12.7 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 channel 1 for the lower restricted band and to channel 11 for the upper restricted band. The measurement is repeated for all modulations. Measurement distance is 3 m.

Measurement:

Measurement parameter for peak measurements	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	1 MHz
Span:	See plot!
Trace mode:	Max Hold
Test setup:	See sub clause 7.2 – D
Measurement uncertainty	See sub clause 9

Measurement parameter for average measurements	
According to DTS clause: 13.3.2	
Detector:	RMS
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	2 MHz
Trace mode:	RMS Average over 101 sweeps
Test setup:	See sub clause 7.2 – D
Measurement uncertainty	See sub clause 9

Limits:

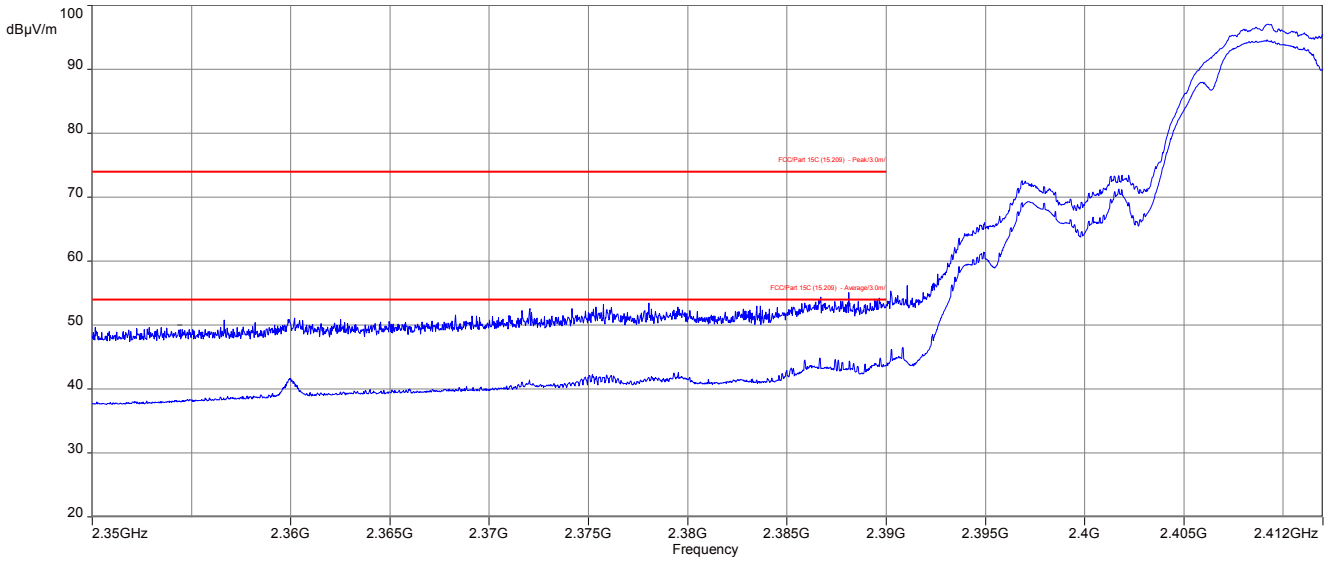
FCC	IC
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains 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	

Results:

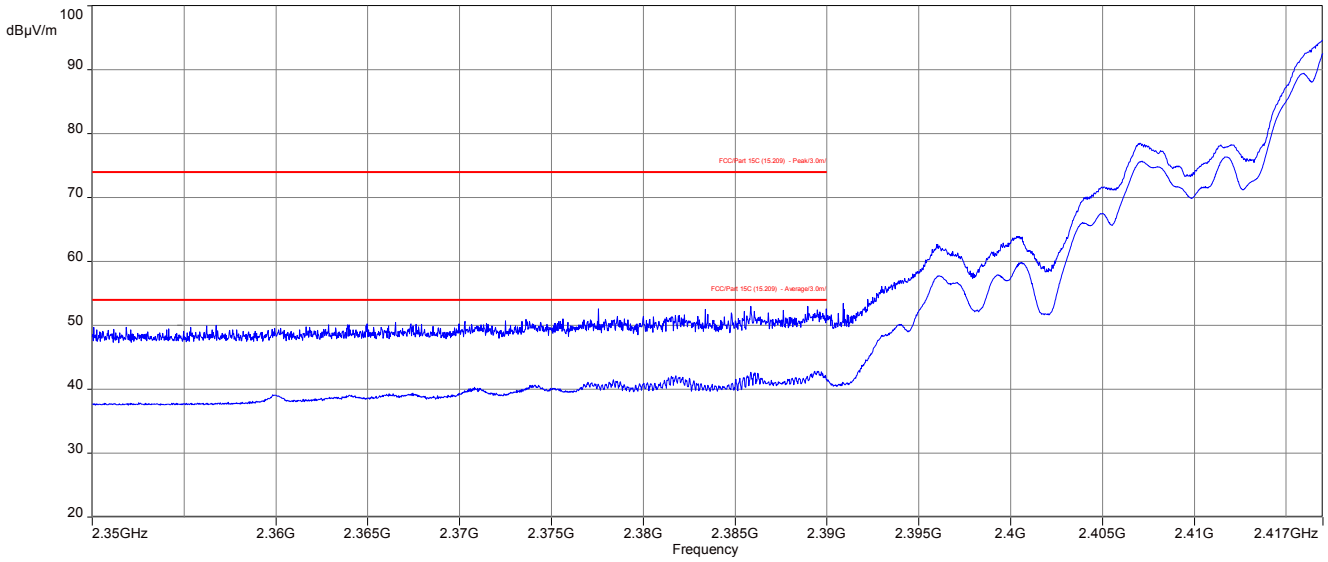
Scenario		Band edge compliance radiated [dBµV/m @ 3m]		
	TX frequency	DSSS / b – mode	OFDM / g – mode	OFDM / n HT20 – mode
Lower band edge	2412 MHz	55 dBµV/m (Peak) 45 dBµV/m (AVG)	68 dBµV/m (Peak) 52 dBµV/m (AVG)	
	2417 MHz			71 dBµV/m (Peak) 52 dBµV/m (AVG)
	2422 MHz	53 dBµV/m (Peak) 43 dBµV/m (AVG)		
	2432 MHz		62 dBµV/m (Peak) 44 dBµV/m (AVG)	72 dBµV/m (Peak) 49 dBµV/m (AVG)
Upper band edge	2442 MHz		68 dBµV/m (Peak) 48 dBµV/m (AVG)	71 dBµV/m (Peak) 52 dBµV/m (AVG)
	2452 MHz	56 dBµV/m (Peak) 43 dBµV/m (AVG)		72 dBµV/m (Peak) 51 dBµV/m (AVG)
	2457 MHz		66 dBµV/m (Peak) 45 dBµV/m (AVG)	
	2462 MHz	58 dBµV/m (Peak) 44 dBµV/m (AVG)		

Plots: DSSS/ b – mode peak / average

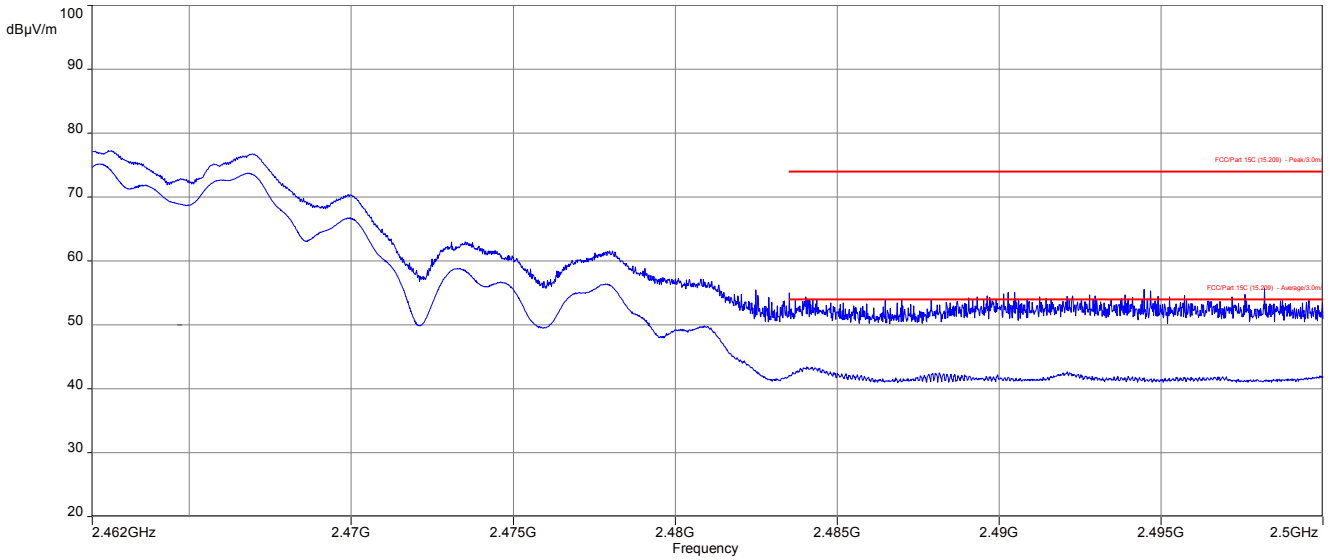
Plot 1: lower band edge, vertical & horizontal polarization, 2412 MHz, power setting 6 dBm



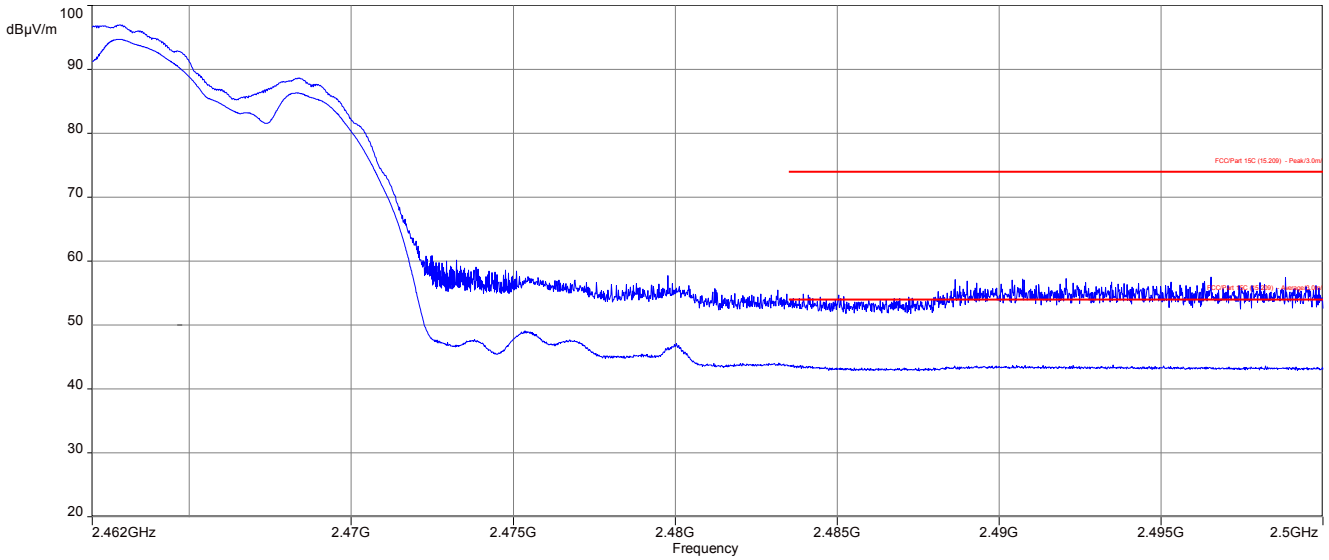
Plot 2: lower band edge, vertical & horizontal polarization, 2422 MHz, power setting 9 dBm



Plot 3: upper band edge, vertical & horizontal polarization, 2452 MHz, power setting 9 dBm

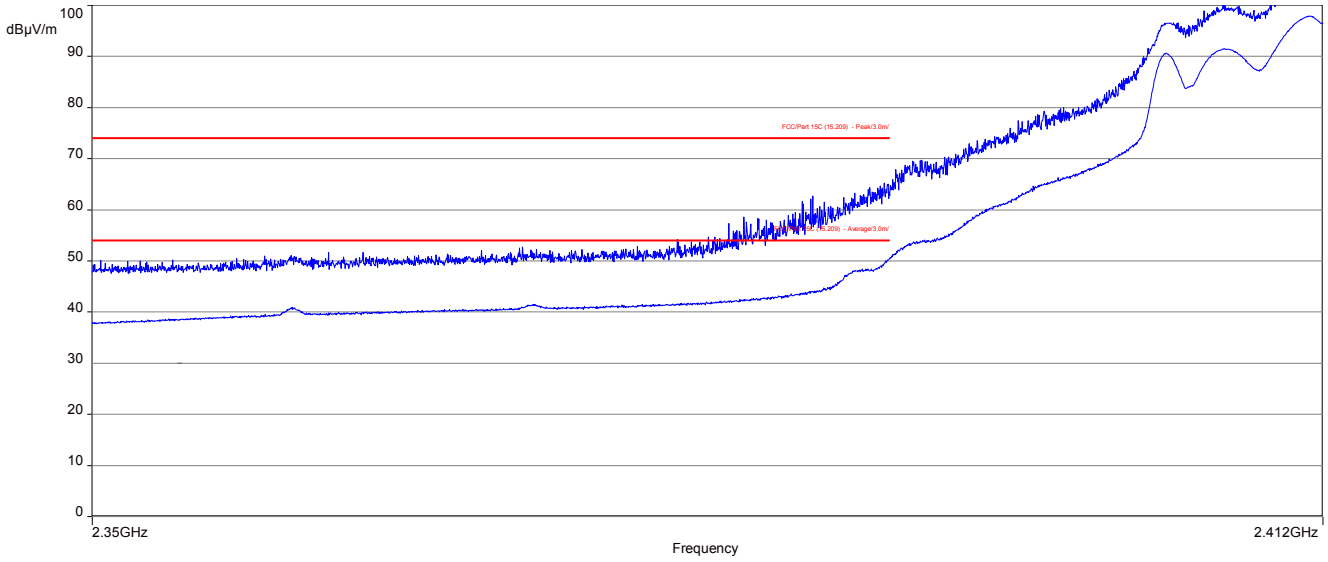


Plot 4: upper band edge, vertical & horizontal polarization, 2462 MHz, power setting 6 dBm

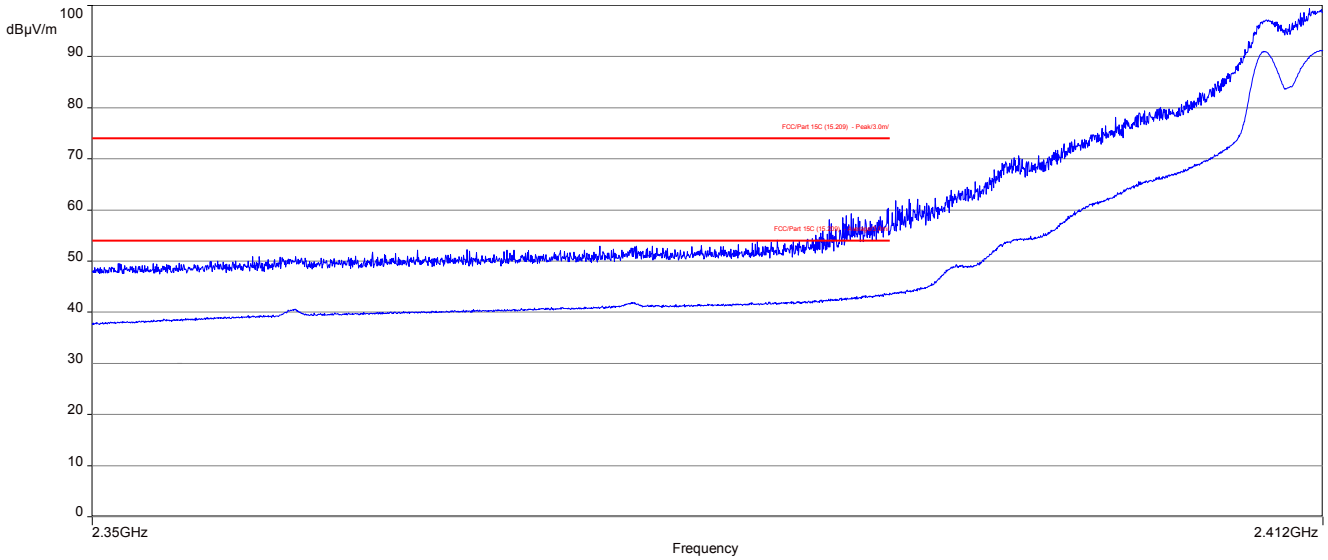


Plots: OFDM / g – mode peak / average

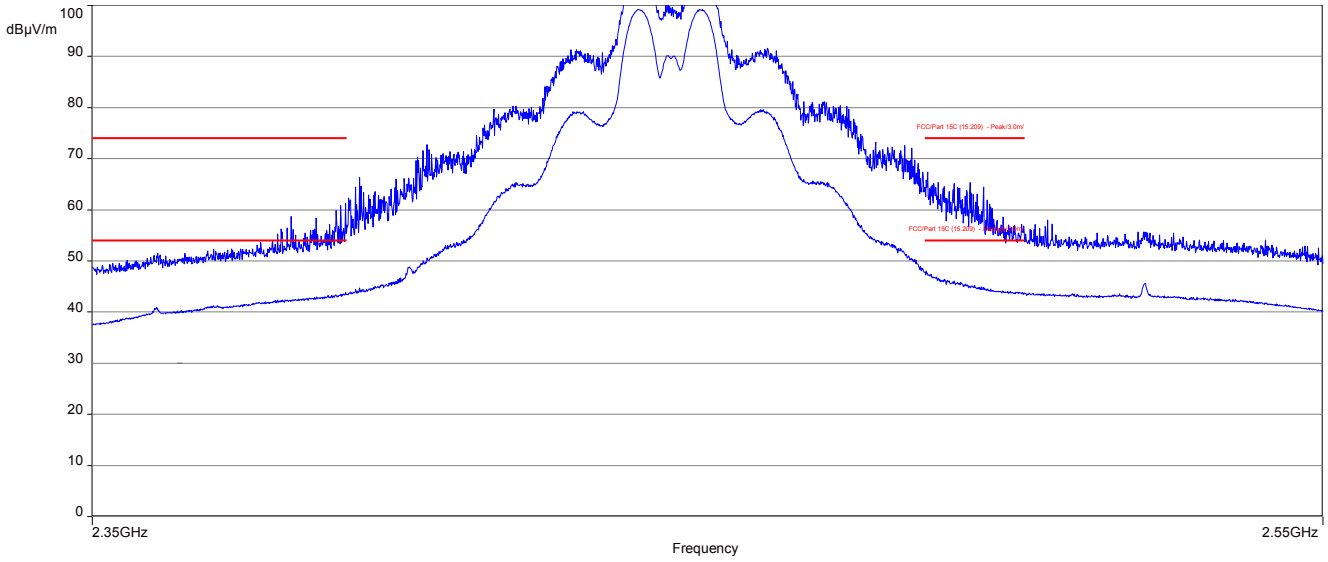
Plot 1: lower band edge, vertical & horizontal polarization, 2412 MHz, power setting 6 dBm



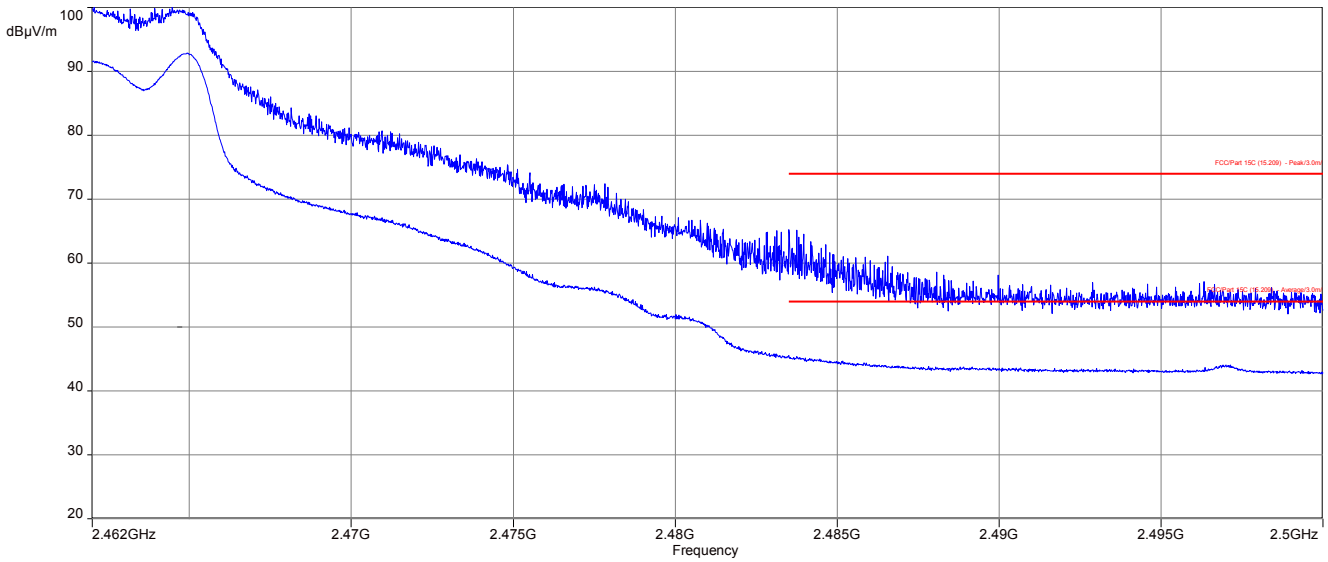
Plot 2: lower band edge, vertical & horizontal polarization, 2432 MHz, power setting 9 dBm



Plot 3: upper band edge, vertical & horizontal polarization, 2442 MHz, power setting 9 dBm

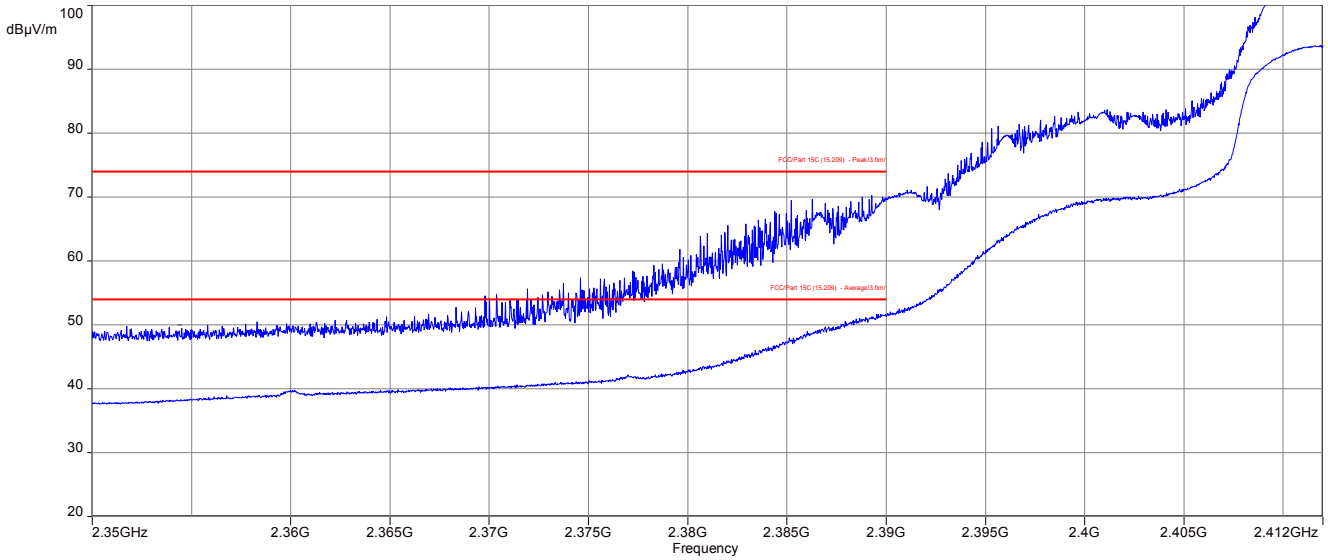


Plot 4: upper band edge, vertical & horizontal polarization, 2457 MHz, power setting 6 dBm

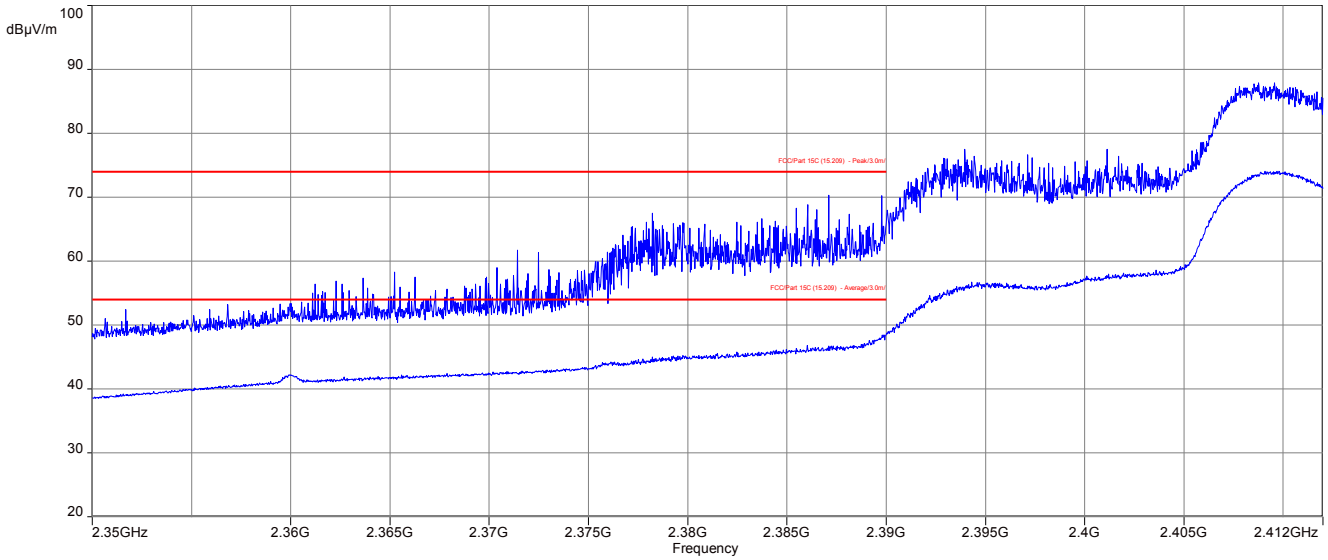


Plots: OFDM / n HT20 – mode peak / average

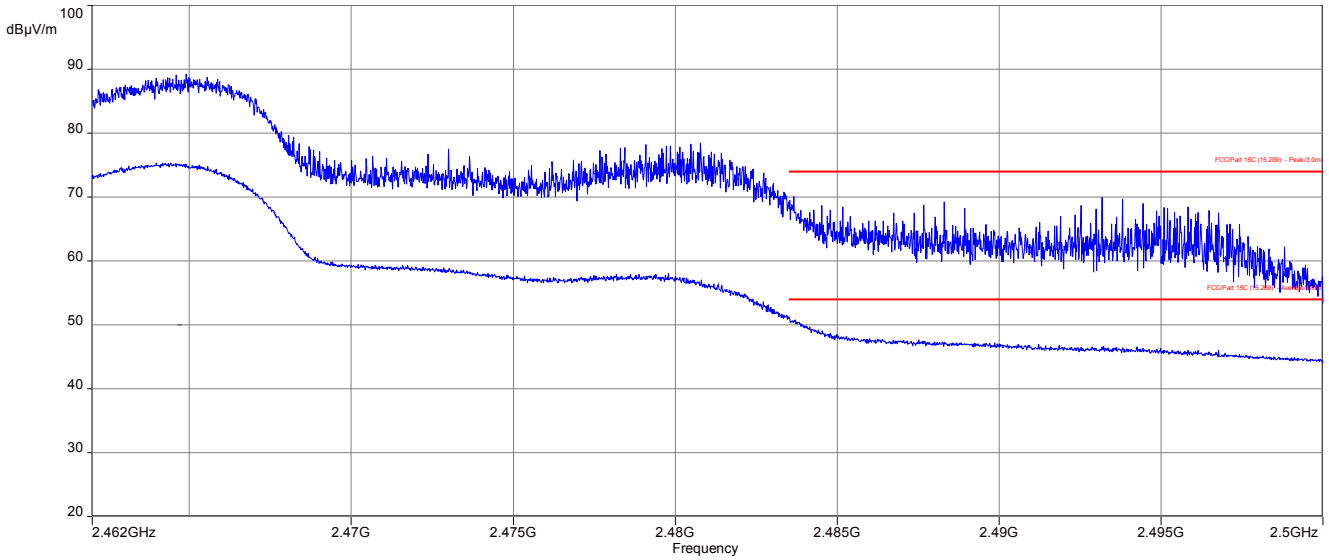
Plot 1: lower band edge, vertical & horizontal polarization, 2417 MHz, power setting 6 dBm



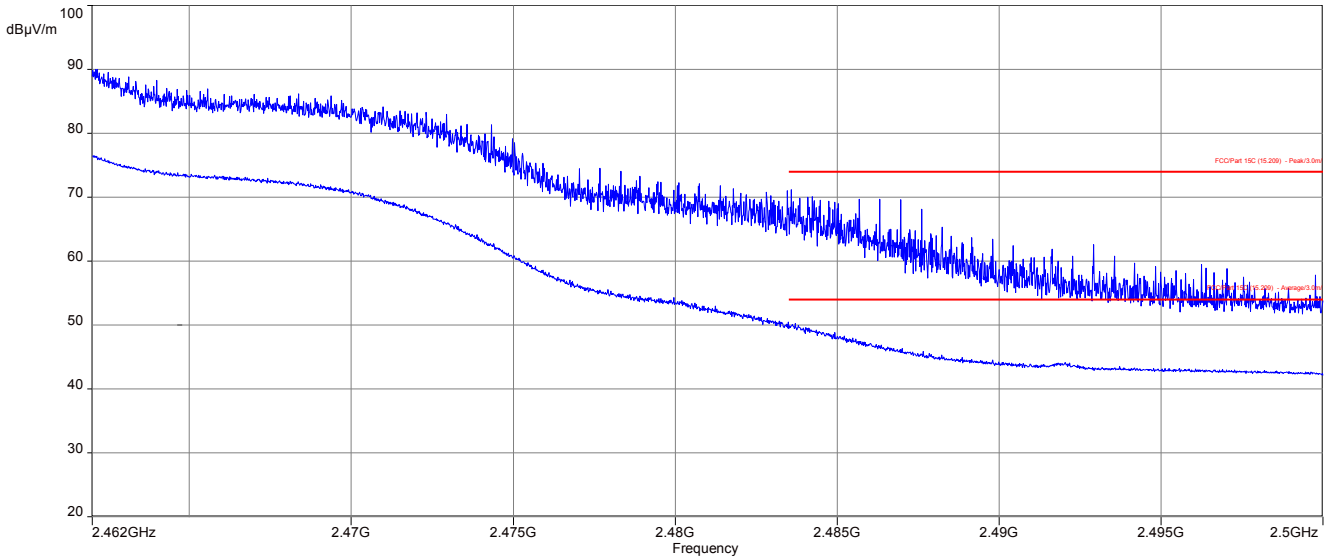
Plot 2: lower band edge, vertical & horizontal polarization, 2417 MHz, power setting 6 dBm



Plot 3: upper band edge, vertical & horizontal polarization, 2442 MHz, power setting 9 dBm



Plot 4: upper band edge, vertical & horizontal polarization, 2452 MHz, power setting 6 dBm



12.8 Band edge compliance conducted

Description:

Measurement of the radiated band edge compliance with a conducted test setup.

Measurement:

Measurement parameter for measurements	
According to DTS clause: 13.3.2 and clause 12.2.2	
Detector:	RMS
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	Lower band edge: 2388 MHz to 2390 MHz (2 MHz) Upper band edge: 2483.5 MHz to 2485.5 MHz (2 MHz)
Trace mode:	Trace average with 200 counts
Test setup:	See sub clause 7.4 – B
Measurement uncertainty	See sub clause 9

Limits:

FCC	IC
-41.26 dBm	

Results: antenna port 1

Scenario	Band edge compliance [dBm] (included antenna gain of 7.5 dBi)	
	DSSS / b – mode	OFDM / g – mode
Max. lower band edge power – 2412 MHz	-51.8	-51.8
Max. lower band edge power – 2422 MHz	-51.9	-52.5
Max. upper band edge power – 2452 MHz	-51.5	-51.3
Max. upper band edge power – 2462 MHz	-51.3	-51.1
	OFDM / n HT20 – mode	-/-
Max. lower band edge power – 2417 MHz	-52.4	-/-
Max. lower band edge power – 2422 MHz	-52.7	
Max. upper band edge power – 2447 MHz	-52.1	-/-
Max. upper band edge power – 2457 MHz	-52.1	

Results: antenna port 2

Scenario	Band edge compliance [dBm] (included antenna gain of 7.5 dBi)	
	DSSS / b – mode	OFDM / g – mode
Max. lower band edge power – 2412 MHz	-51.7	-51.7
Max. lower band edge power – 2422 MHz	-51.9	-52.1
Max. upper band edge power – 2452 MHz	-50.5	-50.7
Max. upper band edge power – 2462 MHz	-52.5	-50.2
	OFDM / n HT20 – mode	-/-
Max. lower band edge power – 2417 MHz	-52.2	-/-
Max. lower band edge power – 2422 MHz	-52.2	
Max. upper band edge power – 2447 MHz	-50.8	-/-
Max. upper band edge power – 2457 MHz	-50.8	

Results: antenna port 3

Scenario	Band edge compliance [dBm] (included antenna gain of 7.5 dBi)	
	DSSS / b – mode	OFDM / g – mode
Max. lower band edge power – 2412 MHz	-54.1	-52.2
Max. lower band edge power – 2422 MHz	-52.2	-52.3
Max. upper band edge power – 2452 MHz	-51.1	-51.3
Max. upper band edge power – 2462 MHz	-53.2	-50.7
	OFDM / n HT20 – mode	-/-
Max. lower band edge power – 2417 MHz	-52.5	-/-
Max. lower band edge power – 2422 MHz	-52.4	
Max. upper band edge power – 2447 MHz	-51.5	-/-
Max. upper band edge power – 2457 MHz	-51.5	

Results: antenna port 1 + antenna port 2 (calculated)

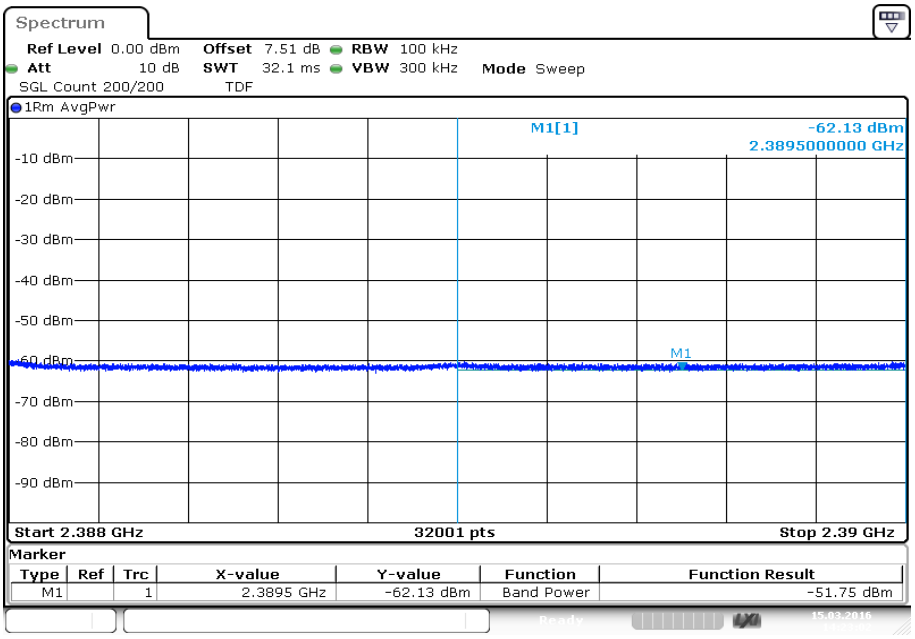
Scenario	Band edge compliance [dBm] (included antenna gain of 7.5 dBi)	
	DSSS / b – mode	OFDM / g – mode
Max. lower band edge power – 2412 MHz	-48.7	-48.7
Max. lower band edge power – 2422 MHz	-48.9	-49.3
Max. upper band edge power – 2452 MHz	-48.0	-48.0
Max. upper band edge power – 2462 MHz	-48.8	-47.6
	OFDM / n HT20 – mode	-/-
Max. lower band edge power – 2417 MHz	-49.3	-/-
Max. lower band edge power – 2422 MHz	-49.4	
Max. upper band edge power – 2447 MHz	-48.4	-/-
Max. upper band edge power – 2457 MHz	-48.4	

Results: antenna port 1 + antenna port 2 + antenna port 3 (calculated)

Scenario	Band edge compliance [dBm] (included antenna gain of 7.5 dBi)	
	DSSS / b – mode	OFDM / g – mode
Max. lower band edge power – 2412 MHz	-47.6	-47.1
Max. lower band edge power – 2422 MHz	-47.2	-47.5
Max. upper band edge power – 2452 MHz	-46.2	-46.3
Max. upper band edge power – 2462 MHz	-47.5	-45.9
	OFDM / n HT20 – mode	-/-
Max. lower band edge power – 2417 MHz	-47.6	-/-
Max. lower band edge power – 2422 MHz	-47.7	
Max. upper band edge power – 2447 MHz	-46.7	-/-
Max. upper band edge power – 2457 MHz	-46.7	

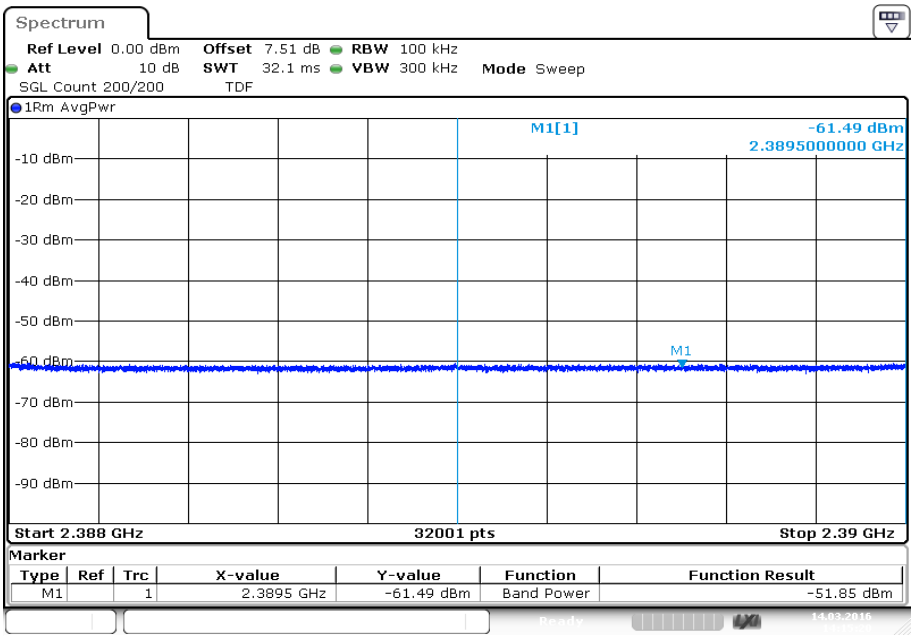
Plots: DSSS / b – mode, antenna port 1

Plot 1: Lower band edge, 2412 MHz



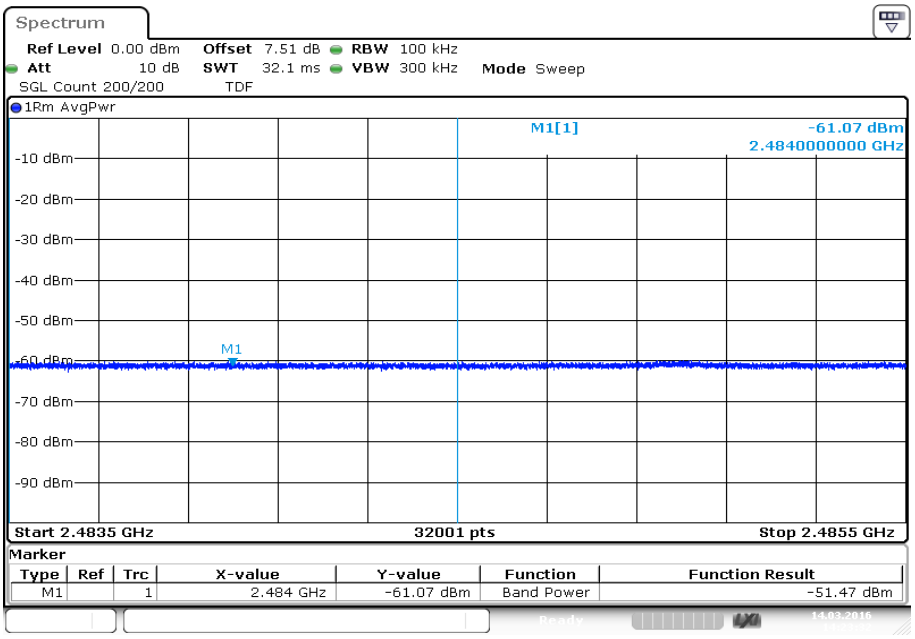
Date: 15.MAR.2016 14:23:03

Plot 2: Lower band edge, 2422 MHz



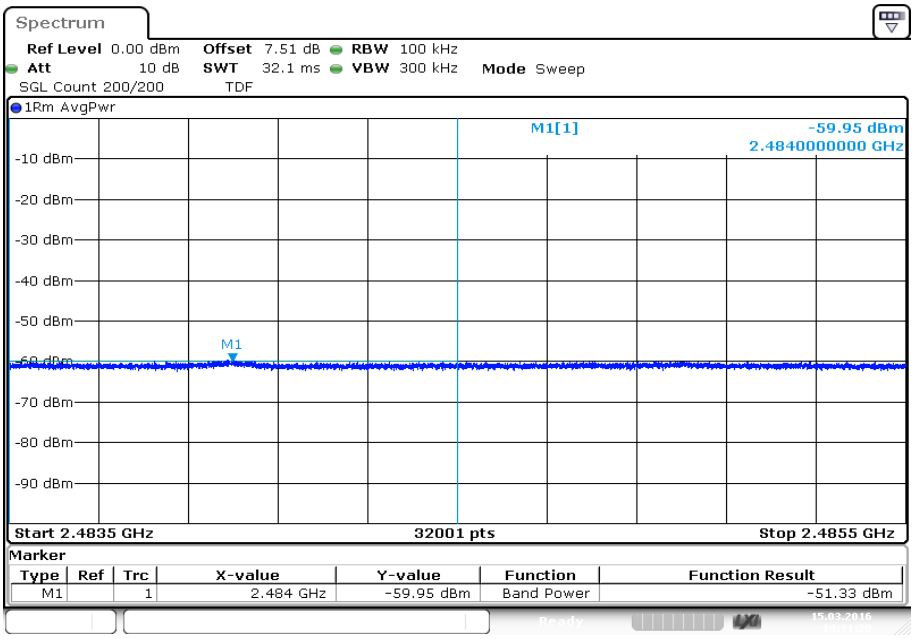
Date: 14.MAR.2016 14:15:21

Plot 3: Upper band edge, 2452 MHz



Date: 14.MAR.2016 14:23:33

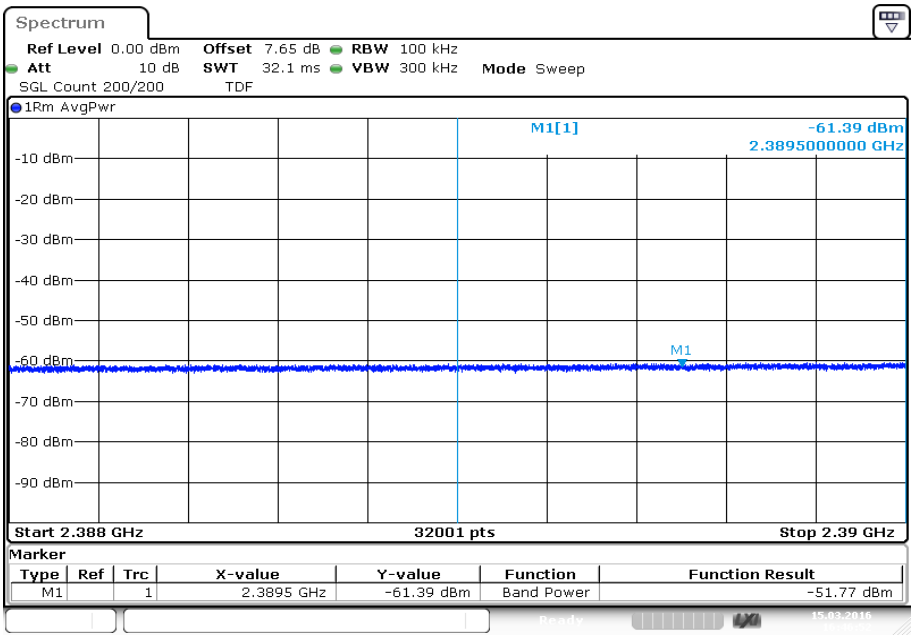
Plot 4: Upper band edge, 2462 MHz



Date: 15.MAR.2016 14:31:21

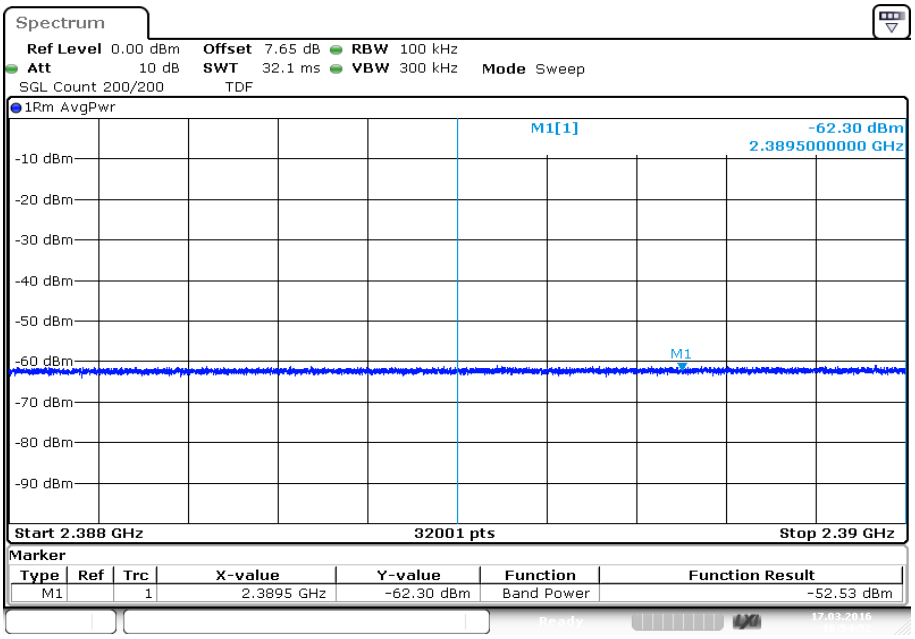
Plots: OFDM / g – mode, antenna port 1

Plot 1: Lower band edge, 2412 MHz



Date: 15.MAR.2016 16:46:53

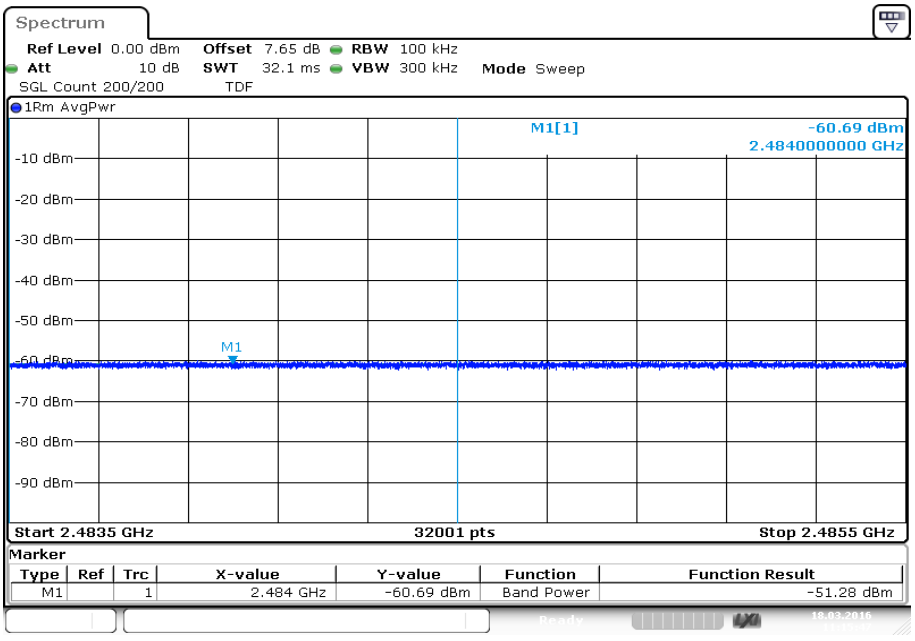
Plot 2: Lower band edge, 2422 MHz



Date: 17.MAR.2016 16:54:52

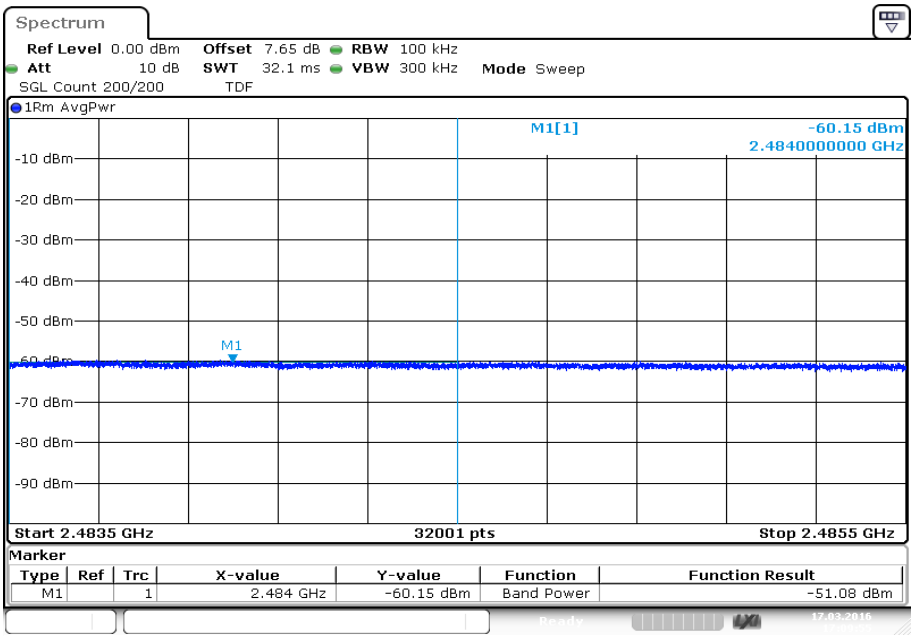
Plots: OFDM / g – mode, antenna port 1

Plot 3: Upper band edge, 2452 MHz



Date: 18.MAR.2016 11:15:47

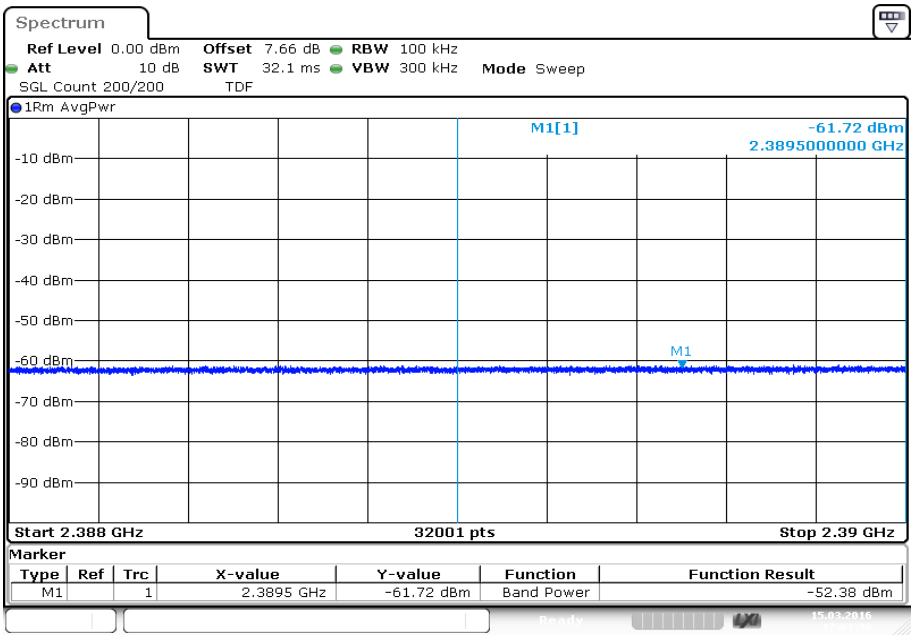
Plot 4: Upper band edge, 2462 MHz



Date: 17.MAR.2016 17:09:55

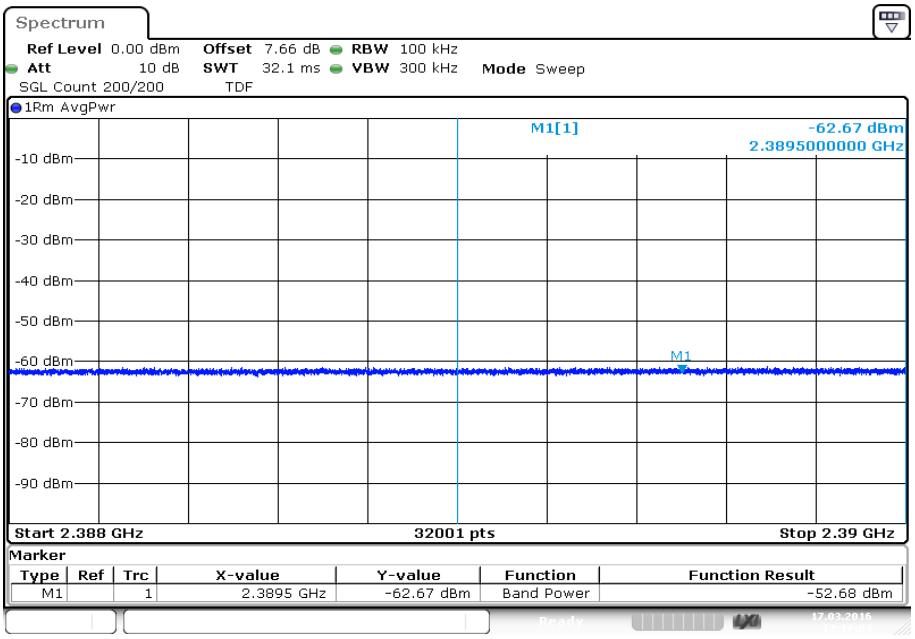
Plots: OFDM / n HT20 – mode, antenna port 1

Plot 1: Lower band edge, 2417 MHz



Date: 15.MAR.2016 17:01:37

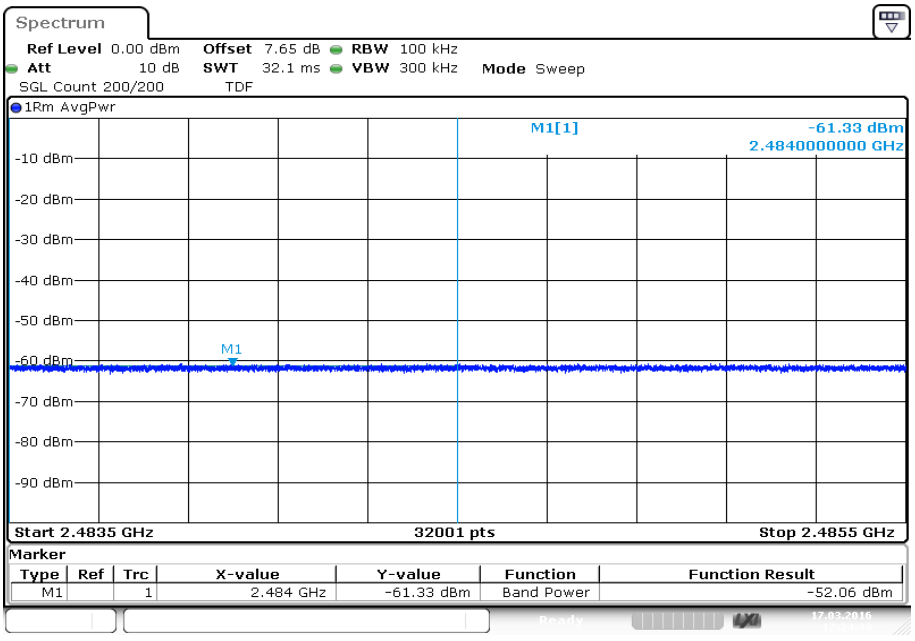
Plot 2: Lower band edge, 2422 MHz



Date: 17.MAR.2016 17:17:04

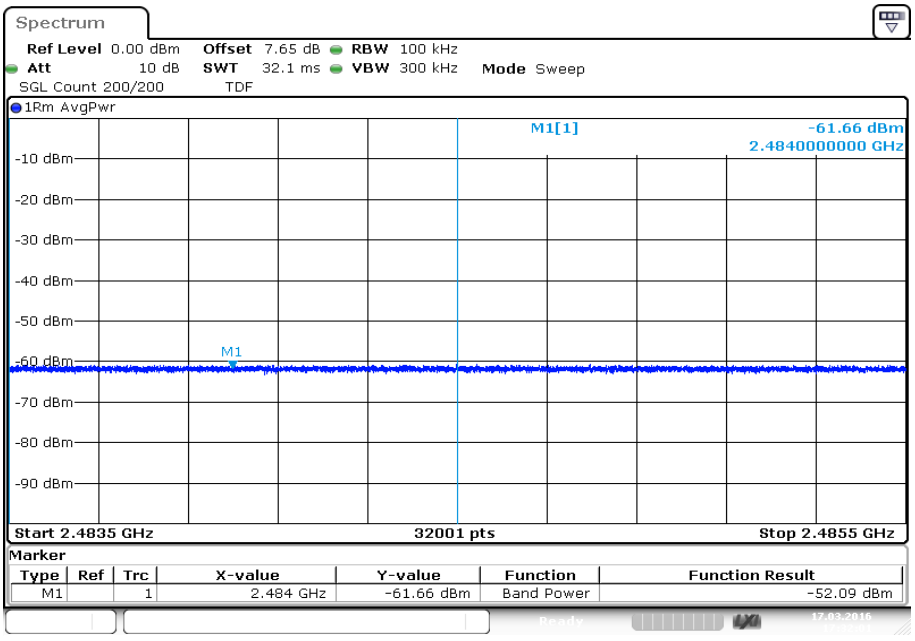
Plots: OFDM / n HT20 – mode, antenna port 1

Plot 3: Upper band edge, 2447 MHz



Date: 17.MAR.2016 17:24:39

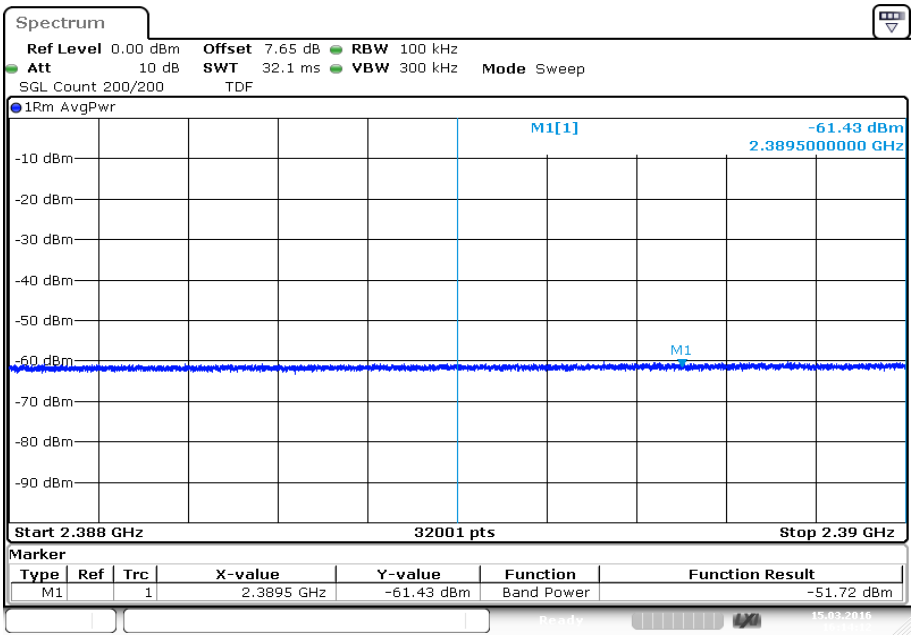
Plot 4: Upper band edge, 2457 MHz



Date: 17.MAR.2016 17:32:01

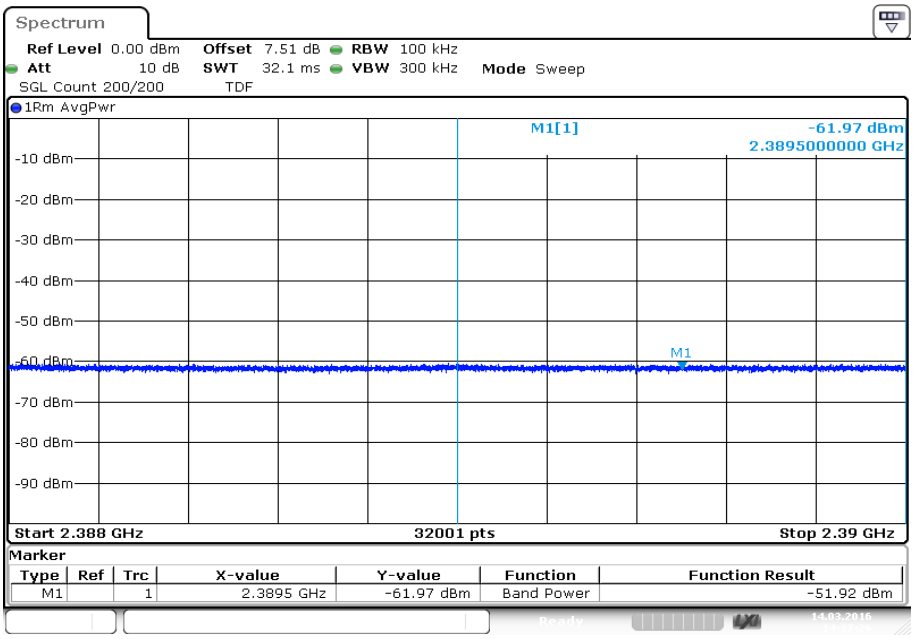
Plots: DSSS / b – mode, antenna port 2

Plot 1: Lower band edge, 2412 MHz



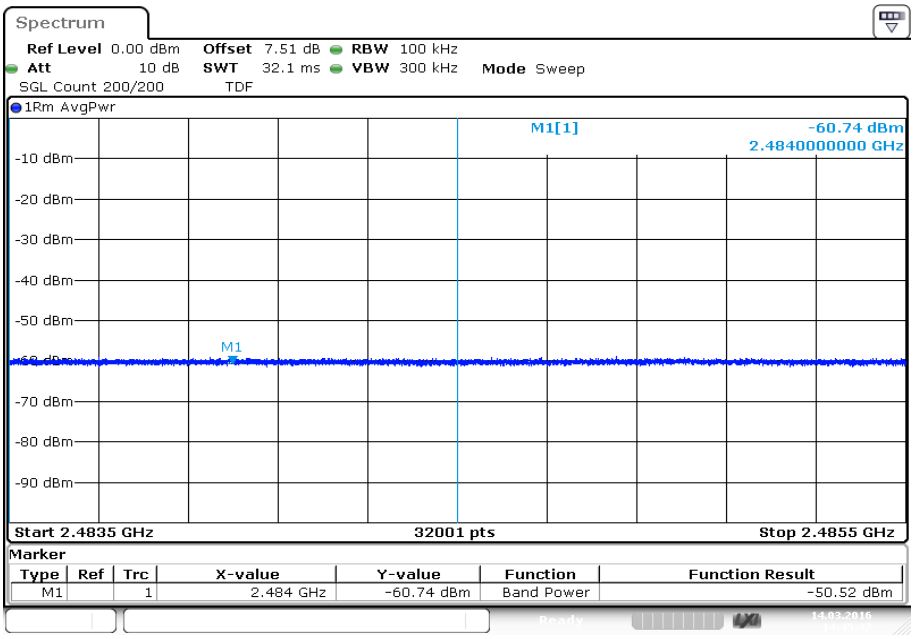
Date: 15.MAR.2016 16:14:12

Plot 2: Lower band edge, 2422 MHz



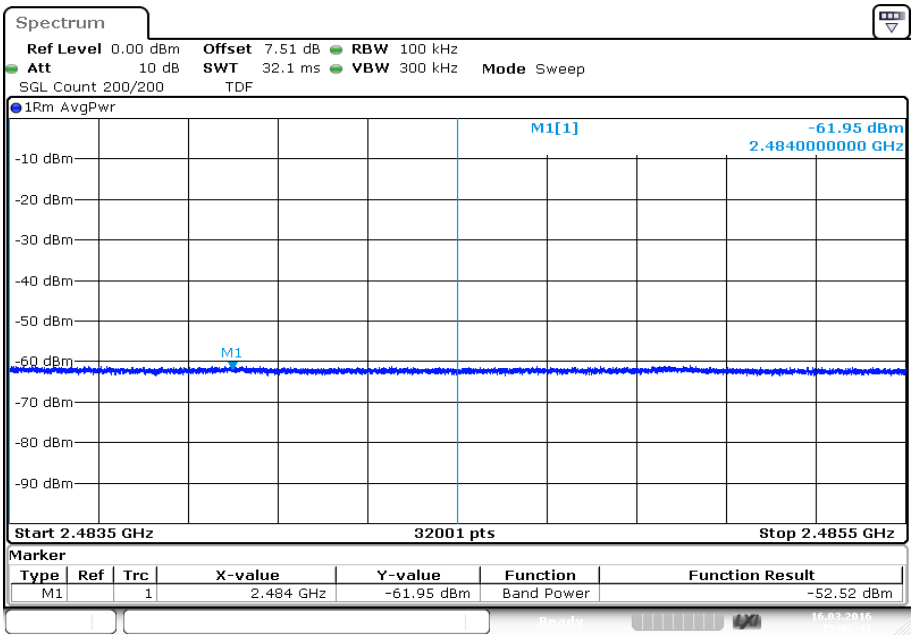
Date: 14.MAR.2016 14:37:26

Plot 3: Upper band edge, 2452 MHz



Date: 14.MAR.2016 14:45:38

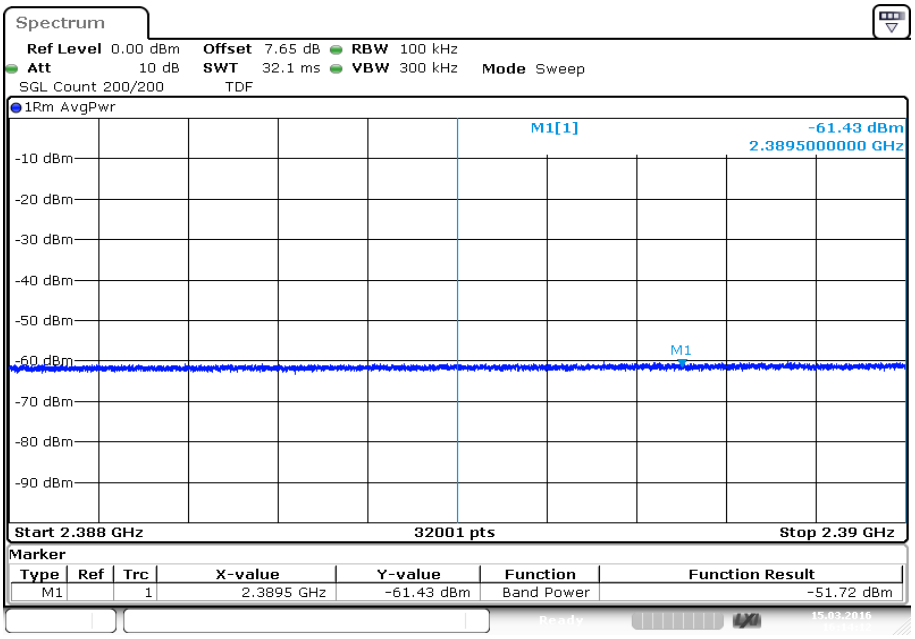
Plot 4: Upper band edge, 2462 MHz



Date: 16.MAR.2016 15:02:42

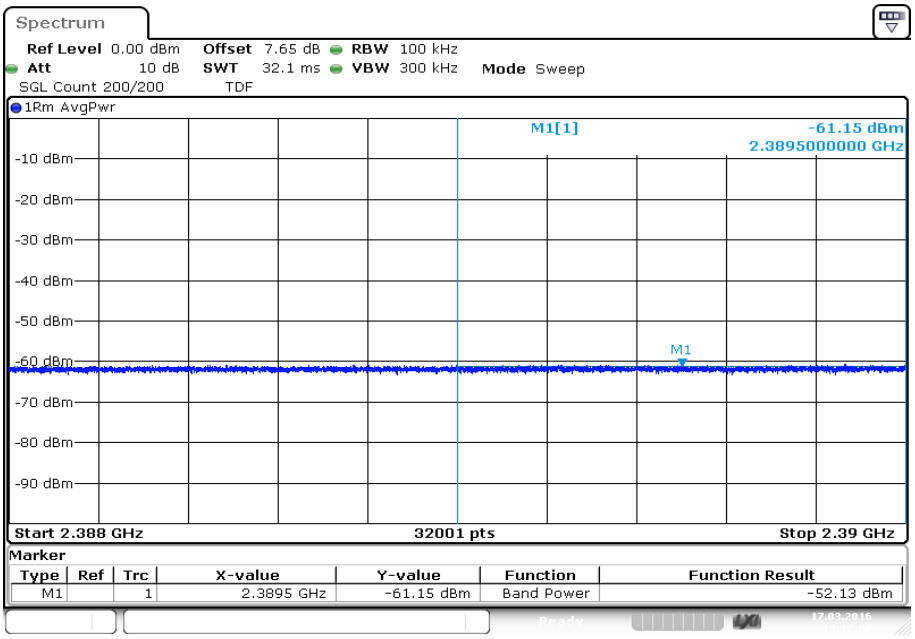
Plots: OFDM / g – mode, antenna port 2

Plot 1: Lower band edge, 2412 MHz



Date: 15.MAR.2016 16:14:12

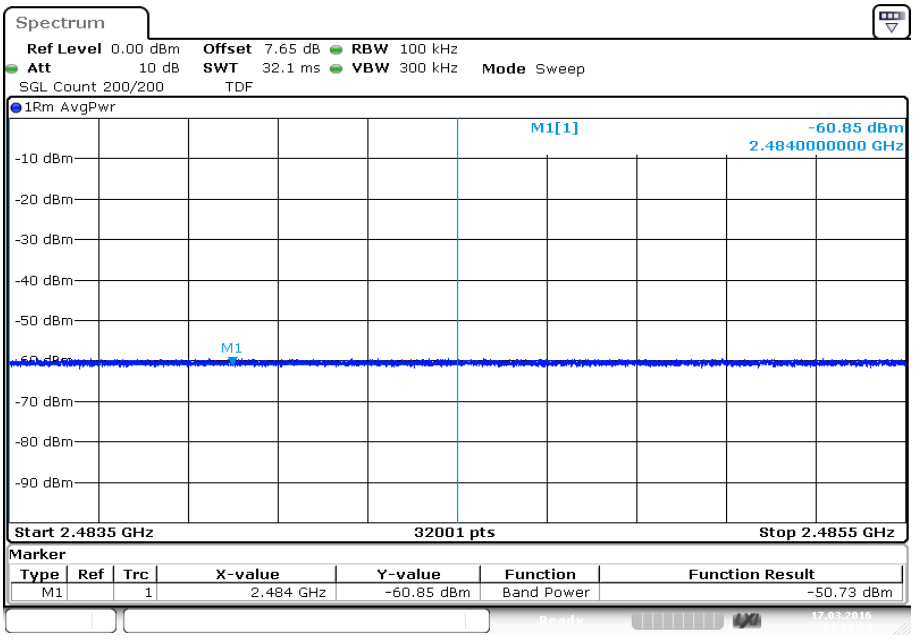
Plot 2: Lower band edge, 2422 MHz



Date: 17.MAR.2016 14:12:07

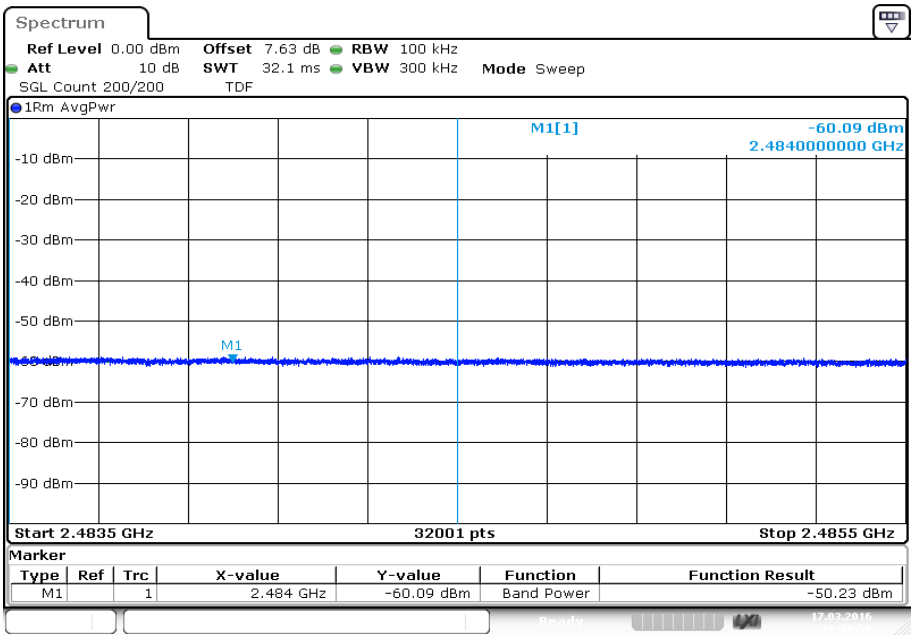
Plots: OFDM / g – mode, antenna port 2

Plot 3: Upper band edge, 2452 MHz



Date: 17.MAR.2016 14:19:54

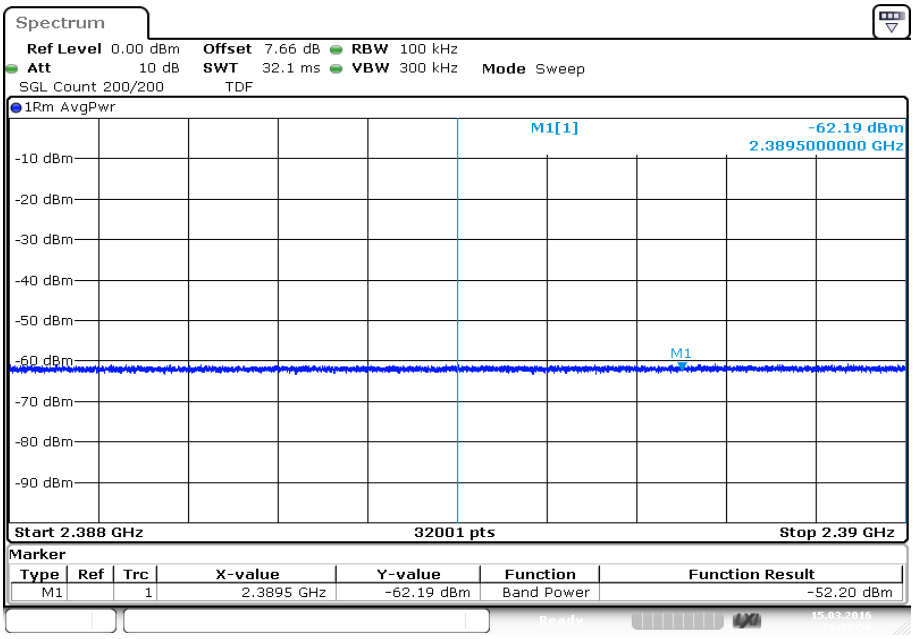
Plot 4: Upper band edge, 2462 MHz



Date: 17.MAR.2016 16:18:49

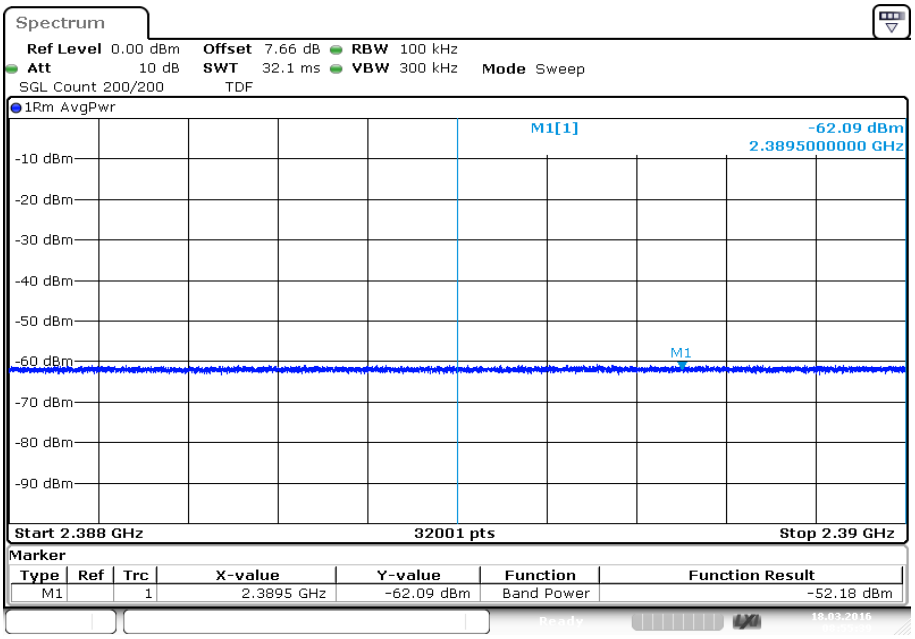
Plots: OFDM / n HT20 – mode, antenna port 2

Plot 1: Lower band edge, 2417 MHz



Date: 15.MAR.2016 16:28:57

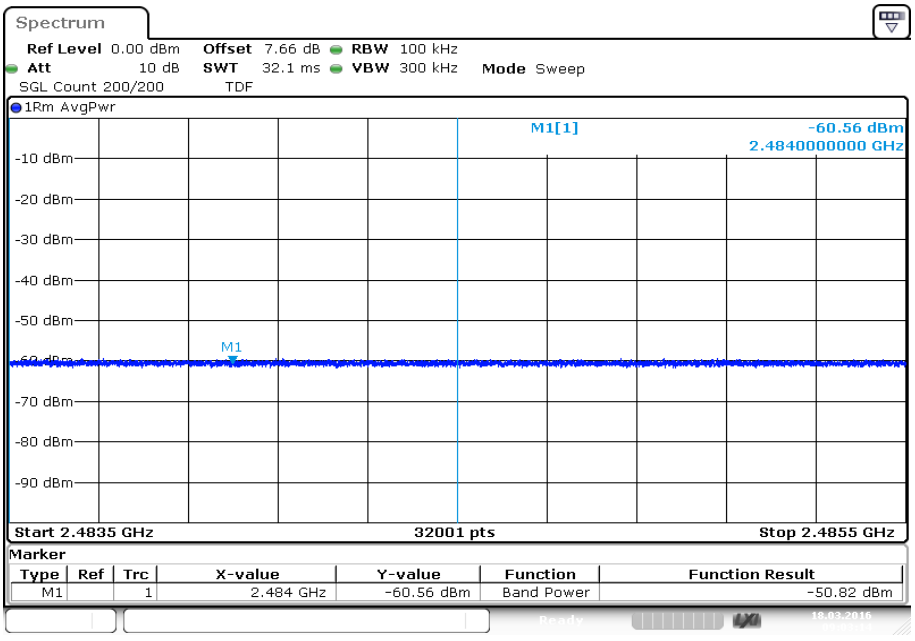
Plot 2: Lower band edge, 2422 MHz



Date: 18.MAR.2016 08:55:39

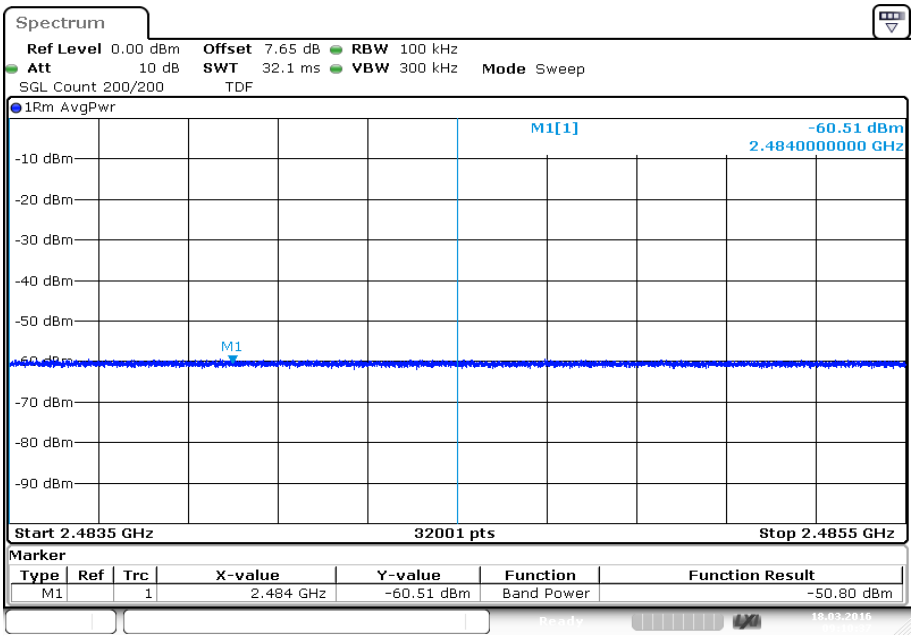
Plots: OFDM / n HT20 – mode, antenna port 2

Plot 3: Upper band edge, 2447 MHz



Date: 18.MAR.2016 09:03:14

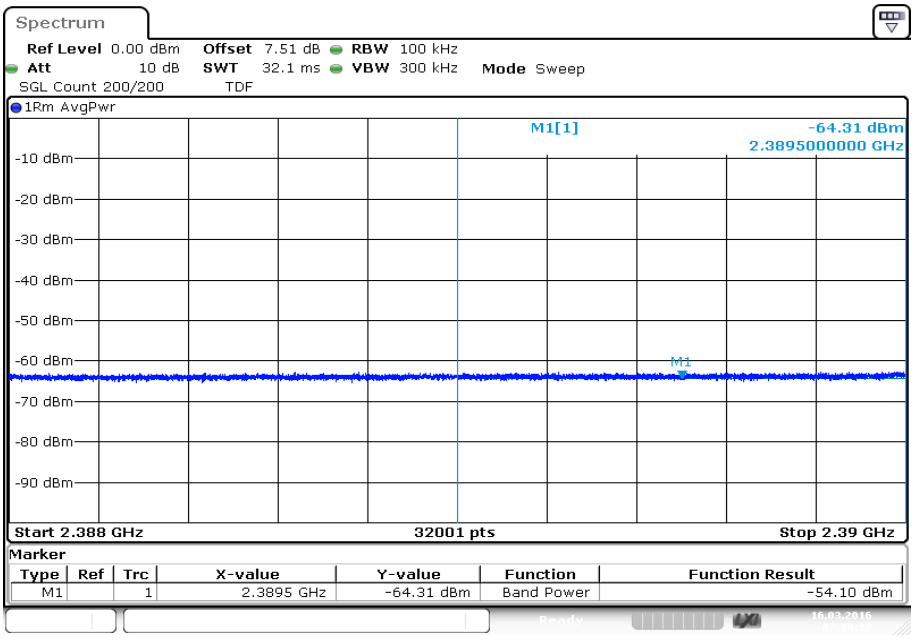
Plot 4: Upper band edge, 2457 MHz



Date: 18.MAR.2016 09:10:37

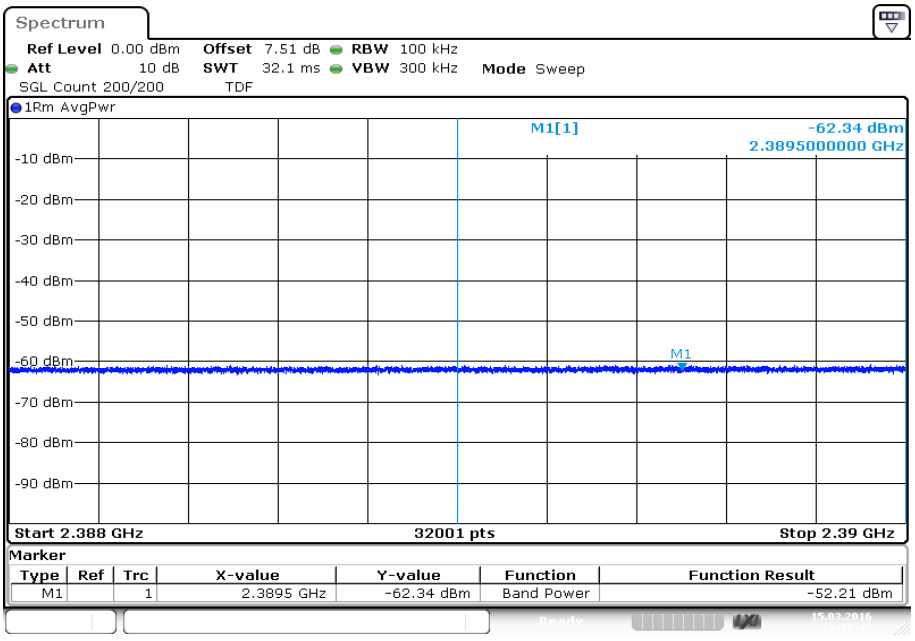
Plots: DSSS / b – mode, antenna port 3

Plot 1: Lower band edge, 2412 MHz



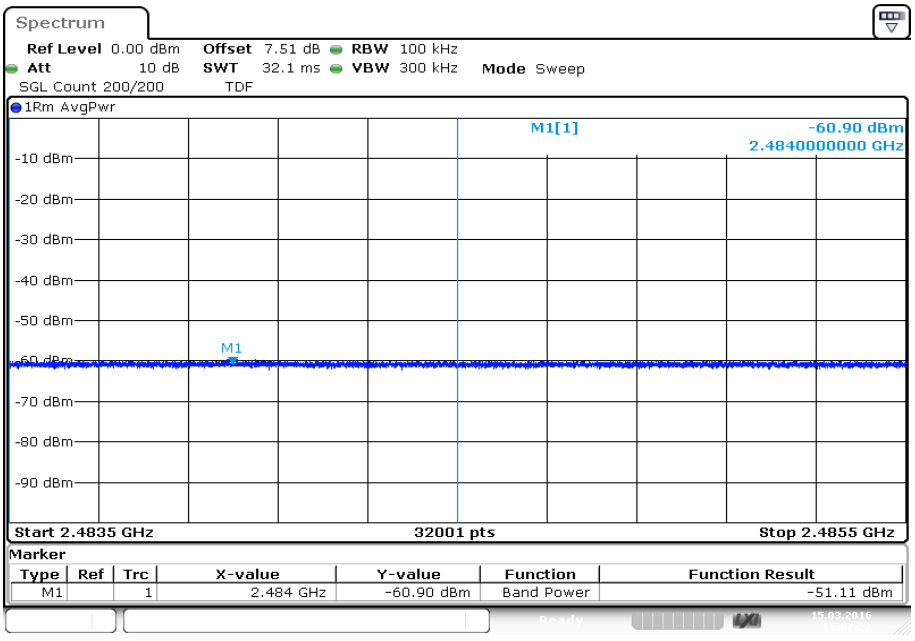
Date: 16.MAR.2016 07:39:18

Plot 2: Lower band edge, 2422 MHz



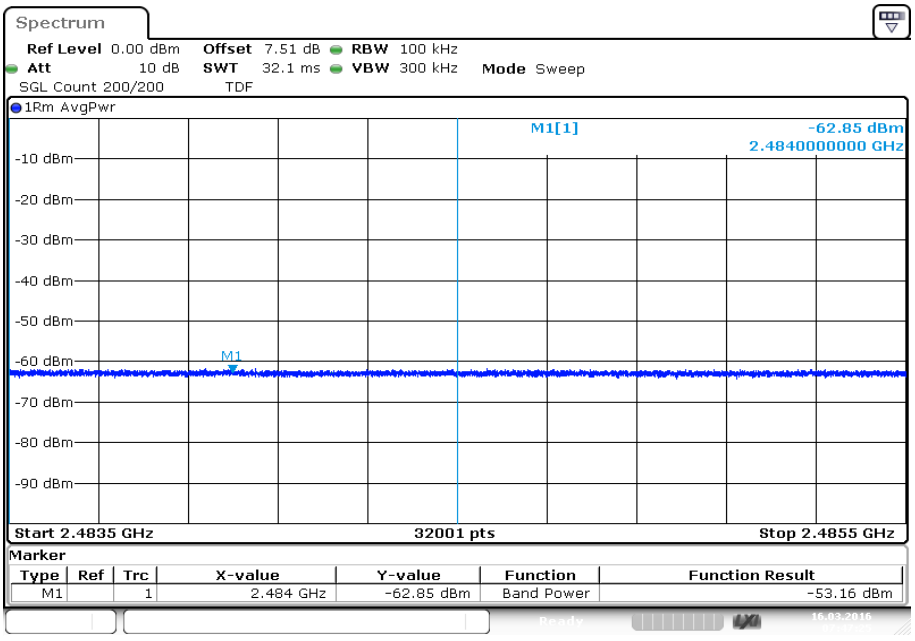
Date: 15.MAR.2016 10:57:48

Plot 3: Upper band edge, 2452 MHz



Date: 15.MAR.2016 11:07:23

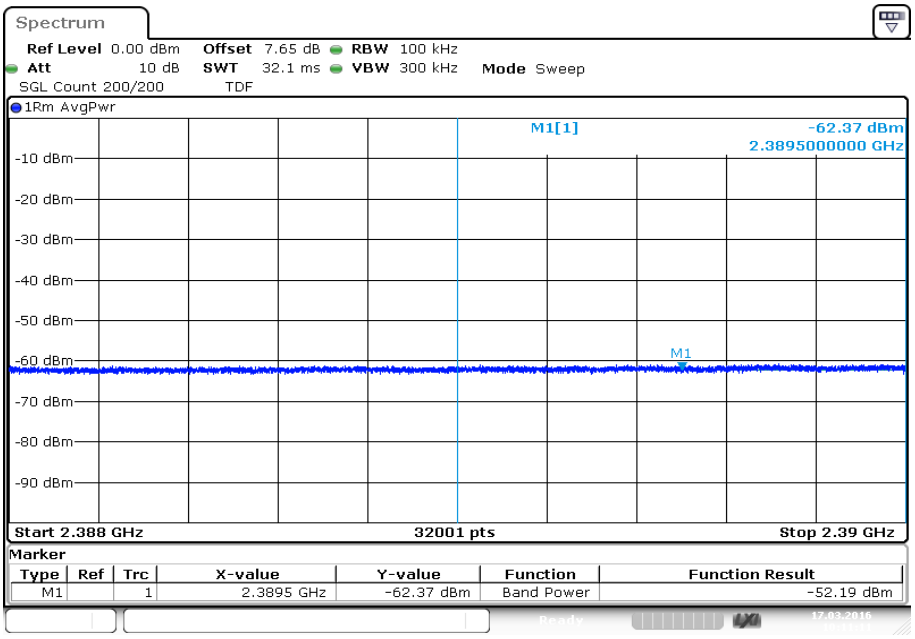
Plot 4: Upper band edge, 2462 MHz



Date: 16.MAR.2016 07:47:26

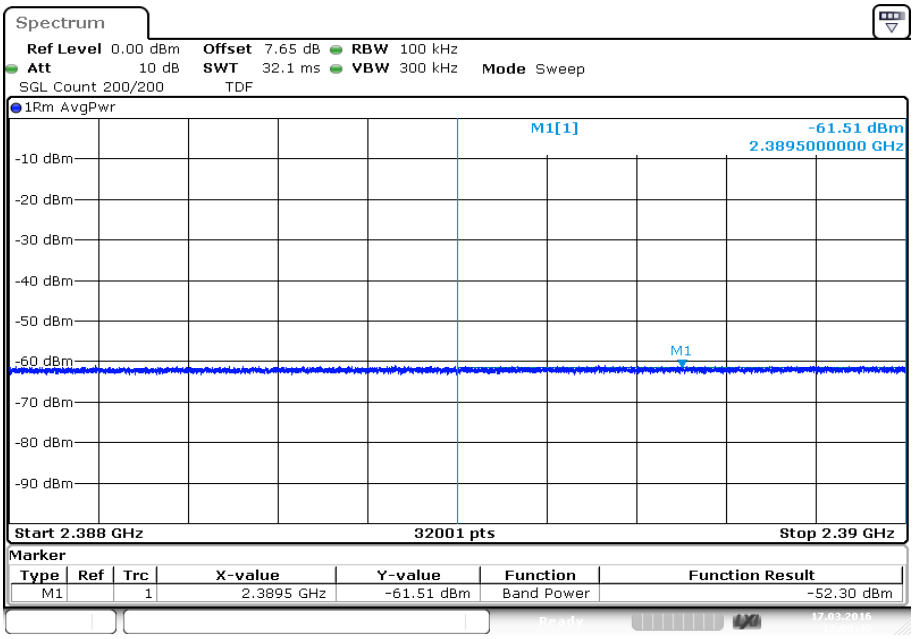
Plots: OFDM / g – mode, antenna port 3

Plot 1: Lower band edge, 2412 MHz



Date: 17.MAR.2016 10:11:12

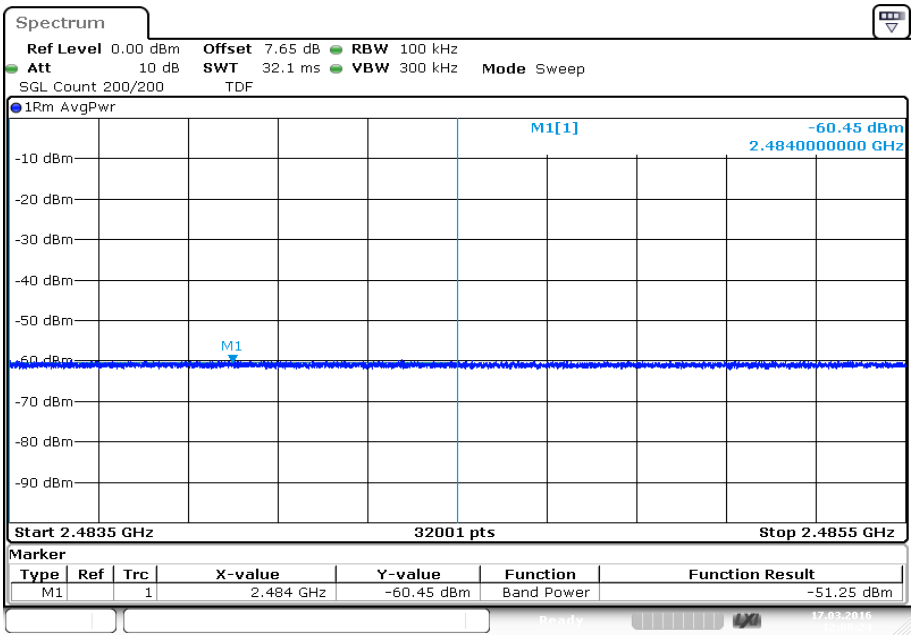
Plot 2: Lower band edge, 2422 MHz



Date: 17.MAR.2016 12:00:45

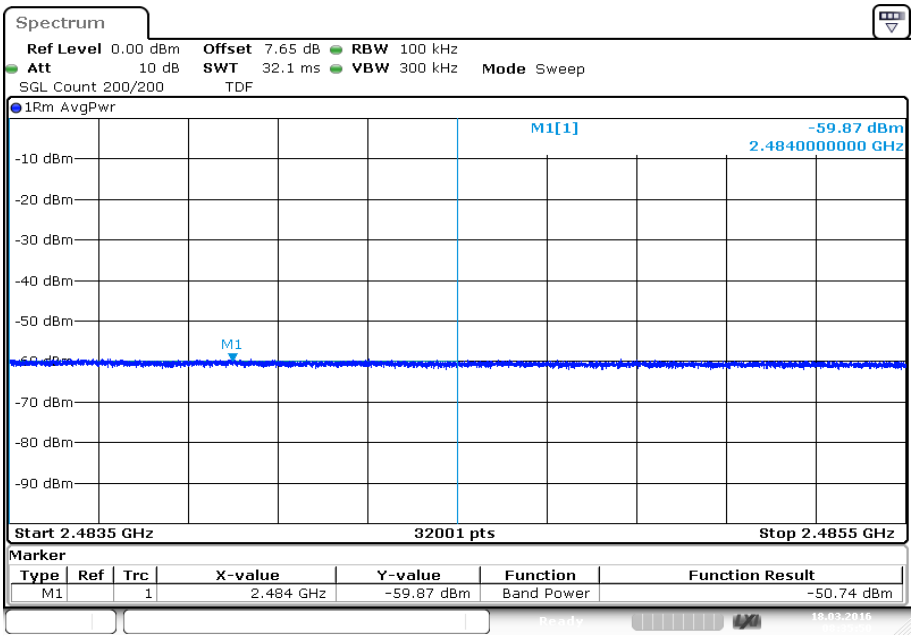
Plots: OFDM / g – mode, antenna port 3

Plot 3: Upper band edge, 2452 MHz



Date: 17.MAR.2016 12:08:24

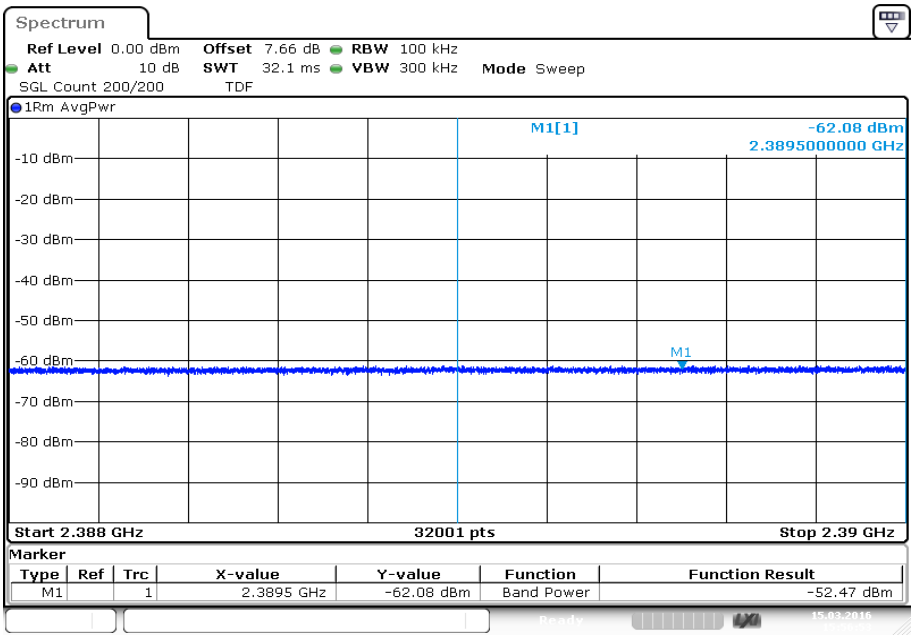
Plot 4: Upper band edge, 2462 MHz



Date: 18.MAR.2016 08:35:50

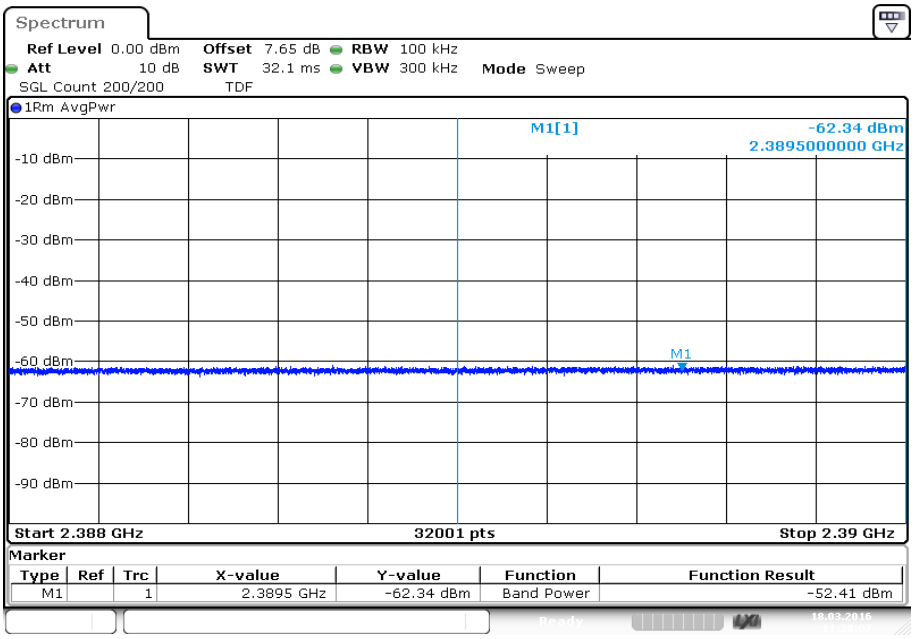
Plots: OFDM / n HT20 – mode, antenna port 3

Plot 1: Lower band edge, 2417 MHz



Date: 15.MAR.2016 15:56:53

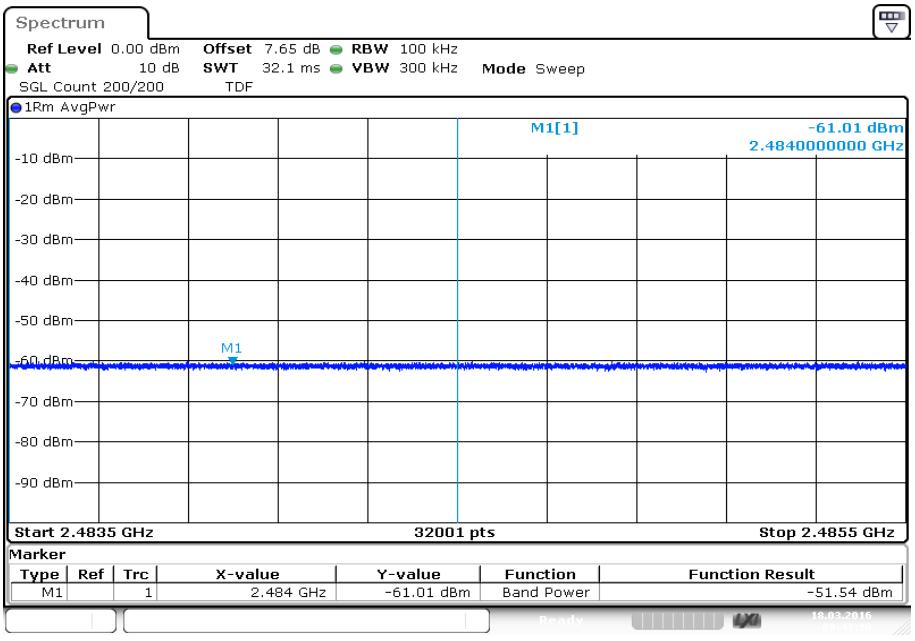
Plot 2: Lower band edge, 2422 MHz



Date: 18.MAR.2016 11:28:07

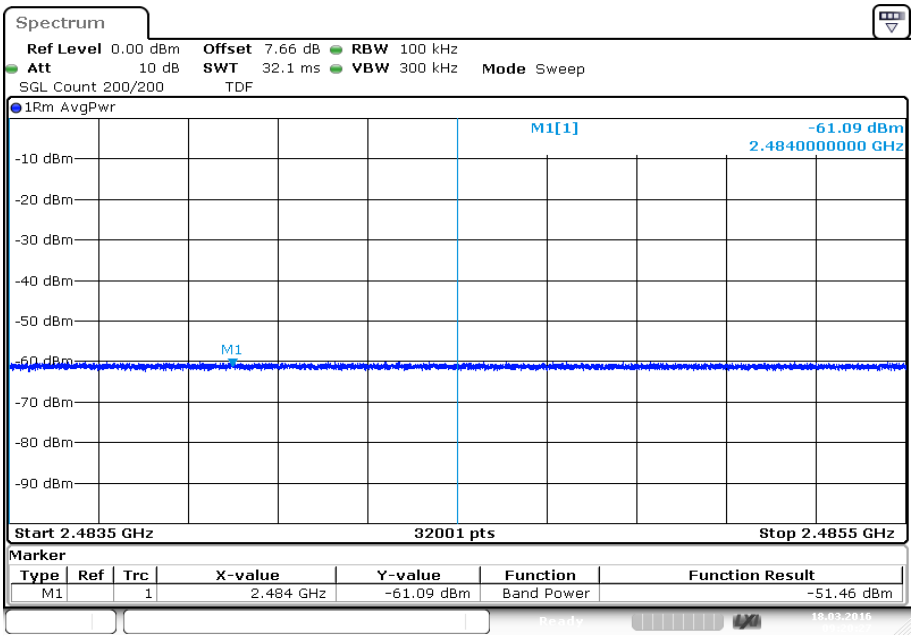
Plots: OFDM / n HT20 – mode, antenna port 3

Plot 3: Upper band edge, 2447 MHz



Date: 18.MAR.2016 08:43:10

Plot 4: Upper band edge, 2457 MHz



Date: 18.MAR.2016 09:20:27

12.9 Spurious emissions conducted

Description:

Measurement of the conducted spurious emissions in transmit mode. The measurement is performed at channel 1, 6 and 11. The measurement is repeated for all modulations.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	500 kHz
Span:	9 kHz to 25 GHz
Trace mode:	Max Hold
Test setup:	See sub clause 7.4 – B
Measurement uncertainty	See sub clause 9

Limits:

FCC	IC
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 30 dB (AVG) or 20 dB (peak) 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	

Note: The included spurious emission plots with -30 dBc limit show the compliant for both limits the -20 dBc and the -30 dBc limits.

Results: DSSS / b – mode, antenna port 1

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-5.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2422	-2.1	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	2.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-1.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2462	-4.3	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / g – mode, antenna port 1

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-8.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-3.5	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2457	-6.1	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / n HT20 – mode, antenna port 1

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2417	-7.5	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-4.0	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-6.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: DSSS / b – mode, antenna port 2

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-4.7	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2422	-1.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	2.1	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-1.7	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2462	-5.2	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / g – mode, antenna port 2

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-7.1	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-3.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2457	-6.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / n HT20 – mode, antenna port 2

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2417	-7.0	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-3.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-6.9	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: DSSS / b – mode, antenna port 3

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-4.9	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2422	-2.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	2.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-2.4	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2462	-5.8	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / g – mode, antenna port 3

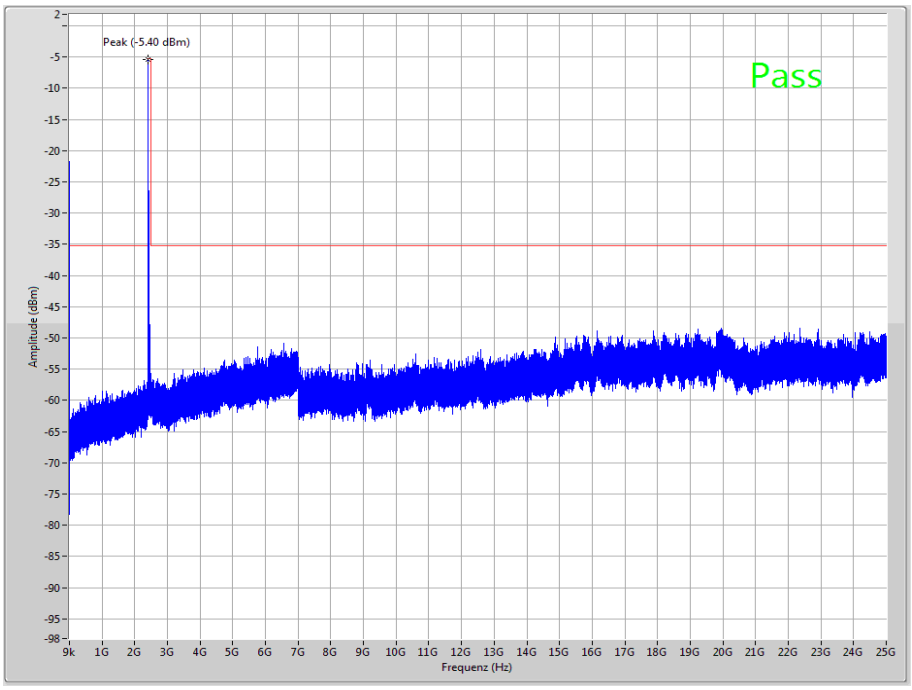
TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412	-7.0	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-4.0	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2457	-6.8	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

Results: OFDM / n HT20 – mode, antenna port 3

TX Spurious Emissions Conducted				
f [MHz]	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2417	-7.2	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2437	-3.6	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant
2452	-7.7	30 dBm	> 30	Operating frequency
No peaks detected. All detected emissions are below the -20 dBc & -30 dBc criteria.		-20 dBc (peak) -30 dBc (average)	-/-	compliant

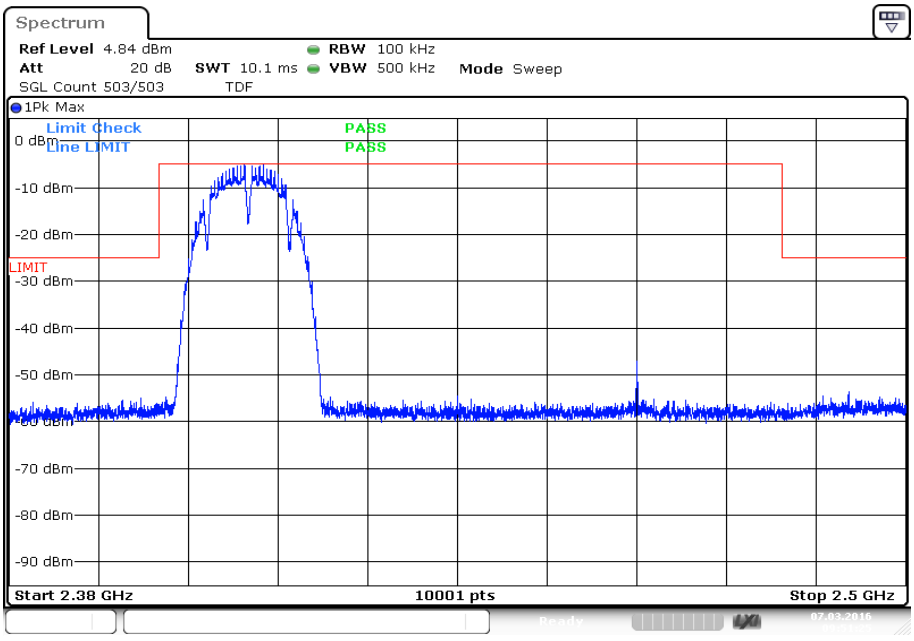
Plots: DSSS / b – mode, antenna port 1

Plot 1: 2412 MHz, up to 25 GHz



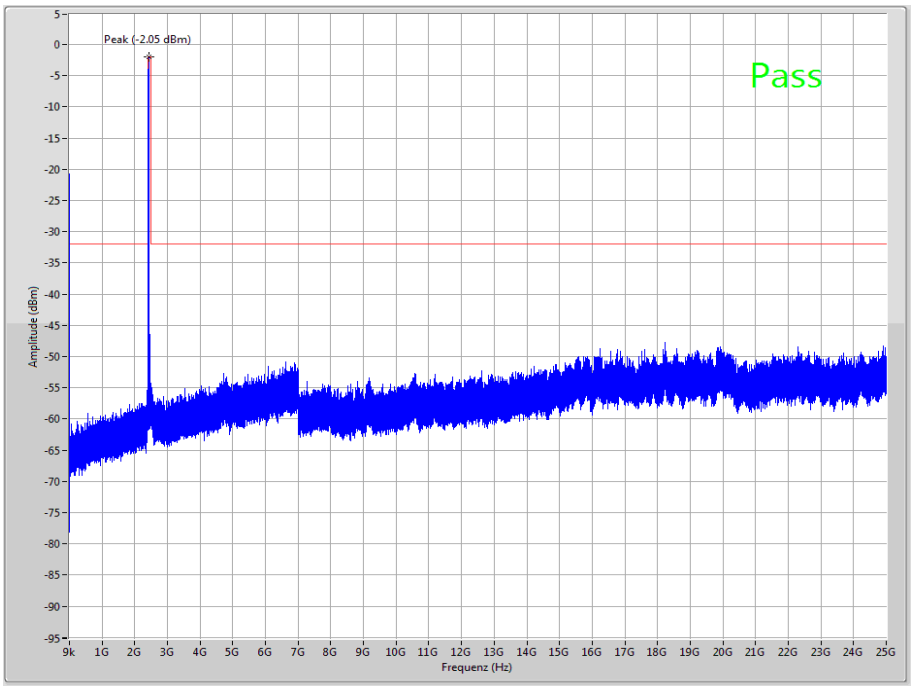
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



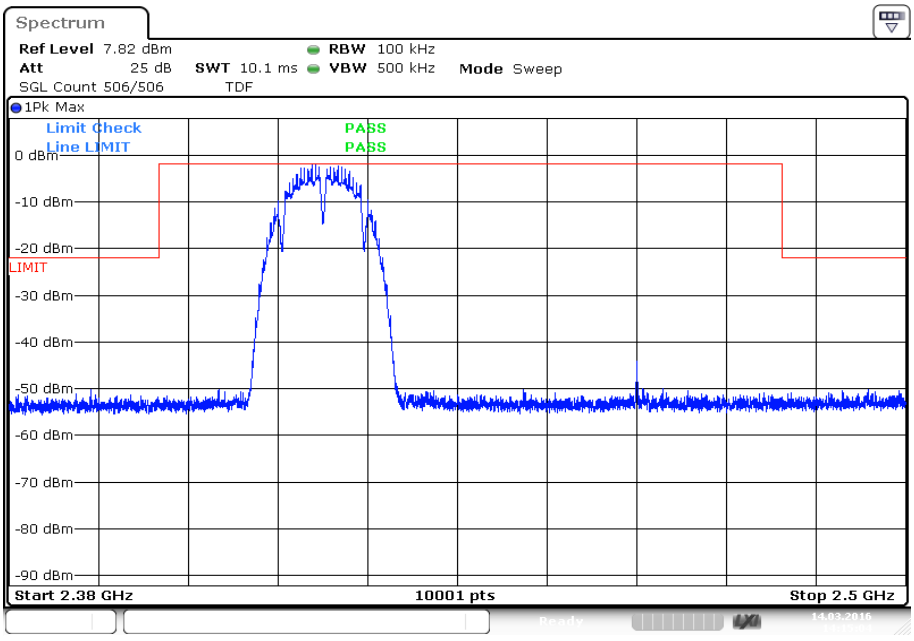
Date: 7.MAR.2016 09:51:26

Plot 3: 2422 MHz, up to 25 GHz



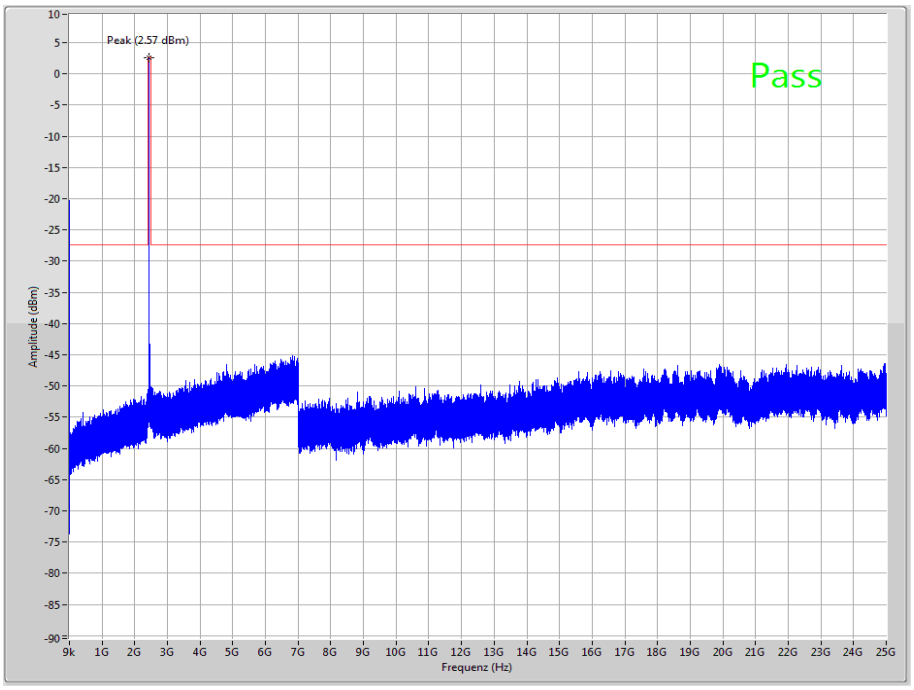
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2422 MHz, zoomed carrier



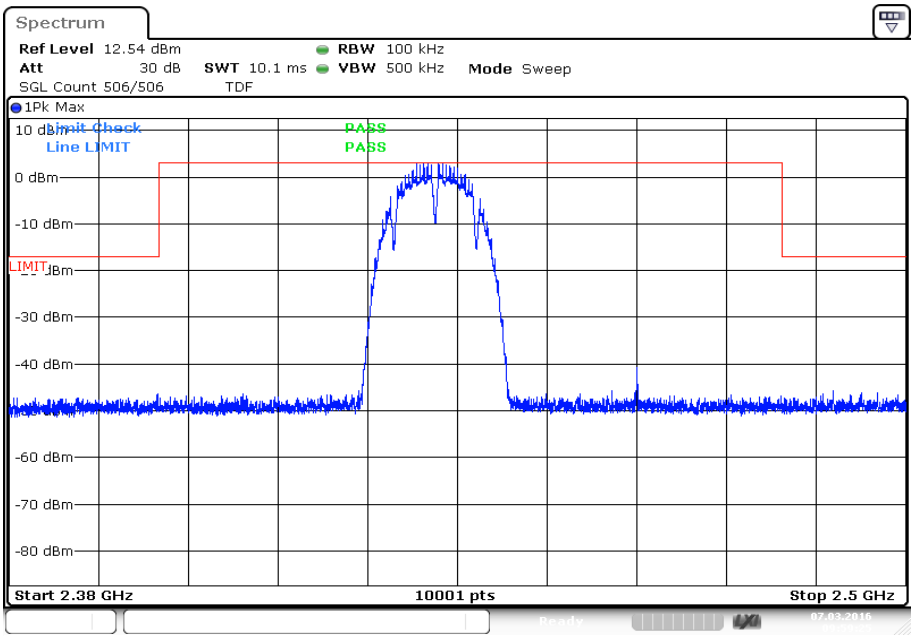
Date: 14.MAR.2016 14:15:05

Plot 5: 2437 MHz, up to 25 GHz



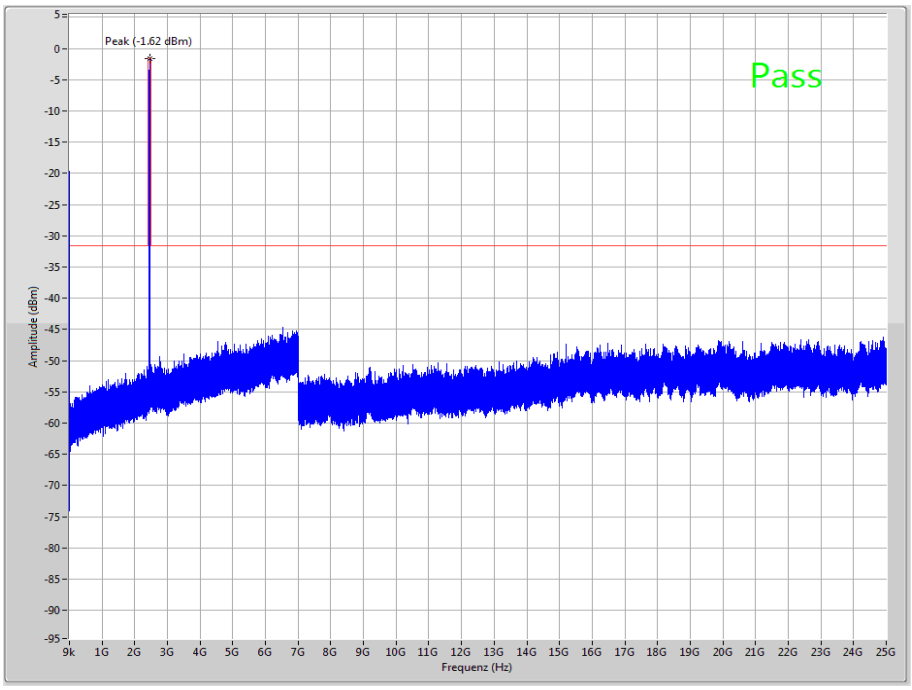
The peak at the beginning of the plot is the LO from the SA.

Plot 6: 2437 MHz, zoomed carrier



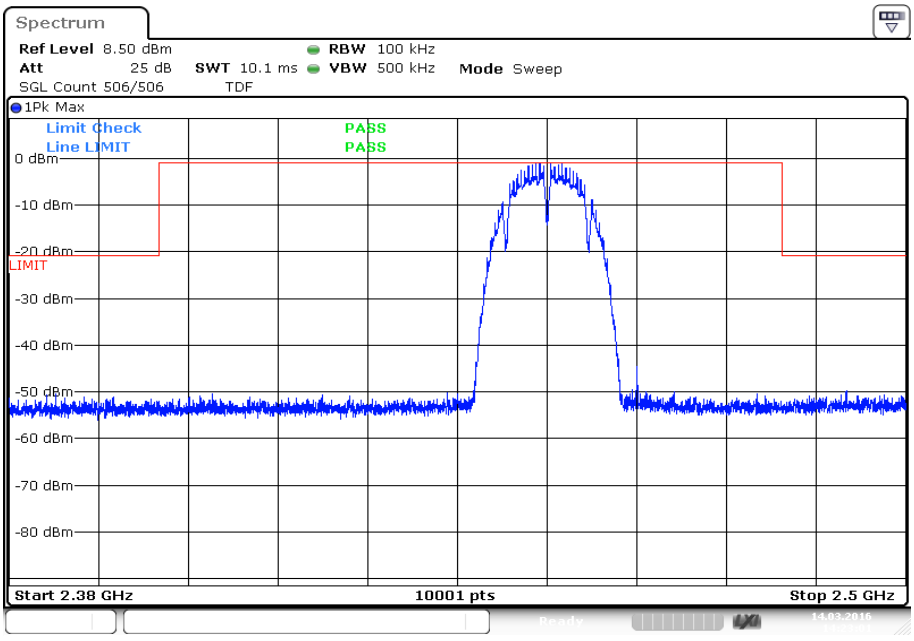
Date: 7.MAR.2016 09:59:25

Plot 7: 2452 MHz, up to 25 GHz



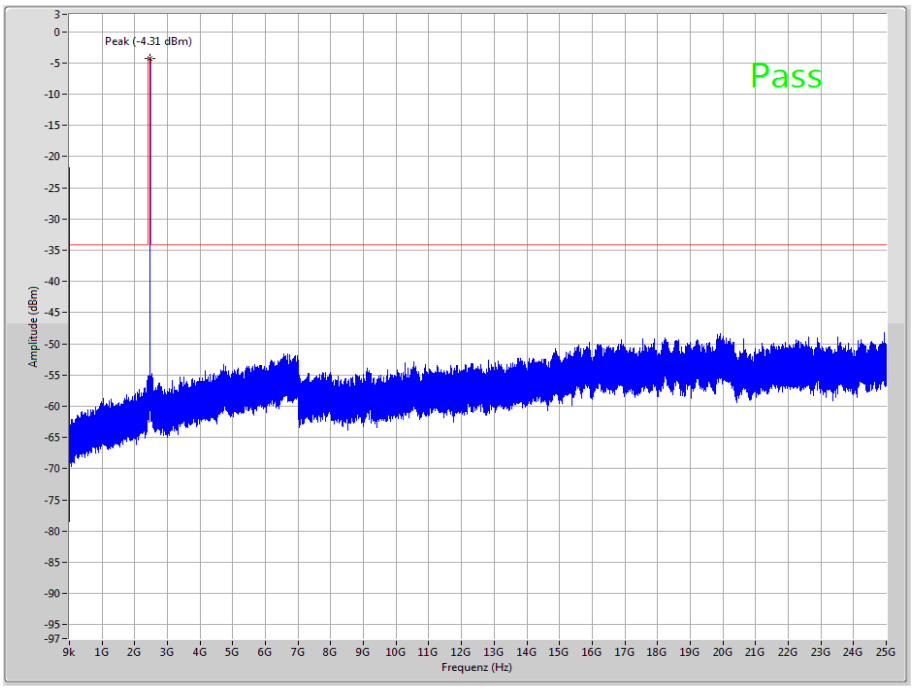
The peak at the beginning of the plot is the LO from the SA.

Plot 8: 2452 MHz, zoomed carrier



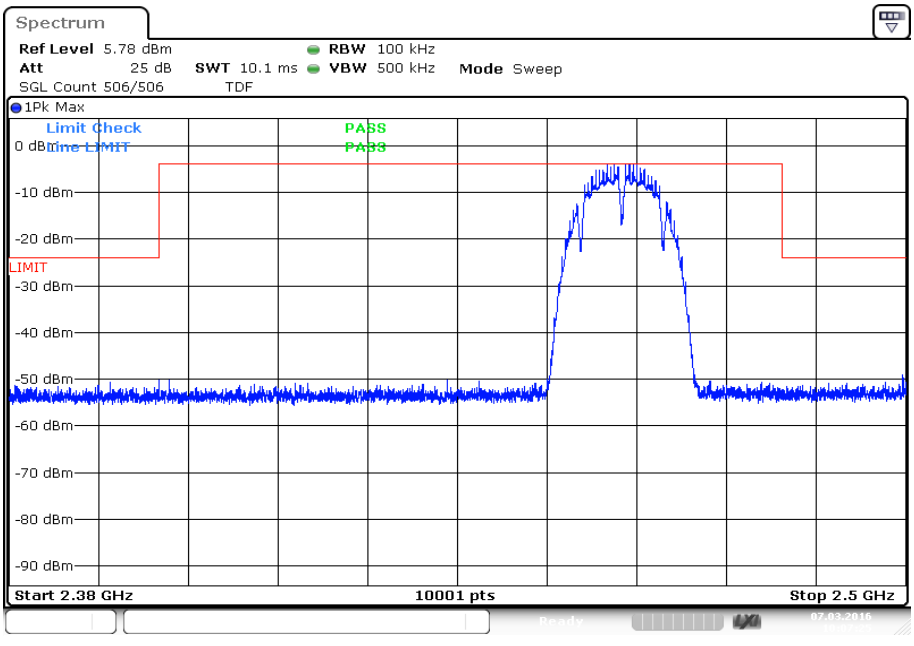
Date: 14.MAR.2016 14:23:01

Plot 9: 2462 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

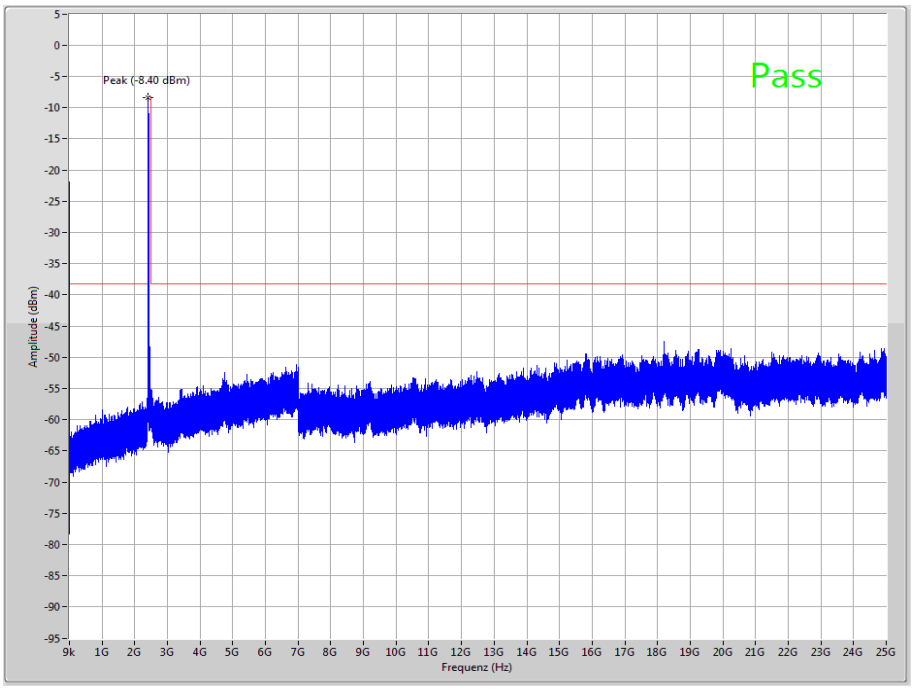
Plot 10: 2462 MHz, zoomed carrier



Date: 7.MAR.2016 10:07:25

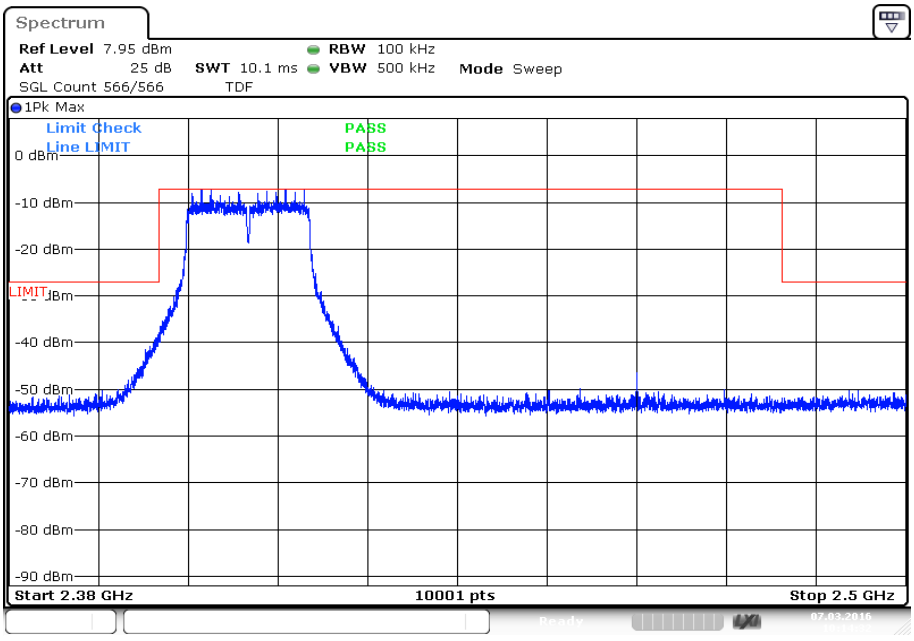
Plots: OFDM / g – mode, antenna port 1

Plot 1: 2412 MHz, up to 25 GHz



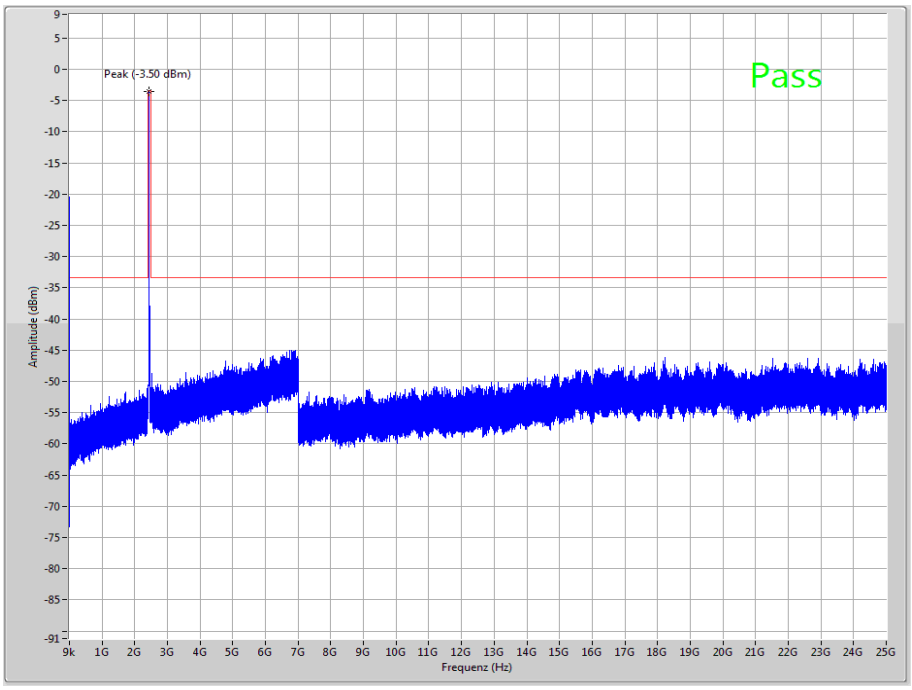
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



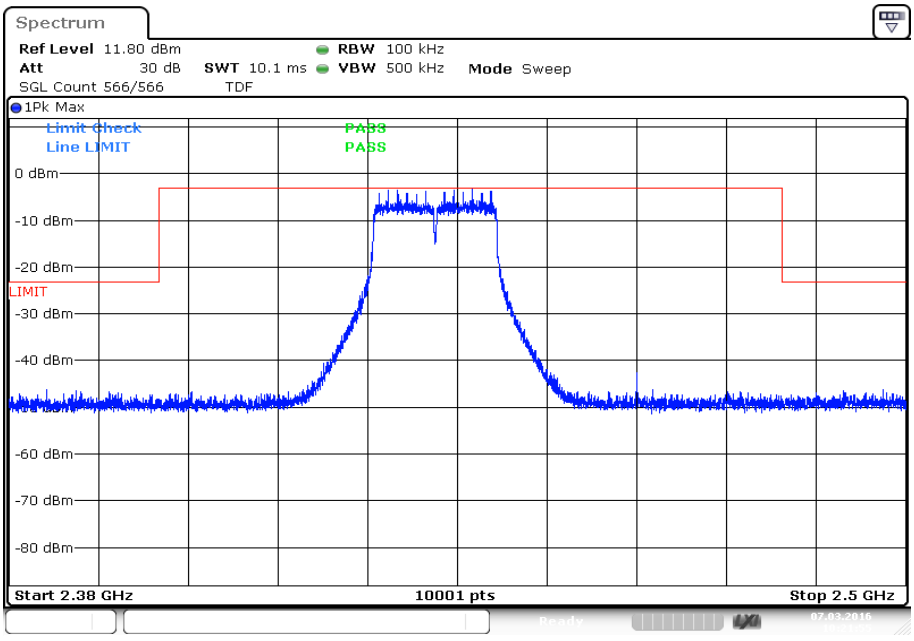
Date: 7.MAR.2016 10:14:33

Plot 3: 2437 MHz, up to 25 GHz



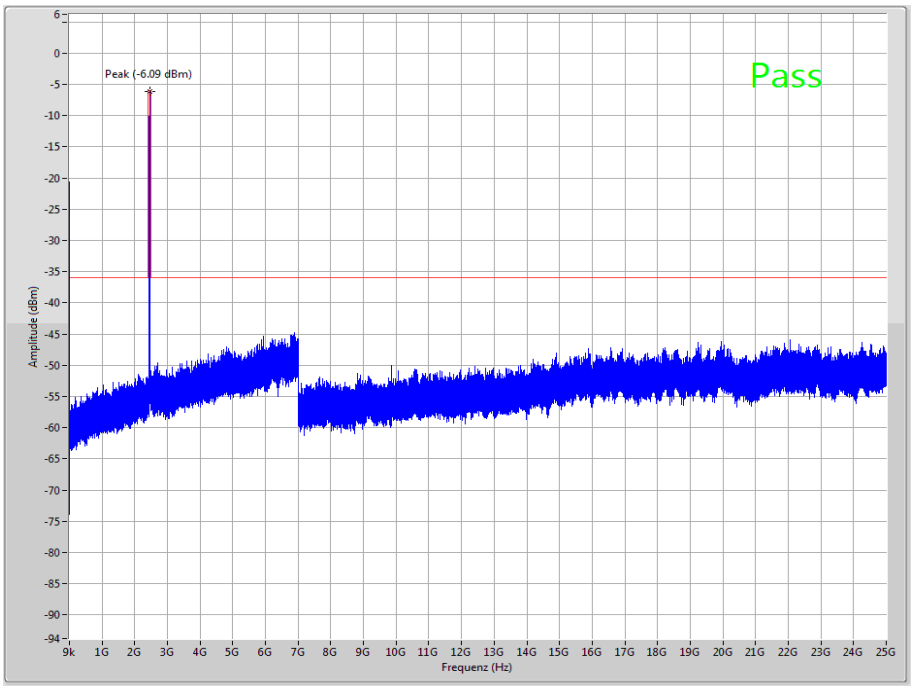
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



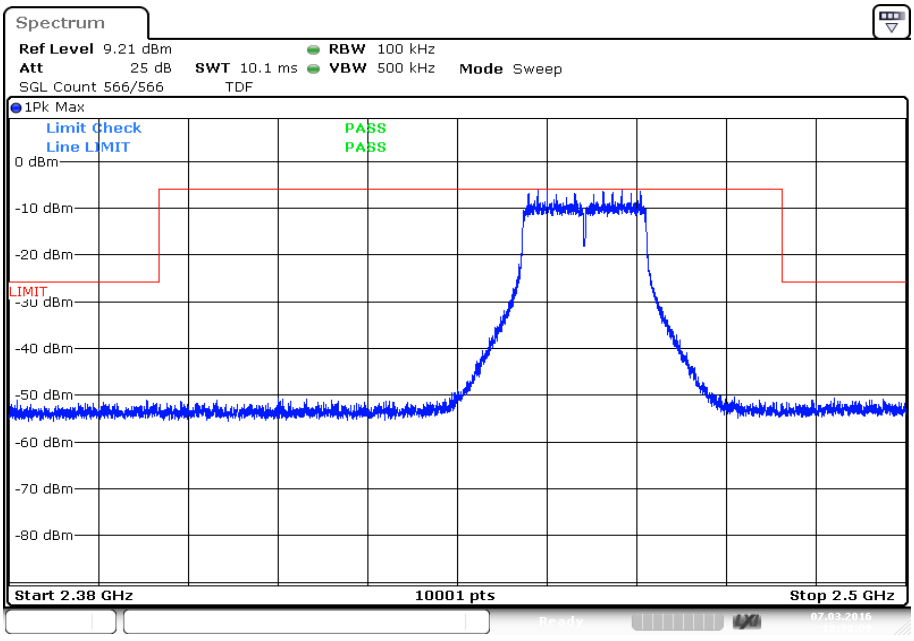
Date: 7.MAR.2016 10:21:56

Plot 5: 2457 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

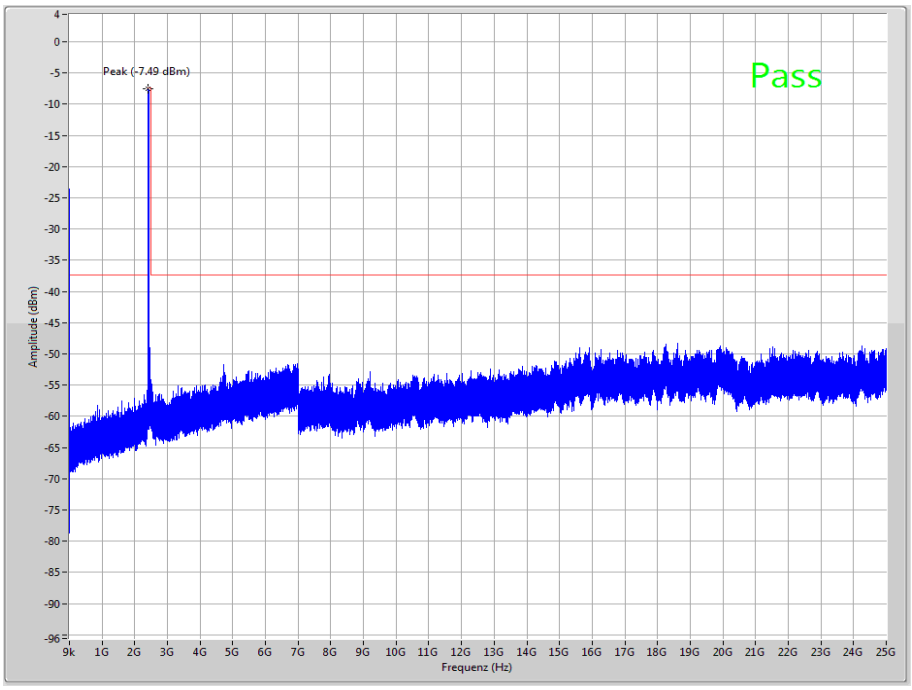
Plot 6: 2457 MHz, zoomed carrier



Date: 7.MAR.2016 10:38:10

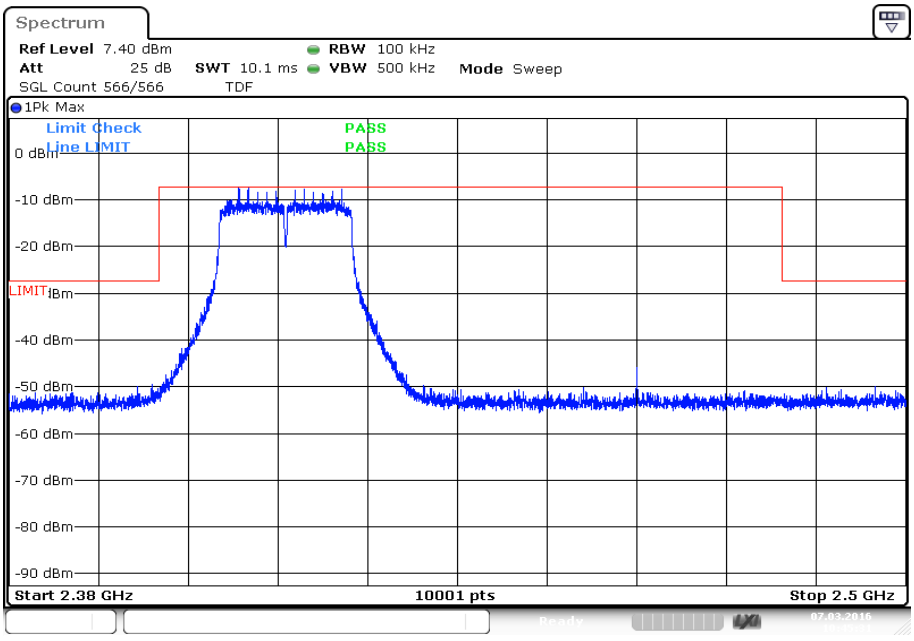
Plots: OFDM / n HT20 – mode, antenna port 1

Plot 1: 2417 MHz, up to 25 GHz



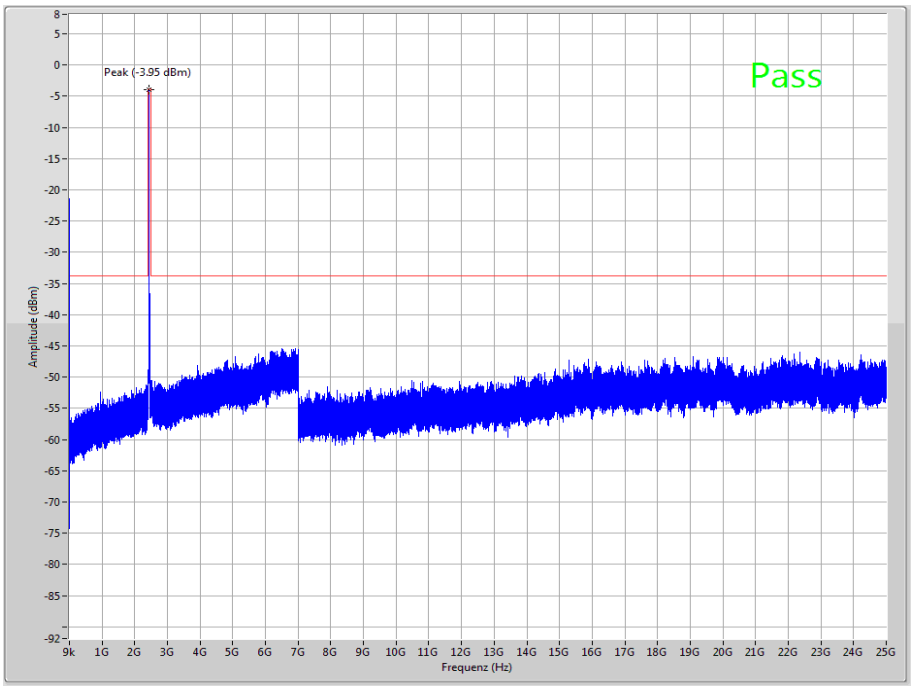
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2417 MHz, zoomed carrier



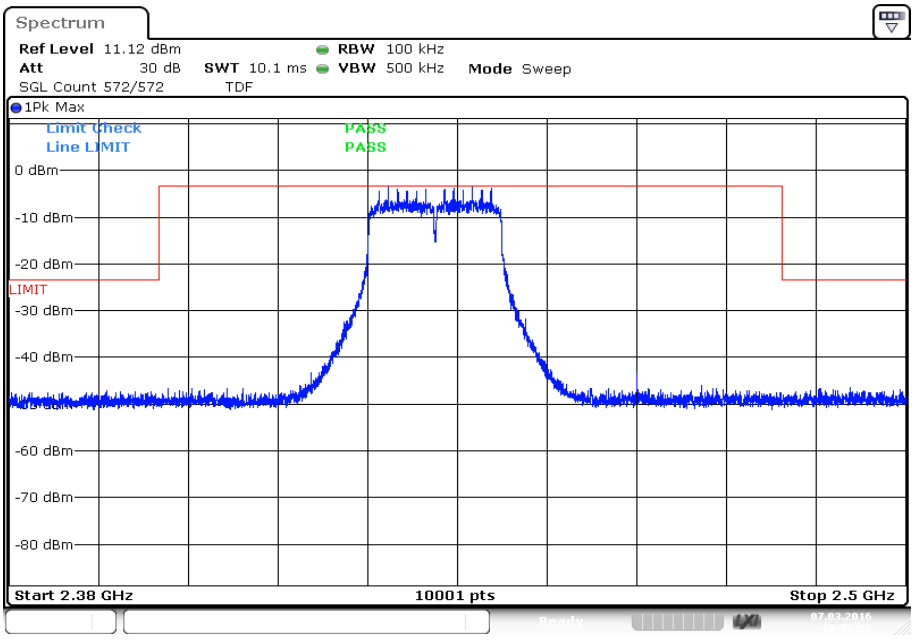
Date: 7.MAR.2016 10:45:32

Plot 3: 2437 MHz, up to 25 GHz



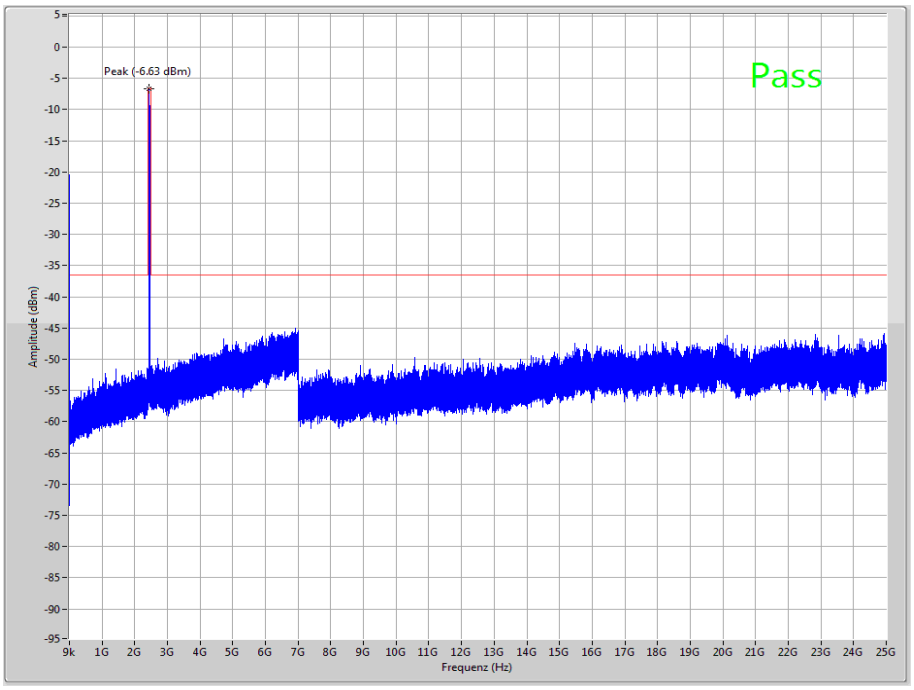
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



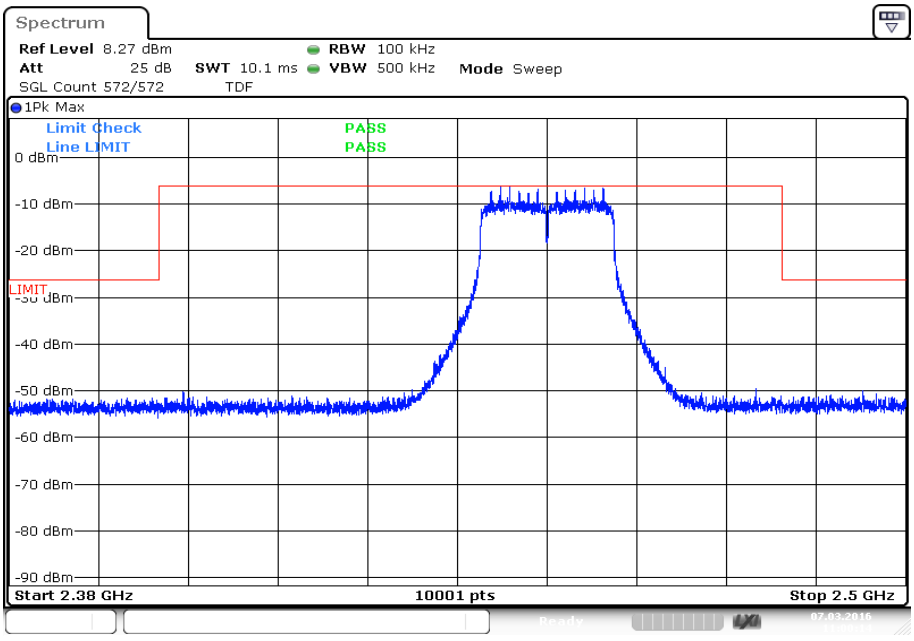
Date: 7.MAR.2016 10:52:54

Plot 5: 2452 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

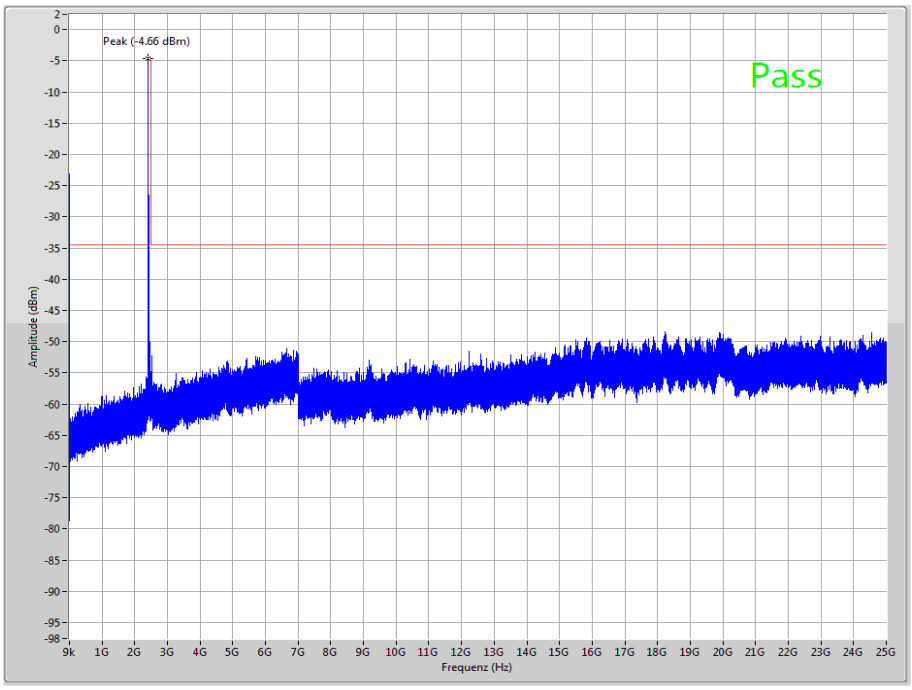
Plot 6: 2452 MHz, zoomed carrier



Date: 7.MAR.2016 11:00:15

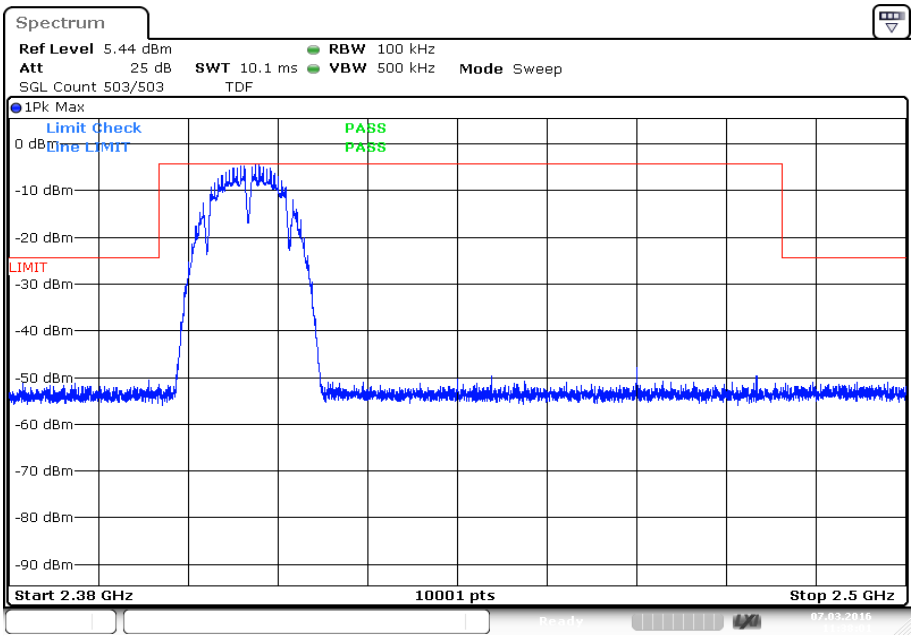
Plots: DSSS / b – mode, antenna port 2

Plot 1: 2412 MHz, up to 25 GHz



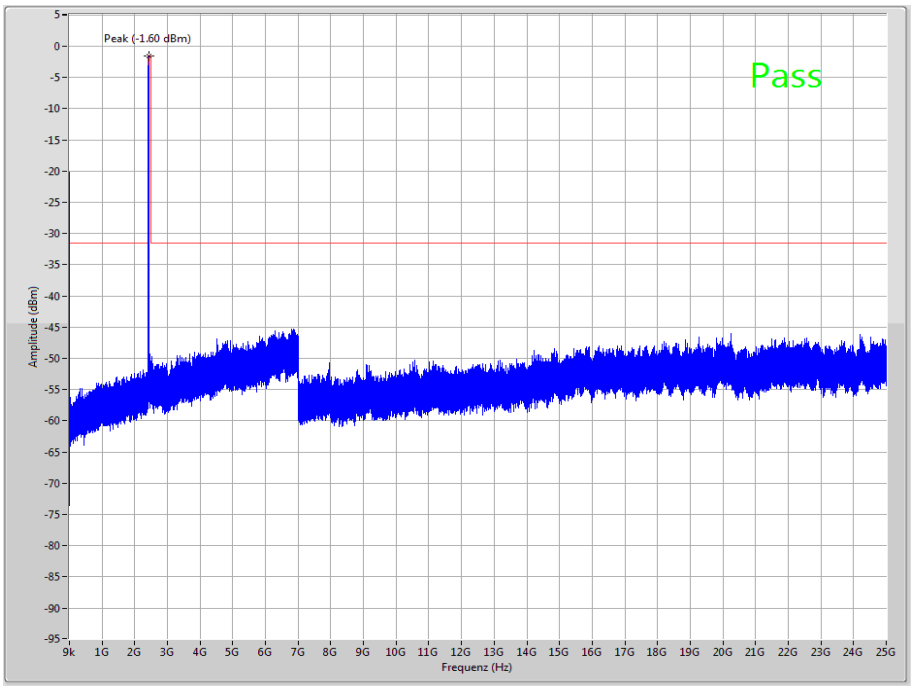
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



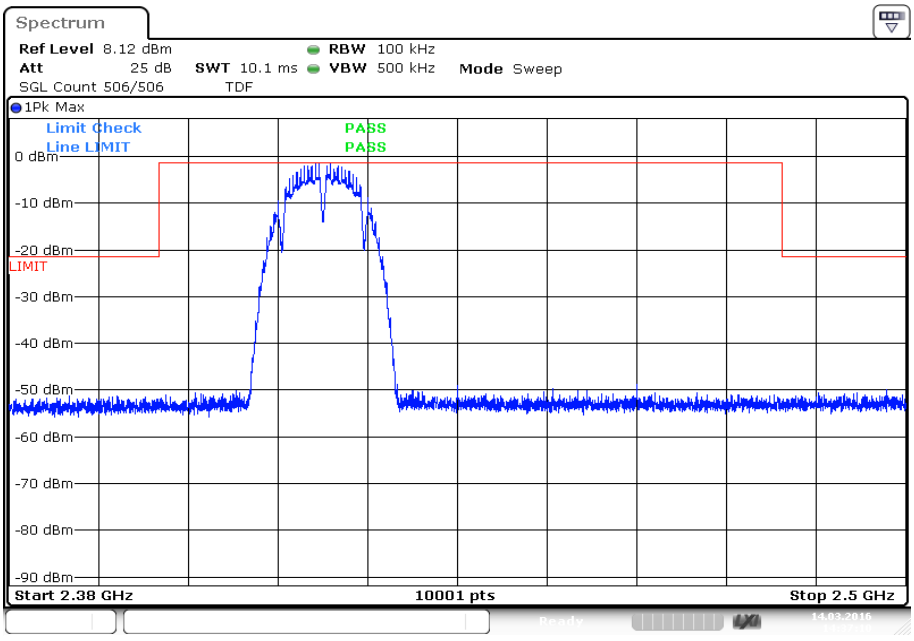
Date: 7.MAR.2016 11:38:02

Plot 3: 2422 MHz, up to 25 GHz



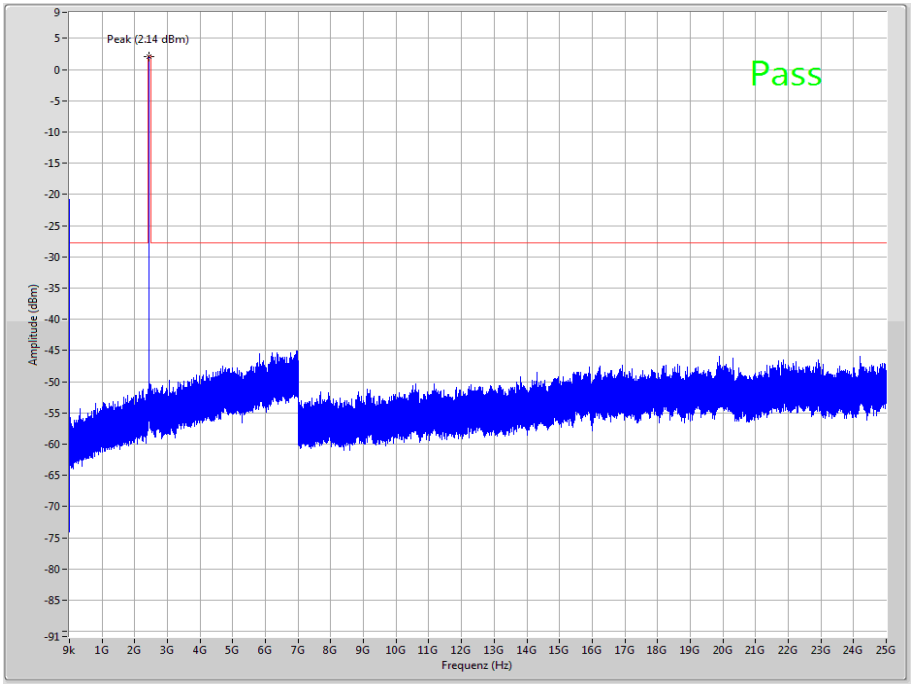
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2422 MHz, zoomed carrier



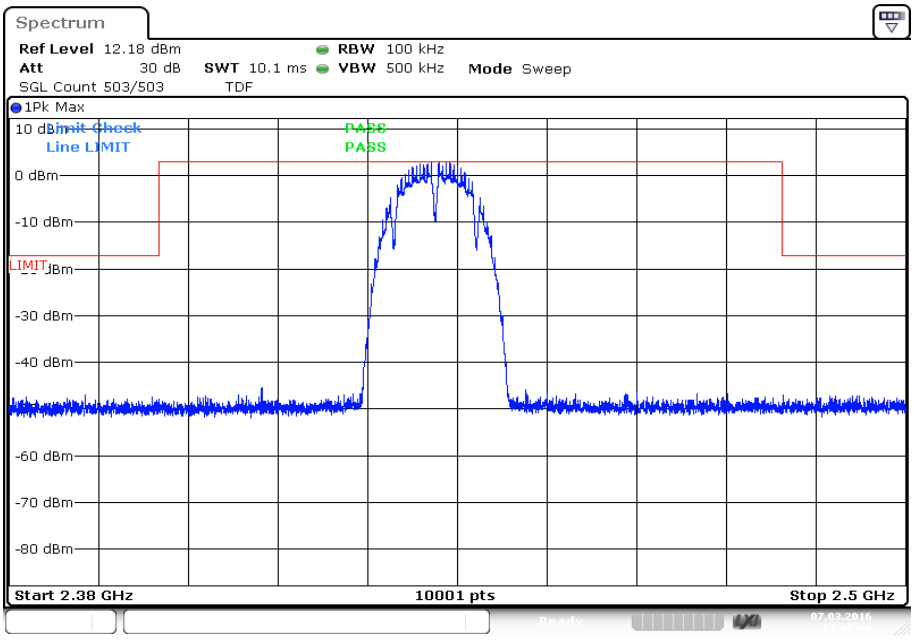
Date: 14.MAR.2016 14:37:11

Plot 5: 2437 MHz, up to 25 GHz



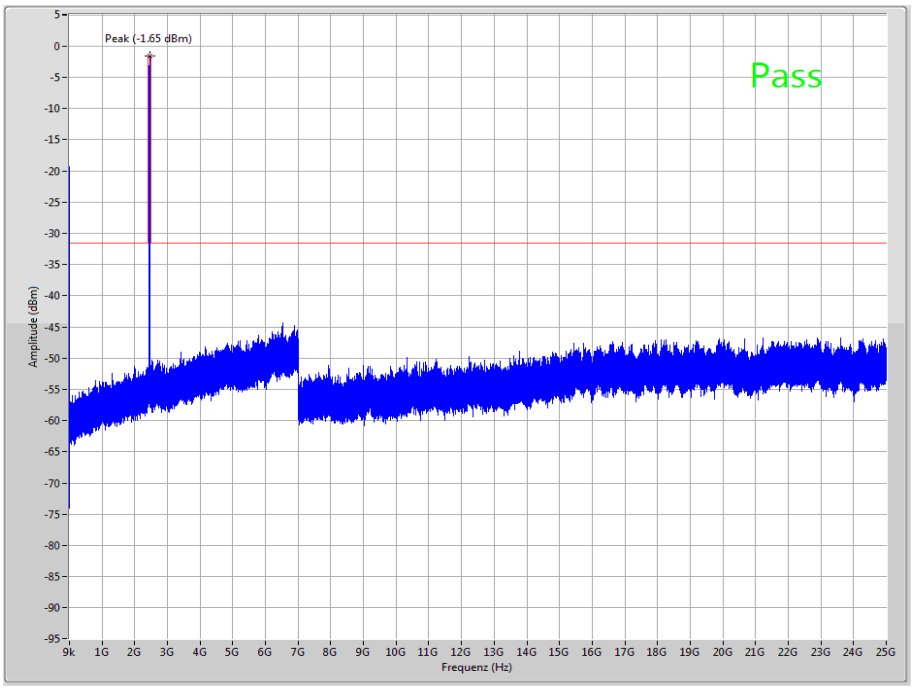
The peak at the beginning of the plot is the LO from the SA.

Plot 6: 2437 MHz, zoomed carrier



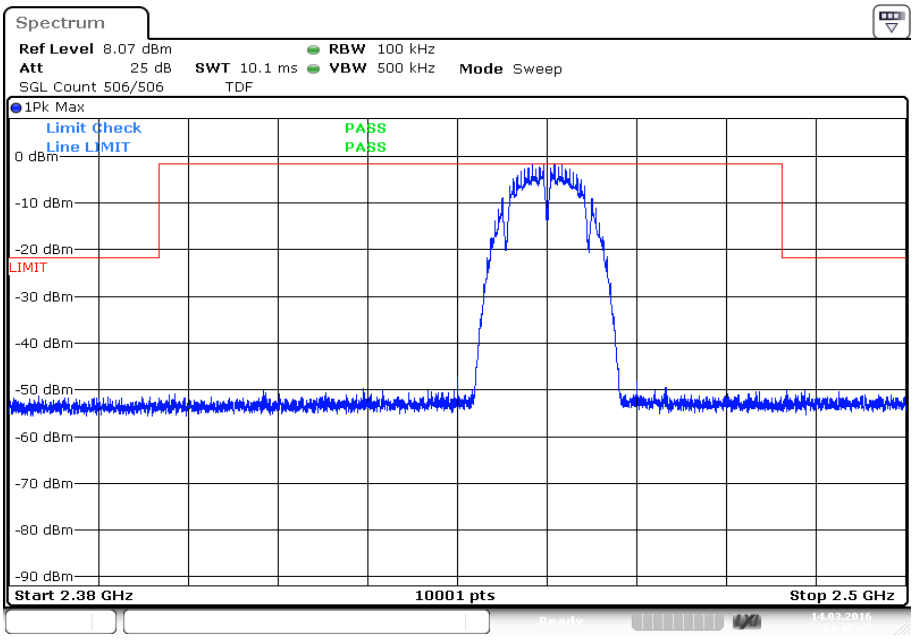
Date: 7.MAR.2016 11:47:07

Plot 7: 2452 MHz, up to 25 GHz



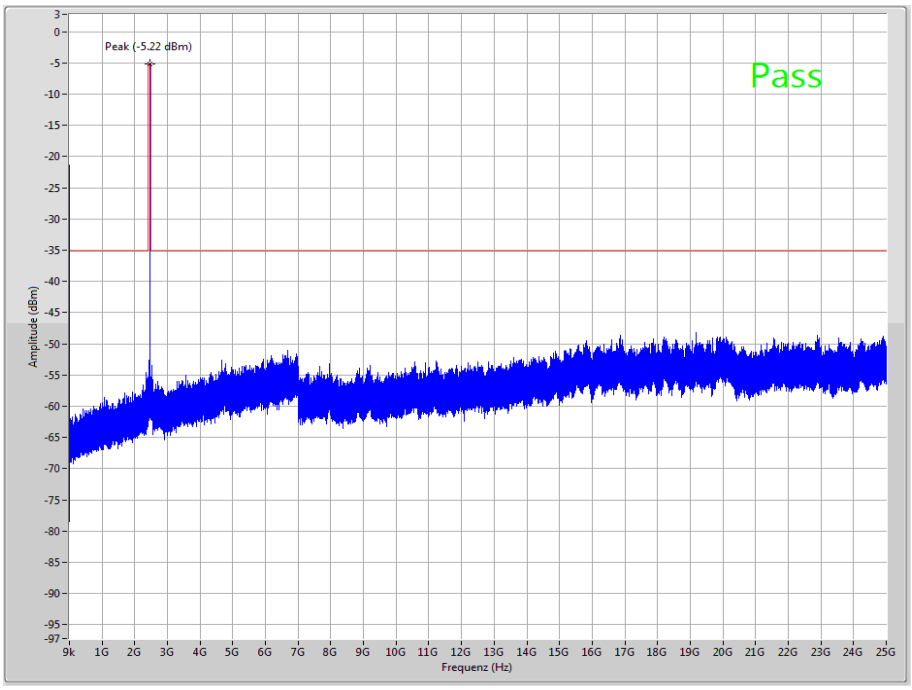
The peak at the beginning of the plot is the LO from the SA.

Plot 8: 2452 MHz, zoomed carrier



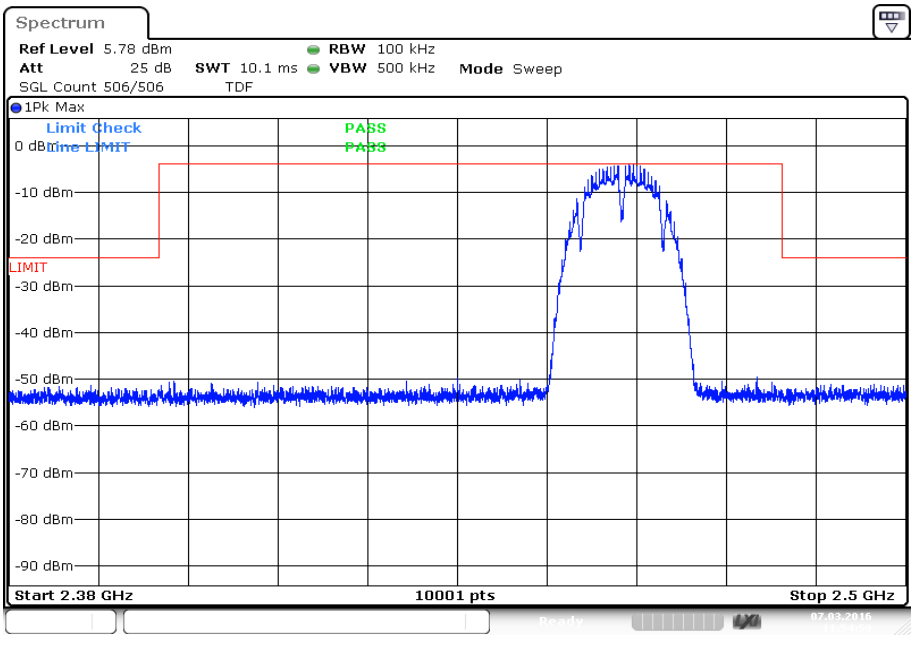
Date: 14.MAR.2016 14:45:06

Plot 9: 2462 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

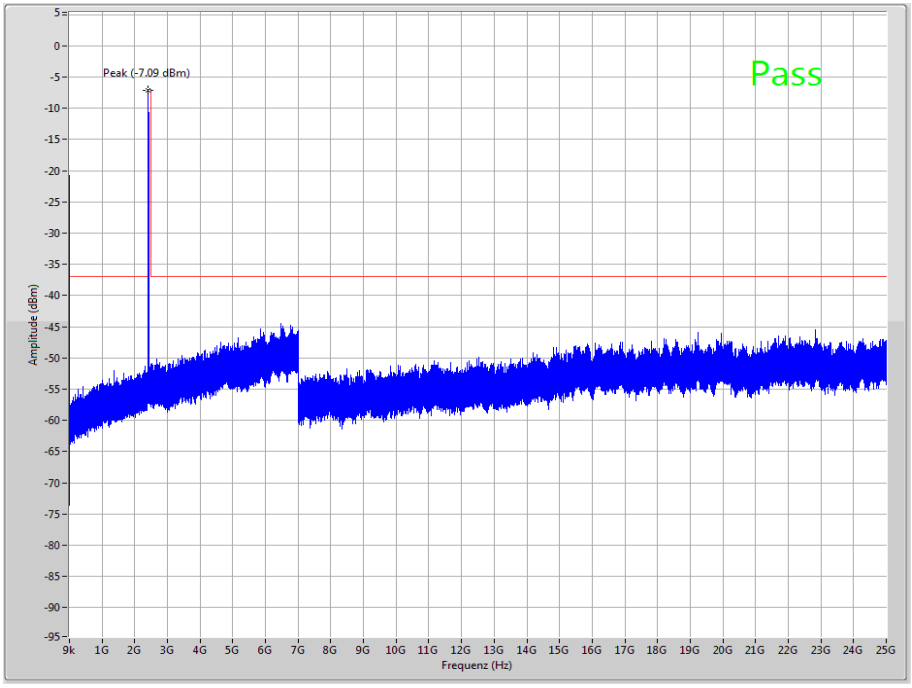
Plot 10: 2462 MHz, zoomed carrier



Date: 7.MAR.2016 11:54:59

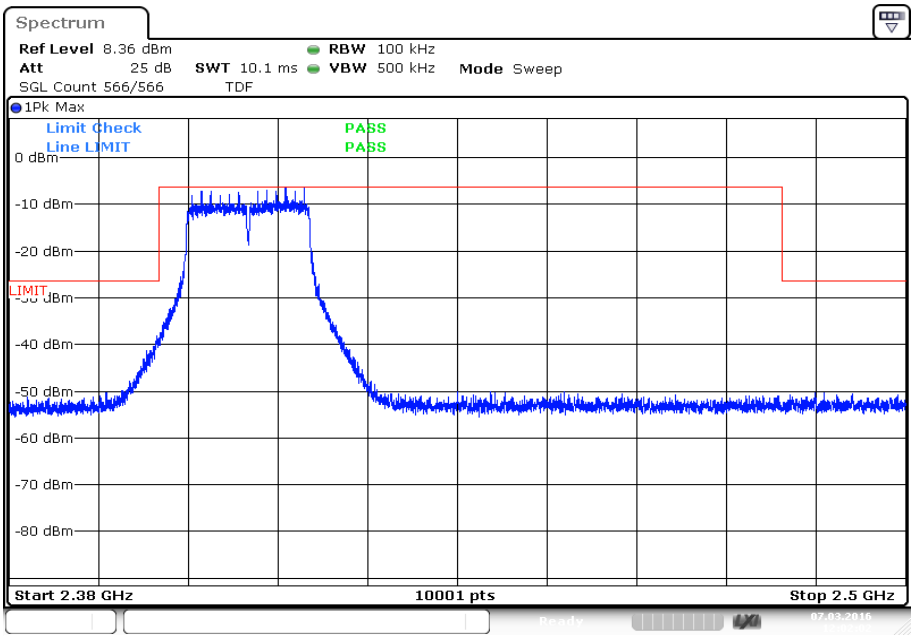
Plots: OFDM / g – mode, antenna port 2

Plot 1: 2412 MHz, up to 25 GHz



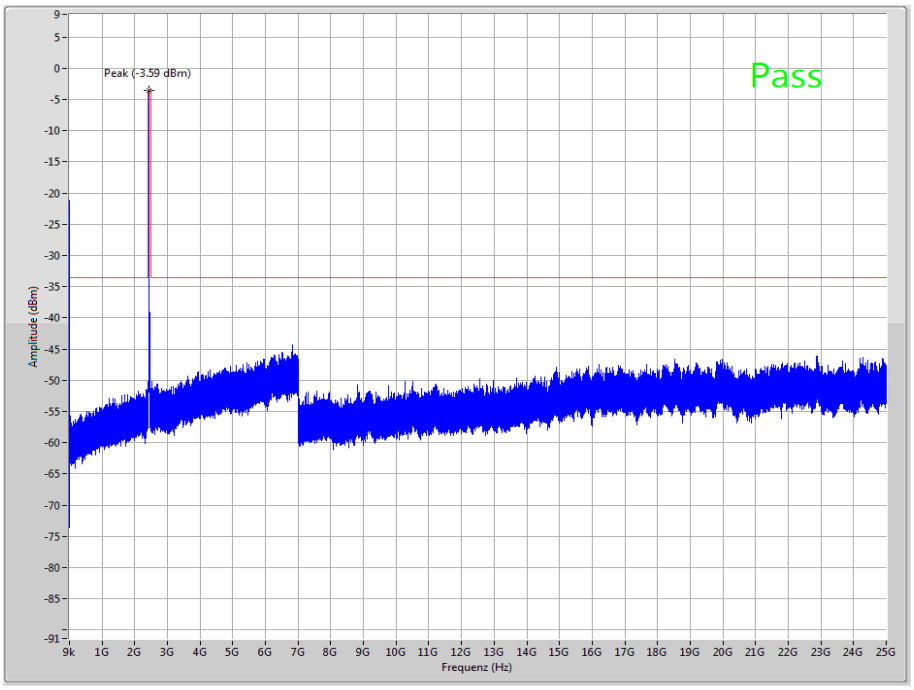
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



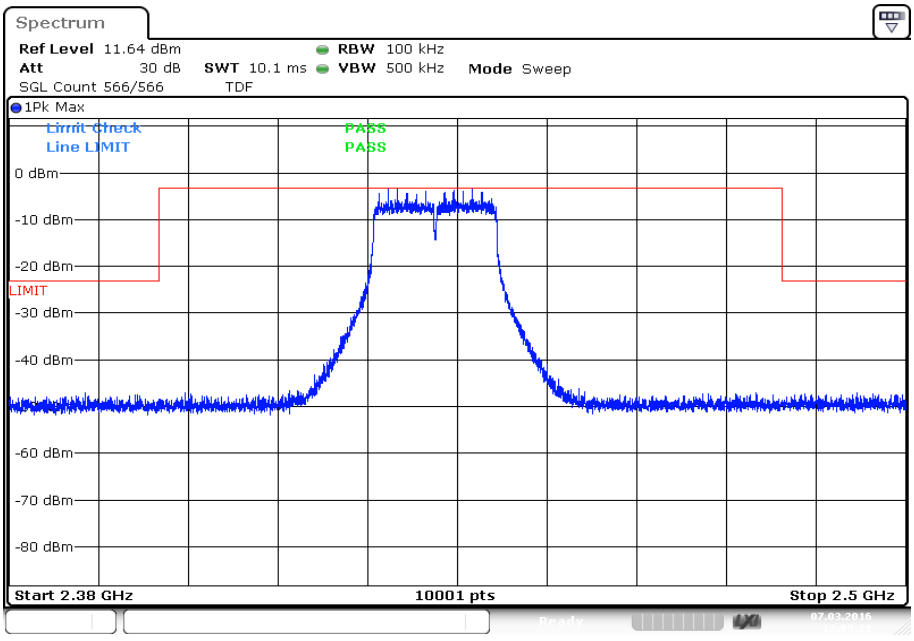
Date: 7.MAR.2016 12:02:03

Plot 3: 2437 MHz, up to 25 GHz



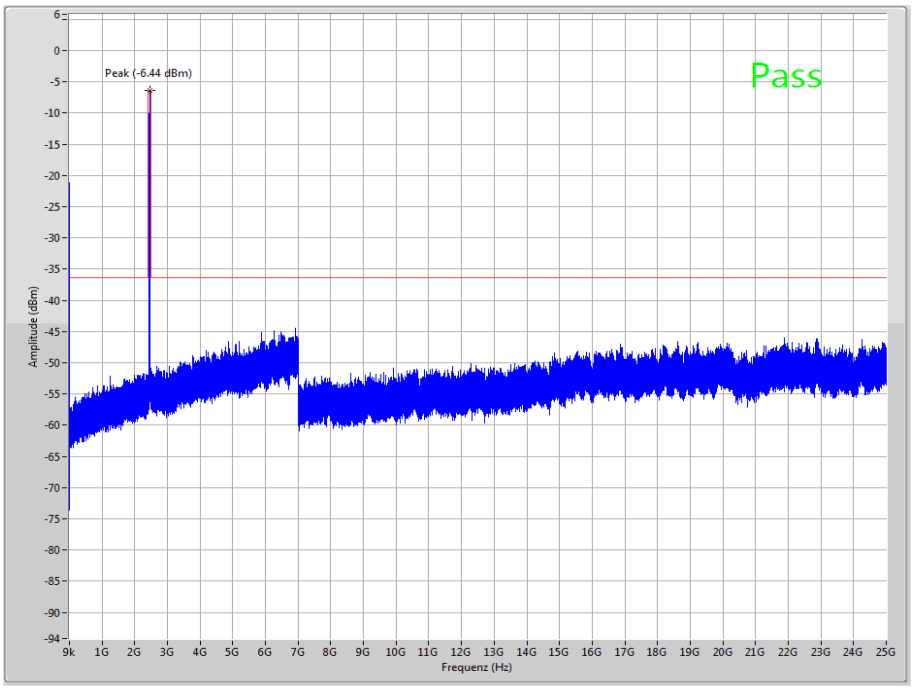
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



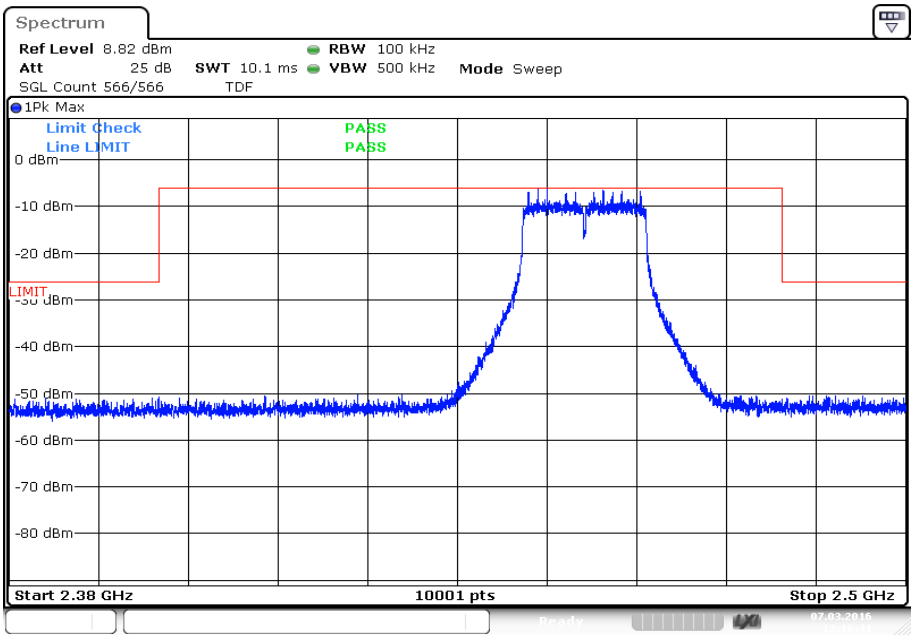
Date: 7.MAR.2016 12:09:22

Plot 5: 2457 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

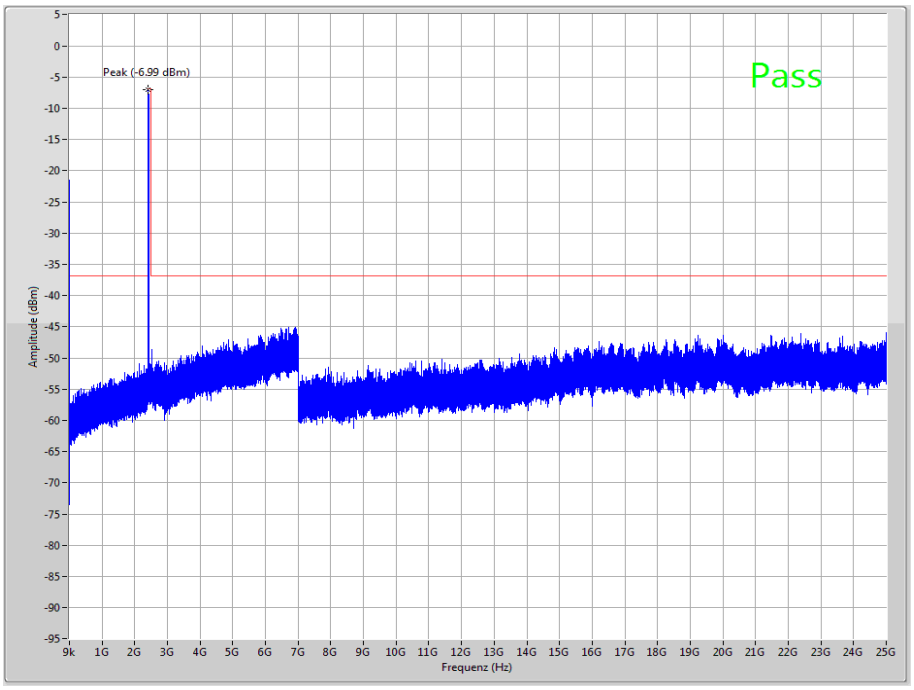
Plot 6: 2457 MHz, zoomed carrier



Date: 7.MAR.2016 12:16:41

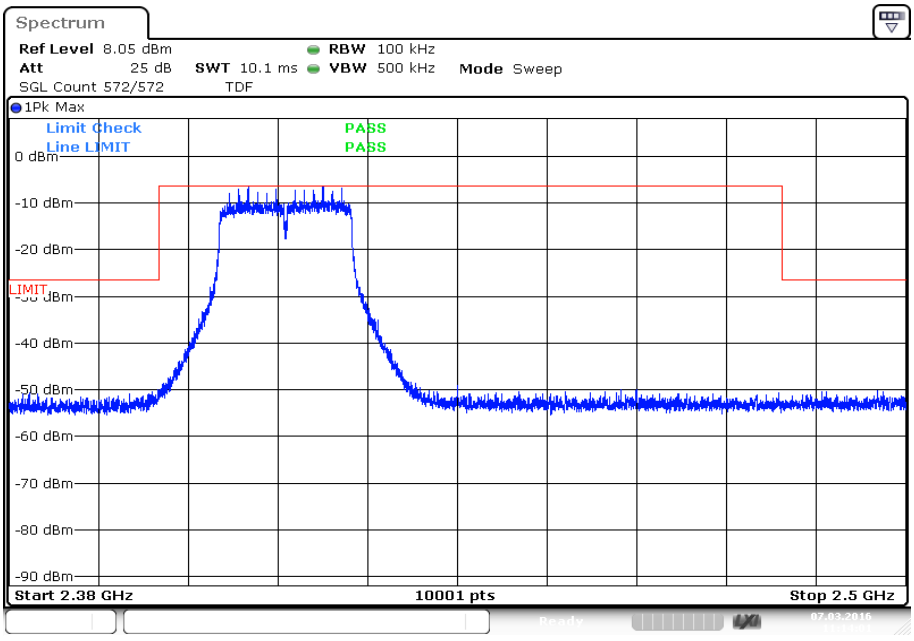
Plots: OFDM / n HT20 – mode, antenna port 2

Plot 1: 2417 MHz, up to 25 GHz



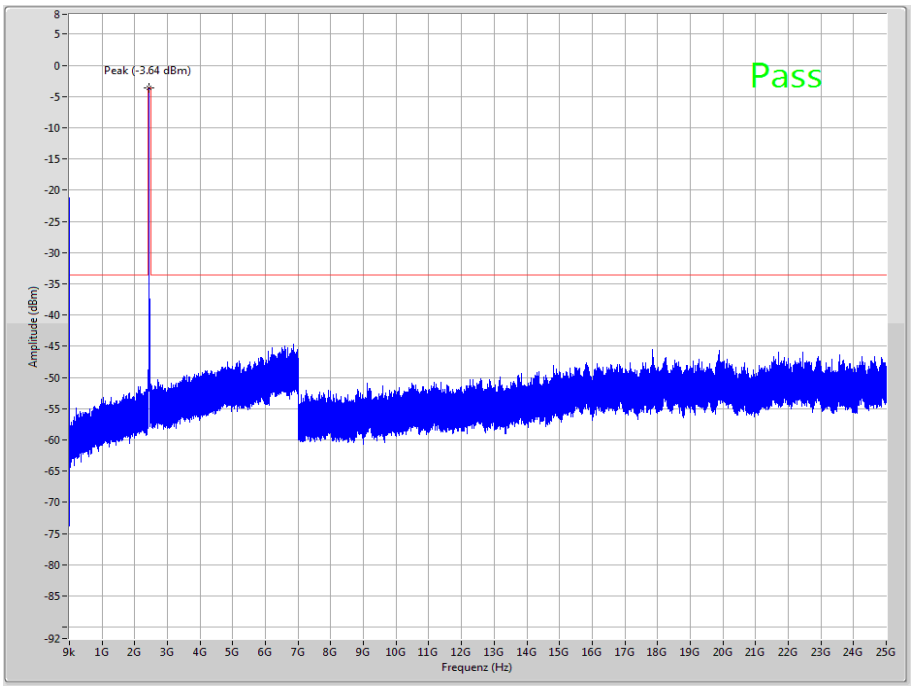
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2417 MHz, zoomed carrier



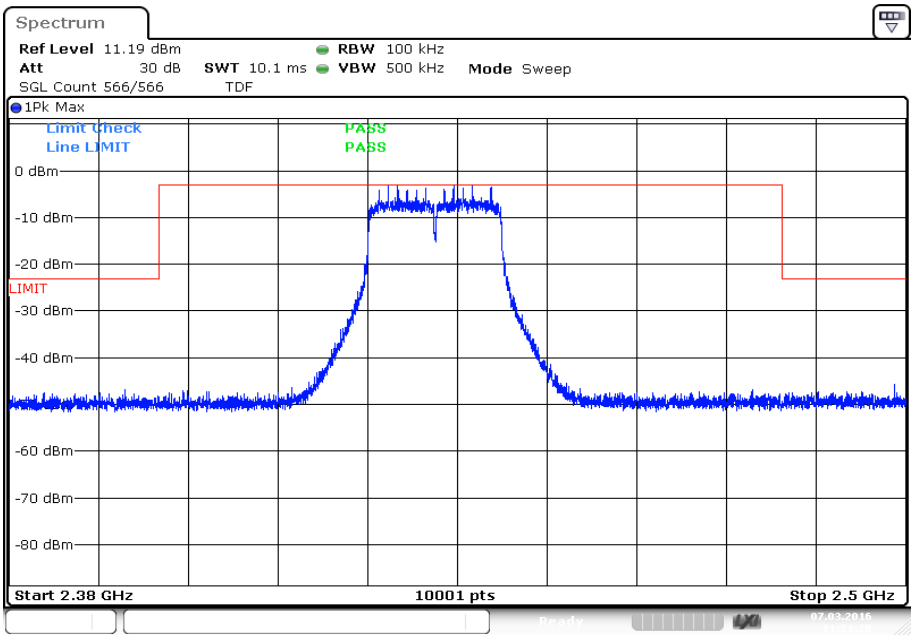
Date: 7.MAR.2016 11:14:01

Plot 3: 2437 MHz, up to 25 GHz



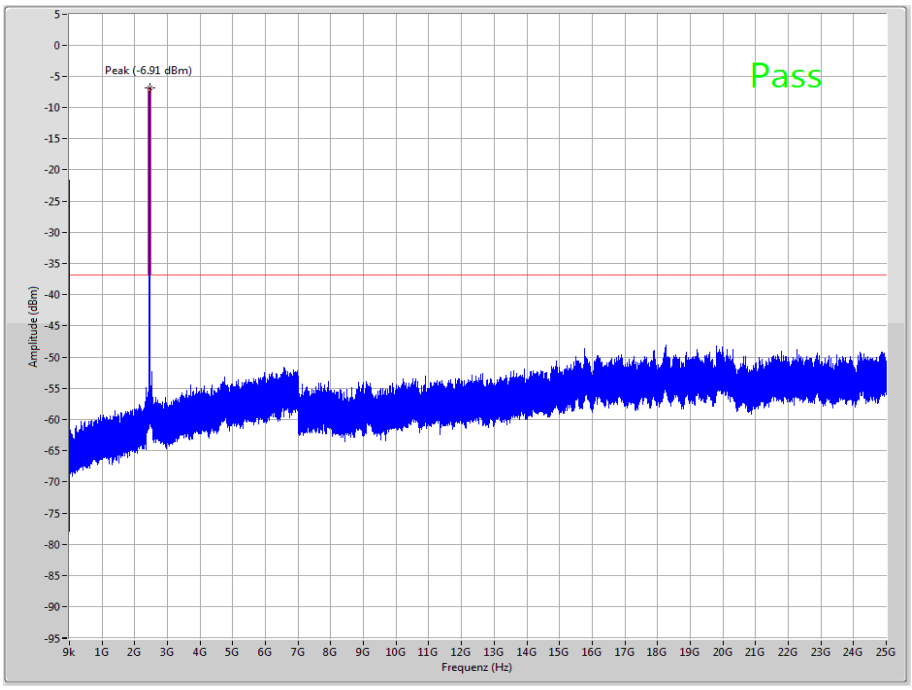
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



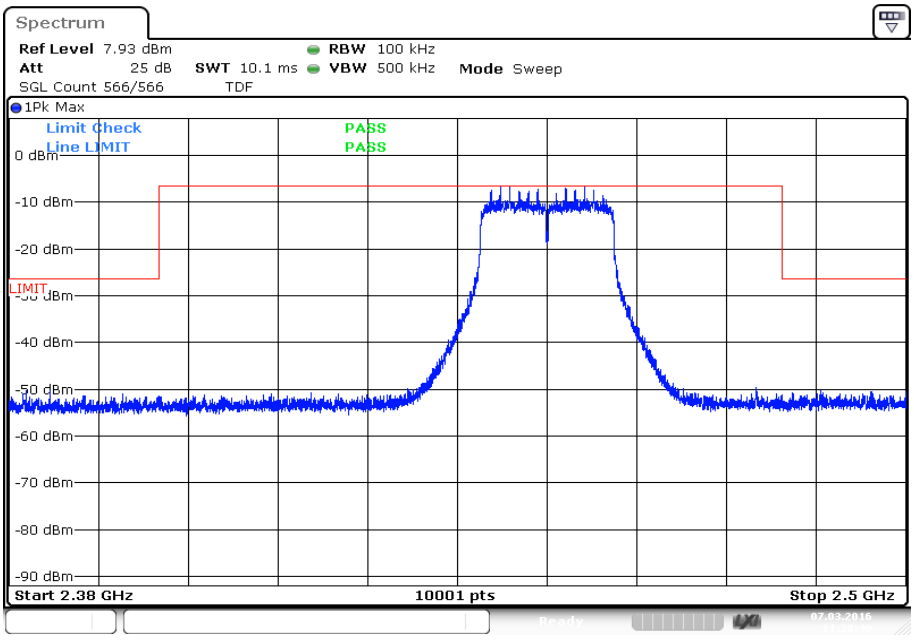
Date: 7.MAR.2016 11:21:20

Plot 5: 2452 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

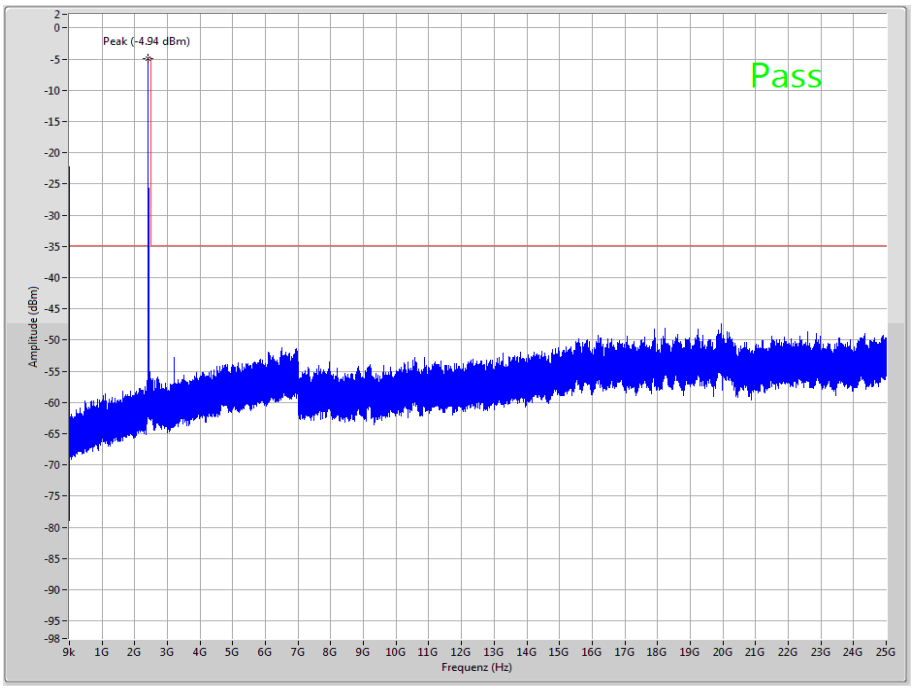
Plot 6: 2452 MHz, zoomed carrier



Date: 7.MAR.2016 11:28:40

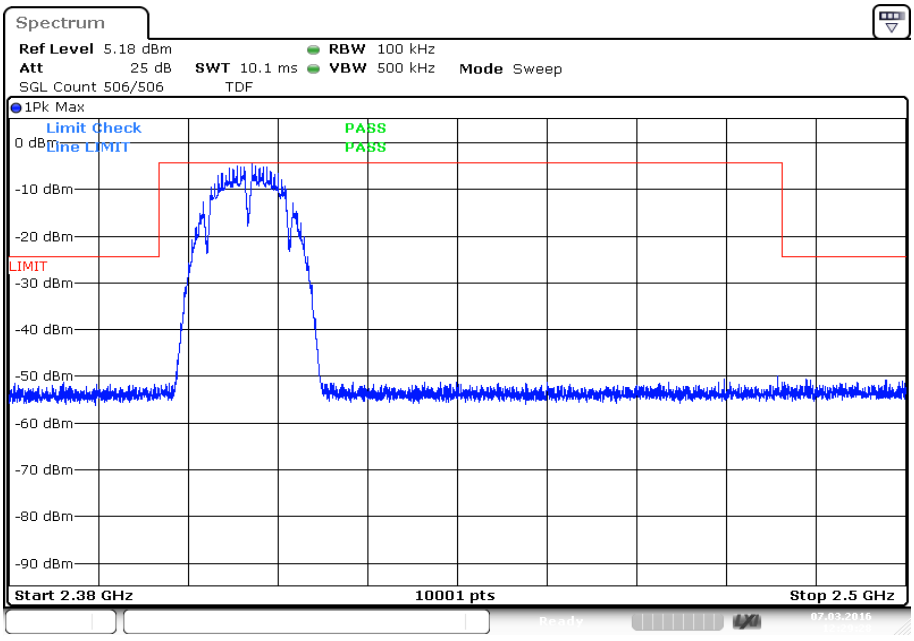
Plots: DSSS / b – mode, antenna port 3

Plot 1: 2412 MHz, up to 25 GHz



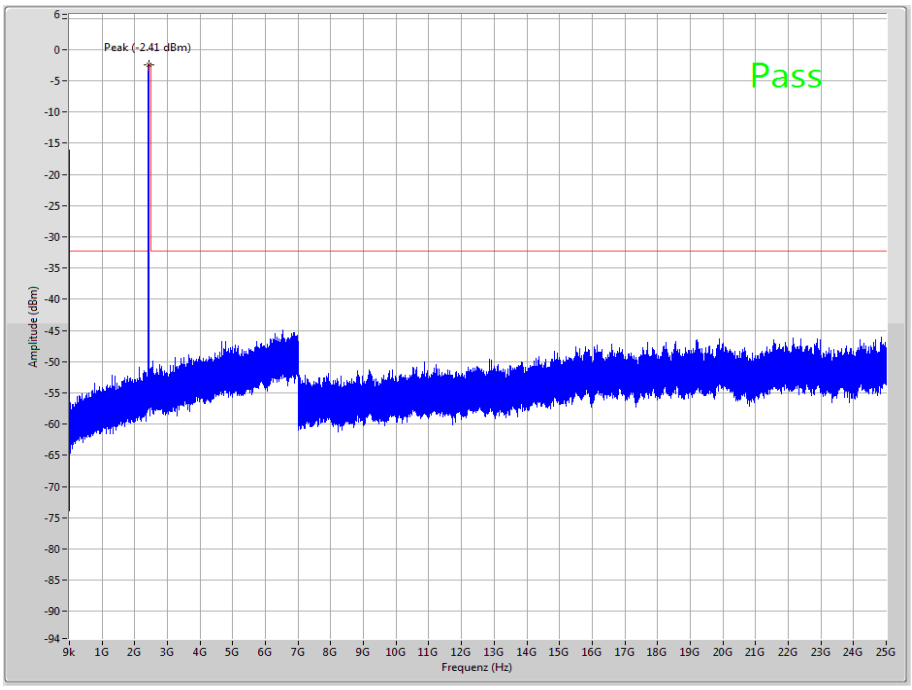
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



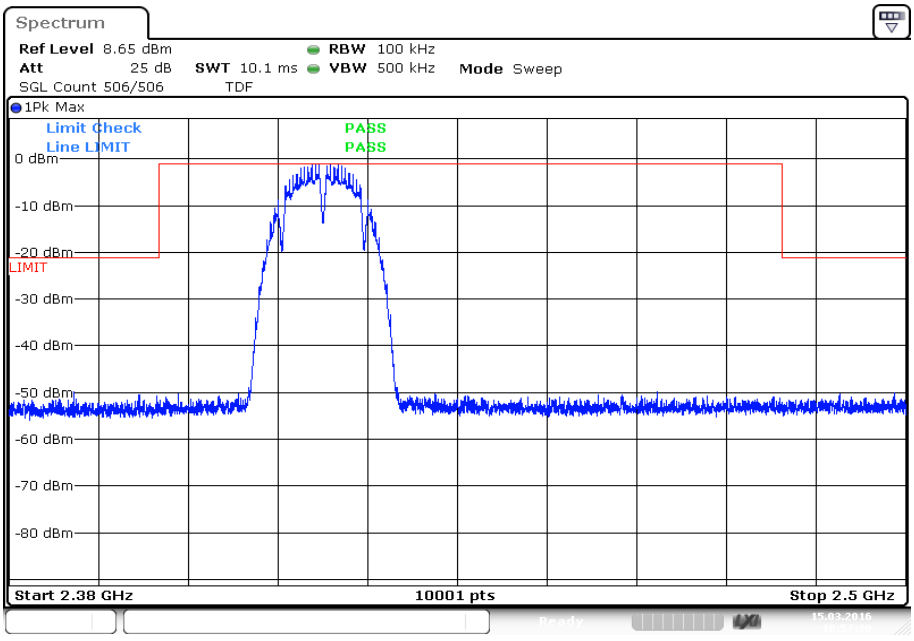
Date: 7.MAR.2016 12:29:28

Plot 3: 2422 MHz, up to 25 GHz



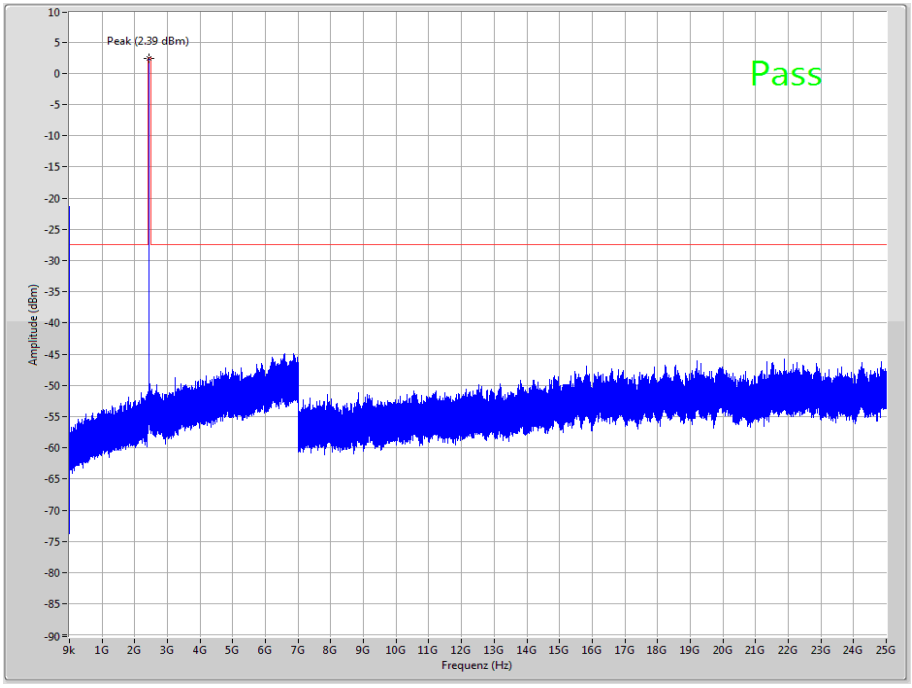
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2422 MHz, zoomed carrier



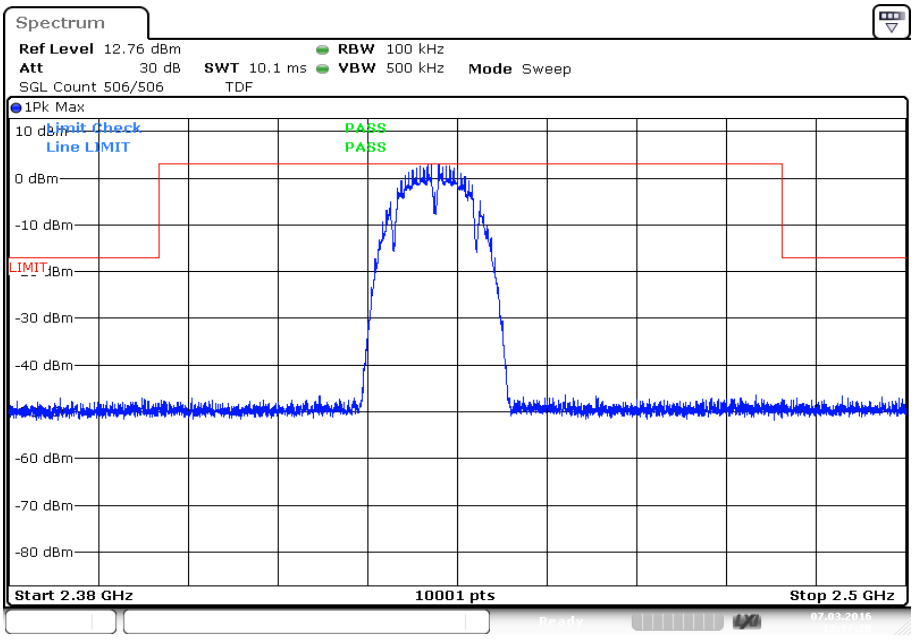
Date: 15.MAR.2016 10:57:31

Plot 5: 2437 MHz, up to 25 GHz



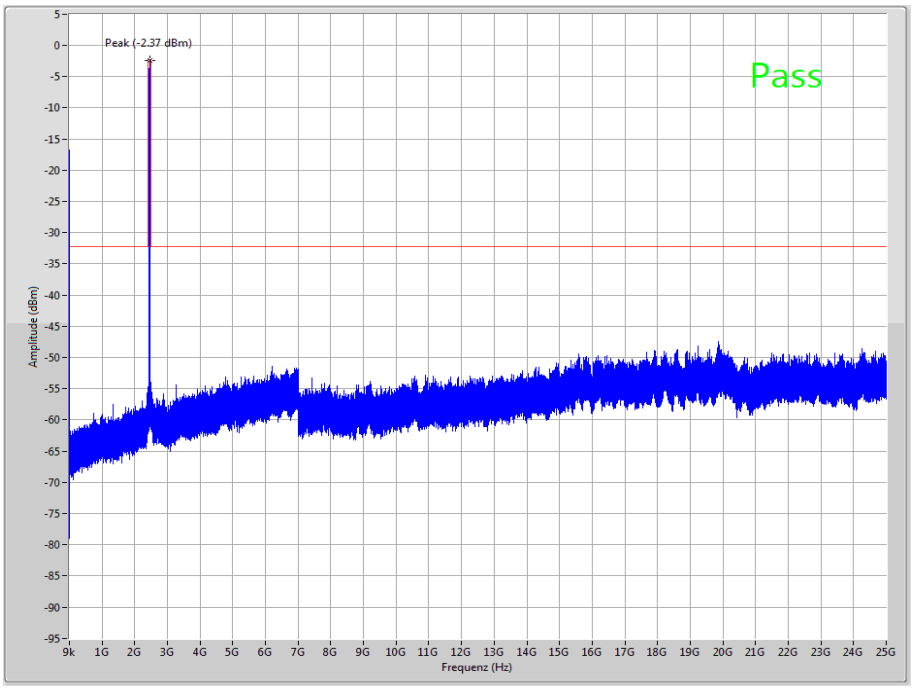
The peak at the beginning of the plot is the LO from the SA.

Plot 6: 2437 MHz, zoomed carrier



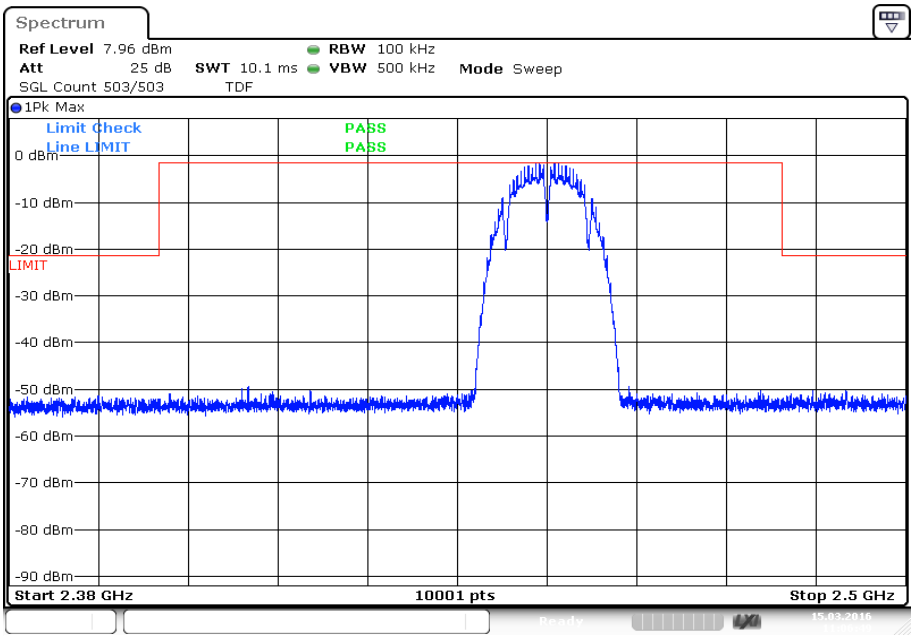
Date: 7.MAR.2016 12:37:21

Plot 7: 2452 MHz, up to 25 GHz



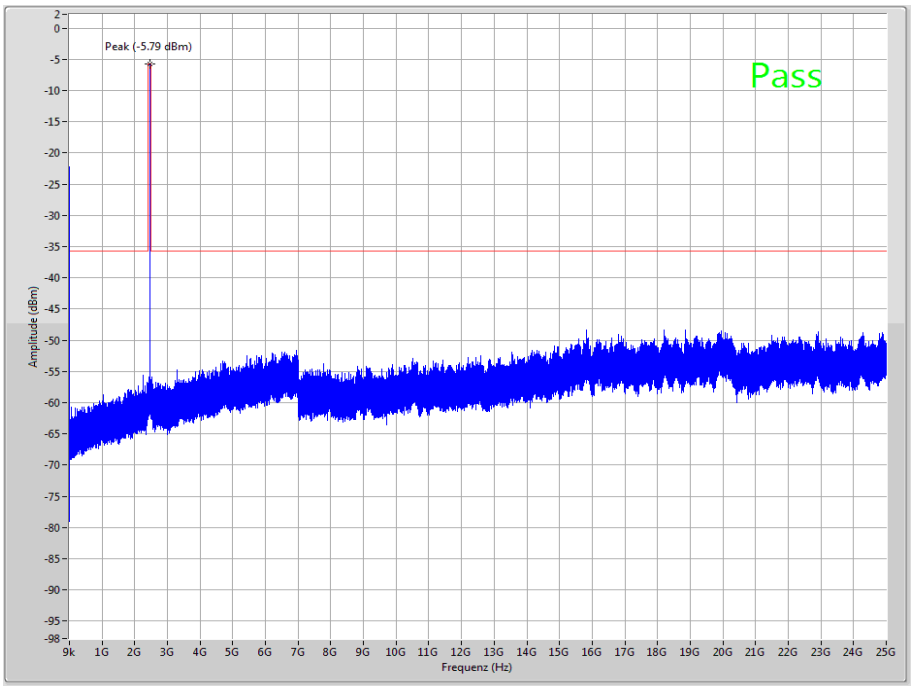
The peak at the beginning of the plot is the LO from the SA.

Plot 8: 2452 MHz, zoomed carrier



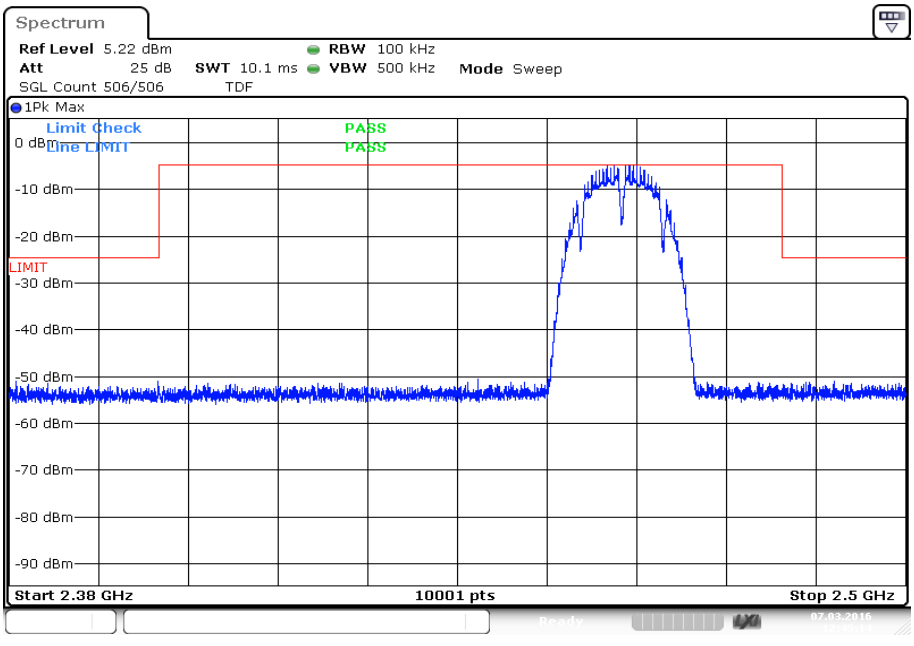
Date: 15.MAR.2016 11:06:50

Plot 9: 2462 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

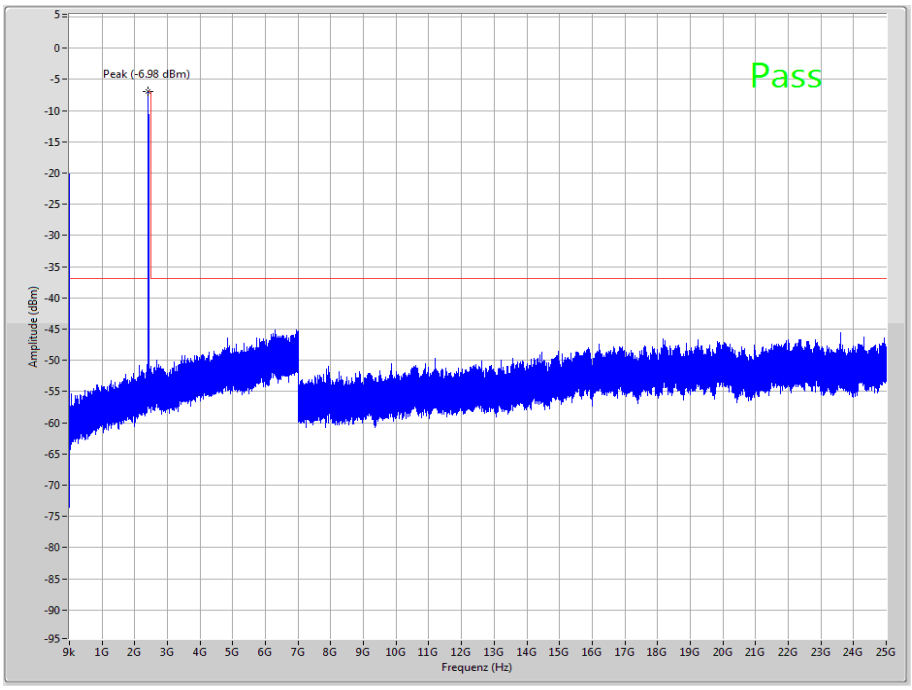
Plot 10: 2462 MHz, zoomed carrier



Date: 7.MAR.2016 12:45:14

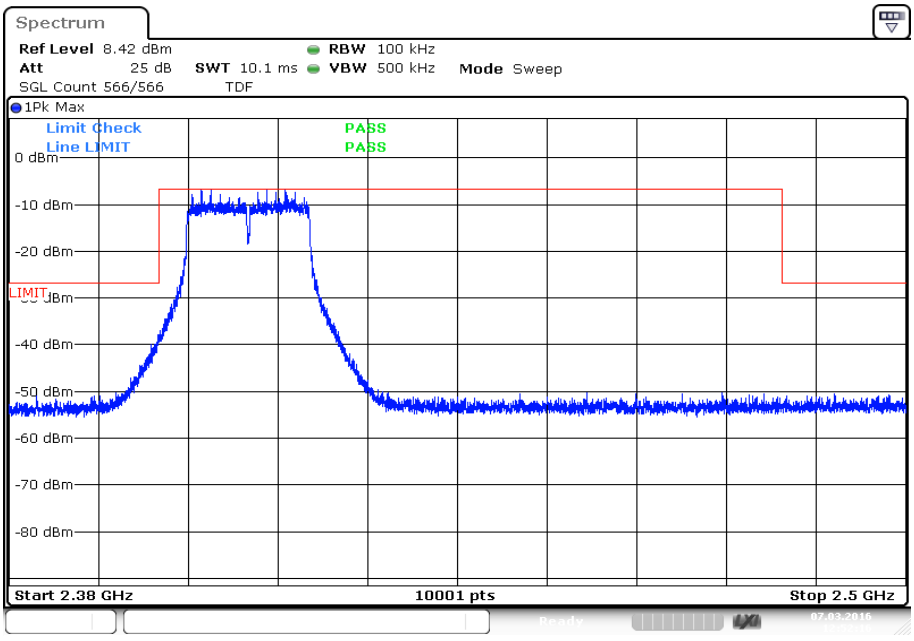
Plots: OFDM / g – mode, antenna port 3

Plot 1: 2412 MHz, up to 25 GHz



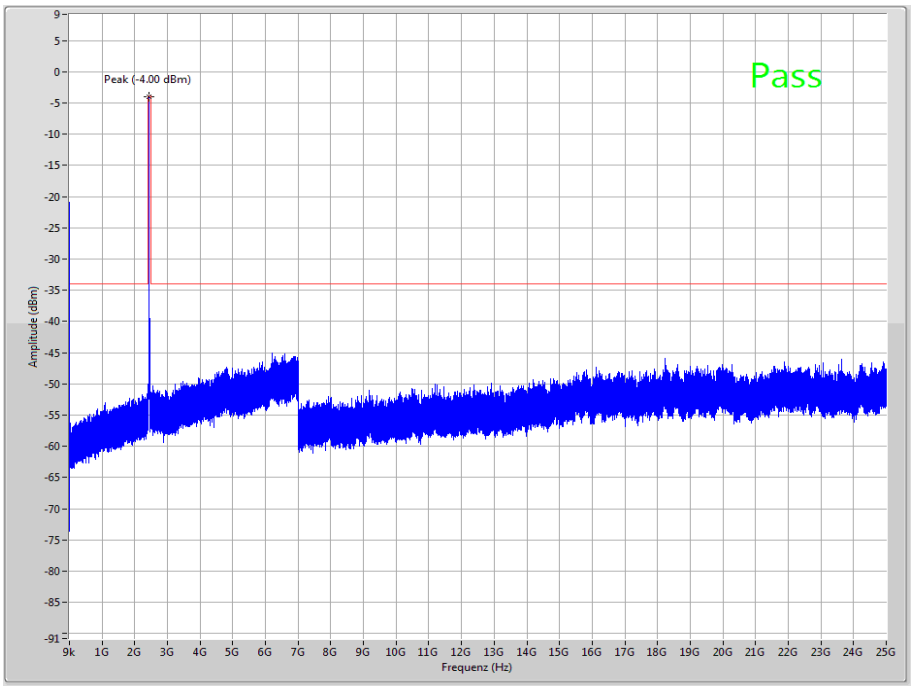
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2412 MHz, zoomed carrier



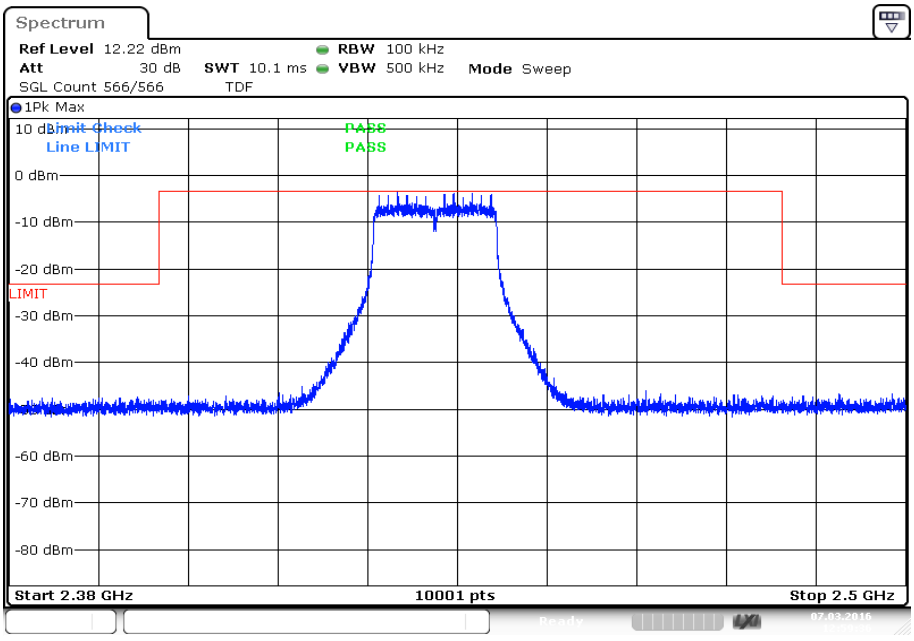
Date: 7.MAR.2016 12:52:17

Plot 3: 2437 MHz, up to 25 GHz



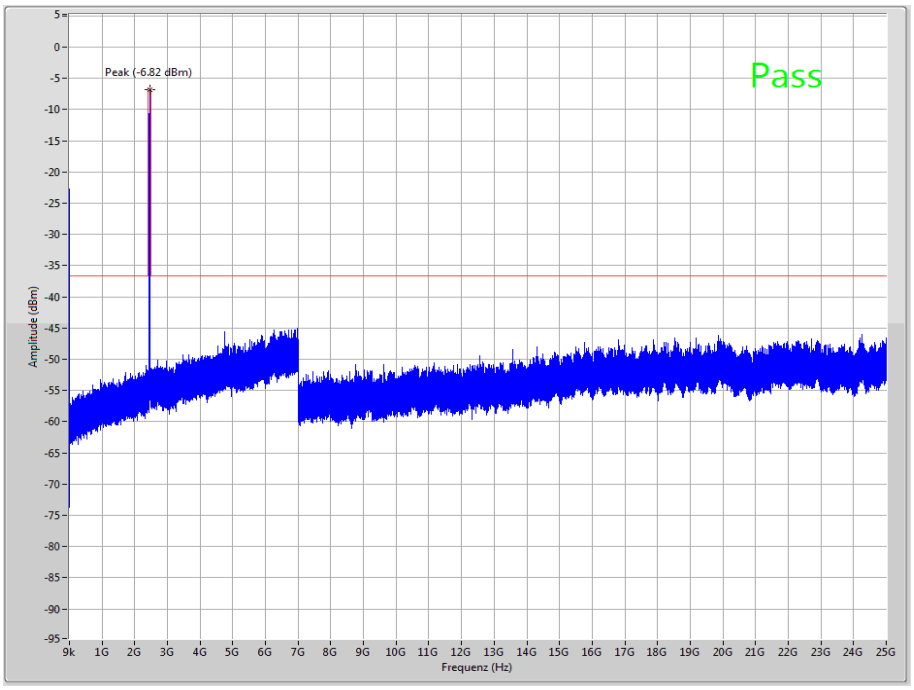
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



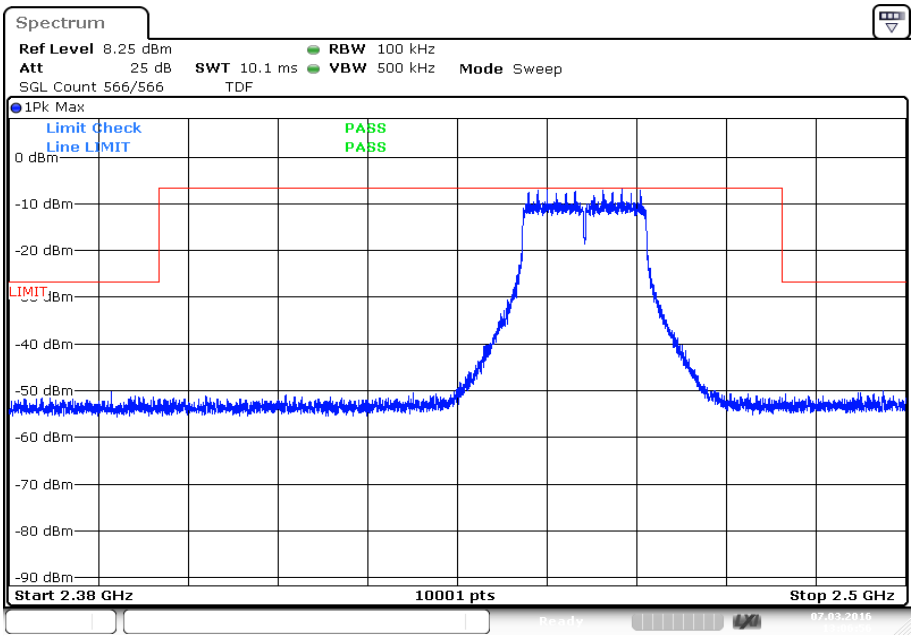
Date: 7.MAR.2016 12:59:36

Plot 5: 2457 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

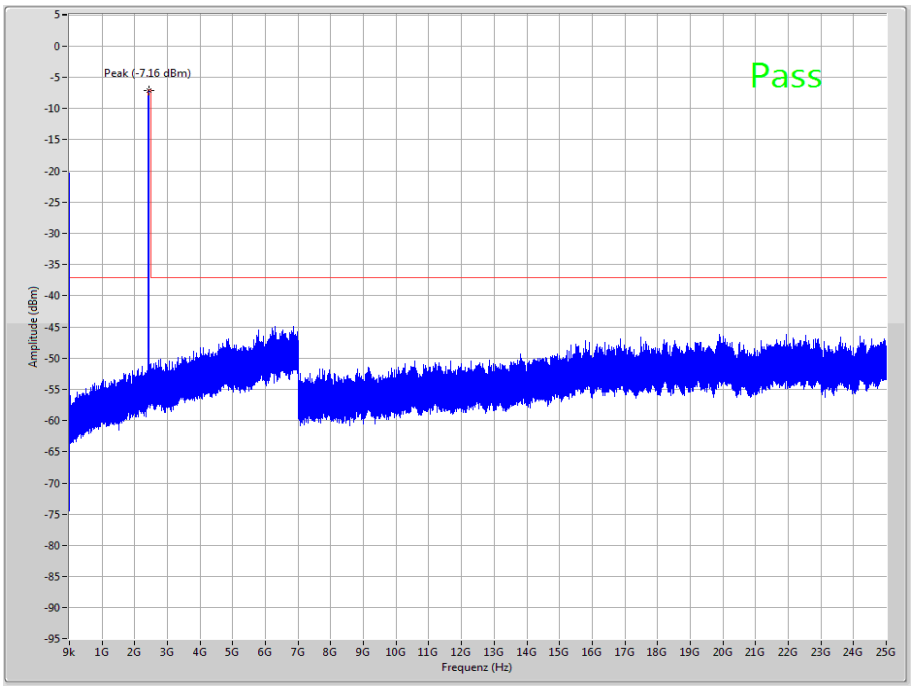
Plot 6: 2457 MHz, zoomed carrier



Date: 7.MAR.2016 13:06:57

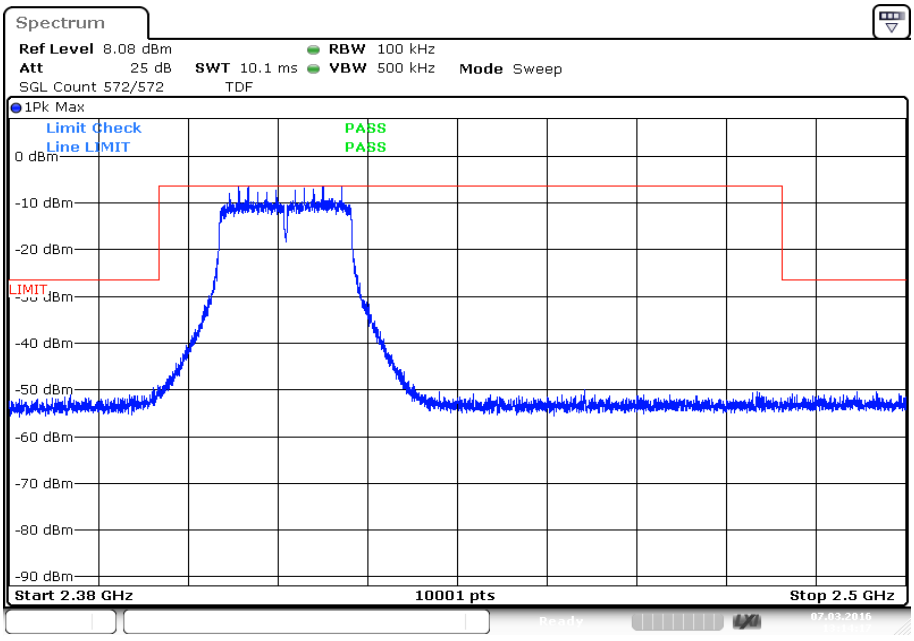
Plots: OFDM / n HT20 – mode, antenna port 3

Plot 1: 2417 MHz, up to 25 GHz



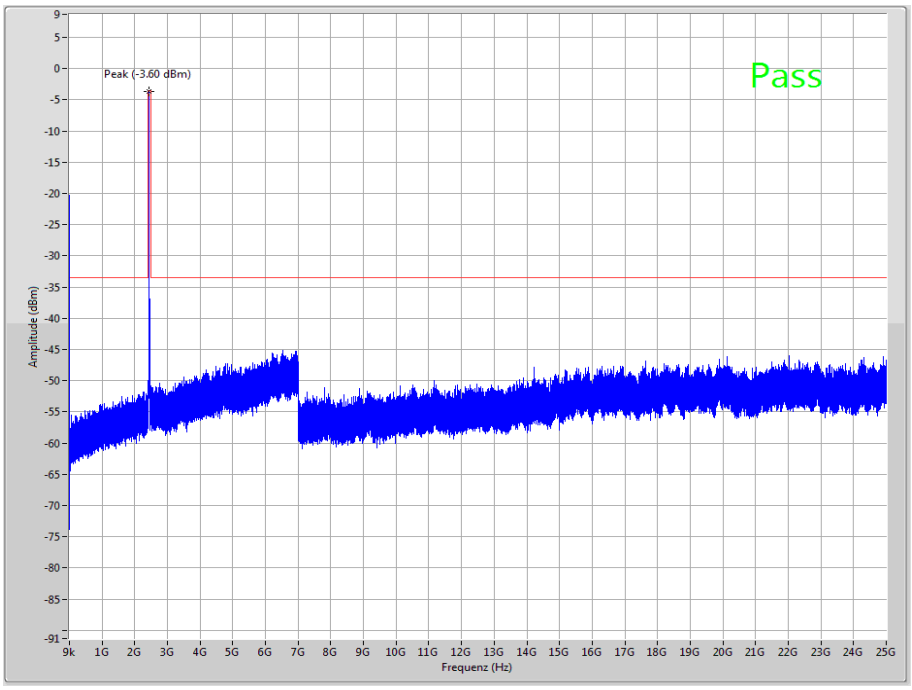
The peak at the beginning of the plot is the LO from the SA.

Plot 2: 2417 MHz, zoomed carrier



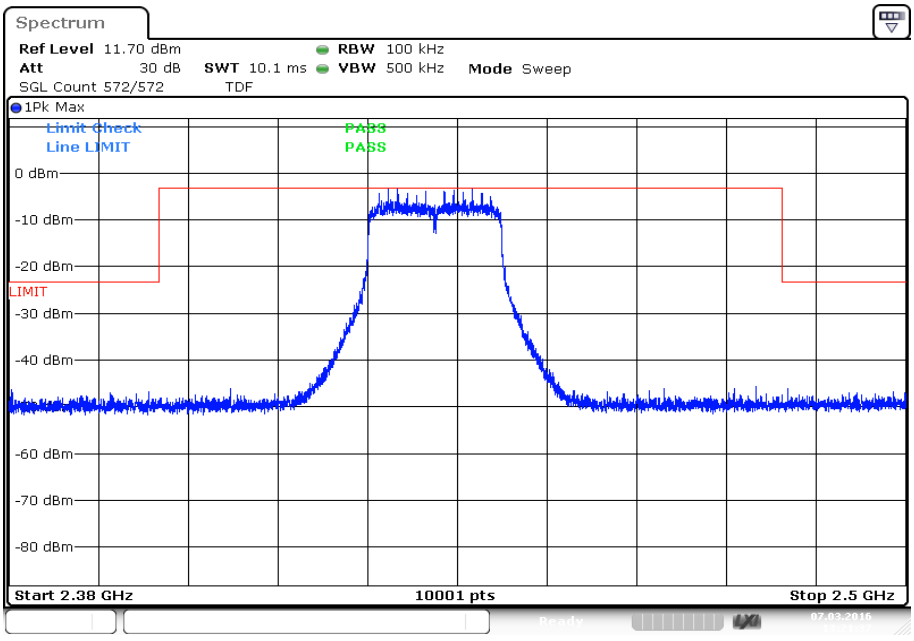
Date: 7.MAR.2016 13:14:18

Plot 3: 2437 MHz, up to 25 GHz



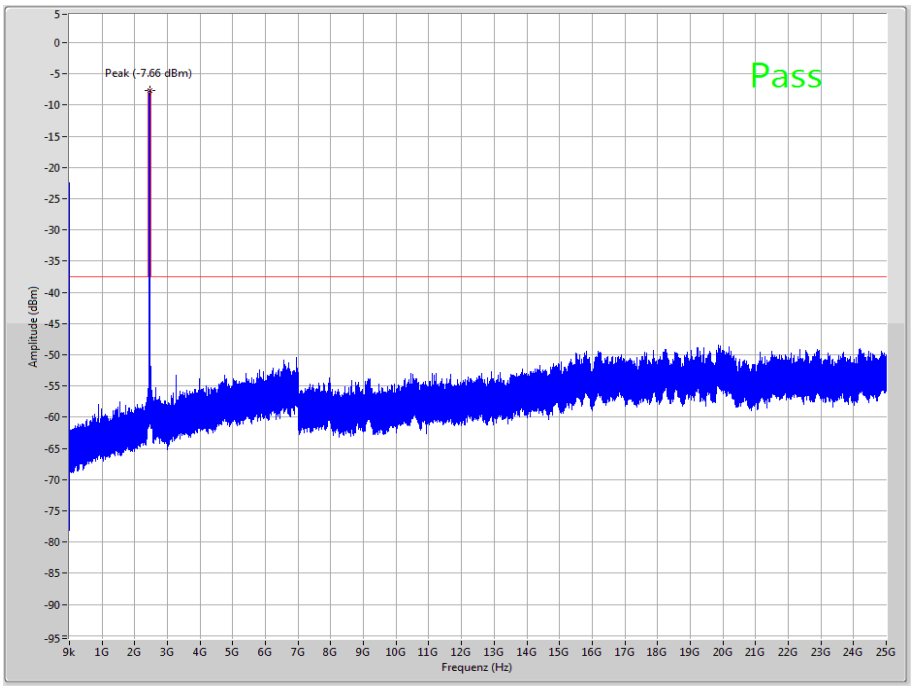
The peak at the beginning of the plot is the LO from the SA.

Plot 4: 2437 MHz, zoomed carrier



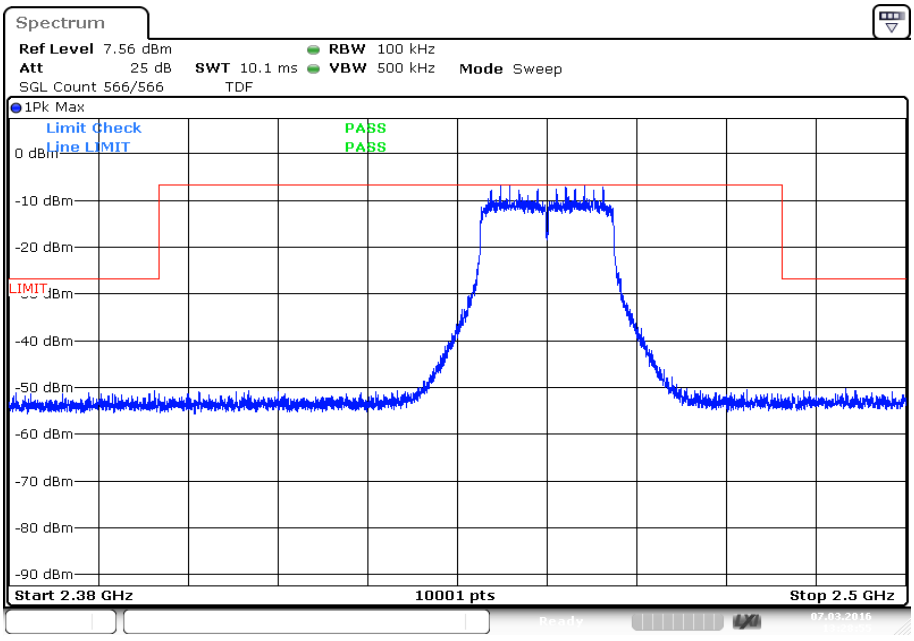
Date: 7.MAR.2016 13:21:38

Plot 5: 2452 MHz, up to 25 GHz



The peak at the beginning of the plot is the LO from the SA.

Plot 6: 2452 MHz, zoomed carrier



Date: 7.MAR.2016 13:28:56

12.10 Spurious emissions radiated below 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to channel 6. This measurement is representative for all channels and modes. If peaks are found channel 1 and channel 11 will be measured too. The measurement is performed with the data rate producing the highest output power. 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
Resolution bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Video bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace mode:	Max Hold
Measured modulation	☒ DSSS b – mode ☒ OFDM g – mode ☒ OFDM n HT20 – mode ☐ OFDM n HT40 – mode
Test setup:	See sub clause 7.2 – B
Measurement uncertainty	See sub clause 9

Limits:

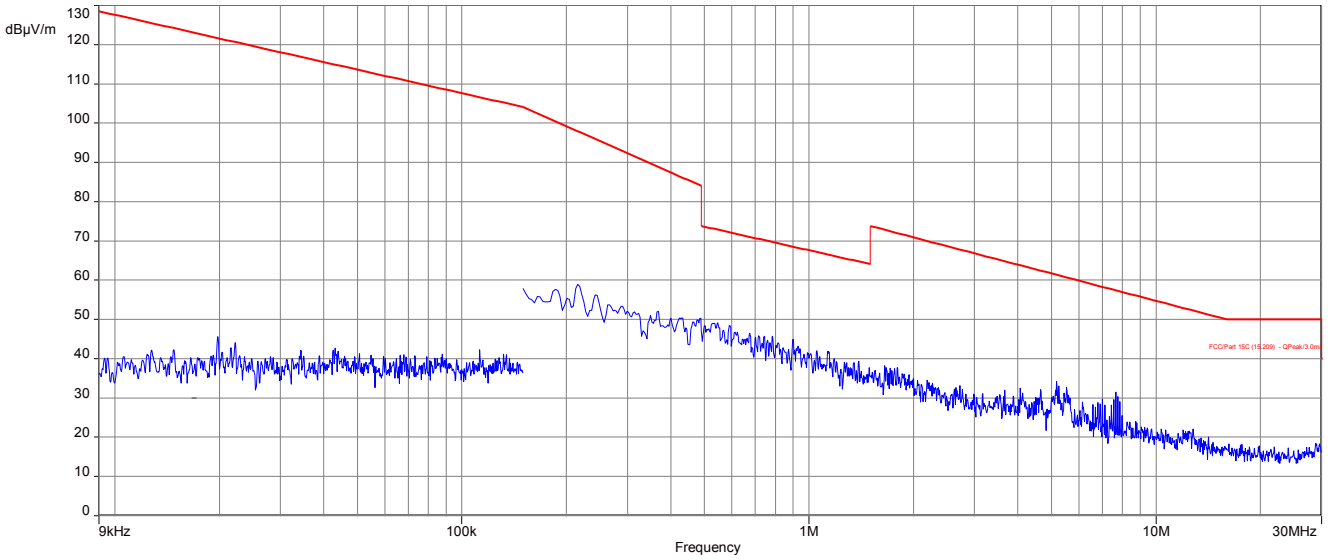
FCC		IC
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Results:

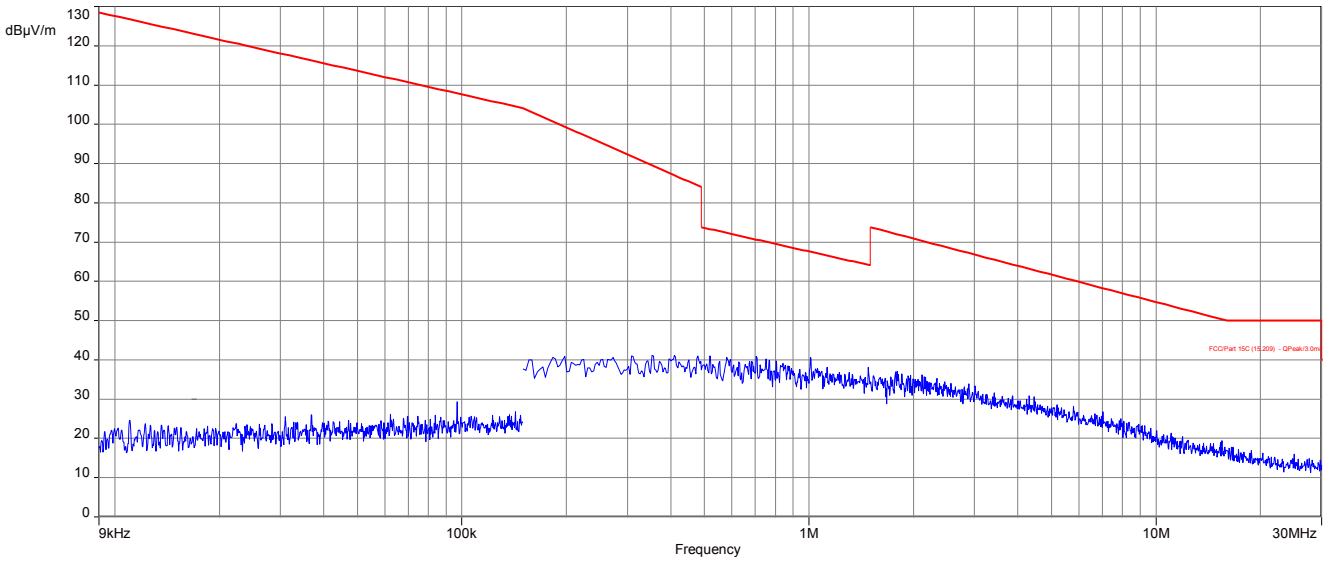
TX Spurious Emissions Radiated < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
All detected peaks are more than 20 dB below the limit.		

Plots: DSSS / b – mode

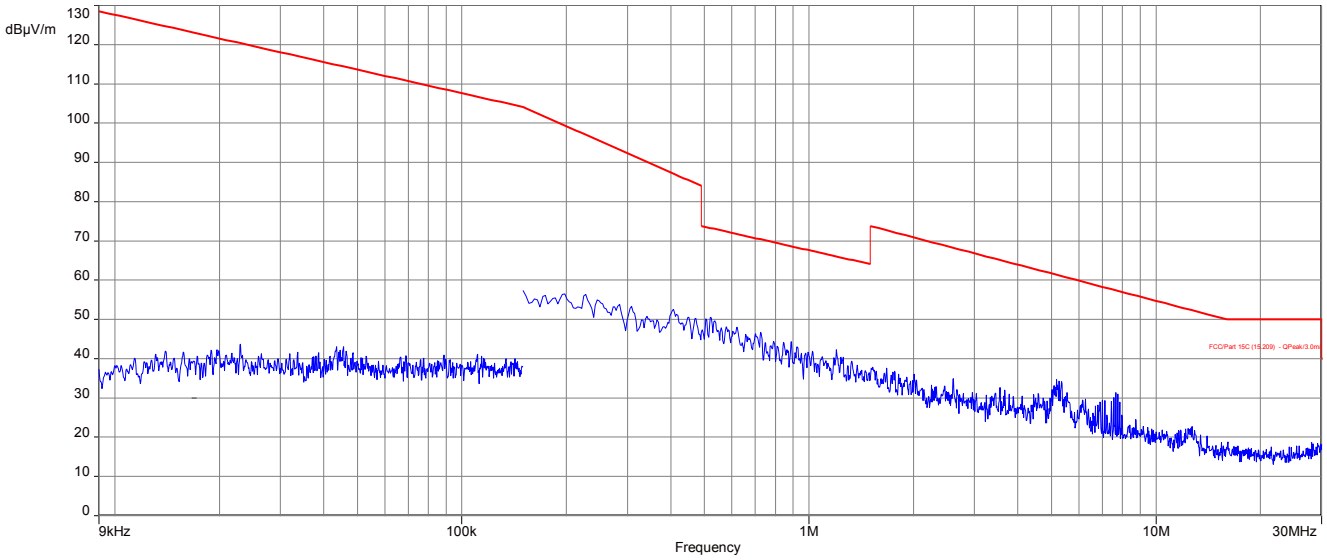
Plot 1: 9 kHz to 30 MHz, low channel



Plot 2: 9 kHz to 30 MHz, mid channel

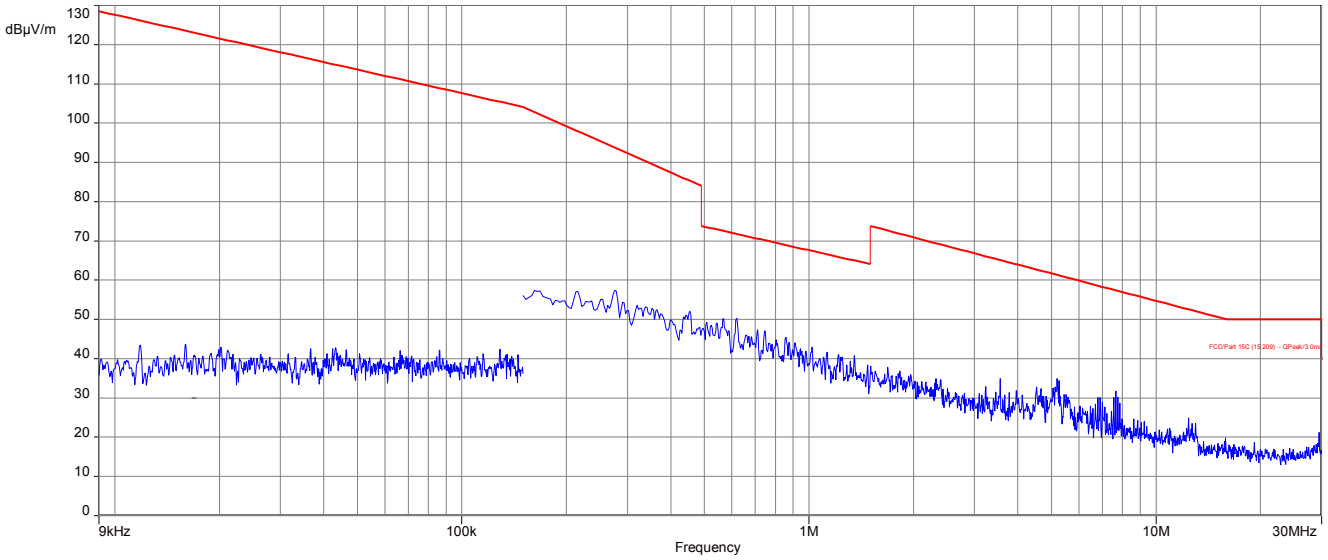


Plot 3: 9 kHz to 30 MHz, high channel

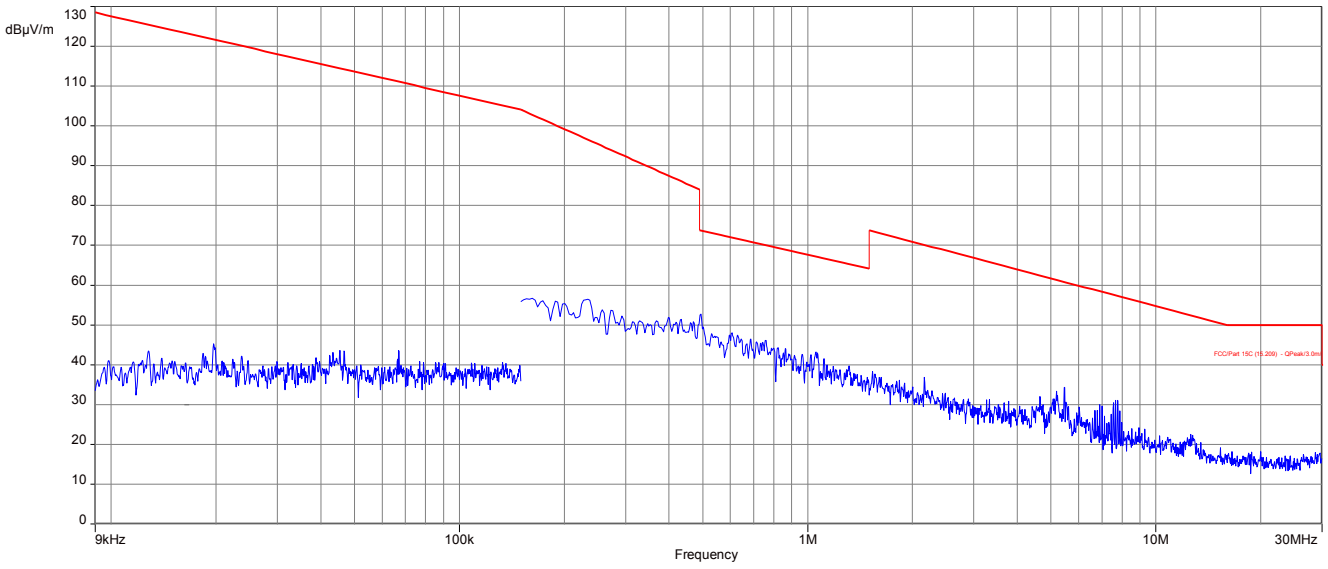


Plots: OFDM / g – mode

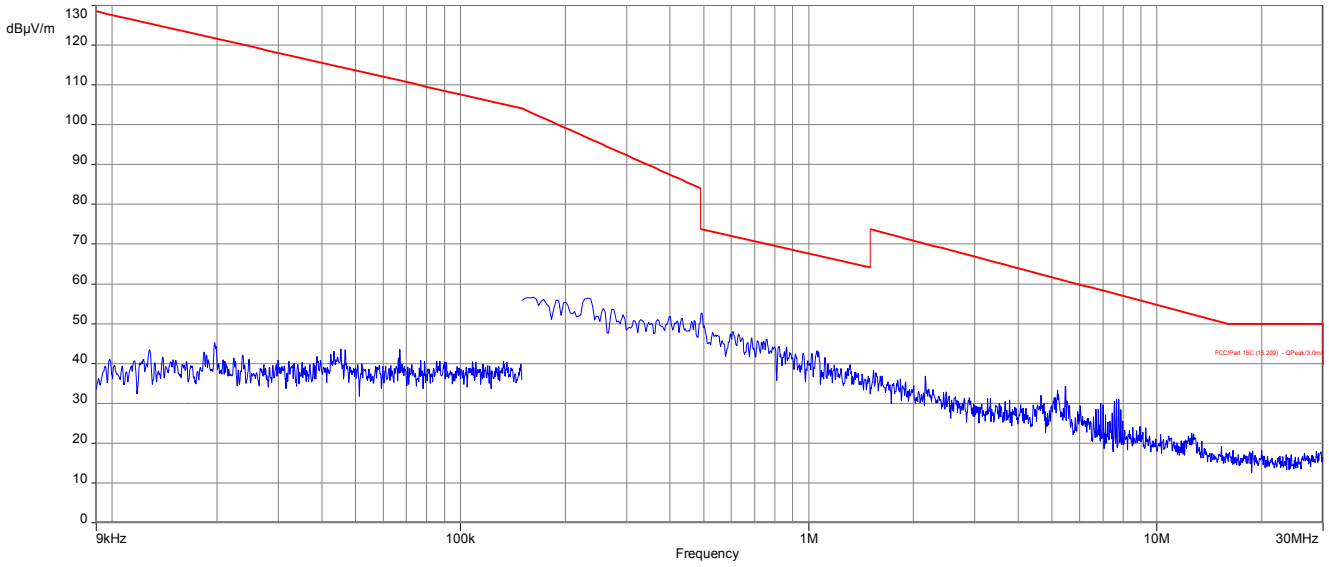
Plot 1: 9 kHz to 30 MHz, low channel



Plot 2: 9 kHz to 30 MHz, mid channel

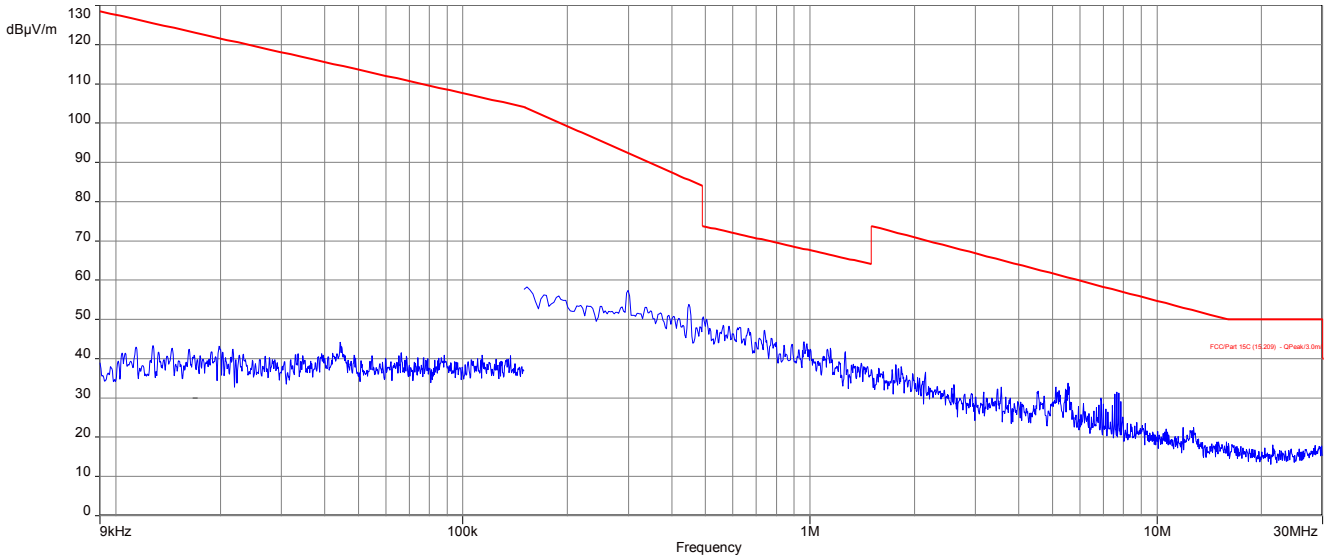


Plot 3: 9 kHz to 30 MHz, high channel

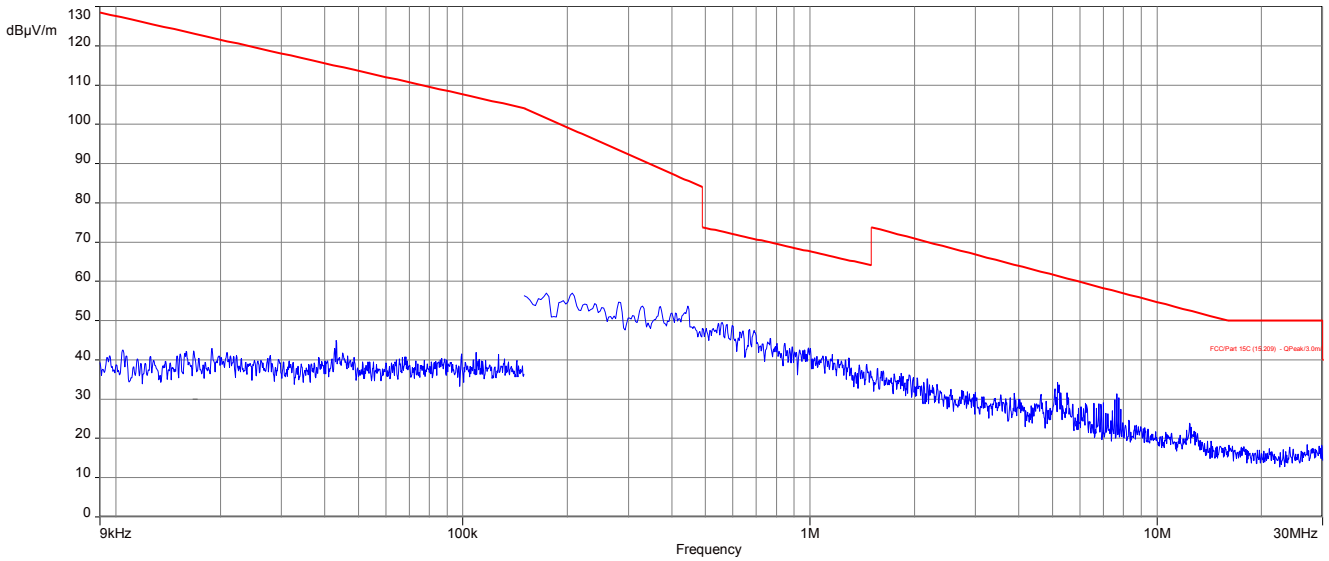


Plots: OFDM / n HT20 – mode

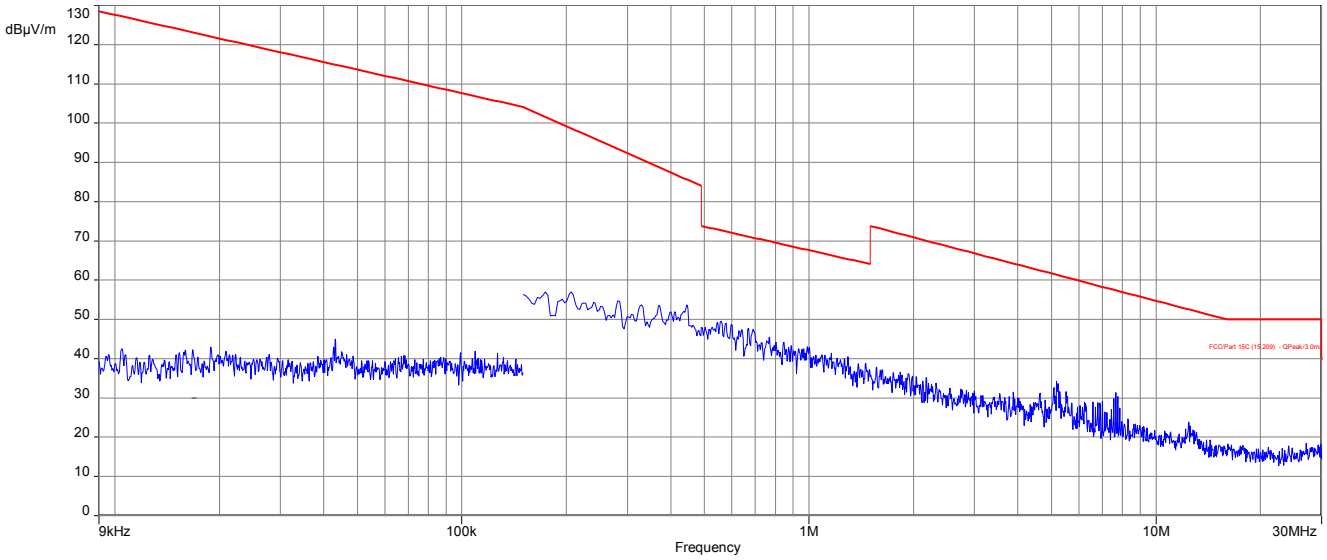
Plot 1: 9 kHz to 30 MHz, low channel



Plot 2: 9 kHz to 30 MHz, mid channel



Plot 3: 9 kHz to 30 MHz, high channel



12.11 Spurious emissions radiated 30 MHz to 1 GHz

Description:

Measurement of the radiated spurious emissions and cabinet radiations below 1 GHz.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Resolution bandwidth:	120 kHz
Video bandwidth:	3 x RBW
Span:	30 MHz to 1 GHz
Trace mode:	Max Hold
Measured modulation	☒ DSSS b – mode ☒ OFDM g – mode ☒ OFDM n HT20 – mode ☐ OFDM n HT40 – mode ☒ RX / Idle – mode
Test setup:	See sub clause 7.1 - A
Measurement uncertainty	See sub clause 9

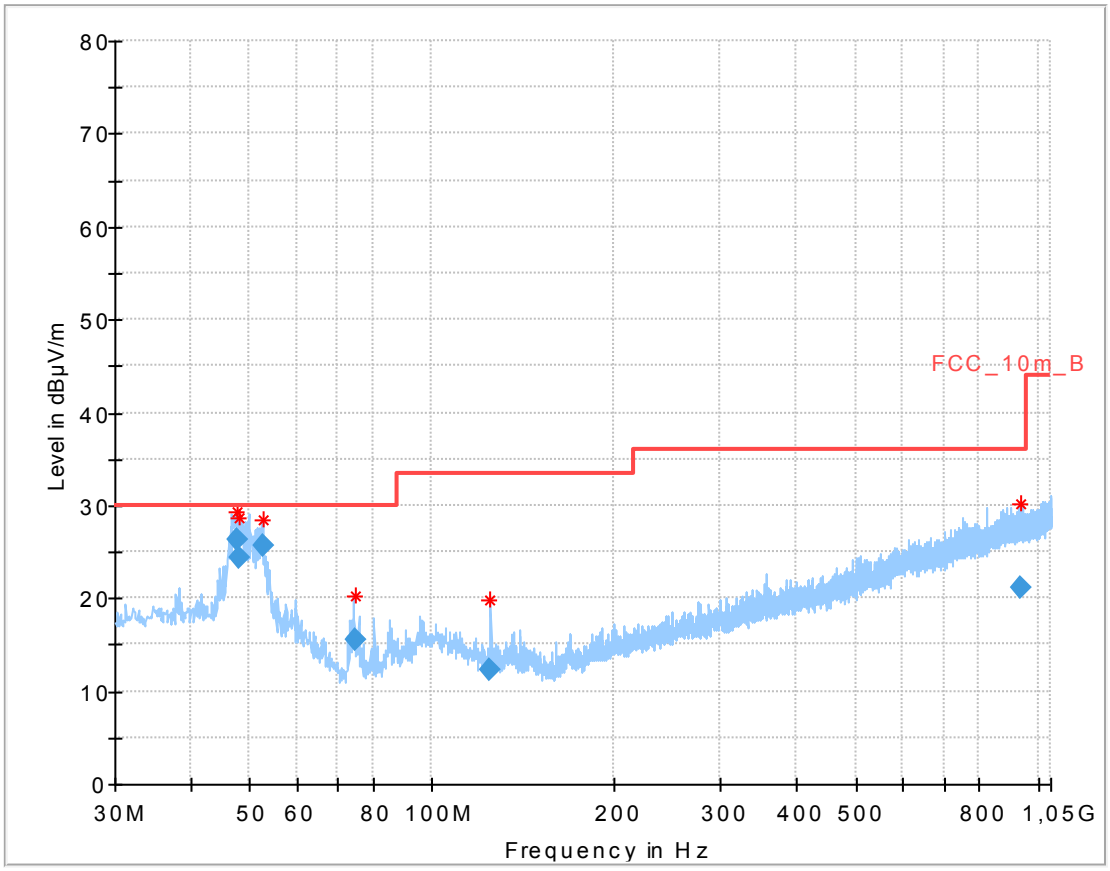
The modulation with the highest output power was used to perform the transmitter spurious emissions. If spurious were detected a re-measurement was performed on the detected frequency with each modulation.

Limits:

FCC	IC	
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 §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10

Plot: DSSS / b – mode

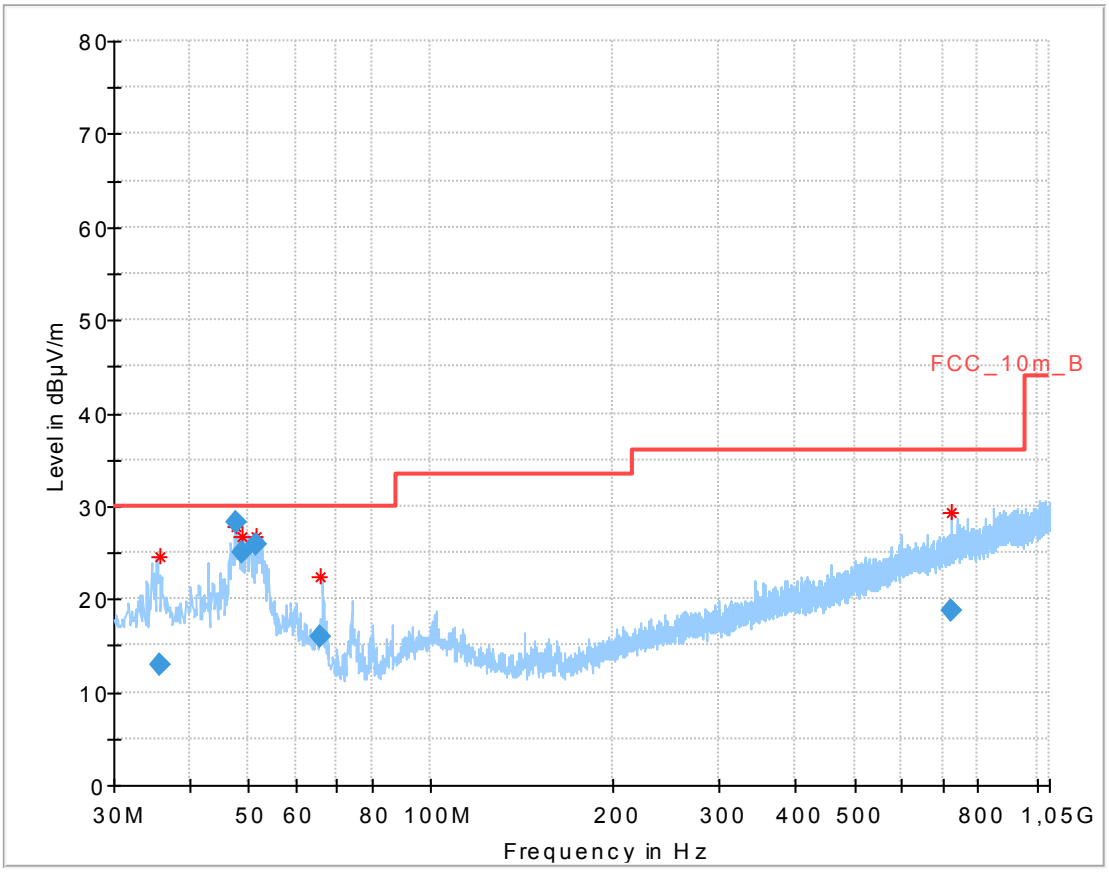
Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization, low channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.561850	26.35	30.00	3.65	1000.0	120.000	98.0	V	242.0	13.2
48.273300	24.28	30.00	5.72	1000.0	120.000	98.0	V	208.0	13.0
52.544100	25.56	30.00	4.44	1000.0	120.000	98.0	V	281.0	12.2
74.565750	15.63	30.00	14.37	1000.0	120.000	101.0	V	100.0	8.3
125.030250	12.28	33.50	21.22	1000.0	120.000	170.0	V	135.0	9.8
937.786050	21.05	36.00	14.95	1000.0	120.000	170.0	V	350.0	24.2

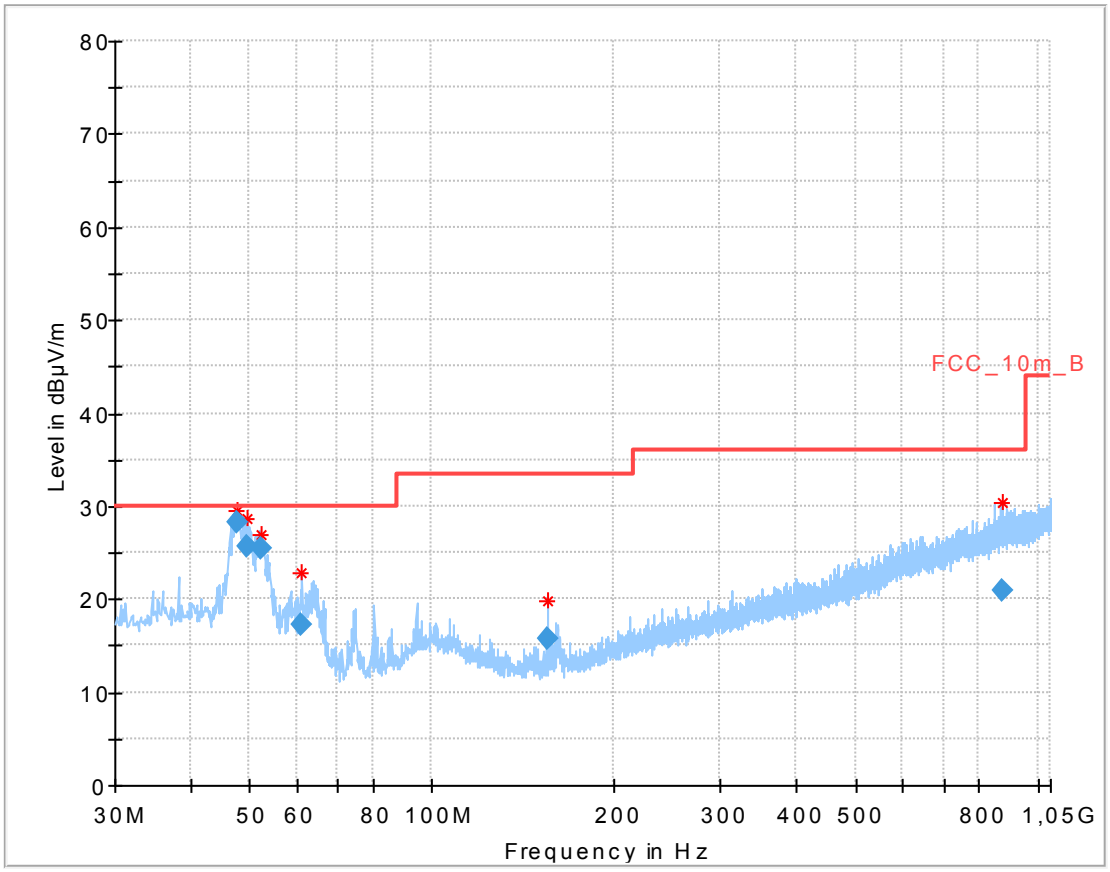
Plot 2: 30 MHz to 1 GHz, vertical & horizontal polarization, mid channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
35.704800	12.88	30.00	17.12	1000.0	120.000	170.0	V	278.0	13.8
47.581500	28.17	30.00	1.83	1000.0	120.000	98.0	V	192.0	13.2
48.929250	25.06	30.00	4.94	1000.0	120.000	98.0	V	192.0	12.9
51.545550	25.82	30.00	4.18	1000.0	120.000	98.0	V	1.0	12.4
65.712900	15.90	30.00	14.10	1000.0	120.000	98.0	V	259.0	9.3
720.940650	18.81	36.00	17.19	1000.0	120.000	170.0	V	270.0	22.0

Plot 3: 30 MHz to 1 GHz, vertical & horizontal polarization, high channel

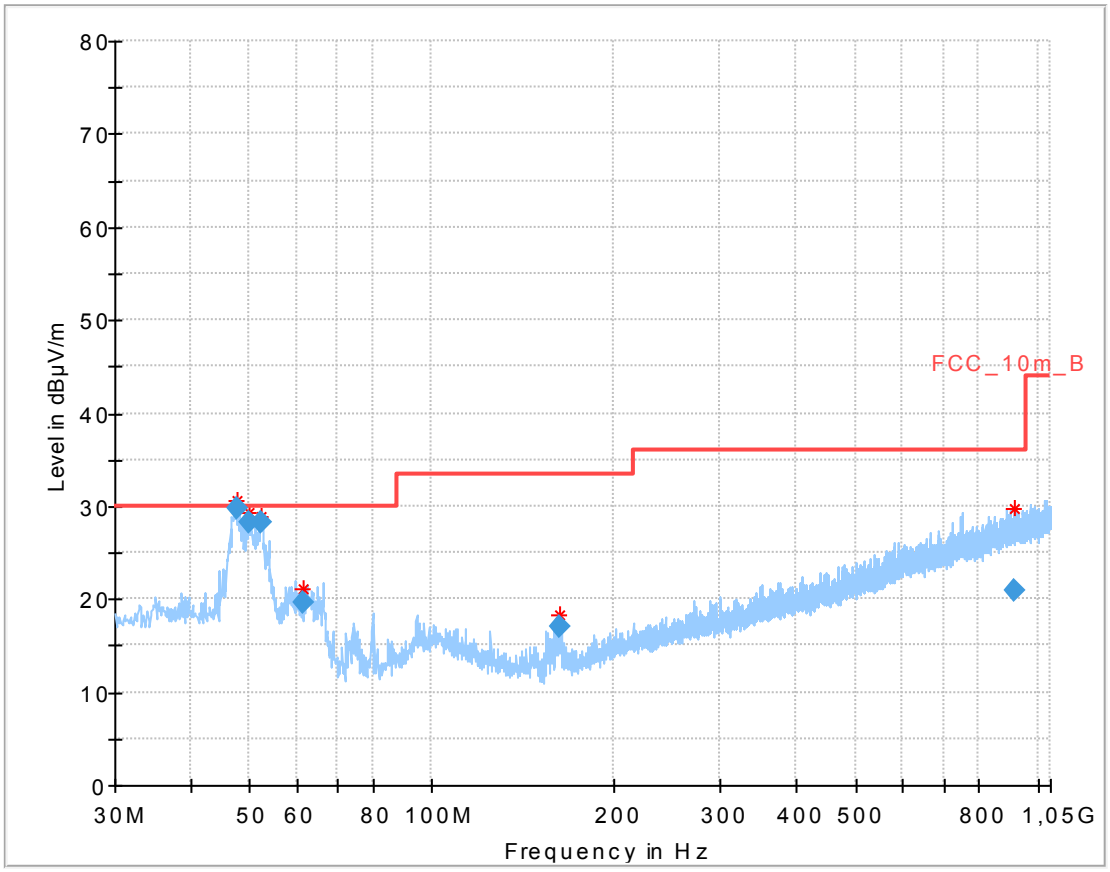


Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.608650	28.31	30.00	1.69	1000.0	120.000	98.0	V	316.0	13.2
49.551750	25.66	30.00	4.34	1000.0	120.000	98.0	V	316.0	12.7
52.178250	25.47	30.00	4.53	1000.0	120.000	98.0	V	353.0	12.3
60.765900	17.17	30.00	12.83	1000.0	120.000	101.0	V	341.0	10.4
155.623950	15.70	33.50	17.80	1000.0	120.000	98.0	V	353.0	9.0
877.315350	20.84	36.00	15.16	1000.0	120.000	170.0	H	220.0	23.8

Plot: OFDM / g – mode

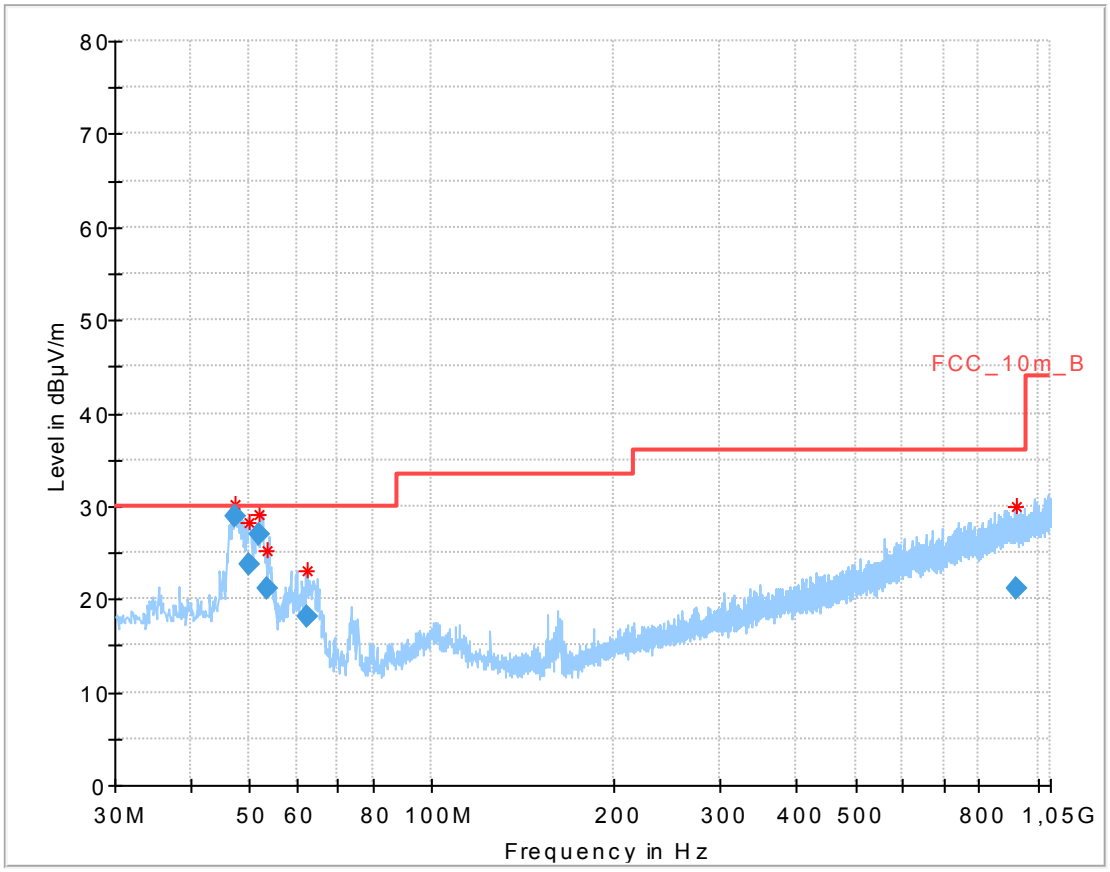
Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization, low channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.592450	29.65	30.00	0.35	1000.0	120.000	98.0	V	337.0	13.2
49.872000	28.16	30.00	1.84	1000.0	120.000	98.0	V	1.0	12.7
52.497150	28.23	30.00	1.77	1000.0	120.000	98.0	V	1.0	12.2
61.132500	19.52	30.00	10.48	1000.0	120.000	170.0	V	337.0	10.3
162.361950	16.98	33.50	16.52	1000.0	120.000	98.0	V	82.0	9.2
917.956350	20.89	36.00	15.11	1000.0	120.000	98.0	V	12.0	24.2

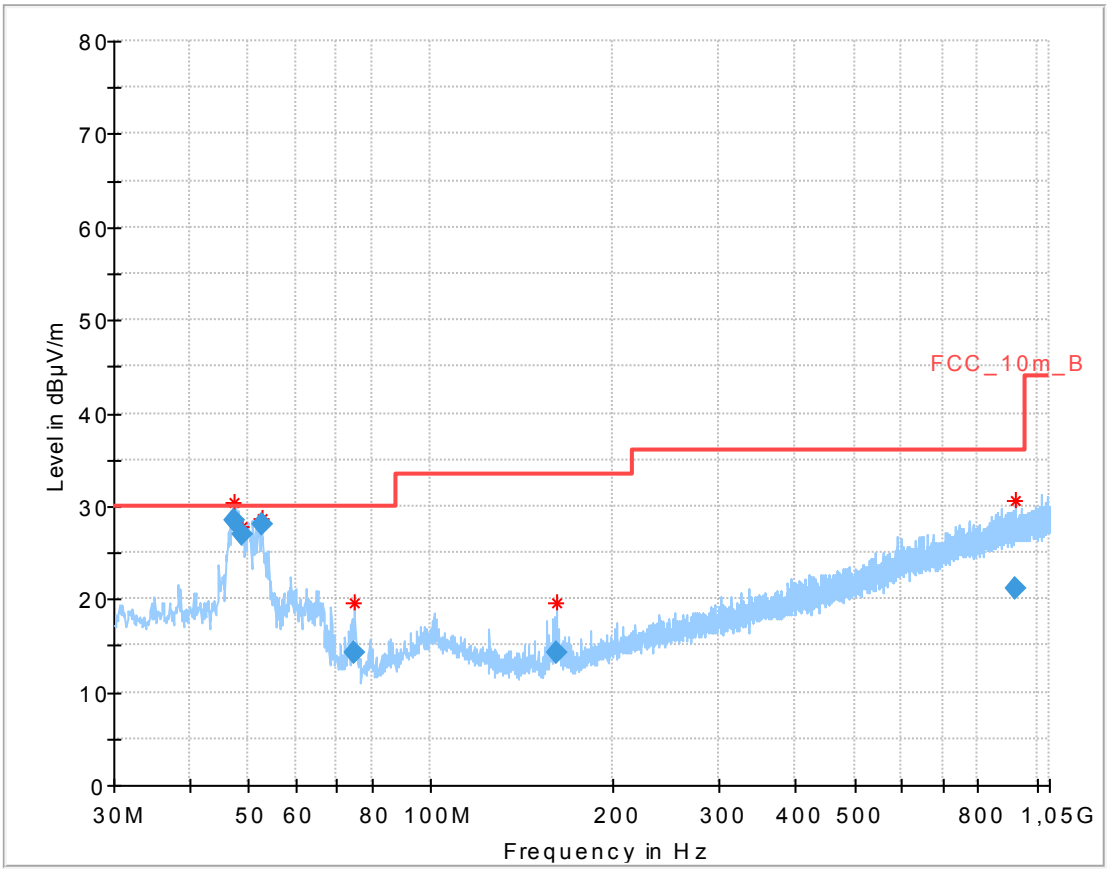
Plot 2: 30 MHz to 1 GHz, vertical & horizontal polarization, mid channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.537100	28.99	30.00	1.01	1000.0	120.000	98.0	V	39.0	13.2
50.089350	23.76	30.00	6.24	1000.0	120.000	98.0	V	32.0	12.6
51.848250	26.99	30.00	3.01	1000.0	120.000	98.0	V	32.0	12.3
53.467200	21.16	30.00	8.84	1000.0	120.000	98.0	V	105.0	12.1
62.114400	18.12	30.00	11.88	1000.0	120.000	101.0	V	351.0	10.1
925.894500	21.05	36.00	14.95	1000.0	120.000	98.0	H	3.0	24.2

Plot 3: 30 MHz to 1 GHz, vertical & horizontal polarization, high channel

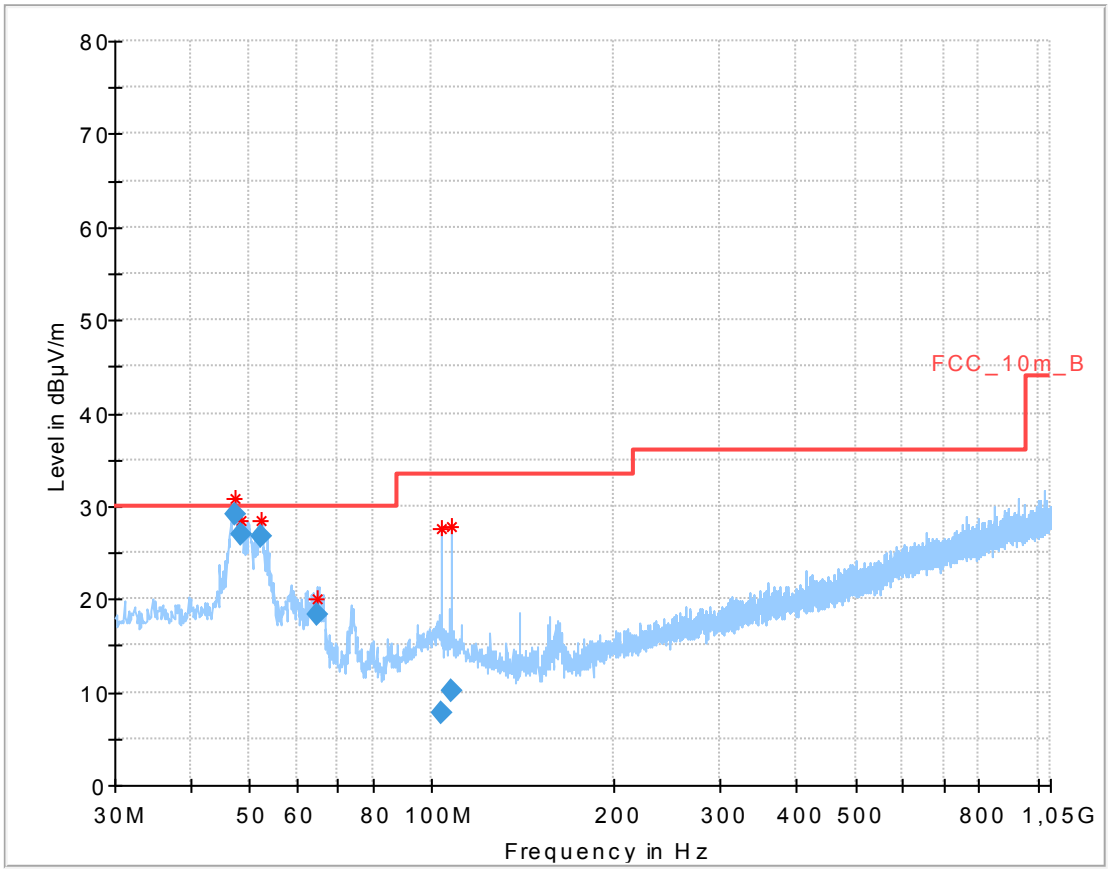


Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.239800	28.52	30.00	1.48	1000.0	120.000	98.0	V	126.0	13.3
48.903300	26.99	30.00	3.01	1000.0	120.000	98.0	V	98.0	12.9
52.539000	28.00	30.00	2.00	1000.0	120.000	98.0	V	3.0	12.2
74.932800	14.25	30.00	15.75	1000.0	120.000	170.0	V	181.0	8.3
161.118300	14.18	33.50	19.32	1000.0	120.000	98.0	V	83.0	9.1
921.274350	21.04	36.00	14.96	1000.0	120.000	170.0	H	353.0	24.2

Plot: OFDM / n HT20 – mode

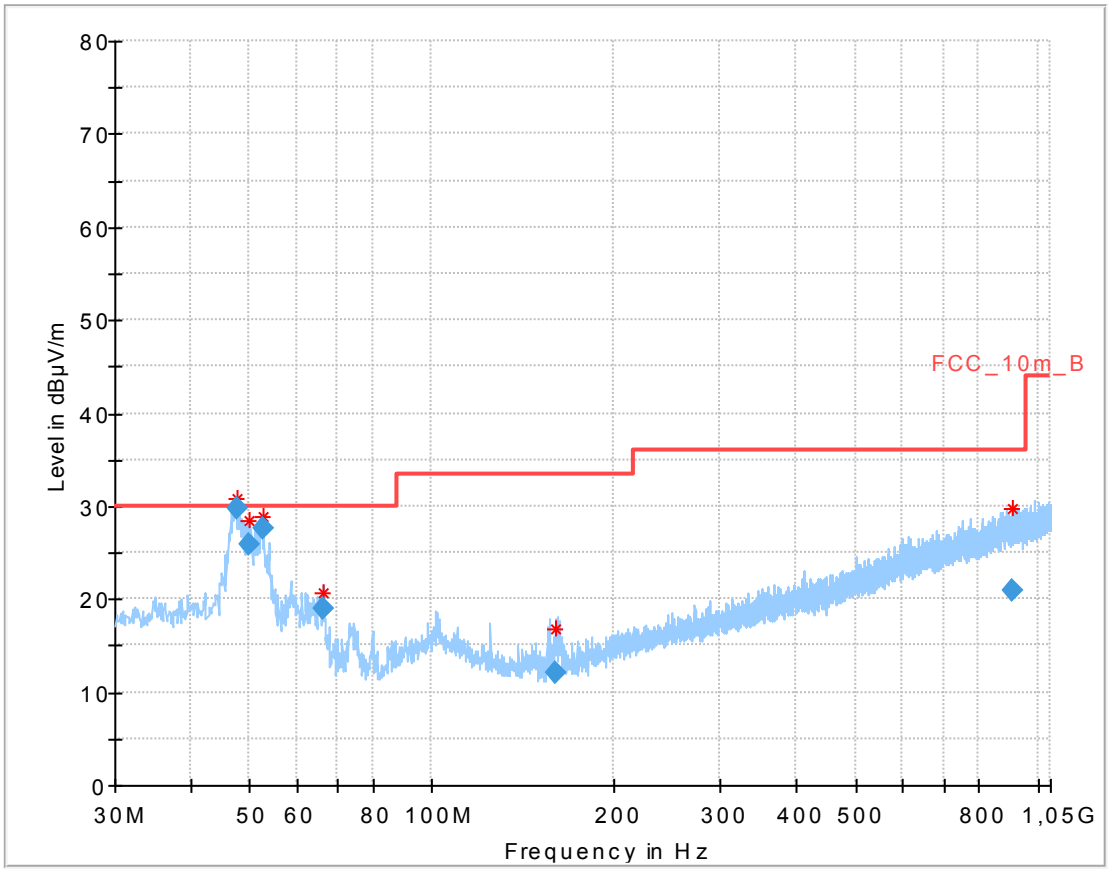
Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization, low channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.228700	29.20	30.00	0.80	1000.0	120.000	98.0	V	353.0	13.3
48.540000	26.91	30.00	3.09	1000.0	120.000	98.0	V	210.0	13.0
52.171200	26.78	30.00	3.22	1000.0	120.000	98.0	V	47.0	12.3
64.767300	18.23	30.00	11.77	1000.0	120.000	170.0	V	303.0	9.5
103.550400	7.81	33.50	25.69	1000.0	120.000	101.0	V	147.0	11.8
108.004950	10.24	33.50	23.26	1000.0	120.000	170.0	V	147.0	11.3

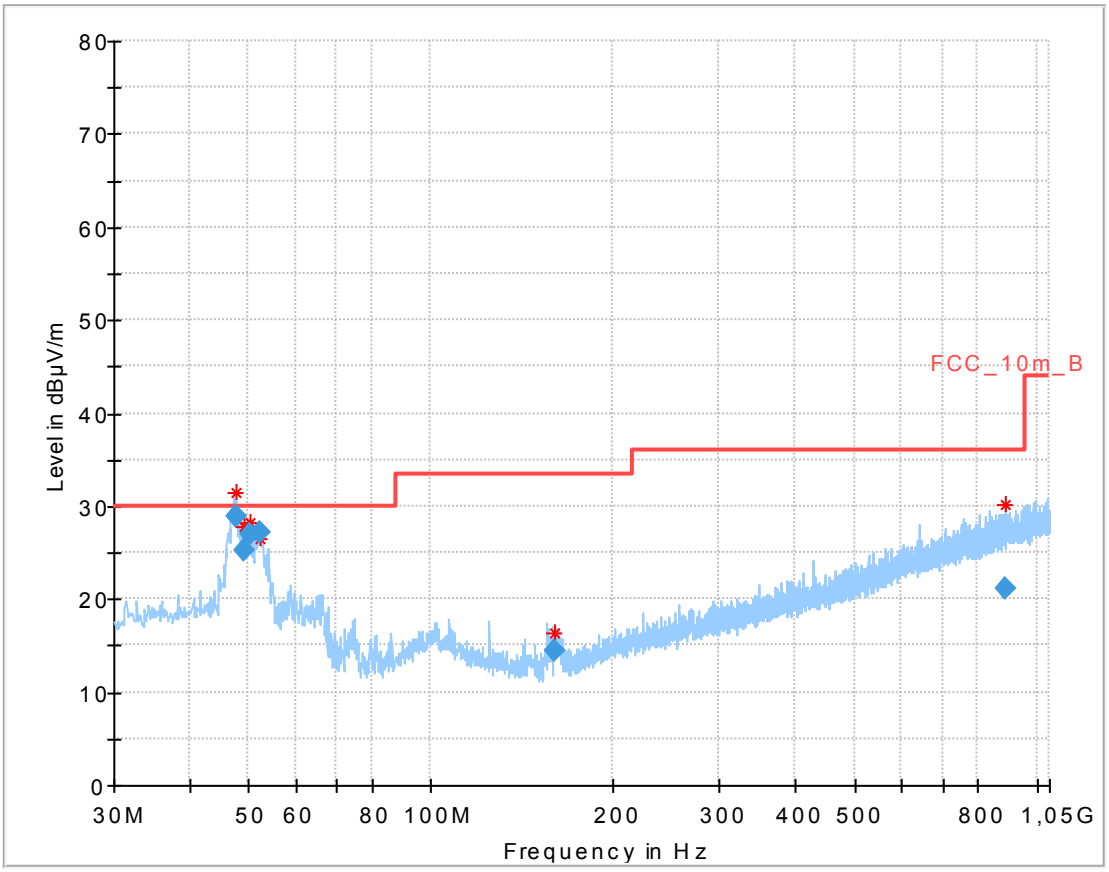
Plot 2: 30 MHz to 1 GHz, vertical & horizontal polarization, mid channel



Final_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.571300	29.72	30.00	0.28	1000.0	120.000	98.0	V	79.0	13.2
49.899900	25.95	30.00	4.05	1000.0	120.000	98.0	V	274.0	12.7
52.536450	27.58	30.00	2.42	1000.0	120.000	98.0	V	2.0	12.2
66.287550	18.95	30.00	11.05	1000.0	120.000	170.0	V	297.0	9.2
159.651600	12.00	33.50	21.50	1000.0	120.000	170.0	V	95.0	9.1
909.830550	20.98	36.00	15.02	1000.0	120.000	170.0	H	130.0	24.1

Plot 3: 30 MHz to 1 GHz, vertical & horizontal polarization, high 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)
47.582550	28.95	30.00	1.05	1000.0	120.000	98.0	V	170.0	13.2
49.182150	25.23	30.00	4.77	1000.0	120.000	98.0	V	101.0	12.8
50.203200	27.00	30.00	3.00	1000.0	120.000	98.0	V	47.0	12.6
52.197150	27.15	30.00	2.85	1000.0	120.000	98.0	V	6.0	12.3
159.648750	14.53	33.50	18.97	1000.0	120.000	101.0	V	147.0	9.1
890.277600	21.22	36.00	14.78	1000.0	120.000	170.0	V	245.0	24.0

12.12 Spurious emissions radiated above 1 GHz

Description:

Measurement of the radiated spurious emissions above 1 GHz in transmit mode and receiver / idle mode.

Measurement:

Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	3 x RBW
Span:	1 GHz to 26 GHz
Trace mode:	Max Hold
Measured modulation	☒ DSSS b – mode ☒ OFDM g – mode ☒ OFDM n HT20 – mode ☐ OFDM n HT40 – mode ☒ RX / Idle – mode
Test setup:	See sub clause 7.2 – A & – C
Measurement uncertainty	See sub clause 9

Limits:

FCC		IC
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 30 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 §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
Above 960	54.0	3

Results: DSSS / b – mode

TX Spurious Emissions Radiated [dBµV/m]								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	
	Peak			Peak			Peak	
	AVG			AVG			AVG	

Results: OFDM / g – mode

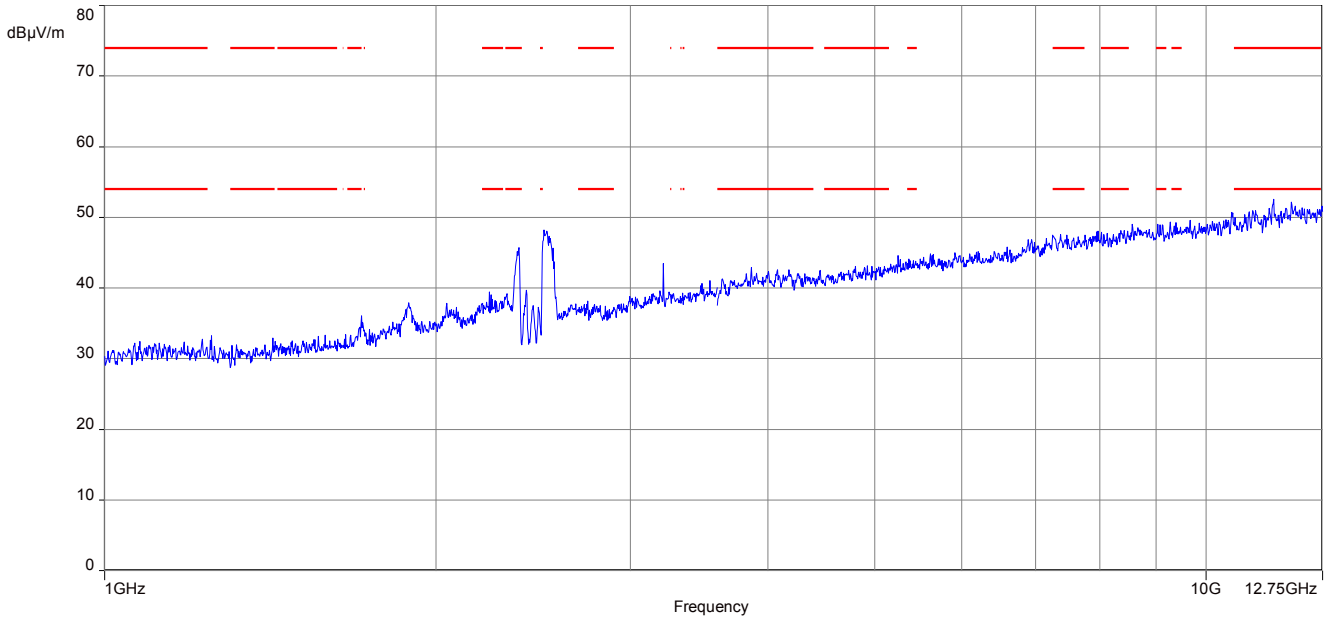
TX Spurious Emissions Radiated [dBµV/m]								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	
	Peak			Peak			Peak	
	AVG			AVG			AVG	

Results: OFDM / n HT20 – mode

TX Spurious Emissions Radiated [dBµV/m]								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.			All detected peak emissions are below the average limit.		
	Peak			Peak			Peak	
	AVG			AVG			AVG	
	Peak			Peak			Peak	
	AVG			AVG			AVG	

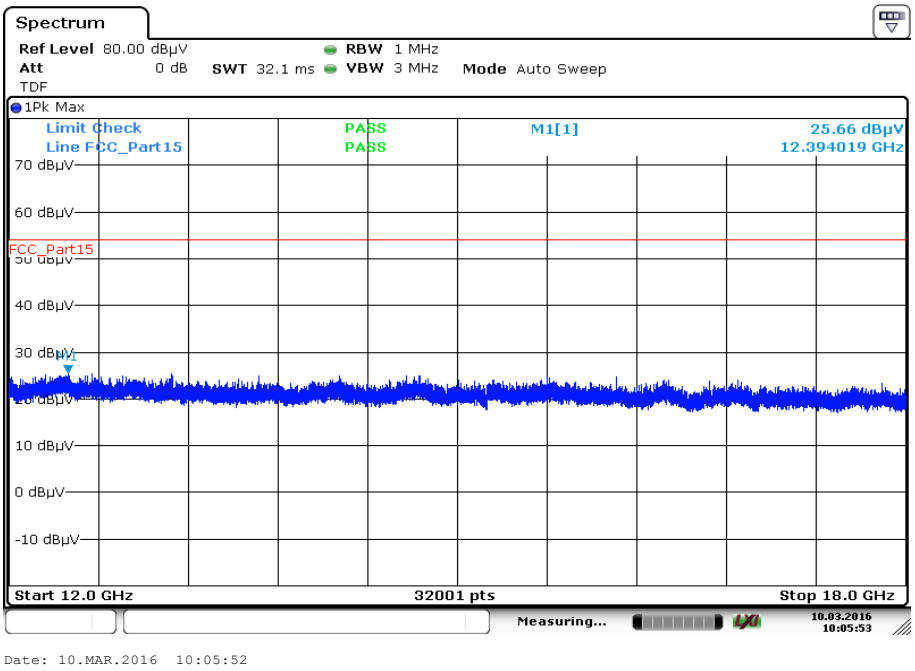
Plots: DSSS / b – mode

Plot 1: lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

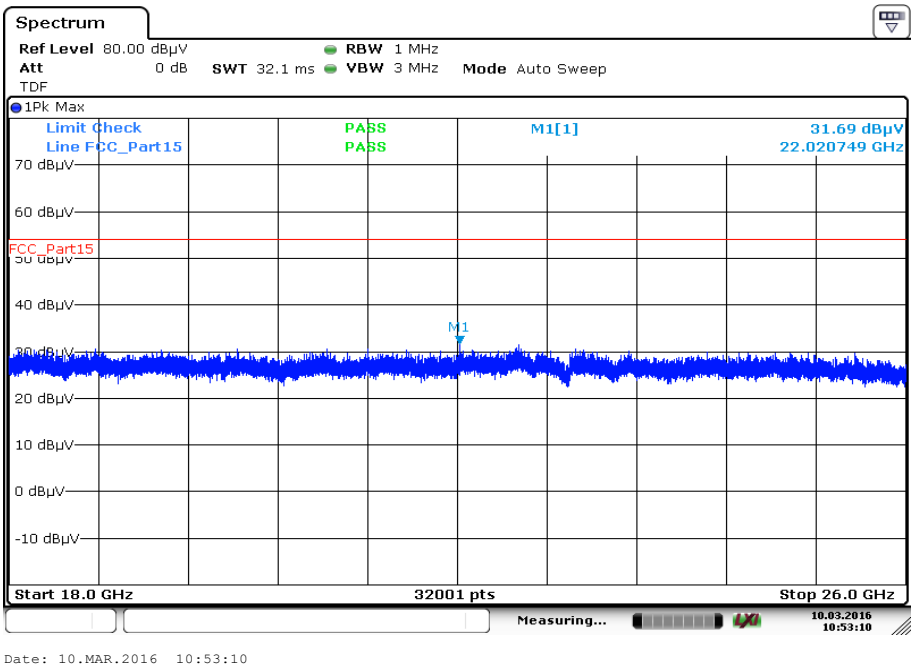


The carrier signal is notched with a 2.4 GHz band rejection filter.

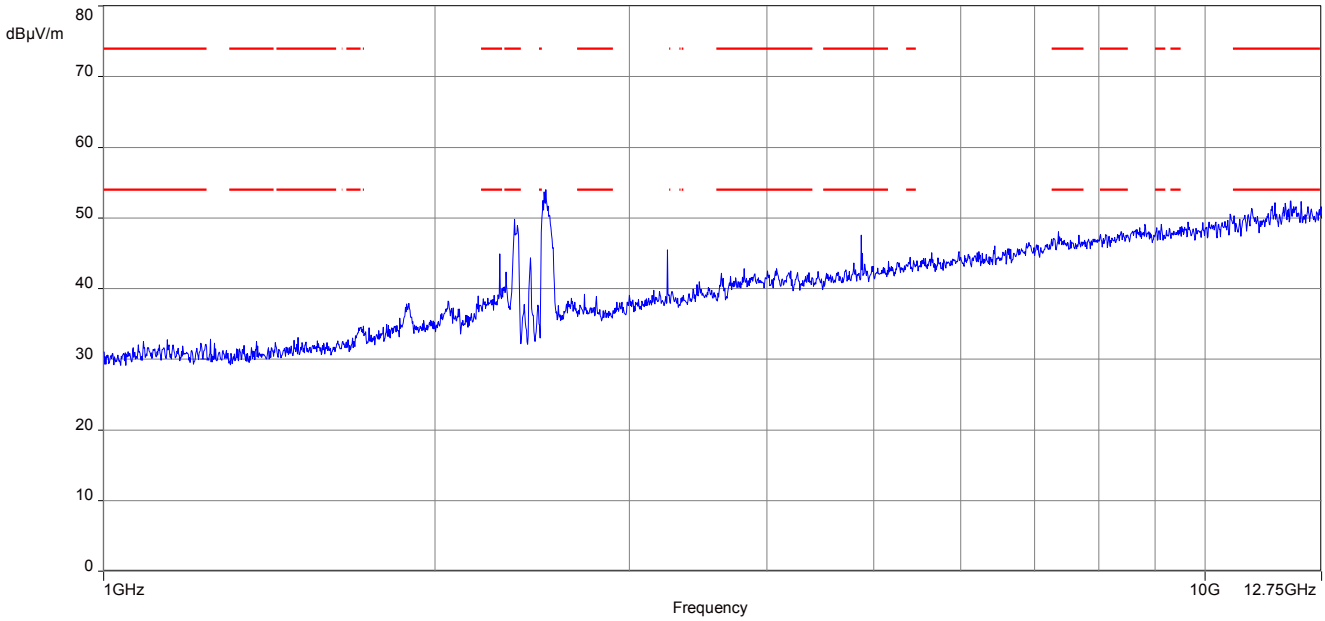
Plot 2: lowest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization, peak & average



Plot 3: lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization

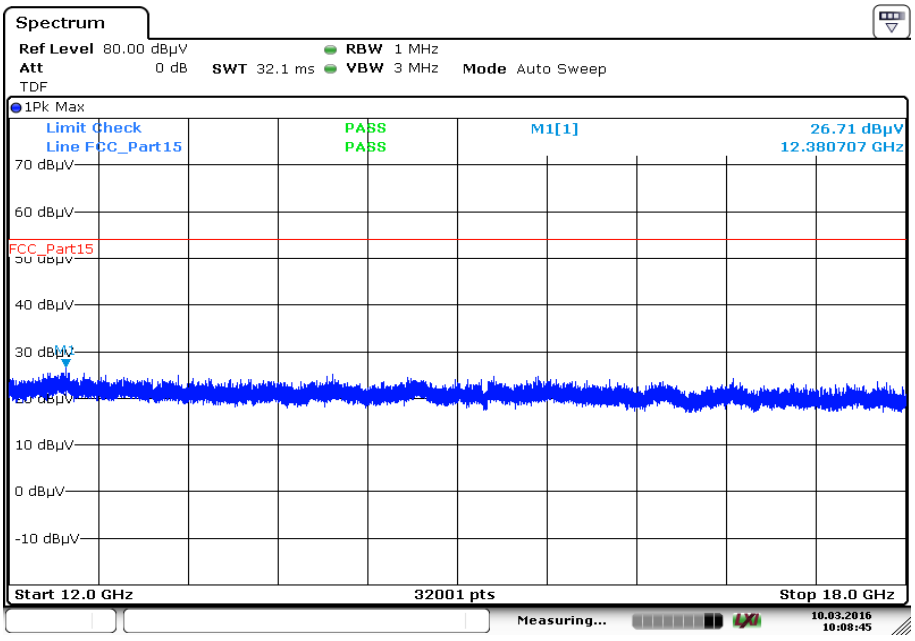


Plot 4: middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



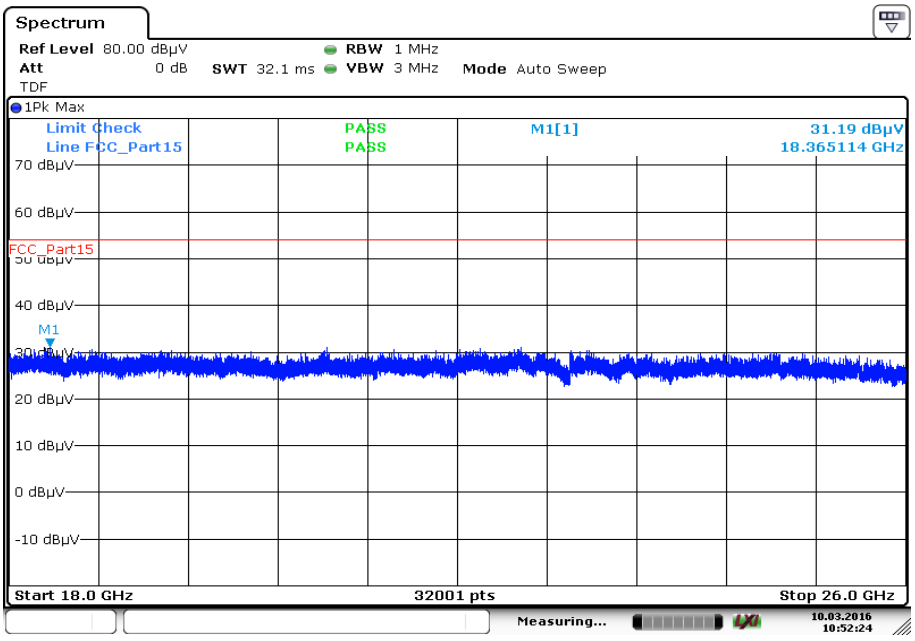
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 5: middle channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization



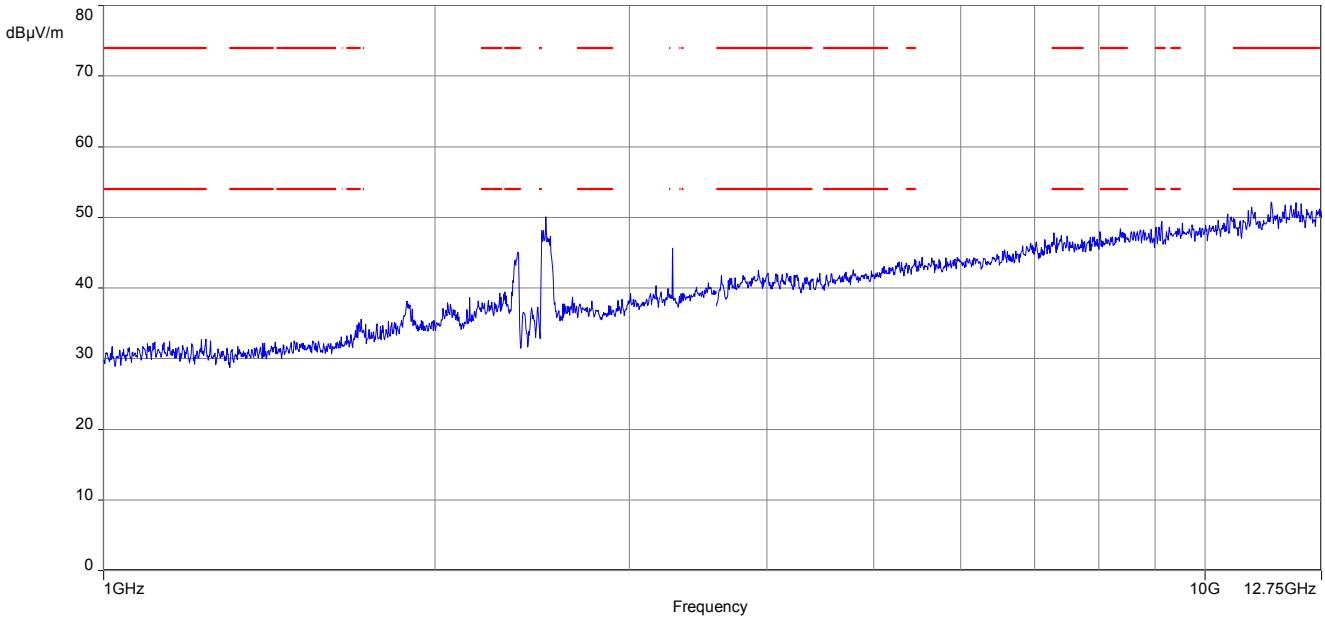
Date: 10.MAR.2016 10:08:45

Plot 6: middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



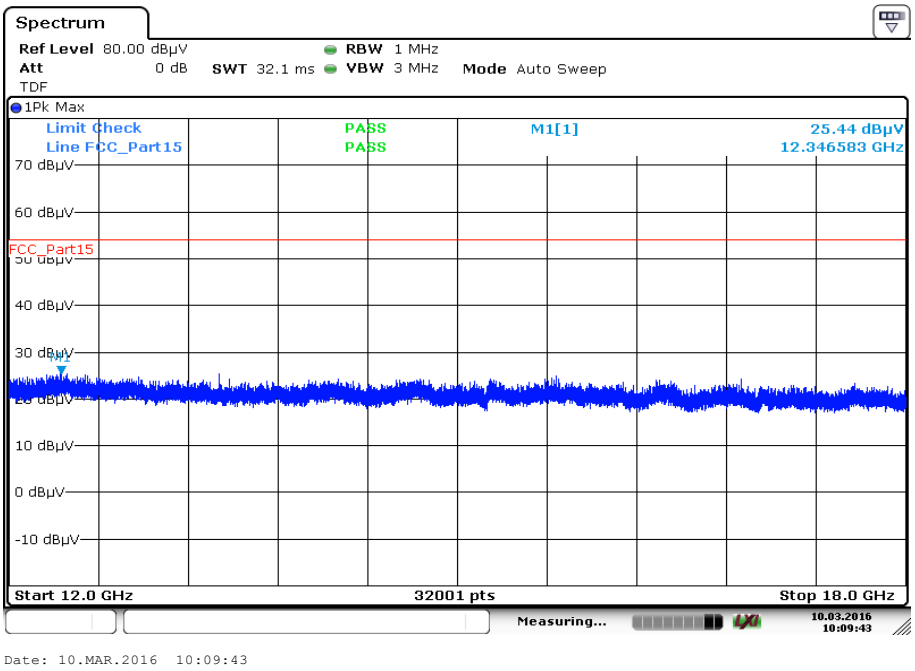
Date: 10.MAR.2016 10:52:24

Plot 7: highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

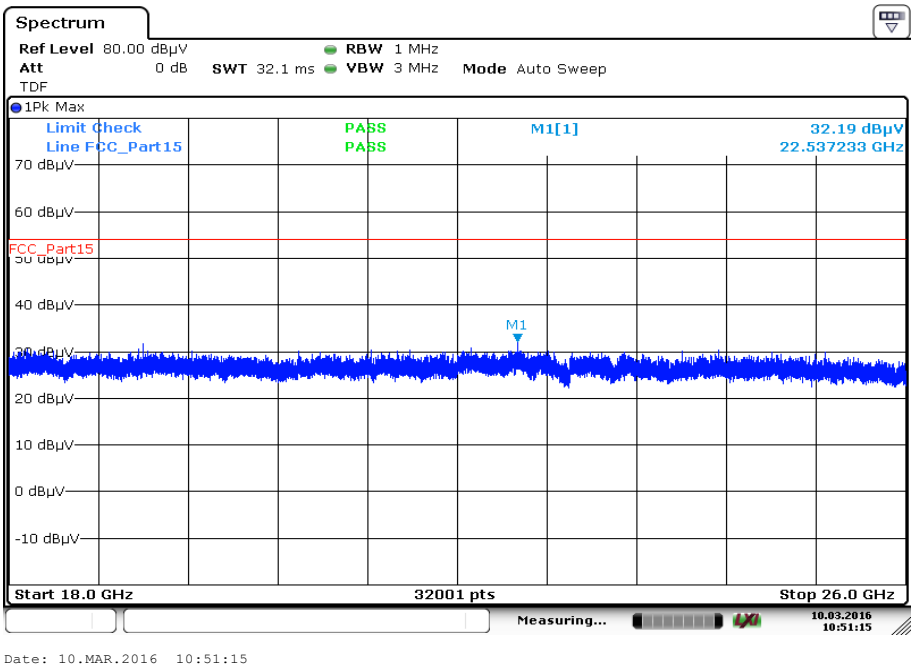


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: highest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization

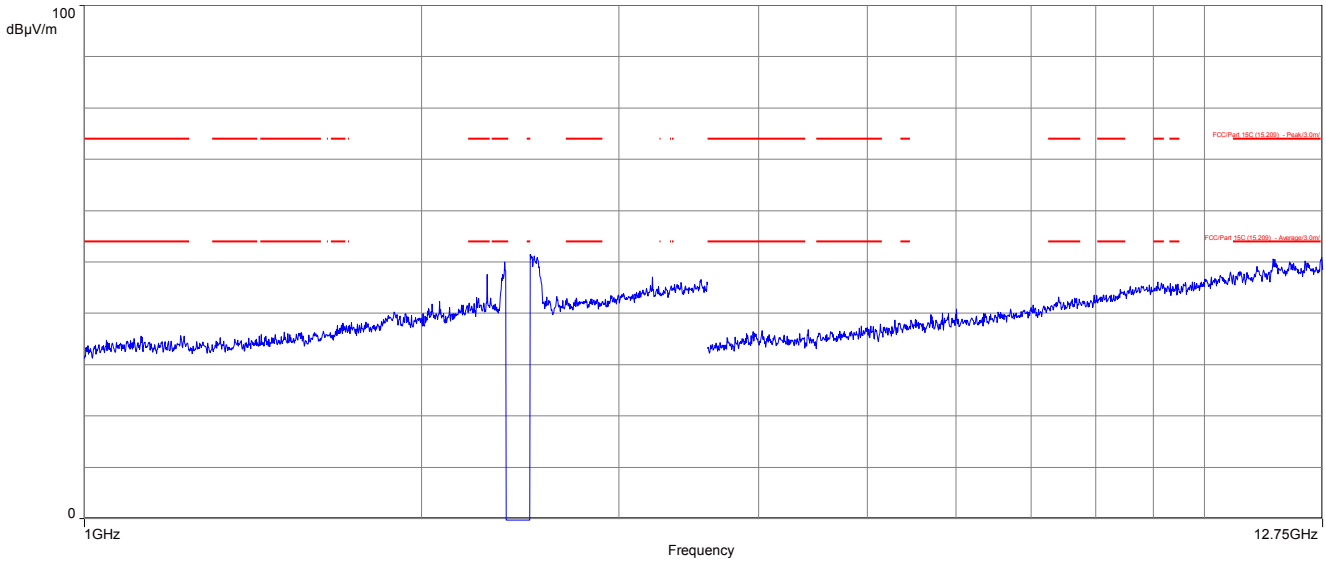


Plot 9: highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



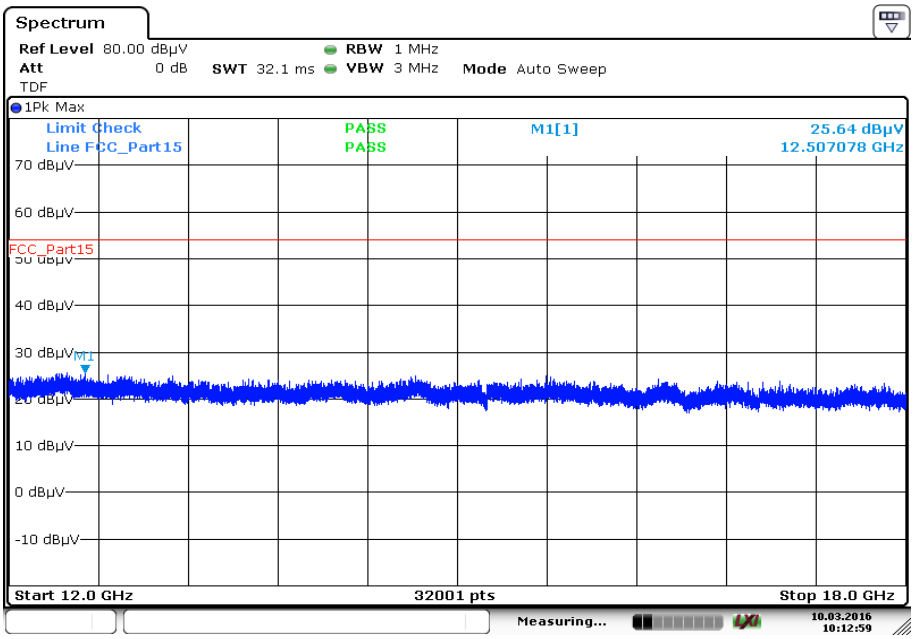
Plots: OFDM / g – mode

Plot 1: lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

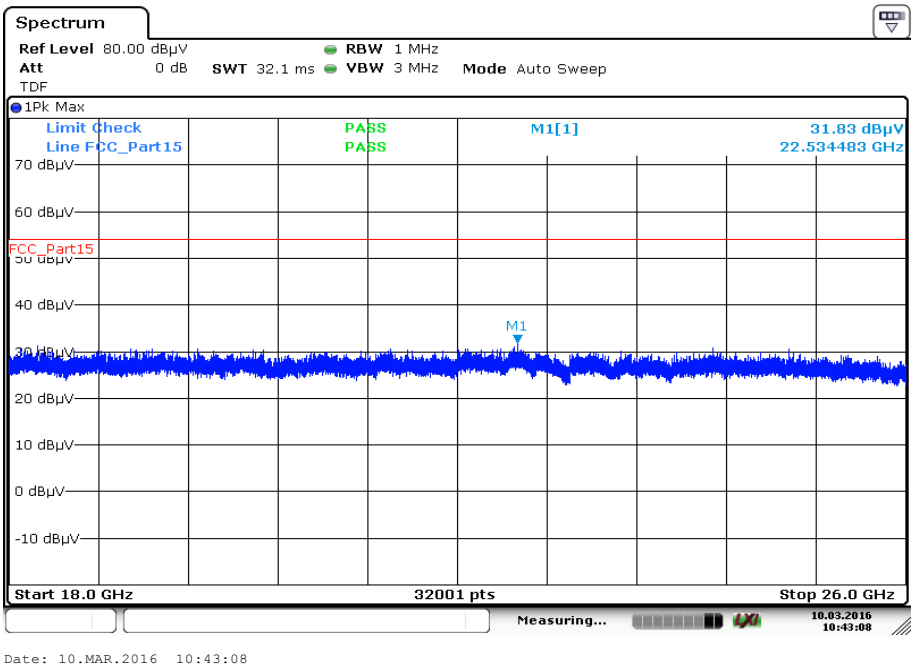


The carrier signal is notched with a 2.4 GHz band rejection filter.

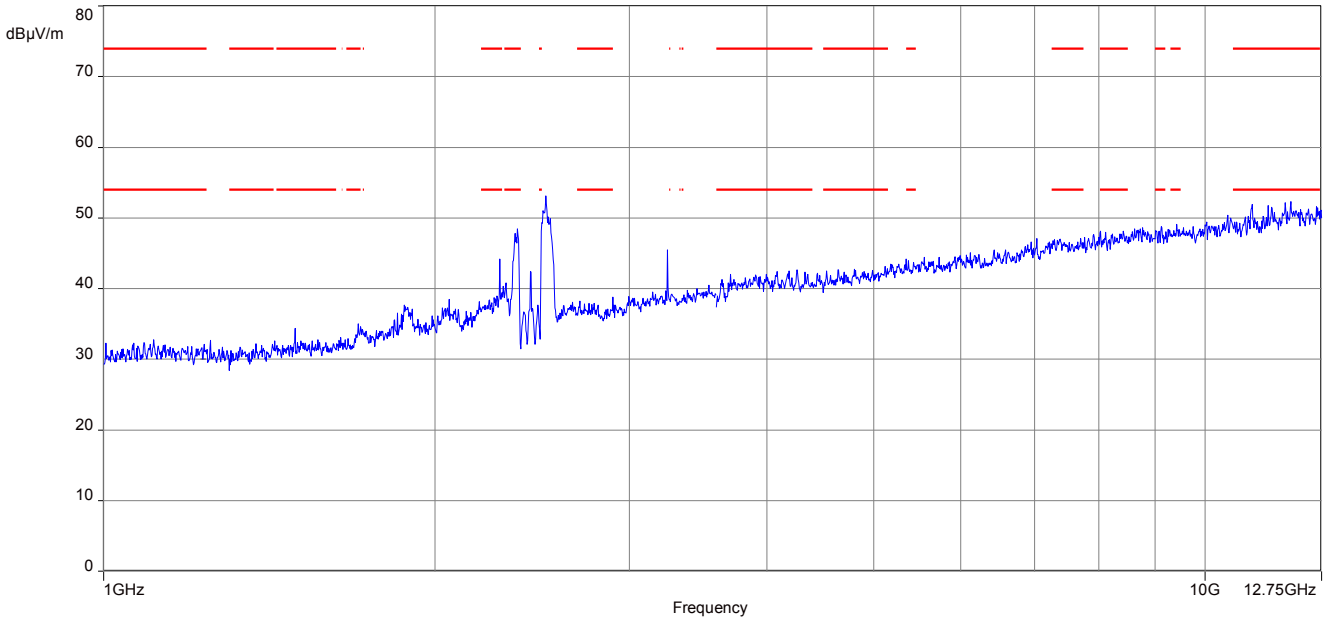
Plot 2: lowest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization, peak & average



Plot 3: lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization

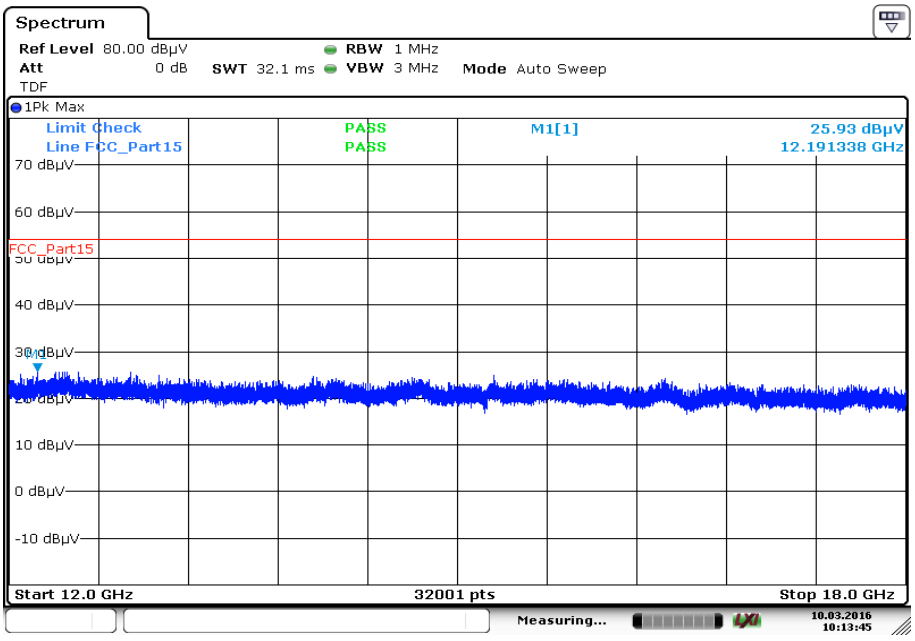


Plot 4: middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



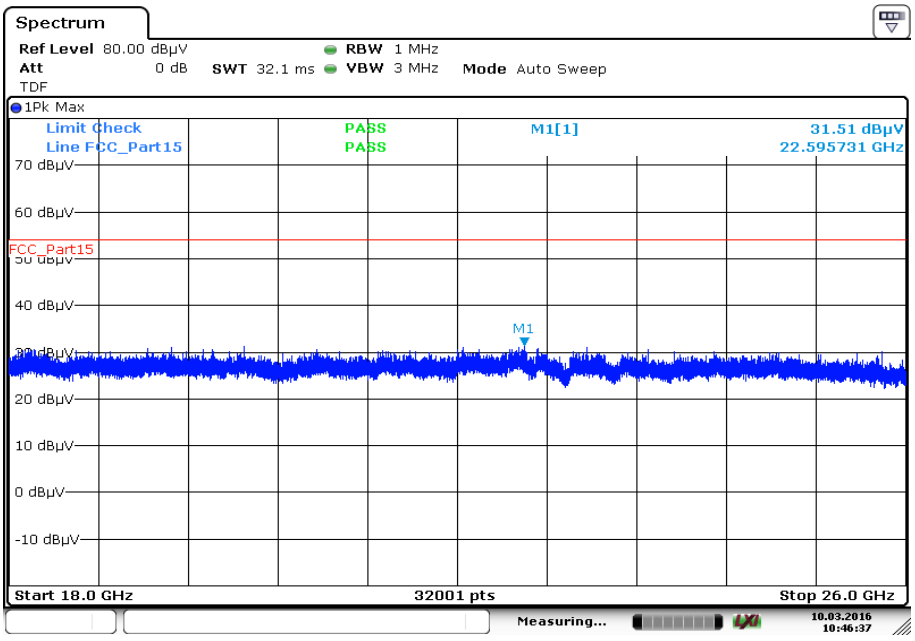
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 5: middle channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization



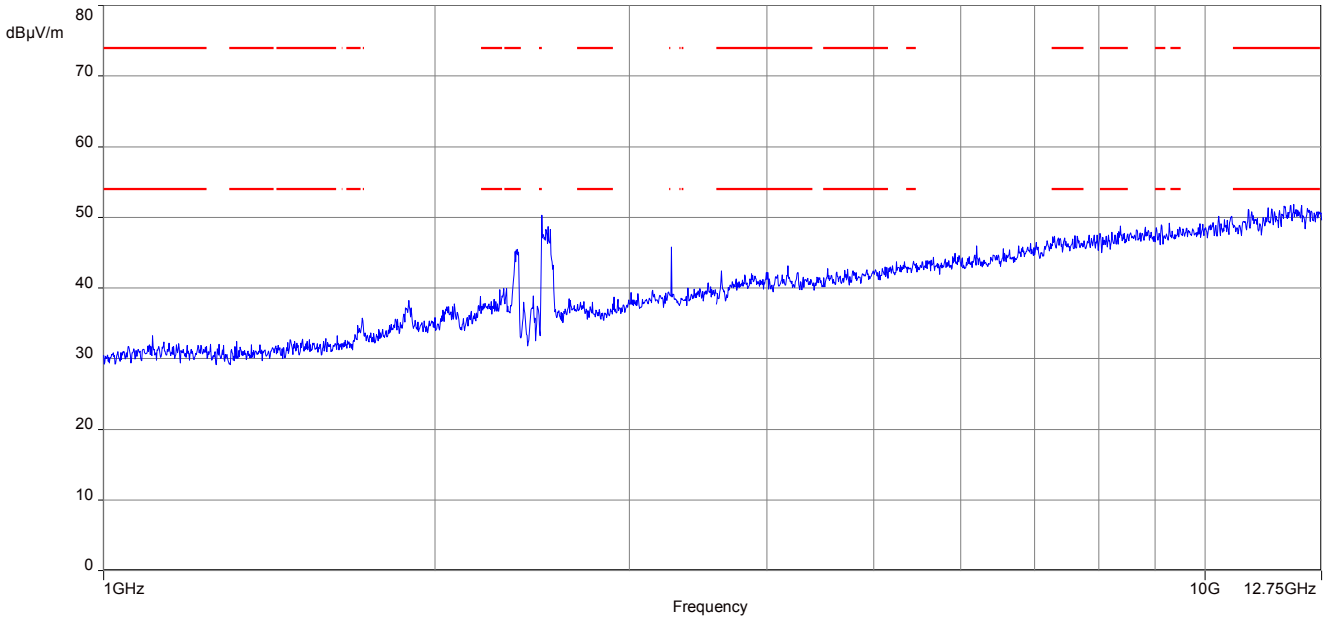
Date: 10.MAR.2016 10:13:45

Plot 6: middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



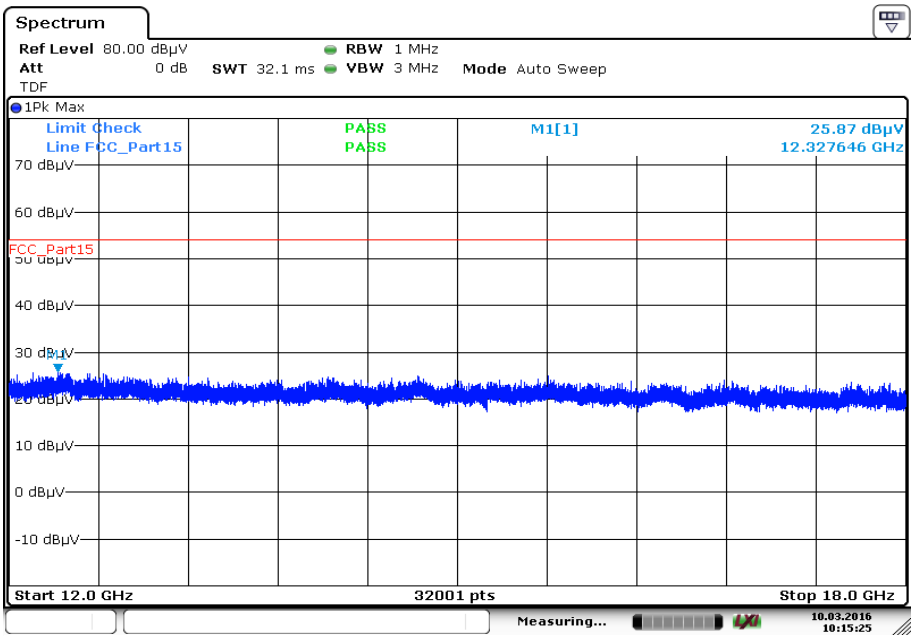
Date: 10.MAR.2016 10:46:37

Plot 7: highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: highest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization



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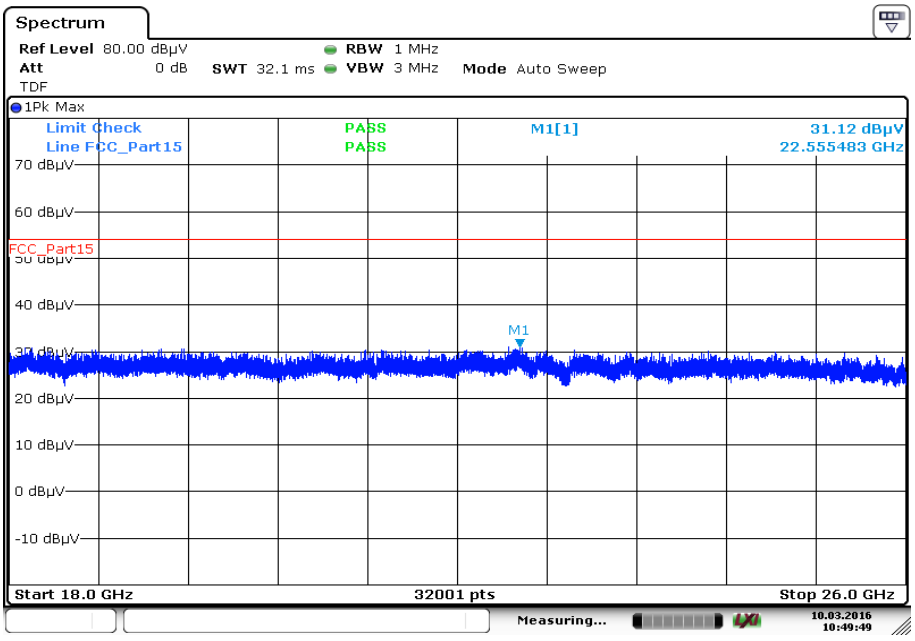
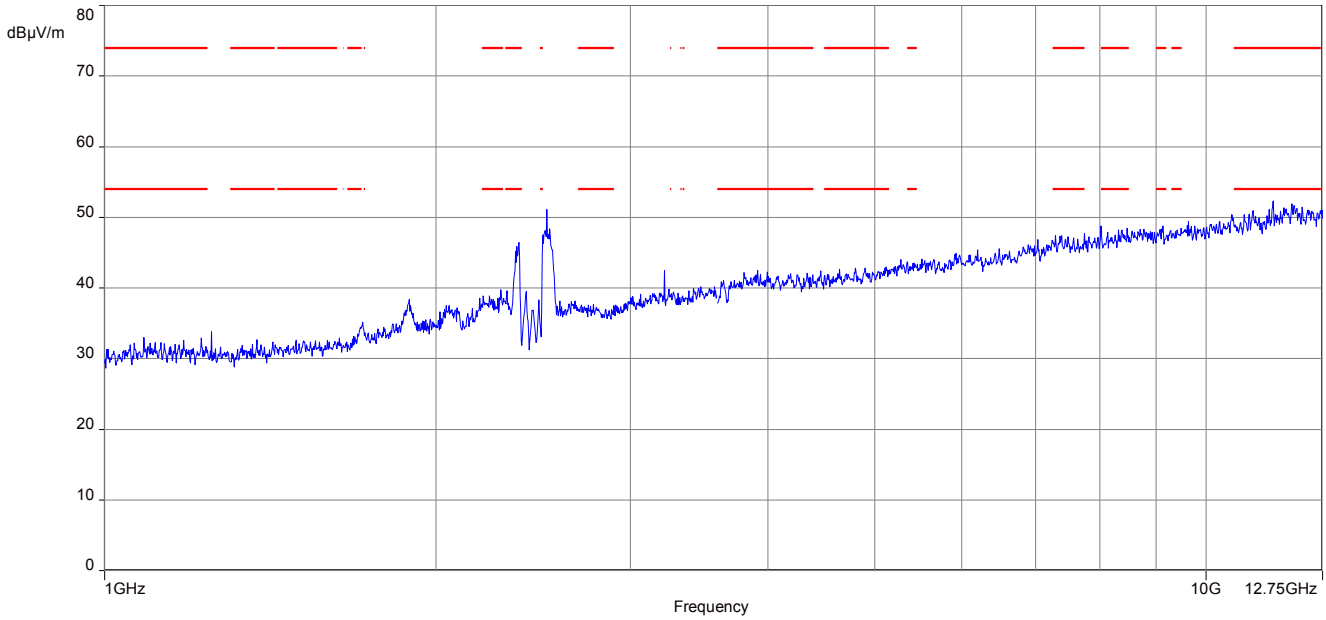
Plot 9: highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



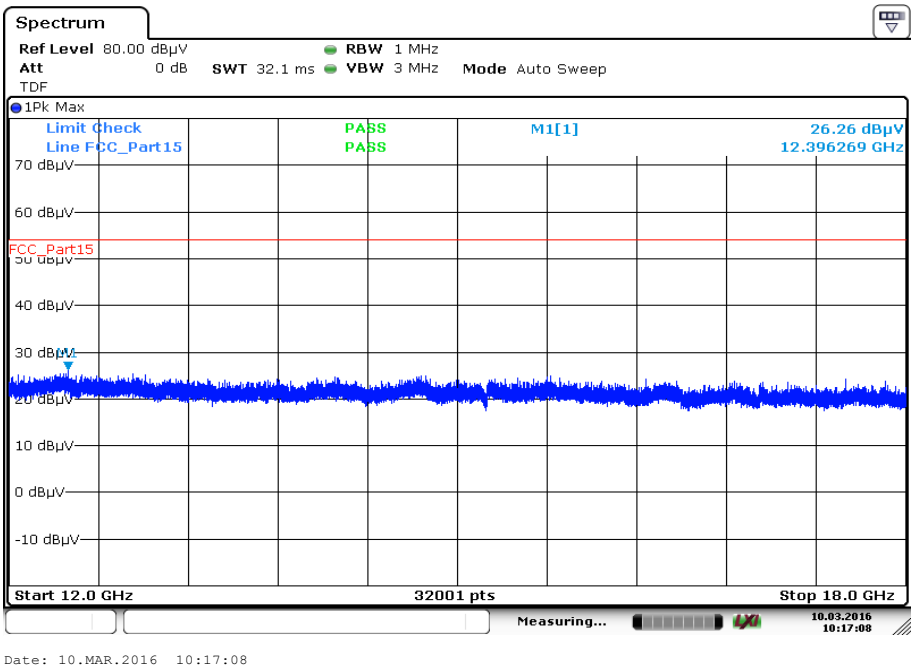
Plots: OFDM / n HT20 – mode

Plot 1: lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

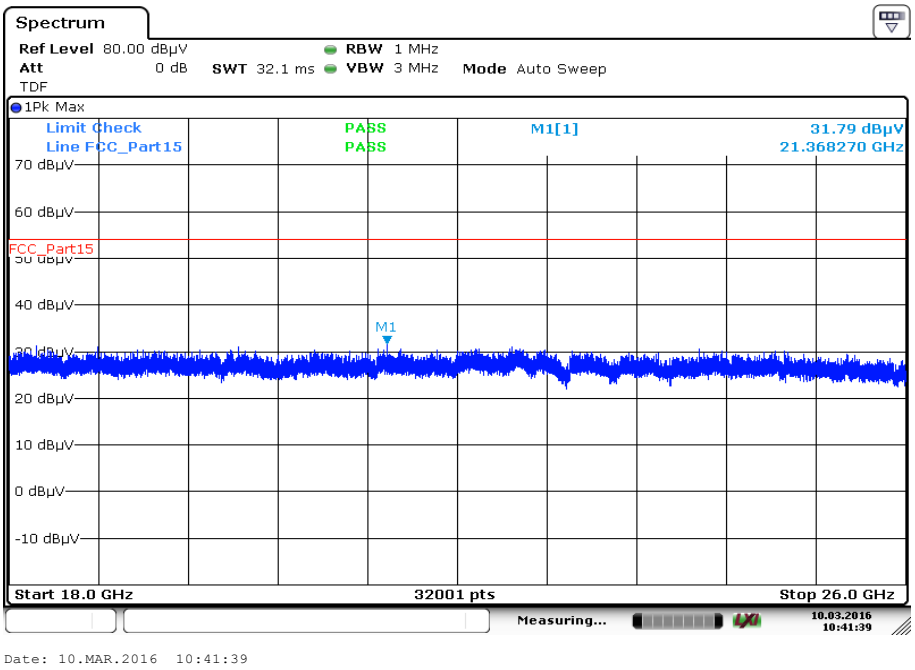


The carrier signal is notched with a 2.4 GHz band rejection filter.

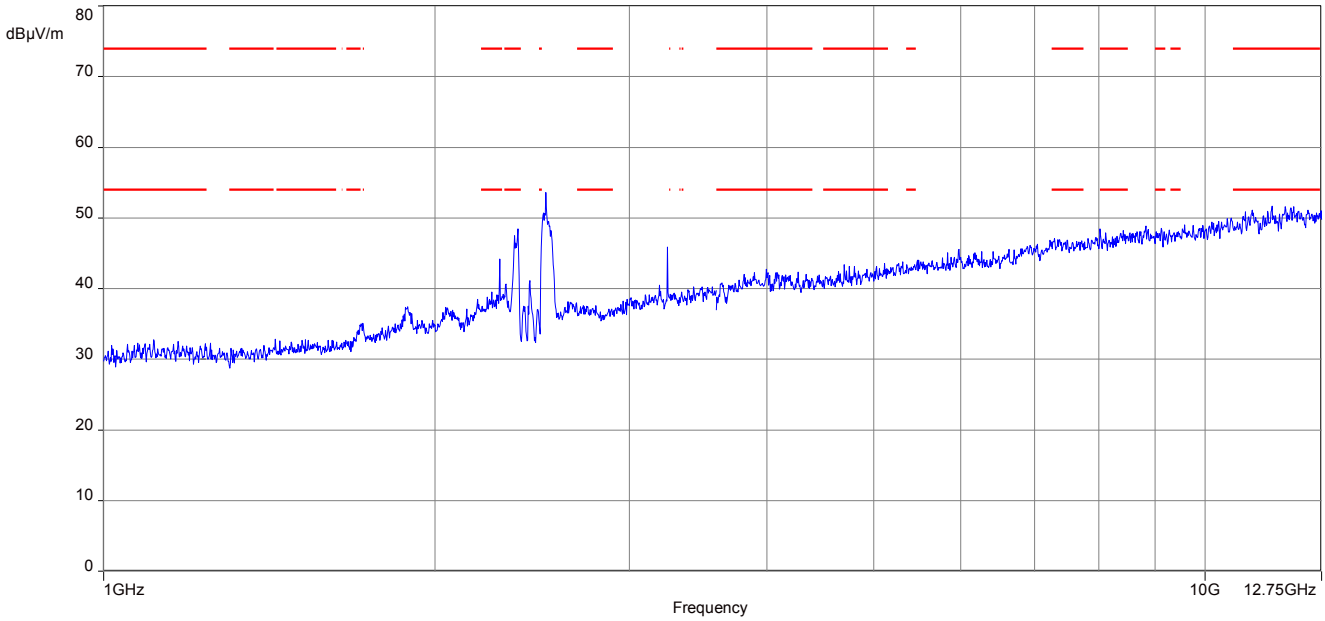
Plot 2: lowest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization, peak & average



Plot 3: lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization

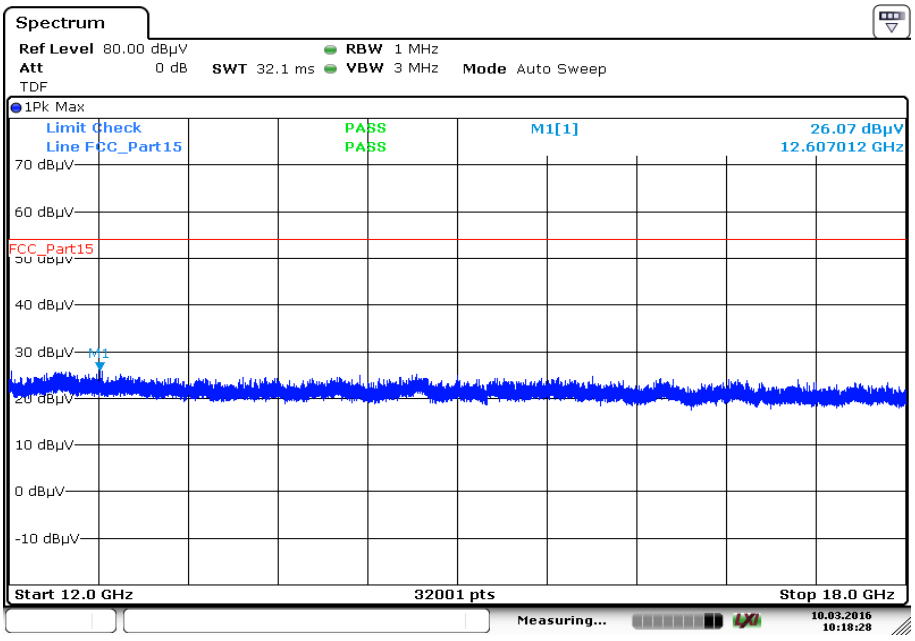


Plot 4: middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



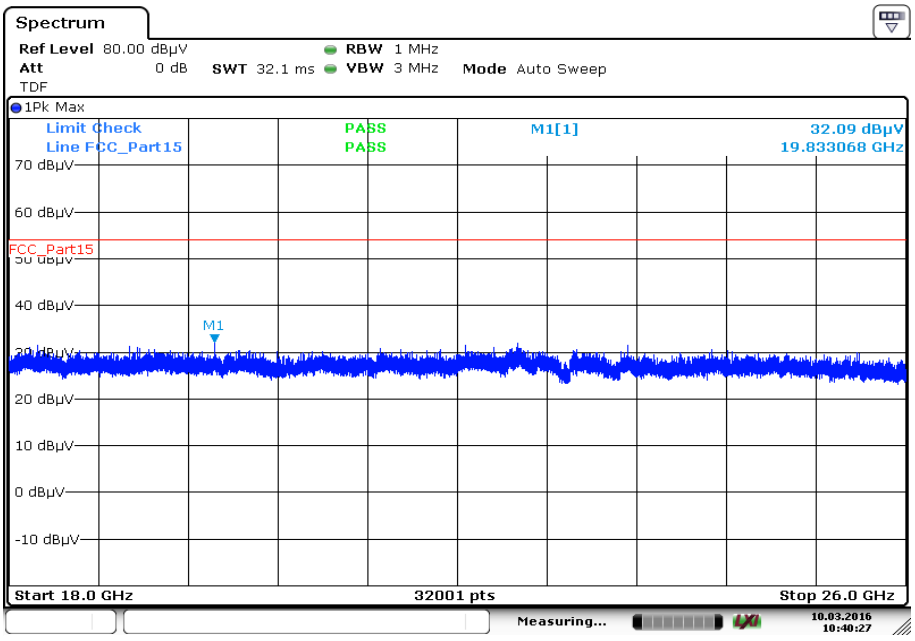
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 5: middle channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization



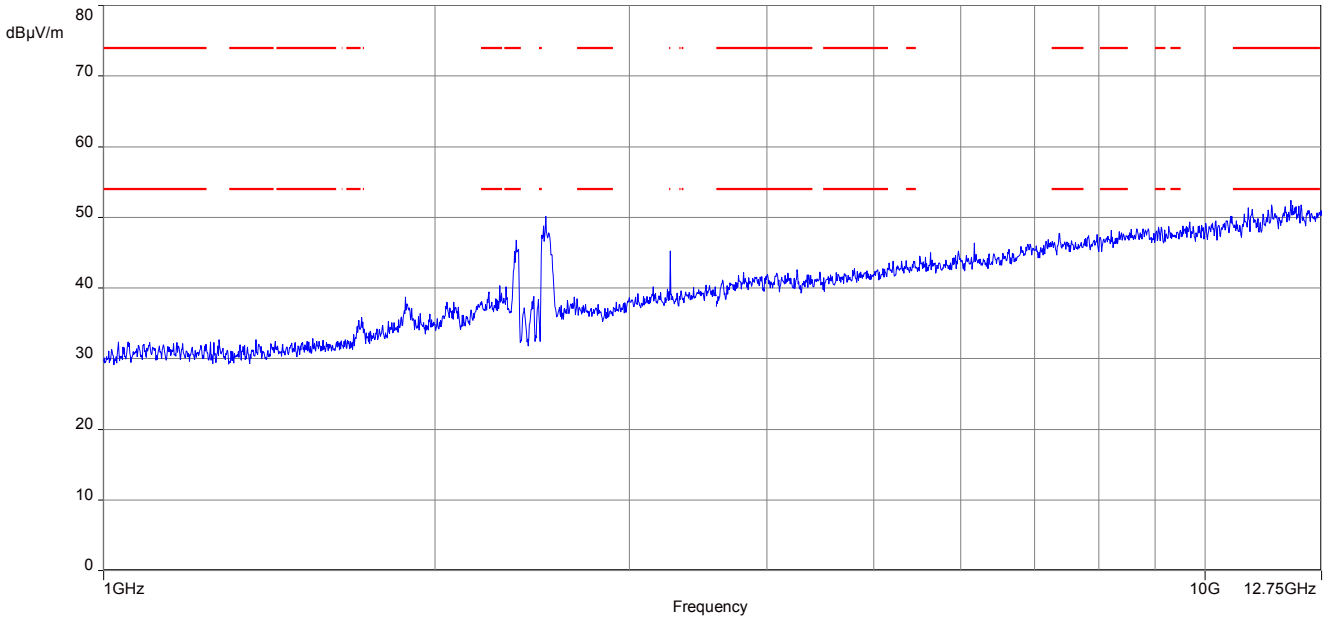
Date: 10.MAR.2016 10:18:27

Plot 6: middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



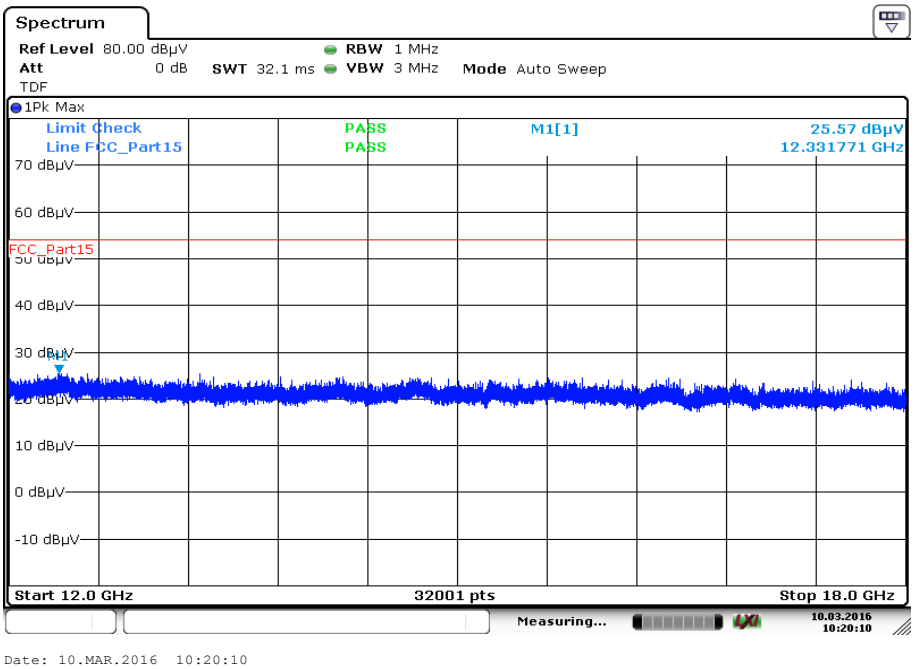
Date: 10.MAR.2016 10:40:27

Plot 7: highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

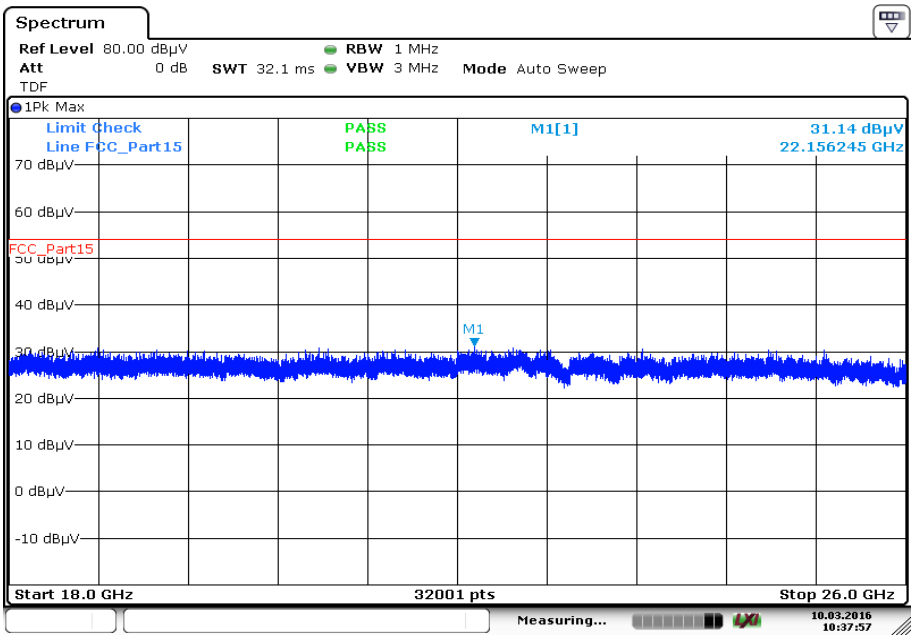


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: highest channel, 12.0 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



13 Observations

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

Annex A Document history

Version	Applied changes	Date of release
	Initial release	2016-04-27

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
PMN - Product marketing name
HMN - Host marketing name
HVIN - Hardware version identification number
FVIN - Firmware version identification number

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

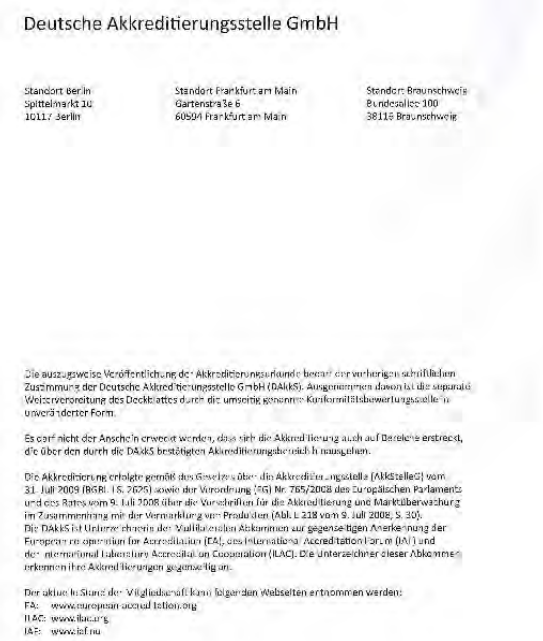
Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 07.03.2014 mit der Akkreditierungsnummer D-PL-12076-01 und ist gültig 17.01.2018. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 77 Seiten.

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

Frankfurt am Main, 07.03.2014

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

Back side of certificate



Deutsche Akkreditierungsstelle GmbH

Standort Berlin
Spittelmarkt 10
10117 Berlin

Standort Frankfurt am Main
Gartenstraße 6
60594 Frankfurt am Main

Standort Braunschweig
Bundesallee 100
38116 Braunschweig

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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), der 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:
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