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# FCC Test report for parts
# 15.107, 15.109, 15.207, 15.209 and 15.247

Product name : DFGT-03MC18

Applicant : Airios

FCC ID : 2A2RK-DFGT

Test report No. : 210300087 001 Ver 1.00

# Laboratory information

## Accreditation

Telefication complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2017. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

Telefication is designated by the FCC as an Accredited Test Firm for compliance testing of equipment subject to Certification under Parts 15 & 18. The Designation number is: NL0001.

Telefication is a Wireless Device Testing laboratory recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.
The Industry Canada company number for Telefication is: 4173A.

Telefication is a registered Conformity Assessment body (CAB) under the Japan-EC MRA (Agreement on Mutual Recognition between Japan and the European Community). The registration number is: 201.

## Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Telefication Netherlands.

## Testing Location

| | |
|---|---|
| **Test Site** | Kiwa Telefication BV |
| **Test Site location** | Wilmersdorf 50<br>7327 AC Apeldoorn<br>The Netherlands<br><br>Tel. +31 88998 3393 |
| **Test Site FCC** | NL0001 |

## Revision History

| Version | Date | Remarks | By |
|---|---|---|---|
| v0.50 | 14-06-2021 | First draft | K.K. |
| v1.00 | 03-08-2021 | Final Version | K.K. |

# Table of Contents

## Summary of Test results

| FCC | ISED | Description | Section in report | Verdict |
|---|---|---|---|---|
| 15.247(d)<br>15.209 (a) | RSS-Gen 8.9 | Radiated spurious emissions | 3.1 | Pass |
| 15.247 (a) | RSS-247 5.2(a) | 6 dB bandwidth | 3.2 | Pass |
| 15.247 (b) | RSS-247 5.4 (d) | RF output power | 3.3 | Pass |
| 15.247 (e) | RSS-247 5.2 (b) | Power spectral density | 3.4 | Pass |
| 15.247 (d) | RSS-247 5.5 | Band edge | 3.5 | Pass |
| 15.207 (c) | RSS-Gen 8.8 | Conducted spurious emissions on AC mains | 3.6 | Pass |

# 1 General Description

## 1.1 Applicant

| | |
|---|---|
| **Client name:** | AIRIOS BV |
| **Address:** | Peter Zuidlaan 10 |
| **Zip code:** | 5502 NH |
| **Telephone:** | +31621915110 |
| **E-mail:** | Gokhun.selcuk@airios.eu |
| **Contact name:** | Gökhun Selçuk |

## 1.2 Manufacturer

| | |
|---|---|
| **Manufacturer name:** | AIRIOS BV |
| **Address:** | Peter Zuidlaan 10 |
| **Zip code:** | 5502 NH |
| **Telephone:** | +31621915110 |
| **E-mail:** | Gokhun.selcuk@airios.eu |
| **Contact name:** | Gökhun Selçuk |

## 1.3 Tested Equipment Under Test (EUT)

| | |
|---|---|
| **Product name:** | DFGT-03MC18 |
| **Brand name:** | AIRIOS BV |
| **FCC ID:** | 2A2RK-DFGT |
| **Product type:** | Fire gas valve controller |
| **Model(s):** | DFGT- 03MC18<br>DFGT- 03MCB23 |
| **Batch and/or serial No.** | - |
| **Software version:** | 13 |
| **Hardware version:** | 02 |
| **Date of receipt** | 26-05-2021 |
| **Tests started:** | 02-06-2021 |
| **Testing ended:** | 07-06-2021 |

## 1.4 Product specifications of Equipment under test

| | |
|---|---|
| **Tx Frequency:** | BLE: 2400 – 2483.5 MHz |
| **Rx frequency:** | BLE: 2400 – 2483.5 MHz |
| **Antenna type:** | Meander Antenna |
| **Antenna gain:** | 4.2 dBi |
| **Type of modulation:** | BLE: GFSK |
| **Emission designator** | 719KG1D |

Disclaimer: The antenna gain, OCW and operating frequency bands are declared by the applicant

## 1.5 Environmental conditions

| | | |
|---|---|---|
| **Test date** | 02-06-2021 | 07-06-2021 |
| **Ambient temperature** | 23.8 | 20.7 |
| **Humidity** | 43.4 | 45.1 |

## 1.6 Measurement standards

- ANSI C63.4:2014
- ANSI C63.10:2013

## 1.7 Applicable standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.107
- FCC Part 15 Subpart C §15.109
- FCC Part 15 Subpart C §15.207
- FCC Part 15 Subpart C §15.209
- FCC Part 15 Subpart C §15.247

## 1.8 Observation and remarks

None.

## 1.9 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications stated in paragraph 1.7 of this report.

The results of the test as stated in this report, are exclusively applicable to the product items as identified in this report. Telefication accepts no responsibility for any properties of product items in this test report, which are not supported by the tests as specified in paragraph 1.7 *"Applicable standards".*

All conducted tests are performed by:

Name : Koray Korcum under supervision of Paul van Wanrooij

Review of test methods and report by:

Name : ing. P.A. Suringa

The above conclusions have been verified by the following signatory:

Date : 20-08-2021

Name : ing. R. van Barneveld

Function : Test Engineer

Signature :

# 2 Test configuration of the Equipment Under Test

## 2.1 Test mode

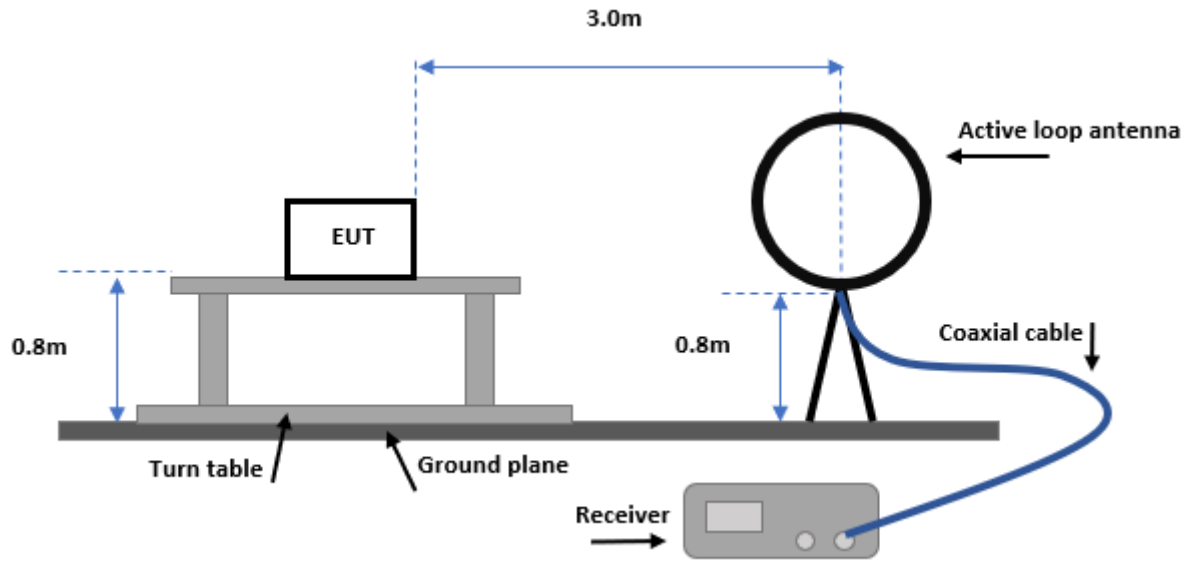
The applicant provided test mode firmware for the BLE radio, in which it was possible to configure the radio to transmit continuously.

## 2.2 Tested channels

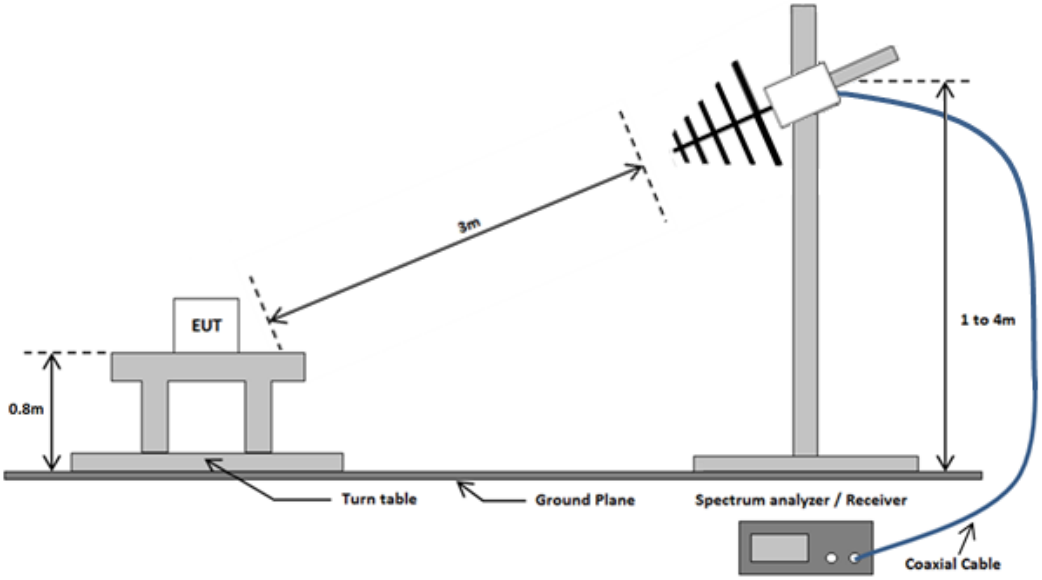
| Technology | Channels | Frequency (MHz) |
|---|---|---|
| BLE | 1 | 2402 |
| | 18 | 2440 |
| | 39 | 2480 |

## 2.3 Test setups

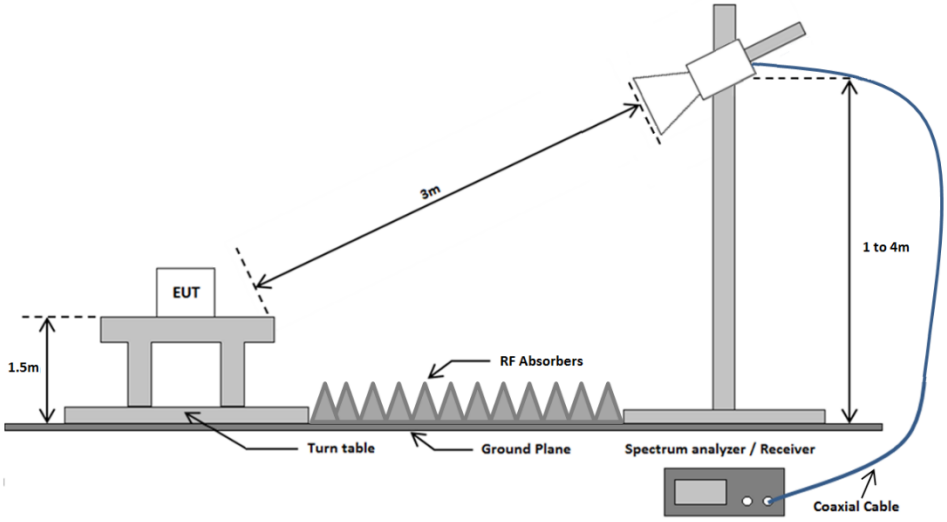
**Radiated emissions test setup 9 kHz – 30 MHz**



**Radiated emissions test setup 30 MHz - 1 GHz**

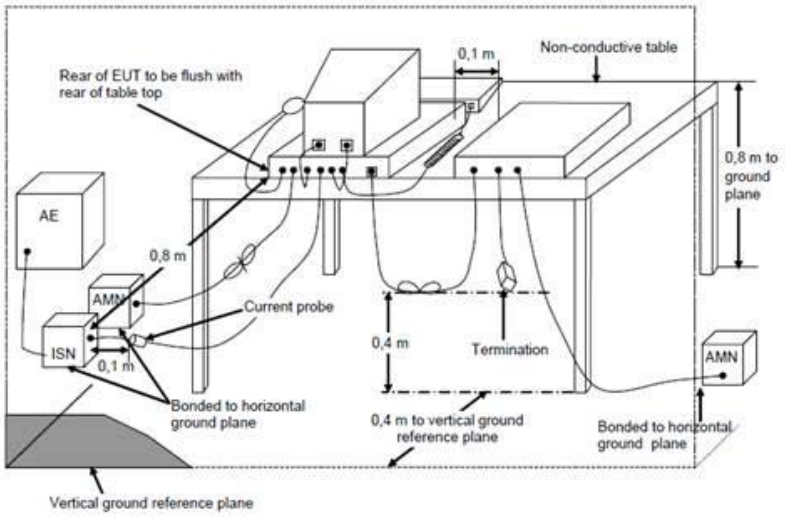



**Radiated emissions test setup above 1 GHz**



**Conducted emissions test setup**

*Emissions test at AC mains*



## 2.4 Equipment used in the test configuration

| Description | Manufacturer | Model | ID | Used at Par. |
|---|---|---|---|---|
| EMI Receiver | Rohde & Schwarz | ESCI | TE11128 | 3.6 |
| EMI Receiver | Rohde & Schwarz | ESR7 | TE01220 | 3.1 |
| Spectrum analyzer | Rohde & Schwarz | FSP40 | TE11125 | 3.2 – 3.6 |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | TE01269 | 3.1 |
| 3.0 GHz HPF | Wainwright | WHK3.0/18G-10EF | TE01140 | 3.1 |
| Active loop antenna | EMCO | 6502 | TE11171 | 3.1 |
| Biconilog antenna | Chase | CBL6112A | TE00967 | 3.1 |
| Horn antenna | EMCO | 3115 | TE00531 | 3.1 |
| Preamplifier 1-18 GHz | µComp Nordic | MCNA-40-0010800-25-10P | TE11175 | 3.1 |
| Horn antenna | FLANN-MICROWAVE | 20240-25 | TE 00818 | 3.1 |
| Preamplifier 18-26 GHz | Miteq | JS4-18004000-33-8P | TE 11131 | 3.1 |
| Two Line V Network | Rohde & Schwarz | ENV216 | TE 11176 | 3.6 |

## 2.5 Sample calculations

All formulas for data conversions and conversion factors are reported in chapter 4 of this test report.

# 3 Test results

## 3.1 Radiated spurious emissions

### 3.1.1 Limit

| Frequency (MHz) | Field strength (µV/m) | Field strength (dBµV/m) | Measurement distance(m) |
|---|---|---|---|
| 0.009 – 0.490 | 2400/F(kHz) | 20*{log[2400]-log[F(kHz)]} | 300* |
| 0.490 – 1.705 | 24000/F(kHz) | 20*{log[24000]-log[F(kHz)]} | 30* |
| 1.705 – 13.11<br>14.01 – 30.0 | 30 | 29.5 | 30* |
| 30 -88 | 100 | 40 | 3 |
| 88 - 216 | 150 | 43,5 | 3 |
| 216-960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

*Note: Limit lines in the plots corrected to 3m measurement distance according to the method described in ANSI C63.10-2013, clause 6.4

### 3.1.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.1.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.1.4 Test procedure

9 kHz – 30 MHz: According to ANSI C63.4-2014, section 5.4.2 and 8.2.3
30 MHz to 26.5 GHz: According to ANSI C63.4-2014, section 8.3

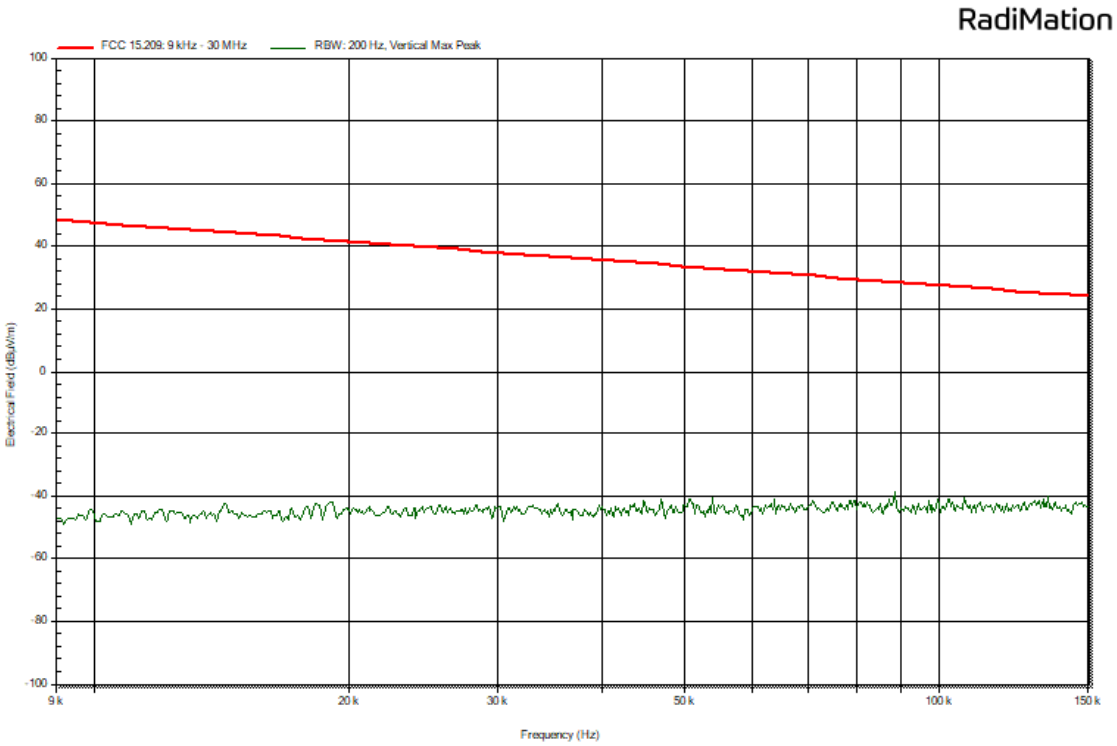
9 kHz to 30 MHz: IRN 026 – Method 10
30 MHz to 1 GHz: IRN 026 – Method 1
1 GHz to 18 GHz: IRN 026 – Method 2
18 to 26.5 GHz: IRN 026 – Method 3

### 3.1.5 Measurement Uncertainty

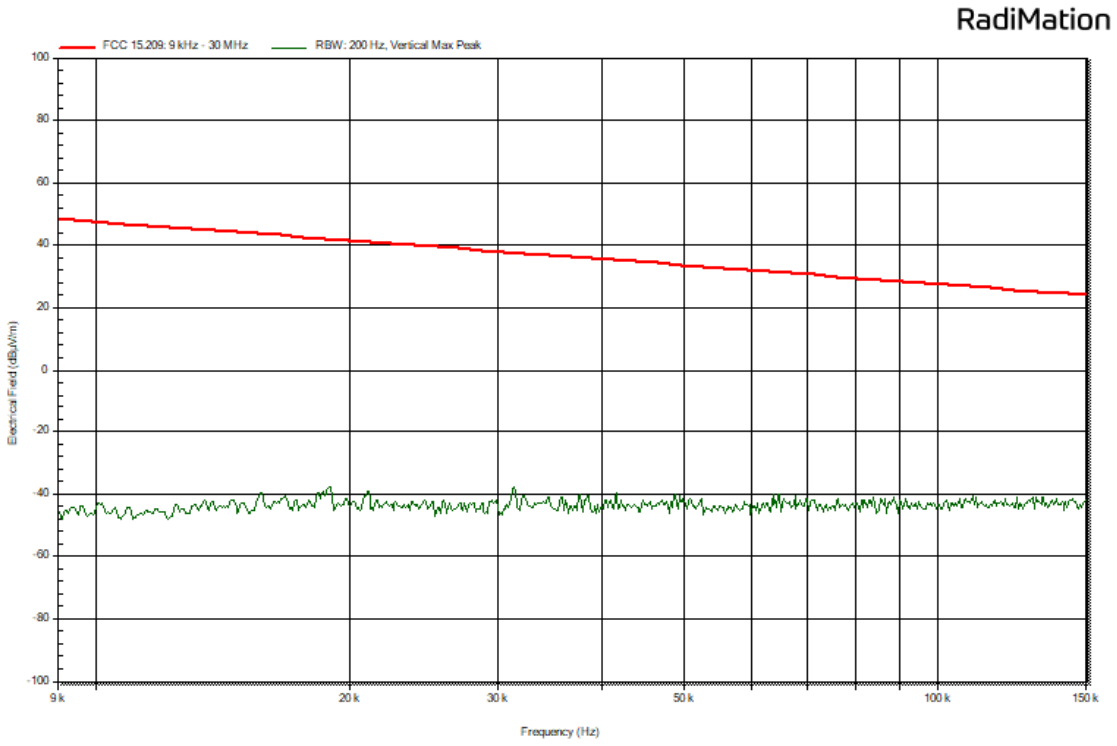
| Frequency range | Polarization | Uncertainty |
|---|---|---|
| 9 kHz – 30 MHz | -- | ±1.6 dB |
| 30 – 200 MHz | Horizontal | ±4.5 dB |
| | Vertical | ±5.4 dB |
| 200 -1000 MHz | Horizontal | ±3.6 dB |
| | Vertical | ±4.6 dB |
| 1 – 18 GHz | Horizontal | ±5.7 dB |
| | Vertical | ±5.7 dB |
| 18 – 26.5 GHz | Horizontal | ±4.9 dB |
| | Vertical | ±4.9 dB |

### 3.1.6 Plots of the Radiated Spurious Emissions Measurement

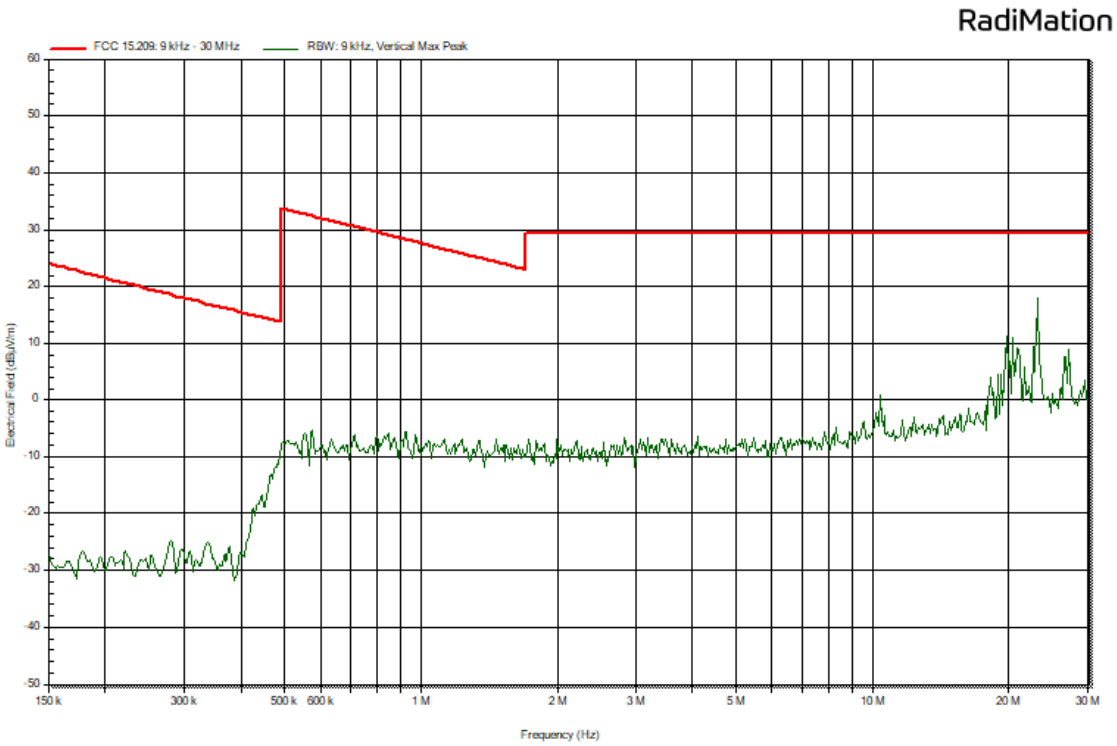
**9 – 150 kHz (Perpendicular)**



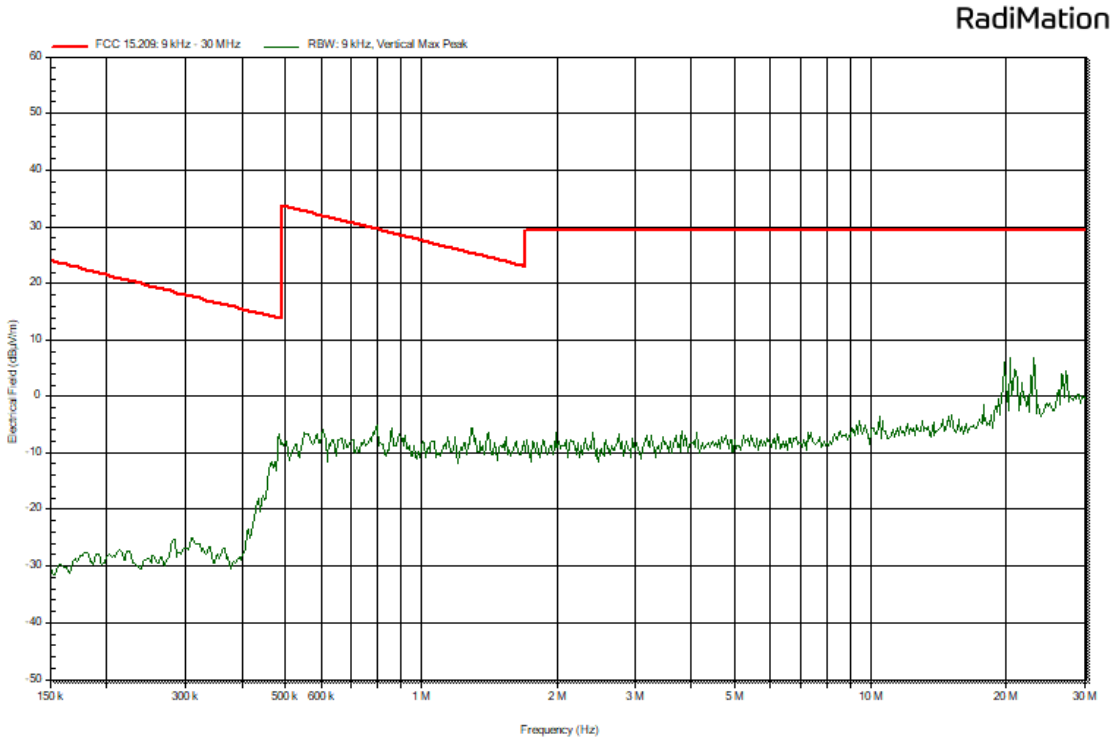

**9 – 150 kHz (Parallel)**



**150 kHz – 30 MHz (Perpendicular)**



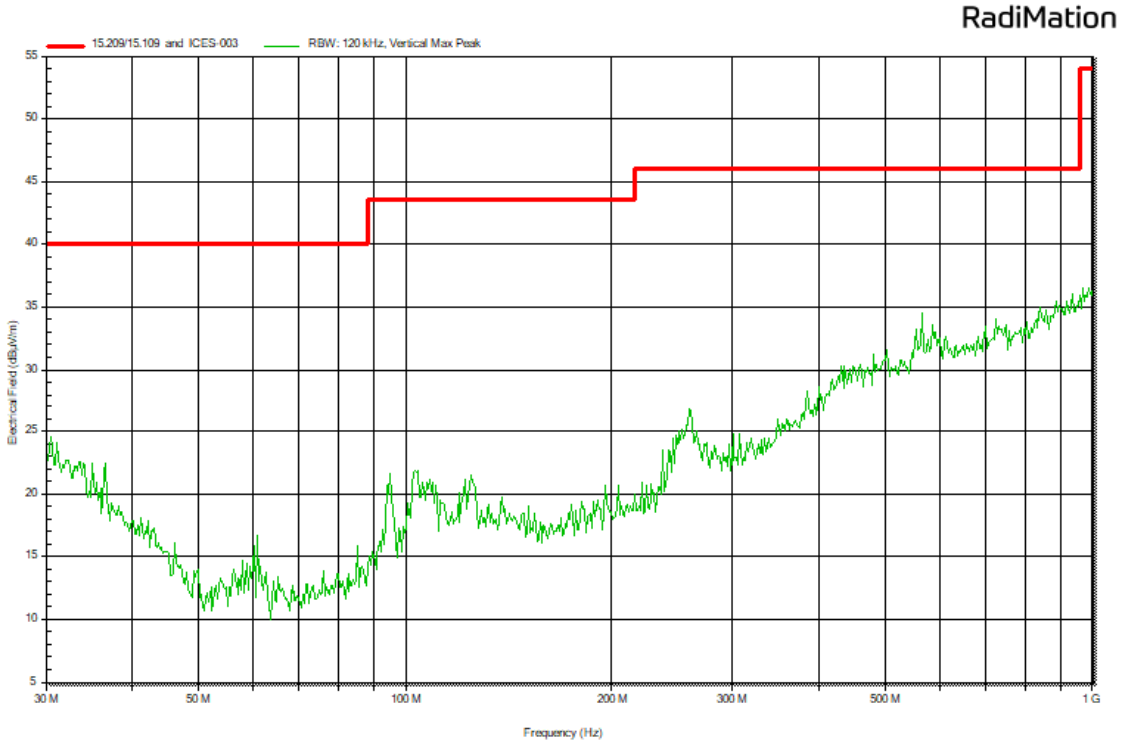

**150 kHz – 30 MHz (Parallel)**



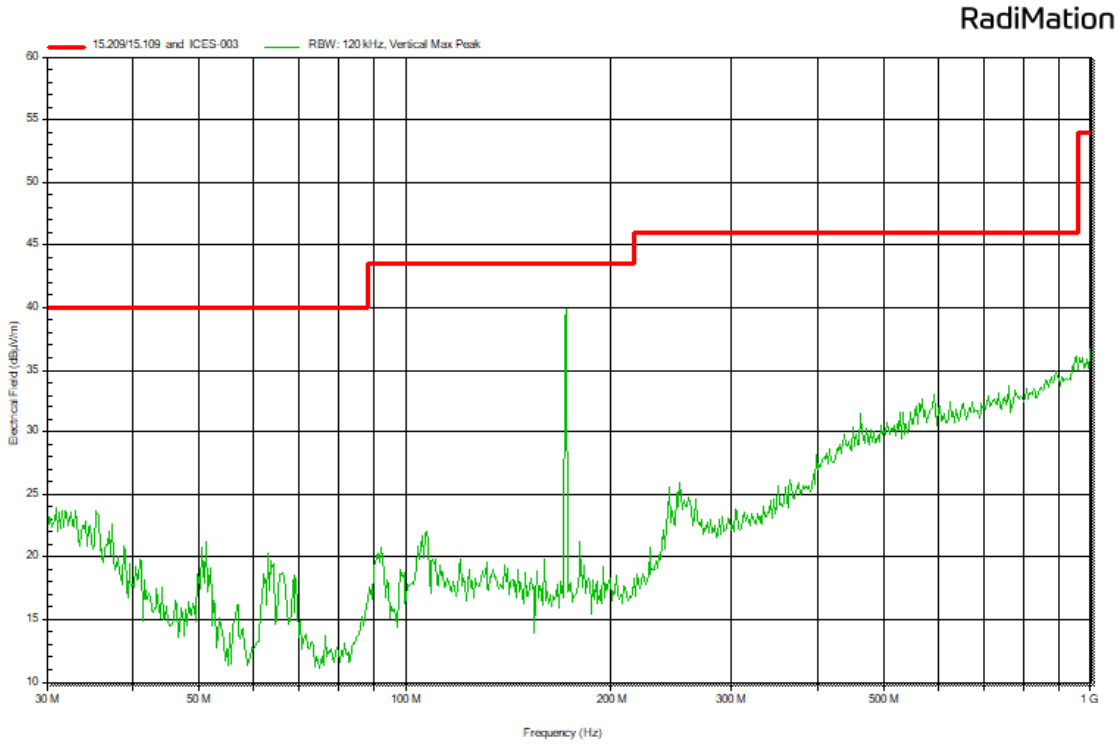
**30 -1000 MHz**

**Vertical polarization**

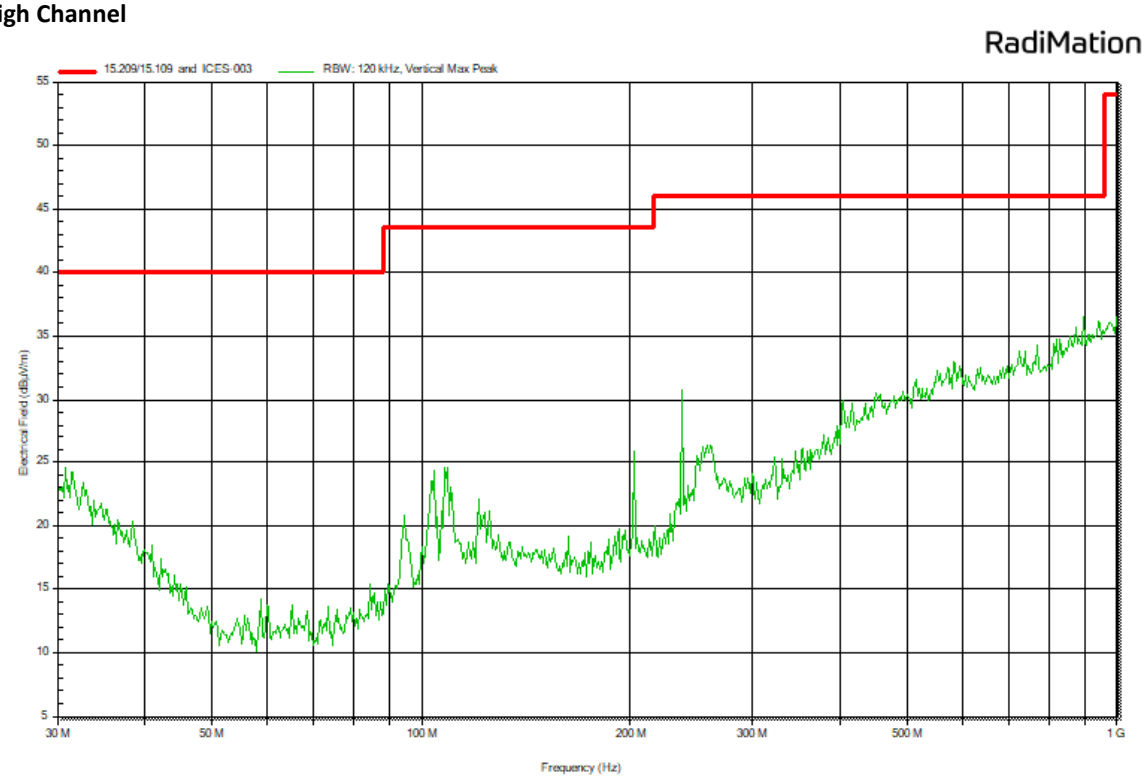
**Low channel**




**Mid channel**

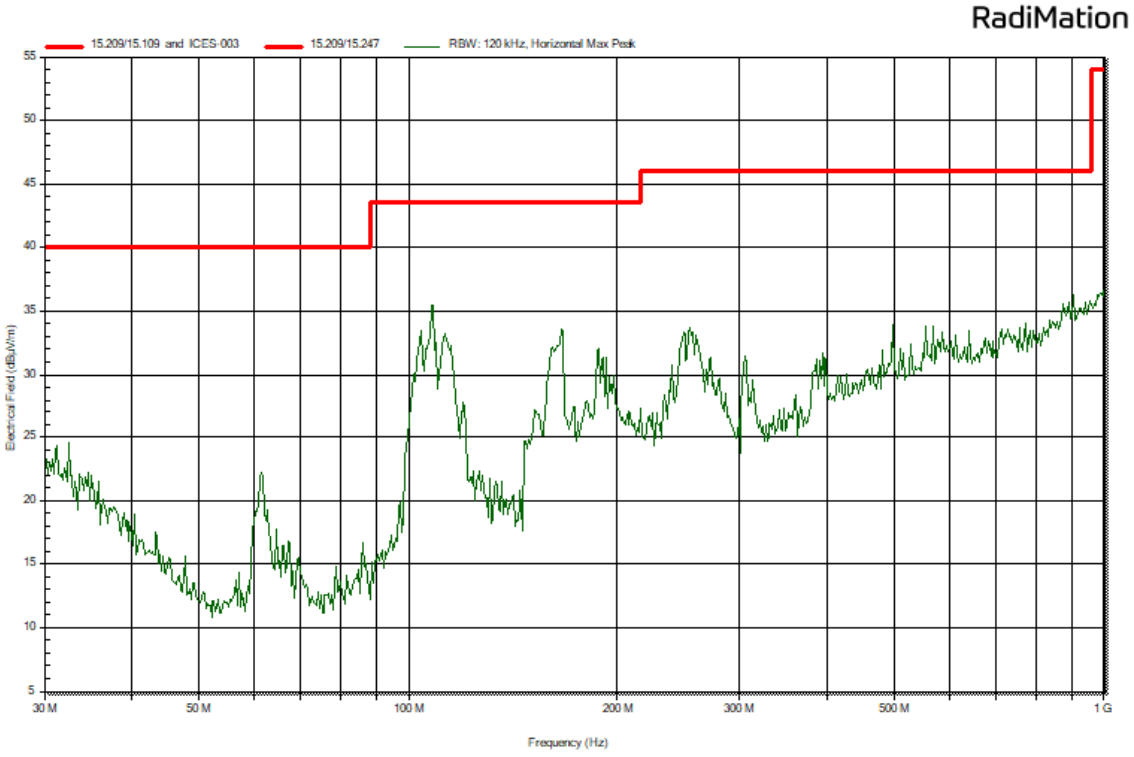


**High Channel**

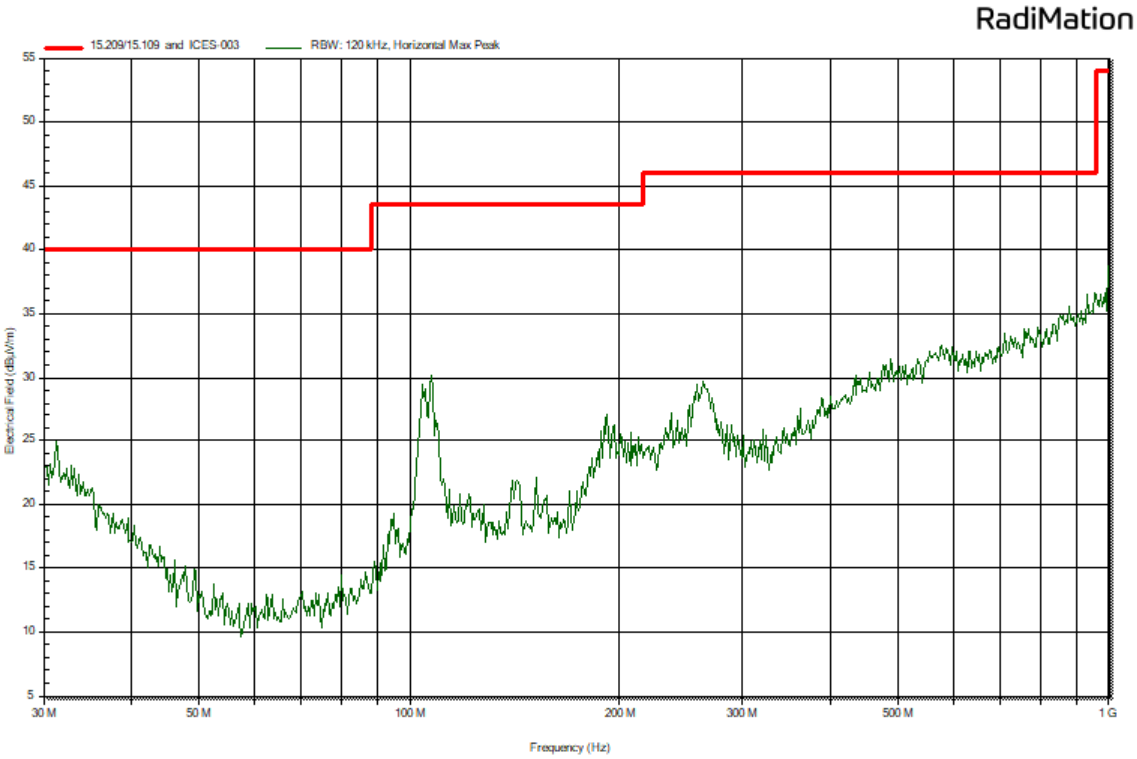



**Horizontal polarization**

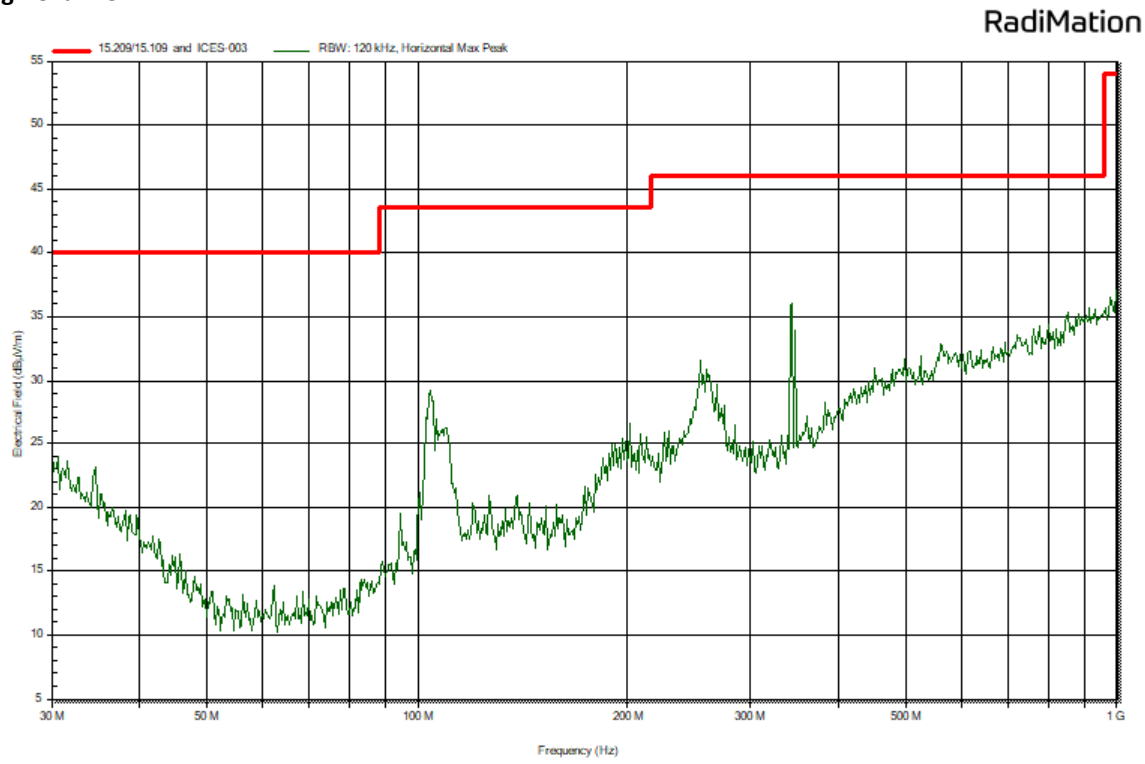
**Low channel**



**Mid channel**



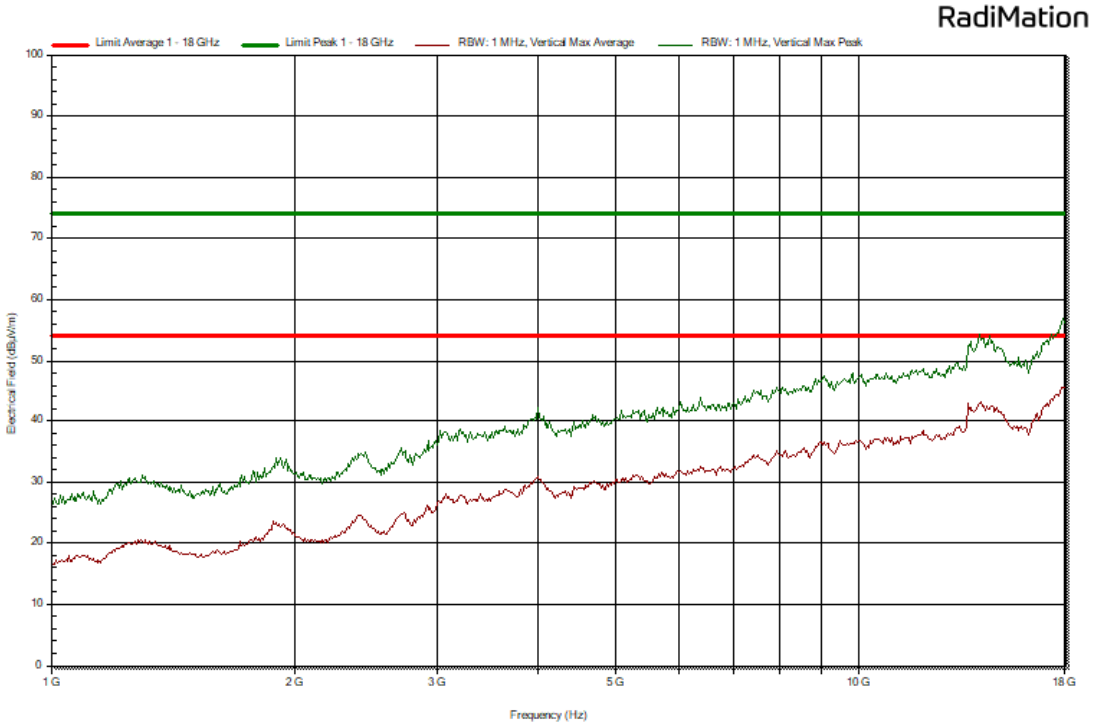

**High Channel**



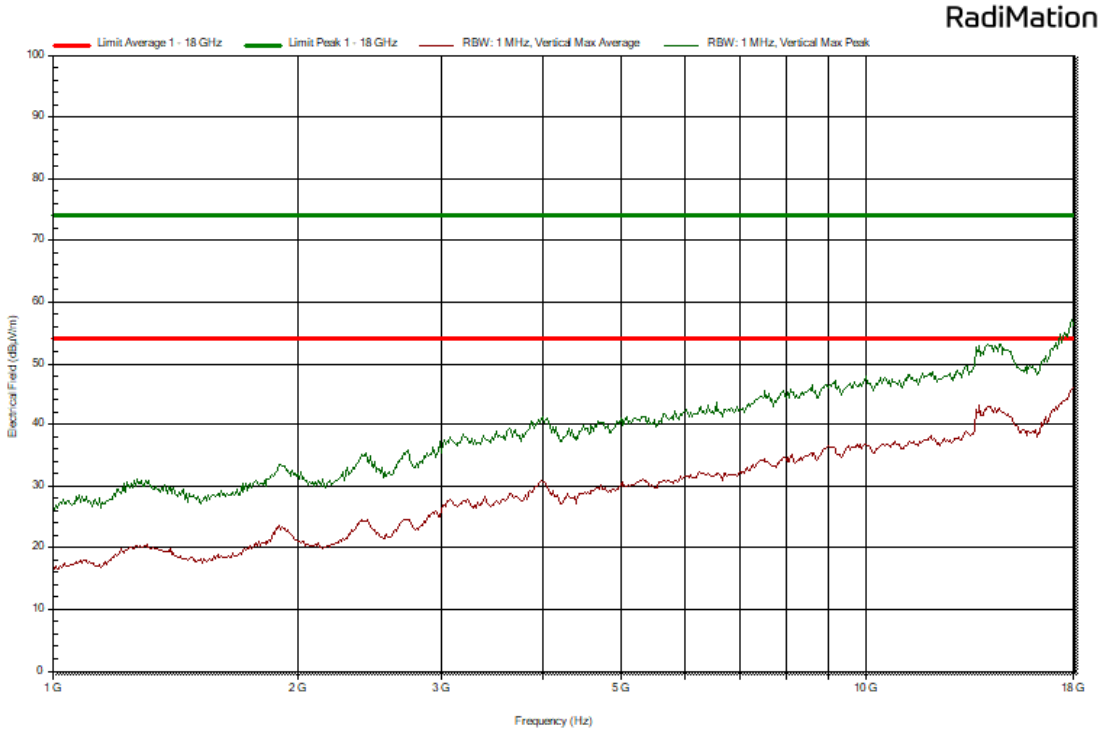
**1 -18 GHz**

**Vertical polarization**

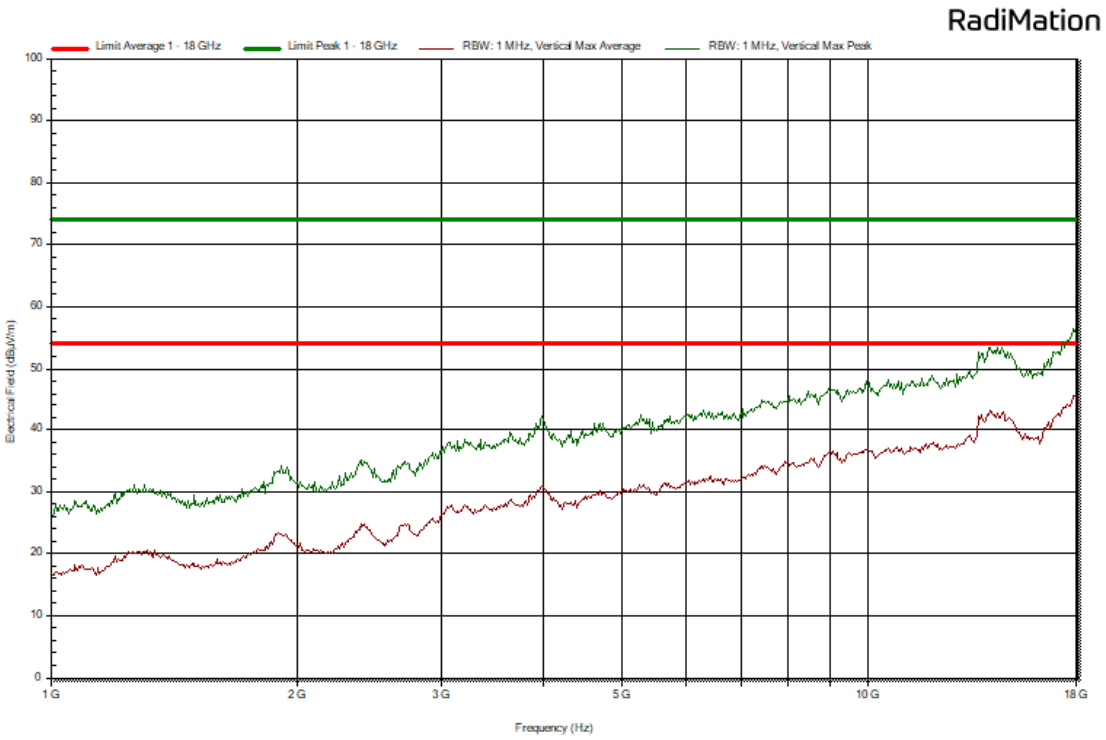
**Low channel**




**Mid channel**

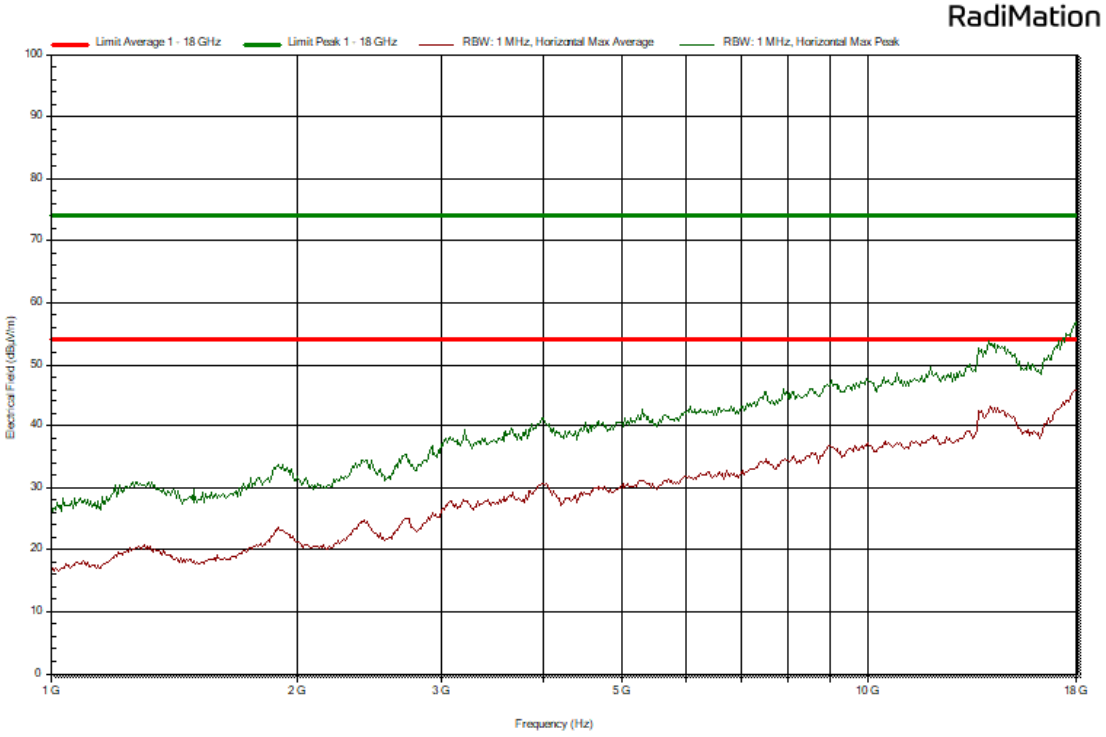


**High Channel**

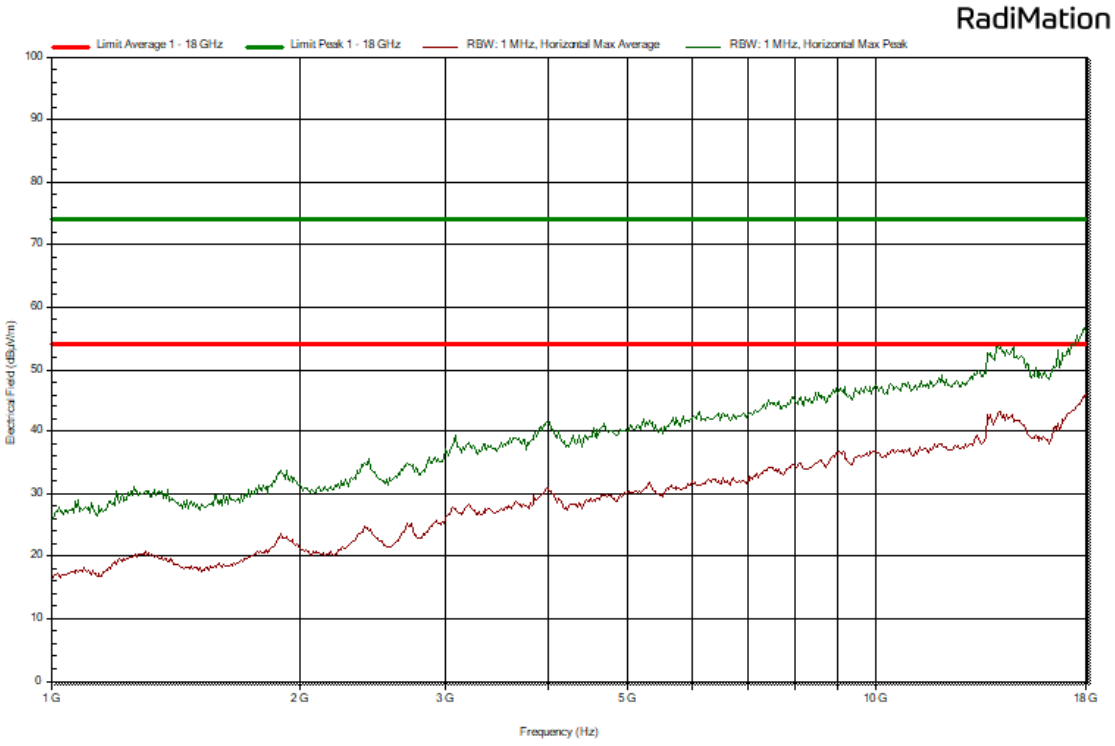



**Horizontal polarization**

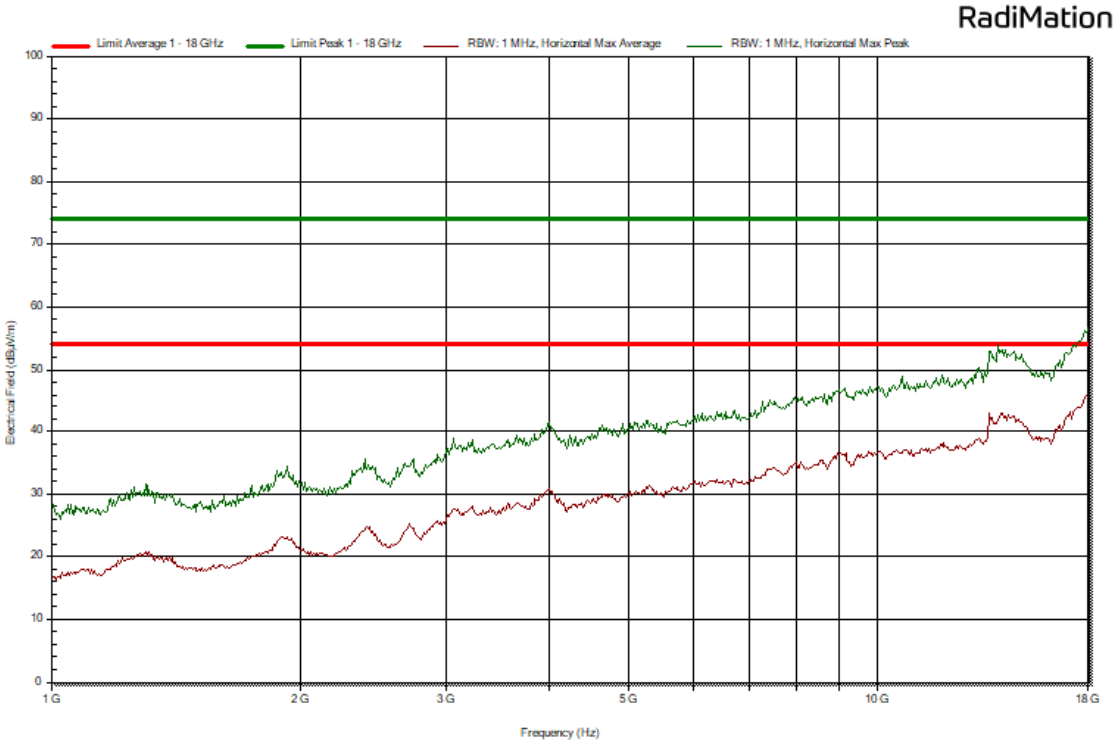
**Low channel**



**Mid channel**



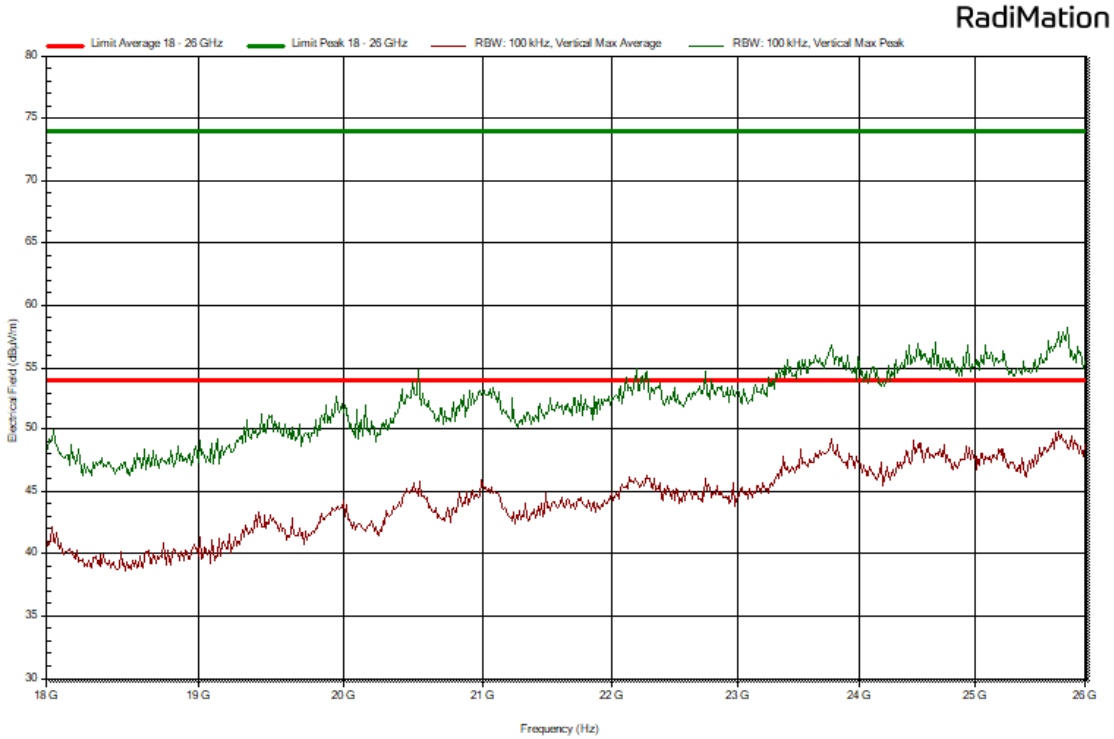

**High Channel**



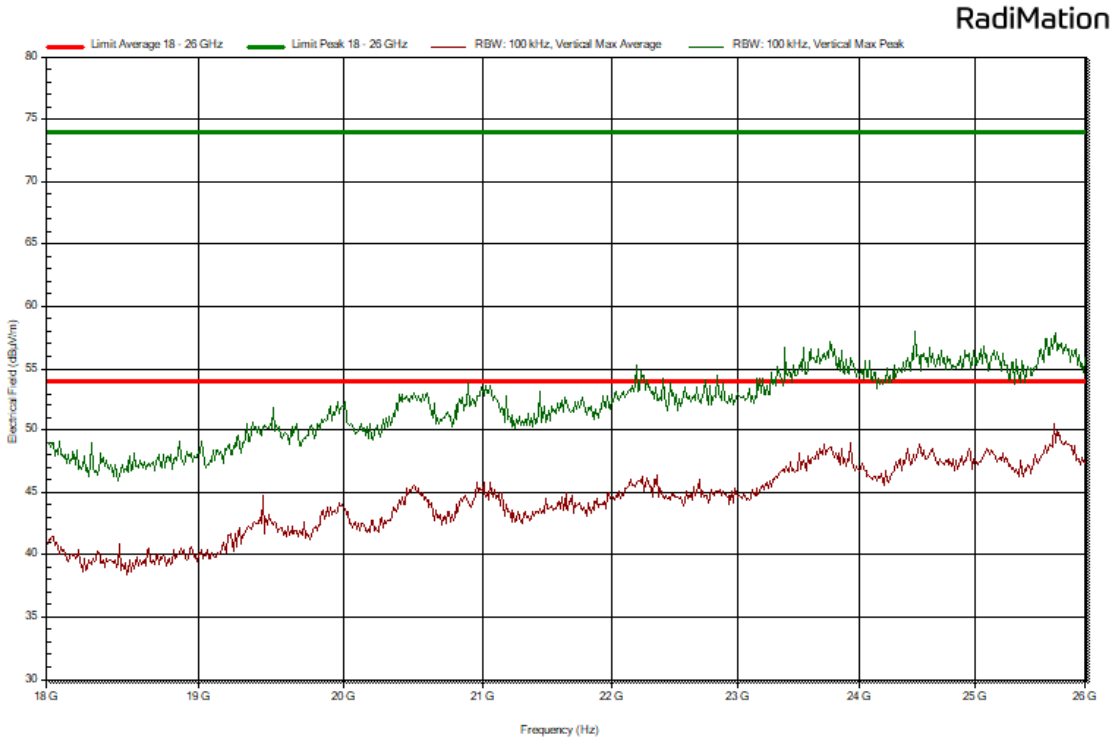
**18 -26 GHz**

**Vertical polarization**

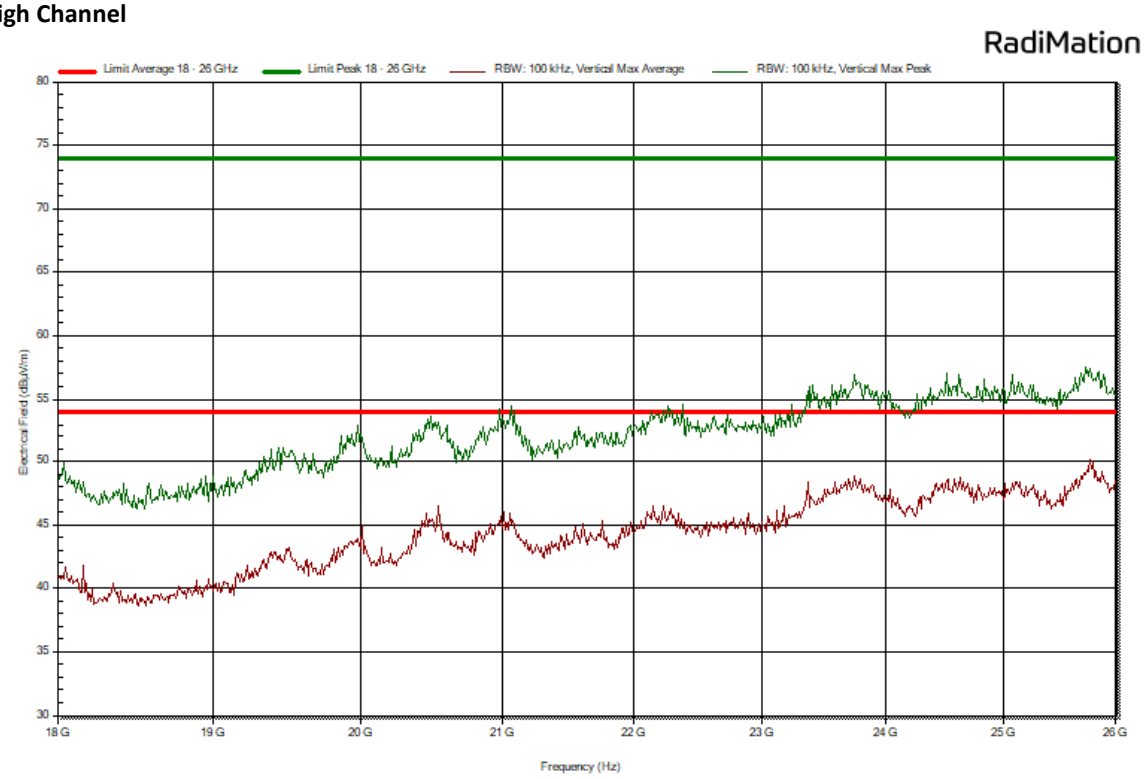
**Low channel**




**Mid channel**

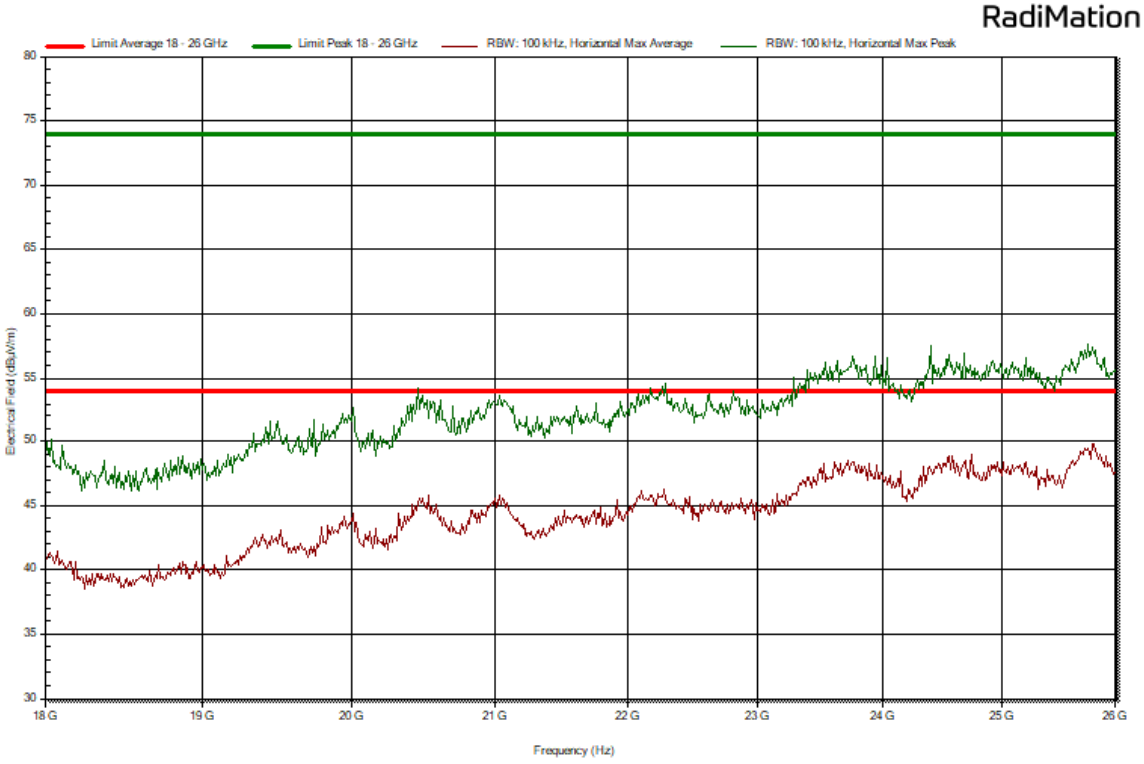


**High Channel**

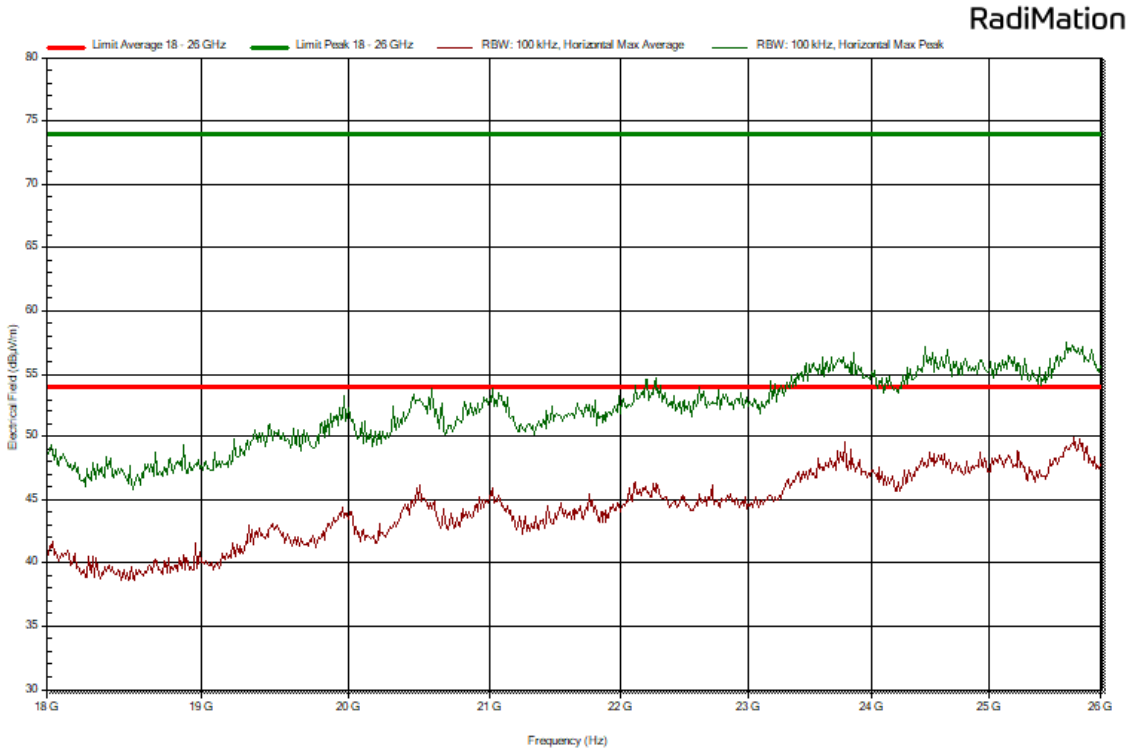



**Horizontal polarization**

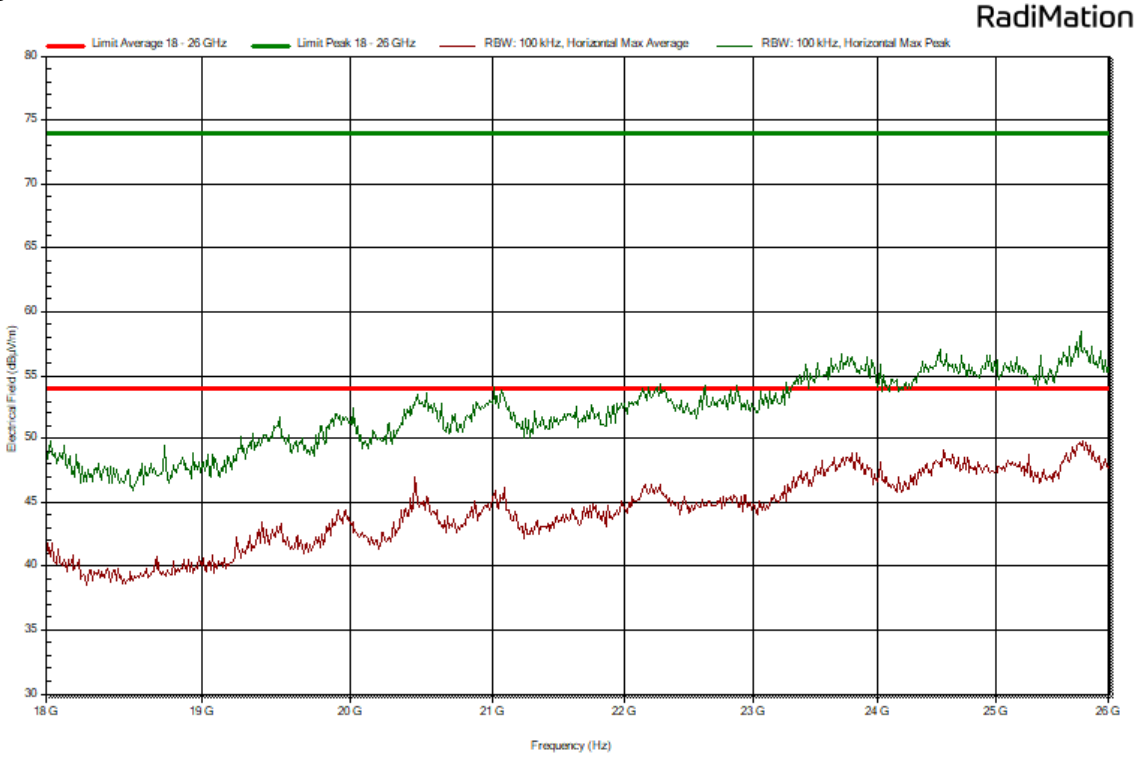
**Low channel**



**Mid channel**




**High Channel**



## 3.2 6dB bandwidth Measurement

### 3.2.1 Limit

The minimum 6 dB Bandwidth shall be at least 500 kHz.

### 3.2.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.2.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.2.4 Test procedure

Tests according to ANSI C63.10
IRN 017 - Occupied bandwidth (Hz) Method 4 – DTS Bandwidth.

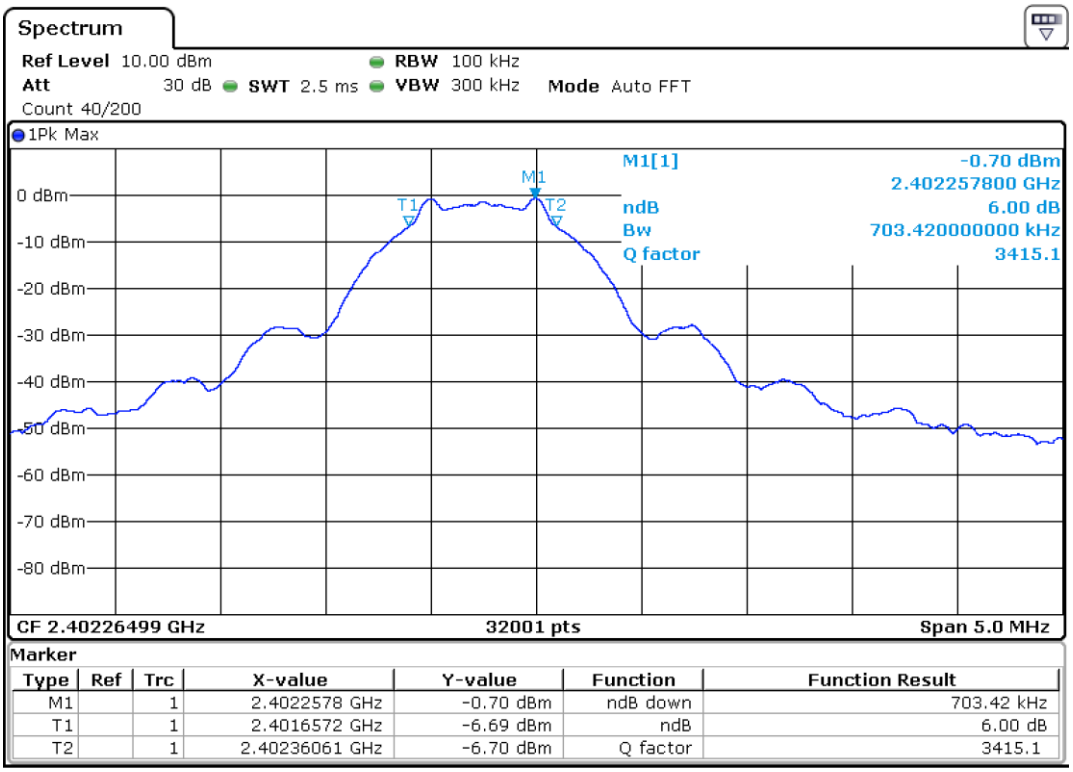
### 3.2.5 Test Results of the 6 dB bandwidth Measurement

| Technology Std. | Channel | Frequency (MHz) | Data rate | 6dB bandwidth (kHz) |
|---|---|---|---|---|
| Bluetooth Low energy | 37 | 2402 | 1 Mbps | 703.4 |
| | 18 | 2440 | 1 Mbps | 718.8 |
| | 39 | 2480 | 1 Mbps | 702.1 |
| Uncertainty | ± 36.2 kHz | | | |

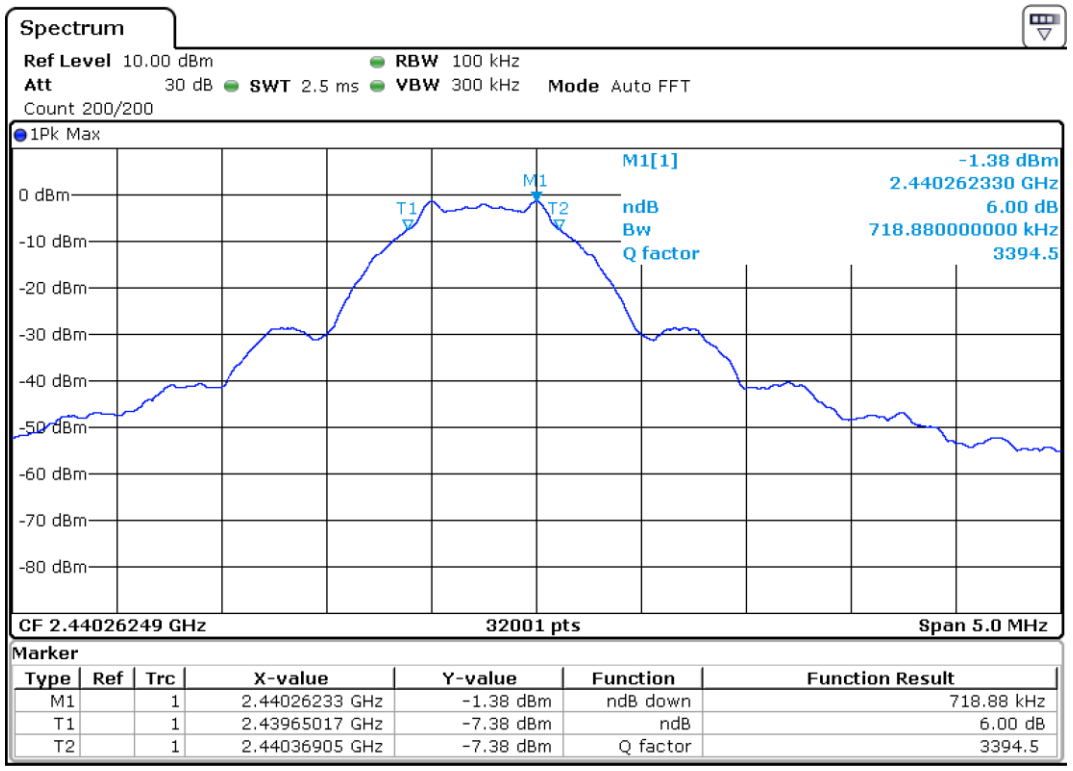
### 3.2.6 Plots of the 6dB bandwidth measurement

See next page.

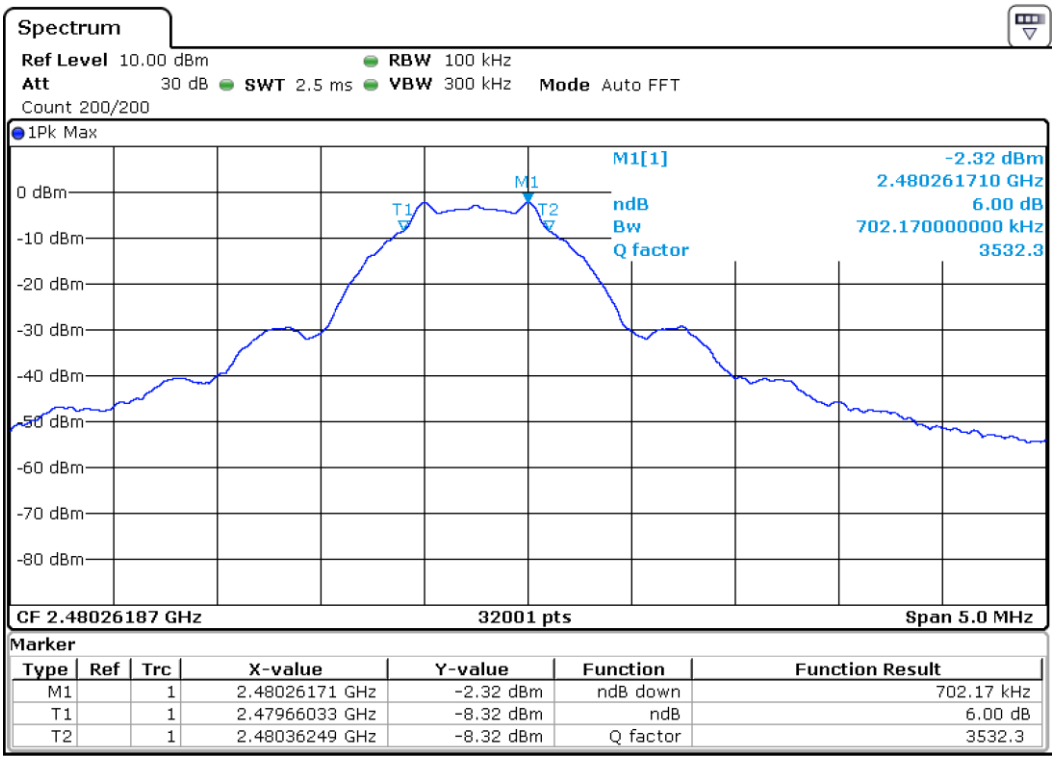
**Channel 37**




**Channel 18**



**Channel 39**




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.48026171 GHz | -2.32 dBm | ndB down | 702.17 kHz |
| T1 | | 1 | 2.47966033 GHz | -8.32 dBm | ndB | 6.00 dB |
| T2 | | 1 | 2.48036249 GHz | -8.32 dBm | Q factor | 3532.3 |

## 3.3 Output Power Measurement

### 3.3.1 Limit

For systems using digital modulation in the 2400-2483.5 MHz, the limit for the peak output power is 30 dBm. If transmitting antenna of directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point to point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

### 3.3.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.3.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.3.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.

IRN 014 - RF power (W) - Method 1 – AVGSA (DTS) according to ANSI C63.10.

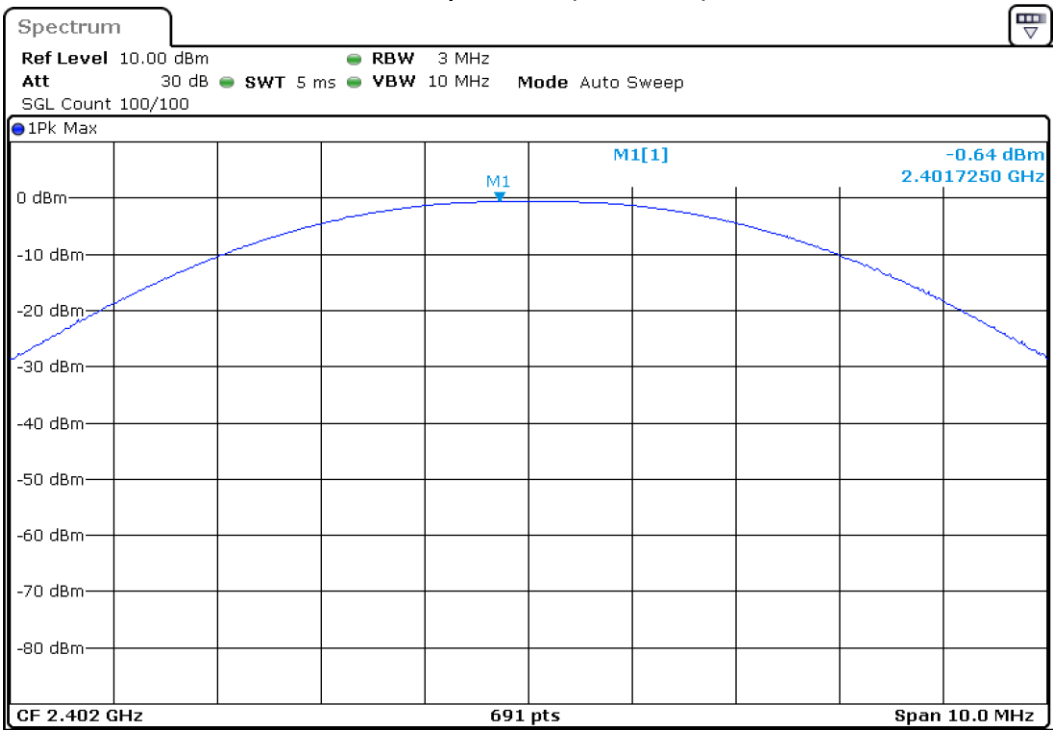
### 3.3.5 Test results of Output Power Measurement

**Peak method**

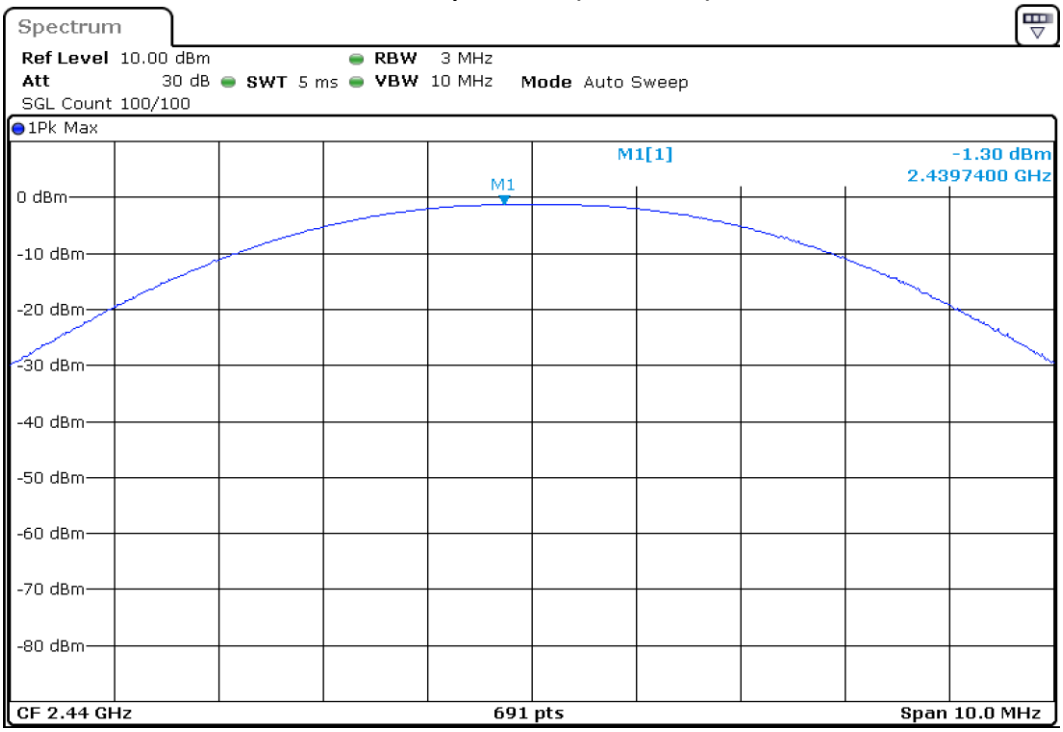
| Technology Std. | Channel | Frequency (MHz) | Data rate | Peak output power (dBm) |
|---|---|---|---|---|
| Bluetooth Low Energy | 37 | 2402 | 1 Mbps | -0.64 |
| | 18 | 2440 | 1 Mbps | -1.30 |
| | 39 | 2480 | 1 Mbps | -2.28 |
| Uncertainty | ±0.71 dB | | | |

### 3.3.6 Plots of Peak Output Power Measurement

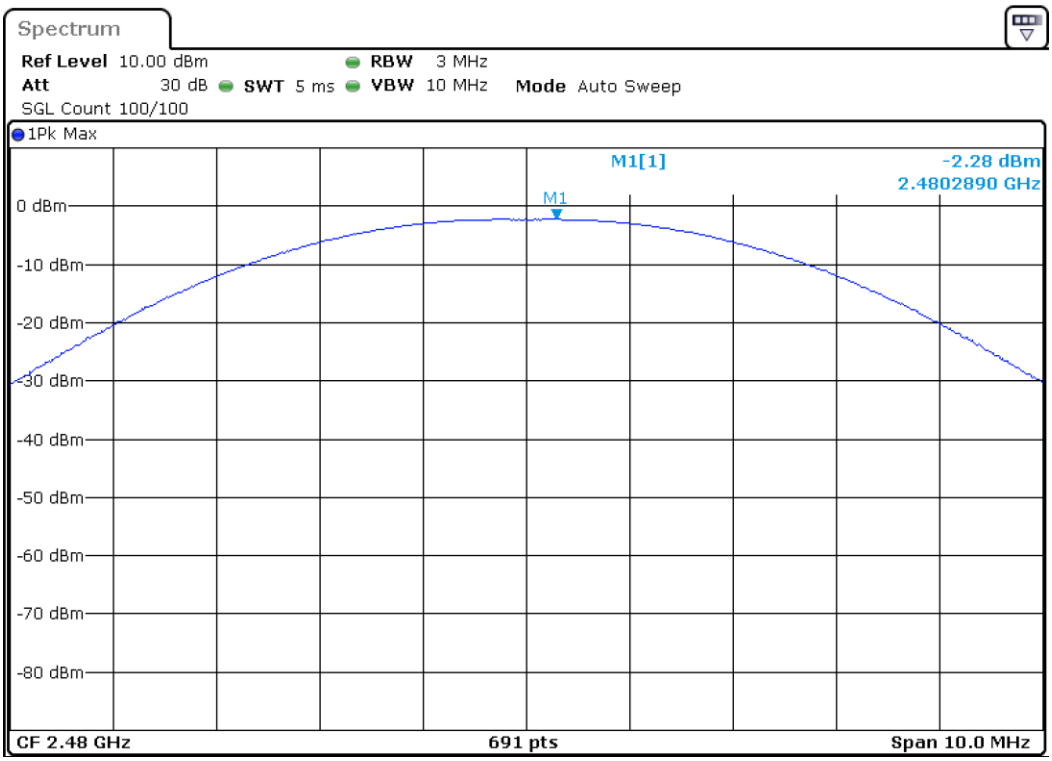
**Peak Output Power (Channel 37)**




**Peak Output Power (Channel 18)**



**Peak Output Power (Channel 39)**



## 3.4 Power Spectral Density

### 3.4.1 Limit

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band at any time interval of continuous transmission.

### 3.4.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.4.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.4.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.

IRN 030 - Spectral power density (W per n.Hz) - Method 5 – Peak method PKPSD (PSD in 3 kHz band)

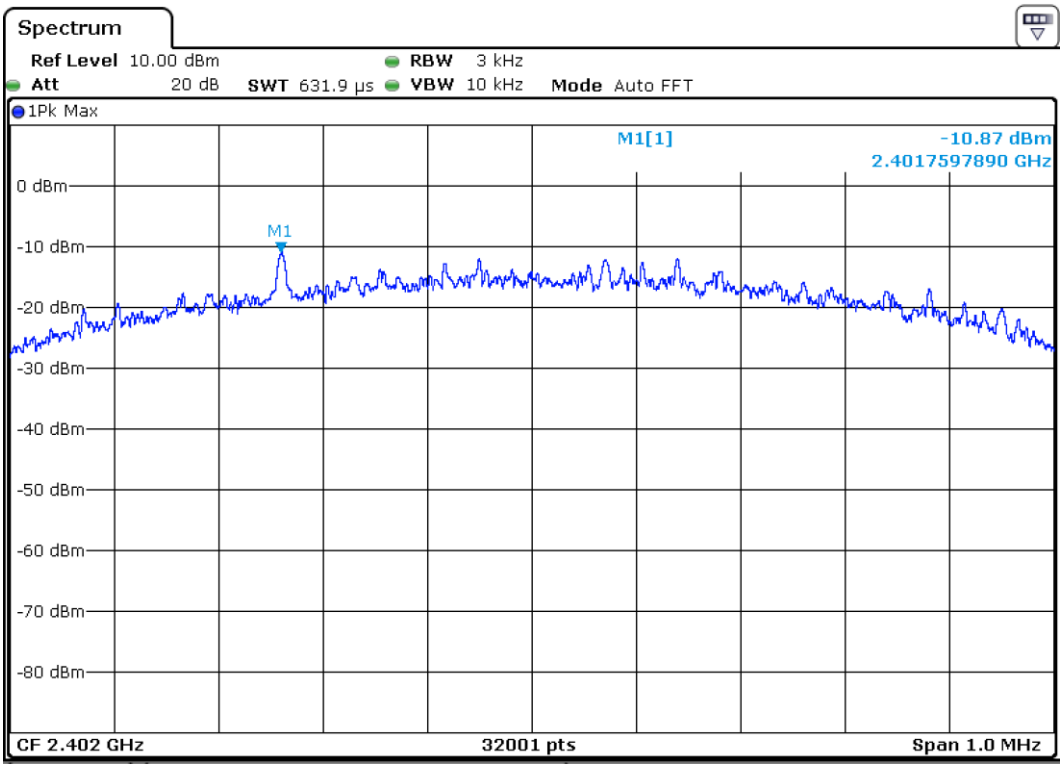
### 3.4.5 Test results of Power Spectral Density Measurement

**Peak Power spectral density**

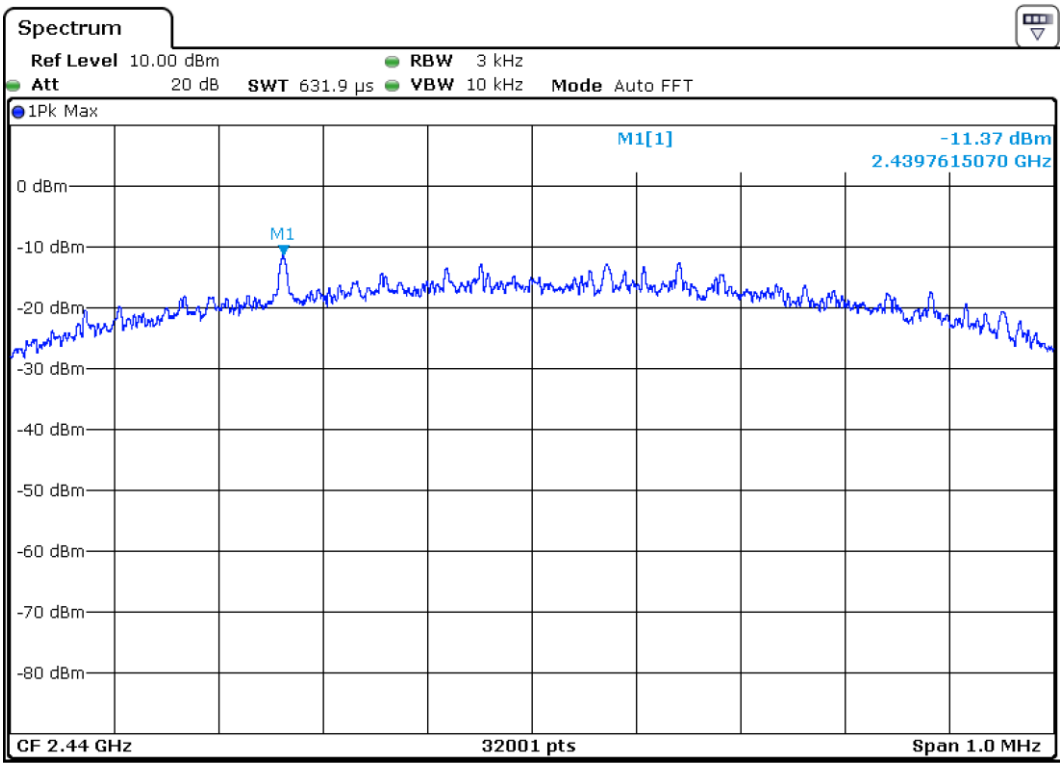
| Technology Std. | Channel | Frequency (MHz) | Data rate | PSD (dBm/3 kHz) |
|---|---|---|---|---|
| Bluetooth Low Energy | 37 | 2402 | 1 Mbps | -10.87 |
| | 18 | 2440 | 1 Mbps | -11.37 |
| | 39 | 2480 | 1 Mbps | -12.45 |
| Uncertainty | ±2 dB | | | |

### 3.4.6 Plots of the Power Spectral Density Measurements

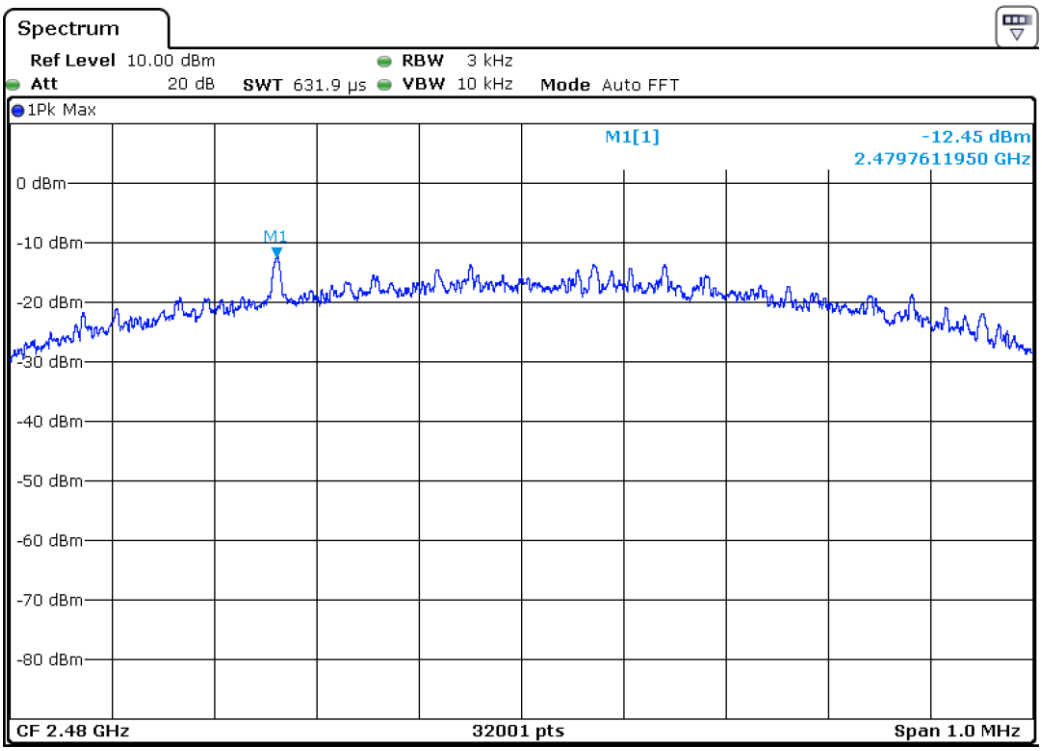
**Power Spectral Density 3 kHz (channel 37)**




**Power Spectral Density 3 kHz (channel 18)**



**Power Spectral Density 3 kHz (channel 39)**



## 3.5 Band edge Measurement

### 3.5.1 Limit

**Band edge:**
At the edge of the authorized band the RF power shall be at least 20 dB down.

### 3.5.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.5.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.5.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05, sections 11.3 and 12.1. IRN 026 - Radiated electrical disturbance (V per m) Method 6 – Radiated electrical disturbance at the Authorized band edge.

### 3.5.5 Test results of band edge measurements

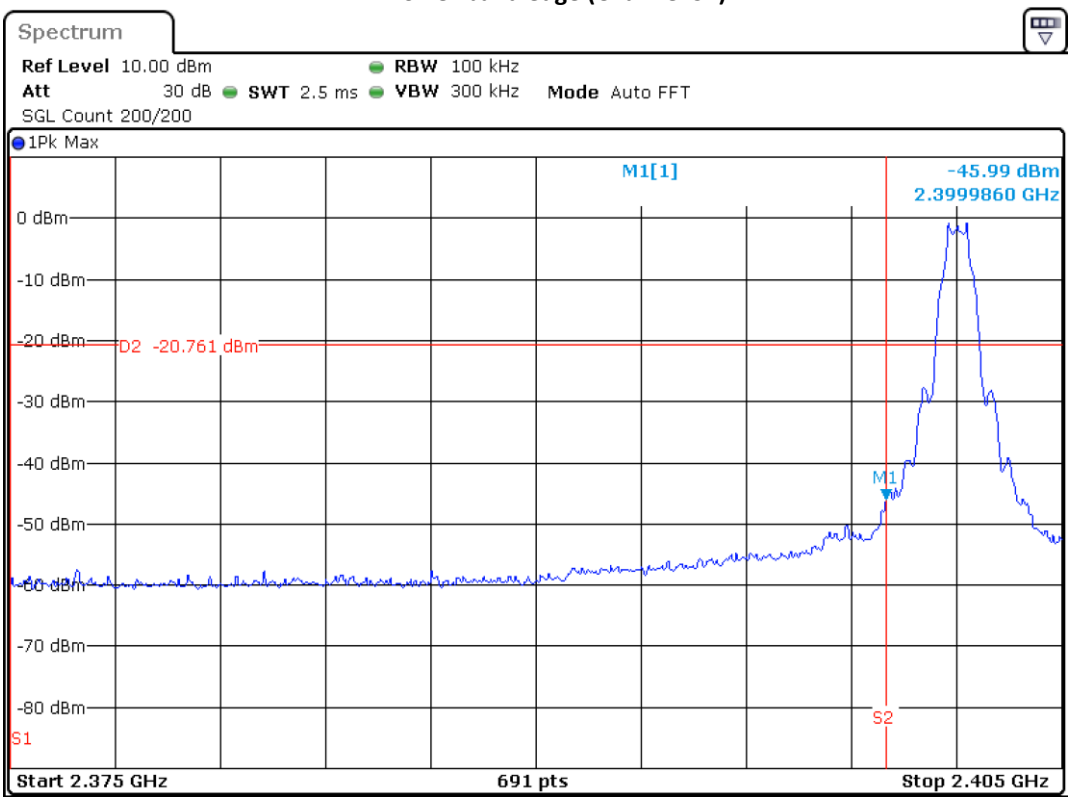
**Peak method**

| Technology Std. | Channels | Frequency (MHz) | Data rate | Attenuation (dB) |
|---|---|---|---|---|
| Bluetooth Low Energy | 37 | 2402 | 1 Mbps | -45.99 |
| | 39 | 2480 | 1 Mbps | -55.04 |
| Uncertainty | ± 5.7 dB. | | | |

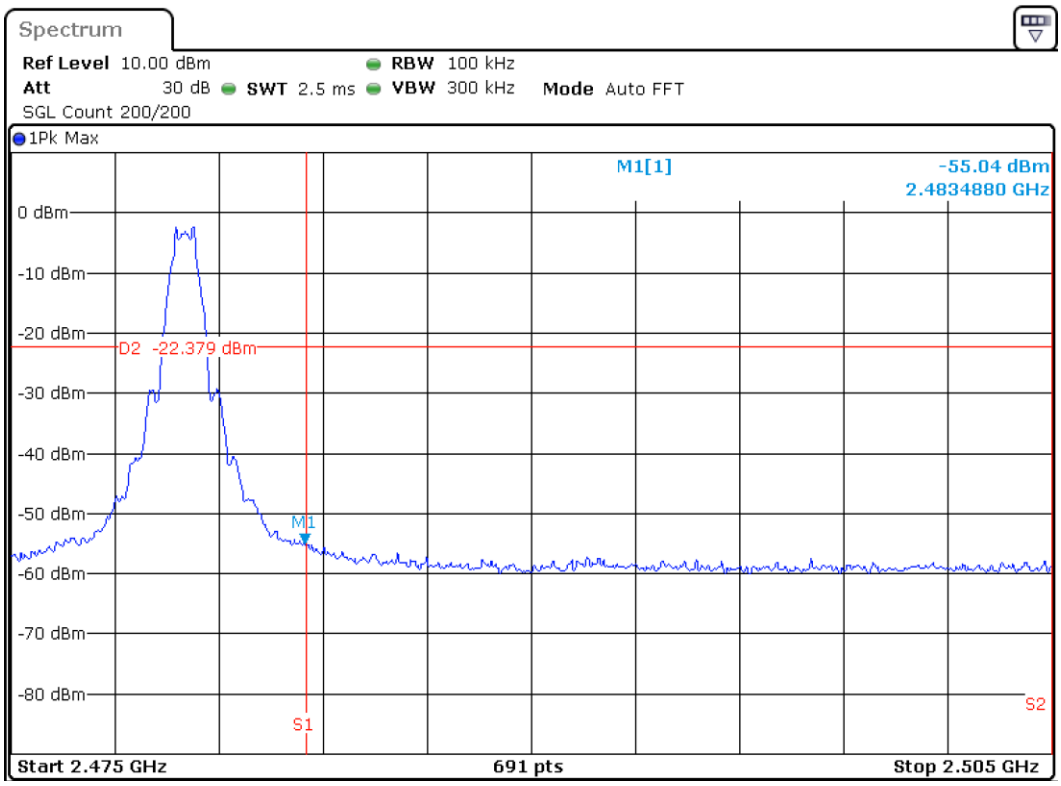
### 3.5.6 Plots of the Band edge Measurements

See next page.

**BLE Lower band edge (Channel 37)**




**BLE Upper band edge (Channel 39)**



## 3.6 Conducted emissions

### 3.6.1 Limit

According to 15.207 (c)

Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

| Frequency of emission (MHz) | Conducted limit (dBµV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15–0.5 | 66 to 56* | 56 to 46* |
| 0.5–5 | 56 | 46 |
| 5–30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

### 3.6.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

### 3.6.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

### 3.6.4 Test procedure

According to ANSI C63.4: 2014, section 13.3
IRN 029 – Method 1

### 3.6.5 Test results and plots of the AC mains conducted measurement

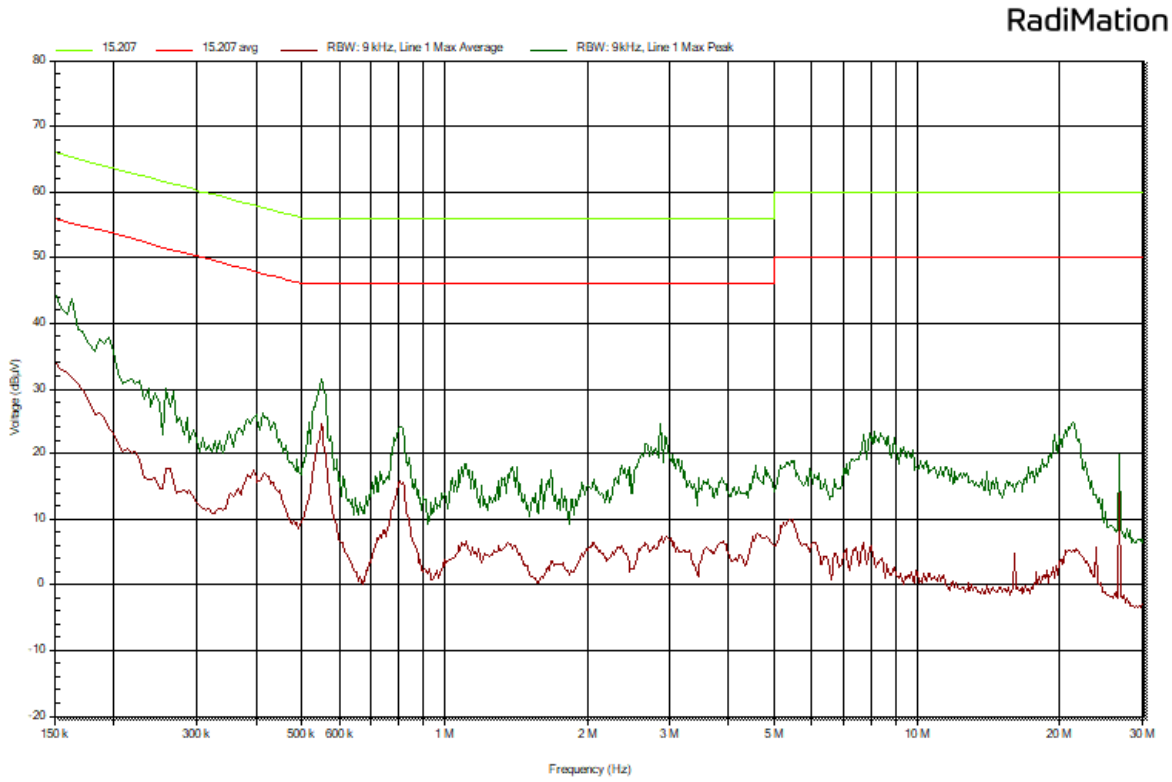
See next page.

### 3.6.6 Measurement uncertainty

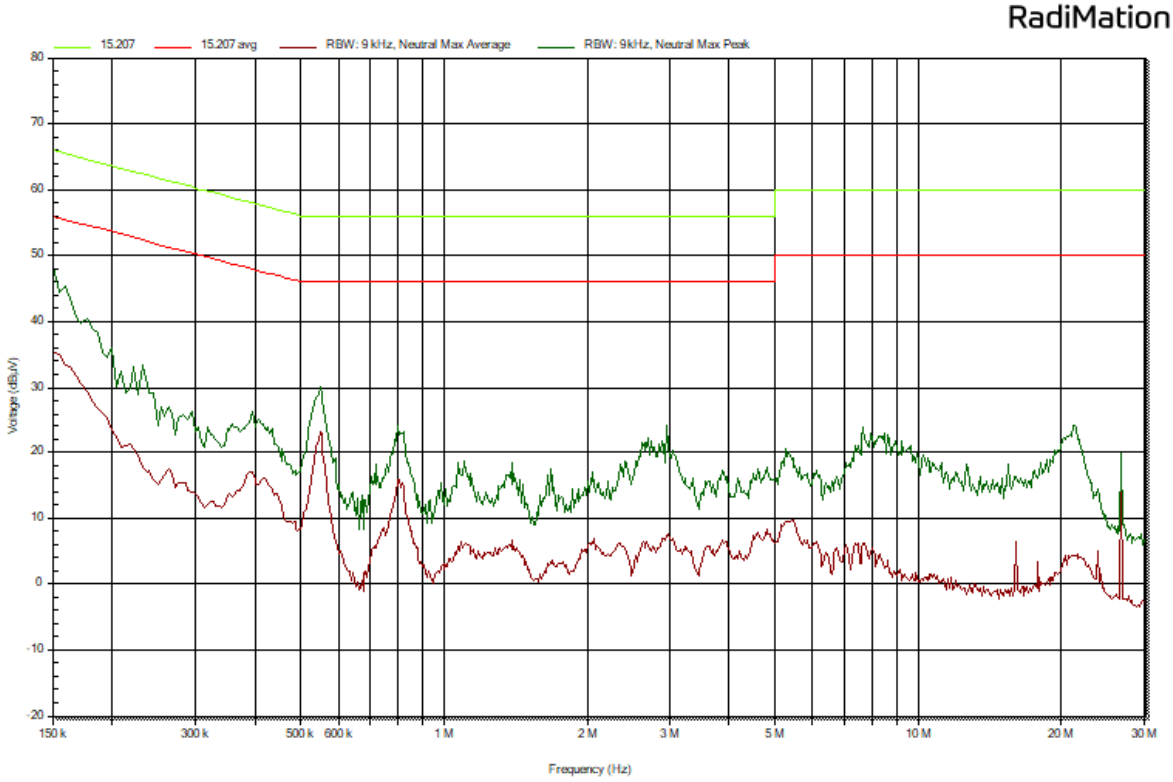
+/- 3.6 dB

### 3.6.7 Plots of the AC mains conducted spurious measurement

**Phase**




**Neutral**



# 4 Sample calculations

All formulas for data conversions and conversion factors are reported in this chapter.

Conducted emission Measurement:

$U_{lisn}$ (dBµV) = U (dBµV) + Corr. (dB)

Where:
U = Measuring receiver voltage
LISN insertion loss = Voltage division factor of LISN
Corr. = sum of single correction factors of used LISN, cables and pulse limiter.
Linear interpolation will be used for frequencies in between the values in the table.

| **Frequency (Mhz)** | **Voltage division LISN (db)** | **Insertion Loss Pulse limiter (dB)** | **Cable loss (dB)** | **Corr. (dB)** |
|---|---|---|---|---|
| | **TE 00208 SN: 892785/004 Rohde & Schwarz ESH3-Z5** | **TE 00756 SN: 5SM03153 Rohde & Schwarz ESH3-Z2** | **TE 11134** | |
| 0,15 | 0,09 | 9,87 | 0,02 | 9,98 |
| 0,2 | 0,1 | 9,87 | 0,03 | 10 |
| 0,3 | 0,1 | 9,87 | 0,03 | 10 |
| 0,5 | 0,1 | 9,87 | 0,08 | 10,05 |
| 0,7 | 0,12 | 9,87 | 0,25 | 10,24 |
| 0,8 | 0,12 | 9,87 | 0,25 | 10,24 |
| 1 | 0,13 | 9,87 | 0,11 | 10,11 |
| 2 | 0,16 | 9,87 | 0,15 | 10,18 |
| 3 | 0,19 | 9,87 | 0,21 | 10,27 |
| 5 | 0,26 | 9,88 | 0,21 | 10,35 |
| 7 | 0,36 | 9,89 | 0,25 | 10,5 |
| 8 | 0,39 | 9,89 | 0,25 | 10,53 |
| 10 | 0,46 | 9,91 | 0,29 | 10,66 |
| 15 | 0,77 | 9,93 | 0,34 | 11,04 |
| 20 | 0,95 | 9,96 | 0,37 | 11,28 |
| 25 | 1,12 | 9,99 | 0,43 | 11,54 |
| 30 | 1,1 | 10,04 | 0,45 | 11,59 |

Field Strength Measurement:

E (dBµV/m) = U(dBµV) + AF (dB/m) + Corr. (dB)

Where:
E = Electric field strength
U = Measuring receiver voltage
AF = Antenna factor
CL = Cable loss

Corr. = sum of single correction factors of used cable and amplifier (if applicable).
Linear interpolation will be used for frequencies in between the values in the table.
Tables shows an extract of the values.

| **Frequency (Mhz)** | **AF (dB/m)**<br>**TE 00967**<br>**Chase CBL6112A**<br>**SN: 2308** | **Cable loss (dB)**<br>**Id: SAR cable** | **Corr. (dB)** |
|---|---|---|---|
| 30 | 18,6 | 0,68 | 19,28 |
| 100 | 10,7 | 1,15 | 11,85 |
| 150 | 10,6 | 1,41 | 12,01 |
| 200 | 9,3 | 1,63 | 10,93 |
| 250 | 12,6 | 1,93 | 14,53 |
| 300 | 13,3 | 2,12 | 15,42 |
| 350 | 14,6 | 2,2 | 16,8 |
| 400 | 15,5 | 2,29 | 17,79 |
| 450 | 16,9 | 2,53 | 19,43 |
| 500 | 17,5 | 2,67 | 20,17 |
| 550 | 18,4 | 2,9 | 21,3 |
| 600 | 18,8 | 3,02 | 21,82 |
| 650 | 19,2 | 3,09 | 22,29 |
| 700 | 19 | 3,22 | 22,22 |
| 750 | 19,8 | 3,56 | 23,36 |
| 800 | 19,7 | 3,69 | 23,39 |
| 900 | 20,4 | 3,81 | 24,21 |
| 950 | 20,8 | 3,91 | 24,71 |
| 1000 | 21,2 | 4,3 | 25,5 |

| Frequency (Mhz) | AF (dB/m)<br>TE 00531<br>Emco 3115<br>SN: 9412-4377 | Gain (dB)<br>TE 11132<br>Miteq<br>JS4-18004000-30-8P-A1 | Cable loss (dB)<br>TE 01315 | Corr. (dB) |
|---|---|---|---|---|
| 1000 | 23,6 | 40,4 | 2,0 | 66 |
| 1500 | 25,1 | 40,5 | 2,4 | 68 |
| 2000 | 27,1 | 40,5 | 2,7 | 70,3 |
| 2500 | 28,6 | 40,7 | 3,2 | 72,5 |
| 3000 | 30,5 | 40,7 | 3,2 | 74,4 |
| 3500 | 31,2 | 40,7 | 3,4 | 75,3 |
| 4000 | 32,7 | 40,9 | 4,9 | 78,5 |
| 4500 | 32,4 | 40,9 | 4,4 | 77,7 |
| 5000 | 33,2 | 40,7 | 4,6 | 78,5 |
| 5500 | 34,0 | 40,5 | 4,5 | 79 |
| 6000 | 34,6 | 40,0 | 5,2 | 79,8 |
| 6500 | 34,3 | 39,4 | 5,9 | 79,6 |
| 7000 | 35,2 | 38,6 | 5,7 | 79,5 |
| 7500 | 36,4 | 39,2 | 5,9 | 81,5 |
| 8000 | 37,0 | 38,9 | 6,3 | 82,2 |
| 8500 | 37,5 | 38,4 | 6,4 | 82,3 |
| 9000 | 38,1 | 37,4 | 6,5 | 82 |
| 9500 | 37,8 | 37,0 | 7,1 | 81,9 |
| 10000 | 38,2 | 36,5 | 7,3 | 82 |
| 10500 | 38,1 | 36,7 | 7,6 | 82,4 |
| 11000 | 38,3 | 36,9 | 8,3 | 83,5 |
| 11500 | 38,5 | 37,6 | 8,1 | 84,2 |
| 12000 | 39,1 | 38,3 | 8,4 | 85,8 |
| 12500 | 38,7 | 38,5 | 8,3 | 85,5 |
| 13000 | 39,2 | 38,9 | 9,2 | 87,3 |
| 13500 | 40,5 | 40,2 | 8,3 | 89 |
| 14000 | 41,1 | 40,0 | 8,2 | 89,3 |
| 14500 | 41,4 | 40,1 | 8,2 | 89,7 |
| 15000 | 40,2 | 41,4 | 8,3 | 89,9 |
| 15500 | 37,9 | 41,4 | 8,6 | 87,9 |
| 16000 | 37,5 | 42,8 | 9,2 | 89,5 |
| 16500 | 38,6 | 42,3 | 8,8 | 89,7 |
| 17000 | 41,1 | 43,1 | 9,4 | 93,6 |
| 17500 | 42,7 | 43,2 | 9,4 | 95,3 |
| 18000 | 44,0 | 44,2 | 9,8 | 98 |

| Frequency (Mhz) | AF (dB/m)<br>TE 00531<br>Emco 3115<br>SN: 9412-4377 | Gain (dB)<br>TE 11132<br>Miteq<br>JS4-18004000-30-8P-A1 | Cable loss (dB)<br>TE 01315 | Corr. (dB) |
|---|---|---|---|---|
| 18000 | 31,3 | 26,2 | 9,8 | 67,3 |
| 19000 | 31,5 | 26,1 | 9,6 | 67,2 |
| 20000 | 31,7 | 25,9 | 11 | 68,6 |
| 21000 | 31,9 | 24,3 | 10,7 | 66,9 |
| 22000 | 32,1 | 18,3 | 10,5 | 60,9 |
| 23000 | 32,2 | 18,9 | 10,8 | 61,9 |
| 24000 | 32,3 | 23,6 | 11,4 | 67,3 |
| 25000 | 32,4 | 24,5 | 11,6 | 68,5 |
| 26000 | 32,5 | 25,3 | 11,7 | 69,5 |