



## TEST REPORT Nr. R20003601

### Federal Communication Commission (FCC)

|                                                                                                                                                                                                            |                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Report Reference No.</b> .....                                                                                                                                                                          | R20003601                                                                                            |
| Date of issue: .....                                                                                                                                                                                       | 16.10.2020                                                                                           |
| Total number pages: .....                                                                                                                                                                                  | 47                                                                                                   |
| <b>Applicant's name</b> .....                                                                                                                                                                              | Infiniteplay S.r.l.                                                                                  |
| Address .....                                                                                                                                                                                              | Giacinto Andrea Longhin, 131 – 35129 Padova (PD) – Italy                                             |
| <b>Test specification:</b>                                                                                                                                                                                 |                                                                                                      |
| Standards .....                                                                                                                                                                                            | FCC Rules & Regulations, Title 47:2019<br>Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 225 |
| Non-standard test method .....                                                                                                                                                                             | N/A                                                                                                  |
| <b>Test Report Form No.</b> .....                                                                                                                                                                          | 15_225CMC                                                                                            |
| Test Report Form(s) Originator ..                                                                                                                                                                          | CMC Centro Misure Compatibilità S.r.l.                                                               |
| Master TRF .....                                                                                                                                                                                           | 2020-05                                                                                              |
| <b>General disclaimer:</b>                                                                                                                                                                                 |                                                                                                      |
| The test results presented in this report relate only to the object tested.<br>This report shall not be reproduced, except in full, without the written approval of CMC Centro Misure Compatibilità S.r.l. |                                                                                                      |
| <b>Test item description</b> .....                                                                                                                                                                         | Outdoor entrance panel                                                                               |
| Trademark .....                                                                                                                                                                                            | IpDoor                                                                                               |
| Manufacturer .....                                                                                                                                                                                         | Infiniteplay S.r.l.                                                                                  |
| Model / Type reference .....                                                                                                                                                                               | IP220D.10                                                                                            |
| FCC ID .....                                                                                                                                                                                               | 2AX2X-IPDDP                                                                                          |
| Rating(s) .....                                                                                                                                                                                            | 24 Vdc<br>48 Vdc from PoE                                                                            |
| <b>Report</b>                                                                                                                                                                                              |                                                                                                      |
| Tested by (name + signature) .....                                                                                                                                                                         | C. Panozzo                                                                                           |
| Approved by (name + signature) .....                                                                                                                                                                       | R. Beghetto                                                                                          |



## 1 Summary

|     |                                             |    |
|-----|---------------------------------------------|----|
| 1   | Summary.....                                | 2  |
| 2   | Reference standard .....                    | 3  |
| 3   | List of attachments.....                    | 3  |
| 4   | Deviation(s) from test specification.....   | 3  |
| 5   | Testing location.....                       | 3  |
| 6   | General description of test item(s).....    | 5  |
| 6.1 | Photos of the test item .....               | 6  |
| 7   | Verdict summary section .....               | 8  |
| 8   | Test conditions .....                       | 10 |
| 8.1 | General .....                               | 10 |
| 9   | Test results .....                          | 11 |
| 9.1 | Antenna requirements .....                  | 11 |
| 9.2 | Conducted emission .....                    | 12 |
| 9.3 | Radiated emissions .....                    | 22 |
| 9.4 | Field strength with the assigned band ..... | 35 |
| 9.5 | Frequency tolerance .....                   | 39 |
| 9.6 | 20 dB bandwidth .....                       | 41 |



|                                                                                                                                                    |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <b>2 Reference standard</b>                                                                                                                        |    |
| FCC Rules and Regulation Title 47 part 15:2019                                                                                                     | -- |
| <b>3 List of attachments</b>                                                                                                                       |    |
| Attachment 1: Instruments list, measurement uncertainty, judgement of compliance and quality manual references                                     |    |
| <b>4 Deviation(s) from test specification</b>                                                                                                      |    |
| None                                                                                                                                               |    |
| <b>5 Testing location</b>                                                                                                                          |    |
| CMC Centro Misure Compatibilità S.r.l.<br>Via della Fisica, 20 – 36016 Thiene (VI) – Italy<br>Test site facility's FCC registration number: 182474 |    |

| Revision index | Date       | Change history |
|----------------|------------|----------------|
| 1.0            | 16.10.2020 | --             |



| Testing and sampling:                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of receipt of test item.....                                                                                                                                                                                                                                                                                                    | 07.01.2020                                                                                                                                                                             |
| Testing start date .....                                                                                                                                                                                                                                                                                                             | 09.10.2020                                                                                                                                                                             |
| Testing end date .....                                                                                                                                                                                                                                                                                                               | 15.10.2020                                                                                                                                                                             |
| Sampling procedure.....                                                                                                                                                                                                                                                                                                              | Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion.<br>The results relate to the sample as it has been received. |
| Internal identification.....                                                                                                                                                                                                                                                                                                         | Adhesive label with the product number P200013                                                                                                                                         |
| General remarks:                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                        |
| <p>This report shall not be reproduced, except in full, without the written approval of CMC.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>“(see appended table)”: refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> |                                                                                                                                                                                        |
| Possible test case verdicts:                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |
| Test case does not apply to the test object:                                                                                                                                                                                                                                                                                         | N/A (Not Applicable)                                                                                                                                                                   |
| Test object does meet the requirement:                                                                                                                                                                                                                                                                                               | P (Pass)                                                                                                                                                                               |
| Test object does not meet the requirement:                                                                                                                                                                                                                                                                                           | F (Fail)                                                                                                                                                                               |
| Test object does not performed:                                                                                                                                                                                                                                                                                                      | N/E (Not Executed)                                                                                                                                                                     |
| Definition of symbols used in this test report:                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report.                                                                                                                                                                                                        |                                                                                                                                                                                        |
| <input type="checkbox"/> Indicates that the listed condition, standard or equipment is not applicable for this report.                                                                                                                                                                                                               |                                                                                                                                                                                        |



## 6 General description of test item(s)

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                  |                          |                          |                          |                          |                          |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Description .....                                     | Outdoor entrance panel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                  |                          |                          |                          |                          |                          |
| Model Number .....                                    | IP220D.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                  |                          |                          |                          |                          |                          |
| FCC ID .....                                          | 2AX2X-IPDDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                  |                          |                          |                          |                          |                          |
| Serial Number .....                                   | --                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                  |                          |                          |                          |                          |                          |
| Brand name .....                                      | IpDoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                  |                          |                          |                          |                          |                          |
| Nominal frequency .....                               | 13,56 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                  |                          |                          |                          |                          |                          |
| Rated power supply .....                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Voltage and Frequency                                                            | Reference poles          |                          |                          |                          |                          |
|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                  | N                        | L1                       | L2                       | L3                       | PE                       |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | AC:                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | AC:                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                       | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DC: 24 V                                                                         |                          |                          |                          |                          | <input type="checkbox"/> |
| Software version .....                                | 1.03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                  |                          |                          |                          |                          |                          |
| General mounting position .....                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Table top equipment                                                              |                          |                          |                          |                          |                          |
|                                                       | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Wall/ceiling mounted equipment                                                   |                          |                          |                          |                          |                          |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Floor standing equipment                                                         |                          |                          |                          |                          |                          |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hand-held equipment                                                              |                          |                          |                          |                          |                          |
| Type of equipment .....                               | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Transmitter unit                                                                 |                          |                          |                          |                          |                          |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Receiver unit                                                                    |                          |                          |                          |                          |                          |
| Type of station .....                                 | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Fixed station                                                                    |                          |                          |                          |                          |                          |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Portable station                                                                 |                          |                          |                          |                          |                          |
|                                                       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mobile station                                                                   |                          |                          |                          |                          |                          |
| Operating modes .....                                 | No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operating mode of test item                                                      |                          |                          |                          |                          |                          |
|                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | TX mode, continuous transmission at 13,56 MHz                                    |                          |                          |                          |                          |                          |
|                                                       | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | TX dummy mode, continuous transmission at 13,56 MHz with 50 $\Omega$ termination |                          |                          |                          |                          |                          |
| Supplemental information to the operating modes ..... | All tests have been performed with EUT supplied from 24 Vdc because, as declared by the manufacturer, this is the power supply that provided the highest emission level. With EUT supplied from PoE, the certified WiFi module would not be enabled                                                                                                                                                                                                                                                                                                                                                  |                                                                                  |                          |                          |                          |                          |                          |
| Accessories (not part of the test item) .....         | PC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                  |                          |                          |                          |                          |                          |
|                                                       | Smartphone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                  |                          |                          |                          |                          |                          |
|                                                       | PoE power unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                  |                          |                          |                          |                          |                          |
| Declination of responsibility .....                   | <p>Components list and software/hardware version (if reported) are provided by the manufacturer. CMC Centro Misure Compatibilità S.r.l. cannot be considered responsible for these information, for any other document sent by the manufacturer and for any difference between the software version present in the tested sample and that present in the object intended for final sale.</p> <p>In some cases, the software in the tested sample is in a version dedicated exclusively to the test, and therefore does not represent the software installed in the final version of the product.</p> |                                                                                  |                          |                          |                          |                          |                          |



## 6.1 Photos of the test item







## 7 Verdict summary section

| FCC Rules & Regulations, Title 47:2019<br>Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 225 |                                       |                |         |
|------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|---------|
| Clause                                                                                               | Requirement – Test case               | Basic standard | Verdict |
| Part 15.203                                                                                          | Antenna requirements                  | --             | P       |
| Part 15.207                                                                                          | Conducted emissions                   | ANSI C63.10    | P       |
| Part 15.209                                                                                          | Radiated emissions                    | ANSI C63.10    | P       |
| Part 15.225                                                                                          | Field strength with the assigned band | ANSI C63.10    | P       |
| Part 15.225 (e)                                                                                      | Frequency tolerance                   | ANSI C63.10    | P       |
| Part 15.215                                                                                          | 20 dB bandwidth                       | ANSI C63.10    | P       |



| Normative references                           |                                                                                                                                                                  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference no.                                  | Description                                                                                                                                                      |
| FCC Rules and Regulation Title 47 part 15:2019 | --                                                                                                                                                               |
| ANSI C63.4:2014                                | American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz |
| ANSI C63.10:2013                               | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices                                                                   |





## 8 Test conditions

### 8.1 General

|                                          |                                                                                                                                                                                                                                 |                 |                             |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|
| Environmental reference conditions.....: | The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment.<br>The climatic conditions during the tests were within the following limits: |                 |                             |
|                                          | <b>Temperature</b>                                                                                                                                                                                                              | <b>Humidity</b> | <b>Atmospheric pressure</b> |
|                                          | 15 °C – 35 °C                                                                                                                                                                                                                   | 30 % - 60 %     | 800 hPa – 1060 hPa          |
|                                          | If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.                                                                        |                 |                             |
| Measurement uncertainties .....          | Attachment 1                                                                                                                                                                                                                    |                 |                             |



## 9 Test results

### 9.1 Antenna requirements

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Tested by .....                     | C. Panozzo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| Test date .....                     | 09.10.2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| Reference standards .....           | FCC Rules and Regulation; Titles 47 Part. 15.203 and 15.204                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Test specification .....            | <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded</p> |                  |
| Antenna type.....                   | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Integral antenna |
|                                     | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | External antenna |
| Antenna gain.....                   | 0 dBi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| External R.F. power amplifier ..... | Not Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |



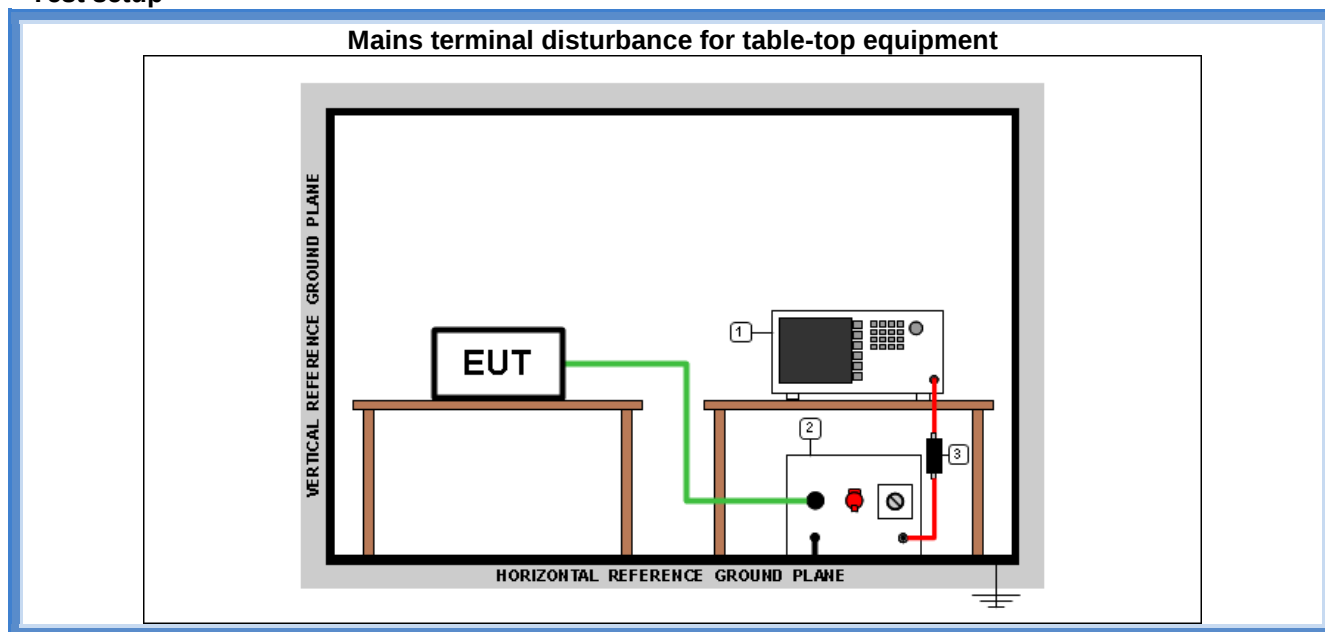
## 9.2 Conducted emission

|                                             |                                                                         |                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | C. Panozzo                                                              |                                                                                                              |
| Test date .....                             | 10.10.2020                                                              |                                                                                                              |
| Test location (stand) .....                 | Shielded chamber (CMC A001)                                             |                                                                                                              |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.207<br>ANSI C63.10 cl. 6.2 |                                                                                                              |
| Test set-up description .....               | <input checked="" type="checkbox"/>                                     | Table top equipment set-up (80 cm above the reference ground plane)                                          |
|                                             | <input type="checkbox"/>                                                | Floor standing equipment set-up (insulating material up to 12 mm thick)                                      |
|                                             | <input type="checkbox"/>                                                | False floor installation equipment set-up (insulating material up to 34 cm above the reference ground plane) |
| Supplementary Test set-up description ..... | --                                                                      |                                                                                                              |
| Test method applied .....                   | <input checked="" type="checkbox"/>                                     | Artificial mains network, 50 $\mu$ H/50 $\Omega$ LISN                                                        |
|                                             | <input type="checkbox"/>                                                | Other:                                                                                                       |

### Acceptance limits

| Frequency range (MHz) | $\text{dB}(\mu\text{V})$ Quasi-peak | $\text{dB}(\mu\text{V})$ Average |
|-----------------------|-------------------------------------|----------------------------------|
| 0,15 to 0,50          | 66 to 56                            | 56 to 46                         |
| 0,5 to 5              | 56                                  | 46                               |
| 5 to 30               | 60                                  | 50                               |

## Test setup



Test setup PE001\_01

| Test setup PE001_01 |            |                 |           |                        |
|---------------------|------------|-----------------|-----------|------------------------|
| Nr.                 | Id. Number | Manufacturer    | Model     | Description            |
| 3                   | CMC S010   | Rohde & Schwarz | ESH3-Z2   | Pulse limiter          |
| 2                   | CMC S200   | Schwarzbeck     | NSLK 8128 | V-LISN                 |
| 1                   | CMC S206   | Rohde & Schwarz | ESCI 7    | EMC Receiver 9KHz-7GHz |

## Result

| Line | Frequency Range (MHz) | Graphs    | Remarks                       | Result |
|------|-----------------------|-----------|-------------------------------|--------|
| N    | 0,15 – 30             | G20003610 | TX mode                       | P      |
| L1   | 0,15 – 30             | G20003611 | TX mode                       | P      |
| L1   | 0,15 – 30             | G20003612 | TX mode with 50 Ω termination | P      |
| N    | 0,15 – 30             | G20003613 | TX mode with 50 Ω termination | P      |

**Remarks:** tests performed on 120 Vac side of AC/DC power unit, peaks above the limits at 13,56 MHz are due to the main transmitting frequency

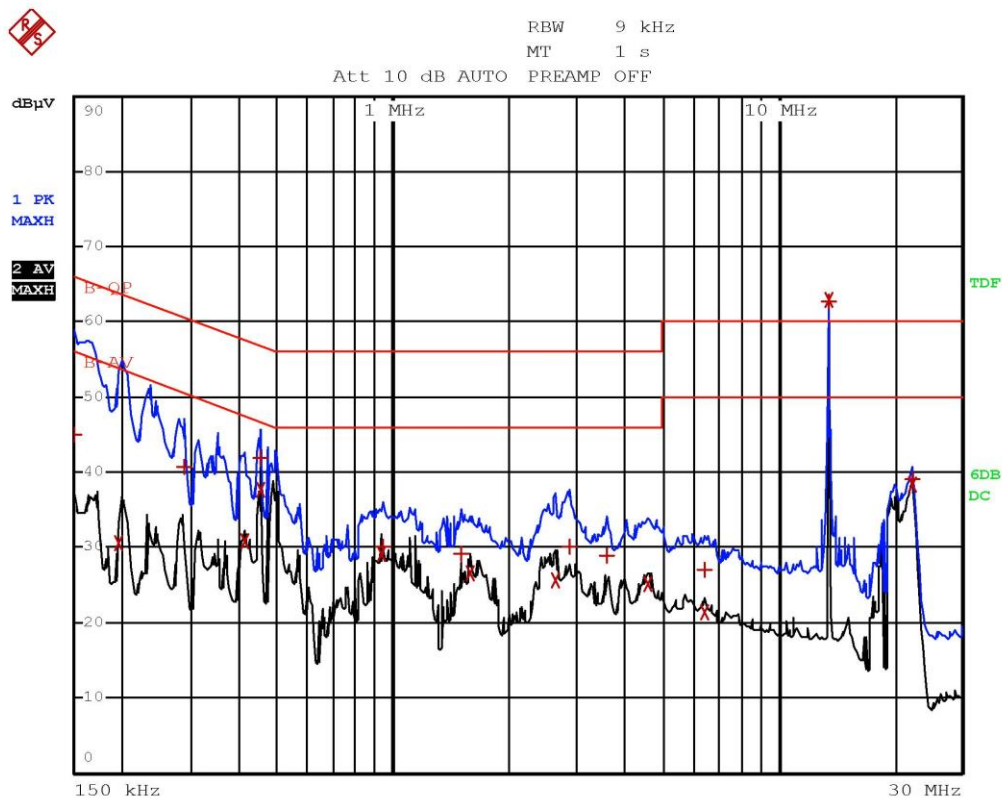
### Graphs Legend

PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +

AV: Average; AV [1s] (average at 1 second) values are marked with a X



## Graphs

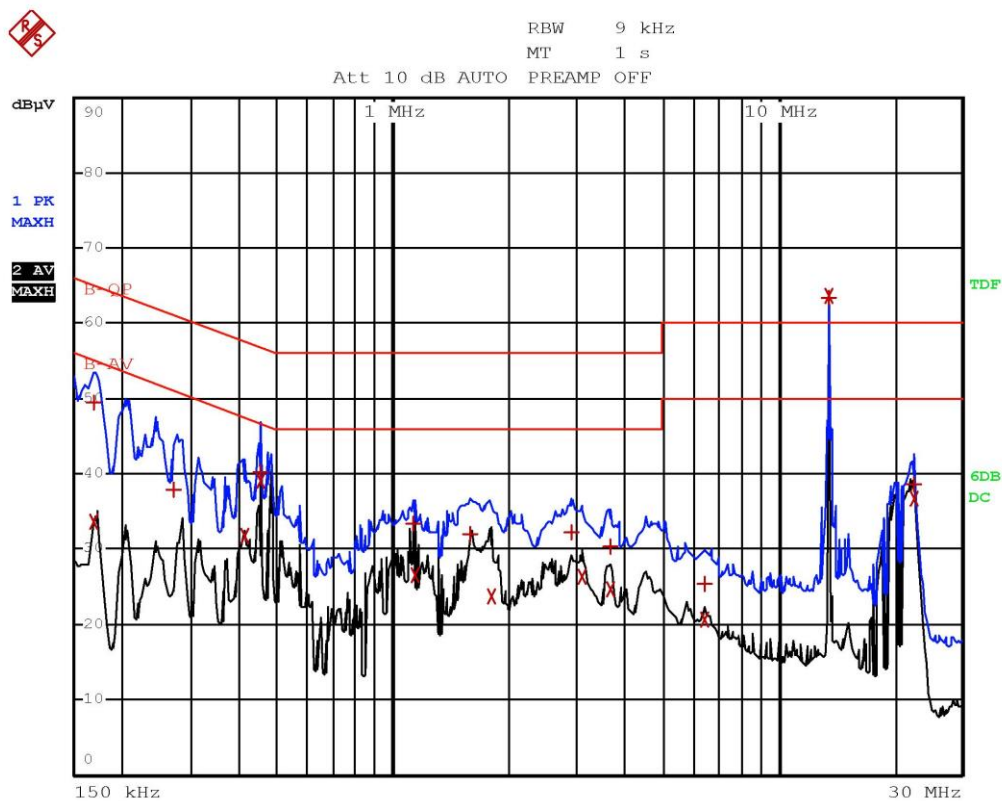


Panozzo 20003610 Line N TX/RX



| EDIT PEAK LIST (Final Measurement Results) |            |            |                |  |
|--------------------------------------------|------------|------------|----------------|--|
| Trace1:                                    | B-QP       |            |                |  |
| Trace2:                                    | B-AV       |            |                |  |
| Trace3:                                    | ---        |            |                |  |
| TRACE                                      | FREQUENCY  | LEVEL dBpV | DELTA LIMIT dB |  |
| 1 Quasi Peak                               | 150 kHz    | 45.00      | -20.99         |  |
| 2 Average                                  | 198 kHz    | 30.64      | -23.05         |  |
| 1 Quasi Peak                               | 286 kHz    | 40.83      | -19.80         |  |
| 2 Average                                  | 410 kHz    | 30.93      | -16.71         |  |
| 1 Quasi Peak                               | 454 kHz    | 41.93      | -14.86         |  |
| 2 Average                                  | 454 kHz    | 37.56      | -9.23          |  |
| 2 Average                                  | 938 kHz    | 29.24      | -16.76         |  |
| 1 Quasi Peak                               | 946 kHz    | 30.16      | -25.83         |  |
| 1 Quasi Peak                               | 1.51 MHz   | 29.18      | -26.81         |  |
| 2 Average                                  | 1.594 MHz  | 26.52      | -19.47         |  |
| 2 Average                                  | 2.634 MHz  | 25.62      | -20.38         |  |
| 1 Quasi Peak                               | 2.866 MHz  | 30.02      | -25.97         |  |
| 1 Quasi Peak                               | 3.606 MHz  | 28.89      | -27.10         |  |
| 2 Average                                  | 4.57 MHz   | 25.11      | -20.88         |  |
| 2 Average                                  | 6.434 MHz  | 21.28      | -28.72         |  |
| 1 Quasi Peak                               | 6.454 MHz  | 27.00      | -32.99         |  |
| 1 Quasi Peak                               | 13.562 MHz | 62.67      | 2.67           |  |
| 2 Average                                  | 13.562 MHz | 62.90      | 12.90          |  |
| 1 Quasi Peak                               | 22.246 MHz | 39.07      | -20.92         |  |
| 2 Average                                  | 22.246 MHz | 38.33      | -11.66         |  |

Panozzo 20003610 Line N TX/RX

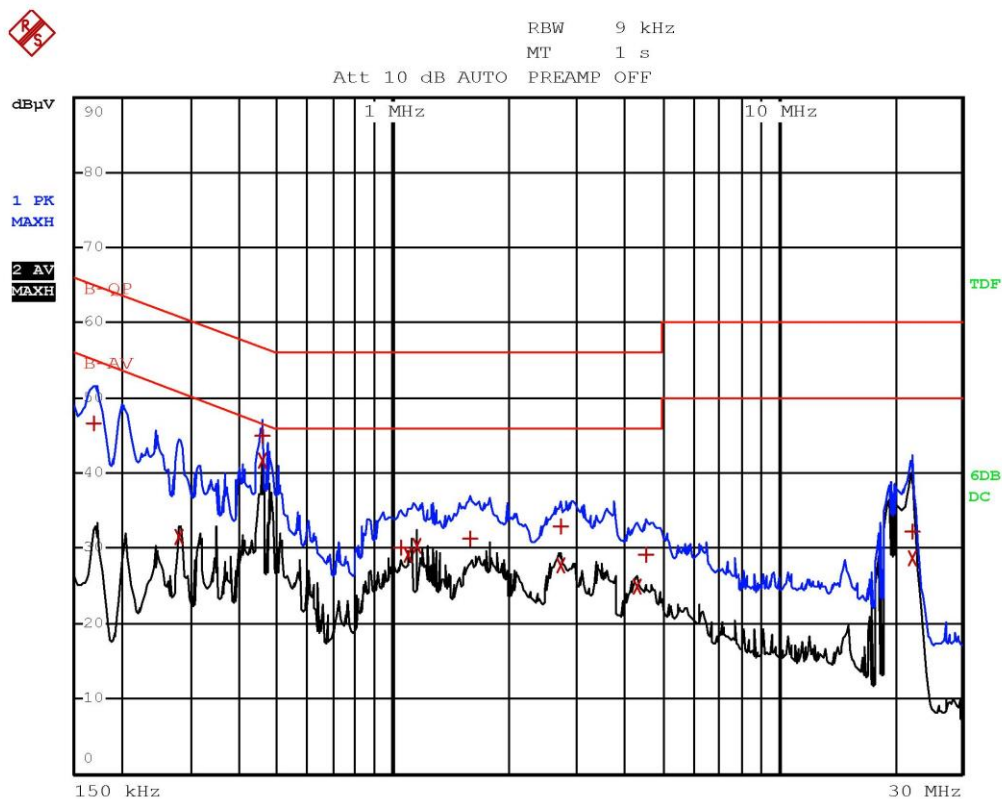


Panozzo 20003611 Line L TX/RX



| EDIT PEAK LIST (Final Measurement Results) |            |            |                |  |
|--------------------------------------------|------------|------------|----------------|--|
| Trace1:                                    | B-QP       |            |                |  |
| Trace2:                                    | B-AV       |            |                |  |
| Trace3:                                    | ---        |            |                |  |
| TRACE                                      | FREQUENCY  | LEVEL dBμV | DELTA LIMIT dB |  |
| 1 Quasi Peak                               | 170 kHz    | 49.51      | -15.44         |  |
| 2 Average                                  | 170 kHz    | 33.70      | -21.25         |  |
| 1 Quasi Peak                               | 274 kHz    | 37.90      | -23.09         |  |
| 2 Average                                  | 410 kHz    | 31.70      | -15.94         |  |
| 2 Average                                  | 450 kHz    | 39.20      | -7.67          |  |
| 1 Quasi Peak                               | 454 kHz    | 40.20      | -16.59         |  |
| 1 Quasi Peak                               | 1.134 MHz  | 33.53      | -22.46         |  |
| 2 Average                                  | 1.142 MHz  | 26.47      | -19.52         |  |
| 1 Quasi Peak                               | 1.582 MHz  | 32.07      | -23.92         |  |
| 2 Average                                  | 1.798 MHz  | 23.85      | -22.14         |  |
| 1 Quasi Peak                               | 2.922 MHz  | 32.25      | -23.74         |  |
| 2 Average                                  | 3.106 MHz  | 26.36      | -19.63         |  |
| 1 Quasi Peak                               | 3.662 MHz  | 30.46      | -25.53         |  |
| 2 Average                                  | 3.674 MHz  | 24.61      | -21.38         |  |
| 1 Quasi Peak                               | 6.426 MHz  | 25.30      | -34.69         |  |
| 2 Average                                  | 6.434 MHz  | 20.57      | -29.42         |  |
| 1 Quasi Peak                               | 13.562 MHz | 63.30      | 3.30           |  |
| 2 Average                                  | 13.562 MHz | 63.55      | 13.55          |  |
| 1 Quasi Peak                               | 22.49 MHz  | 38.59      | -21.40         |  |
| 2 Average                                  | 22.49 MHz  | 36.80      | -13.19         |  |

Panozzo 20003611 Line L TX/RX

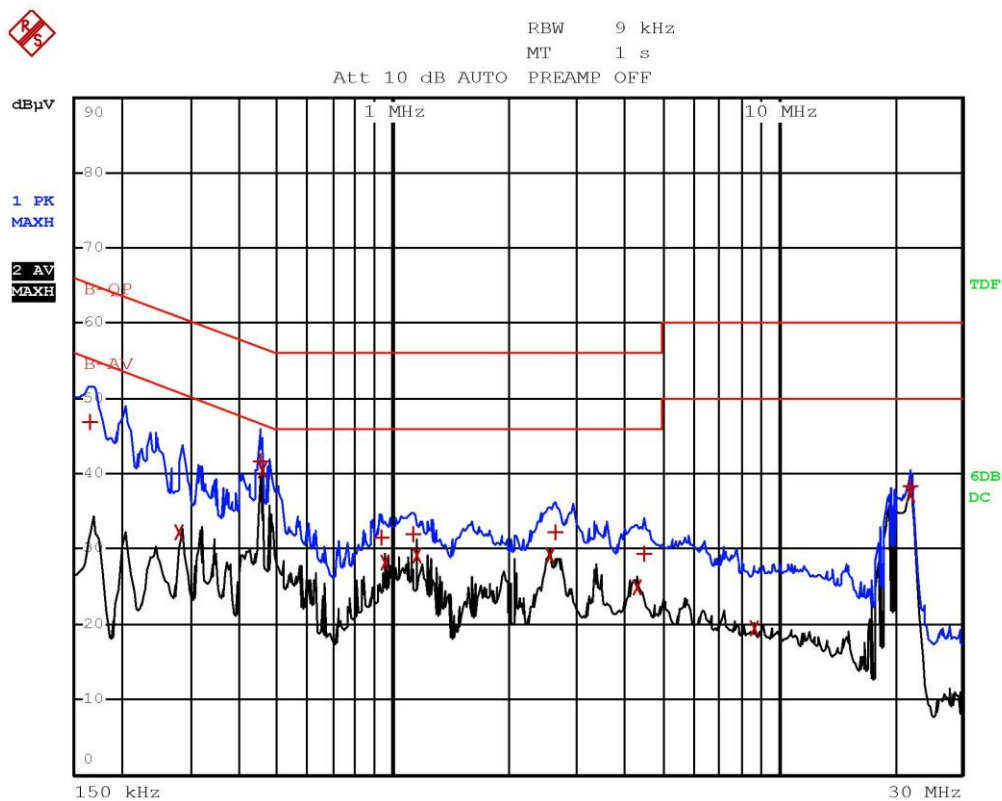


Panozzo 20003612 Line L TX/RX antenna 50 Ohm



| EDIT PEAK LIST (Final Measurement Results) |           |            |                |
|--------------------------------------------|-----------|------------|----------------|
| Trace1:                                    | B-QP      |            |                |
| Trace2:                                    | B-AV      |            |                |
| Trace3:                                    | ---       |            |                |
| TRACE                                      | FREQUENCY | LEVEL dBpV | DELTA LIMIT dB |
| 1 Quasi Peak                               | 170 kHz   | 46.58      | -18.37         |
| 2 Average                                  | 282 kHz   | 31.57      | -19.18         |
| 1 Quasi Peak                               | 458 kHz   | 44.88      | -11.83         |
| 2 Average                                  | 458 kHz   | 41.64      | -5.07          |
| 1 Quasi Peak                               | 1.046 MHz | 30.11      | -25.88         |
| 2 Average                                  | 1.09 MHz  | 29.25      | -16.74         |
| 2 Average                                  | 1.154 MHz | 30.33      | -15.66         |
| 1 Quasi Peak                               | 1.582 MHz | 31.29      | -24.71         |
| 1 Quasi Peak                               | 2.73 MHz  | 32.95      | -23.04         |
| 2 Average                                  | 2.73 MHz  | 27.83      | -18.16         |
| 2 Average                                  | 4.31 MHz  | 24.98      | -21.01         |
| 1 Quasi Peak                               | 4.566 MHz | 29.11      | -26.88         |
| 1 Quasi Peak                               | 22.35 MHz | 32.29      | -27.70         |
| 2 Average                                  | 22.35 MHz | 28.62      | -21.37         |

Panozzo 20003612 Line L TX/RX antenna 50 Ohm



Panozzo 20003613 Line N TX/RX antenna 50 Ohm



| EDIT PEAK LIST (Final Measurement Results) |            |            |                |
|--------------------------------------------|------------|------------|----------------|
| Trace1:                                    | B-QP       |            |                |
| Trace2:                                    | B-AV       |            |                |
| Trace3:                                    | ---        |            |                |
| TRACE                                      | FREQUENCY  | LEVEL dBµV | DELTA LIMIT dB |
| 1 Quasi Peak                               | 166 kHz    | 46.84      | -18.31         |
| 2 Average                                  | 282 kHz    | 32.33      | -18.41         |
| 1 Quasi Peak                               | 454 kHz    | 41.73      | -15.06         |
| 2 Average                                  | 458 kHz    | 40.61      | -6.11          |
| 1 Quasi Peak                               | 930 kHz    | 31.55      | -24.44         |
| 2 Average                                  | 950 kHz    | 28.27      | -17.73         |
| 1 Quasi Peak                               | 1.134 MHz  | 31.94      | -24.05         |
| 2 Average                                  | 1.154 MHz  | 29.15      | -16.84         |
| 2 Average                                  | 2.558 MHz  | 29.19      | -16.80         |
| 1 Quasi Peak                               | 2.646 MHz  | 32.27      | -23.73         |
| 2 Average                                  | 4.314 MHz  | 24.91      | -21.08         |
| 1 Quasi Peak                               | 4.502 MHz  | 29.48      | -26.51         |
| 2 Average                                  | 8.654 MHz  | 19.45      | -30.54         |
| 1 Quasi Peak                               | 22.122 MHz | 38.43      | -21.56         |
| 2 Average                                  | 22.122 MHz | 37.25      | -12.74         |

Panozzo 20003613 Line N TX/RX antenna 50 Ohm



### 9.3 Radiated emissions

|                                             |                                                                                           |                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | C. Panozzo                                                                                |                                                                                                              |
| Test date .....                             | 09.10.2020                                                                                |                                                                                                              |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                                                          |                                                                                                              |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.209<br>ANSI C63.10 cl. 6.3, 6.4, 6.5 and 6.6 |                                                                                                              |
| Test set-up description .....               | <input checked="" type="checkbox"/>                                                       | Table top equipment set-up (80 cm above the reference ground plane)                                          |
|                                             | <input type="checkbox"/>                                                                  | Floor standing equipment set-up (insulating material up to 12 mm thick)                                      |
|                                             | <input type="checkbox"/>                                                                  | False floor installation equipment set-up (insulating material up to 34 cm above the reference ground plane) |
| Supplementary test set-up description ..... | --                                                                                        |                                                                                                              |
| Test method applied .....                   | <input checked="" type="checkbox"/>                                                       | SAC with measurement distance [m]: 10                                                                        |
| Supplementary information .....             | --                                                                                        |                                                                                                              |

#### Acceptance limits

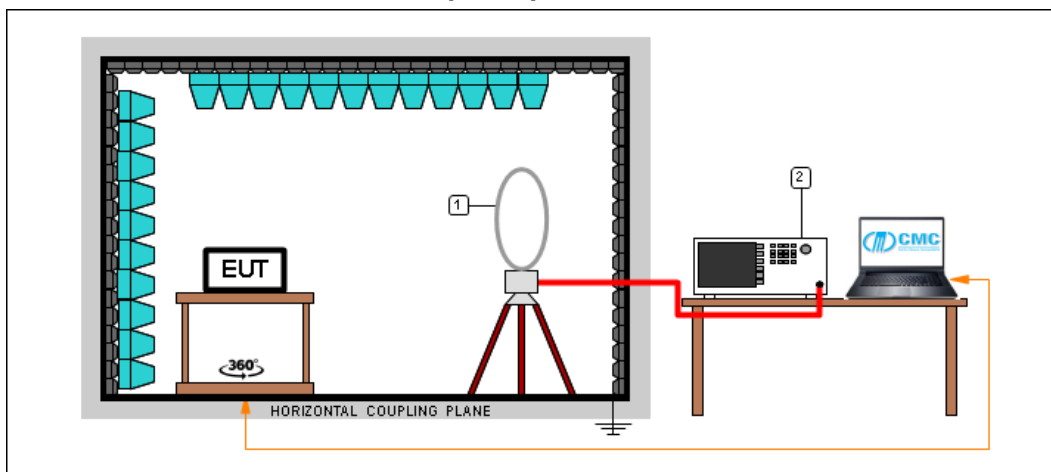
| Frequency range (MHz) | Test distance (m) | Limits [dB(μV/m)] |
|-----------------------|-------------------|-------------------|
| 0,009 to 0,490        | 300               | 48,5 to 13,8      |
| 0,490 to 1,705        | 30                | 33,8 to 22,9      |
| 1,705 to 30           | 30                | 29,5              |
| 30 to 88              | 3                 | 40                |
| 88 to 216             | 3                 | 43,5              |
| 216 to 960            | 3                 | 46,0              |
| 960 to 1000           | 3                 | 54                |

**Remarks:** The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz and 110–490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector. The results have been extrapolated to the specified distance using an extrapolation factor

| Frequency (MHz) | Test distance (m) | AV limits [dB(μV/m)] | Peak limits [dB(μV/m)] |
|-----------------|-------------------|----------------------|------------------------|
| > 1000          | 3                 | 54                   | 74                     |

## Test setup

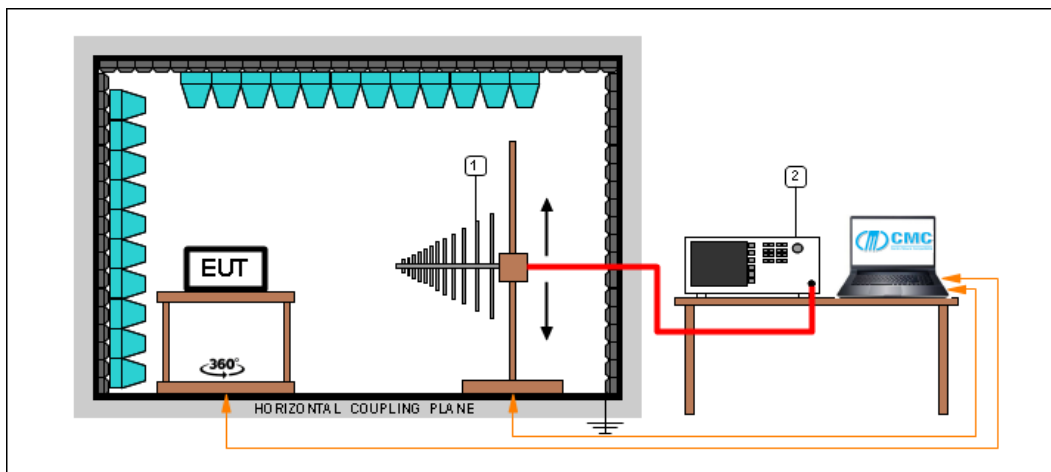
### Frequency $\leq 30$ MHz



#### Test setup PE004\_01

| Nr. | Id. Number | Manufacturer    | Model   | Description               |
|-----|------------|-----------------|---------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26   | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S127   | Schaffner       | HLA6120 | Loop Antenna 9kHz - 30MHz |

### Frequency $\leq 1$ GHz



#### Test setup PE004\_02

| Nr. | Id. Number | Manufacturer    | Model                | Description               |
|-----|------------|-----------------|----------------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26                | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S271   | Schwarzbeck     | BBA 9106 + VHBB 9124 | Broadband Antenna         |

#### Test setup PE004\_03

| Nr. | Id. Number | Manufacturer    | Model       | Description               |
|-----|------------|-----------------|-------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26       | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S287   | Schwarzbeck     | VUSLP 9111B | Broadband Antenna         |



## Result

| Polarization | Frequency Range (MHz) | Graphs    | Remarks | Result |
|--------------|-----------------------|-----------|---------|--------|
| V            | 30 – 300              | G20003601 | --      | P      |
| H            | 30 – 300              | G20003602 | --      | P      |
| H            | 300 – 1000            | G20003603 | --      | P      |
| V            | 300 – 1000            | G20003604 | --      | P      |
| Loop         | 0,009 – 30            | G20003605 | --      | P      |

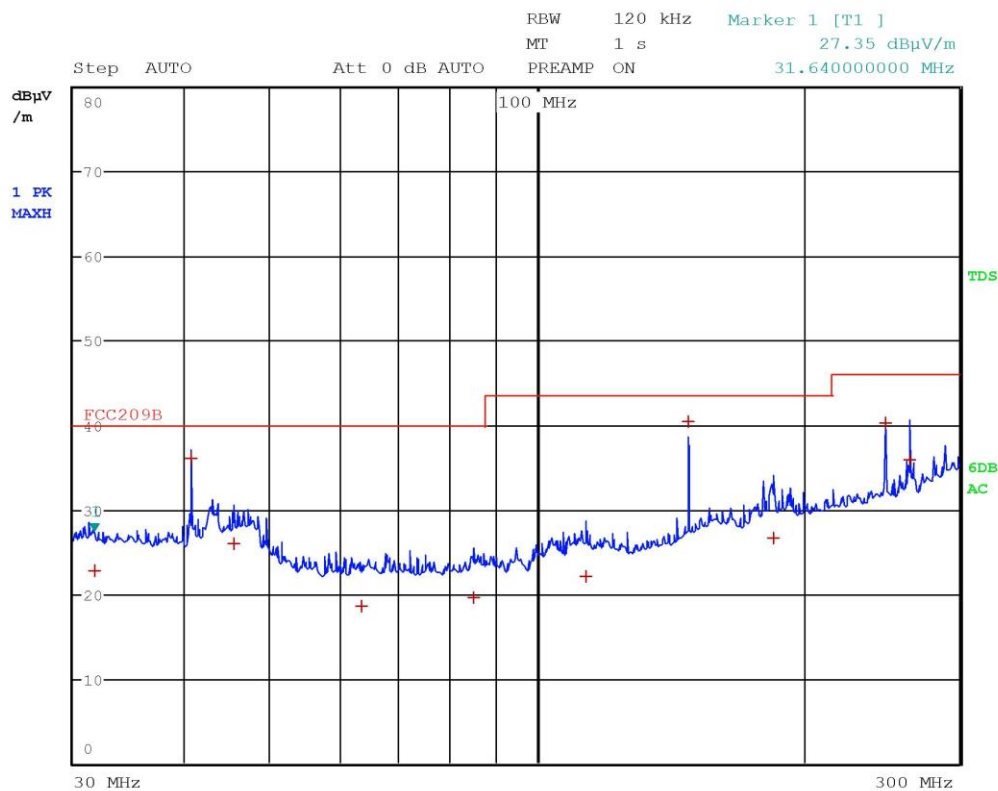
**Remarks:** EUT was tested in 3 orthogonal planes, graphs are related to the highest detected levels. Measurements at frequencies lower than 30 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor  $40\log(\text{test distance}/10)$  based on the measuring distance provided by the standard. Measurements at frequencies higher than 30 MHz and lower than 1000 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor  $20\log(\text{test distance}/10)$  based on the measuring distance provided by the standard.

### Graphs Legend

PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +  
AV: Average; AV [1s] (average at 1 second) values are marked with a X



## Graphs

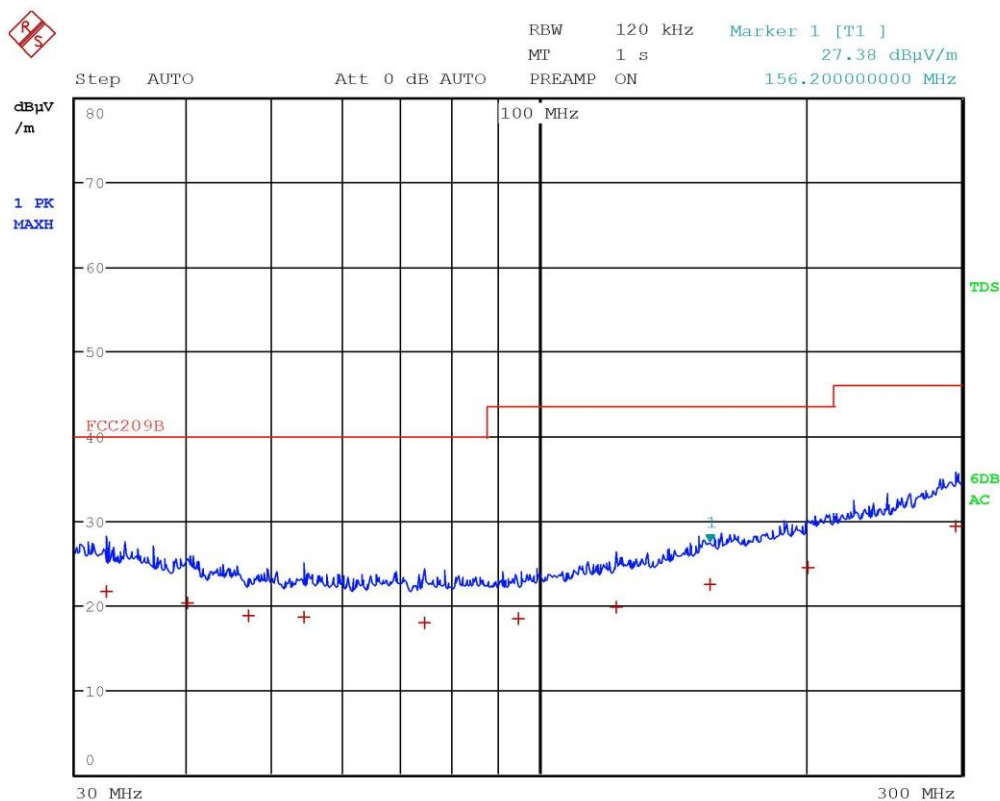


Panozzo 20003601 Vert



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 31.64 MHz  | 22.70        | -17.29         |
| 1 Quasi Peak                               | 40.68 MHz  | 36.05        | -3.94          |
| 1 Quasi Peak                               | 45.48 MHz  | 25.92        | -14.07         |
| 1 Quasi Peak                               | 63.4 MHz   | 18.57        | -21.42         |
| 1 Quasi Peak                               | 84.76 MHz  | 19.54        | -20.45         |
| 1 Quasi Peak                               | 113.72 MHz | 22.17        | -21.34         |
| 1 Quasi Peak                               | 148.48 MHz | 40.37        | -3.14          |
| 1 Quasi Peak                               | 184.76 MHz | 26.72        | -16.79         |
| 1 Quasi Peak                               | 247.48 MHz | 40.25        | -5.76          |
| 1 Quasi Peak                               | 264 MHz    | 35.86        | -10.15         |

Panozzo 20003601 Vert

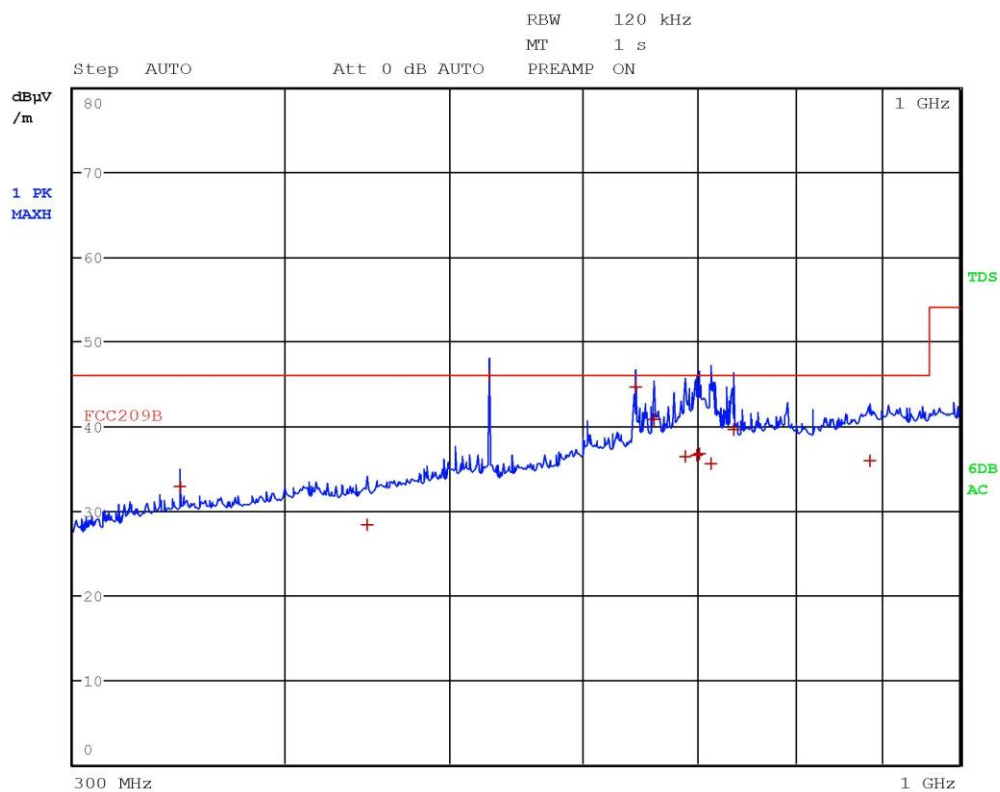


Panozzo 20003602 Horiz



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 32.44 MHz  | 21.51        | -18.48         |
| 1 Quasi Peak                               | 40.08 MHz  | 20.20        | -19.79         |
| 1 Quasi Peak                               | 47.04 MHz  | 18.68        | -21.31         |
| 1 Quasi Peak                               | 54.32 MHz  | 18.55        | -21.44         |
| 1 Quasi Peak                               | 74.28 MHz  | 17.82        | -22.17         |
| 1 Quasi Peak                               | 94.88 MHz  | 18.36        | -25.15         |
| 1 Quasi Peak                               | 122.4 MHz  | 19.71        | -23.80         |
| 1 Quasi Peak                               | 156.2 MHz  | 22.43        | -21.08         |
| 1 Quasi Peak                               | 201.68 MHz | 24.53        | -18.98         |
| 1 Quasi Peak                               | 295.68 MHz | 29.32        | -16.70         |

Panozzo 20003602 Horiz

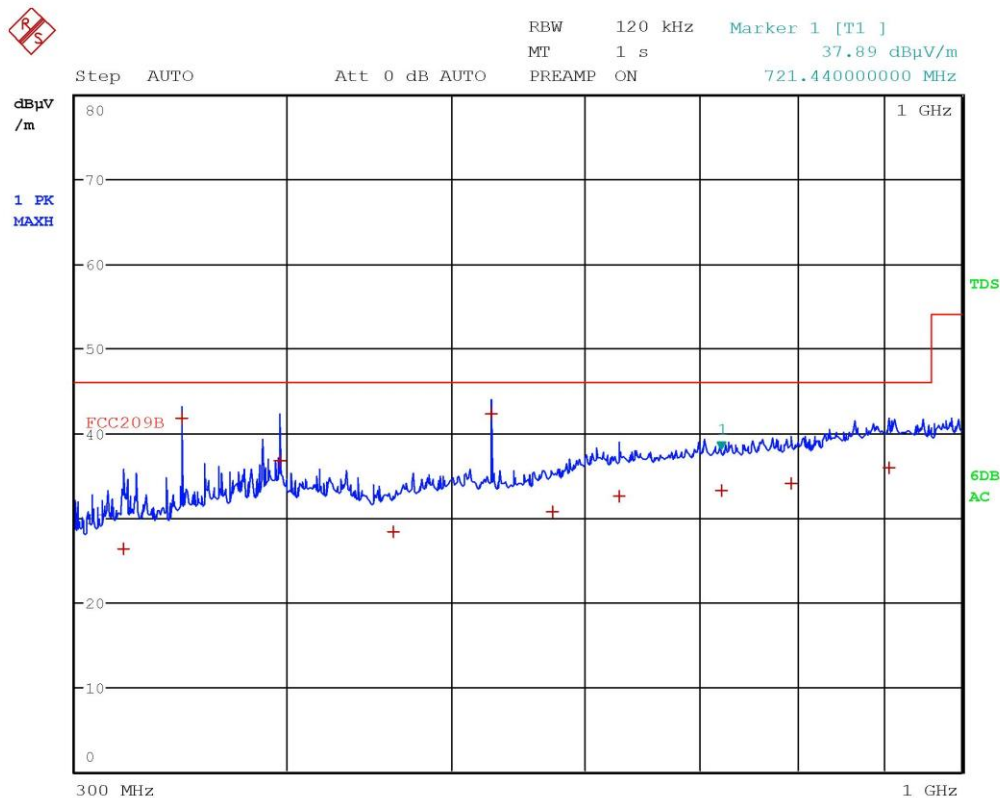


Panozzo 20003603 Horiz



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 346.48 MHz | 32.81        | -13.20         |
| 1 Quasi Peak                               | 447.08 MHz | 28.40        | -17.62         |
| 1 Quasi Peak                               | 527.96 MHz | 46.02        | 0.00           |
| 1 Quasi Peak                               | 643.44 MHz | 44.66        | -1.35          |
| 1 Quasi Peak                               | 659.92 MHz | 40.81        | -5.20          |
| 1 Quasi Peak                               | 689.24 MHz | 36.46        | -9.55          |
| 1 Quasi Peak                               | 699.84 MHz | 36.52        | -9.49          |
| 1 Quasi Peak                               | 702.32 MHz | 36.72        | -9.29          |
| 1 Quasi Peak                               | 713.44 MHz | 35.55        | -10.46         |
| 1 Quasi Peak                               | 735.4 MHz  | 39.51        | -6.50          |
| 1 Quasi Peak                               | 885.32 MHz | 35.82        | -10.19         |

Panozzo 20003603 Horiz

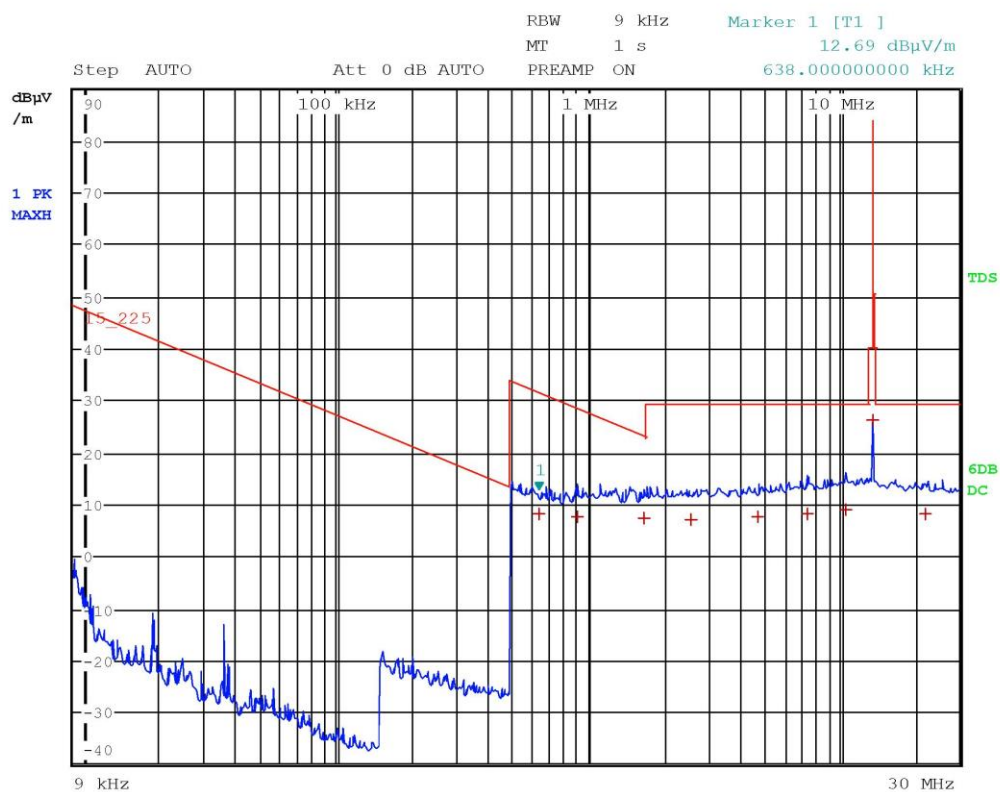


Panozzo 20003604 Vert



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 320.56 MHz | 26.31        | -19.70         |
| 1 Quasi Peak                               | 346.48 MHz | 41.77        | -4.24          |
| 1 Quasi Peak                               | 395.96 MHz | 36.76        | -9.25          |
| 1 Quasi Peak                               | 462 MHz    | 28.24        | -17.77         |
| 1 Quasi Peak                               | 527.96 MHz | 42.30        | -3.71          |
| 1 Quasi Peak                               | 573.64 MHz | 30.73        | -15.29         |
| 1 Quasi Peak                               | 628.56 MHz | 32.54        | -13.47         |
| 1 Quasi Peak                               | 721.44 MHz | 33.24        | -12.77         |
| 1 Quasi Peak                               | 793.32 MHz | 34.01        | -12.00         |
| 1 Quasi Peak                               | 906.24 MHz | 35.82        | -10.20         |

Panozzo 20003604 Vert



Panozzo 20003605 Loop



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | 15_225     |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 638 kHz    | 8.29         | -23.21         |
| 1 Quasi Peak                               | 906 kHz    | 7.67         | -20.79         |
| 1 Quasi Peak                               | 1.666 MHz  | 7.31         | -15.85         |
| 1 Quasi Peak                               | 2.574 MHz  | 7.21         | -22.32         |
| 1 Quasi Peak                               | 4.726 MHz  | 7.57         | -21.96         |
| 1 Quasi Peak                               | 7.47 MHz   | 8.25         | -21.28         |
| 1 Quasi Peak                               | 10.534 MHz | 8.90         | -20.63         |
| 1 Quasi Peak                               | 13.562 MHz | 26.21        | -57.78         |
| 1 Quasi Peak                               | 21.902 MHz | 8.32         | -21.21         |

Panozzo 20003605 Loop

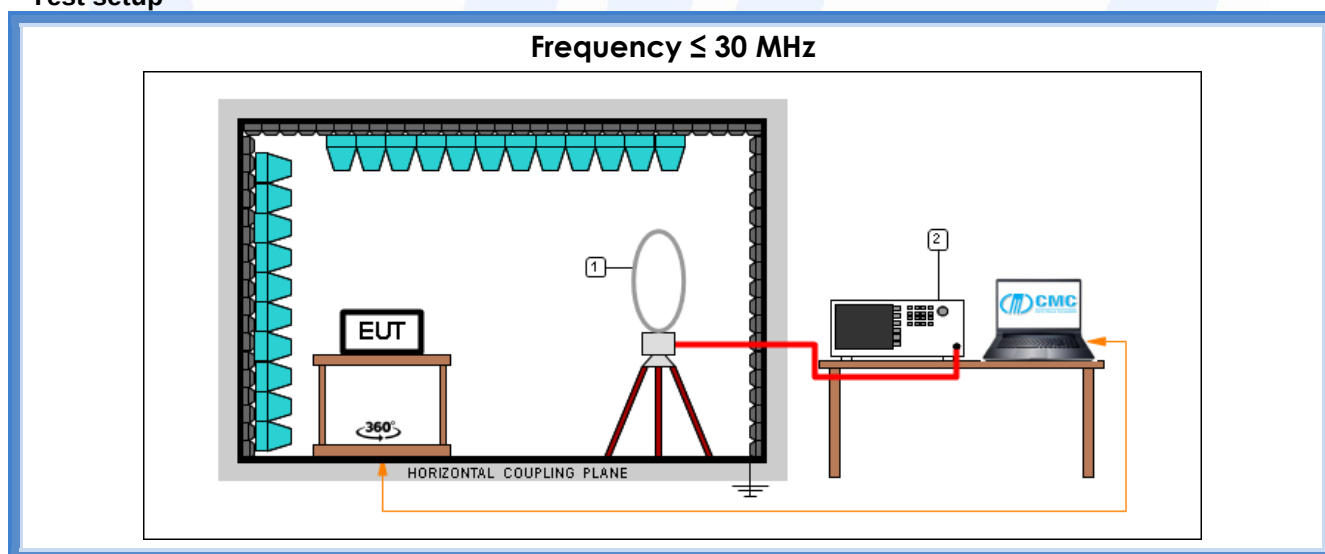
#### 9.4 Field strength with the assigned band

|                                             |                                                                            |
|---------------------------------------------|----------------------------------------------------------------------------|
| Tested by .....                             | C. Panozzo                                                                 |
| Test date .....                             | 12.10.2020                                                                 |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                                           |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.209 and 15.225<br>ANSI C63.10 |
| Supplementary test set-up description ..... | EUT – antenna distance: 10 m                                               |
| Supplementary information.....              | --                                                                         |

#### Acceptance limits

- The field strength of any emissions within the band 13,553 – 13,567 MHz shall not exceed 15,848 microvolts/meter at 30 meters
- Within the bands 13,410 – 13,553 MHz and 13,567 – 13,710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters
- Within the bands 13,110 – 13,410 MHz and 13,710 – 14,010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters
- The field strength of any emissions appearing outside of the 13,110 – 14,010 MHz band shall not exceed the general radiated emission limits in §15.209

#### Test setup



| Test setup PE004_01 |            |                 |         |                           |
|---------------------|------------|-----------------|---------|---------------------------|
| Nr.                 | Id. Number | Manufacturer    | Model   | Description               |
| 2                   | CMC S164   | Rohde & Schwarz | ESU26   | Receiver 20 Hz - 26.5 GHz |
| 1                   | CMC S127   | Schaffner       | HLA6120 | Loop Antenna 9kHz - 30MHz |



## Result

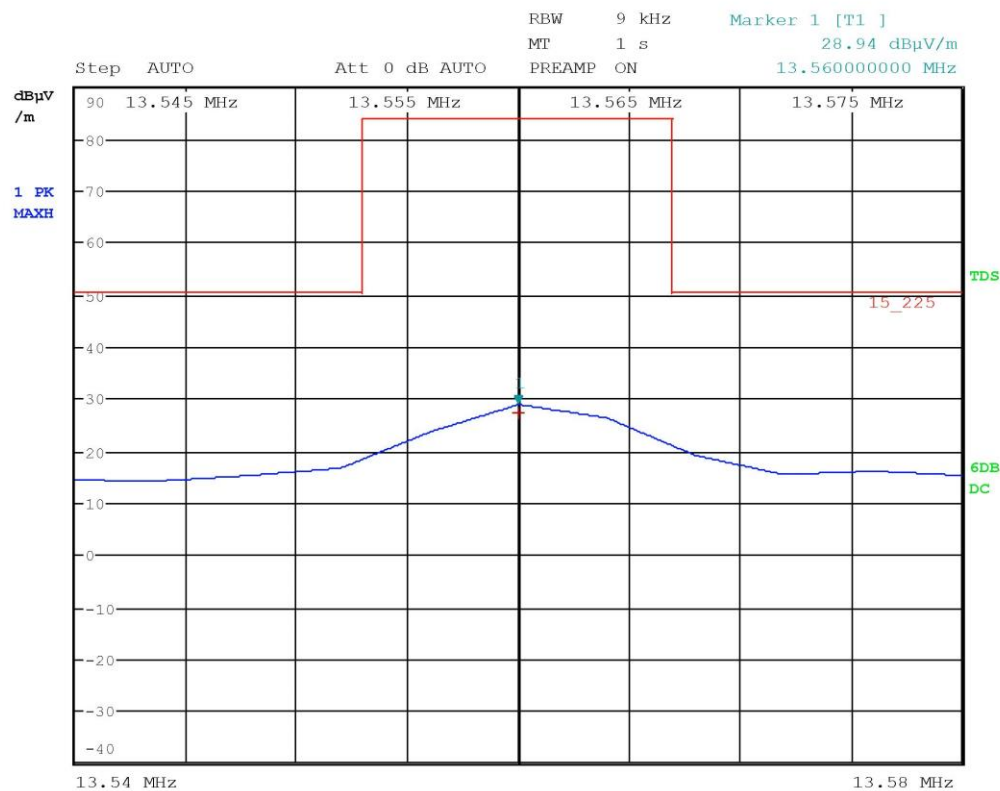
| Frequency band (MHz) | Graphs    | Measured level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) |
|----------------------|-----------|-------------------------------|----------------------|
| 13,553 – 13,567      | G20003606 | 27,26                         | 84,00                |

**Remarks:** EUT was tested in 3 orthogonal planes, graphs are related to the highest detected levels. Measurements have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor  $40\log(\text{test distance}/10)$  based on the measuring distance provided by the standard.

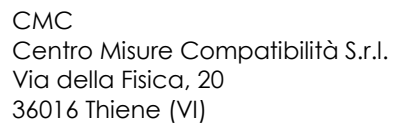




## Graphs



Panozzo 20003606



**LAB N° 0168 L**



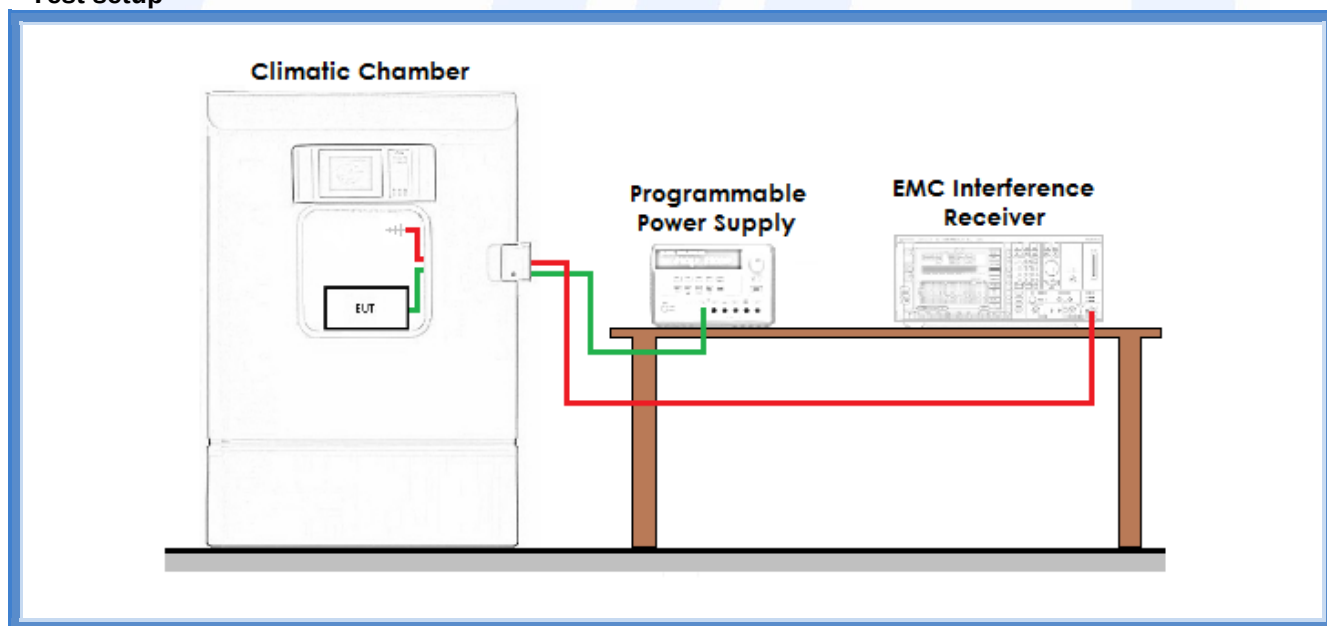
## 9.5 Frequency tolerance

|                                                |                                                                    |
|------------------------------------------------|--------------------------------------------------------------------|
| Tested by .....                                | C. Panozzo                                                         |
| Test date .....                                | 15.10.2020                                                         |
| Test location (stand) .....                    | Climatic chamber (CMC B069)                                        |
| Reference standards .....                      | FCC Rules and Regulation; Titles 47 Part. 15.225 e)<br>ANSI C63.10 |
| Supplementary test set-up<br>description ..... | --                                                                 |
| Supplementary information.....                 | --                                                                 |

### Acceptance limits

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0,01\%$  of the operating frequency over a temperature variation of  $-20\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$  at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of  $20\text{ }^{\circ}\text{C}$ . For battery operated equipment, the equipment tests shall be performed using a new battery

### Test setup



| <i>Id. Number</i> | <i>Manufacturer</i> | <i>Model</i> | <i>Description</i>      |
|-------------------|---------------------|--------------|-------------------------|
| CMC S295          | Rohde & Schwarz     | FSW43        | Spectrum Analyzer 43GHz |
| CMC B069          | Angelantoni         | CH 600C      | Climatic chamber        |



## Result

| Test conditions  |                        | Measured frequency | Frequency limits    |
|------------------|------------------------|--------------------|---------------------|
| Temperature (°C) | Voltage level (V)      | (MHz)              | (MHz)               |
| -20              | Nominal supply voltage | 13,560696          | 13,55864 – 13,56136 |
| -10              | Nominal supply voltage | 13,560666          | 13,55864 – 13,56136 |
| 0                | Nominal supply voltage | 13,560633          | 13,55864 – 13,56136 |
| 10               | Nominal supply voltage | 13,560624          | 13,55864 – 13,56136 |
| 20               | Nominal supply voltage | 13,560650          | 13,55864 – 13,56136 |
| 30               | Nominal supply voltage | 13,560642          | 13,55864 – 13,56136 |
| 40               | Nominal supply voltage | 13,560602          | 13,55864 – 13,56136 |
| 50               | Nominal supply voltage | 13,560639          | 13,55864 – 13,56136 |

| Test conditions  |                   |                   | Measured frequency | Frequency limits    |
|------------------|-------------------|-------------------|--------------------|---------------------|
| Temperature (°C) | Voltage level (%) | Voltage level (V) | (MHz)              | (MHz)               |
| 20               | 85                | 20,4              | 13,560699          | 13,55864 – 13,56136 |
| 20               | 90                | 21,6              | 13,560698          | 13,55864 – 13,56136 |
| 20               | 95                | 22,8              | 13,560698          | 13,55864 – 13,56136 |
| 20               | 100               | 24                | 13,560696          | 13,55864 – 13,56136 |
| 20               | 105               | 25,2              | 13,560699          | 13,55864 – 13,56136 |
| 20               | 110               | 26,4              | 13,560699          | 13,55864 – 13,56136 |
| 20               | 115               | 27,6              | 13,560700          | 13,55864 – 13,56136 |



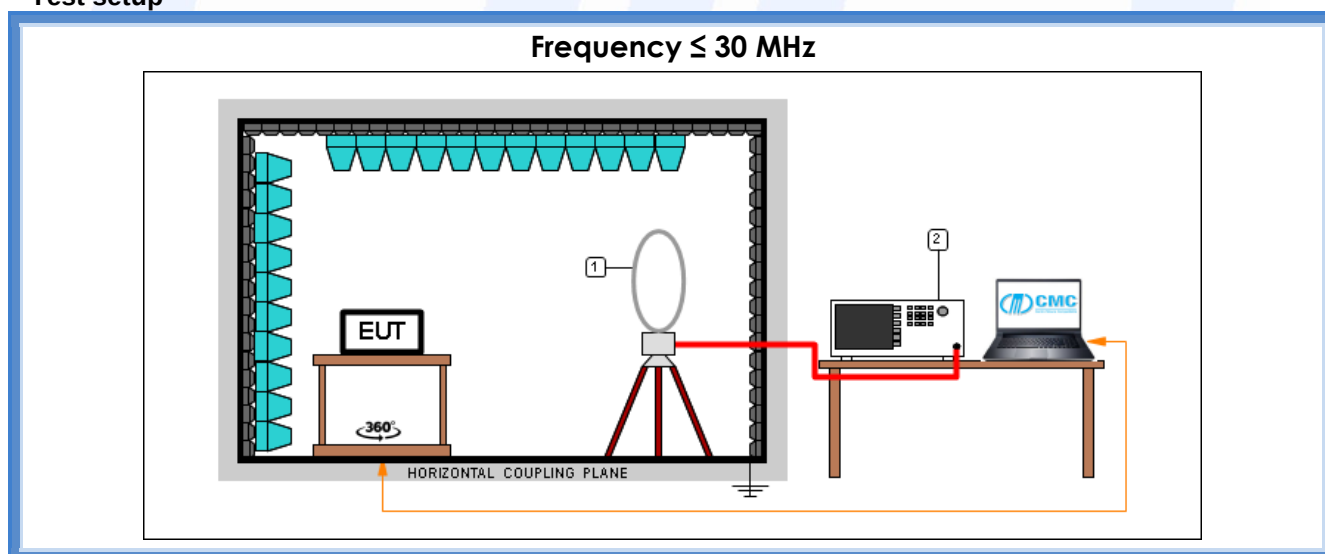
## 9.6 20 dB bandwidth

|                                             |                                                                           |
|---------------------------------------------|---------------------------------------------------------------------------|
| Tested by .....                             | C. Panozzo                                                                |
| Test date .....                             | 06.05.2020                                                                |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                                          |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.215<br>ANSI C63.10 cl. 7.8.7 |
| Supplementary test set-up description ..... | --                                                                        |
| Supplementary information.....              | --                                                                        |

### Acceptance limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated

### Test setup

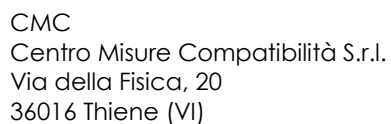


Test setup PE004\_01

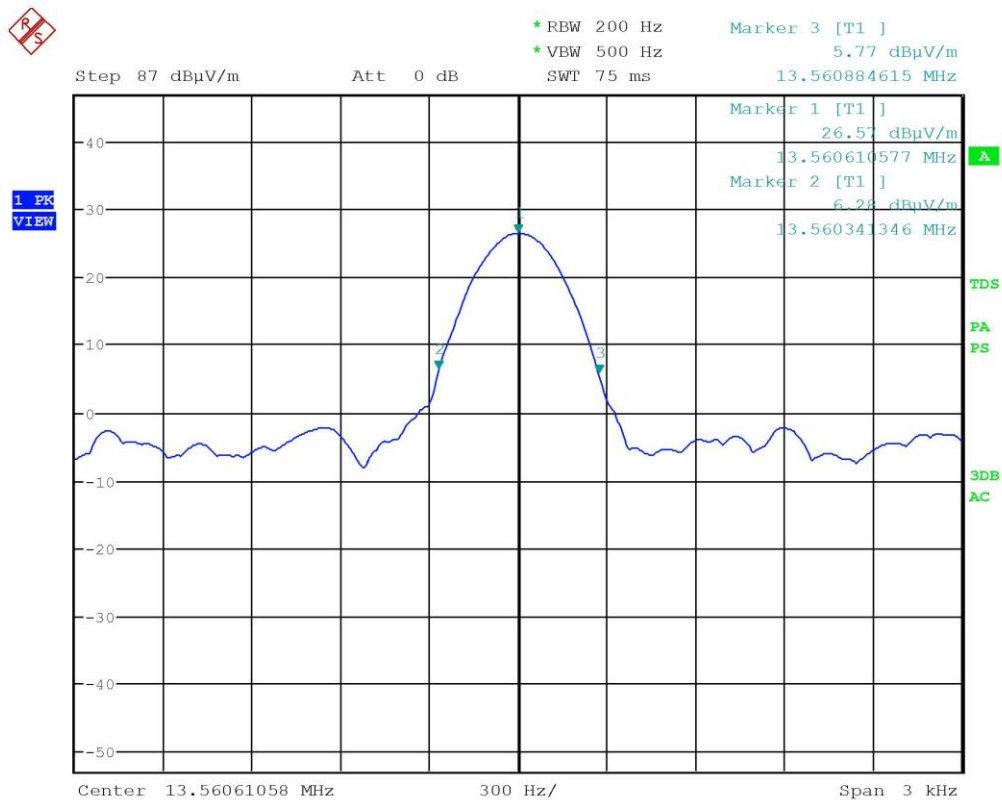
| Nr. | Id. Number | Manufacturer    | Model   | Description               |
|-----|------------|-----------------|---------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26   | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S127   | Schaffner       | HLA6120 | Loop Antenna 9kHz - 30MHz |

### Result

| $f$ (MHz) | 20 dB bandwidth (MHz) |           | Graph     | Results  |
|-----------|-----------------------|-----------|-----------|----------|
|           | $F_L$                 | $F_H$     |           |          |
| 13,56     | 13,560341             | 13,560884 | G20003608 | Complies |
|           |                       |           | G20003609 |          |



**LAB N° 0168 L**



Panozzo 20003609



## Attachment 1

### Instruments list

| <i><b>Id. number</b></i> | <i><b>Manufacturer</b></i> | <i><b>Model</b></i>  | <i><b>Description</b></i>           | <i><b>Serial number</b></i> | <i><b>Last calibration</b></i> | <i><b>Due date calibration</b></i> |
|--------------------------|----------------------------|----------------------|-------------------------------------|-----------------------------|--------------------------------|------------------------------------|
| CMC S010                 | Rohde & Schwarz            | ESH3-Z2              | Impulses Limiting Device            | - - -                       | January '20                    | January '21                        |
| CMC S108                 | EMCO                       | 3115                 | Horn Antenna                        | 9811-5622                   | June '19                       | June '22                           |
| CMC S127                 | Schaffner                  | HLA6120              | Loop Antenna                        | 1191                        | November '18                   | November '23                       |
| CMC S164                 | Rohde & Schwarz            | ESU26                | EMC interference receiver           | 100052                      | January '20                    | January '21                        |
| CMC S200                 | Schwarzbeck                | NSLK 8128            | V-LISN                              | 8128-273                    | January '20                    | January '21                        |
| CMC S206                 | Rohde & Schwarz            | ESCI 7               | EMC Receiver 9KHz-7GHz              | 100781                      | January '20                    | January '21                        |
| CMC S260                 | CMC                        | Wfr_N                | Shielded Cable                      | Wfr_ant10-1                 | November '19                   | November '20                       |
| CMC S261                 | CMC                        | Wfr_N                | Shielded Cable                      | Wfr_ant20-1                 | November '19                   | November '20                       |
| CMC S262                 | CMC                        | Wfr_N_fix            | Shielded Cable                      | Wfr_fix32-1                 | November '19                   | November '20                       |
| CMC S263                 | CMC                        | Wfr_N_fix            | Shielded Cable                      | Wfr_fix31-1                 | November '19                   | November '20                       |
| CMC S264                 | CMC                        | Wfr_N                | Shielded Cable                      | Wfr_ext03-1                 | November '19                   | November '20                       |
| CMC S271                 | Schwarzbeck                | BBA 9106 + VHBB 9124 | Biconical Antenna (30-300MHz)       | 831                         | June '19                       | June '22                           |
| CMC S287                 | Schwarzbeck                | VUSLP 9111B          | Log-periodic Antenna (200 MHz-3GHz) | 9111B-203                   | June '19                       | June '22                           |
| CMC S288                 | CMC                        | W_sma_white          | Joint Shielded Cable                | W_001                       | November '19                   | November '20                       |
| CMC S295                 | Rohde & Schwarz            | FSW43                | Spectrum Analyzer 43GHz             | 104059                      | November '19                   | November '22                       |



## Attachment 1

### Measurement uncertainty

| Test                                                      | Test Setup | Expanded uncertainty     | Note |
|-----------------------------------------------------------|------------|--------------------------|------|
| Conducted emission CISPR 16<br>LISN 50uH 0,009-0,0150 MHz | PE001_01   | 3,4 dB                   | 1    |
| Conducted emission CISPR 16<br>LISN 50uH 0,150-30,0 MHz   | PE001_01   | 3,0 dB                   | 1    |
| Conducted emission CISPR 16<br>Voltage Probe 0,15-30 MHz  | PE001_02   | 2,9 dB                   | 1    |
| Conducted emission CISPR 16<br>Current Probe 0,15-30 MHz  | PE001_03   | 2,6 dB                   | 1    |
| Conducted emission CISPR 16<br>ISN 0,15-30 MHz            | PE001_04   | 4,7 dB                   | 1    |
| Clic CISPR 16<br>LISN 50uH 0,150-30,0 MHz                 | PE001_05   | 2,9 dB                   | 1    |
| Radiated Emission CDNE<br>30-300 MHz                      | PE001_06   | 3,3 dB                   | 1    |
| Disturbance Power<br>30-300 MHz                           | PE002_01   | 3,6 dB                   | 1    |
| Radiated Emission LAS<br>0,15-30 MHz                      | PE003_01   | 2,0 dB                   | 1    |
| Radiated Emission CISPR 16<br>Loop Ant. 0,15-30 MHz       | PE004_01   | 4,0 dB                   | 1    |
| Radiated Emission CISPR 16<br>Bicon. Ant. 30-300 MHz      | PE004_02   | 3,9 dB                   | 1    |
| Radiated Emission CISPR 16<br>LogP. Ant. 300-1000 MHz     | PE004_03   | 3,8 dB                   | 1    |
| Radiated Emission CISPR 16<br>Horn Ant. 1-18 GHz          | PE004_04   | 4,2 dB                   | 1    |
| Human Exposure to electromagnetic fields                  | PE005_01   | 23,6 %                   | 1    |
| Harmonics                                                 | PE006_01   | 10 mA + 2,6 %            | 1    |
| Flicker                                                   | PE007_01   | 4,79 %                   | 1    |
| Radiated Immunity<br>80 MHz - 6 GHz                       | PE102_XX   | 1,95 dB 0,75 V/m a 3V/m  | 1    |
| Conducted Immunity<br>0,15 - 230 MHz                      | PE105_XX   | 1,20 dB 0,44 V a 3V      | 1    |
| AC Magnetic field                                         | PE106_01   | 1,55 % 0,15 A/m a 10A/m  | 1    |
| Pulse Magnetic field                                      | PE107_01   | 6,25 % 18,7 A/m a 300A/m | 1    |
| Dumped Magnetic field                                     | PE108_01   | 6,25 % 1,87 A/m a 30A/m  | 1    |
| Common mode conducted immunity                            | PE112_01   | 2,21 % 0,22 V a 10V      | 1    |



## Attachment 1

| Test                                       | Test Setup  | Expanded uncertainty | Note |
|--------------------------------------------|-------------|----------------------|------|
| Power/Spurious<br>9kHz-30MHz               | PR001_01    | 4,0 dB               | 1    |
| Power/Spurious ERP<br>30-1000MHz d=10m     | PR001_02+03 | 4,7 dB               | 1    |
| Misura della potenza EIRP<br>1-18GHz d=3m  | PR001_04+05 | 4,7 dB               | 1    |
| Misura della potenza EIRP<br>18-40GHz d=3m | PR001_06    | 5,4 dB               | 1    |
| Frequency error                            | PR002_01+02 | $< 1 \times 10^{-7}$ | 1    |
| Timing zero span (1001pts.)                | PR002_01+02 | 0,2 % SWT            | 1    |
| Modulation bandwidth                       | PR002_01+02 | $< 1 \times 10^{-7}$ | 1    |
| Conducted RF power and spurious emission   | PR002_01+02 | 1,1 dB               | 1    |
| Adjacent channel power                     | PR002_01+02 | 1,1 dB               | 1    |
| Blocking                                   | PR002_01+02 | 1,1 dB               | 1    |

| Test                                             | Test Setup | Expanded uncertainty | Note |
|--------------------------------------------------|------------|----------------------|------|
| Electrostatic discharge immunity test            | PE101_0X   |                      | 2    |
| Electrical fast transients / burst immunity test | PE103_0X   |                      | 2    |
| Surge immunity test                              | PE104_0X   |                      | 2    |
| Short interruption immunity test                 | PE109_01   |                      | 2    |
| Ring Wave immunity test                          | PE110_01   |                      | 2    |
| Low frequency immunity test                      | PE111_01   |                      | 2    |
| Dumped Oscillatory immunity test                 | PE113_01   |                      | 2    |
| Rev. 20_02 date 24/02/2020                       |            |                      |      |

### Note 1:

The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of  $p = 95\%$

### Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor  $k=2$



## Attachment 1

### Judgement of compliance

| Case 1                                                                                                                                                              | Case 2                                                                                                                                                                                                     | Case 3                                                                                                                                                                                                        | Case 4                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                               |                                                                                                                                                                             |
| The sample complies with the requirements.<br><br>The measurement results is within the specification limit when the measurement uncertainty is taken into account. | The sample complies with the requirements.<br><br>It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit. | The sample does not comply with the requirements.<br><br>It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty also the measurement result is upper the limit. | The sample does not comply with the requirements.<br><br>The measurement results is outside the specification limit when the measurement uncertainty is taken into account. |

In agreement with ILAC-G8: 03/2009 Guidelines on the Reporting of Compliance with Specification

### Quality manual references – Internal procedure

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| Internal Procedure PM001 rev. 3.0 (Quality Manual) ..... | Measure procedure                   |
| Internal Procedure INC_M rev. 9.1 (Quality Manual) ..... | Measurement uncertainty calculation |