11.8 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:

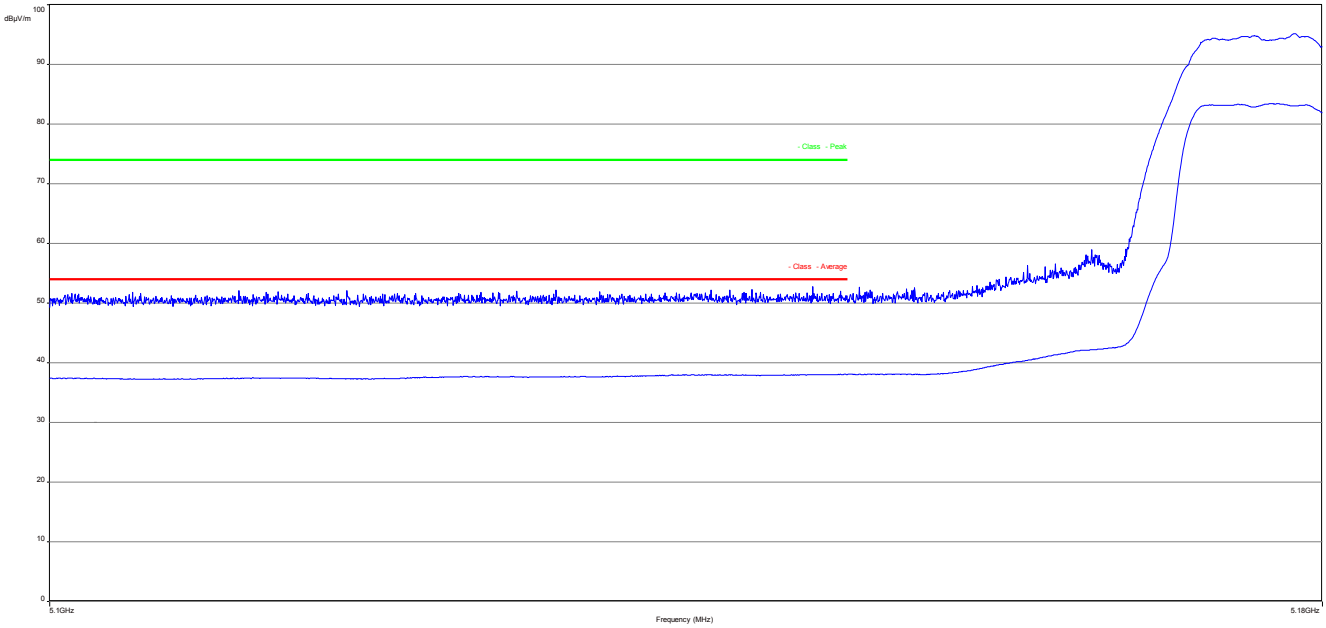
Band Edge Compliance Radiated
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within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

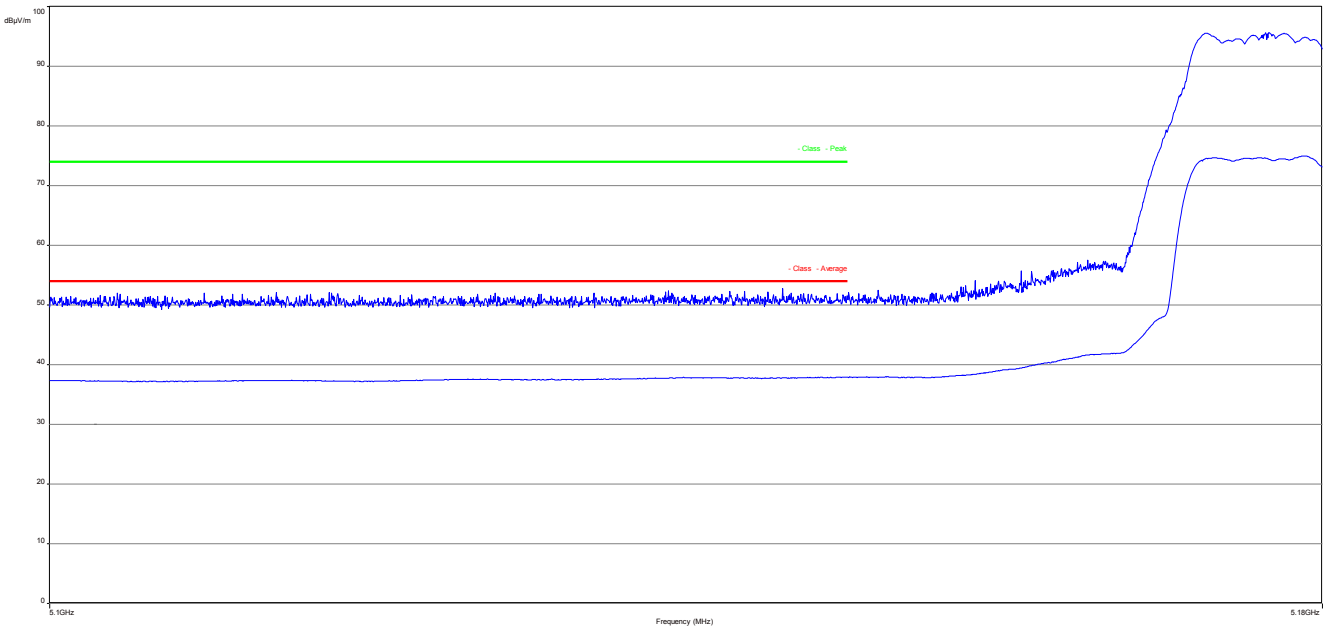
Scenario	Band Edge Compliance Radiated [dBµV/m]
band edge	< 74 dBµV/m (Peak) < 54 dBµV/m (AVG)
Measurement uncertainty	± 3 dB

Plots:

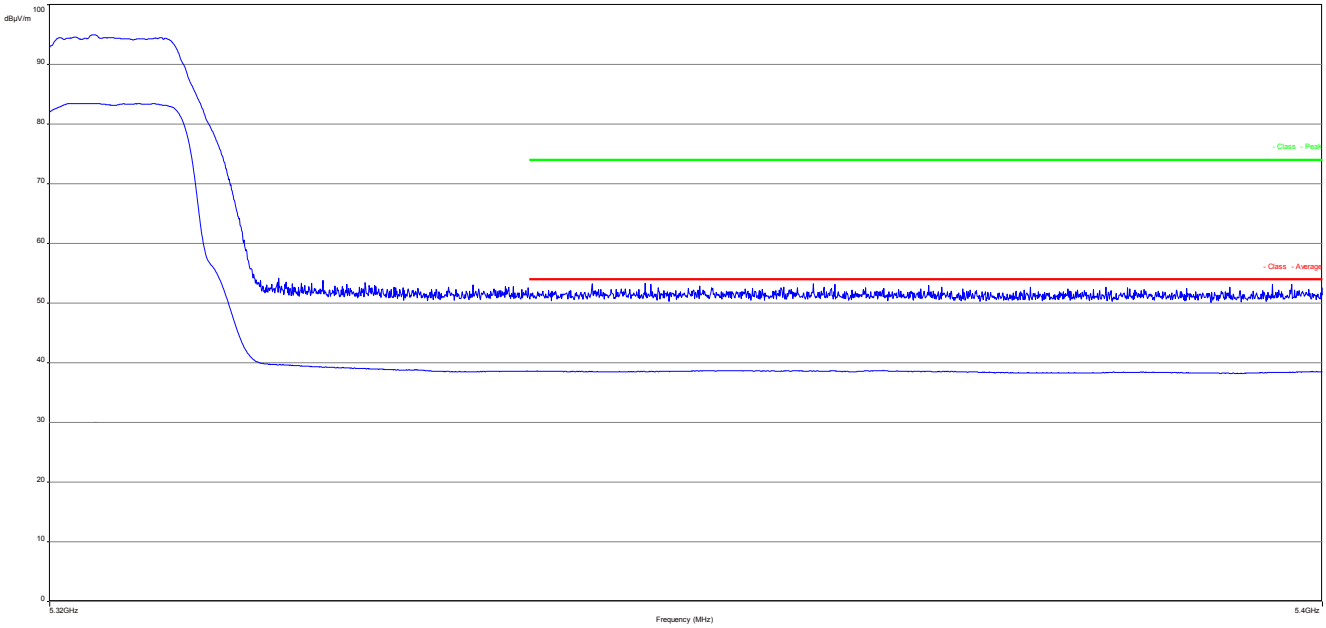
Plot 1: lower band edge, vertical & horizontal polarization (a mode), channel 36, low data rate



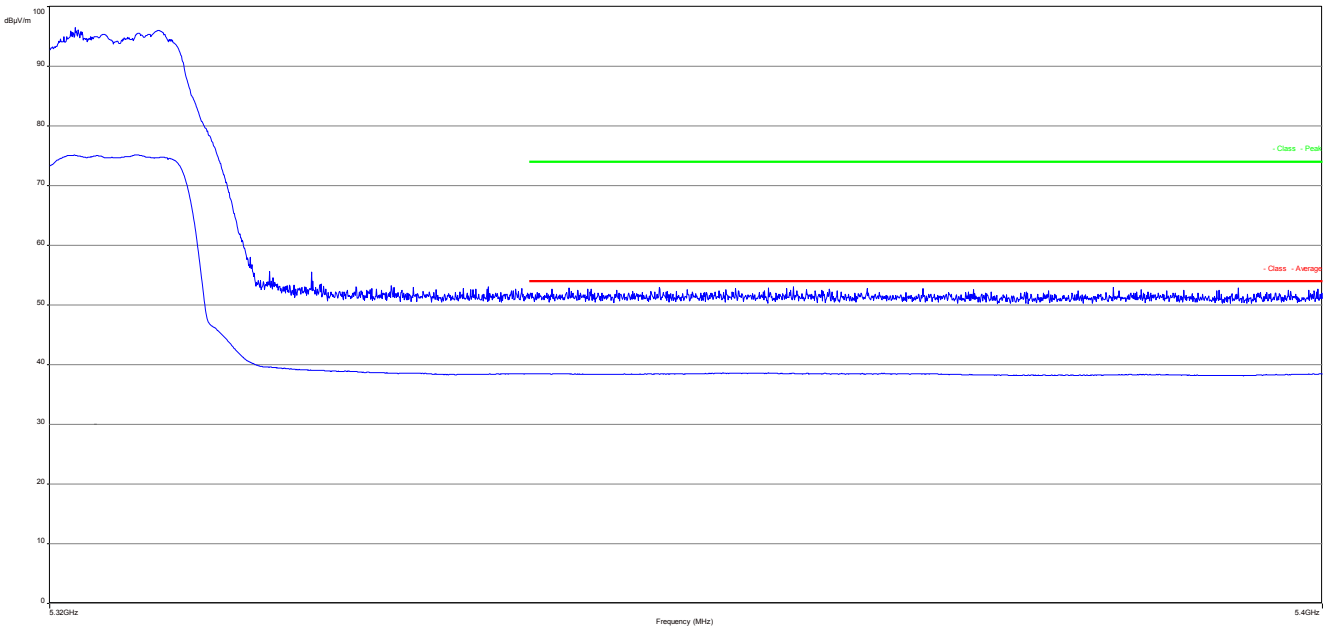
Plot 2: lower band edge, vertical & horizontal polarization (a mode), channel 36, high data rate



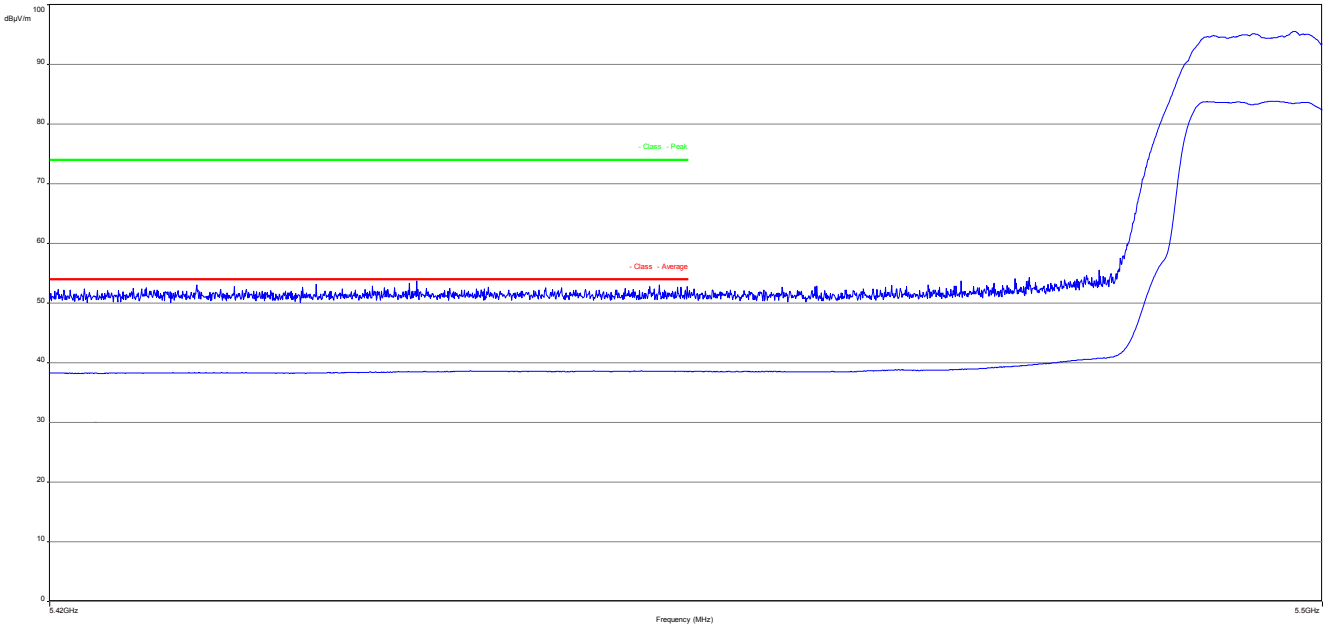
Plot 3: upper band edge, vertical & horizontal polarization (a mode), channel 64, low data rate



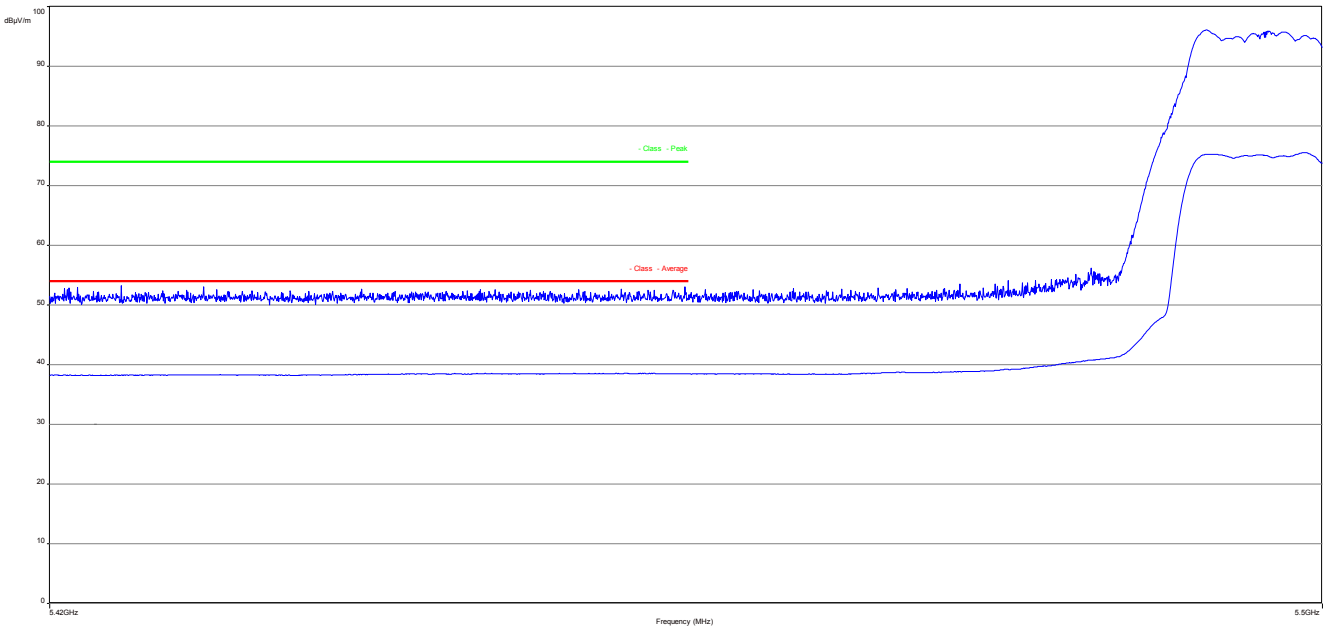
Plot 4: upper band edge, vertical & horizontal polarization (a mode), channel 64, high data rate



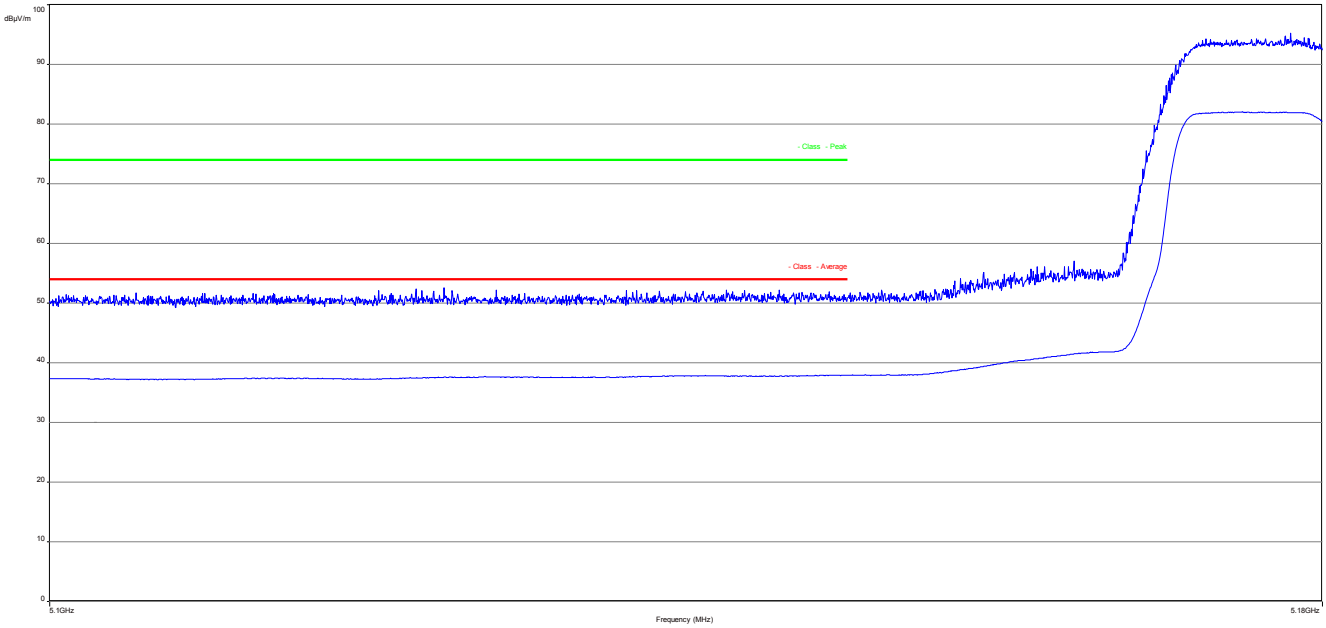
Plot 5: lower band edge, vertical & horizontal polarization (a mode), channel 100, low data rate



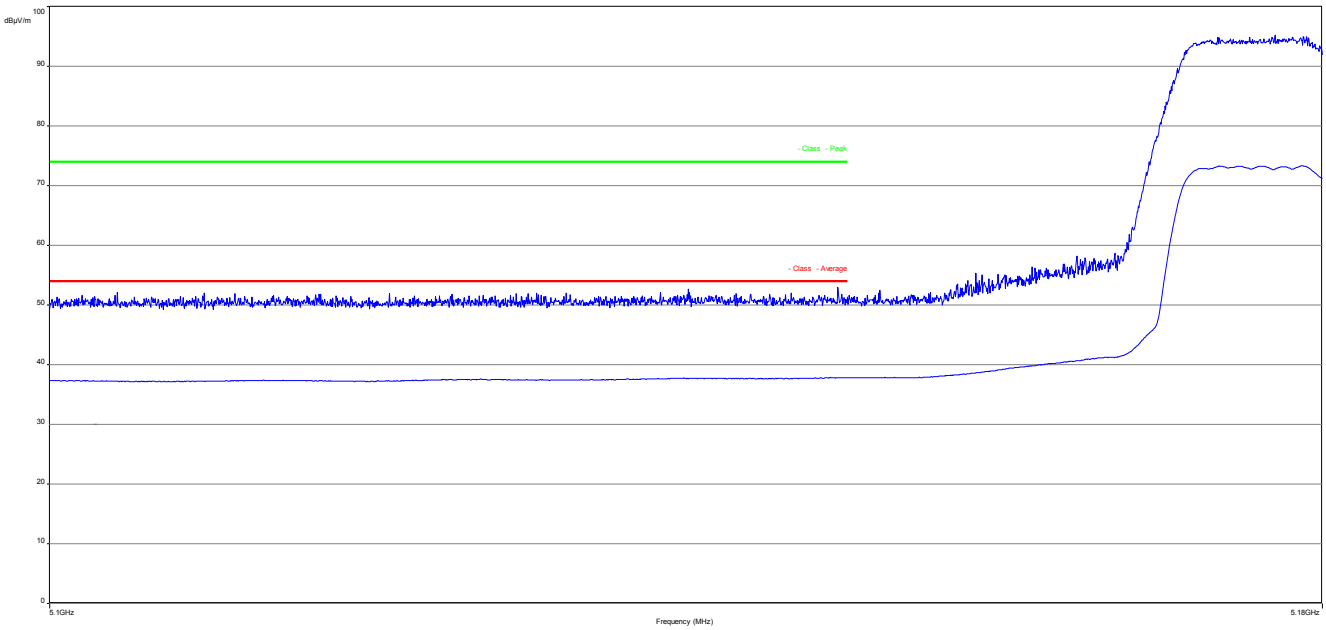
Plot 6: lower band edge, vertical & horizontal polarization (a mode), channel 100, high data rate



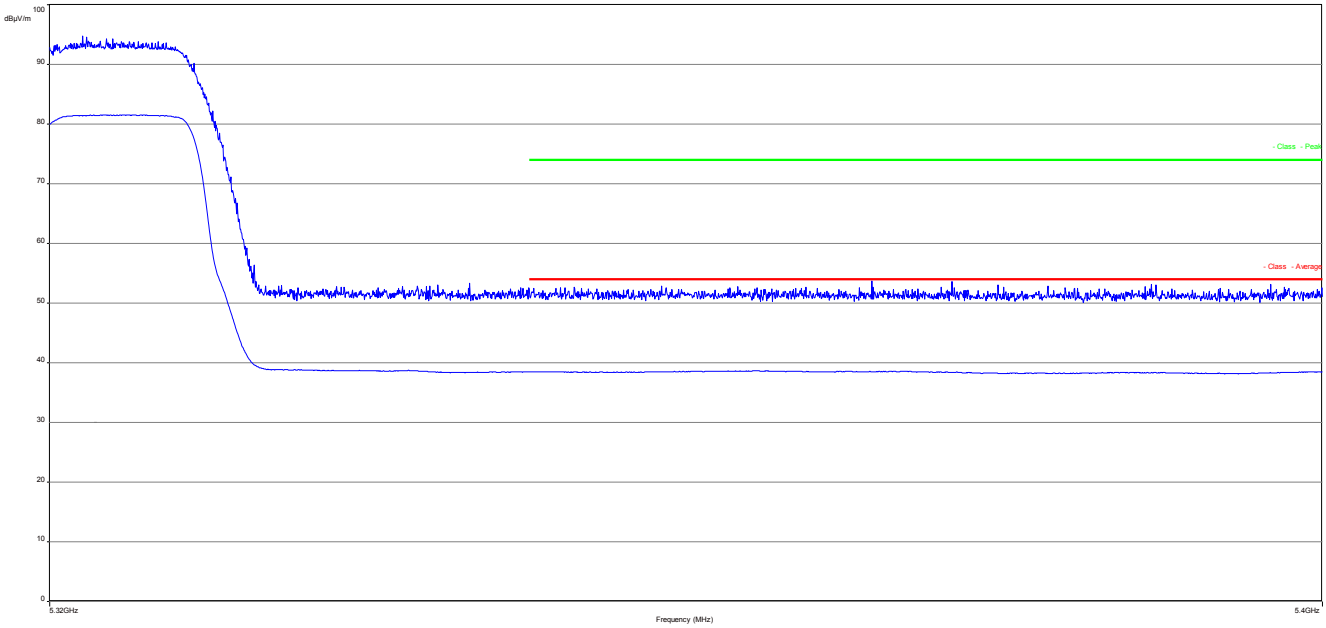
Plot 7: lower band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 36, low data rate



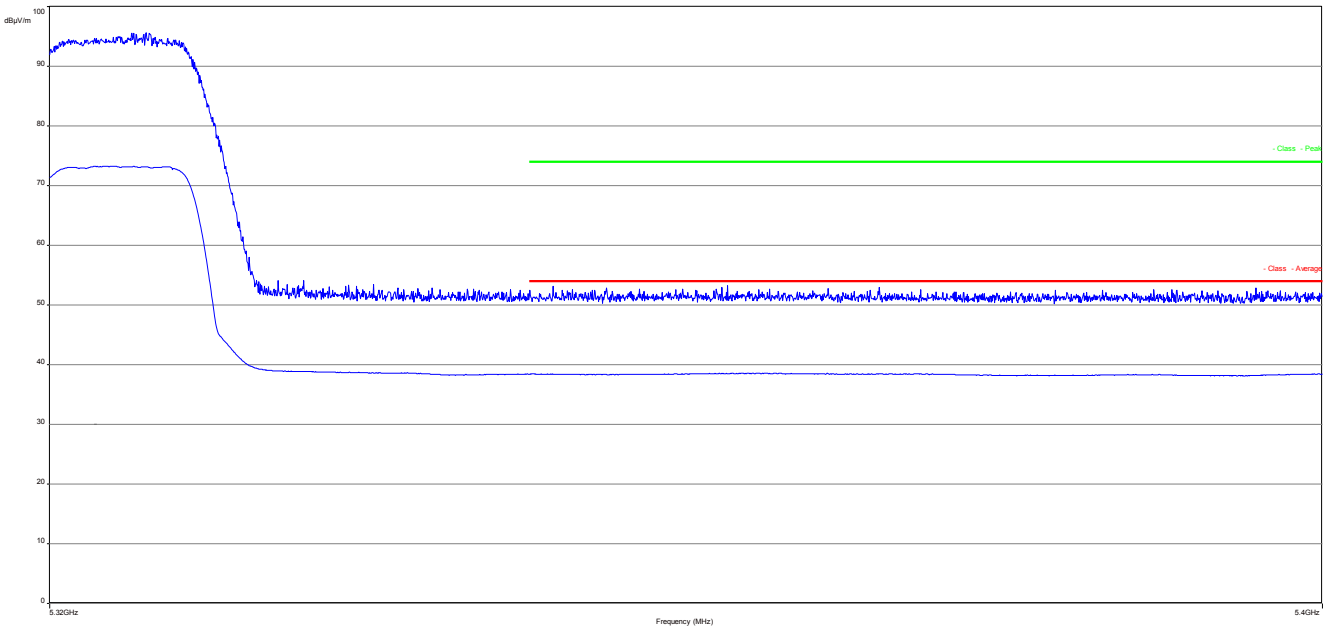
Plot 8: lower band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 36, high data rate



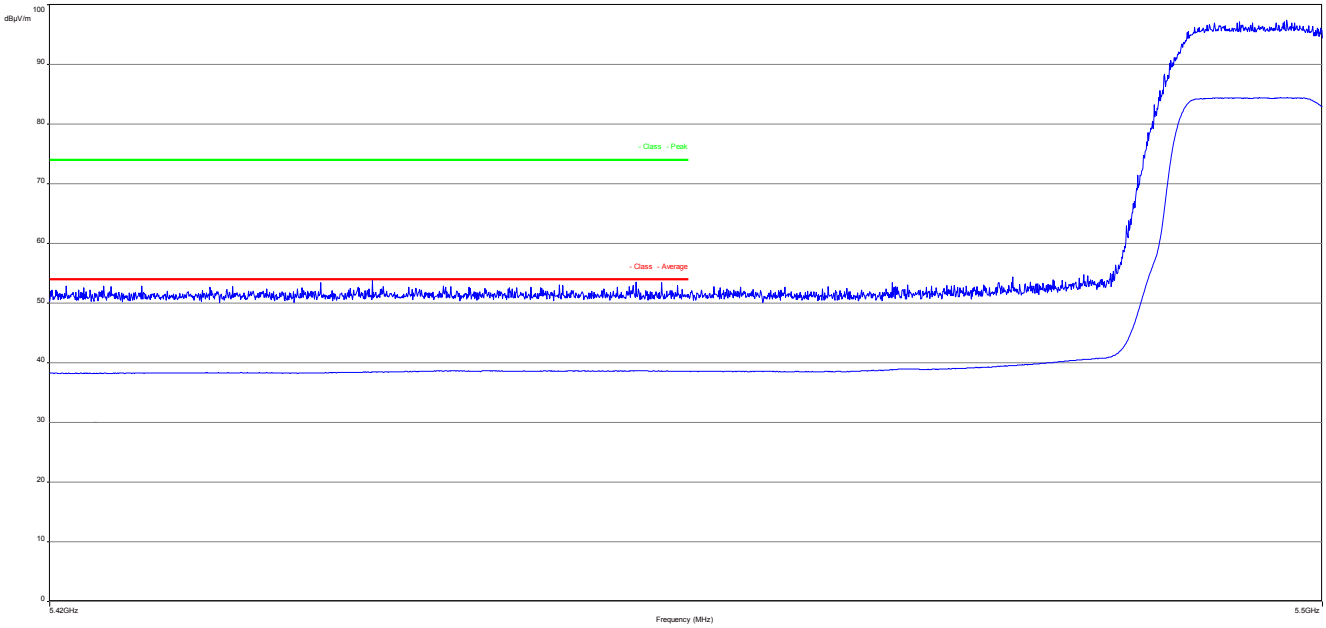
Plot 9: upper band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 64, low data rate



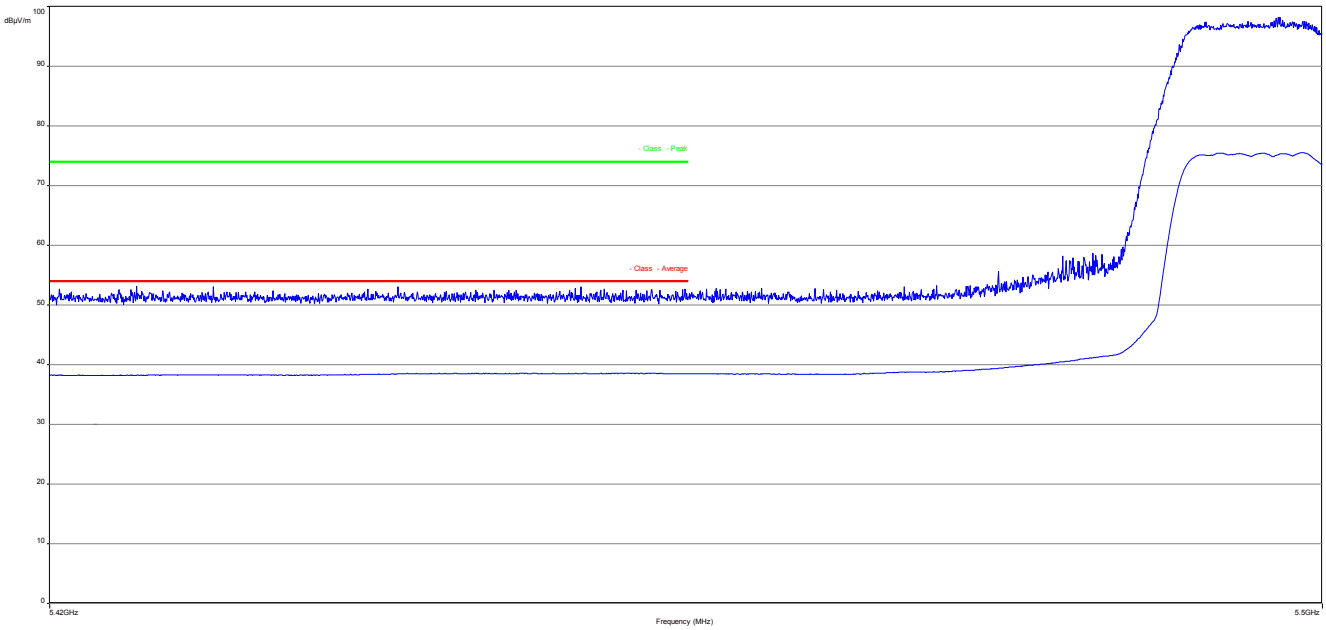
Plot 10: upper band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 64, high data rate



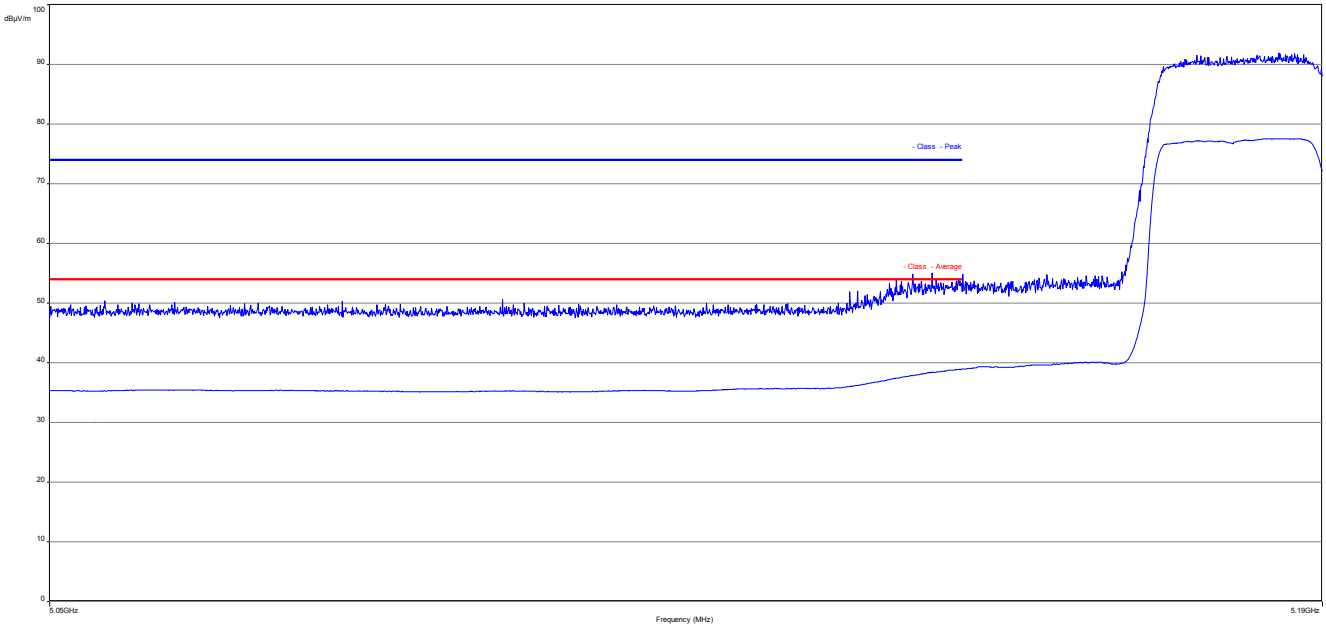
Plot 11: lower band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 100, low data rate



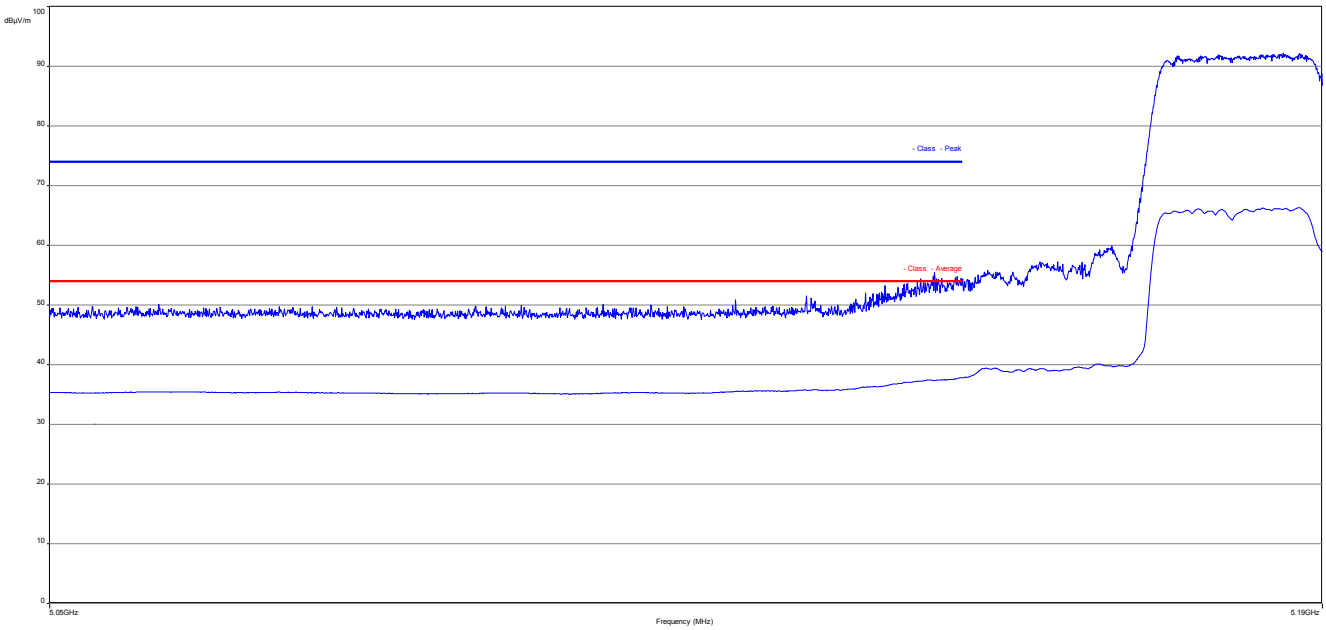
Plot 12: lower band edge, vertical & horizontal polarization (n/ac HT 20 mode), channel 100, high data rate



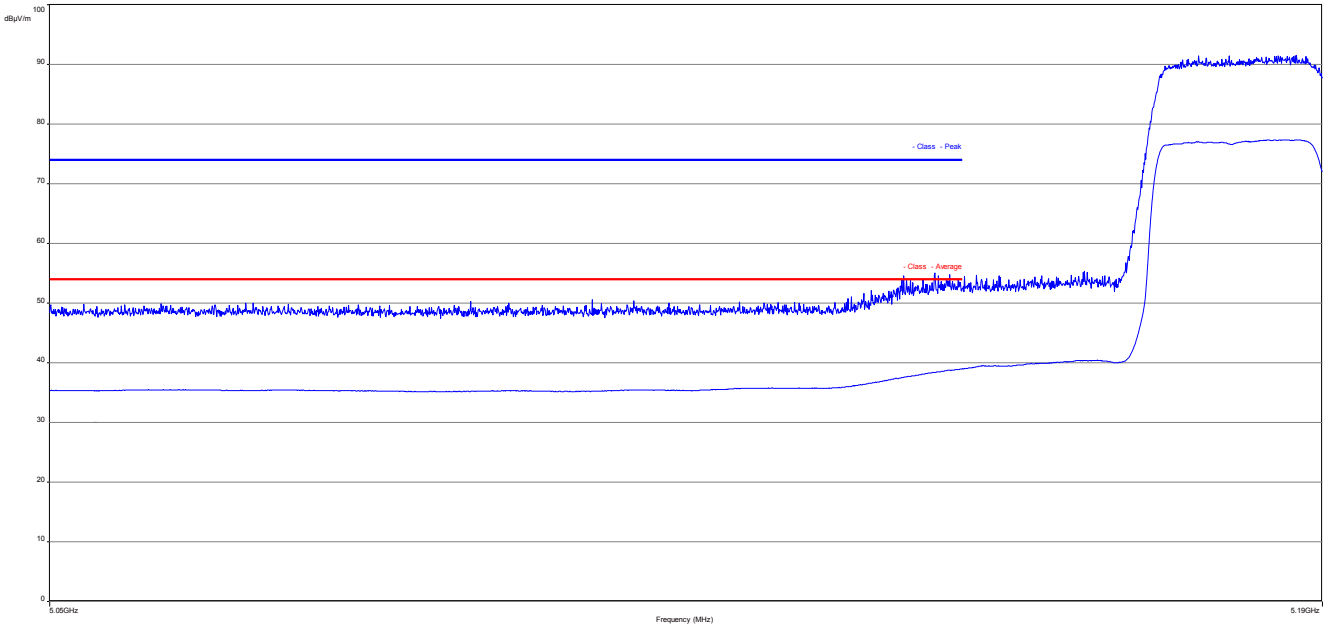
Plot 13: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 38, low data rate



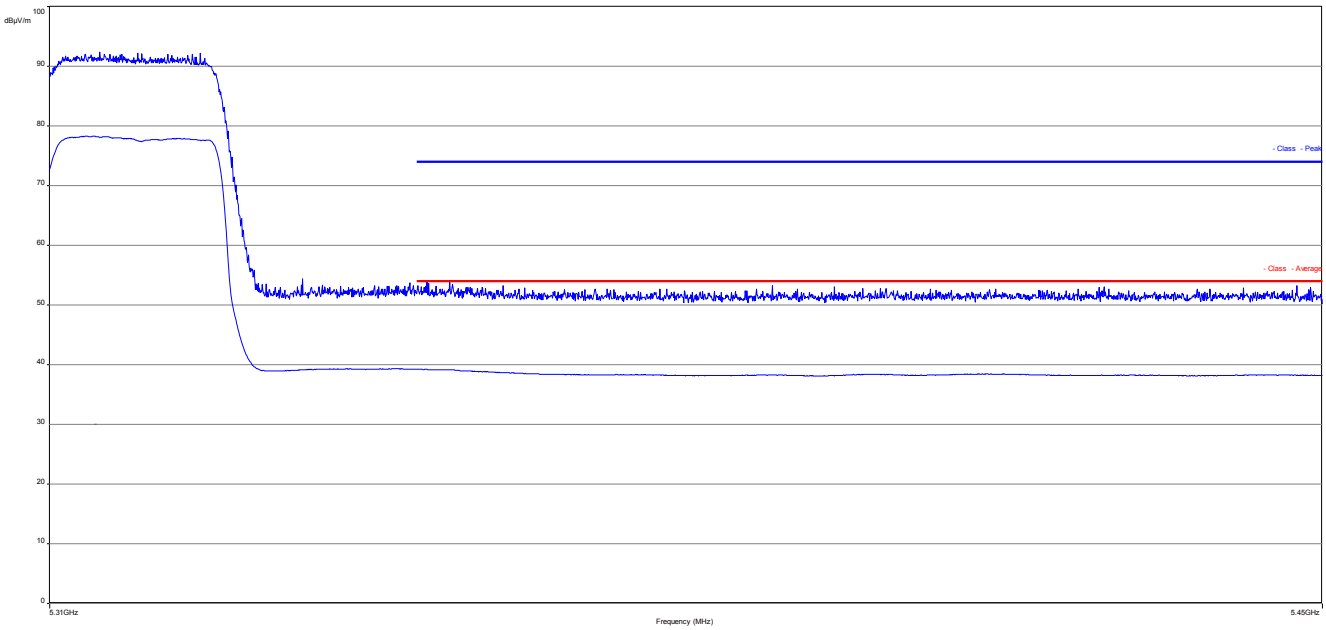
Plot 14: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 38, high data rate



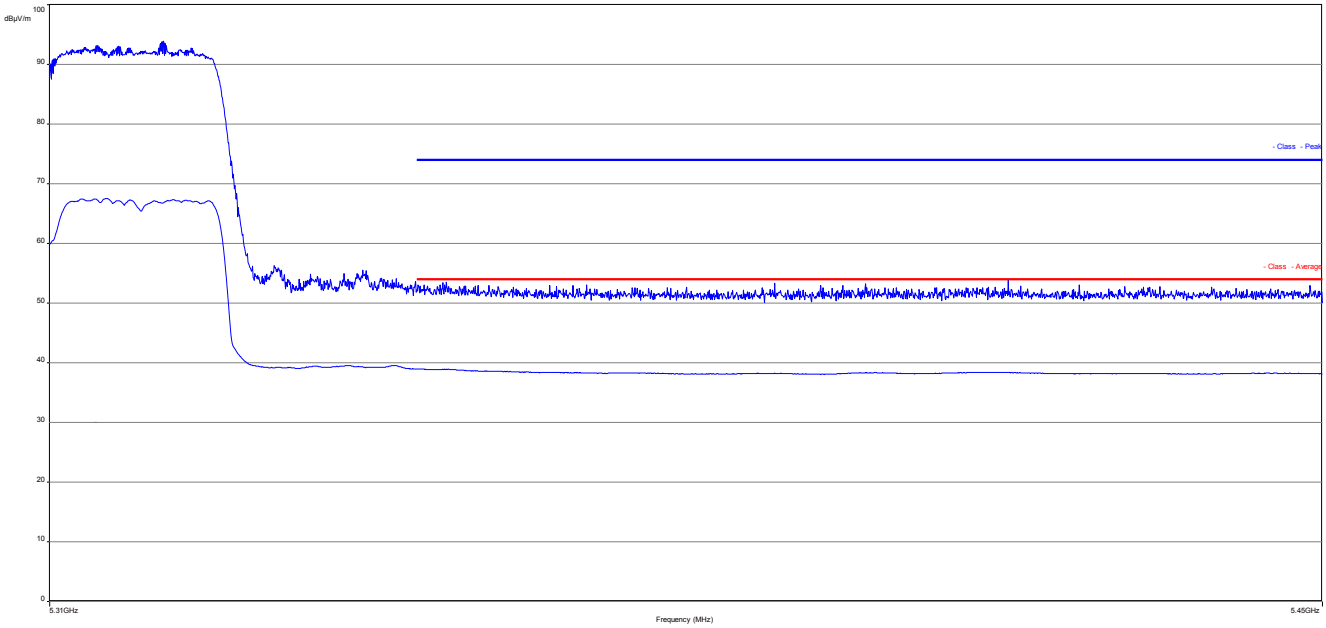
Plot 15: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 38, highest power d. r.



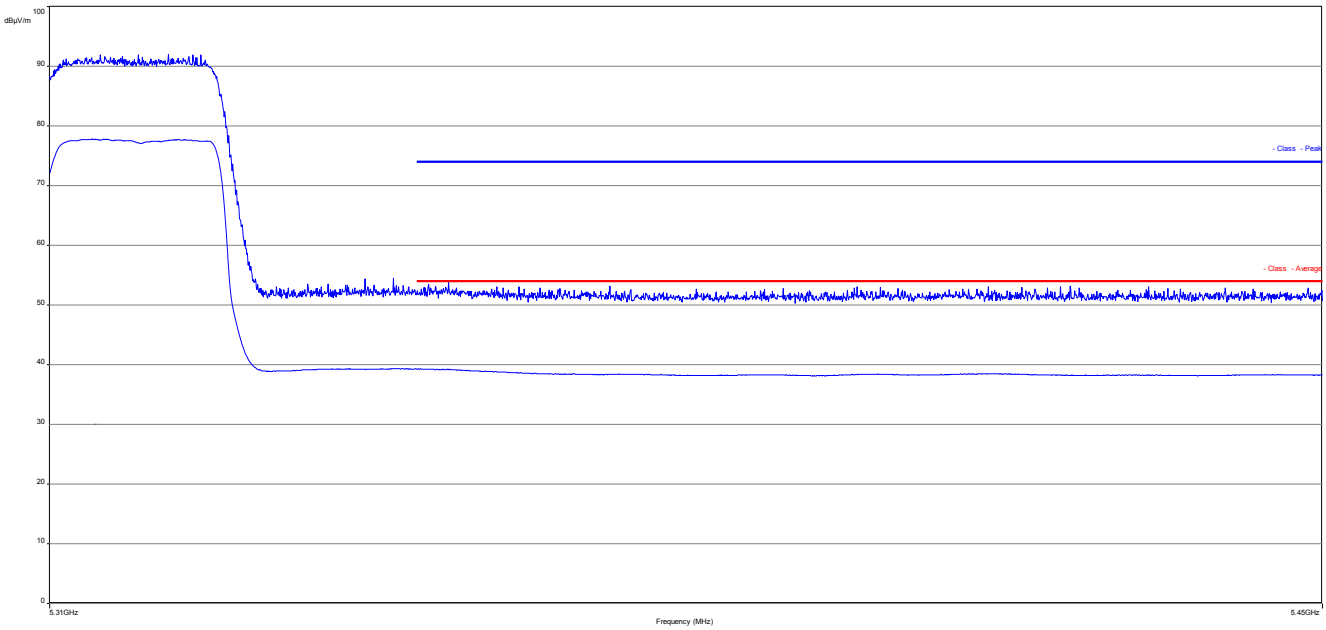
Plot 16: upper band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 62, low data rate



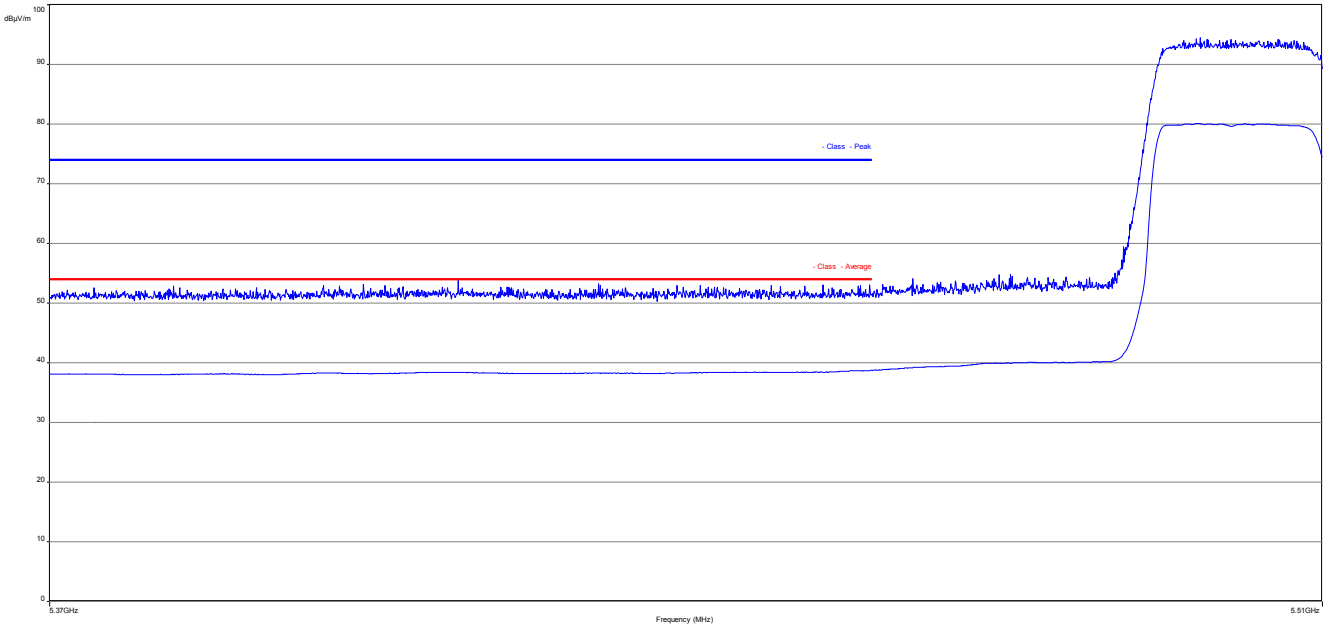
Plot 17: upper band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 62, high data rate



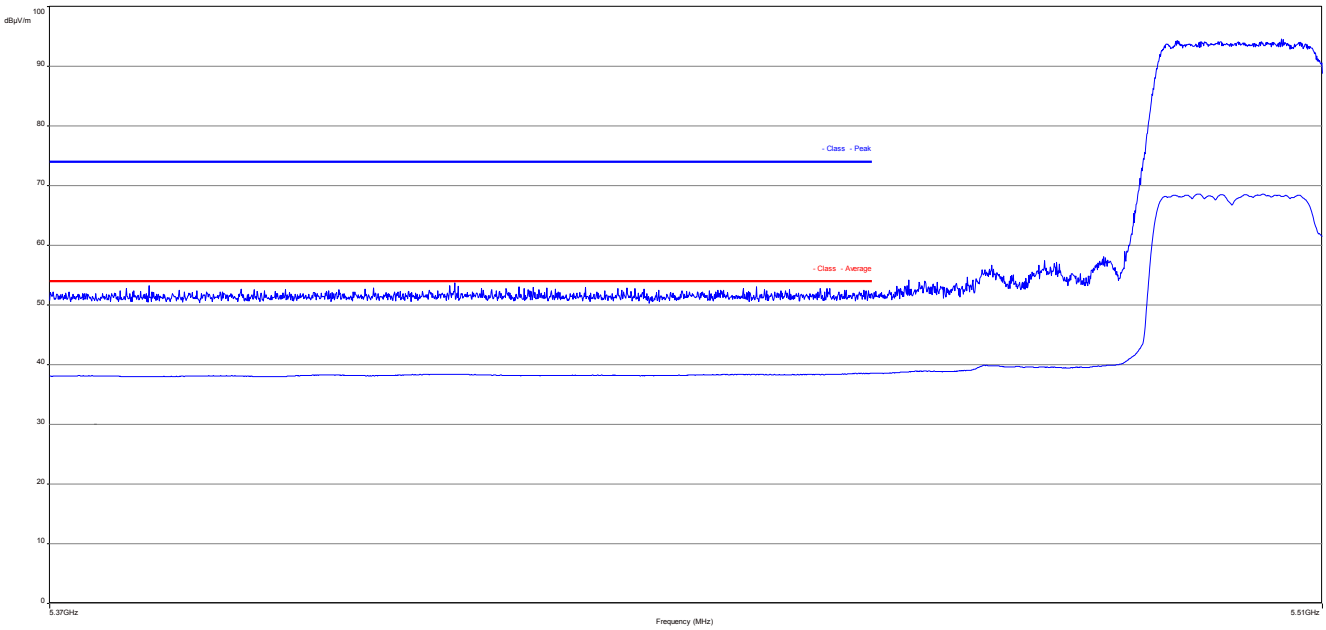
Plot 18: upper band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 62, highest power d. r.



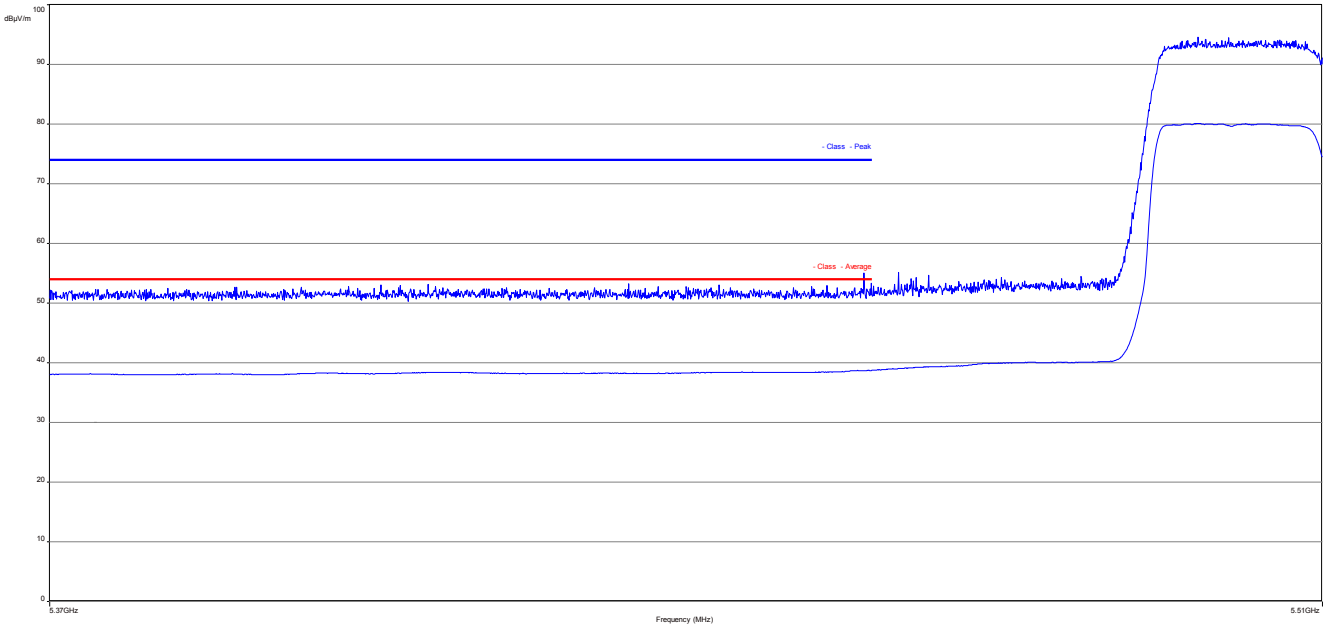
Plot 19: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 102, low data rate



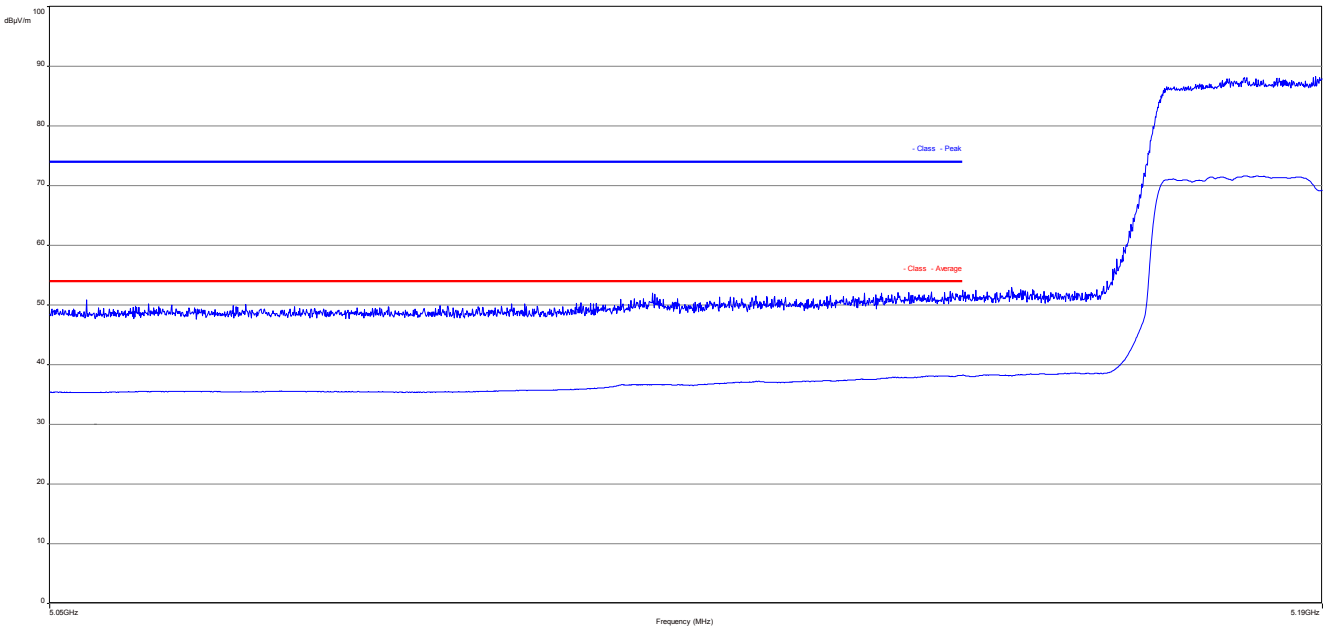
Plot 20: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 102, high data rate



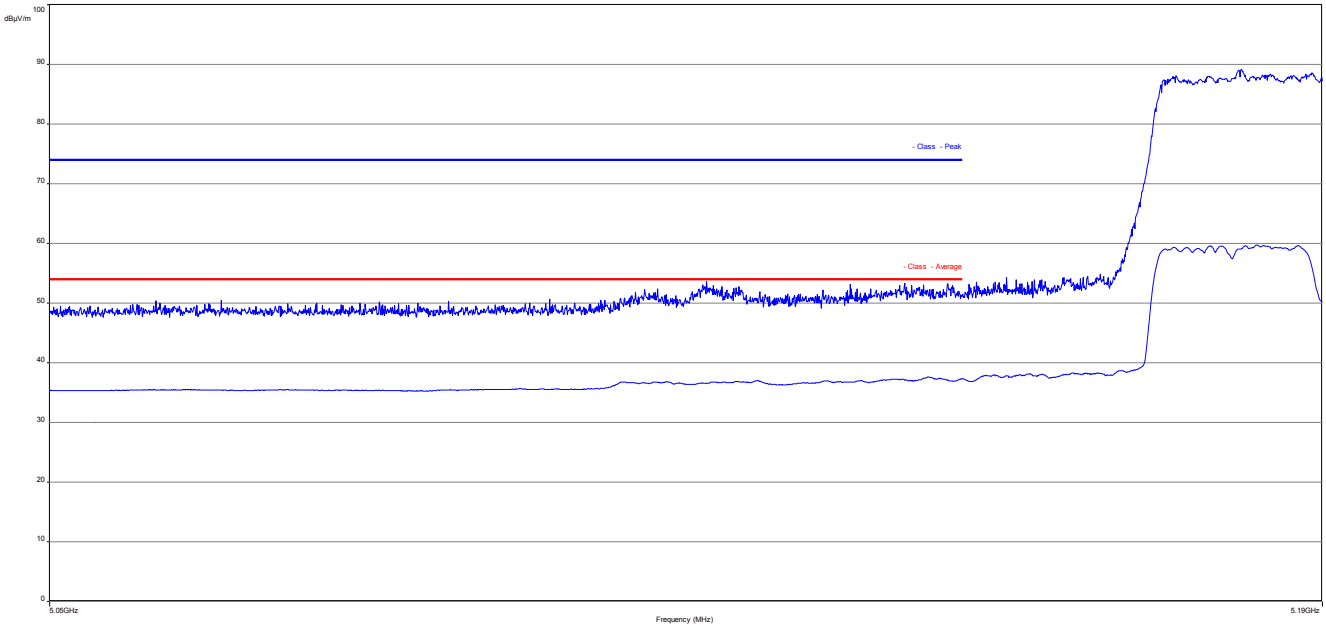
Plot 21: lower band edge, vertical & horizontal polarization (n/ac HT 40 mode), channel 102, highest power d. r.



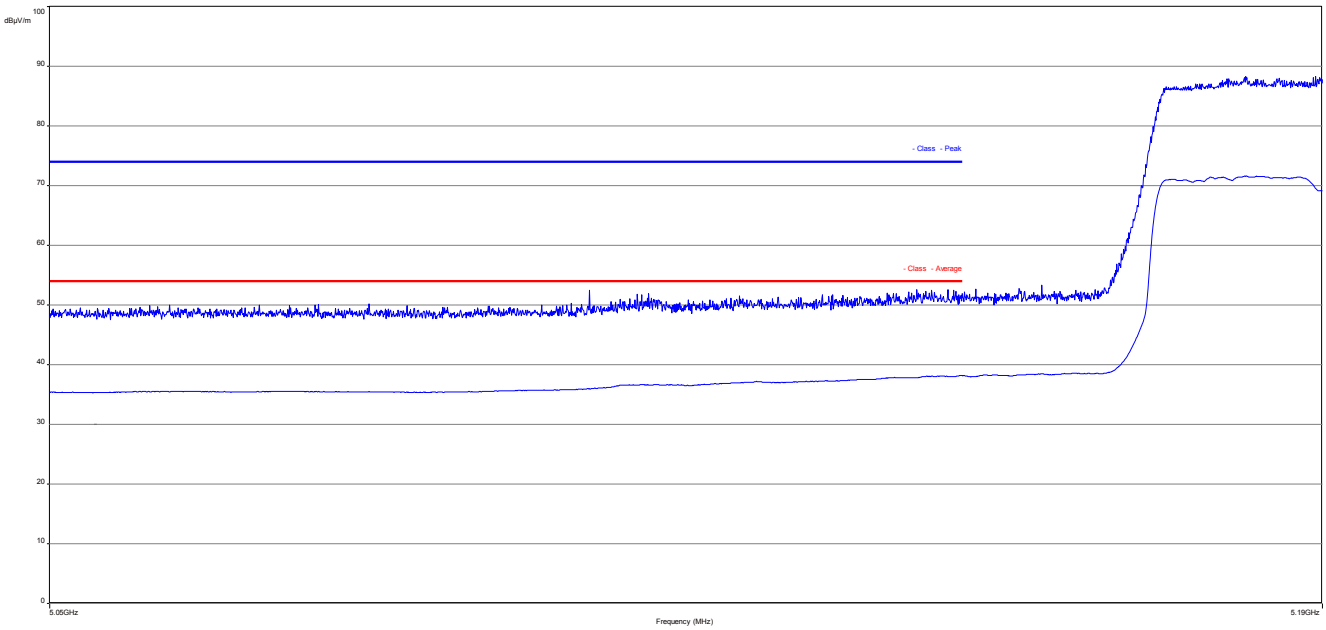
Plot 22: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 42, low data rate



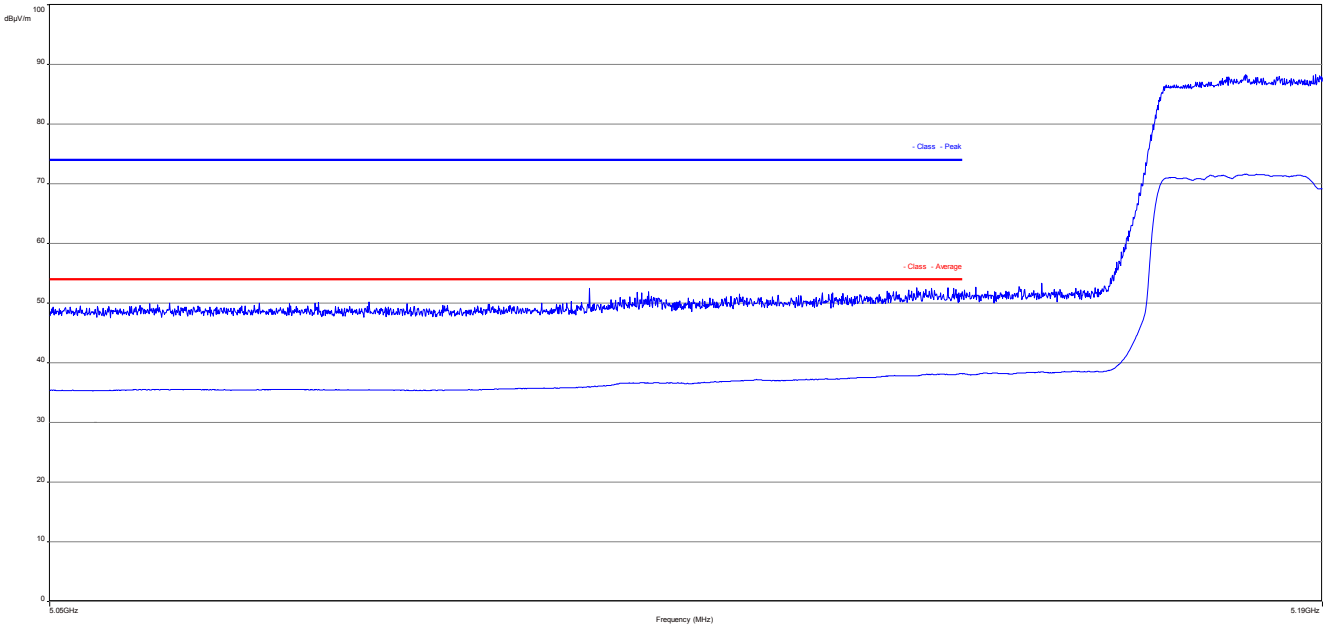
Plot 23: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 42, high data rate



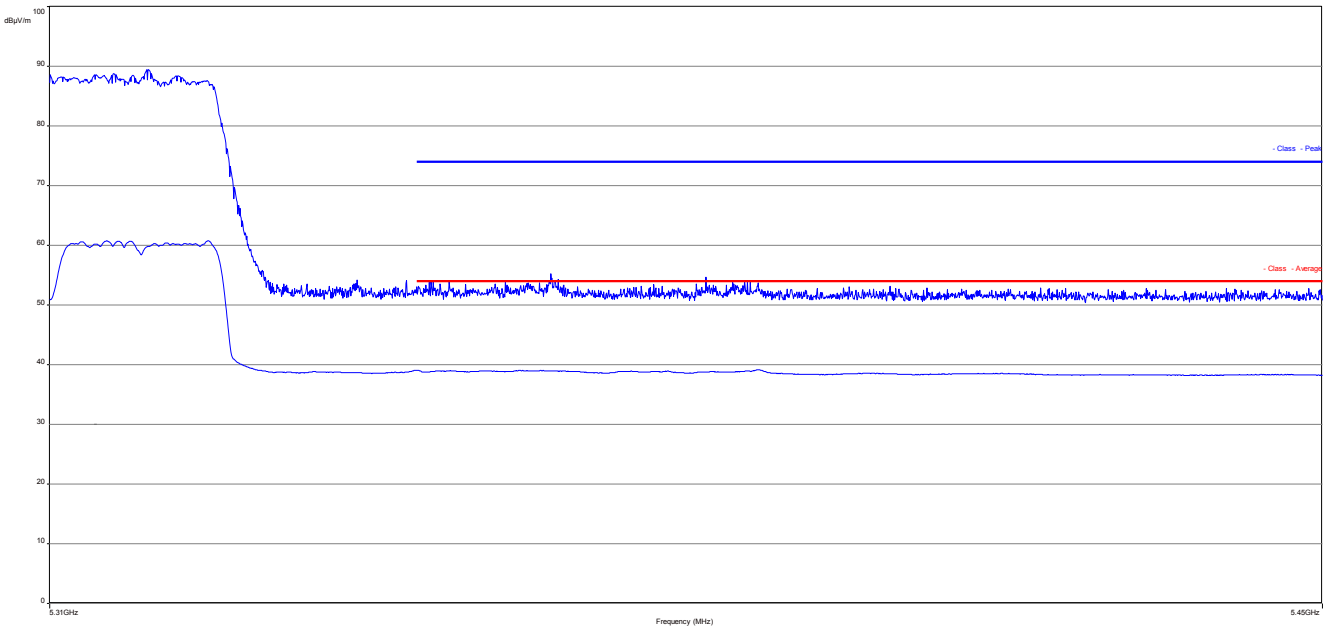
Plot 24: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 42, highest power d. r.



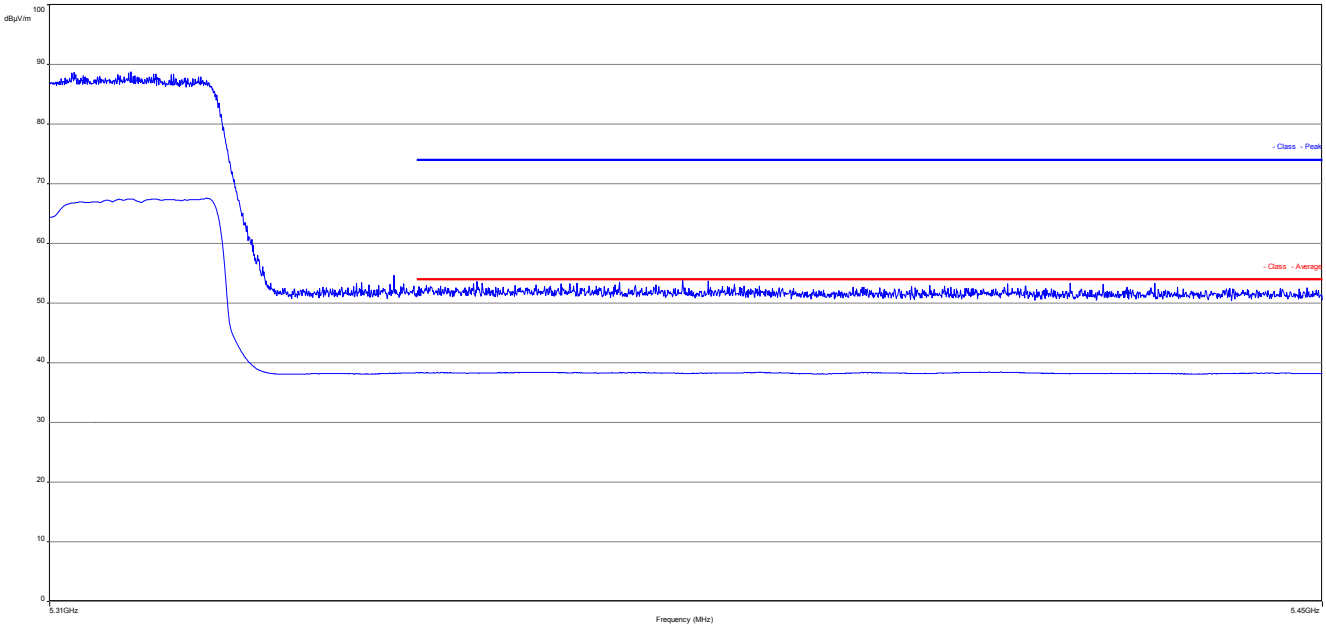
Plot 25: upper band edge, vertical & horizontal polarization (ac HT 80 mode), channel 58, low data rate



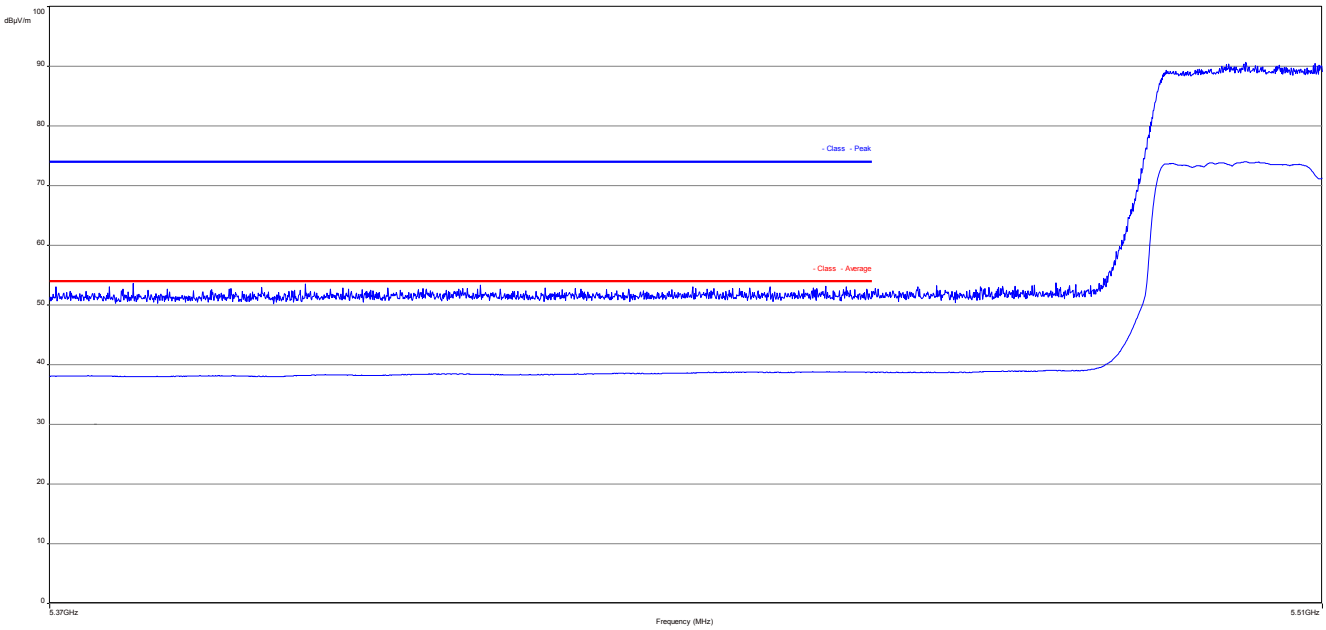
Plot 26: upper band edge, vertical & horizontal polarization (ac HT 80 mode), channel 58, high data rate



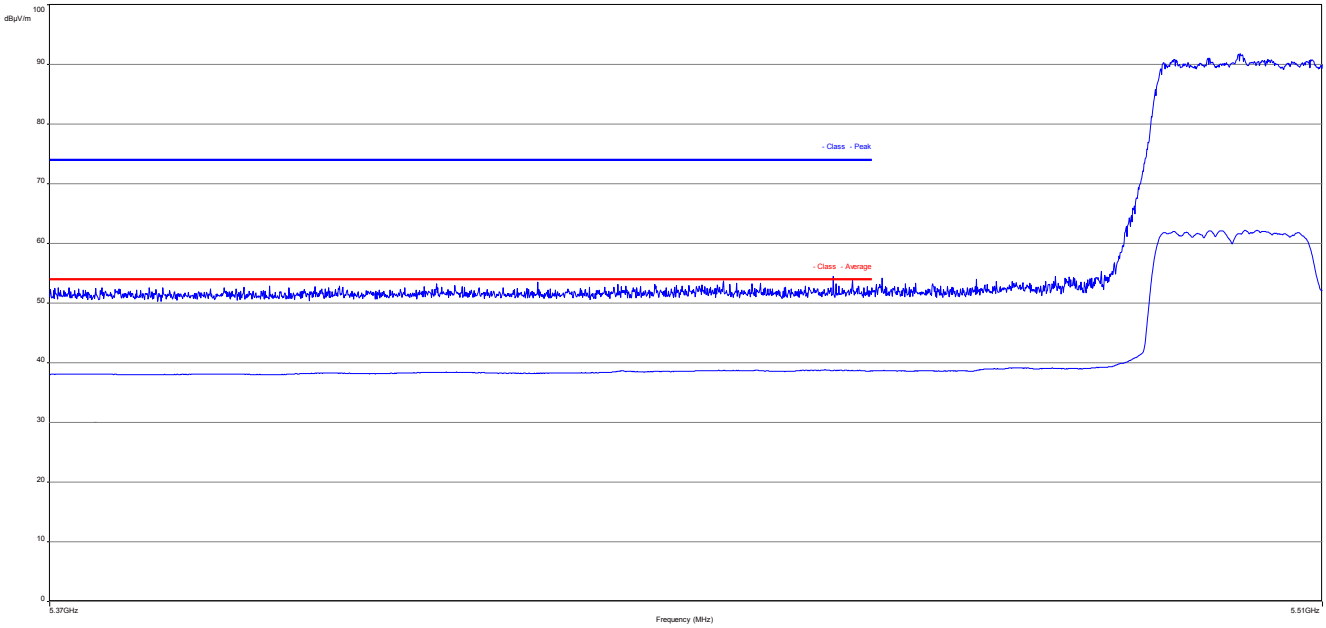
Plot 27: upper band edge, vertical & horizontal polarization (ac HT 80 mode), channel 58, highest power d. r.



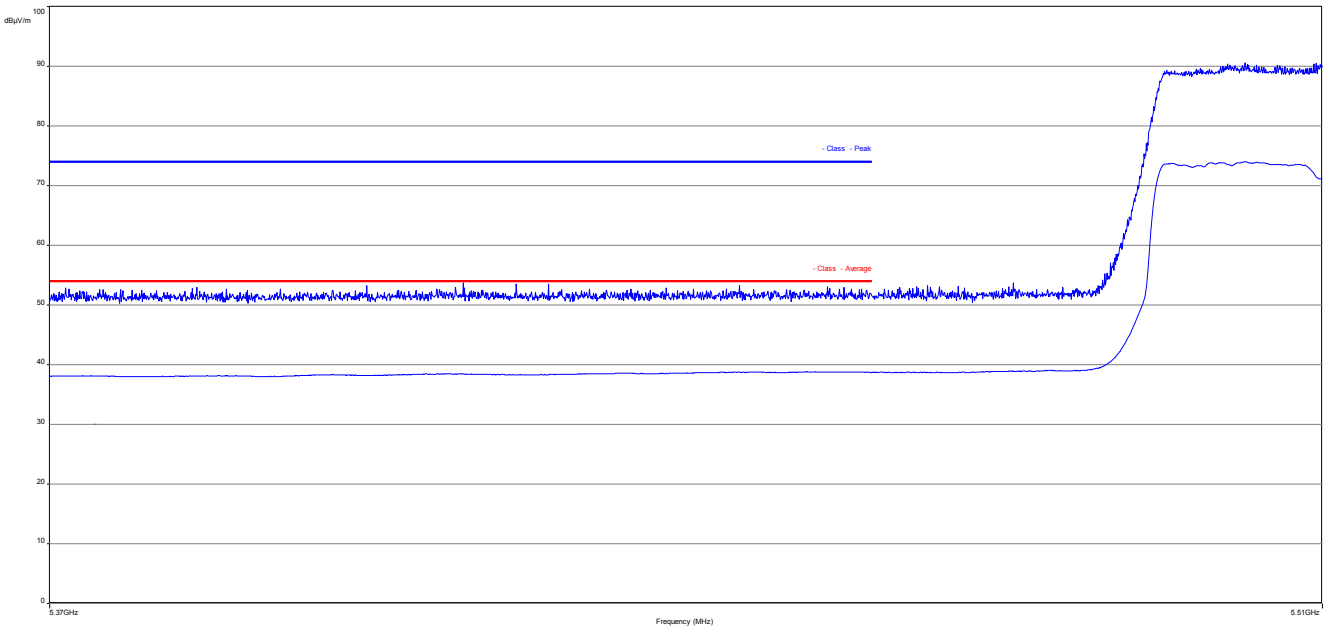
Plot 28: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 106, low data rate



Plot 29: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 106, high data rate



Plot 30: lower band edge, vertical & horizontal polarization (ac HT 80 mode), channel 106, highest power d. r.



Result: **Passed**

11.9 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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
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.		
All detected peaks are below the average limit!			All detected peaks are below the average limit!			All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / n/ac – modeHT20

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – 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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – 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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – 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.		
All detected peaks are below the average limit!			All detected peaks are below the average limit!			All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / n/ac – modeHT40

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – mode HT40								
Lowest 5190 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.		
All detected peaks are below the average limit!				!		All detected peaks are below the average limit		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – mode HT40								
Lowest 5310 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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM n/ac – mode HT40								
Lowest 5670 MHz			Middle 5765 MHz			Highest 5795 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.		
All detected peaks are below the average limit!			All detected peaks are below the average limit!			All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / ac – modeHT80

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM ac – mode HT80								
Lowest 5210 MHz			-/-			Highest 5290 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.		
All detected peaks are below the average limit!						All detected peaks are below the average limit!		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m] / dBm								
OFDM ac – mode HT80								
Lowest 5530 MHz			-/-			Highest 5610 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.		
All detected peaks are below the average limit!						All detected peaks 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: OFDM / a – mode

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

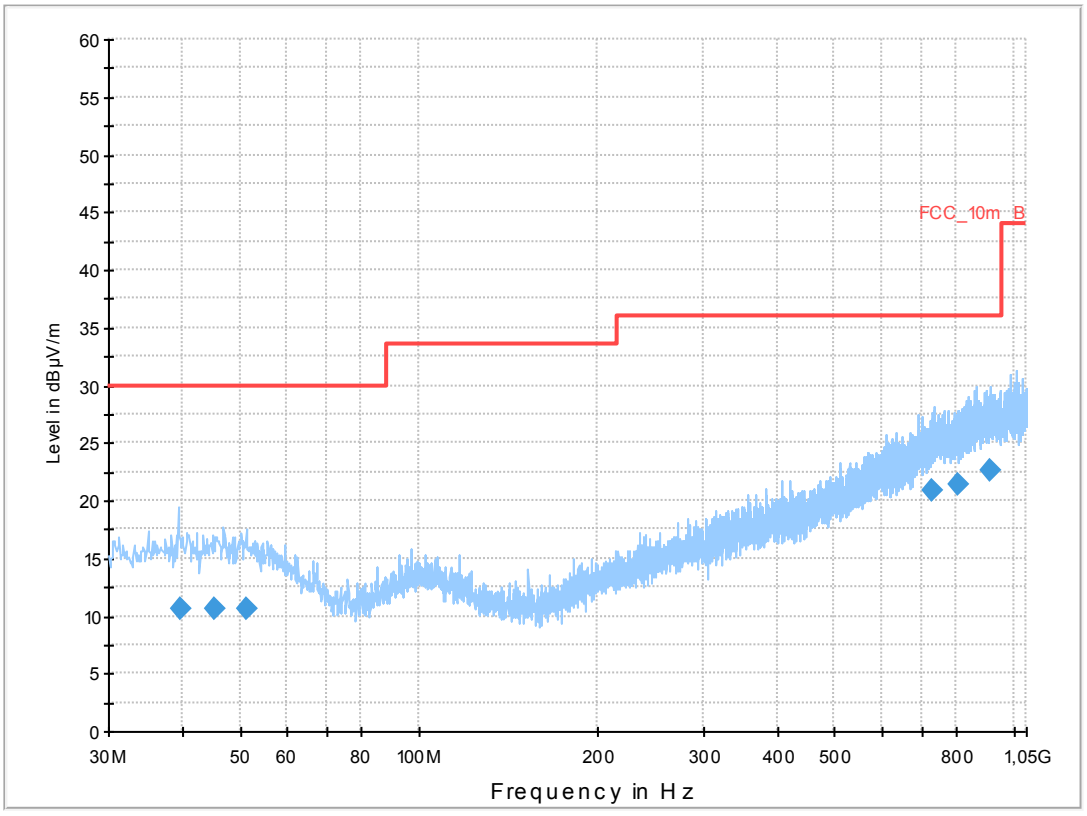
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 36
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

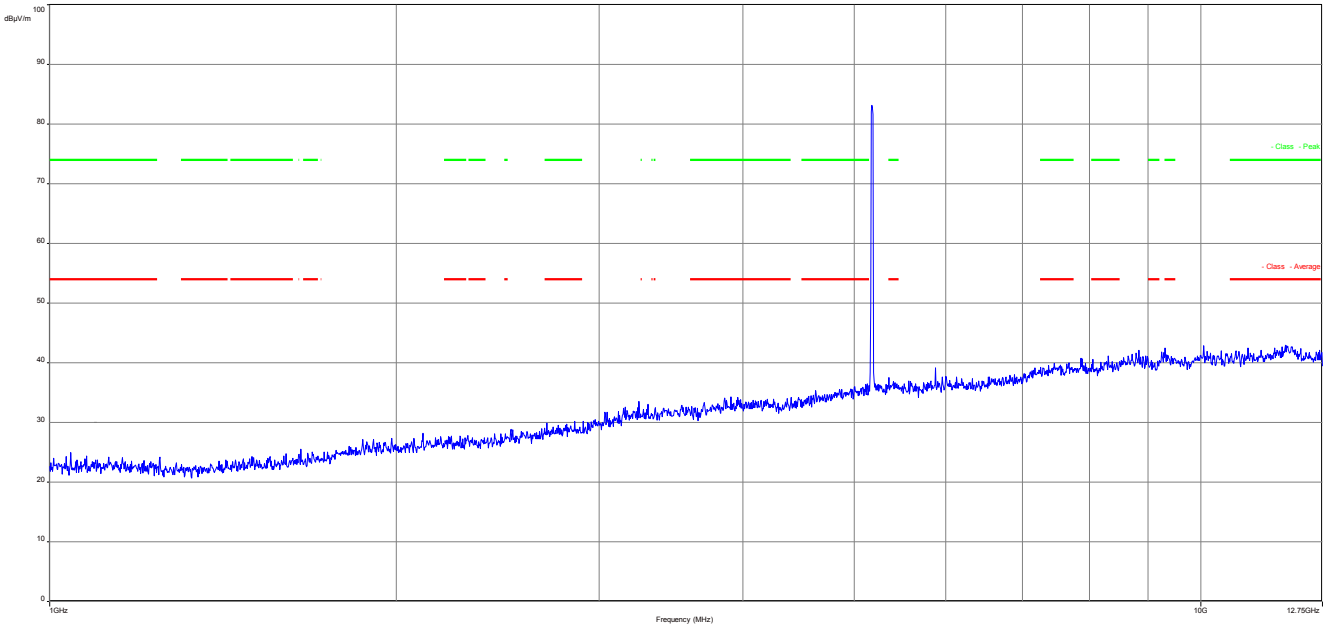
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



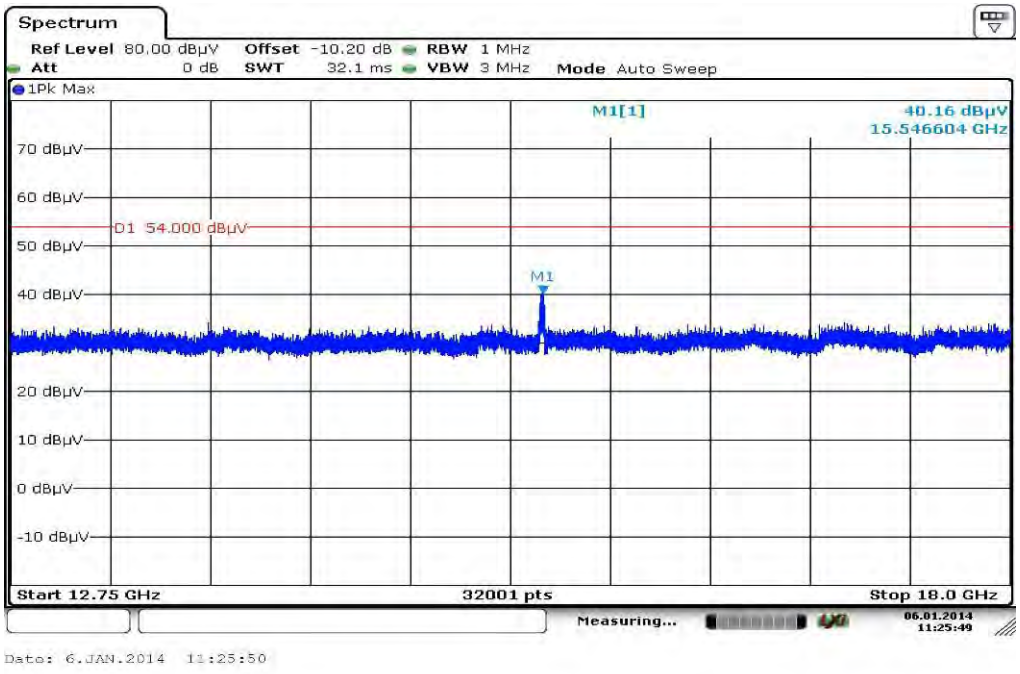
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
39.807600	10.6	1000.0	120.000	170.0	V	190.0	13.4	19.4	30.0	
45.358800	10.6	1000.0	120.000	170.0	H	-10.0	13.3	19.4	30.0	
51.081450	10.6	1000.0	120.000	111.0	V	88.0	13.3	19.4	30.0	
731.799000	20.8	1000.0	120.000	170.0	H	88.0	23.2	15.2	36.0	
806.678100	21.3	1000.0	120.000	170.0	H	10.0	23.9	14.7	36.0	
909.720750	22.7	1000.0	120.000	161.0	H	190.0	25.2	13.3	36.0	

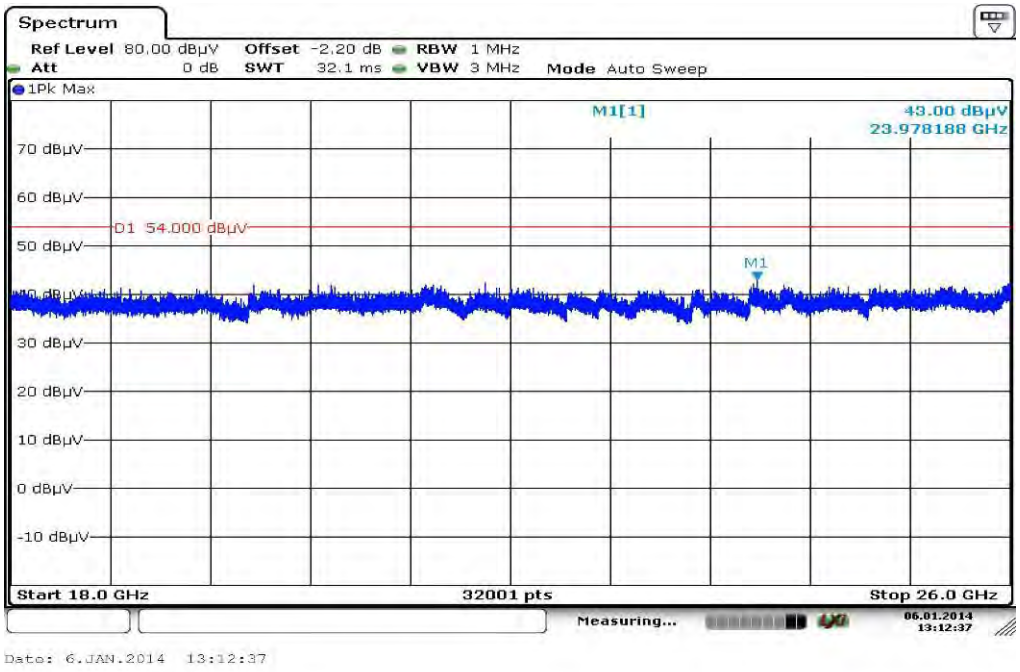
Plot 2: 1 GHz to 12.75 GHz, 5180 MHz, vertical & horizontal polarization



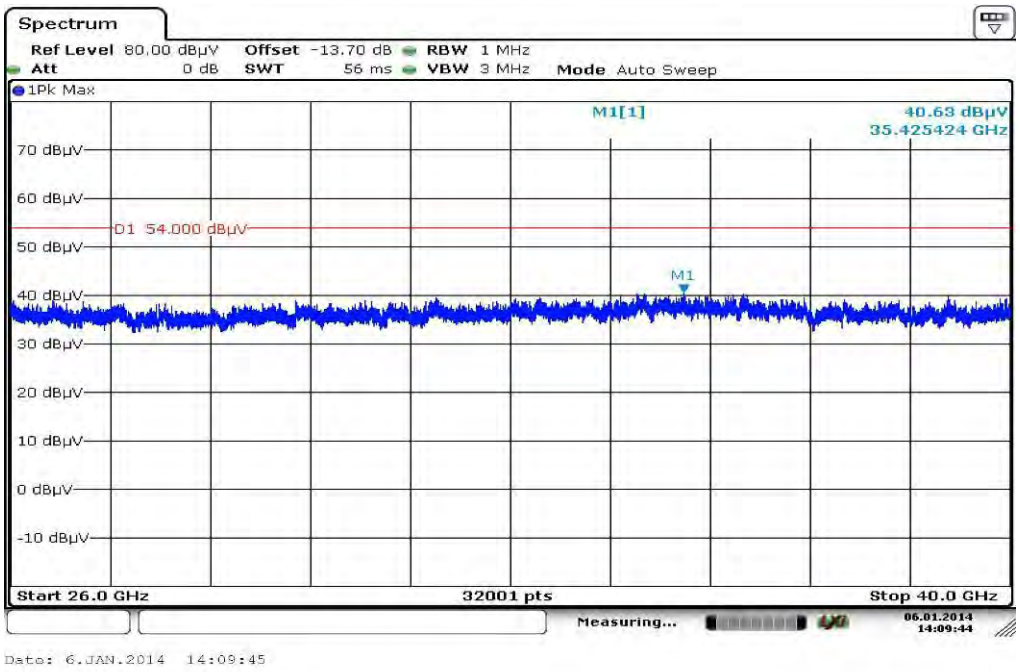
Plot 3: 12 GHz to 18 GHz, 5180 MHz, vertical & horizontal polarization



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

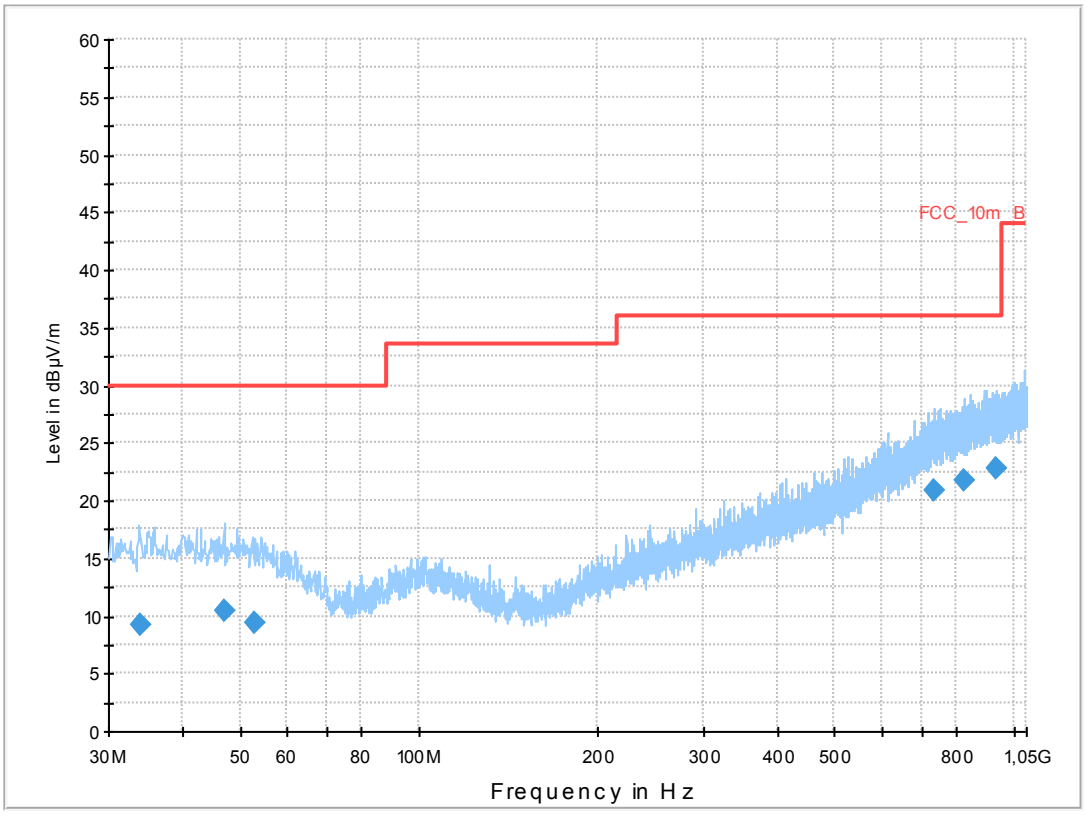
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 48
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

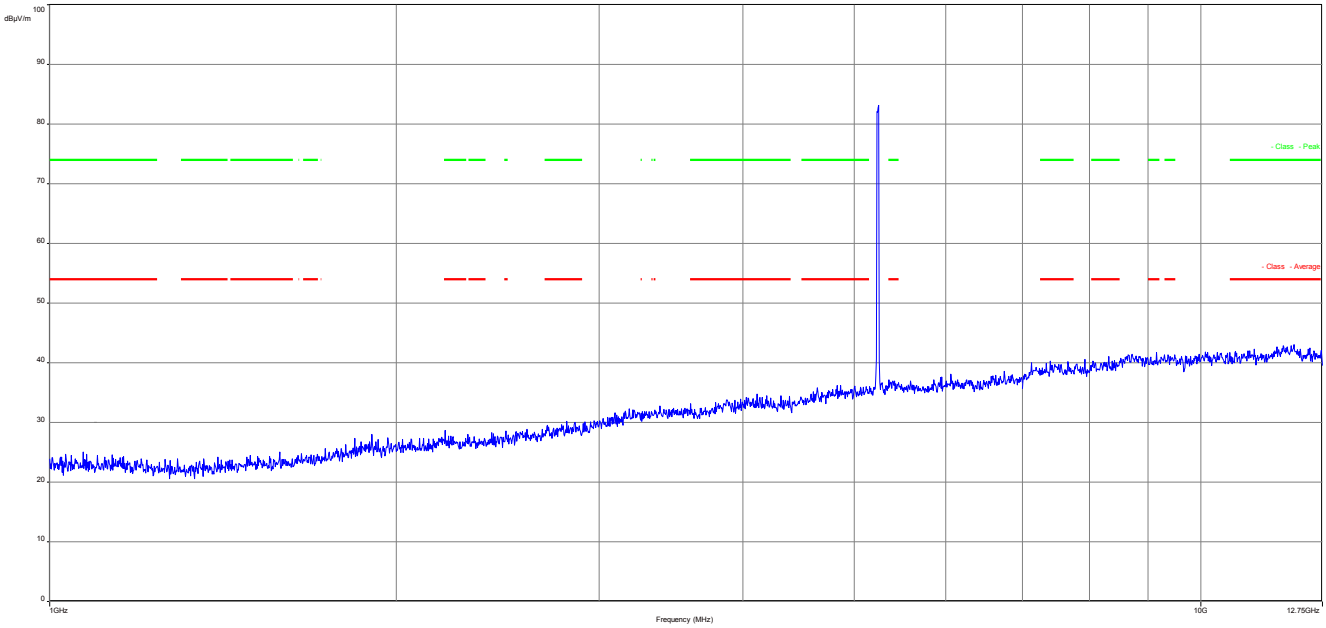
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



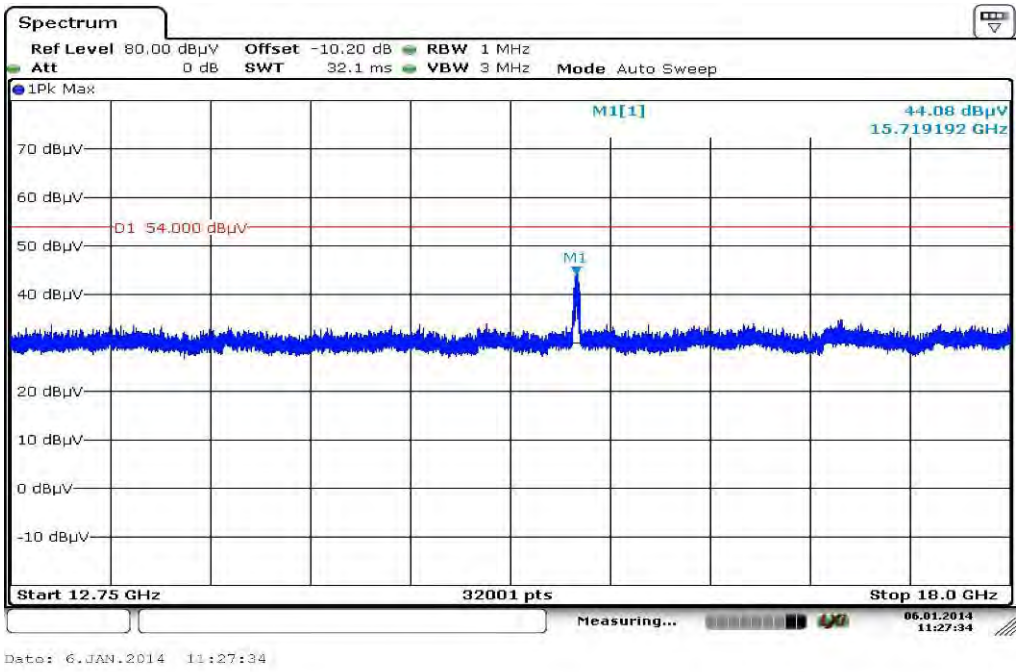
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
33.925650	9.3	1000.0	120.000	98.0	H	100.0	12.9	20.7	30.0	
46.887450	10.4	1000.0	120.000	111.0	V	270.0	13.3	19.6	30.0	
52.867800	9.4	1000.0	120.000	170.0	H	100.0	13.1	20.6	30.0	
735.162300	20.9	1000.0	120.000	98.0	V	272.0	23.3	15.1	36.0	
826.775400	21.7	1000.0	120.000	170.0	H	100.0	24.2	14.3	36.0	
932.493150	22.7	1000.0	120.000	170.0	H	190.0	25.3	13.3	36.0	

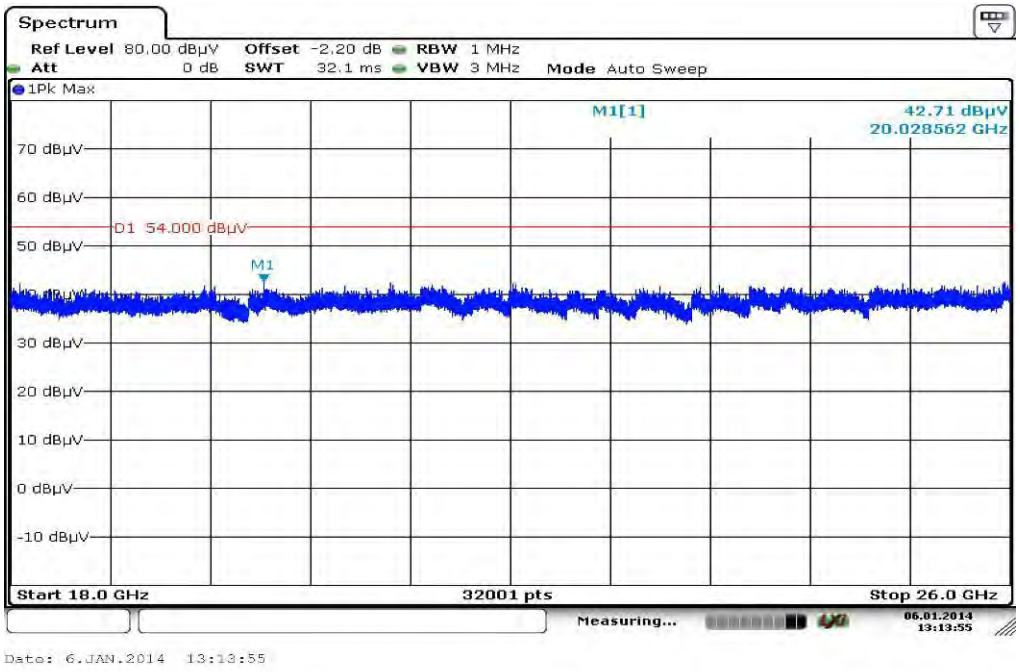
Plot 7: 1 GHz to 12.75 GHz, 5240 MHz, vertical & horizontal polarization



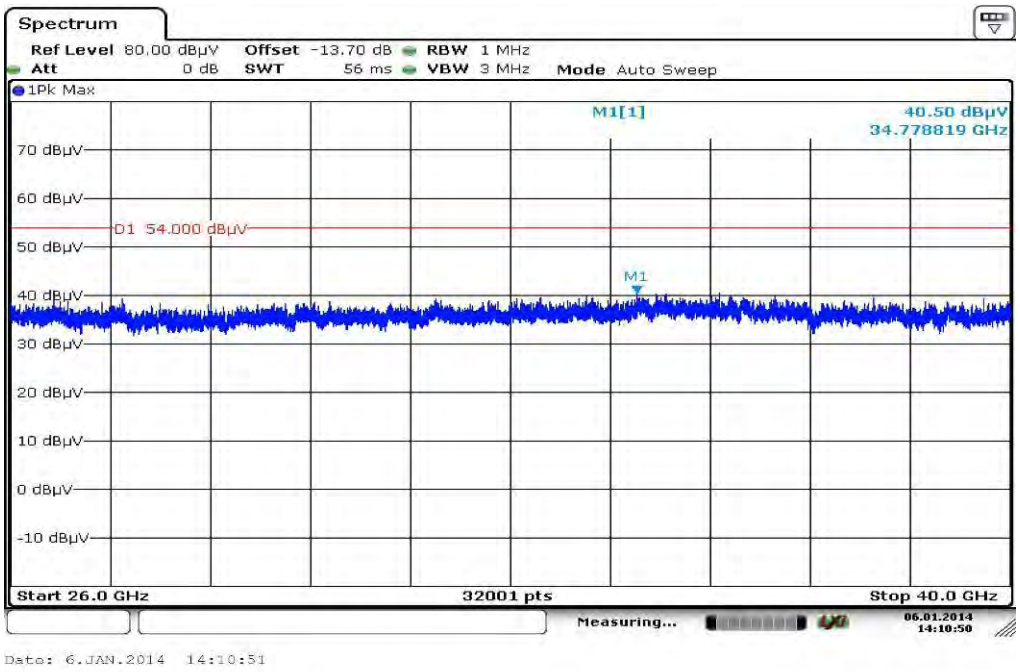
Plot 8: 12 GHz to 18 GHz, 5240 MHz, vertical & horizontal polarization



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

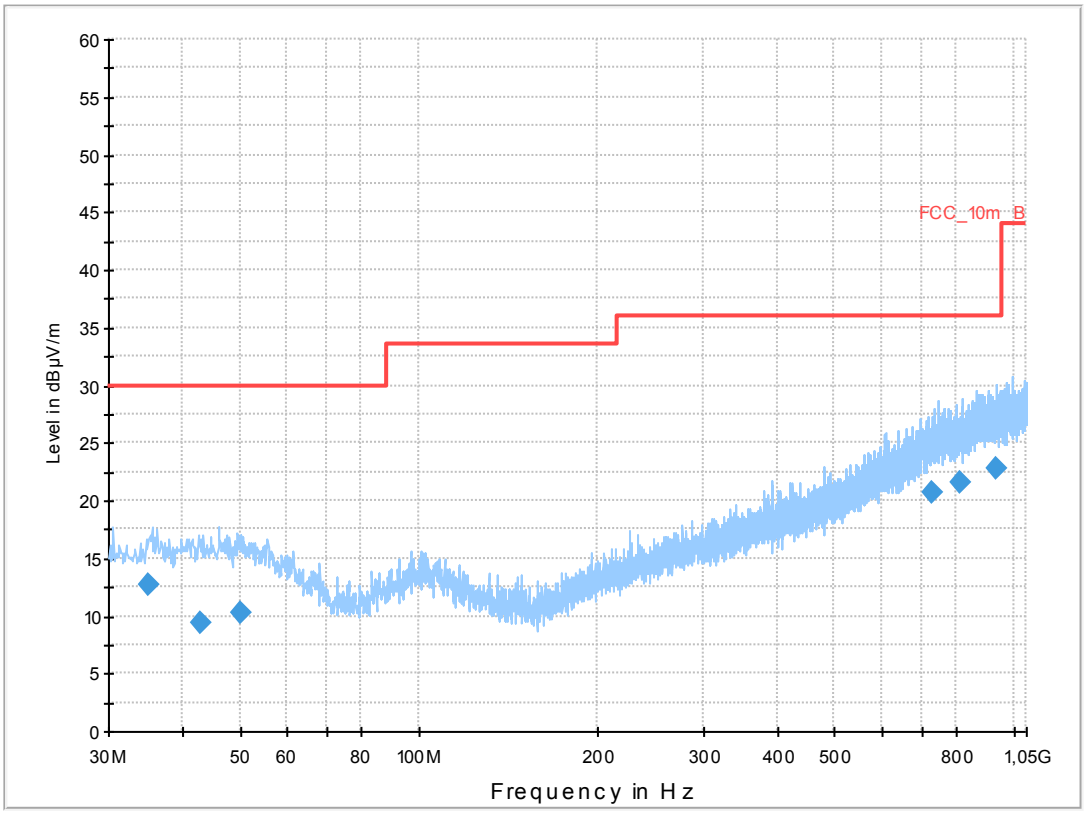
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 52
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

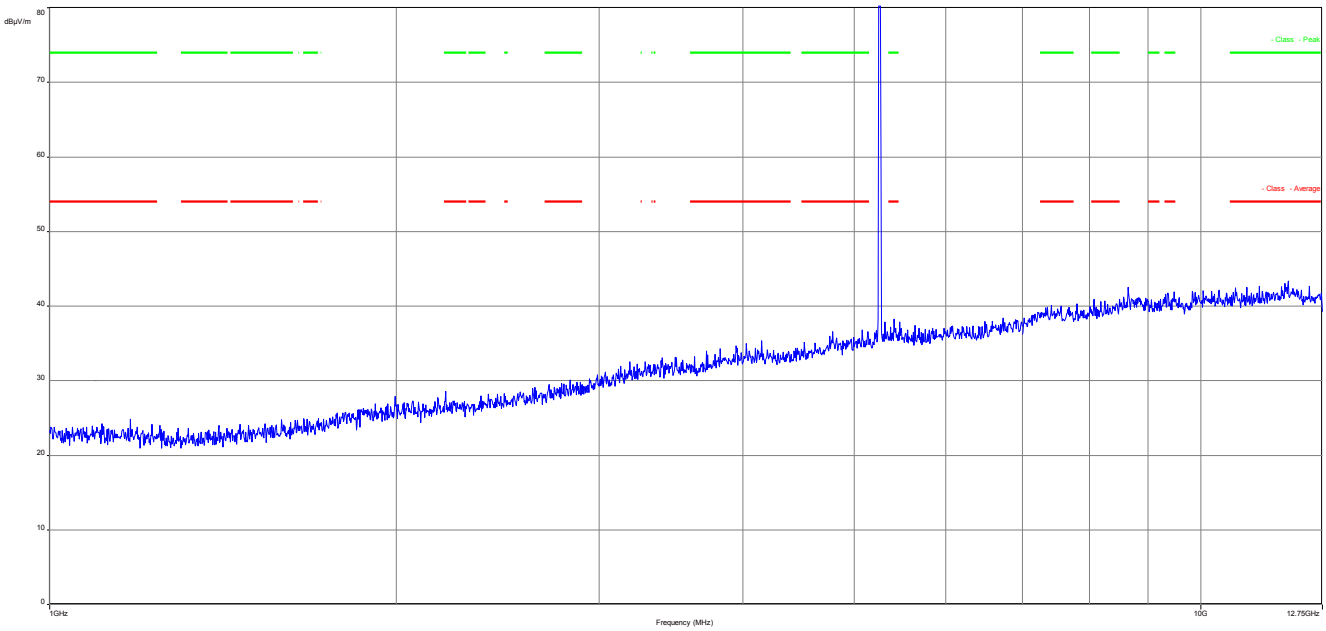
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



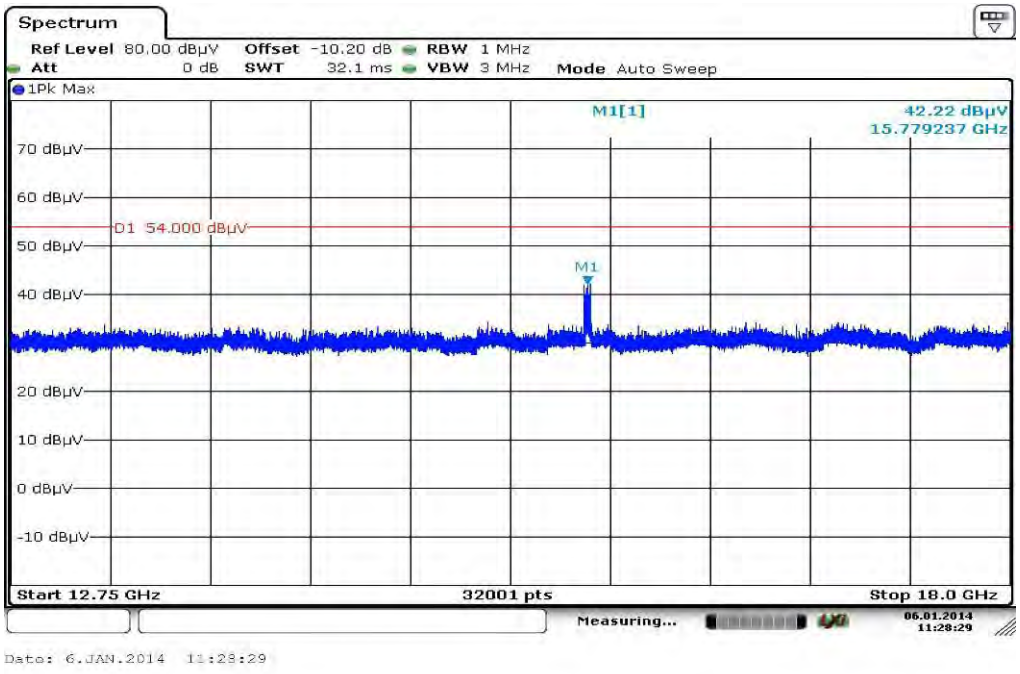
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.002950	12.7	1000.0	120.000	120.0	V	80.0	13.0	17.4	30.0	
42.869100	9.4	1000.0	120.000	170.0	H	100.0	13.3	20.6	30.0	
49.914600	10.2	1000.0	120.000	170.0	V	280.0	13.4	19.8	30.0	
731.244750	20.7	1000.0	120.000	170.0	V	265.0	23.2	15.3	36.0	
815.622000	21.5	1000.0	120.000	142.0	V	2.0	24.0	14.5	36.0	
932.273250	22.7	1000.0	120.000	98.0	V	270.0	25.3	13.3	36.0	

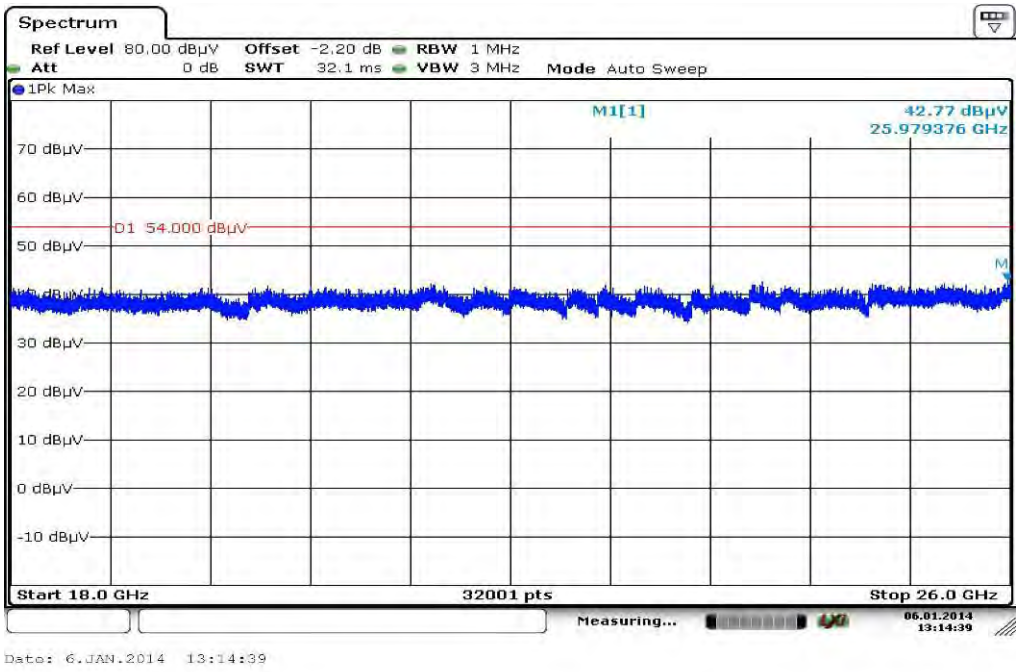
Plot 12: 1 GHz to 12.75 GHz, 5260 MHz, vertical & horizontal polarization



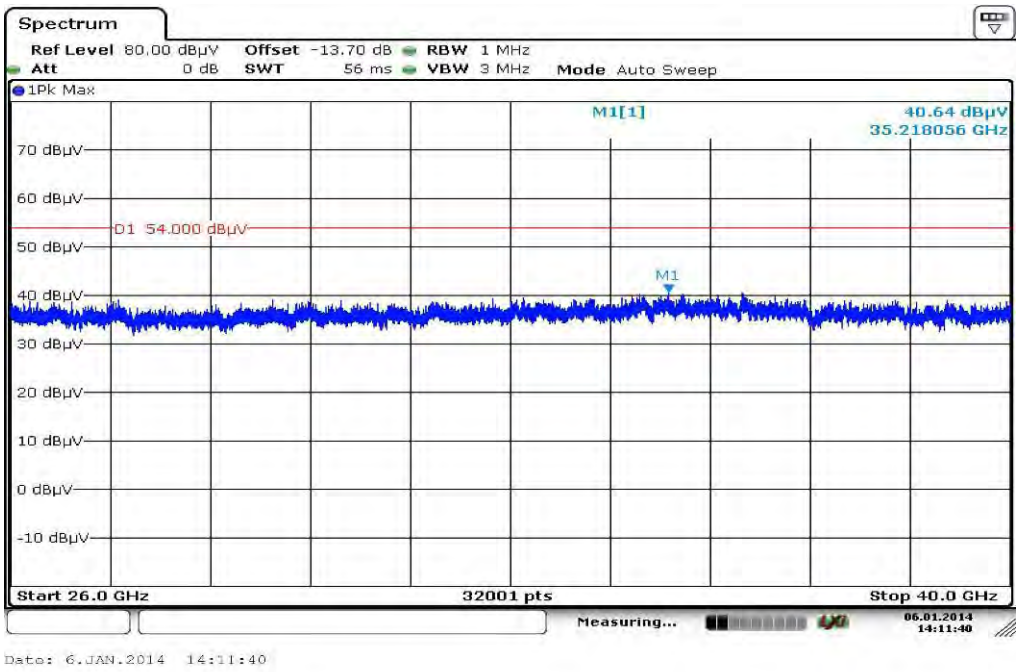
Plot 13: 12 GHz to 18 GHz, 5260 MHz, vertical & horizontal polarization



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

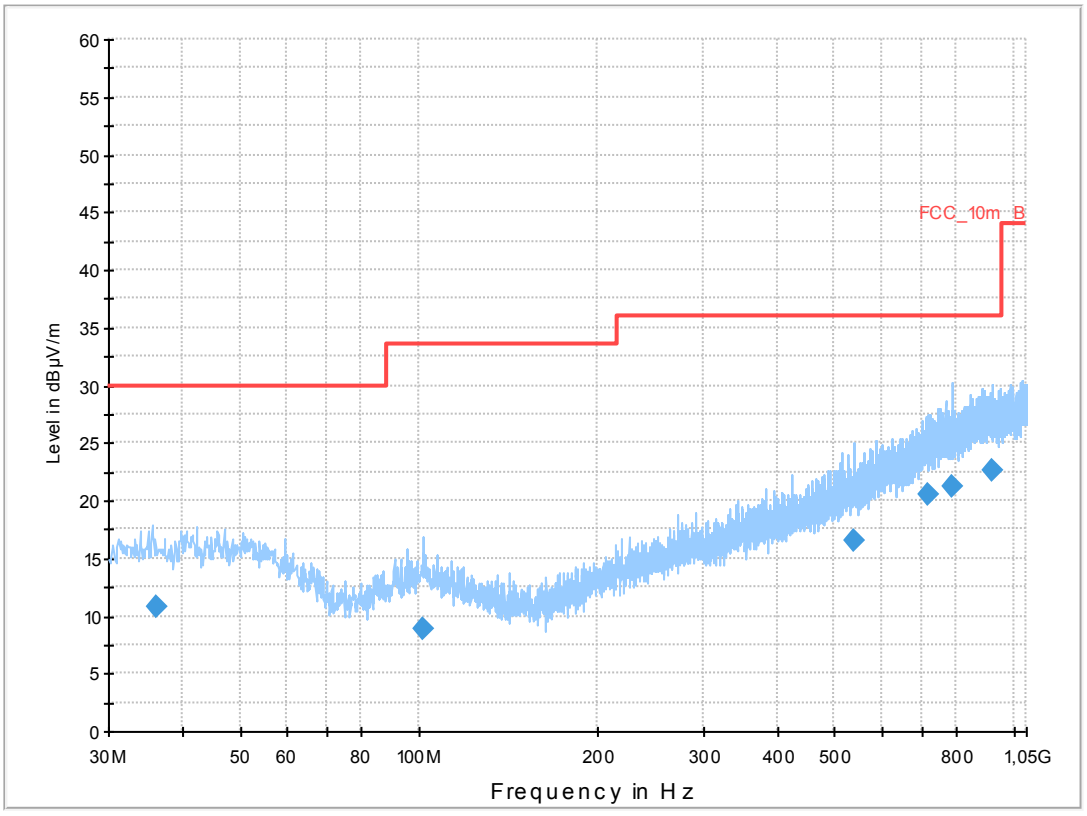
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 64
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

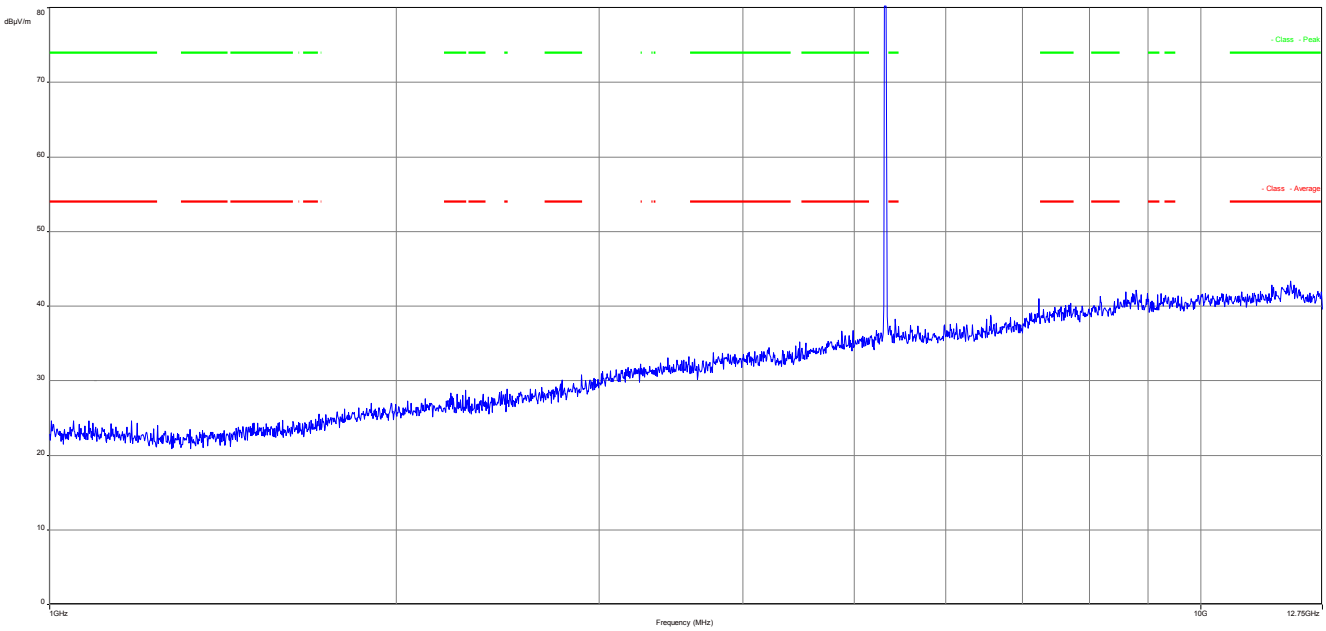
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



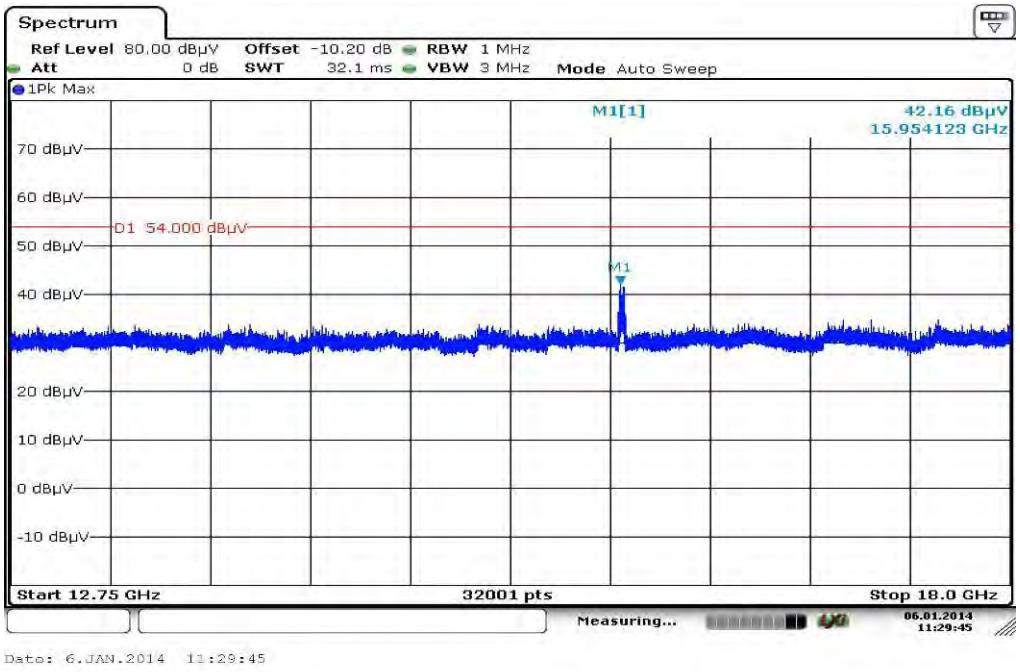
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.039900	10.8	1000.0	120.000	155.0	V	261.0	13.1	19.2	30.0	
101.722200	8.9	1000.0	120.000	170.0	V	190.0	11.7	24.6	33.5	
538.823400	16.5	1000.0	120.000	111.0	H	10.0	19.2	19.5	36.0	
719.757600	20.6	1000.0	120.000	170.0	H	10.0	23.0	15.4	36.0	
788.410050	21.2	1000.0	120.000	111.0	V	178.0	23.8	14.8	36.0	
919.756800	22.7	1000.0	120.000	170.0	V	81.0	25.3	13.3	36.0	

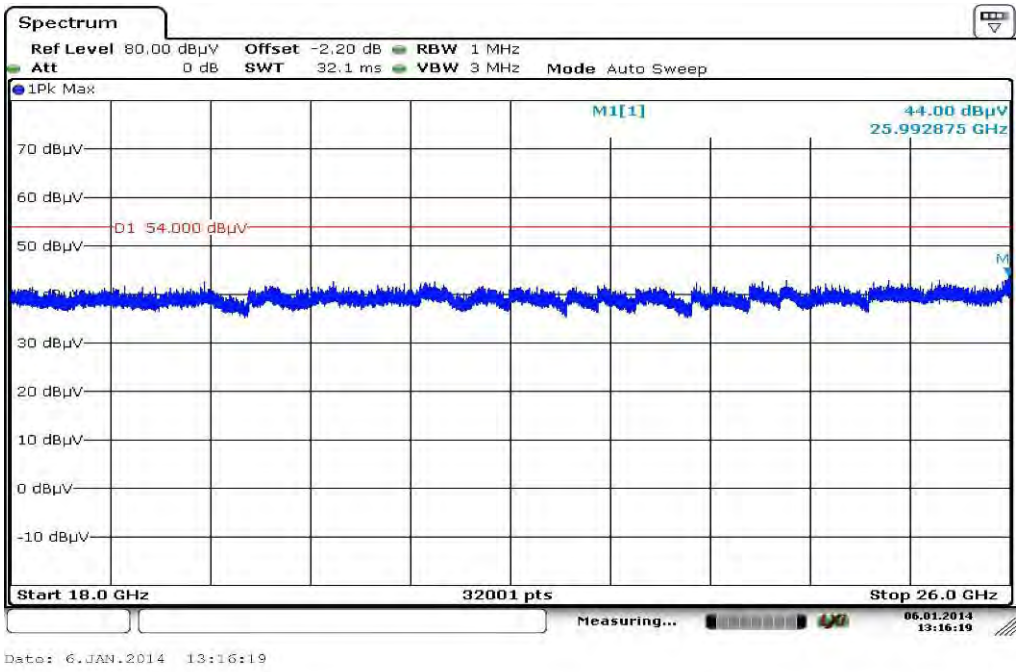
Plot 17: 1 GHz to 12.75 GHz, 5320 MHz, vertical & horizontal polarization



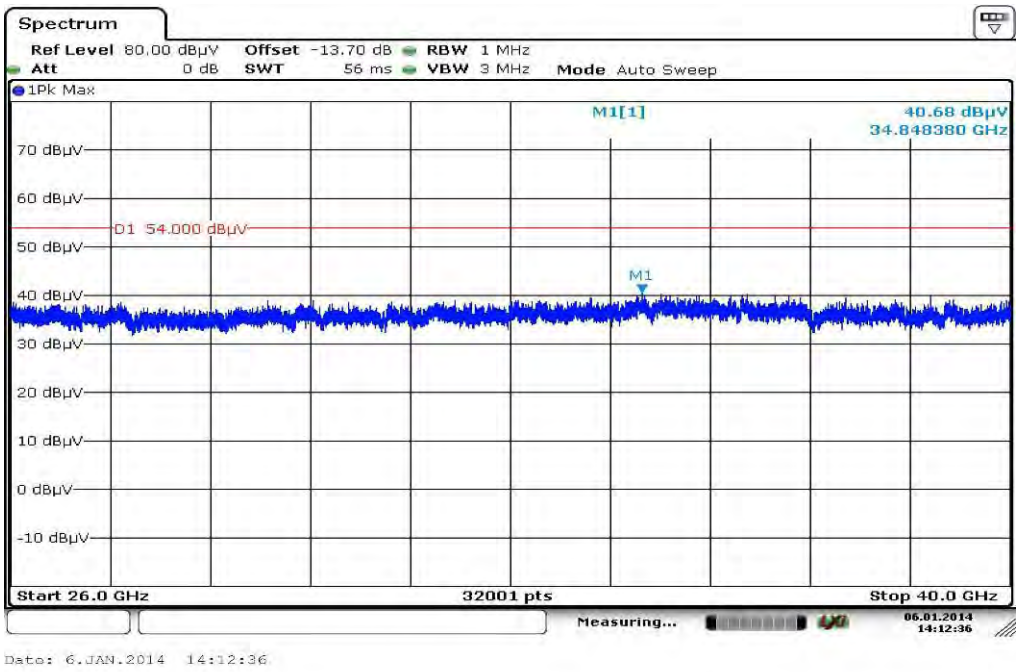
Plot 18: 12 GHz to 18 GHz, 5320 MHz, vertical & horizontal polarization



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

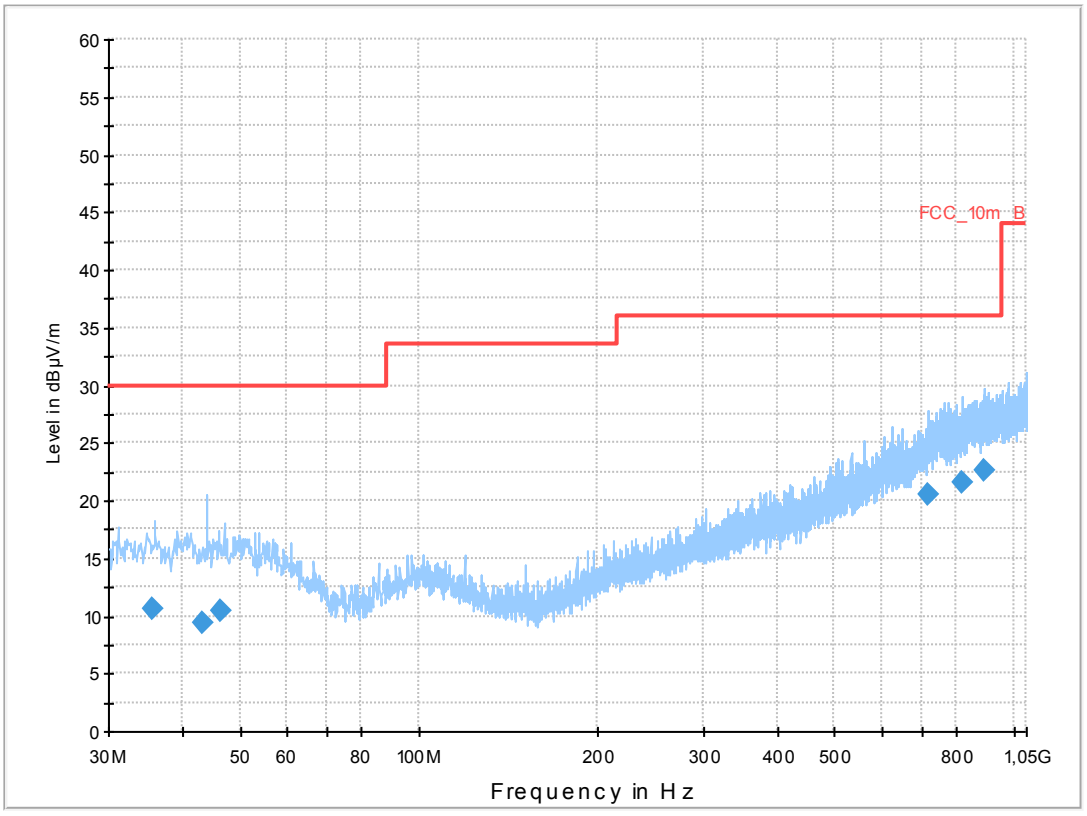
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 100
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

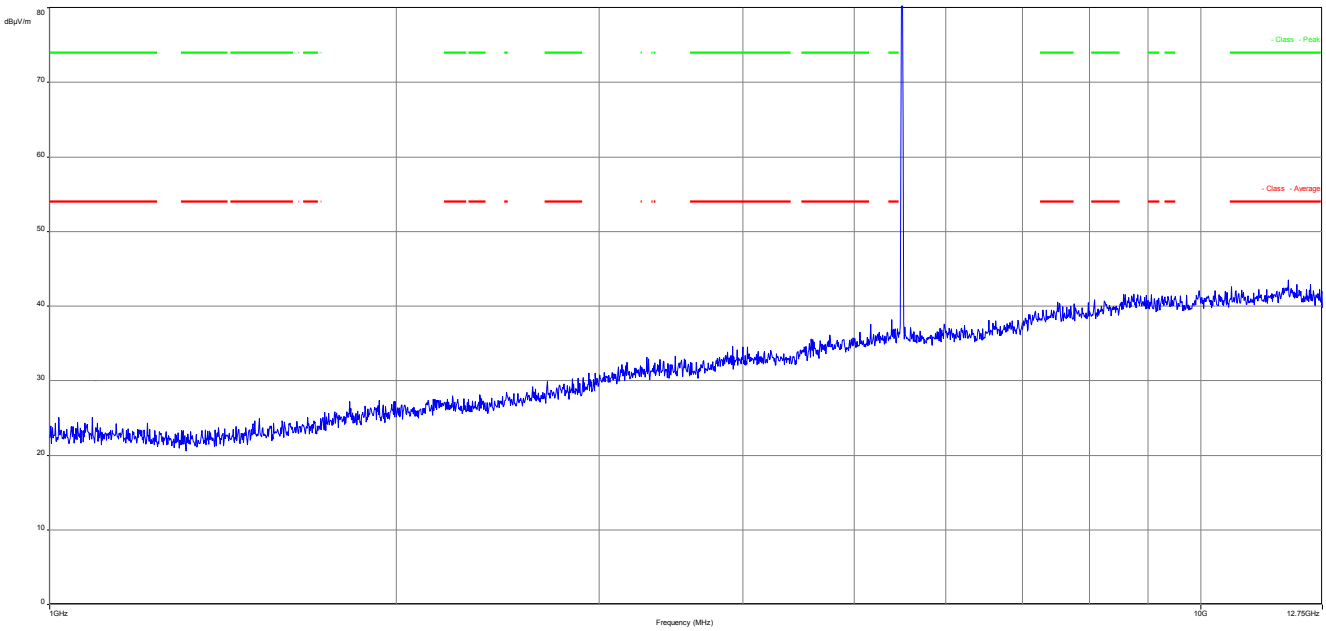
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



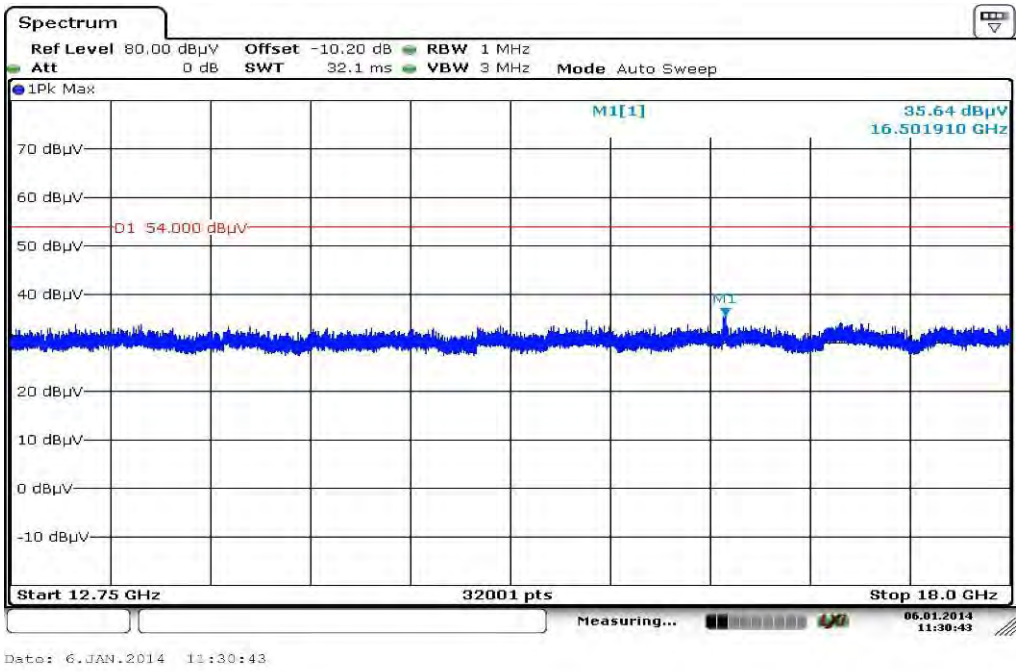
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.678250	10.7	1000.0	120.000	170.0	H	190.0	13.1	19.3	30.0	
43.345200	9.4	1000.0	120.000	112.0	V	190.0	13.3	20.6	30.0	
46.503000	10.5	1000.0	120.000	170.0	H	190.0	13.3	19.5	30.0	
719.086800	20.6	1000.0	120.000	135.0	V	190.0	22.9	15.4	36.0	
819.024300	21.6	1000.0	120.000	98.0	V	100.0	24.1	14.4	36.0	
892.898850	22.7	1000.0	120.000	170.0	H	10.0	25.1	13.3	36.0	

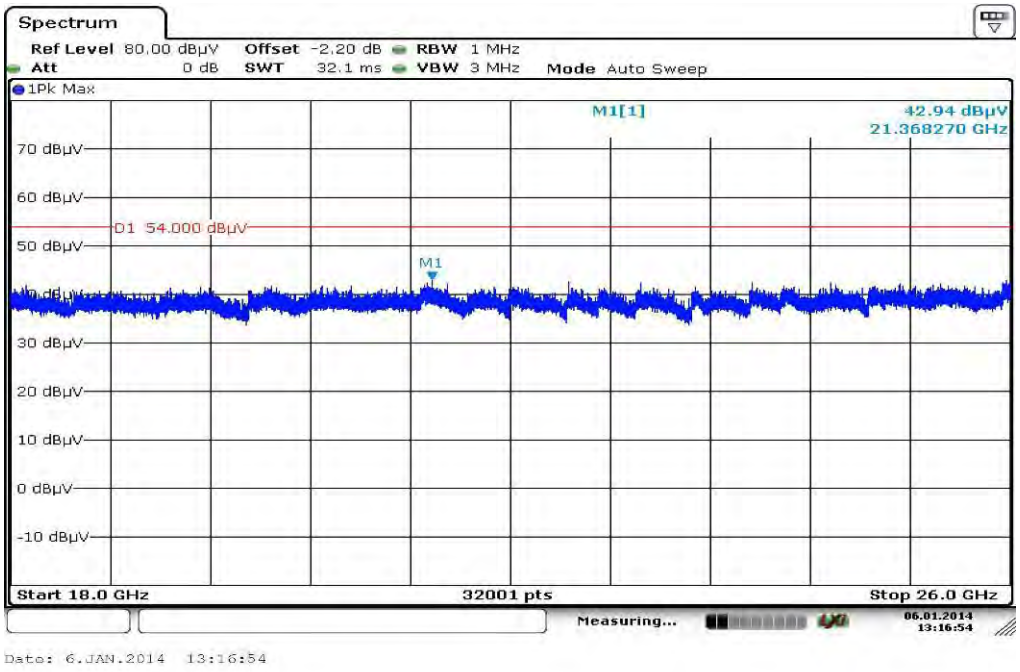
Plot 22: 1 GHz to 12.75 GHz, 5500 MHz, vertical & horizontal polarization



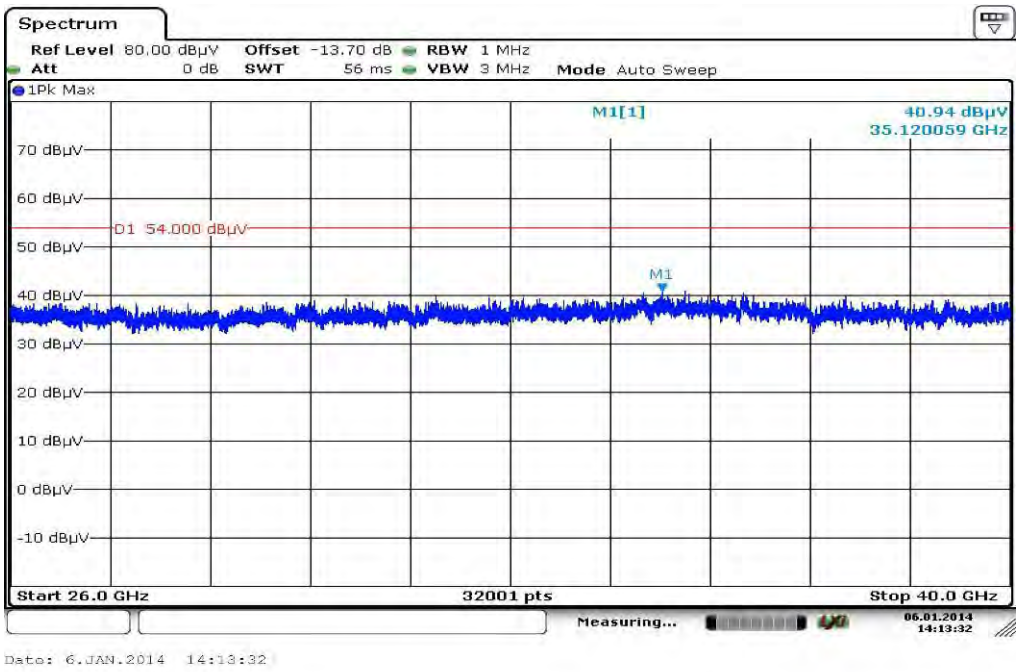
Plot 23: 12 GHz to 18 GHz, 5500 MHz, vertical & horizontal polarization



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

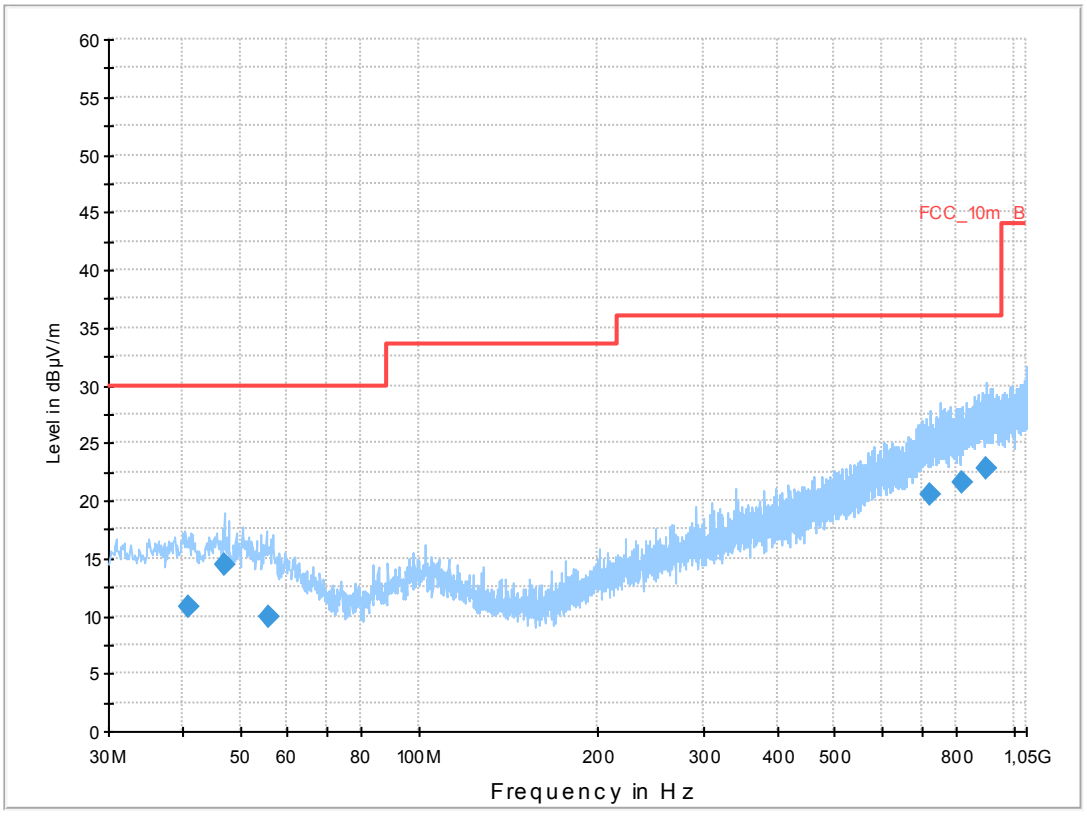
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 120
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

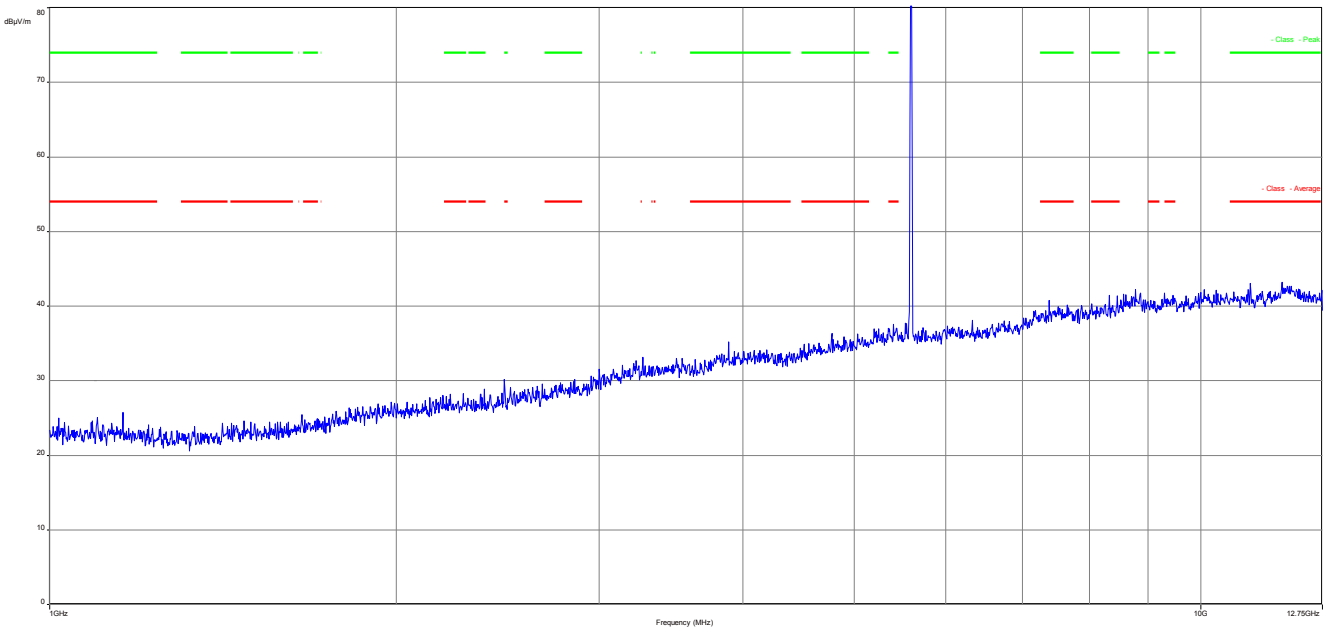
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



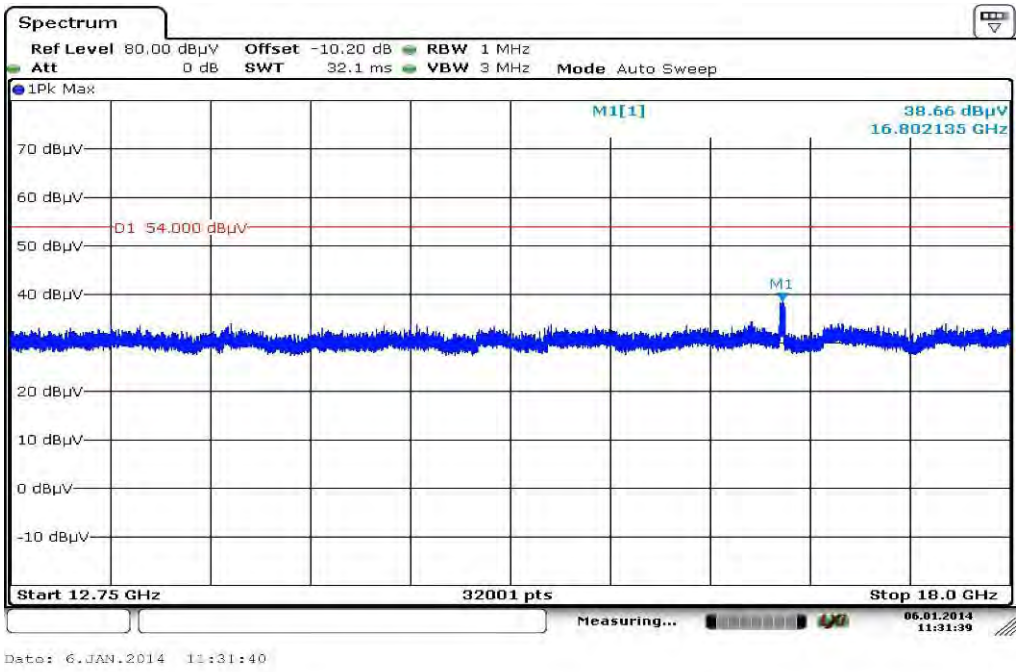
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
40.942800	10.8	1000.0	120.000	153.0	H	190.0	13.4	19.2	30.0	
47.013900	14.4	1000.0	120.000	105.0	V	178.0	13.3	15.6	30.0	
55.816200	9.9	1000.0	120.000	146.0	H	170.0	12.7	20.1	30.0	
724.034550	20.6	1000.0	120.000	170.0	V	261.0	23.1	15.4	36.0	
816.286800	21.5	1000.0	120.000	170.0	H	270.0	24.0	14.5	36.0	
899.902050	22.7	1000.0	120.000	144.0	V	81.0	25.2	13.3	36.0	

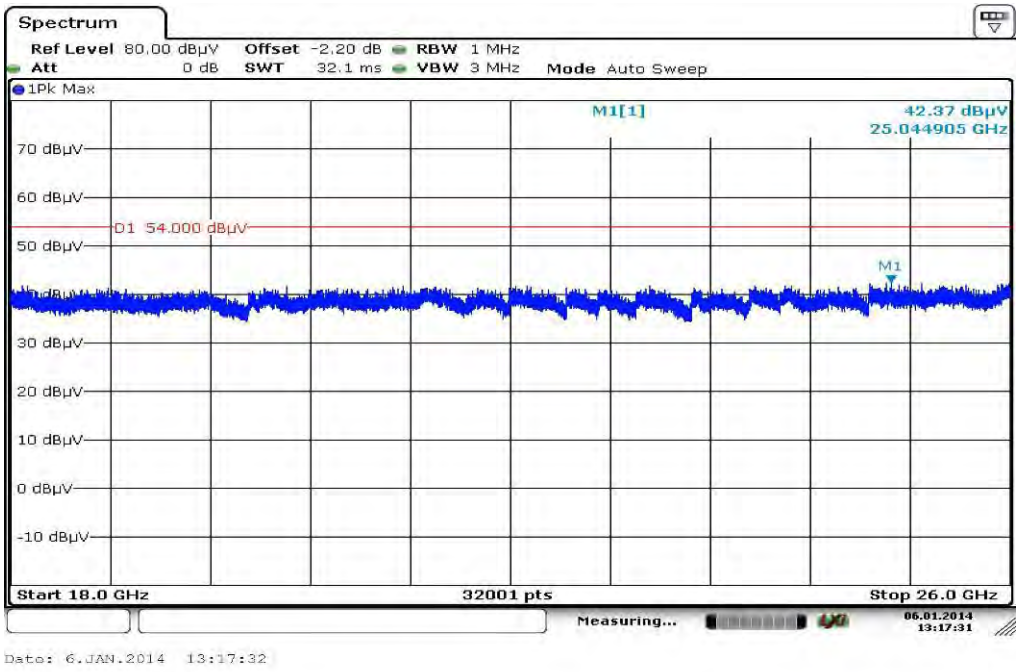
Plot 27: 1 GHz to 12.75 GHz, 5600 MHz, vertical & horizontal polarization



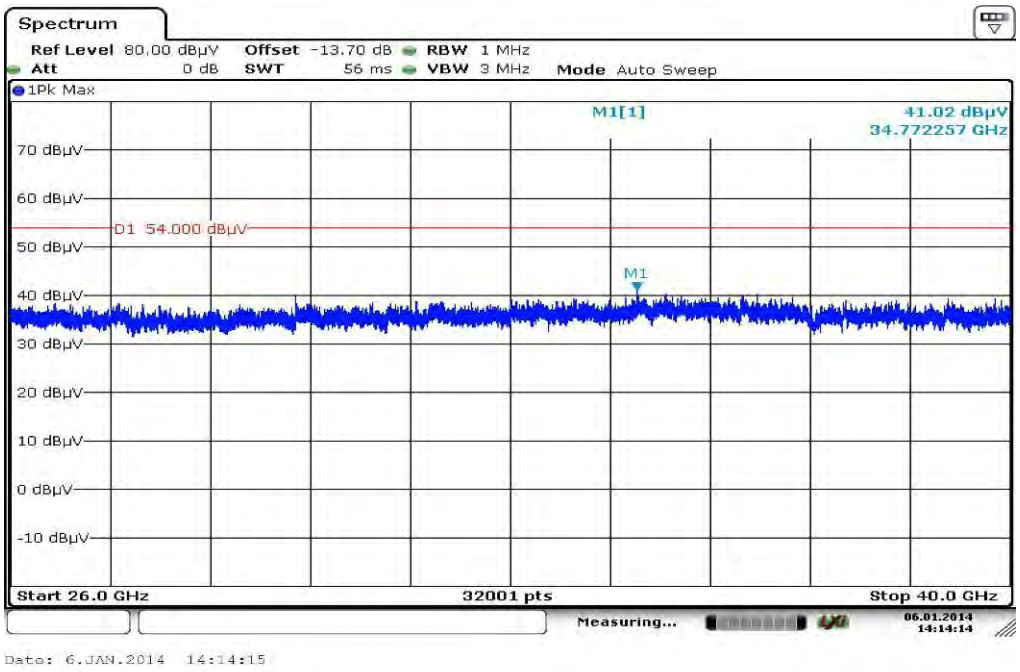
Plot 28: 12 GHz to 18 GHz, 5600 MHz, vertical & horizontal polarization



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

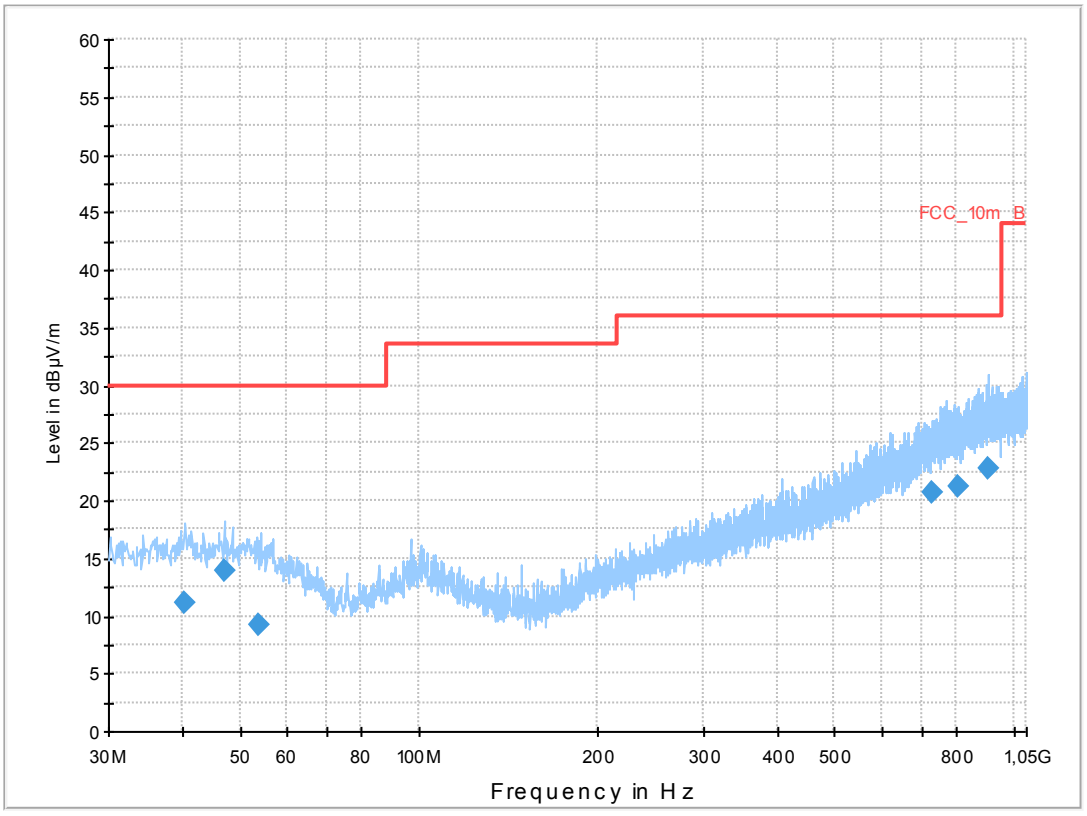
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan a-mode tx ch 140
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

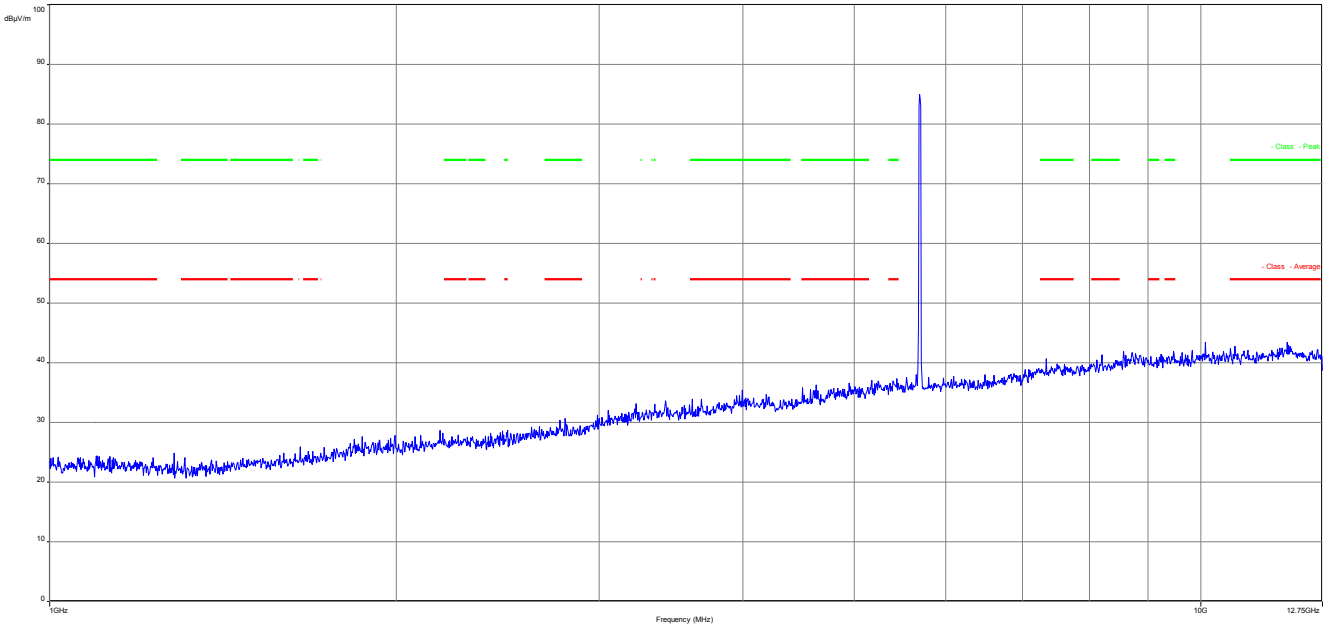
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



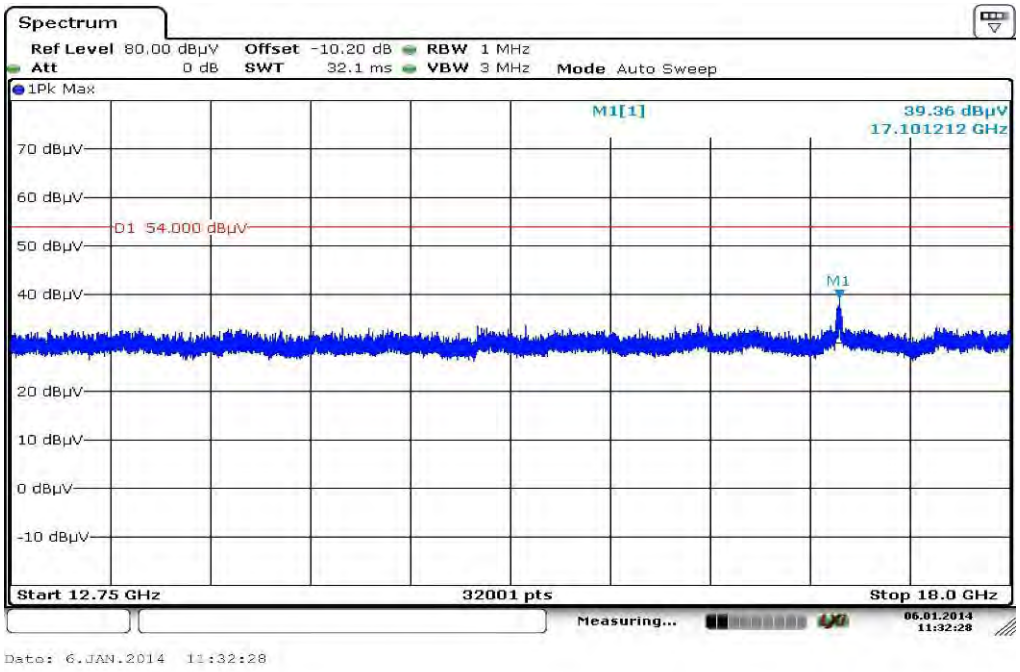
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
40.330050	11.0	1000.0	120.000	170.0	V	81.0	13.4	19.0	30.0	
47.030550	13.9	1000.0	120.000	98.0	V	180.0	13.3	16.1	30.0	
53.583000	9.2	1000.0	120.000	98.0	H	190.0	13.0	20.8	30.0	
726.663750	20.7	1000.0	120.000	170.0	H	268.0	23.1	15.3	36.0	
805.246500	21.3	1000.0	120.000	170.0	V	2.0	23.9	14.7	36.0	
903.104100	22.8	1000.0	120.000	170.0	V	280.0	25.2	13.2	36.0	

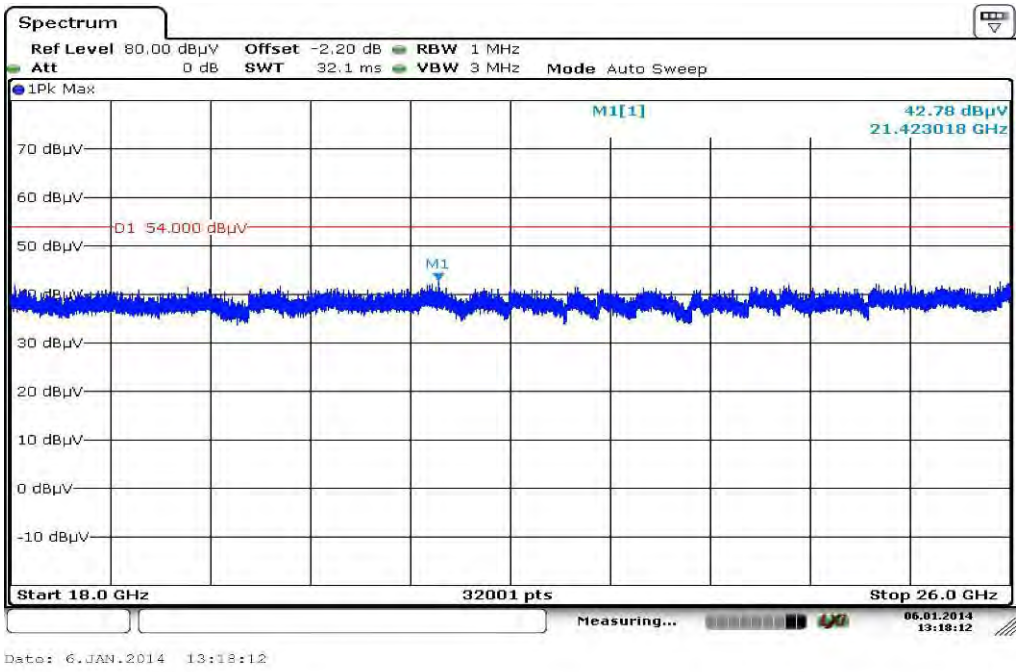
Plot 32: 1 GHz to 12.75 GHz, 5700 MHz, vertical & horizontal polarization



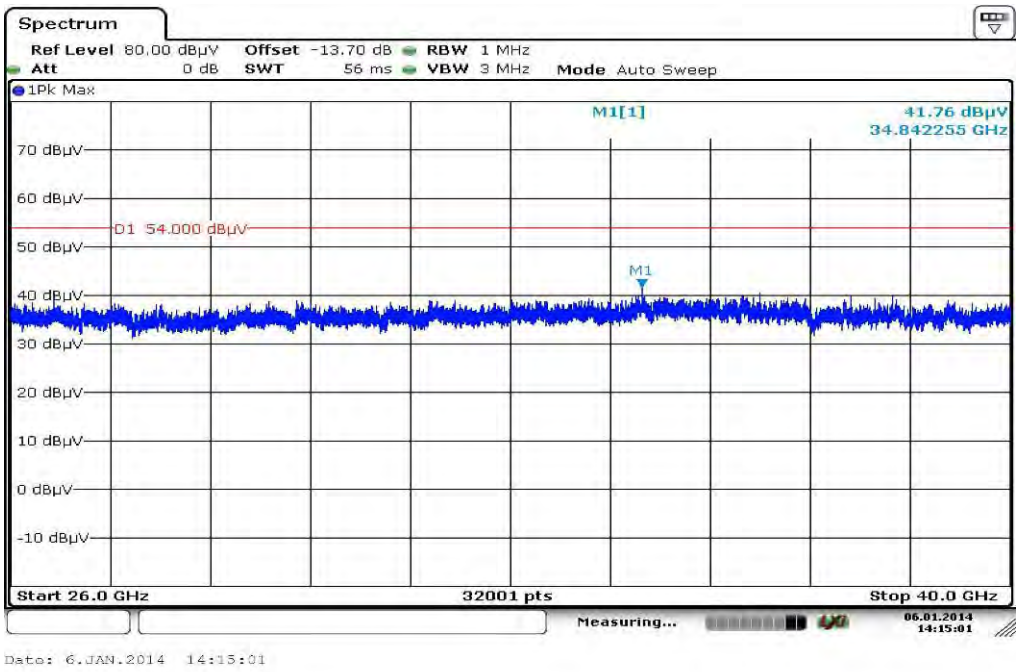
Plot 33: 12 GHz to 18 GHz, 5700 MHz, vertical & horizontal polarization



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 / ac – mode HT20

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

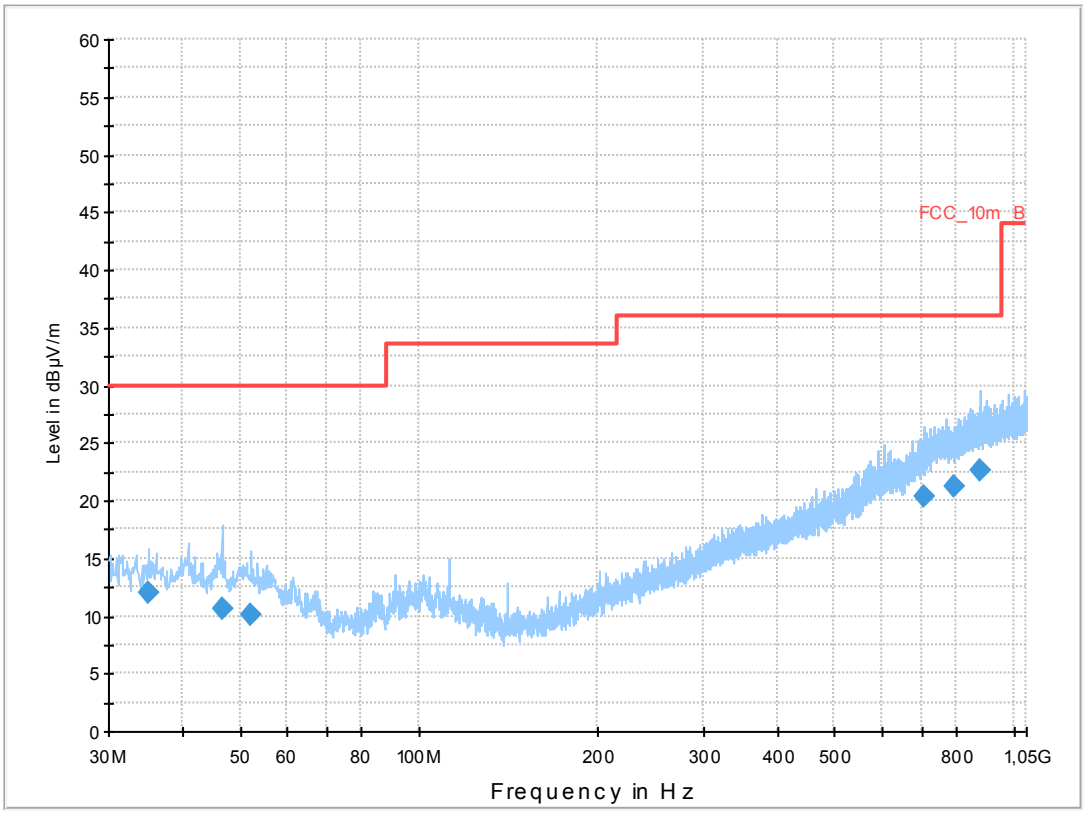
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 36
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

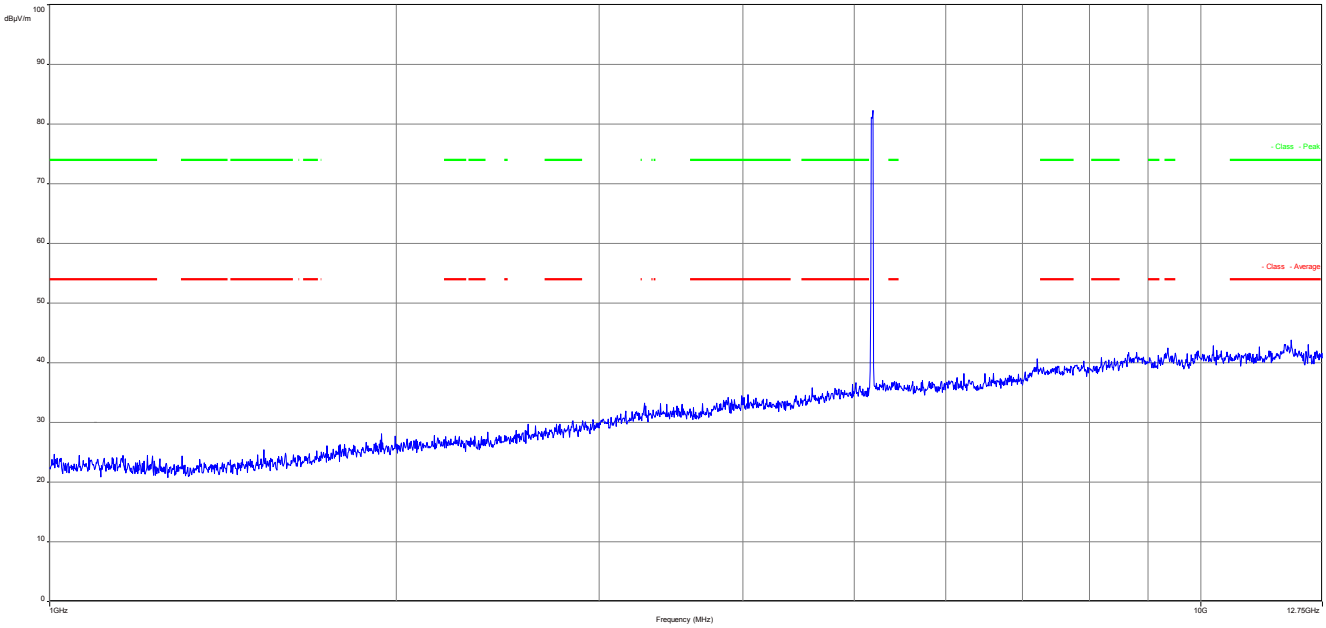
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



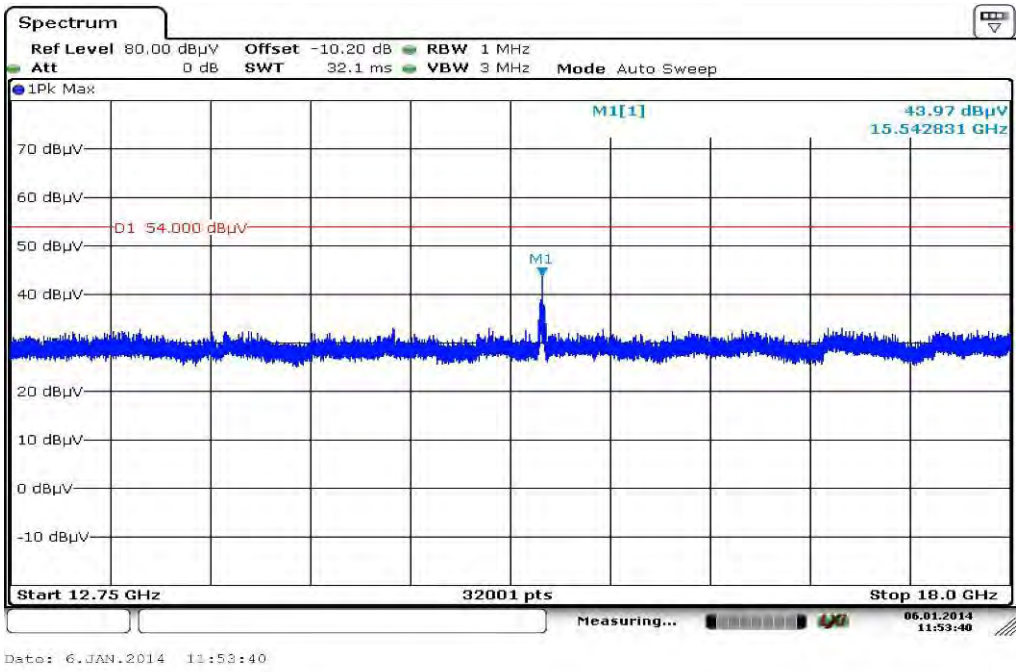
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.040000	12.0	1000.0	120.000	195.0	V	35.0	13.0	18.0	30.0	
46.560000	10.5	1000.0	120.000	111.0	V	137.0	13.3	19.5	30.0	
52.080000	10.1	1000.0	120.000	258.0	V	144.0	13.2	19.9	30.0	
707.280000	20.3	1000.0	120.000	270.0	V	46.0	22.7	15.7	36.0	
796.440000	21.2	1000.0	120.000	270.0	V	294.0	23.8	14.8	36.0	
878.760000	22.6	1000.0	120.000	270.0	H	223.0	24.9	13.4	36.0	

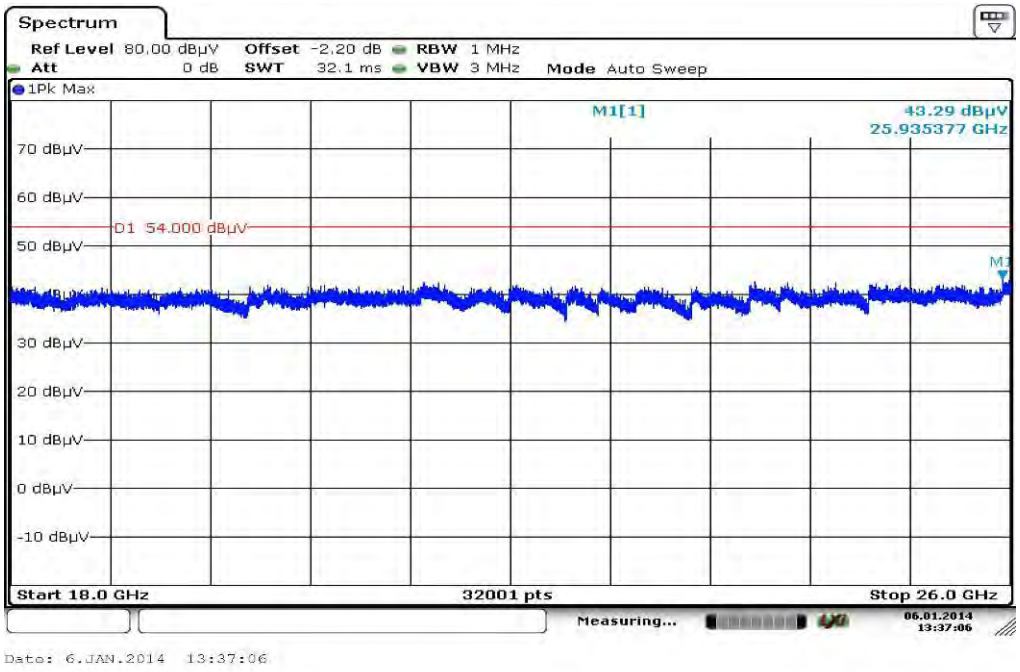
Plot 2: 1 GHz to 12.75 GHz, 5180 MHz, vertical & horizontal polarization



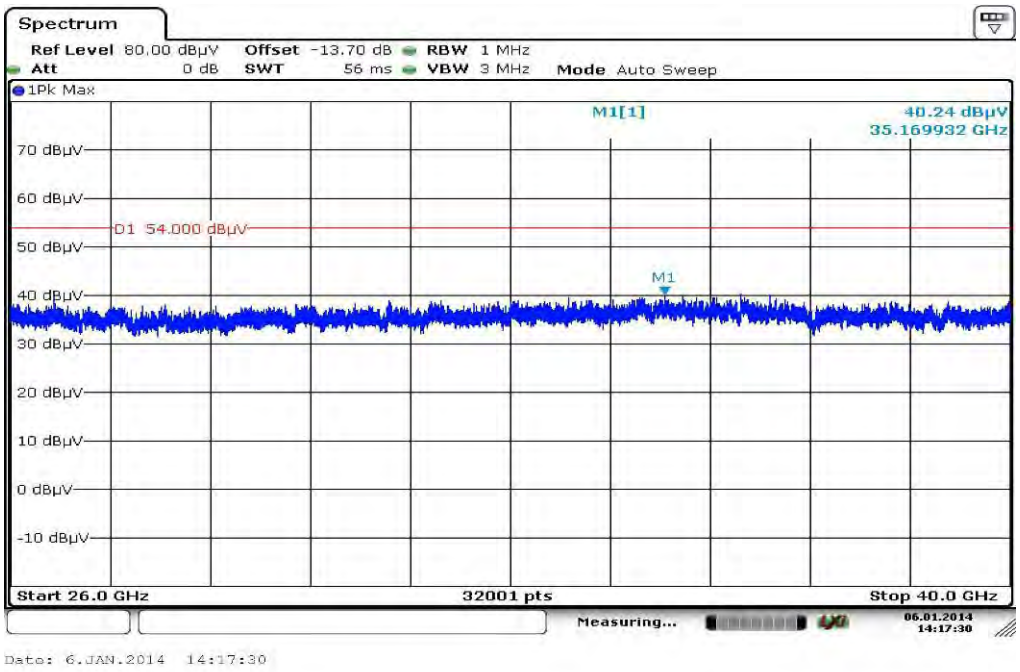
Plot 3: 12 GHz to 18 GHz, 5180 MHz, vertical & horizontal polarization



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

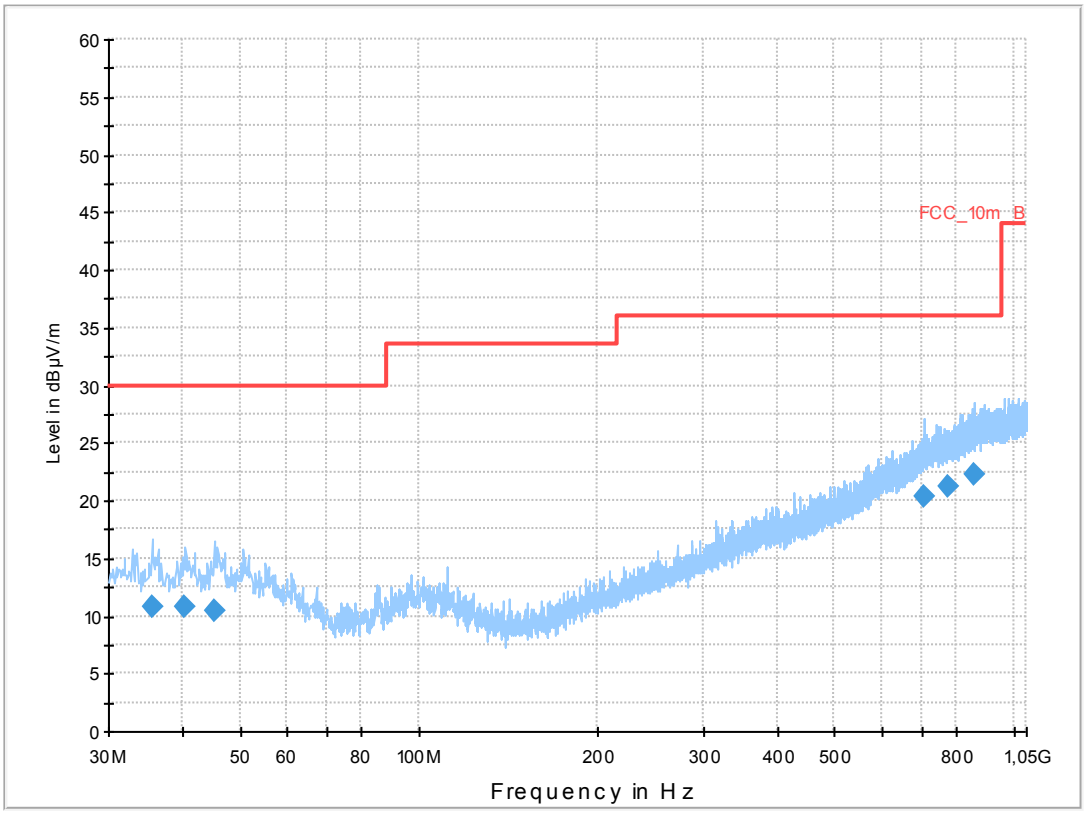
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 48
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

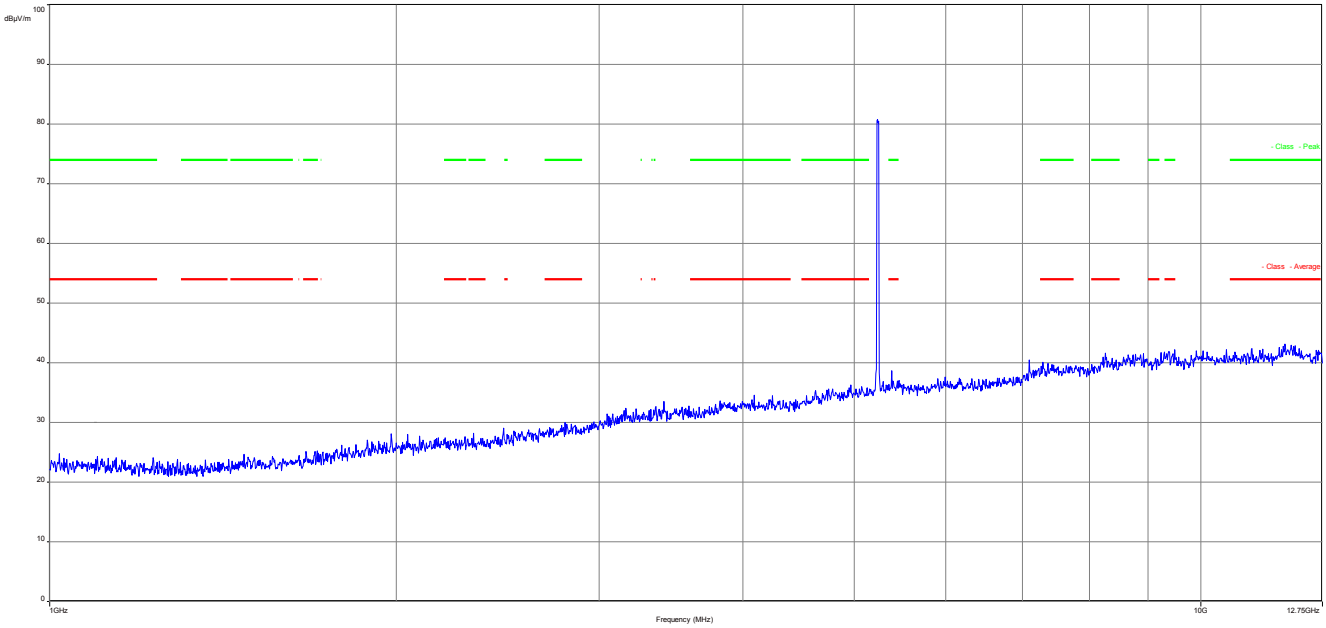
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



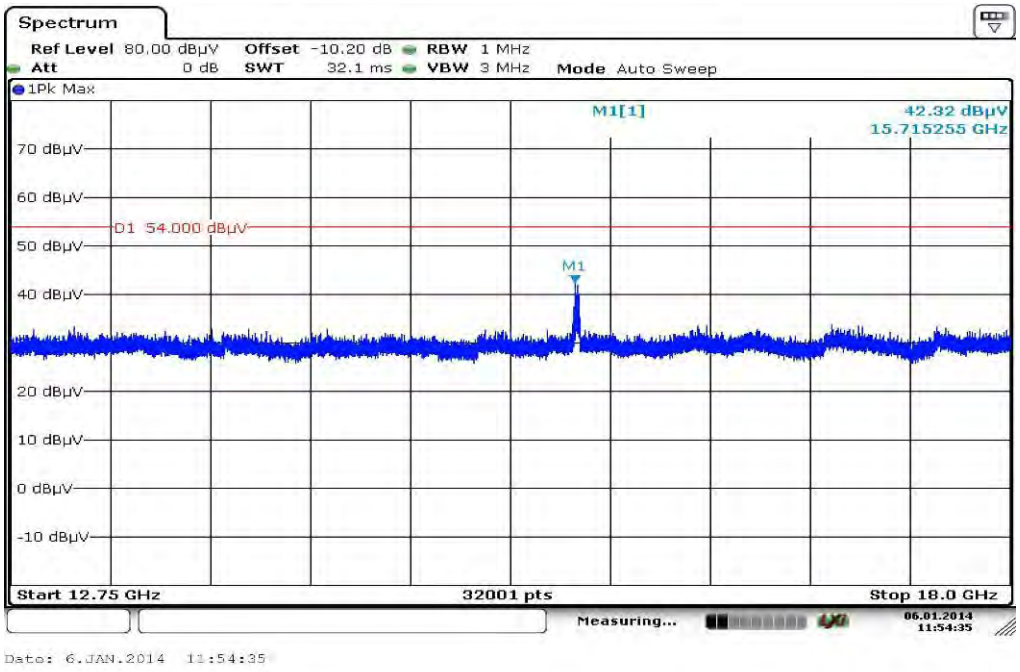
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.520000	10.7	1000.0	120.000	224.0	V	240.0	13.1	19.3	30.0	
40.200000	10.8	1000.0	120.000	270.0	H	52.0	13.4	19.2	30.0	
45.120000	10.4	1000.0	120.000	270.0	H	114.0	13.3	19.6	30.0	
708.240000	20.3	1000.0	120.000	270.0	H	206.0	22.7	15.7	36.0	
774.000000	21.2	1000.0	120.000	270.0	V	68.0	23.7	14.8	36.0	
859.080000	22.3	1000.0	120.000	110.0	H	177.0	24.7	13.7	36.0	

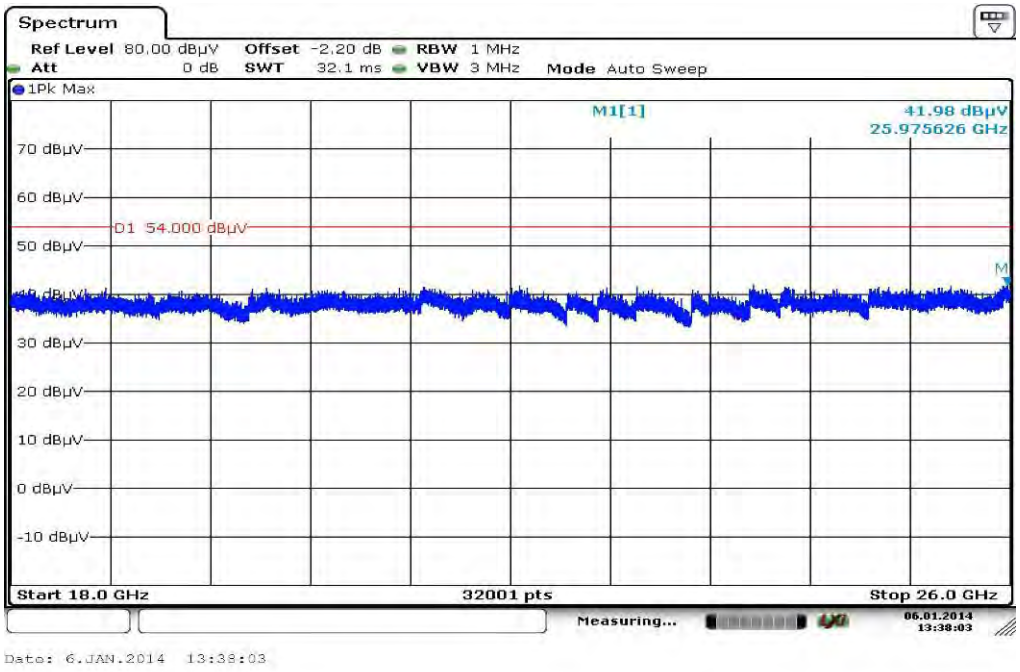
Plot 7: 1 GHz to 12.75 GHz, 5240 MHz, vertical & horizontal polarization



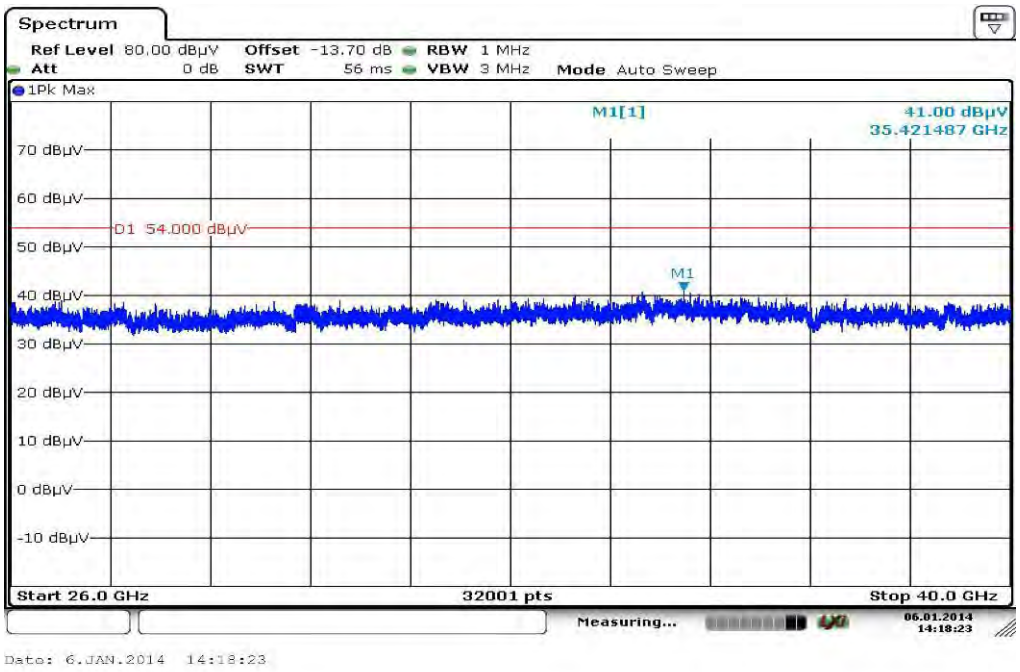
Plot 8: 12 GHz to 18 GHz, 5240 MHz, vertical & horizontal polarization



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

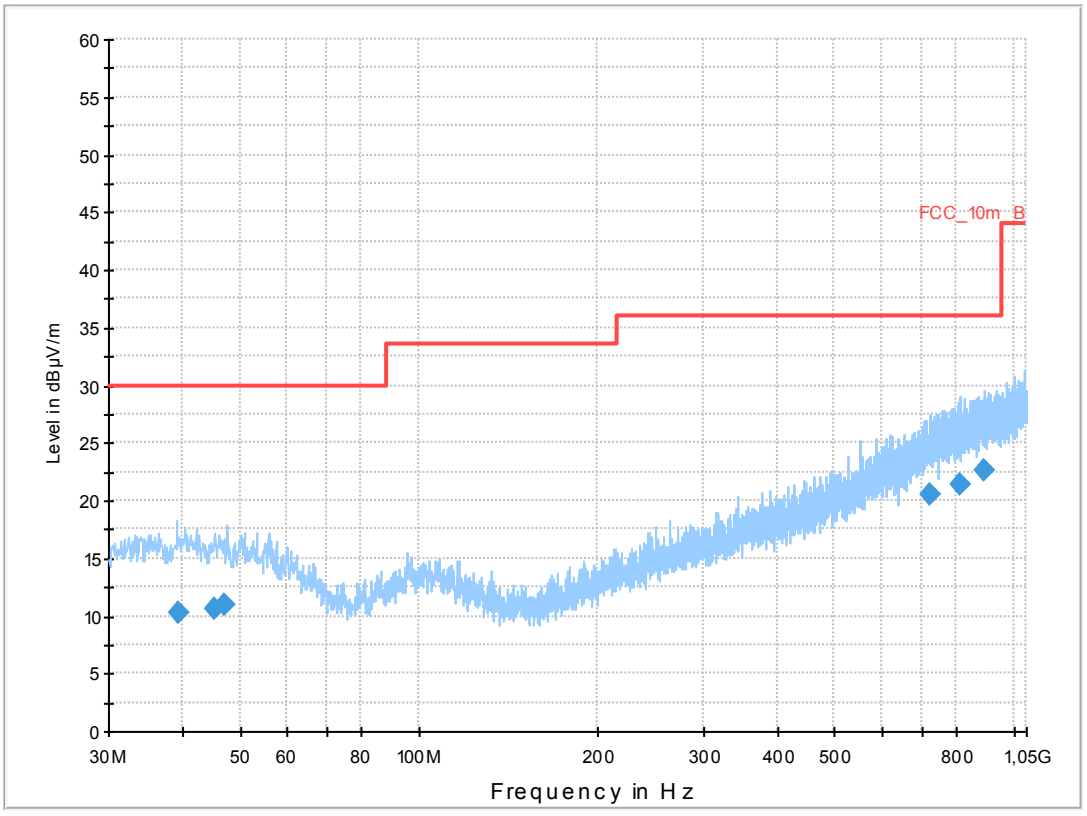
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 52
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

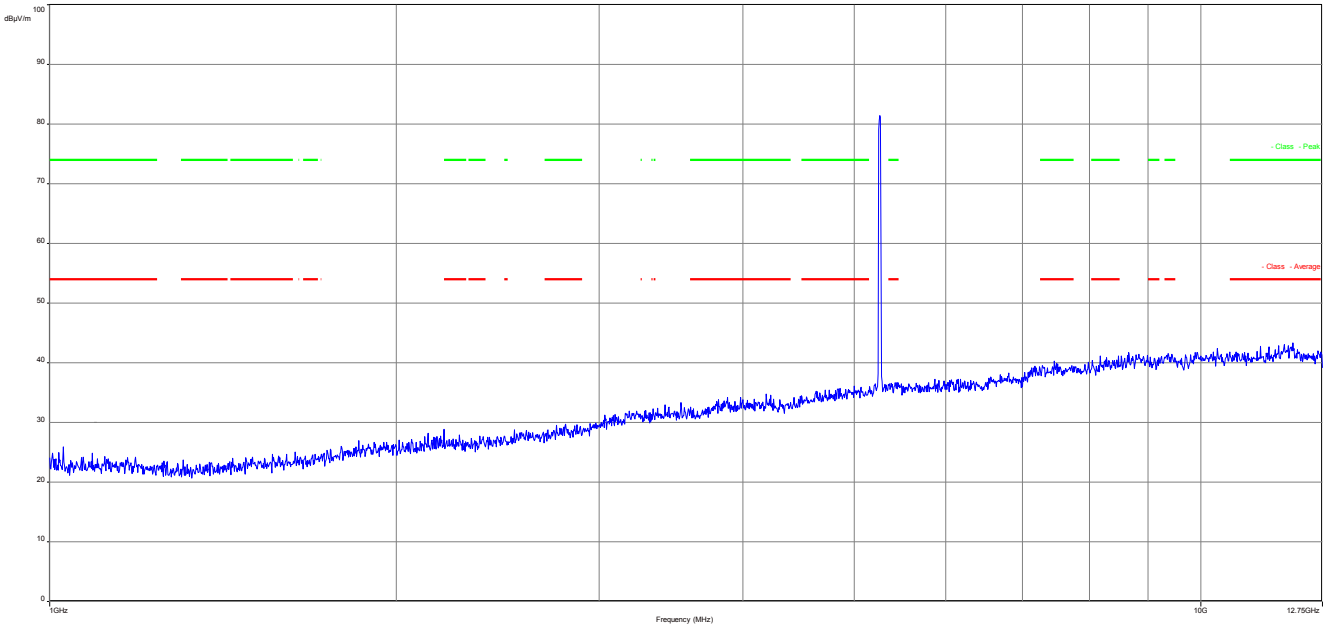
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



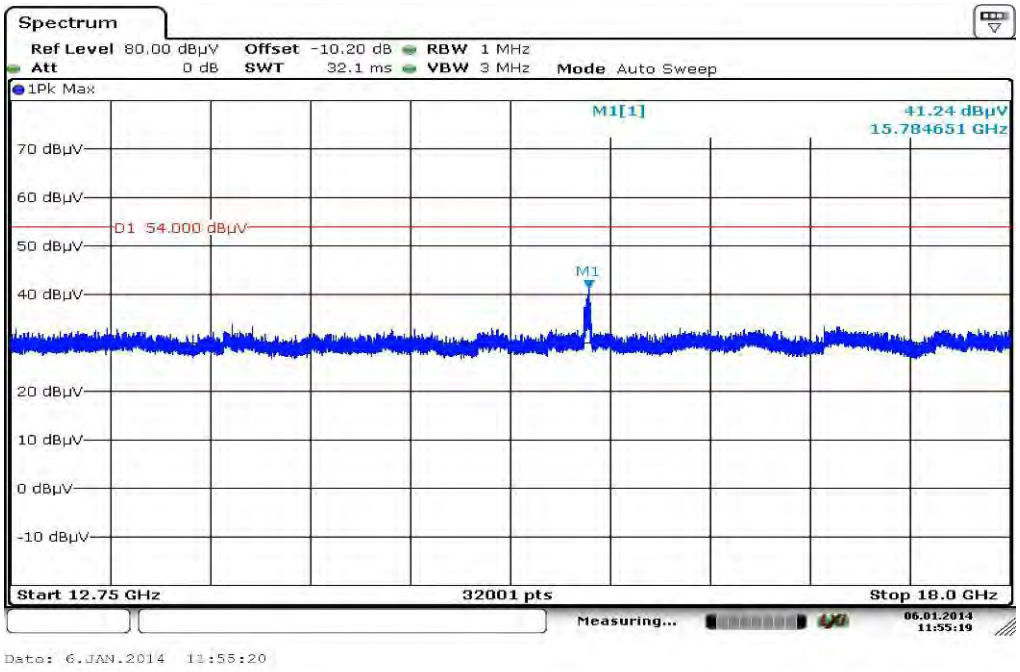
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
39.355500	10.3	1000.0	120.000	98.0	V	270.0	13.4	19.7	30.0	
45.403200	10.6	1000.0	120.000	170.0	H	190.0	13.3	19.4	30.0	
47.059950	10.9	1000.0	120.000	98.0	V	2.0	13.3	19.1	30.0	
721.805700	20.6	1000.0	120.000	170.0	V	272.0	23.0	15.4	36.0	
810.724950	21.4	1000.0	120.000	104.0	V	267.0	24.0	14.6	36.0	
894.081600	22.6	1000.0	120.000	170.0	H	10.0	25.1	13.4	36.0	

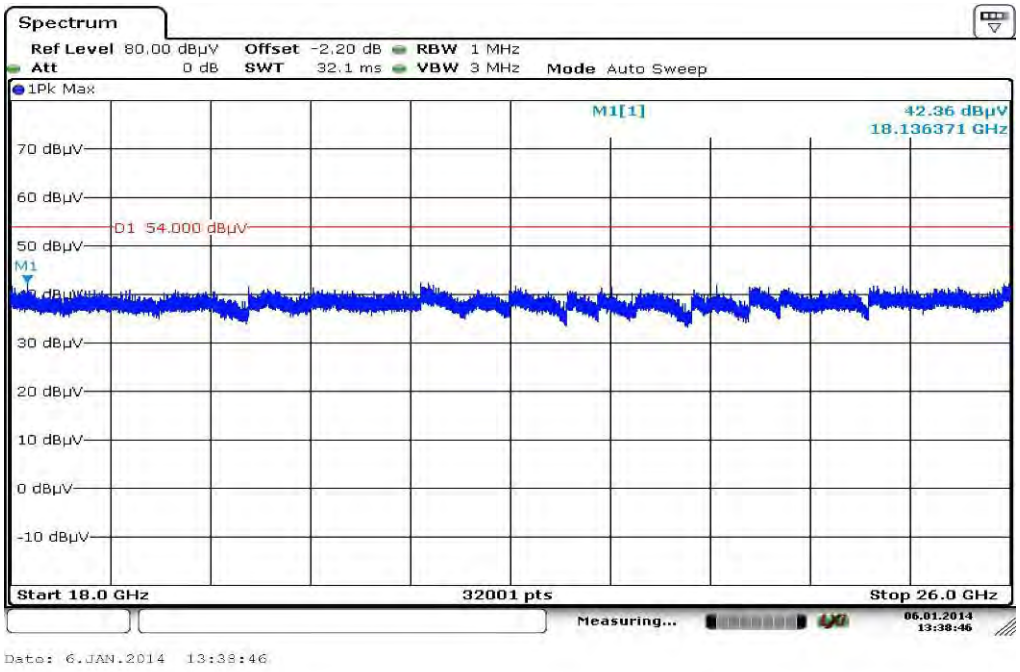
Plot 12: 1 GHz to 12.75 GHz, 5260 MHz, vertical & horizontal polarization



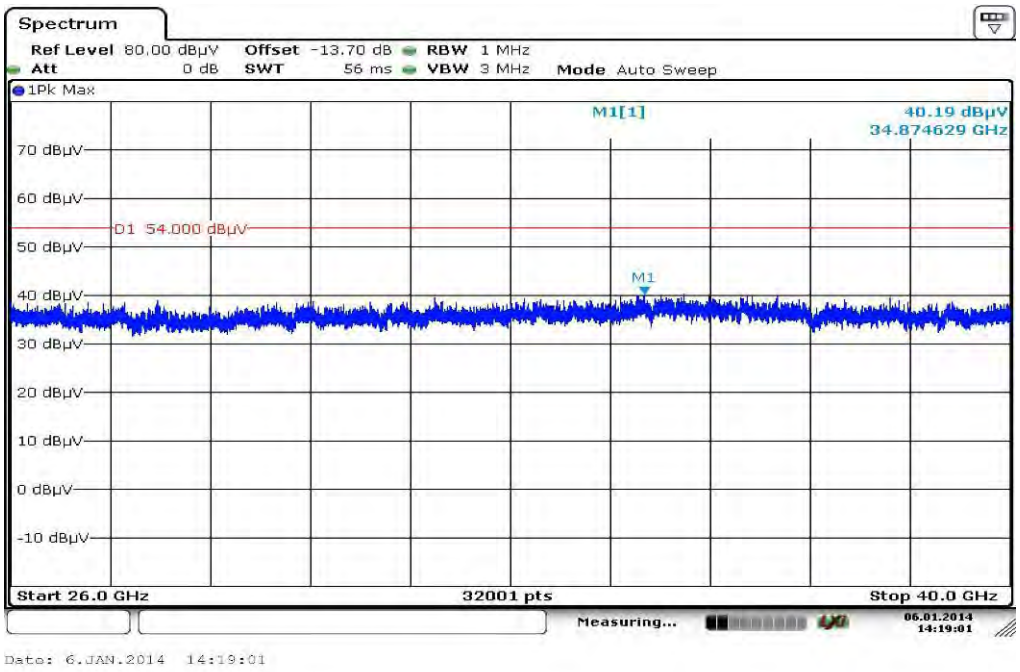
Plot 13: 12 GHz to 18 GHz, 5260 MHz, vertical & horizontal polarization



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

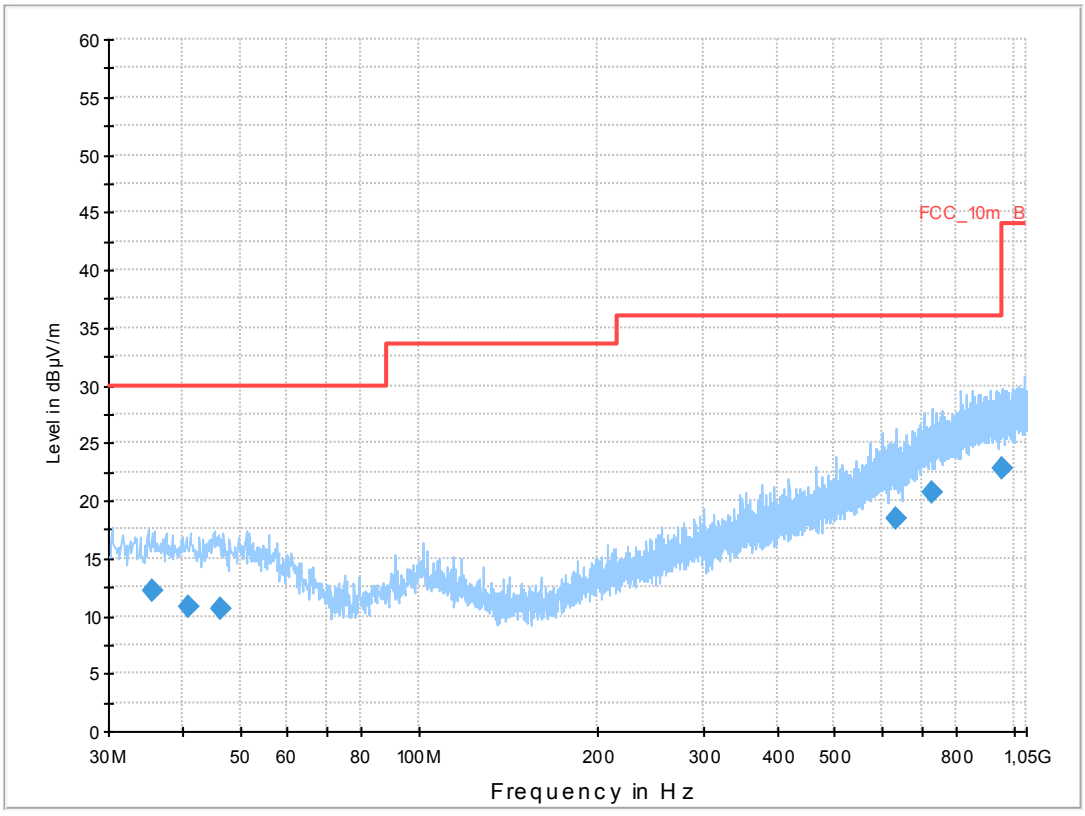
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 64
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

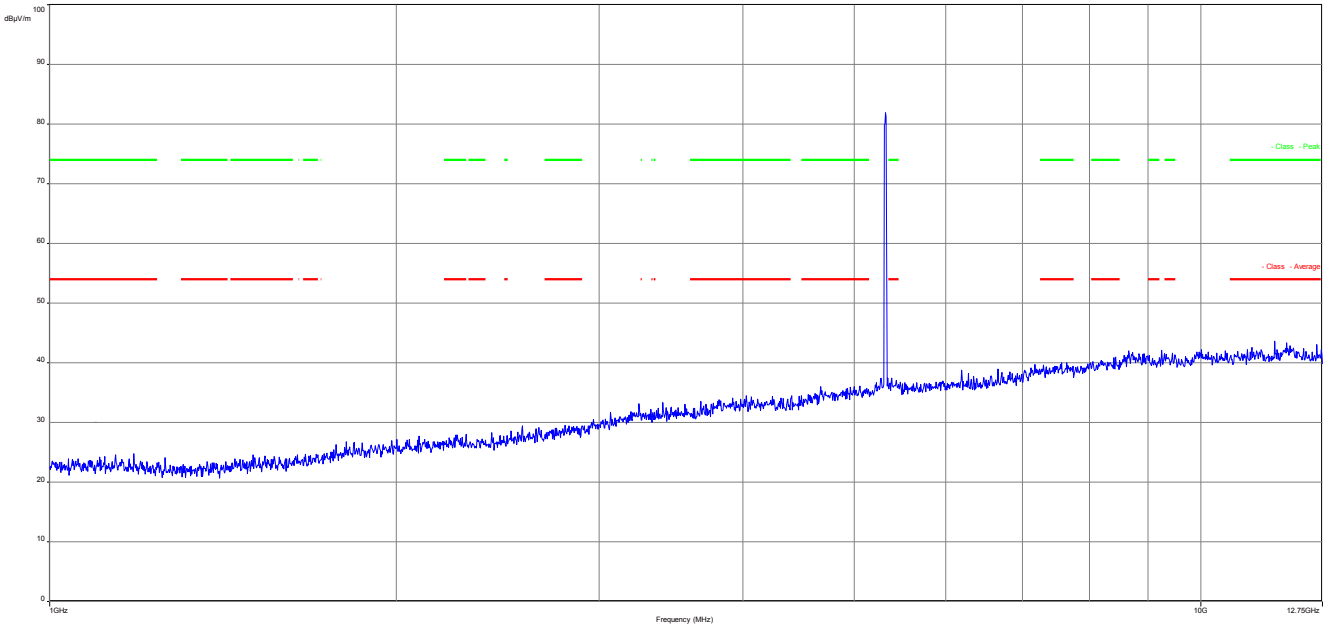
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



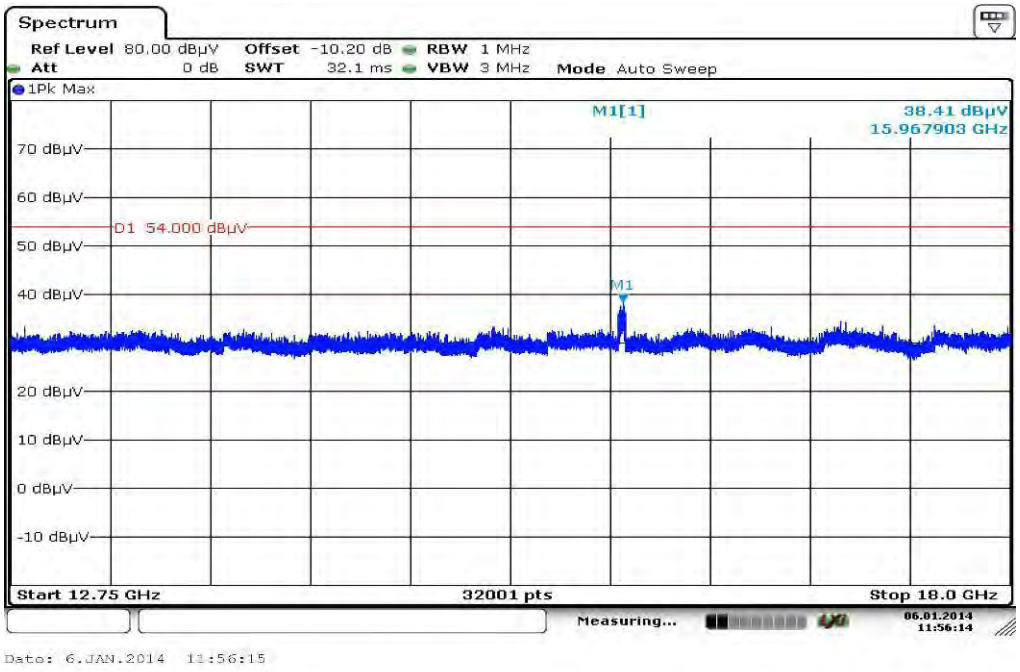
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.454600	12.1	1000.0	120.000	170.0	V	-10.0	13.1	17.9	30.0	
40.940250	10.8	1000.0	120.000	170.0	V	0.0	13.4	19.2	30.0	
46.316850	10.6	1000.0	120.000	98.0	H	182.0	13.3	19.4	30.0	
632.521950	18.5	1000.0	120.000	170.0	V	100.0	21.0	17.5	36.0	
730.302000	20.7	1000.0	120.000	170.0	H	10.0	23.2	15.3	36.0	
956.672400	22.8	1000.0	120.000	170.0	H	-1.0	25.4	13.2	36.0	

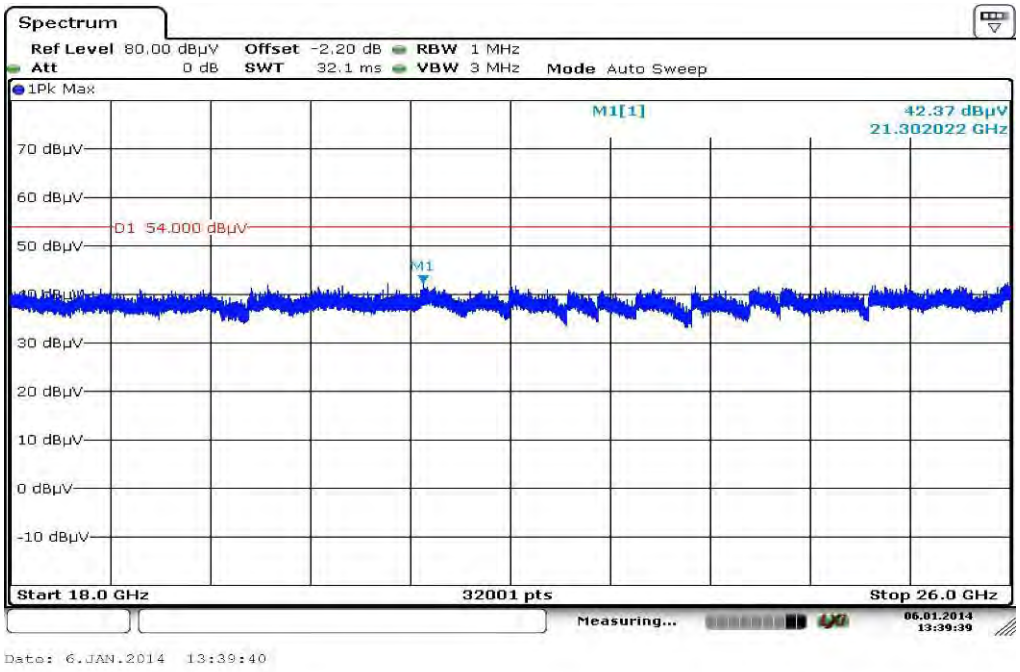
Plot 17: 1 GHz to 12.75 GHz, 5320 MHz, vertical & horizontal polarization



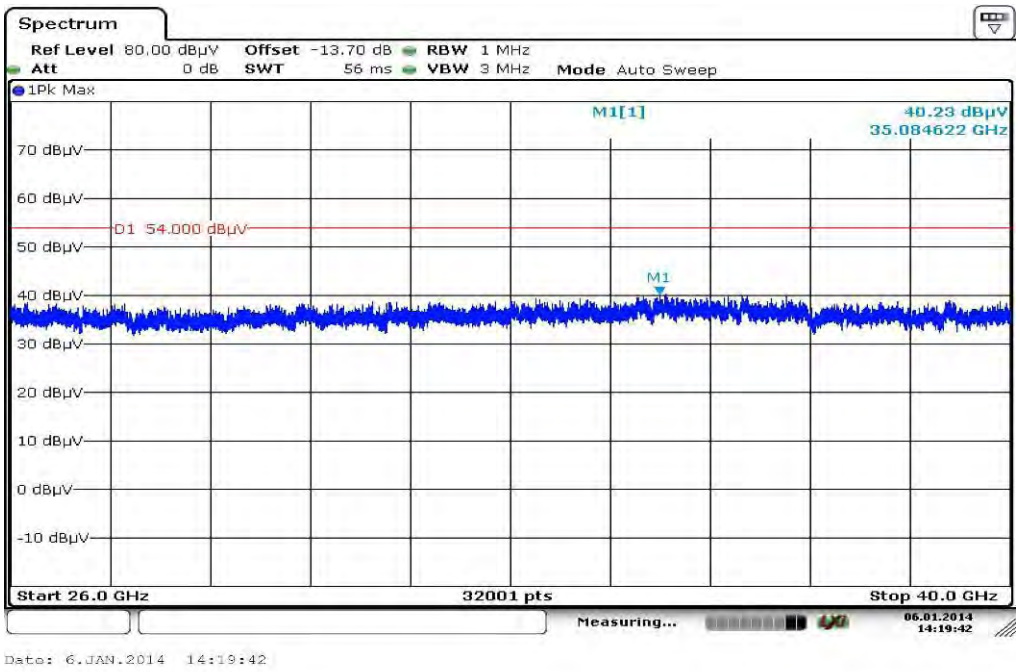
Plot 18: 12 GHz to 18 GHz, 5320 MHz, vertical & horizontal polarization



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

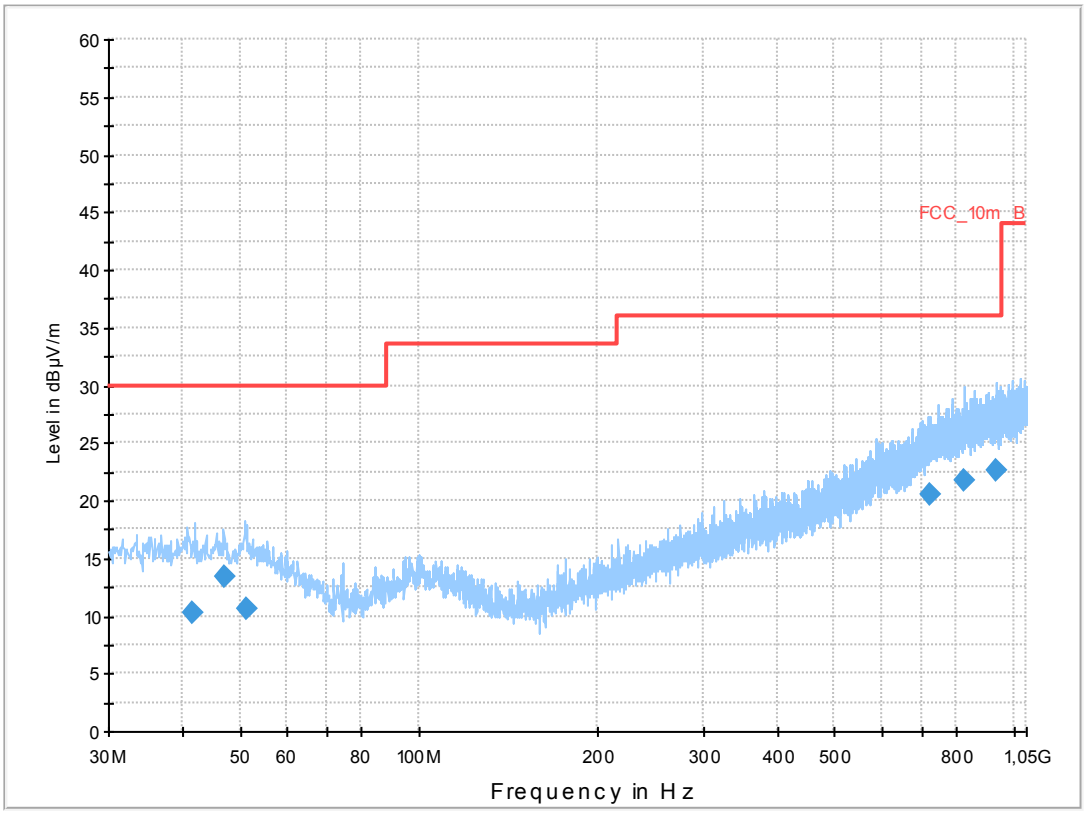
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 100
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

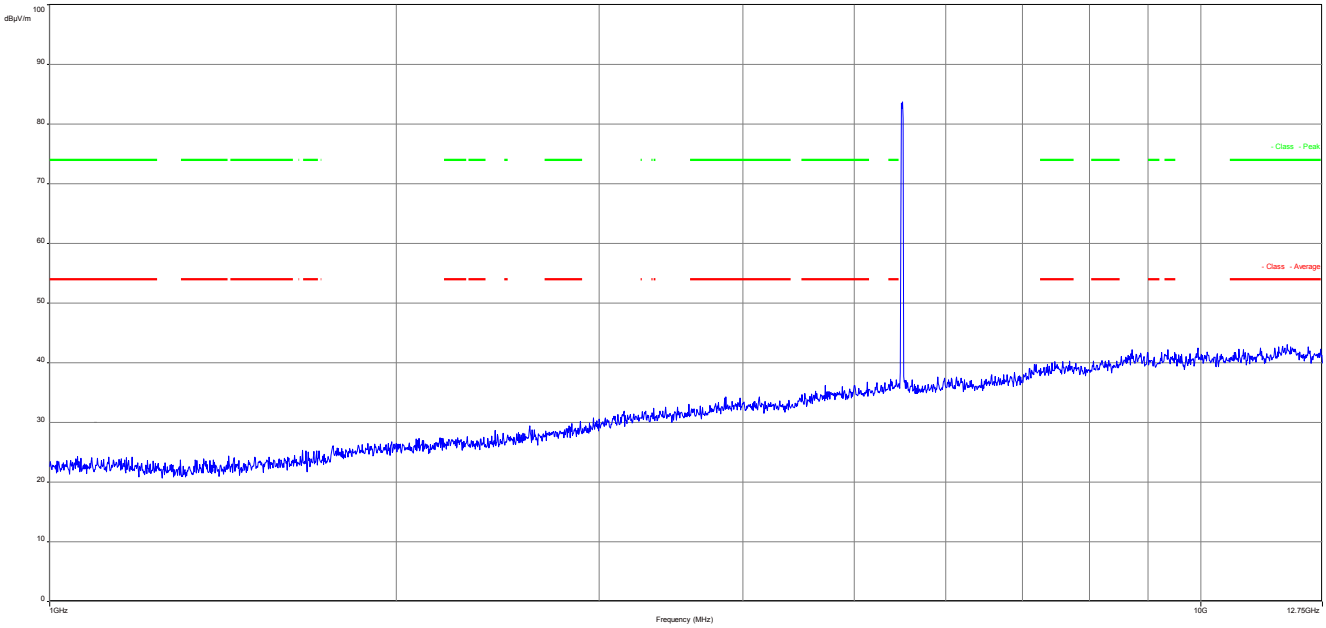
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



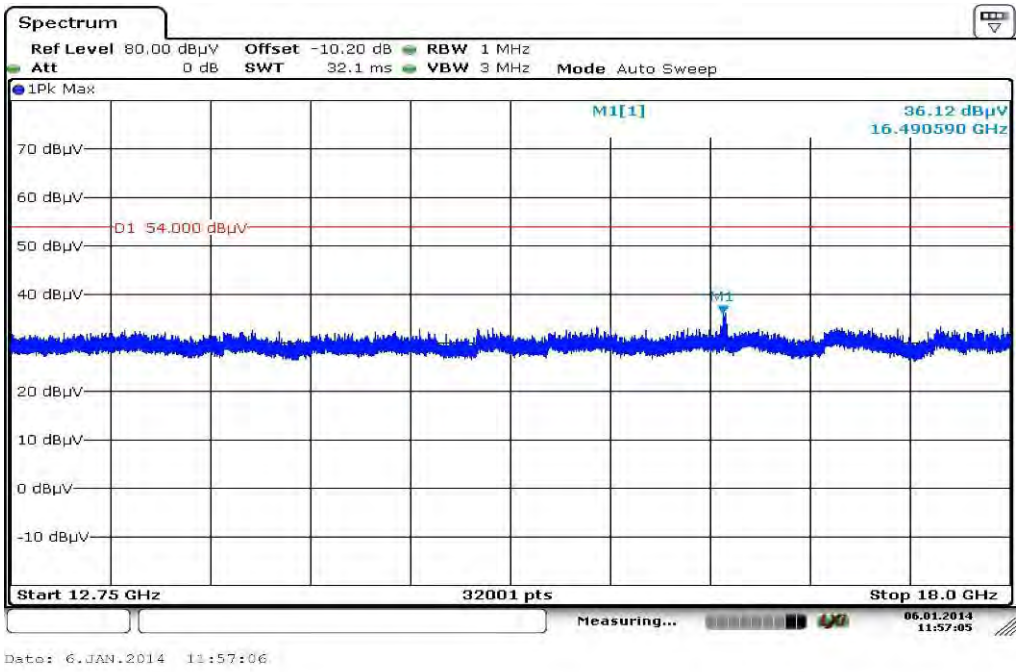
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
41.667900	10.2	1000.0	120.000	170.0	H	10.0	13.4	19.8	30.0	
46.969350	13.4	1000.0	120.000	98.0	V	100.0	13.3	16.6	30.0	
51.124950	10.6	1000.0	120.000	170.0	V	265.0	13.3	19.4	30.0	
720.852300	20.5	1000.0	120.000	170.0	H	280.0	23.0	15.5	36.0	
826.802700	21.7	1000.0	120.000	170.0	V	270.0	24.2	14.3	36.0	
934.521600	22.6	1000.0	120.000	170.0	V	190.0	25.3	13.4	36.0	

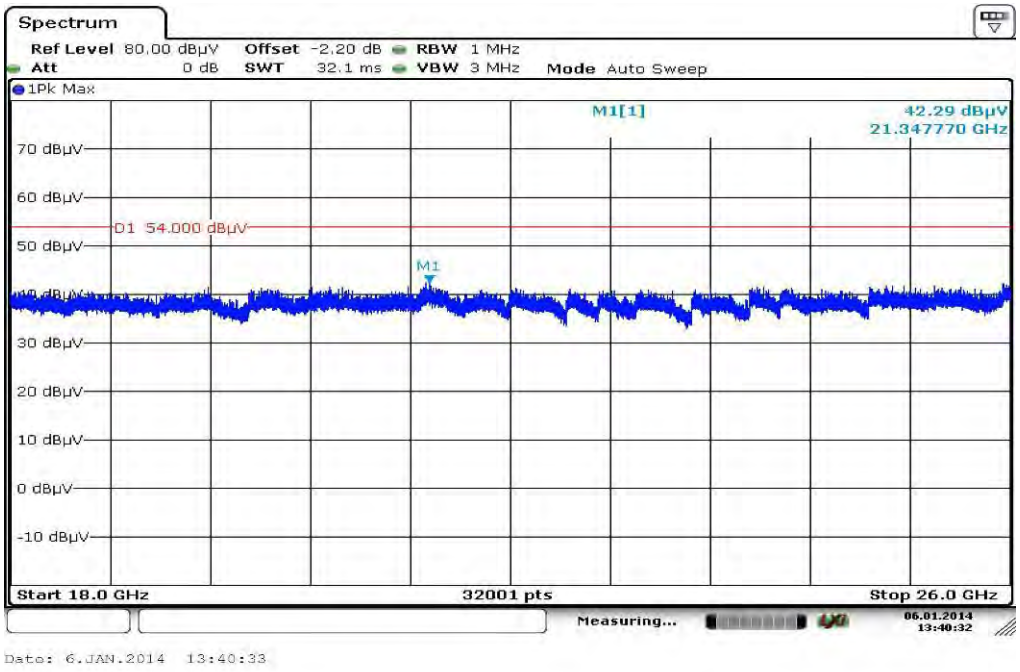
Plot 22: 1 GHz to 12.75 GHz, 5500 MHz, vertical & horizontal polarization



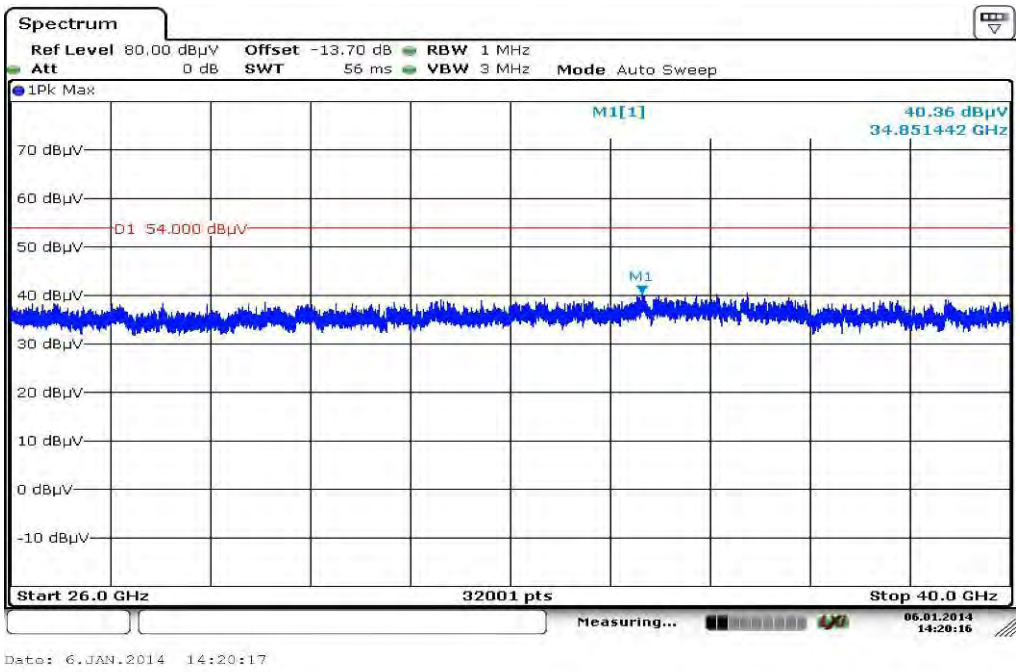
Plot 23: 12 GHz to 18 GHz, 5500 MHz, vertical & horizontal polarization



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

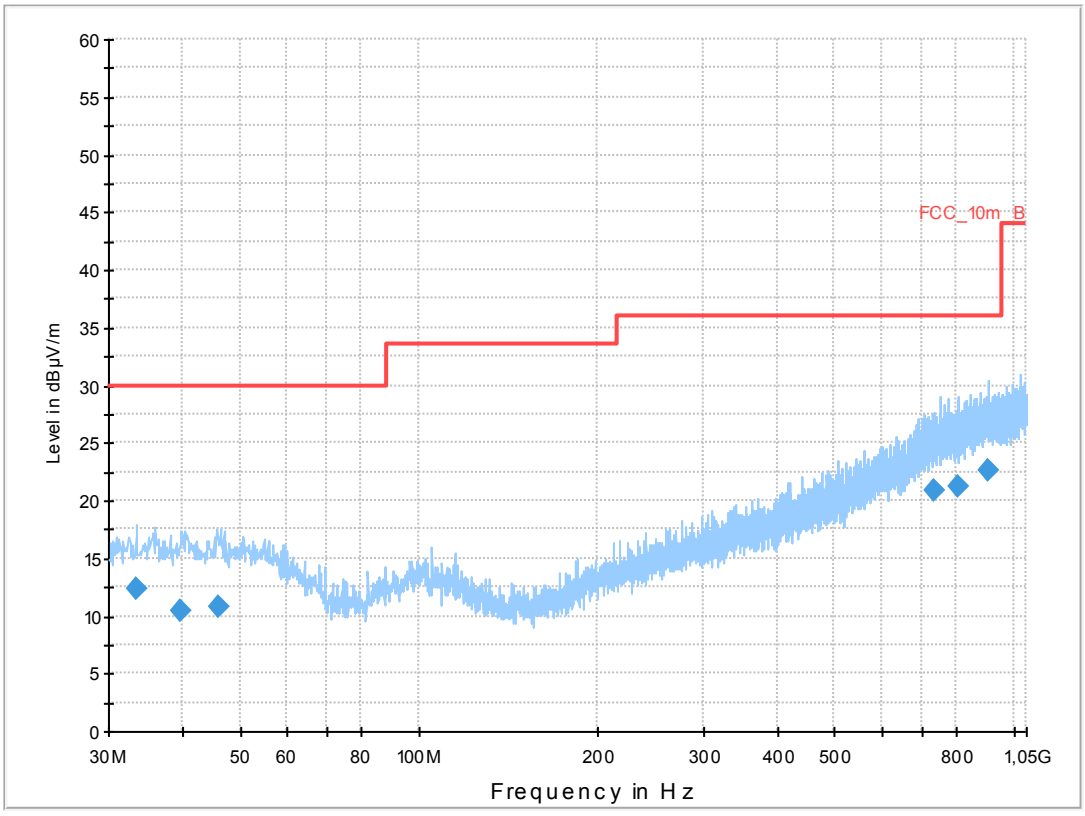
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 120
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

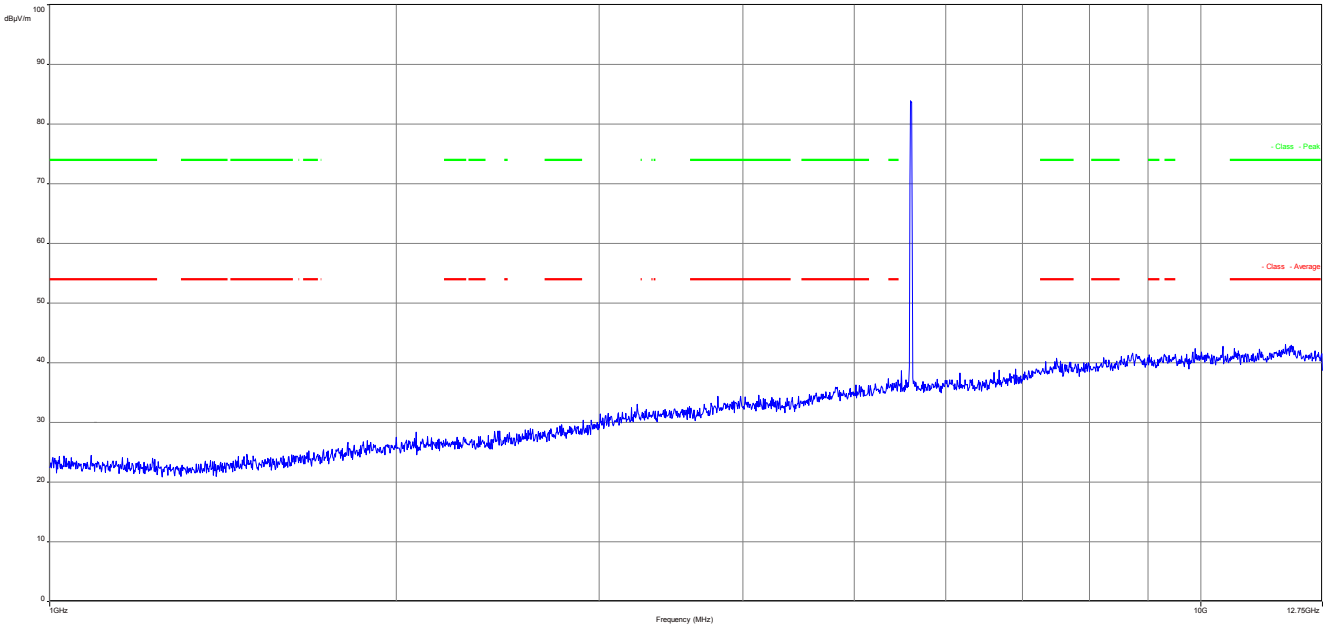
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



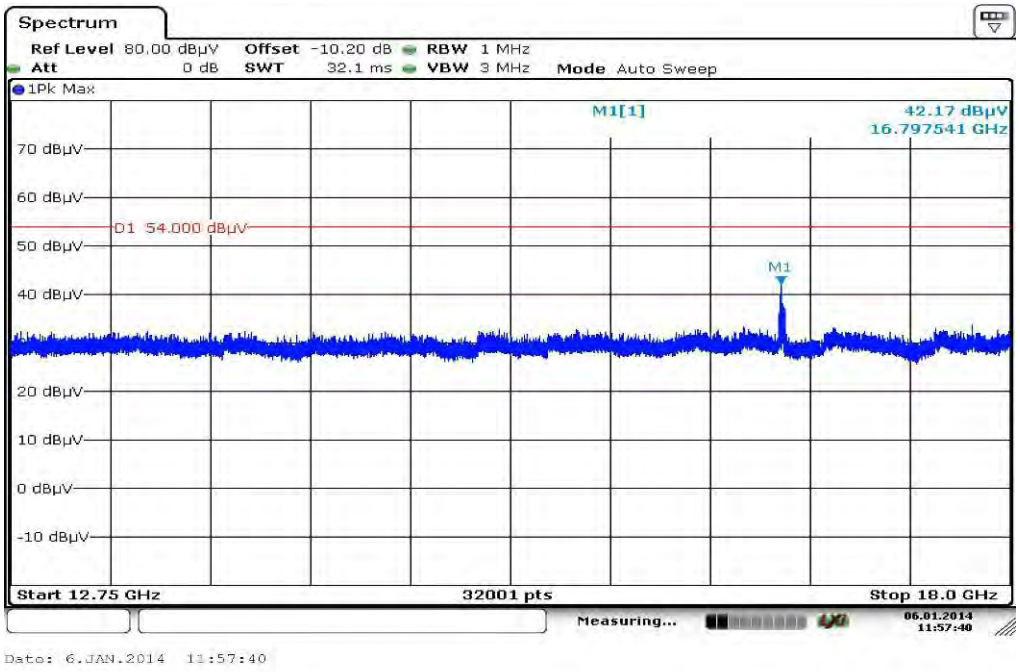
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
33.326250	12.4	1000.0	120.000	98.0	V	87.0	12.9	17.6	30.0	
39.594300	10.5	1000.0	120.000	98.0	V	182.0	13.4	19.5	30.0	
46.132650	10.8	1000.0	120.000	105.0	V	-10.0	13.3	19.2	30.0	
732.105000	20.8	1000.0	120.000	170.0	V	100.0	23.2	15.2	36.0	
803.562450	21.3	1000.0	120.000	98.0	V	10.0	23.9	14.7	36.0	
904.871250	22.6	1000.0	120.000	170.0	V	280.0	25.2	13.4	36.0	

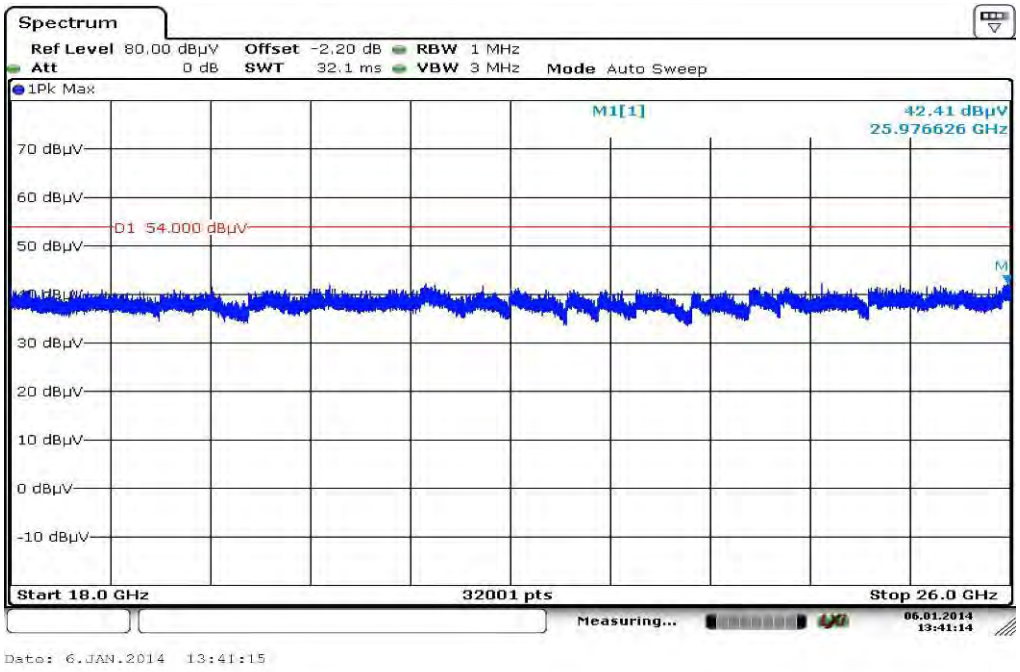
Plot 27: 1 GHz to 12.75 GHz, 5600 MHz, vertical & horizontal polarization



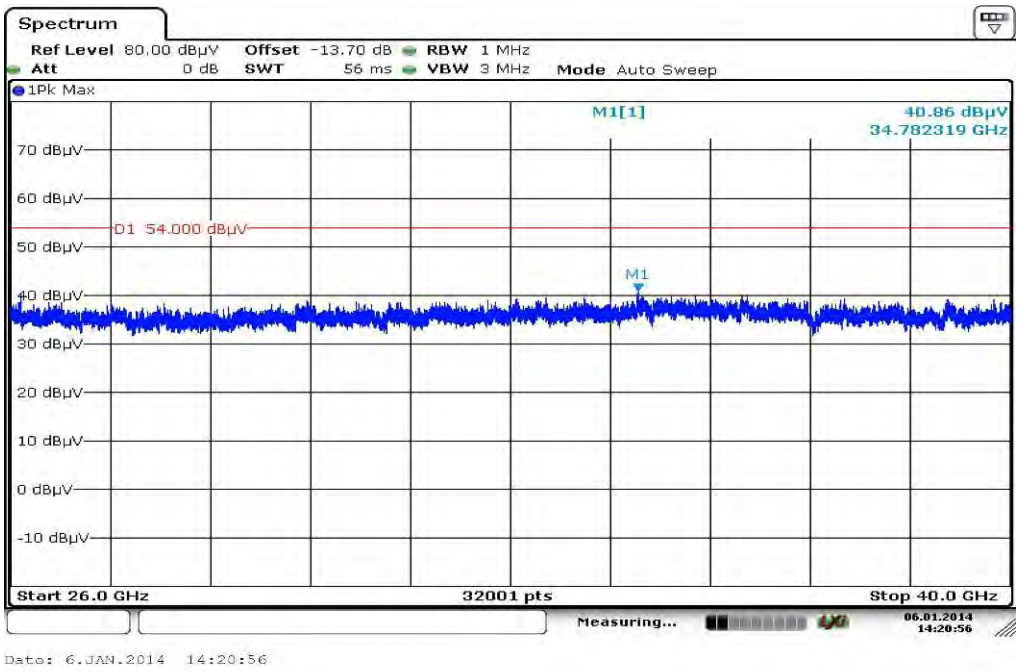
Plot 28: 12 GHz to 18 GHz, 5600 MHz, vertical & horizontal polarization



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

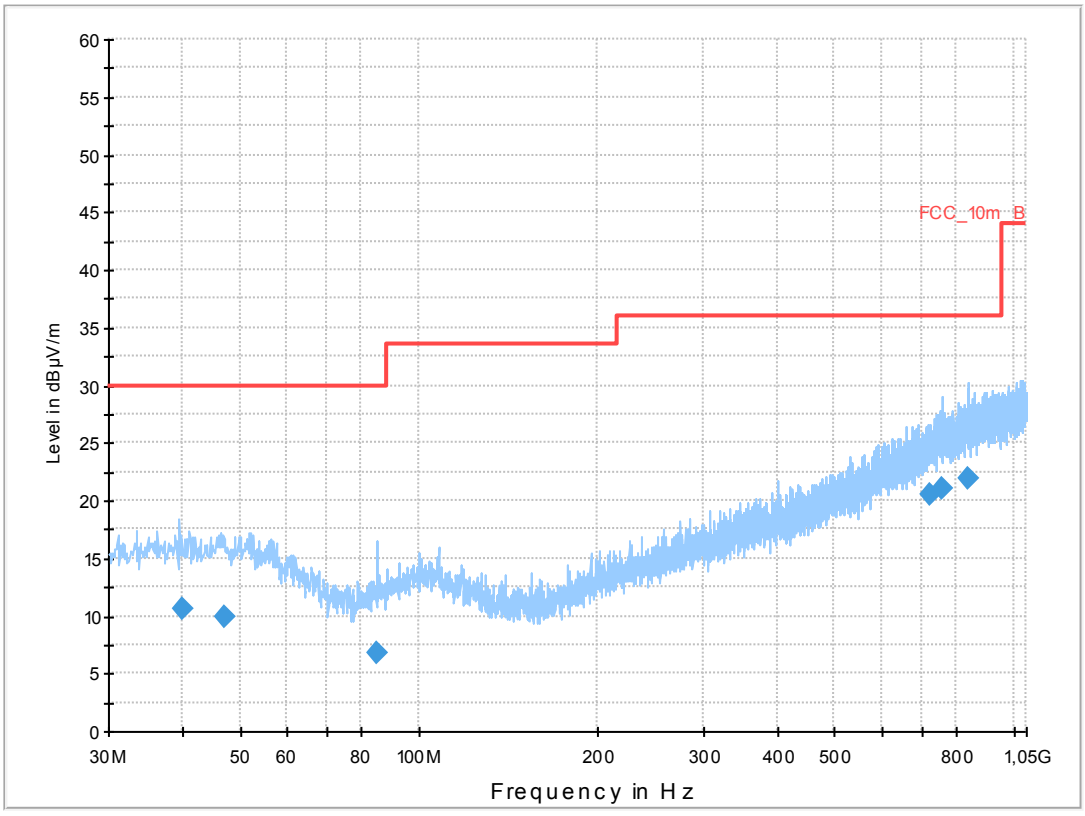
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT20) tx ch 140
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

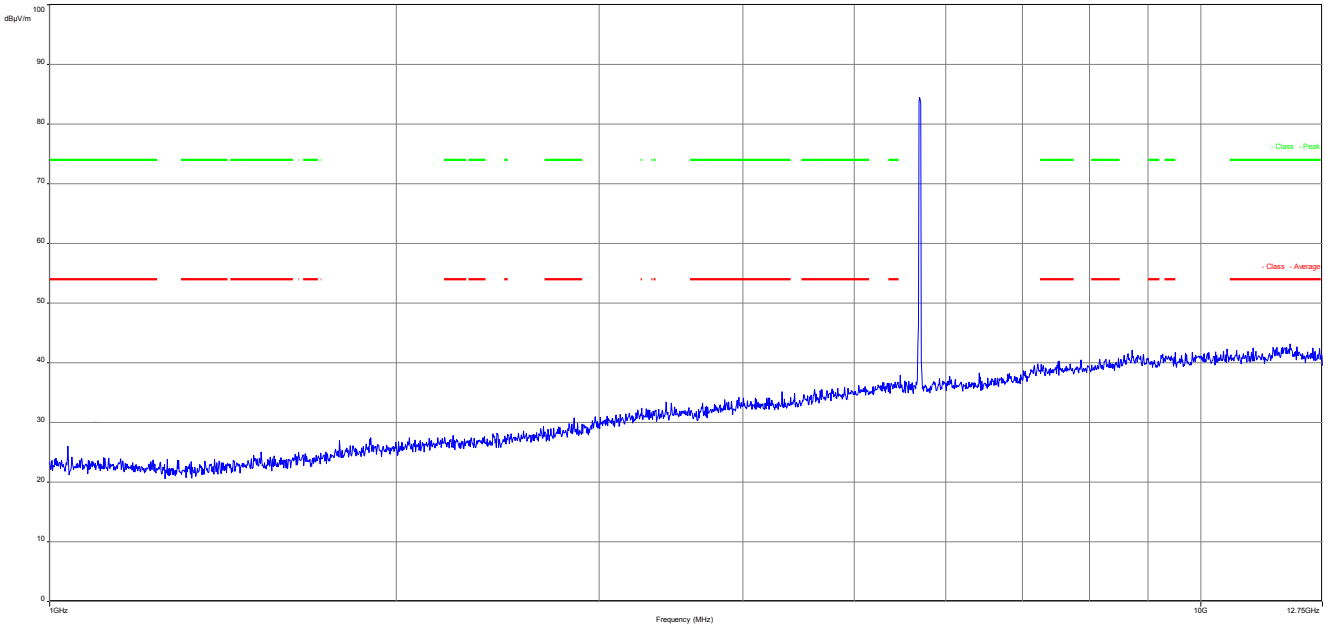
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



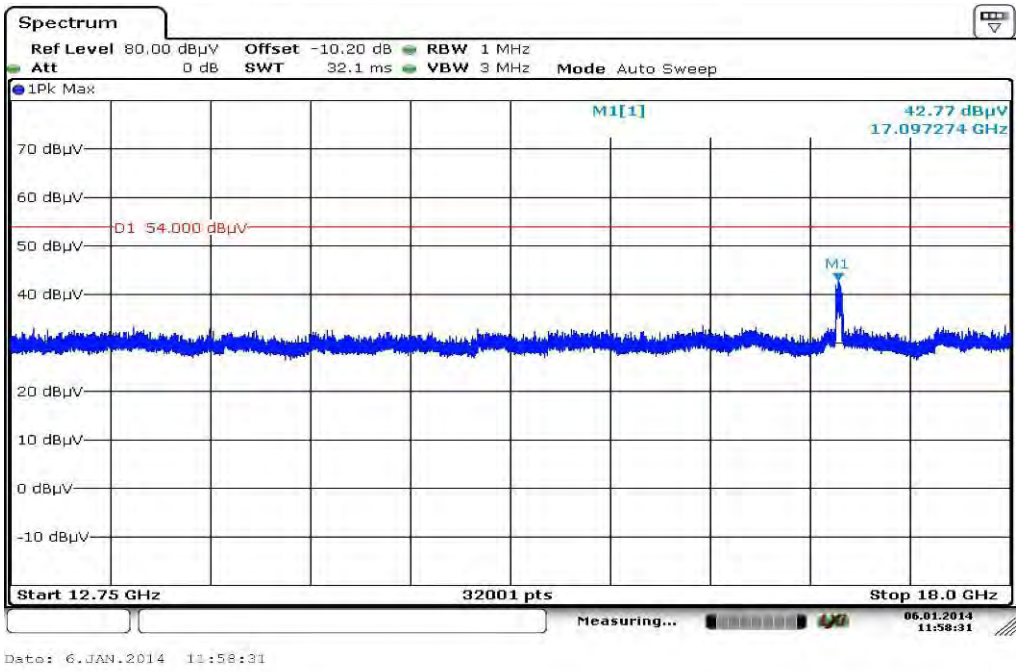
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
39.854250	10.6	1000.0	120.000	170.0	H	175.0	13.4	19.4	30.0	
47.113950	9.9	1000.0	120.000	104.0	H	260.0	13.3	20.1	30.0	
85.085100	6.8	1000.0	120.000	170.0	H	280.0	9.8	23.2	30.0	
723.616500	20.6	1000.0	120.000	170.0	V	88.0	23.1	15.4	36.0	
759.132300	21.1	1000.0	120.000	143.0	H	265.0	23.7	14.9	36.0	
839.068500	22.0	1000.0	120.000	170.0	V	-2.0	24.4	14.0	36.0	

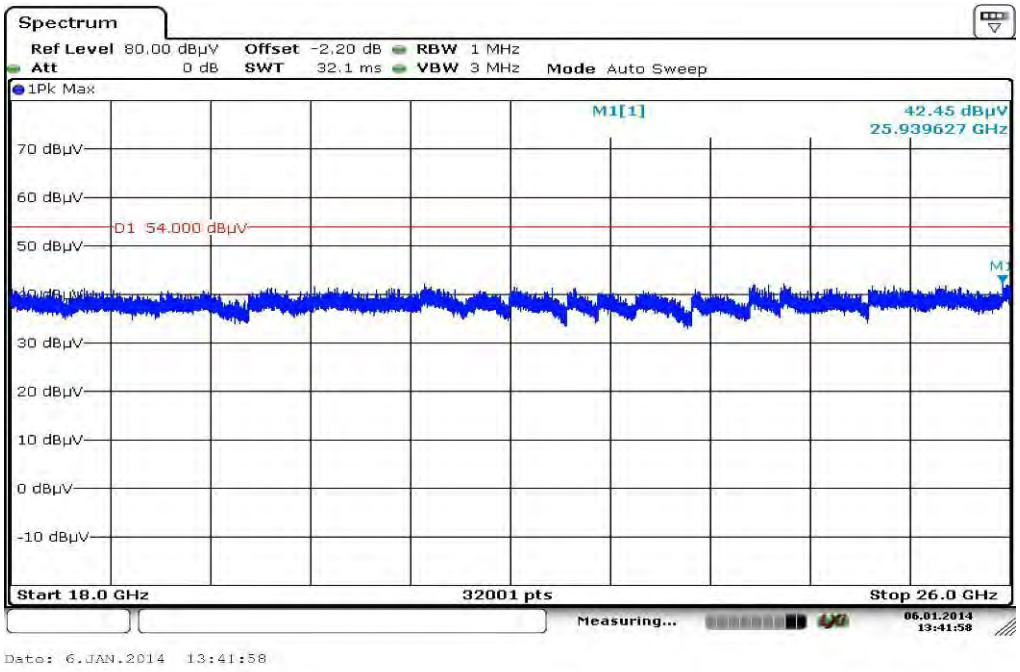
Plot 32: 1 GHz to 12.75 GHz, 5700 MHz, vertical & horizontal polarization



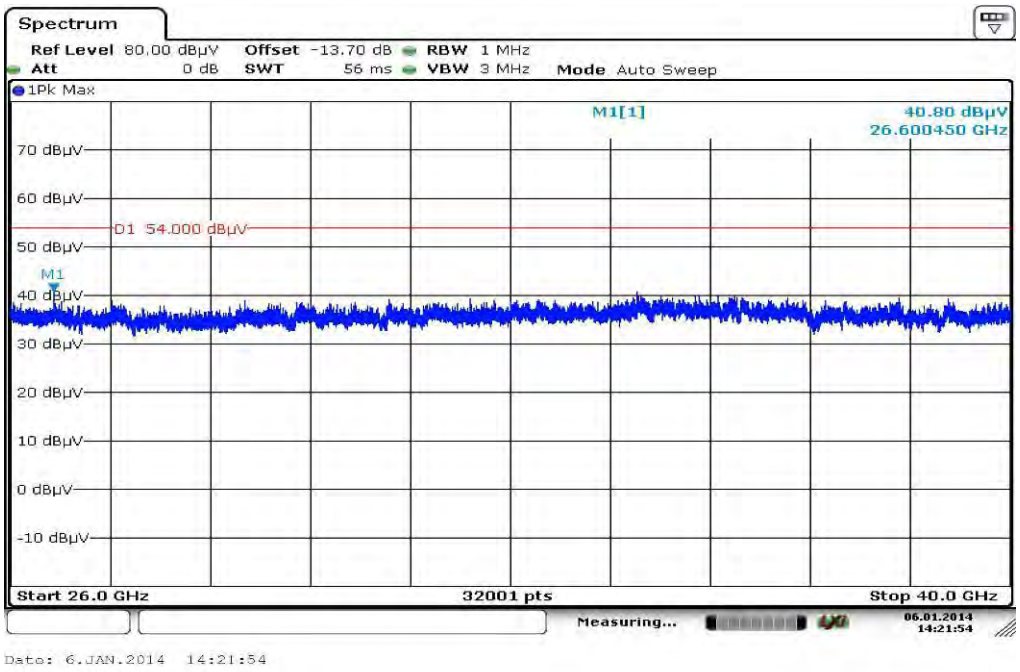
Plot 33: 12 GHz to 18 GHz, 5700 MHz, vertical & horizontal polarization



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 / ac – mode HT40

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

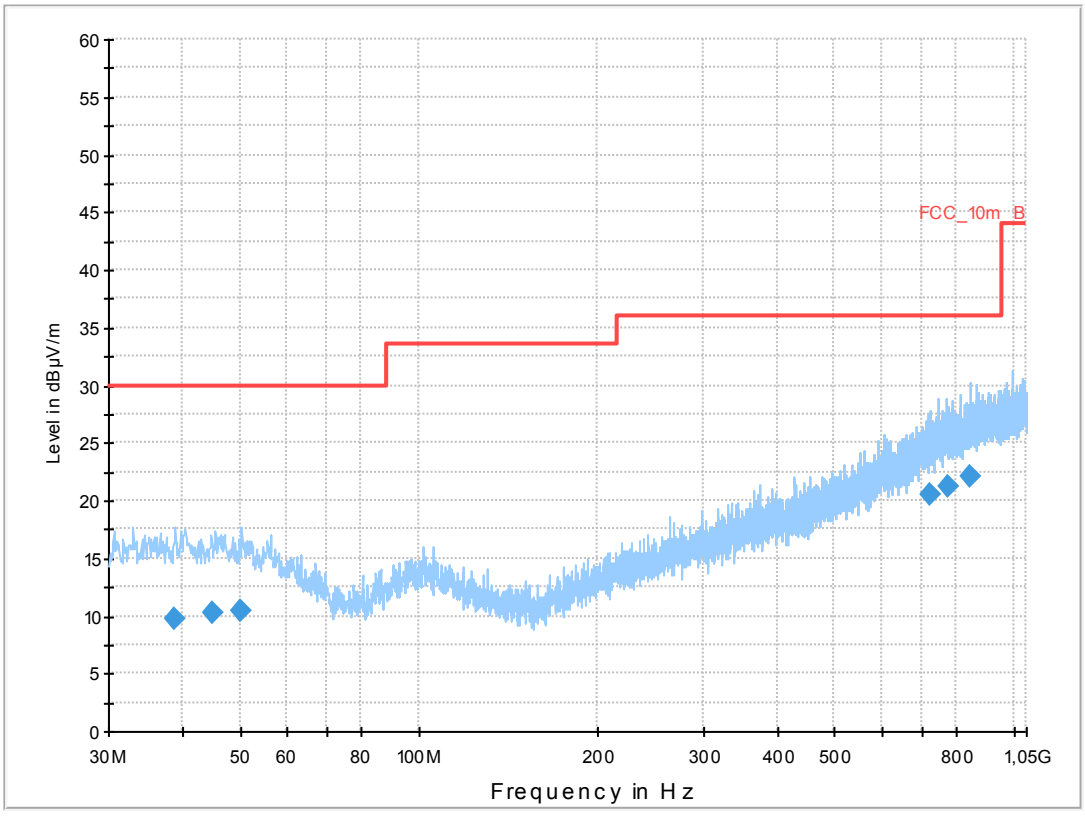
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 38
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

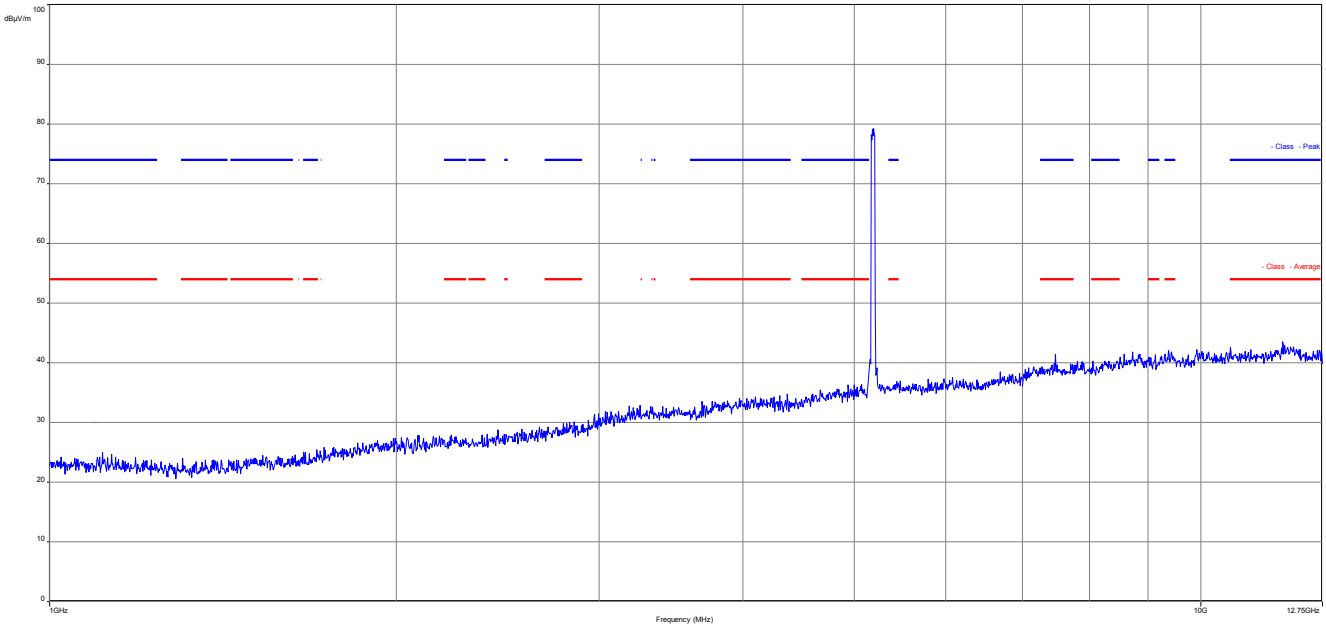
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



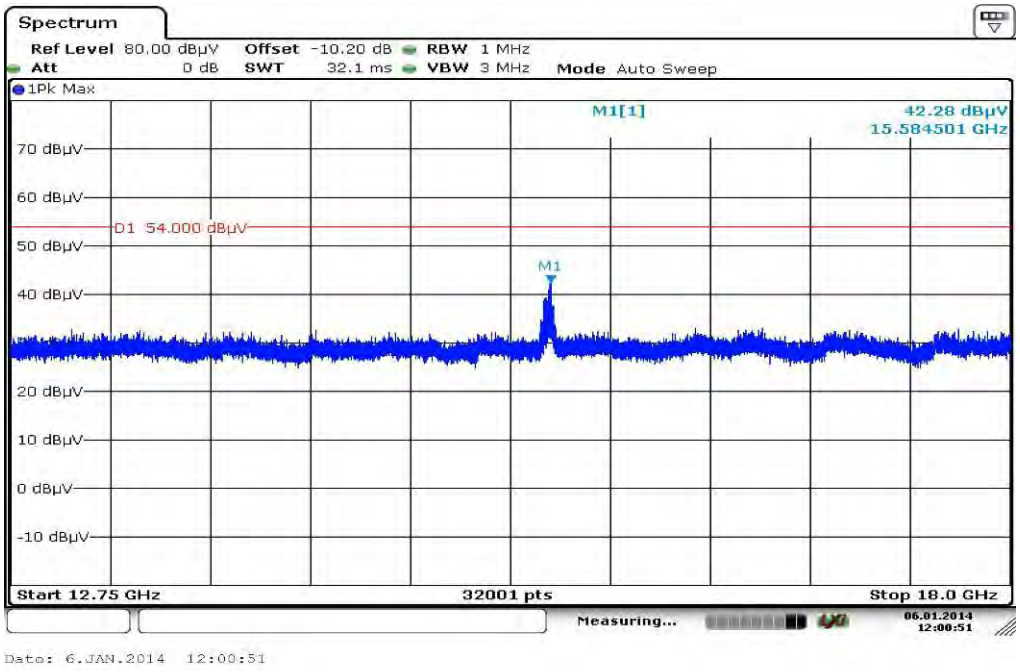
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.831550	9.7	1000.0	120.000	124.0	V	100.0	13.3	20.3	30.0	
44.795400	10.2	1000.0	120.000	170.0	V	10.0	13.3	19.8	30.0	
50.270100	10.4	1000.0	120.000	170.0	V	3.0	13.3	19.6	30.0	
724.585950	20.5	1000.0	120.000	170.0	H	280.0	23.1	15.5	36.0	
774.082500	21.2	1000.0	120.000	170.0	V	3.0	23.7	14.8	36.0	
847.251000	22.1	1000.0	120.000	98.0	H	170.0	24.5	13.9	36.0	

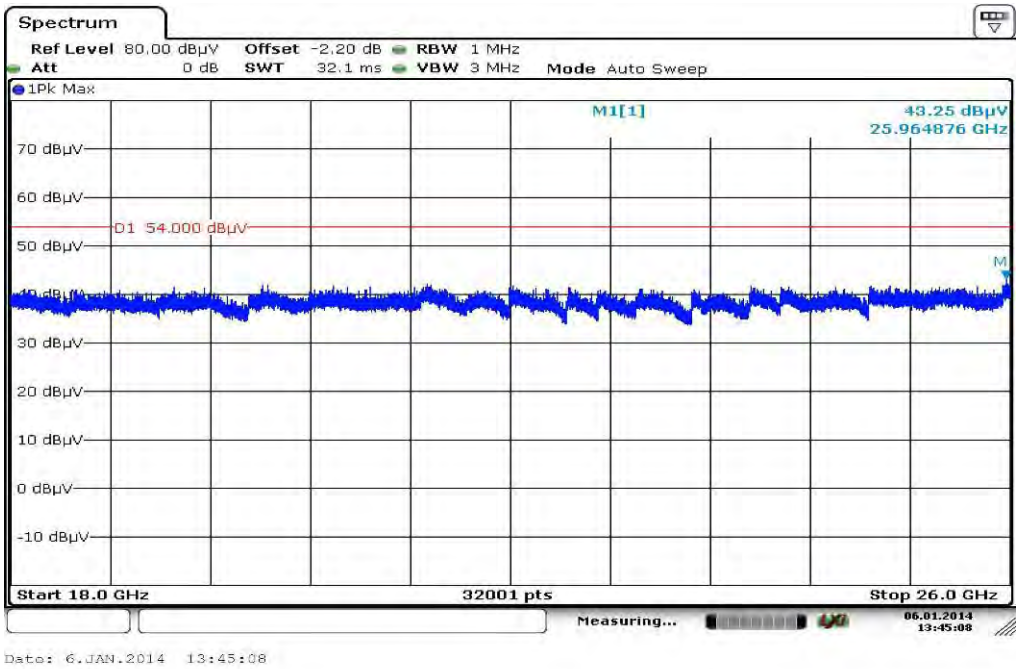
Plot 2: 1 GHz to 12.75 GHz, 5190 MHz, vertical & horizontal polarization



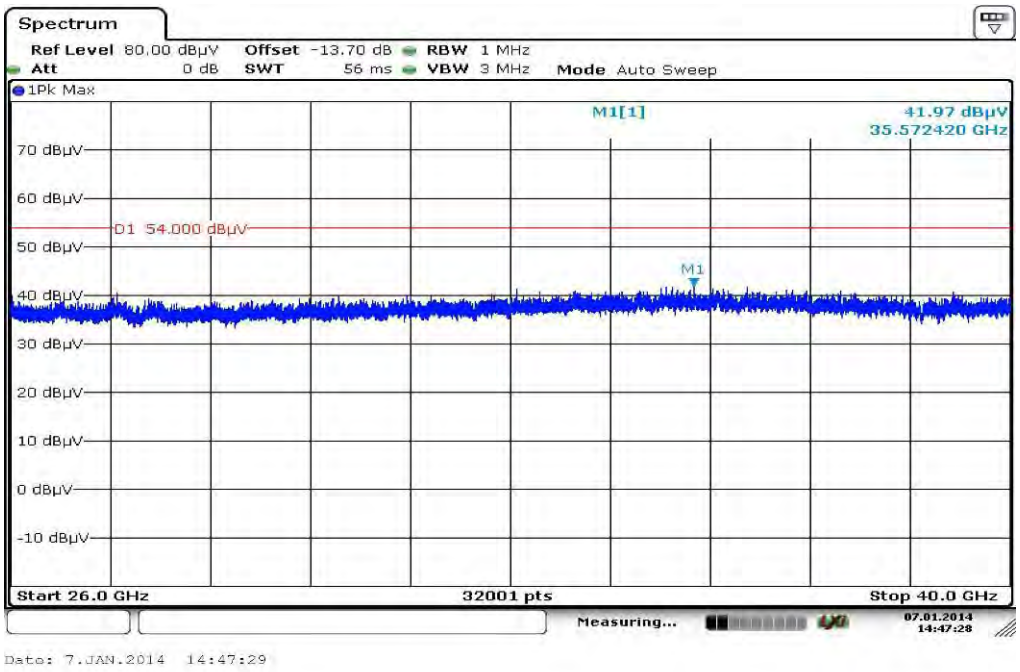
Plot 3: 12 GHz to 18 GHz, 5190 MHz, vertical & horizontal polarization



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

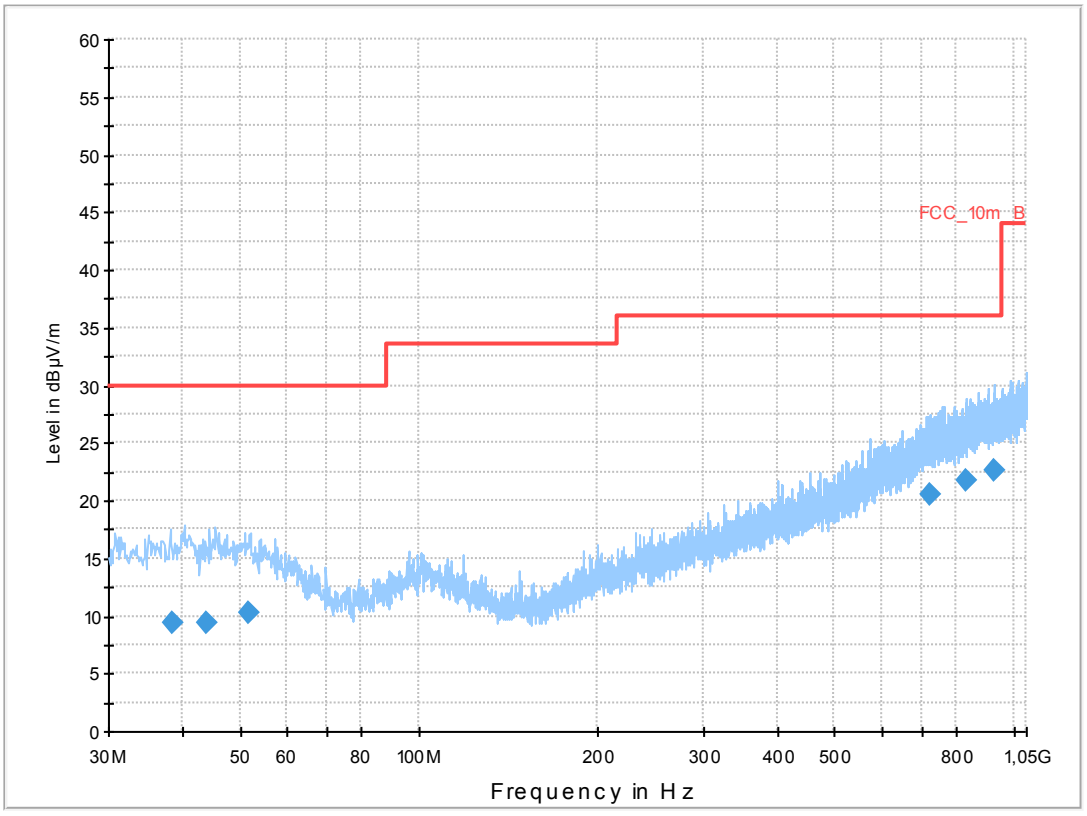
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 46
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

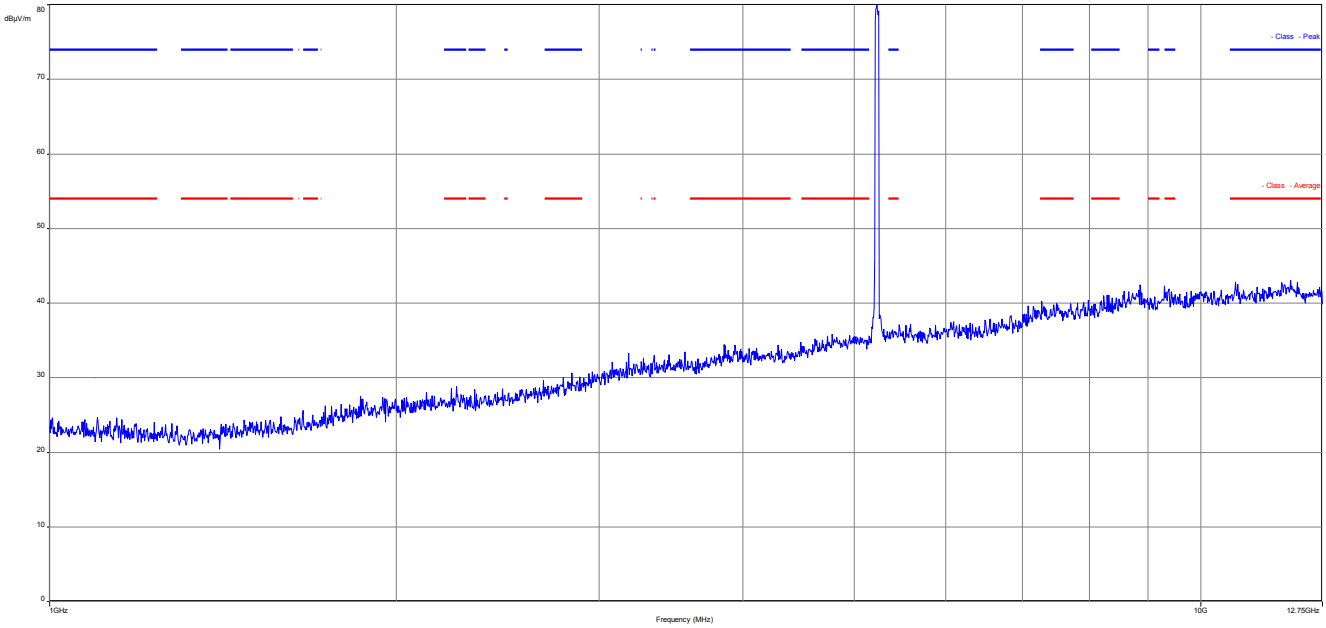
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



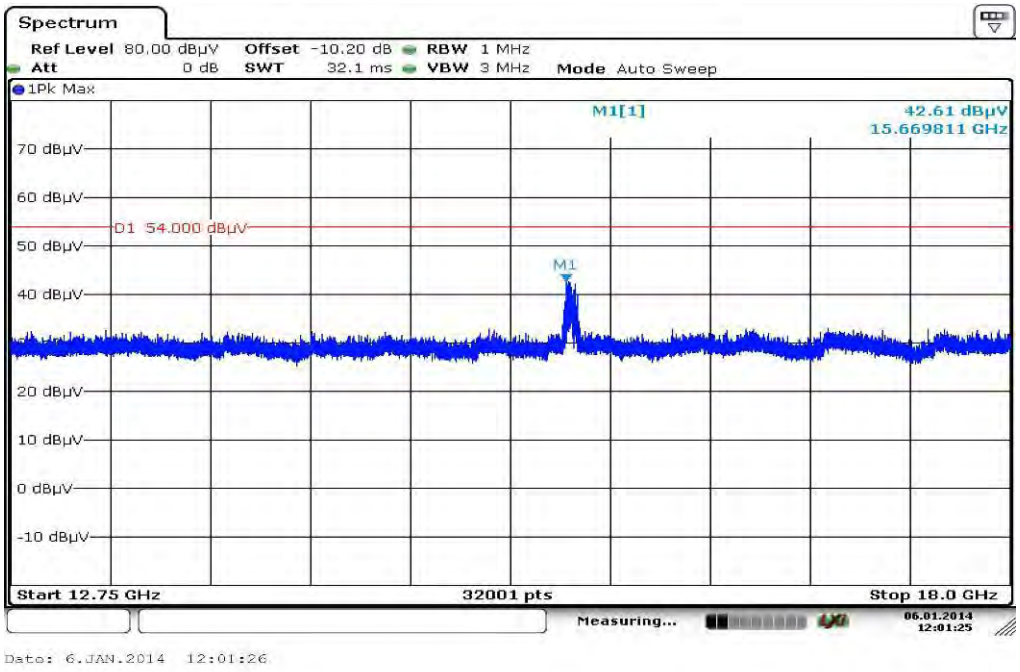
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.515200	9.4	1000.0	120.000	111.0	H	-6.0	13.3	20.6	30.0	
43.760700	9.5	1000.0	120.000	170.0	V	272.0	13.3	20.5	30.0	
51.718350	10.3	1000.0	120.000	170.0	H	182.0	13.2	19.7	30.0	
726.041700	20.6	1000.0	120.000	155.0	H	272.0	23.1	15.4	36.0	
829.393650	21.8	1000.0	120.000	170.0	H	178.0	24.2	14.2	36.0	
923.795250	22.6	1000.0	120.000	120.0	H	190.0	25.3	13.4	36.0	

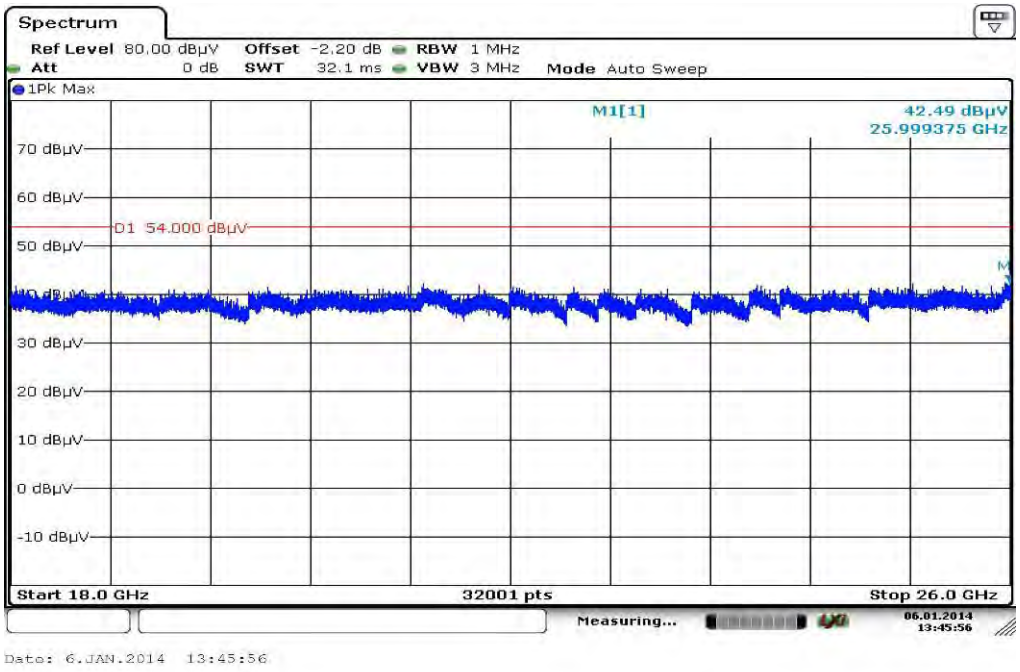
Plot 7: 1 GHz to 12.75 GHz, 5230 MHz, vertical & horizontal polarization



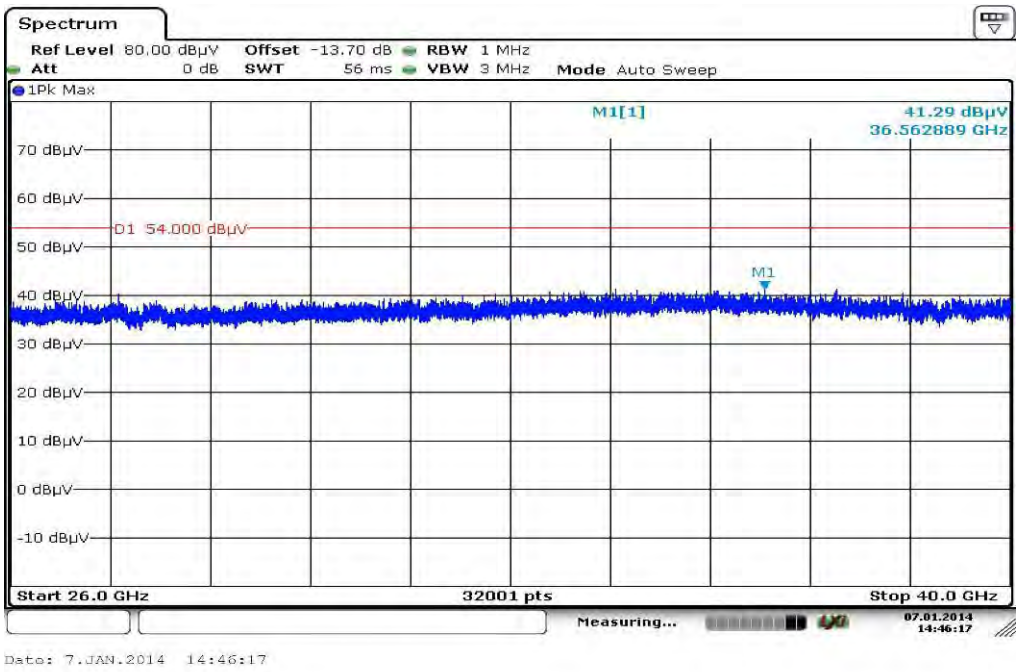
Plot 8: 12 GHz to 18 GHz, 5230 MHz, vertical & horizontal polarization



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

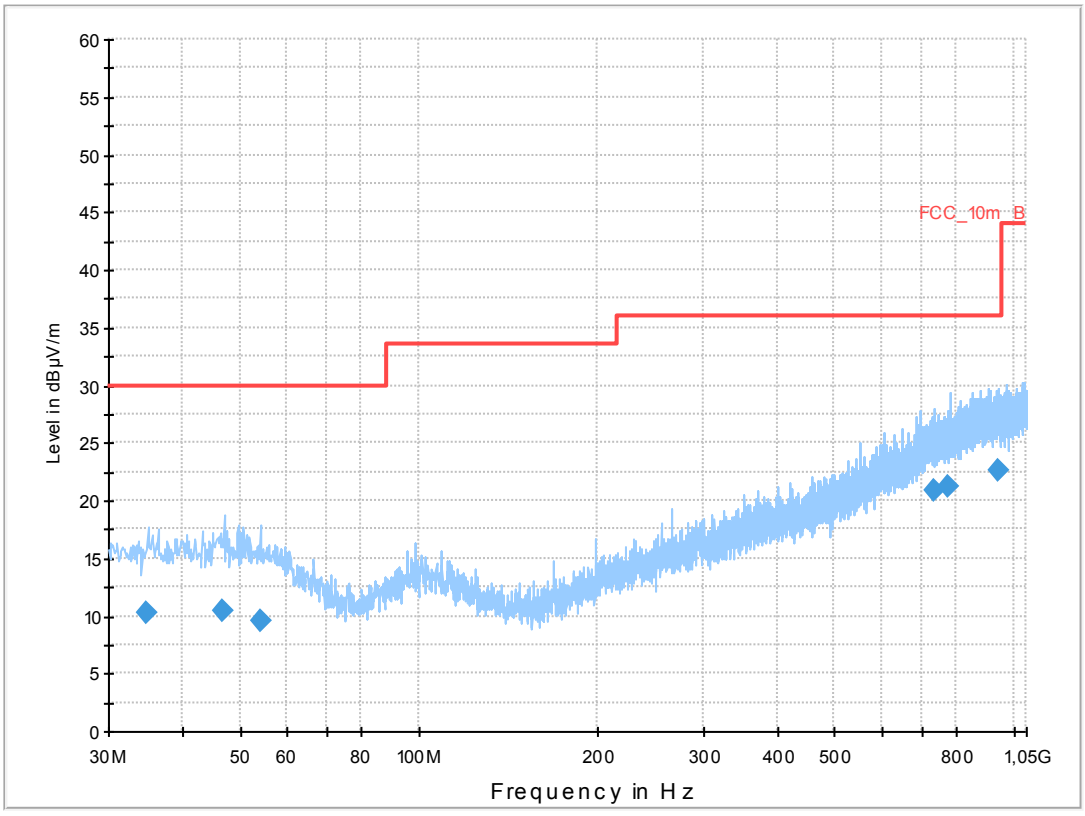
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 54
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

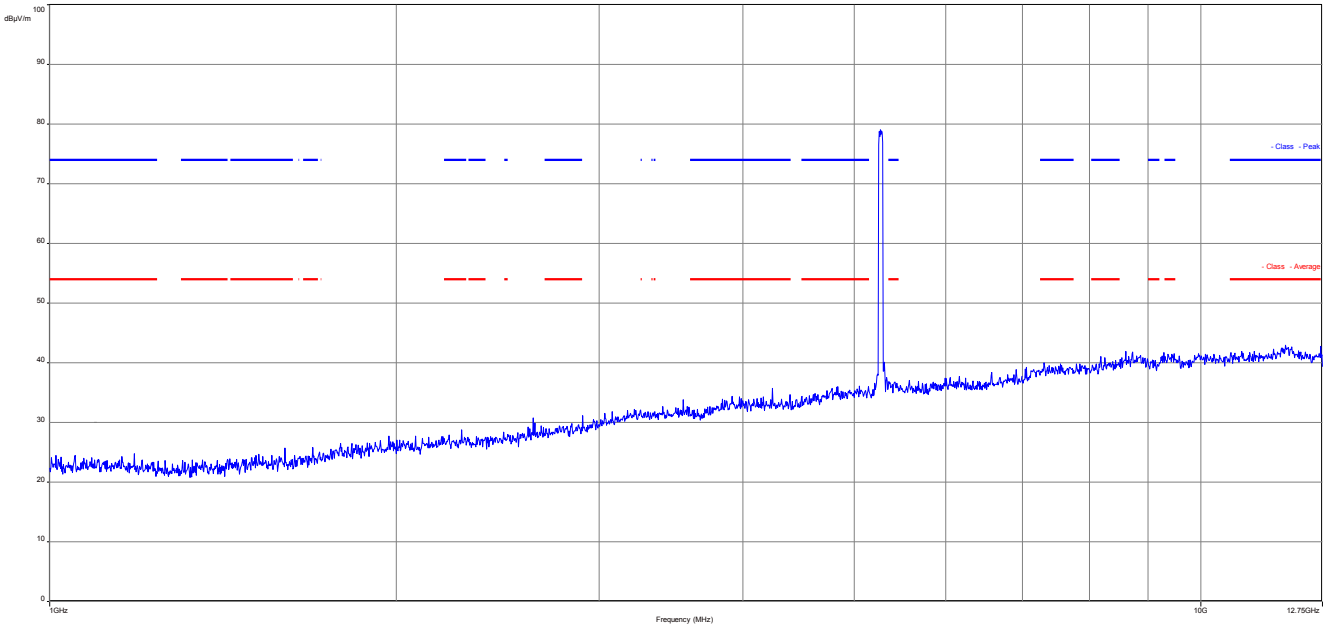
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



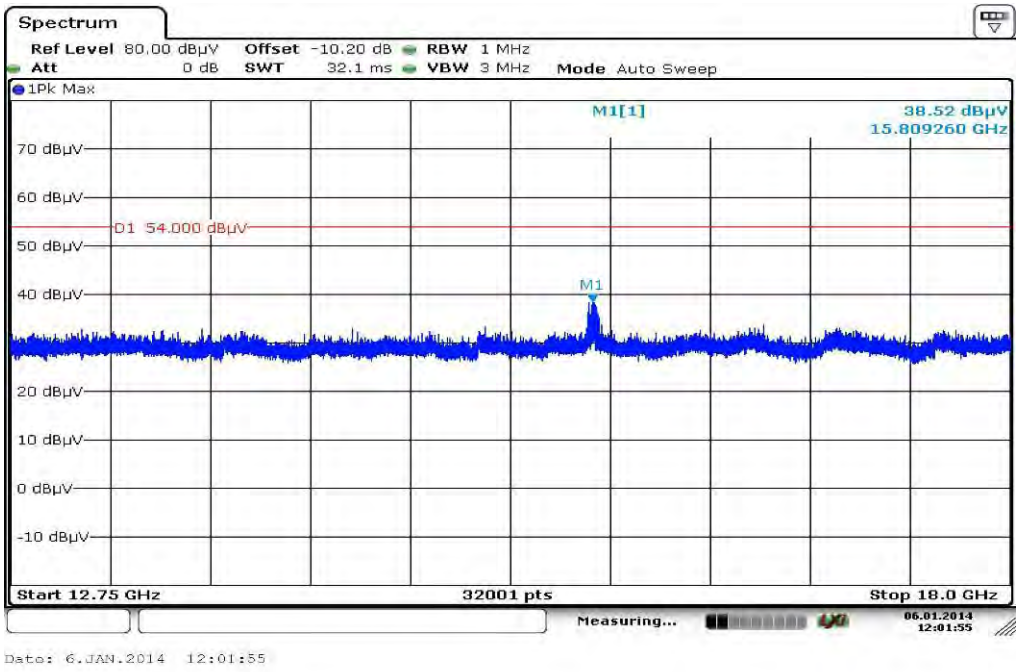
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
34.894350	10.2	1000.0	120.000	105.0	V	280.0	13.0	19.8	30.0	
46.829400	10.4	1000.0	120.000	120.0	V	190.0	13.3	19.6	30.0	
54.146700	9.6	1000.0	120.000	120.0	V	88.0	13.0	20.4	30.0	
733.107600	20.9	1000.0	120.000	170.0	V	84.0	23.3	15.1	36.0	
777.047850	21.2	1000.0	120.000	120.0	V	270.0	23.7	14.8	36.0	
943.589100	22.7	1000.0	120.000	111.0	H	182.0	25.3	13.3	36.0	

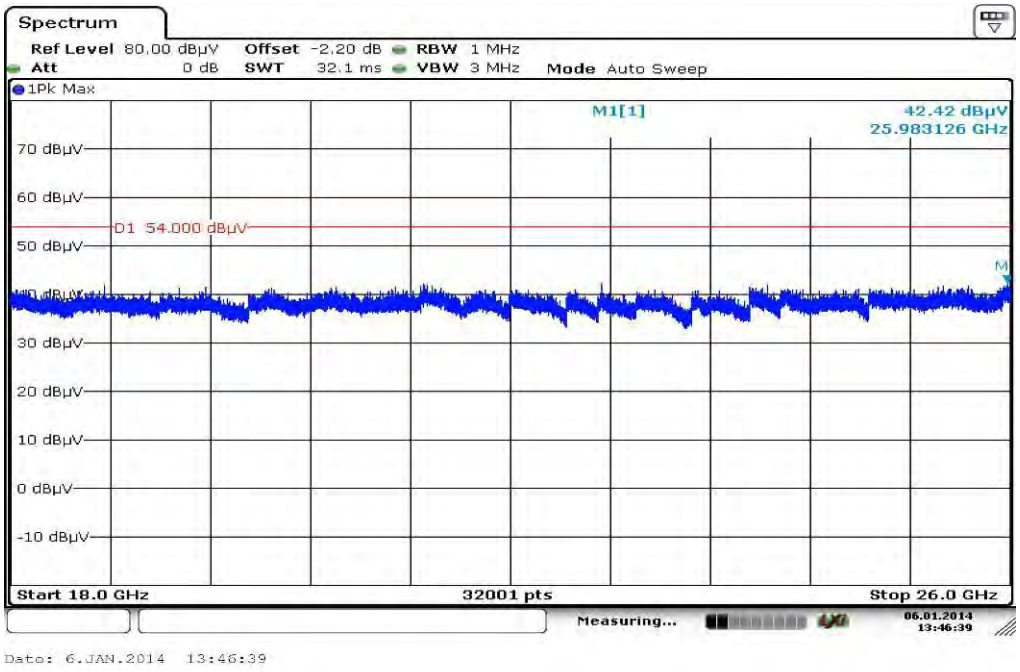
Plot 12: 1 GHz to 12.75 GHz, 5270 MHz, vertical & horizontal polarization



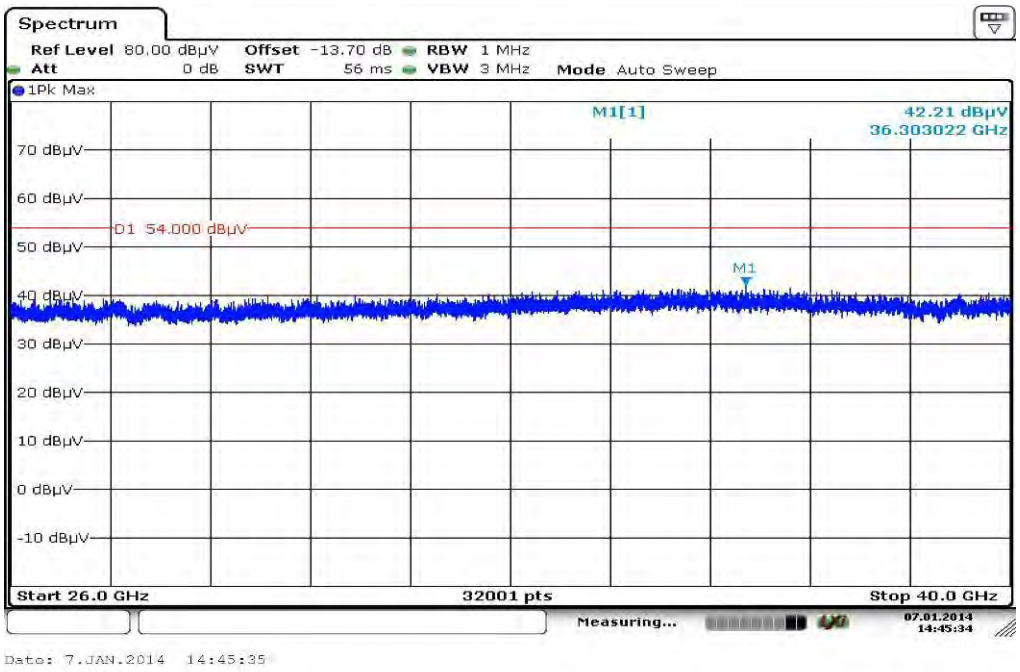
Plot 13: 12 GHz to 18 GHz, 5270 MHz, vertical & horizontal polarization



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

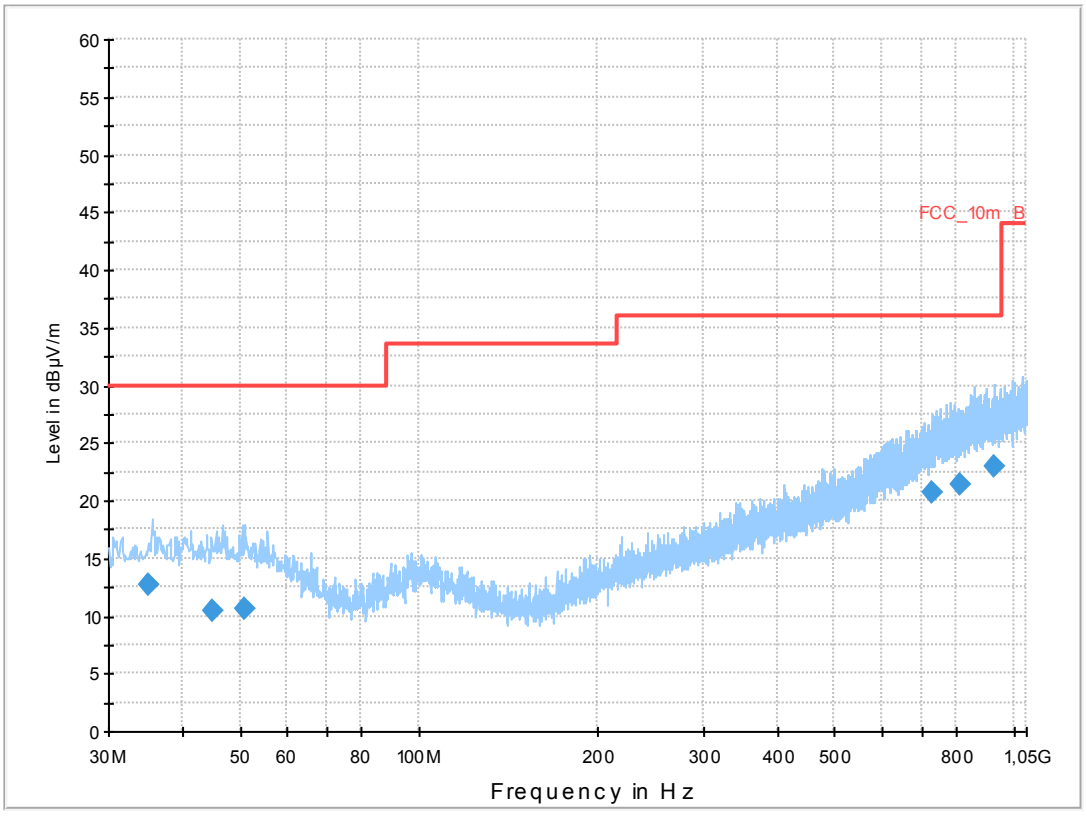
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 62
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

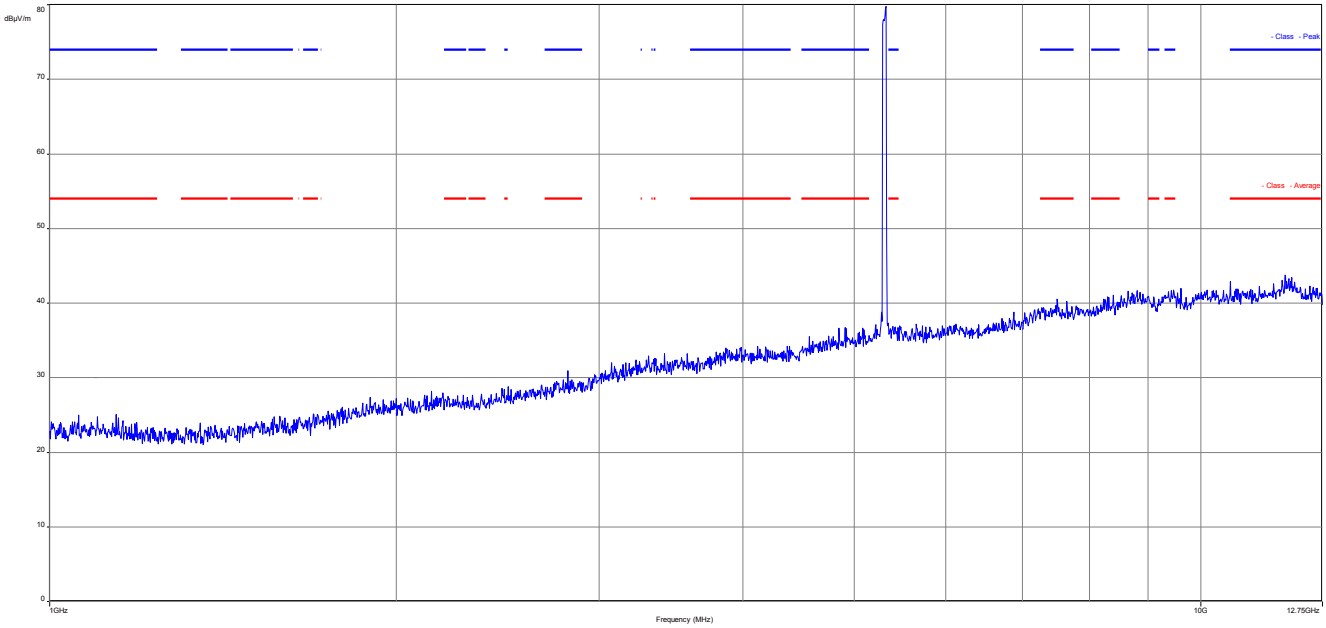
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



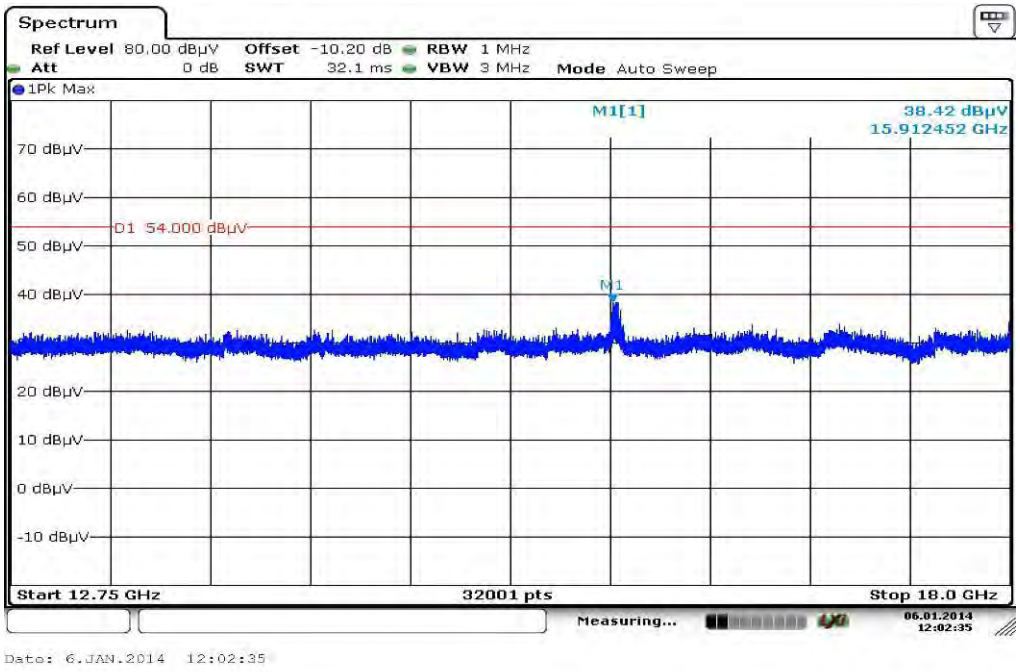
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.032800	12.7	1000.0	120.000	143.0	V	268.0	13.0	17.3	30.0	
45.061200	10.4	1000.0	120.000	104.0	V	180.0	13.3	19.6	30.0	
50.932200	10.6	1000.0	120.000	170.0	V	280.0	13.3	19.4	30.0	
728.592450	20.8	1000.0	120.000	170.0	H	260.0	23.2	15.2	36.0	
811.546200	21.4	1000.0	120.000	170.0	V	268.0	24.0	14.6	36.0	
927.288600	22.9	1000.0	120.000	170.0	V	261.0	25.3	13.1	36.0	

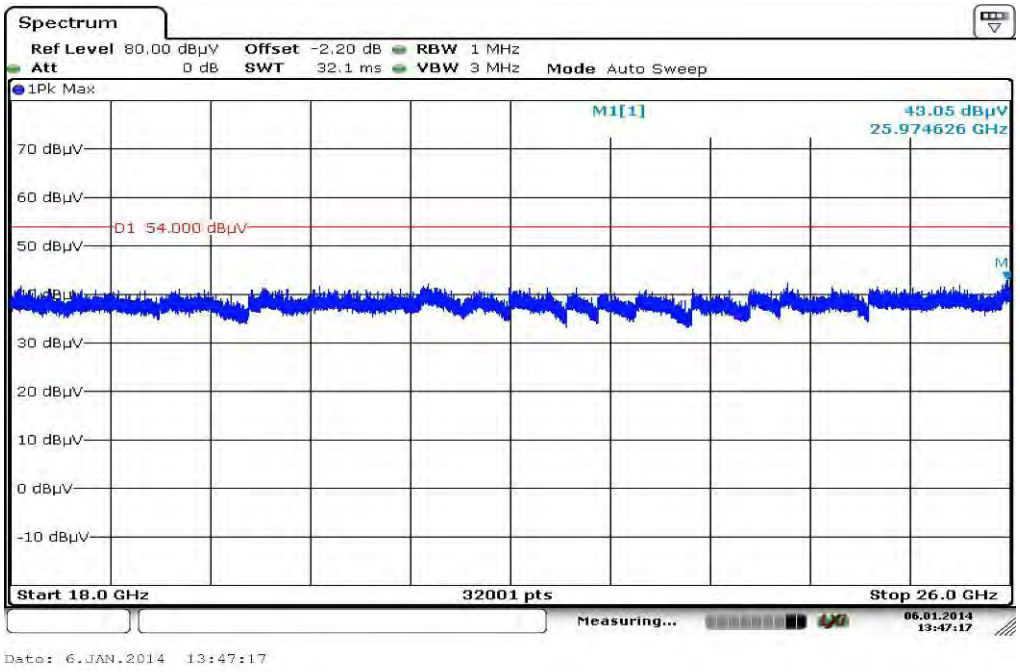
Plot 17: 1 GHz to 12.75 GHz, 5310 MHz, vertical & horizontal polarization



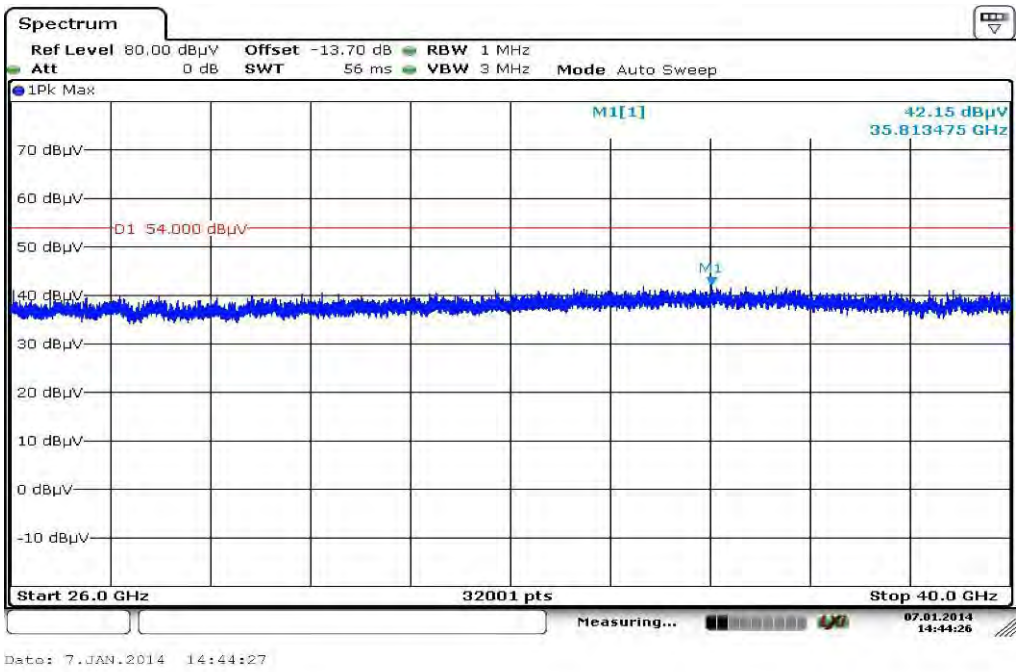
Plot 18: 12 GHz to 18 GHz, 5310 MHz, vertical & horizontal polarization



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

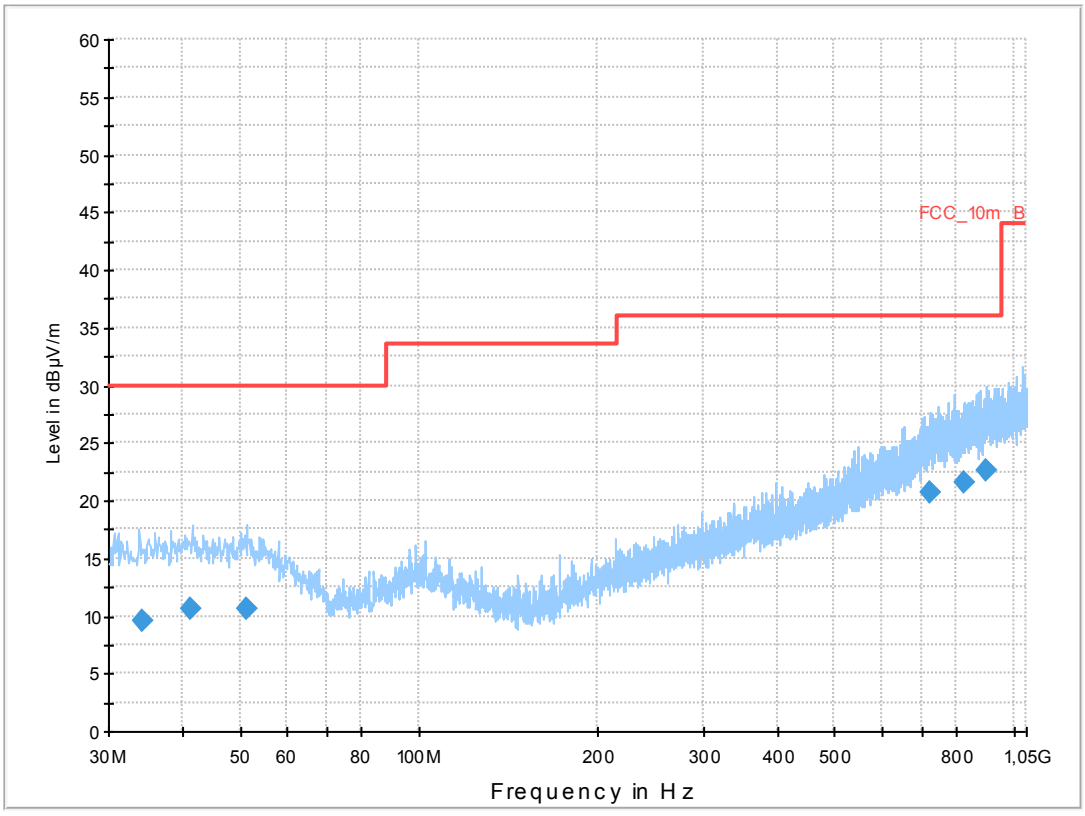
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 102
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

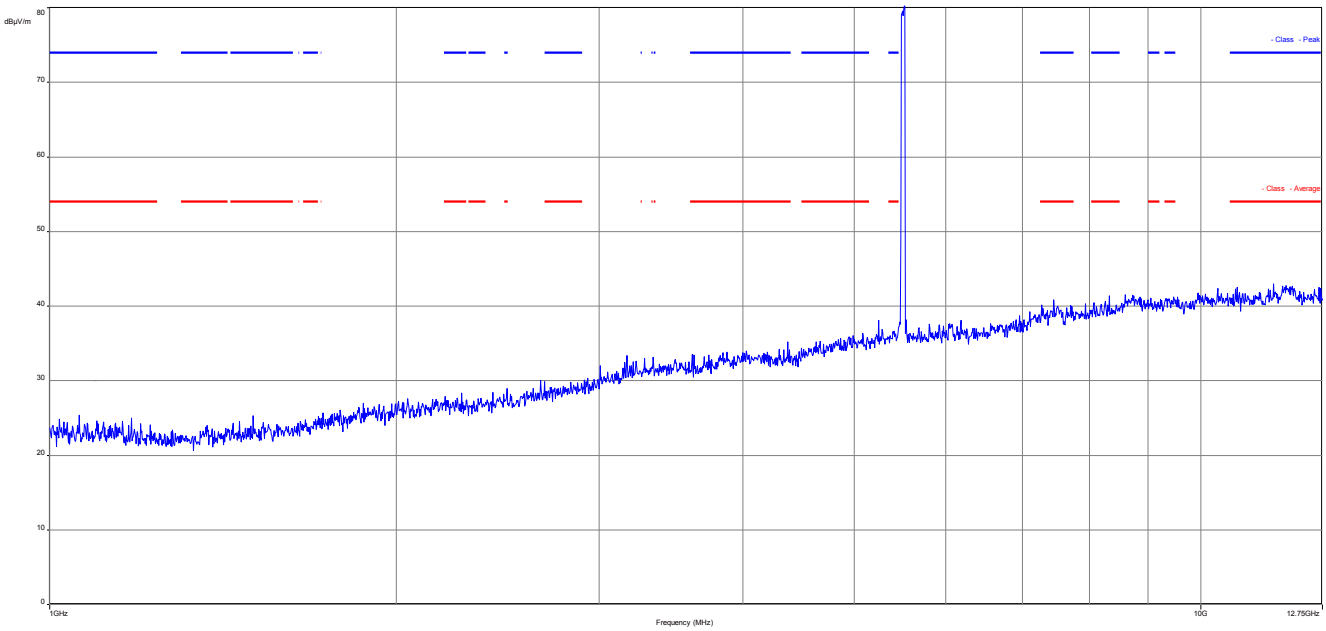
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



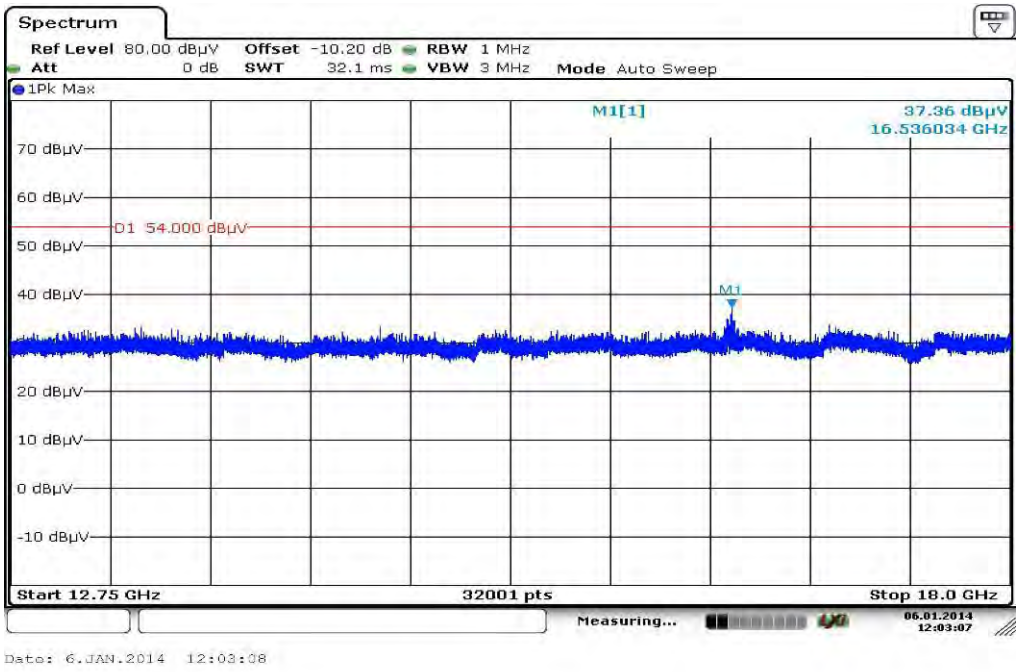
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
34.260450	9.5	1000.0	120.000	170.0	H	10.0	12.9	20.5	30.0	
41.226750	10.6	1000.0	120.000	170.0	H	190.0	13.4	19.4	30.0	
51.146400	10.6	1000.0	120.000	98.0	V	280.0	13.3	19.4	30.0	
723.168900	20.6	1000.0	120.000	98.0	V	170.0	23.0	15.4	36.0	
822.498900	21.6	1000.0	120.000	170.0	V	280.0	24.1	14.4	36.0	
899.861400	22.7	1000.0	120.000	170.0	H	80.0	25.2	13.3	36.0	

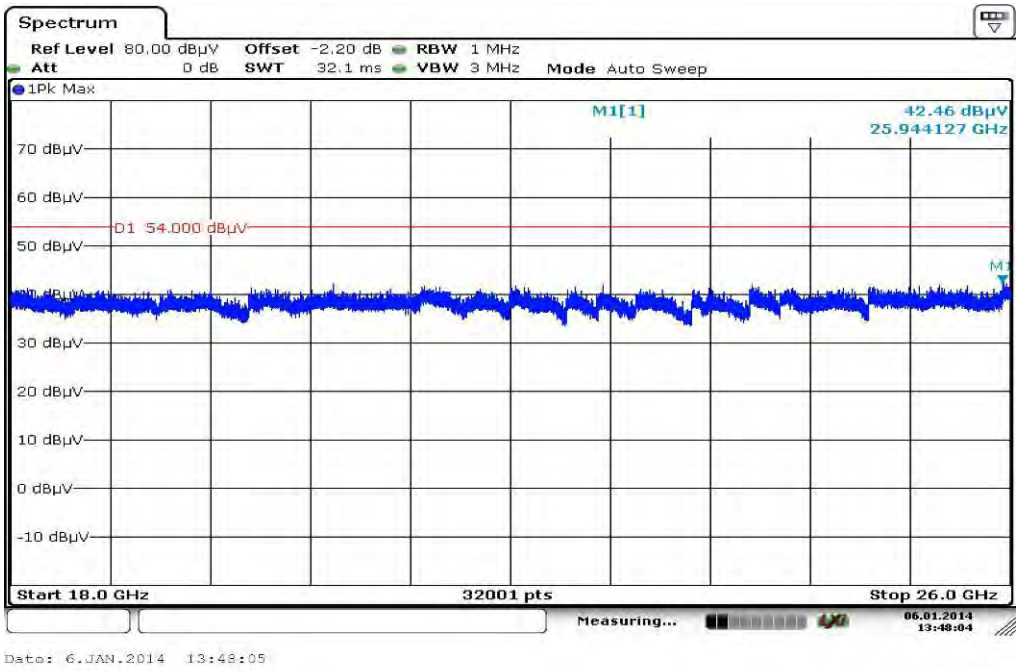
Plot 22: 1 GHz to 12.75 GHz, 5510 MHz, vertical & horizontal polarization



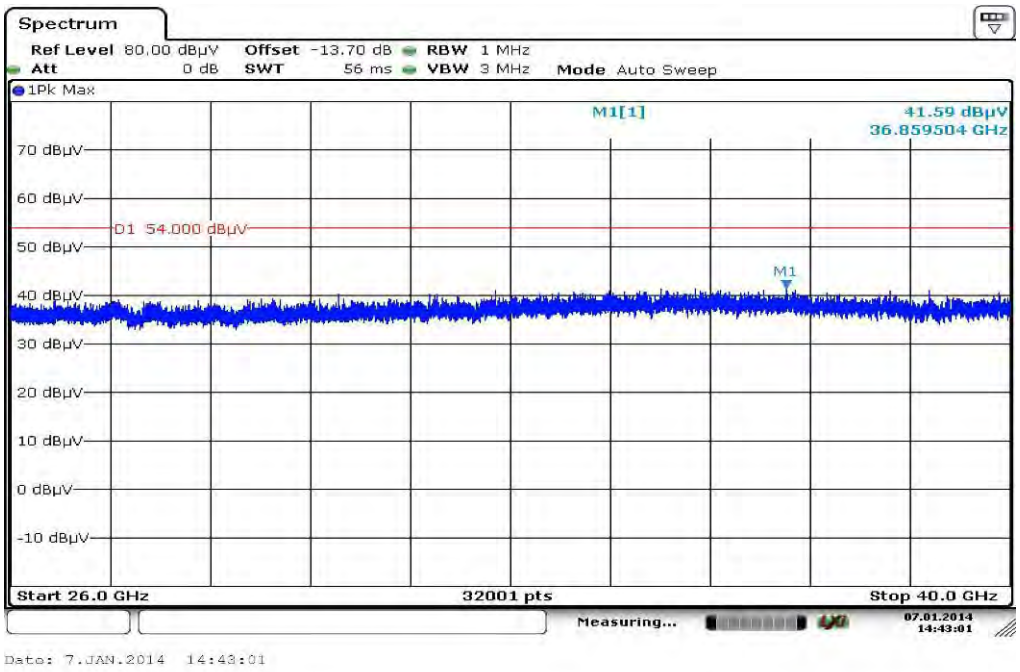
Plot 23: 12 GHz to 18 GHz, 5510 MHz, vertical & horizontal polarization



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

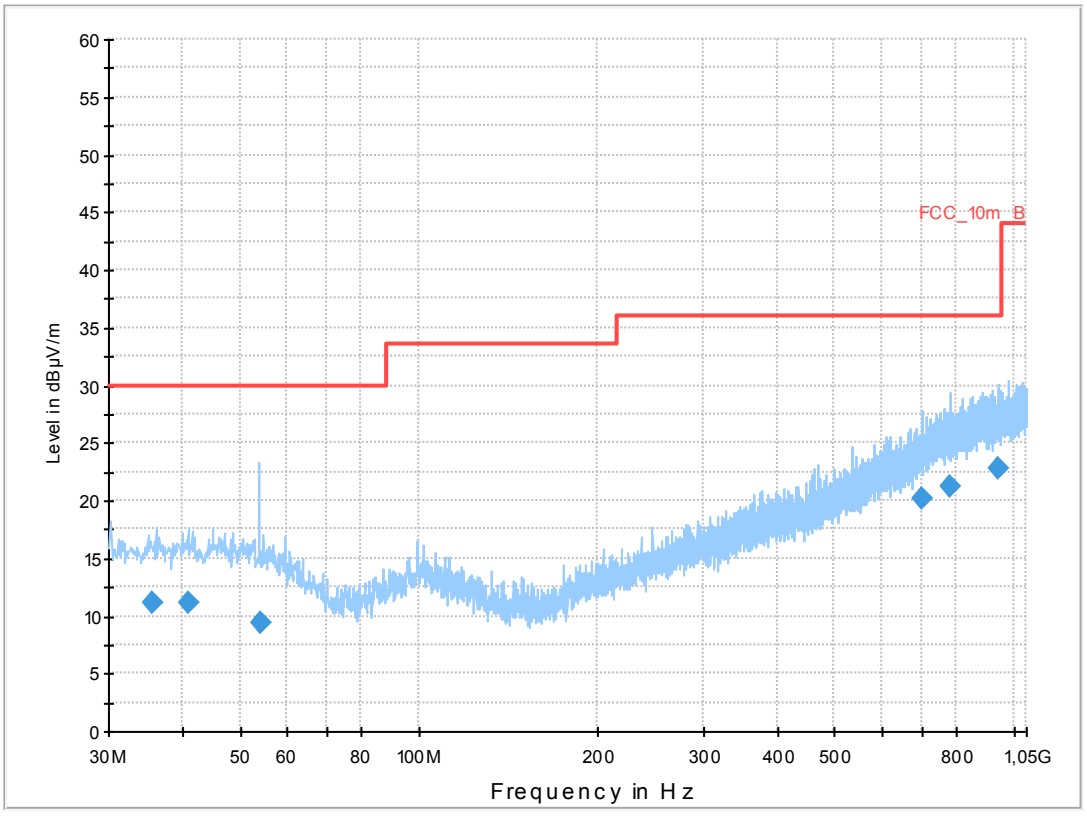
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 118
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

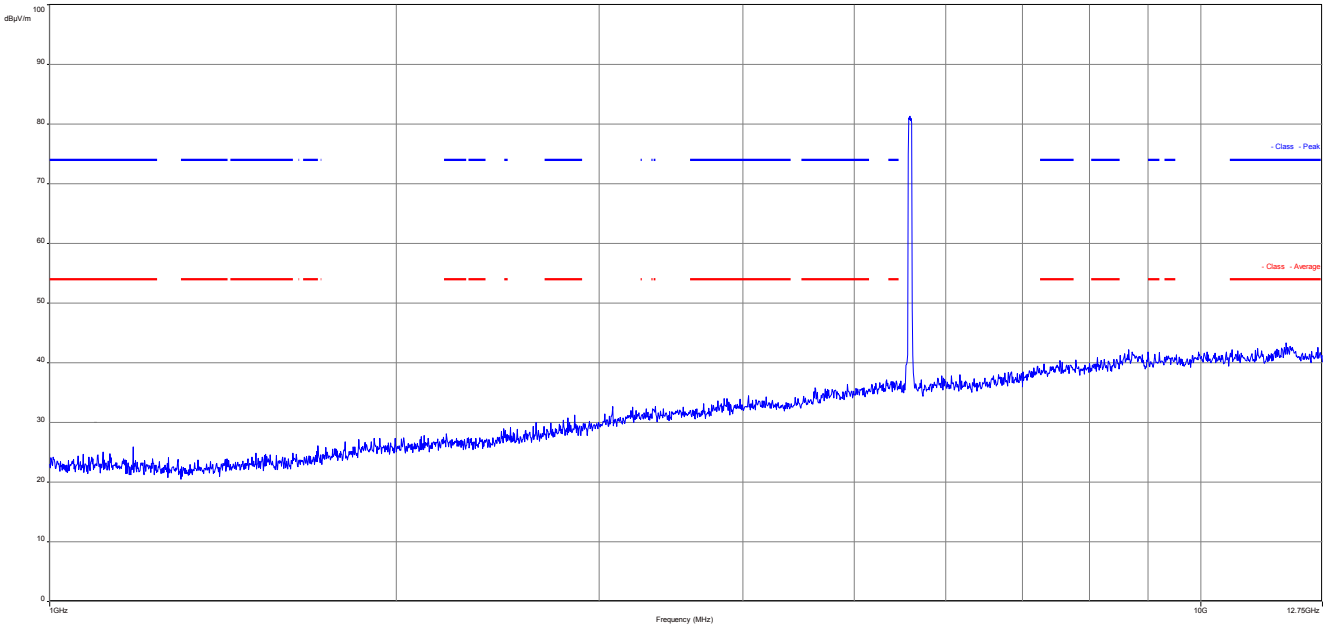
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



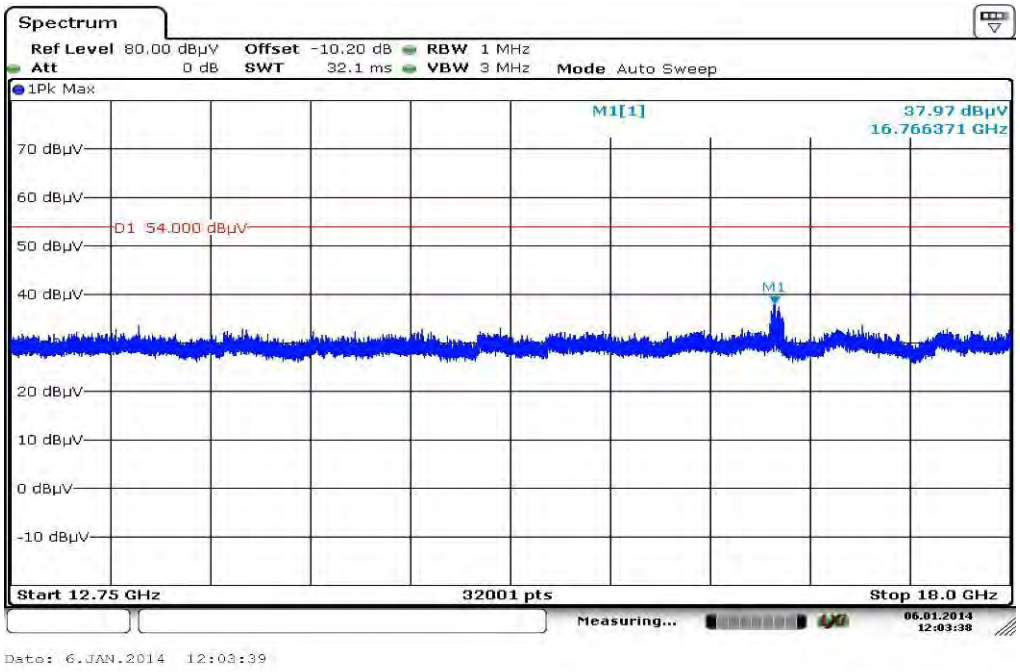
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.522250	11.1	1000.0	120.000	132.0	V	261.0	13.1	18.9	30.0	
40.765200	11.1	1000.0	120.000	98.0	V	85.0	13.4	18.9	30.0	
53.933400	9.4	1000.0	120.000	170.0	V	-9.0	13.0	20.6	30.0	
700.070700	20.1	1000.0	120.000	170.0	V	-9.0	22.5	15.9	36.0	
780.766800	21.1	1000.0	120.000	170.0	H	81.0	23.7	14.9	36.0	
942.734250	22.7	1000.0	120.000	120.0	V	178.0	25.3	13.3	36.0	

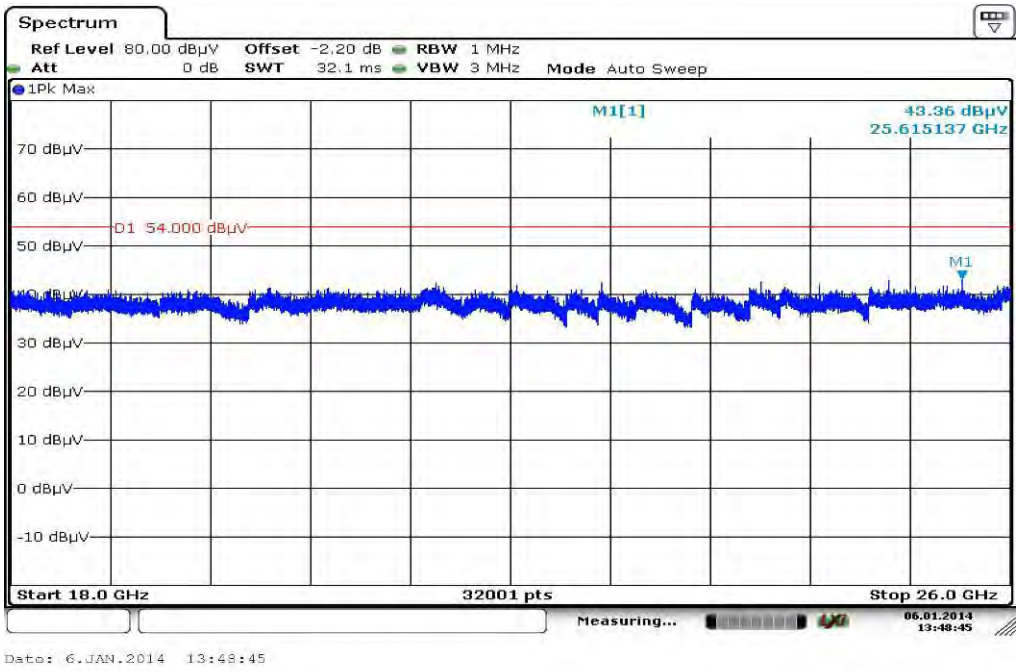
Plot 27: 1 GHz to 12.75 GHz, 5590 MHz, vertical & horizontal polarization



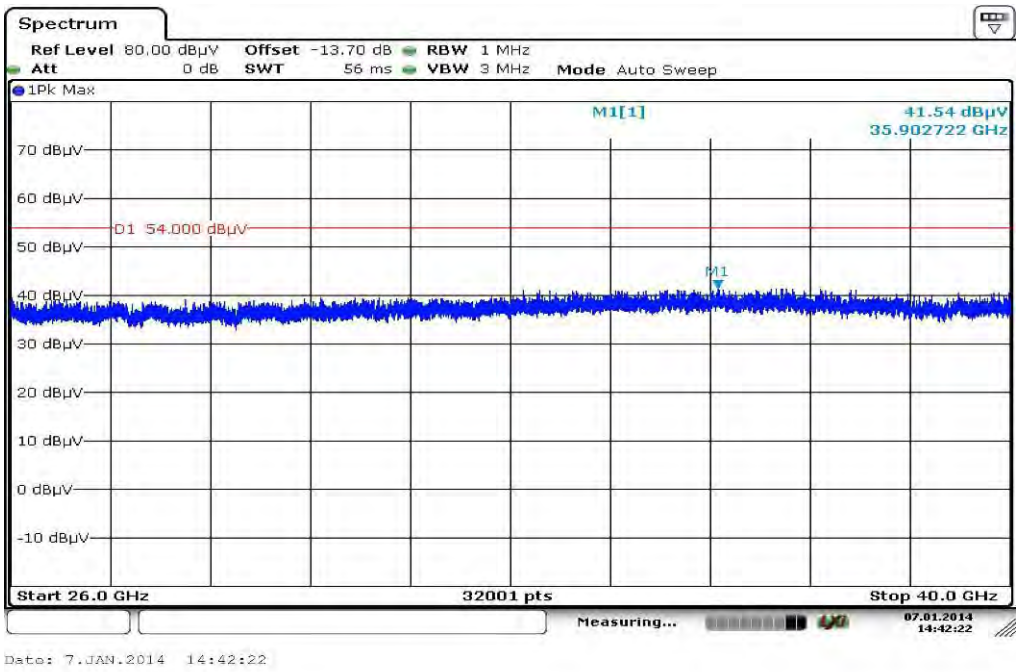
Plot 28: 12 GHz to 18 GHz, 5590 MHz, vertical & horizontal polarization



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

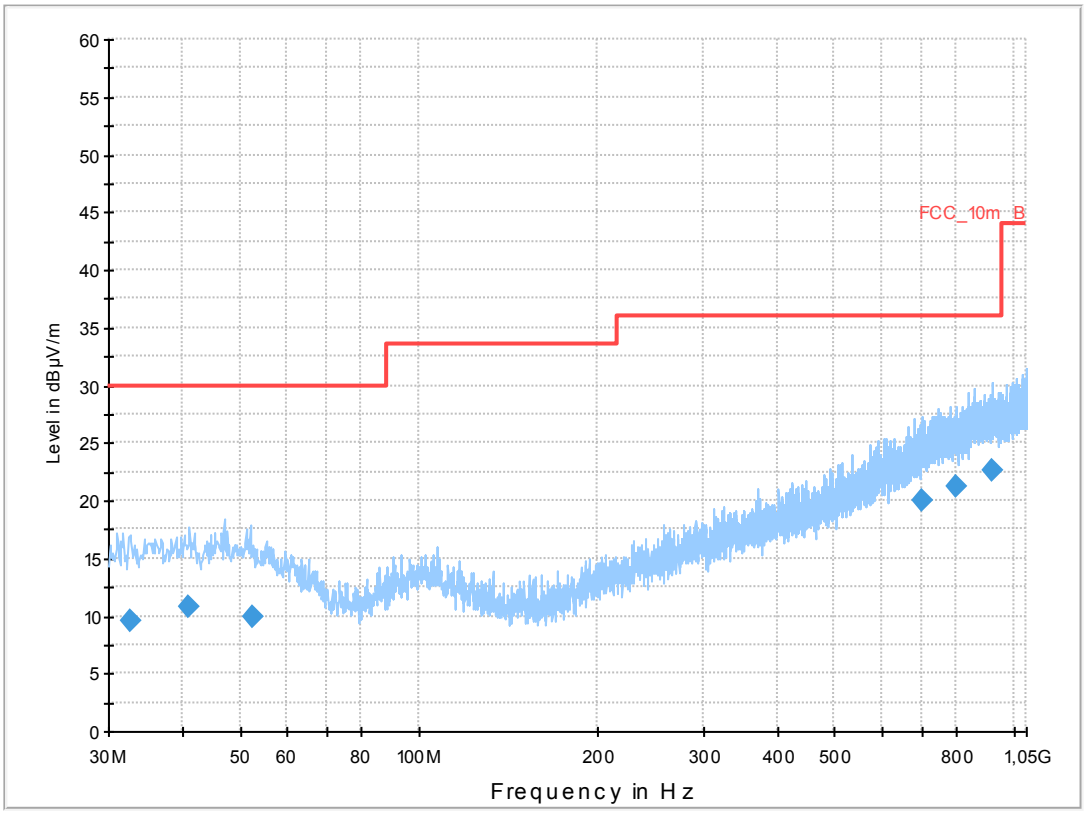
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT40) tx ch 134
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

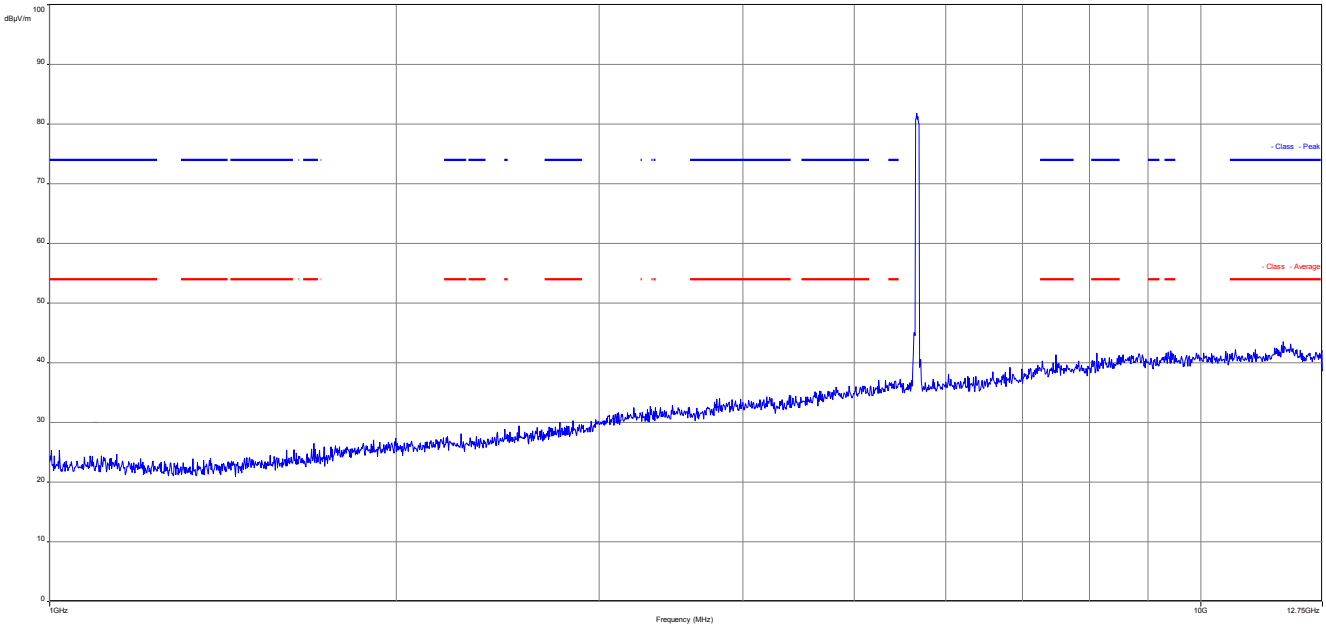
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



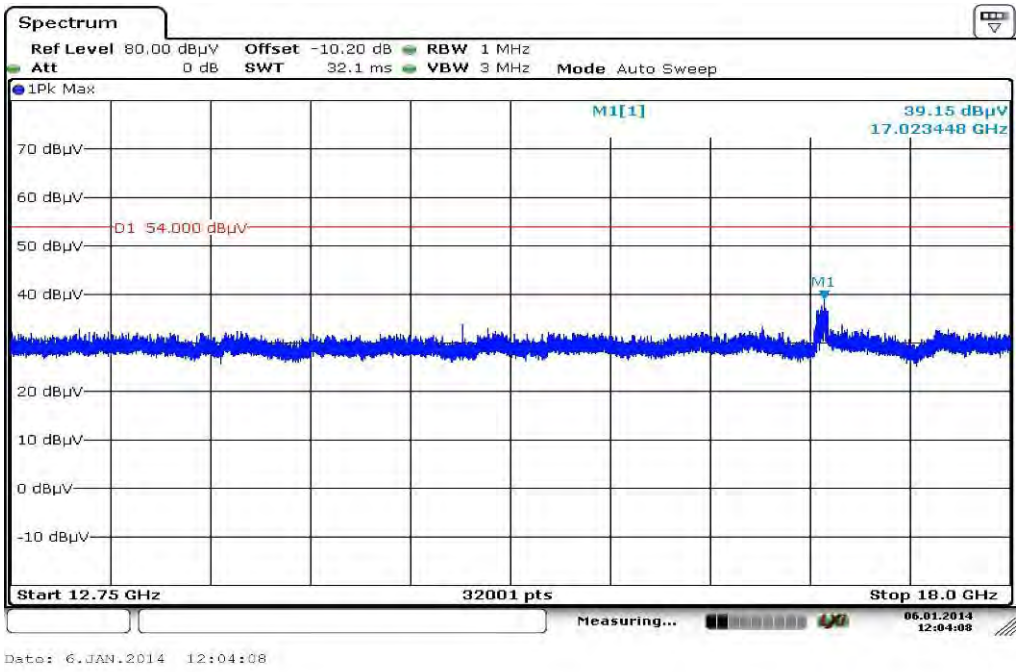
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.784000	9.6	1000.0	120.000	142.0	V	100.0	12.8	20.4	30.0	
40.983450	10.8	1000.0	120.000	170.0	H	269.0	13.4	19.2	30.0	
52.340250	9.9	1000.0	120.000	121.0	V	81.0	13.1	20.1	30.0	
700.309350	20.1	1000.0	120.000	170.0	H	-5.0	22.5	15.9	36.0	
800.352150	21.2	1000.0	120.000	170.0	H	10.0	23.8	14.8	36.0	
920.406000	22.6	1000.0	120.000	170.0	V	2.0	25.3	13.4	36.0	

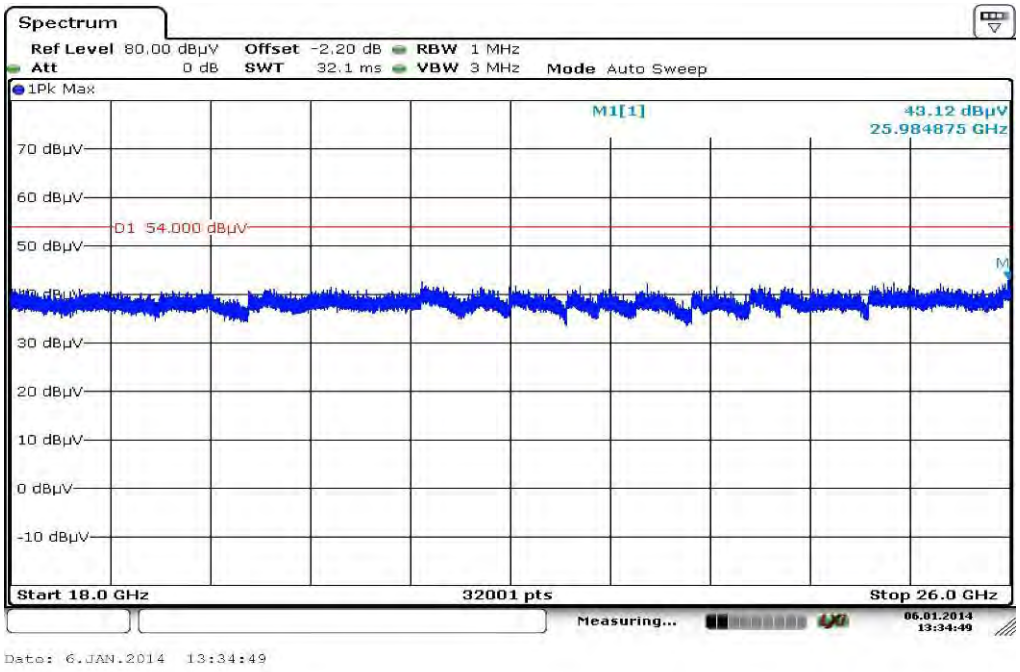
Plot 32: 1 GHz to 12.75 GHz, 5670 MHz, vertical & horizontal polarization



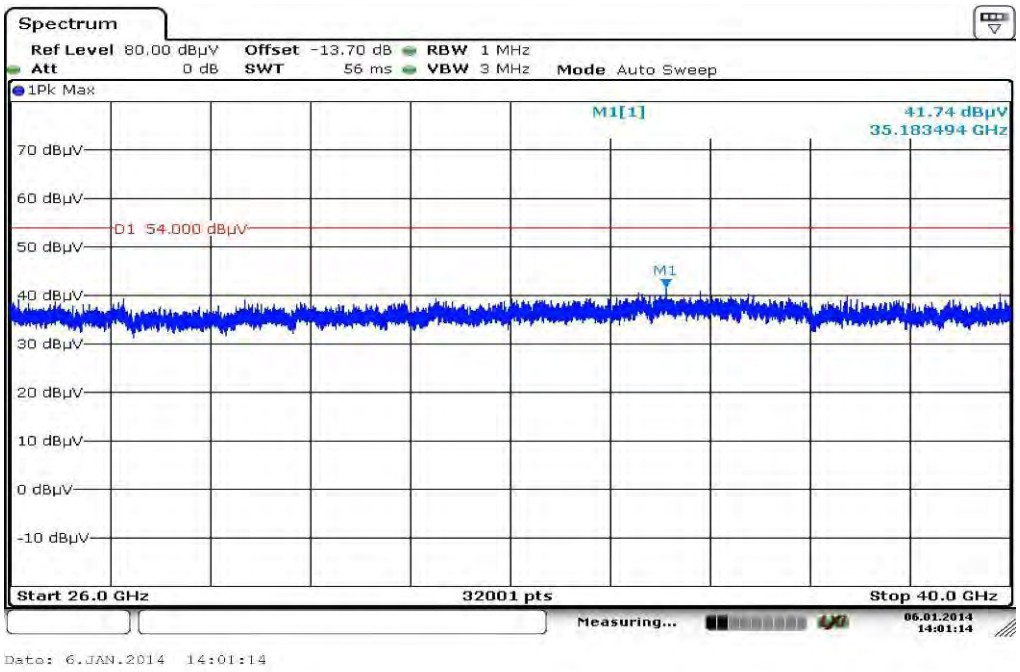
Plot 33: 12 GHz to 18 GHz, 5670 MHz, vertical & horizontal polarization



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



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



Plots: OFDM / ac – mode HT80

Plot 36: 30 MHz to 1 GHz, 5210 MHz, vertical & horizontal polarization

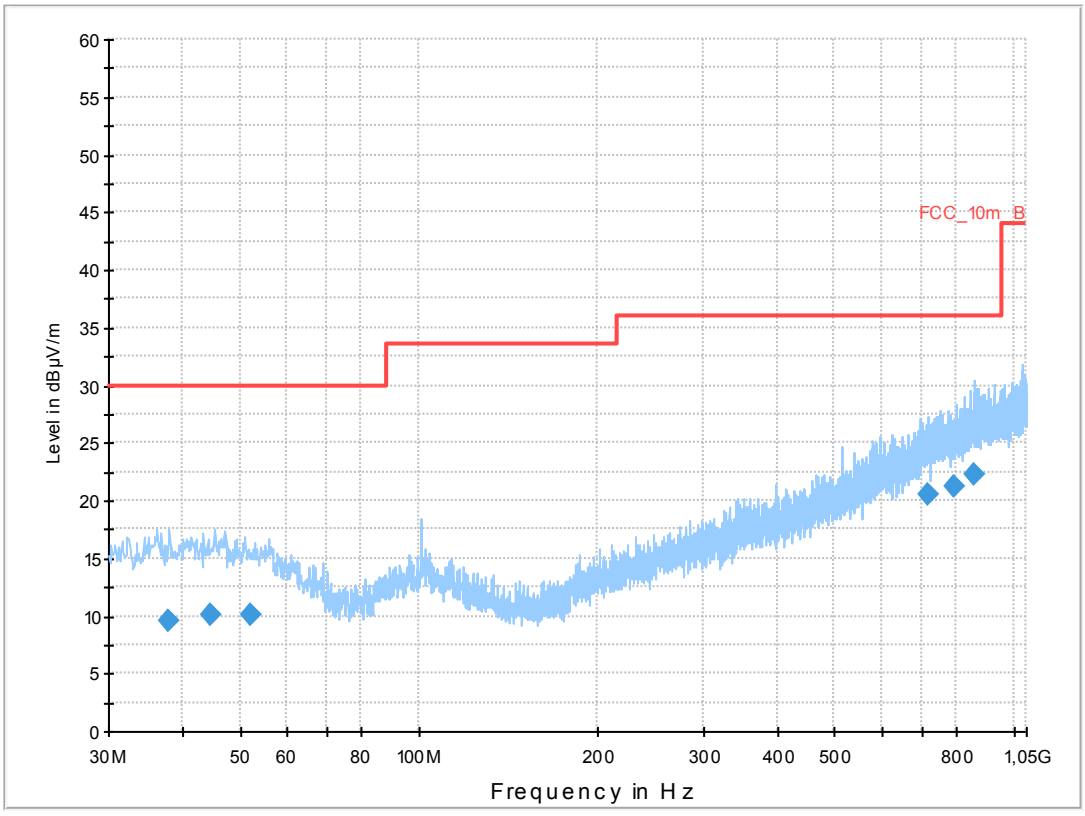
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT80) tx ch 42
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

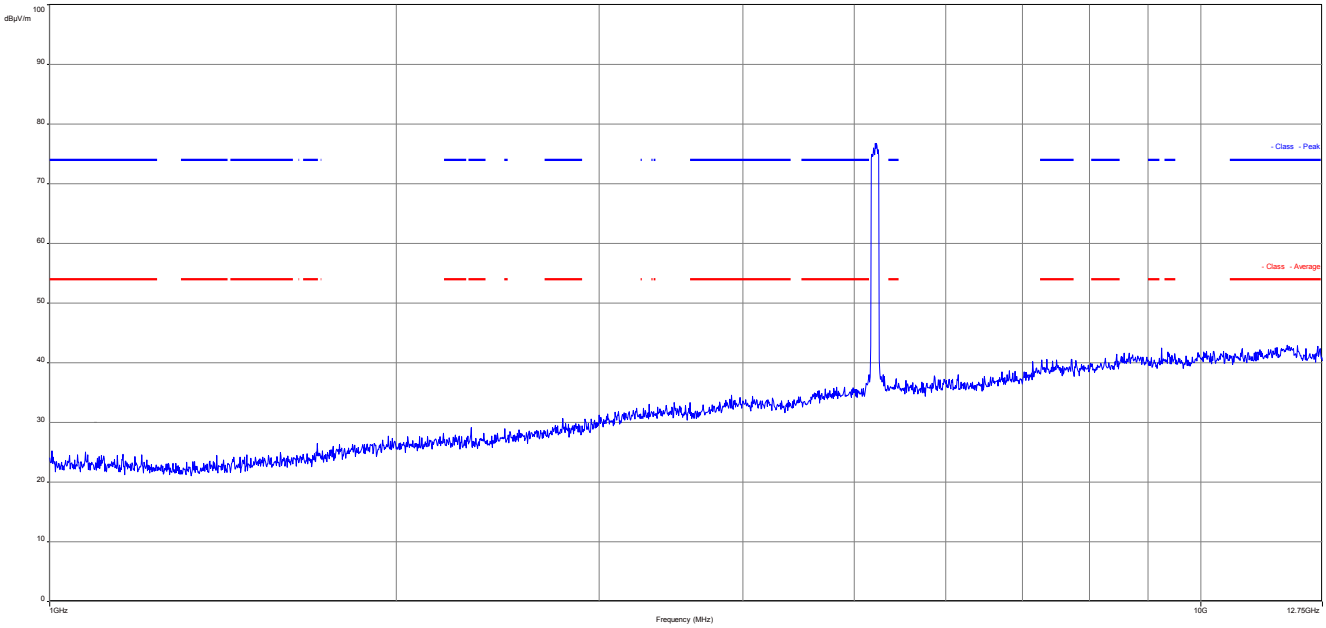
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



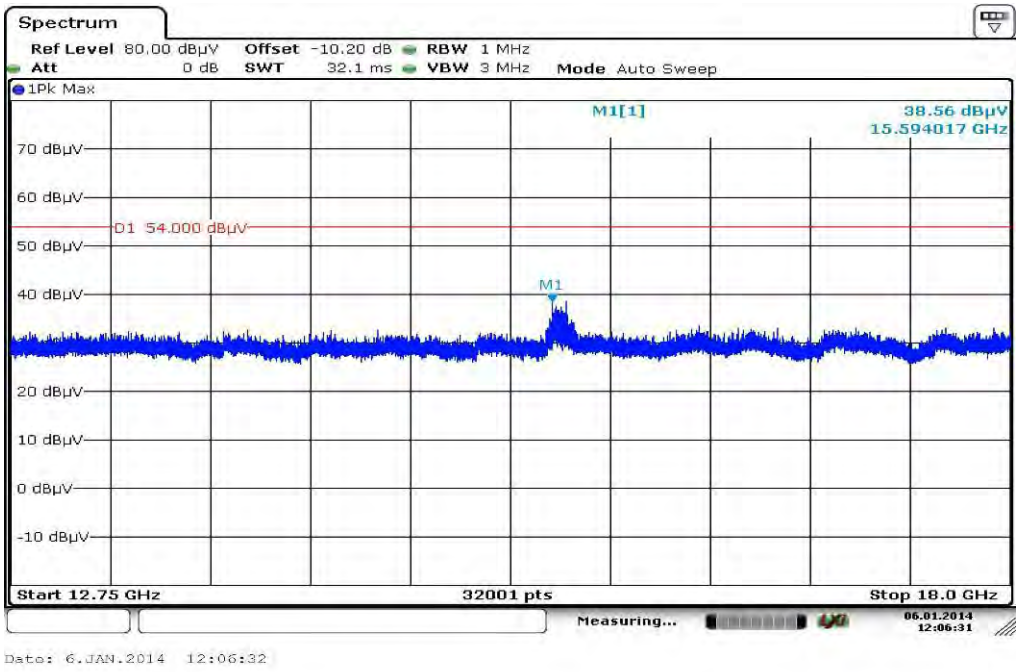
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
37.773900	9.6	1000.0	120.000	109.0	V	260.0	13.3	20.4	30.0	
44.652150	10.1	1000.0	120.000	98.0	H	-2.0	13.3	19.9	30.0	
52.083000	10.1	1000.0	120.000	170.0	V	92.0	13.2	19.9	30.0	
715.905900	20.4	1000.0	120.000	170.0	V	190.0	22.9	15.6	36.0	
793.071600	21.2	1000.0	120.000	170.0	V	190.0	23.8	14.8	36.0	
860.142450	22.3	1000.0	120.000	111.0	V	88.0	24.7	13.7	36.0	

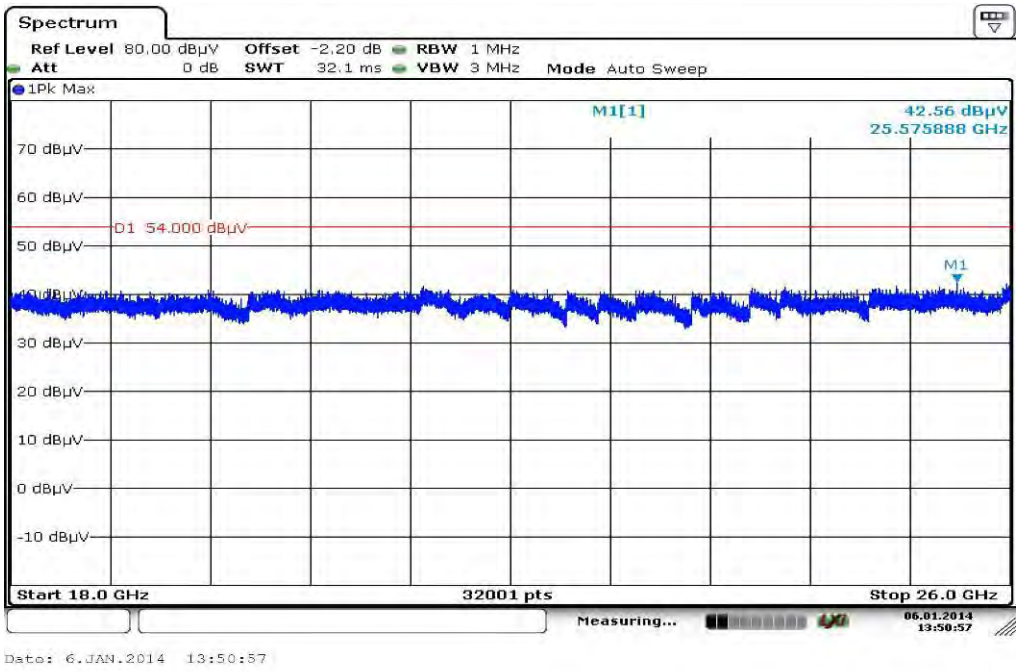
Plot 37: 1 GHz to 12.75 GHz, 5210 MHz, vertical & horizontal polarization



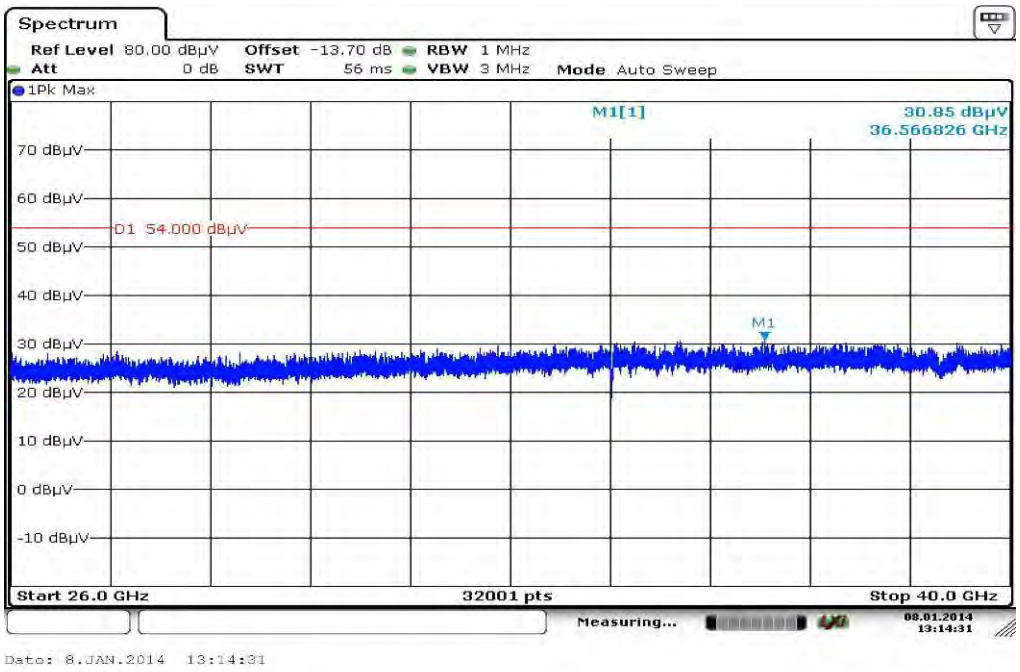
Plot 38: 12 GHz to 18 GHz, 5210 MHz, vertical & horizontal polarization



Plot 39: 18 GHz to 26 GHz, 5210 MHz, vertical & horizontal polarization



Plot 40: 26 GHz to 40 GHz, 5210 MHz, vertical & horizontal polarization



Plot 41: 30 MHz to 1 GHz, 5290 MHz, vertical & horizontal polarization

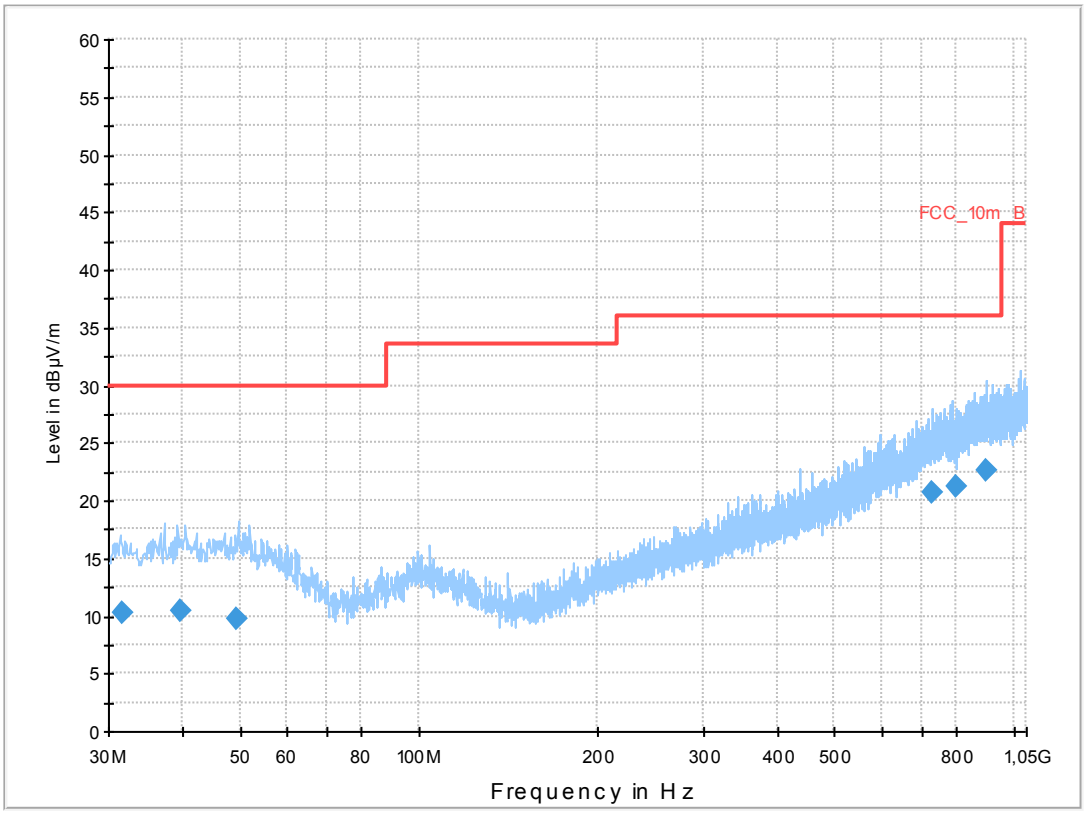
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT80) tx ch 58
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

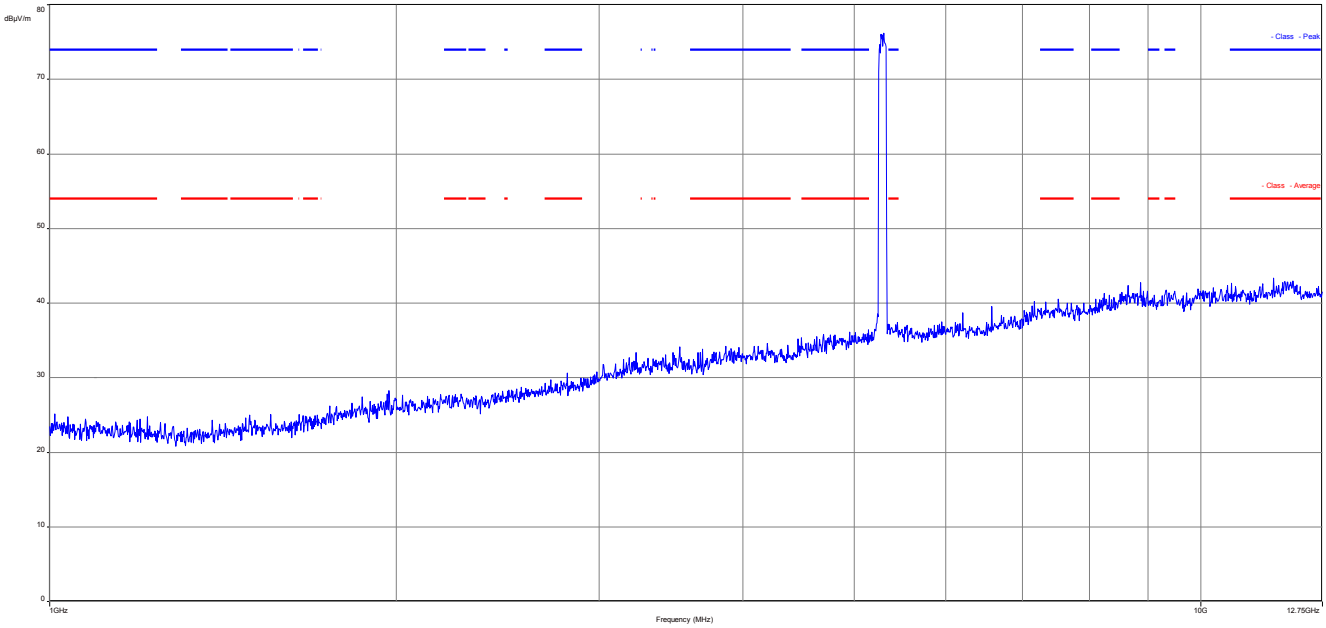
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



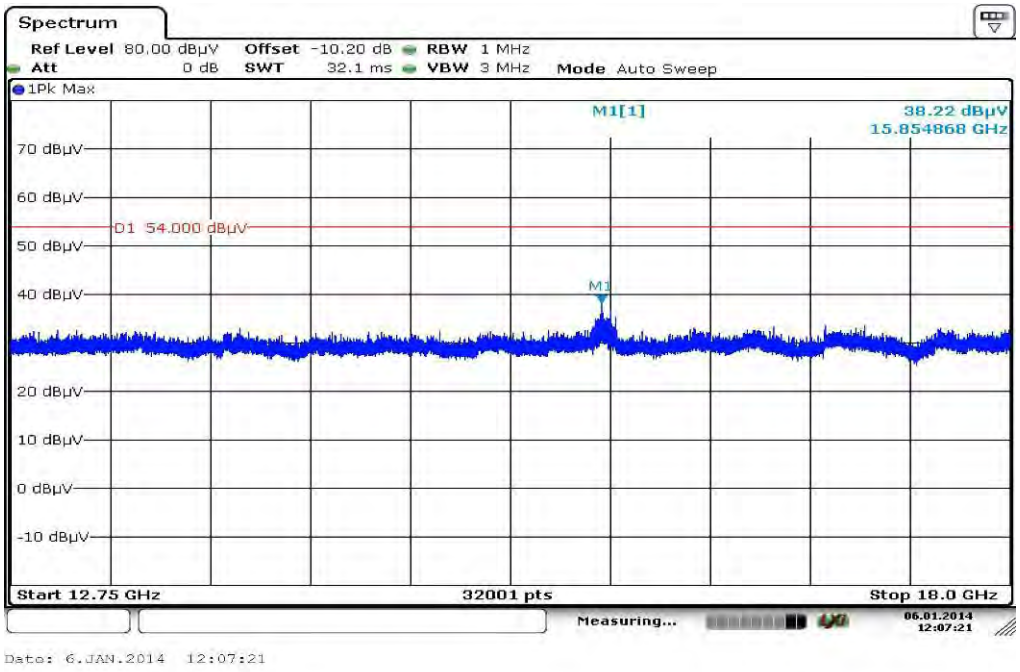
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
31.772550	10.3	1000.0	120.000	170.0	H	170.0	12.7	19.7	30.0	
39.745350	10.4	1000.0	120.000	170.0	H	280.0	13.4	19.6	30.0	
49.179000	9.7	1000.0	120.000	132.0	V	190.0	13.4	20.3	30.0	
731.140050	20.8	1000.0	120.000	170.0	H	261.0	23.2	15.2	36.0	
802.993200	21.3	1000.0	120.000	170.0	H	190.0	23.8	14.7	36.0	
897.214200	22.7	1000.0	120.000	170.0	H	85.0	25.2	13.3	36.0	

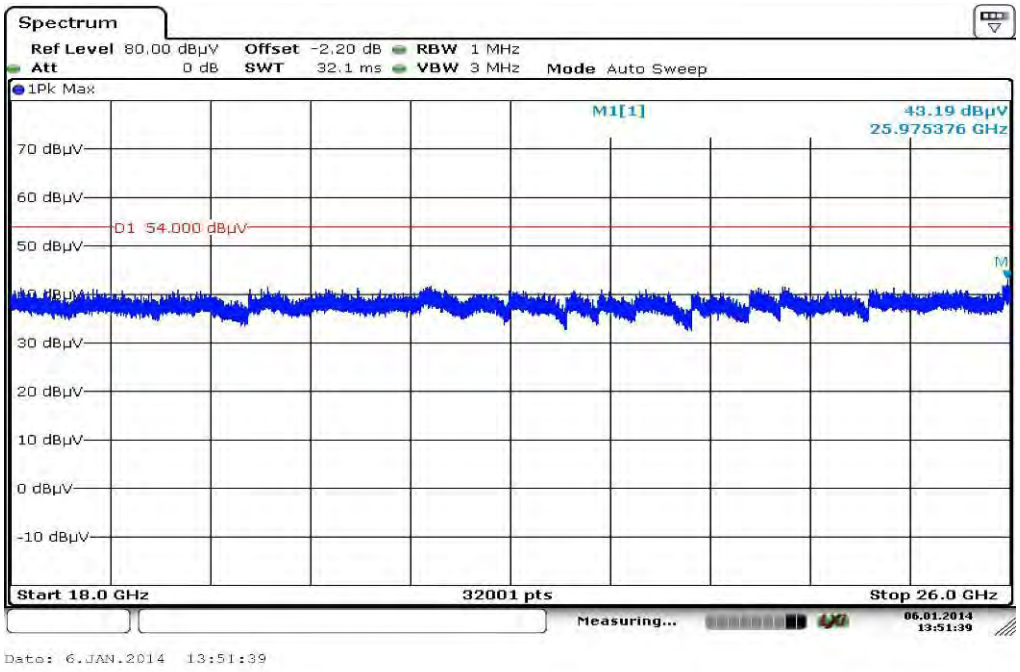
Plot 42: 1 GHz to 12.75 GHz, 5290 MHz, vertical & horizontal polarization



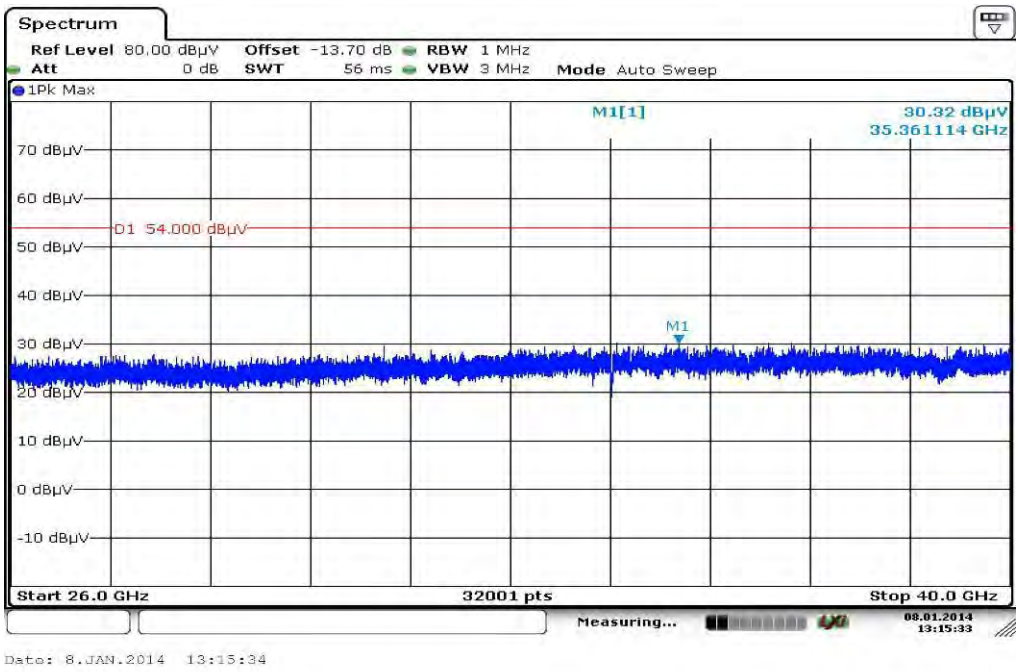
Plot 43: 12 GHz to 18 GHz, 5290 MHz, vertical & horizontal polarization



Plot 44: 18 GHz to 26 GHz, 5290 MHz, vertical & horizontal polarization



Plot 45: 26 GHz to 40 GHz, 5290 MHz, vertical & horizontal polarization



Plot 46: 30 MHz to 1 GHz, 5530 MHz, vertical & horizontal polarization

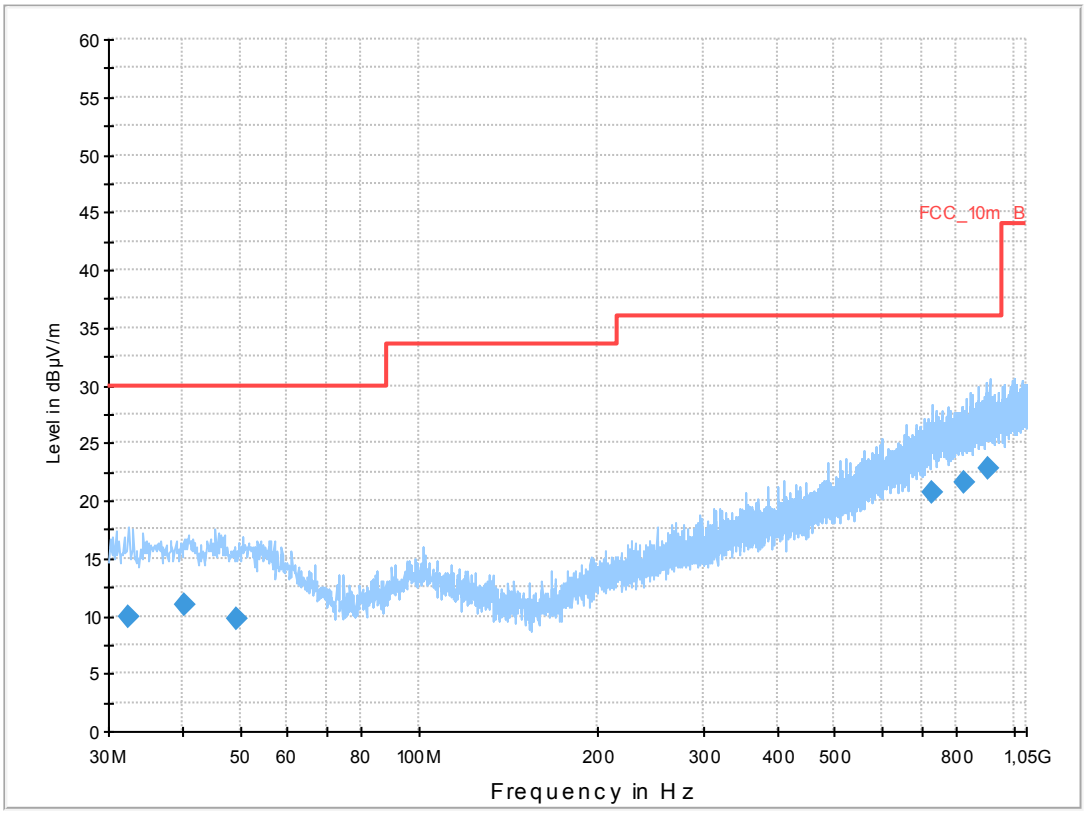
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT80) tx ch 106
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

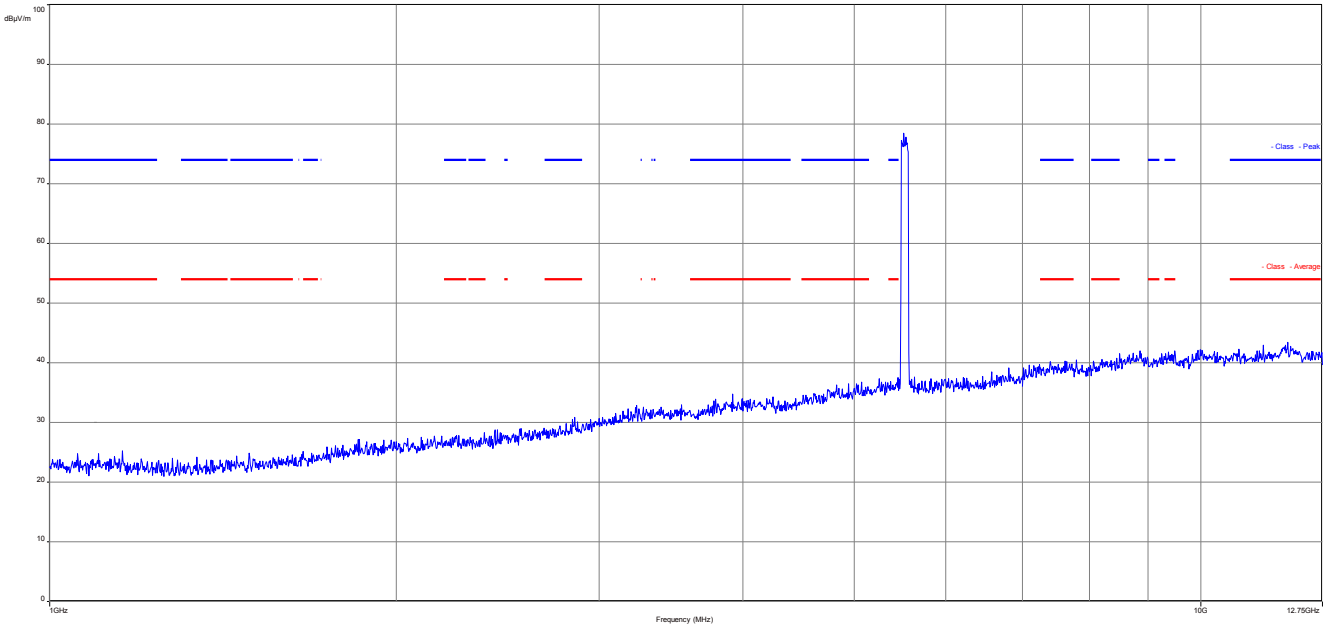
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



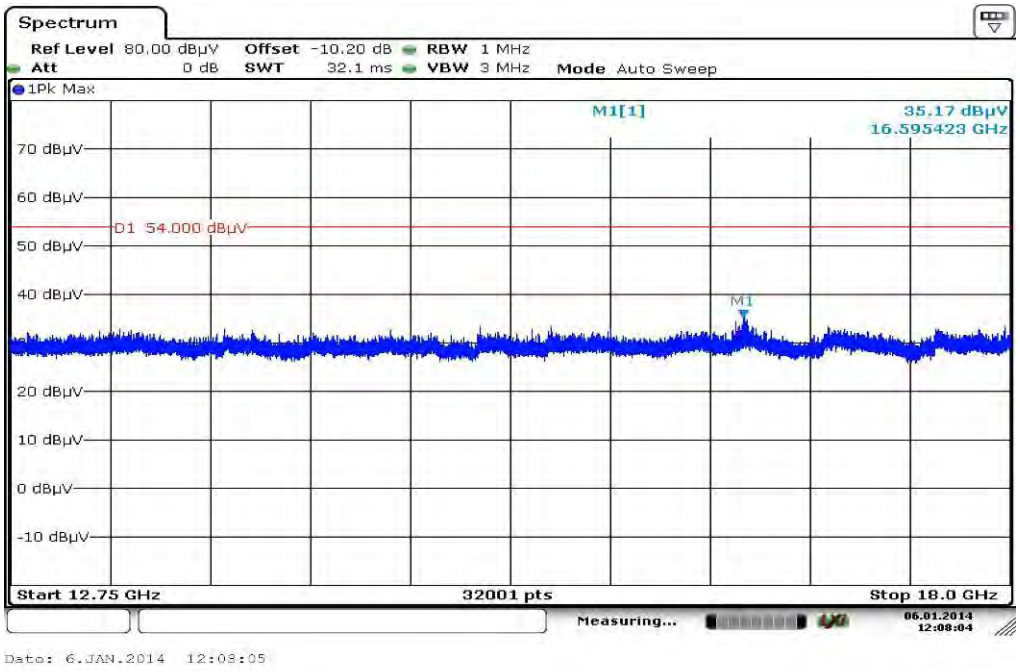
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.396550	9.9	1000.0	120.000	143.0	H	2.0	12.8	20.1	30.0	
40.421250	10.9	1000.0	120.000	170.0	H	170.0	13.4	19.1	30.0	
49.318800	9.8	1000.0	120.000	170.0	H	280.0	13.4	20.2	30.0	
727.276050	20.7	1000.0	120.000	111.0	H	92.0	23.1	15.3	36.0	
822.322350	21.6	1000.0	120.000	155.0	H	280.0	24.1	14.4	36.0	
909.114450	22.7	1000.0	120.000	161.0	V	170.0	25.2	13.3	36.0	

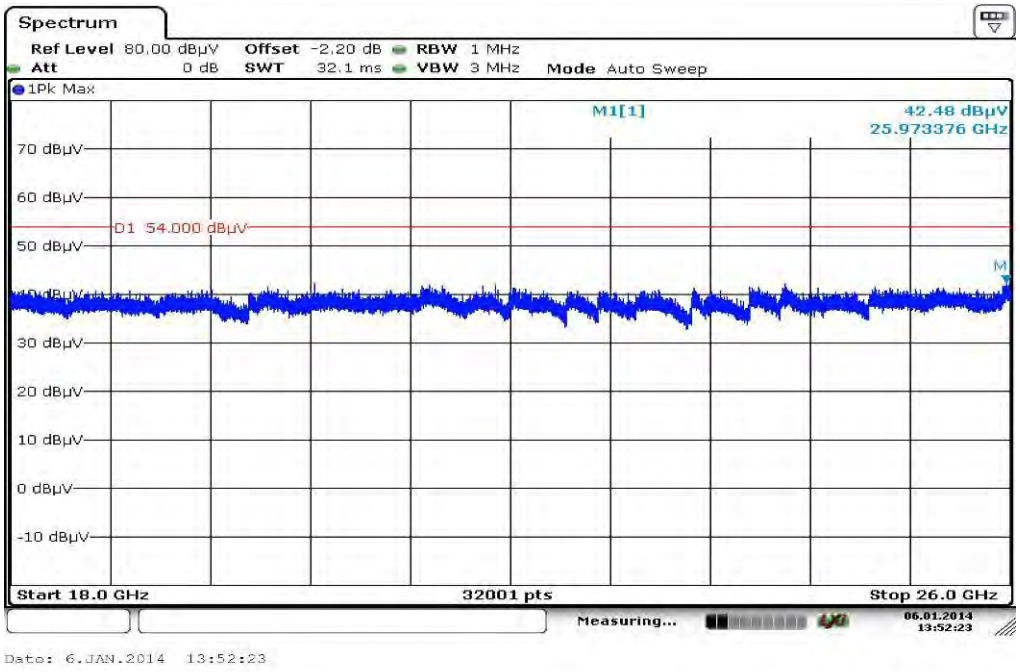
Plot 47: 1 GHz to 12.75 GHz, 5530 MHz, vertical & horizontal polarization



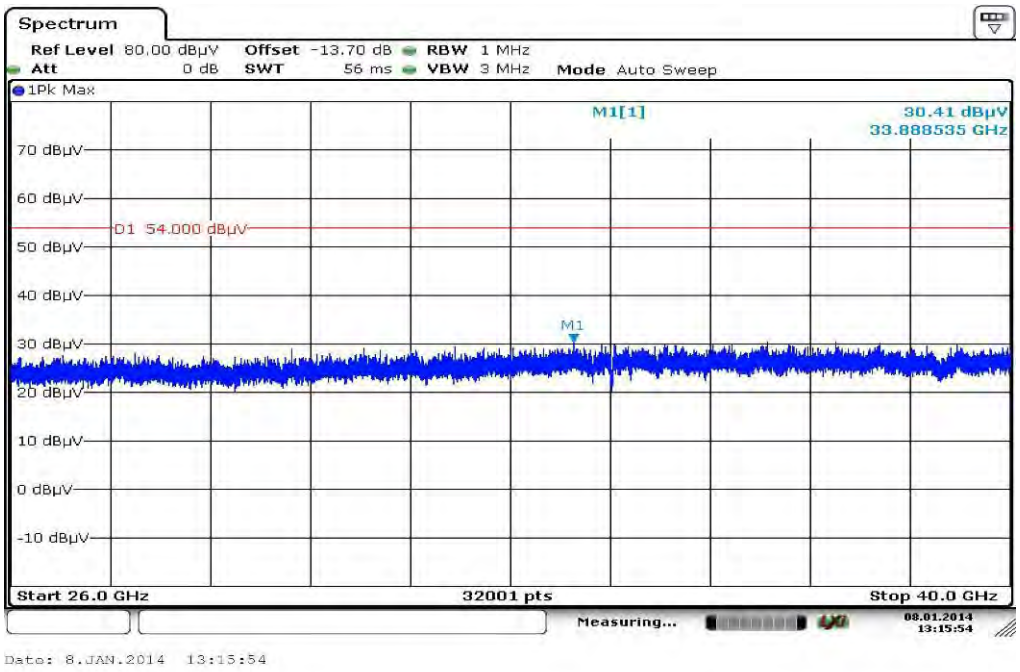
Plot 48: 12 GHz to 18 GHz, 5530 MHz, vertical & horizontal polarization



Plot 49: 18 GHz to 26 GHz, 5530 MHz, vertical & horizontal polarization



Plot 50: 26 GHz to 40 GHz, 5530 MHz, vertical & horizontal polarization



Plot 51: 30 MHz to 1 GHz, 5610 MHz, vertical & horizontal polarization

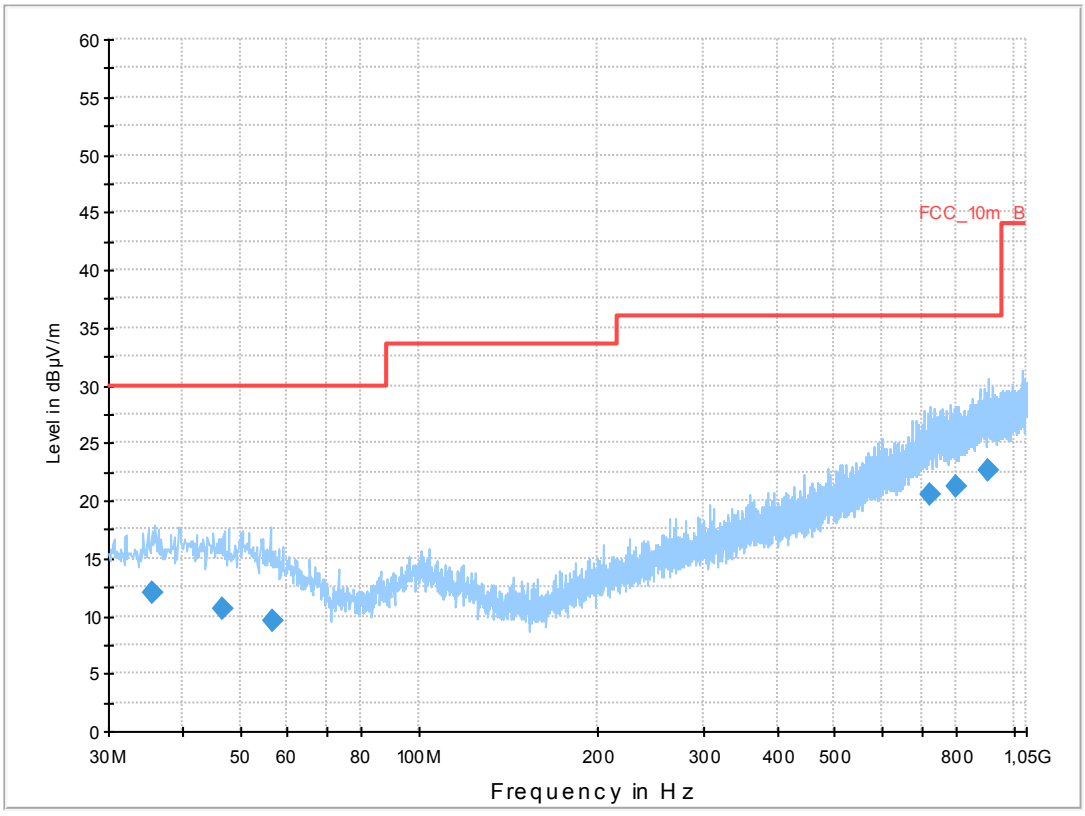
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q67
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	w-lan ac-mode (HT80) tx ch 122
Operator Name:	Hennemann
Comment:	battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

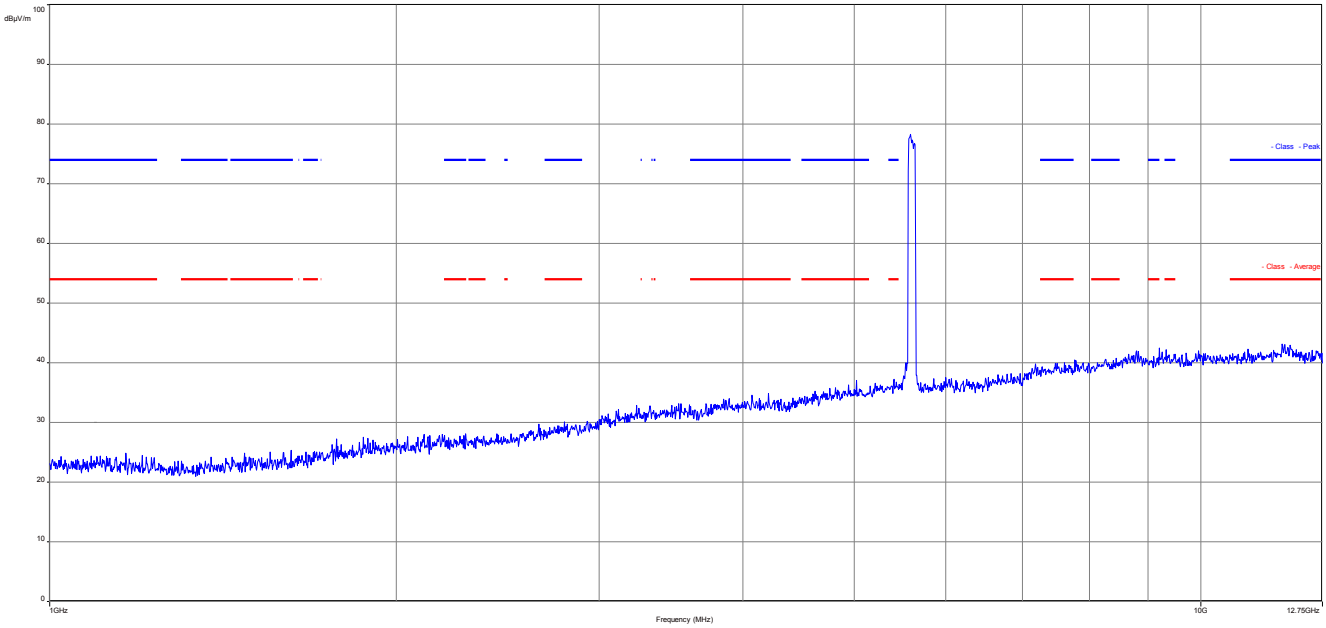
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



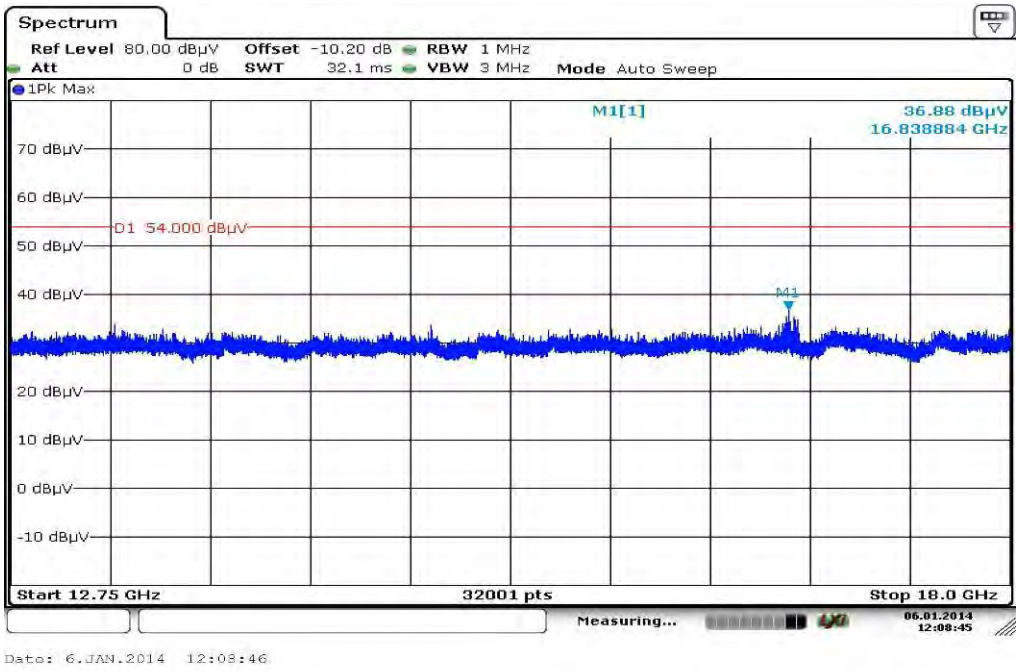
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.492100	11.9	1000.0	120.000	170.0	V	80.0	13.1	18.1	30.0	
46.683300	10.6	1000.0	120.000	98.0	V	100.0	13.3	19.4	30.0	
56.734650	9.6	1000.0	120.000	170.0	H	182.0	12.4	20.4	30.0	
724.833450	20.5	1000.0	120.000	98.0	V	10.0	23.1	15.5	36.0	
799.297800	21.2	1000.0	120.000	105.0	V	0.0	23.8	14.8	36.0	
903.595650	22.7	1000.0	120.000	154.0	H	10.0	25.2	13.3	36.0	

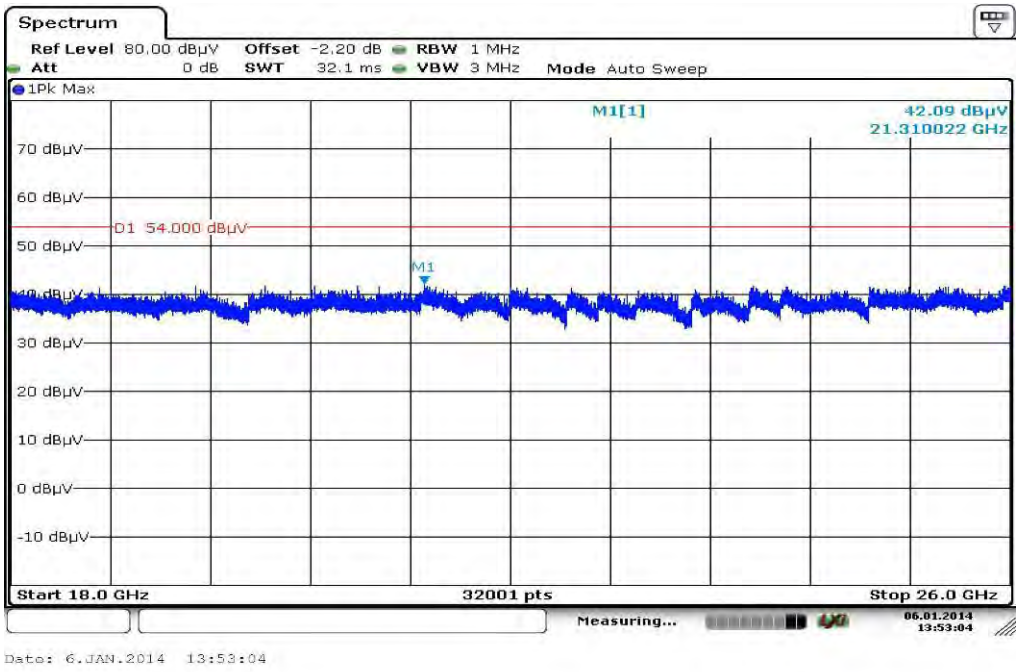
Plot 52: 1 GHz to 12.75 GHz, 5610 MHz, vertical & horizontal polarization



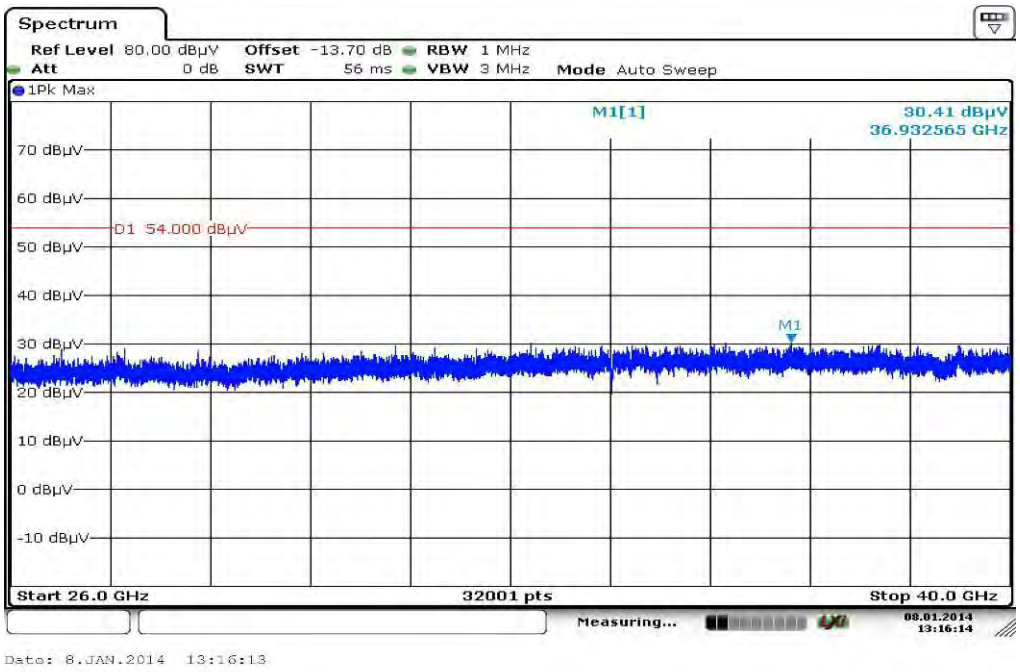
Plot 53: 12 GHz to 18 GHz, 5610 MHz, vertical & horizontal polarization



Plot 54: 18 GHz to 26 GHz, 5610 MHz, vertical & horizontal polarization



Plot 55: 26 GHz to 40 GHz, 5610 MHz, vertical & horizontal polarization



11.10 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 peaks 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

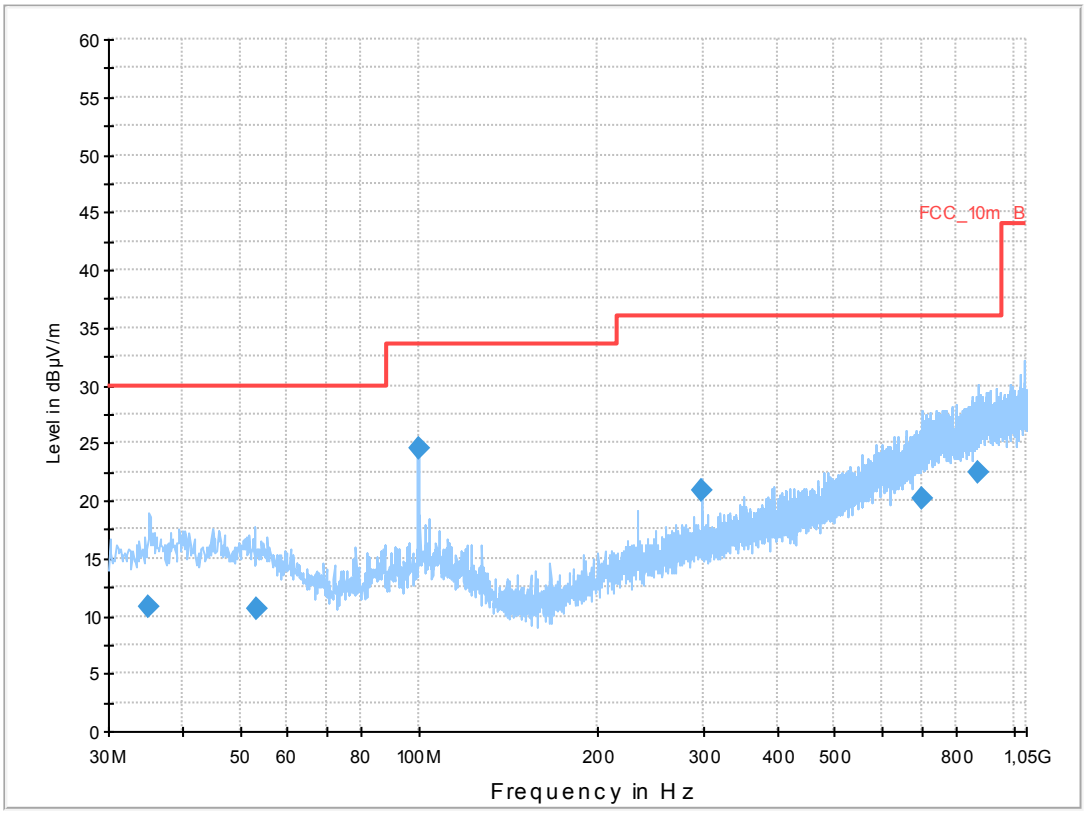
Common Information

EUT:	TM-0040-BV
Serial Number:	CB51267Q2F
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	idle + charging
Operator Name:	Hennemann
Comment:	connected to notebook

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

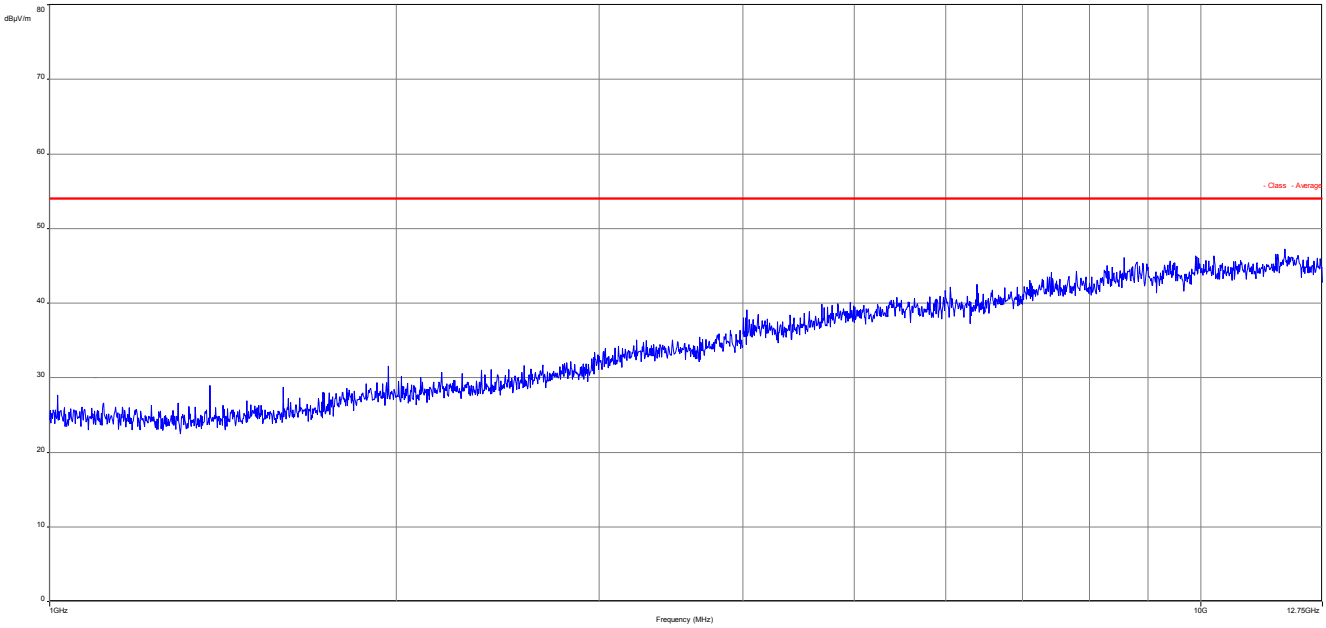
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



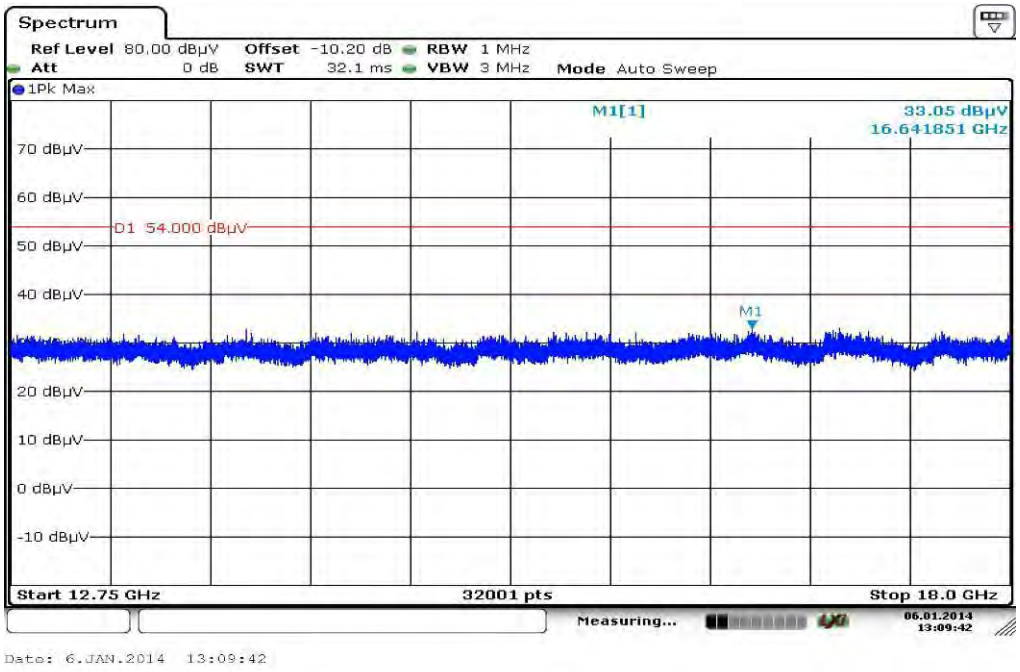
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
34.960800	10.8	1000.0	120.000	153.0	V	190.0	13.0	19.2	30.0	
53.477100	10.6	1000.0	120.000	98.0	V	170.0	13.0	19.4	30.0	
99.775200	24.6	1000.0	120.000	98.0	V	-2.0	11.9	8.9	33.5	
299.341950	20.8	1000.0	120.000	98.0	V	100.0	14.5	15.2	36.0	
703.647900	20.2	1000.0	120.000	132.0	H	80.0	22.6	15.8	36.0	
870.385200	22.4	1000.0	120.000	98.0	H	88.0	24.8	13.6	36.0	

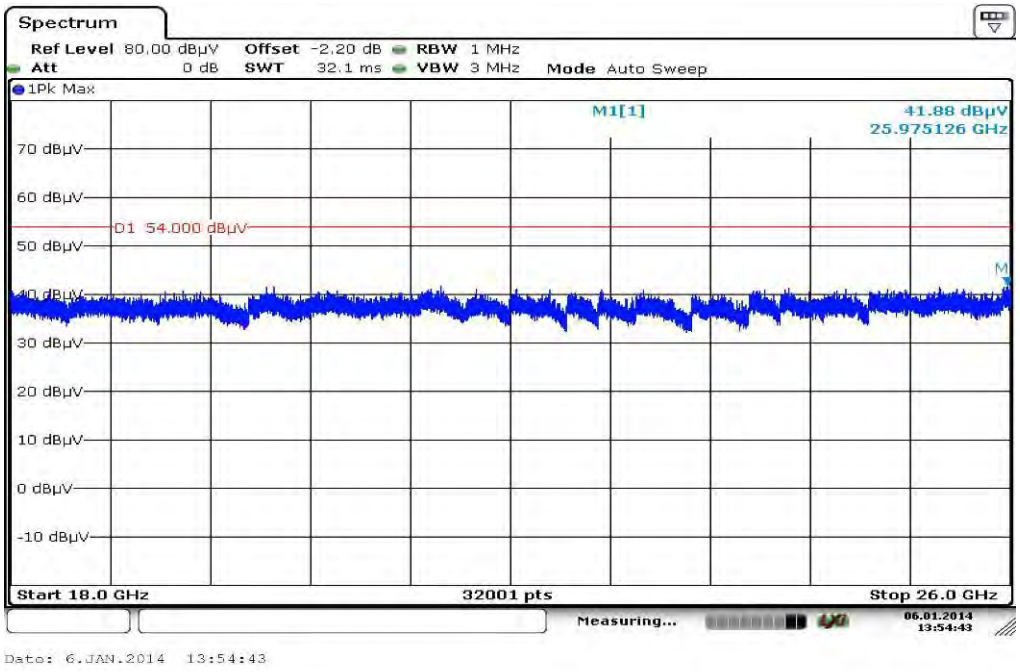
Plot 2: 1 GHz to 12.75 GHz, vertical & horizontal polarization



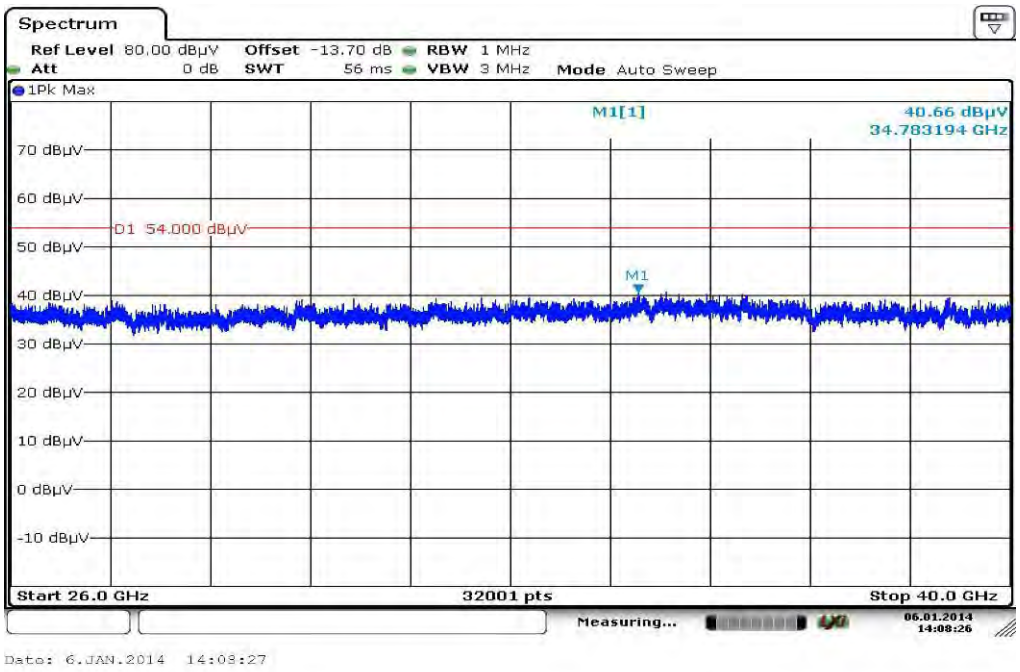
Plot 3: 12 GHz to 18 GHz, vertical & horizontal polarization



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



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



11.11 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 critical peaks are found the lowest channel and the highest channel will be measured too. Then the EUT is set to receive or idle mode. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

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

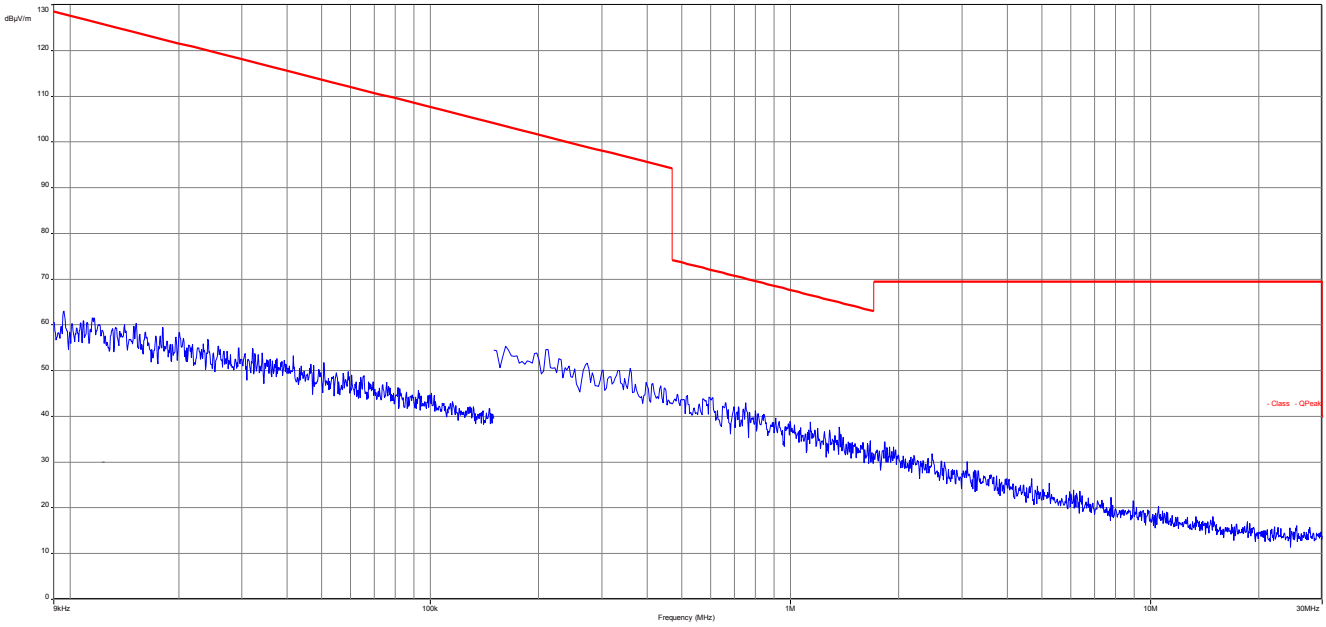
Results:

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

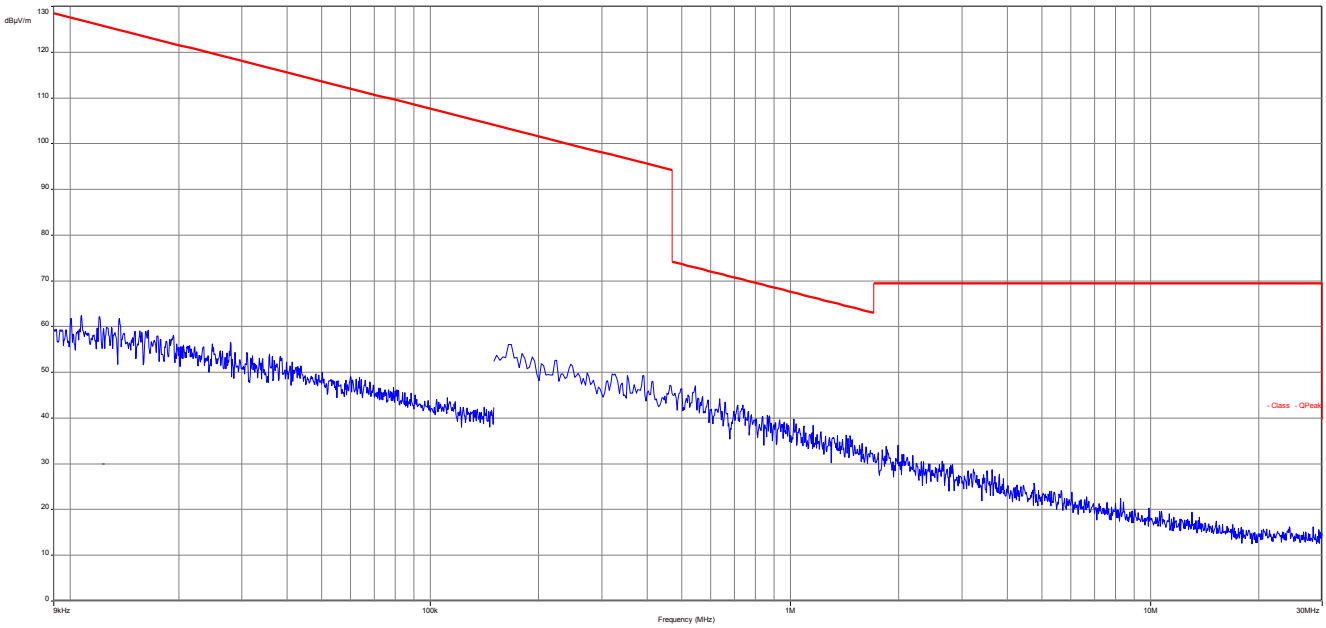
Result: Passed

Plots:

Plot 1: 9 kHz to 30 MHz, TX mode



Plot 2: 9 kHz to 30 MHz, RX mode



11.12 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 critical peaks are found the lowest channel and the highest channel will be measured too. Both power lines, phase and neutral line, are measured. Found peaks are 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

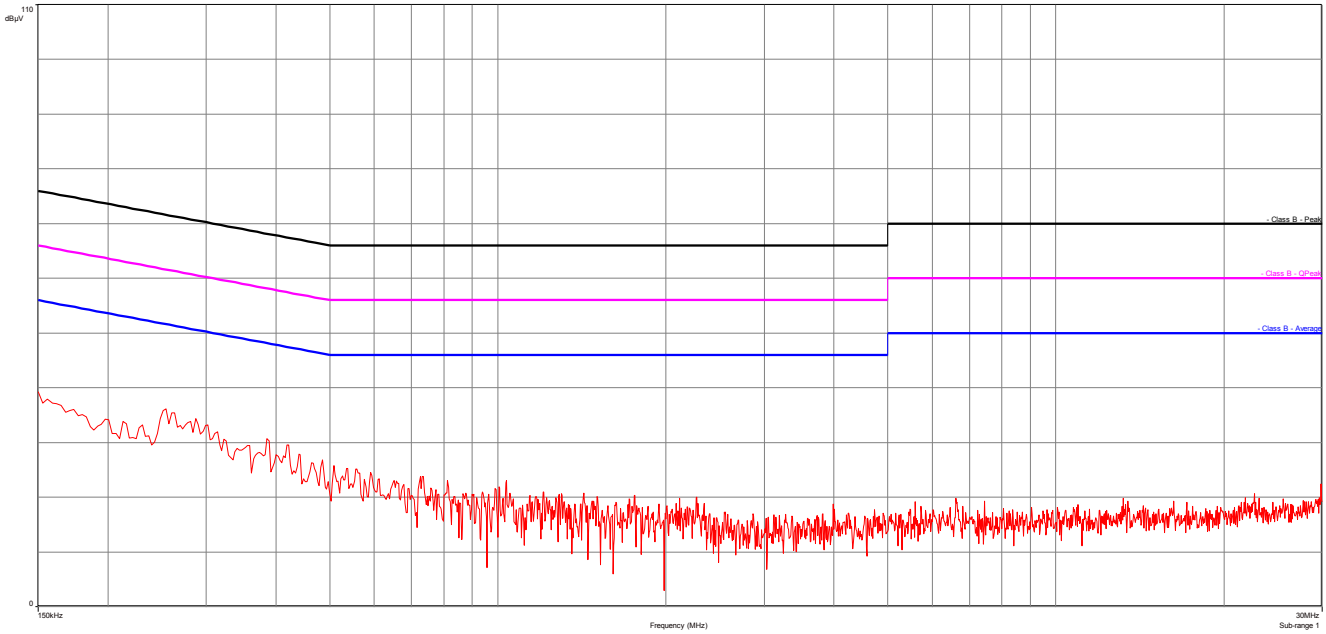
Results:

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

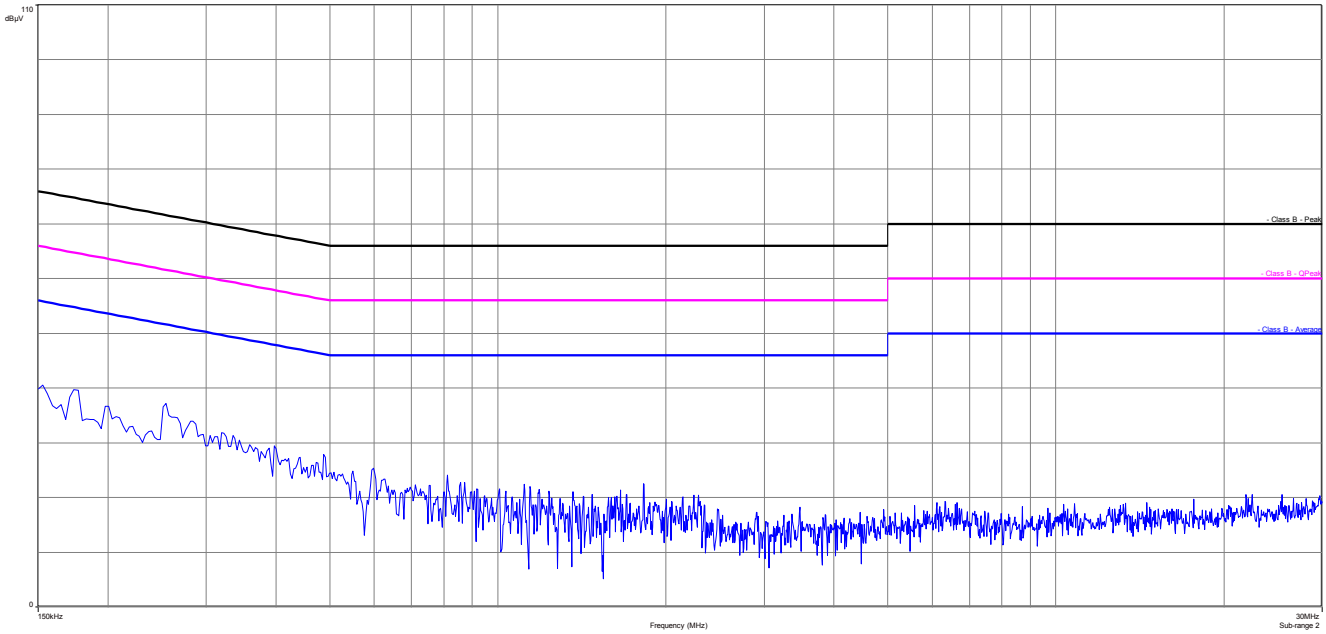
Result: Passed

Plots:

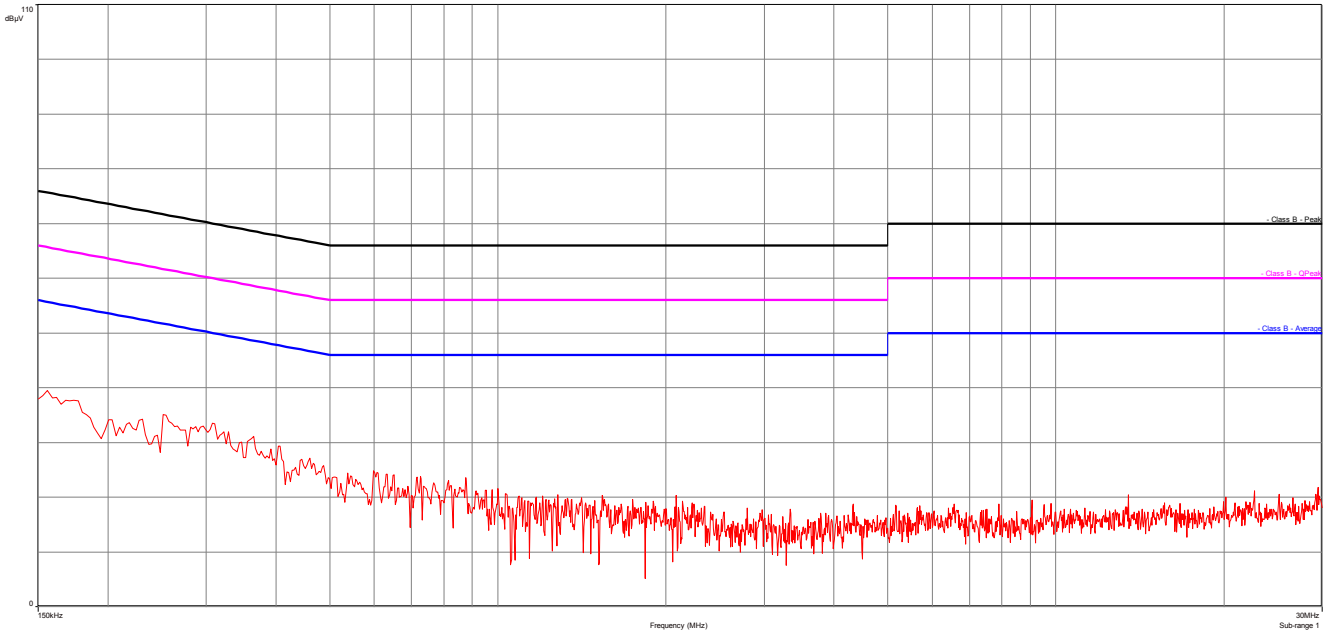
Plot 1: 150 kHz to 30 MHz / phase Line, TX mode



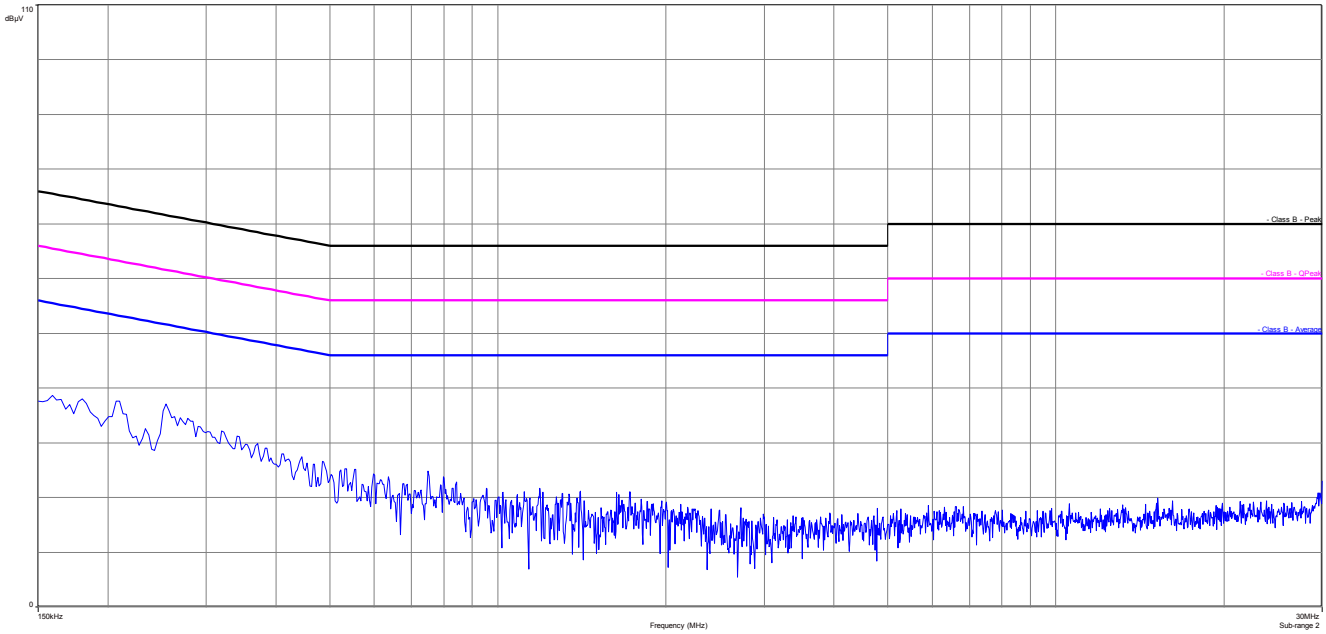
Plot 2: 150 kHz to 30 MHz / neutral Line, TX mode



Plot 3: 150 kHz to 30 MHz / phase Line, RX mode



Plot 4: 150 kHz to 30 MHz / neutral Line, RX mode



12 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 (Labor/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
3	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B597 9	300000210	ne		
4	n. a.	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	09.01.2013	09.01.2014
5	n. a.	Analyzer-Reference-System (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	Ve	14.07.2011	14.01.2014
6	n. a.	Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379	ev		
7	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
8	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
9	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
10	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	295	300003787	k	12.04.2012	12.04.2014
11	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	300003874	k	16.01.2013	16.01.2014
12	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
13	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKl!	08.05.2013	08.05.2015
14	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
15	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
16	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
17	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
18	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
19	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015
20	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
21	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	371	300003854	vlKl!	14.10.2011	14.10.2014
22	n. a.	MXE EMI Receiver 20 Hz	N9038A	Agilent Technologi	MY51210197	300004405	k	21.02.2013	21.02.2014

		bis 26,5 GHz		es					
23	11b	Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268	ev		
24	A026	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787	k	22.07.2013	22.07.2015
25	A029	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442	k	19.07.2013	19.07.2015
26	A031	Std. Gain Horn Antenna 26.5 to 40.0 GHz	637	Narda	GB42110541	300000510	k	19.07.2013	19.07.2015
27	n. a.	Spectrum Analyzer 20 Hz - 50 GHz	FSU50	R&S	200012	300003443	Ve	09.10.2012	09.10.2014
28	n. a.	Broadband Low Noise Amplifier 18-50 GHz	CBL18503 070-XX	CERNEX	19338	300004273	ne		
29	n. a.	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	22.10.2012	22.01.2014
30	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/84193	300003889	Ve	26.09.2013	26.09.2015
31	n. a.	Power Supply 0-20V, 0-5A	6632B	Agilent Technologies	GB42110541	400000562	vlKl!	10.01.2013	10.01.2016

Agenda: Kind of Calibration

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

13 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	2014-02-07

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 18.01.2013 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 80 Seiten.

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

Frankfurt am Main, 18.01.2013

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

Back side of certificate

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60594 Frankfurt am Main

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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), 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