



## TEST REPORT Nr. R20222601

### Federal Communication Commission (FCC)

|                                                                                                                                                                                                            |                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Report Reference No.</b> .....                                                                                                                                                                          | R20222601                                                                   |
| Date of issue: .....                                                                                                                                                                                       | 11.01.2021                                                                  |
| Total number pages: .....                                                                                                                                                                                  | 29                                                                          |
| <b>Applicant's name</b> .....                                                                                                                                                                              | Caen RFID S.r.l.                                                            |
| Address .....                                                                                                                                                                                              | Via Vetraia, 11 – 55049 Viareggio (LU) – Italy                              |
| <b>Test specification:</b>                                                                                                                                                                                 |                                                                             |
| Standards .....                                                                                                                                                                                            | FCC Rules & Regulations, Title 47:2019<br>Part 15 paragraph(s): 107 and 109 |
| Non-standard test method .....                                                                                                                                                                             | N/A                                                                         |
| <b>Test Report Form No.</b> .....                                                                                                                                                                          | 15-107_15-109CMC                                                            |
| Test Report Form(s) Originator ..                                                                                                                                                                          | CMC Centro Misure Compatibilità S.r.l.                                      |
| Master TRF .....                                                                                                                                                                                           | 2021-01                                                                     |
| <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> .....                                                                                                                                                                         | R1280IU – skid – RAIN RFID Mini Sled Reader FCC                             |
| Trademark .....                                                                                                                                                                                            | Caen RFID                                                                   |
| Manufacturer .....                                                                                                                                                                                         | Caen RFID S.r.l.                                                            |
| Model / Type reference .....                                                                                                                                                                               | WR1280IXUSAA                                                                |
| FCC ID .....                                                                                                                                                                                               | UVECAENRFID032                                                              |
| Rating(s) .....                                                                                                                                                                                            | 3,7 Vdc from battery<br>5 Vdc from USB                                      |
| <b>Report</b>                                                                                                                                                                                              |                                                                             |
| Tested by (name + signature) .....                                                                                                                                                                         | G. Gandini                                                                  |
| Approved by (name + signature) .....                                                                                                                                                                       | R. Beghetto                                                                 |



## 1 Summary

|     |                                           |    |
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| 1   | Summary.....                              | 2  |
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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            | 11.01.2021 | --             |



| Testing and sampling:                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of receipt of test item .....                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13.11.2020                                                                                                                                                                             |
| Testing start date .....                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 26.11.2020                                                                                                                                                                             |
| Testing end date .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 27.11.2020                                                                                                                                                                             |
| Sampling procedure.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion.<br>The results relate to the sample as it has been received. |
| Internal identification .....                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adhesive label with the product number P201186                                                                                                                                         |
| General remarks:                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                        |
| <p>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.<br/>Tests reported in this test report marked by wording: “Test not accredited by ACCREDIA” are not part of the ACCREDIA accreditation of this laboratory.</p> |                                                                                                                                                                                        |
| Possible test case verdicts:                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                        |
| Test case does not apply to the test object:                                                                                                                                                                                                                                                                                                                                                                                                                                           | N/A (Not Applicable)                                                                                                                                                                   |
| Test object does meet the requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                 | P (Pass)                                                                                                                                                                               |
| Test object does not meet the requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                             | F (Fail)                                                                                                                                                                               |
| Test object does not performed:                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/E (Not Executed)                                                                                                                                                                     |
| Definition of symbols used in this test report:                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report.<br><input type="checkbox"/> Indicates that the listed condition, standard or equipment is not applicable for this report.                                                                                                                                                                                                                                |                                                                                                                                                                                        |



## 6 General description of test item(s)

|                          |                                                                                    |                          |                                     |                                     |                          |                          |                                     |
|--------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| Description .....        | R1280IU – skid – RAIN RFID Mini Sled Reader FCC                                    |                          |                                     |                                     |                          |                          |                                     |
| Model Number .....       | WR1280IXUSAA                                                                       |                          |                                     |                                     |                          |                          |                                     |
| FCC ID .....             | UVECAENRFID032                                                                     |                          |                                     |                                     |                          |                          |                                     |
| Serial Number .....      | 0001000120400001                                                                   |                          |                                     |                                     |                          |                          |                                     |
| Brand name .....         | Caen RFID                                                                          |                          |                                     |                                     |                          |                          |                                     |
| Type of device .....     | TV Broadcast Receiver                                                              |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | FM Broadcast Receiver                                                              |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | CB Receiver                                                                        |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Superregenerative Receiver                                                         |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Scanning Receiver                                                                  |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Radar Detector                                                                     |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | All other receivers subject to Part 15                                             |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | TV Interface Device                                                                |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Cable System Terminal Device                                                       |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Stand-alone Cable input selector switch                                            |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Class B personal computers and peripherals                                         |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | CPU boards and internal power supplies used with Class B personal computers        |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Class B personal computers assembled using authorized CPU boards or power supplies |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Class B external switching power supplies                                          |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Other Class B digital devices & peripherals                                        |                          |                                     |                                     |                          |                          | <input checked="" type="checkbox"/> |
|                          | Class A digital devices, peripherals & external switching power supplies           |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | Access Broadband over Power Line (Access BPL)                                      |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
|                          | All other devices                                                                  |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |
| Ports.....               | Port name and description                                                          | Cable                    |                                     |                                     |                          |                          |                                     |
|                          |                                                                                    | Specified length [m]     | Attached during test                | Shielded                            |                          |                          |                                     |
|                          | USB cable                                                                          | < 3                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                          |                          |                                     |
| Rated power supply ..... | Voltage and Frequency                                                              | Reference poles          |                                     |                                     |                          |                          |                                     |
|                          |                                                                                    | N                        | L1                                  | L2                                  | L3                       | PE                       |                                     |
|                          | <input type="checkbox"/> AC:                                                       | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                                     |
|                          | <input type="checkbox"/> AC:                                                       | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                                     |
|                          | <input checked="" type="checkbox"/> DC: 5 V from USB                               |                          |                                     |                                     |                          |                          | <input type="checkbox"/>            |



|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Emission class .....                          | Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| Software version .....                        | 1.3.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |
| Mounting position.....                        | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Table top equipment                 |
|                                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Wall/Ceiling mounted equipment      |
|                                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Floor standing equipment            |
|                                               | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Hand-held equipment                 |
|                                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other:                              |
| Operating modes .....                         | No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operating mode of test item         |
|                                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | USB communication with PC, recharge |
| Accessories (not part of the test item) ..... | PC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |
| Declination of responsibility .....           | <p>Components list and software/hardware version (if reported) are provided by the manufacturer. CMC Centro Misure Compatibilità S.r.l. cannot be considered responsible for these information, for any other document sent by the manufacturer and for any difference between the software version present in the tested sample and that present in the object intended for final sale.</p> <p>In some cases, the software in the tested sample is in a version dedicated exclusively to the test, and therefore does not represent the software installed in the final version of the product.</p> |                                     |



## 6.1 Photos of the test item







## 7 Verdict summary section

| FCC Rules & Regulations, Title 47:2019<br>Part 15 paragraph(s): 107 and 109 |                         |                |               |         |
|-----------------------------------------------------------------------------|-------------------------|----------------|---------------|---------|
| Clause                                                                      | Requirement – Test case | Basic standard | Test sequence | Verdict |
| Part 15.107                                                                 | Conducted emission      | ANSI C63.4     | 2             | P       |
| Part 15.109                                                                 | Radiated emission       | ANSI C63.4     | 1             | 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 |





## 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 Emission

### 9.1 Conducted emission

|                                             |                                                                      |                                                                                                              |
|---------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | G. Gandini                                                           |                                                                                                              |
| Test date .....                             | 27.11.2020                                                           |                                                                                                              |
| Test location (stand) .....                 | Shielded chamber (CMC A001)                                          |                                                                                                              |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.107<br>ANSI C63.4 cl. 7 |                                                                                                              |
| 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:                                                                                                       |

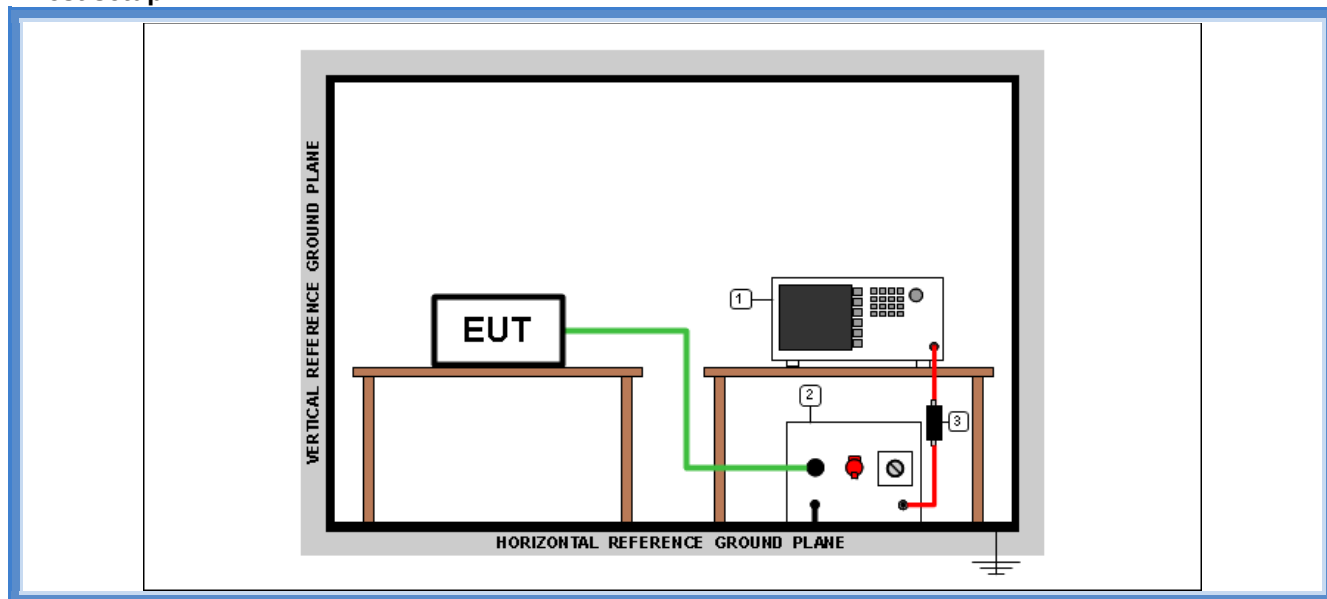
### Acceptance limits

| Limits for class A equipment |                                     |                                  |
|------------------------------|-------------------------------------|----------------------------------|
| Frequency range (MHz)        | $\text{dB}(\mu\text{V})$ Quasi-peak | $\text{dB}(\mu\text{V})$ Average |
| 0,15 to 0,50                 | 79                                  | 66                               |
| 0,5 to 5                     | 73                                  | 60                               |
| 5 to 30                      | 73                                  | 60                               |

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



## Test setup



Test setup PE001\_01

| 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 S353   | Rohde & Schwarz | ESW26     | EMI Test Receiver 1 Hz - 26.5 GHz |

## Result

| Line | Frequency Range (MHz) | Graphs    | Remarks | Result |
|------|-----------------------|-----------|---------|--------|
| L1   | 0,15 – 30             | G20222605 | --      | P      |
| N    | 0,15 – 30             | G20222606 | --      | P      |

**Remarks:** test performed on 120 Vac side of auxiliary PC power unit

## Graphs Legend

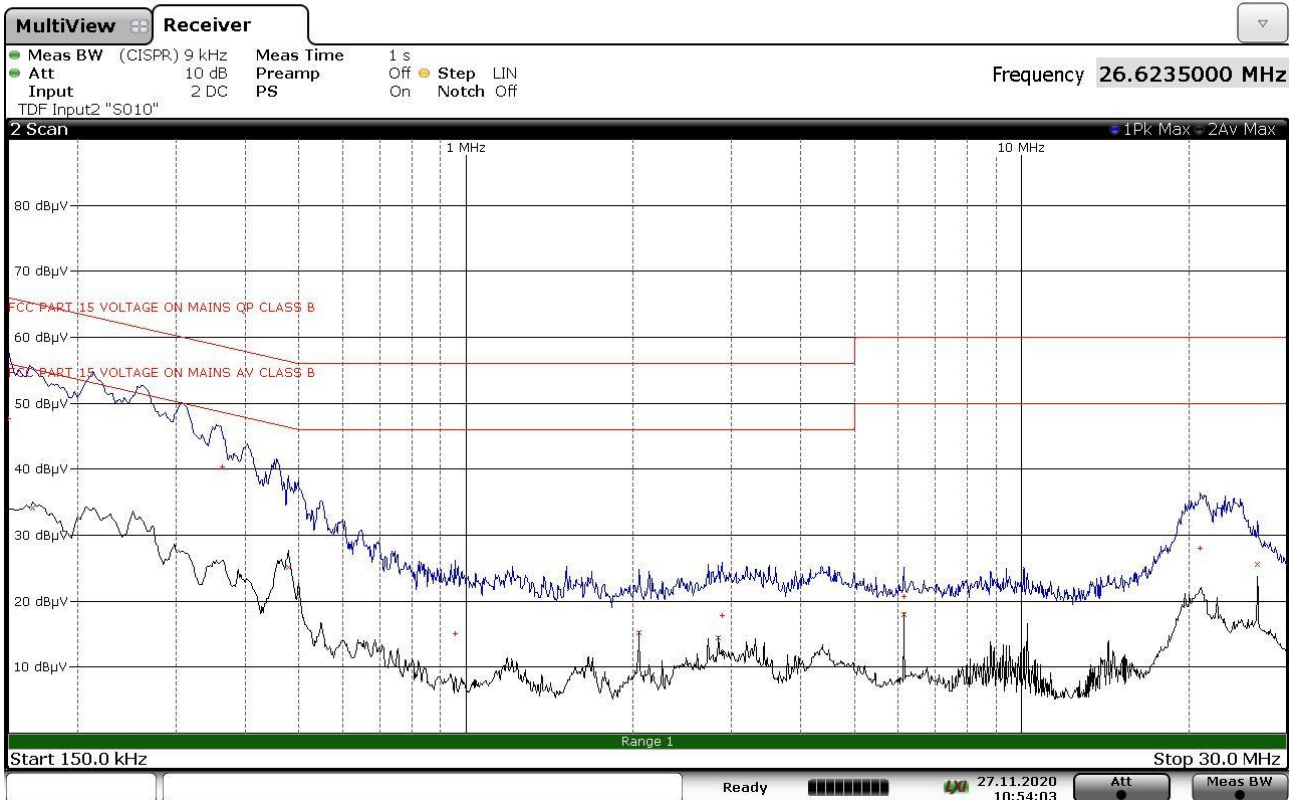
PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +

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



## Graphs

Gandini 20222605



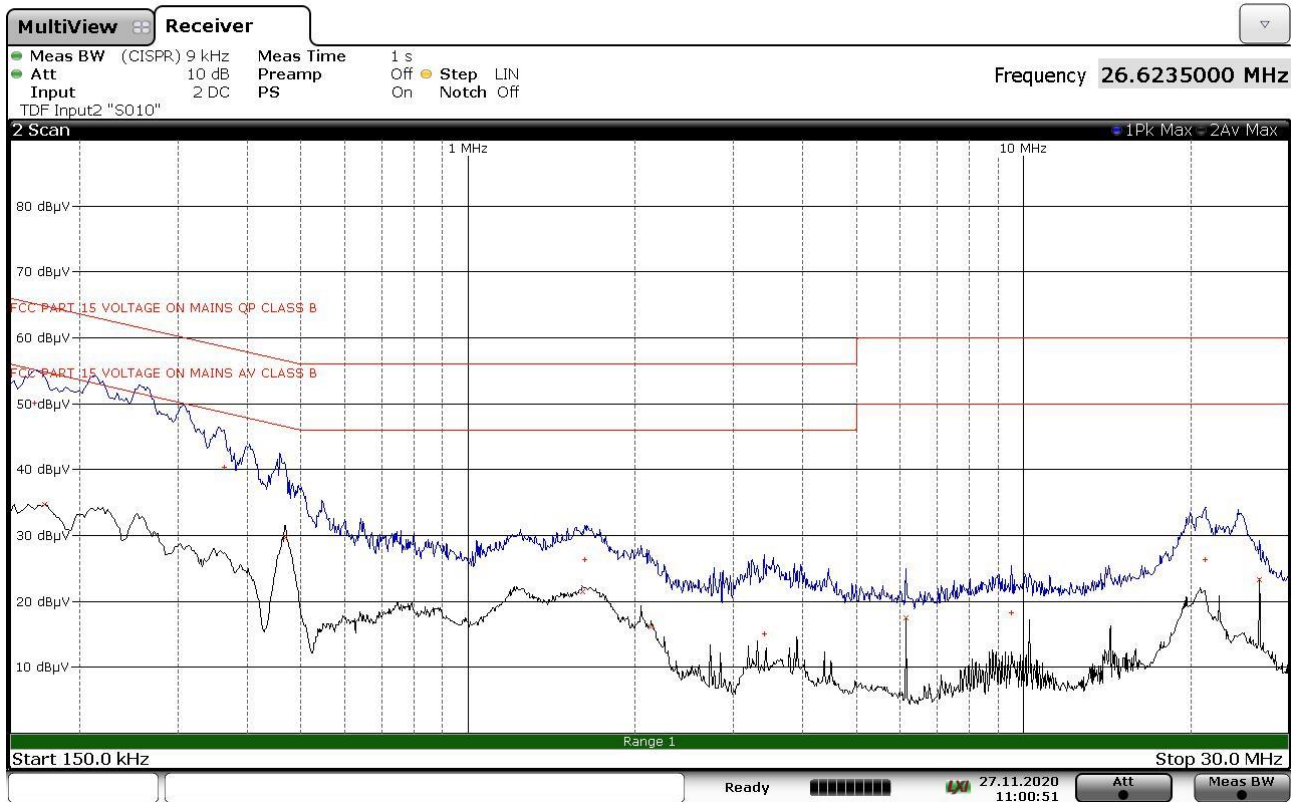
FINAL RESULT TABLE

| QUASI PEAK |          |           | AVERAGE  |          |           |
|------------|----------|-----------|----------|----------|-----------|
| Freq Hz    | Lev dBuV | Margin dB | Freq Hz  | Lev dBuV | Margin dB |
| 150000     | +47,67   | -18,33    | 165750   | +34,06   | -21,11    |
| 363750     | +40,34   | -18,30    | 478500   | +25,10   | -21,27    |
| 955500     | +15,09   | -40,91    | 2046750  | +15,23   | -30,77    |
| 2892750    | +17,76   | -38,24    | 2847750  | +14,46   | -31,54    |
| 6144000    | +20,66   | -39,34    | 6144000  | +17,99   | -32,01    |
| 20978250   | +28,00   | -32,00    | 26623500 | +25,54   | -24,46    |

20222605\_2



Gandini 20222606



FINAL RESULT TABLE

| QUASI PEAK |          |           | AVERAGE  |          |           |
|------------|----------|-----------|----------|----------|-----------|
| Freq Hz    | Lev dBuV | Margin dB | Freq Hz  | Lev dBuV | Margin dB |
| 165750     | +50,07   | -15,10    | 172500   | +34,65   | -20,19    |
| 363750     | +40,41   | -18,23    | 469500   | +29,68   | -16,84    |
| 1623750    | +26,35   | -29,65    | 1605750  | +21,45   | -24,55    |
| 3412500    | +15,12   | -40,88    | 2132250  | +16,09   | -29,91    |
| 9512250    | +18,21   | -41,79    | 6144000  | +17,50   | -32,50    |
| 21259500   | +26,34   | -33,66    | 26623500 | +23,25   | -26,75    |

20222606\_2



## 9.2 Radiated emission

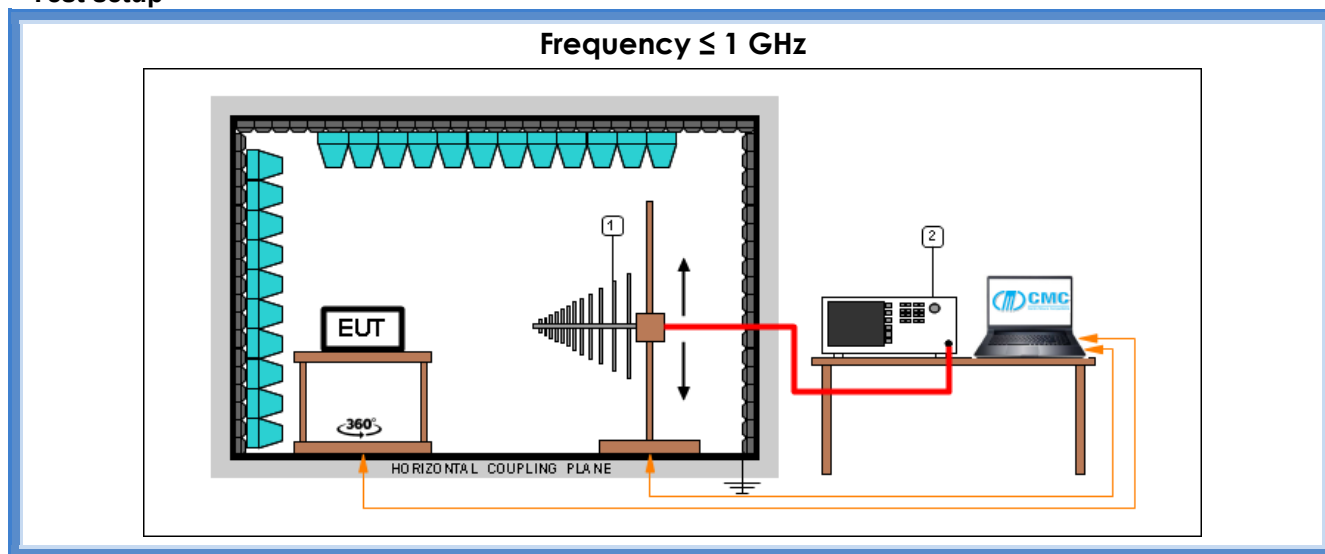
|                                             |                                                                                                                   |                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Tested by .....                             | G. Gandini                                                                                                        |                                                                                                              |
| Test date .....                             | 26.11.2020                                                                                                        |                                                                                                              |
| Test location (stand) .....                 | Semi-anechoic chamber (CMC A070)                                                                                  |                                                                                                              |
| Reference standards .....                   | FCC Rules and Regulation; Titles 47 Part. 15.109<br>ANSI C63.4 cl. 8                                              |                                                                                                              |
| 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 .....                   | OATS or SAC with measurement distance [m]:<br>10 m for frequencies below 1 GHz<br>3 m for frequencies above 1 GHz |                                                                                                              |
| Supplementary information .....             | --                                                                                                                |                                                                                                              |

### Acceptance limits

| Class A radiated limits |                   |                          |
|-------------------------|-------------------|--------------------------|
| Frequency range (MHz)   | Limits [dB(μV/m)] | Measurement distance (m) |
| 30 to 88                | 39,08             | 10                       |
| 88 to 216               | 43,52             | 10                       |
| 216 to 960              | 46,44             | 10                       |
| Above 960               | 49,54             | 10                       |

| Class B radiated limits |                   |                          |
|-------------------------|-------------------|--------------------------|
| Frequency range (MHz)   | Limits [dB(μV/m)] | Measurement distance (m) |
| 30 to 88                | 40                | 3                        |
| 88 to 216               | 43,52             | 3                        |
| 216 to 960              | 46,02             | 3                        |
| Above 960               | 53,98             | 3                        |

## Test setup



Test setup PE004\_02

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

Test setup PE004\_03

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

## Result

| Polarization | Frequency Range (MHz) | Graphs    | Remarks | Result |
|--------------|-----------------------|-----------|---------|--------|
| V            | 30 – 300              | G20222601 | --      | P      |
| H            | 30 – 300              | G20222602 | --      | P      |
| H            | 300 – 1000            | G20222603 | --      | P      |
| V            | 300 – 1000            | G20222604 | --      | P      |

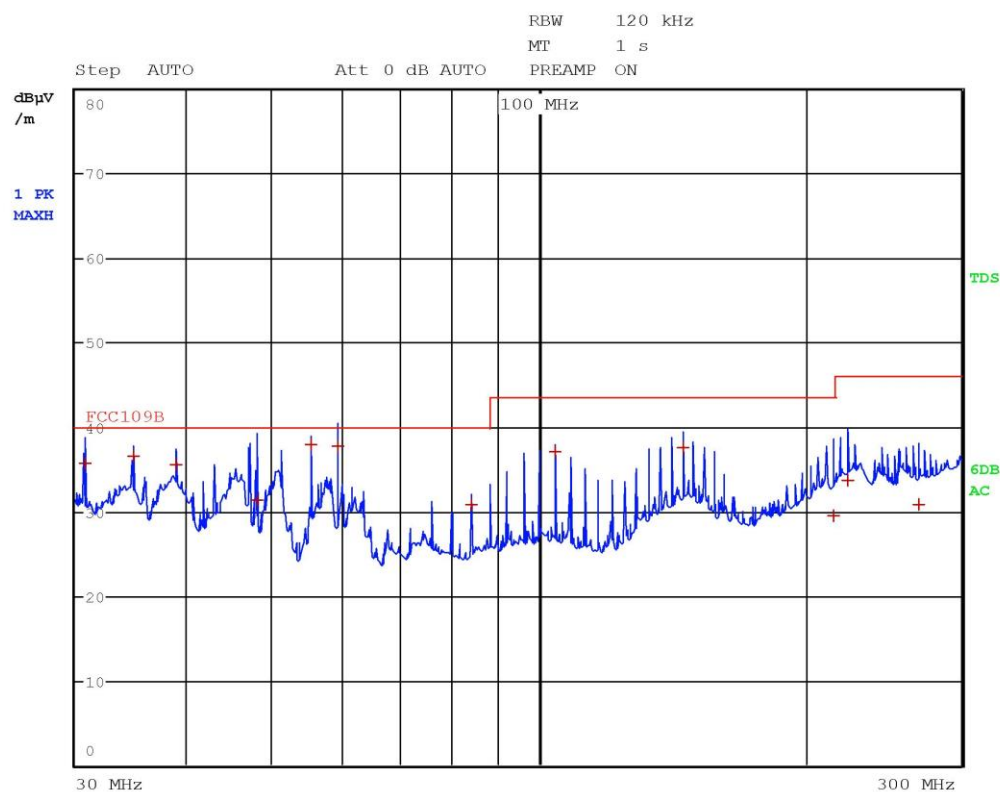
**Remarks:** EUT was tested in 3 orthogonal planes, graphs are related to the highest detected levels. Measurements at frequencies lower than 1000 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with conversion factor  $20\log(\text{test distance}/10)$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

### 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

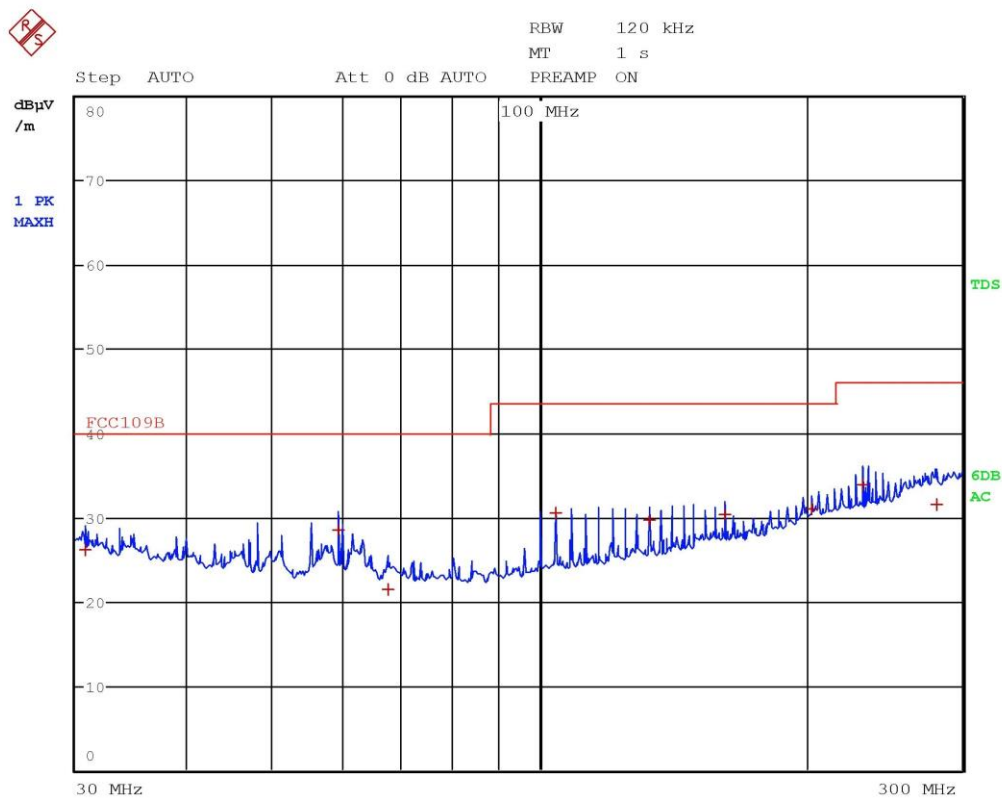


Gandini 20222601-Vert-USB communication



| EDIT PEAK LIST (Final Measurement Results) |                   |               |                |
|--------------------------------------------|-------------------|---------------|----------------|
| Trace1:                                    | FCC109B           |               |                |
| Trace2:                                    | ---               |               |                |
| Trace3:                                    | ---               |               |                |
| TRACE                                      | FREQUENCY         | LEVEL, dBµV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 30.72 MHz         | 35.70         | -4.29          |
| 1 Quasi Peak                               | 34.8 MHz          | 36.49         | -3.50          |
| 1 Quasi Peak                               | 38.92 MHz         | 35.50         | -4.49          |
| 1 Quasi Peak                               | 48 MHz            | 31.39         | -8.60          |
| 1 Quasi Peak                               | 55.28 MHz         | 37.96         | -2.03          |
| 1 Quasi Peak                               | 59.4 MHz          | 37.65         | -2.34          |
| 1 Quasi Peak                               | 83.96 MHz         | 30.80         | -9.19          |
| 1 Quasi Peak                               | 104.44 MHz        | 37.11         | -6.40          |
| 1 Quasi Peak                               | 145.4 MHz         | 37.58         | -5.93          |
| 1 Quasi Peak                               | 215.04 MHz        | 29.46         | -14.05         |
| 1 Quasi Peak                               | 223.24 MHz        | 33.72         | -12.29         |
| 1 Quasi Peak                               | 268.286410256 MHz | 30.87         | -15.14         |

Gandini 20222601-Vert-USB communication

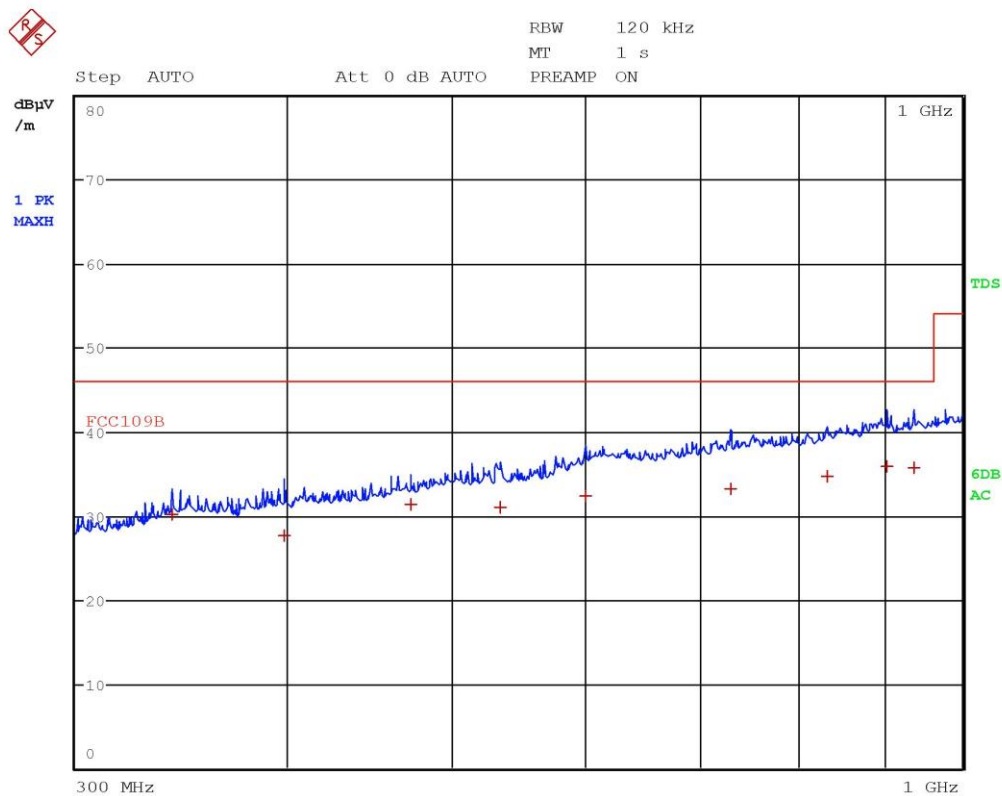


Gandini 20222602-Horiz-USB communication



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC109B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 30.72 MHz  | 26.14        | -13.86         |
| 1 Quasi Peak                               | 59.4 MHz   | 28.56        | -11.43         |
| 1 Quasi Peak                               | 67.6 MHz   | 21.50        | -18.49         |
| 1 Quasi Peak                               | 104.44 MHz | 30.47        | -13.04         |
| 1 Quasi Peak                               | 133.12 MHz | 29.63        | -13.88         |
| 1 Quasi Peak                               | 161.8 MHz  | 30.30        | -13.21         |
| 1 Quasi Peak                               | 202.76 MHz | 30.99        | -12.52         |
| 1 Quasi Peak                               | 231.4 MHz  | 33.90        | -12.11         |
| 1 Quasi Peak                               | 280.56 MHz | 31.56        | -14.45         |

Gandini 20222602-Horiz-USB communication

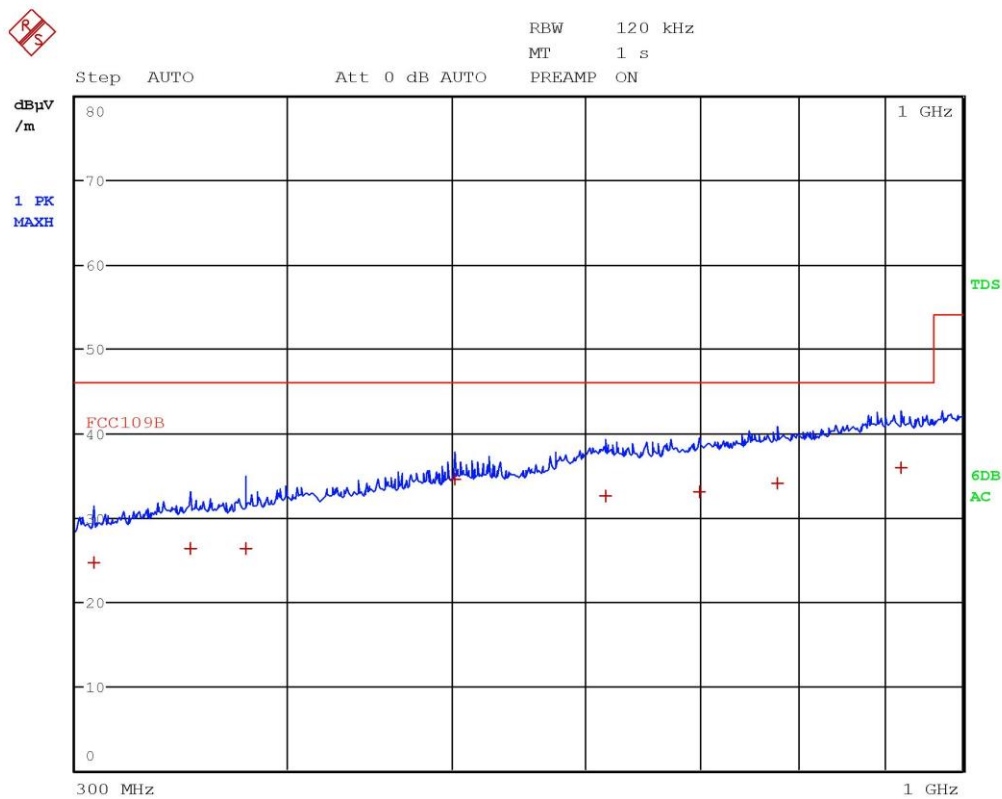


Gandini 20222603-Horiz-USB communication



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC109B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 342 MHz    | 30.23        | -15.78         |
| 1 Quasi Peak                               | 398.28 MHz | 27.71        | -18.30         |
| 1 Quasi Peak                               | 473.12 MHz | 31.37        | -14.64         |
| 1 Quasi Peak                               | 534.56 MHz | 30.96        | -15.05         |
| 1 Quasi Peak                               | 600.12 MHz | 32.34        | -13.67         |
| 1 Quasi Peak                               | 729.84 MHz | 33.24        | -12.77         |
| 1 Quasi Peak                               | 832.08 MHz | 34.63        | -11.38         |
| 1 Quasi Peak                               | 902.92 MHz | 35.81        | -10.20         |
| 1 Quasi Peak                               | 937.12 MHz | 35.73        | -10.29         |

Gandini 20222603-Horiz-USB communication



Gandini 20222604-Vert-USB communication



| EDIT PEAK LIST (Final Measurement Results) |            |              |                |
|--------------------------------------------|------------|--------------|----------------|
| Trace1:                                    | FCC109B    |              |                |
| Trace2:                                    | ---        |              |                |
| Trace3:                                    | ---        |              |                |
| TRACE                                      | FREQUENCY  | LEVEL dBμV/m | DELTA LIMIT dB |
| 1 Quasi Peak                               | 307.72 MHz | 24.59        | -21.42         |
| 1 Quasi Peak                               | 351.04 MHz | 26.37        | -19.64         |
| 1 Quasi Peak                               | 377.92 MHz | 26.33        | -19.68         |
| 1 Quasi Peak                               | 501.76 MHz | 34.46        | -11.55         |
| 1 Quasi Peak                               | 616.2 MHz  | 32.49        | -13.52         |
| 1 Quasi Peak                               | 699.56 MHz | 33.03        | -12.98         |
| 1 Quasi Peak                               | 778.84 MHz | 34.05        | -11.97         |
| 1 Quasi Peak                               | 920.64 MHz | 35.86        | -10.15         |

Gandini 20222604-Vert-USB communication



## 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 S164                 | Rohde & Schwarz            | ESU26                | EMC interference receiver           | 100052                      | January '20                    | January '21                        |
| CMC S200                 | Schwarzbeck                | NSLK 8128            | V-LISN                              | 8128-273                    | January '20                    | January '21                        |
| CMC 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 '21                       |
| CMC S353                 | Rohde & Schwarz            | ESW26                | EMI Test Receiver 1 Hz - 26.5 GHz   | 101492                      | September '20                  | September '22                      |



## Attachment 1

### Measurement uncertainty

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



## Attachment 1

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

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

### Note 1:

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

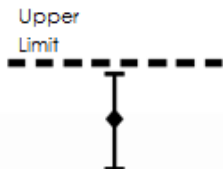
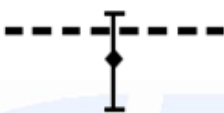
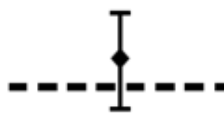
### Note 2:

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



## Attachment 1

### Judgement of compliance

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

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

### Quality manual references – Internal procedure

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