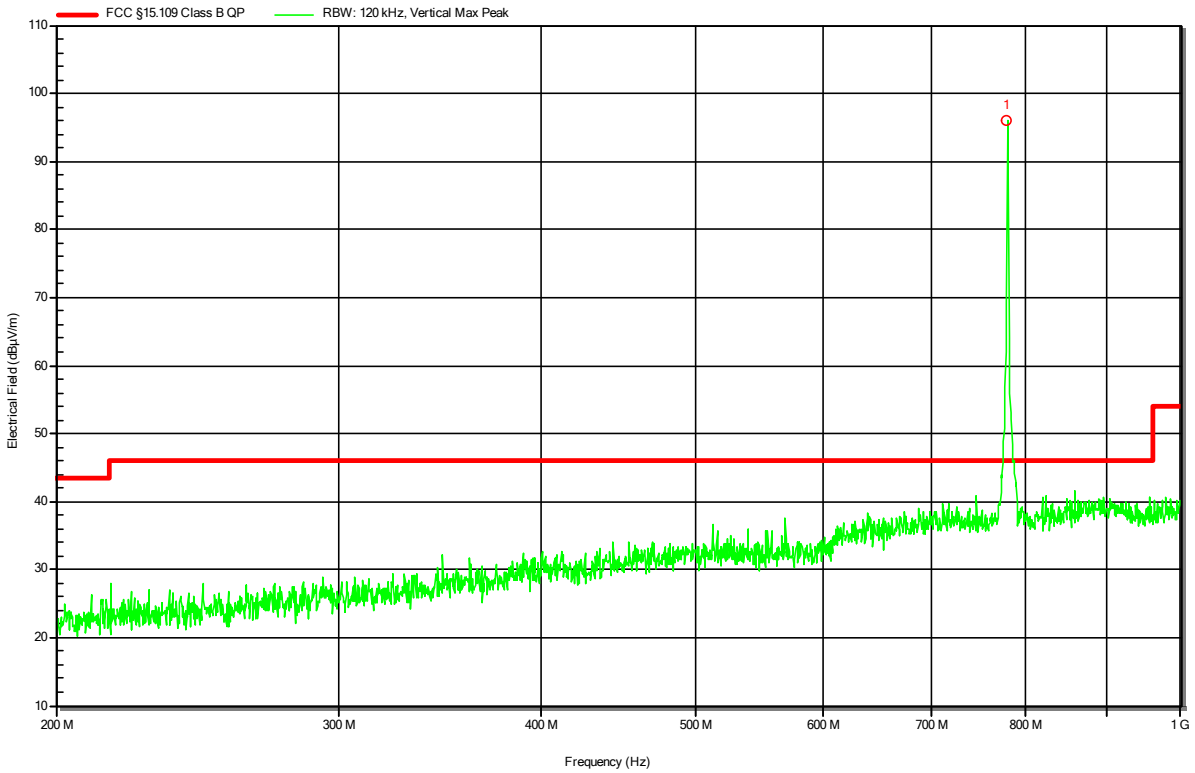
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | LTE FDD 13 carrier | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Rohde & Schwarz HL 223, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | |

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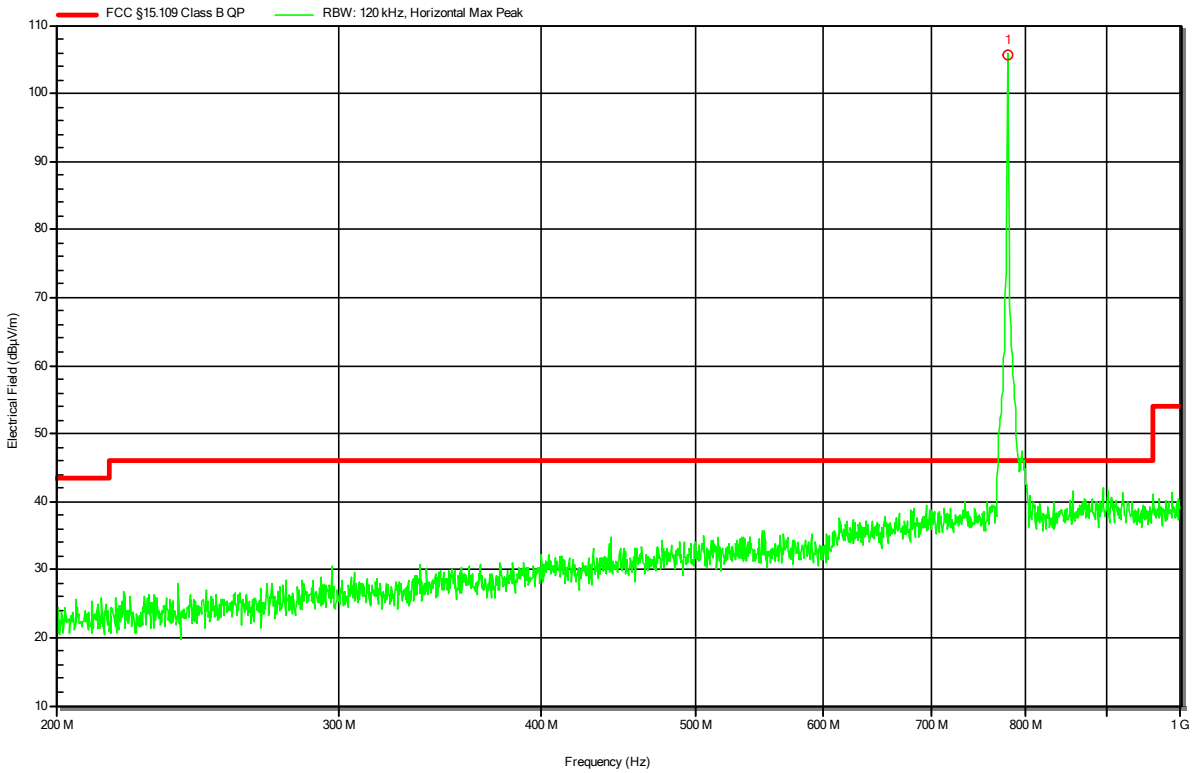
RadiMation




| Peak Number | Frequency | Angle | Height |
|---|---|---|---|
| 1 | LTE FDD 4 carrier | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Vertical |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | With 2.4GHz notchfilter for Bluetooth |

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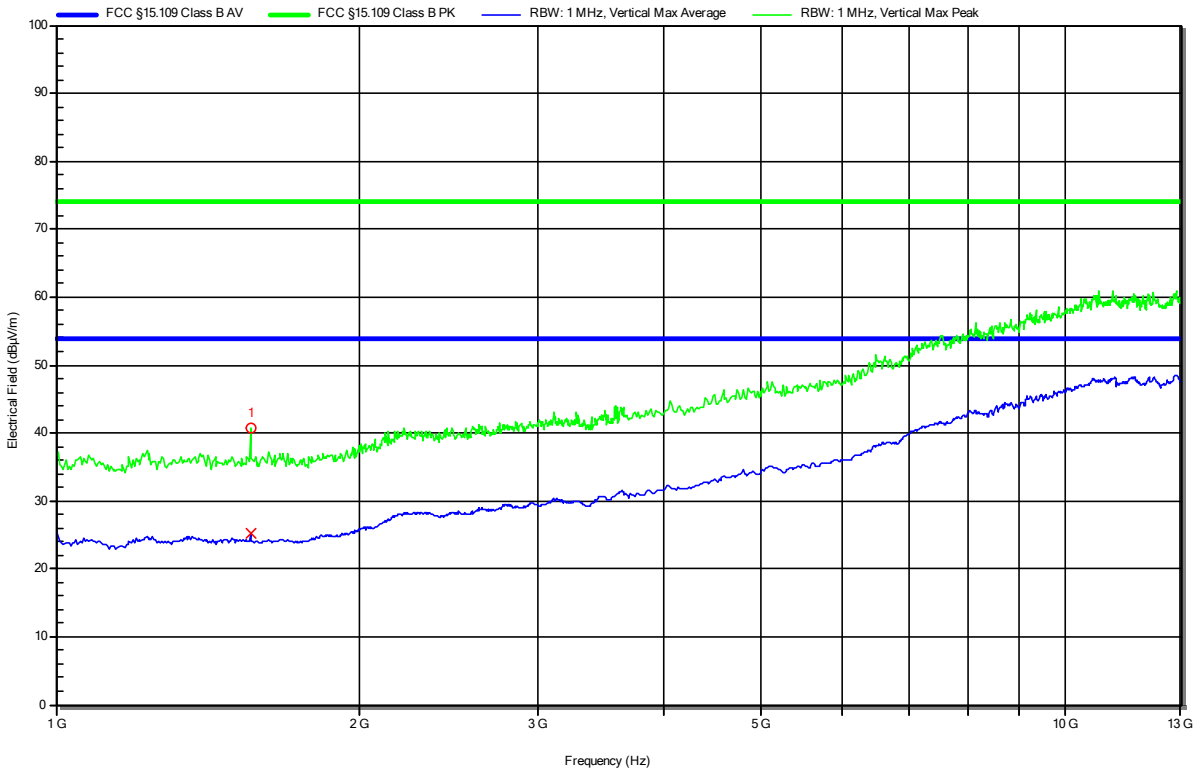
RadiMation




| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,558 GHz | 2nd Harmonic LTE FDD13 | | | | | |

**Radiated emissions**
**according to FCC part 15B**

| | |
|---|---|
| Project Number: | G0M-2104-9762 |
| Applicant: | Webfleet Solutions B.V. |
| Model Description: | Telematic Device with GSM+LTE+GNSS+OBD connector |
| Model: | L0240 |
| Test Sample ID: | 9762 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Handrik |
| Test Date: | 2021-07-22 |
| Operating Conditions: | ambient temperature: 23 °Celsius<br>power input: 24V DC |
| Antenna: | Schwarzbeck BBHA 9120D, Horizontal |
| Measurement Distance: | 3m |
| Operational Mode & | 4 |
| EUT Configuration: | 4 |
| Note 1: | With 2.4GHz notchfilter for Bluetooth |

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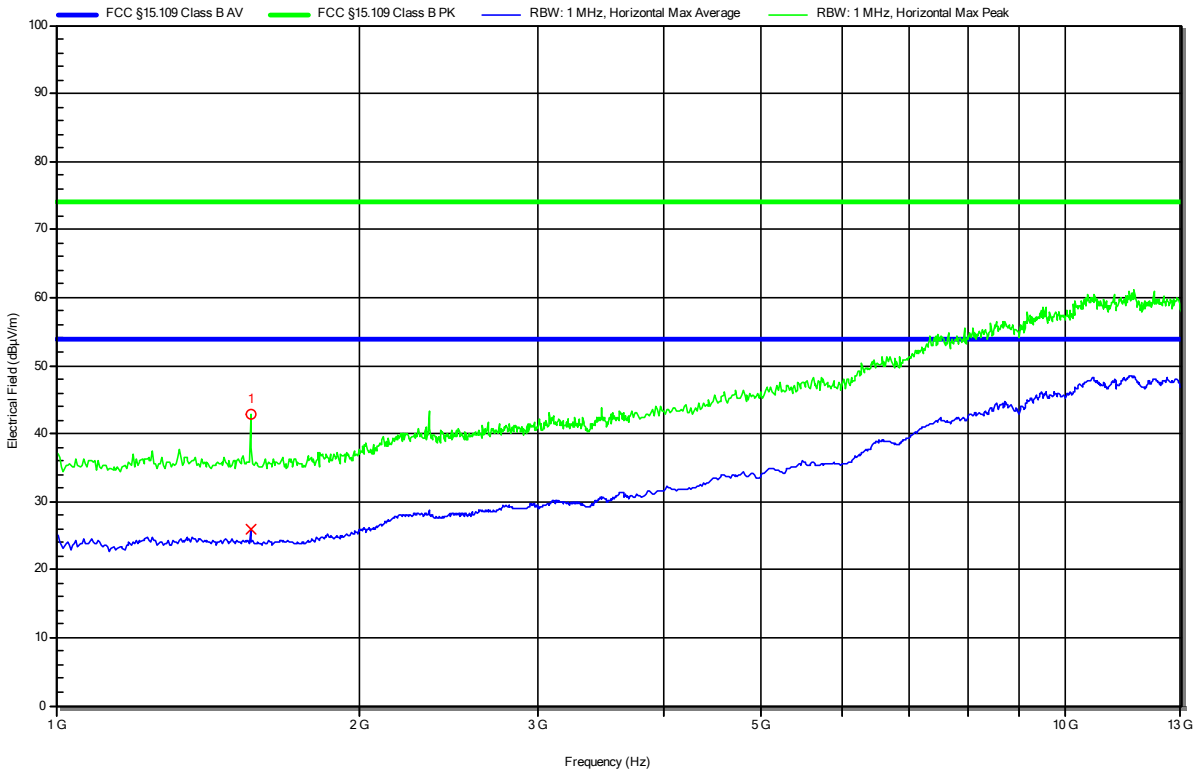
RadiMation




| Peak Number | Frequency | Peak | Peak Limit | Peak Difference | Peak Status | Angle | Height |
|---|---|---|---|---|---|---|---|
| 1 | 1,558 GHz | 2nd Harmonic LTE FDD13 | | | | | |

# 3 Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%, with a coverage factor of 2.

| Test Name | Measurement Uncertainty |
|---|---|
| Conducted emissions at the mains power port | 150kHz to 30MHz, 3.35dB |
| Radiated Emission | 30MHz to 200MHz @ 3m, 5.1dB<br>200MHz to 1GHz @ 3m, 5.3dB<br>>1GHz to 6GHz @3m, 5.95dB |