EKTOS
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REPORT

Accredited by DANAK under registration number 563 to testing.
TEST: Testing laboratory (DS/EN ISO/IEC 17025)
FCC reg. no.: DK0002
ISED: CABID: DK0001, Company Number: 10247A,

Test Report

of

Airofit Breathing Trainer:
AF003

FCC ID: 2ATQX-AF003
ISED ID: 25191-AF003

according to

FCC 47 CFR, Part 15 Subpart C
15.247 Operation within the band 2400 - 2483.5 MHz

and

RSS-247 issue 2 - Digital transmission system

Performed by

Søren Søltoft
Senior EMC Engineer

Examined by

David Busk
Lab. Manager, M. Sc. EE.

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Report no.:	P21-0177-1 rev. 1	**Report date:**	2022-05-06
Test started:	2022-01-11	**Test ended:**	2022-02-07
Test laboratory:	EKTOS TRS A/S Hammerholmen 45A 2650 Hvidovre Denmark	**Client:**	Airofit A/S Rønnegade 1, 5th floor 2100 København Denmark
Contact person:	David Busk	**Contact person:**	Christoffer Dupont

Facility reg. no.	FCC Designation number: DK0002 ISED: CABID: DK0001, Company Number: 10247A
Test specimen:	Airofit Breathing Trainer: AF003
Test specification:	FCC 47 CFR Part 15 Subpart C 15.247 Operation within the band 2400 - 2483.5 MHz RSS-247 issue 2 - Digital transmission system. The tests relevant for the test specimens are listed in *section 1.1*.
Documentation:	P21-0777-1 rev. 1 supersedes P21-0777-1 issued 2022-03-11. Changes: Corrected values in table 15 and table 16. 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 Søltoft David Busk

CONTENTS

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 RSS-247	15.247 Operation within the band 2400 – 2483.5 MHz 5. DTS operating in the band 2400 – 2483.5 MHz	PASSED
-	Duty cycle measurement	n.a.
47 CFR Part 15.247 (a) (2) RSS-247 5.2 (a)	6 dB bandwidth	PASSED
47 CFR Part 15.247 (b) (3) RSS-247 5.4 (d)	Maximum peak conducted output power	PASSED
47 CFR Part 15.247 (d) RSS-247 5.5	Emission outside frequency band	PASSED
47 CFR Part 15.247 (d) RSS-247 3.3	Emission in restricted bands	PASSED
47 CFR Part 15.247 (d)	Band Edge	PASSED
47 CFR Part 15.247 (e) RSS-247 5.2 (b)	Power spectral density	PASSED
47 CFR Part 2.1049 RSS-Gen 6.7	Occupied bandwidth	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.
n.a.	Test performed to establish the duty cycle correction factor.

1.2 Test Specimen

Manufacturer	Airofit
Name	Airofit Breathing Trainer
Model	AF003
Firmware	radio_test_pca10040, 23. November 2021, 09:20:25
Hardware	AF003
Supply voltage	Internal rechargeable Li-Ion battery

The 2.4 GHz Bluetooth Low Energy radio uses frequencies in the band 2400 - 2483.5 MHz.
As the frequency range is greater than 10 MHz 3 frequencies are selected for test.

For the conducted test a unit stripped of housing and equipped with a temporary antenna connector was used.
For radiated test a unit in casing was used. It was modified with 3 wires for programming the radio parameters. During Emission in restricted bands test these wires were shortened to approx. 5 mm.
Both types of test specimen were running a radio test firmware
The following channels were used for testing.
Channel 18 at 2442 MHz.
Channel 37 at 2402 MHz.
Channel 39 at 2480 MHz.

Setting of the radio parameters was done according to instructions provided by Nordic Semiconductor in a terminal window on a laptop.
All measurements were performed with default RF output power setting at 0 dBm.

Because of limited battery capacity a 5 VDC USB charger was used during most tests to ensure maximum supply voltage during tests. This is only possible because it is running a test FW. It will not be possible to activate radio while charging in final firmware.

See photo in appendix 1.

1.1 Auxiliary Equipment

1.1.1 AC/DC adaptor

Manufacturer	Nokia
Model	AC-50E
Serial no.	409049326369070864506756l9
Details	-
Supply voltage	AC 100 – 240 V 0.20A (120 VAC used during tests)
Output voltage	DC 5 V / 1.3 A
Operational mode	Used as typical charger

See photo in appendix 1.

1.1.2 Laptop

Manufacturer	Lenovo
Model	ThinkPad L460
Serial no.	-
Software	Microsoft Windows 10 Professional
Details	-
Supply voltage	20 VDC from AC/DC power supply

The Laptop was used to configure test specimen into correct mode of operation by means of terminal program and commands specified by from Nordic Semiconductor. A USB to 6-wire adaptor was delivered by client to connect to test specimen during set up of parameters.

1.2 I/O port to test specimen

I/O Port	Type	Shielding	Cable length
Micro USB for charging	Micro USB	Shielded	< 3m
Temporary Programming port	3 wire	-	< 3m

2 TESTS

2.1 Antenna requirements

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.203 and 15.247 (b) (4)
Test method	None
Comments	None
Dates of measurements	2022-01-12
Test personnel	Søren Søltoft

2.1.1 Test result

The test specimen has an internal antenna, which is part of the printed circuit board, and therefore not replaceable.

The highest antenna gain was measured to 0.0 dBi at channel 37 (2402 MHz).

Requirement	Result
47 CFR 15.203	PASSED
47 CFR 15.247 (b) (4)	PASSED

Table 1. Antenna requirements test results.

2.2 Duty Cycle

Test specimen	AF003
Test specification	FCC 47 CFR Part 15 Subpart C
Test method	ANSI C63.10:2013 sec. 11.6, b)
Comments	None
Temperature / Humidity	22°C / 31%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.2.1 Test setup

The test was performed conducted at the temporary antenna connector.
The measurement was performed using zero-span mode on a spectrum analyzer.
The duty cycle was measured at channel 37 at 2402 MHz.

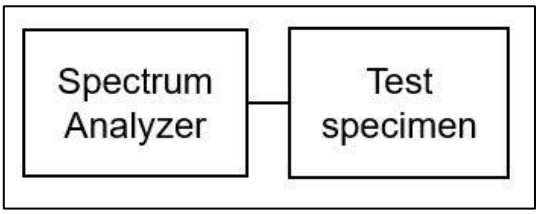

Figure 1. Test setup.

2.2.2 Test result

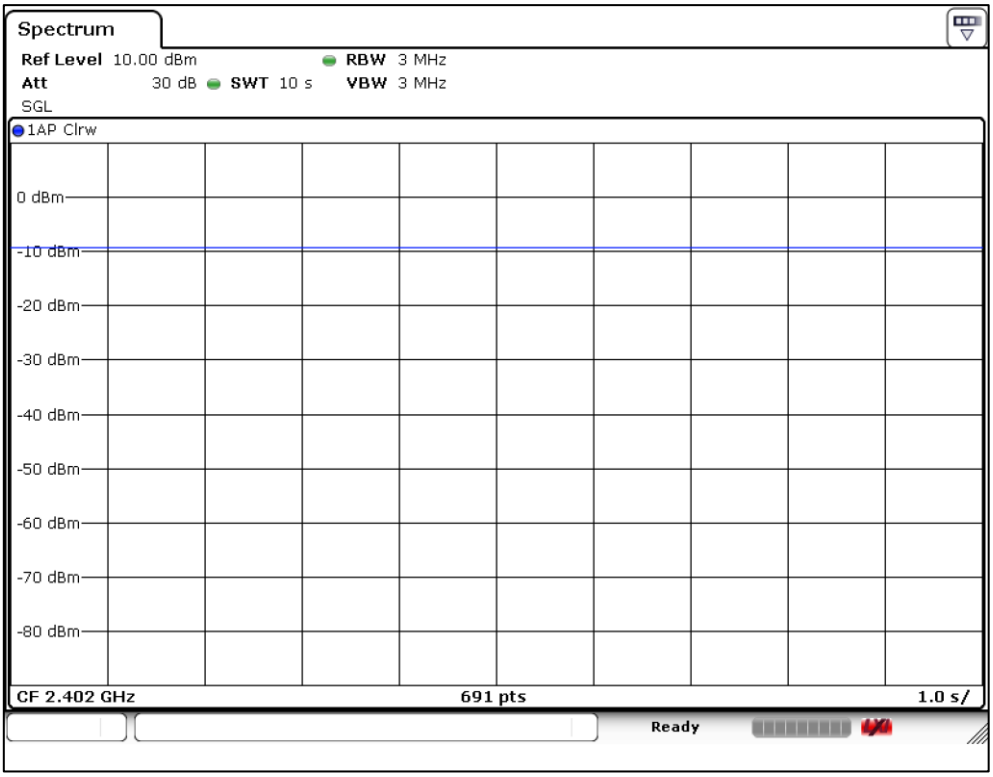

Figure 2. Duty Cycle.

The duty cycle was 100%.
No transmission stops were detected in zero span mode with sweep time variating between 1 us and 10 s.

2.2.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	30150092	2022-11-30

2.3 6 dB Bandwidth

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.247 (a) (2) RSS-247 5.2 (a)
Test method	ANSI C63.10:2013 sec. 11.8.2
Comments	None
Temperature / Humidity	23°C / 37%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.3.1 Test setup

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

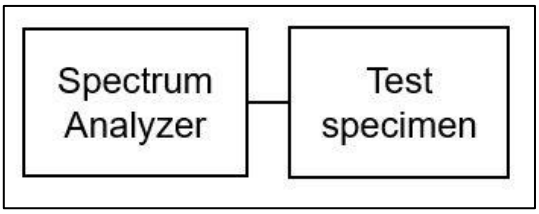

Figure 3. Test setup.

See photo of test set up in appendix 1.

2.3.2 Test result

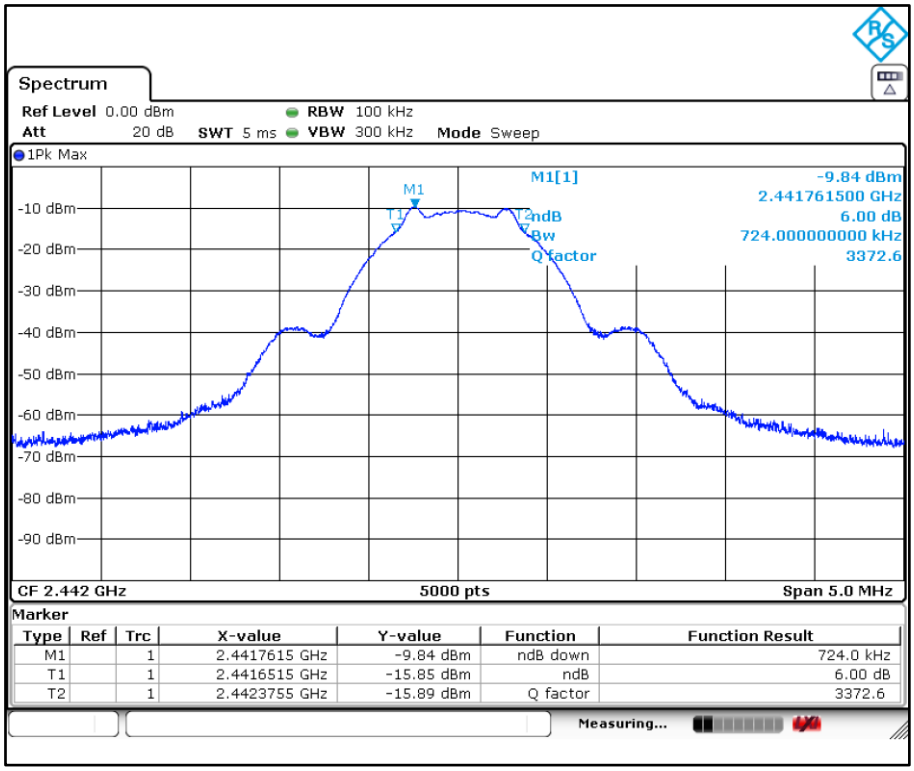

Figure 4. 6 dB Band Width at channel 18 .

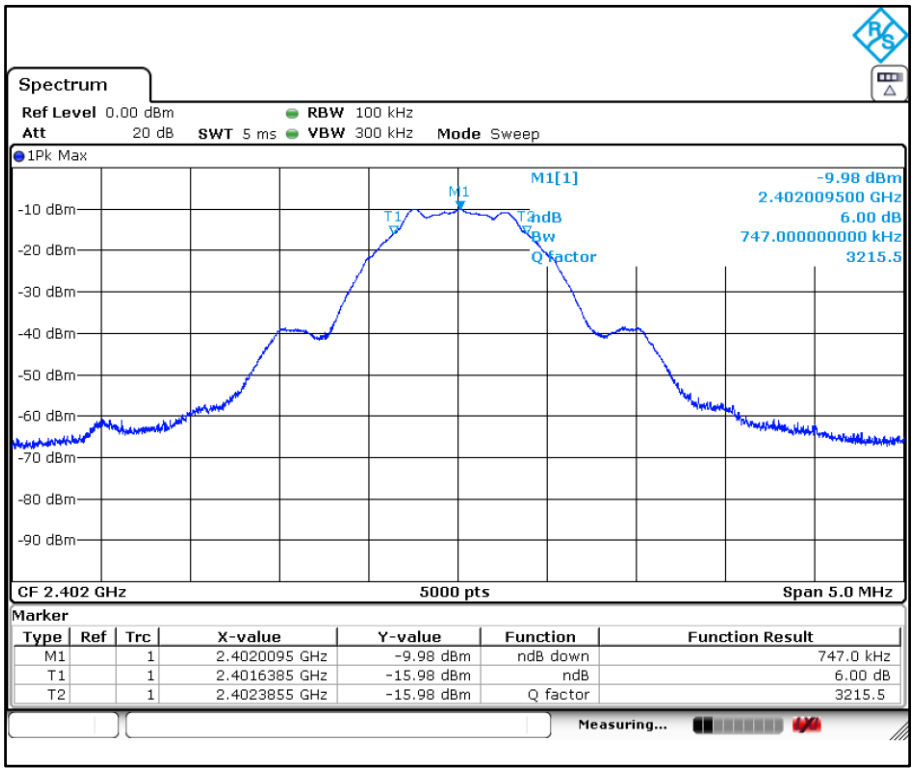

Figure 5. 6 dB Band Width channel 37.

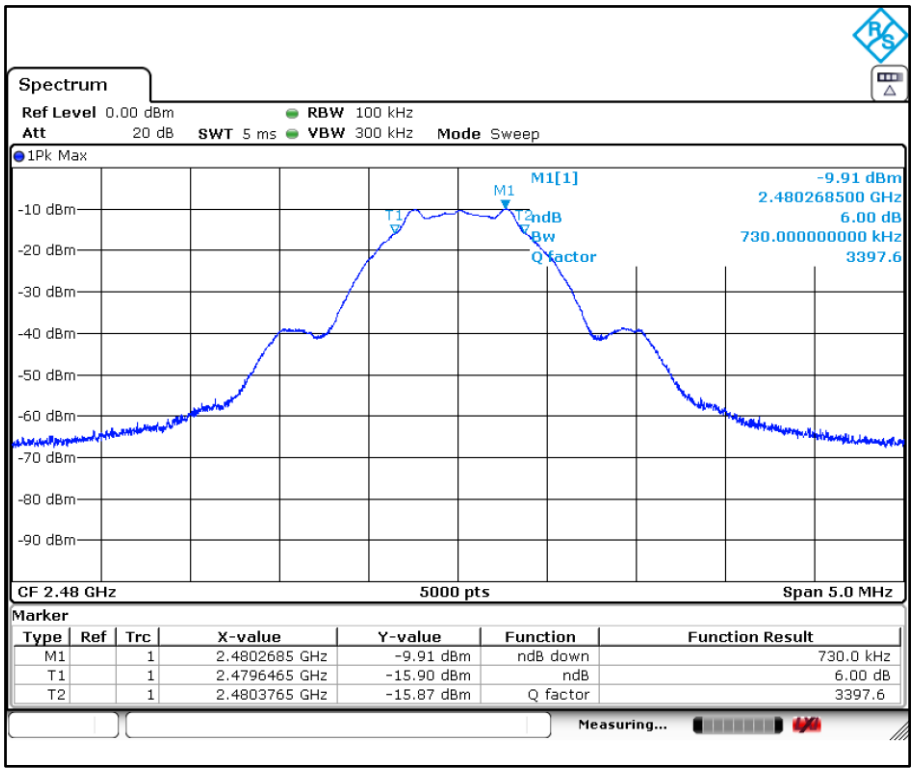

Figure 6. 6 dB Band Width channel 39.

Channel	Frequency [MHz]	6 dB BW [kHz]	Limit [kHz]	Result
18	2442	724	500	PASSED
37	2402	747	500	PASSED
39	2480	730	500	PASSED

Table 2. 6 dB Bandwidth.

2.3.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	30150092	2022-11-30
Multimeter	Hewlett Packard	34401A	30114880	2022-01-14
Power Supply 0-15V 7A, 0-30V 4A	Hewlett Packard	E3632A	30114306	-

2.4 Maximum peak conducted output power

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.247 (b) (3) RSS-247 5.4 (d)
Test method	ANSI C63.10:2013 sec 11.9.1.1
Frequency range	2400-2483.5 MHz
Limits	FCC 47 CFR Part 15.247 (b) (3)
Comments	None
Temperature / Humidity	23°C / 37%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.4.1 Test setup

The test specimen was connected to a spectrum analyzer using a temporary antenna connector.
RBW 1 MHz ≥ DTS BW: 747 kHz.

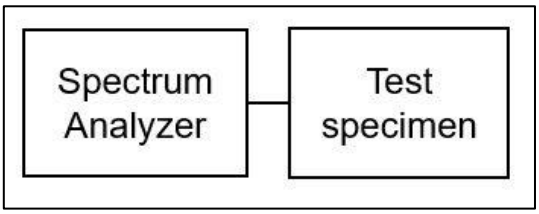

Figure 7. Test setup.

See photo of test set up in appendix 1.

2.4.2 Test results

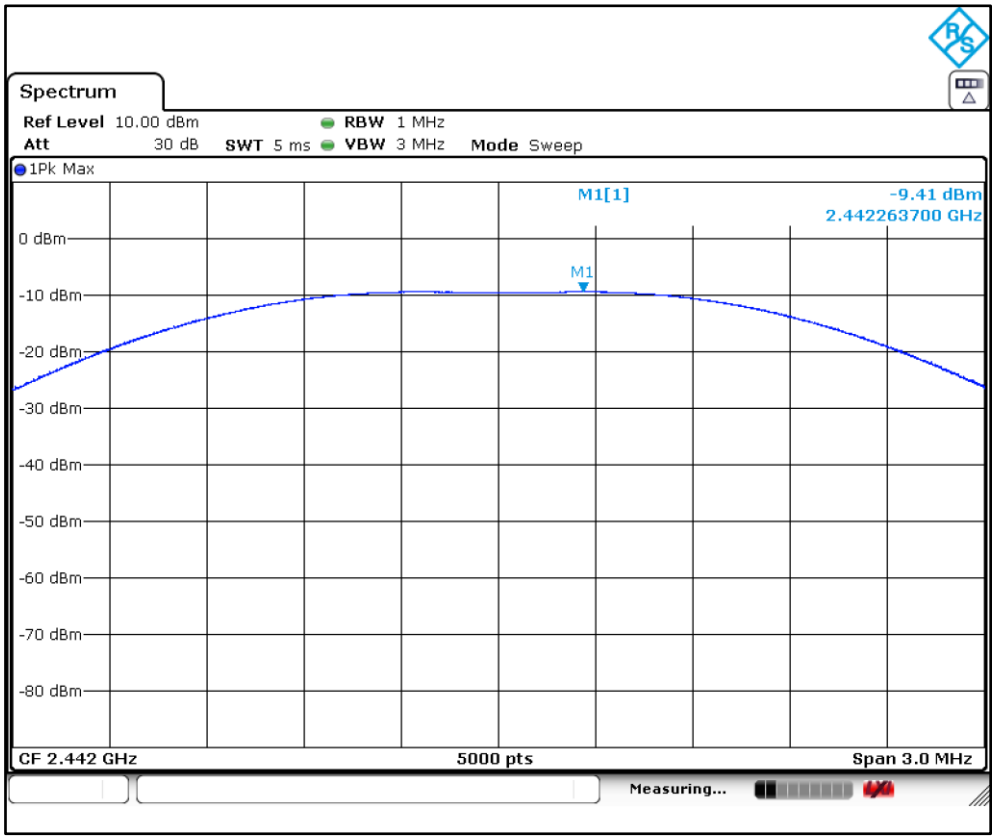

Figure 8. Output power channel 18.

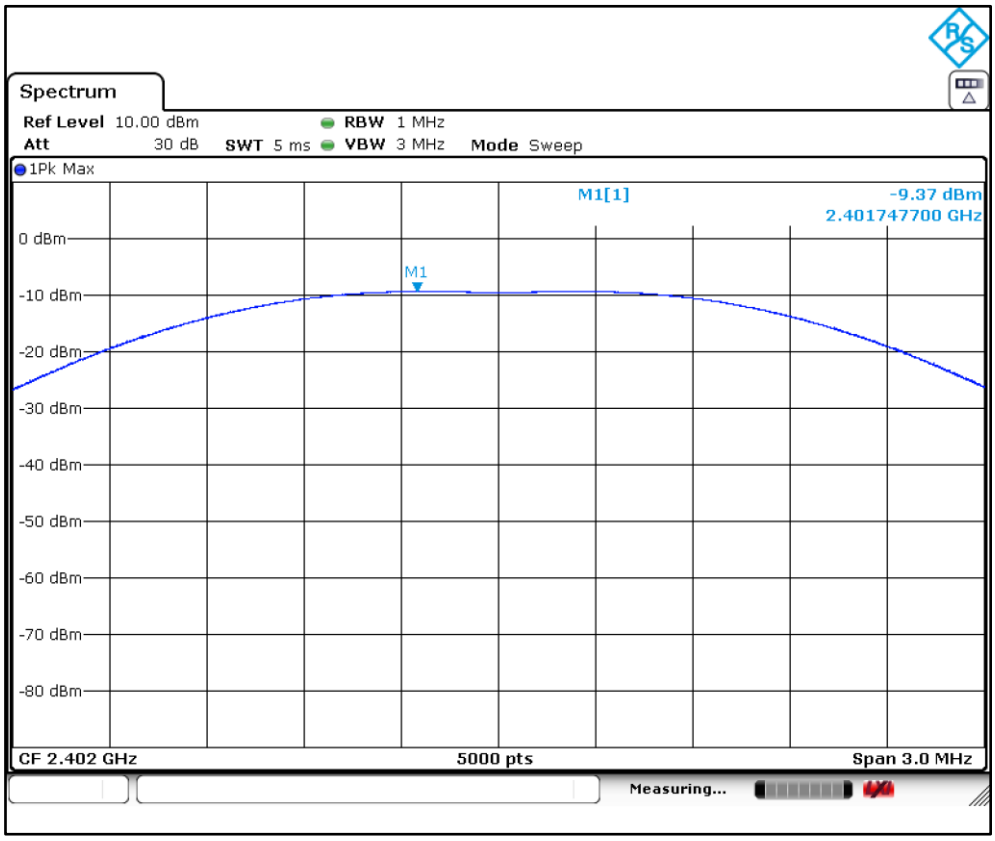

Figure 9. Output power channel 37.

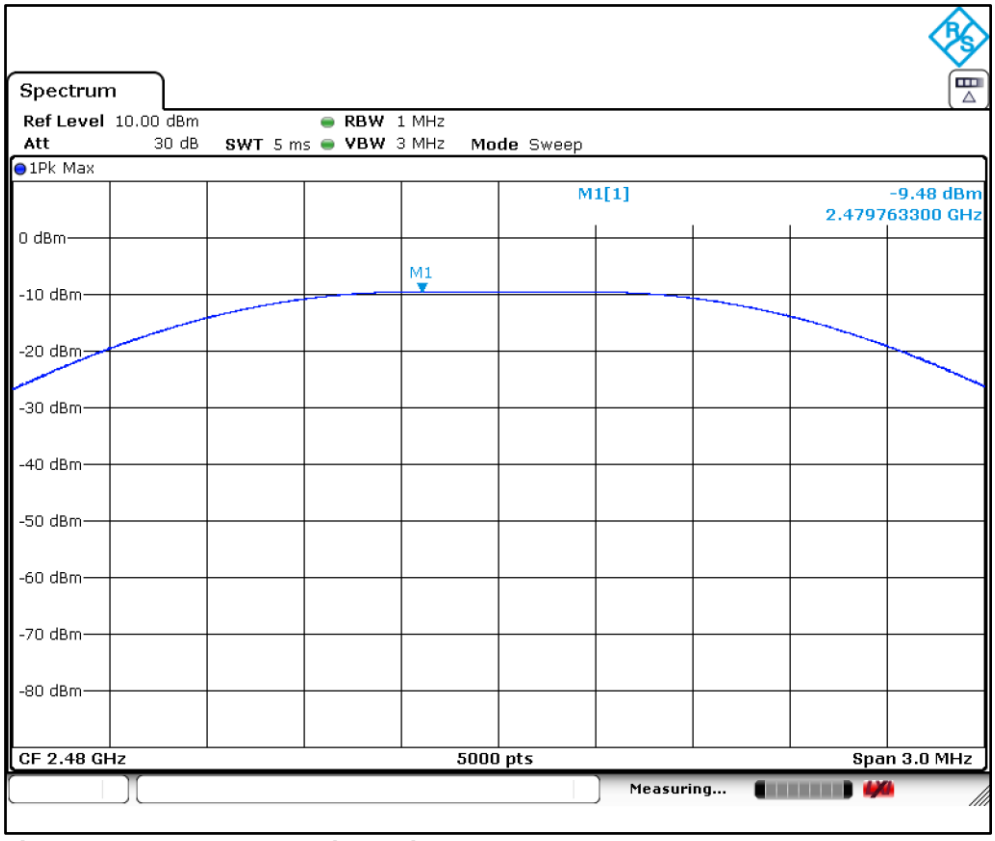

Figure 10. Output power channel 39.

The antenna gain is less than 6 dBi.

Channel	Frequency [MHz]	Output power [dBm]	Limit [dBm]	Result
18	2442	-9.41	30	PASSED
37	2402	-9.37	30	PASSED
39	2480	-9.48	30	PASSED

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

2.4.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	50092	2022-11-30
Multimeter	Hewlett Packard	34401A	14880	2022-01-14
Power Supply 0-15V 7A, 0-30V 4A	Hewlett Packard	E3632A	14306	-

2.5 Emission outside frequency band

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.247 (d) RSS-247 5.5
Test method	ANSI C63.10:2013 sec. 11.11
Frequency range	30 MHz – 25 GHz
Limits	FCC 47 CFR Part 15.247 (d).
Comments	None
Temperature / Humidity	23°C / 37%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.5.1 Test setup

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

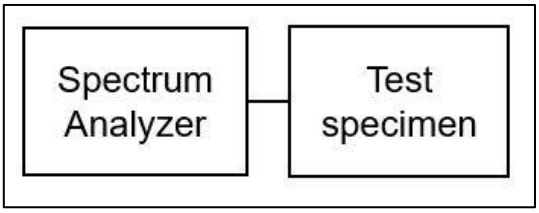

Figure 11. Test set up.

See appendix 1 for photo of test setup

2.5.2 Test results

2.5.2.1 Reference level for test.

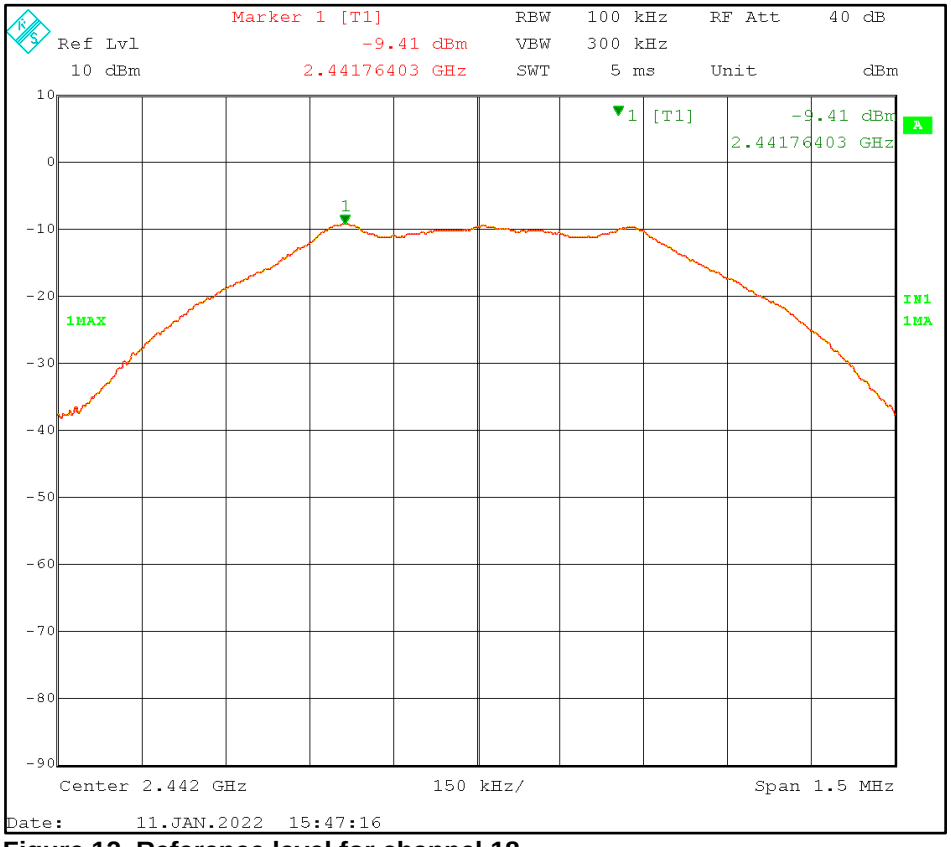

Figure 12. Reference level for channel 18.

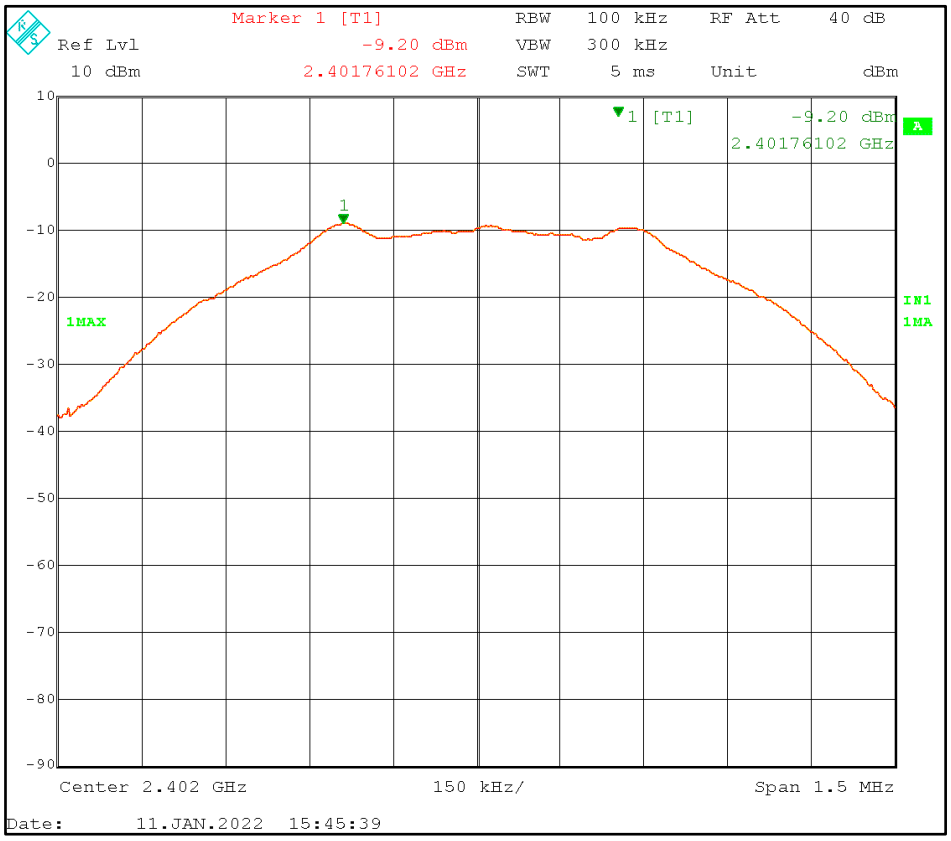

Figure 13. Reference level for channel 37.

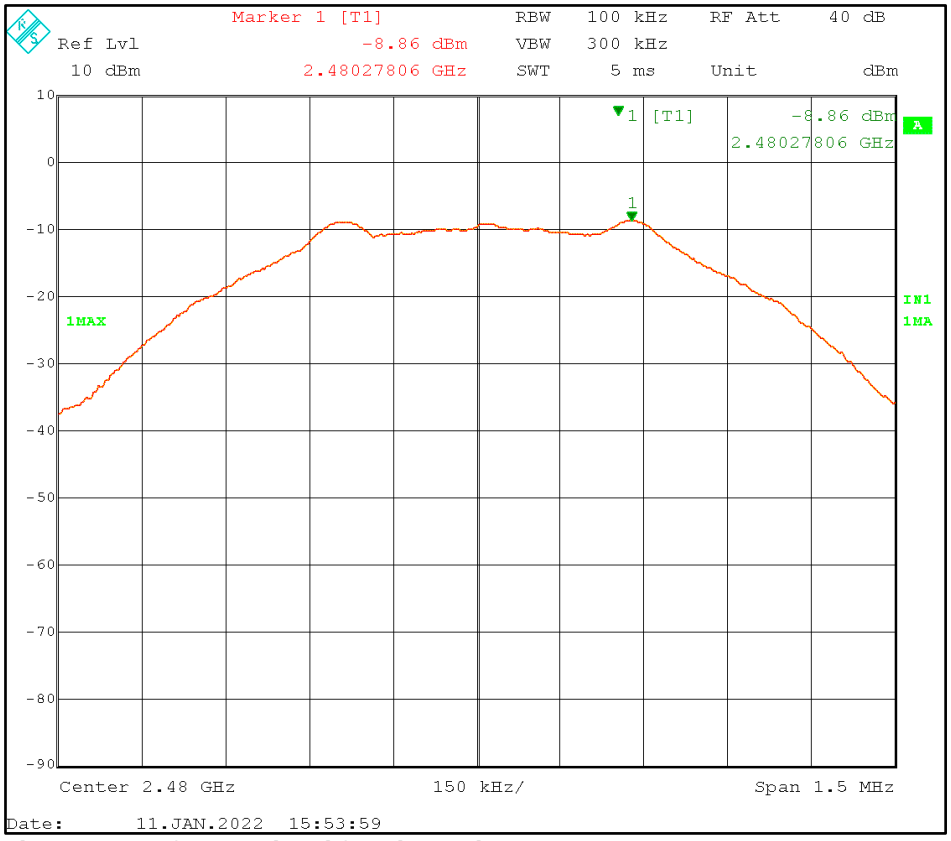

Figure 14. Reference level for channel 39.

2.5.2.2 Test result for channel 18 at 2442 MHz

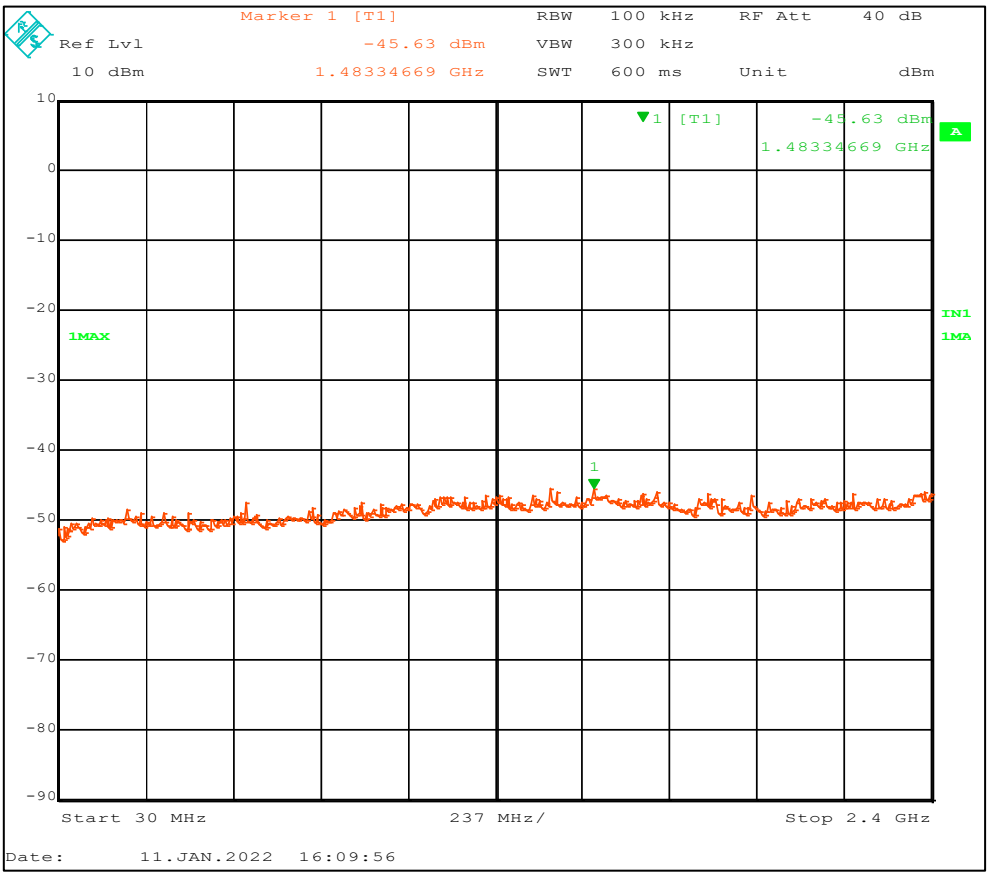

Figure 15. Emission test results. 30 MHz – 2.4 GHz.

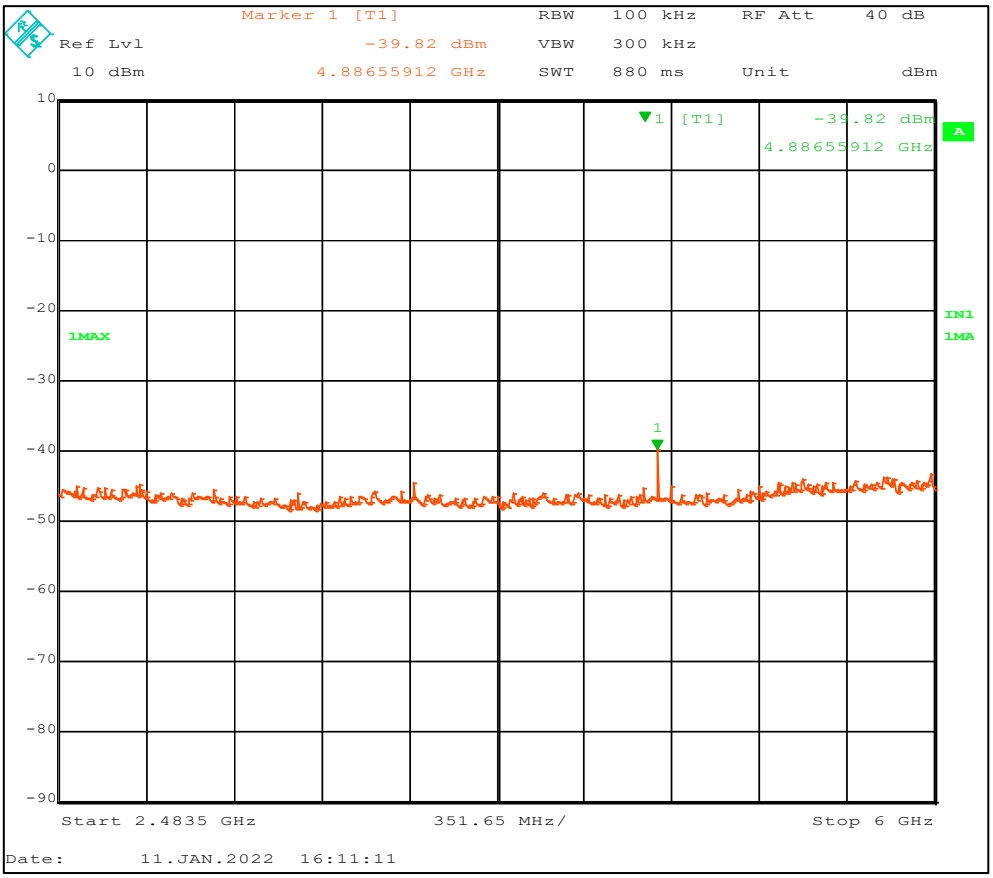

Figure 16. Emission test result 2.4835 GHz to 6 GHz.

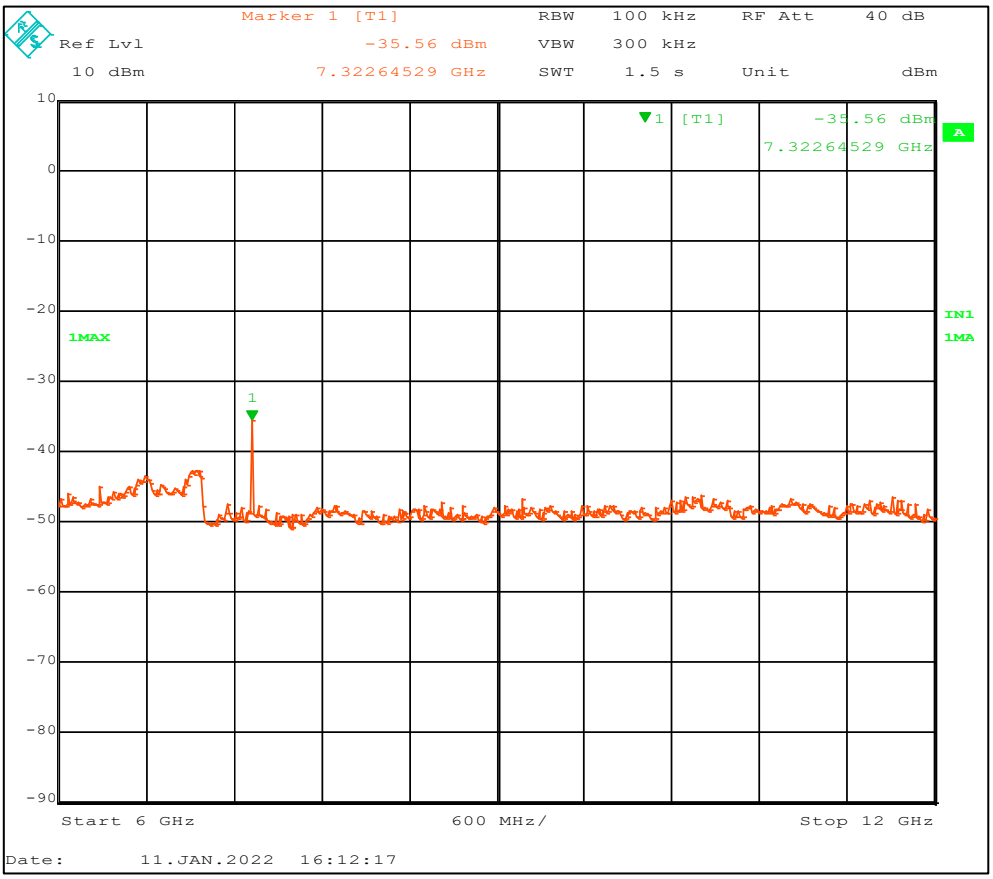

Figure 17. Emission test result 6 GHz to 12 GHz.

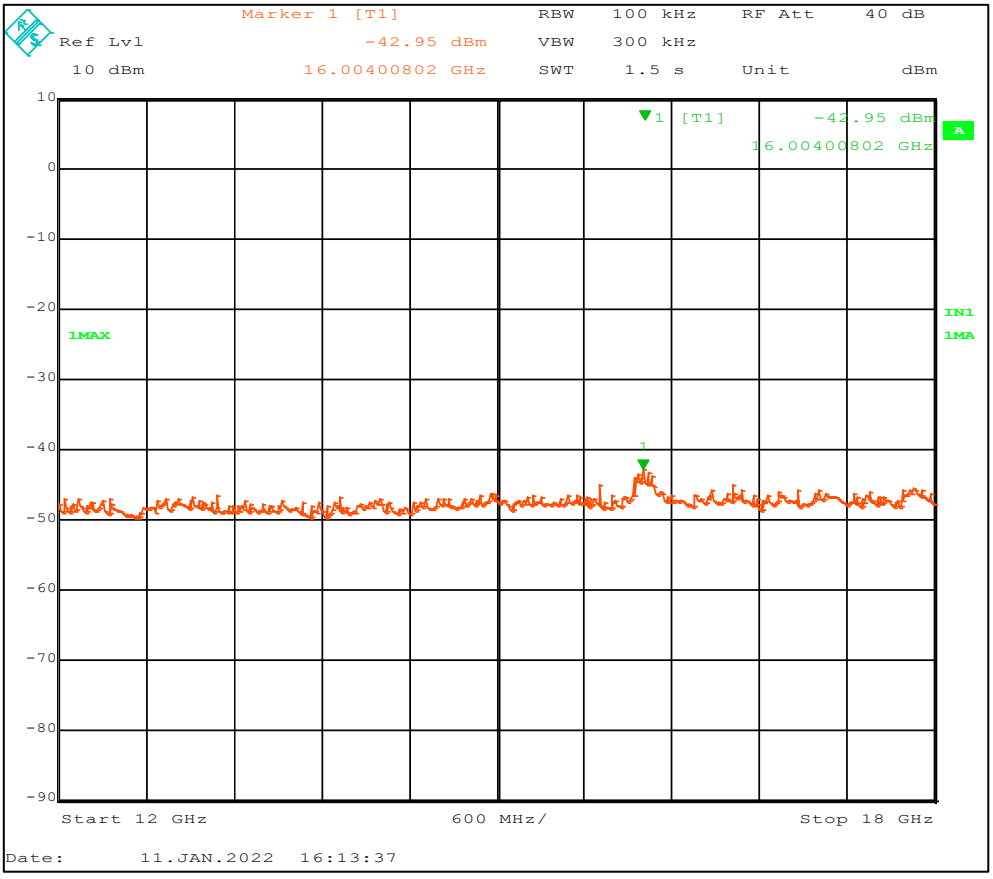

Figure 18. Emission test result 12 GHz to 18 GHz.

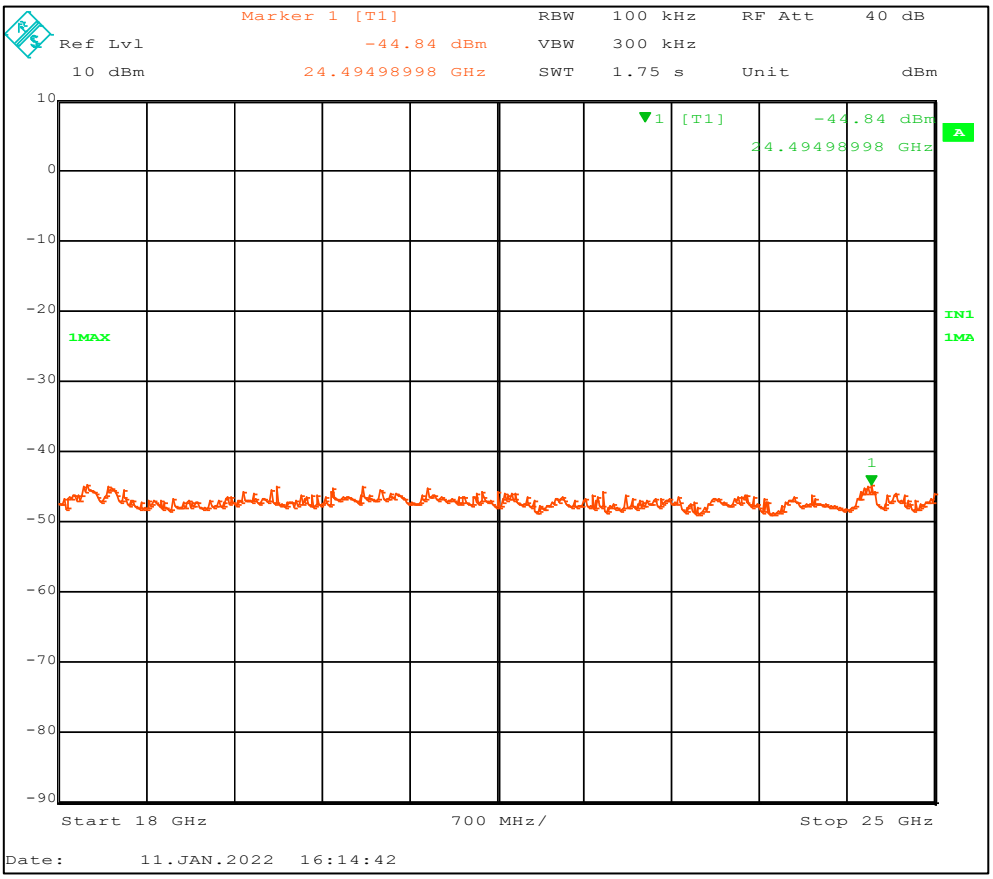

Figure 19. Emission test result 18 GHz to 25 GHz.

Frequency [MHz]	Peak [dBm]	BW [kHz]	Margin [dB]	Limit [dBm]	Result
1483.34669	-45.63	100	16.22	-29.41	PASSED
4886.55912	-39.82	100	10.41	-29.41	PASSED
7322.64529	-35.56	100	6.15	-29.41	PASSED
16004.00802	-42.95	100	13.54	-29.41	PASSED
24494.98998	-44.84	100	15.43	-29.41	PASSED

Table 3. Emission test results. Channel 18. 30 MHz to 25 GHz.

2.5.2.3 Test result for channel 37 at 2402 MHz

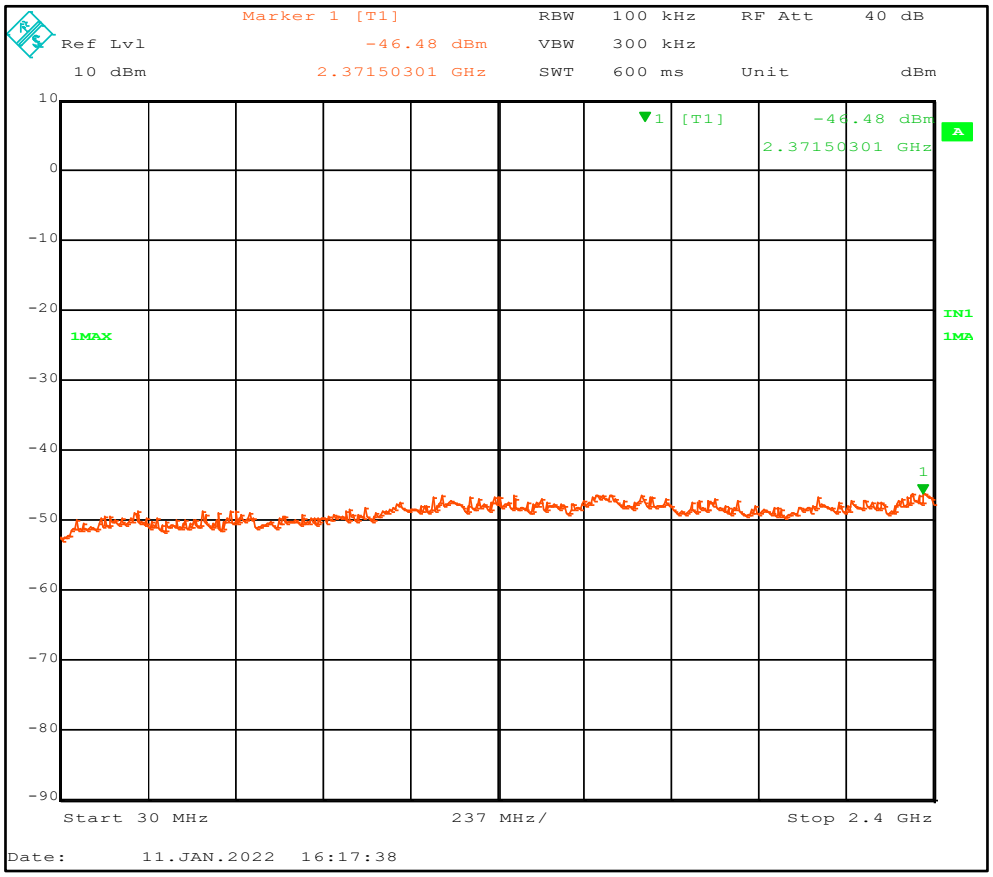

Figure 20. Emission test results. 30 MHz – 2.4 GHz.

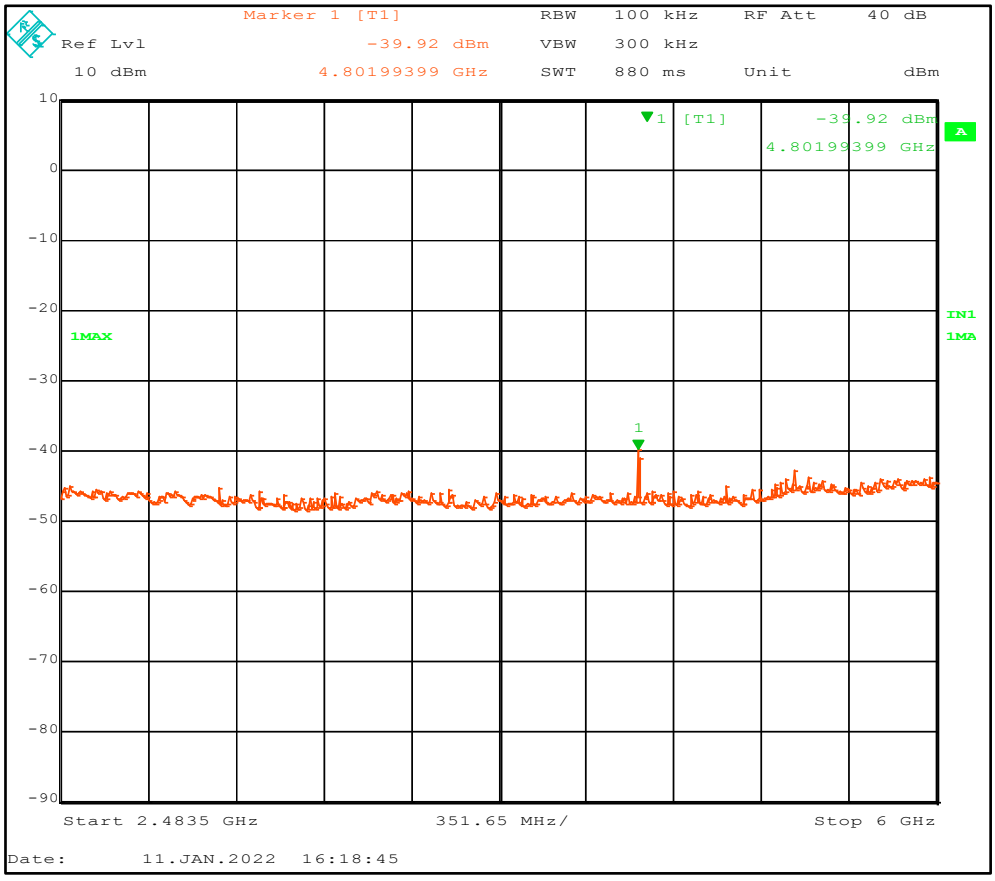

Figure 21. Emission test result 2.4835 GHz to 6 GHz.

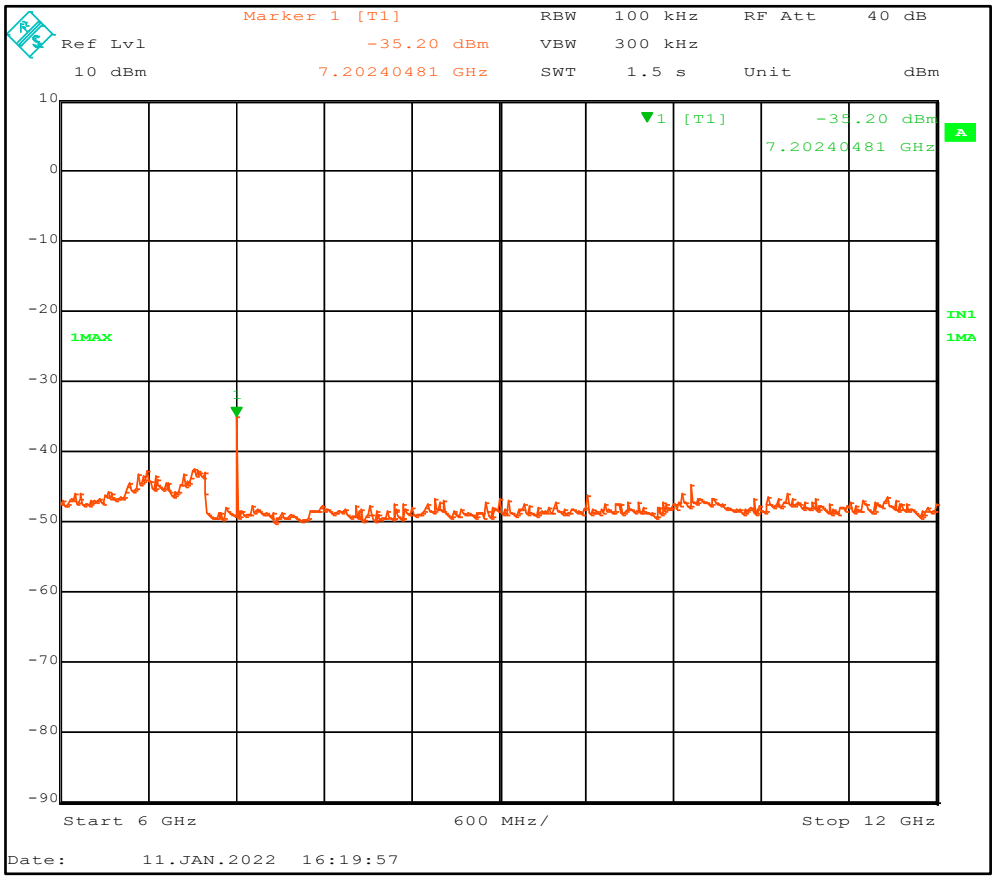

Figure 22. Emission test result 6 GHz to 12 GHz.

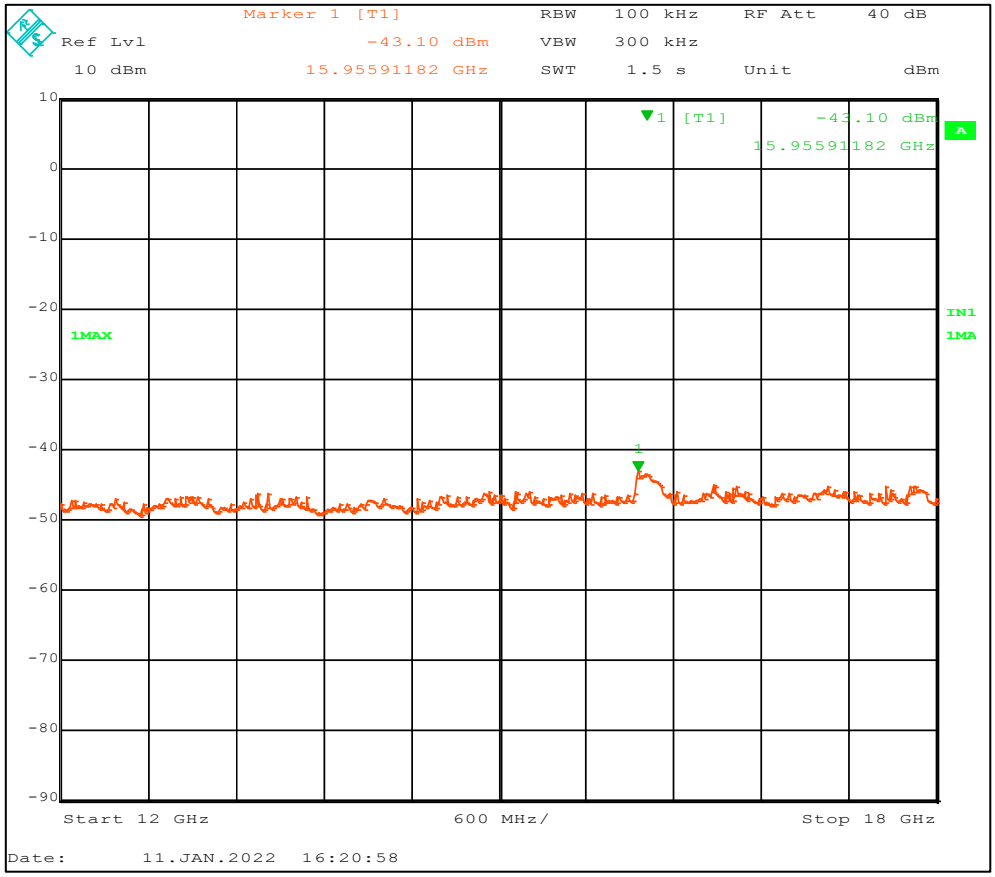

Figure 23. Emission test result 12 GHz to 18 GHz.

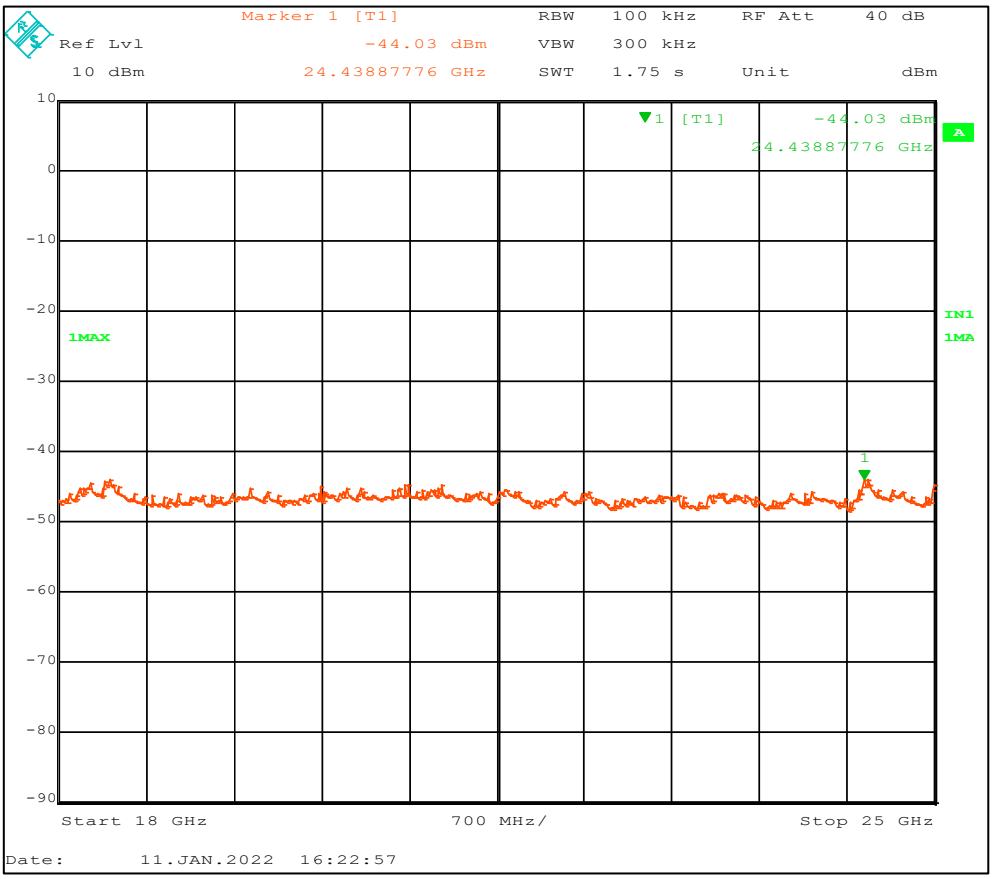

Figure 24. Emission test result 18 GHz to 25 GHz.

Frequency [MHz]	Peak [dBm]	BW [kHz]	Margin [dB]	Limit [dBm]	Result
2371.50301	-46.48	100	17.28	-29.2	PASSED
4801.99399	-39.92	100	10.72	-29.2	PASSED
7202.40481	-35.20	100	6.00	-29.2	PASSED
15955.91182	-43.10	100	13.90	-29.2	PASSED

Table 4. Emission test results. Channel 37. 30 MHz to 25 GHz.

2.5.2.4 Test result for channel 39 at 2480 MHz

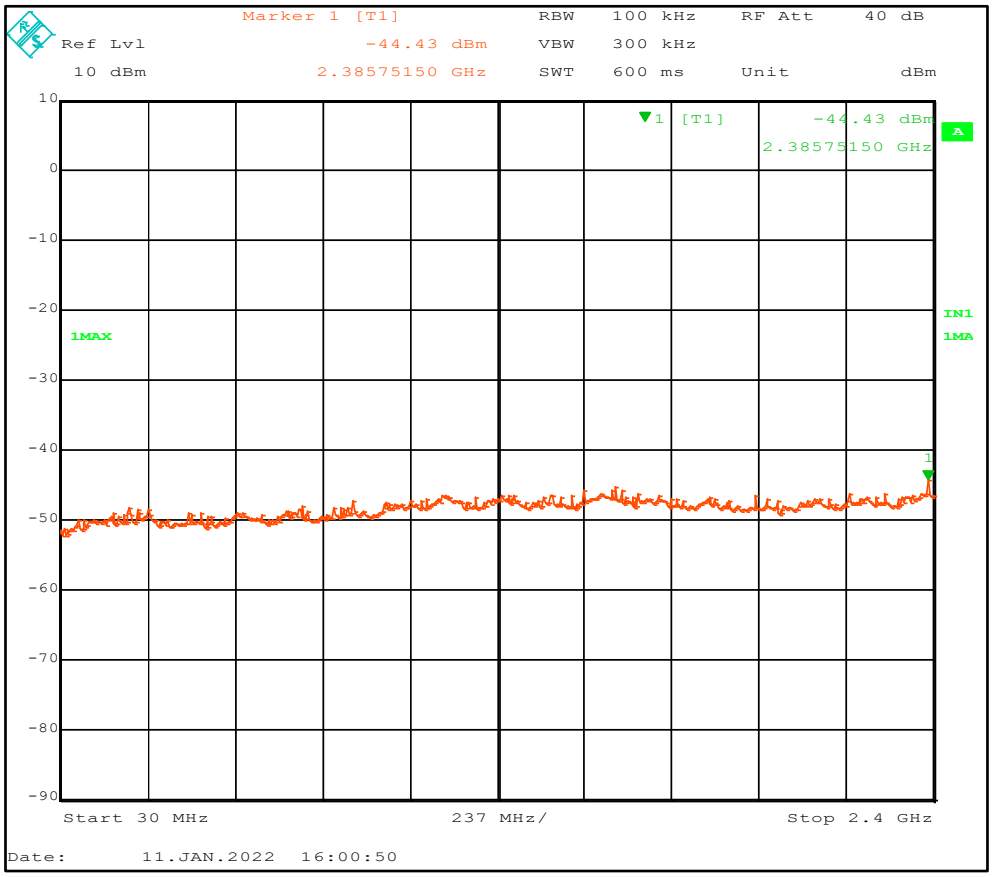

Figure 25. Emission test results. 30 MHz – 2.4 GHz.

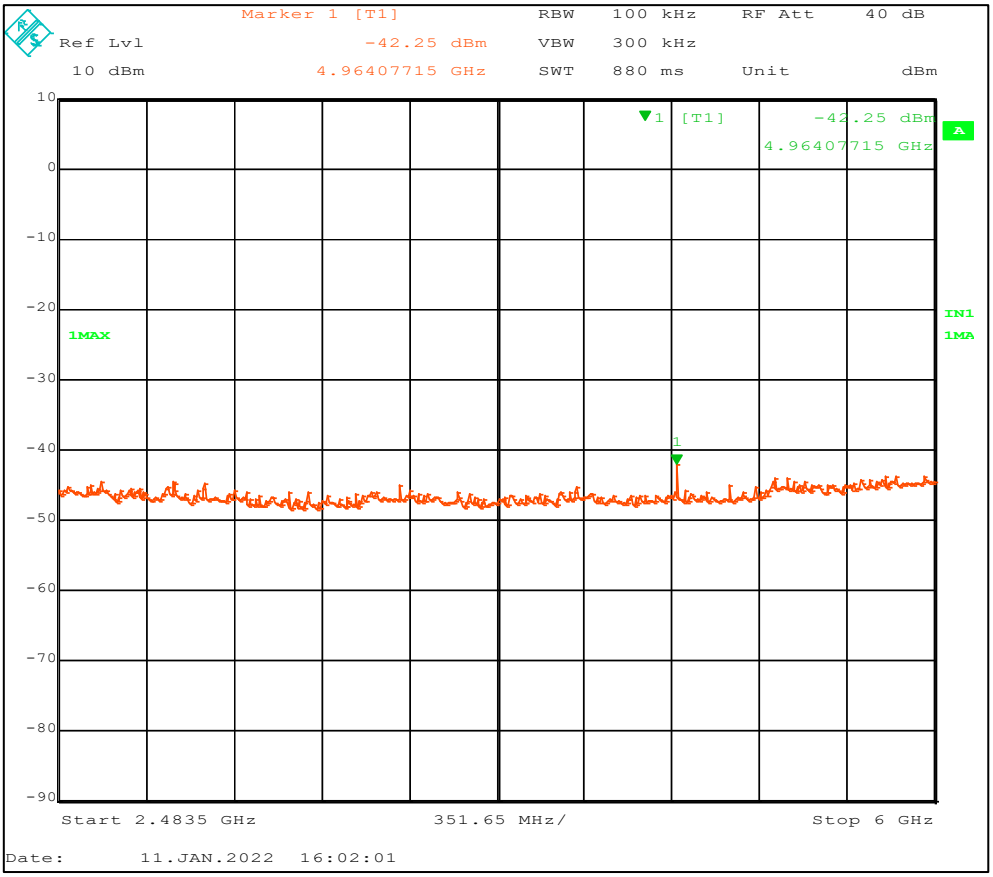

Figure 26. Emission test result 2.4835 GHz to 6 GHz.

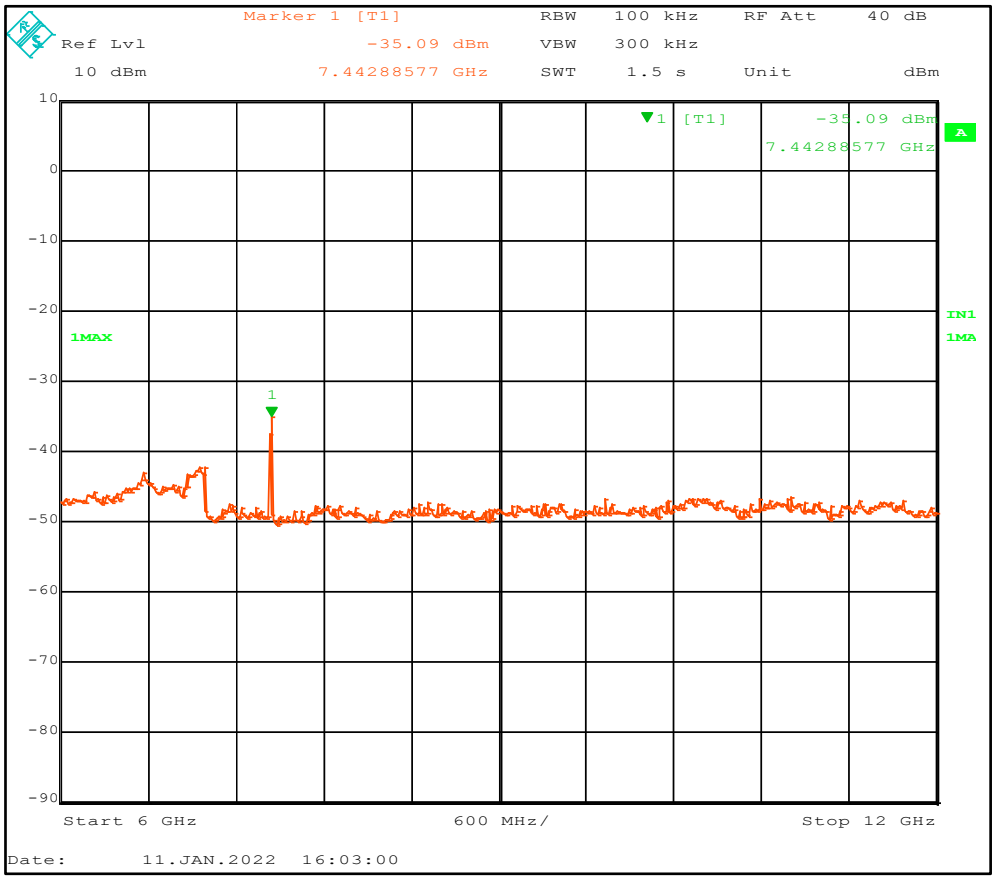

Figure 27. Emission test result 6 GHz to 12 GHz.

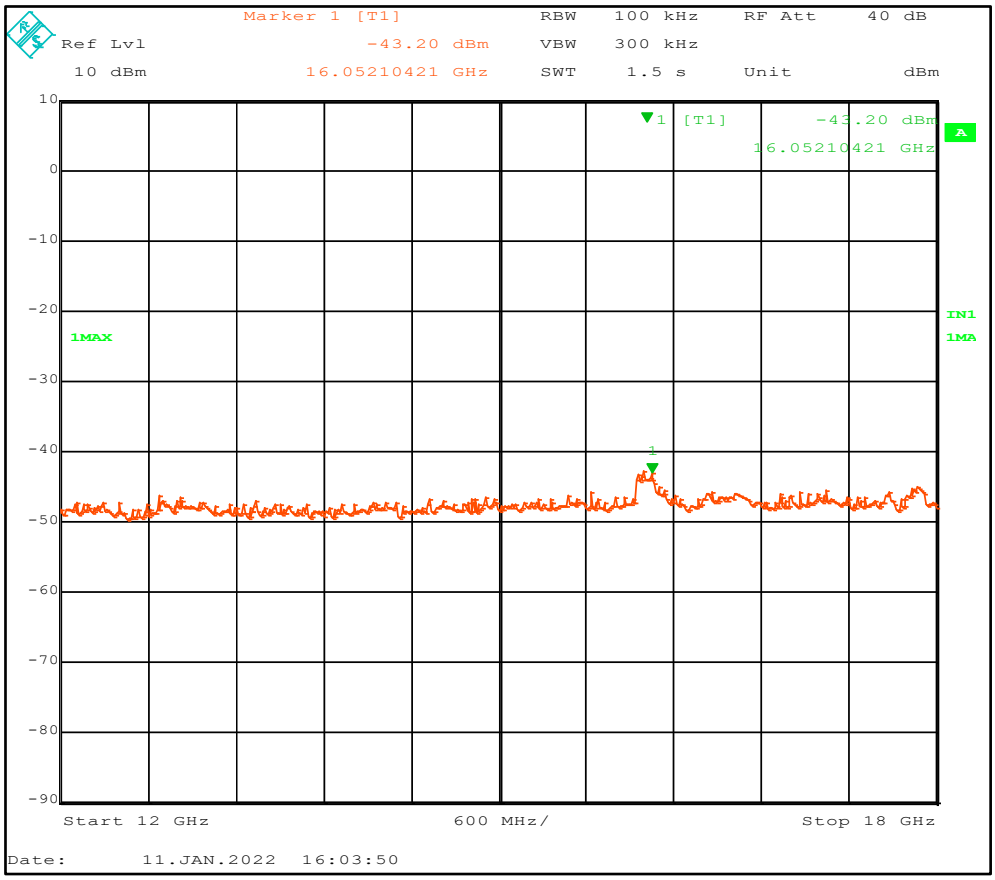

Figure 28. Emission test result 12 GHz to 18 GHz.

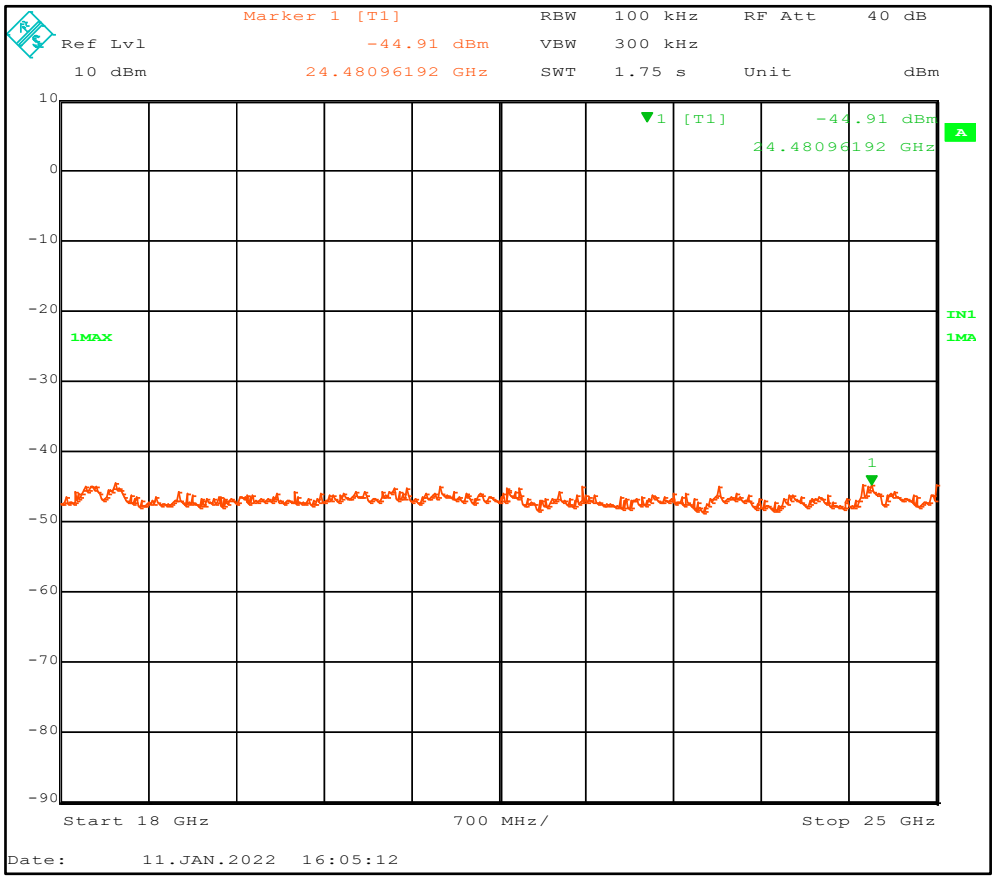

Figure 29. Emission test result 18 GHz to 25 GHz.

Frequency [MHz]	Peak [dBm]	BW [kHz]	Margin [dB]	Limit [dBm]	Result
2385.75150	-44.43	100	15.57	-28.86	PASSED
4964.07715	-42.25	100	13.39	-28.86	PASSED
7442.88577	-35.09	100	6.23	-28.86	PASSED
16052.10421	-43.20	100	14.34	-28.86	PASSED
24480.96192	-44.91	100	16.05	-28.86	PASSED
2385.75150	-44.43	100	15.57	-28.86	PASSED

Table 5. Emission test results. Channel 39. 30 MHz to 25 GHz.

2.5.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Receiver EMI Test 20Hz-26.5GHz	Rohde & Schwarz	ESI 26	20763	2012-01-23
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	50092	2022-11-30
Multimeter	Hewlett Packard	34401A	14880	2022-01-14
Power Supply 0-15V 7A, 0-30V 4A	Hewlett Packard	E3632A	14306	-

2.6 Emission in restricted bands

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.247 (d) RSS-247 3.3
Test method	ANSI C63.10:2013 sec. 11.12
Frequency range	30 MHz – 25 GHz
Limits	FCC 47 CFR Part 15.209 in restricted bands.
Comments	None
Temperature / Humidity	21 - 24°C / 33 - 42%RH
Dates of measurements	2022-01-13, 2022-01-14, 2022-01-17, 2022-01-21, 2022-02-07
Test personnel	Søren Søltoft, David Busk

2.6.1 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.

The test specimen was supplied by a typical ACDC adaptor with USB interface to insure maximum voltage during test. In normal use transmitting during charging is not possible.

Channel 18 (2442 MHz) was tested in 3 orientations (Vertical, horizontal and horizontal -90 degree).

The worst case orientation was found to be horizontal which was used for test on channel 37 and channel 39.

Because the result was relative close to limit in the frequency range 3 GHz to 13.5 GHz the two remaining orientations for channel 37 and channel 39 were also measured in this frequency range.

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 13.5 GHz.

In range 13.5 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

The duty cycle of the fundamental was measured to 100%.

See appendix 1 for photo of test set up

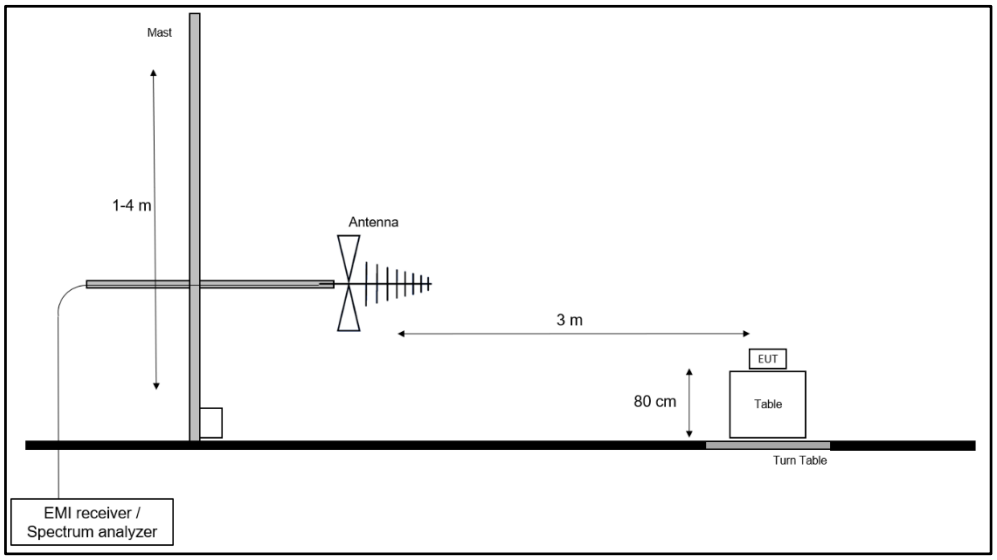

Figure 30. Test setup 30 – 1000 MHz.

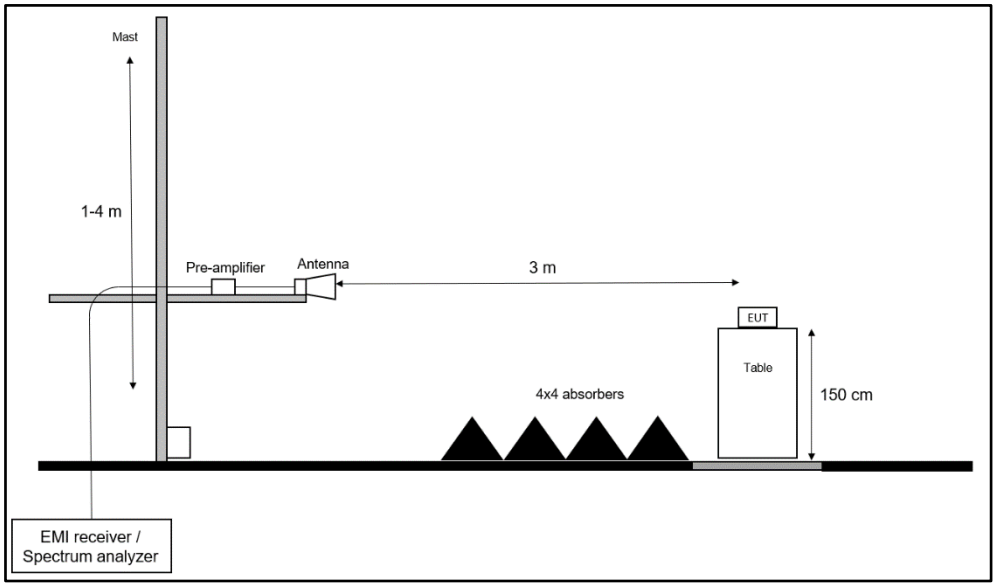

Figure 31. Test setup 1 – 13.5 GHz.

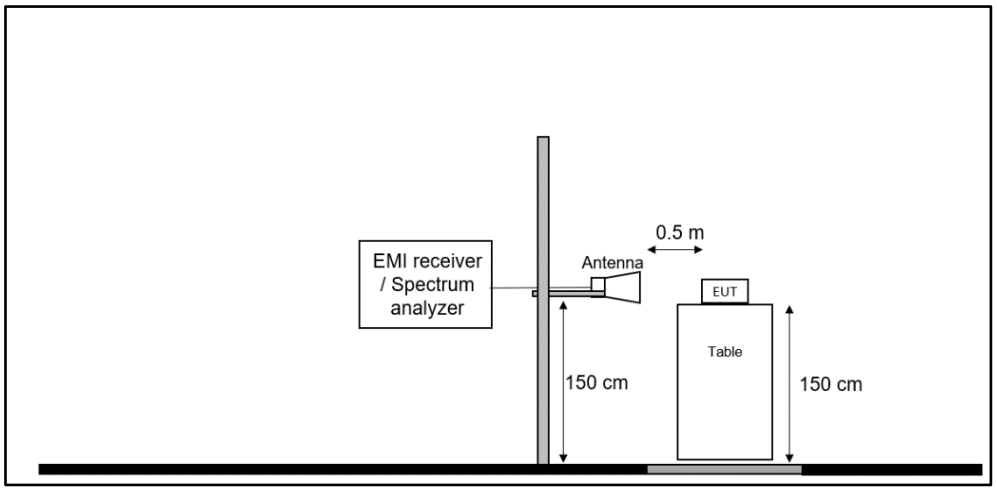

Figure 32. Test setup 13.5 – 25 GHz.

2.6.2 Test results

2.6.2.1 Channel 18 at 2442 MHz

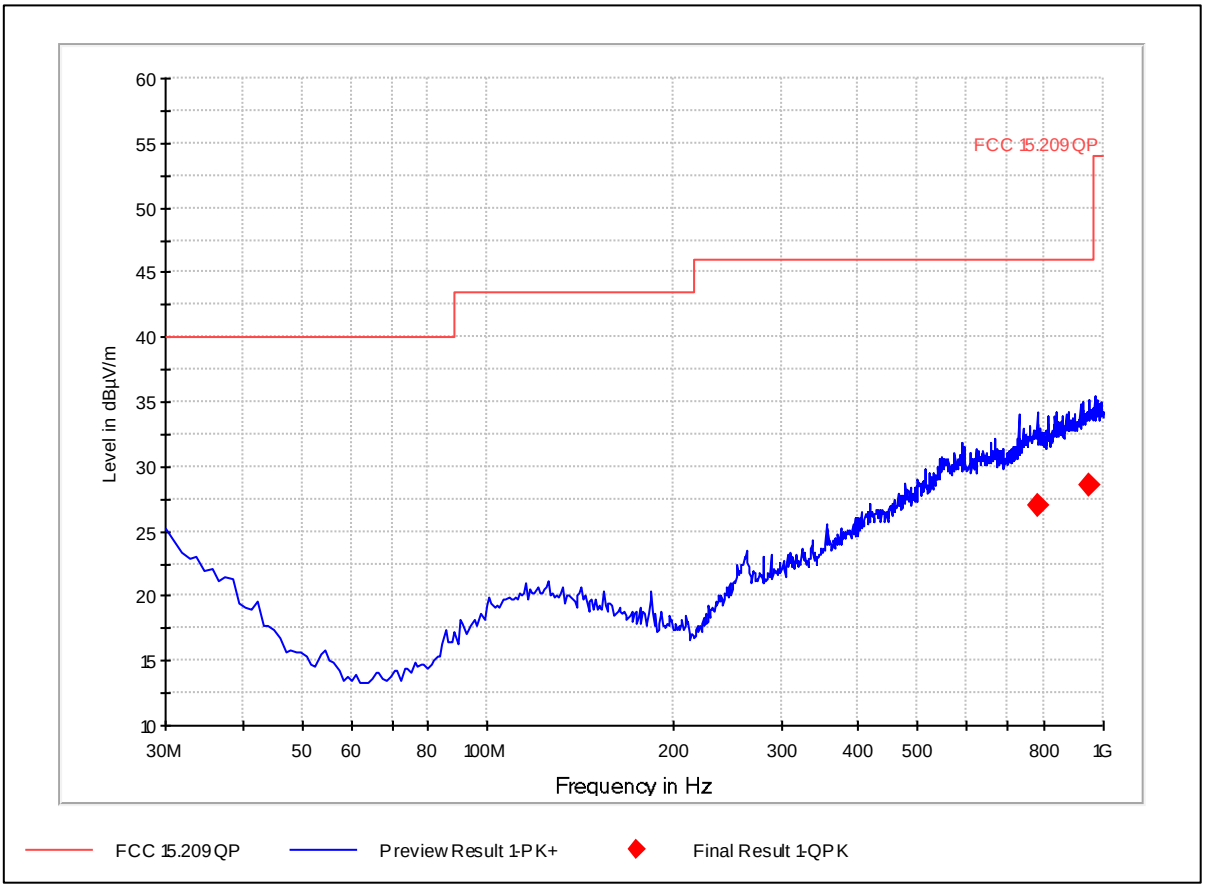

Figure 33. Radiated emission test results. 30 - 1000 MHz. EUT ver.

Frequency [MHz]	QP [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
780.071122	27.0	120	336.7	V	-22.0	-	-	-
946.181784	28.5	120	394.5	V	98.0	17.5	46.0	PASSED

Table 6. Radiated emission test results. 30 - 1000 MHz. Quasi peak detector. EUT ver.

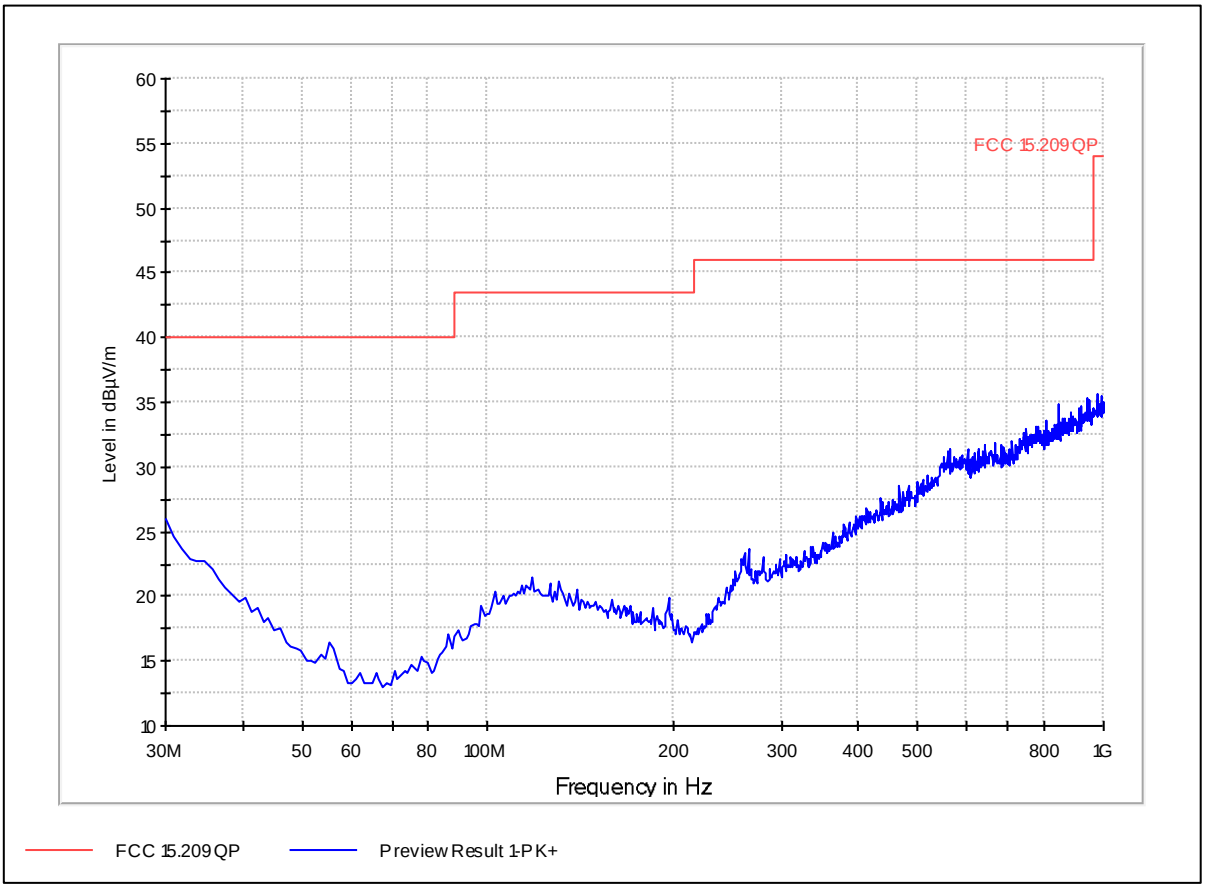

Figure 34. Radiated emission test results. 30 - 1000 MHz. EUT hor.

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

Table 7. Radiated emission test results. 30 - 1000 MHz. Quasi peak detector. EUT hor.

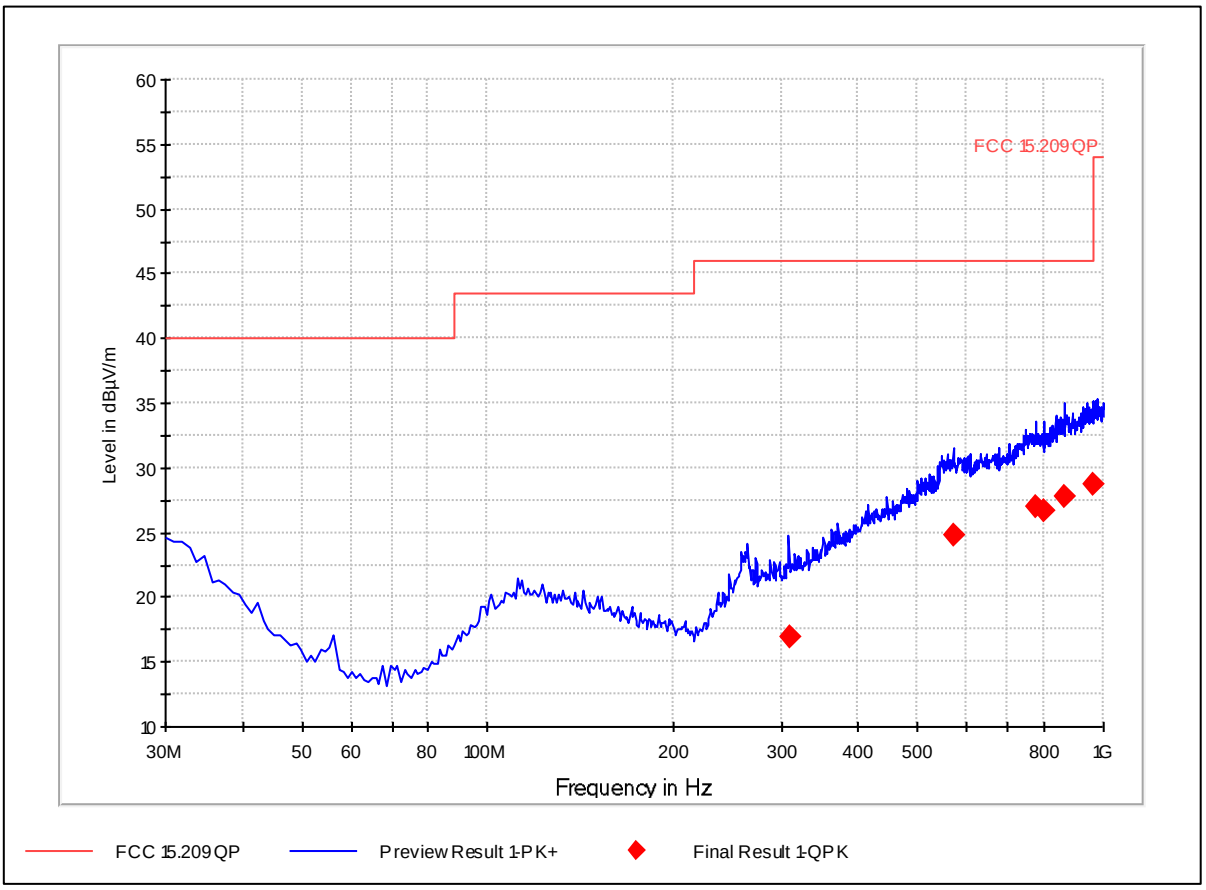

Figure 35. Radiated emission test results. 30 - 1000 MHz. EUT hor-90.

Frequency [MHz]	QP [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
308.845711	16.9	120	99.9	V	159.0	-	-	-
571.230281	24.8	120	293.2	V	46.0	-	-	-
775.091102	27.0	120	292.1	V	96.0	-	-	-
802.155210	26.6	120	142.0	H	98.0	-	-	-
867.533467	27.7	120	349.8	V	102.0	-	-	-
961.203848	28.6	120	245.0	V	99.0	25.4	54.0	PASSED

Table 8. Radiated emission test results. 30 - 1000 MHz. Quasi peak detector. EUT hor-90.

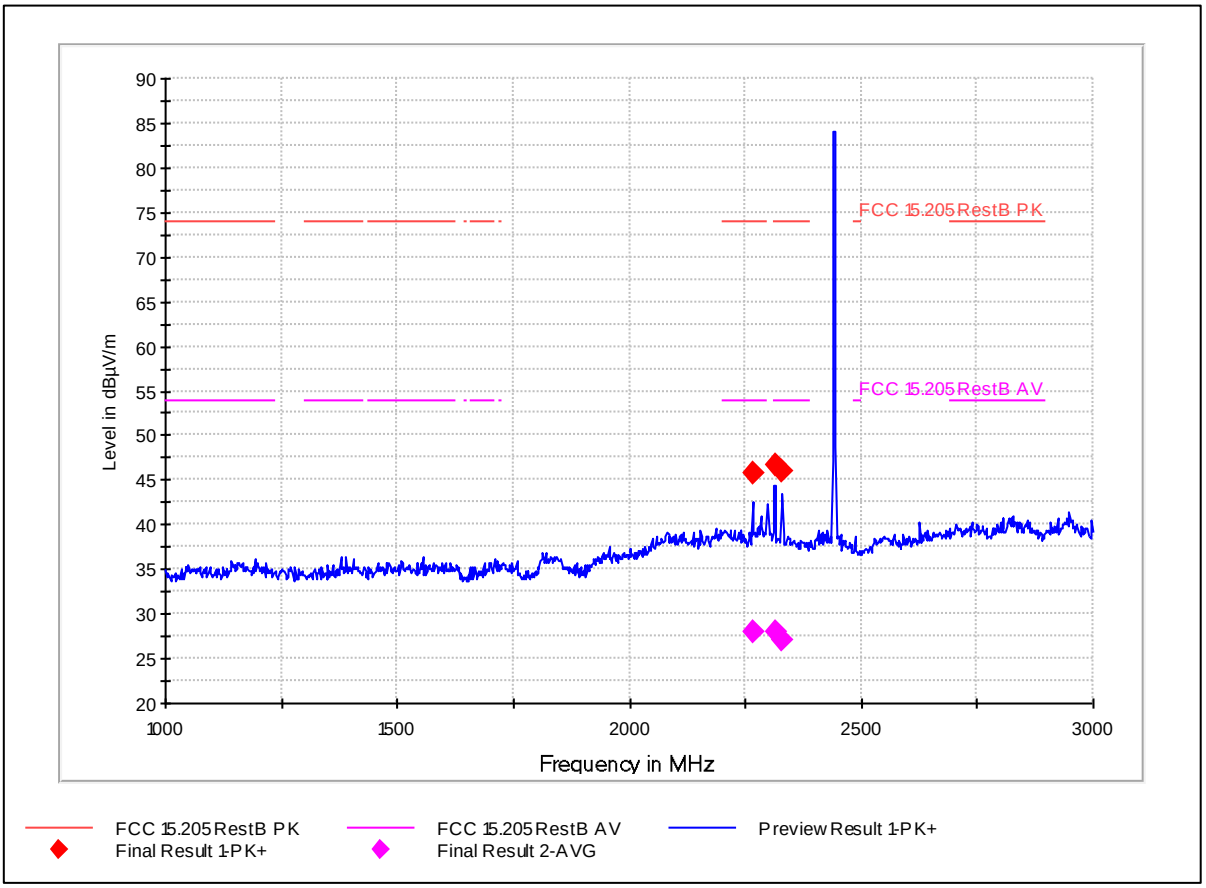

Figure 36. Radiated emission test results 1 - 3 GHz. EUT ver.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2266.033066	45.8	1000	99.6	V	86.0	28.2	74.0	PASSED
2314.025251	46.7	1000	100.1	H	320.0	27.3	74.0	PASSED
2330.061323	46.0	1000	155.0	V	78.0	28.0	74.0	PASSED

Table 9. Radiated emission test results 1 - 3 GHz. Peak detector. EUT ver.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2266.033066	28.0	1000	99.6	V	86.0	26.0	54.0	PASSED
2314.025251	28.0	1000	100.1	H	320.0	26.0	54.0	PASSED
2330.061323	27.0	1000	155.0	V	78.0	27.0	54.0	PASSED

Table 10. Radiated emission test results- 1 - 3 GHz. Average detector. EUT ver.

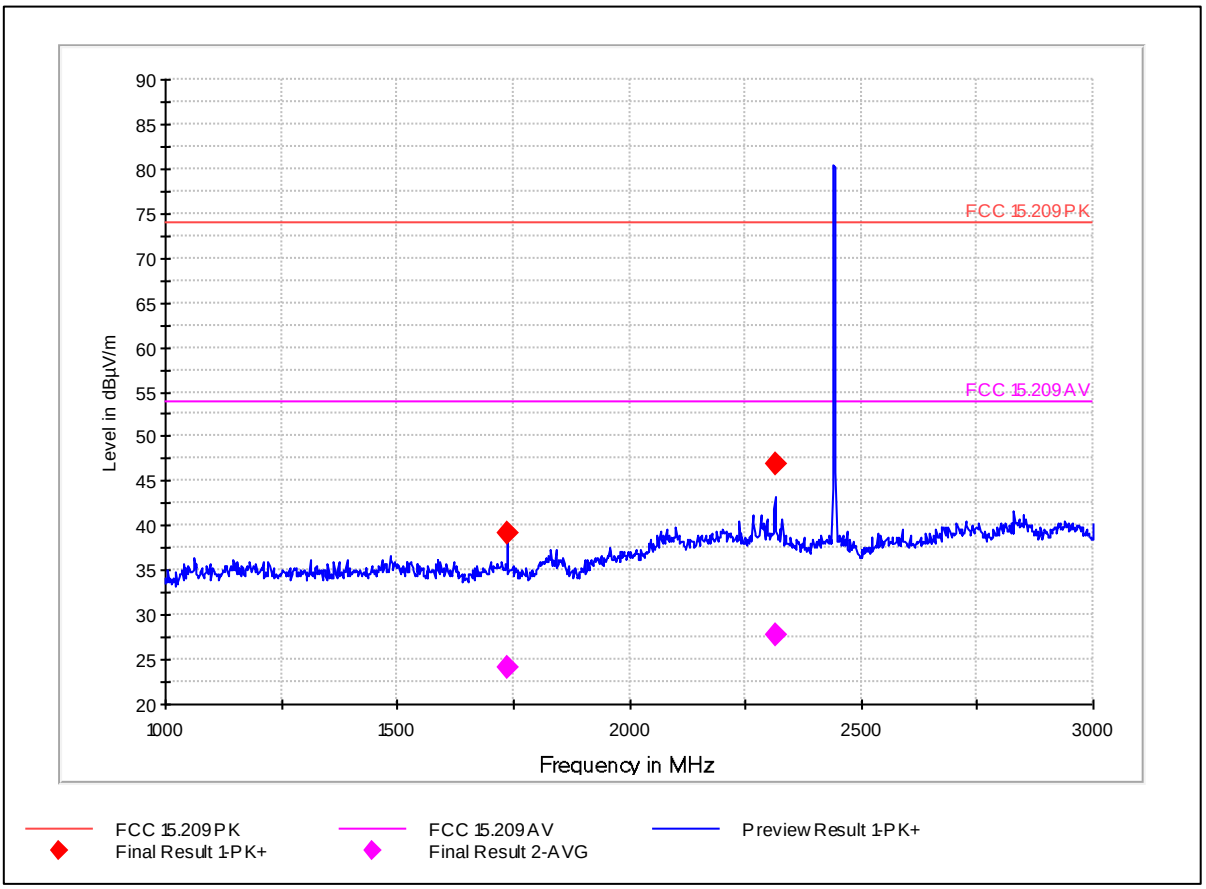

Figure 37. Radiated emission test results 1 - 3 GHz. EUT hor.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
1735.174950	39.3	1000	99.9	H	112.0	-	-	-
2313.929259	46.8	1000	100.0	V	165.0	27.2	74.0	PASSED

Table 11. Radiated emission test results 1 - 3 GHz. Peak detector. EUT hor.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
1735.174950	24.0	1000	99.9	H	112.0	-	-	-
2313.929259	27.9	1000	100.0	V	165.0	26.1	54.0	PASSED

Table 12. Radiated emission test results- 1 - 3 GHz. Average detector. EUT hor.

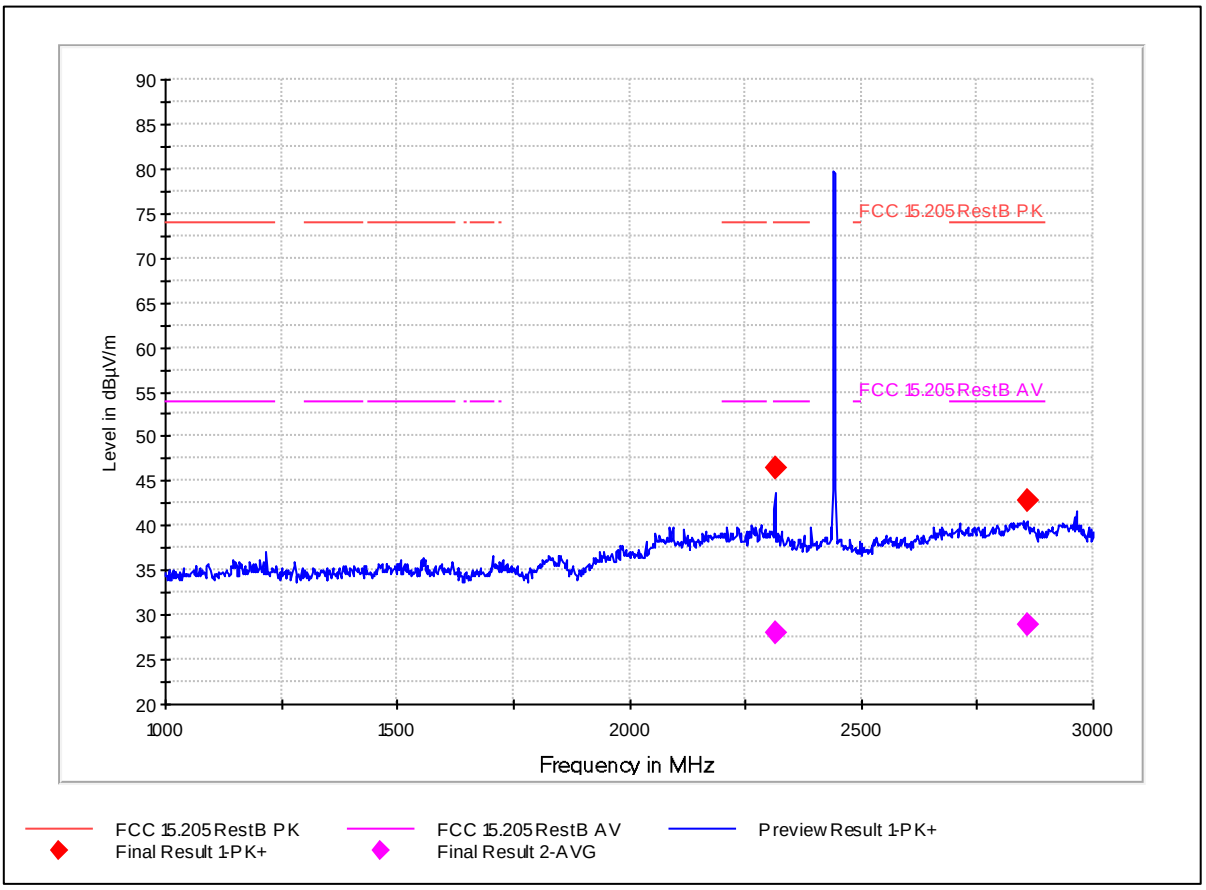

Figure 38. Radiated emission test results 1 - 3 GHz. EUT hor- 90.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2314.129259	46.5	1000	100.1	H	54.0	27.5	74.0	PASSED
2858.115431	42.8	1000	266.0	H	311.0	31.2	74.0	PASSED

Table 13. Radiated emission test results 1 - 3 GHz. Peak detector. EUT hor-90.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2314.129259	28.0	1000	100.1	H	54.0	26.0	54.0	PASSED
2858.115431	28.8	1000	266.0	H	311.0	25.2	54.0	PASSED

Table 14. Radiated emission test results- 1 - 3 GHz. Average detector. EUT hor-90.

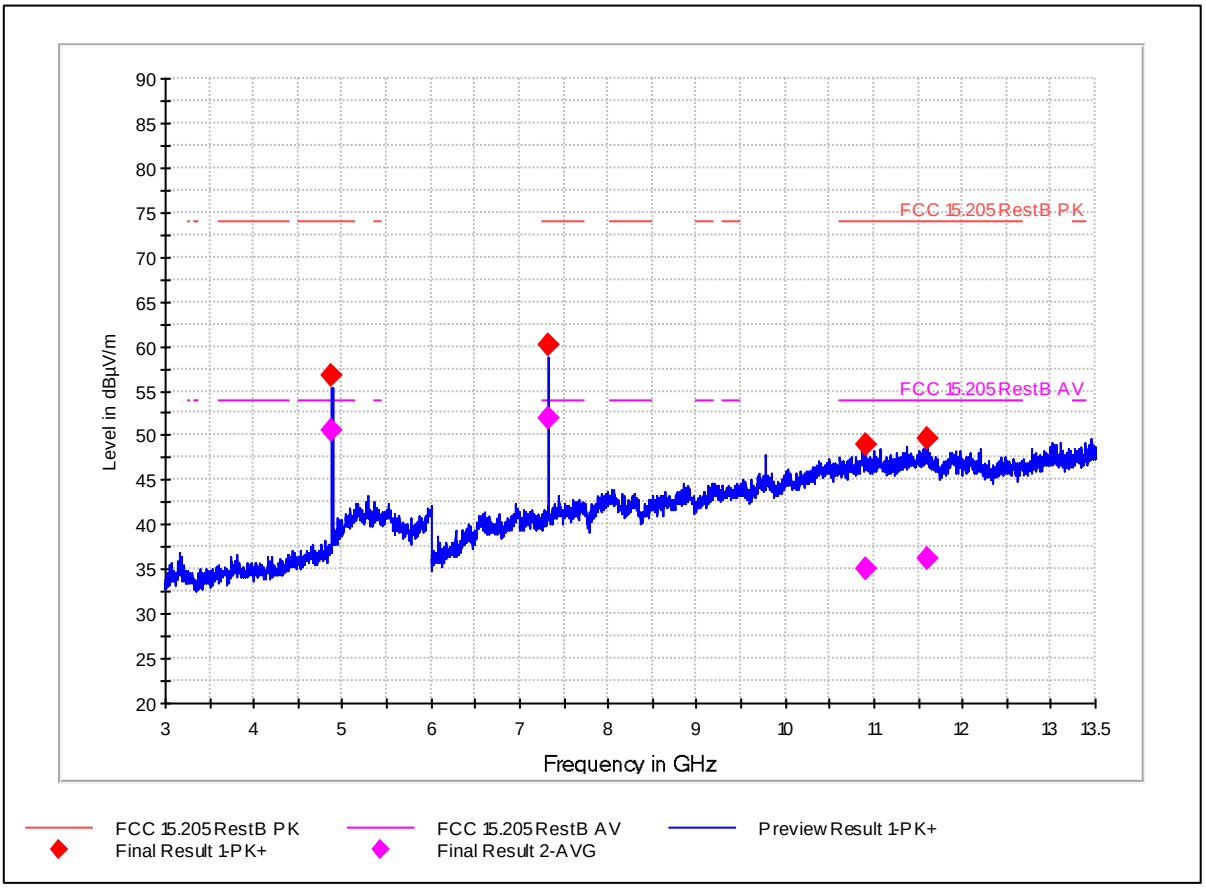

Figure 39. Radiated emission test results 3 – 13.5 GHz. EUT ver.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.471543	56.6	1000	99.9	V	275.0	17.4	74.0	PASSED
7325.253307	60.1	1000	155.0	V	254.0	13.9	74.0	PASSED
10909.927655	48.9	1000	100.1	V	79.0	25.1	74.0	PASSED
11602.702405	49.6	1000	340.0	V	-36.0	24.4	74.0	PASSED

Table 15. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT ver.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.471543	50.5	1000	99.9	V	275.0	3.5	54.0	PASSED
7325.253307	51.8	1000	155.0	V	254.0	2.2	54.0	PASSED
10909.927655	35.1	1000	100.1	V	79.0	18.9	54.0	PASSED
11602.702405	36.2	1000	340.0	V	-36.0	17.8	54.0	PASSED

Table 16. Radiated emission test results 3 – 13.5 GHz. Average detector. EUT ver.

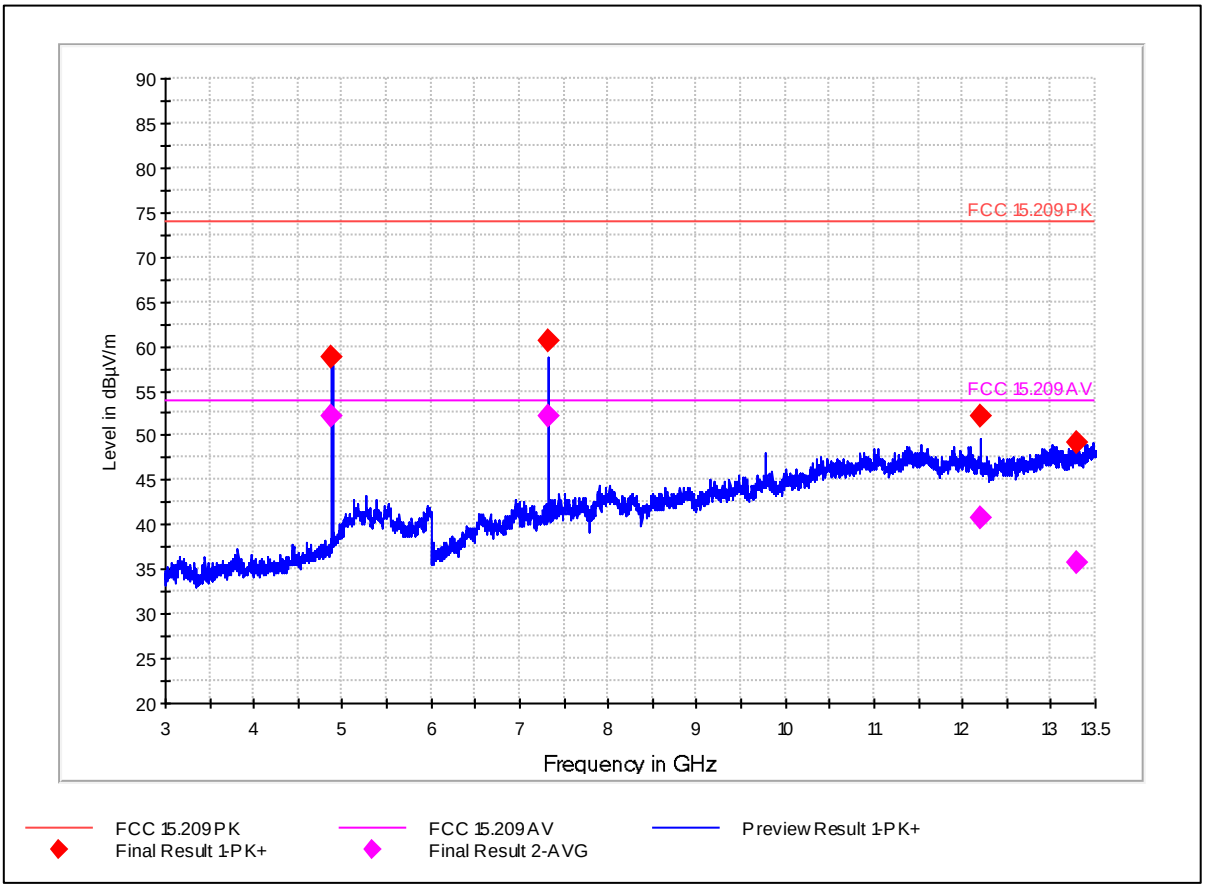

Figure 40. Radiated emission test results 3 – 13.5 GHz. EUT hor.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.567535	58.7	1000	155.1	V	305.0	15.3	74.0	PASSED
7325.249299	60.5	1000	99.9	H	178.0	13.5	74.0	PASSED
12208.920842	52.3	1000	100.0	H	274.0	21.7	74.0	PASSED
13283.777154	49.1	1000	189.1	H	196.0	24.9	74.0	PASSED

Table 17. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT hor.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.567535	52.2	1000	155.1	V	305.0	1.8	54.0	PASSED
7325.249299	52.3	1000	99.9	H	178.0	1.7	54.0	PASSED
12208.920842	40.8	1000	100.0	H	274.0	13.2	54.0	PASSED
13283.777154	35.7	1000	189.1	H	196.0	18.3	54.0	PASSED

Table 18. Radiated emission test results 3 - 14 GHz. Average detector. EUT hor.

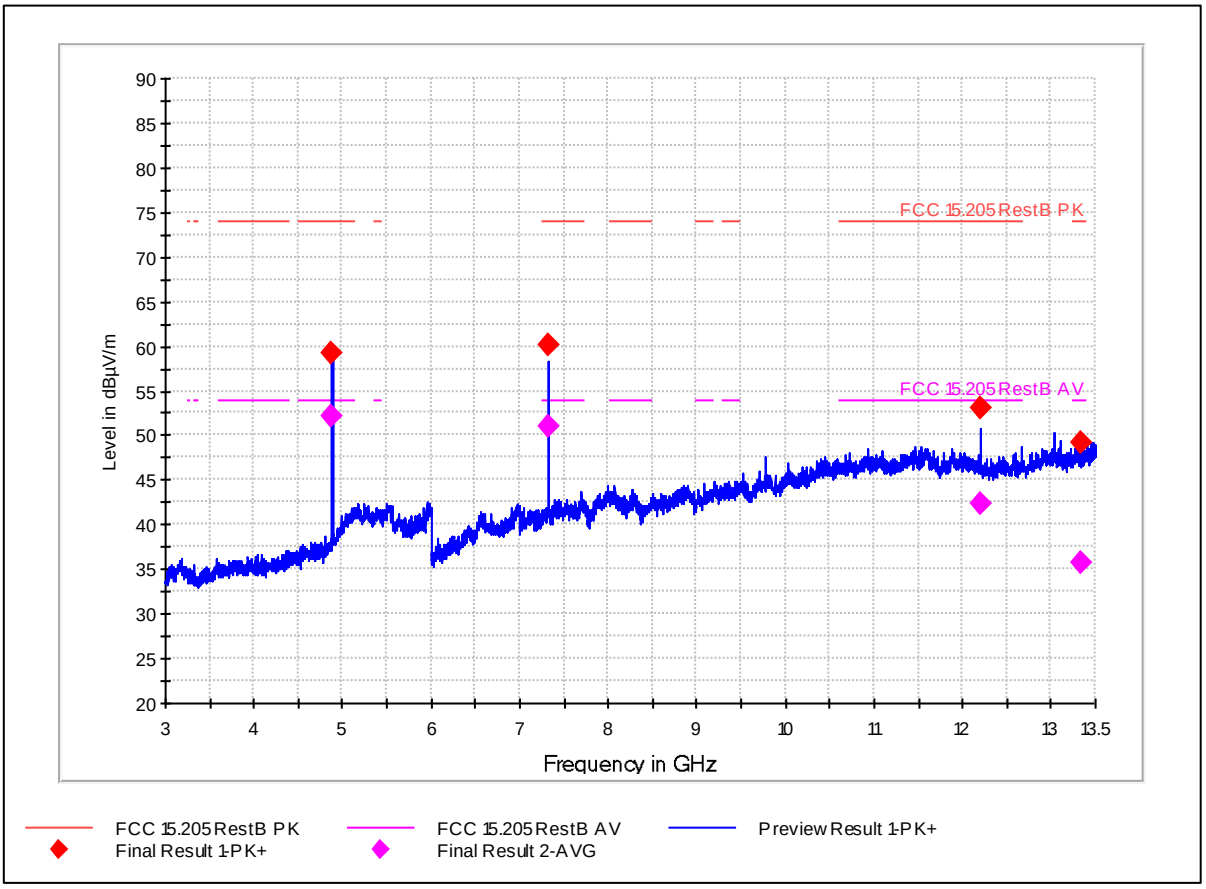

Figure 41. Radiated emission test results 3 – 13.5 GHz. EUT hor- 90.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.567535	59.2	1000	154.8	H	10.0	14.8	74.0	PASSED
7326.849299	60.2	1000	99.9	V	282.0	13.8	74.0	PASSED
12208.816834	53.2	1000	215.0	V	290.0	20.8	74.0	PASSED
13333.171343	49.1	1000	290.1	H	8.0	24.9	74.0	PASSED

Table 19. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT hor- 90.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4884.567535	52.3	1000	154.8	H	10.0	1.7	54.0	PASSED
7326.849299	51.1	1000	99.9	V	282.0	2.9	54.0	PASSED
12208.816834	42.4	1000	215.0	V	290.0	11.6	54.0	PASSED
13333.171343	35.6	1000	290.1	H	8.0	18.4	54.0	PASSED

Table 20. Radiated emission test results 3 – 13.5 GHz. Average detector. EUT hor- 90.

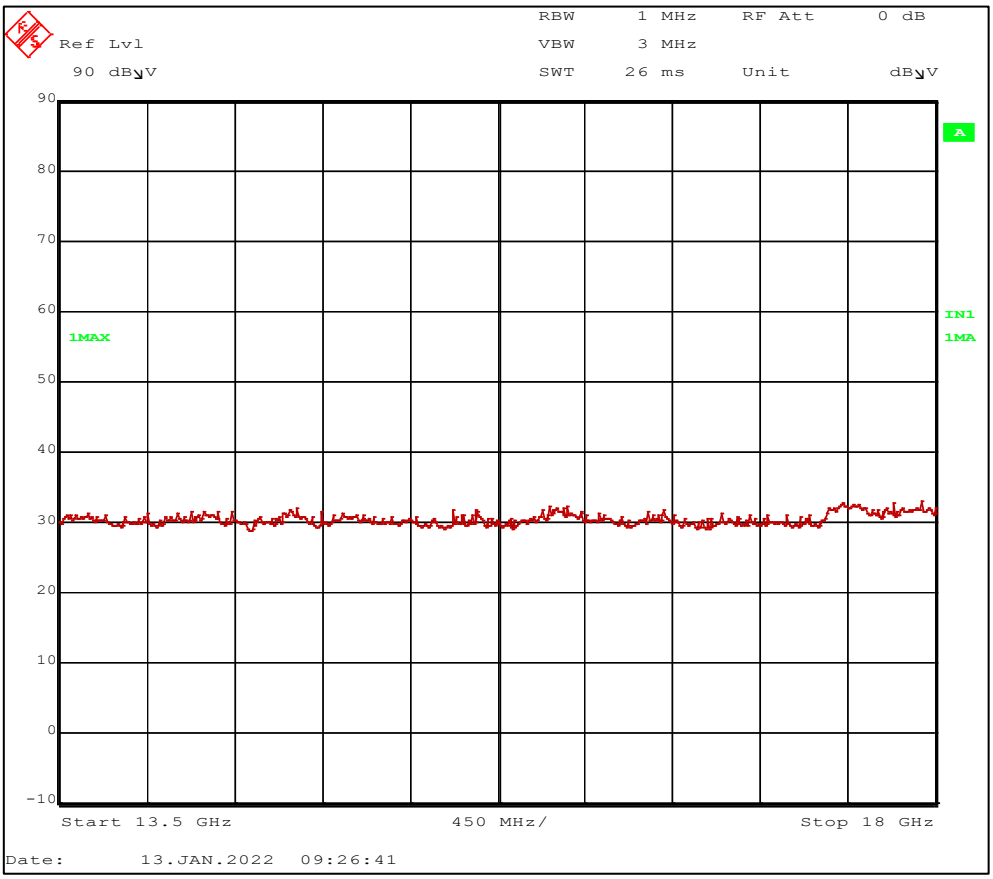

Figure 42 Radiated emission test results 13.5 - 18 GHz. Peak detector. 3 orient.

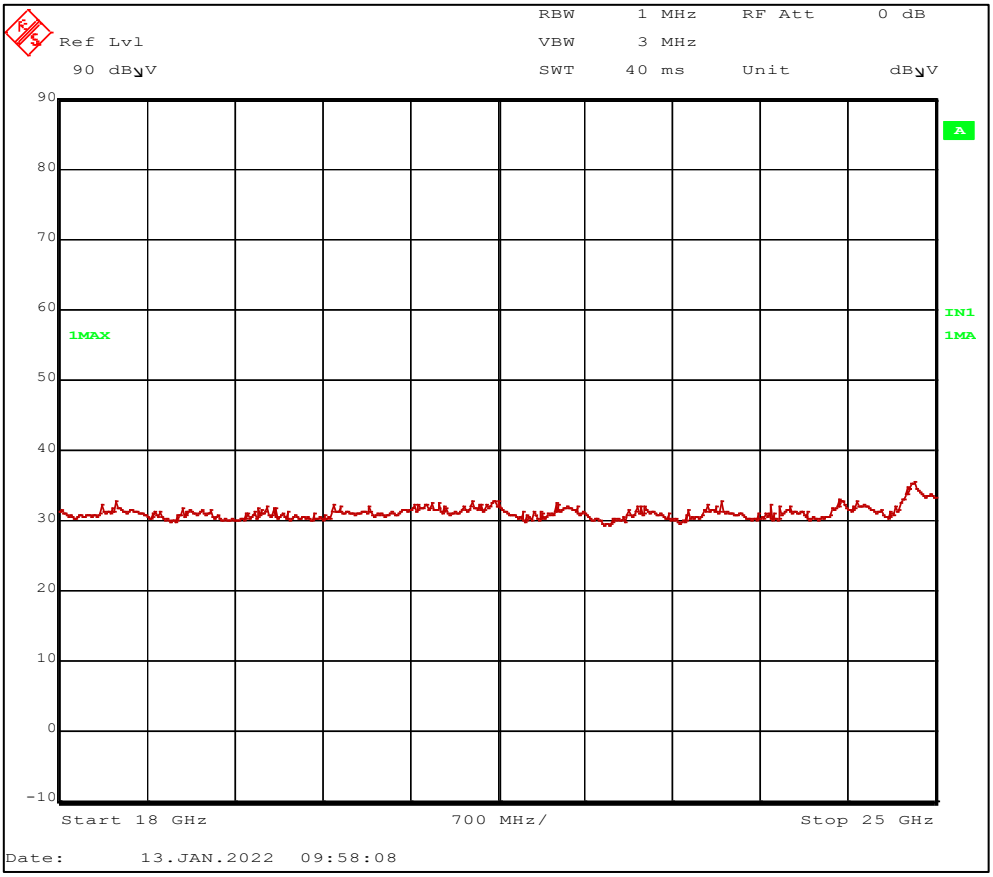

Figure 43. Radiated emission test results 18 - 25 GHz. Peak detector. 3 orient.

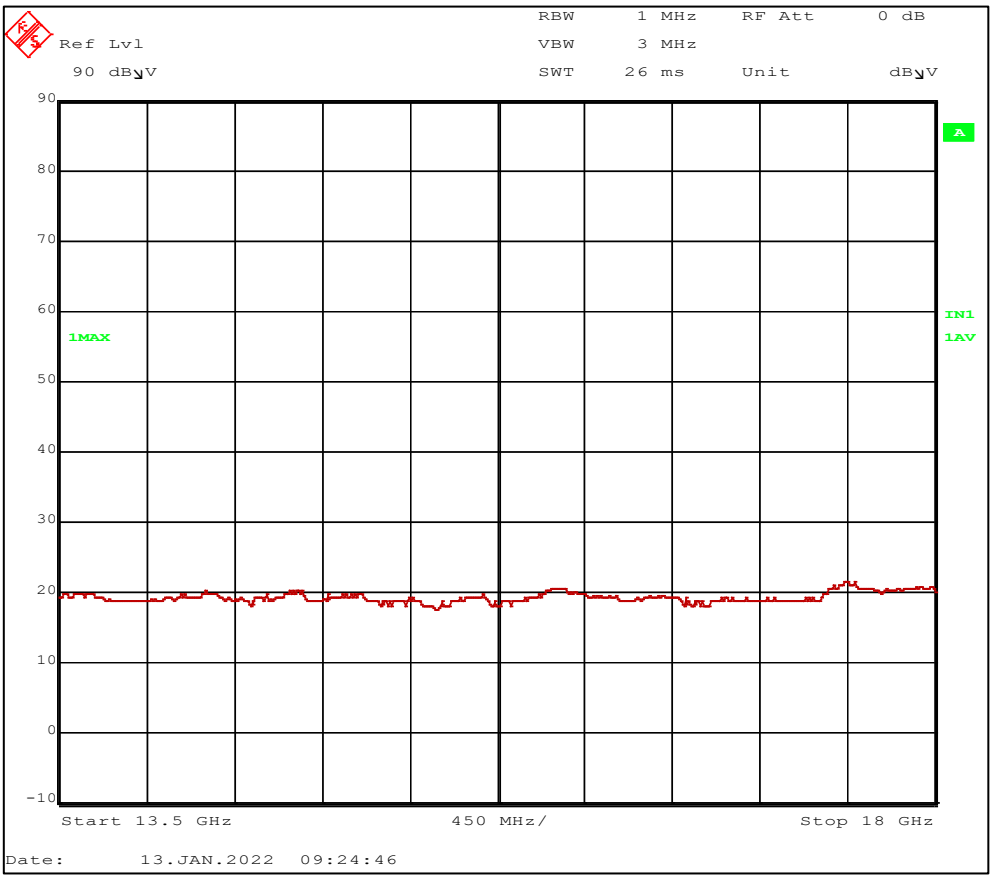

Figure 44. Radiated emission test results 13.5 - 18 GHz. Average detector. 3 orient.

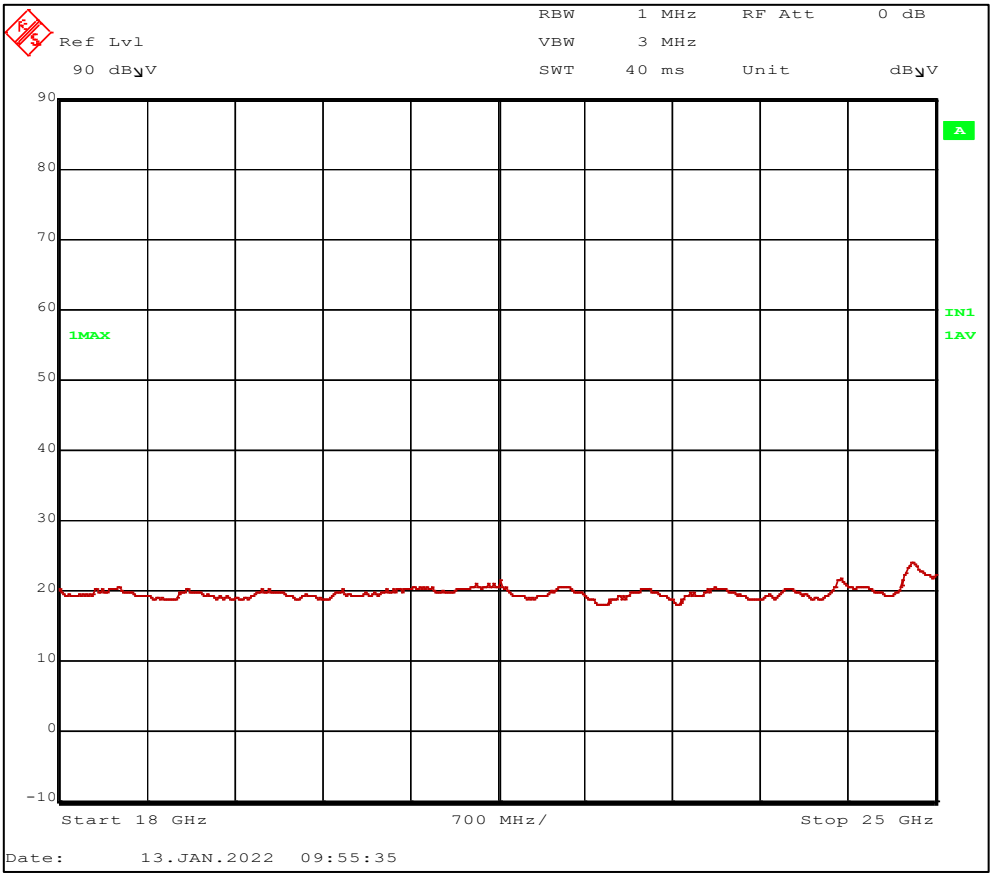

Figure 45. Radiated emission test results 18 - 25 GHz. Average detector. 3 orient.

Average Limit 3 m.	Peak limit 3 m	3 m / 0.5 m factor	Average Limit 0.5 m.	Peak limit 0.5 m
dBµV/m	dBµV/m	dB	dBµV/m	dBµV/m
53.98	73.98	15.56 dB	69.54	89.54

Table 21. Calculation of limit at 0.5 m.

Frequency	AF	Cable loss	Correction factor
GHz	dB/m	dB	dB/m
13.5	37.1	< 2	39.1
18.0	37.4	< 2	39.4
18.0	40.3	< 2	42.3
25.0	40.6	< 2	42.6

Table 22. Correction factors13.5 – 25 GHz.

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

Table 23. Radiated emission test results 13.5 - 25 GHz. Peak detector. EUT 3 orientations.

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

Table 24. Radiated emission test results 13.5 – 25 GHz. Average detector. EUT 3 orientations.

2.6.2.2 Channel 37 at 2402 MHz

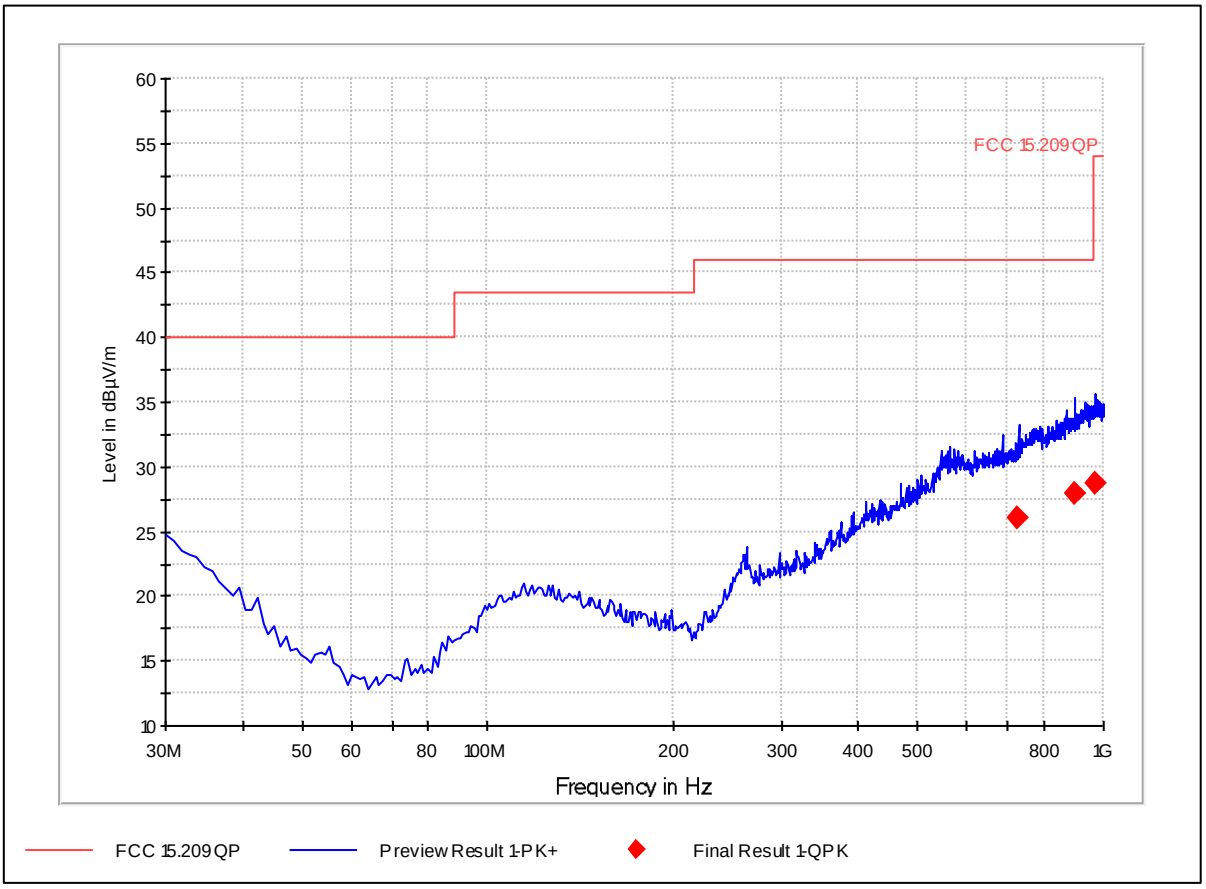

Figure 46. Radiated emission test results. 30 - 1000 MHz. EUT hor.

Frequency [MHz]	QP [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
727.496914	26.0	120	161.0	H	171.0	20.0	-	-
896.743587	27.9	120	141.0	V	34.0	18.1	-	-
966.965872	28.7	120	320.1	V	-44.0	25.3	54.0	PASSED

Table 25. Radiated emission test results. 30 - 1000 MHz. Quasi peak detector. EUT hor.

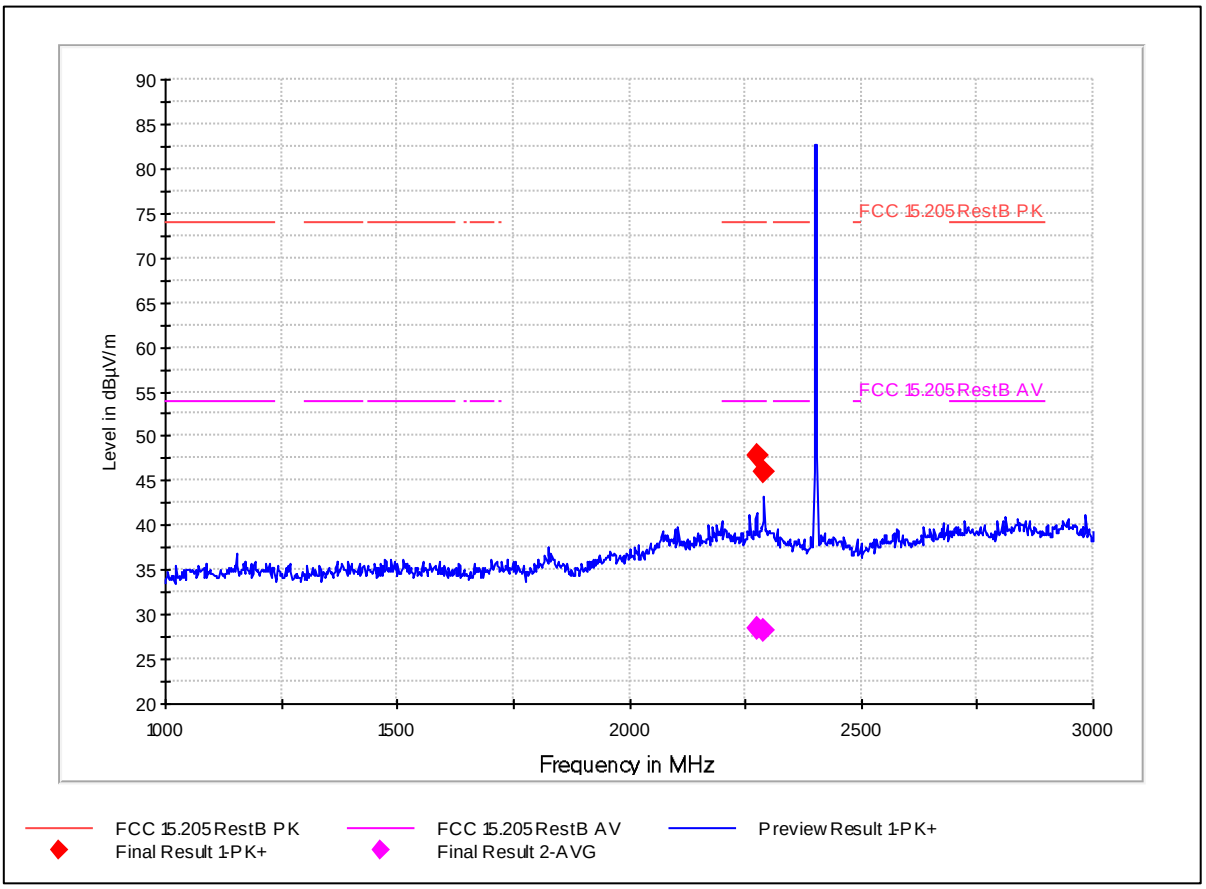

Figure 47. Radiated emission test results. 1 – 3 GHz. EUT hor.

Frequency [MHz]	QP [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2274.149098	47.8	1000	120.8	H	145.0	26.2	74.0	PASSED
2289.781162	46.0	1000	100.1	V	122.0	28.0	74.0	PASSED

Table 26. Radiated emission test results. 1 – 3 GHz. Quasi peak detector. EUT hor.

Frequency [MHz]	AVG [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2274.149098	28.4	1000	120.8	H	145.0	25.6	54.0	PASSED
2289.781162	28.2	1000	100.1	V	122.0	25.8	54.0	PASSED

Table 27. Radiated emission test results- 1 - 3 GHz. Average detector. EUT hor.

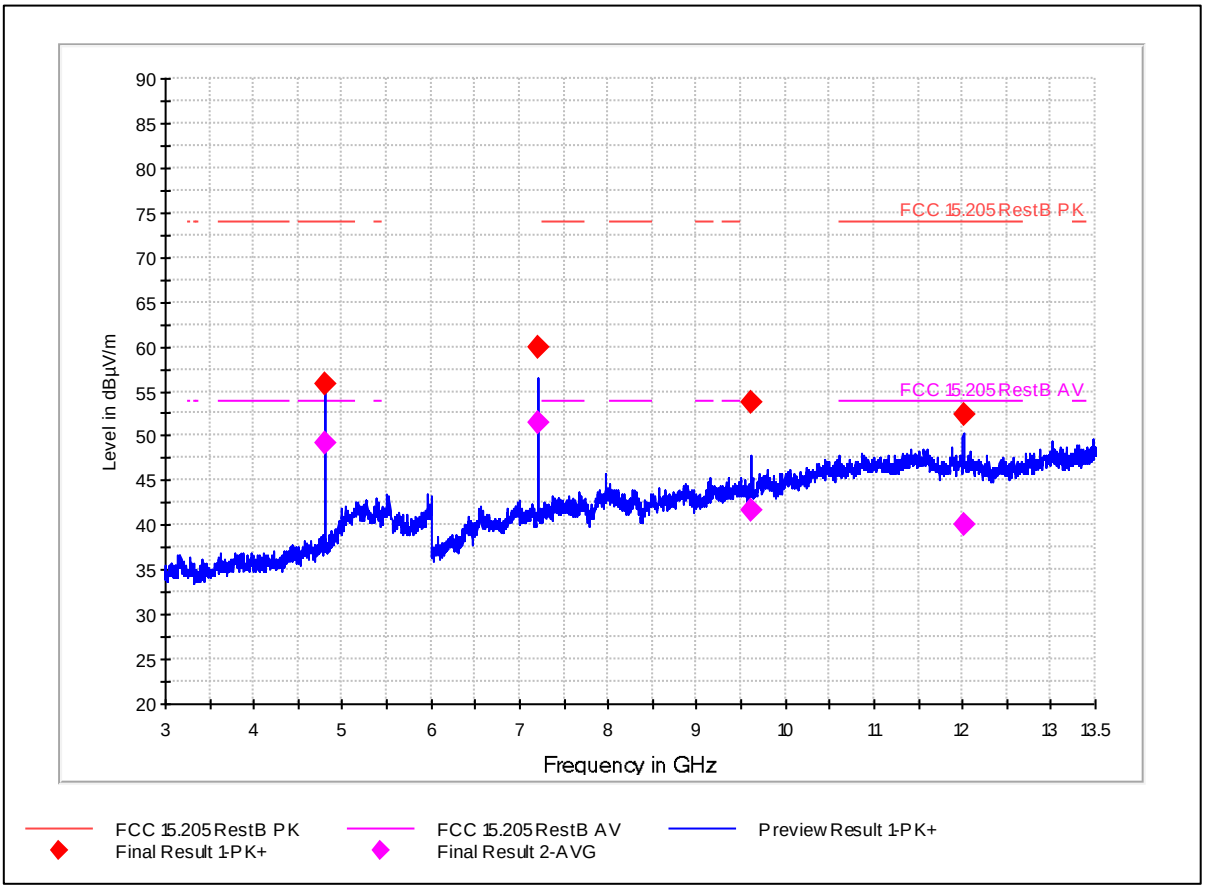

Figure 48. Radiated emission test results 3 – 13.5 GHz. EUT hor.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4803.507214	55.9	1000	155.2	H	47.0	18.1	74.0	PASSED
7206.808818	59.8	1000	100.1	H	49.0	-	-	-
9609.114429	53.8	1000	243.9	V	158.0	-	-	-
12011.520040	52.3	1000	155.1	H	263.0	21.7	74.0	PASSED

Table 28. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT hor.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4803.507214	49.3	1000	155.2	H	47.0	4.7	54.0	PASSED
7206.808818	51.6	1000	100.1	H	49.0	-	-	-
9609.114429	41.6	1000	243.9	V	158.0	-	-	-
12011.520040	40.0	1000	155.1	H	263.0	14.0	54.0	PASSED

Table 29. Radiated emission test results 3 – 13.5 GHz. Average detector. EUT hor.

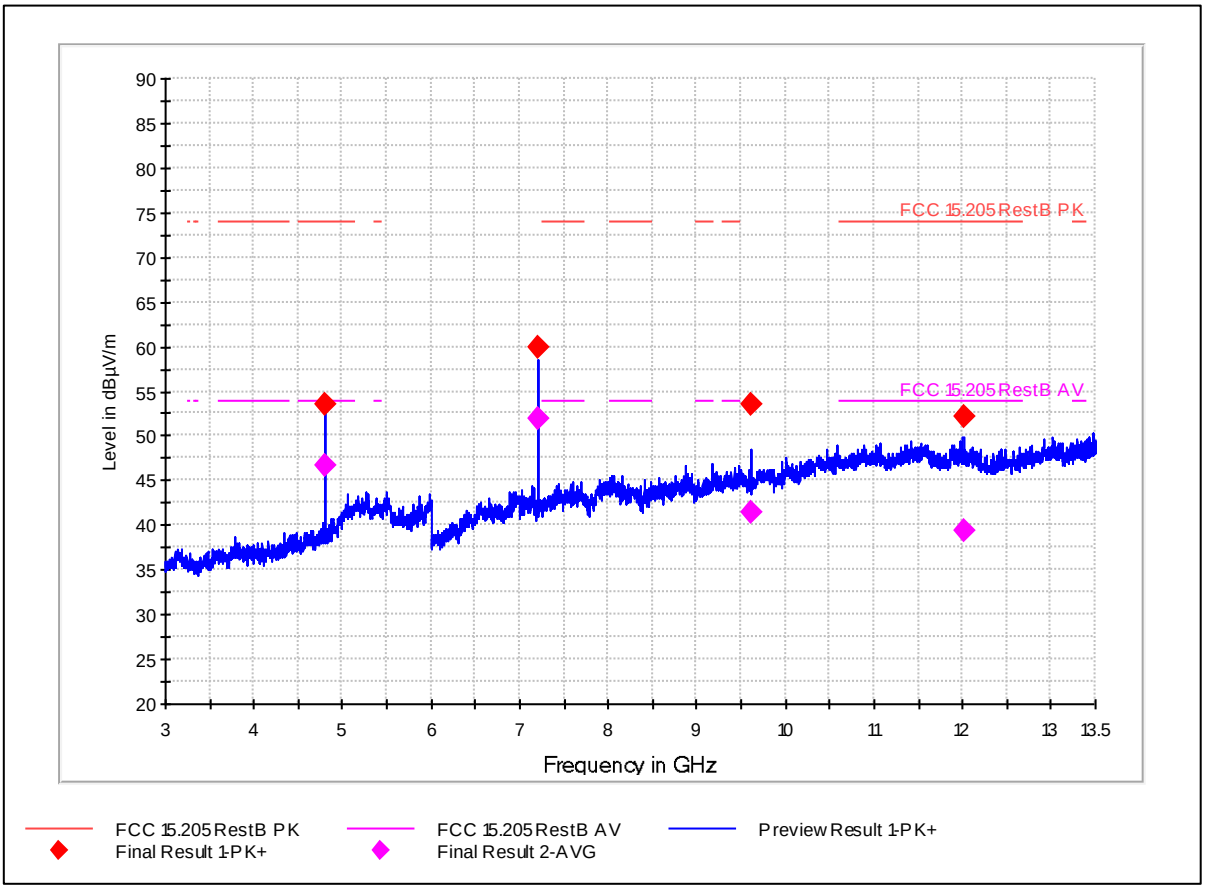

Figure 49. Radiated emission test results 3 – 13.5 GHz. EUT ver.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4804.507214	53.5	1000.	155.2	V	106.0	20.5	74.0	PASSED
7205.212826	59.9	1000.	213.4	H	334.0	-	-	-
9609.018437	53.5	1000.	188.9	V	214.0	-	-	-
12008.816032	52.3	1000.	233.6	V	221.0	21.7	74.0	PASSED

Table 30. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT ver.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4804.507214	46.6	1000.	155.2	V	106.0	7.4	54.0	PASSED
7205.212826	51.8	1000.	213.4	H	334.0	-	-	-
9609.018437	41.4	1000.	188.9	V	214.0	-	-	-
12008.816032	39.4	1000.	233.6	V	221.0	14.6	54.0	PASSED

Table 31. Radiated emission test results 3 – 13.5 GHz. Average detector. EUT ver.

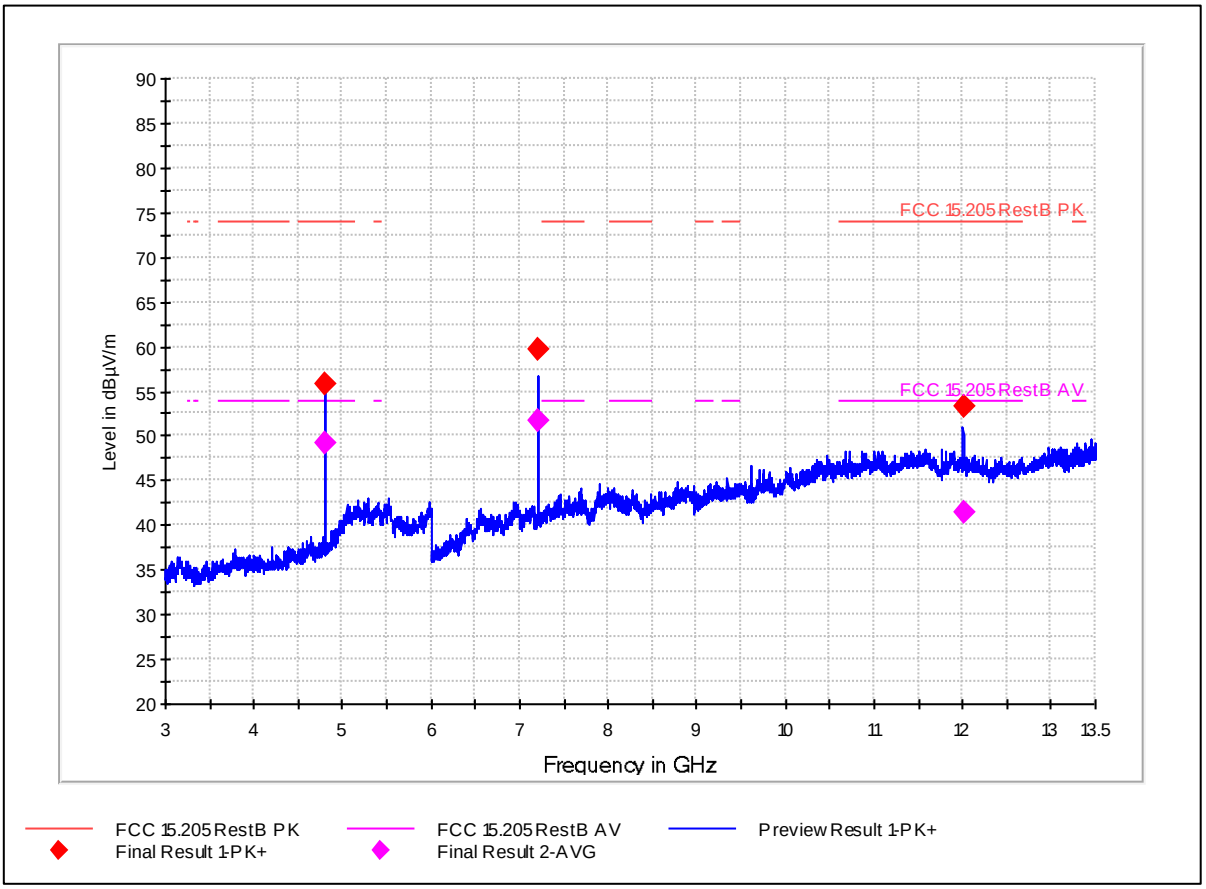

Figure 50. Radiated emission test results 3 – 13.5 GHz. EUT hor-90.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4804.511222	55.7	1000.	154.8	H	40.0	18.3	74.0	PASSED
7205.212826	59.8	1000.	99.9	H	23.0	-	-	-
12008.716032	53.3	1000.	227.9	V	262.0	20.7	74.0	PASSED

Table 32. Radiated emission test results 3 – 13.5 GHz. Peak detector. EUT hor-90.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4804.511222	49.1	1000.	154.8	H	40.0	4.9	54.0	PASSED
7205.212826	51.7	1000.	99.9	H	23.0	-	-	-
12008.716032	41.5	1000.	227.9	V	262.0	12.5	54.0	PASSED

Table 33. Radiated emission test results 3 – 13.5 GHz. Average detector. EUT hor-90.

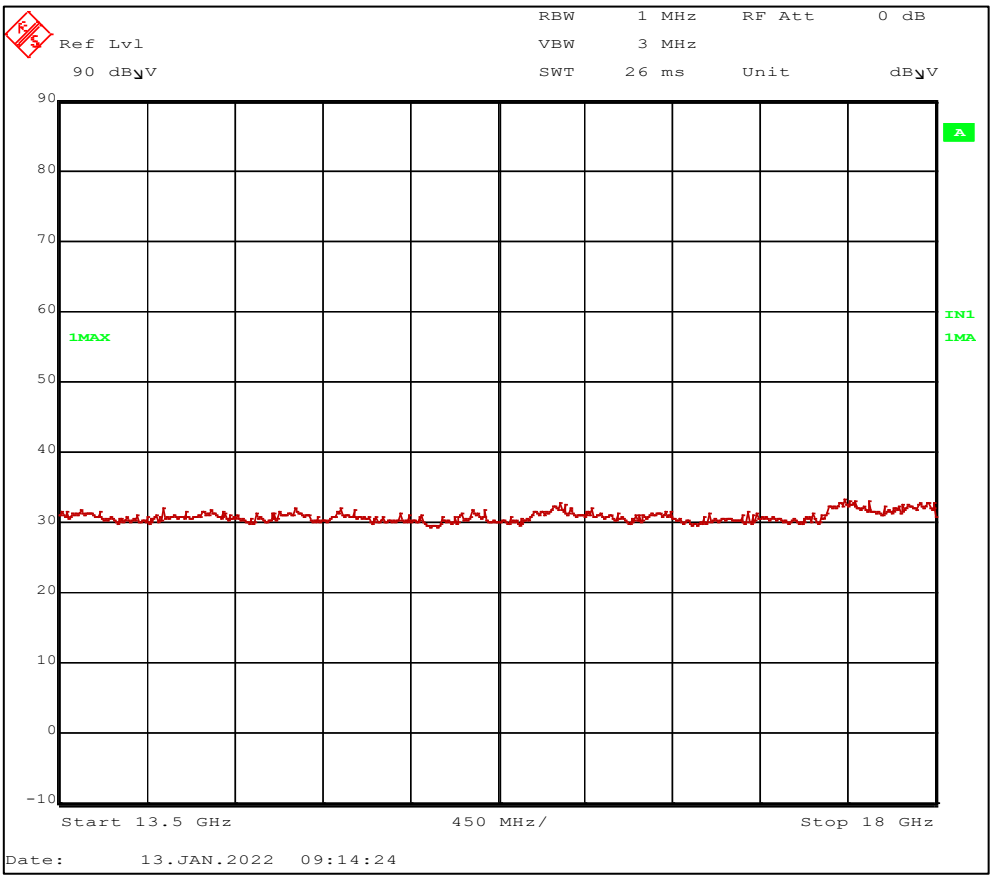

Figure 51 Radiated emission test results 13.5 - 18 GHz. Peak detector.

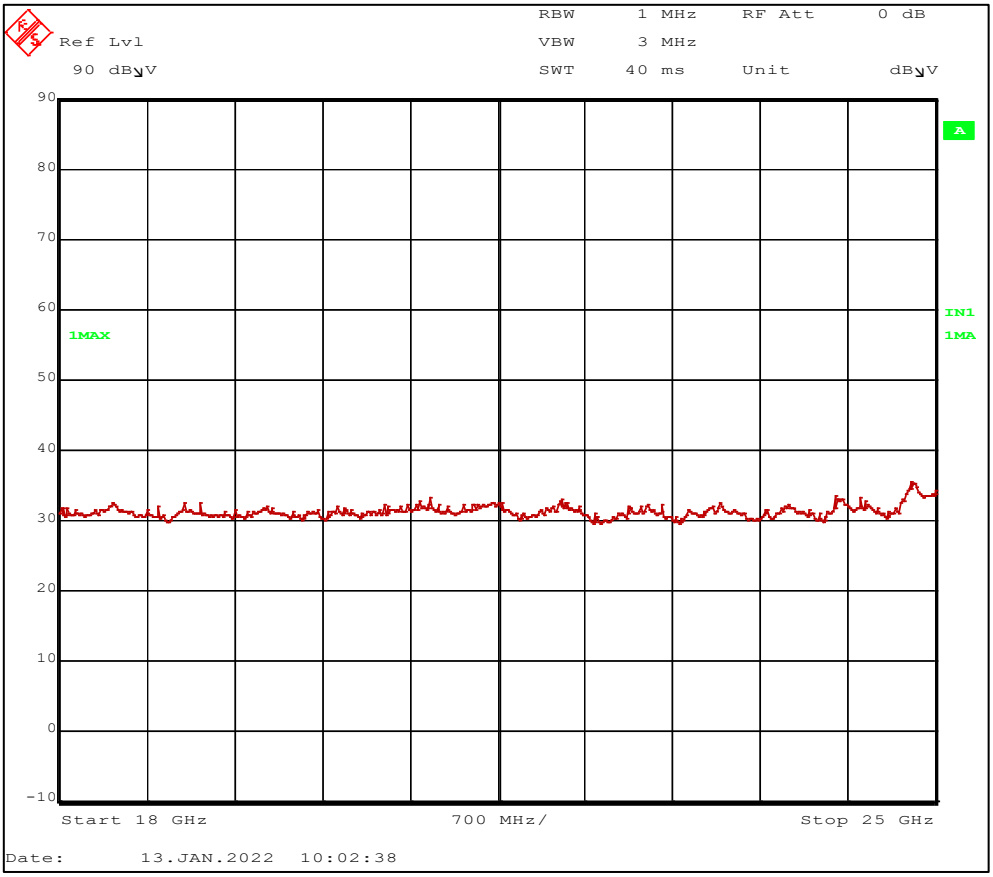

Figure 52. Radiated emission test results 18 - 25 GHz. Peak detector.

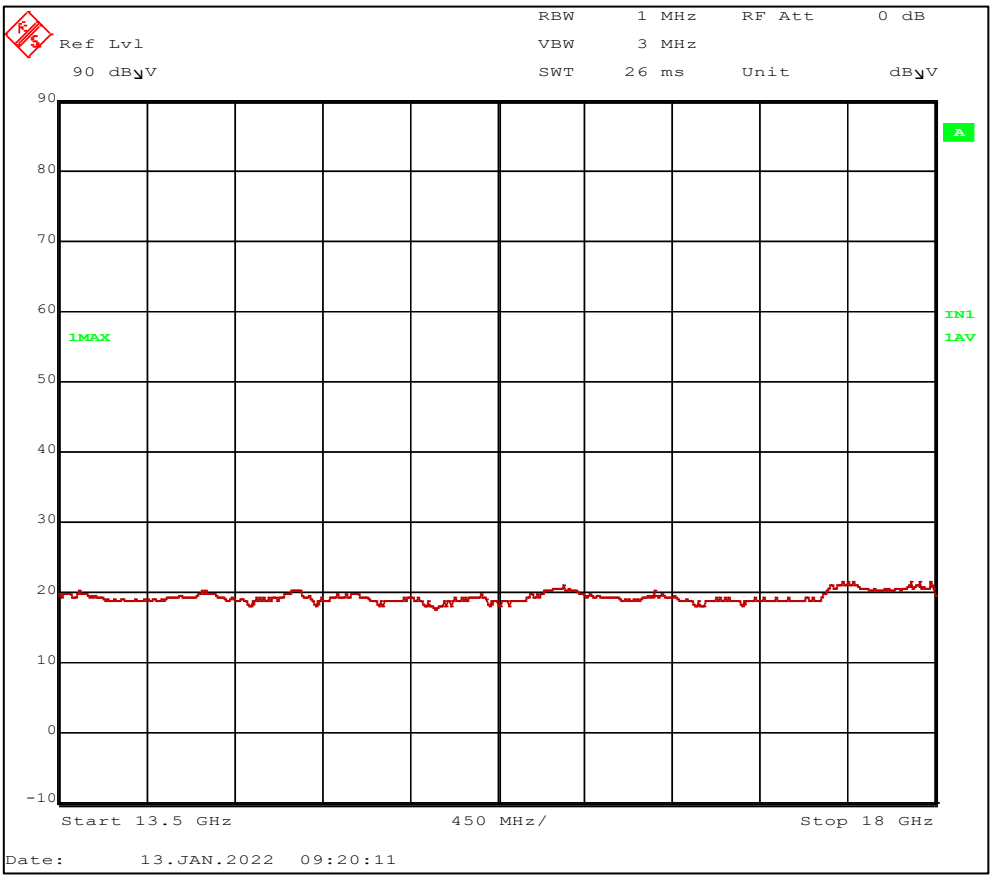

Figure 53. Radiated emission test results 13.5 - 18 GHz. Average detector.

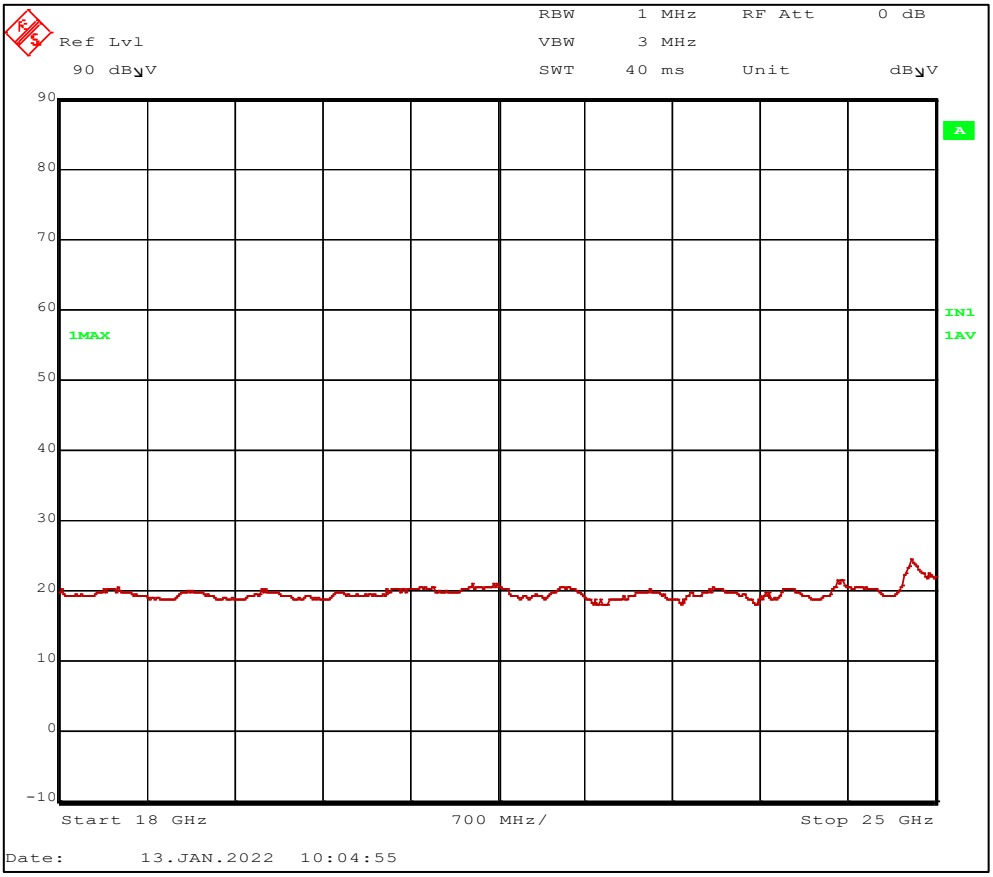

Figure 54. Radiated emission test results 18 - 25 GHz. Average detector.

Average Limit 3 m.	Peak limit 3 m	3 m / 0.5 m factor	Average Limit 0.5 m.	Peak limit 0.5 m
dBµV/m	dBµV/m	dB	dBµV/m	dBµV/m
53.98	73.98	15.56 dB	69.54	89.54

Table 34. 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 35. Correction factors 13.5 – 25 GHz.

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

Table 36. Radiated emission test results 13.5 - 25 GHz. Peak detector. EUT 3 orientations.

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

Table 37. Radiated emission test results 13.5 – 25 GHz. Average detector. EUT 3 orientations.

2.6.2.3 Channel 39 at 2480 MHz

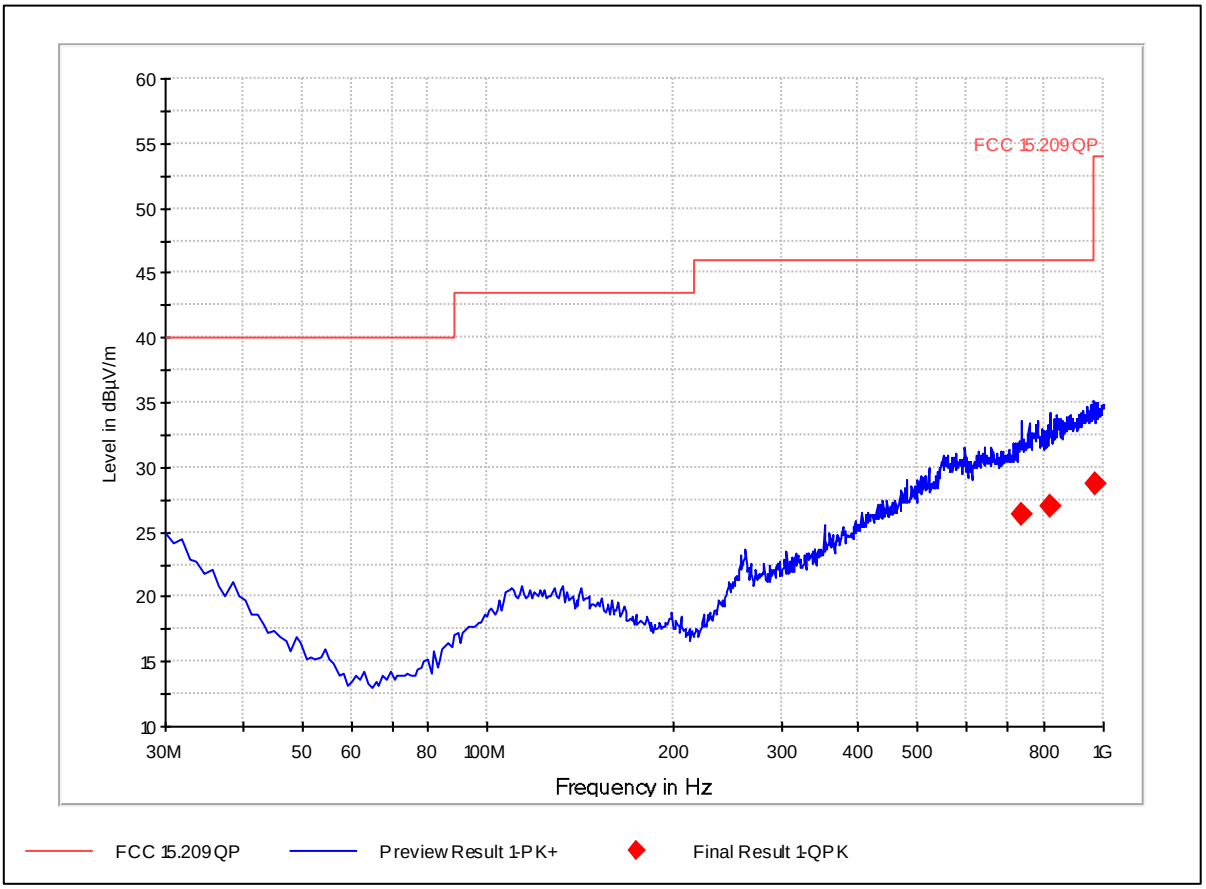

Figure 55. Radiated emission test results 30 - 1000 MHz. EUT hor.

Frequency [MHz]	QP [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
734.990942	26.3	120	226.9	V	136.0	-	-	-
819.571283	27.0	120	215.0	H	-43.0	-	-	-
967.061864	28.8	120	247.1	V	162.0	25.2	54.0	PASSED

Table 38. Radiated emission test results. 30 - 1000 MHz. Quasi peak detector. EUT hor.

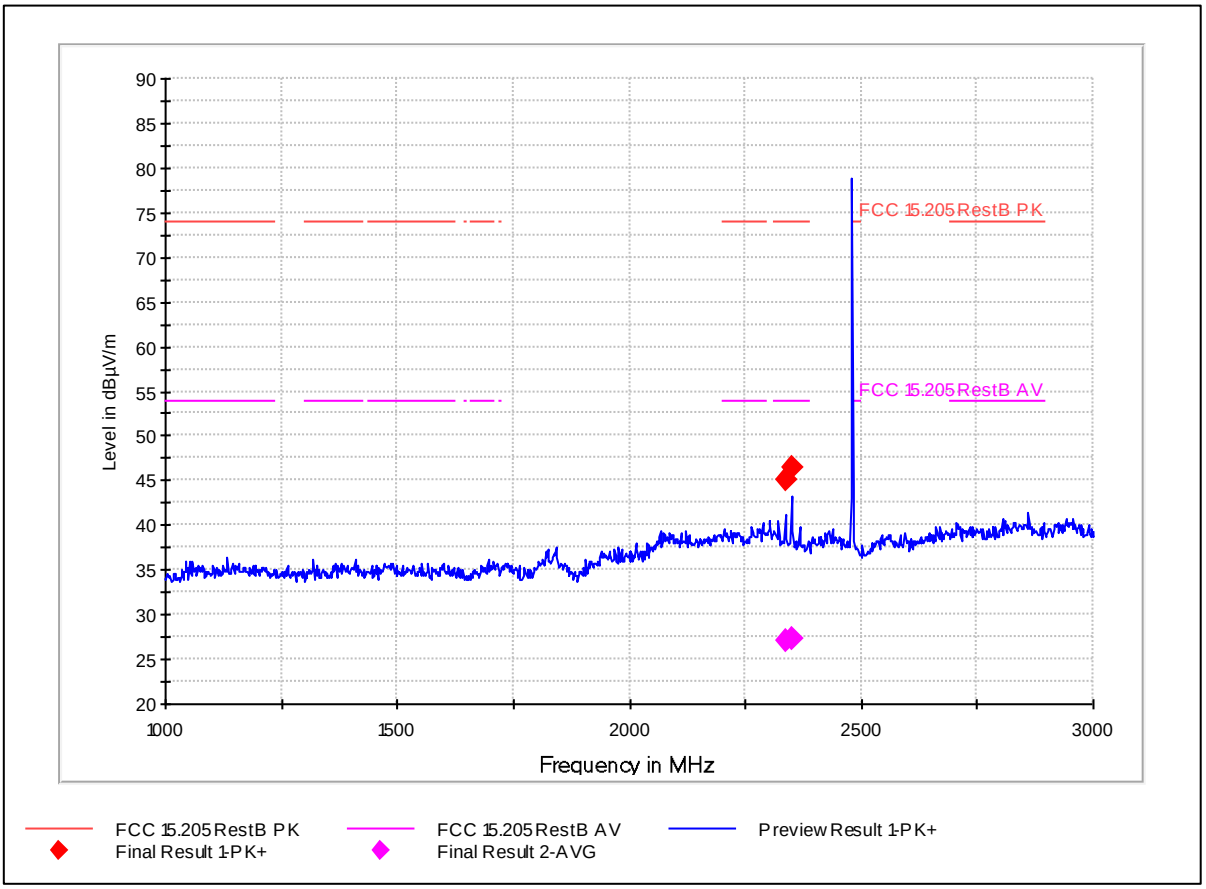

Figure 56. Radiated emission test results 1 - 3 GHz. EUT hor.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2336.173347	45.0	1000	99.6	H	150.0	29.0	74.0	PASSED
2351.901403	46.5	1000	100.1	H	152.0	27.5	74.0	PASSED

Table 39. Radiated emission test results 1 - 3 GHz. Peak detector. EUT hor.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2336.173347	27.1	1000	99.6	H	150.0	26.9	54.0	PASSED
2351.901403	27.4	1000	100.1	H	152.0	26.6	54.0	PASSED

Table 40. Radiated emission test results 1 - 3 GHz. Average detector. EUT hor.

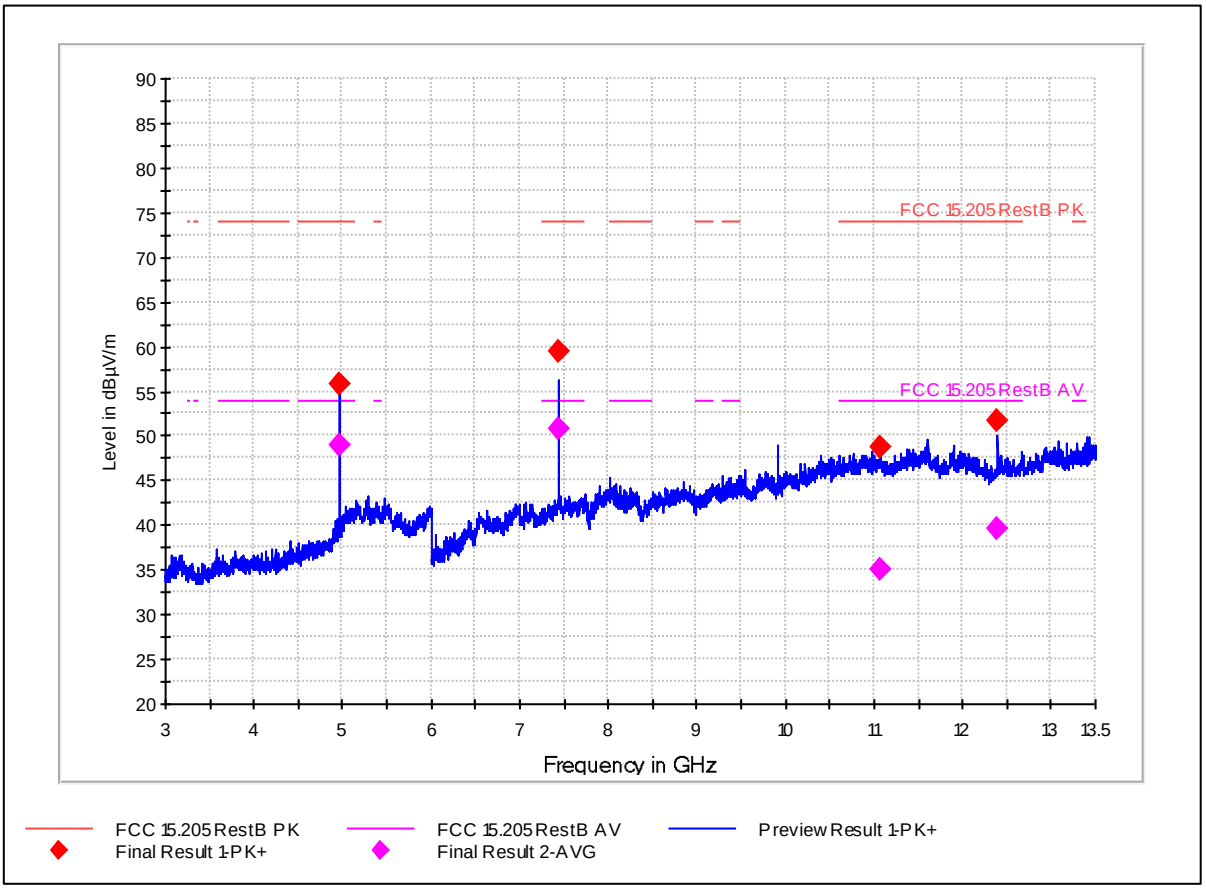

Figure 57. Radiated emission test results 3 – 13.5 GHz. EUT hor.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4959.523848	55.9	1000	155.1	V	122.0	18.1	74.0	PASSED
7440.777756	59.3	1000	99.9	V	294.0	14.7	74.0	PASSED
11064.532265	48.6	1000	165.0	V	-25.0	25.4	74.0	PASSED
12401.401603	51.6	1000	99.9	H	278.0	22.4	74.0	PASSED

Table 41. Radiated emission test results 3 - 13.5 GHz. Peak detector. EUT hor.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4959.523848	48.9	1000	155.1	V	122.0	5.1	54.0	PASSED
7440.777756	50.8	1000	99.9	V	294.0	3.2	54.0	PASSED
11064.532265	35.1	1000	165.0	V	-25.0	18.9	54.0	PASSED
12401.401603	39.5	1000	99.9	H	278.0	14.5	54.0	PASSED

Table 42. Radiated emission test results 3 - 13.5 GHz. Average detector. EUT hor.

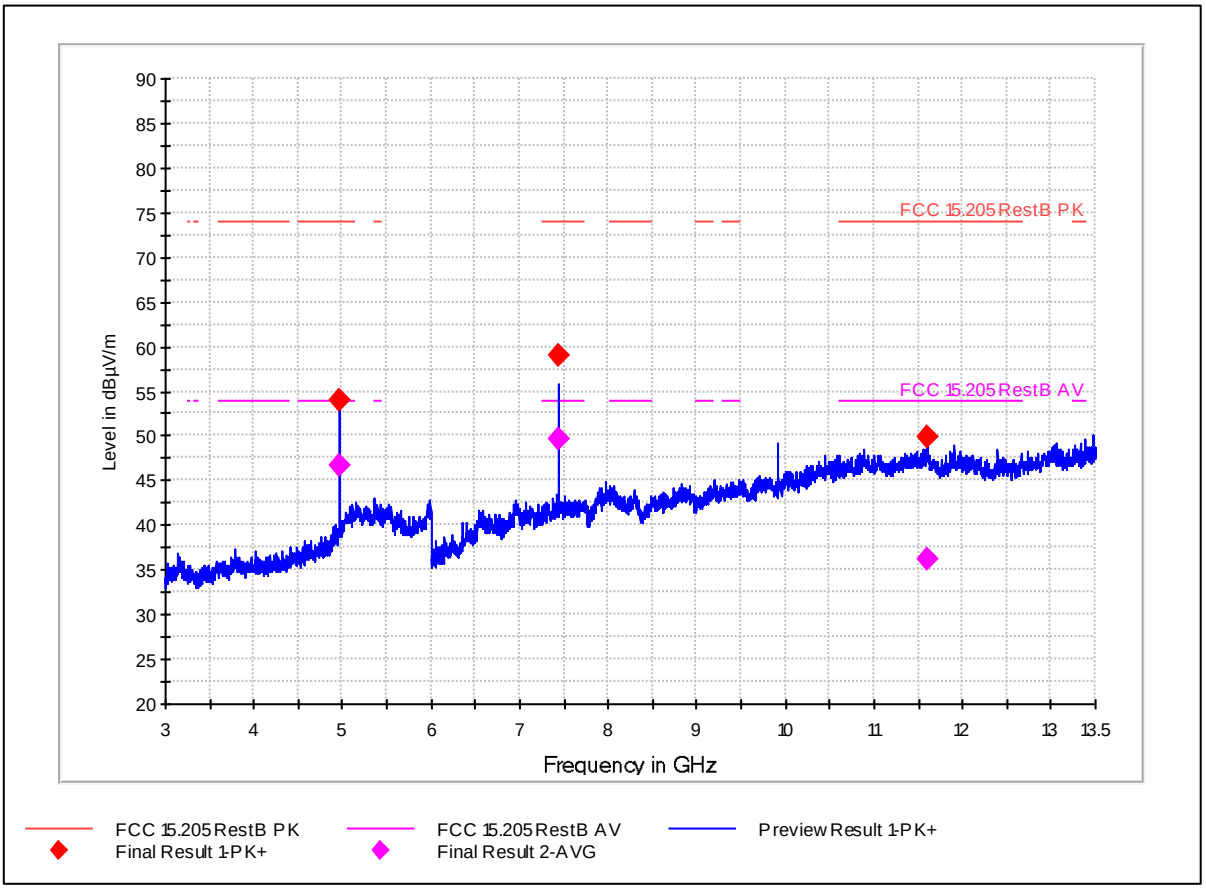

Figure 58. Radiated emission test results 3 – 13.5 GHz. EUT ver.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4960.519840	53.9	1000	153.7	V	57.0	20.1	74.0	PASSED
7440.781764	59.0	1000	205.8	H	-7.0	15.0	74.0	PASSED
11598.594389	49.8	1000	307.0	H	213.0	24.2	74.0	PASSED

Table 43. Radiated emission test results 3 - 13.5 GHz. Peak detector. EUT ver.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4960.519840	46.6	1000	153.7	V	57.0	7.4	54.0	PASSED
7440.781764	49.6	1000	205.8	H	-7.0	4.4	54.0	PASSED
11598.594389	36.1	1000	307.0	H	213.0	17.9	54.0	PASSED

Table 44. Radiated emission test results 3 - 13.5 GHz. Average detector. EUT ver.

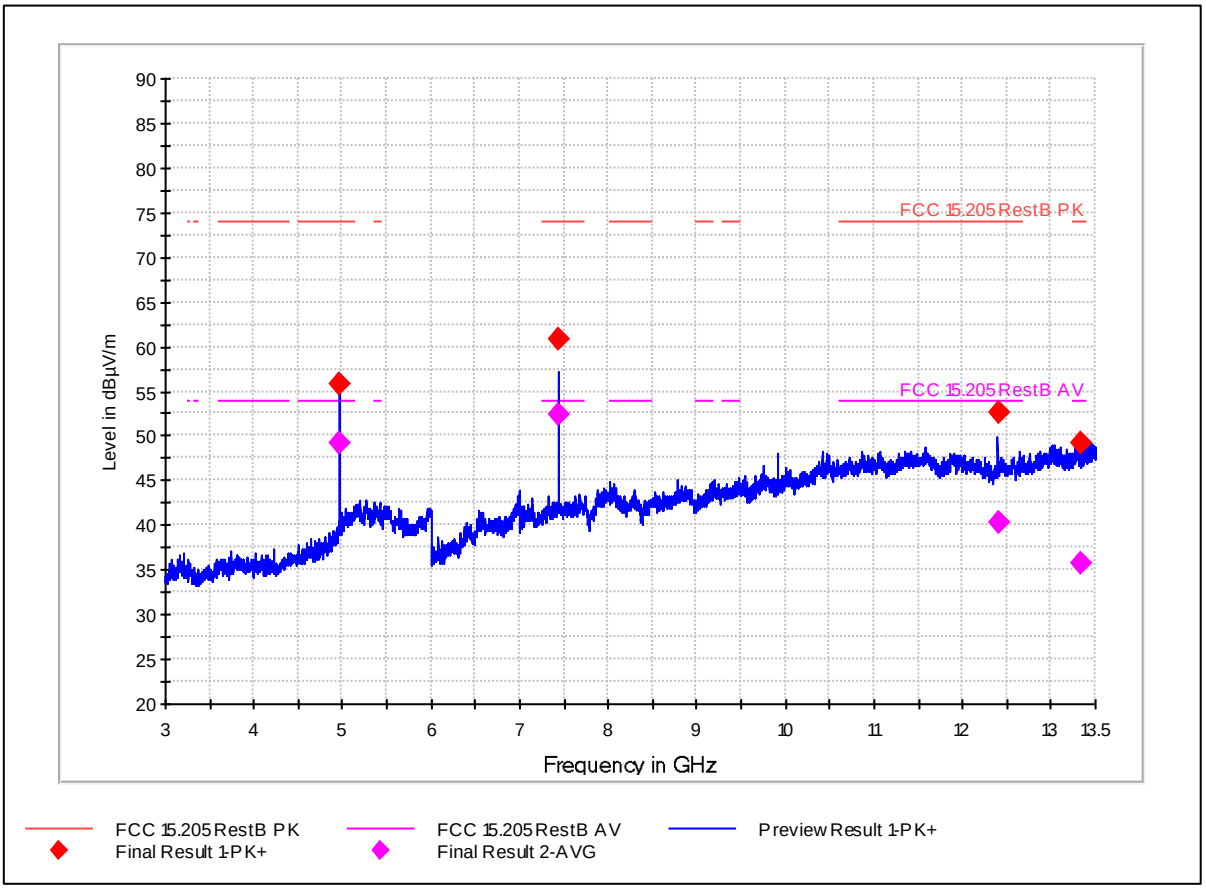

Figure 59. Radiated emission test results 3 – 13.5 GHz. EUT hor-90.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4959.519840	55.9	1000	155.1	H	116.0	18.1	74.0	PASSED
7440.777756	60.9	1000	250.7	V	294.0	13.1	74.0	PASSED
12401.497595	52.5	1000	174.8	V	274.0	21.5	74.0	PASSED
13328.855311	49.1	1000	354.8	V	278.0	24.9	74.0	PASSED

Table 45. Radiated emission test results 3 - 13.5 GHz. Peak detector. EUT hor-90.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
4959.519840	49.1	1000	155.1	H	116.0	4.9	54.0	PASSED
7440.777756	52.4	1000	250.7	V	294.0	1.6	54.0	PASSED
12401.497595	40.2	1000	174.8	V	274.0	13.8	54.0	PASSED
13328.855311	35.7	1000	354.8	V	278.0	18.3	54.0	PASSED

Table 46. Radiated emission test results 3 - 13.5 GHz. Average detector. EUT hor-90.

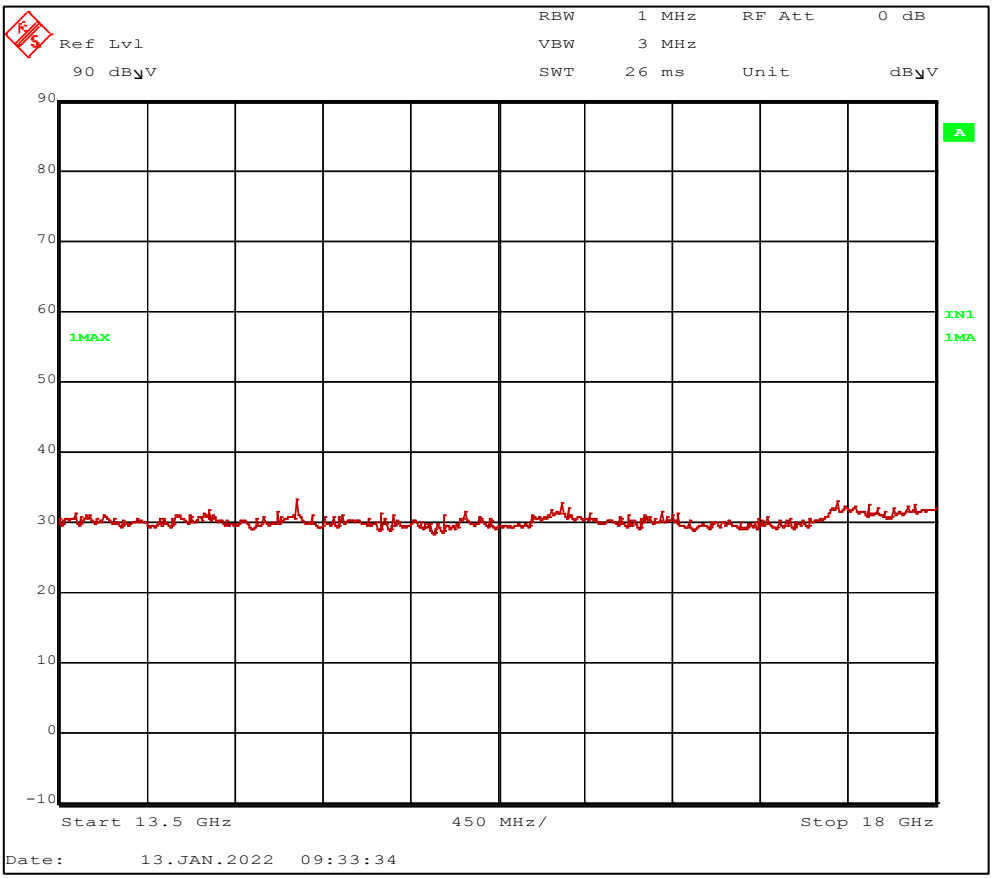

Figure 60. Radiated emission test results 13.5 - 18 GHz. Peak detector.

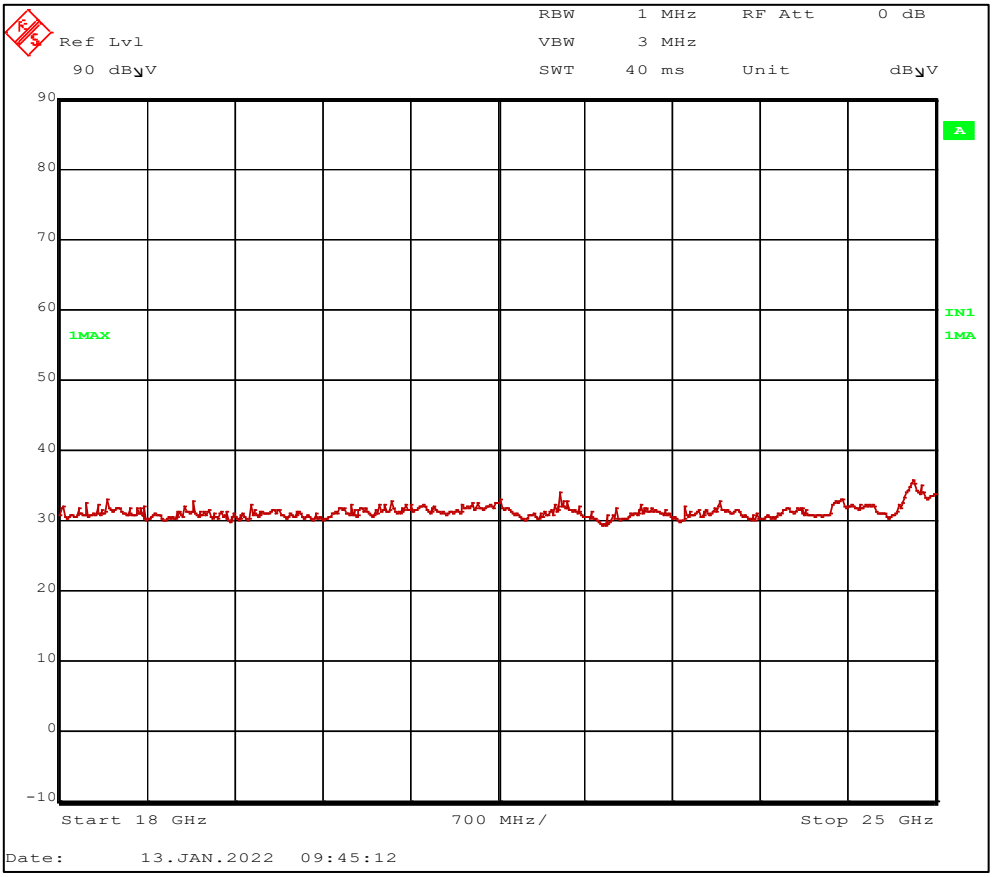

Figure 61. Radiated emission test results 18 - 25 GHz. Peak detector.

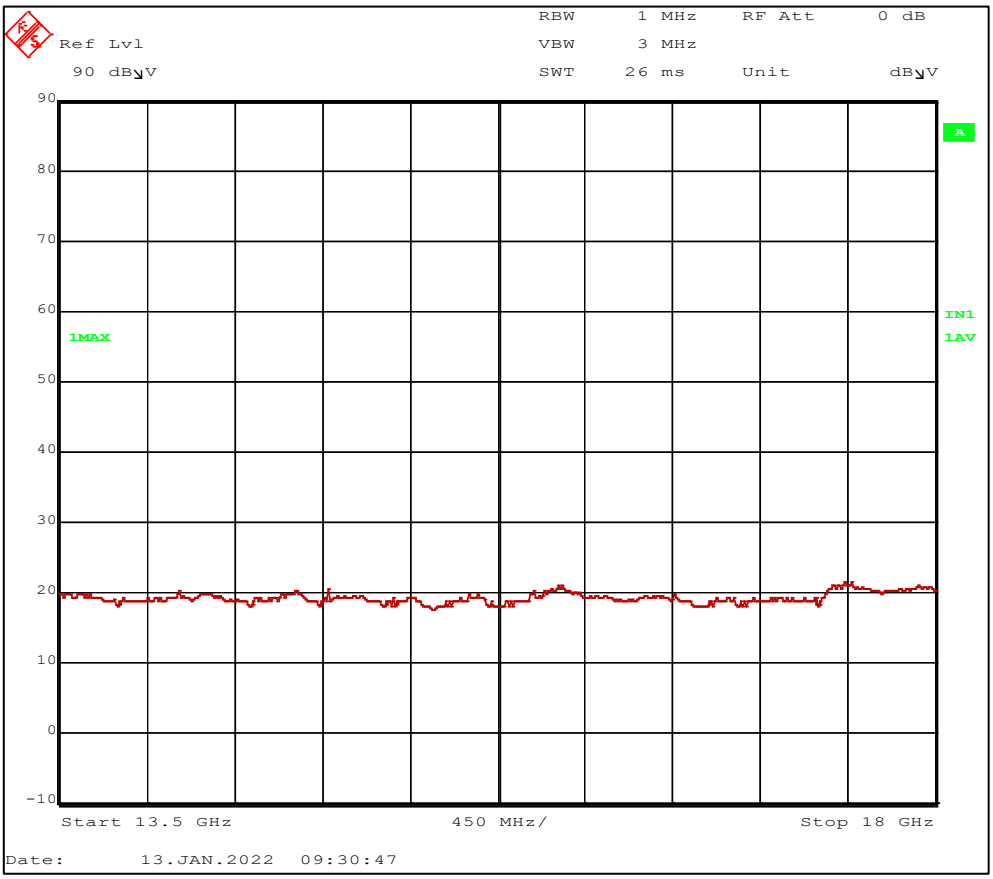

Figure 62. Radiated emission test results 13.5 - 18 GHz. Average detector.

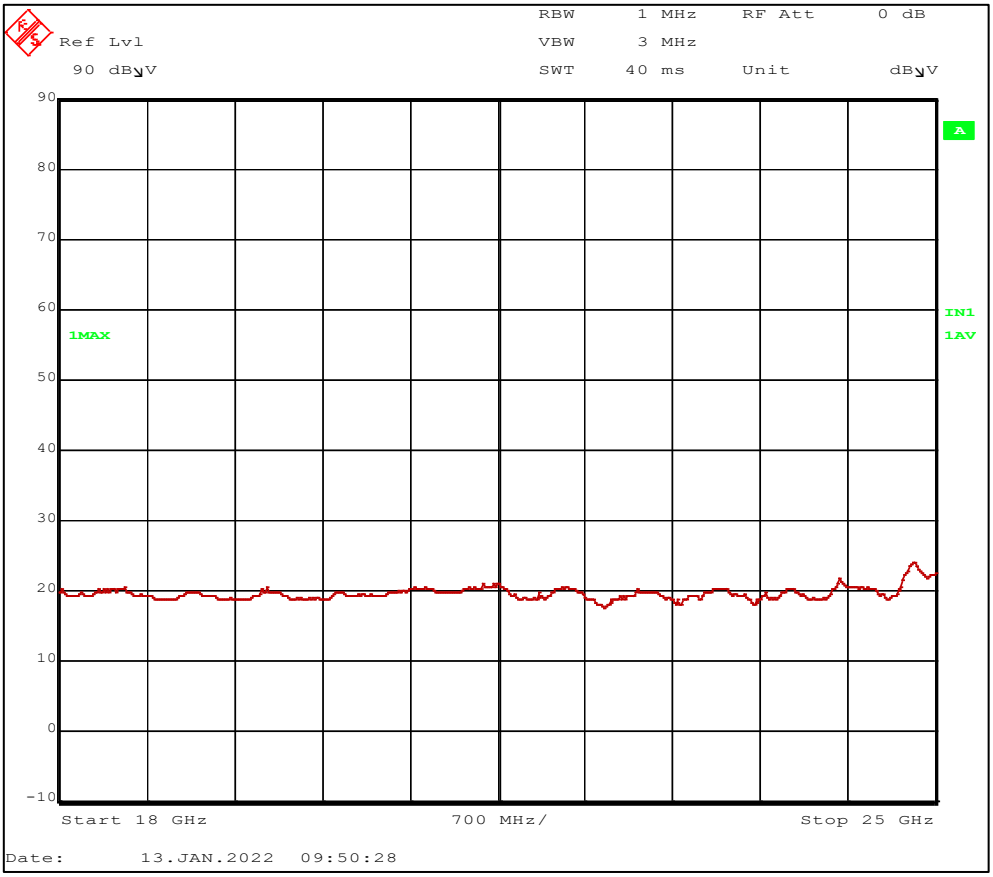

Figure 63. Radiated emission test results 18 - 25 GHz. Average detector.

Average Limit 3 m.	Peak limit 3 m	3 m / 0.5 m factor	Average Limit 0.5 m.	Peak limit 0.5 m
dBµV/m	dBµV/m	dB	dBµV/m	dBµV/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 13.5 – 25 GHz.

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

Table 49. Radiated emission test results. 13.5 - 25 GHz. Peak detector. EUT 3 orientations.

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

Table 50. Radiated emission test results 13.5 - 25 GHz. Average detector. EUT 3 orientations.

2.6.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due
Antenna Bilog 30MHz - 2GHz	Chase	CBL6112B	30114397	2022-11-25
Antenna Horn	Schwarzbeck	BBHA 9120 D	30120031	2022-04-15
Antenna Std gain Horn 12GHz - 18GHz	Narda	639 + 609	30117219	2022-08-26
Antenna Std gain Horn 18 - 26.5 GHz	Narda	638 + 4608B	30117524	2022-08-26
LNA amplifier 3 - 18 GHz	Miteq	AMF60-020180-29-20P	30150080	2022-08-26
LNA amplifier 1 - 26 GHz	Miteq	JS4-01002600-36-5P	30150081	2022-08-26
Filter high pass	Wainwright	WHKS 1000-10SS	30113917	2022-08-26
Analyzer 20Hz-26.5GHz	Rohde & Schwarz	ESIB 26	30118880	2023-01-03

Table 51. Radiated emission test equipment.

2.7 Band edge

Test specimen	AF003
Test specification	FCC 558074 D01 15.247 (d) Measurement Guidance v05r2
Test method	ANSI C63.10:2013 sec. 11.12
Comments	None
Temperature / Humidity	22°C / 31%RH
Dates of measurements	2022-02-17
Test personnel	Søren Søltoft

2.7.1 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.

See appendix 1 for photo of test set up.

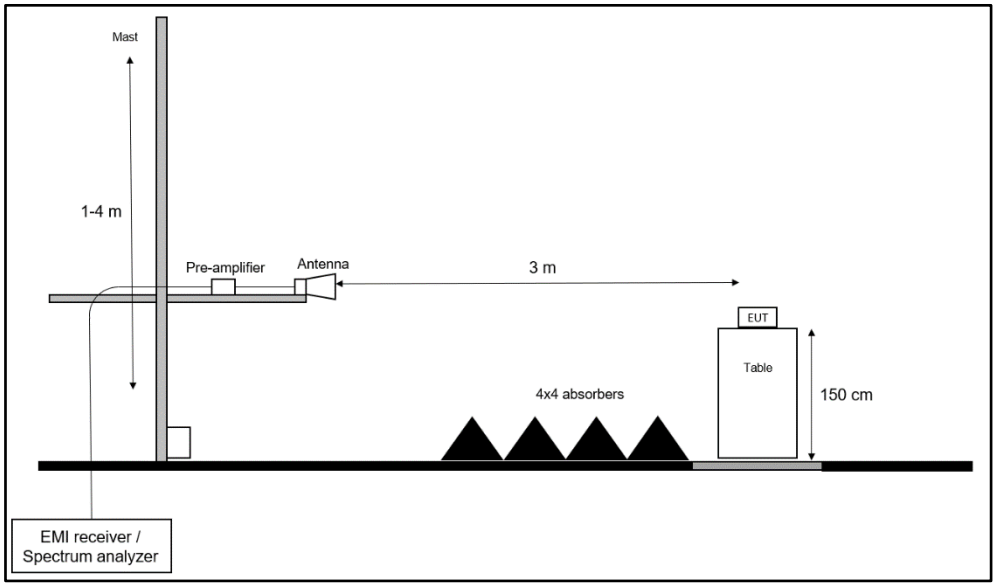

Figure 64. Test setup.

2.7.2 Test results

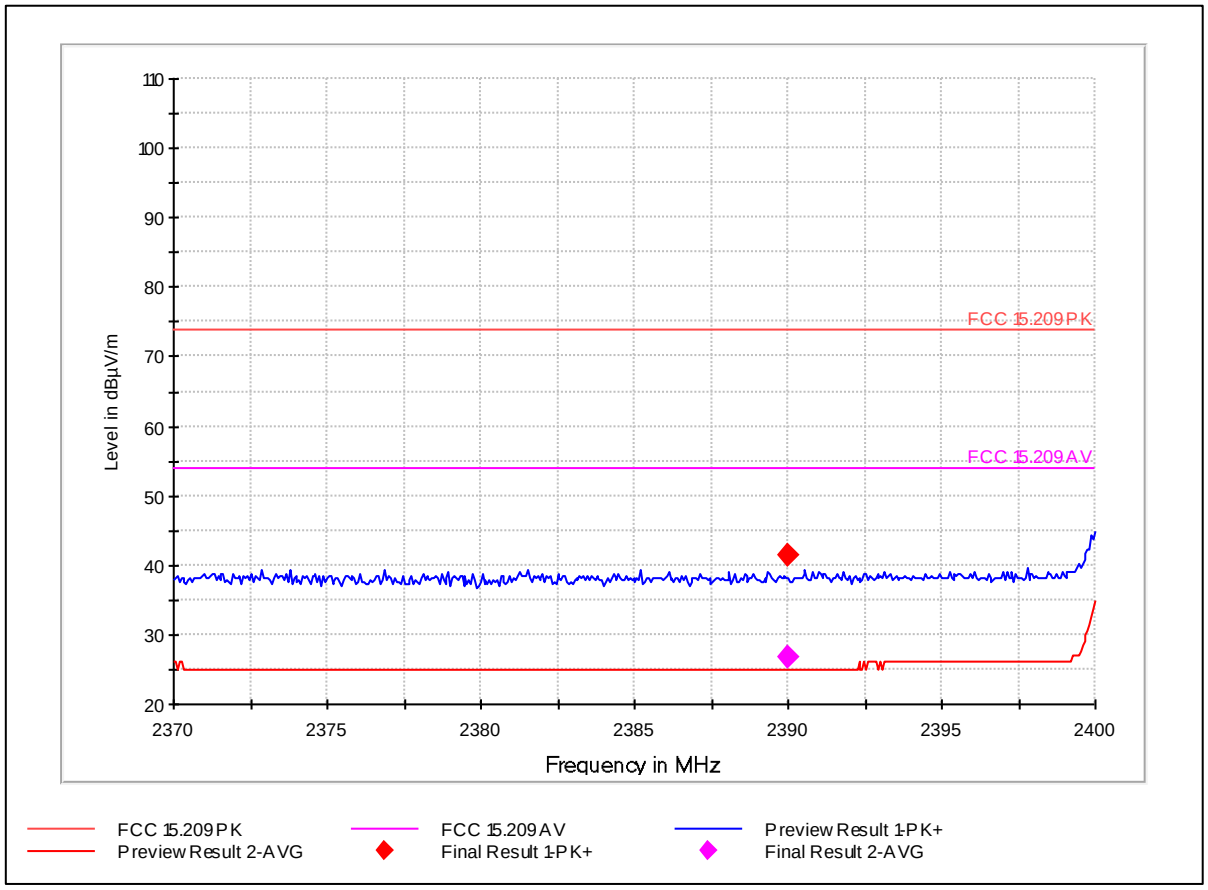

Figure 65. Band Edge for channel 37.

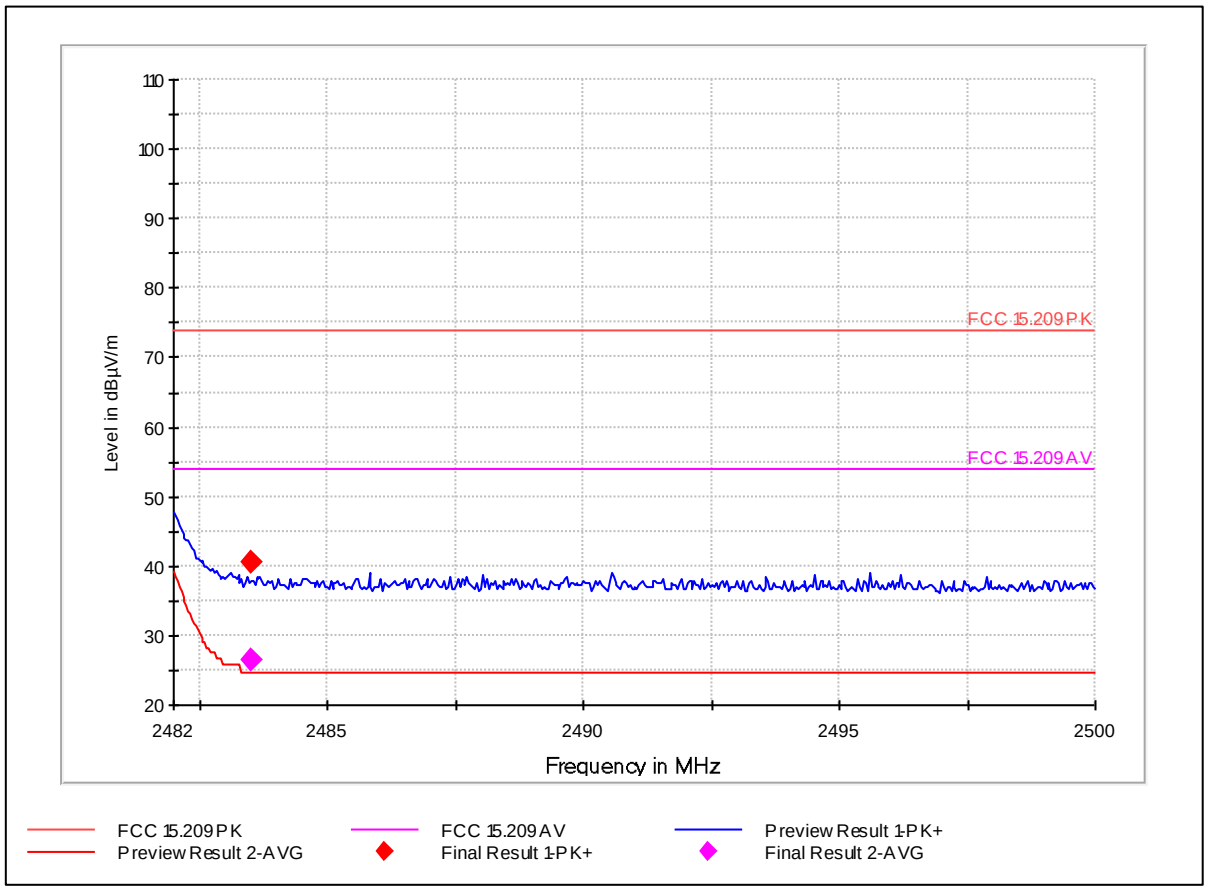

Figure 66. Band Edge for channel 39.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2390.020040	41.5	1000	231.2	V	280.0	32.5	74.0	PASSED

Table 52. Band Edge for channel 37. Peak detector.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2390.020040	26.8	1000	231.2	V	280.0	27.2	54.0	PASSED

Table 53. Band Edge for channel 37. Average detector.

Frequency [MHz]	Peak [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2483.515030	40.5	1000	115.0	V	289.0	33.5	74.0	PASSED

Table 54. Band Edge for channel 39. Peak detector.

Frequency [MHz]	Average [dBµV/m]	BW [kHz]	Height [cm]	Pol.	Azimuth [deg]	Margin [dB]	Limit [dBµV/m]	Result
2483.515030	26.6	1000	115.0	V	289.0	27.4	54.0	PASSED

Table 55. Band Edge for channel 39. Average detector.

2.7.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Analyzer 20Hz-26.5GHz	Rohde & Schwarz	ESIB 26	30118880	2023-01-03
Antenna Horn	Schwarzbeck	BBHA 9120 D	30120031	2022-04-15

Table 56. Band Edge test equipment.

2.8 Power spectral density

Test specimen	AF003
Test specification	FCC 47 CFR Part 15.247 (e) RSS-247 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 / 37%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.8.1 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.

2.8.2 Test results

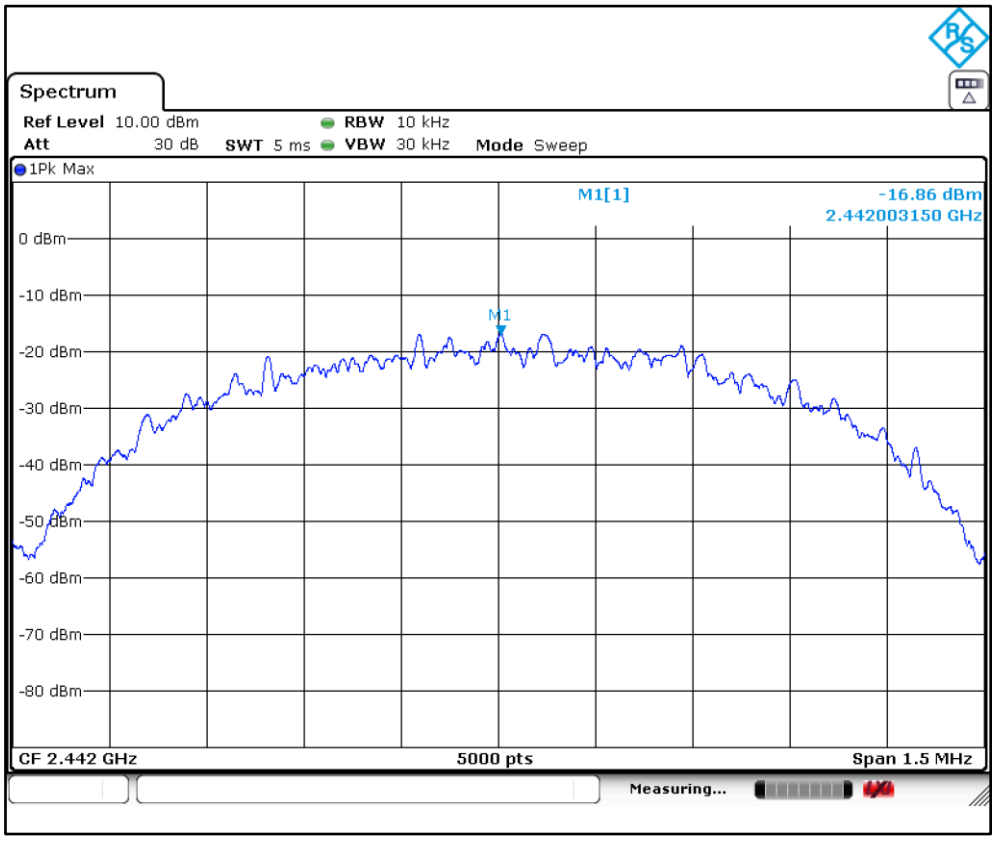

Figure 67. Power spectral density channel 18.

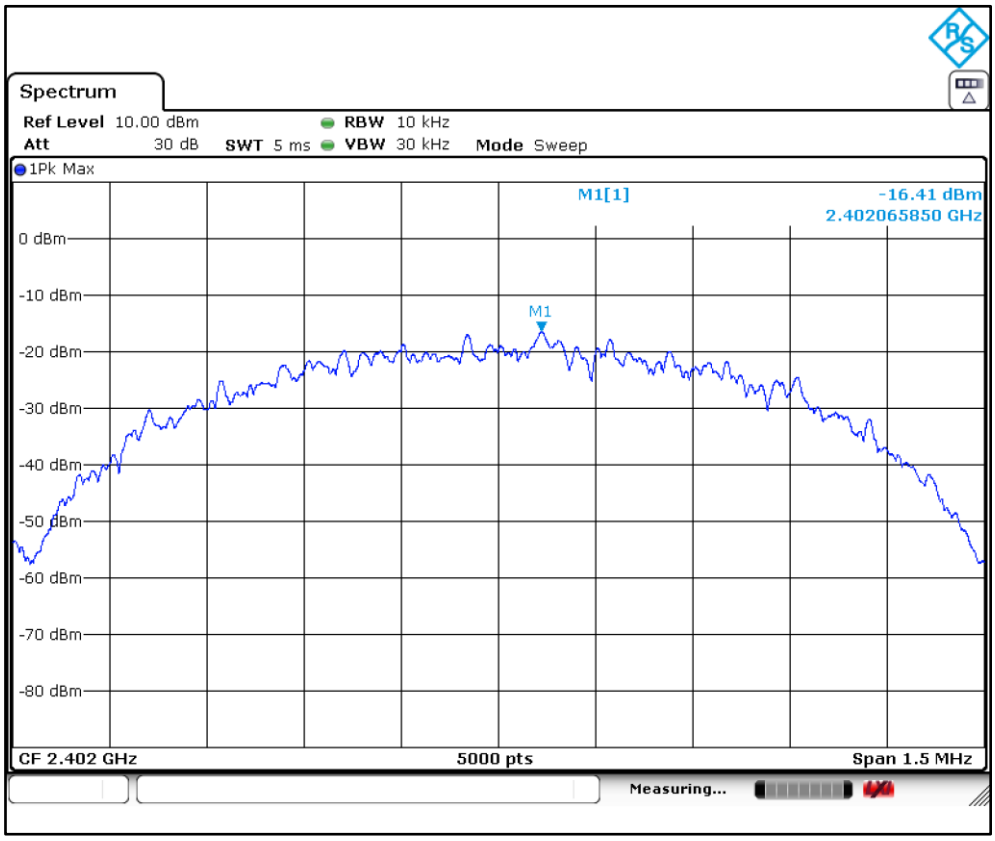

Figure 68. Power spectral density channel 37.

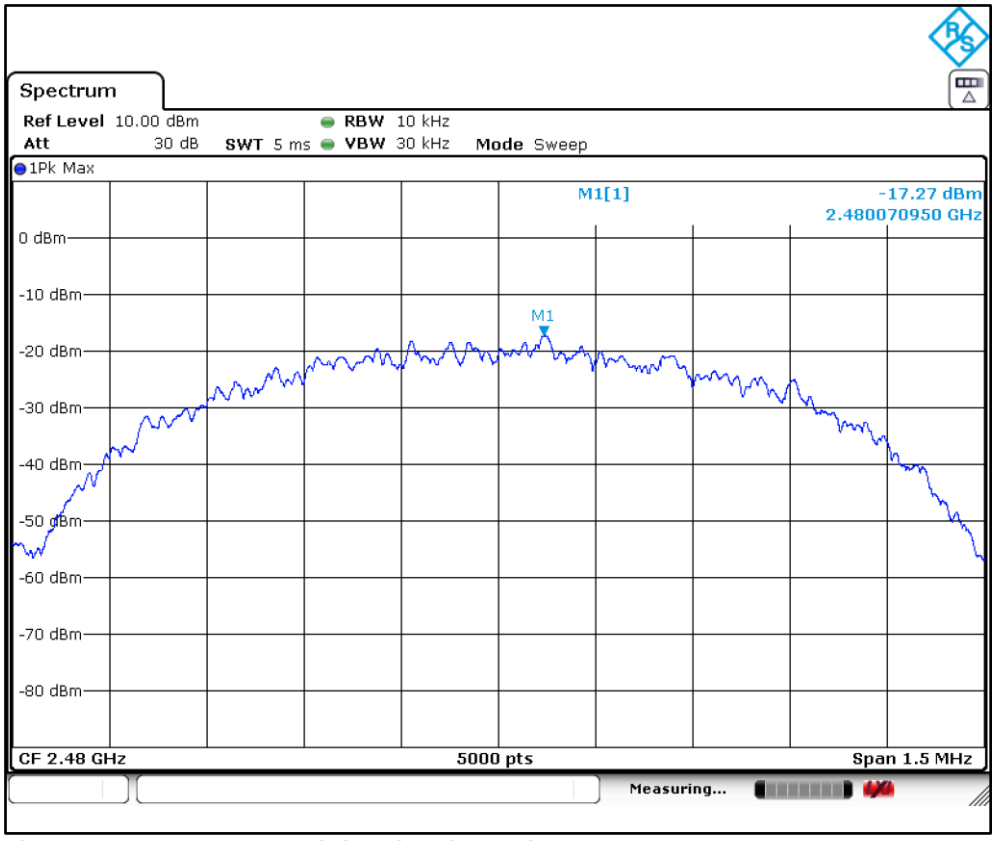

Figure 69. Power spectral density channel 39.

Channel	Frequency [MHz]	Power Spectral density [dBm]	Limit [dBm]	Result
18	2442	-16.86	8	PASSED
37	2402	-16.41	8	PASSED
39	2480	-17.27	8	PASSED

Table 57. Power spectral density test results.

2.8.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	30150092	2022-11-30
Multimeter	Hewlett Packard	34401A	30114880	2022-01-14
Power Supply 0-15V 7A, 0-30V 4A	Hewlett Packard	E3632A	30114306	-

Table 58. Power spectral density test equipment.

2.9 Occupied bandwidth

Test specimen	AF003
Test specification	FCC 47 CFR Part 2.1049 RSS-Gen 6.7
Test method	ANSI C63.10:2013 sec. 6.9.3
Comments	None
Temperature / Humidity	23°C / 37%RH
Dates of measurements	2022-01-11
Test personnel	Søren Søltoft

2.9.1 Test setup

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

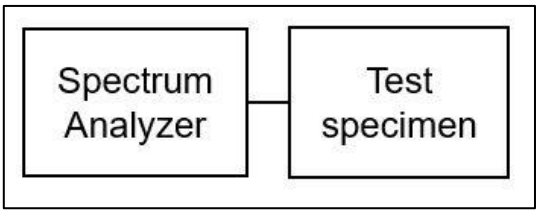

Figure 70. Test setup.

See photo of test set up in appendix 1.

2.9.2 Test results

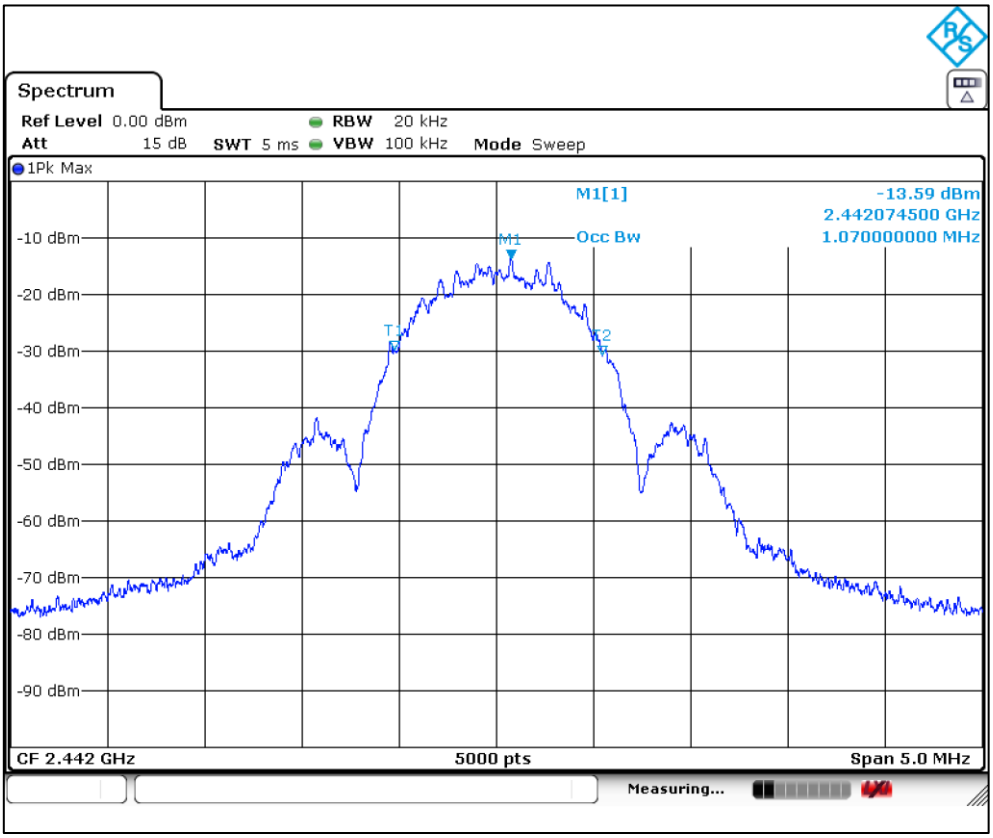

Figure 71. Occupied bandwidth 99% channel 18.

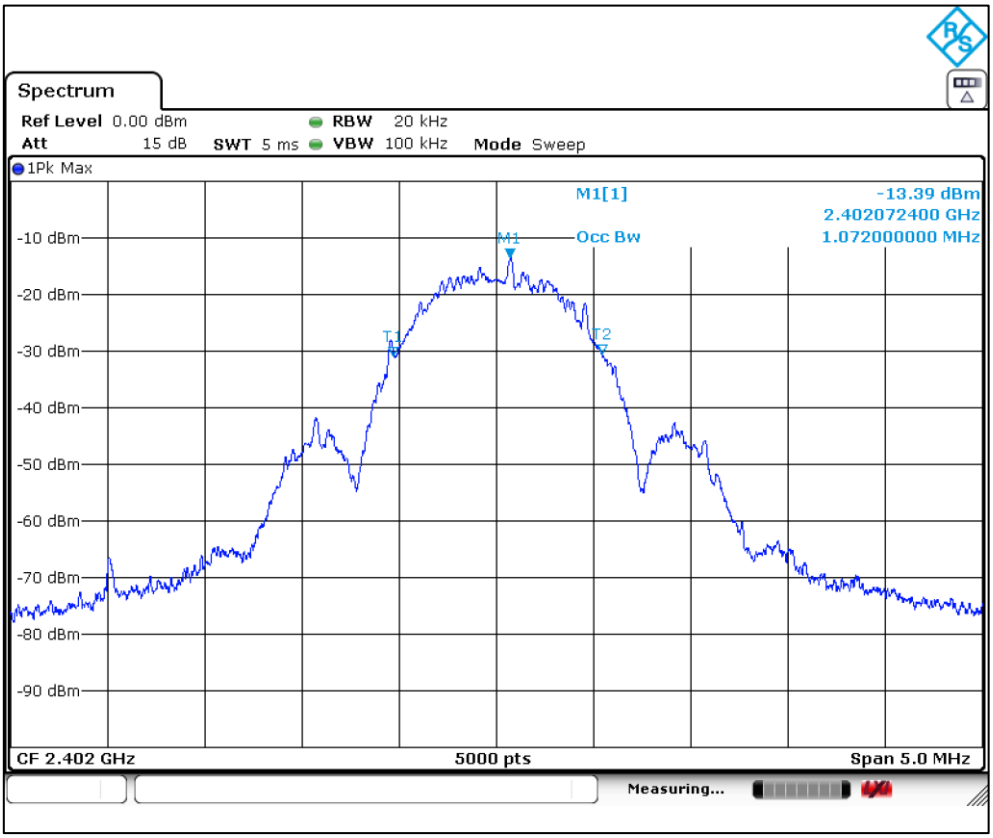

Figure 72. Occupied bandwidth 99% channel 37.

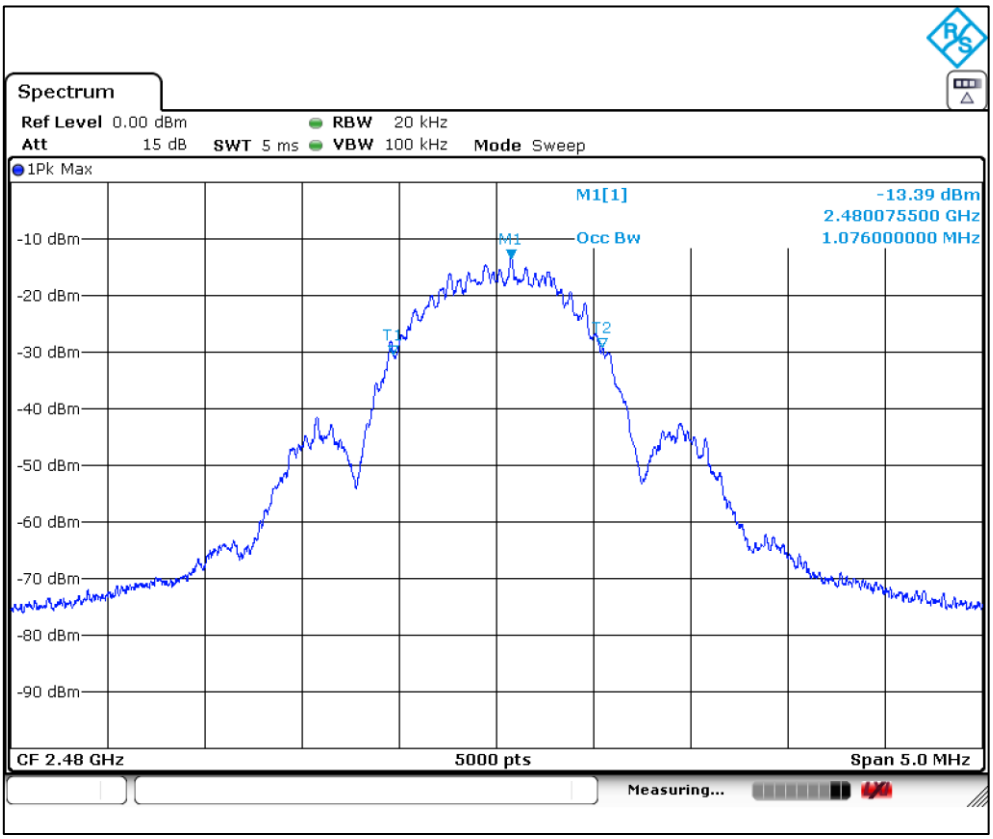

Figure 73. Occupied bandwidth 99% channel 39.

Channel	Frequency [MHz]	Occupied bandwidth 99% [MHz]	Result
19	2440	1.070	PASSED
37	2402	1.072	PASSED
39	2480	1.076	PASSED

Table 59. 99% Occupied bandwidth test results.

2.9.3 Test equipment

Description	Supplier	Model	Tag no.	Cal. due date
Spectrum Analyzer 10Hz-13.6GHz	Rohde & Schwarz	FSV 13	30150092	2022-11-30
Multimeter	Hewlett Packard	34401A	30114880	2022-01-14
Power Supply 0-15V 7A, 0-30V 4A	Hewlett Packard	E3632A	30114306	-

Table 60. 99% Occupied bandwidth test equipment.

3 MEASURING UNCERTAINTIES

Compliancy 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**