

## 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:	$\geq 3 \times RBW$
Span:	See plots!
Trace mode:	Max Hold
Test setup:	See sub clause 6.2 – A
Measurement uncertainty:	See sub clause 8

### Limits:

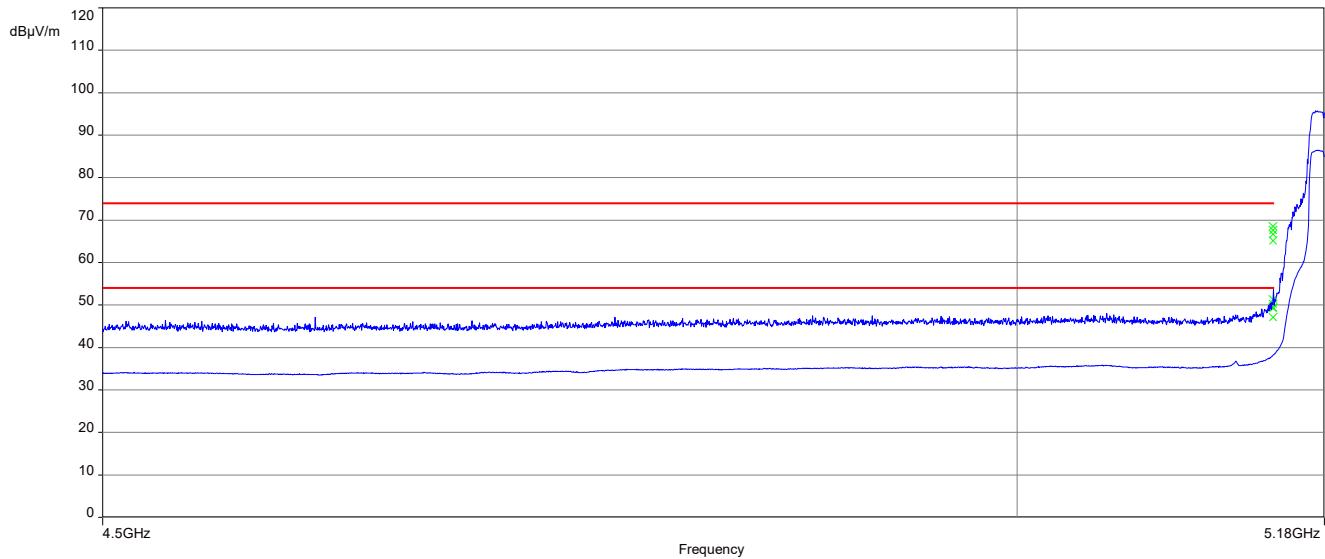
Band Edge Compliance Radiated	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth 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 $\mu$ V/m (peak) 54 dB $\mu$ V/m (average)	

### Result:

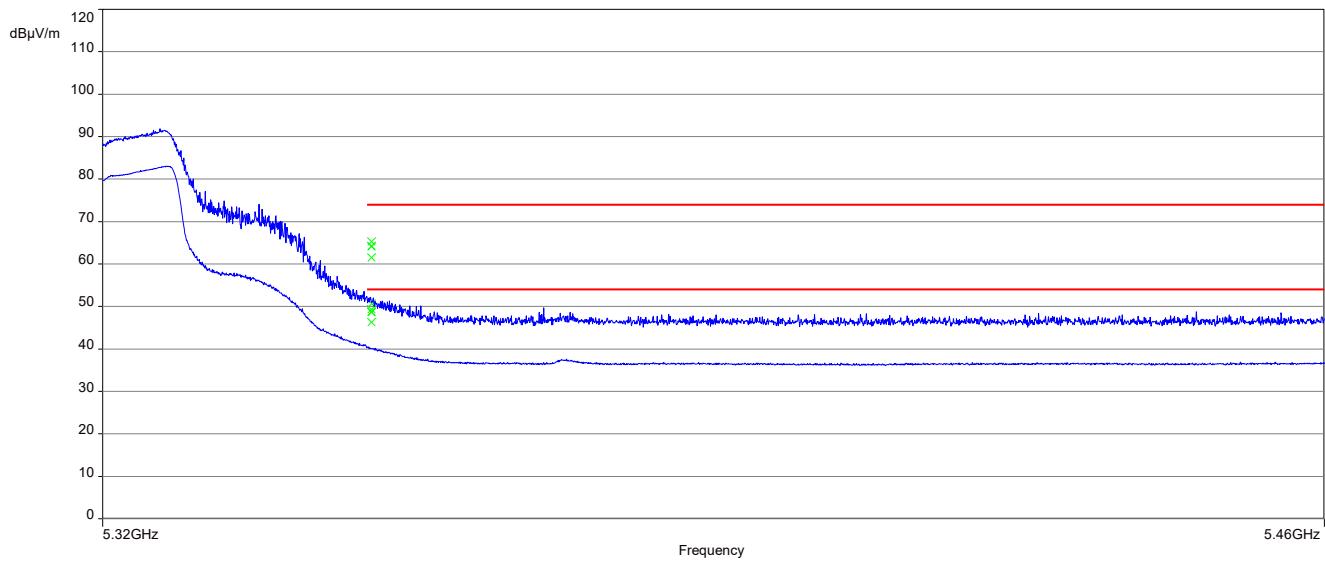
Scenario	Band Edge Compliance Radiated [dB $\mu$ V/m]
band edge	< 74 dB $\mu$ V/m (peak) < 54 dB $\mu$ V/m (average)

**Plots:**

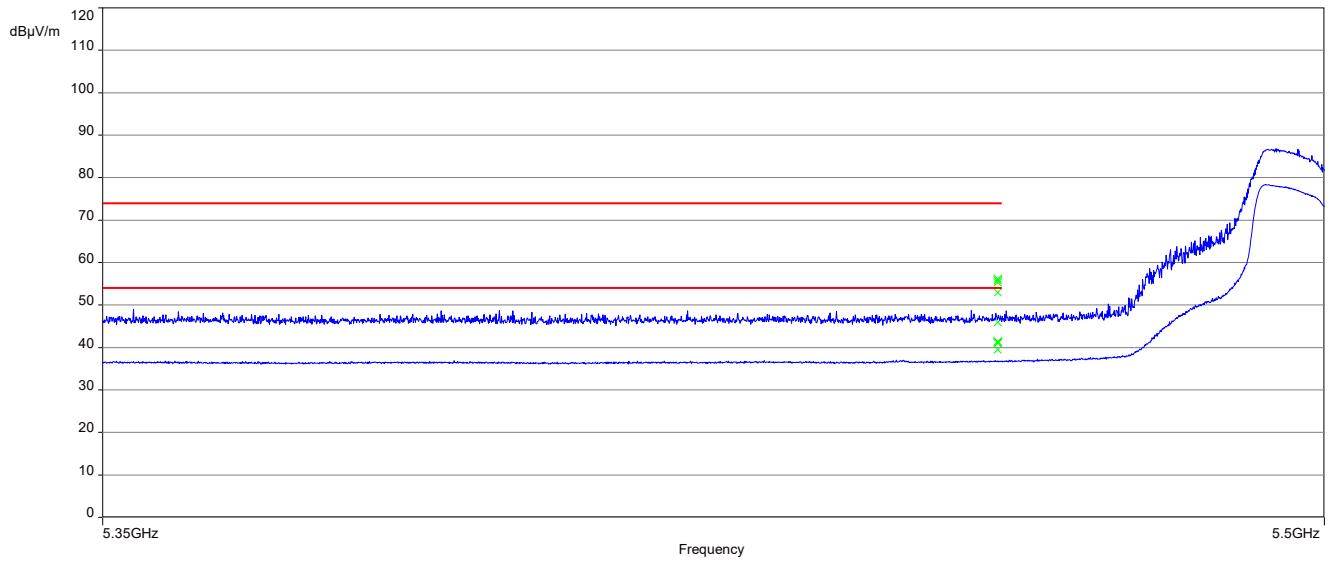
**Plot 1:** lower band edge; U-NII-1; lowest channel; 20 MHz channel bandwidth



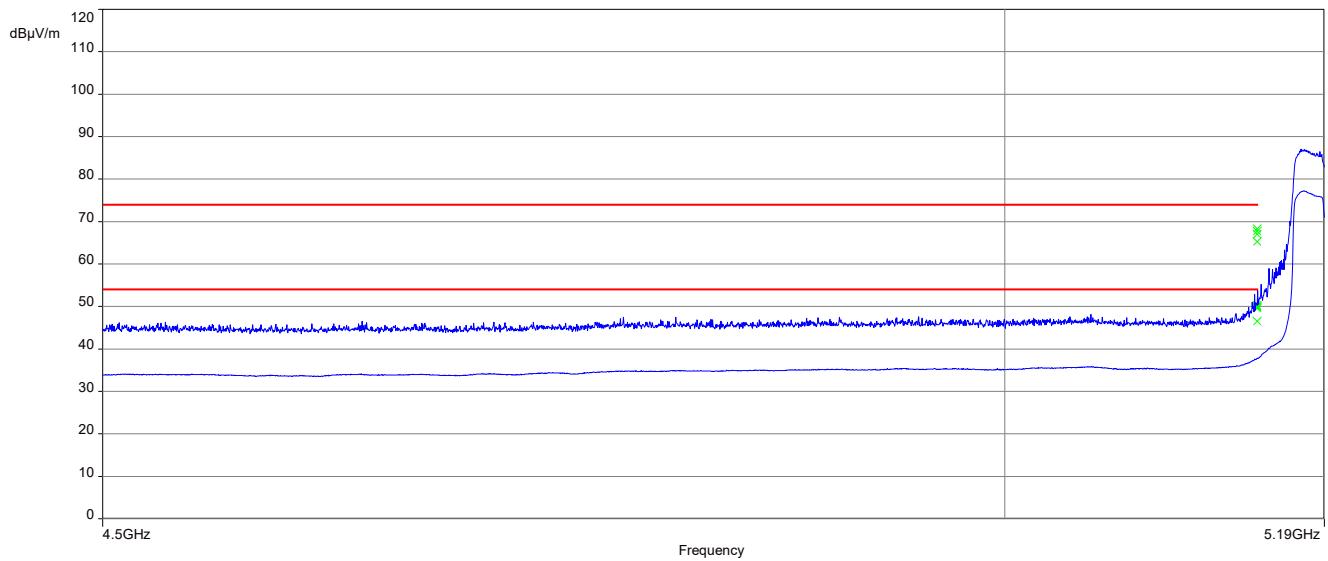
**Plot 2:** upper band edge; U-NII-2A; highest channel; 20 MHz channel bandwidth



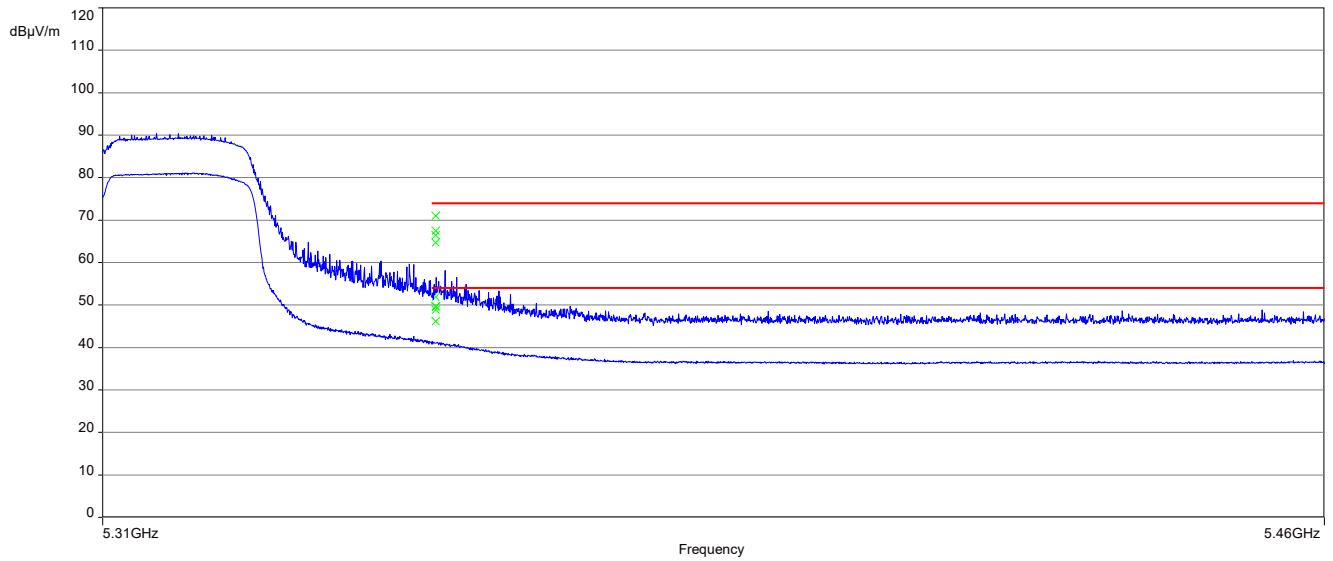
**Plot 3:** lower band edge; U-NII-2C; lowest channel; 20 MHz channel bandwidth



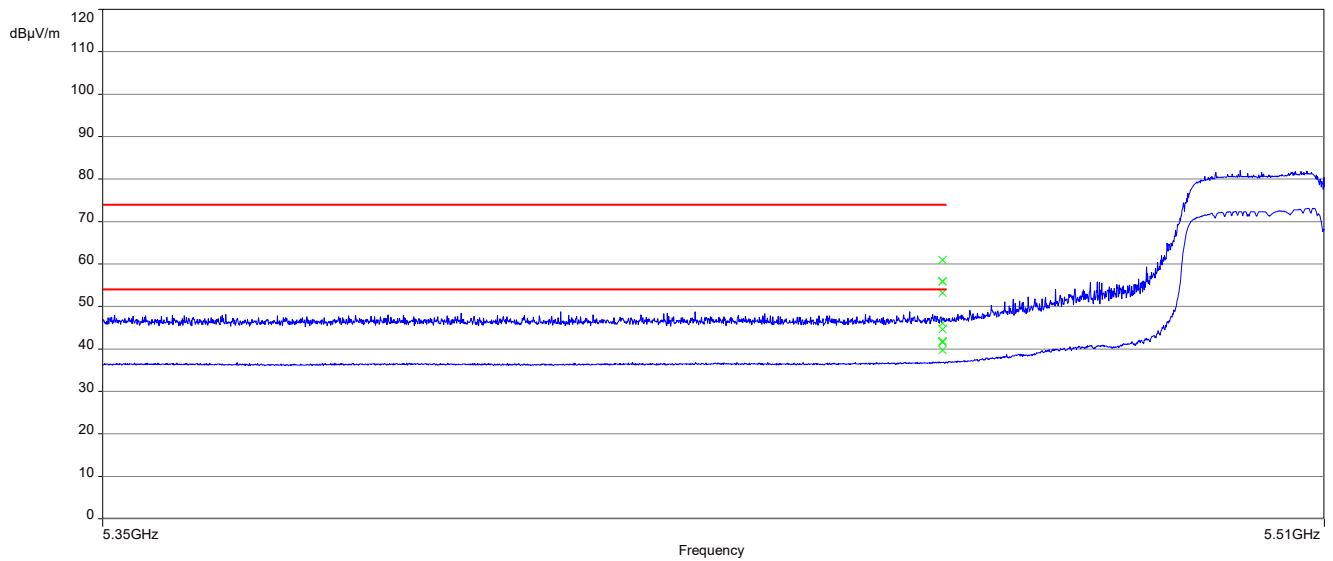
**Plot 4:** lower band edge; U-NII-1; lowest channel; 40 MHz channel bandwidth



**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:

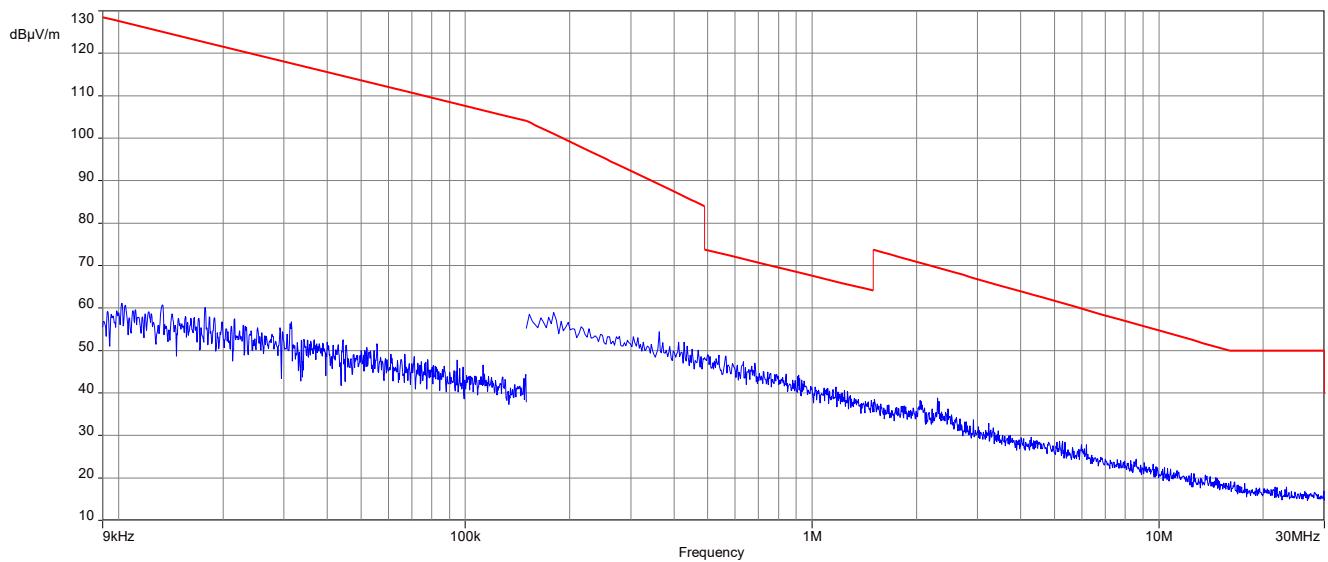
Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

### Results:

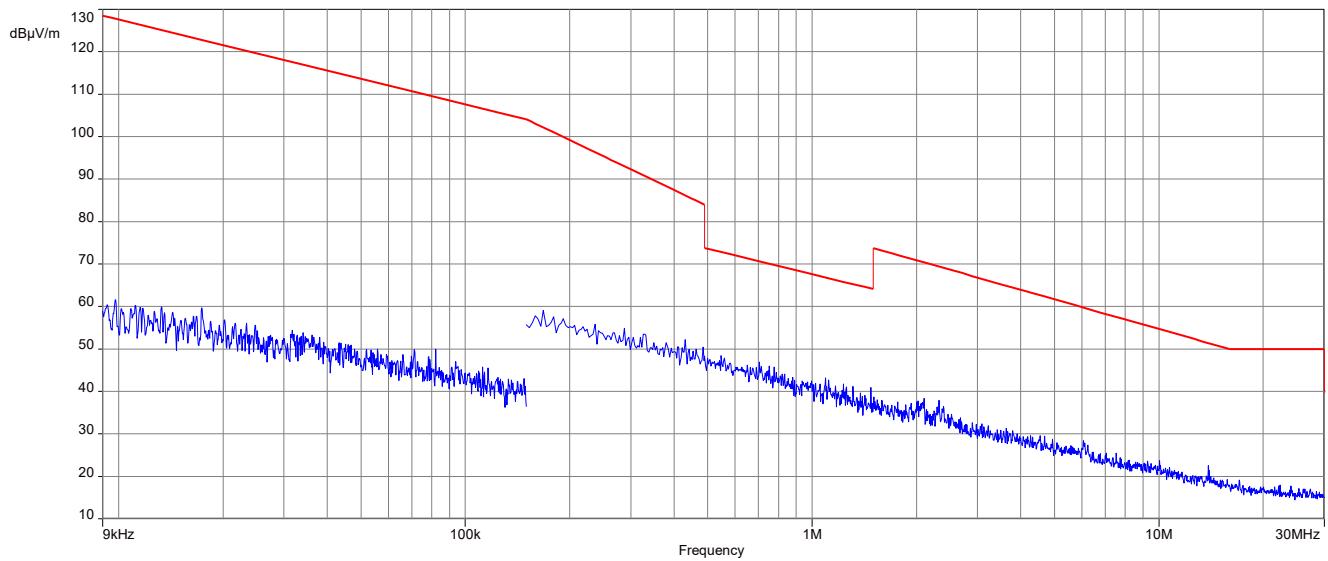
Spurious Emissions Radiated < 30 MHz [dB $\mu$ V/m]		
F [MHz]	Detector	Level [dB $\mu$ V/m]
All detected emissions are more than 20 dB below the limit.		

**Plots:** 20 MHz channel bandwidth

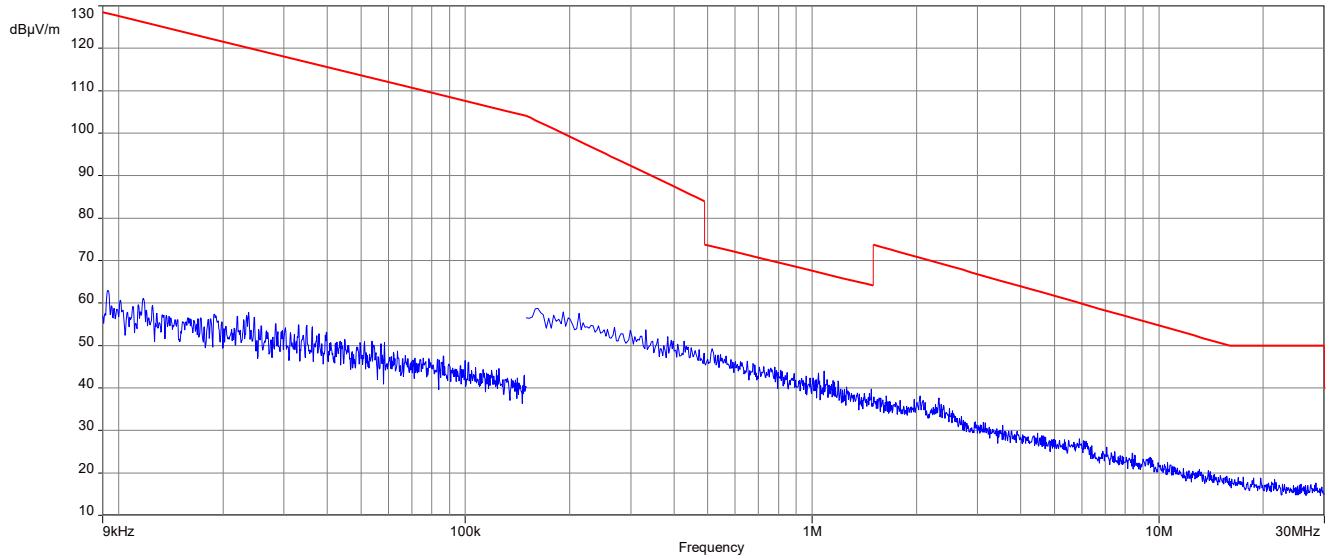
**Plot 1:** 9 kHz to 30 MHz, U-NII-1; lowest channel



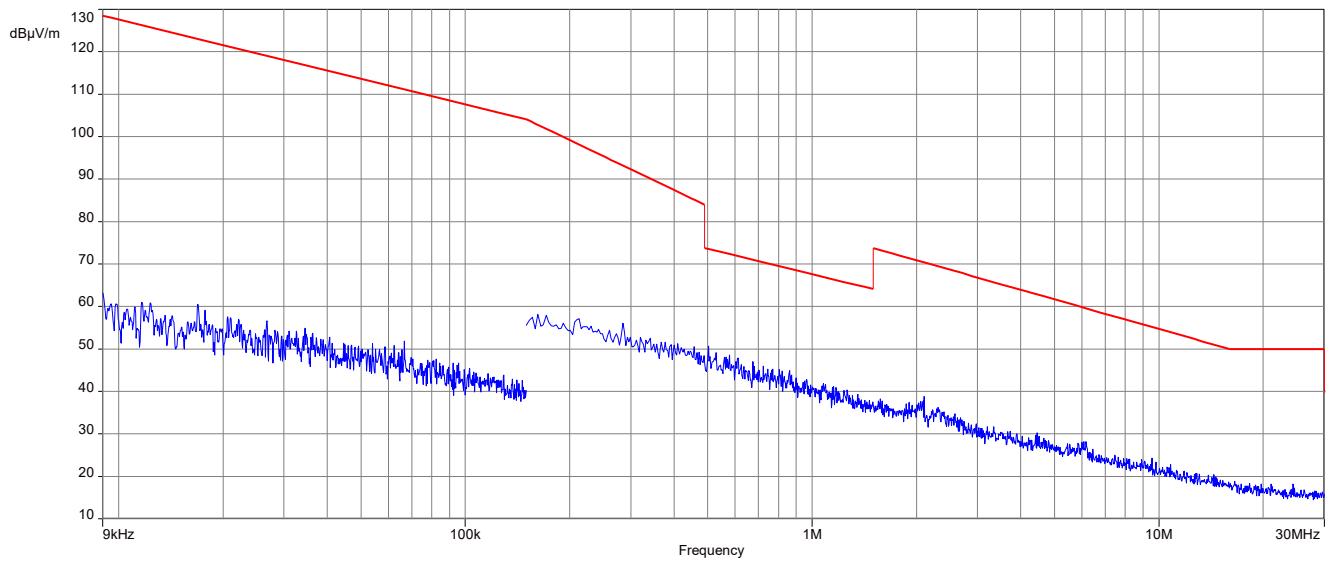
**Plot 2:** 9 kHz to 30 MHz, U-NII-1; highest channel



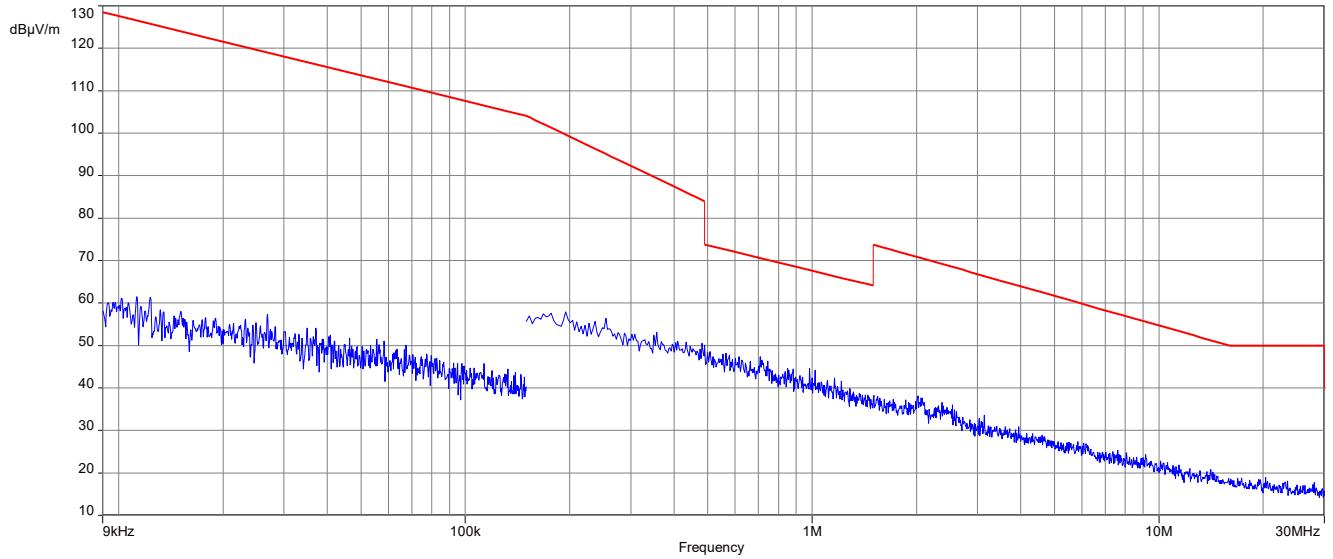
**Plot 3:** 9 kHz to 30 MHz, U-NII-2A; lowest channel



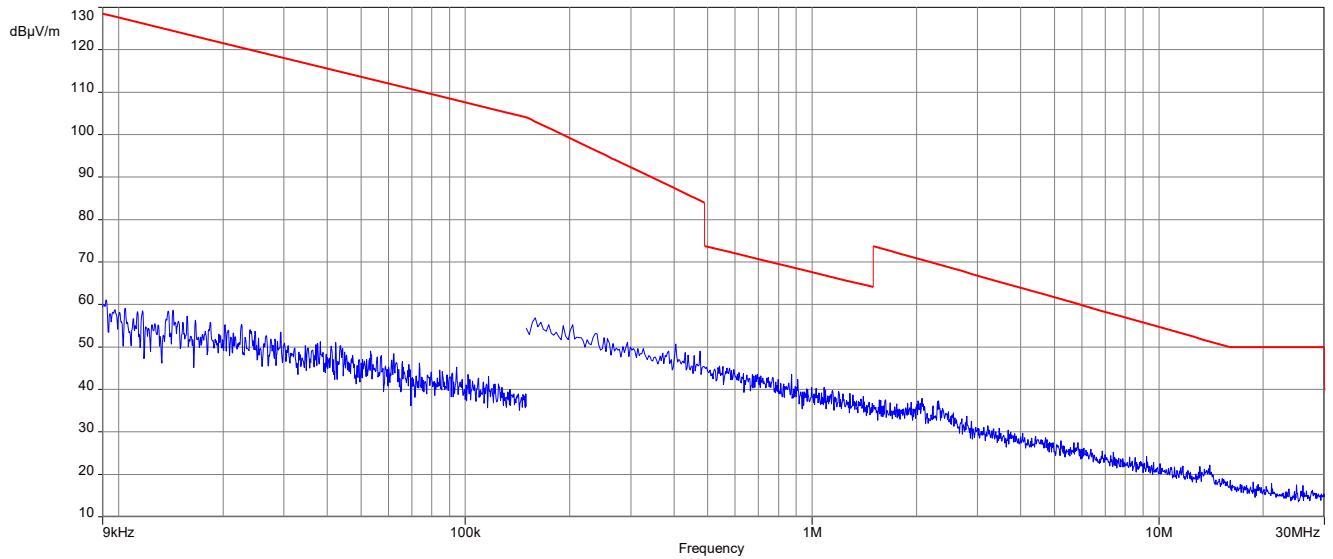
**Plot 4:** 9 kHz to 30 MHz, U-NII-2A; highest channel



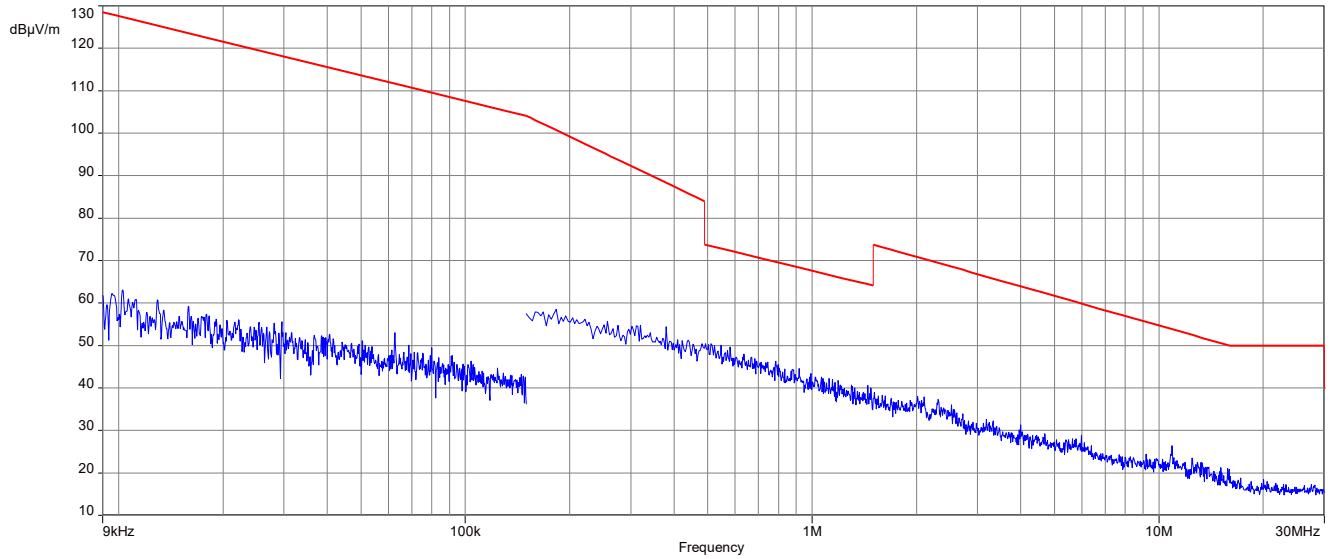
**Plot 5:** 9 kHz to 30 MHz, U-NII-2C; lowest channel



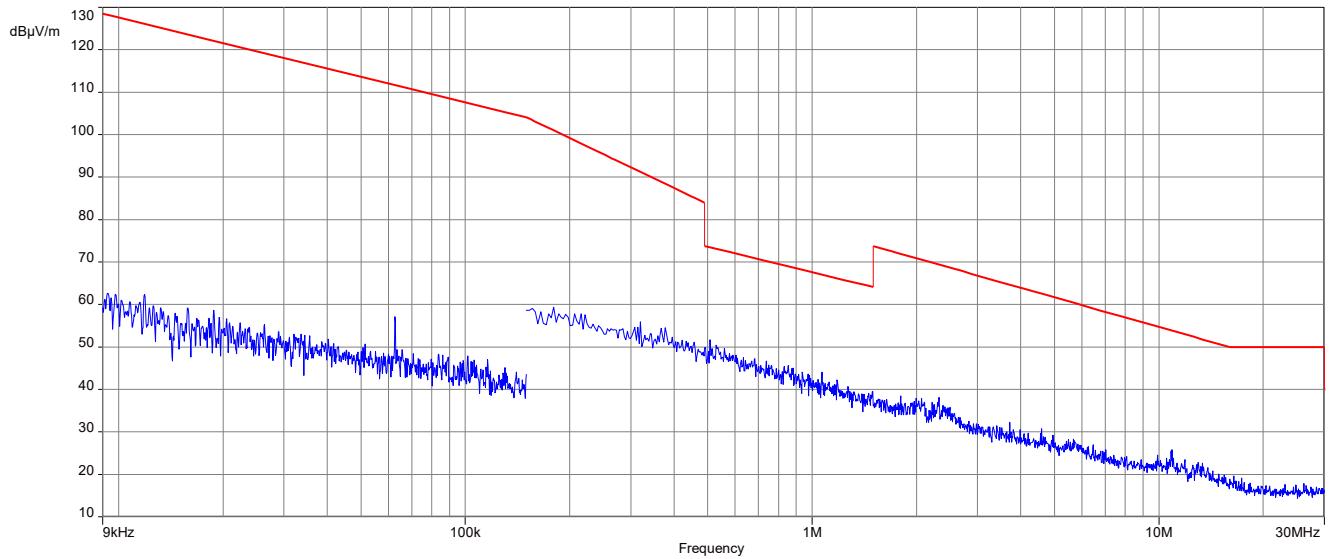
**Plot 6:** 9 kHz to 30 MHz, U-NII-2C; middle channel



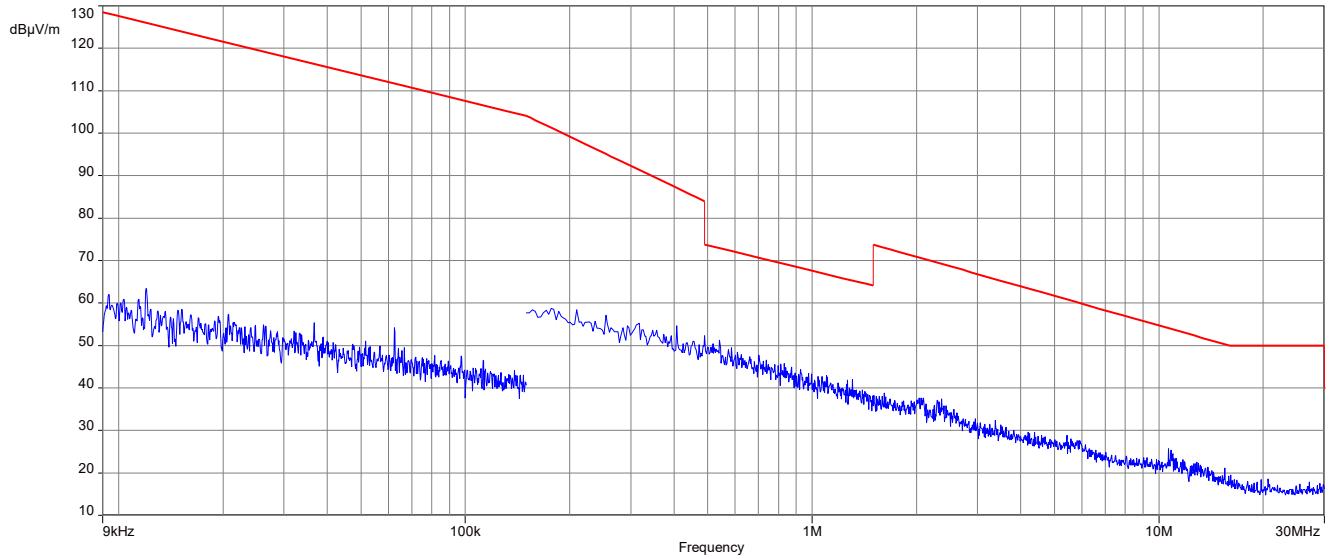
**Plot 7:** 9 kHz to 30 MHz, U-NII-2C; highest channel



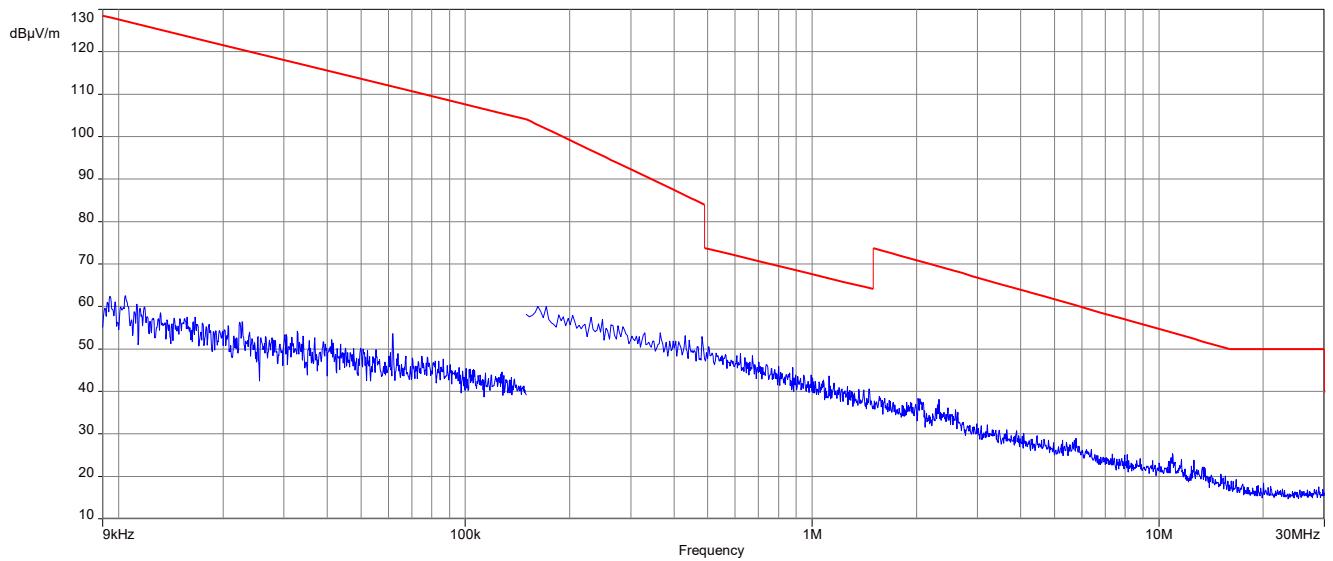
**Plot 8:** 9 kHz to 30 MHz, U-NII-3; lowest channel



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

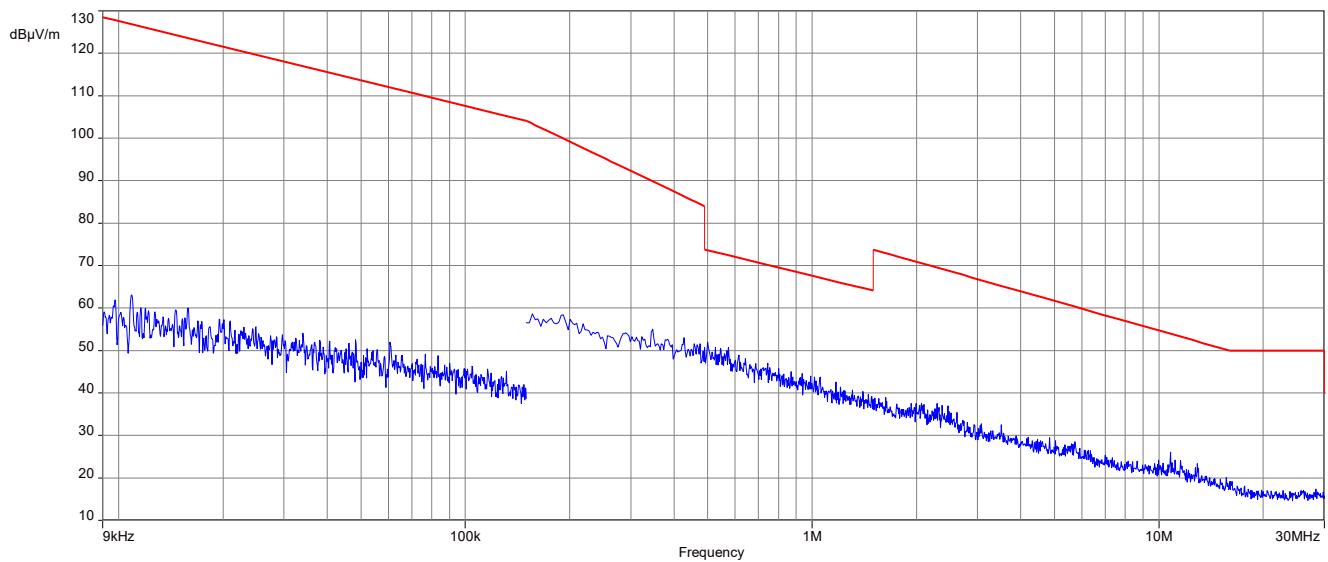


**Plot 10:** 9 kHz to 30 MHz, U-NII-3; highest channel

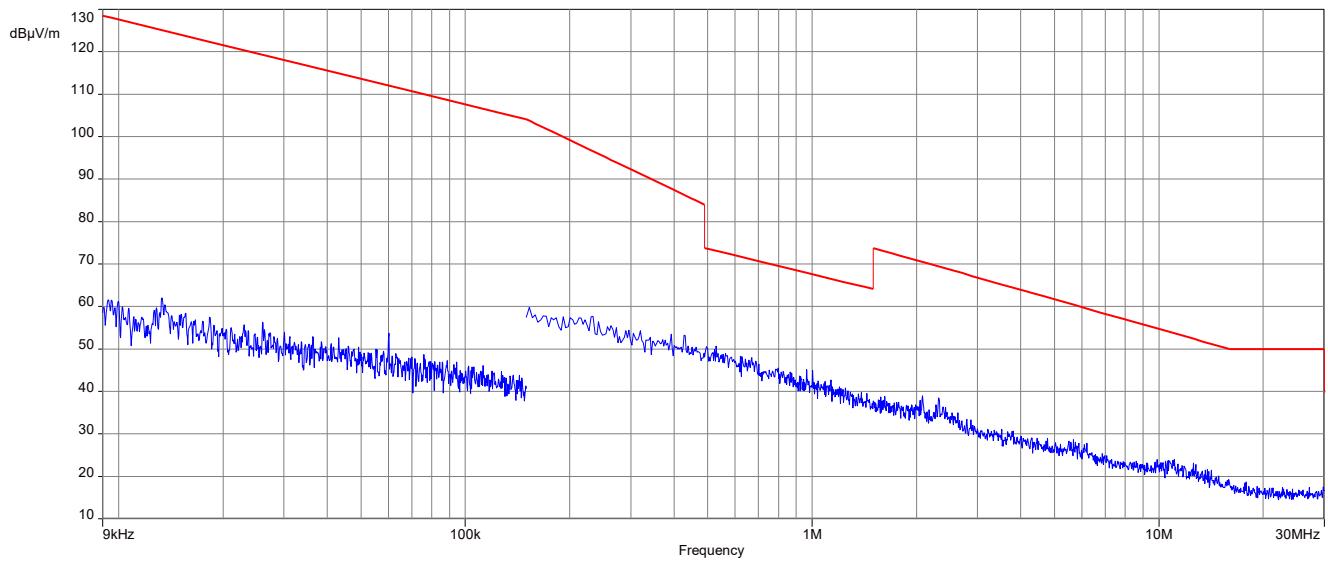


**Plots:** 40 MHz channel bandwidth

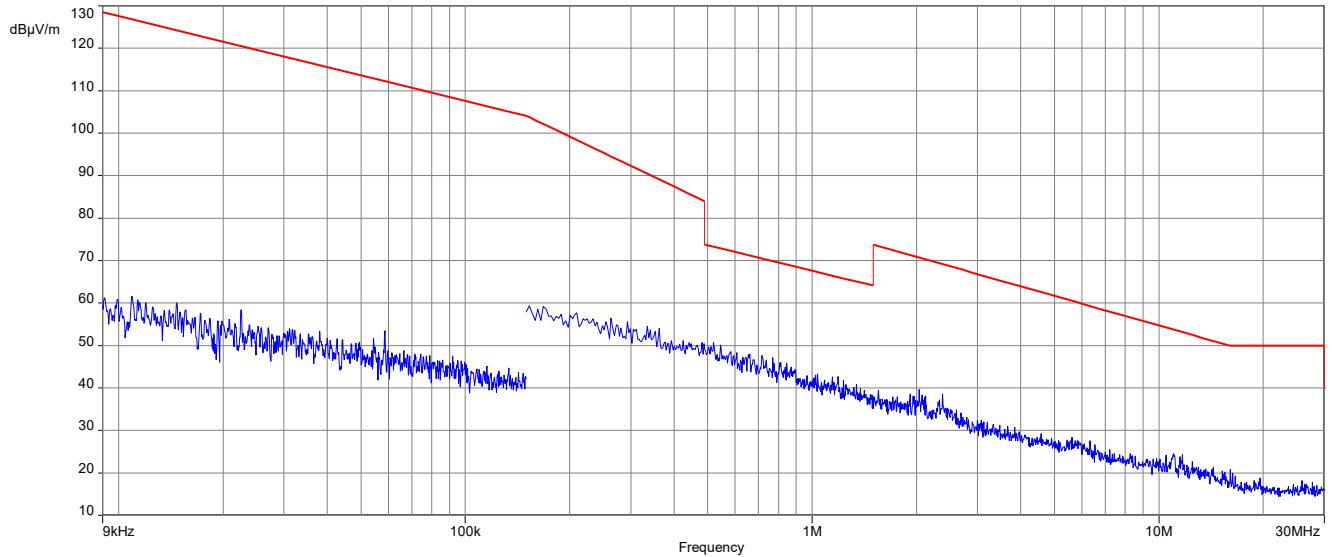
**Plot 1:** 9 kHz to 30 MHz, U-NII-1; lowest channel



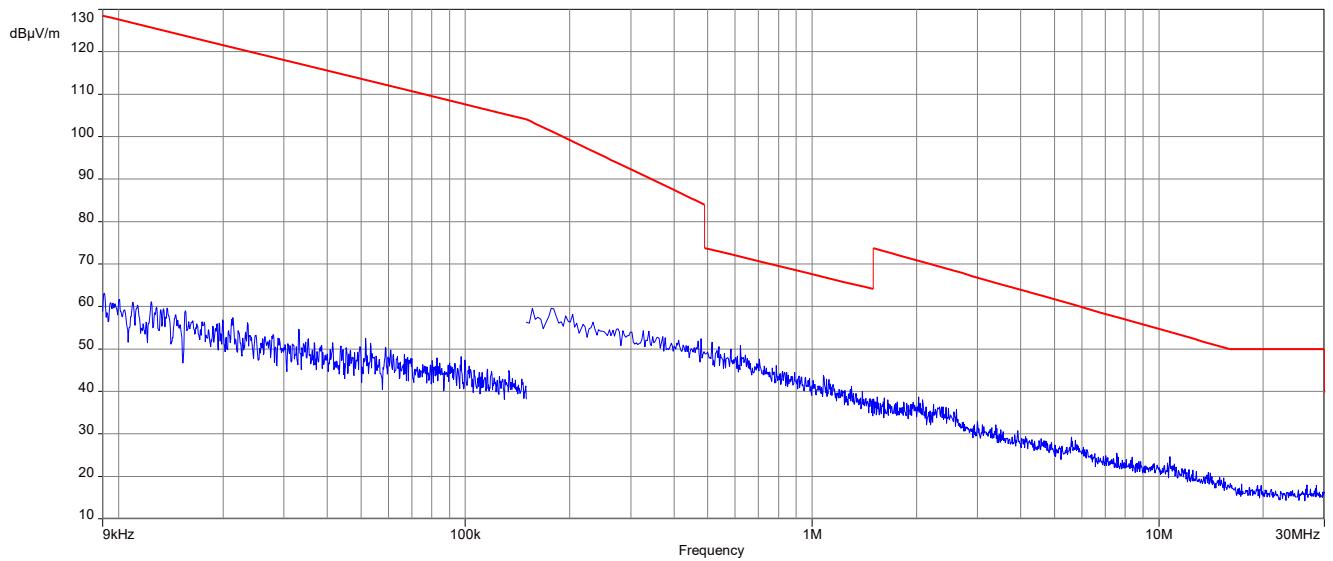
**Plot 2:** 9 kHz to 30 MHz, U-NII-1; highest channel



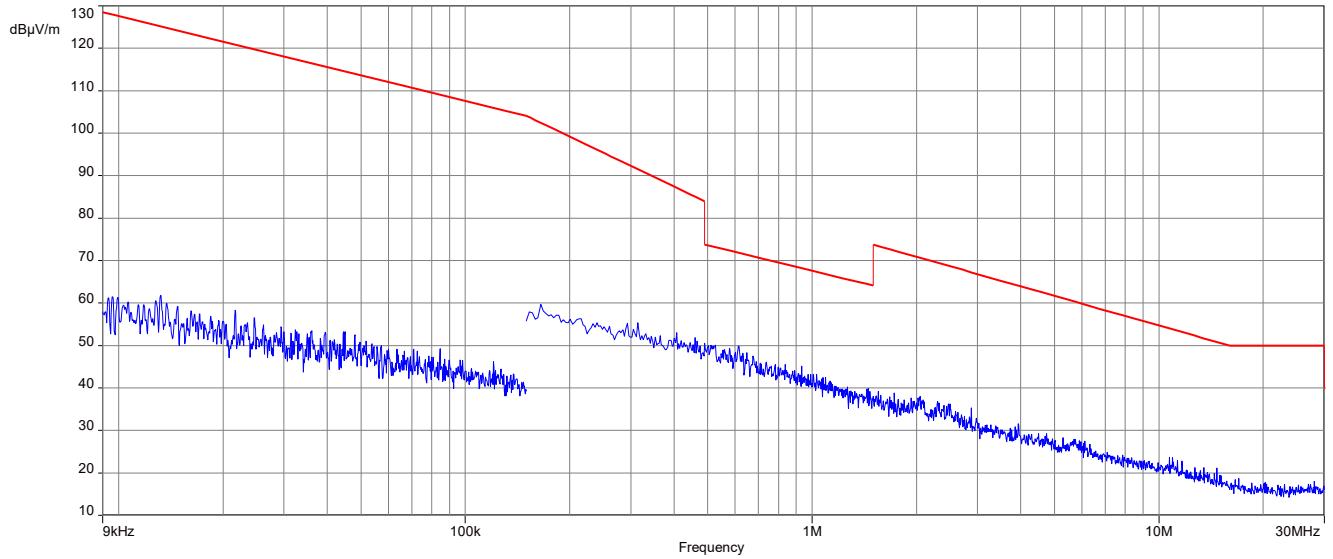
**Plot 3:** 9 kHz to 30 MHz, U-NII-2A; lowest channel



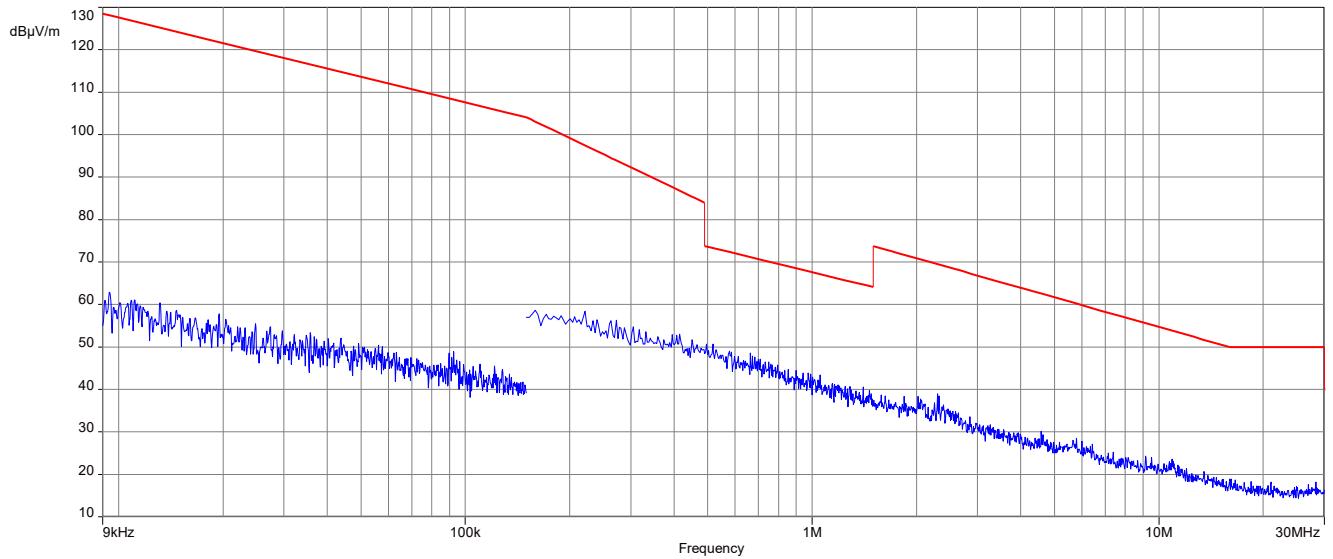
**Plot 4:** 9 kHz to 30 MHz, U-NII-2A; highest channel



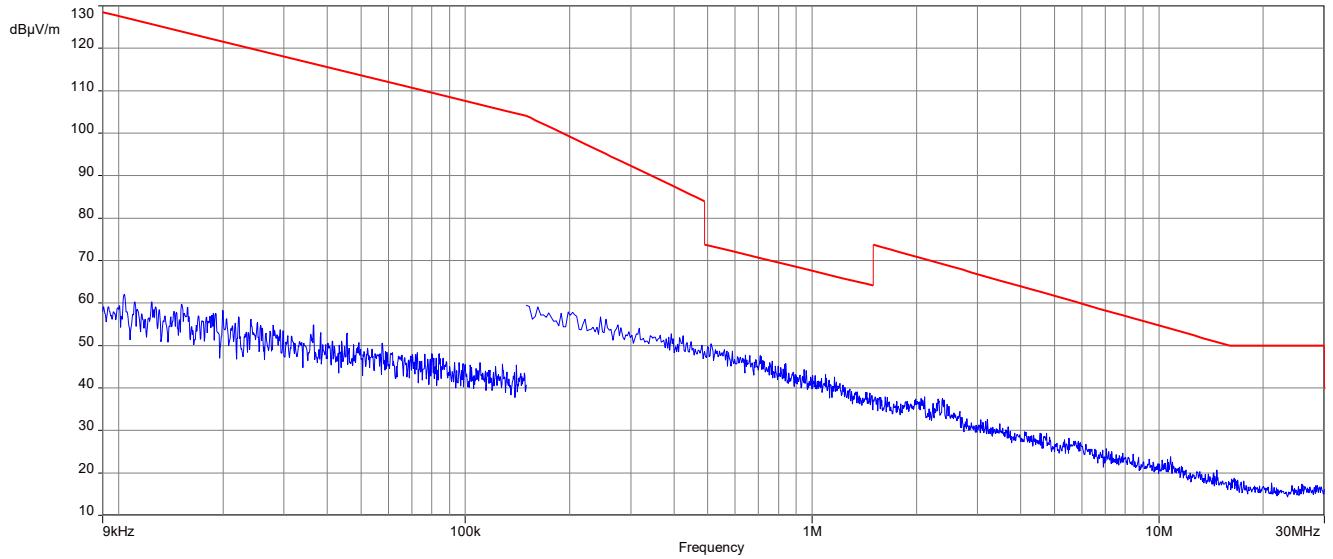
**Plot 5:** 9 kHz to 30 MHz, U-NII-2C; lowest channel



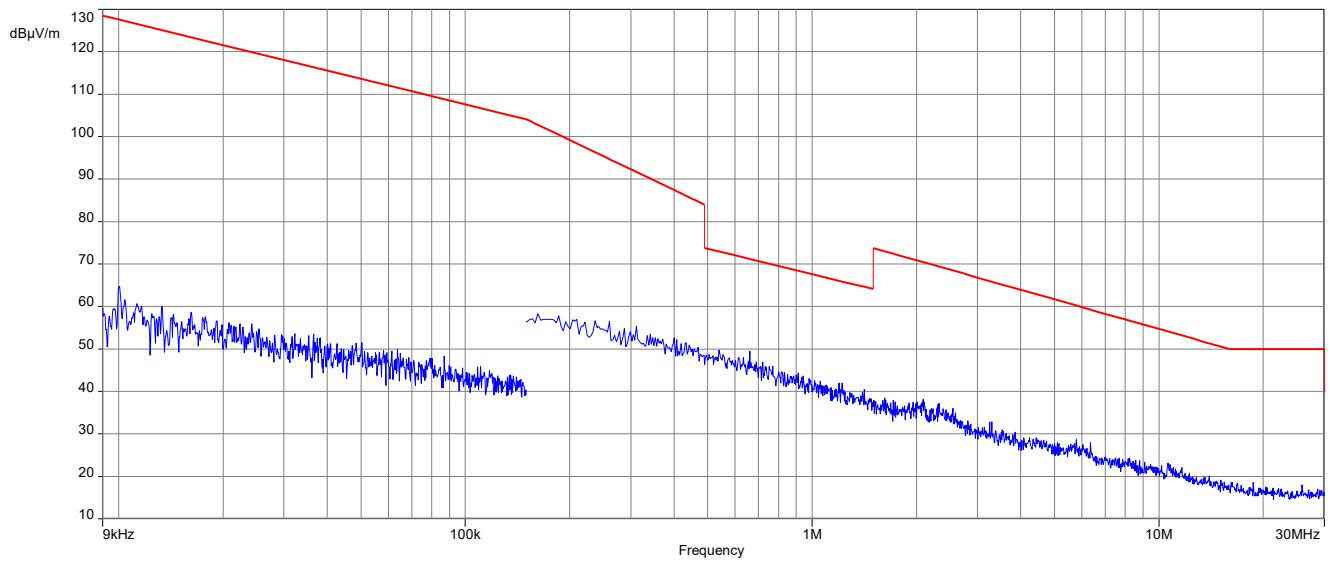
**Plot 6:** 9 kHz to 30 MHz, U-NII-2C; middle channel



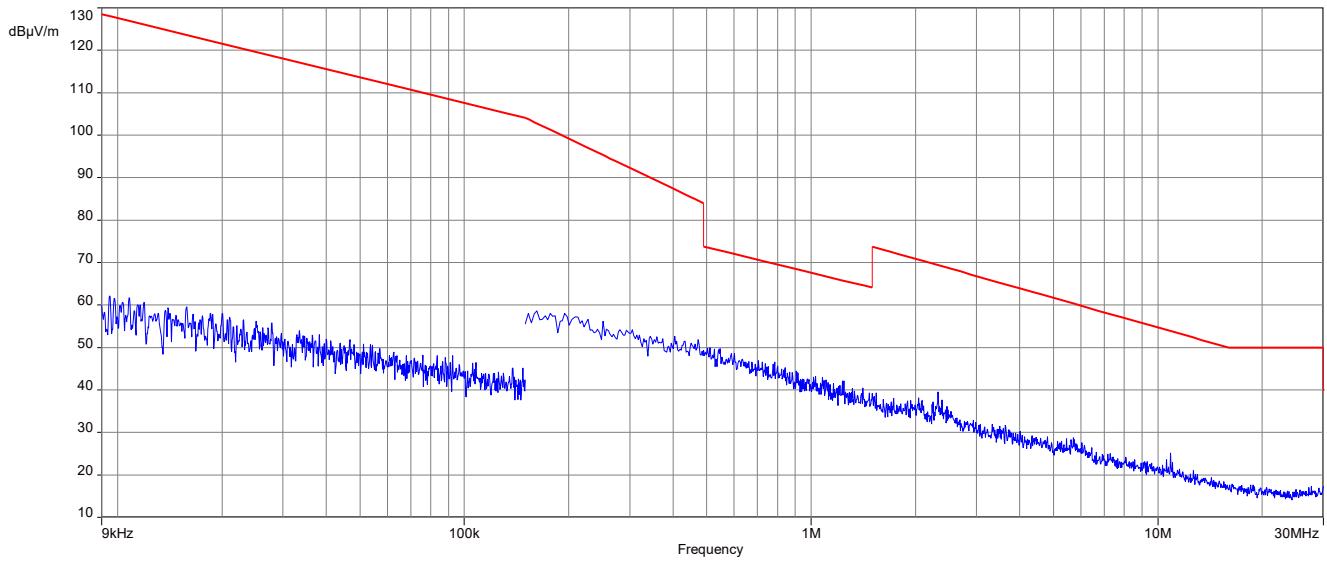
**Plot 7:** 9 kHz to 30 MHz, U-NII-2C; highest channel



**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 $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-1 (5150 MHz to 5250 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-2A (5250 MHz to 5350 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-2C (5470 MHz to 5725 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-3 (5725 MHz to 5850 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-1 (5150 MHz to 5250 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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.					

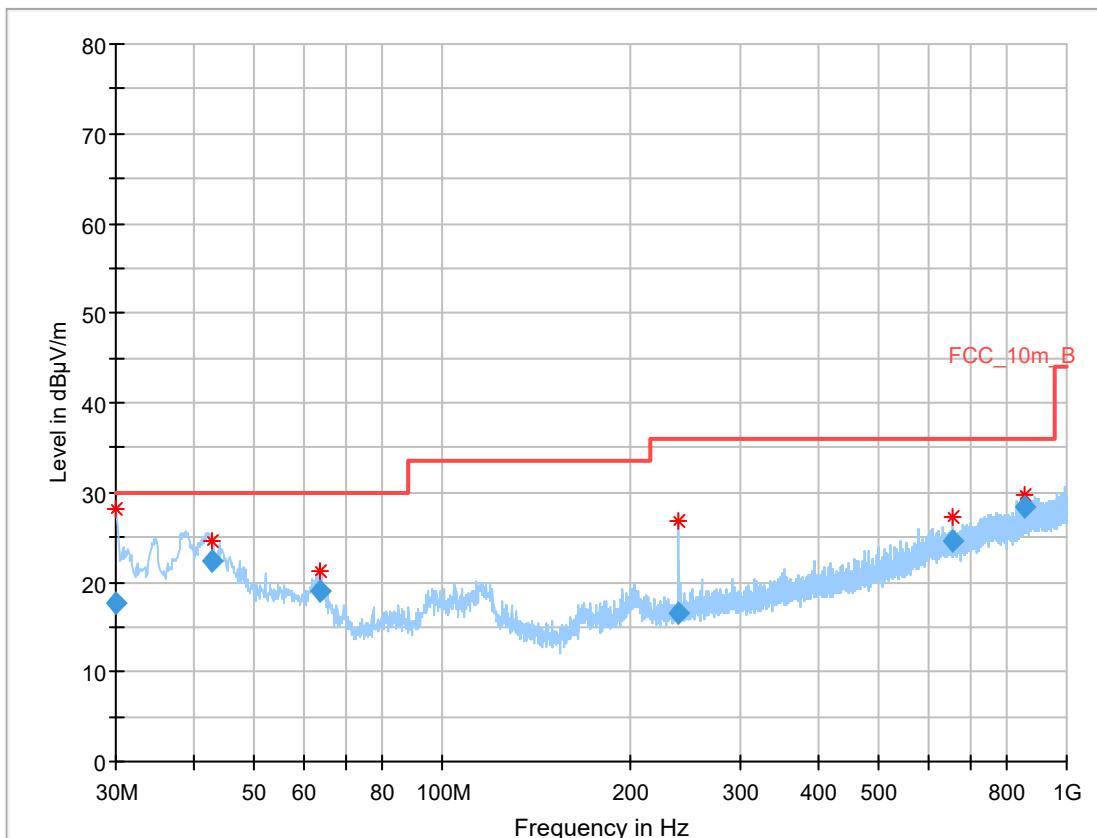
TX Spurious Emissions Radiated [dB $\mu$ V/m] / dBm											
U-NII-2A (5250 MHz to 5350 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]			
For emissions below 1 GHz, 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 $\mu$ V/m] / dBm											
U-NII-2C (5470 MHz to 5725 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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 $\mu$ V/m] / dBm											
U-NII-3 (5725 MHz to 5850 MHz)											
Lowest channel			Middle channel			Highest channel					
F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ V/m]	F [MHz]	Detector	Level [dB $\mu$ 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.					

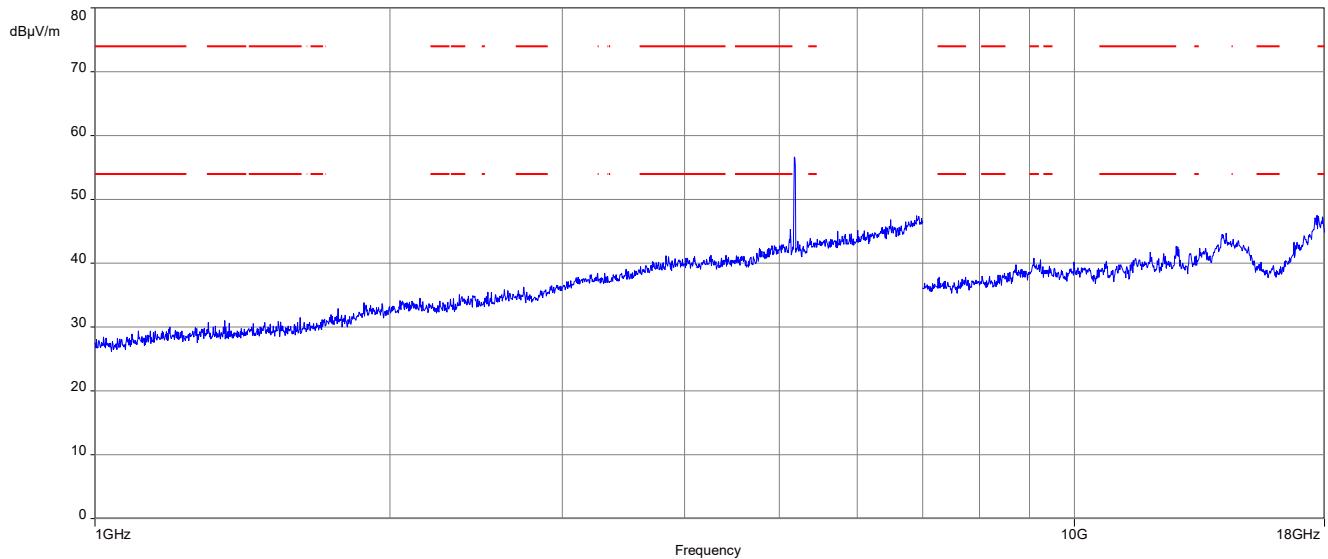
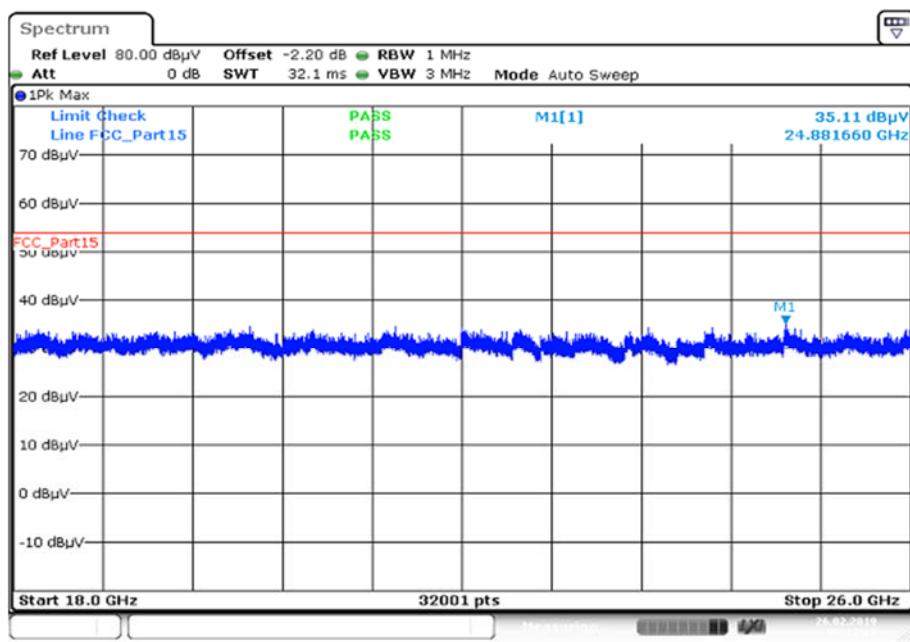
**Plots:** 20 MHz channel bandwidth

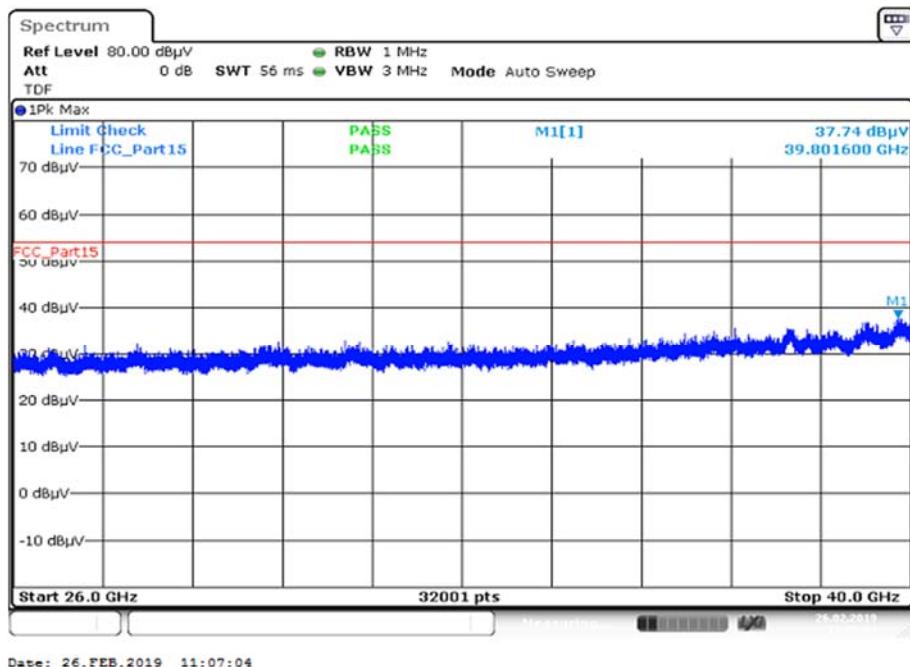
**Plot 1:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



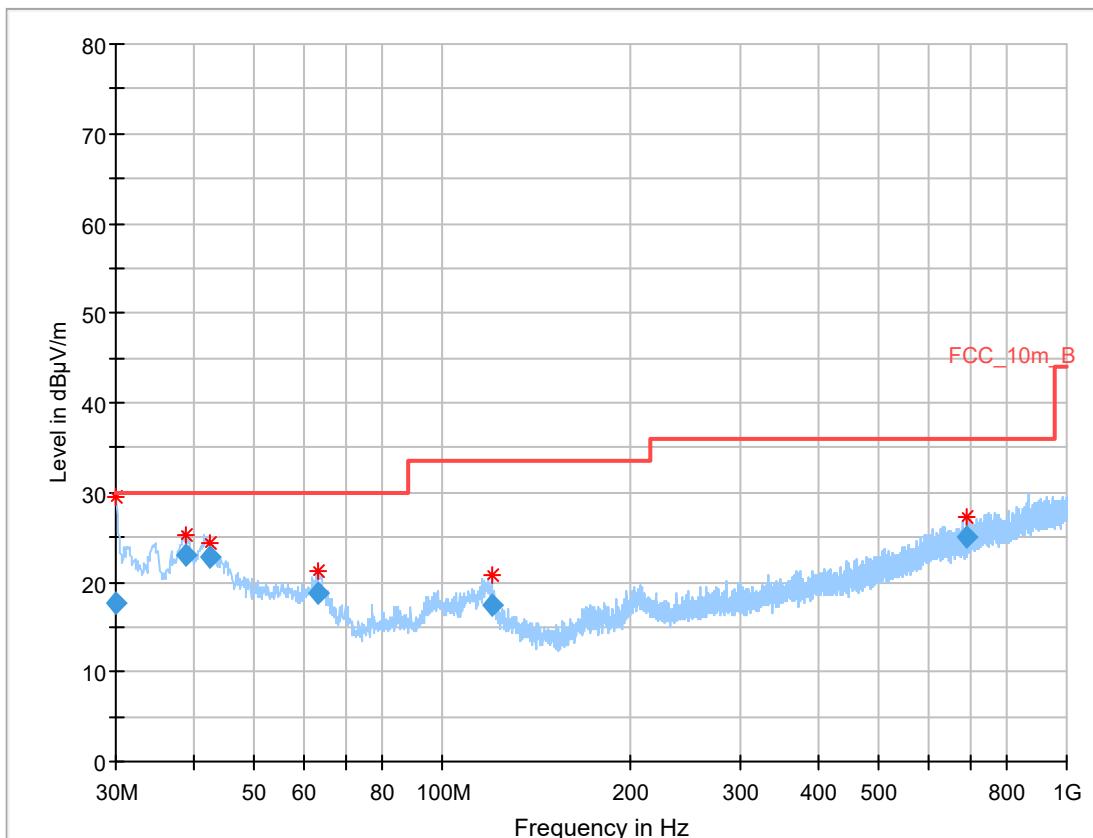
### Final\_Result:

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ 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

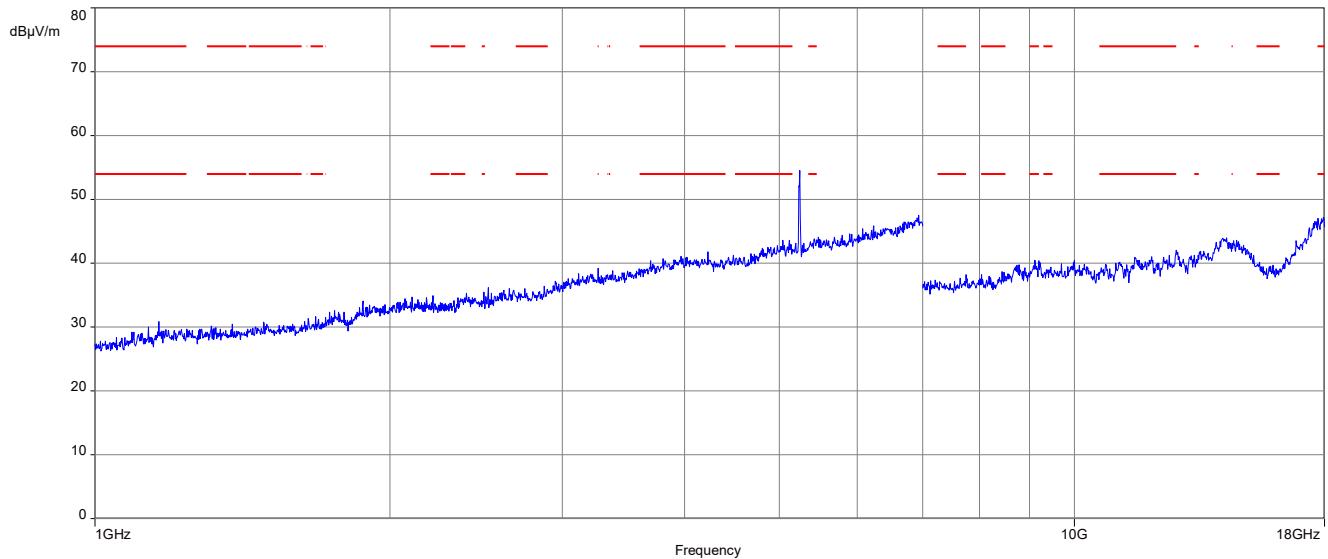
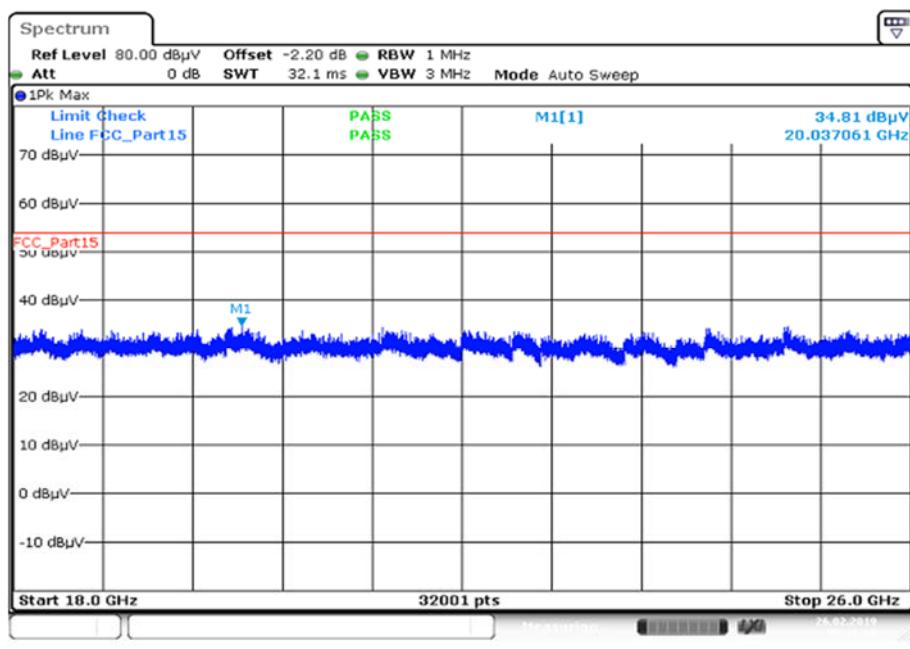
**Plot 4:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

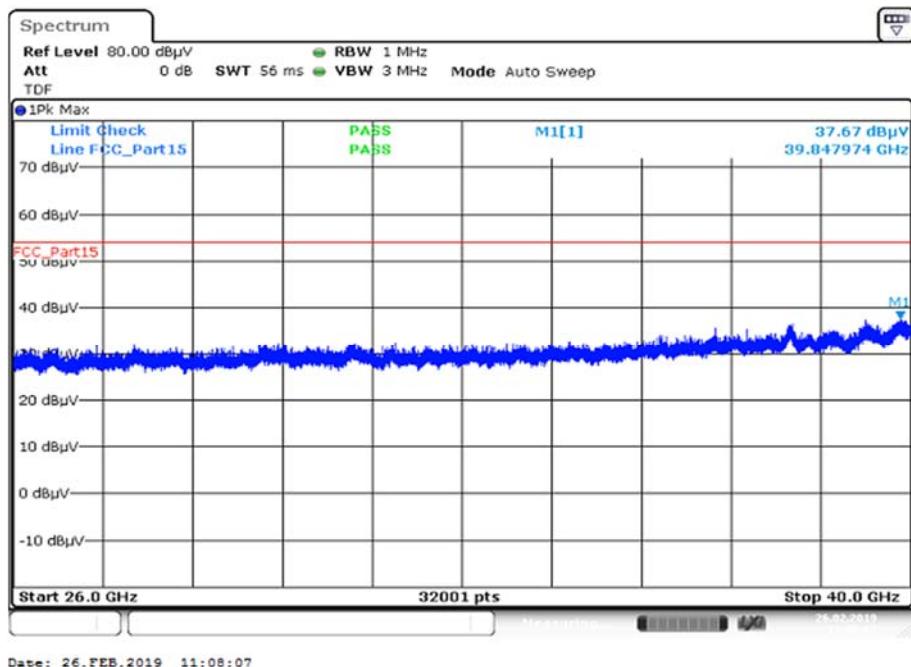
**Plot 5:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



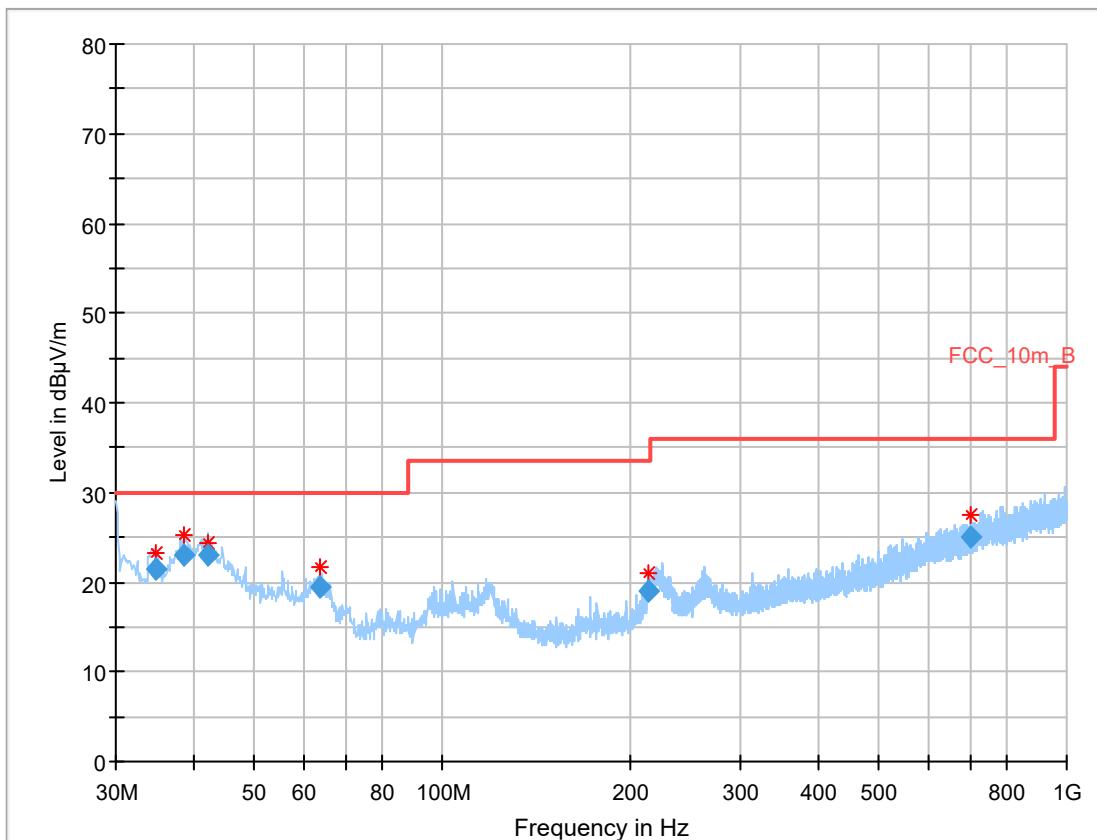
#### Final\_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/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

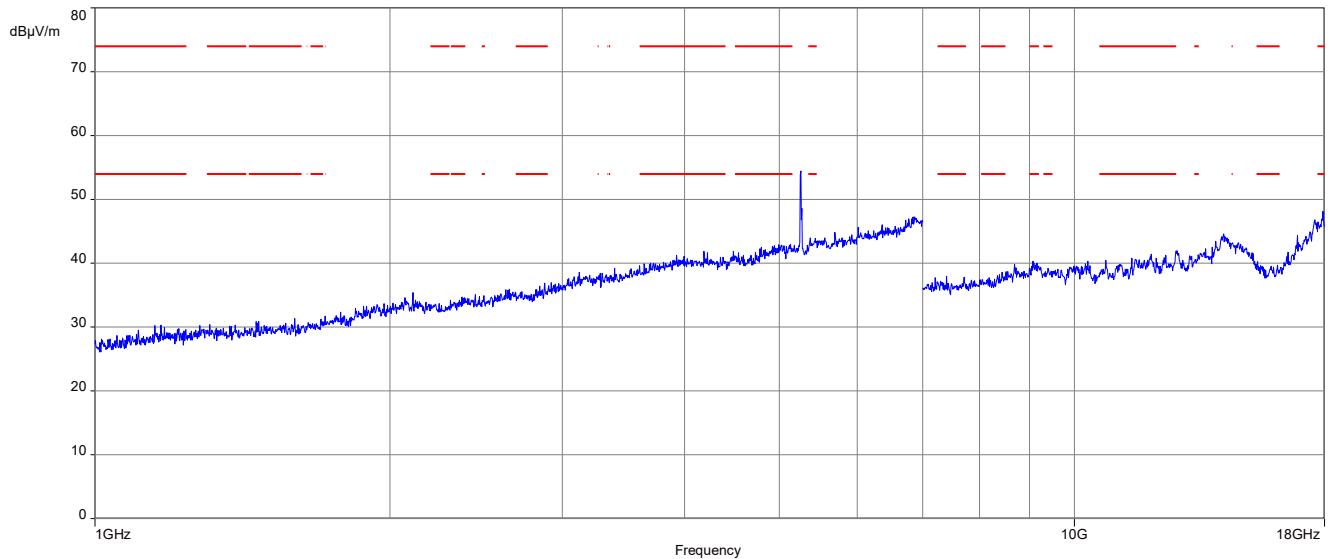
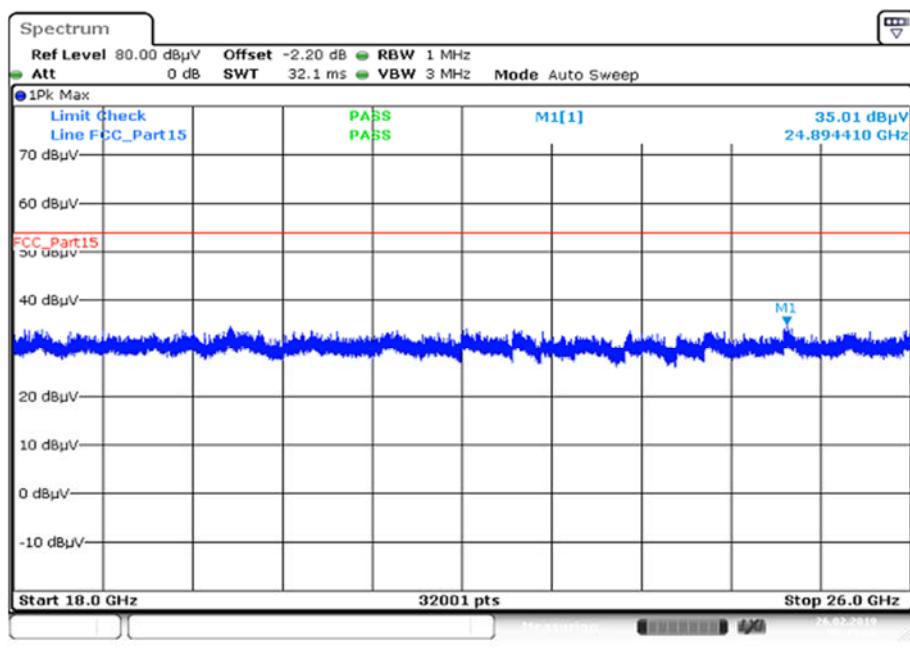
**Plot 8:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel

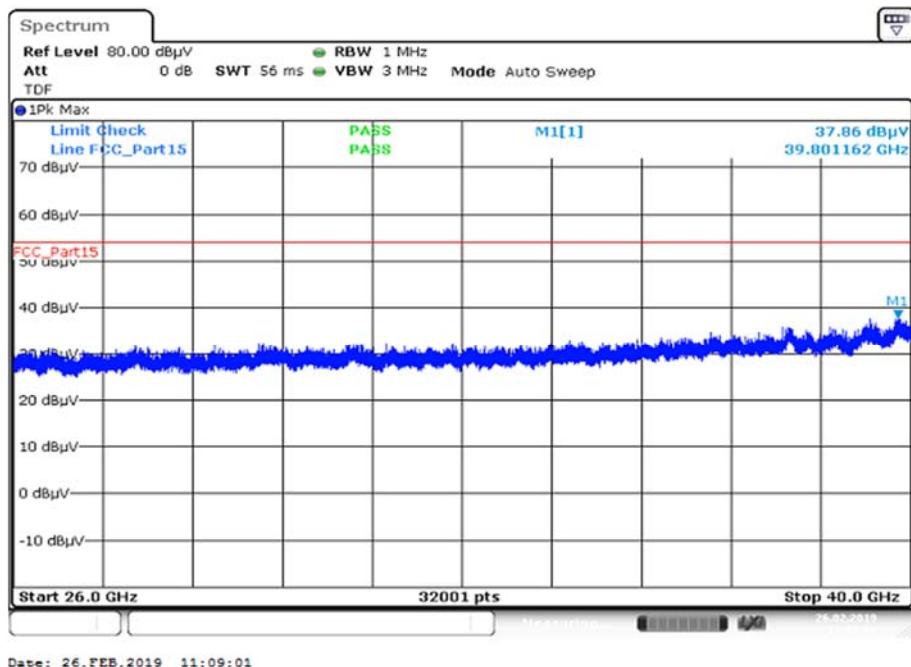
**Plot 9:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

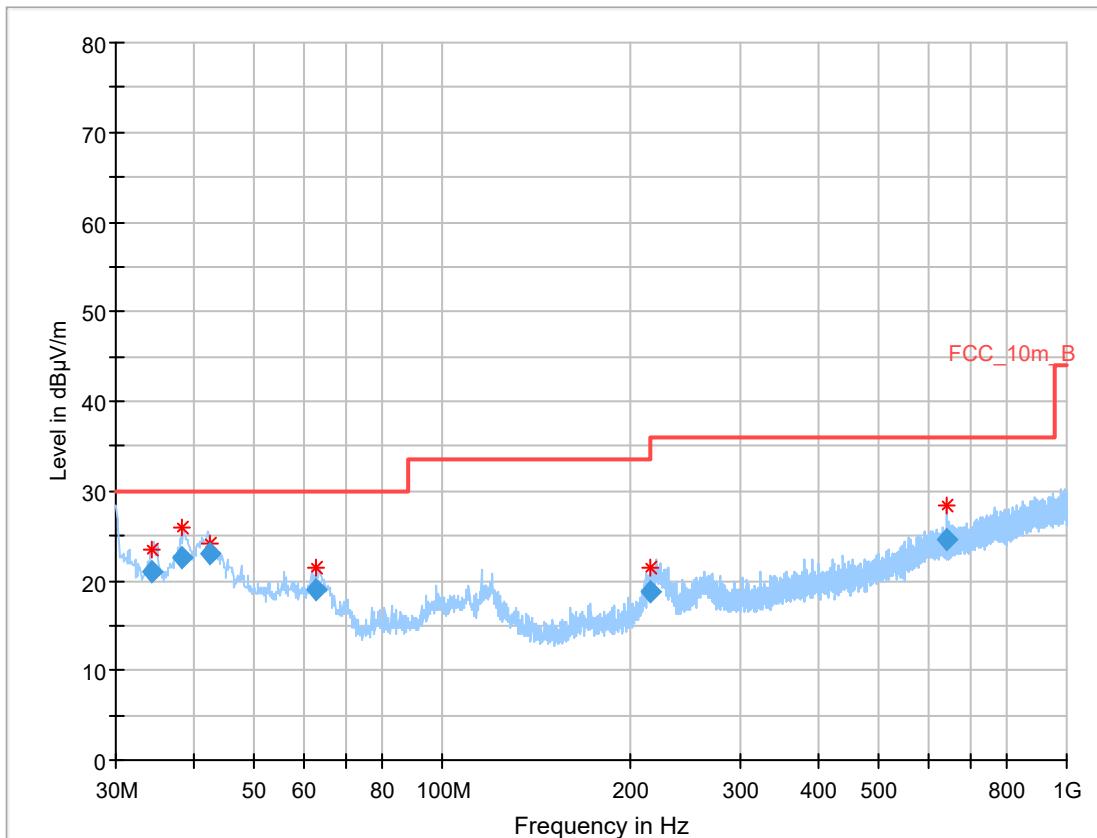


#### Final\_Result:

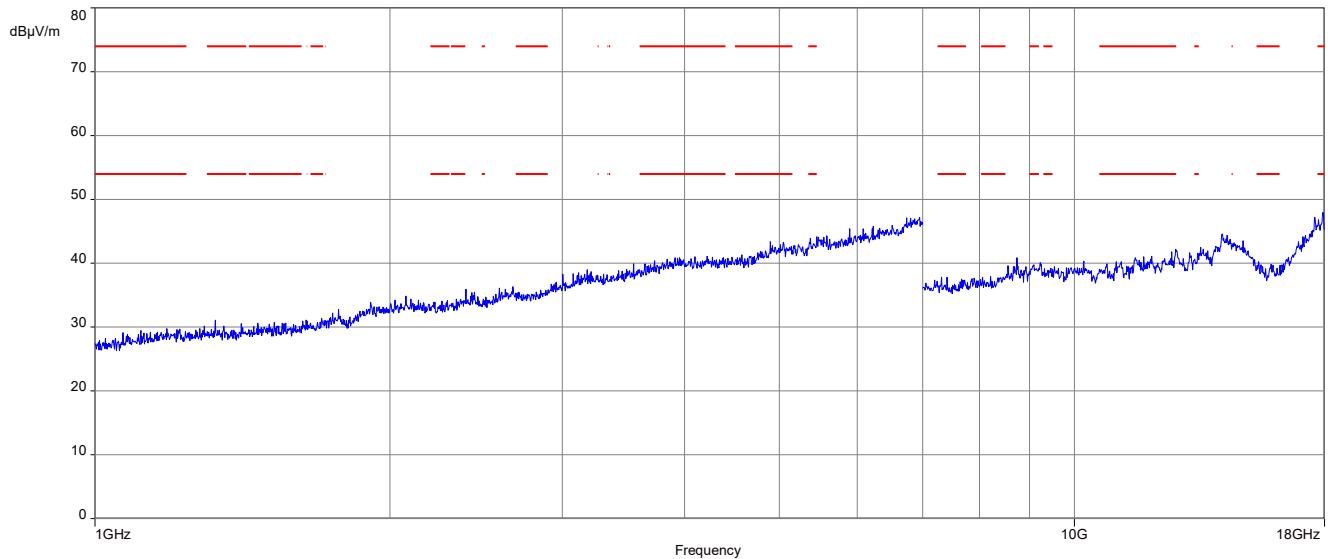
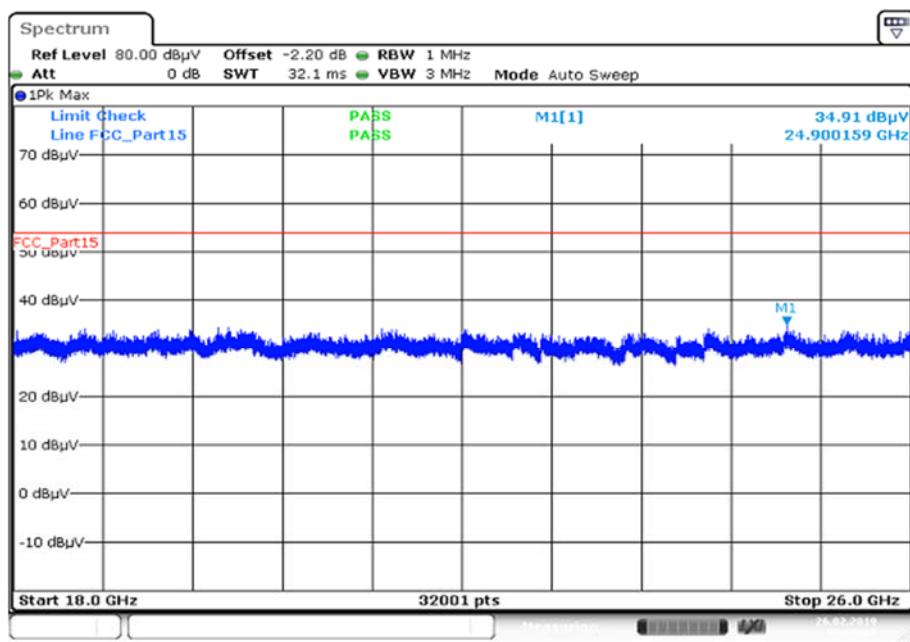
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.868	21.49	30.0	8.51	1000	120	98.0	V	124.0	13.8
38.677	23.01	30.0	6.99	1000	120	101.0	V	133.0	14.2
42.252	23.03	30.0	6.97	1000	120	98.0	V	74.0	14.5
63.762	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

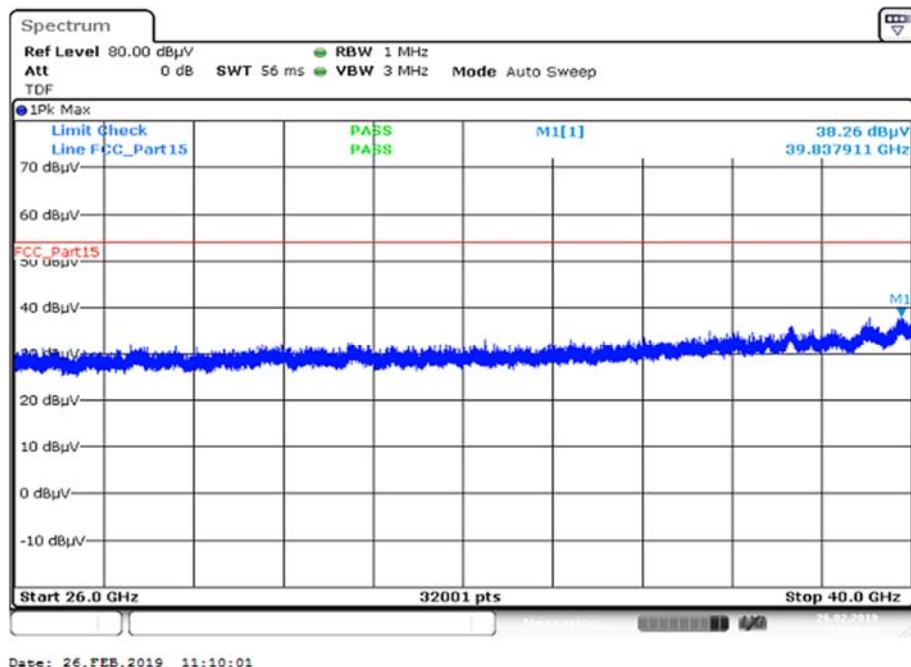
**Plot 10:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel**Plot 11:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

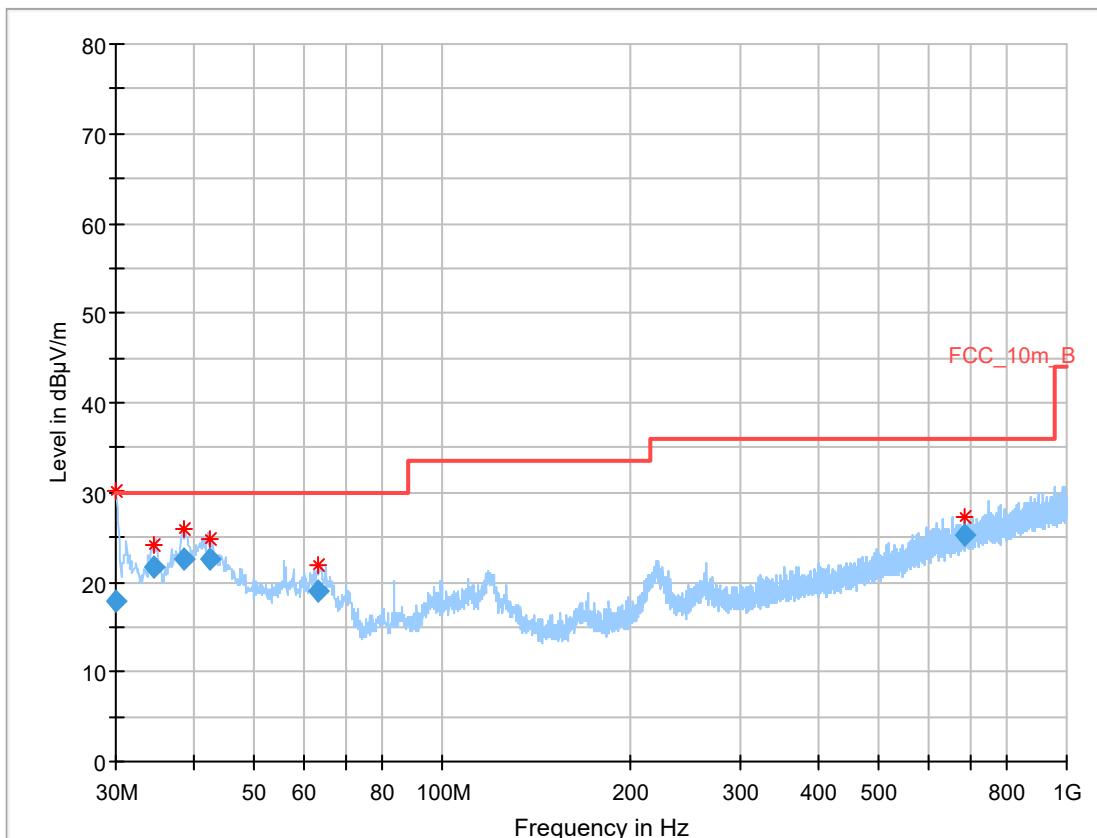
**Plot 12:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

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

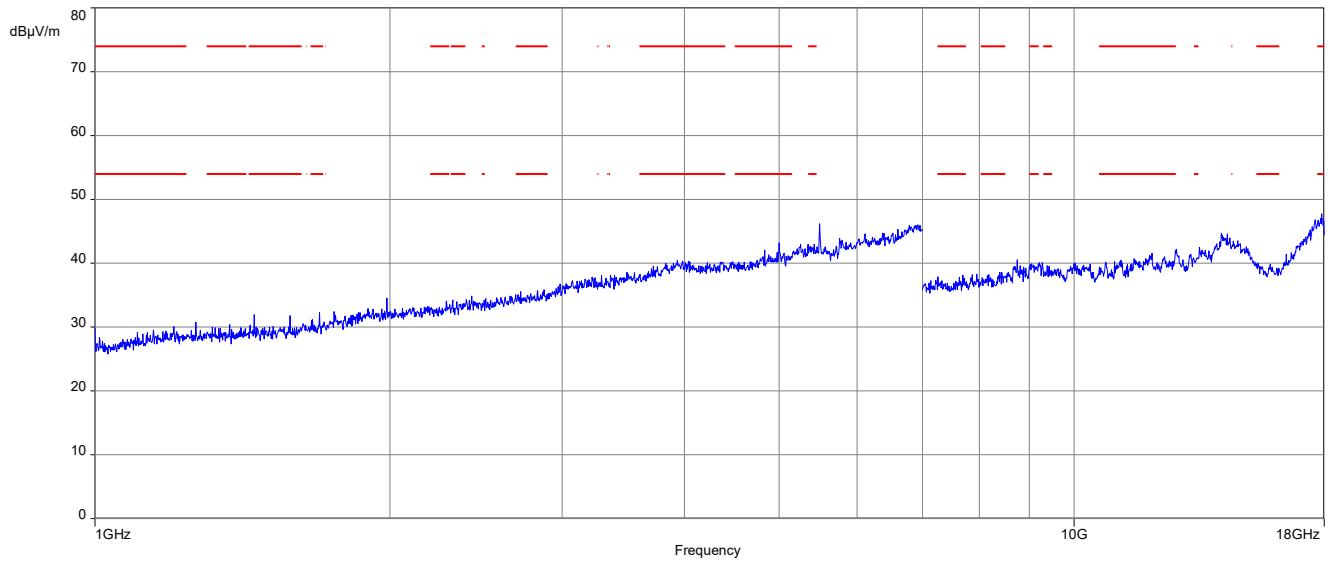
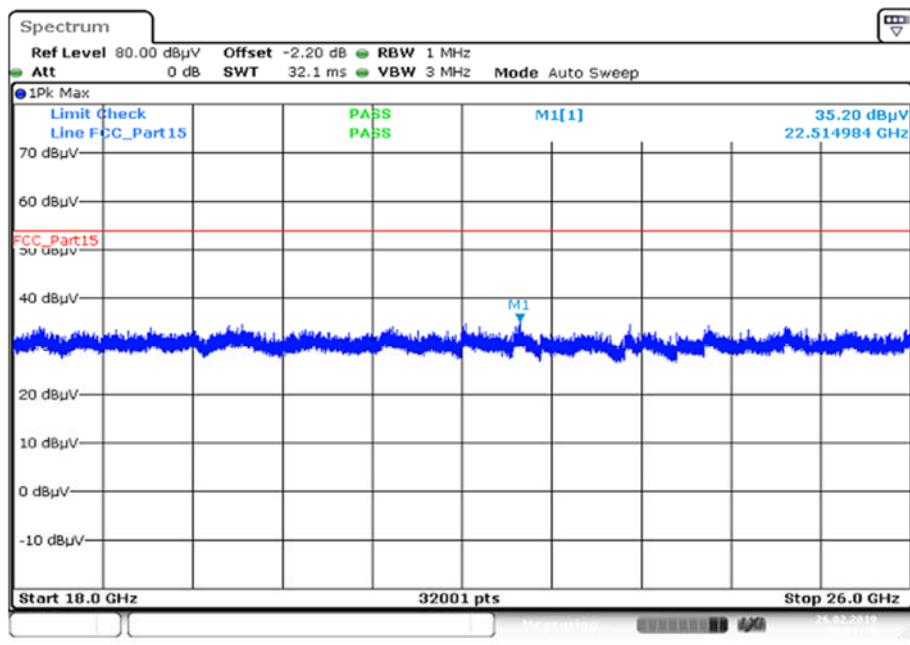
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.285	20.99	30.0	9.01	1000	120	101.0	V	67.0	13.7
38.378	22.59	30.0	7.41	1000	120	98.0	V	141.0	14.2
42.335	22.94	30.0	7.06	1000	120	98.0	V	52.0	14.6
62.976	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

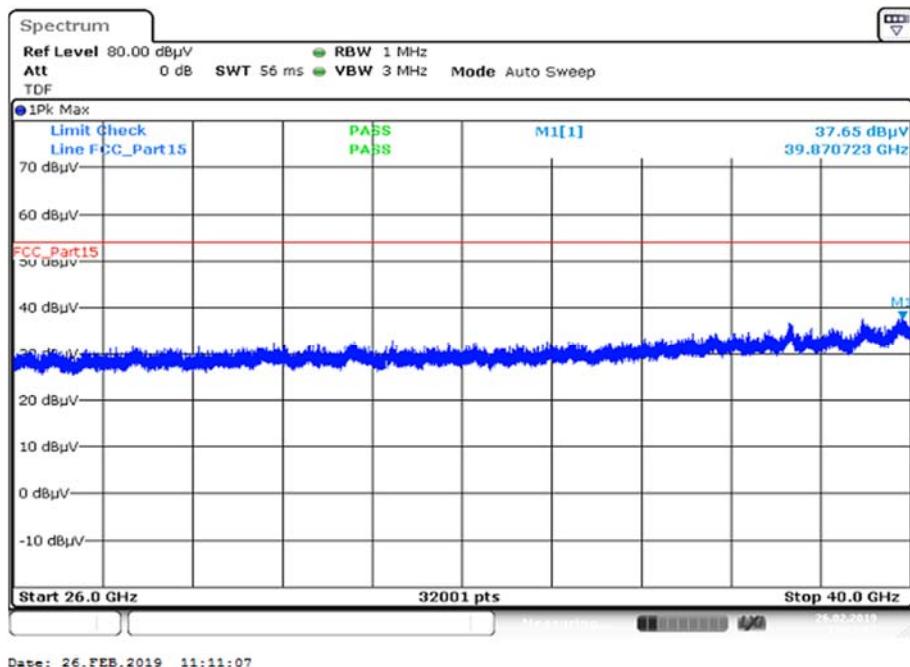
**Plot 14:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; highest channel**Plot 15:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

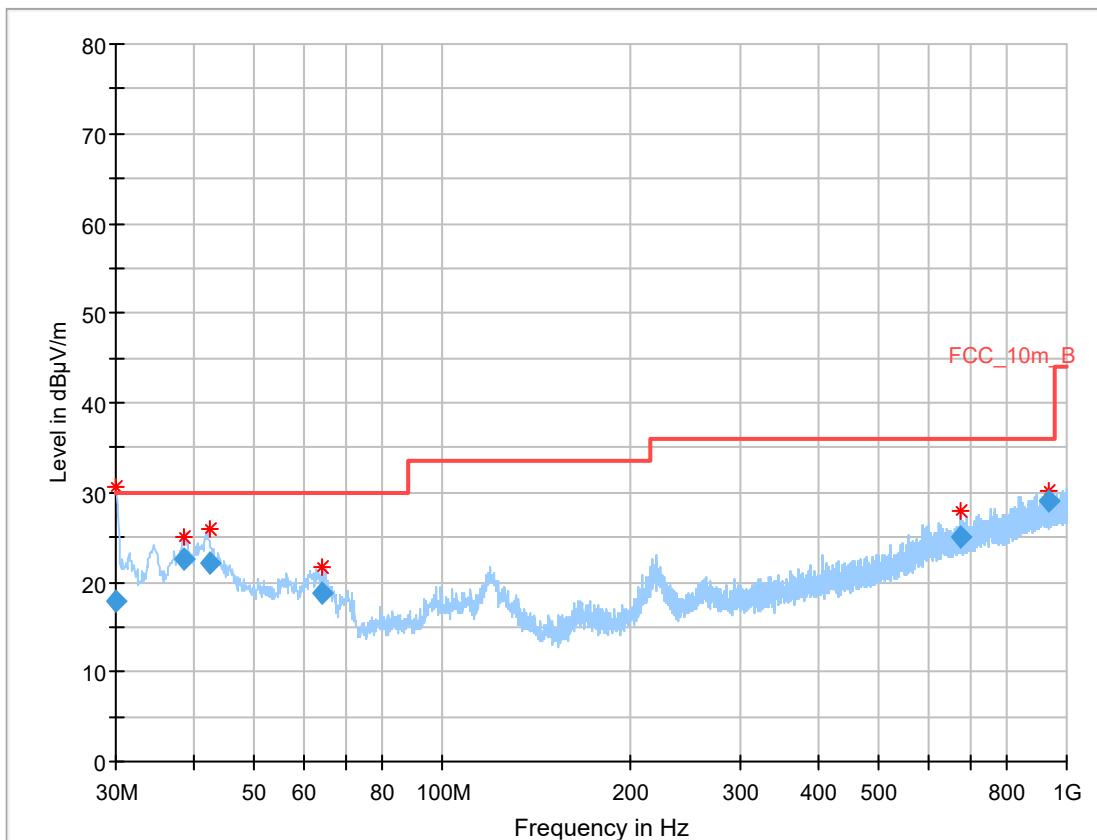
**Plot 16:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

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

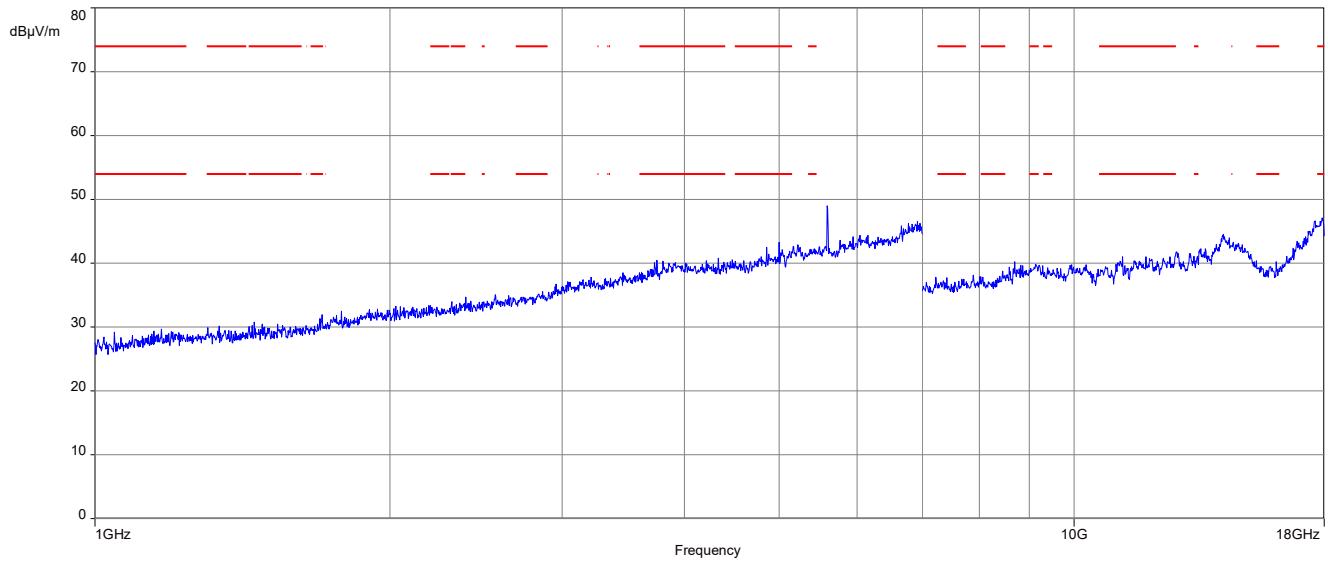
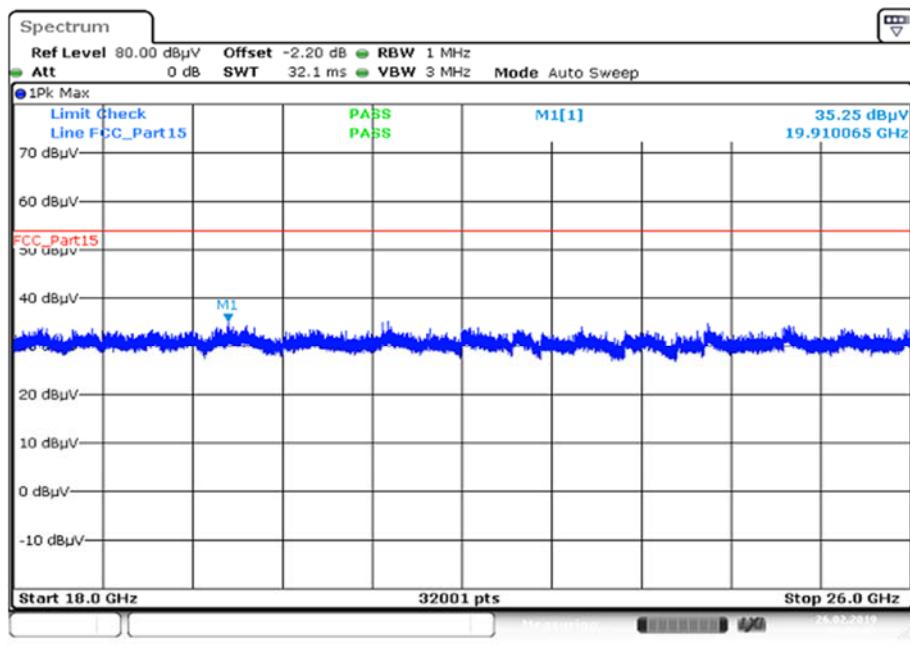
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.017	17.86	30.0	12.14	1000	120	101.0	H	11.0	13.0
34.490	21.78	30.0	8.22	1000	120	101.0	V	145.0	13.7
38.505	22.63	30.0	7.37	1000	120	98.0	V	308.0	14.2
42.364	22.50	30.0	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

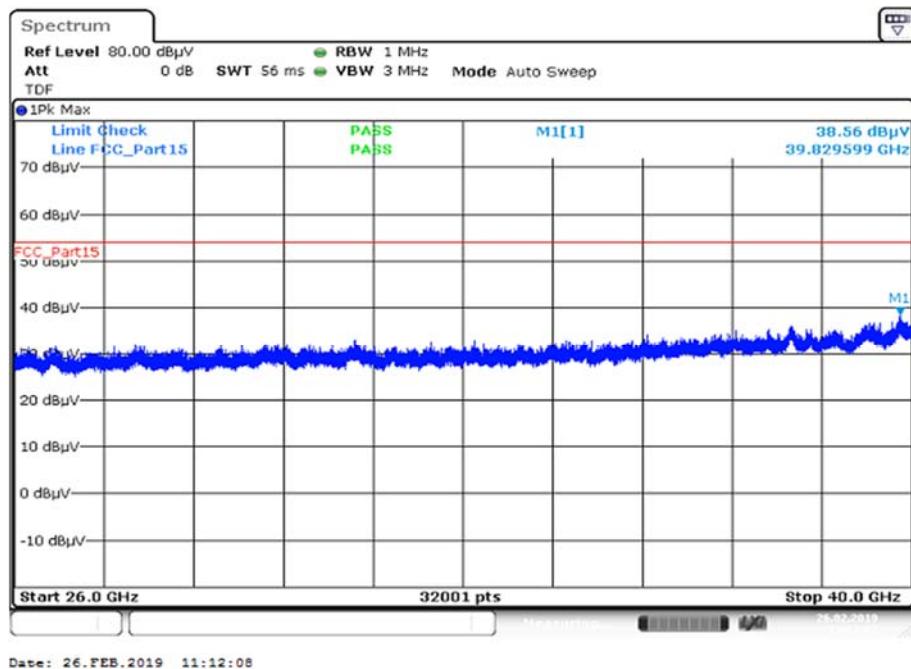
**Plot 18:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Plot 19:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

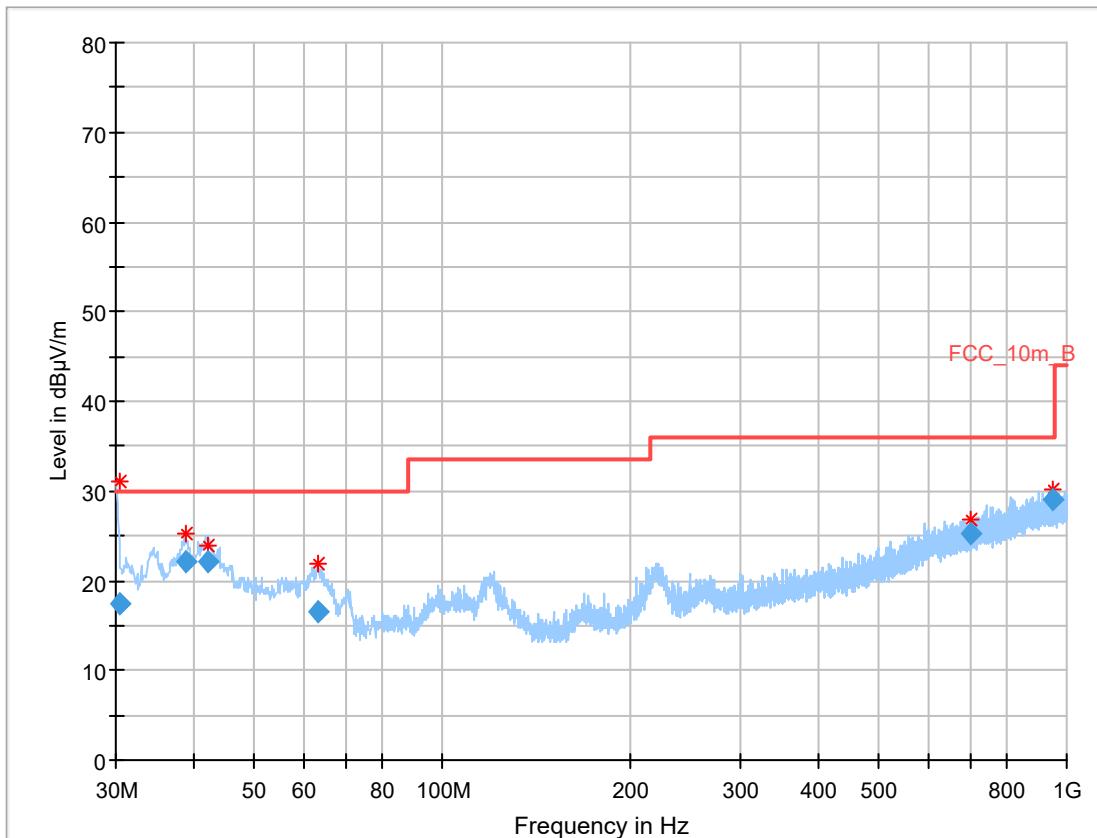
**Plot 20:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

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

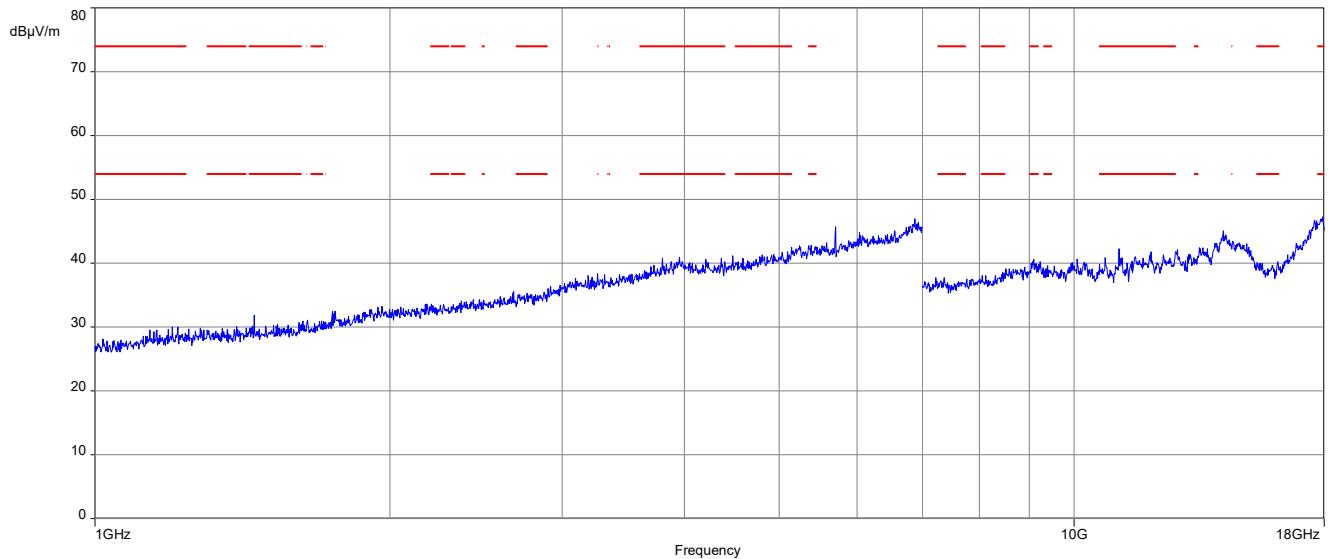
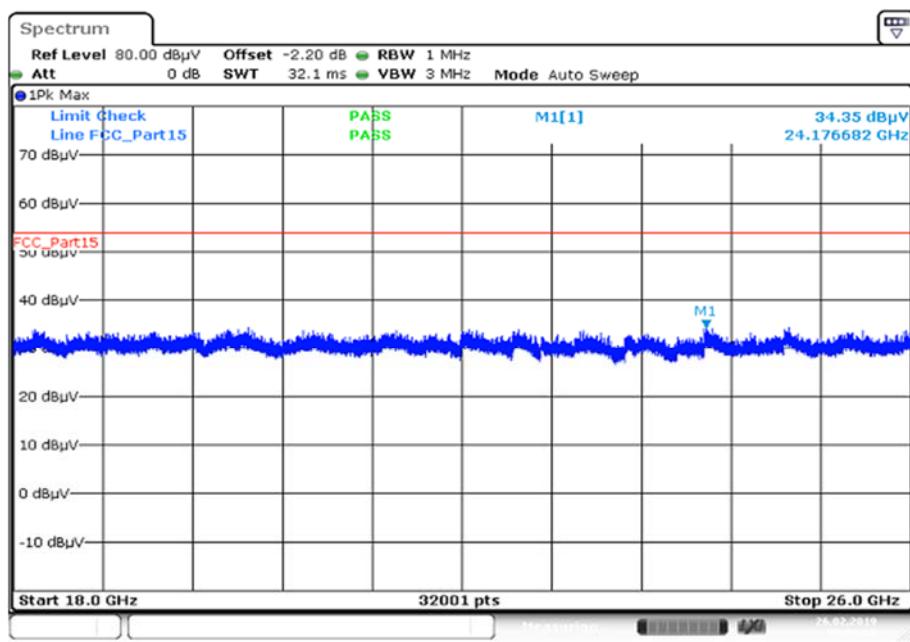
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.008	17.90	30.0	12.10	1000	120	101.0	H	253.0	13.0
38.660	22.59	30.0	7.41	1000	120	98.0	V	341.0	14.2
42.360	22.20	30.0	7.80	1000	120	100.0	V	181.0	14.6
64.107	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

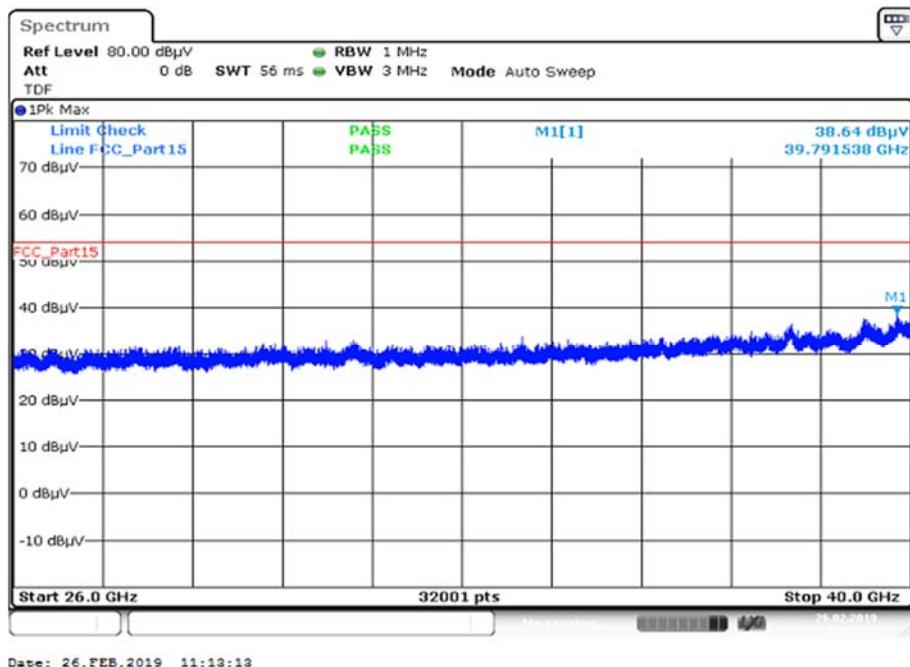
**Plot 22:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Plot 23:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

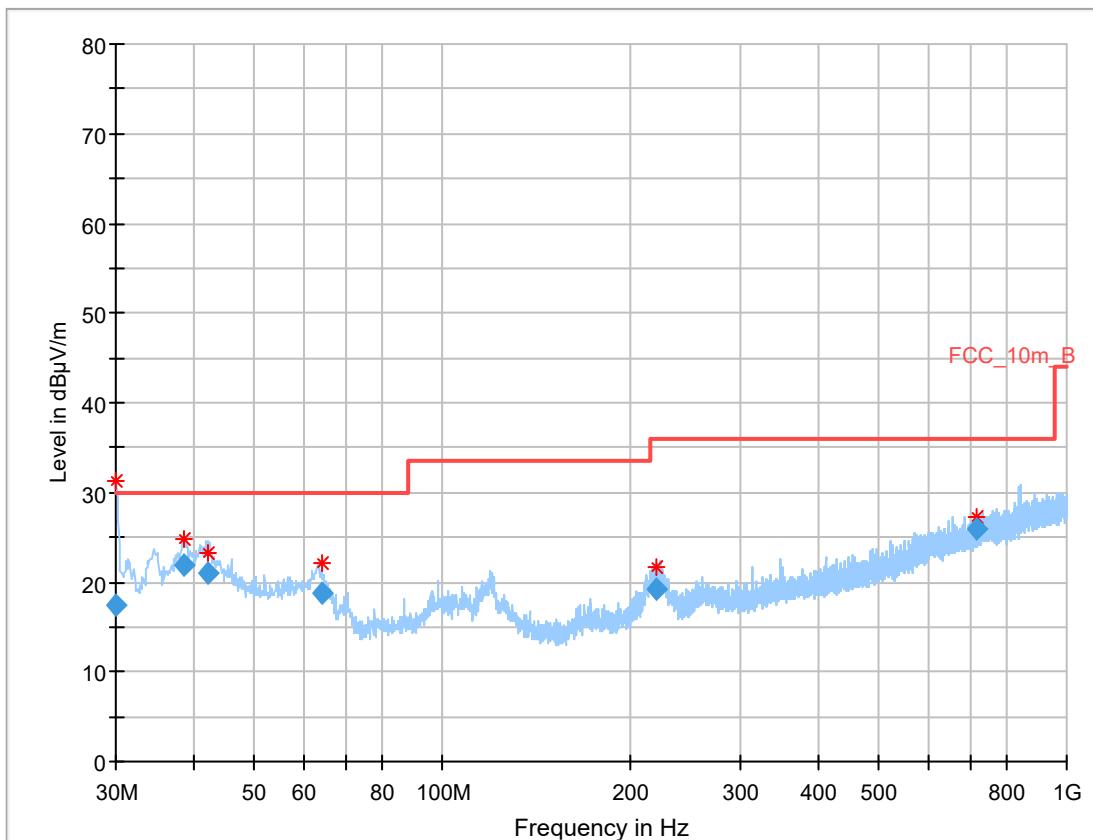
**Plot 24:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

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

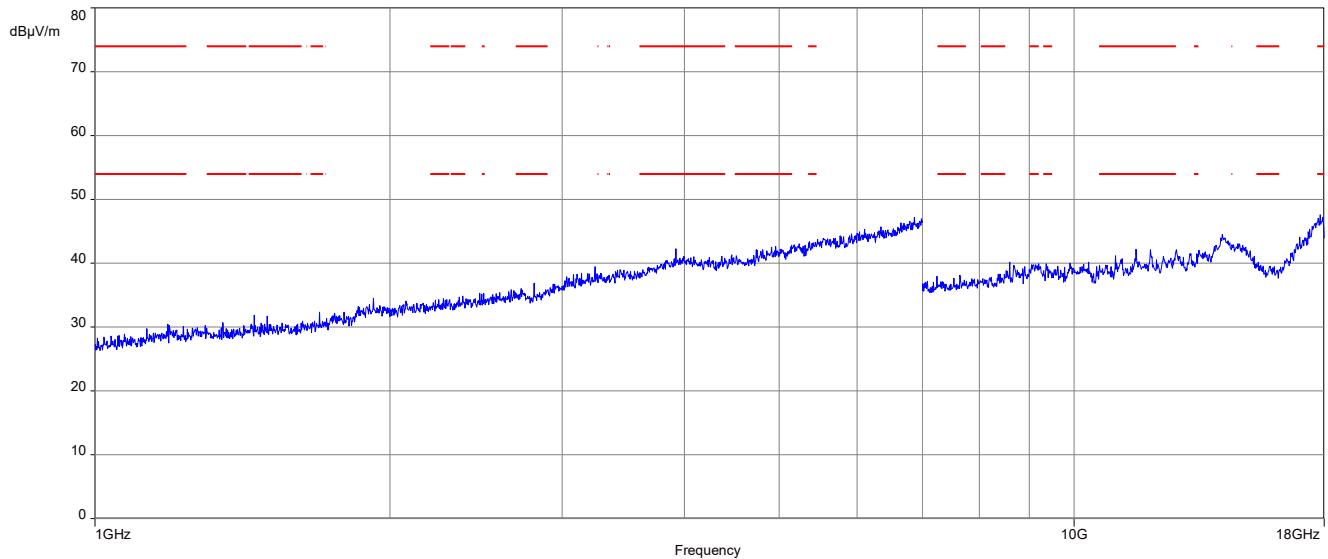
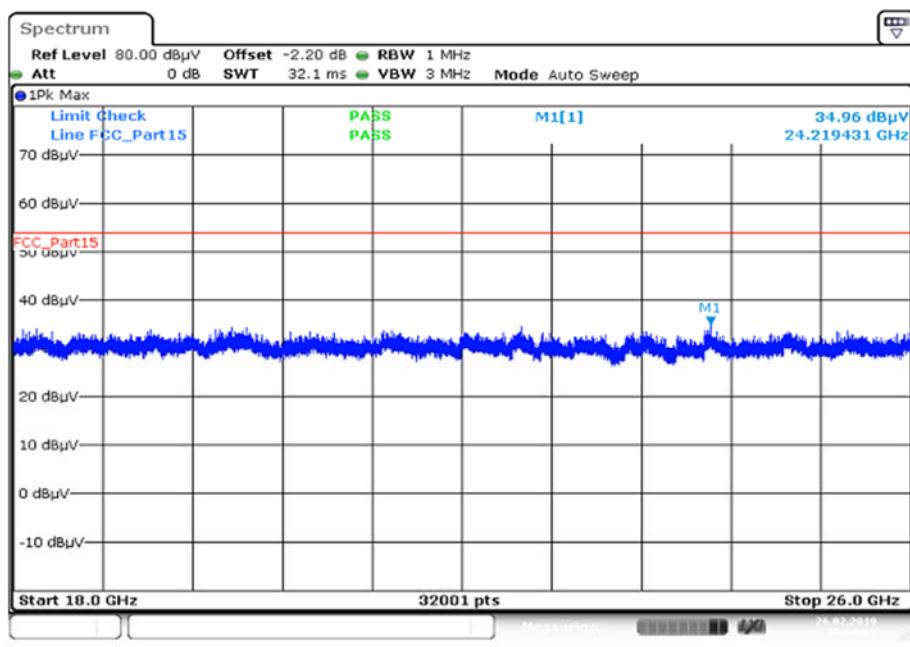
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.453	17.48	30.0	12.52	1000	120	101.0	H	282.0	13.1
38.716	22.02	30.0	7.98	1000	120	98.0	V	9.0	14.2
42.279	22.03	30.0	7.97	1000	120	98.0	V	0.0	14.5
63.334	16.58	30.0	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

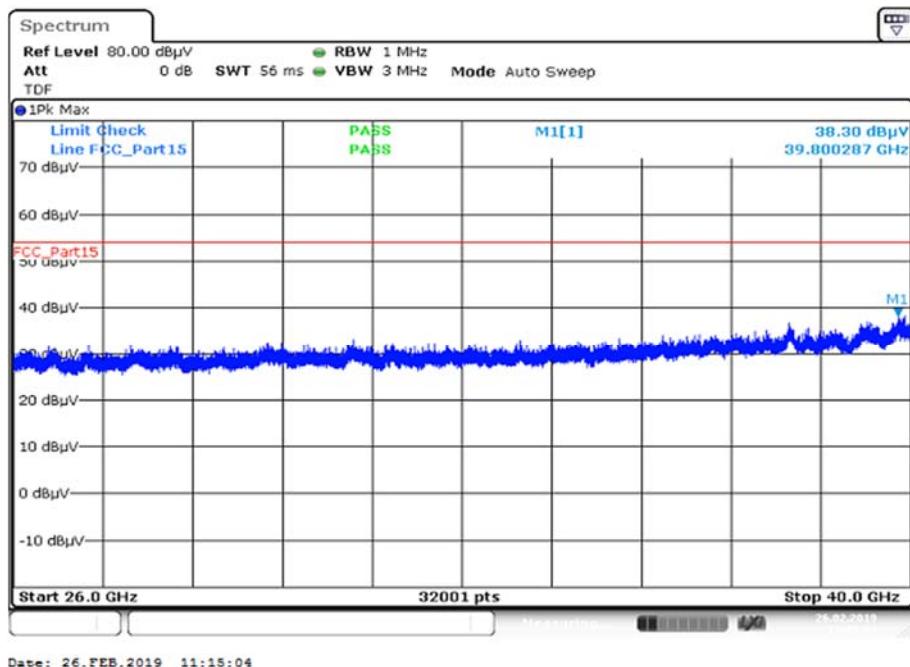
**Plot 26:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel**Plot 27:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

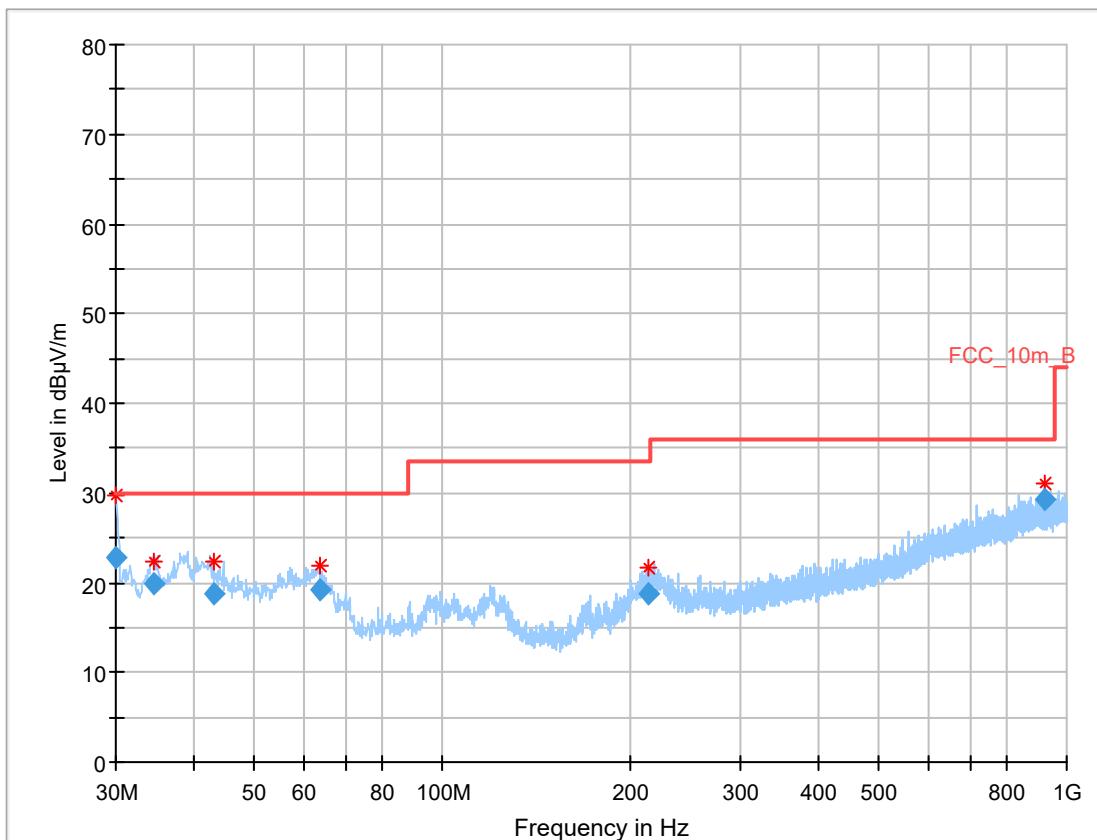
**Plot 28:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

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

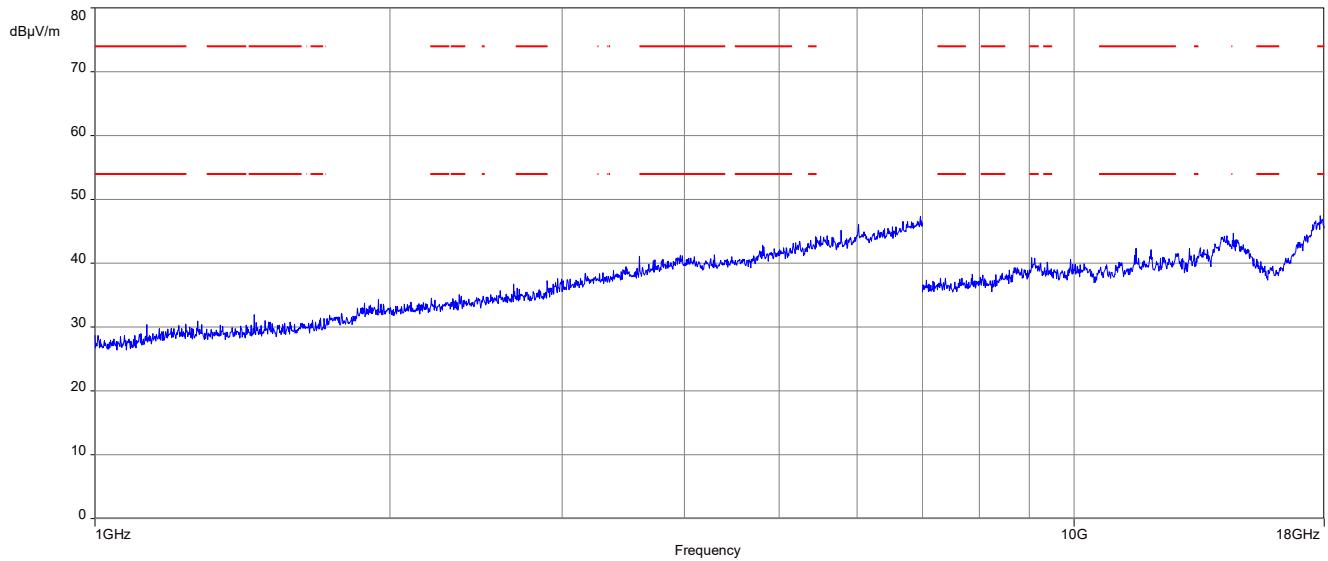
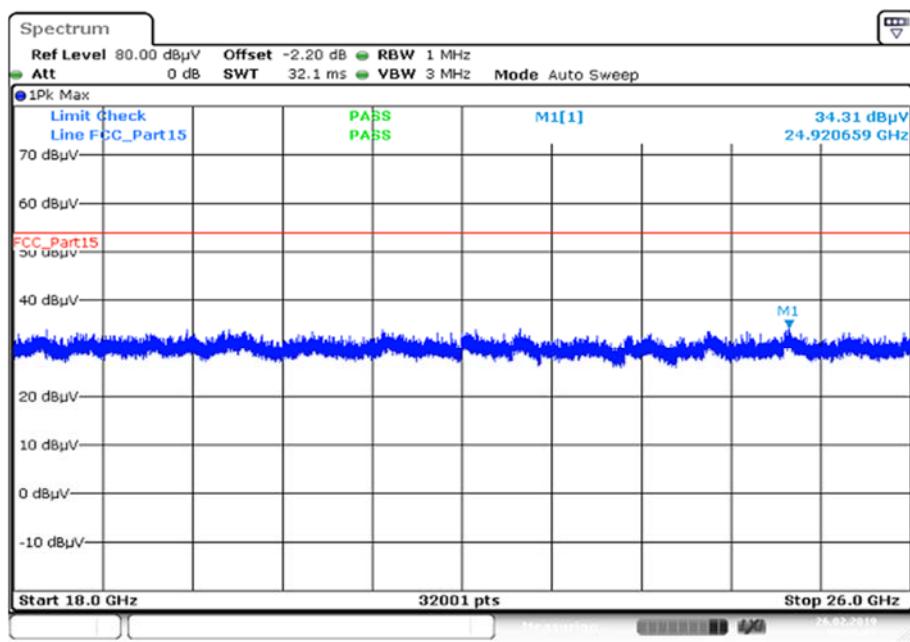
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.060	17.34	30.0	12.66	1000	120	101.0	H	71.0	13.0
38.640	22.00	30.0	8.00	1000	120	98.0	V	339.0	14.2
42.074	20.96	30.0	9.04	1000	120	170.0	V	198.0	14.5
64.011	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

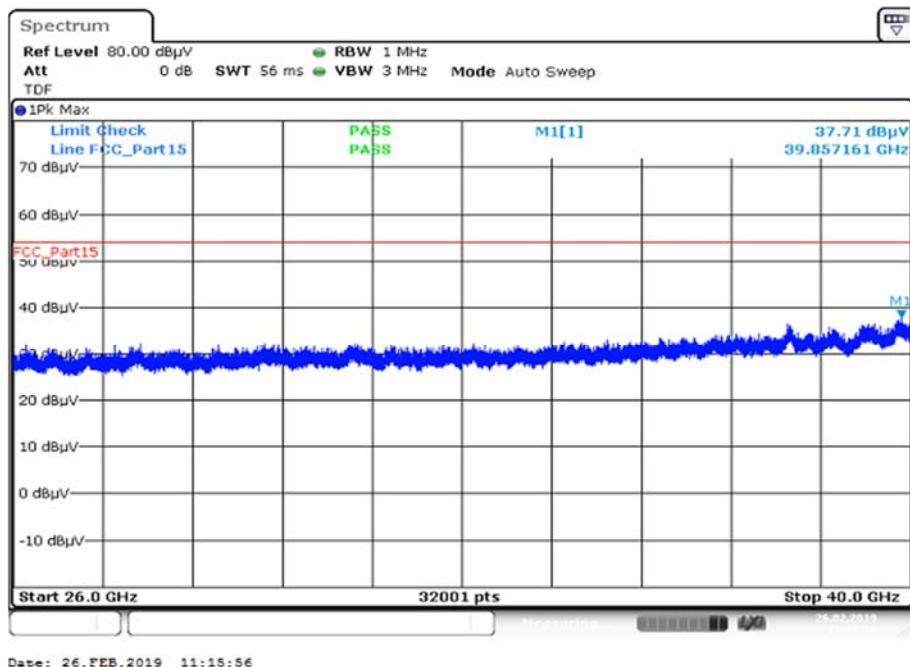
**Plot 30:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Plot 31:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

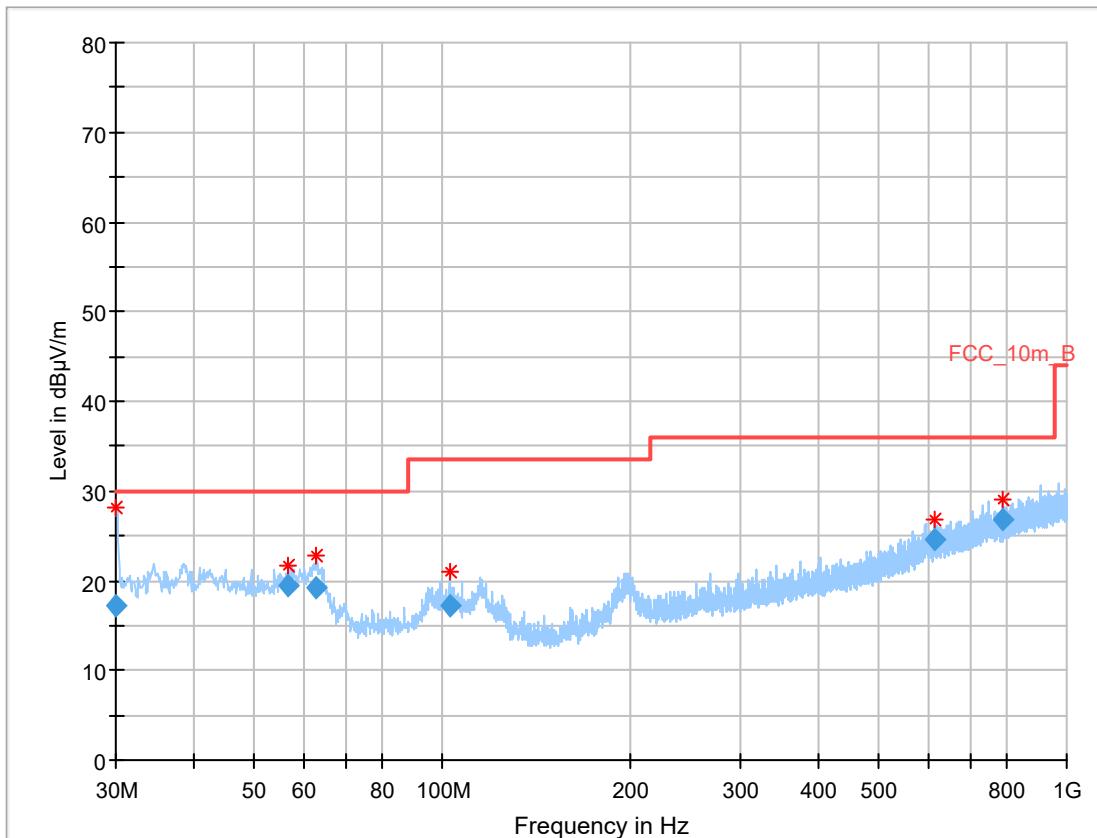
**Plot 32:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

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

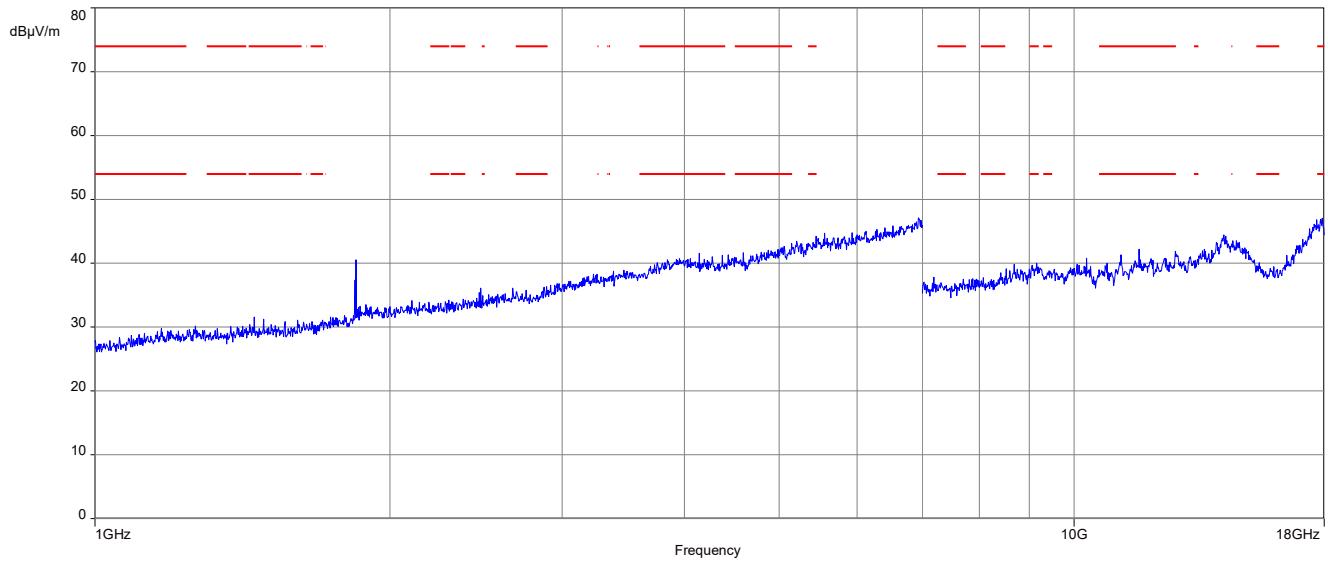
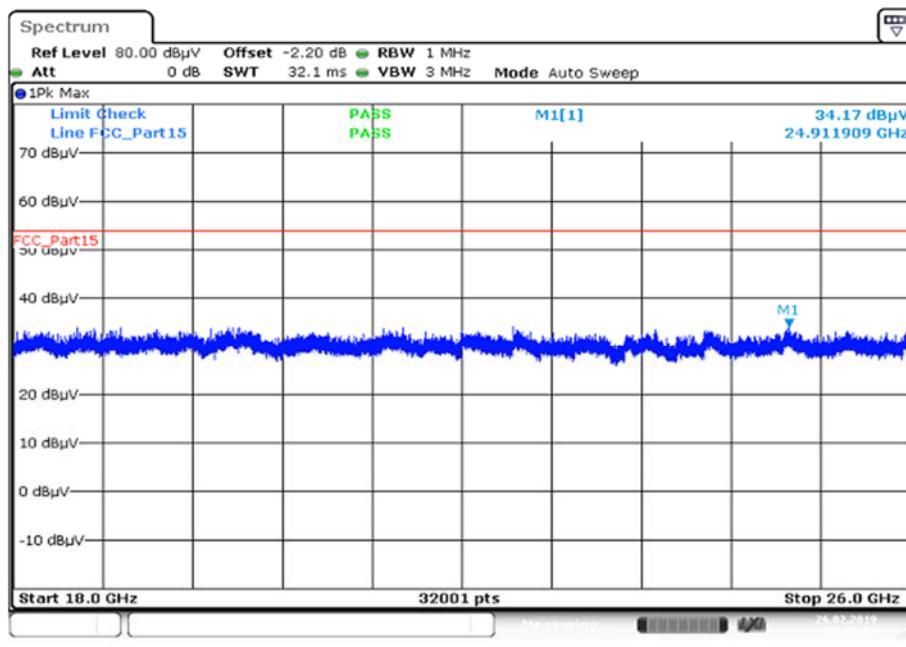
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.006	22.76	30.0	7.24	1000	120	170.0	H	-10.0	13.0
34.419	19.99	30.0	10.01	1000	120	101.0	V	264.0	13.7
42.966	18.80	30.0	11.20	1000	120	101.0	V	-9.0	14.6
63.506	19.12	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

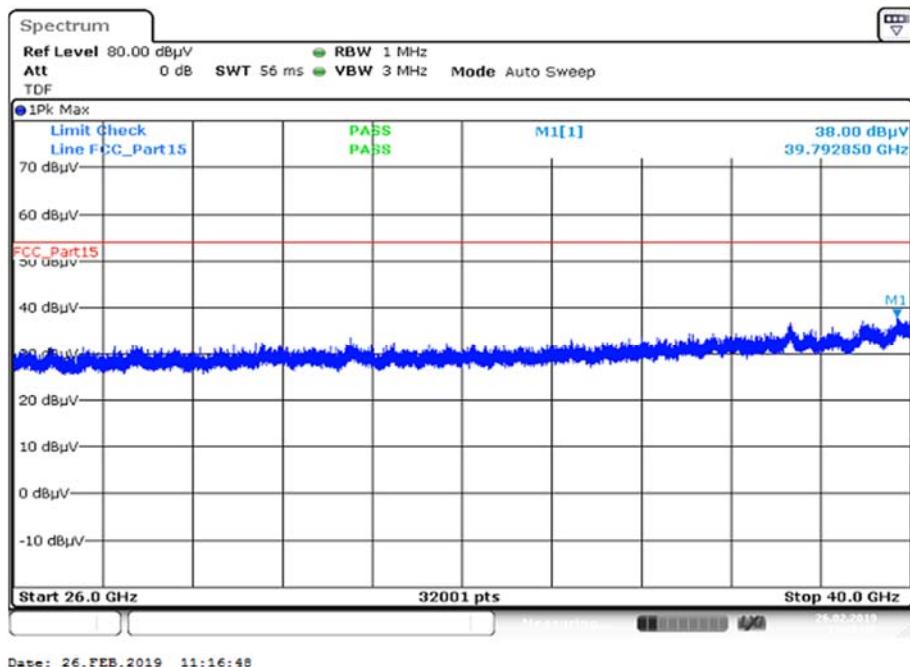
**Plot 34:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel**Plot 35:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; middle channel

**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:**

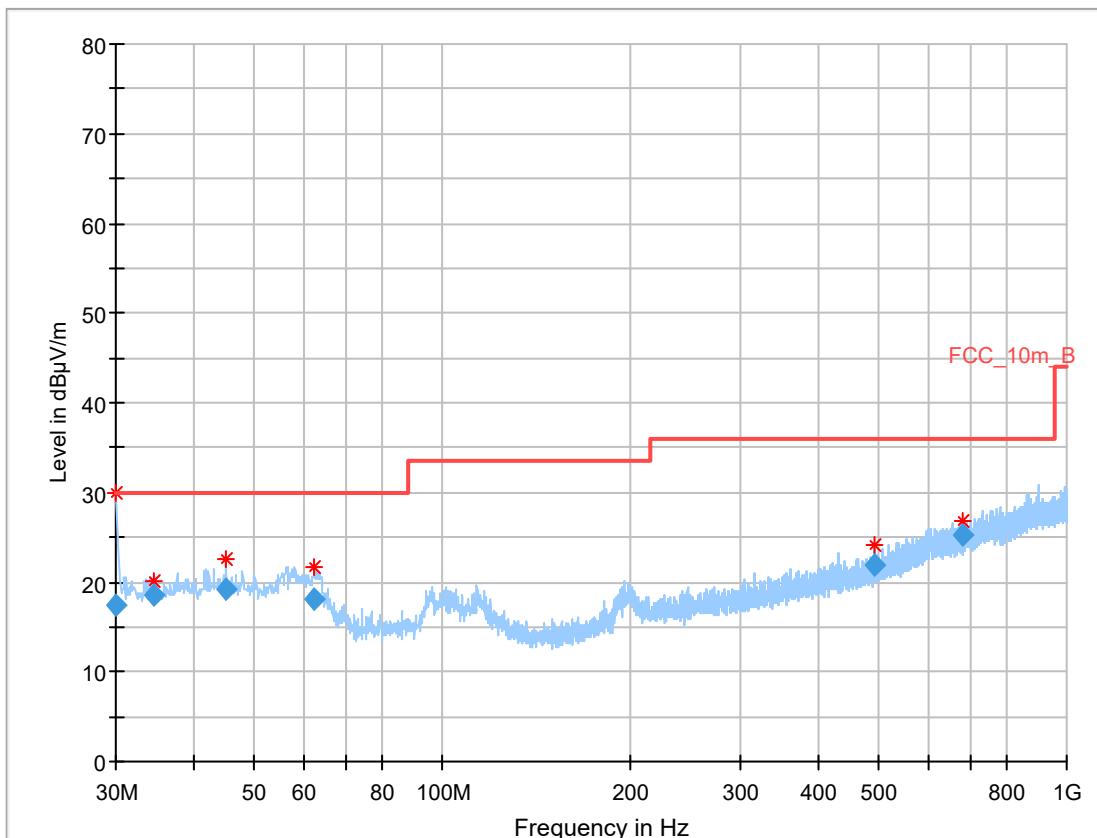
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.028	17.29	30.0	12.71	1000	120	101.0	H	299.0	13.0
56.714	19.38	30.0	10.62	1000	120	101.0	V	350.0	13.8
62.616	19.15	30.0	10.85	1000	120	160.0	V	341.0	12.4
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

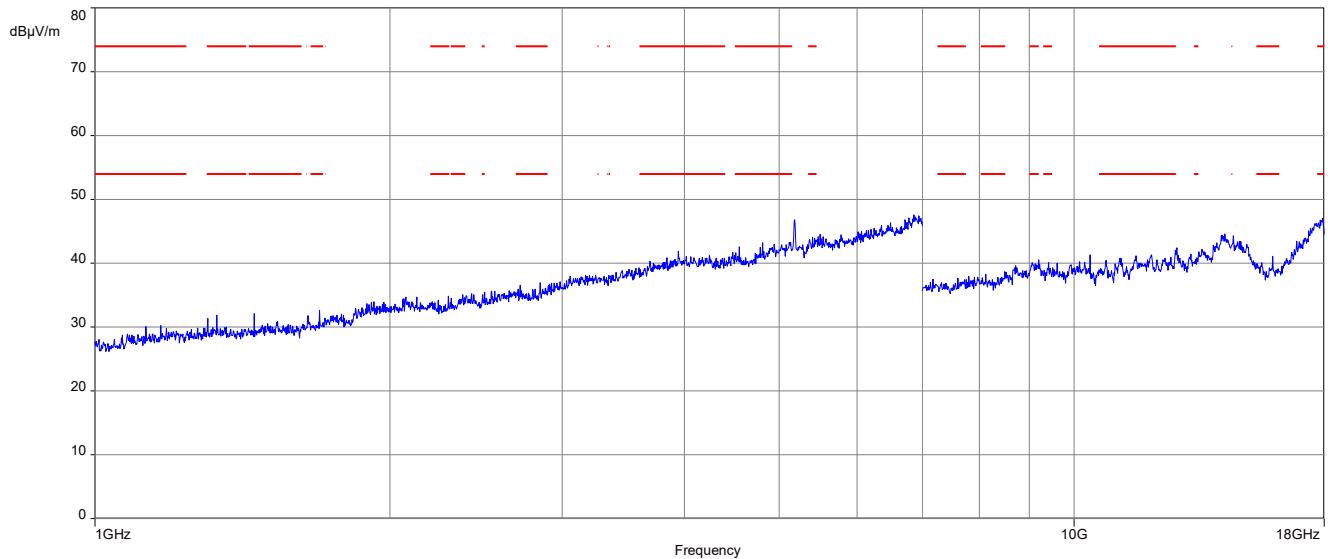
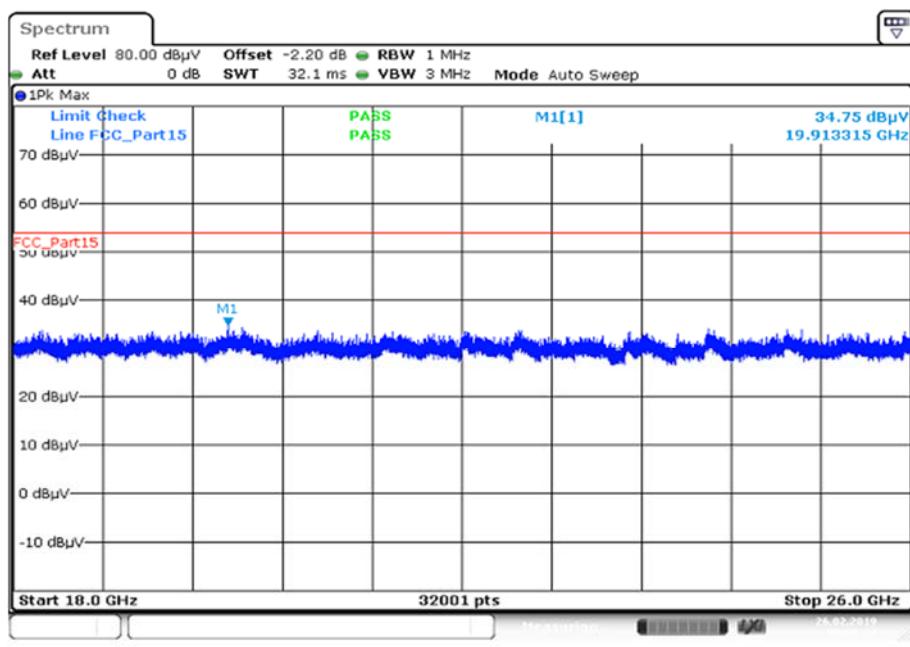
**Plots:** 40 MHz channel bandwidth

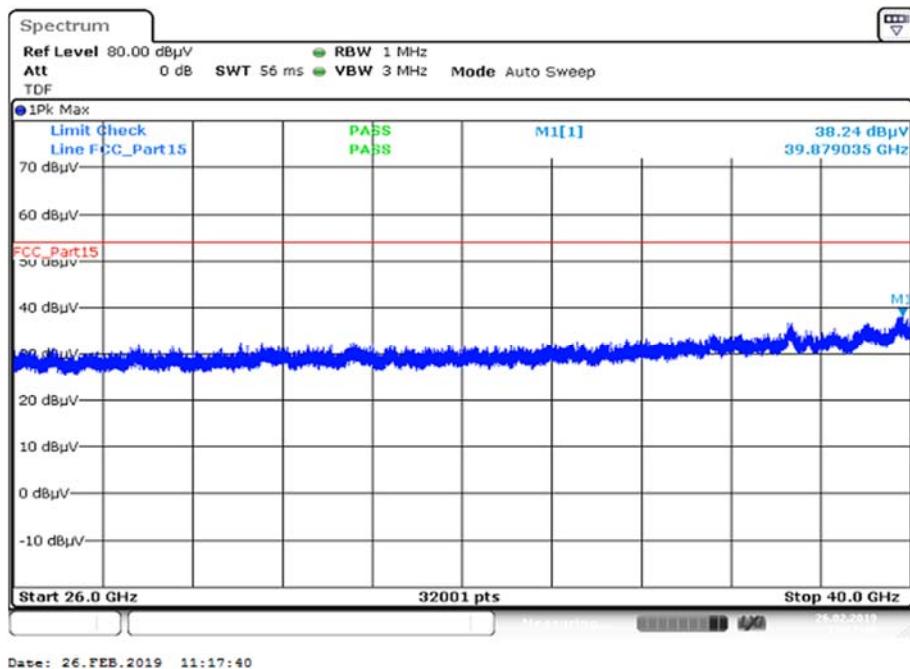
**Plot 1:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



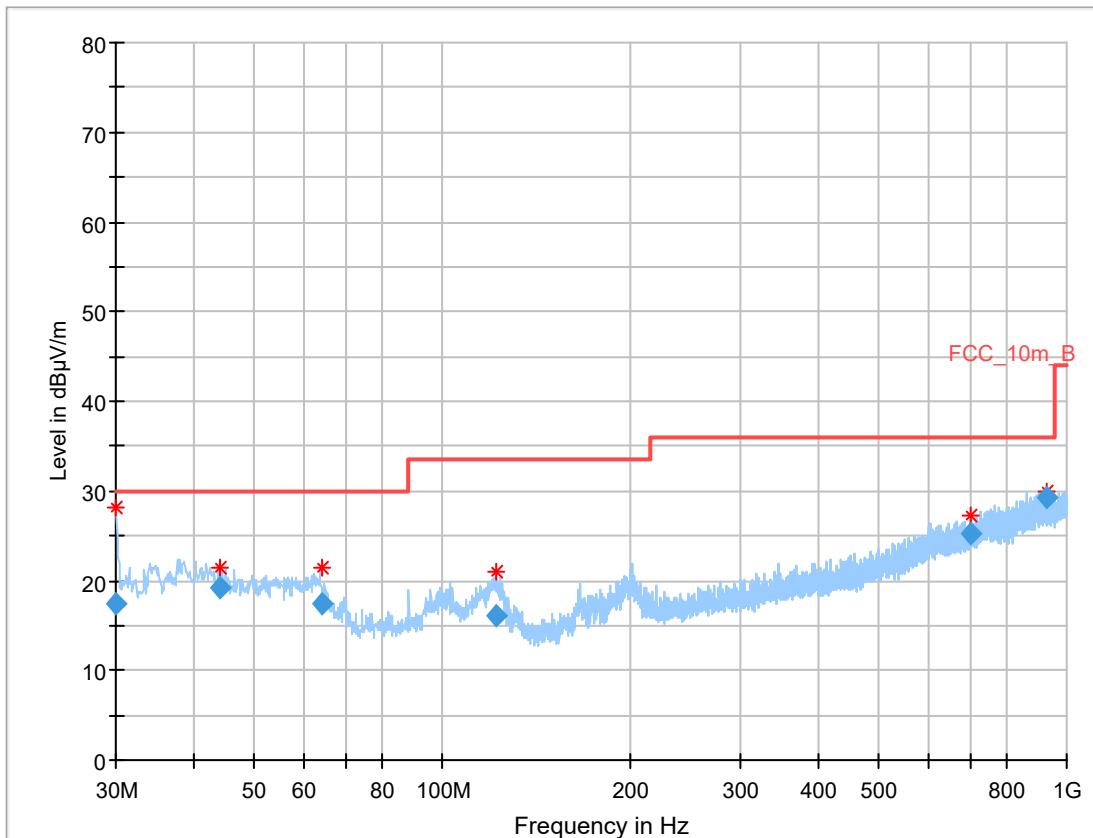
### Final\_Result:

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ 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

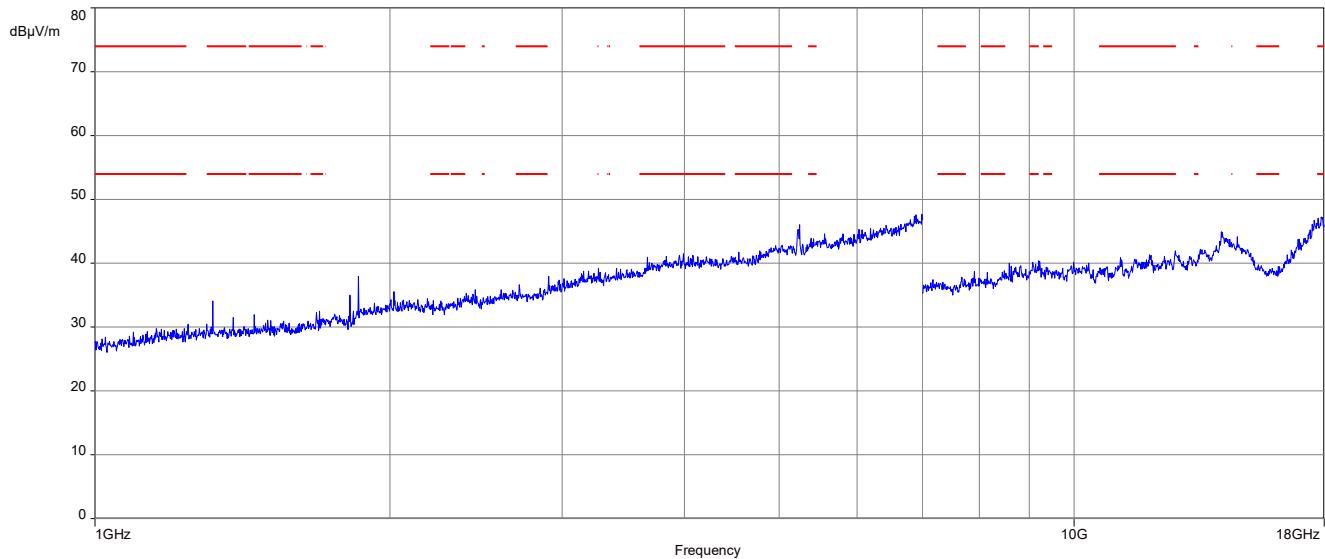
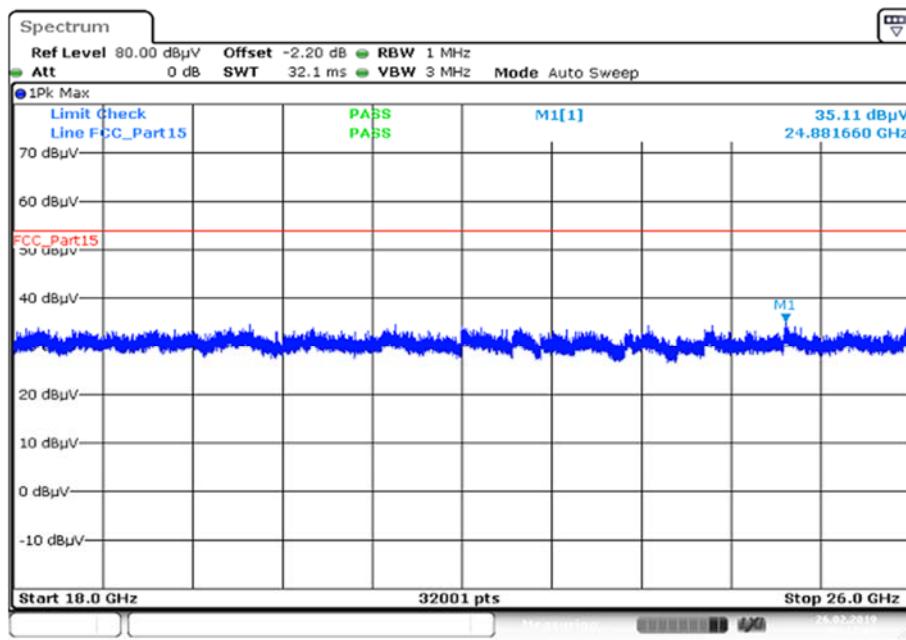
**Plot 4:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

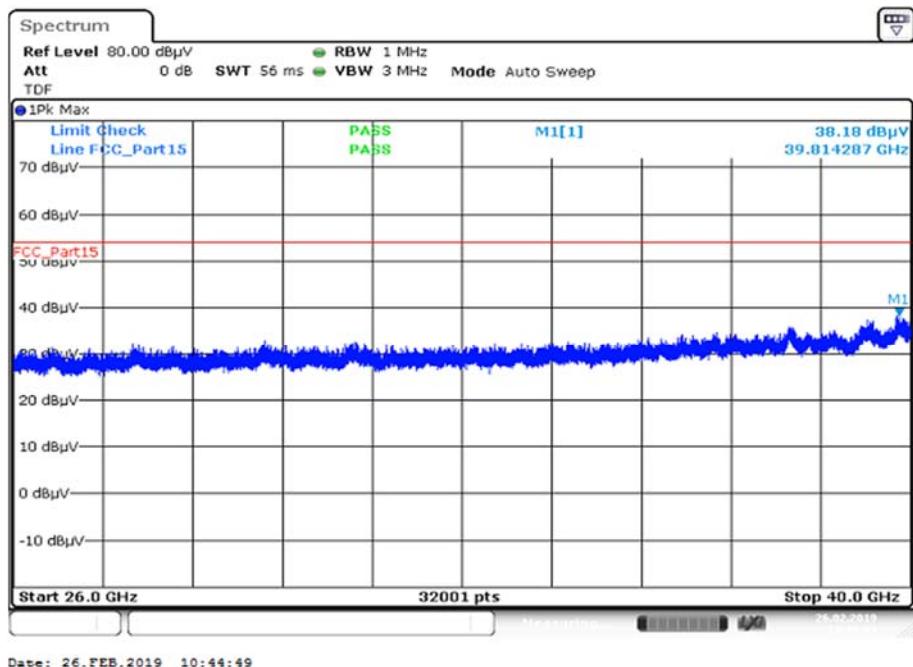
**Plot 5:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



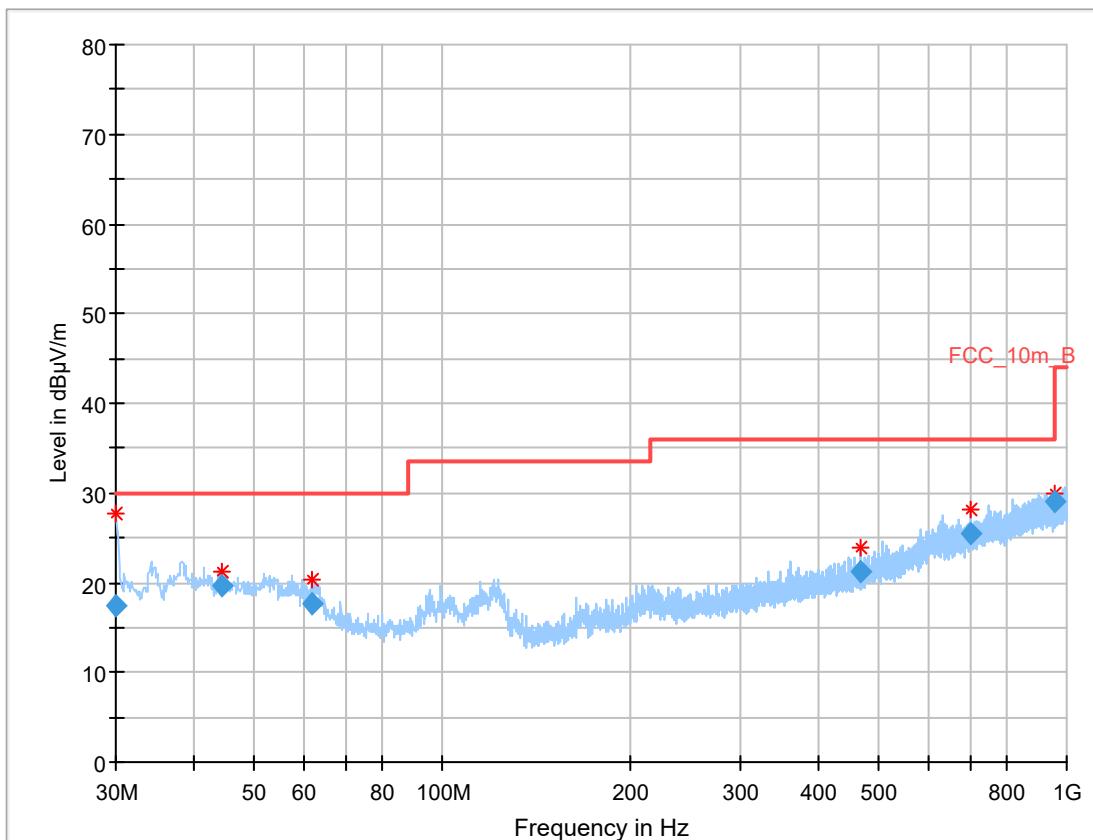
#### Final\_Result:

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ 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

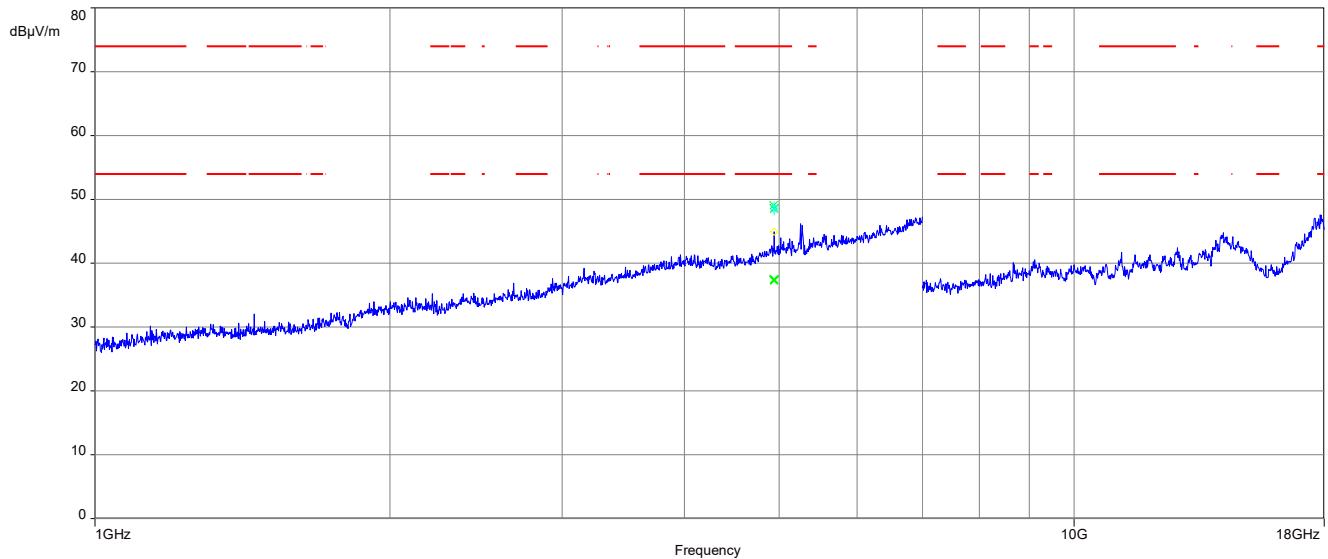
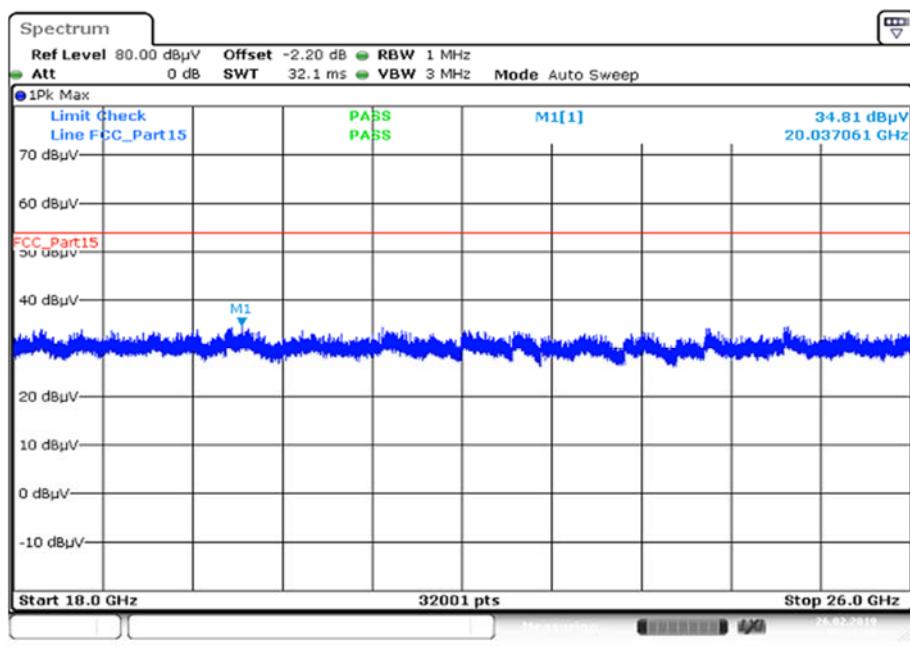
**Plot 8:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel

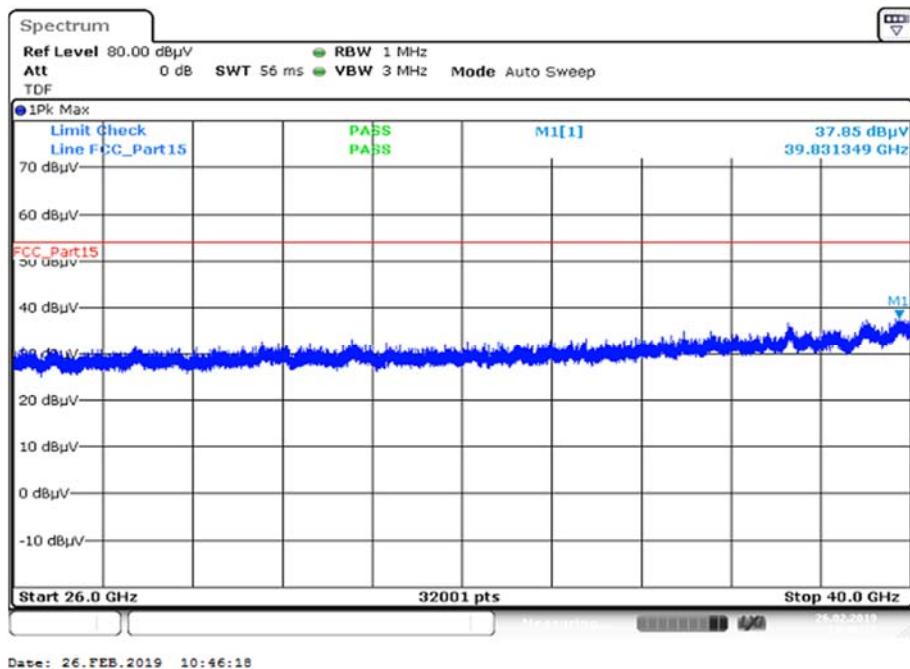
**Plot 9:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

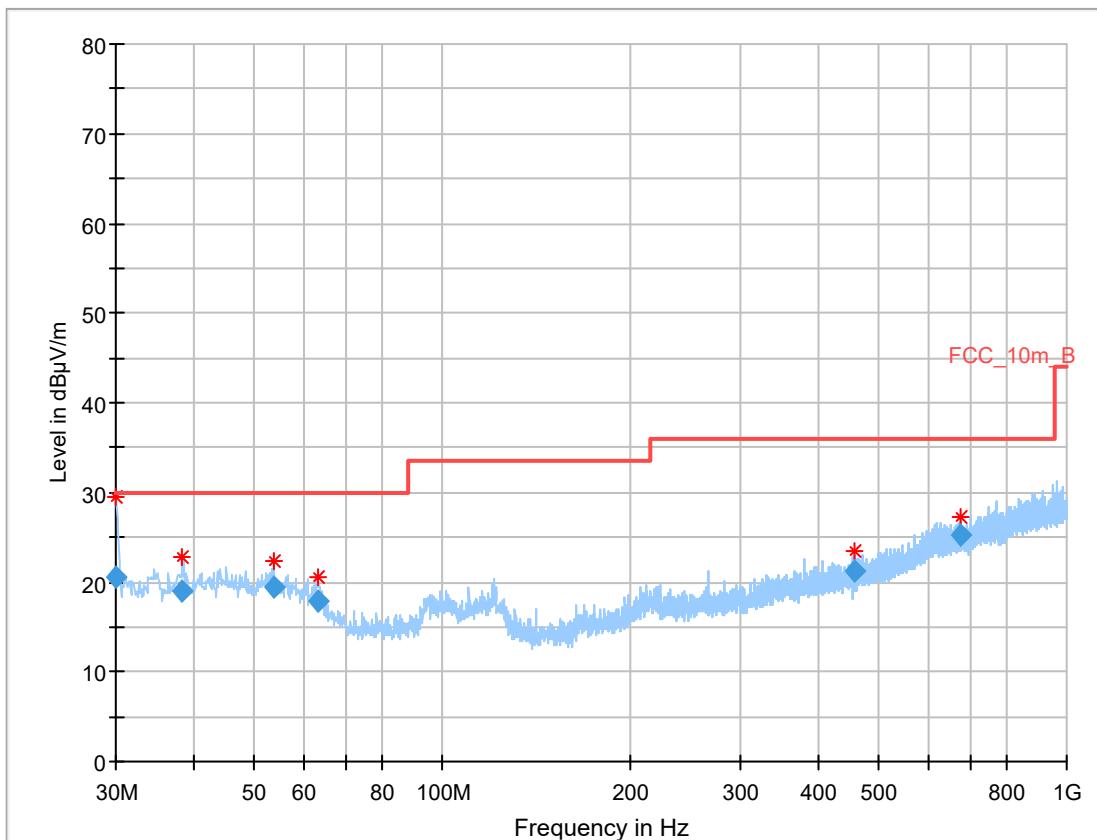


#### Final\_Result:

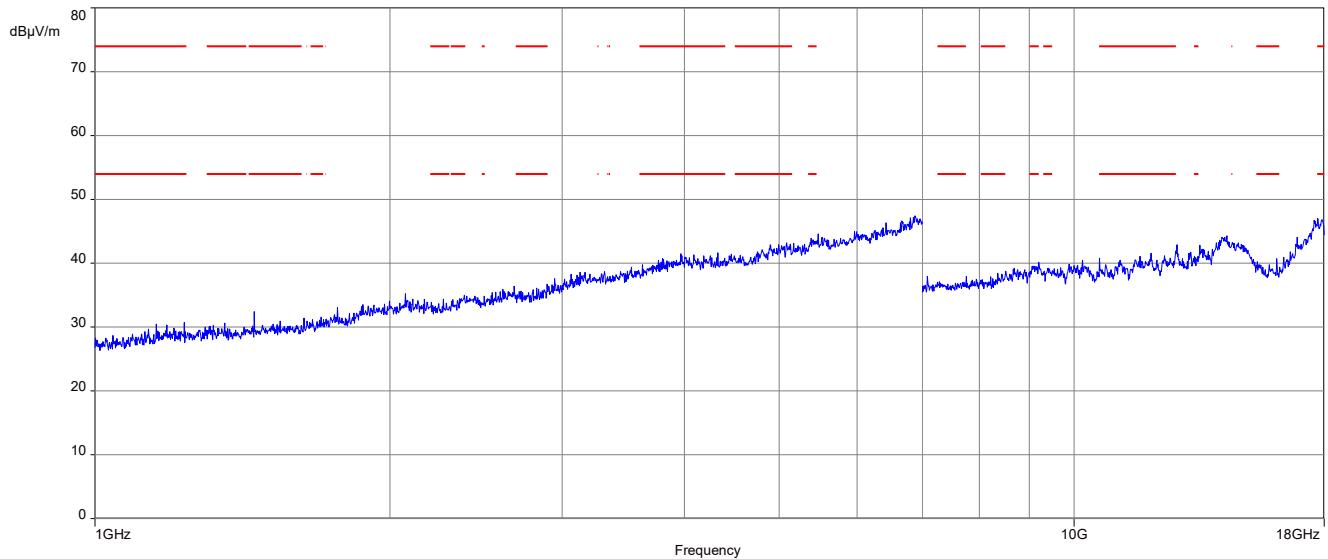
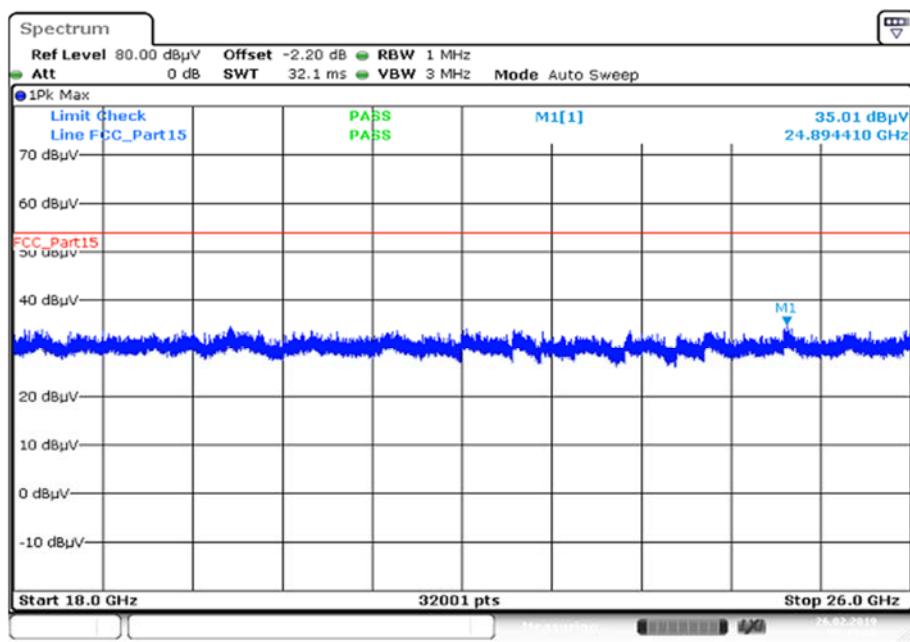
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.006	17.50	30.0	12.50	1000	120	101.0	H	163.0	13.0
44.236	19.61	30.0	10.39	1000	120	98.0	V	0.0	14.7
62.063	17.68	30.0	12.32	1000	120	160.0	V	350.0	12.5
467.683	21.27	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

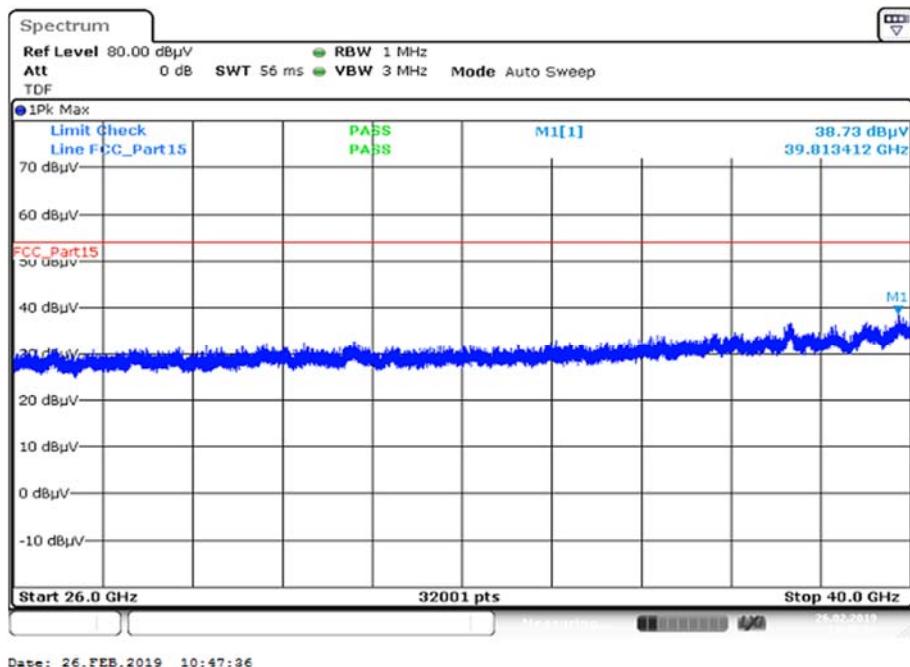
**Plot 10:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel**Plot 11:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

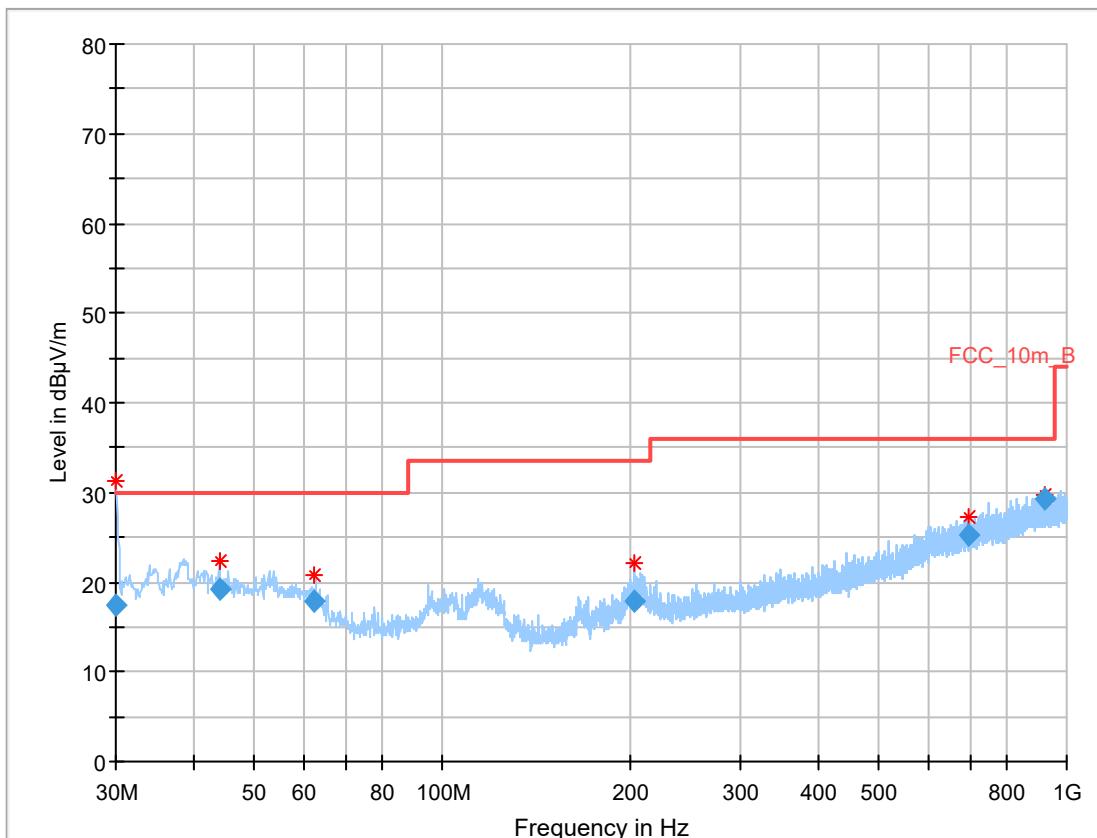
**Plot 12:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel

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

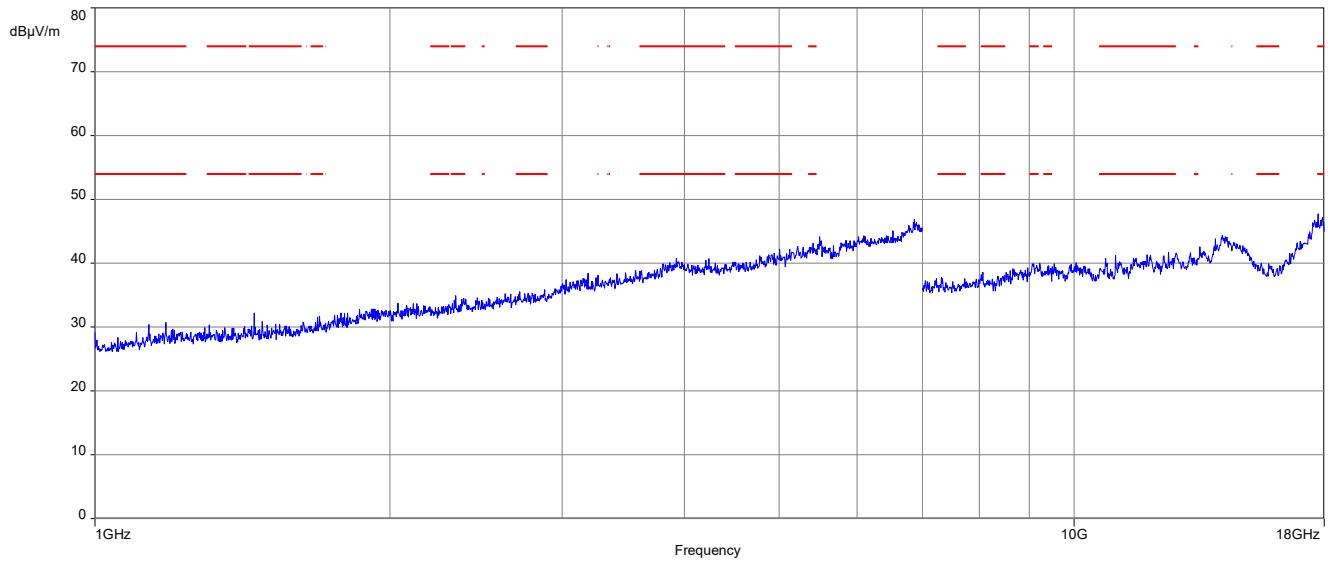
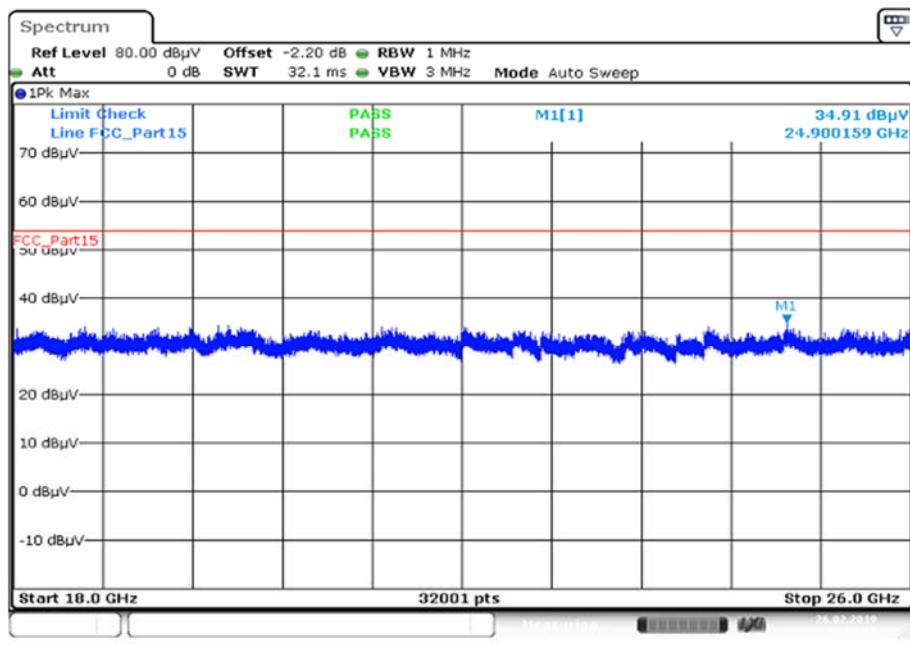
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.020	20.49	30.0	9.51	1000	120	160.0	H	249.0	13.0
38.393	18.91	30.0	11.09	1000	120	160.0	V	17.0	14.2
53.713	19.37	30.0	10.63	1000	120	101.0	V	228.0	14.4
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

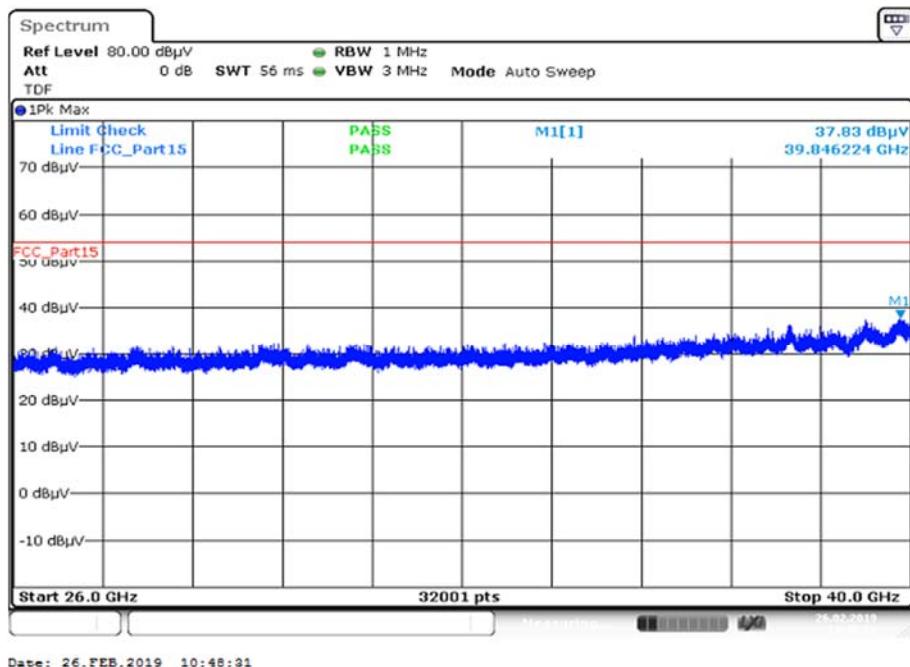
**Plot 16:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel

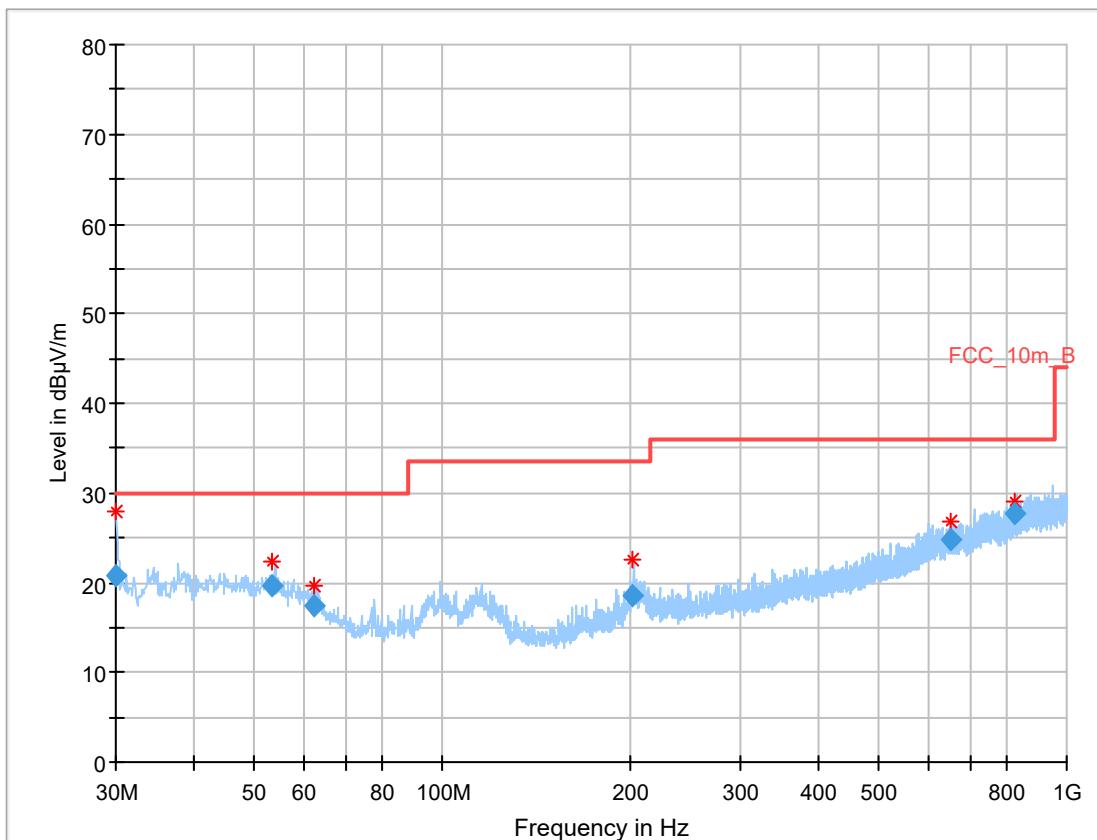
**Plot 17:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Final\_Result:**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ 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

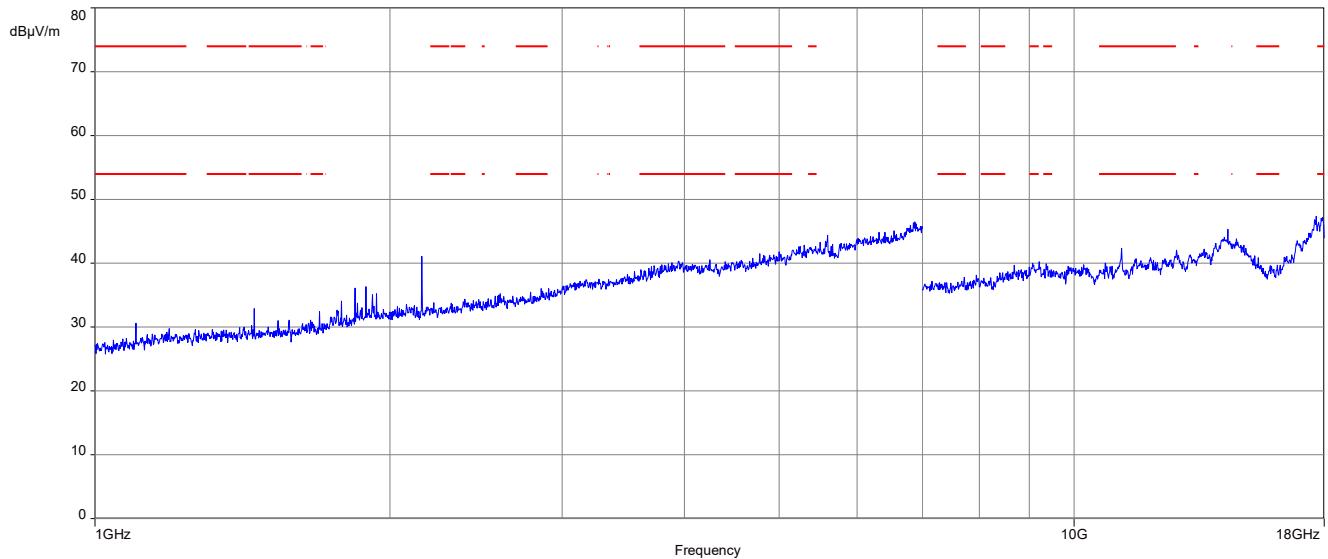
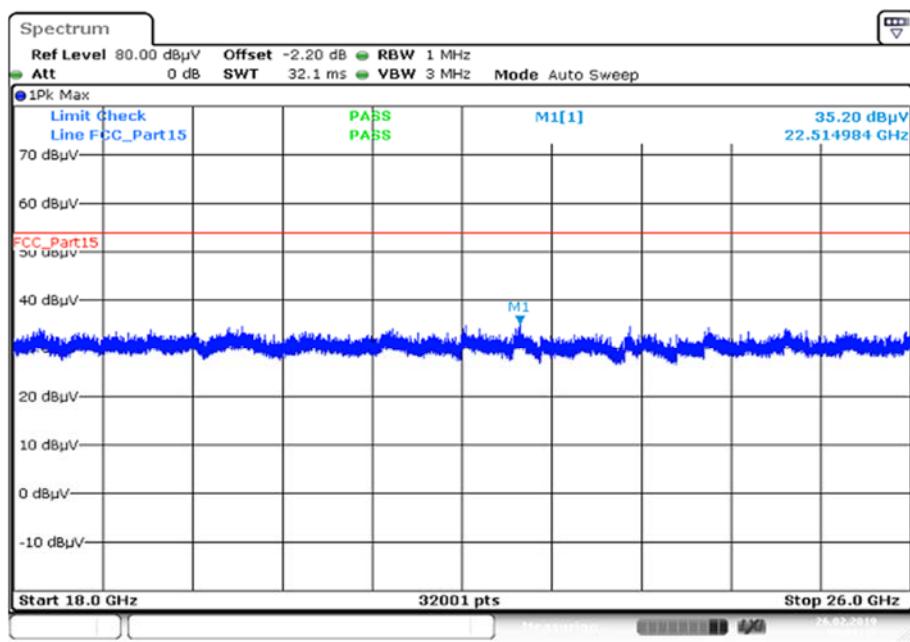
**Plot 18:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel**Plot 19:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

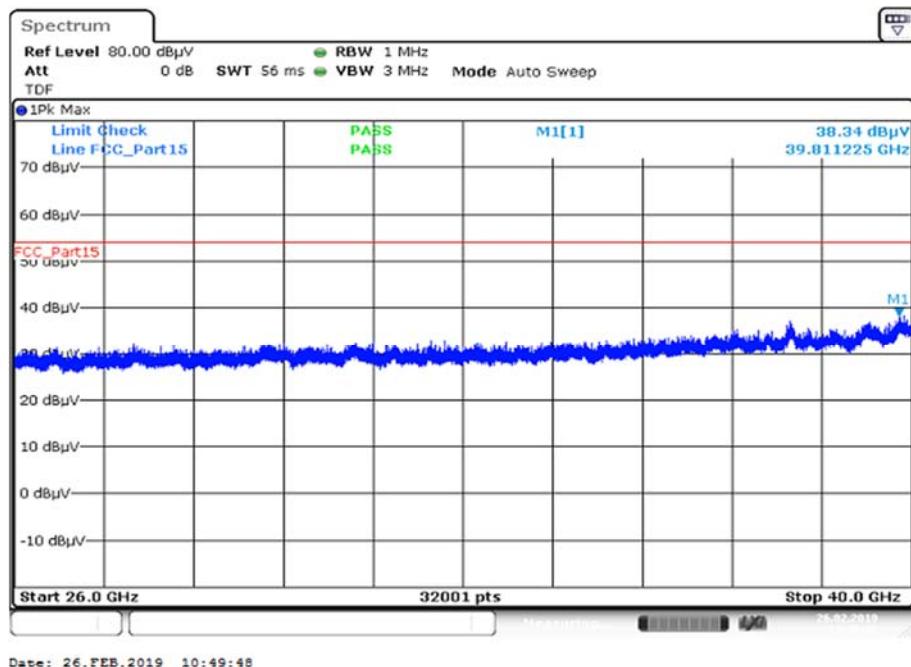
**Plot 20:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel

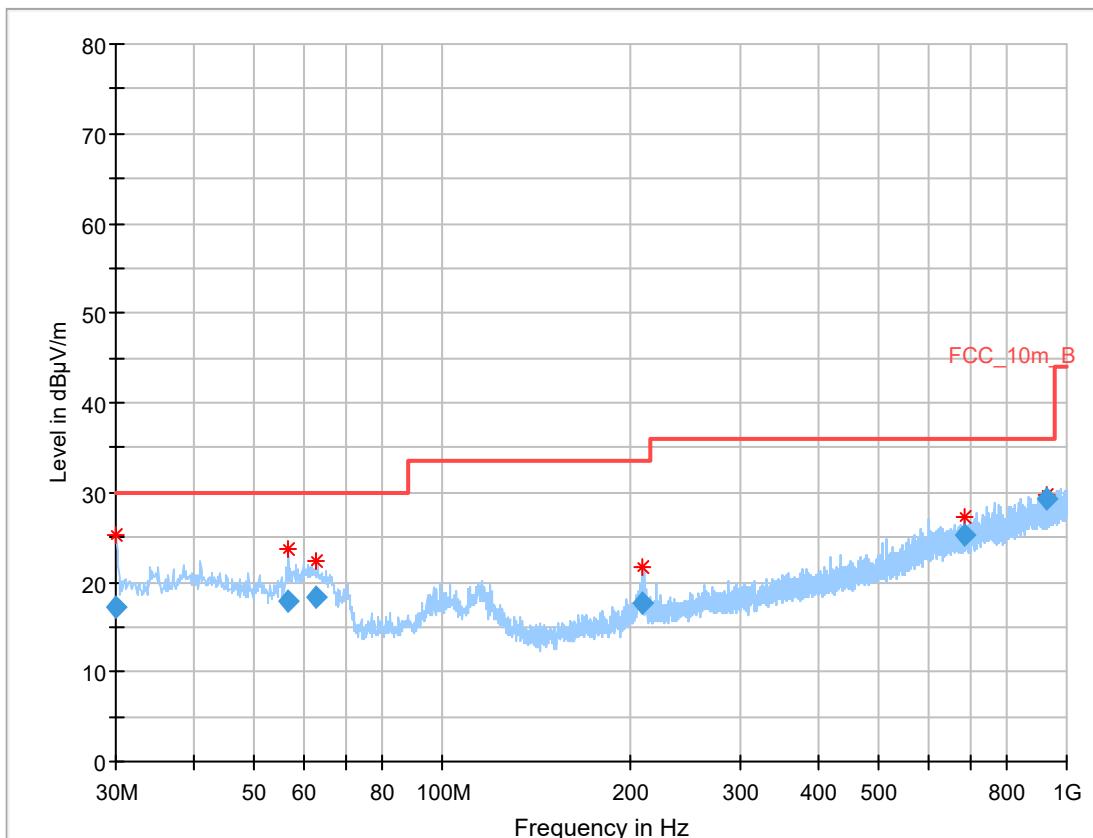


**Plot 21:** 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Final\_Result:**

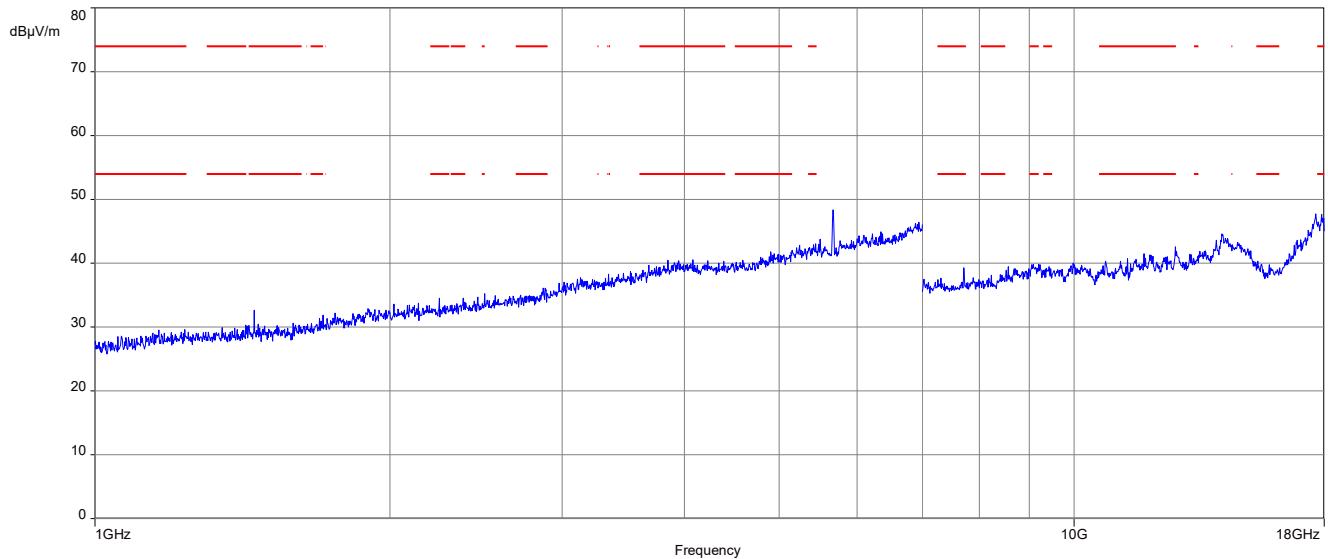
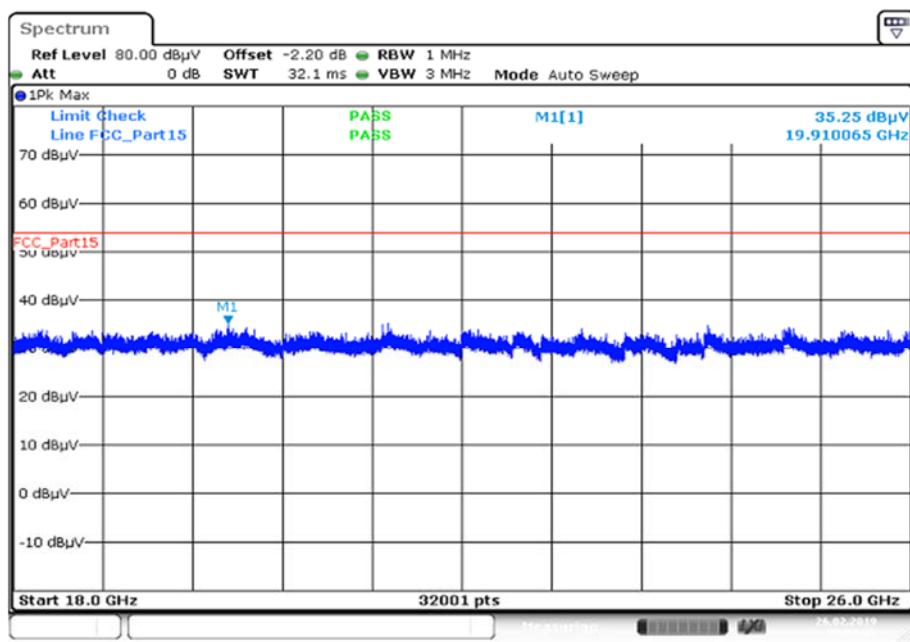
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.011	20.86	30.0	9.14	1000	120	160.0	H	29.0	13.0
53.499	19.63	30.0	10.37	1000	120	98.0	V	250.0	14.4
62.450	17.50	30.0	12.50	1000	120	100.0	V	13.0	12.4
201.957	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

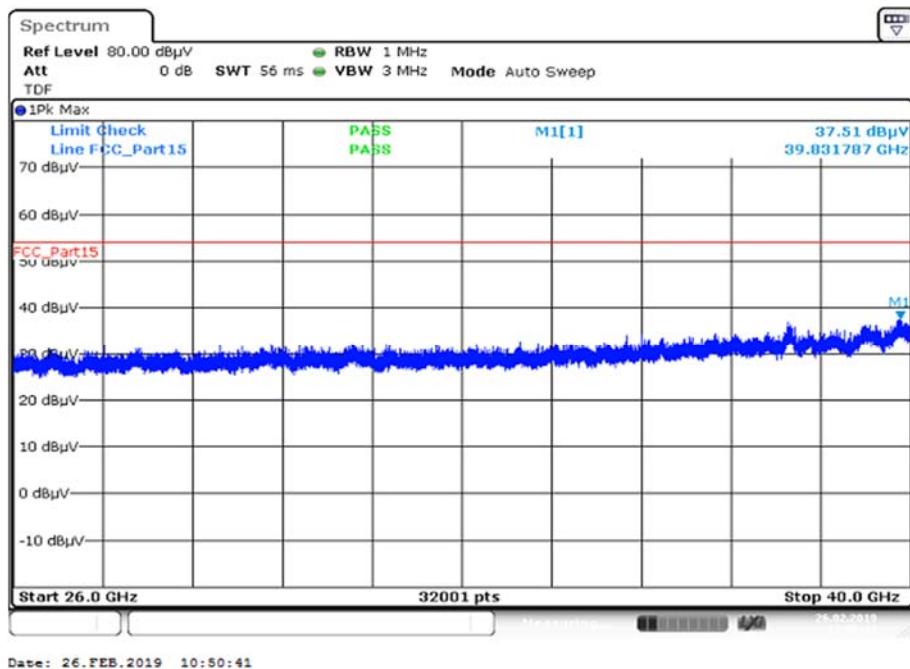
**Plot 22:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel**Plot 23:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

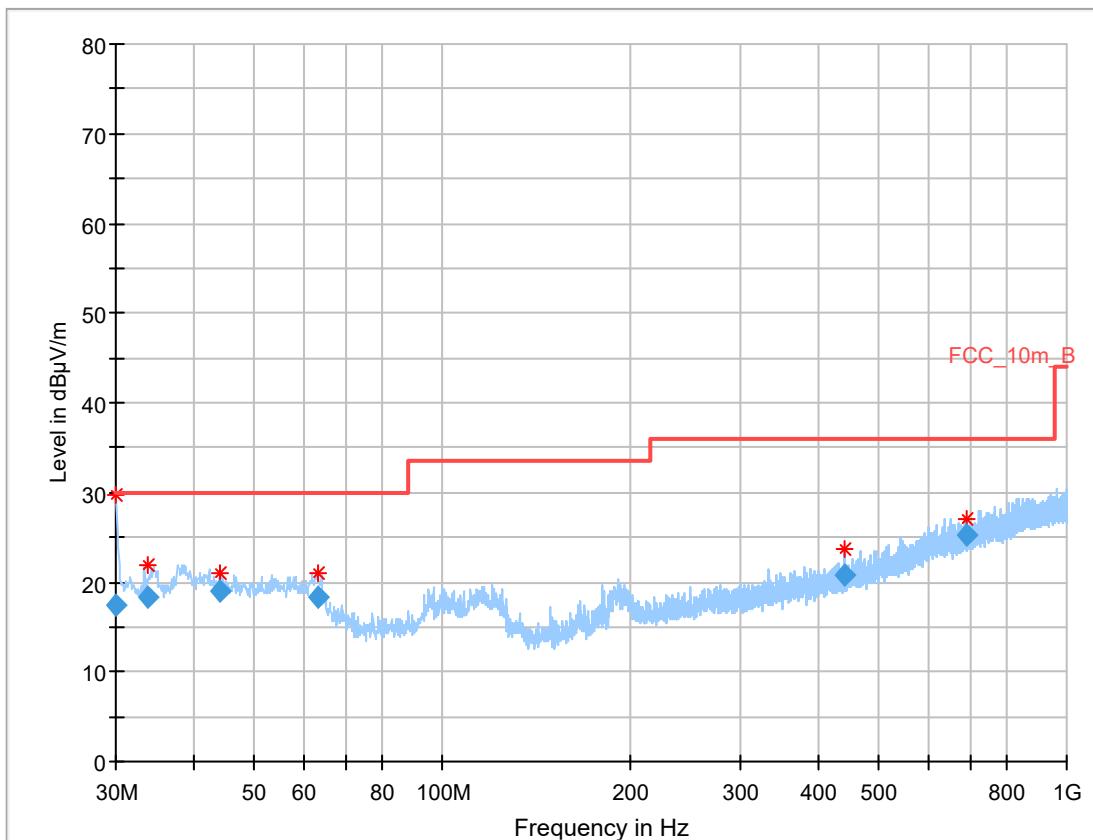
**Plot 24:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel

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

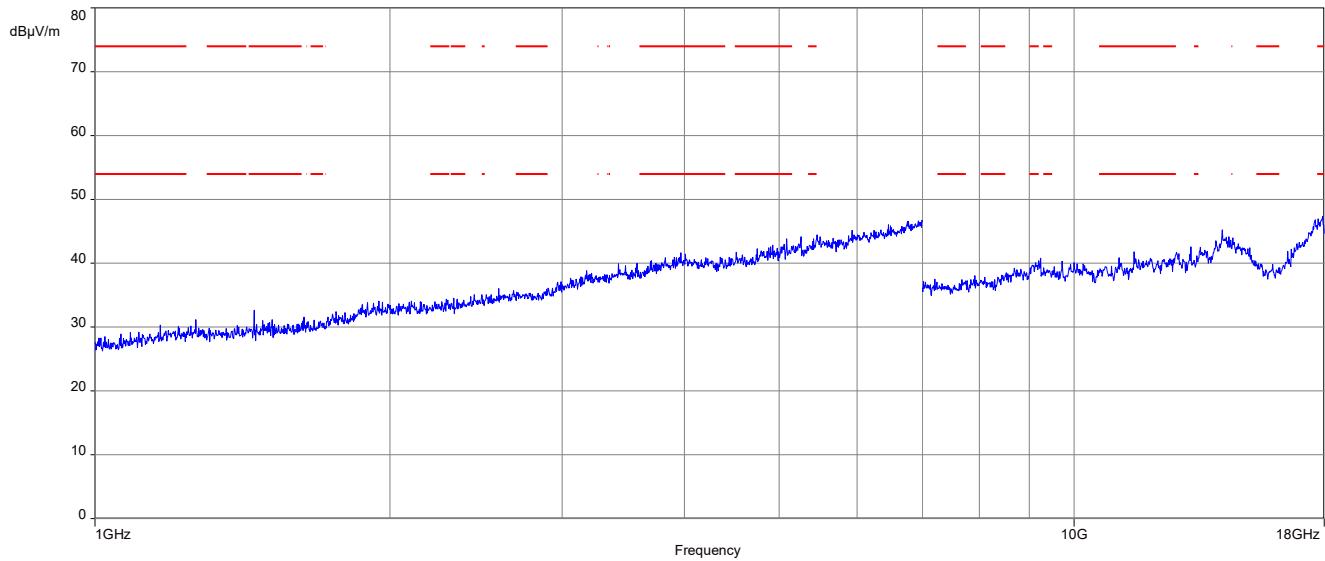
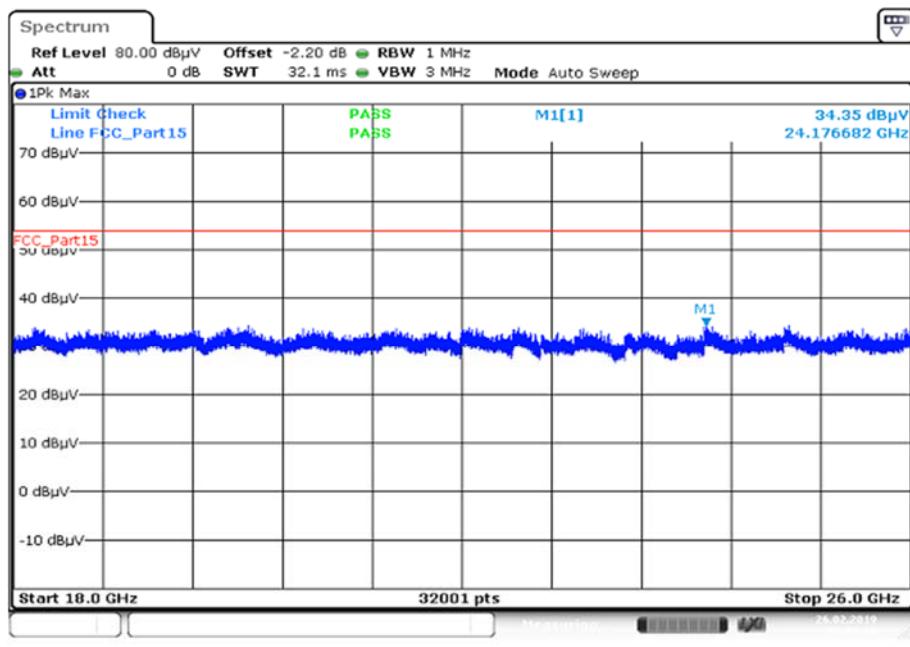
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.045	17.15	30.0	12.85	1000	120	101.0	H	350.0	13.0
56.426	17.87	30.0	12.13	1000	120	160.0	V	0.0	13.9
62.889	18.27	30.0	11.73	1000	120	160.0	V	227.0	12.3
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

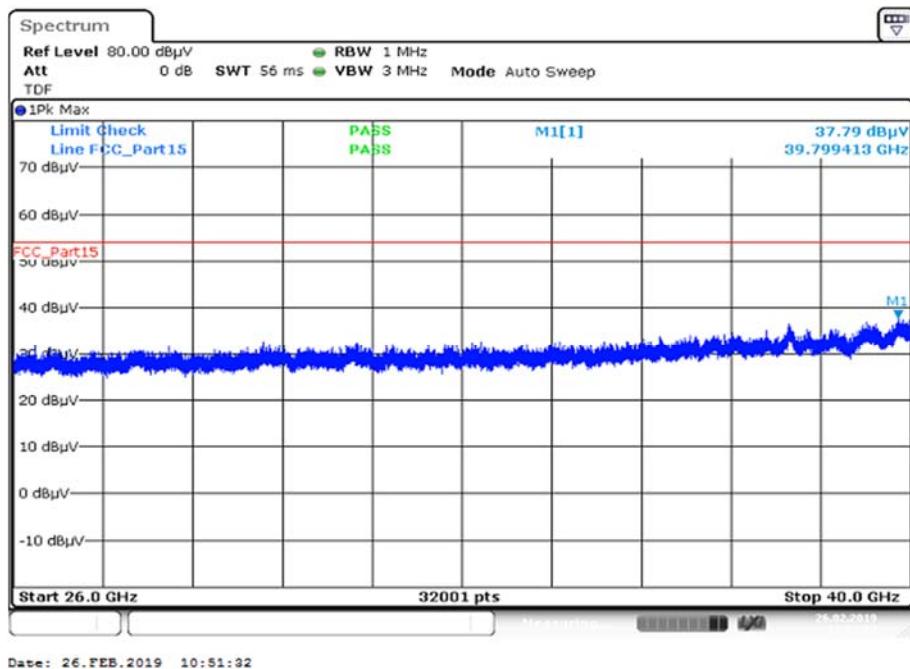
**Plot 26:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel**Plot 27:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

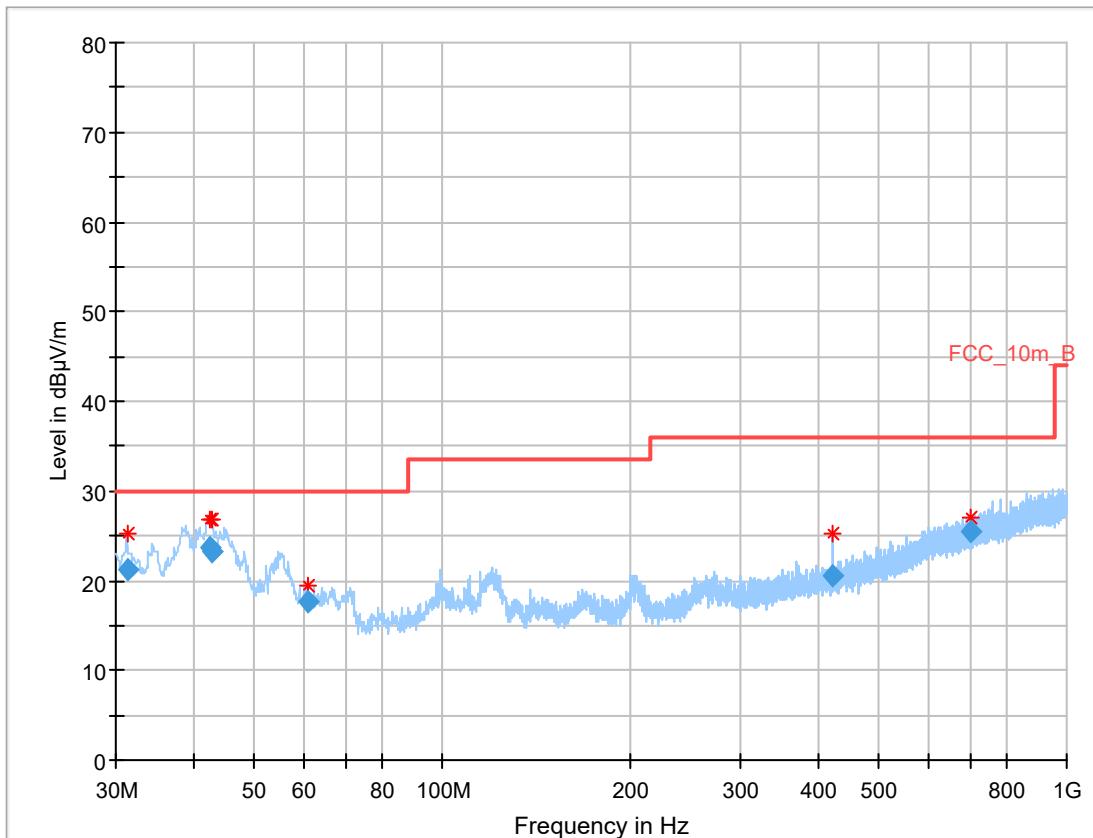
**Plot 28:** 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

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

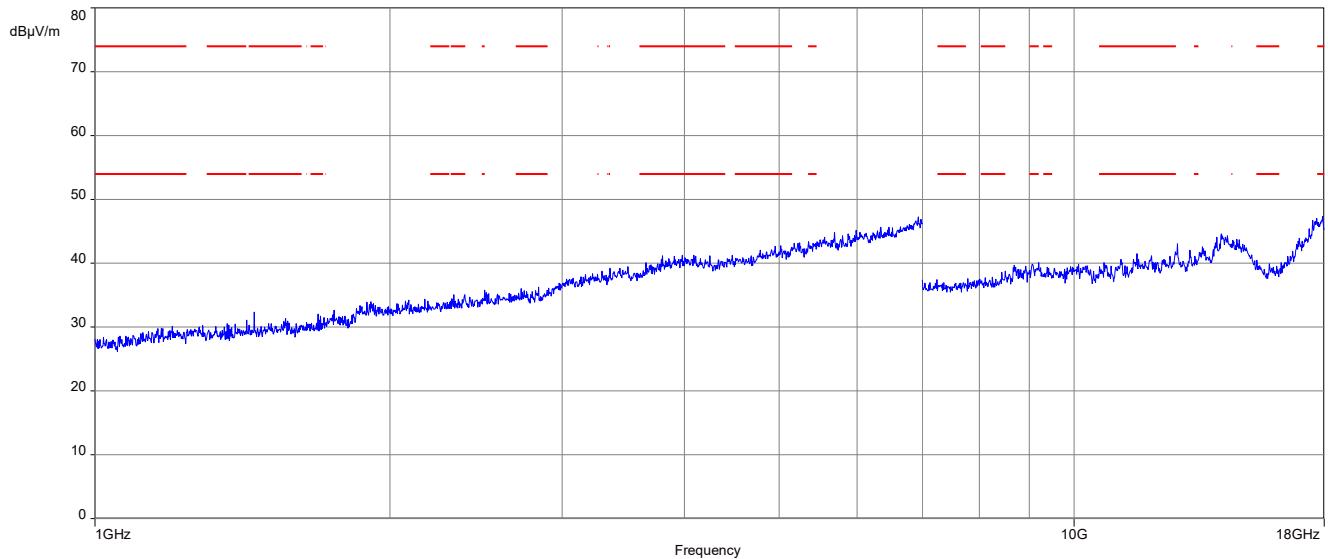
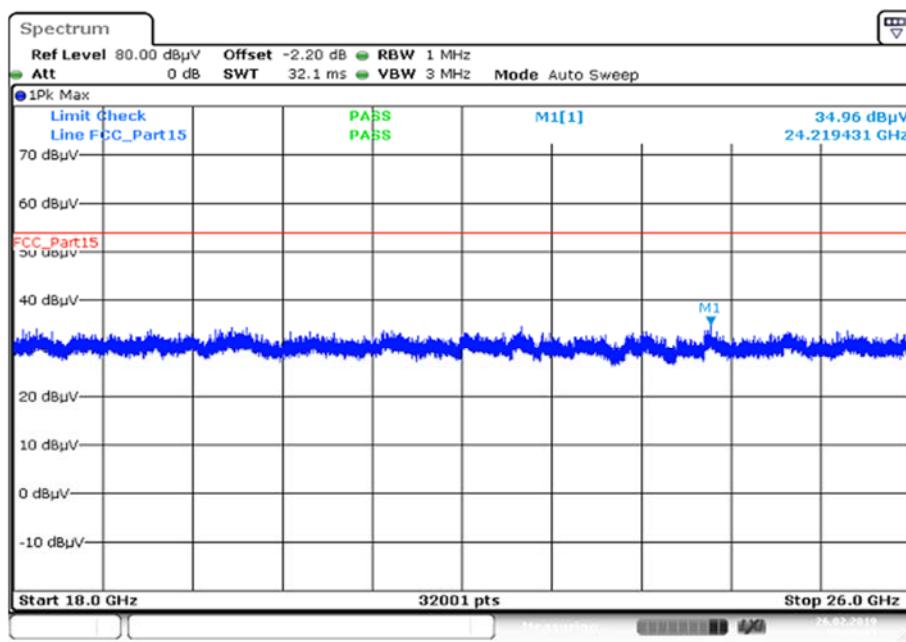
Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.026	17.35	30.0	12.65	1000	120	100.0	H	292.0	13.0
33.649	18.23	30.0	11.77	1000	120	98.0	V	349.0	13.6
44.198	19.08	30.0	10.92	1000	120	101.0	V	144.0	14.7
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

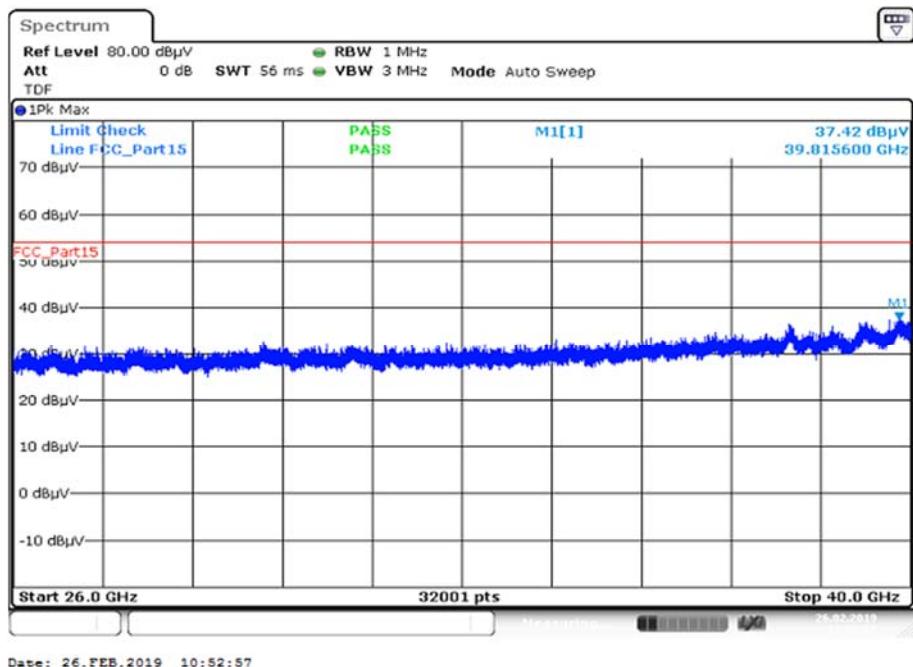
**Plot 30:** 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel**Plot 31:** 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel

**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 $\mu$ V/m)	Limit (dB $\mu$ 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:

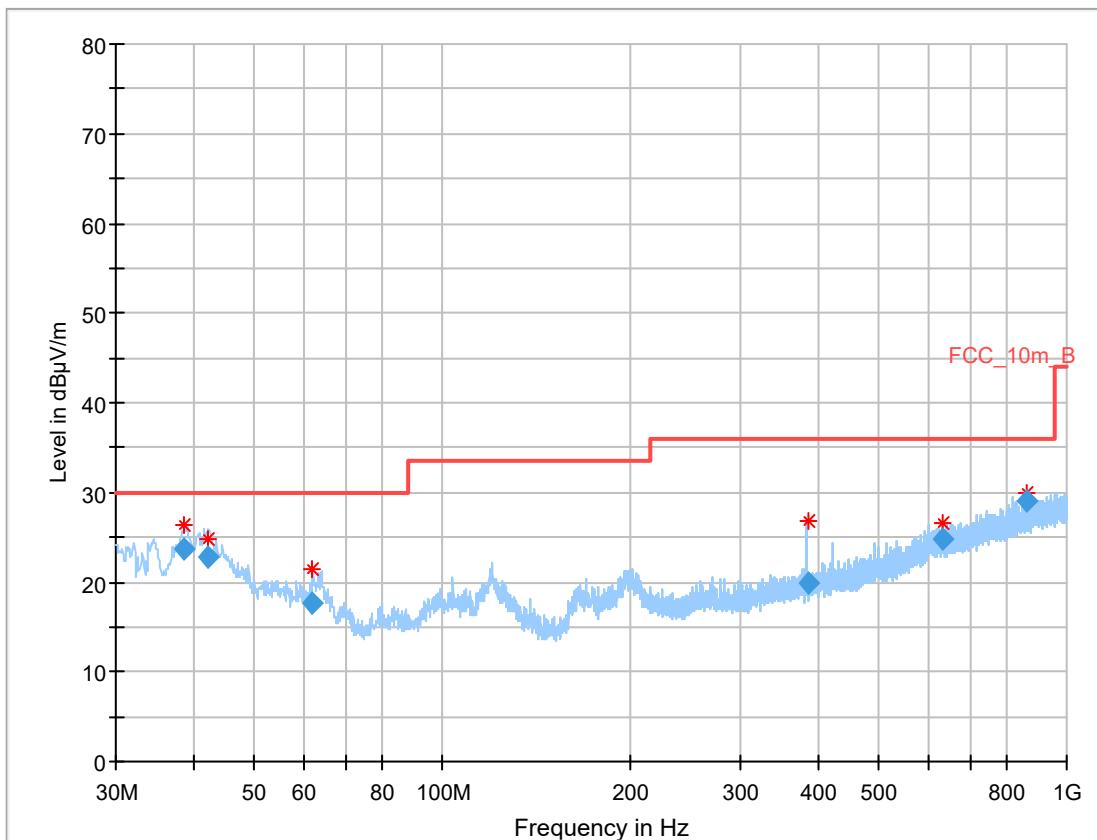
RX Spurious Emissions Radiated		
Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

### Results:

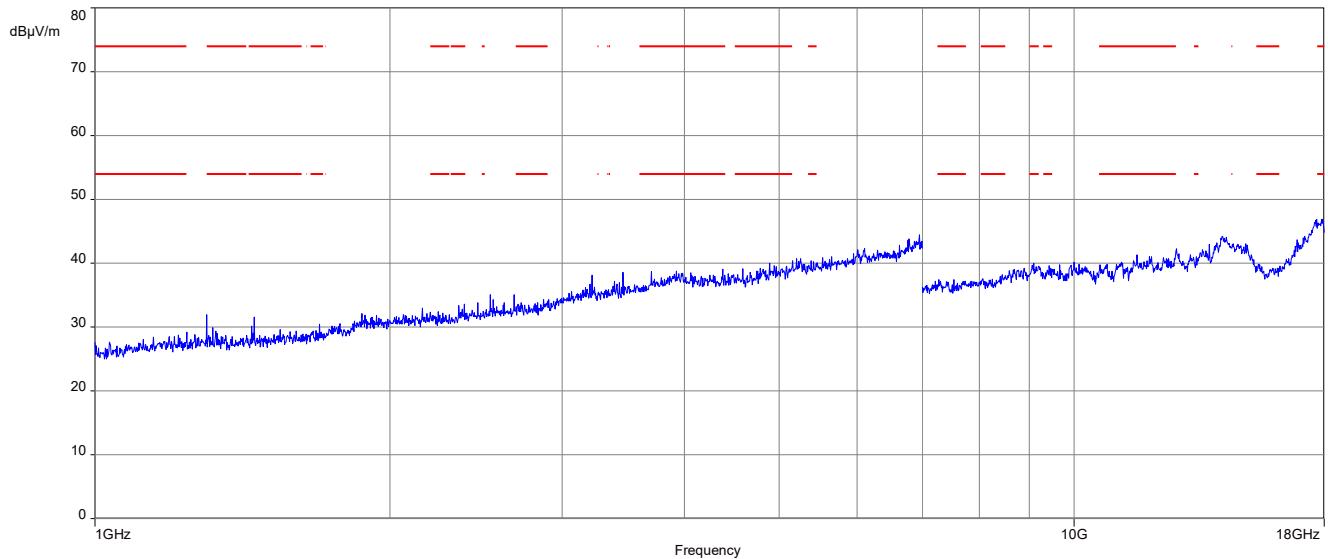
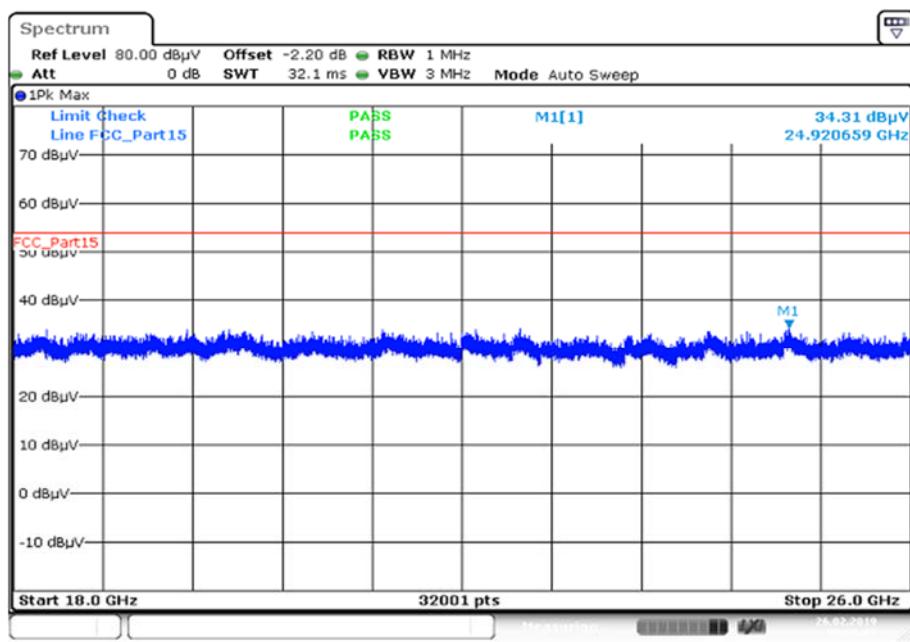
RX Spurious Emissions Radiated [dB $\mu$ V/m]		
F [MHz]	Detector	Level [dB $\mu$ V/m]

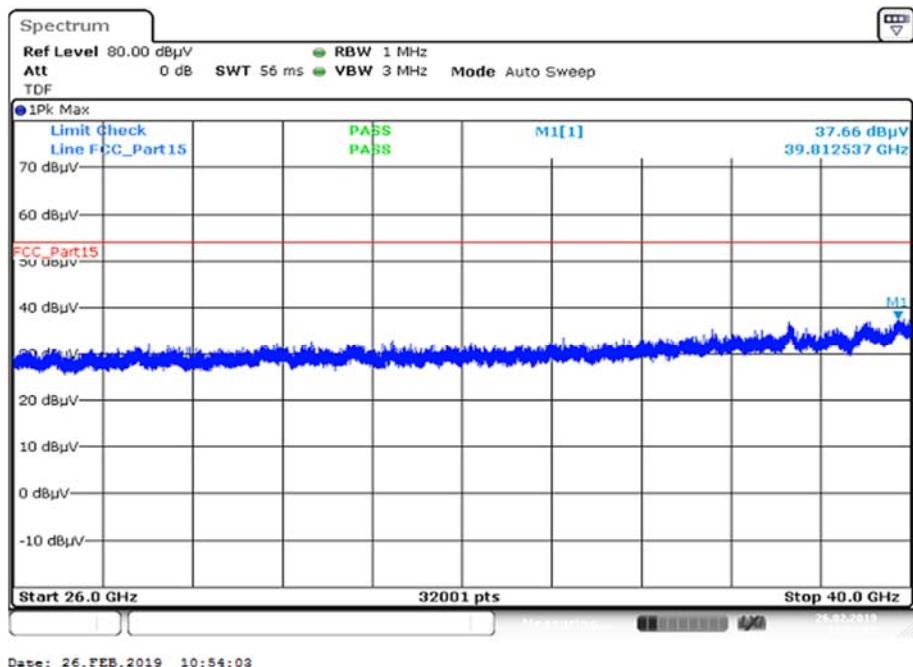
**Plots:**

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

**Final\_Result:**

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ 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

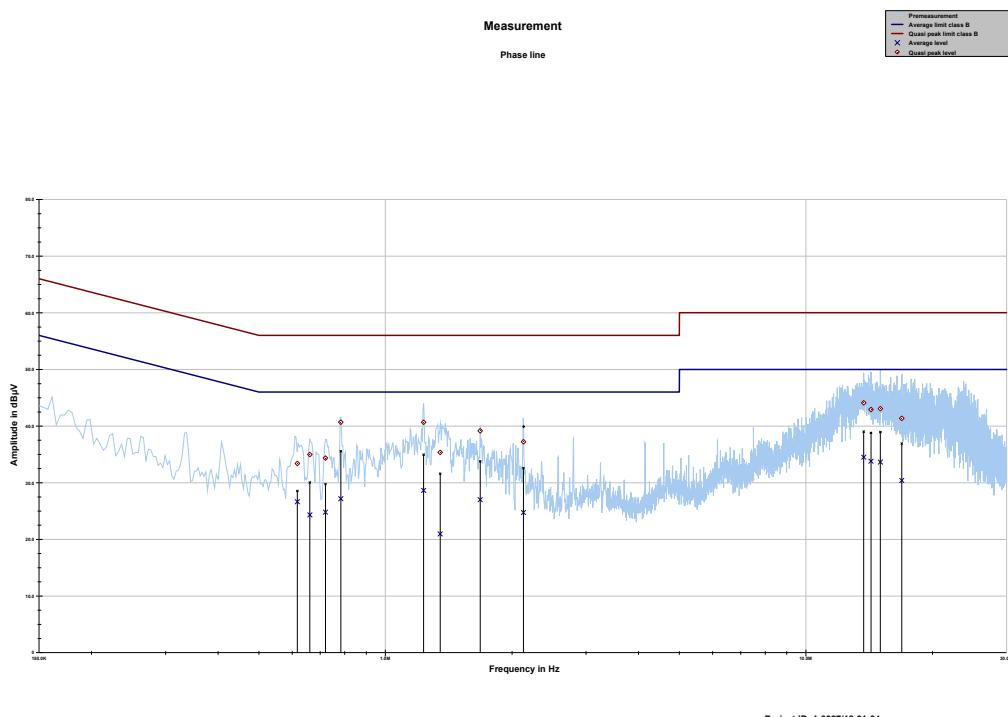
### Limits:

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

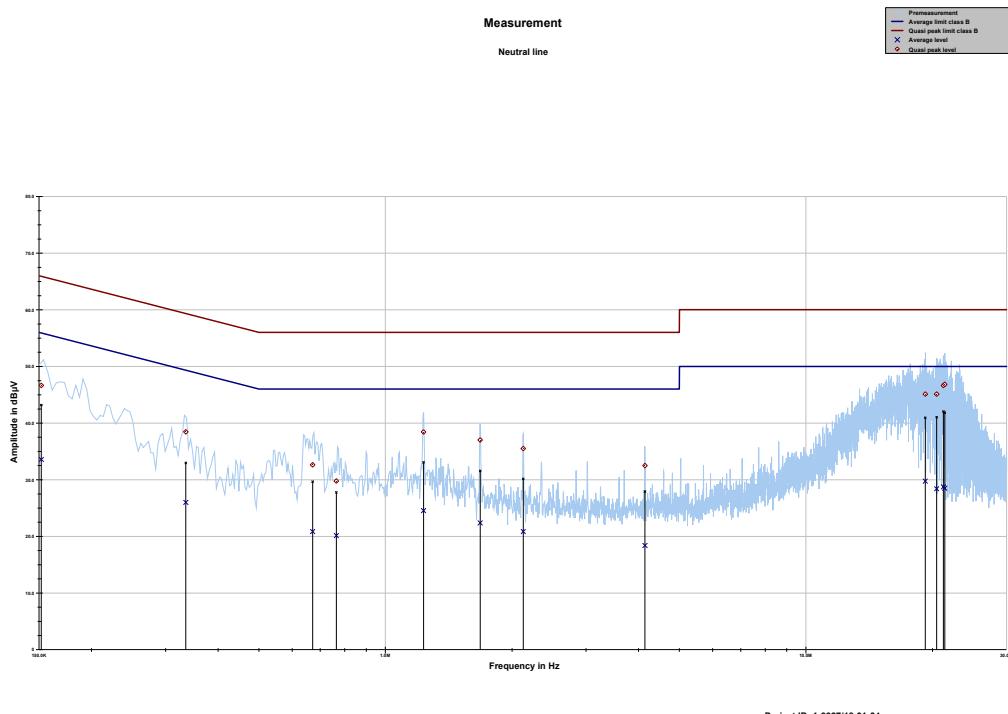
\*Decreases with the logarithm of the frequency

### Results:

Spurious Emissions Conducted < 30 MHz [dB $\mu$ V/m]		
F [MHz]	Detector	Level [dB $\mu$ 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
<b>0.617398</b>	33.39	22.61	56.000	26.64	19.36	46.000
<b>0.661040</b>	34.99	21.01	56.000	24.31	21.69	46.000
<b>0.720033</b>	34.35	21.65	56.000	24.79	21.21	46.000
<b>0.783528</b>	40.69	15.31	56.000	27.17	18.83	46.000
<b>1.232918</b>	40.67	15.33	56.000	28.65	17.35	46.000
<b>1.349883</b>	35.34	20.66	56.000	20.97	25.03	46.000
<b>1.679865</b>	39.16	16.84	56.000	27.01	18.99	46.000
<b>2.128990</b>	37.23	18.77	56.000	24.74	21.26	46.000
<b>13.720467</b>	44.10	15.90	60.000	34.51	15.49	50.000
<b>14.279560</b>	42.92	17.08	60.000	33.80	16.20	50.000
<b>15.031560</b>	43.07	16.93	60.000	33.65	16.35	50.000
<b>16.903465</b>	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
<b>0.151943</b>	46.65	19.24	65.893	33.57	22.38	55.944
<b>0.335167</b>	38.45	20.87	59.322	25.98	24.73	50.710
<b>0.671392</b>	32.62	23.38	56.000	20.85	25.15	46.000
<b>0.764228</b>	29.76	26.24	56.000	20.12	25.88	46.000
<b>1.232072</b>	38.42	17.58	56.000	24.54	21.46	46.000
<b>1.680178</b>	37.01	18.99	56.000	22.37	23.63	46.000
<b>2.127410</b>	35.51	20.49	56.000	20.85	25.15	46.000
<b>4.142305</b>	32.48	23.52	56.000	18.39	27.61	46.000
<b>19.226972</b>	45.10	14.90	60.000	29.75	20.25	50.000
<b>20.460861</b>	45.10	14.90	60.000	28.40	21.60	50.000
<b>21.227486</b>	46.64	13.36	60.000	28.74	21.26	50.000
<b>21.382981</b>	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

<b>EUT</b>	Equipment under test
<b>DUT</b>	Device under test
<b>UUT</b>	Unit under test
<b>GUE</b>	GNSS User Equipment
<b>ETSI</b>	European Telecommunications Standards Institute
<b>EN</b>	European Standard
<b>FCC</b>	Federal Communications Commission
<b>FCC ID</b>	Company Identifier at FCC
<b>IC</b>	Industry Canada
<b>PMN</b>	Product marketing name
<b>HMN</b>	Host marketing name
<b>HVIN</b>	Hardware version identification number
<b>FVIN</b>	Firmware version identification number
<b>EMC</b>	Electromagnetic Compatibility
<b>HW</b>	Hardware
<b>SW</b>	Software
<b>Inv. No.</b>	Inventory number
<b>S/N or SN</b>	Serial number
<b>C</b>	Compliant
<b>NC</b>	Not compliant
<b>NA</b>	Not applicable
<b>NP</b>	Not performed
<b>PP</b>	Positive peak
<b>QP</b>	Quasi peak
<b>AVG</b>	Average
<b>OC</b>	Operating channel
<b>OCW</b>	Operating channel bandwidth
<b>OBW</b>	Occupied bandwidth
<b>OOB</b>	Out of band
<b>DFS</b>	Dynamic frequency selection
<b>CAC</b>	Channel availability check
<b>OP</b>	Occupancy period
<b>NOP</b>	Non occupancy period
<b>DC</b>	Duty cycle
<b>PER</b>	Packet error rate
<b>CW</b>	Clean wave
<b>MC</b>	Modulated carrier
<b>WLAN</b>	Wireless local area network
<b>RLAN</b>	Radio local area network
<b>DSSS</b>	Dynamic sequence spread spectrum
<b>OFDM</b>	Orthogonal frequency division multiplexing
<b>FHSS</b>	Frequency hopping spread spectrum
<b>GNSS</b>	Global Navigation Satellite System
<b>C/N<sub>0</sub></b>	Carrier to noise-density ratio, expressed in dB-Hz

## Annex B Document history

Version	Applied changes	Date of release
-/-	Initial release	2019-03-07

## 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><b>Accreditation</b> </p> <p>The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory <b>CTC advanced GmbH</b> 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: <b>Telecommunication (TC) and Electromagnetic Compatibility (EMC) for Canadian Standards</b></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: <b>D-PL-12076-01-04</b></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. 3625) and the Regulation (EC) No 755/2008 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: <a href="http://www.european-accreditation.org">www.european-accreditation.org</a> ILAC: <a href="http://www.ilac.org">www.ilac.org</a> IAF: <a href="http://www.iafnu">www.iafnu</a></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

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<p>  <b>Deutsche Akkreditierungsstelle GmbH</b></p> <p><b>Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV</b>    Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition</p> <p><b>Accreditation</b> </p> <p>The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory  <b>CTC advanced GmbH</b>  <b>Untertürkheimer Straße 6-10, 66117 Saarbrücken</b></p> <p>is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:</p> <p><b>Telecommunication (FCC Requirements)</b></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 5 pages.</p> <p>Registration number of the certificate: <b>D-PL-12076-01-05</b></p> <p>Frankfurt am Main, 11.01.2019      Dipl.-Ing. Uwe Zimmermann    Head of Division</p> <p>See notes overleaf.</p>	<p><b>Deutsche Akkreditierungsstelle GmbH</b></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 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.</p> <p>The up-to-date state of membership can be retrieved from the following websites:    EA: <a href="http://www.european-accreditation.org">www.european-accreditation.org</a>    ILAC: <a href="http://www.ilac.org">www.ilac.org</a>    IAF: <a href="http://www.iaf.nu">www.iaf.nu</a></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-12076-01-05.pdf>

##### END OF TEST REPORT #####