

TEST REPORT

Test report no.: 1-1335-25-02-05_TR1-R01



Deutsche
Akkreditierungsstelle
D-PL-12047-01-00

Testing laboratory

cetecom advanced GmbH

Untertuerkheimer Strasse 6 – 10

66117 Saarbruecken / Germany

Phone: + 49 681 5 98 - 0

Fax: + 49 681 5 98 - 9075

Internet: <https://cetecomadvanced.com>

e-mail: mail@cetecomadvanced.com

Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkkS).

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number:

D-PL-12047-01-00.

ISED Testing Laboratory Recognized Listing Number: DE0001

FCC designation number: DE0002

Applicant

Parrot Drones SAS

174 Quai de Jemmapes

75010 Paris / FRANCE

Phone: +33 1 48 03 60 60

Contact: Arezki Guerrab

e-mail: arezki.guerrab@parrot.com

Manufacturer

Parrot Drones SAS

174 Quai de Jemmapes

75010 Paris / FRANCE

Test standard/s

FCC - Title 47 CFR Part 15

FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices

RSS - 247 Issue 4

Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: SKYCONTROLLER UKR

Model name: MPP U2 GOV

FCC ID: 2AG6IMPPU2GOV

ISED certification number: 21053-MPPU2GOV

Frequency: 5150 MHz to 5250 MHz; 5745 MHz to 5850 MHz

Technology tested: WLAN

Antenna: Two integrated antennas

Power supply: 7.2 V DC by battery
120/230 V AC by mains

Temperature range: -36°C to +50°C

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorized:



cn=Michael Dorongovski-Kerbusch, o,
ou,
email=michael.dorongovski@cetecomad
vanced.com, c=DE
2026.06.08 15:22:36 +02'00'

Michael Dorongovski
Lab Manager
Regulatory Services Radio

Test performed:



cn=Marco Bertolino, o=cetecom advanced
GmbH, ou=BTL-251205,
email=Marco.Bertolino@cetecomadvanced.co
m, c=DE
2026.06.09 07:02:04 +02'00'

Marco Bertolino
Supervisor Radio Lab
Regulatory Services Radio

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2026-01-14
Date of receipt of test item:	2026-05-04
Start of test:*	2026-05-04
End of test:*	2026-06-02
Person(s) present during the test:	Mr. Arezki Guerrab

*Date of each measurement, if not shown in the plot, can be requested. Dates are stored in the measurement software.

2.3 Test laboratories sub-contracted

None

3 Test standard/s, references and accreditations

Test standard	Date	Description
FCC - Title 47 CFR Part 15	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 247 Issue 4	2025-07-24	Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands

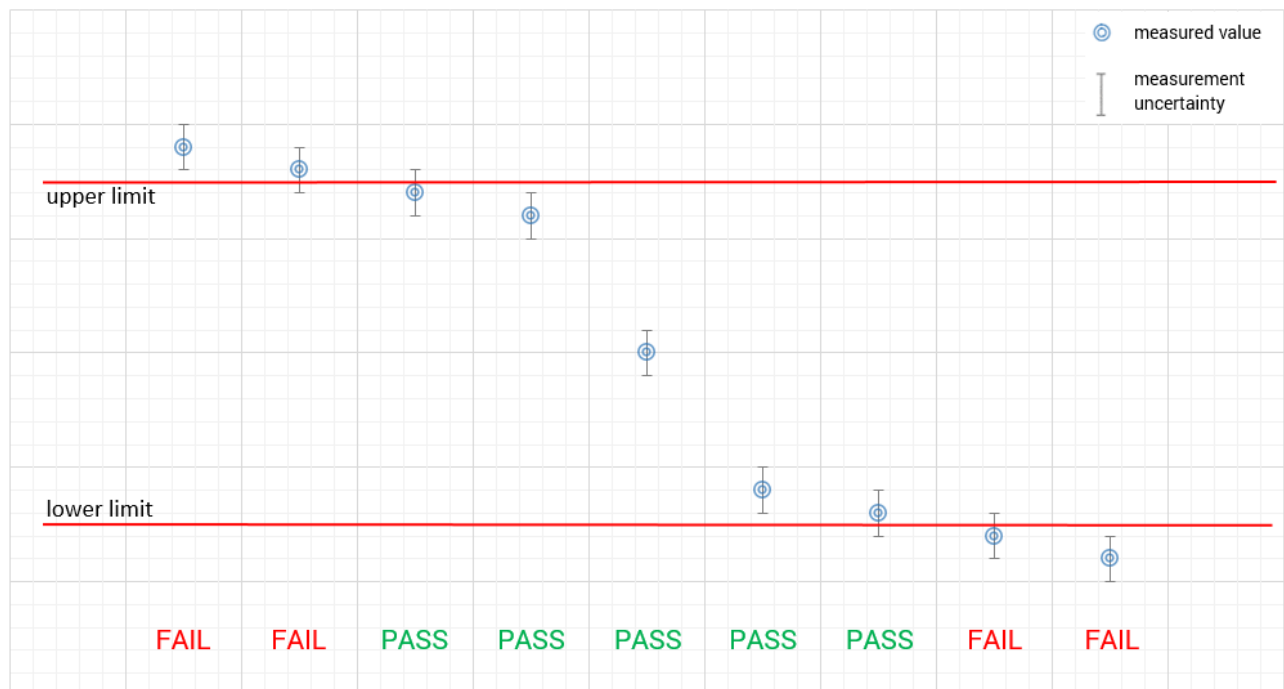
Guidance	Version	Description
KDB 789033 D02	v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E
ANSI C63.10-2020	-/-	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI/USEMCSC C63.10a-2024 Amendment 1	2024-08-08	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1
ANSI/USEMCSC C63.10a-2024 Amendment 1 Errata	2024-11-18	Errata to American National Standard for Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1
KDB 662911 D01	v02r01	Correction Sheet
KDB 174176 D01	V01r02	Emissions Testing of Transmitters with Multiple Outputs in the Same Band
		AC POWER LINE CONDUCTED EMISSIONS
		FREQUENTLY ASKED QUESTIONS

4 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong."

measured value, measurement uncertainty, verdict



5 Test environment

Temperature :	T _{nom} T _{max} T _{min}	+22 °C during room temperature tests No tests under extreme environmental conditions required. No tests under extreme environmental conditions required.
Relative humidity content :		40 %
Barometric pressure :		Not relevant for this kind of testing
Power supply :	V _{nom} V _{max} V _{min}	7.2 V DC by battery 5.0 V DC by mains adapter PD6008 120/230 V AC by mains No tests under extreme environmental conditions required. No tests under extreme environmental conditions required.

6 Test item

6.1 General description

Kind of test item :	SKYCONTROLLER UKR
Model name :	MPP U2 GOV
HMN :	-/-
PMN :	SKYCONTROLLER UKR
HVIN :	MPP U2 GOV
FVIN :	-/-
S/N serial number :	Radiated unit: 163 Conducted unit: 163
Hardware status :	HW_06
Software status :	8.5.0-alpha2
Firmware status :	8.5.0-alpha2
Frequency band :	5150 MHz to 5250 MHz; 5745 MHz to 5850 MHz
Type of radio transmission :	OFDM
Use of frequency spectrum :	
Type of modulation :	CCK, (D)BPSK, (D)QPSK, 16 – QAM, 64 – QAM
Number of channels :	9
Antenna :	Two integrated antennas
Power supply :	7.2 V DC by battery 120/230 V AC by mains
Temperature range :	-36°C to +50°C

6.2 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup and EUT photos are included in test report:

1-1335-25-02-01_TR1-A101-R01
1-1335-25-02-01_TR1-A102-R01
1-1335-25-02-01_TR1-A104-R01

7 Description of the test setup

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, RF generating and signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

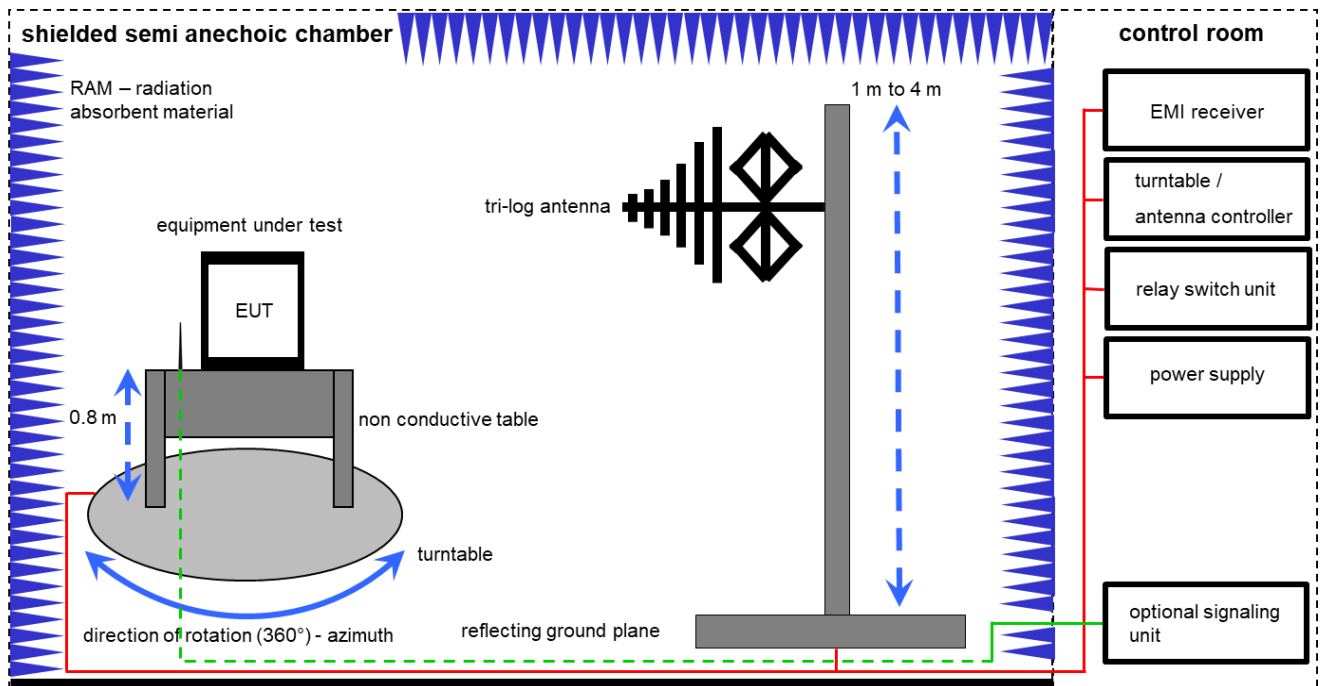
Each block diagram listed can contain several test setup configurations. All devices belonging to a test setup are identified with the same letter syntax. For example: Column Setup and all devices with an A.

Agenda: Kind of Calibration

k/cal	calibration / calibrated	EK	limited calibration
Ne/cnn	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
Ev/chk	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlk!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress
cpu	check prior usage		

7.1 Shielded semi anechoic chamber

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 30 MHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are conform to specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Measurement distance: tri-log antenna 10 meter

$$FS = UR + CL + AF$$

(FS-field strength; UR-voltage at the receiver; CL-loss of the cable; AF-antenna factor)

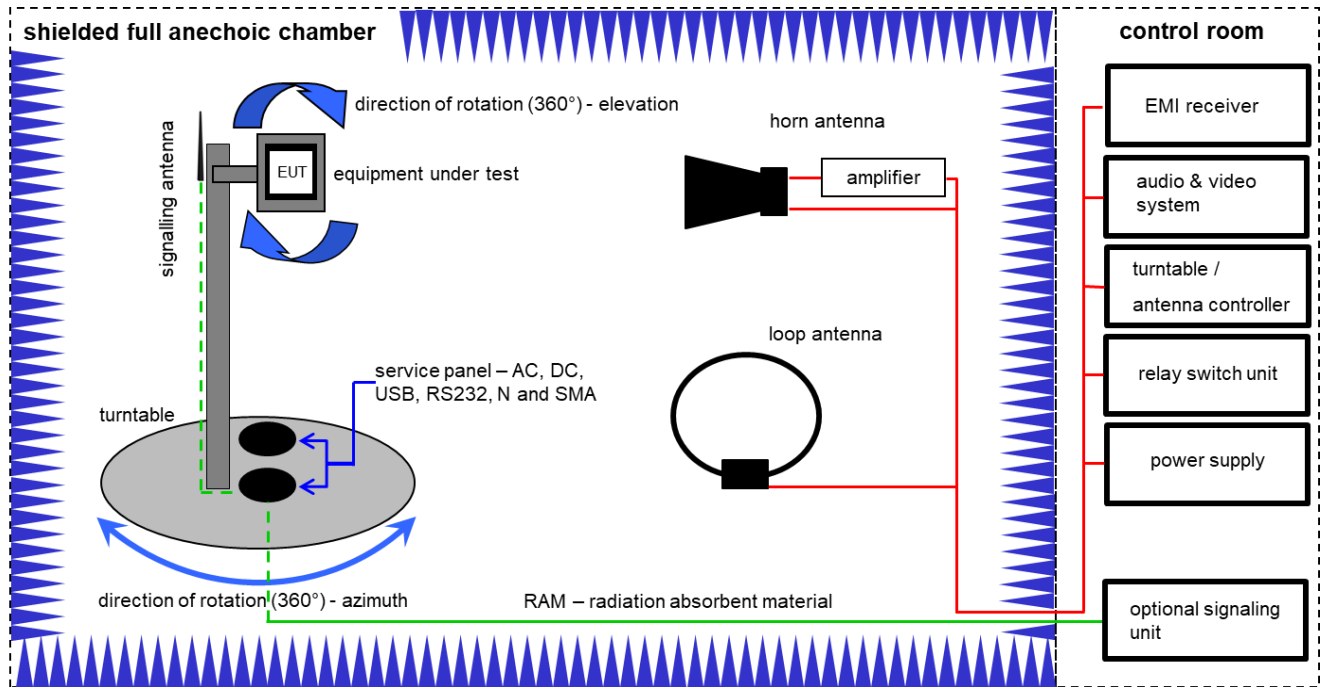
Example calculation:

$$FS [dB\mu V/m] = 12.35 [dB\mu V/m] + 1.90 [dB] + 16.80 [dB/m] = 31.05 [dB\mu V/m] \quad (35.69 \mu V/m)$$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Semi anechoic chamber	Semi anechoic chamber 3000023	MEC Import: MWB AG	-/-	40797	cnn	-/-	-/-
2	A	TRILOG Broadband Antenna	TRILOG Broadband Antenna VULB9163	Schwarzbeck Mess-Elektronik OHG Schönaun	371	40798	cal	11.07.2024	11.07.2026
3	A	Turntable	Turntable 2089-4.0	EMCO Elektronik GmbH Gilching	-/-	40799	cnn	-/-	-/-
4	A	Switch-Unit	Switch-Unit 3488A	Hewlett Packard	2719A14505	50160	cpu	-/-	-/-
5	A	Power Supply	Power Supply 6032A	Hewlett Packard	2920A04466	50161	cnn	-/-	-/-
6	A	Antenna Tower	Antenna Tower 2175	ETS-Lindgren GmbH Taufkirchen	64762	50279	cnn	-/-	-/-
7	A	Positioning Controller	Positioning Controller 2090	ETS-Lindgren GmbH Taufkirchen	64672	50280	cnn	-/-	-/-
8	A	EMI Test Receiver	EMI Test Receiver ESR3 9kHz-3.6GHz	Rohde & Schwarz Messgerätebau GmbH Memmingen	102587	50417	cal	08.12.2025	31.12.2026

7.2 Shielded fully anechoic chamber



Measurement distance: horn antenna 3 meter; loop antenna 3 meter

FS = UR + CA + AF

(FS-field strength; UR-voltage at the receiver; CA-loss of the signal path; AF-antenna factor)

Example calculation:

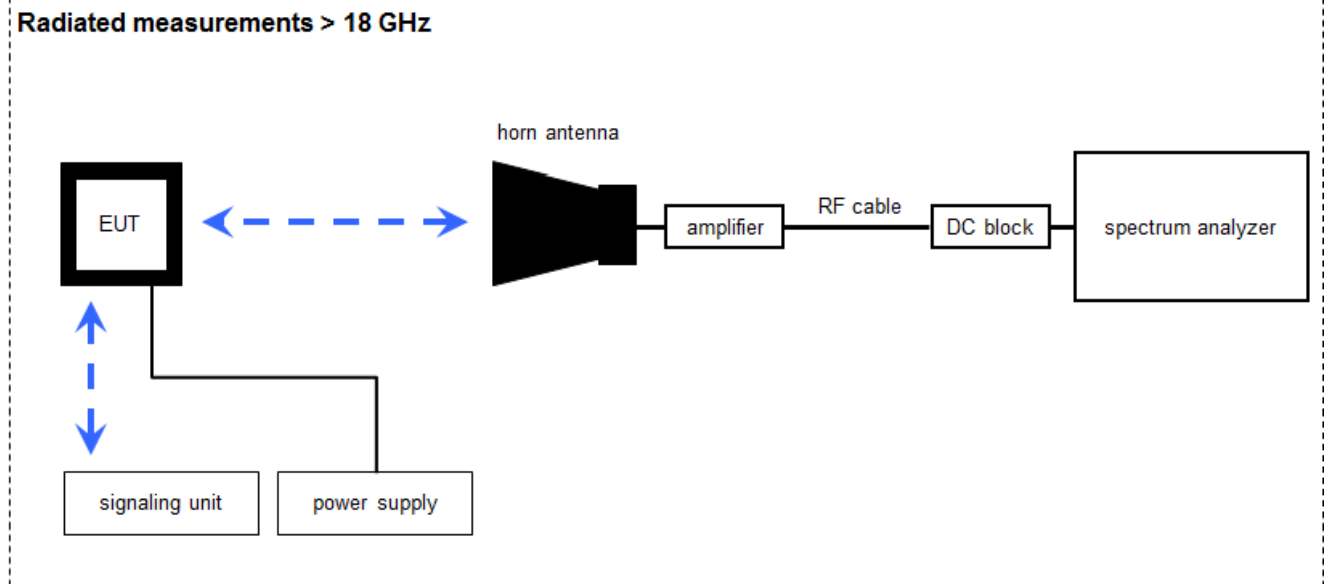
FS [dBμV/m] = 40.0 [dBμV/m] + (-35.8) [dB] + 32.9 [dB/m] = 37.1 [dBμV/m] (71.61 μV/m)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A, B, C	Signal- and Spectrum Analyzer	Signal- and Spectrum Analyzer FSW26	Rohde & Schwarz Messgerätebau GmbH Memmingen	101455	40114	cal	08.12.2025	31.12.2026
2	A, B	Double-Ridged Waveguide Horn Antenna	Double-Ridged Waveguide Horn Antenna 3115	EMCO Elektronik GmbH Gilching	8812-3089	40344	cal	09.07.2024	09.07.2026
3	B	Highpass Filter	Highpass Filter WHK1.1/15G-10SS	Wainwright Instruments GmbH Andechs	37	40362	cnn	-/-	-/-
4	B	Highpass Filter	Highpass Filter WHKX7.0/18G-8SS	Wainwright Instruments GmbH Andechs	18	40364	cpu	-/-	-/-
5	B	Band Reject Filter	Band Reject Filter WRCJV12-5120-5150-5350-5380-40SS	Wainwright Instruments GmbH Andechs	5	40395	cpu	-/-	-/-
6	B	Band Reject Filter	Band Reject Filter WRCJV12-5695-5725-5850-5880-40SS	Wainwright Instruments GmbH Andechs	5	40396	cpu	-/-	-/-
7	A, B	Broadband Amplifier 0.5-18 GHz	Broadband Amplifier 0.5-18 GHz CBLU5184540	MEC Import: CERNEX	22050	40374	cpu	-/-	-/-
8	A, B, C	4U RF Switch Platform	4U RF Switch Platform L4491A	Agilent Technologies Deutschland GmbH Böblingen	MY50000032	40376	cnn	-/-	-/-
9	B	Highpass Filter	Highpass Filter WHKX2.6/18G-10SS	Wainwright Instruments GmbH Andechs	12	40377	cnn	-/-	-/-
10	A, B, C	NEXIO EMV-Software	NEXIO EMV-Software BAT EMC	MEC Import: Nexio	-/-	40383	cnn	-/-	-/-

			V2022.0.32.0						
11	A, B, C	Anechoic chamber	Anechoic chamber	MEC Import: TDK	-/-	40385	cnn	-/-	-/-
12	A, B, C	Power Supply	Power Supply HMP2020	Rohde & Schwarz Messgerätebau GmbH Memmingen	120626	40410	cal	04.12.2025	31.12.2027
13	C	Active Loop Antenna 9 kHz to 30 MHz	6502	EMCO	2210	3000010 15	vIKI!	07.07.2025	07.07.2027

7.3 Radiated measurements > 18 GHz



Measurement distance: horn antenna 50 cm

FS = UR + CA + AF

(FS-field strength; UR-voltage at the receiver; CA-loss signal path & distance correction; AF-antenna factor)

Example calculation:

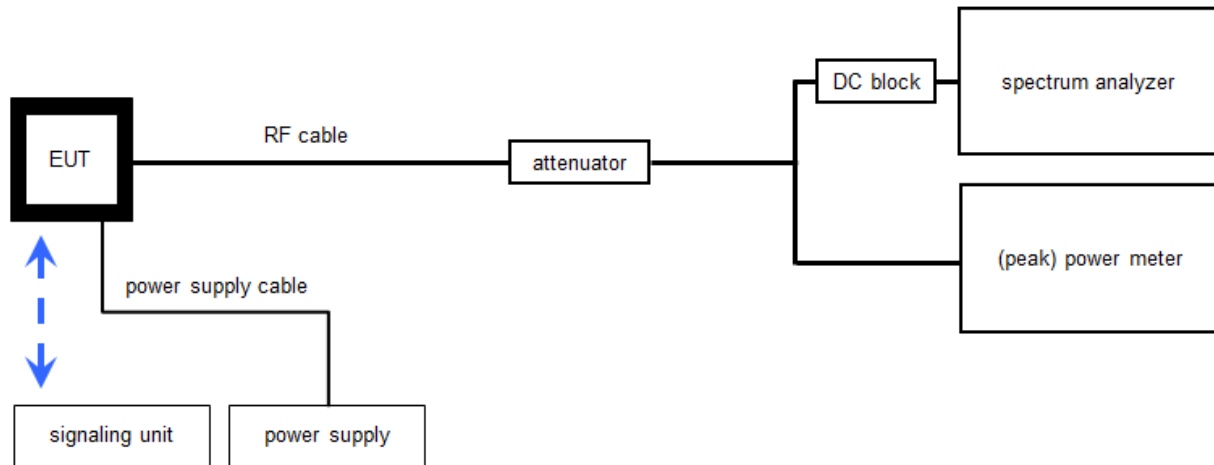
FS [dBμV/m] = 40.0 [dBμV/m] + (-60.1) [dB] + 36.74 [dB/m] = 16.64 [dBμV/m] (6.79 μV/m)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Horn Antenna 18,0-40,0 GHz	Horn Antenna 18,0-40,0 GHz LHAF180	MEC Import: Microw.Devel	39180-103-021	40170	cal	16.01.2026	31.01.2028
2	A	Low Noise Amplifier, Broadband 18-50 GHz	Low Noise Amplifier, Broadband 18-50 GHz BZT-18005000-550835-SL2525-SL	MEC Import: B&Z Technologies	27887-27889	40789	cpu	-/-	-/-
3	A	Signal analyzer	Signal analyzer FSV40	Rohde & Schwarz Messgerätebau GmbH Memmingen	101042	40292	cal	08.01.2026	31.01.2027
4	A	RF-Cable	RF-Cable ST18/SMAM/SMAM /72	Huber & Suhner GmbH Unterhaching	Batch no. 699714	40389	cpu	-/-	-/-
5	A	DC-Blocker 0.1-40 GHz	DC-Blocker 0.1-40 GHz 8141A	MEC Import: Inmet	-/-	40390	cpu	-/-	-/-

7.4 Conducted measurements

Conducted measurements normal conditions



OP = AV + CA
 (OP-output power; AV-analyzer value; CA-loss signal path)

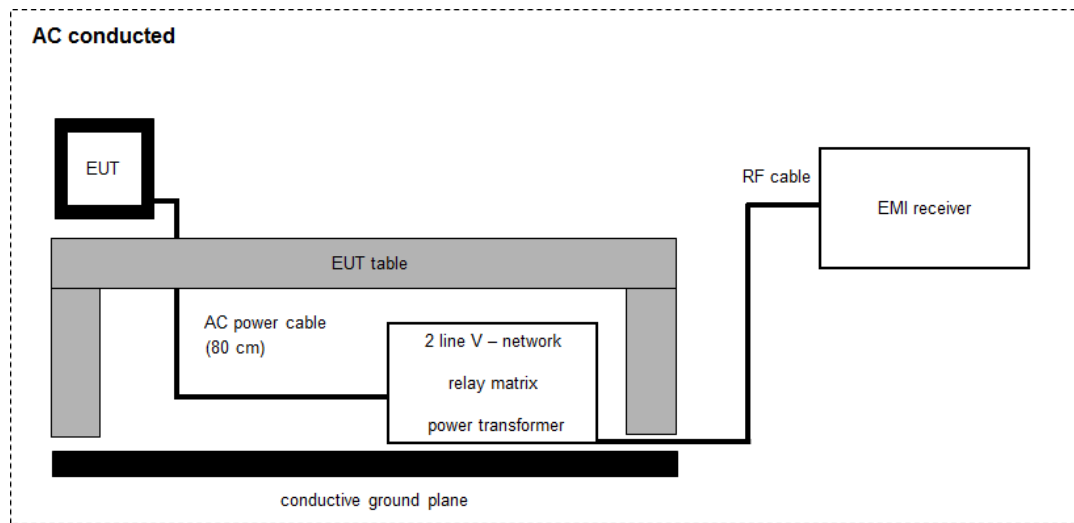
Example calculation:

OP [dBm] = 6.0 [dBm] + 11.7 [dB] = 17.7 [dBm] (58.88 mW)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Signal analyzer	Signal analyzer FSV40	Rohde & Schwarz Messgerätebau GmbH Memmingen	101042	40292	cal	08.01.2026	31.01.2027
2	A	RF-Cable	RF-Cable ST18/SMAm/SMAm /72	Huber & Suhner GmbH Unterhaching	Batch no. 699714	40389	cpu	-/-	-/-
3	A	DC-Blocker 0.1-40 GHz	DC-Blocker 0.1-40 GHz 8141A	MEC Import: Inmet		40390	cpu	-/-	-/-
4	A	DC Power Supply	DC Power Supply HMP2020	Rohde & Schwarz Messgerätebau GmbH Memmingen	102850 / 101699	40306	cal	02.12.2025	31.12.2027
5	A	Switch Matrix	Switch Matrix USM	cetecom advanced GmbH Saarbrücken	C001	40340	cnn	-/-	-/-
6	A	RF-Cable	RF-Cable ST18/SMAm/SMAm /60	Huber & Suhner GmbH Unterhaching	Batch no. 606844	40386	cpu	-/-	-/-
7	A	RF-Cable	RF-Cable ST18/SMAm/SMAm /48	Huber & Suhner GmbH Unterhaching	Batch no. 600918	40387	cpu	-/-	-/-
8	A	Coax Attenuator 10 dB 2W 0-40 GHz	Coax Attenuator 10 dB 2W 0-40 GHz MCL BW-K10-2W44+	Mini-Circuits Brooklyn		40391	cpu	-/-	-/-

7.5 AC conducted



$$FS = UR + CF + VC$$

(FS-field strength; UR-voltage at the receiver; CR-loss of the cable and filter; VC-correction factor of the ISN)

Example calculation:

$$FS [dB\mu V/m] = 37.62 [dB\mu V/m] + 9.90 [dB] + 0.23 [dB] = 47.75 [dB\mu V/m] \quad (244.06 \mu V/m)$$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	EMI Test Receiver	EMI Test Receiver ESR3 9kHz-3.6GHz	Rohde & Schwarz Messgerätebau GmbH Memmingen	102981	40332	cal	05.12.2025	31.12.2026
2	A	Two-Line V-Network (LISN)	Two-Line V-Network (LISN) ESH3-Z5	Rohde & Schwarz Messgerätebau GmbH Memmingen	892475/017	50005	cal	09.12.2025	31.12.2027

8 Sequence of testing

8.1 Sequence of testing radiated spurious 9 kHz to 30 MHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, it is placed on a table with 0.8 m height.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement*

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1 m.
- At each turntable position the analyzer sweeps with positive-peak detector to find the maximum of all emissions.

Final measurement

- Identified emissions during the pre-measurement are maximized by the software by rotating the turntable from 0° to 360°.
- Loop antenna is rotated about its vertical axis for maximum response at each azimuth about the EUT. (For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT)
- The final measurement is done in the position (turntable and elevation) causing the highest emissions with quasi-peak (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. A plot with the graph of the premeasurement and the limit is stored.

*)Note: The sequence will be repeated three times with different EUT orientations.

8.2 Sequence of testing radiated spurious 30 MHz to 1 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^\circ$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.3 Sequence of testing radiated spurious 1 GHz to 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a 2-axis positioner with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height is 1.5 m.
- At each turntable position and antenna polarization the analyzer sweeps with positive peak detector to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximizes the peaks by rotating the turntable from 0° to 360°. This measurement is repeated for different EUT-table positions (0° to 150° in 30°-steps) and for both antenna polarizations.
- The final measurement is done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.4 Sequence of testing radiated spurious above 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet.
- The measurement distance is as appropriate (e.g. 0.5 m).
- The EUT is set into operation.

Premeasurement

- The test antenna is handheld and moved carefully over the EUT to cover the EUT's whole sphere and different polarizations of the antenna.

Final measurement

- The final measurement is performed at the position and antenna orientation causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement and the limit is stored.

9 Measurement uncertainty

Measurement uncertainty		
Test case	Uncertainty	
Antenna gain	± 3 dB	
Power spectral density	± 1.56 dB	
DTS bandwidth	± 100 kHz (depends on the used RBW)	
Occupied bandwidth	± 100 kHz (depends on the used RBW)	
Maximum output power conducted	± 1.56 dB	
Detailed spurious emissions @ the band edge - conducted	± 1.56 dB	
Band edge compliance radiated	± 3 dB	
Spurious emissions conducted	> 3.6 GHz	± 1.56 dB
	> 7 GHz	± 1.56 dB
	> 18 GHz	± 2.31 dB
	≥ 40 GHz	± 2.97 dB
Spurious emissions radiated below 30 MHz	± 3 dB	
Spurious emissions radiated 30 MHz to 1 GHz	± 4.1 dB	
Spurious emissions radiated 1 GHz to 12.75 GHz	± 3.7 dB	
Spurious emissions radiated above 12.75 GHz	± 4.5 dB	
Spurious emissions conducted below 30 MHz (AC conducted)	± 2.6 dB	

10 Summary of measurement results

☒	No deviations from the technical specifications were ascertained
☐	There were deviations from the technical specifications ascertained
☐	This test report is only a partial test report. The content and verdict of the performed test cases are listed below.

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Title 47 Part 15 RSS 247, Issue 4	See table	2026-06-08	-/-

Test specification clause	Test case	C	NC	NA	NP	Remark
-/-	Output power verification (cond.)	-/-				Declared
-/-	Antenna gain	-/-				Declared
U-NII Part 15	Duty cycle	-/-				-/-
§15.407(a) RSS - 247 (6.2.x.1)	Maximum output power (conducted & radiated)	☒	☐	☐	☐	-/-
§15.407(a) RSS - 247 (6.2.x.1)	Power spectral density	☒	☐	☐	☐	-/-
RSS - 247 (6.2.4.1)	Spectrum bandwidth 6dB bandwidth	☒	☐	☐	☐	-/-
§15.407(a) RSS - 247 (6.2.x.2)	Spectrum bandwidth 26dB bandwidth	☒	☐	☐	☐	-/-
RSS Gen clause 6.6	Spectrum bandwidth 99% bandwidth	-/-				-/-
§15.205 RSS - 247 (6.2.x.2)	Band edge compliance radiated	☒	☐	☐	☐	-/-
§15.407(b) RSS - 247 (6.2.x.2)	TX spurious emissions radiated	☒	☐	☐	☐	-/-
§15.209(a) RSS-Gen	Spurious emissions radiated < 30 MHz	☒	☐	☐	☐	-/-
§15.107(a) §15.207	Spurious emissions conducted emissions< 30 MHz	☒	☐	☐	☐	-/-
§15.407 RSS - 247 (6.3)	DFS	☐	☐	☒	☐	

Notes:

C:	Compliant	NC:	Not compliant	NA:	Not applicable	NP:	Not performed
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11 Additional comments

Reference documents: Starlab_MPP_measurement_results-PV2.xlsx
1-1335-25-02-05_TR1-A201-R01.pdf

Special test descriptions: None

Configuration descriptions: The device supports only MIMO in all modes. All tests were performed with power settings 10. All modes support 5 MHz, 10 MHz and 20 MHz bandwidths. Due to the same power settings, the 5 MHz and 10 MHz modes were only tested for a-mode in a radiated setup.

EUT selection: ☒ Only one device available
☐ Devices selected by the customer
☐ Devices selected by the laboratory (Randomly)

Provided channels:

Channels with 20, 10, 5 MHz channel bandwidth:

U-NII-1 (5150 MHz to 5250 MHz) channel number & center frequency				
channel	36	40	44	48
f _c / MHz	5180	5200	5220	5240

U-NII-3 (5725 MHz to 5850 MHz) channel number & center frequency					
channel	149	153	157	161	165
f _c / MHz	5745	5765	5785	5805	5825

Note: The channels used for the tests were marked in bold in the list.

Test mode:

- ☐ No test mode available.
lperf is used to transmit data to a companion device
- ☒ Special software is used.
EUT is transmitting pseudo random data by itself

Antennas and transmit operating modes:

- ☐ Operating mode 1 (single antenna)
- Equipment with 1 antenna,
 - Equipment with 2 diversity antennas operating in switched diversity mode by which at any moment in time only 1 antenna is used,
 - Smart antenna system with 2 or more transmit/receive chains, but operating in a mode where only 1 transmit/receive chain is used)
- ☒ Operating mode 2 (multiple antennas, no beamforming)
- Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously but without beamforming.
- ☐ Operating mode 3 (multiple antennas, with beamforming)
- Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously with beamforming.
In addition to the antenna assembly gain (G), the beamforming gain (Y) may have to be taken into account when performing the measurements.

12 Measurement results

12.1 Identify worst case data rate

Measurement:

All modes of the module will be measured with an average power meter to identify the maximum transmission power on mid channel. In the case that only one or two channels are available, only these will be measured.

In further tests only the identified worst case modulation scheme or bandwidth will be measured.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	3 MHz
Trace mode:	Max hold
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Results:

OFDM – mode	Modulation scheme / bandwidth					
	U-NII-1		U-NII-2C		U-NII-3	
	lowest channel	highest channel	lowest channel	highest channel	lowest channel	highest channel
a – mode, FR, HR, QR	6 Mbit/s	6 Mbit/s	NA		6 Mbit/s	6 Mbit/s
n HT20 – mode	MCS0	MCS0			MCS0	MCS0
ac VHT20 – mode	MCS0	MCS0			MCS0	MCS0
ax HE20 – mode	MCS0	MCS0			MCS0	MCS0

12.2 Antenna gain

Limits:

Antenna Gain
6 dBi / > 6 dBi output power and power density reduction required

Results:

U-NII-1 (5150 MHz to 5250 MHz)	Antenna gain Combined MIMO gain		
	Lowest channel	Middle channel	Highest channel
Gain / dBi (declared)	6.78		

U-NII-3 (5725 MHz to 5850 MHz)	Antenna gain Combined MIMO gain		
	Lowest channel	Middle channel	Highest channel
Gain / dBi (declared)	5.8		

12.3 Duty cycle

Results:

Duty cycle and correction factor:

OFDM – mode	Calculation method	
	Duty cycle	Correction factor
a – mode	100 %	0.0 dB
n HT20 – mode	100 %	0.0 dB
ac VHT20 – mode	100 %	0.0 dB
ax HE20 – mode	100 %	0.0 dB

12.4 Maximum output power

12.4.1 Maximum output power according to FCC requirements

Measurement:

Measurement parameter	
According to: KDB789033 D02, E.2.e.	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf FCC Part 15.407 Max Output Power and PSD
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Limits	
Radiated output power	Conducted output power
Band 5150 MHz – 5250 MHz	
For an outdoor access point: Conducted power + 6 dBi antenna gain For an indoor access point: Conducted power + 6 dBi antenna gain For fixed point-to-point access points Conducted power + 23 dBi antenna gain For client devices Conducted power + 6 dBi antenna gain (If the Antenna gain is greater than the Limit: 1dB reduction in the max. conducted output power for each 1 dB of antenna gain in excess of the Limit)	For an outdoor access point: output power $\leq 1\text{W}/30\text{dBm}$ The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm) For an indoor access point output power $\leq 1\text{W}/30\text{dBm}$ For fixed point-to-point access points output power $\leq 1\text{W}/30\text{dBm}$ For client devices output power $\leq 250\text{ mW}/24\text{dBm}$
Band 5725MHz – 5850 MHz	
Conducted power + 6 dBi antenna gain (Antenna gain higher than the Limit: 1dB reduction in the max. conducted output power for each 1 dB of antenna gain in excess of the Limit Exception: fixed point-to-point U-NII devices, no corresponding reduction in transmitter conducted power)	output power $\leq 1\text{W}/30\text{dBm}$

Results:

Maximum output power [dBm] Conducted	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	6.82	7.60	8.81	6.62	5.47	6.79
a-mode FR ANT2	7.26	7.03	7.95	6.71	6.33	6.71
a-mode FR SUM	10.06	10.33	11.41	9.68	8.93	9.76
a-mode HR ANT1	3.47	3.87	5.42	6.46	5.29	6.62
a-mode HR ANT2	4.01	3.53	4.52	6.51	6.22	6.54
a-mode HR SUM	6.76	6.71	8.00	9.50	8.79	9.59
a-mode QR ANT1	4.56	5.38	6.45	6.36	5.17	6.58
a-mode QR ANT2	4.99	4.59	5.49	6.51	6.14	6.52
a-mode QR SUM	7.79	8.01	9.01	9.45	8.69	9.56
nHT20-mode FR ANT1	6.74	7.51	8.72	5.99	4.96	6.13
nHT20-mode FR ANT2	7.16	6.94	7.82	6.08	5.71	6.03
nHT20-mode FR SUM	9.97	10.24	11.30	9.05	8.36	9.09
acVHT20-mode FR ANT1	6.24	7.02	8.17	5.86	4.83	5.99
acVHT20-mode FR ANT2	6.65	6.44	7.27	5.99	5.63	5.92
acVHT20-mode FR SUM	9.46	9.75	10.75	8.94	8.26	8.97
axHE20-mode FR ANT1	6.54	7.33	8.56	6.19	5.11	6.35
axHE20-mode FR ANT2	6.98	6.77	7.64	6.30	6.00	6.34
axHE20-mode FR SUM	9.78	10.07	11.13	9.26	8.59	9.36

12.4.2 Maximum output power according to ISED requirements

Description:

Measurement of the maximum output power conducted + radiated

Measurement:

Measurement parameter	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf ISED Max Output Power and PSD
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Radiated output power	Conducted output power for mobile equipment
The lesser one of 200 mW or 10 dBm + 10 log Bandwidth 5.150-5.250 GHz 1 W or 17 dBm + 10 log Bandwidth 5.250-5.350 GHz 1 W or 17 dBm + 10 log Bandwidth 5.470-5.725 GHz (where Bandwidth is the 99% Bandwidth [MHz]) Conducted power + 6dBi antenna gain 5.725-5.825 GHz	The lesser one of 250mW or 11 dBm + 10 log Bandwidth 5.250-5.350 GHz 250mW or 11 dBm + 10 log Bandwidth 5.470-5.725 GHz (where Bandwidth is the 99% Bandwidth [MHz]) 1W 5.725-5.825 GHz

Results:

Maximum output power [dBm] Radiated	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	13.48	14.27	15.48	12.29	11.16	12.46
a-mode FR ANT2	13.96	13.73	14.64	12.41	12.02	12.40
a-mode FR SUM	16.74	17.02	18.09	15.36	14.62	15.44
a-mode HR ANT1	10.09	10.49	12.02	12.08	10.91	12.26
a-mode HR ANT2	10.65	10.18	11.15	12.16	11.87	12.21
a-mode HR SUM	13.39	13.35	14.62	15.13	14.43	15.25
a-mode QR ANT1	11.03	11.89	12.97	11.89	10.74	12.13
a-mode QR ANT2	11.53	11.15	12.04	12.02	11.67	12.05
a-mode QR SUM	14.30	14.55	15.54	14.97	14.24	15.10
nHT20-mode FR ANT1	13.41	14.18	15.38	11.67	10.58	11.82
nHT20-mode FR ANT2	13.86	13.63	14.51	11.76	11.39	11.73
nHT20-mode FR SUM	16.65	16.92	17.98	14.73	14.01	14.79
acVHT20-mode FR ANT1	12.90	13.67	14.84	11.54	10.46	11.68
acVHT20-mode FR ANT2	13.33	13.12	13.96	11.68	11.33	11.62
acVHT20-mode FR SUM	16.13	16.41	17.43	14.62	13.93	14.66
axHE20-mode FR ANT1	13.21	14.00	15.21	11.90	10.82	12.08
axHE20-mode FR ANT2	13.66	13.44	14.27	12.02	11.68	12.03
axHE20-mode FR SUM	16.45	16.74	17.78	14.97	14.28	15.07

12.5 Power spectral density

12.5.1 Power spectral density according to FCC requirements

Measurement:

Measurement parameter	
According to: KDB789033 D02, F.	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf FCC Part 15.407 Max Output Power and PSD
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Power Spectral Density
Band 5150 MHz – 5250 MHz
For an outdoor access point power spectral density conducted ≤ 17 dBm in any 1 MHz band* For an indoor access point power spectral density conducted ≤ 17 dBm in any 1 MHz band* For fixed point-to-point access points power spectral density conducted ≤ 17 dBm in any 1 MHz band** For client devices point power spectral density conducted ≤ 11 dBm in any 1 MHz band* *If transmitting antennas of directional gain greater than 6 dBi are used the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi **Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
Band 5250MHz – 5350 MHz
power spectral density conducted ≤ 11 dBm in any 1 MHz band* *If transmitting antennas of directional gain greater than 6 dBi are used the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
Band 5470MHz – 5725 MHz
power spectral density conducted ≤ 11 dBm in any 1 MHz band* *If transmitting antennas of directional gain greater than 6 dBi are used the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
Band 5725MHz – 5850 MHz
power spectral density conducted ≤ 30 dBm in any 500 kHz band If transmitting antennas of directional gain greater than 6 dBi are used the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

Results:

PSD [dBm/1MHz or dBm/500kHz] Conducted	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	-4.45	-3.66	-2.57	-7.36	-8.22	-7.03
a-mode FR ANT2	-3.91	-4.16	-3.25	-7.48	-7.87	-7.46
a-mode FR SUM	-1.2	-0.9	0.1	-4.4	-5.0	-4.2
a-mode HR ANT1	-4.69	-4.51	-3.06	-4.54	-5.61	-4.24
a-mode HR ANT2	-4.31	-4.86	-3.82	-4.55	-4.91	-4.50
a-mode HR SUM	-1.5	-1.7	-0.4	-1.5	-2.2	-1.4
a-mode QR ANT1	-1.15	-0.36	0.64	-1.98	-3.04	-1.65
a-mode QR ANT2	-0.77	-1.18	-0.25	-1.88	-2.22	-1.79
a-mode QR SUM	2.1	2.3	3.2	1.1	0.4	1.3
nHT20-mode FR ANT1	-4.54	-3.74	-2.64	-8.36	-9.09	-8.04
nHT20-mode FR ANT2	-4.01	-4.27	-3.38	-8.34	-8.76	-8.39
nHT20-mode FR SUM	-1.3	-1.0	0.0	-5.3	-5.9	-5.2
acVHT20-mode FR ANT1	-5.33	-4.45	-3.36	-8.50	-9.25	-8.21
acVHT20-mode FR ANT2	-4.79	-4.97	-4.16	-8.42	-8.86	-8.49
acVHT20-mode FR SUM	-2.0	-1.7	-0.7	-5.4	-6.0	-5.3
axHE20-mode FR ANT1	-5.30	-4.40	-3.22	-8.35	-9.12	-8.01
axHE20-mode FR ANT2	-4.71	-4.87	-4.05	-8.39	-8.73	-8.35
axHE20-mode FR SUM	-2.0	-1.6	-0.6	-5.4	-5.9	-5.2

12.5.2 Power spectral density according to ISED requirements

Description:

Measurement of the power spectral density of a digital modulated system. The measurement is repeated at the lowest, middle and highest channel.

Measurement:

Measurement parameter	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf ISED Max Output Power and PSD
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Power Spectral Density
power spectral density e.i.r.p. ≤ 10 dBm in any 1 MHz band (band 5150 – 5250 MHz) power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5250 – 5350 MHz) power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5470 – 5725 MHz) power spectral density conducted ≤ 30 dBm in any 500 kHz band (band 5725 – 5850 MHz)

Results:

PSD [dBm/1MHz or dBm/500kHz] Radiated	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	2.32	3.14	4.20	-7.39	-8.20	-7.04
a-mode FR ANT2	2.85	2.60	3.55	-7.48	-7.83	-7.45
a-mode FR SUM	5.6	5.9	6.9	-4.4	-5.0	-4.2
a-mode HR ANT1	2.07	2.32	3.71	-4.55	-5.60	-4.21
a-mode HR ANT2	2.48	1.93	2.95	-4.60	-4.92	-4.53
a-mode HR SUM	5.3	5.1	6.4	-1.6	-2.2	-1.4
a-mode QR ANT1	5.63	6.41	7.43	-1.97	-3.08	-1.74
a-mode QR ANT2	6.00	5.63	6.54	-1.89	-2.24	-1.78
a-mode QR SUM	8.8	9.0	10.0	1.1	0.4	1.3
nHT20-mode FR ANT1	2.24	3.02	4.13	-8.35	-9.14	-8.05
nHT20-mode FR ANT2	2.75	2.52	3.39	-8.33	-8.74	-8.39
nHT20-mode FR SUM	5.5	5.8	6.8	-5.3	-5.9	-5.2
acVHT20-mode FR ANT1	1.44	2.31	3.41	-8.49	-9.26	-8.17
acVHT20-mode FR ANT2	1.98	1.86	2.63	-8.43	-8.82	-8.50
acVHT20-mode FR SUM	4.7	5.1	6.0	-5.4	-6.0	-5.3
axHE20-mode FR ANT1	1.46	2.35	3.52	-8.34	-9.09	-8.02
axHE20-mode FR ANT2	2.05	1.93	2.73	-8.33	-8.76	-8.32
axHE20-mode FR SUM	4.8	5.2	6.2	-5.3	-5.9	-5.2

12.6 Minimum emission bandwidth for the band 5.725-5.85 GHz

Description:

Measurement of the 6 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
According to: KDB789033 D02, C.2.	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf FCC Part 15.407 & ISSED Minimum Emission BW
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

FCC	ISED
The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results:

6 dB bandwidth [MHz]	Ch149	Ch157	Ch165
a-mode FR ANT1	16.35	16.35	16.35
a-mode FR ANT2	16.35	16.40	16.35
a-mode HR ANT1	8.2	8.2	8.2
a-mode HR ANT2	8.2	8.2	8.2
a-mode QR ANT1	4.2	4.2	4.1
a-mode QR ANT2	4.2	4.2	4.1
nHT20-mode FR ANT1	17.6	17.6	17.6
nHT20-mode FR ANT2	17.6	17.6	17.6
acVHT20-mode FR ANT1	17.6	17.6	17.6
acVHT20-mode FR ANT2	17.7	17.6	17.6
axHE20-mode FR ANT1	19.0	19.1	19.1
axHE20-mode FR ANT2	19.1	19.1	19.1

12.7 Spectrum bandwidth / 26 dB bandwidth

Description:

Measurement of the 26 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
According to: KDB789033 D02, C.1.	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf FCC Part 15.407 & ISSED Bandwidths
Used test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Spectrum Bandwidth – 26 dB Bandwidth
IC: Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band. FCC: Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.

Results:

26 dB bandwidth [MHz]	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	20.3	20.0	20.6	18.4	18.2	18.3
a-mode FR ANT2	20.5	20.8	20.6	18.6	18.6	18.5
a-mode HR ANT1	10.9	11.0	10.7	9.7	9.5	9.5
a-mode HR ANT2	10.7	10.8	11.0	9.7	9.7	9.7
a-mode QR ANT1	5.5	5.6	5.4	5.1	5.1	5.1
a-mode QR ANT2	5.5	5.7	5.6	5.1	5.2	5.1
nHT20-mode FR ANT1	20.1	20.1	20.0	19.8	19.8	19.8
nHT20-mode FR ANT2	20.9	20.8	20.6	19.8	19.8	19.7
acVHT20-mode FR ANT1	22.1	21.9	21.7	19.7	19.8	19.6
acVHT20-mode FR ANT2	21.7	21.9	21.9	19.8	19.7	19.7
axHE20-mode FR ANT1	21.9	22.0	22.0	20.7	20.6	20.5
axHE20-mode FR ANT2	22.1	22.3	22.0	20.6	20.5	20.6

12.8 Occupied bandwidth / 99% emission bandwidth

Description:

Measurement of the 99% bandwidth of the modulated signal acc. RSS-GEN.

Measurement:

Measurement parameter	
External result file(s)	1-1335-25-02-05_TR1-A201-R01.pdf FCC Part 15.407 & ISSED Bandwidths
Test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Usage:

-/-	ISED
OBW is necessary for Emission Designator	

Results:

99% bandwidth [kHz]	Ch36	Ch40	Ch48	Ch149	Ch157	Ch165
a-mode FR ANT1	16583	16633	16683	16633	16633	16583
a-mode FR ANT2	16833	16833	16833	16683	16683	16683
a-mode HR ANT1	8541	8541	8541	8541	8541	8541
a-mode HR ANT2	8691	8691	8691	8641	8641	8591
a-mode QR ANT1	4496	4446	4496	4446	4496	4446
a-mode QR ANT2	4496	4595	4496	4446	4496	4496
nHT20-mode FR ANT1	16583	16633	16683	17832	17832	17832
nHT20-mode FR ANT2	16833	16833	16833	17832	17882	17832
acVHT20-mode FR ANT1	17832	17832	17832	17832	17832	17782
acVHT20-mode FR ANT2	17882	17882	17882	17832	17882	17882
axHE20-mode FR ANT1	19081	19131	19131	19131	19131	19131
axHE20-mode FR ANT2	19181	19181	19181	19181	19181	19131

12.9 Undesirable emissions for transmitters operating in the 5725 MHz to 5850 MHz band (conducted)

Description:

Measurement of the spectrum mask as per FCC Part 15.407 (b)(4) and KDB 789033 II.G.2 (c) (ii).
The measurement is repeated at the lowest, middle and highest channel and performed in a conducted way as defined in KDB 789033 II.G.3 (b).

The highest antenna gain is considered and was added to the Reference Level Offset.
Emission levels are further adjusted to consider the number of antenna outputs (2).

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	$\geq 3 \times \text{RBW}$
Span:	See plots!
Trace mode:	Max Hold
Test setup:	See chapter 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

FCC Part 15.407 (b)(4)
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Result: Compliant (See external results file)

12.10 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. Measurement distance is 3m.

Measurement:

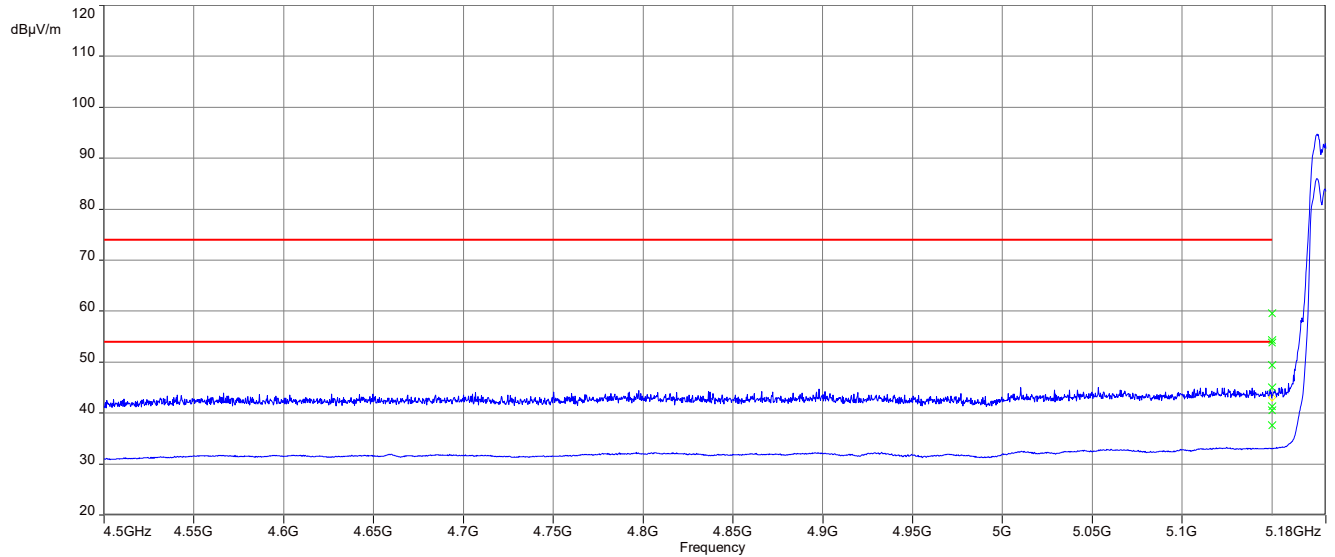
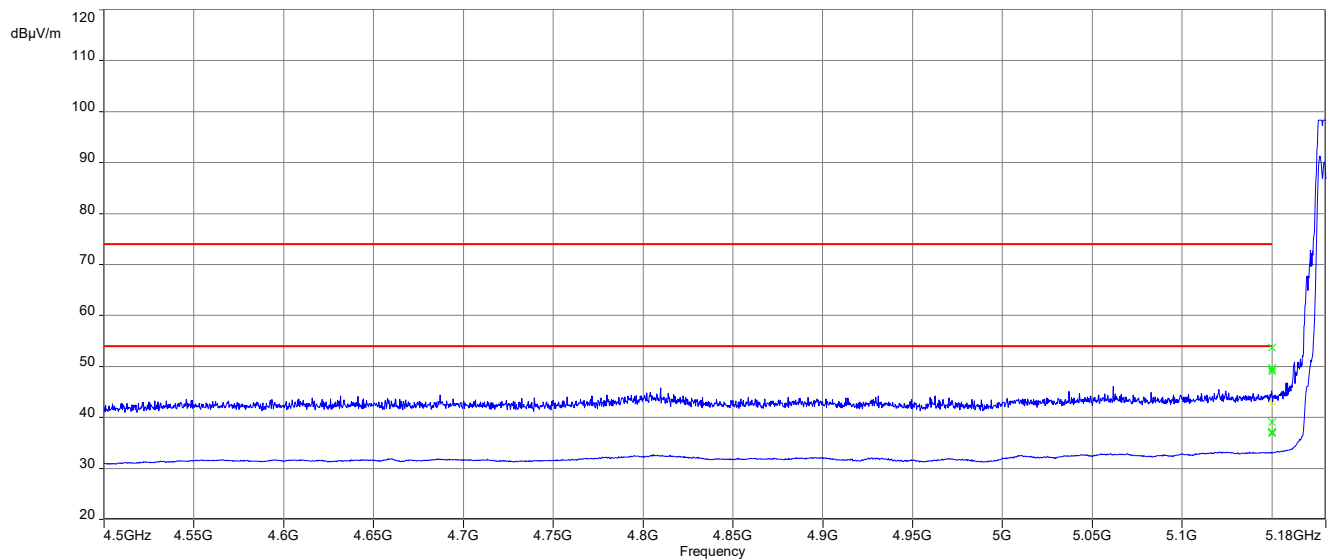
Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	$\geq 3 \times \text{RBW}$
Span:	See plots!
Trace mode:	Max Hold
Test setup:	See chapter 7.2 – A
Measurement uncertainty:	See chapter 9

Limits:

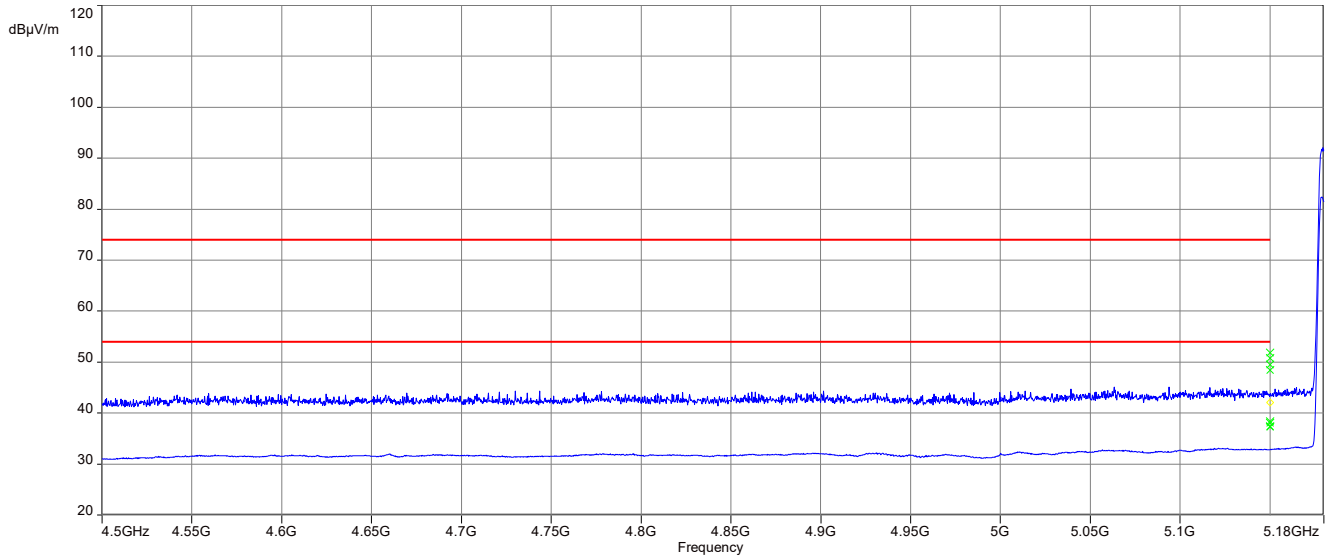
Band Edge Compliance Radiated
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).
74 dB μ V/m (peak) 54 dB μ V/m (average)

Result:

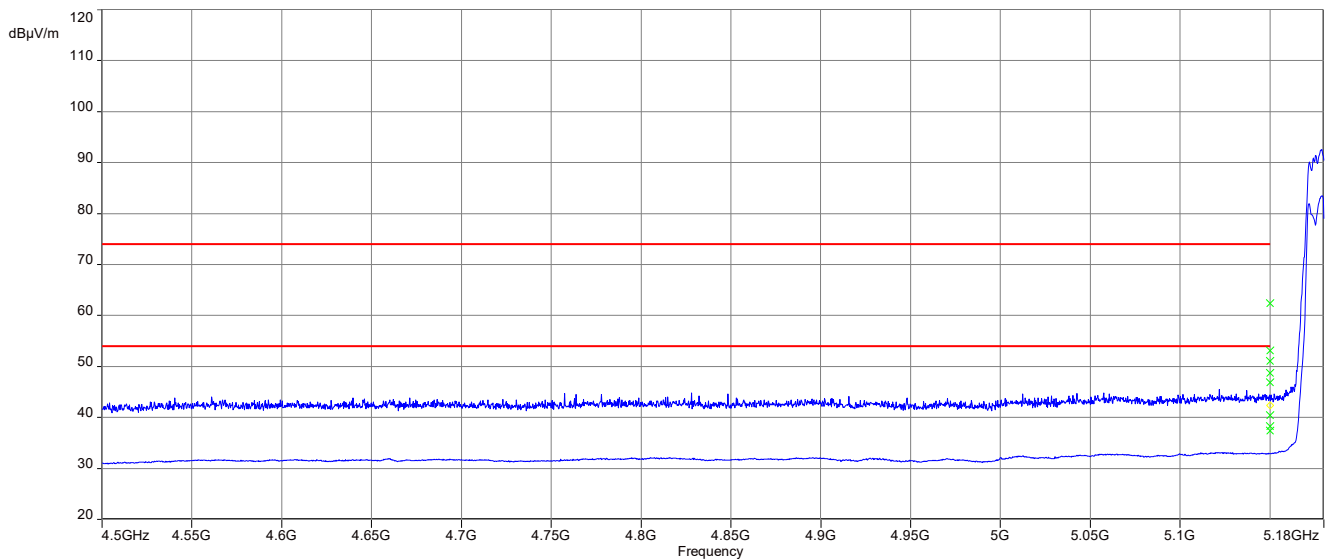
Scenario	Band Edge Compliance Radiated [dB μ V/m@3m]
BEC a-mode FR ANT1+ANT2 Channel 36	59.5 (peak) 45.0 (average)
BEC a-mode HR ANT1+ANT2 Channel 36	53.8 (peak) 39.1 (average)
BEC a-mode QR ANT1+ANT2 Channel 36	51.9 (peak) 38.4 (average)
BEC nHT20-mode FR ANT1+ANT2 Channel 36	62.4 (peak) 46.9 (average)
BEC acVHT20-mode FR ANT1+ANT2 Channel 36	62.7 (peak) 46.5 (average)
BEC axHE20-mode FR ANT1+ANT2 Channel 36	66.2 (peak) 48.2 (average)

Plots:**Plot 1:** lower band edge; U-NII-1; Channel 36; a-mode FR ANT1+ANT2**Plot 2:** lower band edge; U-NII-1; Channel 36; a-mode HR ANT1+ANT2

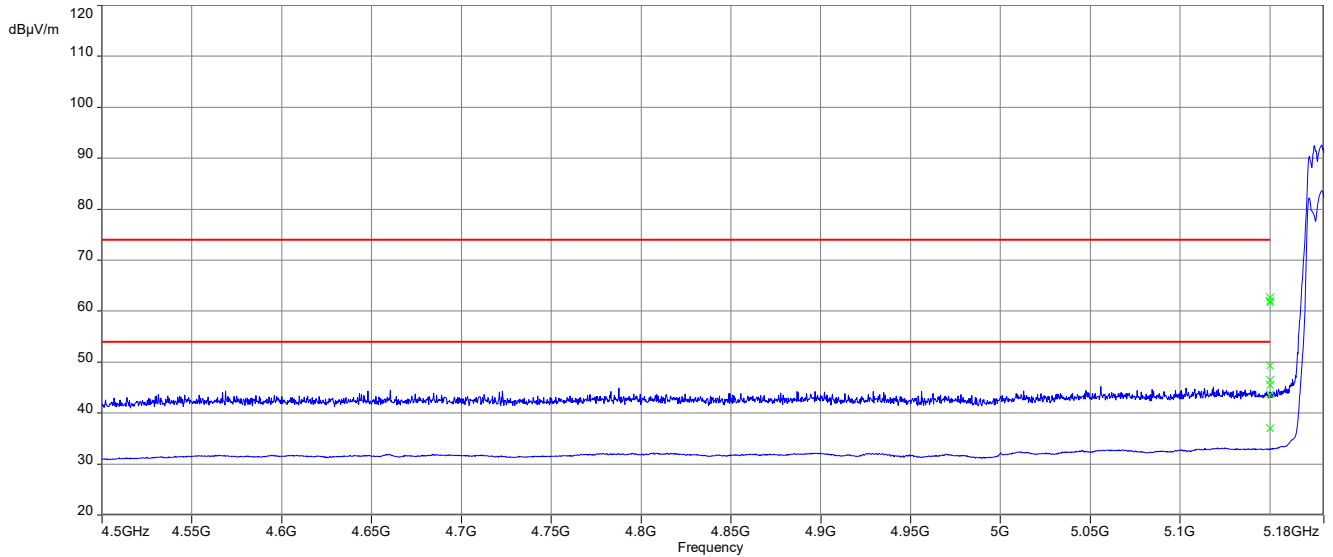
Plot 3: lower band edge; U-NII-1; Channel 36; a-mode QR ANT1+ANT2



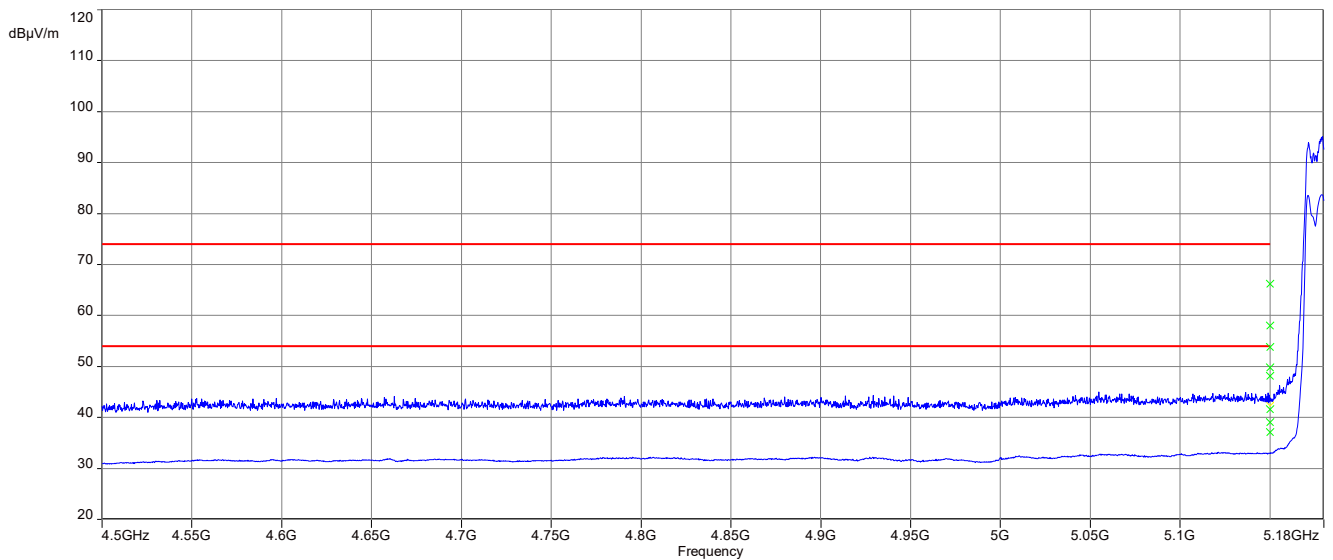
Plot 4: lower band edge; U-NII-1; Channel 36; nHT20-mode FR ANT1+ANT2



Plot 5: lower band edge; U-NII-1; Channel 36; acVHT20-mode FR ANT1+ANT2



Plot 6: lower band edge; U-NII-1; Channel 36; axHE20-mode FR ANT1+ANT2



12.11 Spurious emissions radiated below 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The limits are re-calculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace mode:	Max Hold
Test setup:	See chapter 7.2 – C
Measurement uncertainty:	See chapter 9

Limits:

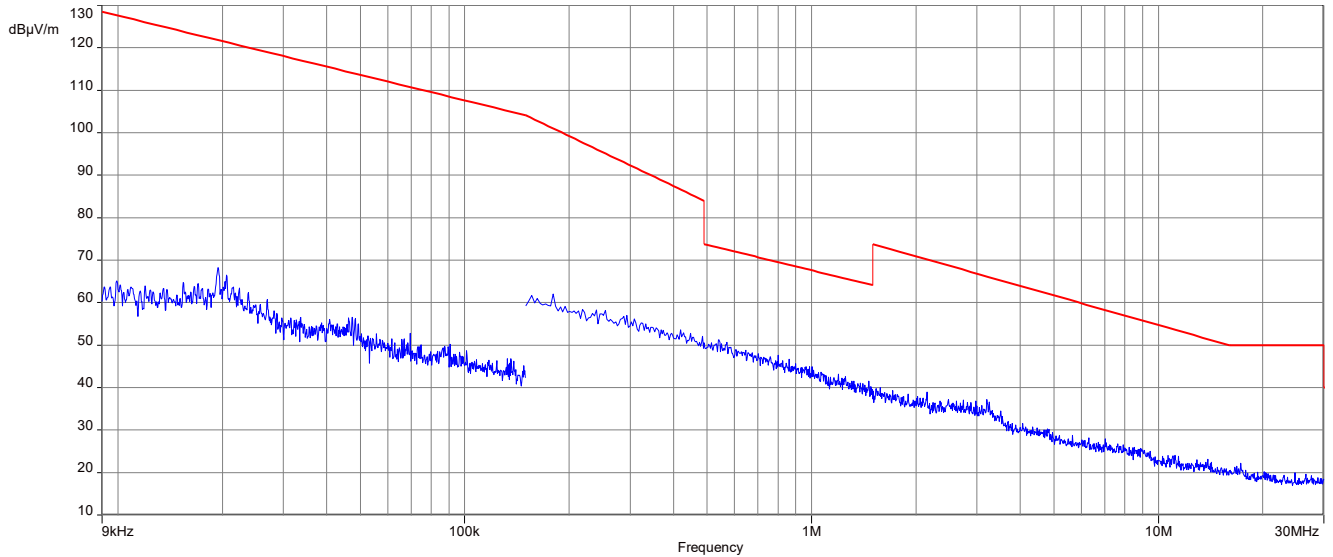
Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (μV/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Results:

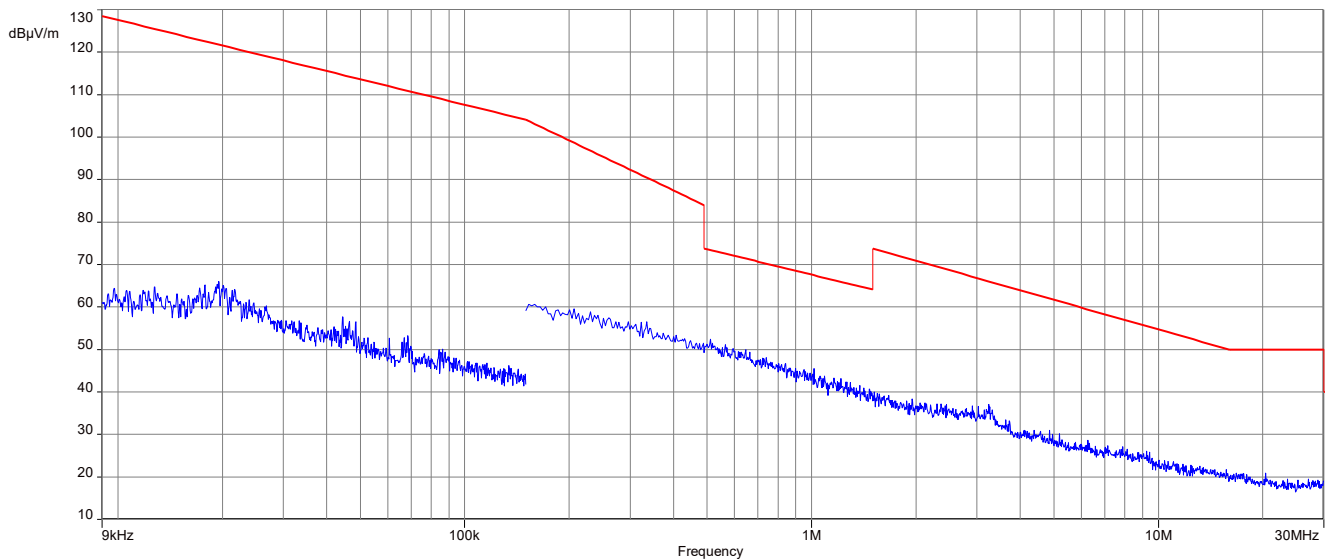
Spurious Emissions Radiated < 30 MHz [dBμV/m]		
F [MHz]	Detector	Level [dBμV/m]
All detected emissions are more than 20 dB below the limit.		

Plots: a-mode FR ANT1+ANT2

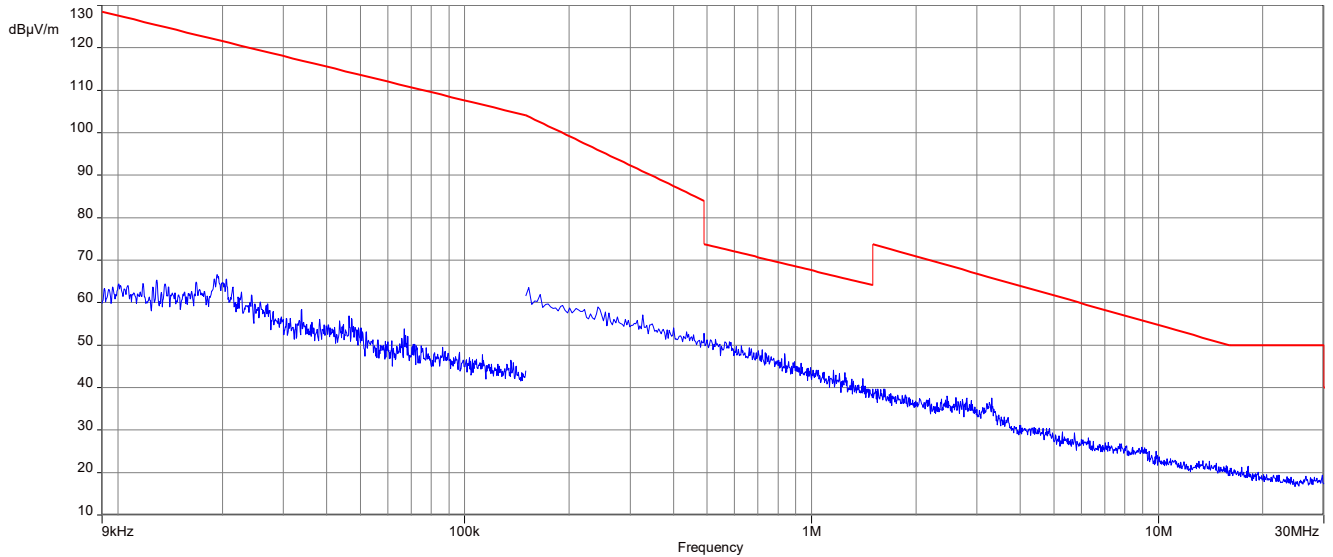
Plot 1: 9 kHz to 30 MHz, U-NII-1; lowest channel



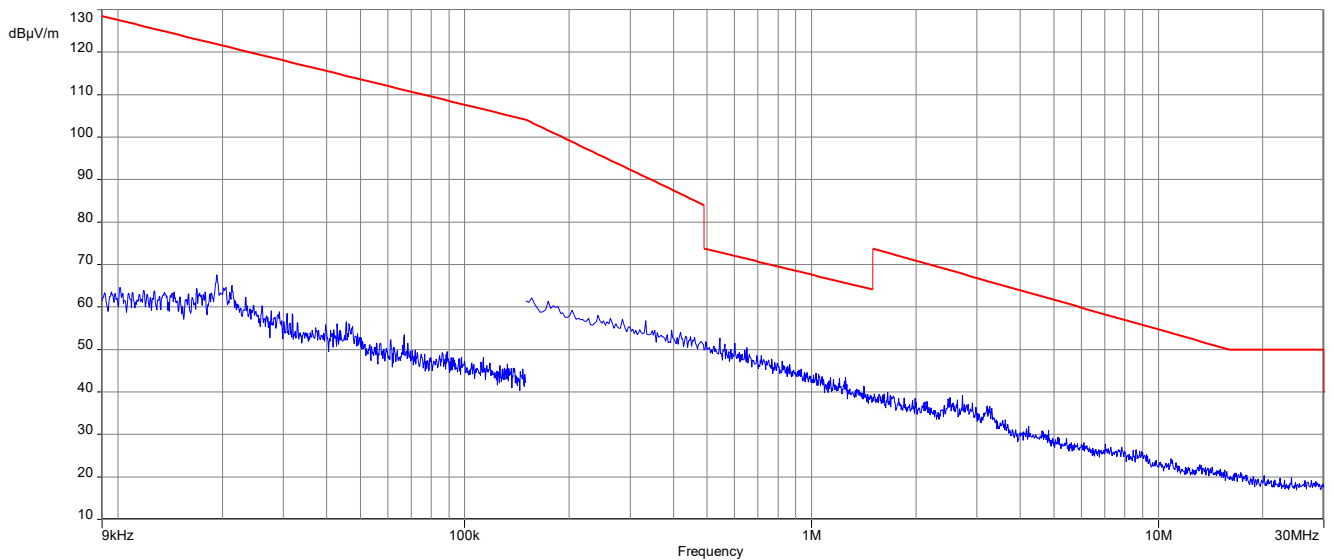
Plot 2: 9 kHz to 30 MHz, U-NII-1; middle channel



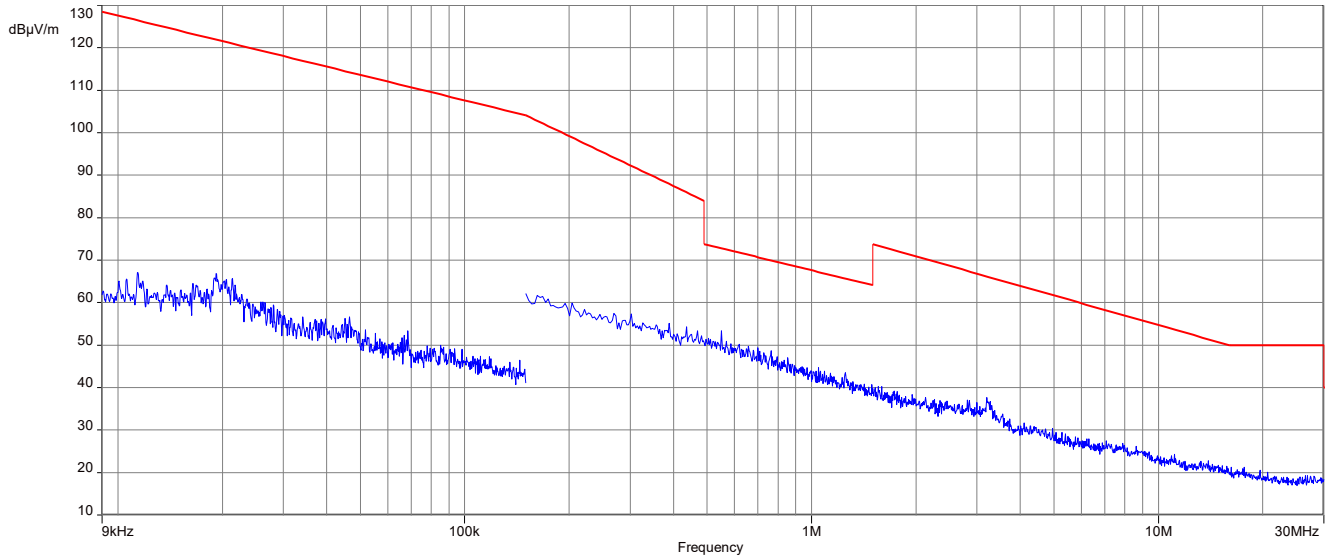
Plot 3: 9 kHz to 30 MHz, U-NII-1; highest channel



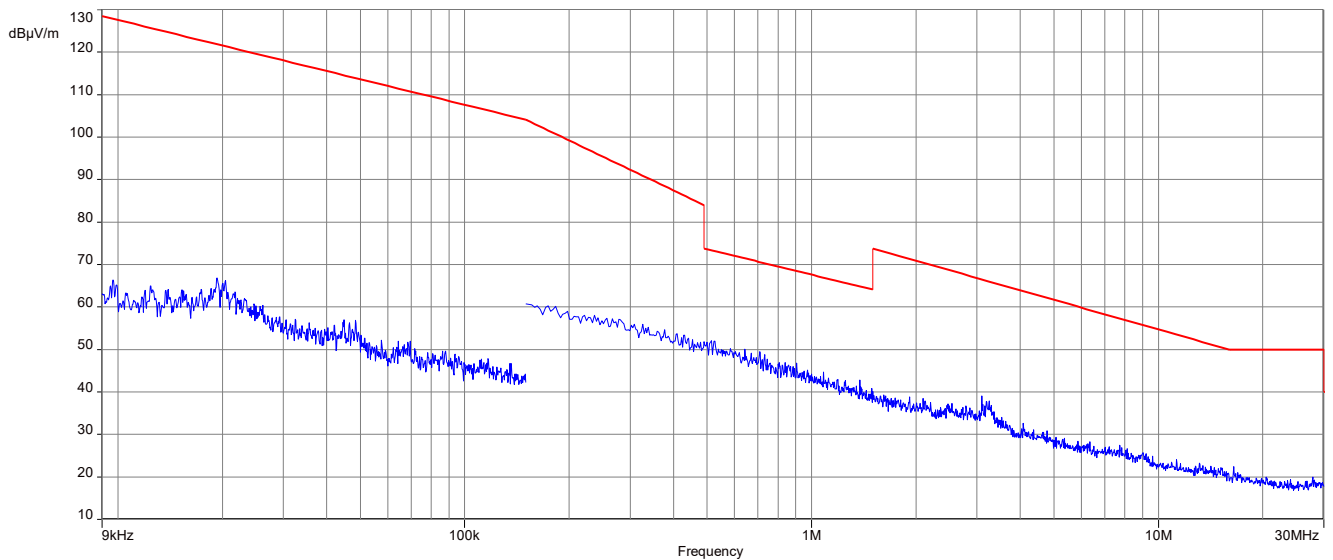
Plot 4: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 5: 9 kHz to 30 MHz, U-NII-3; middle channel

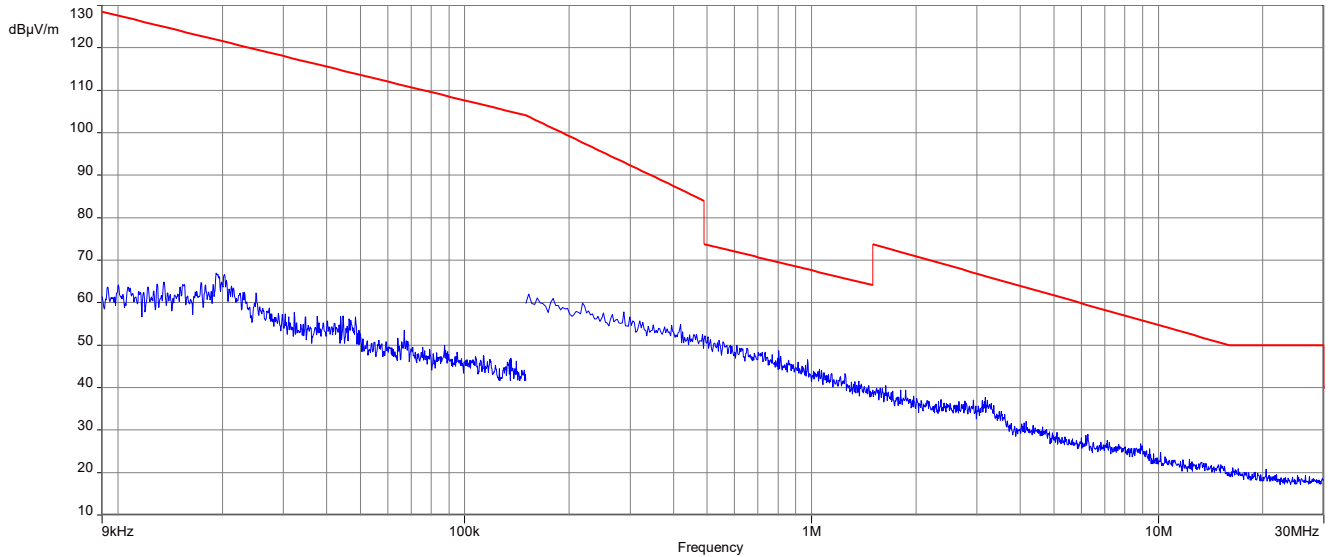


Plot 6: 9 kHz to 30 MHz, U-NII-3; highest channel

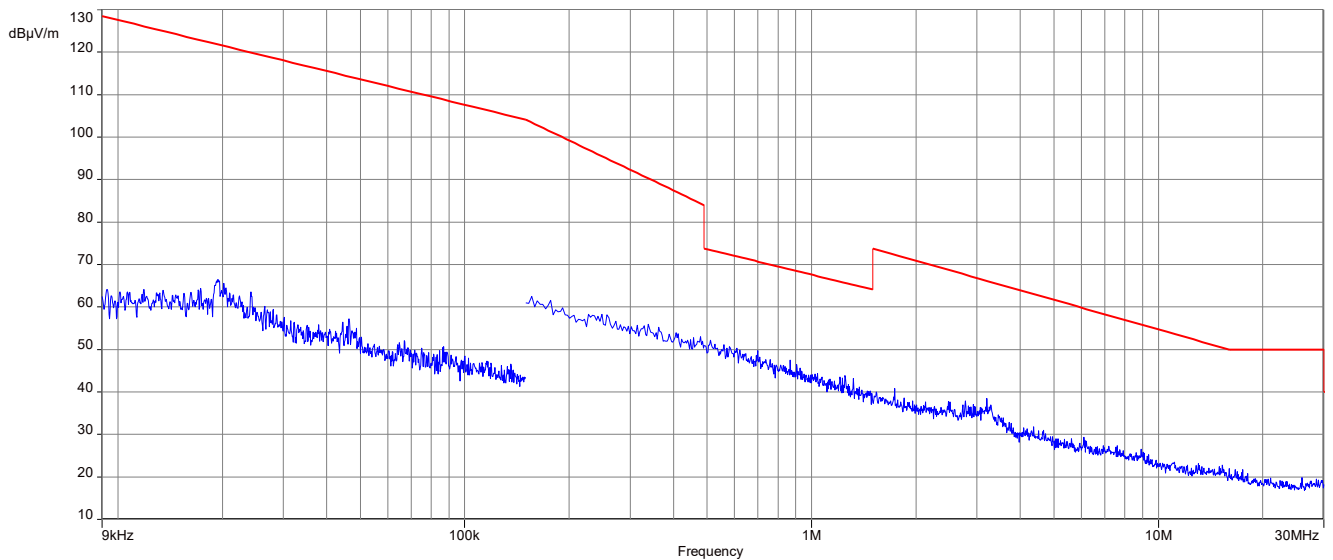


Plots: a-mode HR ANT1+ANT2

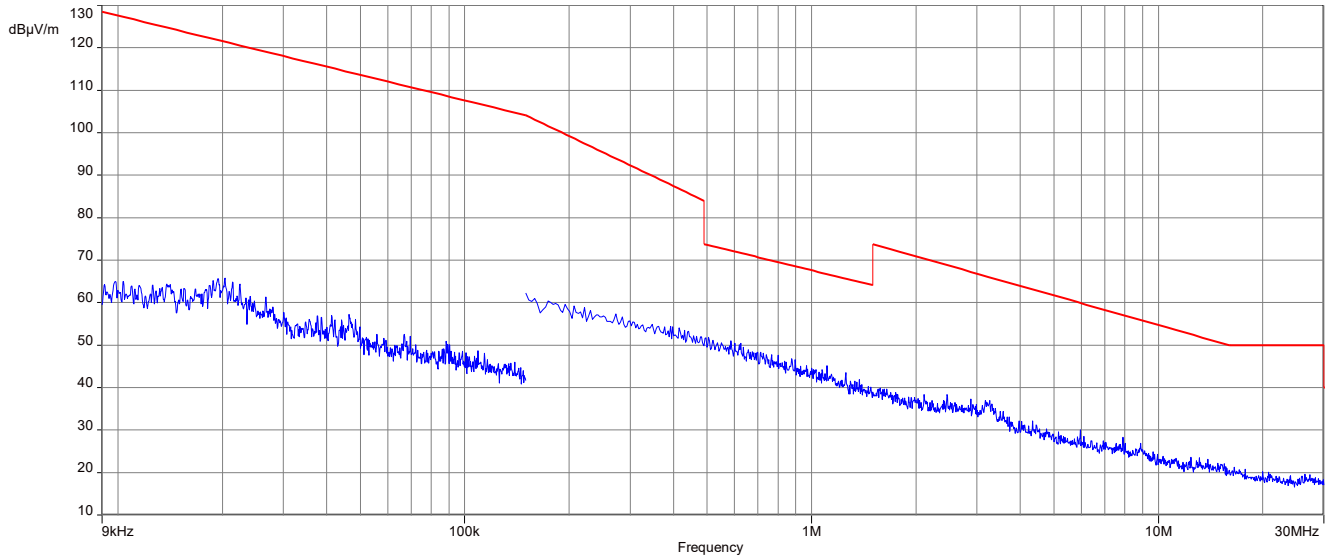
Plot 7: 9 kHz to 30 MHz, U-NII-1; lowest channel



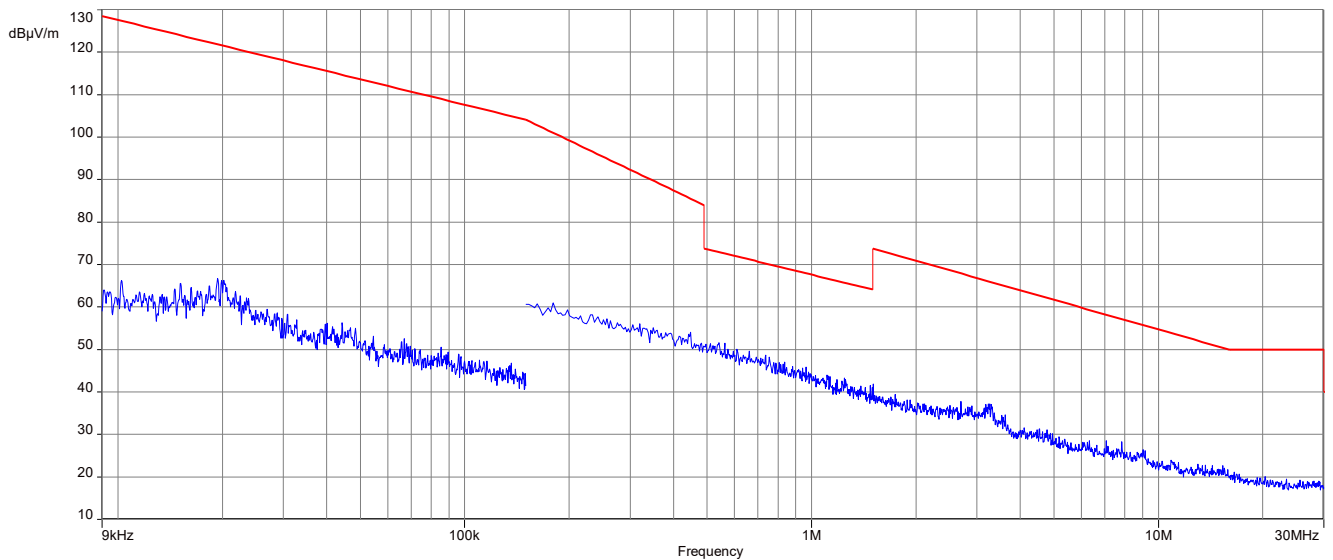
Plot 8: 9 kHz to 30 MHz, U-NII-1; middle channel



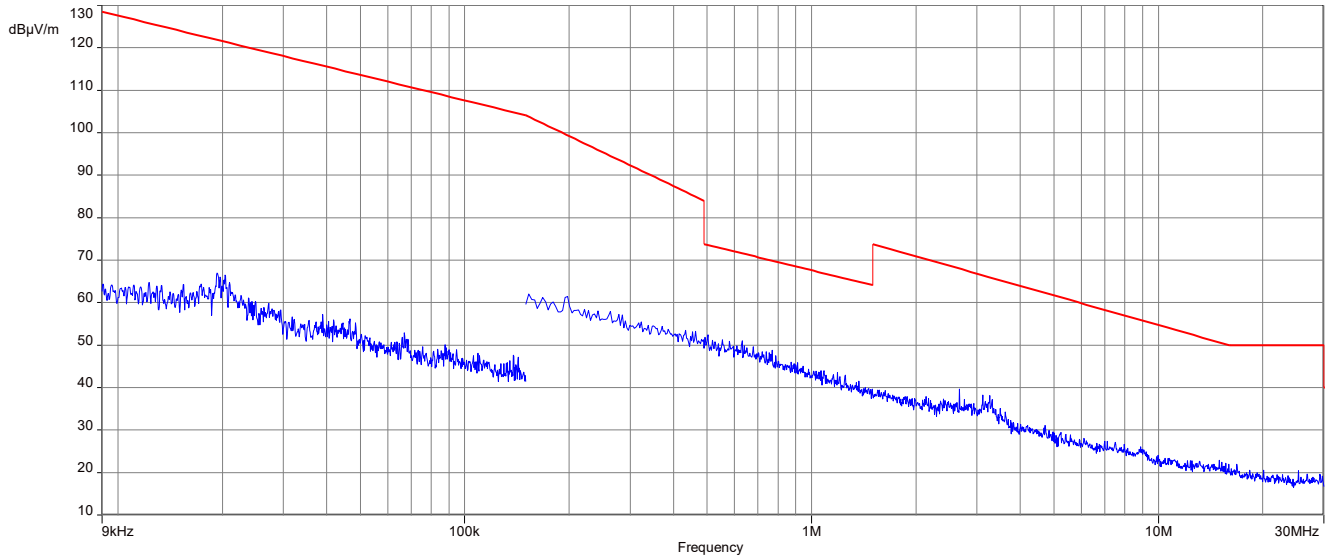
Plot 9: 9 kHz to 30 MHz, U-NII-1; highest channel



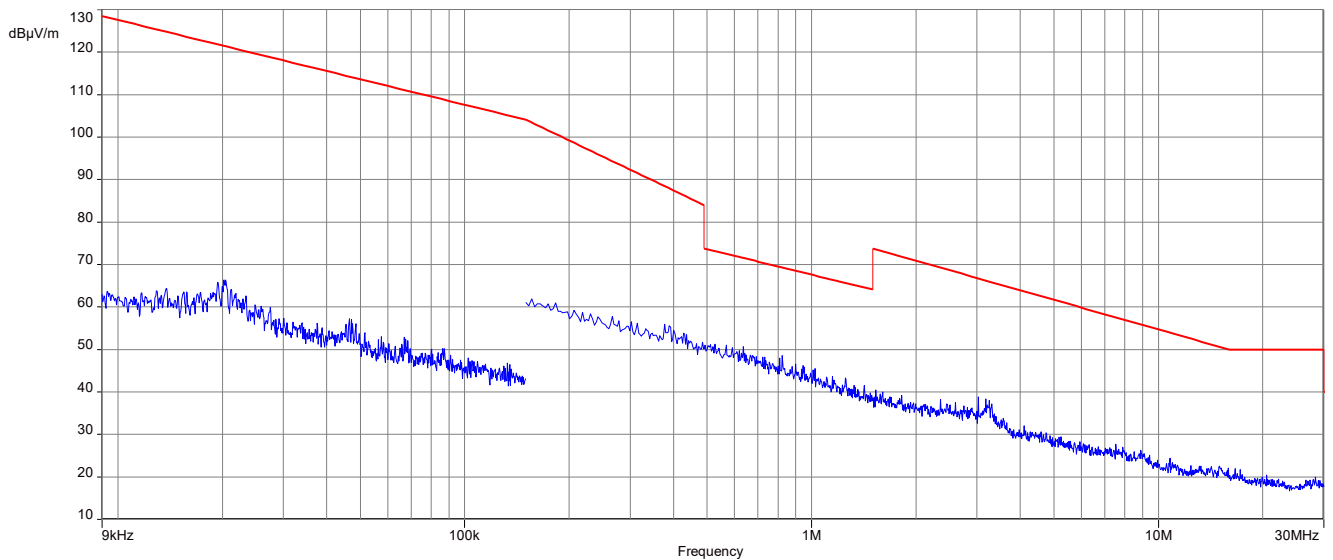
Plot 10: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 11: 9 kHz to 30 MHz, U-NII-3; middle channel

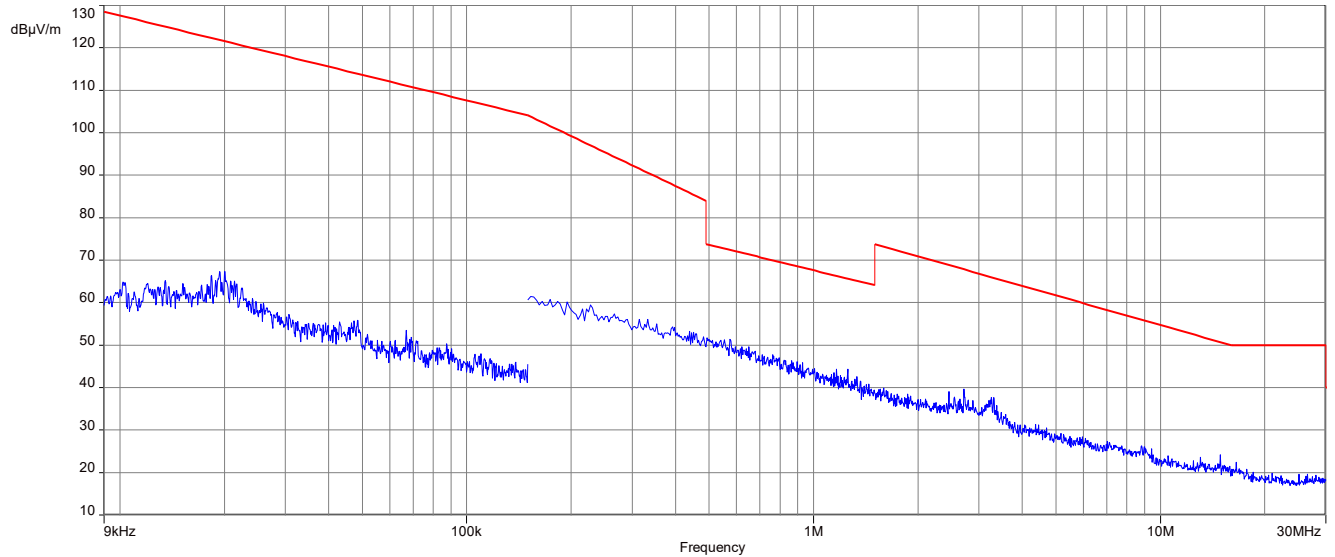


Plot 12: 9 kHz to 30 MHz, U-NII-3; highest channel

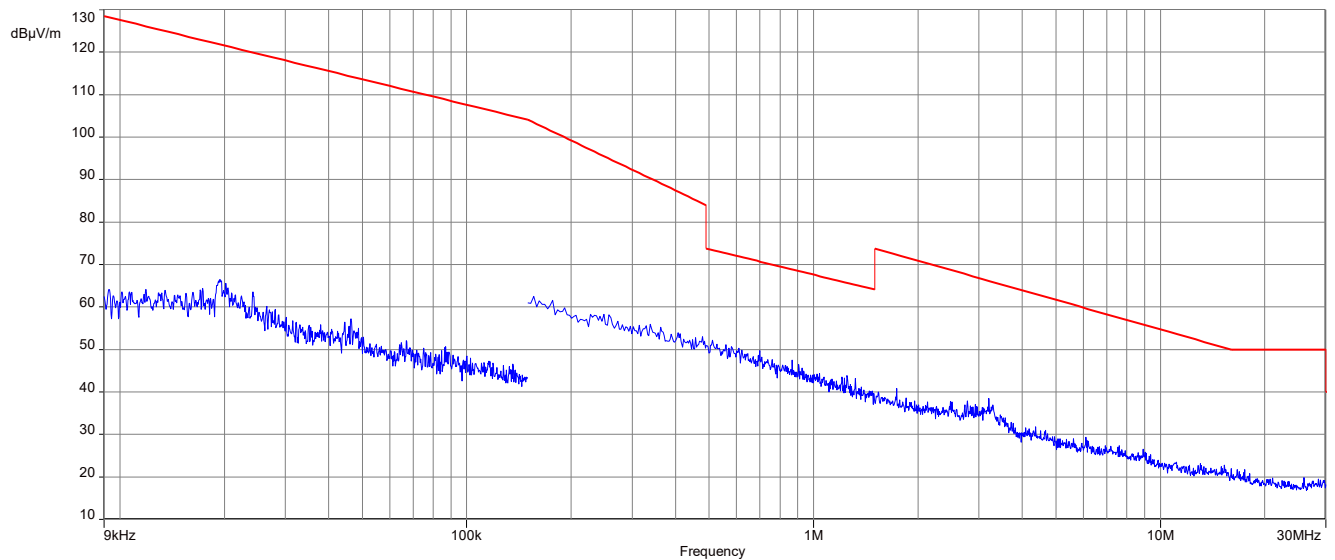


Plots: a-mode QR ANT1+ANT2

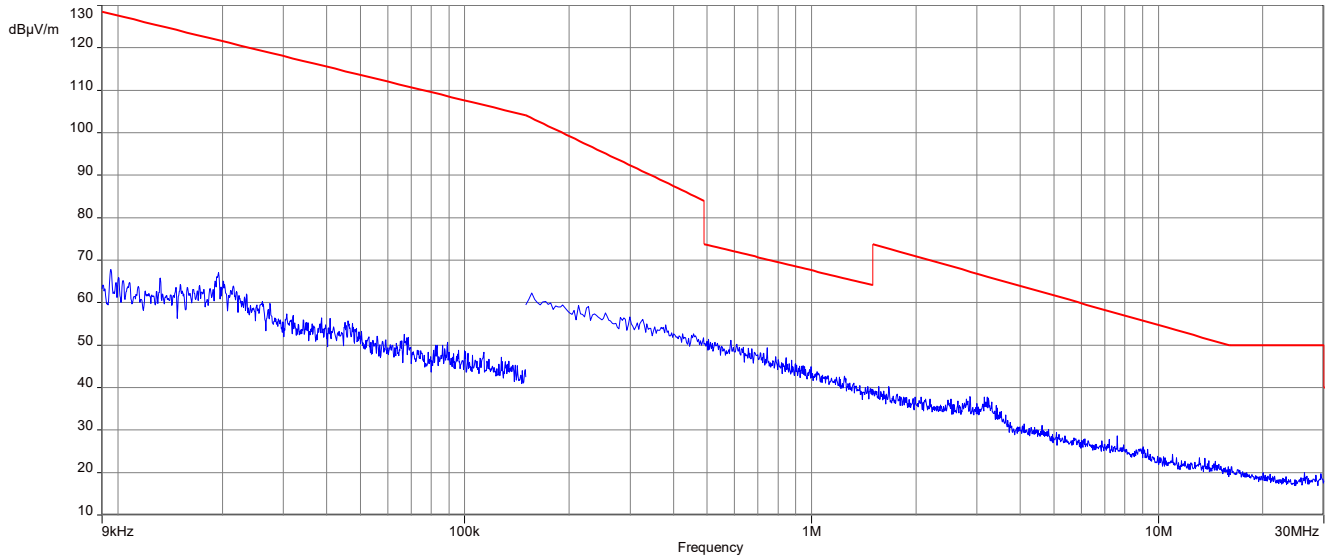
Plot 13: 9 kHz to 30 MHz, U-NII-1; lowest channel



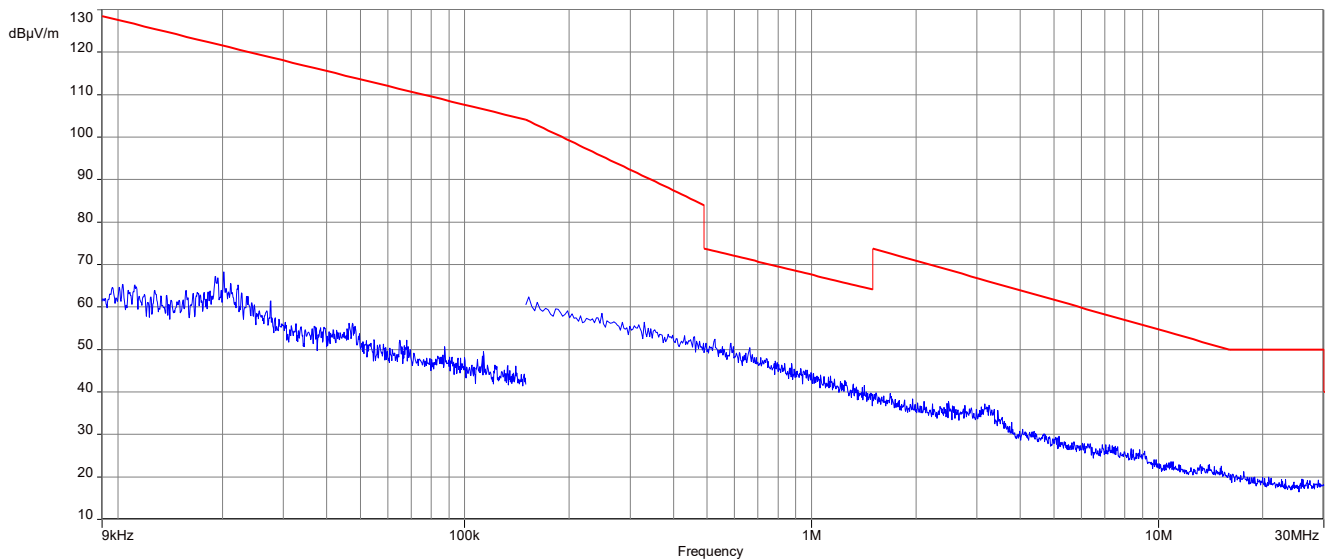
Plot 14: 9 kHz to 30 MHz, U-NII-1; middle channel



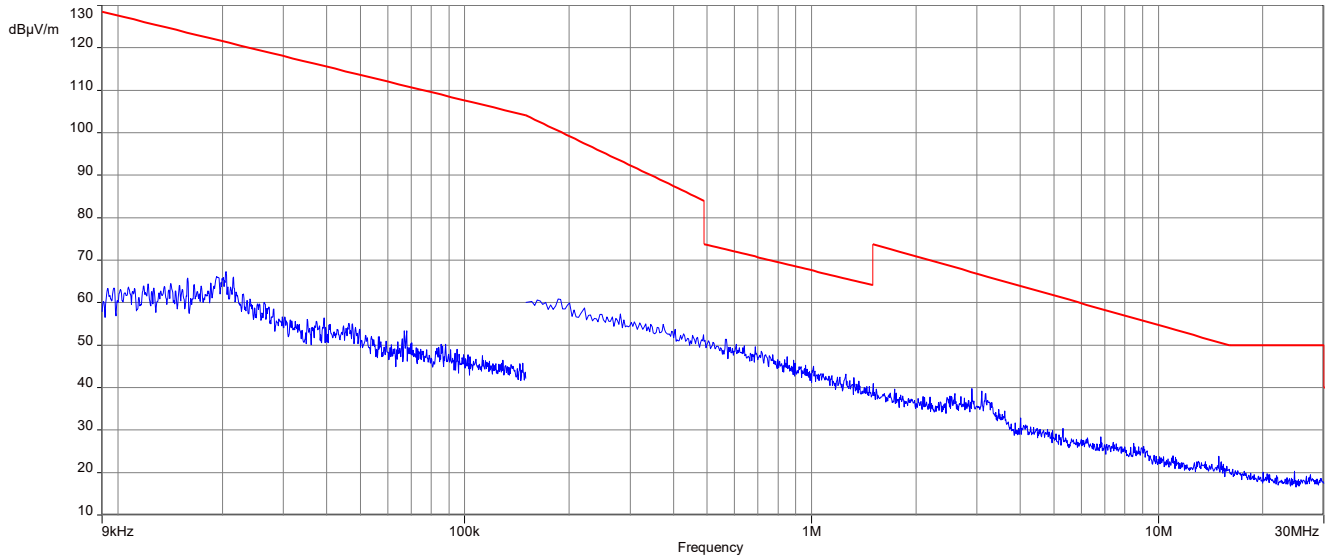
Plot 15: 9 kHz to 30 MHz, U-NII-1; highest channel



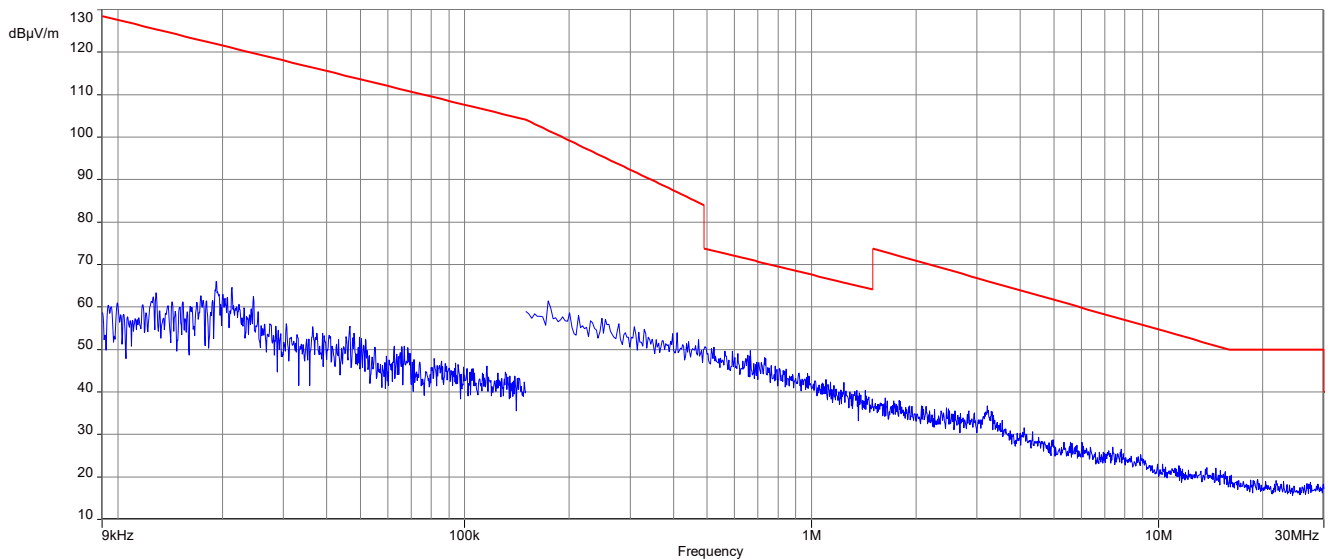
Plot 16: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 17: 9 kHz to 30 MHz, U-NII-3; middle channel

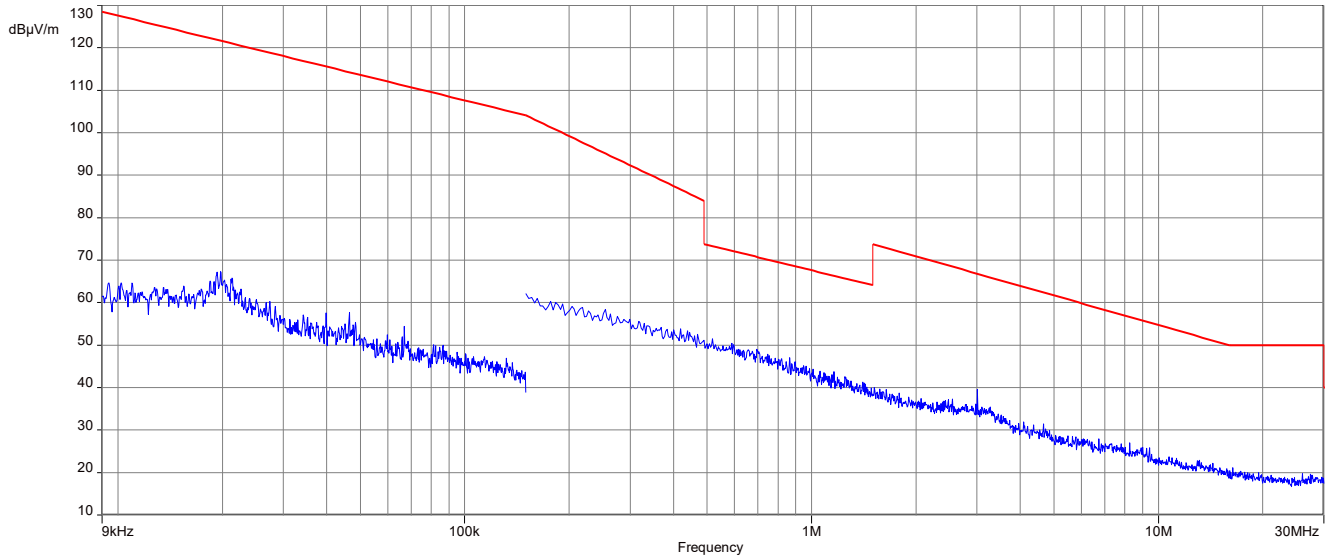


Plot 18: 9 kHz to 30 MHz, U-NII-3; highest channel

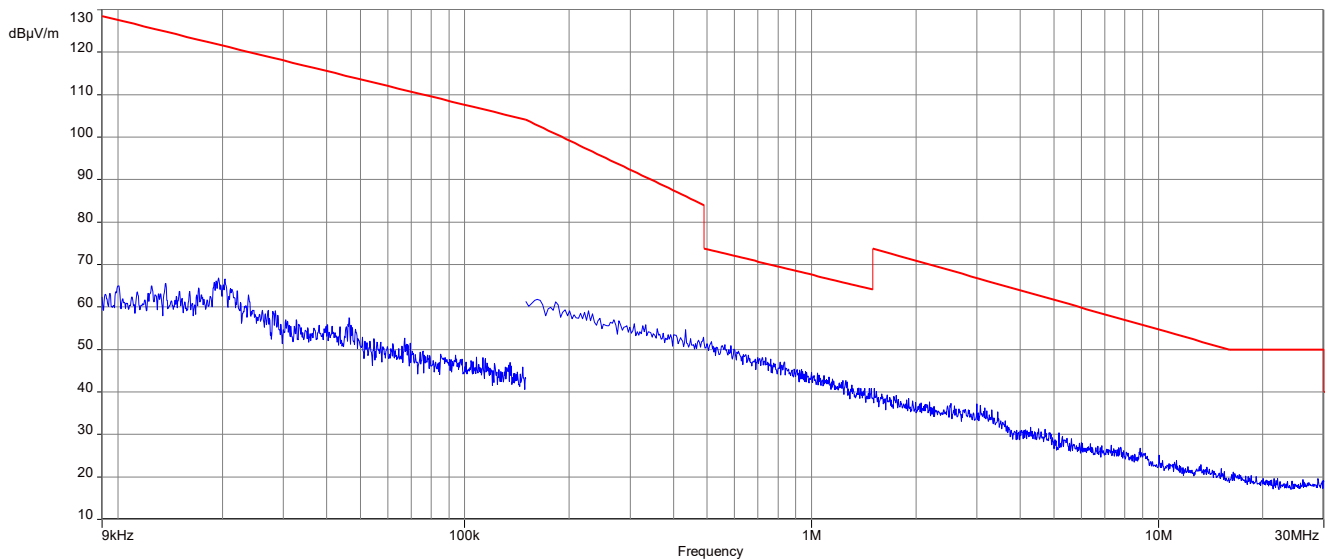


Plots: axHE20-mode FR ANT1+ANT2

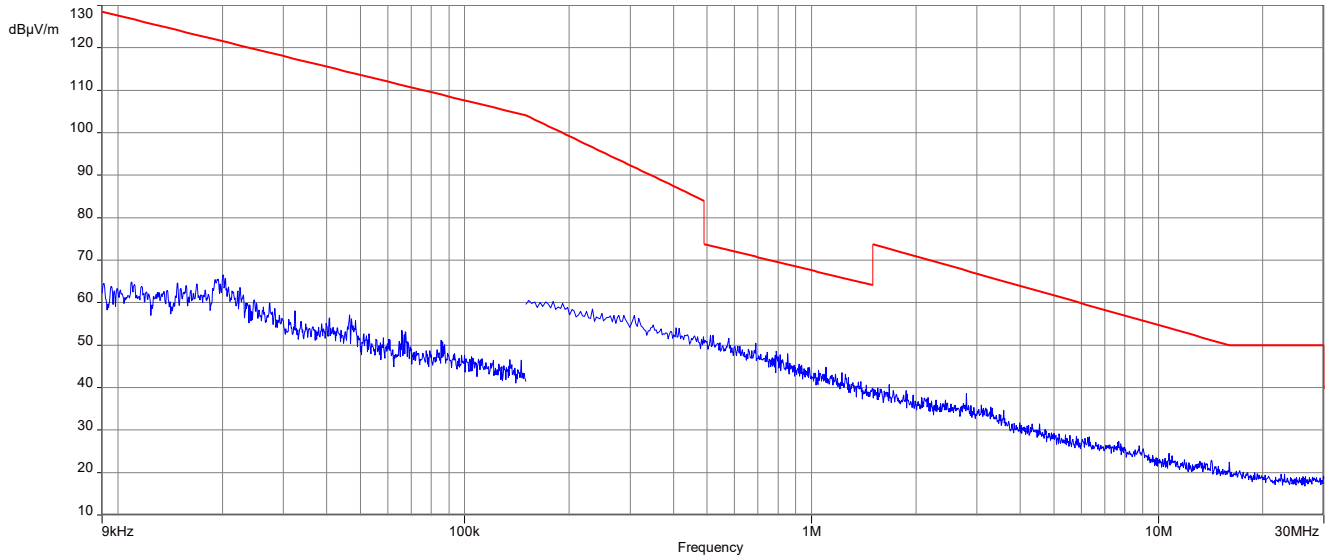
Plot 19: 9 kHz to 30 MHz, U-NII-1; lowest channel



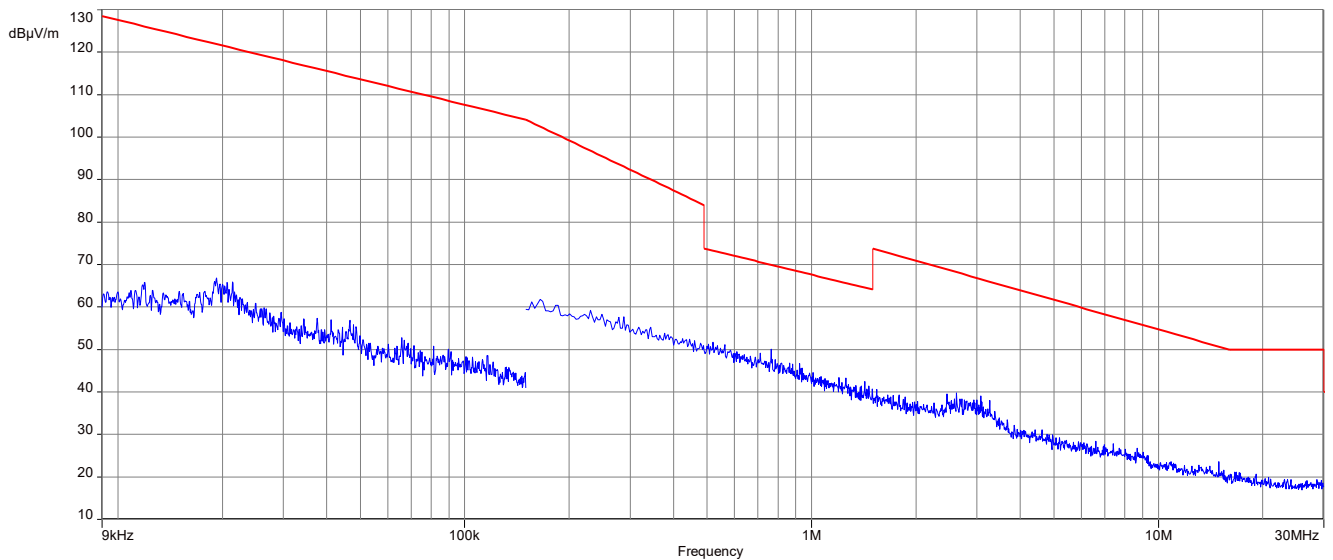
Plot 20: 9 kHz to 30 MHz, U-NII-1; middle channel



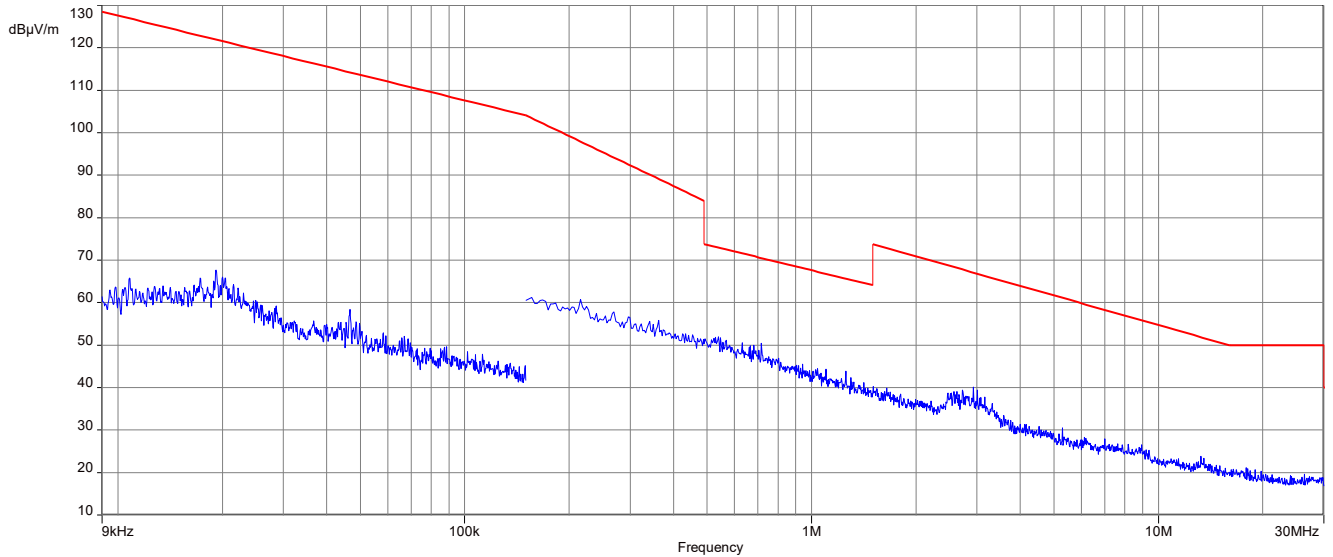
Plot 21: 9 kHz to 30 MHz, U-NII-1; highest channel



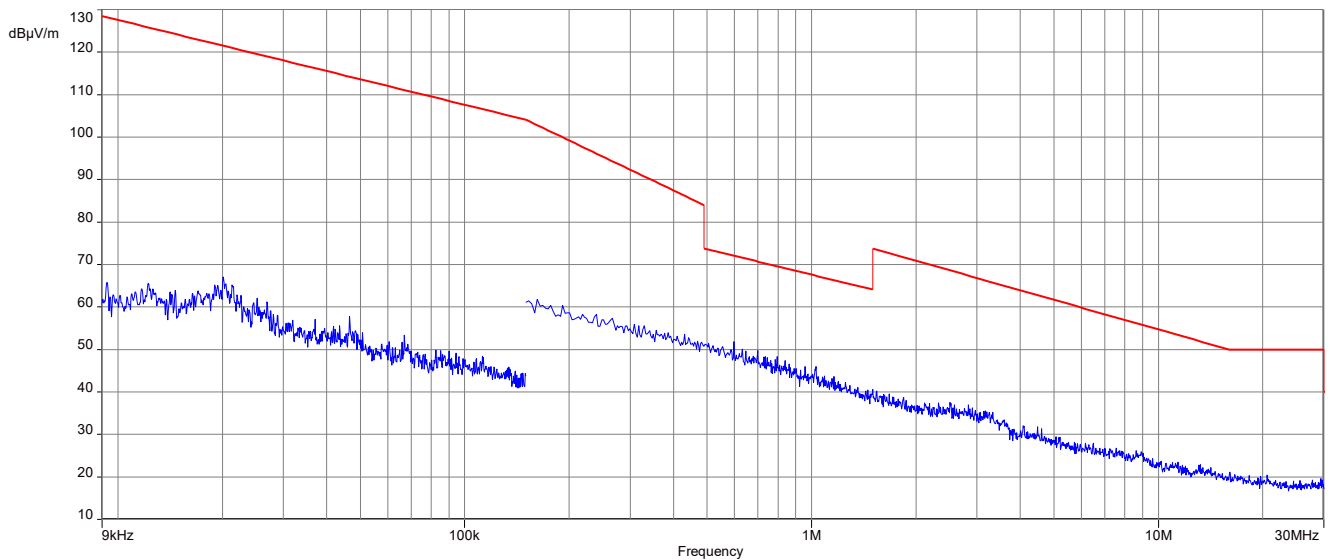
Plot 22: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 23: 9 kHz to 30 MHz, U-NII-3; middle channel



Plot 24: 9 kHz to 30 MHz, U-NII-3; highest channel



12.12 Spurious emissions radiated 30 MHz to 1 GHz

Measurement:

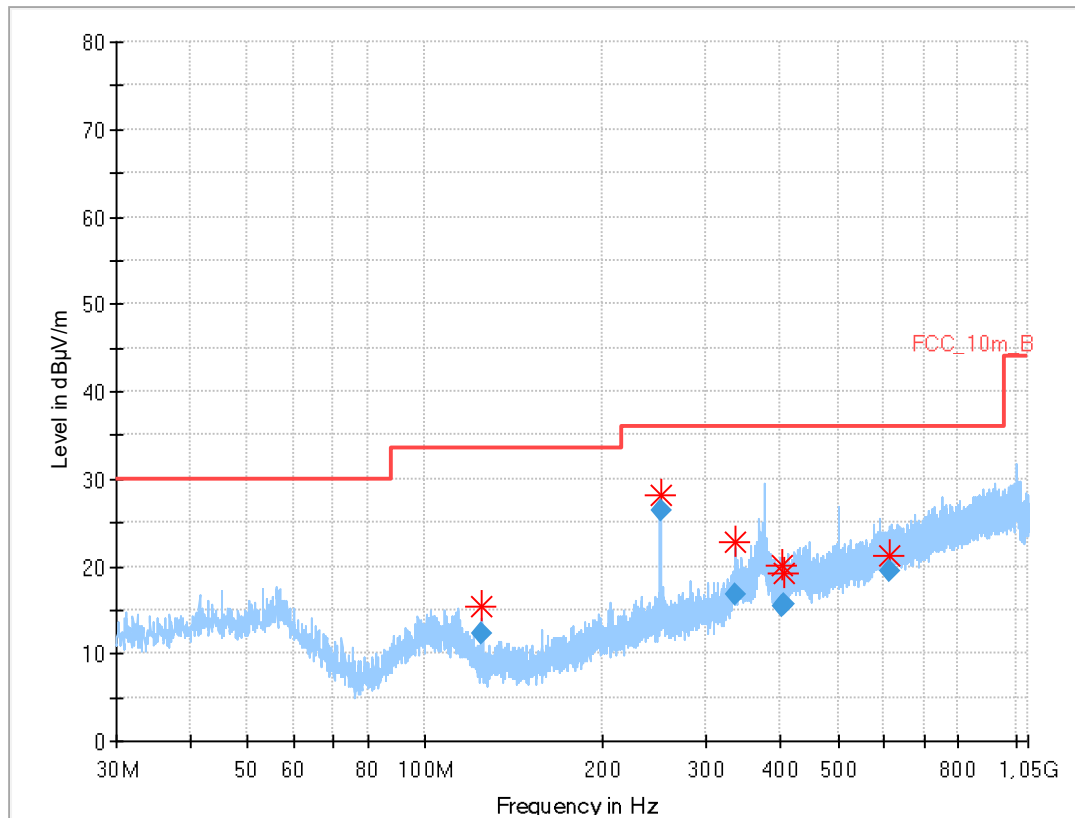
Measurement parameter	
Detector:	Quasi Peak
Sweep time:	Auto
Resolution bandwidth:	120 kHz
Video bandwidth:	500 kHz
Span:	30 MHz to 1 GHz
Test setup:	See chapter 7.1 setup A
Measurement uncertainty:	See chapter 9

Limits:

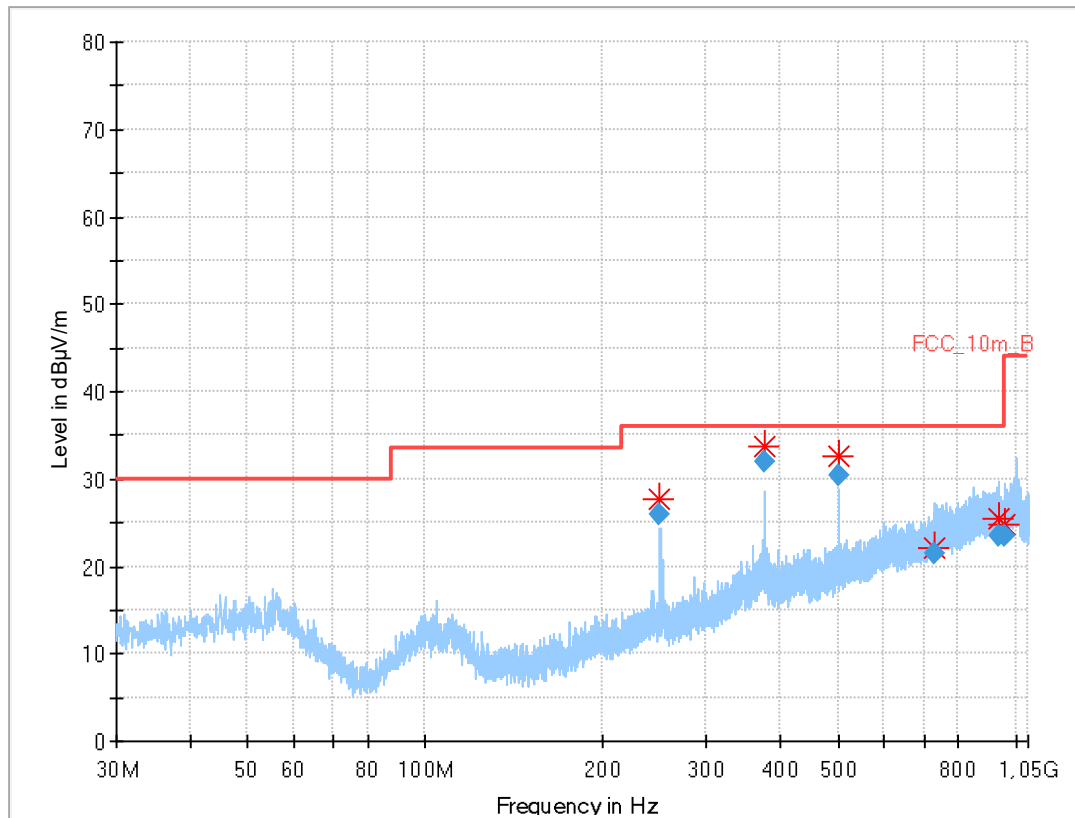
TX Spurious Emissions Radiated		
§15.209 / RSS-247		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3
§15.407		
Outside the restricted bands!	-27 dBm / MHz	

Plots:

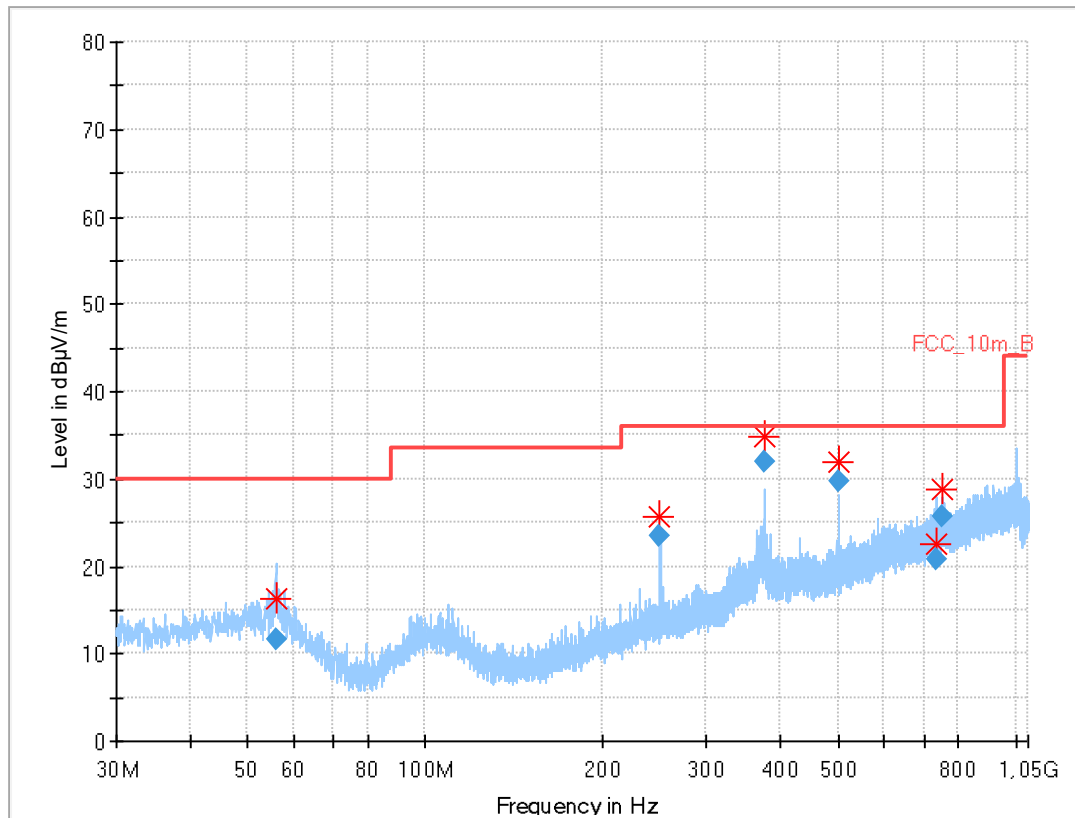
Plot 1: 30 MHz to 1 GHz; U-NII-1; OFDM/a-mode; FR; valid for all channels

**Results:**

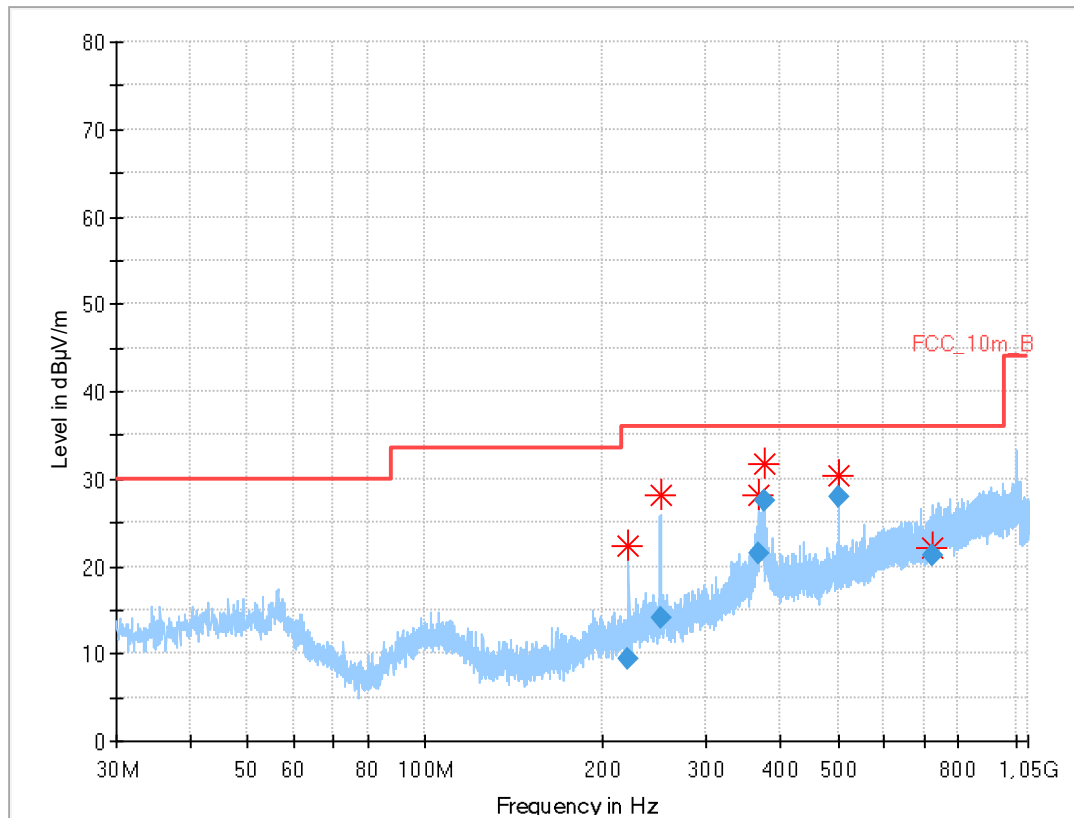
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
125.006640	12.33	33.50	21.17	1000.0	120.000	105.0	V	70.0	9.7
250.007520	26.47	36.00	9.53	1000.0	120.000	101.0	V	169.0	13.8
335.001240	16.84	36.00	19.16	1000.0	120.000	170.0	H	22.0	15.9
401.540280	15.45	36.00	20.55	1000.0	120.000	156.0	H	177.0	17.6
405.360000	15.60	36.00	20.40	1000.0	120.000	170.0	H	194.0	17.7
611.503080	19.47	36.00	16.53	1000.0	120.000	170.0	H	88.0	21.6

Plot 2: 30 MHz to 1 GHz; U-NII-1; OFDM/a-mode; HR; valid for all channels**Results:**

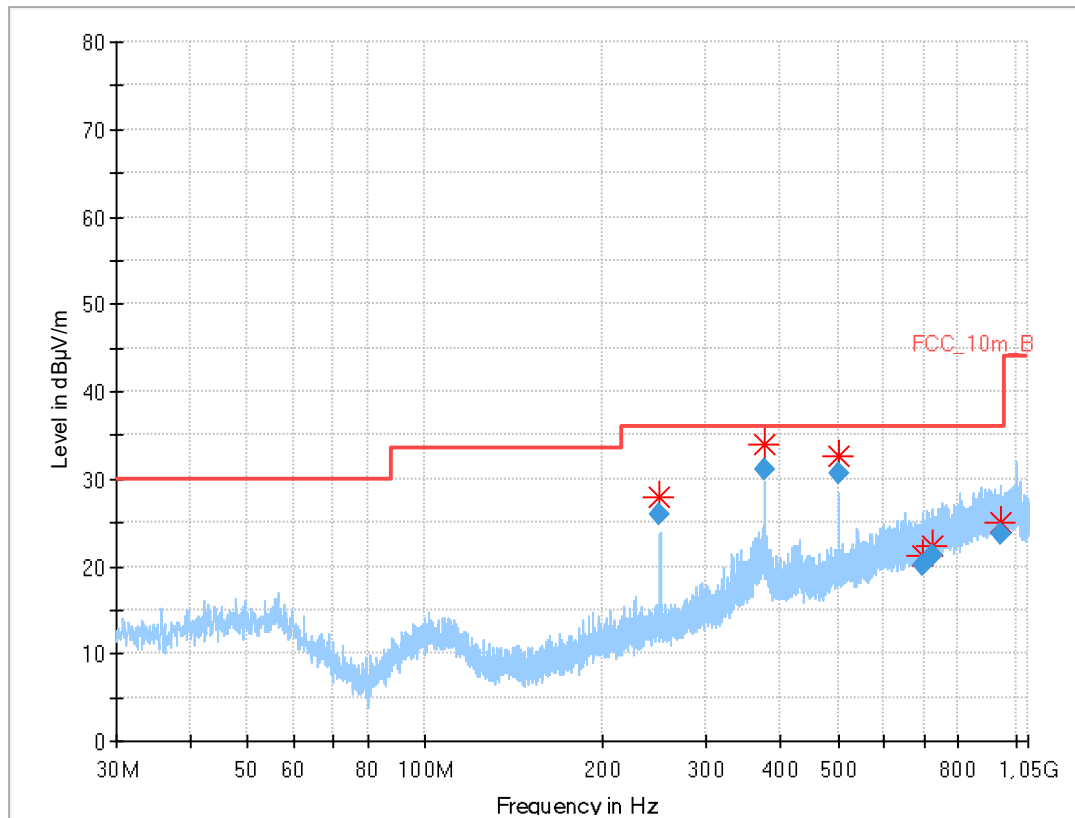
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
250.000560	25.86	36.00	10.14	1000.0	120.000	170.0	H	67.0	13.8
375.002400	31.88	36.00	4.12	1000.0	120.000	170.0	H	105.0	16.6
500.023080	30.47	36.00	5.53	1000.0	120.000	170.0	H	202.0	19.1
729.479880	21.56	36.00	14.44	1000.0	120.000	170.0	V	202.0	22.6
937.268280	23.50	36.00	12.50	1000.0	120.000	170.0	H	-16.0	24.8
957.331200	23.40	36.00	12.60	1000.0	120.000	170.0	H	80.0	24.8

Plot 3: 30 MHz to 1 GHz; U-NII-1; OFDM/a-mode; QR; valid for all channels**Results:**

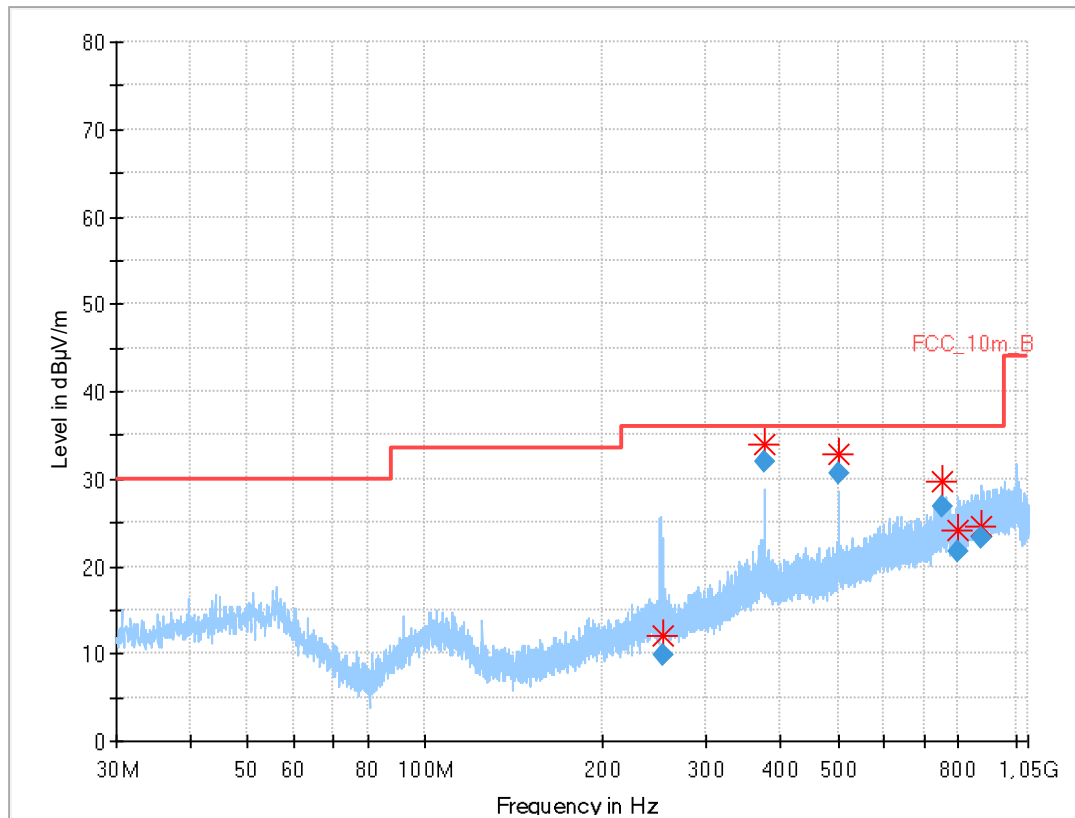
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
55.839480	11.52	30.00	18.48	1000.0	120.000	170.0	V	-8.0	15.3
250.000200	23.52	36.00	12.48	1000.0	120.000	170.0	H	81.0	13.8
375.013440	31.86	36.00	4.14	1000.0	120.000	170.0	H	81.0	16.6
500.002560	29.78	36.00	6.22	1000.0	120.000	170.0	H	202.0	19.1
732.336000	20.73	36.00	15.27	1000.0	120.000	101.0	H	284.0	22.7
750.017640	25.71	36.00	10.29	1000.0	120.000	101.0	H	96.0	23.1

Plot 4: 30 MHz to 1 GHz; U-NII-1; OFDM/ax HE20-mode; FR; valid for all channels**Results:**

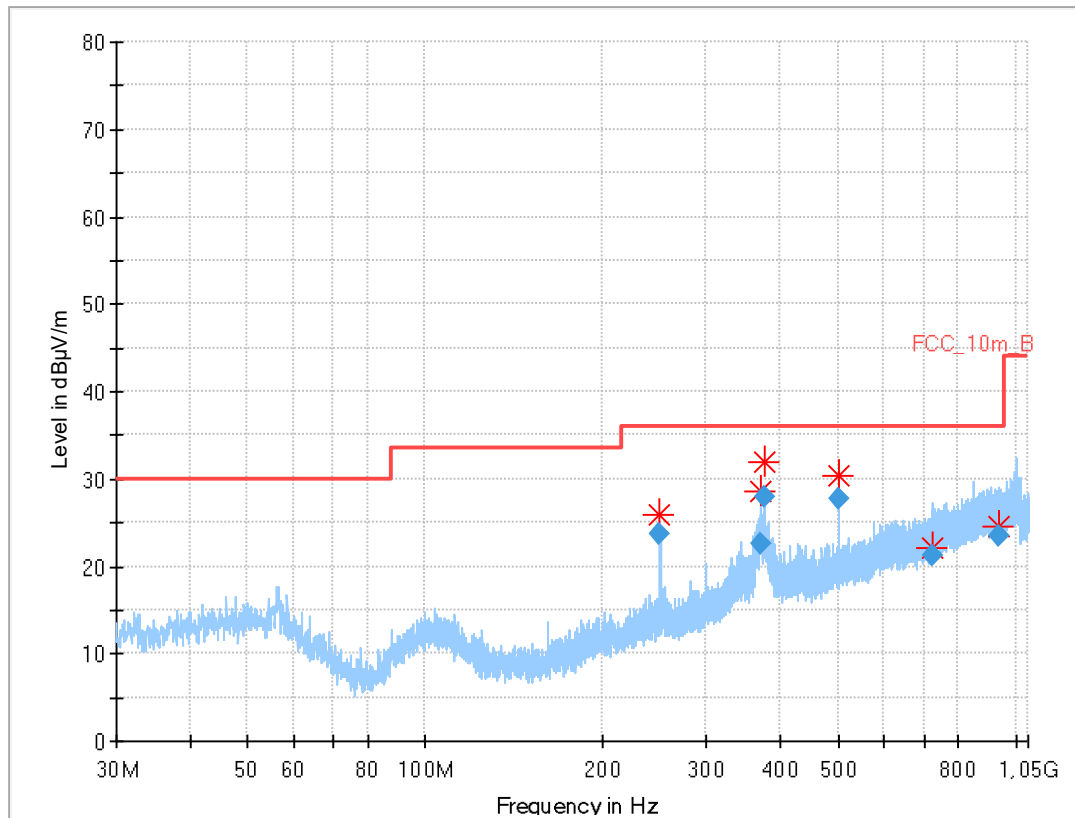
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
221.286360	9.35	36.00	26.65	1000.0	120.000	136.0	V	-3.0	12.5
250.005720	14.09	36.00	21.91	1000.0	120.000	105.0	V	163.0	13.8
367.494000	21.50	36.00	14.50	1000.0	120.000	170.0	H	22.0	16.4
375.017160	27.58	36.00	8.42	1000.0	120.000	170.0	H	69.0	16.6
500.005440	27.90	36.00	8.10	1000.0	120.000	170.0	H	-21.0	19.1
725.271240	21.29	36.00	14.71	1000.0	120.000	165.0	V	70.0	22.4

Plot 5: 30 MHz to 1 GHz; U-NII-3; OFDM/a-mode; FR; valid for all channels and modes**Results:**

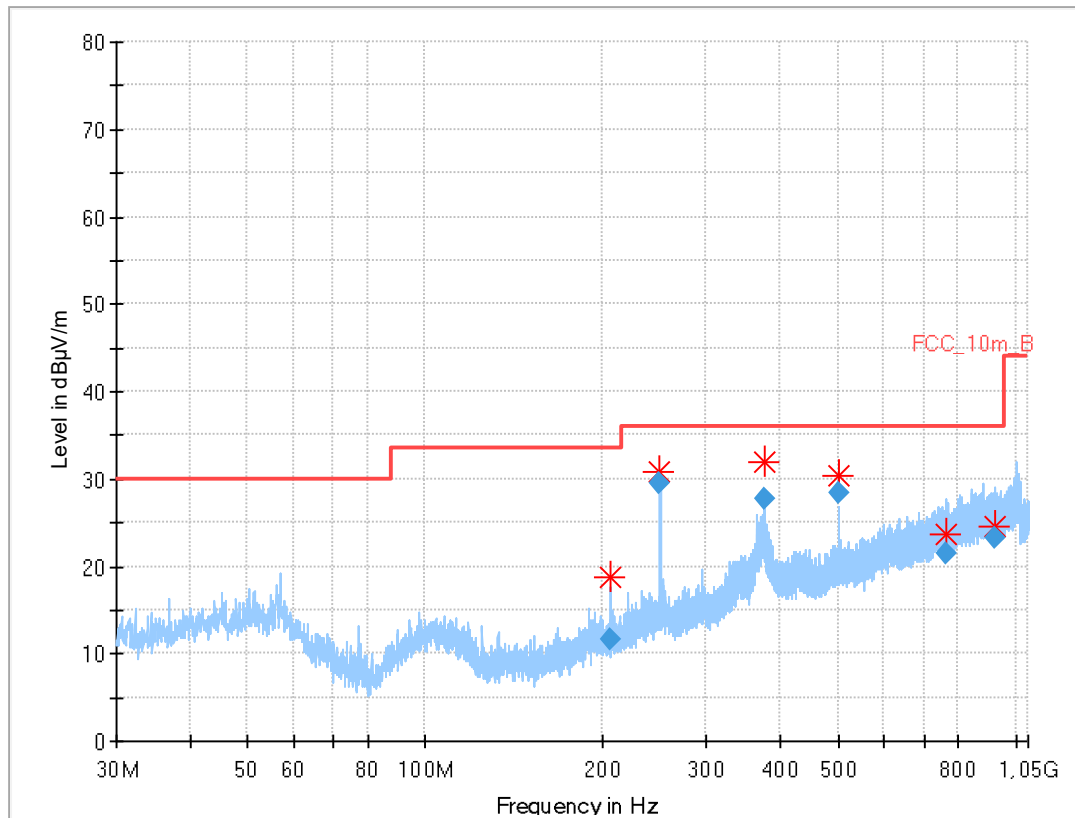
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
249.998880	25.93	36.00	10.07	1000.0	120.000	170.0	H	70.0	13.8
375.021240	31.00	36.00	5.00	1000.0	120.000	170.0	H	74.0	16.6
500.005080	30.62	36.00	5.38	1000.0	120.000	164.0	H	202.0	19.1
694.208880	20.11	36.00	15.89	1000.0	120.000	170.0	V	-10.0	21.8
725.587080	21.24	36.00	14.76	1000.0	120.000	170.0	V	87.0	22.4
946.454880	23.58	36.00	12.42	1000.0	120.000	170.0	H	-17.0	24.8

Plot 6: 30 MHz to 1 GHz; U-NII-3; OFDM/a-mode; HR; valid for all channels and modes**Results:**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
252.943800	9.84	36.00	26.16	1000.0	120.000	154.0	V	6.0	13.8
375.015960	31.92	36.00	4.08	1000.0	120.000	170.0	H	112.0	16.6
500.019480	30.70	36.00	5.30	1000.0	120.000	170.0	H	202.0	19.1
750.017760	26.78	36.00	9.22	1000.0	120.000	138.0	H	100.0	23.1
796.276920	21.59	36.00	14.41	1000.0	120.000	170.0	V	292.0	23.3
873.177000	23.15	36.00	12.85	1000.0	120.000	170.0	H	6.0	24.5

Plot 7: 30 MHz to 1 GHz; U-NII-3; OFDM/a-mode; QR; valid for all channels and modes**Results:**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
249.998400	23.78	36.00	12.22	1000.0	120.000	170.0	H	262.0	13.8
371.133120	22.59	36.00	13.41	1000.0	120.000	170.0	H	22.0	16.5
375.005400	27.93	36.00	8.07	1000.0	120.000	170.0	H	67.0	16.6
500.005680	27.69	36.00	8.31	1000.0	120.000	170.0	H	-21.0	19.1
725.100960	21.21	36.00	14.79	1000.0	120.000	128.0	V	82.0	22.4
936.320760	23.50	36.00	12.50	1000.0	120.000	170.0	V	178.0	24.8

Plot 8: 30 MHz to 1 GHz; U-NII-3; OFDM/ax HE20-mode; FR; valid for all channels and modes**Results:**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
205.234800	11.62	33.50	21.88	1000.0	120.000	105.0	V	202.0	11.9
249.993000	29.44	36.00	6.56	1000.0	120.000	106.0	V	158.0	13.8
375.021960	27.67	36.00	8.33	1000.0	120.000	170.0	H	70.0	16.6
500.007120	28.46	36.00	7.54	1000.0	120.000	98.0	V	159.0	19.1
761.810400	21.36	36.00	14.64	1000.0	120.000	170.0	H	-6.0	23.3
925.437120	23.34	36.00	12.66	1000.0	120.000	170.0	V	22.0	24.8

12.13 Spurious emissions radiated 1 GHz to 40 GHz

Measurement:

Measurement parameter	
Detector:	Peak / AVG
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Span:	1 GHz to 40 GHz
Test setup:	See chapter 7.2 – B See chapter 7.3 – A
Measurement uncertainty:	See chapter 9

Limits:

TX Spurious Emissions Radiated		
§15.209 / RSS-247		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
Above 960	54.0	3
§15.407		
Outside the restricted bands!	-27 dBm / MHz	

Results: a-mode FR ANT1+ANT2

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-1 (5150 MHz to 5250 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-3 (5725 MHz to 5850 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

Results: a-mode HR ANT1+ANT2

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-1 (5150 MHz to 5250 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-3 (5725 MHz to 5850 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

Results: a-mode QR ANT1+ANT2

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-1 (5150 MHz to 5250 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-3 (5725 MHz to 5850 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

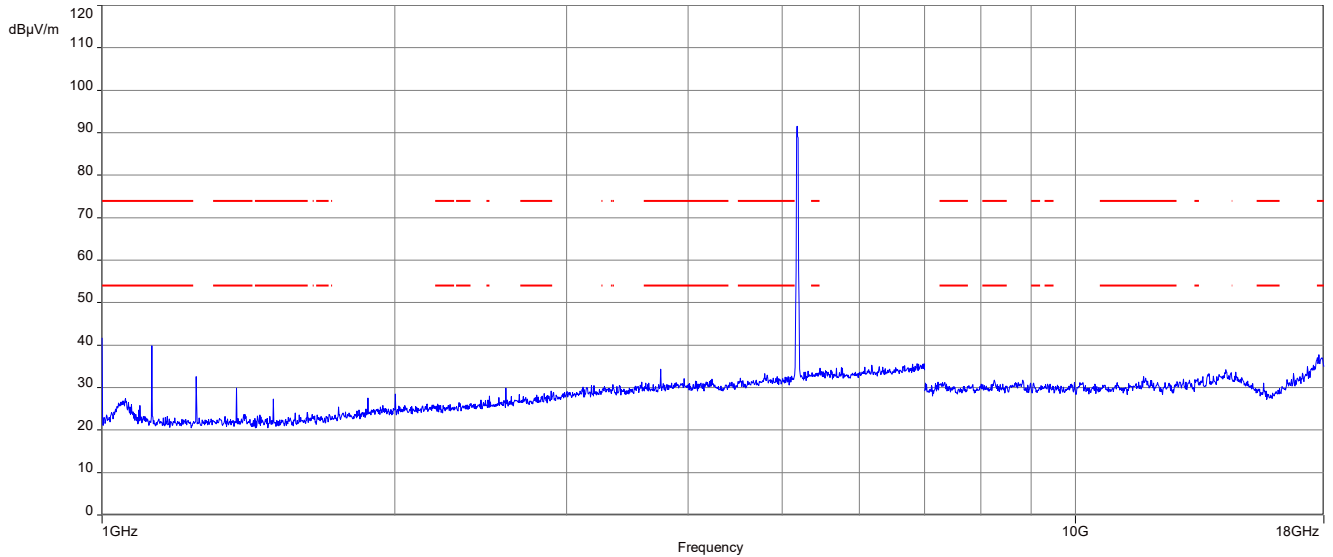
Results: axHE20-mode FR ANT1+ANT2

TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-1 (5150 MHz to 5250 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	

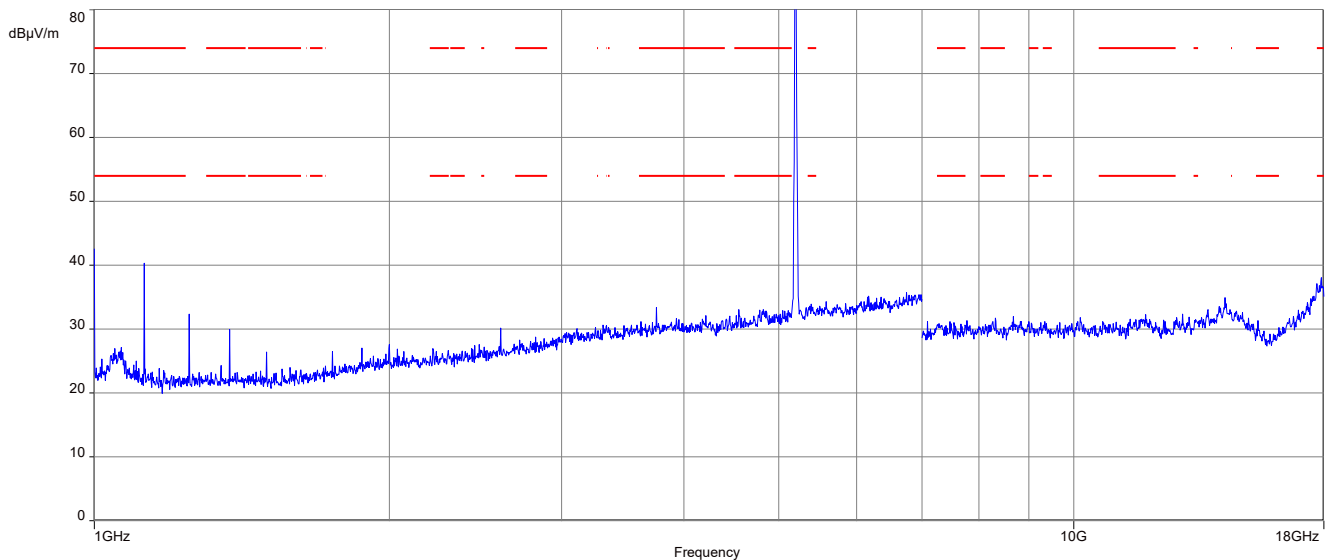
TX Spurious Emissions Radiated [dBµV/m] / dBm								
U-NII-3 (5725 MHz to 5850 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
5342.8	Peak	54.1	All detected peak emissions are below the average Limit.			All detected peak emissions are below the average Limit.		
	AVG	39.2						
	Peak			Peak			Peak	
	AVG			AVG			AVG	

Plots: a-mode FR ANT1+ANT2

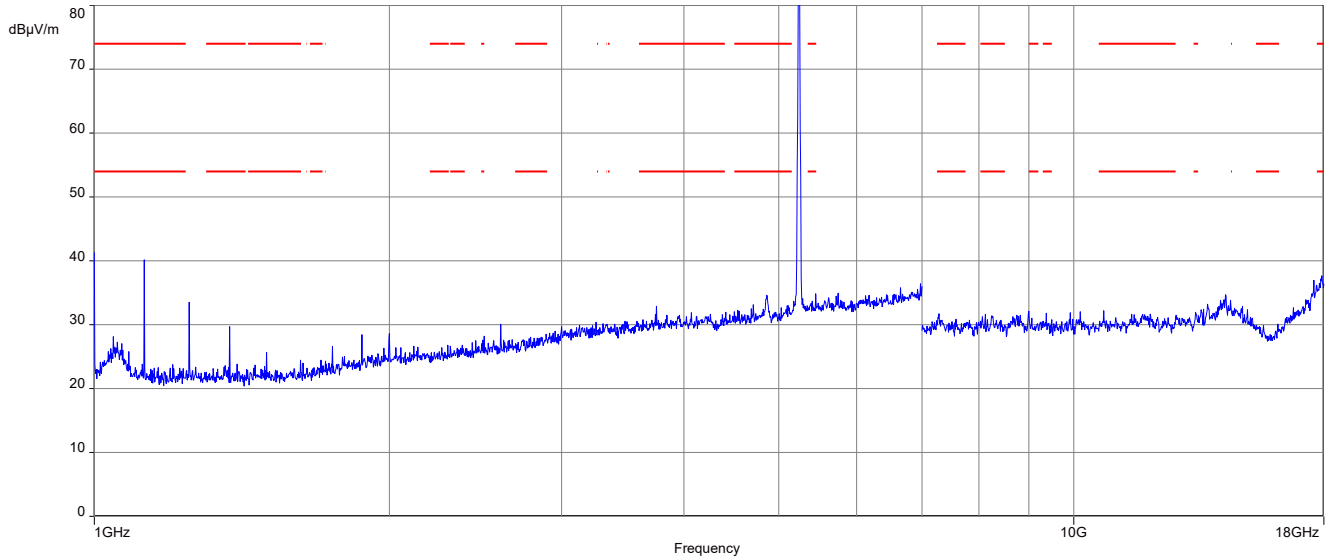
Plot 1: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



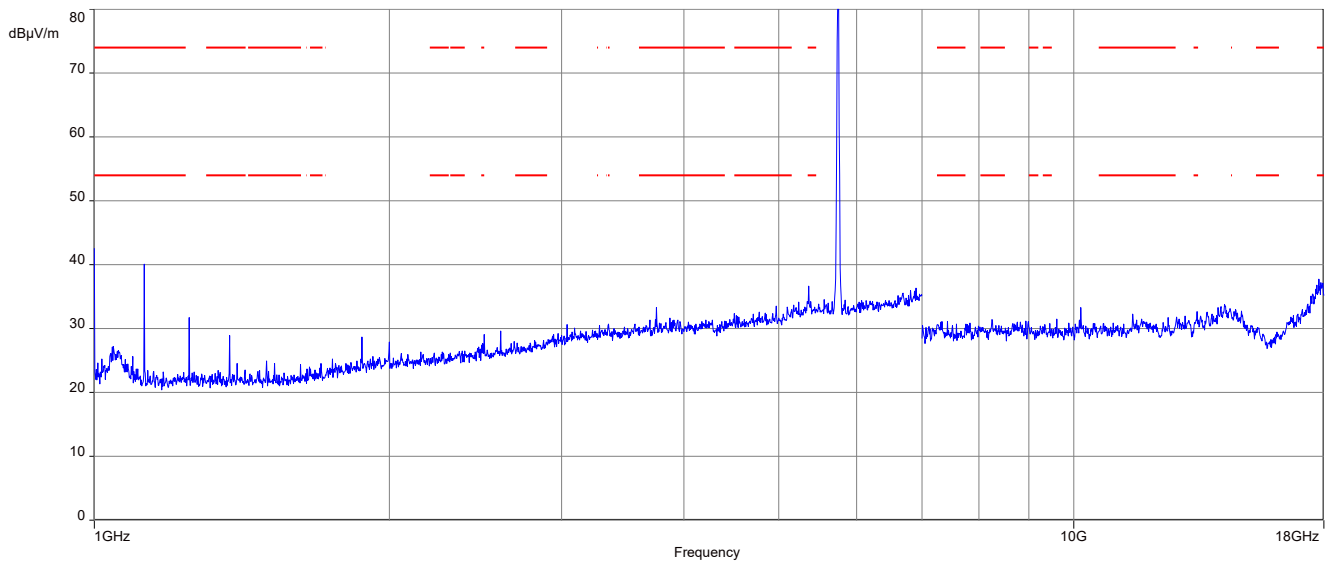
Plot 2: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; middle channel



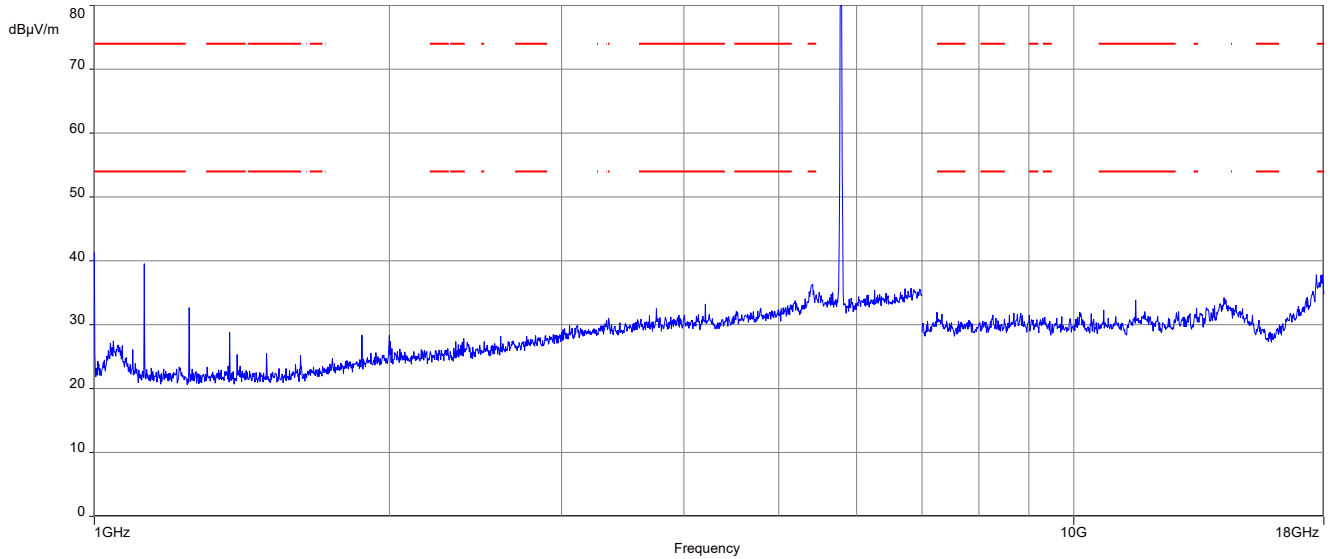
Plot 3: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



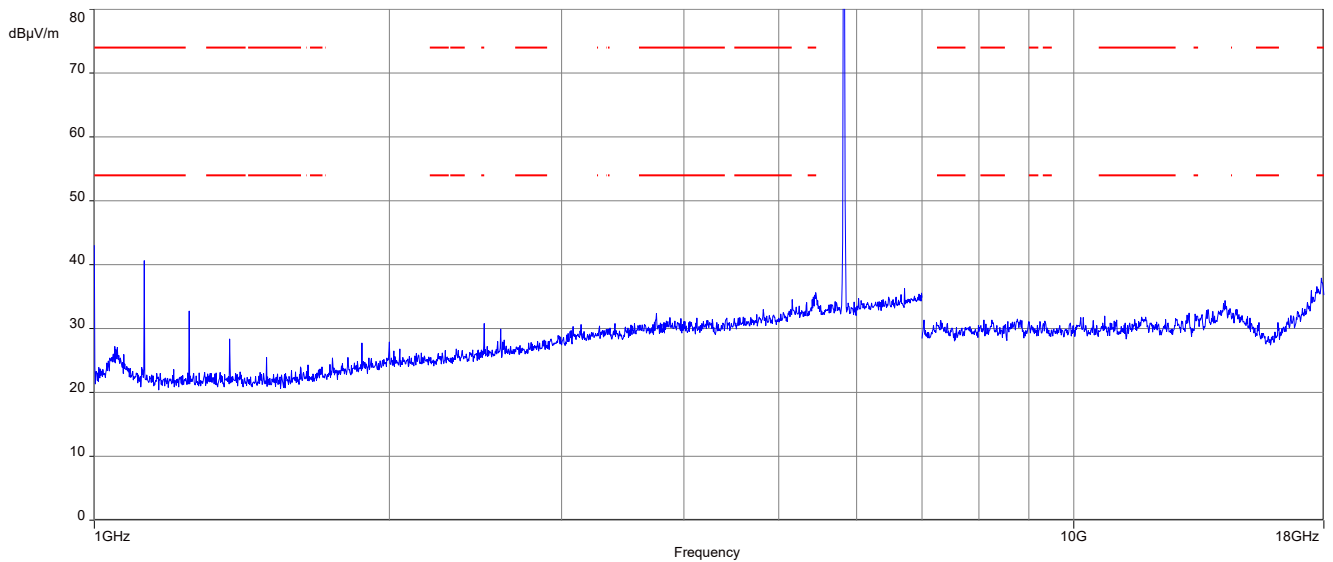
Plot 4: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 5: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel

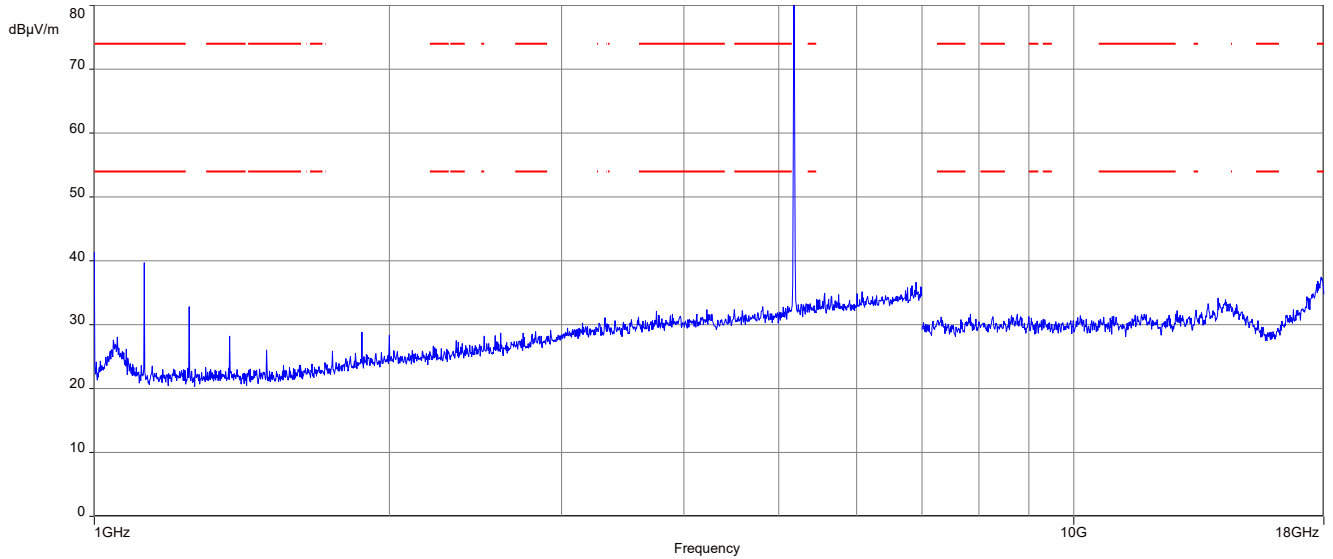


Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel

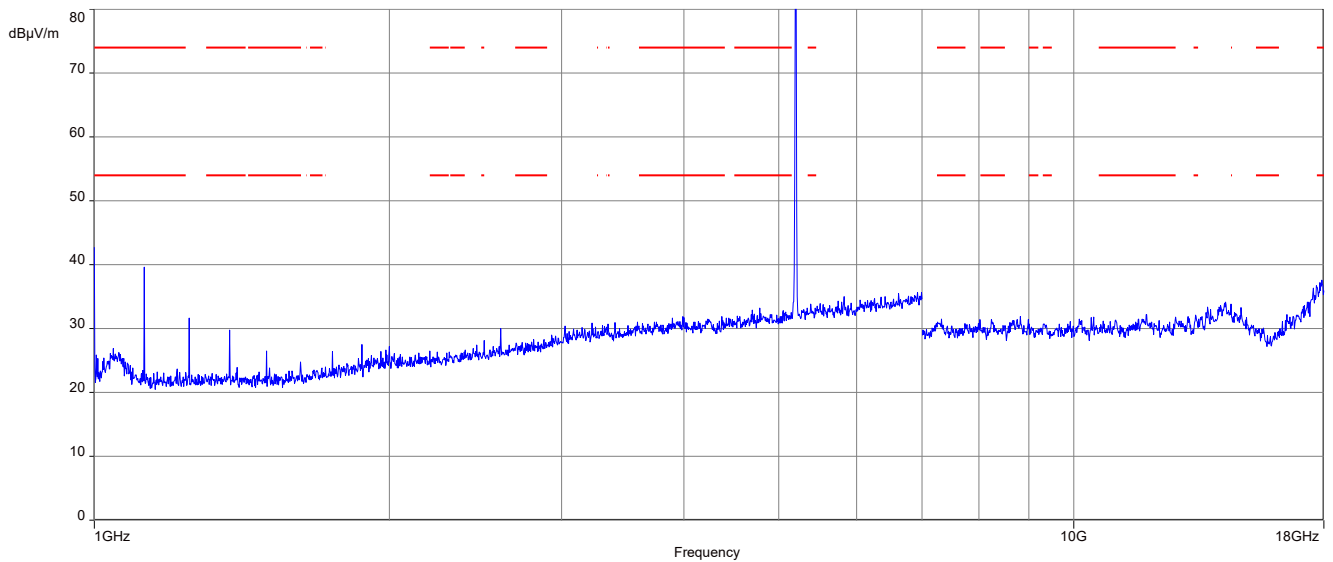


Plots: a-mode HR ANT1+ANT2

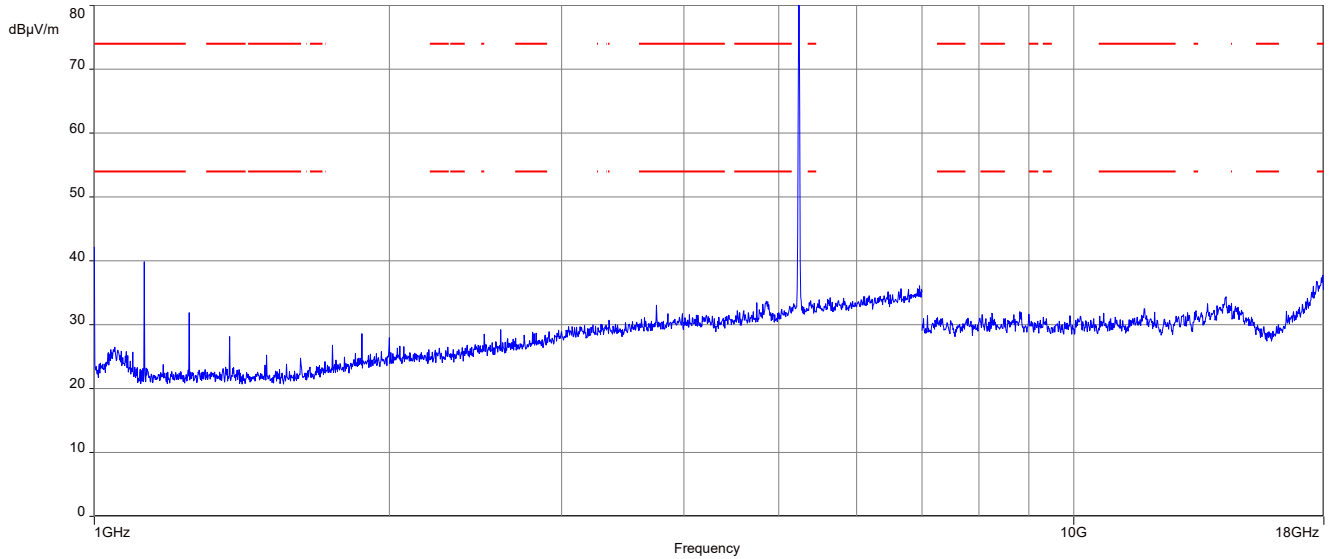
Plot 7: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



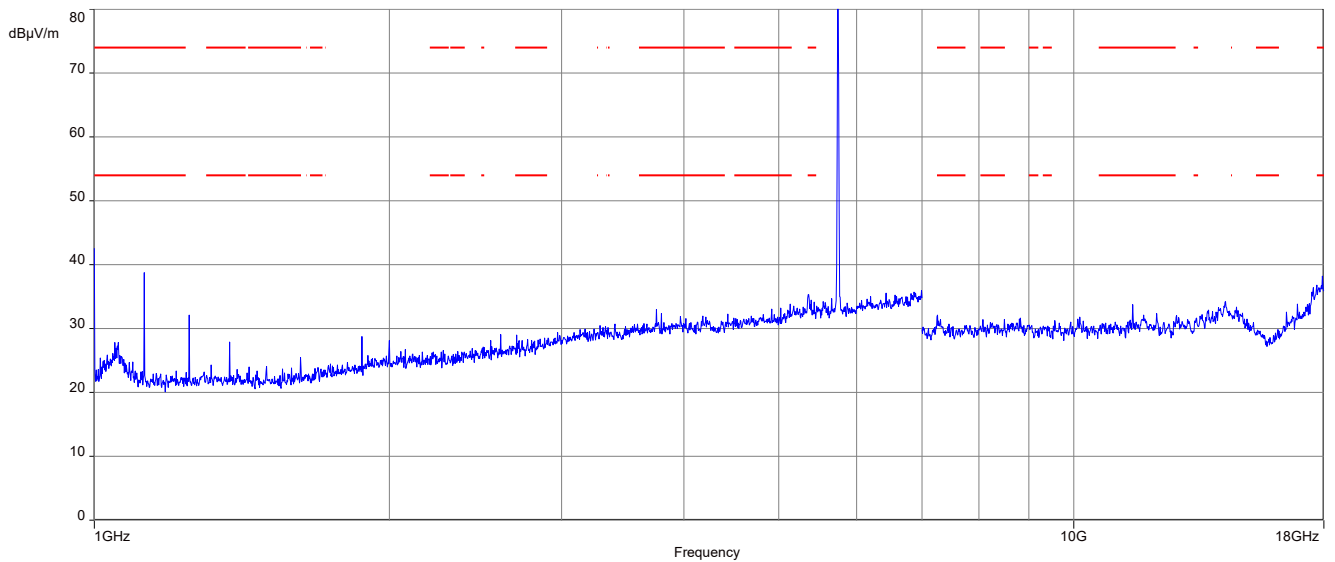
Plot 8: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; middle channel



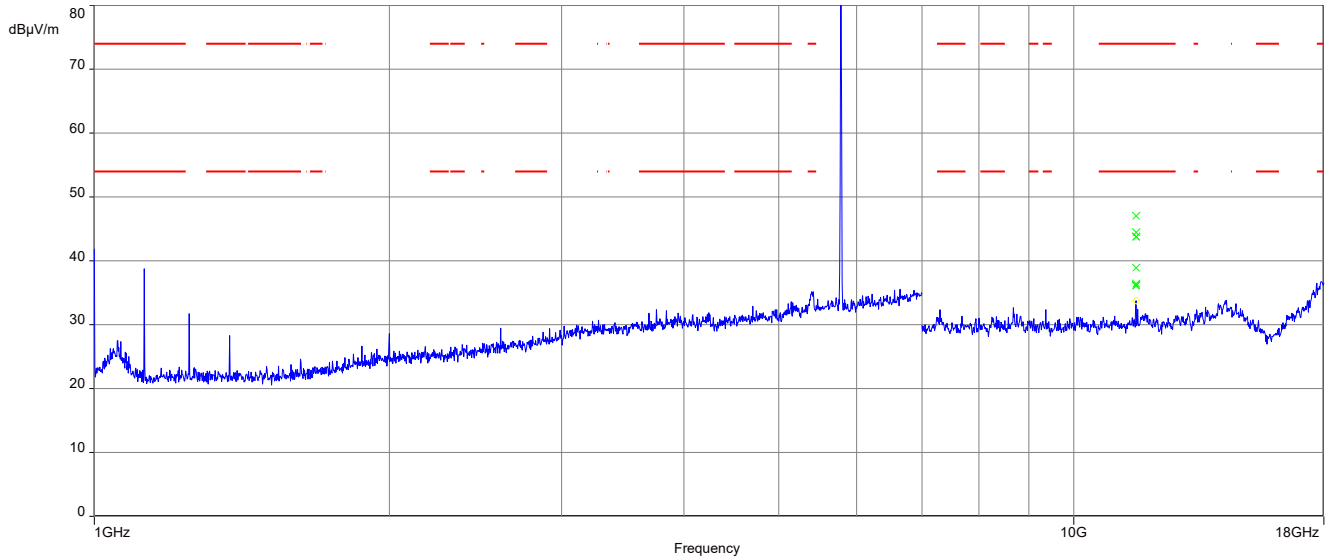
Plot 9: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



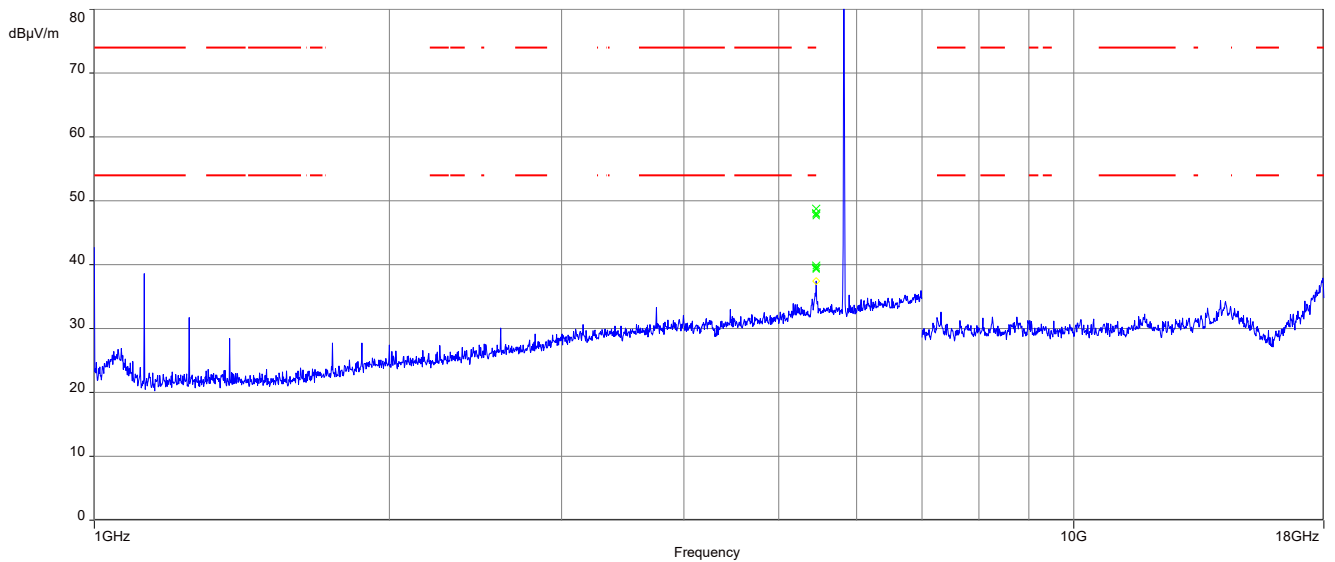
Plot 10: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 11: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel

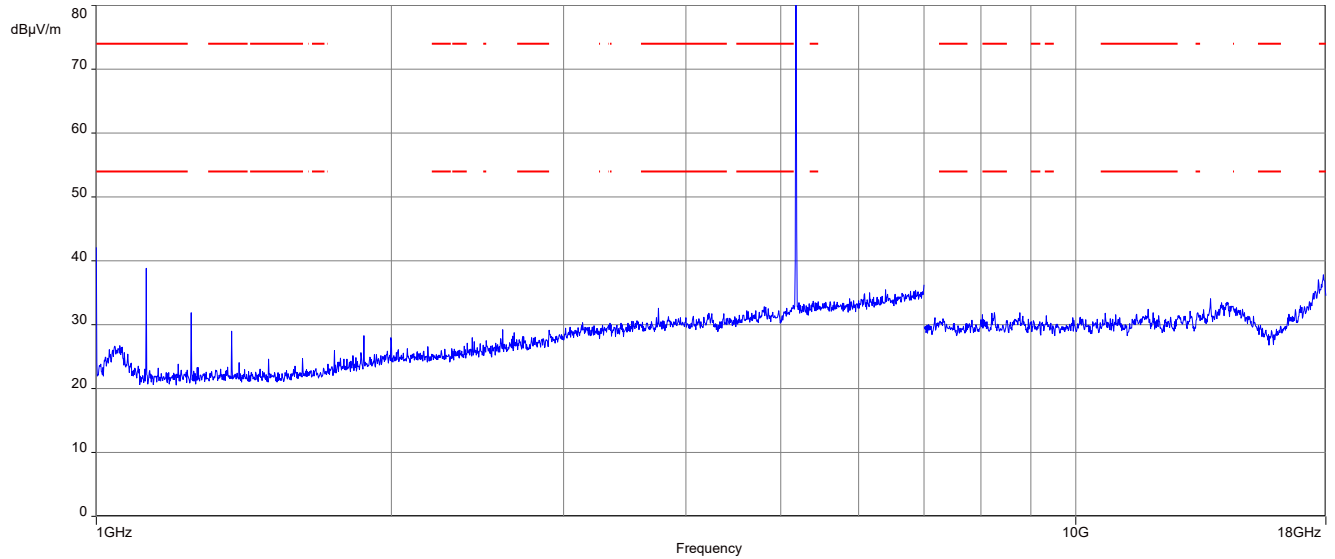


Plot 12: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel

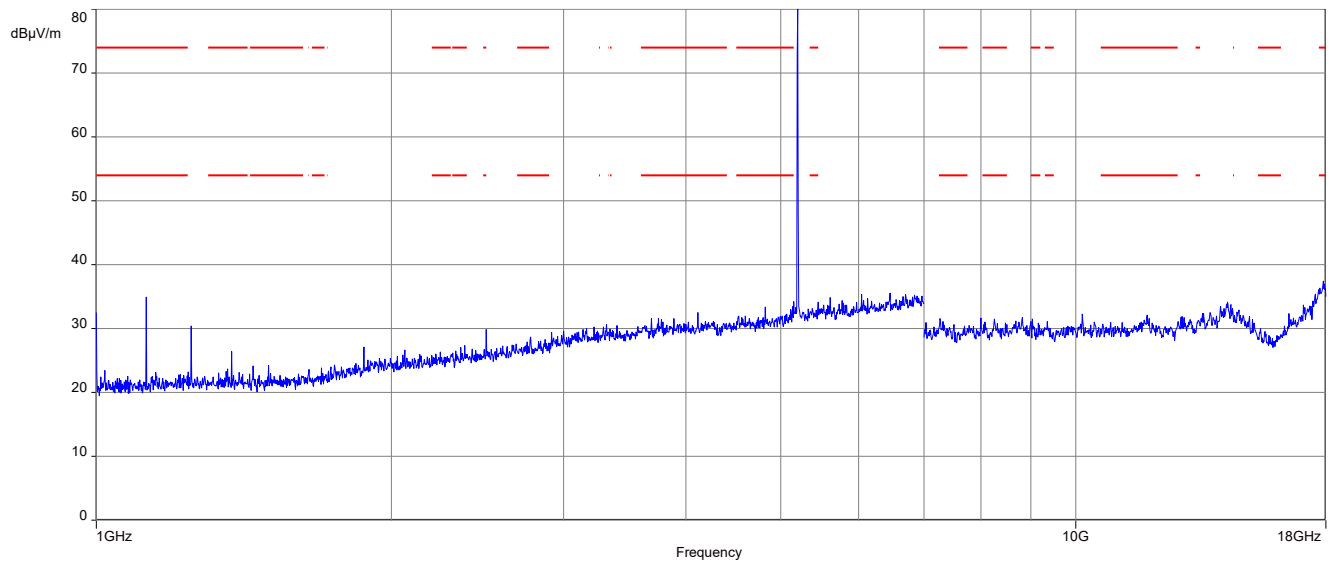


Plots: a-mode QR ANT1+ANT2

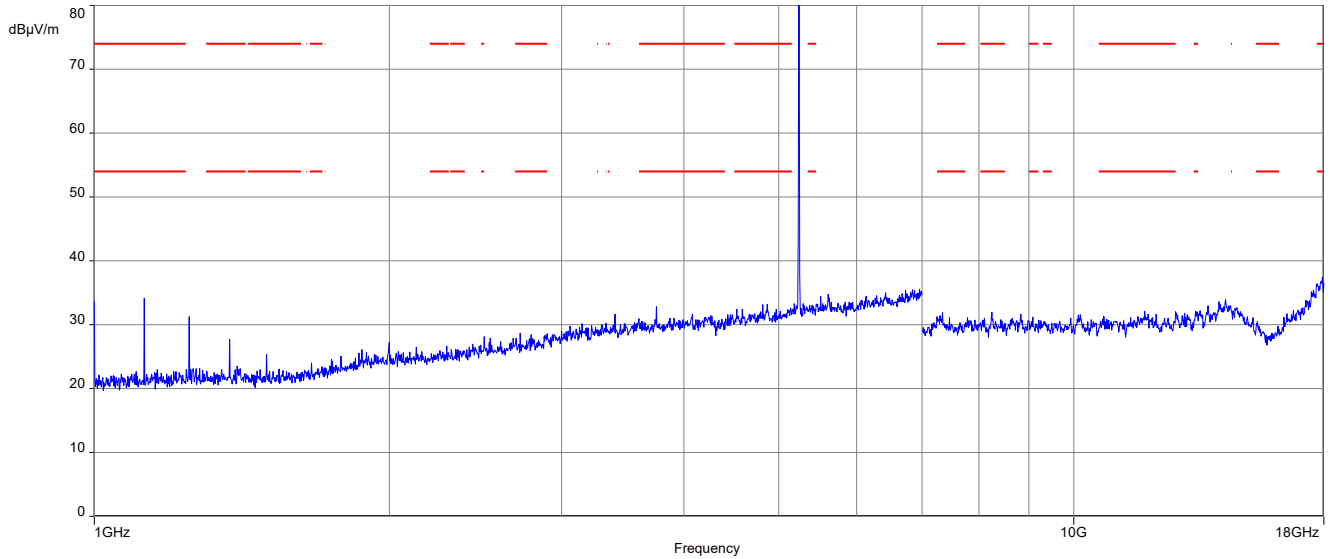
Plot 13: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



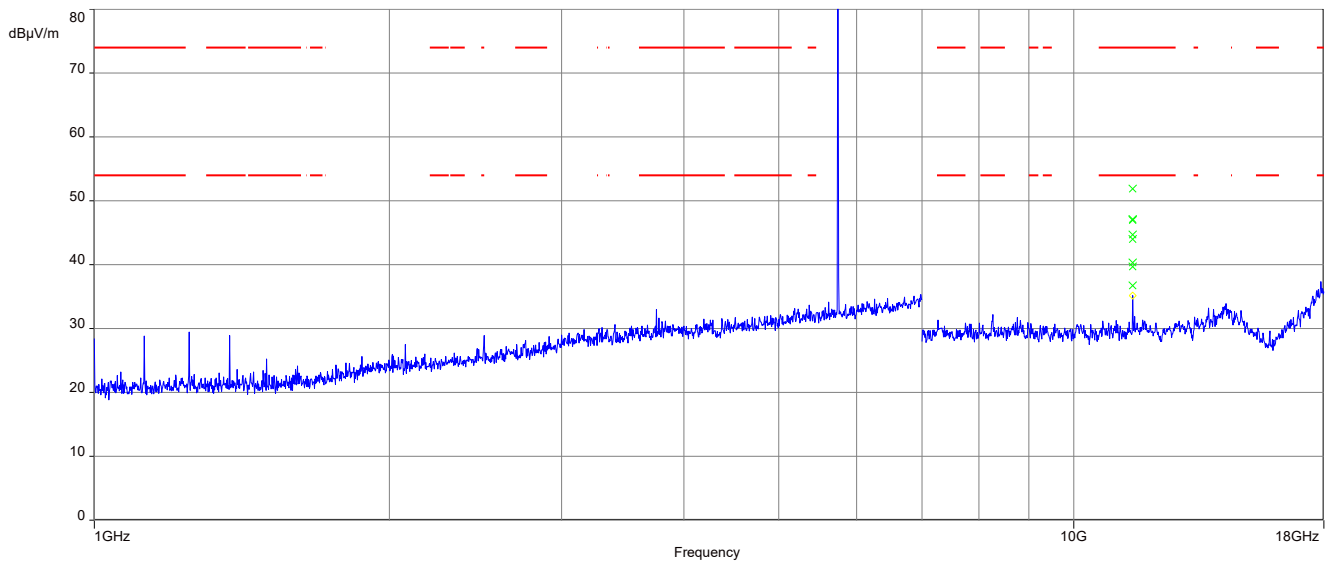
Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; middle channel



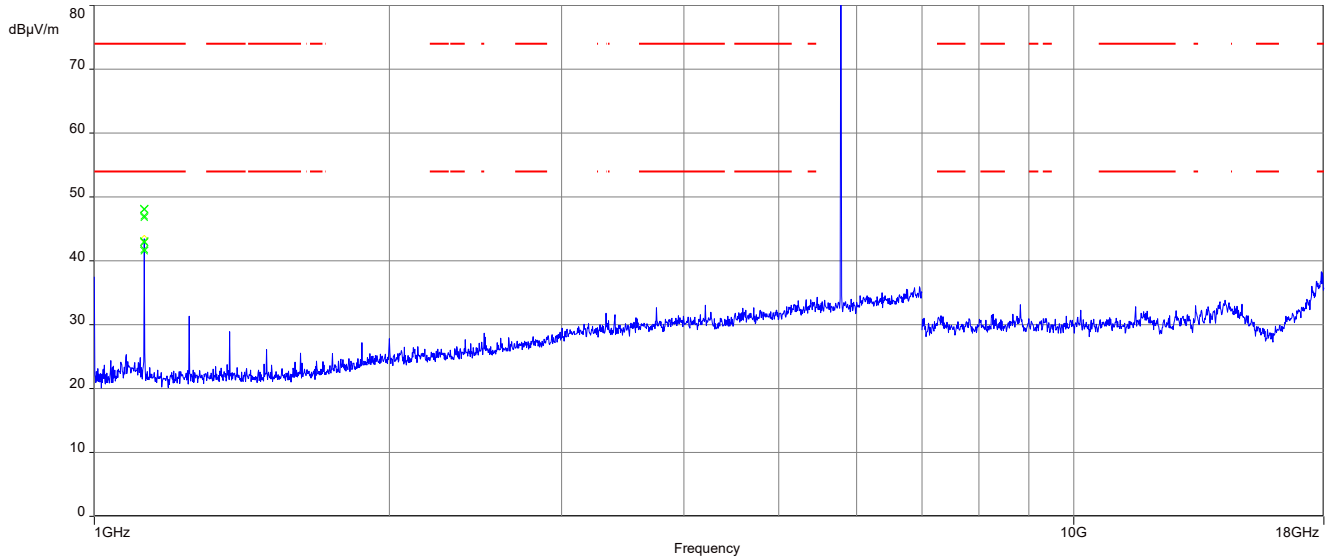
Plot 15: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



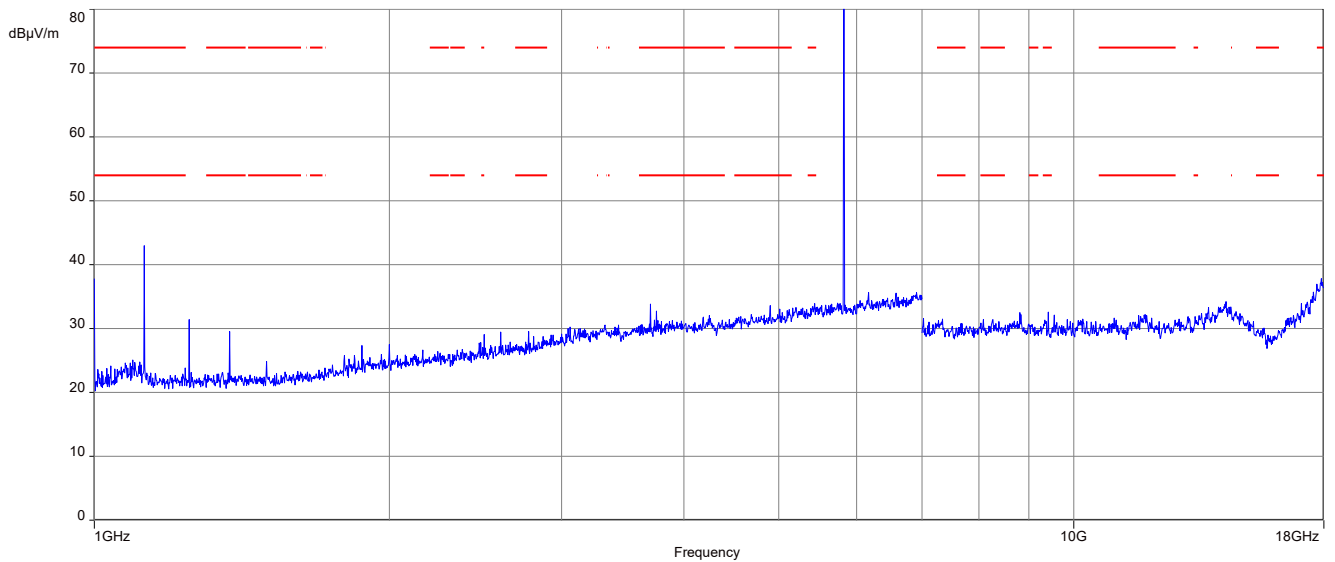
Plot 16: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 17: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel

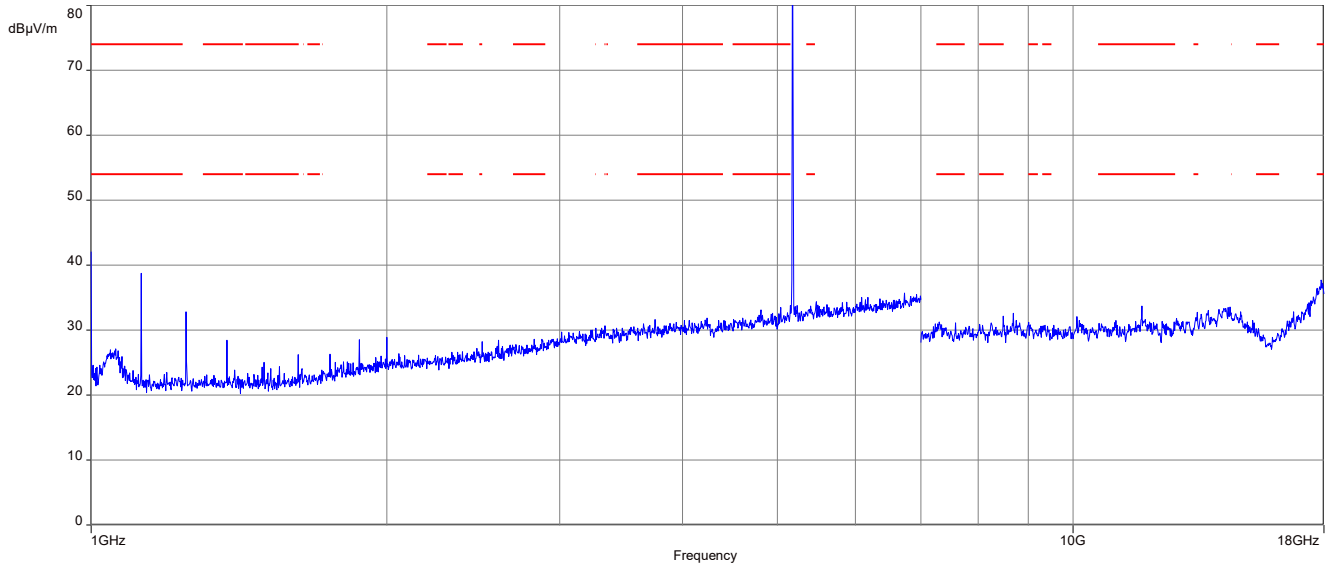


Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel

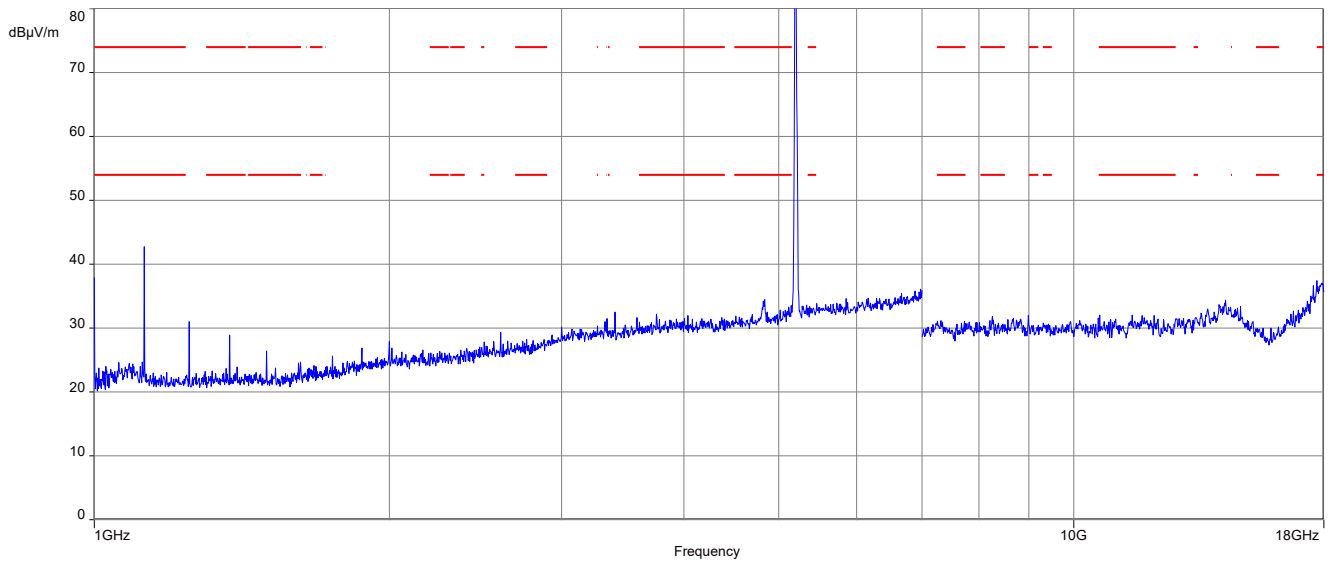


Plots: axHE20-mode FR ANT1+ANT2

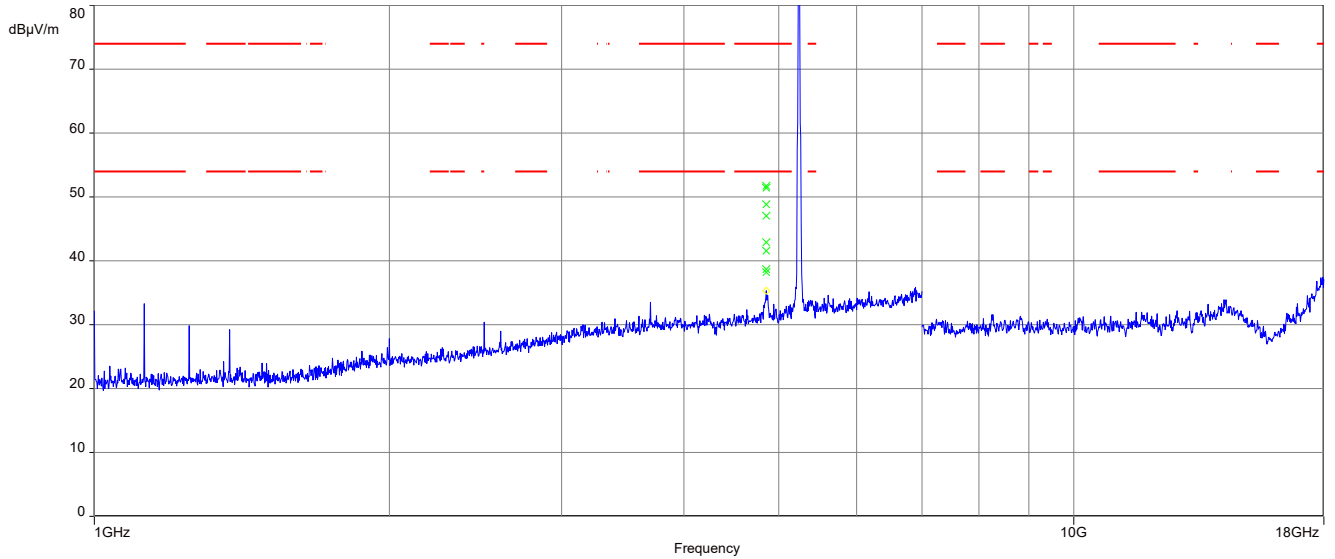
Plot 19: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



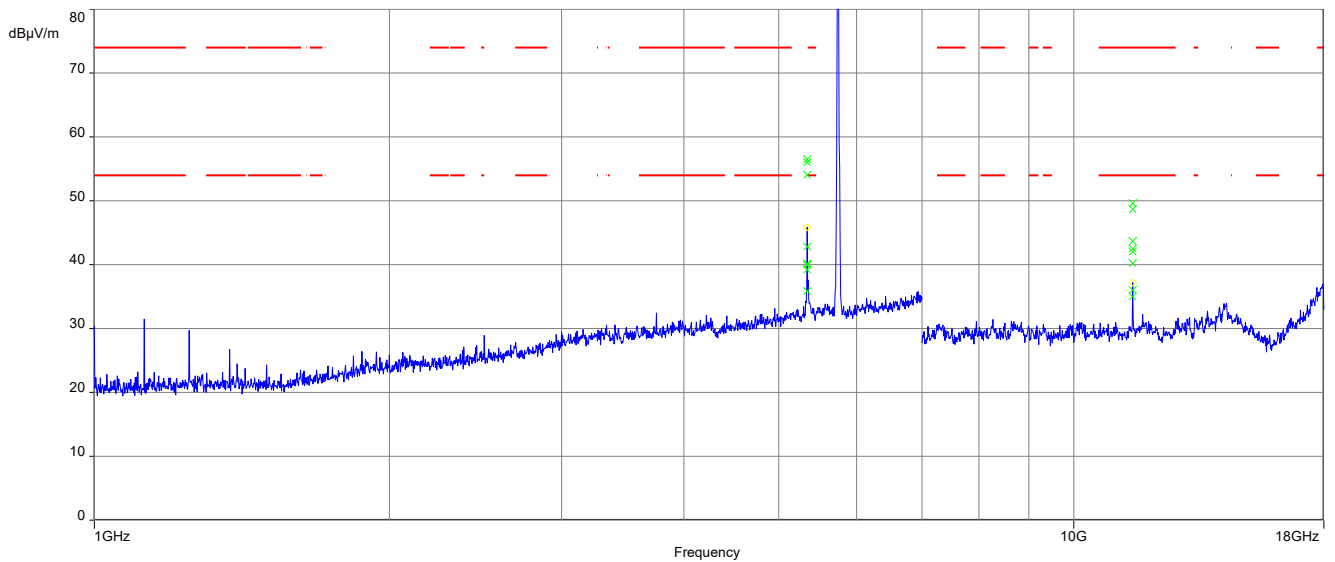
Plot 20: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; middle channel



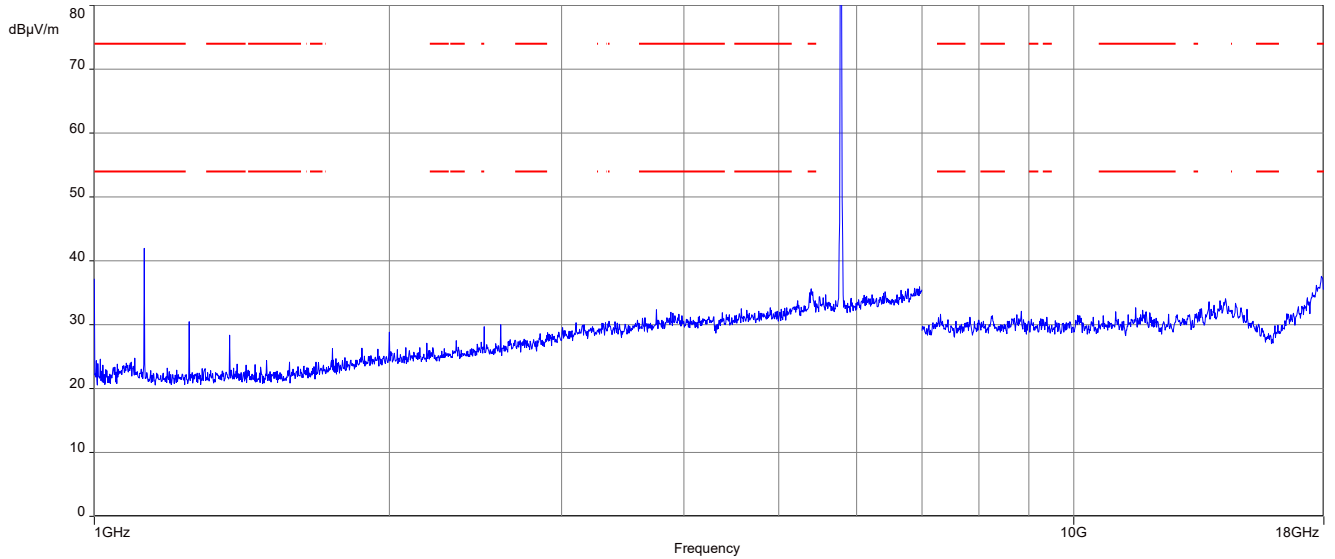
Plot 21: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



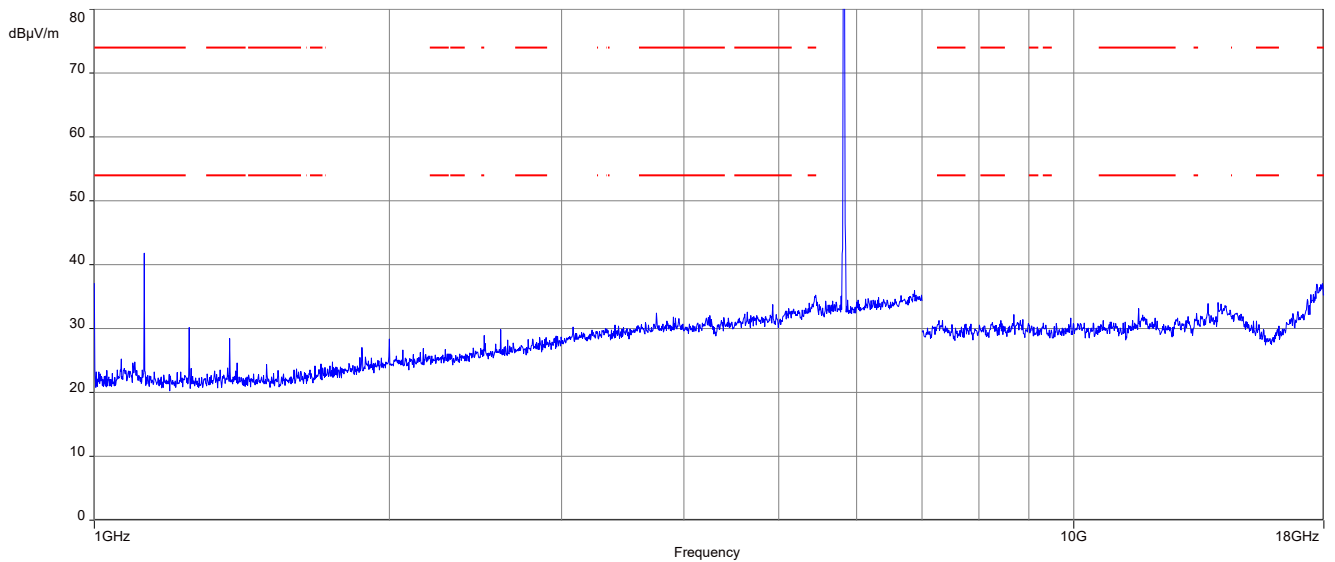
Plot 22: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 23: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel

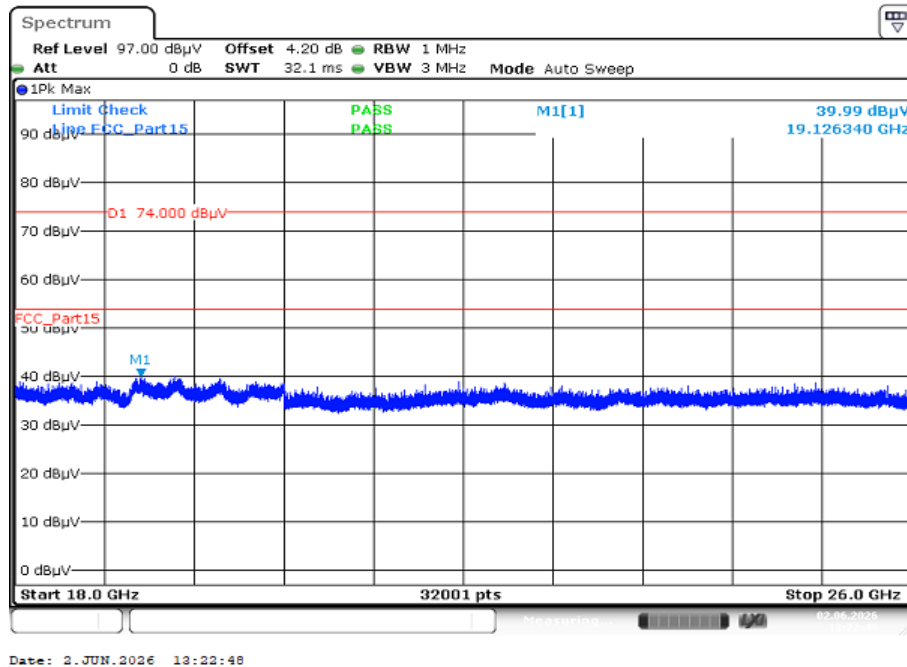


Plot 24: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel

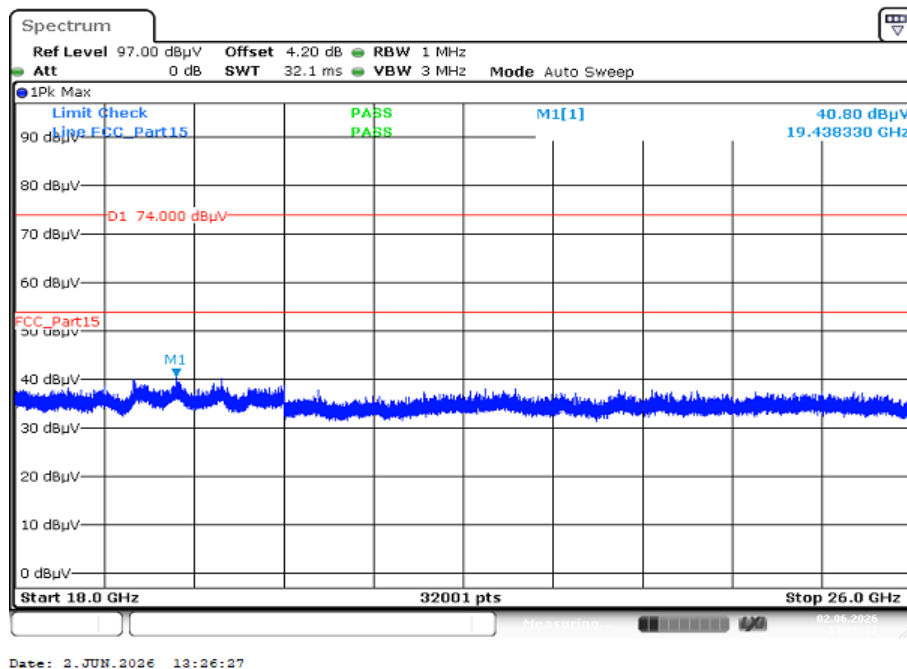


Plots: 18 GHz to 40 GHz

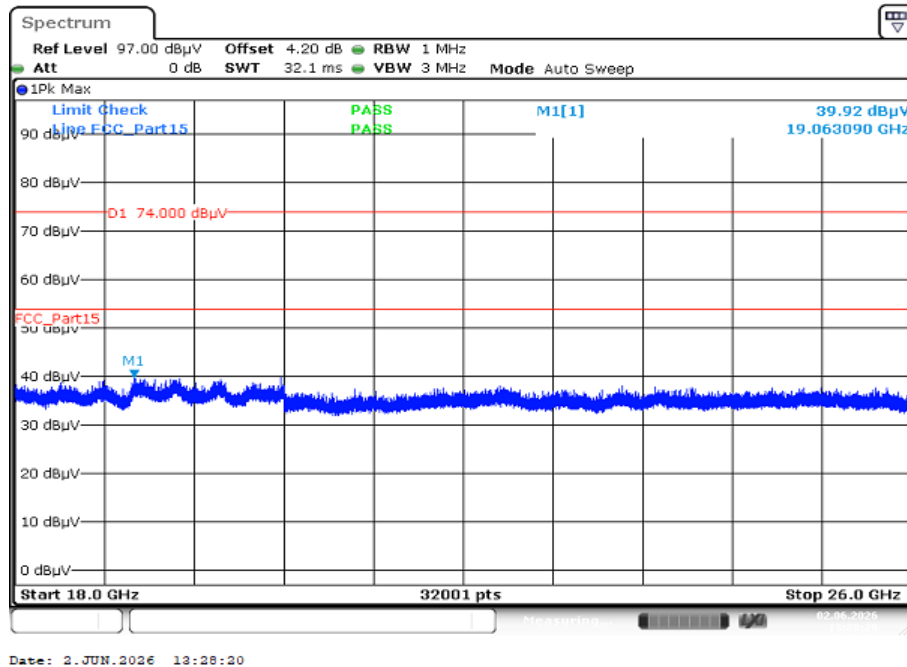
Plot 25: 18 GHz to 26 GHz; vertical & horizontal polarization; FR; valid for all modes and channels



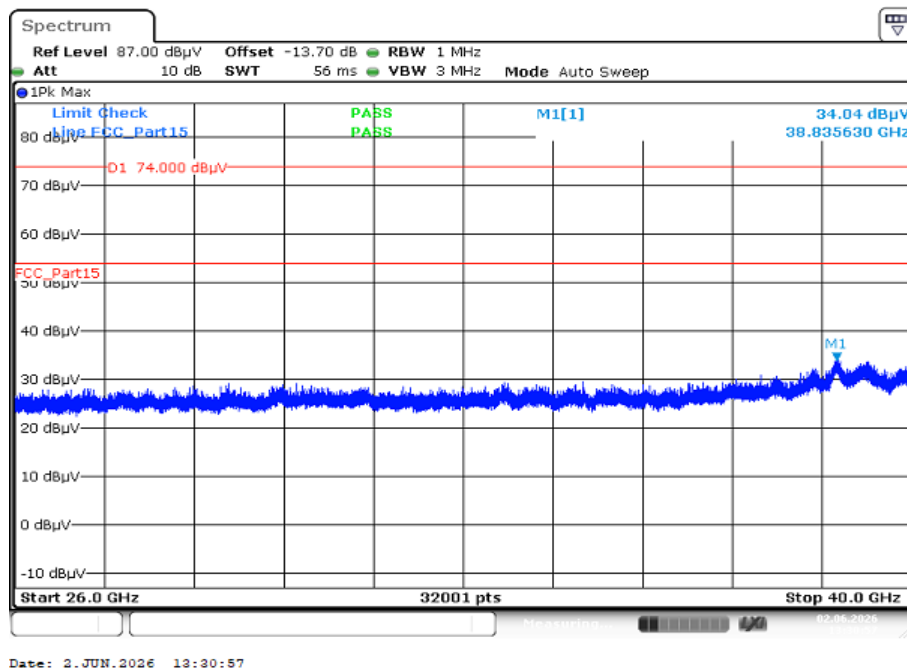
Plot 26: 18 GHz to 26 GHz; vertical & horizontal polarization; HR; valid for all modes and channels



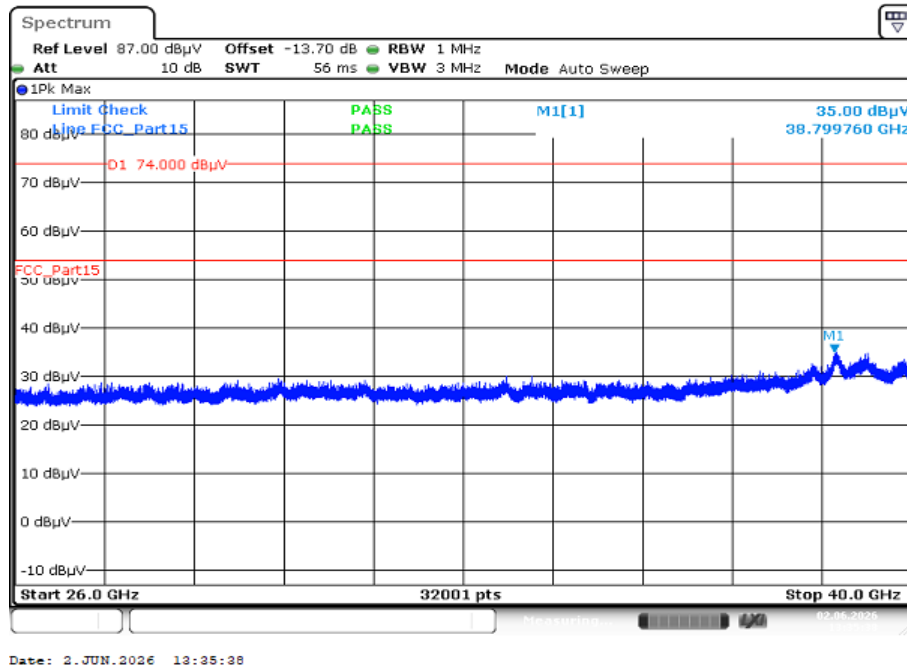
Plot 27: 18 GHz to 26 GHz; vertical & horizontal polarization; QR; valid for all modes and channels



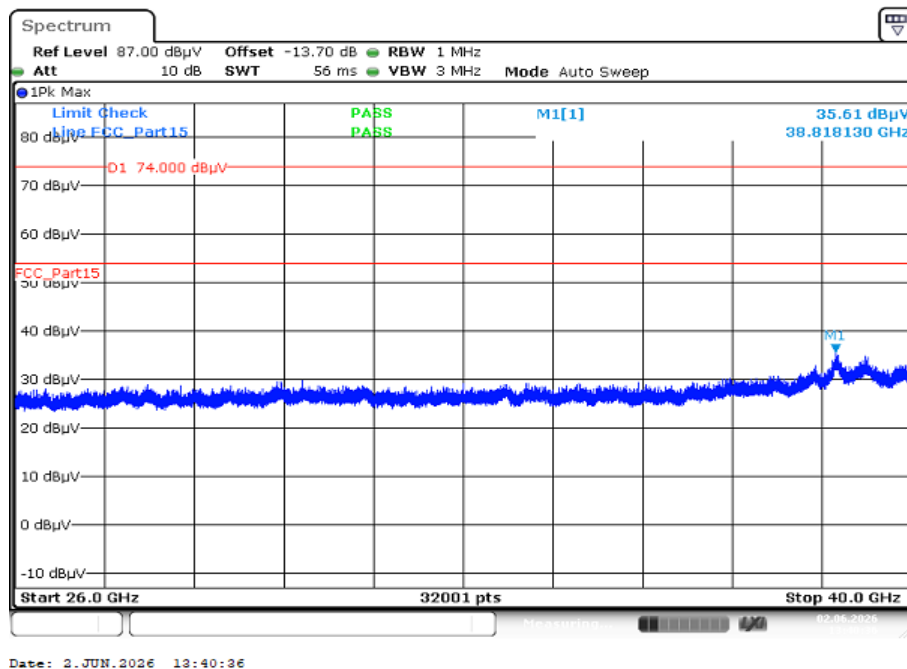
Plot 28: 26 GHz to 40 GHz; vertical & horizontal polarization; FR; valid for all modes and channels



Plot 29: 26 GHz to 40 GHz; vertical & horizontal polarization; HR; valid for all modes and channels



Plot 30: 26 GHz to 40 GHz; vertical & horizontal polarization; QR; valid for all modes and channels



12.14 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to middle channel. If critical peaks are found the lowest channel and the highest channel will be measured too. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

Measurement:

Measurement parameter	
Detector:	Peak - Quasi Peak / Average
Sweep time:	Auto
Video bandwidth:	9 kHz
Resolution bandwidth:	100 kHz
Span:	150 kHz to 30 MHz
Trace mode:	Max Hold
Test setup:	See chapter 7.5 setup A
Measurement uncertainty:	See chapter 9

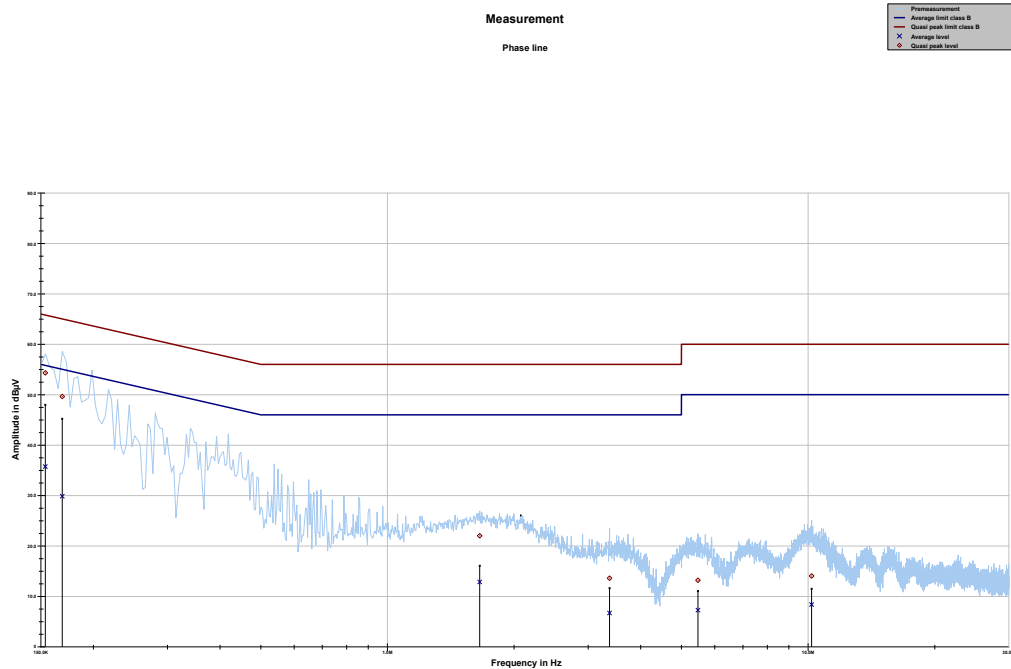
Limits:

Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dB μ V/m)	Average (dB μ V/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

*Decreases with the logarithm of the frequency

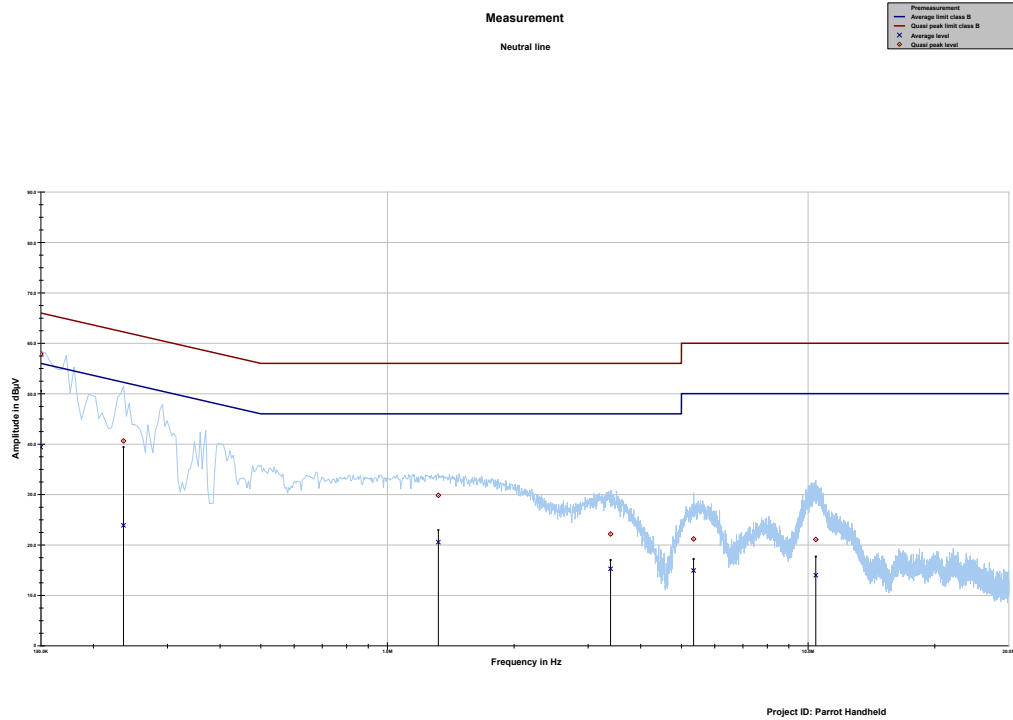
Plots: 120 V / 60 Hz

Plot 1: 150 kHz to 30 MHz, phase line



Project ID: Parrot Handheld

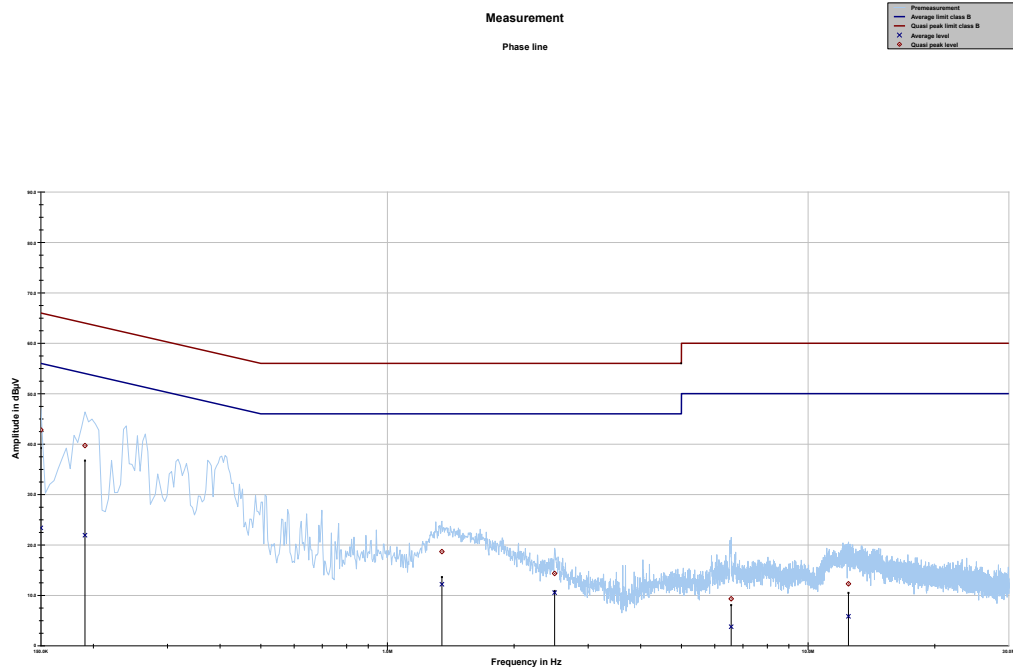
Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin average	Limit AV
MHz	dBμV	dB	dBμV	dBμV	dB	dBμV
0.153731	54.32	11.48	65.796	35.74	20.15	55.893
0.168656	49.64	15.39	65.026	29.86	25.61	55.467
1.657425	22.02	33.98	56.000	12.85	33.15	46.000
3.373800	13.59	42.41	56.000	6.69	39.31	46.000
5.474494	13.19	46.81	60.000	7.27	42.73	50.000
10.194525	14.05	45.95	60.000	8.37	41.63	50.000

Plot 2: 150 kHz to 30 MHz, neutral line

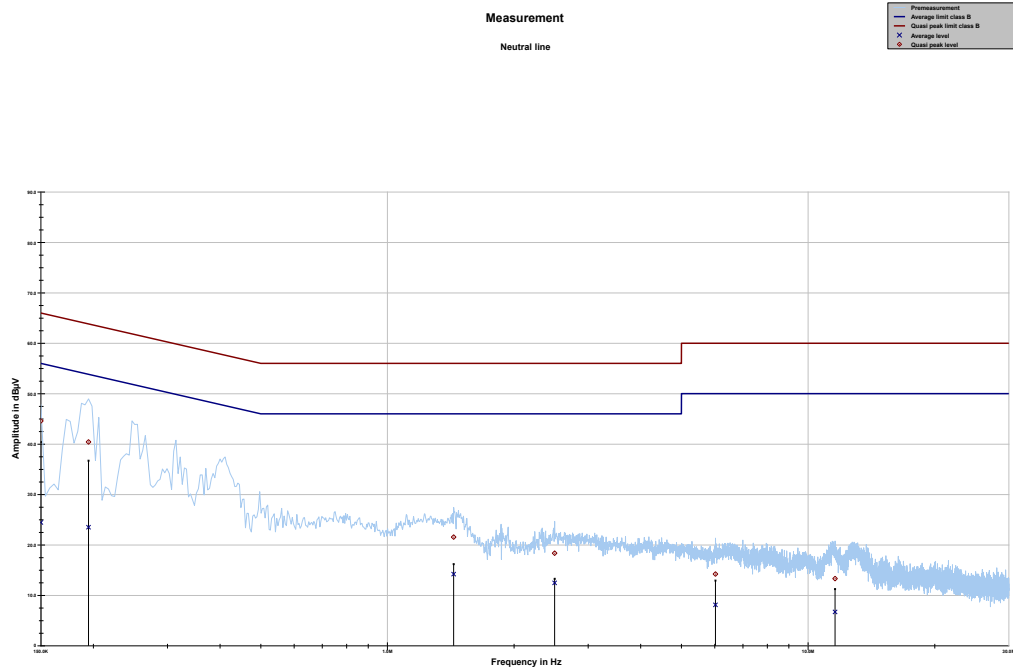
Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin Average	Limit AV
MHz	dBµV	dB	dBµV	dBµV	dB	dBµV
0.150000	57.90	8.10	66.000	39.38	16.62	56.000
0.235819	40.62	21.62	62.242	23.88	29.67	53.548
1.321613	29.85	26.15	56.000	20.56	25.44	46.000
3.392456	22.17	33.83	56.000	15.25	30.75	46.000
5.343900	21.19	38.81	60.000	14.92	35.08	50.000
10.429594	21.07	38.93	60.000	13.98	36.02	50.000

Plots: 230 V / 60 Hz

Plot 1: 150 kHz to 30 MHz, phase line



Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin average	Limit AV
MHz	dBµV	dB	dBµV	dBµV	dB	dBµV
0.153731	54.32	11.48	65.796	35.74	20.15	55.893
0.168656	49.64	15.39	65.026	29.86	25.61	55.467
1.657425	22.02	33.98	56.000	12.85	33.15	46.000
3.373800	13.59	42.41	56.000	6.69	39.31	46.000
5.474494	13.19	46.81	60.000	7.27	42.73	50.000
10.194525	14.05	45.95	60.000	8.37	41.63	50.000

Plot 2: 150 kHz to 30 MHz, neutral line

Project ID: Parrot Handheld

Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin Average	Limit AV
MHz	dBµV	dB	dBµV	dBµV	dB	dBµV
0.150000	57.90	8.10	66.000	39.38	16.62	56.000
0.235819	40.62	21.62	62.242	23.88	29.67	53.548
1.321613	29.85	26.15	56.000	20.56	25.44	46.000
3.392456	22.17	33.83	56.000	15.25	30.75	46.000
5.343900	21.19	38.81	60.000	14.92	35.08	50.000
10.429594	21.07	38.93	60.000	13.98	36.02	50.000

13 Glossary

AVG	Average
C	Compliant
C/N₀	Carrier to noise-density ratio, expressed in dB-Hz
CAC	Channel availability check
CW	Clean wave
DC	Duty cycle
DFS	Dynamic frequency selection
DSSS	Dynamic sequence spread spectrum
DUT	Device under test
EN	European Standard
ETSI	European Telecommunications Standards Institute
EMC	Electromagnetic Compatibility
EUT	Equipment under test
FCC	Federal Communications Commission
FCC ID	Combination of Grantee Code and Equipment Product Code
FHSS	Frequency hopping spread spectrum
FVIN	Firmware version identification number
GNSS	Global Navigation Satellite System
GUE	GNSS User Equipment
HMN	Host marketing name
HVIN	Hardware version identification number
HW	Hardware
ISED	Innovation, Science and Economic Development Canada
Inv. No.	Inventory number
MC	Modulated carrier
NA	Not applicable
NC	Not compliant
NOP	Non occupancy period
NP	Not performed
OBW	Occupied bandwidth
OC	Operating channel
OCW	Operating channel bandwidth
OFDM	Orthogonal frequency division multiplexing
OOB	Out of band
OP	Occupancy period
PER	Packet error rate
PMN	Product marketing name
PP	Positive peak
QP	Quasi peak
RLAN	Radio local area network
S/N or SN	Serial number
SW	Software
UUT	Unit under test
WLAN	Wireless local area network

14 Document history

Version	Applied changes	Date of release
R01	Initial release	2026-06-08

END OF TEST REPORT