10.8 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:	10 Hz / 1 MHz
Span:	See plots!
Trace-Mode:	Max Hold

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 dBµV/m PEAK 54 dBµV/m AVG

Result:

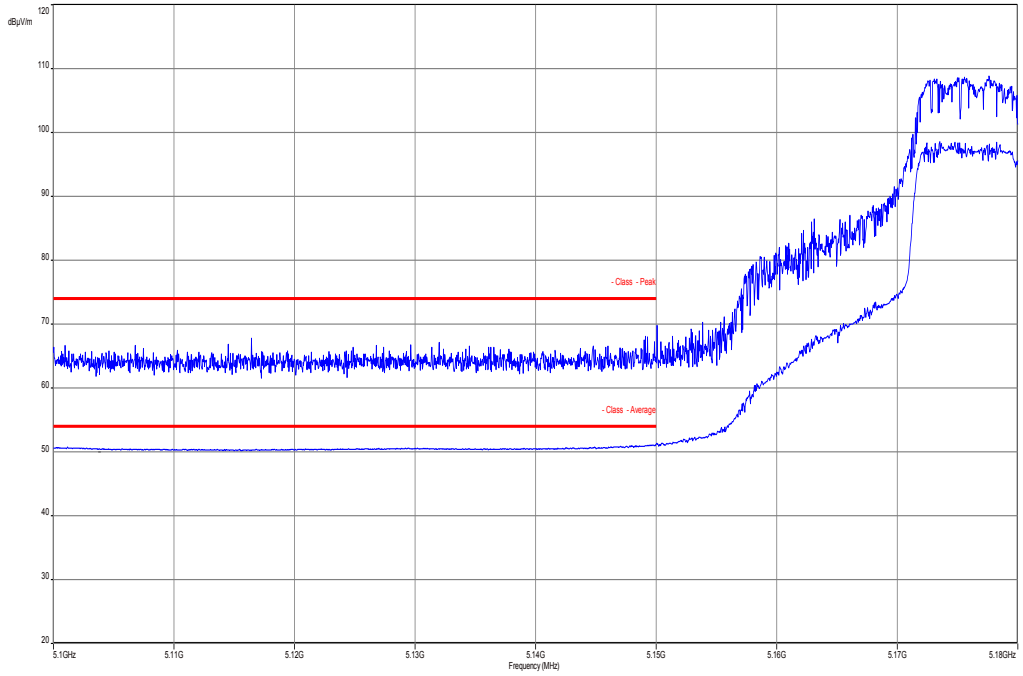
Scenario	Band Edge Compliance Radiated [dBµV/m]
band edge	< 74 dBµV/m (AVG) < 54 dBµV/m (PEAK)
Measurement uncertainty	± 3 dB

Note:

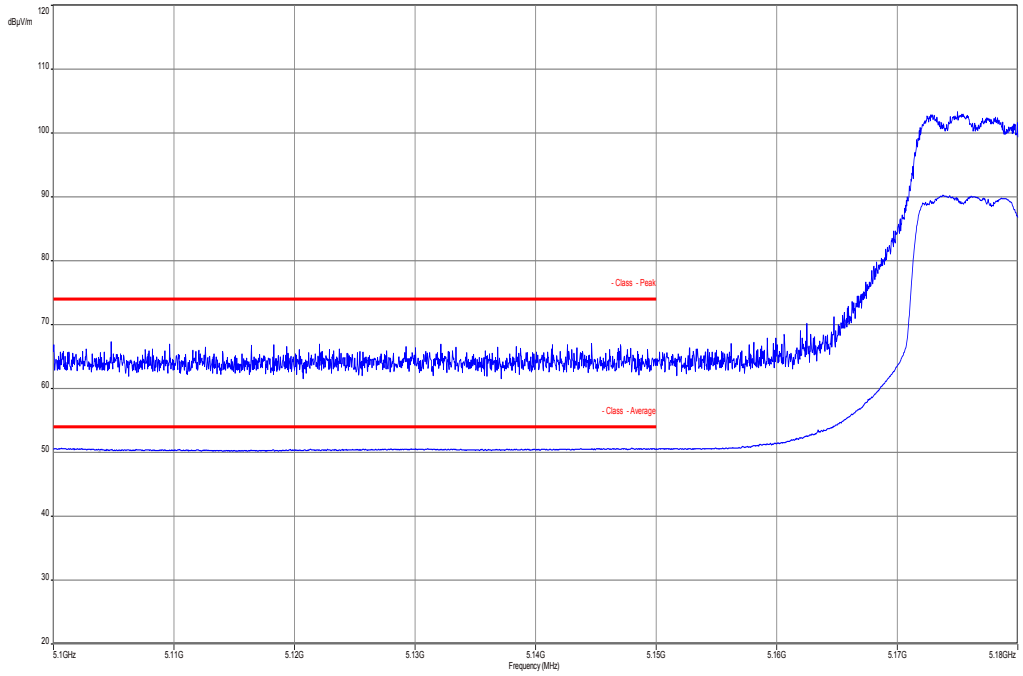
Both antennas are active!

Plots:

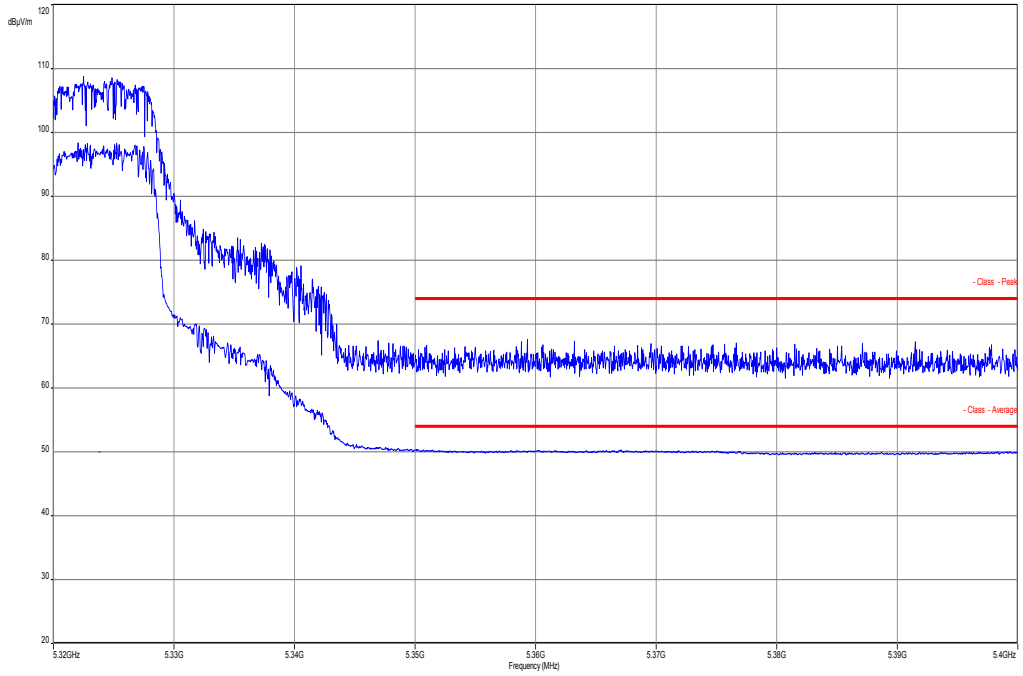
Plot 1: lower band edge, vertical & horizontal polarization (a mode), channel 36, low data rate



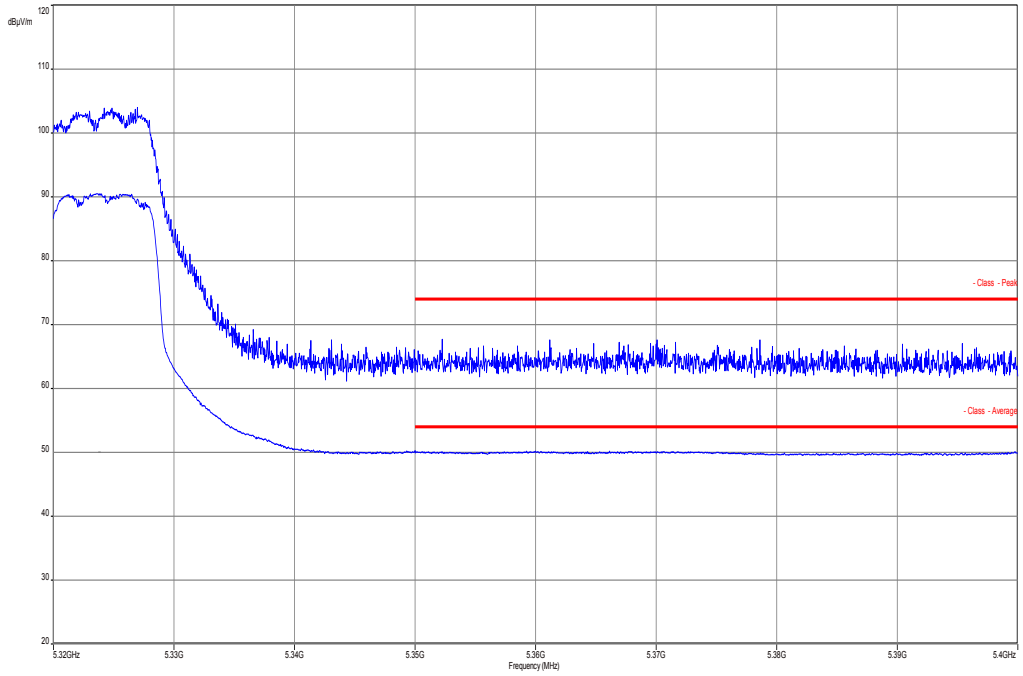
Plot 2: lower band edge, vertical & horizontal polarization (a mode), channel 36, high data rate



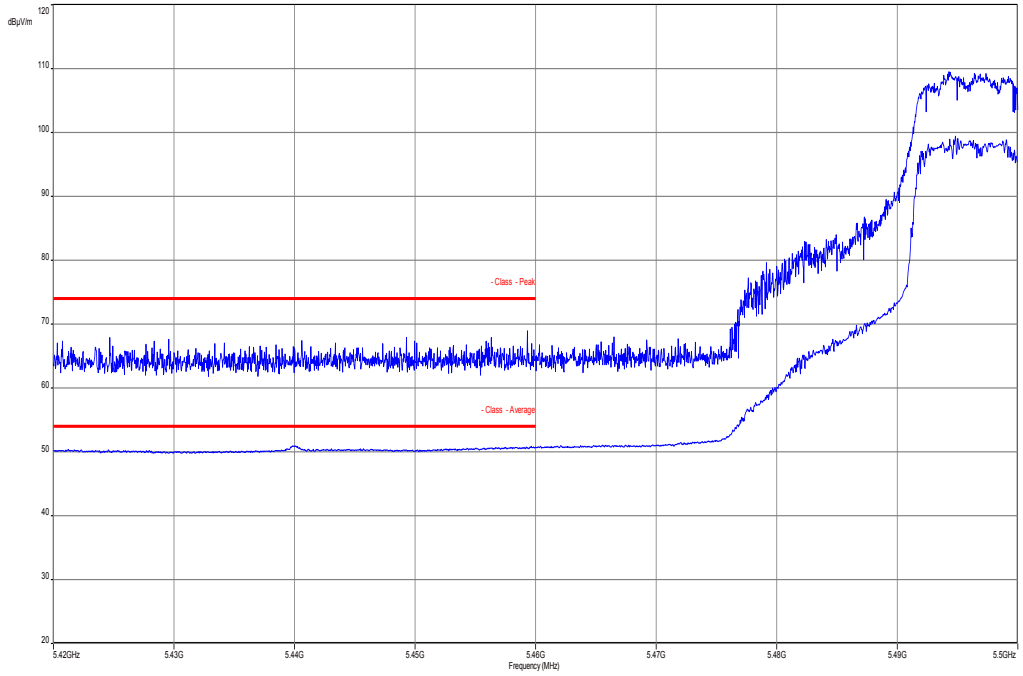
Plot 3: upper band edge, vertical & horizontal polarization (a mode), channel 64, low data rate



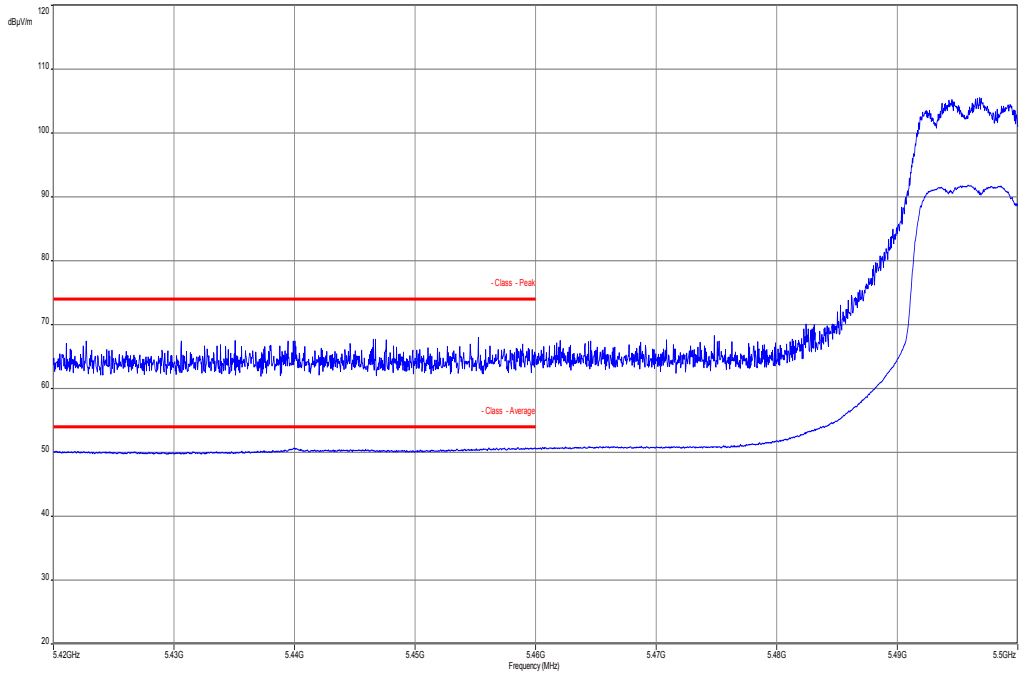
Plot 4: upper band edge, vertical & horizontal polarization (a mode), channel 64, high data rate



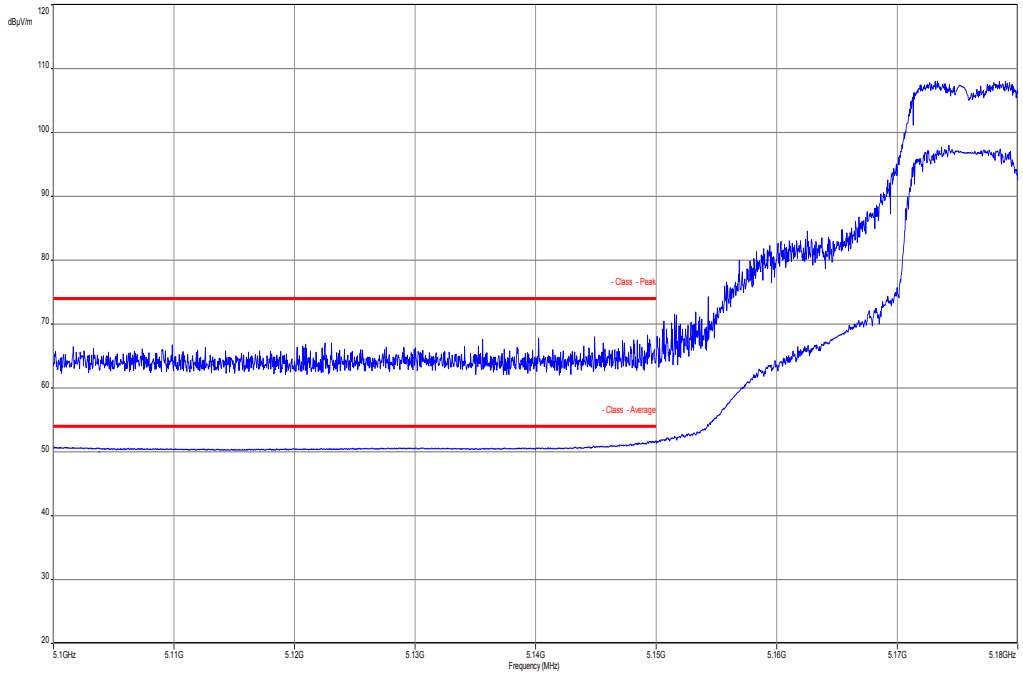
Plot 5: lower band edge, vertical & horizontal polarization (a mode), channel 100, low data rate



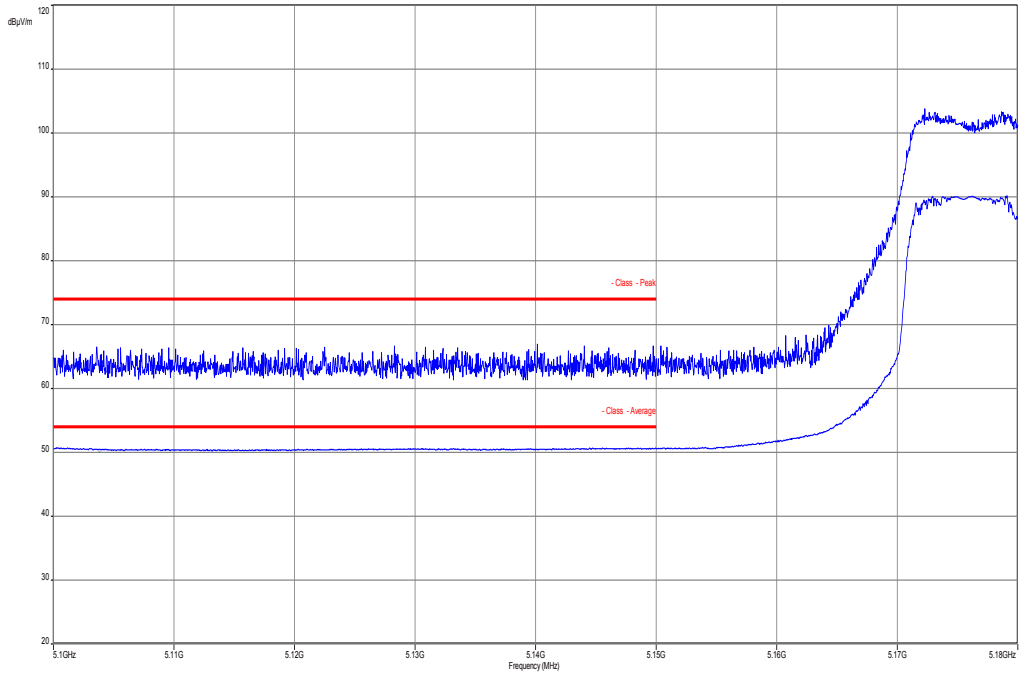
Plot 6: lower band edge, vertical & horizontal polarization (a mode), channel 100, high data rate



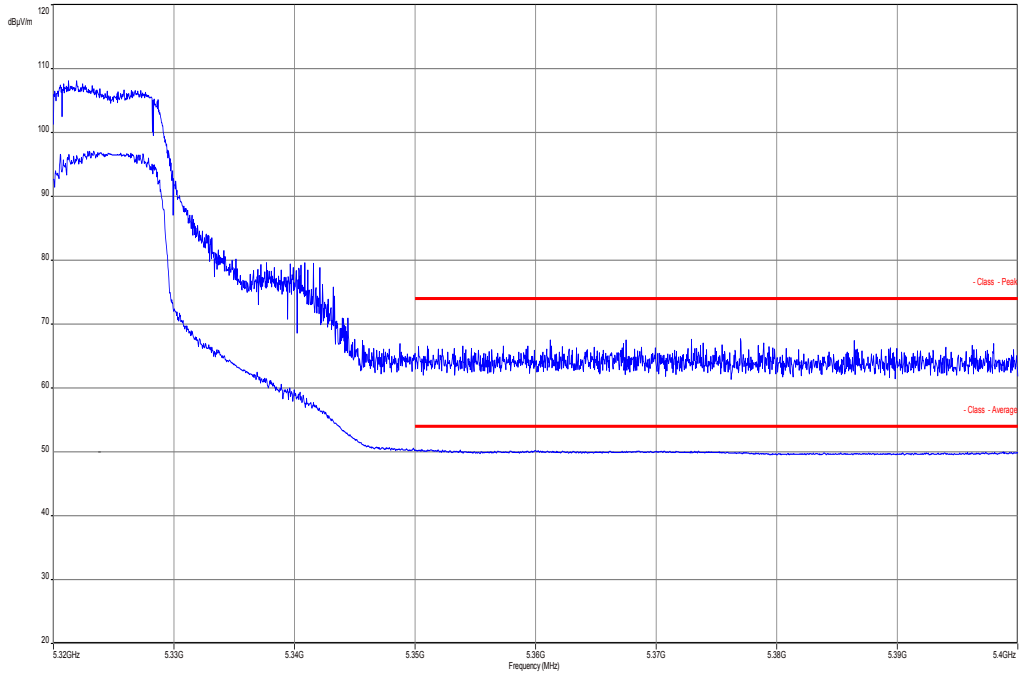
Plot 7: lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 36, low data rate



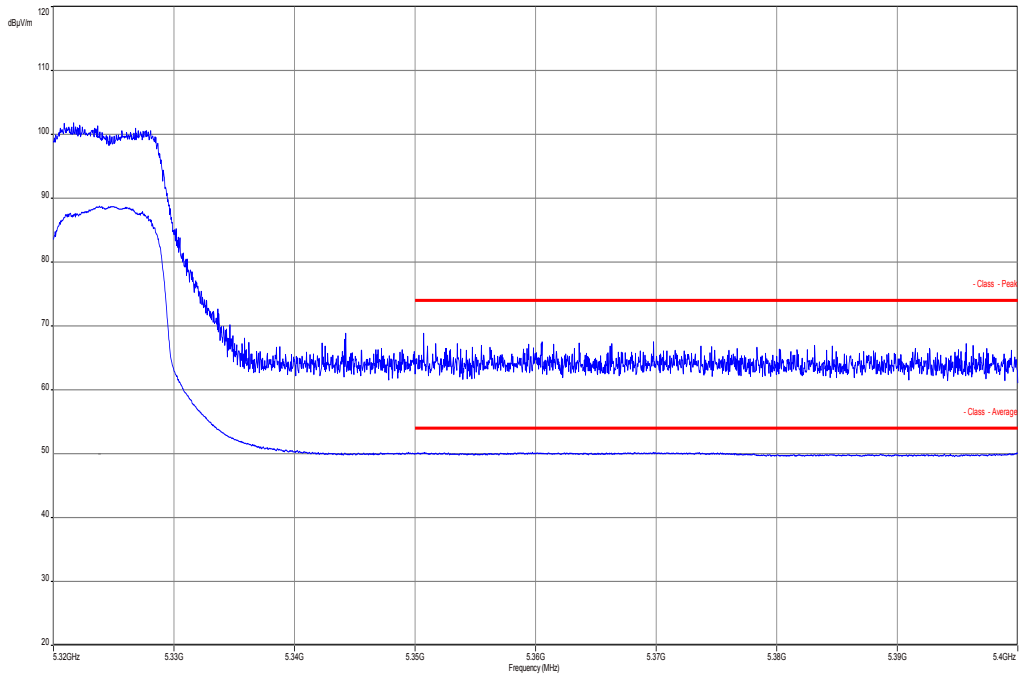
Plot 8: lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 36, high data rate



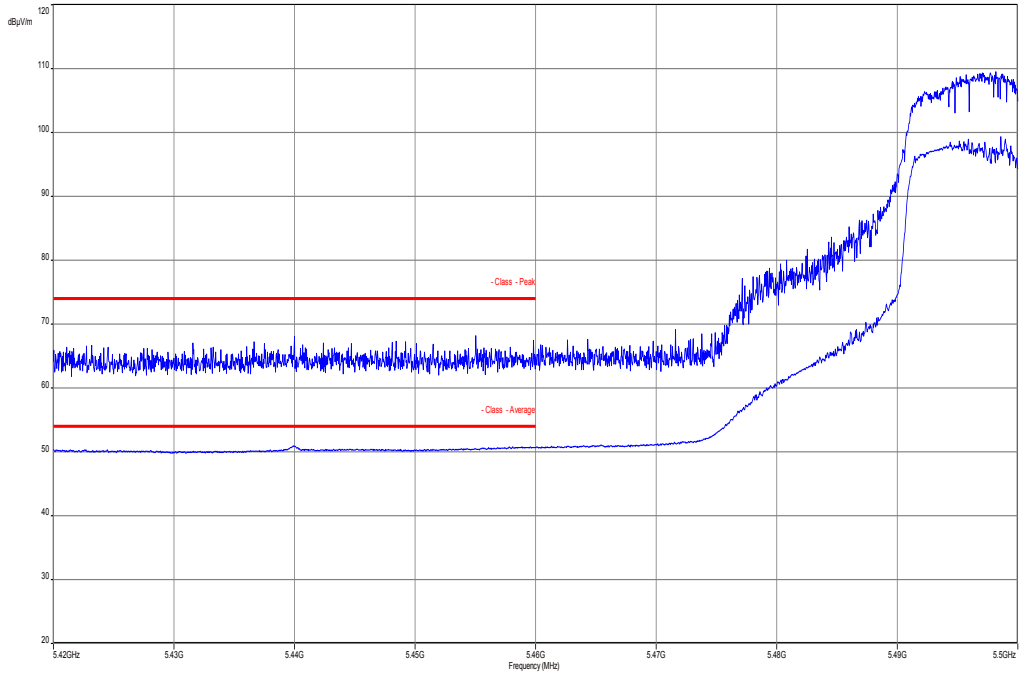
Plot 9: upper band edge, vertical & horizontal polarization (n HT 20 mode), channel 64, low data rate



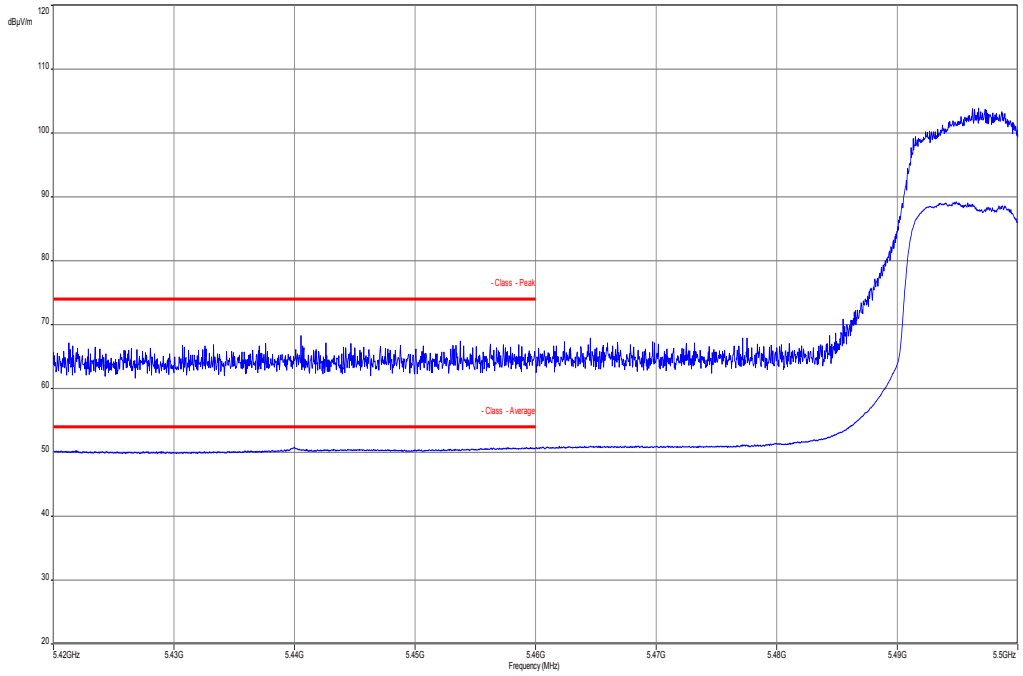
Plot 10: upper band edge, vertical & horizontal polarization (n HT 20 mode), channel 64, high data rate



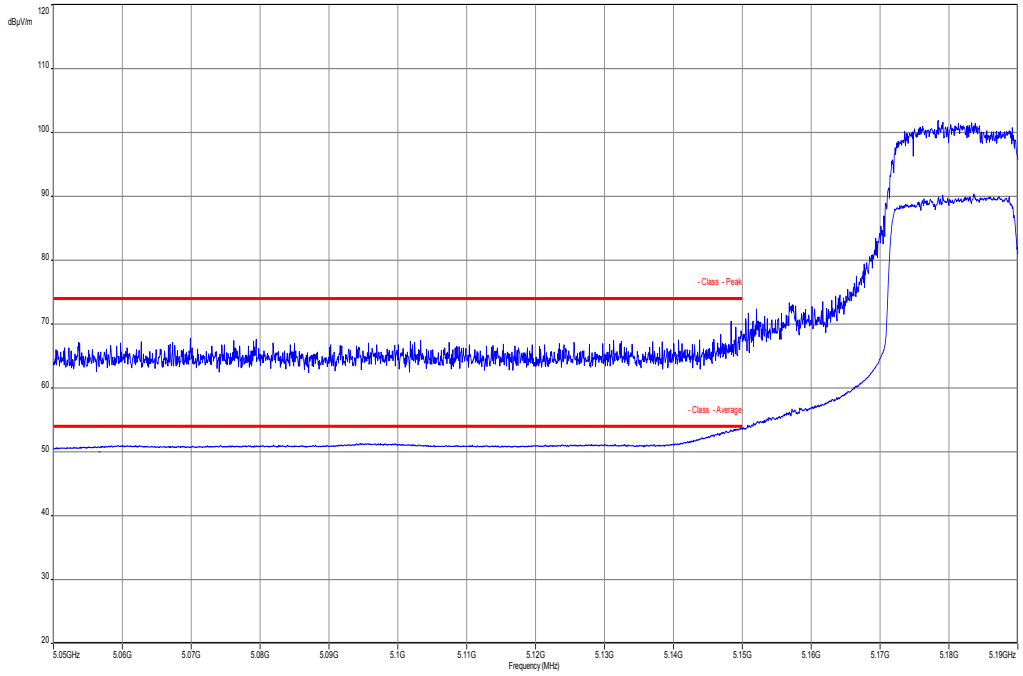
Plot 11: lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 100, low data rate



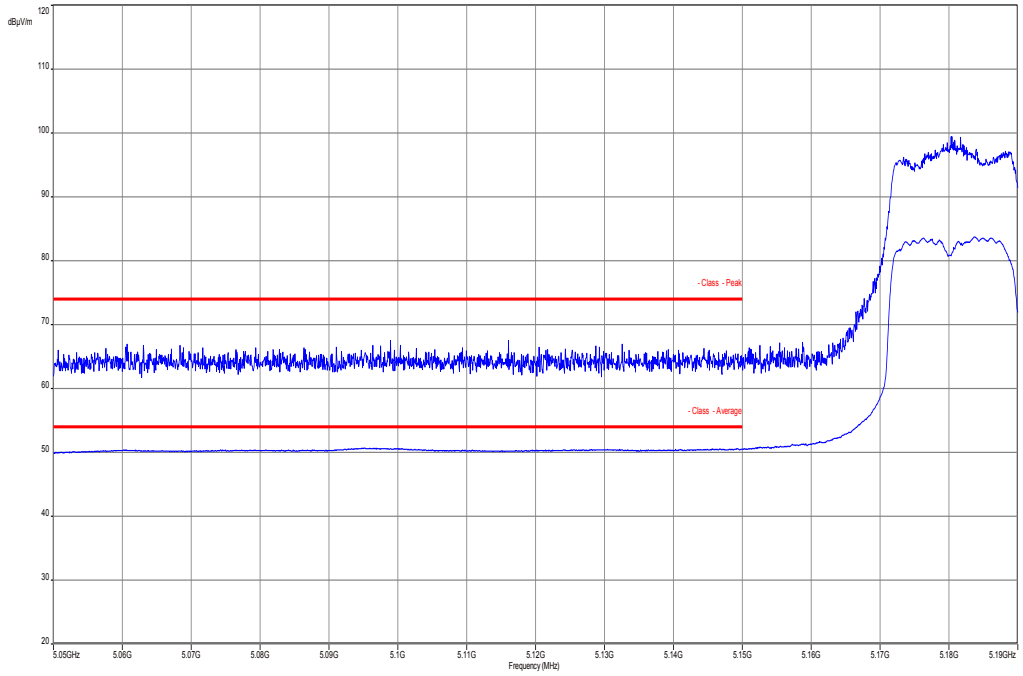
Plot 12: lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 100, high data rate



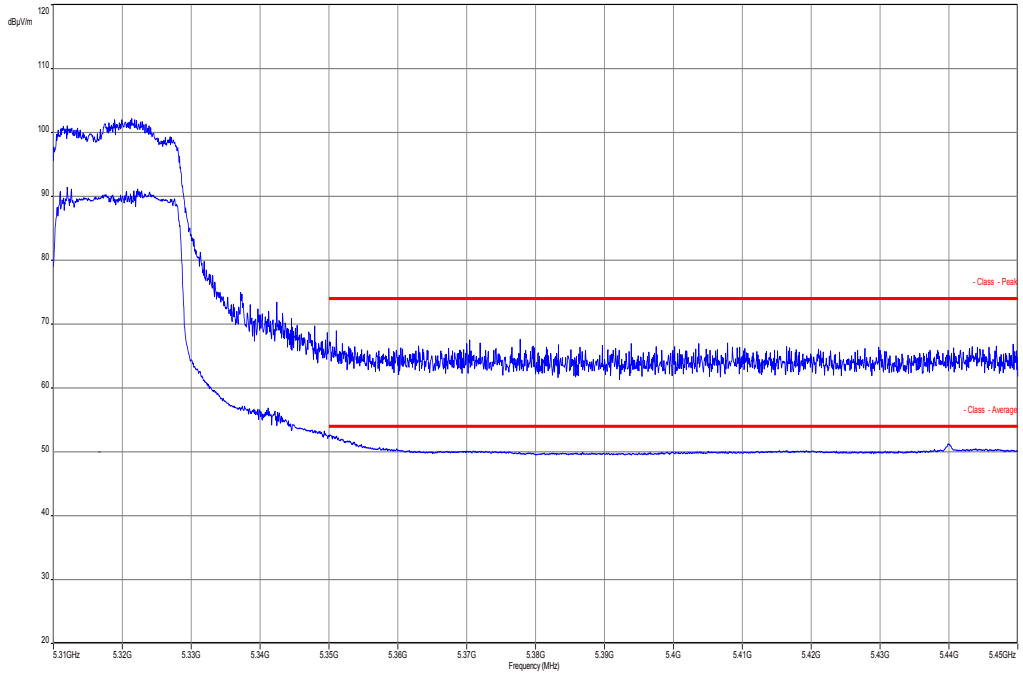
Plot 13: lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 38, low data rate



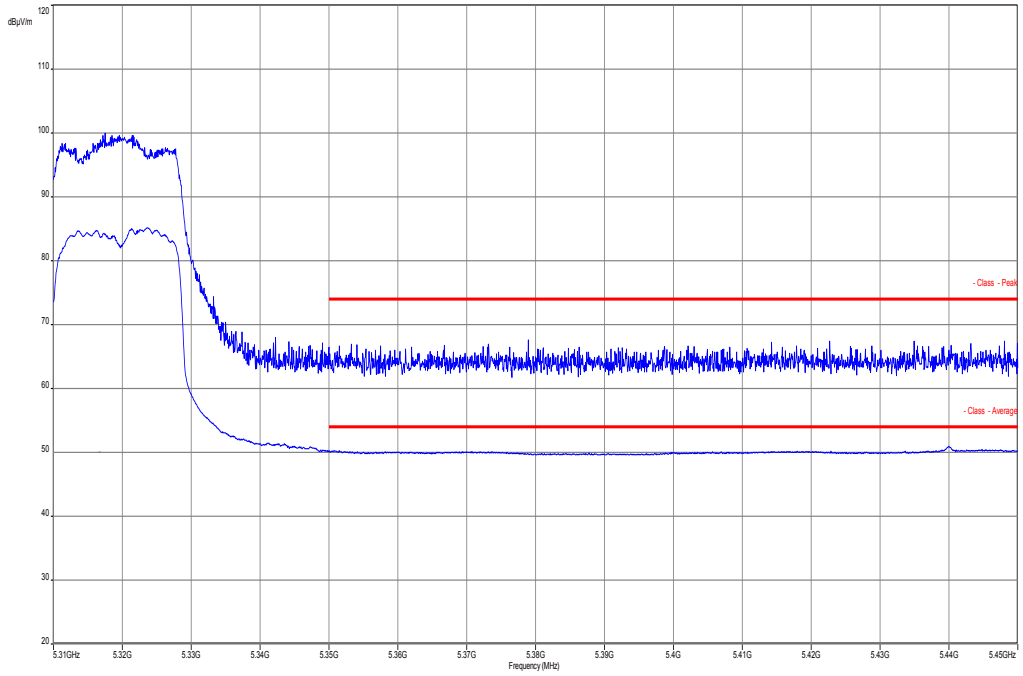
Plot 14: lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 38, high data rate



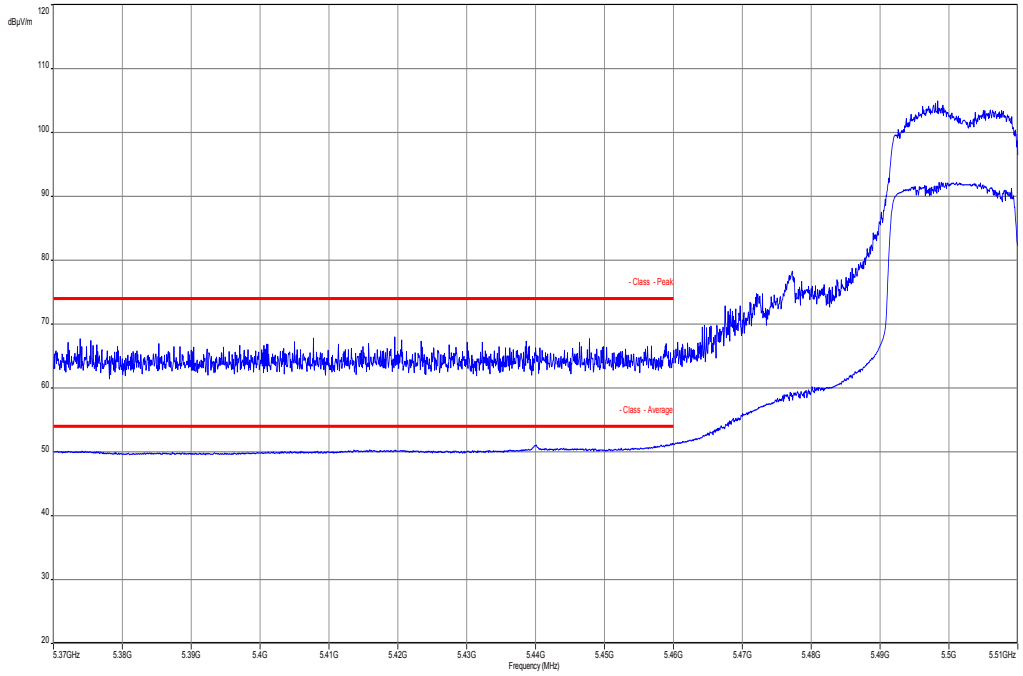
Plot 15: upper band edge, vertical & horizontal polarization (n HT 40 mode), channel 62, low data rate



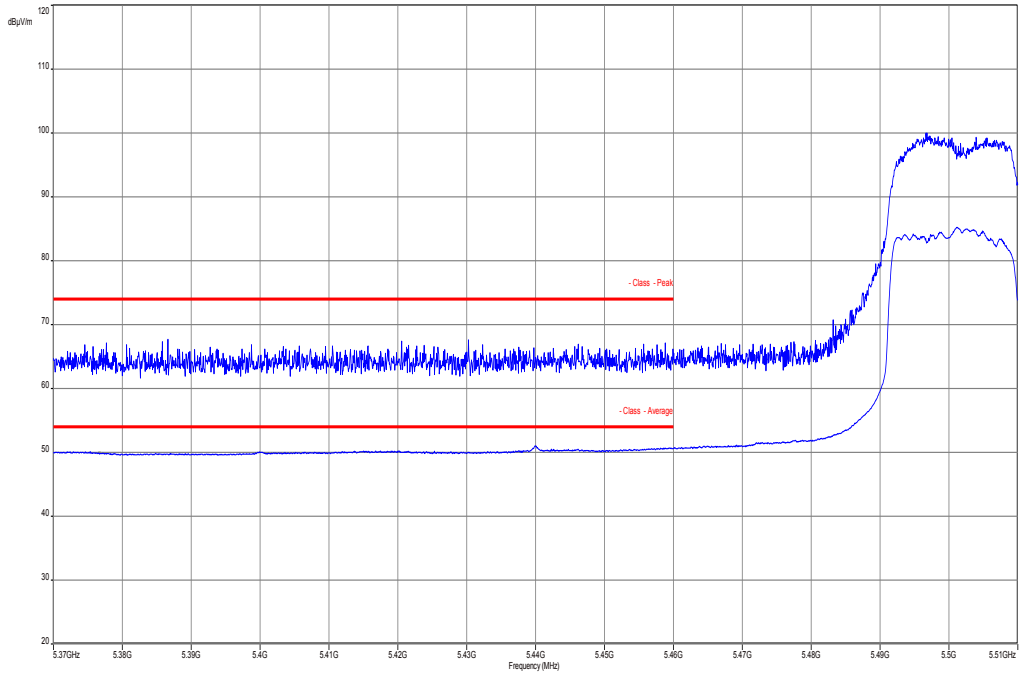
Plot 16: upper band edge, vertical & horizontal polarization (n HT 40 mode), channel 62, high data rate



Plot 17: lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 102, low data rate



Plot 18: lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 102, high data rate



Result: **Passed**

10.9 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 /10 Hz
Span:	30 MHz to 40 GHz
Trace-Mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %

Limits:

TX Spurious Emissions Radiated		
§15.209		
Frequency (MHz)	Field Strength (dBµV/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: OFDM / a – mode

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM a – mode								
Lowest 5180 MHz			-/-			Highest 5240 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM a – mode								
Lowest 5260 MHz			-/-			Highest 5320 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM a – mode								
Lowest 5500 MHz			Middle 5600 MHz			Highest 5700 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – modeHT20

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT20								
Lowest 5180 MHz			-/-			Highest 5240 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT20								
Lowest 5260 MHz			-/-			Highest 5320 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT20								
Lowest 5500 MHz			Middle 5600 MHz			Highest 5700 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / n – modeHT40

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT40								
Lowest 5190 MHz			Middle 5230 MHz			Highest 5270 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT40								
Lowest 5310 MHz			Middle 5510 MHz			Highest 5590 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n – mode HT40								
Lowest 5670 MHz			-/-			-/-		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			-/-		
Measurement uncertainty			± 3 dB					

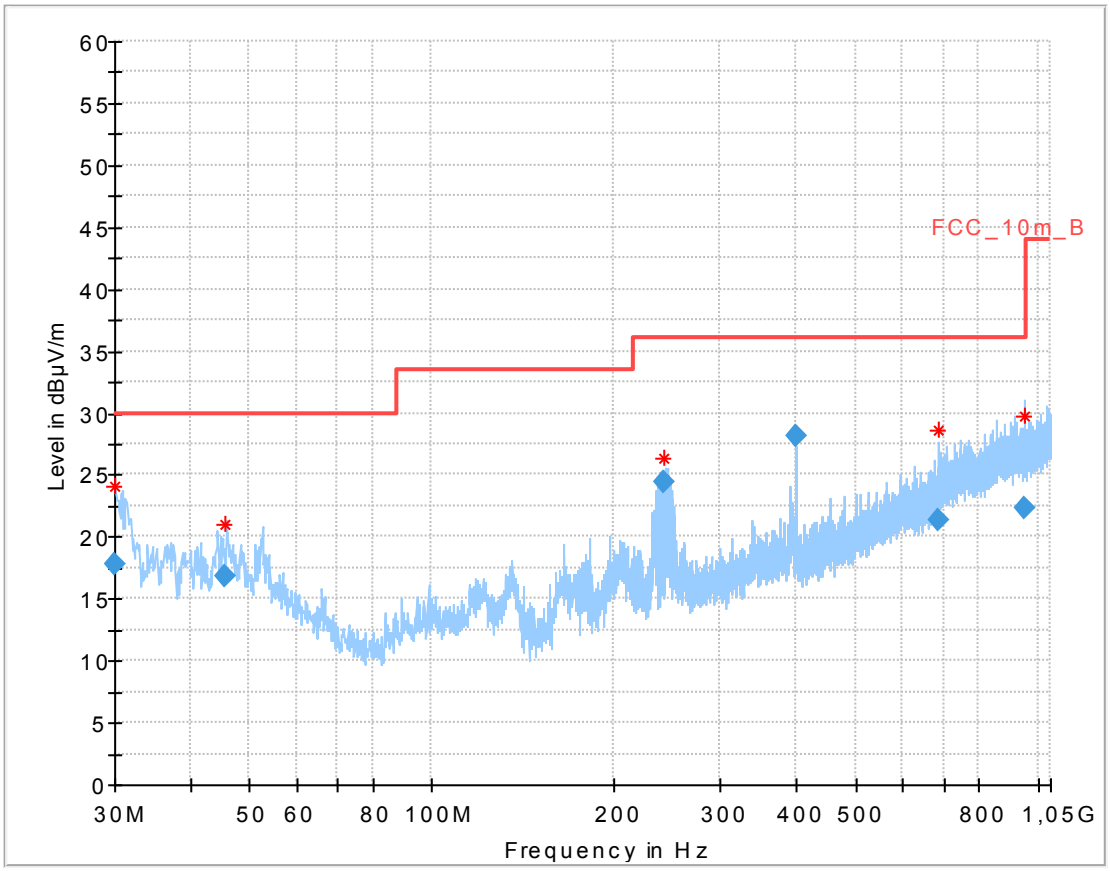
Result: **Passed**

Note:

Both antennas are active!

Plots: OFDM / a – mode

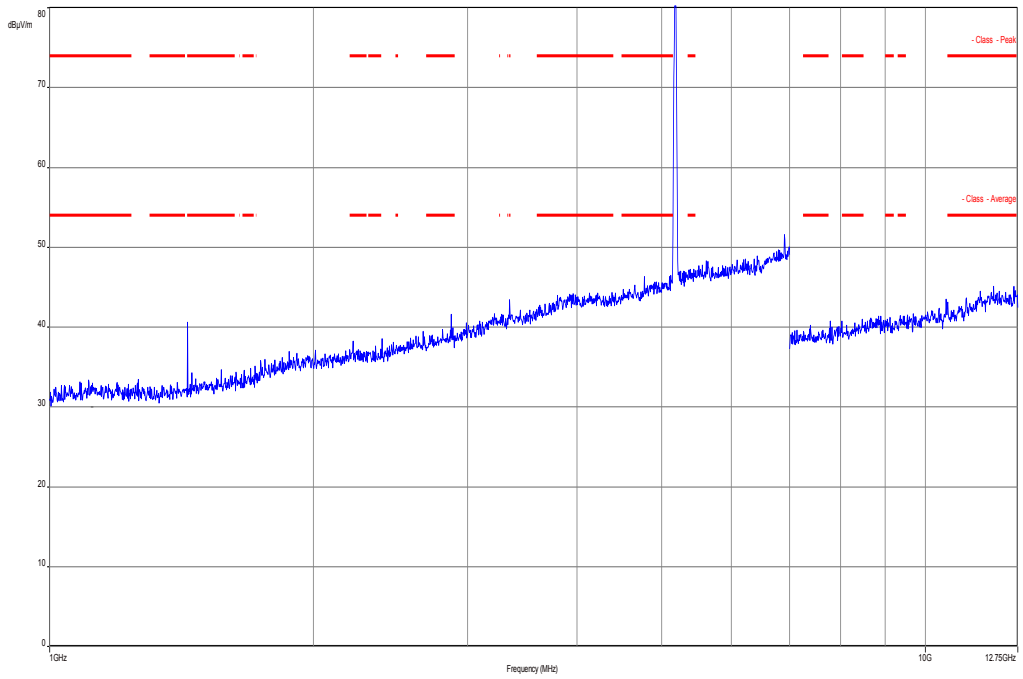
Plot 1: 30 MHz to 1 GHz, 5180 MHz, vertical & horizontal polarization



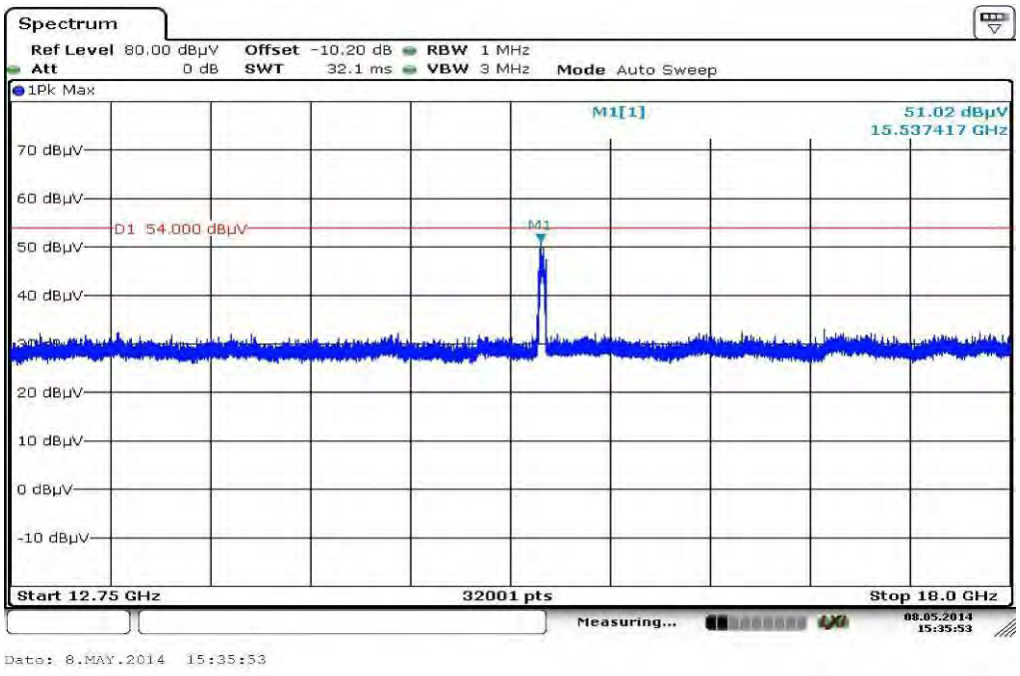
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.050025	17.78	30.00	12.22	1000.0	120.000	170.0	V	-3.0	12.5
45.577200	16.76	30.00	13.24	1000.0	120.000	98.0	V	85.0	13.3
240.760950	24.37	36.00	11.63	1000.0	120.000	98.0	V	175.0	13.0
400.002450	28.10	36.00	7.90	1000.0	120.000	98.0	V	85.0	16.9
687.233700	21.38	36.00	14.62	1000.0	120.000	170.0	H	10.0	22.2
950.356050	22.35	36.00	13.65	1000.0	120.000	98.0	H	10.0	25.4

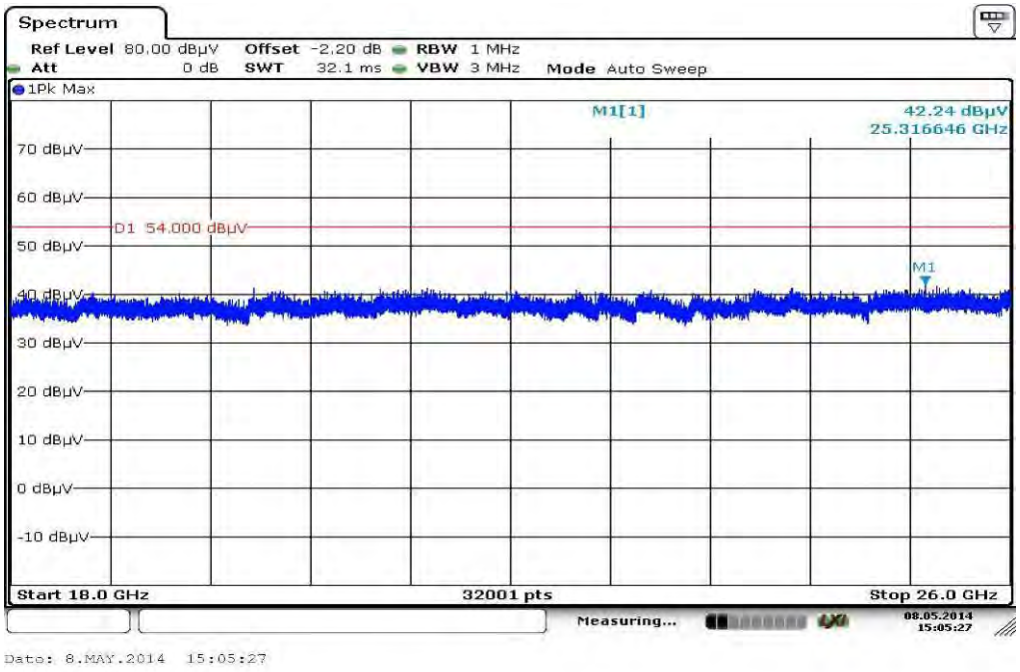
Plot 2: 1 GHz to 12.75 GHz, 5180 MHz, vertical & horizontal polarization



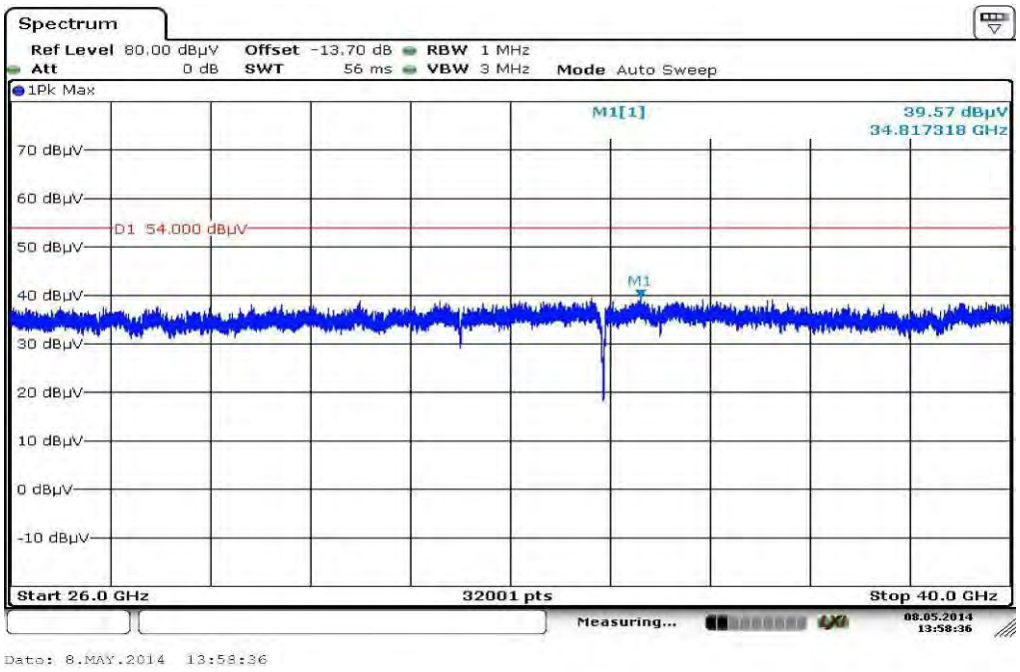
Plot 3: 12 GHz to 18 GHz, 5180 MHz, vertical & horizontal polarization



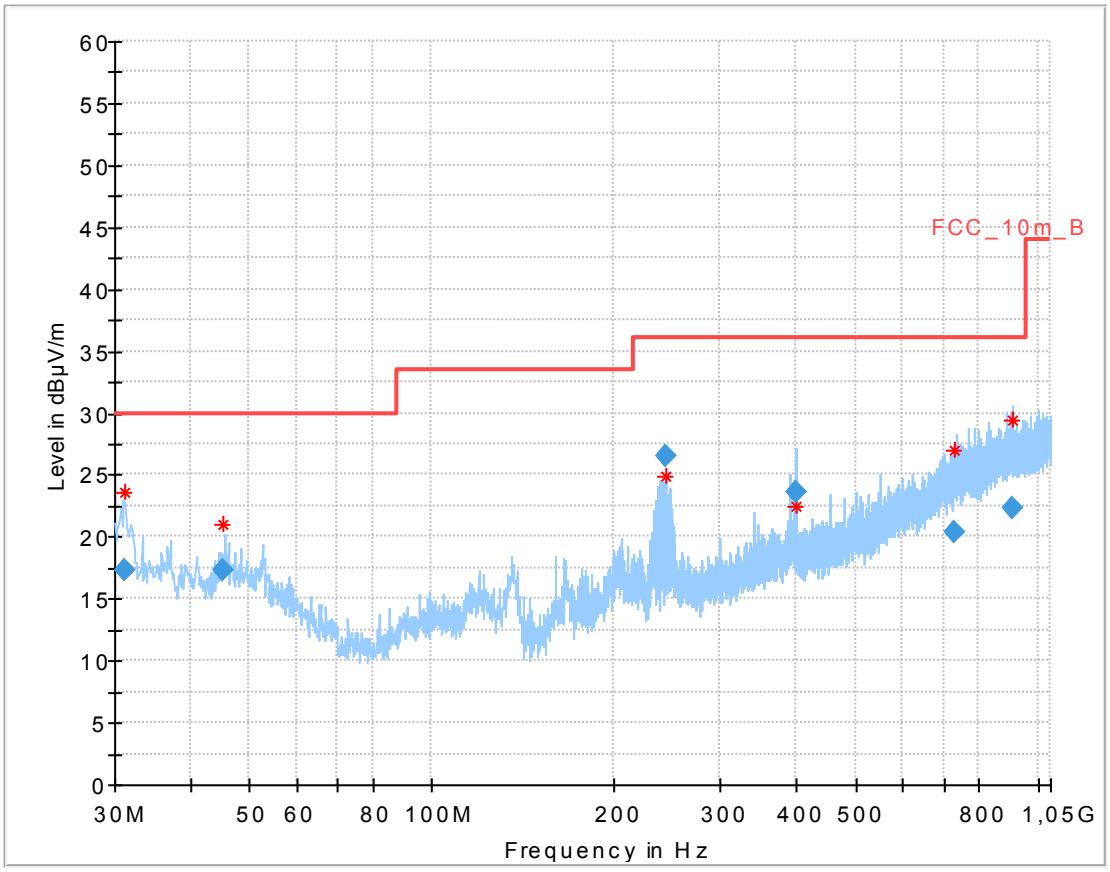
Plot 4: 18 GHz to 26 GHz, 5180 MHz, vertical & horizontal polarization



Plot 5: 26 GHz to 40 GHz, 5180 MHz, vertical & horizontal polarization



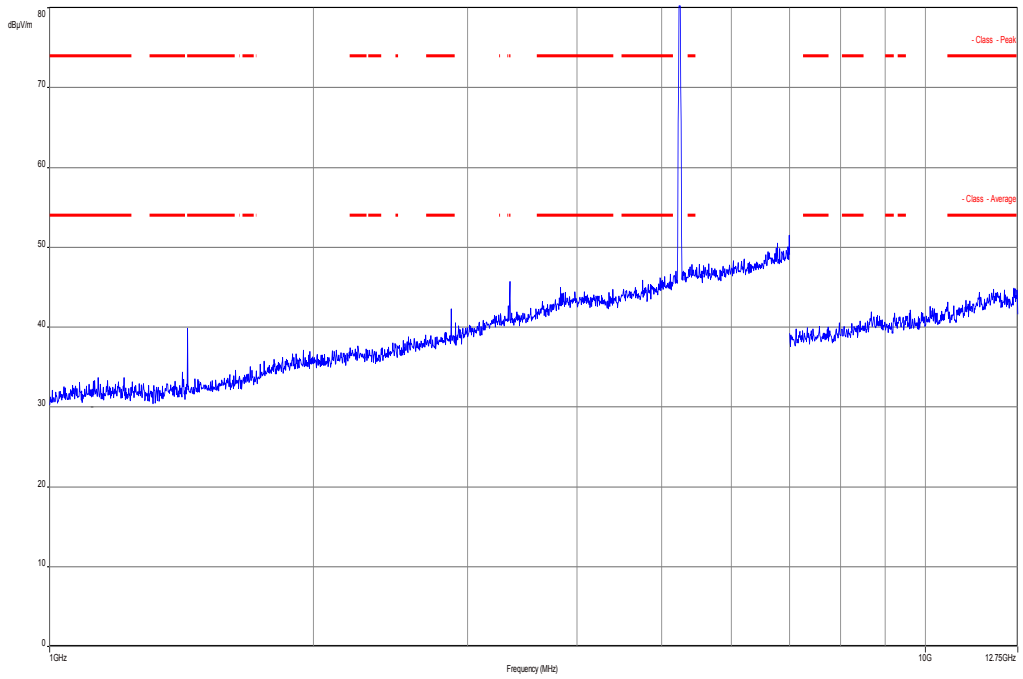
Plot 6: 30 MHz to 1 GHz, 5240 MHz, vertical & horizontal polarization



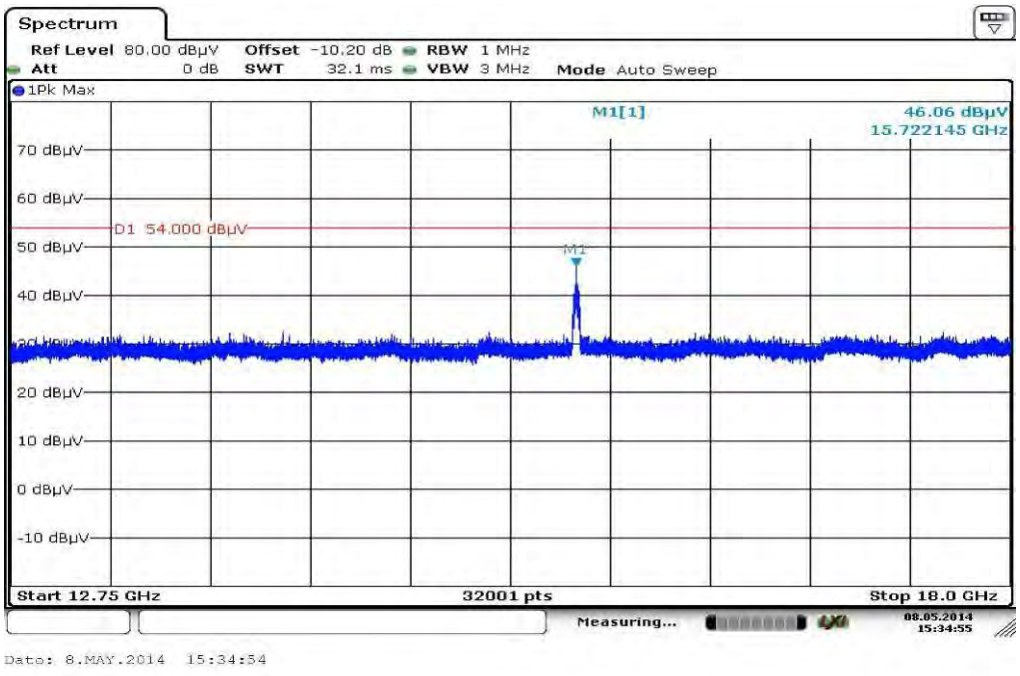
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.063200	17.34	30.00	12.66	1000.0	120.000	142.0	V	280.0	12.6
45.187500	17.36	30.00	12.64	1000.0	120.000	104.0	V	-5.0	13.3
242.596650	26.58	36.00	9.42	1000.0	120.000	170.0	H	80.0	13.1
399.969900	23.61	36.00	12.39	1000.0	120.000	98.0	V	82.0	16.9
728.915250	20.33	36.00	15.67	1000.0	120.000	163.0	V	261.0	23.2
911.018100	22.26	36.00	13.74	1000.0	120.000	116.0	H	280.0	25.2

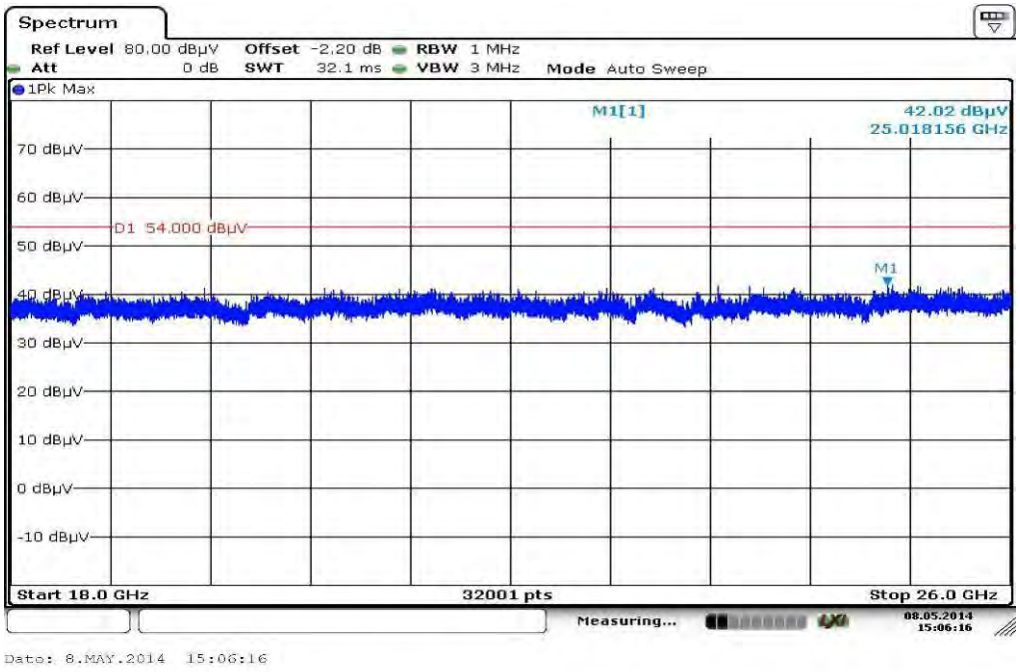
Plot 7: 1 GHz to 12.75 GHz, 5240 MHz, vertical & horizontal polarization



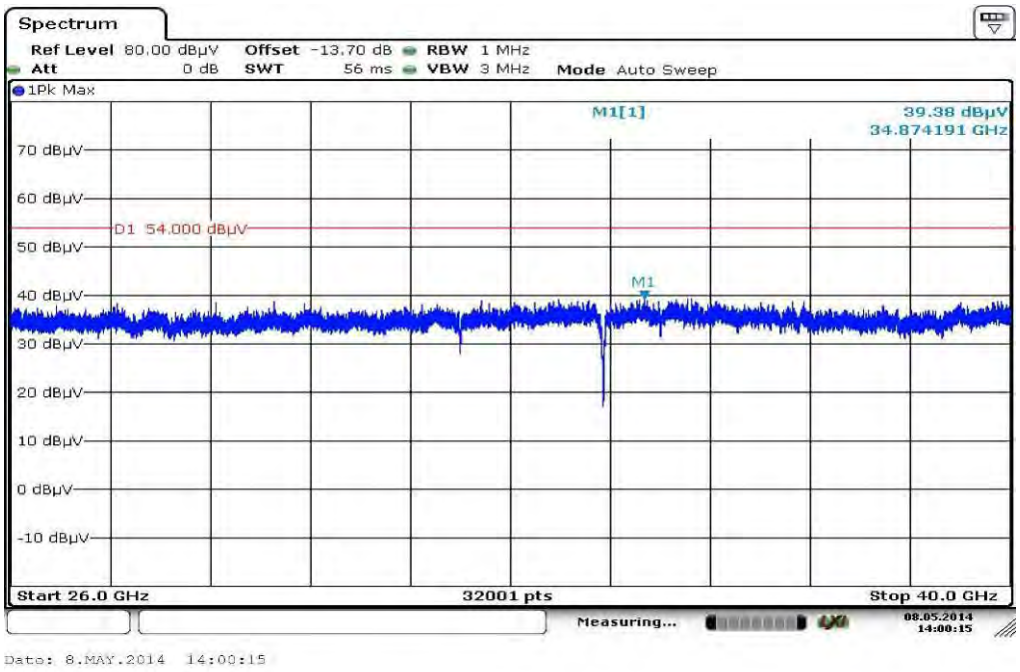
Plot 8: 12 GHz to 18 GHz, 5240 MHz, vertical & horizontal polarization



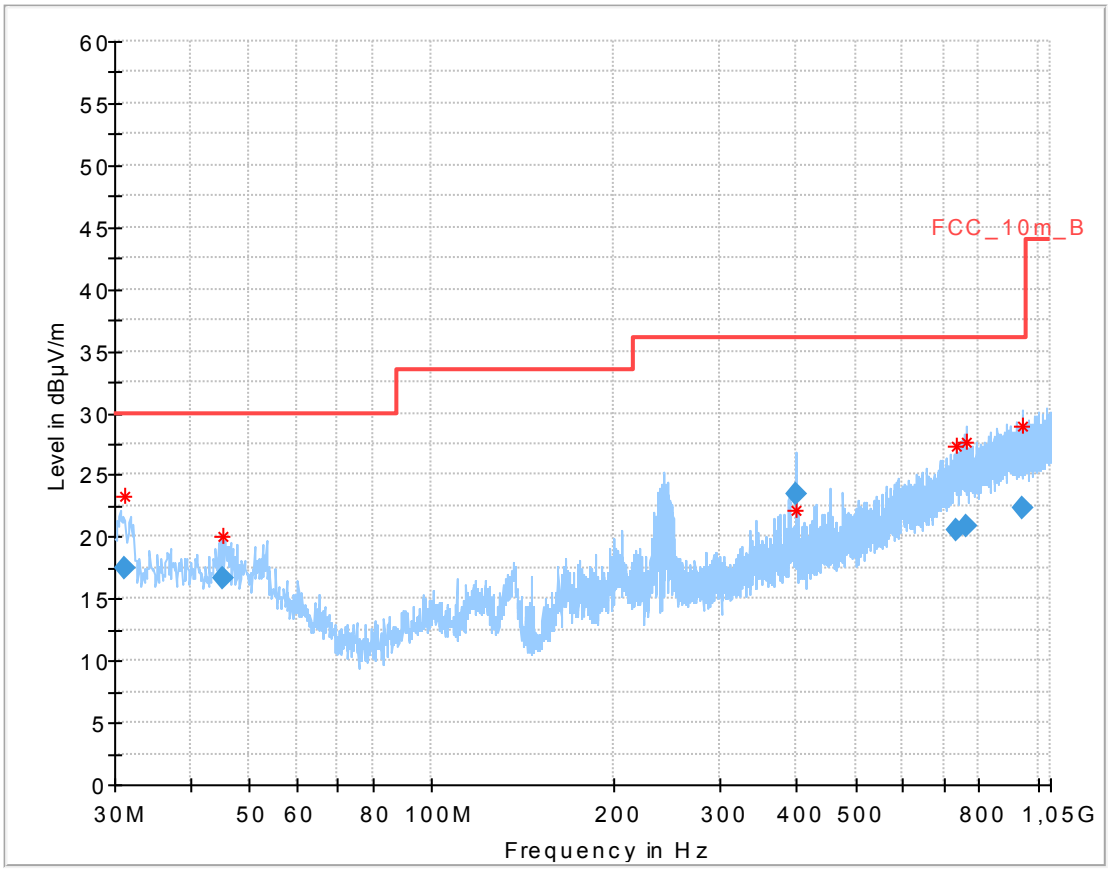
Plot 9: 18 GHz to 26 GHz, 5240 MHz, vertical & horizontal polarization



Plot 10: 26 GHz to 40 GHz, 5240 MHz, vertical & horizontal polarization



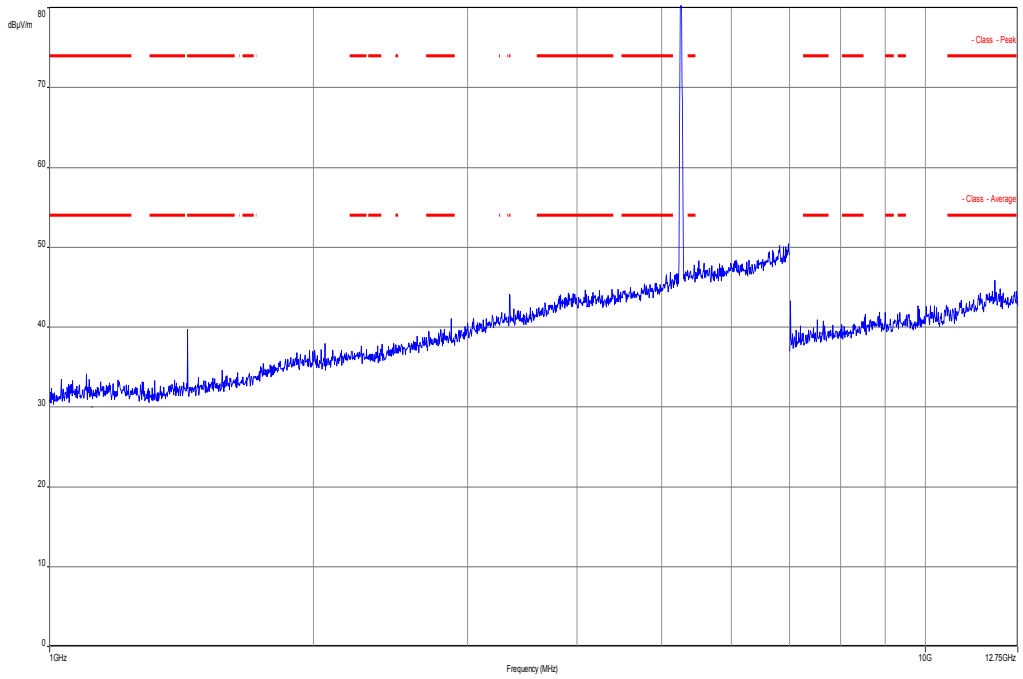
Plot 11: 30 MHz to 1 GHz, 5260 MHz, vertical & horizontal polarization



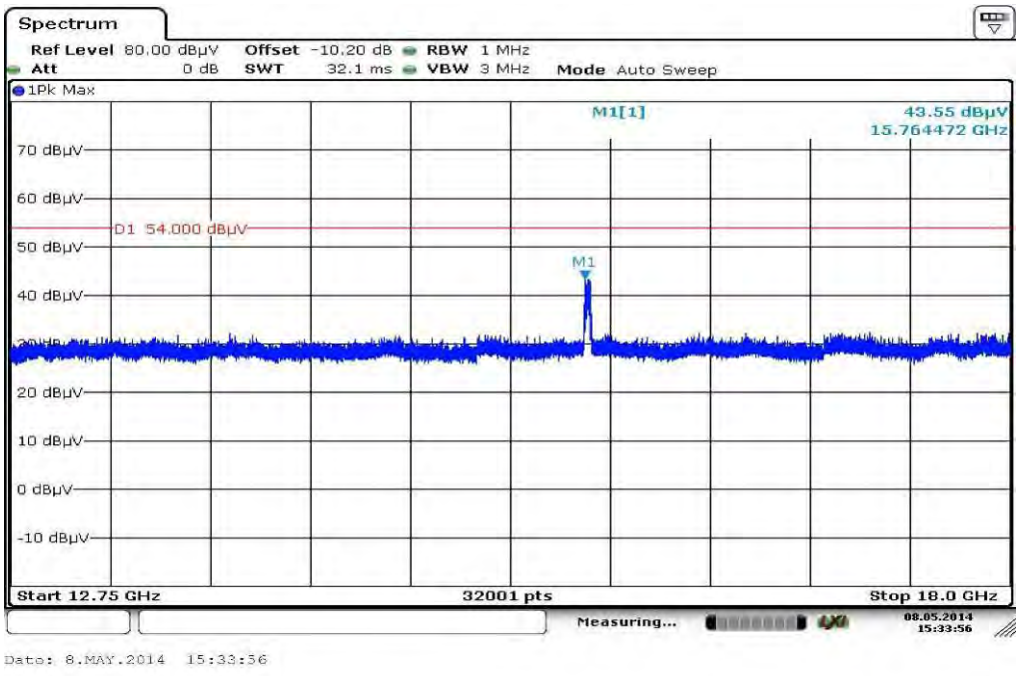
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.157100	17.39	30.00	12.61	1000.0	120.000	124.0	V	88.0	12.6
45.176100	16.64	30.00	13.36	1000.0	120.000	170.0	V	190.0	13.3
399.948600	23.43	36.00	12.57	1000.0	120.000	98.0	V	82.0	16.9
732.550800	20.50	36.00	15.50	1000.0	120.000	170.0	H	87.0	23.3
761.867700	20.84	36.00	15.16	1000.0	120.000	170.0	H	190.0	23.7
946.324350	22.28	36.00	13.72	1000.0	120.000	170.0	H	100.0	25.3

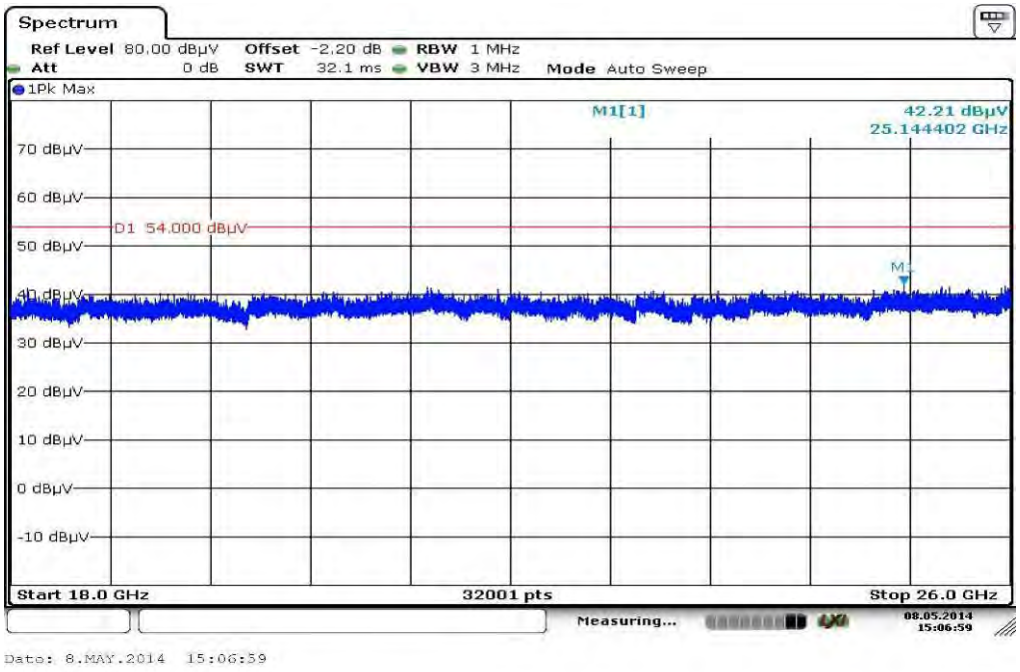
Plot 12: 1 GHz to 12.75 GHz, 5260 MHz, vertical & horizontal polarization



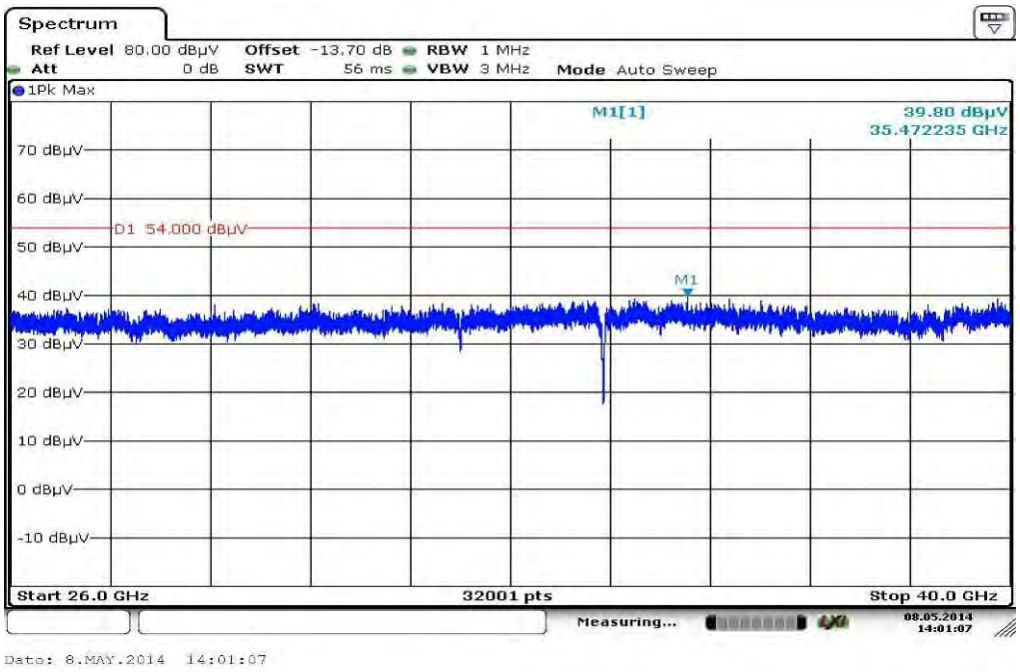
Plot 13: 12 GHz to 18 GHz, 5260 MHz, vertical & horizontal polarization



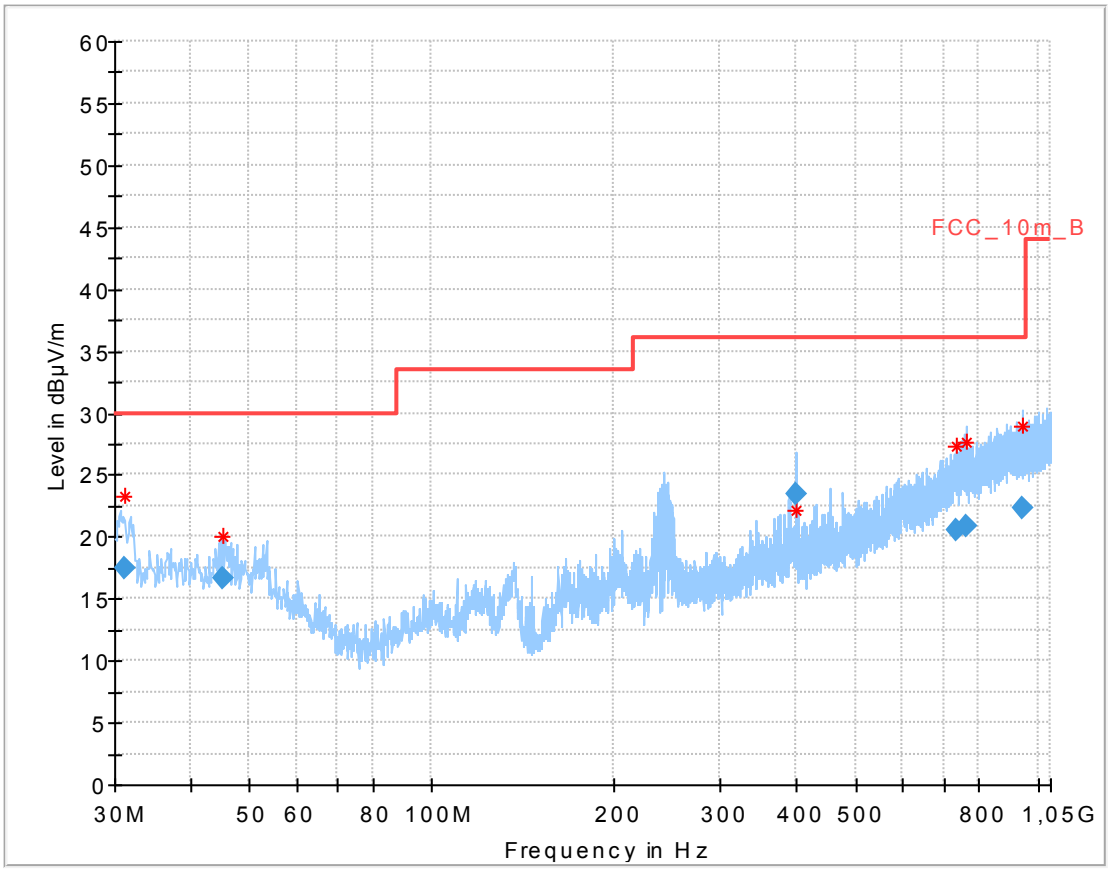
Plot 14: 18 GHz to 26 GHz, 5260 MHz, vertical & horizontal polarization



Plot 15: 26 GHz to 40 GHz, 5260 MHz, vertical & horizontal polarization



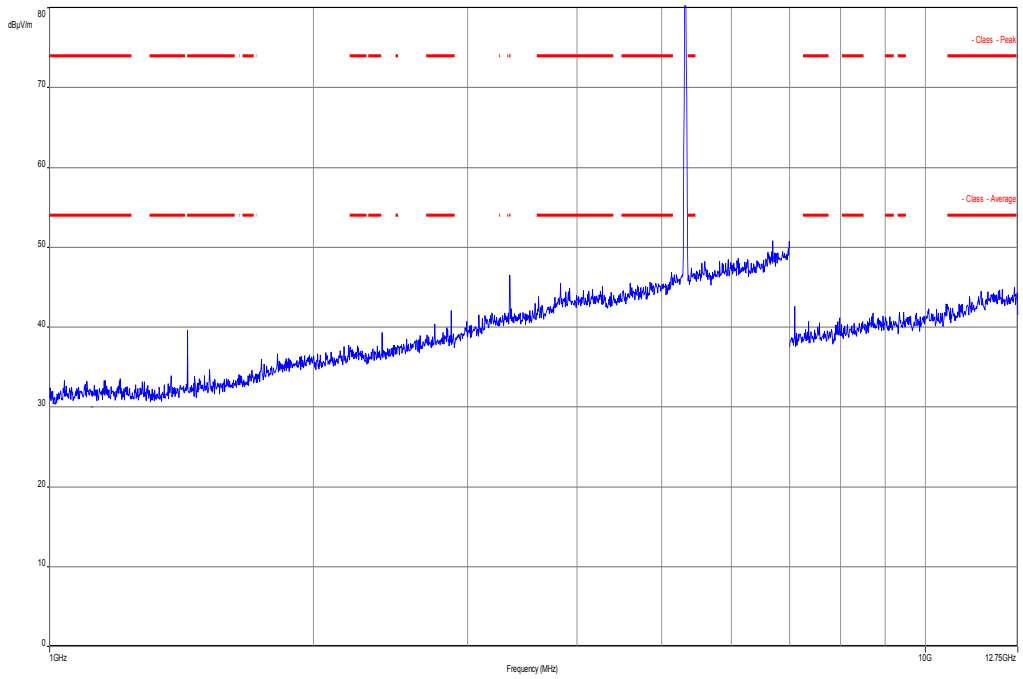
Plot 16: 30 MHz to 1 GHz, 5320 MHz, vertical & horizontal polarization



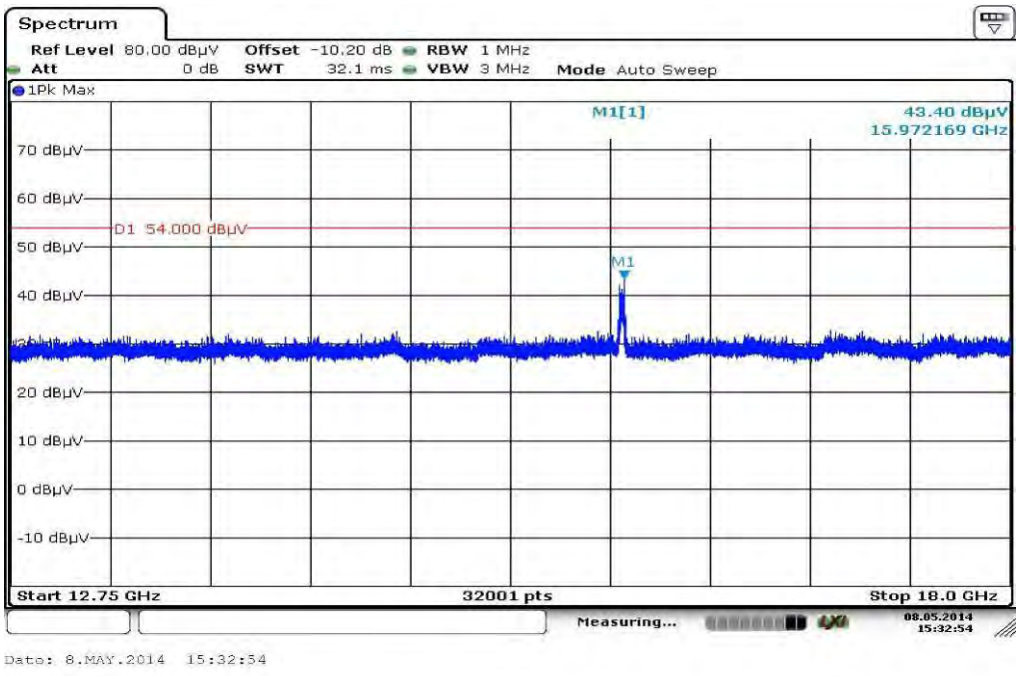
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.157100	17.39	30.00	12.61	1000.0	120.000	124.0	V	88.0	12.6
45.176100	16.64	30.00	13.36	1000.0	120.000	170.0	V	190.0	13.3
399.948600	23.43	36.00	12.57	1000.0	120.000	98.0	V	82.0	16.9
732.550800	20.50	36.00	15.50	1000.0	120.000	170.0	H	87.0	23.3
761.867700	20.84	36.00	15.16	1000.0	120.000	170.0	H	190.0	23.7
946.324350	22.28	36.00	13.72	1000.0	120.000	170.0	H	100.0	25.3

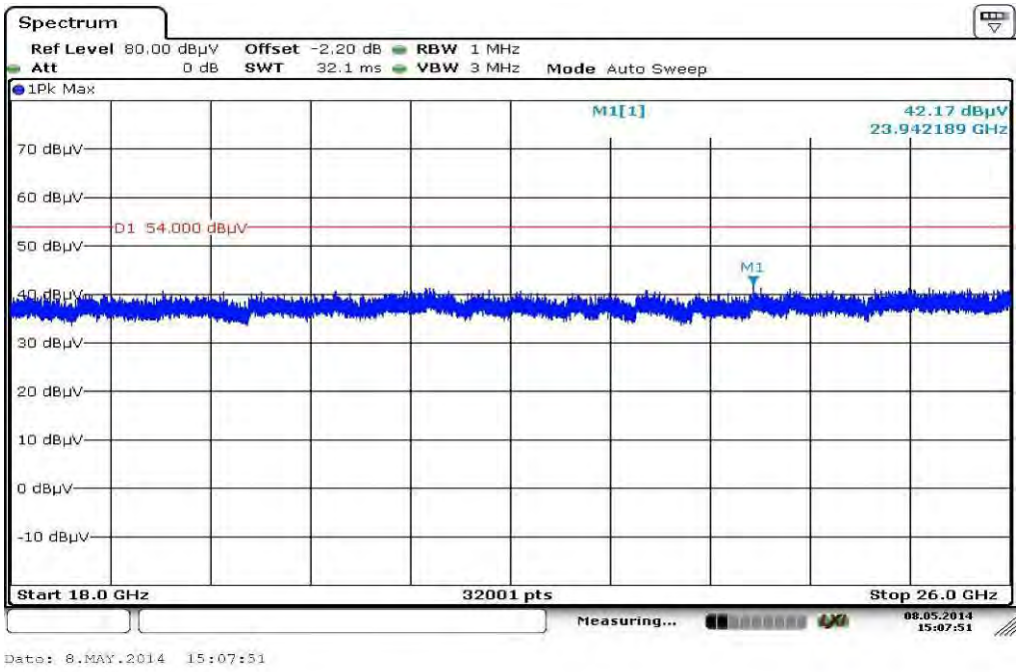
Plot 17: 1 GHz to 12.75 GHz, 5320 MHz, vertical & horizontal polarization



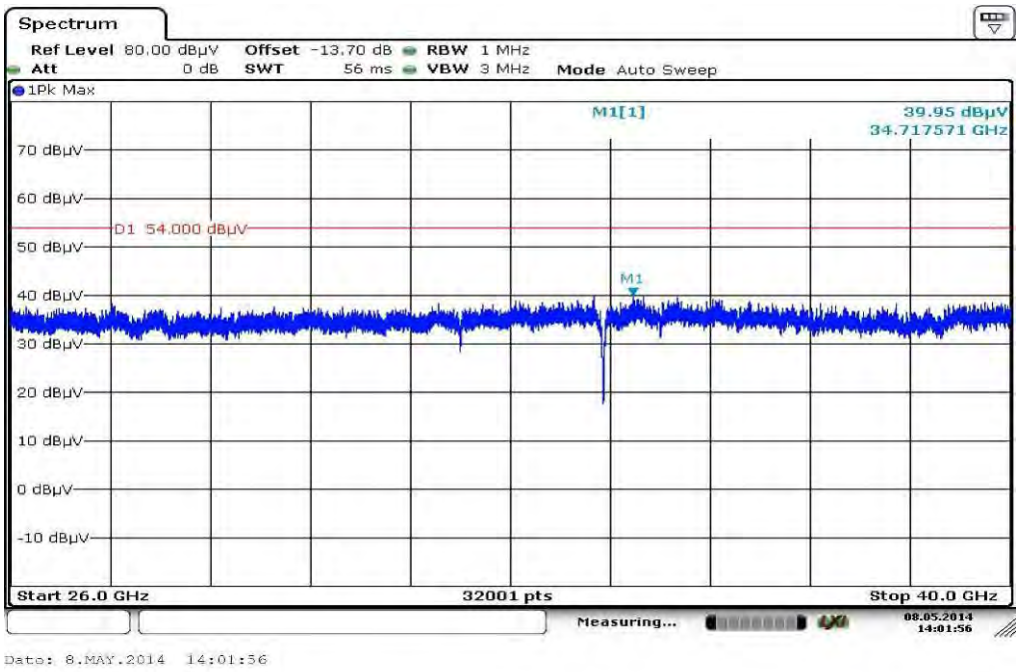
Plot 18: 12 GHz to 18 GHz, 5320 MHz, vertical & horizontal polarization



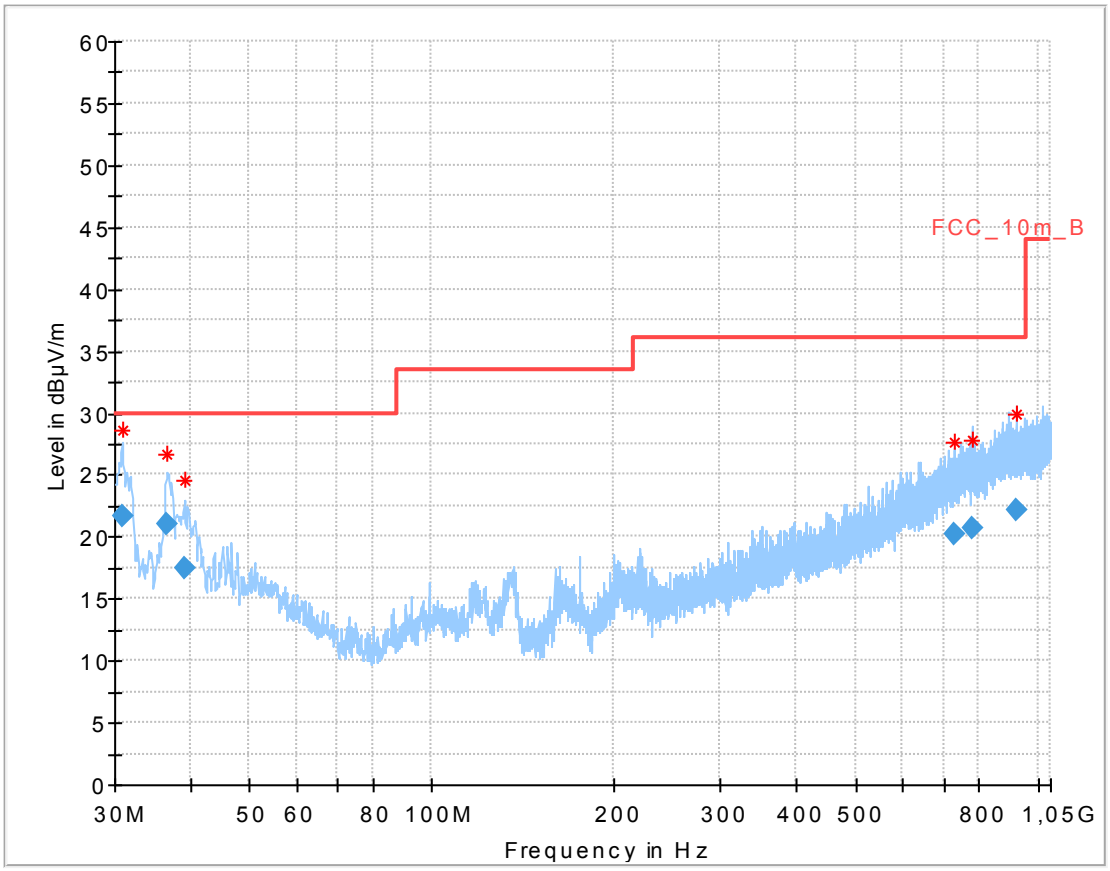
Plot 19: 18 GHz to 26 GHz, 5320 MHz, vertical & horizontal polarization



Plot 20: 26 GHz to 40 GHz, 5320 MHz, vertical & horizontal polarization



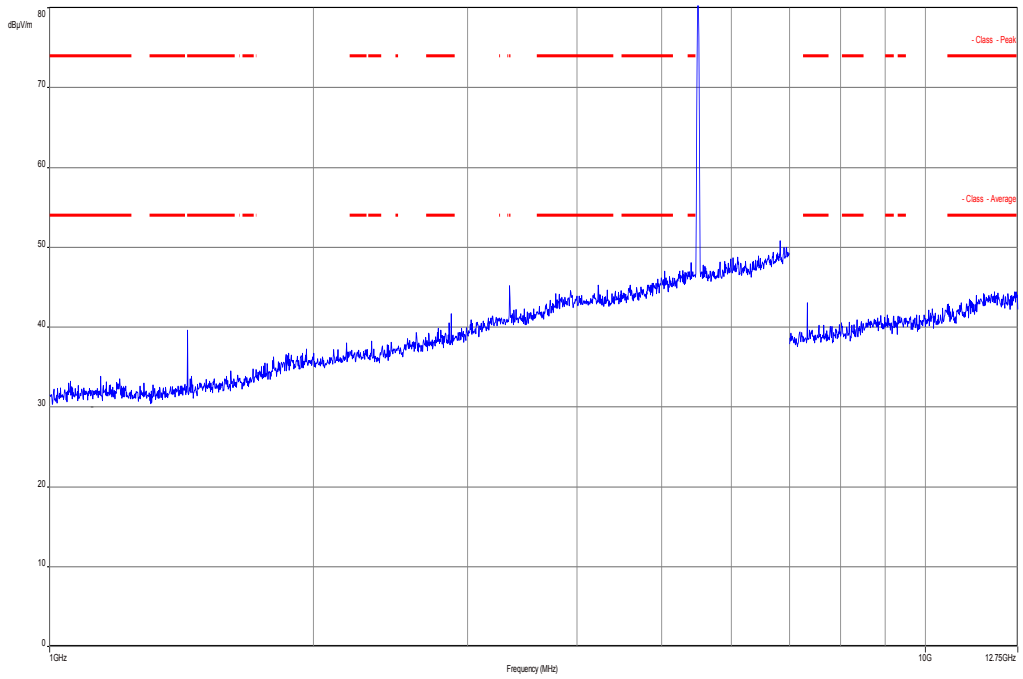
Plot 21: 30 MHz to 1 GHz, 5500 MHz, vertical & horizontal polarization



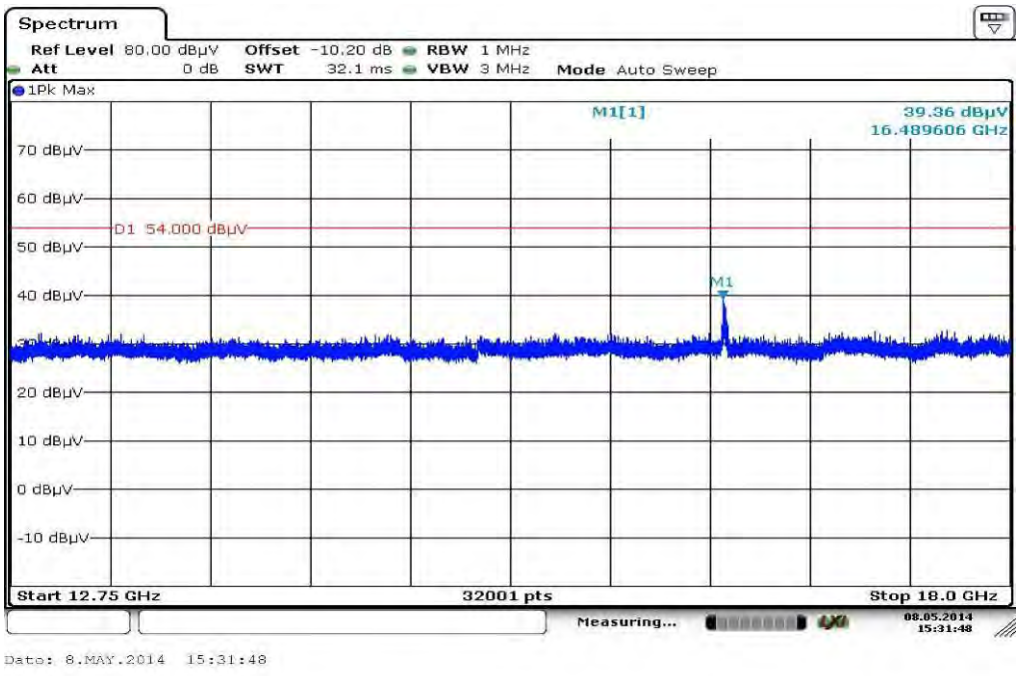
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.866100	21.72	30.00	8.28	1000.0	120.000	98.0	V	10.0	12.6
36.659700	21.05	30.00	8.95	1000.0	120.000	98.0	V	172.0	13.2
39.033150	17.41	30.00	12.59	1000.0	120.000	170.0	V	280.0	13.4
730.348050	20.22	36.00	15.78	1000.0	120.000	170.0	V	190.0	23.2
781.491750	20.68	36.00	15.32	1000.0	120.000	170.0	V	190.0	23.7
922.538250	22.23	36.00	13.77	1000.0	120.000	170.0	H	82.0	25.3

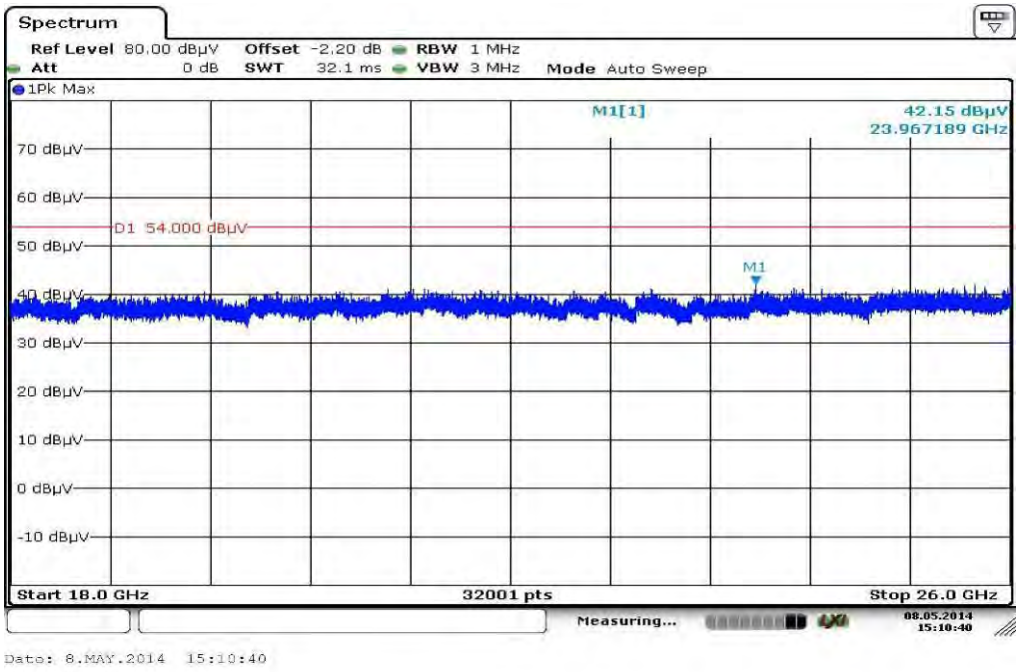
Plot 22: 1 GHz to 12.75 GHz, 5500 MHz, vertical & horizontal polarization



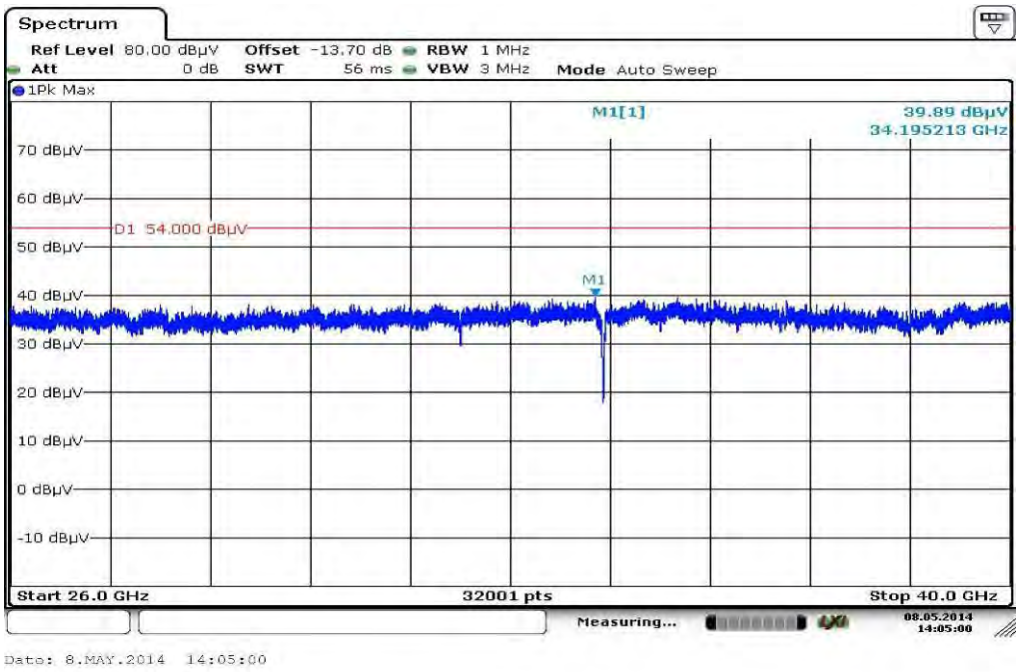
Plot 23: 12 GHz to 18 GHz, 5500 MHz, vertical & horizontal polarization



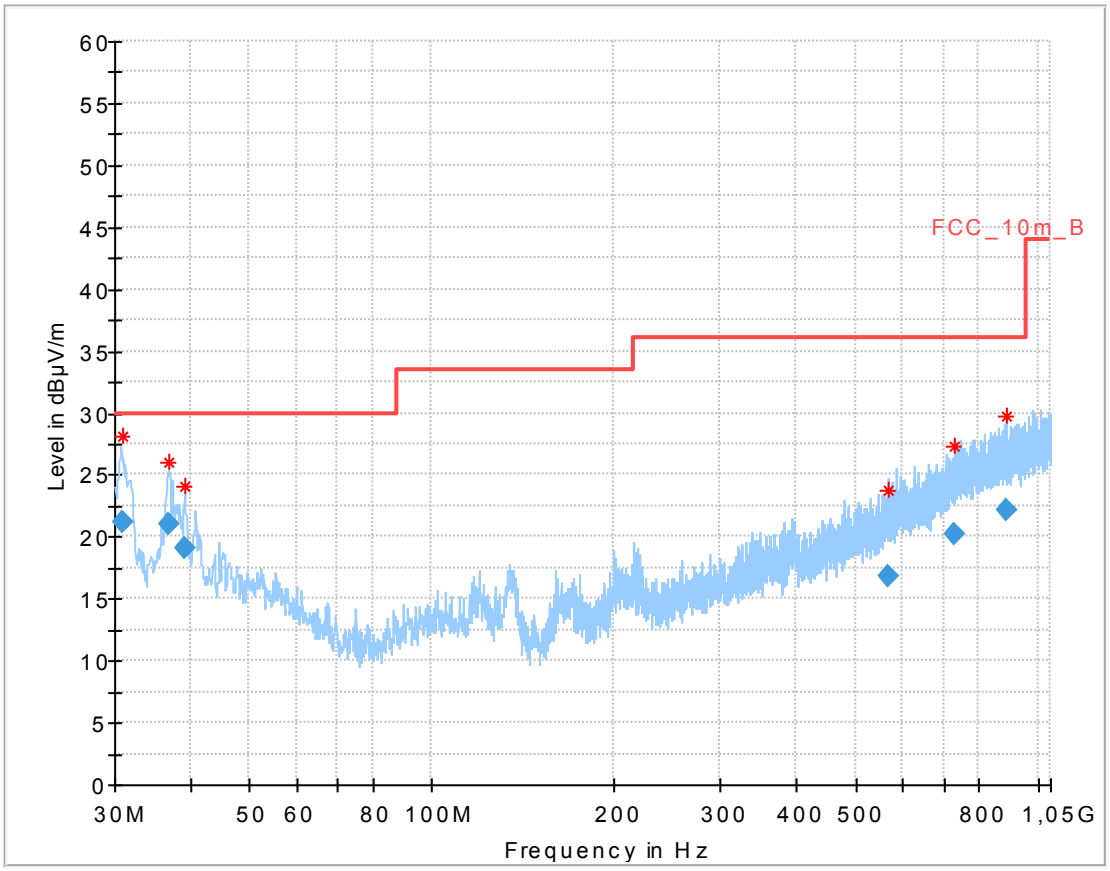
Plot 24: 18 GHz to 26 GHz, 5500 MHz, vertical & horizontal polarization



Plot 25: 26 GHz to 40 GHz, 5500 MHz, vertical & horizontal polarization



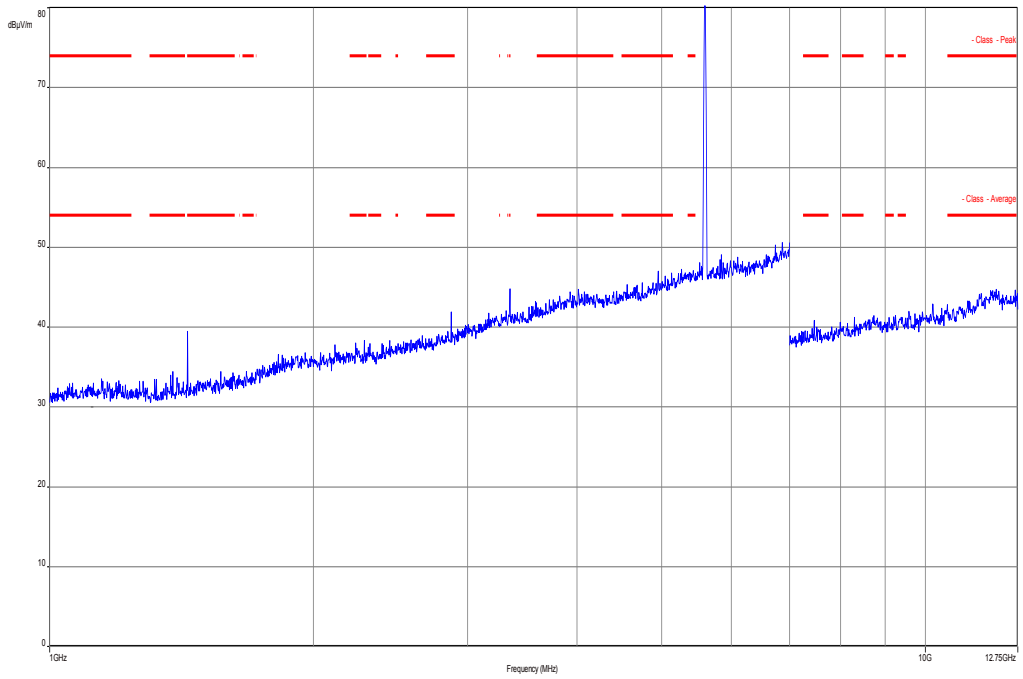
Plot 26: 30 MHz to 1 GHz, 5600 MHz, vertical & horizontal polarization



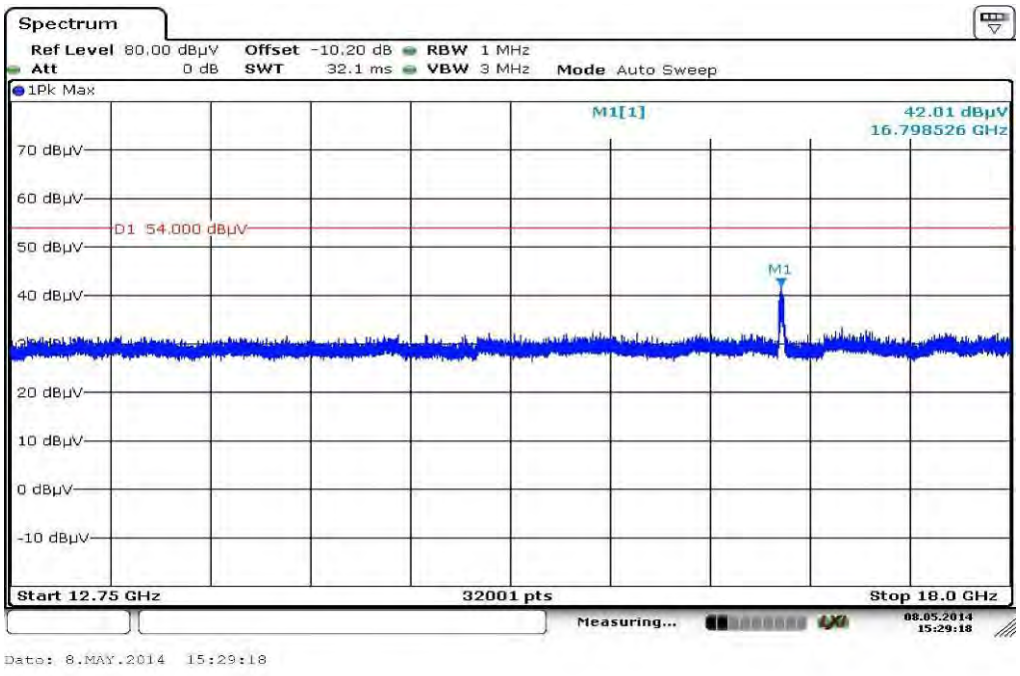
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.948750	21.25	30.00	8.75	1000.0	120.000	170.0	V	100.0	12.6
36.823950	20.98	30.00	9.02	1000.0	120.000	106.0	V	100.0	13.2
39.186750	19.07	30.00	10.93	1000.0	120.000	101.0	V	180.0	13.4
565.748700	16.85	36.00	19.15	1000.0	120.000	122.0	V	93.0	19.8
729.580350	20.26	36.00	15.74	1000.0	120.000	170.0	V	260.0	23.2
886.405350	22.20	36.00	13.80	1000.0	120.000	170.0	H	280.0	25.0

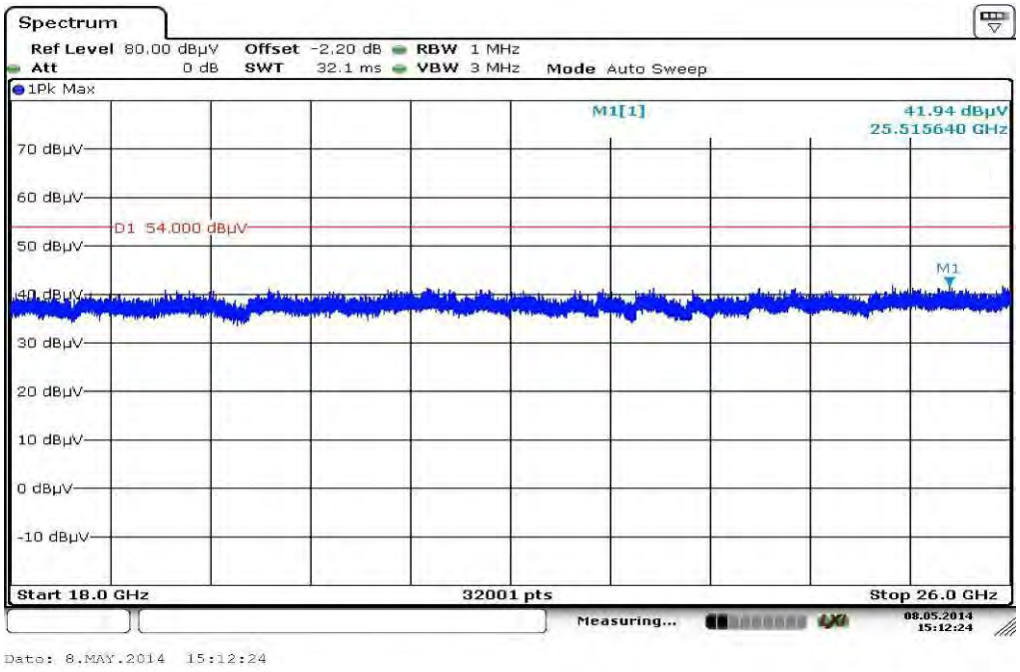
Plot 27: 1 GHz to 12.75 GHz, 5600 MHz, vertical & horizontal polarization



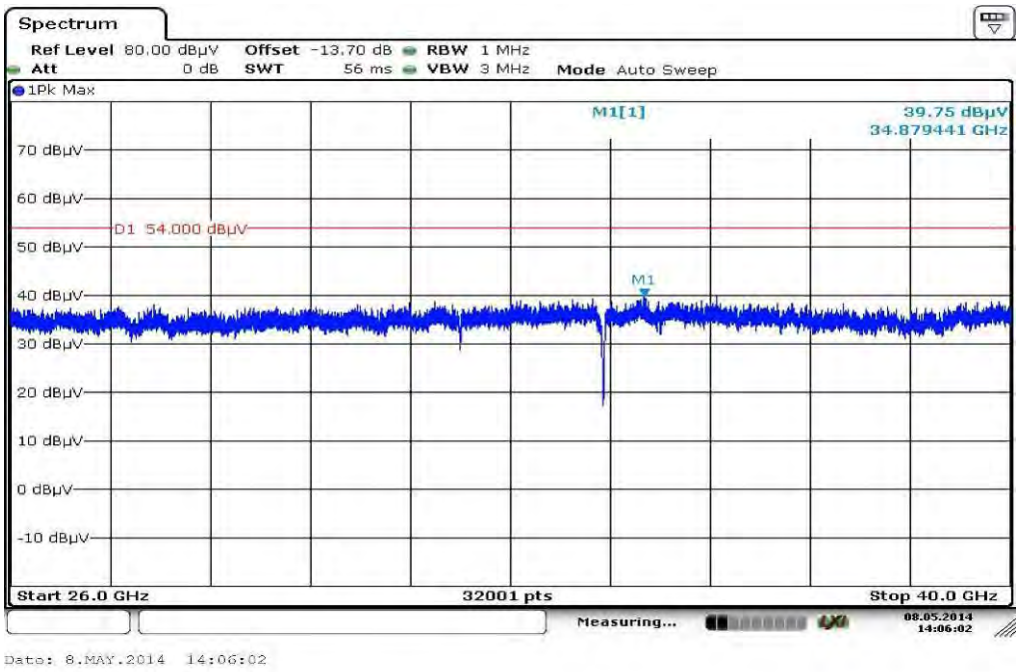
Plot 28: 12 GHz to 18 GHz, 5600 MHz, vertical & horizontal polarization



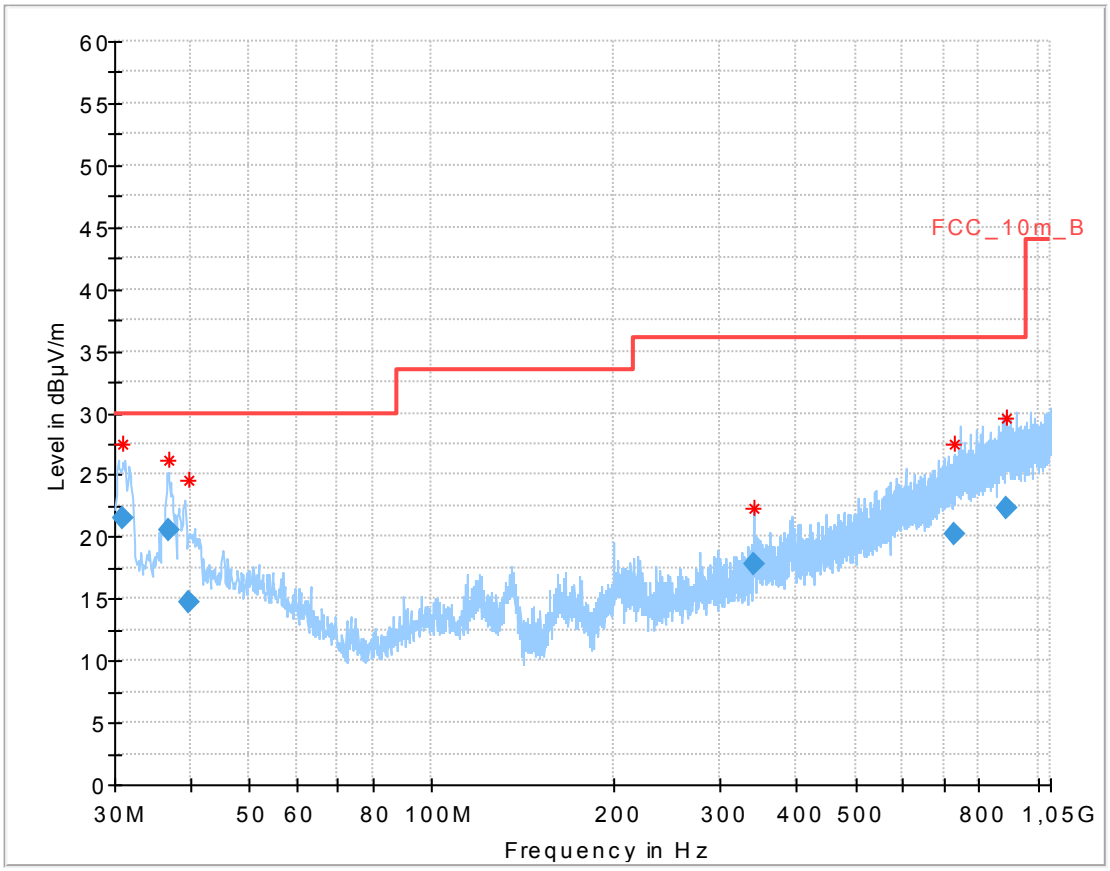
Plot 29: 18 GHz to 26 GHz, 5600 MHz, vertical & horizontal polarization



Plot 30: 26 GHz to 40 GHz, 5600 MHz, vertical & horizontal polarization



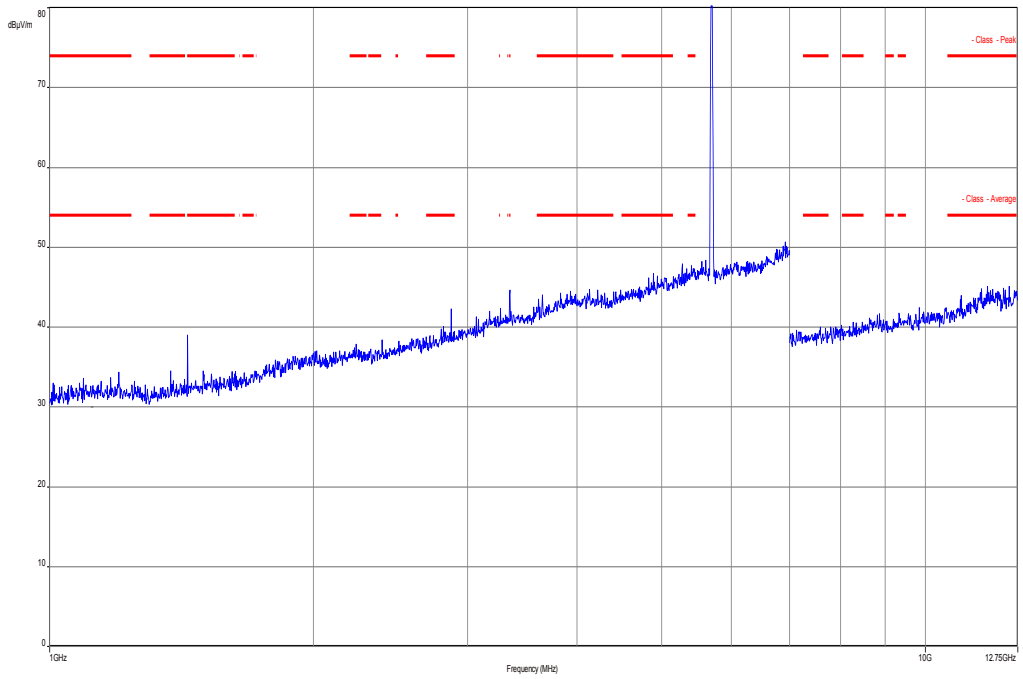
Plot 31: 30 MHz to 1 GHz, 5700 MHz, vertical & horizontal polarization



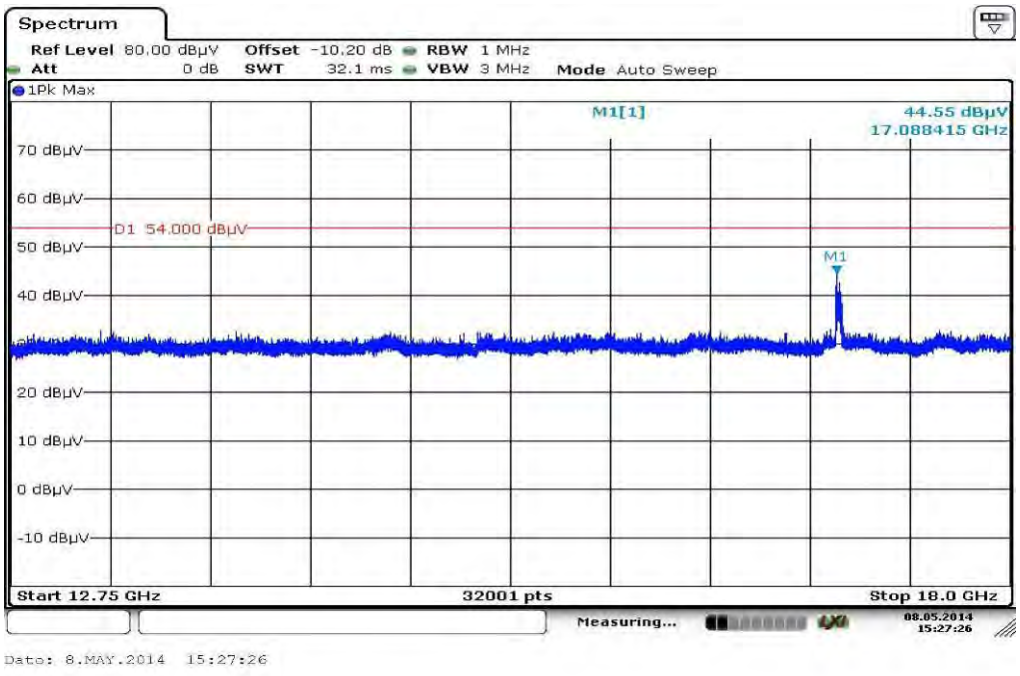
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.888794	21.48	30.00	8.52	1000.0	120.000	98.0	V	100.0	12.6
36.900600	20.61	30.00	9.39	1000.0	120.000	101.0	V	100.0	13.2
39.695400	14.65	30.00	15.35	1000.0	120.000	170.0	V	190.0	13.4
340.086450	17.82	36.00	18.18	1000.0	120.000	98.0	V	93.0	15.8
726.569250	20.16	36.00	15.84	1000.0	120.000	101.0	V	280.0	23.1
890.538900	22.26	36.00	13.74	1000.0	120.000	170.0	H	-9.0	25.1

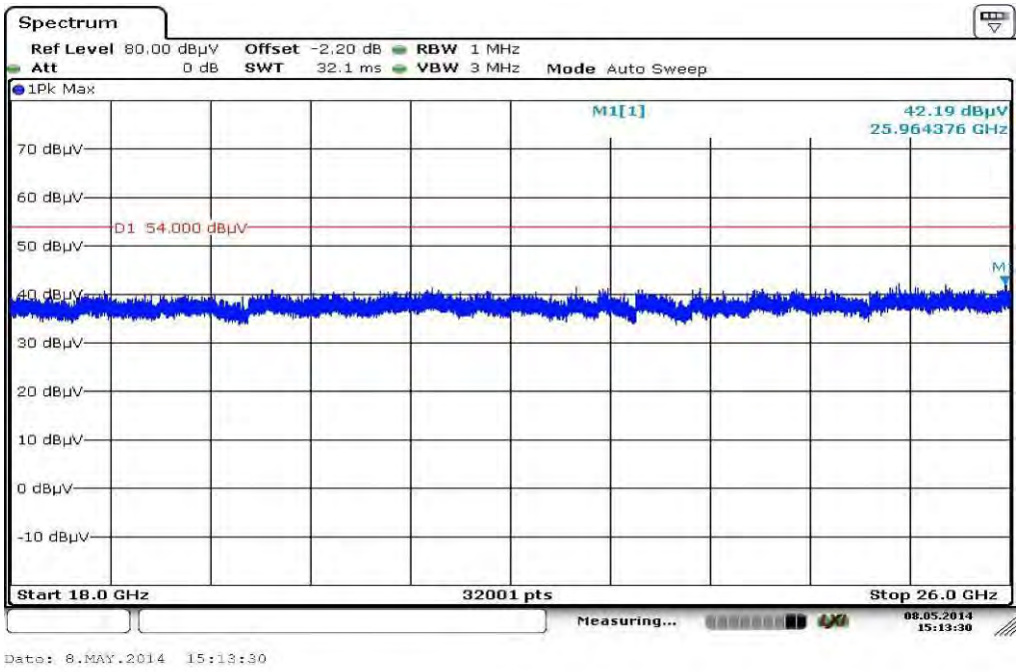
Plot 32: 1 GHz to 12.75 GHz, 5700 MHz, vertical & horizontal polarization



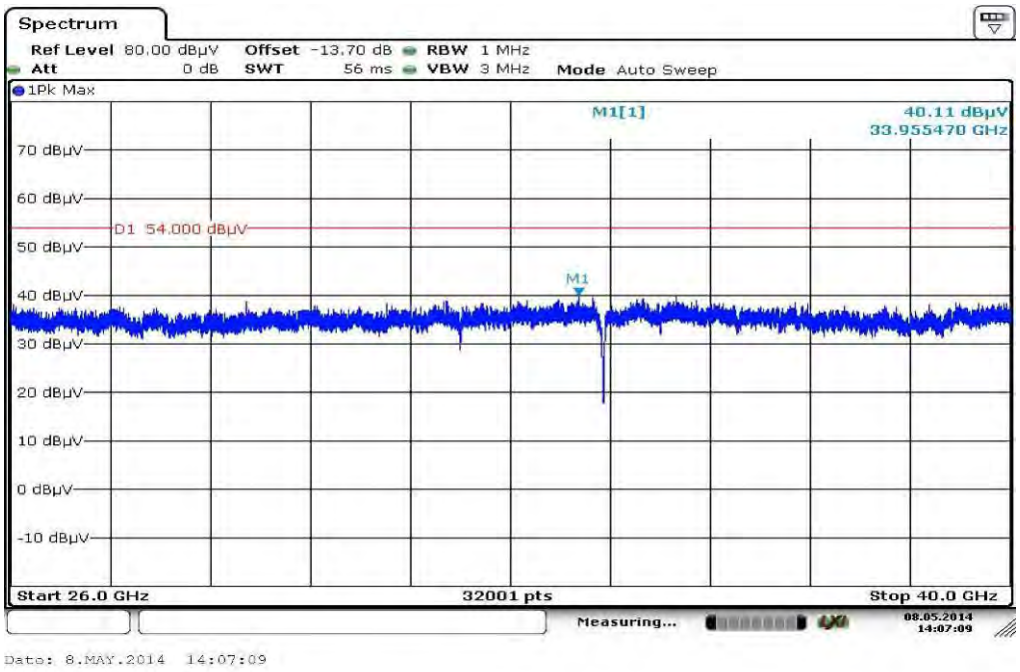
Plot 33: 12 GHz to 18 GHz, 5700 MHz, vertical & horizontal polarization



Plot 34: 18 GHz to 26 GHz, 5700 MHz, vertical & horizontal polarization

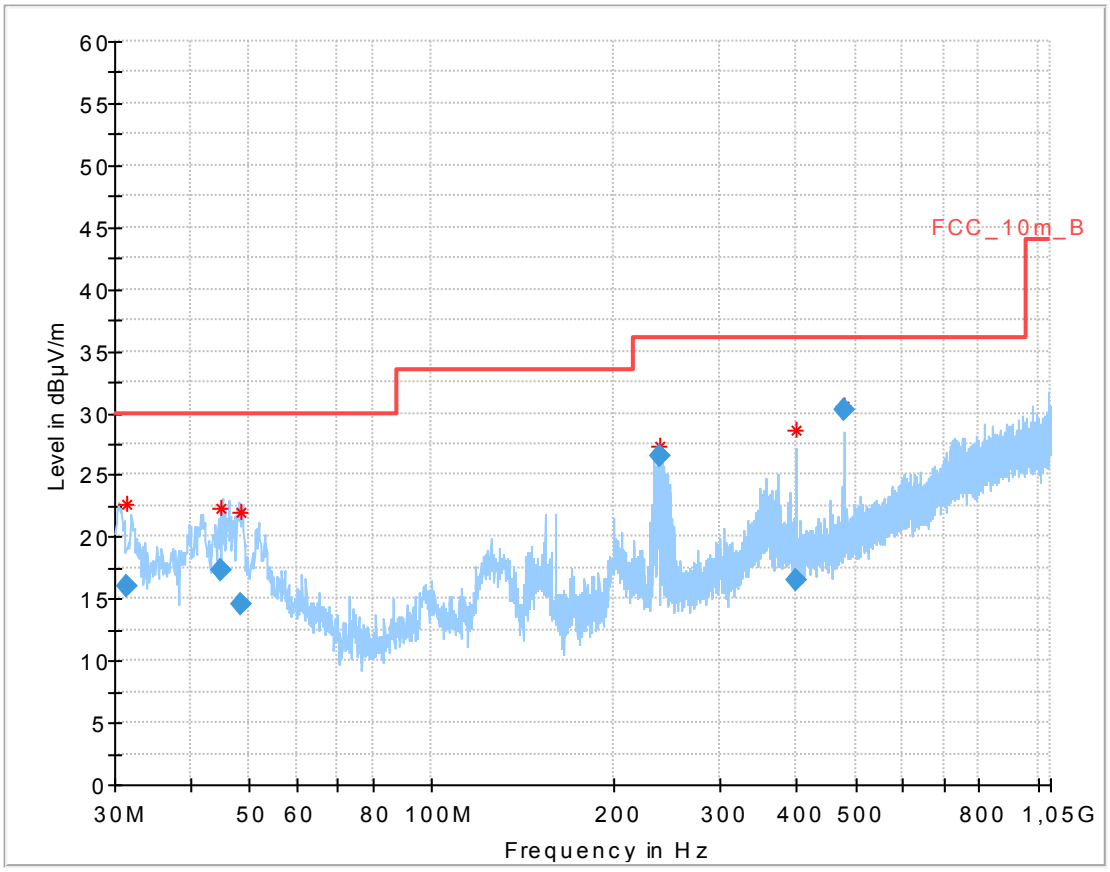


Plot 35: 26 GHz to 40 GHz, 5700 MHz, vertical & horizontal polarization



Plots: OFDM / n – mode HT20

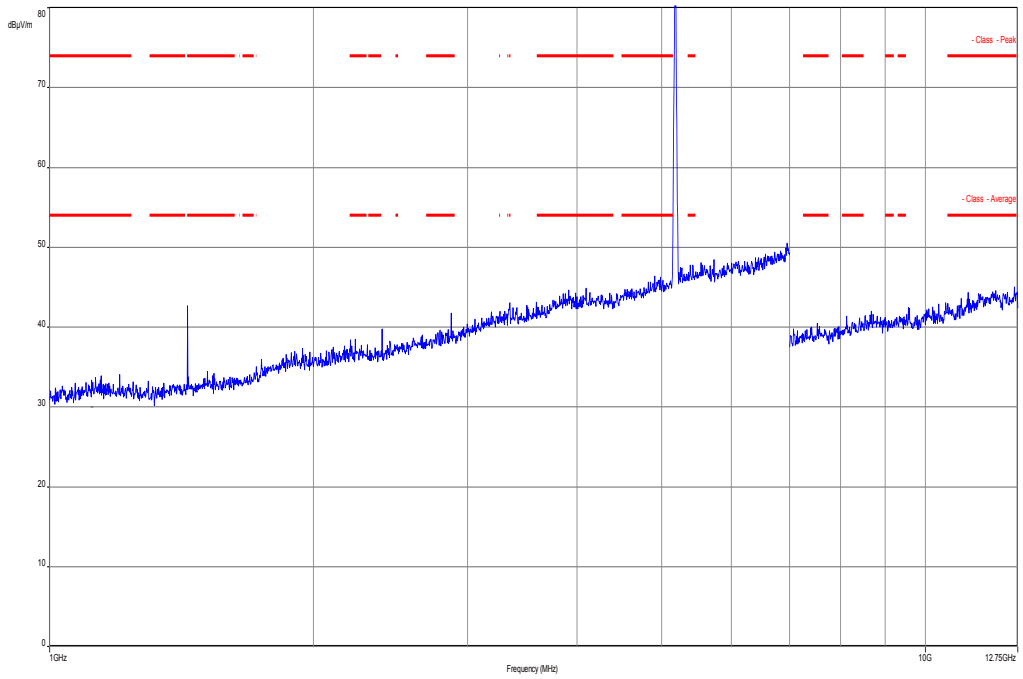
Plot 1: 30 MHz to 1 GHz, 5180 MHz, vertical & horizontal polarization



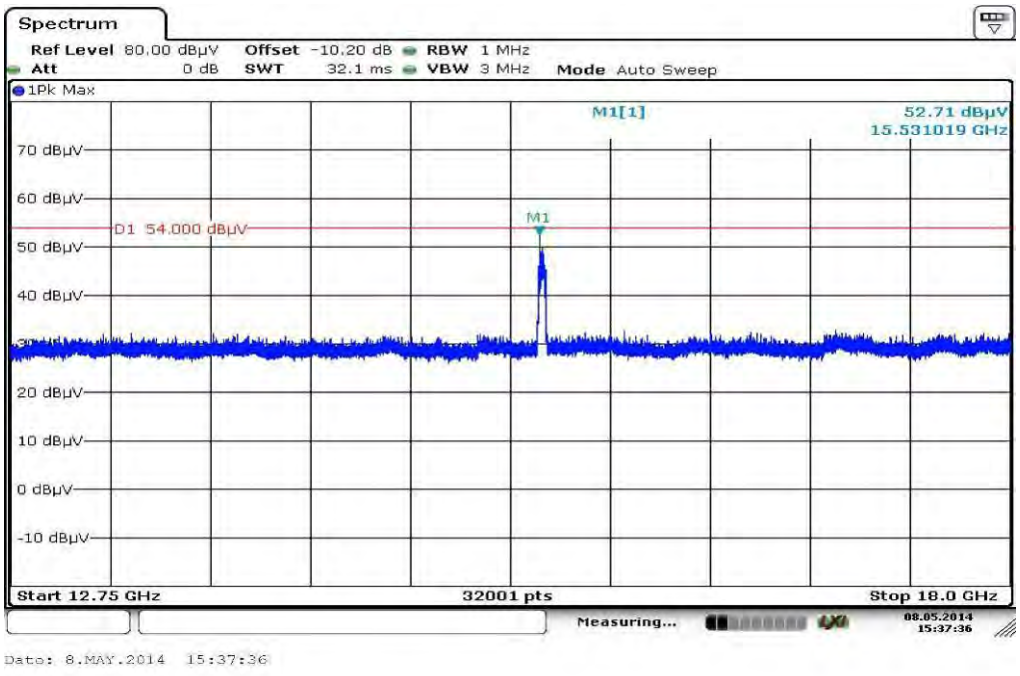
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.417200	16.02	30.00	13.98	1000.0	120.000	158.0	V	-4.0	12.7
44.819250	17.30	30.00	12.70	1000.0	120.000	106.0	V	10.0	13.3
48.394050	14.50	30.00	15.50	1000.0	120.000	170.0	V	171.0	13.3
237.418800	26.56	36.00	9.44	1000.0	120.000	170.0	H	100.0	12.9
399.995100	16.54	36.00	19.46	1000.0	120.000	101.0	V	273.0	16.9
478.978800	30.17	36.00	5.83	1000.0	120.000	170.0	H	190.0	18.3

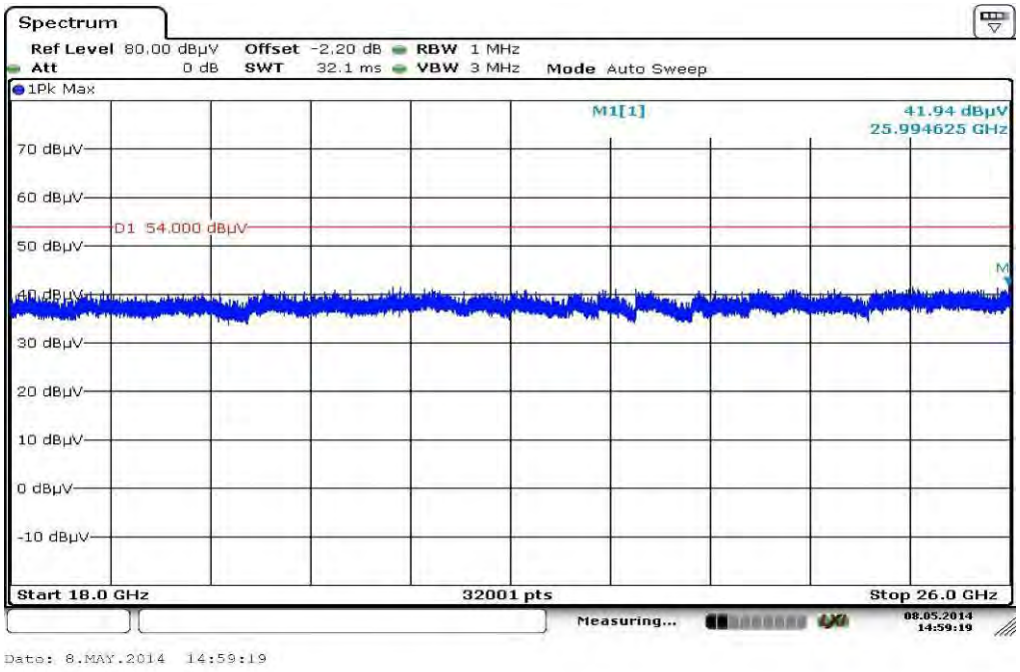
Plot 2: 1 GHz to 12.75 GHz, 5180 MHz, vertical & horizontal polarization



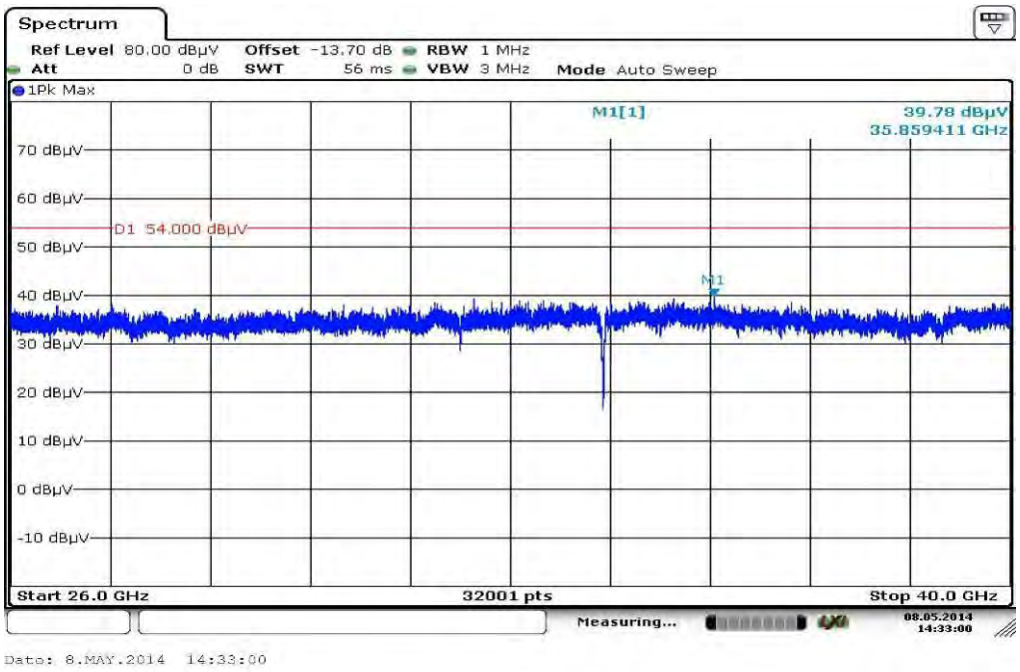
Plot 3: 12 GHz to 18 GHz, 5180 MHz, vertical & horizontal polarization



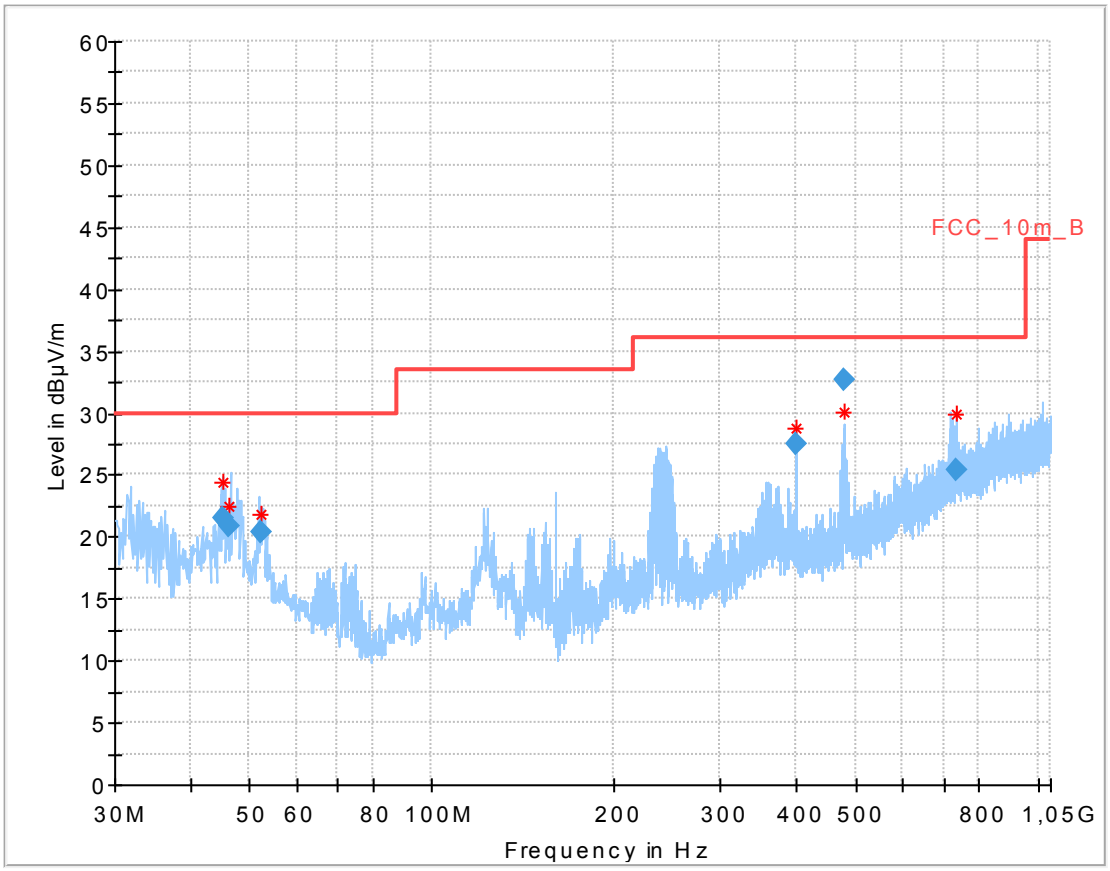
Plot 4: 18 GHz to 26 GHz, 5180 MHz, vertical & horizontal polarization



Plot 5: 26 GHz to 40 GHz, 5180 MHz, vertical & horizontal polarization



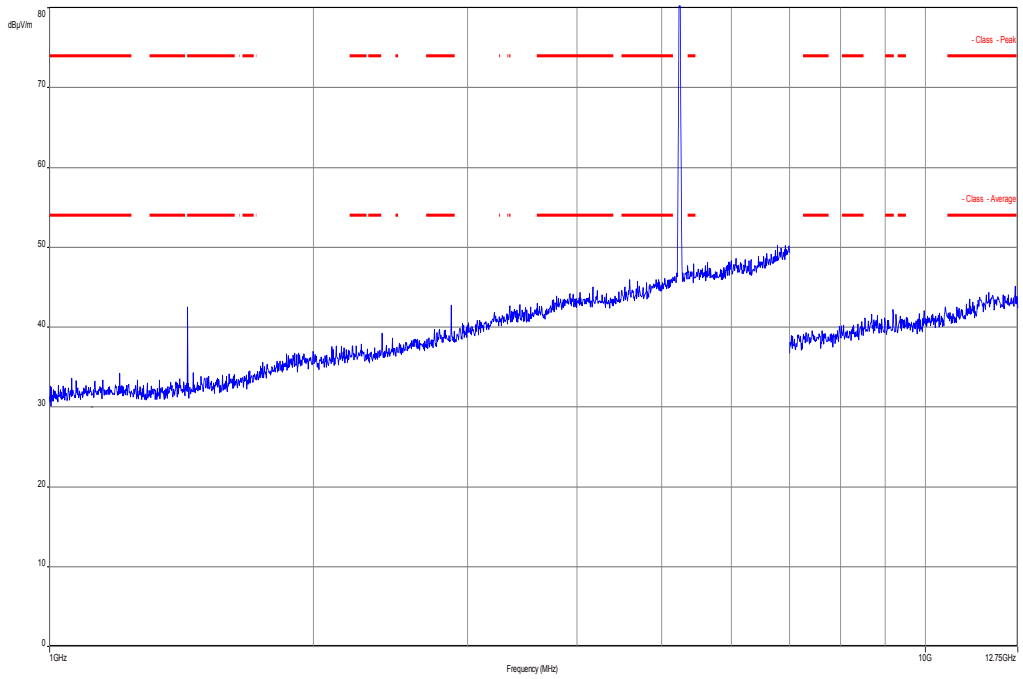
Plot 6: 30 MHz to 1 GHz, 5240 MHz, vertical & horizontal polarization



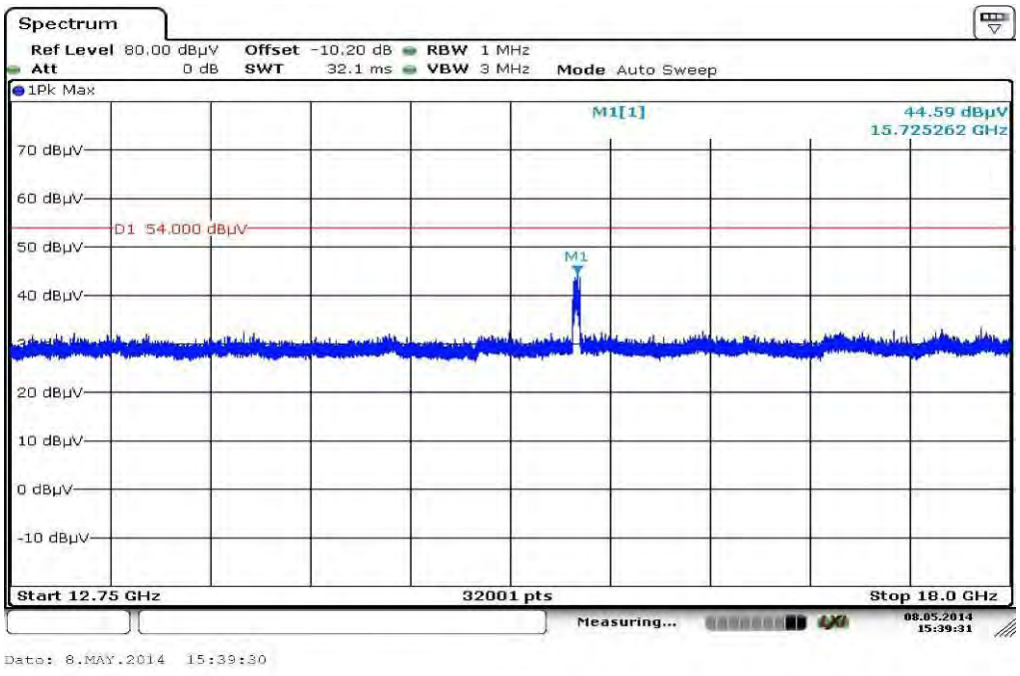
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
45.183000	21.45	30.00	8.55	1000.0	120.000	98.0	V	261.0	13.3
46.280700	20.91	30.00	9.09	1000.0	120.000	113.0	V	-5.0	13.3
52.232700	20.31	30.00	9.69	1000.0	120.000	98.0	V	266.0	13.2
400.009500	27.43	36.00	8.57	1000.0	120.000	101.0	V	280.0	16.9
480.001650	32.66	36.00	3.34	1000.0	120.000	170.0	H	190.0	18.3
731.505000	25.38	36.00	10.62	1000.0	120.000	116.0	H	10.0	23.2

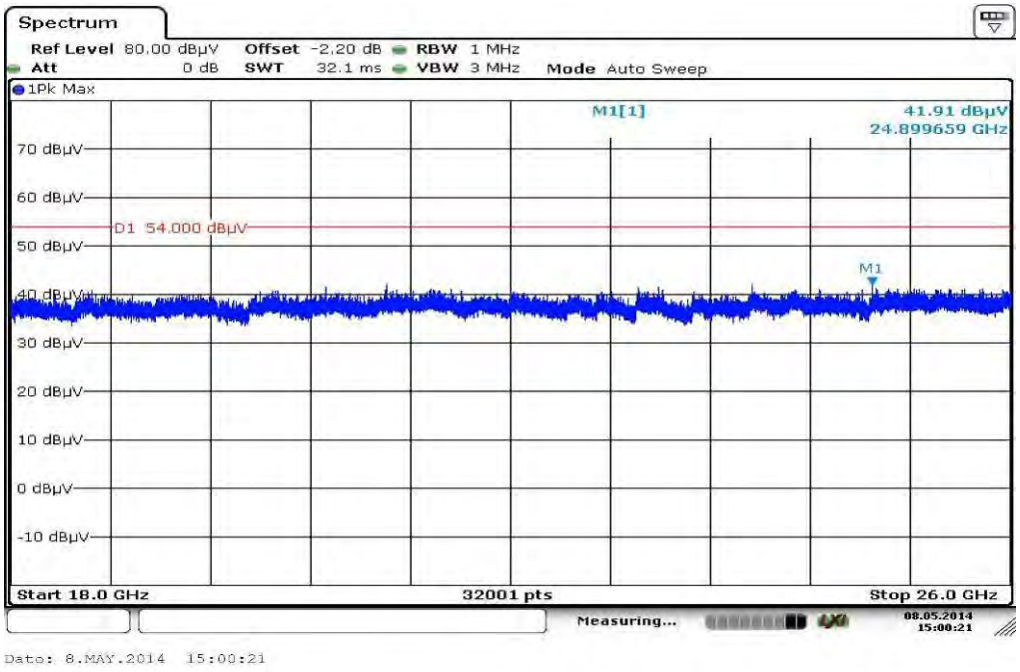
Plot 7: 1 GHz to 12.75 GHz, 5240 MHz, vertical & horizontal polarization



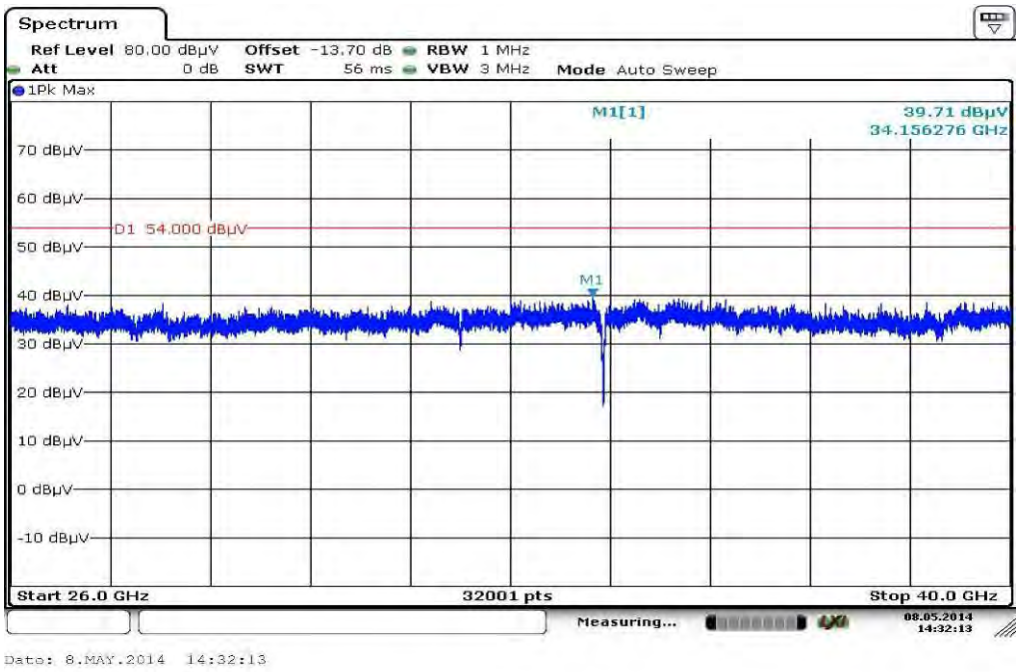
Plot 8: 12 GHz to 18 GHz, 5240 MHz, vertical & horizontal polarization



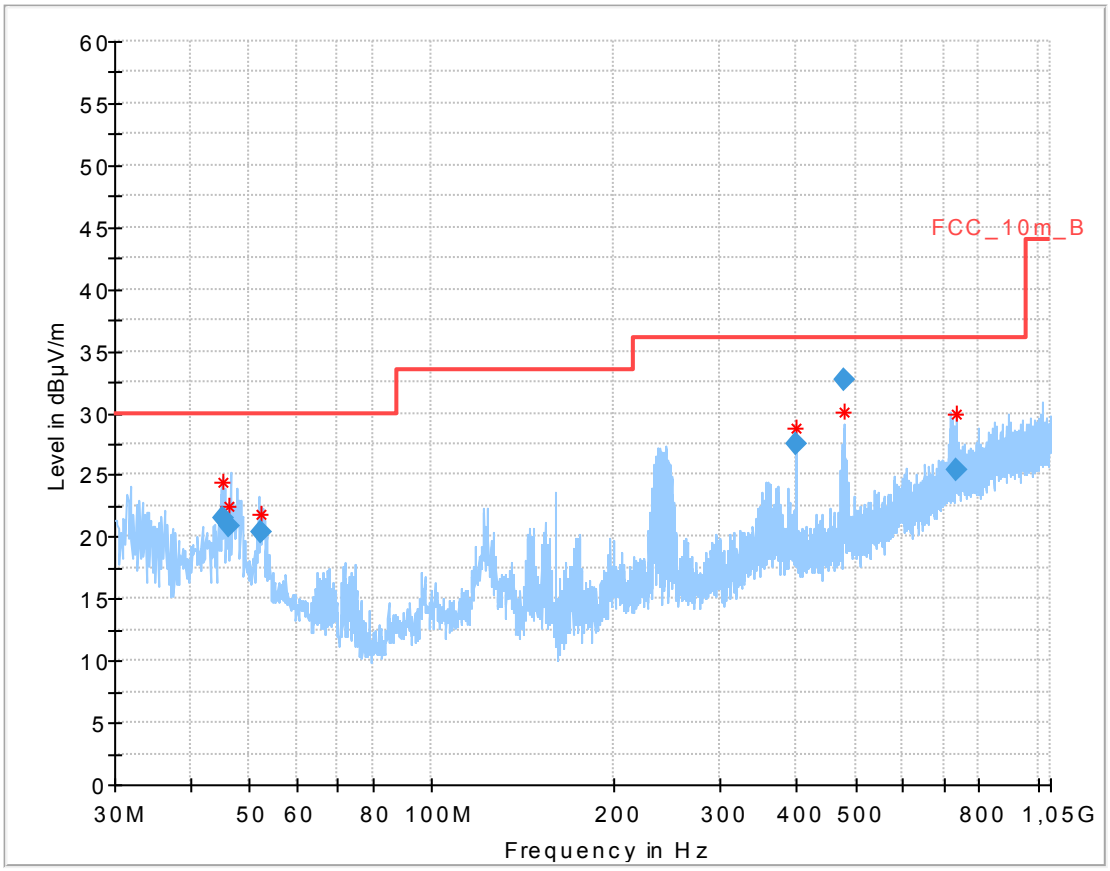
Plot 9: 18 GHz to 26 GHz, 5240 MHz, vertical & horizontal polarization



Plot 10: 26 GHz to 40 GHz, 5240 MHz, vertical & horizontal polarization



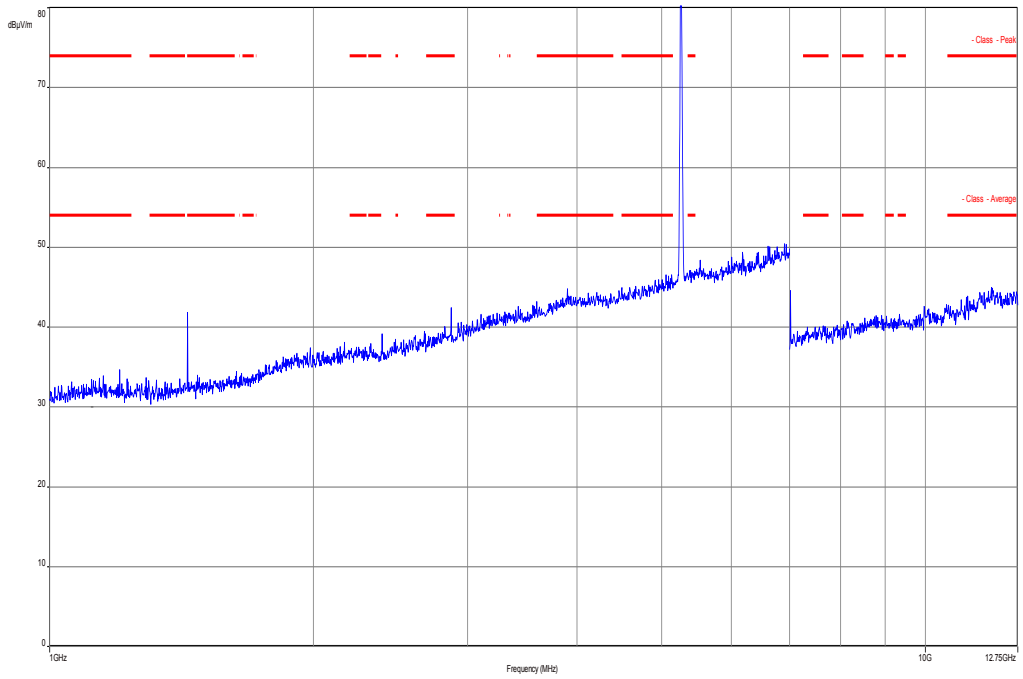
Plot 11: 30 MHz to 1 GHz, 5260 MHz, vertical & horizontal polarization



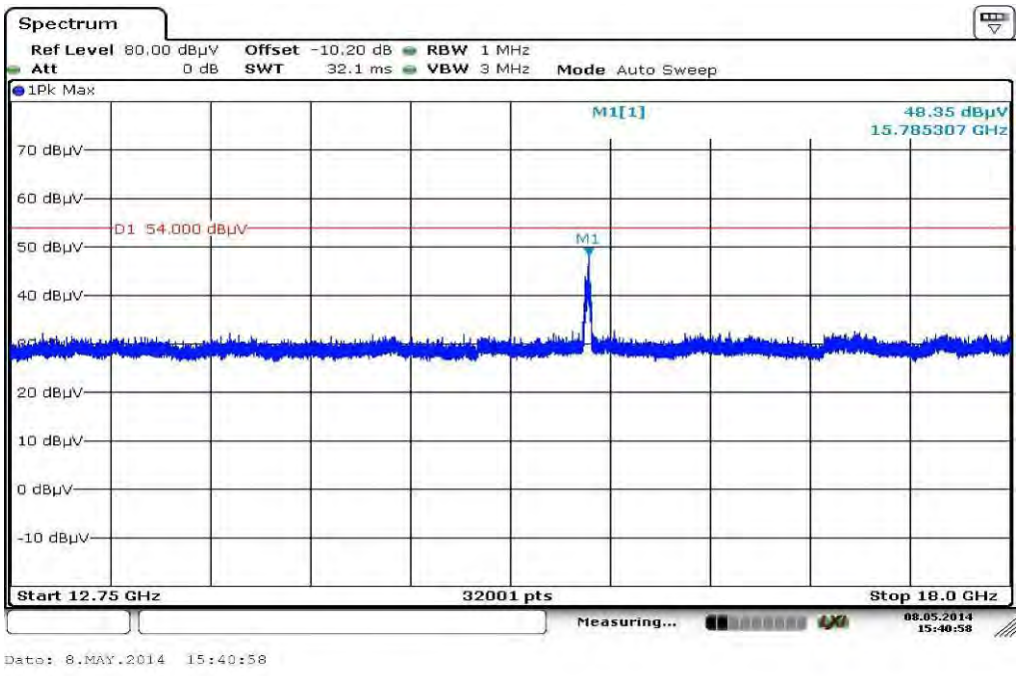
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
45.183000	21.45	30.00	8.55	1000.0	120.000	98.0	V	261.0	13.3
46.280700	20.91	30.00	9.09	1000.0	120.000	113.0	V	-5.0	13.3
52.232700	20.31	30.00	9.69	1000.0	120.000	98.0	V	266.0	13.2
400.009500	27.43	36.00	8.57	1000.0	120.000	101.0	V	280.0	16.9
480.001650	32.66	36.00	3.34	1000.0	120.000	170.0	H	190.0	18.3
731.505000	25.38	36.00	10.62	1000.0	120.000	116.0	H	10.0	23.2

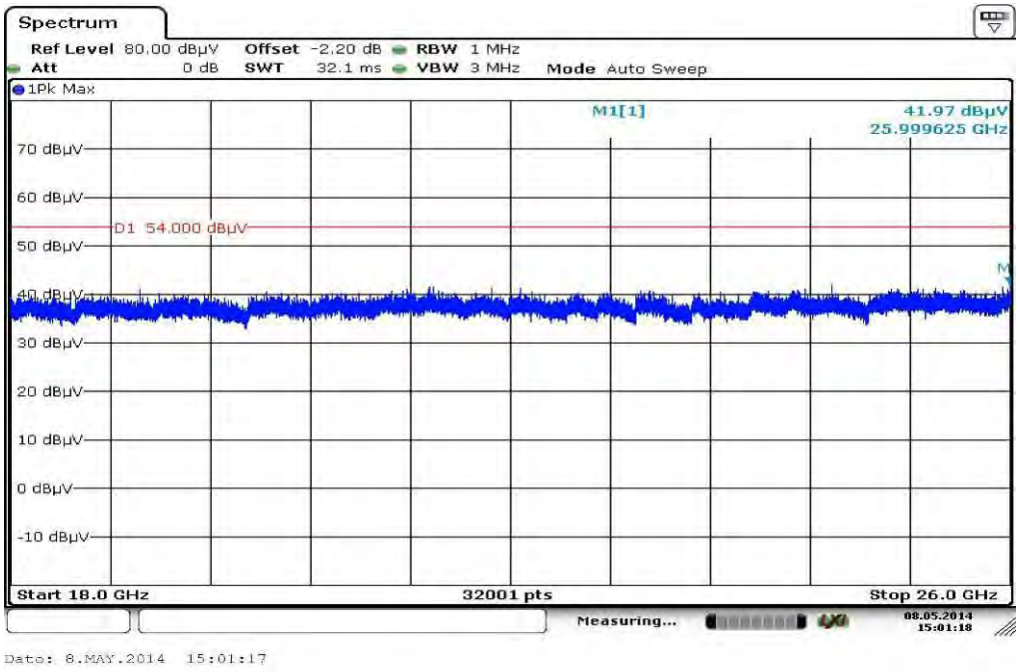
Plot 12: 1 GHz to 12.75 GHz, 5260 MHz, vertical & horizontal polarization



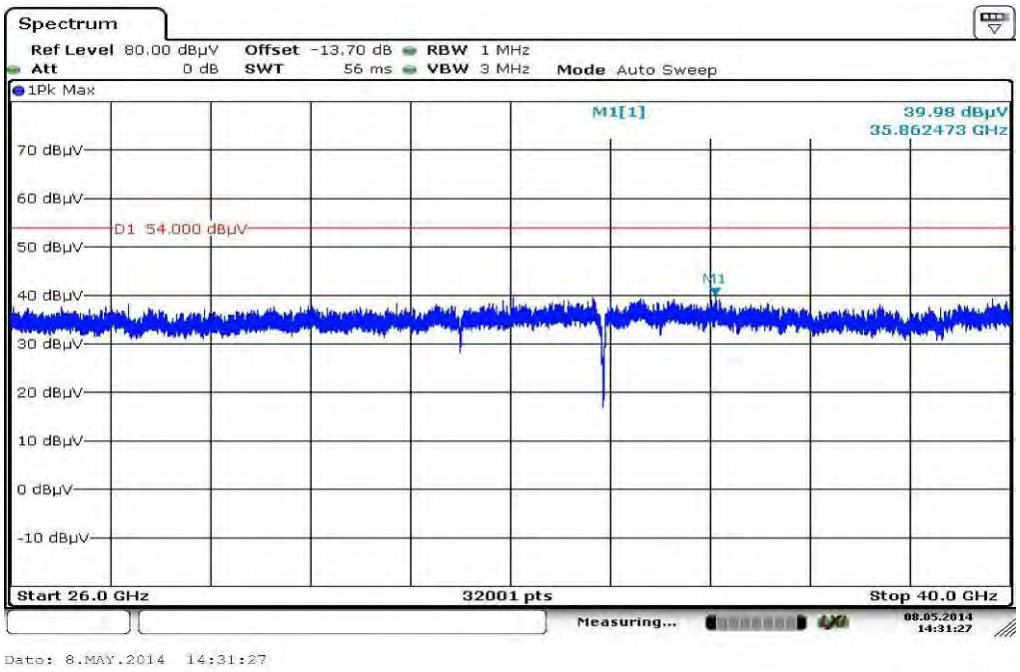
Plot 13: 12 GHz to 18 GHz, 5260 MHz, vertical & horizontal polarization



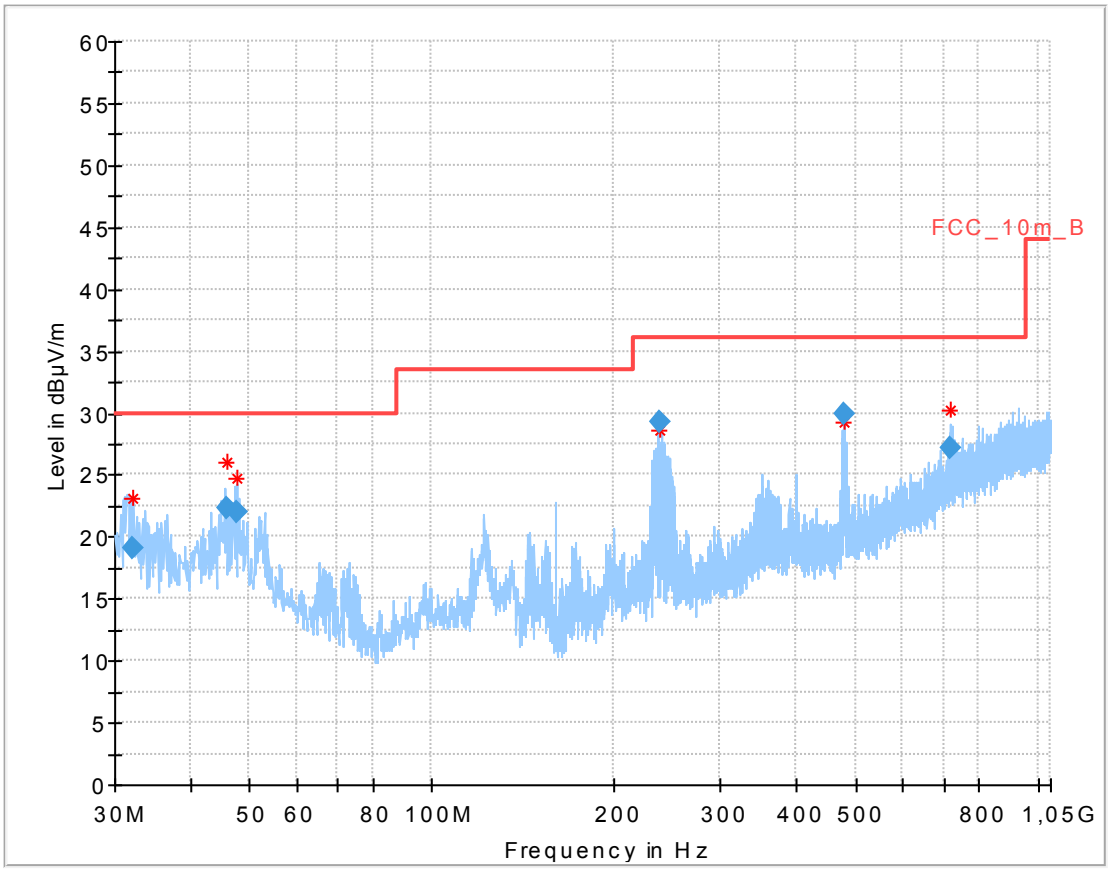
Plot 14: 18 GHz to 26 GHz, 5260 MHz, vertical & horizontal polarization



Plot 15: 26 GHz to 40 GHz, 5260 MHz, vertical & horizontal polarization



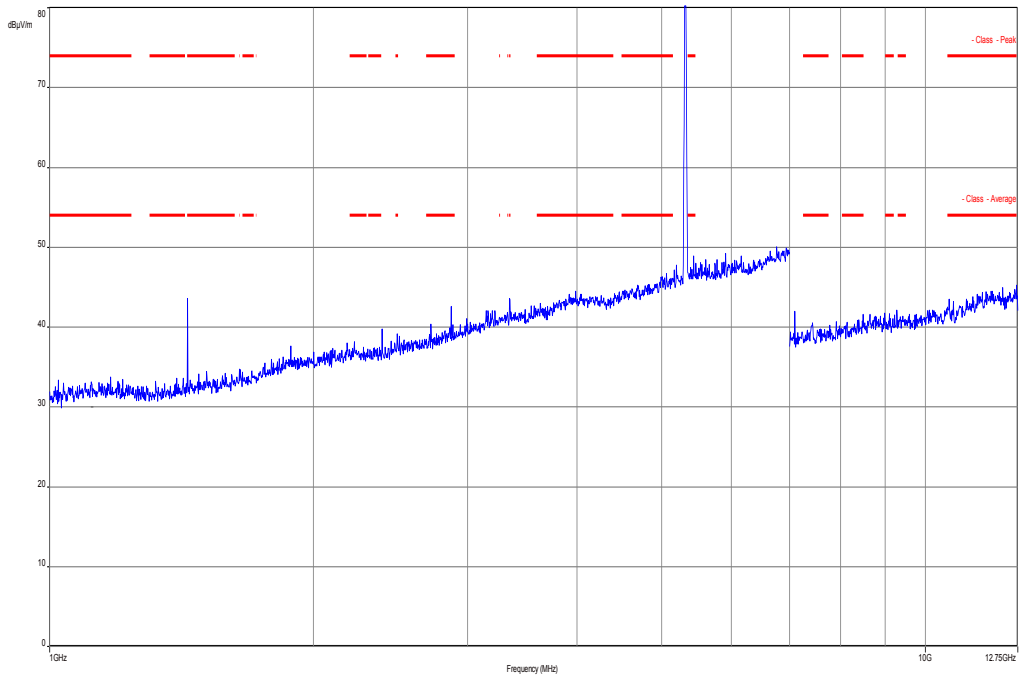
Plot 16: 30 MHz to 1 GHz, 5320 MHz, vertical & horizontal polarization



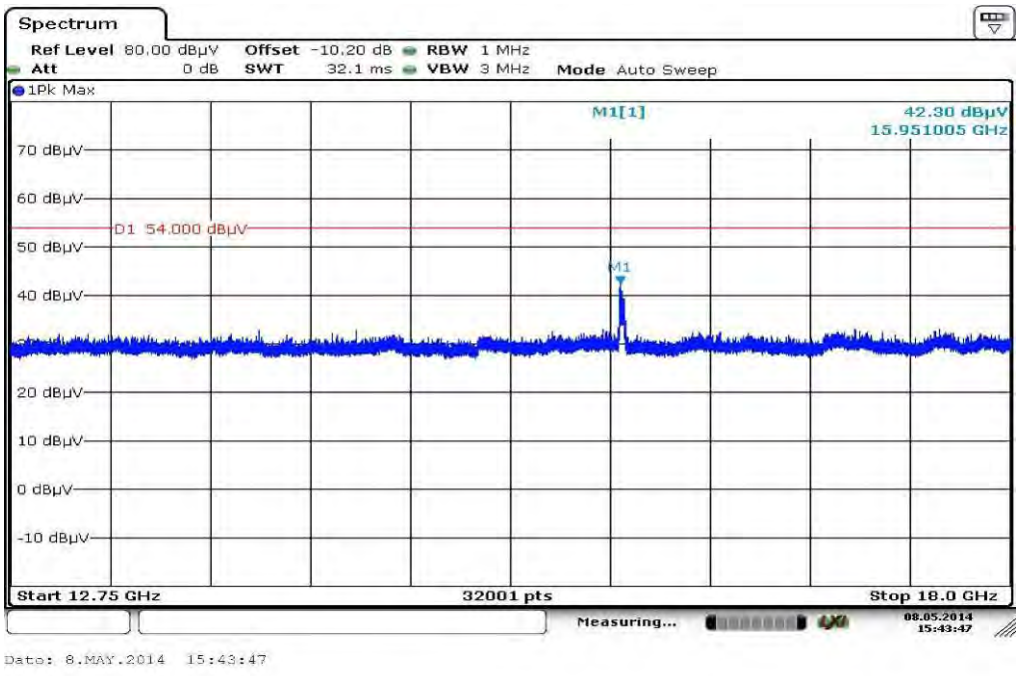
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.196900	19.10	30.00	10.90	1000.0	120.000	170.0	V	-10.0	12.7
45.915300	22.25	30.00	7.75	1000.0	120.000	98.0	V	274.0	13.3
47.782500	22.04	30.00	7.96	1000.0	120.000	98.0	V	261.0	13.3
238.516800	29.24	36.00	6.76	1000.0	120.000	170.0	H	-10.0	13.0
478.900800	29.96	36.00	6.04	1000.0	120.000	170.0	H	190.0	18.3
718.153350	27.10	36.00	8.90	1000.0	120.000	125.0	H	-7.0	22.9

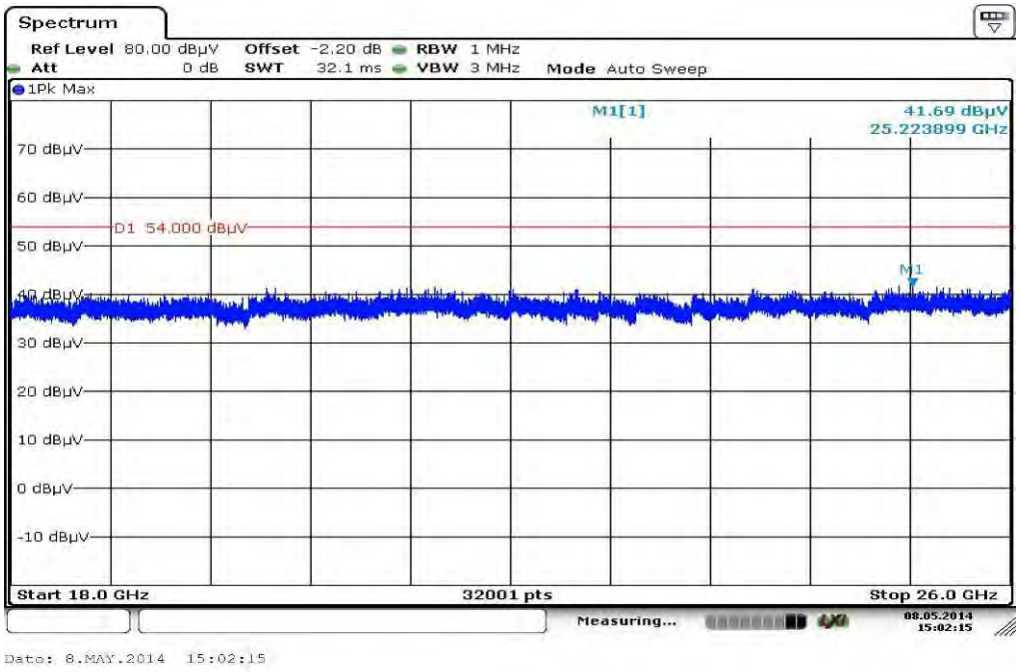
Plot 17: 1 GHz to 12.75 GHz, 5320 MHz, vertical & horizontal polarization



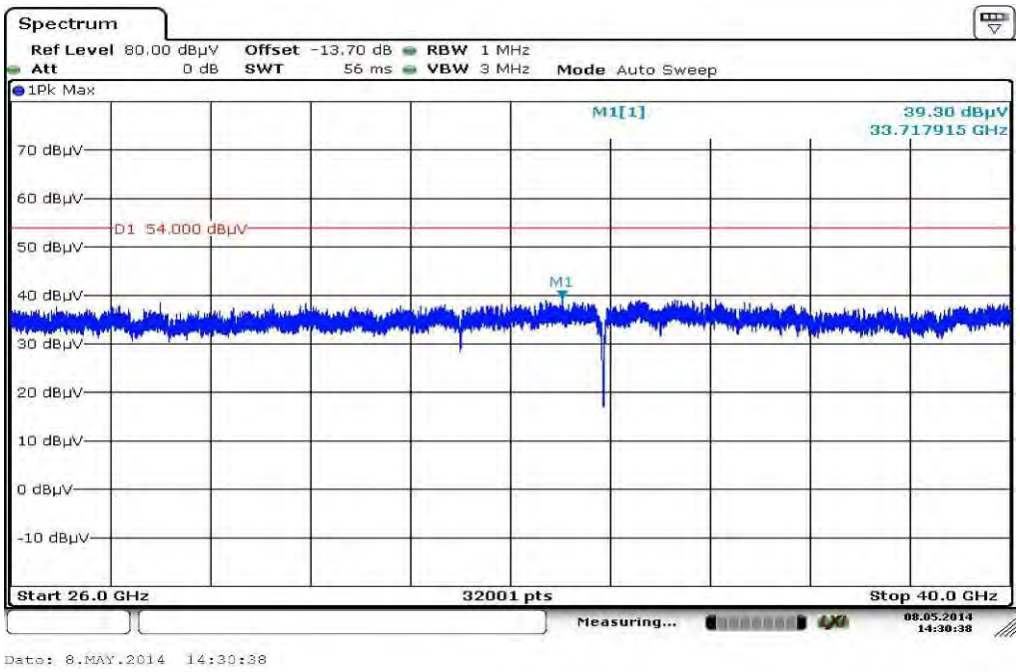
Plot 18: 12 GHz to 18 GHz, 5320 MHz, vertical & horizontal polarization



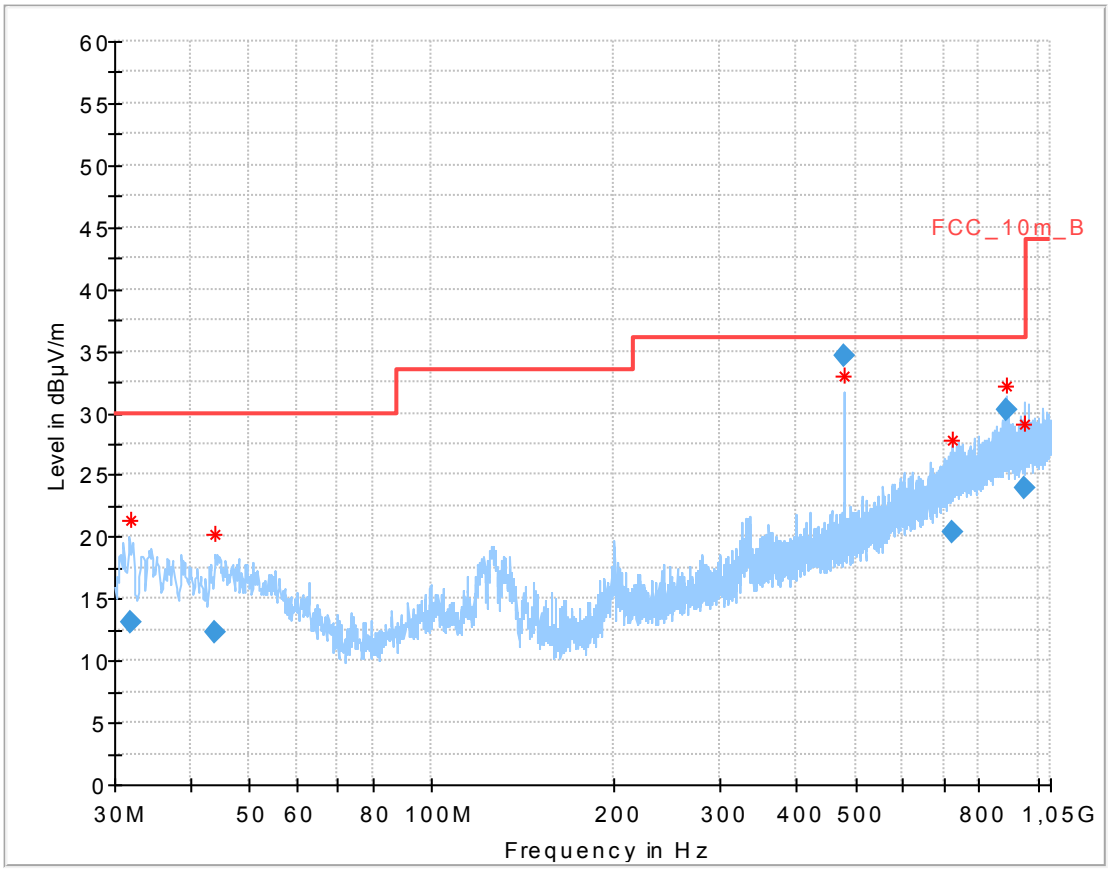
Plot 19: 18 GHz to 26 GHz, 5320 MHz, vertical & horizontal polarization



Plot 20: 26 GHz to 40 GHz, 5320 MHz, vertical & horizontal polarization



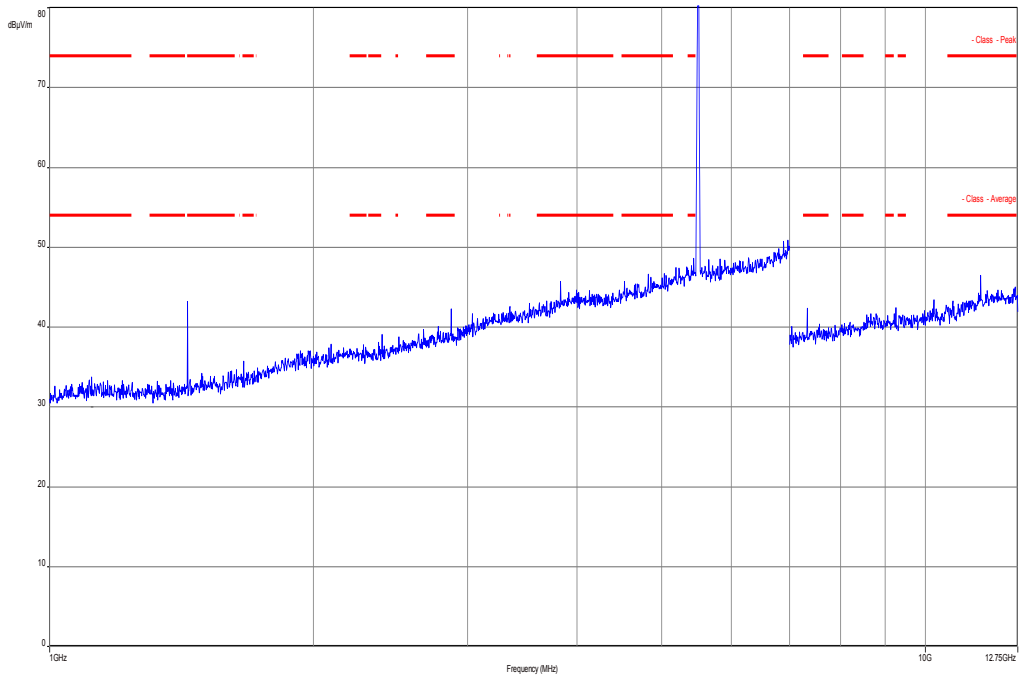
Plot 21: 30 MHz to 1 GHz, 5500 MHz, vertical & horizontal polarization



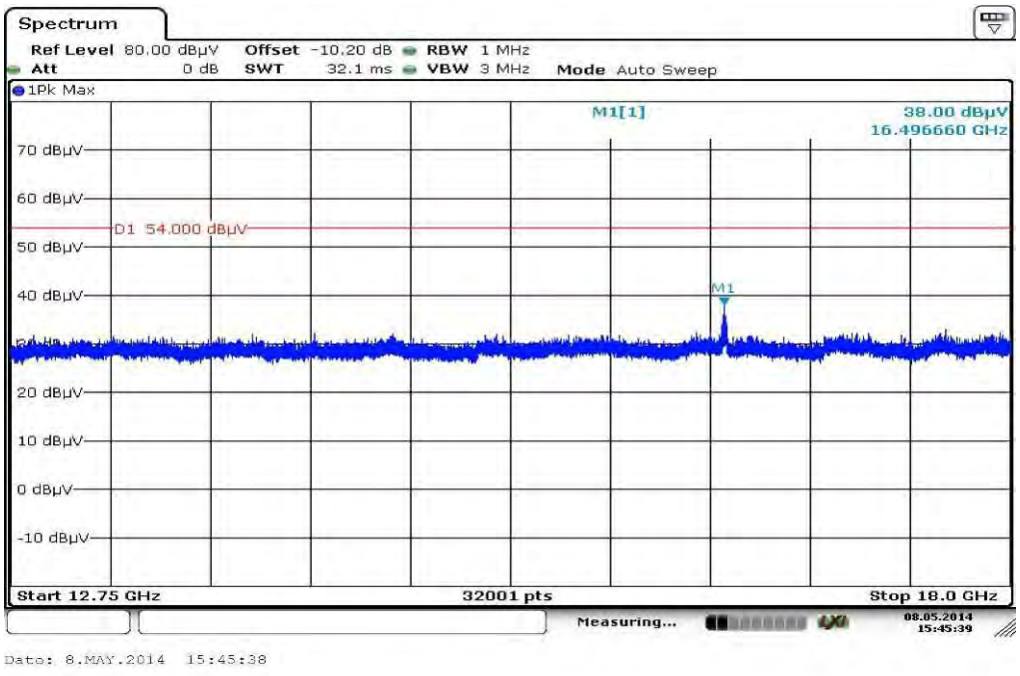
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.852200	13.11	30.00	16.89	1000.0	120.000	170.0	V	10.0	12.7
43.923000	12.28	30.00	17.72	1000.0	120.000	106.0	V	178.0	13.3
478.996500	34.53	36.00	1.47	1000.0	120.000	128.0	H	10.0	18.3
721.245750	20.40	36.00	15.60	1000.0	120.000	170.0	H	176.0	23.0
887.764800	30.22	36.00	5.78	1000.0	120.000	105.0	H	-10.0	25.0
952.272900	23.93	36.00	12.07	1000.0	120.000	170.0	V	10.0	25.4

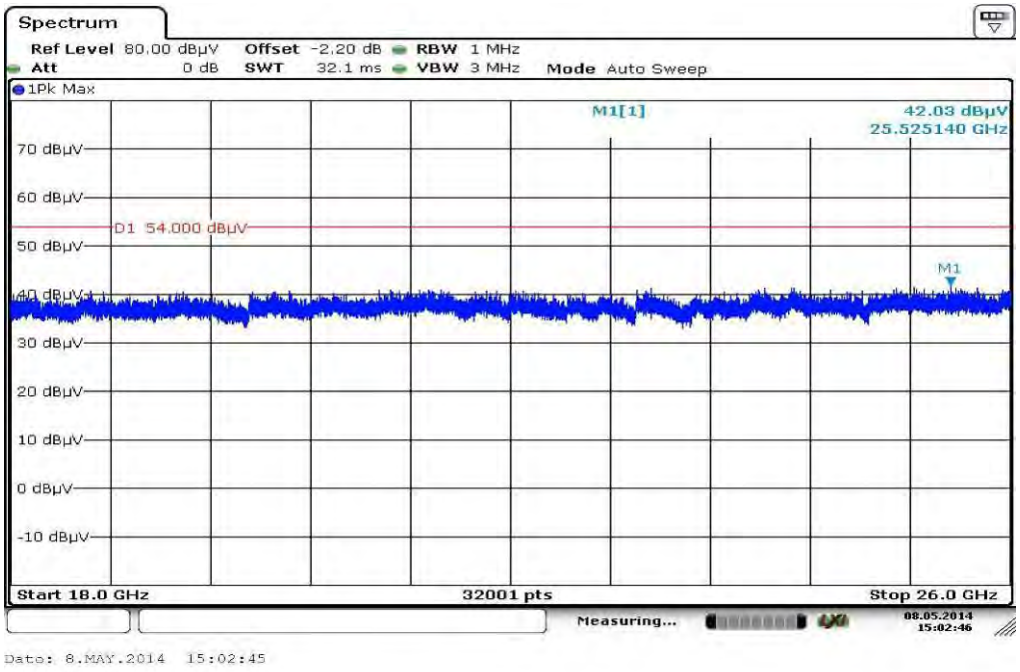
Plot 22: 1 GHz to 12.75 GHz, 5500 MHz, vertical & horizontal polarization



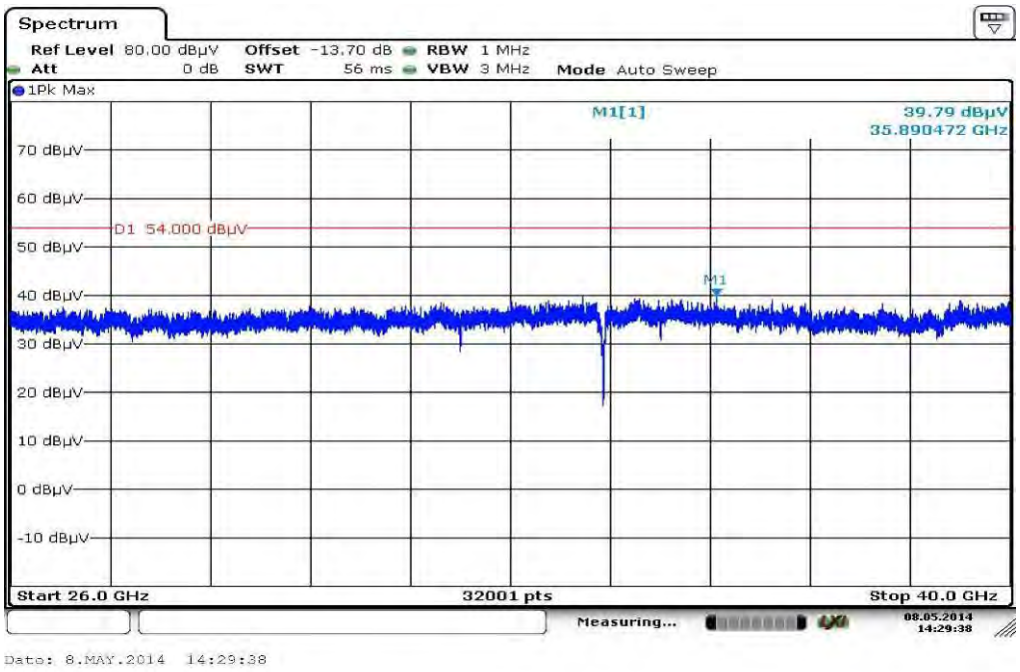
Plot 23: 12 GHz to 18 GHz, 5500 MHz, vertical & horizontal polarization



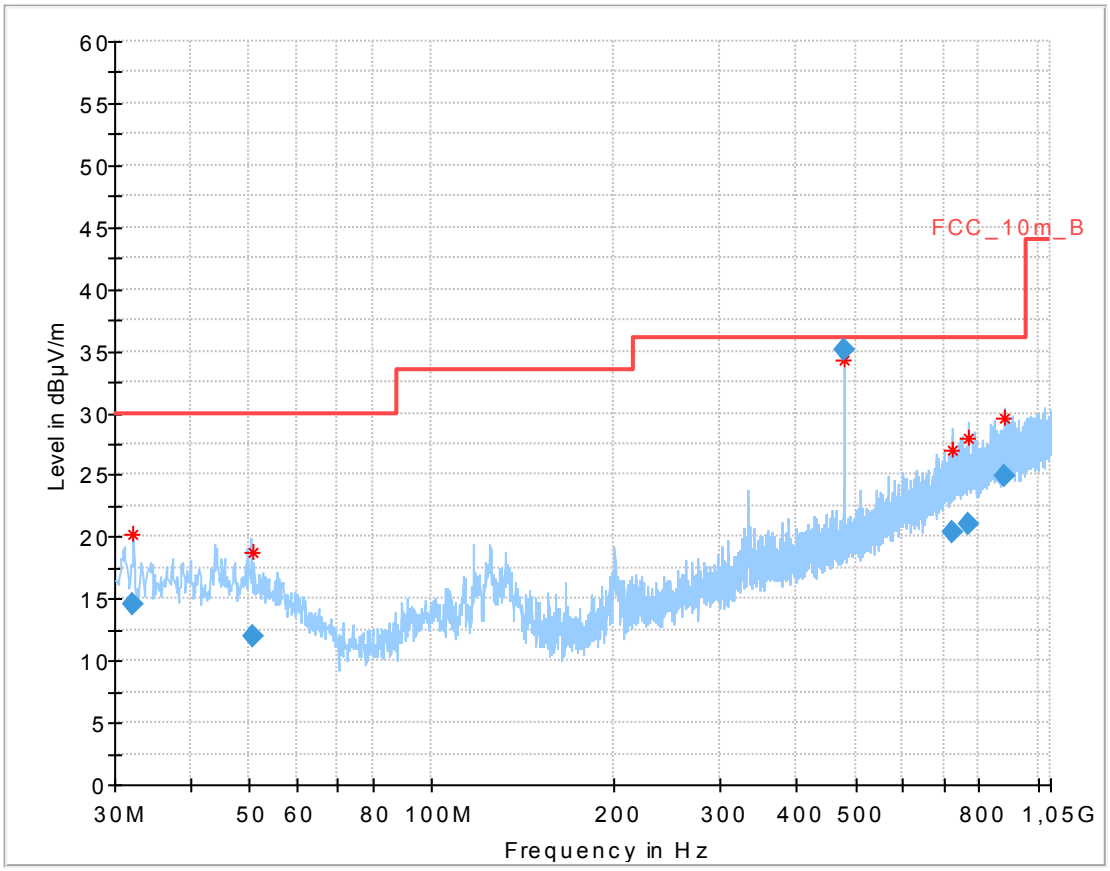
Plot 24: 18 GHz to 26 GHz, 5500 MHz, vertical & horizontal polarization



Plot 25: 26 GHz to 40 GHz, 5500 MHz, vertical & horizontal polarization



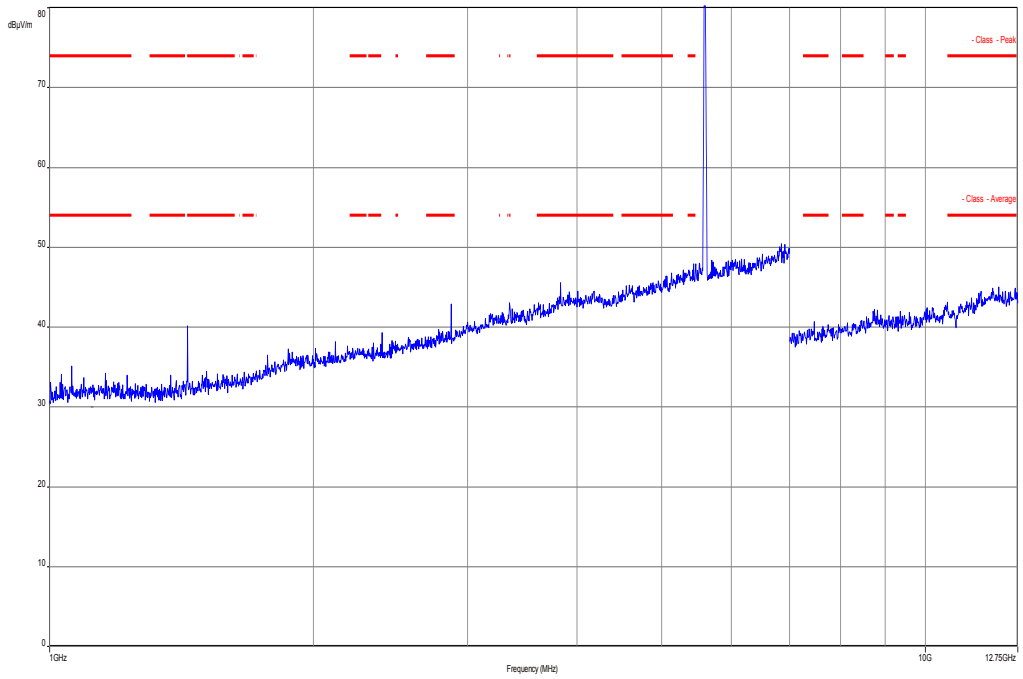
Plot 26: 30 MHz to 1 GHz, 5600 MHz, vertical & horizontal polarization



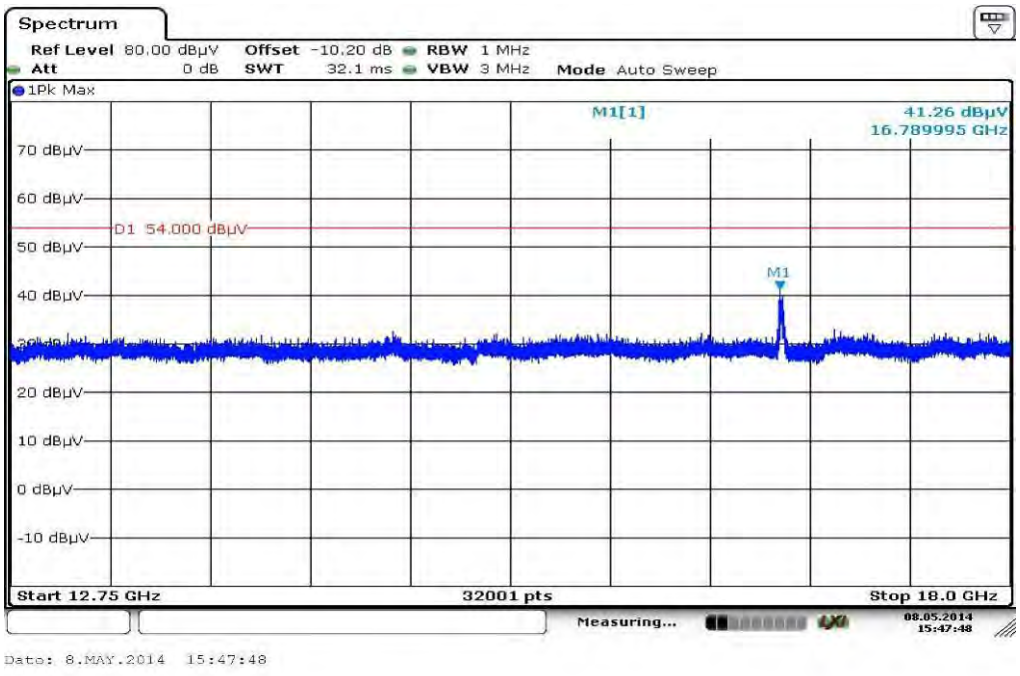
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.034600	14.58	30.00	15.42	1000.0	120.000	101.0	V	190.0	12.7
50.611200	11.90	30.00	18.10	1000.0	120.000	170.0	V	10.0	13.3
478.981500	35.11	36.00	0.89	1000.0	120.000	170.0	H	10.0	18.3
720.927450	20.36	36.00	15.64	1000.0	120.000	148.0	V	271.0	23.0
767.304750	21.02	36.00	14.98	1000.0	120.000	170.0	H	181.0	23.7
878.554650	24.88	36.00	11.12	1000.0	120.000	101.0	H	100.0	24.9

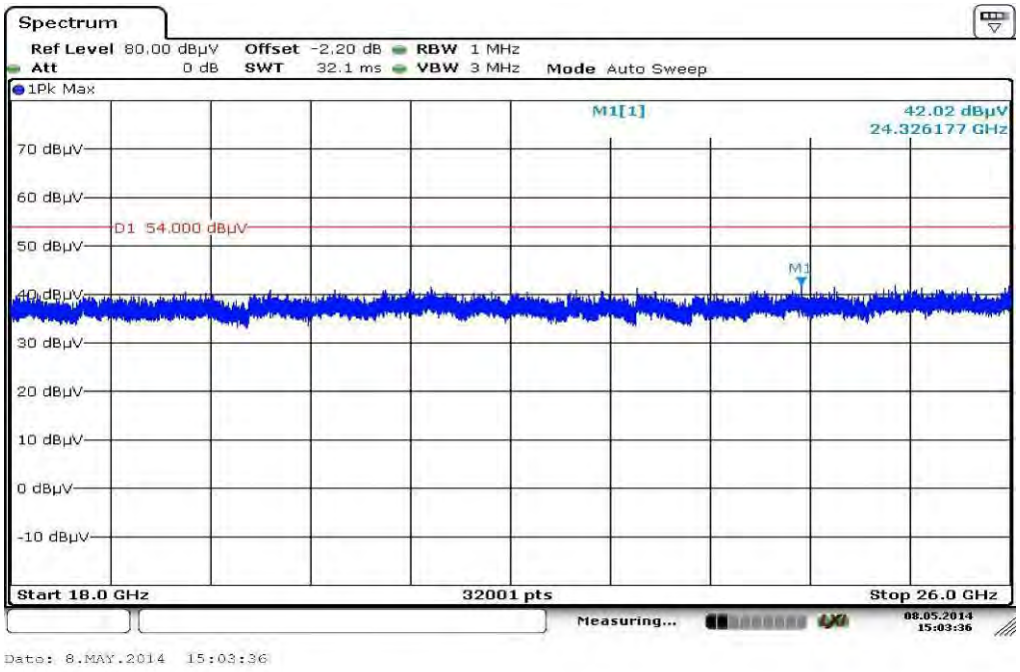
Plot 27: 1 GHz to 12.75 GHz, 5600 MHz, vertical & horizontal polarization



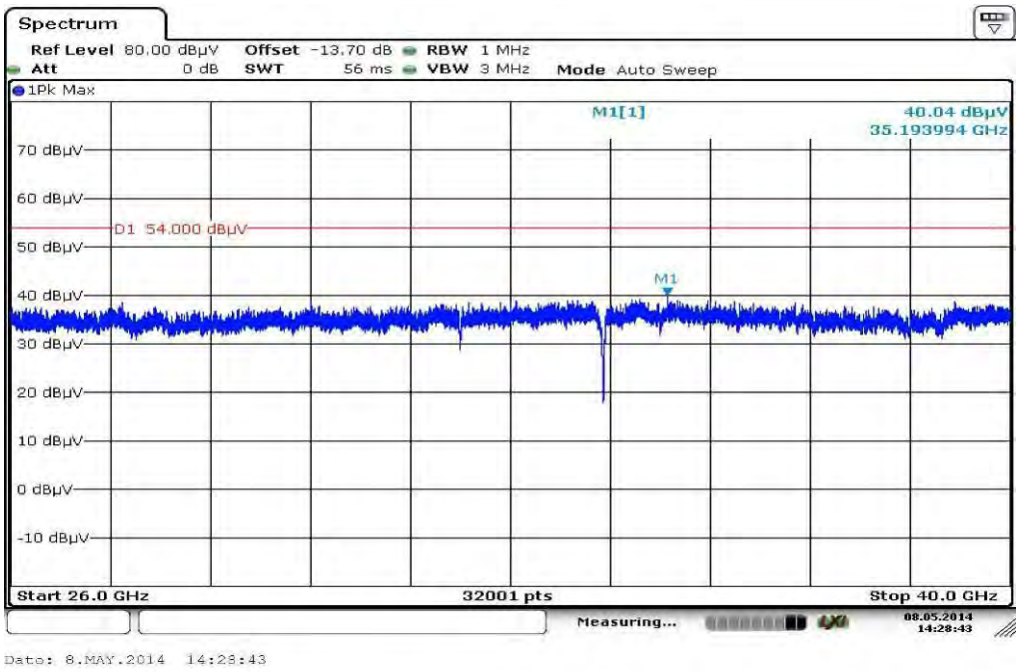
Plot 28: 12 GHz to 18 GHz, 5600 MHz, vertical & horizontal polarization



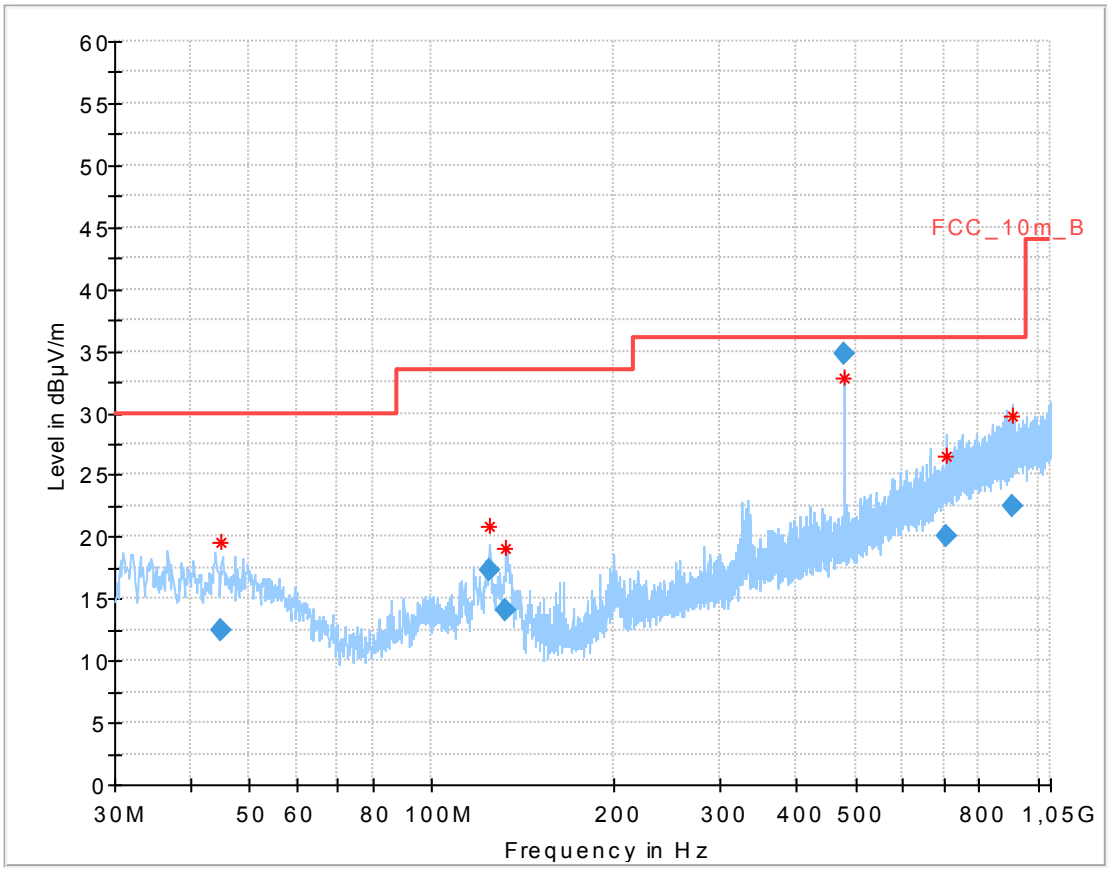
Plot 29: 18 GHz to 26 GHz, 5600 MHz, vertical & horizontal polarization



Plot 30: 26 GHz to 40 GHz, 5600 MHz, vertical & horizontal polarization



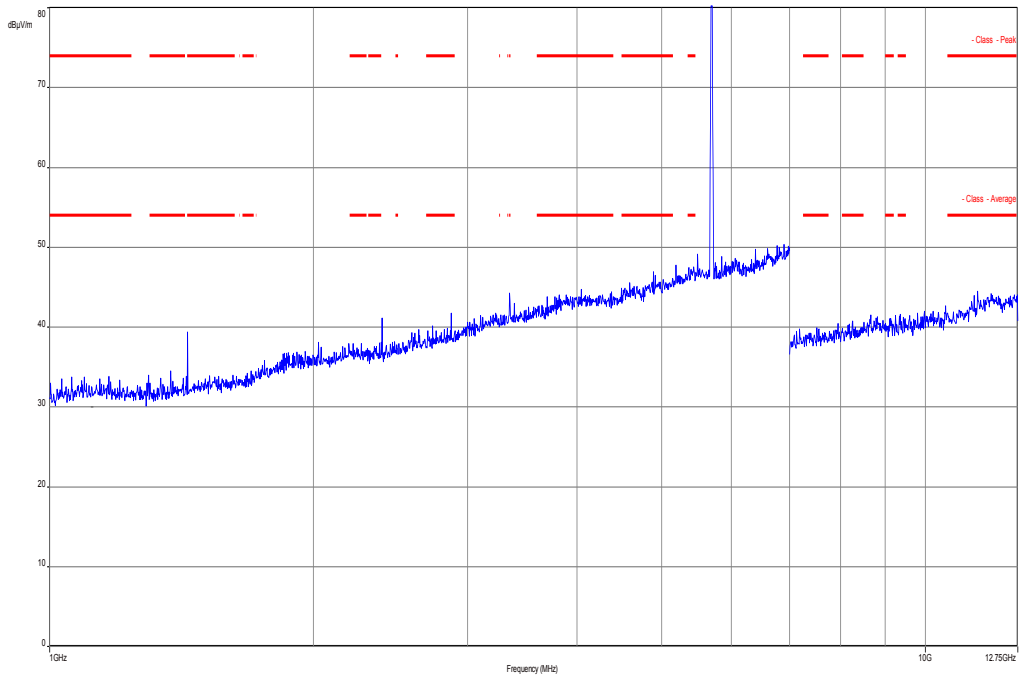
Plot 31: 30 MHz to 1 GHz, 5700 MHz, vertical & horizontal polarization



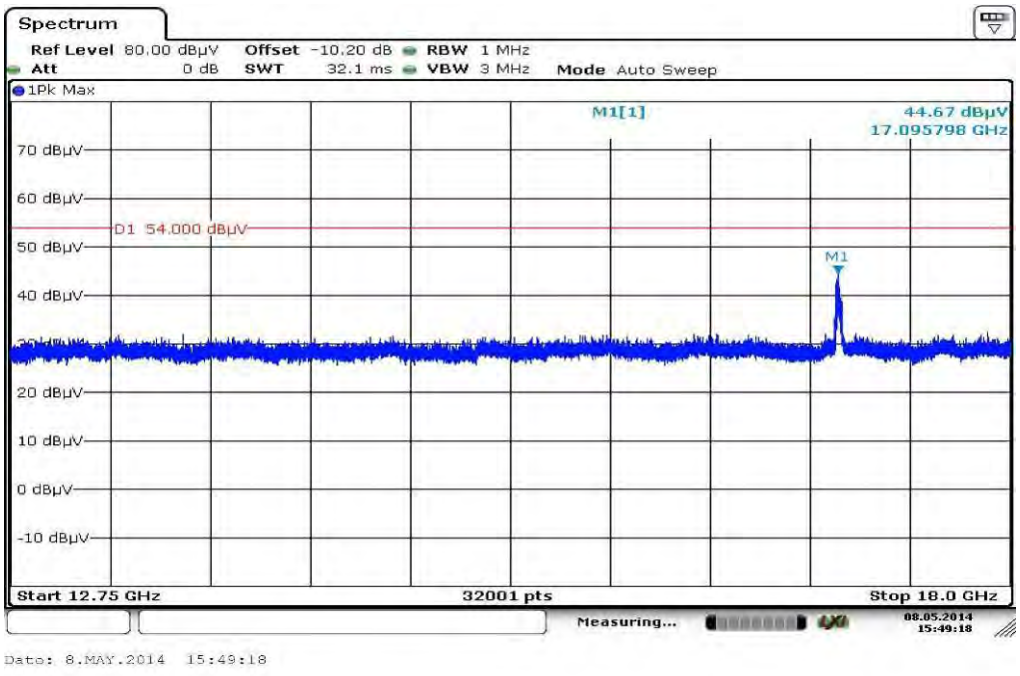
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
45.082200	12.41	30.00	17.59	1000.0	120.000	170.0	V	268.0	13.3
124.998150	17.27	33.50	16.23	1000.0	120.000	105.0	V	81.0	9.8
132.809400	14.09	33.50	19.41	1000.0	120.000	170.0	V	10.0	9.2
478.972500	34.74	36.00	1.26	1000.0	120.000	170.0	H	10.0	18.3
708.703950	20.09	36.00	15.91	1000.0	120.000	170.0	V	280.0	22.7
906.789000	22.48	36.00	13.52	1000.0	120.000	170.0	V	261.0	25.2

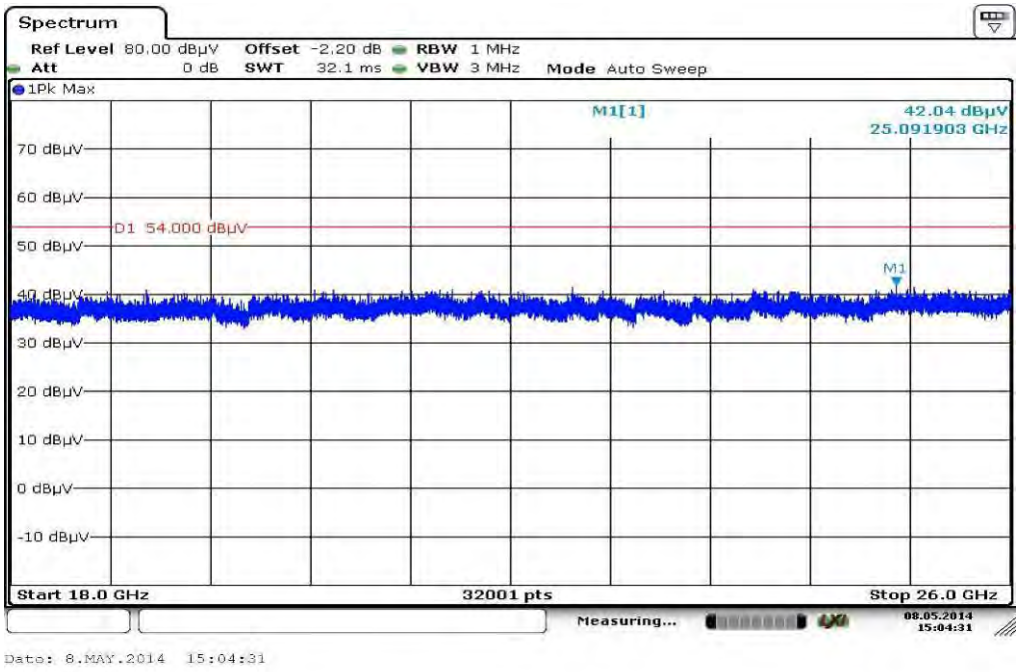
Plot 32: 1 GHz to 12.75 GHz, 5700 MHz, vertical & horizontal polarization



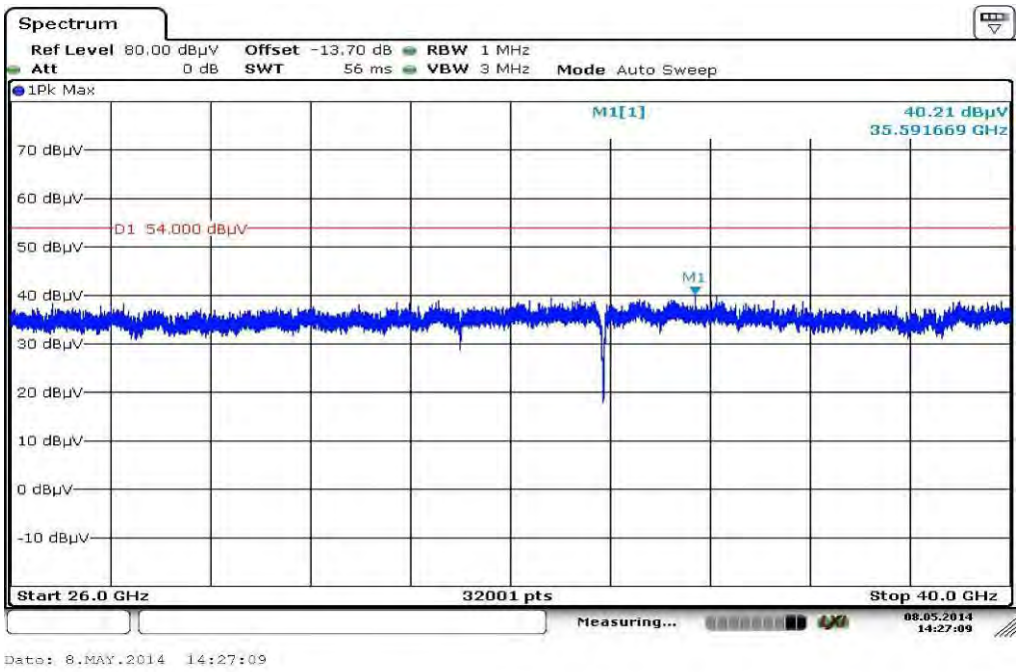
Plot 33: 12 GHz to 18 GHz, 5700 MHz, vertical & horizontal polarization



Plot 34: 18 GHz to 26 GHz, 5700 MHz, vertical & horizontal polarization

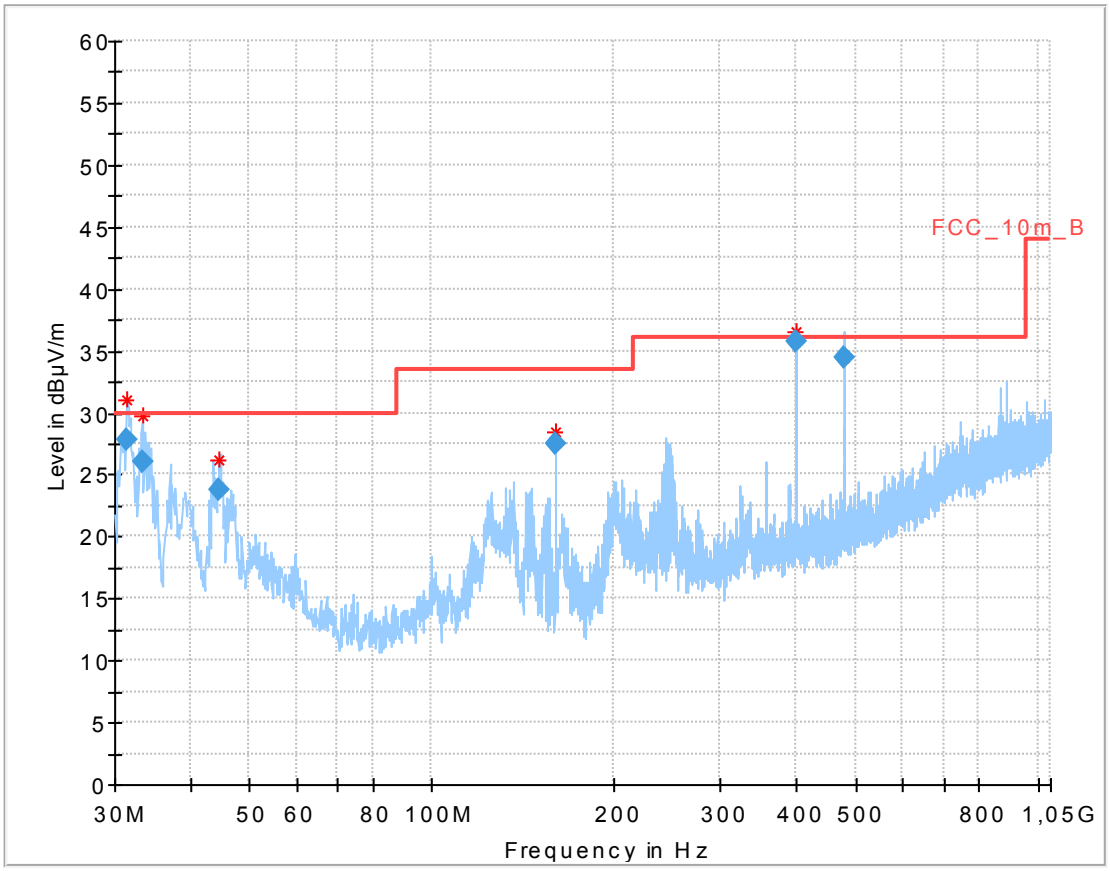


Plot 35: 26 GHz to 40 GHz, 5700 MHz, vertical & horizontal polarization



Plots: OFDM / n – mode HT40

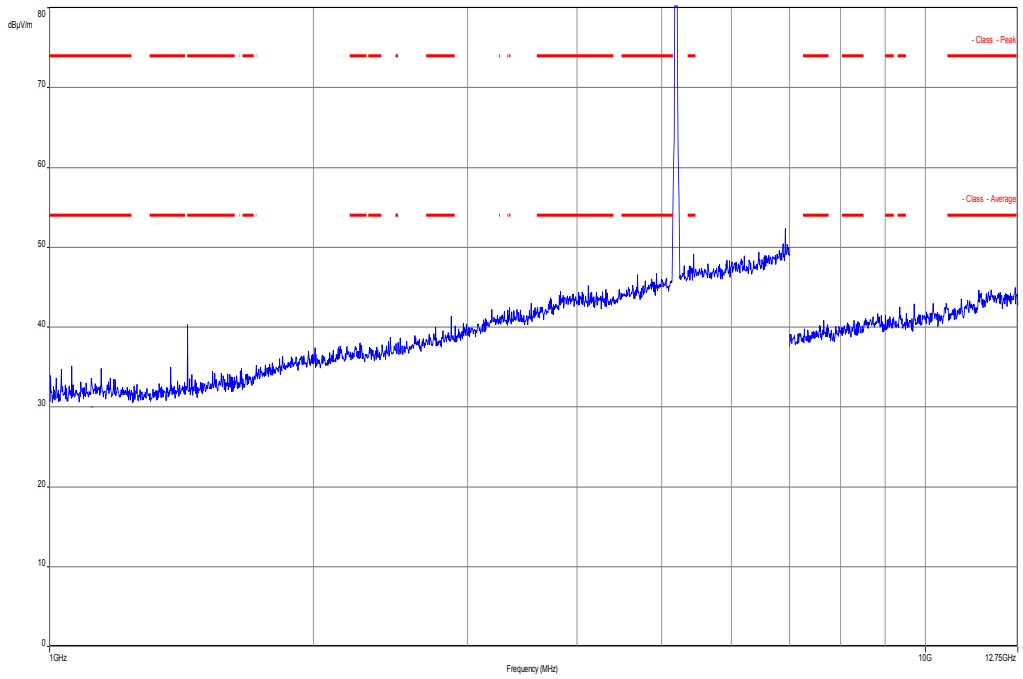
Plot 1: 30 MHz to 1 GHz, 5190 MHz, vertical & horizontal polarization



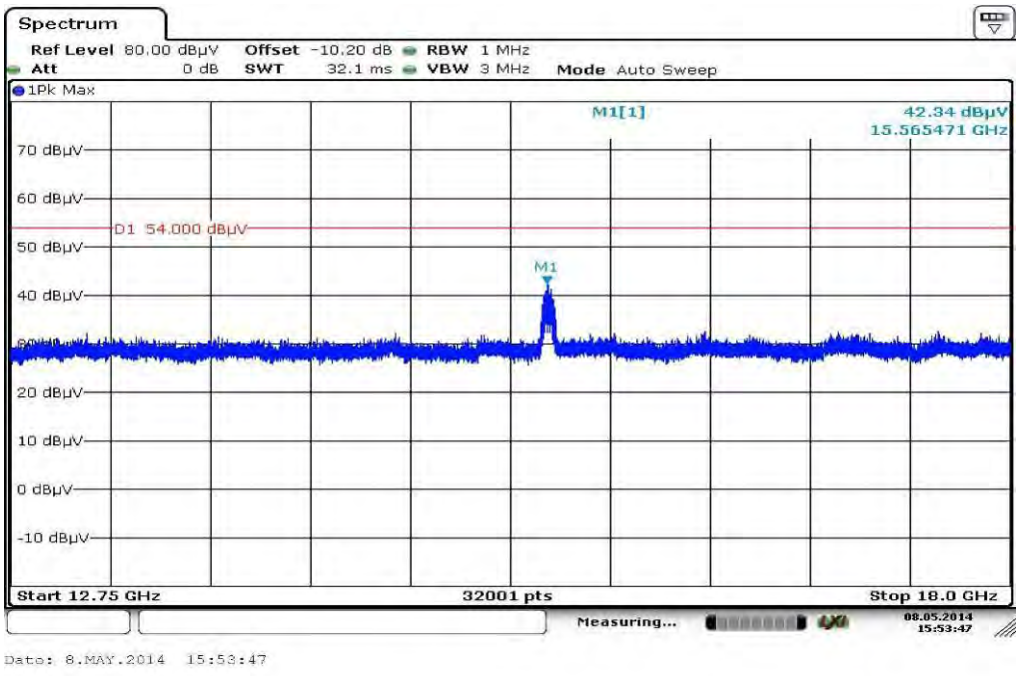
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.492950	27.75	30.00	2.25	1000.0	120.000	98.0	V	100.0	12.7
33.314550	26.08	30.00	3.92	1000.0	120.000	105.0	V	-10.0	12.9
44.442750	23.73	30.00	6.27	1000.0	120.000	98.0	V	268.0	13.3
159.986550	27.57	33.50	5.93	1000.0	120.000	98.0	V	86.0	9.2
400.006350	35.71	36.00	0.29	1000.0	120.000	170.0	H	-9.0	16.9
478.978650	34.49	36.00	1.51	1000.0	120.000	170.0	H	3.0	18.3

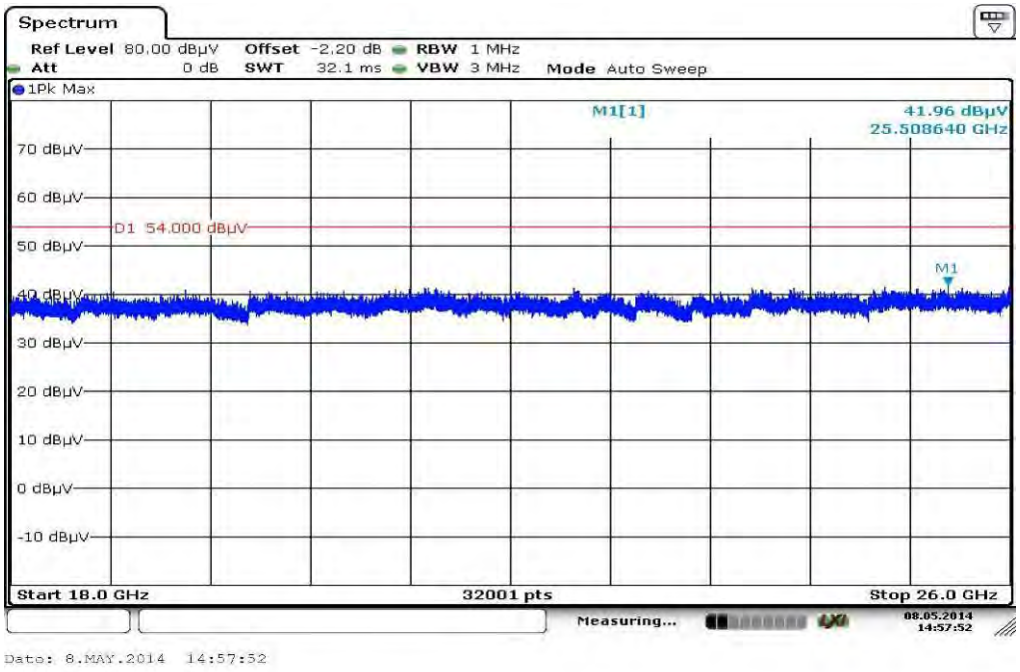
Plot 2: 1 GHz to 12.75 GHz, 5190 MHz, vertical & horizontal polarization



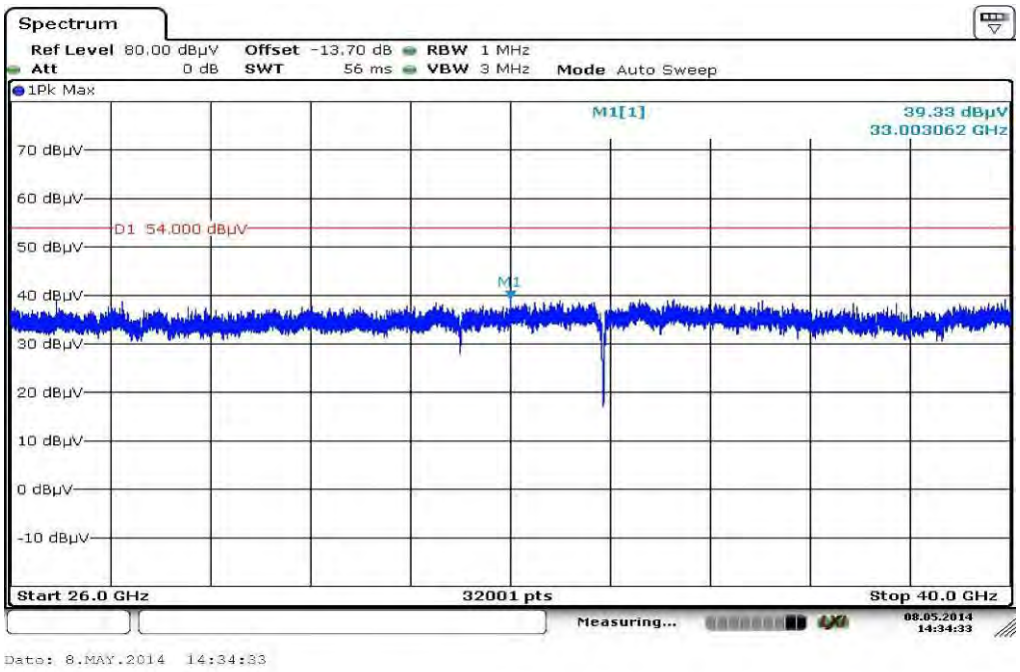
Plot 3: 12 GHz to 18 GHz, 5190 MHz, vertical & horizontal polarization



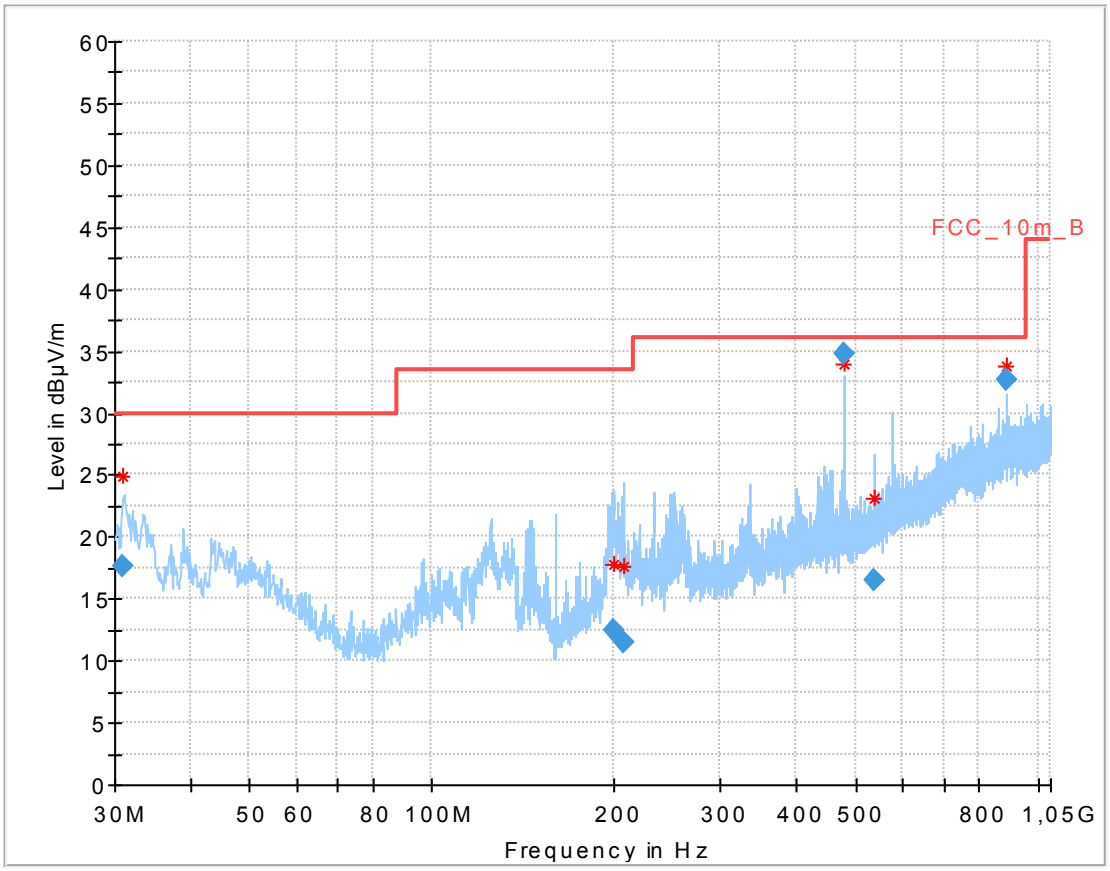
Plot 4: 18 GHz to 26 GHz, 5190 MHz, vertical & horizontal polarization



Plot 5: 26 GHz to 40 GHz, 5190 MHz, vertical & horizontal polarization



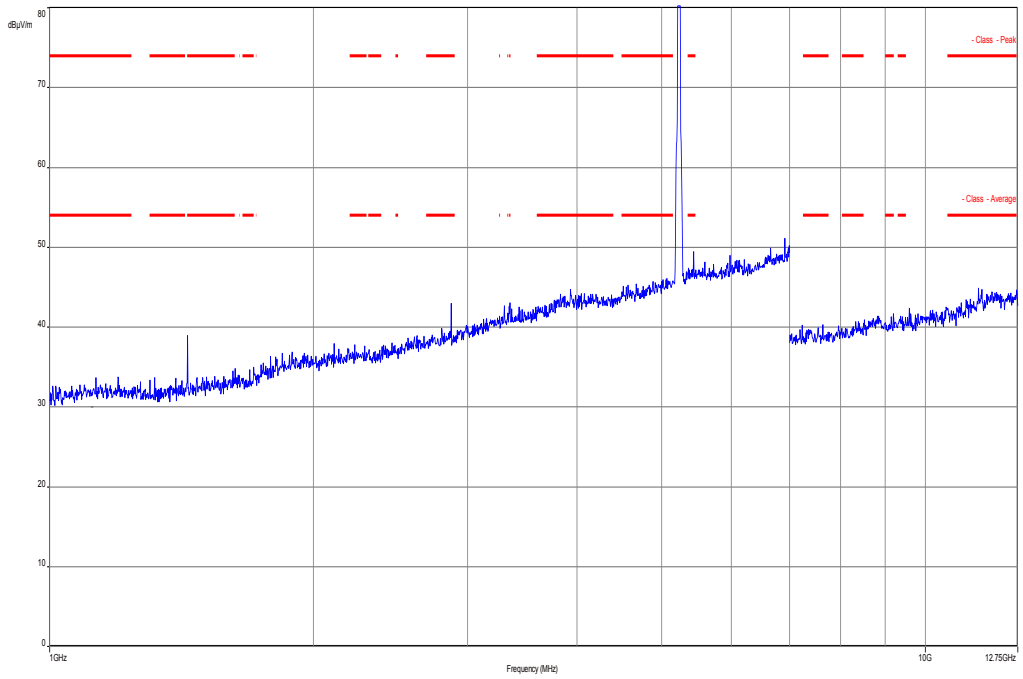
Plot 6: 30 MHz to 1 GHz, 5230 MHz, vertical & horizontal polarization



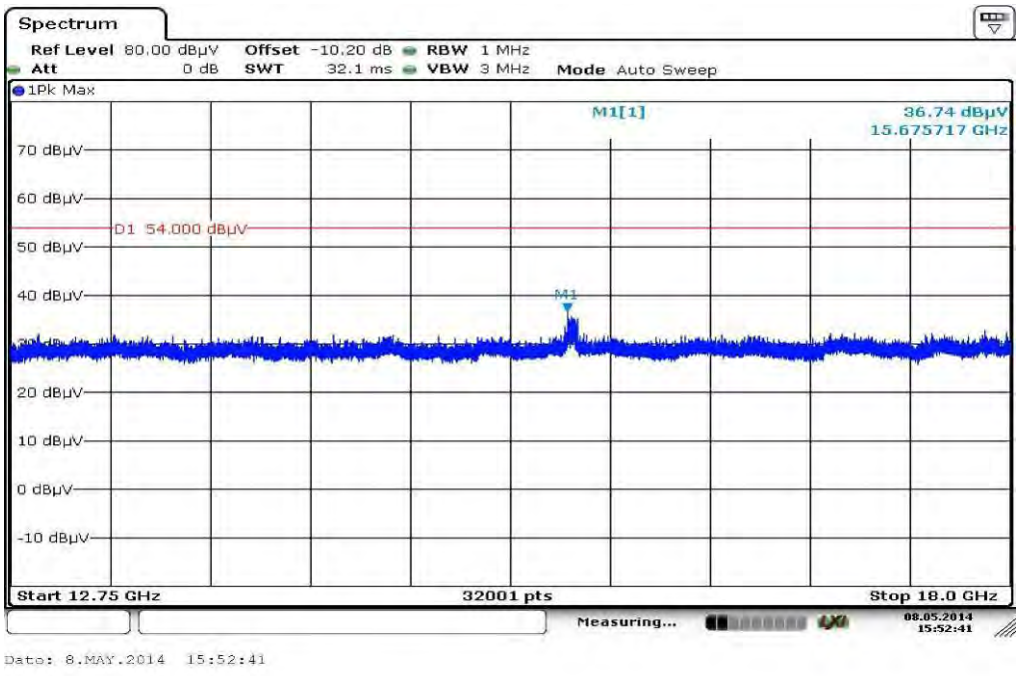
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.002300	17.66	30.00	12.34	1000.0	120.000	146.0	V	171.0	12.6
200.032650	12.43	33.50	21.07	1000.0	120.000	170.0	V	80.0	11.7
207.284400	11.56	33.50	21.94	1000.0	120.000	155.0	V	100.0	12.0
478.983900	34.78	36.00	1.22	1000.0	120.000	170.0	H	0.0	18.3
538.757400	16.47	36.00	19.53	1000.0	120.000	170.0	H	-5.0	19.2
887.752050	32.74	36.00	3.26	1000.0	120.000	118.0	H	190.0	25.0

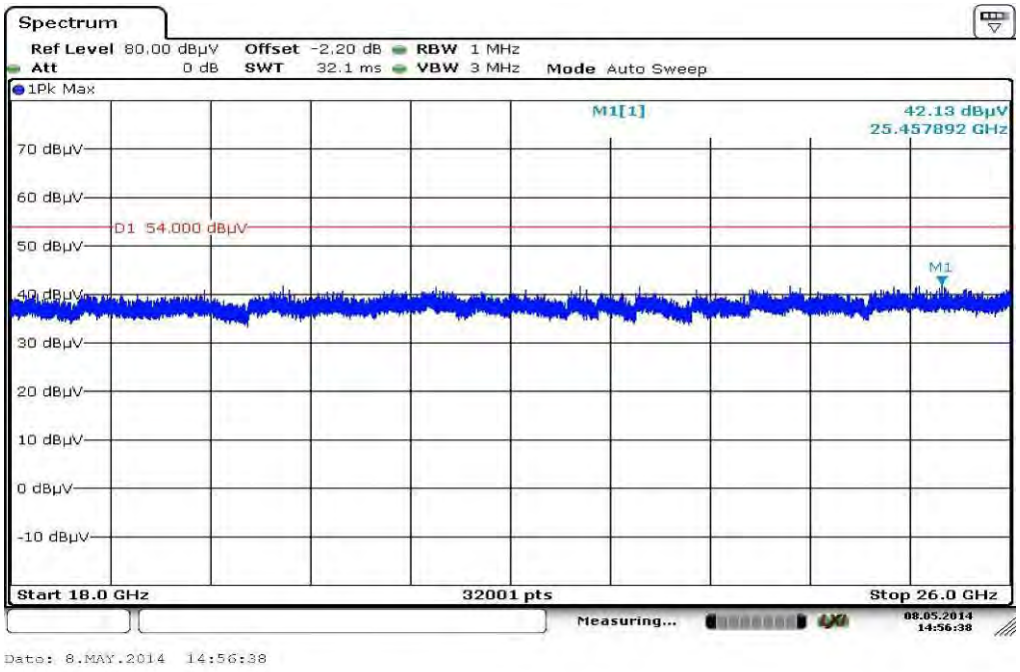
Plot 7: 1 GHz to 12.75 GHz, 5230 MHz, vertical & horizontal polarization



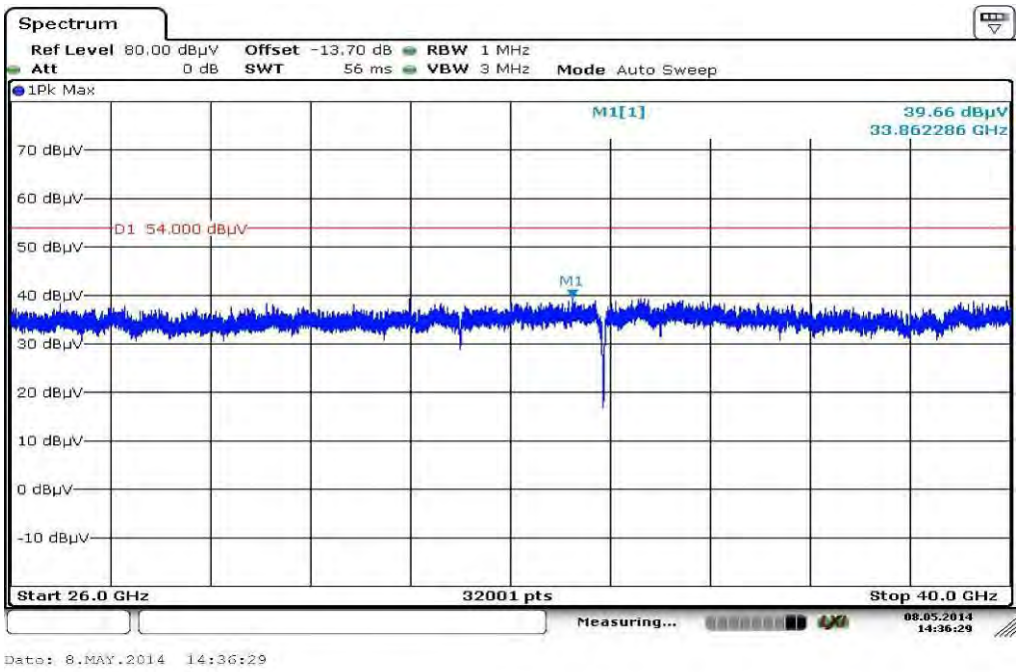
Plot 8: 12 GHz to 18 GHz, 5230 MHz, vertical & horizontal polarization



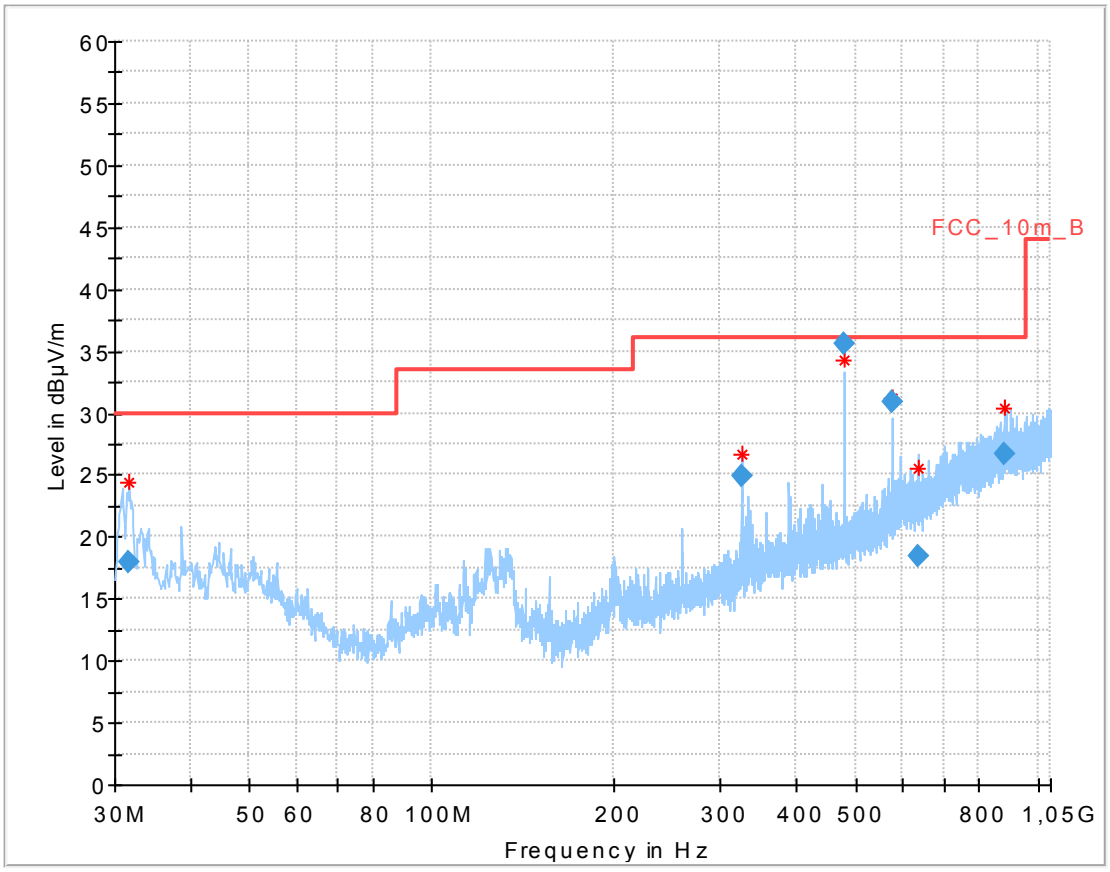
Plot 9: 18 GHz to 26 GHz, 5230 MHz, vertical & horizontal polarization



Plot 10: 26 GHz to 40 GHz, 5230 MHz, vertical & horizontal polarization



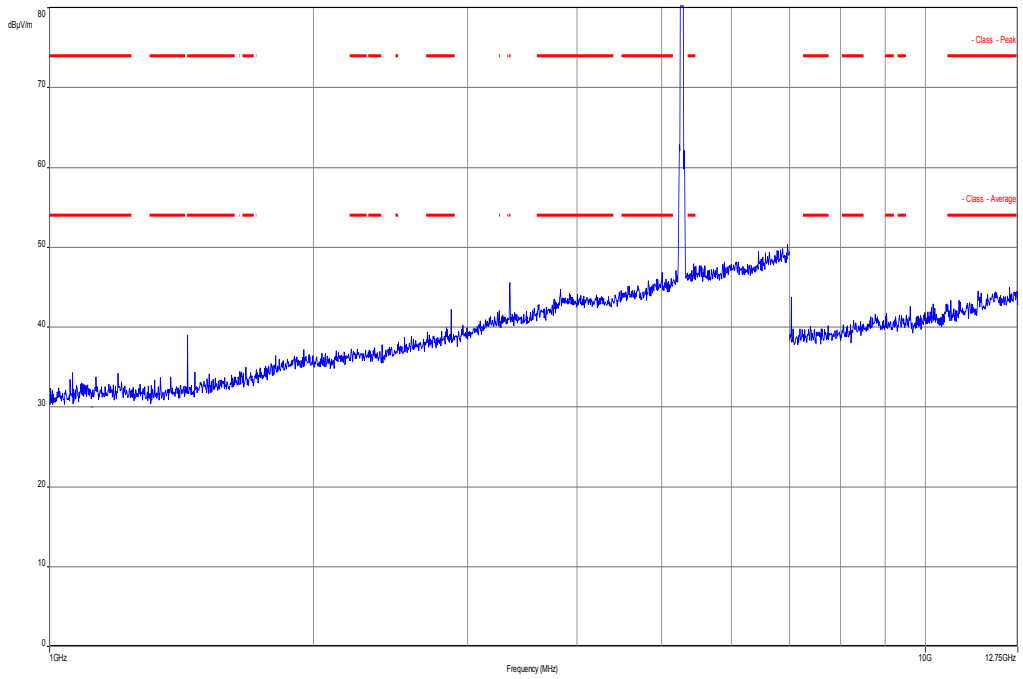
Plot 11: 30 MHz to 1 GHz, 5270 MHz, vertical & horizontal polarization



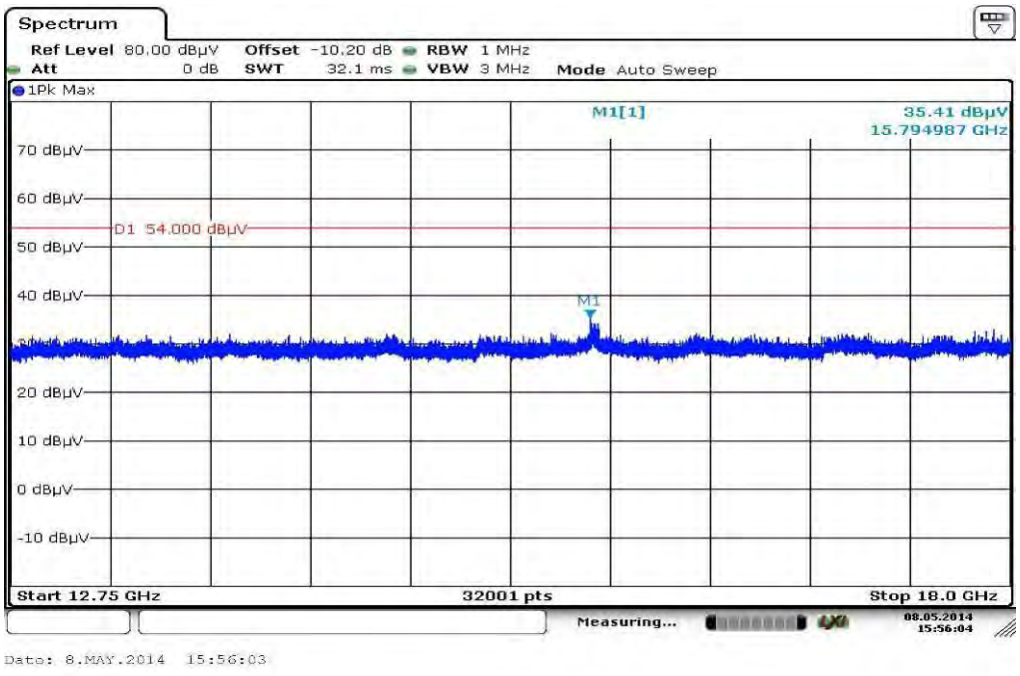
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.628550	17.89	30.00	12.11	1000.0	120.000	112.0	V	264.0	12.7
324.318300	24.98	36.00	11.02	1000.0	120.000	98.0	V	81.0	15.3
478.984500	35.64	36.00	0.36	1000.0	120.000	170.0	H	-7.0	18.3
574.983600	30.85	36.00	5.15	1000.0	120.000	134.0	H	10.0	20.1
635.155800	18.48	36.00	17.52	1000.0	120.000	164.0	H	280.0	21.0
878.565600	26.69	36.00	9.31	1000.0	120.000	106.0	H	100.0	24.9

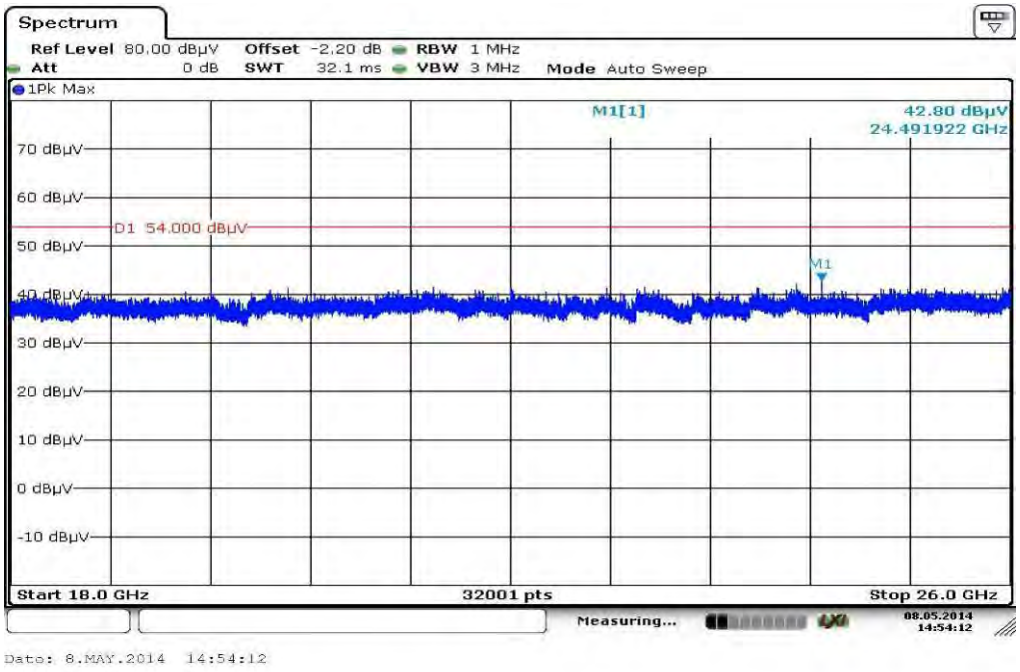
Plot 12: 1 GHz to 12.75 GHz, 5270 MHz, vertical & horizontal polarization



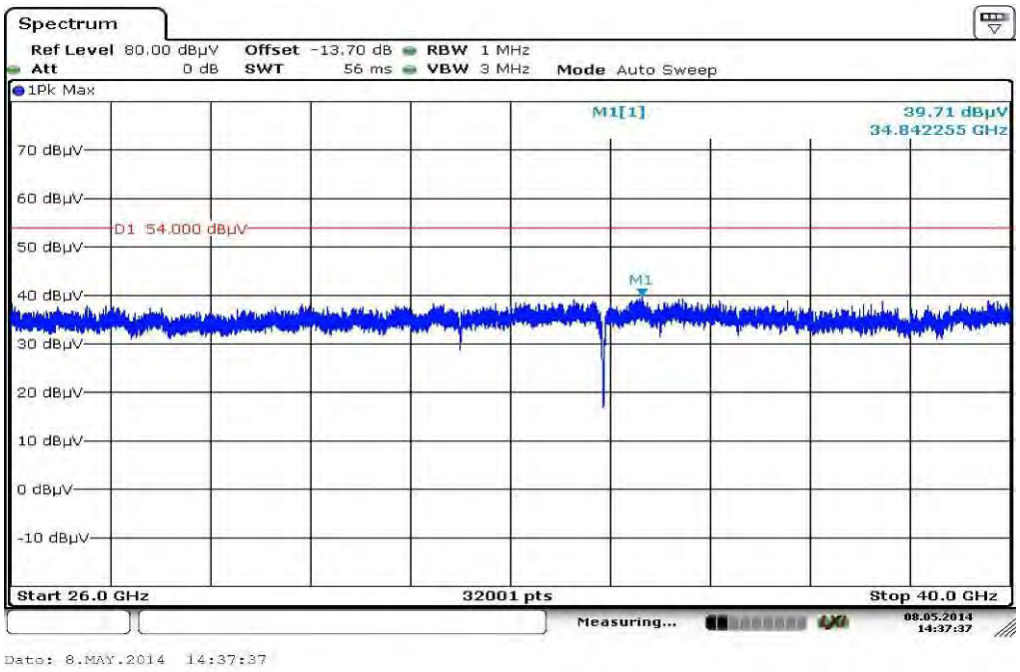
Plot 13: 12 GHz to 18 GHz, 5270 MHz, vertical & horizontal polarization



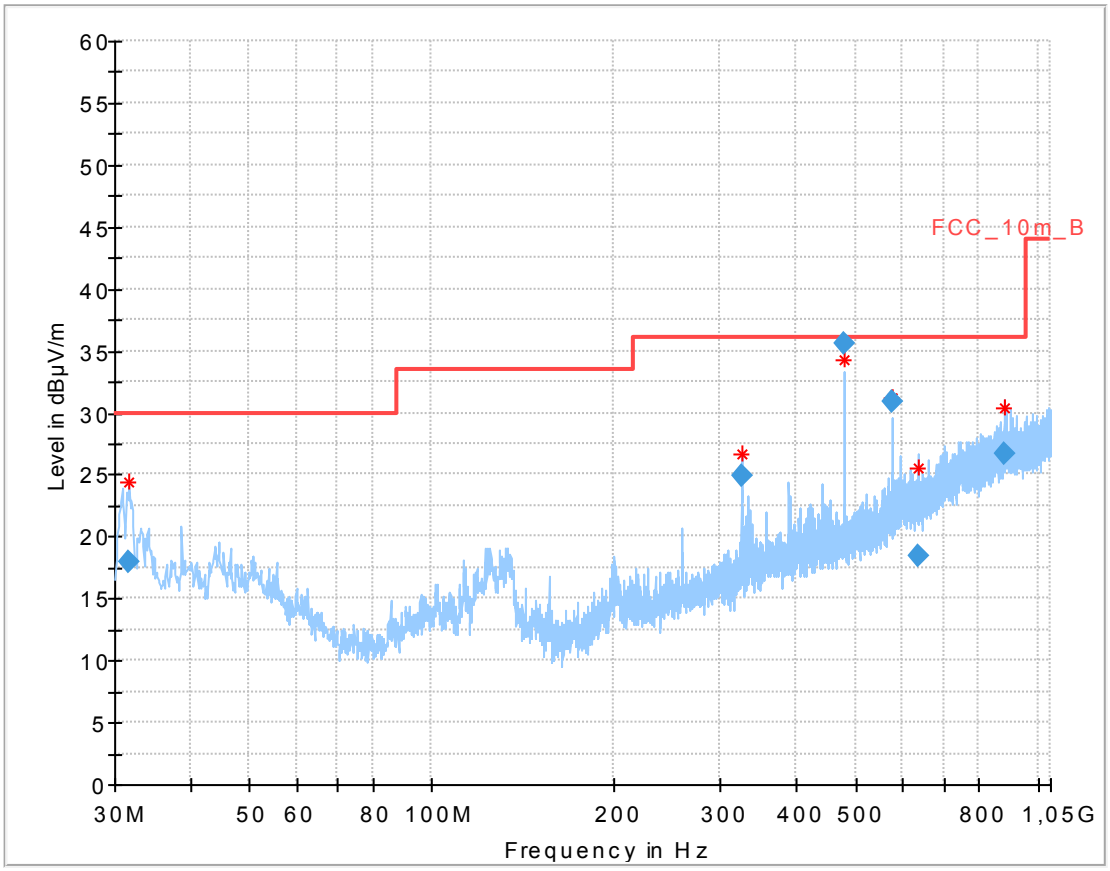
Plot 14: 18 GHz to 26 GHz, 5270 MHz, vertical & horizontal polarization



Plot 15: 26 GHz to 40 GHz, 5270 MHz, vertical & horizontal polarization



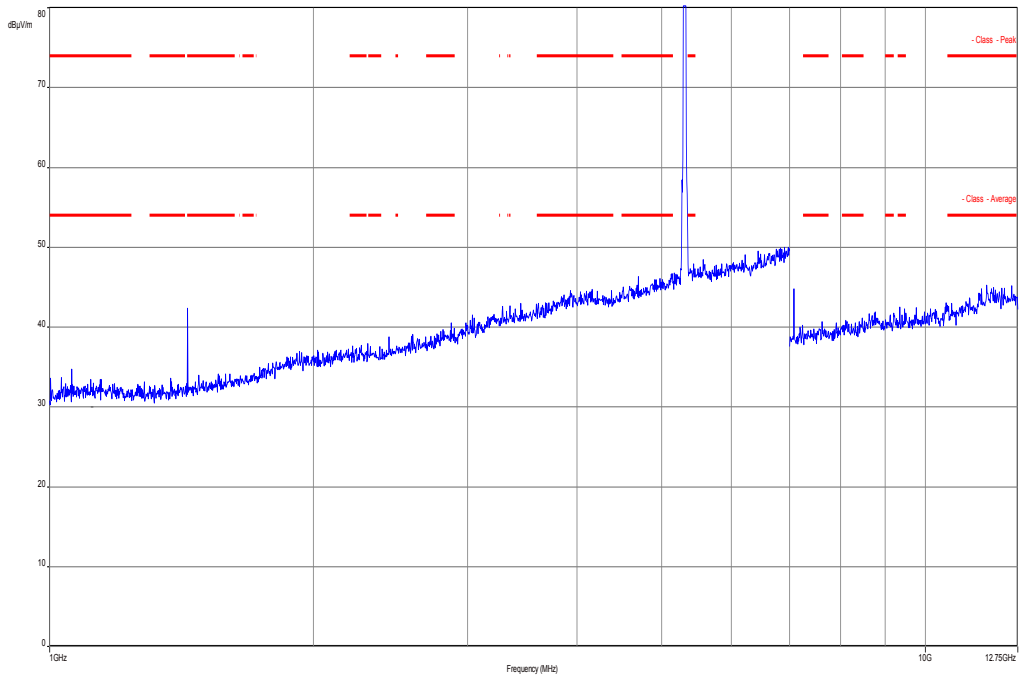
Plot 16: 30 MHz to 1 GHz, 5310 MHz, vertical & horizontal polarization



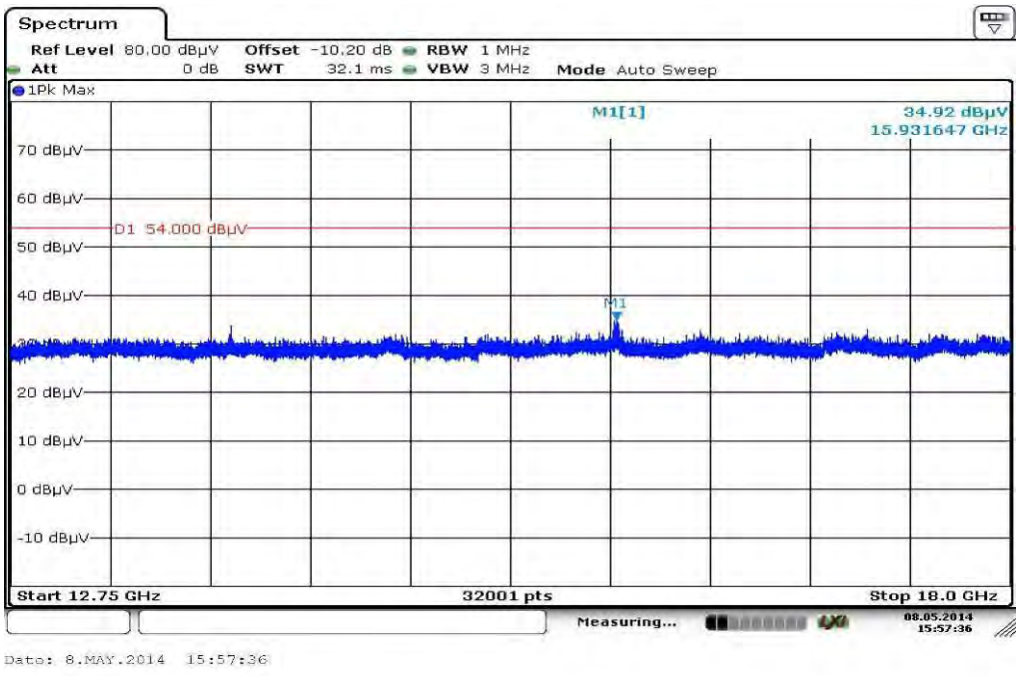
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.628550	17.89	30.00	12.11	1000.0	120.000	112.0	V	264.0	12.7
324.318300	24.98	36.00	11.02	1000.0	120.000	98.0	V	81.0	15.3
478.984500	35.64	36.00	0.36	1000.0	120.000	170.0	H	-7.0	18.3
574.983600	30.85	36.00	5.15	1000.0	120.000	134.0	H	10.0	20.1
635.155800	18.48	36.00	17.52	1000.0	120.000	164.0	H	280.0	21.0
878.565600	26.69	36.00	9.31	1000.0	120.000	106.0	H	100.0	24.9

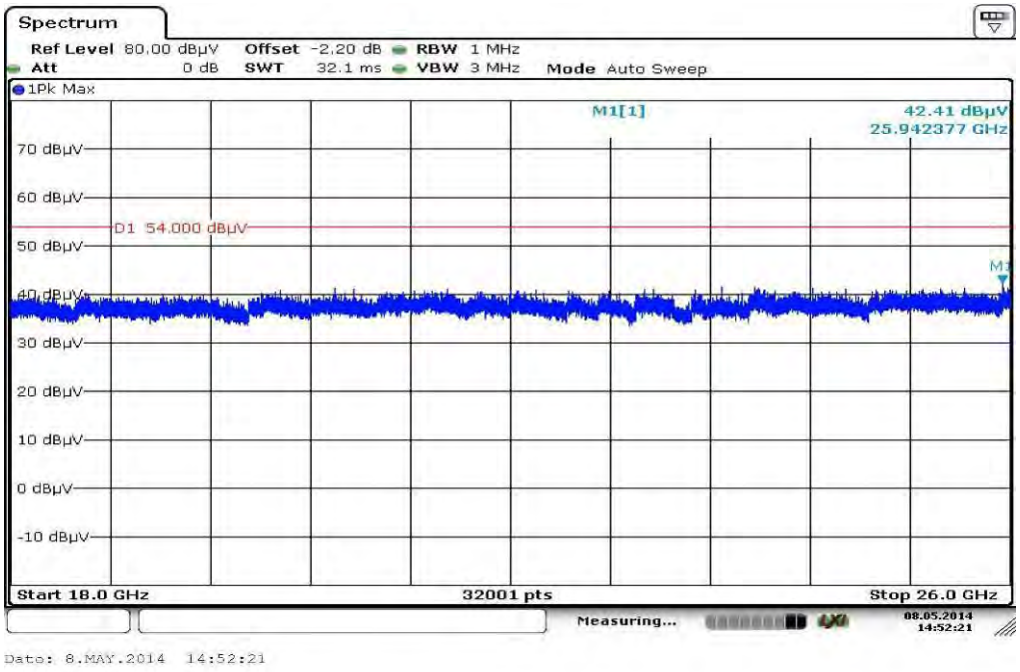
Plot 17: 1 GHz to 12.75 GHz, 5310 MHz, vertical & horizontal polarization



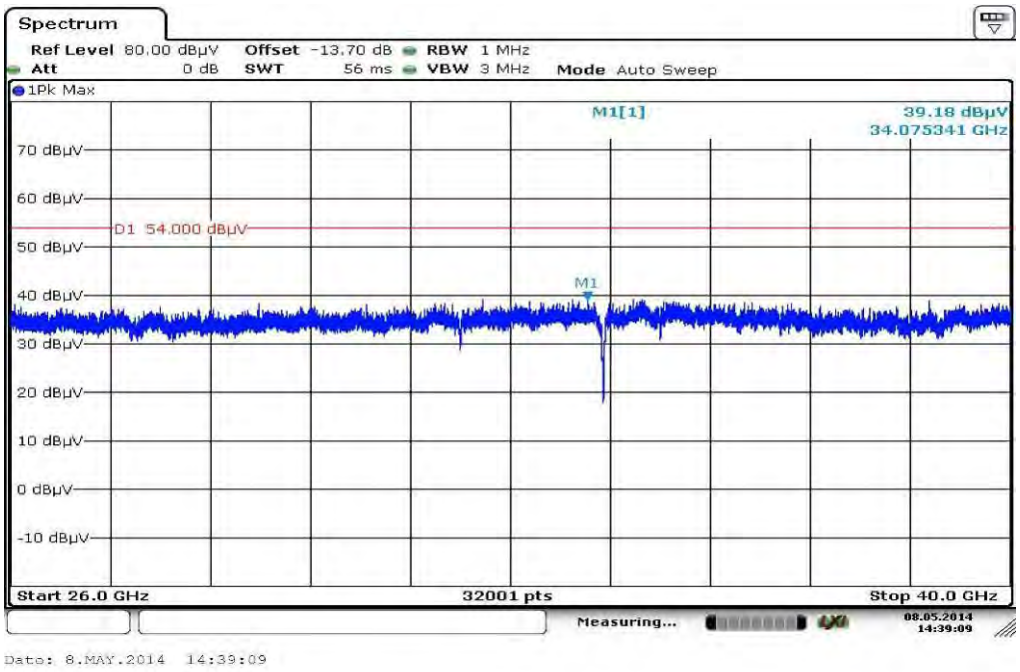
Plot 18: 12 GHz to 18 GHz, 5310 MHz, vertical & horizontal polarization



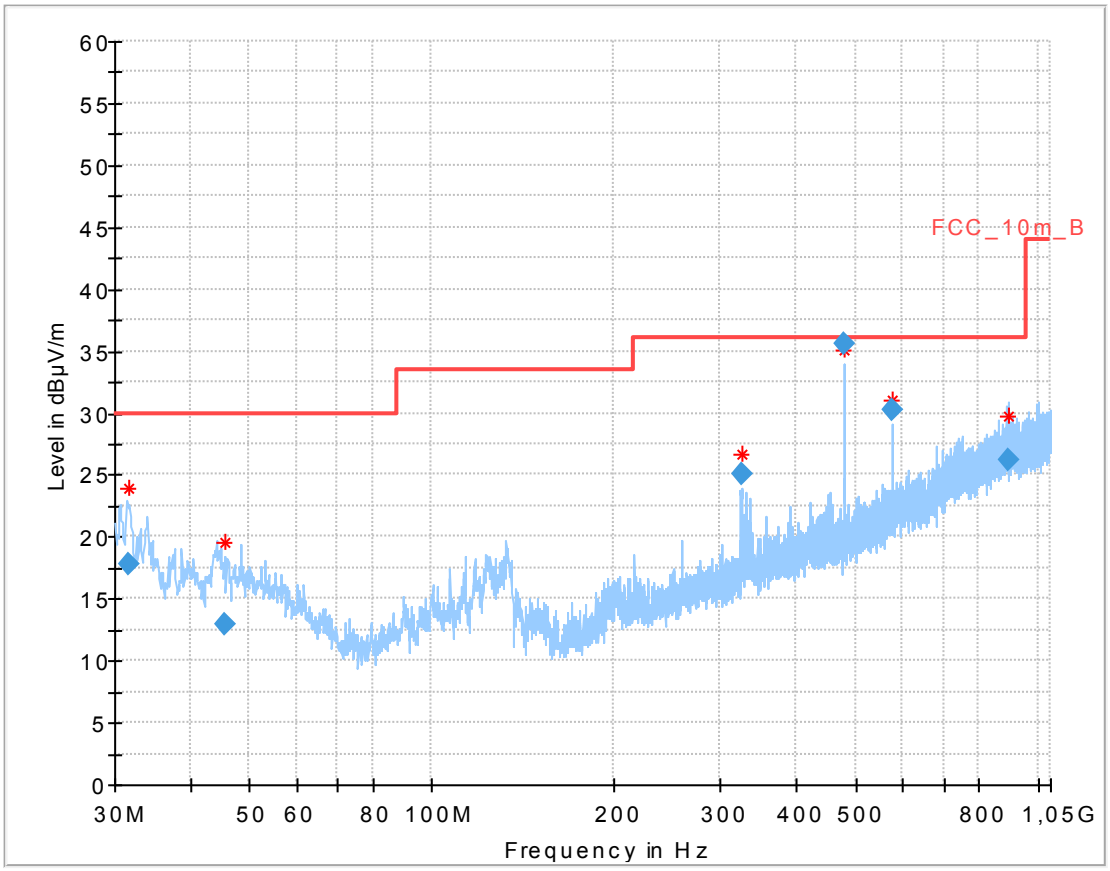
Plot 19: 18 GHz to 26 GHz, 5310 MHz, vertical & horizontal polarization



Plot 20: 26 GHz to 40 GHz, 5310 MHz, vertical & horizontal polarization



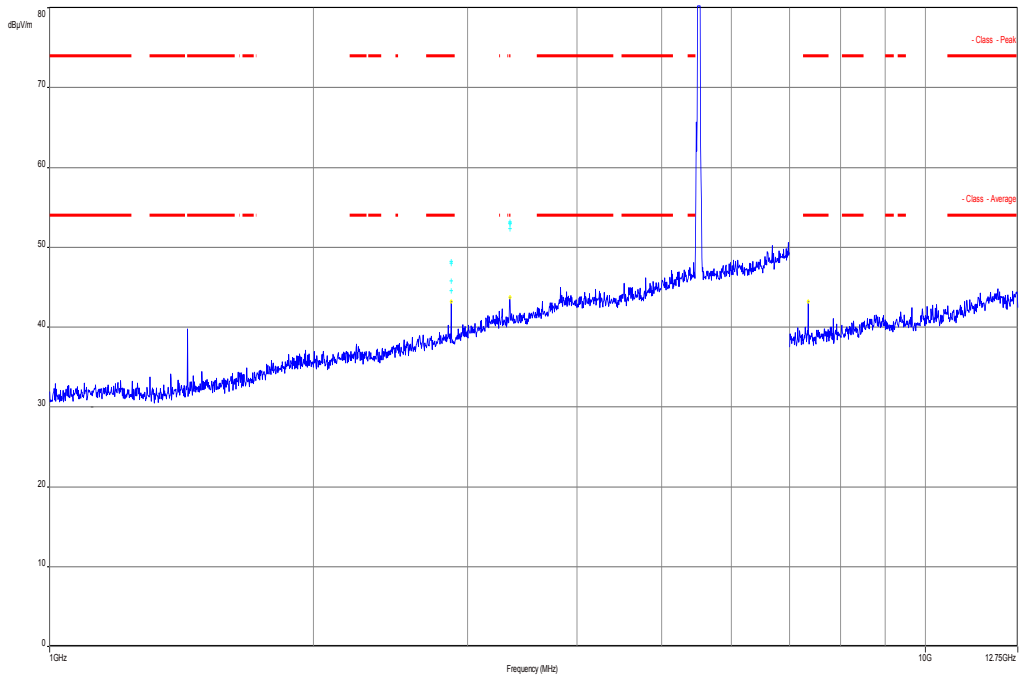
Plot 21: 30 MHz to 1 GHz, 5510 MHz, vertical & horizontal polarization



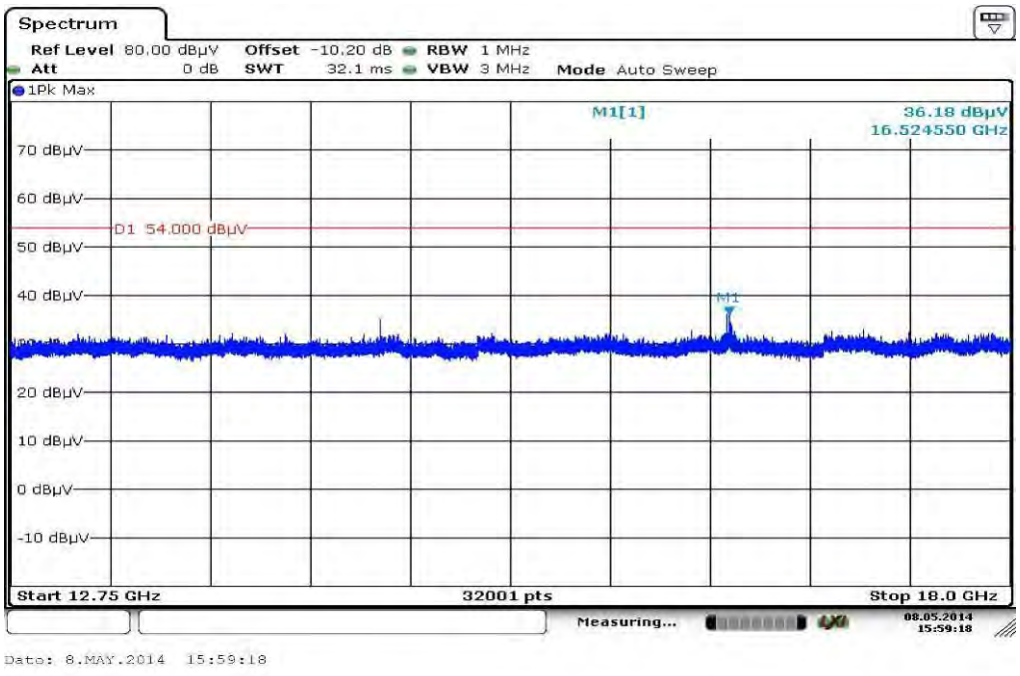
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.680000	17.82	30.00	12.18	1000.0	120.000	170.0	V	266.0	12.7
45.452250	12.90	30.00	17.10	1000.0	120.000	116.0	V	280.0	13.3
324.311400	25.02	36.00	10.98	1000.0	120.000	98.0	V	10.0	15.3
478.987950	35.54	36.00	0.46	1000.0	120.000	164.0	H	1.0	18.3
574.980600	30.21	36.00	5.79	1000.0	120.000	170.0	H	83.0	20.1
897.004500	26.26	36.00	9.74	1000.0	120.000	105.0	H	-10.0	25.2

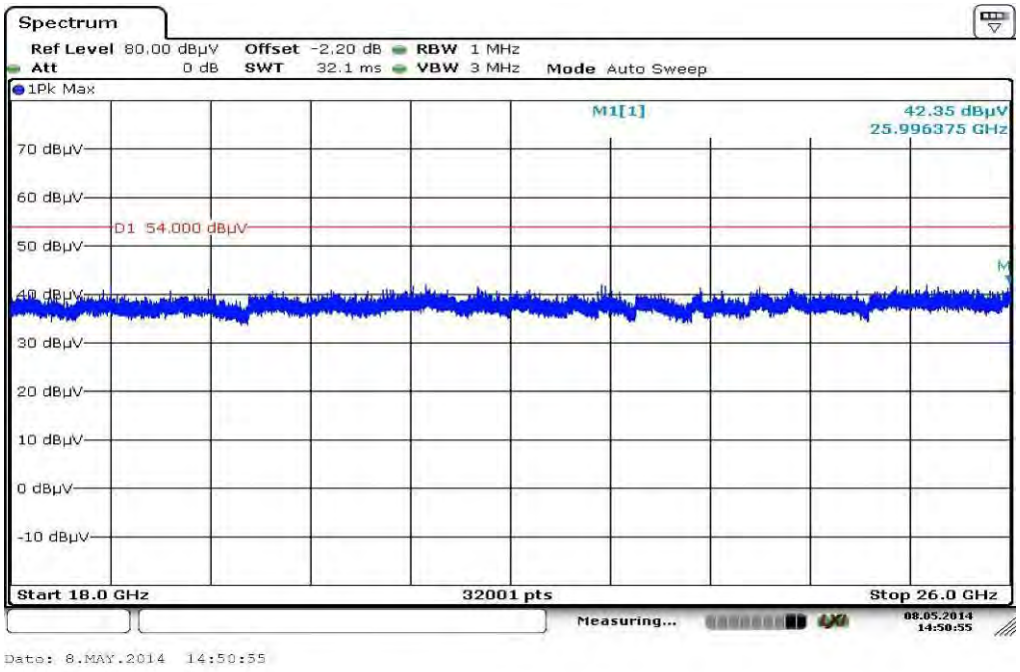
Plot 22: 1 GHz to 12.75 GHz, 5510 MHz, vertical & horizontal polarization



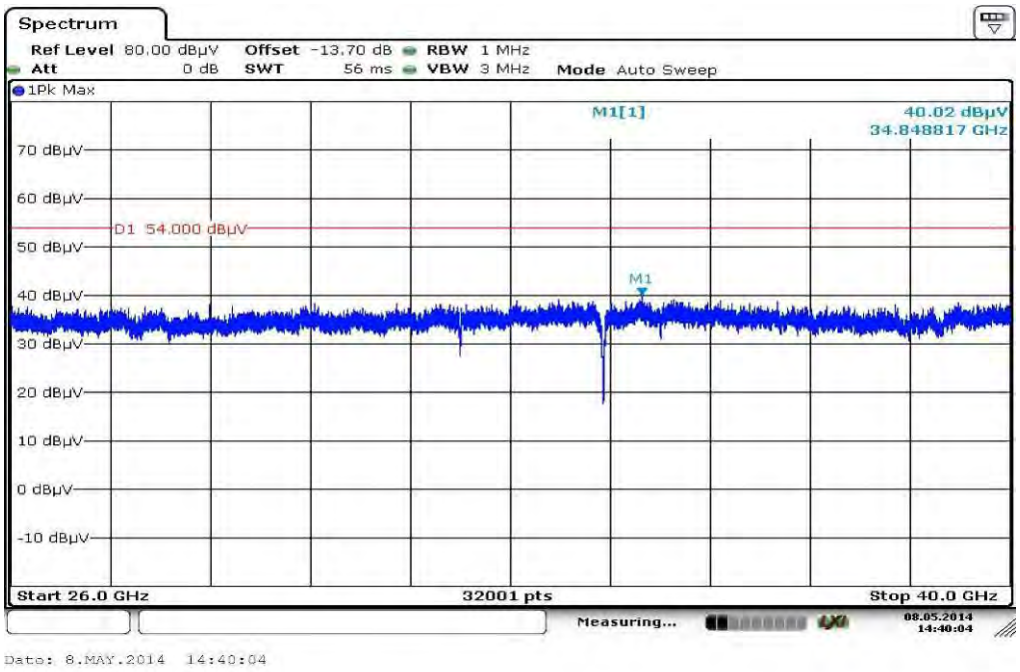
Plot 23: 12 GHz to 18 GHz, 5510 MHz, vertical & horizontal polarization



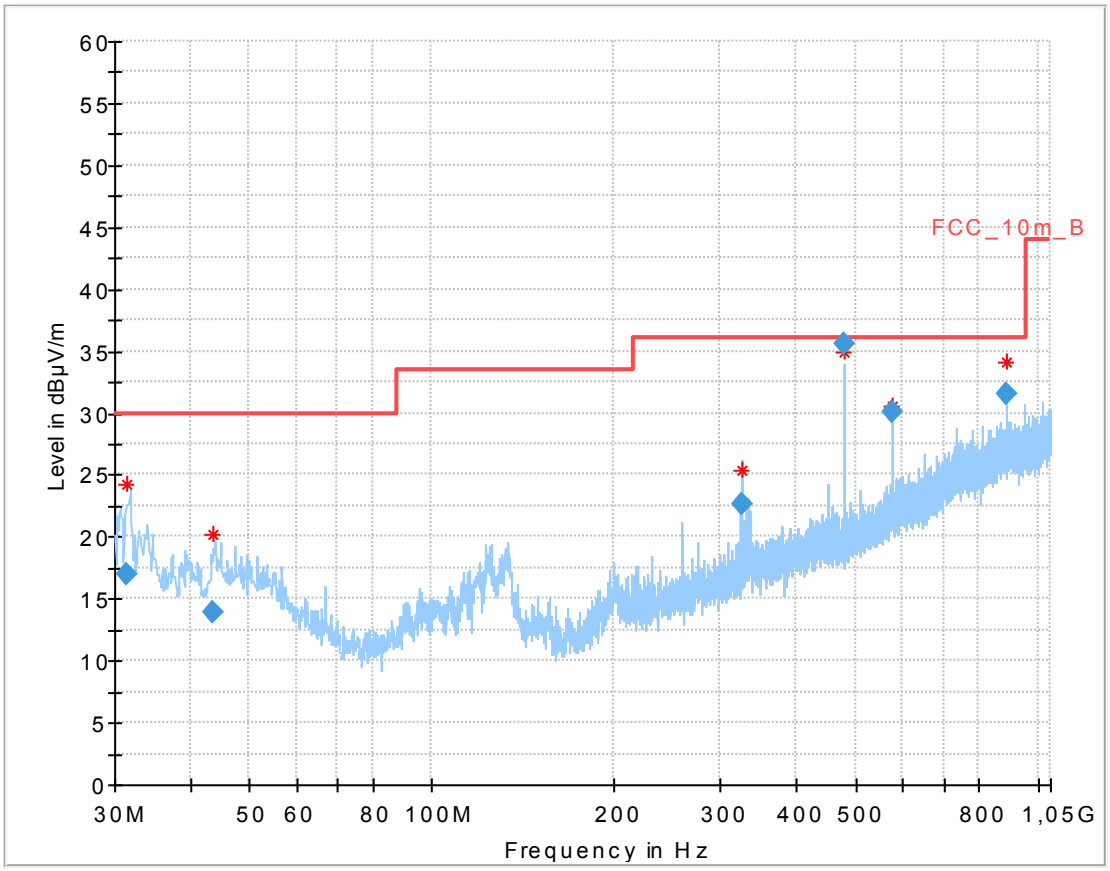
Plot 24: 18 GHz to 26 GHz, 5510 MHz, vertical & horizontal polarization



Plot 25: 26 GHz to 40 GHz, 5510 MHz, vertical & horizontal polarization



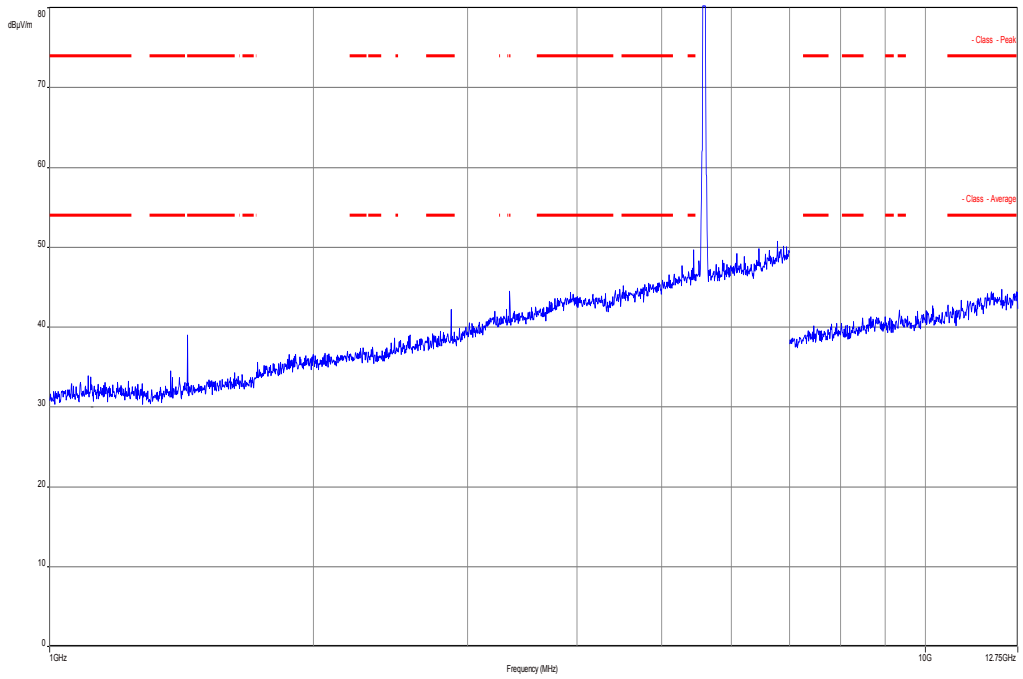
Plot 26: 30 MHz to 1 GHz, 5590 MHz, vertical & horizontal polarization



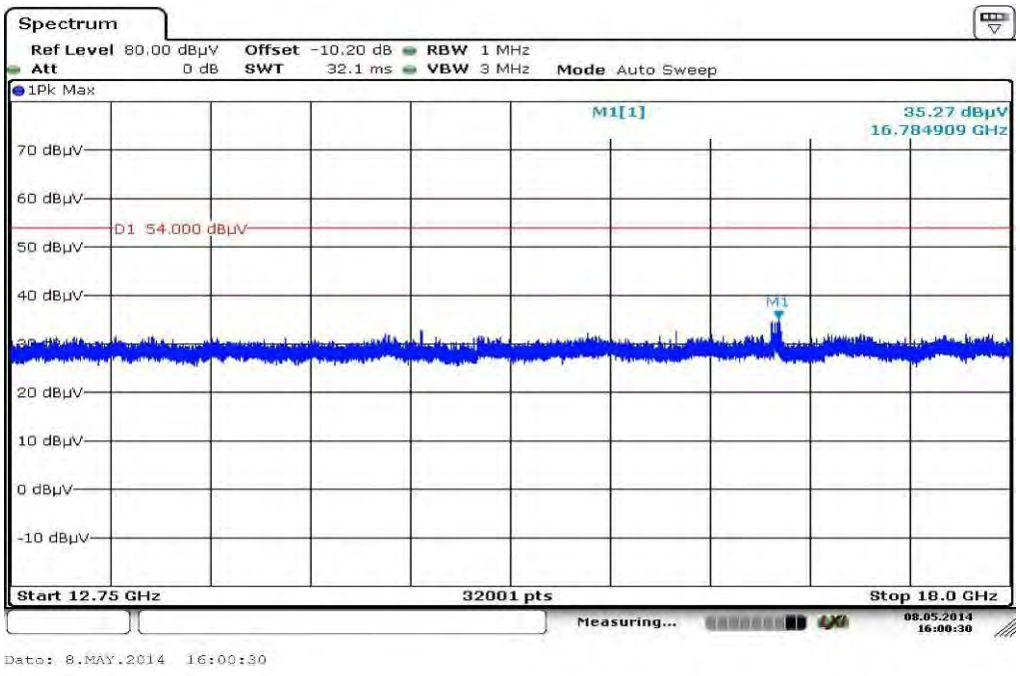
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.349700	16.92	30.00	13.08	1000.0	120.000	101.0	V	190.0	12.6
43.710750	13.96	30.00	16.04	1000.0	120.000	98.0	V	-6.0	13.3
324.332850	22.59	36.00	13.41	1000.0	120.000	98.0	V	84.0	15.3
478.985850	35.61	36.00	0.39	1000.0	120.000	170.0	H	4.0	18.3
574.981200	30.14	36.00	5.86	1000.0	120.000	170.0	H	170.0	20.1
887.788350	31.48	36.00	4.52	1000.0	120.000	98.0	H	190.0	25.0

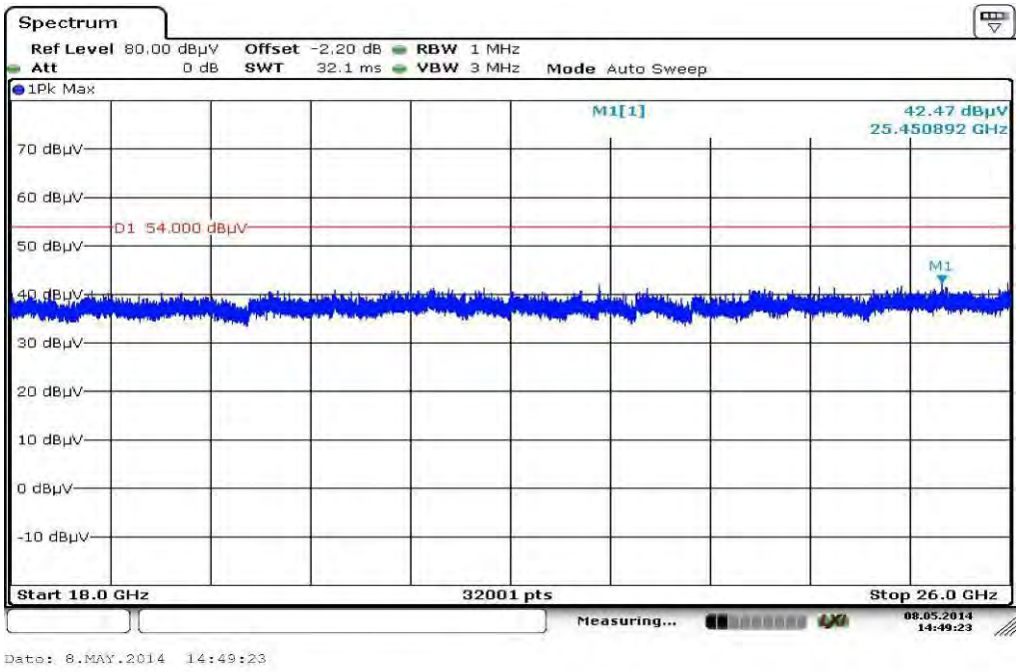
Plot 27: 1 GHz to 12.75 GHz, 5590 MHz, vertical & horizontal polarization



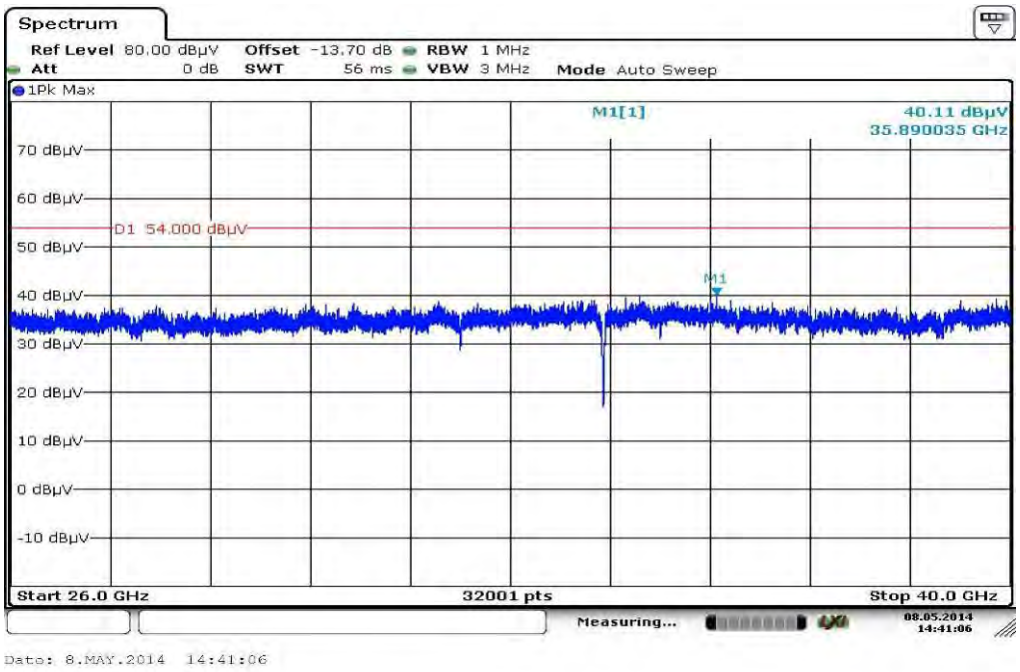
Plot 28: 12 GHz to 18 GHz, 5590 MHz, vertical & horizontal polarization



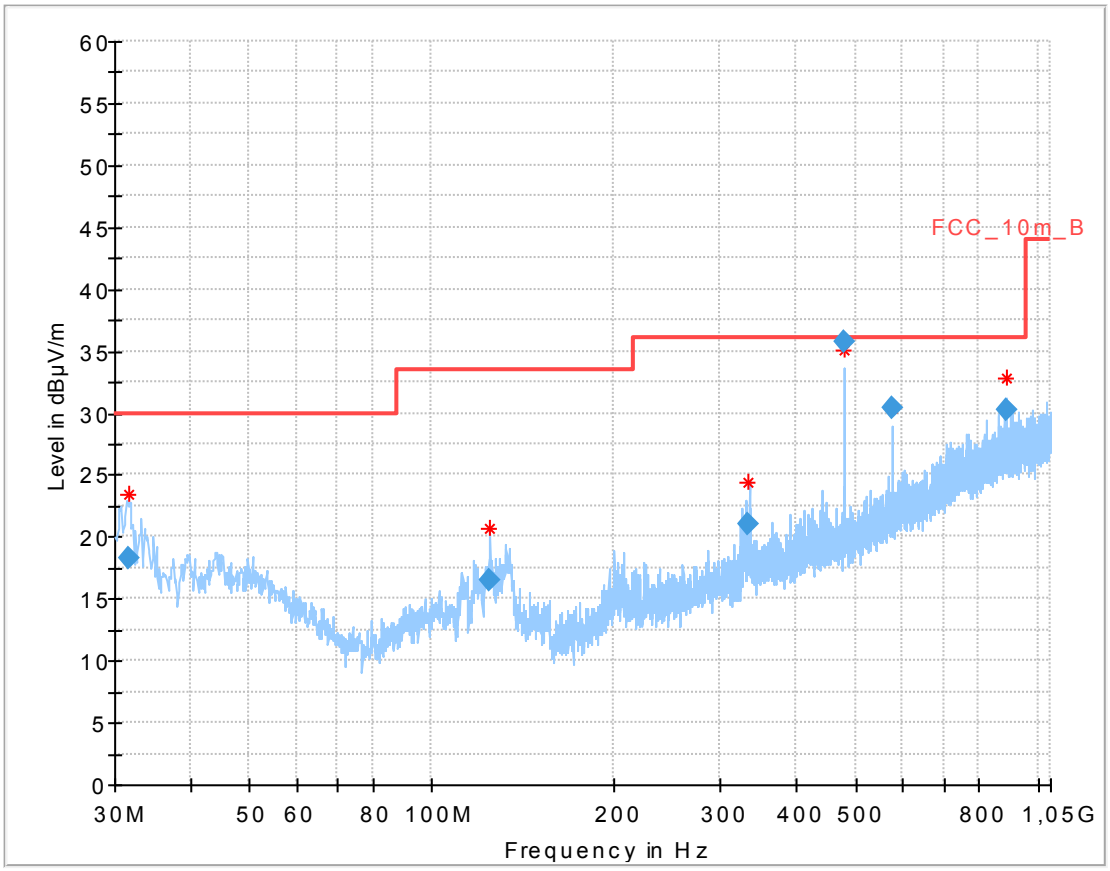
Plot 29: 18 GHz to 26 GHz, 5590 MHz, vertical & horizontal polarization



Plot 30: 26 GHz to 40 GHz, 5590 MHz, vertical & horizontal polarization



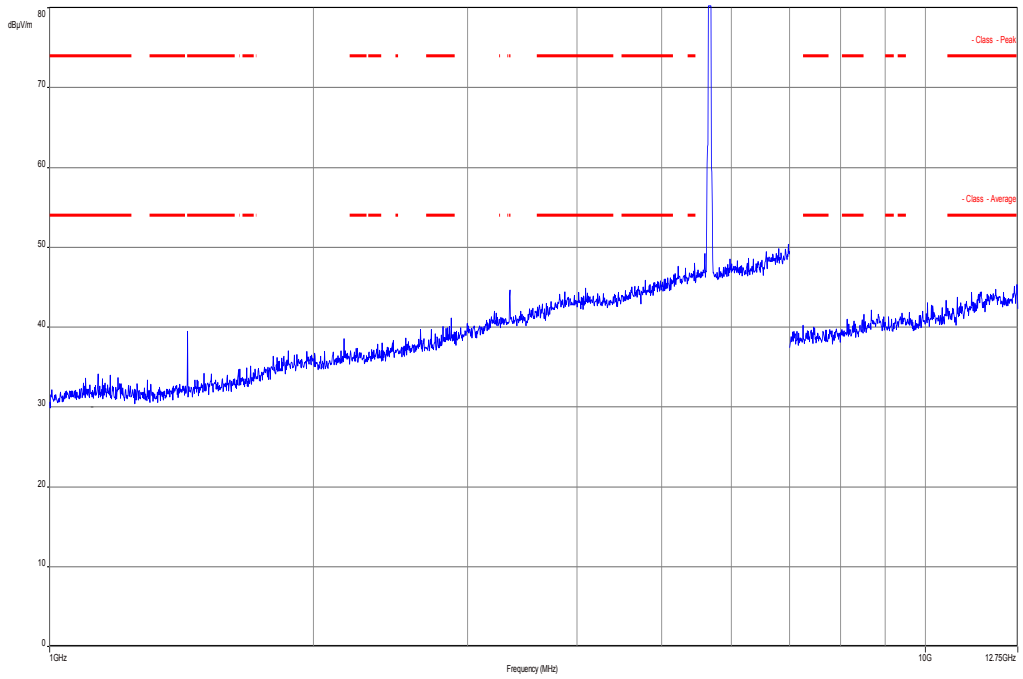
Plot 31: 30 MHz to 1 GHz, 5670 MHz, vertical & horizontal polarization



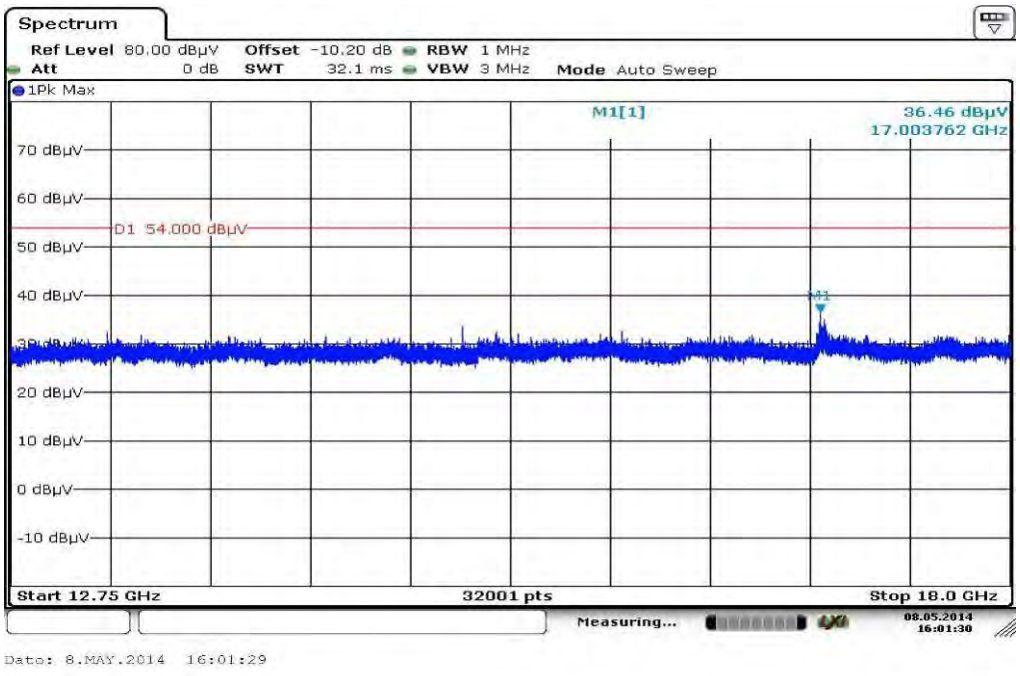
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.650000	18.34	30.00	11.66	1000.0	120.000	98.0	V	268.0	12.7
124.992450	16.48	33.50	17.02	1000.0	120.000	170.0	V	-6.0	9.8
333.364200	20.98	36.00	15.02	1000.0	120.000	105.0	V	3.0	15.6
478.982850	35.76	36.00	0.24	1000.0	120.000	170.0	H	1.0	18.3
574.975650	30.35	36.00	5.65	1000.0	120.000	170.0	H	10.0	20.1
887.782950	30.31	36.00	5.69	1000.0	120.000	107.0	H	100.0	25.0

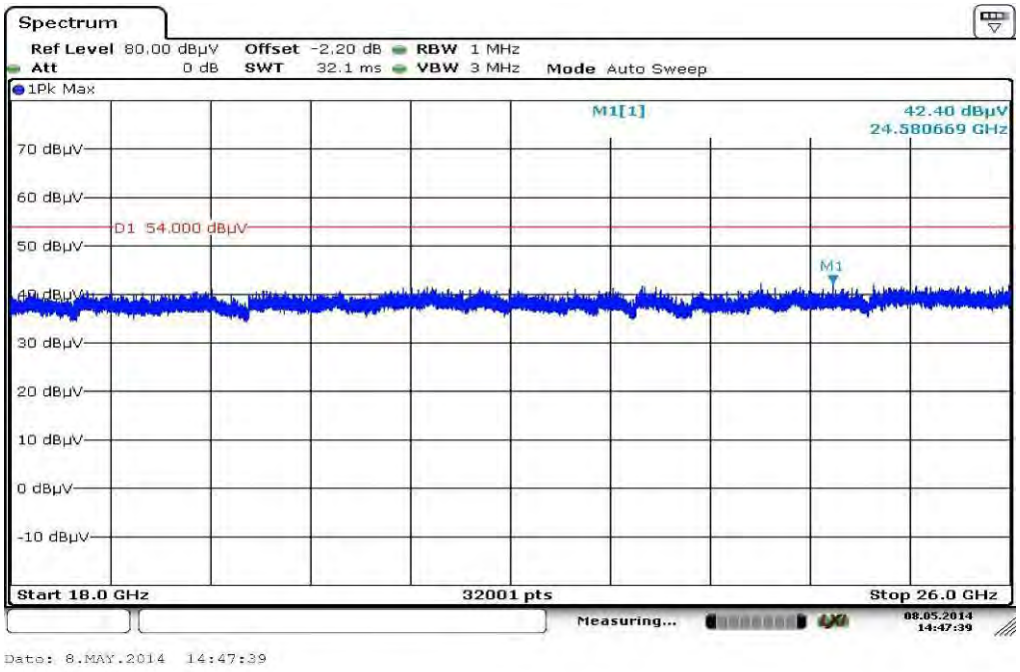
Plot 32: 1 GHz to 12.75 GHz, 5670 MHz, vertical & horizontal polarization



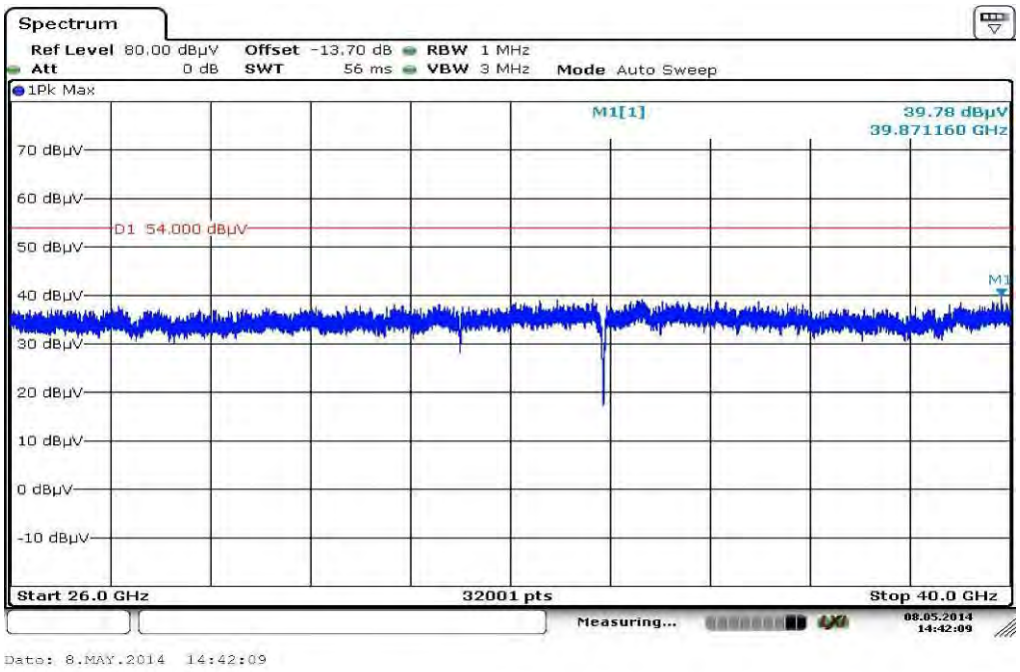
Plot 33: 12 GHz to 18 GHz, 5670 MHz, vertical & horizontal polarization



Plot 34: 18 GHz to 26 GHz, 5670 MHz, vertical & horizontal polarization



Plot 35: 26 GHz to 40 GHz, 5670 MHz, vertical & horizontal polarization



10.10 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 /10 Hz
Span:	30 MHz to 40 GHz
Trace-Mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %

Limits:

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

Results:

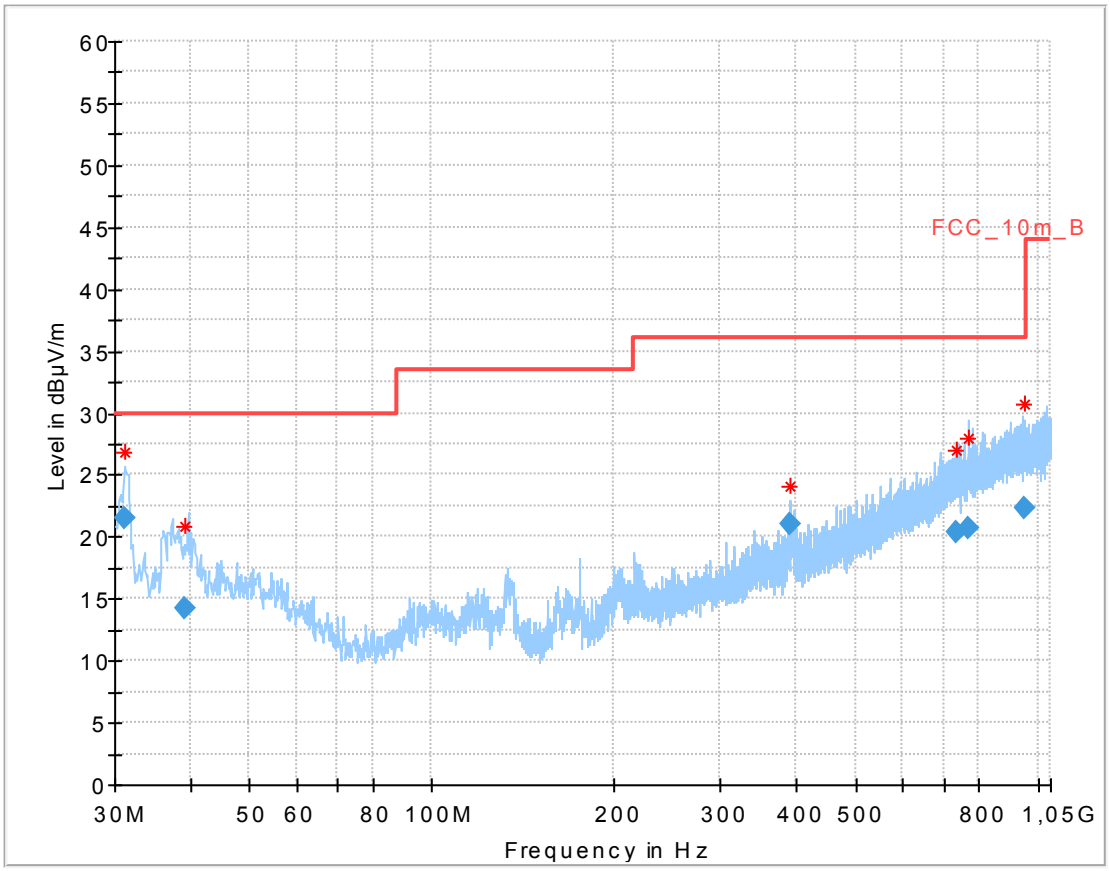
RX Spurious Emissions Radiated [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
All detected peak emissions are below the average limit.		
Measurement uncertainty	± 3 dB	

Result: Passed

Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

Plots: RX / Idle – mode

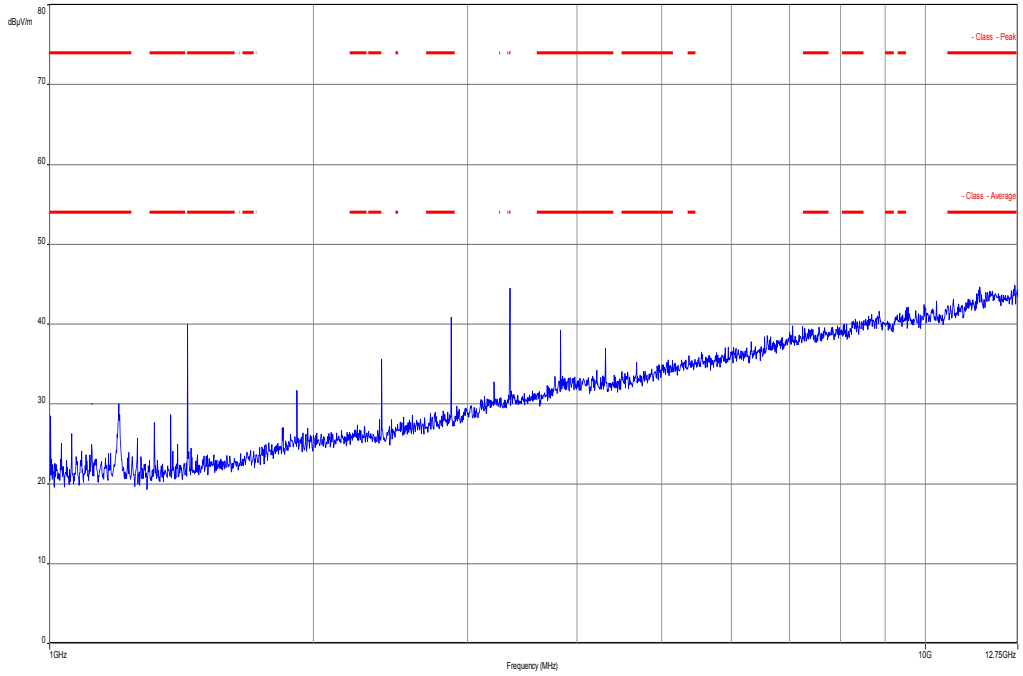
Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization



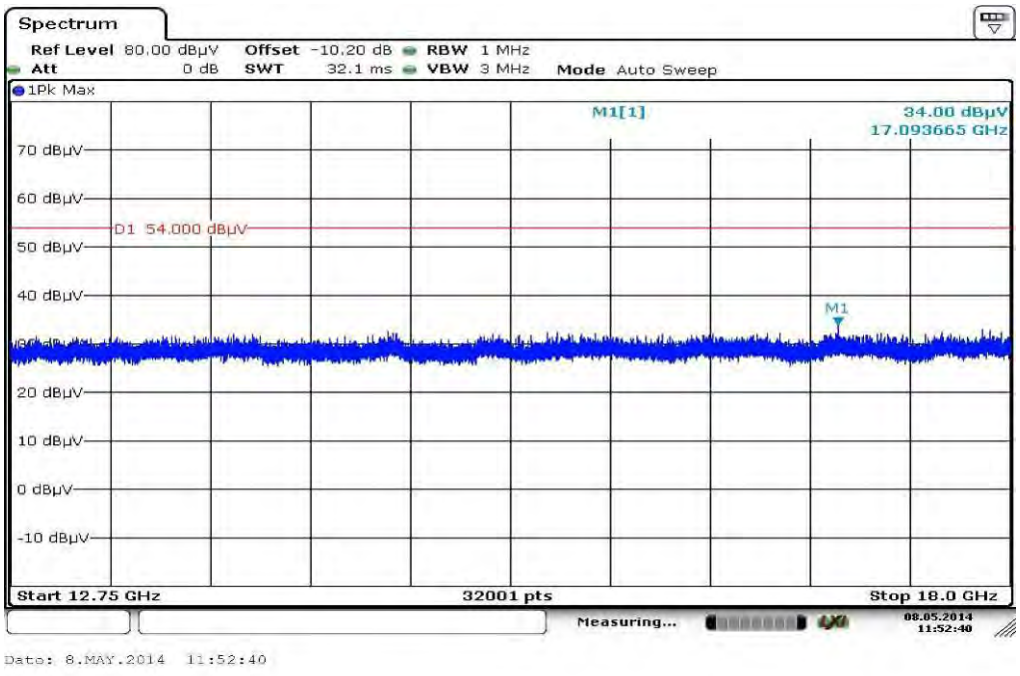
Final result:

Frequency (MHz)	Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.179450	21.48	30.00	8.52	1000.0	120.000	101.0	V	10.0	12.6
39.225900	14.25	30.00	15.75	1000.0	120.000	98.0	V	10.0	13.4
391.199700	20.98	36.00	15.02	1000.0	120.000	170.0	H	180.0	16.8
732.138750	20.33	36.00	15.67	1000.0	120.000	170.0	V	-10.0	23.2
769.060350	20.65	36.00	15.35	1000.0	120.000	114.0	H	80.0	23.7
947.718600	22.33	36.00	13.67	1000.0	120.000	170.0	V	-5.0	25.3

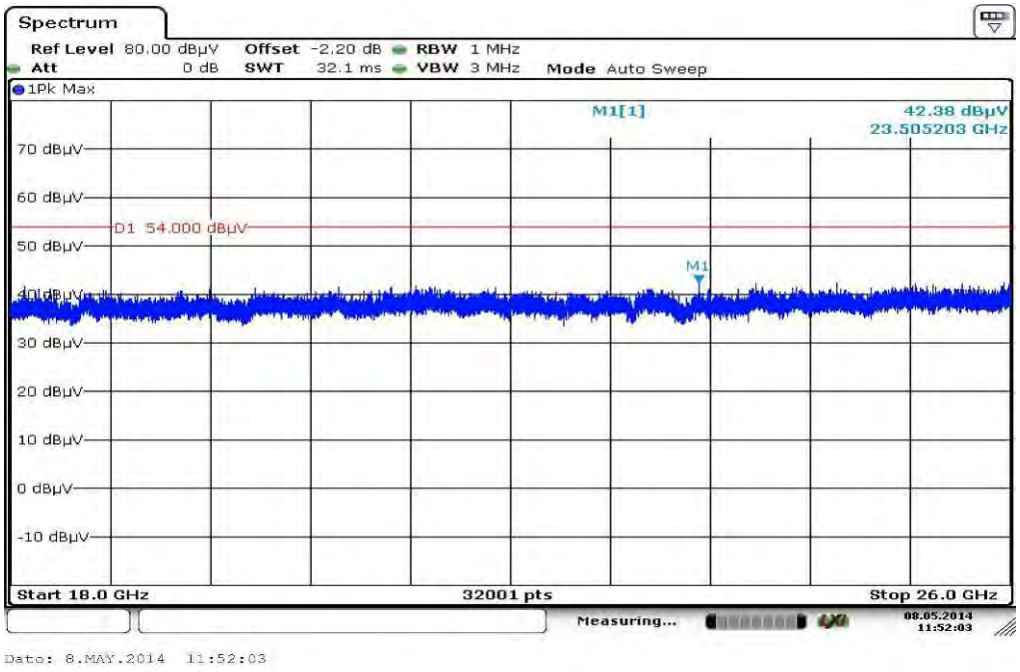
Plot 2: 1 GHz to 12.75 GHz, vertical & horizontal polarization



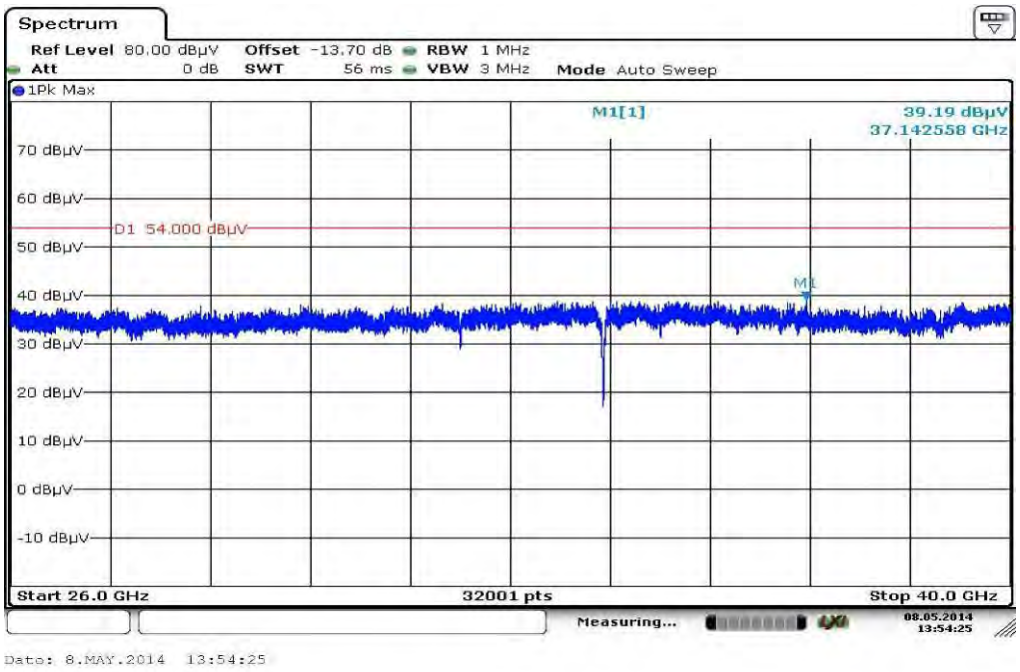
Plot 3: 12 GHz to 18 GHz, vertical & horizontal polarization



Plot 4: 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 5: 26 GHz to 40 GHz, vertical & horizontal polarization



10.11 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 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

Limits:

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

Results:

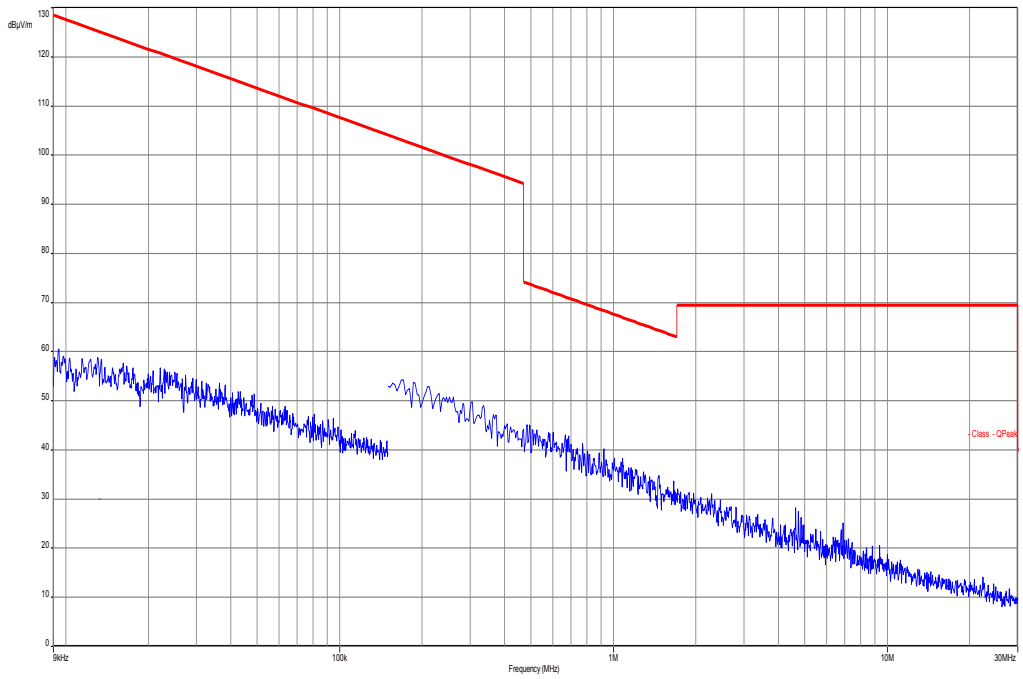
Spurious Emissions Radiated < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No emissions detected.		
Measurement uncertainty	± 3 dB	

Result: Passed

Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

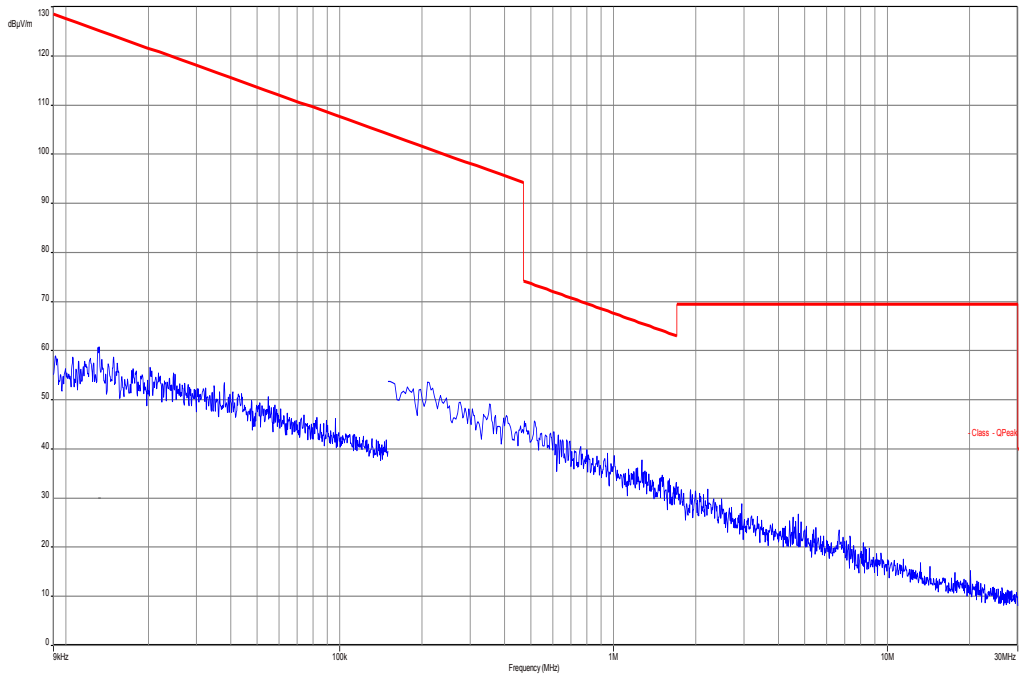
Plots: TX mode

Plot 1: 9 kHz to 30 MHz



Plots: RX / Idle – mode

Plot 1: 9 kHz to 30 MHz



10.12 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 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 remeasured 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:	F > 150 kHz: 9 kHz
Resolution bandwidth:	F > 150 kHz: 100 kHz
Span:	150 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dBµV/m)	Average (dBµV/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

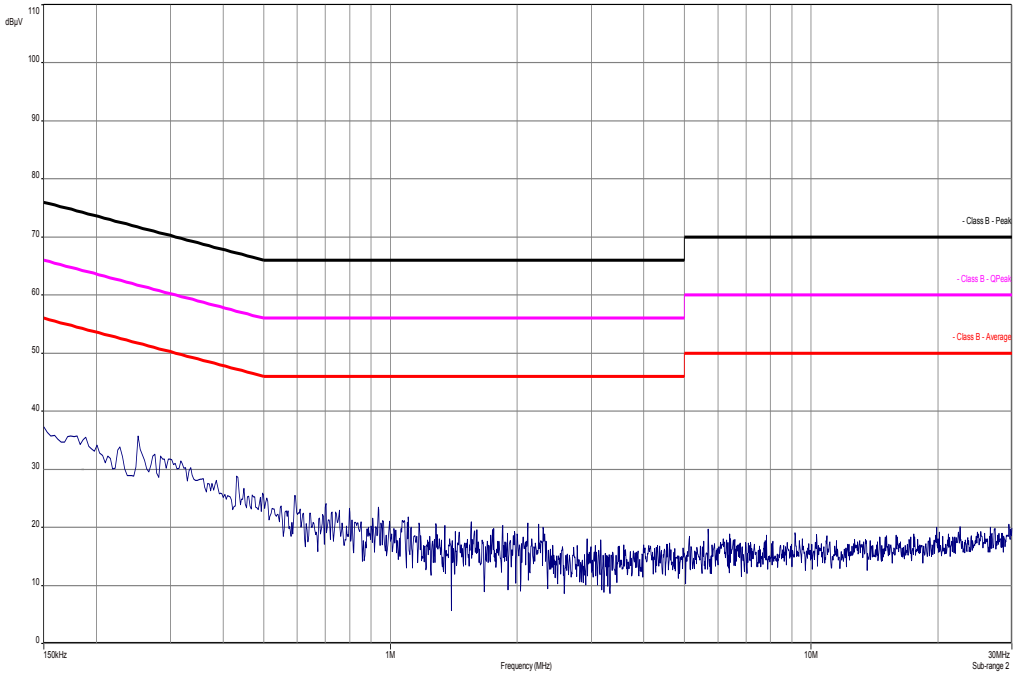
Results:

Spurious Emissions Conducted < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No emissions detected.		
Measurement uncertainty	± 3 dB	

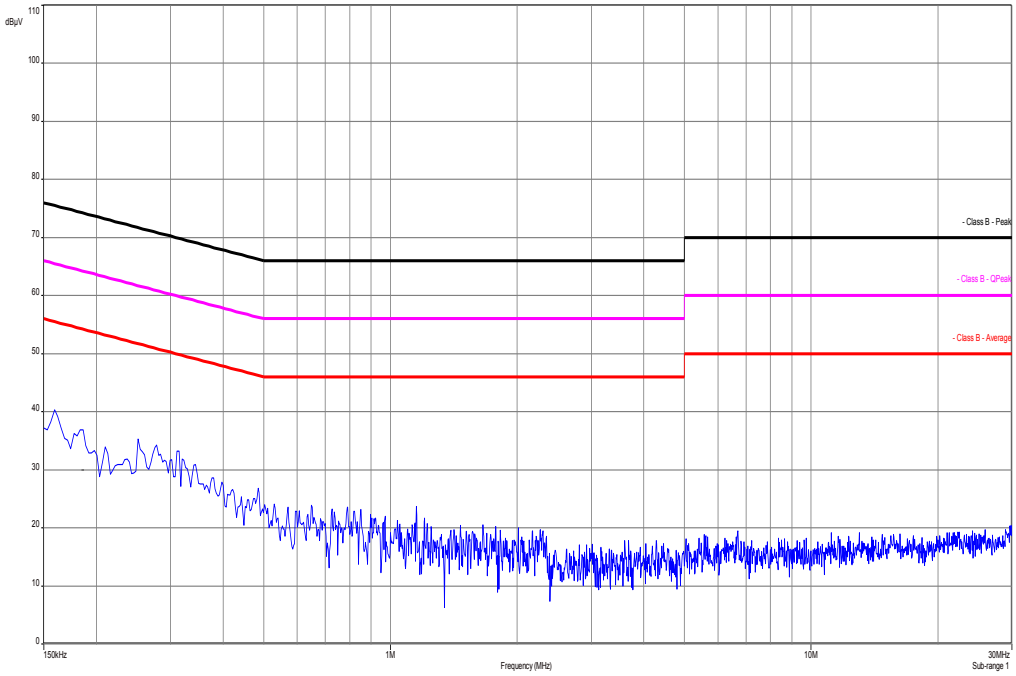
Result: Passed

Plots:

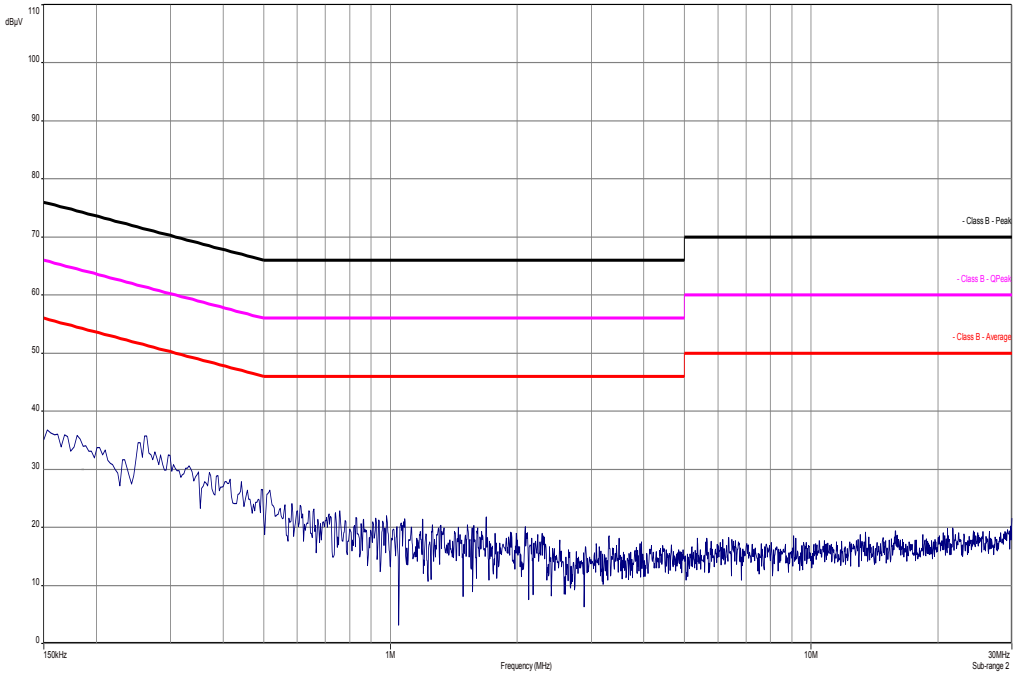
Plot 1: TX mode, 150 kHz to 30 MHz, phase line



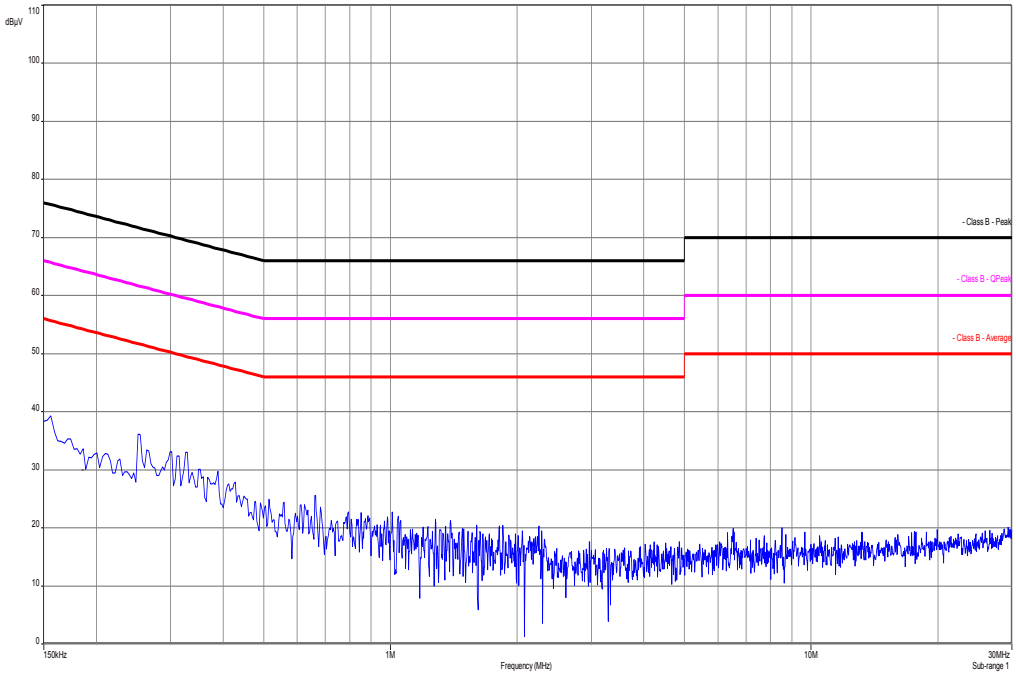
Plot 2: TX mode, 150 kHz to 30 MHz, neutral line



Plot 3: RX / Idle – mode, 150 kHz to 30 MHz, phase line



Plot 4: RX / Idle – mode, 150 kHz to 30 MHz, neutral line



11 Test equipment and ancillaries used for tests

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

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

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
11	11b	Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268	ev		
2	A026	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787	k	22.07.2013	22.07.2015
3	A029	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442	k	19.07.2013	19.07.2015
4	A031	Std. Gain Horn Antenna 26.5 to 40.0 GHz	637	Narda	100037	300000510	k	19.07.2013	19.07.2015
5	n. a.	Broadband Low Noise Amplifier 18-50 GHz	CBL18503070-XX	CERNEX	19338	300004273	ne		
6	n. a.	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	21.01.2014	21.01.2015
7	n. a.	Isolating Transformer	RT5A	Grundig	12780	300001166	ev		
8	n. a.	Power Sensor	NRP-Z22	R&S	100039	400000189	k	23.08.2012	23.08.2014
9	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/84193	300003889	Ve	26.09.2013	26.09.2015
10	n. a.	Power Supply 0-20V, 0-5A	6632B	Agilent Technologies	GB42110541	400000562	vlKl!	10.01.2013	10.01.2016
11	n. a.	Amplifier 2-40 GHz	JS32-02004000-57-5P	MITEQ	1777200	300004541	ev		
12	n. a.	PC-WLAN Tester	Intel Core i3 3220/3,3 GHz, Prozessor		2V2403033A4523	300004589	ne		
13	n. a.	Teststand	Teststand Custom Sequence Editor	National Instruments GmbH		300004590	ne		
14	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
15	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKl!	08.05.2013	08.05.2015
16	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
17	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
18	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	30.01.2014	30.01.2016
19	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
20	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
21	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
22	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015

23	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
24	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
25	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vlKl!	14.10.2011	14.10.2014
26	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	13.03.2014	13.03.2015

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlkl!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

12 Observations

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

Annex A Document history

Version	Applied changes	Date of release
	Initial release	2014-05-19
A	Duty cycle re-calculated	2014-05-21
B	New product name; added hardware and software version	2014-05-27

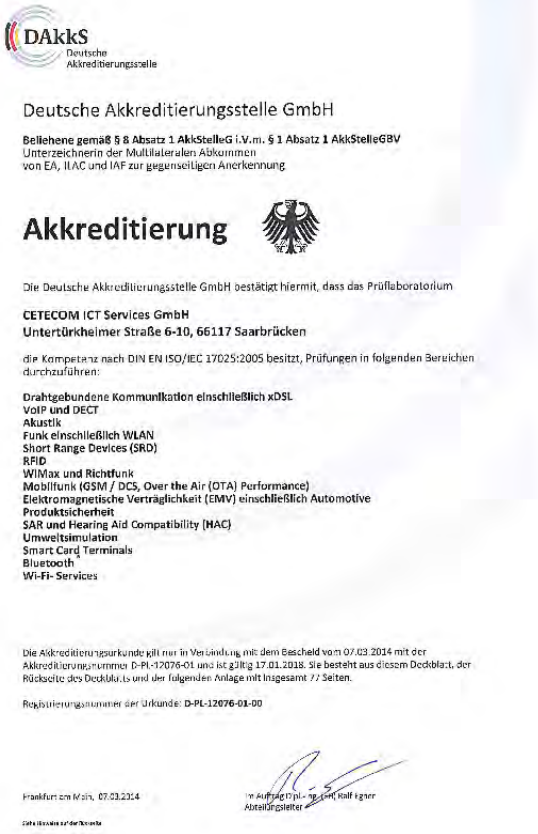
Annex B Further information

Glossary

AVG - Average
DUT - Device under test
EMC - Electromagnetic Compatibility
EN - European Standard
EUT - Equipment under test
ETSI - European Telecommunications Standard Institute
FCC - Federal Communication Commission
FCC ID - Company Identifier at FCC
HW - Hardware
IC - Industry Canada
Inv. No. - Inventory number
N/A - Not applicable
PP - Positive peak
QP - Quasi peak
S/N - Serial number
SW - Software

Annex C Accreditation Certificate

Front side of certificate



DAkkS
Deutsche Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10, 66117 Saarbrücken

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Drahtgebundene Kommunikation einschließlich xDSL
VoIP und DECT
Akustik
Funk einschließlich WLAN
Short Range Devices (SRD)
RFID
WiMax und Richtfunk
Mobilfunk (GSM / DCS, Over the Air (OTA) Performance)
Elektromagnetische Verträglichkeit (EMV) einschließlich Automotive
Produktsicherheit
SAR und Hearing Aid Compatibility (HAC)
Umweltsimulation
Smart Card Terminals
Bluetooth
Wi-Fi- Services

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 07.03.2014 mit der Akkreditierungsnummer D-PL-12076-01 und ist gültig 17.01.2018. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 77 Seiten.

Registrierungsnummer der Urkunde: **D-PL-12076-01-00**

Frankfurt am Main, 07.03.2014

Im Auftrag Dipl.-Ing. (FH) Rolf Egner
Abteilungsleiter

Back side of certificate

Deutsche Akkreditierungsstelle GmbH

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Die auszugsweise Veröffentlichung der Akkreditierungsurkunde bedarf der vorherigen schriftlichen Zustimmung der Deutsche Akkreditierungsstelle GmbH (DAkkS). Ausgenommen davon ist die separate Weiterverbreitung des Deckblattes durch die umseitig genannte Konformitätsbewertungsstelle in unveränderter Form.

Es darf nicht der Anschein erweckt werden, dass sich die Akkreditierung auch auf Bereiche erstreckt, die über den durch die DAkkS bestätigten Akkreditierungsbereich hinausgehen.

Die Akkreditierung erfolgte gemäß des Gesetzes über die Akkreditierungsstelle (AkkStelleG) vom 31. Juli 2009 (BGBl. I S. 2625) sowie der Verordnung (EG) Nr. 765/2008 des Europäischen Parlaments und des Rates vom 9. Juli 2008 über die Vorschriften für die Akkreditierung und Marktüberwachung im Zusammenhang mit der Vermarktung von Produkten (Abl. L 218 vom 9. Juli 2008, S. 30).
Die DAkkS ist Unterzeichnerin der Multilateralen Abkommen zur gegenseitigen Anerkennung der European co-operation for Accreditation (EA), des International Accreditation Forum (IAF) und der International Laboratory Accreditation Cooperation (ILAC). Die Unterzeichner dieser Abkommen erkennen ihre Akkreditierungen gegenseitig an.

Der aktuelle Stand der Mitgliedschaft kann folgenden Webseiten entnommen werden:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Note:

The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

http://www.cetecom.com/eu/de/cetecom-group/europa/deutschland-saarbruecken/akkreditierungen.html