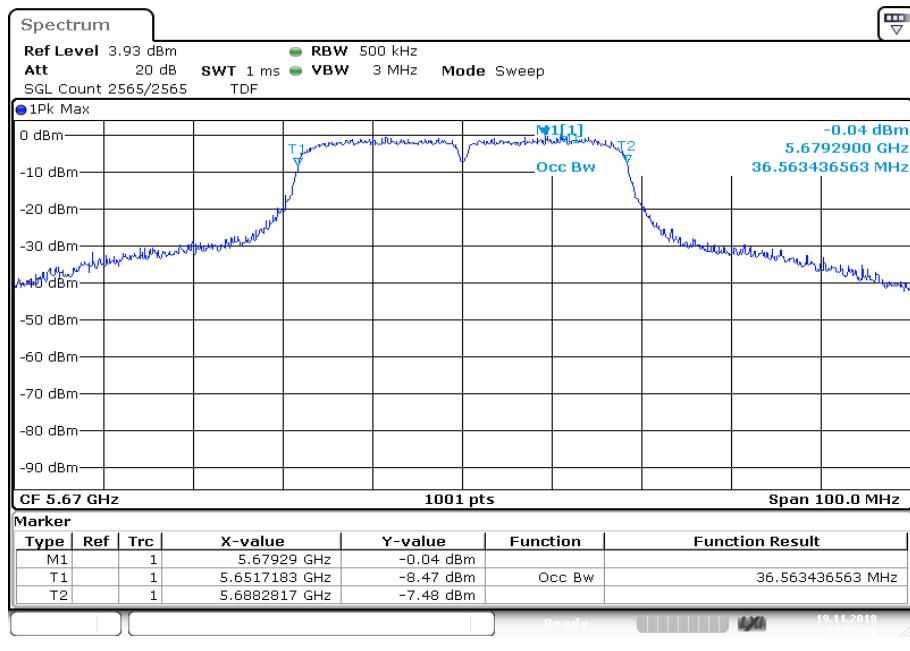
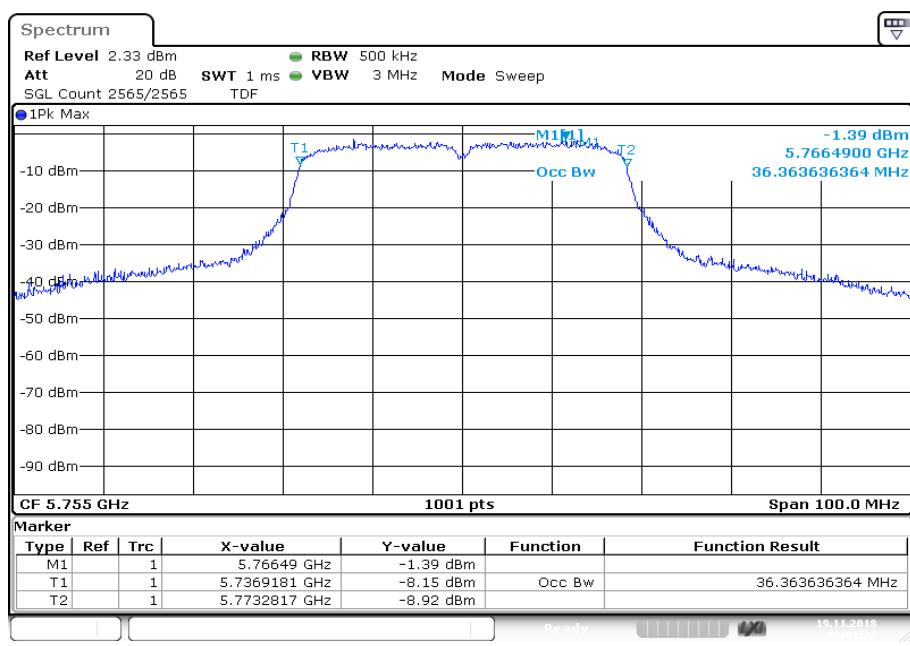
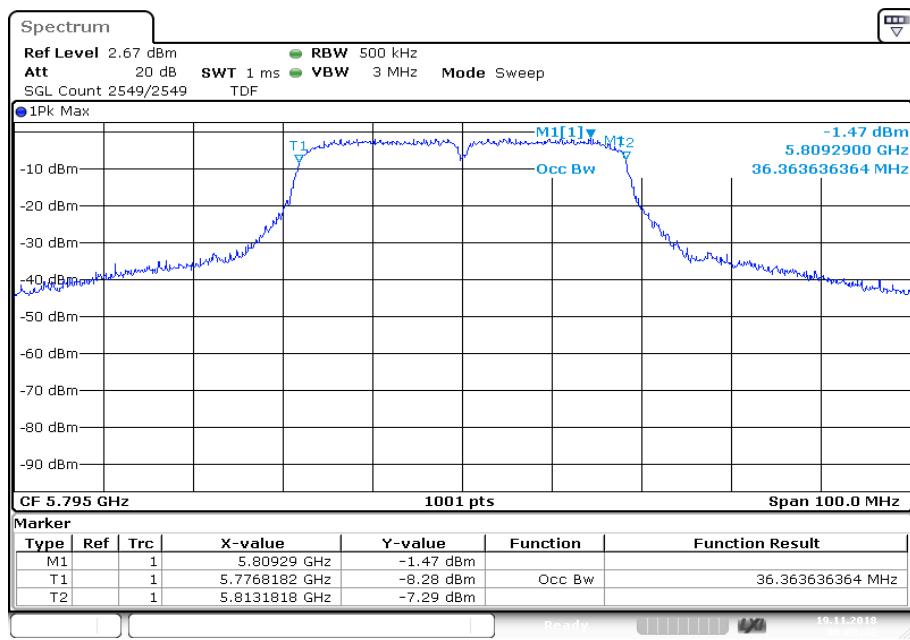


Plot 7: U-NII-2C; highest channel**Plot 8:** U-NII-3; lowest channel

Plot 9: U-NII-3; highest channel

11.9 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 sub clause 6.2 – A
Measurement uncertainty:	See sub clause 8

Limits:

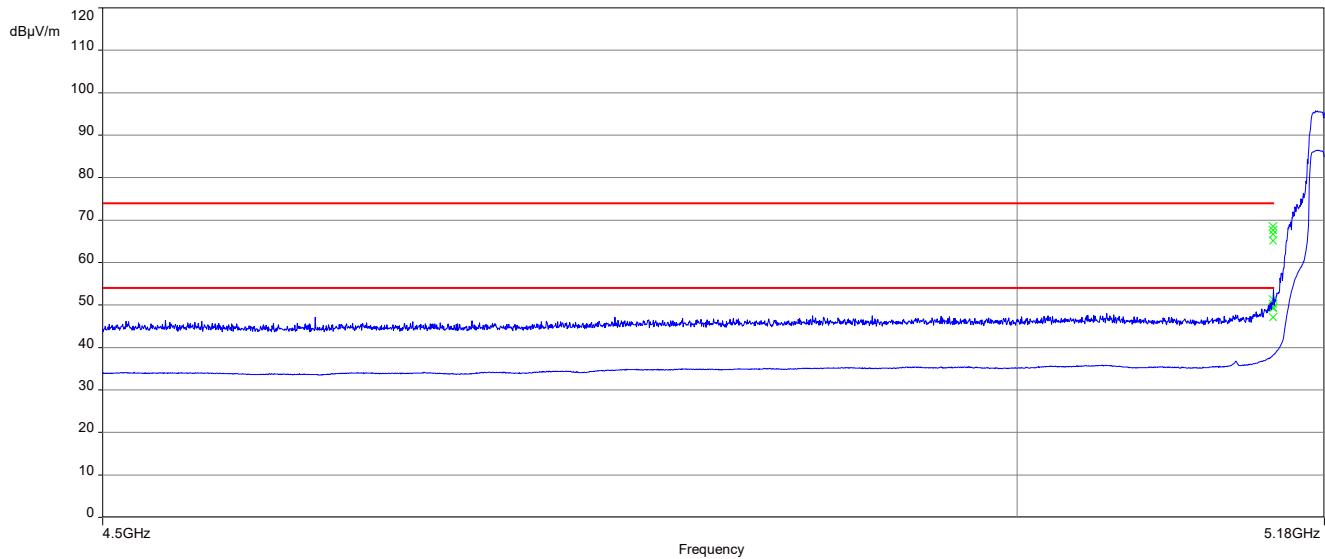
Band Edge Compliance Radiated	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth 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:

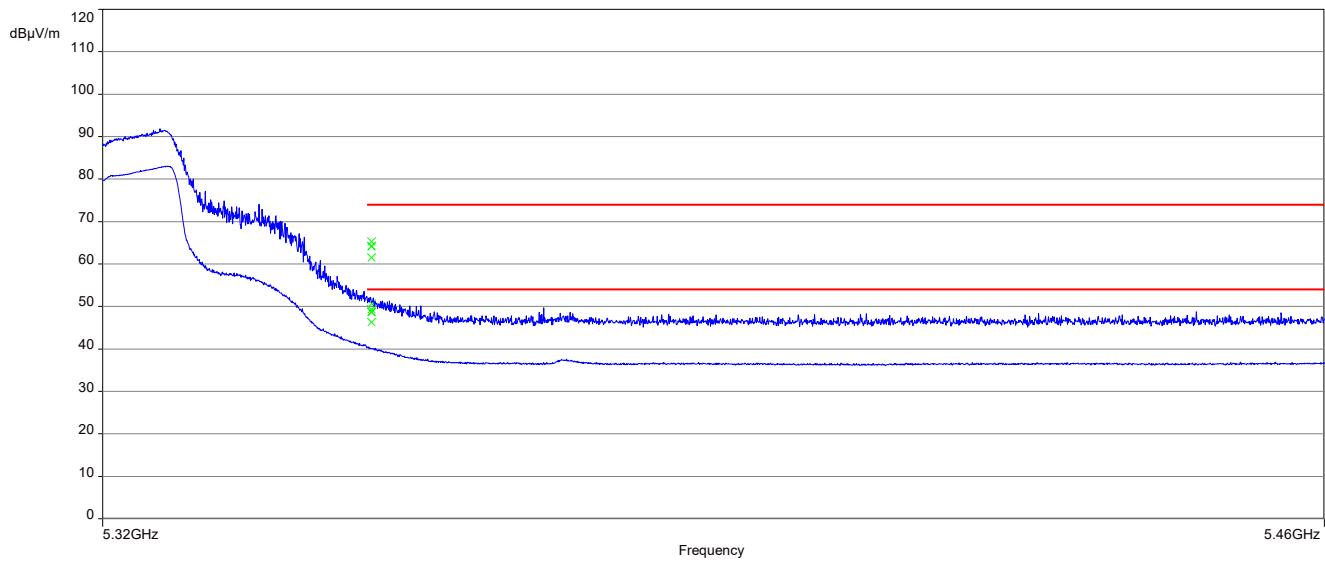
Scenario	Band Edge Compliance Radiated [dB μ V/m]
band edge	< 74 dB μ V/m (peak) < 54 dB μ V/m (average)

Plots:

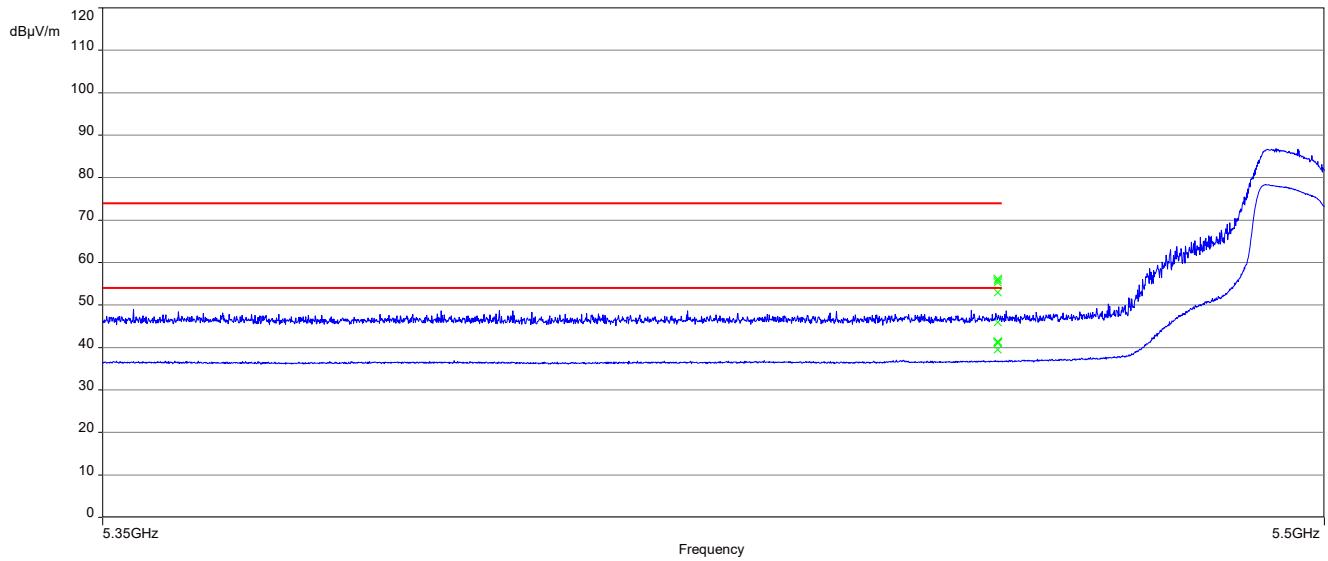
Plot 1: lower band edge; U-NII-1; lowest channel; 20 MHz channel bandwidth



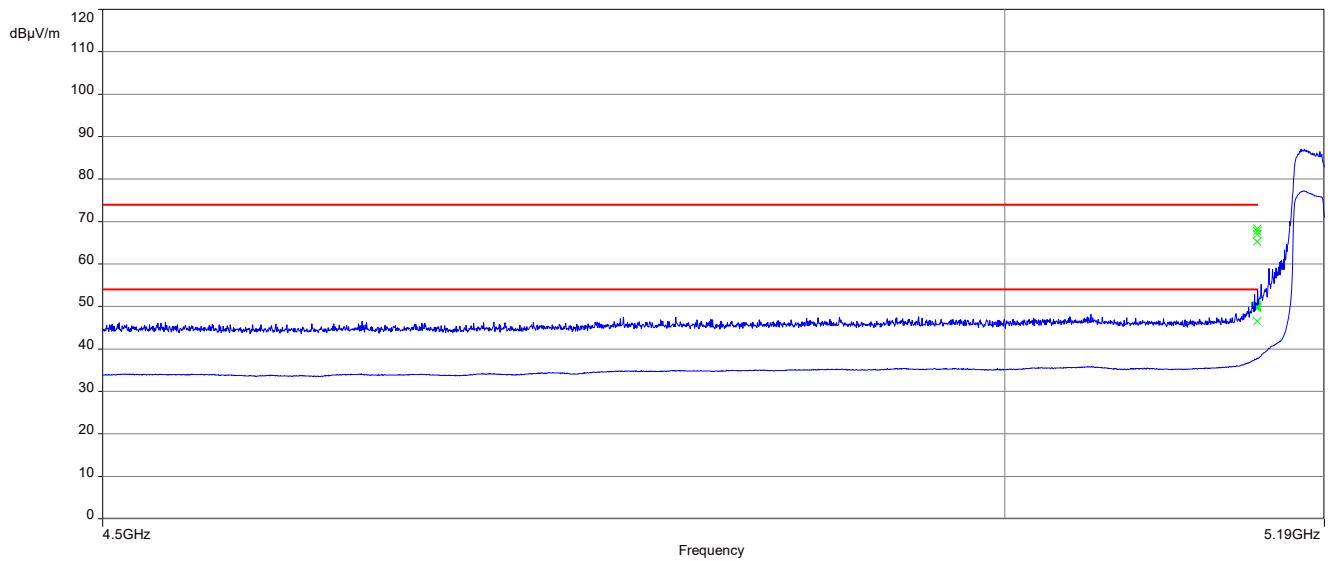
Plot 2: upper band edge; U-NII-2A; highest channel; 20 MHz channel bandwidth



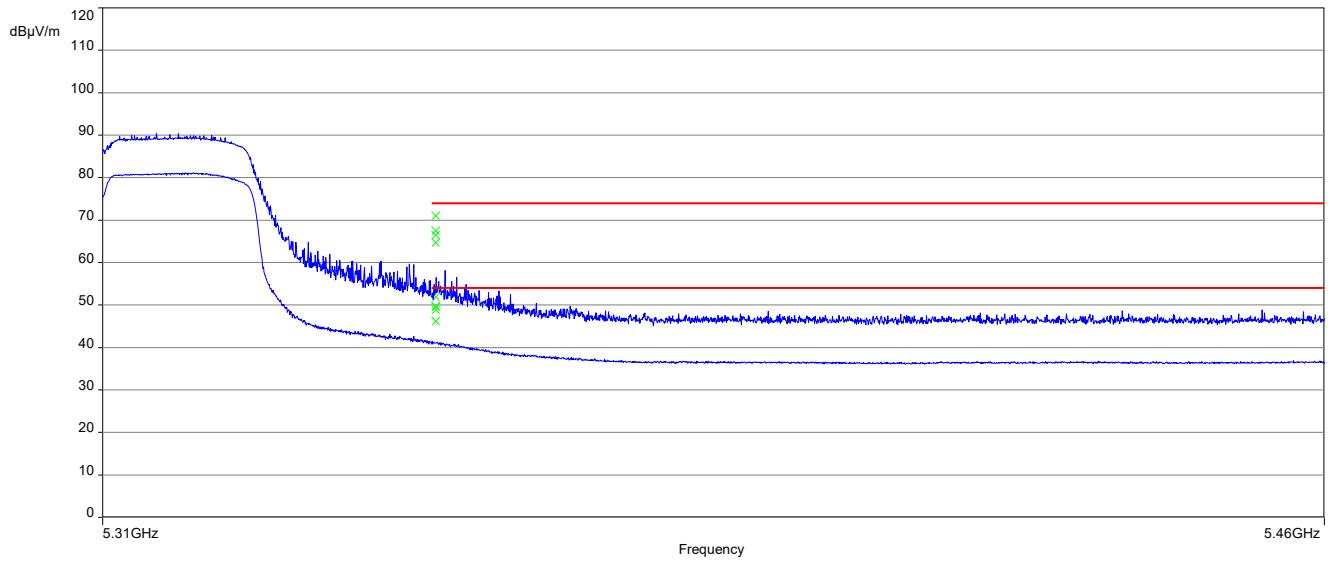
Plot 3: lower band edge; U-NII-2C; lowest channel; 20 MHz channel bandwidth



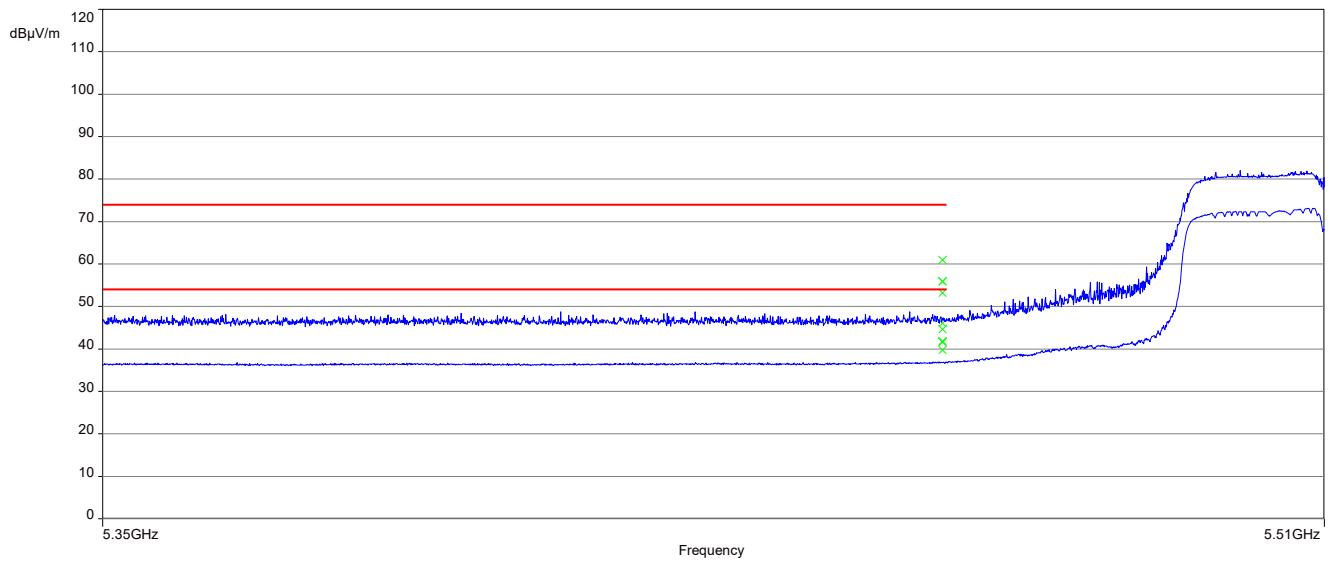
Plot 4: lower band edge; U-NII-1; lowest channel; 40 MHz channel bandwidth



Plot 5: upper band edge; U-NII-2A; highest channel; 40 MHz channel bandwidth



Plot 6: lower band edge; U-NII-2C; lowest channel; 40 MHz channel bandwidth



11.10 Spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode and receive mode below 30 MHz. The EUT is set first to middle channel. This measurement is representative for all channels and modes. If critical peaks are found the lowest channel and the highest channel will be measured too. Then the EUT is set to receive or idle mode. The limits are recalculated 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 sub clause 6.2 – C
Measurement uncertainty:	See sub clause 8

Limits:

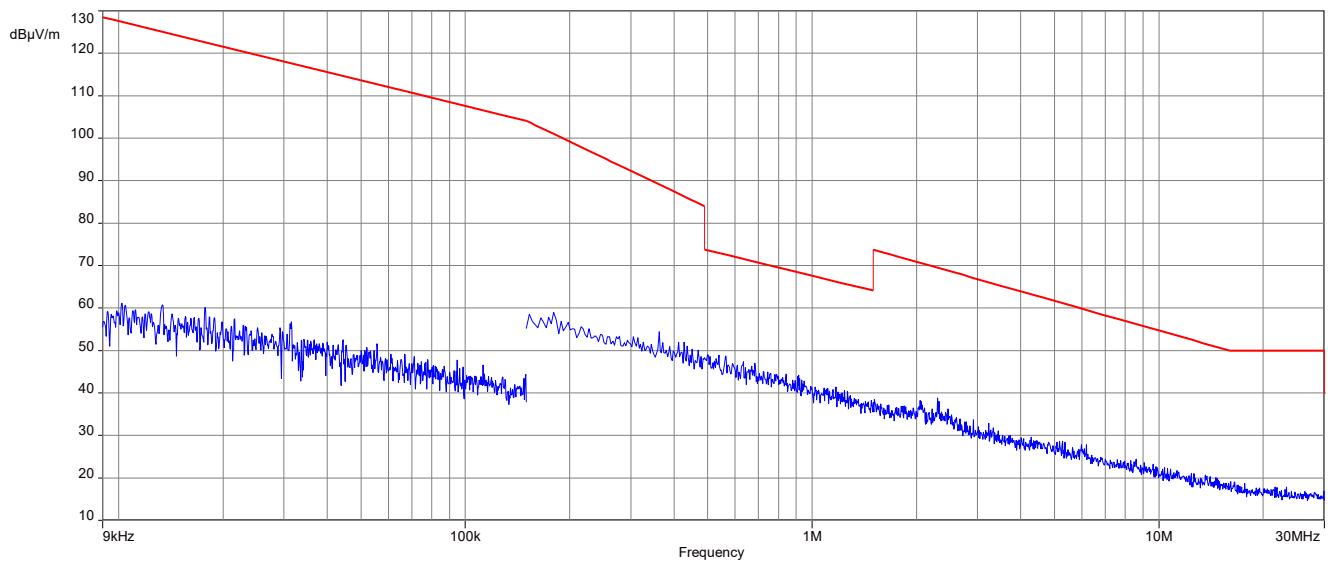
Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Results:

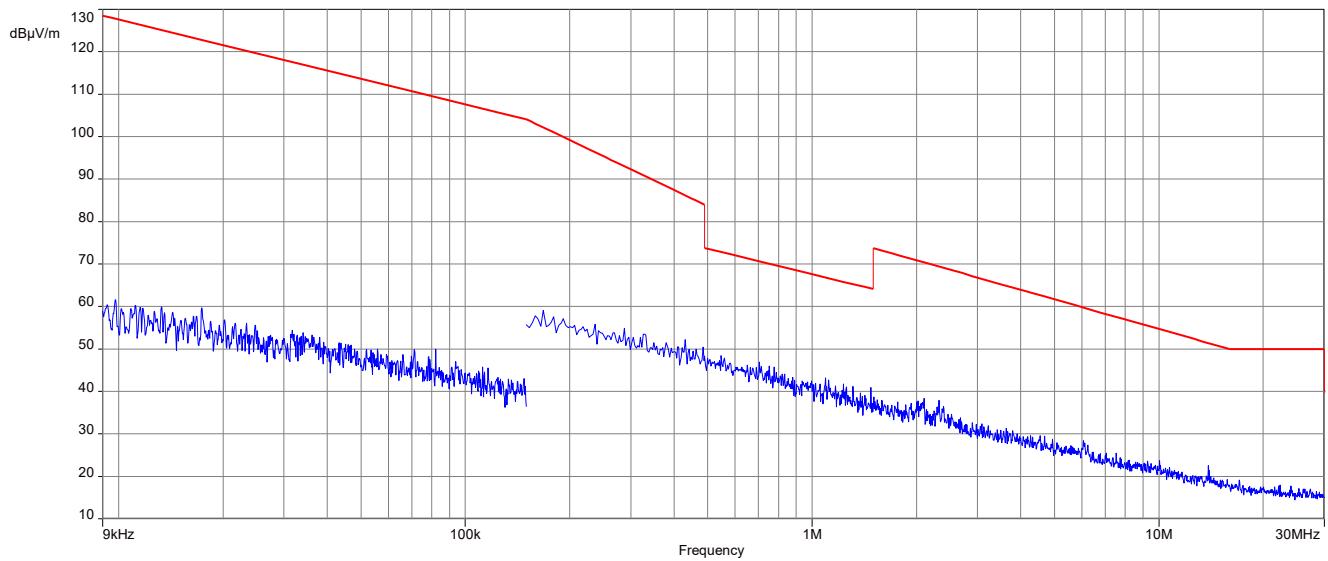
Spurious Emissions Radiated < 30 MHz [dB μ V/m]		
F [MHz]	Detector	Level [dB μ V/m]
All detected emissions are more than 20 dB below the limit.		

Plots: 20 MHz channel bandwidth

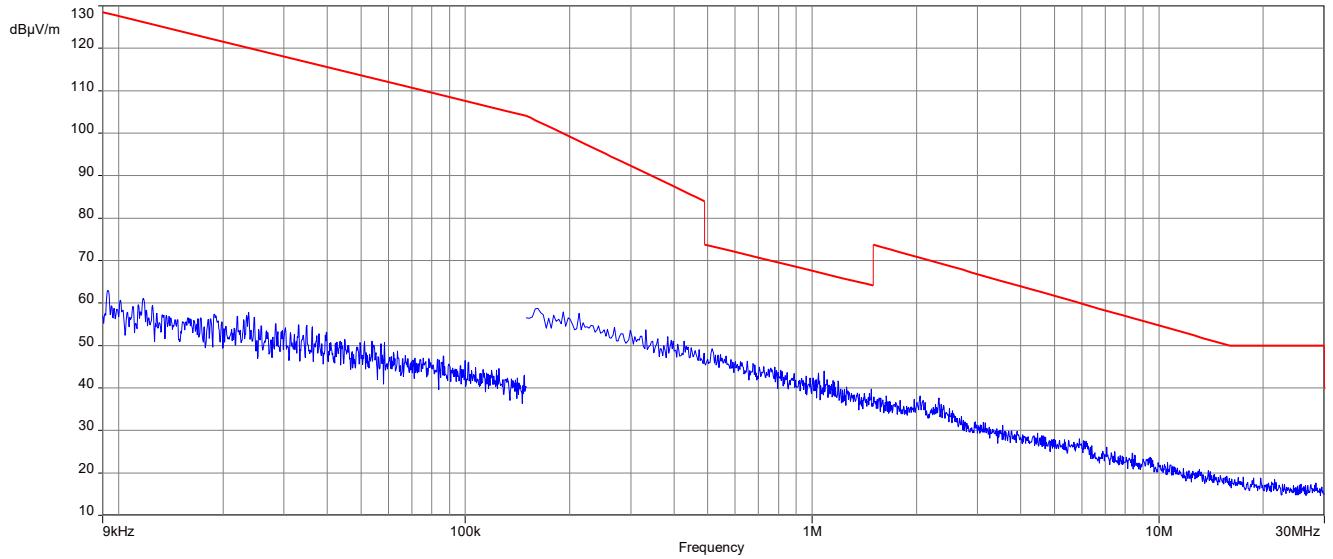
Plot 1: 9 kHz to 30 MHz, U-NII-1; lowest channel



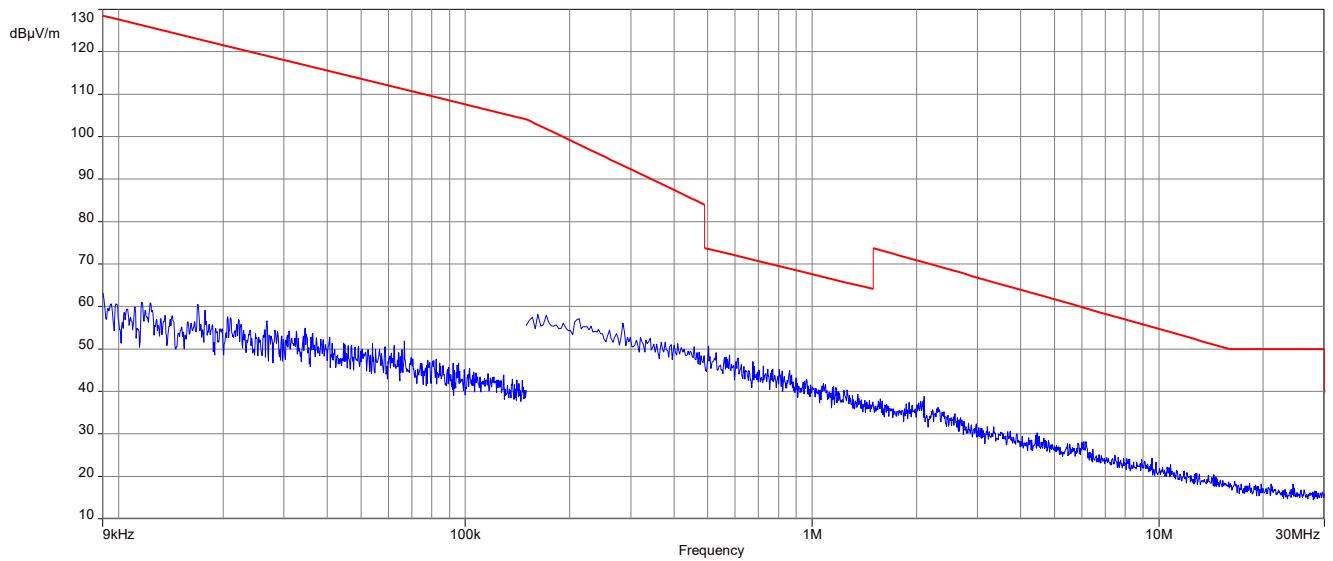
Plot 2: 9 kHz to 30 MHz, U-NII-1; highest channel



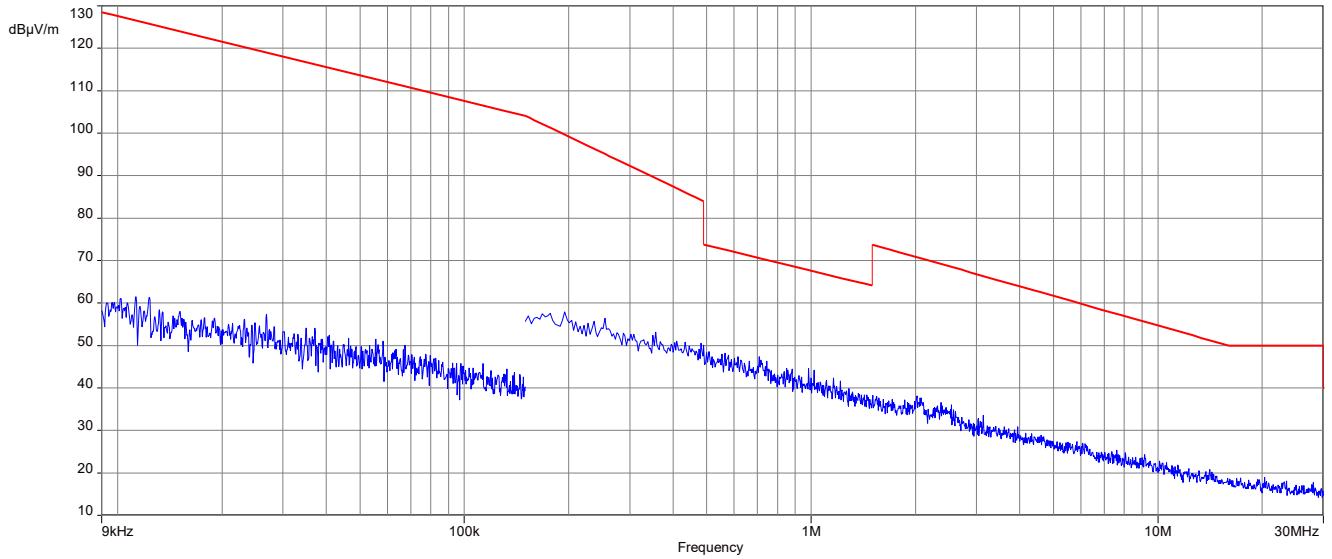
Plot 3: 9 kHz to 30 MHz, U-NII-2A; lowest channel



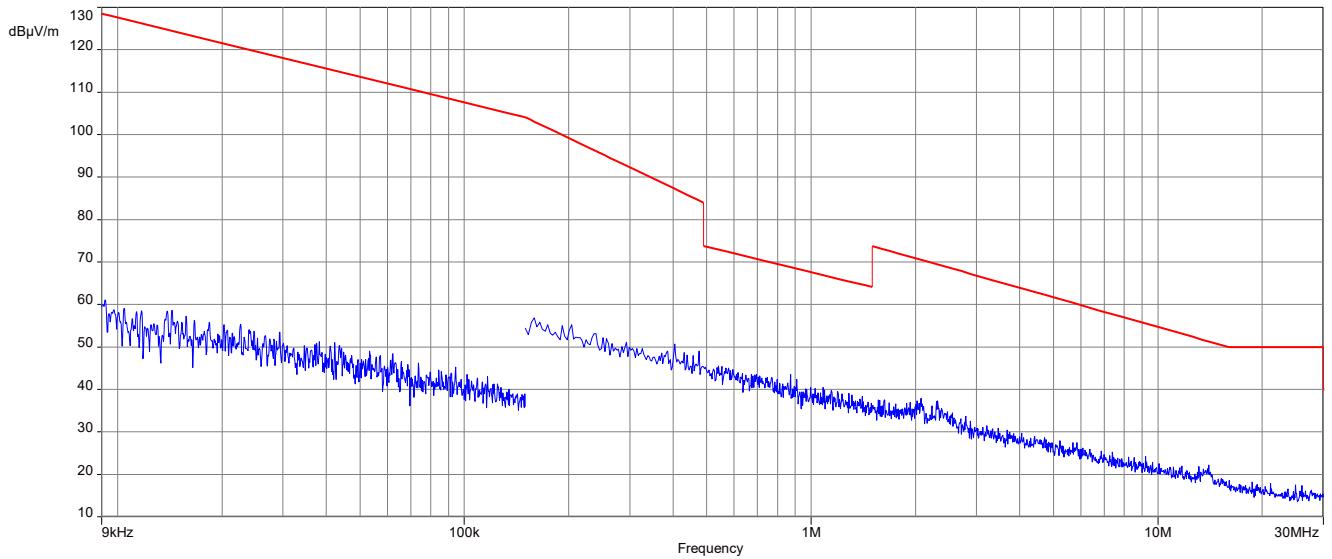
Plot 4: 9 kHz to 30 MHz, U-NII-2A; highest channel



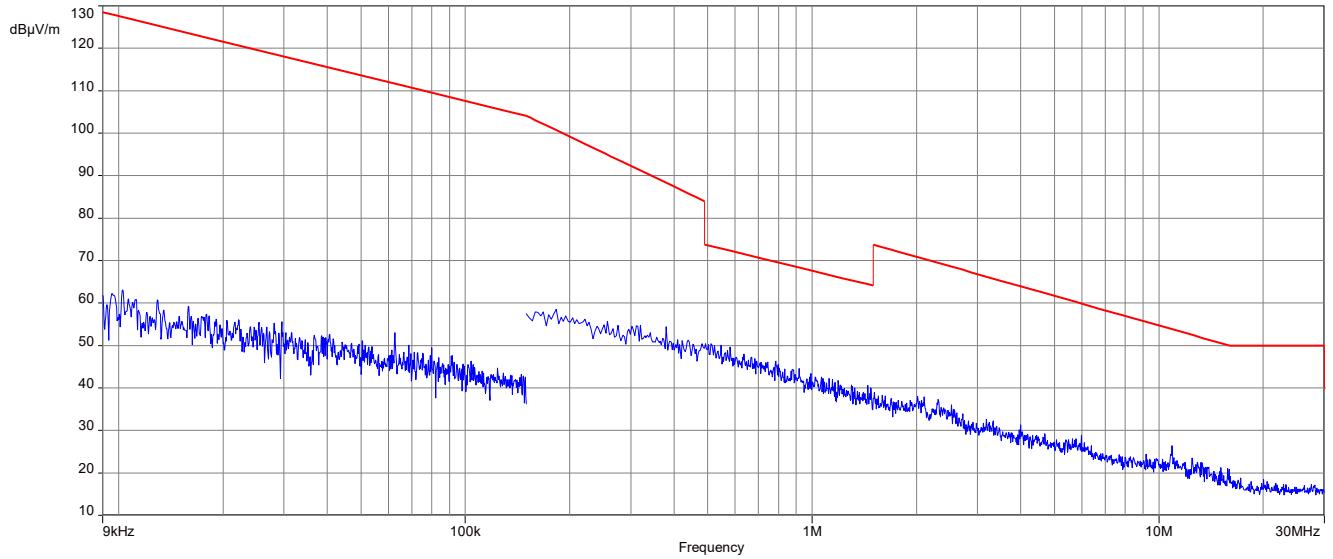
Plot 5: 9 kHz to 30 MHz, U-NII-2C; lowest channel



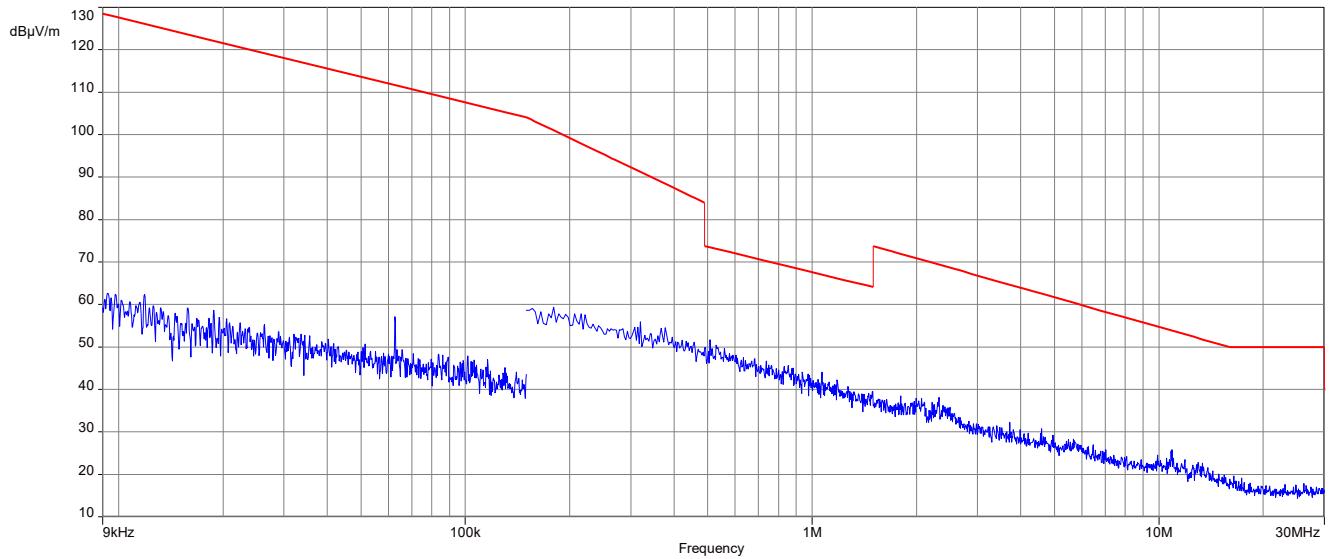
Plot 6: 9 kHz to 30 MHz, U-NII-2C; middle channel



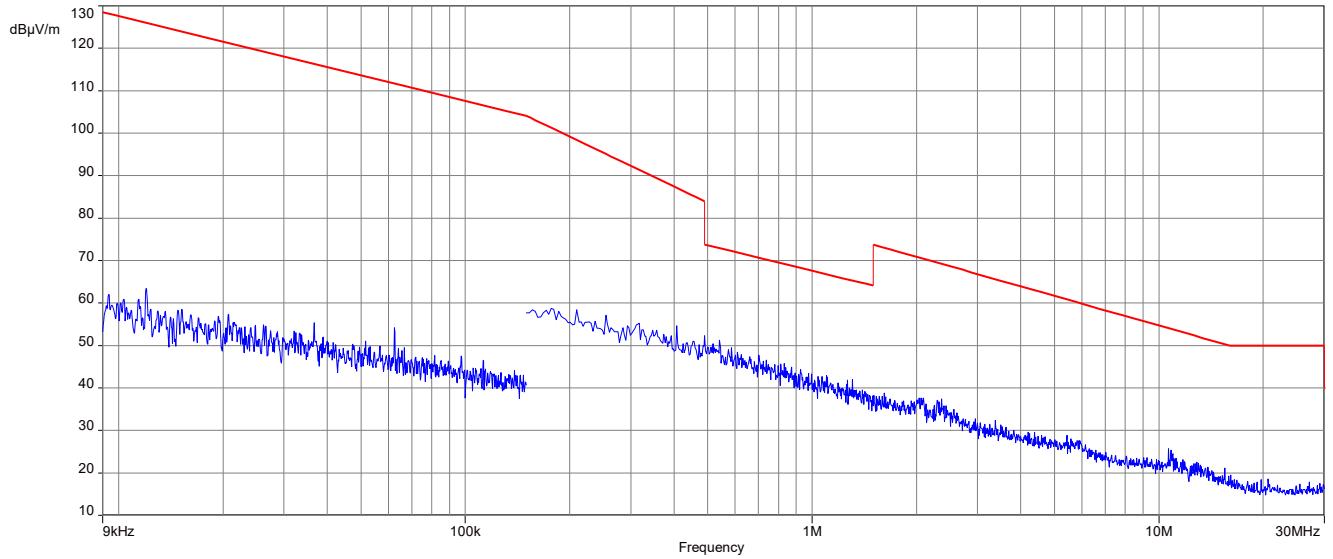
Plot 7: 9 kHz to 30 MHz, U-NII-2C; highest channel



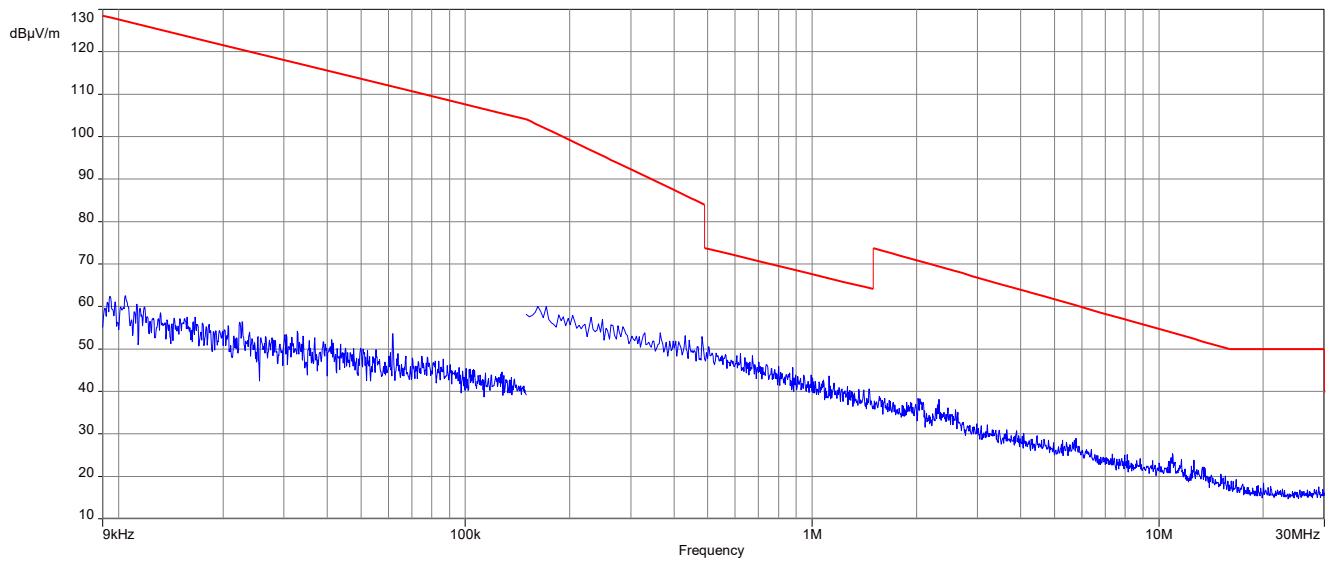
Plot 8: 9 kHz to 30 MHz, U-NII-3; lowest channel



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

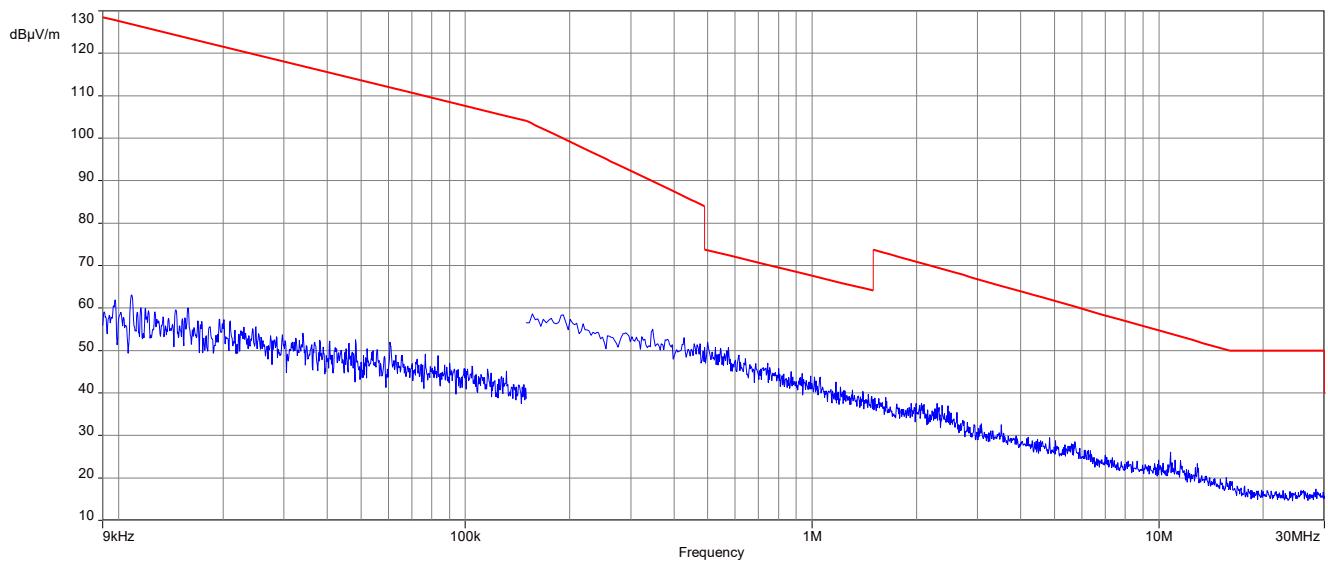


Plot 10: 9 kHz to 30 MHz, U-NII-3; highest channel

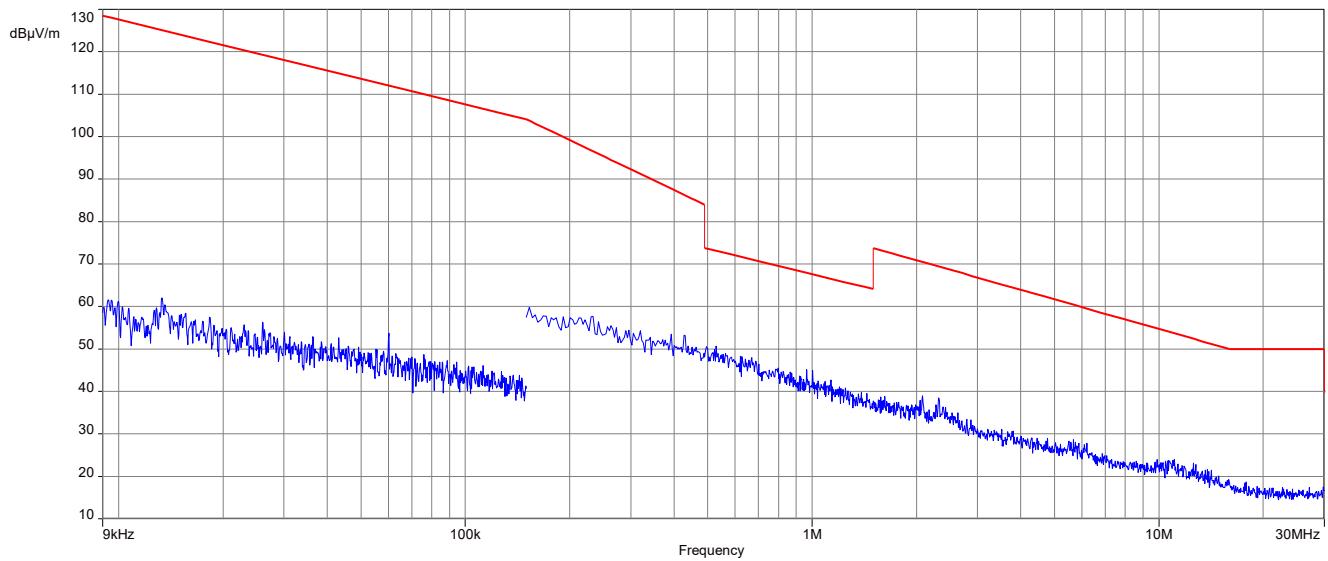


Plots: 40 MHz channel bandwidth

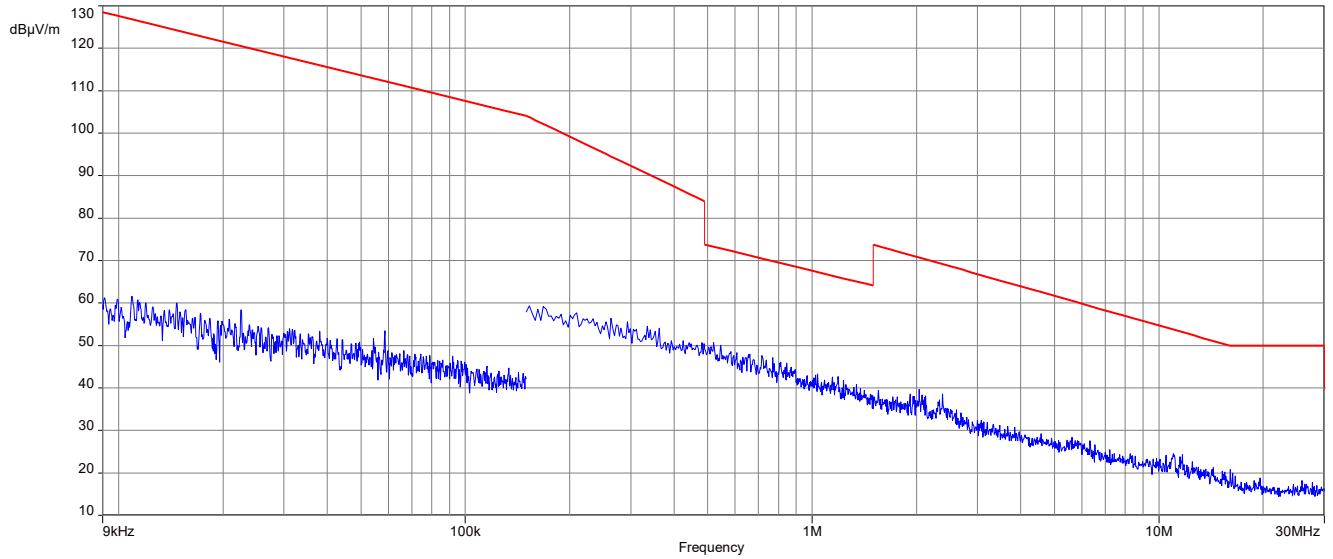
Plot 1: 9 kHz to 30 MHz, U-NII-1; lowest channel



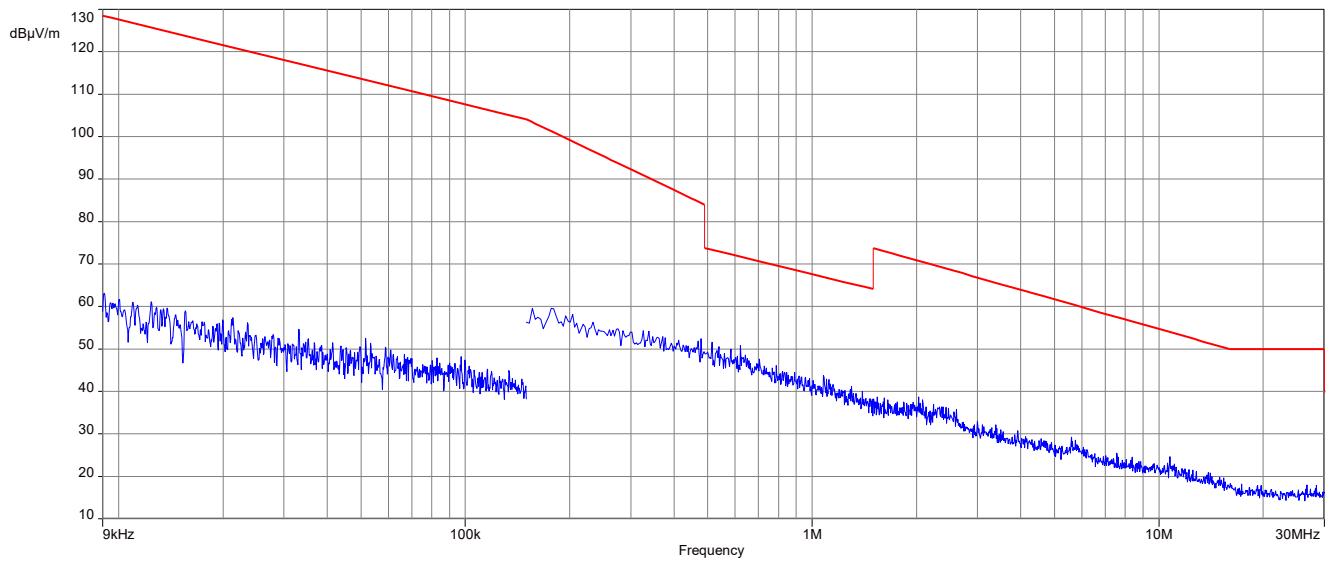
Plot 2: 9 kHz to 30 MHz, U-NII-1; highest channel



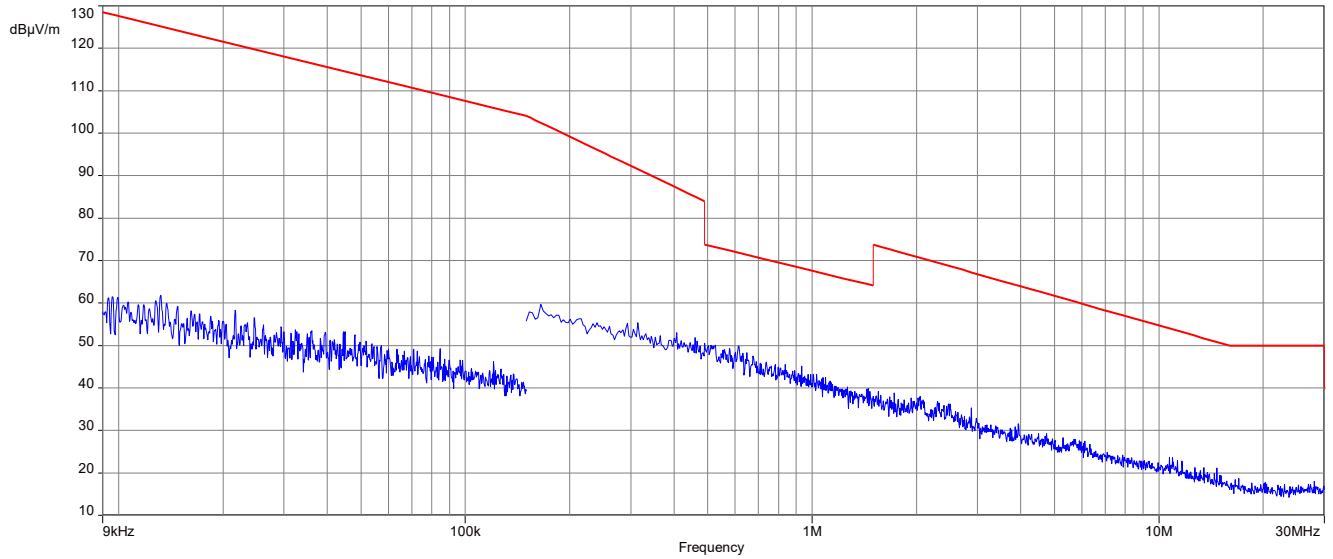
Plot 3: 9 kHz to 30 MHz, U-NII-2A; lowest channel



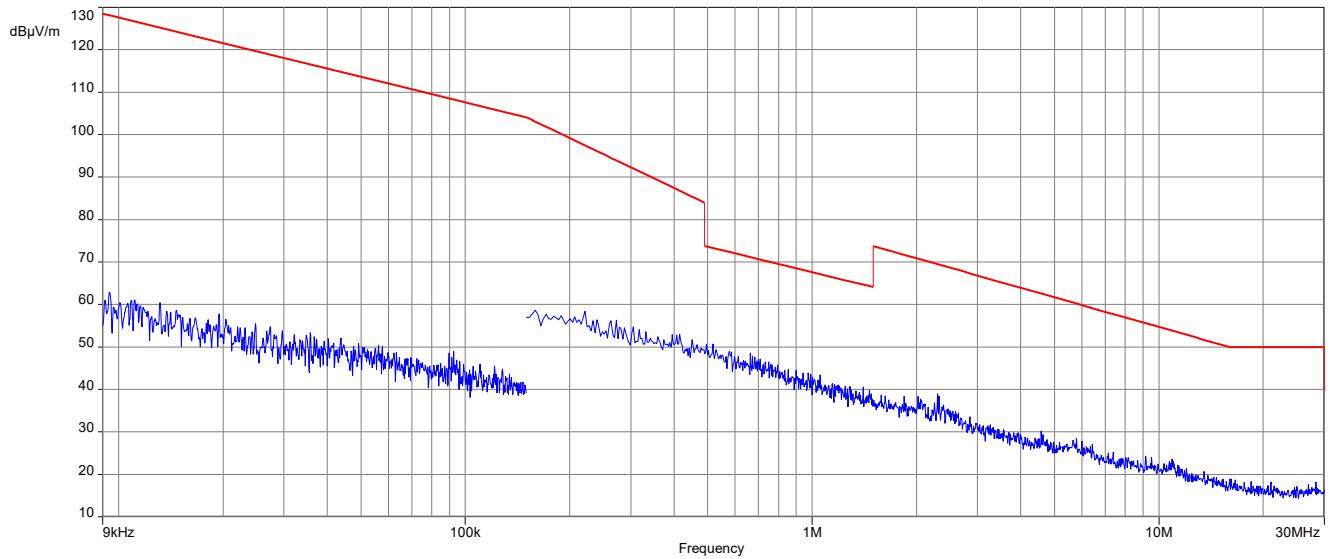
Plot 4: 9 kHz to 30 MHz, U-NII-2A; highest channel



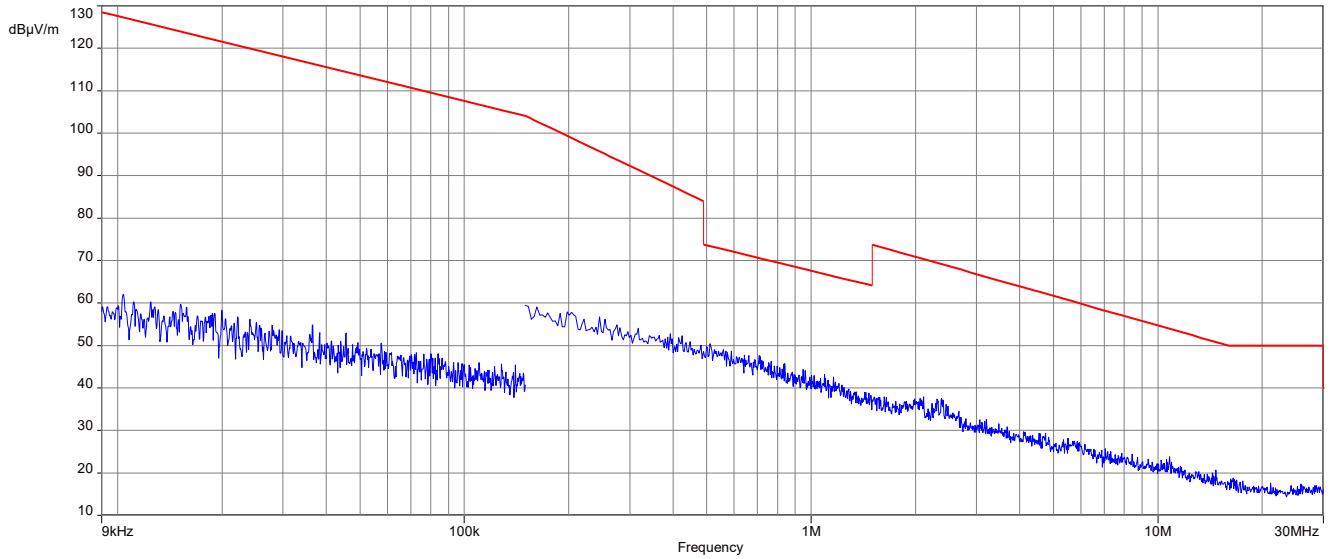
Plot 5: 9 kHz to 30 MHz, U-NII-2C; lowest channel



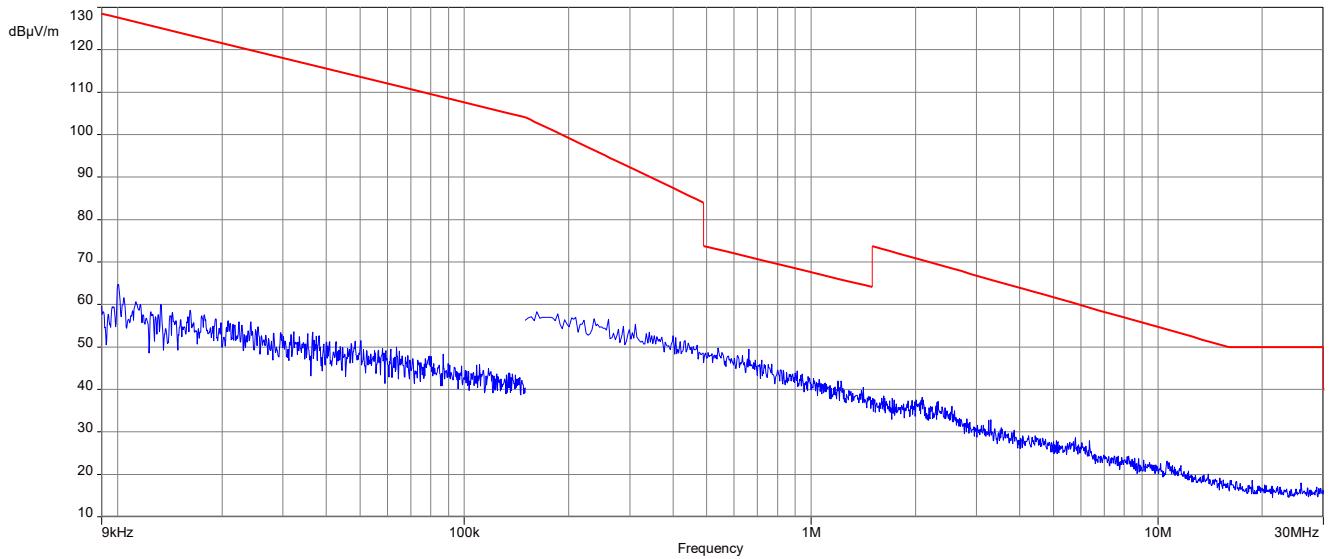
Plot 6: 9 kHz to 30 MHz, U-NII-2C; middle channel



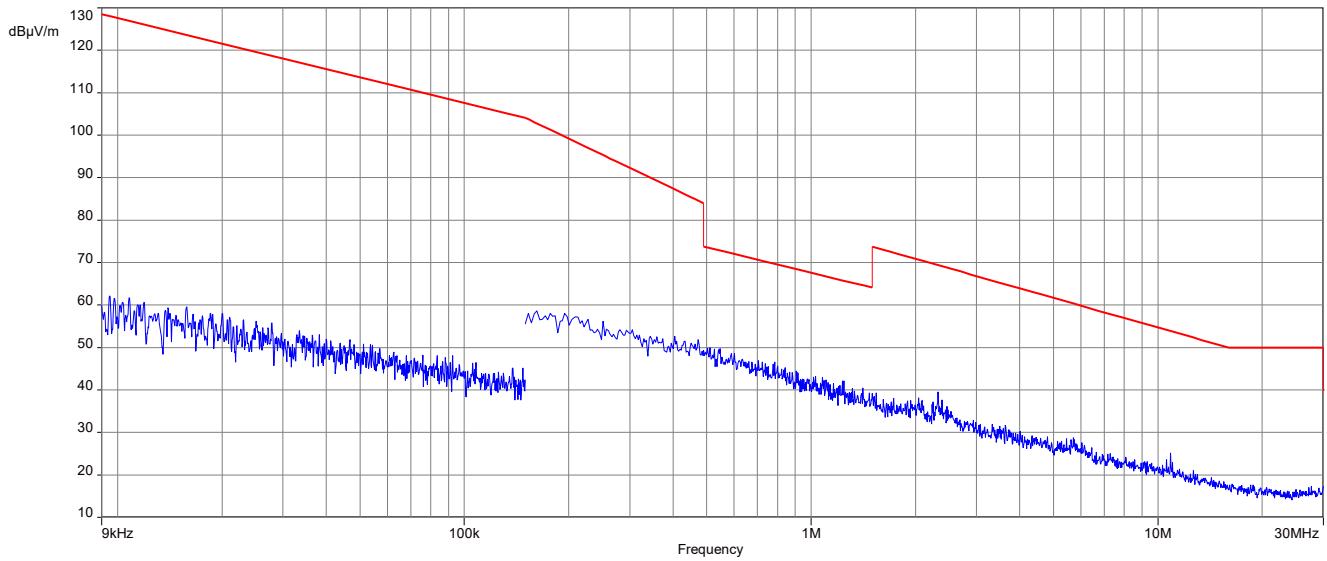
Plot 7: 9 kHz to 30 MHz, U-NII-2C; highest channel



Plot 8: 9 kHz to 30 MHz, U-NII-3; lowest channel



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



11.11 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode. The measurement is performed at lowest, middle and highest channel.

Measurement:

Measurement parameter	
Detector:	Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz / 1 MHz
Span:	30 MHz to 40 GHz
Trace mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %
Test setup:	See sub clause 6.1 – A See sub clause 6.2 – B See sub clause 6.3 – A
Measurement uncertainty:	See sub clause 8

Limits:

TX Spurious Emissions Radiated		
§15.209		
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	

Results: 20 MHz channel bandwidth

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-1 (5150 MHz to 5250 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.						For emissions above 18 GHz please take look at the plots.					

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-2A (5250 MHz to 5350 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.						For emissions above 18 GHz please take look at the plots.					

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-2C (5470 MHz to 5725 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.					

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-3 (5725 MHz to 5850 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.					

Results: 40 MHz channel bandwidth

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-1 (5150 MHz to 5250 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.						For emissions above 18 GHz please take look at the plots.					

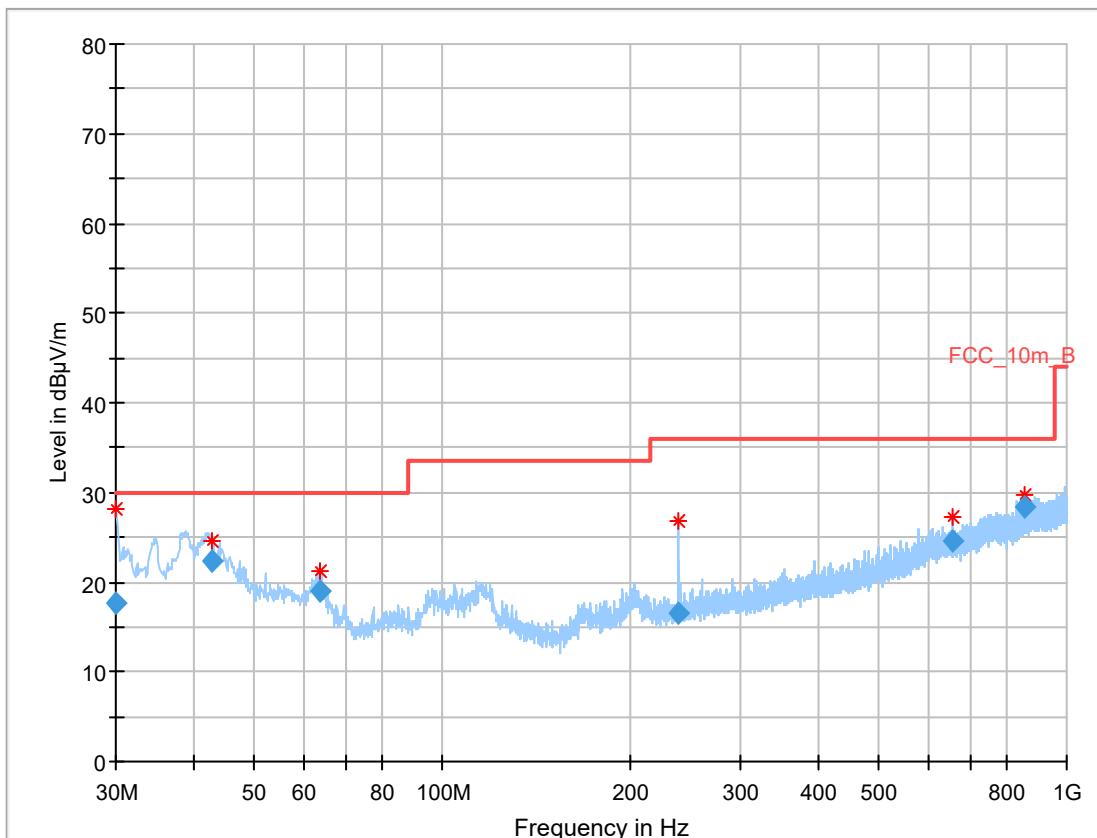
TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-2A (5250 MHz to 5350 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.						For emissions above 18 GHz please take look at the plots.					

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-2C (5470 MHz to 5725 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.					

TX Spurious Emissions Radiated [dB μ V/m] / dBm											
U-NII-3 (5725 MHz to 5850 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]			
For emissions below 1 GHz, see the table below the plot.						For emissions below 1 GHz, see the table below the plot.					
	Peak		-/-				Peak				
	AVG						AVG				
For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.			For emissions above 18 GHz please take look at the plots.					

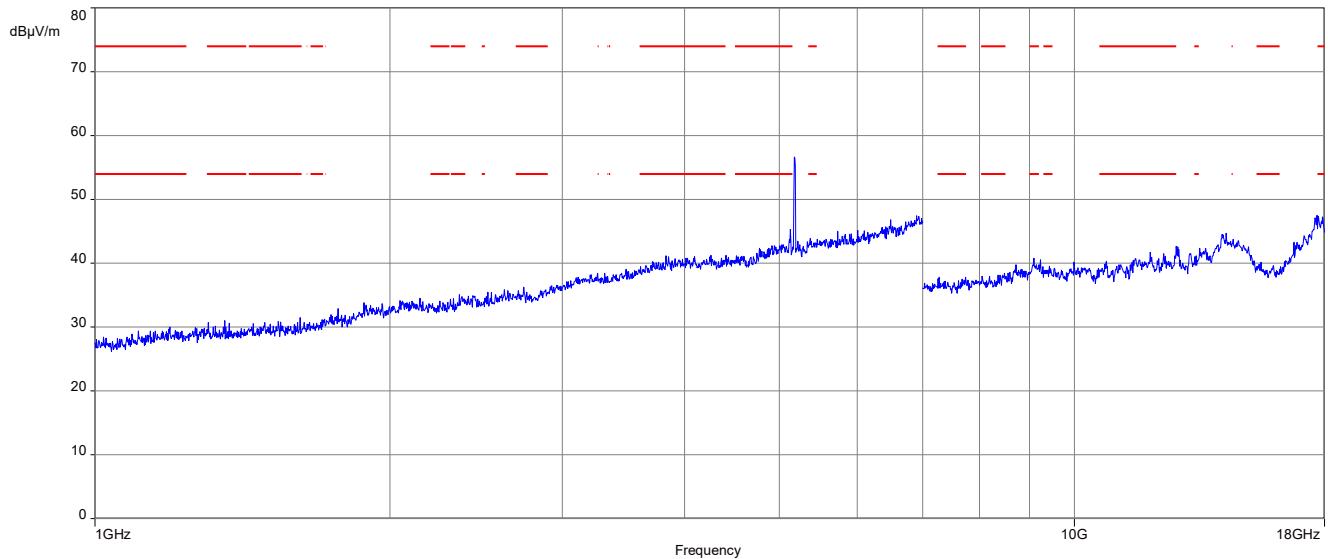
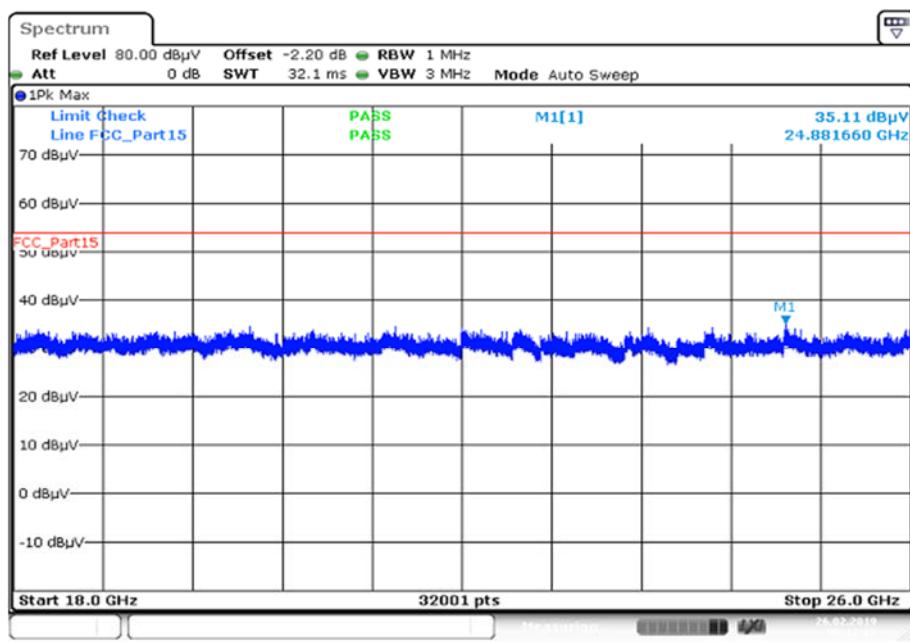
Plots: 20 MHz channel bandwidth

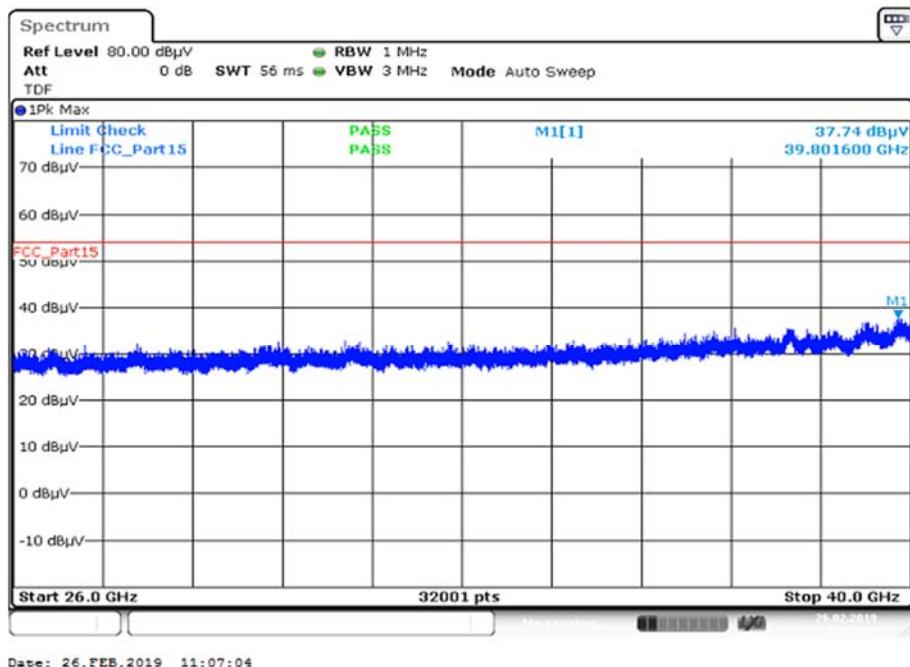
Plot 1: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



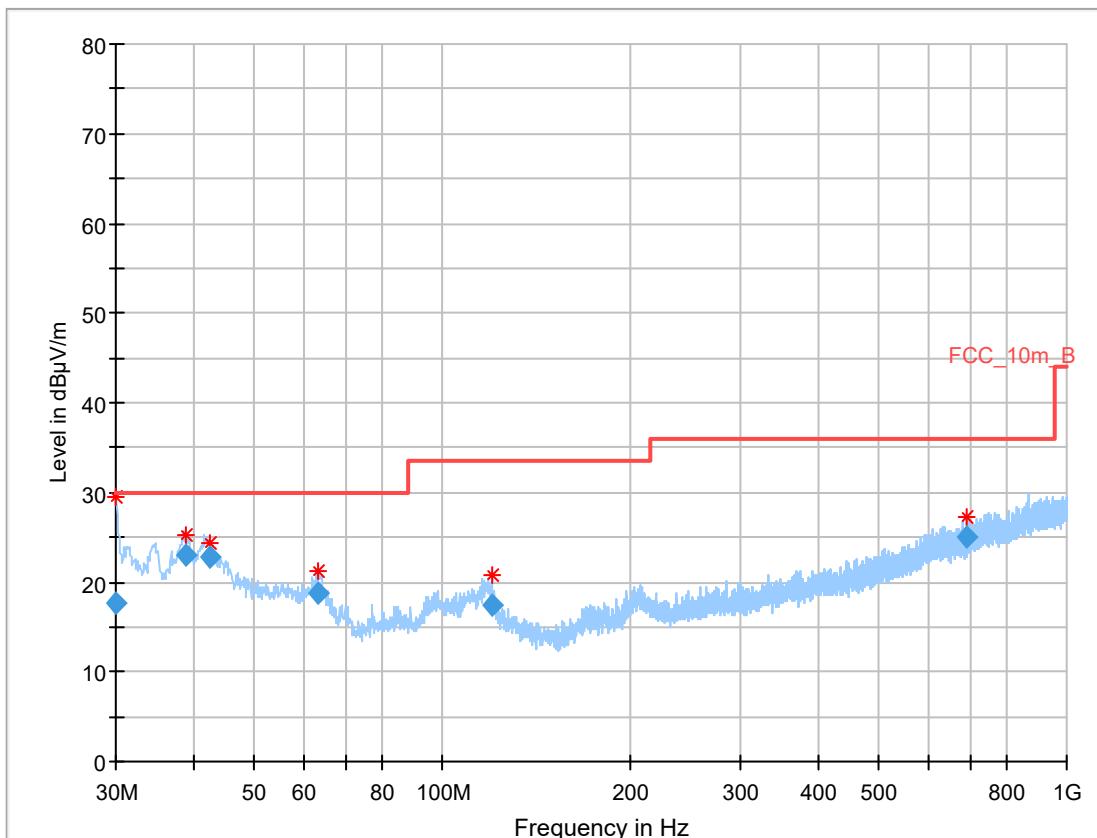
Final_Result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.020	17.66	30.0	12.34	1000	120	101.0	H	306.0	13.0
42.783	22.38	30.0	7.62	1000	120	98.0	V	37.0	14.6
63.815	18.93	30.0	11.07	1000	120	98.0	V	44.0	12.1
238.388	16.50	36.0	19.50	1000	120	101.0	V	354.0	13.4
657.375	24.69	36.0	11.31	1000	120	101.0	H	-10.0	20.8
855.536	28.49	36.0	7.51	1000	120	170.0	H	79.0	23.3

Plot 2: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel**Plot 3:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

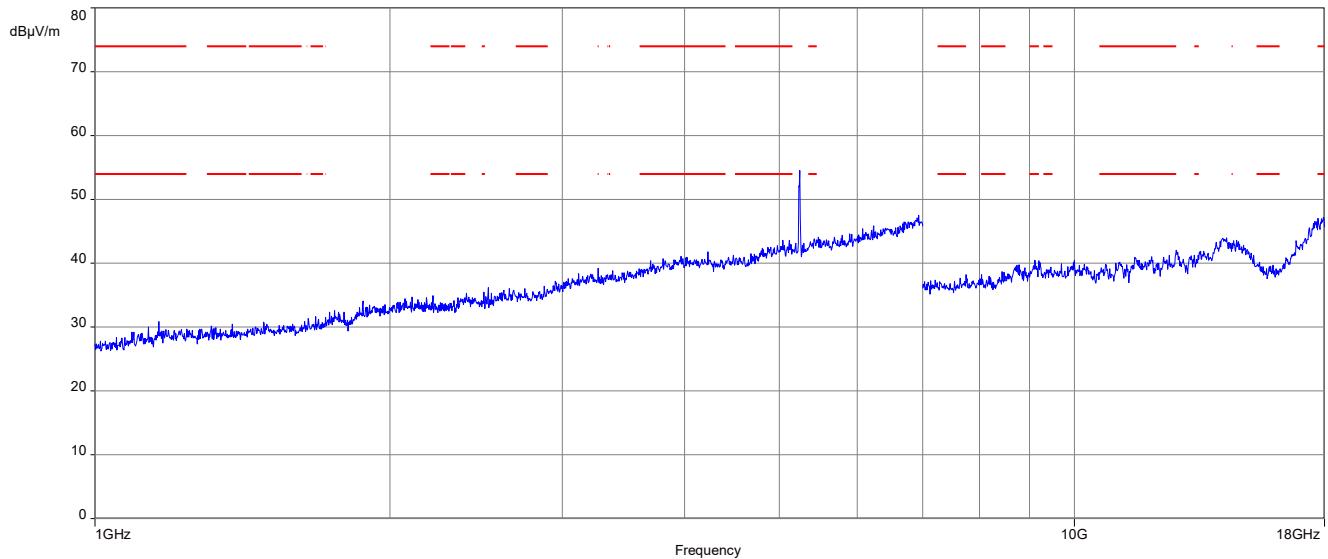
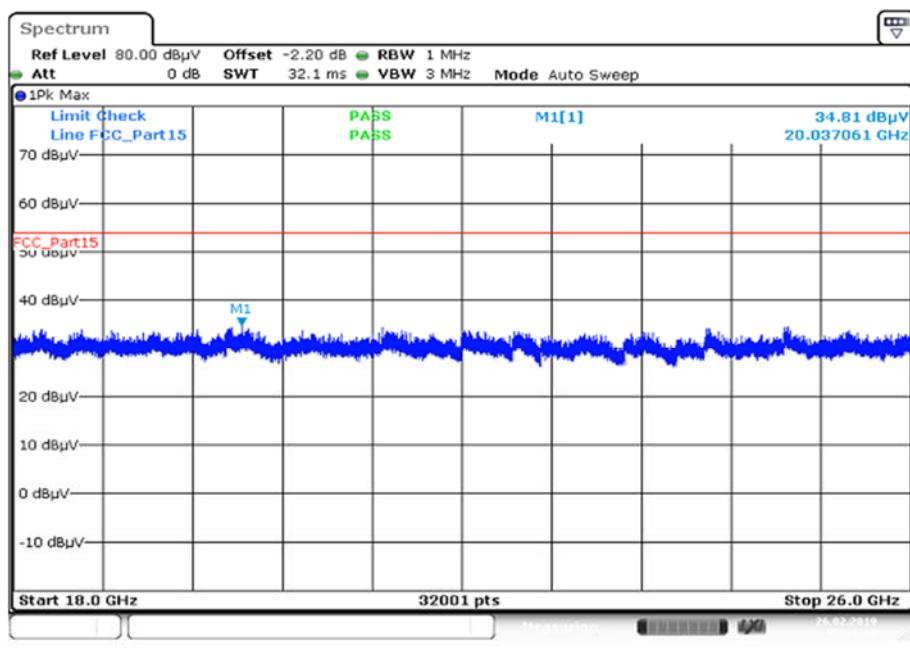
Plot 4: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

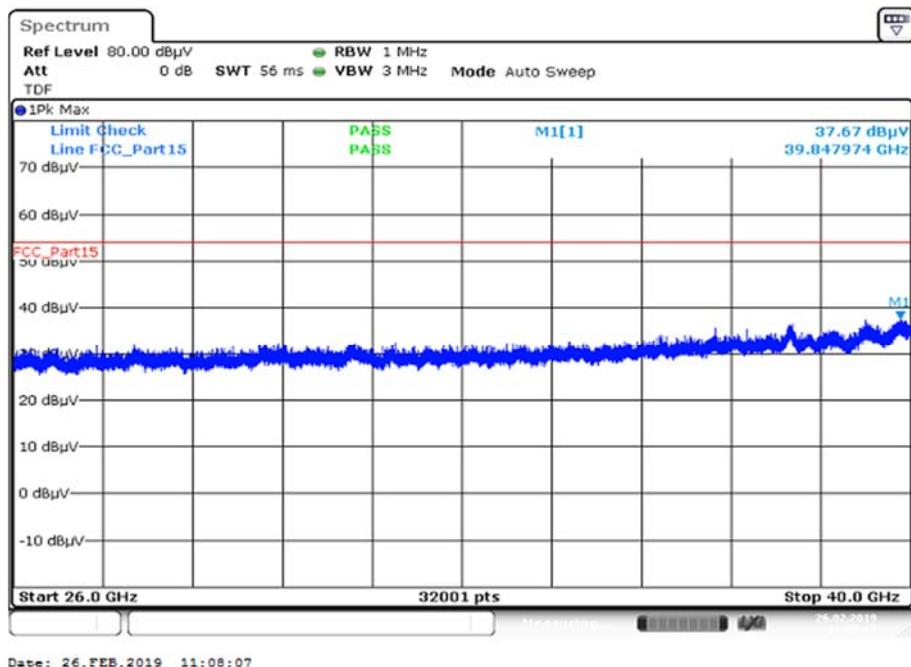
Plot 5: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



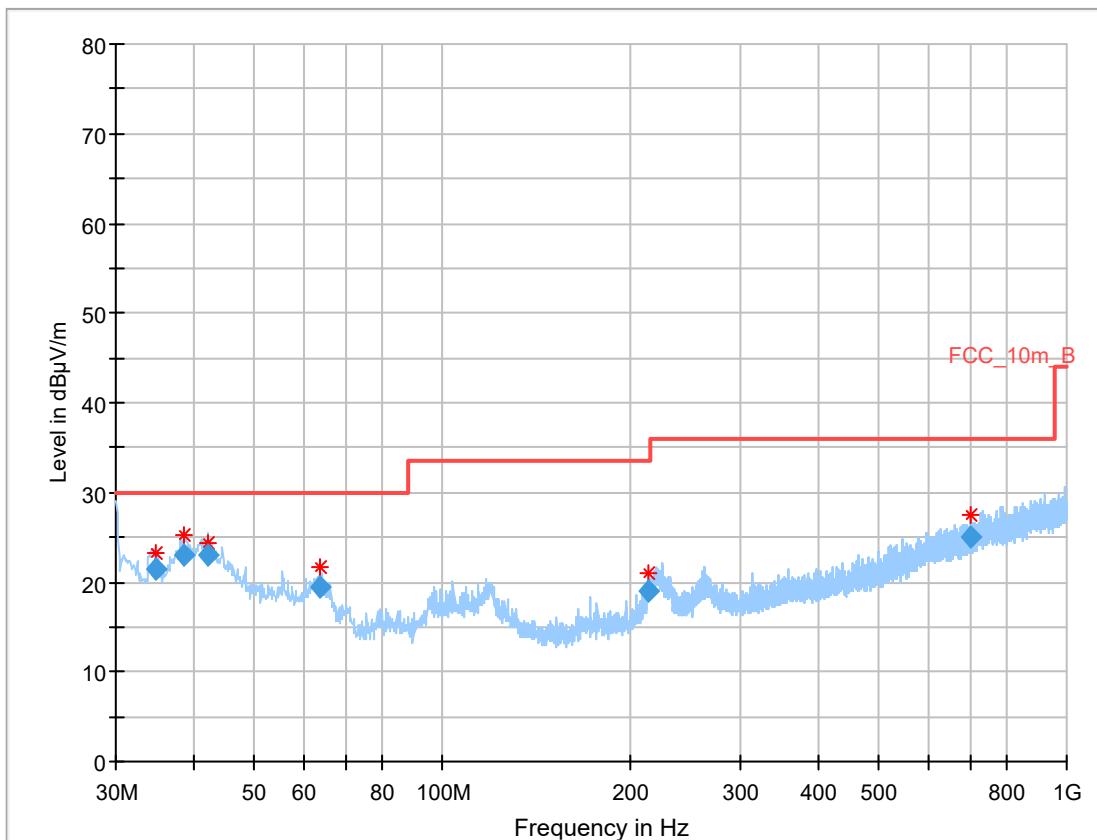
Final_Result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.008	17.72	30.0	12.28	1000	120	101.0	H	147.0	13.0
38.716	22.94	30.0	7.06	1000	120	98.0	V	345.0	14.2
42.389	22.72	30.0	7.28	1000	120	98.0	V	24.0	14.6
63.261	18.71	30.0	11.29	1000	120	98.0	V	11.0	12.3
120.279	17.35	33.5	16.15	1000	120	170.0	V	332.0	11.3
692.727	25.10	36.0	10.90	1000	120	170.0	V	-8.0	21.1

Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel**Plot 7:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; highest channel

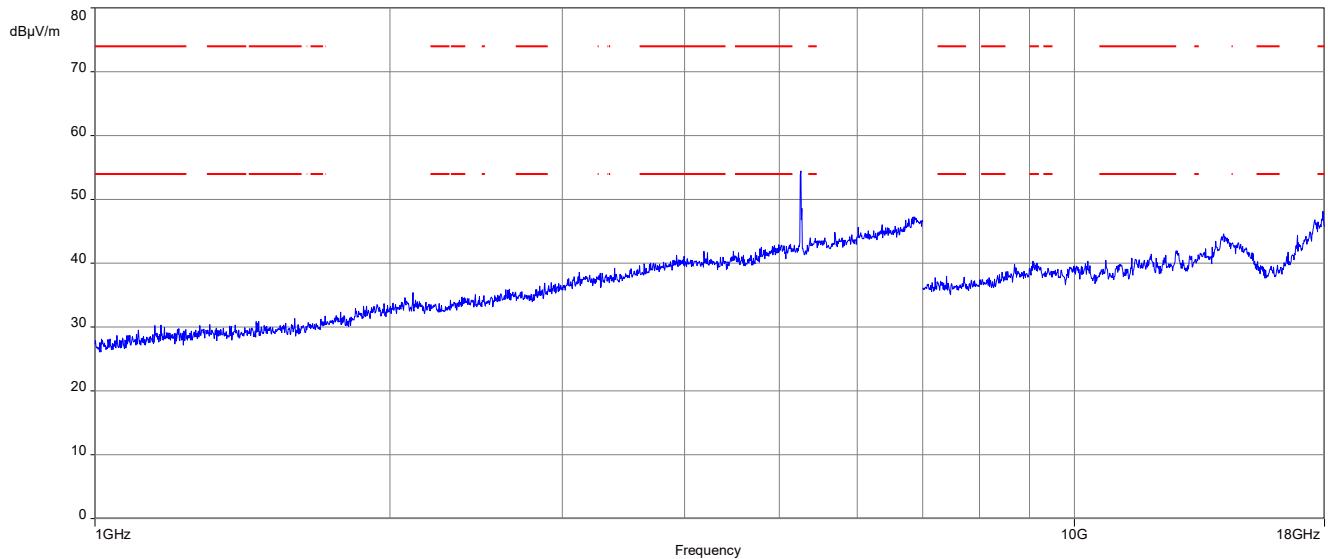
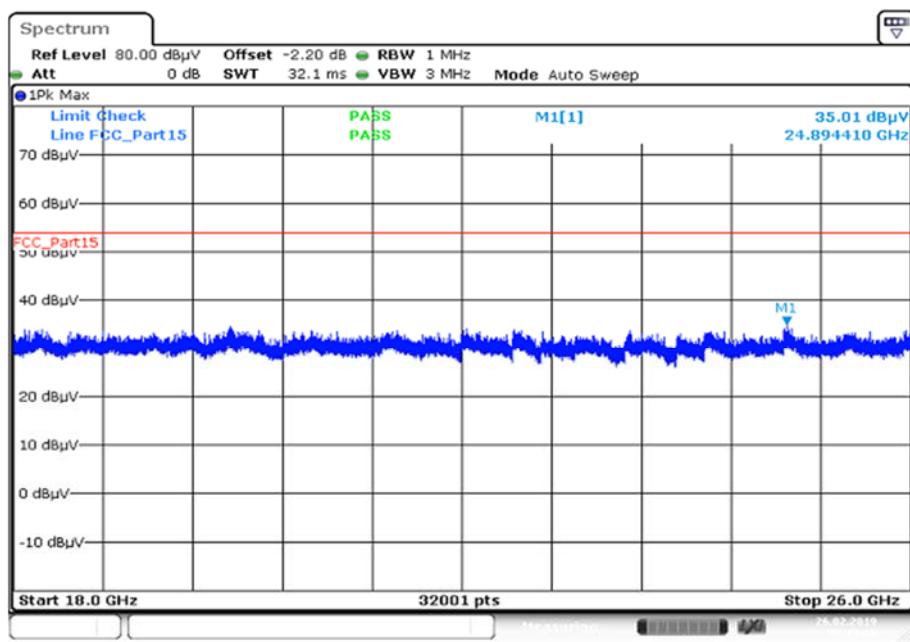
Plot 8: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel

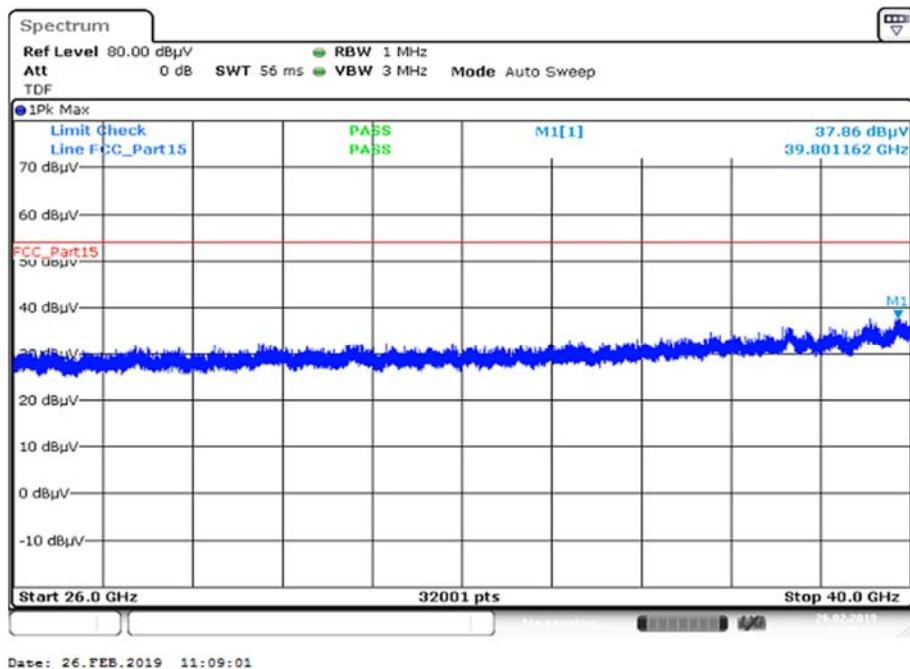
Plot 9: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

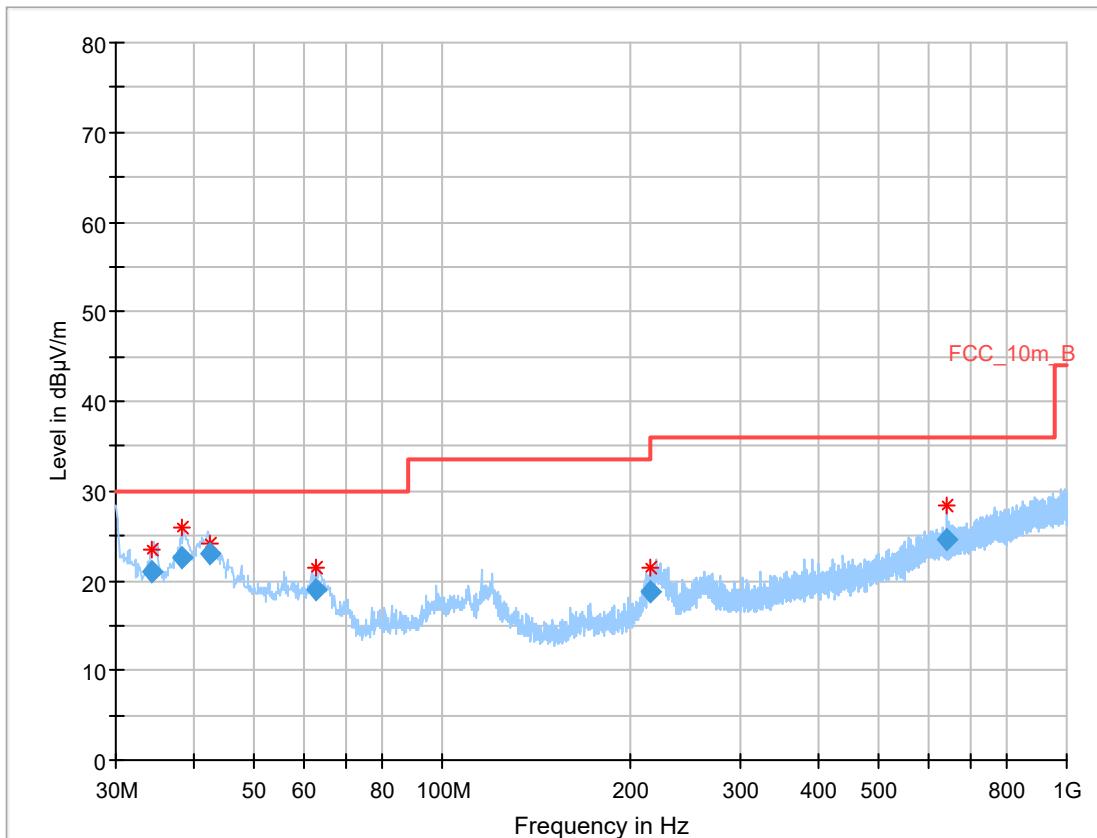


Final_Result:

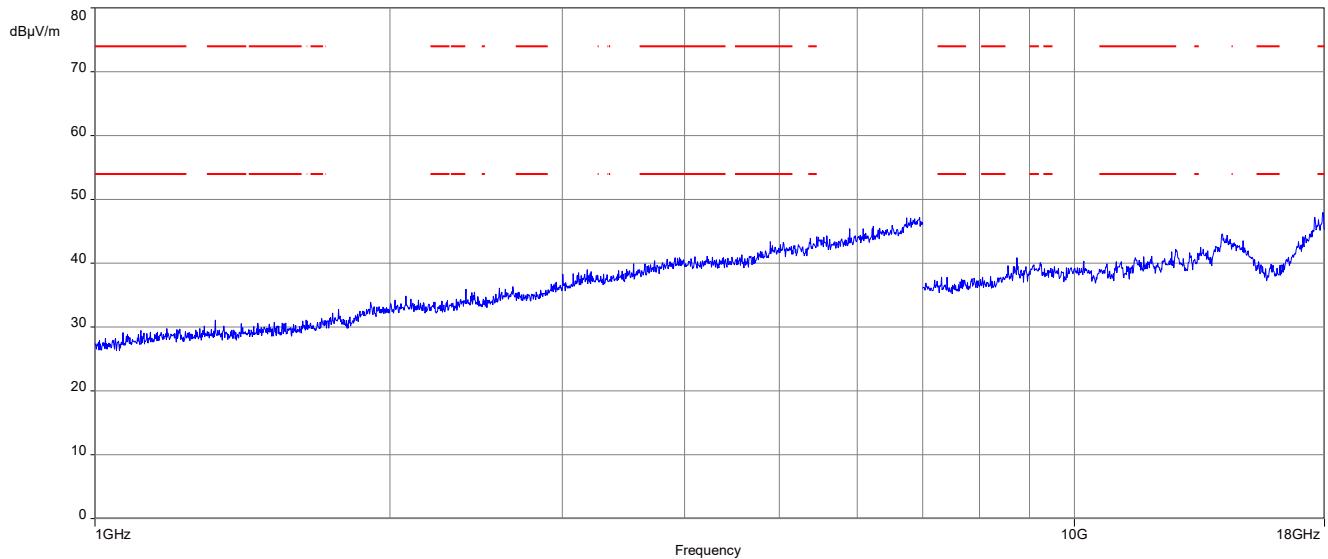
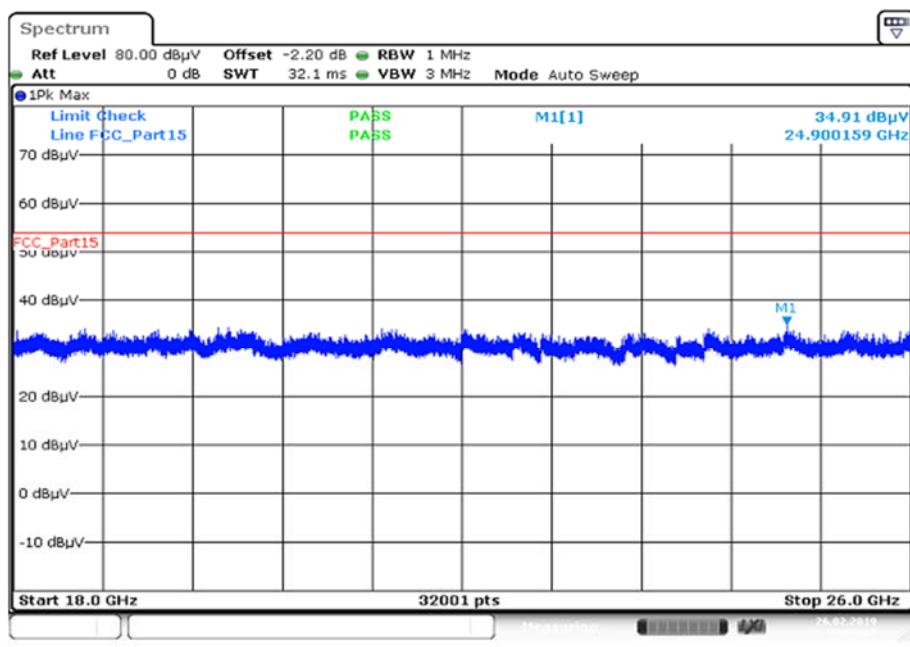
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.868	21.49	30.0	8.51	1000	120	98.0	V	124.0	13.8
38.677	23.01	30.0	6.99	1000	120	101.0	V	133.0	14.2
42.252	23.03	30.0	6.97	1000	120	98.0	V	74.0	14.5
63.762	19.40	30.0	10.60	1000	120	170.0	V	50.0	12.1
214.490	18.97	33.5	14.53	1000	120	98.0	V	126.0	12.8
700.794	25.13	36.0	10.87	1000	120	101.0	H	102.0	21.1

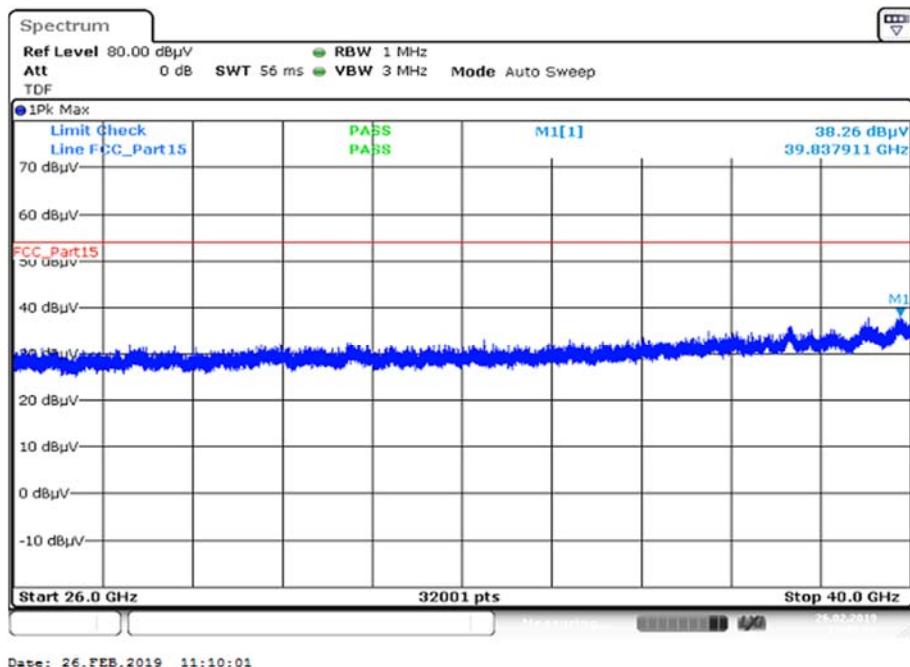
Plot 10: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel**Plot 11:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

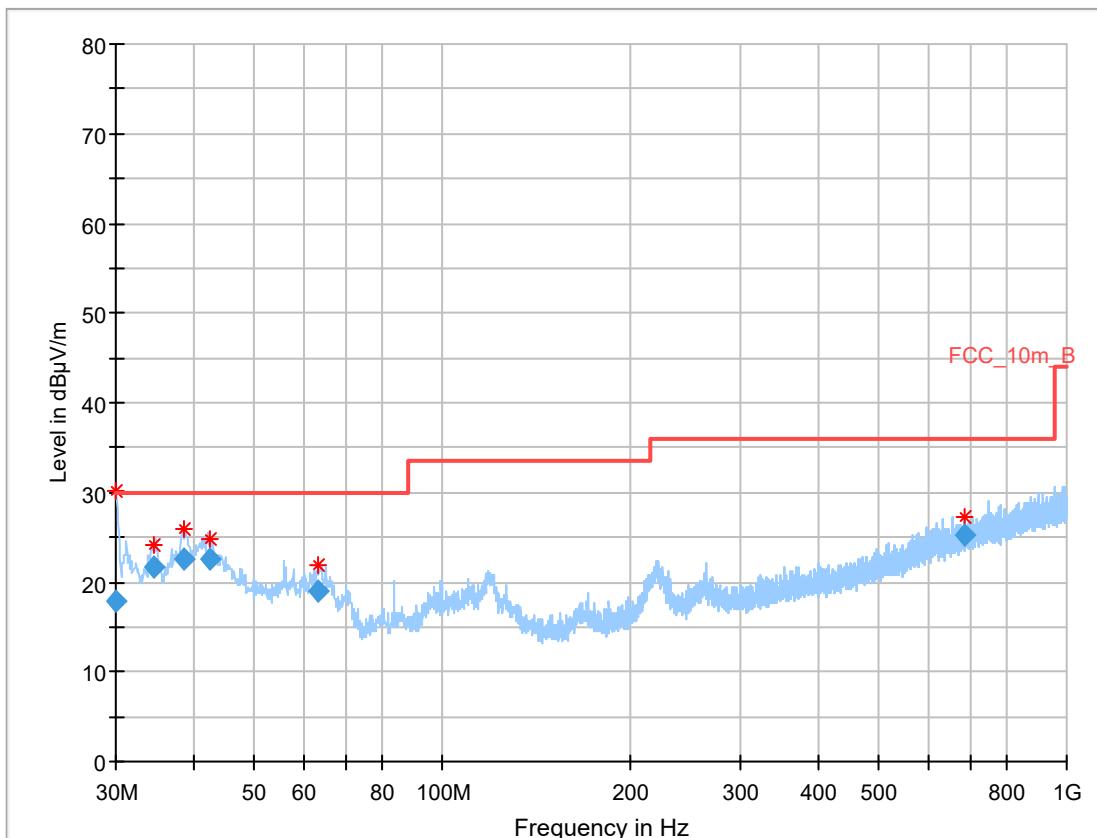
Plot 12: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

Plot 13: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; highest channel**Final_Result:**

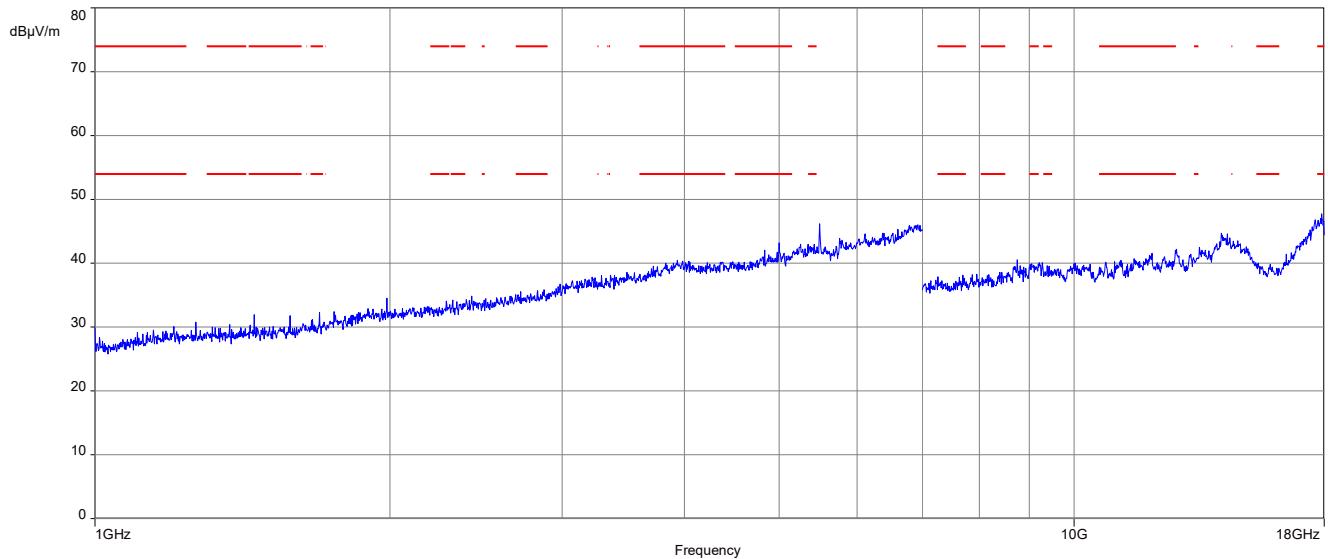
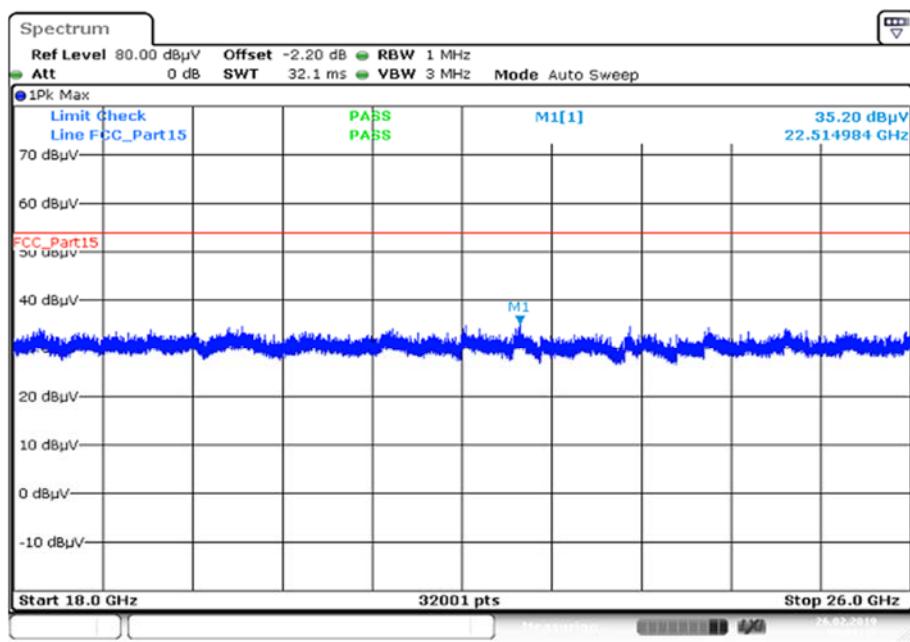
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.285	20.99	30.0	9.01	1000	120	101.0	V	67.0	13.7
38.378	22.59	30.0	7.41	1000	120	98.0	V	141.0	14.2
42.335	22.94	30.0	7.06	1000	120	98.0	V	52.0	14.6
62.976	18.95	30.0	11.05	1000	120	170.0	V	39.0	12.3
214.739	18.79	33.5	14.71	1000	120	101.0	V	108.0	12.8
641.607	24.54	36.0	11.46	1000	120	100.0	V	305.0	20.7

Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; highest channel**Plot 15:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

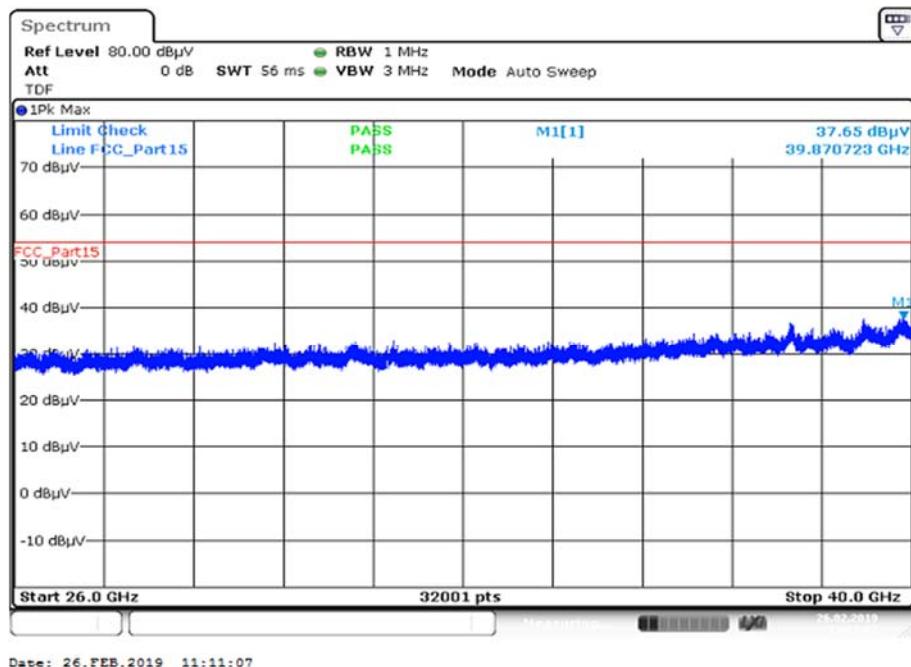
Plot 16: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

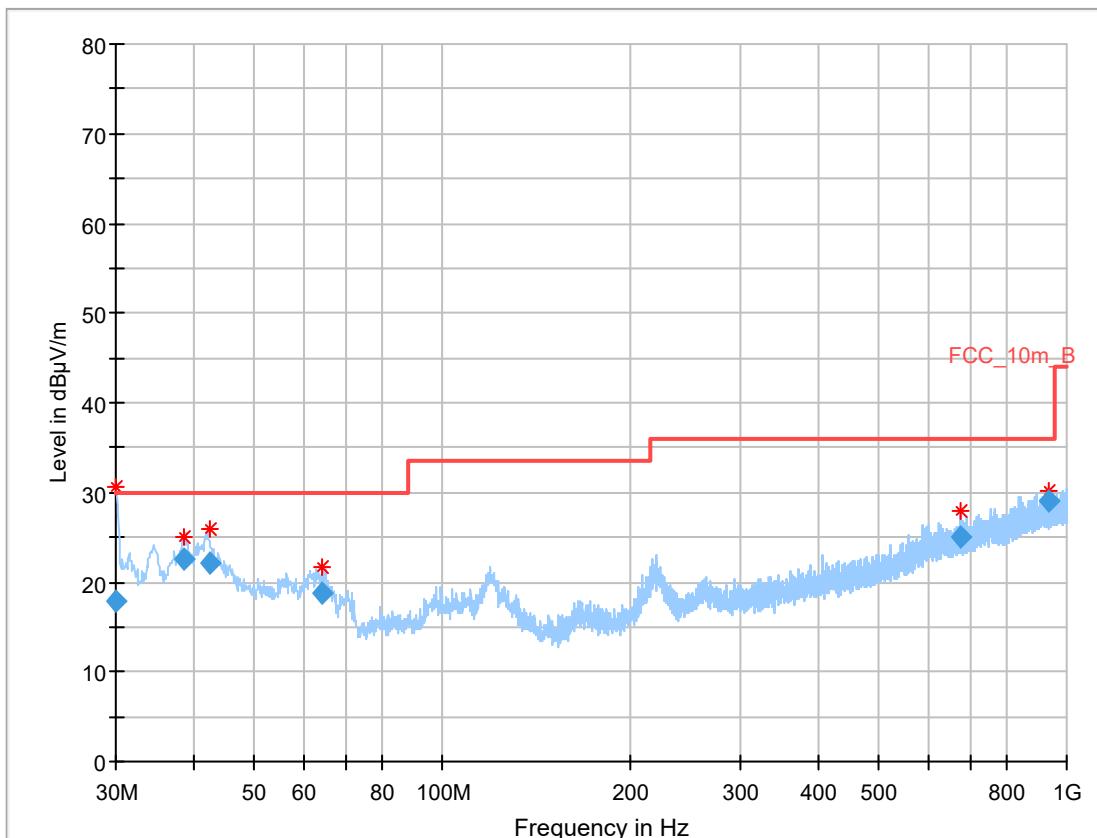
Plot 17: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Final_Result:**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.017	17.86	30.0	12.14	1000	120	101.0	H	11.0	13.0
34.490	21.78	30.0	8.22	1000	120	101.0	V	145.0	13.7
38.505	22.63	30.0	7.37	1000	120	98.0	V	308.0	14.2
42.364	22.50	30.0	7.50	1000	120	100.0	V	144.0	14.6
63.427	19.03	30.0	10.97	1000	120	98.0	V	67.0	12.2
684.969	25.20	36.0	10.80	1000	120	170.0	H	295.0	21.0

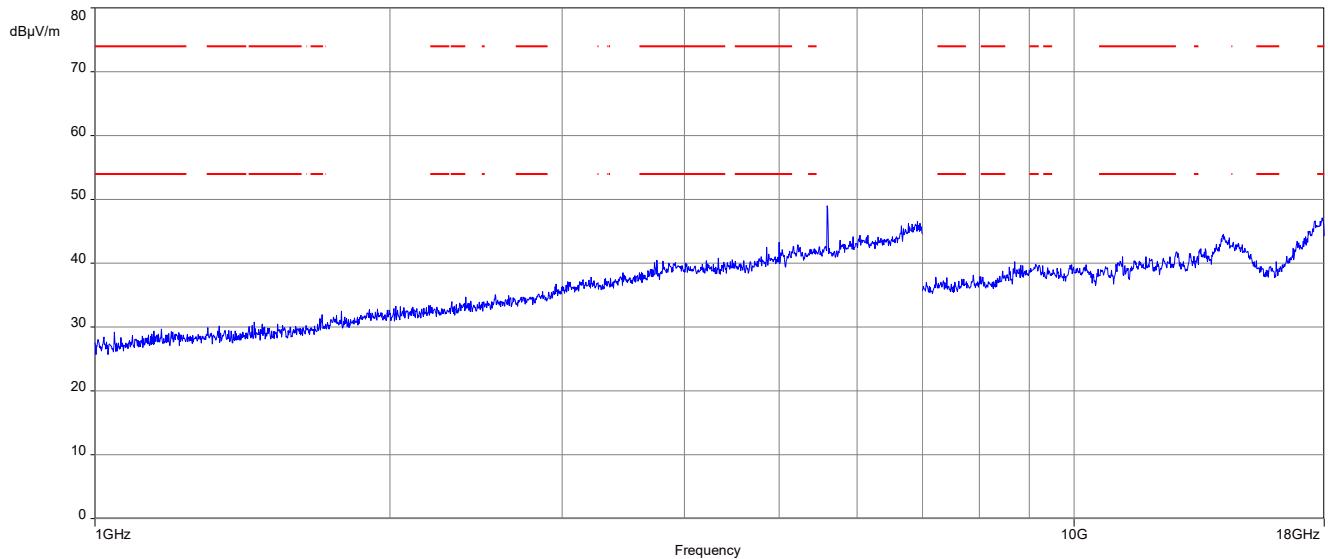
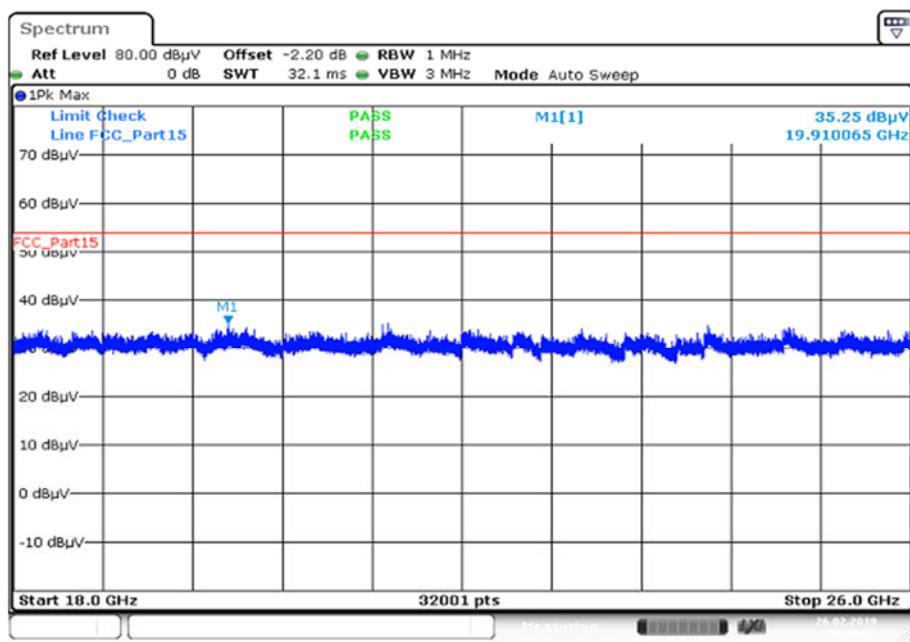
Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Plot 19:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

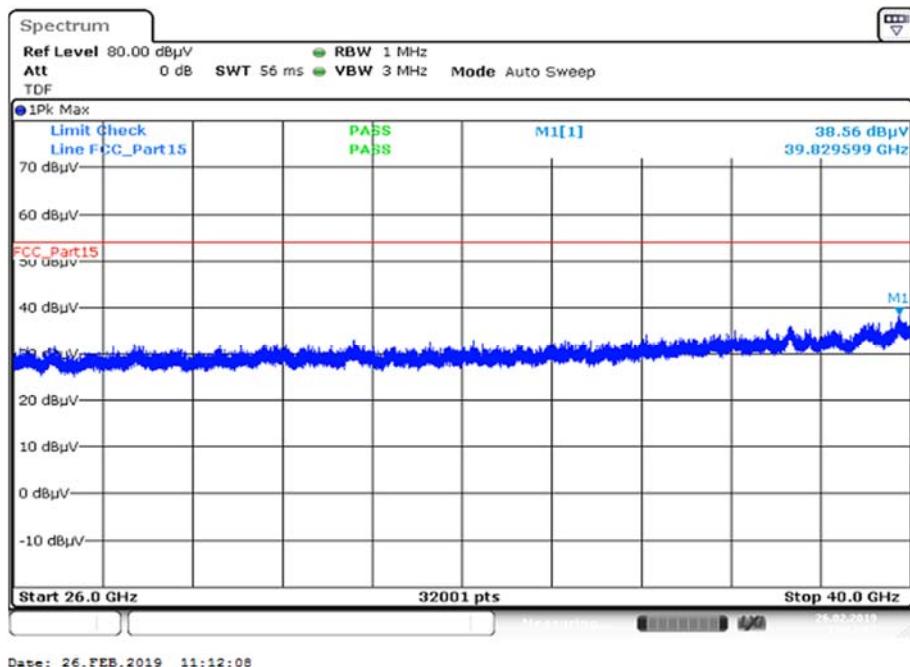
Plot 20: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

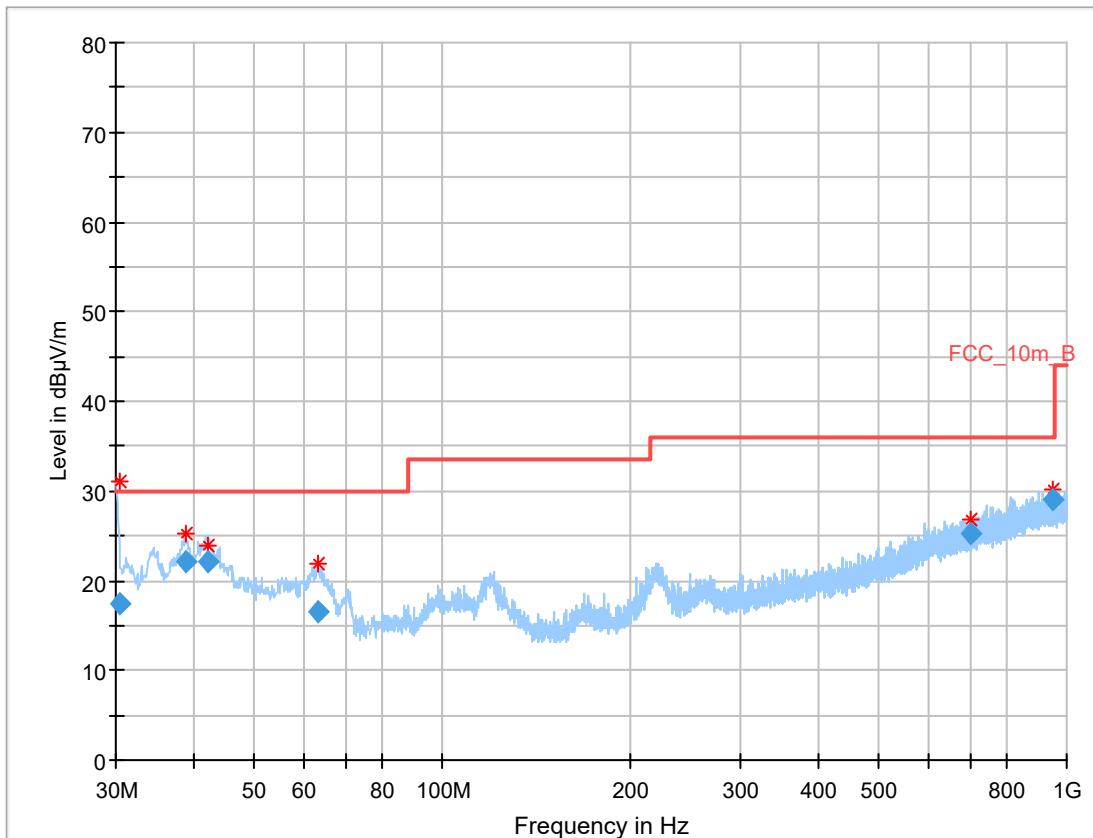


Plot 21: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Final_Result:**

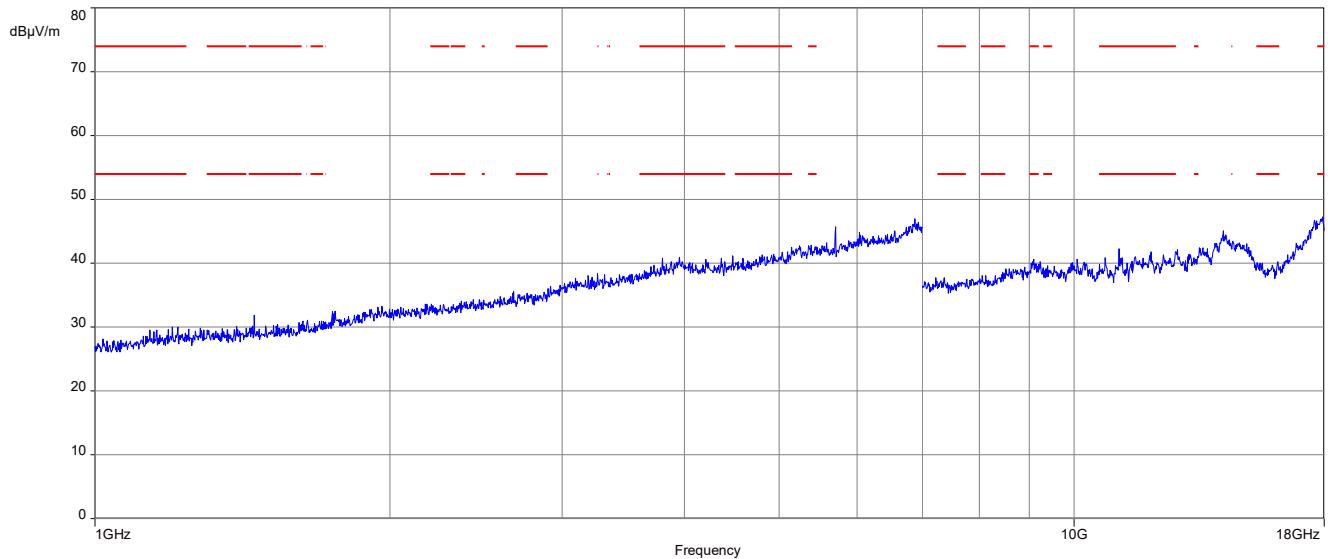
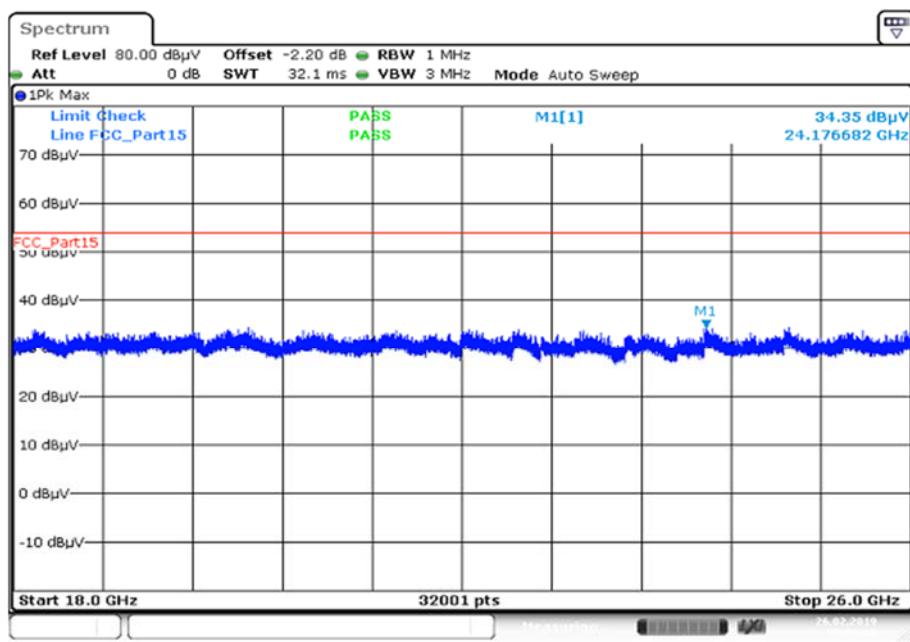
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.008	17.90	30.0	12.10	1000	120	101.0	H	253.0	13.0
38.660	22.59	30.0	7.41	1000	120	98.0	V	341.0	14.2
42.360	22.20	30.0	7.80	1000	120	100.0	V	181.0	14.6
64.107	18.77	30.0	11.23	1000	120	98.0	V	13.0	12.1
677.714	25.12	36.0	10.88	1000	120	98.0	V	350.0	21.0
933.562	29.13	36.0	6.87	1000	120	98.0	H	177.0	24.0

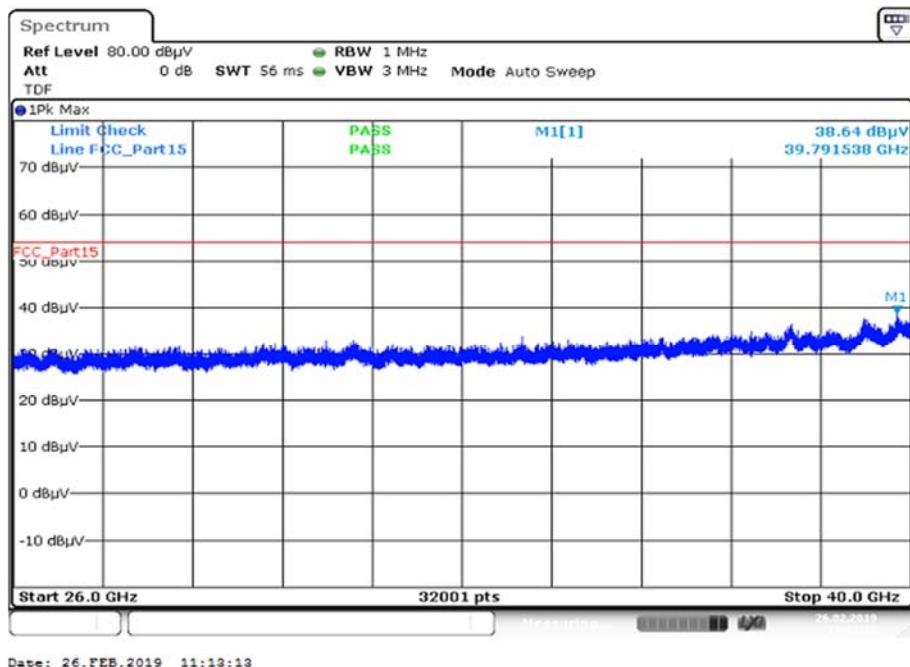
Plot 22: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Plot 23:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

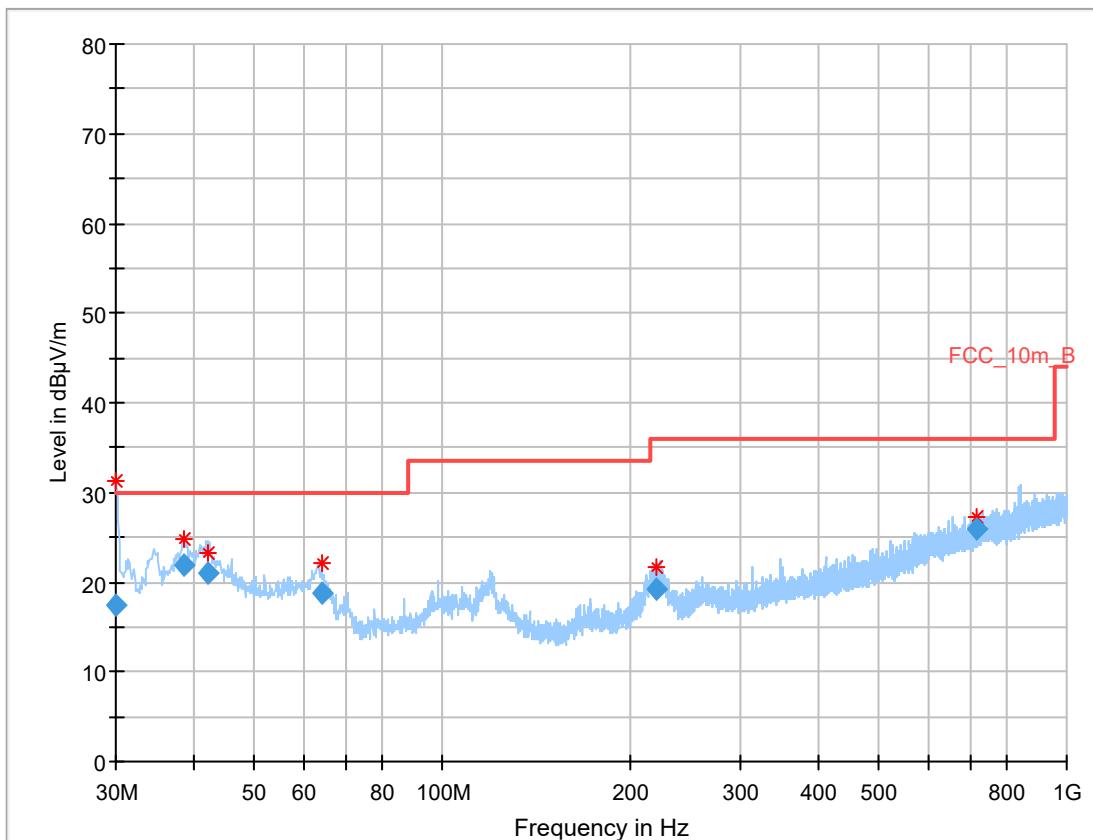
Plot 24: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

Plot 25: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; highest channel**Final_Result:**

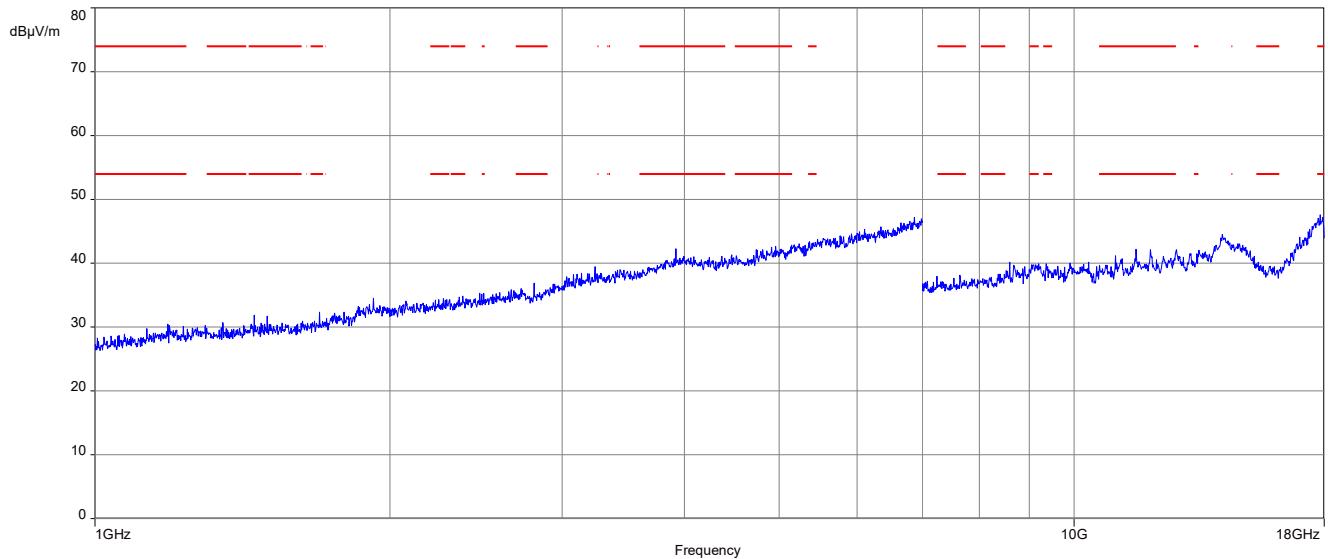
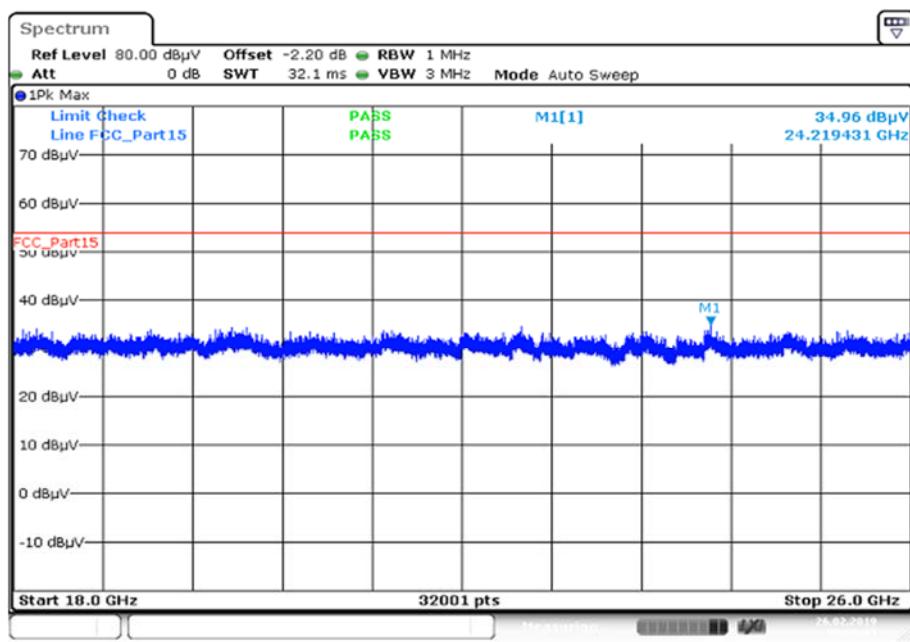
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.453	17.48	30.0	12.52	1000	120	101.0	H	282.0	13.1
38.716	22.02	30.0	7.98	1000	120	98.0	V	9.0	14.2
42.279	22.03	30.0	7.97	1000	120	98.0	V	0.0	14.5
63.334	16.58	30.0	13.42	1000	120	98.0	V	69.0	12.2
700.158	25.36	36.0	10.64	1000	120	98.0	V	288.0	21.1
946.942	29.07	36.0	6.93	1000	120	170.0	H	104.0	24.1

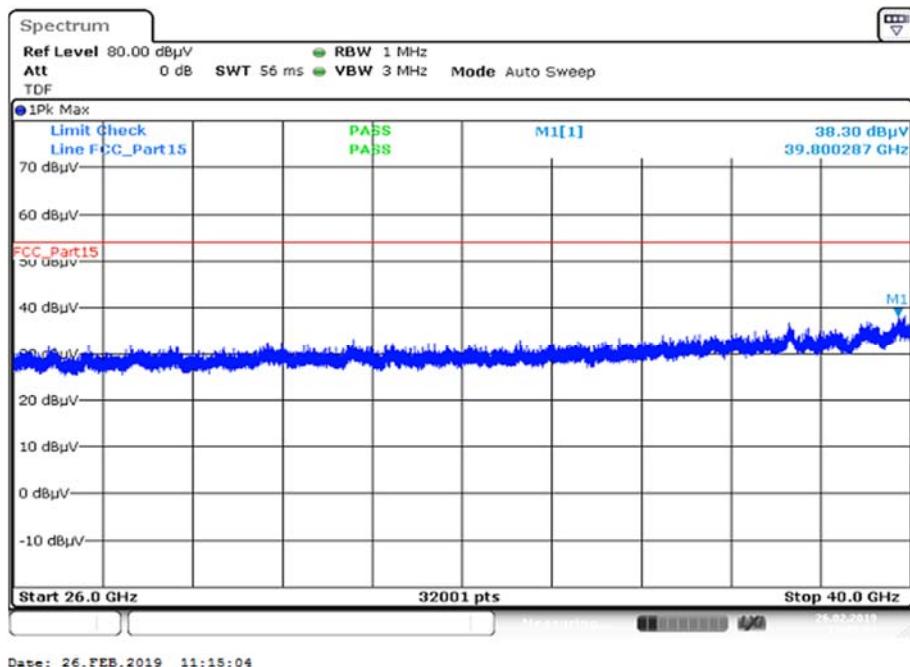
Plot 26: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel**Plot 27:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

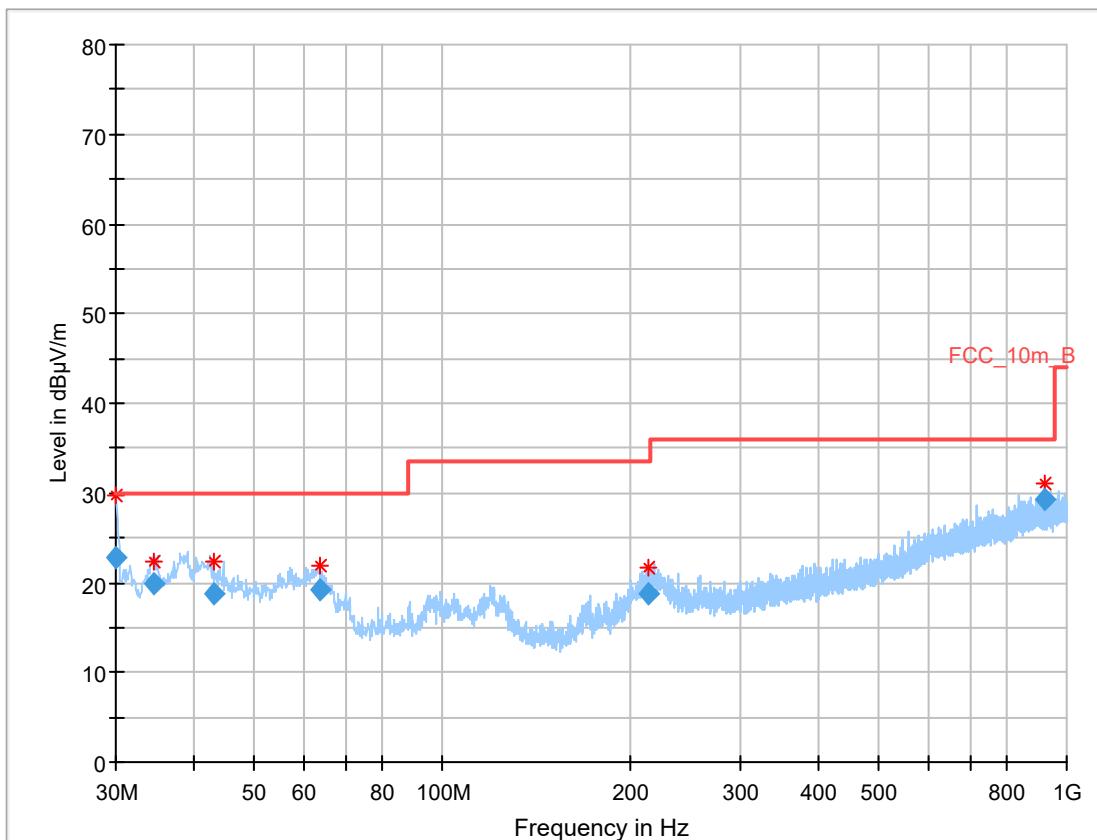
Plot 28: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

Plot 29: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Final_Result:**

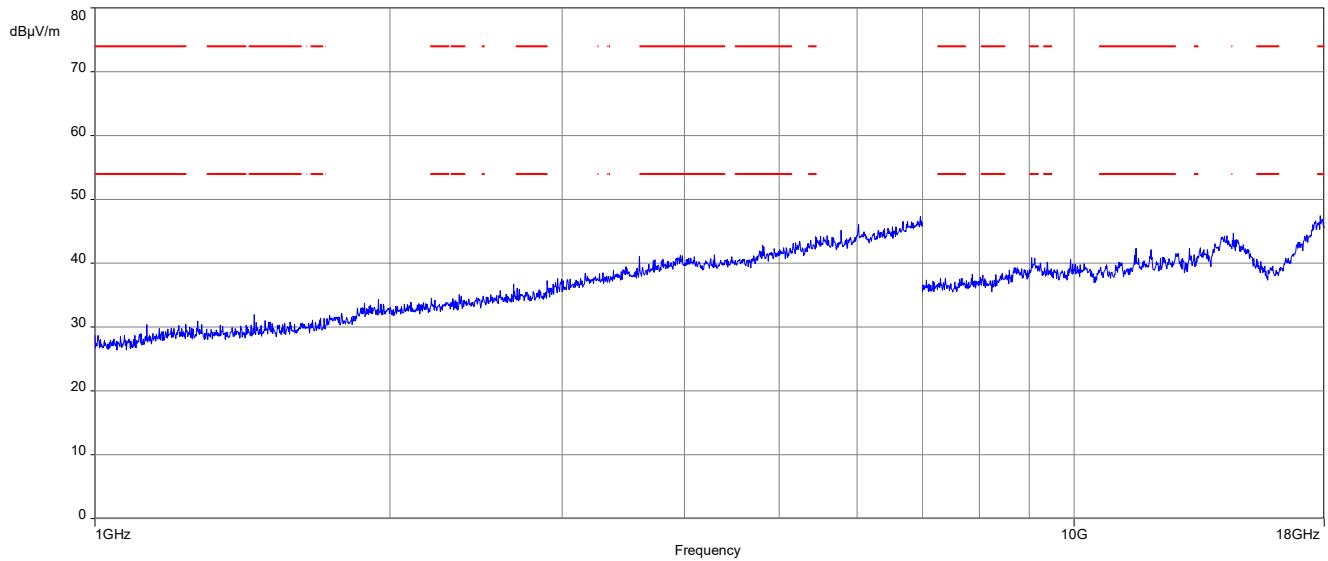
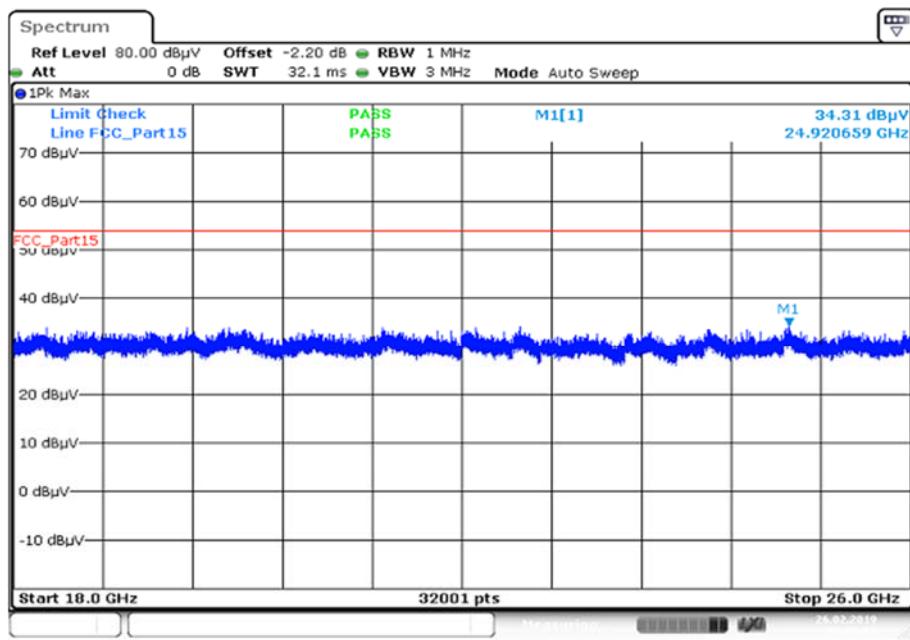
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.060	17.34	30.0	12.66	1000	120	101.0	H	71.0	13.0
38.640	22.00	30.0	8.00	1000	120	98.0	V	339.0	14.2
42.074	20.96	30.0	9.04	1000	120	170.0	V	198.0	14.5
64.011	18.85	30.0	11.15	1000	120	101.0	V	16.0	12.1
220.340	19.27	36.0	16.73	1000	120	100.0	V	137.0	12.9
719.829	25.90	36.0	10.10	1000	120	170.0	H	294.0	21.6

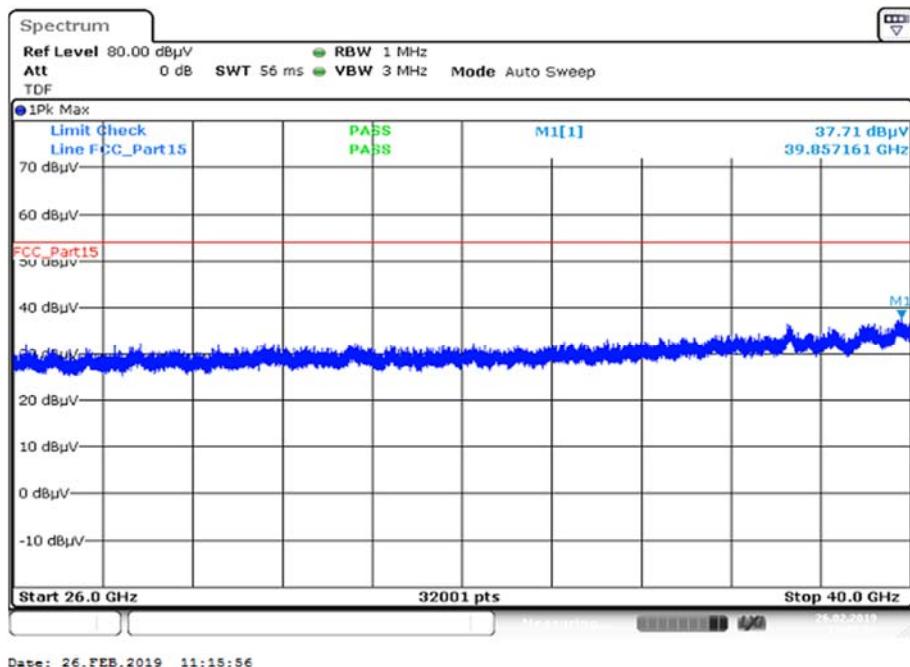
Plot 30: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Plot 31:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

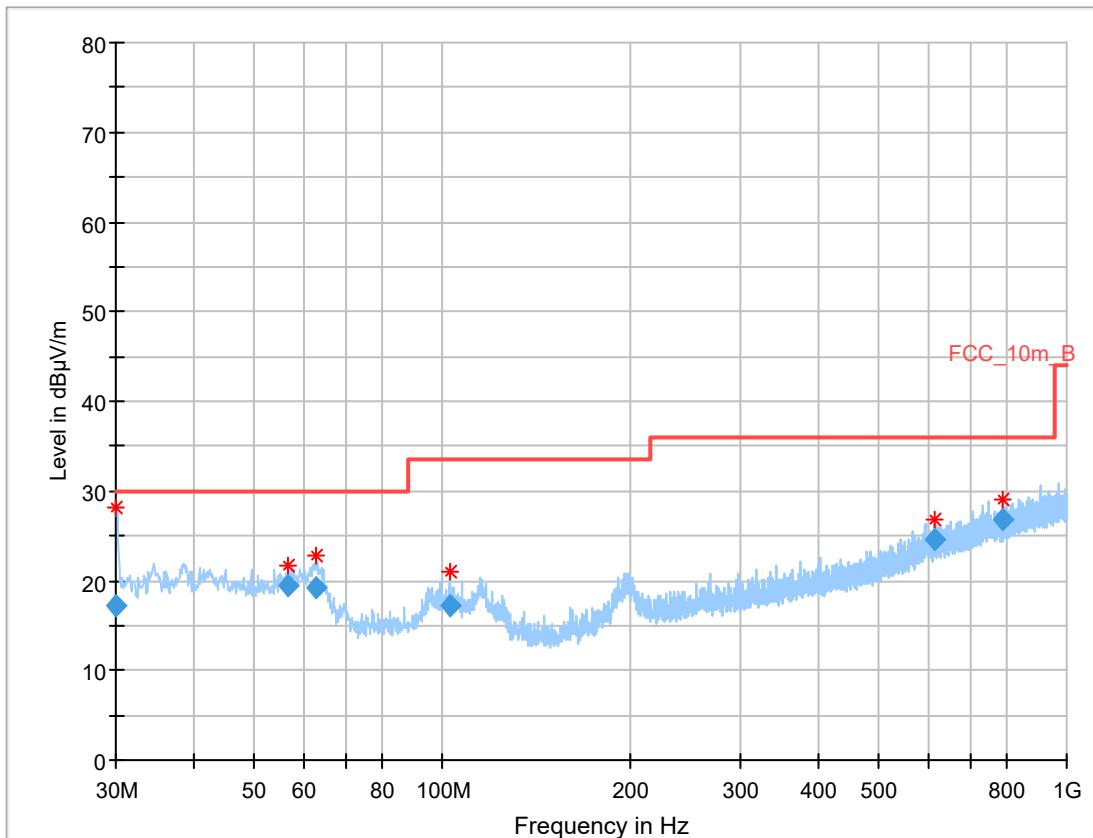
Plot 32: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

Plot 33: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; middle channel**Final_Result:**

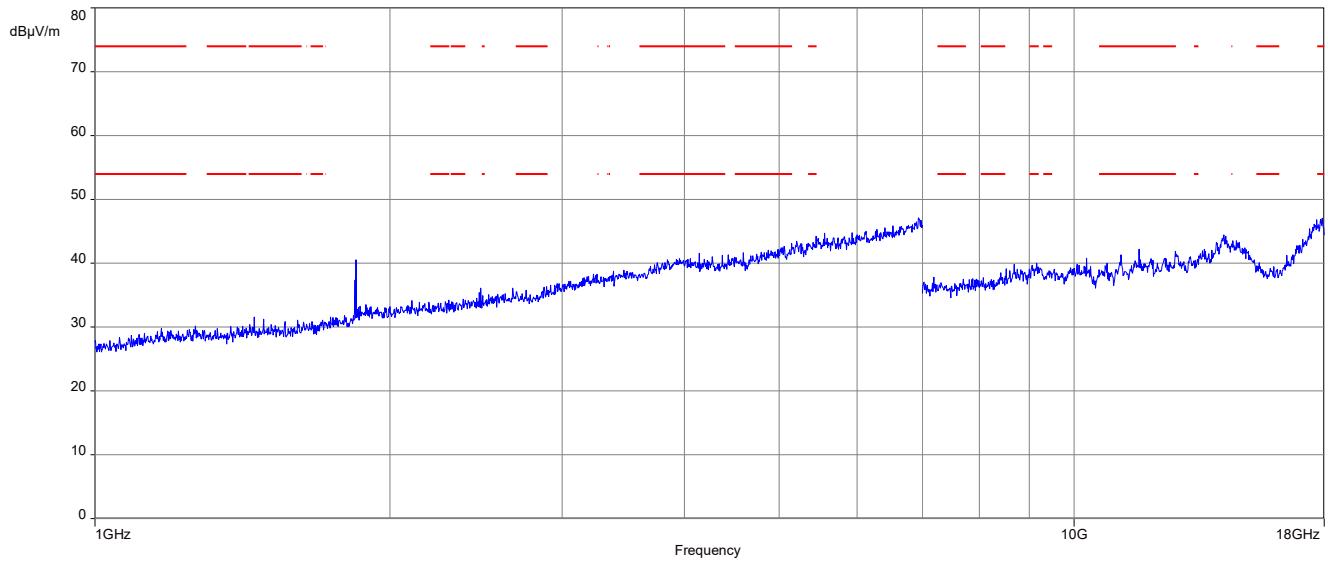
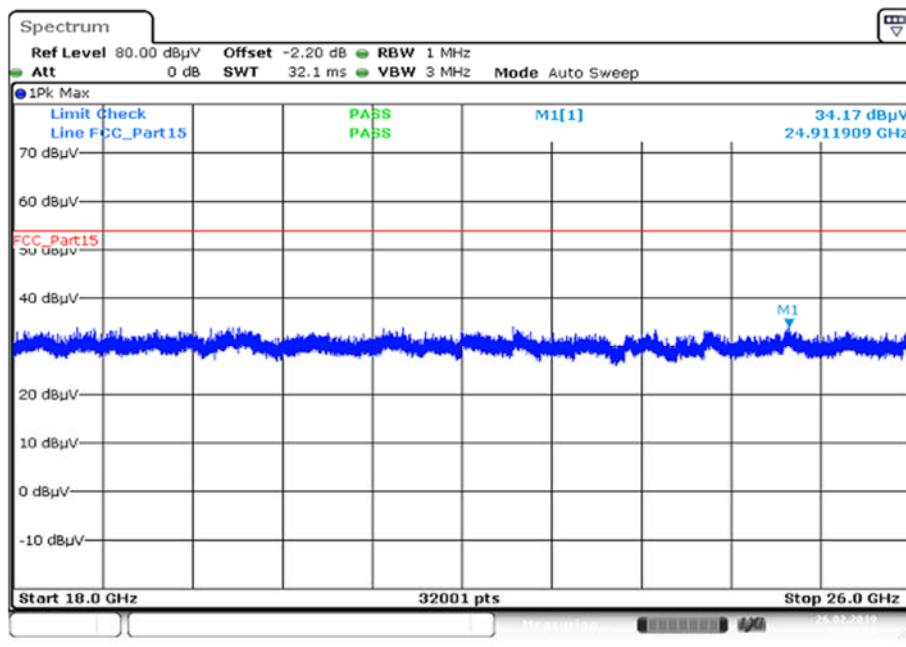
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.006	22.76	30.0	7.24	1000	120	170.0	H	-10.0	13.0
34.419	19.99	30.0	10.01	1000	120	101.0	V	264.0	13.7
42.966	18.80	30.0	11.20	1000	120	101.0	V	-9.0	14.6
63.506	19.12	30.0	10.88	1000	120	170.0	V	36.0	12.2
214.093	18.71	33.5	14.79	1000	120	98.0	V	274.0	12.8
921.786	29.22	36.0	6.78	1000	120	170.0	H	197.0	24.0

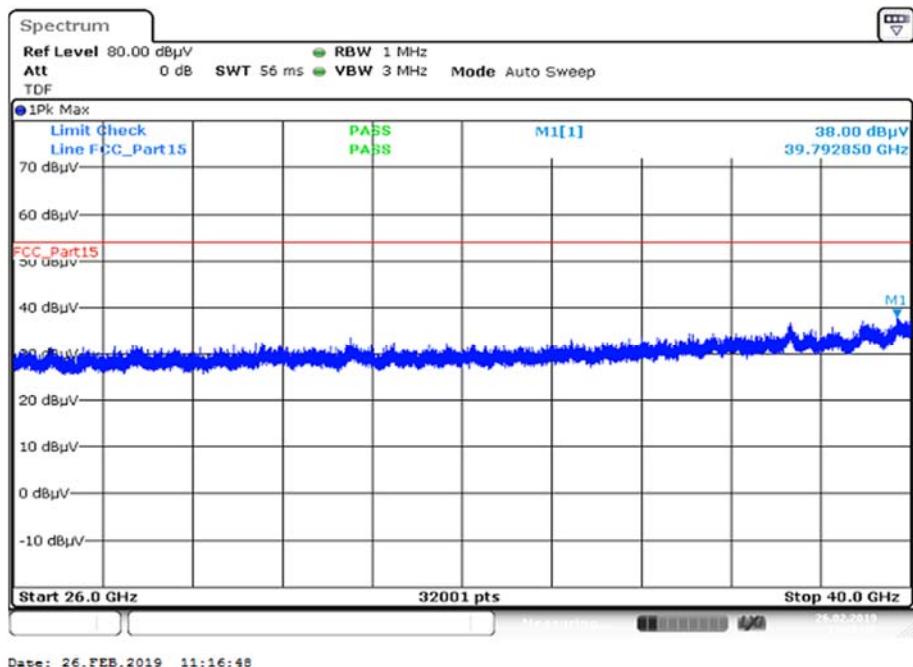
Plot 34: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel**Plot 35:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; middle channel

Plot 36: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; middle channel

Plot 37: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; highest channel**Final_Result:**

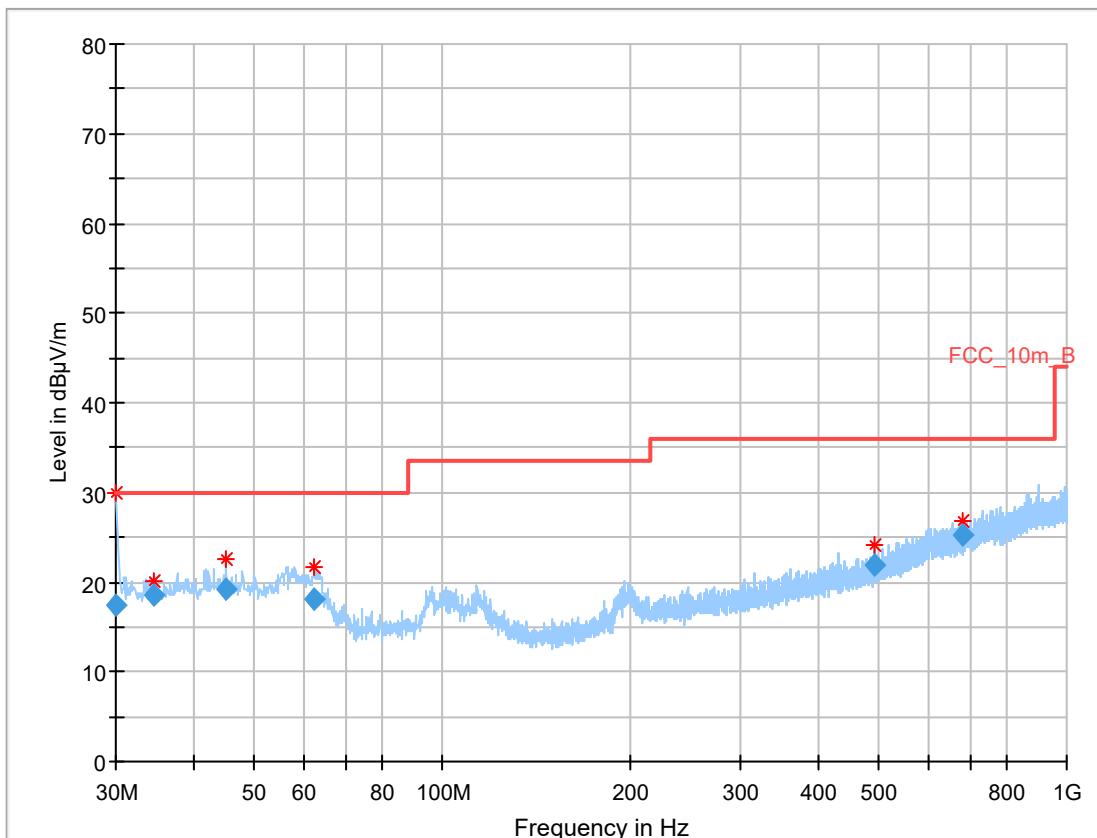
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.028	17.29	30.0	12.71	1000	120	101.0	H	299.0	13.0
56.714	19.38	30.0	10.62	1000	120	101.0	V	350.0	13.8
62.616	19.15	30.0	10.85	1000	120	160.0	V	341.0	12.4
102.656	17.29	33.5	16.21	1000	120	100.0	V	350.0	12.9
615.448	24.54	36.0	11.46	1000	120	160.0	V	169.0	20.5
790.231	26.73	36.0	9.27	1000	120	160.0	H	194.0	22.4

Plot 38: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel**Plot 39:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; highest channel

Plot 40: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; highest channel

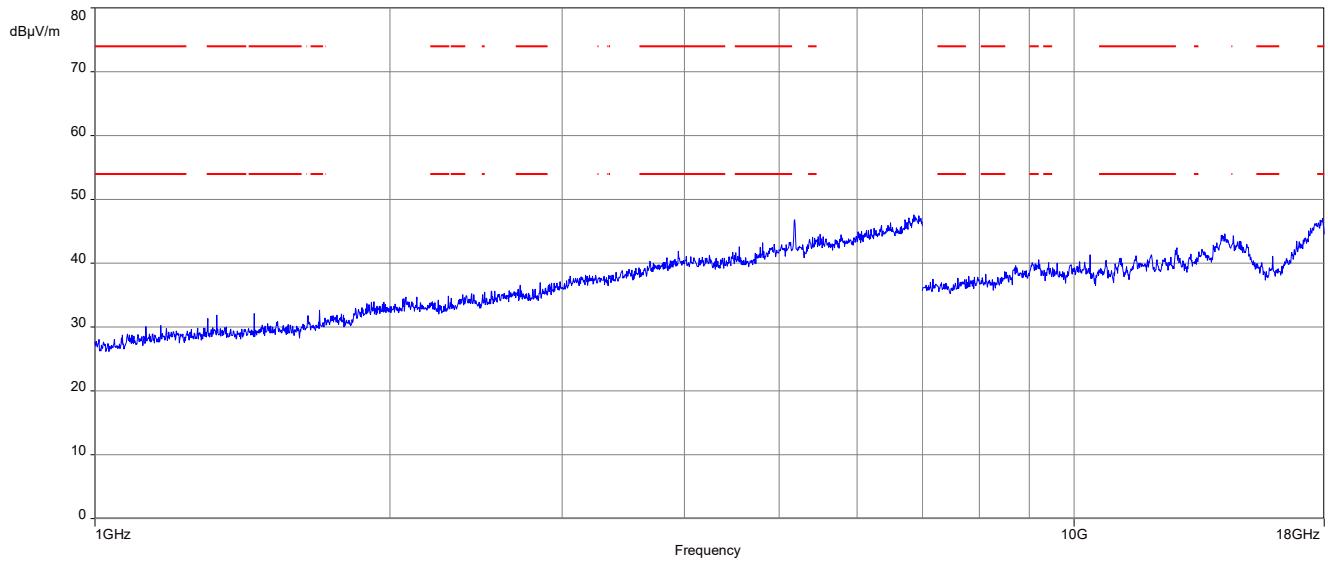
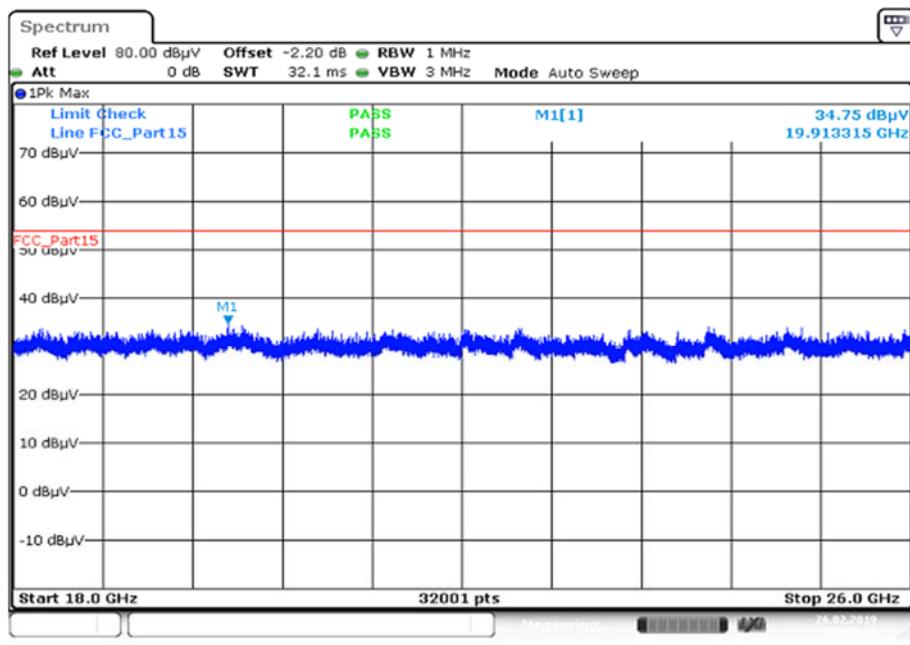
Plots: 40 MHz channel bandwidth

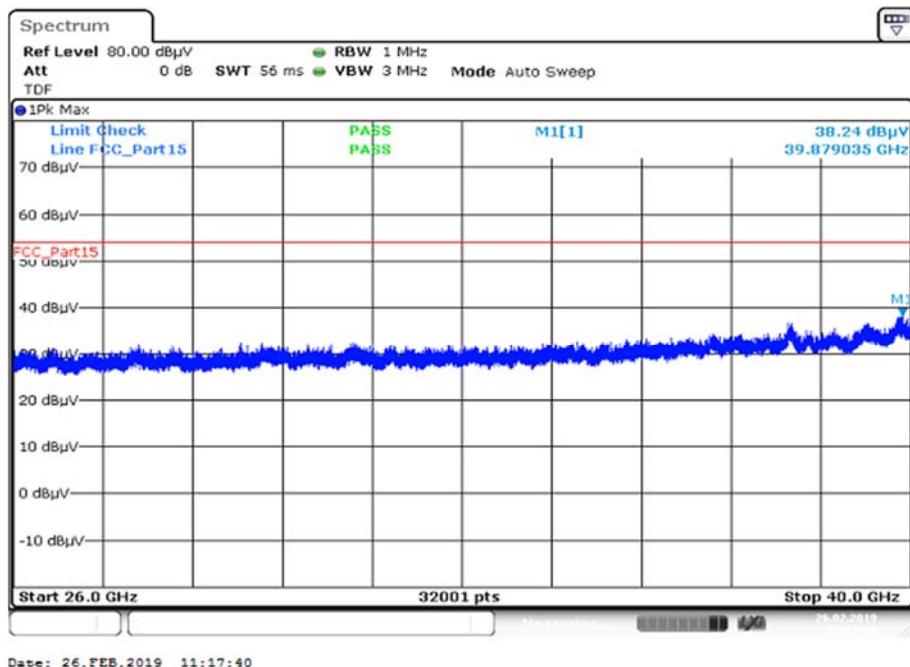
Plot 1: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



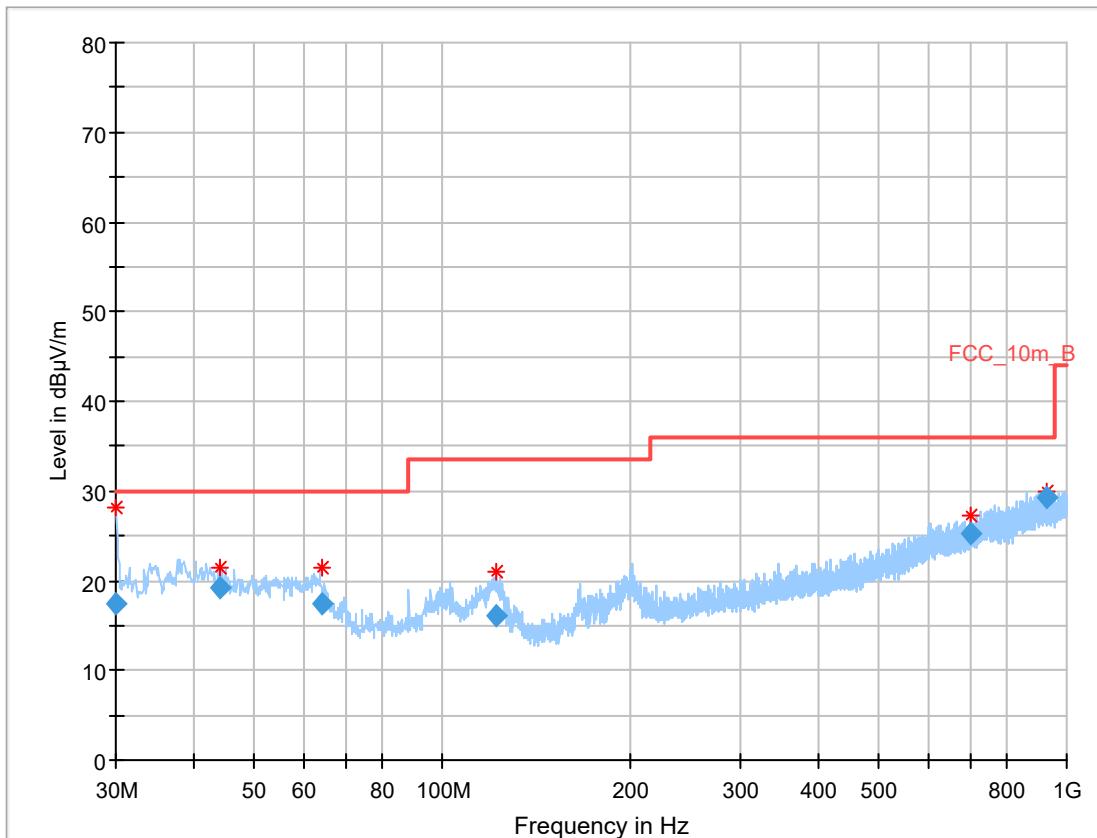
Final_Result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.006	17.45	30.0	12.55	1000	120	101.0	H	266.0	13.0
34.587	18.53	30.0	11.47	1000	120	160.0	V	147.0	13.7
45.109	19.16	30.0	10.84	1000	120	101.0	V	22.0	14.8
62.173	18.19	30.0	11.81	1000	120	101.0	V	350.0	12.5
492.691	21.95	36.0	14.05	1000	120	160.0	H	0.0	18.1
680.374	25.17	36.0	10.83	1000	120	160.0	H	230.0	21.0

Plot 2: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel**Plot 3:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

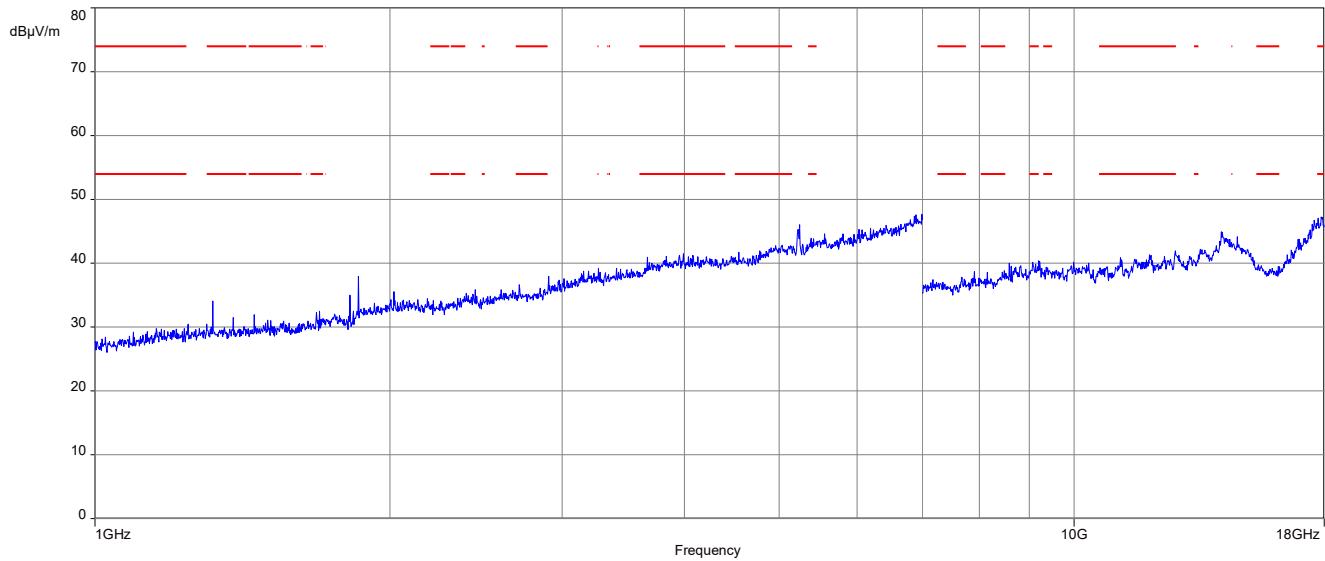
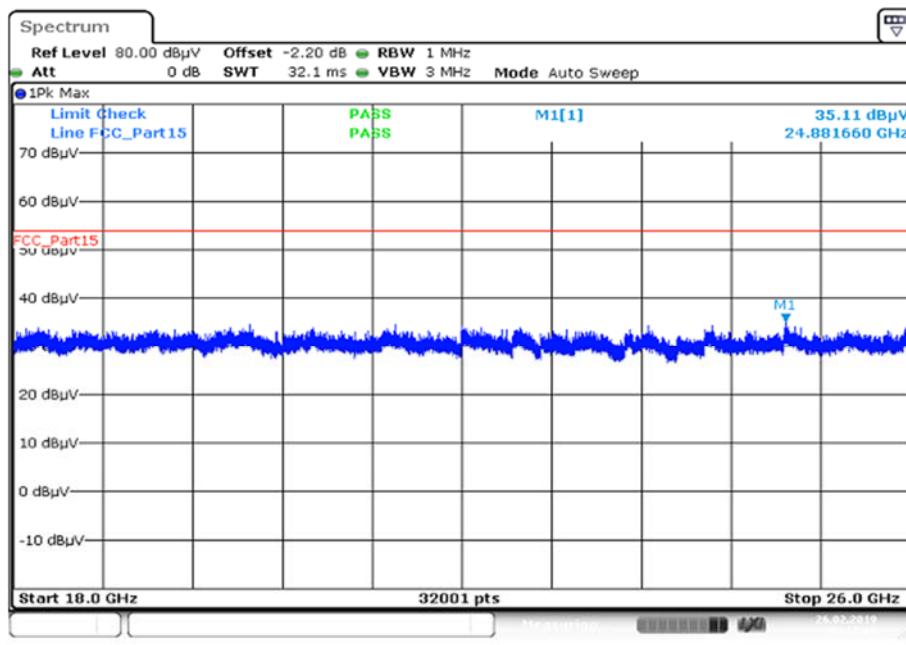
Plot 4: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

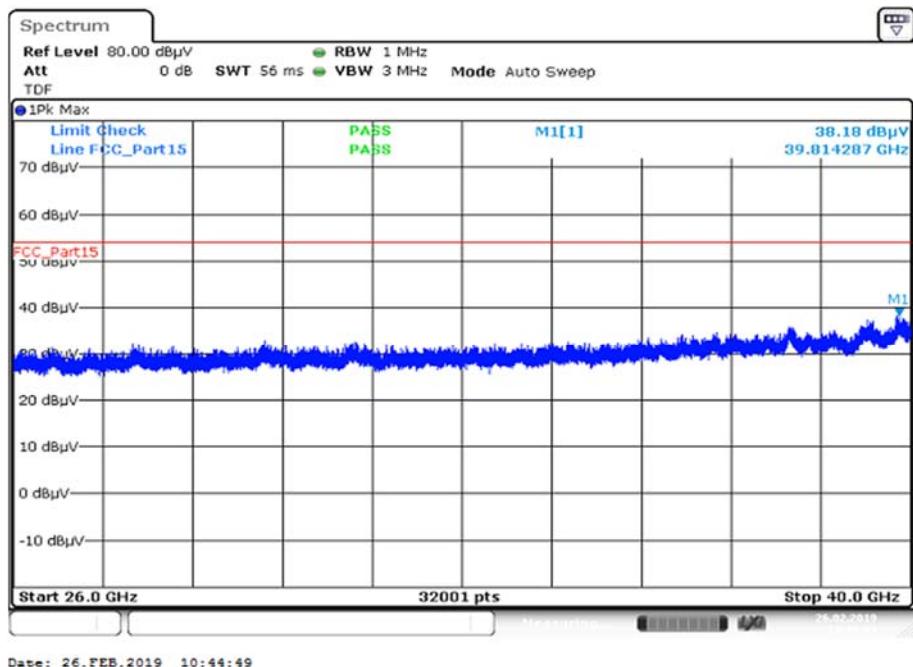
Plot 5: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



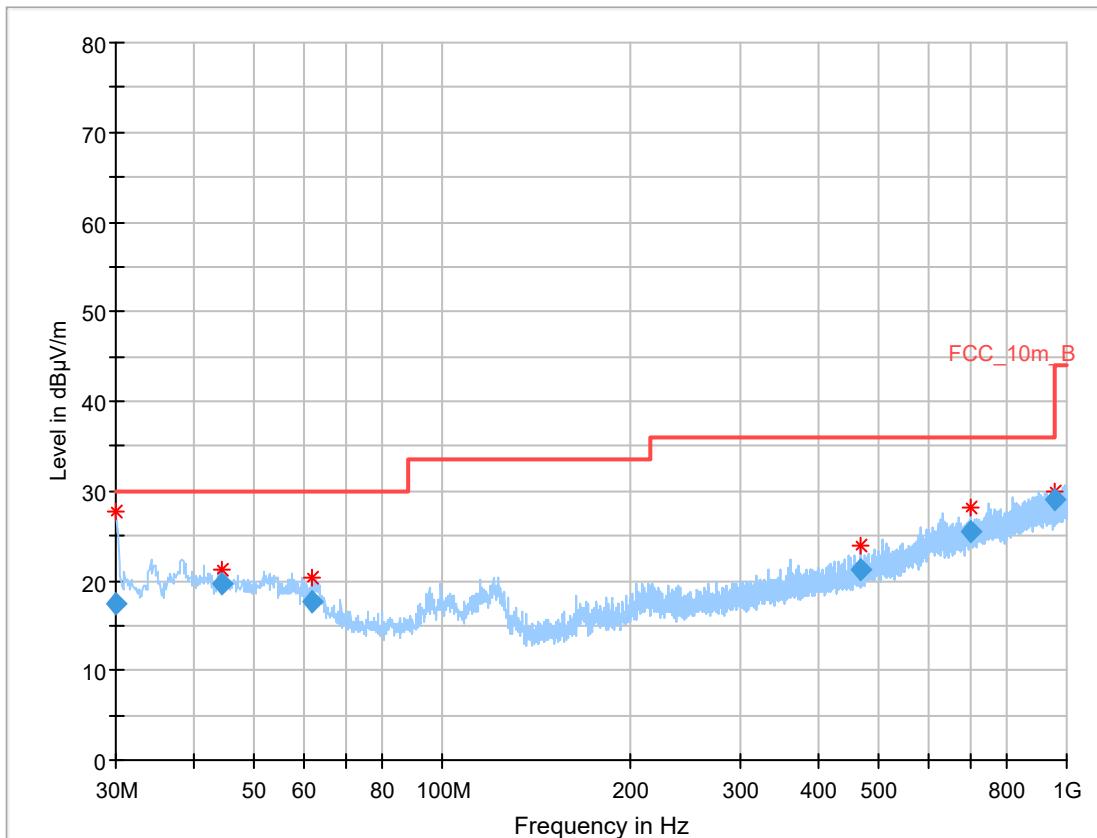
Final_Result:

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.008	17.40	30.0	12.60	1000	120	101.0	H	87.0	13.0
44.087	19.28	30.0	10.72	1000	120	98.0	V	276.0	14.7
64.293	17.36	30.0	12.64	1000	120	101.0	V	285.0	12.0
121.829	16.15	33.5	17.35	1000	120	160.0	V	121.0	11.1
700.147	25.36	36.0	10.64	1000	120	160.0	V	1.0	21.1
926.542	29.22	36.0	6.78	1000	120	160.0	H	349.0	24.0

Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel**Plot 7:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; highest channel

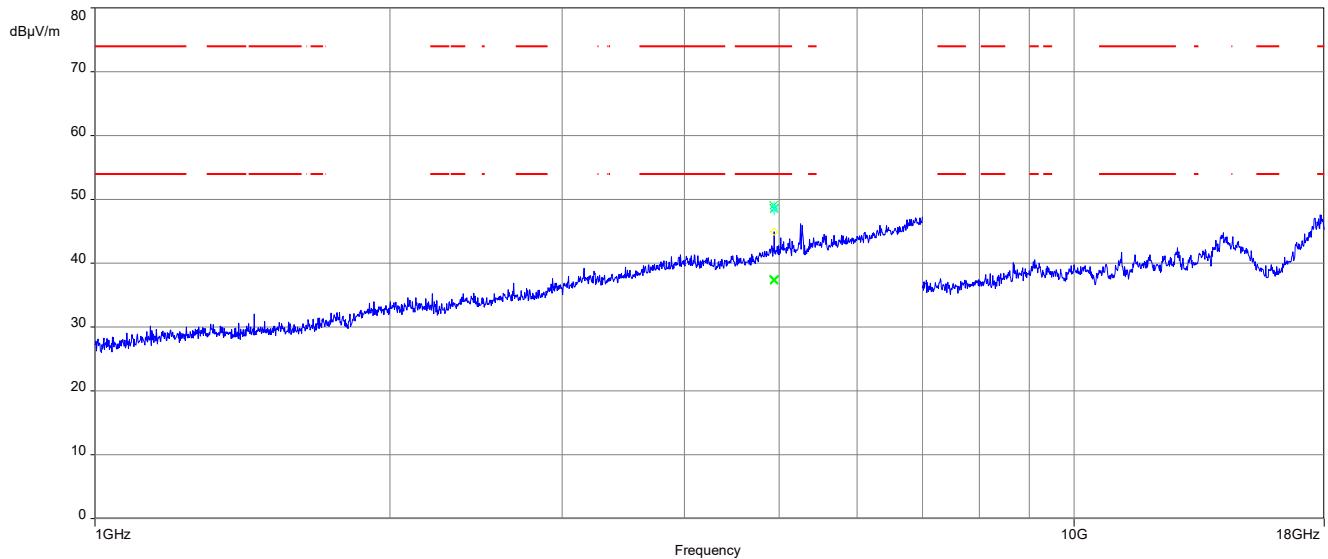
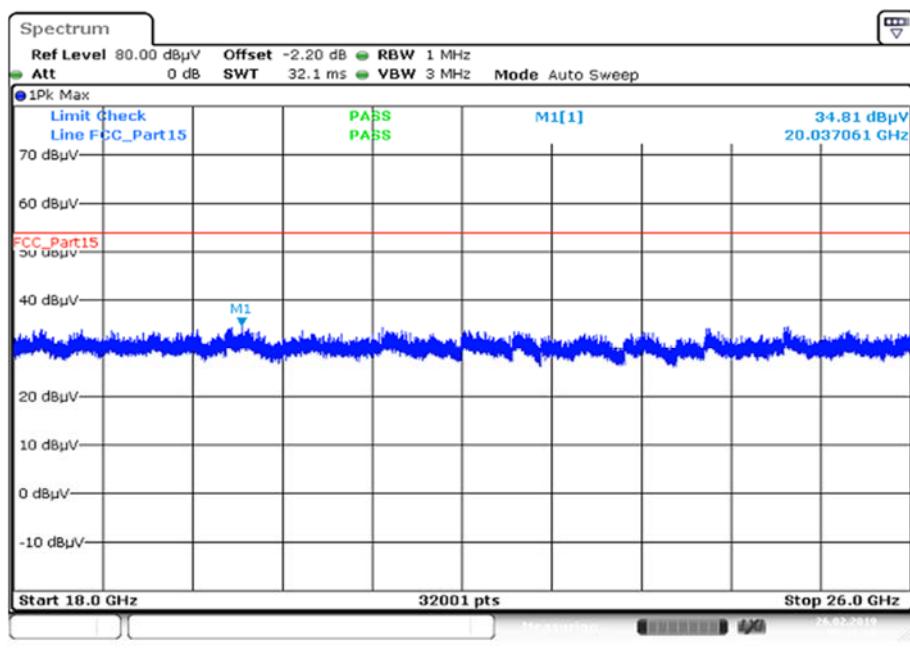
Plot 8: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel

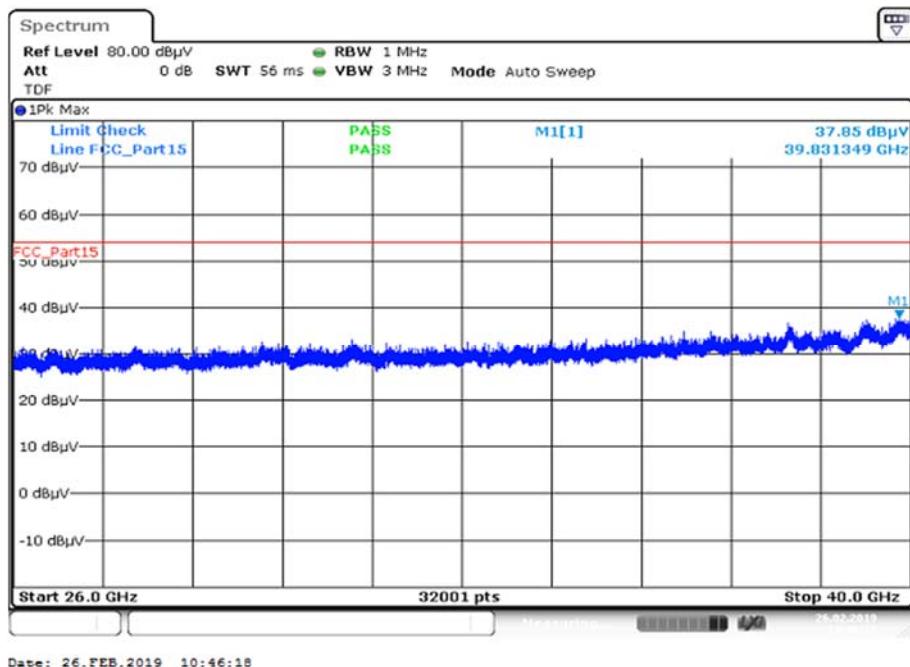
Plot 9: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

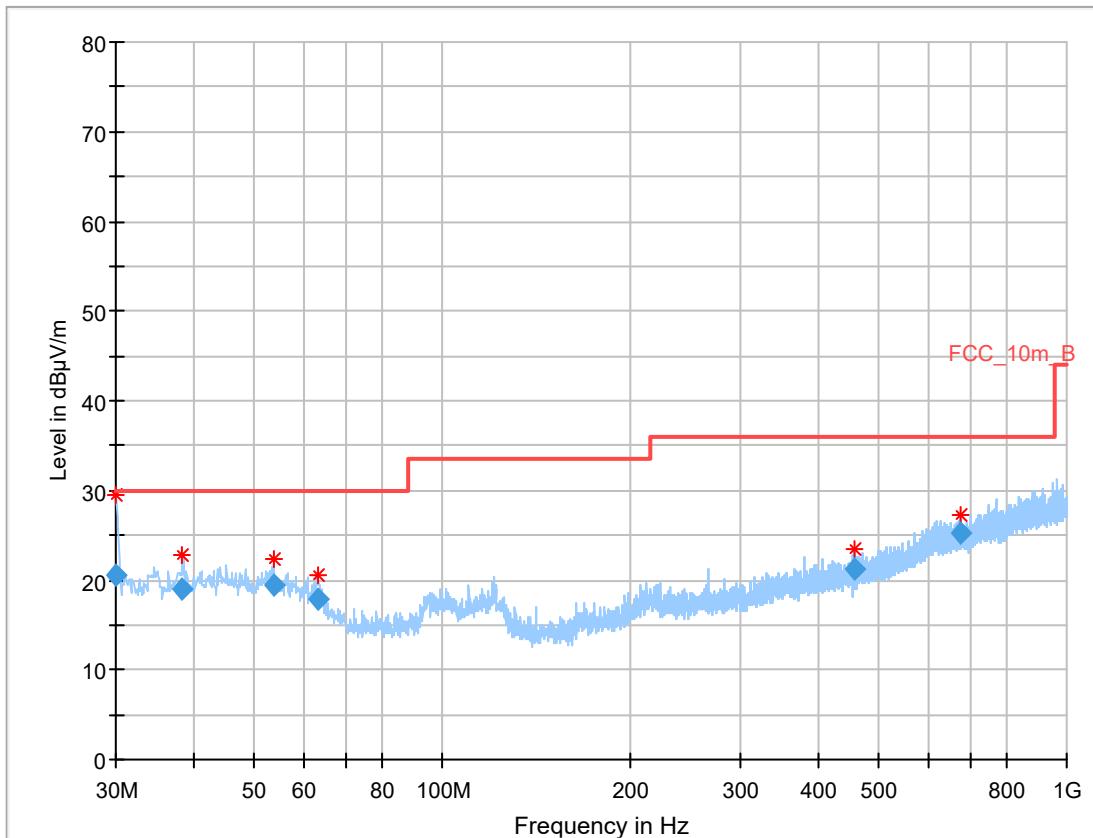


Final_Result:

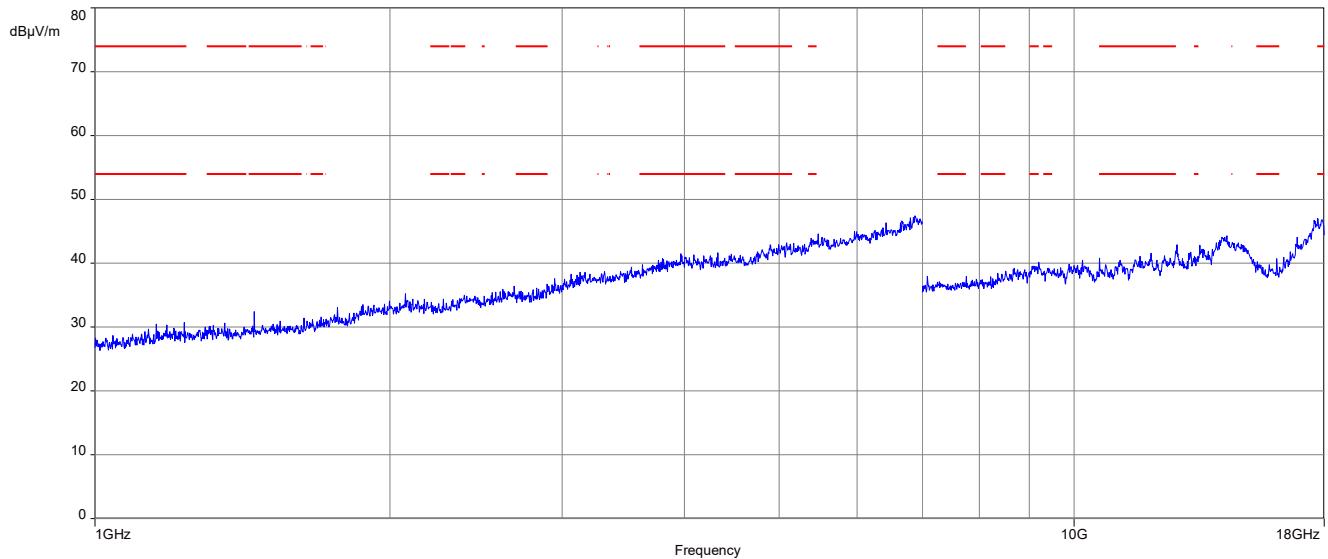
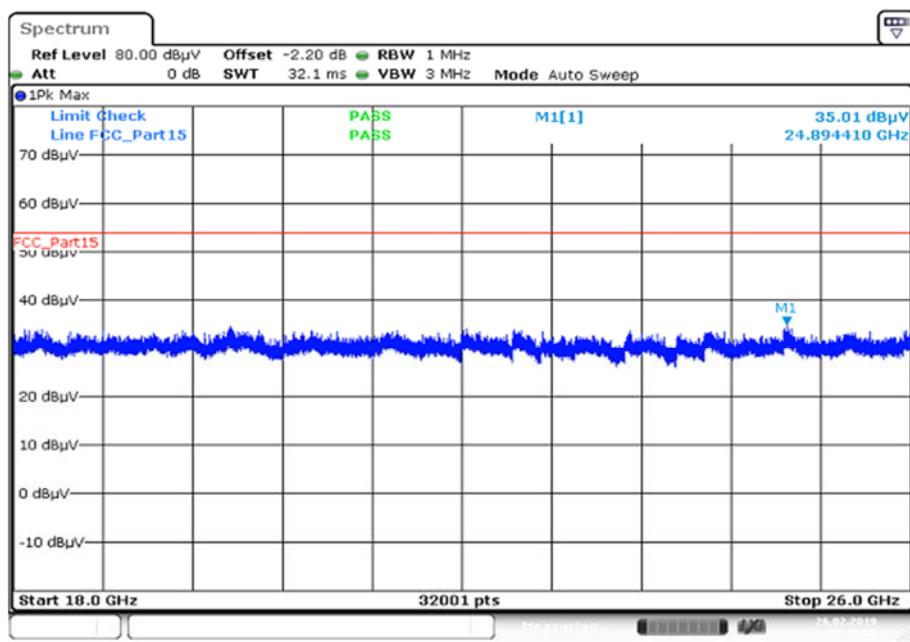
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.006	17.50	30.0	12.50	1000	120	101.0	H	163.0	13.0
44.236	19.61	30.0	10.39	1000	120	98.0	V	0.0	14.7
62.063	17.68	30.0	12.32	1000	120	160.0	V	350.0	12.5
467.683	21.27	36.0	14.73	1000	120	101.0	V	12.0	17.7
701.155	25.40	36.0	10.60	1000	120	160.0	H	301.0	21.2
958.178	29.16	36.0	6.84	1000	120	160.0	H	309.0	24.2

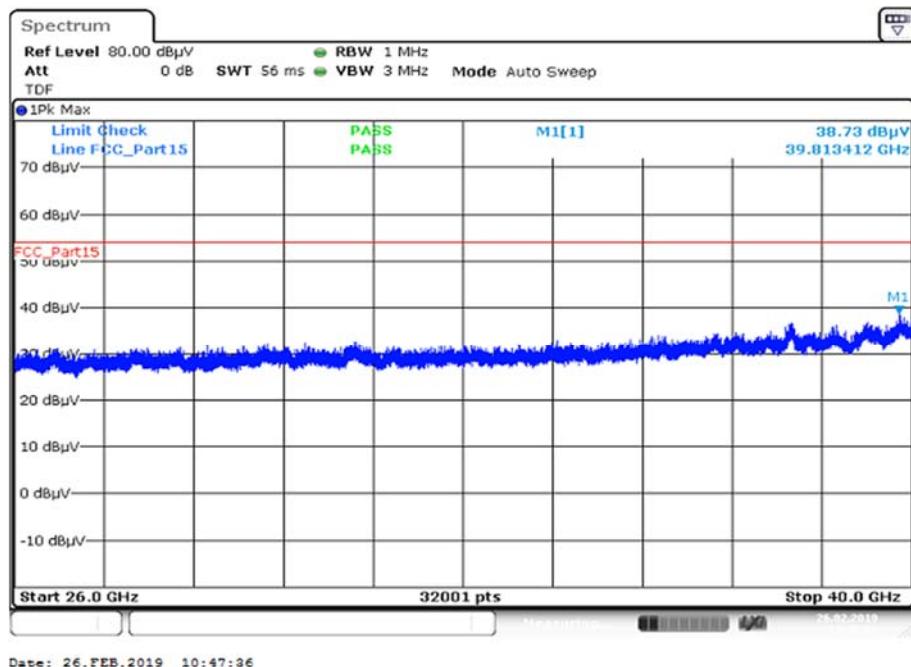
Plot 10: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel**Plot 11:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

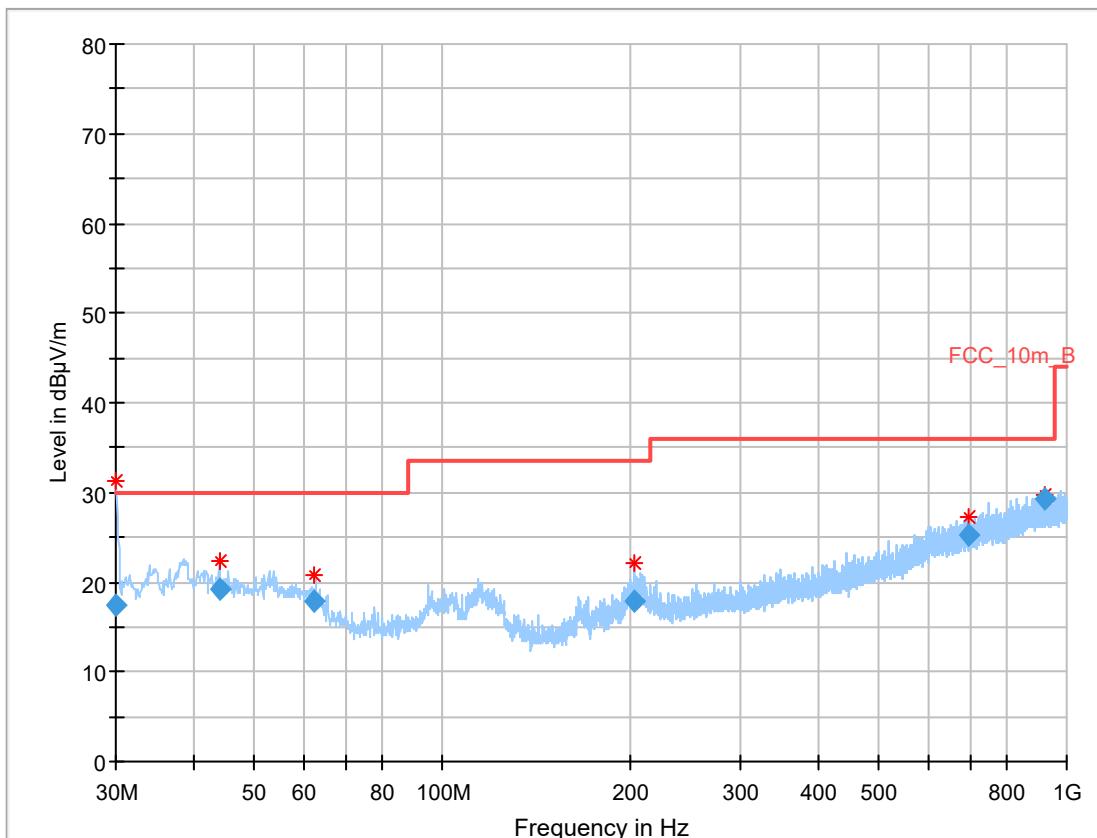
Plot 12: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

Plot 13: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; highest channel**Final_Result:**

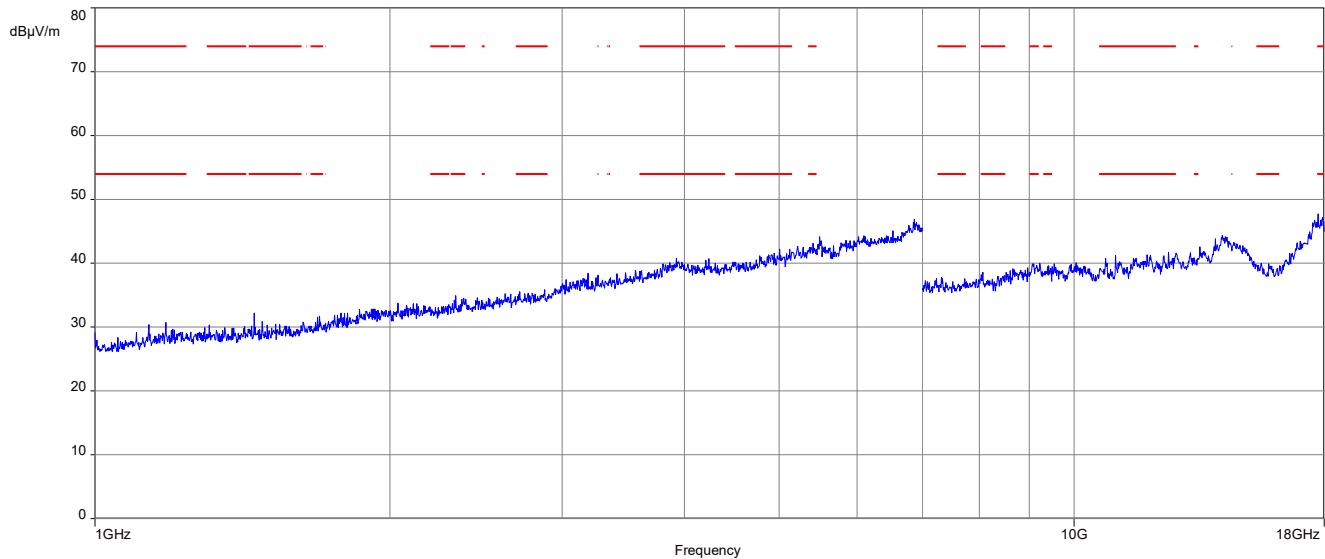
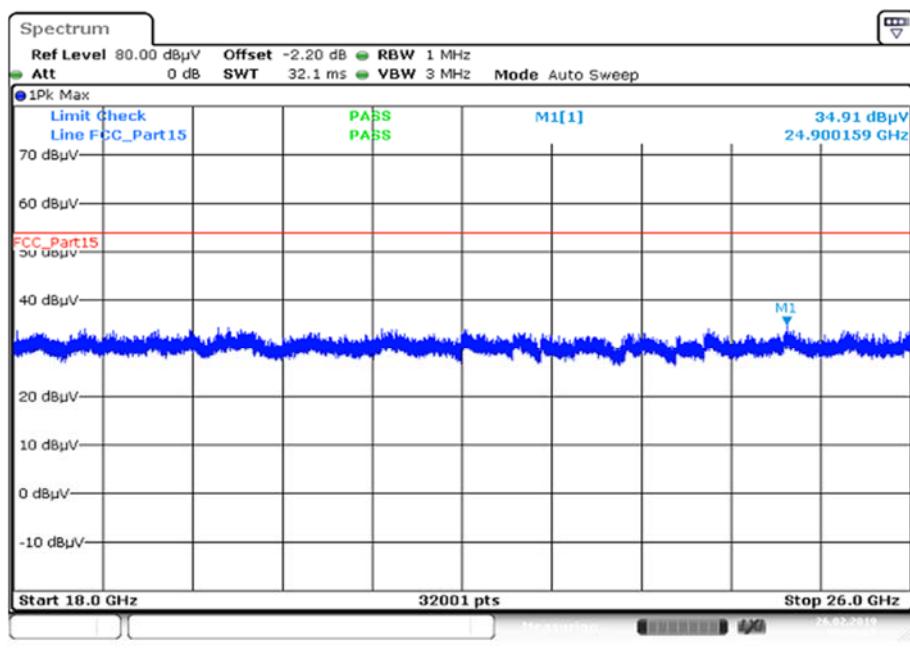
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.020	20.49	30.0	9.51	1000	120	160.0	H	249.0	13.0
38.393	18.91	30.0	11.09	1000	120	160.0	V	17.0	14.2
53.713	19.37	30.0	10.63	1000	120	101.0	V	228.0	14.4
63.115	17.81	30.0	12.19	1000	120	101.0	V	1.0	12.3
458.432	21.12	36.0	14.88	1000	120	101.0	H	235.0	17.5
676.314	25.15	36.0	10.85	1000	120	160.0	H	234.0	21.0

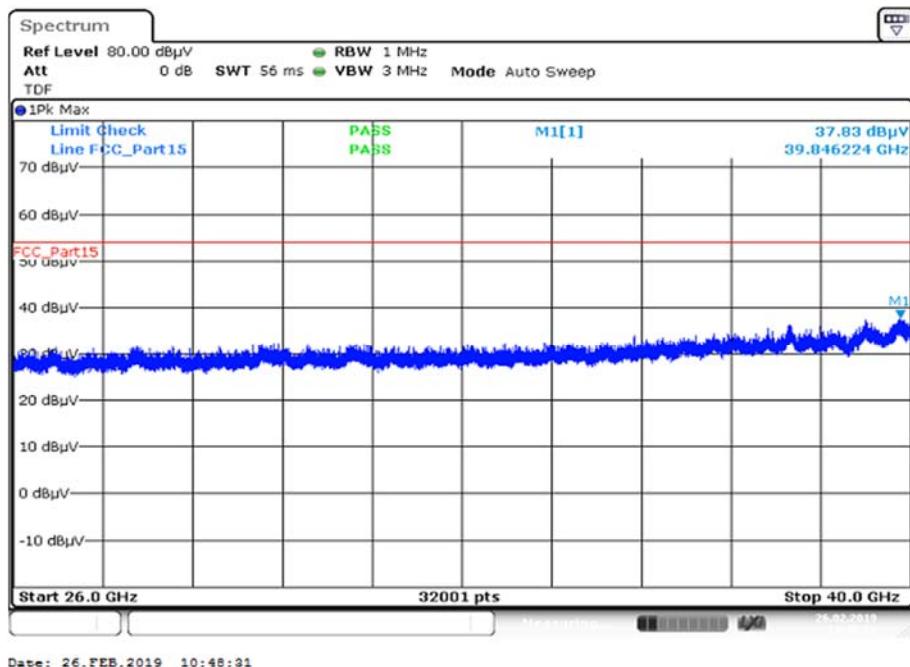
Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; highest channel**Plot 15:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

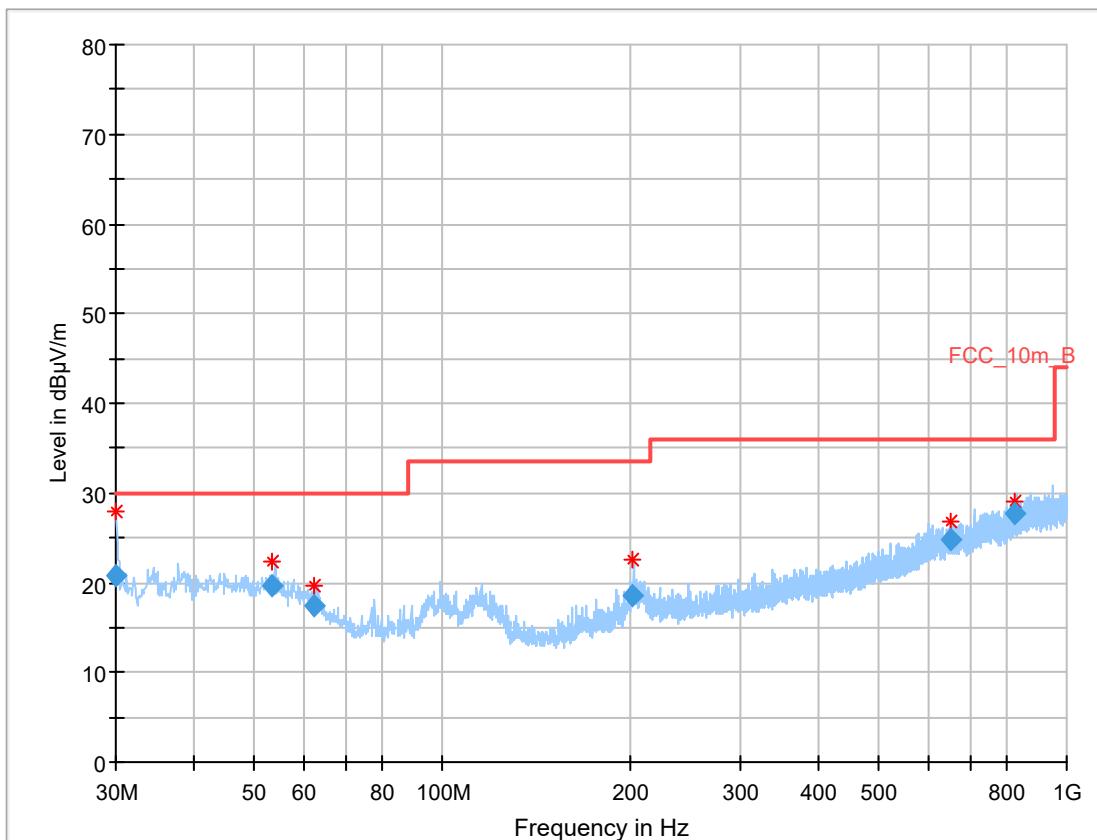
Plot 16: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

Plot 17: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Final_Result:**

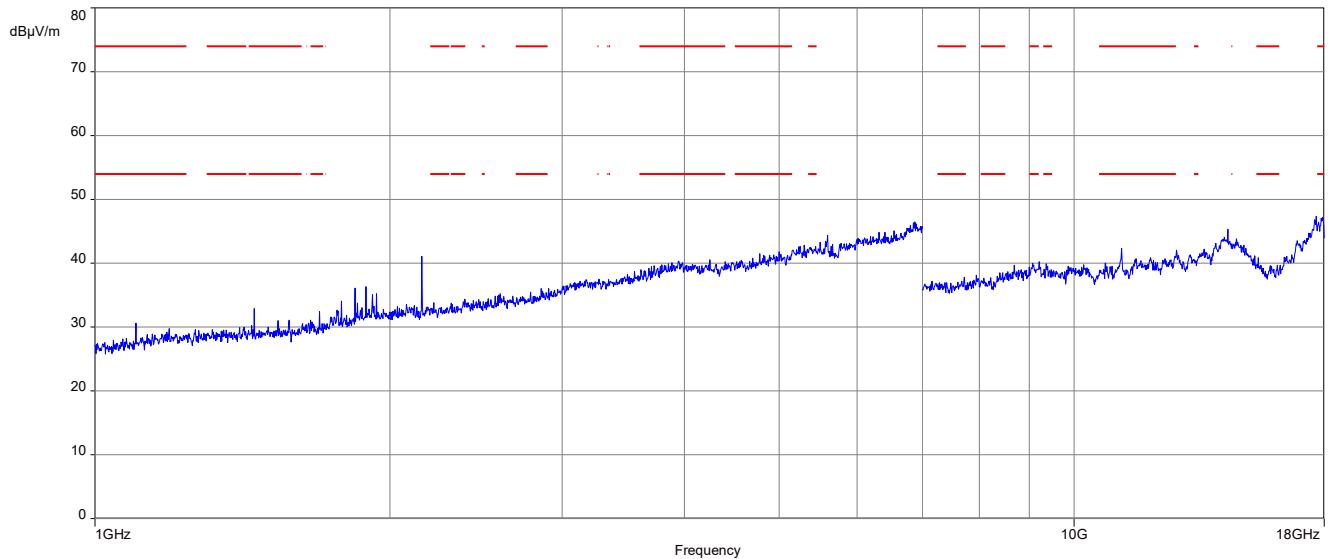
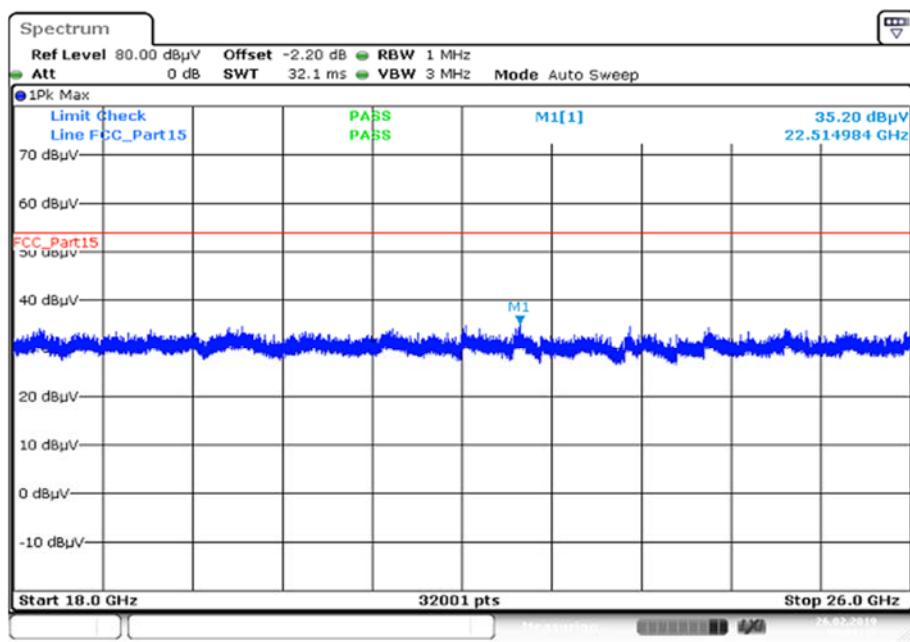
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.004	17.51	30.0	12.49	1000	120	101.0	H	27.0	13.0
44.115	19.22	30.0	10.78	1000	120	98.0	V	52.0	14.7
62.362	17.85	30.0	12.15	1000	120	160.0	V	42.0	12.5
203.161	17.79	33.5	15.71	1000	120	98.0	V	44.0	12.4
694.852	25.33	36.0	10.67	1000	120	101.0	H	82.0	21.1
922.763	29.21	36.0	6.79	1000	120	160.0	H	306.0	24.0

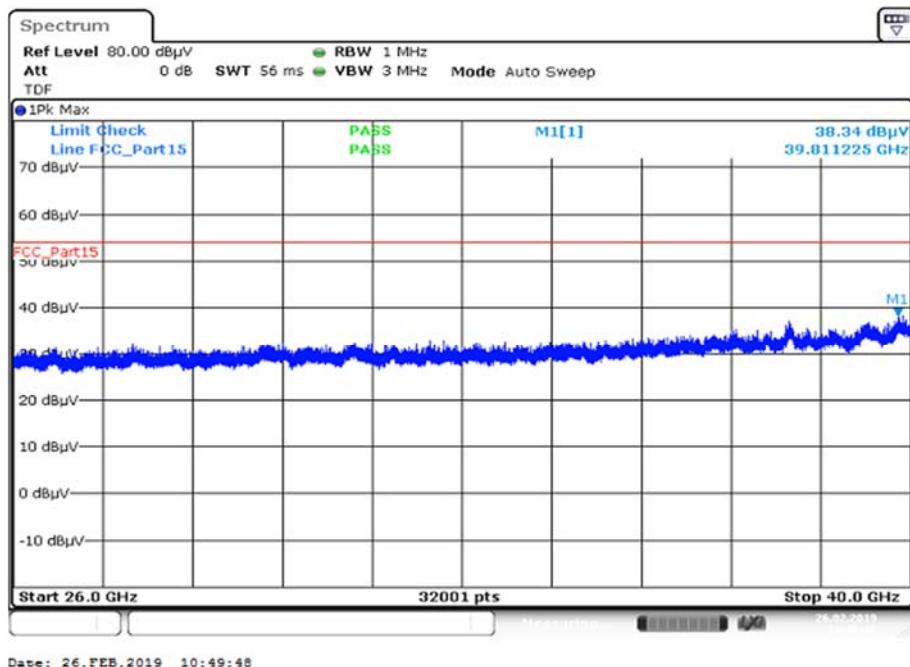
Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Plot 19:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

Plot 20: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

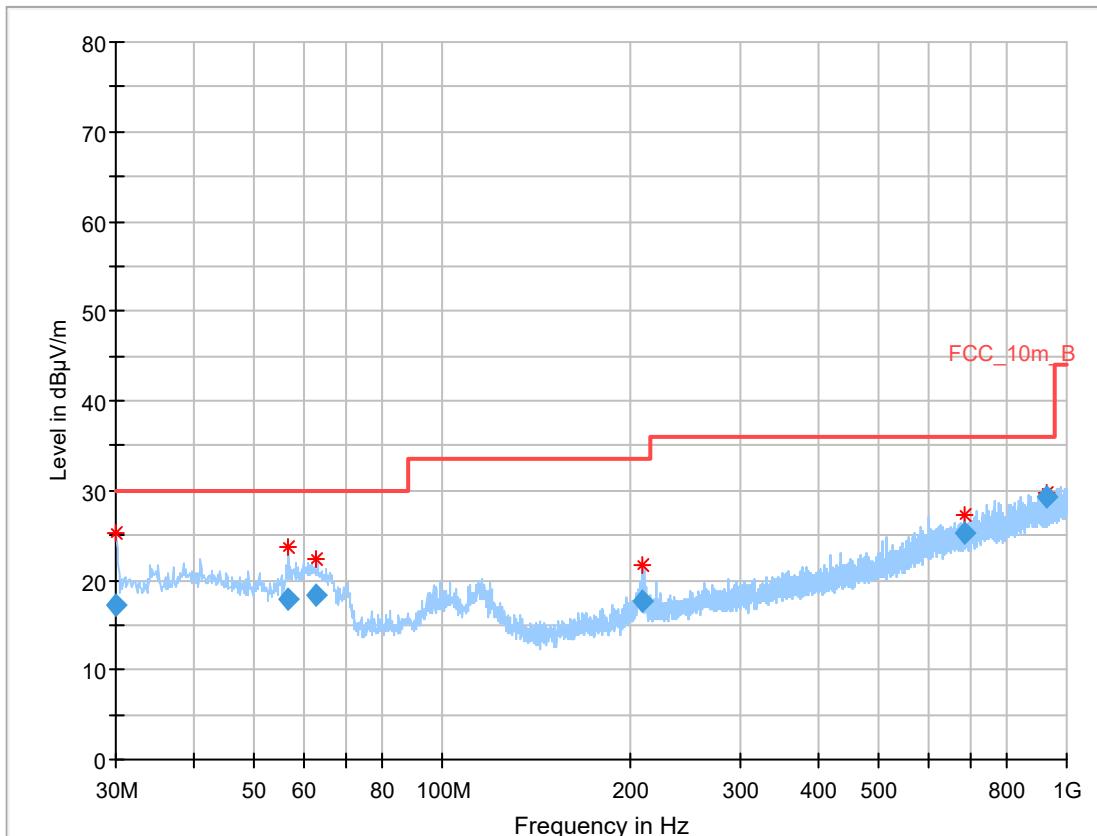
Plot 21: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Final_Result:**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.011	20.86	30.0	9.14	1000	120	160.0	H	29.0	13.0
53.499	19.63	30.0	10.37	1000	120	98.0	V	250.0	14.4
62.450	17.50	30.0	12.50	1000	120	100.0	V	13.0	12.4
201.957	18.51	33.5	14.99	1000	120	98.0	V	95.0	12.4
650.886	24.85	36.0	11.15	1000	120	160.0	H	343.0	20.8
826.612	27.81	36.0	8.19	1000	120	160.0	H	0.0	22.8

Plot 22: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Plot 23:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

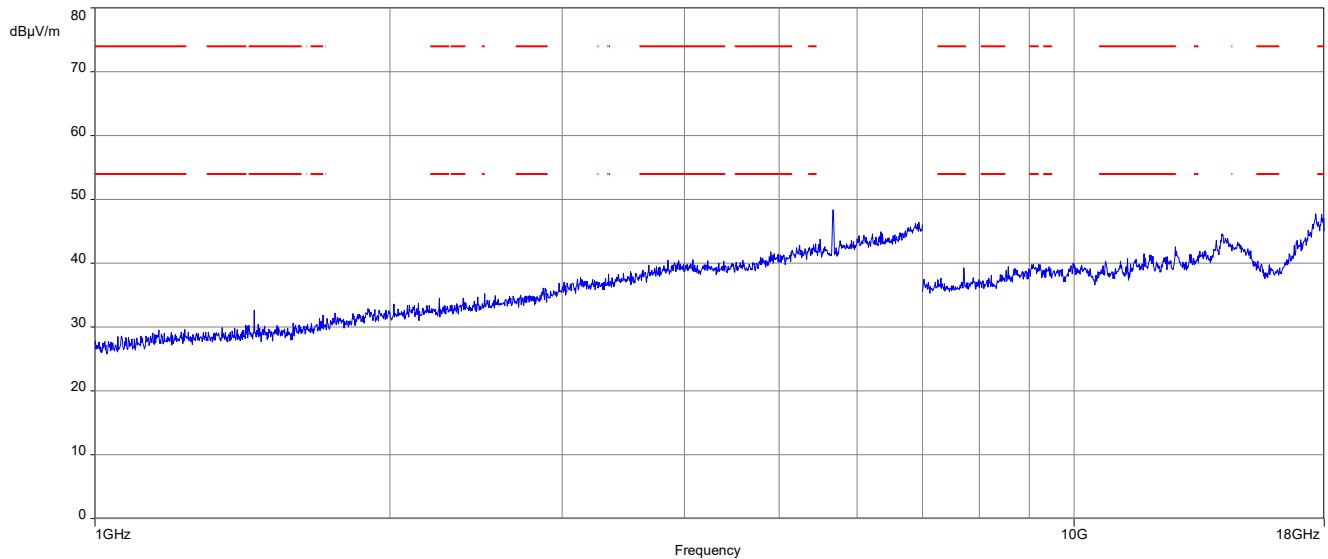
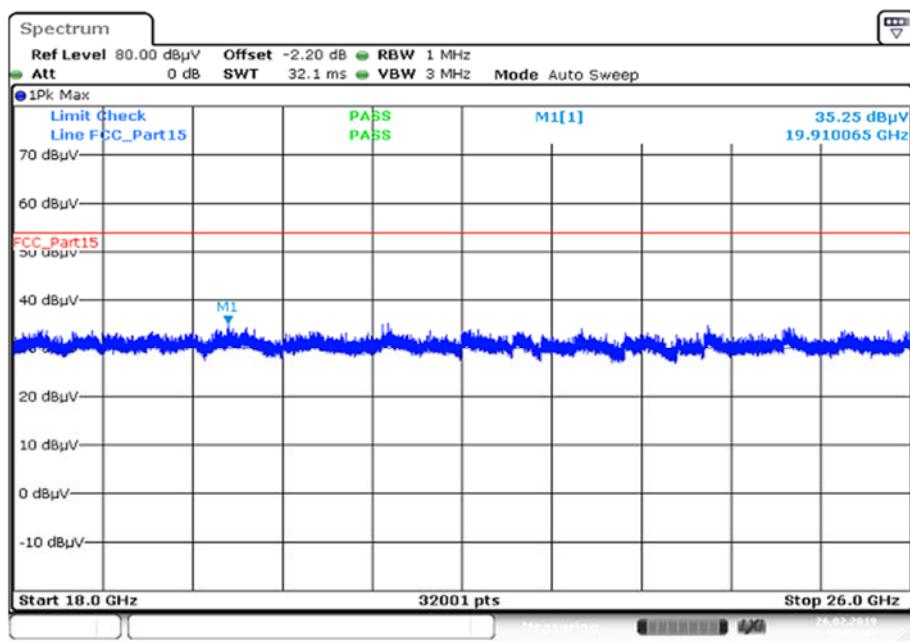
Plot 24: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

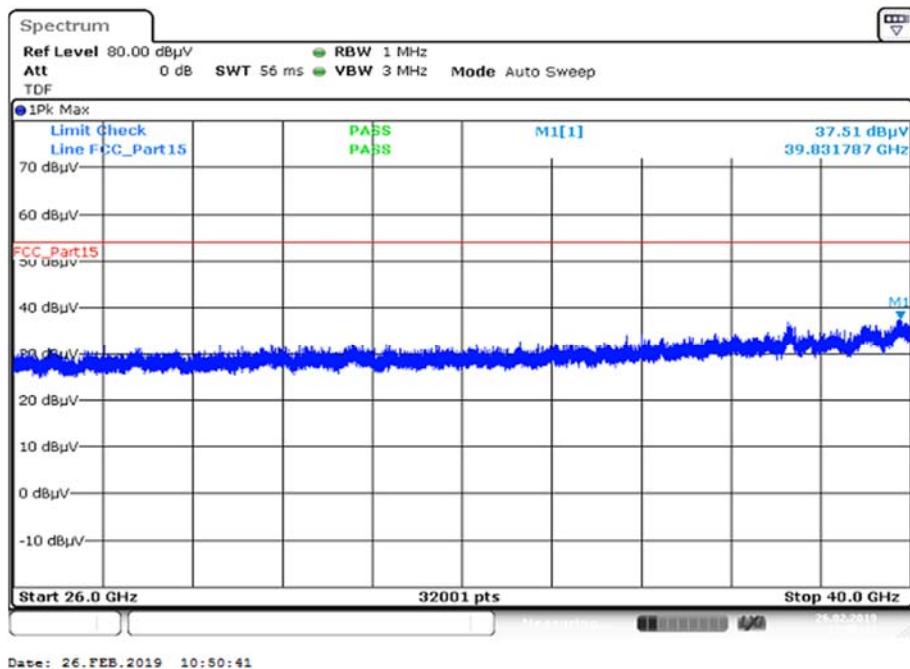
Plot 25: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

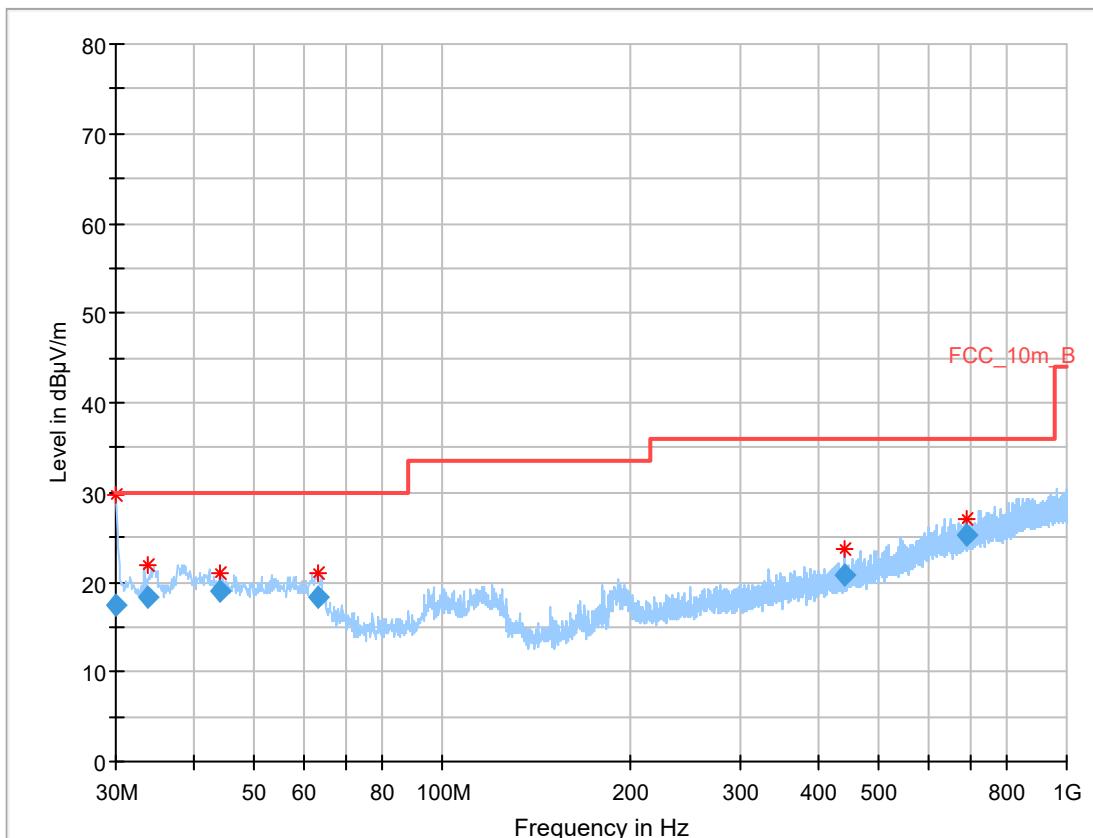


Final_Result:

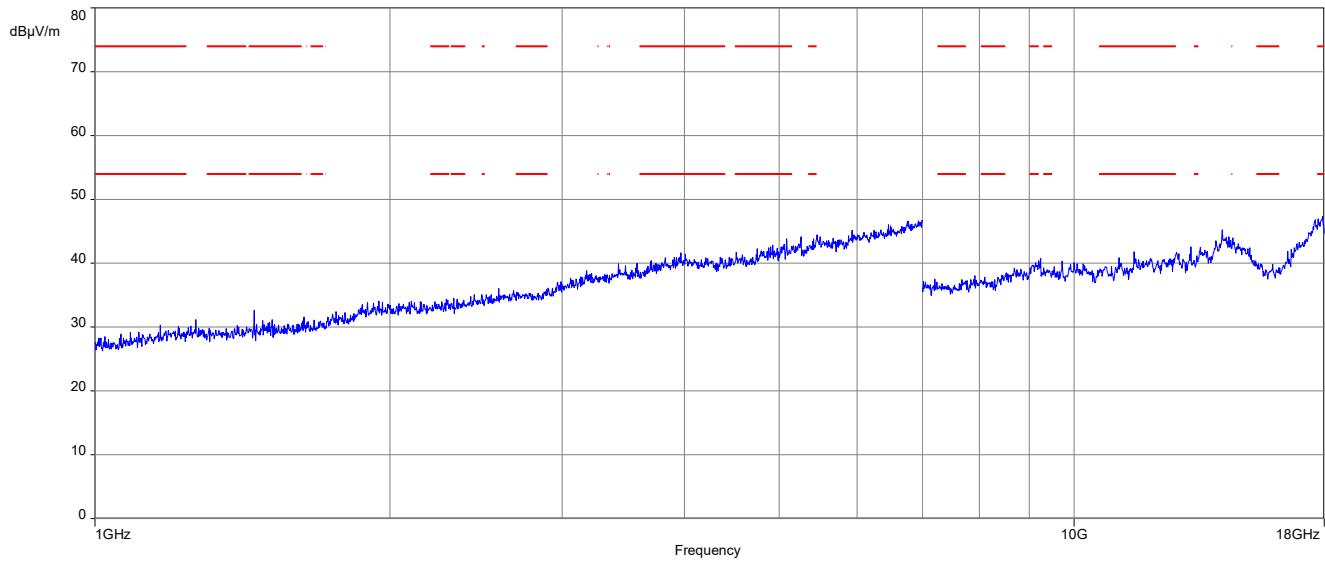
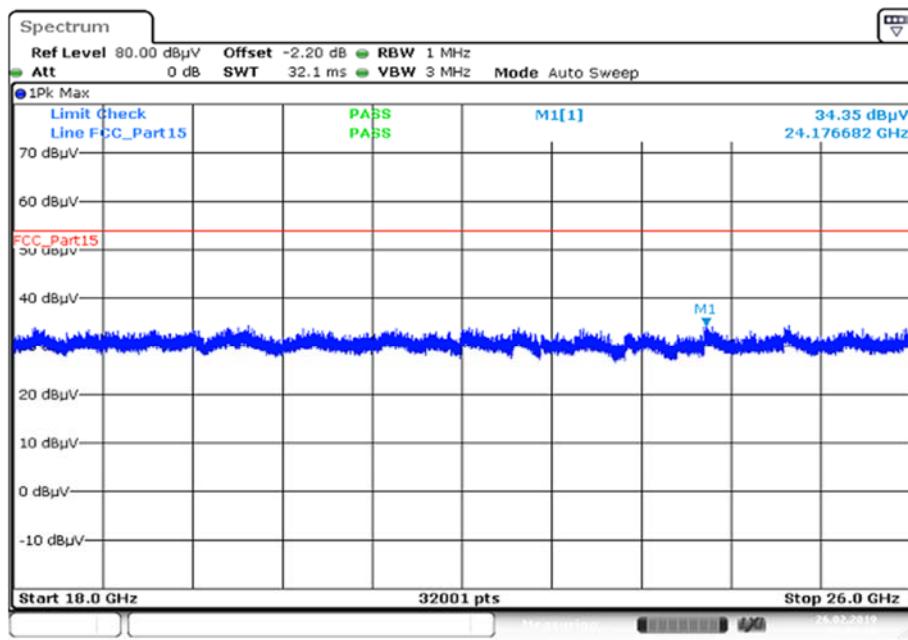
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.045	17.15	30.0	12.85	1000	120	101.0	H	350.0	13.0
56.426	17.87	30.0	12.13	1000	120	160.0	V	0.0	13.9
62.889	18.27	30.0	11.73	1000	120	160.0	V	227.0	12.3
208.775	17.68	33.5	15.82	1000	120	98.0	V	98.0	12.6
687.663	25.29	36.0	10.71	1000	120	160.0	H	261.0	21.0
927.629	29.17	36.0	6.83	1000	120	160.0	H	8.0	24.0

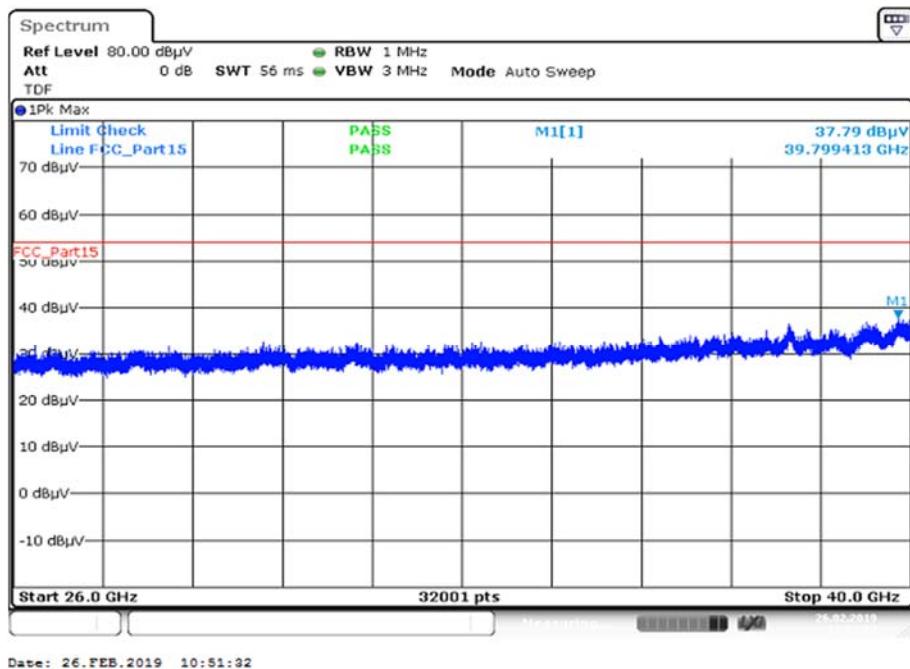
Plot 26: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel**Plot 27:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

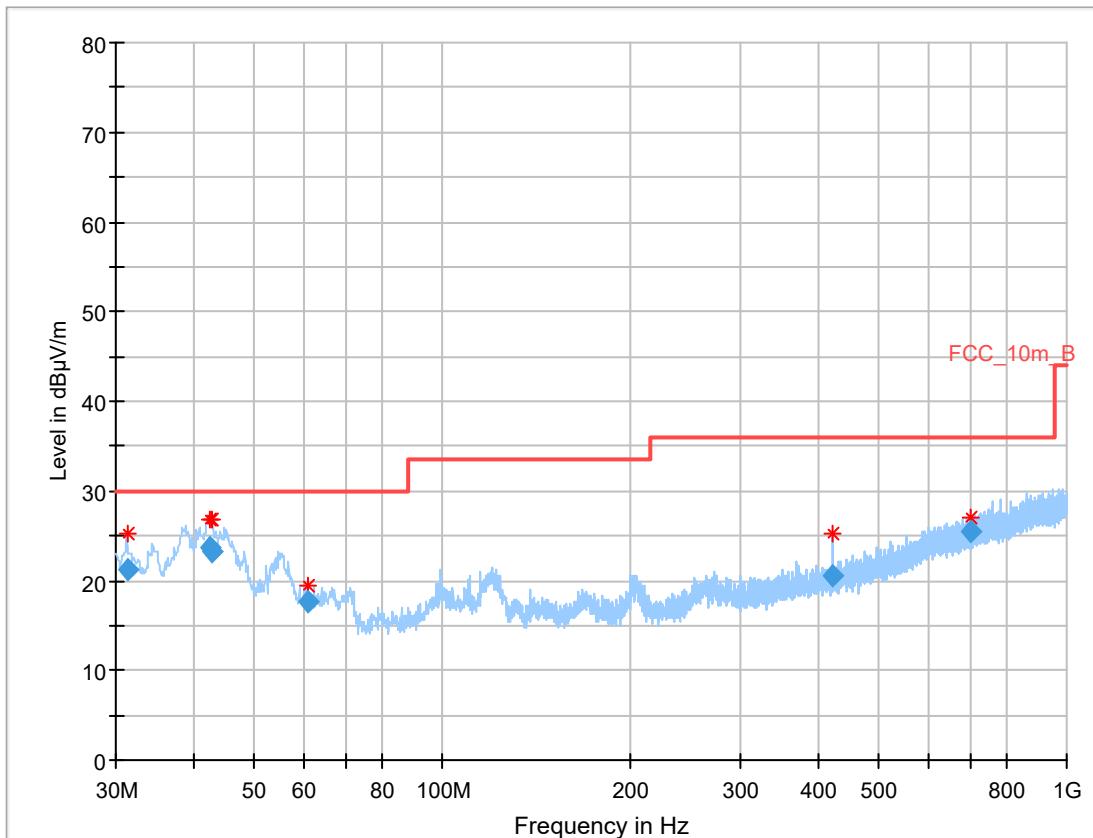
Plot 28: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

Plot 29: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Final_Result:**

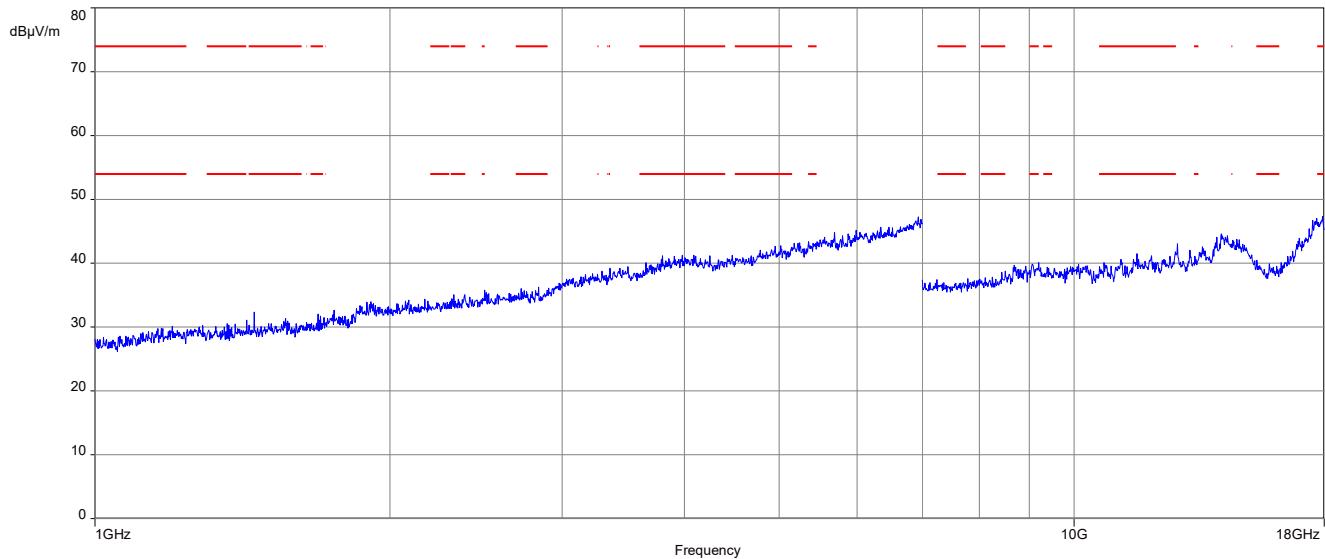
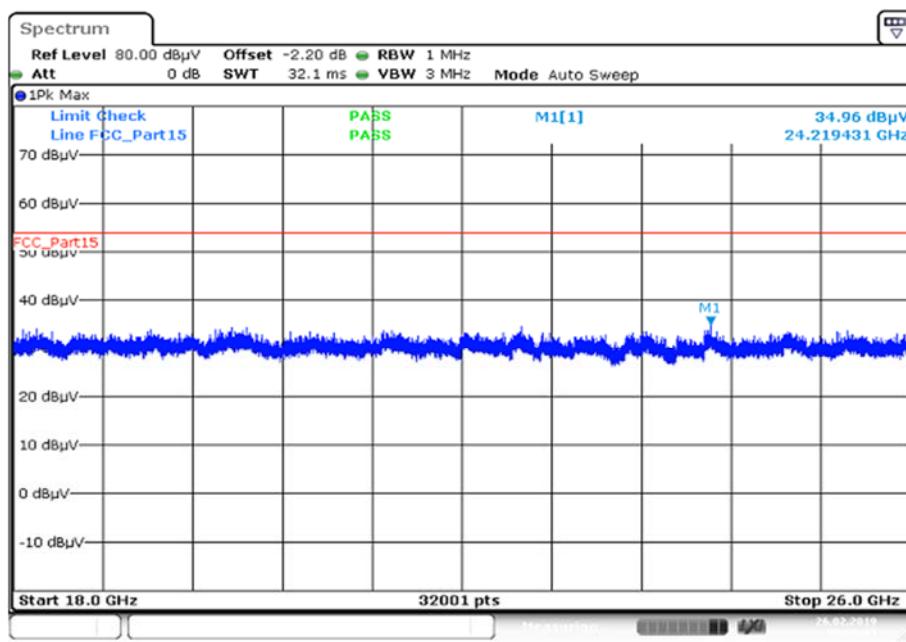
Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.026	17.35	30.0	12.65	1000	120	100.0	H	292.0	13.0
33.649	18.23	30.0	11.77	1000	120	98.0	V	349.0	13.6
44.198	19.08	30.0	10.92	1000	120	101.0	V	144.0	14.7
63.090	18.33	30.0	11.67	1000	120	160.0	V	225.0	12.3
440.046	20.87	36.0	15.13	1000	120	101.0	V	302.0	17.2
691.210	25.28	36.0	10.72	1000	120	160.0	V	4.0	21.1

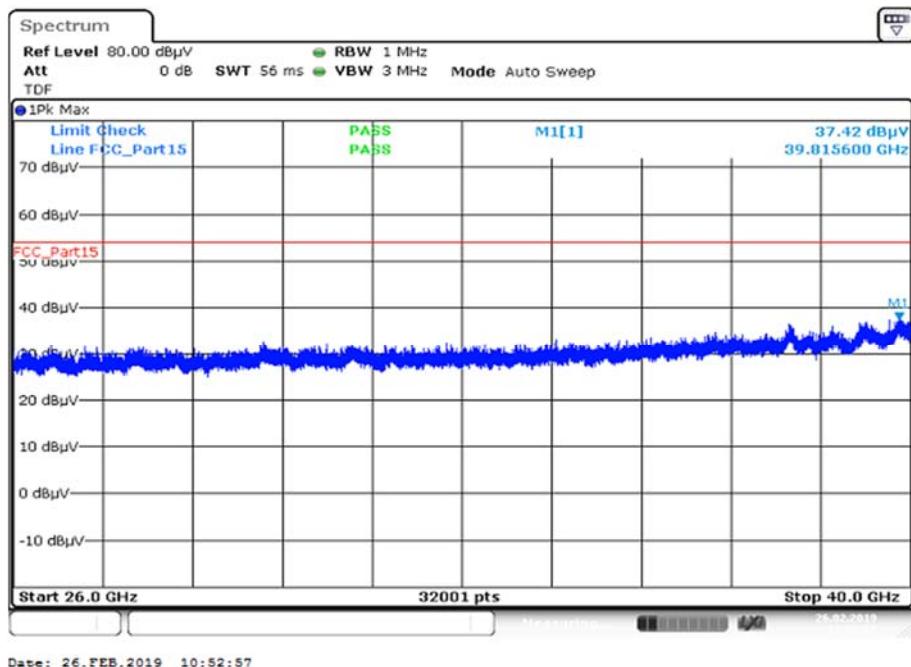
Plot 30: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Plot 31:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

Plot 32: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

Plot 33: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; highest channel**Final_Result:**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.247	21.20	30.0	8.80	1000	120	101.0	V	156.0	13.2
42.373	23.78	30.0	6.22	1000	120	98.0	V	38.0	14.6
42.604	23.32	30.0	6.68	1000	120	98.0	V	202.0	14.6
60.830	17.63	30.0	12.37	1000	120	101.0	V	350.0	12.8
422.475	20.56	36.0	15.44	1000	120	160.0	H	335.0	17.0
702.155	25.44	36.0	10.56	1000	120	101.0	H	350.0	21.2

Plot 34: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel**Plot 35:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; highest channel

Plot 36: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; highest channel

11.12 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode.

Measurement:

Measurement parameter	
Detector:	Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz
Span:	30 MHz to 40 GHz
Trace mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %
Test setup:	See chapter 6.2 – B
Measurement uncertainty:	See chapter 8

Limits:

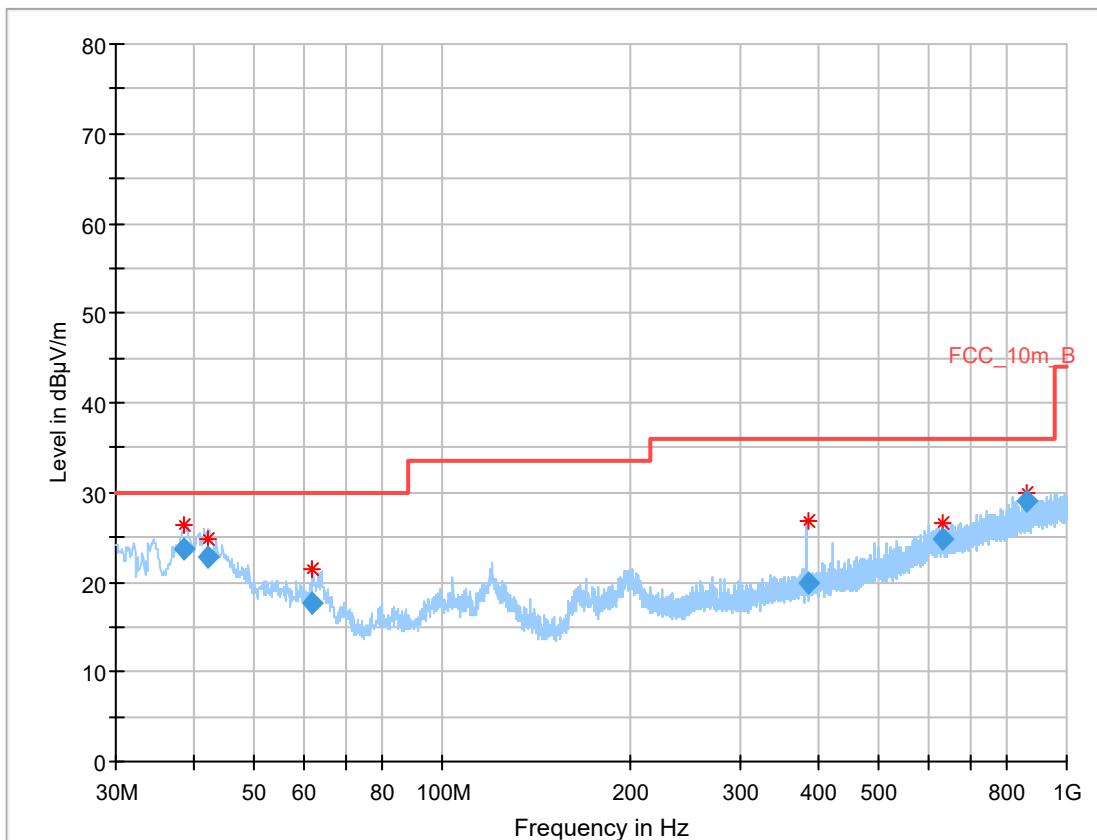
RX Spurious Emissions Radiated		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results:

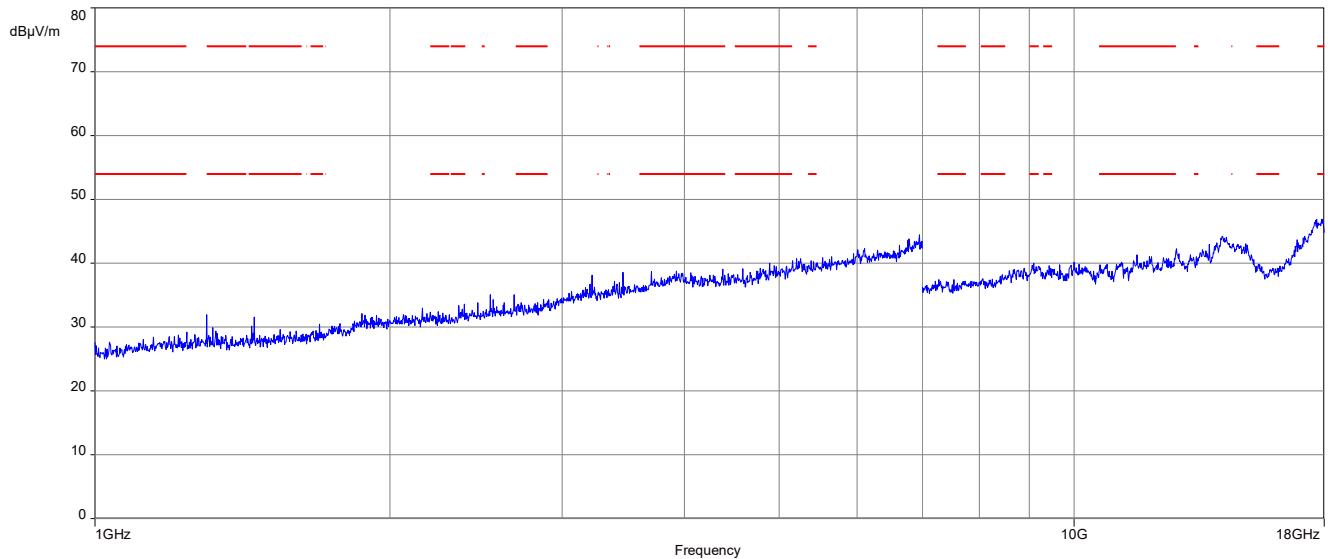
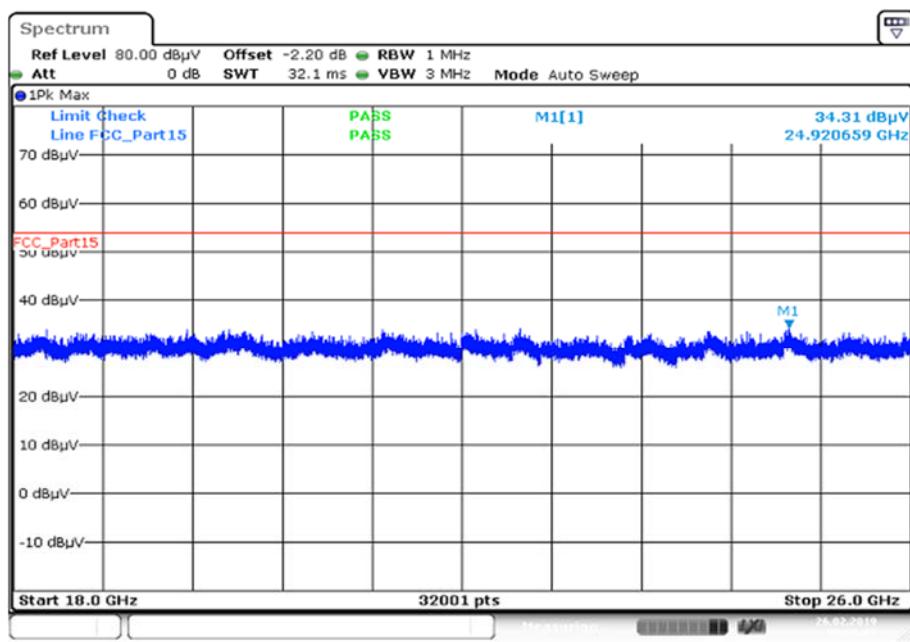
RX Spurious Emissions Radiated [dB μ V/m]		
F [MHz]	Detector	Level [dB μ V/m]

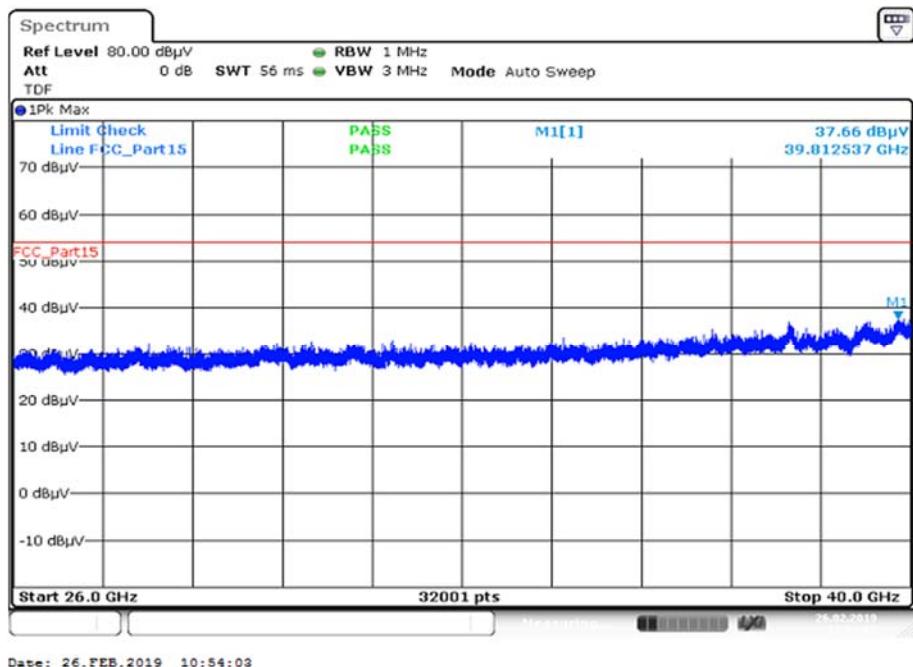
Plots:

Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization

**Final_Result:**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
38.649	23.70	30.0	6.30	1000	120	98.0	V	279.0	14.2
42.188	22.84	30.0	7.16	1000	120	160.0	V	263.0	14.5
61.914	17.56	30.0	12.44	1000	120	101.0	V	323.0	12.6
384.464	19.96	36.0	16.04	1000	120	160.0	H	266.0	16.5
633.797	24.71	36.0	11.29	1000	120	160.0	V	294.0	20.6
859.690	28.95	36.0	7.05	1000	120	101.0	H	350.0	23.3

Plot 2: 1 GHz to 18 GHz, vertical & horizontal polarization**Plot 3:** 18 GHz to 26 GHz, vertical & horizontal polarization

Plot 4: 26 GHz to 40 GHz, vertical & horizontal polarization

11.13 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 sub clause 6.4 – A
Measurement uncertainty:	See sub clause 8

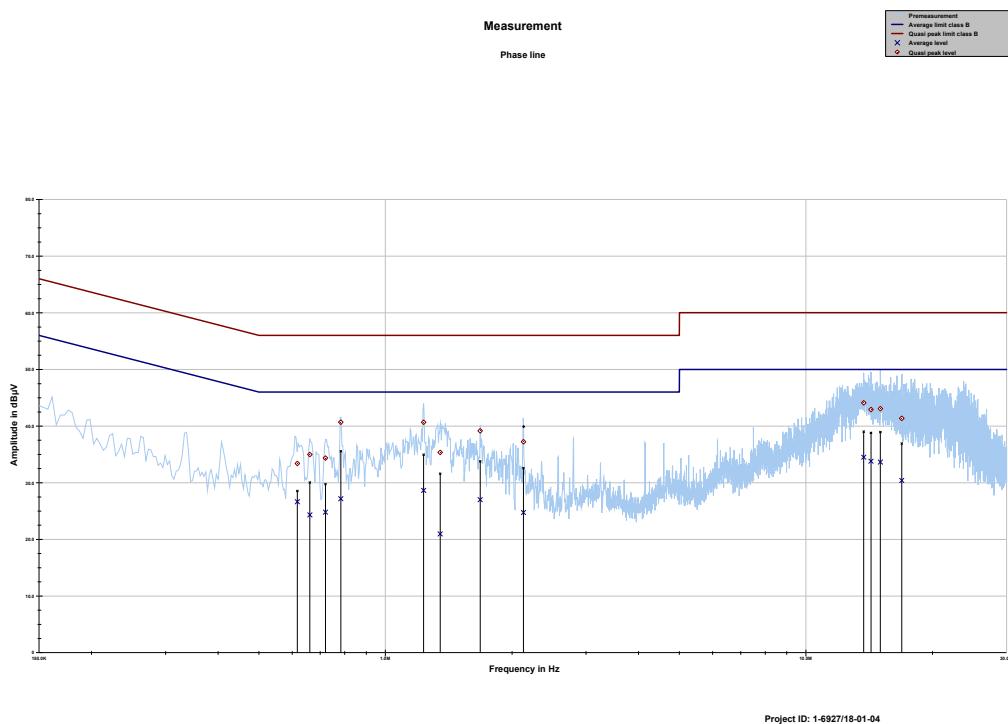
Limits:

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

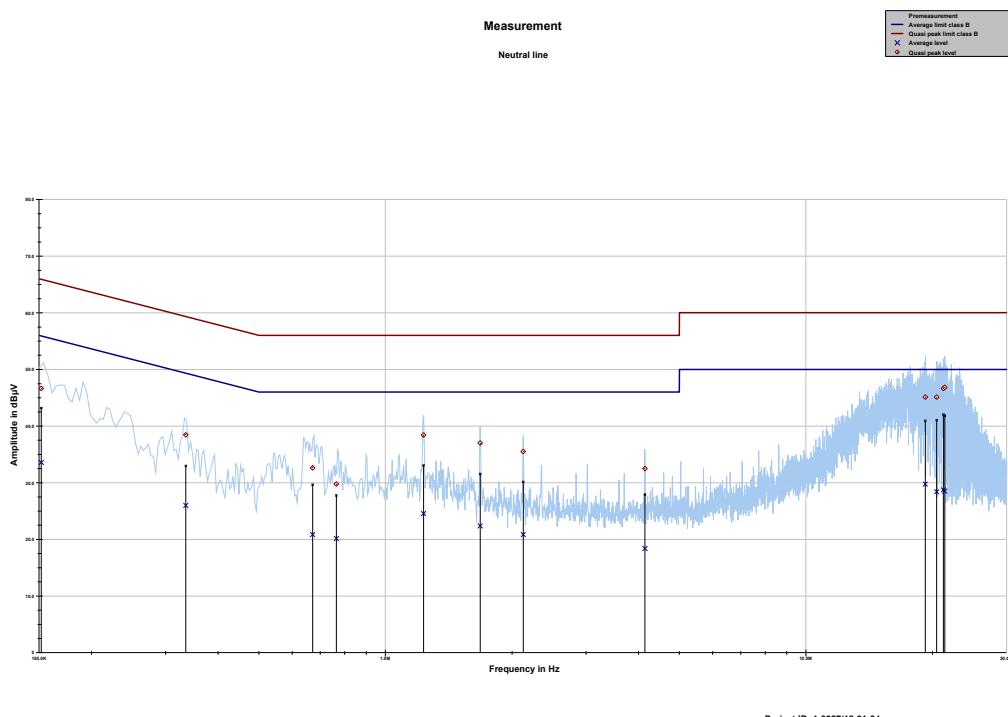
*Decreases with the logarithm of the frequency

Results:

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

Plots:**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
0.617398	33.39	22.61	56.000	26.64	19.36	46.000
0.661040	34.99	21.01	56.000	24.31	21.69	46.000
0.720033	34.35	21.65	56.000	24.79	21.21	46.000
0.783528	40.69	15.31	56.000	27.17	18.83	46.000
1.232918	40.67	15.33	56.000	28.65	17.35	46.000
1.349883	35.34	20.66	56.000	20.97	25.03	46.000
1.679865	39.16	16.84	56.000	27.01	18.99	46.000
2.128990	37.23	18.77	56.000	24.74	21.26	46.000
13.720467	44.10	15.90	60.000	34.51	15.49	50.000
14.279560	42.92	17.08	60.000	33.80	16.20	50.000
15.031560	43.07	16.93	60.000	33.65	16.35	50.000
16.903465	41.36	18.64	60.000	30.39	19.61	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
0.151943	46.65	19.24	65.893	33.57	22.38	55.944
0.335167	38.45	20.87	59.322	25.98	24.73	50.710
0.671392	32.62	23.38	56.000	20.85	25.15	46.000
0.764228	29.76	26.24	56.000	20.12	25.88	46.000
1.232072	38.42	17.58	56.000	24.54	21.46	46.000
1.680178	37.01	18.99	56.000	22.37	23.63	46.000
2.127410	35.51	20.49	56.000	20.85	25.15	46.000
4.142305	32.48	23.52	56.000	18.39	27.61	46.000
19.226972	45.10	14.90	60.000	29.75	20.25	50.000
20.460861	45.10	14.90	60.000	28.40	21.60	50.000
21.227486	46.64	13.36	60.000	28.74	21.26	50.000
21.382981	46.82	13.18	60.000	28.49	21.51	50.000

12 Observations

No observations except those reported with the single test cases have been made.

Annex A Glossary

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

Annex B Document history

Version	Applied changes	Date of release
-/-	Initial release	2019-03-20

Annex C Accreditation Certificate – D-PL-12076-01-04

first page	last page
<p> Deutsche Akkreditierungsstelle GmbH</p> <p>Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition</p> <p>Accreditation </p> <p>The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory CTC advanced GmbH Untertürkheimer Straße 6-10, 66117 Saarbrücken</p> <p>is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:</p> <p>Telecommunication (TC) and Electromagnetic Compatibility (EMC) for Canadian Standards</p> <p>The accreditation certificate shall only apply in connection with the notice of accreditation of 11.01.2019 with the accreditation number D-PL-12076-01 and is valid until 21.04.2021. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 7 pages.</p> <p>Registration number of the certificate: D-PL-12076-01-04</p> <p>Frankfurt am Main, 11.01.2019  Dipl.-Ing. Uwe Zimmermann Head of Division</p> <p><small>See notes overleaf.</small></p>	<p>Deutsche Akkreditierungsstelle GmbH</p> <p>Office Berlin Spittelmarkt 10 10117 Berlin</p> <p>Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main</p> <p>Office Braunschweig Bundesallee 100 38116 Braunschweig</p> <p>The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.</p> <p>No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.</p> <p>The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 238 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.</p> <p>The up-to-date state of membership can be retrieved from the following websites: EA: www.european-accreditation.org ILAC: www.ilac.org IAF: www.iafnu</p>

Note: The current certificate annex is published on the website (link see below) of the Accreditation Body DAkkS or may be received by CTC advanced GmbH on request

<https://www.dakks.de/as/ast/d/D-PL-12076-01-04.pdf>

Annex D Accreditation Certificate – D-PL-12076-01-05

first page	last page
 Deutsche Akkreditierungsstelle GmbH Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition Accreditation  The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory CTC advanced GmbH Untertürkheimer Straße 6-10, 66117 Saarbrücken is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields: Telecommunication (FCC Requirements) The accreditation certificate shall only apply in connection with the notice of accreditation of 11.01.2019 with the accreditation number D-PL-12076-01 and is valid until 21.04.2021. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 5 pages. Registration number of the certificate: D-PL-12076-01-05  Frankfurt am Main, 11.01.2019 <small>See notes overleaf.</small>	Deutsche Akkreditierungsstelle GmbH Office Berlin Spittelmarkt 10 10117 Berlin Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main Office Braunschweig Bundesallee 100 38116 Braunschweig The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf. No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS. The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations. The up-to-date state of membership can be retrieved from the following websites: EA: www.european-accreditation.org ILAC: www.ilac.org IAF: www.iaf.nu

Note: The current certificate annex is published on the website (link see below) of the Accreditation Body DAkkS or may be received by CTC advanced GmbH on request

<https://www.dakks.de/as/ast/d/D-PL-12076-01-05.pdf>

END OF TEST REPORT