

**TEST REPORT****Nr. R20244601****Federal Communication Commission (FCC)**

|                                                                                                                                                                                                            |                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Report Reference No.</b> .....                                                                                                                                                                          | R20244601                                                                                            |
| Date of issue: .....                                                                                                                                                                                       | 24.02.2021                                                                                           |
| Total number pages: .....                                                                                                                                                                                  | 49                                                                                                   |
| <b>Applicant's name</b> .....                                                                                                                                                                              | Teleco Automation S.r.l.                                                                             |
| Address .....                                                                                                                                                                                              | Via Calmaggione, 10/4 – 31100 Treviso (TV) – Italy                                                   |
| <b>Test specification:</b>                                                                                                                                                                                 |                                                                                                      |
| Standards .....                                                                                                                                                                                            | FCC Rules & Regulations, Title 47:2019<br>Part 15 paragraph(s): 203, 204, 205, 207, 209, 215 and 249 |
| Non-standard test method .....                                                                                                                                                                             | N/A                                                                                                  |
| <b>Test Report Form No.</b> .....                                                                                                                                                                          | 15-249CMC                                                                                            |
| Test Report Form(s) Originator ..                                                                                                                                                                          | CMC Centro Misure Compatibilità S.r.l.                                                               |
| Master TRF .....                                                                                                                                                                                           | 2021-02                                                                                              |
| <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> .....                                                                                                                                                                         | TVLink RS232                                                                                         |
| Trademark .....                                                                                                                                                                                            | Teleco Automation                                                                                    |
| Manufacturer .....                                                                                                                                                                                         | Teleco Automation S.r.l.                                                                             |
| Model / Type reference .....                                                                                                                                                                               | TVTRX232-916 916MHz                                                                                  |
| FCC ID .....                                                                                                                                                                                               | P59TVTRX232-916                                                                                      |
| Rating(s) .....                                                                                                                                                                                            | 5 Vdc                                                                                                |
| <b>Report</b>                                                                                                                                                                                              |                                                                                                      |
| Tested by (name + signature) .....                                                                                                                                                                         | M. Segalla                                                                                           |
| Approved by (name + signature) .....                                                                                                                                                                       | R. Beghetto                                                                                          |



## 1 Summary

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|                                                                                                                                                    |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <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            | 24.02.2021 | --             |



|                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Testing and sampling:</b>                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                        |
| Date of receipt of test item.....                                                                                                                                                                                                                                                                                 | 14.12.2020                                                                                                                                                                             |
| Testing start date .....                                                                                                                                                                                                                                                                                          | 18.02.2021                                                                                                                                                                             |
| Testing end date .....                                                                                                                                                                                                                                                                                            | 22.02.2021                                                                                                                                                                             |
| 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 P201333                                                                                                                                         |
| <b>General remarks:</b>                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                        |
| This report shall not be reproduced, except in full, without the written approval of CMC.<br>The test results presented in this report relate only to the object tested.<br>“(see appended table)”: refers to a table appended to the report.<br>Throughout this report a comma is used as the decimal separator. |                                                                                                                                                                                        |
| <b>Possible test case verdicts:</b>                                                                                                                                                                                                                                                                               |                                                                                                                                                                                        |
| 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)                                                                                                                                                                     |
| <b>Definition of symbols used in this test report:</b>                                                                                                                                                                                                                                                            |                                                                                                                                                                                        |
| <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.                                                                                                                                                                                            |                                                                                                                                                                                        |

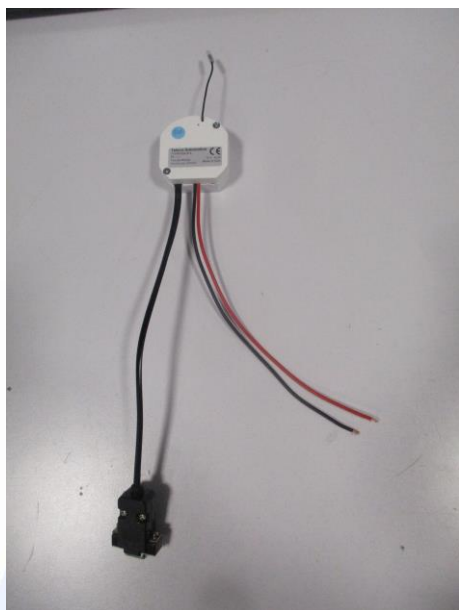


## 6 General description of tested item and testing condition(s)

|                          |                                     |                                                 |                          |                          |                          |                          |                          |
|--------------------------|-------------------------------------|-------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Description .....        | TVLink RS232                        |                                                 |                          |                          |                          |                          |                          |
| Model Number .....       | TVTRX232-916 916MHz                 |                                                 |                          |                          |                          |                          |                          |
| FCC ID .....             | P59TVTRX232-916                     |                                                 |                          |                          |                          |                          |                          |
| Serial Number .....      | --                                  |                                                 |                          |                          |                          |                          |                          |
| Brand name .....         | Teleco Automation                   |                                                 |                          |                          |                          |                          |                          |
| Frequency band .....     | 902 – 928 MHz                       |                                                 |                          |                          |                          |                          |                          |
| Nominal frequency .....  | Fc: 916 MHz                         |                                                 |                          |                          |                          |                          |                          |
| Test 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: 5 V                                         |                          |                          |                          |                          | <input type="checkbox"/> |
| Test configuration ..... | <input checked="" type="checkbox"/> | Table top 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                                   | EUT in continuous transmission at maximum power |                          |                          |                          |                          |                          |



## 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 249 |                                          |                |         |
|------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|---------|
| Clause                                                                                               | Requirement – Test case                  | Basic standard | Verdict |
| Part 15.203                                                                                          | Antenna requirements                     | ANSI C63.10    | P       |
| Part 15.207                                                                                          | Conducted emissions                      | ANSI C63.10    | P       |
| Part 15.209                                                                                          | Radiated emissions and spurious emission | ANSI C63.10    | P       |
| Part 15.209 and 15.249                                                                               | Peak Output Power                        | ANSI C63.10    | P       |
| Part 15.215                                                                                          | 20 dB Bandwidth                          | ANSI C63.10    | P       |
| Part 15.249                                                                                          | Band edge                                | 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 .....                     | M. Segalla                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| Test date .....                     | 18.02.2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| 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 type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Integral antenna |
|                                     | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | External antenna |
| Antenna gain.....                   | 2,5 dBi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| External R.F. power amplifier ..... | Not Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |



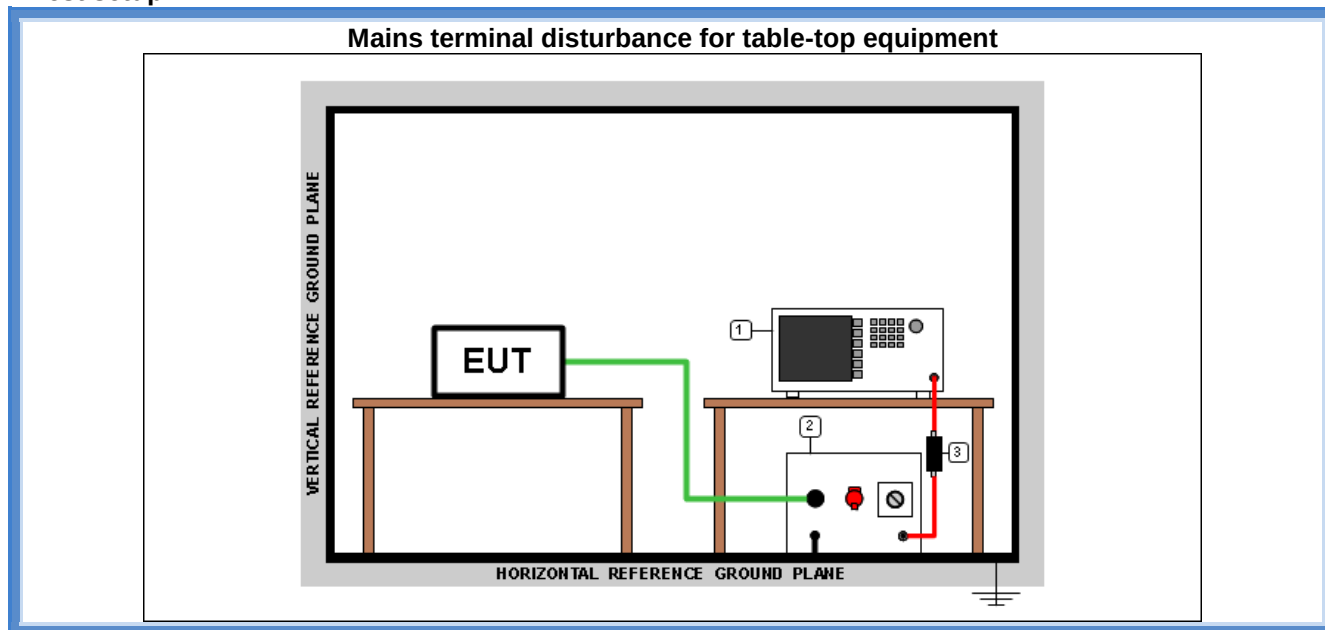
## 9.2 Conducted emission

|                                             |                                                                         |                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | M. Segalla                                                              |                                                                                                              |
| Test date .....                             | 22.02.2021                                                              |                                                                                                              |
| 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) | <i>dB(<math>\mu</math>V) Quasi-peak</i> | <i>dB(<math>\mu</math>V) Average</i> |
|-----------------------|-----------------------------------------|--------------------------------------|
| 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 |            |                 |           |                        |
|---------------------|------------|-----------------|-----------|------------------------|
| 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             | G20244617 | --      | P      |
| L1   | 0,15 – 30             | G20244618 | --      | P      |

**Remarks:** tests performed on 120 V ~ 60 Hz side of power unit Elektro-Automatik EA-PS 3032-10B

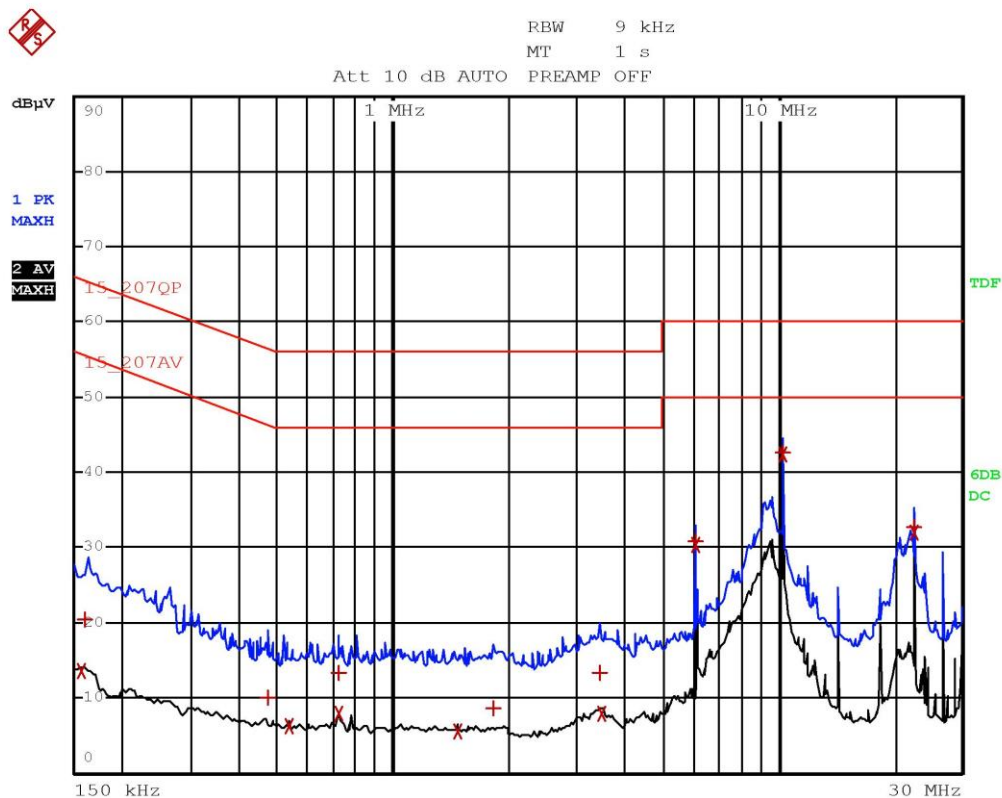
### Graphs Legend

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

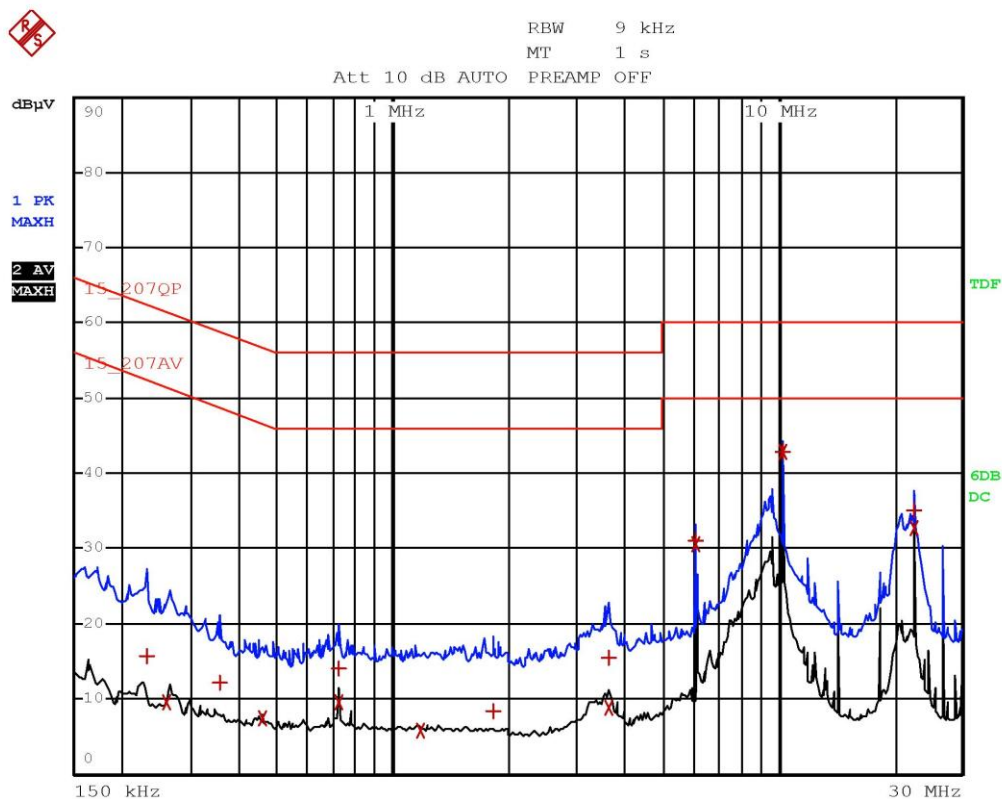


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| EDIT PEAK LIST (Final Measurement Results) |            |                  |                |  |
|--------------------------------------------|------------|------------------|----------------|--|
| Trace1:                                    | 15_207QP   |                  |                |  |
| Trace2:                                    | 15_207AV   |                  |                |  |
| Trace3:                                    | ---        |                  |                |  |
| TRACE                                      | FREQUENCY  | LEVEL dB $\mu$ V | DELTA LIMIT dB |  |
| 2 Average                                  | 158 kHz    | 13.47            | -42.09         |  |
| 1 Quasi Peak                               | 162 kHz    | 20.36            | -44.99         |  |
| 1 Quasi Peak                               | 474 kHz    | 9.94             | -46.49         |  |
| 2 Average                                  | 538 kHz    | 6.34             | -39.65         |  |
| 1 Quasi Peak                               | 722 kHz    | 13.39            | -42.60         |  |
| 2 Average                                  | 726 kHz    | 7.94             | -38.05         |  |
| 2 Average                                  | 1.478 MHz  | 5.52             | -40.47         |  |
| 1 Quasi Peak                               | 1.83 MHz   | 8.58             | -47.41         |  |
| 1 Quasi Peak                               | 3.45 MHz   | 13.22            | -42.77         |  |
| 2 Average                                  | 3.482 MHz  | 7.89             | -38.10         |  |
| 1 Quasi Peak                               | 6.146 MHz  | 30.82            | -29.17         |  |
| 2 Average                                  | 6.146 MHz  | 30.37            | -19.62         |  |
| 1 Quasi Peak                               | 10.238 MHz | 42.58            | -17.41         |  |
| 2 Average                                  | 10.238 MHz | 42.44            | -7.55          |  |
| 1 Quasi Peak                               | 22.526 MHz | 32.67            | -27.32         |  |
| 2 Average                                  | 22.526 MHz | 32.04            | -17.95         |  |

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Segalla 20244618



| EDIT PEAK LIST (Final Measurement Results) |            |            |                |
|--------------------------------------------|------------|------------|----------------|
| Trace1:                                    | 15_207QP   |            |                |
| Trace2:                                    | 15_207AV   |            |                |
| Trace3:                                    | ---        |            |                |
| TRACE                                      | FREQUENCY  | LEVEL dBpV | DELTA LIMIT dB |
| 1 Quasi Peak                               | 230 kHz    | 15.62      | -46.82         |
| 2 Average                                  | 262 kHz    | 9.59       | -41.77         |
| 1 Quasi Peak                               | 354 kHz    | 12.22      | -46.64         |
| 2 Average                                  | 458 kHz    | 7.41       | -39.31         |
| 1 Quasi Peak                               | 722 kHz    | 14.06      | -41.93         |
| 2 Average                                  | 722 kHz    | 9.50       | -36.49         |
| 2 Average                                  | 1.186 MHz  | 5.71       | -40.28         |
| 1 Quasi Peak                               | 1.818 MHz  | 8.49       | -47.50         |
| 1 Quasi Peak                               | 3.634 MHz  | 15.50      | -40.49         |
| 2 Average                                  | 3.646 MHz  | 8.87       | -37.12         |
| 1 Quasi Peak                               | 6.146 MHz  | 31.14      | -28.86         |
| 2 Average                                  | 6.146 MHz  | 30.62      | -19.37         |
| 1 Quasi Peak                               | 10.238 MHz | 42.89      | -17.10         |
| 2 Average                                  | 10.238 MHz | 42.85      | -7.14          |
| 1 Quasi Peak                               | 22.526 MHz | 35.06      | -24.93         |
| 2 Average                                  | 22.526 MHz | 32.75      | -17.24         |

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### 9.3 Radiated emissions and spurious emission

|                                             |                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | M. Segalla                                                                                                                                                                                                                                                                                                                                           |
| Test date .....                             | 18.02.2021                                                                                                                                                                                                                                                                                                                                           |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                                                                                                                                                                                                                                                                                                                     |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.209 and 15.249 (a) and (d)<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)<br><input type="checkbox"/> Floor standing equipment set-up (insulating material up to 12 mm thick)<br><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 .....                   | SAC with measurement distance [m]: 10                                                                                                                                                                                                                                                                                                                |
| Supplementary information.....              | --                                                                                                                                                                                                                                                                                                                                                   |

#### Acceptance limits

| <i>Acceptance limits for emissions in restricted frequency bands (<math>f &lt; 1000</math> MHz)</i> |                   |                         |
|-----------------------------------------------------------------------------------------------------|-------------------|-------------------------|
| Frequency range (MHz)                                                                               | Test distance (m) | Limits [dB( $\mu$ V/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

| <i>Acceptance limits for emissions in restricted frequency bands (<math>f \geq 1000</math> MHz)</i> |                   |                            |                              |
|-----------------------------------------------------------------------------------------------------|-------------------|----------------------------|------------------------------|
| Frequency (MHz)                                                                                     | Test distance (m) | AV limits [dB( $\mu$ V/m)] | Peak limits [dB( $\mu$ V/m)] |
| > 1000                                                                                              | 3                 | 54                         | 74                           |



The restricted frequency bands are listed in the following table

| MHz                 | MHz                   | MHz             | GHz           |
|---------------------|-----------------------|-----------------|---------------|
| 0,090 – 0,110       | 16,42 – 16,423        | 399,9 – 410     | 4,5 – 5,15    |
| 0,495 – 0,505       | 16,69475 – 16,69525   | 608 – 614       | 5,35 – 5,46   |
| 2,1735 – 2,1905     | 16,80425 – 16,80475   | 960 – 1240      | 7,25 – 7,75   |
| 4,125 – 4,128       | 25,5 – 25,67          | 1300 – 1427     | 8,025 – 8,5   |
| 4,17725 – 4,17775   | 37,5 – 38,25          | 1435 – 1626,5   | 9,0 – 9,2     |
| 4,20725 – 4,20775   | 73 – 74,6             | 1645,5 – 1646,5 | 9,3 – 9,5     |
| 6,215 – 6,218       | 74,8 – 75,2           | 1660 – 1710     | 10,6 – 12,7   |
| 6,26775 – 6,26825   | 108 – 121,94          | 1718,8 – 1722,2 | 13,25 – 13,4  |
| 6,31175 – 6,31225   | 123 – 138             | 2200 – 2300     | 14,47 – 14,5  |
| 8,291 – 8,294       | 149,9 – 150,05        | 2310 – 2390     | 15,35 – 16,2  |
| 8,362 – 8,366       | 156,52475 – 156,52525 | 2483,5 – 2500   | 17,7 – 21,4   |
| 8,37625 – 8,38675   | 156,7 – 156,9         | 2690 – 2900     | 22,01 – 23,12 |
| 8,41425 – 8,41475   | 162,0125 – 167,17     | 3260 – 3267     | 23,6 – 24,0   |
| 12,29 – 12,293      | 167,72 – 173,2        | 3332 – 3339     | 31,2 – 31,8   |
| 12,51975 – 12,52025 | 240 – 285             | 3345,8 – 3358   | 36,43 – 36,5  |
| 12,57675 – 12,57725 | 322 – 335,4           | 3600 – 4400     | Above 38,6    |
| 13,36 – 13,41       |                       |                 |               |

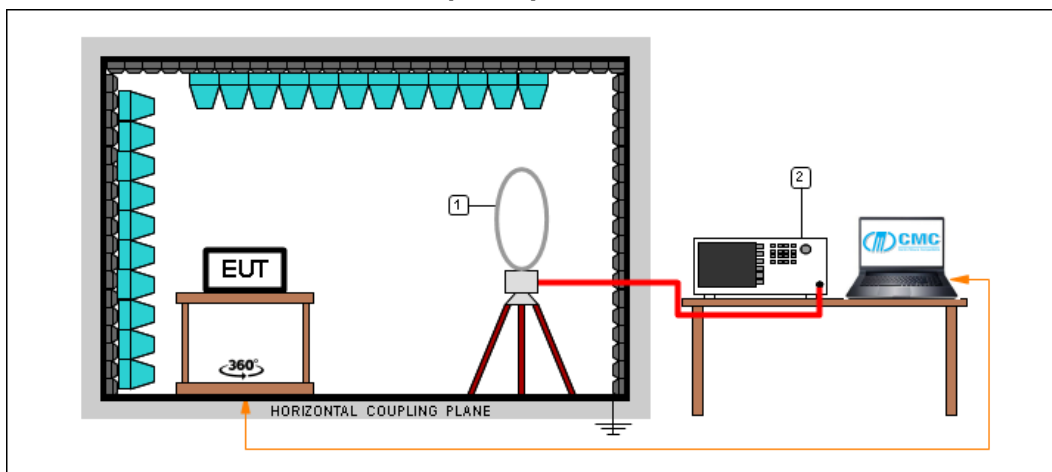
**Acceptance limits for emissions in non-restricted frequency bands**

Field strength of harmonics: 500  $\mu\text{V/m}$  (54 dB( $\mu\text{V/m}$ )).

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

## Test setup

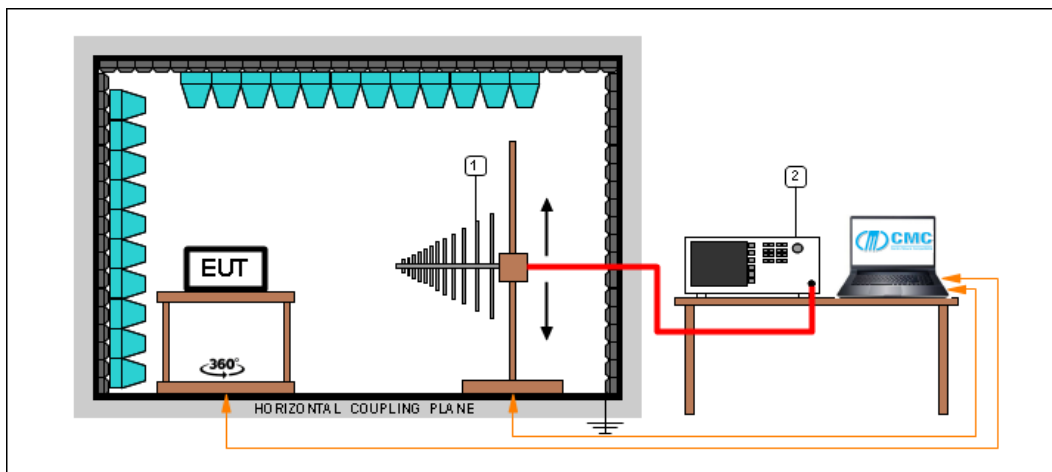
### Frequency $\leq 30$ MHz



#### 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

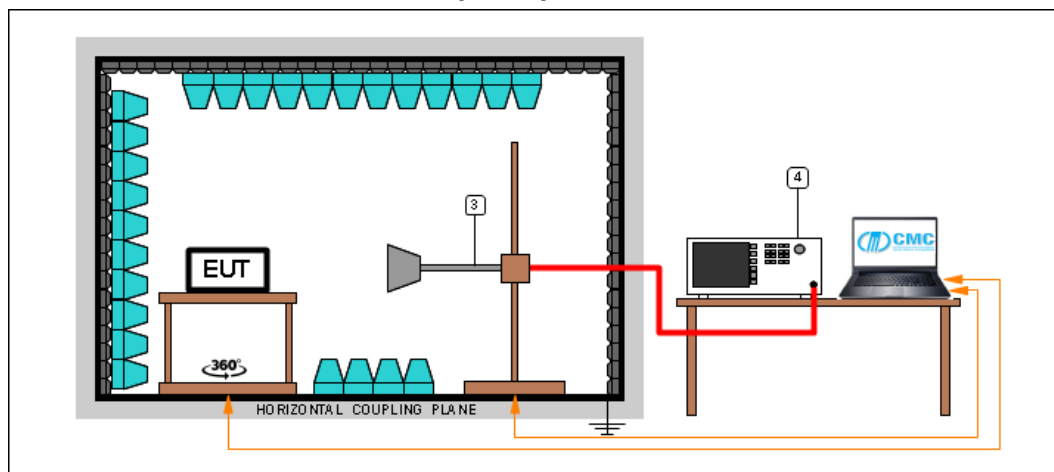
| Nr. | Id. Number | Manufacturer    | Model                | Description               |
|-----|------------|-----------------|----------------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26                | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S271   | Schwarzbeck     | 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         |



### Frequency > 1 GHz



Test setup PE004\_04

| Nr. | Id. Number | Manufacturer           | Model                      | Description               |
|-----|------------|------------------------|----------------------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz        | ESU26                      | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S108   | Emco                   | 3115                       | Waveguide antenna         |
| --  | CMC S334   | Wainwright Instruments | WHKX12-935-1000-15000-40SS | High Pass Filter 1000MHz  |



## Result

| Polarization | Frequency Range (MHz) | Graphs    | Remarks | Result |
|--------------|-----------------------|-----------|---------|--------|
| V            | 300 – 1000            | G20244610 | --      | P      |
| H            | 300 – 1000            | G20244611 | --      | P      |
| H            | 30 – 300              | G20244612 | --      | P      |
| V            | 30 – 300              | G20244613 | --      | P      |
| V            | 1000 – 10000          | G20244614 | --      | P      |
| H            | 1000 – 10000          | G20244615 | --      | P      |
| Loop         | 0,009 – 30            | G20244616 | --      | 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.

Peaks above the limits are caused by the nominal transmitting frequencies

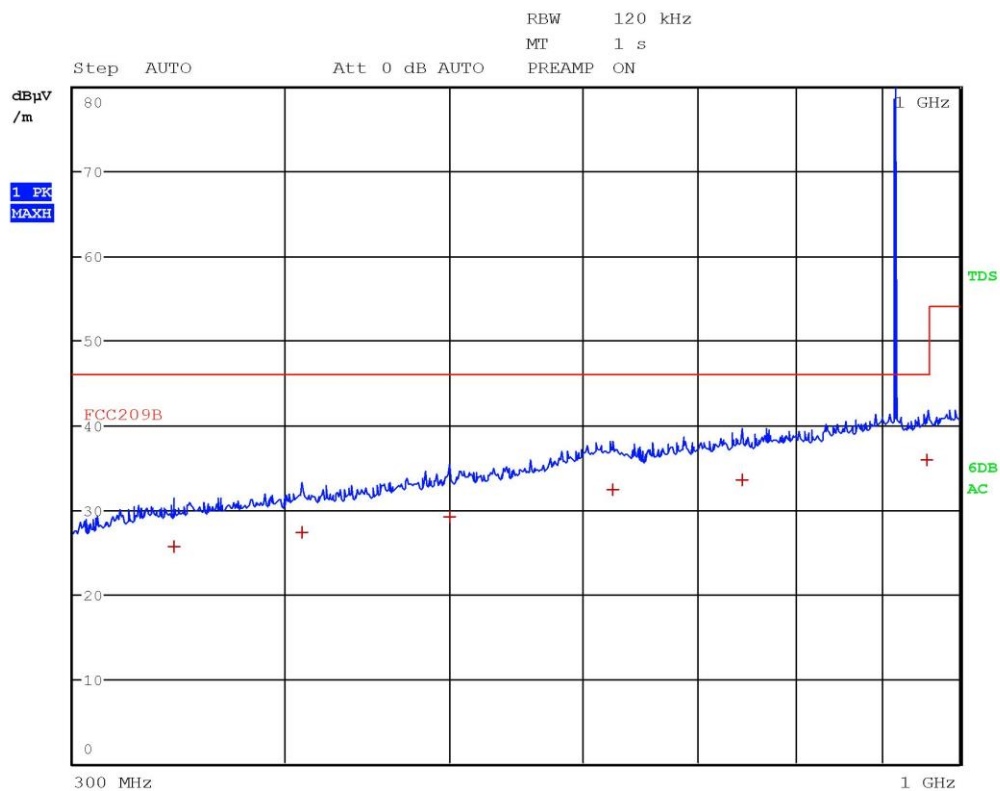
### Graphs Legend

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

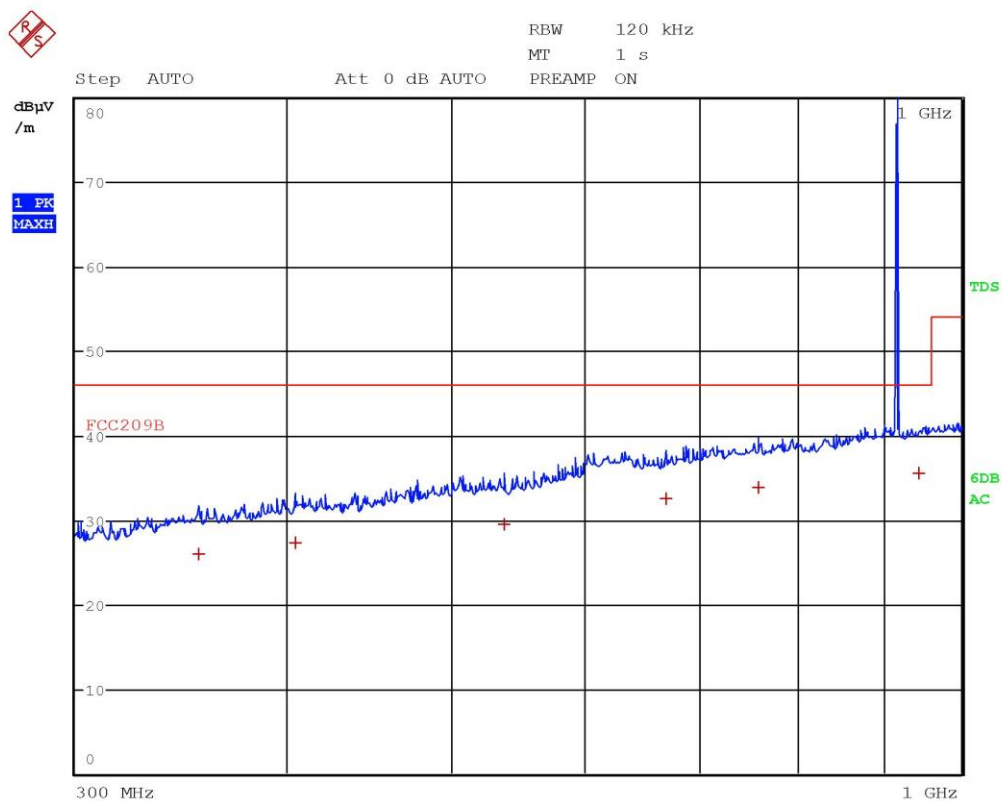


Segalla 20244610



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 344.04 MHz | 25.64        | -20.37         |
| 1 Quasi Peak                               | 409.2 MHz  | 27.33        | -18.68         |
| 1 Quasi Peak                               | 500.52 MHz | 29.23        | -16.78         |
| 1 Quasi Peak                               | 624.84 MHz | 32.37        | -13.64         |
| 1 Quasi Peak                               | 744.44 MHz | 33.45        | -12.56         |
| 1 Quasi Peak                               | 956.92 MHz | 35.83        | -10.19         |

Segalla 20244610

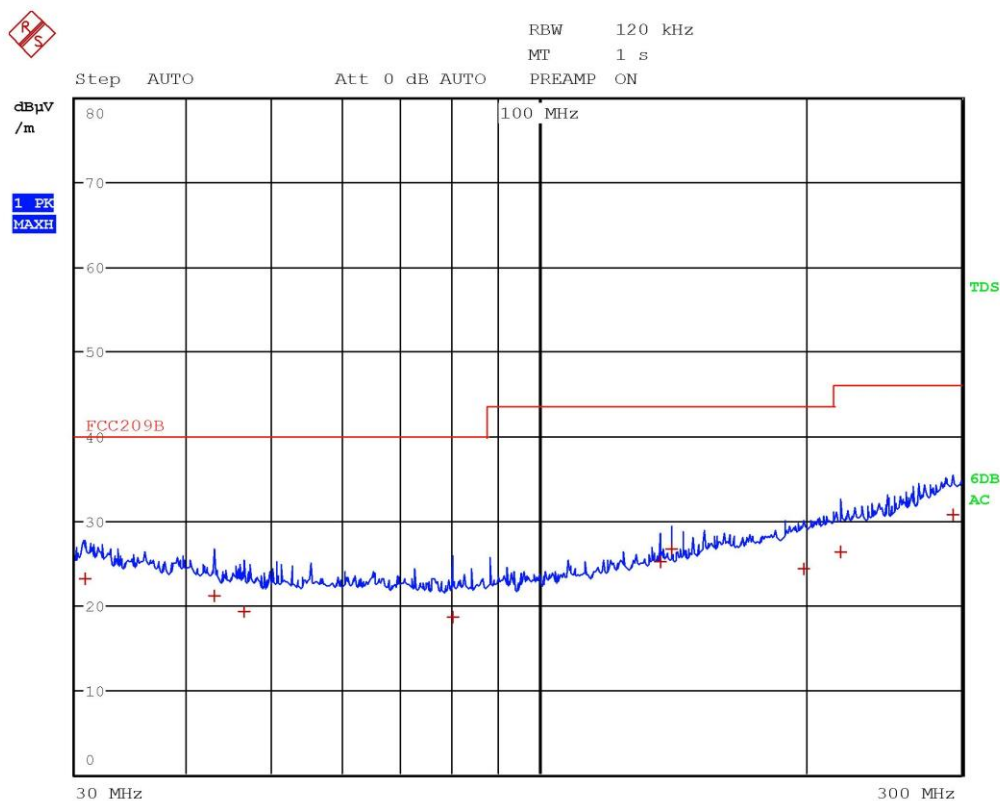


Segalla 20244611



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 354.56 MHz | 25.93        | -20.08         |
| 1 Quasi Peak                               | 404.76 MHz | 27.23        | -18.78         |
| 1 Quasi Peak                               | 537.36 MHz | 29.56        | -16.45         |
| 1 Quasi Peak                               | 668.92 MHz | 32.45        | -13.56         |
| 1 Quasi Peak                               | 758.48 MHz | 33.80        | -12.21         |
| 1 Quasi Peak                               | 943.08 MHz | 35.60        | -10.41         |

Segalla 20244611

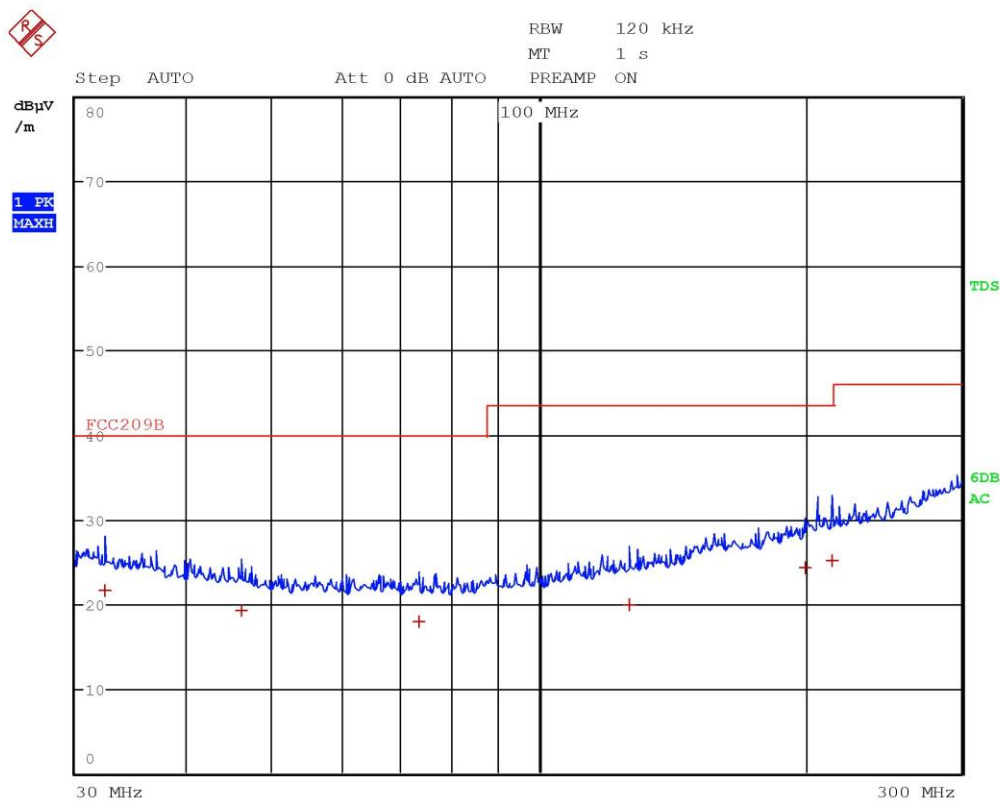


Segalla 20244612



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 30.76 MHz  | 23.16        | -16.83         |
| 1 Quasi Peak                               | 43 MHz     | 21.07        | -18.92         |
| 1 Quasi Peak                               | 46.44 MHz  | 19.17        | -20.82         |
| 1 Quasi Peak                               | 79.92 MHz  | 18.50        | -21.50         |
| 1 Quasi Peak                               | 137.24 MHz | 25.09        | -18.42         |
| 1 Quasi Peak                               | 141.32 MHz | 26.64        | -16.87         |
| 1 Quasi Peak                               | 199.24 MHz | 24.20        | -19.31         |
| 1 Quasi Peak                               | 219.12 MHz | 26.26        | -19.75         |
| 1 Quasi Peak                               | 292.88 MHz | 30.72        | -15.30         |

Segalla 20244612

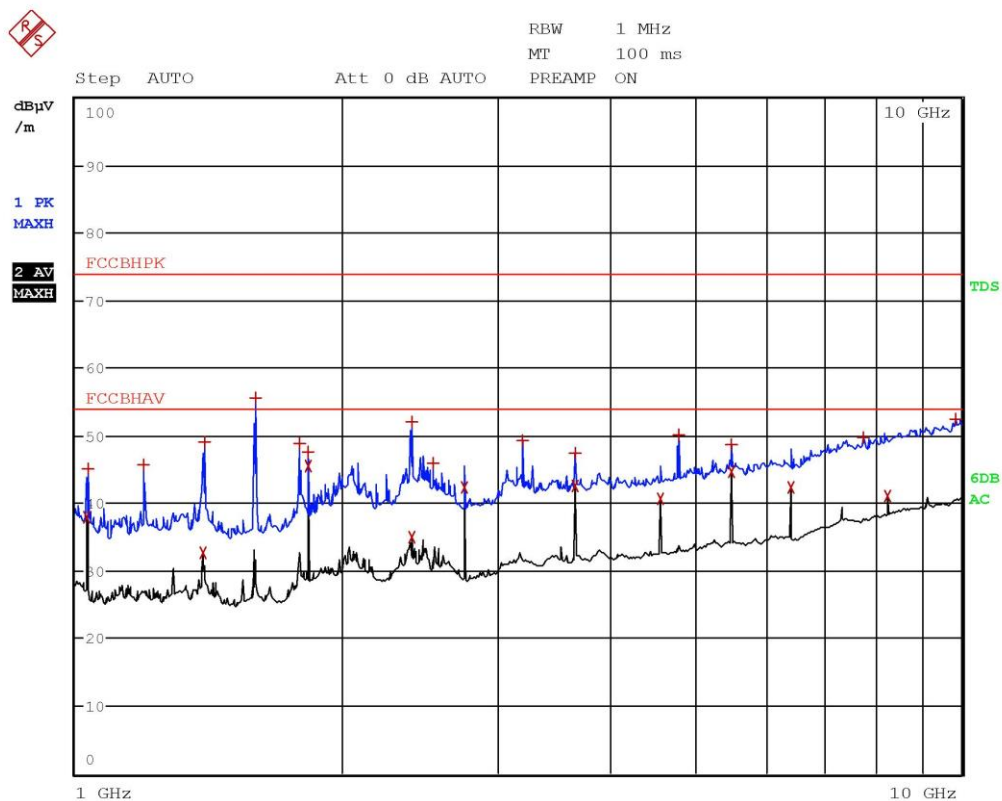


Segalla 20244613



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC209B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 32.4 MHz   | 21.65        | -18.34         |
| 1 Quasi Peak                               | 46.08 MHz  | 19.26        | -20.73         |
| 1 Quasi Peak                               | 73.32 MHz  | 17.85        | -22.15         |
| 1 Quasi Peak                               | 126.64 MHz | 19.99        | -23.52         |
| 1 Quasi Peak                               | 199.68 MHz | 24.29        | -19.22         |
| 1 Quasi Peak                               | 214.6 MHz  | 25.10        | -18.42         |

Segalla 20244613



Segalla 20244614



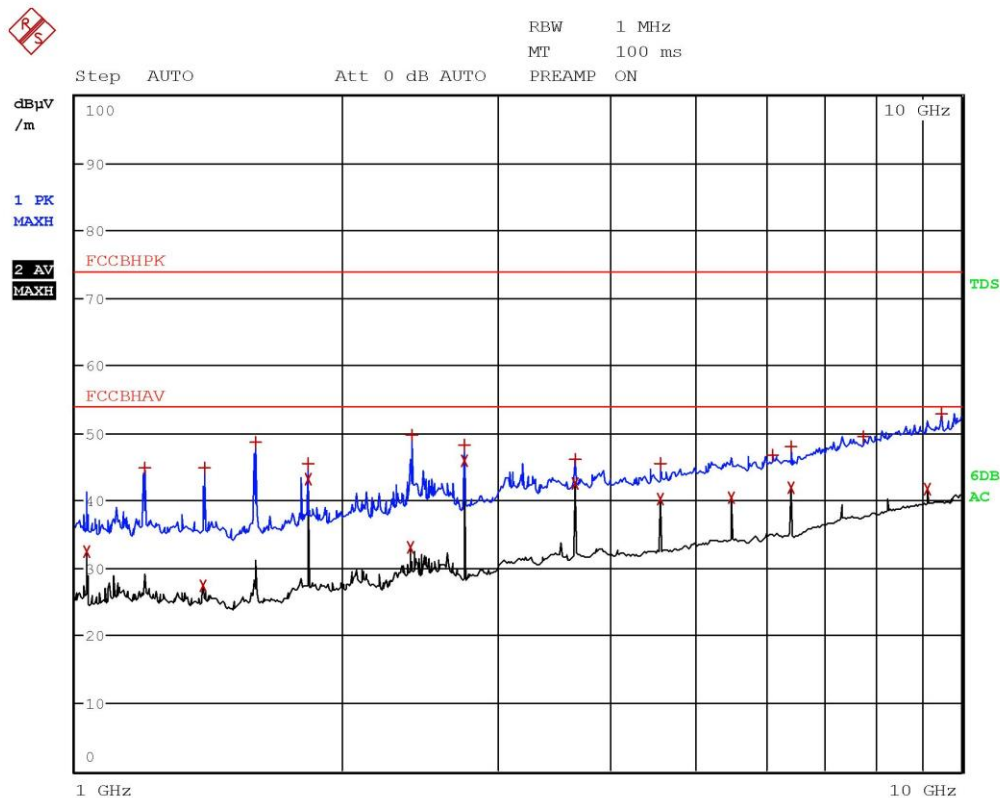
| EDIT PEAK LIST (Prescan Results) |            |              |                |
|----------------------------------|------------|--------------|----------------|
| Trace1:                          | FCCBHPK    |              |                |
| Trace2:                          | FCCBHAV    |              |                |
| Trace3:                          | ---        |              |                |
| TRACE                            | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 2 Average                        | 1.0312 GHz | 37.88        | -16.09         |
| 1 Max Peak                       | 1.0316 GHz | 45.07        | -28.90         |
| 1 Max Peak                       | 1.1952 GHz | 45.67        | -28.30         |
| 2 Average                        | 1.3936 GHz | 32.75        | -21.22         |
| 1 Max Peak                       | 1.3996 GHz | 49.13        | -24.84         |
| 1 Max Peak                       | 1.596 GHz  | 55.57        | -18.40         |
| 1 Max Peak                       | 1.7928 GHz | 48.89        | -25.08         |
| 2 Average                        | 1.832 GHz  | 45.41        | -8.56          |
| 1 Max Peak                       | 1.832 GHz  | 47.55        | -26.42         |
| 1 Max Peak                       | 2.3948 GHz | 51.96        | -22.01         |
| 2 Average                        | 2.3964 GHz | 35.00        | -18.97         |
| 1 Max Peak                       | 2.5292 GHz | 45.85        | -28.12         |
| 2 Average                        | 2.748 GHz  | 42.36        | -11.61         |
| 1 Max Peak                       | 3.1932 GHz | 49.21        | -24.76         |
| 1 Max Peak                       | 3.664 GHz  | 47.39        | -26.58         |
| 2 Average                        | 3.664 GHz  | 42.63        | -11.34         |
| 2 Average                        | 4.58 GHz   | 40.59        | -13.39         |
| 1 Max Peak                       | 4.7932 GHz | 50.13        | -23.84         |
| 1 Max Peak                       | 5.496 GHz  | 48.66        | -25.31         |
| 2 Average                        | 5.496 GHz  | 44.72        | -9.25          |

Segalla 20244614



| EDIT PEAK LIST (Prescan Results) |            |              |                |
|----------------------------------|------------|--------------|----------------|
| Trace1:                          | FCCBHPK    |              |                |
| Trace2:                          | FCCBHAV    |              |                |
| Trace3:                          | ---        |              |                |
| TRACE                            | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 2 Average                        | 6.412 GHz  | 42.26        | -11.71         |
| 1 Max Peak                       | 7.7448 GHz | 49.76        | -24.21         |
| 2 Average                        | 8.2444 GHz | 40.97        | -13.00         |
| 1 Max Peak                       | 9.866 GHz  | 52.43        | -21.54         |

Segalla 20244614



Segalla 20244615



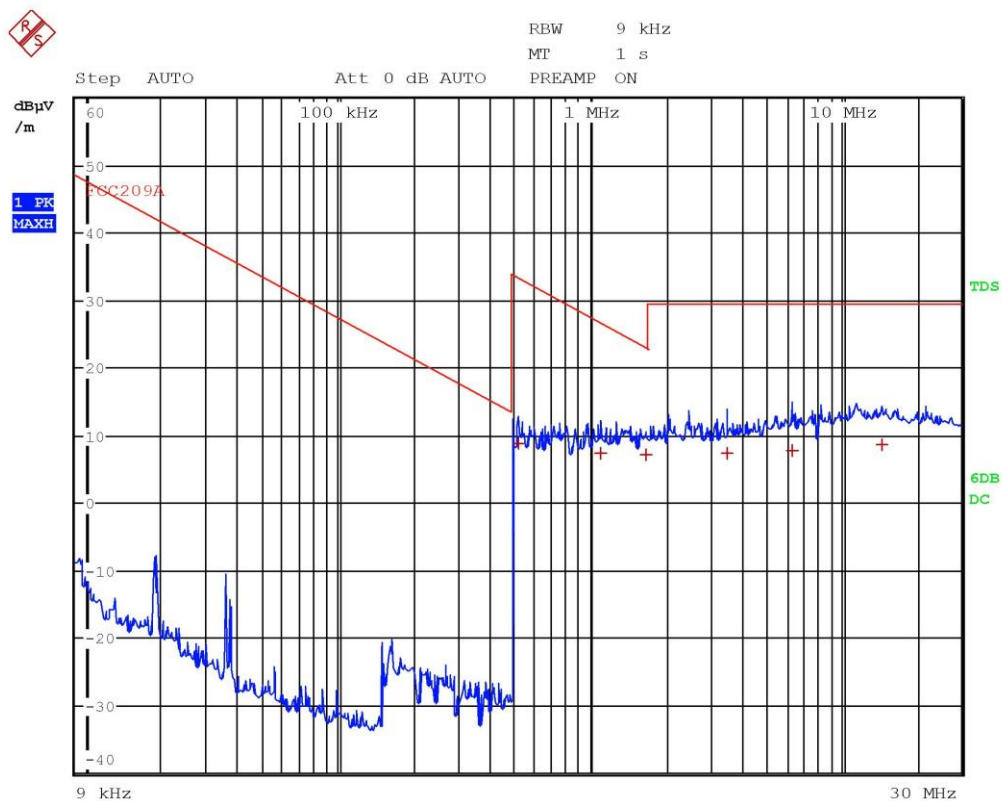
| EDIT PEAK LIST (Prescan Results) |            |              |                |
|----------------------------------|------------|--------------|----------------|
| Trace1:                          | FCCBHPK    |              |                |
| Trace2:                          | FCCBHAV    |              |                |
| Trace3:                          | ---        |              |                |
| TRACE                            | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 2 Average                        | 1.0308 GHz | 32.49        | -21.48         |
| 1 Max Peak                       | 1.198 GHz  | 44.89        | -29.08         |
| 2 Average                        | 1.3948 GHz | 27.40        | -26.57         |
| 1 Max Peak                       | 1.3976 GHz | 44.88        | -29.09         |
| 1 Max Peak                       | 1.5988 GHz | 48.56        | -25.41         |
| 2 Average                        | 1.832 GHz  | 43.19        | -10.79         |
| 1 Max Peak                       | 1.832 GHz  | 45.40        | -28.57         |
| 2 Average                        | 2.3916 GHz | 33.03        | -20.94         |
| 1 Max Peak                       | 2.3972 GHz | 49.68        | -24.29         |
| 1 Max Peak                       | 2.748 GHz  | 48.17        | -25.81         |
| 2 Average                        | 2.748 GHz  | 45.92        | -8.05          |
| 1 Max Peak                       | 3.664 GHz  | 46.07        | -27.90         |
| 2 Average                        | 3.664 GHz  | 42.49        | -11.48         |
| 1 Max Peak                       | 4.58 GHz   | 45.48        | -28.49         |
| 2 Average                        | 4.58 GHz   | 40.13        | -13.84         |
| 2 Average                        | 5.496 GHz  | 40.39        | -13.58         |
| 1 Max Peak                       | 6.1284 GHz | 46.68        | -27.29         |
| 1 Max Peak                       | 6.412 GHz  | 48.09        | -25.88         |
| 2 Average                        | 6.4124 GHz | 41.94        | -12.03         |
| 1 Max Peak                       | 7.7504 GHz | 49.53        | -24.44         |

Segalla 20244615



| EDIT PEAK LIST (Prescan Results) |            |              |                |
|----------------------------------|------------|--------------|----------------|
| Trace1:                          | FCCBHPK    |              |                |
| Trace2:                          | FCCBHAV    |              |                |
| Trace3:                          | ---        |              |                |
| TRACE                            | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 2 Average                        | 9.1604 GHz | 41.75        | -12.22         |
| 1 Max Peak                       | 9.4816 GHz | 52.91        | -21.06         |

Segalla 20244615



Segalla 20244616



| EDIT PEAK LIST (Final Measurement Results) |           |              |                |
|--------------------------------------------|-----------|--------------|----------------|
| Trace1:                                    | FCC209A   |              |                |
| Trace2:                                    | ---       |              |                |
| Trace3:                                    | ---       |              |                |
| TRACE                                      | FREQUENCY | LEVEL dBµV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 518 kHz   | 8.80         | -24.50         |
| 1 Quasi Peak                               | 1.106 MHz | 7.35         | -19.37         |
| 1 Quasi Peak                               | 1.666 MHz | 7.25         | -15.91         |
| 1 Quasi Peak                               | 3.53 MHz  | 7.29         | -22.24         |
| 1 Quasi Peak                               | 6.418 MHz | 7.87         | -21.67         |
| 1 Quasi Peak                               | 14.47 MHz | 8.58         | -20.95         |

Segalla 20244616



#### 9.4 Peak Output Power

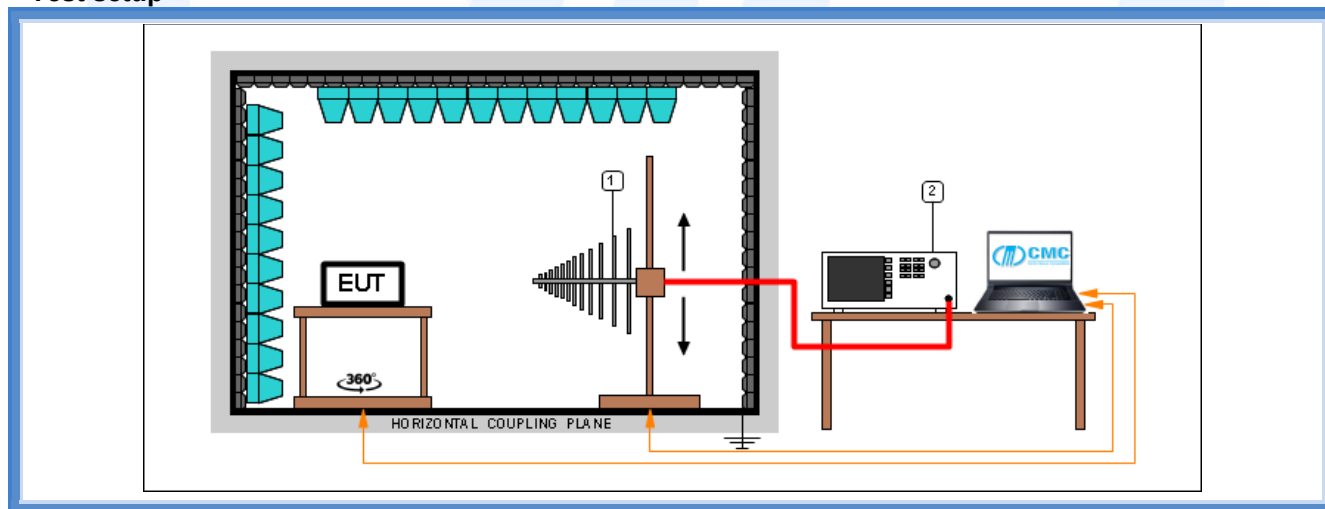
|                                             |                                                          |
|---------------------------------------------|----------------------------------------------------------|
| Tested by .....                             | M. Segalla                                               |
| Test date .....                             | 18.02.2021                                               |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                         |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.209 and 249 |
| Supplementary test set-up description ..... | EUT – antenna distance: 3 m                              |
| Supplementary information .....             | --                                                       |

#### Acceptance limits

| Frequency range (MHz) | RF Power Output (mV/m) | RF Power Output dB(μV/m) |
|-----------------------|------------------------|--------------------------|
| 902 – 928             | 50                     | 94                       |

| Frequency range (MHz) | RF Power Output (mV/m) | RF Power Output dB(μV/m) |
|-----------------------|------------------------|--------------------------|
| 2400 – 2483,5         | 50                     | 94                       |

#### Test setup



Test setup PE004\_03

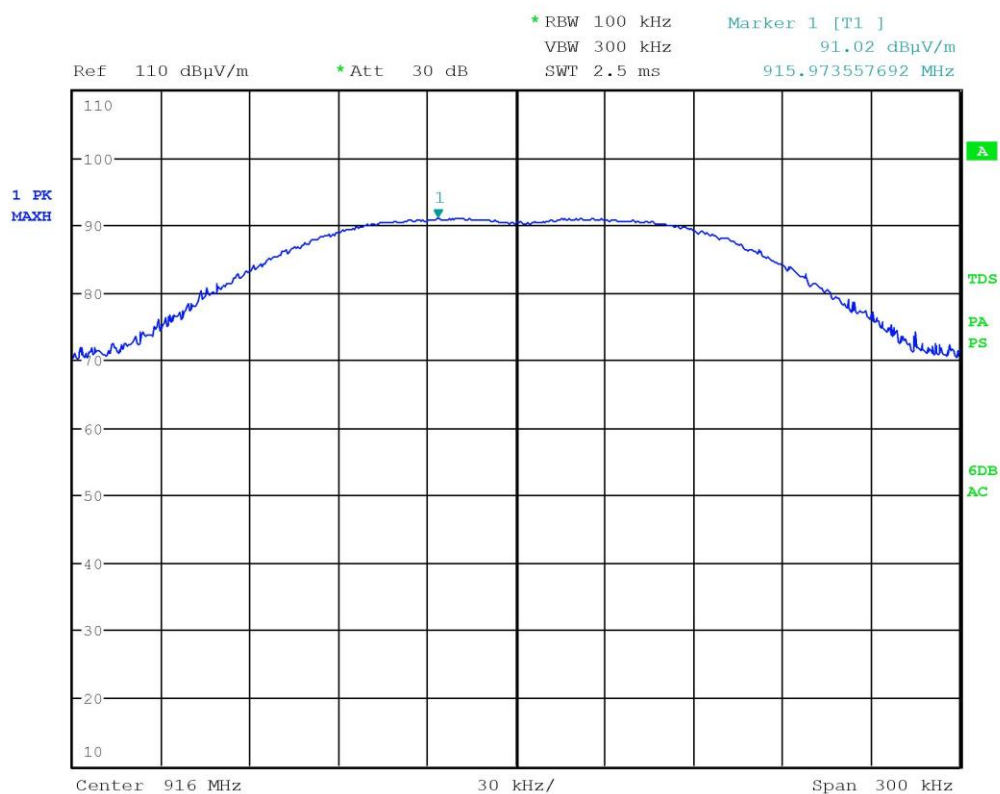
| Nr. | Id. Number | Manufacturer    | Model       | Description               |
|-----|------------|-----------------|-------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26       | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S287   | Schwarzbeck     | VUSLP 9111B | Broadband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

#### Result

| Channel (MHz) | Polarization | Graphs    | Measured level (dBμV/m) | Limit (dBμV/m) |
|---------------|--------------|-----------|-------------------------|----------------|
| 916,00        | Worst case   | G20244605 | 91,02                   | 94,00          |



## Graphs



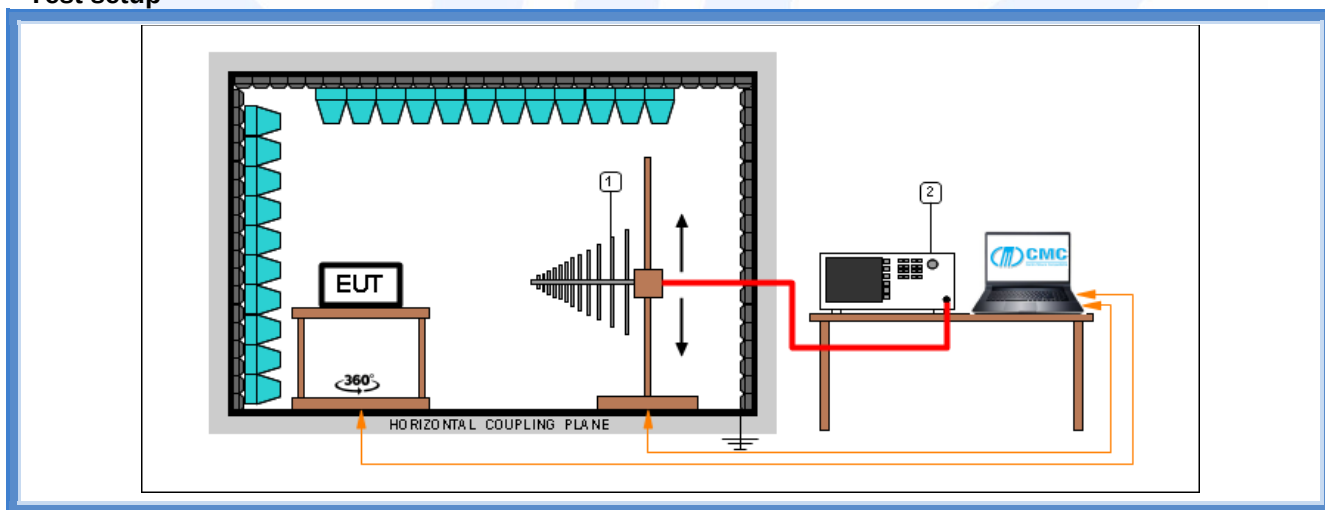
Segalla 20244605



## 9.5 20 dB bandwidth

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tested by .....             | M. Segalla                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Test date .....             | 18.02.2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Test location (stand) ..... | Semi-anechoic chamber (CMC A070)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Reference standards .....   | FCC Rules and Regulation; Titles 47 Part. 15.215 (c)<br>ANSI C63.10 cl. 7.8.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Test specification .....    | 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. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation |

## Test setup



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         |



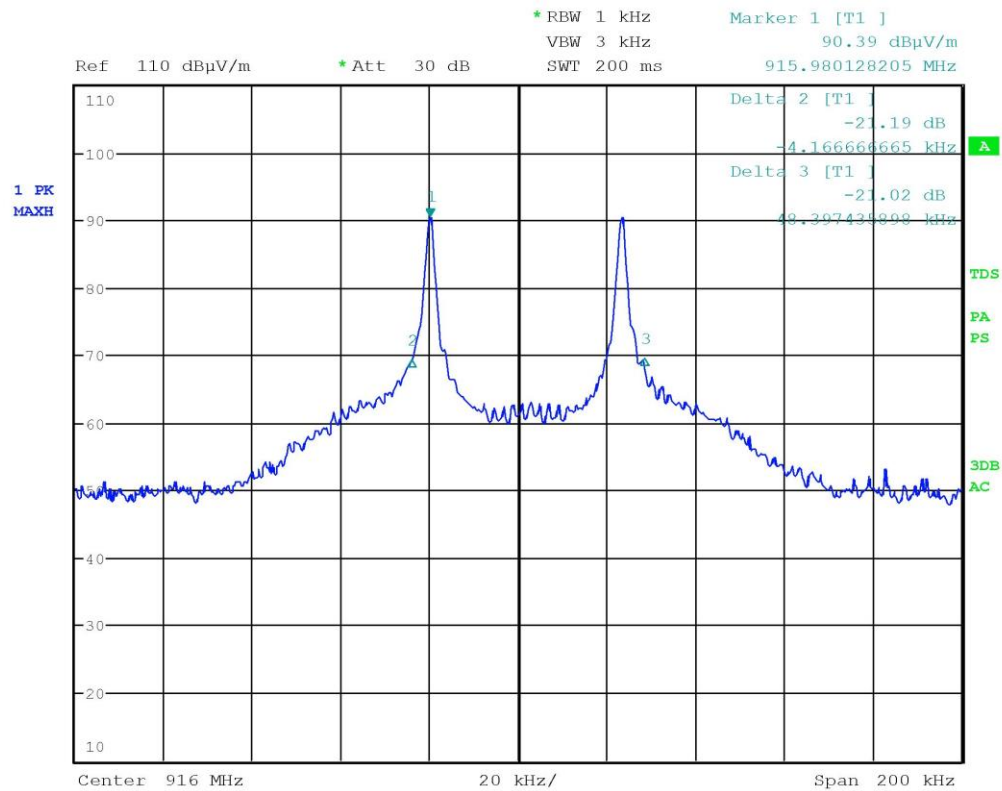
## Result

| Channel (MHz) | Graphs    | 20 dB bandwidth (MHz) | Limits (MHz) | Results  |
|---------------|-----------|-----------------------|--------------|----------|
| 916,00        | G20197426 | 915,976 – 916,029     | 902 – 928    | Complies |





## Graphs



Segalla 20244606



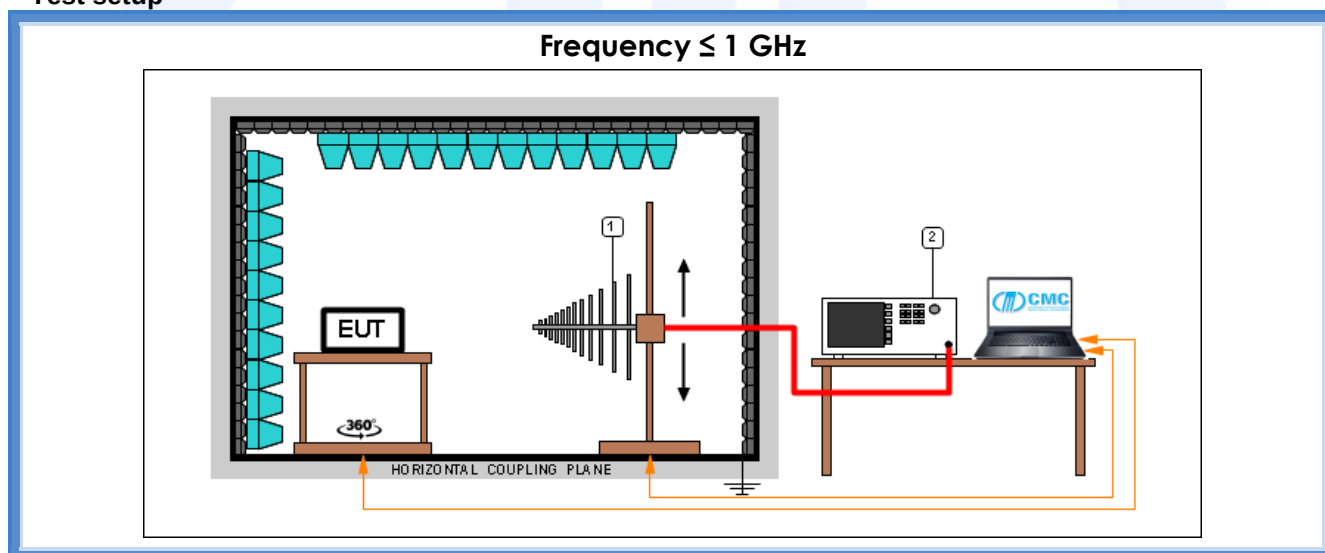
## 9.6 Band edge

|                                |                                                                                                                                                                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tested by .....                | M. Segalla                                                                                                                                                                                                                                              |
| Test date .....                | 18.02.2021                                                                                                                                                                                                                                              |
| Test location (stand) .....    | Semi-anechoic chamber (CMC A070)                                                                                                                                                                                                                        |
| Reference standards .....      | FCC Rules and Regulation; Titles 47 Part. 15.249 (d)                                                                                                                                                                                                    |
| Test specification .....       | Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation |
| Supplementary information..... | --                                                                                                                                                                                                                                                      |

### Acceptance limits

Operation within the band 902 – 928 MHz

### Test setup



Test setup PE004\_03

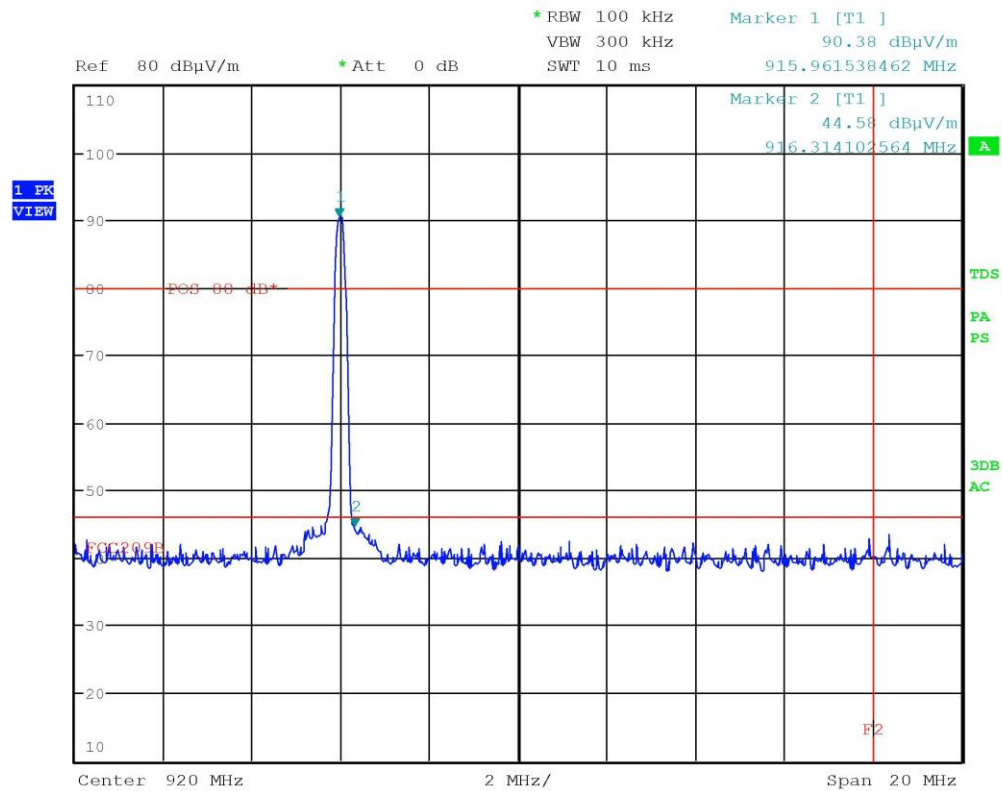
| Nr. | Id. Number | Manufacturer    | Model       | Description               |
|-----|------------|-----------------|-------------|---------------------------|
| 2   | CMC S164   | Rohde & Schwarz | ESU26       | Receiver 20 Hz - 26.5 GHz |
| 1   | CMC S287   | Schwarzbeck     | VUSLP 9111B | Broadband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

### Result

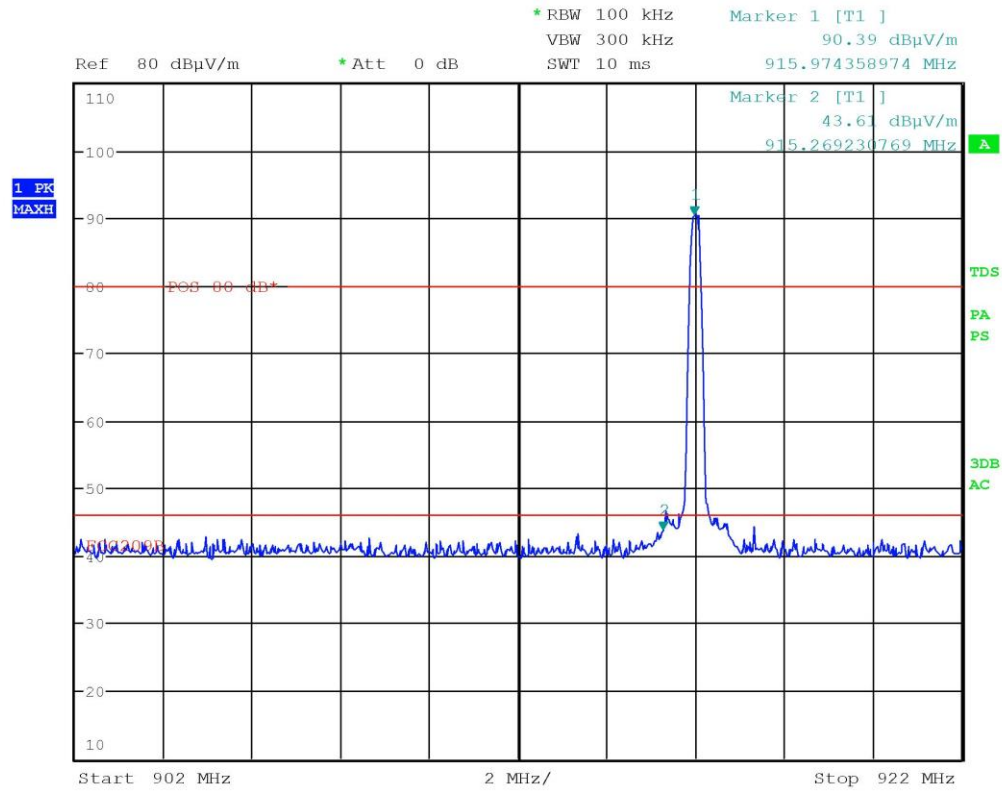
| Channel (MHz) | Graph(s)  | Results                         |          |
|---------------|-----------|---------------------------------|----------|
| 916,00        | G20244609 | F <sub>L</sub> : 915,269231 MHz | Complies |
| 916,00        | G20244608 | F <sub>H</sub> : 916,314103 MHz | Complies |



## Graphs



Segalla 20244608



Segalla 20244609



## 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 '21                    | January '22                        |
| 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 '21                    | January '22                        |
| CMC S200                 | Schwarzbeck                | NSLK 8128                  | V-LISN                              | 8128-273                    | January '21                    | January '22                        |
| CMC S206                 | Rohde & Schwarz            | ESCI 7                     | EMC Receiver 9KHz-7GHz              | 100781                      | January '21                    | January '22                        |
| CMC S260                 | CMC                        | Wfr_N                      | Shielded Cable                      | Wfr_ant10-1                 | November '20                   | November '21                       |
| CMC S261                 | CMC                        | Wfr_N                      | Shielded Cable                      | Wfr_ant20-1                 | November '20                   | November '21                       |
| CMC S262                 | CMC                        | Wfr_N_fix                  | Shielded Cable                      | Wfr_fix32-1                 | November '20                   | November '21                       |
| CMC S263                 | CMC                        | Wfr_N_fix                  | Shielded Cable                      | Wfr_fix31-1                 | November '20                   | November '21                       |
| CMC S264                 | CMC                        | Wfr_N                      | Shielded Cable                      | Wfr_ext03-1                 | November '20                   | November '21                       |
| 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 '20                   | November '23                       |
| CMC S295                 | Rohde & Schwarz            | FSW43                      | Spectrum Analyzer 43GHz             | 104059                      | November '20                   | November '23                       |
| CMC S334                 | Wainwright Instruments     | WHKX12-935-1000-15000-40SS | High Pass Filter 1000MHz            | 46                          | December '20                   | December '21                       |



## 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   | 3,8 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   | 4,2 dB                   | 1    |
| Radiated Emission CISPR 16<br>Bicon. Ant. 30-300 MHz      | PE004_02   | 4,1 dB                   | 1    |
| Radiated Emission CISPR 16<br>LogP. Ant. 300-1000 MHz     | PE004_03   | 3,9 dB                   | 1    |
| Radiated Emission CISPR 16<br>Horn Ant. 1-18 GHz          | PE004_04   | 4,1 dB                   | 1    |
| Human Exposure to electromagnetic fields                  | PE005_01   | 16,7 %                   | 1    |
| Harmonics                                                 | PE006_01   | 10 mA + 2,9 %            | 1    |
| Flicker                                                   | PE007_01   | 4,53 %                   | 1    |
| Radiated Immunity<br>80 MHz - 6 GHz                       | PE102_XX   | 2,20 dB 0,87 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   | 6,23 % 18,7 A/m a 300A/m | 1    |
| Dumped Magnetic field                                     | PE108_01   | 6,23 % 1,87 A/m a 30A/m  | 1    |
| Common mode conducted immunity                            | PE112_01   | 2,16 % 0,22 V a 10V      | 1    |



## Attachment 1

| Test                                       | Test Setup  | Expanded uncertainty | Note |
|--------------------------------------------|-------------|----------------------|------|
| Power/Spurious<br>9kHz-30MHz               | PR001_01    | 4,2 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. 21_01 date 23/02/2021                       |            |                      |      |

### 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.                                                                        | The sample complies with the requirements.                                                                                                               | The sample does not comply with the requirements.                                                                                                    | The sample does not comply with the requirements.                                                                  |
| The measurement results is within the specification limit when the measurement uncertainty is taken into account. | It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit. | 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 measurement results is outside the specification limit when the measurement uncertainty is taken into account. |

In agreement with ILAC-G8:09/2019 cl.4.2.1 Guidelines on Decision Rules and Statements of Conformity

### Quality manual references – Internal procedure

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| Internal Procedure PM001 rev. 3.1 (Quality Manual) ..... | Measure procedure                   |
| Internal Procedure INC_M rev. 9.4 (Quality Manual) ..... | Measurement uncertainty calculation |