

Inter|Lab<sup>®</sup>

## FCC Measurement/Technical Report on

### OTE050 & OTE051

### Jabra Elite

FCC ID: BCE-OTE050 & BCE-OTE051  
IC ID: 2386C-OTE050 & 2386C-OTE051

**Report Reference:** MDE\_GNNET\_1606\_FCCd

**Test Laboratory:**

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**Note:**

The following test results relate only to the devices specified in this document. This report shall not be reproduced in parts without the written approval of the test laboratory.

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## **0 Summary**

### **0.1 Technical Report Summary**

#### **Type of Authorization**

Certification for an intentional radiator:  
10.6 MHz Near Field Magnetic Induction (NFMI) radio

#### **Applicable FCC Rules**

Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Ch.1 Parts 2 and 15 (10-1-15 Edition). The following subparts are applicable to the results in this test report.

#### **Part 2, Subpart J - Equipment Authorization Procedures, Certification**

#### **Part 15, Subpart C – Intentional Radiators**

- § 15.205 Restricted bands of operation
- § 15.207 Conducted limits
- § 15.209 Radiated emission limits; general requirements
- § 15.215 Additional provisions to the general radiated emission limitations

Note:  
ANSI C63.10-2013 applied

#### **Summary Test Results:**

**The EUT complied with all performed tests as listed in chapter 0.2 Measurement Summary.**

## 0.2 Measurement Summary / signatures

### 47 CFR Chapter I FCC Part 15, Subpart C §15.209

Radiated Emissions

The measurement was performed according to ANSI C63.10

| OP-Mode   | Setup    | Port      | Final Result |
|-----------|----------|-----------|--------------|
| op-mode 1 | Setup_01 | Enclosure | passed       |

### 47 CFR Chapter I FCC Part 15, Subpart C §15.209

Peak Output Power

The measurement was performed according to ANSI C63.10

| OP-Mode   | Setup    | Port      | Final Result |
|-----------|----------|-----------|--------------|
| op-mode 1 | Setup_01 | Enclosure | passed       |

#### Notes:

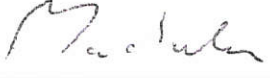
N/A = Not applicable

(1) The EUT is DC powered.

#### Revision History

| Report version control |              |  |                  |
|------------------------|--------------|--|------------------|
| Version                | Release date | Change Description                           | Version validity |
| initial                | 2016-09-27   | --   | invalid          |
| rev01                  | 2016-10-13   | Type of Authorization in Section 0.1 changed | valid            |
| rev01                  | 2016-10-13   | DAKKS Registration number changed            | valid            |

Responsible for  
Accreditation Scope:

  
Dipl.-Ing. Robert Machulec

Responsible  
for Test Report:

  
B.Sc. Jens Dörwald



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### 0.3 Administrative Data

#### 0.4 Testing Laboratory

Company Name: 7layers GmbH  
Address: Borsigstr. 11  
40880 Ratingen  
Germany

This facility has been fully described in a report submitted to the FCC and accepted under the registration number 96716.

This facility has been fully described in a report submitted to the IC and accepted under the registration number: Site# 3699A-1.

The test facility is also accredited by the following accreditation organisation:

Laboratory accreditation no: DAkKS D-PL-12140-01-00  
Responsible for accreditation scope: Dipl.-Ing. Robert Machulec

Report Template Version: 2016-08-19

#### 0.5 Project Data

Responsible for testing and report: B.Sc. Jens Dörwald  
Employees who performed the tests: documented internally at 7Layers  
Date of Report: 2016-10-13  
Testing Period: 2016-09-19 to 2016-09-22

#### 0.6 Applicant Data

Company Name: GN Audio A/S  
Address: Lautrupbjerg 7  
DK-2750 Ballerup  
Denmark

Contact Person:

#### 0.7 Manufacturer Data

Company Name: Please see applicants data  
Address:  
Contact Person:

# 1 Test object Data

## 1.1 General EUT Description

**Equipment under Test** Jabra Elite OTE050 & OTE051  
**Type Designation:** OTE050 & OTE051  
**Kind of Device:** 10.6 MHz RF Transceiver  
**Voltage Type:** DC  
**Voltage level:** 4.0 V

### General product description:

The EUT is a wireless headset with an ear to ear link between the left and right side earbud. The headset has a Bluetooth & Bluetooth low energy transceiver in the right earbud and a magnetic induction transceiver in both left and right earbud.

### The EUT provides the following ports:

| Port and interconnecting cables | Cable length | Shielded |
|---------------------------------|--------------|----------|
| -                               | -            | -        |

The main components of the EUT are listed and described in Chapter 2.

## 1.2 EUT Main components

### Type, S/N, Short Descriptions etc. used in this Test Report

| Short Description   | Equipment under Test | Type Designation | Serial No. | HW Status | SW Status | Date of Receipt |
|---|----------------------|------------------|------------|-----------|-----------|-----------------|
| EUT A (Code: DE1021017 ac01)  | Jabra Elite          | OTE050           | -          | 28-04525  | 1.0       | 2016-09-16      |
| Remarks: EUT A is equipped with an integral antenna. The EUT has no software installed. |                      |                  |            |           |           |                 |
| EUT B (Code: DE1021017 ad01)  | Jabra Elite          | OTE051           | -          | 28-04530  | 1.0       | 2016-09-16      |
| Remarks: EUT B is equipped with an integral antenna. The EUT has no software installed. |                      |                  |            |           |           |                 |

**NOTE: The short description is used to simplify the identification of the EUT in this test report.**

## 1.3 Ancillary Equipment

For the purposes of this test report, ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Ancillary Equipment can influence the test results.

| Short Description | Equipment under Test | Type Designation | Serial No. | HW Status | SW Status | FCC ID |
|-------------------|----------------------|------------------|------------|-----------|-----------|--------|
| -                 | -                    | -                | -          | -         | -         | -      |

## 1.4 Auxiliary Equipment

For the purposes of this test report, auxiliary equipment is defined as equipment which is used temporarily to enable operational and control features especially used for the tests of the EUT which is not used during normal operation or equipment that is used during the tests in combination with the EUT but is not subject of this test report. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Auxiliary Equipment can influence the test results.

| Short Description | Equipment under Test | Type Designation | Serial no. | HW Status | SW Status | FCC ID |
|-------------------|----------------------|------------------|------------|-----------|-----------|--------|
| -                 | -                    | -                | -          | -         | -         | -      |

## 1.5 EUT Setups

This chapter describes the combination of EUTs and equipment used for testing. The rationale for selecting the EUTs, ancillary and auxiliary equipment and interconnecting cables, is to test a representative configuration meeting the requirements of the referenced standards.

| Setup No. | Combination of EUTs | Description and Rationale |
|-----------|---------------------|---------------------------|
| Setup_01  | EUT A and EUT B     |                           |

## 1.6 Operating Modes

This chapter describes the operating modes of the EUTs used for testing.

| Op. Mode  | Description of Operating Modes | Remarks   |
|-----------|--------------------------------|---|
| Op-mode 1 | continuous modulation          | EUT is transmitting continuously modulated signal |

## 1.7 Special software used for testing

None

## 1.8 Product labelling

### 1.8.1. FCC ID label

FCC ID: BCE-OTE050 & BCE-OTE051

### 1.8.2. IC ID label

IC ID: 2386C-OTE050 & 2386C-OTE051

### 2.8.3 Location of the label on the EUT

Please refer to the documentation of the applicant.



## 2 Test Results

### 2.1 Spurious radiated emissions

**Standard** FCC Part 15, Subpart C

**The test was performed according to:** ANSI C63.10

#### 2.1.1. Test Description

The test set-up was made in accordance to the general provisions of ANSI C63.10 in a typical installation configuration. The Equipment Under Test (EUT) was set up on a non-conductive table 1.0 x 2.0 m<sup>2</sup> in the semi-anechoic chamber. The influence of the EUT support table that is used between 30–1000 MHz was evaluated.

The measurement procedure is implemented into the EMI test software EMC32 from R&S. Exploratory tests are performed at 3 orthogonal axes to determine the worst-case orientation of a body-worn or handheld EUT. The final test on all kind of EUTs is also performed at 3 axes. A pre-check is performed while the EUT is powered from a DC power source.

#### 1. Measurement up to 30 MHz

The Loop antenna HFH2-Z2 is used.

##### Step 1: pre measurement

- Anechoic chamber
- Antenna distance: 3 m
- Detector: Peak-Maxhold
- Frequency range: 0.009 - 0.15 MHz and 0.15 – 30 MHz
- Frequency steps: 0.05 kHz and 2.25 kHz
- IF-Bandwidth: 0.2 kHz and 9 kHz
- Measuring time / Frequency step: 100 ms (FFT-based)

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

##### Step 2: final measurement

For the relevant emissions determined in step 1, an additional measurement with the following settings will be performed. Intention of this step is to find the maximum emission level.

- Open area test side
- Antenna distance: according to the Standard
- Detector: Quasi-Peak
- Frequency range: 0.009 – 30 MHz
- Frequency steps: measurement at frequencies detected in step 1
- IF-Bandwidth: 0.2 - 10 kHz
- Measuring time / Frequency step: 1 s

#### 2. Measurement above 30 MHz and up to 1 GHz

##### Step 1: Preliminary scan

This is a preliminary test to identify the highest amplitudes relative to the limit.

Settings for step 1:

- Antenna distance: 3 m
- Detector: Peak-Maxhold / Quasipeak (FFT-based)

- Frequency range: 30 – 1000 MHz
- Frequency steps: 30 kHz
- IF-Bandwidth: 120 kHz
- Measuring time / Frequency step: 100 ms
- Turntable angle range:  $-180^{\circ}$  to  $90^{\circ}$
- Turntable step size:  $90^{\circ}$
- Height variation range: 1 – 3 m
- Height variation step size: 2 m
- Polarisation: Horizontal + Vertical

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

### **Step 2:** Adjustment measurement

In this step the accuracy of the turntable azimuth and antenna height will be improved. This is necessary to find out the maximum value of every frequency.

For each frequency, which was determined the turntable azimuth and antenna height will be adjusted. The turntable azimuth will slowly vary by  $\pm 45^{\circ}$  around this value. During this action, the value of emission is continuously measured. The turntable azimuth at the highest emission will be recorded and adjusted. In this position, the antenna height will also slowly vary by  $\pm 100$  cm around the antenna height determined. During this action, the value of emission is also continuously measured. The antenna height of the highest emission will also be recorded and adjusted.

- Detector: Peak – Maxhold
- Measured frequencies: in step 1 determined frequencies
- IF – Bandwidth: 120 kHz
- Measuring time: 100 ms
- Turntable angle range:  $\pm 45^{\circ}$  around the determined value
- Height variation range:  $\pm 100$  cm around the determined value
- Antenna Polarisation: max. value determined in step 1

### **Step 3:** Final measurement with QP detector

With the settings determined in step 3, the final measurement will be performed:

EMI receiver settings for step 4:

- Detector: Quasi-Peak ( $< 1$  GHz)
- Measured frequencies: in step 1 determined frequencies
- IF – Bandwidth: 120 kHz
- Measuring time: 1 s

After the measurement a plot will be generated this contains a diagram with the results of the preliminary scan and a chart with the frequencies and values of the results of the final measurement.

### 2.1.2. Test Requirements / Limits

FCC Part 15, Subpart C, §15.209, Radiated Emission Limits

| Frequency in MHz | Limit (μV/m)     | Measurement distance (m) | Limits (dBμV/m)    |
|------------------|------------------|--------------------------|--------------------|
| 0.009 – 0.49     | 2400/F(kHz)@300m | 3                        | (48.5 – 13.8)@300m |
| 0.49 – 1.705     | 24000/F(kHz)@30m | 3                        | (33.8 – 23.0)@30m  |
| 1.705 – 30       | 30@30m           | 3                        | 29.5@30m           |

The measured values are corrected with an inverse linear distance extrapolation factor (40 dB/decade) according FCC 15.31 (2).

| Frequency in MHz | Limit (μV/m) | Measurement distance (m) | Limits (dBμV/m) |
|------------------|--------------|--------------------------|-----------------|
| 30 – 88          | 100@3m       | 3                        | 40.0@3m         |
| 88 – 216         | 150@3m       | 3                        | 43.5@3m         |
| 216 – 960        | 200@3m       | 3                        | 46.0@3m         |
| 960 – 26000      | 500@3m       | 3                        | 54.0@3m         |
| 26000 – 40000    | 500@3m       | 1                        | 54.0@3m         |

§15.35(b) ..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor:  $\text{Limit (dB}\mu\text{V/m)} = 20 \log (\text{Limit } (\mu\text{V/m})/1\mu\text{V/m})$

### 2.1.3. Test Protocol

Temperature: 27 °C  
Air Pressure: 1012 hPa  
Humidity: 36 %

#### 2.1.3.1. Measurement up to 30 MHz

| Op. Mode  | Setup    | Port      |
|-----------|----------|-----------|
| op-mode 1 | Setup_01 | Enclosure |

| Polarisation | Frequency MHz | Corrected value dB $\mu$ V/m |      |    | Limit dB $\mu$ V/m | Limit dB $\mu$ V/m | Limit dB $\mu$ V/m | Delta to limit dB | Delta to limit dB |
|--------------|---------------|------------------------------|------|----|--------------------|--------------------|--------------------|-------------------|-------------------|
|              |               | QP                           | Peak | AV | QP                 | Peak               | AV                 | QP/Peak           | AV                |
| -            | -             | -                            | -    | -  | -                  | -                  | -                  | -                 | -                 |

Remark: No relevant spurious emissions in the range 20 dB below the limit found, therefore step 2 was not performed.  
Please see annex for the measurement plots.

#### 2.1.3.2. Measurement above 30 MHz

| Op. Mode  | Setup    | Port      |
|-----------|----------|-----------|
| op-mode 1 | Setup_01 | Enclosure |

| Polarisation | Frequency MHz | Corrected value dB $\mu$ V/m |      |    | Limit dB $\mu$ V/m | Limit dB $\mu$ V/m | Limit dB $\mu$ V/m | Delta to limit dB | Delta to limit dB |
|--------------|---------------|------------------------------|------|----|--------------------|--------------------|--------------------|-------------------|-------------------|
|              |               | QP                           | Peak | AV | QP                 | Peak               | AV                 | QP/Peak           | AV                |
| -            | -             | -                            | -    | -  | -                  | -                  | -                  | -                 | -                 |

Remarks: No relevant spurious emissions in the range 20 dB below the limit found, therefore step 2 was not performed.  
Please see annex for the measurement plots.

#### 2.1.4. Test result: Spurious radiated emissions

| FCC Part 15, Subpart C | Op. Mode  | Result |
|------------------------|-----------|--------|
|                        | op-mode 1 | passed |

## 2.2 Peak power output

**Standard** FCC Part 15, Subpart C

**The test was performed according to:** ANSI C63.10

### 3.2.1 Test Description

Please refer to sub-clause 2.1.1.

### 3.2.2 Test Limits

Please refer to sub-clause 2.1.2.

### 3.2.3 Test Protocol

Temperature: 23 °C  
 Air Pressure: 1012 hPa  
 Humidity: 36 %

| Op. Mode  | Setup    | Port      |
|-----------|----------|-----------|
| op-mode 1 | Setup_01 | Enclosure |

| Output power dB $\mu$ V/m | Frequency MHz | Limit dB $\mu$ V/m at fundamental frequency for 10 m distance | Remarks  |
|---------------------------|---------------|---|--|
| <-8.86                    | 10.6          | -   | Maximum radiated field strength at fundamental frequency |

Note: The EUT transmitted a continuously modulated signal.

Remark: Please see annex for the measurement plots.

Comment:

The Peak power output is not measurable in a distance of 3m, because the output power level is below the noise level of the testsystem, therefore no measurement value is reported.

### 3.2.4 Test result: Peak power output

| FCC Part 15, Subpart C | Op. Mode  | Result |
|------------------------|-----------|--------|
|                        | op-mode 1 | passed |

### 3 Measurement uncertainty

| Test Case                   | Parameter           | Uncertainty             |
|-----------------------------|---------------------|-------------------------|
| Peak power output           | Power               | ± 4.5 dB                |
| Occupied bandwidth          | Power<br>Frequency: | ± 4.5 dB<br>± 0.125 kHz |
| Spurious radiated emissions | Power<br>Frequency: | ± 4.5 dB<br>± 11.2 kHz  |

### 4 Test equipment

#### 1 Radiated Emissions

Lab to perform radiated emission tests

| Ref.No. | Device Name                   | Description                                   | Manufacturer                      | Serial Number          | Calibration Due |
|---------|-------------------------------|---|-----------------------------------|------------------------|-----------------|
| 1.1     | Fully Anechoic Room           | 8.80m x 4.60m x 4.05m (l x w x h)             | Albatross Projects                | P26971-647-001-PRB     |                 |
| 1.2     | AM 4.0                        | Antenna mast                                  | Maturo GmbH                       | AM4.0/180/11920513     |                 |
| 1.3     | ESR 7                         | EMI Receiver / Spectrum Analyzer              | Rohde & Schwarz                   | 101424                 | 2016-11-13      |
| 1.4     | Anechoic Chamber              | 10.58 x 6.38 x 6.00 m <sup>3</sup>            | Frankonia                         | none                   | 2017-01-09      |
| 1.5     | ESIB 26                       | Spectrum Analyzer                             | Rohde & Schwarz                   | 830482/004             | 2017-12-08      |
| 1.6     | Tilt device Maturo (Rohacell) | Antrieb TD1.5-10kg                            | Maturo GmbH                       | TD1.5-10kg/024/3790709 |                 |
| 1.7     | AS 620 P                      | Antenna mast                                  | HD GmbH                           | 620/37                 |                 |
| 1.8     | NRV-Z1                        | Sensor Head A                                 | Rohde & Schwarz                   | 827753/005             | 2016-05-11      |
| 1.9     | JS4-18002600-32-5P            | Broadband Amplifier 18 GHz - 26 GHz           | Miteq                             | 849785                 |                 |
| 1.10    | HL 562                        | Ultralog new biconicals                       | Rohde & Schwarz GmbH & Co. KG     | 830547/003             | 2018-06-30      |
| 1.11    | Opus10 THI (8152.00)          | ThermoHygro Datalogger 12 (Environ)           | Lufft Mess- und Regeltechnik GmbH | 12482                  | 2017-03-10      |
| 1.12    | HFH2-Z2                       | Loop Antenna                                  | Rohde & Schwarz GmbH & Co. KG     | 829324/006             | 2017-11-27      |
| 1.13    | FSW 43                        | Spectrum Analyzer                             | Rohde & Schwarz                   | 103779                 | 2016-11-17      |
| 1.14    | Opus10 TPR (8253.00)          | ThermoAirpressure Datalogger 13 (Environ)     | Lufft Mess- und Regeltechnik GmbH | 13936                  | 2017-02-27      |
| 1.15    | Chroma 6404                   | AC Power Source                               | Chroma ATE INC.                   | 64040001304            |                 |
| 1.16    | 3160-10                       | Standard Gain / Pyramidal Horn Antenna 40 GHz | EMCO Elektronik GmbH              | 00086675               |                 |
| 1.17    | HL 562 Ultralog               | Log.-per. Antenna                             | Rohde & Schwarz GmbH & Co. KG     | 100609                 | 2016-03-18      |
| 1.18    | HF 907                        | Double-ridged horn                            | Rohde & Schwarz GmbH & Co. KG     | 102444                 | 2018-05-11      |
| 1.19    | DE 325                        | Dreheinheit                                   | HD GmbH                           |                        |                 |

## 2 Radio lab

Lab to perform frequency bandwidth measurements

| Ref.No. | Device Name       | Description                       | Manufacturer    | Serial Number      | Calibration Due |
|---------|-------------------|-----------------------------------|-----------------|--------------------|-----------------|
| 2.1     | FSV30             | Signal Analyzer                   | Rohde & Schwarz | 103005             | 2018-02-24      |
| 2.2     | Weinschel 56-10   | 10 dB attenuator                  | Weinschel       | W3711              | -               |
| 2.3     | Weinschel 4T-10   | 10 dB attenuator                  | Weinschel       | F9401              | -               |
| 2.4     | WA1515            | 6 dB coupler                      | Weinschel       | A855               | -               |
| 2.5     | 5-4 Rev.0         | 20 dB coupler                     | -               | 07-00              | -               |
| 2.6     | ST18/SMAm/SMAm/36 | Coaxial cable (RLC-1)             | -               | Batch No. 12424    | -               |
| 2.7     | ST18/SMAm/SMAm/36 | Coaxial cable (RLC-2)             | -               | Batch No. 625905   | -               |
| 2.8     | ST18/SMAm/Nm/48   | Coaxial cable (RL-RX spuri cable) | -               | Batch No. 625626   | -               |
| 2.9     | 7006-1            | DC blocker                        | Weinschel       | W0026              | -               |
| 2.10    | NGSM 32/10        | DC power supply                   | Rohde & Schwarz | 2725               | 2017-06-22      |
| 2.11    | OPUS 10           | Thermo-Hydrometer                 | Lufft           | 12482              | 2017-03-10      |
| 2.12    | 177               | Digital Voltmeter                 | Fluke           | 86670383           | 2018-02-03      |
| 2.13    | VT4002            | Temperature Chamber               | Vötsch          | 585660021<br>50010 | 2018-03-08      |

## 5 Antenna Factors, Cable Loss and Sample Calculations

This chapter contains the antenna factors with their corresponding path loss of the used measurement path for all antennas as well as the insertion loss of the LISN.

### 5.1 LISN R&S ESH3-Z5 (150 kHz – 30 MHz)

| Frequency<br>MHz | Corr.<br>dB | LISN<br>insertion<br>loss<br>ESH3-<br>Z5<br>dB | cable<br>loss<br>(incl. 10<br>dB<br>atten-<br>uator)<br>dB |
|------------------|-------------|--|--|
| 0,15             | 10,1        | 0,1  | 10,0   |
| 5                | 10,3        | 0,1  | 10,2   |
| 7                | 10,5        | 0,2  | 10,3   |
| 10               | 10,5        | 0,2  | 10,3   |
| 12               | 10,7        | 0,3  | 10,4   |
| 14               | 10,7        | 0,3  | 10,4   |
| 16               | 10,8        | 0,4  | 10,4   |
| 18               | 10,9        | 0,4  | 10,5   |
| 20               | 10,9        | 0,4  | 10,5   |
| 22               | 11,1        | 0,5  | 10,6   |
| 24               | 11,1        | 0,5  | 10,6   |
| 26               | 11,2        | 0,5  | 10,7   |
| 28               | 11,2        | 0,5  | 10,7   |
| 30               | 11,3        | 0,5  | 10,8   |

#### Sample calculation

$$U_{\text{LISN}} \text{ (dB } \mu\text{V)} = U \text{ (dB } \mu\text{V)} + \text{Corr. (dB)}$$

U = Receiver reading

LISN Insertion loss = Voltage Division Factor of LISN

Corr. = sum of single correction factors of used LISN, cables, switch units (if used)

Linear interpolation will be used for frequencies in between the values in the table.



## 5.2 Antenna R&S HFH2-Z2 (9 kHz – 30 MHz)

| Frequency<br>MHz | AF<br>HFH-Z2<br>dB (1/m) | Corr.<br>dB | cable<br>loss 1<br>(inside<br>chamber)<br>dB | cable<br>loss 2<br>(outside<br>chamber)<br>dB | cable<br>loss 3<br>(switch<br>unit)<br>dB | cable<br>loss 4<br>(to<br>receiver)<br>dB | distance<br>corr.<br>(-40 dB/<br>decade)<br>dB | d <sub>Limit</sub><br>(meas.<br>distance<br>(limit)<br>m | d <sub>used</sub><br>(meas.<br>distance<br>(used)<br>m |
|------------------|--------------------------|-------------|--|---|---|---|--|--|--|
| 0,009            | 20,50                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,01             | 20,45                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,015            | 20,37                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,02             | 20,36                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,025            | 20,38                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,03             | 20,32                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,05             | 20,35                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,08             | 20,30                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,1              | 20,20                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,2              | 20,17                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,3              | 20,14                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,49             | 20,12                    | -79,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -80  | 300  | 3  |
| 0,490001         | 20,12                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 0,5              | 20,11                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 0,8              | 20,10                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 1                | 20,09                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 2                | 20,08                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 3                | 20,06                    | -39,6       | 0,1  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 4                | 20,05                    | -39,5       | 0,2  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 5                | 20,05                    | -39,5       | 0,2  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 6                | 20,02                    | -39,5       | 0,2  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 8                | 19,95                    | -39,5       | 0,2  | 0,1   | 0,1                                       | 0,1                                       | -40  | 30   | 3  |
| 10               | 19,83                    | -39,4       | 0,2  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 12               | 19,71                    | -39,4       | 0,2  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 14               | 19,54                    | -39,4       | 0,2  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 16               | 19,53                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 18               | 19,50                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 20               | 19,57                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 22               | 19,61                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 24               | 19,61                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 26               | 19,54                    | -39,3       | 0,3  | 0,1   | 0,2                                       | 0,1                                       | -40  | 30   | 3  |
| 28               | 19,46                    | -39,2       | 0,3  | 0,1   | 0,3                                       | 0,1                                       | -40  | 30   | 3  |
| 30               | 19,73                    | -39,1       | 0,4  | 0,1   | 0,3                                       | 0,1                                       | -40  | 30   | 3  |

### Sample calculation

$$E \text{ (dB } \mu\text{V/m)} = U \text{ (dB } \mu\text{V)} + \text{AF (dB 1/m)} + \text{Corr. (dB)}$$

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

distance correction =  $-40 * \text{LOG} (d_{\text{Limit}}/ d_{\text{used}})$

Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values

### 5.3 Antenna R&S HL562 (30 MHz – 1 GHz)

( $d_{Limit} = 3 \text{ m}$ )

| Frequency<br>MHz | AF<br>R&S<br>HL562<br>dB (1/m) | Corr.<br>dB | cable<br>loss 1<br>(inside<br>chamber)<br>dB | cable<br>loss 2<br>(outside<br>chamber)<br>dB | cable<br>loss 3<br>(switch<br>unit)<br>dB | cable<br>loss 4<br>(to<br>receiver)<br>dB | distance<br>corr.<br>(-20 dB/<br>decade)<br>dB | $d_{Limit}$<br>(meas.<br>distance<br>(limit))<br>m | $d_{used}$<br>(meas.<br>distance<br>(used))<br>m |
|------------------|--------------------------------|-------------|--|---|---|---|--|--|--|
| 30               | 18,6                           | 0,6         | 0,29   | 0,04  | 0,23                                      | 0,02                                      | 0,0  | 3  | 3  |
| 50               | 6,0                            | 0,9         | 0,39   | 0,09  | 0,32                                      | 0,08                                      | 0,0  | 3  | 3  |
| 100              | 9,7                            | 1,2         | 0,56   | 0,14  | 0,47                                      | 0,08                                      | 0,0  | 3  | 3  |
| 150              | 7,9                            | 1,6         | 0,73   | 0,20  | 0,59                                      | 0,12                                      | 0,0  | 3  | 3  |
| 200              | 7,6                            | 1,9         | 0,84   | 0,21  | 0,70                                      | 0,11                                      | 0,0  | 3  | 3  |
| 250              | 9,5                            | 2,1         | 0,98   | 0,24  | 0,80                                      | 0,13                                      | 0,0  | 3  | 3  |
| 300              | 11,0                           | 2,3         | 1,04   | 0,26  | 0,89                                      | 0,15                                      | 0,0  | 3  | 3  |
| 350              | 12,4                           | 2,6         | 1,18   | 0,31  | 0,96                                      | 0,13                                      | 0,0  | 3  | 3  |
| 400              | 13,6                           | 2,9         | 1,28   | 0,35  | 1,03                                      | 0,19                                      | 0,0  | 3  | 3  |
| 450              | 14,7                           | 3,1         | 1,39   | 0,38  | 1,11                                      | 0,22                                      | 0,0  | 3  | 3  |
| 500              | 15,6                           | 3,2         | 1,44   | 0,39  | 1,20                                      | 0,19                                      | 0,0  | 3  | 3  |
| 550              | 16,3                           | 3,5         | 1,55   | 0,46  | 1,24                                      | 0,23                                      | 0,0  | 3  | 3  |
| 600              | 17,2                           | 3,5         | 1,59   | 0,43  | 1,29                                      | 0,23                                      | 0,0  | 3  | 3  |
| 650              | 18,1                           | 3,6         | 1,67   | 0,34  | 1,35                                      | 0,22                                      | 0,0  | 3  | 3  |
| 700              | 18,5                           | 3,6         | 1,67   | 0,42  | 1,41                                      | 0,15                                      | 0,0  | 3  | 3  |
| 750              | 19,1                           | 4,1         | 1,87   | 0,54  | 1,46                                      | 0,25                                      | 0,0  | 3  | 3  |
| 800              | 19,6                           | 4,1         | 1,90   | 0,46  | 1,51                                      | 0,25                                      | 0,0  | 3  | 3  |
| 850              | 20,1                           | 4,4         | 1,99   | 0,60  | 1,56                                      | 0,27                                      | 0,0  | 3  | 3  |
| 900              | 20,8                           | 4,7         | 2,14   | 0,60  | 1,63                                      | 0,29                                      | 0,0  | 3  | 3  |
| 950              | 21,1                           | 4,8         | 2,22   | 0,60  | 1,66                                      | 0,33                                      | 0,0  | 3  | 3  |
| 1000             | 21,6                           | 4,9         | 2,23   | 0,61  | 1,71                                      | 0,30                                      | 0,0  | 3  | 3  |

( $d_{Limit} = 10 \text{ m}$ )

|      |      |      |      |      |      |      |       |    |   |
|------|------|------|------|------|------|------|-------|----|---|
| 30   | 18,6 | -9,9 | 0,29 | 0,04 | 0,23 | 0,02 | -10,5 | 10 | 3 |
| 50   | 6,0  | -9,6 | 0,39 | 0,09 | 0,32 | 0,08 | -10,5 | 10 | 3 |
| 100  | 9,7  | -9,2 | 0,56 | 0,14 | 0,47 | 0,08 | -10,5 | 10 | 3 |
| 150  | 7,9  | -8,8 | 0,73 | 0,20 | 0,59 | 0,12 | -10,5 | 10 | 3 |
| 200  | 7,6  | -8,6 | 0,84 | 0,21 | 0,70 | 0,11 | -10,5 | 10 | 3 |
| 250  | 9,5  | -8,3 | 0,98 | 0,24 | 0,80 | 0,13 | -10,5 | 10 | 3 |
| 300  | 11,0 | -8,1 | 1,04 | 0,26 | 0,89 | 0,15 | -10,5 | 10 | 3 |
| 350  | 12,4 | -7,9 | 1,18 | 0,31 | 0,96 | 0,13 | -10,5 | 10 | 3 |
| 400  | 13,6 | -7,6 | 1,28 | 0,35 | 1,03 | 0,19 | -10,5 | 10 | 3 |
| 450  | 14,7 | -7,4 | 1,39 | 0,38 | 1,11 | 0,22 | -10,5 | 10 | 3 |
| 500  | 15,6 | -7,2 | 1,44 | 0,39 | 1,20 | 0,19 | -10,5 | 10 | 3 |
| 550  | 16,3 | -7,0 | 1,55 | 0,46 | 1,24 | 0,23 | -10,5 | 10 | 3 |
| 600  | 17,2 | -6,9 | 1,59 | 0,43 | 1,29 | 0,23 | -10,5 | 10 | 3 |
| 650  | 18,1 | -6,9 | 1,67 | 0,34 | 1,35 | 0,22 | -10,5 | 10 | 3 |
| 700  | 18,5 | -6,8 | 1,67 | 0,42 | 1,41 | 0,15 | -10,5 | 10 | 3 |
| 750  | 19,1 | -6,3 | 1,87 | 0,54 | 1,46 | 0,25 | -10,5 | 10 | 3 |
| 800  | 19,6 | -6,3 | 1,90 | 0,46 | 1,51 | 0,25 | -10,5 | 10 | 3 |
| 850  | 20,1 | -6,0 | 1,99 | 0,60 | 1,56 | 0,27 | -10,5 | 10 | 3 |
| 900  | 20,8 | -5,8 | 2,14 | 0,60 | 1,63 | 0,29 | -10,5 | 10 | 3 |
| 950  | 21,1 | -5,6 | 2,22 | 0,60 | 1,66 | 0,33 | -10,5 | 10 | 3 |
| 1000 | 21,6 | -5,6 | 2,23 | 0,61 | 1,71 | 0,30 | -10,5 | 10 | 3 |

#### Sample calculation

$$E \text{ (dB } \mu\text{V/m)} = U \text{ (dB } \mu\text{V)} + \text{AF (dB 1/m)} + \text{Corr. (dB)}$$

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

distance correction =  $-20 * \text{LOG} (d_{Limit}/ d_{used})$

Linear interpolation will be used for frequencies in between the values in the table.

Tables show an extract of values.

### 5.4 Antenna R&S HF907 (1 GHz – 18 GHz)

| Frequency | AF R&S HF907 | Corr. |
|-----------|--------------|-------|
| MHz       | dB (1/m)     | dB    |
| 1000      | 24,4         | -19,4 |
| 2000      | 28,5         | -17,4 |
| 3000      | 31,0         | -16,1 |
| 4000      | 33,1         | -14,7 |
| 5000      | 34,4         | -13,7 |
| 6000      | 34,7         | -12,7 |
| 7000      | 35,6         | -11,0 |

| cable loss 1 (relay + cable inside chamber) | cable loss 2 (outside chamber) | cable loss 3 (switch unit, attenuator & pre-amp) | cable loss 4 (to receiver) |  |  |
|---|--------------------------------|--|----------------------------|--|--|
| dB  | dB                             | dB   | dB                         |  |  |
| 0,99  | 0,31                           | -21,51   | 0,79                       |  |  |
| 1,44  | 0,44                           | -20,63   | 1,38                       |  |  |
| 1,87  | 0,53                           | -19,85   | 1,33                       |  |  |
| 2,41  | 0,67                           | -19,13   | 1,31                       |  |  |
| 2,78  | 0,86                           | -18,71   | 1,40                       |  |  |
| 2,74  | 0,90                           | -17,83   | 1,47                       |  |  |
| 2,82  | 0,86                           | -16,19   | 1,46                       |  |  |

| Frequency | AF R&S HF907 | Corr. |
|-----------|--------------|-------|
| MHz       | dB (1/m)     | dB    |
| 3000      | 31,0         | -23,4 |
| 4000      | 33,1         | -23,3 |
| 5000      | 34,4         | -21,7 |
| 6000      | 34,7         | -21,2 |
| 7000      | 35,6         | -19,8 |

| cable loss 1 (relay inside chamber) | cable loss 2 (inside chamber) | cable loss 3 (outside chamber) | cable loss 4 (switch unit, attenuator & pre-amp) | cable loss 5 (to receiver) | used for FCC 15.247 |
|-------------------------------------|-------------------------------|--------------------------------|--|----------------------------|---------------------|
| dB                                  | dB                            | dB                             | dB   | dB                         |                     |
| 0,47                                | 1,87                          | 0,53                           | -27,58   | 1,33                       |                     |
| 0,56                                | 2,41                          | 0,67                           | -28,23   | 1,31                       |                     |
| 0,61                                | 2,78                          | 0,86                           | -27,35   | 1,40                       |                     |
| 0,58                                | 2,74                          | 0,90                           | -26,89   | 1,47                       |                     |
| 0,66                                | 2,82                          | 0,86                           | -25,58   | 1,46                       |                     |

| Frequency | AF R&S HF907 | Corr. |
|-----------|--------------|-------|
| MHz       | dB (1/m)     | dB    |
| 7000      | 35,6         | -57,3 |
| 8000      | 36,3         | -56,3 |
| 9000      | 37,1         | -55,3 |
| 10000     | 37,5         | -56,2 |
| 11000     | 37,5         | -55,3 |
| 12000     | 37,6         | -53,7 |
| 13000     | 38,2         | -53,5 |
| 14000     | 39,9         | -56,3 |
| 15000     | 40,9         | -54,1 |
| 16000     | 41,3         | -54,1 |
| 17000     | 42,8         | -54,4 |
| 18000     | 44,2         | -54,7 |

| cable loss 1 (relay inside chamber) | cable loss 2 (High Pass) | cable loss 3 (pre-amp) | cable loss 4 (inside chamber) | cable loss 5 (outside chamber) | cable loss 6 (to receiver) |
|-------------------------------------|--------------------------|------------------------|-------------------------------|--------------------------------|----------------------------|
| dB                                  | dB                       | dB                     | dB                            | dB                             | dB                         |
| 0,56                                | 1,28                     | -62,72                 | 2,66                          | 0,94                           | 1,46                       |
| 0,69                                | 0,71                     | -61,49                 | 2,84                          | 1,00                           | 1,53                       |
| 0,68                                | 0,65                     | -60,80                 | 3,06                          | 1,09                           | 1,60                       |
| 0,70                                | 0,54                     | -61,91                 | 3,28                          | 1,20                           | 1,67                       |
| 0,80                                | 0,61                     | -61,40                 | 3,43                          | 1,27                           | 1,70                       |
| 0,84                                | 0,42                     | -59,70                 | 3,53                          | 1,26                           | 1,73                       |
| 0,83                                | 0,44                     | -59,81                 | 3,75                          | 1,32                           | 1,83                       |
| 0,91                                | 0,53                     | -63,03                 | 3,91                          | 1,40                           | 1,77                       |
| 0,98                                | 0,54                     | -61,05                 | 4,02                          | 1,44                           | 1,83                       |
| 1,23                                | 0,49                     | -61,51                 | 4,17                          | 1,51                           | 1,85                       |
| 1,36                                | 0,76                     | -62,36                 | 4,34                          | 1,53                           | 2,00                       |
| 1,70                                | 0,53                     | -62,88                 | 4,41                          | 1,55                           | 1,91                       |

#### Sample calculation

$$E \text{ (dB } \mu\text{V/m)} = U \text{ (dB } \mu\text{V)} + \text{AF (dB 1/m)} + \text{Corr. (dB)}$$

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

Linear interpolation will be used for frequencies in between the values in the table.

Tables show an extract of values.

## 5.5 Antenna EMCO 3160-09 (18 GHz – 26.5 GHz)

| Frequency<br>MHz | AF<br>EMCO<br>3160-09<br>dB (1/m) | Corr.<br>dB | cable<br>loss 1<br>(inside<br>chamber)<br>dB | cable<br>loss 2<br>(pre-<br>amp)<br>dB | cable<br>loss 3<br>(inside<br>chamber)<br>dB | cable<br>loss 4<br>(switch<br>unit)<br>dB | cable<br>loss 5<br>(to<br>receiver)<br>dB |
|------------------|-----------------------------------|-------------|--|--|--|---|---|
| 18000            | 40,2                              | -23,5       | 0,72   | -35,85                                 | 6,20   | 2,81                                      | 2,65                                      |
| 18500            | 40,2                              | -23,2       | 0,69   | -35,71                                 | 6,46   | 2,76                                      | 2,59                                      |
| 19000            | 40,2                              | -22,0       | 0,76   | -35,44                                 | 6,69   | 3,15                                      | 2,79                                      |
| 19500            | 40,3                              | -21,3       | 0,74   | -35,07                                 | 7,04   | 3,11                                      | 2,91                                      |
| 20000            | 40,3                              | -20,3       | 0,72   | -34,49                                 | 7,30   | 3,07                                      | 3,05                                      |
| 20500            | 40,3                              | -19,9       | 0,78   | -34,46                                 | 7,48   | 3,12                                      | 3,15                                      |
| 21000            | 40,3                              | -19,1       | 0,87   | -34,07                                 | 7,61   | 3,20                                      | 3,33                                      |
| 21500            | 40,3                              | -19,1       | 0,90   | -33,96                                 | 7,47   | 3,28                                      | 3,19                                      |
| 22000            | 40,3                              | -18,7       | 0,89   | -33,57                                 | 7,34   | 3,35                                      | 3,28                                      |
| 22500            | 40,4                              | -19,0       | 0,87   | -33,66                                 | 7,06   | 3,75                                      | 2,94                                      |
| 23000            | 40,4                              | -19,5       | 0,88   | -33,75                                 | 6,92   | 3,77                                      | 2,70                                      |
| 23500            | 40,4                              | -19,3       | 0,90   | -33,35                                 | 6,99   | 3,52                                      | 2,66                                      |
| 24000            | 40,4                              | -19,8       | 0,88   | -33,99                                 | 6,88   | 3,88                                      | 2,58                                      |
| 24500            | 40,4                              | -19,5       | 0,91   | -33,89                                 | 7,01   | 3,93                                      | 2,51                                      |
| 25000            | 40,4                              | -19,3       | 0,88   | -33,00                                 | 6,72   | 3,96                                      | 2,14                                      |
| 25500            | 40,5                              | -20,4       | 0,89   | -34,07                                 | 6,90   | 3,66                                      | 2,22                                      |
| 26000            | 40,5                              | -21,3       | 0,86   | -35,11                                 | 7,02   | 3,69                                      | 2,28                                      |
| 26500            | 40,5                              | -21,1       | 0,90   | -35,20                                 | 7,15   | 3,91                                      | 2,36                                      |

### Sample calculation

$$E \text{ (dB } \mu\text{V/m)} = U \text{ (dB } \mu\text{V)} + \text{AF (dB 1/m)} + \text{Corr. (dB)}$$

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values.

## 5.6 Antenna EMCO 3160-10 (26.5 GHz – 40 GHz)

| Frequency<br>GHz | AF<br>EMCO<br>3160-10<br>dB (1/m) | Corr.<br>dB | cable<br>loss 1<br>(inside<br>chamber)<br>dB | cable<br>loss 2<br>(outside<br>chamber)<br>dB | cable<br>loss 3<br>(switch<br>unit)<br>dB | cable<br>loss 4<br>(to<br>receiver)<br>dB | distance<br>corr.<br>(-20 dB/<br>decade)<br>dB | d <sub>Limit</sub><br>(meas.<br>distance<br>(limit))<br>m | d <sub>used</sub><br>(meas.<br>distance<br>(used))<br>m |
|------------------|-----------------------------------|-------------|--|---|---|---|--|---|---|
| 26,5             | 43,4                              | -11,2       | 4,4  |   |   |   | -15,6  | 3   | 0,5   |
| 27,0             | 43,4                              | -11,2       | 4,4  |   |   |   | -15,6  | 3   | 0,5   |
| 28,0             | 43,4                              | -11,1       | 4,5  |   |   |   | -15,6  | 3   | 0,5   |
| 29,0             | 43,5                              | -11,0       | 4,6  |   |   |   | -15,6  | 3   | 0,5   |
| 30,0             | 43,5                              | -10,9       | 4,7  |   |   |   | -15,6  | 3   | 0,5   |
| 31,0             | 43,5                              | -10,8       | 4,7  |   |   |   | -15,6  | 3   | 0,5   |
| 32,0             | 43,5                              | -10,7       | 4,8  |   |   |   | -15,6  | 3   | 0,5   |
| 33,0             | 43,6                              | -10,7       | 4,9  |   |   |   | -15,6  | 3   | 0,5   |
| 34,0             | 43,6                              | -10,6       | 5,0  |   |   |   | -15,6  | 3   | 0,5   |
| 35,0             | 43,6                              | -10,5       | 5,1  |   |   |   | -15,6  | 3   | 0,5   |
| 36,0             | 43,6                              | -10,4       | 5,1  |   |   |   | -15,6  | 3   | 0,5   |
| 37,0             | 43,7                              | -10,3       | 5,2  |   |   |   | -15,6  | 3   | 0,5   |
| 38,0             | 43,7                              | -10,2       | 5,3  |   |   |   | -15,6  | 3   | 0,5   |
| 39,0             | 43,7                              | -10,2       | 5,4  |   |   |   | -15,6  | 3   | 0,5   |
| 40,0             | 43,8                              | -10,1       | 5,5  |   |   |   | -15,6  | 3   | 0,5   |

### Sample calculation

$$E \text{ (dB } \mu\text{V/m)} = U \text{ (dB } \mu\text{V)} + \text{AF (dB 1/m)} + \text{Corr. (dB)}$$

U = Receiver reading

AF = Antenna factor

Corr. = sum of single correction factors of used cables, switch unit, distance correction, amplifier (if applicable)

Linear interpolation will be used for frequencies in between the values in the table.

distance correction =  $-20 * \text{LOG} (d_{\text{Limit}} / d_{\text{used}})$

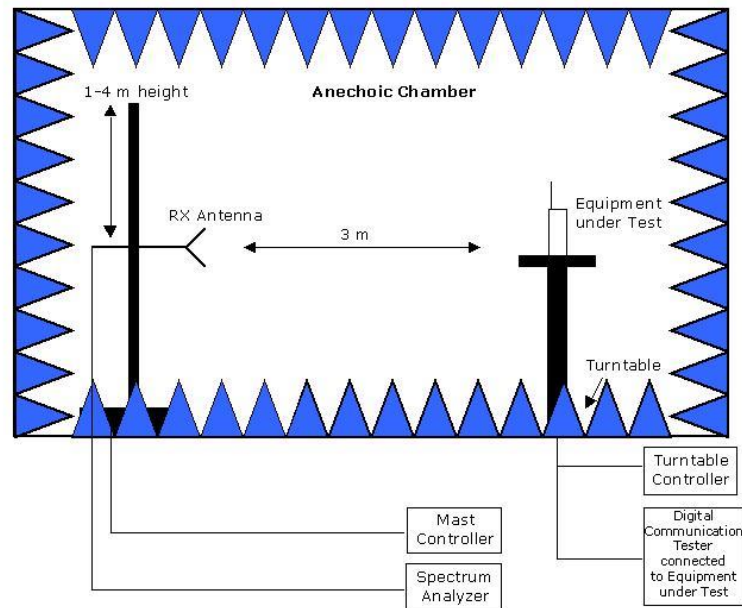
Linear interpolation will be used for frequencies in between the values in the table.

Table shows an extract of values.

## 6 Photo Report

Photos are included in an external report.

## 7 Setup Drawings



Remark: Depending on the frequency range suitable antenna types, attenuators or preamplifiers are used.

**Drawing 1:** Setup in the Anechoic chamber. For measurements below 1 GHz the ground was replaced by a conducting ground plane.

## 8 FCC and IC Correlation of measurement requirements for General Radio Equipment from FCC and IC

### General radio equipment

| Measurement  | FCC reference  | IC reference  |
|--|--|---|
| Conducted emissions on AC Mains  | § 15.207   | RSS-Gen Issue 4: 8.8  |
| Transmitter spurious radiated emissions                                    | § 15.209   | RSS-Gen Issue 4: 6.13/8.9/8.10;<br>RSS-210 Issue 8: 2.5   |
| Spurious radiated emissions below 490 kHz and restricted to emission level | § 15.201, CFR47, Part 2, Subpart J; if all emissions ≤ 40 dB below the limit listed in §15.209 | RSS-Gen Issue 4: 8.9/8.10;<br>RSS-210 Issue 8: 2.5.1;<br>RSS-310 Issue 3;<br>if all emissions ≤ 40 dB below the limit listed in RSS-Gen |
| Wanted Emission (Carrier)  | § 15.209   | RSS-210 Issue 8: 2.5.1<br>RSS-Gen Issue 4: 6.12, 8.9  |
| Other requirements, e.g. Transmitter frequency stability                   | §15.215  | RSS- Gen, Issue 4: 6.11/8.11  |
| Antenna requirement  | § 15.203 / 15.204  | RSS-Gen Issue 4: 8.3  |
| Receiver spurious emissions  | –  | RSS-210 Issue 8: 2.3;<br>RSS Gen Issue 4: 5/7 *)  |

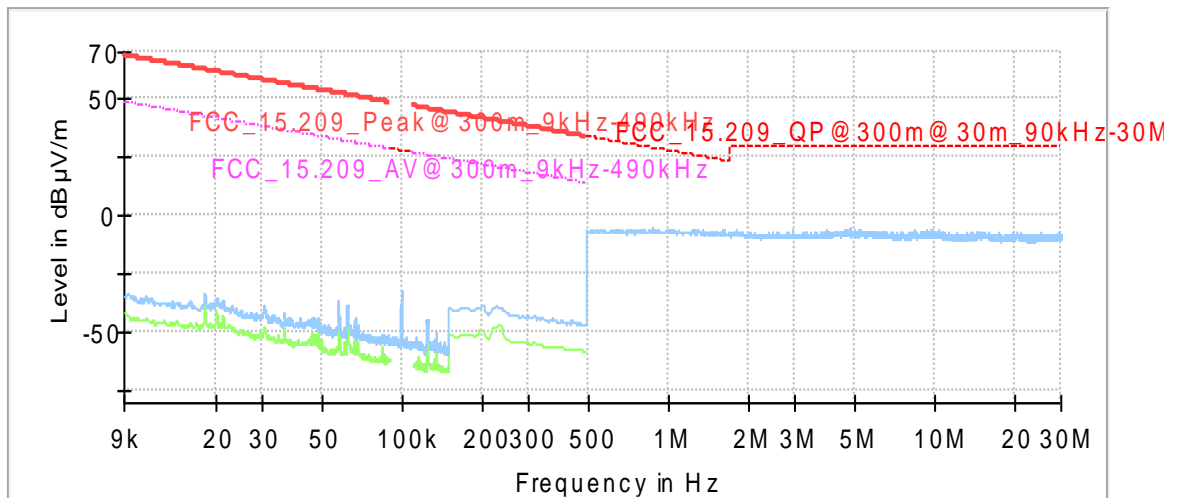
\*) Receivers are exempted from certification besides if operating in stand-alone mode in the frequency range 30–960 MHz or if these are scanner receivers.

## 9 Annex measurement plots

### 9.1 Radiated emissions and peak output power

#### 9.1.1. Spurious radiated emissions up to 30 MHz – Op-Mode 1

EUT A + EUT B





**9.1.2. Spurious radiated emissions above 30 MHz – Op\_Mode 1**

EUT A & EUT B

