

# EMC TEST REPORT

**No. 2105354STO-103**

## Electromagnetic disturbances

### EQUIPMENT UNDER TEST

Equipment: Table standing luminaire with LED  
Type/Model: B2105 Sinnerlig  
Manufacturer: IKEA of Sweden AB  
Tested by request of: IKEA of Sweden AB

### SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards:

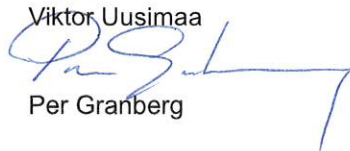
FCC 47 CFR Part 15: Radio frequency devices, Subpart B: Unintentional radiators. Class B equipment.

ICES-005 Issue 5: Lighting Equipment, Class B. (2018)

For details, see clause 2 – 4.

Date of issue: May 5, 2022

Tested by:

  
Viktor Uusimaa  
  
Per Granberg

Approved by:

  
Anna Näslund

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**Revision History**

| Test report no. | Release no. | Date of issue | Description                                     |
|-----------------|-------------|---------------|-------------------------------------------------|
| 2105354STO-103  | 1           | May 5, 2022   | Radiated emission measurements for FCC and ICES |

## Terms, definition and abbreviations

The following terms, definitions and abbreviations may be used throughout the report.

| Term/definition/abbreviation | Meaning                                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------------------------------|
| AAN                          | Asymmetrical Artificial Network                                                                           |
| AC                           | Alternating Current                                                                                       |
| AE                           | Associated Equipment                                                                                      |
| AMN                          | Artificial Mains Network                                                                                  |
| AV                           | Average                                                                                                   |
| BW                           | Bandwidth                                                                                                 |
| CAV                          | CISPR Average                                                                                             |
| CM                           | Common Mode                                                                                               |
| CMAD                         | Common Mode Absorption Device                                                                             |
| DC                           | Direct Current                                                                                            |
| DM                           | Differential Mode                                                                                         |
| EM                           | Electromagnetic                                                                                           |
| EMC                          | Electromagnetic Compatibility                                                                             |
| EUT                          | Equipment Under Test                                                                                      |
| F                            | Fail                                                                                                      |
| FAR                          | Fully Anechoic Room                                                                                       |
| $F_x$                        | Highest fundamental frequency generated or used within the EUT, or highest frequency at which it operates |
| H                            | Horizontal                                                                                                |
| ISN                          | Impedance Stabilizing Network                                                                             |
| MU                           | Measurement Uncertainty                                                                                   |
| N/A                          | Not Applicable                                                                                            |
| P                            | Pass                                                                                                      |
| PE                           | Protective Earth                                                                                          |
| PK                           | Peak                                                                                                      |
| Pol.                         | Polarisation                                                                                              |
| QP / QPK                     | Quasi-Peak                                                                                                |
| RBW                          | Resolution Bandwidth                                                                                      |
| RF                           | Radio Frequency                                                                                           |
| RGP                          | Reference Ground Plane                                                                                    |
| RH                           | Relative Humidity                                                                                         |
| RMS                          | Root Mean Square                                                                                          |
| Rx                           | Receiver / Receiving                                                                                      |
| SAC                          | Semi-Anechoic Chamber                                                                                     |
| Tx                           | Transmitter / Transmitting                                                                                |
| V                            | Vertical                                                                                                  |
| VBW                          | Video Bandwidth                                                                                           |

## CONTENTS

|                                                                                 | <b>Page</b> |
|---------------------------------------------------------------------------------|-------------|
| 1. Client Information .....                                                     | 5           |
| 2. Equipment under test (EUT).....                                              | 5           |
| 2.1 Identification of the EUT .....                                             | 5           |
| 2.2 Test set up and EUT photos .....                                            | 6           |
| 2.3 Additional information about the EUT .....                                  | 6           |
| 2.4 Peripheral/auxiliary equipment.....                                         | 7           |
| 2.5 Decision rule .....                                                         | 7           |
| 3. Test Specifications .....                                                    | 8           |
| 3.1 Additions, deviations and exclusions from standards and accreditation ..... | 8           |
| 3.2 Test site .....                                                             | 8           |
| 3.3 Mode of operation during the test .....                                     | 9           |
| 4. Test Summary .....                                                           | 10          |
| 5. Conducted continuous disturbances .....                                      | 11          |
| 5.1 Test results, AC Power input port, Class B .....                            | 12          |
| 5.2 Test equipment .....                                                        | 13          |
| 6. Radiated rf Emission in the frequency-range 30 MHz – 1 GHz .....             | 14          |
| 6.1 Test results, 30 – 1000 MHz, FCC, Class B .....                             | 16          |
| 6.2 Test results, 30 – 1000 MHz, ICES-005, Class B .....                        | 18          |
| 6.3 Test equipment .....                                                        | 20          |

## 1. CLIENT INFORMATION

The EUT has been tested by request of

|                        |                                                |
|------------------------|------------------------------------------------|
| <b>Company</b>         | IKEA of Sweden AB<br>343 81, Älmhult<br>SWEDEN |
| <b>Name of contact</b> | Markus Mauritzon                               |
| <b>Client observer</b> | -                                              |

## 2. EQUIPMENT UNDER TEST (EUT)

### 2.1 Identification of the EUT

|                                                   |                                                                                                                                                                                                                                                  |                   |                    |                  |                                                                                                                                                                               |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equipment:</b>                                 | Table standing luminaire with dimmable LED                                                                                                                                                                                                       |                   |                    |                  |                                                                                                                                                                               |
| <b>Type/Model:</b>                                | B2105 Sinnerlig                                                                                                                                                                                                                                  |                   |                    |                  |                                                                                                                                                                               |
| <b>Brand name:</b>                                | IKEA                                                                                                                                                                                                                                             |                   |                    |                  |                                                                                                                                                                               |
| <b>S/N:</b>                                       | -                                                                                                                                                                                                                                                |                   |                    |                  |                                                                                                                                                                               |
| <b>Manufacturer:</b>                              | IKEA of Sweden AB                                                                                                                                                                                                                                |                   |                    |                  |                                                                                                                                                                               |
| <b>Highest clock frequency, <math>F_X</math>:</b> | < 108 MHz                                                                                                                                                                                                                                        |                   |                    |                  |                                                                                                                                                                               |
| <b>Software version:</b>                          | -                                                                                                                                                                                                                                                |                   |                    |                  |                                                                                                                                                                               |
| <b>Hardware version:</b>                          | -                                                                                                                                                                                                                                                |                   |                    |                  |                                                                                                                                                                               |
| <b>Mounting position: (during normal use)</b>     | <input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing <input type="checkbox"/> Wall/ceiling<br><input type="checkbox"/> Hand-held <input type="checkbox"/> Other:                                                |                   |                    |                  |                                                                                                                                                                               |
| <b>Supplementary information:</b>                 | When the luminaire is connected to an appropriate power supply via a USB cable, it can recharge batteries inside the luminaire as well as drive the luminaire itself. It is also possible to drive the luminaire solely with 4, 1,2 V batteries. |                   |                    |                  |                                                                                                                                                                               |
| <b>Input ratings</b>                              | <b>Voltage [V]</b>                                                                                                                                                                                                                               | <b>Freq. [Hz]</b> | <b>Current [A]</b> | <b>Power [W]</b> | <b>Coupling</b>                                                                                                                                                               |
| <input type="checkbox"/> AC                       |                                                                                                                                                                                                                                                  |                   |                    |                  | <b>L1</b> <input type="checkbox"/> <b>L2</b> <input type="checkbox"/> <b>L3</b> <input type="checkbox"/> <b>N</b> <input type="checkbox"/> <b>PE</b> <input type="checkbox"/> |
| <input checked="" type="checkbox"/> DC            | 5                                                                                                                                                                                                                                                | -                 | -                  | 5                | <b>V+</b> <input checked="" type="checkbox"/> <b>V-</b> <input checked="" type="checkbox"/> <b>PE</b> <input type="checkbox"/>                                                |
| <input checked="" type="checkbox"/> Battery       | 4 x 1,2                                                                                                                                                                                                                                          | -                 | -                  | 5                | <b>V+</b> <input checked="" type="checkbox"/> <b>V-</b> <input checked="" type="checkbox"/> <b>PE</b> <input type="checkbox"/>                                                |
| <input type="checkbox"/> Other:                   |                                                                                                                                                                                                                                                  |                   |                    |                  |                                                                                                                                                                               |

Type No. B2105 SINNERLIG



Design and Quality  
IKEA of Sweden

5 W 5 V DC

Conforms to: UL Std 153 Certified to: CSA  
Std C22.2 No. 250.4 CAN ICES-005 (B) /  
NMB-005 (B)



**Intertek**  
3163808



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EP5020964

**CANADIAN ENERGY  
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**21520**

IKEA of Sweden AB, SE - 34381 Älmhult  
1C50-TYAS  
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Photo/copy of marking/rating plate(s)

## 2.2 Test set up and EUT photos

Test set up and EUT photos are enclosed in Annex 1 to this test report.

## 2.3 Additional information about the EUT

The EUT consists of the following units:

| Unit        | S/N | Description                                                                                        |
|-------------|-----|----------------------------------------------------------------------------------------------------|
| Luminaire   | -   | Dimmable LED light source                                                                          |
| USB-C cable | -   | Provides an option to drive the LEDs with the cable, as well as to charge batteries inside the EUT |

The EUT has the following ports:

| Port type                                                                                                  | Port name        | Shielded                 |
|------------------------------------------------------------------------------------------------------------|------------------|--------------------------|
| <b>AC I/O</b>                                                                                              |                  |                          |
| <input checked="" type="checkbox"/> AC power input                                                         | AC mains*        | <input type="checkbox"/> |
| <input type="checkbox"/> AC power output                                                                   |                  | <input type="checkbox"/> |
| <b>DC I/O</b>                                                                                              |                  |                          |
| <input checked="" type="checkbox"/> DC power input                                                         | Local wired port | <input type="checkbox"/> |
| <input type="checkbox"/> DC power output                                                                   |                  | <input type="checkbox"/> |
| <b>Signal/control I/O</b>                                                                                  |                  |                          |
| <input type="checkbox"/> Telecom/network                                                                   |                  | <input type="checkbox"/> |
| <input type="checkbox"/> Signal/control                                                                    |                  | <input type="checkbox"/> |
| <b>Supplementary information:</b> *This port is referring to the LED driver of the luminaire, which is AE. |                  |                          |

The EUT ports were connected according to the following:

| Port name        | Cable type  | Connected to     |
|------------------|-------------|------------------|
| Local wired port | 0,9 m USB-C | LED Power supply |

## 2.4 Peripheral/auxiliary equipment

### Auxiliary

Equipment needed for correct operation of the EUT and is part of the system under test.

| Equipment                      | Manufacturer      | Type/Model   | S/N |
|--------------------------------|-------------------|--------------|-----|
| 4 Rechargeable 1,2 V batteries | IKEA of Sweden AB | LADDA 2450   | -   |
| LED Power Supply               | IKEA of Sweden AB | ICPSW5-5KR-1 | -   |

## 2.5 Decision rule

The statements of conformity are reported as:

Passed – When the measured values are within the specified limits.

Failed – When one or more measures values are outside the specified limits.

### 3. TEST SPECIFICATIONS

#### 3.1 Additions, deviations and exclusions from standards and accreditation

The following editions of basic standards were applied instead of the standards referenced in FCC 47 CFR Part 15 and ICES-005:

| Referenced      | Applied         |
|-----------------|-----------------|
| ANSI C63.4-2014 | ANSI C63.4-2014 |
| CISPR 15:2015   | CISPR 15:2018   |

#### 3.2 Test site

Measurements were performed at:

Intertek Semko AB.  
Torshamnsgatan 43,  
P.O. Box 1103  
SE-164 22 Kista

Intertek Semko AB is an FCC listed test site with site registration number 90913  
Intertek Semko AB is an FCC accredited conformity assessment body with designation number SE0002  
Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G

Measurement chambers

| Measurement Chamber                              | Type of chamber               | IC Site filing # |
|--------------------------------------------------|-------------------------------|------------------|
| <input checked="" type="checkbox"/> STORA HALLEN | Semi-anechoic<br>10 m and 3 m | 2042G-2          |
| <input type="checkbox"/> BJÖRKHALLEN             | Semi-anechoic<br>3 m          | 2042G-1          |
| <input type="checkbox"/> 5 m CHAMBER             | Semi-anechoic<br>5 m          | 2042G-3          |

### 3.3 Mode of operation during the test

| Mode no. | Supply       | Description                                                 |
|----------|--------------|-------------------------------------------------------------|
| 1        | 120 V, 60 Hz | Maximum light intensity, cable operated, batteries charging |
| 2        | Battery      | Maximum light intensity, battery operated                   |

| Test                           | Mode of operation |
|--------------------------------|-------------------|
| Conducted continuous emission  | 1                 |
| Radiated emission of EM fields | 1,2               |

#### 4. TEST SUMMARY

The test has been carried out at the Intertek Semko AB premises in Kista, Sweden.  
The results in this report apply only to sample tested.

Result: P – F – N/A

| EMISSION TESTS             |             |                                |                |         |         |
|----------------------------|-------------|--------------------------------|----------------|---------|---------|
| Chapter                    | Standard(s) | Description                    | Port type(s)   | Note(s) | Verdict |
| 5                          | ANSI C63.4  | Conducted continuous emission  | AC power input | -       | P       |
| 5                          | CISPR 15    | Conducted continuous emission  | AC power input | -       | P       |
| 6                          | ANSI C63.4  | Radiated emission of EM fields | Enclosure      | -       | P       |
| 6                          | CISPR 15    | Radiated emission of EM fields | Enclosure      | -       | P       |
| Supplementary information: |             |                                |                |         |         |

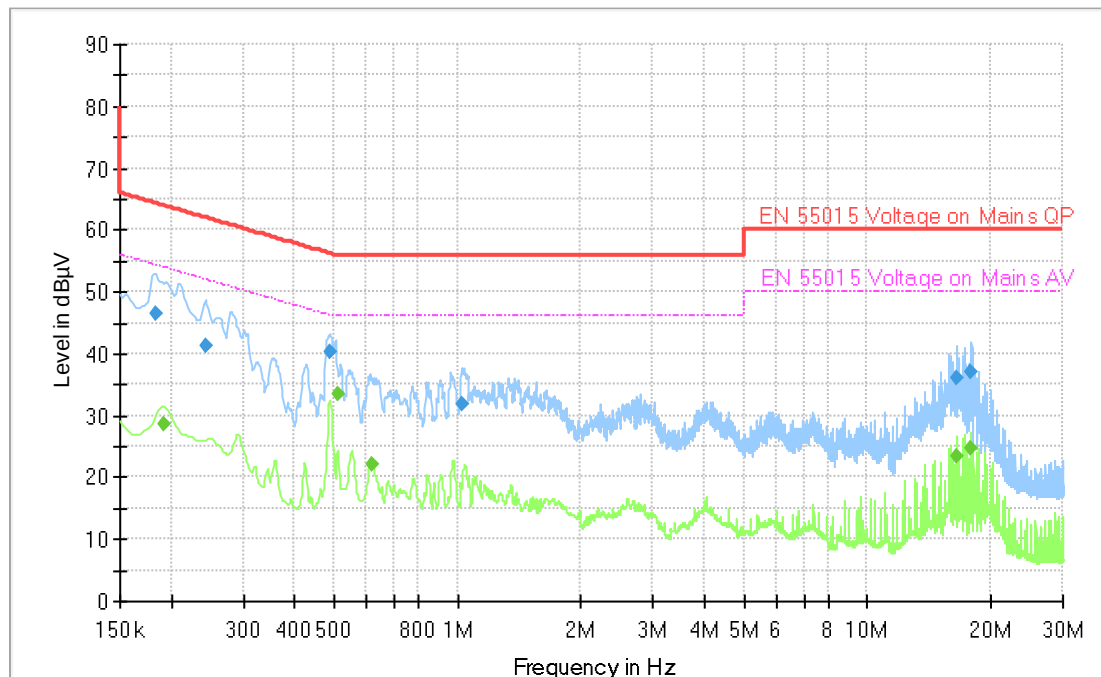
## 5. CONDUCTED CONTINUOUS DISTURBANCES in the frequency-range 0.15 – 30 MHz

| Date of test      | Temp. [°C] | Humidity [%RH] | Tested by |
|-------------------|------------|----------------|-----------|
| September 8, 2021 | 22         | 56             | VUU/PEG   |

| <b>Test setup and procedure:</b>                                                                                                                                                    | EUT was placed 0.8 m from the AMN /ISN.<br>Overview sweeps were performed for each lead of the cable(s).<br>AE requiring mains power to operate was/were connected to AMN /ISN terminated with 50 $\Omega$ , when applicable. |                         |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------|
| <b>EUT position:</b>                                                                                                                                                                | <input checked="" type="checkbox"/> Table-top (EUT 0.4 m from the RGP)<br><input type="checkbox"/> Floor-standing (EUT 12 mm from the RGP)<br><input type="checkbox"/> Other:                                                 |                         |              |
| Tested port type(s):                                                                                                                                                                | Coupling device                                                                                                                                                                                                               | Measurement uncertainty |              |
|                                                                                                                                                                                     |                                                                                                                                                                                                                               | Frequency range         | Value        |
| <input checked="" type="checkbox"/> AC power                                                                                                                                        | <input checked="" type="checkbox"/> AMN                                                                                                                                                                                       | 0.15 – 30 MHz           | $\pm 3.3$ dB |
| <b>Supplementary information:</b><br>Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011.<br>The measurement uncertainty is given with a confidence of 95 %. |                                                                                                                                                                                                                               |                         |              |

| Port                                                                                                                                                                   | Frequency [MHz] | Voltage limits [dBμV] (2) |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------|-------------|
|                                                                                                                                                                        |                 | QP                        | AV          |
| Limits FCC Part 15 subpart B and ICES-005                                                                                                                              |                 |                           |             |
| □ AC power input Class A                                                                                                                                               | 0.15 – 0.50     | 79                        | 66          |
|                                                                                                                                                                        | 0.50 – 30.0     | 73                        | 60          |
| ☒ AC power input Class B                                                                                                                                               | 0.15 – 0.50     | 66 – 56 (1)               | 56 – 46 (1) |
|                                                                                                                                                                        | 0.50 – 5.00     | 56                        | 46          |
|                                                                                                                                                                        | 5.00 – 30.0     | 60                        | 50          |
| <b>Supplementary information:</b><br>(1) The limits decrease linearly with the logarithm of the frequency.<br>(2) At transitional frequencies the lower limit applies. |                 |                           |             |

## 5.1 Test results, AC Power input port, Class B



Diagram, Peak and AV overview sweep

### Measurement results, Quasi-peak

| Frequency (MHz) | QuasiPeak (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | PE  | Corr. (dB) |
|-----------------|------------------|--------------|-------------|-----------------|-----------------|------|-----|------------|
| 0.183750        | 46.44            | 64.31        | 17.87       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 0.242250        | 41.29            | 62.02        | 20.73       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 0.487500        | 40.40            | 56.21        | 15.81       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 1.032000        | 31.75            | 56.00        | 24.25       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 16.579500       | 36.14            | 60.00        | 23.86       | 1000.0          | 9.000           | N    | GND | 10.7       |
| 17.974500       | 36.91            | 60.00        | 23.09       | 1000.0          | 9.000           | N    | GND | 10.8       |

### Measurement results, Average

| Frequency (MHz) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | PE  | Corr. (dB) |
|-----------------|----------------|--------------|-------------|-----------------|-----------------|------|-----|------------|
| 0.192750        | 28.74          | 53.92        | 25.18       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 0.510000        | 33.39          | 46.00        | 12.61       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 0.615750        | 22.05          | 46.00        | 23.95       | 1000.0          | 9.000           | N    | GND | 10.0       |
| 16.579500       | 23.31          | 50.00        | 26.69       | 1000.0          | 9.000           | L1   | GND | 10.8       |
| 17.976750       | 24.55          | 50.00        | 25.45       | 1000.0          | 9.000           | N    | GND | 10.8       |

## 5.2 Test equipment

| Equipment type       | Manufacturer     | Model         | Inv. No. | Last Cal. date | Cal. interval |
|----------------------|------------------|---------------|----------|----------------|---------------|
| Measurement software | Rohde & Schwarz  | EMC32 -       | --       | --             | --            |
| Coaxial cable        | Suhner           | G03232 D-01   | 9701     | 2021-06-07     | 1 Year        |
| Power source         | Chroma           | 61604         | 31757    | --             | --            |
| Measurement receiver | Rohde & Schwarz  | ESU 8         | 12866    | 2021-07-07     | 1 Year        |
| Thermometer          | Vaisala          | HMI41         | 8335     | 2020-11-06     | 1 Year        |
| Pulse limiter        | Rohde & Schwarz  | ESH3-Z2       | 32455    | 2021-07-06     | 1 Year        |
| Coaxial cable        | HUBER+SUHNER     | RG 223/U      | 9815     | 2021-06-07     | 1 Year        |
| AMN                  | Rohde & Schwarz  | ESH3-Z5       | 2728     | 2021-07-05     | 1 Year        |
| Multimeter           | GOSSEN METRAWATT | Metra Hit 16S | 8141     | 2021-07-09     | 1 Year        |

## 6. RADIATED RF EMISSION IN THE FREQUENCY-RANGE 30 MHz – 1 GHz

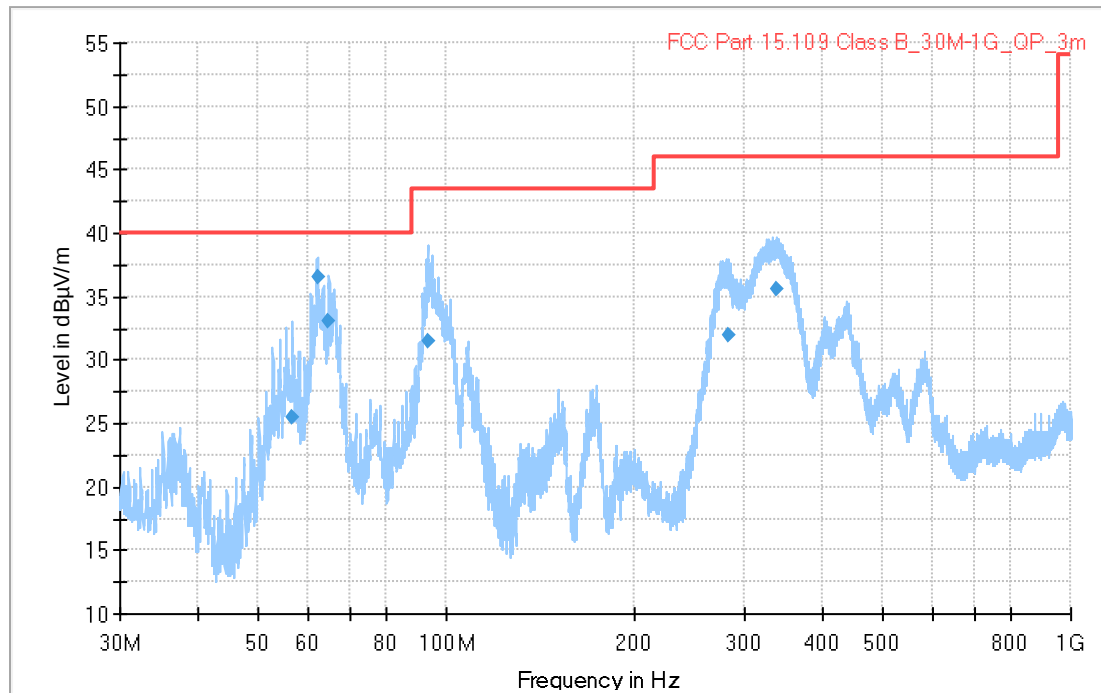
| Date of test      | Temp. [°C] | Humidity [%RH] | Tested by |
|-------------------|------------|----------------|-----------|
| September 9, 2021 | 21         | 32             | VUU/PEG   |

|                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                 |                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Test setup and procedure:</b>                                                                                                                                              | The EUT was placed on a non-conductive support on the RGP. Overview sweeps were performed with the measurement receiver in max hold mode and the peak detector activated in the frequency range 30 – 1000 MHz. Above 1 GHz, both the peak and average detectors were activated, when applicable. During height scan above 1 GHz the EUT was kept in antennas cone of radiation. |                                |
| <b>EUT position:</b>                                                                                                                                                          | <input checked="" type="checkbox"/> Table-top (EUT 0.8 m from the RGP)<br><input type="checkbox"/> Floor-standing (EUT 12 mm from the RGP)<br><input type="checkbox"/> Other:                                                                                                                                                                                                   |                                |
| <b>Highest measured frequency:</b>                                                                                                                                            | <input checked="" type="checkbox"/> $F_X \leq 108$ MHz: 1 GHz<br><input type="checkbox"/> $108 \text{ MHz} < F_X \leq 500$ MHz: 2 GHz<br><input type="checkbox"/> $500 \text{ MHz} < F_X \leq 1$ GHz: 5 GHz<br><input type="checkbox"/> $F_X > 1$ GHz: $5 \times F_X$ up to a max. of 40 GHz<br><input type="checkbox"/> $F_X$ is unknown: 40 GHz                               |                                |
| <b>Frequency range:</b>                                                                                                                                                       | <b>Measuring distance</b>                                                                                                                                                                                                                                                                                                                                                       | <b>Measurement uncertainty</b> |
| <input checked="" type="checkbox"/> 30 to 1000 MHz                                                                                                                            | 3 m                                                                                                                                                                                                                                                                                                                                                                             | $\pm 5.1$ dB                   |
| <input type="checkbox"/> 30 to 1000 MHz                                                                                                                                       | 10 m                                                                                                                                                                                                                                                                                                                                                                            | $\pm 5.0$ dB                   |
| <input type="checkbox"/> 1.0 to 18 GHz                                                                                                                                        | 3 m                                                                                                                                                                                                                                                                                                                                                                             | $\pm 4.5$ dB                   |
| <input type="checkbox"/> 18 to 26 GHz                                                                                                                                         | 3 m                                                                                                                                                                                                                                                                                                                                                                             | $\pm 4.8$ dB                   |
| <input type="checkbox"/> 26 to 40 GHz                                                                                                                                         | 3 m                                                                                                                                                                                                                                                                                                                                                                             | $\pm 5.7$ dB                   |
| <b>Supplementary information:</b> Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011. The measurement uncertainty is given with a confidence of 95 %. |                                                                                                                                                                                                                                                                                                                                                                                 |                                |

| Test    | Freq.<br>[MHz] | Meas.<br>angle<br>[°] | Antenna |         |               | RBW<br>[kHz] |      |      | VBW<br>[kHz] |
|---------|----------------|-----------------------|---------|---------|---------------|--------------|------|------|--------------|
|         |                |                       | Type    | Height  | Pol.          | QP           | PK   | AV   | PK           |
| Preview | 30 – 1000      | 0 – 359               | Bilog   | 1 – 4 m | V<br>and<br>H | -            | 120  | -    | 1000         |
| Final   |                |                       |         |         |               | 120          | -    | -    | -            |
| Preview | 1000 – 40000   | 0 – 359               | Horn    | 1 – 4 m |               | -            | 1000 | 1000 | 3000         |
| Final   |                |                       |         |         |               | -            | 1000 | 1000 | -            |

| Measurement distance<br>[m]                                         | Frequency<br>[MHz] | Limits [dBµV/m] |      |      |
|---------------------------------------------------------------------|--------------------|-----------------|------|------|
|                                                                     |                    | QP              | PK   | AV   |
| Limits, FCC, Class A                                                |                    |                 |      |      |
| <input type="checkbox"/> 3 / <input type="checkbox"/> 10            | 30 – 88            | 49.5 / 39.1     | -    | -    |
|                                                                     | 88 – 216           | 54.0 / 43.5     | -    | -    |
|                                                                     | 216 – 960          | 56.9 / 46.4     | -    | -    |
|                                                                     | 960 – 1000         | 60.0 / 49.5     | -    | -    |
| <input type="checkbox"/> 3                                          | Above 1000         | -               | 80.0 | 60.0 |
| Limits, FCC, Class B                                                |                    |                 |      |      |
| <input checked="" type="checkbox"/> 3 / <input type="checkbox"/> 10 | 30 – 88            | 40.0 / 29.5     | -    | -    |
|                                                                     | 88 – 216           | 43.5 / 33.1     | -    | -    |
|                                                                     | 216 – 960          | 46.0 / 35.6     | -    | -    |
|                                                                     | 960 – 1000         | 54.0 / 43.5     | -    | -    |
| <input type="checkbox"/> 3                                          | Above 1000         | -               | 74.0 | 54.0 |
| Limits, ICES-005 Class A                                            |                    |                 |      |      |
| <input type="checkbox"/> 3 / <input type="checkbox"/> 10            | 30 – 88            | 49.5 / 39.1     | -    | -    |
|                                                                     | 88 – 216           | 54.0 / 43.5     | -    | -    |
|                                                                     | 216 – 1000         | 56.9 / 46.4     | -    | -    |
| Limits, ICES-005, Class B                                           |                    |                 |      |      |
| <input checked="" type="checkbox"/> 3 / <input type="checkbox"/> 10 | 30 – 88            | 40.0 / 29.5     | -    | -    |
|                                                                     | 88 – 216           | 43.5 / 33.1     | -    | -    |
|                                                                     | 216 – 1000         | 46.0 / 35.6     | -    | -    |

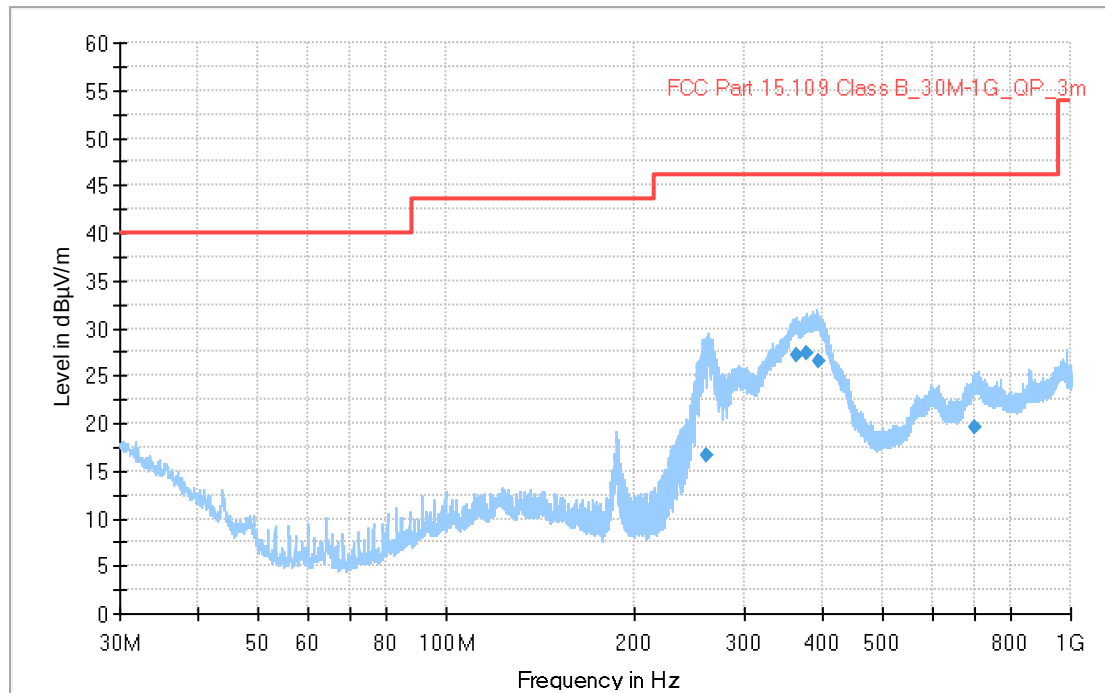
## 6.1 Test results, 30 – 1000 MHz, FCC, Class B



Diagram, Peak overview sweep, operation mode No. 1

### Measurement results, Quasi-peak

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 56.730          | 25.49              | 40.00          | 14.51       | 1000.0          | 120.0           | 100.0       | V   | 24.0          | -27          |
| 62.100          | 36.52              | 40.00          | 3.48        | 1000.0          | 120.0           | 105.0       | V   | 195.0         | -28          |
| 64.740          | 33.10              | 40.00          | 6.90        | 1000.0          | 120.0           | 121.0       | V   | 272.0         | -28          |
| 93.180          | 31.43              | 43.50          | 12.09       | 1000.0          | 120.0           | 115.0       | V   | 144.0         | -24          |
| 282.480         | 31.92              | 46.00          | 14.10       | 1000.0          | 120.0           | 111.0       | H   | 13.0          | -20          |
| 337.320         | 35.63              | 46.00          | 10.39       | 1000.0          | 120.0           | 159.0       | V   | 106.0         | -18          |



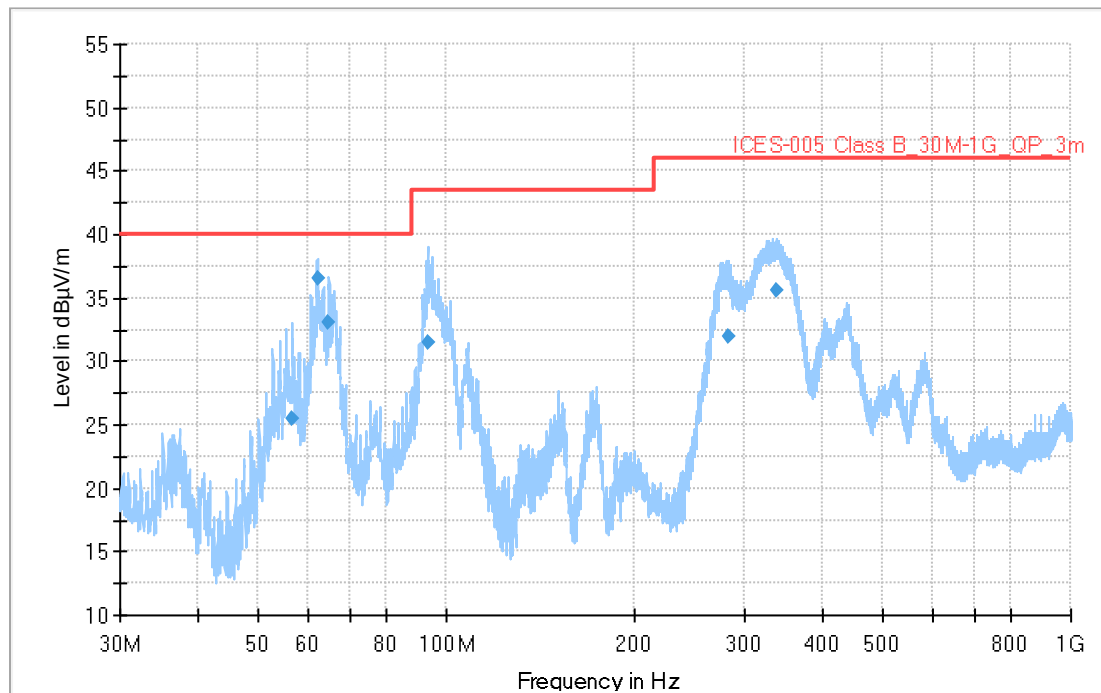
Diagram, Peak overview sweep, operation mode No. 2

Measurement results, Quasi-peak, operation mode No. 2

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 261.660         | 16.55              | 46.00          | 29.47       | 1000.0          | 120.0           | 204.0       | V   | 56.0          | -19          |
| 363.450         | 27.26              | 46.00          | 18.76       | 1000.0          | 120.0           | 148.0       | V   | 50.0          | -18          |
| 376.710         | 27.46              | 46.00          | 18.56       | 1000.0          | 120.0           | 152.0       | V   | 40.0          | -17          |
| 393.120         | 26.62              | 46.00          | 19.40       | 1000.0          | 120.0           | 154.0       | V   | 66.0          | -17          |
| 700.170         | 19.64              | 46.00          | 26.38       | 1000.0          | 120.0           | 133.0       | H   | 331.0         | -10          |

All other measured disturbances have a margin of more than 20 dB to the limits.

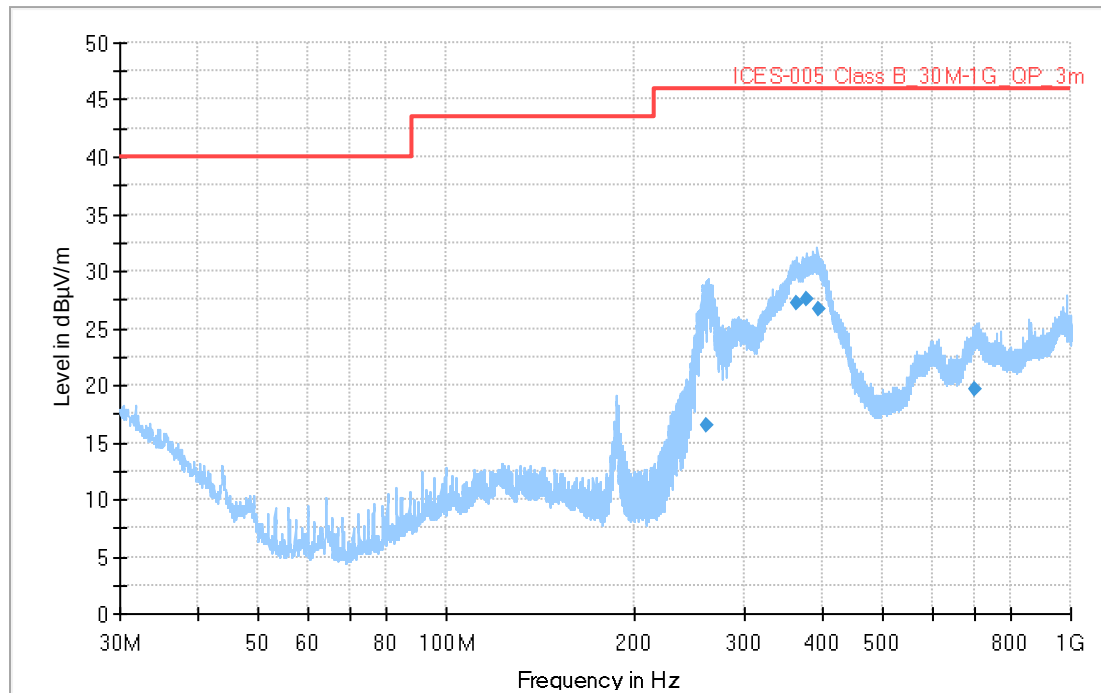
## 6.2 Test results, 30 – 1000 MHz, ICES-005, Class B



Diagram, Peak overview sweep, operation mode No. 1

Measurement results, Quasi-peak, operation mode No. 1

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 56.730          | 25.49              | 40.00          | 14.51       | 1000.0          | 120.0           | 100.0       | V   | 24.0          | -27          |
| 62.100          | 36.52              | 40.00          | 3.48        | 1000.0          | 120.0           | 105.0       | V   | 195.0         | -28          |
| 64.740          | 33.10              | 40.00          | 6.90        | 1000.0          | 120.0           | 121.0       | V   | 272.0         | -28          |
| 93.180          | 31.43              | 43.50          | 12.07       | 1000.0          | 120.0           | 115.0       | V   | 144.0         | -24          |
| 282.480         | 31.92              | 46.00          | 14.08       | 1000.0          | 120.0           | 111.0       | H   | 13.0          | -20          |
| 337.320         | 35.63              | 46.00          | 10.37       | 1000.0          | 120.0           | 159.0       | V   | 106.0         | -18          |



Diagram, Peak overview sweep, operation mode No. 2

Measurement results, Quasi-peak, operation mode No. 2

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|--------------|
| 261.660         | 16.55              | 46.00          | 29.45       | 1000.0          | 120.0           | 204.0       | V   | 56.0          | -19          |
| 363.450         | 27.26              | 46.00          | 18.74       | 1000.0          | 120.0           | 148.0       | V   | 50.0          | -18          |
| 376.710         | 27.46              | 46.00          | 18.54       | 1000.0          | 120.0           | 152.0       | V   | 40.0          | -17          |
| 393.120         | 26.62              | 46.00          | 19.38       | 1000.0          | 120.0           | 154.0       | V   | 66.0          | -17          |
| 700.170         | 19.64              | 46.00          | 26.36       | 1000.0          | 120.0           | 133.0       | H   | 331.0         | -10          |

### 6.3 Test equipment

| Equipment type       | Manufacturer    | Model                    | Inv. No. | Last Cal. date | Cal. interval |
|----------------------|-----------------|--------------------------|----------|----------------|---------------|
| Measurement software | Rohde & Schwarz | EMC32 – 8                | --       | --             | --            |
| Multimeter           | Fluke           | 287 True RMS             | 31781    | 2020-11-26     | 1 Year        |
| Test receiver        | Rohde & Schwarz | ESW 44                   | 33890    | 2021-07-21     | 1 Year        |
| Attenuator           | Rohde & Schwarz | ESH3-Z2                  | 32455    | 2121-07-06     | 1 Year        |
| Coaxial cable        | Suhner          | RG 214/U                 | 9798     | 2021-02-04     | 1 Year        |
| Coaxial cable        | Huber+Suhner    | SUCOFLEX 106             | 39122    | 2021-05-06     | 1 Year        |
| Antenna control unit | Maturo GMBH     | NCD                      | 33670    | -              | -             |
| Camera control unit  | Pontis          | HDCon6103                | 32899    | -              | -             |
| Bilog Antenna        | TESEQ           | CBL 6111D                | 34200    | 2020-03-18     | 3 Years       |
| Preamplifier         | Semko           | AM1331                   | S7992    | 2020-06-15     | 1 Year        |
| Coaxial cable        | Rosenberger     | LAS-S003-10000 (UFB293C) | 39148    | 2021-05-06     | 1 Year        |
| Cable                | Rosenberger     | LA5-S003-10000 (UFB293C) | 39163    | 2021-02-04     | 1 Year        |