7.5 PEAK POWER SPECTRAL DENSITY

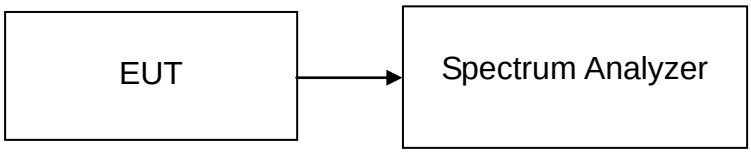
LIMIT

According to §15.407(a)

(1) For the band 5.15-5.25,5.25-5.35, 5.47-5.725 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = Sweep= AUTO
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Duty Cycle = 89.47% Duty Factor = 0.48

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5180	5.39	7.27	9.44	10.71	PASS
Mid	5220	4.32	6.36	8.47	10.71	PASS
High	5240	6.95	7.86	10.44	10.71	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

Duty Cycle = 88.89% Duty Factor = 0.51

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5180	5.75	7.09	9.48	10.71	PASS
Mid	5220	4.33	6.14	8.34	10.71	PASS
High	5240	5.12	5.93	8.56	10.71	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Duty Cycle = 80.00% Duty Factor = 0.97

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5190	0.98	0.29	2.71	10.71	PASS
High	5230	3.16	3.73	6.46	10.71	PASS

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5210MHz

Duty Cycle = 67.57% Duty Factor = 1.70

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Mid	5210	-6.18	-5.01	-2.54	10.71	PASS

Remark:

*1. Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

2. The maximum antenna gain is 6.29dBi; therefore the reduction due to antenna gain is 0.29dBi, so the limit is 10.71dBm.

Test mode: IEEE 802.11a mode/ 5260 ~ 5320MHz

Duty Cycle = 89.47% Duty Factor = 0.48

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5260	7.07	7.97	10.53	10.71	PASS
Mid	5280	6.01	4.40	8.29	10.71	PASS
High	5320	4.33	5.80	8.14	10.71	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

Duty Cycle = 88.89% Duty Factor = 0.51

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5260	4.68	5.83	8.30	10.71	PASS
Mid	5280	4.33	5.51	7.97	10.71	PASS
High	5320	4.38	5.82	8.17	10.71	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Duty Cycle = 80.00% Duty Factor = 0.97

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5270	2.46	3.55	6.05	10.71	PASS
High	5310	0.38	1.74	4.12	10.71	PASS

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5290MHz

Duty Cycle = 67.57% Duty Factor = 1.70

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Mid	5290	-3.94	-2.73	-0.28	10.71	PASS

Remark:

*1. Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

2. The maximum antenna gain is 6.29dBi; therefore the reduction due to antenna gain is 0.29dBi, so the limit is 10.71dBm.

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Duty Cycle = 89.47% Duty Factor = 0.48

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	4.52	6.66	8.73	10.71	PASS
Mid	5580	6.92	8.09	10.56	10.71	PASS
High	5700	4.67	6.21	8.52	10.71	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

Duty Cycle = 88.89% Duty Factor = 0.51

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5500	5.66	7.58	9.74	10.71	PASS
Mid	5580	6.18	7.40	9.84	10.71	PASS
High	5700	3.76	6.12	8.11	10.71	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Duty Cycle = 80.00% Duty Factor = 0.97

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5510	0.30	1.08	3.60	10.71	PASS
Mid	5550	5.42	6.23	8.85	10.71	PASS
High	5670	3.97	4.75	7.39	10.71	PASS

Test mode: IEEE 802.11ac VHT 80 MHz mode / 5530 MHz

Duty Cycle = 67.57% Duty Factor = 1.70

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Mid	5530	-4.19	-2.87	-0.47	10.71	PASS

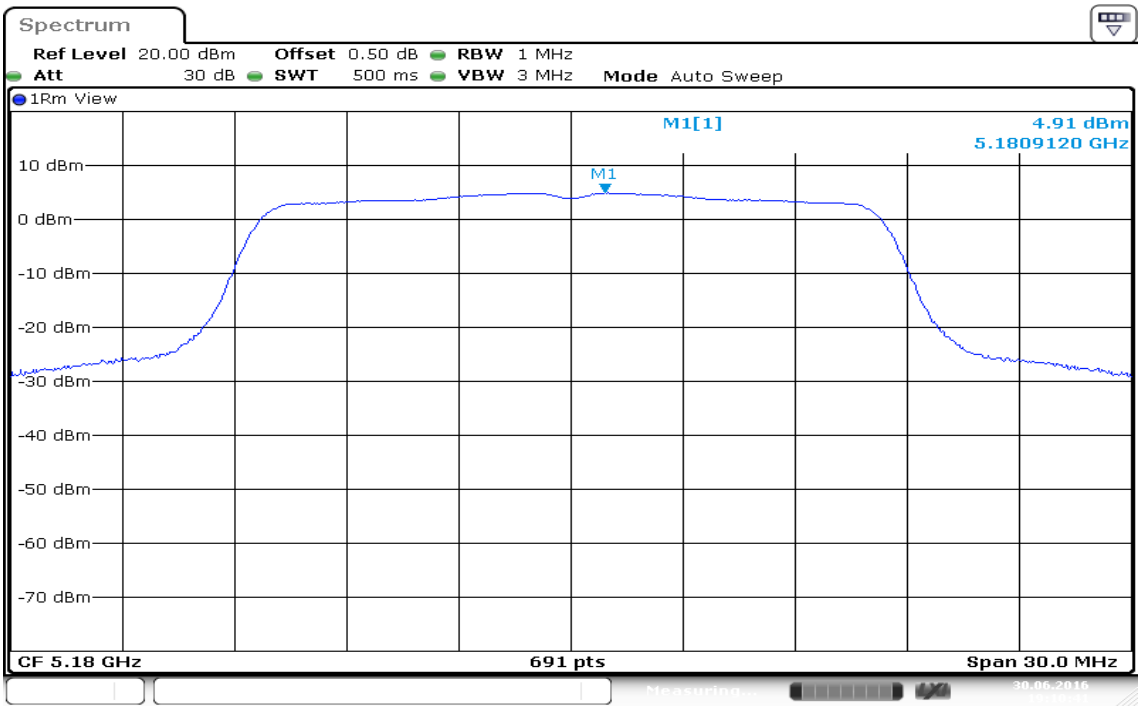
Remark:

*1. Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)*

2. The maximum antenna gain is 6.29dBi; therefore the reduction due to antenna gain is 0.29dBi, so the limit is 10.71dBm.

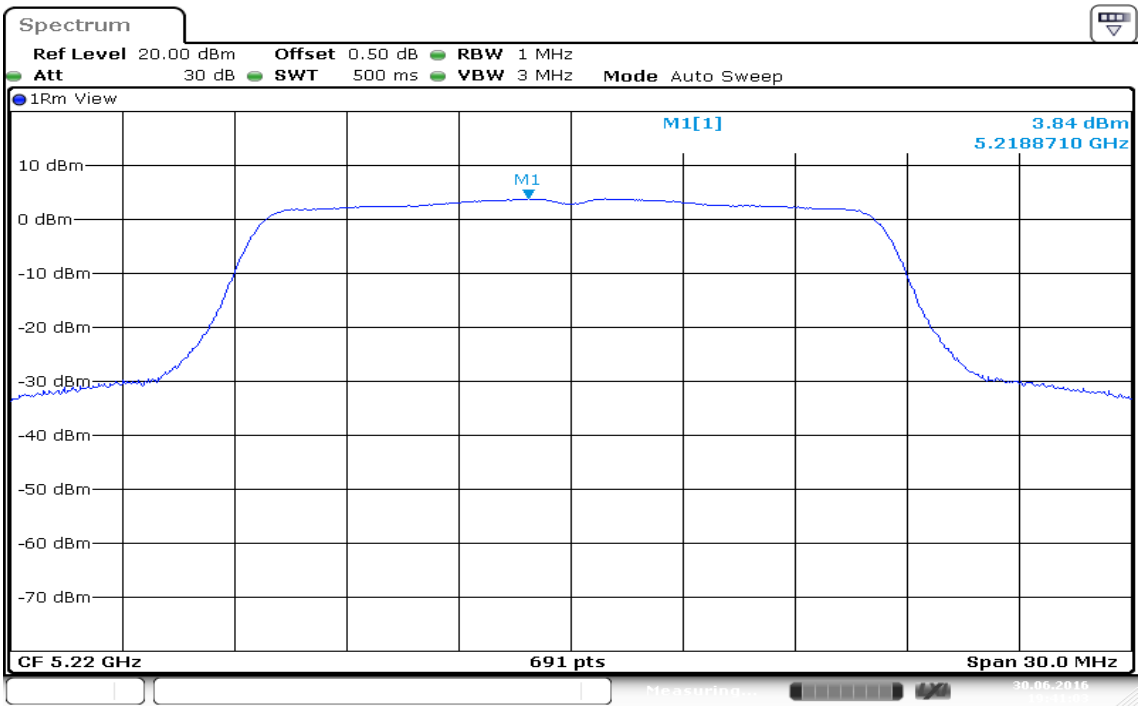
Test Plot
IEEE 802.11a mode / 5180 ~ 5240MHz / Chain 0

CH Low



Date: 30.JUN.2016 19:10:41

CH Mid



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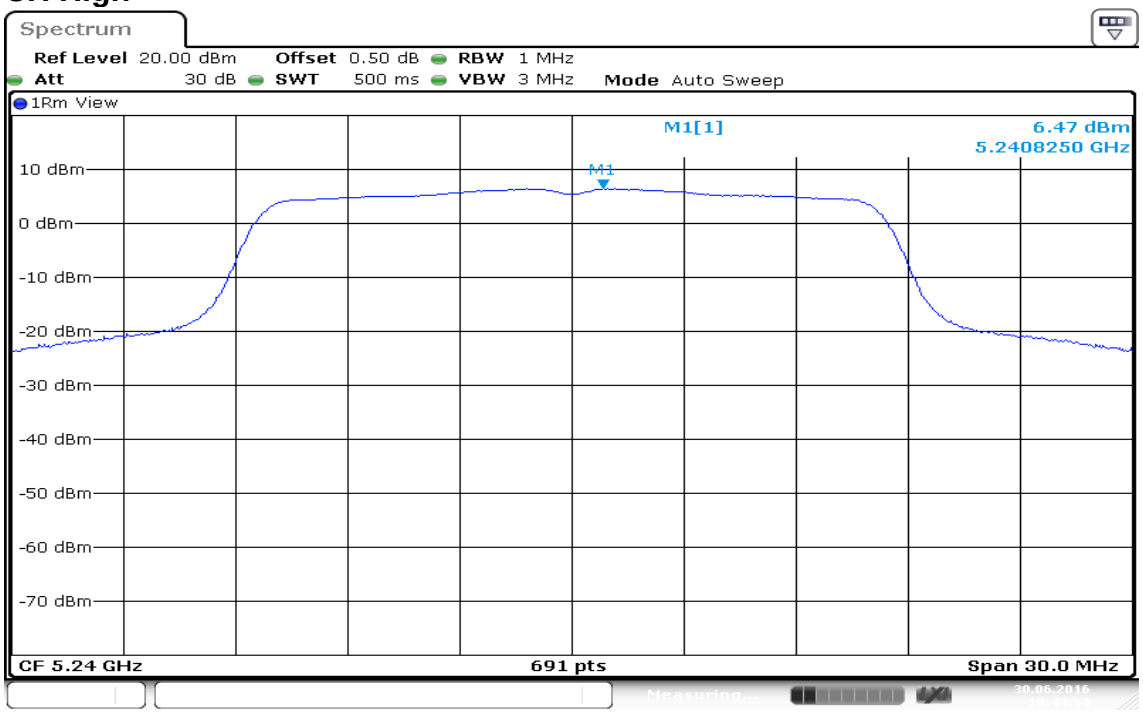
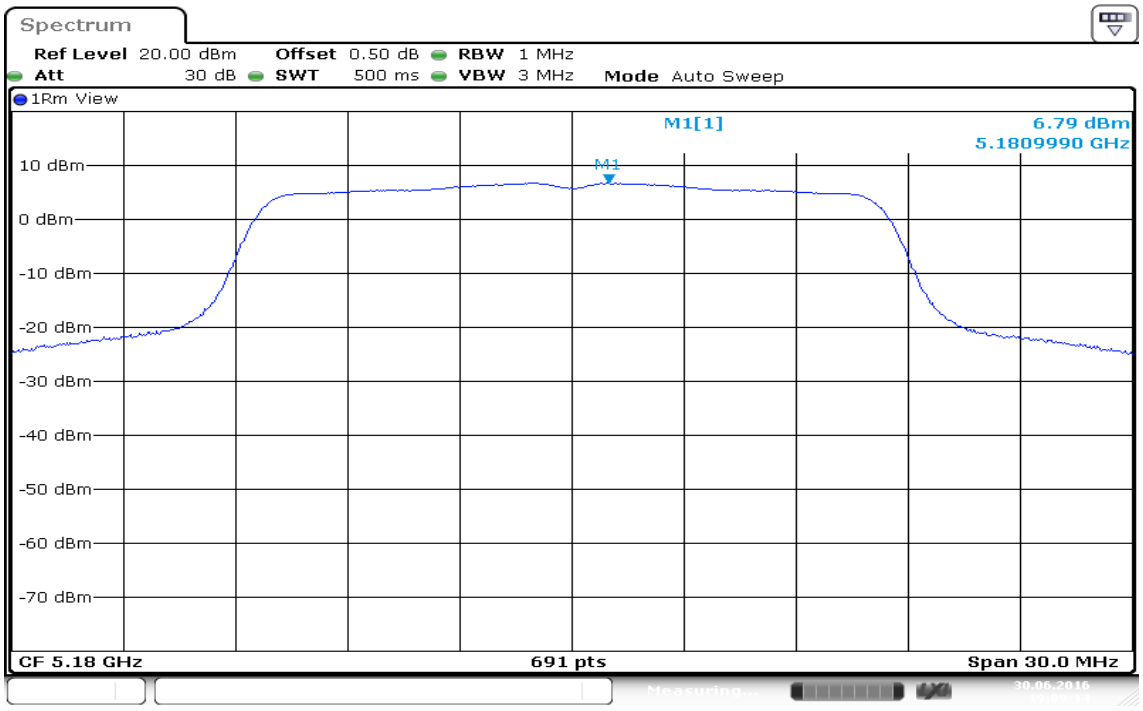
CH High



Date: 30.JUN.2016 19:44:54

IEEE 802.11a mode / 5180 ~ 5240MHz / Chain 1

CH Low



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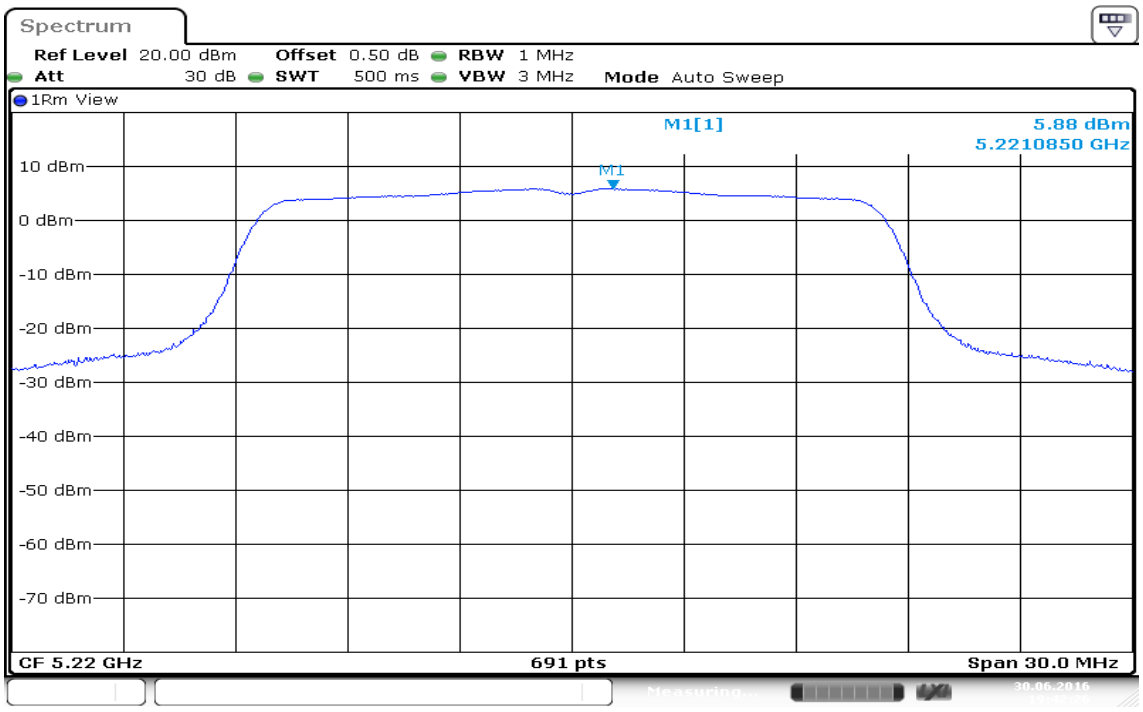

Date: 30.JUN.2016 19:42:26

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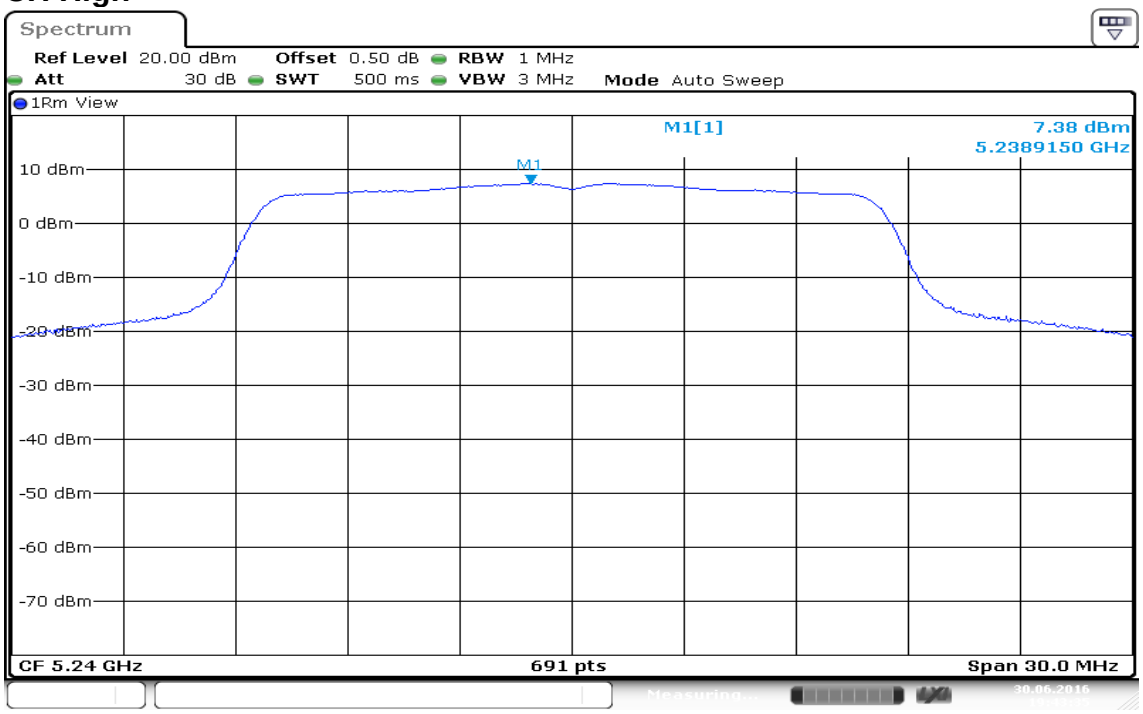
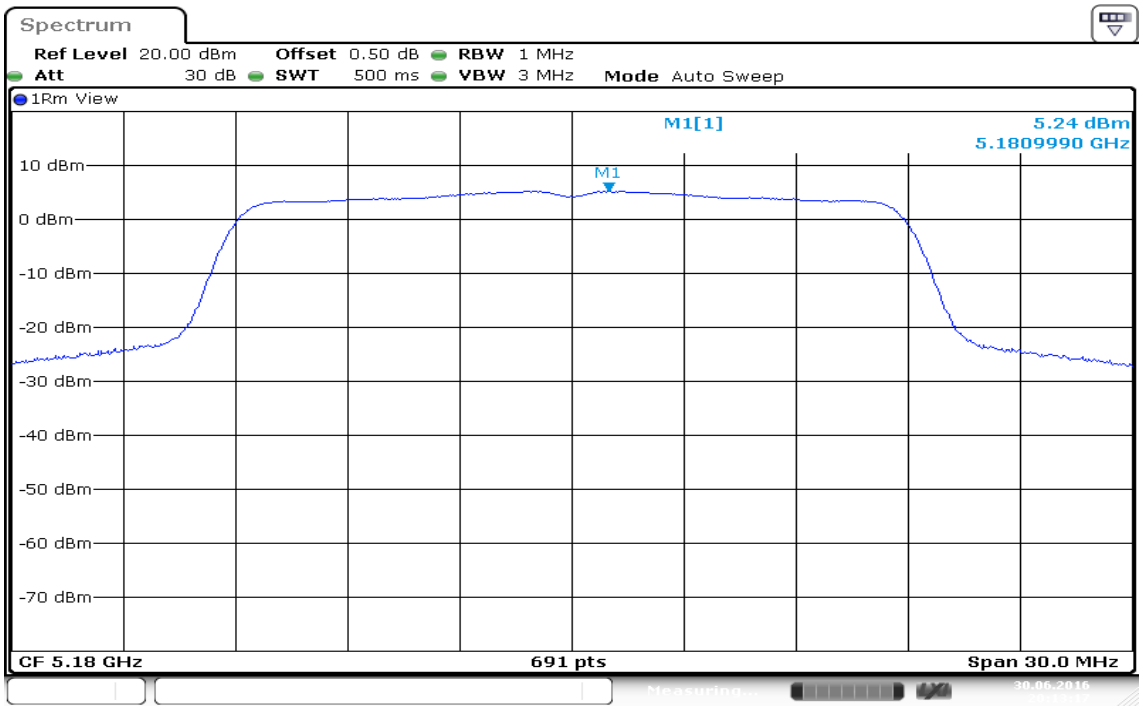


Date: 30.JUN.2016 19:43:36

IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 0

CH Low



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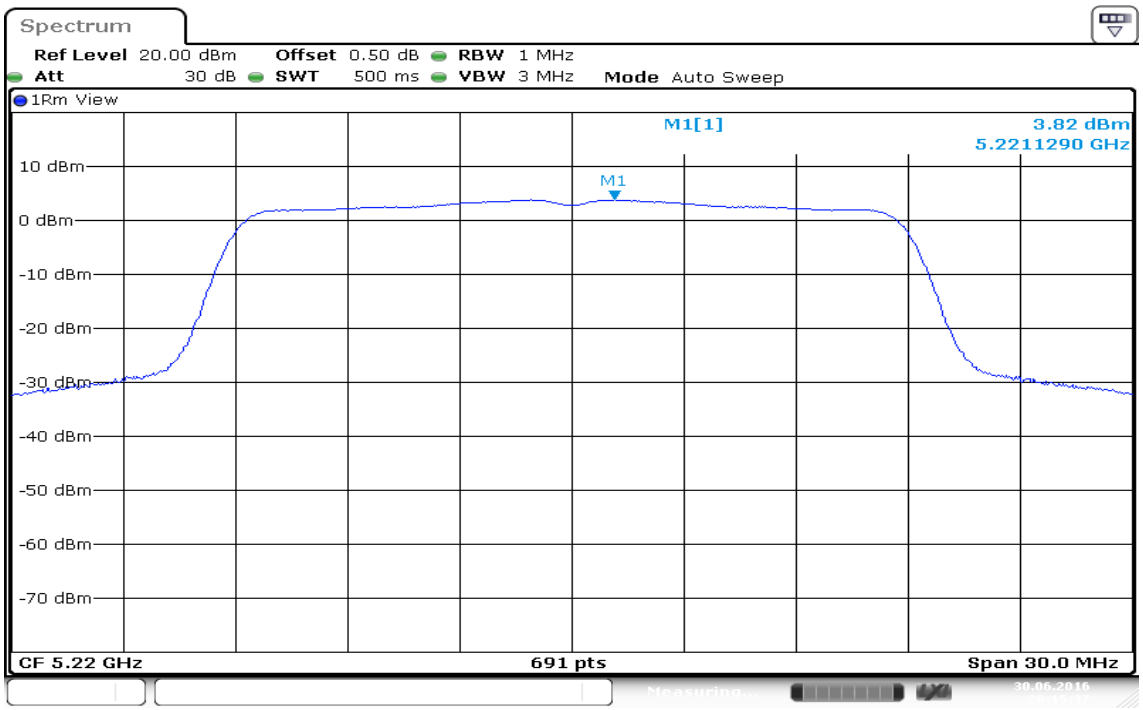
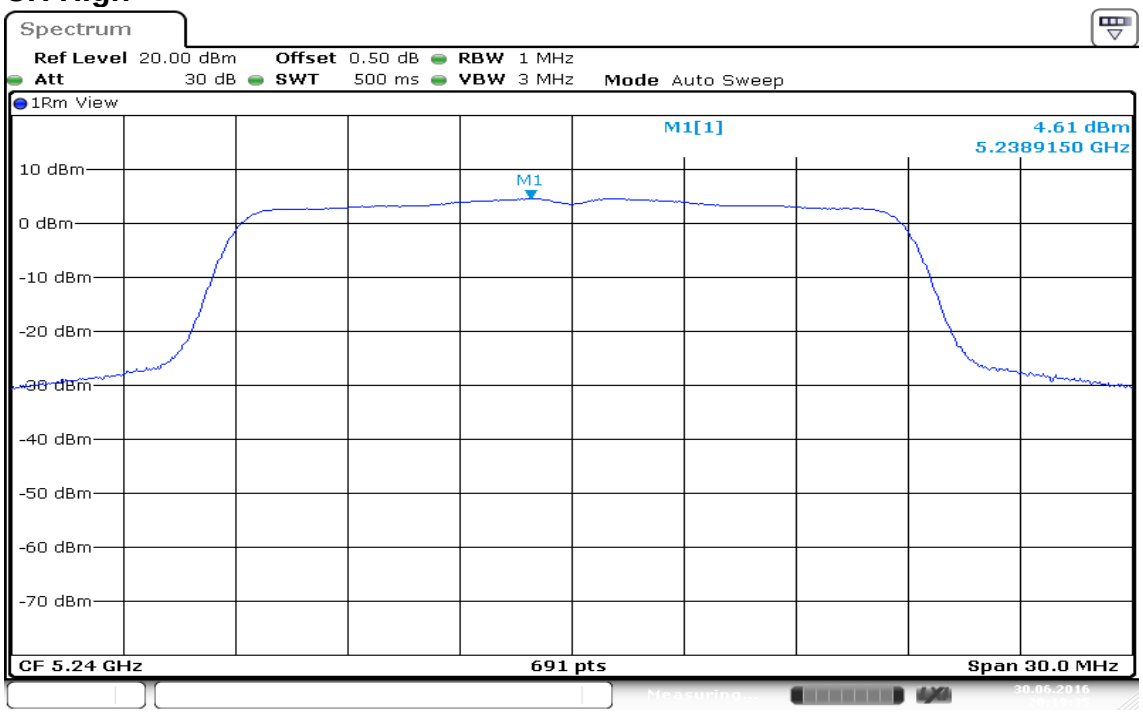
CH Mid



Date: 30.JUN.2016 20:15:37

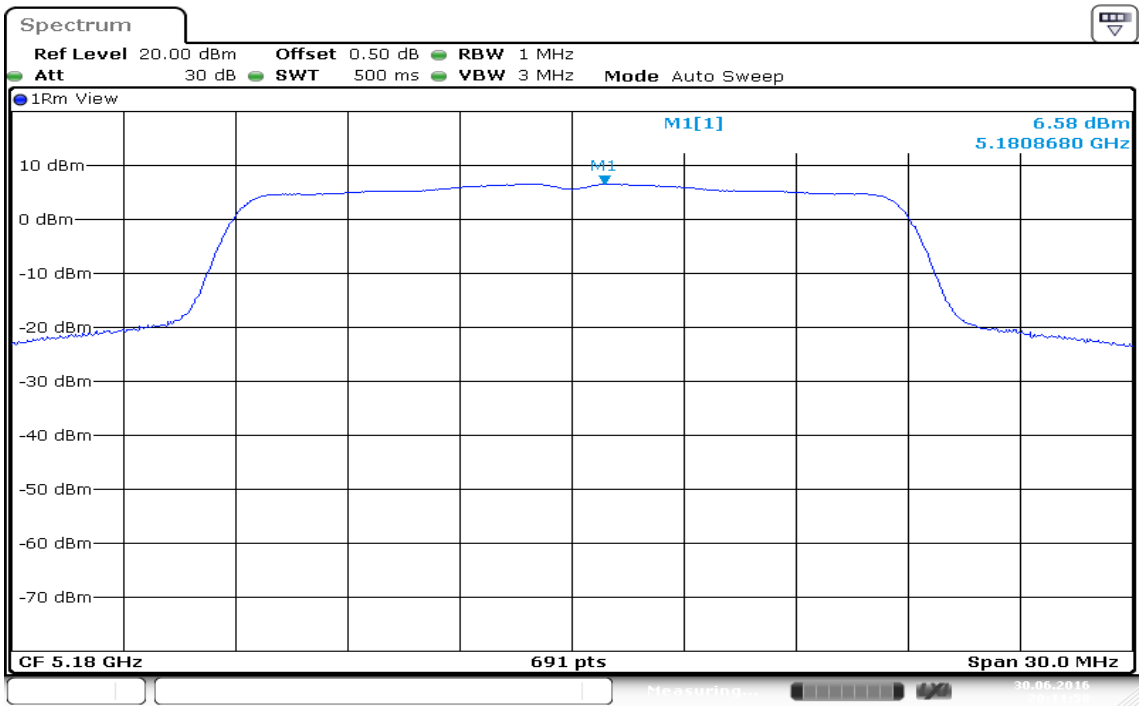
CH High



Date: 30.JUN.2016 20:19:36

IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz / Chain 1

CH Low



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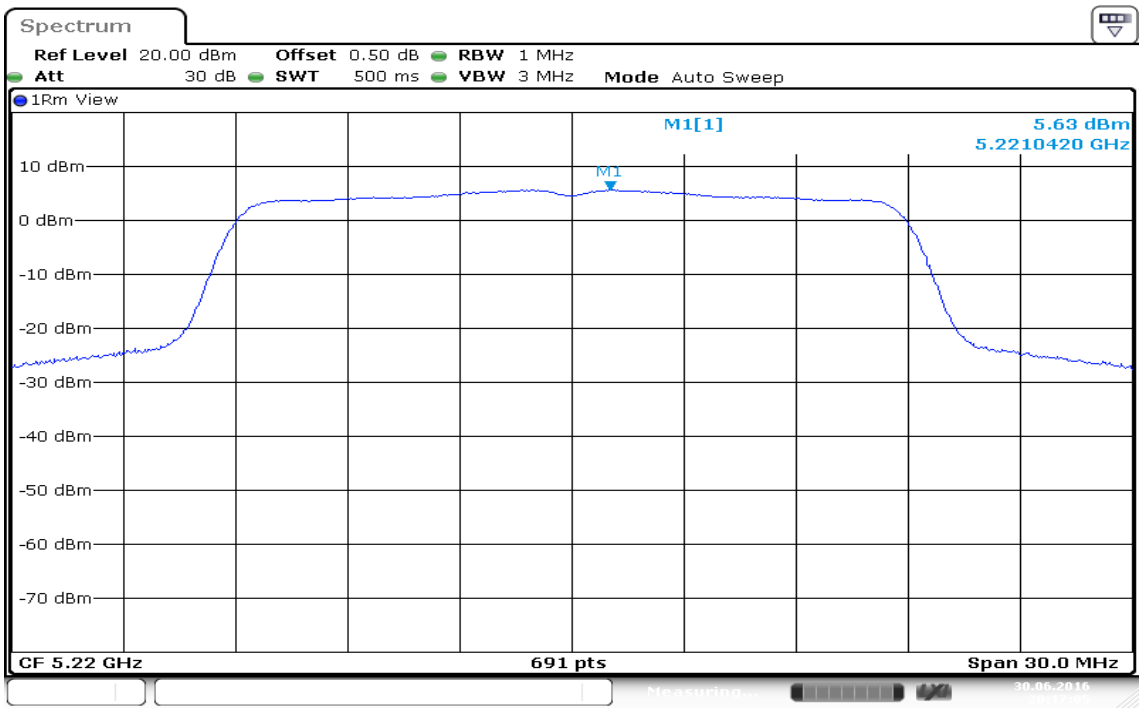
CH Mid



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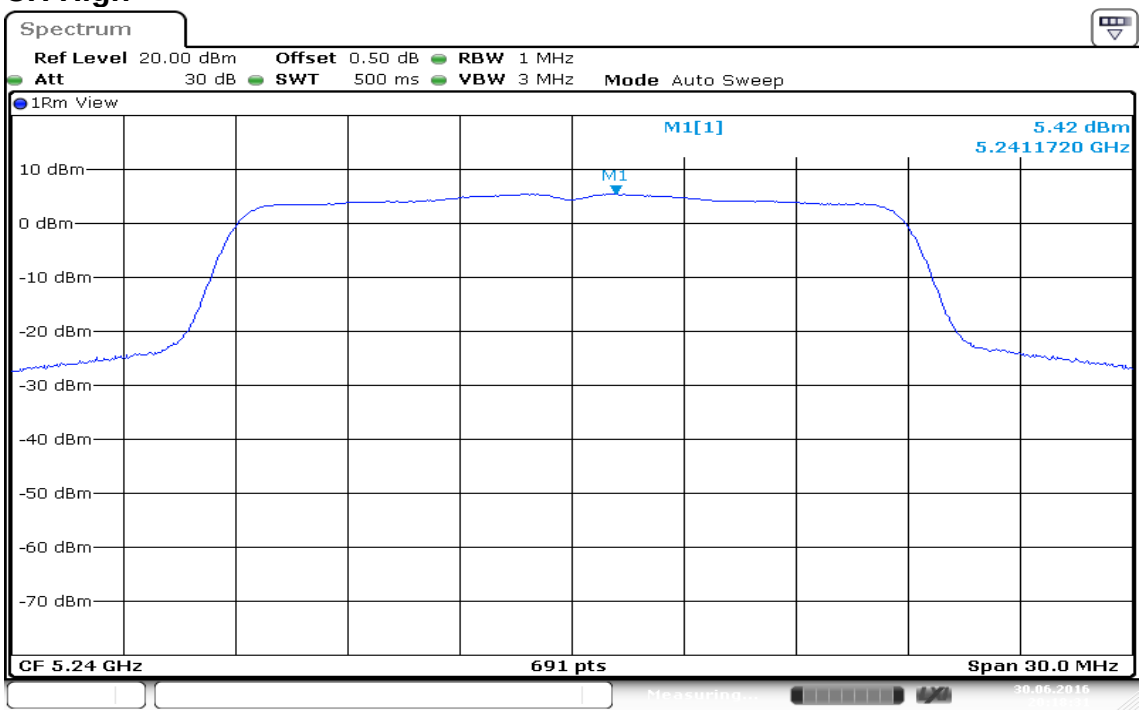
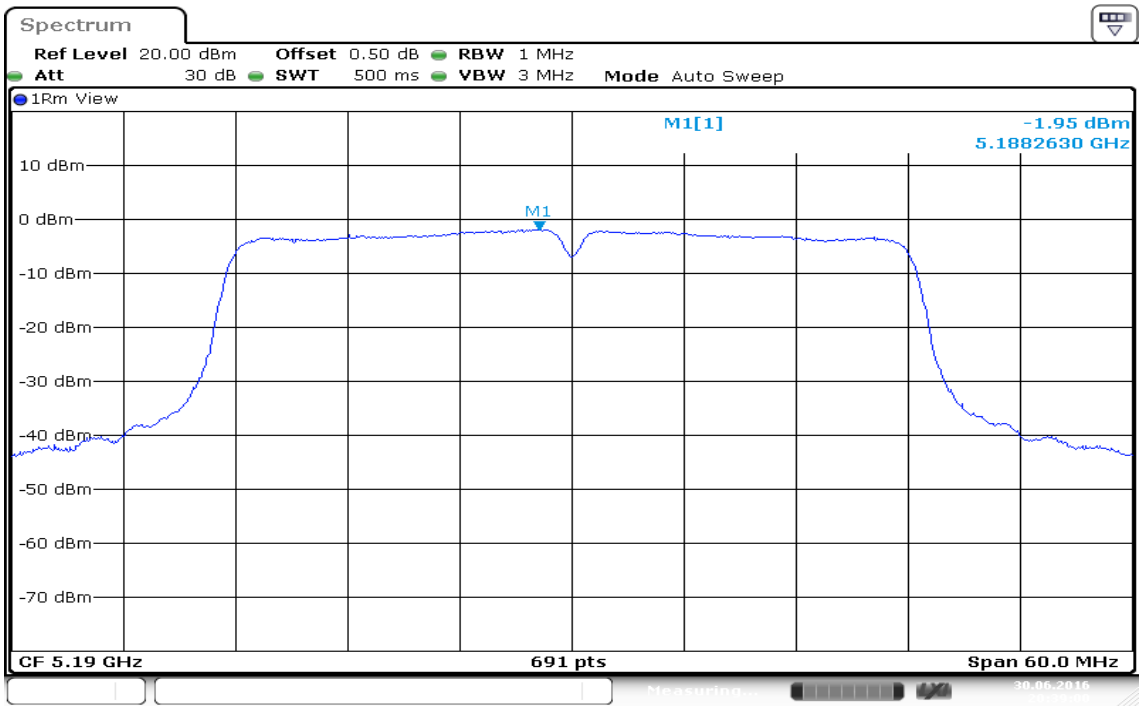


Date: 30.JUN.2016 20:18:32

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low



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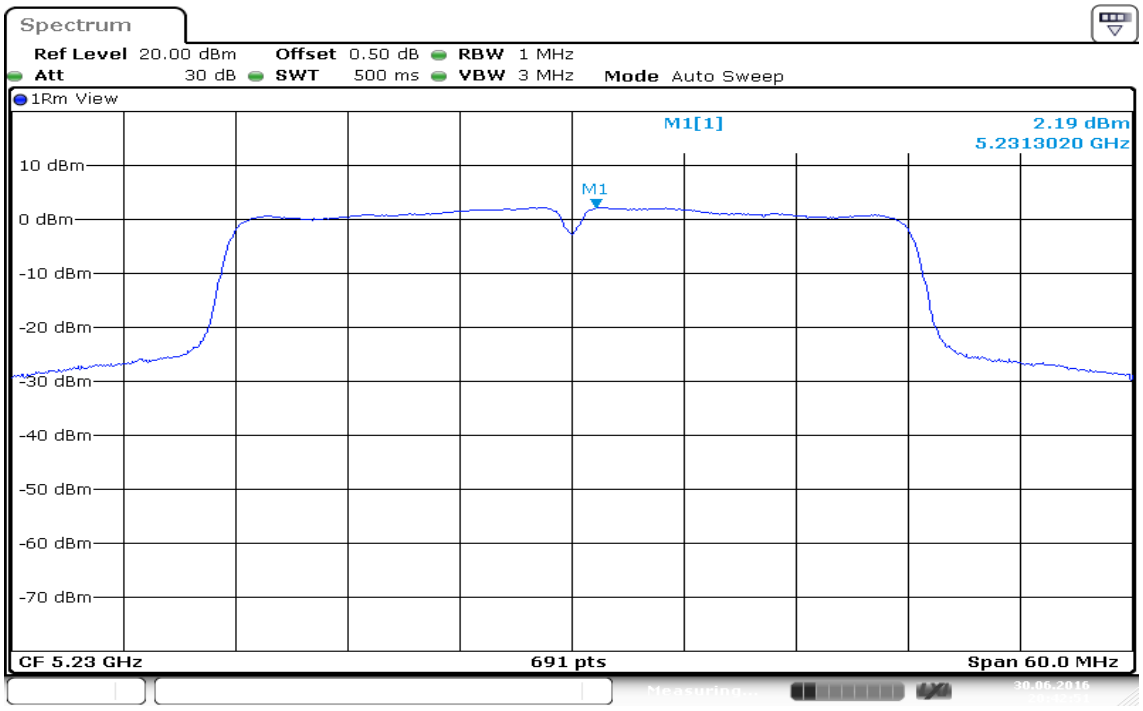
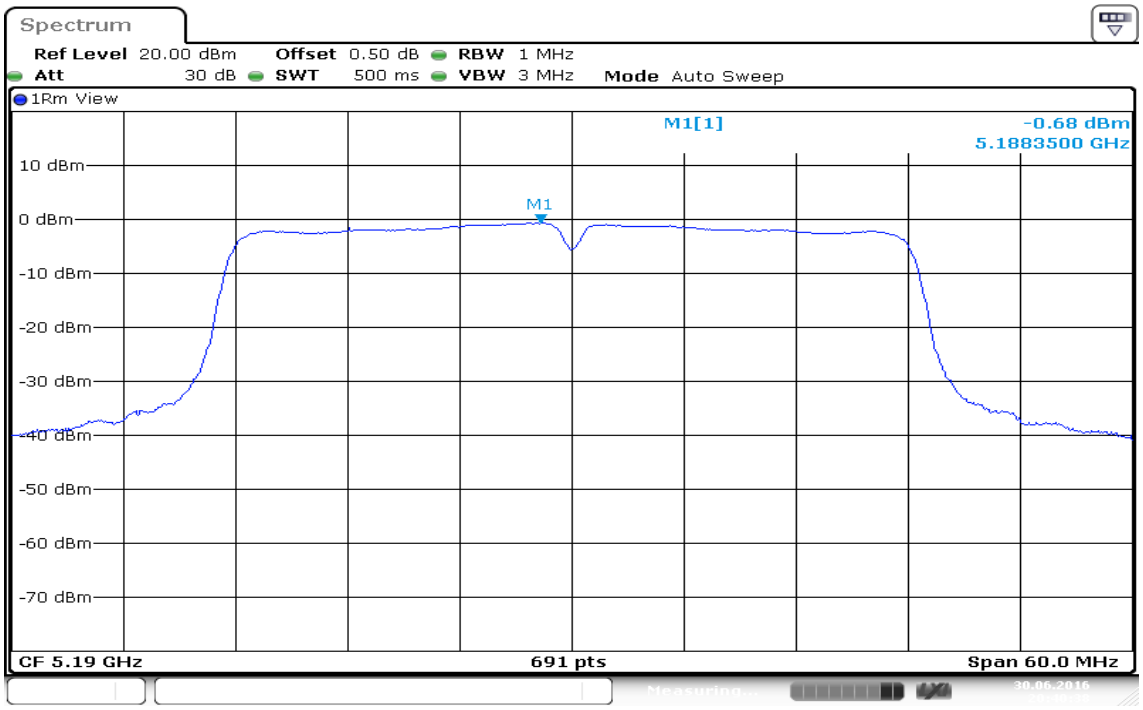


Date: 30.JUN.2016 20:42:50

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low



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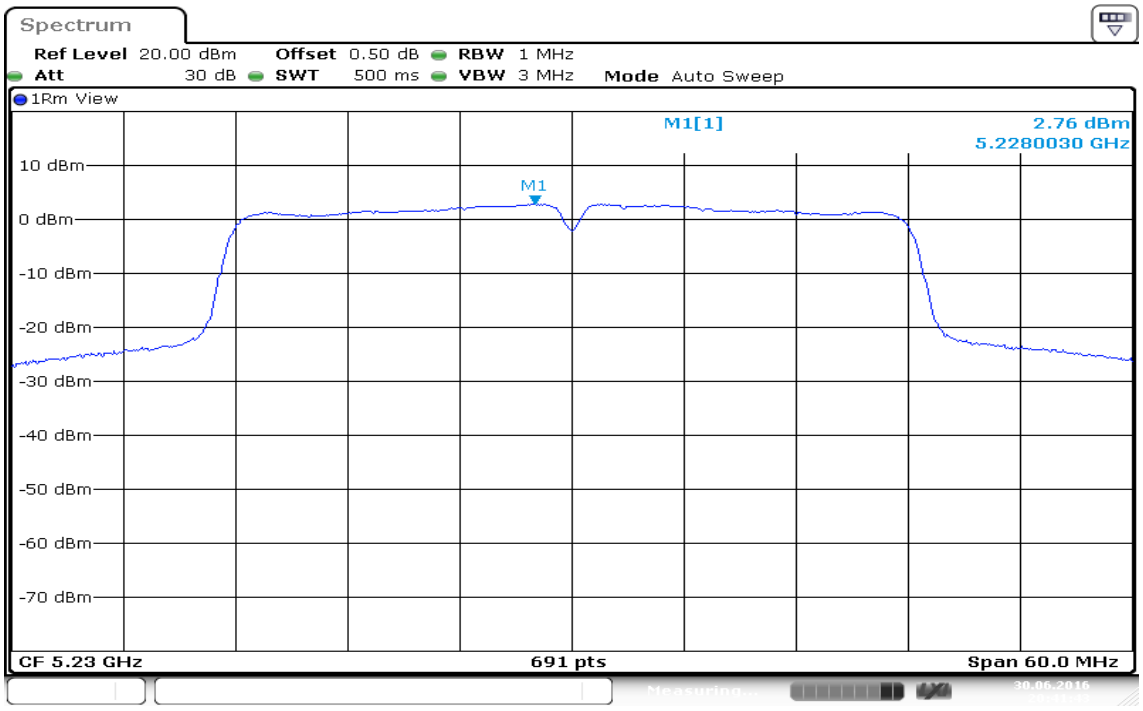
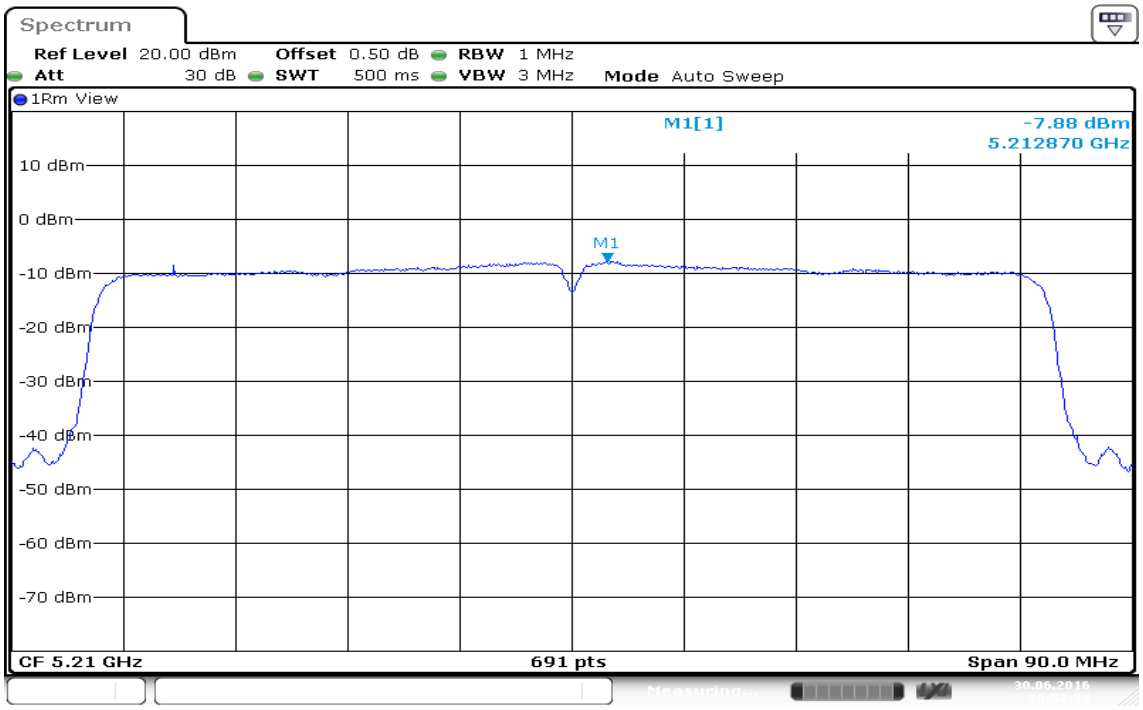


Date: 30.JUN.2016 20:41:43

IEEE 802.11ac VHT 80 MHz mode / 5210MHz/ Chain 0

CH Mid



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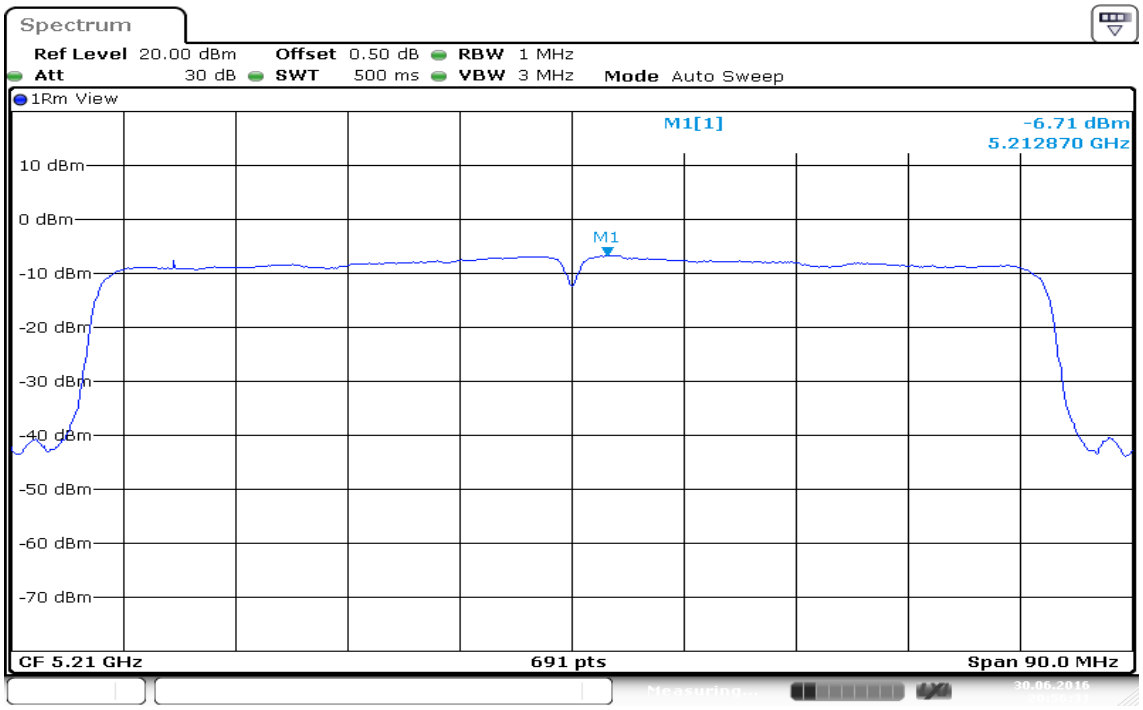
IEEE 802.11ac VHT 80 MHz mode / 5210MHz/ Chain 1

CH Mid



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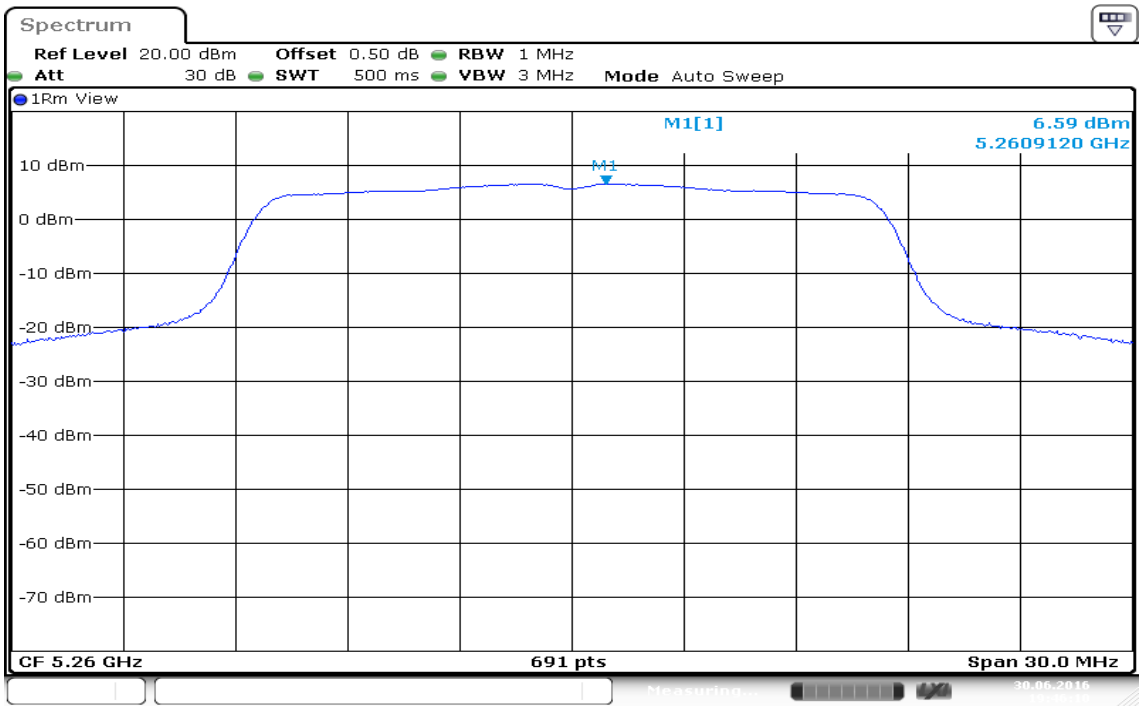
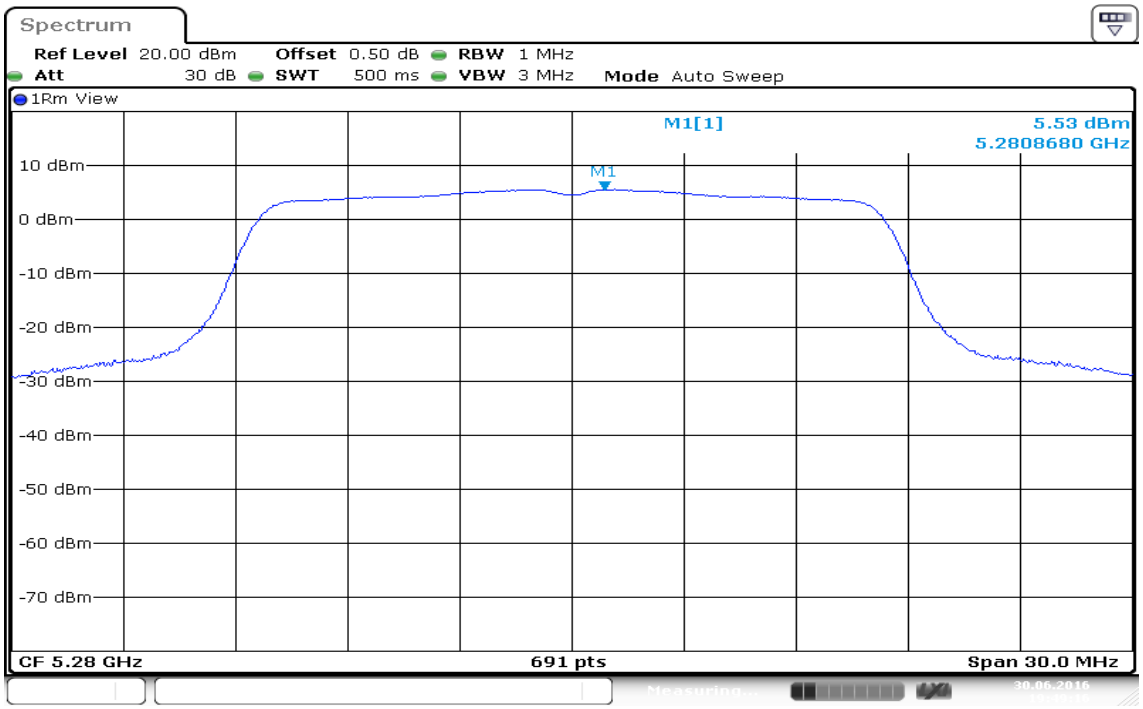
IEEE 802.11a mode / 5260 ~ 5320MHz /Chain 0

CH Low



Date: 30.JUN.2016 19:46:10

CH Mid



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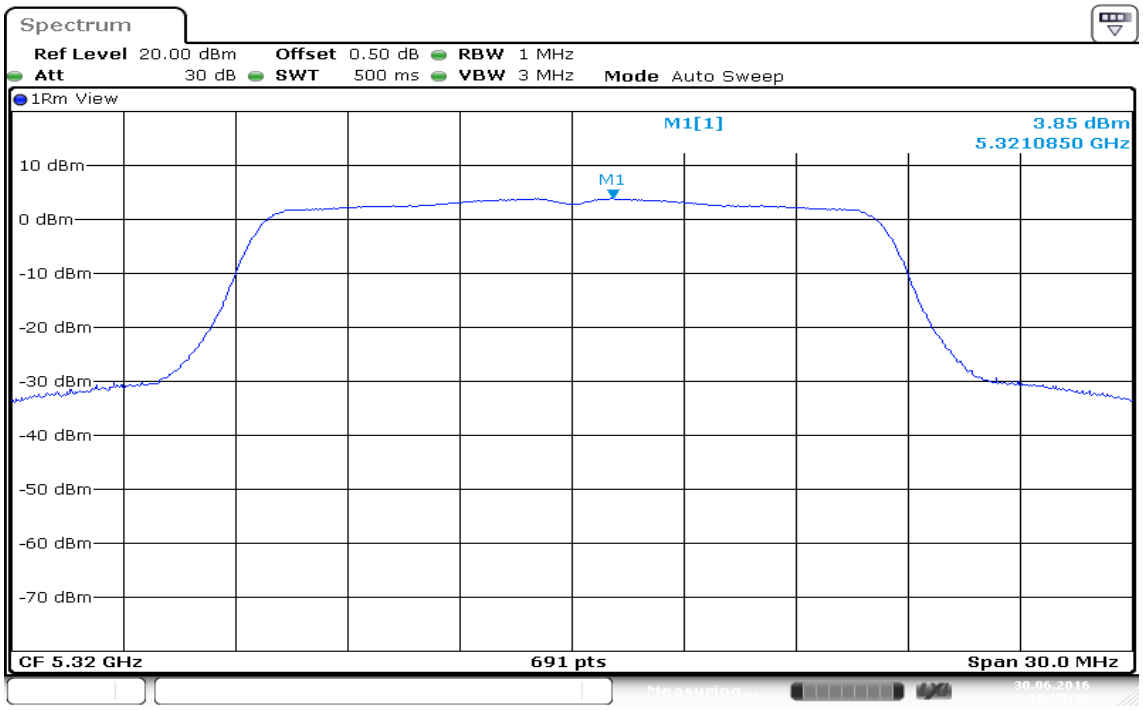
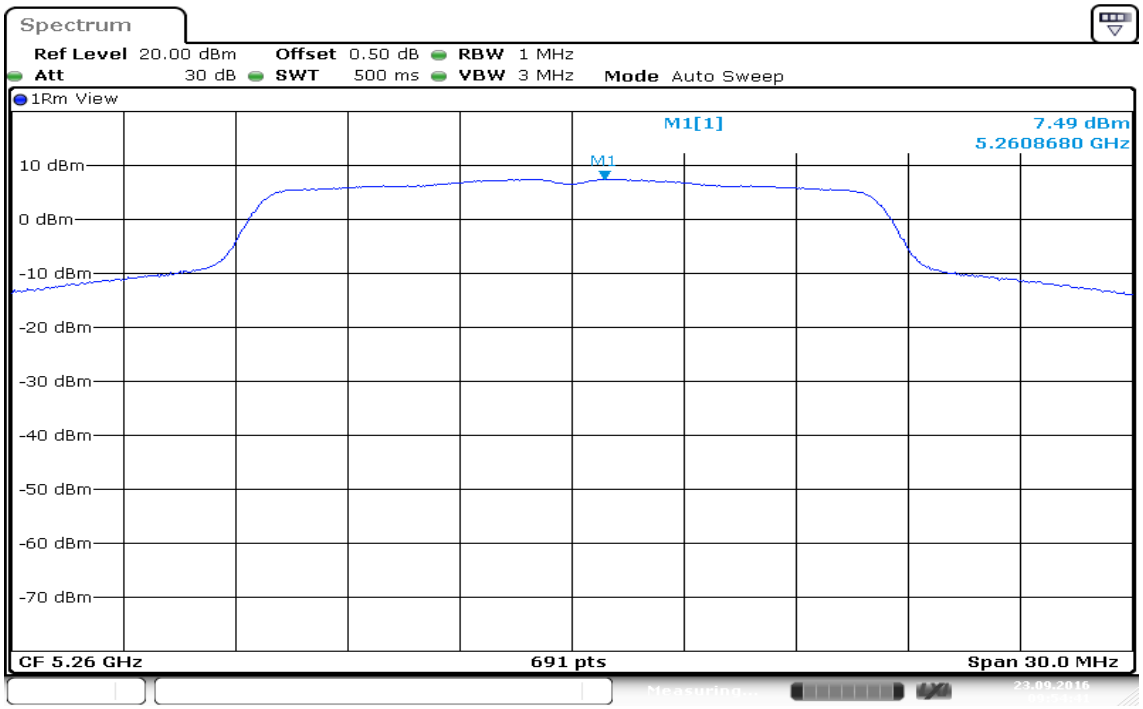


Date: 30.JUN.2016 19:55:46

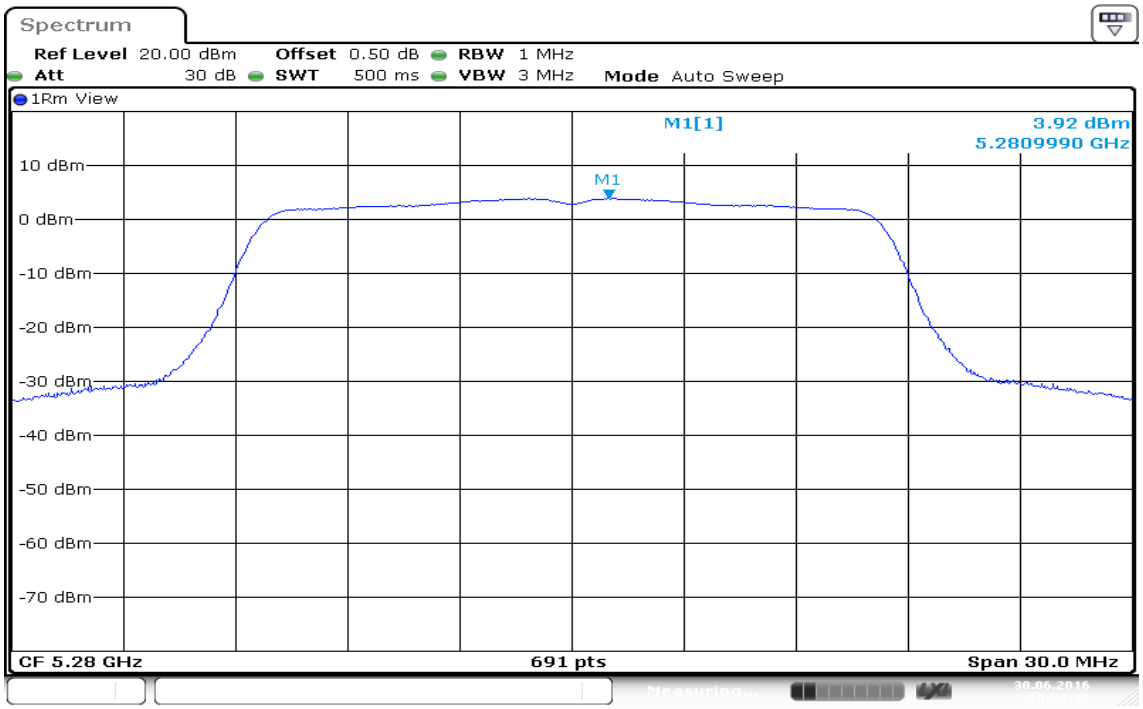
IEEE 802.11a mode / 5260 ~ 5320MHz /Chain 1

CH Low



Date: 23.SEP.2016 09:54:41

CH Mid



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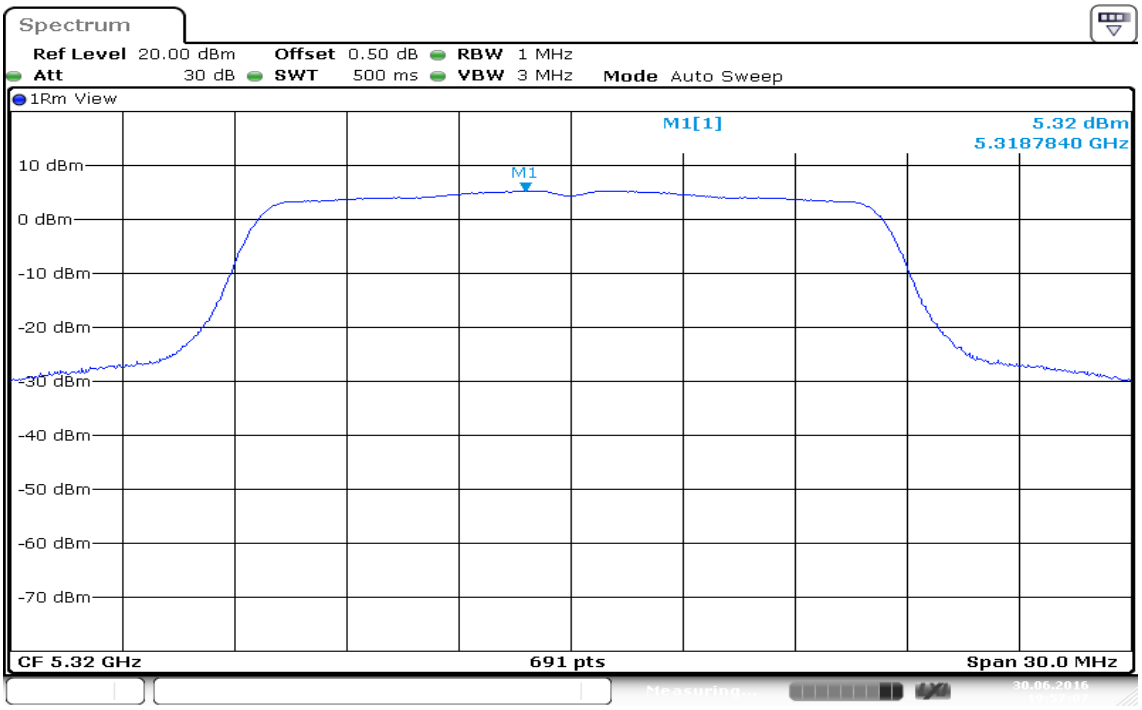
CH High



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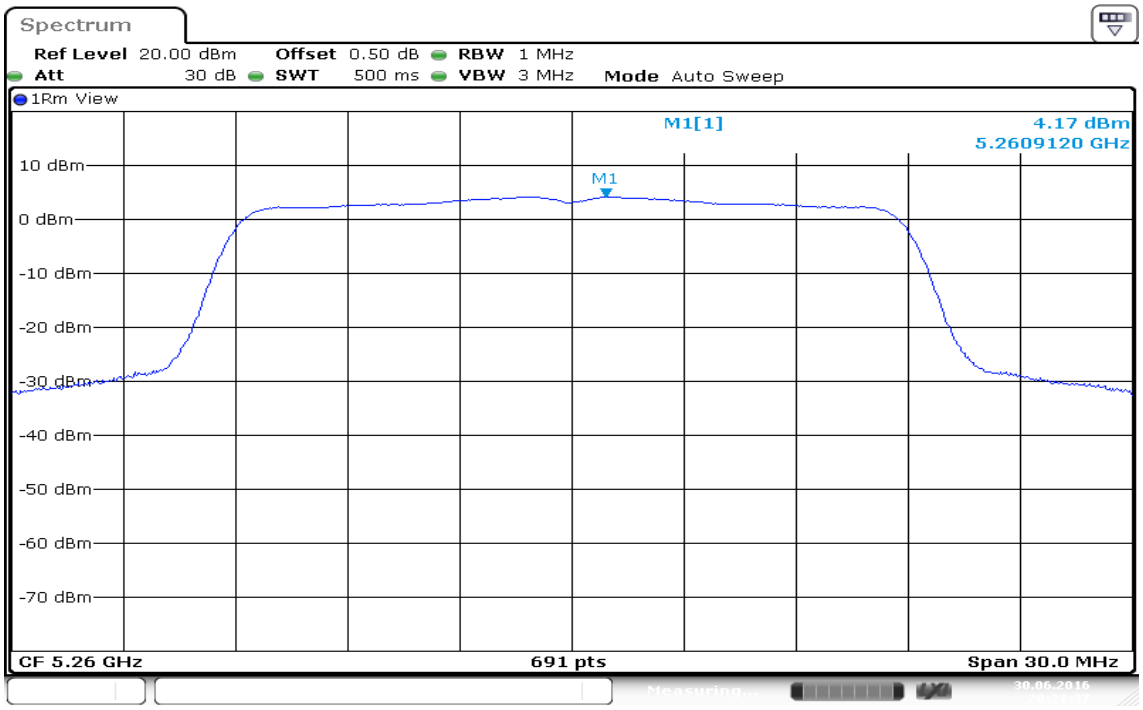
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz/ Chain 0

CH Low



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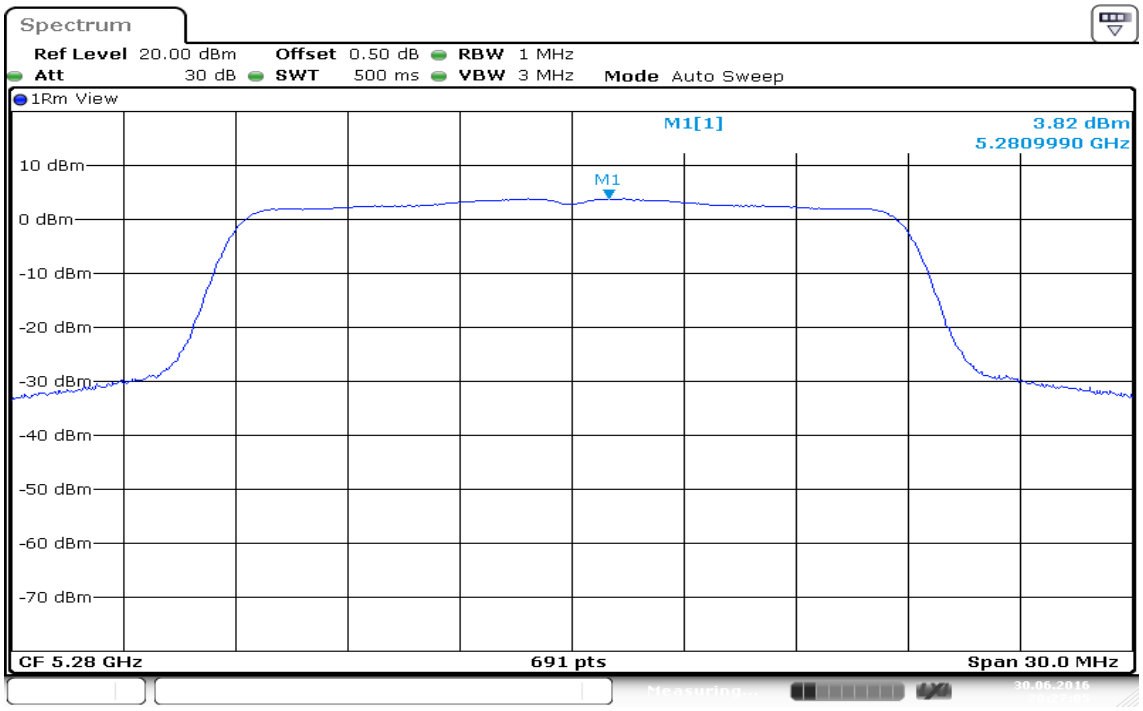
CH Mid



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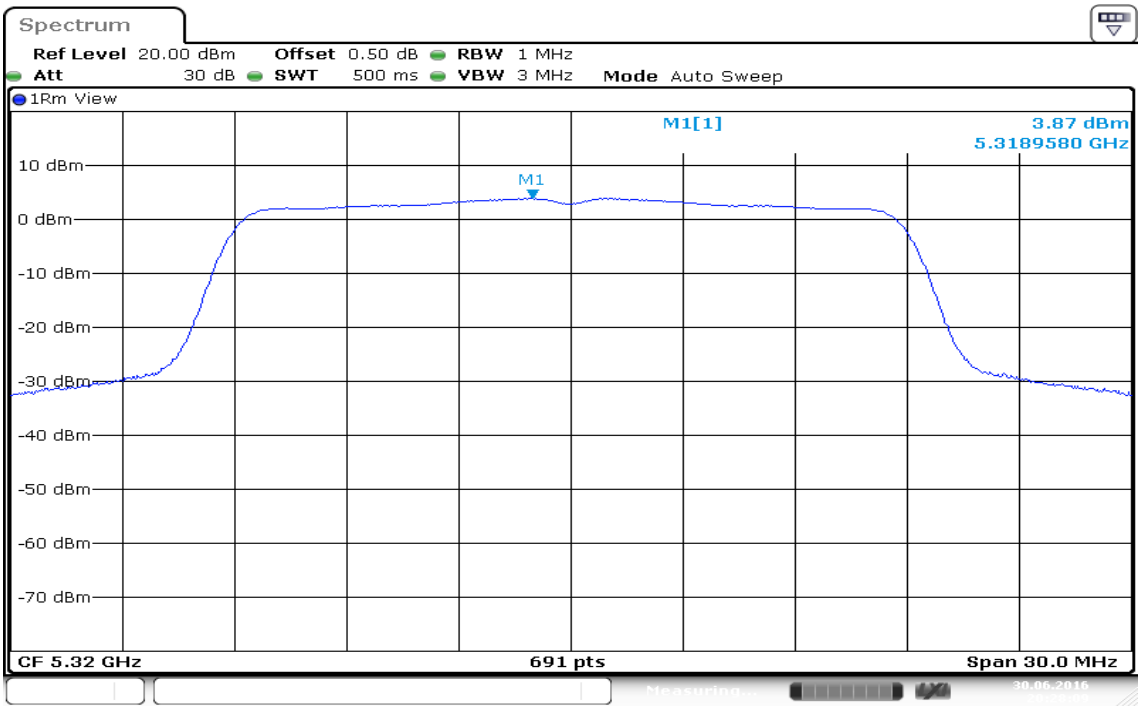

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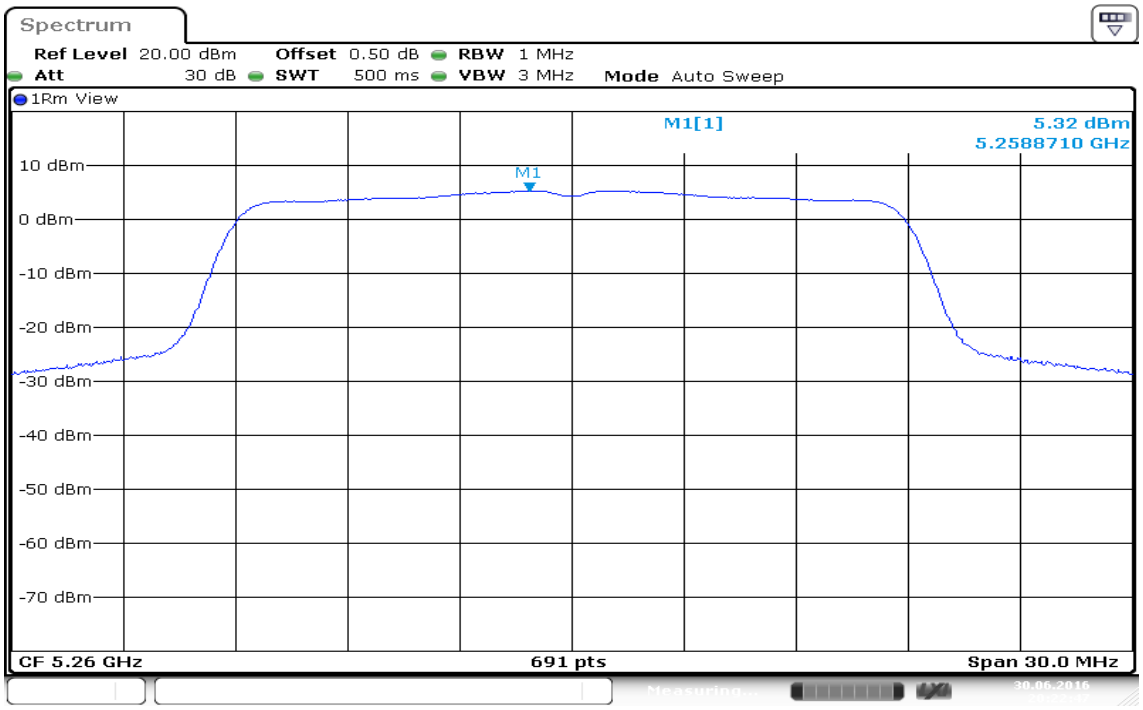
IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz/ Chain 1

CH Low



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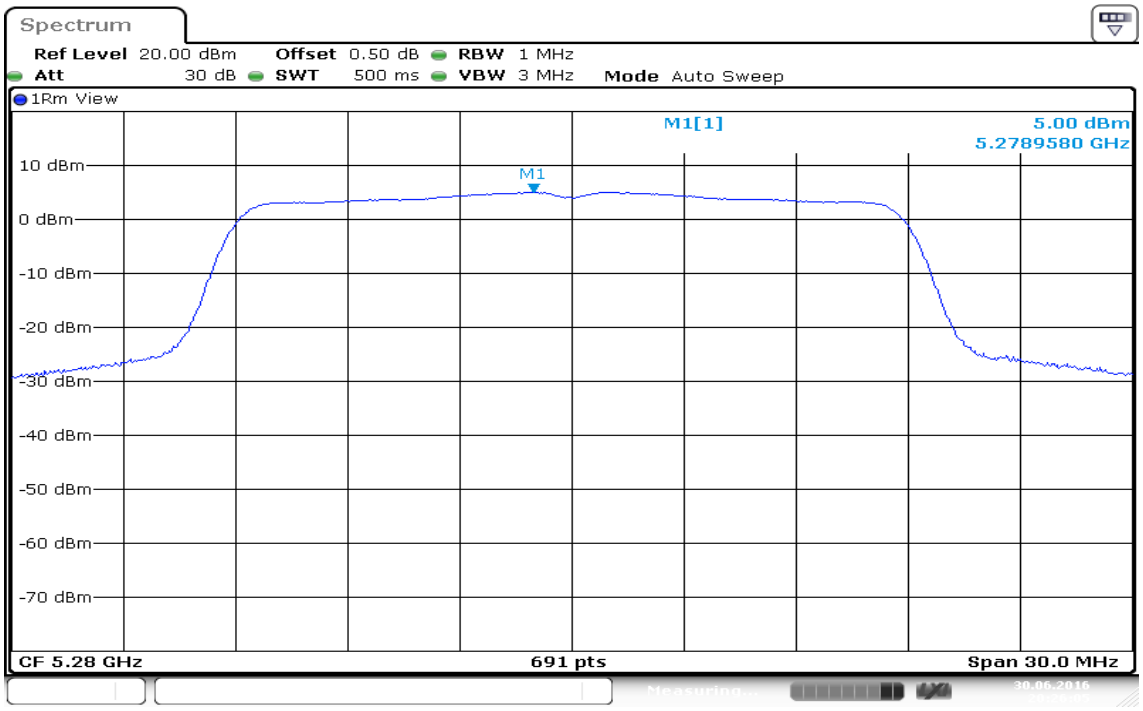
CH Mid



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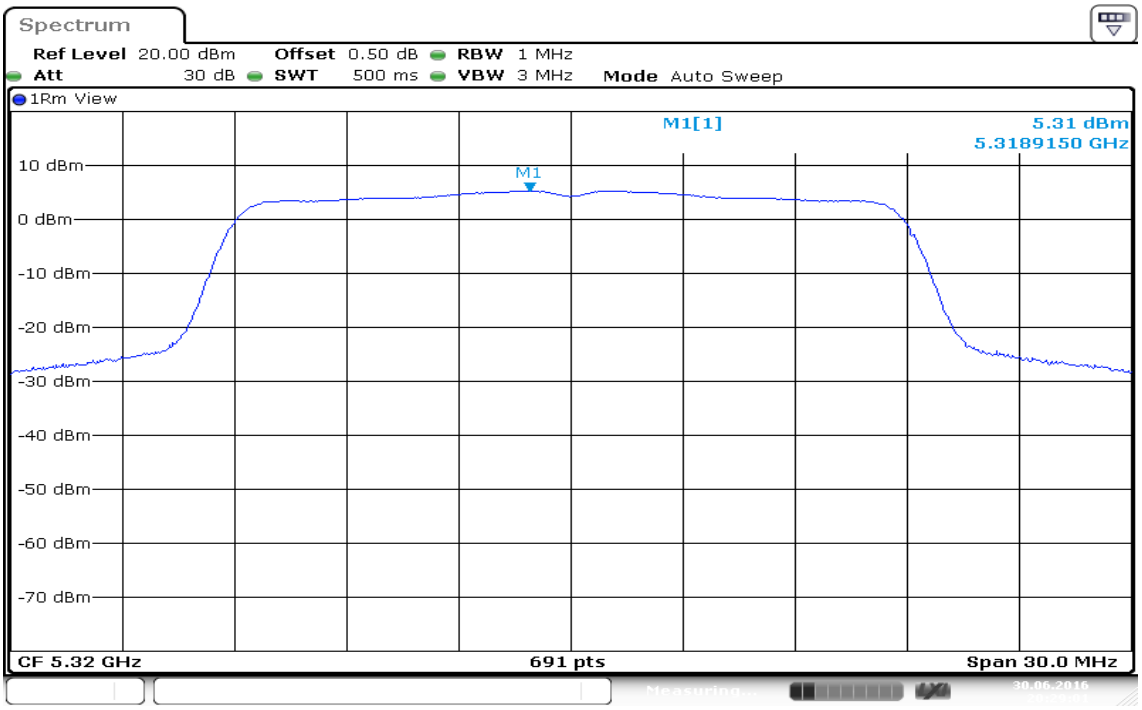
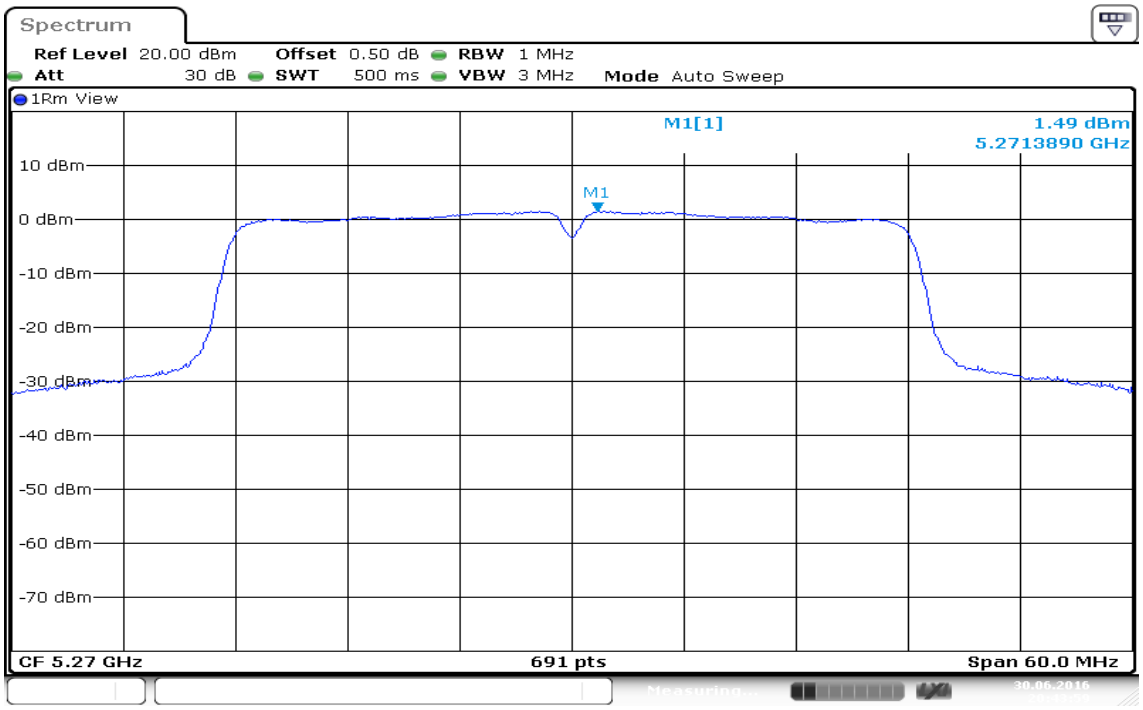


Date: 30.JUN.2016 20:29:01

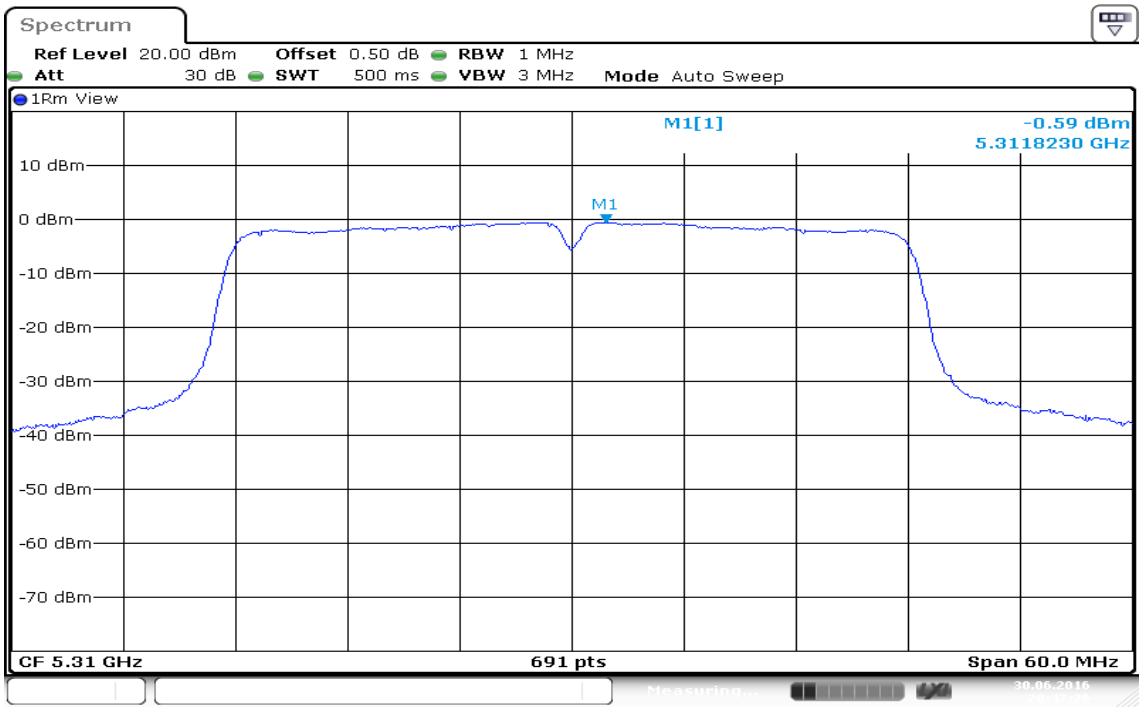
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz/ Chain 0

CH Low



Date: 30.JUN.2016 20:44:00

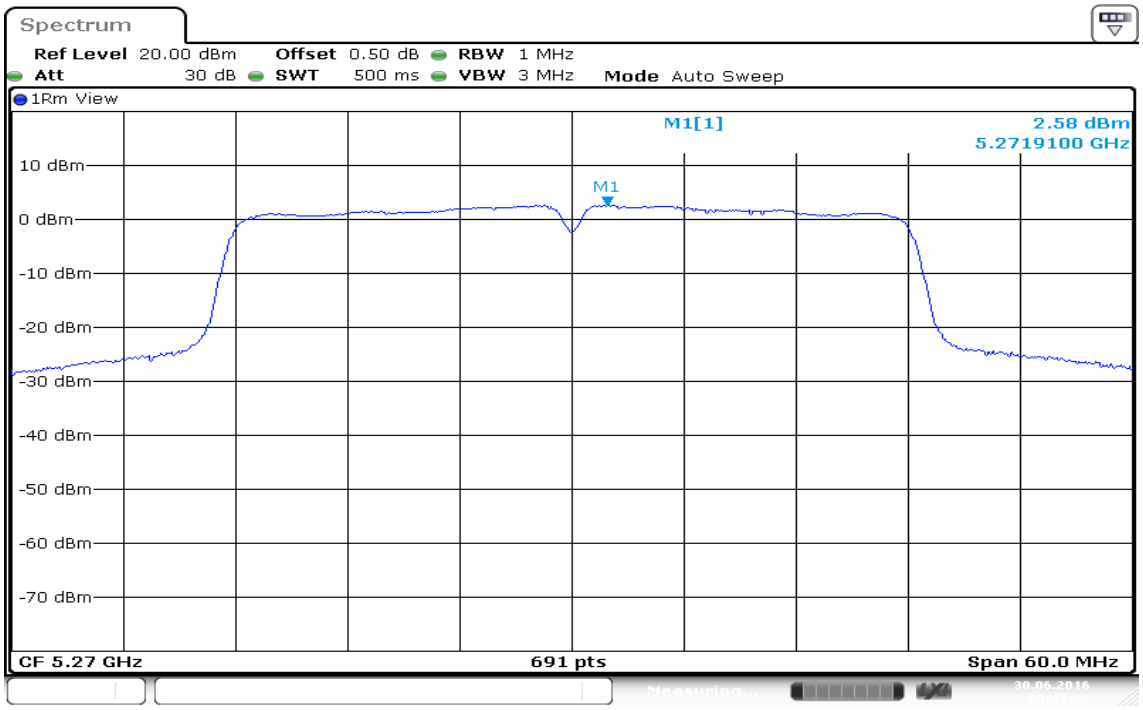
CH High



Date: 30.JUN.2016 20:47:27

IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz/ Chain 1

CH Low



Date: 30.JUN.2016 20:45:03

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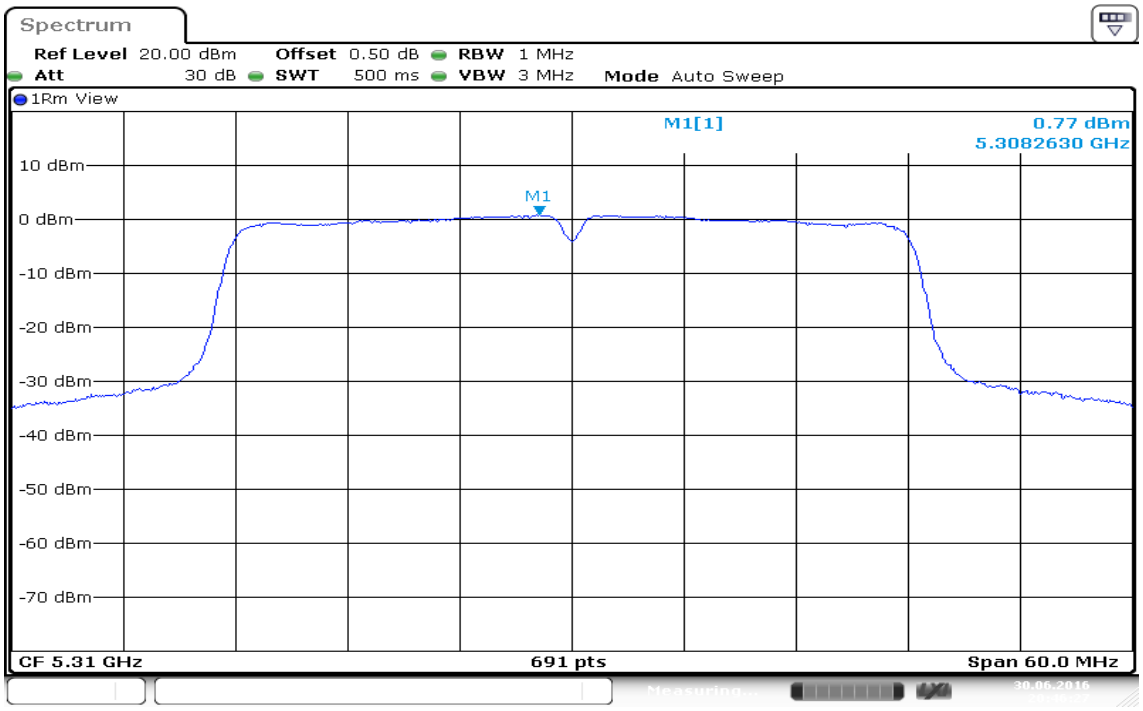

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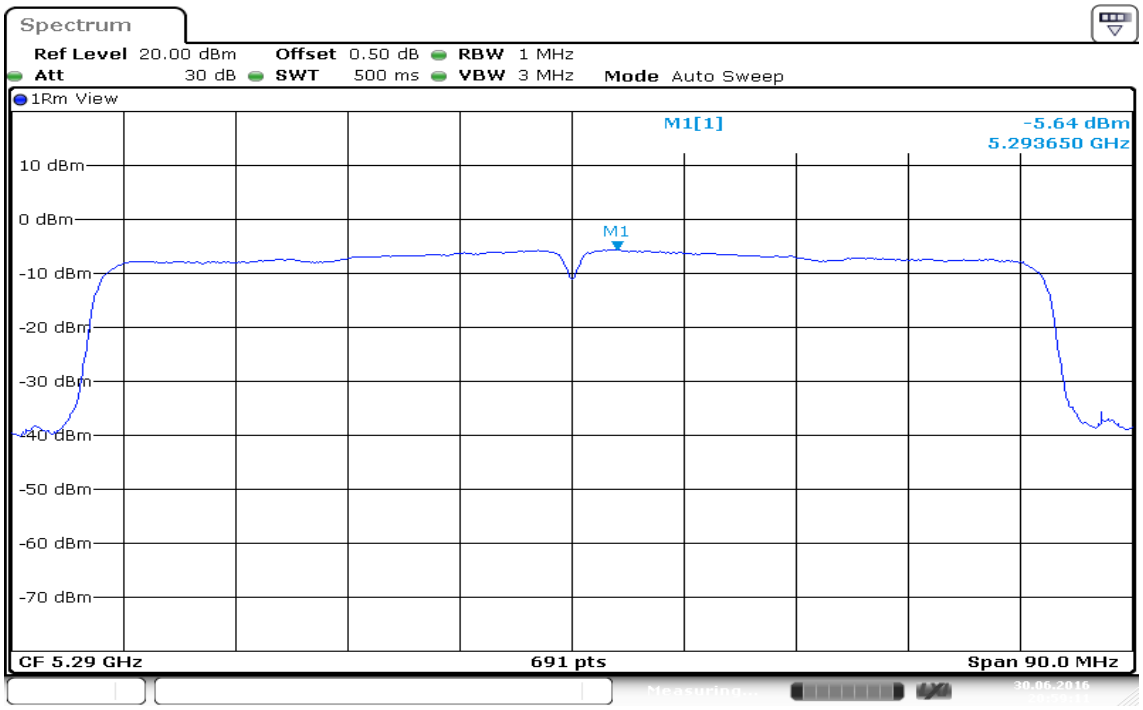
IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 0

CH Mid



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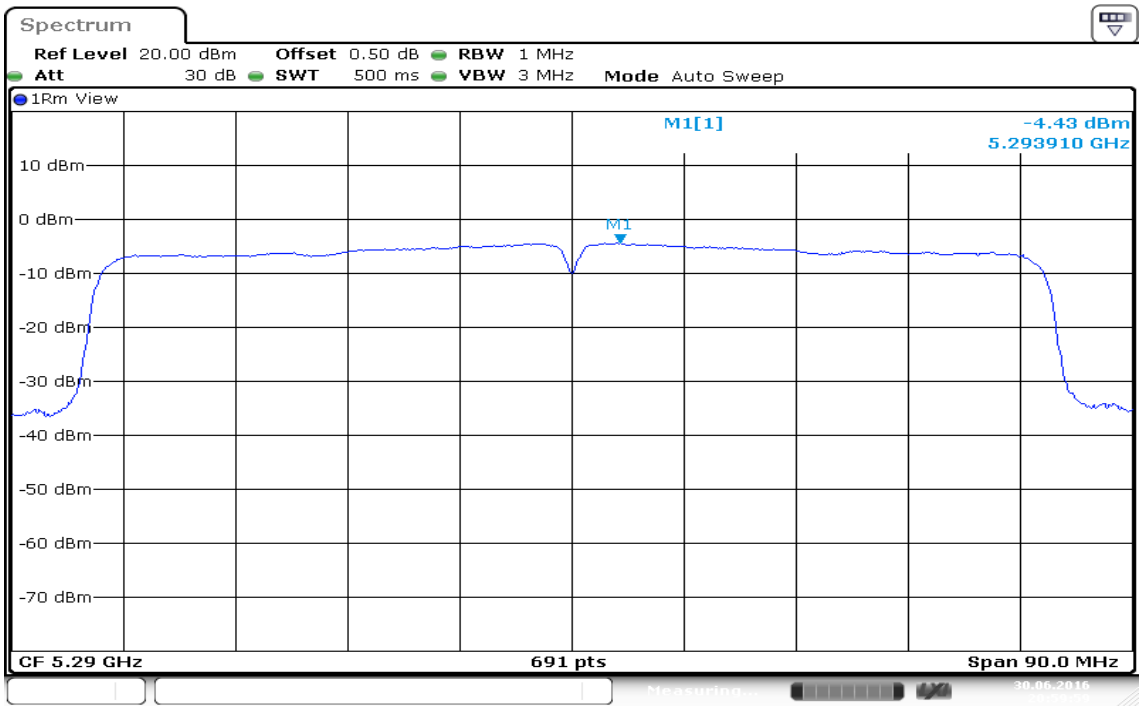
IEEE 802.11ac VHT 80 MHz mode / 5290MHz / Chain 1

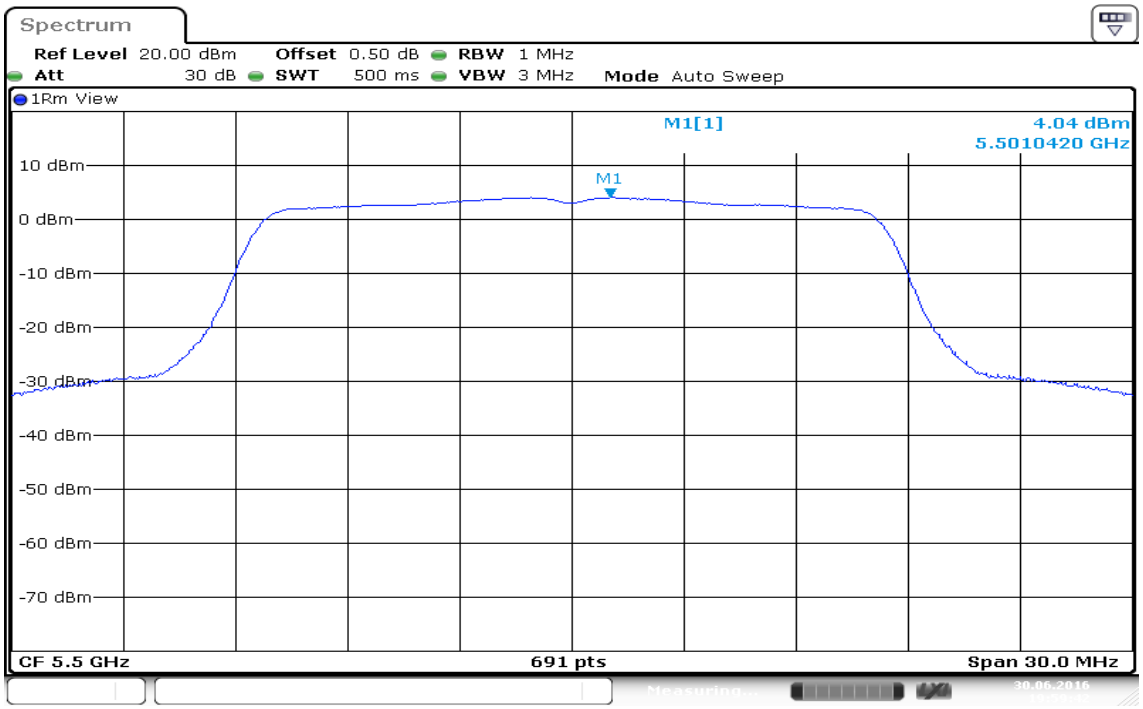
CH Mid



Date: 30.JUN.2016 20:59:59

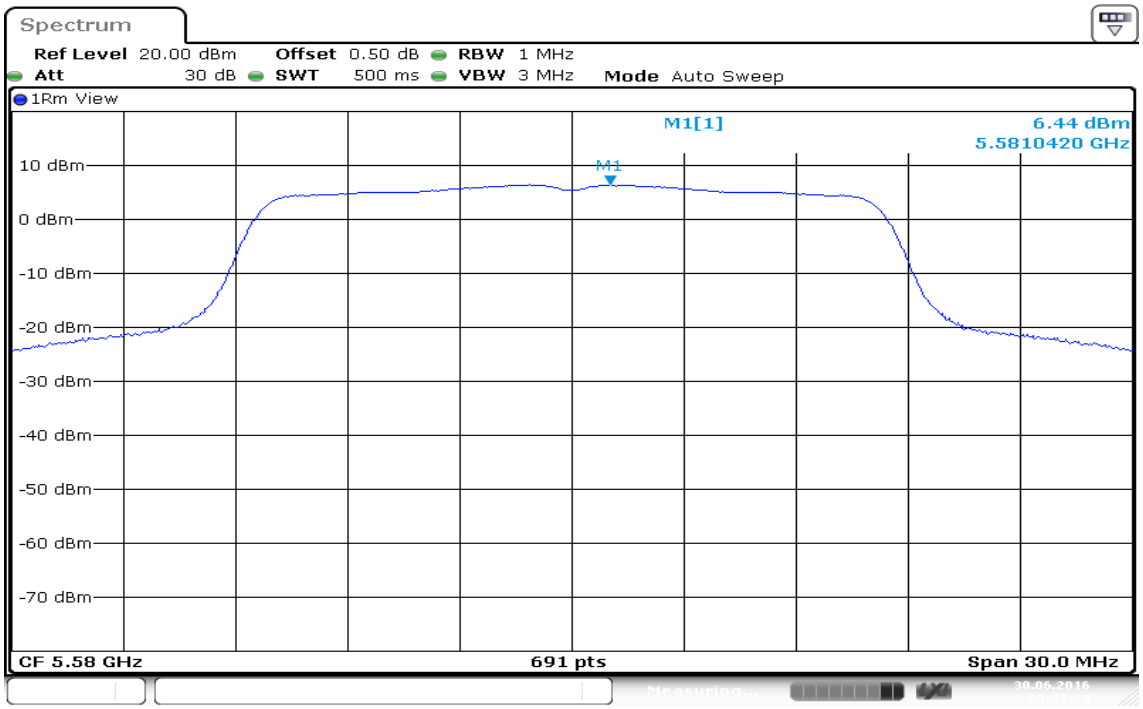
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz/ Chain 0

CH Low



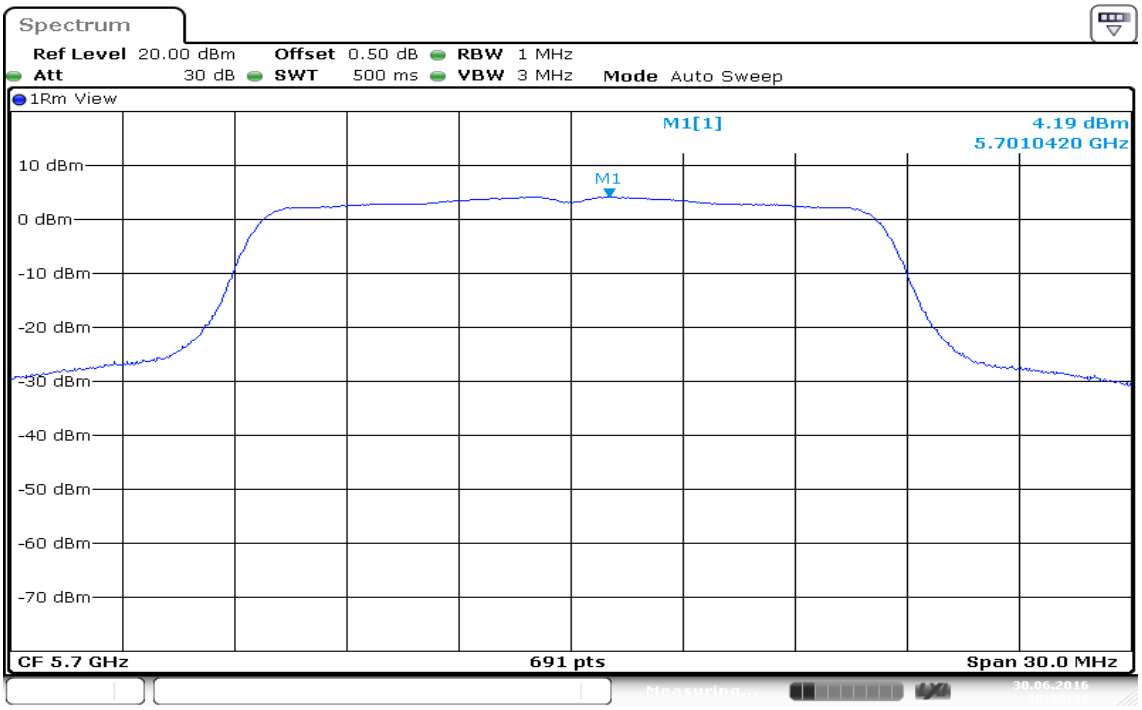
Date: 30.JUN.2016 19:59:42

CH Mid



Date: 30.JUN.2016 20:07:24

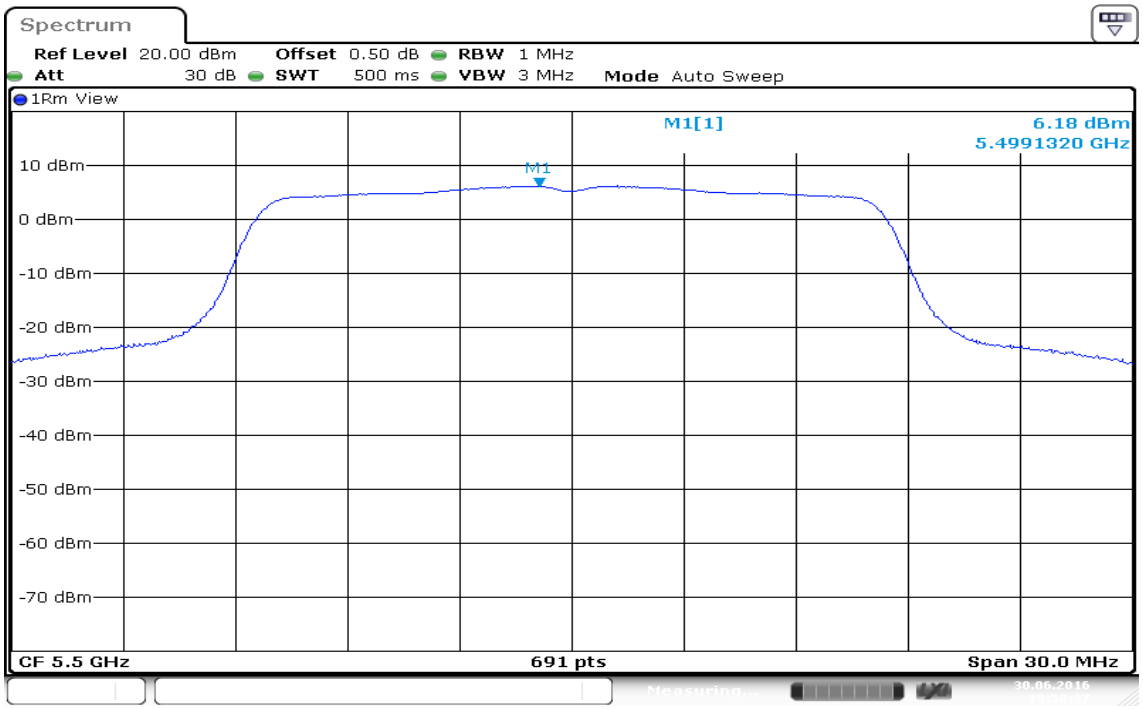
CH High



Date: 30.JUN.2016 20:08:31

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz/ Chain 1

CH Low



Date: 30.JUN.2016 19:58:37

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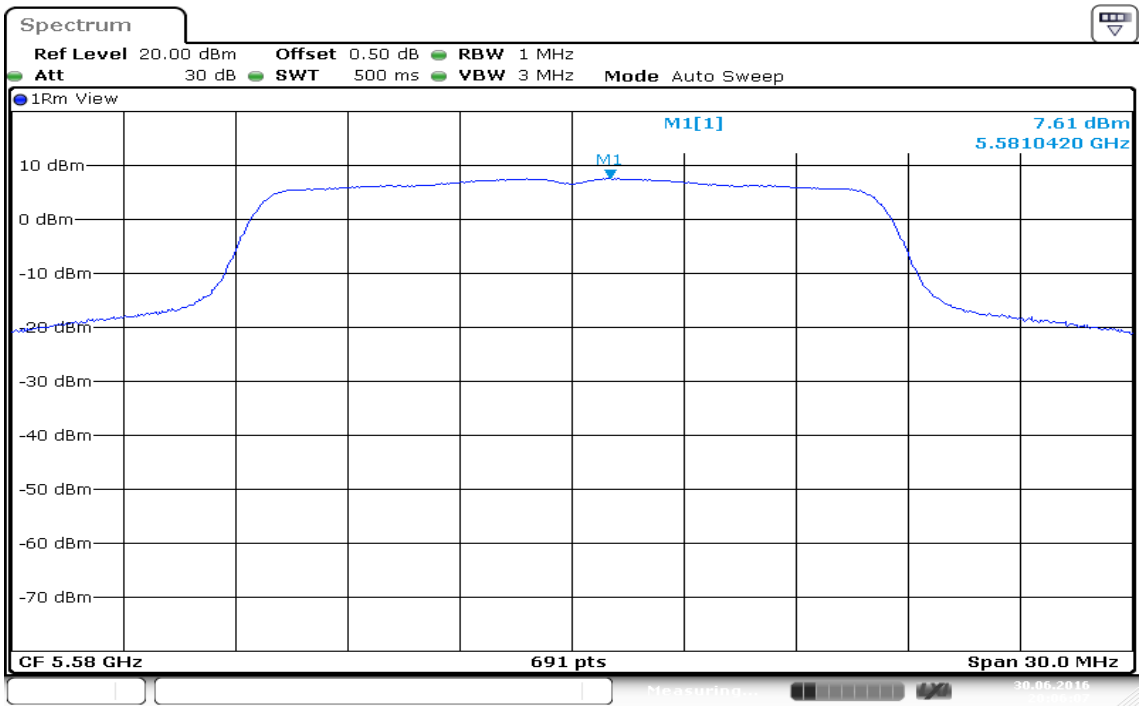

Date: 30.JUN.2016 20:06:07

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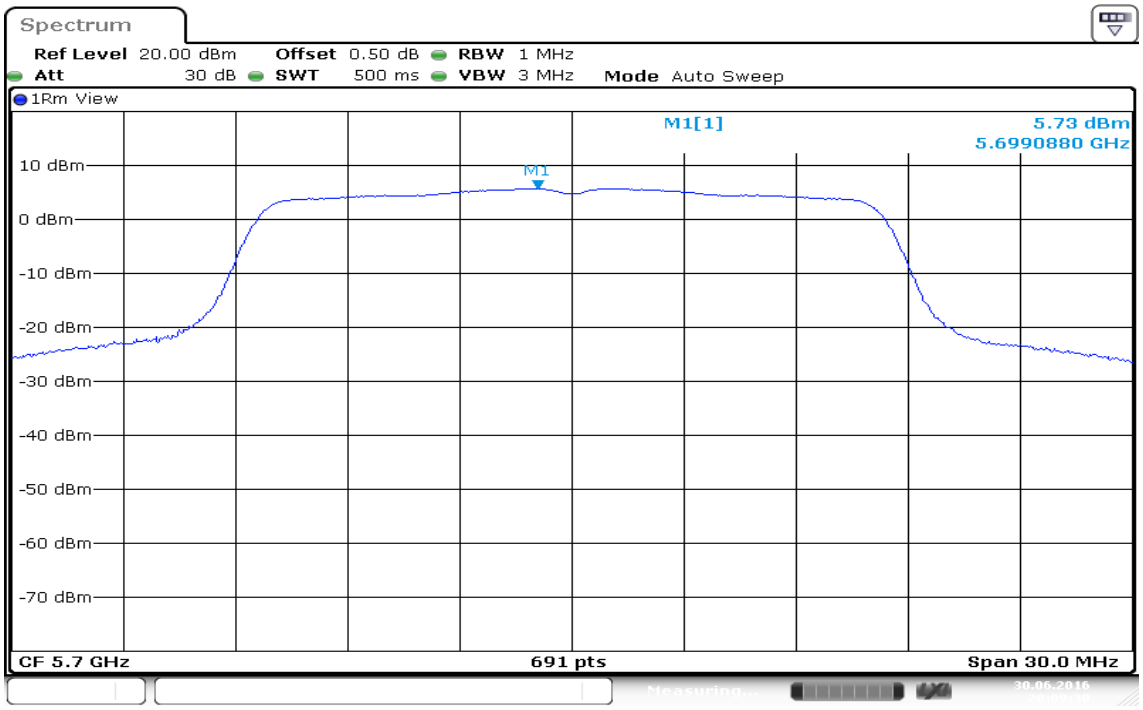
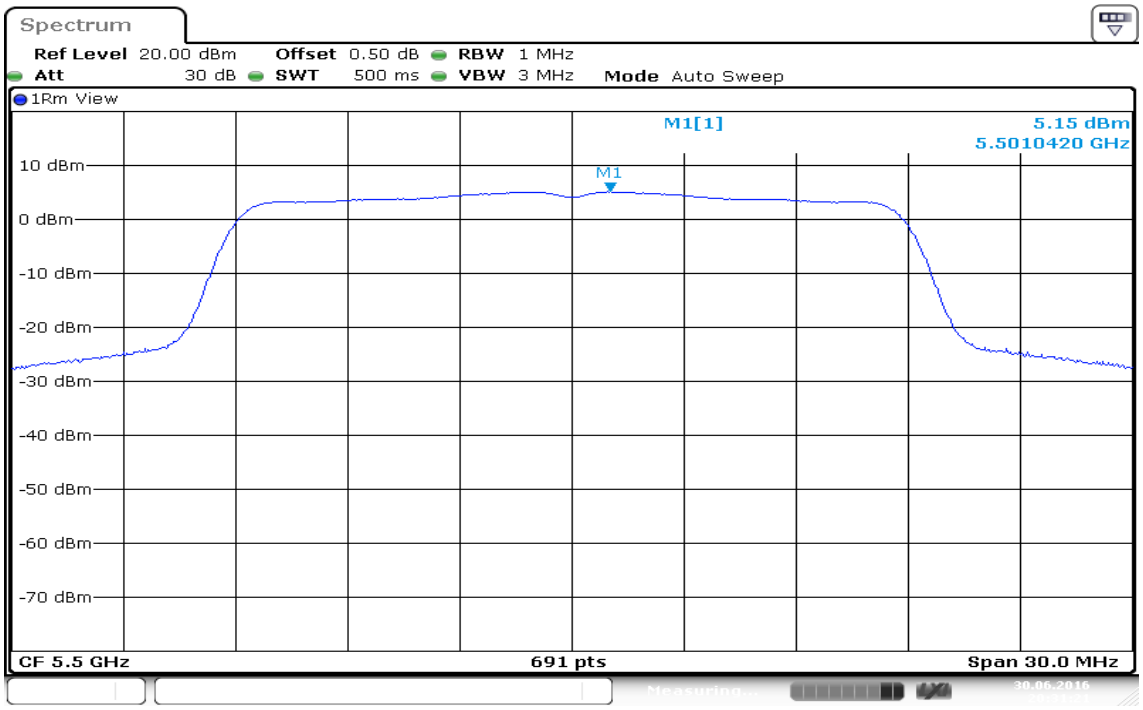


Date: 30.JUN.2016 20:09:30

IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz/ Chain 0

CH Low



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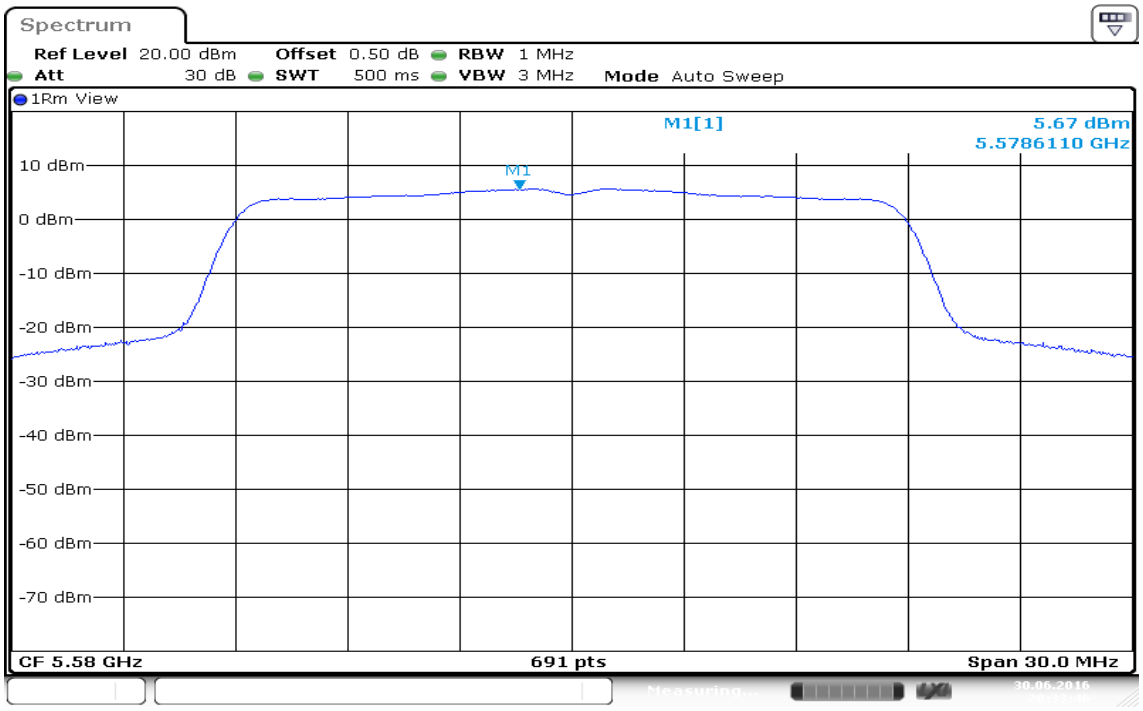
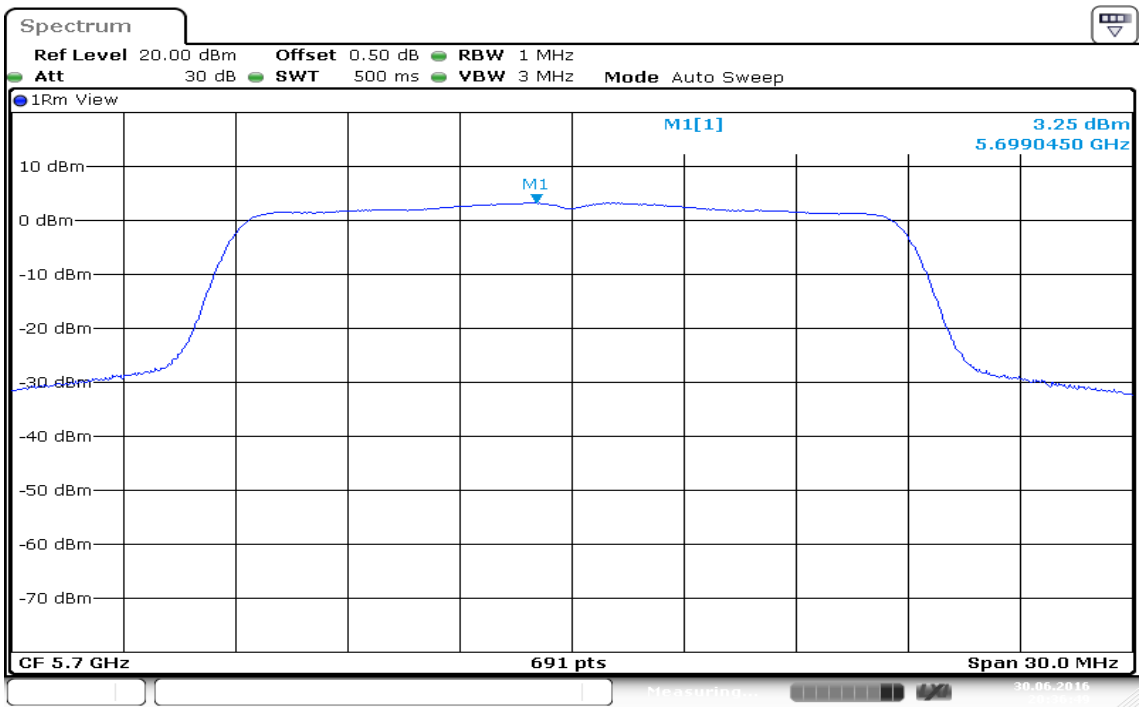


Date: 30.JUN.2016 20:33:46

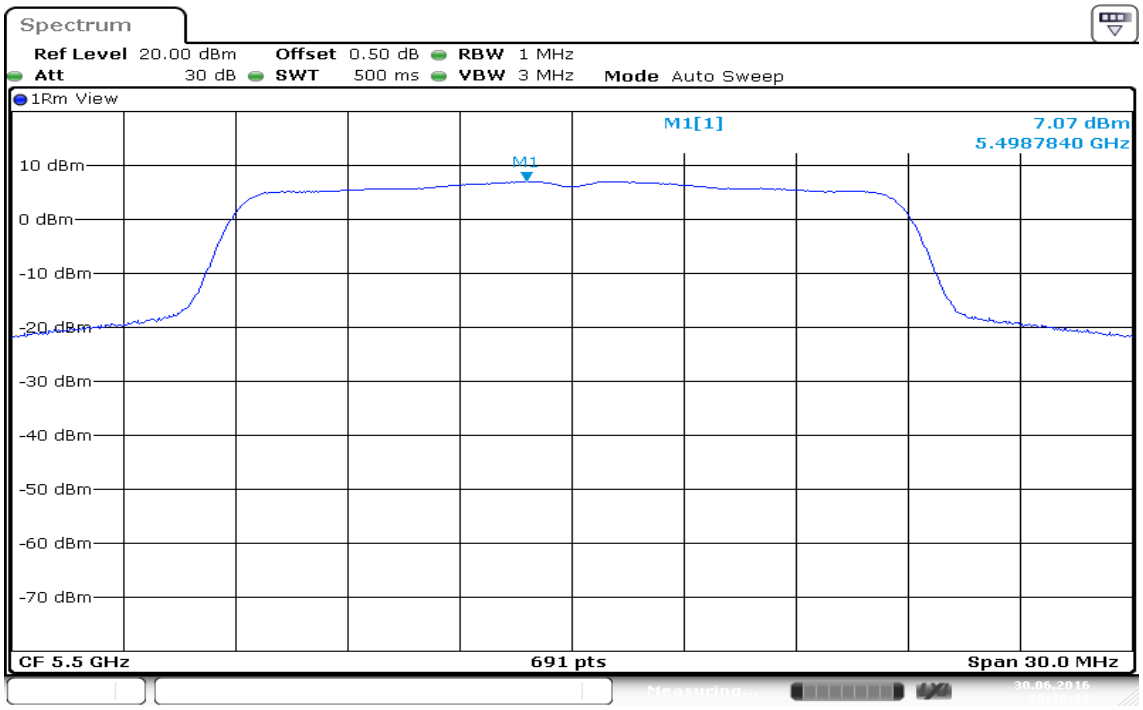
CH High



Date: 30.JUN.2016 20:36:49

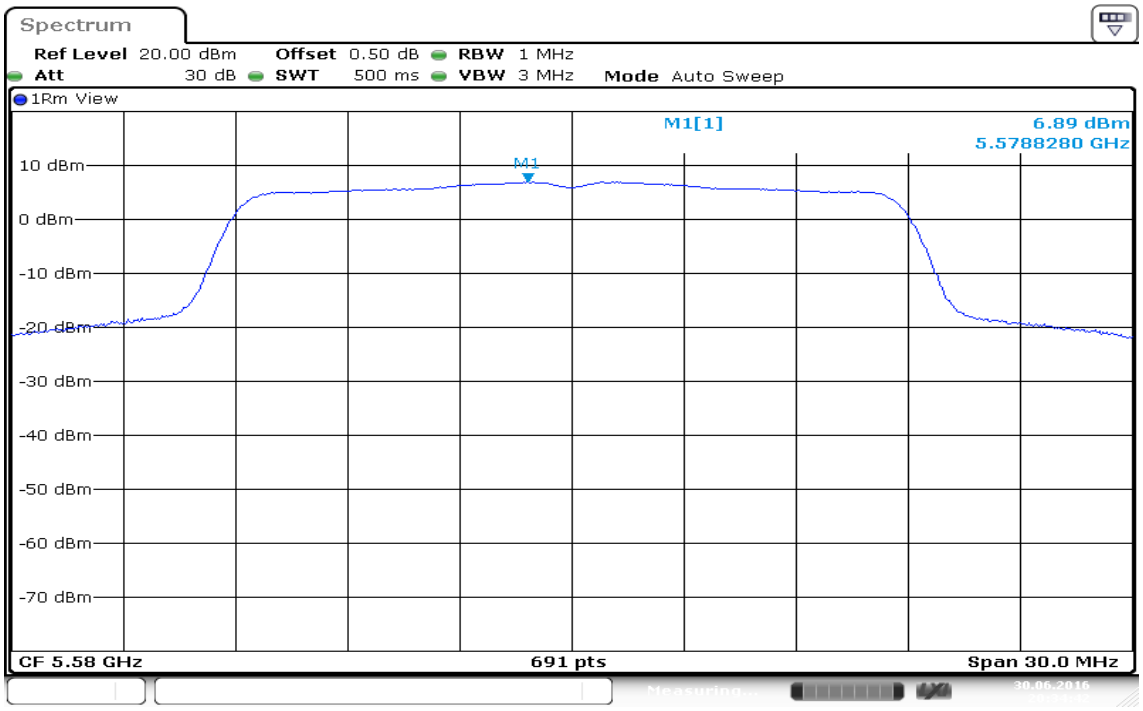
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz/ Chain 1

CH Low



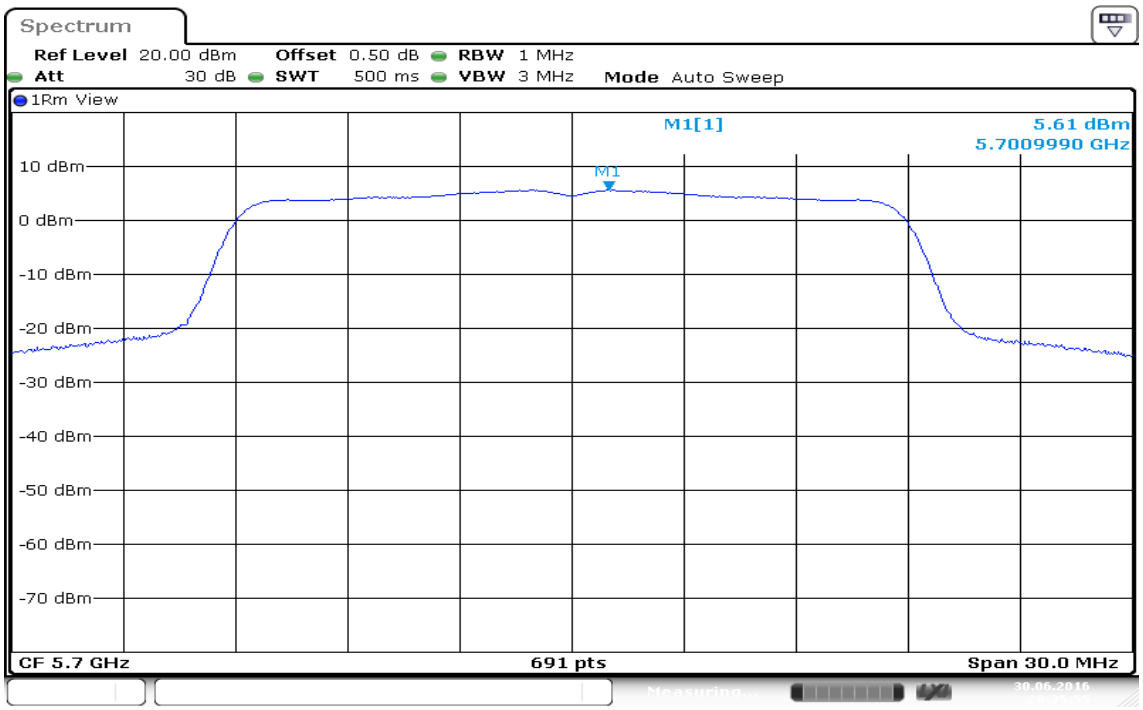
Date: 30.JUN.2016 20:30:11

CH Mid



Date: 30.JUN.2016 20:34:42

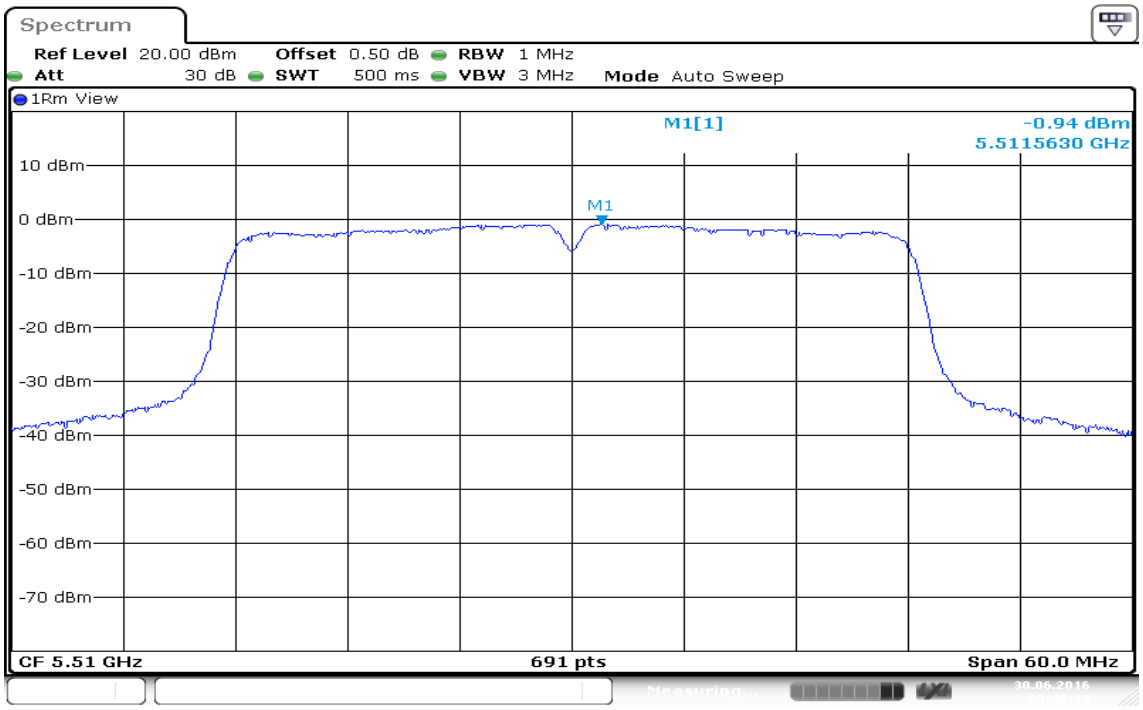
CH High



Date: 30.JUN.2016 20:35:55

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low



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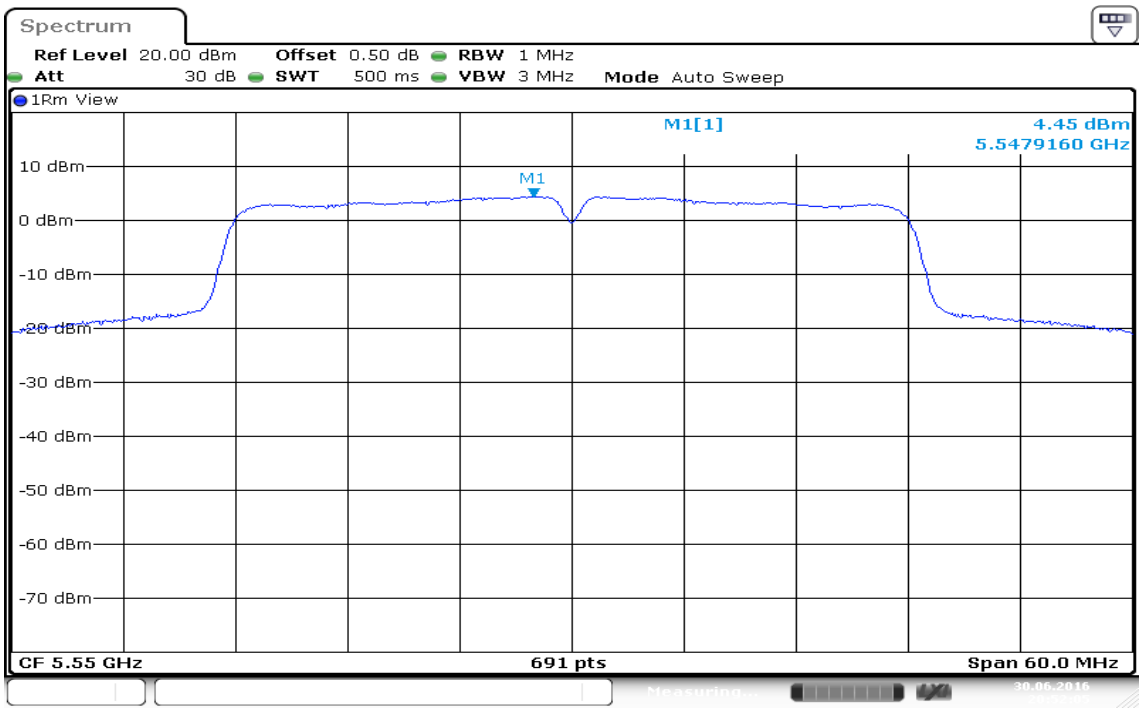
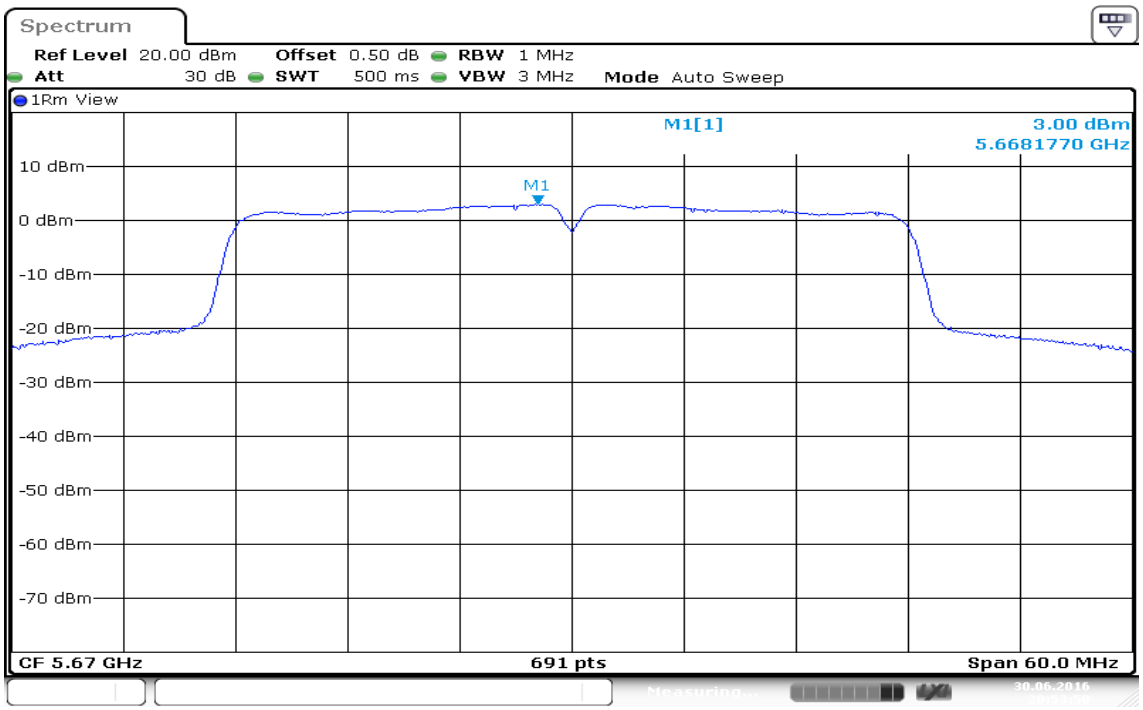
CH Mid



Date: 30.JUN.2016 20:52:05

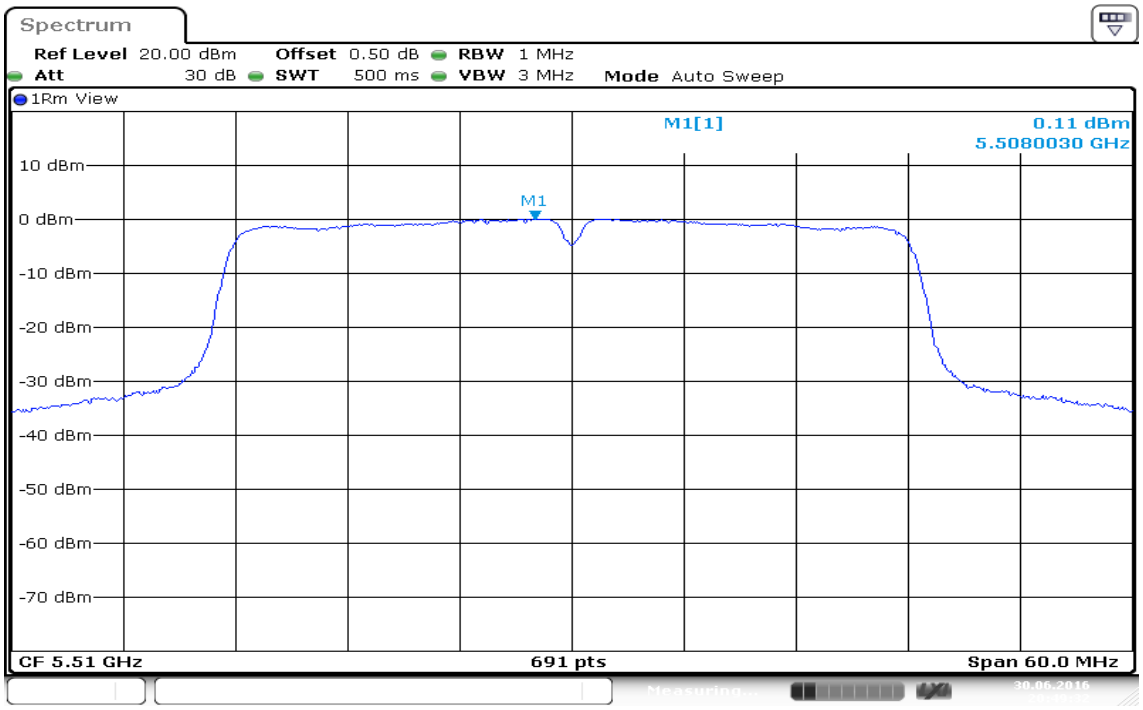
CH High



Date: 30.JUN.2016 20:53:50

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low



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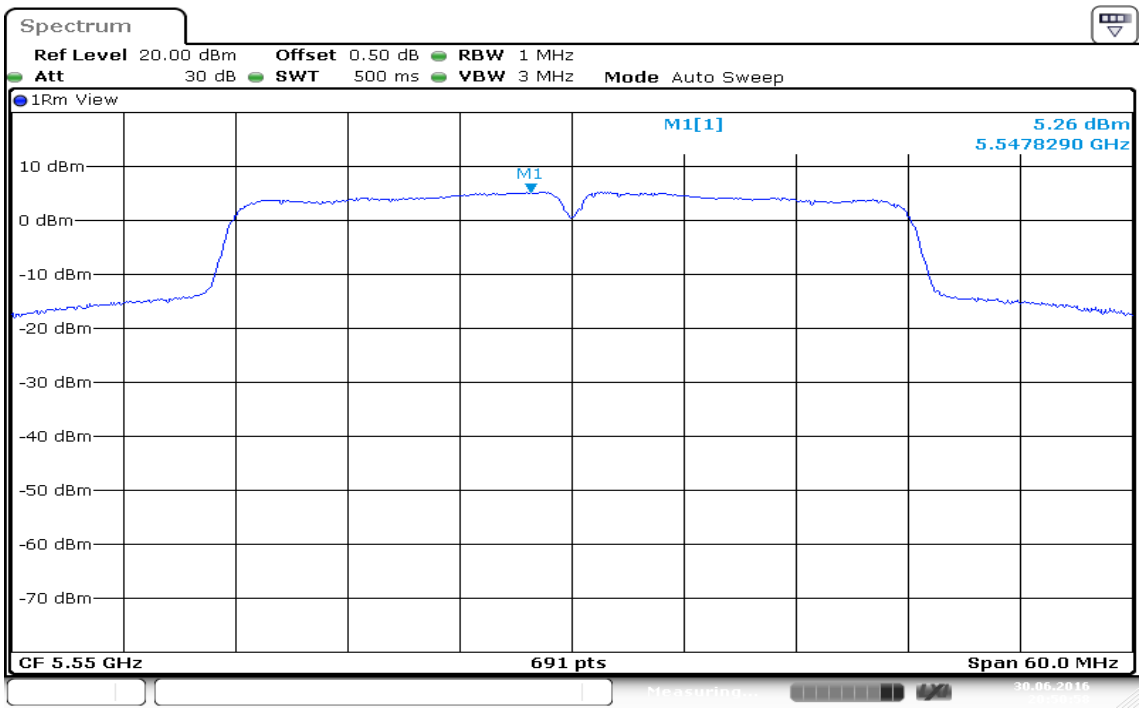
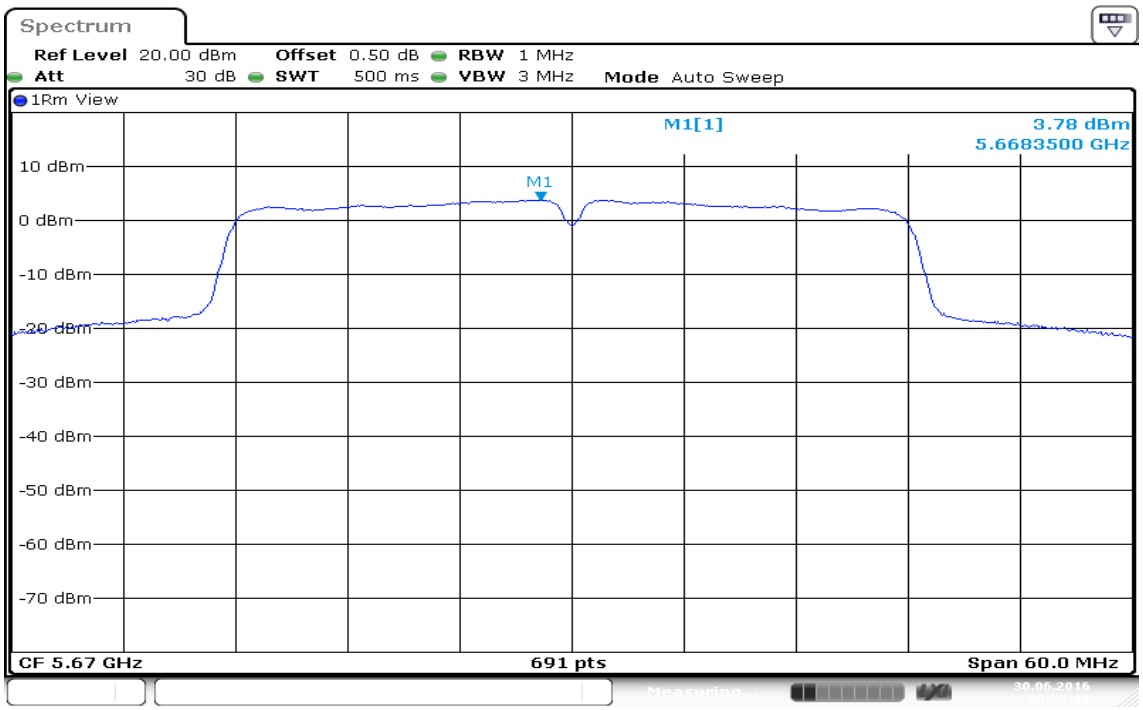
CH Mid



Date: 30.JUN.2016 20:50:59

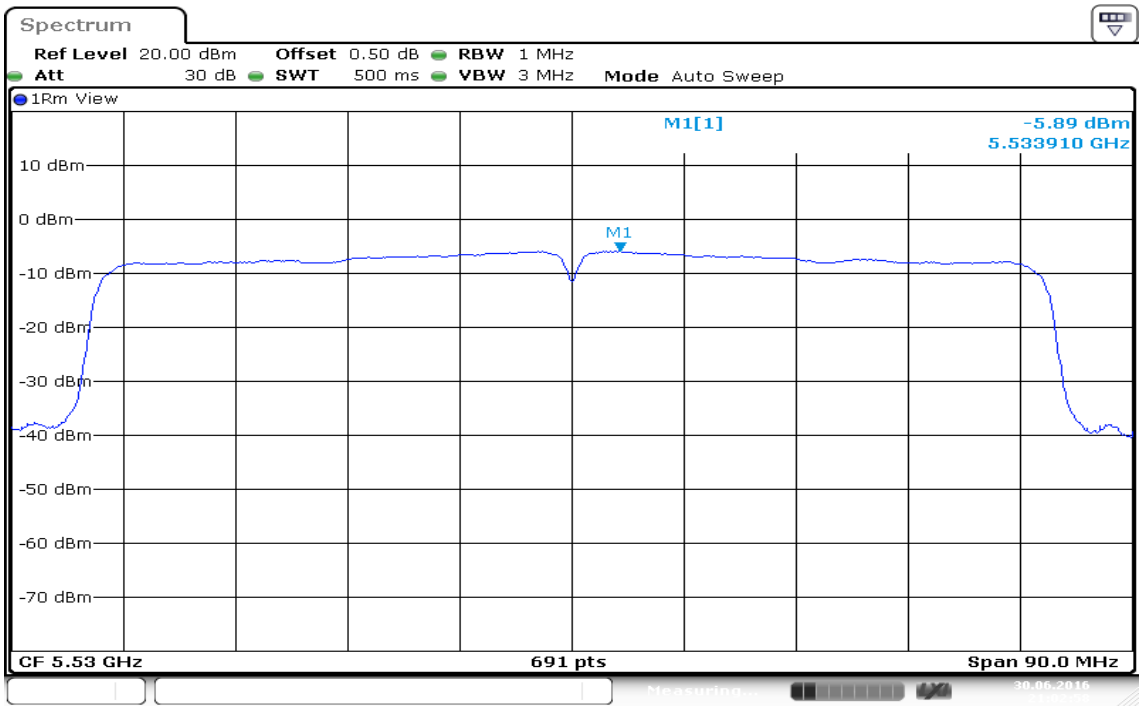
CH High



Date: 30.JUN.2016 20:55:10

IEEE 802.11ac VHT 80 MHz mode / 5530MHz / Chain 0

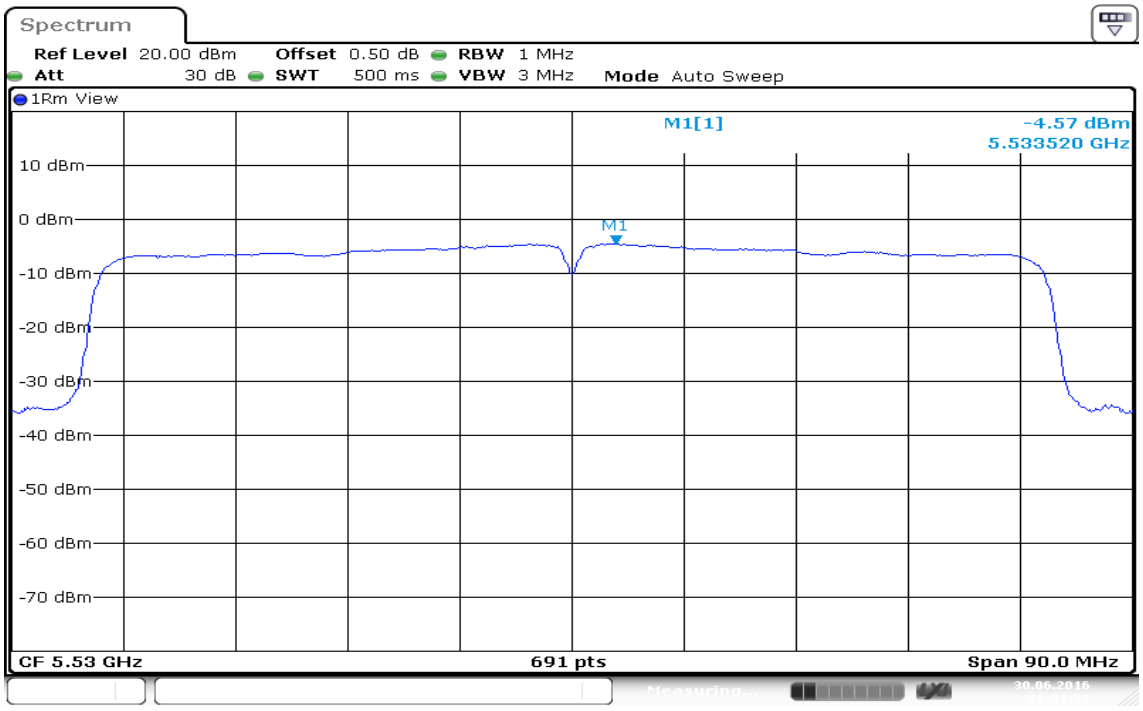
CH Mid



Date: 30.JUN.2016 21:02:58

IEEE 802.11ac VHT 80 MHz mode / 5530MHz / Chain 1

CH Mid



Date: 30.JUN.2016 21:01:59

7.6 RADIATED UNDESIRABLE EMISSION

LIMIT

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

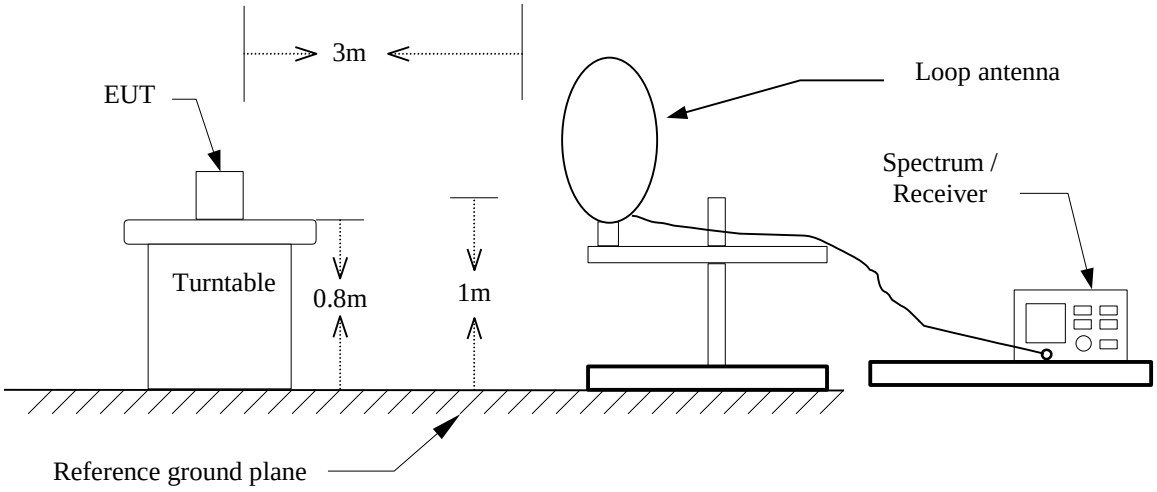
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

2. In the emission table above, the tighter limit applies at the band edges.

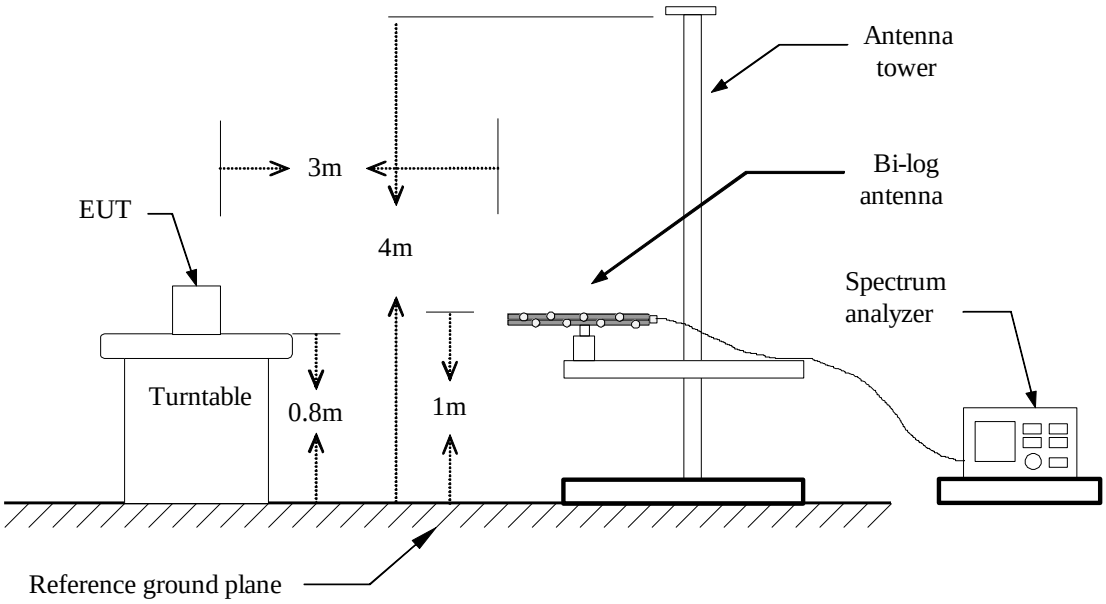
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
0.009 - 0.490	2400/F(kHz) +80	20LOG((2400/F(kHz))+80)
0.490 - 1.705	24000/F(kHz) +40	20LOG((24000/F(kHz))+40)
1.705 – 30.0	30	69.54
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

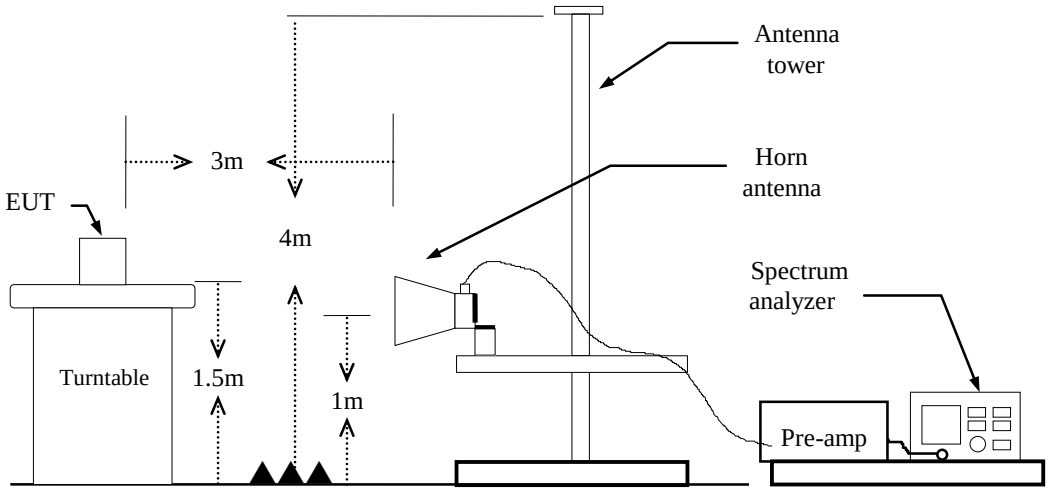
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz


Antenna
tower
3m
Horn
antenna
EUT
4m
Spectrum
analyzer
Turntable
1.5m
1m
Pre-amp

TEST PROCEDURE

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m high and below 1 GHz is 0.8m high above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

   RBW=100kHz / VBW=300kHz / Sweep=AUTO

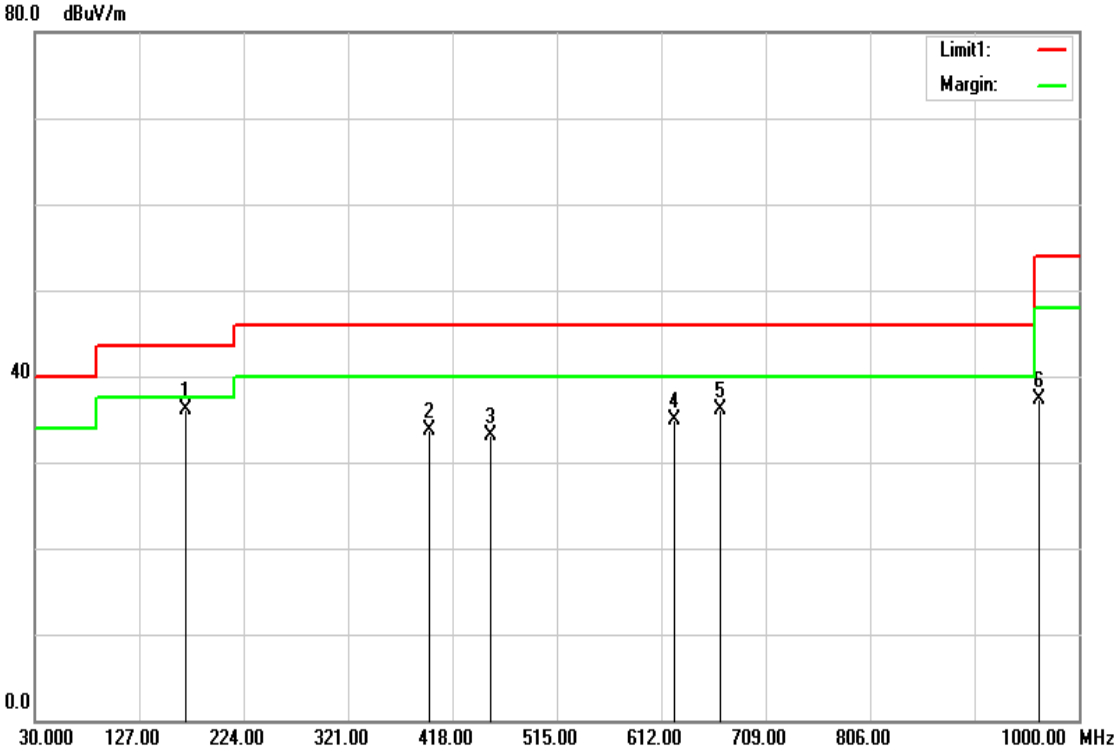
   Above 1GHz:

   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b)AVERAGE: RBW=1MHz,
   if duty cycle≧98%, VBW=10Hz.
   if duty cycle<98% VBW=1/T.
   IEEE 802.11a mode: =94%, VBW=680Hz
   IEEE 802.11n HT 20 MHz mode: =89%, VBW=750Hz
   IEEE 802.11n HT 40 MHz mode: =81%, VBW=1.5kHz
   IEEE 802.11ac VHT 80 MHz mode: =68%, VBW=3kHz
7. Repeat above procedures until the measurements for all frequencies are complete.
8. Result = Spectrum Reading + cable loss(spectrum to Amp) - Amp Gain + Cable loss(Amp to receive Ant)+ Receive Ant

Note: We checked every harmonics frequencies from Fundamental frequencies with reduced VBW, and we mark a point to prove pass or not if we find any emission. For this case, there are no emissions hidden in the noise floor.

Below 1 GHz

Operation Mode: Normal Link
Test Date: September 10, 2016
Temperature: 27°C
Tested by: Dennis Li
Humidity: 53% RH
Polarity: Ver.

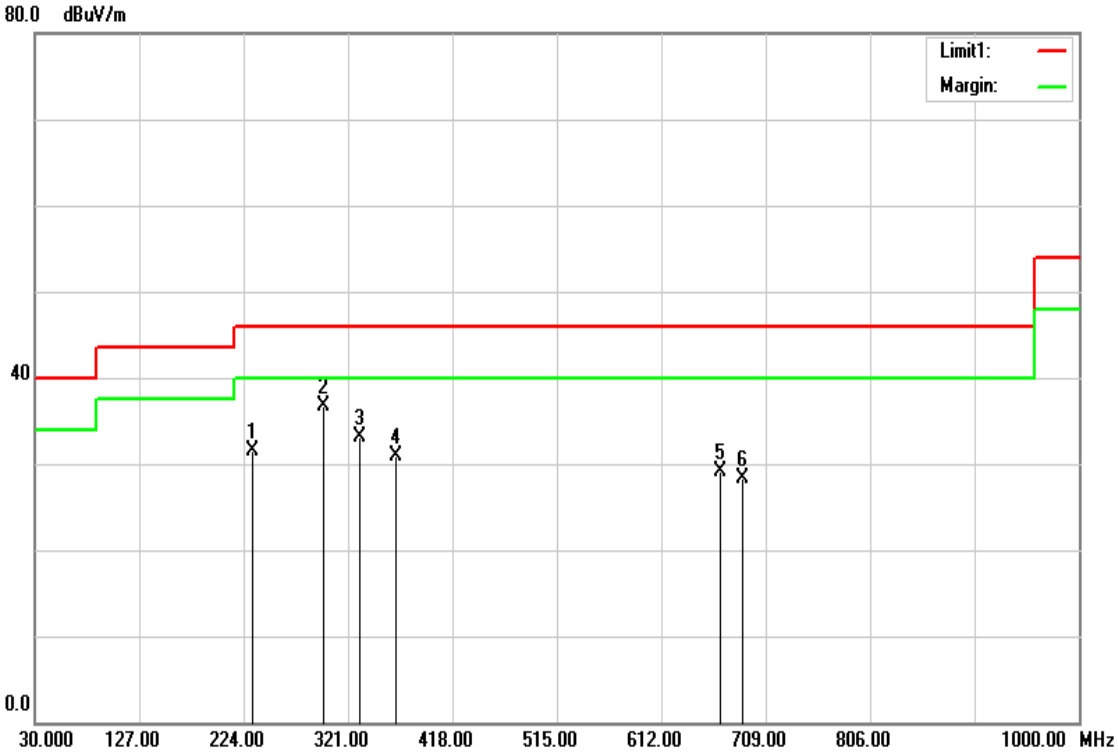


Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
169.6800	52.91	-16.83	36.08	43.50	-7.42	peak	V
396.6600	45.46	-11.78	33.68	46.00	-12.32	peak	V
452.9200	43.27	-10.13	33.14	46.00	-12.86	peak	V
623.6400	42.14	-7.20	34.94	46.00	-11.06	peak	V
666.3200	42.50	-6.41	36.09	46.00	-9.91	peak	V
963.1400	39.56	-2.18	37.38	54.00	-16.62	peak	V

Remark:

1. *No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

Operation Mode: Normal Link
Test Date: September 10, 2016
Temperature: 27°C
Tested by: Dennis Li
Humidity: 53% RH
Polarity: Hor.

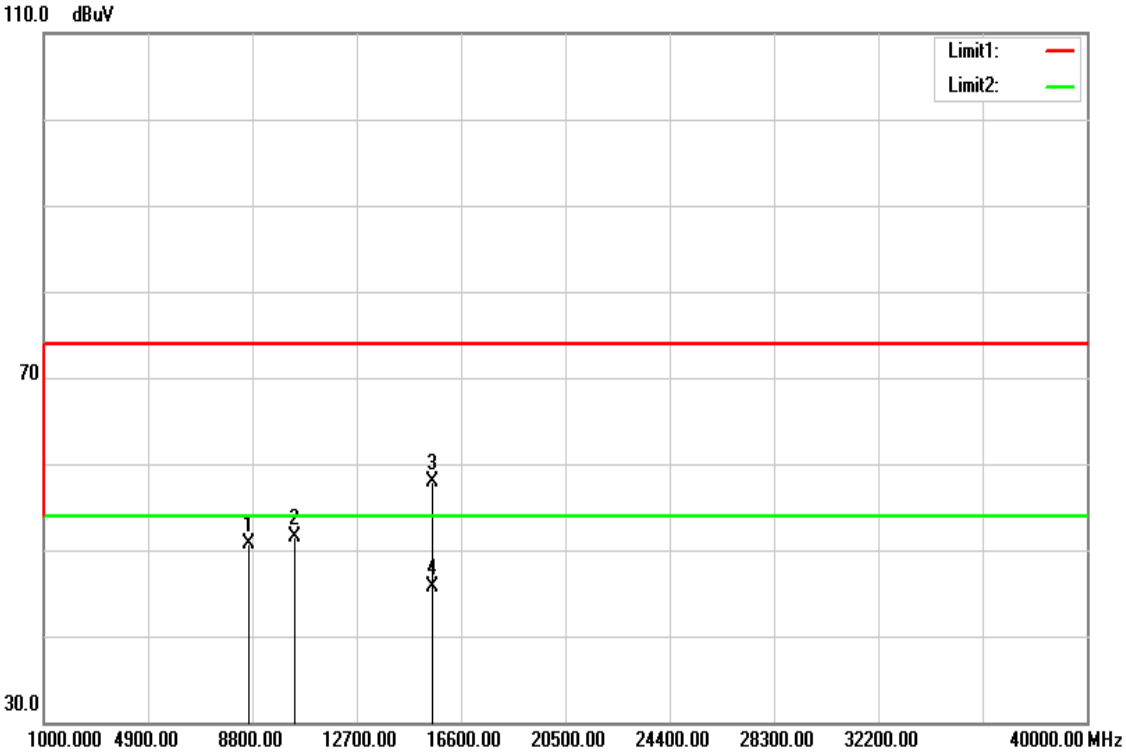


Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
232.7300	48.26	-16.67	31.59	46.00	-14.41	peak	H
298.6900	50.87	-14.26	36.61	46.00	-9.39	peak	H
331.6700	46.44	-13.38	33.06	46.00	-12.94	peak	H
365.6200	43.39	-12.52	30.87	46.00	-15.13	peak	H
666.3200	35.46	-6.41	29.05	46.00	-16.95	peak	H
687.6600	34.47	-6.19	28.28	46.00	-17.72	peak	H

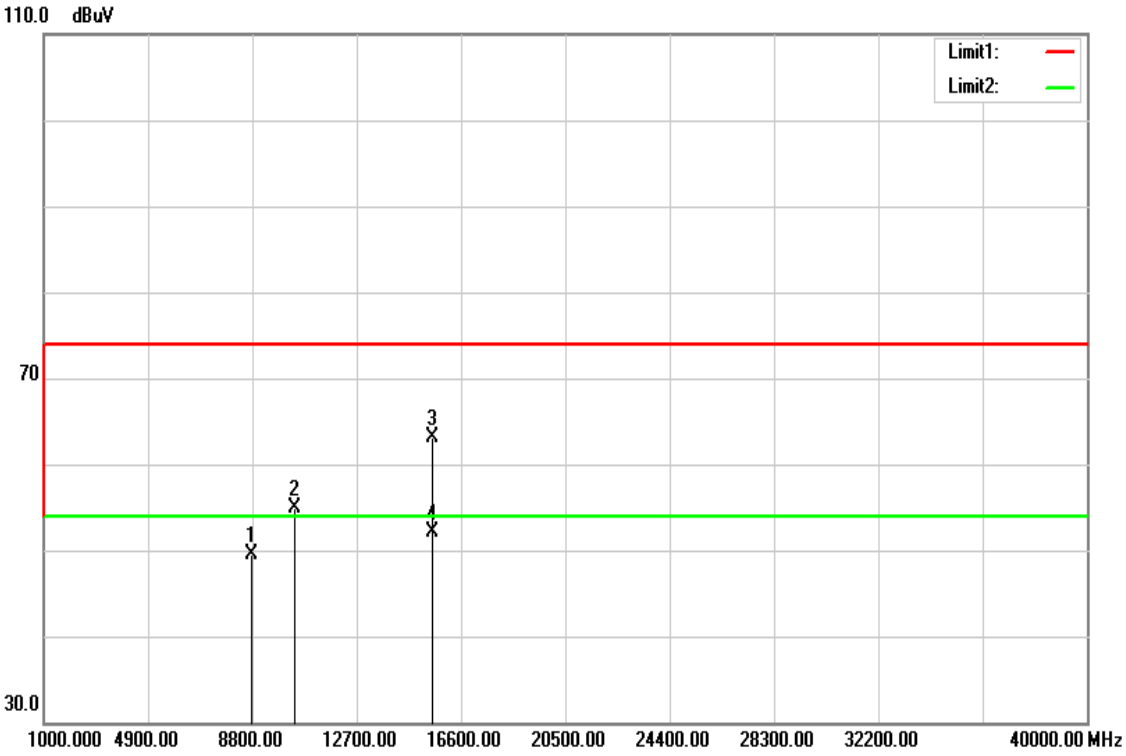
Remark:

1. *No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).*
2. *Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
3. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

Above 1 GHz
U-NII-1
Tx / IEEE 802.11a mode / CH Low
Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

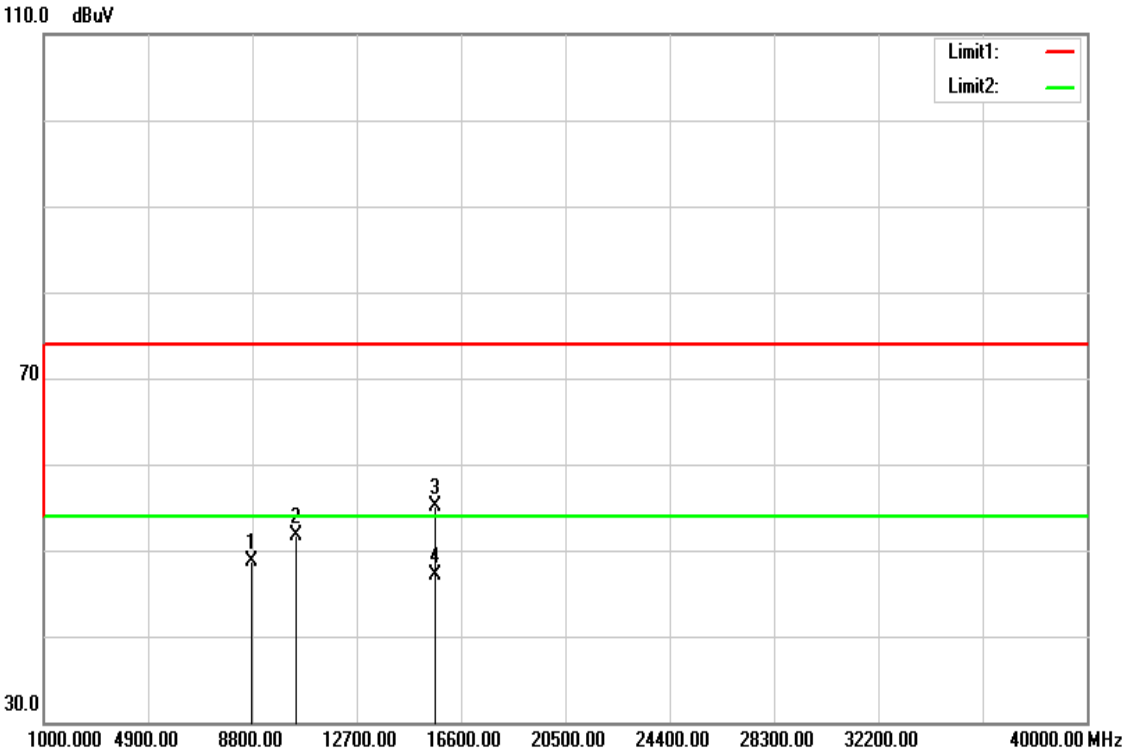
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8647.000	36.99	13.71	50.70	74.00	-23.30	peak	V
10360.000	35.05	16.52	51.57	74.00	-22.43	peak	V
15540.000	38.82	19.04	57.86	74.00	-16.14	peak	V
15540.000	26.60	19.04	45.64	54.00	-8.36	AVG	V
N/A							
8791.000	35.64	13.77	49.41	74.00	-24.59	peak	H
10360.000	38.47	16.52	54.99	74.00	-19.01	peak	H
15540.000	44.11	19.04	63.15	74.00	-10.85	peak	H
15540.000	33.15	19.04	52.19	54.00	-1.81	AVG	H
N/A							

Remark:

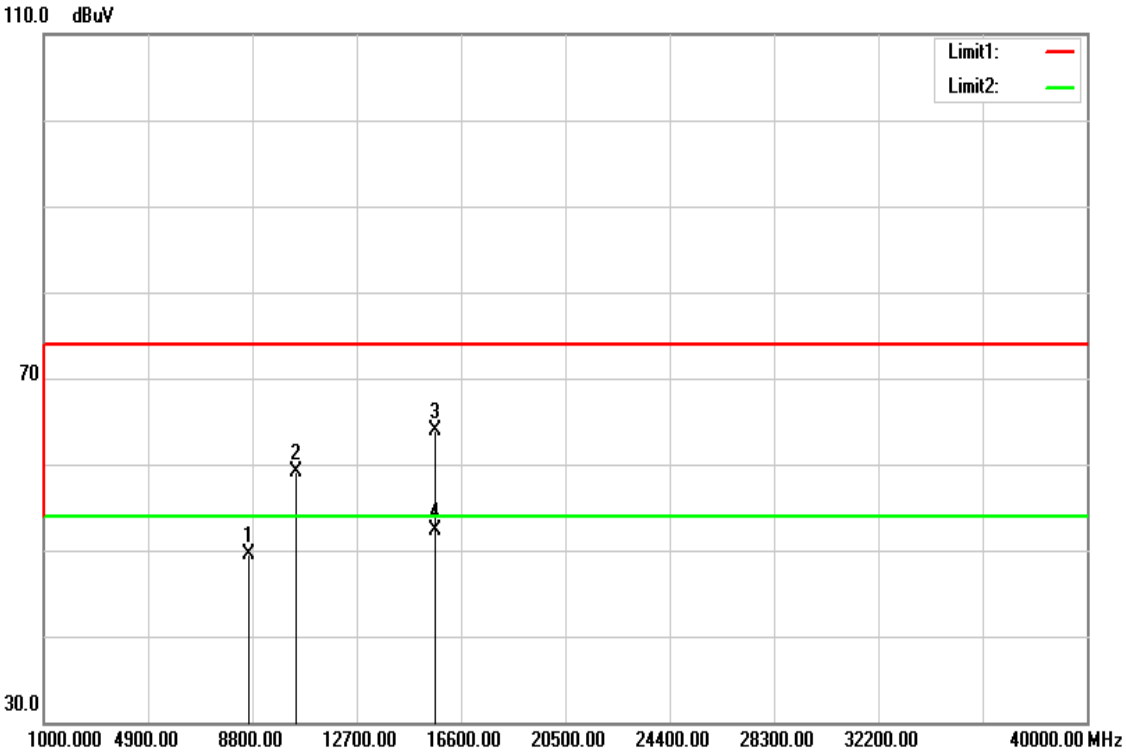
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Mid
Test Date: June 22, 2016
Temperature: 27°C
Tested by: Dennis Li
Humidity: 53% RH
Polarity: Ver. / Hor.

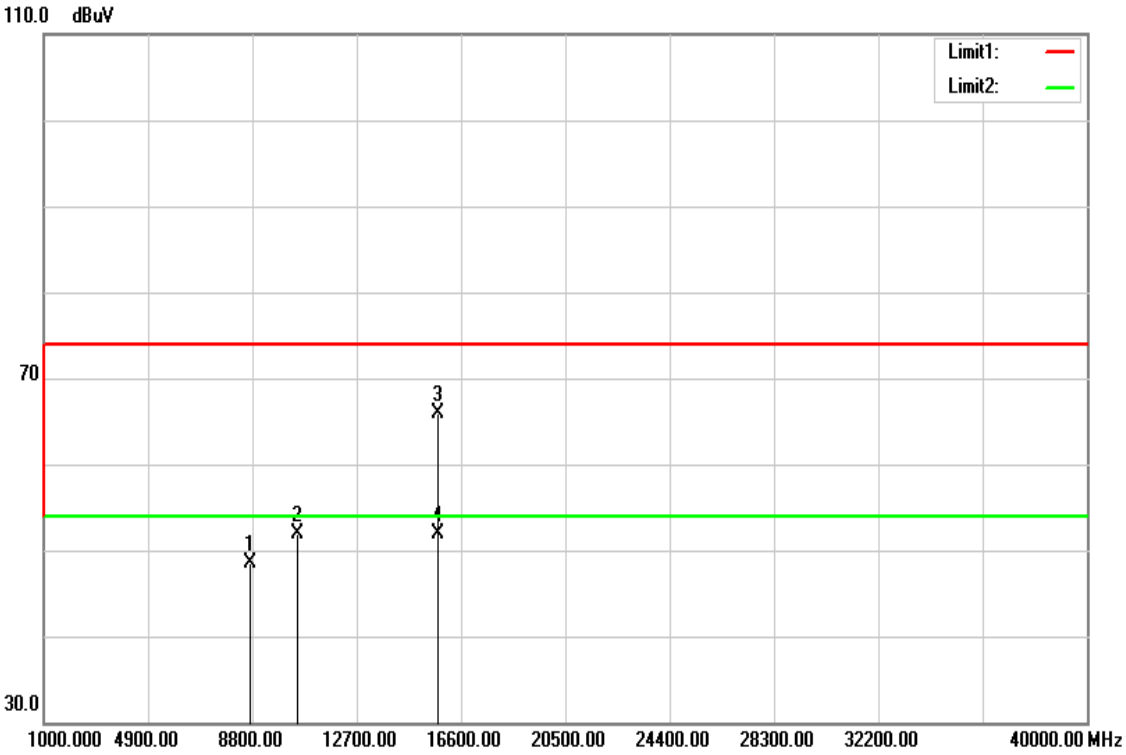
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8754.000	34.94	13.76	48.70	74.00	-25.30	peak	V
10440.000	34.84	16.89	51.73	74.00	-22.27	peak	V
15660.000	35.88	19.14	55.02	74.00	-18.98	peak	V
15660.000	27.98	19.14	47.12	54.00	-6.88	AVG	V
N/A							
8657.000	35.86	13.71	49.57	74.00	-24.43	peak	H
10440.000	42.13	16.89	59.02	74.00	-14.98	peak	H
15660.000	44.81	19.14	63.95	74.00	-10.05	peak	H
15660.000	33.22	19.14	52.36	54.00	-1.64	AVG	H
N/A							

Remark:

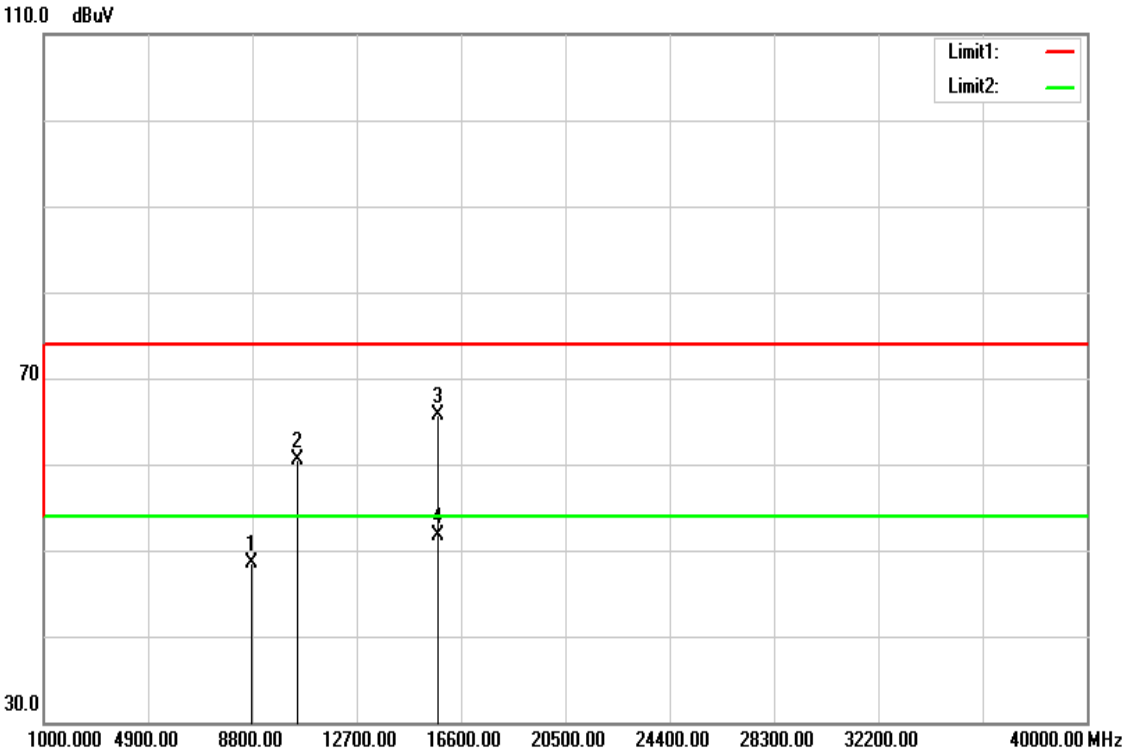
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

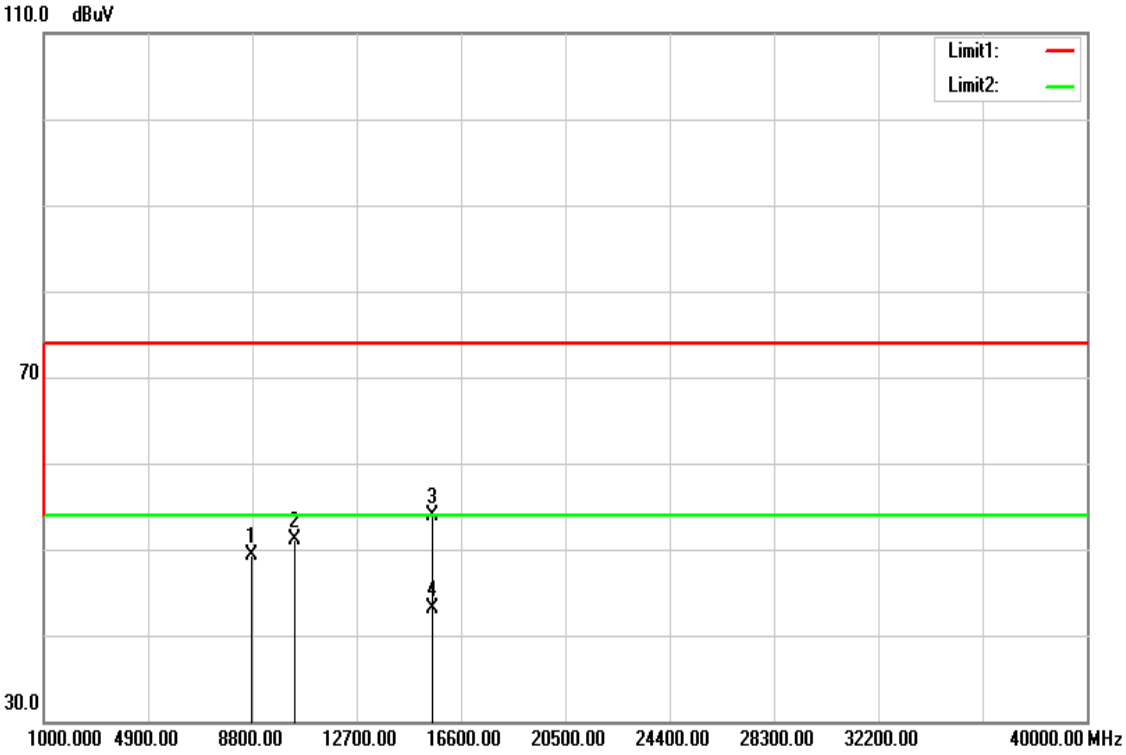
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8745.000	34.69	13.75	48.44	74.00	-25.56	peak	V
10480.000	34.83	17.07	51.90	74.00	-22.10	peak	V
15720.000	46.65	19.19	65.84	74.00	-8.16	peak	V
15720.000	32.67	19.19	51.86	54.00	-2.14	AVG	V
N/A							
8766.000	34.80	13.76	48.56	74.00	-25.44	peak	H
10480.000	43.50	17.07	60.57	74.00	-13.43	peak	H
15720.000	46.45	19.19	65.64	74.00	-8.36	peak	H
15720.000	32.48	19.19	51.67	54.00	-2.33	AVG	H
N/A							

Remark:

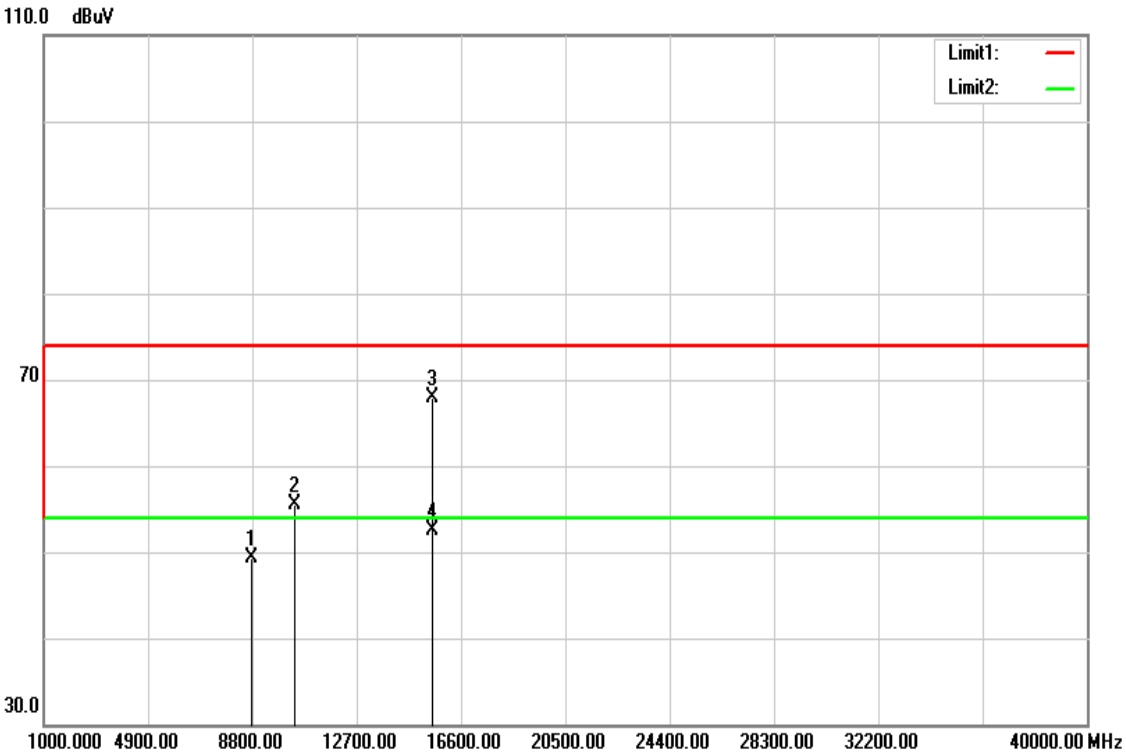
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 20 MHz mode / CH Low	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

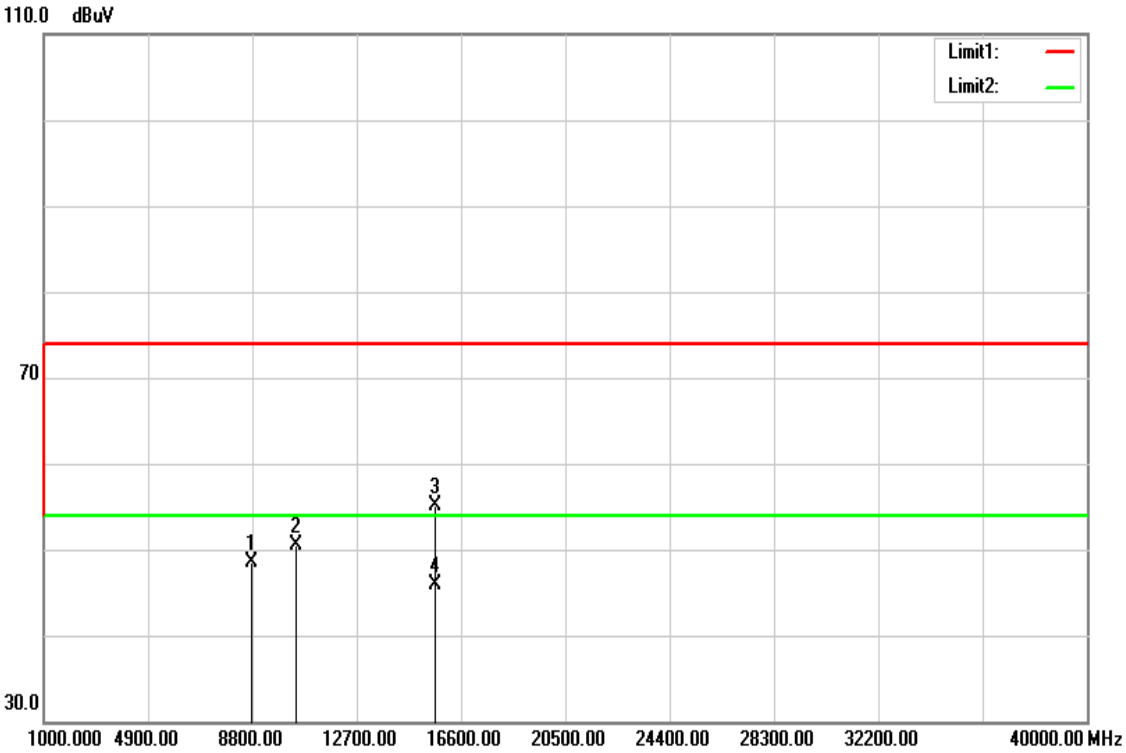
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8763.000	35.62	13.76	49.38	74.00	-24.62	peak	V
10360.000	34.50	16.52	51.02	74.00	-22.98	peak	V
15540.000	34.95	19.04	53.99	74.00	-20.01	peak	V
15540.000	24.07	19.04	43.11	54.00	-10.89	AVG	V
N/A							
8765.000	35.53	13.76	49.29	74.00	-24.71	peak	H
10360.000	39.04	16.52	55.56	74.00	-18.44	peak	H
15540.000	48.88	19.04	67.92	74.00	-6.08	peak	H
15540.000	33.42	19.04	52.46	54.00	-1.54	AVG	H
N/A							

Remark:

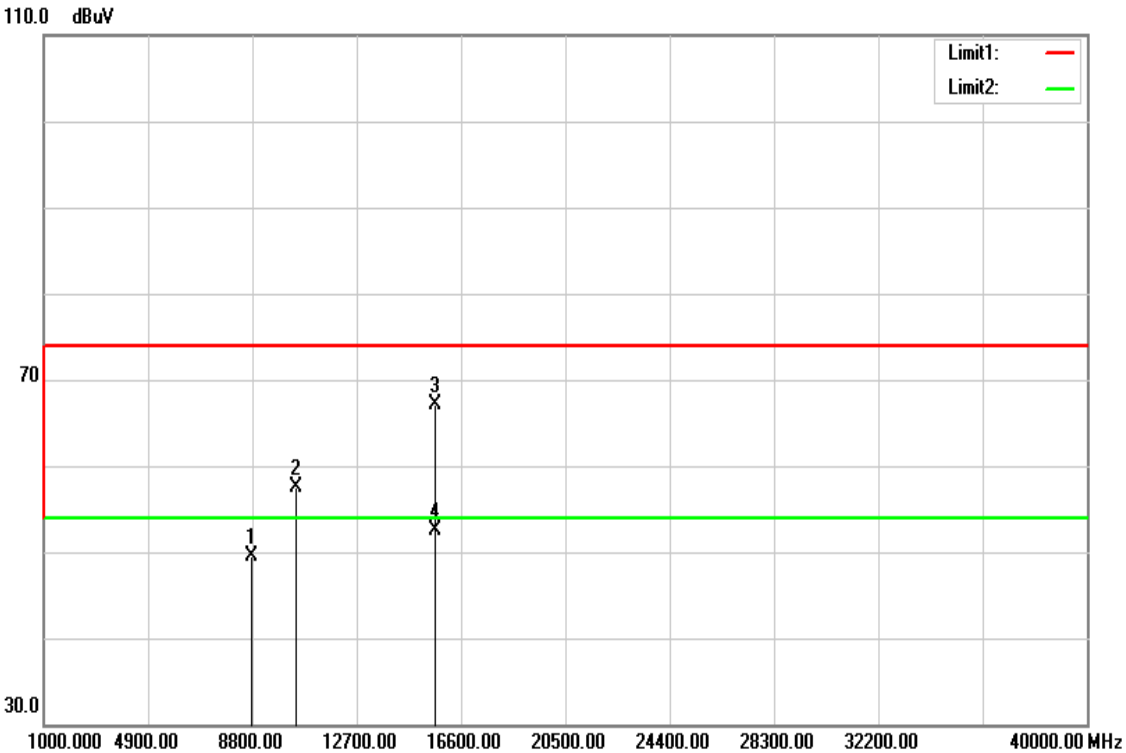
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 20 MHz mode / CH Mid	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

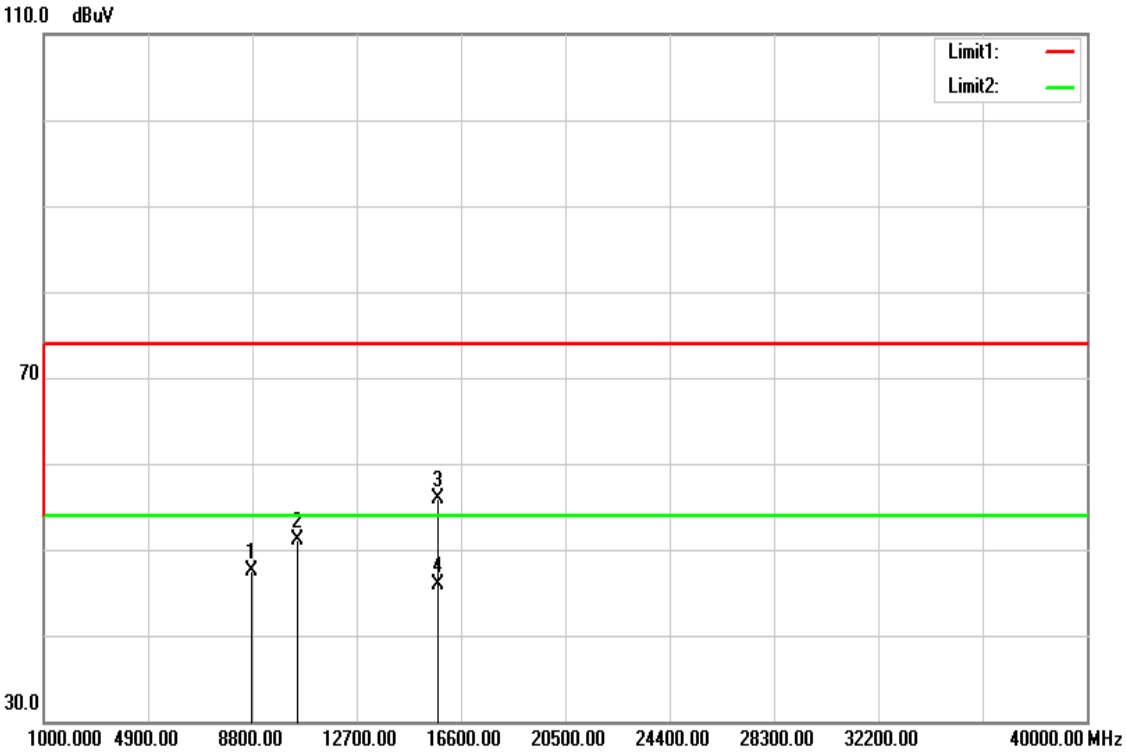
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8760.000	34.77	13.76	48.53	74.00	-25.47	peak	V
10440.000	33.53	16.89	50.42	74.00	-23.58	peak	V
15660.000	35.92	19.14	55.06	74.00	-18.94	peak	V
15660.000	26.84	19.14	45.98	54.00	-8.02	AVG	V
N/A							
8754.000	35.69	13.76	49.45	74.00	-24.55	peak	H
10440.000	40.71	16.89	57.60	74.00	-16.40	peak	H
15660.000	47.91	19.14	67.05	74.00	-6.95	peak	H
15660.000	33.43	19.14	52.57	54.00	-1.43	AVG	H
N/A							

Remark:

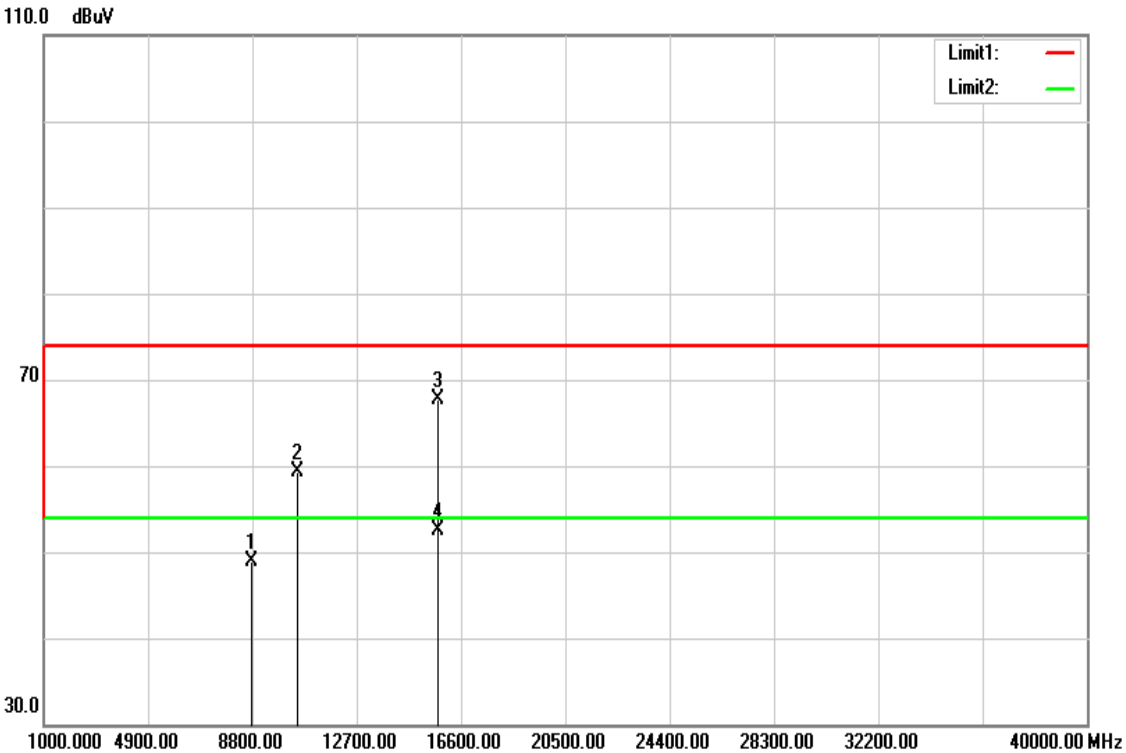
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 20 MHz mode / CH High	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

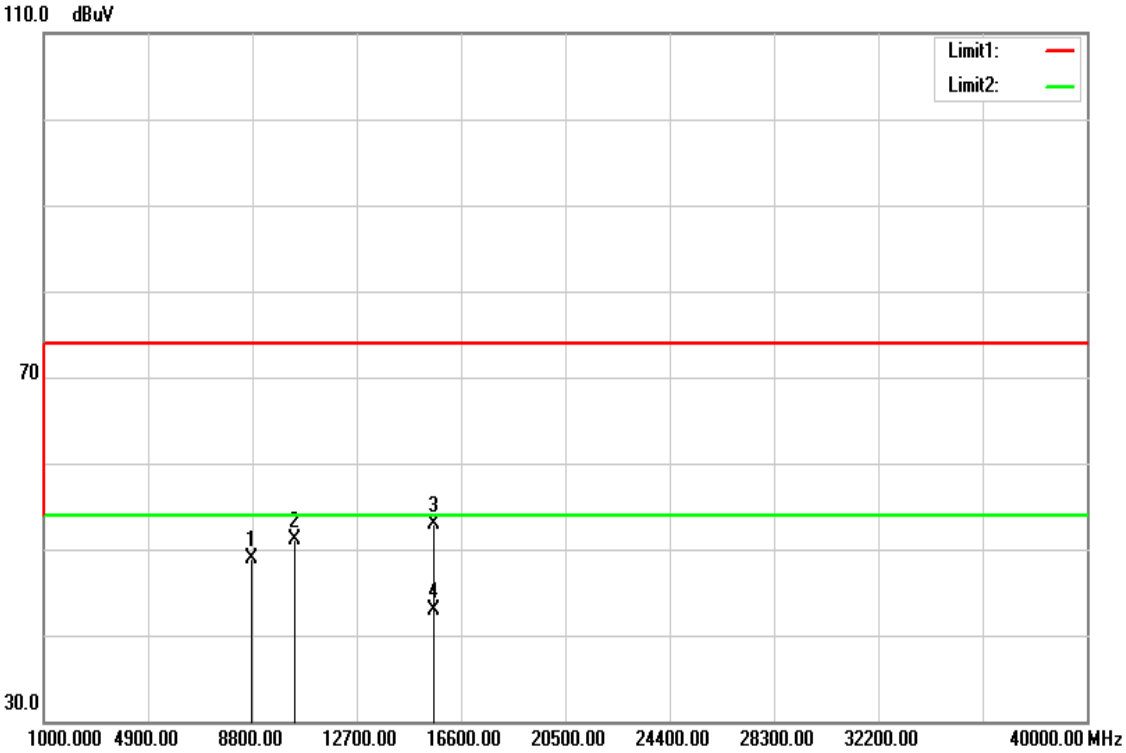
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8796.000	33.81	13.78	47.59	74.00	-26.41	peak	V
10480.000	34.05	17.07	51.12	74.00	-22.88	peak	V
15720.000	36.72	19.19	55.91	74.00	-18.09	peak	V
15720.000	26.72	19.19	45.91	54.00	-8.09	AVG	V
N/A							
8756.000	35.23	13.76	48.99	74.00	-25.01	peak	H
10480.000	42.20	17.07	59.27	74.00	-14.73	peak	H
15720.000	48.44	19.19	67.63	74.00	-6.37	peak	H
15720.000	33.39	19.19	52.58	54.00	-1.42	AVG	H
N/A							

Remark:

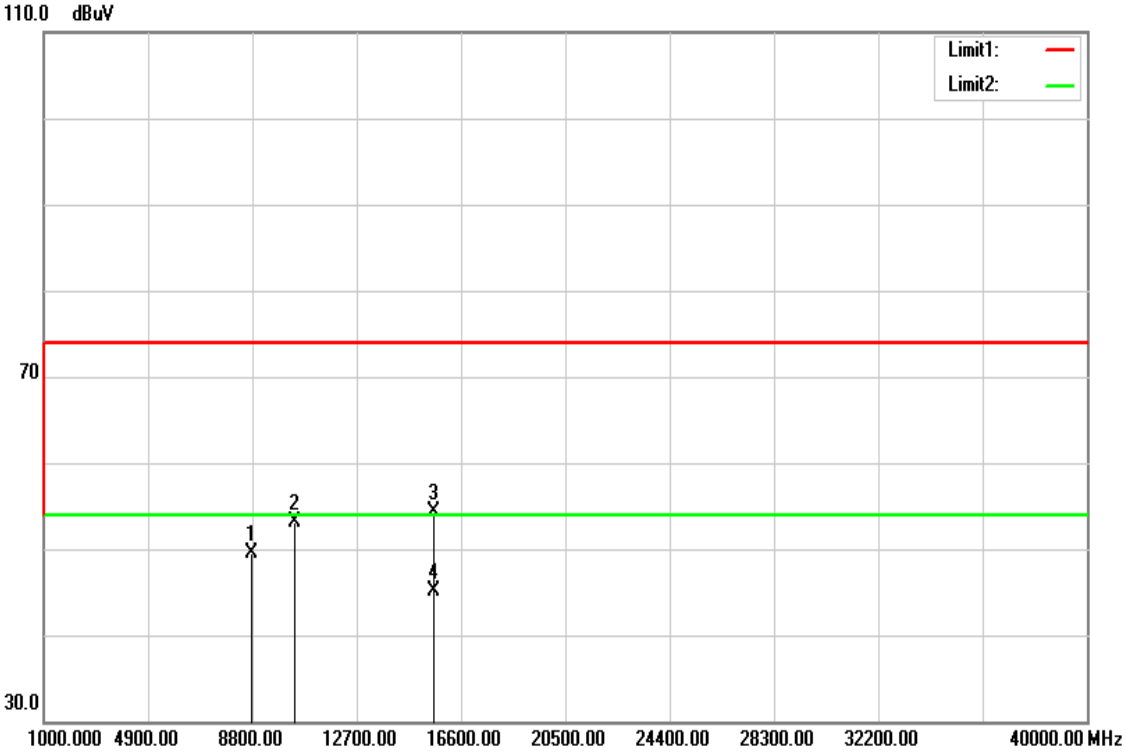
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / CH Low	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

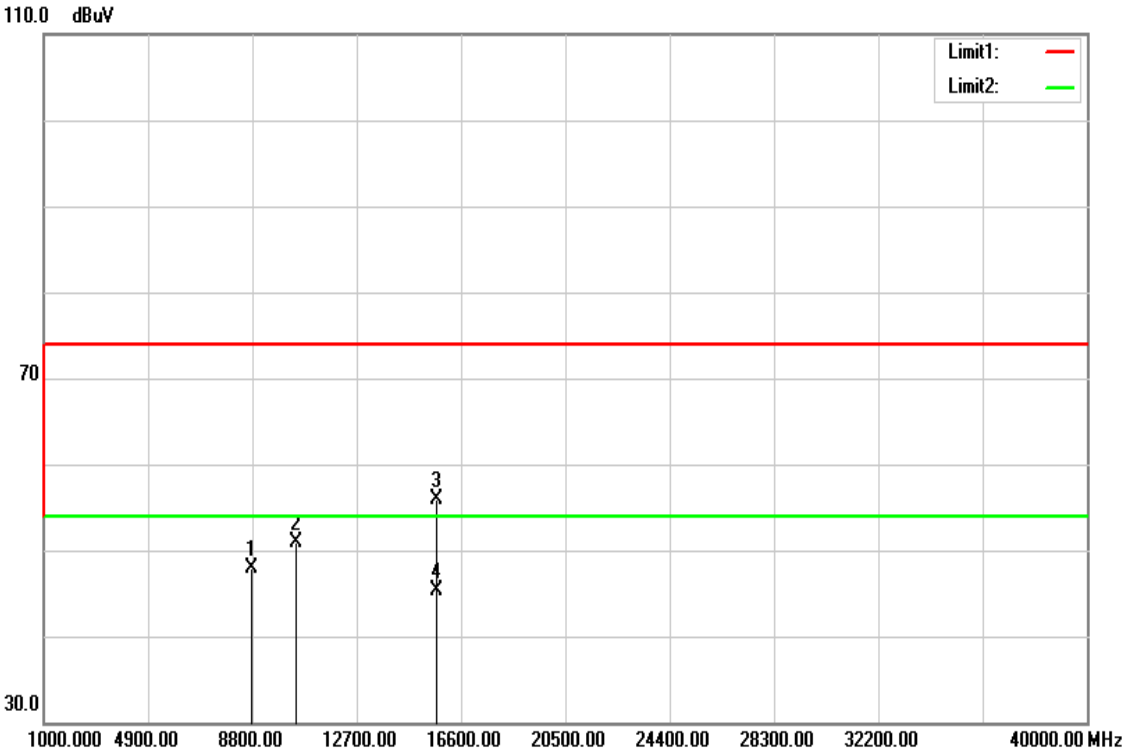
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8763.000	35.22	13.76	48.98	74.00	-25.02	peak	V
10380.000	34.48	16.62	51.10	74.00	-22.90	peak	V
15570.000	33.82	19.07	52.89	74.00	-21.11	peak	V
15570.000	23.90	19.07	42.97	54.00	-11.03	AVG	V
N/A							
8752.000	35.75	13.76	49.51	74.00	-24.49	peak	H
10380.000	36.42	16.62	53.04	74.00	-20.96	peak	H
15570.000	35.27	19.07	54.34	74.00	-19.66	peak	H
15570.000	25.98	19.07	45.05	54.00	-8.95	AVG	H
N/A							

Remark:

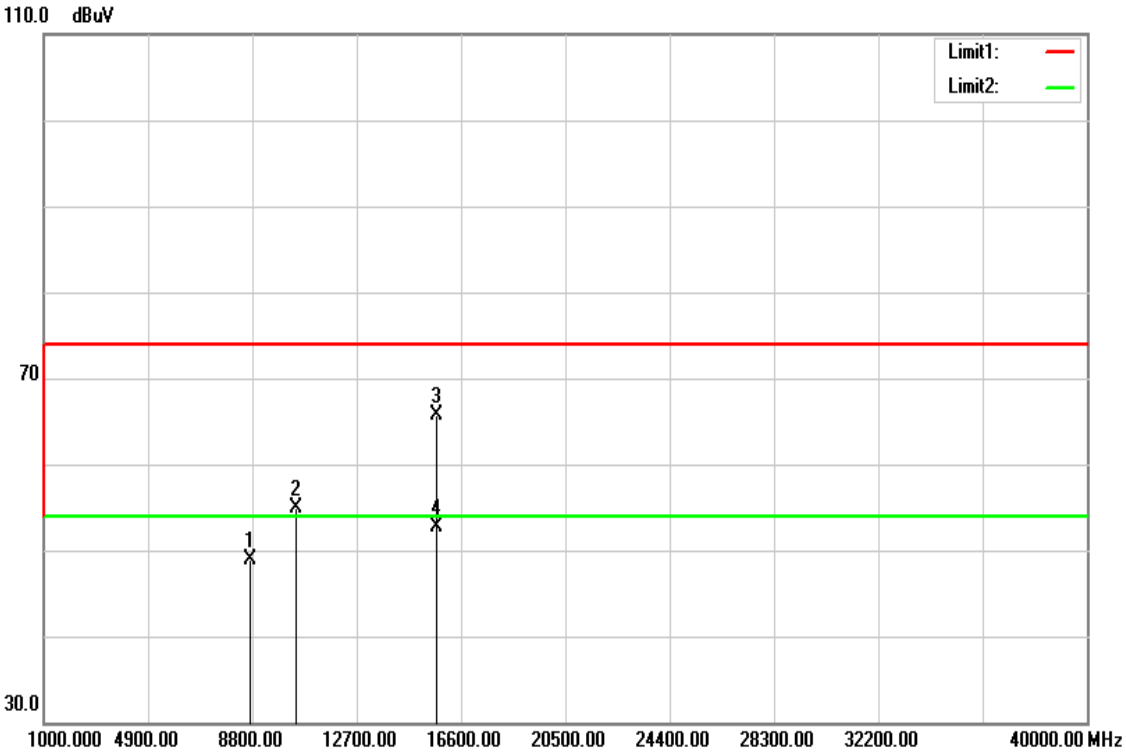
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11n HT 40 MHz mode / CH High	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

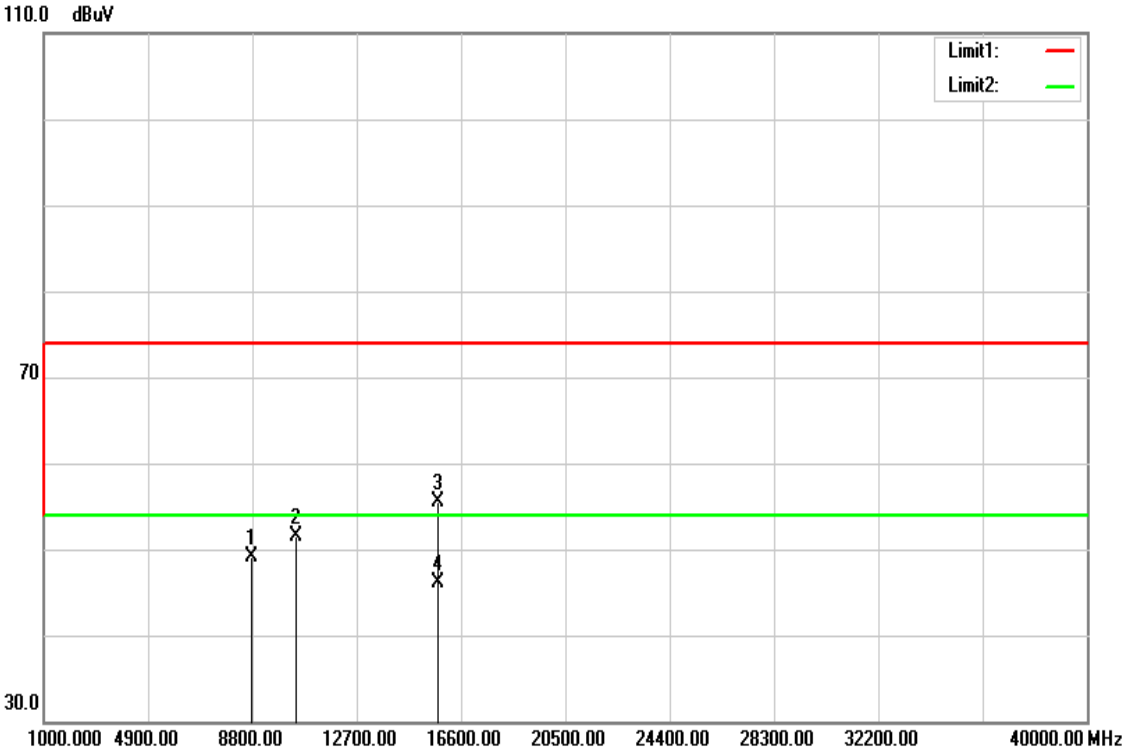
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8765.000	34.23	13.76	47.99	74.00	-26.01	peak	V
10460.000	33.88	16.98	50.86	74.00	-23.14	peak	V
15690.000	36.74	19.17	55.91	74.00	-18.09	peak	V
15690.000	26.16	19.17	45.33	54.00	-8.67	AVG	V
N/A							
8744.000	35.07	13.75	48.82	74.00	-25.18	peak	H
10460.000	37.89	16.98	54.87	74.00	-19.13	peak	H
15690.000	46.47	19.17	65.64	74.00	-8.36	peak	H
15690.000	33.55	19.17	52.72	54.00	-1.28	AVG	H
N/A							

Remark:

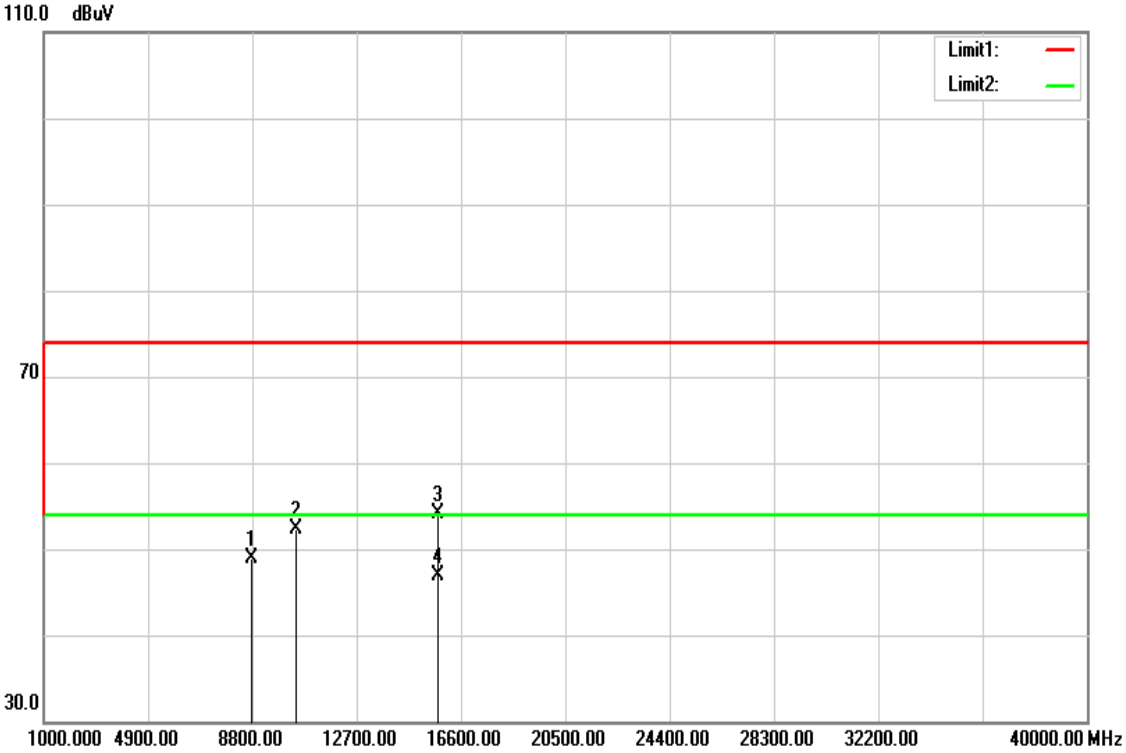
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8762.000	35.40	13.76	49.16	74.00	-24.84	peak	V
10420.000	34.76	16.80	51.56	74.00	-22.44	peak	V
15720.000	36.25	19.19	55.44	74.00	-18.56	peak	V
15720.000	26.93	19.19	46.12	54.00	-7.88	AVG	V
N/A							
8779.000	35.08	13.77	48.85	74.00	-25.15	peak	H
10420.000	35.41	16.80	52.21	74.00	-21.79	peak	H
15720.000	34.82	19.19	54.01	74.00	-19.99	peak	H
15720.000	27.63	19.19	46.82	54.00	-7.18	AVG	H
N/A							

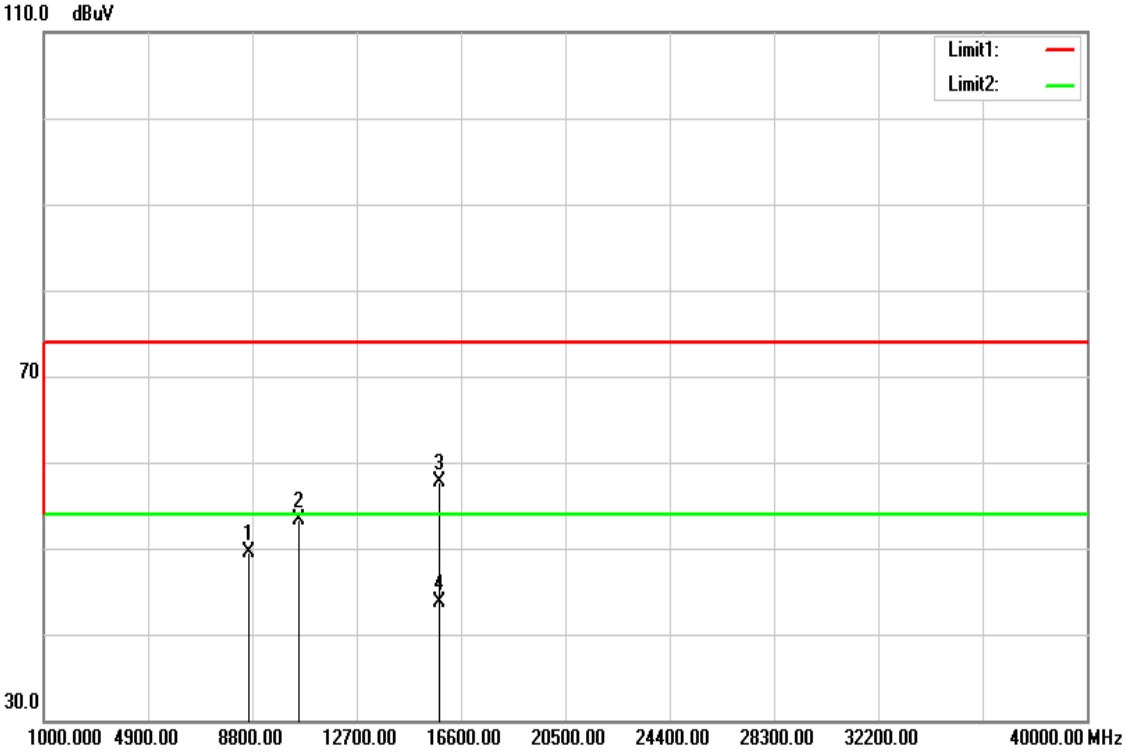
Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

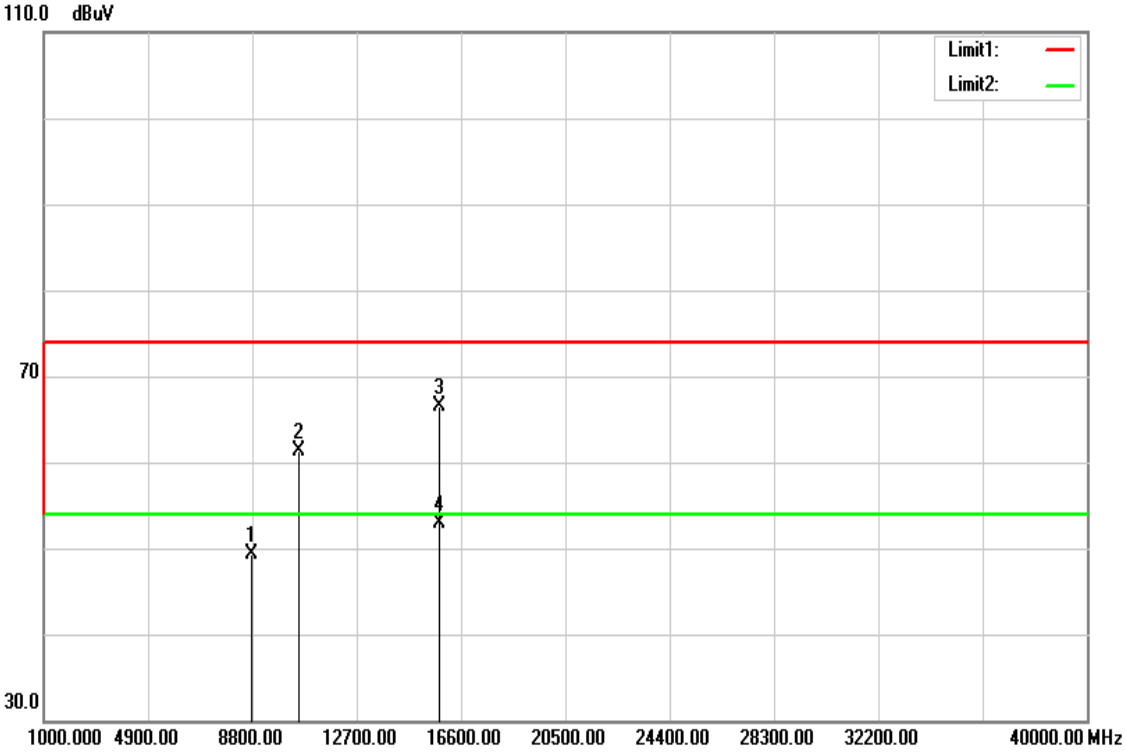
U-NII-2A

Tx / IEEE 802.11a mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

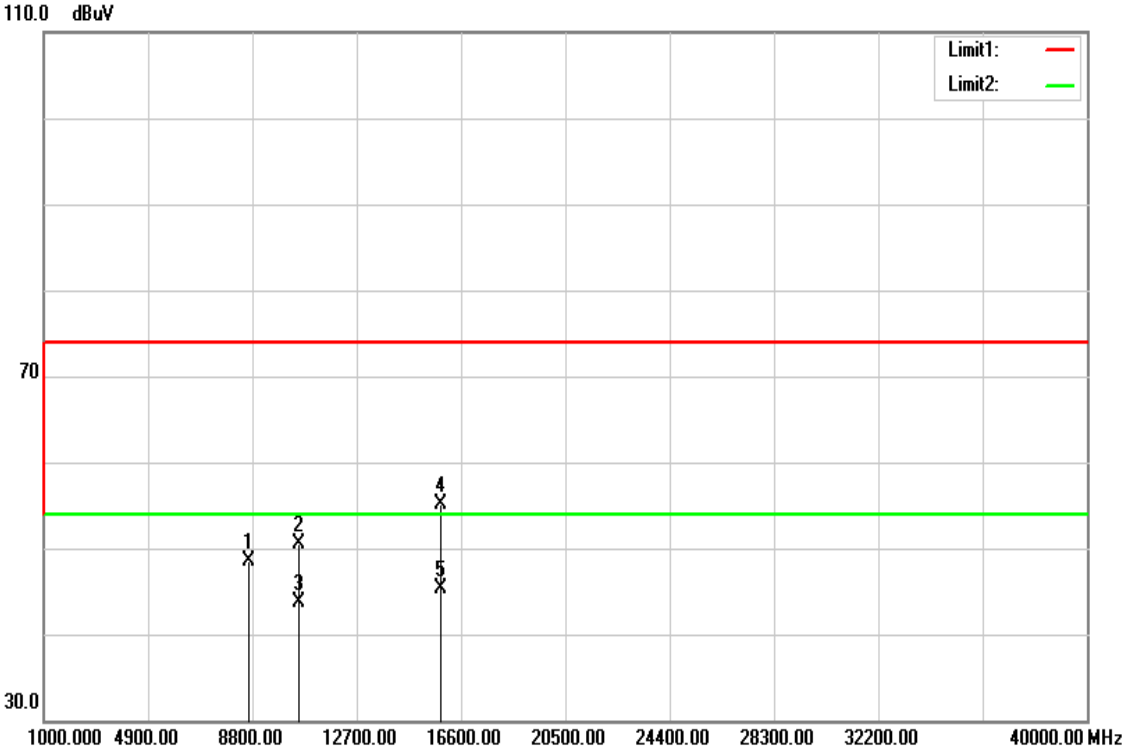
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8645.000	35.84	13.71	49.55	74.00	-24.45	peak	V
10520.000	36.26	17.14	53.40	74.00	-20.60	peak	V
15780.000	38.45	19.25	57.70	74.00	-16.30	peak	V
15780.000	24.40	19.25	43.65	54.00	-10.35	AVG	V
N/A							
8756.000	35.50	13.76	49.26	74.00	-24.74	peak	H
10520.000	44.08	17.14	61.22	74.00	-12.78	peak	H
15780.000	47.24	19.25	66.49	74.00	-7.51	peak	H
15780.000	33.58	19.25	52.83	54.00	-1.17	AVG	H
N/A							

Remark:

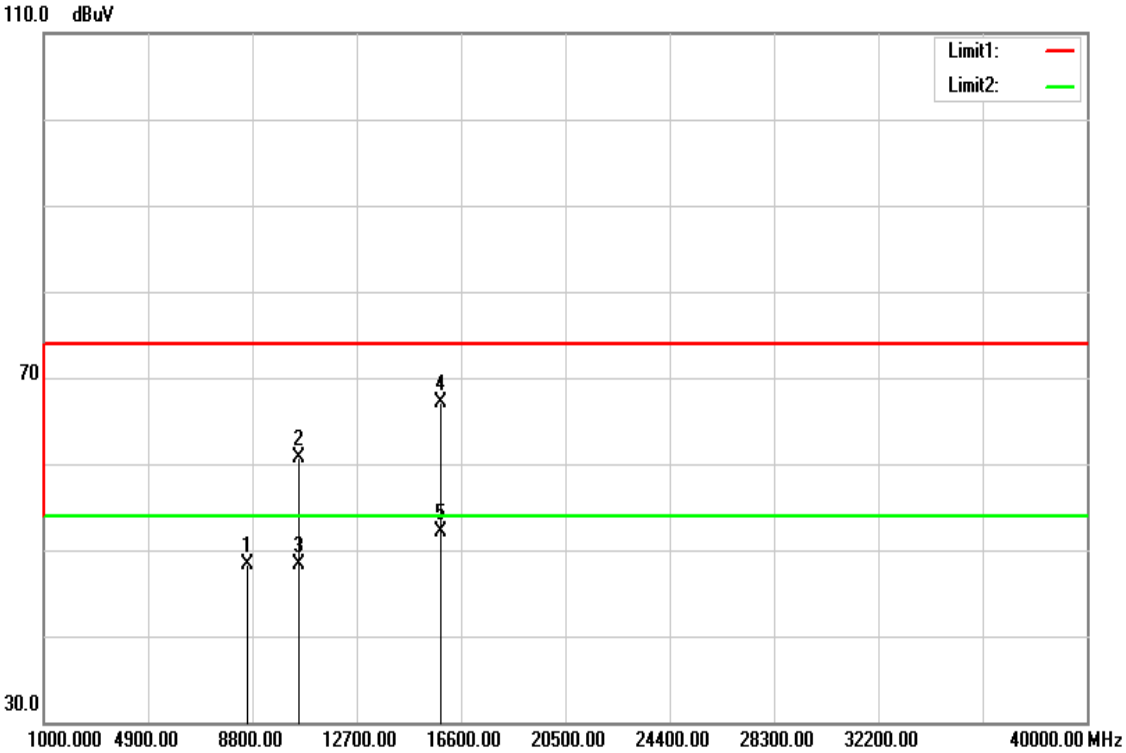
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Mid
Test Date: June 22, 2016
Temperature: 27°C
Tested by: Dennis Li
Humidity: 53% RH
Polarity: Ver. / Hor.

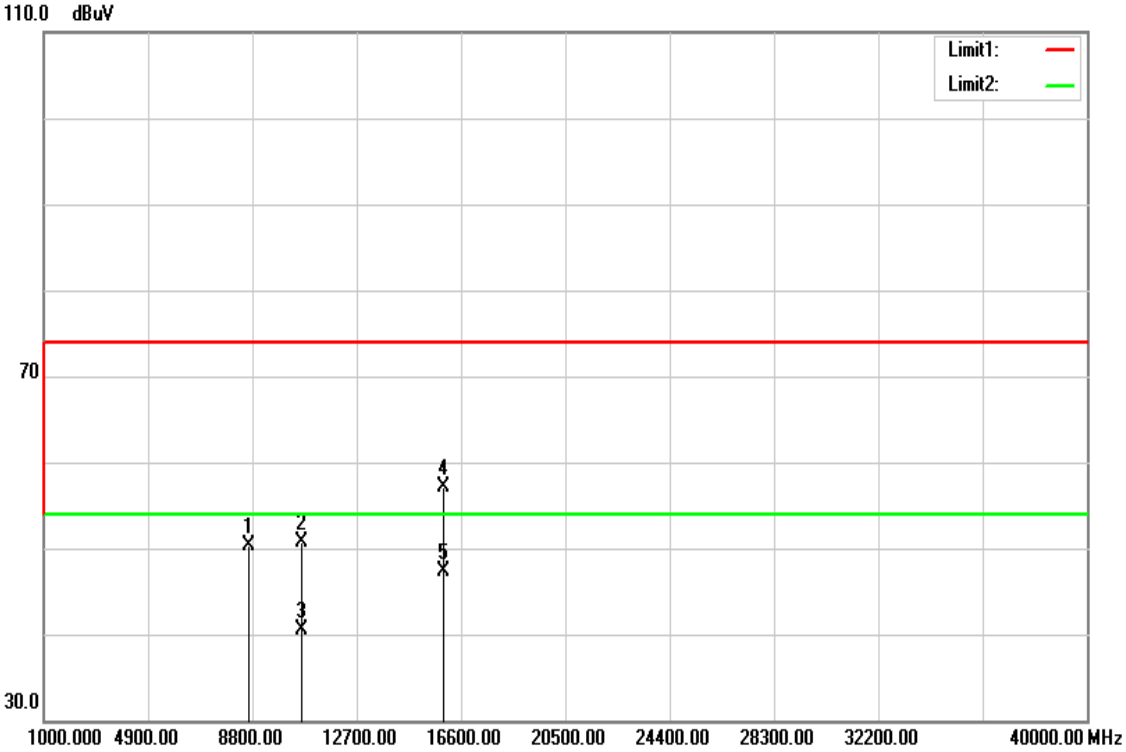
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8679.000	34.69	13.72	48.41	74.00	-25.59	peak	V
10560.000	33.48	17.11	50.59	74.00	-23.41	peak	V
10560.000	26.52	17.11	43.63	54.00	-10.37	AVG	V
15840.000	35.74	19.30	55.04	74.00	-18.96	peak	V
15840.000	26.04	19.30	45.34	54.00	-8.66	AVG	V
N/A							
8633.000	34.57	13.70	48.27	74.00	-25.73	peak	H
10560.000	43.67	17.11	60.78	74.00	-13.22	peak	H
10560.000	31.23	17.11	48.34	54.00	-5.66	AVG	H
15840.000	47.81	19.30	67.11	74.00	-6.89	peak	H
15840.000	32.73	19.30	52.03	54.00	-1.97	AVG	H
N/A							

Remark:

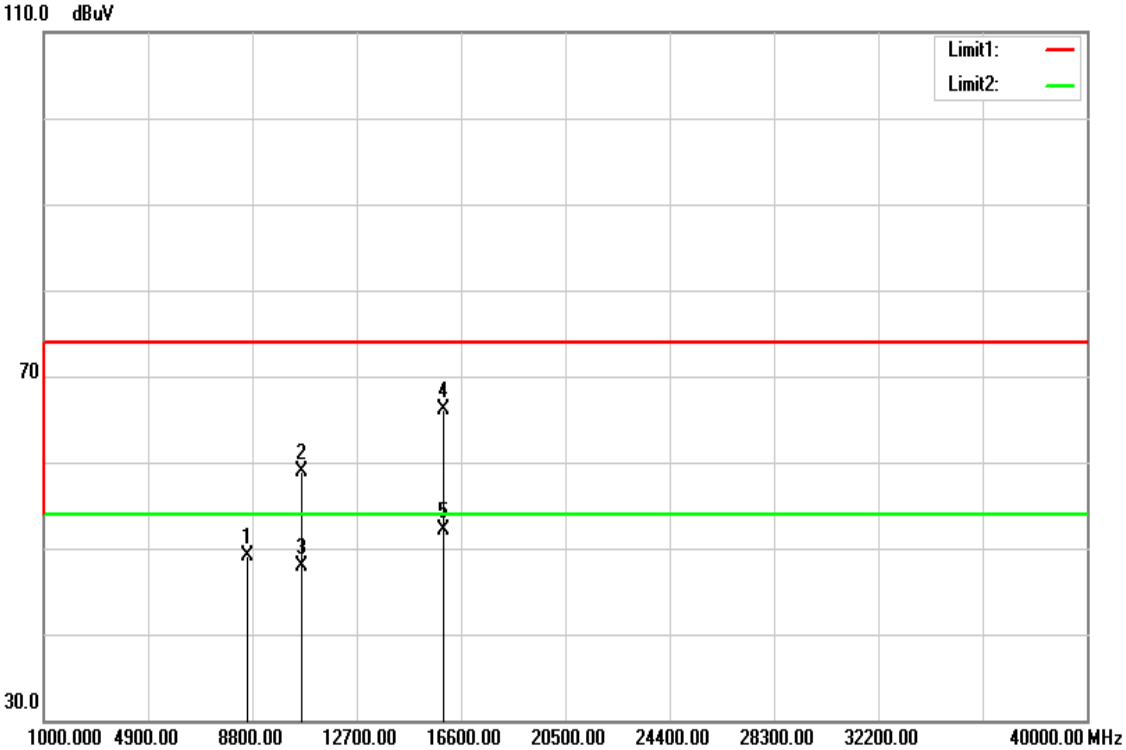
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

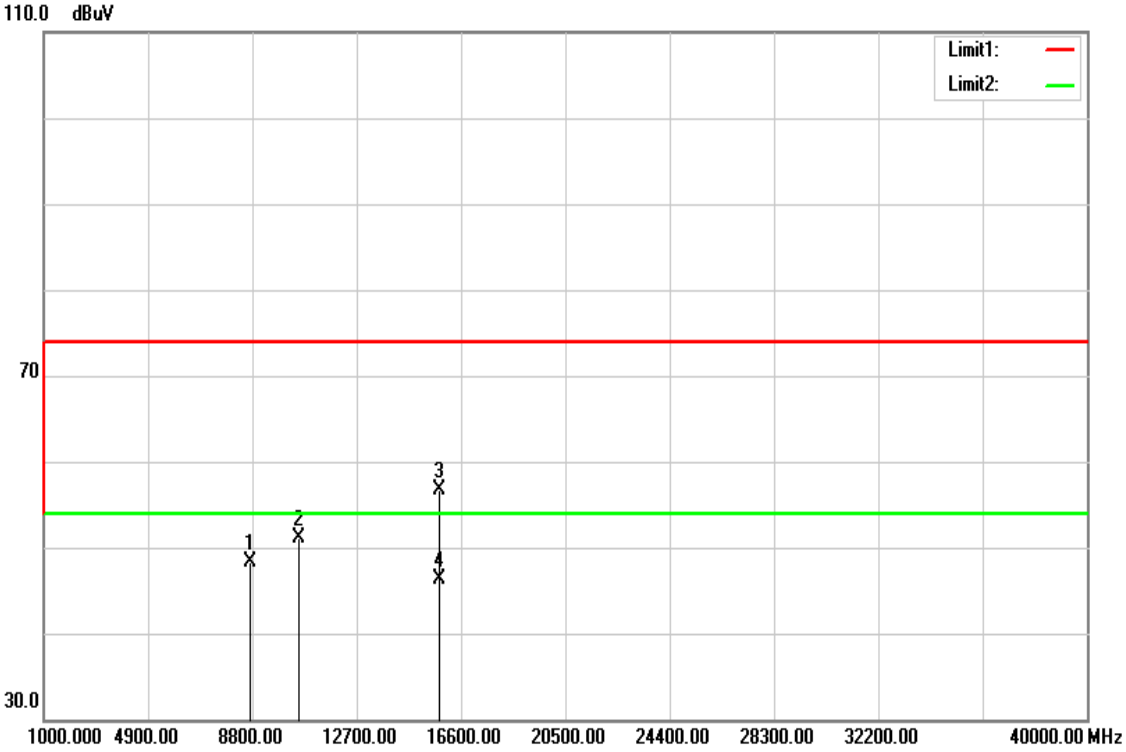
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8668.000	36.66	13.72	50.38	74.00	-23.62	peak	V
10640.000	33.65	17.04	50.69	74.00	-23.31	peak	V
10640.000	23.47	17.04	40.51	54.00	-13.49	AVG	V
15960.000	37.77	19.40	57.17	74.00	-16.83	peak	V
15960.000	27.95	19.40	47.35	54.00	-6.65	AVG	V
N/A							
8621.000	35.35	13.70	49.05	74.00	-24.95	peak	H
10640.000	41.81	17.04	58.85	74.00	-15.15	peak	H
10640.000	30.77	17.04	47.81	54.00	-6.19	AVG	H
15960.000	46.79	19.40	66.19	74.00	-7.81	peak	H
15960.000	32.73	19.40	52.13	54.00	-1.87	AVG	H
N/A							

Remark:

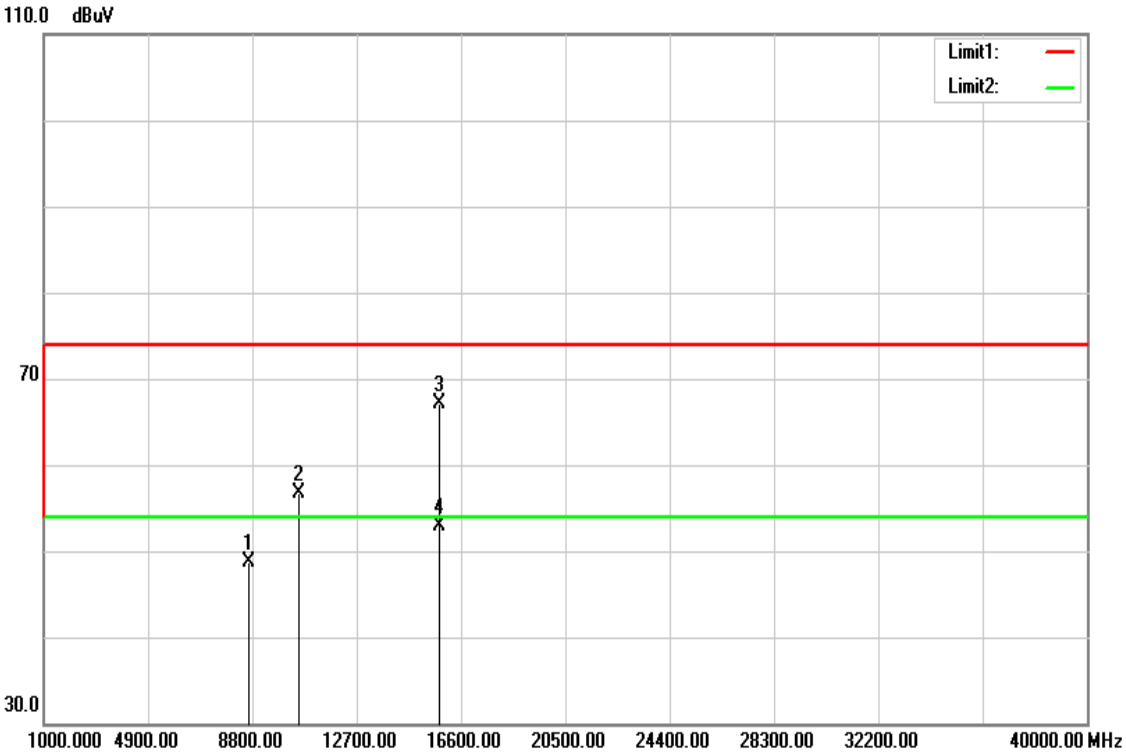
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

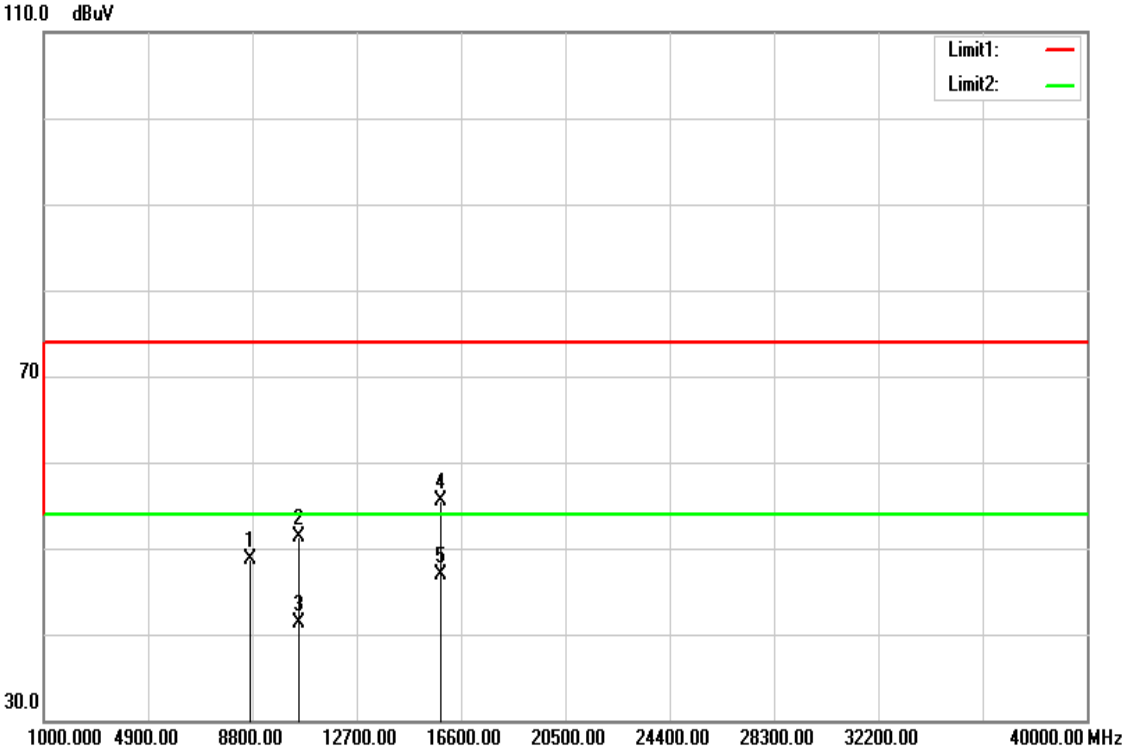
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8713.000	34.53	13.74	48.27	74.00	-25.73	peak	V
10520.000	33.93	17.14	51.07	74.00	-22.93	peak	V
15780.000	37.47	19.25	56.72	74.00	-17.28	peak	V
15780.000	27.12	19.25	46.37	54.00	-7.63	AVG	V
N/A							
8647.000	34.98	13.71	48.69	74.00	-25.31	peak	H
10520.000	39.59	17.14	56.73	74.00	-17.27	peak	H
15780.000	47.95	19.25	67.20	74.00	-6.80	peak	H
15780.000	33.71	19.25	52.96	54.00	-1.04	AVG	H
N/A							

Remark:

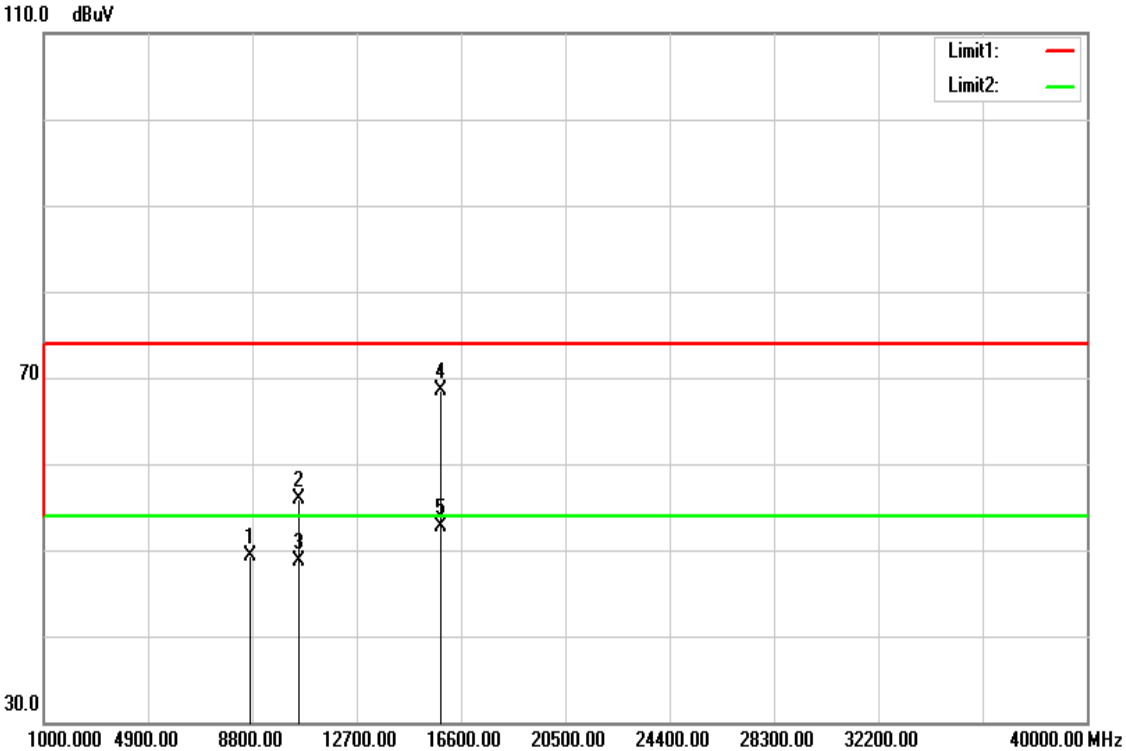
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH Mid **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

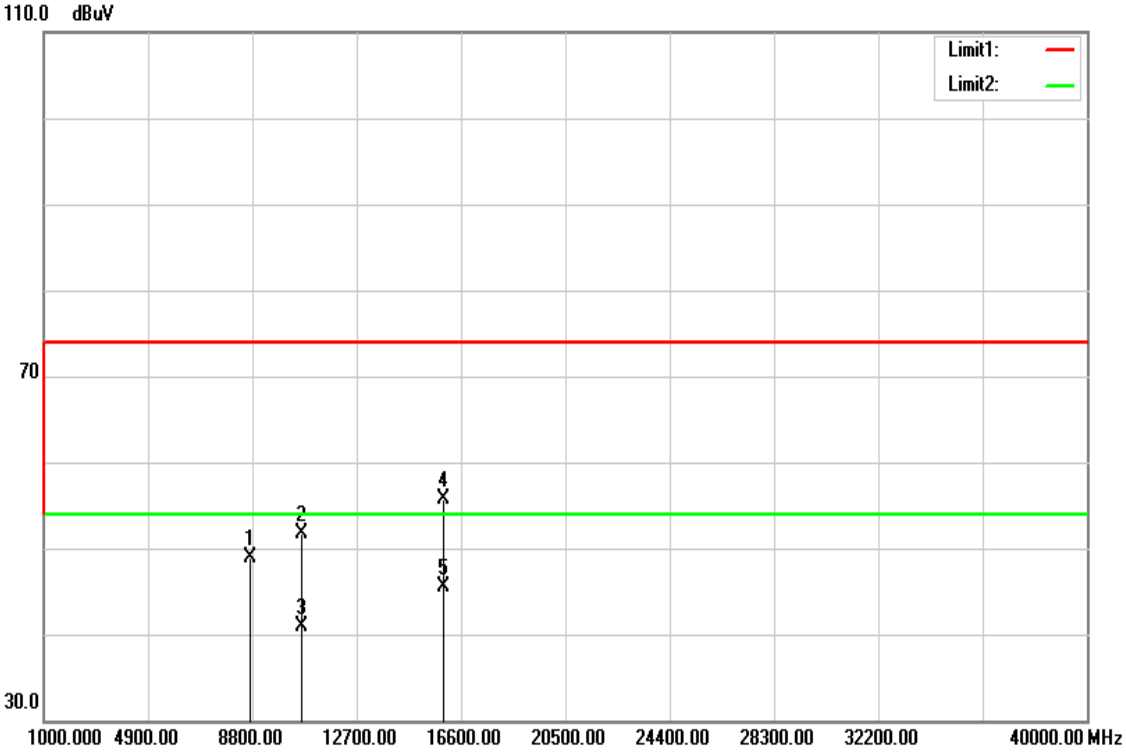
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8723.000	35.04	13.74	48.78	74.00	-25.22	peak	V
10560.000	34.21	17.11	51.32	74.00	-22.68	peak	V
10560.000	24.12	17.11	41.23	54.00	-12.77	AVG	V
15840.000	36.18	19.30	55.48	74.00	-18.52	peak	V
15840.000	27.52	19.30	46.82	54.00	-7.18	AVG	V
N/A							
8743.000	35.64	13.75	49.39	74.00	-24.61	peak	H
10560.000	38.85	17.11	55.96	74.00	-18.04	peak	H
10560.000	31.56	17.11	48.67	54.00	-5.33	AVG	H
15840.000	49.20	19.30	68.50	74.00	-5.50	peak	H
15840.000	33.50	19.30	52.80	54.00	-1.20	AVG	H
N/A							

Remark:

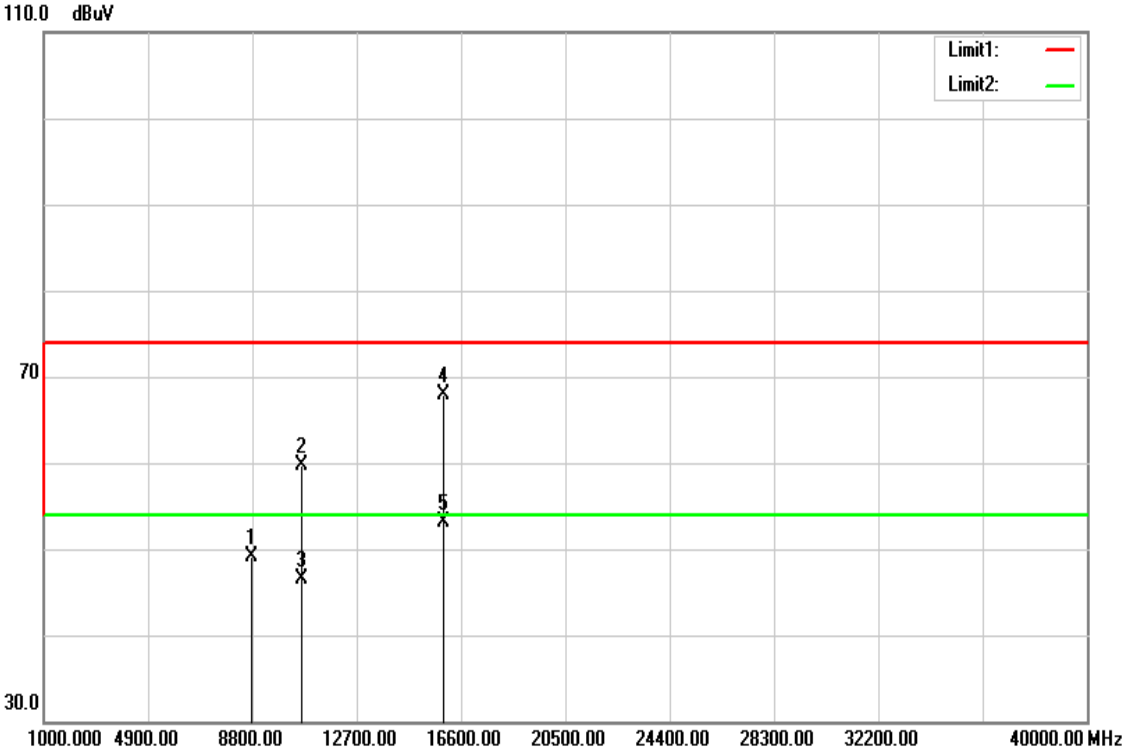
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

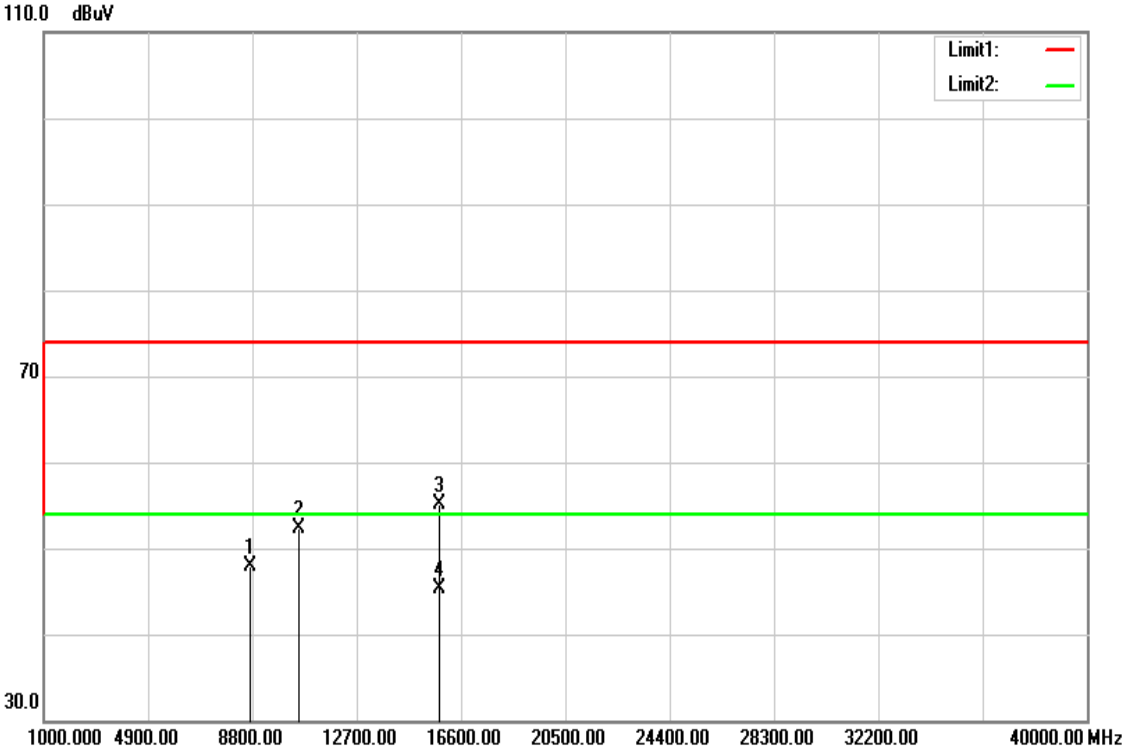
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8746.000	35.21	13.75	48.96	74.00	-25.04	peak	V
10640.000	34.72	17.04	51.76	74.00	-22.24	peak	V
10640.000	23.96	17.04	41.00	54.00	-13.00	AVG	V
15960.000	36.21	19.40	55.61	74.00	-18.39	peak	V
15960.000	26.18	19.40	45.58	54.00	-8.42	AVG	V
N/A							
8764.000	35.26	13.76	49.02	74.00	-24.98	peak	H
10640.000	42.59	17.04	59.63	74.00	-14.37	peak	H
10640.000	29.51	17.04	46.55	54.00	-7.45	AVG	H
15960.000	48.45	19.40	67.85	74.00	-6.15	peak	H
15960.000	33.73	19.40	53.13	54.00	-0.87	AVG	H
N/A							

Remark:

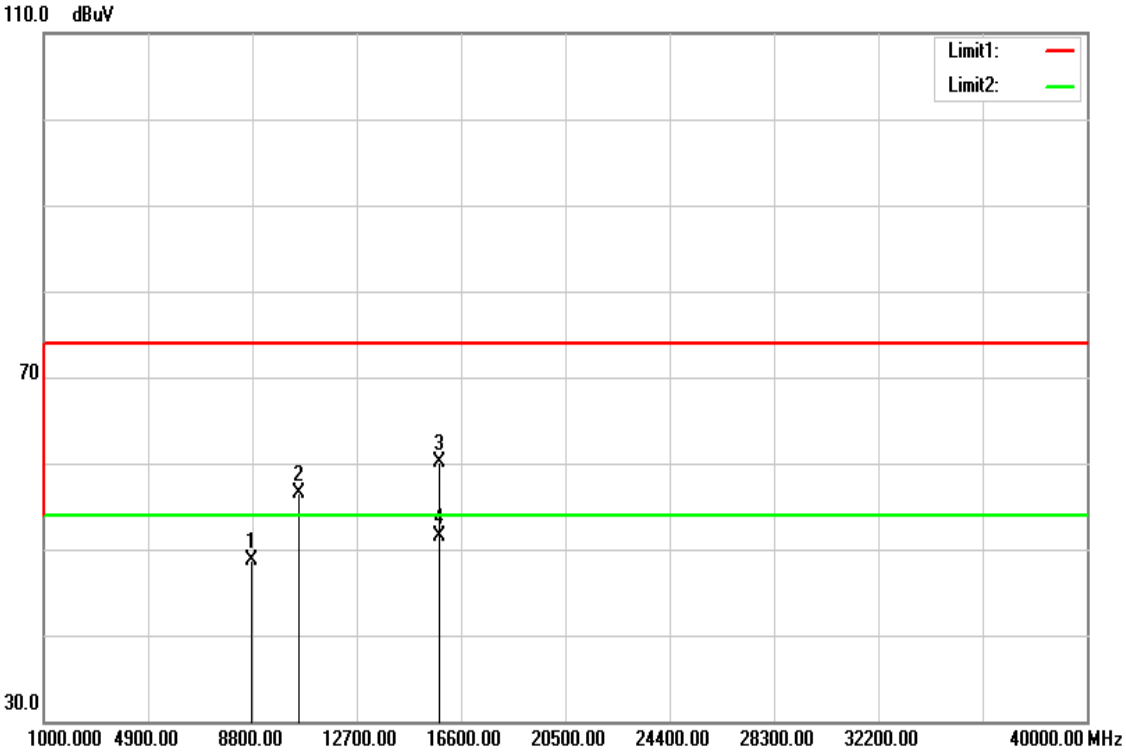
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

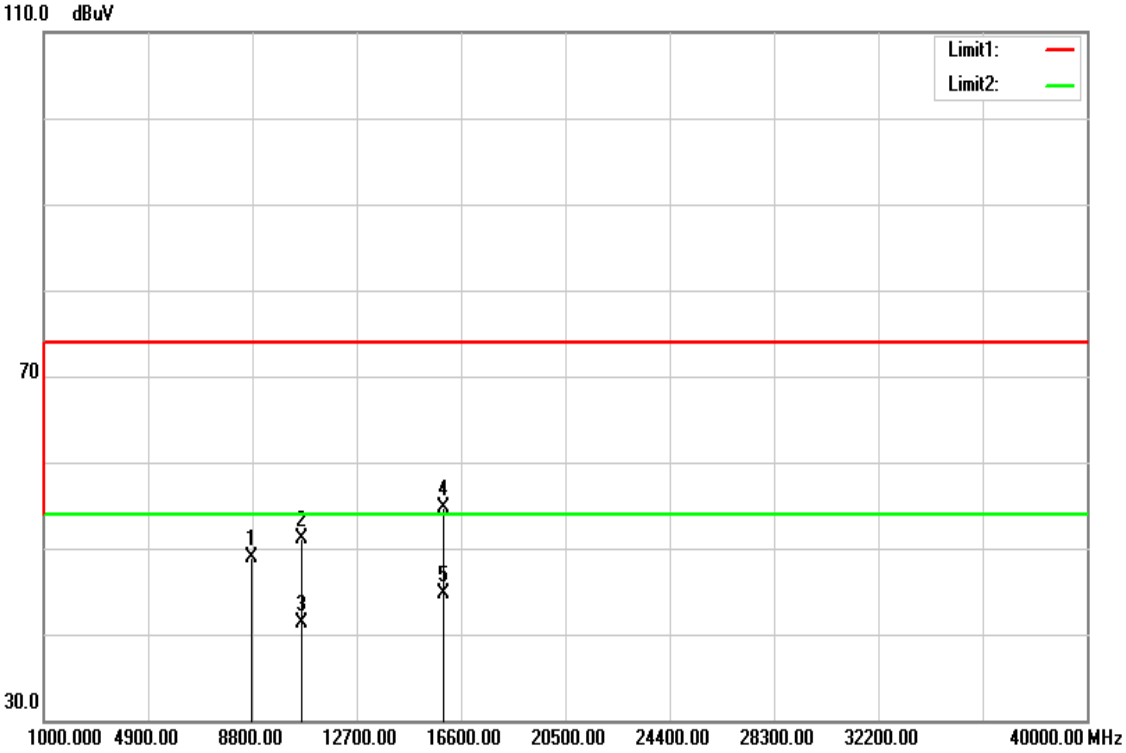
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8699.000	34.13	13.73	47.86	74.00	-26.14	peak	V
10540.000	35.12	17.13	52.25	74.00	-21.75	peak	V
15810.000	35.83	19.27	55.10	74.00	-18.90	peak	V
15810.000	25.95	19.27	45.22	54.00	-8.78	AVG	V
N/A							
8755.000	34.86	13.76	48.62	74.00	-25.38	peak	H
10540.000	39.34	17.13	56.47	74.00	-17.53	peak	H
15810.000	40.74	19.27	60.01	74.00	-13.99	peak	H
15810.000	32.29	19.27	51.56	54.00	-2.44	AVG	H
N/A							

Remark:

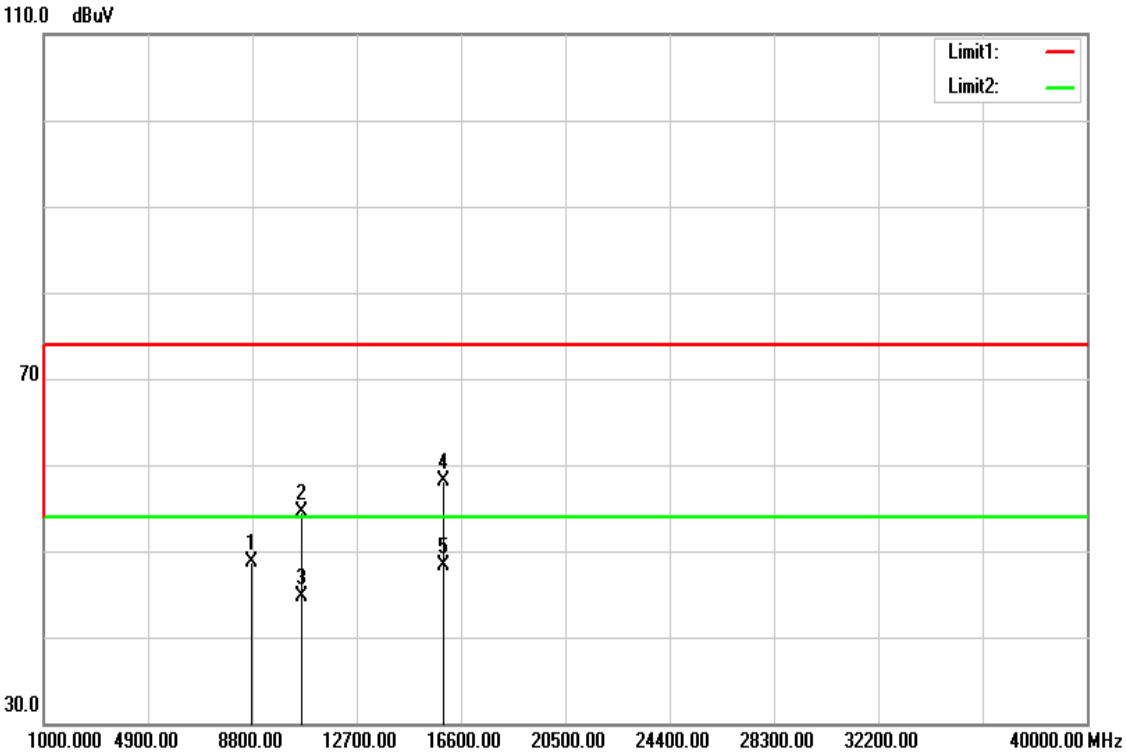
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

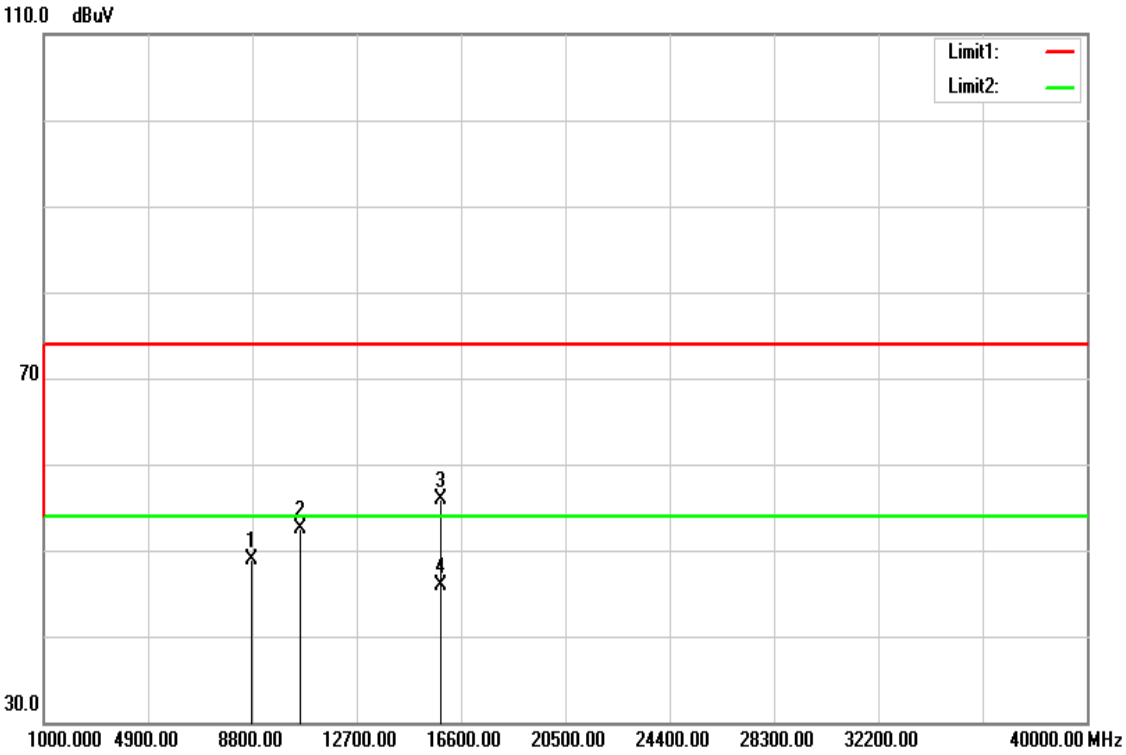
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8756.000	35.22	13.76	48.98	74.00	-25.02	peak	V
10620.000	34.10	17.06	51.16	74.00	-22.84	peak	V
10620.000	24.26	17.06	41.32	54.00	-12.68	AVG	V
15930.000	35.43	19.37	54.80	74.00	-19.20	peak	V
15930.000	25.28	19.37	44.65	54.00	-9.35	AVG	V
N/A							
8796.000	34.92	13.78	48.70	74.00	-25.30	peak	H
10620.000	37.44	17.06	54.50	74.00	-19.50	peak	H
10620.000	27.72	17.06	44.78	54.00	-9.22	AVG	H
15930.000	38.82	19.37	58.19	74.00	-15.81	peak	H
15930.000	28.99	19.37	48.36	54.00	-5.64	AVG	H
N/A							

Remark:

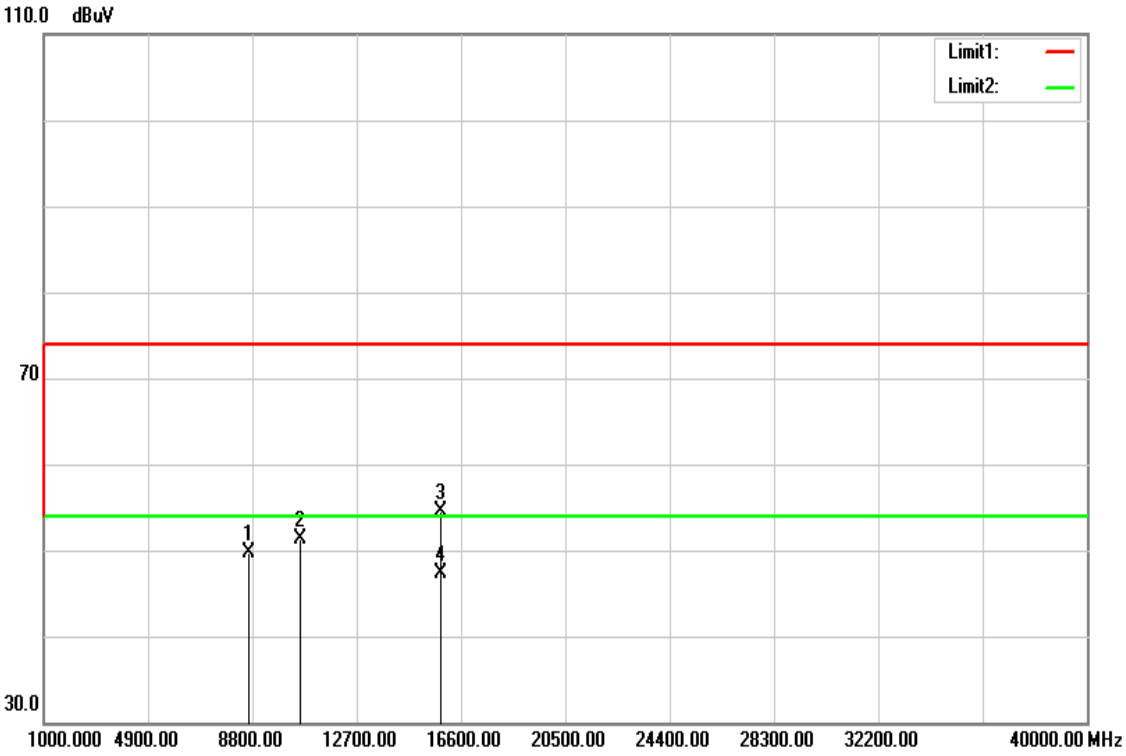
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8791.000	35.19	13.77	48.96	74.00	-25.04	peak	V
10580.000	35.32	17.09	52.41	74.00	-21.59	peak	V
15870.000	36.55	19.32	55.87	74.00	-18.13	peak	V
15870.000	26.57	19.32	45.89	54.00	-8.11	AVG	V
N/A							
8691.000	36.03	13.73	49.76	74.00	-24.24	peak	H
10580.000	34.12	17.09	51.21	74.00	-22.79	peak	H
15870.000	35.19	19.32	54.51	74.00	-19.49	peak	H
15870.000	27.99	19.32	47.31	54.00	-6.69	AVG	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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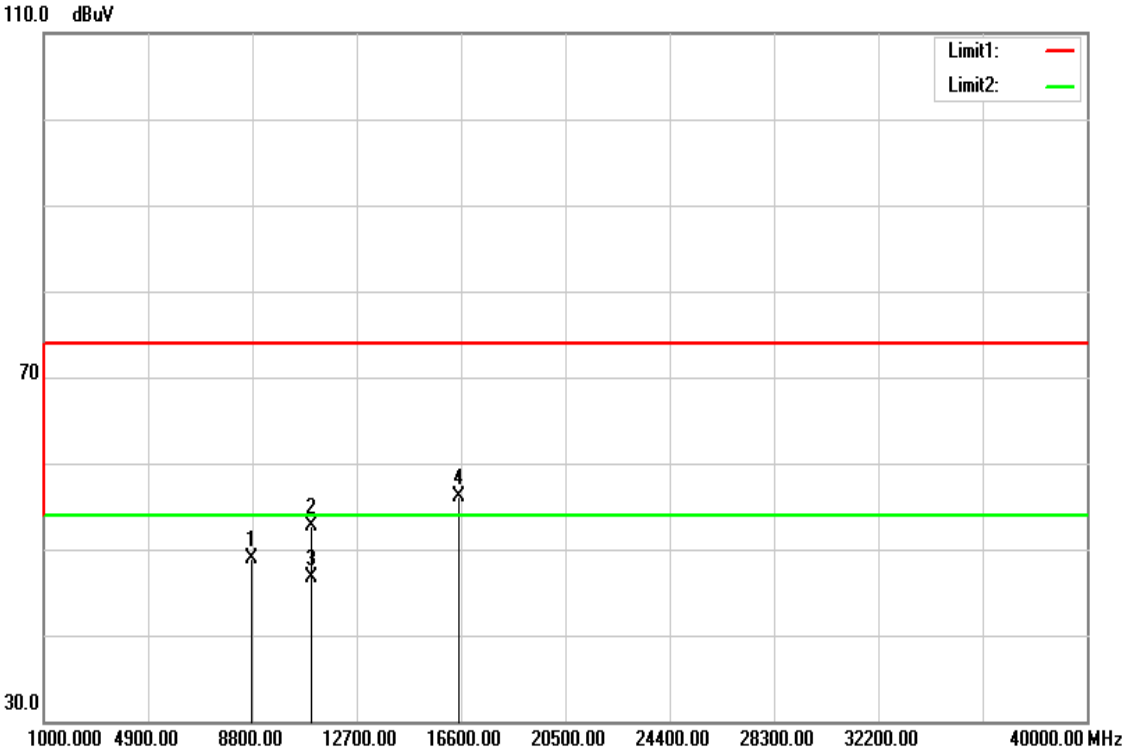
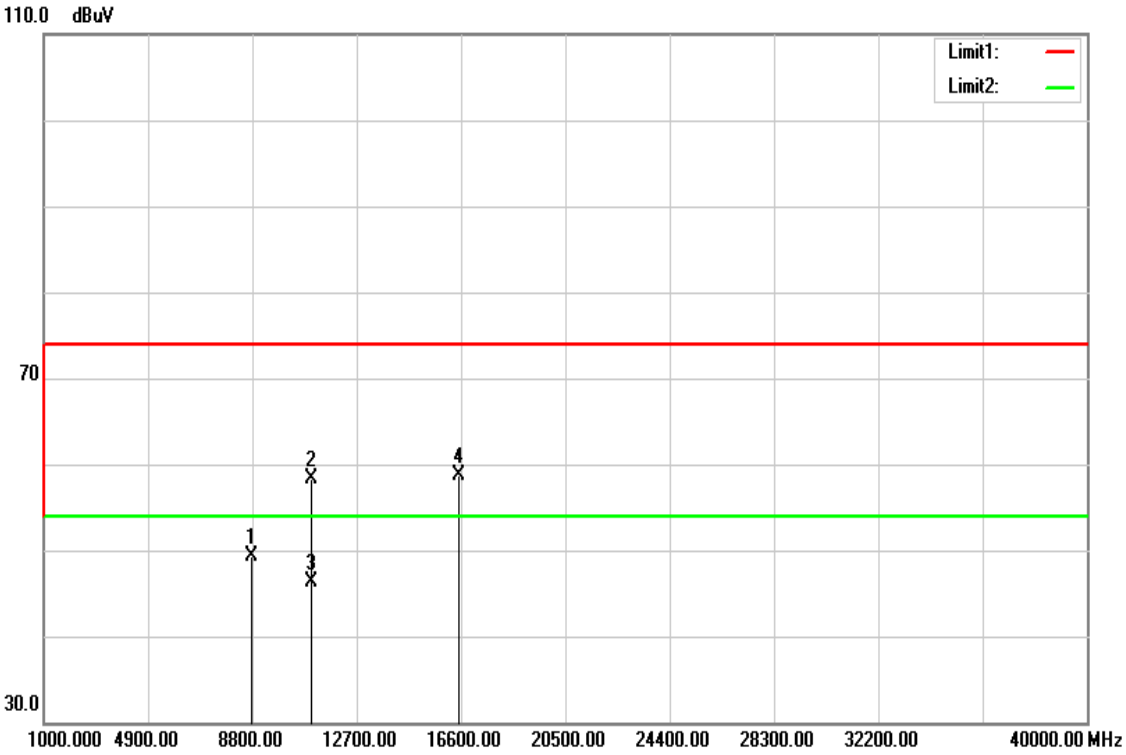
Tx / IEEE 802.11a mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

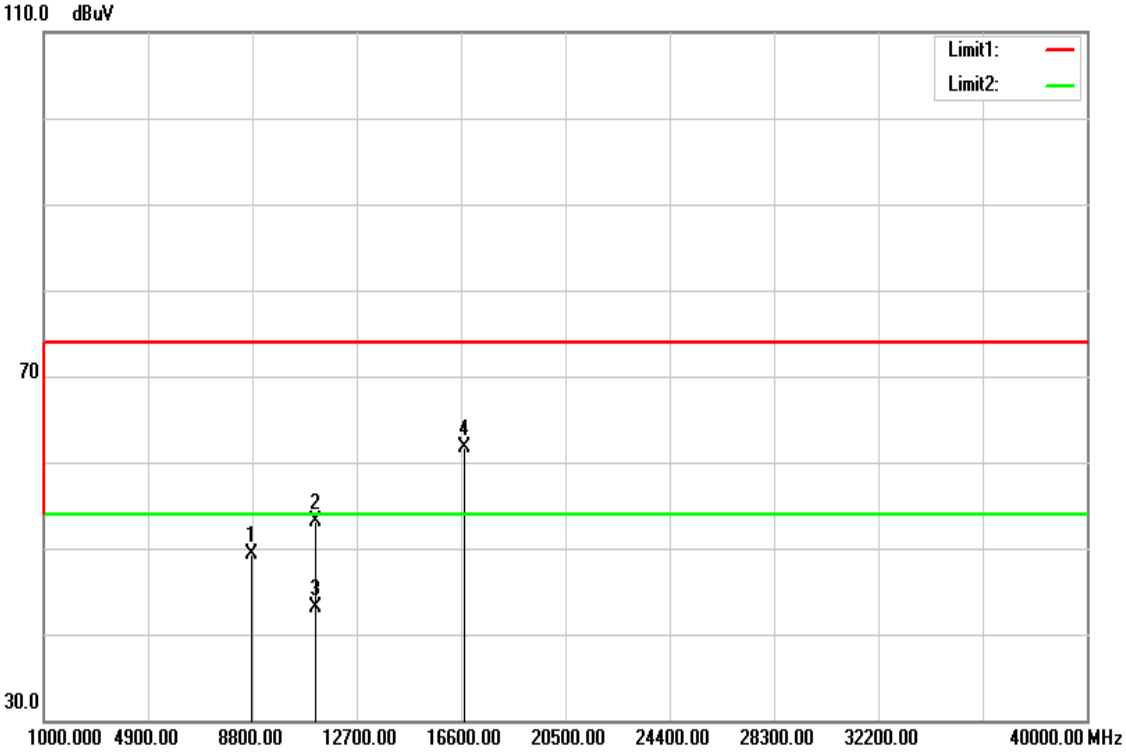
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8763.000	35.06	13.76	48.82	74.00	-25.18	peak	V
11000.000	35.99	16.73	52.72	74.00	-21.28	peak	V
11000.000	29.90	16.73	46.63	54.00	-7.37	AVG	V
16500.000	34.77	21.39	56.16	74.00	-17.84	peak	V
N/A							
8754.000	35.61	13.76	49.37	74.00	-24.63	peak	H
11000.000	41.55	16.73	58.28	74.00	-15.72	peak	H
11000.000	29.47	16.73	46.20	54.00	-7.80	AVG	H
16500.000	37.24	21.39	58.63	74.00	-15.37	peak	H
N/A							

Remark:

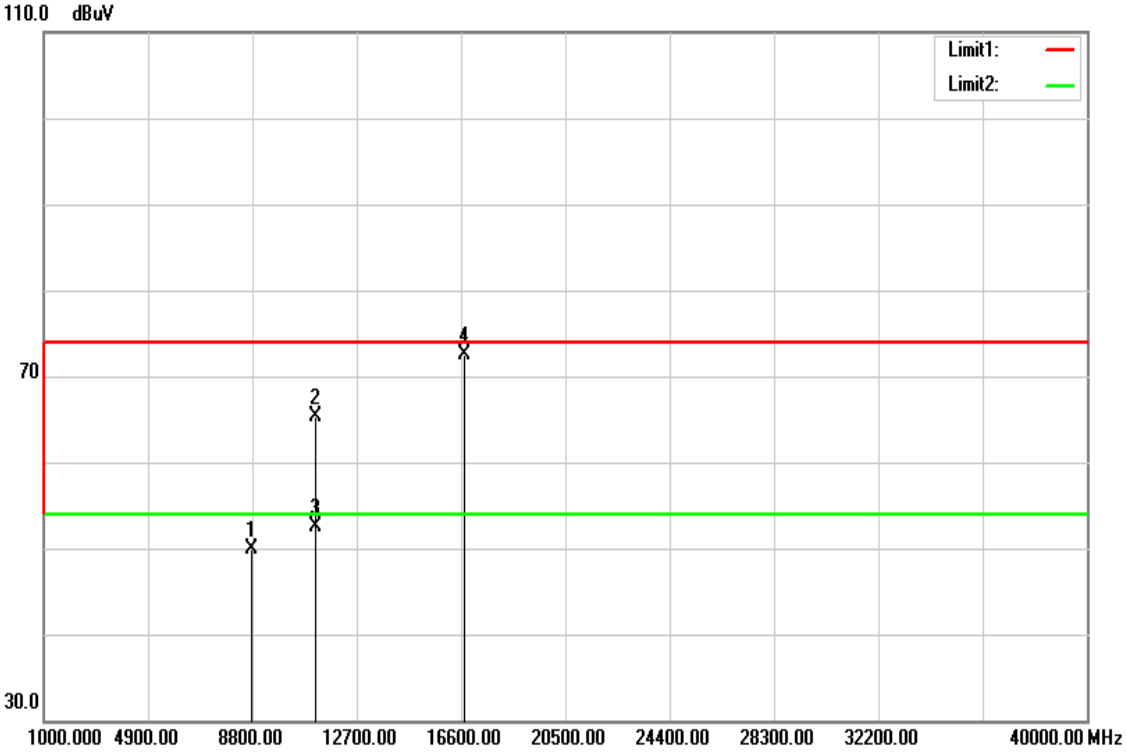
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH Mid
Test Date: June 22, 2016
Temperature: 27°C
Tested by: Dennis Li
Humidity: 53% RH
Polarity: Ver. / Hor.

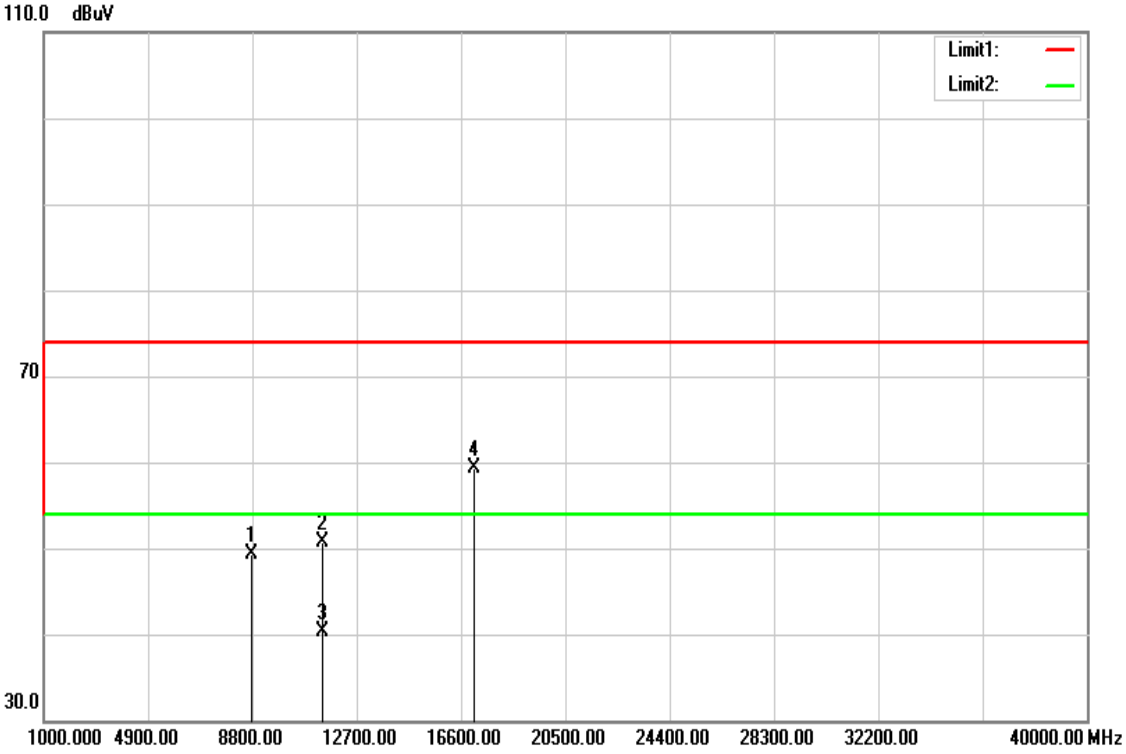
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8756.000	35.60	13.76	49.36	74.00	-24.64	peak	V
11160.000	36.26	16.75	53.01	74.00	-20.99	peak	V
11160.000	26.36	16.75	43.11	54.00	-10.89	AVG	V
16740.000	38.79	22.82	61.61	74.00	-12.39	peak	V
N/A							
8756.000	36.12	13.76	49.88	74.00	-24.12	peak	H
11160.000	48.51	16.75	65.26	74.00	-8.74	peak	H
11160.000	35.69	16.75	52.44	54.00	-1.56	AVG	H
16740.000	49.78	22.82	72.60	74.00	-1.40	peak	H
N/A							

Remark:

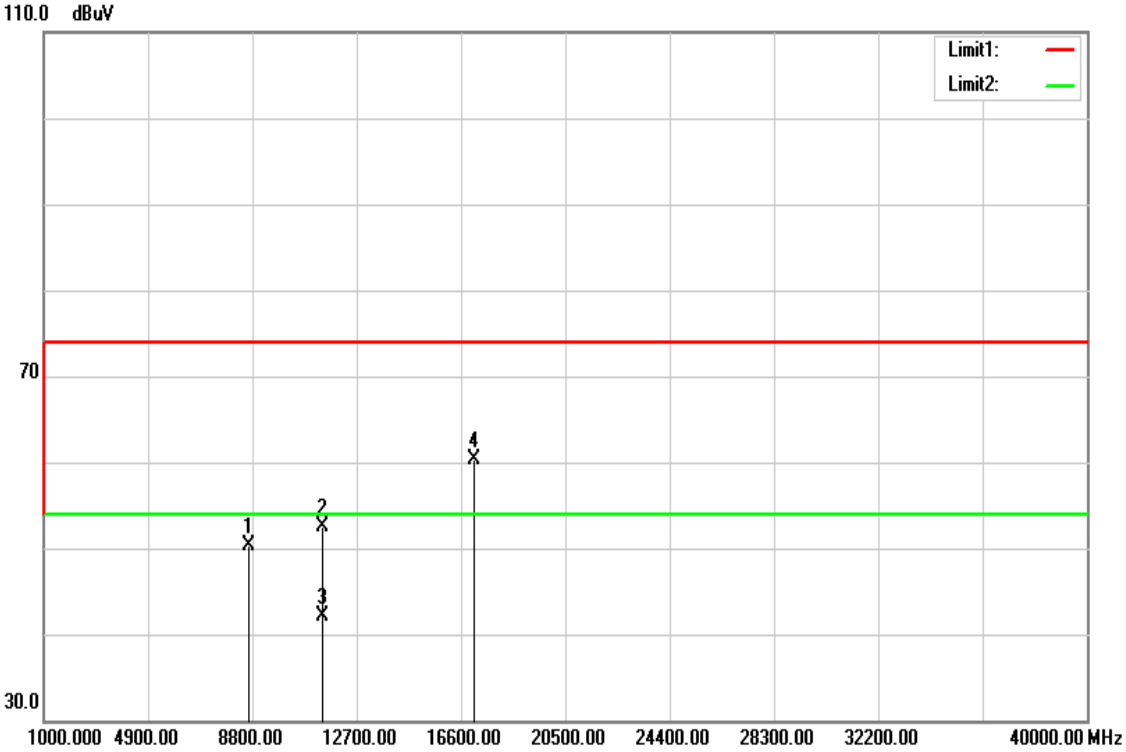
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11a mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11a mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

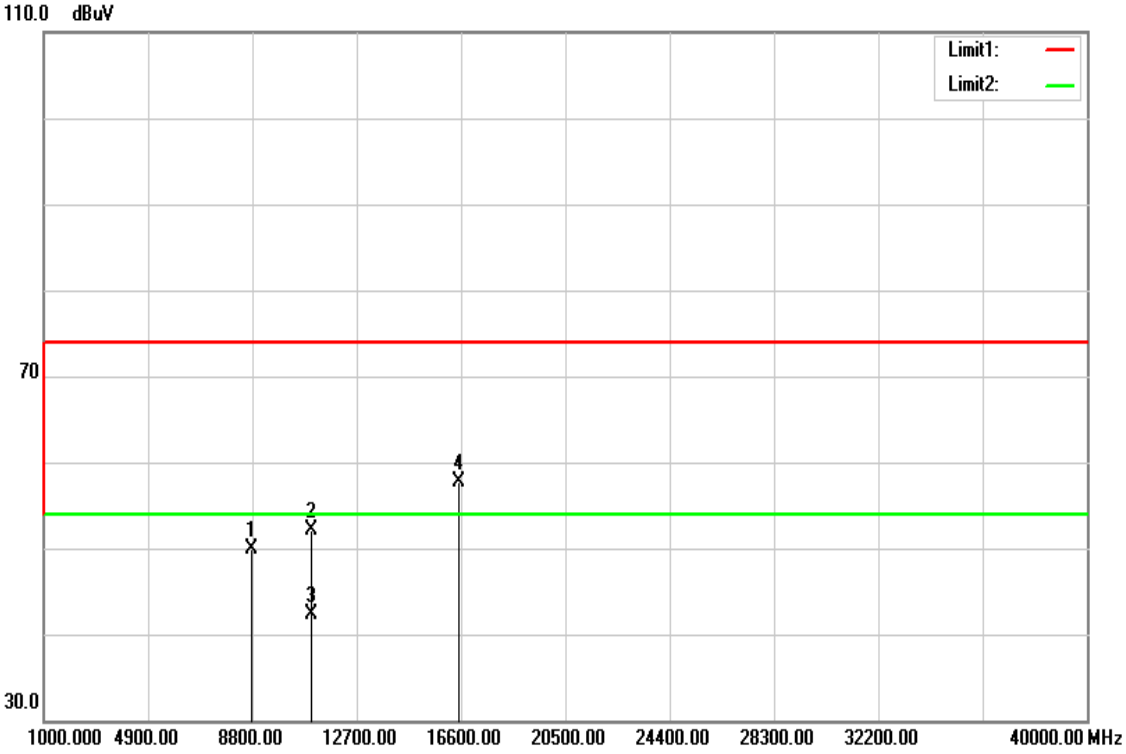
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8796.000	35.44	13.78	49.22	74.00	-24.78	peak	V
11400.000	33.86	16.77	50.63	74.00	-23.37	peak	V
11400.000	23.59	16.77	40.36	54.00	-13.64	AVG	V
17100.000	34.56	24.75	59.31	74.00	-14.69	peak	V
N/A							
8691.000	36.65	13.73	50.38	74.00	-23.62	peak	H
11400.000	35.75	16.77	52.52	74.00	-21.48	peak	H
11400.000	25.35	16.77	42.12	54.00	-11.88	AVG	H
17100.000	35.55	24.75	60.30	74.00	-13.70	peak	H
N/A							

Remark:

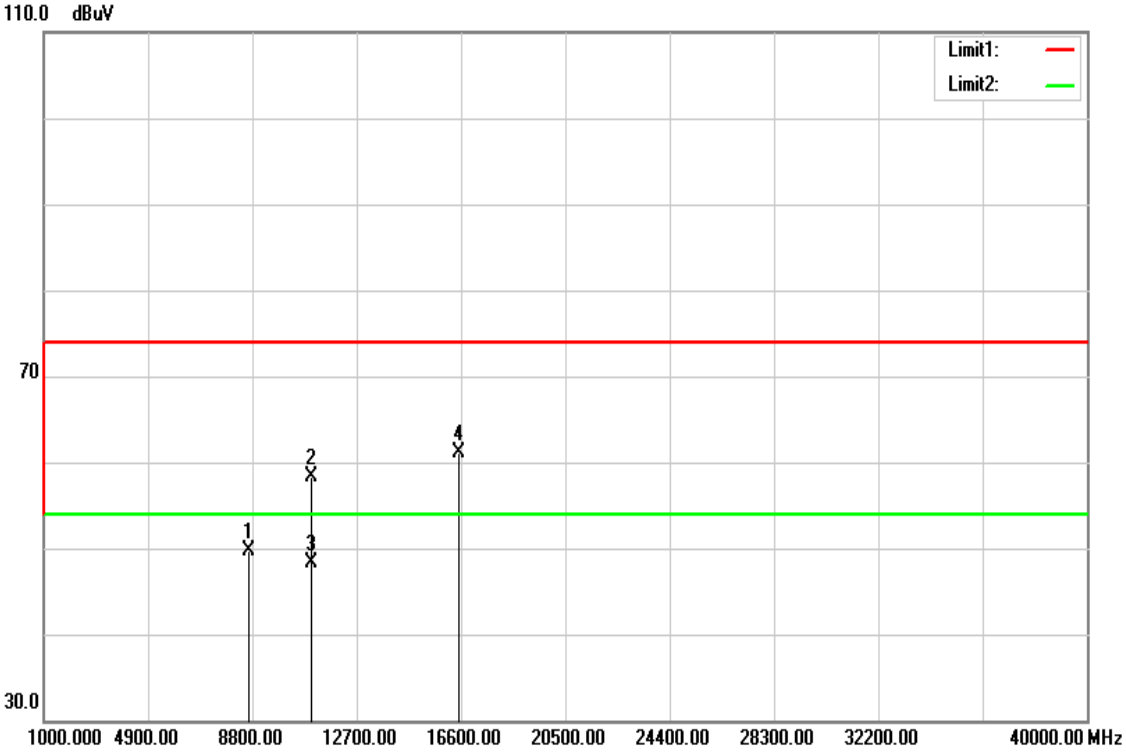
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

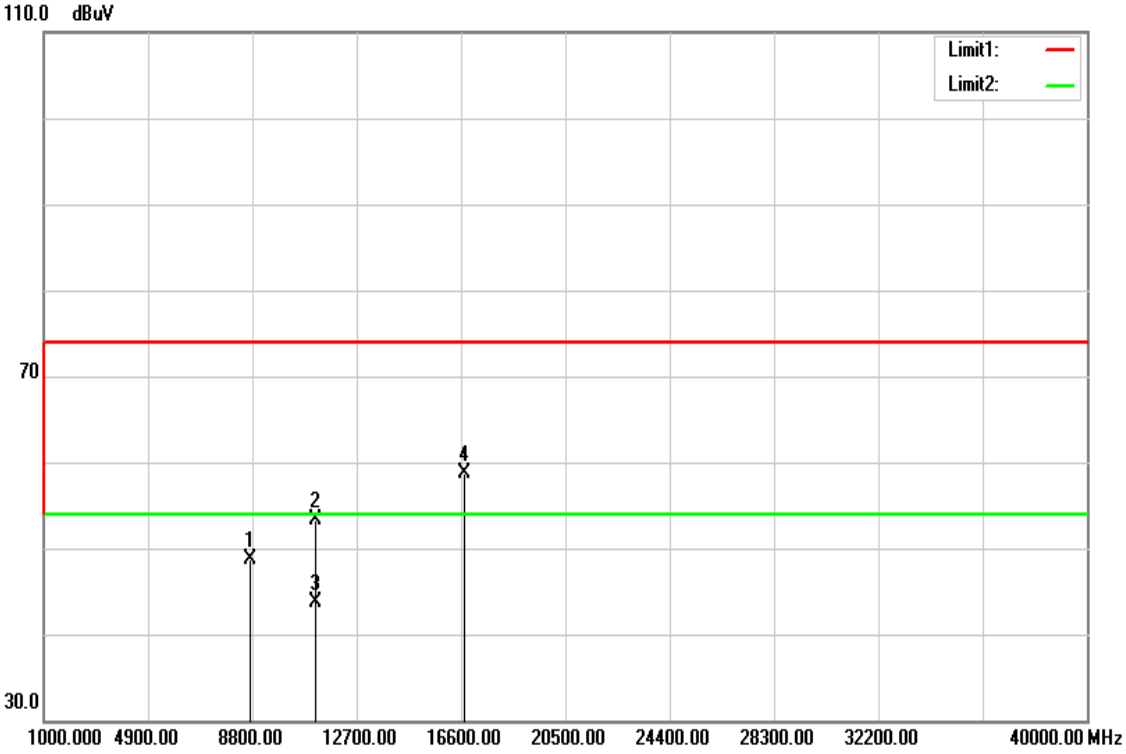
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8796.000	36.15	13.78	49.93	74.00	-24.07	peak	V
11000.000	35.39	16.73	52.12	74.00	-21.88	peak	V
11000.000	25.62	16.73	42.35	54.00	-11.65	AVG	V
16500.000	36.39	21.39	57.78	74.00	-16.22	peak	V
N/A							
8646.000	36.00	13.71	49.71	74.00	-24.29	peak	H
11000.000	41.55	16.73	58.28	74.00	-15.72	peak	H
11000.000	31.48	16.73	48.21	54.00	-5.79	AVG	H
16500.000	39.65	21.39	61.04	74.00	-12.96	peak	H
N/A							

Remark:

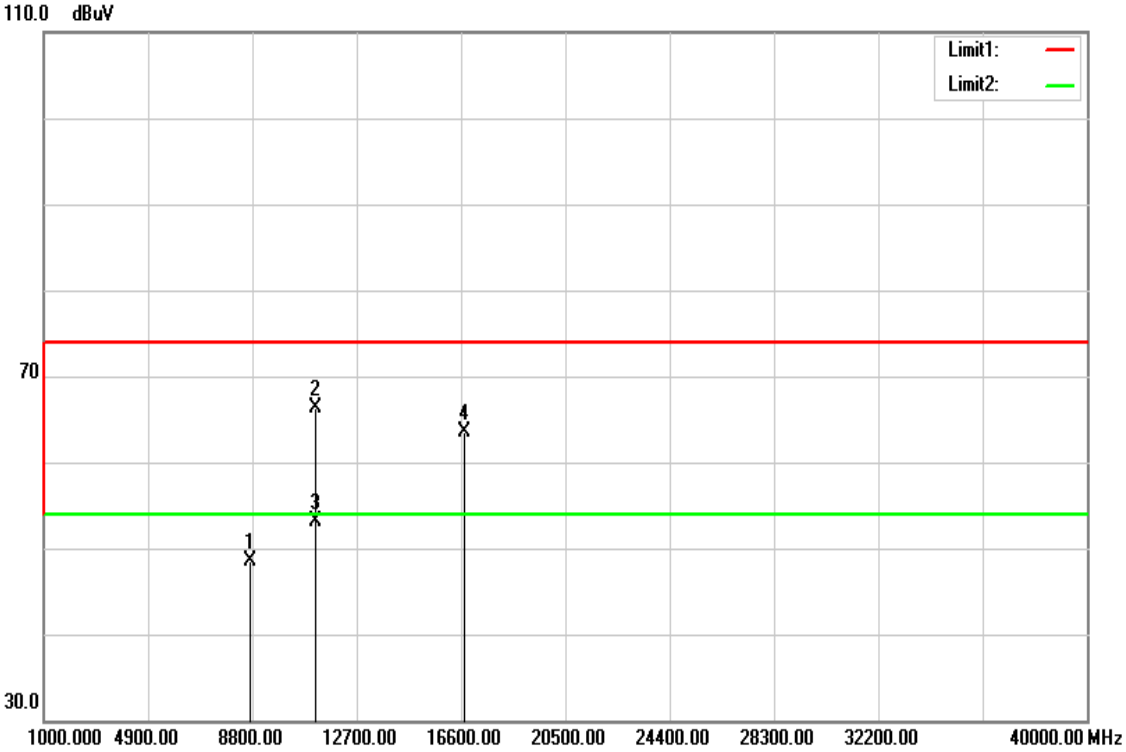
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH Mid **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

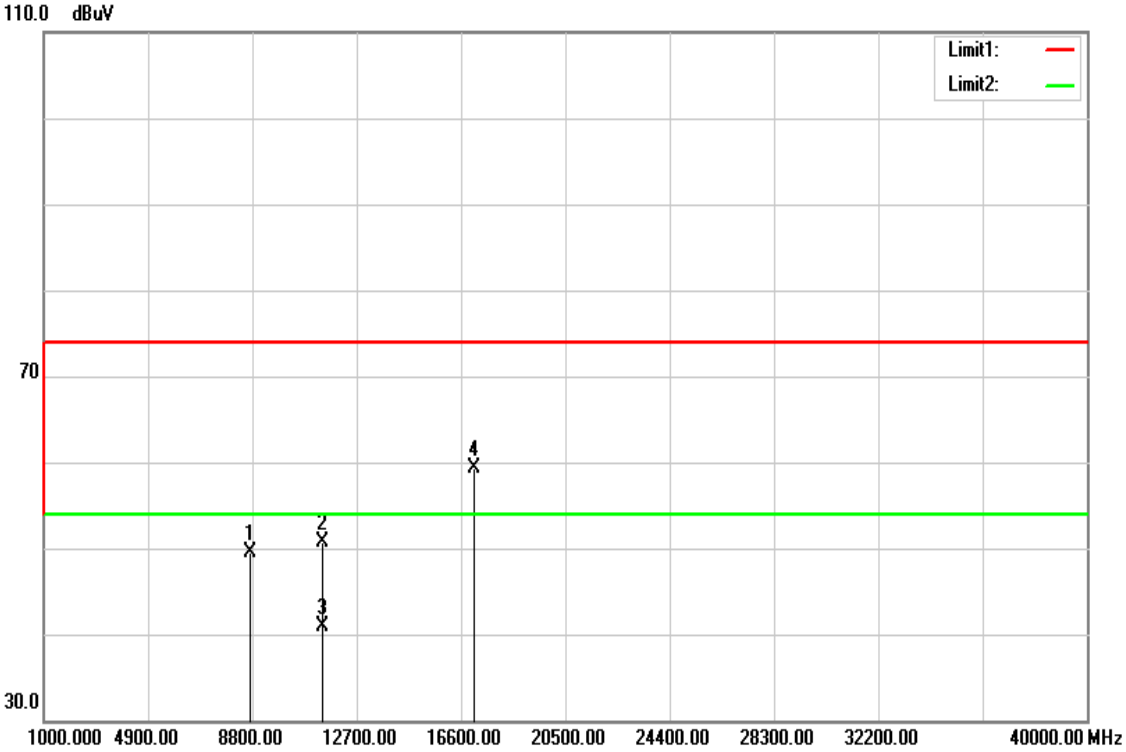
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8741.000	35.00	13.75	48.75	74.00	-25.25	peak	V
11160.000	36.61	16.75	53.36	74.00	-20.64	peak	V
11160.000	27.03	16.75	43.78	54.00	-10.22	AVG	V
16740.000	35.85	22.82	58.67	74.00	-15.33	peak	V
N/A							
8723.000	34.72	13.74	48.46	74.00	-25.54	peak	H
11160.000	49.52	16.75	66.27	74.00	-7.73	peak	H
11160.000	36.27	16.75	53.02	54.00	-0.98	AVG	H
16740.000	40.65	22.82	63.47	74.00	-10.53	peak	H
N/A							

Remark:

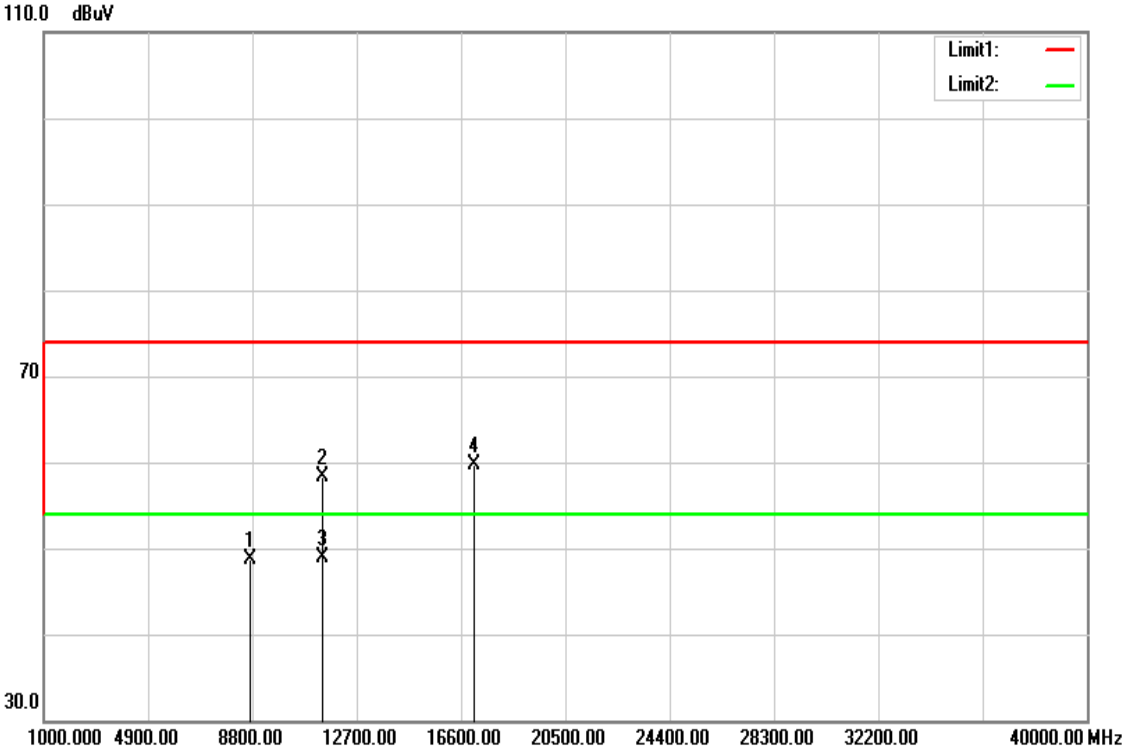
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 20 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 20 MHz mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

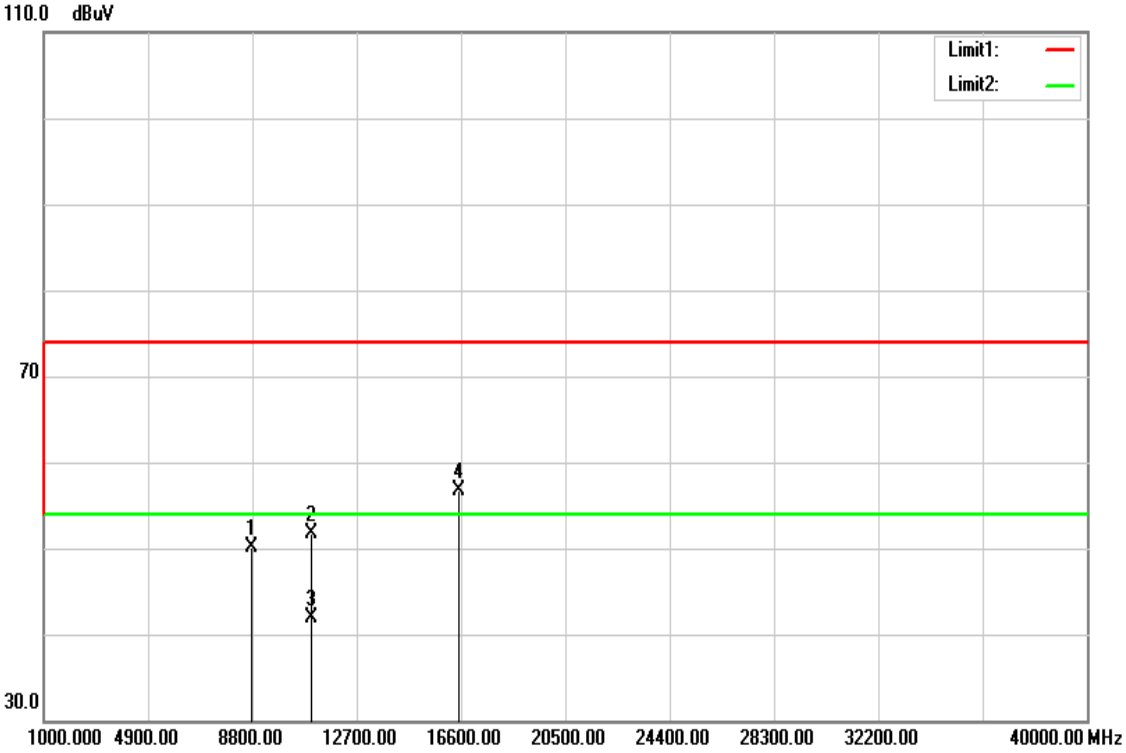
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8711.000	35.67	13.74	49.41	74.00	-24.59	peak	V
11400.000	33.90	16.77	50.67	74.00	-23.33	peak	V
11400.000	24.22	16.77	40.99	54.00	-13.01	AVG	V
17100.000	34.62	24.75	59.37	74.00	-14.63	peak	V
N/A							
8732.000	35.02	13.75	48.77	74.00	-25.23	peak	H
11400.000	41.48	16.77	58.25	74.00	-15.75	peak	H
11400.000	32.21	16.77	48.98	54.00	-5.02	AVG	H
17100.000	34.95	24.75	59.70	74.00	-14.30	peak	H
N/A							

Remark:

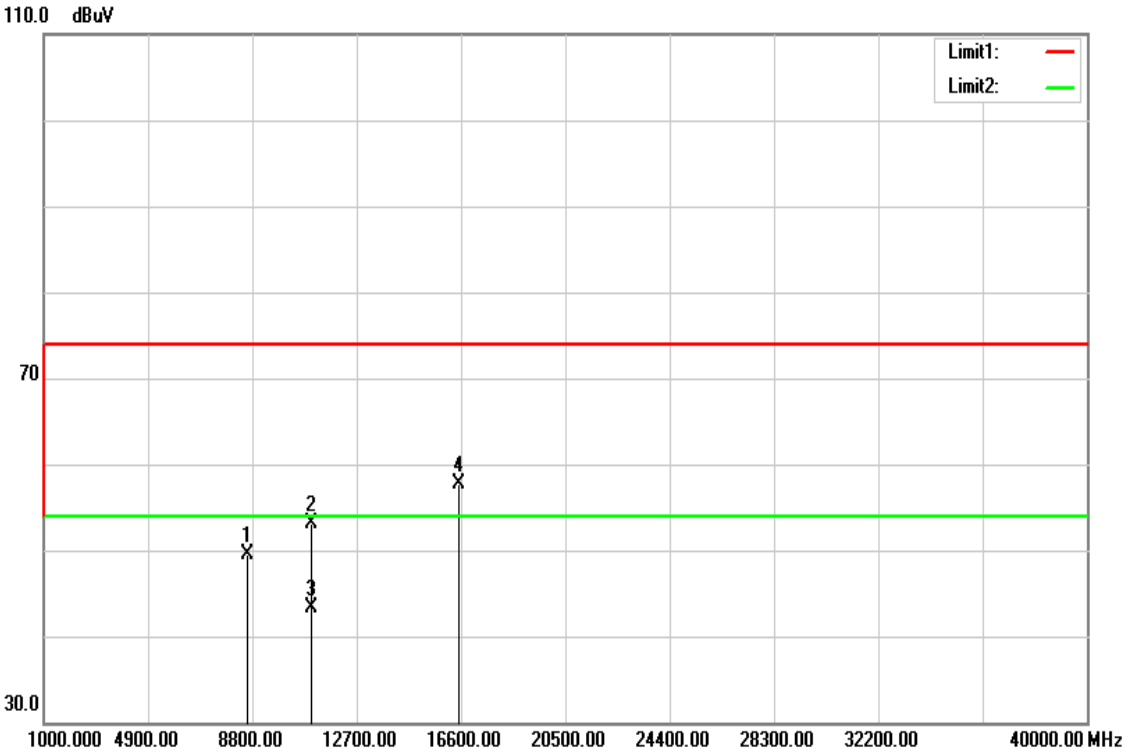
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH Low

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / CH Low **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

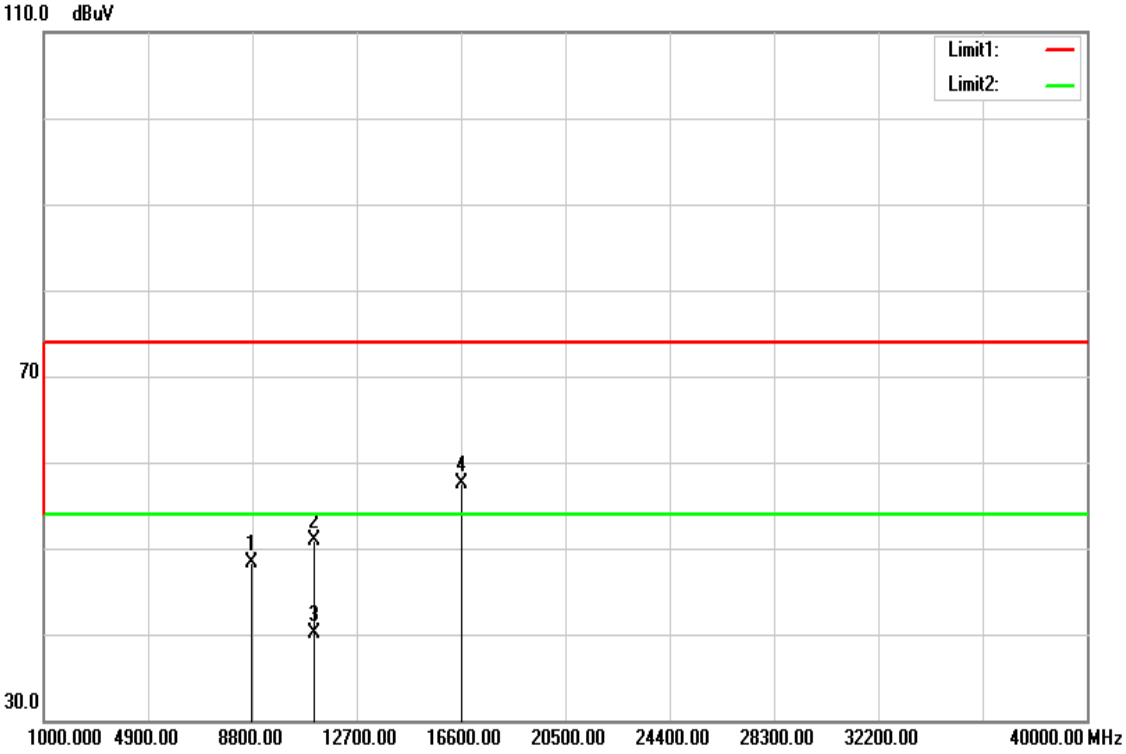
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8769.000	36.30	13.76	50.06	74.00	-23.94	peak	V
11020.000	34.97	16.73	51.70	74.00	-22.30	peak	V
11020.000	25.25	16.73	41.98	54.00	-12.02	AVG	V
16530.000	35.05	21.57	56.62	74.00	-17.38	peak	V
N/A							
8623.000	35.88	13.70	49.58	74.00	-24.42	peak	H
11020.000	36.34	16.73	53.07	74.00	-20.93	peak	H
11020.000	26.59	16.73	43.32	54.00	-10.68	AVG	H
16530.000	36.04	21.57	57.61	74.00	-16.39	peak	H
N/A							

Remark:

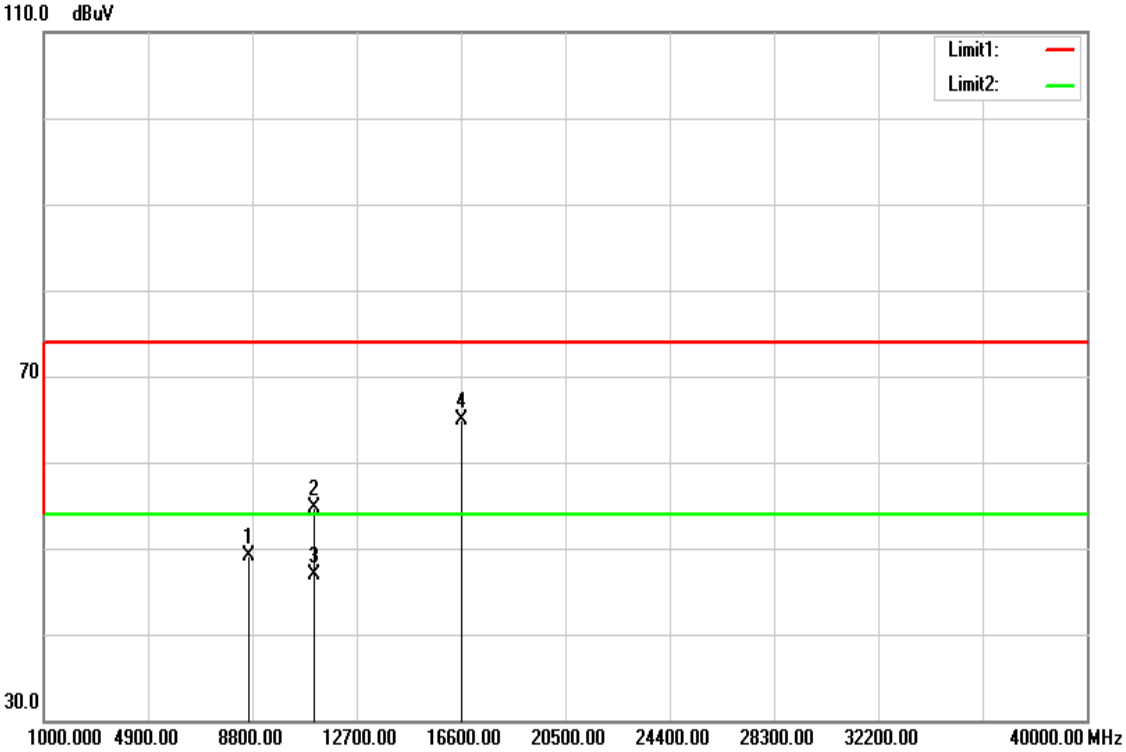
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH Mid

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / CH Mid **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

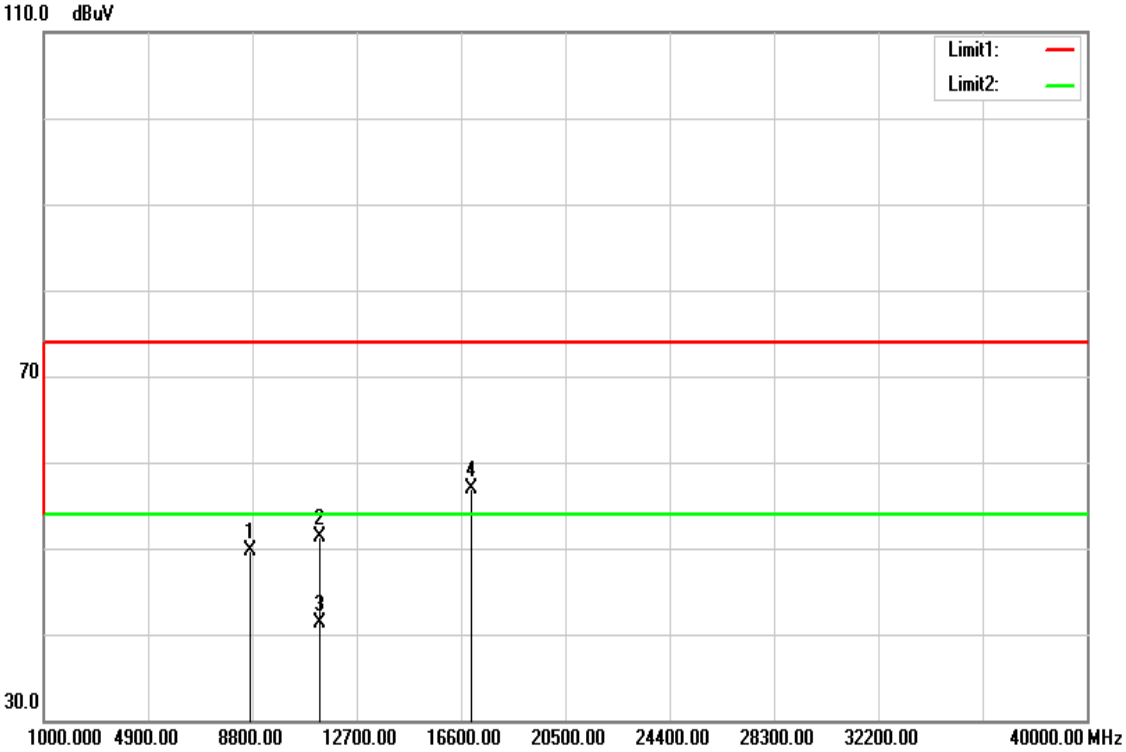
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8769.000	34.60	13.76	48.36	74.00	-25.64	peak	V
11100.000	34.22	16.74	50.96	74.00	-23.04	peak	V
11100.000	23.44	16.74	40.18	54.00	-13.82	AVG	V
16650.000	35.15	22.28	57.43	74.00	-16.57	peak	V
N/A							
8692.000	35.35	13.73	49.08	74.00	-24.92	peak	H
11100.000	37.96	16.74	54.70	74.00	-19.30	peak	H
11100.000	30.24	16.74	46.98	54.00	-7.02	AVG	H
16650.000	42.53	22.28	64.81	74.00	-9.19	peak	H
N/A							

Remark:

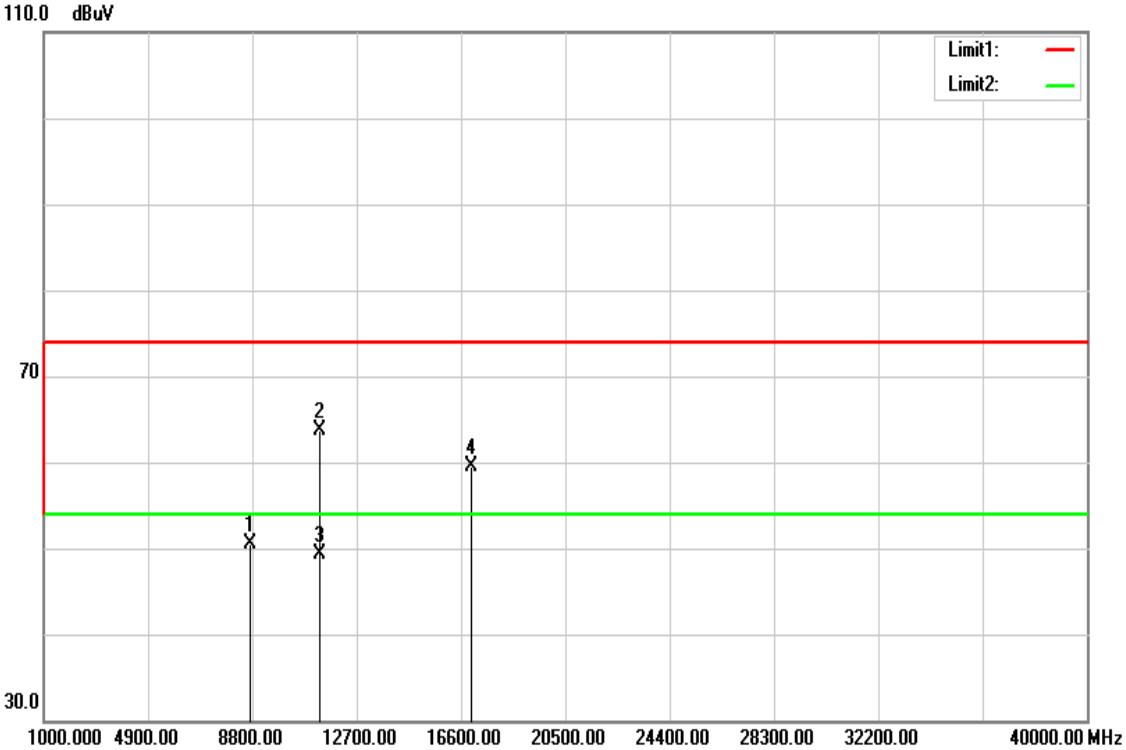
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

Tx / IEEE 802.11n HT 40 MHz mode / CH High

Polarity: Vertical



Polarity: Horizontal



Operation Mode: Tx / IEEE 802.11n HT 40 MHz mode / CH High **Test Date:** June 22, 2016

Temperature: 27°C **Tested by:** Dennis Li

Humidity: 53% RH **Polarity:** Ver. / Hor.

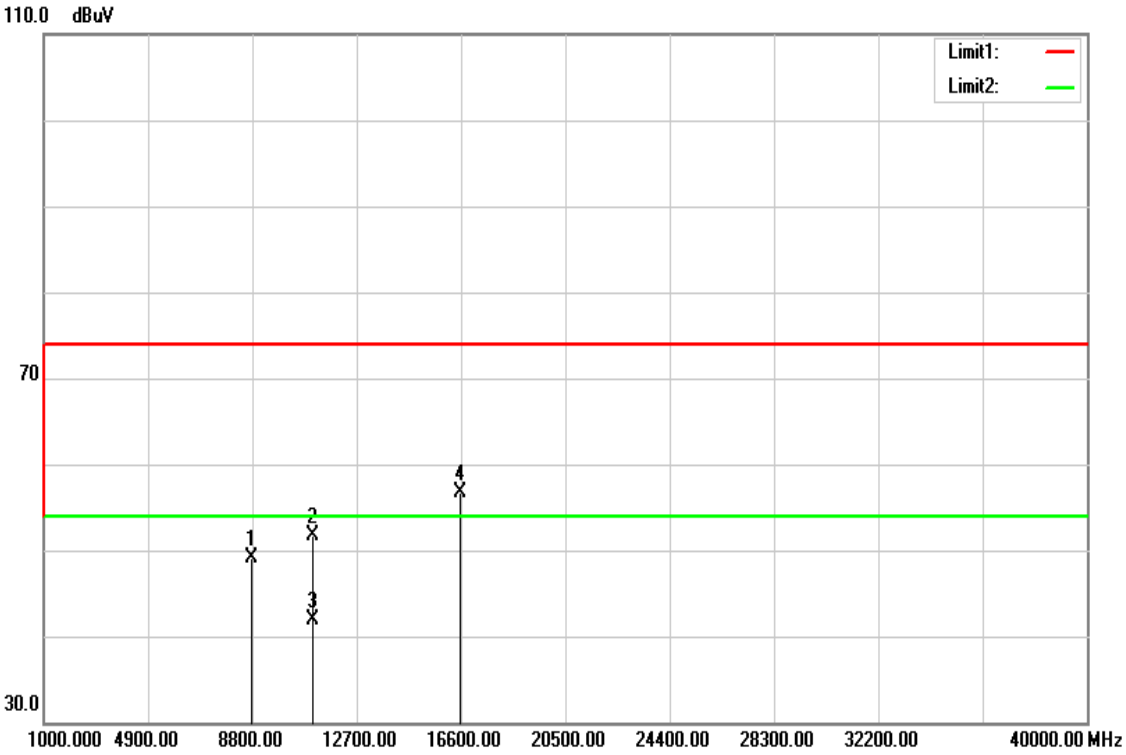
Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8745.000	35.90	13.75	49.65	74.00	-24.35	peak	V
11340.000	34.46	16.76	51.22	74.00	-22.78	peak	V
11340.000	24.47	16.76	41.23	54.00	-12.77	AVG	V
17010.000	32.50	24.40	56.90	74.00	-17.10	peak	V
N/A							
8699.000	36.87	13.73	50.60	74.00	-23.40	peak	H
11340.000	46.92	16.76	63.68	74.00	-10.32	peak	H
11340.000	32.52	16.76	49.28	54.00	-4.72	AVG	H
17010.000	35.11	24.40	59.51	74.00	-14.49	peak	H
N/A							

Remark:

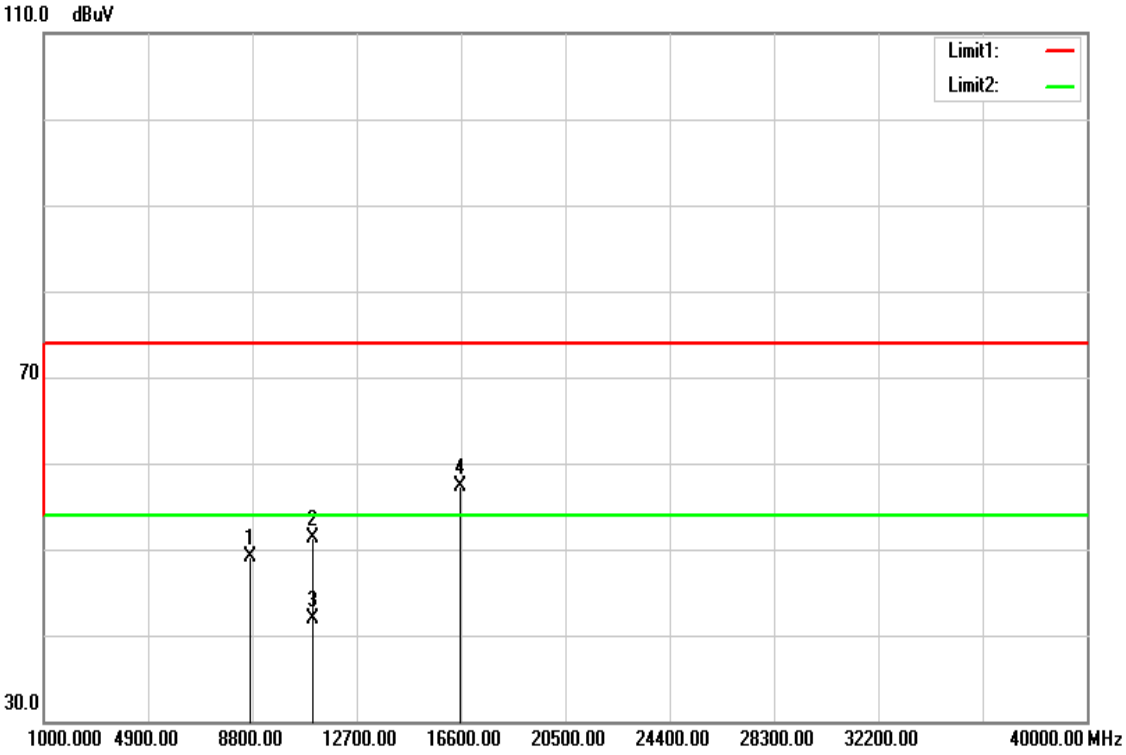
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m)*.

Tx / IEEE 802.11ac VHT 80 MHz mode / CH MId

Polarity: Vertical



Polarity: Horizontal



Operation Mode:	Tx / IEEE 802.11ac VHT 80 MHz mode / CH Mid	**Test Date:**	June 22, 2016
Temperature:	27°C	**Tested by:**	Dennis Li
Humidity:	53% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
8763.000	35.34	13.76	49.10	74.00	-24.90	peak	V
11060.000	35.02	16.74	51.76	74.00	-22.24	peak	V
11060.000	25.15	16.74	41.89	54.00	-12.11	AVG	V
16590.000	34.88	21.92	56.80	74.00	-17.20	peak	V
N/A							
8725.000	35.42	13.74	49.16	74.00	-24.84	peak	H
11060.000	34.64	16.74	51.38	74.00	-22.62	peak	H
11060.000	25.07	16.74	41.81	54.00	-12.19	AVG	H
16590.000	35.38	21.92	57.30	74.00	-16.70	peak	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

7.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

** Decreases with the logarithm of the frequency.*

Test Configuration

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode:	Normal Link	**Test Date:**	July 6, 2016
Temperature:	24°C	**Tested by:**	Dennis Li
Humidity:	50% RH		

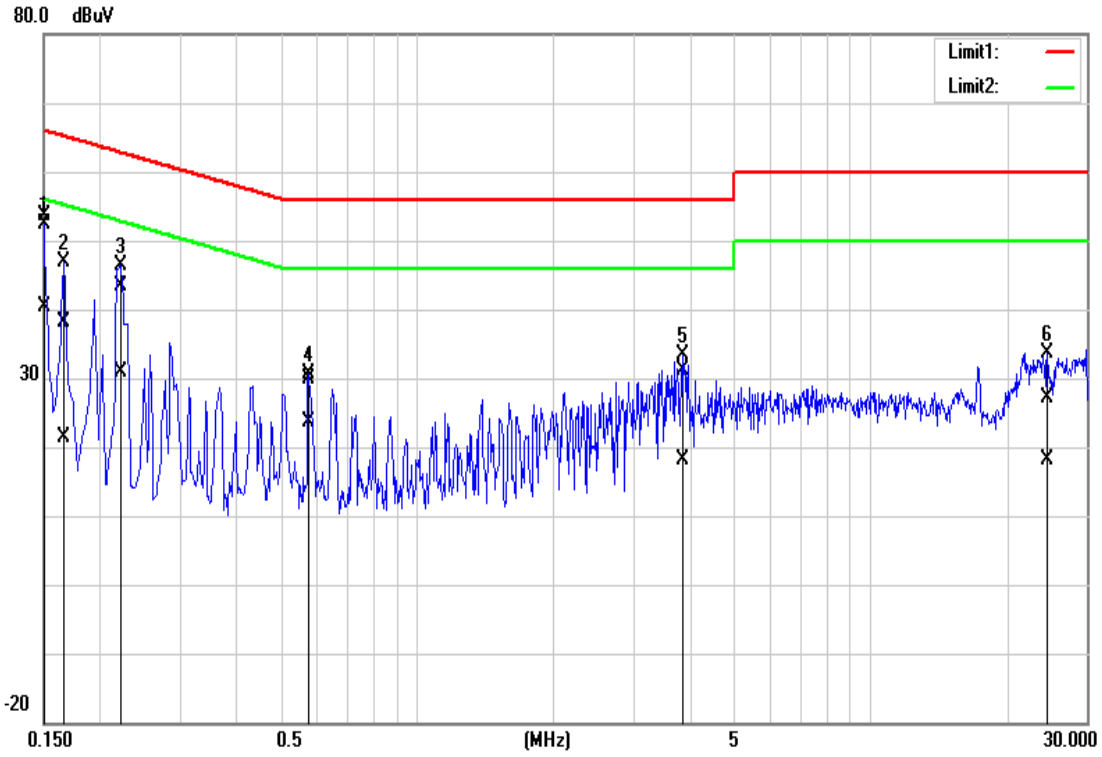
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB/m)	QP Result (dBuV/m)	AV Result (dBuV/m)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1500	43.90	30.72	9.71	53.61	40.43	66.00	56.00	-12.39	-15.57	L1
0.1660	28.46	11.57	9.71	38.17	21.28	65.16	55.16	-26.99	-33.88	L1
0.2220	33.57	21.20	9.70	43.27	30.90	62.74	52.74	-19.47	-21.84	L1
0.5780	20.18	13.94	9.70	29.88	23.64	56.00	46.00	-26.12	-22.36	L1
3.8780	21.39	8.34	9.74	31.13	18.08	56.00	46.00	-24.87	-27.92	L1
24.5540	17.31	8.34	9.83	27.14	18.17	60.00	50.00	-32.86	-31.83	L1
0.1700	27.84	9.88	9.78	37.62	19.66	64.96	54.96	-27.34	-35.30	L2
0.2220	33.94	22.10	9.77	43.71	31.87	62.74	52.74	-19.03	-20.87	L2
0.3700	22.19	13.24	9.76	31.95	23.00	58.50	48.50	-26.55	-25.50	L2
0.6580	20.91	15.78	9.76	30.67	25.54	56.00	46.00	-25.33	-20.46	L2
3.6620	16.40	2.97	9.82	26.22	12.79	56.00	46.00	-29.78	-33.21	L2
29.9220	19.39	11.12	10.38	29.77	21.50	60.00	50.00	-30.23	-28.50	L2

Remark:

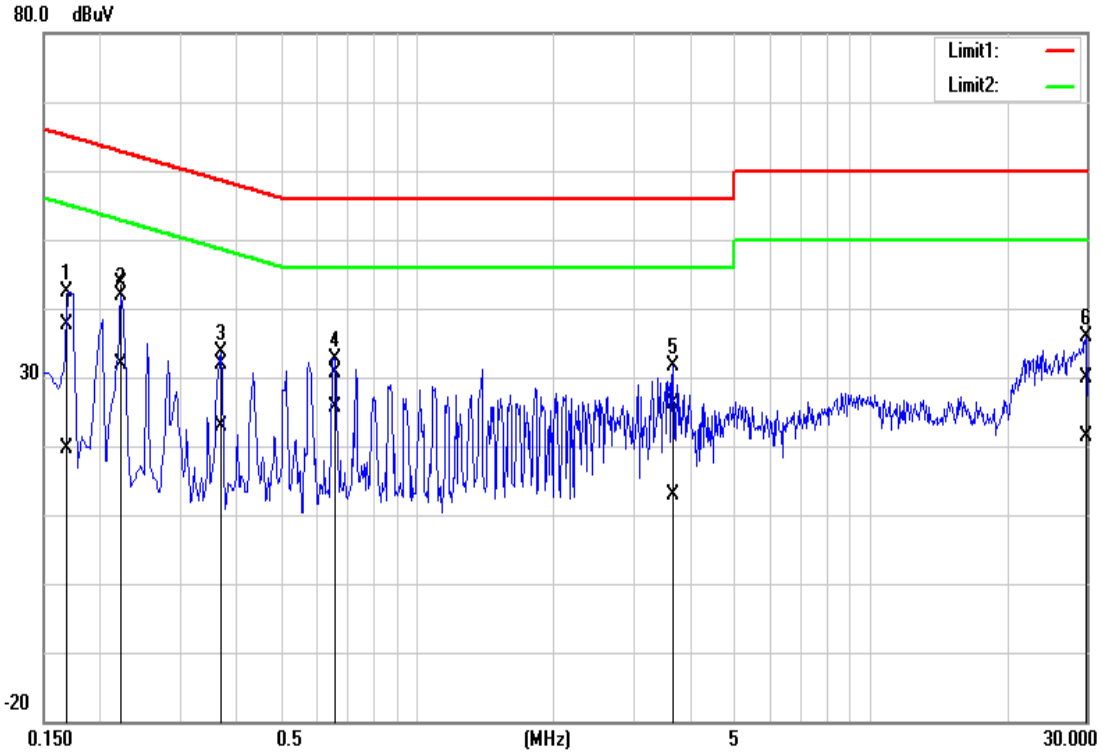
1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz and 30MHz was 10 kHz; the IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9 kHz;*
4. *L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)*

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

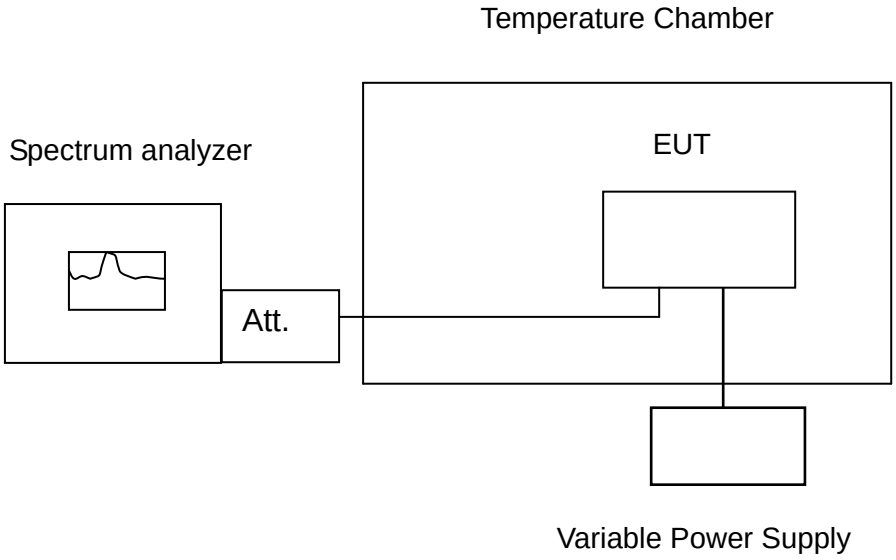


7.8 FREQUENCY STABILITY

LIMIT

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector*

TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST RESULTS

No non-compliance noted.

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit (20ppm)**	**Test Result**
50	5	5220.001740	0.3333	Pass
40	5	5220.000270	0.0517	Pass
30	5	5220.000090	0.0172	Pass
20	5	5220.000070	0.0134	Pass
10	5	5219.999450	-0.1054	Pass
0	5	5219.999450	-0.1054	Pass
-10	5	5219.999450	-0.1054	Pass
-20	5	5219.999910	-0.0172	Pass

Operating Frequency: 5220 MHz				
Environment Temperature (°C)	**Voltage (V)**	**Measured Frequency (MHz)**	**Limit (20ppm)**	**Test Result**
20	5	5260.000070	0.0134	Pass
	5.75	5220.000090	0.0172	Pass
	4.25	5220.000050	0.0096	Pass

7.9 DYNAMIC FREQUENCY SELECTION

TEST PROCEDURE

According to “KDB 905462 D02 v02” and “KDB 905462 D03 v01r01”

LIMIT

According to §15.407 (h) and FCC 06-96 appendix “compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection”.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Table 3: Interference Threshold values, Master or Client incorporating In-Service

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Table 6 – Long Pulse Radar Test Signal

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

DESCRIPTION OF EUT

Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was:

Firmware Rev: JEDI.MP2.mt76x2u.wifi.v3.1.0
The EUT operates over the 5250-5350 MHz range as a Client Device that does not have radar detection capability.

The EUT uses one transmitter connected to two 50-ohm coaxial antenna ports via a diversity switch. Only one antenna port is connected to the test system since the EUT has one antenna only.

The Slave device associated with the EUT during these tests does not have radar detection capability.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is –62 + 5 = -57dBm.

The calibrated conducted DFS Detection Threshold level is set to -57 dBm. The tested level is lower than the required level hence it provides margin to the limit.

Manufacturer’s Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.

TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

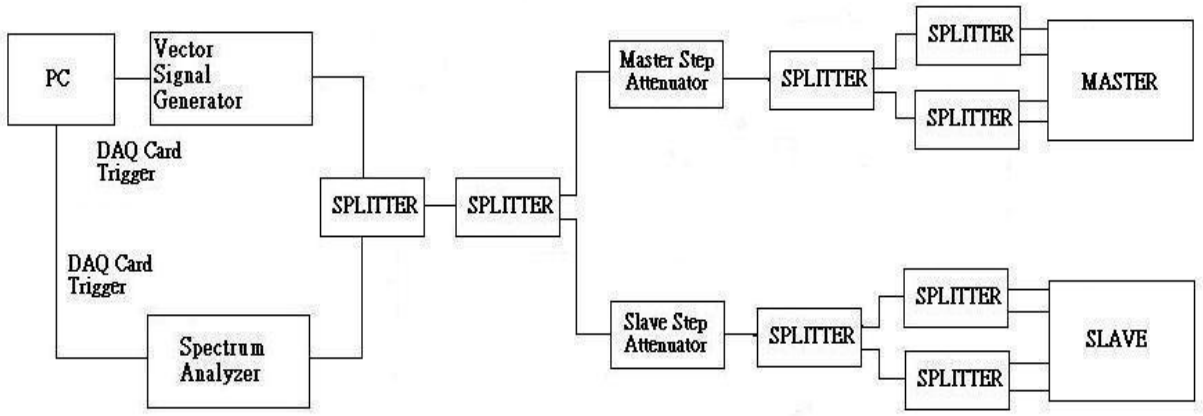
The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

Should multiple RF ports be utilized for the Master and/or Slave devices (for example, for diversity or MIMO implementations), 50 ohm termination would be removed from the splitter so that connection can be established between splitter and the Master and/or Slave devices.

Conducted Method System Block Diagram



System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of –62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from –62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at –62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at –62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

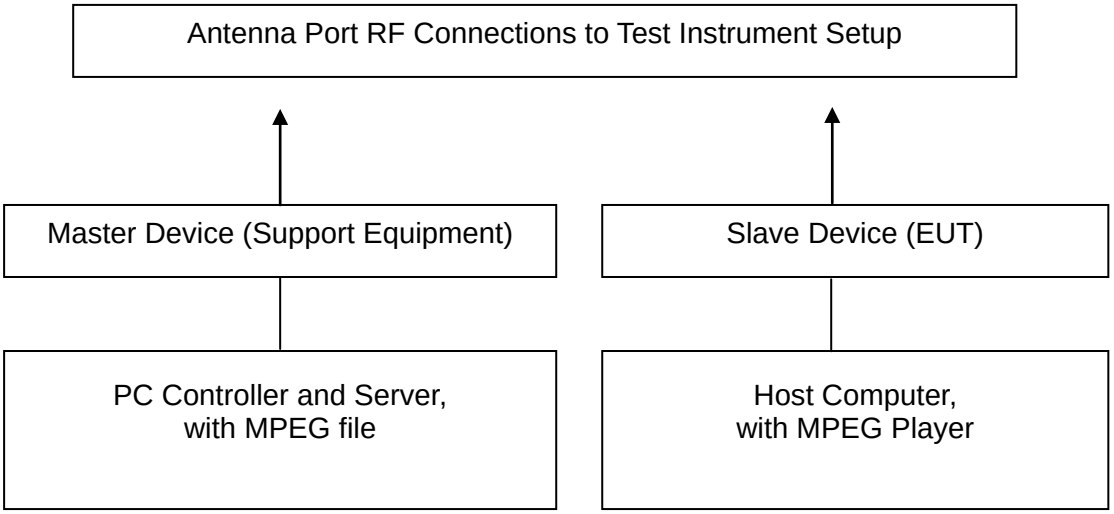
Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.

Test Setup



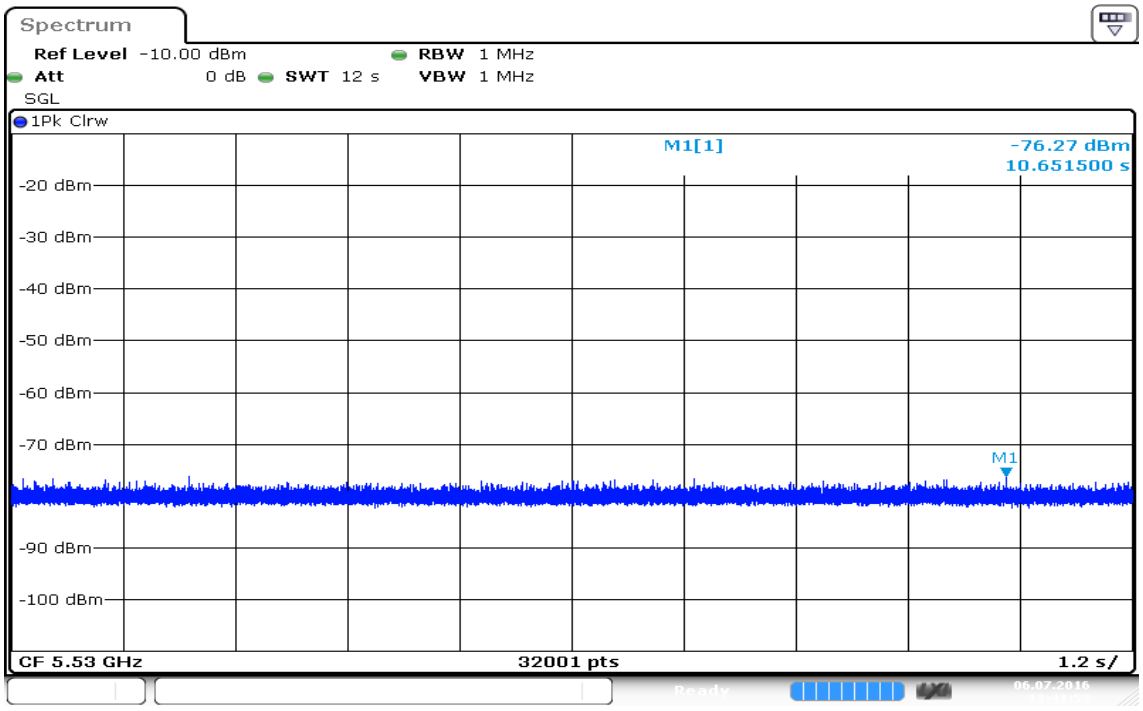
TEST RESULTS

No non-compliance noted

PLOT OF WLAN TRAFFIC FROM SLAVE

IEEE 802.11ac VHT 80 MHz / 5530MHz

Noise Floor



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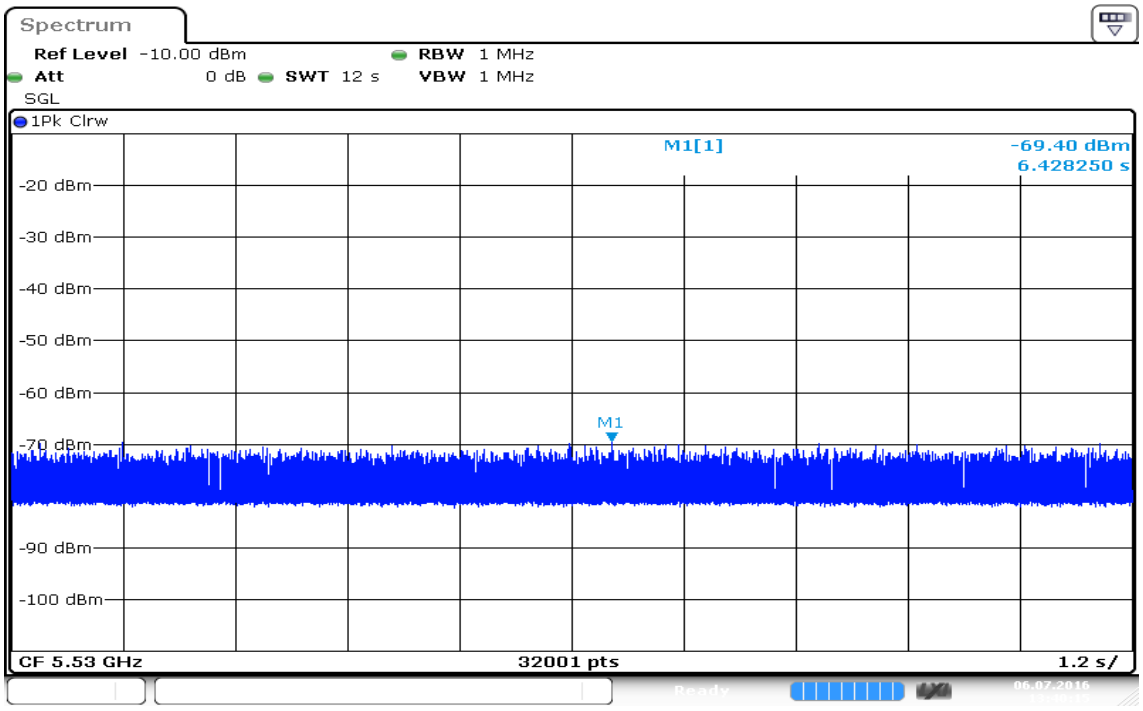
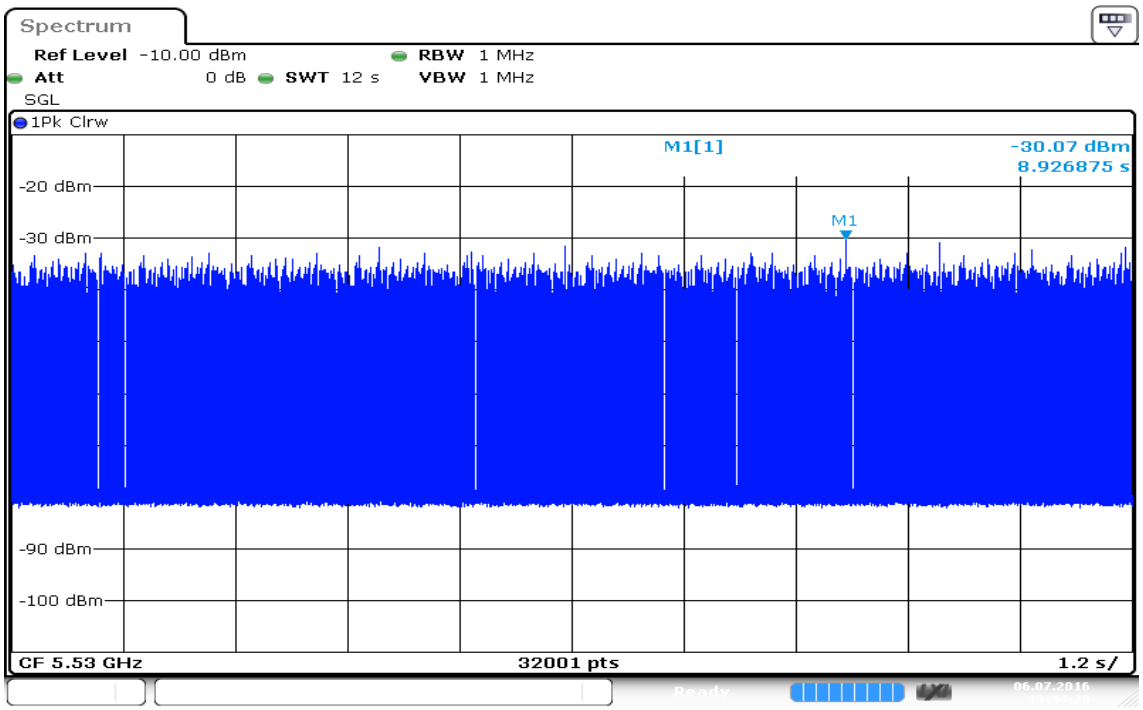
Master Level



Date: 6.JUL.2016 13:40:15

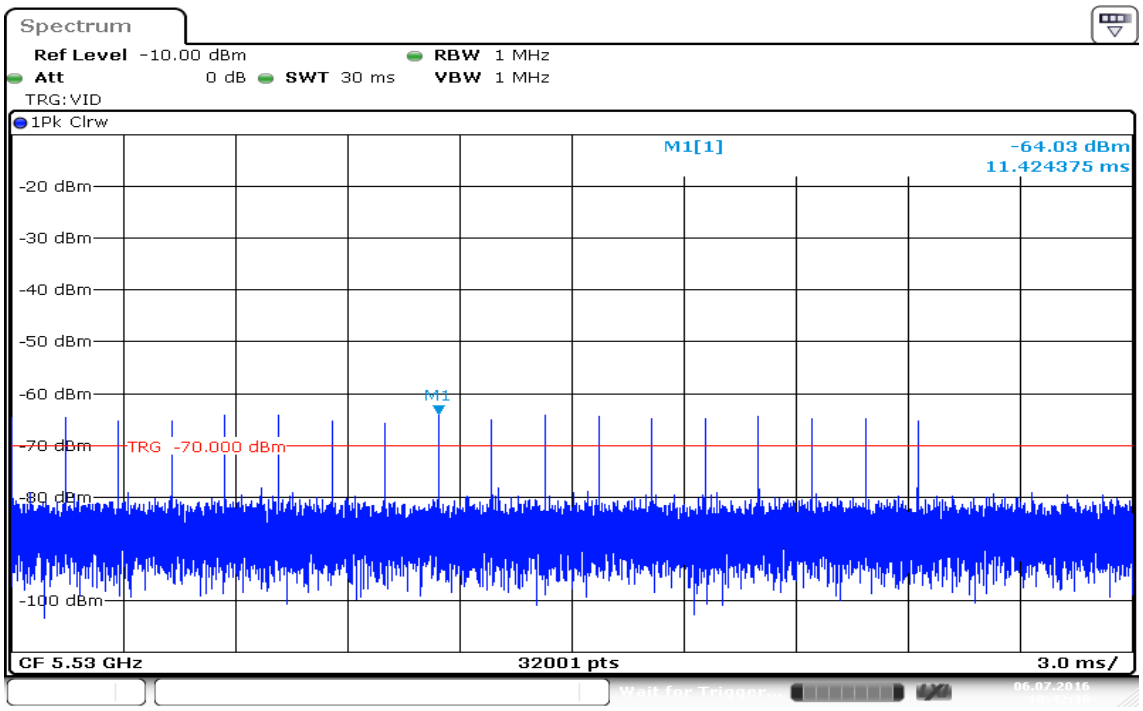
Slave Level



Date: 6.JUL.2016 13:44:29

PLOTS OF RADAR WAVEFORMS

Sample of Short Pulse Radar Type 0



Date: 6.JUL.2016 10:42:30

TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5530 MHz utilizing a conducted test method.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated

Begins at (Reference Marker + 200 msec) and

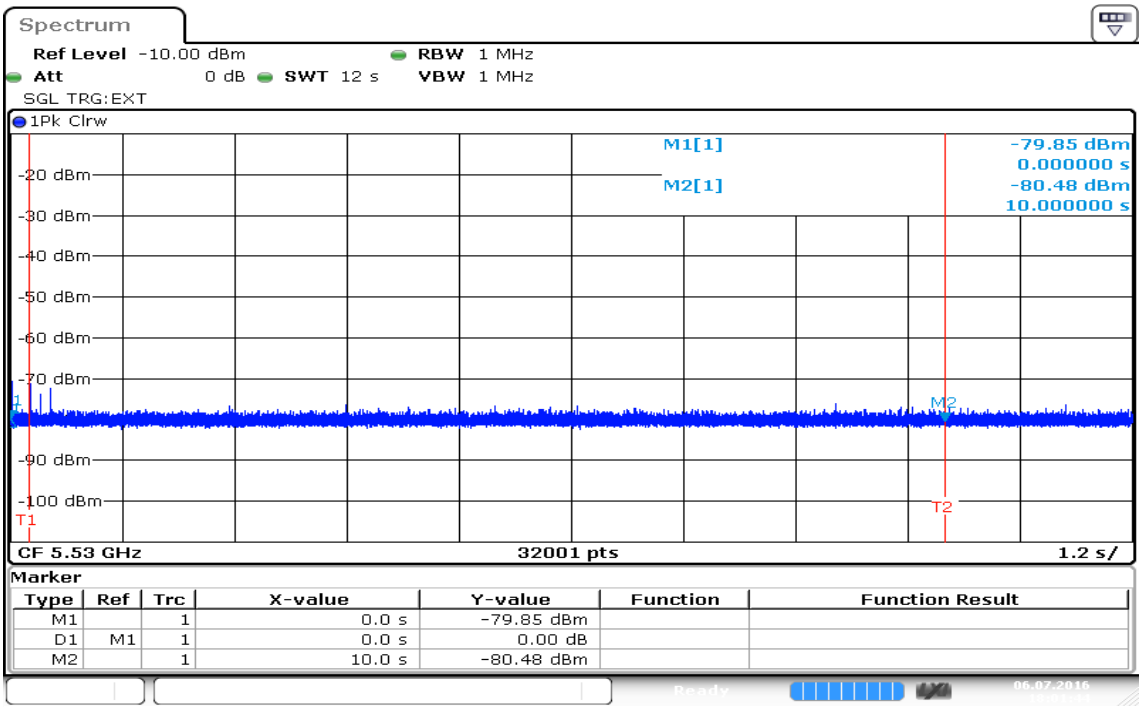
Ends no earlier than (Reference Marker + 10 sec).

IEEE 802.11ac VHT 80 MHz / 5530MHz

Type 1 Channel Move Time Results

No non-compliance noted.

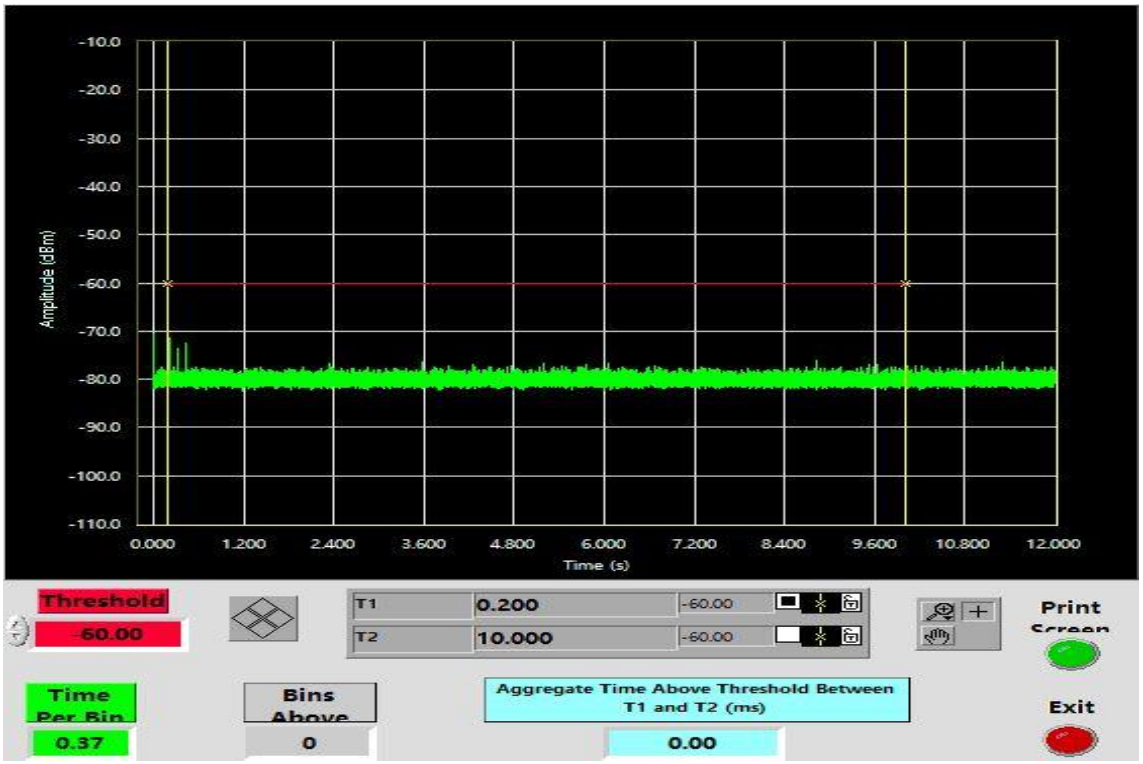
Channel Move Time (s)	Limit (s)
0	10



Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
0	60	-60

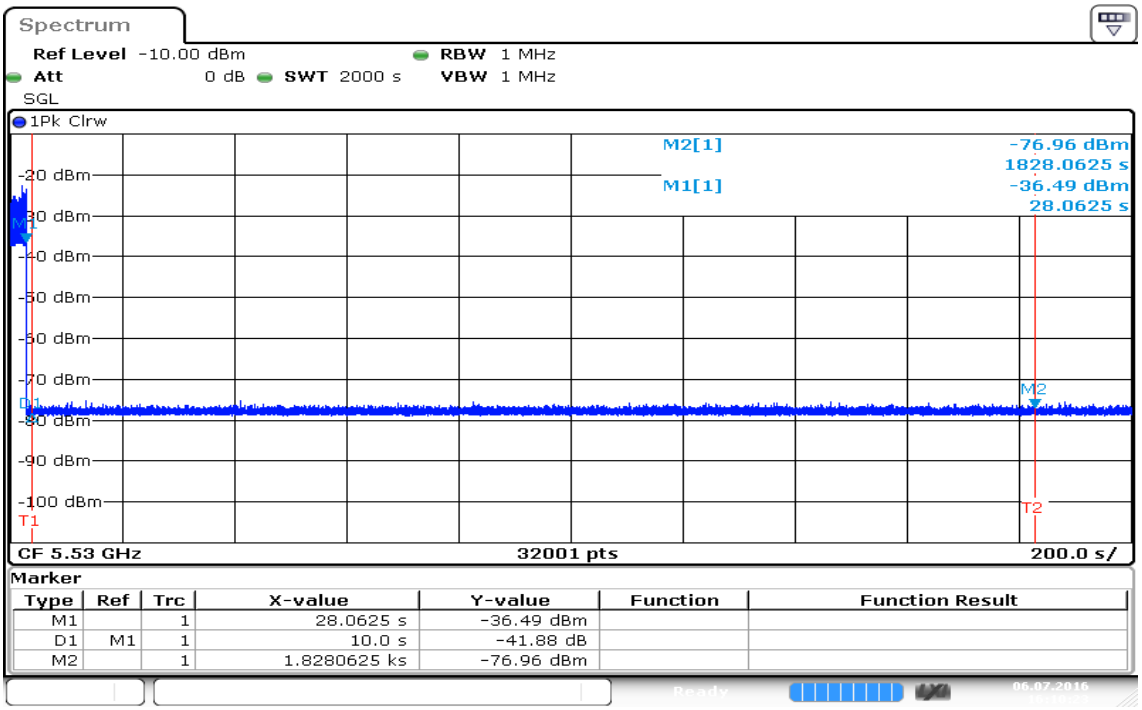


NON-OCCUPANCY PERIOD

IEEE 802.11ac VHT 80 MHz / 5530MHz

Type 1 Non-Occupancy Period Test Results

No non-compliance noted.
No EUT transmissions were observed on the test channel during the 30 minute observation time.



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