

Test Report

of

AT-DG2
FCC ID: 2ADEF AT-DG2
ISED ID 12460A-ATDG2

according to

FCC 47 CFR, Part 15 Subpart C
15.247 Operation within the band 2400 - 2483.5 MHz
and
RSS-247 Issue 2**EKTOS Testing & Reliability Services A/S**

Performed by



Søren Søltøft

Examined by



David Busk

EKTOS Testing & Reliability Services A/SPostal address
EKTOS TRS A/S
A. C. Meyers Vænge 15
2450 Copenhagen SV
DenmarkPhone / E-mail
+45 7070 1499
info@ektos.net

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| | | | |
|----------------------------|---|------------------------|--|
| Report no.: | P18-0060-3 rev.1 | Report date: | 2018-12-14 |
| Test started: | 2018-09-10 | Test ended: | 2018-12-14 |
| Number of pages: | 97 | Client contact: | Henrik Nordgren |
| Test laboratory: | EKTOS TRS A/S A. C. Meyers Vænge 15 2450 Copenhagen SV Denmark | Client: | Airtame ApS Kulegaardsvej 1 1434 Copenhagen Denmark |
| Facility reg. no. | FCC Designation number: DK0002 Industry Canada registration number: 10247A | | |
| Test specimen: | Airtame 2 model no. AT-DG2 | | |
| Test specification: | FCC 47 CFR Part 15 Subpart C 15.247 Operation within the band 2400 - 2483.5 MHz RSS-247 Issue 2 All tests were performed according to ANSI 63.10:2013 The tests relevant for the test specimens are listed in <i>section 1.1</i> . | | |
| Documentation: | P18-0060-3 rev 1 supersedes P18-0060-3 issued 2018-11-22. Changes: Additional measurements were added. This test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The complete test documentation is archived for 10 years at the testing laboratory. | | |
| Test results: | The test specimen complies with relevant parts of the test specifications. The test results relate only to the specimen tested. | | |
| Test personnel: | Søren Søltøft | | |

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Appendix issued in separate report

1 Photos of test setups and equipment.

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1 SUMMARY

See Appendix 1 for photos.

Emission measurements as specified below have been performed.

1.1 Test plan

| Standard | Name of the test | Results |
|---------------------|--|---------|
| FCC 47 CFR Part 15C | 15.247 Operation within the band 2400-2483.5 MHz | Passed |
| - | Duty cycle measurement | n.a. |
| 15.247 (a) (2) | 6 dB bandwidth | Passed |
| 15.247 (b) (3) | Maximum peak conducted power | Passed |
| 15.247 (d) | Emission outside frequency band. | Passed |
| 15.247 (d) | Emission in restricted bands. | Passed |
| 15.247 (d) | Band Edge | Passed |
| 15.247 (e) | Power spectral density | Passed |
| 15.207 (a) | AC conducted emission | Passed |

PASSED The test was performed and the test specimen complies with the essential requirements in the standard.
 FAILED The test was performed and the test specimen does not comply with the essential requirements in the standard.
 REF The test is covered by a test in another report and/or on a similar test specimen.
 NR The test is not relevant for the test specimen or has been waived by the manufacturer.

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1.2 Test Specimen

| | |
|-----------------------|--|
| Manufacturer | Airtame ApS |
| Name | Airtame 2 |
| Model No. | AT-DG2 |
| Test Software | Production FW allowing set up of radio parameters. |
| Supply voltage | 5 VDC from USB |

The AT-DG2 enables streaming from computers and mobile devices to TVs and projectors wirelessly or through Ethernet by a Ethernet to USB adaptor with PoE.

The wireless connection is built on a Cypress (CYG89342) chip.

The 2.4 GHz radio uses frequencies in the range 2412 MHz to 2472 MHz.

The AT-DG2 had a production firm ware which enabled control of the Cypress chip.

As the frequency range is greater than 10 MHz, at least 3 frequencies are selected for test.

For the conducted test AT-DG2 no 12 was stripped of housing and equipped with a temporary antenna connector.

For radiated test AT-DG2 no 5 and AT-DG2 no 10 were used. They were not modified except for the firmware enabling control of radio parameters.

The following radio parameters were used during test.

Band: 2.4 GHz

Antenna chain: 0

Standard: 802.11n

Bandwidth: 20 MHz

Rate ID: 0

TX power: max. +17 dBm

Channel: 1 to 11

Control script and parameters was delivered by client.

"rf-control -t 192.168.1.104 -b 20 -s n -T 1 -p 17 -c 1 -m 0"

| Channel | Power level setting |
|---------|---------------------|
| 1 | 11 |
| 2 | 15 |
| 3 to 9 | 17 |
| 10 | 15 |
| 11 | 12 |

Table 1. Channel power setting.

See photo in appendix 1.

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1.1 Auxiliary Equipment

1.1.1 AC/DC adaptor

| | |
|-----------------------|-------------------------------|
| Manufacturer | Airtame ApS |
| Model | GS5V-2.3C-1U |
| Details | marked : 3 |
| Supply voltage | 100 VAC to 240 VAC 50 / 60 Hz |
| Output voltage | 5 VDC 2.3 A |

1.1.2 AT-PoE

| | |
|-------------------------|---|
| Manufacturer | Airtame Aps |
| Model | AT-PoE |
| Serial no. | 201809GR - 002 |
| Details | - |
| Supply voltage | PoE input:44-57 VDC (48 VDC used during tests), PoE class 1 |
| Output voltage | 5 VDC / 3000 mA |
| Operational mode | Supplying AT-DG2 |

1.1.3 PoE Injector 1

| | |
|-----------------------|--------------------------------|
| Manufacturer | UBIQUITI |
| Model | GP-D480-050G |
| Details | - |
| Supply voltage | 100 VAC to 240 VAC, 50 / 60 Hz |
| Output voltage | 48VDC 0.5A |

1.1.4 PoE Injector 2

| | |
|-----------------------|-------------------------------|
| Manufacturer | AXIS COMMUNICATIONS |
| Model | T8120 15W |
| Details | - |
| Supply voltage | 100 VAC to 240 VAC 50 / 60 Hz |
| Output voltage | 48 VDC 0.35 A |

1.1.5 Laptop

| | |
|-----------------------|-----------------------------------|
| Manufacturer | Lenovo |
| Model | X220 |
| Product ID | 42903WG |
| Serial no. | R9-KVYB6 11/12 |
| Software | Microsoft Windows 10 Professional |
| Details | - |
| Supply voltage | 20 VDC from AC/DC power supply |

1.1.6 AC/DC power supply for laptop

| | |
|-----------------------|---|
| Manufacturer | Lenovo |
| Model | 42T4424 |
| Serial no. | 11S42T4424Z1ZF3E15B6DA REV 05 |
| Details | - |
| Supply voltage | 100 – 240 VAC (120 VAC 60 Hz was used during tests) |
| Output voltage | 20 VDC |

See photo in appendix 1.

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1.2 I/O ports / cables to test specimen

| I/O Port Cable | Type | Shielding | Cable length |
|---------------------------------------|----------|-----------|--------------|
| USB-C branching out to HDMI and USB-A | Customer | Shielded | 107 cm |

1.3 Test set-up

The nominal input voltage to AT-DG2 is 5 VDC

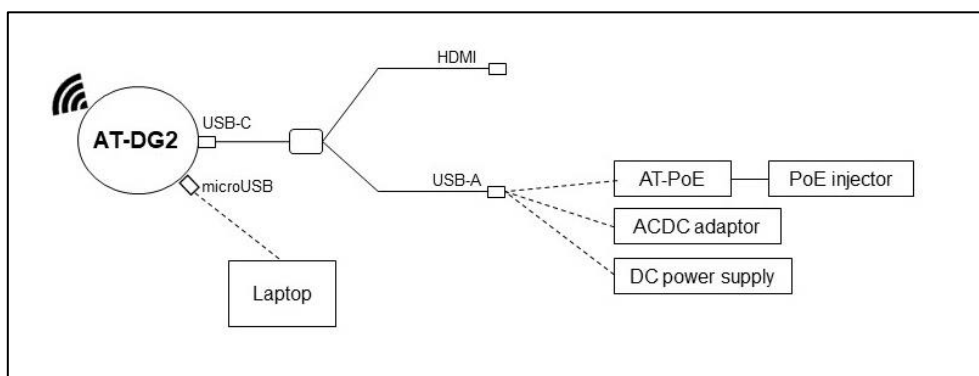


Figure 1. Test set up.

The dotted lines at USB-A indicates that just one is in use at a time.

The dotted line from laptop indicates that this connection was only present during set up of radio, not during test.

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2 TESTS

2.1 Duty Cycle

| | |
|------------------------|--------------------------|
| Test specimen | AT-DG2 no.12 |
| Test specification | 47 CFR Part 15 Subpart C |
| Test method | ANSI C63.10:2013 |
| Comments | None |
| Temperature / Humidity | 25°C / 36%RH |
| Dates of measurements | 2018-10-02 |
| Test personnel | Søren Søltøft |

2.1.1 Test setup

The test specimen was connected directly to a spectrum analyzer using a temporary antenna connector.

See photo of test set up in appendix 1.

2.1.2 Test result

The duty cycle was measured at channel 7 at 2442 MHz.

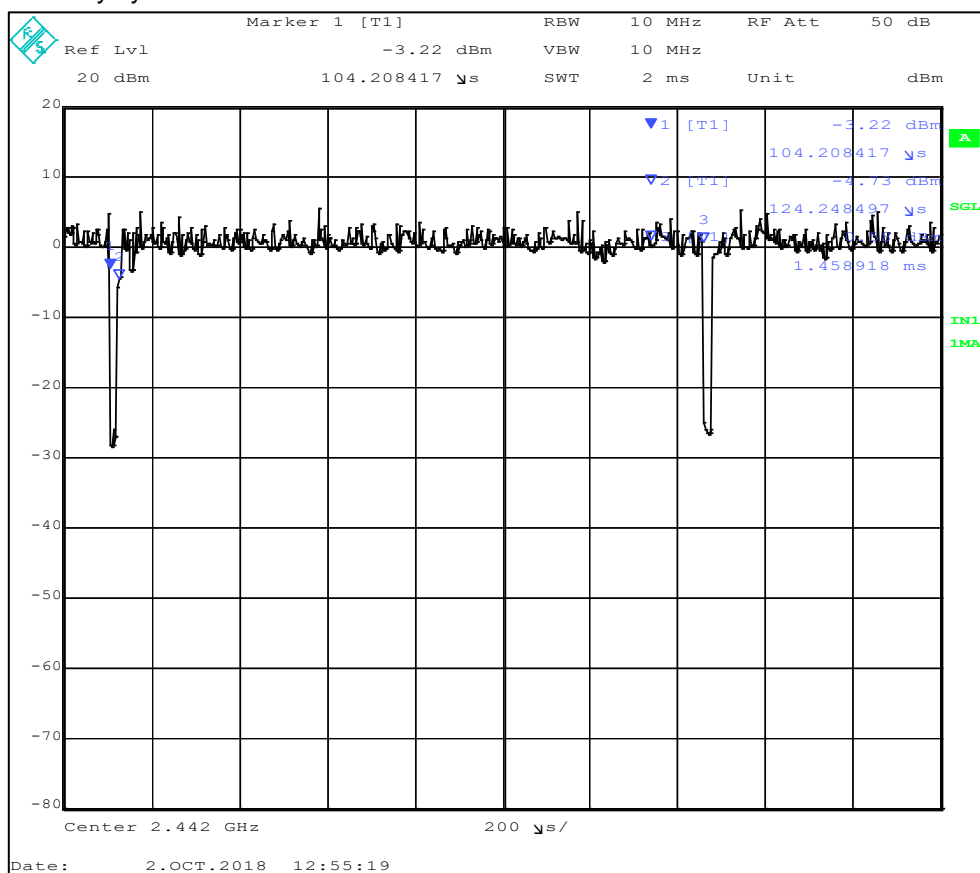


Figure 2. Duty Cycle.

T: 1354.21 μs.

t_{on}: 1334.67 μs

Duty cycle = t_{on} / T = 1334.67 μs / 1354.21 μs = 0,9856 = 98,56 %

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| Duty cycle [%] | Duty cycle limit [%] | Result |
|----------------|----------------------|--------|
| 98.56 | 98 | Passed |

Table 2. Duty cycle.

2.1.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.2 6 dB Bandwidth

| | |
|------------------------|--|
| Test specimen | AT-DG2 no.12 |
| Test specification | FCC 47 CFR Part 15.247 (a) (2) RSS-247 sec 5.2 a) |
| Test method | ANSI C63.10:2013 sec. 11.8 |
| Comments | None |
| Temperature / Humidity | 23°C / 26%RH |
| Dates of measurements | 2018-12-13 |
| Test personnel | Søren Søltøft |

2.2.1 Test setup

The test specimen was connected to a spectrum analyzer using a temporary antenna connector.

See photo of test set up in appendix 1.

2.2.2 Test result

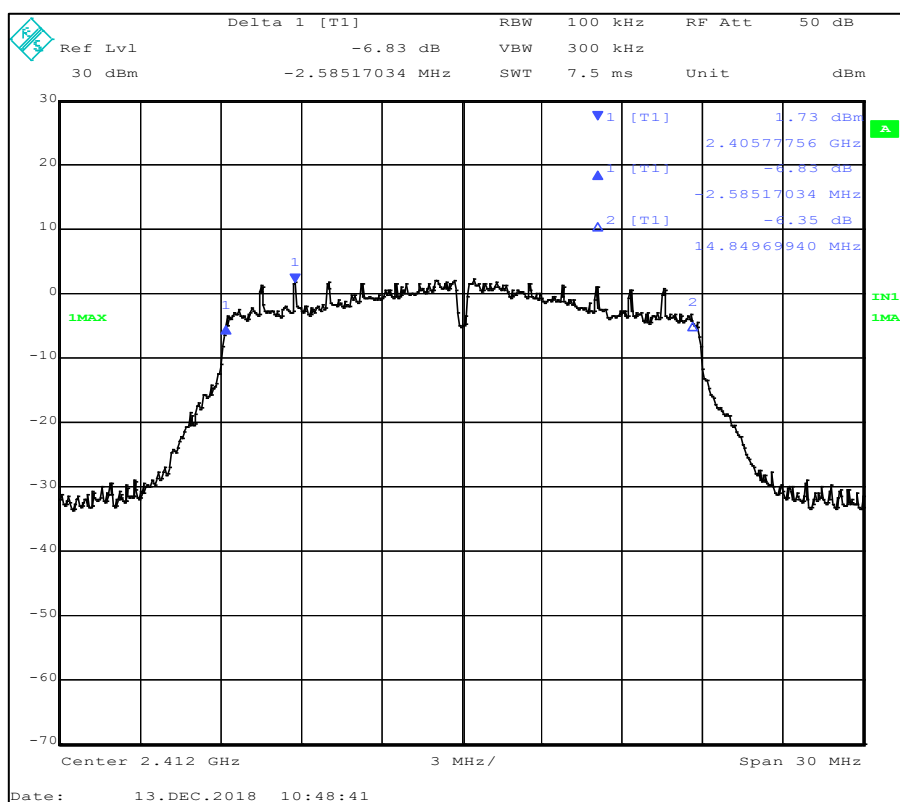


Figure 3. 6 dB Band Width at channel 1 .

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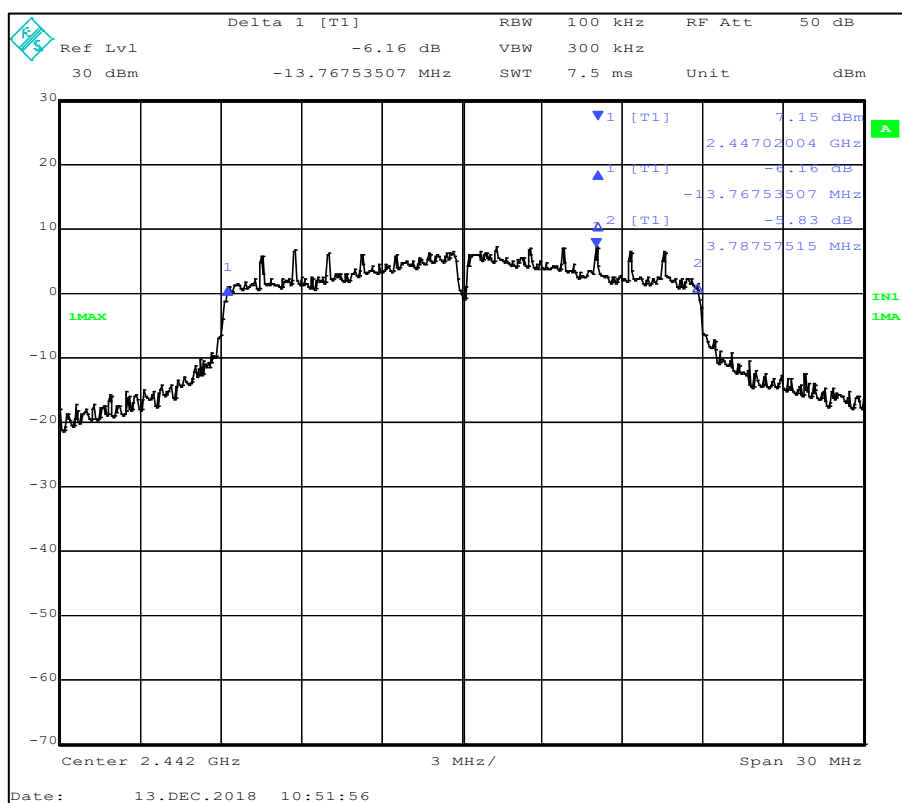


Figure 4. 6 dB Band Width channel 7.

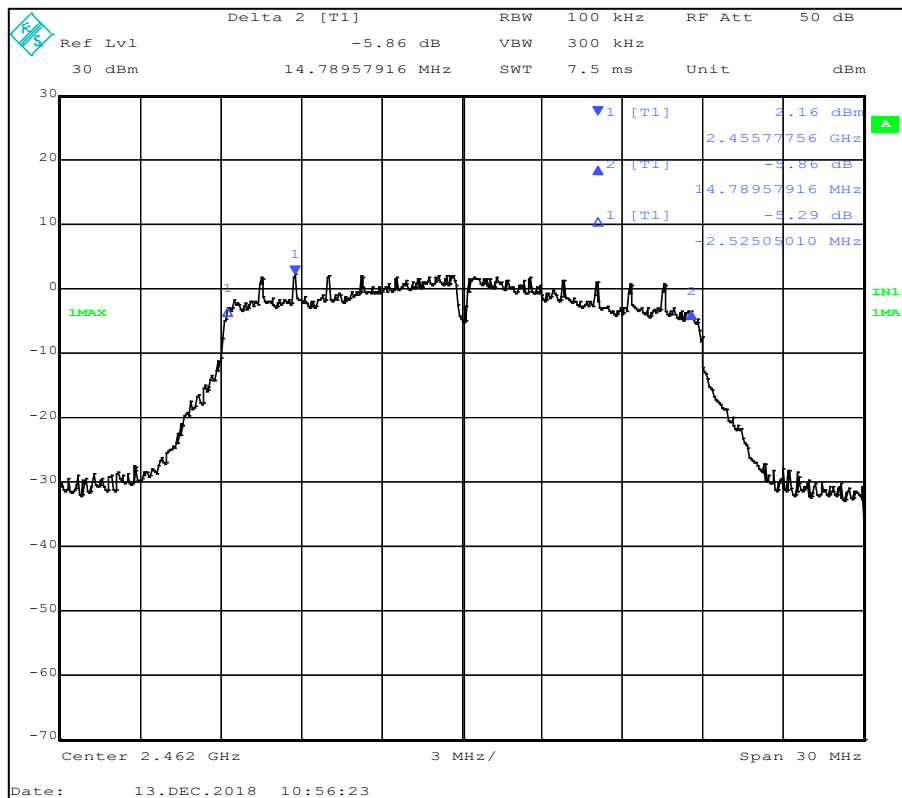


Figure 5. 6 dB Band Width channel 11.

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| Channel | 6 dB BW [kHz] | Limit [kHz] | Result |
|---------|---------------|-------------|--------|
| 1 | 17434.9 | 500 | Passed |
| 7 | 17555.1 | 500 | Passed |
| 11 | 17314.6 | 500 | Passed |

Table 3. 6 dB Band Width.

2.2.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.3 Maximum conducted output power

| | |
|------------------------|--|
| Test specimen | AT-DG2 no.12 |
| Test specification | FCC 47 CFR Part 15.247 (b) (3) RSS-247 sec 5.4 d) |
| Test method | ANSI C63.10:2013 sec 11.9.2.2.2 |
| Frequency range | 2400-2483.5 MHz |
| Limits | FCC 47 CFR Part 15.247 (b) (3) |
| Comments | None |
| Temperature / Humidity | 23°C / 26%RH |
| Dates of measurements | 2018-12-13 |
| Test personnel | Søren Søltøft |

2.3.1 Test setup

The test specimen was connected to a spectrum analyzer using a temporary antenna connector.

See photo of test set up in appendix 1.

2.3.2 Test results

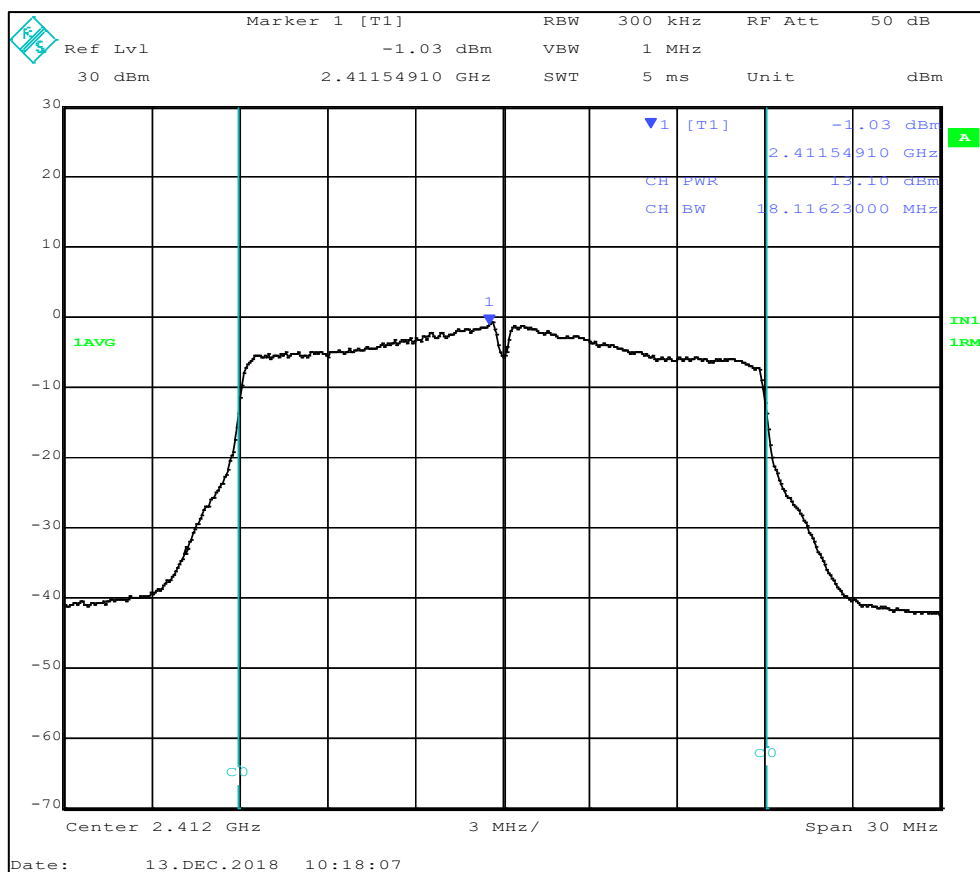


Figure 6. Output power channel 1.

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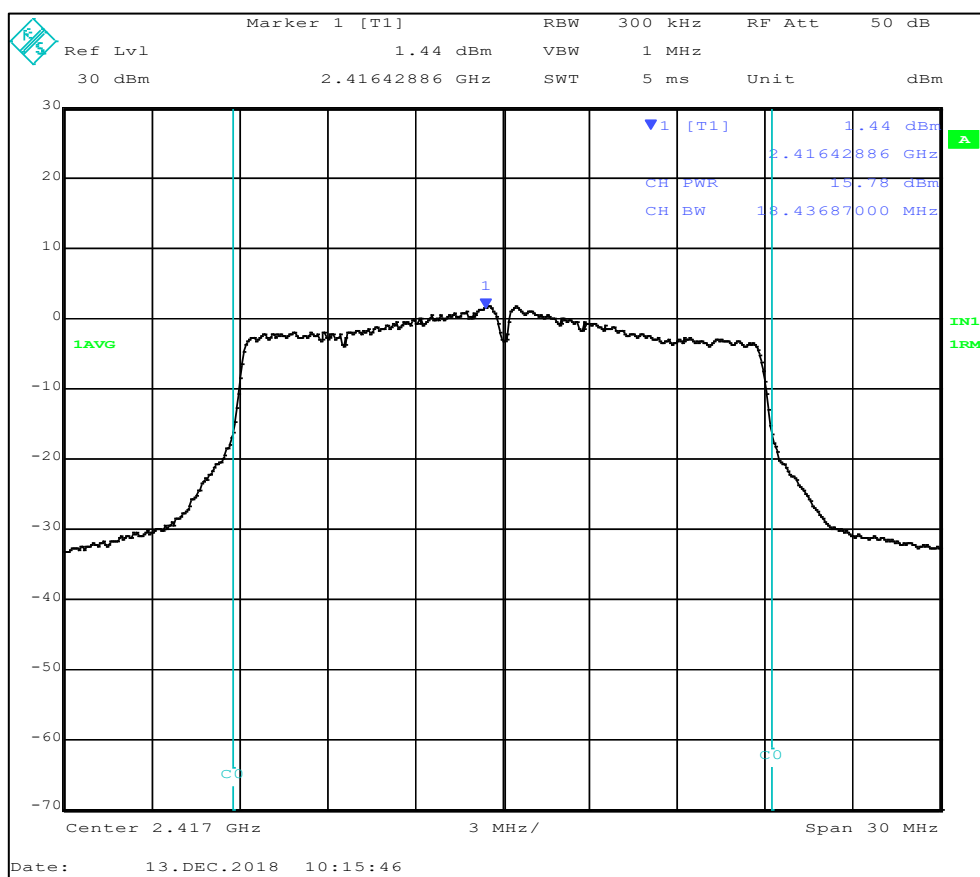


Figure 7. Output power channel 2.

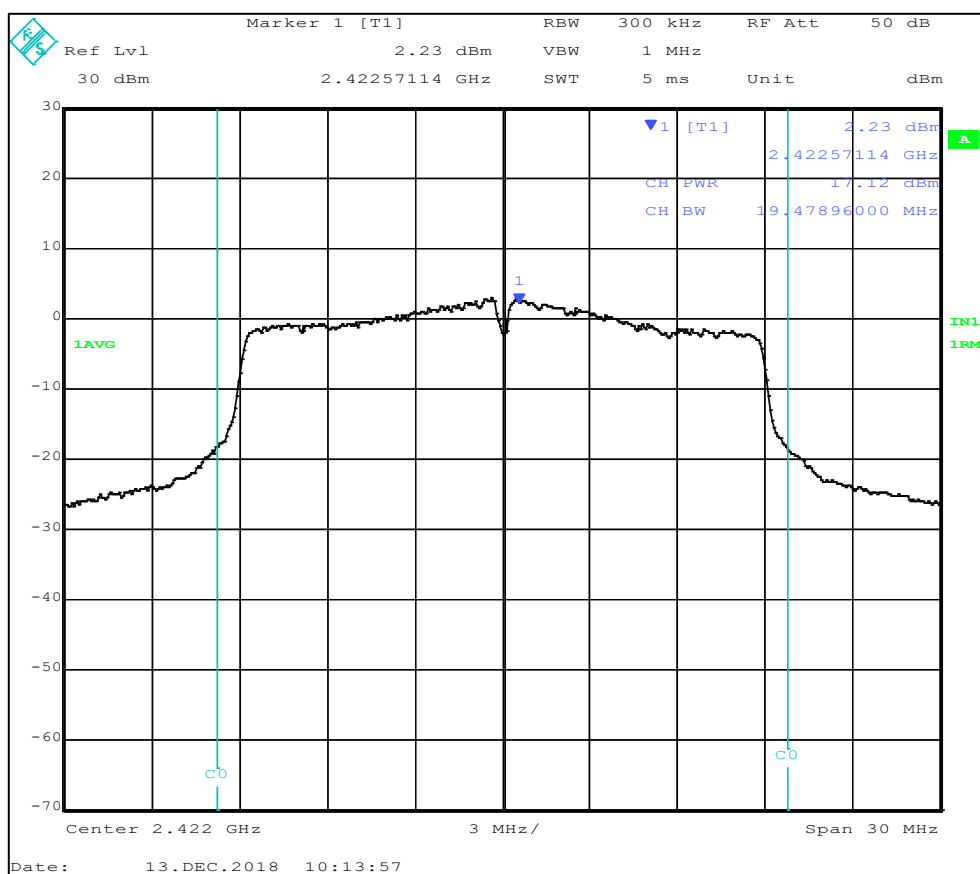


Figure 8. Output power channel 3.

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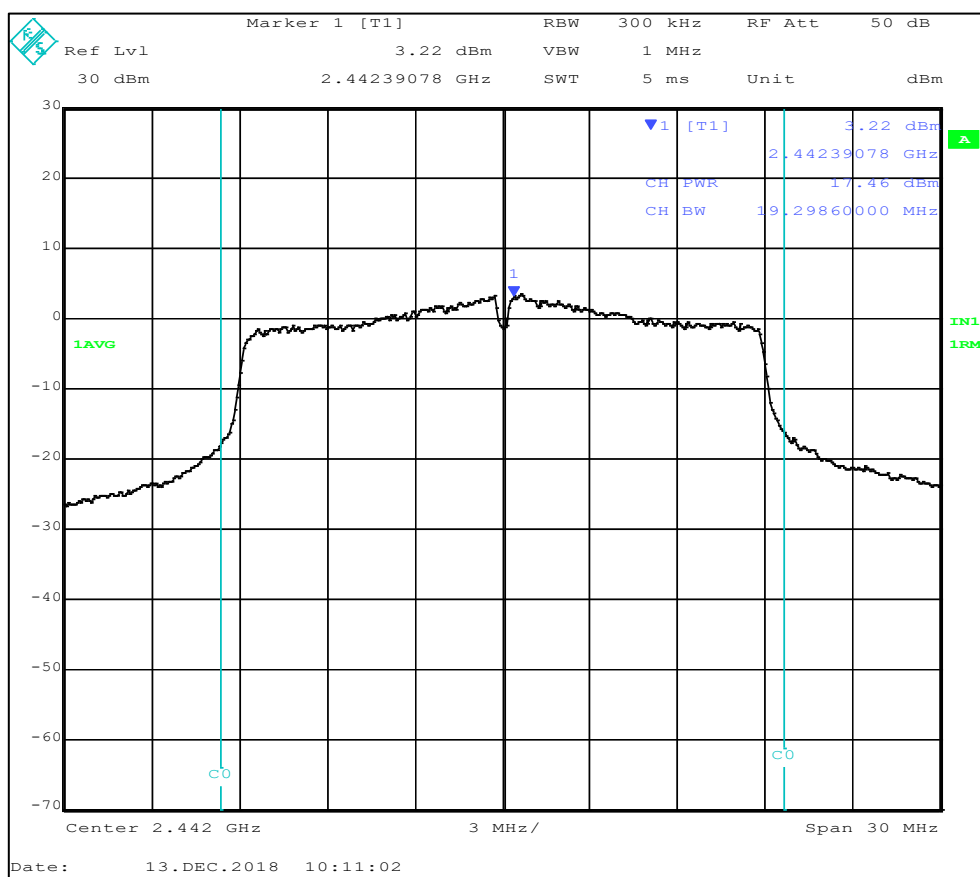


Figure 9. Output power channel 7.

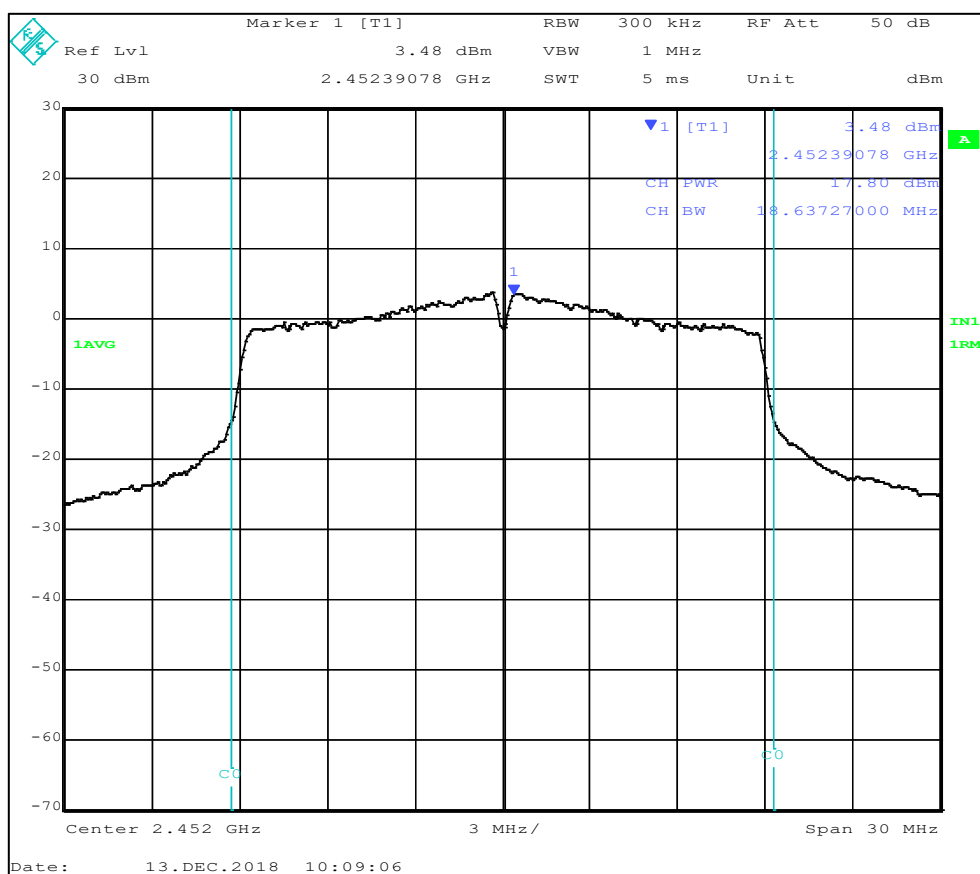


Figure 10. Output power channel 9.

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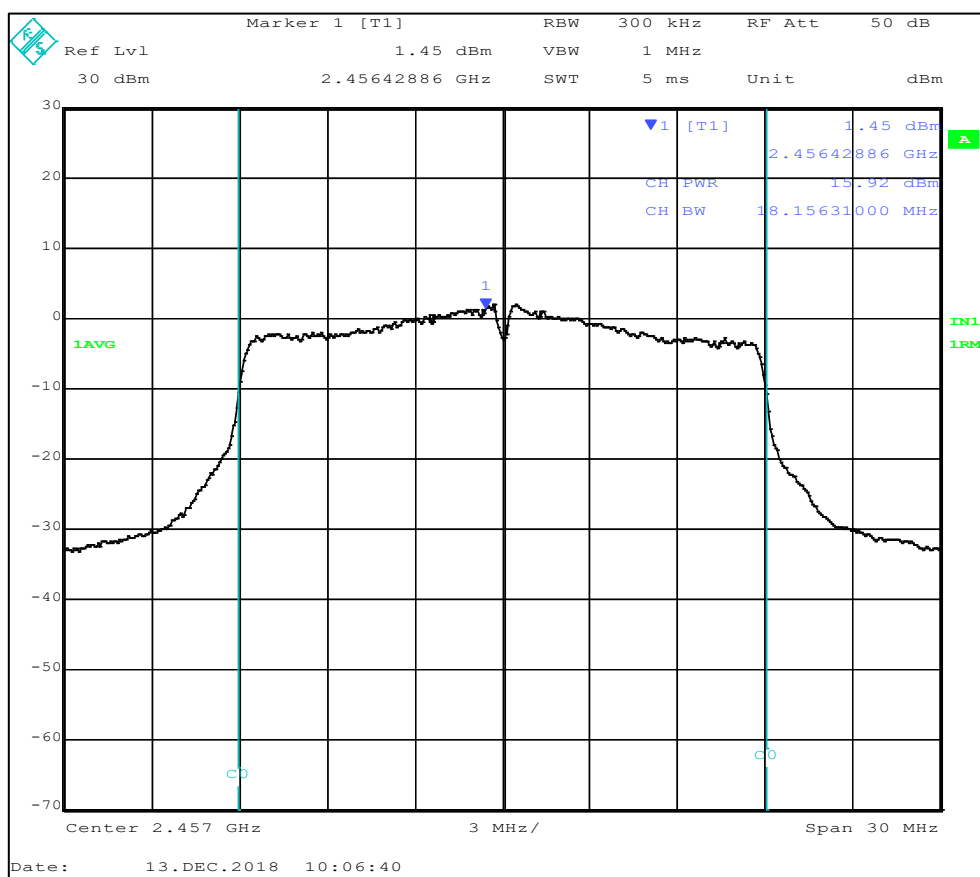


Figure 11. Output power channel 10.

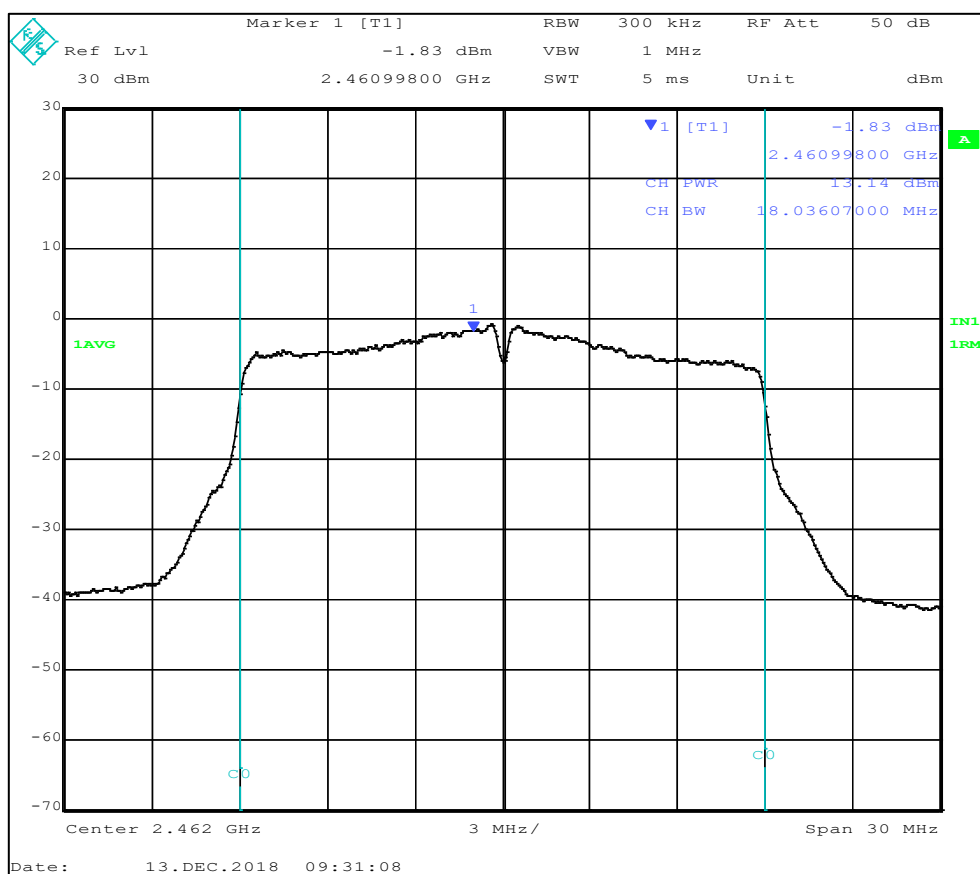


Figure 12. Output power channel 11.

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| Channel | Frequency [MHz] | Output power [dBm] | Limit [dBm] | Result |
|---------|--------------------|-----------------------|----------------|--------|
| 1 | 2412 | 13.1 | 30 | PASSED |
| 2 | 2417 | 15.78 | 30 | PASSED |
| 3 | 2422 | 17.12 | 30 | PASSED |
| 7 | 2442 | 17.46 | 30 | PASSED |
| 9 | 2452 | 17.80 | 30 | PASSED |
| 10 | 2457 | 15.92 | 30 | PASSED |
| 11 | 2462 | 13.14 | 30 | PASSED |

The nominal voltage of 5 VDC were variated between 85% and 115% without any increase of the output power.

2.3.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.4 Emission outside frequency band.

| | |
|------------------------|--|
| Test specimen | AT-DG2 no.12 |
| Test specification | 47 CFR Part 15.247 (d) RSS-247 sec. 5.5 |
| Test method | ANSI C63.10:2013 sec. 11.11 |
| Frequency range | 30 MHz – 25 GHz |
| Limits | 47 CFR Part 15.247 (d). |
| Comments | None |
| Temperature / Humidity | 23°C / 26%RH |
| Dates of measurements | 2018-12-13 |
| Test personnel | Søren Søltøft |

2.4.1 Test setup

The temporary antenna connector of the test specimen was connected directly to the spectrum analyzer.

See appendix 1 for photo of test set up

2.4.2 Test results

2.4.2.1 Reference level for test.

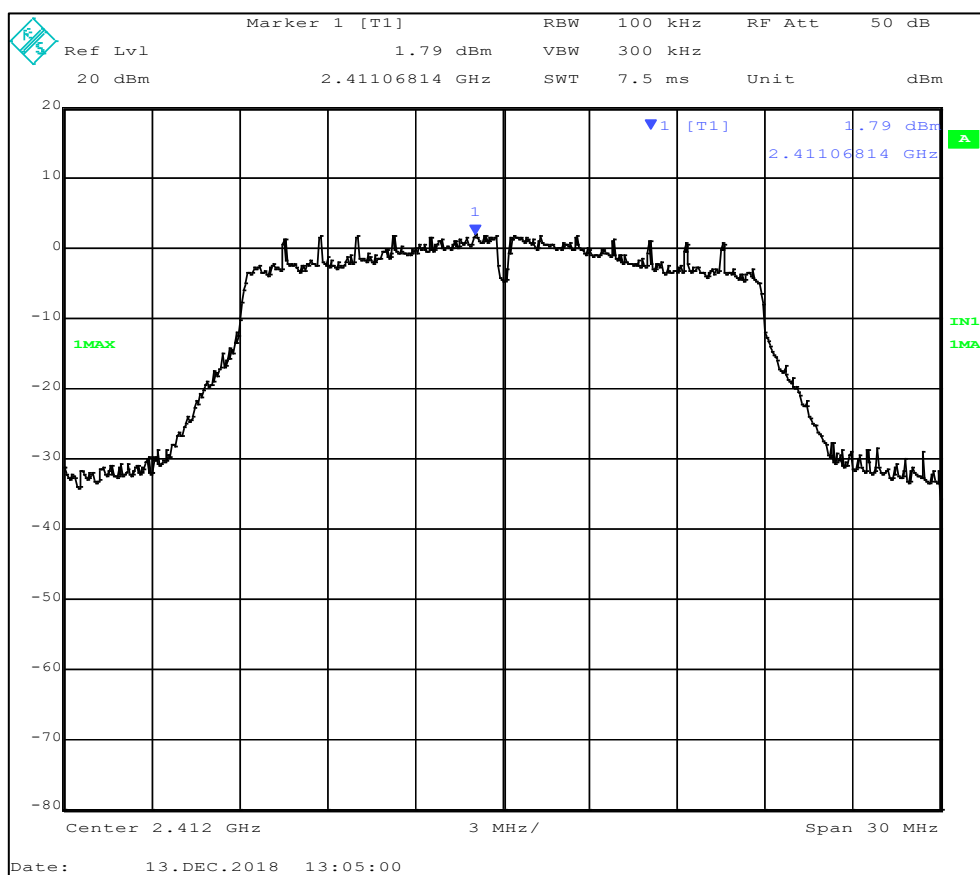


Figure 13. Reference level for channel 1.

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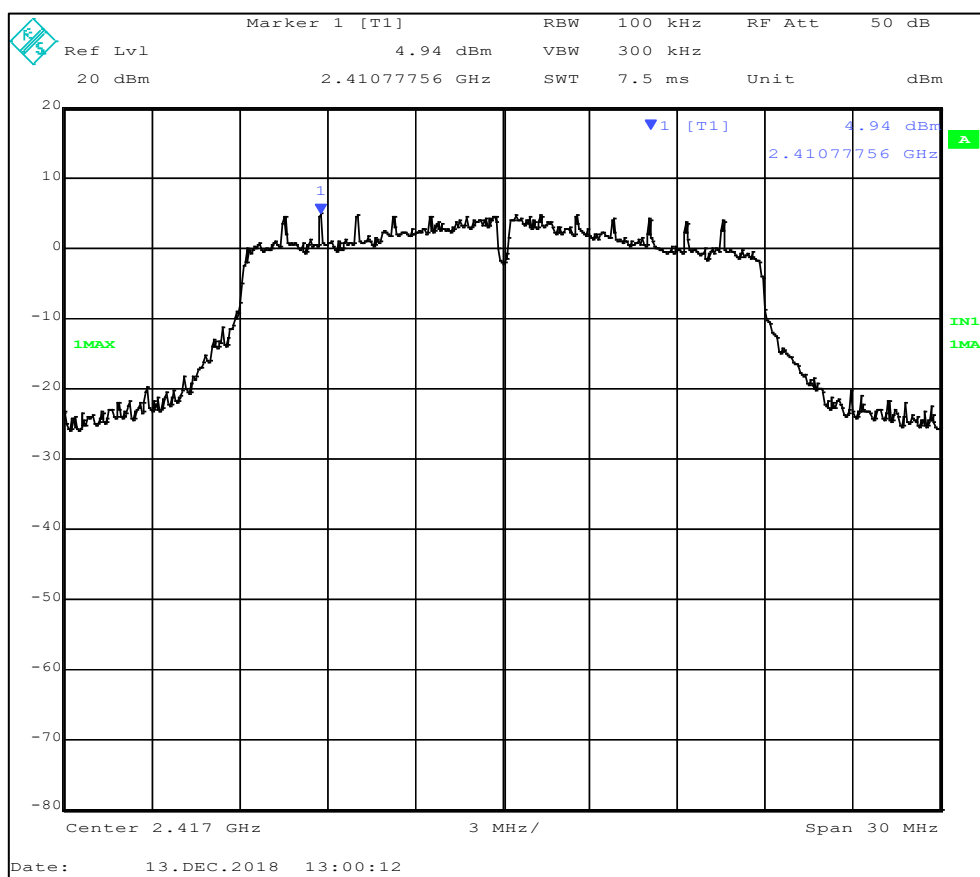


Figure 14. Reference level for channel 2.

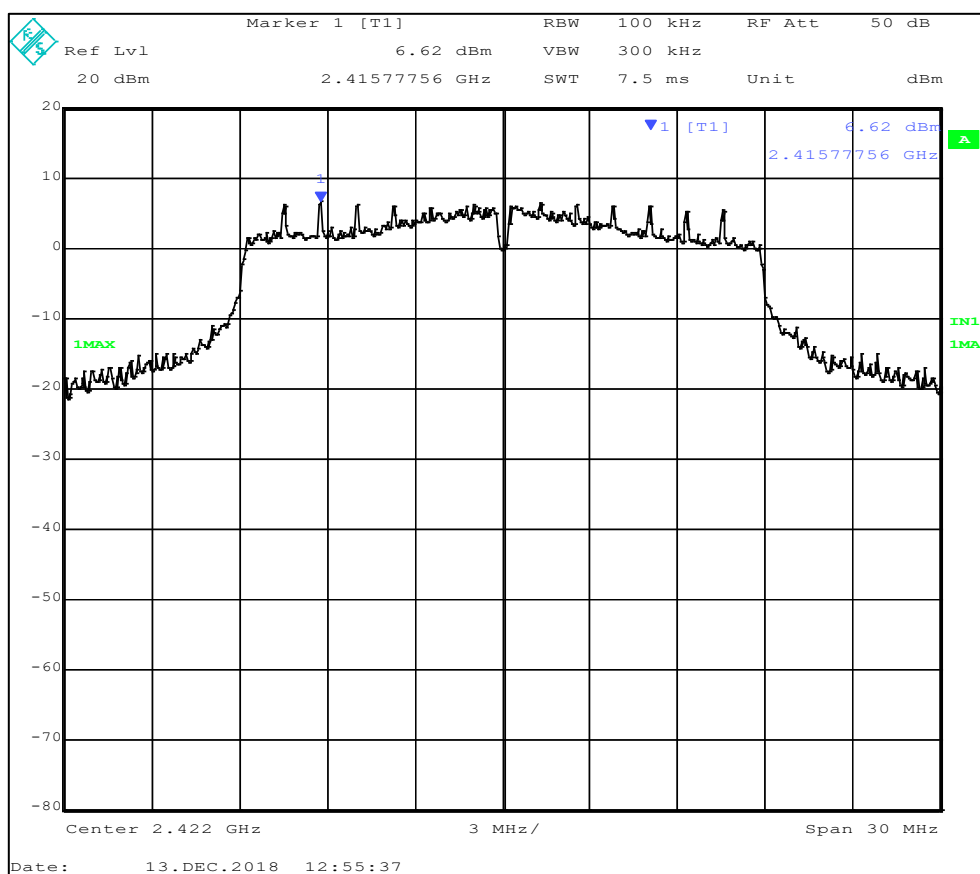


Figure 15. Reference level for channel 3.

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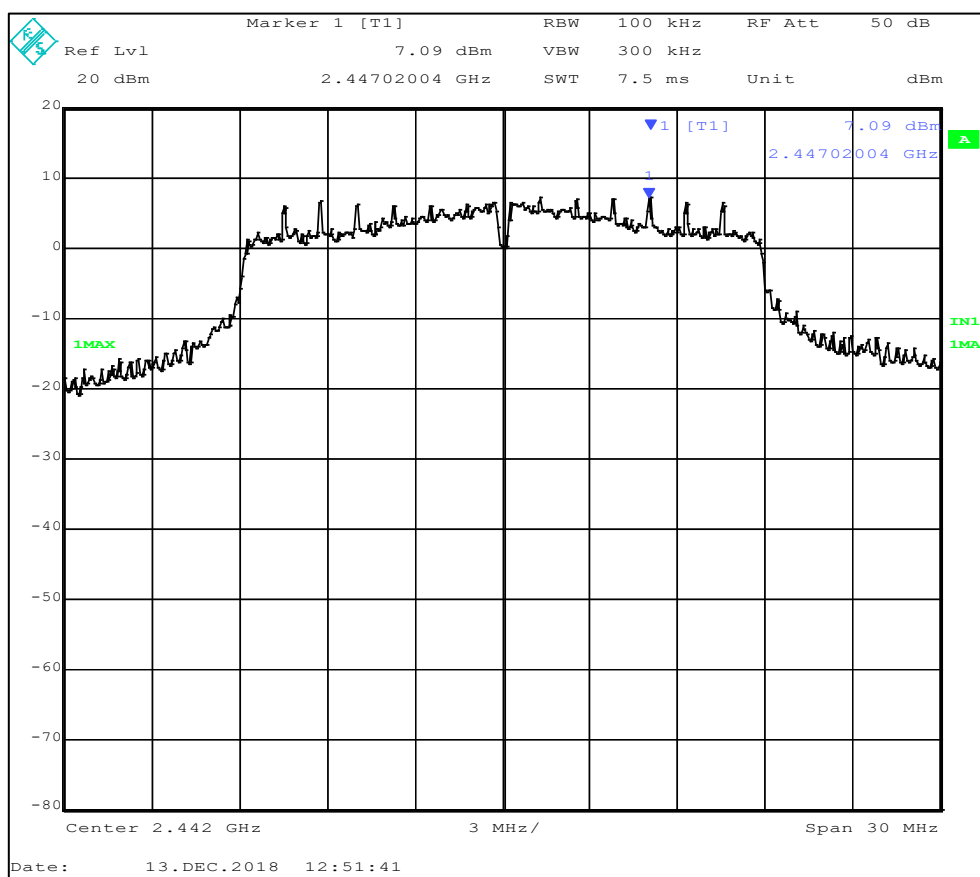


Figure 16. Reference level for channel 7 at 2442 MHz.

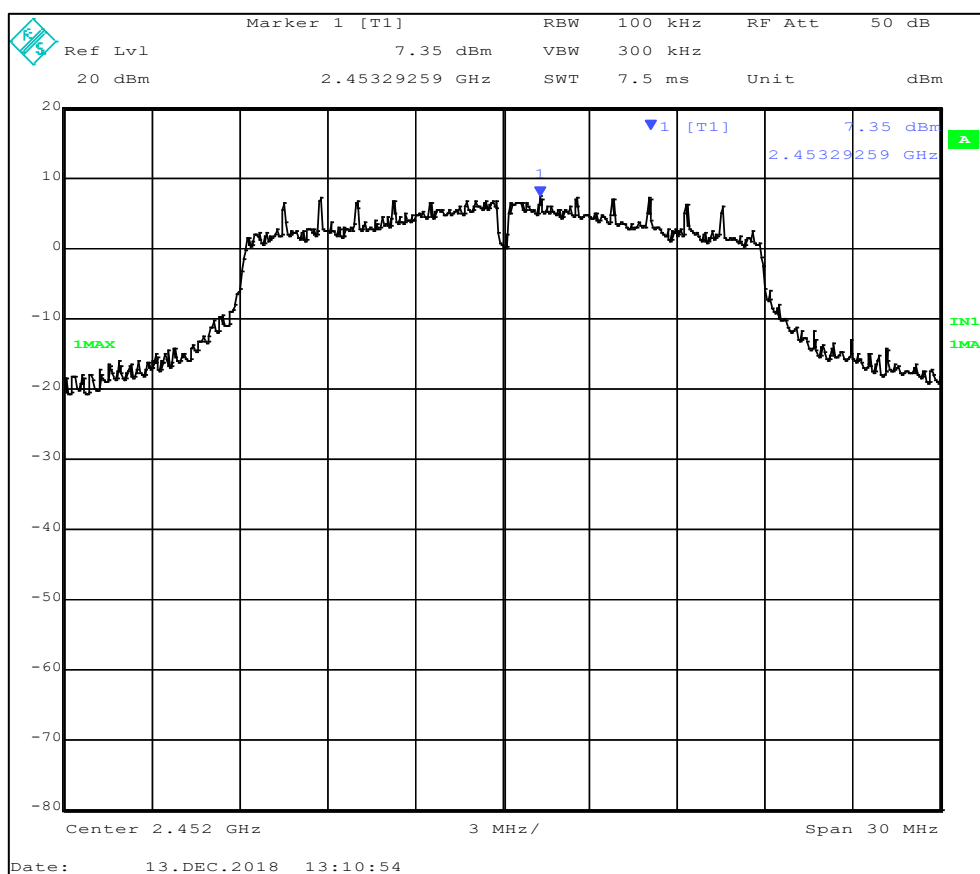


Figure 17. Reference level for channel 9.

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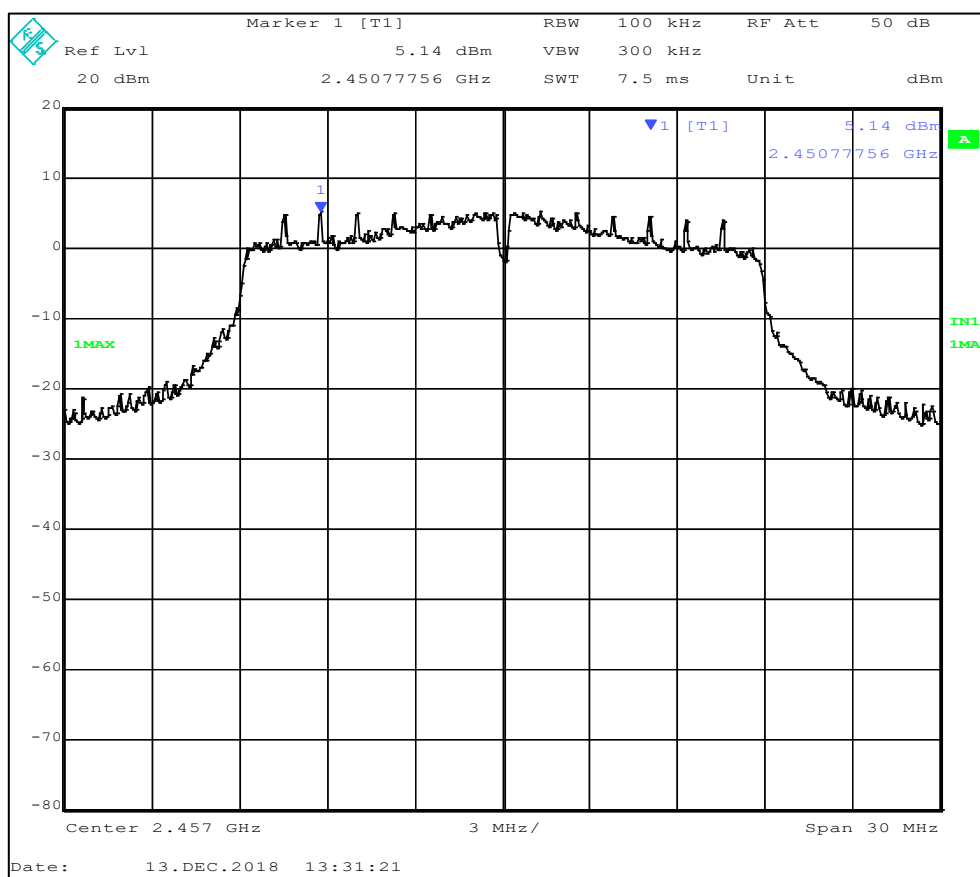


Figure 18. Reference level for channel 10.

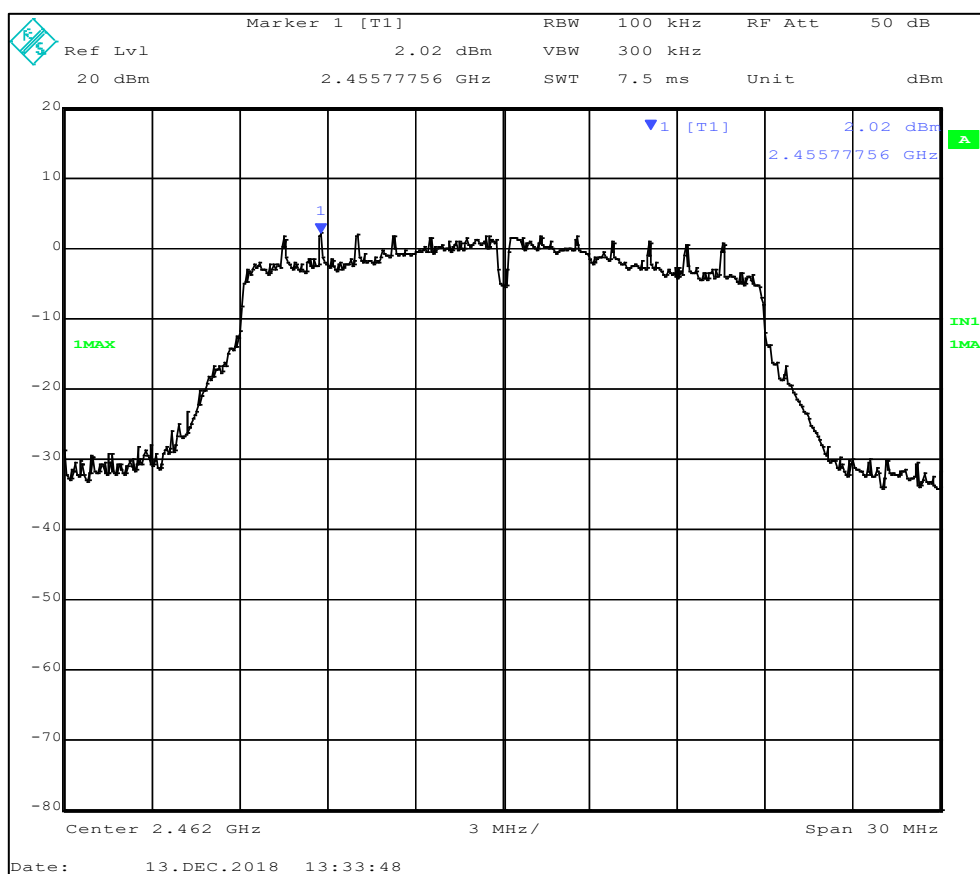


Figure 19. Reference level for channel 11.

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2.4.2.2 Test result for channel 1 at 2412 MHz

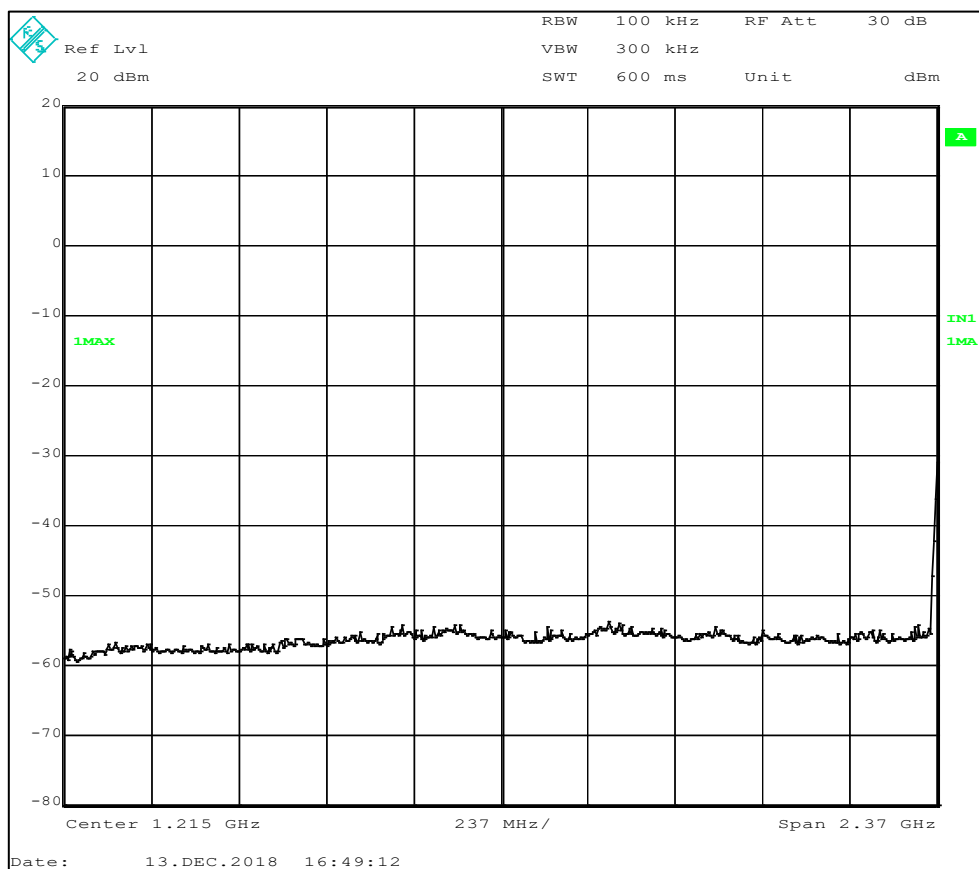


Figure 20. Emission test results. 30 MHz – 2.4 GHz.

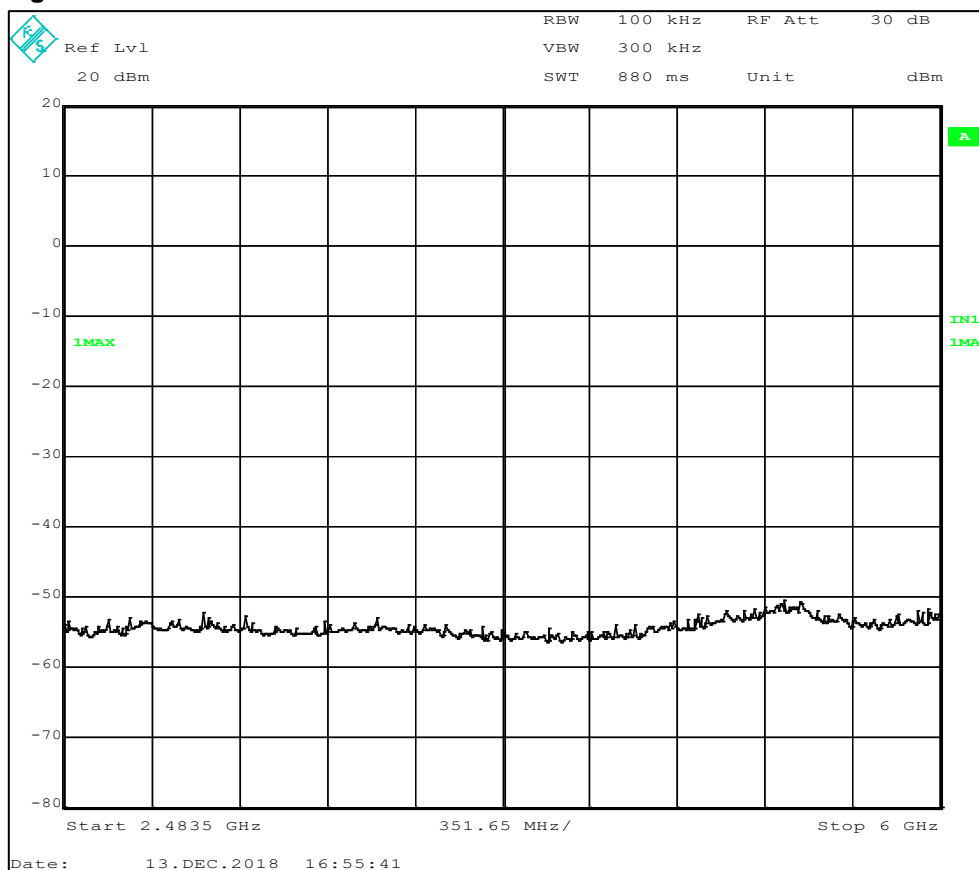


Figure 21. Emission test result 2.4835 GHz to 6 GHz.

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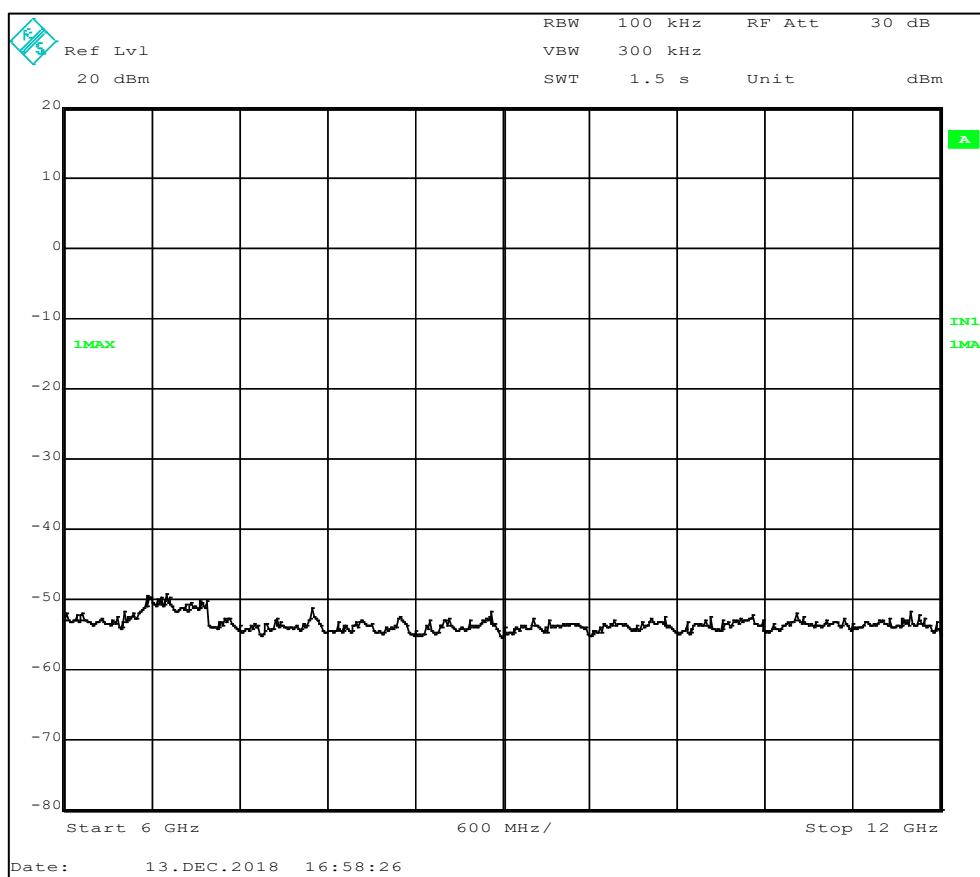


Figure 22. Emission test result 6 GHz to 12 GHz.

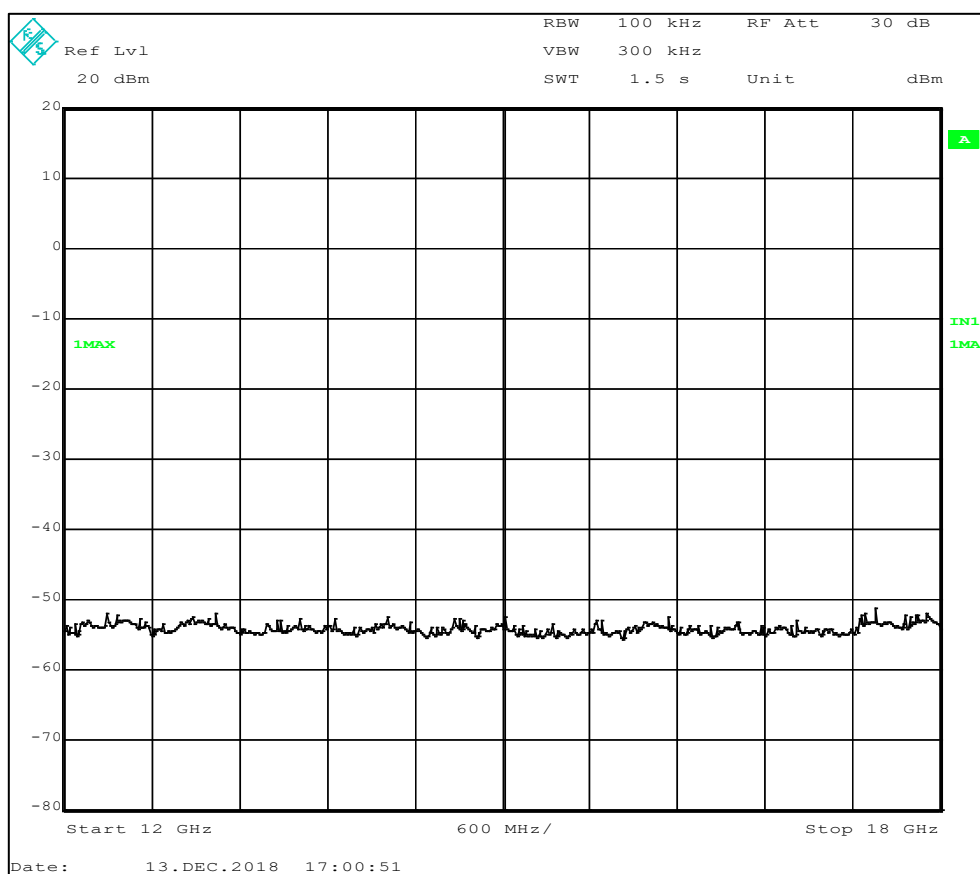


Figure 23. Emission test result 12 GHz to 18 GHz.

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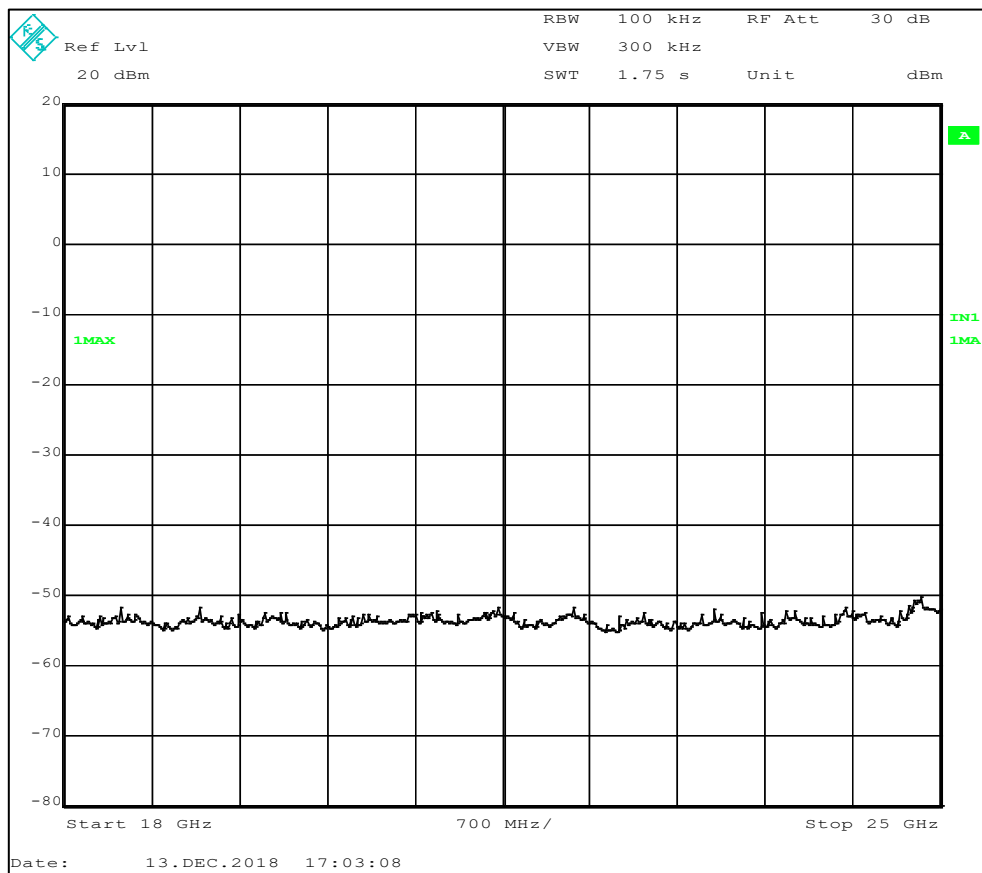


Figure 24. Emission test result 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2399.9399 | -30,24 | 100 | 2,03 | -28,21 | PASSED |

Table 4. Emission test results. Channel 1. 30 MHz to 25 GHz.

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2.4.2.3 Test result for channel 2 at 2417 MHz

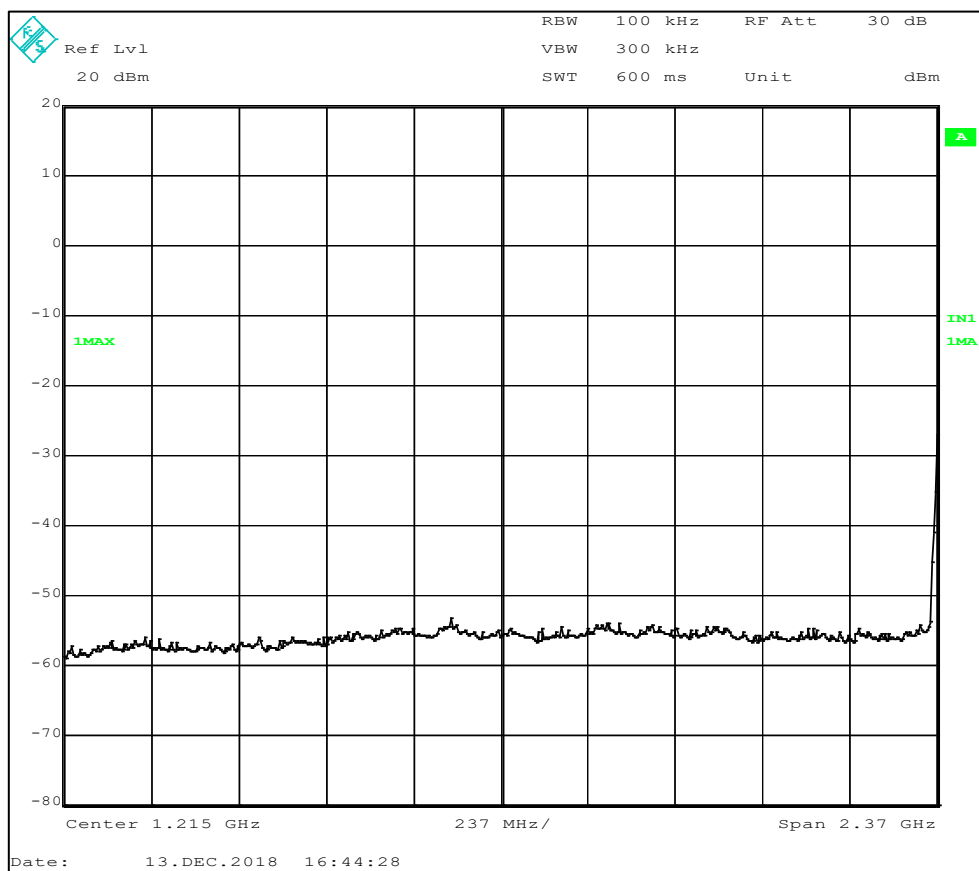


Figure 25. Emission test results. 30 MHz – 2.4 GHz.

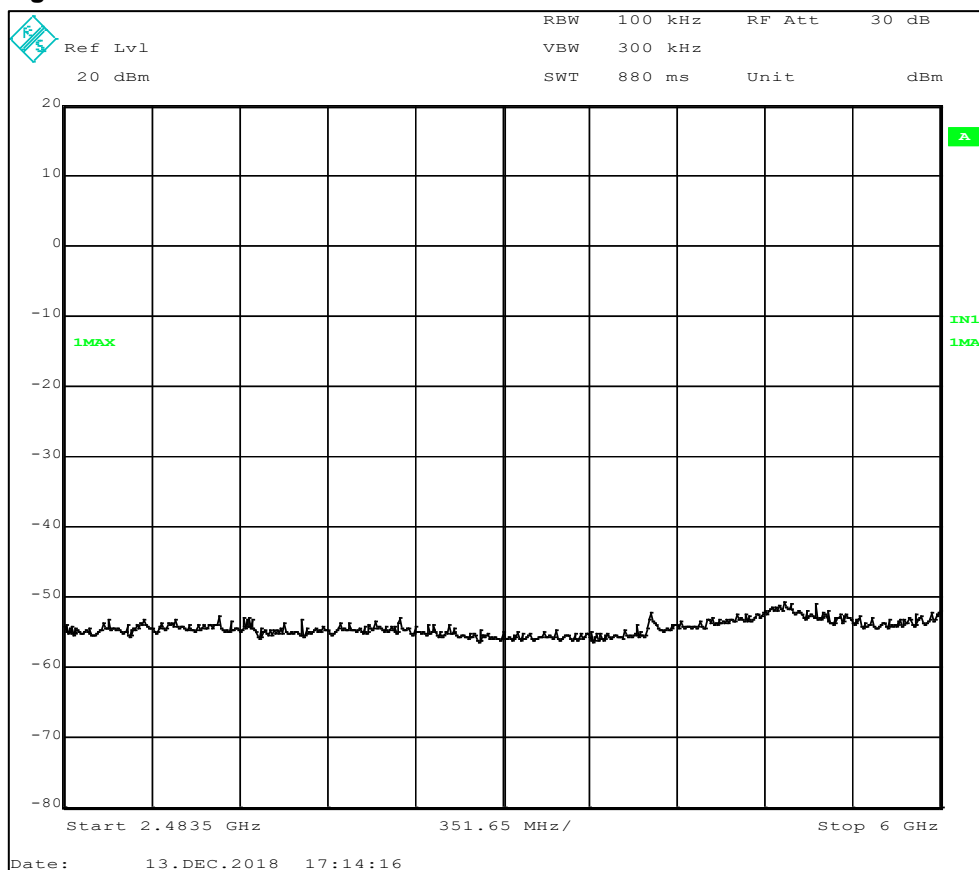


Figure 26. Emission test result 2.4835 GHz to 6 GHz.

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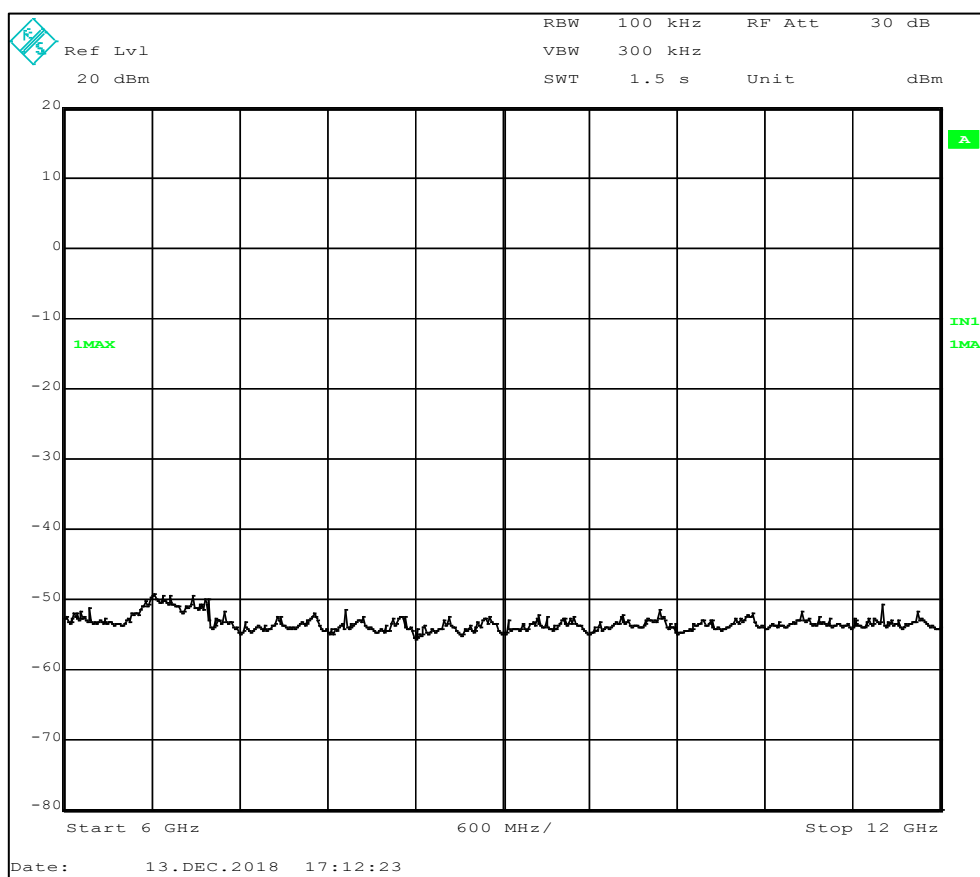


Figure 27. Emission test result 6 GHz to 12 GHz.

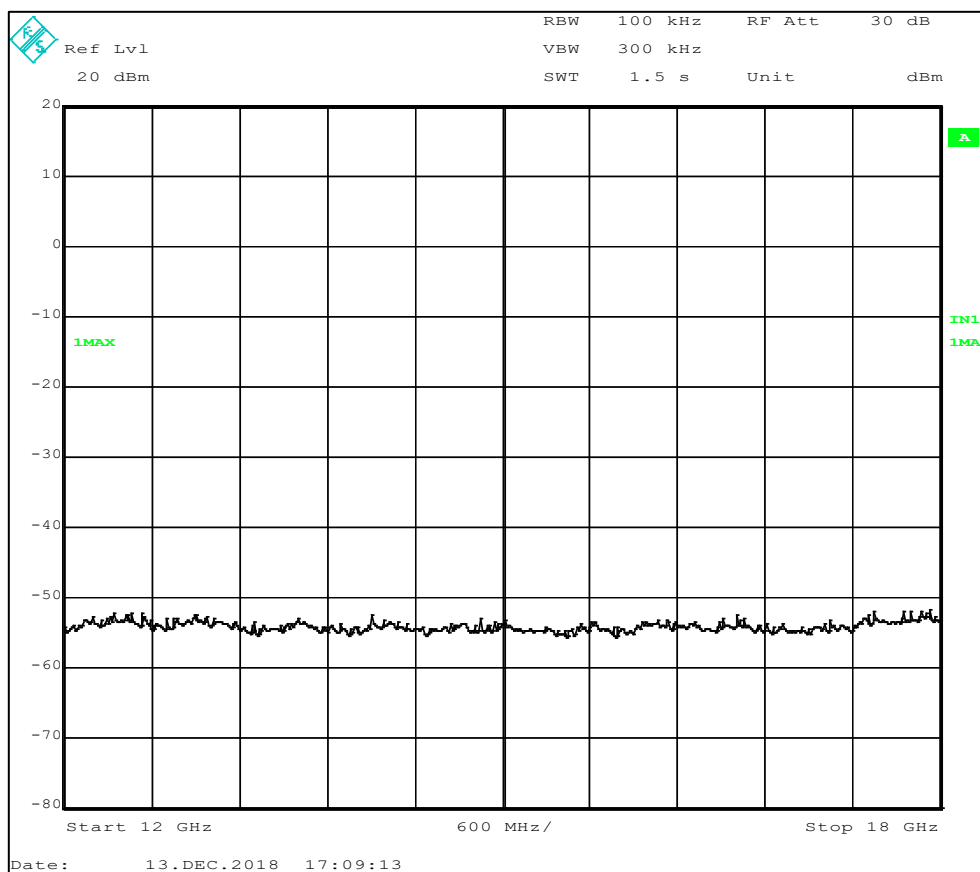


Figure 28. Emission test result 12 GHz to 18 GHz.

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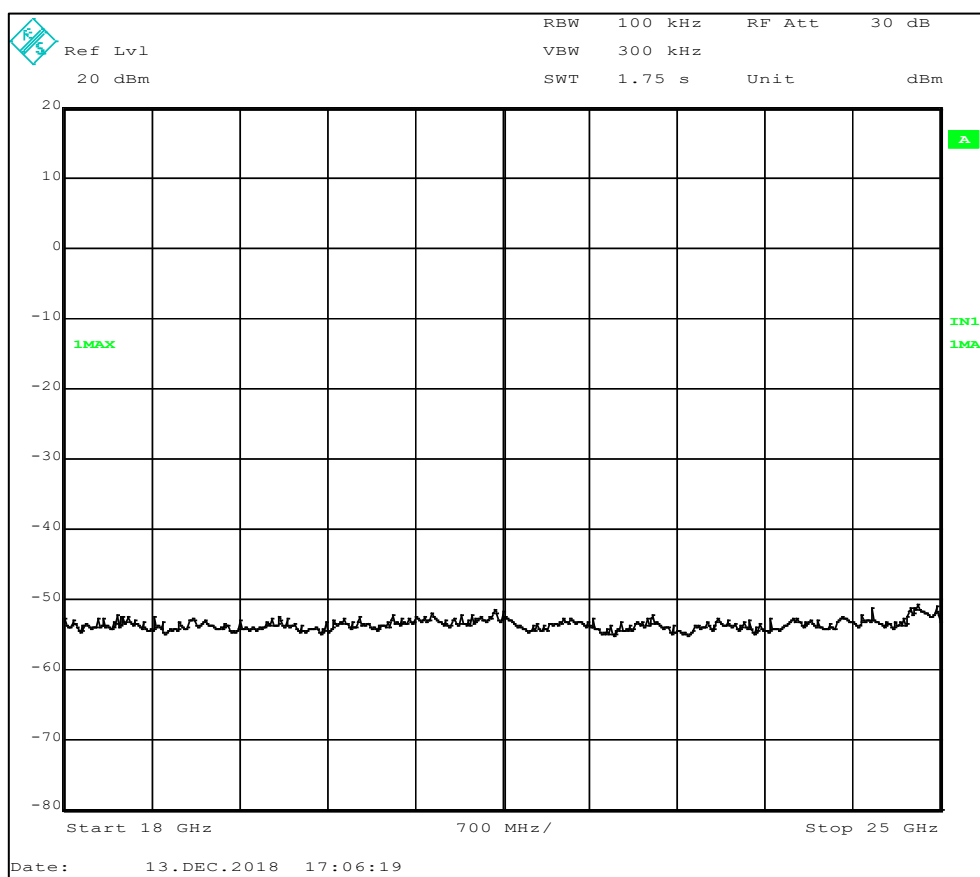


Figure 29. Emission test result 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2399.7194 | -27,83 | 100 | 2.77 | -25,06 | PASSED |

Table 5. Emission test results. Channel 2. 30 MHz to 25 GHz.

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2.4.2.4 Test result for channel 3 at 2422 MHz

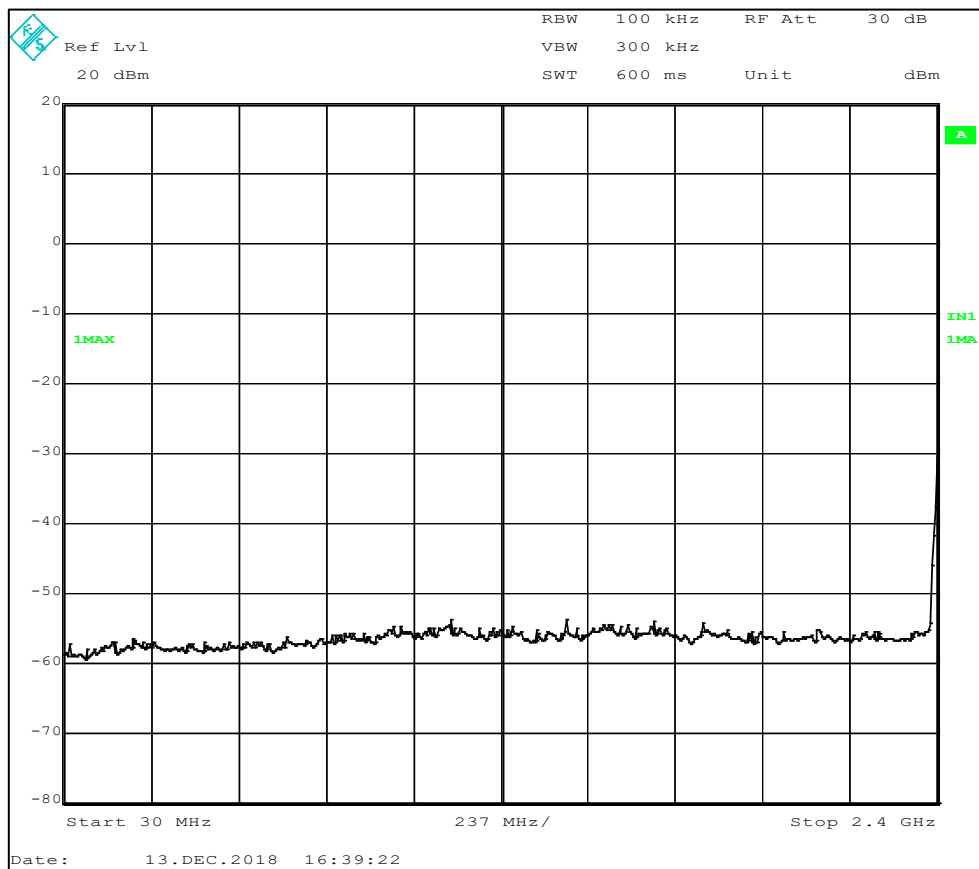


Figure 30. Emission test results. 30 MHz – 2.4 GHz.

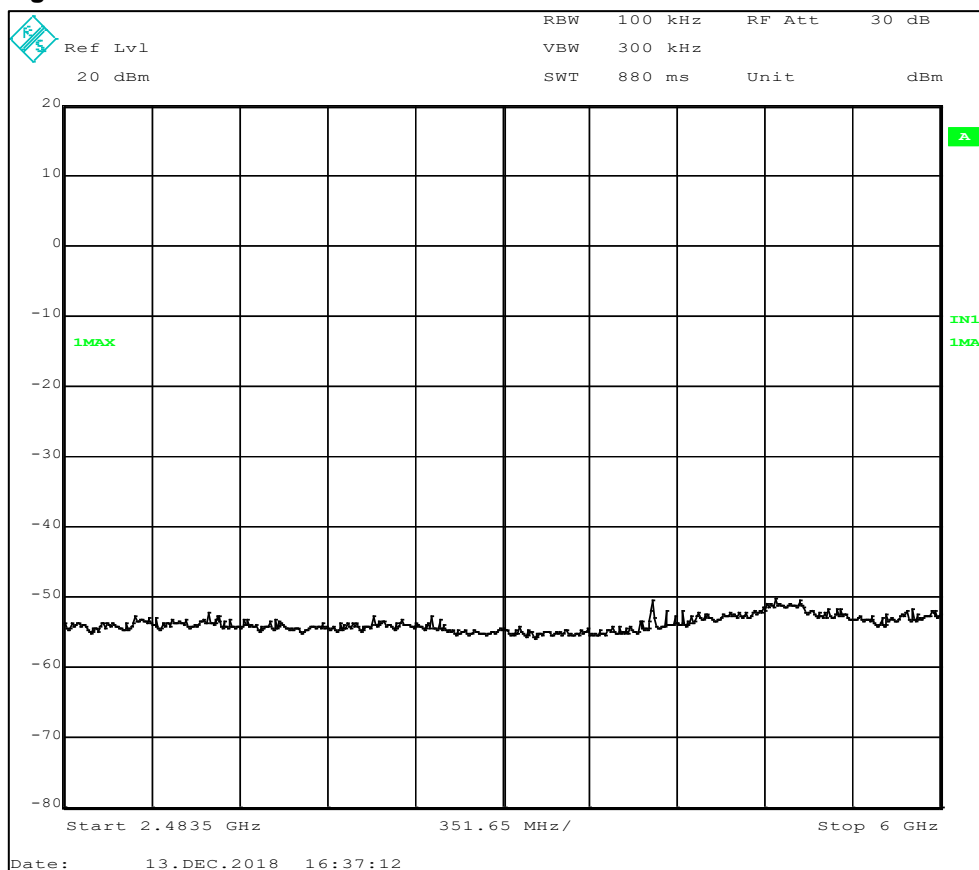


Figure 31. Emission test result 2.4835 GHz to 6 GHz.

FCC ID: 2ADEF AT-DG2
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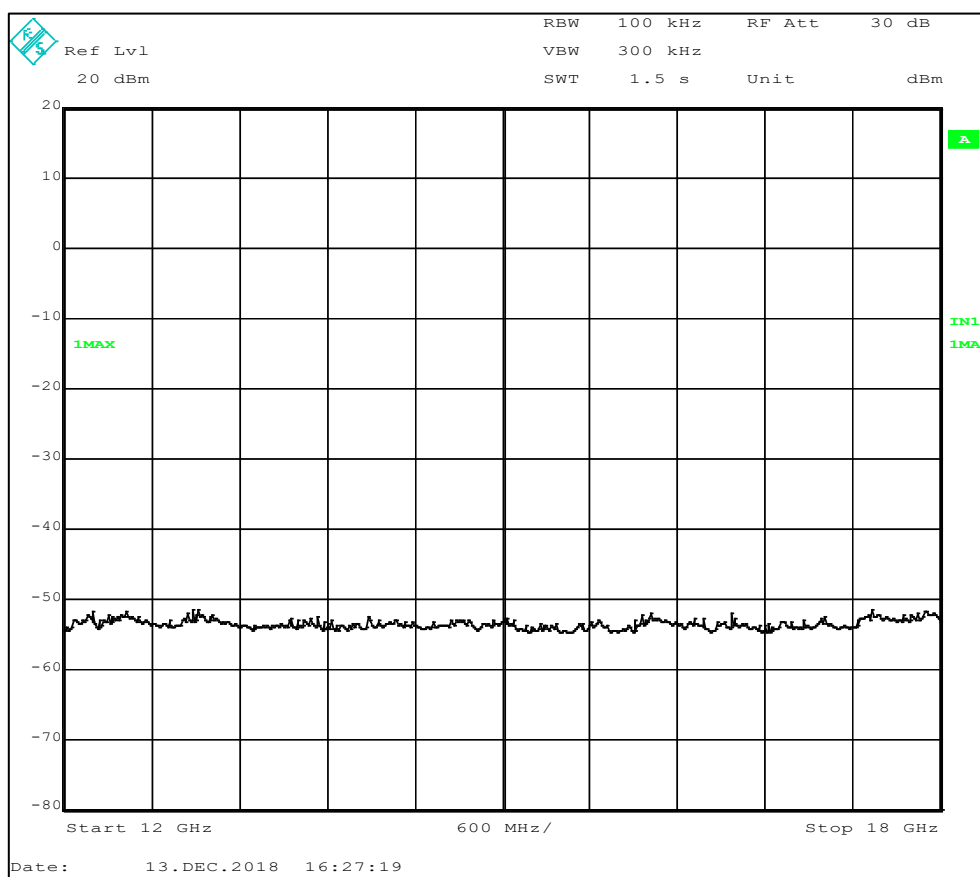


Figure 32. Emission test result 6 GHz to 12 GHz.

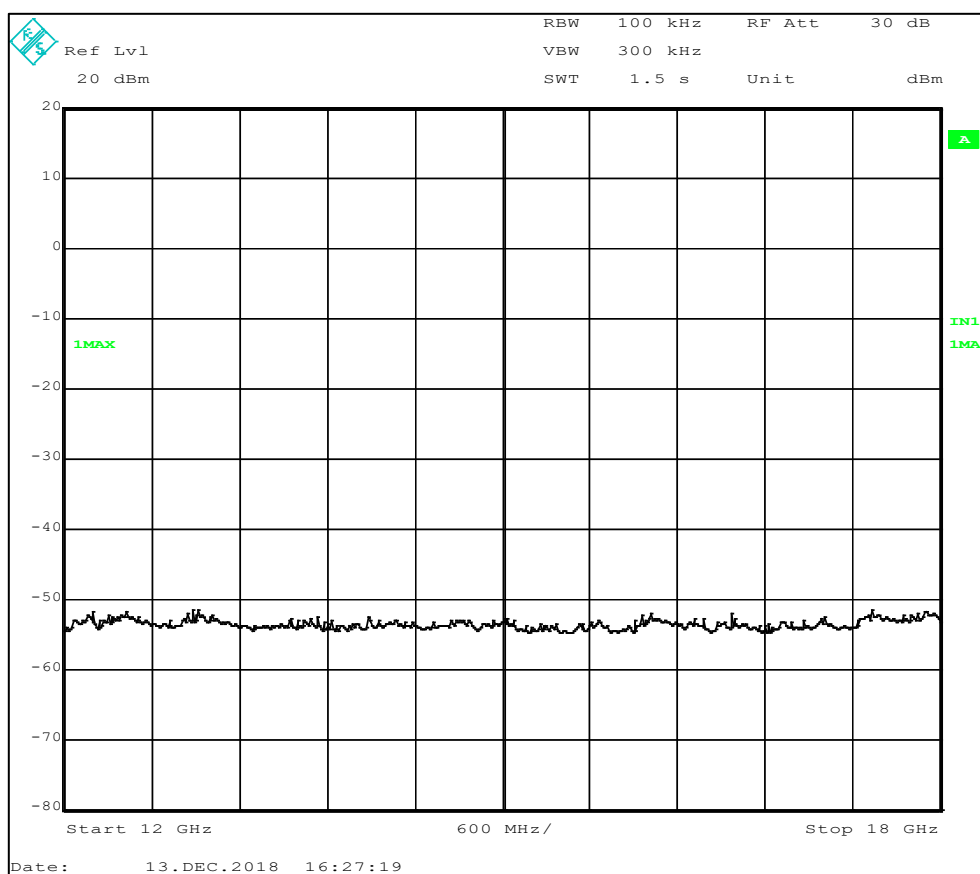


Figure 33. Emission test result 12 GHz to 18 GHz.

FCC ID: 2ADEF AT-DG2
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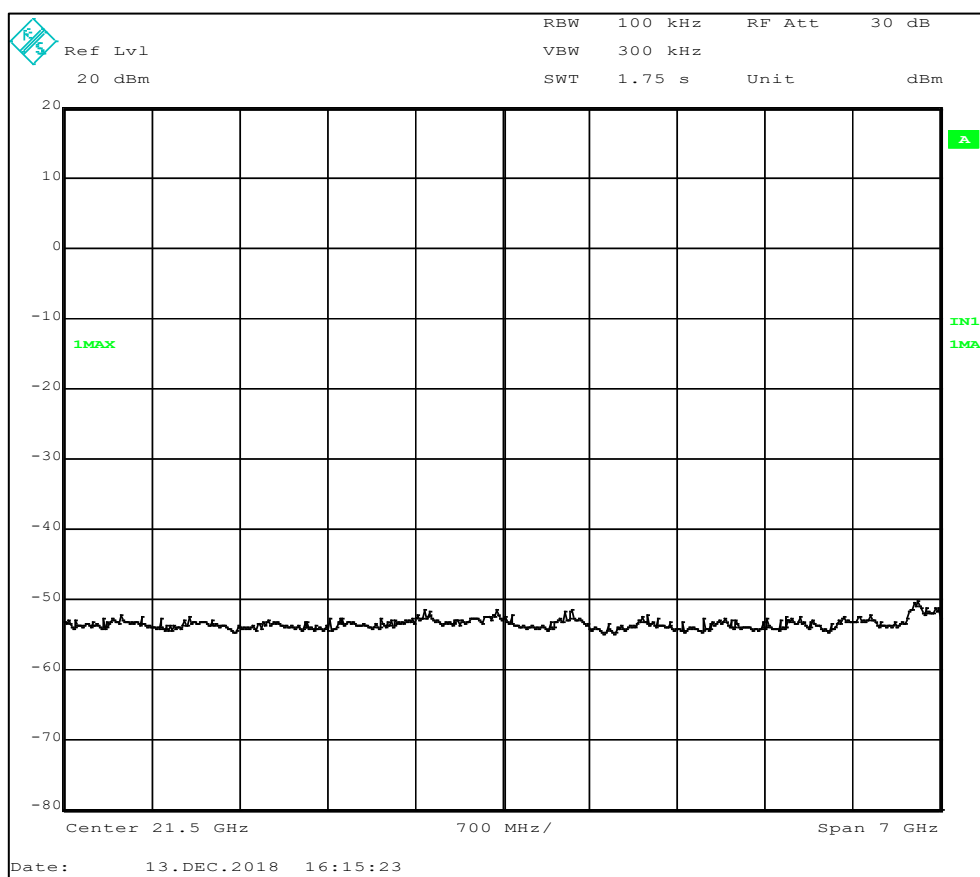


Figure 34. Emission test result 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2400 | -31 | 100 | 7,62 | -23.38 | PASSED |

Table 6. Emission test results. Channel 3. 30 MHz to 25 GHz.

FCC ID: 2ADEF AT-DG2
ISED ID: 12460A-ATDG2

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2.4.2.5 Test result for channel 7 at 2442 MHz

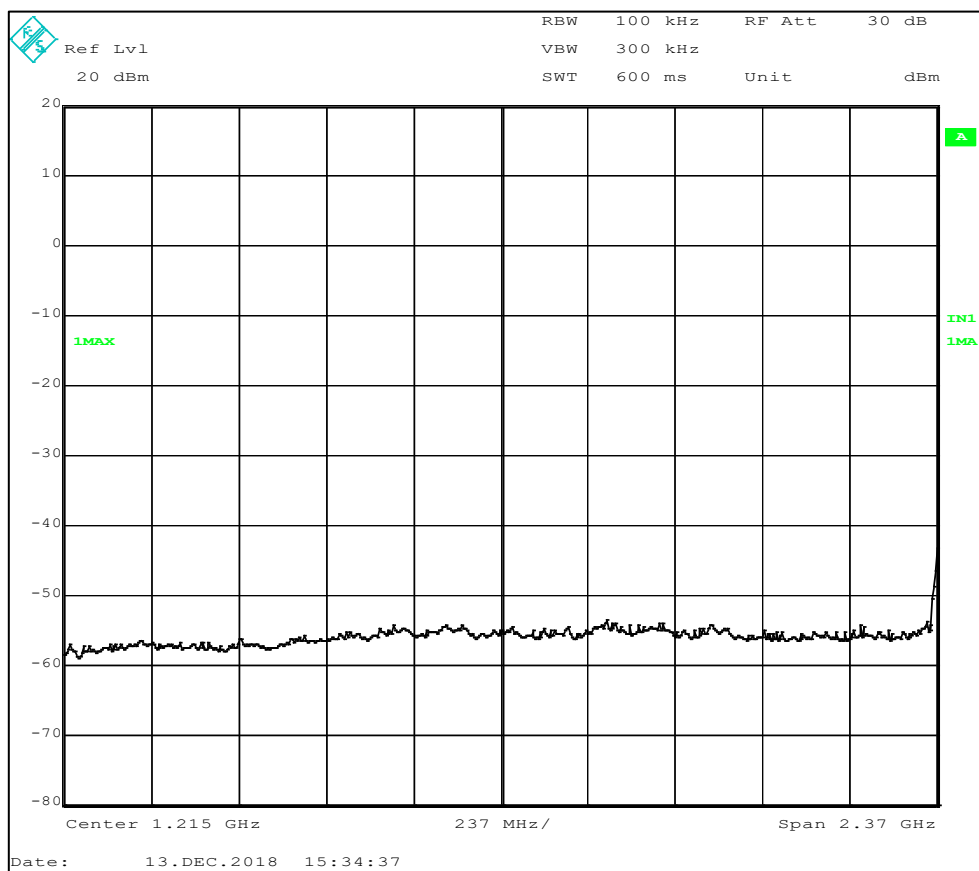


Figure 35. Emission test results. 30 MHz – 2.4 GHz.

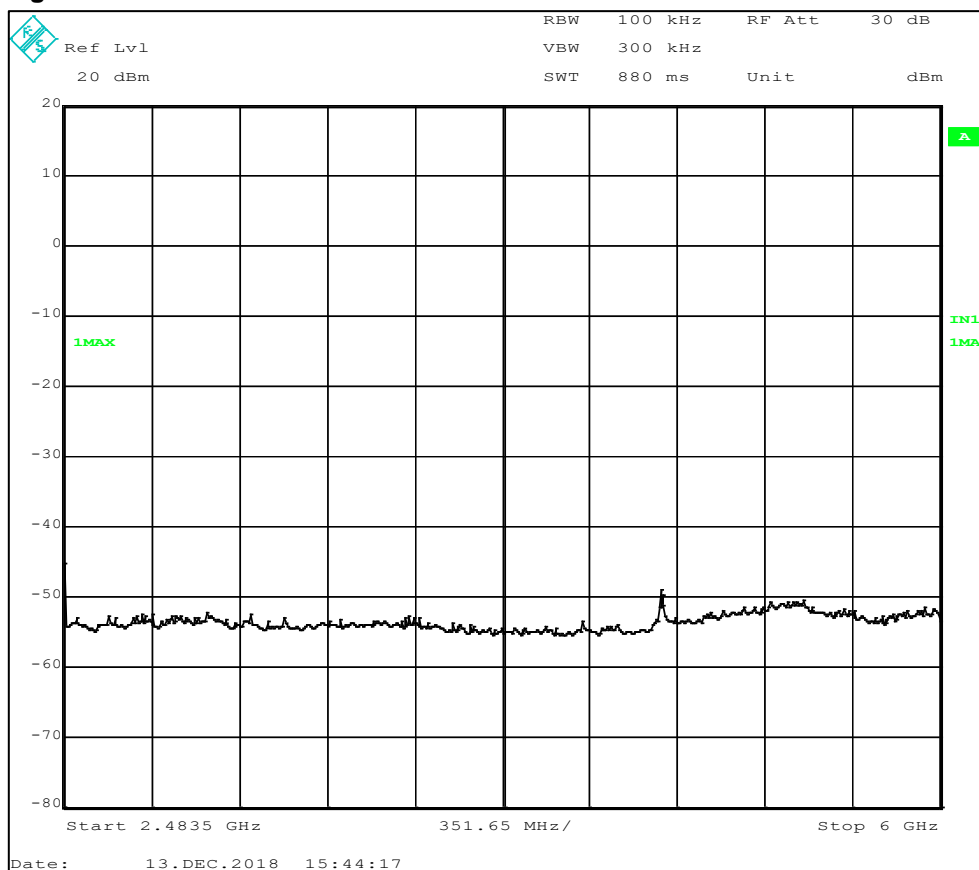


Figure 36. Emission test result 2.4835 GHz to 6 GHz.

FCC ID: 2ADEF AT-DG2
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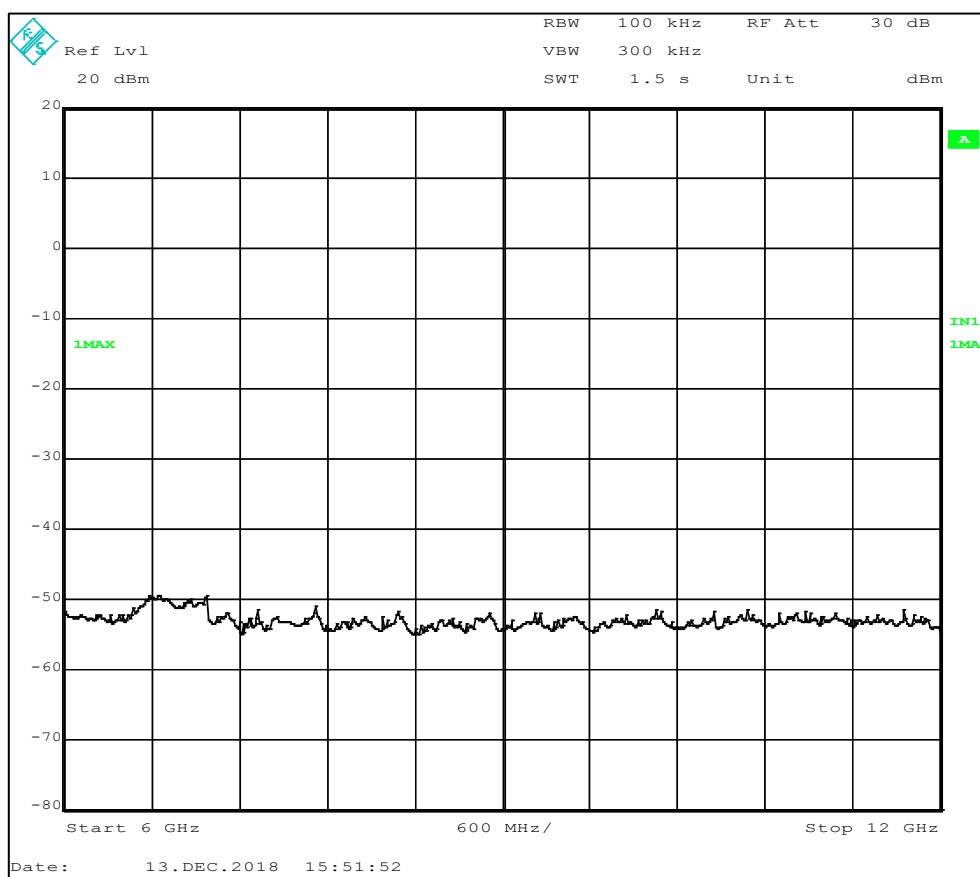


Figure 37. Emission test result 6 GHz to 12 GHz.

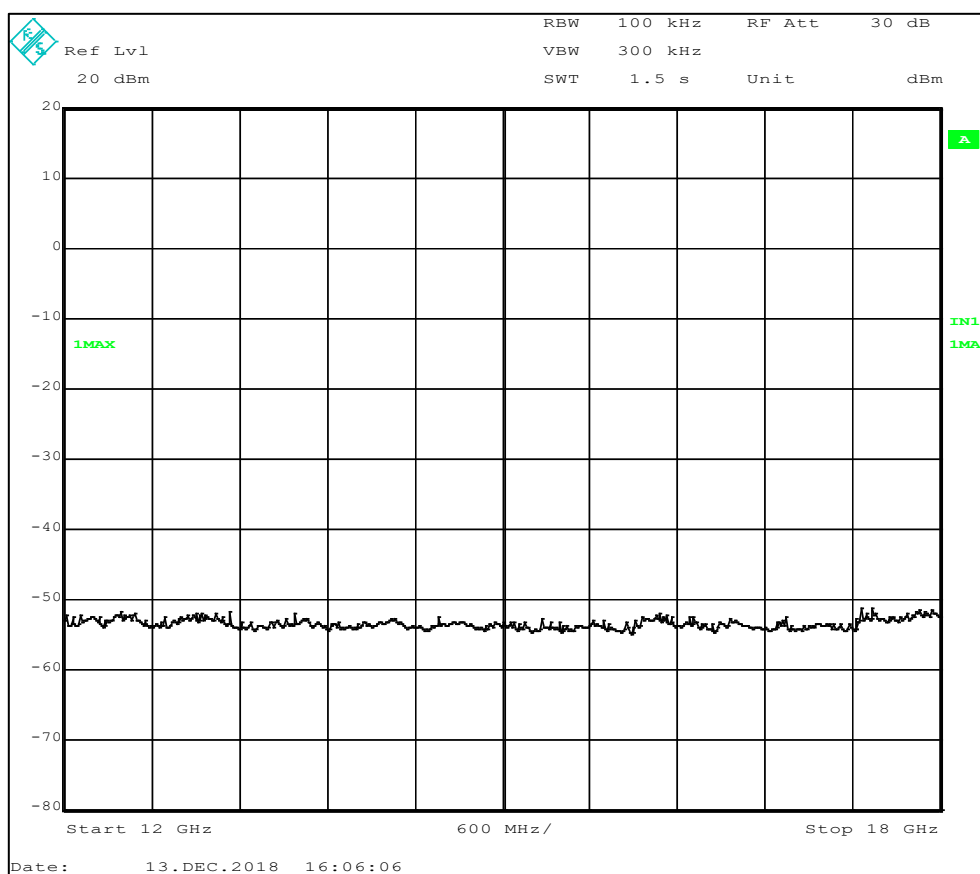


Figure 38. Emission test result 12 GHz to 18 GHz.

FCC ID: 2ADEF AT-DG2
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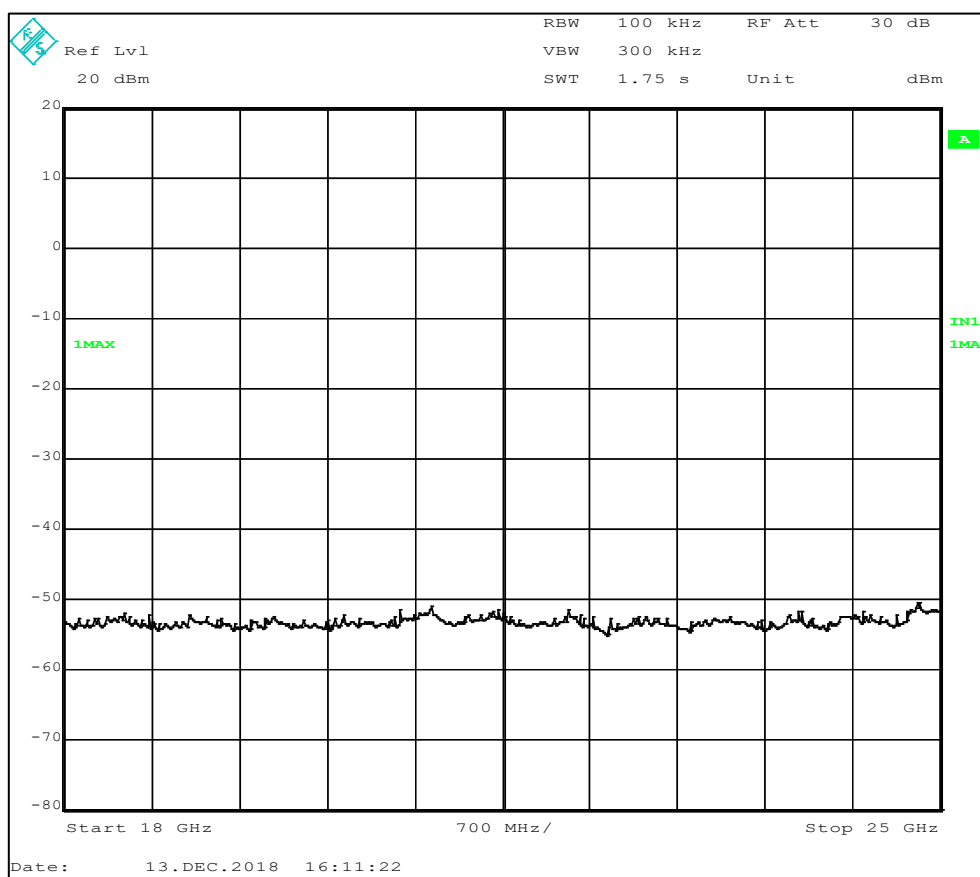


Figure 39. Emission test result 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2400 | -43 | 100 | 20,09 | -22,91 | PASSED |

Table 7. Emission test results. Channel 7. 30 MHz to 25 GHz.

FCC ID: 2ADEF AT-DG2
ISED ID: 12460A-ATDG2

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2.4.2.6 Test result for channel 9 at 2452 MHz

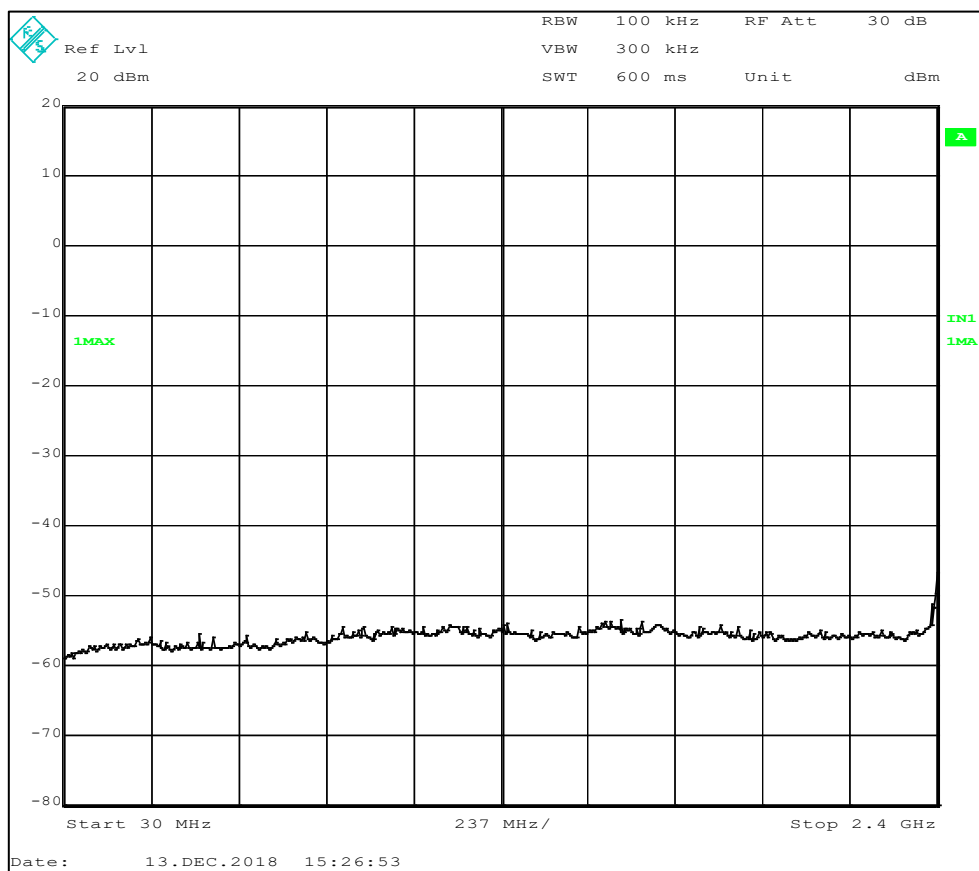


Figure 40. Emission test results. 30 MHz – 2.4 GHz.

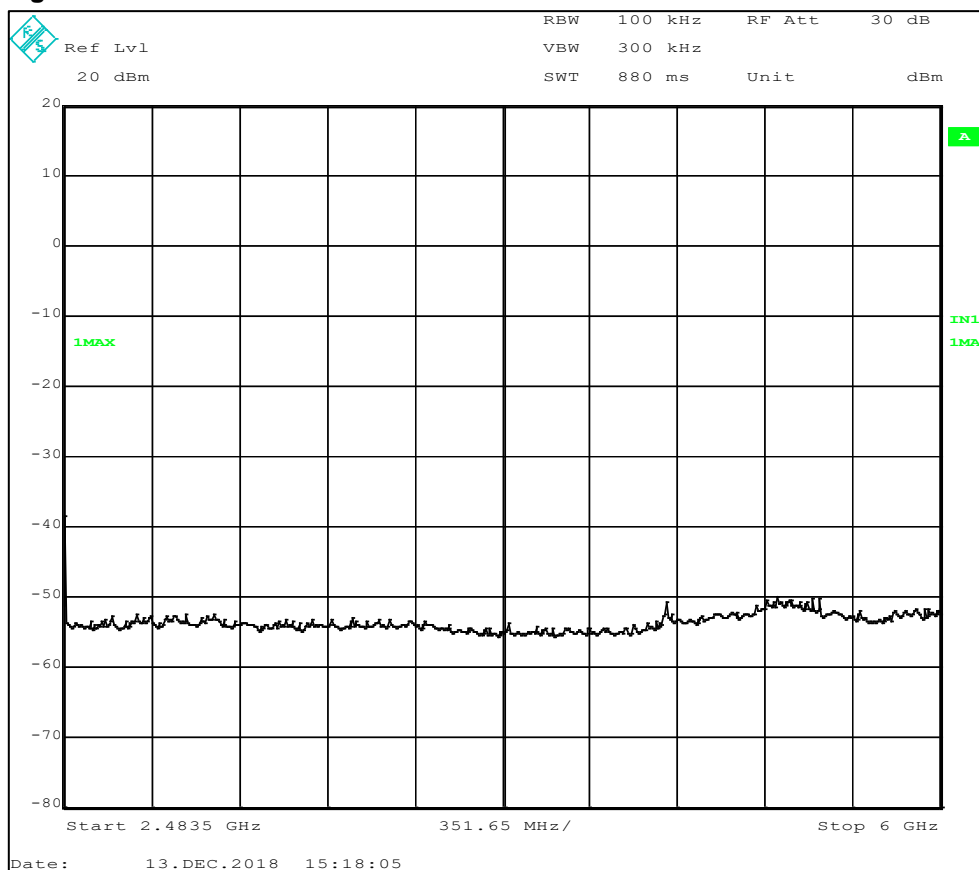


Figure 41. Emission test result 2.4835 GHz to 6 GHz.

FCC ID: 2ADEF AT-DG2
ISED ID: 12460A-ATDG2

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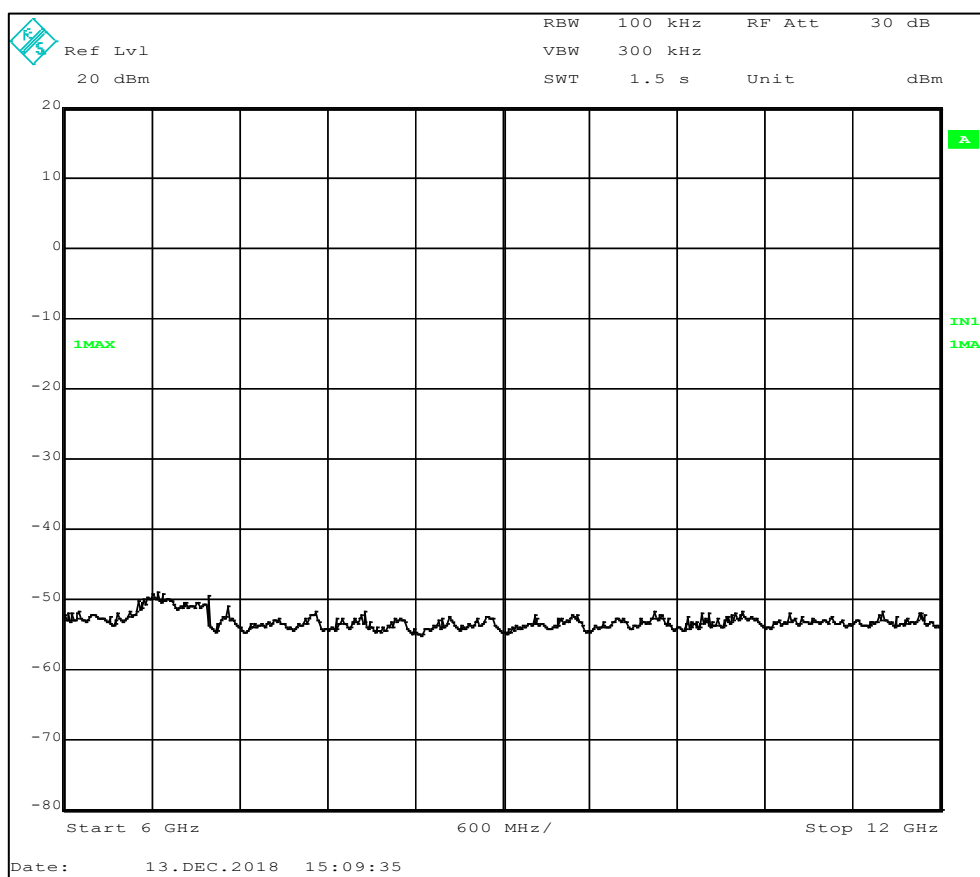


Figure 42. Emission test result 6 GHz to 12 GHz.

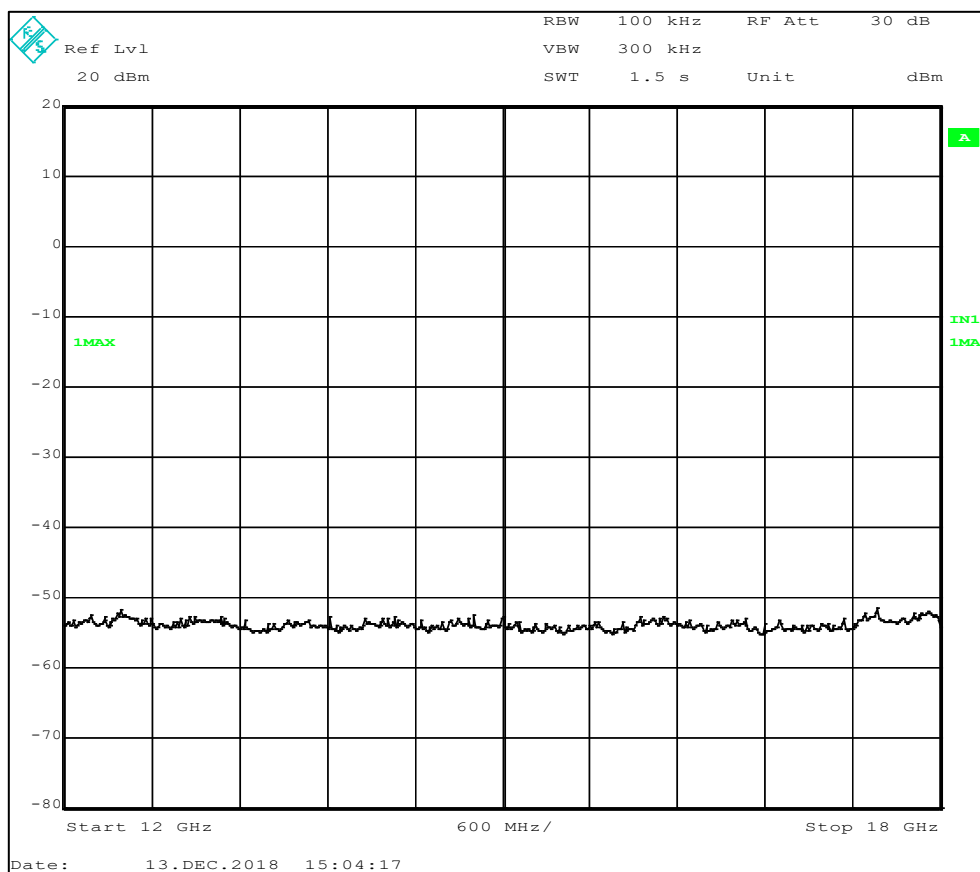


Figure 43. Emission test result 12 GHz to 18 GHz.

FCC ID: 2ADEF AT-DG2
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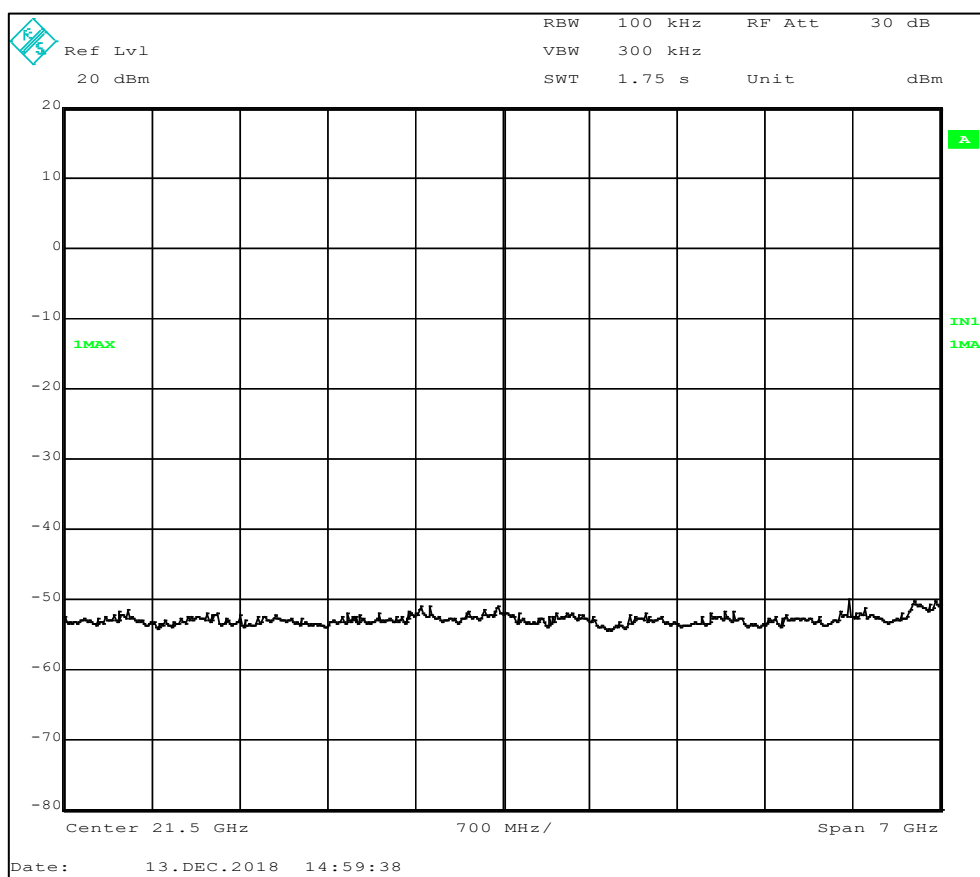


Figure 44. Emission test result 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2483.5 | -38 | 100 | 15,35 | -22,65 | PASSED |

Table 8. Emission test results. Channel 9. 30 MHz to 25 GHz.

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2.4.2.7 Test result for channel 10 at 2457 MHz

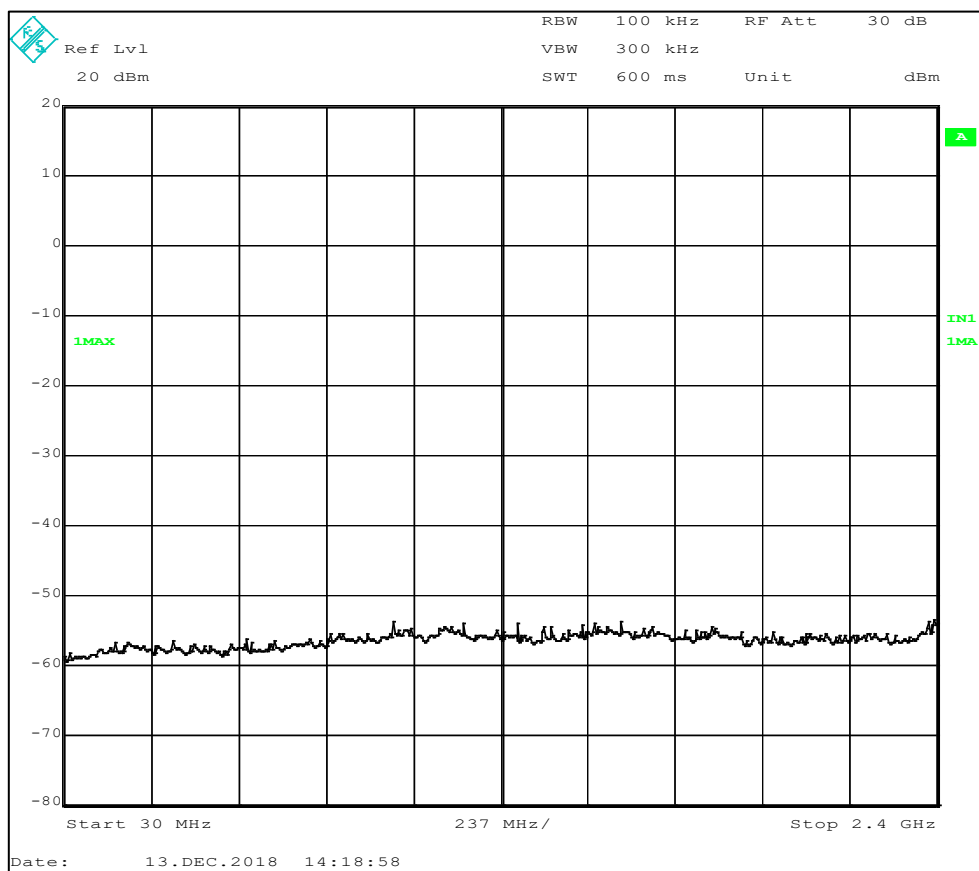


Figure 45. Emission test results. 30 MHz – 2.4 GHz.

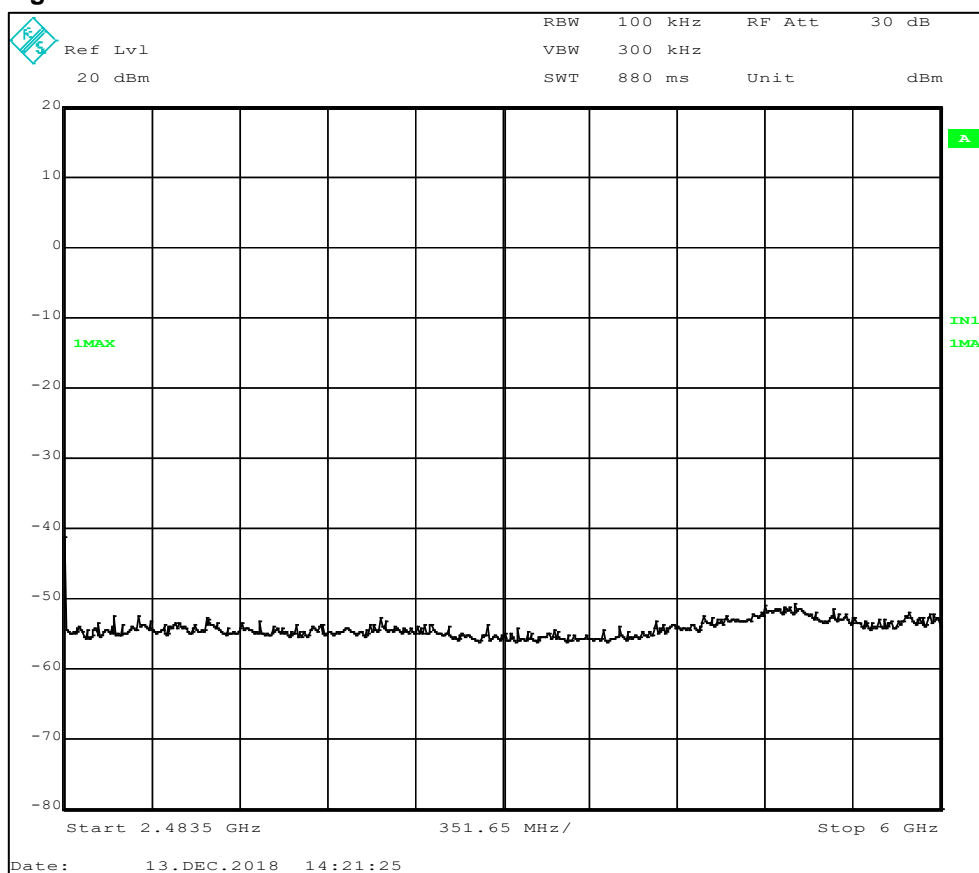


Figure 46. Emission test results. 2.4835 GHz to 6 GHz.

FCC ID: 2ADEF AT-DG2
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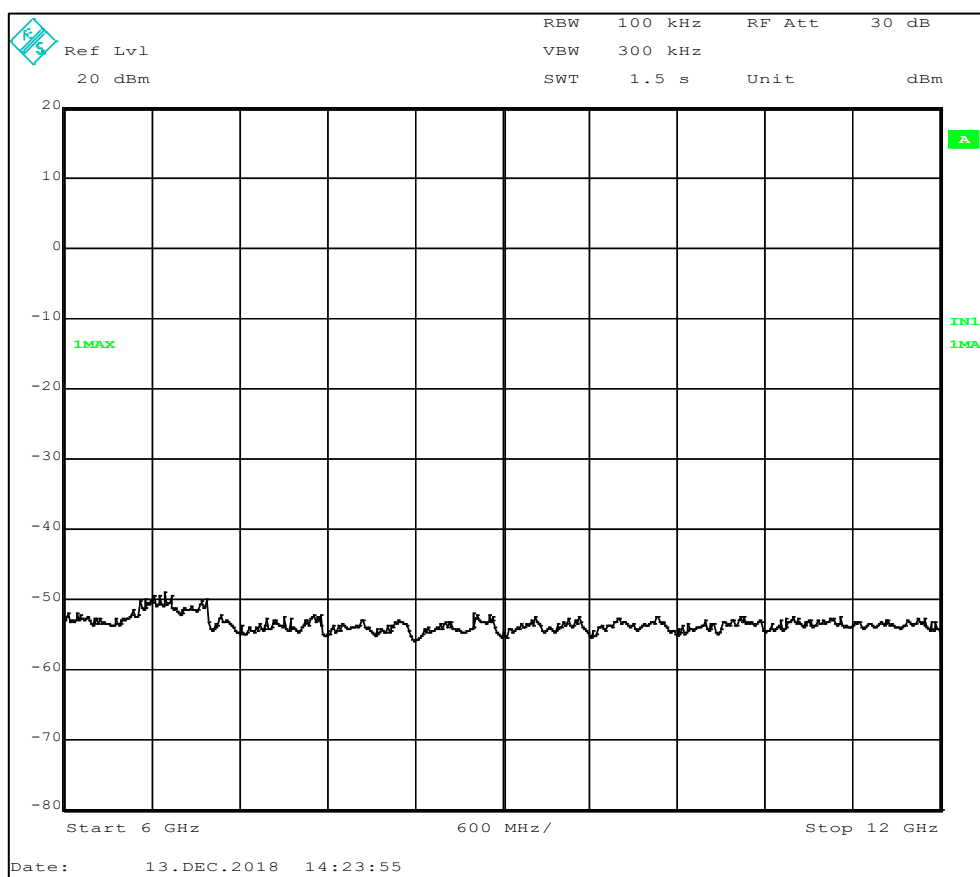


Figure 47. Emission test results. 6 GHz to 12 GHz.

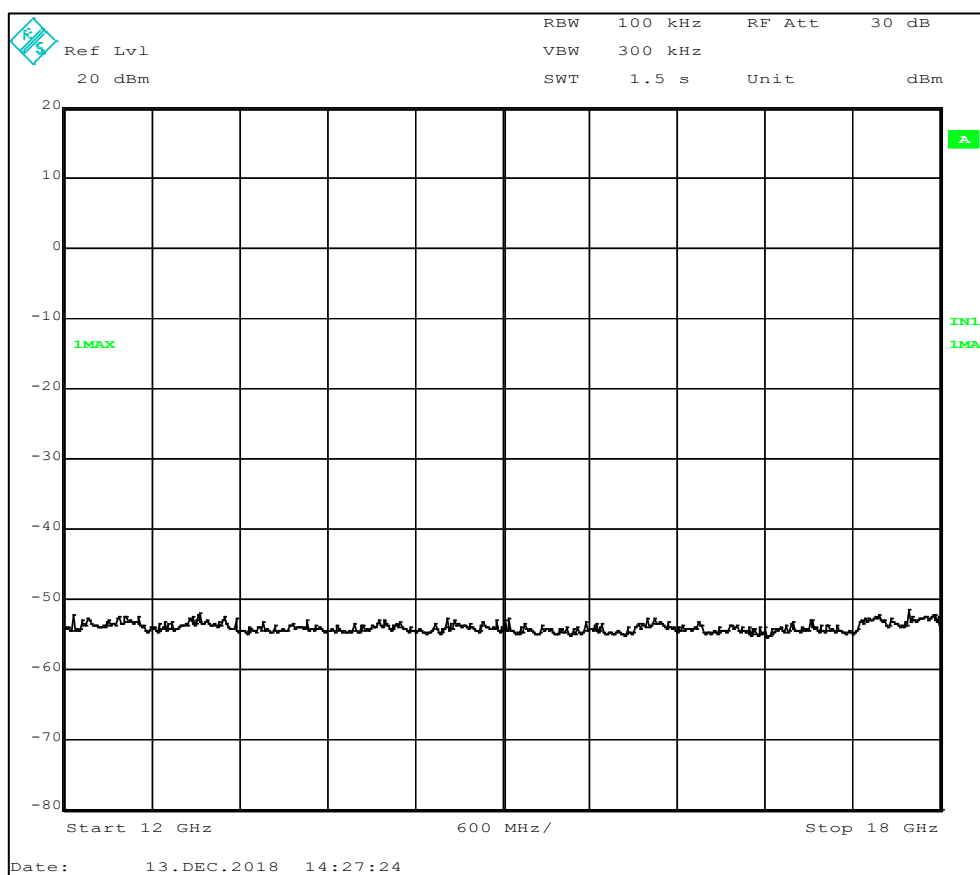


Figure 48. Emission test results. 12 GHz to 18 GHz.

FCC ID: 2ADEF AT-DG2
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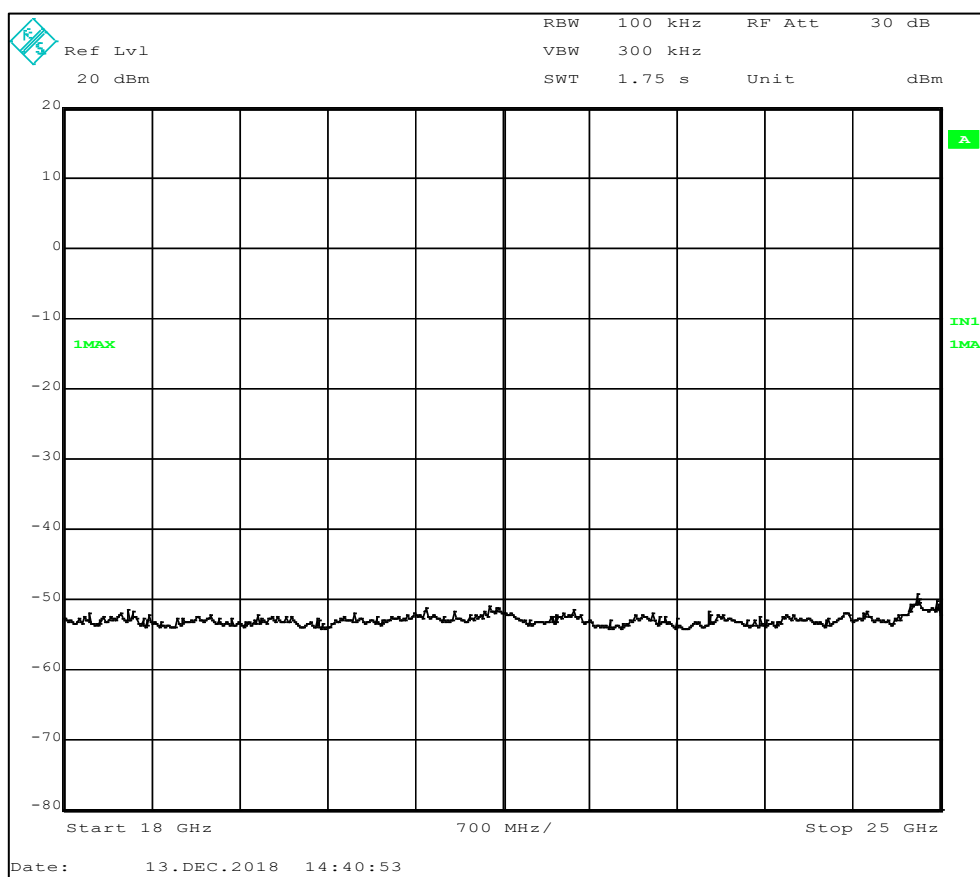


Figure 49. Emission test results. 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2483.5 | -41 | 100 | 16,14 | -24.86 | PASSED |

Table 9. Emission test results. Channel 10. 30 MHz to 25 GHz.

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2.4.2.8 Test result for channel 11 at 2462 MHz.

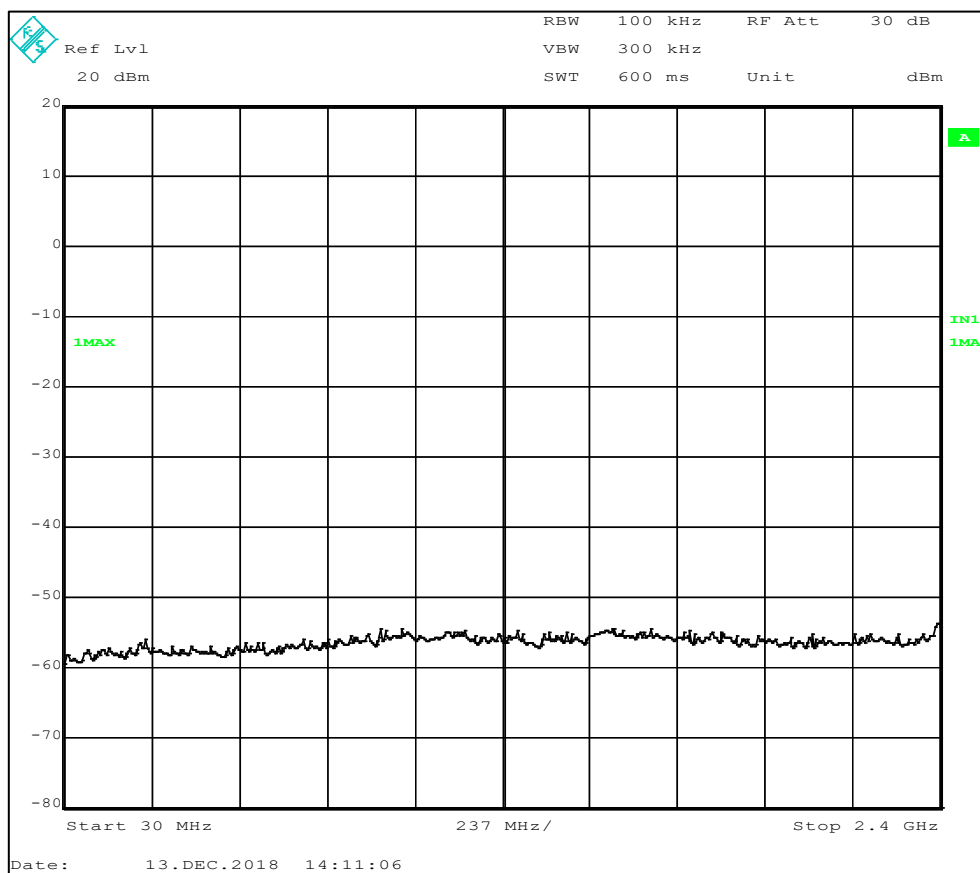


Figure 50. Emission test results. 30 MHz to 2.4 GHz.

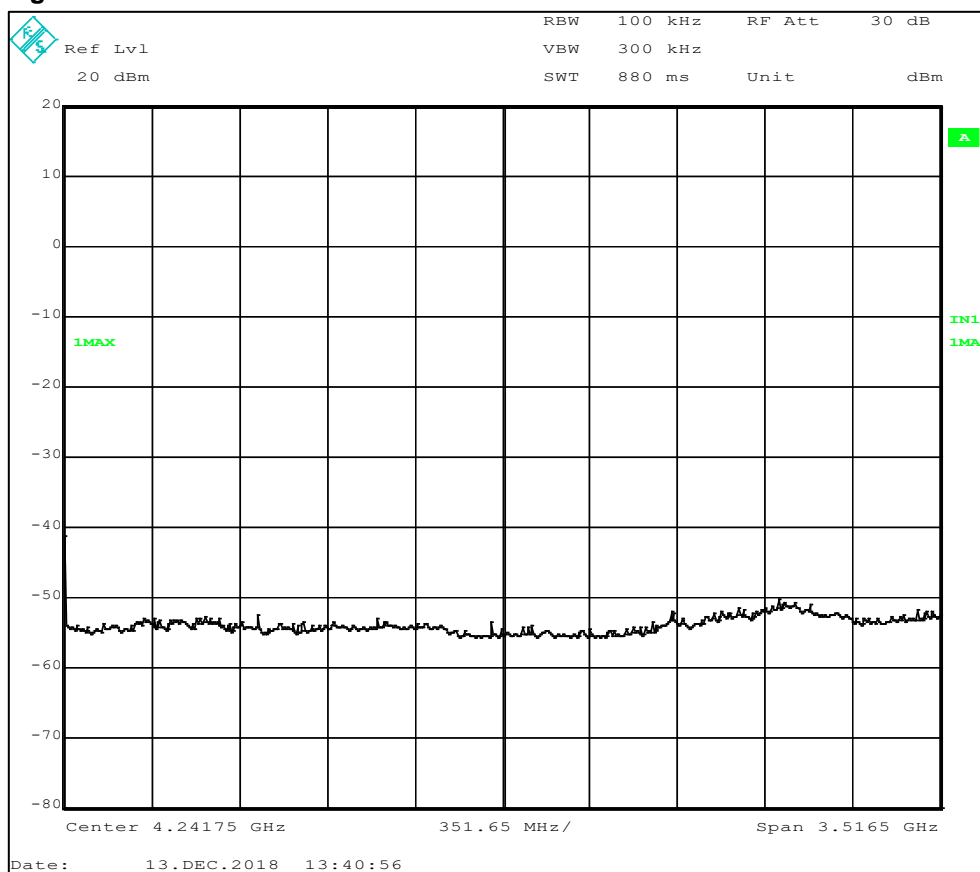


Figure 51. Emission test results. 2.4835 GHz to 6 GHz.

FCC ID: 2ADEF AT-DG2
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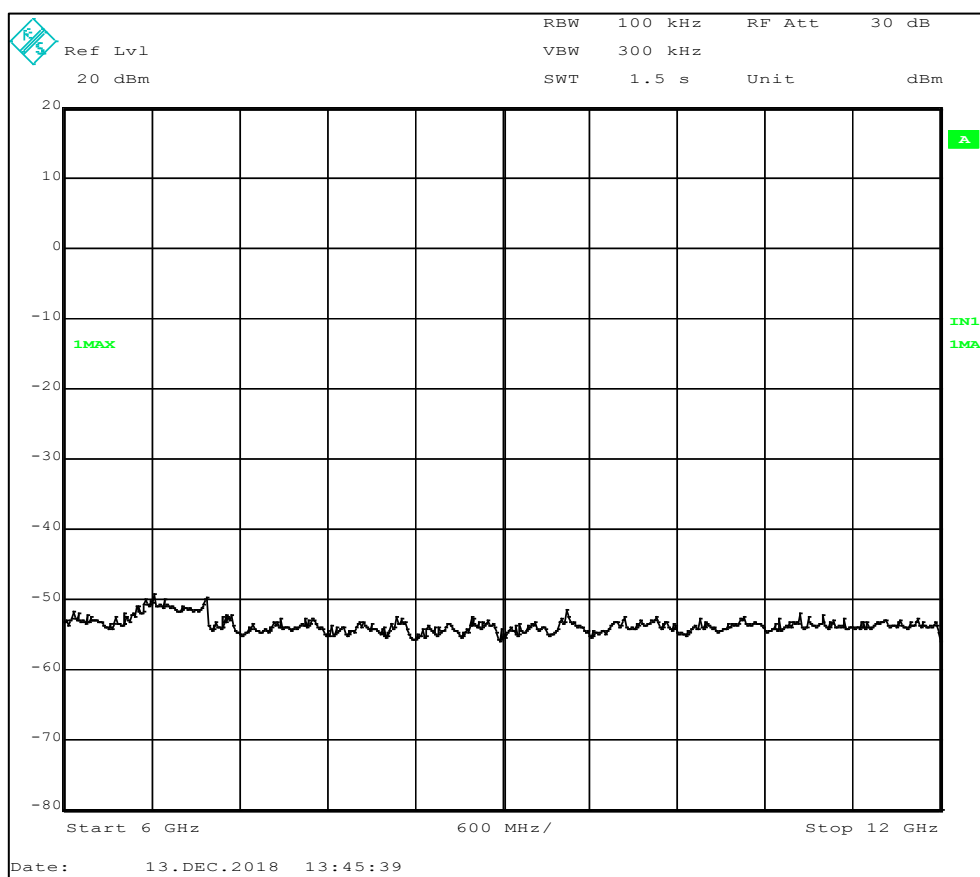


Figure 52. Emission test results. 6 GHz to 12 GHz.

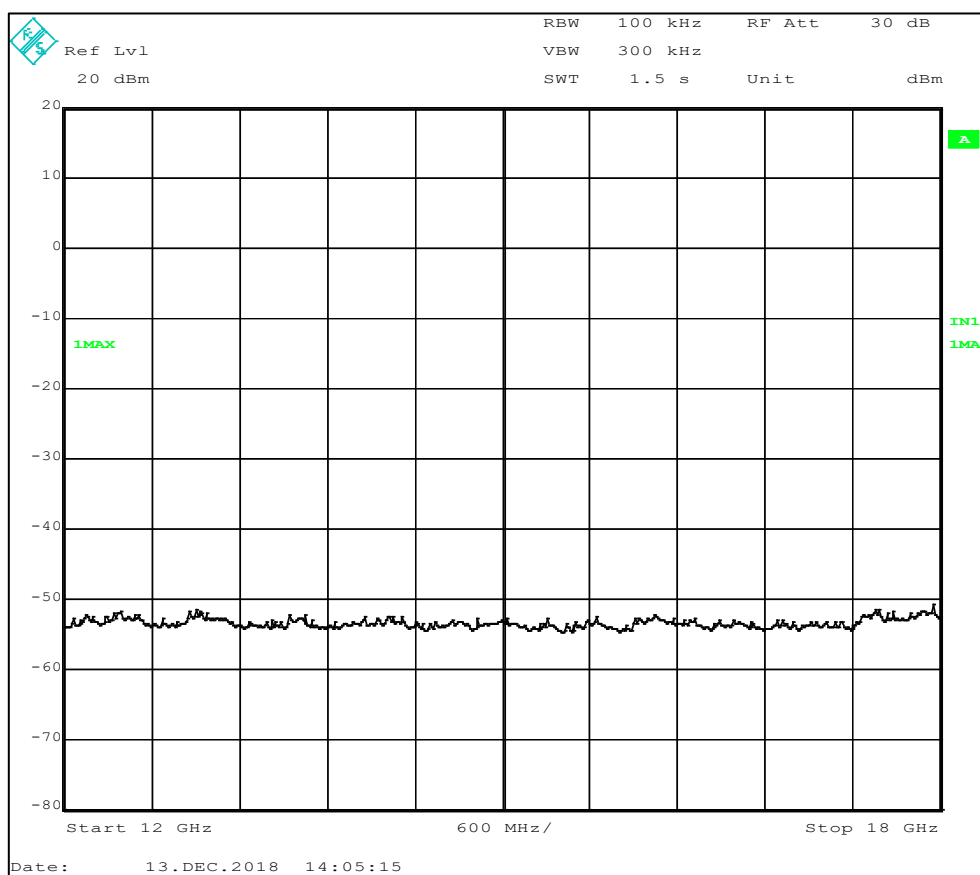


Figure 53. Emission test results. 12 GHz to 18 GHz.

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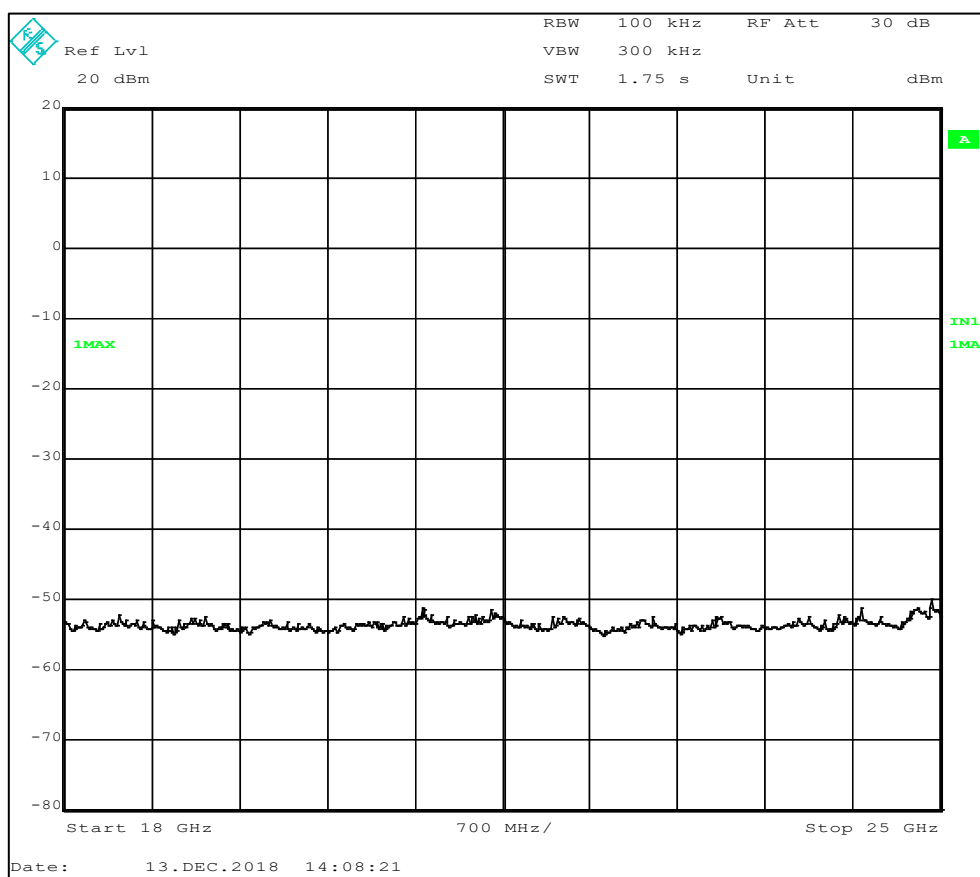


Figure 54. Emission test results. 18 GHz to 25 GHz.

| Frequency [MHz] | Peak [dBm] | BW [kHz] | Margin [dB] | Limit [dBm] | Result |
|-----------------|------------|----------|-------------|-------------|--------|
| 2483.5 | -41 | 100 | 13.02 | -27.98 | PASSED |

Table 10. Emission test results. Channel 11. 30 MHz to 25 GHz.

2.4.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.5 Emission in restricted bands.

| | |
|-------------------------------|--|
| Test specimen | AT-DG2 no.5 |
| Test specification | 47 CFR Part 15.247 (d) RSS-247 sec. 6.2 |
| Test method | ANSI C63.10:2013 sec. 11.12 |
| Frequency range | 30 MHz – 25 GHz |
| Limits | 15.209 in restricted bands. |
| Comments | None |
| Temperature / Humidity | 23°C / 50%RH, 22°C / 49%RH, 23°C / 43%RH, 23°C / 38%RH, 23°C / 53%RH, 21°C / 37%RH, and 21°C / 36%RH |
| Dates of measurements | 2018-09-10, 2018-09-11, 2018-09-12, 2018-09-13, 2018-09-21, 2018-12-12 and 2018-12-14 |
| Test personnel | Søren Søtoft, David Busk |

2.5.1 Test setup

The measurement was performed in the full frequency range from 30 MHz to 25 GHz regardless whether it was a restricted band or not.

During test in the frequency range 200 MHz to 25 GHz the test specimen was supplied by PoE injector 1 and Airtame Ethernet to USB adaptor with PoE.

In the frequency range 30 MHz to 200 MHz the test specimen was supplied by a 5 VDC supply at Airtame USB cable.

The test specimen was tested in a combination of different orientations and channels:

Channel 1 (2412 MHz) were tested in Horizontal and Vertical -90 deg. orientations.

Channel 7 (2442 MHz) was tested in Vertical orientation.

Channel 11 (2462 MHz) was tested in Vertical -90 deg. orientation.

The channels were tested with the following power levels:

Channel 1 at power level 11

Channel 7 at power level 17

Channel 11 at power level 12

The outer channels (channel 1 and channel 11) were additionally tested at power level 17, such as to show that all channels between also complied with the highest possible channel power.

The test of radiated emission was performed in a semi anechoic chamber. The measurements were performed with both horizontal and vertical antenna polarization.

A measuring distance of 3 m was used in frequency range 30 MHz to 14 GHz.

In range 14 GHz to 25 GHz the distance was 0.5 m.

The EUT was placed on a non-conductive table.

For measurements below 1 GHz. the height was 0.8 m and above 1 GHz the height was 1.5 m.

1. A pre-measurement is performed with peak detector. The test object is measured in eight directions with the antenna in the frequency range 30-1000 MHz and in eighteen directions at frequencies above 1 GHz, with the antenna at three heights, 1.0 m, 1.5 m and 2.0 m. In the frequency range of 14 GHz to 25 GHz the measurement distance was 0.5 m.
2. If the emission is close or above the limit during the pre-measurement, the test object is scanned 360 degrees and the antenna height scanned from 1 to 4 m for maximum response. Then the emission is measured with the quasi-peak detector on frequencies below 1 GHz and with the CISPR-average detector above 1 GHz.

The following RBW were used:

30 MHz-1 GHz: RBW = 120 kHz

1-25 GHz: RBW = 1 MHz

See appendix 1 for photo of test set up

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2.5.2 Test results

2.5.2.1 Test result for channel 1 at 2412 MHz in Vertical -90 deg. position at power level 11

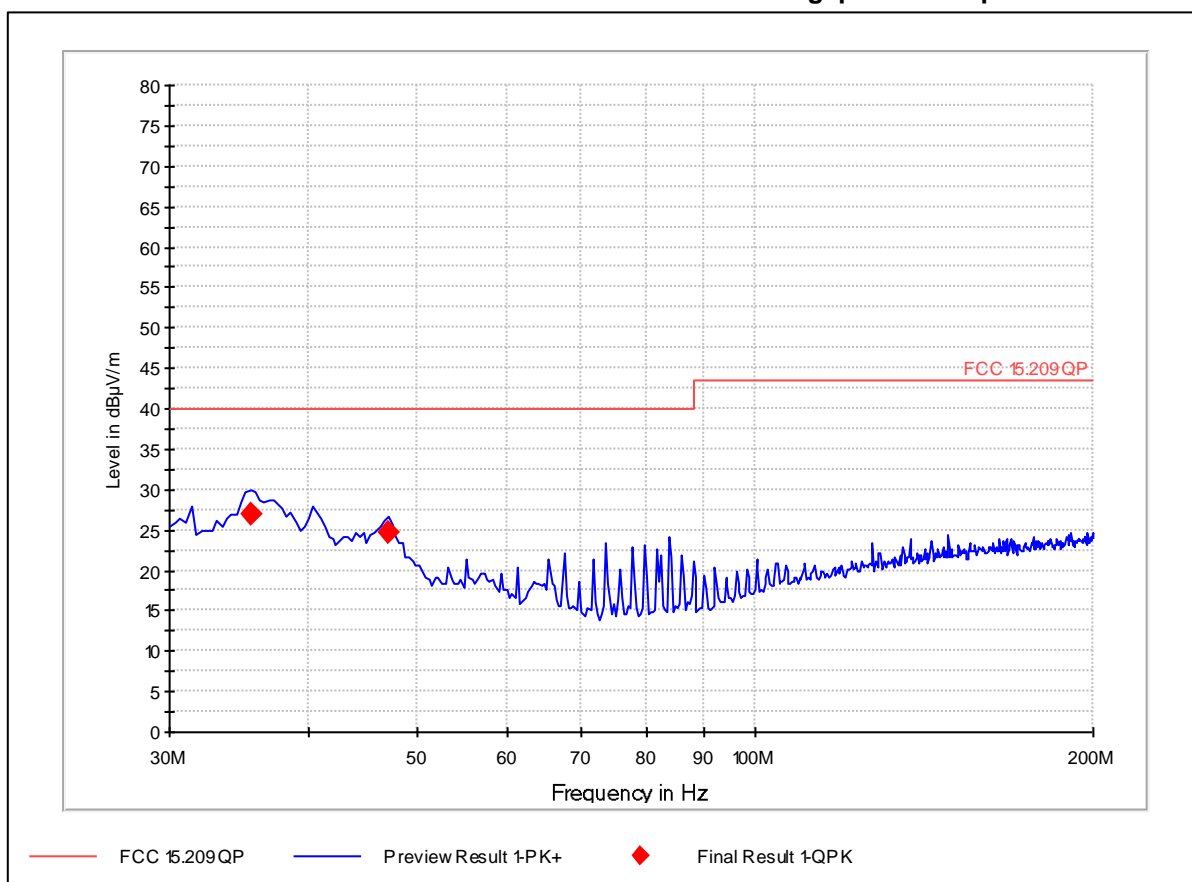


Figure 55. Radiated emission test results. 30 - 200 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 35.440902 | 27.0 | 120.0 | 269.9 | H | 246.0 | 13.0 | 40.0 | PASSED |
| 47.064068 | 24.6 | 120.0 | 338.0 | V | 126.0 | 15.4 | 40.0 | PASSED |

Table 11. Radiated emission test results. 30 - 200 MHz. Quasi peak detector

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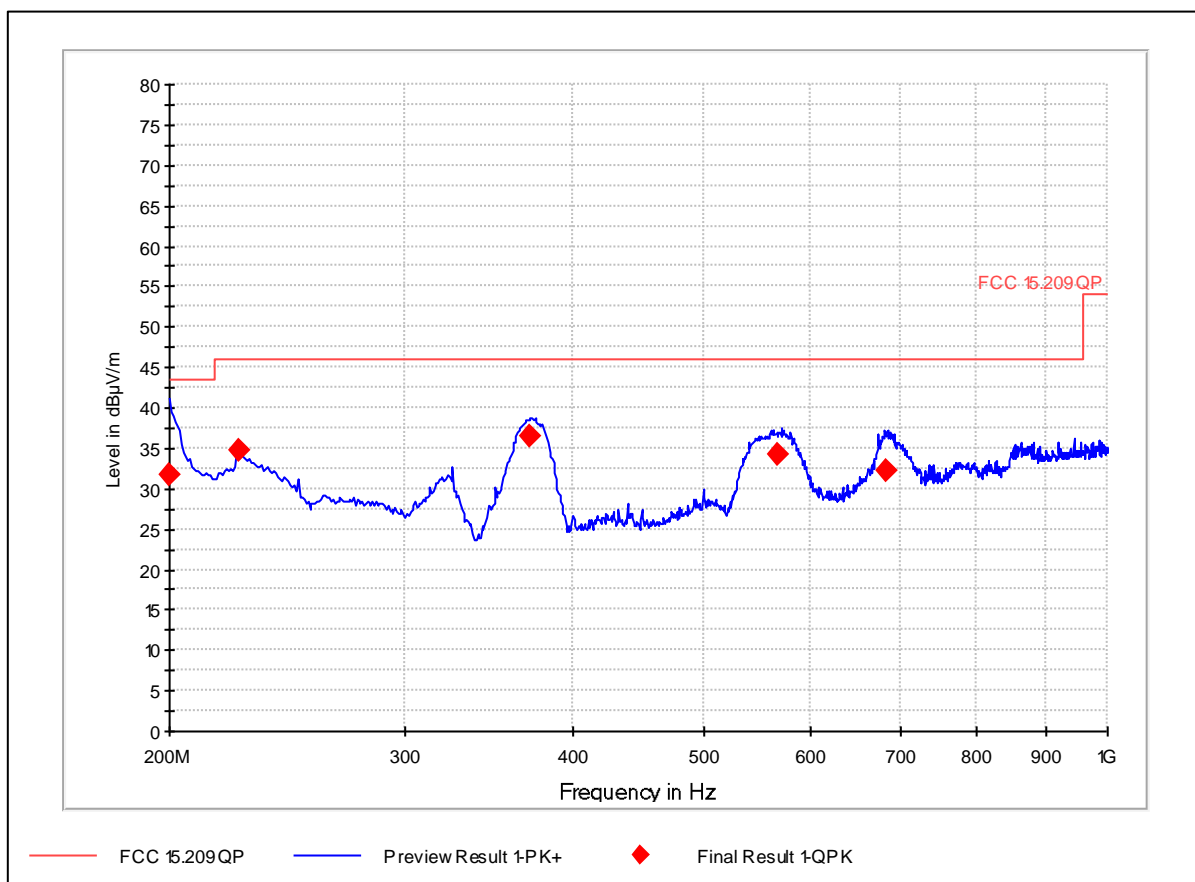


Figure 56. Radiated emission test results. 200 - 1000 MHz.

| Frequency [MHz] | QP [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|-------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| 200.090000 | 31.7 | 120.0 | 199.9 | V | 270.0 | 11.8 | 43.5 | PASSED |
| 225.029699 | 34.8 | 120.0 | 133.1 | V | 298.0 | 11.2 | 46.0 | PASSED |
| 371.351483 | 36.5 | 120.0 | 100.1 | V | 135.0 | 9.5 | 46.0 | PASSED |
| 568.437475 | 34.3 | 120.0 | 99.9 | V | 94.0 | 11.7 | 46.0 | PASSED |
| 685.291543 | 32.2 | 120.0 | 100.1 | V | 67.0 | 13.8 | 46.0 | PASSED |

Table 12. Radiated emission test results. 200 - 1000 MHz. Quasi peak detector.

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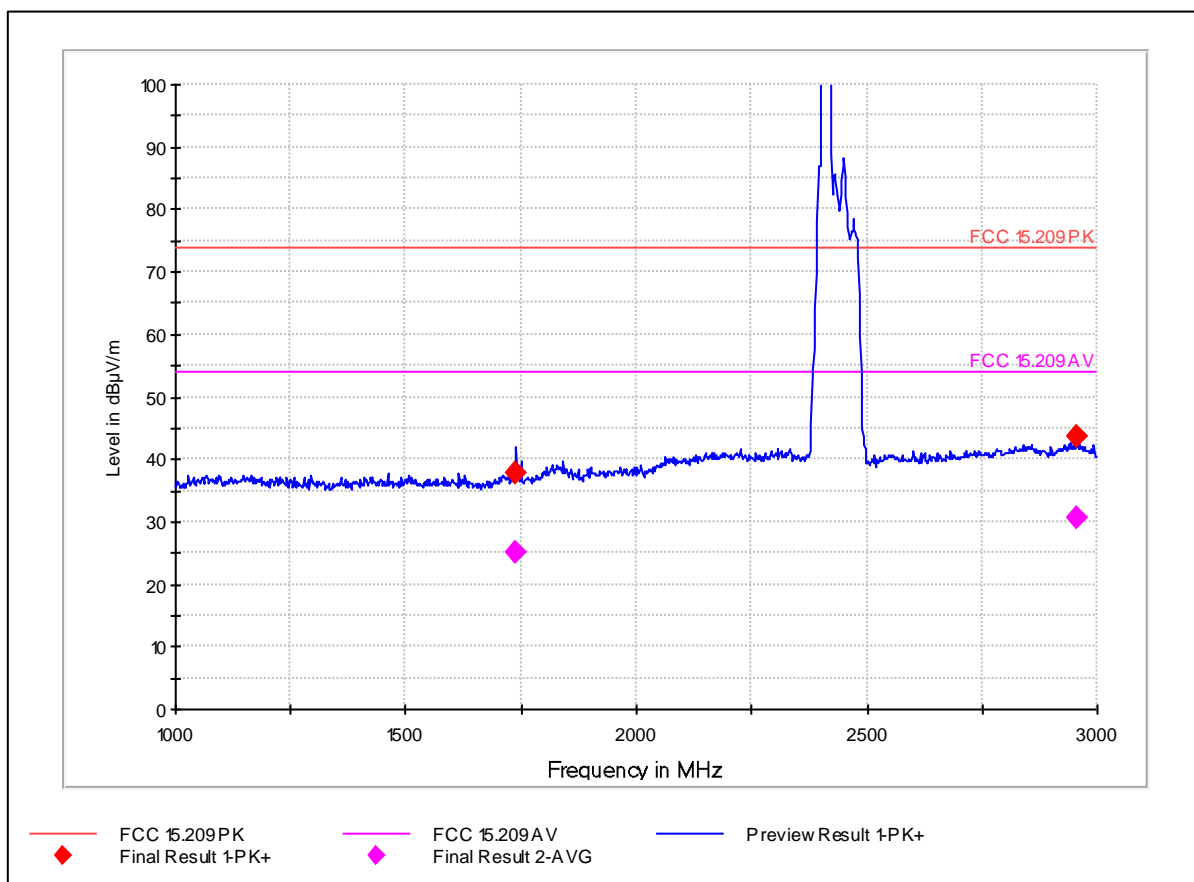


Figure 57. Radiated emission test results 1 - 3 GHz.

The peak in the frequency band is due to the attenuation of a 2.4 GHz band rejection filter, which was added to the measurement path. Thus it is ignored.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 1736.678958 | 37.9 | 1000. | 349.9 | H | 100.0 | 36.1 | 74.0 | PASSED |
| 2953.999800 | 43.7 | 1000. | 149.9 | V | 53.0 | 30.3 | 74.0 | PASSED |

Table 13. Radiated emission test results 1 - 3 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 1736.678958 | 25.2 | 1000. | 349.9 | H | 100.0 | 28.8 | 54.0 | PASSED |
| 2953.999800 | 30.5 | 1000. | 149.9 | V | 53.0 | 23.5 | 54.0 | PASSED |

Table 14. Radiated emission test results- 1 - 3 GHz. Average detector.

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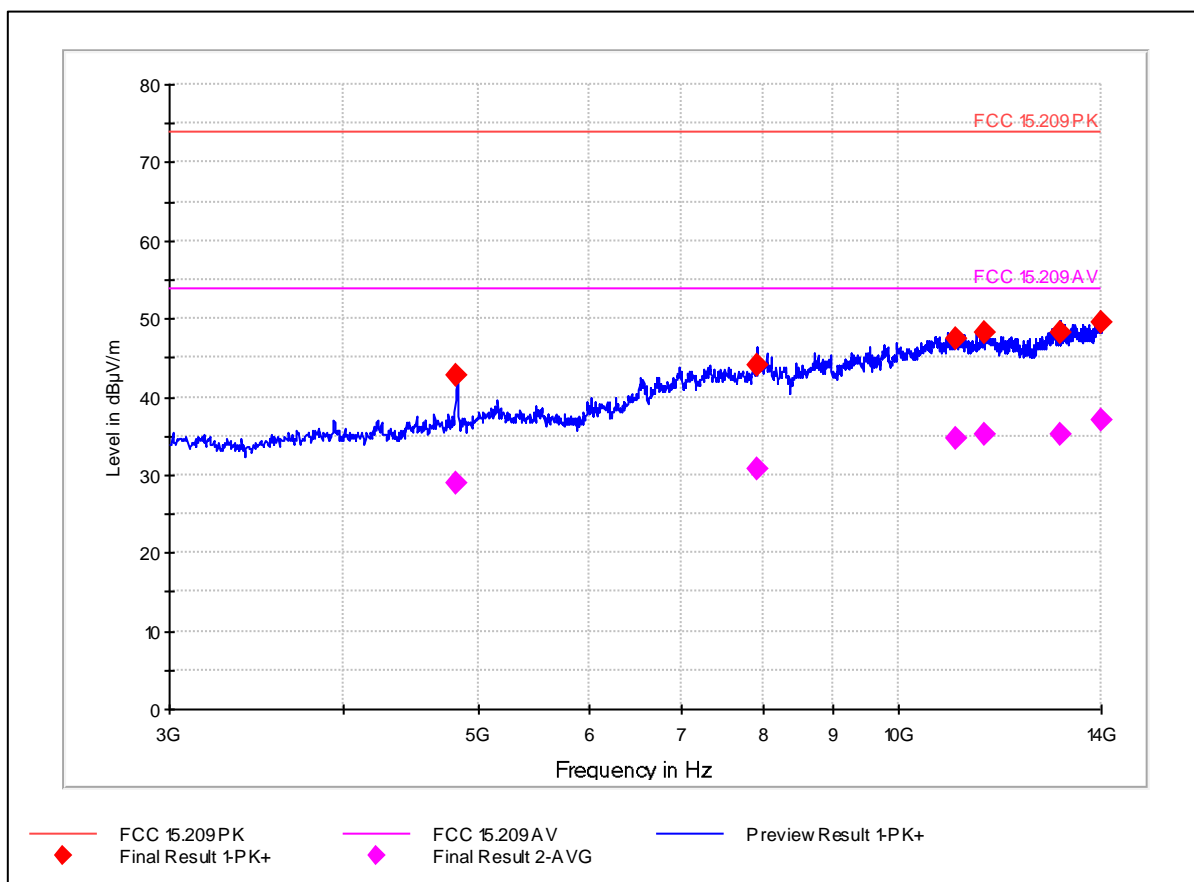


Figure 58. Radiated emission test results 3 - 14 GHz.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4822.257315 | 42.8 | 1000. | 149.9 | H | 184.0 | 31.2 | 74.0 | PASSED |
| 7916.049699 | 44.0 | 1000. | 150.0 | H | 108.0 | 30.0 | 74.0 | PASSED |
| 11008.210020 | 47.3 | 1000. | 236.2 | H | 237.0 | 26.7 | 74.0 | PASSED |
| 11551.183166 | 48.3 | 1000. | 207.0 | V | 125.0 | 25.7 | 74.0 | PASSED |
| 13084.051303 | 48.3 | 1000. | 380.9 | V | 58.0 | 25.7 | 74.0 | PASSED |
| 13985.559920 | 49.5 | 1000. | 170.0 | V | 342.0 | 24.5 | 74.0 | PASSED |

Table 15. Radiated emission test results 3 - 14 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4822.257315 | 29.0 | 1000. | 149.9 | H | 184.0 | 25.0 | 54.0 | PASSED |
| 7916.049699 | 30.7 | 1000. | 150.0 | H | 108.0 | 23.3 | 54.0 | PASSED |
| 11008.210020 | 34.6 | 1000. | 236.2 | H | 237.0 | 19.4 | 54.0 | PASSED |
| 11551.183166 | 35.2 | 1000. | 207.0 | V | 125.0 | 18.8 | 54.0 | PASSED |
| 13084.051303 | 35.3 | 1000. | 380.9 | V | 58.0 | 18.7 | 54.0 | PASSED |
| 13985.559920 | 36.9 | 1000. | 170.0 | V | 342.0 | 17.1 | 54.0 | PASSED |

Table 16. Radiated emission test results 3 - 14 GHz. Average detector.

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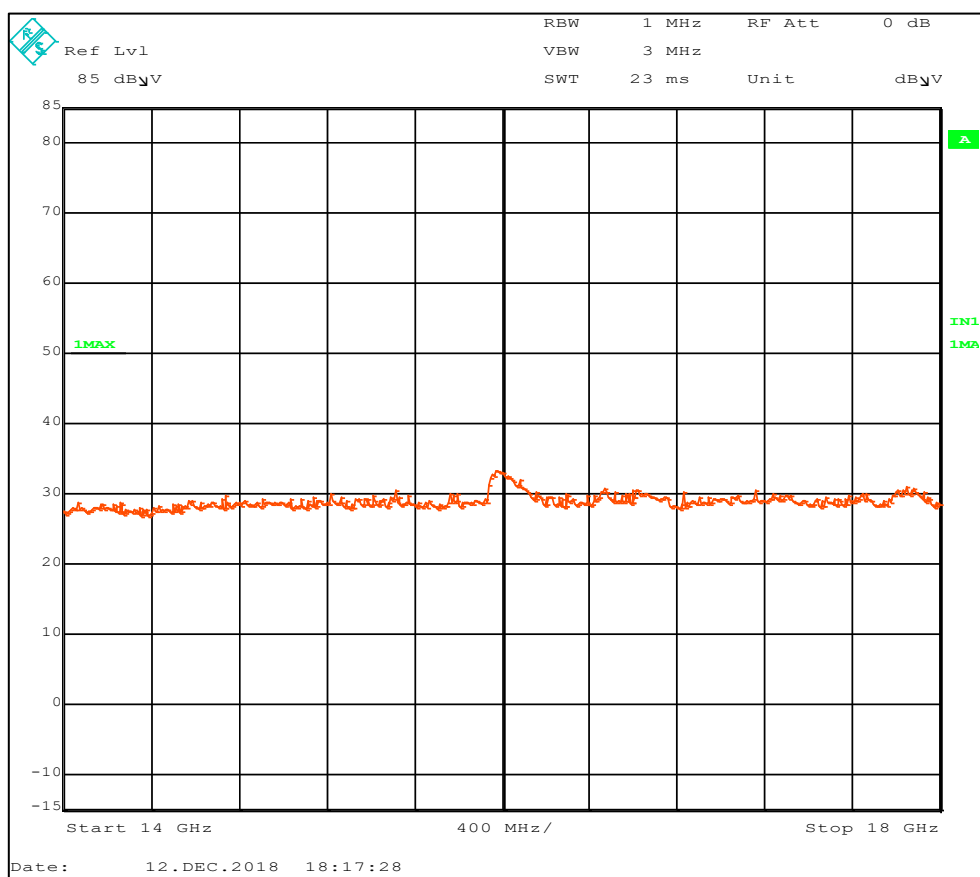


Figure 59 Radiated emission test results 14 - 18 GHz. Peak detector.

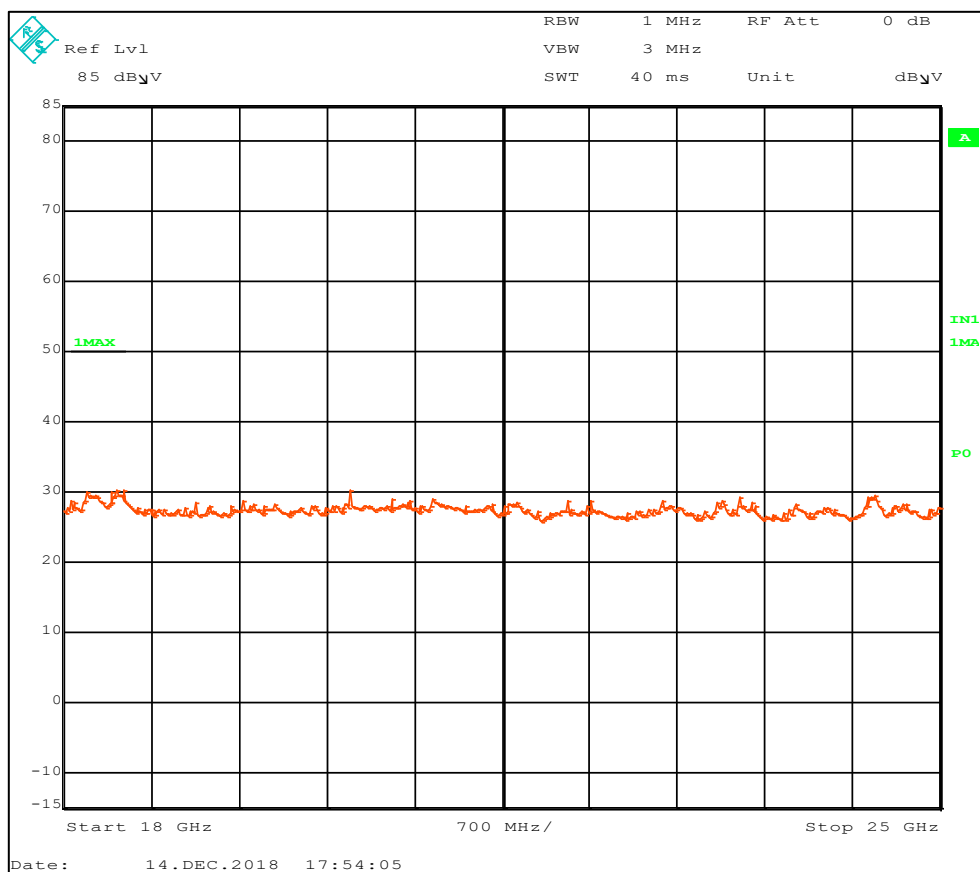


Figure 60. Radiated emission test results 18 - 25 GHz. Peak detector

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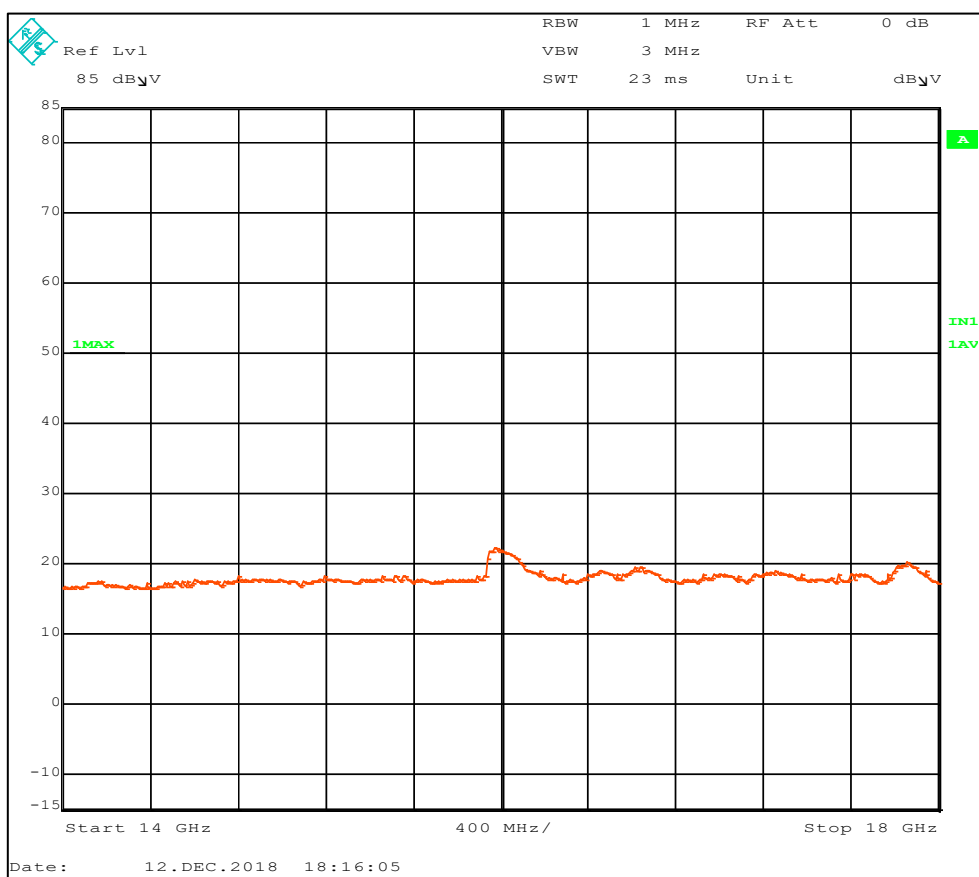


Figure 61. Radiated emission test results 14 - 18 GHz. Average detector.

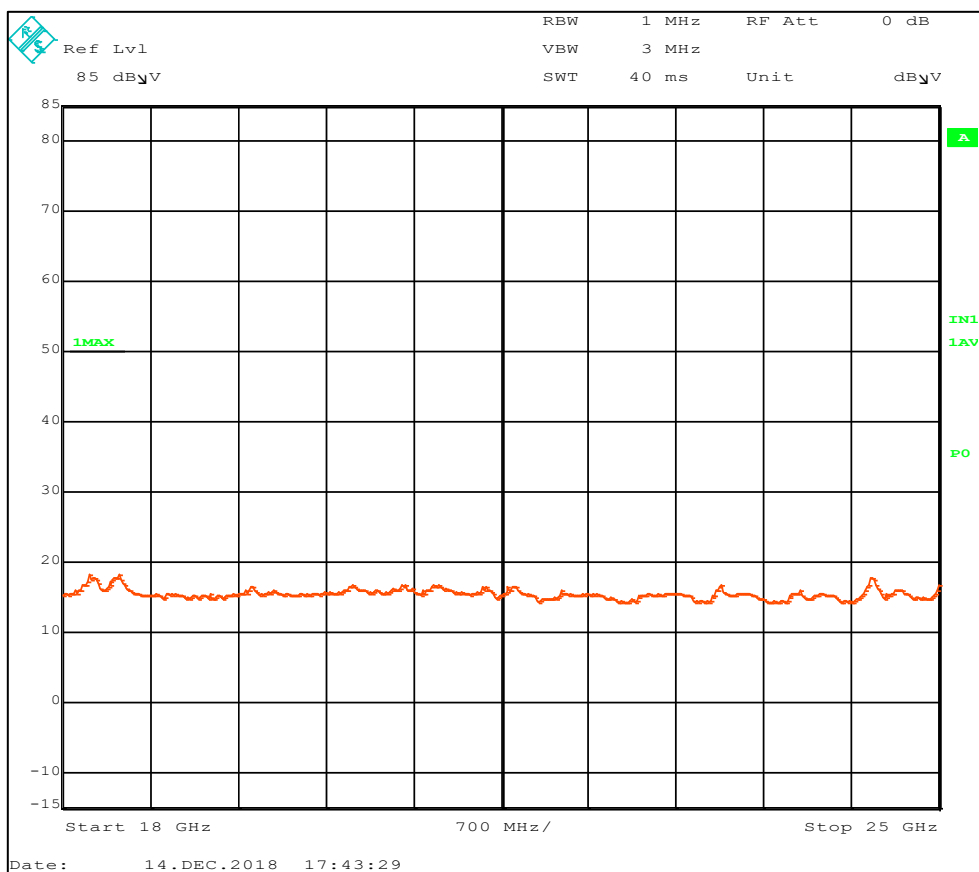


Figure 62. Radiated emission test results 18 - 25 GHz. Average detector.

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| Average Limit 3 m. | Peak limit 3 m | 3 m / 0.5 m factor | Average Limit 0.5 m. | Peak limit 0.5 m |
|--------------------|----------------|--------------------|----------------------|------------------|
| dB μ V/m | dB μ V/m | dB | dB μ V/m | dB μ V/m |
| 53.98 | 73.98 | 15.56 dB | 69.54 | 89.54 |

Table 17. Calculation of limit at 0.5 m.

| Frequency | AF | Cable loss | Correction factor |
|-----------|------|------------|-------------------|
| GHz | dB/m | dB | dB/m |
| 14 | 37,1 | < 2 | 39.1 |
| 18 | 37,4 | < 2 | 39.4 |
| 18 | 40.3 | < 2 | 42.3 |
| 25 | 40.6 | < 2 | 42.6 |

Table 18. Correction factors 14 – 25 GHz.

| Frequency [MHz] | Peak [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|---------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 89.54 | PASSED |

Table 19. Radiated emission test results 14 - 25 GHz. Peak detector.

| Frequency [MHz] | Average [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|------------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 69.54 | PASSED |

Table 20. Radiated emission test results 14 – 25 GHz. Average detector.

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2.5.2.2 Test result for channel 1 at 2412 MHz in horizontal position at power level 17

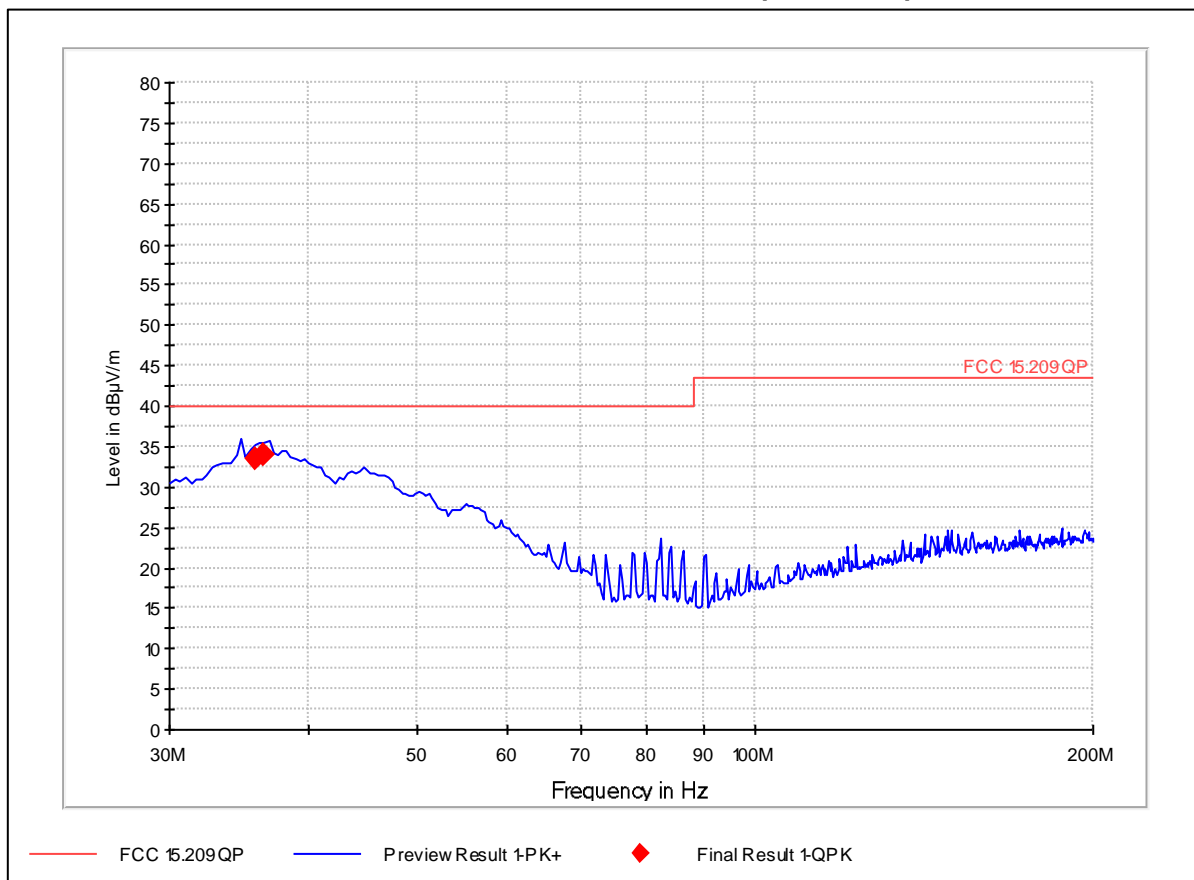


Figure 63. Radiated emission test results. 30 - 200 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 35.869539 | 33.5 | 120.0 | 274.0 | H | 40.0 | 6.5 | 40.0 | PASSED |
| 36.363627 | 33.9 | 120.0 | 278.0 | H | 111.0 | 6.1 | 40.0 | PASSED |

Table 21. Radiated emission test results. 30 - 200 MHz. Quasi peak detector

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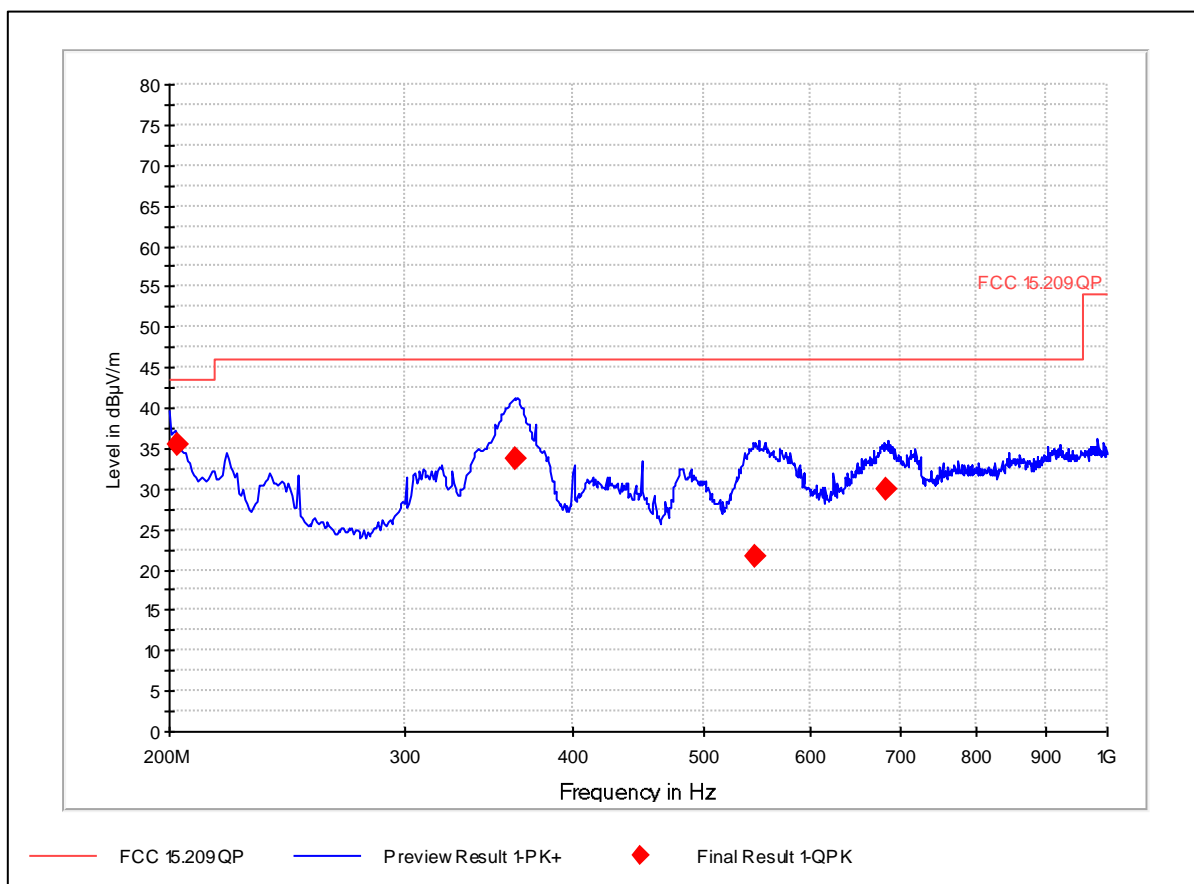


Figure 64. Radiated emission test results. 200 - 1000 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 202.864810 | 35.5 | 120.0 | 297.0 | V | 347.0 | 8.0 | 43.5 | PASSED |
| 362.245451 | 33.7 | 120.0 | 100.0 | V | 1.0 | 12.3 | 46.0 | PASSED |
| 547.312585 | 21.6 | 120.0 | 334.0 | H | 0.0 | 24.4 | 46.0 | PASSED |
| 683.878337 | 29.9 | 120.0 | 162.0 | V | 44.0 | 16.1 | 46.0 | PASSED |

Table 22. Radiated emission test results. 200 - 1000 MHz. Quasi peak detector.

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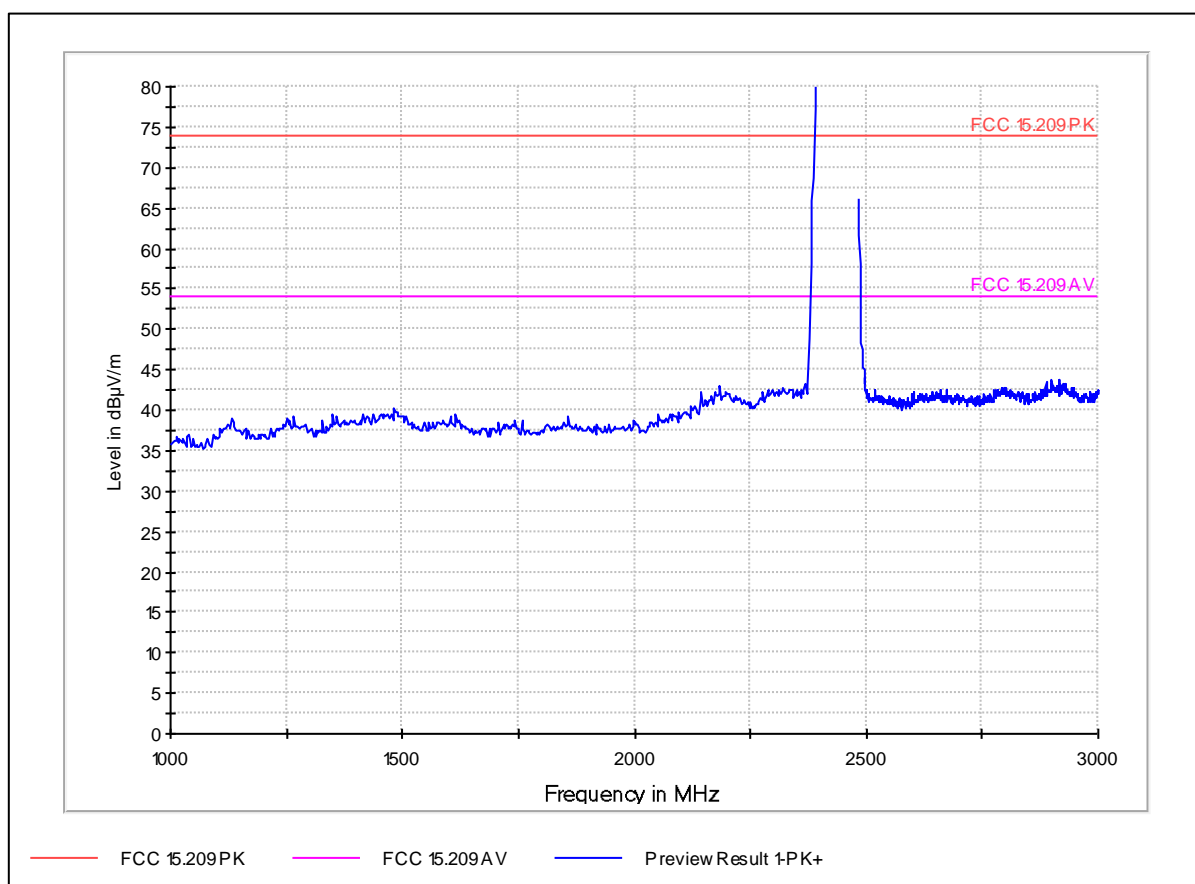


Figure 65. Radiated emission test results 1 - 3 GHz.

The peaks just below and above the frequency band are due to the attenuation of a 2.4 GHz band rejection filter were added to the measurement path. Thus ignored.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| - | - | 1000 | - | - | - | - | 74.0 | PASSED |

Table 23. Radiated emission test results 1 - 3 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| - | - | 1000 | - | - | - | - | 54.00 | PASSED |

Table 24. Radiated emission test results- 1 - 3 GHz. Average detector.

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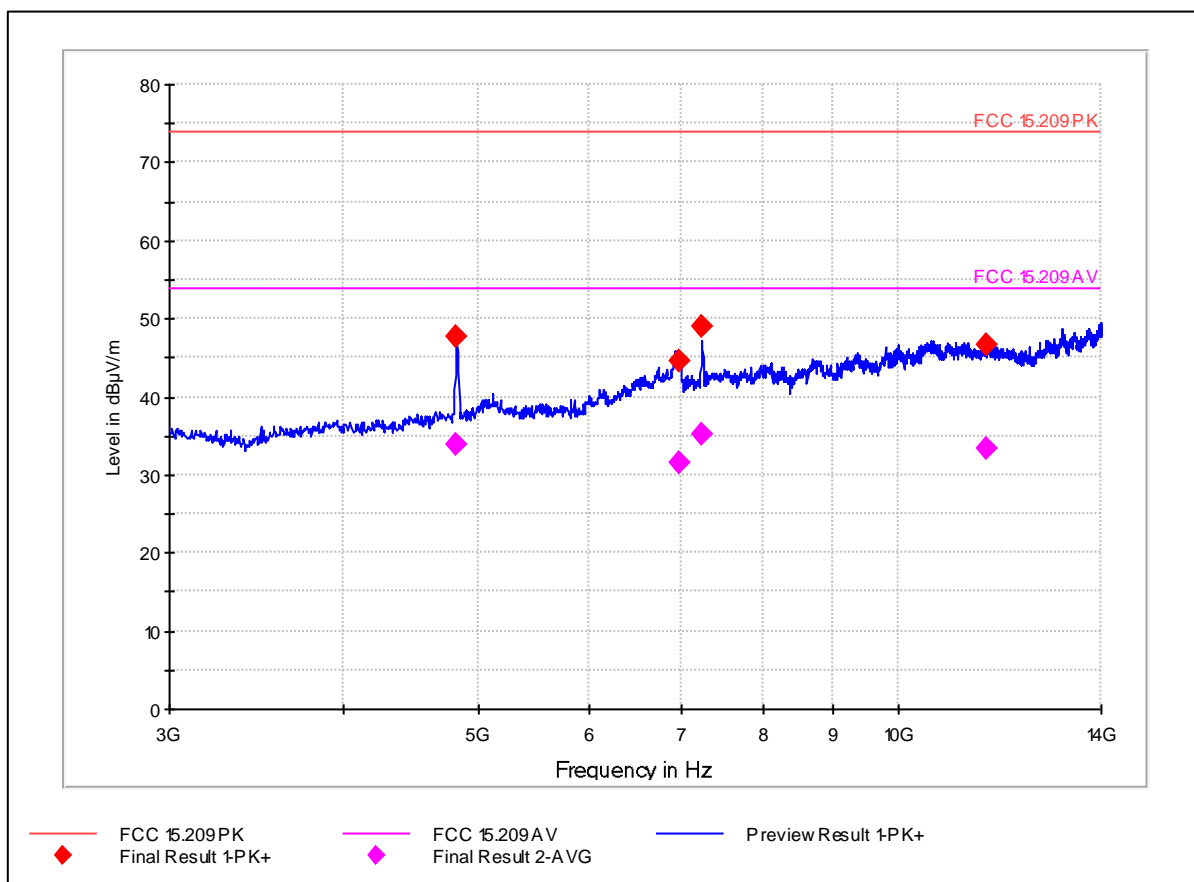


Figure 66. Radiated emission test results 3 - 14 GHz.

| Frequency [MHz] | Peak [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4826.144275 | 47.6 | 1000. | 100.0 | H | 118.0 | 26.4 | 74.0 | PASSED |
| 6971.371272 | 44.5 | 1000. | 180.0 | V | 43.0 | 29.5 | 74.0 | PASSED |
| 7235.884454 | 48.9 | 1000. | 100.0 | H | 0.0 | 25.1 | 74.0 | PASSED |
| 11588.512883 | 46.6 | 1000. | 157.0 | H | 116.0 | 27.4 | 74.0 | PASSED |

Table 25. Radiated emission test results 3 - 14 GHz. Peak detector.

| Frequency [MHz] | Average [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4826.144275 | 33.9 | 1000. | 100.0 | H | 118.0 | 20.1 | 54.0 | PASSED |
| 6971.371272 | 31.6 | 1000. | 180.0 | V | 43.0 | 22.4 | 54.0 | PASSED |
| 7235.884454 | 35.1 | 1000. | 100.0 | H | 0.0 | 18.9 | 54.0 | PASSED |
| 11588.512883 | 33.3 | 1000. | 157.0 | H | 116.0 | 20.7 | 54.0 | PASSED |

Table 26. Radiated emission test results 3 - 14 GHz. Average detector.

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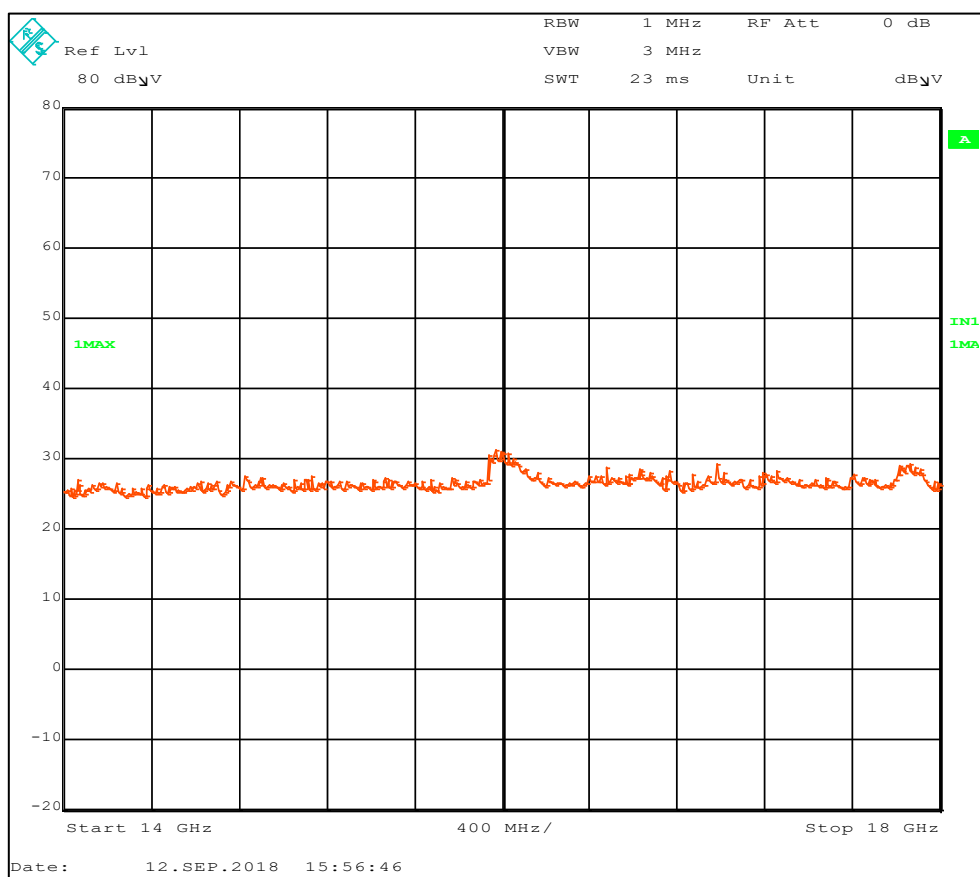


Figure 67 Radiated emission test results 14 - 18 GHz. Peak detector.

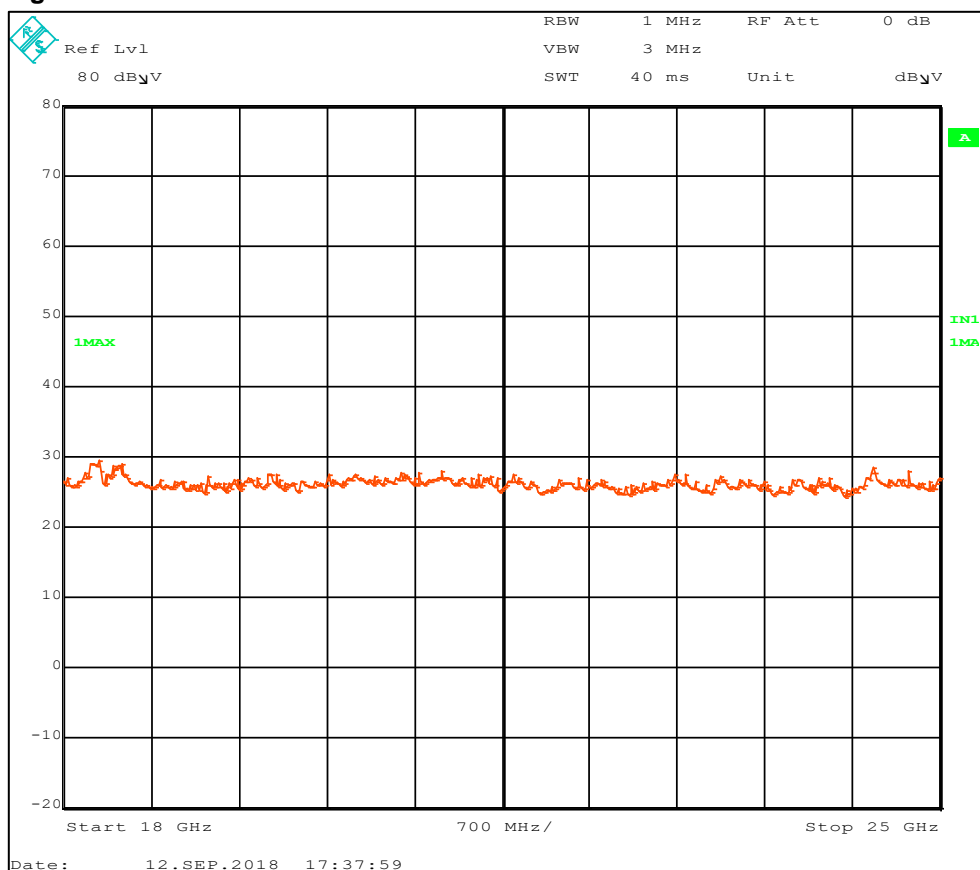


Figure 68. Radiated emission test results 18 - 25 GHz. Peak detector

FCC ID: 2ADEF AT-DG2
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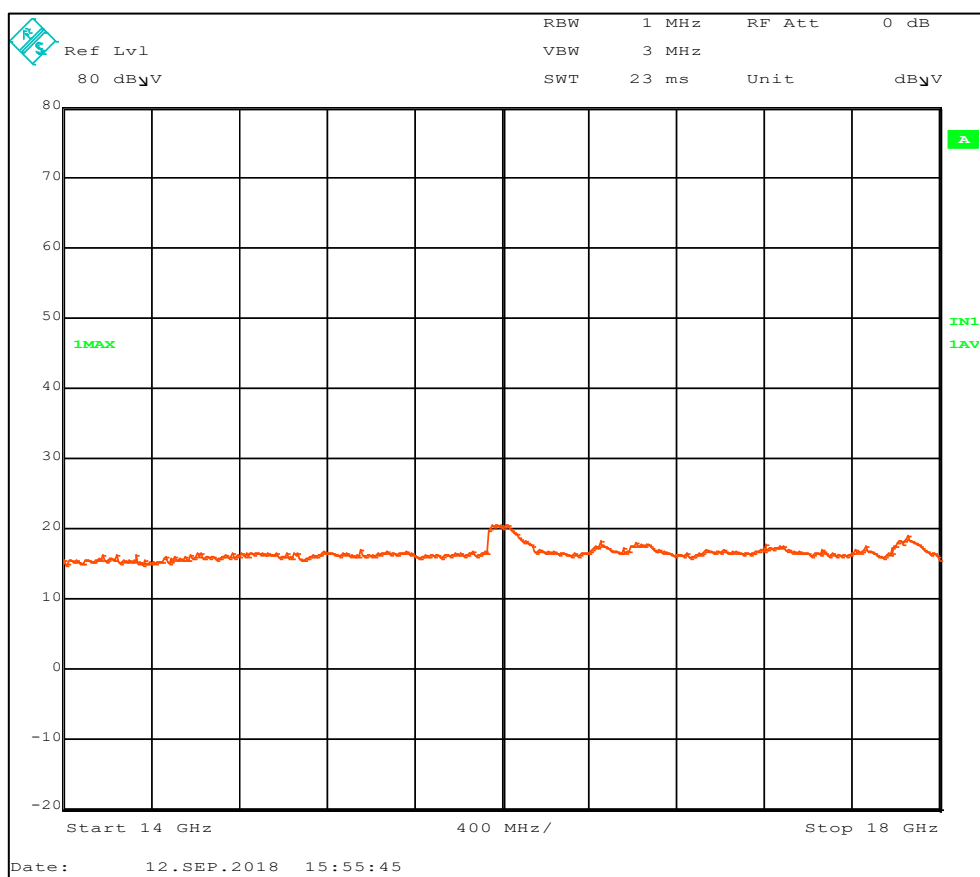


Figure 69. Radiated emission test results 14 - 18 GHz. Average detector.

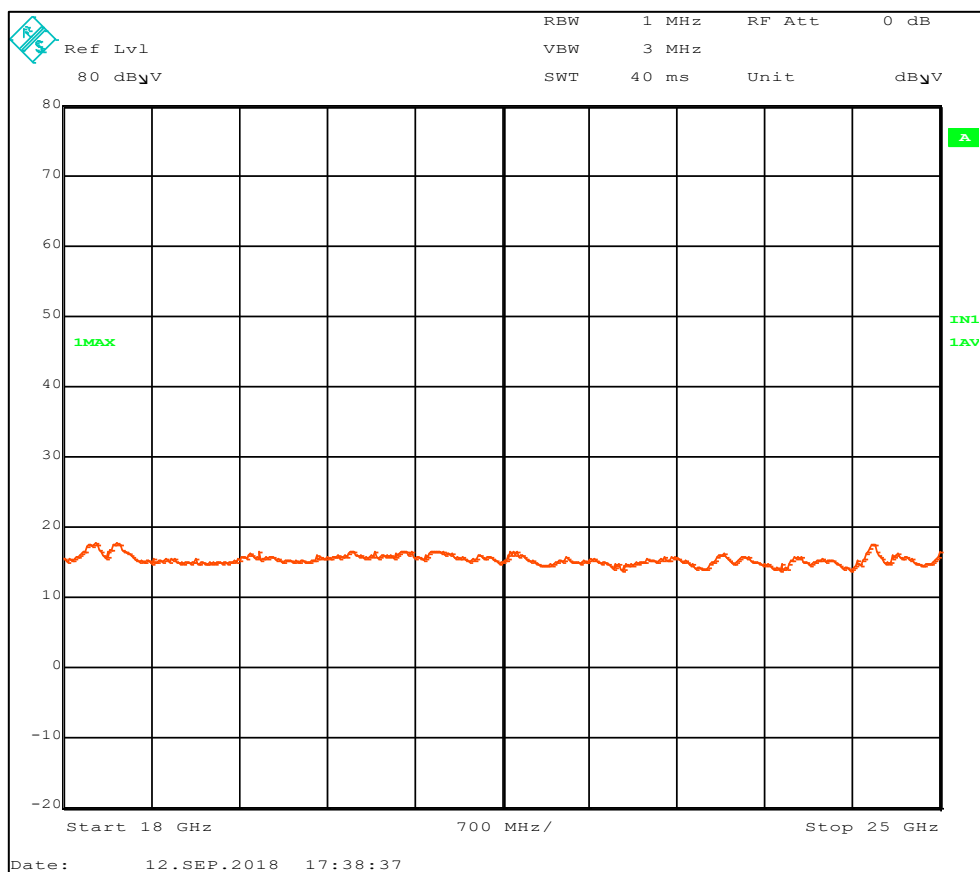


Figure 70. Radiated emission test results 18 - 25 GHz. Average detector.

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| Average Limit 3 m. | Peak limit 3 m | 3 m / 0.5 m factor | Average Limit 0.5 m. | Peak limit 0.5 m |
|--------------------|----------------|--------------------|----------------------|------------------|
| dB μ V/m | dB μ V/m | dB | dB μ V/m | dB μ V/m |
| 53.98 | 73.98 | 15.56 dB | 69.54 | 89.54 |

Table 27. Calculation of limit at 0.5 m.

| Frequency | AF | Cable loss | Correction factor |
|-----------|------|------------|-------------------|
| GHz | dB/m | dB | dB/m |
| 14 | 37,1 | < 2 | 39.1 |
| 18 | 37,4 | < 2 | 39.4 |
| 18 | 40.3 | < 2 | 42.3 |
| 25 | 40.6 | < 2 | 42.6 |

Table 28. Correction factors 14 – 25 GHz.

| Frequency [MHz] | Peak [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|---------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 89.54 | PASSED |

Table 29. Radiated emission test results 14 - 25 GHz. Peak detector.

| Frequency [MHz] | Average [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|------------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 69.54 | PASSED |

Table 30. Radiated emission test results 14 – 25 GHz. Average detector.

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2.5.2.3 Test result for channel 7 at 2442 MHz in vertical position

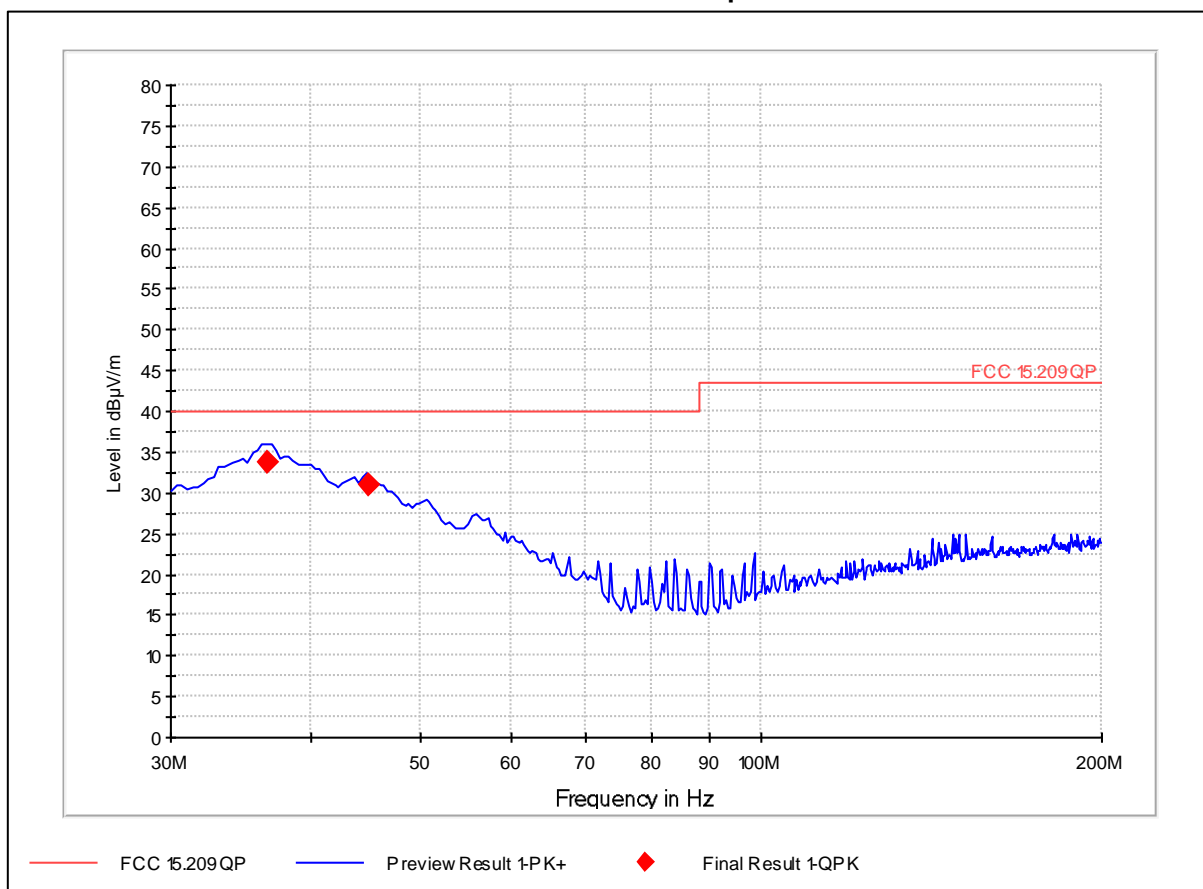


Figure 71. Radiated emission test results. 30 - 200 MHz.

| Frequency [MHz] | QP [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|-------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| 36.632946 | 33.7 | 120.0 | 277.0 | H | 126.0 | 6.3 | 40.0 | PASSED |
| 44.929299 | 30.9 | 120.0 | 318.0 | V | 87.0 | 9.1 | 40.0 | PASSED |

Table 31. Radiated emission test results 30 - 200 MHz.

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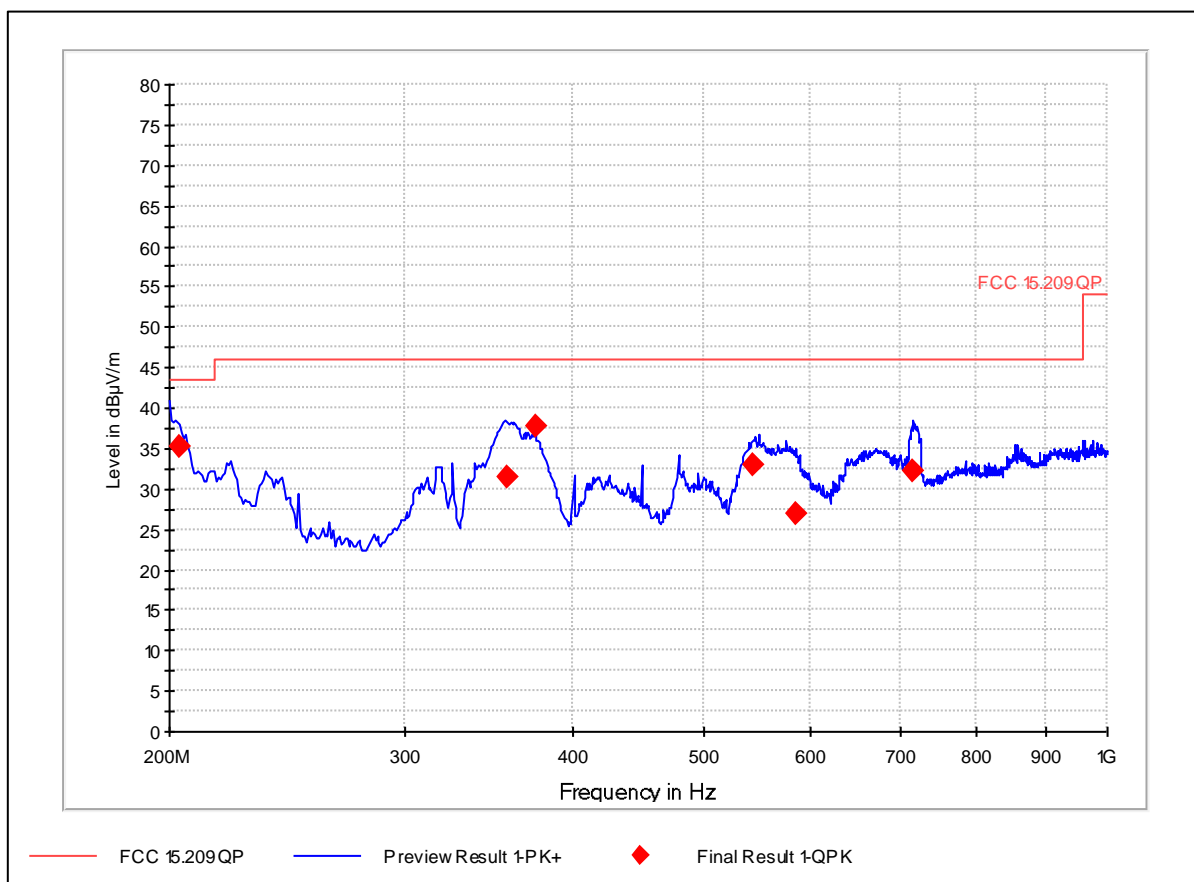


Figure 72. Radiated emission test results. 200 - 1000 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 203.404810 | 35.1 | 120.0 | 184.0 | V | 73.0 | 8.4 | 43.5 | PASSED |
| 357.152625 | 31.4 | 120.0 | 100.0 | V | 346.0 | 14.6 | 46.0 | PASSED |
| 375.019499 | 37.8 | 120.0 | 206.0 | H | 101.0 | 8.2 | 46.0 | PASSED |
| 544.670982 | 32.9 | 120.0 | 100.0 | V | 27.0 | 13.1 | 46.0 | PASSED |
| 586.002745 | 26.9 | 120.0 | 100.0 | V | 354.0 | 19.1 | 46.0 | PASSED |
| 716.184068 | 32.2 | 120.0 | 119.0 | V | 8.0 | 13.8 | 46.0 | PASSED |

Table 32. Radiated emission test results 200 - 1000 MHz.

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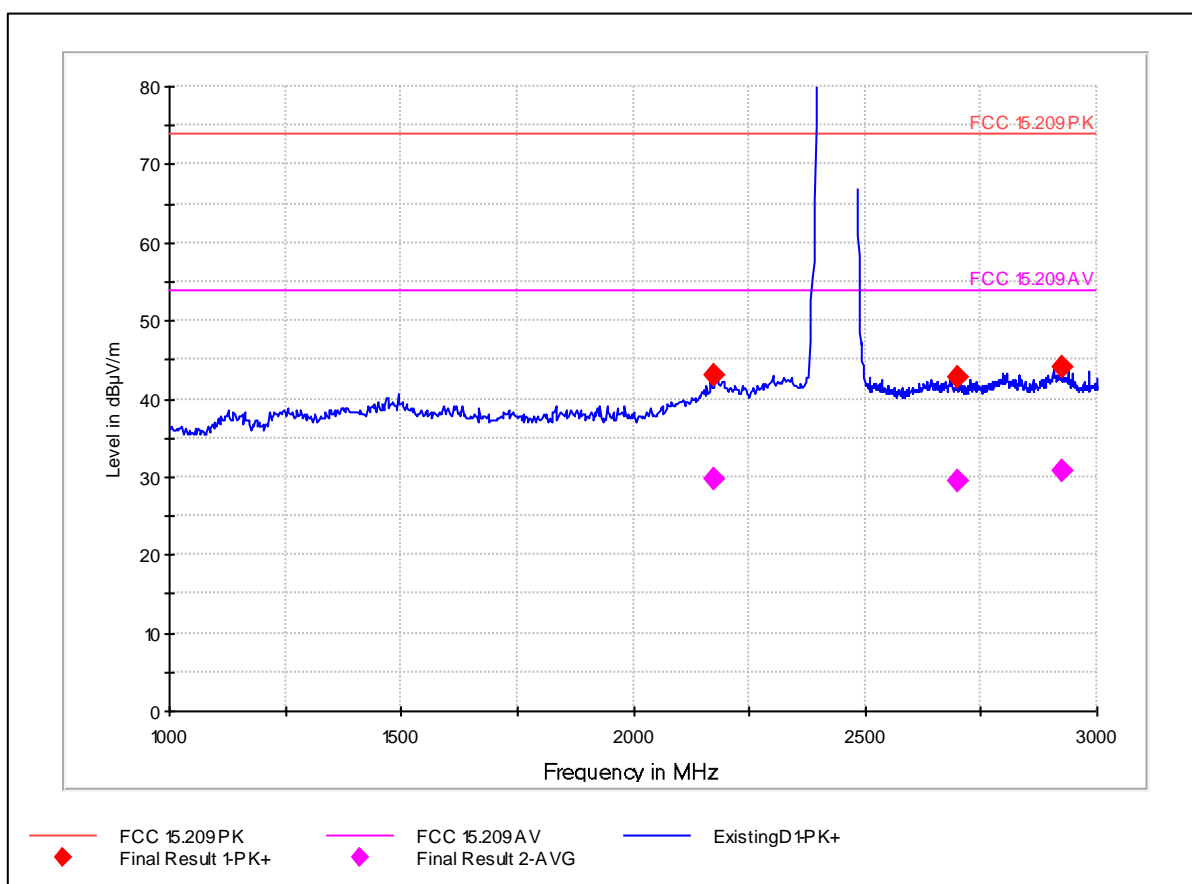


Figure 73. Radiated emission test results 1 - 3 GHz.

The peaks just below and above the frequency band are due to the attenuation of a 2.4 GHz band rejection filter were added to the measurement path. Thus ignored.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2175.656325 | 43.1 | 1000. | 349.0 | H | 339.0 | 30.9 | 74.0 | PASSED |
| 2699.041747 | 42.6 | 1000. | 100.0 | H | 167.0 | 31.4 | 74.0 | PASSED |
| 2926.028169 | 44.1 | 1000. | 200.0 | H | 164.0 | 29.9 | 74.0 | PASSED |

Table 33. Radiated emission test results 1 - 3 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2175.656325 | 29.8 | 1000. | 349.0 | H | 339.0 | 24.2 | 54.0 | PASSED |
| 2699.041747 | 29.4 | 1000. | 100.0 | H | 167.0 | 24.6 | 54.0 | PASSED |
| 2926.028169 | 30.7 | 1000. | 200.0 | H | 164.0 | 23.3 | 54.0 | PASSED |

Table 34. Radiated emission test results 1 - 3 GHz. Average detector.

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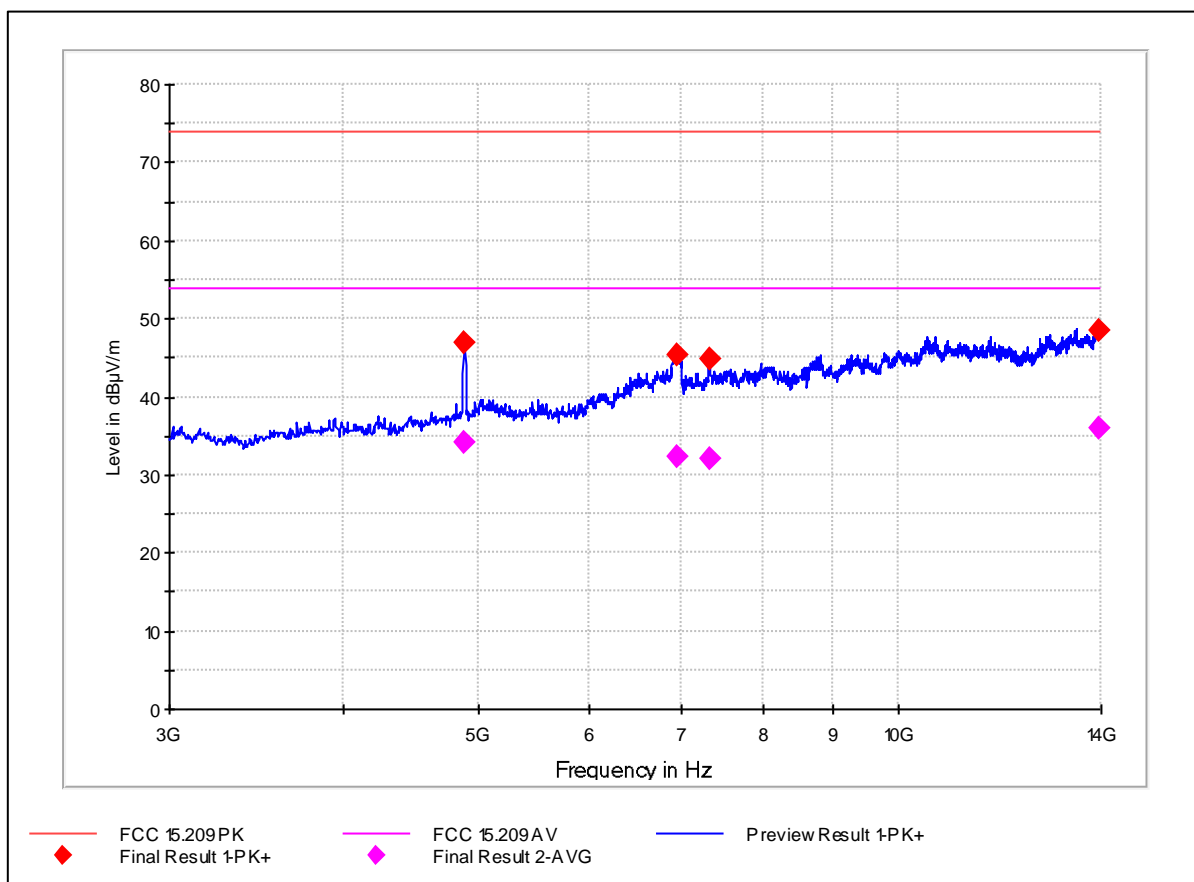


Figure 74. Radiated emission test results 3 - 14 GHz.

| Frequency [MHz] | Peak [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4883.348535 | 46.8 | 1000 | 200.0 | V | 354.0 | 27.2 | 74.0 | PASSED |
| 6938.386252 | 45.4 | 1000 | 217.7 | V | 174.0 | 28.6 | 74.0 | PASSED |
| 7328.813815 | 44.7 | 1000 | 205.0 | H | 240 | 29.3 | 74.0 | PASSED |
| 13951.219207 | 48.4 | 1000 | 201.0 | H | 6.0 | 25.6 | 74.0 | PASSED |

Table 35. Radiated emission test results 3 - 14 GHz. Peak detector.

| Frequency [MHz] | Average [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4883.348535 | 34.0 | 1000 | 200.0 | V | 354.0 | 20.0 | 54.0 | PASSED |
| 6938.386252 | 32.3 | 1000 | 217.7 | V | 174.0 | 21.7 | 54.0 | PASSED |
| 7328.813815 | 32.0 | 1000 | 205.0 | H | 240 | 22.0 | 54.0 | PASSED |
| 13951.219207 | 36.0 | 1000 | 201.0 | H | 6.0 | 18.0 | 54.0 | PASSED |

Table 36. Radiated emission test results 3 - 14 GHz. Average detector

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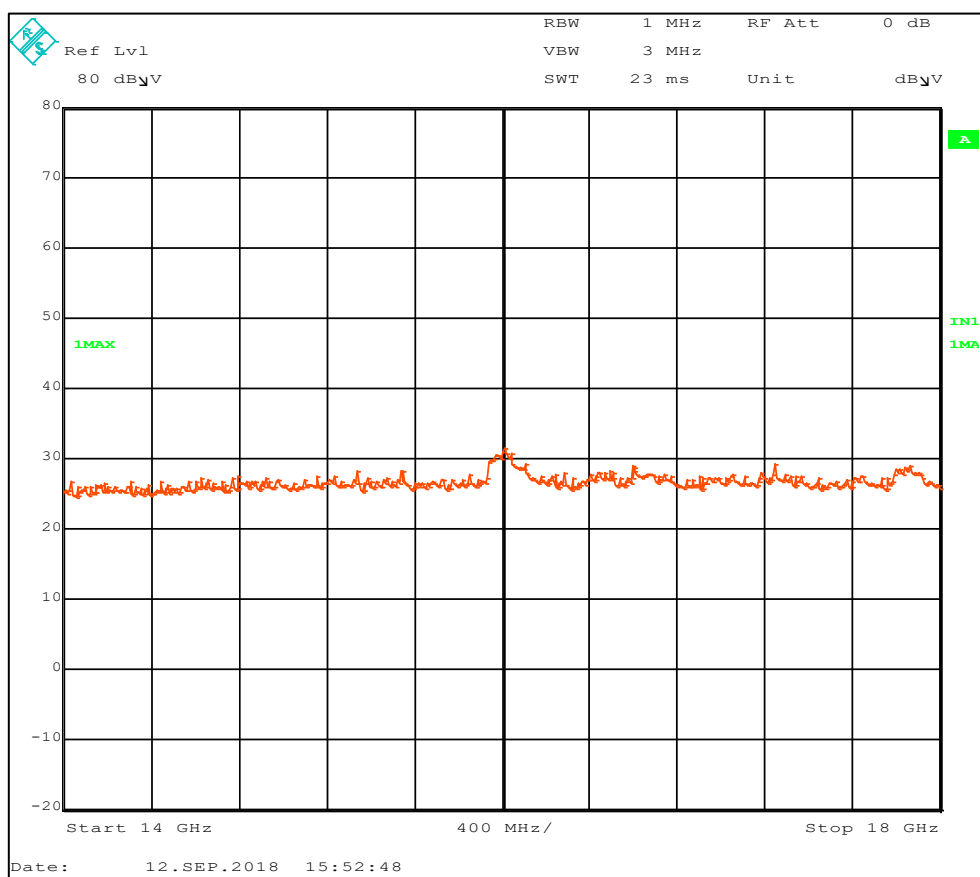


Figure 75. Radiated emission test results 14 - 18 GHz. Peak detector.

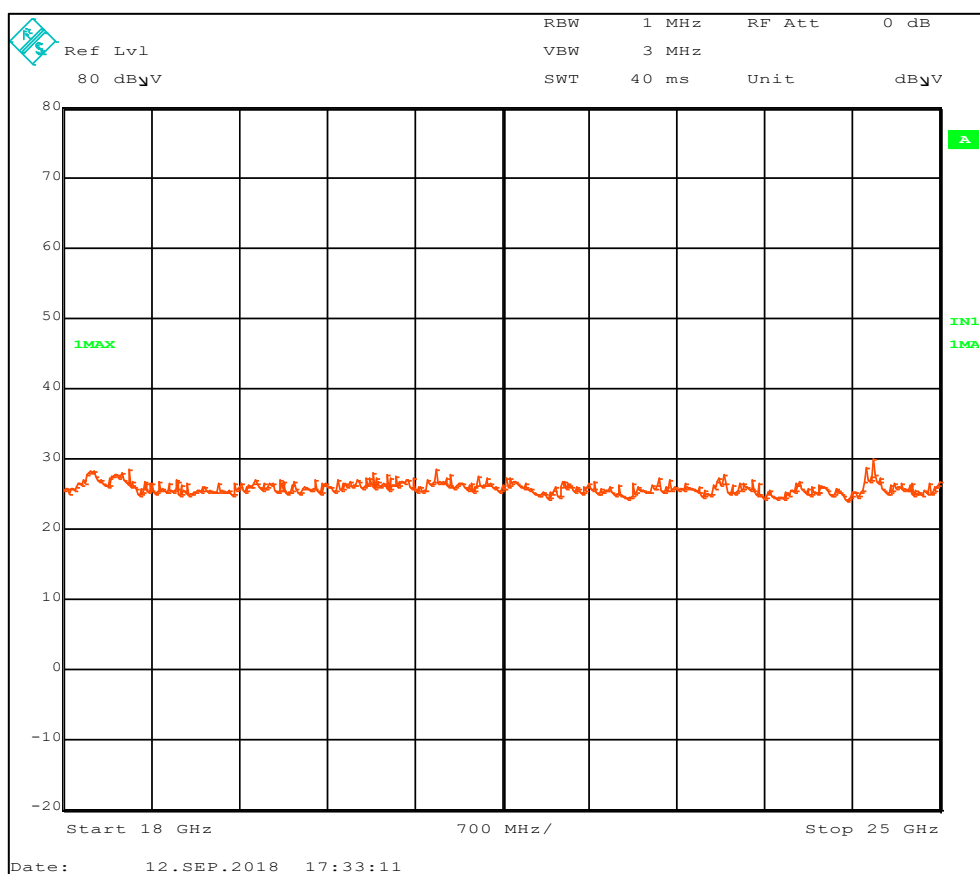


Figure 76. Radiated emission test results 18 - 25 GHz. Peak detector.

FCC ID: 2ADEF AT-DG2
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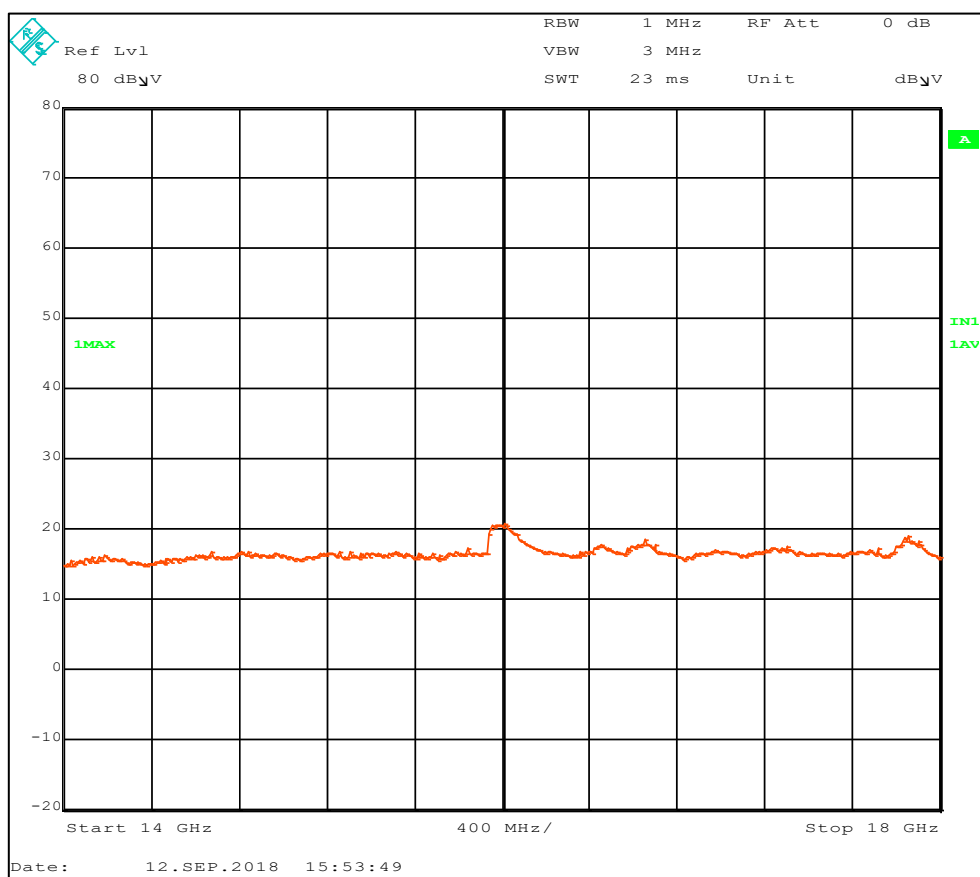


Figure 77. Radiated emission test results 14 - 18 GHz. Average detector.

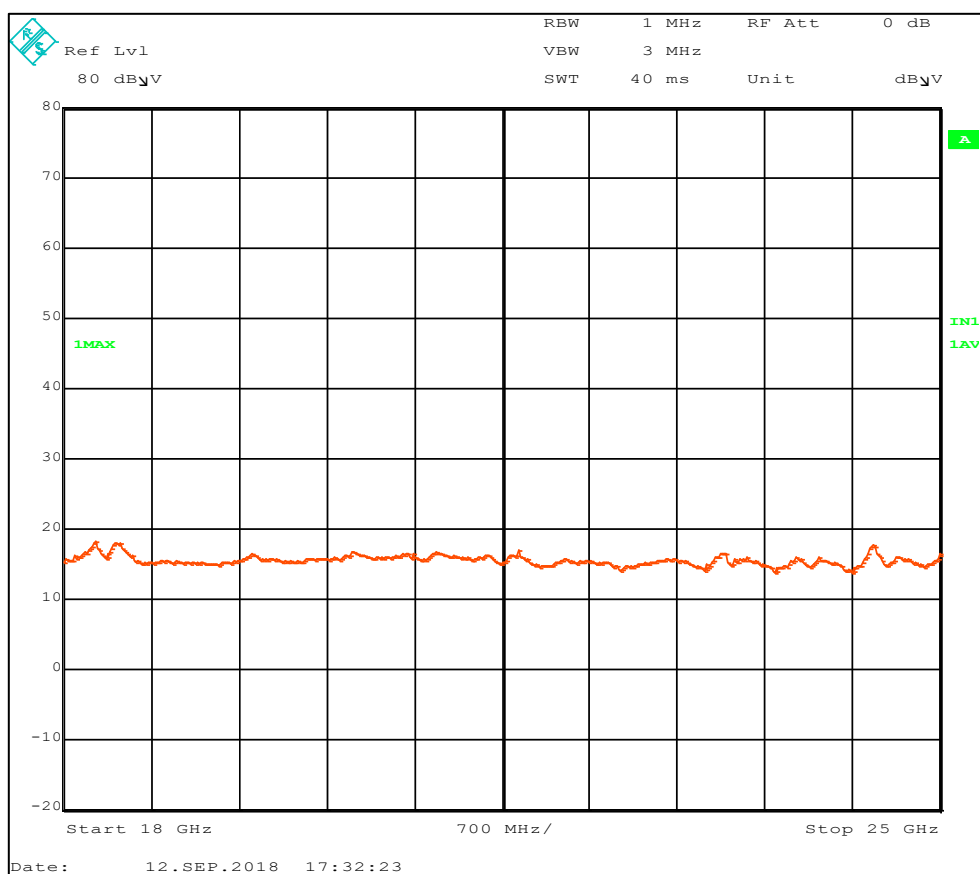


Figure 78. Radiated emission test results 18 - 25 GHz. Average detector.

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| Average Limit 3 m. | Peak limit 3 m | 3 m / 0.5 m factor | Average Limit 0.5 m. | Peak limit 0.5 m |
|--------------------|----------------|--------------------|----------------------|------------------|
| dB μ V/m | dB μ V/m | dB | dB μ V/m | dB μ V/m |
| 53.98 | 73.98 | 15.56 dB | 69.54 | 89.54 |

Table 37. Calculation of limit at 0.5 m.

| Frequency | AF | Cable loss | Correction factor |
|-----------|------|------------|-------------------|
| GHz | dB/m | dB | dB/m |
| 14 | 37,1 | < 2 | 39.1 |
| 18 | 37,4 | < 2 | 39.4 |
| 18 | 40.3 | < 2 | 42.3 |
| 25 | 40.6 | < 2 | 42.6 |

Table 38. Correction factors 14 – 25 GHz.

| Frequency [MHz] | Peak [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|---------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 89.54 | PASSED |

Table 39. Radiated emission test results 14 - 25 GHz. Peak detector.

| Frequency [MHz] | Average [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|------------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 69.54 | PASSED |

Table 40. Radiated emission test results 14 - 25 GHz. Average detector.

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2.5.2.4 Test result for channel 11 at 2472 MHz in vertical – 90 deg. position at power level 12.

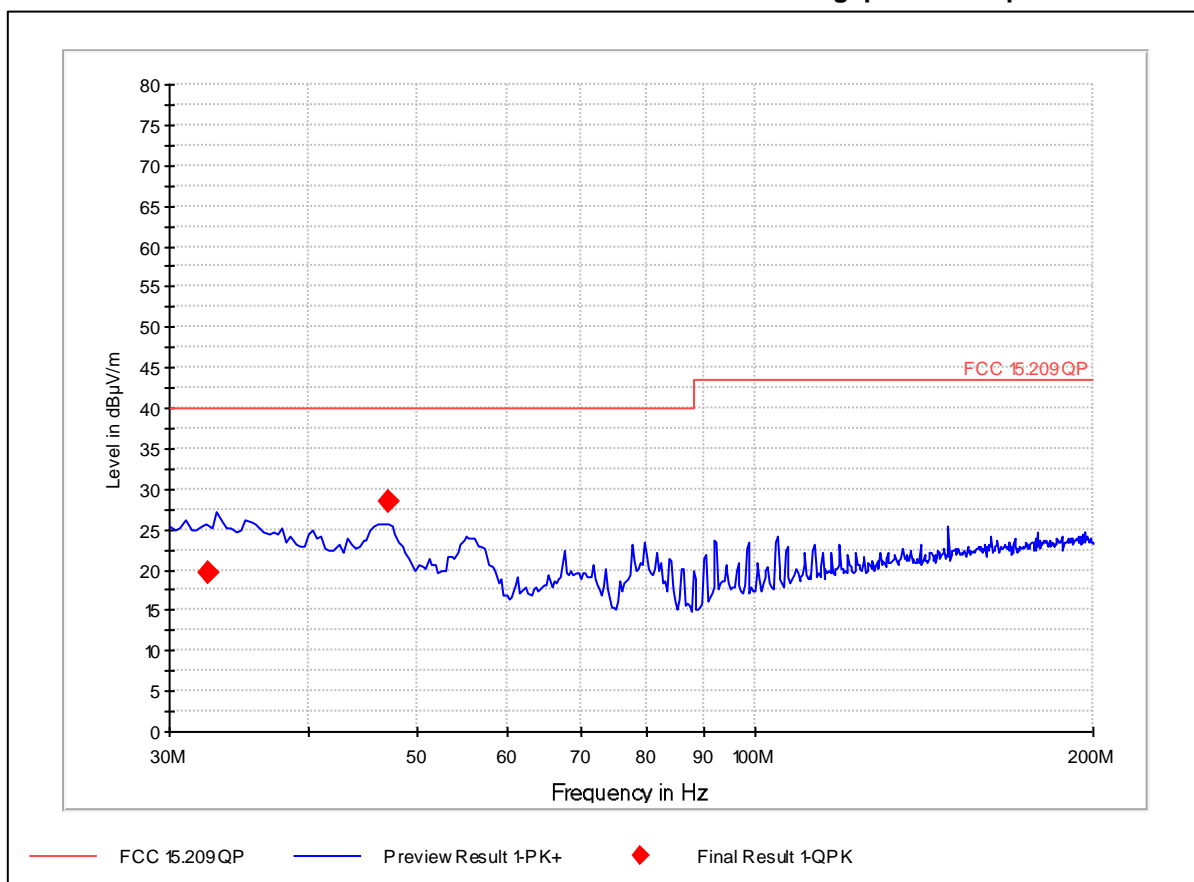


Figure 79. Radiated emission test results 30 - 200 MHz.

| Frequency [MHz] | QP [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 32.506132 | 19.5 | 120.0 | 100.1 | H | 138.0 | -4.0 | 20.5 | PASSED |
| 47.103387 | 28.5 | 120.0 | 334.8 | V | 39.0 | -10.2 | 11.5 | PASSED |

Table 41. Radiated emission test results. 30 - 200 MHz.

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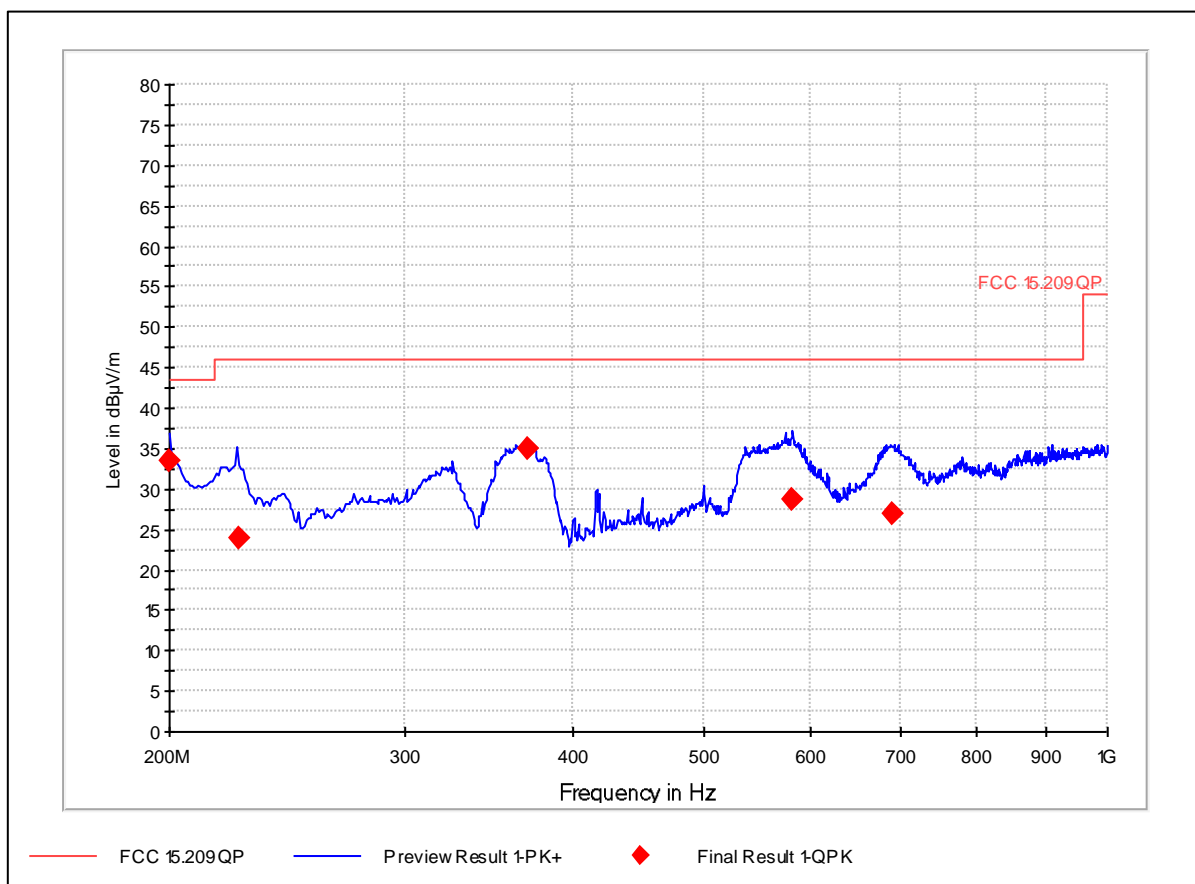


Figure 80. Radiated emission test results 200 - 1000 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 200.120000 | 33.4 | 120.0 | 363.9 | V | 64.0 | 10.1 | 43.5 | PASSED |
| 225.019699 | 23.9 | 120.0 | 119.0 | V | 180.0 | 22.1 | 46.0 | PASSED |
| 369.536673 | 34.9 | 120.0 | 133.0 | H | 335.0 | 11.1 | 46.0 | PASSED |
| 581.274729 | 28.6 | 120.0 | 99.9 | V | 85.0 | 17.4 | 46.0 | PASSED |
| 690.239559 | 26.9 | 120.0 | 230.0 | H | 40.0 | 19.1 | 46.0 | PASSED |

Table 42. Radiated emission test results 200 - 1000 MHz.

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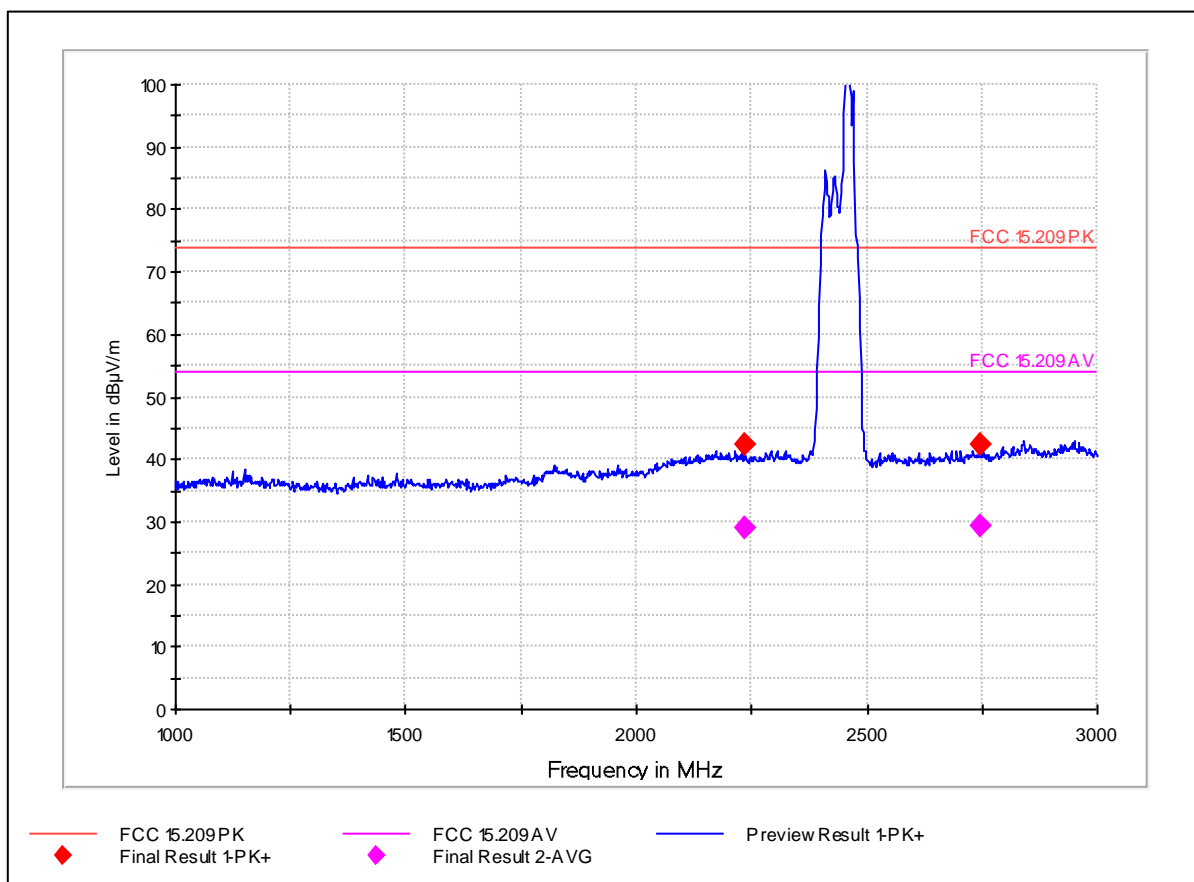


Figure 81. Radiated emission test results 1 - 3 GHz.

The peak in the frequency band is due to the attenuation of a 2.4 GHz band rejection filter, which was added to the measurement path. Thus it is ignored.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2233.360922 | 42.2 | 1000. | 379.9 | H | 0.0 | 31.8 | 74.0 | PASSED |
| 2746.086974 | 42.4 | 1000. | 302.6 | V | 352.0 | 31.6 | 74.0 | PASSED |

Table 43. Radiated emission test results 1 - 3 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2233.360922 | 28.8 | 1000. | 379.9 | H | 0.0 | 25.2 | 54.0 | PASSED |
| 2746.086974 | 29.4 | 1000. | 302.6 | V | 352.0 | 24.6 | 54.0 | PASSED |

Table 44. Radiated emission test results 1 - 3 GHz. Average detector.

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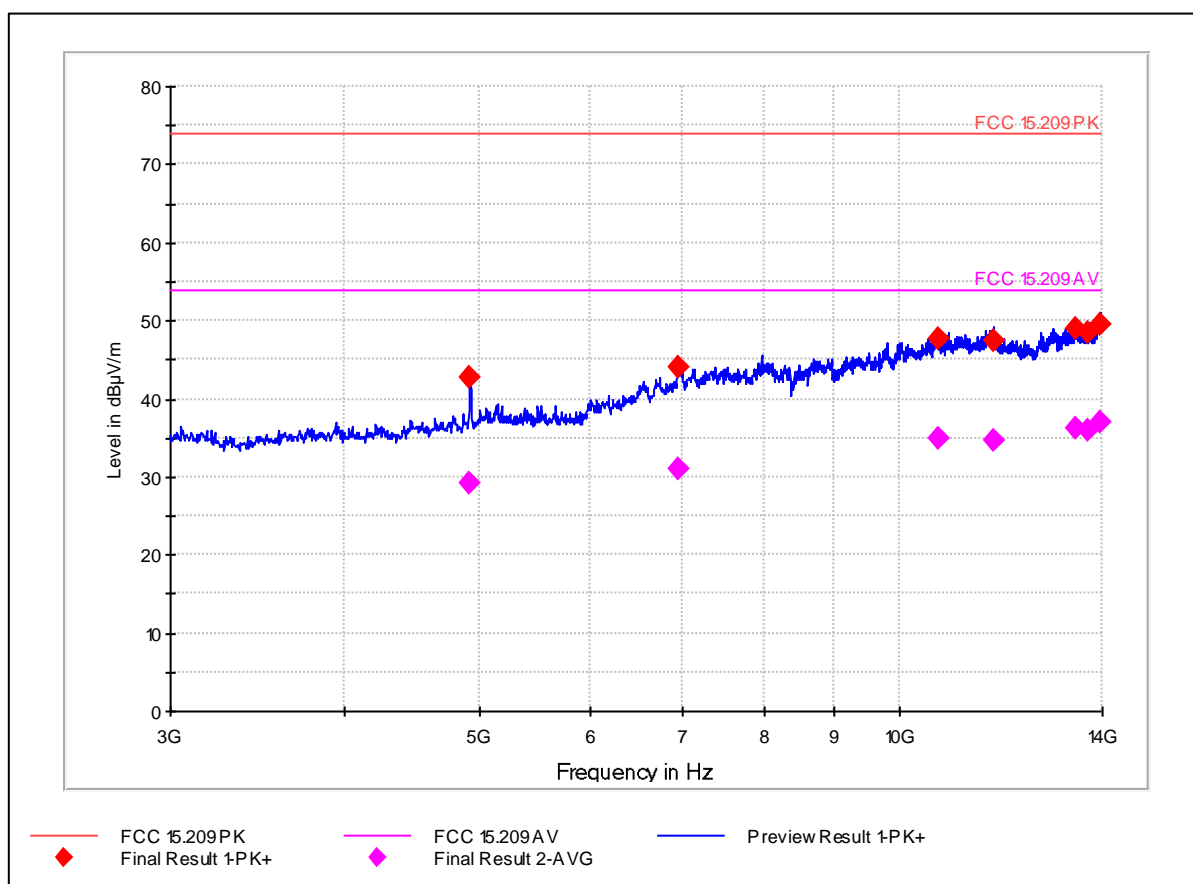


Figure 82. Radiated emission test results 3 - 14 GHz.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4921.847695 | 42.6 | 1000. | 150.1 | V | 145.0 | 31.4 | 74.0 | PASSED |
| 6955.305812 | 44.2 | 1000. | 400.0 | V | 289.0 | 29.8 | 74.0 | PASSED |
| 10662.215631 | 47.6 | 1000. | 303.1 | V | 1.0 | 26.4 | 74.0 | PASSED |
| 11684.562725 | 47.3 | 1000. | 269.9 | V | 0.0 | 26.7 | 74.0 | |
| 13387.262525 | 49.0 | 1000. | 282.1 | V | 78.0 | 25.0 | 74.0 | |
| 13691.903808 | 48.4 | 1000. | 236.8 | V | 193.0 | 25.6 | 74.0 | |
| 13964.614830 | 49.6 | 1000. | 396.0 | H | 290.0 | 24.4 | 74.0 | PASSED |

Table 45. Radiated emission test results 3 - 14 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4921.847695 | 29.1 | 1000. | 150.1 | V | 145.0 | 24.9 | 54.0 | PASSED |
| 6955.305812 | 30.9 | 1000. | 400.0 | V | 289.0 | 23.1 | 54.0 | PASSED |
| 10662.215631 | 35.0 | 1000. | 303.1 | V | 1.0 | 19.0 | 54.0 | |
| 11684.562725 | 34.5 | 1000. | 269.9 | V | 0.0 | 19.5 | 54.0 | |
| 13387.262525 | 36.3 | 1000. | 282.1 | V | 78.0 | 17.7 | 54.0 | |
| 13691.903808 | 35.8 | 1000. | 236.8 | V | 193.0 | 18.2 | 54.0 | PASSED |
| 13964.614830 | 37.0 | 1000. | 396.0 | H | 290.0 | 17.0 | 54.0 | PASSED |

Table 46. Radiated emission test results 3 - 14 GHz. Average detector.

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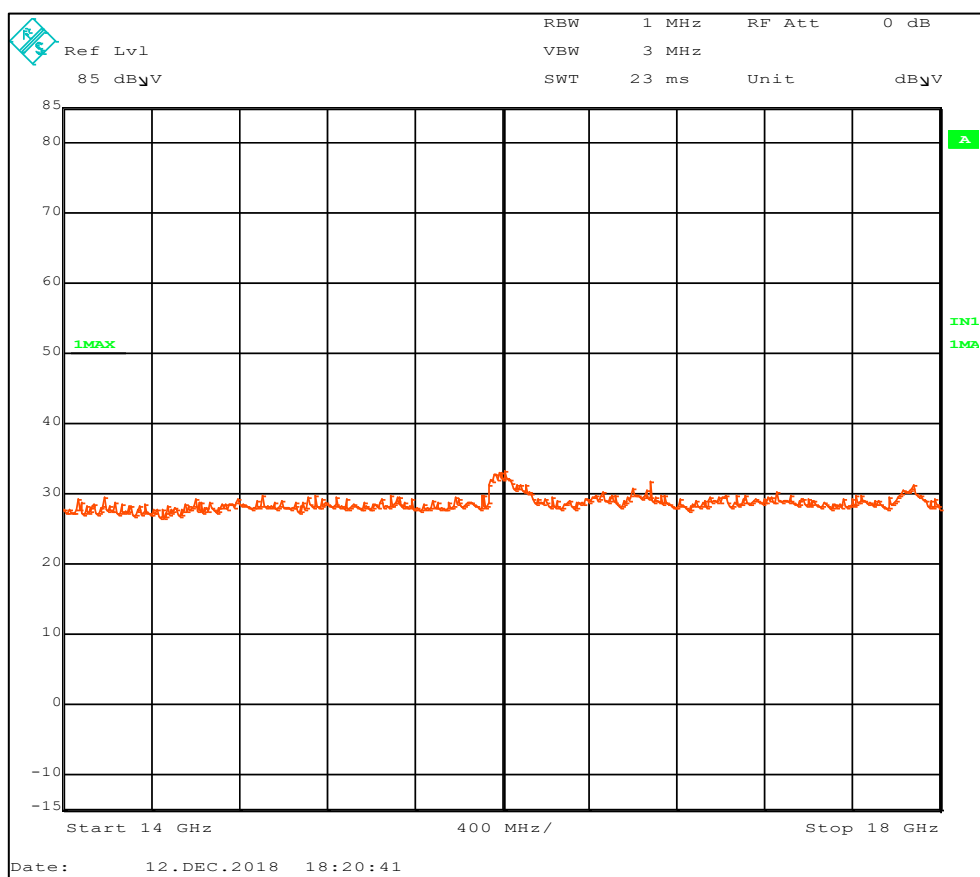


Figure 83. Radiated emission test results 14 - 18 GHz. Peak detector.

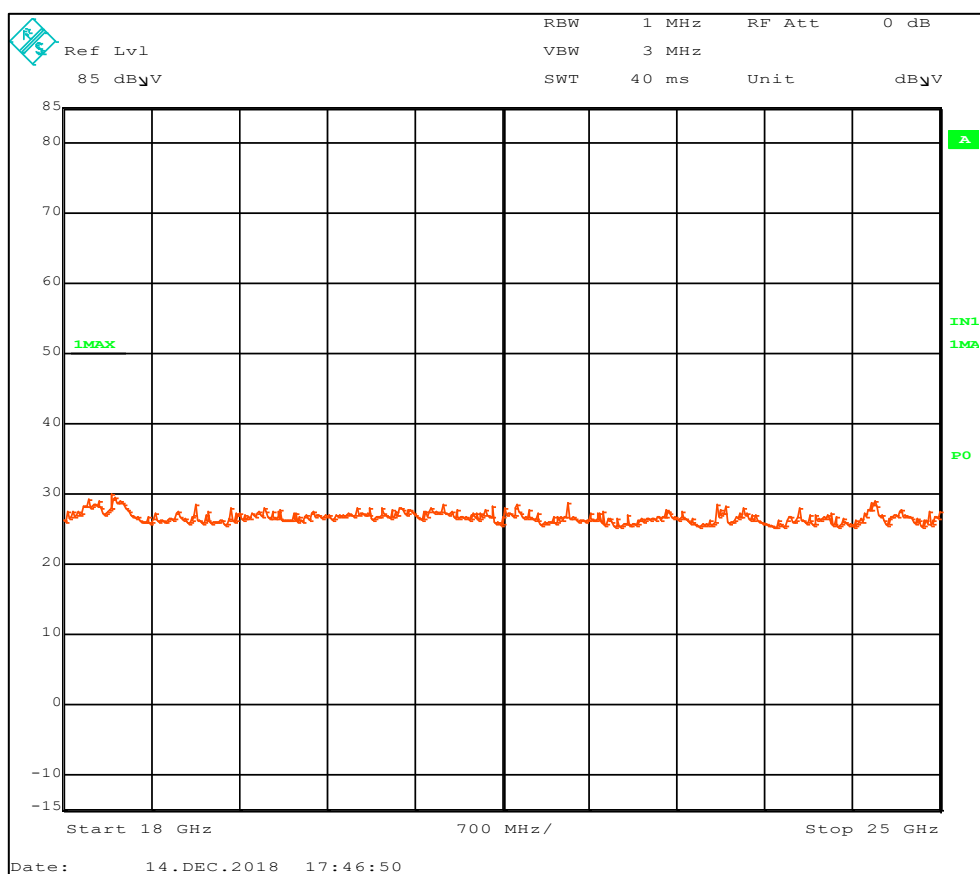


Figure 84. Radiated emission test results 18 - 25 GHz. Peak detector.

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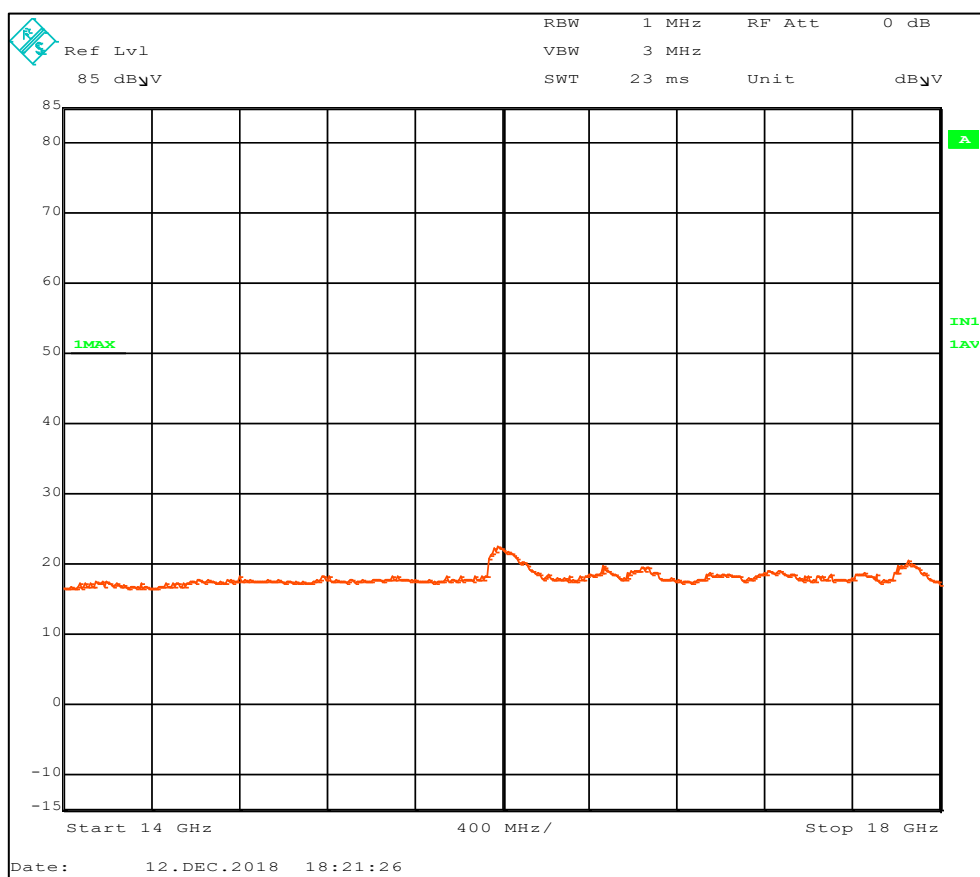


Figure 85. Radiated emission test results 14 - 18 GHz. Average detector.

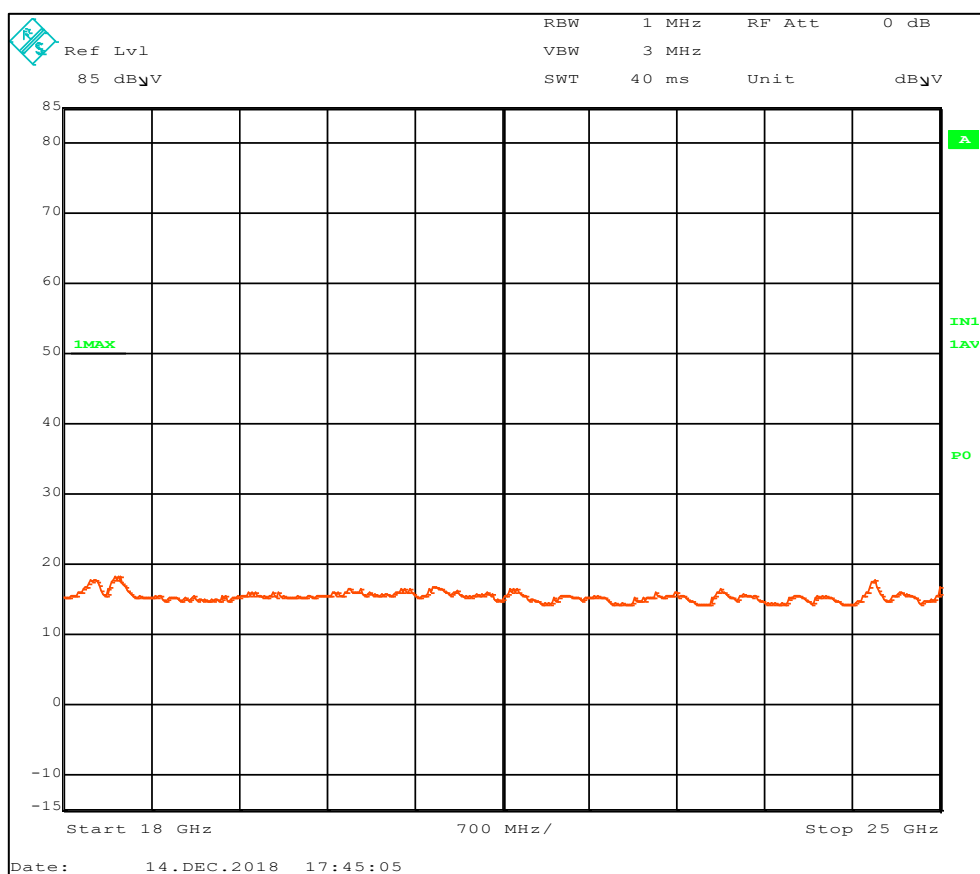


Figure 86. Radiated emission test results 18 - 25 GHz. Average detector.

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| Average Limit 3 m. | Peak limit 3 m | 3 m / 0.5 m factor | Average Limit 0.5 m. | Peak limit 0.5 m |
|--------------------|----------------|--------------------|----------------------|------------------|
| dB μ V/m | dB μ V/m | dB | dB μ V/m | dB μ V/m |
| 53.98 | 73.98 | 15.56 dB | 69.54 | 89.54 |

Table 47. Calculation of limit at 0.5 m.

| Frequency | AF | Cable loss | Correction factor |
|-----------|------|------------|-------------------|
| GHz | dB/m | dB | dB/m |
| 14 | 37,1 | < 2 | 39.1 |
| 18 | 37,4 | < 2 | 39.4 |
| 18 | 40.3 | < 2 | 42.3 |
| 25 | 40.6 | < 2 | 42.6 |

Table 48. Correction factors 14 – 25 GHz.

| Frequency [MHz] | Peak [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|---------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 89.54 | PASSED |

Table 49. Radiated emission test results. 14 - 25 GHz. Peak detector.

| Frequency [MHz] | Average [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|------------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 69.54 | PASSED |

Table 50. Radiated emission test results 14.- 25 GHz. Average detector.

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2.5.2.5 Test result for channel 11 at 2472 MHz in vertical – 90 deg. position at power level 17.

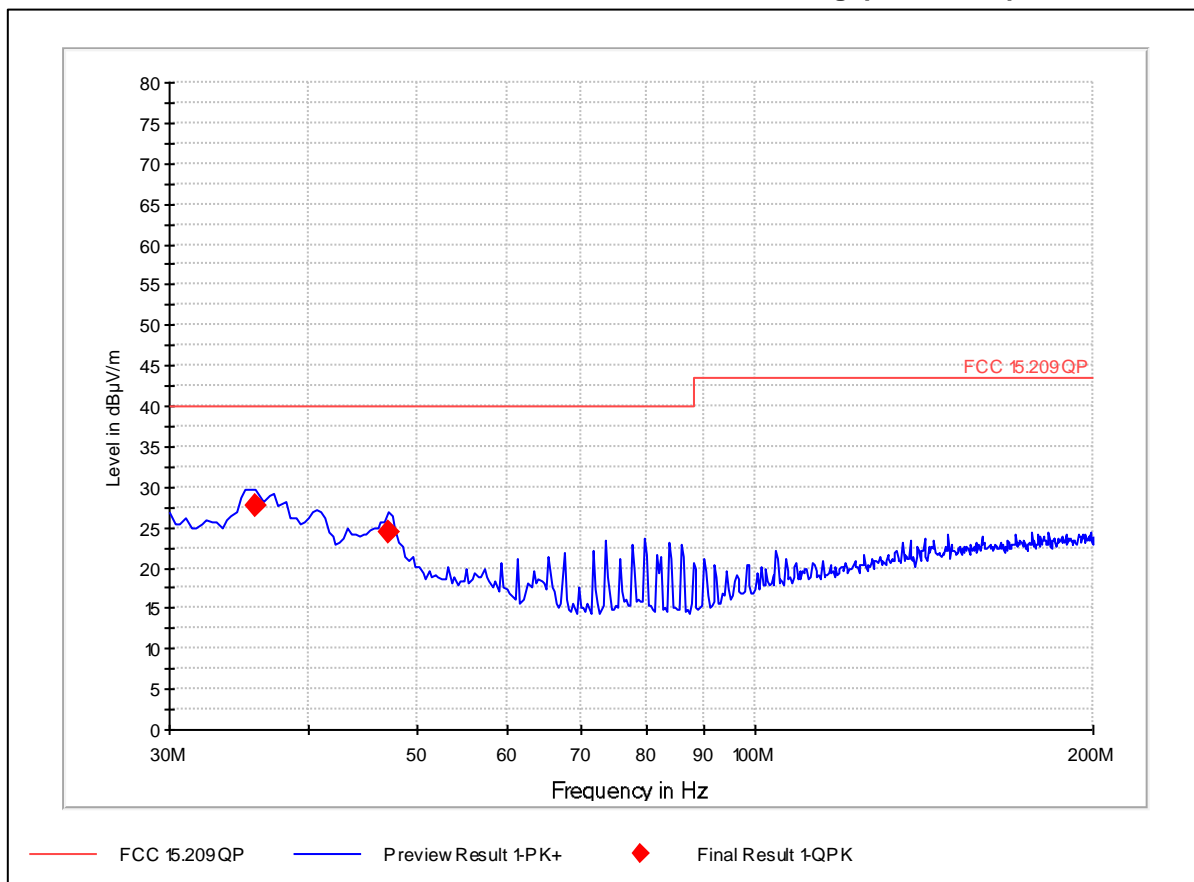


Figure 87. Radiated emission test results 30 - 200 MHz.

| Frequency [MHz] | QP [dBµV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBµV/m] | Result |
|-----------------|-------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 35.730220 | 27.7 | 120.0 | 274.0 | V | 347.0 | 12.3 | 40.0 | PASSED |
| 47.104068 | 24.4 | 120.0 | 335.0 | V | 171.0 | 15.6 | 40.0 | PASSED |

Table 51. Radiated emission test results. 30 - 200 MHz.

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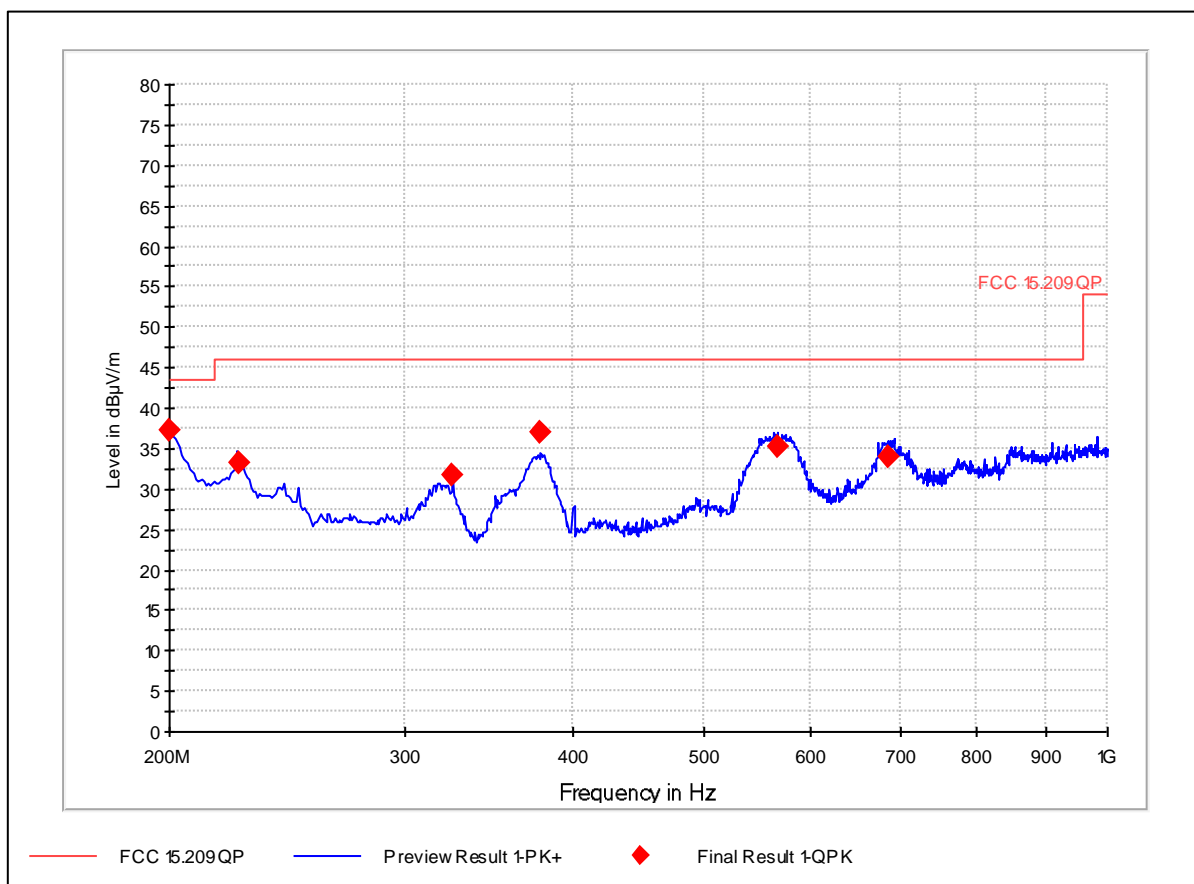


Figure 88. Radiated emission test results 200 - 1000 MHz.

| Frequency [MHz] | QP [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|-------------|----------|-------------|-------|---------------|-------------|----------------|--------|
| 200.000000 | 38.2 | 199.8 | V | 270.0 | 5.3 | 43.5 | 200.00000 | PASSED |
| 224.849699 | 34.6 | 150.1 | V | 315.0 | 11.4 | 46.0 | 224.84969 | PASSED |
| 325.050100 | 32.4 | 199.8 | H | 225.0 | 13.6 | 46.0 | 325.05010 | PASSED |
| 378.757515 | 34.1 | 150.1 | V | 135.0 | 11.9 | 46.0 | 378.75751 | |
| 566.332665 | 36.8 | 150.1 | V | 90.0 | 9.2 | 46.0 | 566.33266 | PASSED |
| 685.771543 | 36.0 | 99.8 | V | 180.0 | 10.0 | 46.0 | 685.77154 | PASSED |

Table 52. Radiated emission test results 200 - 1000 MHz.

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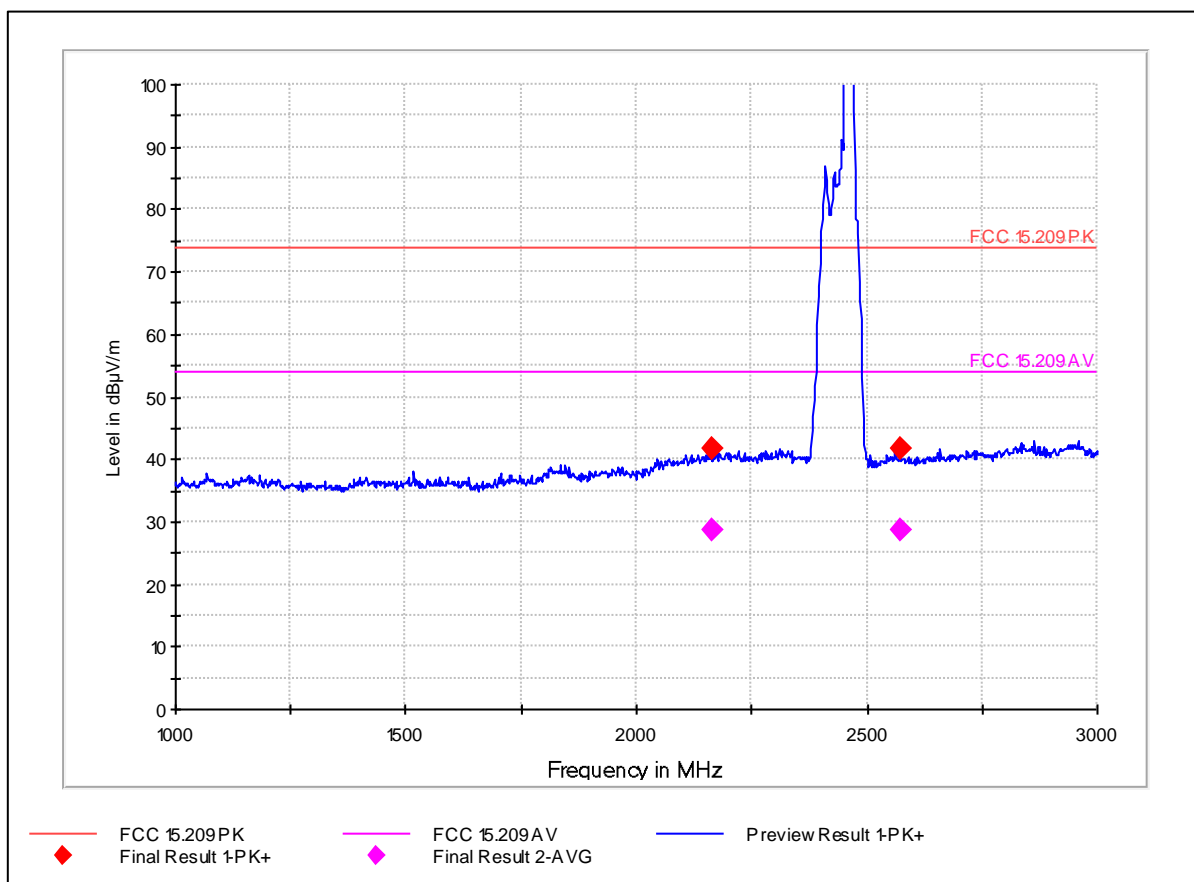


Figure 89. Radiated emission test results 1 - 3 GHz.

The peak in the frequency band is due to the attenuation of a 2.4 GHz band rejection filter, which was added to the measurement path. Thus it is ignored.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2163.820641 | 41.7 | 1000. | 150.1 | V | 92.0 | 32.3 | 74.0 | PASSED |
| 2573.742285 | 41.5 | 1000. | 342.0 | V | 296.0 | 32.5 | 74.0 | PASSED |

Table 53. Radiated emission test results 1 - 3 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 2163.820641 | 28.7 | 1000. | 150.1 | V | 92.0 | 25.3 | 54.0 | PASSED |
| 2573.742285 | 28.6 | 1000. | 342.0 | V | 296.0 | 25.4 | 54.0 | PASSED |

Table 54. Radiated emission test results 1 - 3 GHz. Average detector.

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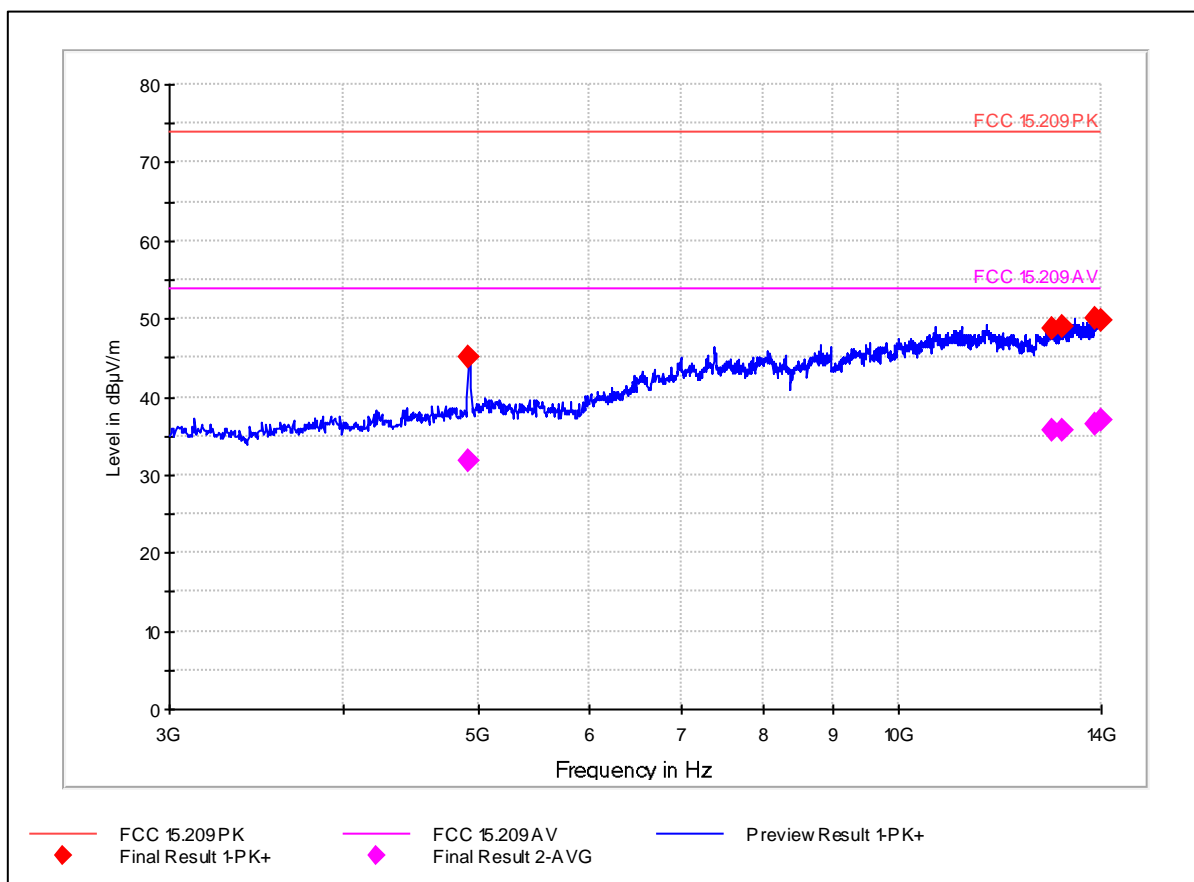


Figure 90. Radiated emission test results 3 - 14 GHz.

| Frequency [MHz] | Peak [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|---------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4924.057715 | 45.0 | 1000. | 149.9 | V | 142.0 | 29.0 | 74.0 | PASSED |
| 12900.490581 | 48.8 | 1000. | 397.1 | V | 218.0 | 25.2 | 74.0 | PASSED |
| 13141.896593 | 49.0 | 1000. | 380.9 | V | 93.0 | 25.0 | 74.0 | PASSED |
| 13880.074549 | 49.9 | 1000. | 177.2 | V | 27.0 | 24.1 | 74.0 | PASSED |
| 13980.254910 | 49.7 | 1000. | 170.8 | V | 48.0 | 24.3 | 74.0 | PASSED |

Table 55. Radiated emission test results 3 - 14 GHz. Peak detector.

| Frequency [MHz] | Average [dBμV/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dBμV/m] | Result |
|-----------------|------------------|----------|-------------|------|---------------|-------------|----------------|--------|
| 4924.057715 | 31.7 | 1000. | 149.9 | V | 142.0 | 22.3 | 54.0 | PASSED |
| 12900.490581 | 35.8 | 1000. | 397.1 | V | 218.0 | 18.2 | 54.0 | PASSED |
| 13141.896593 | 35.8 | 1000. | 380.9 | V | 93.0 | 18.2 | 54.0 | PASSED |
| 13880.074549 | 36.6 | 1000. | 177.2 | V | 27.0 | 17.4 | 54.0 | PASSED |
| 13980.254910 | 37.0 | 1000. | 170.8 | V | 48.0 | 17.0 | 54.0 | PASSED |

Table 56. Radiated emission test results 3 - 14 GHz. Average detector.

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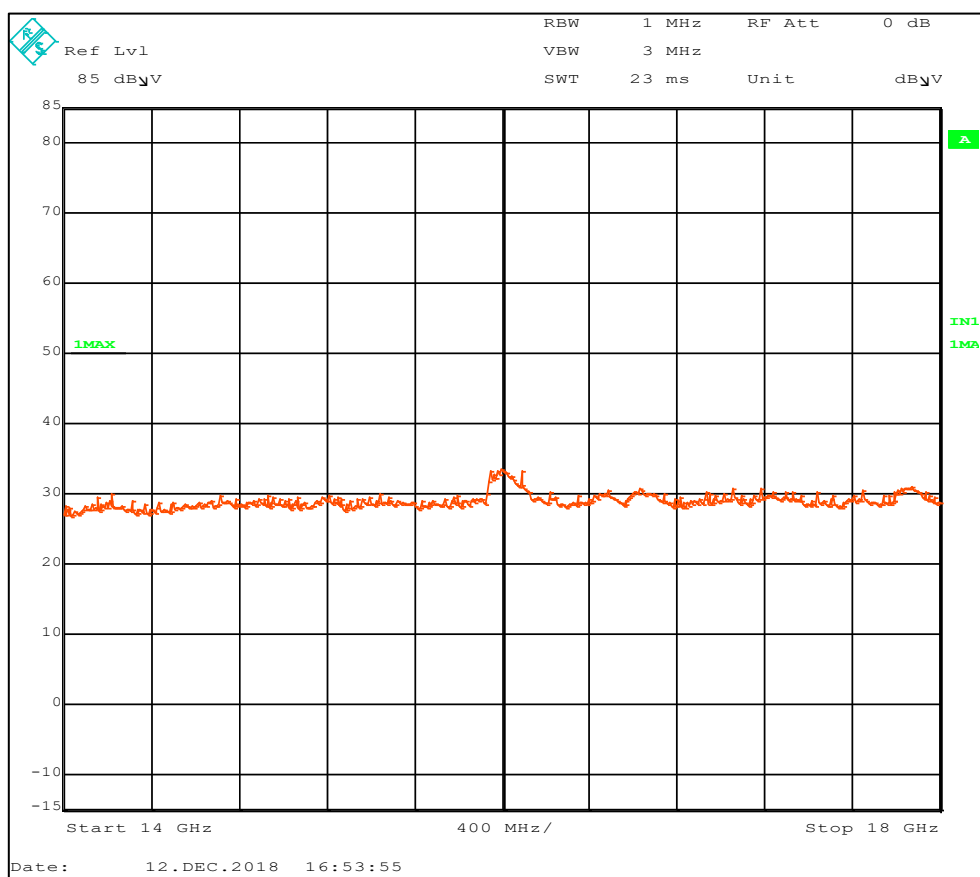


Figure 91. Radiated emission test results 14 - 18 GHz. Peak detector.

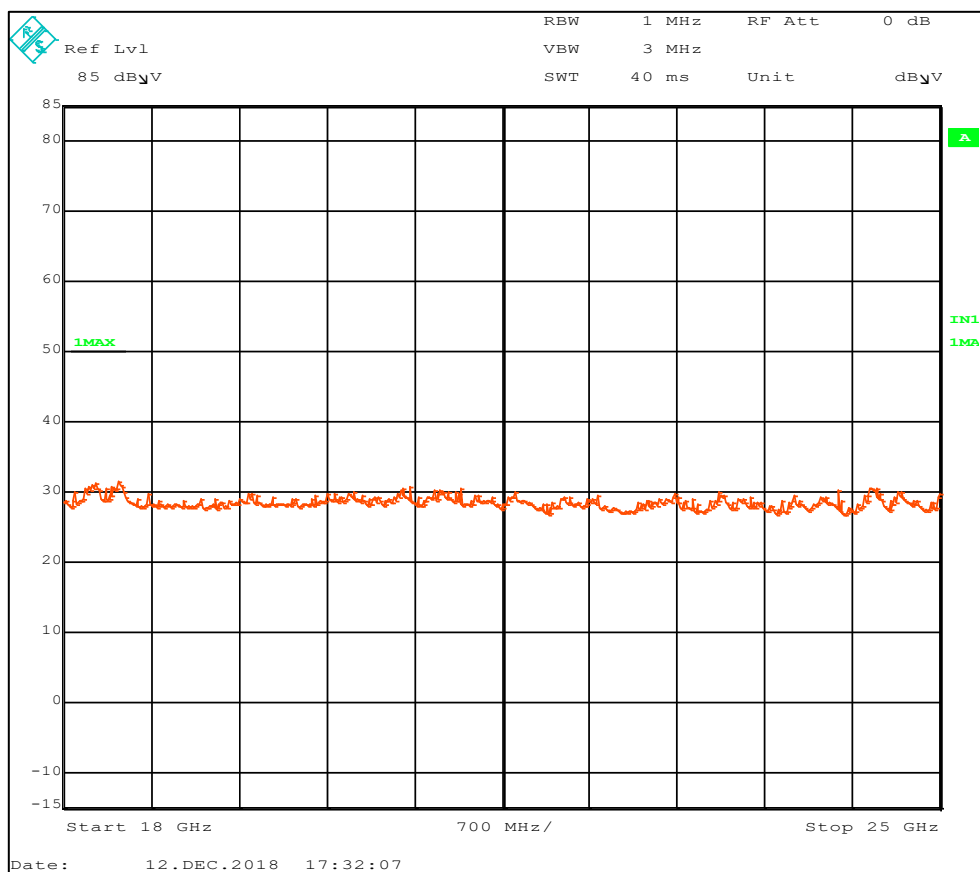


Figure 92. Radiated emission test results 18 - 25 GHz. Peak detector.

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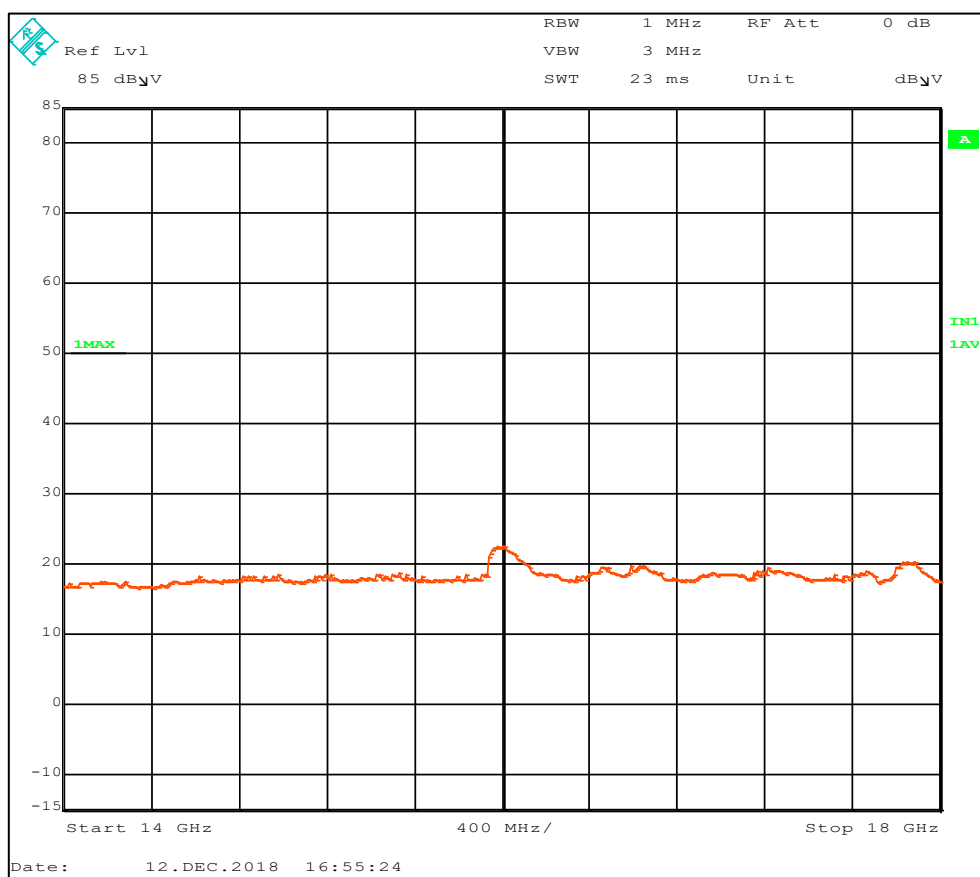


Figure 93. Radiated emission test results 14 - 18 GHz. Average detector.

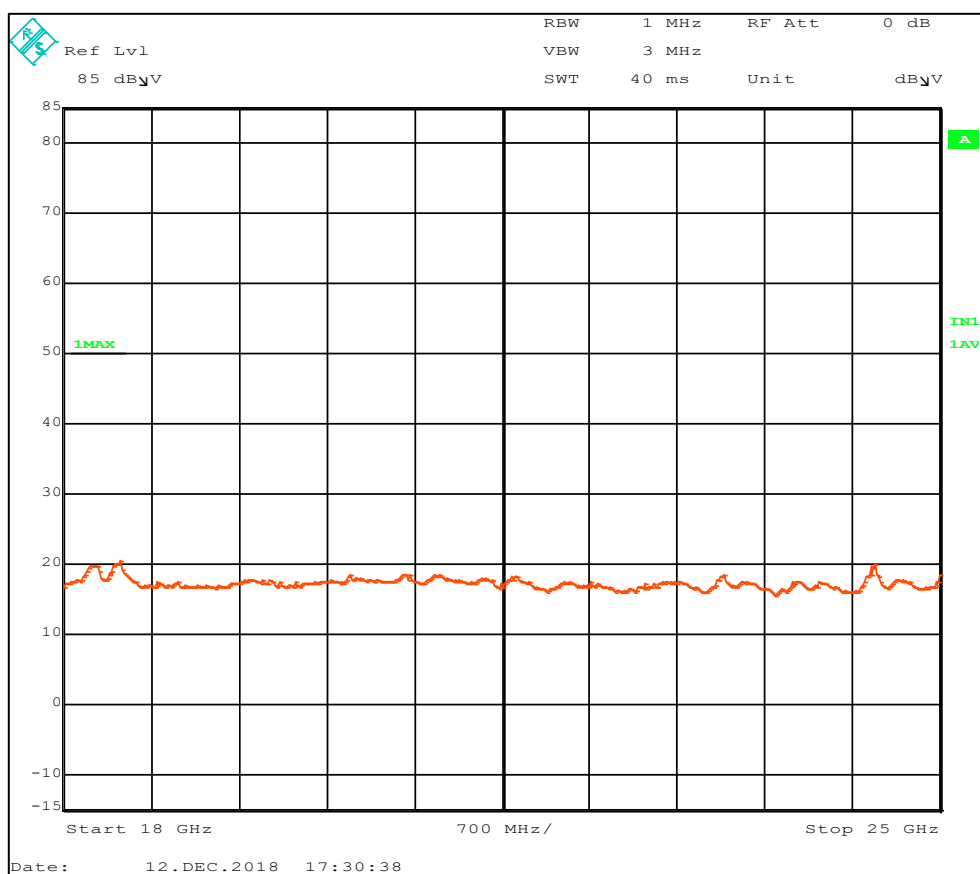


Figure 94. Radiated emission test results 18 - 25 GHz. Average detector.

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| Average Limit 3 m. | Peak limit 3 m | 3 m / 0.5 m factor | Average Limit 0.5 m. | Peak limit 0.5 m |
|--------------------|----------------|--------------------|----------------------|------------------|
| dB μ V/m | dB μ V/m | dB | dB μ V/m | dB μ V/m |
| 53.98 | 73.98 | 15.56 dB | 69.54 | 89.54 |

Table 57. Calculation of limit at 0.5 m.

| Frequency | AF | Cable loss | Correction factor |
|-----------|------|------------|-------------------|
| GHz | dB/m | dB | dB/m |
| 14 | 37,1 | < 2 | 39.1 |
| 18 | 37,4 | < 2 | 39.4 |
| 18 | 40.3 | < 2 | 42.3 |
| 25 | 40.6 | < 2 | 42.6 |

Table 58. Correction factors 14 – 25 GHz.

| Frequency [MHz] | Peak [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|---------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 89.54 | PASSED |

Table 59. Radiated emission test results. 14 - 25 GHz. Peak detector.

| Frequency [MHz] | Average [dB μ V/m] | BW [kHz] | Height [cm] | Pol. | Azimuth [deg] | Margin [dB] | Limit [dB μ V/m] | Result |
|-----------------|------------------------|----------|-------------|------|---------------|-------------|----------------------|--------|
| - | - | 1000 | - | - | - | - | 69.54 | PASSED |

Table 60. Radiated emission test results 14.- 25 GHz. Average detector.

2.5.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|-------------------------------------|-----------------|-------------|---------|---------------|
| Antenna Biconical 30 - 300 MHz | ETS-LINDGREN | EMCO 3110B | 13835 | 2019-02-20 |
| Antenna Log Per 0.2 - 1 GHz | ETS-LINDGREN | 3148 | 50083 | 2019-04-14 |
| Antenna Horn | Schwarzbeck | BBHA 9120 D | 20777 | 2019-02-18 |
| Antenna Std gain Horn 12GHz-18GHz | Narda | 639 + 609 | 17219 | NA |
| Antenna Std gain Horn 18 - 26.5 GHz | Narda | 638 + 4608B | 17524 | NA |
| Analyzer 20Hz-26.5GHz | Rohde & Schwarz | ESI 26 | 20763 | 2019-12-10 |
| Receiver EMI 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.6 Band edge

| | |
|-------------------------------|--|
| Test specimen | DG2 no.10 |
| Test specification | 558074 D01 15.247 Measurement Guidance v05 |
| Test method | ANSI C63.10:2013 sec. 11.12 |
| Comments | none |
| Temperature / Humidity | 22°C / 37%RH |
| Dates of measurements | 2018-11-09 |
| Test personnel | Søren Søltøft |

2.6.1 Test setup

The measurement was performed radiated in a semi anechoic chamber with absorbers on the floor.

The measuring distance was 3 m.

The EUT was placed on a non-conductive table, 1.5 m above the floor.

The test specimen was placed in the orientation giving the highest RF output at the fundamental frequency.

The measurements were performed at the edge of the nearest restricted band below and above the DTS band. Below at 2390 MHz and above at 2483.5 MHz.

An investigation of the Band Edge level versus MCS0 to MCS7 at channel 11 showed MCS0 to be worst case.

See appendix 1 for photo of test set up

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2.6.2 Test results

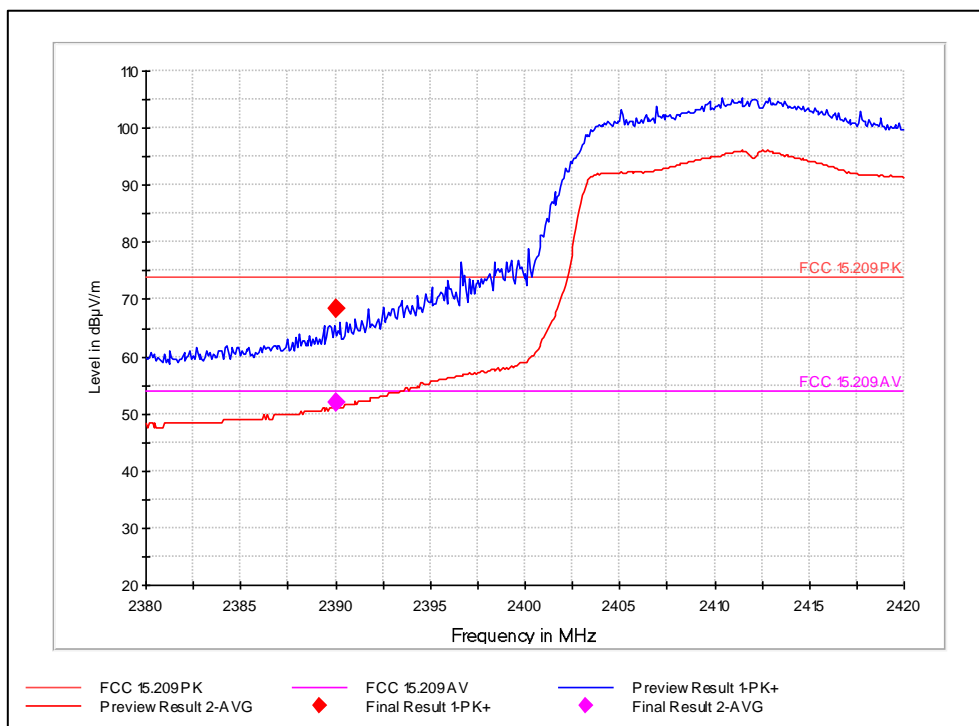


Figure 95. Band Edge for channel 1

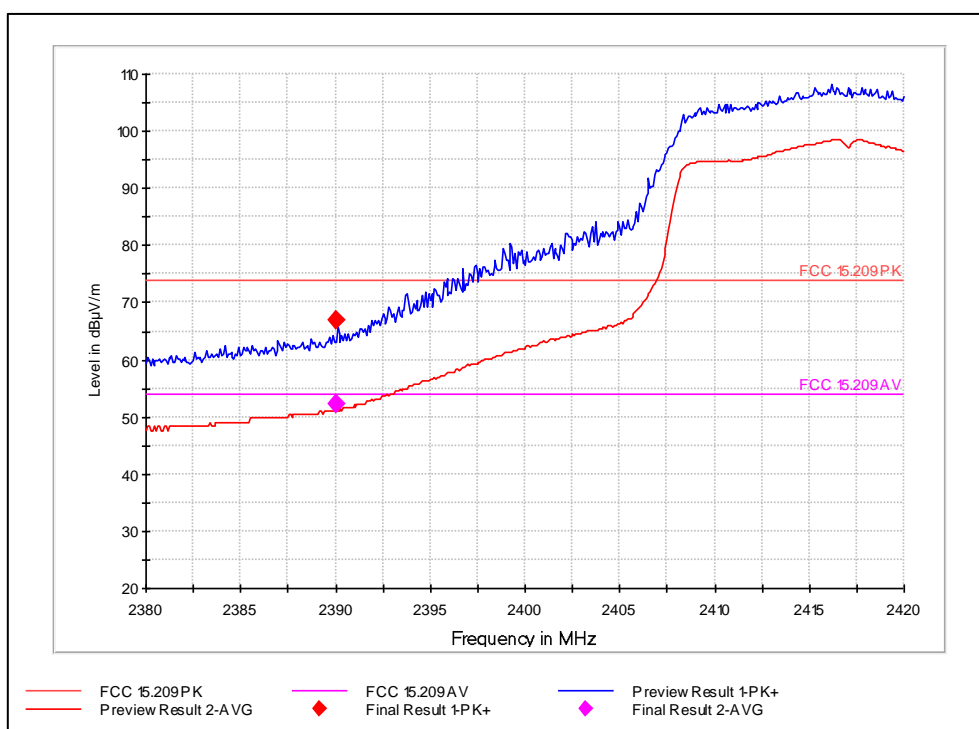


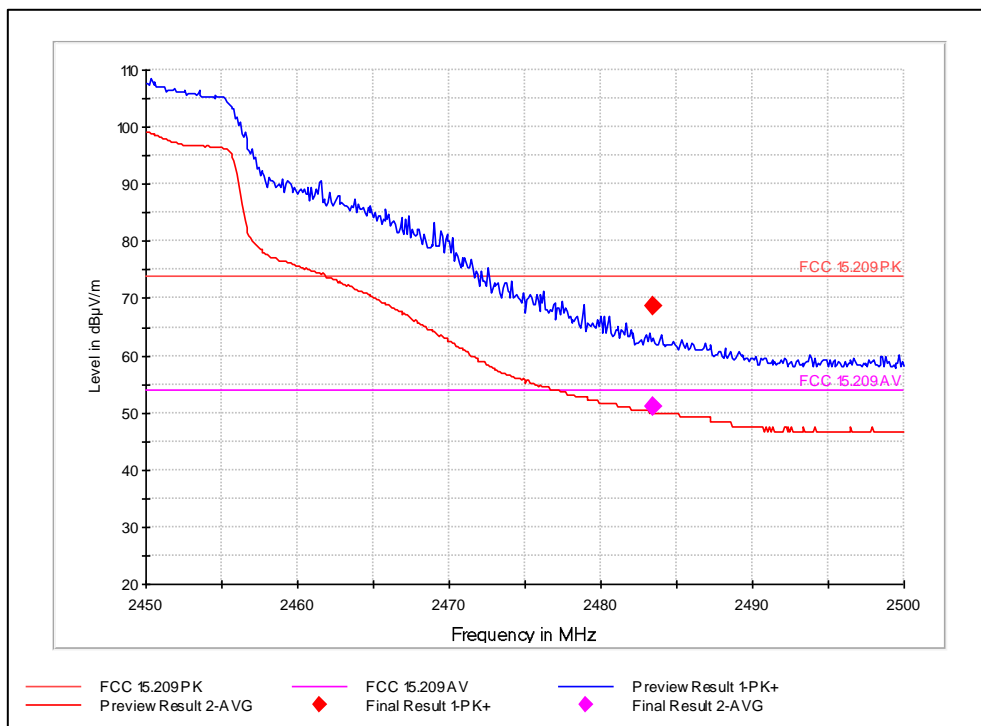
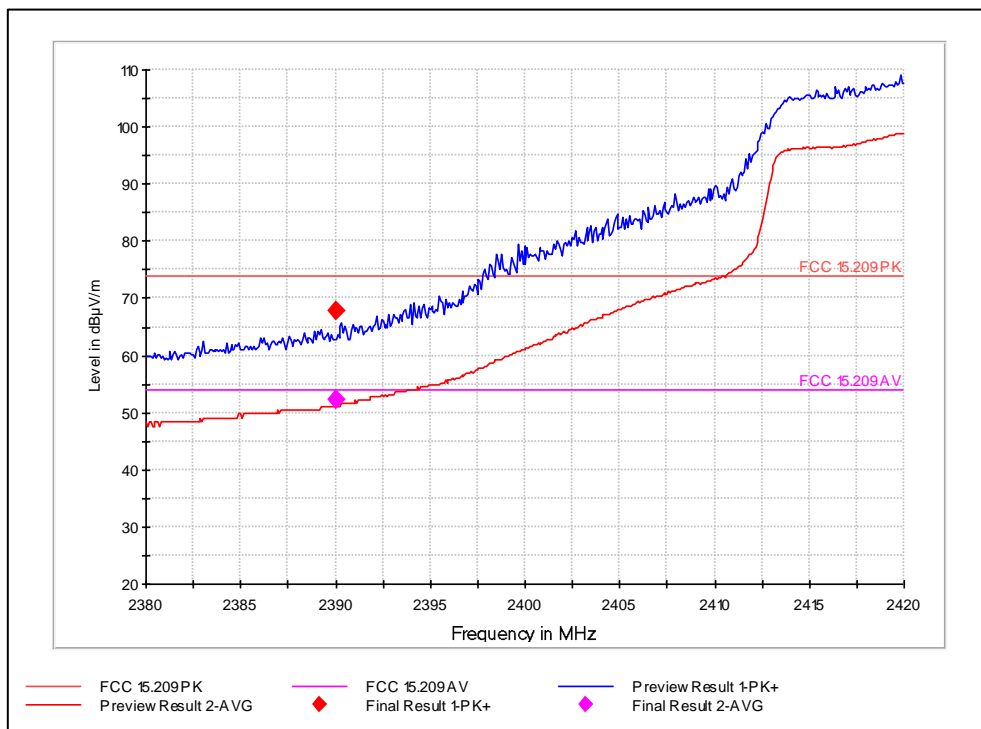
Figure 96. Band Edge for channel 2

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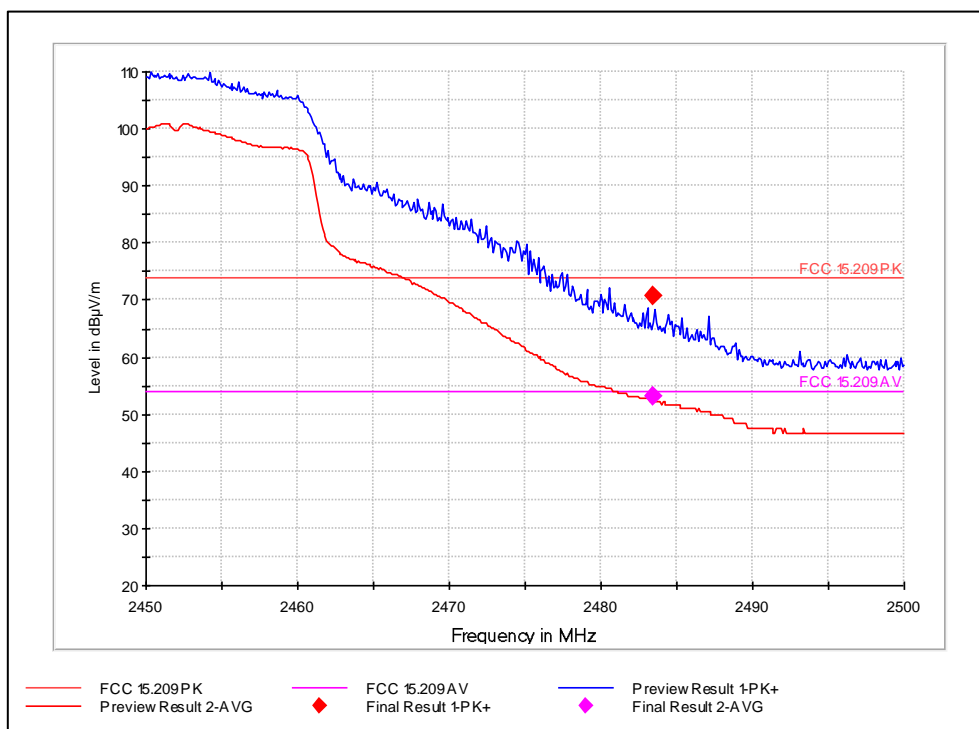


Figure 99. Band Edge for channel 9

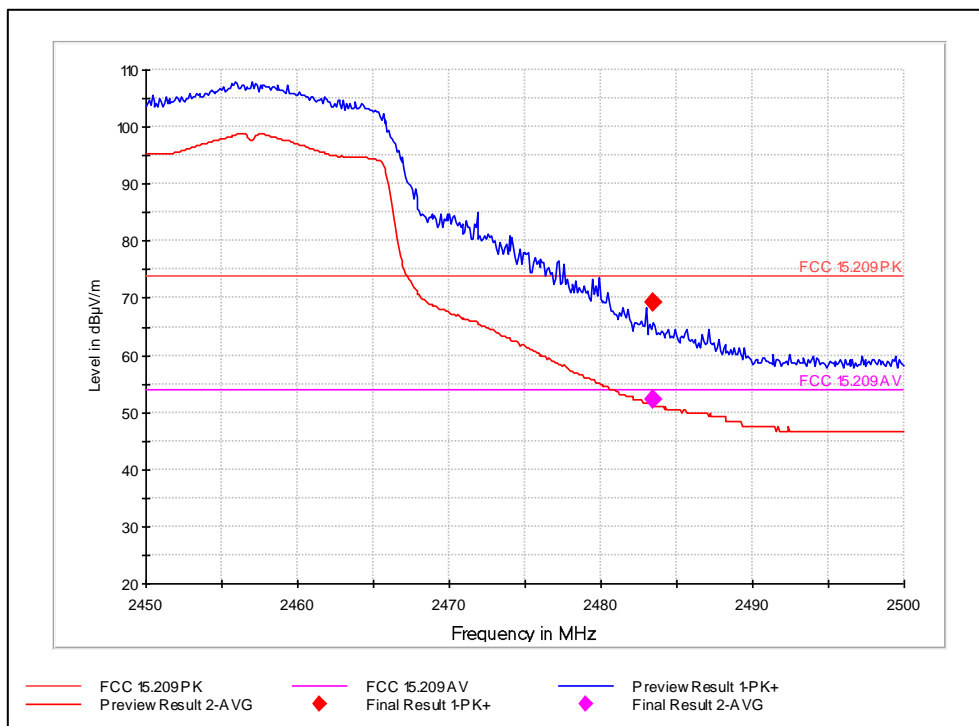


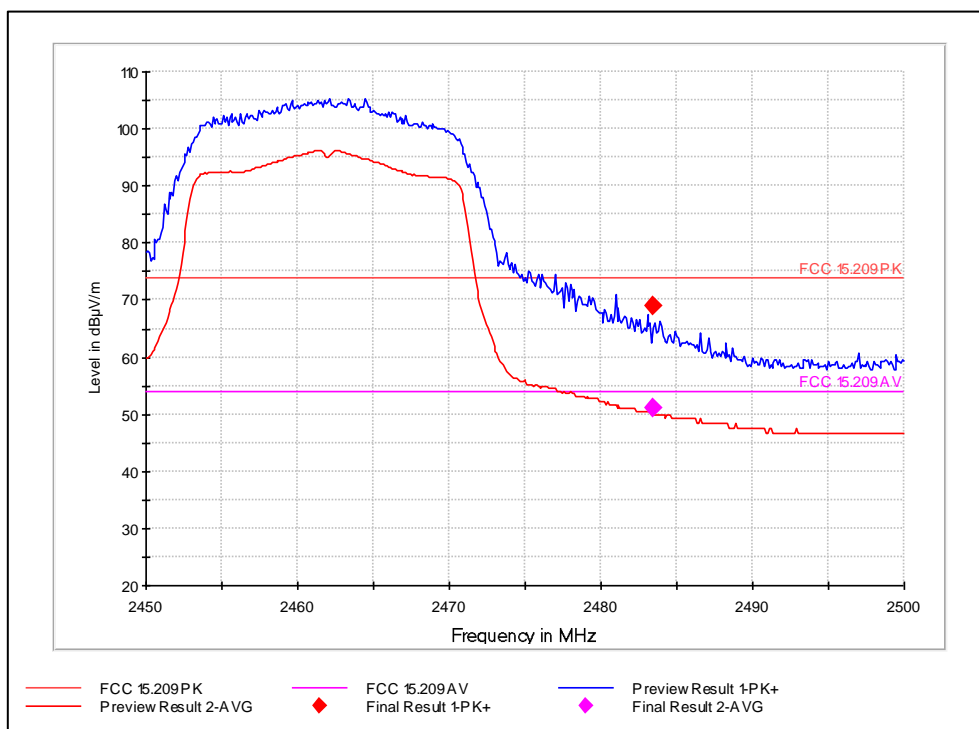
Figure 100. Band Edge for channel 10

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| Channel | Peak | Average | Limit | | Margin | | Result |
|---------|----------|----------|------------------|---------------------|--------------|-----------------|--------|
| | [dBµV/m] | [dBµV/m] | Peak [dBµV/m] | Average [dBµV/m] | Peak [dB] | Average [dB] | |
| 1 | 68.2 | 52 | 74 | 54 | 5.8 | 2 | Passed |
| 2 | 67 | 52.2 | 74 | 54 | 7 | 1.8 | Passed |
| 3 | 67.7 | 52.3 | 74 | 54 | 6.3 | 1.7 | Passed |
| 8 | 68.8 | 51.2 | 74 | 54 | 5.2 | 2.8 | Passed |
| 9 | 70.8 | 53.1 | 74 | 54 | 3.2 | 0.9 | Passed |
| 10 | 69.2 | 52.1 | 74 | 54 | 4.8 | 1.9 | Passed |
| 11 | 68.9 | 51.1 | 74 | 54 | 5.1 | 2.9 | Passed |

Table 61. Band Edge results.

2.6.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|--------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESI 26 | 20763 | 2018-12-05 |

Table 62. Band Edge test equipment.

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2.7 Power spectral density

| | |
|------------------------|--|
| Test specimen | AT-DG2 no. 12 |
| Test specification | FCC 47 CFR Part 15.247 (e) RSS-247 sec 5.2 b) |
| Test method | ANSI C63.10:2013 sec 11.10.2 |
| Limits | FCC 47 CFR Part 15.247 (e) |
| Comments | None |
| Temperature / Humidity | 23°C / 26%RH |
| Dates of measurements | 2018-12-13 |
| Test personnel | Søren Søltøft |

2.7.1 Test setup

The test specimen was connected to a spectrum analyzer using a temporary antenna connector.

See photo of test set up in appendix 1.

2.7.2 Test results

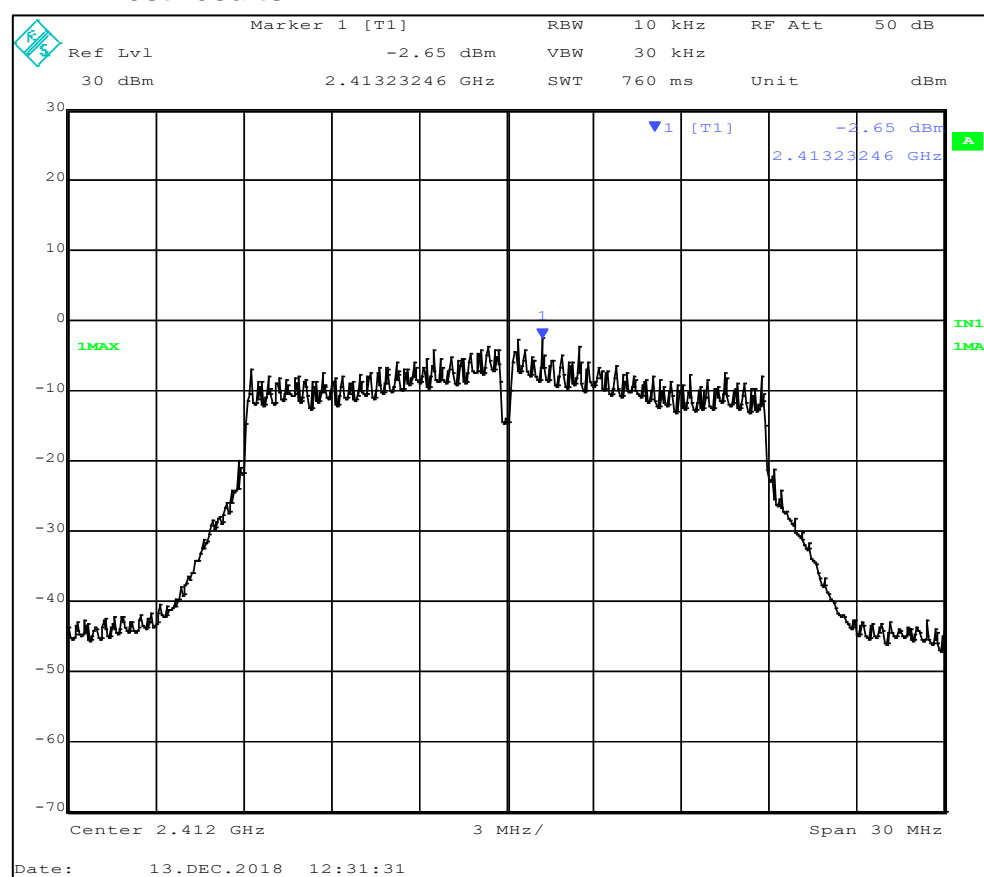


Figure 102. Power spectral density channel 1.

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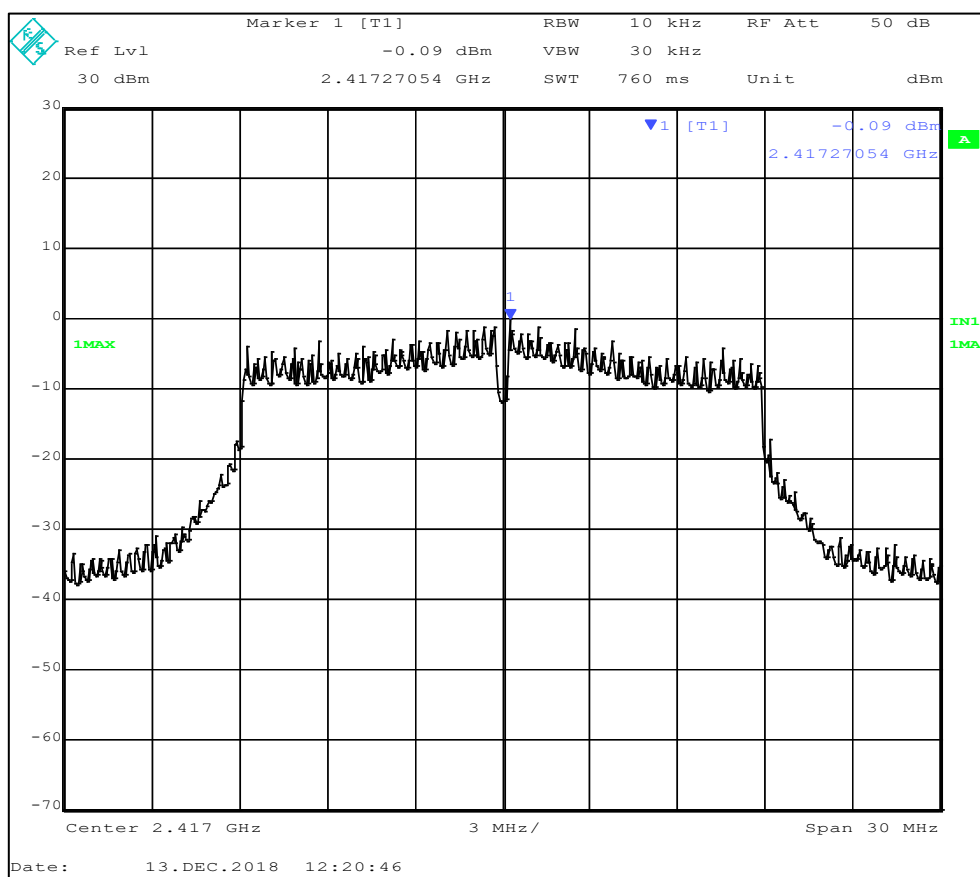


Figure 103. Power spectral density channel 2.

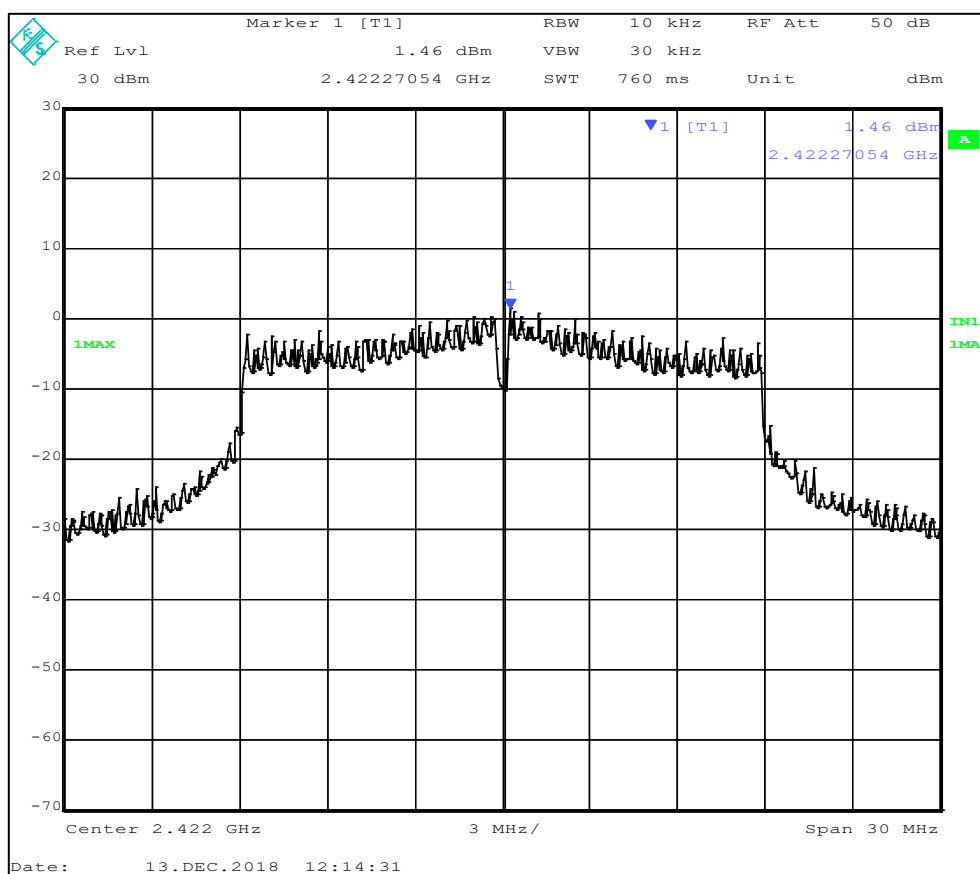


Figure 104. Power spectral density channel 3.

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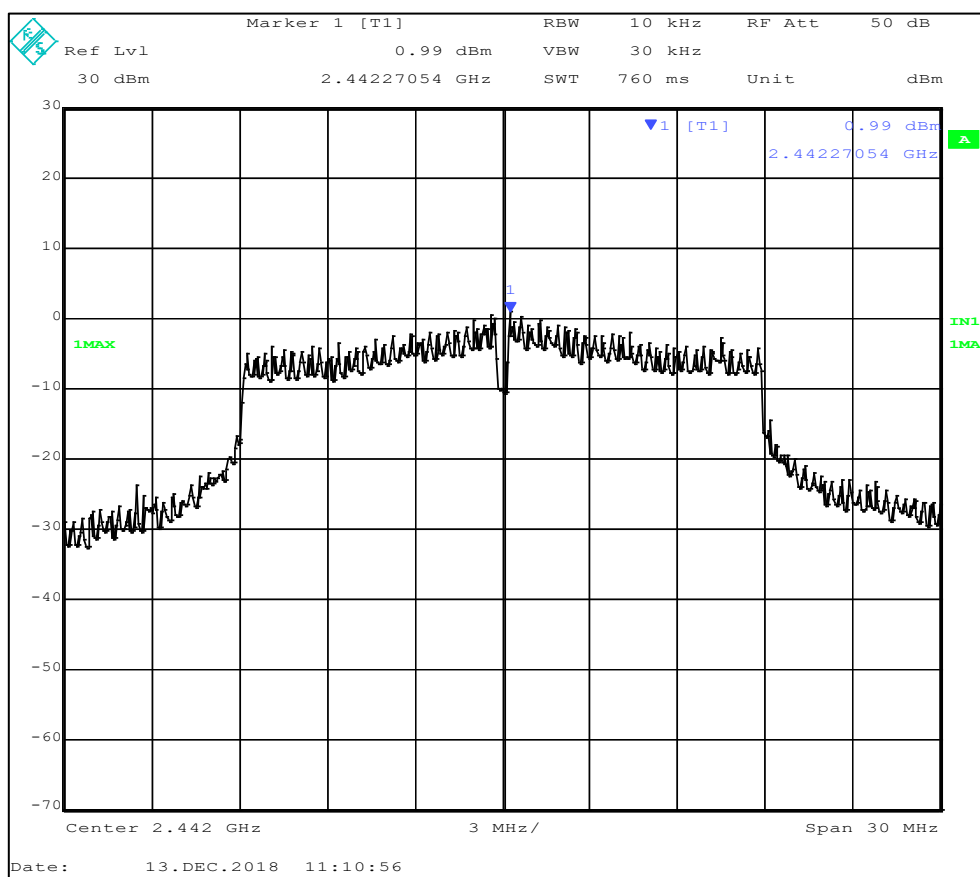


Figure 105 Power spectral density channel 7.

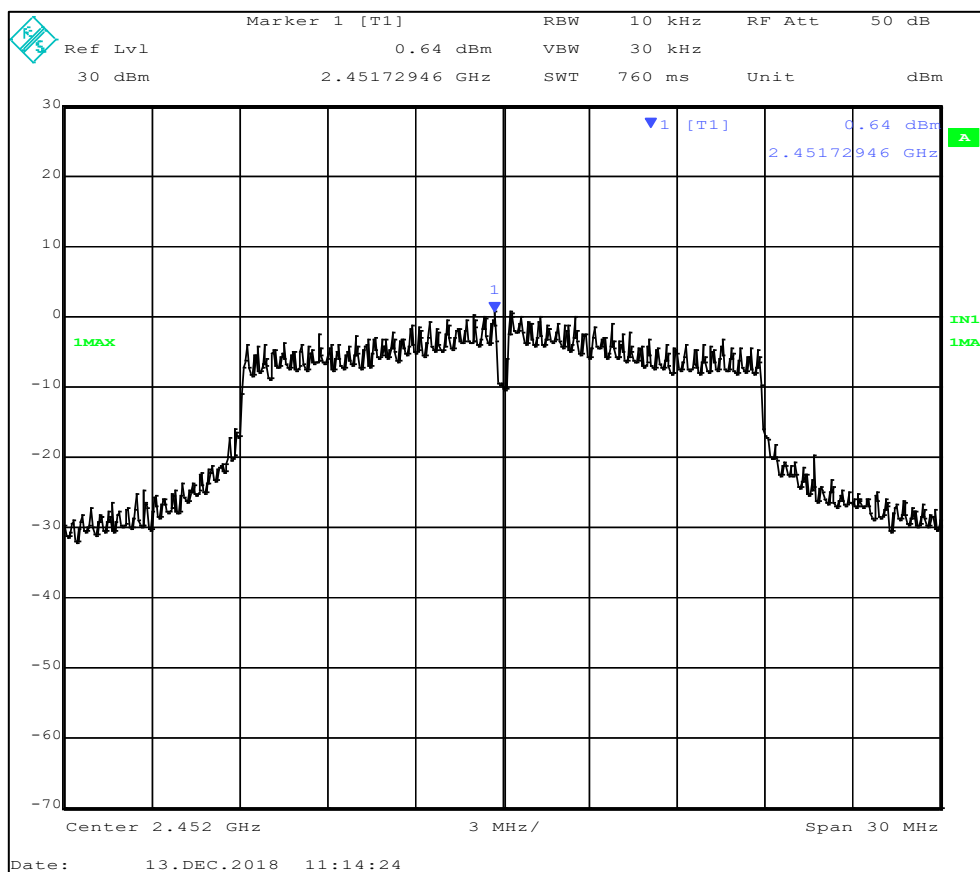


Figure 106. Power spectral density channel 9.

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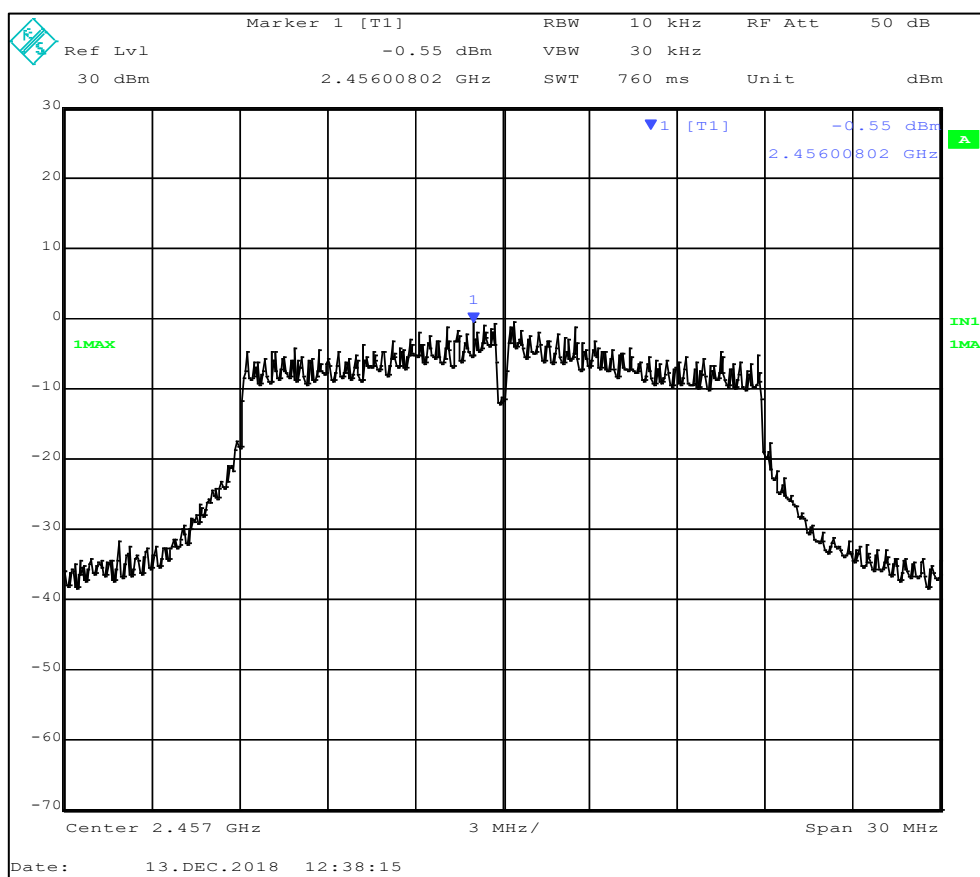


Figure 107. Power spectral density channel 10.

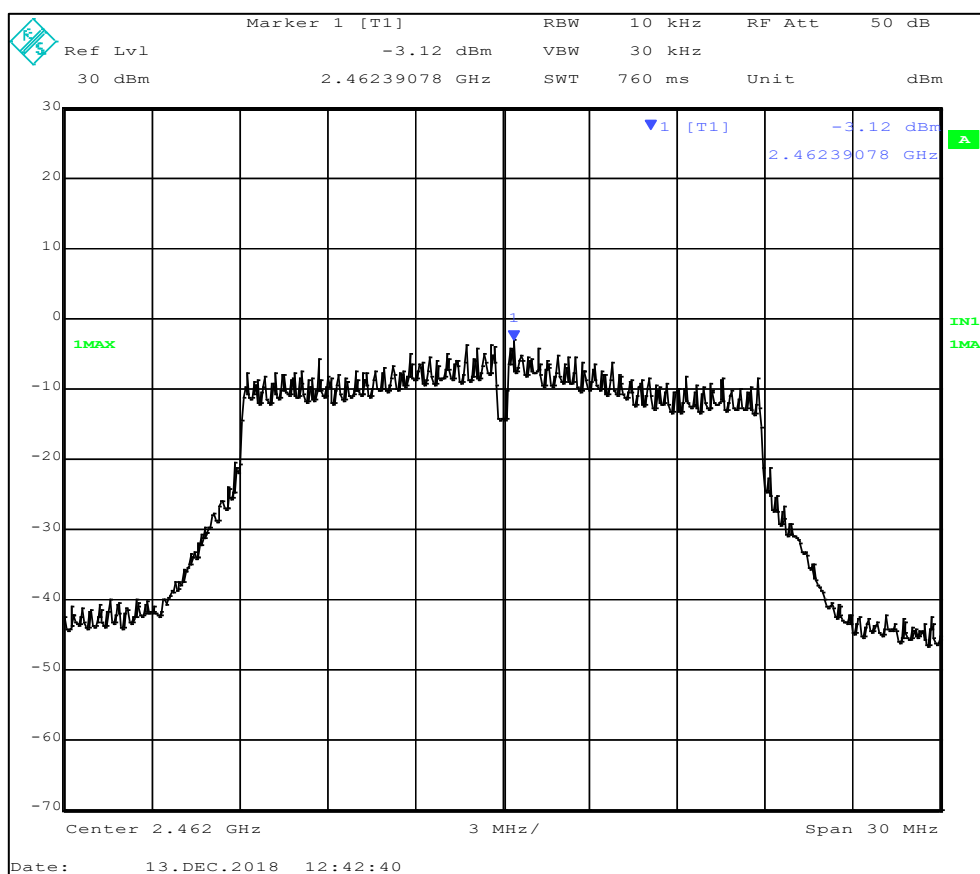


Figure 108. Power spectral density channel 11.

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| Channel | Frequency [MHz] | Power Spectral density [dBm] | Limit [dBm] | Result |
|---------|-----------------|------------------------------|-------------|--------|
| 1 | 2412 | -2.65 | 8 | PASSED |
| 2 | 2417 | -0.09 | 8 | PASSED |
| 3 | 2422 | 1.46 | 8 | PASSED |
| 7 | 2442 | 0.99 | 8 | PASSED |
| 9 | 2452 | 0.64 | 8 | PASSED |
| 10 | 2457 | -0.55 | 8 | PASSED |
| 11 | 2462 | -3.12 | 8 | PASSED |

2.7.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.8 AC Conducted emission

| | |
|-------------------------------|-----------------------------------|
| Test specimen | AT-DG2 No 12 |
| Test specification | 47 CFR Part 15.207 RSS-Gen 8.8 |
| Test method | ANSI C63.10:2013 sec. 6.2 |
| Frequency range | 0.15 - 30 MHz |
| Limits | 47 CFR Part 15.207 |
| Comments | none |
| Temperature / Humidity | 23°C / 49%RH |
| Dates of measurements | 2018-10-11 |
| Test personnel | Søren Søltøft |

2.8.1 Test setup

Measurements were performed with the test specimen powered from a AC/DC adaptor (EMC 3) and from Poe injector through Airtame Ethernet to USB adaptor with PoE (PoE 2). PoE Injector 2 was used as power supply.

The test specimen was set to max power with max duty cycle at channel 7.

The mains supply was 120 VAC.

The test specimen was equipped with a temporary antenna connector which was terminated in 50 ohm.

See appendix 1 for photo of test set up

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2.8.2 Test results

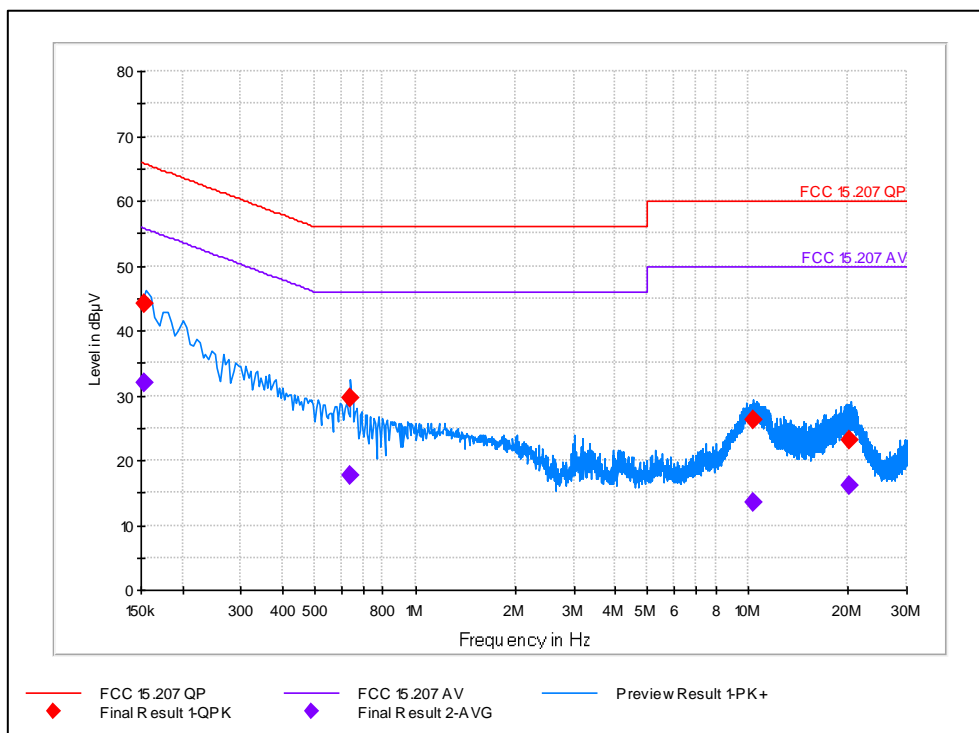


Figure 109. AC Conducted emission. Powered by ACDC adaptor

| Frequency [MHz] | QuasiPeak [dBµV] | BW [kHz] | Line | Margin [dB] | Limit [dBµV] | Result |
|-----------------|------------------|----------|------|-------------|--------------|--------|
| 0.154000 | 44.0 | 9.000 | N | 21.70 | 65.80 | PASSED |
| 0.639000 | 29.5 | 9.000 | N | 26.50 | 56.00 | PASSED |
| 10.355700 | 26.2 | 9.000 | N | 33.80 | 60.00 | PASSED |
| 20.167900 | 23.1 | 9.000 | L1 | 36.90 | 60.00 | PASSED |

Table 63. AC Conducted emission. Powered by ACDC adaptor. QuasiPeak detector.

| Frequency [MHz] | Average [dBµV] | BW [kHz] | Line | Margin [dB] | Limit [dBµV] | Result |
|-----------------|----------------|----------|------|-------------|--------------|--------|
| 0.154000 | 32.1 | 9.000 | N | 23.70 | 55.80 | PASSED |
| 0.639000 | 17.6 | 9.000 | N | 28.40 | 46.00 | PASSED |
| 10.355700 | 13.4 | 9.000 | N | 36.60 | 50.00 | PASSED |
| 20.167900 | 16.0 | 9.000 | L1 | 34.00 | 50.00 | PASSED |

Table 64. AC Conducted emission. Powered by ACDC adaptor. Average detector.

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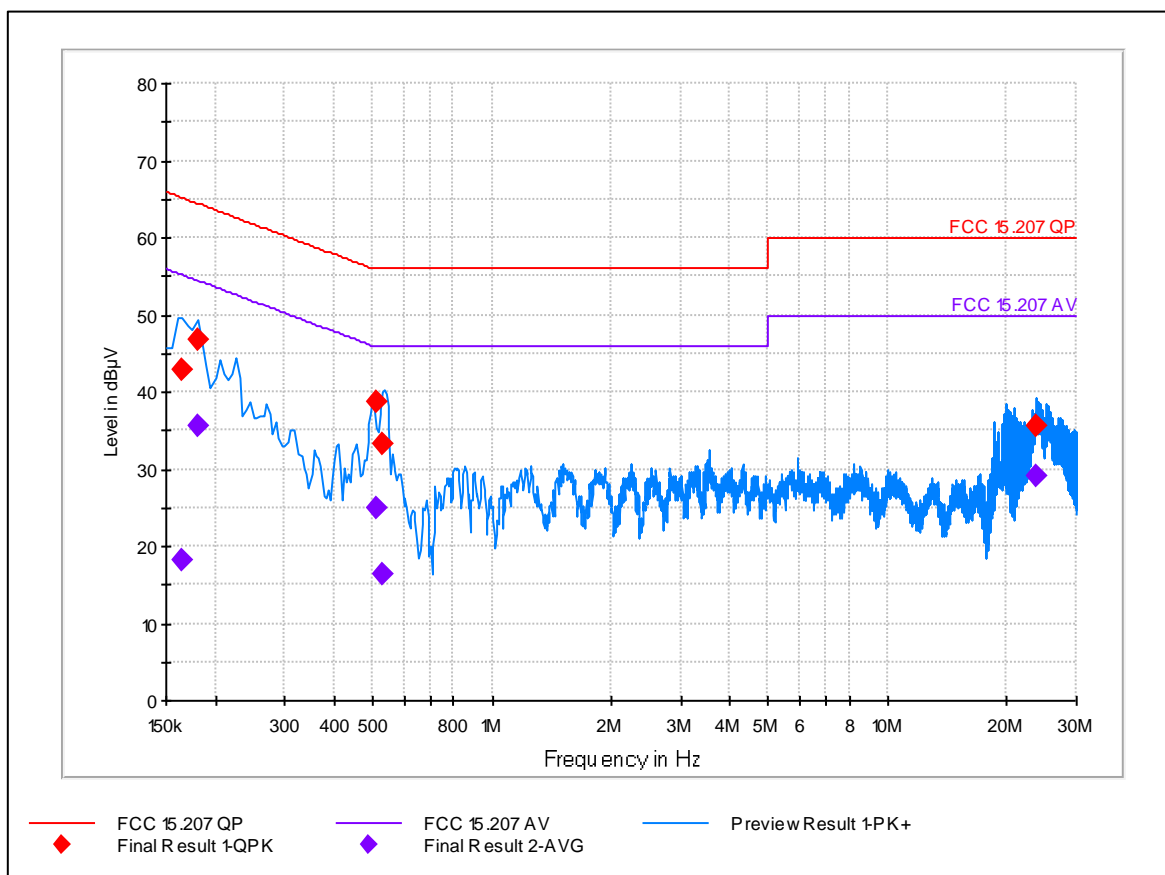


Figure 110. AC Conducted emission. Powered by PoE Injector 2.

| Frequency [MHz] | QuasiPeak [dBµV] | BW [kHz] | Line | Margin [dB] | Limit [dBµV] | Result |
|-----------------|------------------|----------|------|-------------|--------------|--------|
| 0.165200 | 43.0 | 9.000 | N | 22.20 | 65.20 | PASSED |
| 0.180000 | 46.7 | 9.000 | N | 17.80 | 64.50 | PASSED |
| 0.510000 | 38.6 | 9.000 | N | 17.40 | 56.00 | PASSED |
| 0.526700 | 33.3 | 9.000 | N | 22.70 | 56.00 | PASSED |
| 23.661500 | 35.5 | 9.000 | L1 | 24.50 | 60.00 | PASSED |

Table 65. AC Conducted emission. Powered by PoE Injector 2. QuasiPeak detector.

| Frequency [MHz] | Average [dBµV] | BW [kHz] | Line | Margin [dB] | Limit [dBµV] | Result |
|-----------------|----------------|----------|------|-------------|--------------|--------|
| 0.165200 | 18.1 | 9.000 | N | 37.10 | 55.20 | PASSED |
| 0.180000 | 35.7 | 9.000 | N | 18.80 | 54.50 | PASSED |
| 0.510000 | 24.9 | 9.000 | N | 21.10 | 46.00 | PASSED |
| 0.526700 | 16.3 | 9.000 | N | 29.70 | 46.00 | PASSED |
| 23.661500 | 29.1 | 9.000 | L1 | 20.90 | 50.00 | PASSED |

Table 66. AC Conducted emission. Powered by PoE Injector 2. Average detector.

2.8.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| V-network Two Line | R&S | ESH3-Z5 | 20682 | 2019-01-22 |
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

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2.9 Occupied bandwidth

| | |
|------------------------|------------------------------|
| Test specimen | AT-DG2 no. 12 |
| Test specification | 47 CFR 2.1049 RSS-Gen 6.7 |
| Test method | ANSI C63.10:2013 sec. 6.9.3 |
| Comments | none |
| Temperature / Humidity | 23°C / 26%RH |
| Dates of measurements | 2018-12-13 |
| Test personnel | Søren Søltøft |

2.9.1 Test setup

The test specimen was connected to a spectrum analyzer using a temporary antenna connector.

See photo of test set up in appendix 1.

2.9.2 Test results

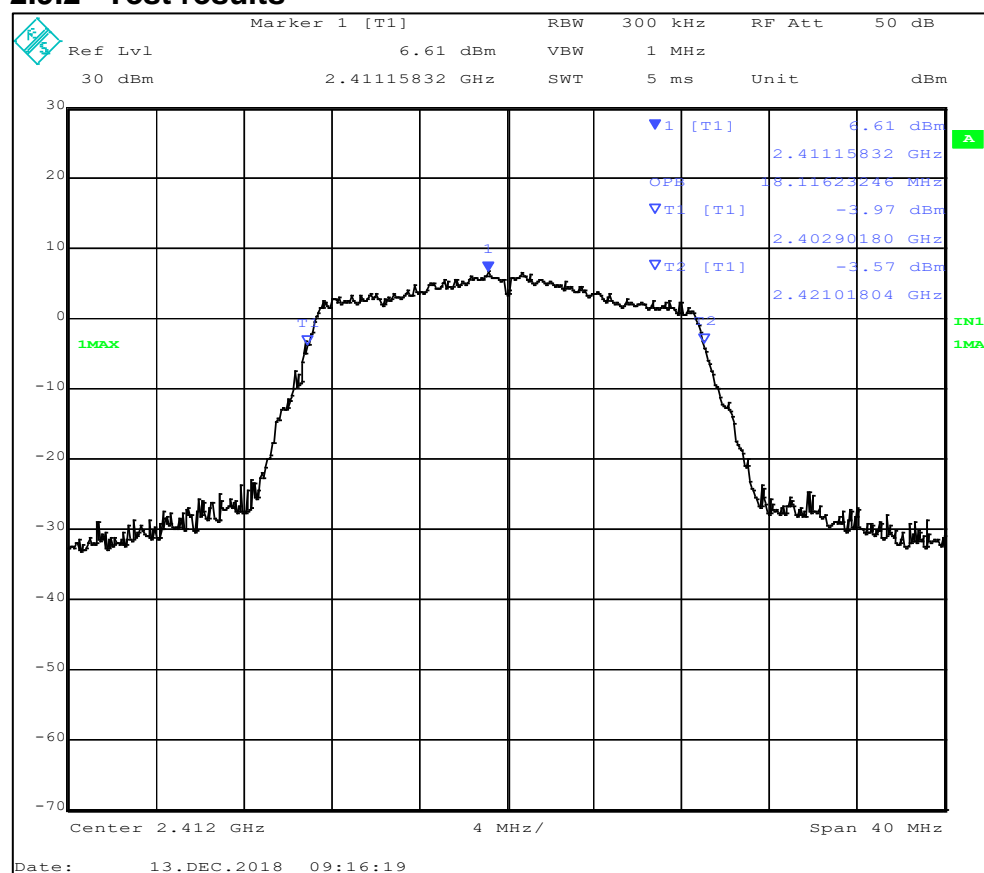


Figure 111. Occupied bandwidth 99% channel 1.

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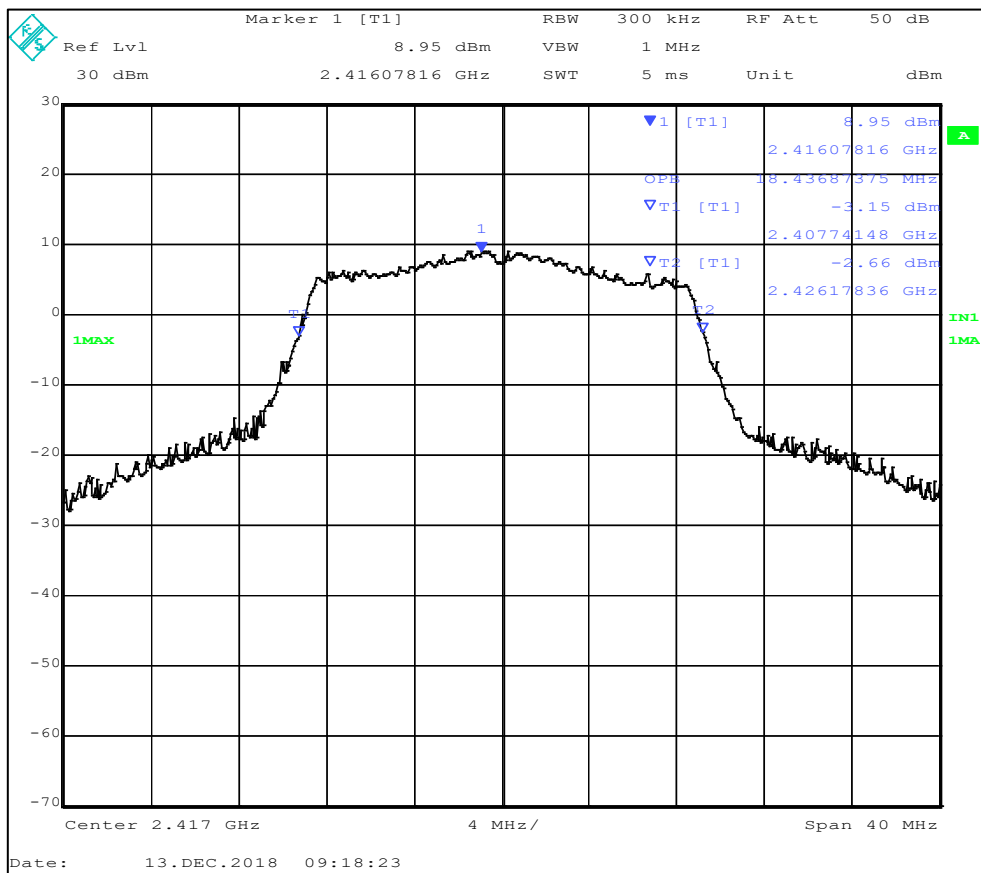


Figure 112. Occupied bandwidth 99% channel 2.

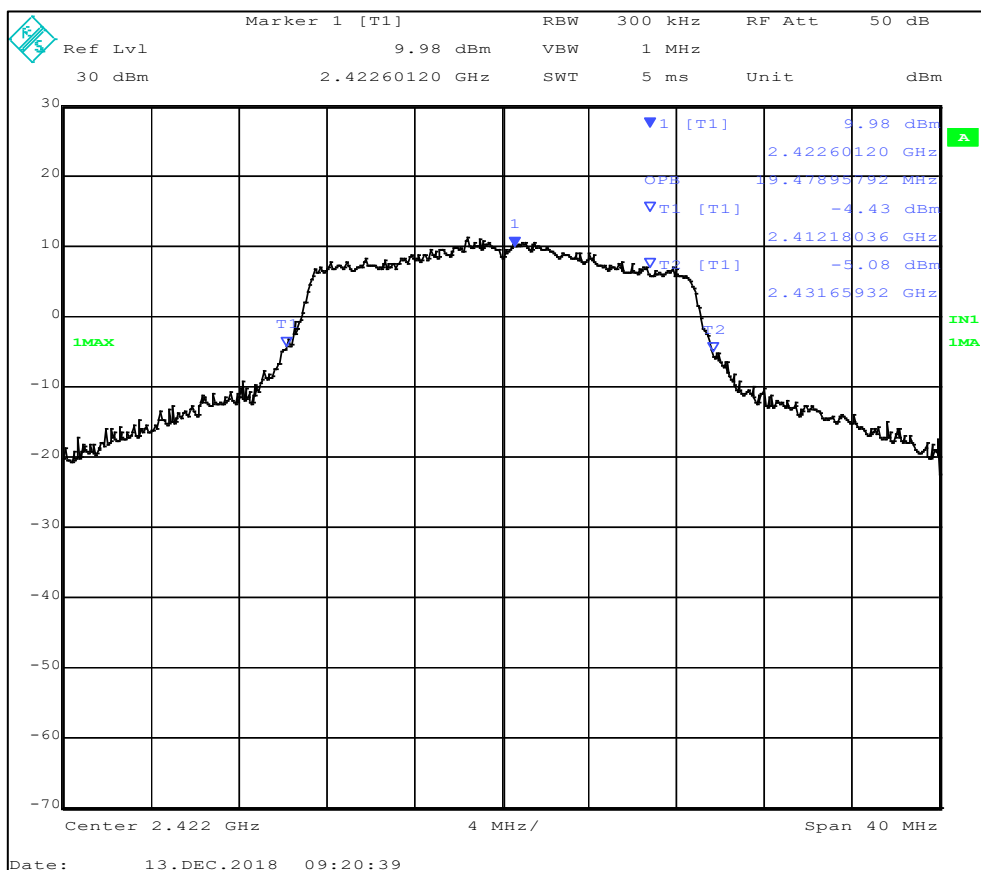


Figure 113. Occupied bandwidth 99% channel 3.

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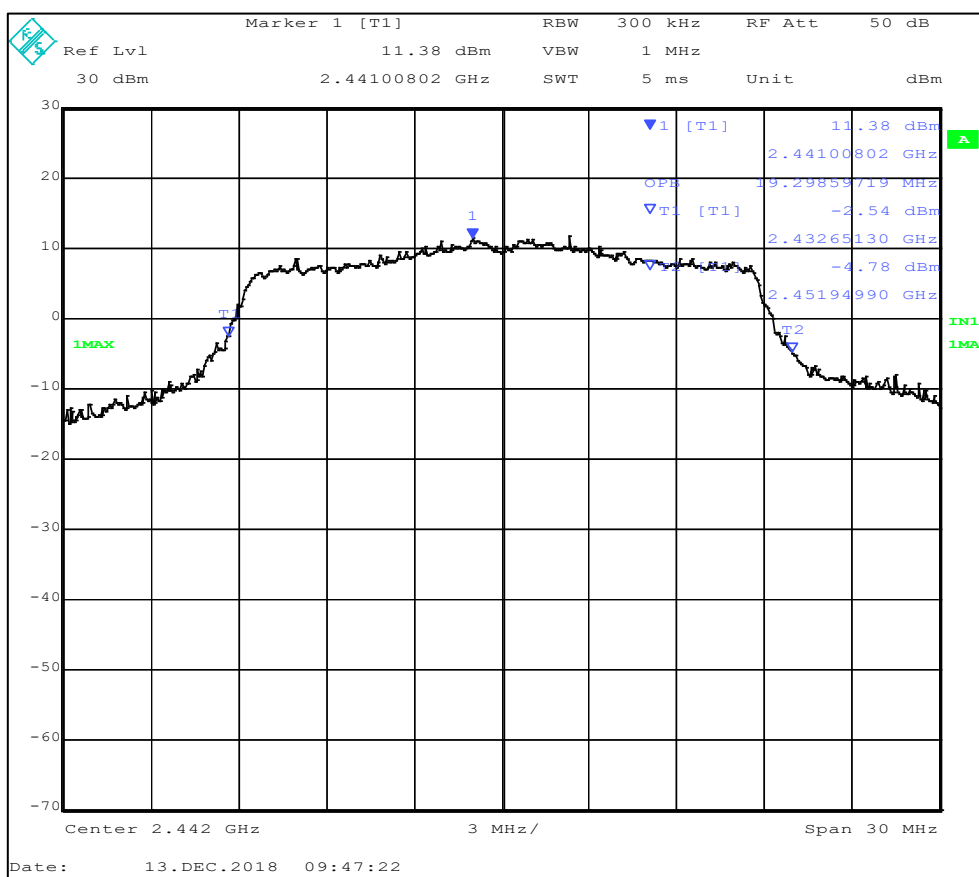


Figure 114. Occupied bandwidth 99% channel 7.

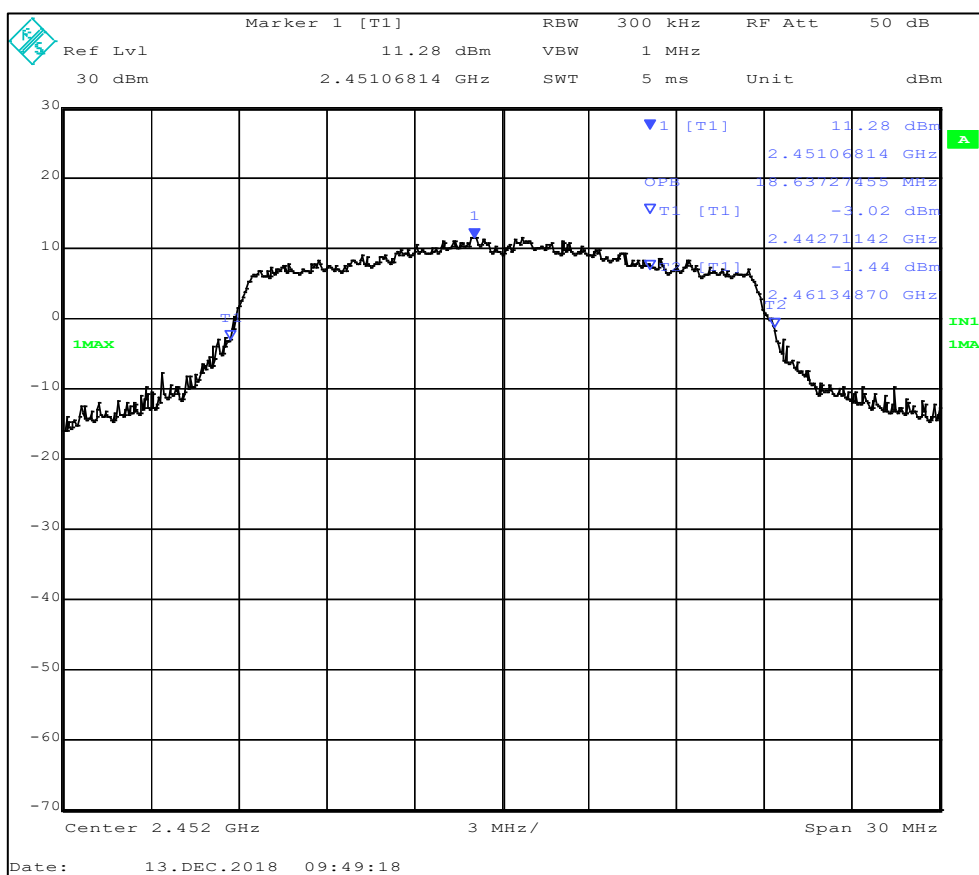


Figure 115. Occupied bandwidth 99% channel 9.

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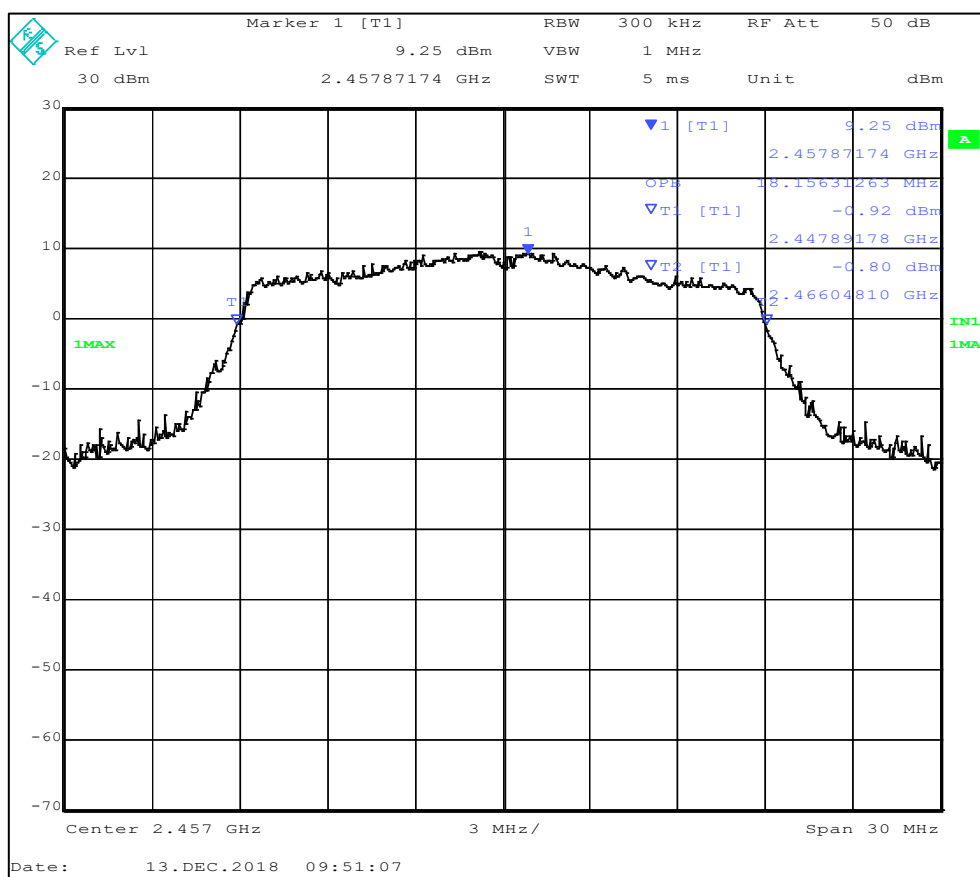


Figure 116. Occupied bandwidth 99% channel 10.

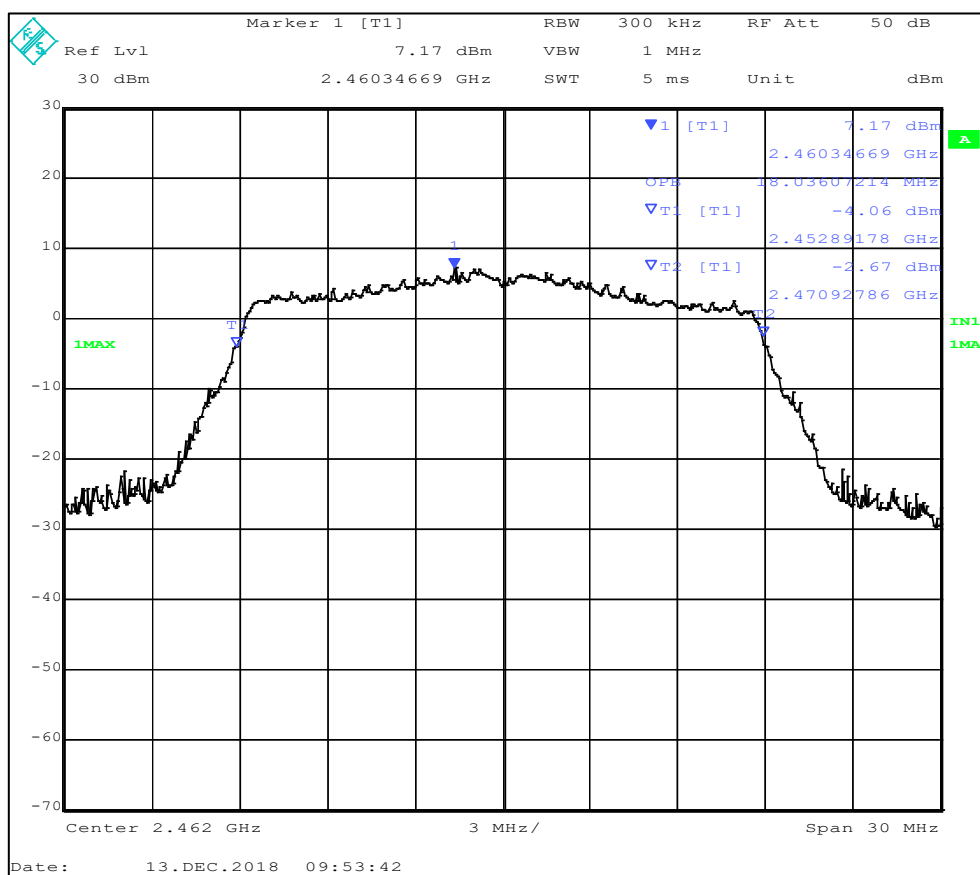


Figure 117. Occupied bandwidth 99% channel 11.

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| Channel | Frequency [MHz] | Occupied bandwidth 99% [MHz] | Result |
|---------|-----------------|------------------------------|--------|
| 1 | 2412 | 18.1161 | PASSED |
| 2 | 2417 | 18.4369 | PASSED |
| 3 | 2422 | 19.4790 | PASSED |
| 7 | 2442 | 19.2986 | PASSED |
| 9 | 2452 | 18.6373 | PASSED |
| 10 | 2457 | 18.1563 | PASSED |
| 11 | 2462 | 18.0361 | PASSED |

Table 67. 99% Occupied bandwidth results.

2.9.3 Test equipment

| Description | Supplier | Model | Tag no. | Cal. due date |
|--------------------------------|-----------------|---------|---------|---------------|
| Receiver EMI Test 20Hz-26.5GHz | Rohde & Schwarz | ESIB 26 | 18880 | 2019-09-24 |

Table 68. 99% Occupied bandwidth test equipment.

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3 MEASURING UNCERTAINTIES

Compliance evaluation is based on a shared risk principle with respect to the measurement uncertainty.

| | Frequency [MHz] | Polarization | Expanded Uncertainty [dB] (k=2) |
|---------------------------------|--------------------|--------------|---------------------------------------|
| Radiated emission | 30 - 200 | Vertical | 4.59 |
| | 200 - 1000 | Vertical | 4.77 |
| | 1000 - 18000 | Vertical | 3.76 |
| | 18000 - 25000 | Vertical | 4.10 |
| | 30 - 200 | Horizontal | 4.57 |
| | 200 - 1000 | Horizontal | 4.86 |
| | 1000 - 18000 | Horizontal | 3.77 |
| | 18000 - 26500 | Horizontal | 4.11 |
| Conducted emission (CISPR 16-4) | 0.01 - 30 | - | 3.44 |
| Conducted emission (ESIB 26) | <1000 | | 2.58 |
| | 1000 - 7000 | | 2.76 |
| | 7000 - 18000 | | 3.38 |
| | 18000 - 26500 | | 3.79 |