

# EMC TEST REPORT

FCC 47 CFR Part 15B  
Industry Canada ICES-003

Electromagnetic compatibility - Unintentional radiators

Report Reference No. .... : G0M-1607-5773-EF0115B-V01

Testing Laboratory ..... : Eurofins Product Service GmbH

Address ..... : Storkower Str. 38c  
15526 Reichenwalde  
Germany

Accreditation ..... :



A2LA Accredited Testing Laboratory, Certificate No.: 1983.01  
FCC Filed Test Laboratory, Reg.-No.: 96970  
IC OATS Filing assigned code: 3470A

Applicant's name ..... : FALCOM GmbH

Address ..... : Gewerbering 6  
98704 Langewiesen  
GERMANY

## Test specification:

Standard..... : 47 CFR Part 15 Subpart B  
ICES-003, Issue 6:2016  
ANSI C63.4:2014

## Equipment under test (EUT):

|                             |                         |                    |
|-----------------------------|-------------------------|--------------------|
| Product description         | UMTS/GSM/GPS/LTE-Device |                    |
| Model No.                   | FOX3-4G-NA              |                    |
| Additional Models           | None                    |                    |
| Hardware version            | P281_Rev03c             |                    |
| Firmware / Software version | 3.0.4                   |                    |
|                             | FCC-ID: QIXFOX3-4G-NA   | IC: 5383A-FOX34GNA |
| Test result                 | Passed                  |                    |

Test Report No.: G0M-1607-5773-EF0115B-V01

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

**Possible test case verdicts:**

- not applicable 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 .....: 2016-10-07

Date (s) of performance of tests .....: 2016-10-12 - 2016-10-24

Compiled by .....: Marco Belz

Tested by (+ signature).....: Andreas Pflug/Marco Belz

Approved by (+ signature) .....: Jens Marquardt  
Deputy Head of Lab

Date of issue .....: 2017-03-02

Total number of pages.....: 32

*A. Pflug / M. Belz*

*Jens Marquardt*

**General remarks:**

**The test results presented in this report relate only to the object tested.**

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

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

**Additional comments:**

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## Version History

| Version | Issue Date | Remarks         | Revised by |
|---------|------------|-----------------|------------|
| V01     | 2017-03-02 | Initial Release |            |

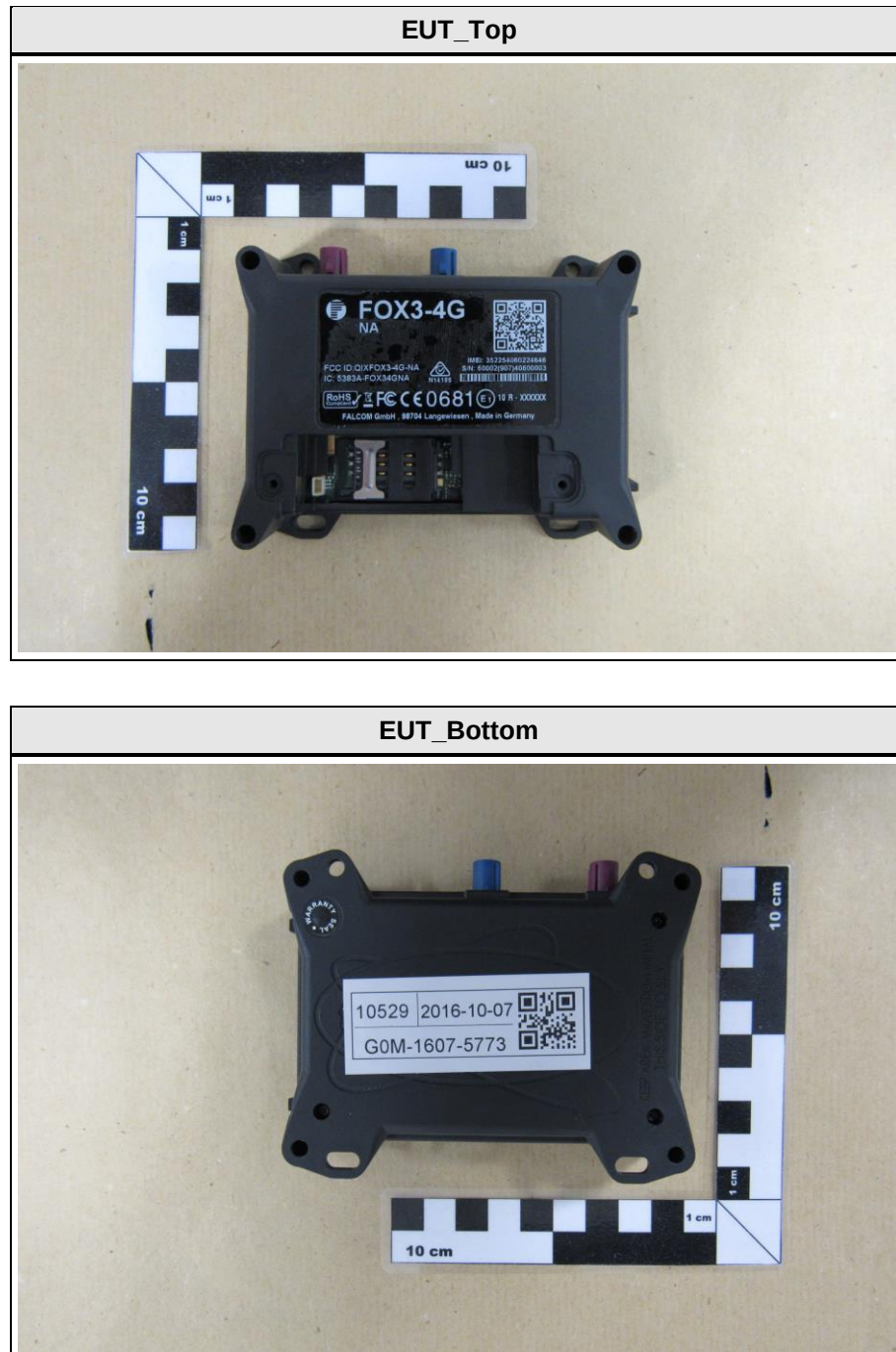
## REPORT INDEX

|          |                                                  |           |
|----------|--------------------------------------------------|-----------|
| <b>1</b> | <b>EQUIPMENT (TEST ITEM) DESCRIPTION</b>         | <b>5</b>  |
| 1.1      | Photos – Equipment external                      | 6         |
| 1.2      | Photos – Equipment internal                      | 9         |
| 1.3      | Photos – Test setup                              | 11        |
| 1.4      | Supporting Equipment Used During Testing         | 12        |
| 1.5      | Input / Output Ports                             | 12        |
| 1.6      | Operating Modes and Configurations               | 13        |
| 1.7      | Test Equipment Used During Testing               | 14        |
| 1.8      | Sample emission level calculation                | 15        |
| <b>2</b> | <b>RESULT SUMMARY</b>                            | <b>16</b> |
| <b>3</b> | <b>TEST CONDITIONS AND RESULTS</b>               | <b>17</b> |
| 3.1      | Test Conditions and Results – Radiated emissions | 17        |

## 1 Equipment (Test item) Description

|                             |                                                              |                |
|-----------------------------|--------------------------------------------------------------|----------------|
| Description                 | UMTS/GSM/GPS/LTE-Device                                      |                |
| Model                       | FOX3-4G-NA                                                   |                |
| Additional Models           | None                                                         |                |
| Serial number               | None                                                         |                |
| Hardware version            | P281_Rev03c                                                  |                |
| Software / Firmware version | 3.0.4                                                        |                |
| FCC-ID                      | QIXFOX3-4G-NA                                                |                |
| IC                          | 5383A-FOX34GNA                                               |                |
| Power supply                | 12 VDC /24 VDC vehicular battery                             |                |
| AC/DC-Adaptor               | None                                                         |                |
| Radio module                | Type                                                         | 3G/4G module   |
|                             | Model                                                        | TOBY-L200      |
|                             | Manufacturer                                                 | UBlox          |
|                             | HW Version                                                   | 192CA0         |
|                             | SW Version                                                   | 15.90          |
|                             | FCC-ID                                                       | XPYTOBYL200    |
|                             | IC                                                           | 8595A-TOBYL200 |
| Manufacturer                | FALCOM GmbH<br>Gewerbering 6<br>98704 Langewiesen<br>GERMANY |                |
| Highest emission frequency  | Fmax [MHz] = 2100                                            |                |
| Device classification       | Class B                                                      |                |
| Equipment type              | Tabletop                                                     |                |
| Number of tested samples    | 1                                                            |                |

## 1.1 Photos – Equipment external



Test Report No.: G0M-1607-5773-EF0115B-V01

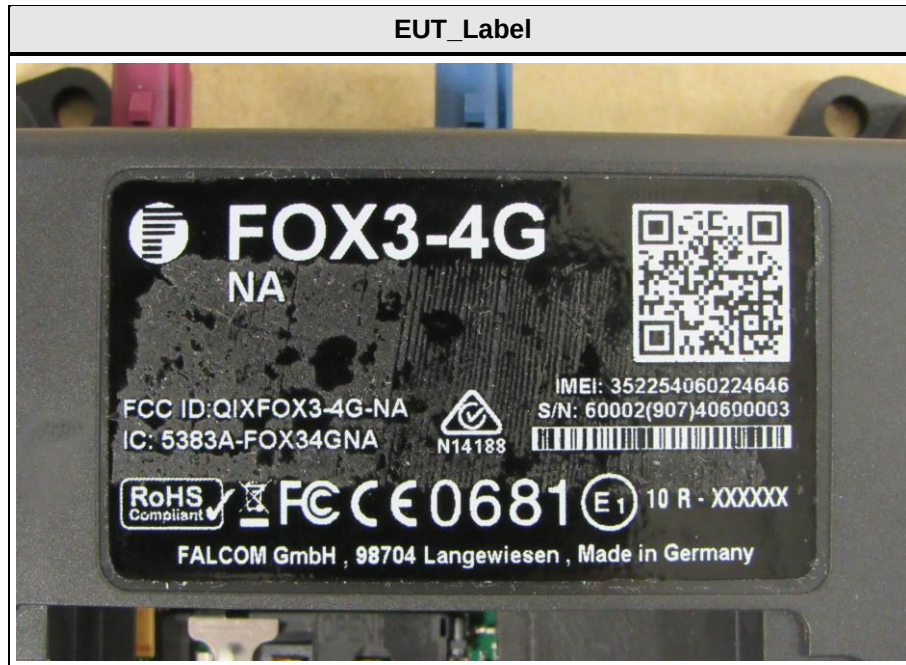
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EUT\_Ports

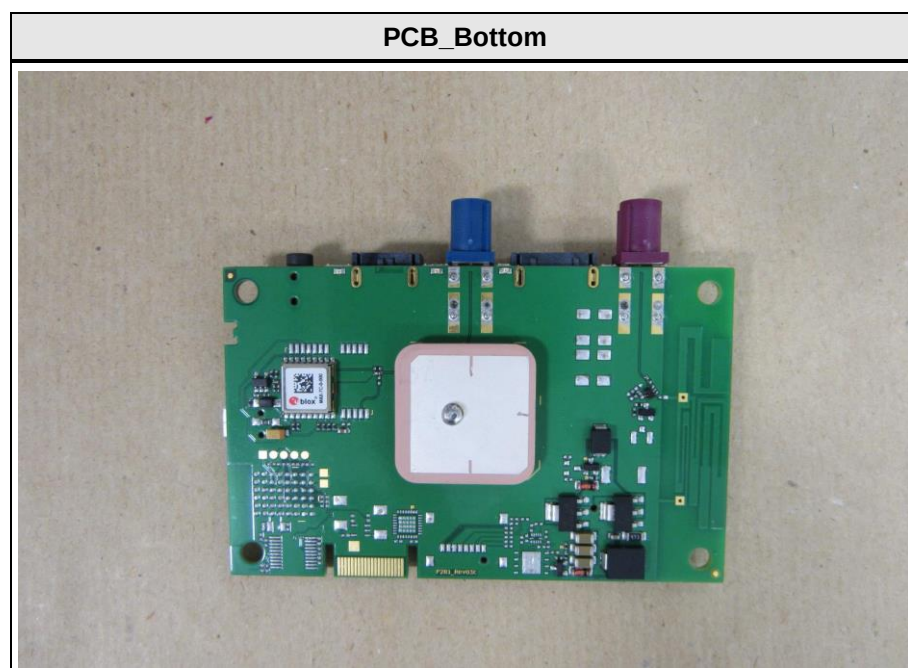
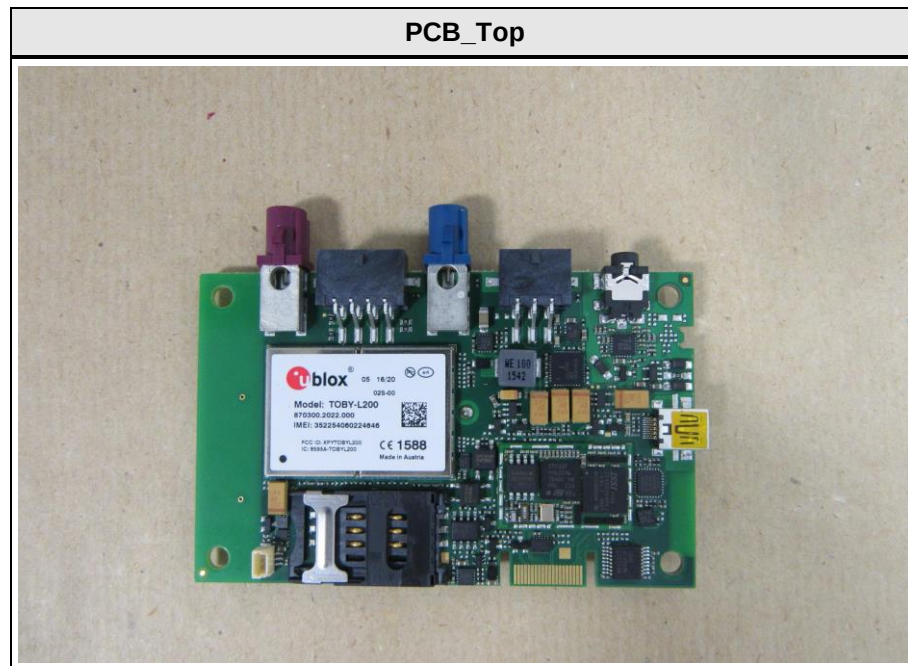


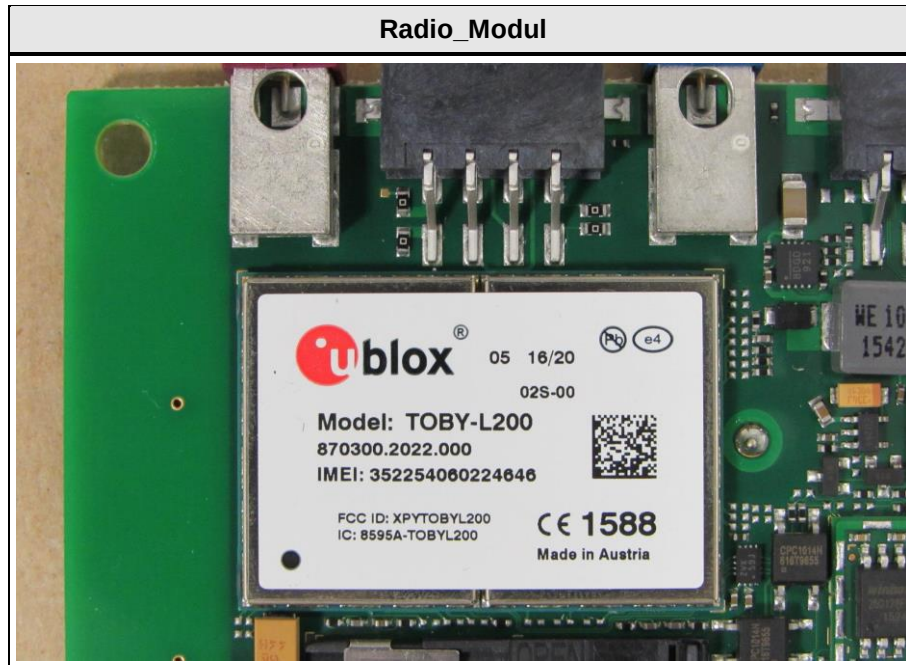
EUT\_Side



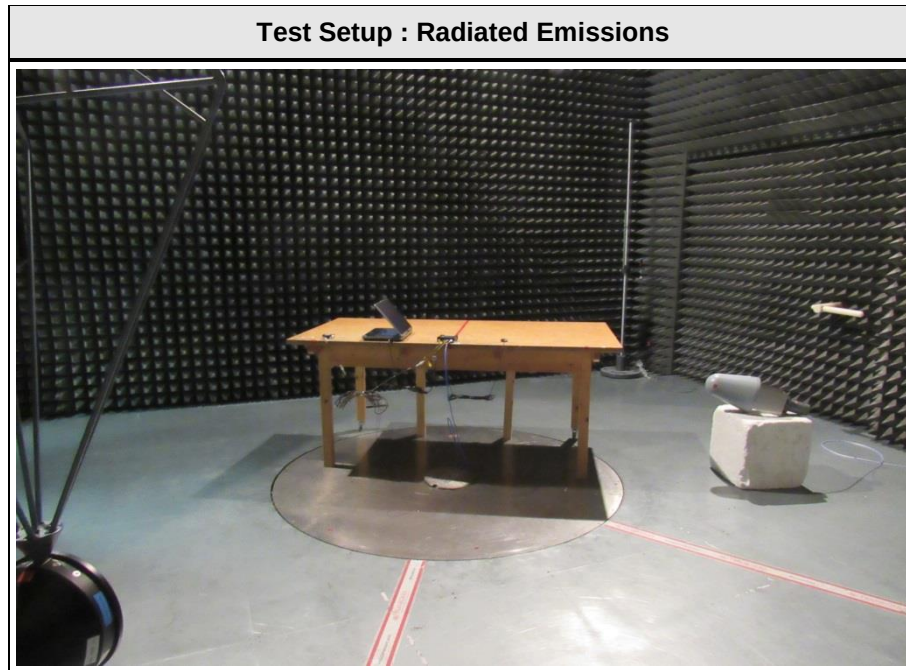


## 1.2 Photos – Equipment internal





### 1.3 Photos – Test setup



#### 1.4 Supporting Equipment Used During Testing

| Product Type* | Device               | Manufacturer    | Model No.       | Comments (e.g. serial no.) |
|---------------|----------------------|-----------------|-----------------|----------------------------|
| AE            | Laptop               | DELL            | Latitude E6420  | 4250209                    |
| AE            | Terminal             | Falcom          | STEPP III CH-B1 | 303051112380008            |
| AE            | Adapter              | Delock          | USB to serial   | 61856                      |
| AE            | Communication Tester | Rohde & Schwarz | CMU200          | EF00304                    |

**\*Note:** Use the following abbreviations:

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

#### 1.5 Input / Output Ports

| Port # | Name            | Type* | Max. Cable Length | Cable Shielded | Comments (e.g. Cat. of Cable) |
|--------|-----------------|-------|-------------------|----------------|-------------------------------|
| 1      | Power           | DC    | 2 m               | No             |                               |
| 2      | Antenna GSM     | I/O   | > 3m              | No             |                               |
| 3      | Antenna GPS     | I/O   | > 3m              | No             |                               |
| 4      | RS 232          | I/O   | 2 m               | No             | Service only                  |
| 5      | CAN             | I/O   | 2 m               | No             |                               |
| 6      | USB             | I/O   | n/a               | n/a            | Service only                  |
| 7      | Molex 6 pin     | I/O   | n/a               | n/a            | Not tested                    |
| 8      | Audio Interface | I/O   | n/a               | n/a            | Not tested                    |

**\*Note:** Use the following abbreviations:

AC : AC power port

DC : DC power port

N/E : Non electrical

I/O : Signal input or output port

TP : Telecommunication port

## 1.6 Operating Modes and Configurations

| Mode # | Description                 |
|--------|-----------------------------|
| 1      | GSM, RS 232 and GPS active  |
| 2      | UMTS, RS 232 and GPS active |
| 3      | LTE, RS 232 and GPS active  |

| Configuration # | EUT Configuration                                                                       |
|-----------------|-----------------------------------------------------------------------------------------|
| 1               | Connection to R&S CMU 200 established; RS 232 Communication to Notebook; GPS reception; |

## 1.7 Test Equipment Used During Testing

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

| Radiated emissions – 3m Chamber |              |            |            |           |          |
|---------------------------------|--------------|------------|------------|-----------|----------|
| Description                     | Manufacturer | Model      | Identifier | Cal. Date | Cal. Due |
| Biconical Antenna               | R&S          | HK 116     | EF00012    | 2016-05   | 2019-05  |
| LPD-Antenne                     | R&S          | HL 223     | EF00187    | 2016-05   | 2019-05  |
| Horn antenna                    | Schwarzbeck  | BBHA 9120D | EF00018    | 2016-09   | 2019-09  |
| EMI Test Receiver               | R&S          | ESU26      | EF00887    | 2017-01   | 2018-01  |

| Radiated emissions – 10m Chamber |                |               |            |             |            |
|----------------------------------|----------------|---------------|------------|-------------|------------|
| Description                      | Manufacturer   | Model         | Identifier | Cal. Date   | Cal. Due   |
| Biconical Antenna                | R&S            | HK 116        | EF00012    | 2016-05     | 2019-05    |
| LPD-Antenne                      | R&S            | HL 223        | EF00187    | 2016-05     | 2019-05    |
| Horn antenna                     | Schwarzbeck    | BBHA 9120D    | EF00018    | 2016-09     | 2019-09    |
| EMI Test Receiver                | Keysight       | N9038A-526    | EF01070    | 2016-08     | 2017-08    |
| RF Cable                         | Huber & Suhner | Sucoflex 106  | -          | System Cal. | System Cal |
| RF Cable                         | Huber & Suhner | Multiflex 141 | -          | System Cal. | System Cal |

## 1.8 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:

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

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:

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

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 | = | 47.5 dBμV/m | : | 47.5 dBμV/m - 57.0 dBμV/m | = | -9.5 dB |

## 2 Result Summary

| FCC 47 CFR Part 15B, Industry Canada ICES-003 |                                   |                  |        |         |
|-----------------------------------------------|-----------------------------------|------------------|--------|---------|
| Product Specific Standard                     | Requirement – Test                | Reference Method | Result | Remarks |
| 47 CFR 15.109<br>ICES-003 Item 6.2            | Radiated emissions                | ANSI C 63.4      | PASS   |         |
| 47 CFR 15.107<br>ICES-003 Item 6.1            | AC power line conducted emissions | ANSI C63.4       | N/A    |         |
| Remarks:                                      |                                   |                  |        |         |

### 3 Test Conditions and Results

#### 3.1 Test Conditions and Results – Radiated emissions

| Radiated emissions acc. FCC 47 CFR 15.109 / ICES-003                     |                     |                            |                  | Verdict: PASS   |               |        |
|--------------------------------------------------------------------------|---------------------|----------------------------|------------------|-----------------|---------------|--------|
| Laboratory Parameters:                                                   |                     | Required prior to the test |                  | During the test |               |        |
| Ambient Temperature                                                      |                     | 15 to 35 °C                |                  | 23 °C           |               |        |
| Relative Humidity                                                        |                     | 30 to 60 %                 |                  | 38 %            |               |        |
| Test according referenced standards                                      |                     | Reference Method           |                  |                 |               |        |
|                                                                          |                     | ANSI C63.4                 |                  |                 |               |        |
| Sample is tested with respect to the requirements of the equipment class |                     | Equipment class            |                  |                 |               |        |
|                                                                          |                     | Class B                    |                  |                 |               |        |
| Test frequency range determined from highest emission frequency          |                     | Highest emission frequency |                  |                 |               |        |
|                                                                          |                     | Fmax [MHz] = 2100          |                  |                 |               |        |
| Fully configured sample scanned over the following frequency range       |                     | Frequency range            |                  |                 |               |        |
|                                                                          |                     | 30 MHz to 15 GHz           |                  |                 |               |        |
| Operating mode                                                           |                     | 1 / 2 / 3                  |                  |                 |               |        |
| Configuration                                                            |                     | 1                          |                  |                 |               |        |
| Limits and results Class B                                               |                     |                            |                  |                 |               |        |
| Frequency [MHz]                                                          | Quasi-Peak [dBµV/m] | Result                     | Average [dBµV/m] | Result          | Peak [dBµV/m] | Result |
| 30 – 88                                                                  | 40                  | PASS                       | -                |                 | -             | -      |
| 88 – 216                                                                 | 43.5                | PASS                       | -                |                 | -             | -      |
| 216 – 960                                                                | 46                  | PASS                       | -                |                 | -             | -      |
| 960 – 1000                                                               | 54                  | PASS                       | -                |                 | -             | -      |
| > 1000                                                                   | -                   | -                          | 54               | PASS            | 74            | PASS   |
| Comments:                                                                |                     |                            |                  |                 |               |        |

**Test Procedure:**

The test site is in accordance with ANSI C63-4:2014 requirements and is listed by FCC.  
The measurement procedure is as follows:

**Exploratory measurement:**

- The EUT was placed on a non-conductive table at a height of 0.8m.
- The EUT and support equipment, if needed, were set up to simulate typical usage.
- 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.
- The antenna was placed at a distance of 3 or 10 m.
- The received signal was monitored at the measurement receiver.
  - Cables not bundled were manipulated within the range of likely arrangements to produce the highest emission amplitude
  - To maximize the suspected emissions the EUT is rotated 360 degrees. If the signal exceeds the previous amplitude, go back to the corresponding azimuth and manipulate the cables again for maximizing the emissions if possible.
  - Move the antenna from 1 to 4m to maximize the suspected highest amplitude signal.
- This procedure has to be performed in both antenna polarizations, horizontal and vertical.
- The arrangement of the equipment with the maximum emission level is shown on the setup picture at item 1.3.

**Final measurement:**

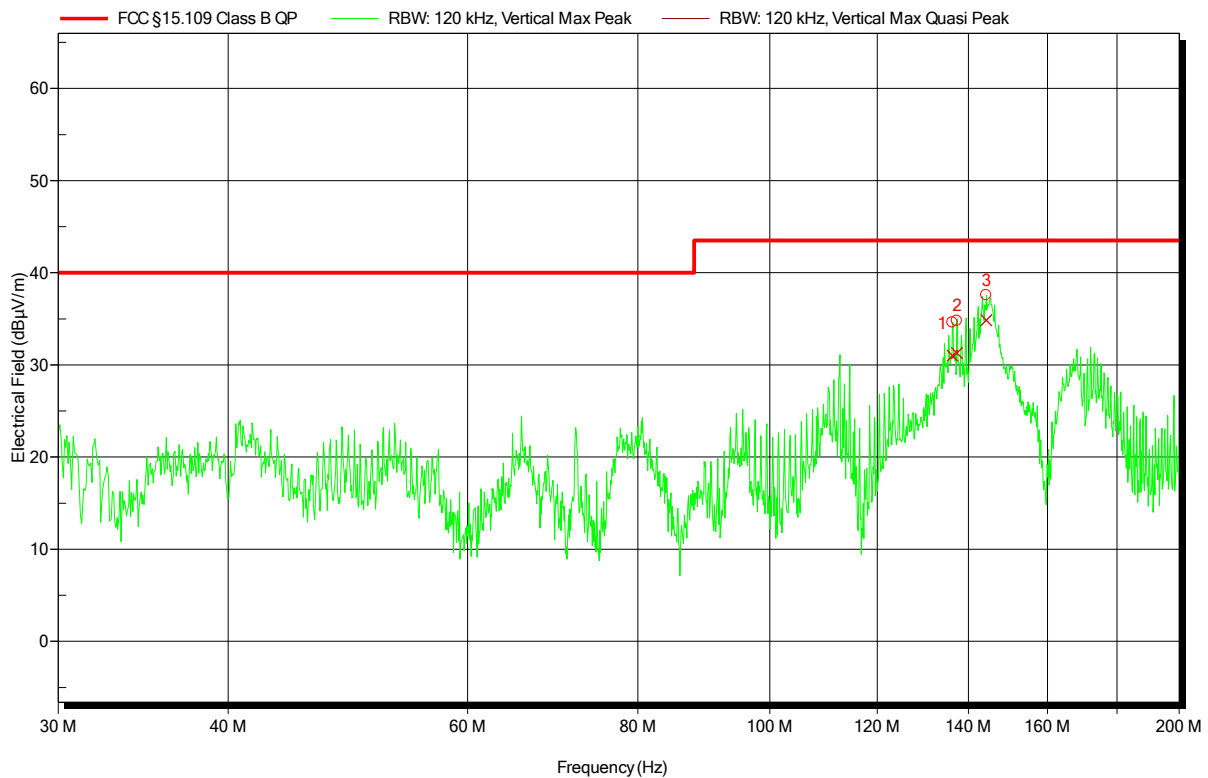
- The EUT was placed on a 0.8 m non-conductive table at a 3 m distance from the receive antenna. The antenna output was connected to the measurement receiver
- A biconical antenna was used for the frequency range 30 – 200 MHz, a logarithmic periodical antenna was used for the frequency range from 200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

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3m  
 Mode: GSM 900; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 6



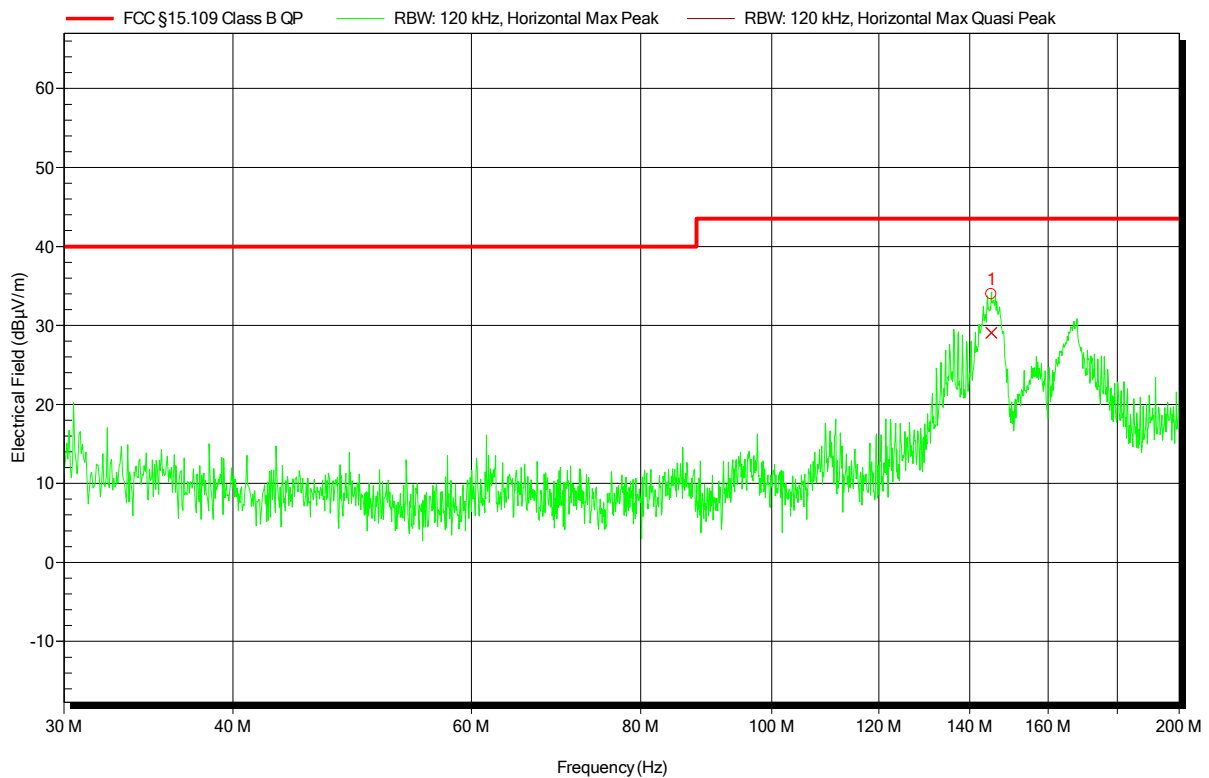
| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 136.266 MHz | 31.01 dBµV/m | 43.52 dBµV/m     | -12.51 dB             | Pass              | 360 Degree | 1 m    |
| 2           | 137.298 MHz | 31.28 dBµV/m | 43.52 dBµV/m     | -12.25 dB             | Pass              | 360 Degree | 1 m    |
| 3           | 144.24 MHz  | 34.86 dBµV/m | 43.52 dBµV/m     | -8.66 dB              | Pass              | 360 Degree | 1 m    |

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3m  
 Mode: GSM 900; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 7



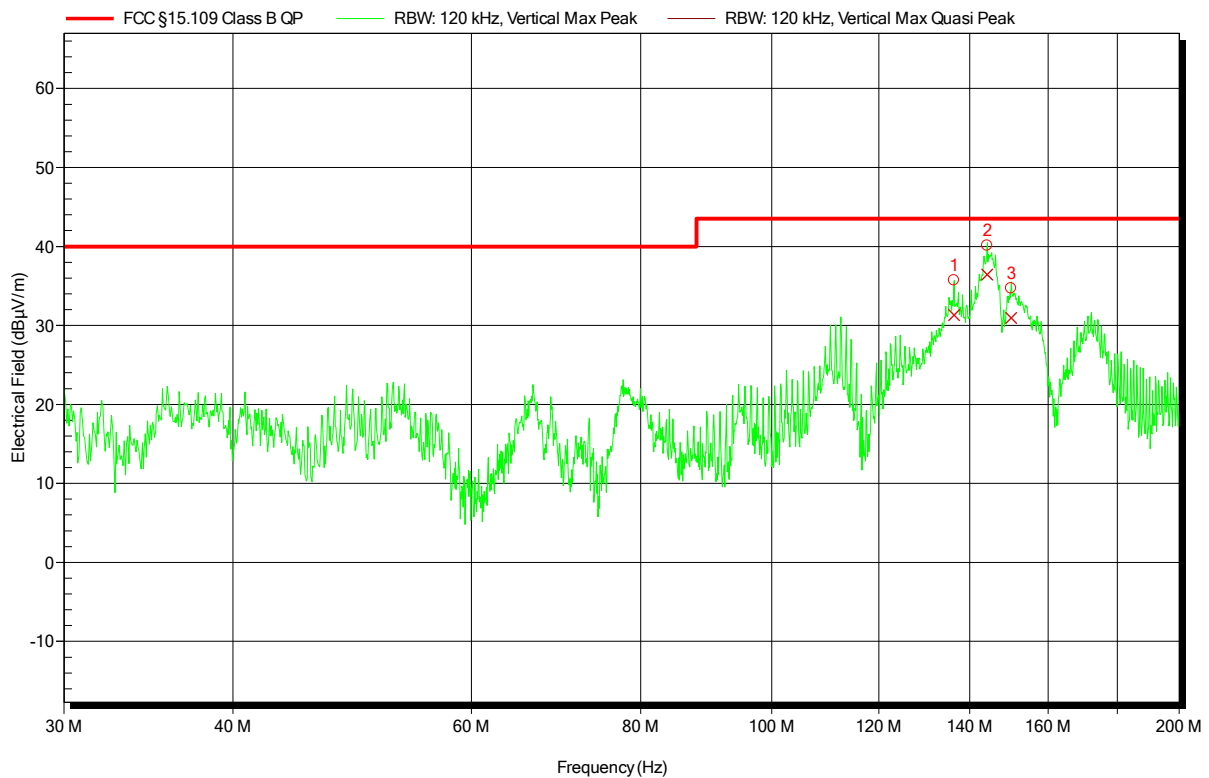
| Peak Number | Frequency  | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 145.26 MHz | 29.09 dBµV/m | 43.52 dBµV/m     | -14.44 dB             | Pass              | 120 Degree | 1.21 m |

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HK 116, Vertical  
 Measurement distance: 3m  
 Mode: UMTS; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 9



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 136.326 MHz | 31.3 dBµV/m  | 43.52 dBµV/m     | -12.22 dB             | Pass              | 360 Degree | 1 m    |
| 2           | 144.24 MHz  | 36.44 dBµV/m | 43.52 dBµV/m     | -7.09 dB              | Pass              | 360 Degree | 1 m    |
| 3           | 150.24 MHz  | 30.92 dBµV/m | 43.52 dBµV/m     | -12.6 dB              | Pass              | 360 Degree | 1 m    |

Test Report No.: G0M-1607-5773-EF0115B-V01

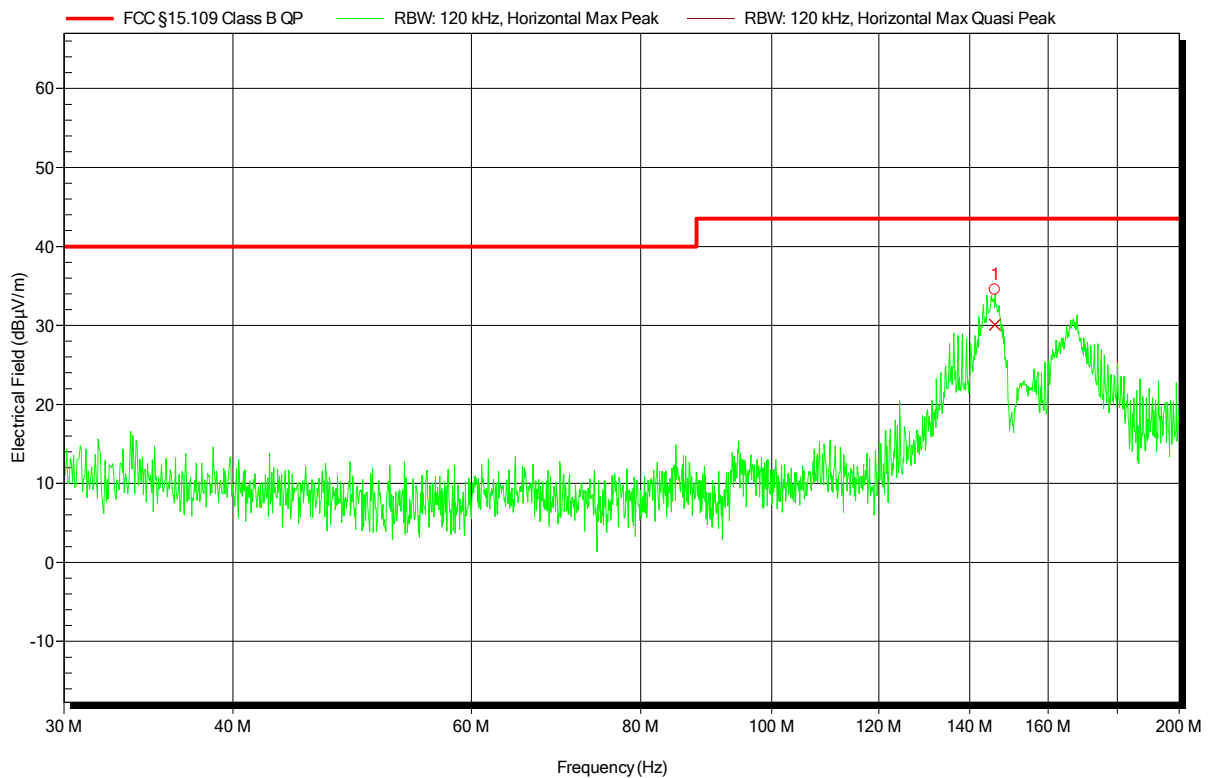
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HK 116, Horizontal  
 Measurement distance: 3m  
 Mode: UMTS; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 11



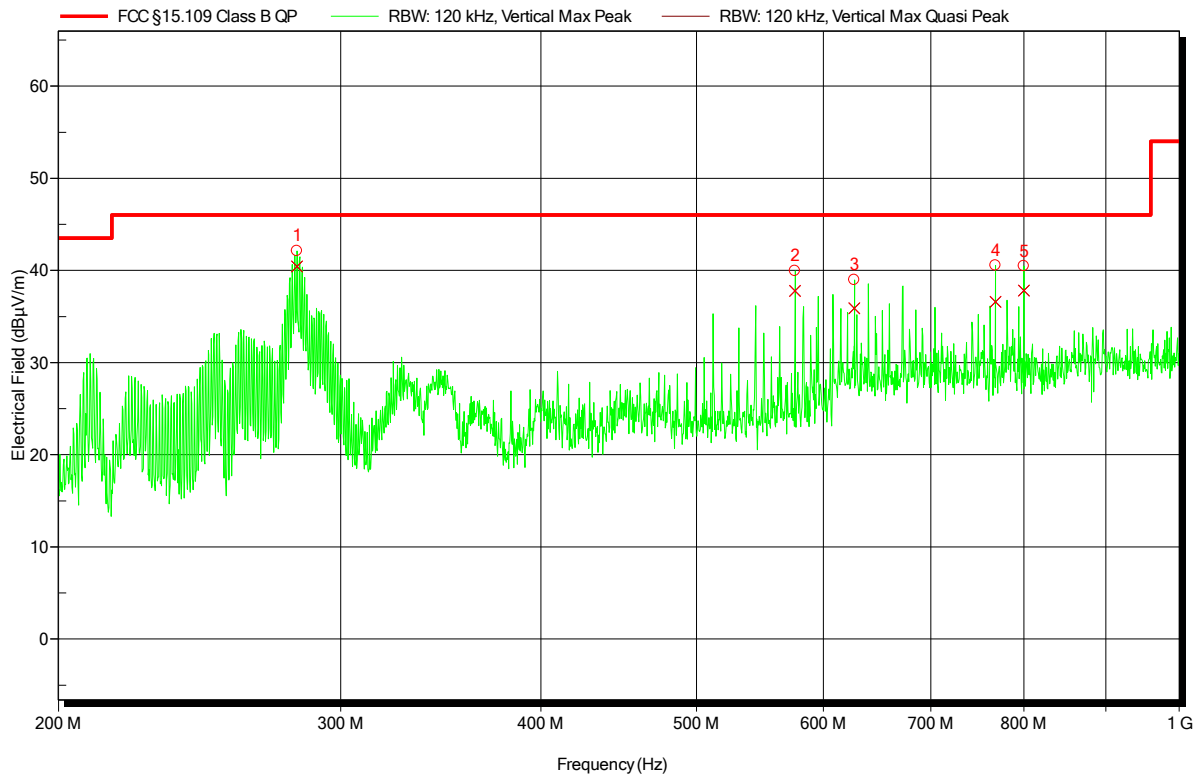
| Peak Number | Frequency  | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 146.16 MHz | 30.09 dBµV/m | 43.52 dBµV/m     | -13.43 dB             | Pass              | 120 Degree | 1.21 m |

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HL 223, Vertical  
 Measurement distance: 3m  
 Mode: LTE; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 15



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle     | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|-----------|--------|
| 1           | 281.81 MHz  | 40.43 dBµV/m | 46.02 dBµV/m     | -5.59 dB              | Pass              | 26 Degree | 1 m    |
| 2           | 575.99 MHz  | 37.8 dBµV/m  | 46.02 dBµV/m     | -8.22 dB              | Pass              | 26 Degree | 1 m    |
| 3           | 627.212 MHz | 35.9 dBµV/m  | 46.02 dBµV/m     | -10.12 dB             | Pass              | 26 Degree | 1 m    |
| 4           | 767.99 MHz  | 36.59 dBµV/m | 46.02 dBµV/m     | -9.43 dB              | Pass              | 26 Degree | 1 m    |
| 5           | 799.994 MHz | 37.83 dBµV/m | 46.02 dBµV/m     | -8.19 dB              | Pass              | 26 Degree | 1 m    |

Test Report No.: G0M-1607-5773-EF0115B-V01

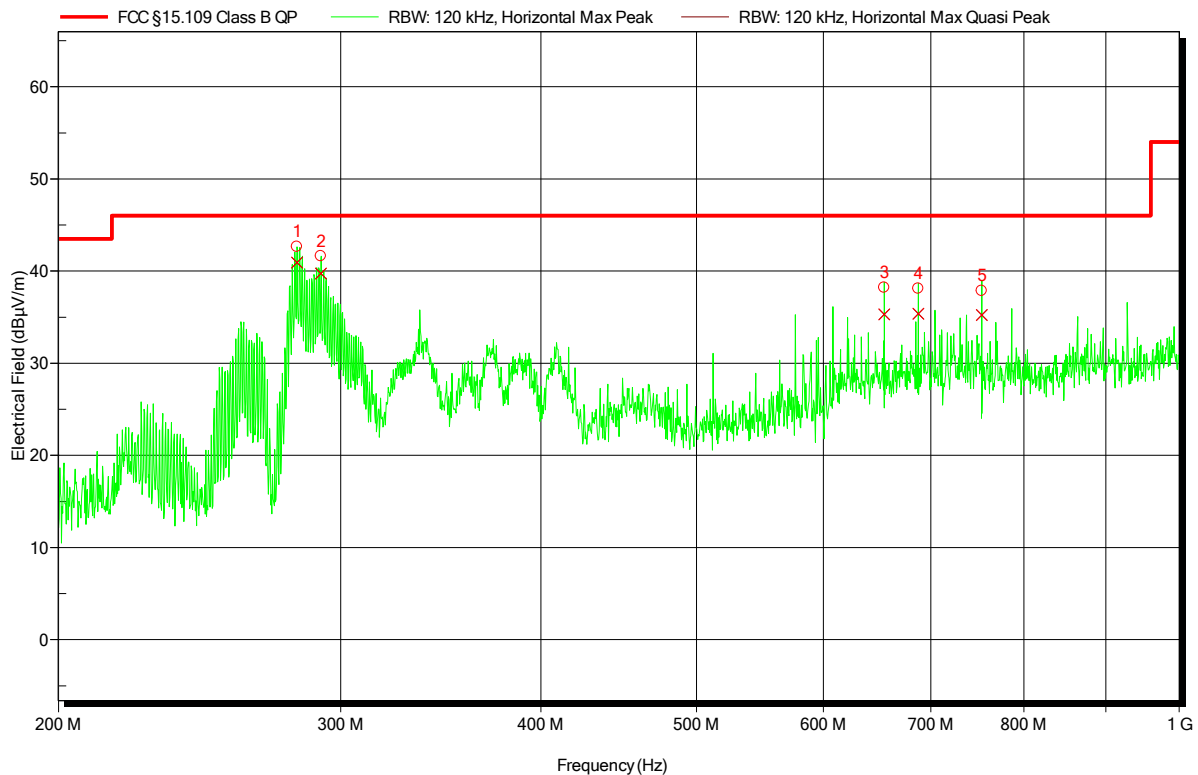
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

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 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3m  
 Mode: LTE; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 16



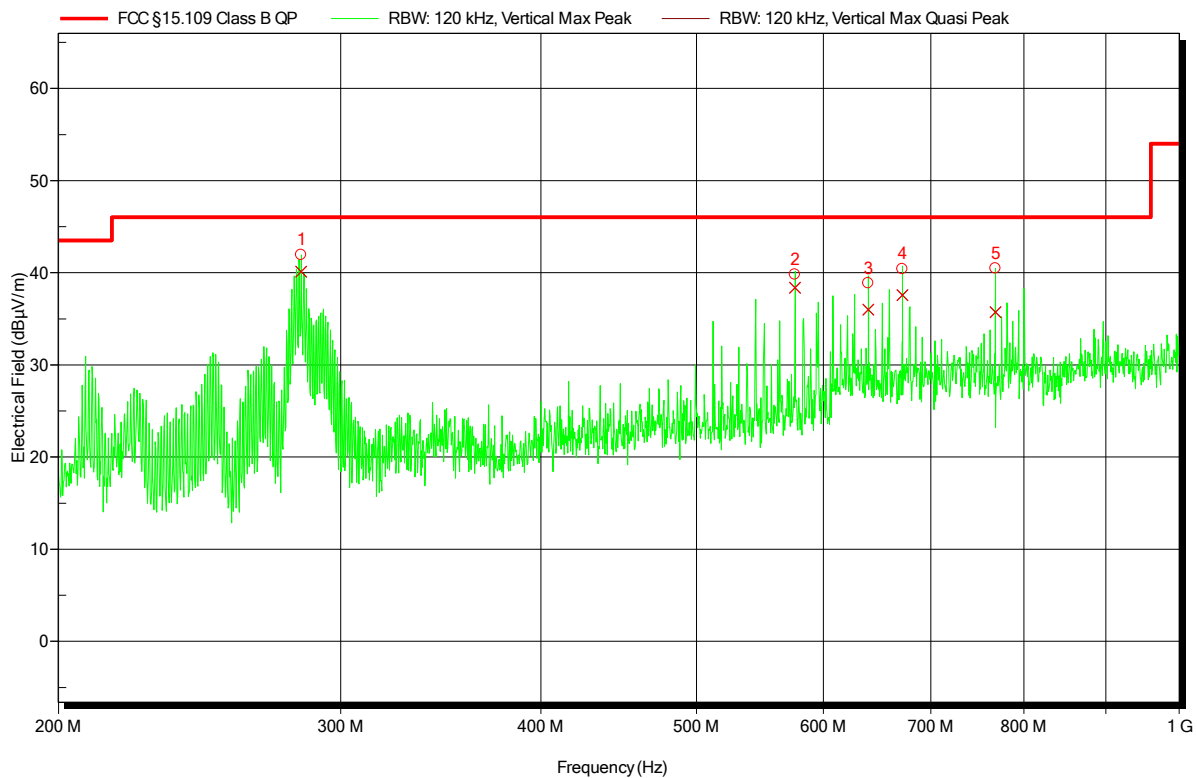
| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 281.822 MHz | 40.92 dBμV/m | 46.02 dBμV/m     | -5.1 dB               | Pass              | 130 Degree | 1.15 m |
| 2           | 291.734 MHz | 39.73 dBμV/m | 46.02 dBμV/m     | -6.29 dB              | Pass              | 130 Degree | 1.15 m |
| 3           | 654.77 MHz  | 35.31 dBμV/m | 46.02 dBμV/m     | -10.71 dB             | Pass              | 130 Degree | 1.15 m |
| 4           | 687.494 MHz | 35.38 dBμV/m | 46.02 dBμV/m     | -10.64 dB             | Pass              | 130 Degree | 1.15 m |
| 5           | 752.978 MHz | 35.22 dBμV/m | 46.02 dBμV/m     | -10.8 dB              | Pass              | 130 Degree | 1.15 m |

## Spurious emissions under normal conditions according to FCC Part 15b

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Applicant: FALCOM GmbH  
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Model: FOX3-4G-NA  
Test Site: Eurofins Product Service GmbH  
Operator: Mr. Belz  
Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
Antenna: Rohde & Schwarz HL 223, Vertical  
Measurement distance: 3m  
Mode: UMTS; GPS u. RS232 active,  
Test Date: 2016-10-12  
Note:

Index 17



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle     | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|-----------|--------|
| 1           | 283.556 MHz | 40.13 dBµV/m | 46.02 dBµV/m     | -5.89 dB              | Pass              | 26 Degree | 1 m    |
| 2           | 575.99 MHz  | 38.36 dBµV/m | 46.02 dBµV/m     | -7.66 dB              | Pass              | 26 Degree | 1 m    |
| 3           | 640.004 MHz | 36 dBµV/m    | 46.02 dBµV/m     | -10.02 dB             | Pass              | 26 Degree | 1 m    |
| 4           | 671.984 MHz | 37.58 dBµV/m | 46.02 dBµV/m     | -8.44 dB              | Pass              | 26 Degree | 1 m    |
| 5           | 767.978 MHz | 35.74 dBµV/m | 46.02 dBµV/m     | -10.28 dB             | Pass              | 26 Degree | 1 m    |

Test Report No.: G0M-1607-5773-EF0115B-V01

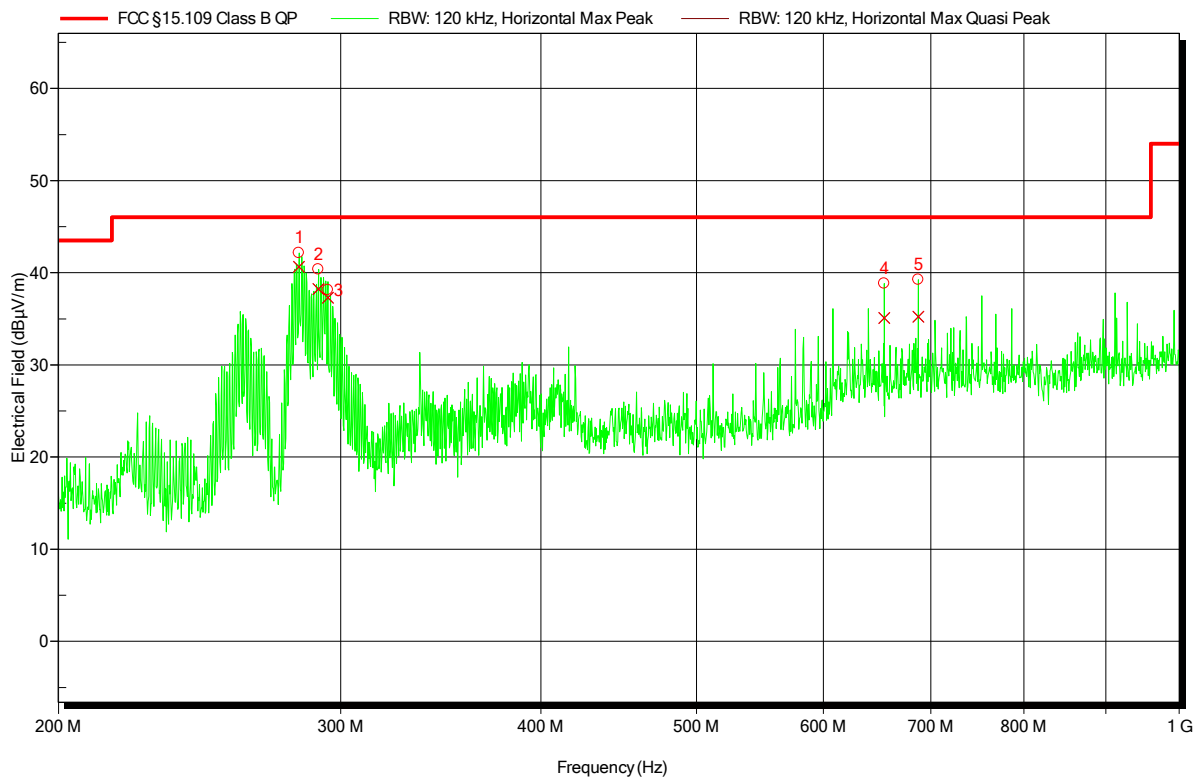
Eurofins Product Service GmbH  
Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
EUT Name: smart tracking / data logging device  
Model: FOX3-4G-NA  
Test Site: Eurofins Product Service GmbH  
Operator: Mr. Belz  
Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
Antenna: Rohde & Schwarz HL 223, Horizontal  
Measurement distance: 3m  
Mode: UMTS; GPS u. RS232 active,  
Test Date: 2016-10-12  
Note:

Index 18



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 282.65 MHz  | 40.64 dBµV/m | 46.02 dBµV/m     | -5.38 dB              | Pass              | 130 Degree | 1.1 m  |
| 2           | 290.606 MHz | 38.23 dBµV/m | 46.02 dBµV/m     | -7.79 dB              | Pass              | 130 Degree | 1.1 m  |
| 3           | 294.56 MHz  | 37.29 dBµV/m | 46.02 dBµV/m     | -8.73 dB              | Pass              | 130 Degree | 1.1 m  |
| 4           | 654.764 MHz | 35.09 dBµV/m | 46.02 dBµV/m     | -10.93 dB             | Pass              | 130 Degree | 1.1 m  |
| 5           | 687.488 MHz | 35.22 dBµV/m | 46.02 dBµV/m     | -10.8 dB              | Pass              | 130 Degree | 1.1 m  |

Test Report No.: G0M-1607-5773-EF0115B-V01

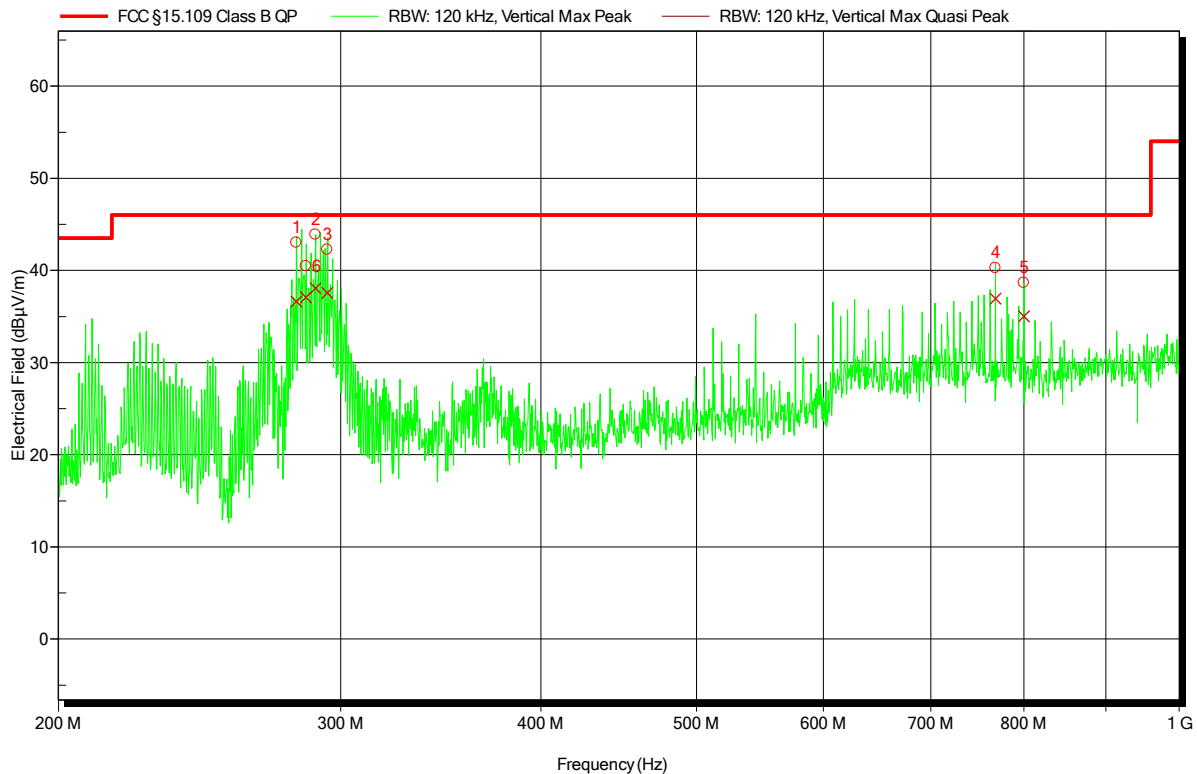
Eurofins Product Service GmbH  
Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
EUT Name: smart tracking / data logging device  
Model: FOX3-4G-NA  
Test Site: Eurofins Product Service GmbH  
Operator: Mr. Belz  
Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
Antenna: Rohde & Schwarz HL 223, Vertical  
Measurement distance: 3m  
Mode: GSM; GPS u. RS232 active,  
Test Date: 2016-10-12  
Note:

Index 19



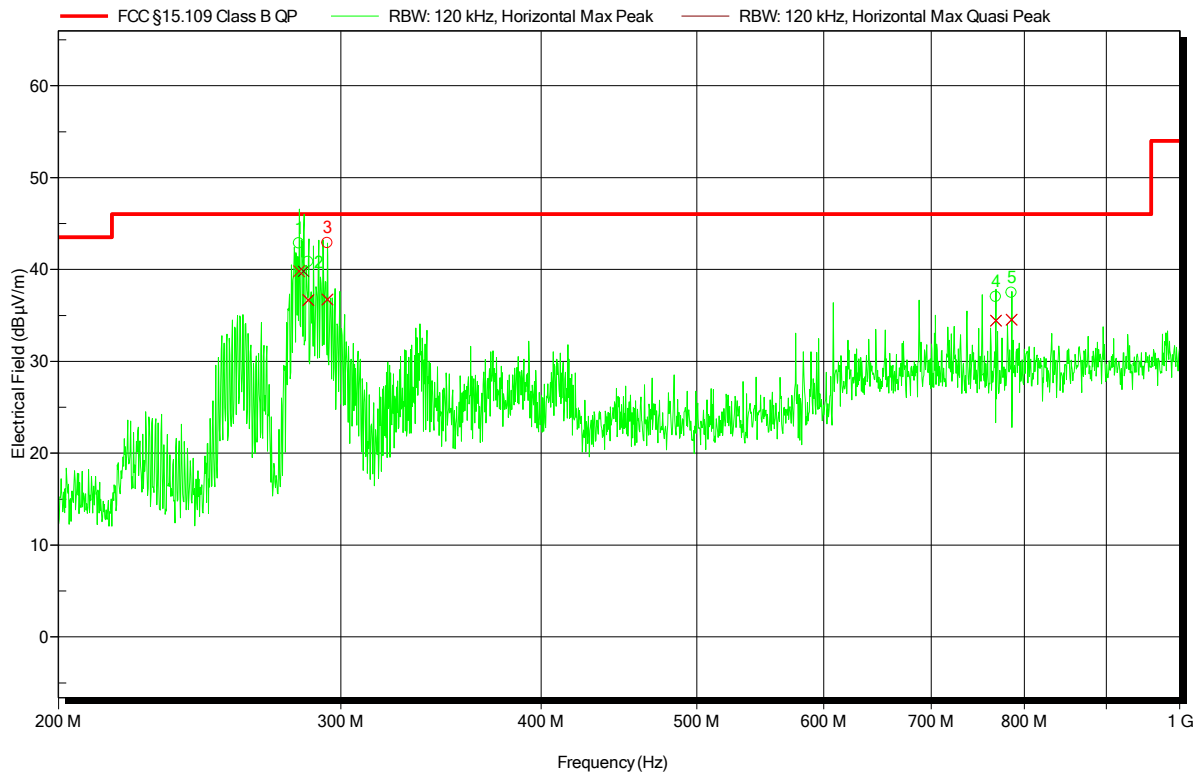
| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 281.552 MHz | 36.62 dBµV/m | 46.02 dBµV/m     | -9.41 dB              | Pass              | 360 Degree | 1 m    |
| 2           | 289.472 MHz | 38.05 dBµV/m | 46.02 dBµV/m     | -7.97 dB              | Pass              | 360 Degree | 1 m    |
| 3           | 294.38 MHz  | 37.56 dBµV/m | 46.02 dBµV/m     | -8.46 dB              | Pass              | 360 Degree | 1 m    |
| 4           | 767.99 MHz  | 36.94 dBµV/m | 46.02 dBµV/m     | -9.08 dB              | Pass              | 360 Degree | 1 m    |
| 5           | 799.982 MHz | 35.03 dBµV/m | 46.02 dBµV/m     | -10.99 dB             | Pass              | 360 Degree | 1 m    |
| 6           | 285.44 MHz  | 37.1 dBµV/m  | 46.02 dBµV/m     | -8.92 dB              | Pass              | 360 Degree | 1 m    |

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Rohde & Schwarz HL 223, Horizontal  
 Measurement distance: 3m  
 Mode: GSM; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note: PASS  
 T135A110

Index 20



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle      | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|------------|--------|
| 1           | 282.58 MHz  | 39.82 dBμV/m | 46.02 dBμV/m     | -6.2 dB               | Pass              | 135 Degree | 1.1 m  |
| 2           | 286.4 MHz   | 36.65 dBμV/m | 46.02 dBμV/m     | -9.37 dB              | Pass              | 135 Degree | 1.1 m  |
| 3           | 294.375 MHz | 36.73 dBμV/m | 46.02 dBμV/m     | -9.29 dB              | Pass              | 135 Degree | 1.1 m  |
| 4           | 767.99 MHz  | 34.44 dBμV/m | 46.02 dBμV/m     | -11.58 dB             | Pass              | 135 Degree | 1.1 m  |
| 5           | 785.702 MHz | 34.53 dBμV/m | 46.02 dBμV/m     | -11.49 dB             | Pass              | 135 Degree | 1.1 m  |

Test Report No.: G0M-1607-5773-EF0115B-V01

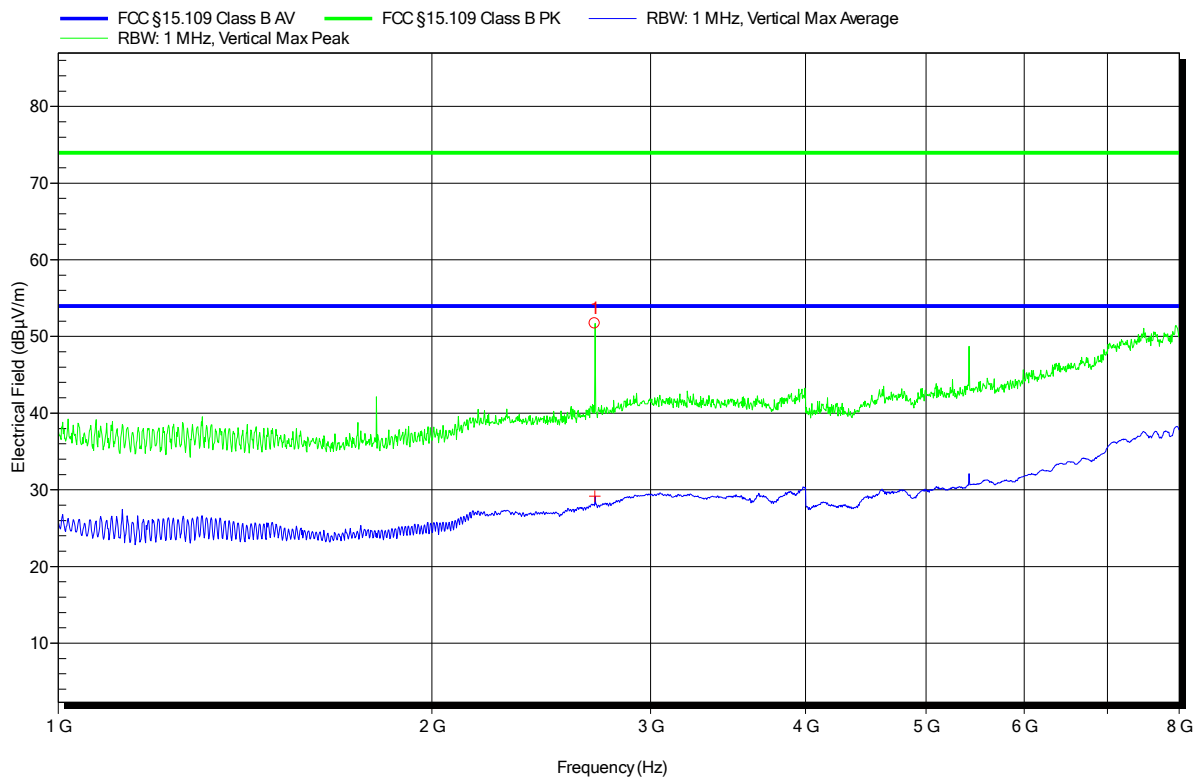
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement distance: 3m  
 Mode: GSM; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note: Peak 1 = GSM Harm.

Index 21



| Peak Number | Frequency | Peak        | Angle      | Height |
|-------------|-----------|-------------|------------|--------|
| 1           | 2.707 GHz | 51.7 dBμV/m | 180 Degree | 1 m    |

| Peak Number | Frequency | Average      | Average Limit | Average Difference | Average Status | Angle      | Height |
|-------------|-----------|--------------|---------------|--------------------|----------------|------------|--------|
| 1           | 2.707 GHz | 29.17 dBμV/m | 53.98 dBμV/m  | -24.81 dB          | Pass           | 180 Degree | 1 m    |

Test Report No.: G0M-1607-5773-EF0115B-V01

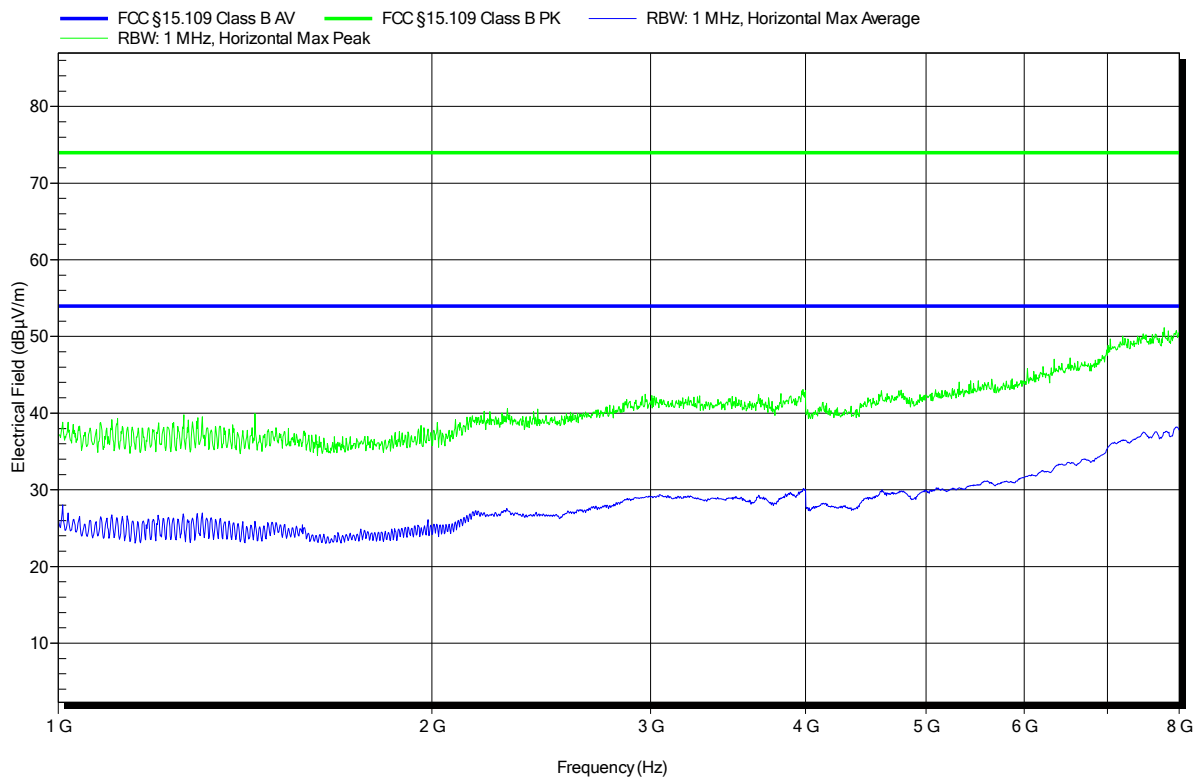
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Spurious emissions under normal conditions according to FCC Part 15b**

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement distance: 3m  
 Mode: GSM; GPS u. RS232 active,  
 Test Date: 2016-10-12  
 Note:

Index 22

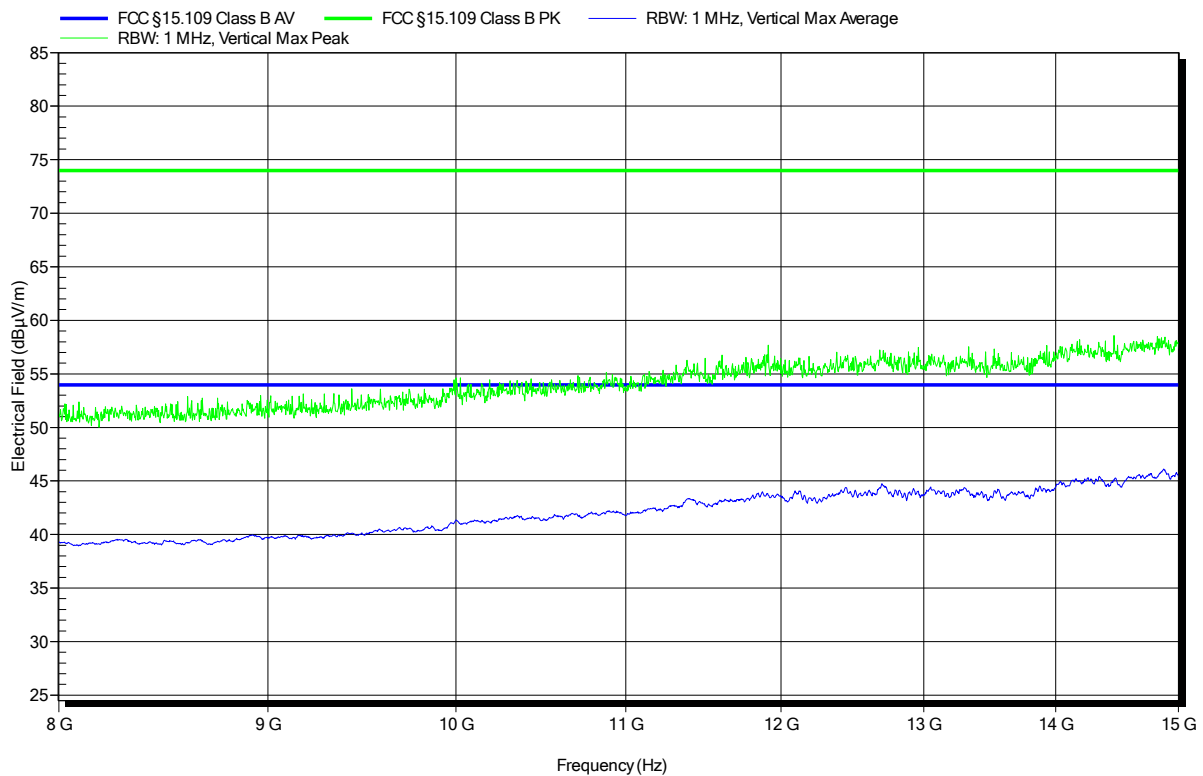


**Radiated emissions according to FCC Part 15b**

Project number: G0M-1607-5773

|                       |                                        |
|-----------------------|----------------------------------------|
| Applicant:            | FALCOM GmbH                            |
| EUT Name:             | smart tracking / data logging device   |
| Model:                | FOX3-4G-NA                             |
| Test Site:            | Eurofins Product Service GmbH          |
| Operator:             | Mr. Belz                               |
| Test Conditions:      | Tnom: 22°C, Unom: 12 VDC vehicular use |
| Antenna:              | ETS-Lindgren 3117, Vertical            |
| Measurement distance: | 3 m                                    |
| Mode:                 | GSM; GPS u. RS232 active,              |
| Test Date:            | 2016-10-24                             |
| Note:                 |                                        |

Index 25



**Radiated emissions according to FCC Part 15b**

Project number: G0M-1607-5773

Applicant: FALCOM GmbH  
 EUT Name: smart tracking / data logging device  
 Model: FOX3-4G-NA  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Belz  
 Test Conditions: Tnom: 22°C, Unom: 12 VDC vehicular use  
 Antenna: ETS-Lindgren 3117, Horizontal  
 Measurement distance: 3 m  
 Mode: GSM; GPS u. RS232 active,  
 Test Date: 2016-10-24  
 Note:

Index 26

