

4.5 RADIATION BANDEGE AND SPURIOUS EMISSION

4.5.1 Test Limit

FCC according to §15.407, §15.209 and §15.205,

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

IC according to RSS-247 section 6.2.1(2), section 6.2.2(2), section 6.2.3(2) and section 6.2.4(2)

UNII-1 :

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz

UNII-2a and 2c :

For devices with operating frequencies in the band 5250-5350 MHz but having a channel bandwidth that overlaps the band 5150-5250 MHz, the devices' unwanted emission shall not exceed -27 dBm/MHz e.i.r.p. outside the band 5150-5350 MHz and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device shall be labelled "for indoor use only." Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.

UNII-3:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

4.5.2 Test Procedure

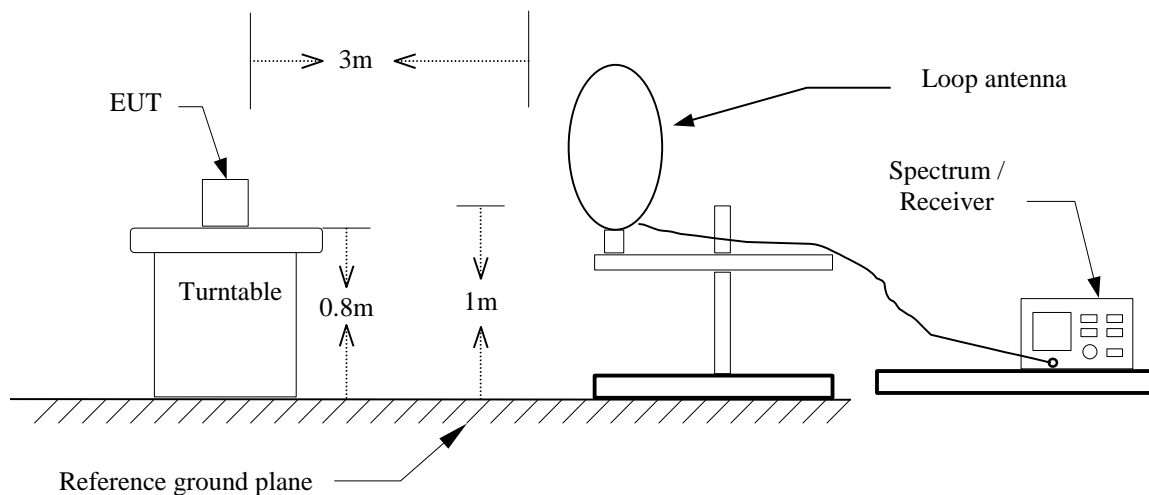
Test method Refer as KDB 789033 D02 v01r03, Section G.3, G.4, G.5, and G.6,.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.
3. Span shall wide enough to full capture the emission measured. The SA from 30MHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.
5. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW \geq 3*RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G :
 - (2.1) For Peak measurement : RBW = 1MHz, VBW \geq 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW
 - If Duty Cycle \geq 98%, VBW=10Hz.
 - If Duty Cycle < 98%, VBW=1/T.

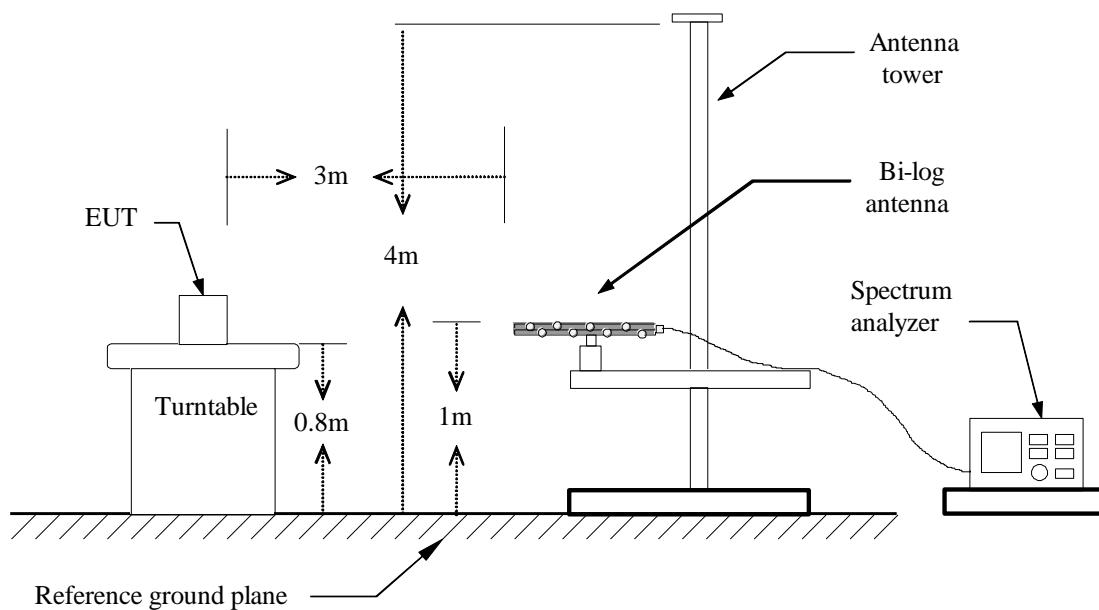
Configuration	Duty Cycle (%)	T(ms)	1/T (kHz)	VBW Setting
802.11a	98%	2.0900	-	10Hz
802.11n HT20	94%	1.0100	0.990	1KHz
802.11n HT40	90%	0.5200	1.923	2KHz
802.11ac VHT80	67%	0.1000	10.000	10KHz

4.5.3 Test Setup

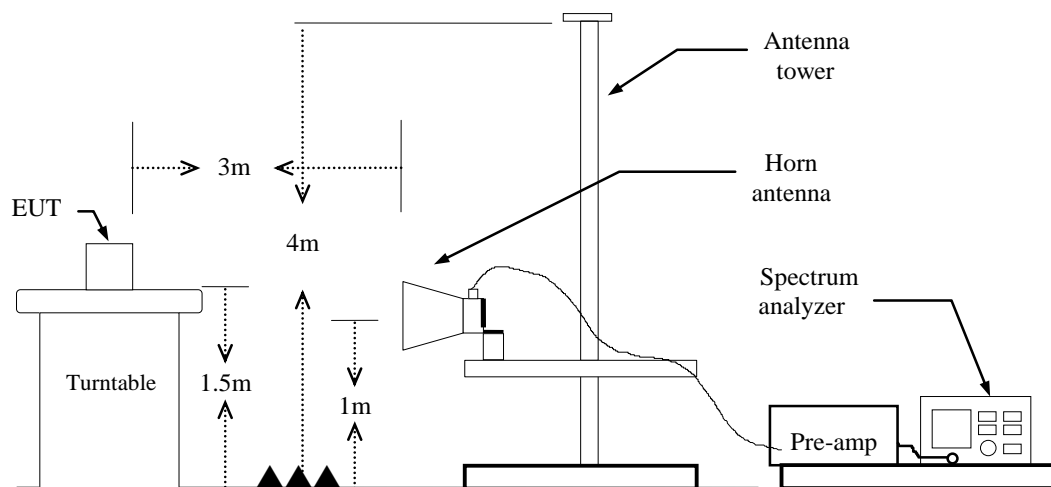
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz

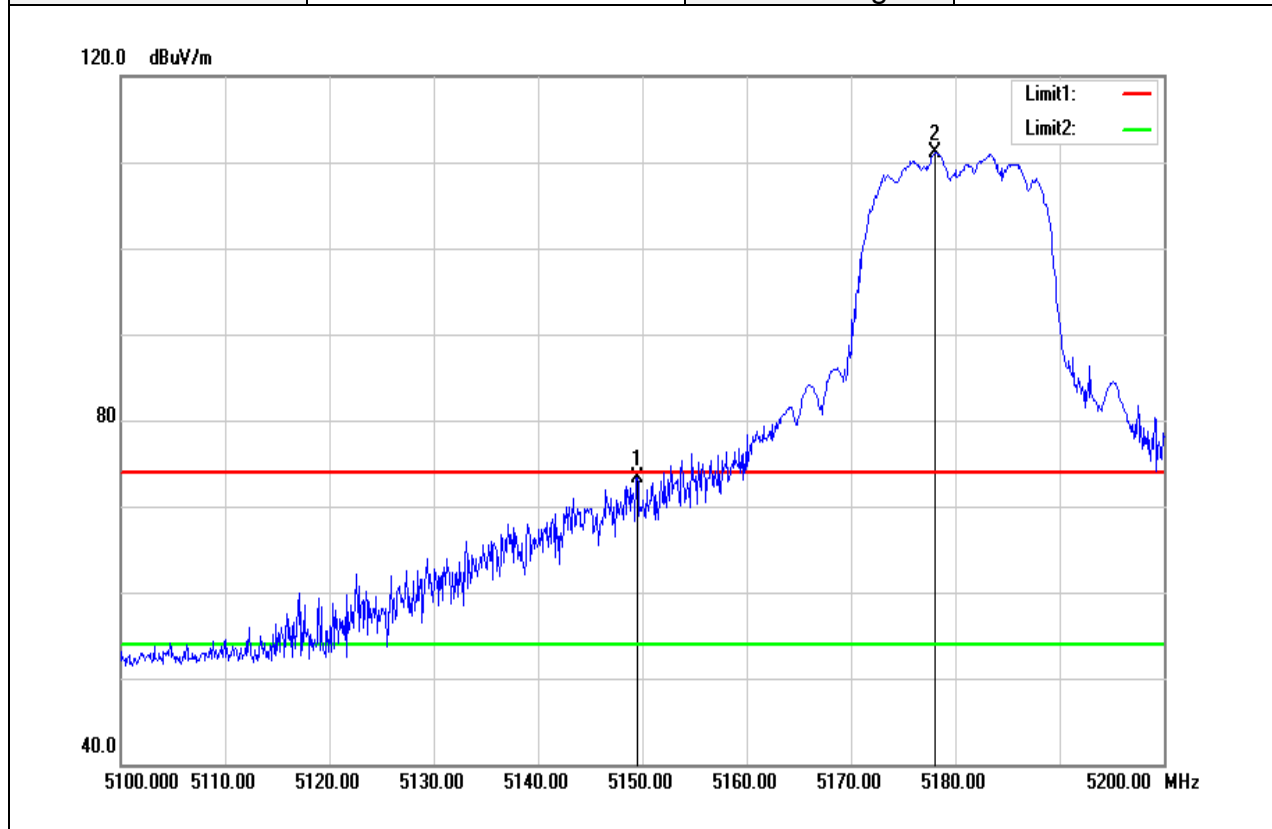


4.5.4 Test Result

Test Data

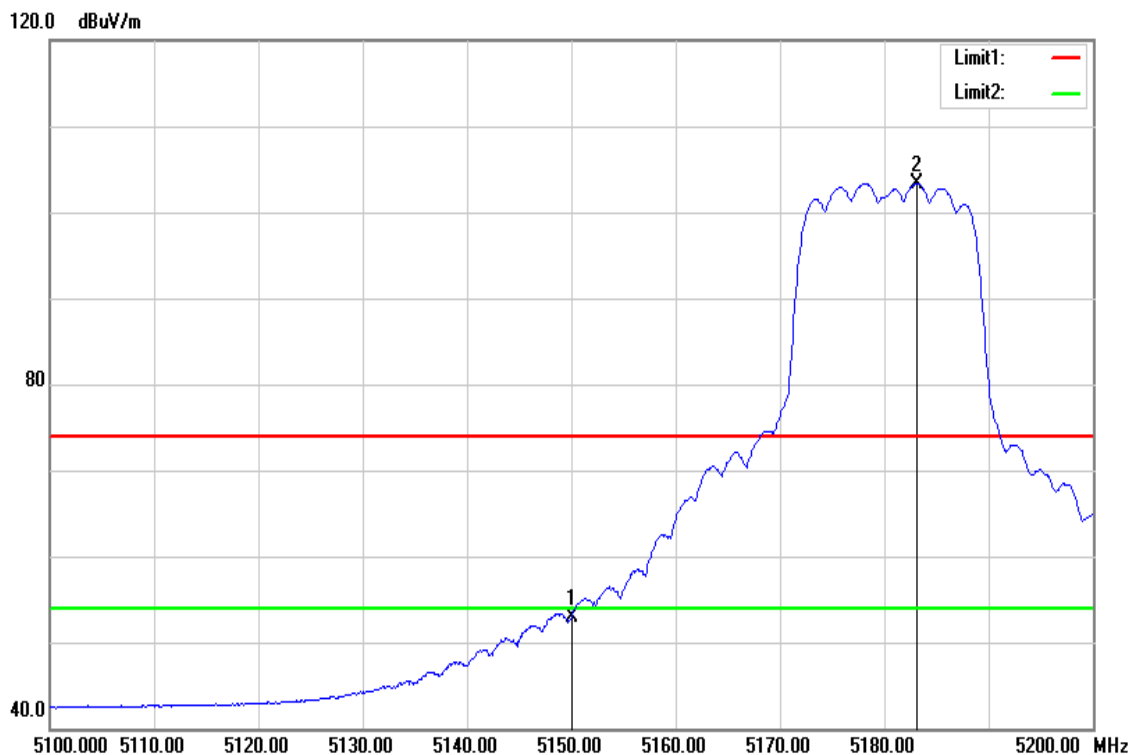
Band Edge Test Data for UNII-1

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



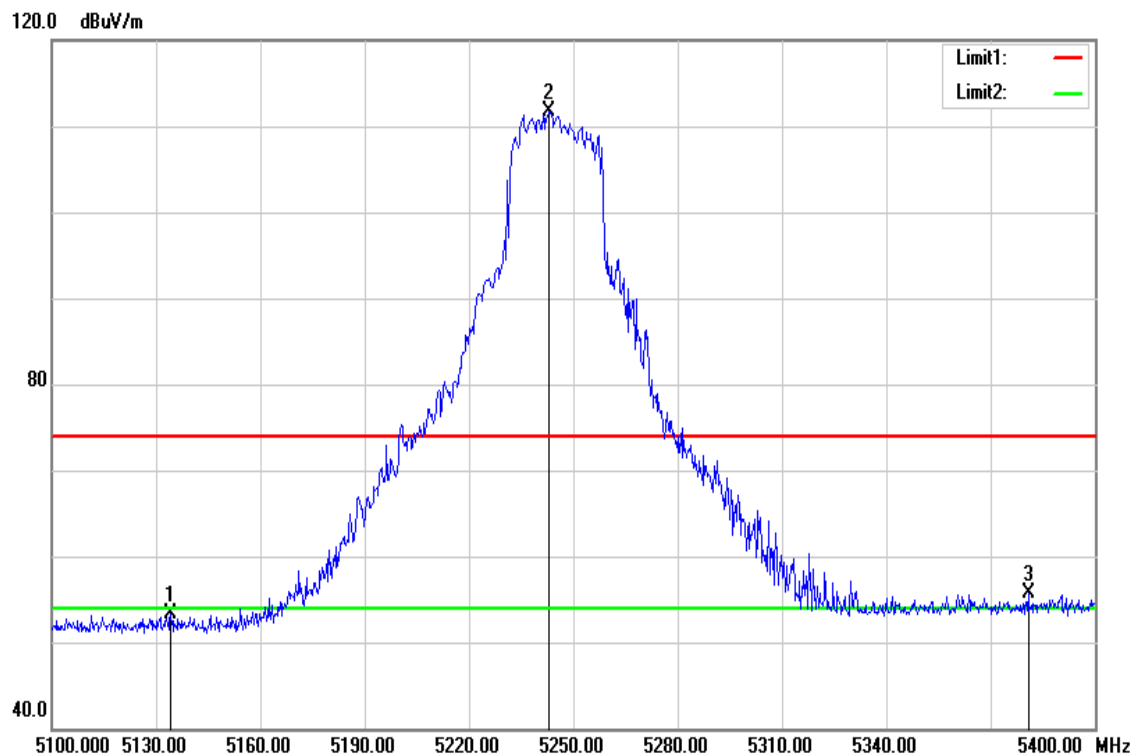
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.500	70.28	3.04	73.32	74.00	-0.68	peak
5178.100	107.22	3.85	111.07	-	-	peak

Test Mode	IEEE 802.11a / 5180MHZ	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



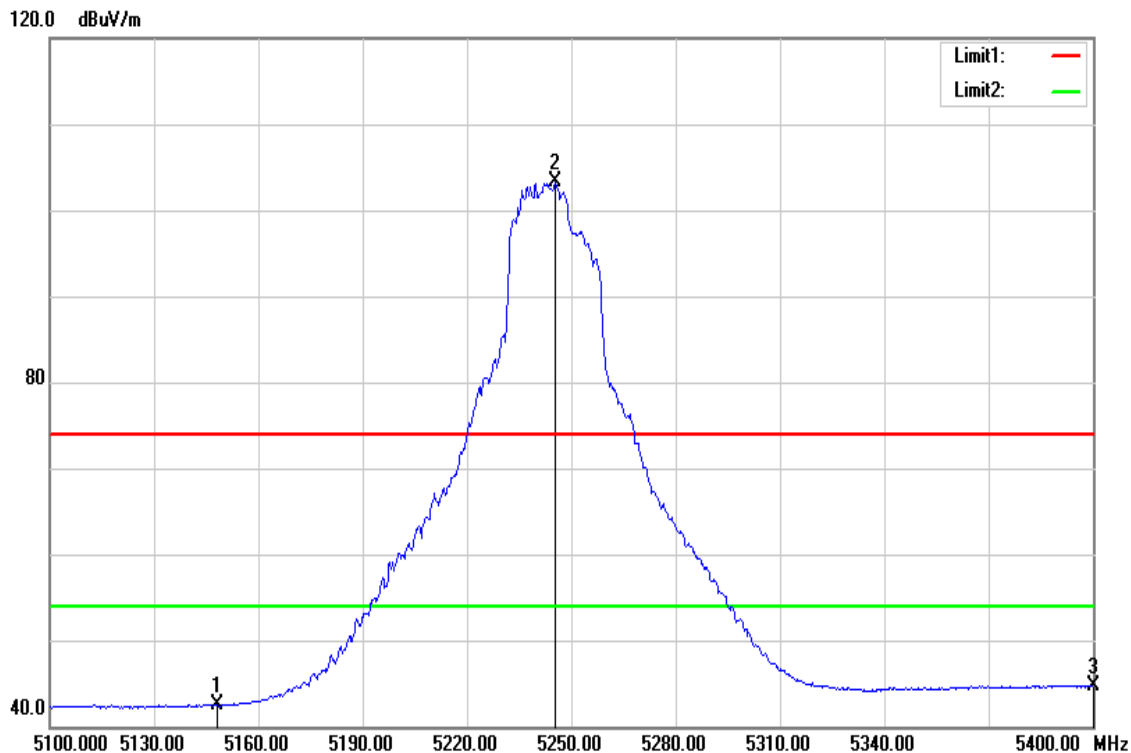
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	49.94	3.04	52.98	54.00	-1.02	AVG
5183.100	99.34	4.00	103.34	-	-	AVG

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



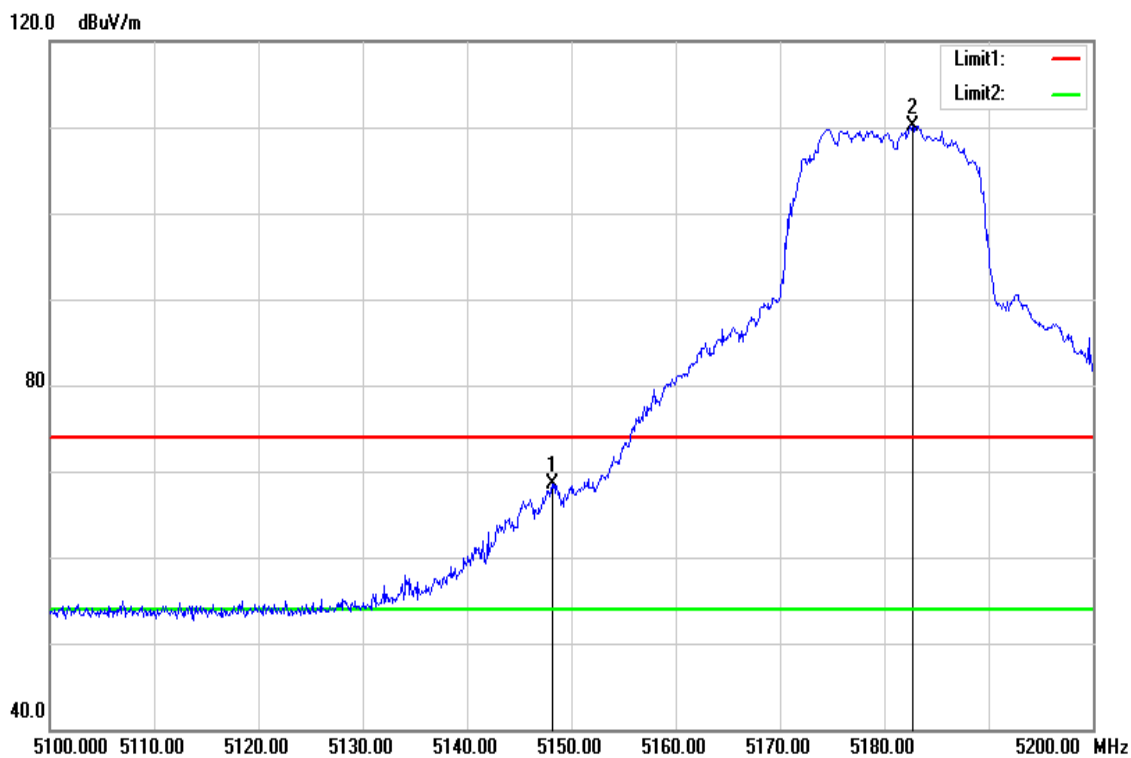
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5134.200	50.33	2.93	53.26	74.00	-20.74	peak
5243.100	106.97	4.64	111.61	-	-	peak
5380.800	50.20	5.56	55.76	74.00	-18.24	peak

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



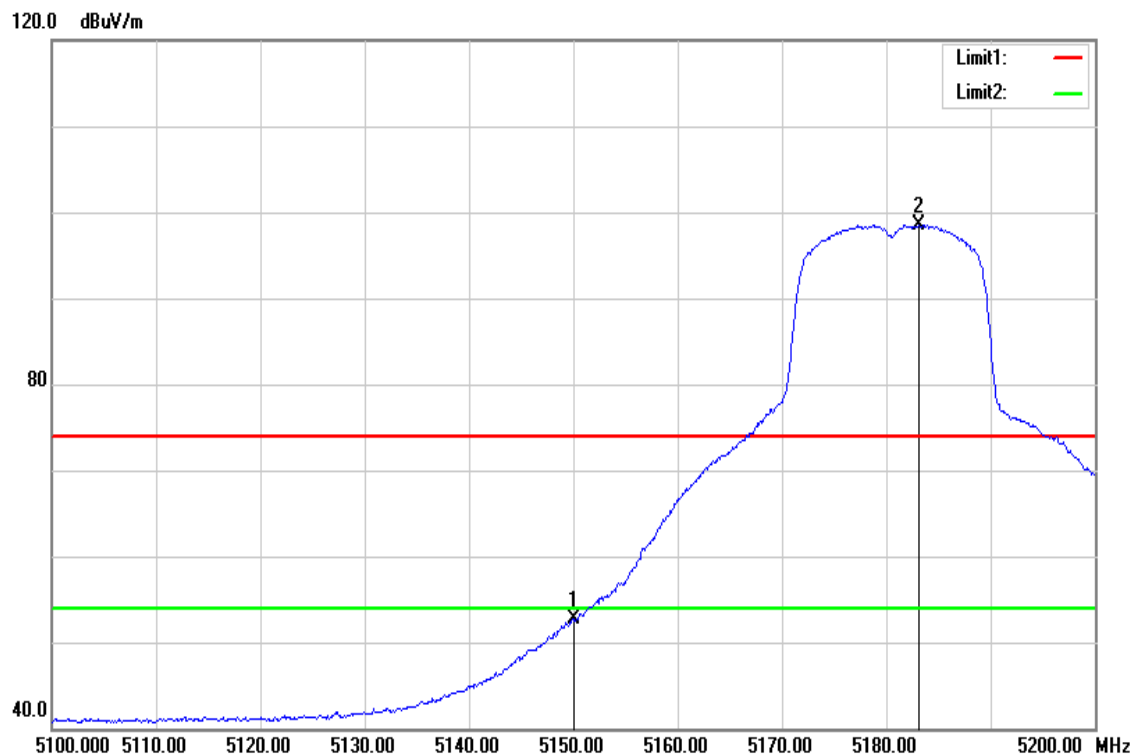
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.000	39.56	3.03	42.59	54.00	-11.41	AVG
5245.500	98.75	4.64	103.39	-	-	AVG
5400.000	39.03	5.72	44.75	54.00	-9.25	AVG

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



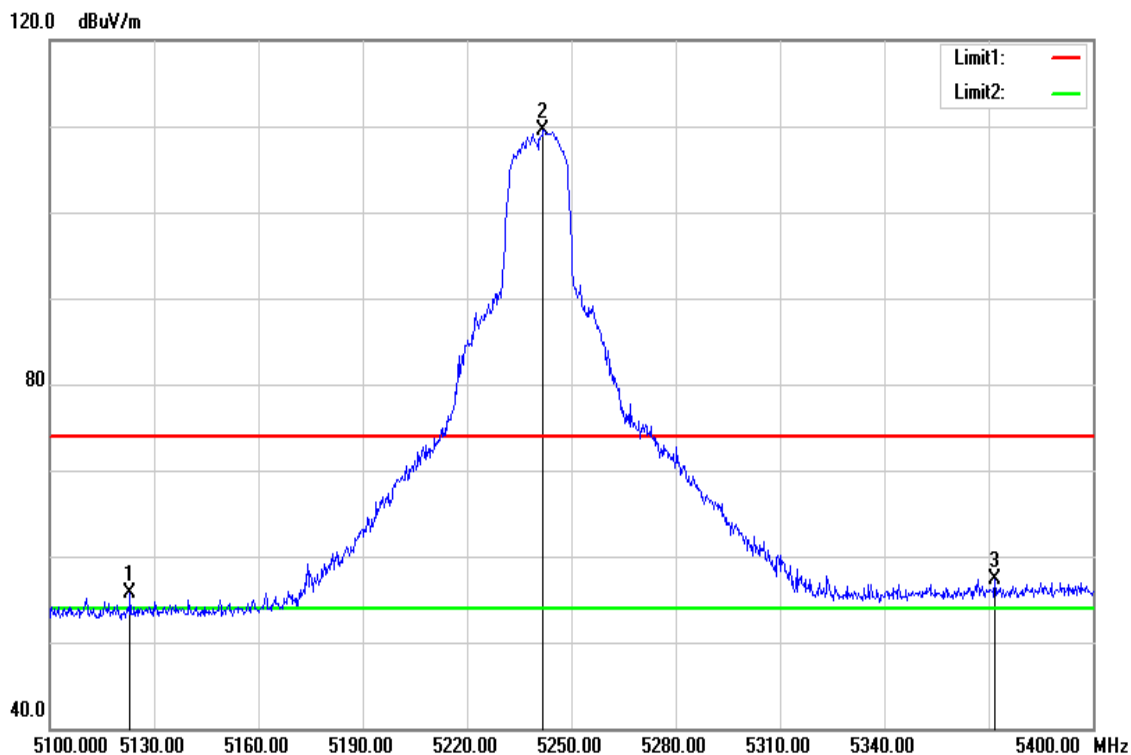
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.200	65.49	3.03	68.52	74.00	-5.48	peak
5182.700	106.09	3.99	110.08	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



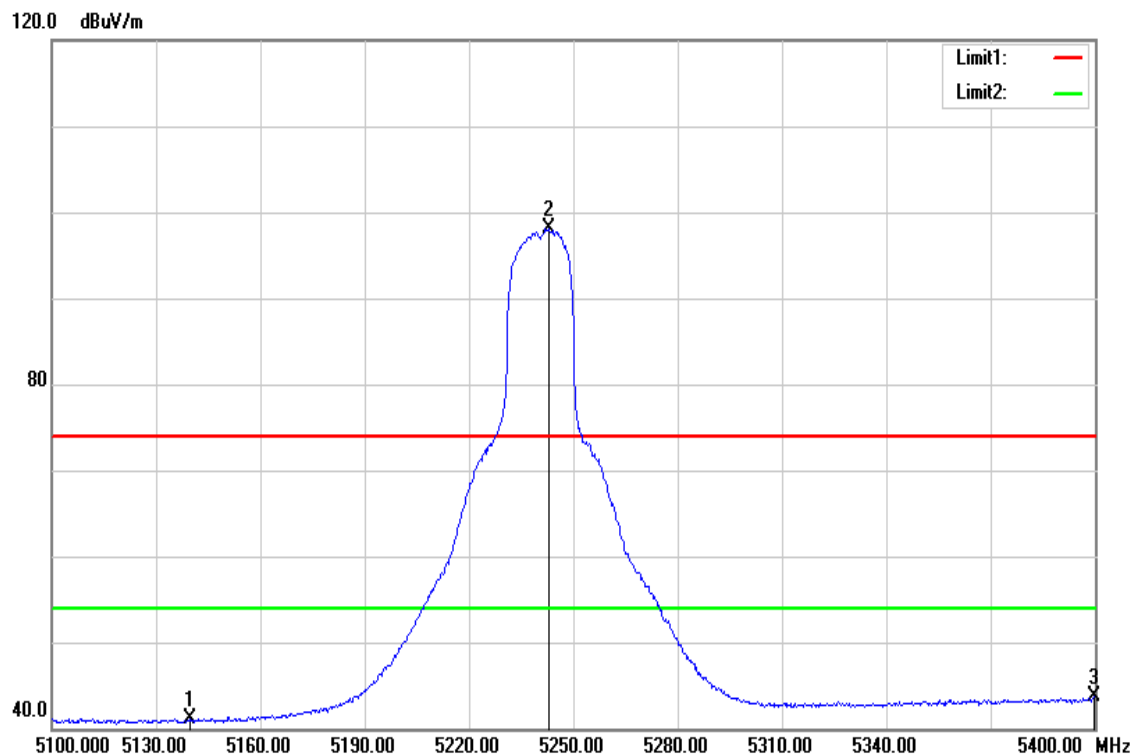
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	49.72	3.04	52.76	54.00	-1.24	AVG
5183.100	94.49	4.00	98.49	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



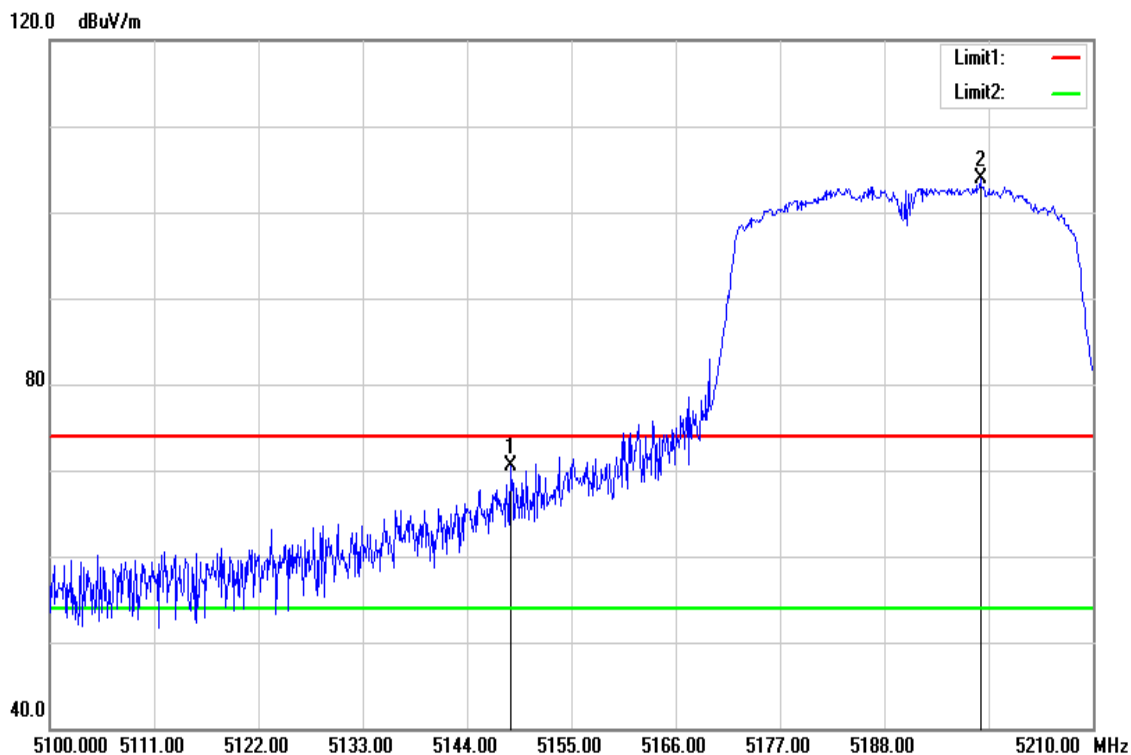
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5123.100	52.81	2.86	55.67	74.00	-18.33	peak
5241.900	104.87	4.63	109.50	-	-	peak
5371.800	51.85	5.49	57.34	74.00	-16.66	peak

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



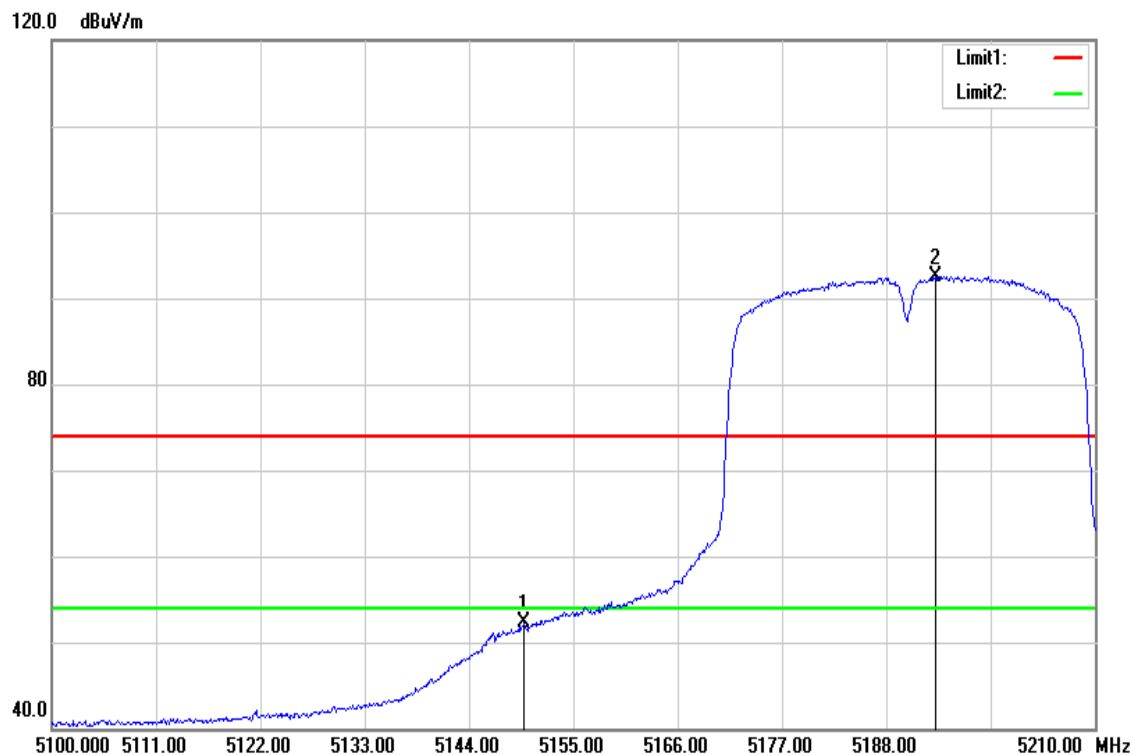
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5139.900	38.18	2.97	41.15	54.00	-12.85	AVG
5242.800	93.45	4.64	98.09	-	-	AVG
5399.700	37.90	5.72	43.62	54.00	-10.38	AVG

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



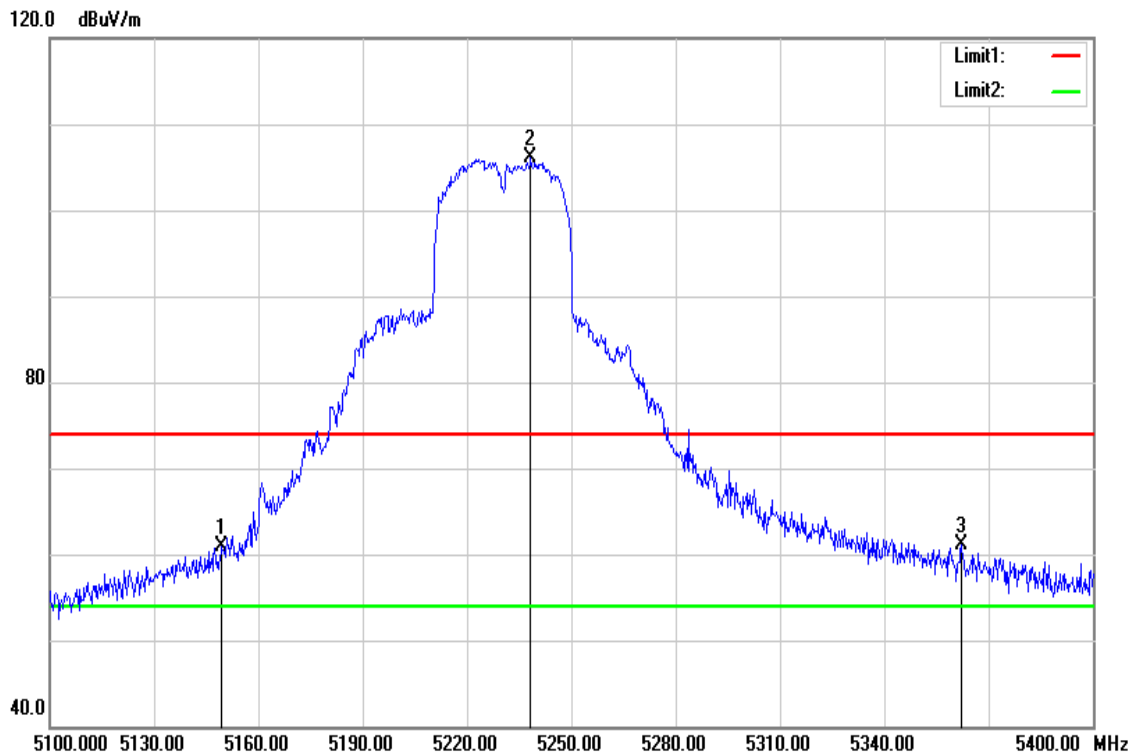
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.620	67.48	3.03	70.51	74.00	-3.49	peak
5198.120	99.41	4.44	103.85	-	-	peak

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temperature	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



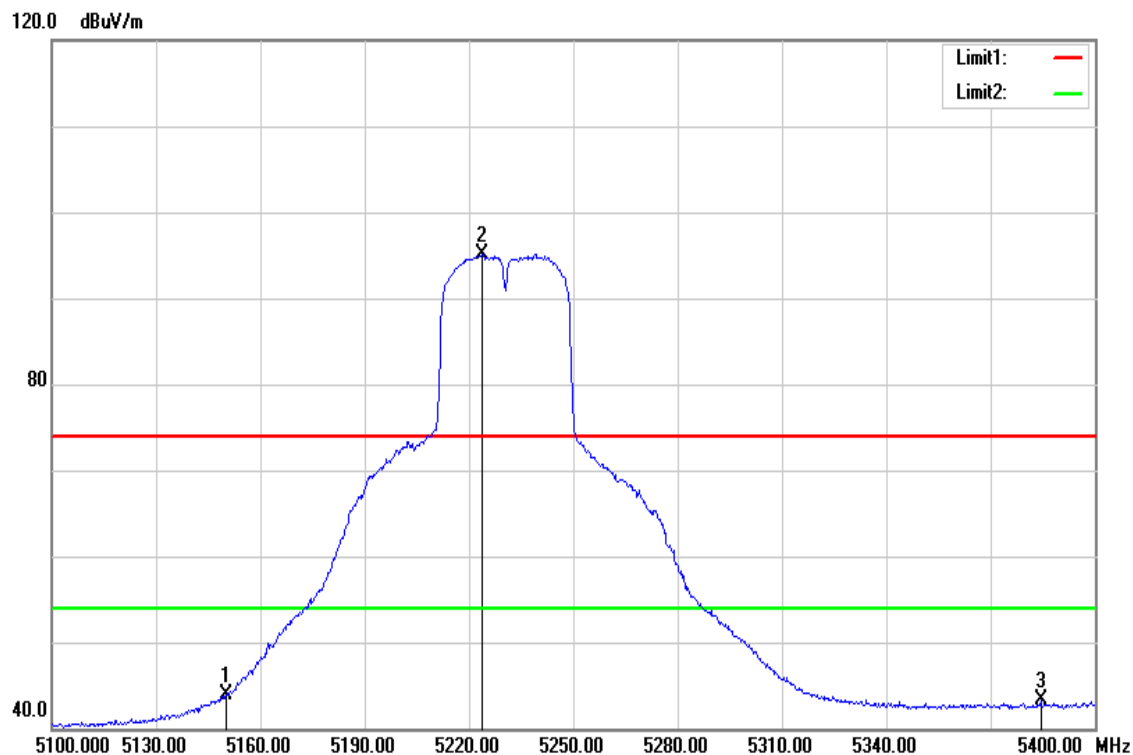
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.830	49.19	3.04	52.23	54.00	-1.77	AVG
5193.170	88.26	4.29	92.55	-	-	AVG

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



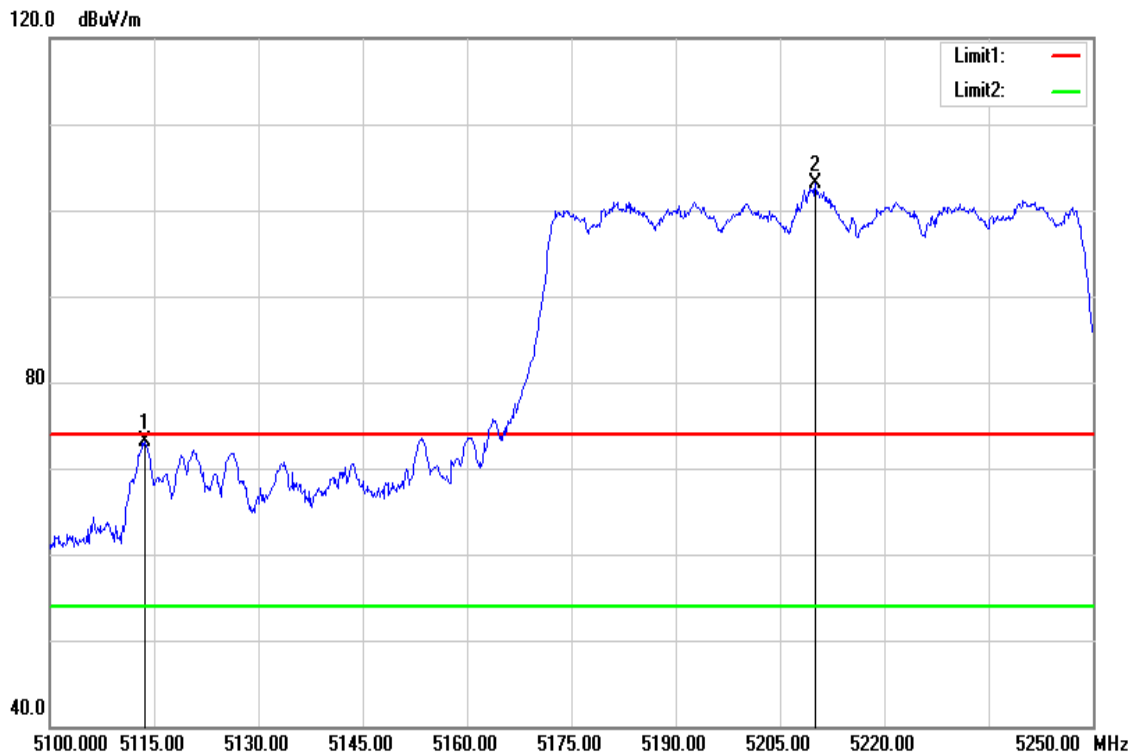
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.500	57.87	3.04	60.91	74.00	-13.09	peak
5238.300	101.46	4.62	106.08	-	-	peak
5362.200	55.74	5.41	61.15	74.00	-12.85	peak

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



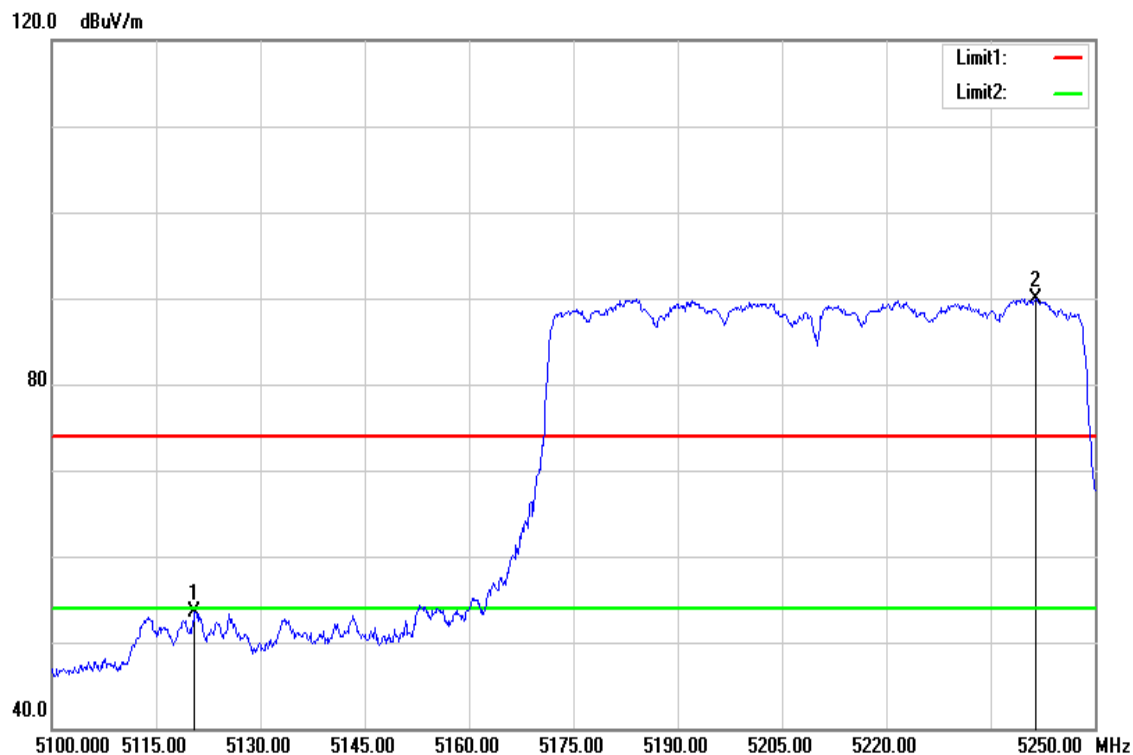
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	40.82	3.04	43.86	54.00	-10.14	AVG
5223.600	90.57	4.57	95.14	-	-	AVG
5384.400	37.61	5.59	43.20	54.00	-10.80	AVG

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5113.650	70.32	2.79	73.11	74.00	-0.89	peak
5210.100	98.50	4.52	103.02	-	-	peak

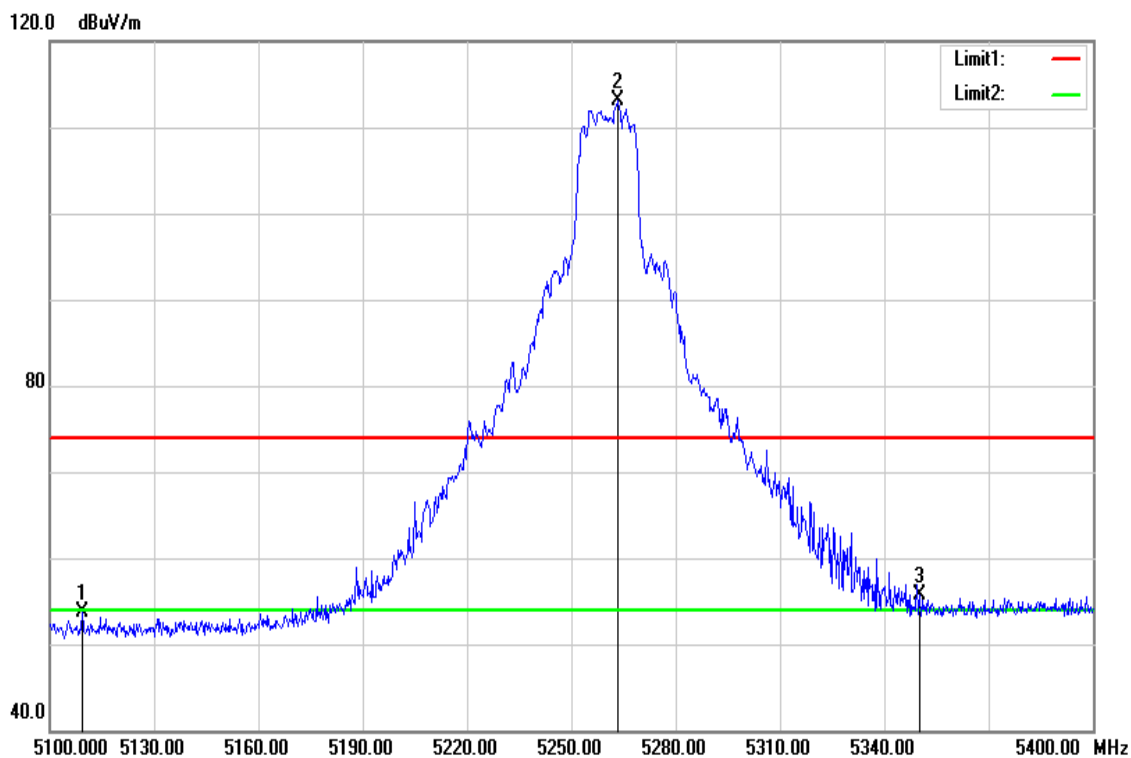
Test Mode	IEEE 802.11ac VHT80 / 5210MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5120.550	50.62	2.84	53.46	54.00	-0.54	AVG
5241.450	85.35	4.63	89.98	-	-	AVG

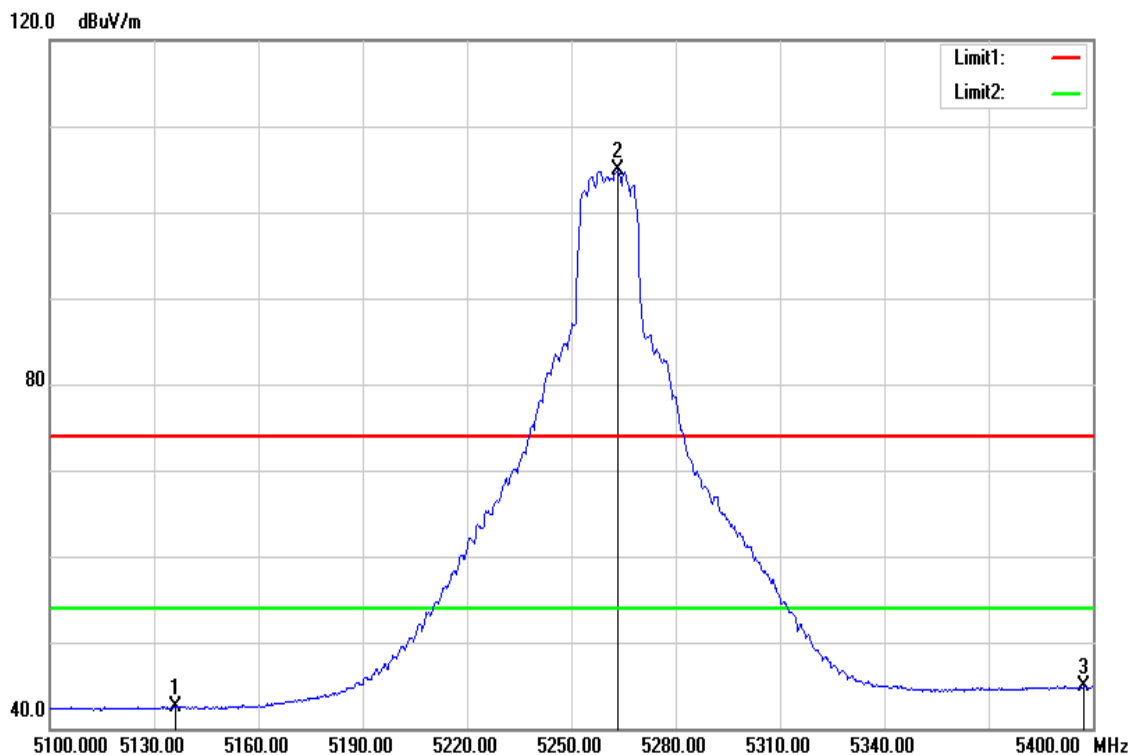
Band Edge Test Data for UNII-2a

Test Mode	IEEE 802.11a / 5260 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



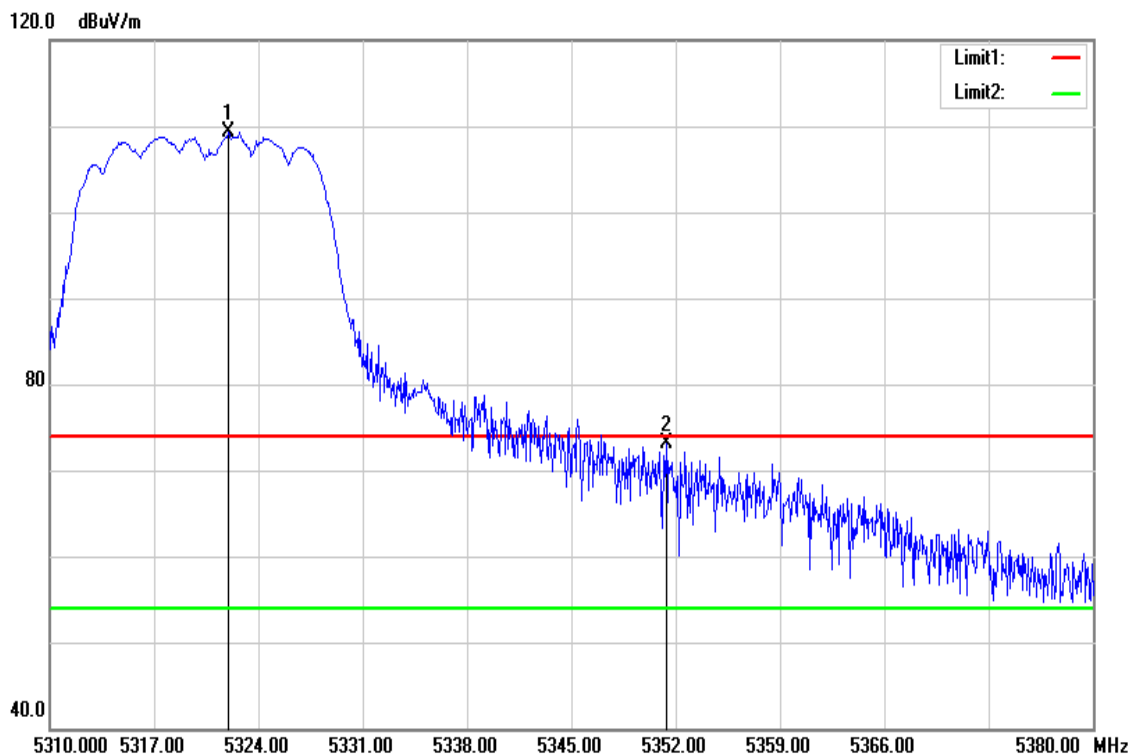
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5109.300	51.03	2.76	53.79	74.00	-20.21	peak
5263.200	108.32	4.70	113.02	-	-	peak
5350.000	50.49	5.31	55.80	74.00	-18.20	peak

Test Mode	IEEE 802.11a / 5260MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



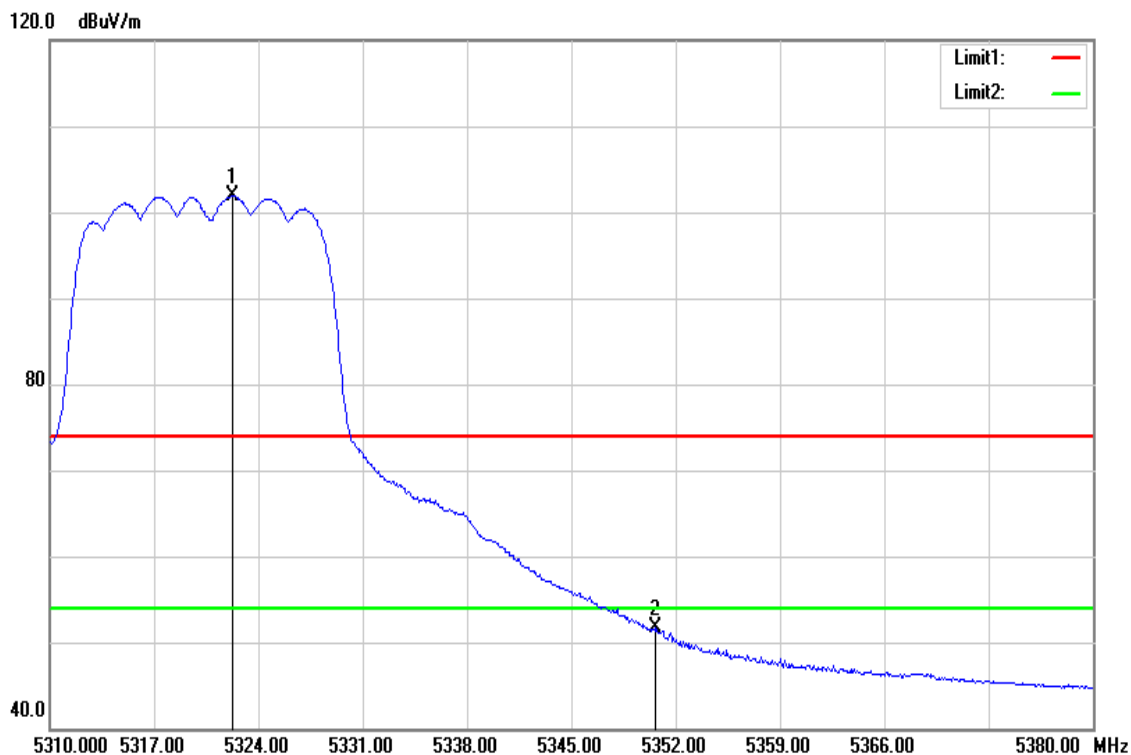
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5136.000	39.58	2.94	42.52	54.00	-11.48	AVG
5263.200	100.14	4.70	104.84	-	-	AVG
5397.300	39.18	5.70	44.88	54.00	-9.12	AVG

Test Mode	IEEE 802.11a / 5320MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



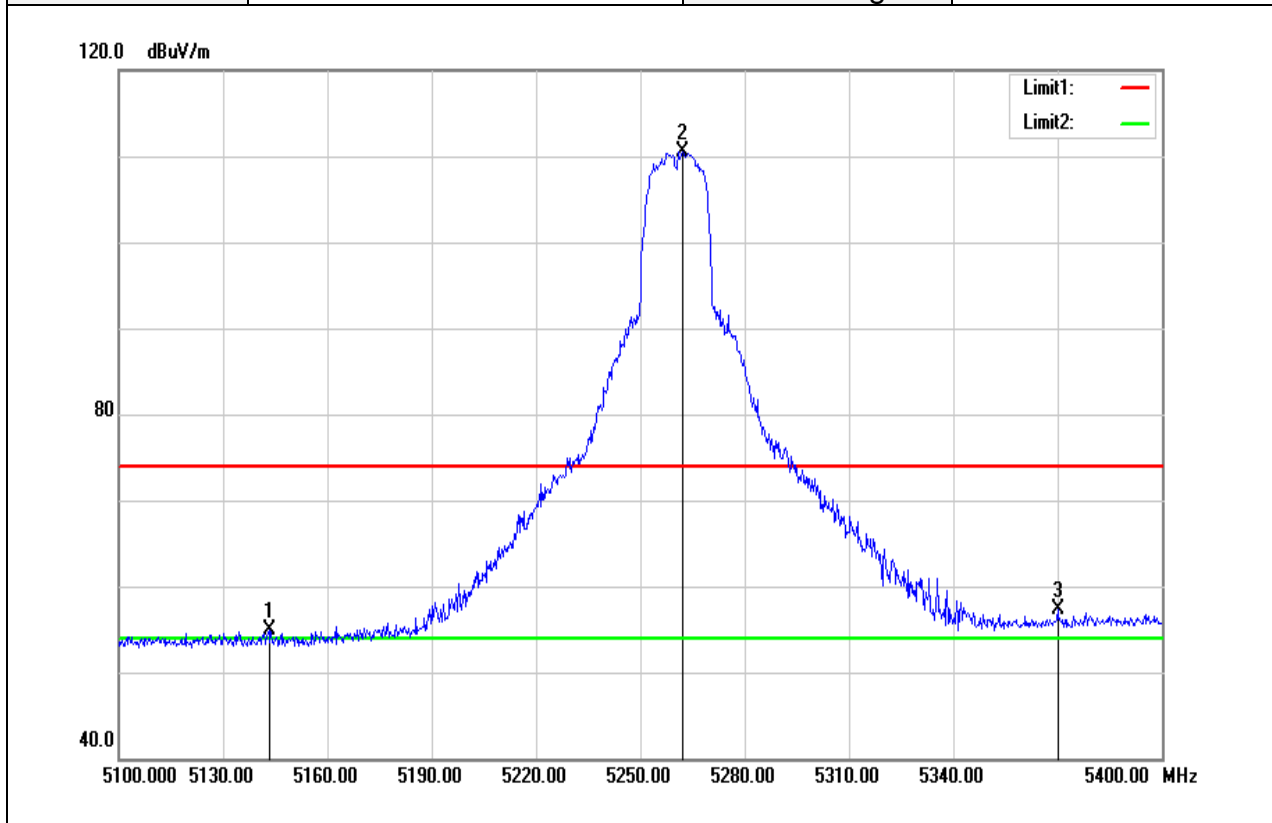
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5321.970	104.27	5.04	109.31	-	-	peak
5351.370	67.77	5.32	73.09	74.00	-0.91	peak

Test Mode	IEEE 802.11a / 5320MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



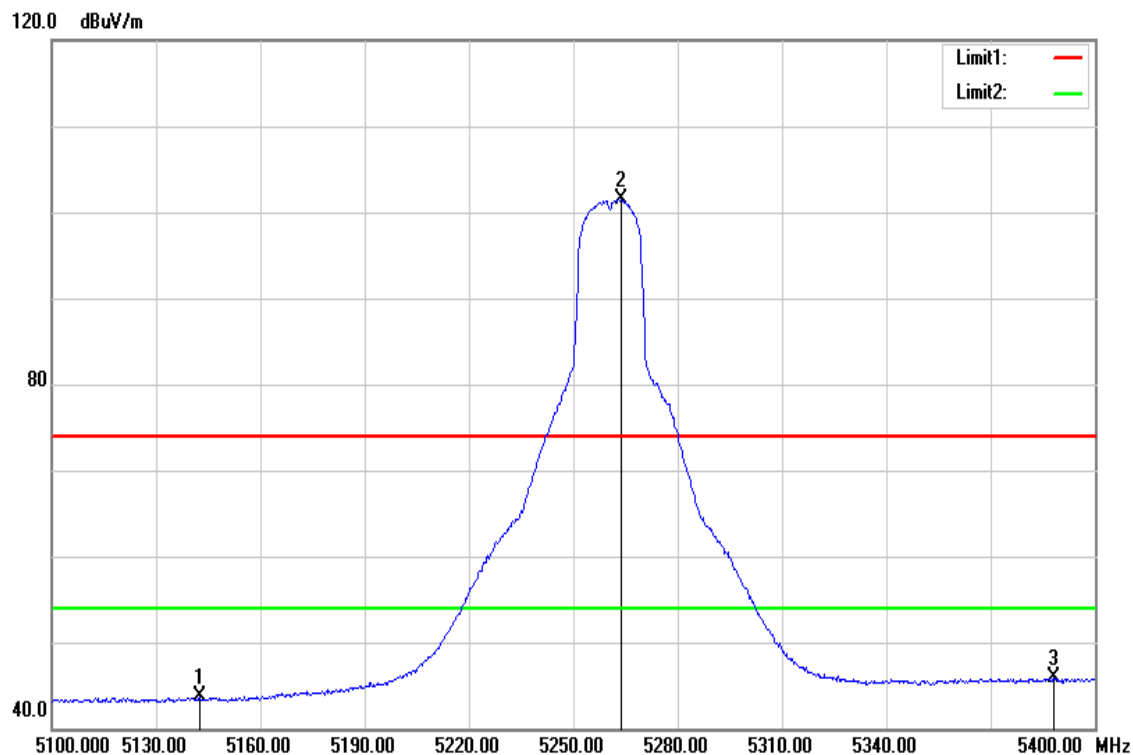
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5322.250	96.91	5.04	101.95	-	-	AVG
5350.670	46.38	5.32	51.70	54.00	-2.30	AVG

Test Mode	IEEE 802.11n HT20 / 5260MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



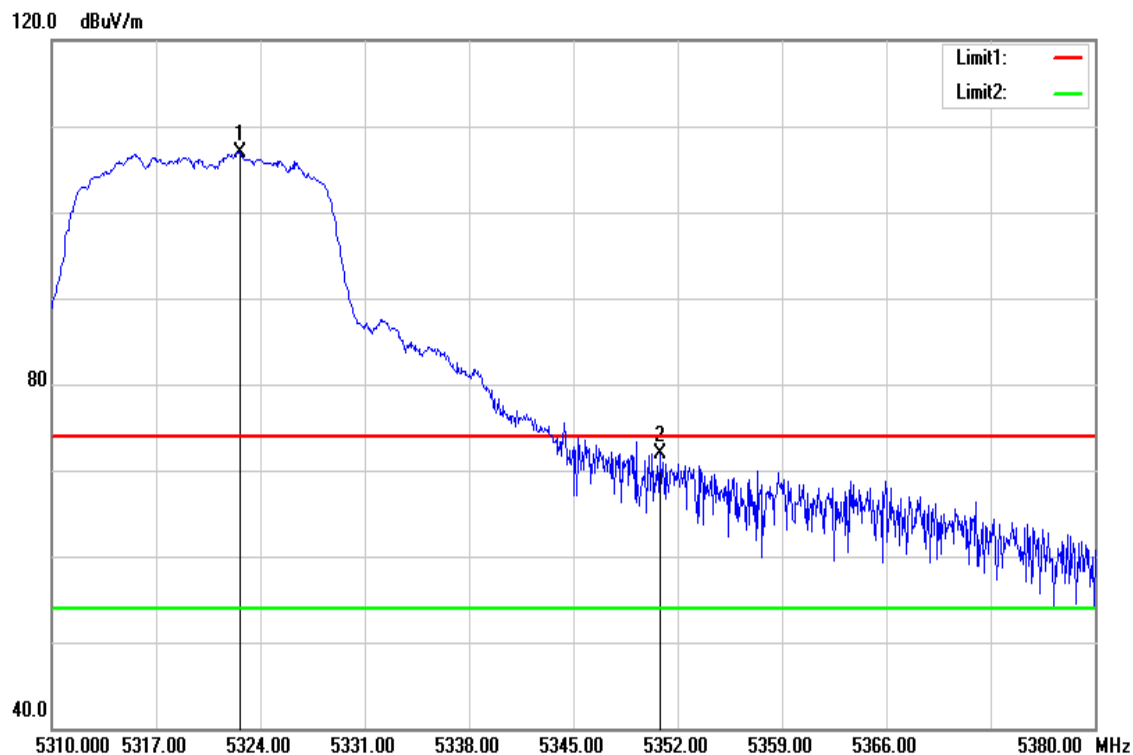
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5143.200	51.89	2.99	54.88	74.00	-19.12	peak
5262.300	105.83	4.70	110.53	-	-	peak
5370.000	51.84	5.47	57.31	74.00	-16.69	peak

Test Mode	IEEE 802.11n HT20 / 5260MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



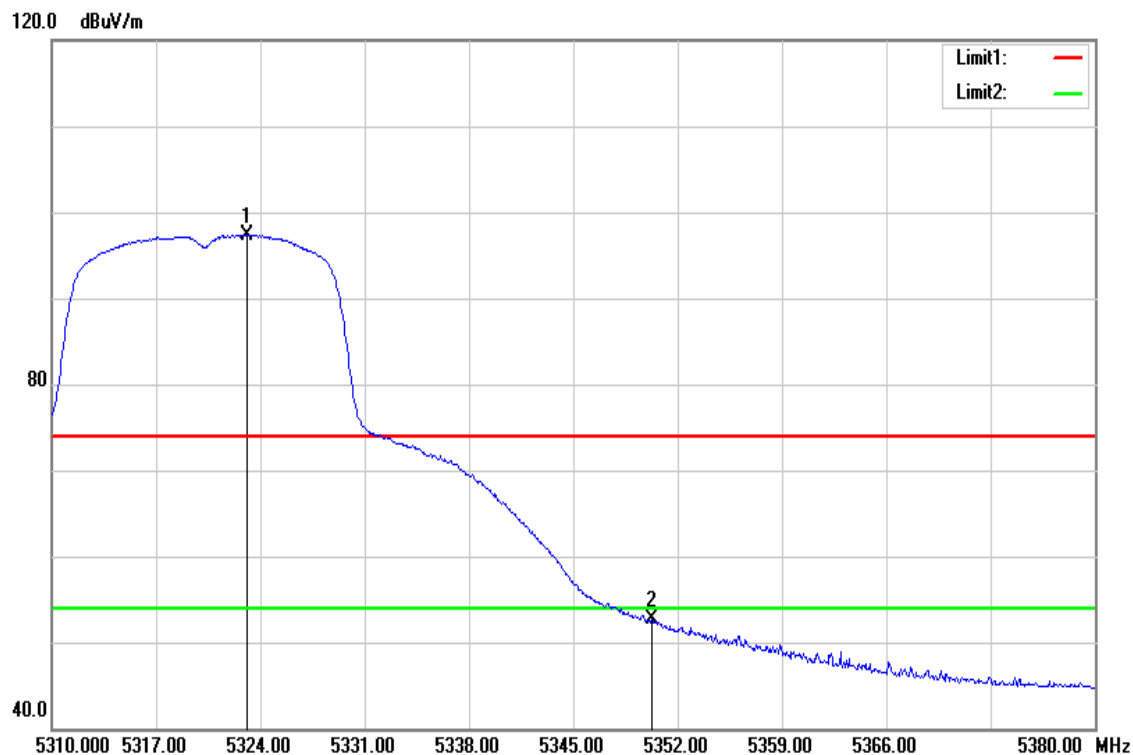
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5142.600	40.63	2.99	43.62	54.00	-10.38	AVG
5263.800	96.76	4.71	101.47	-	-	AVG
5388.000	40.22	5.62	45.84	54.00	-8.16	AVG

Test Mode	IEEE 802.11n HT20 / 5320MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



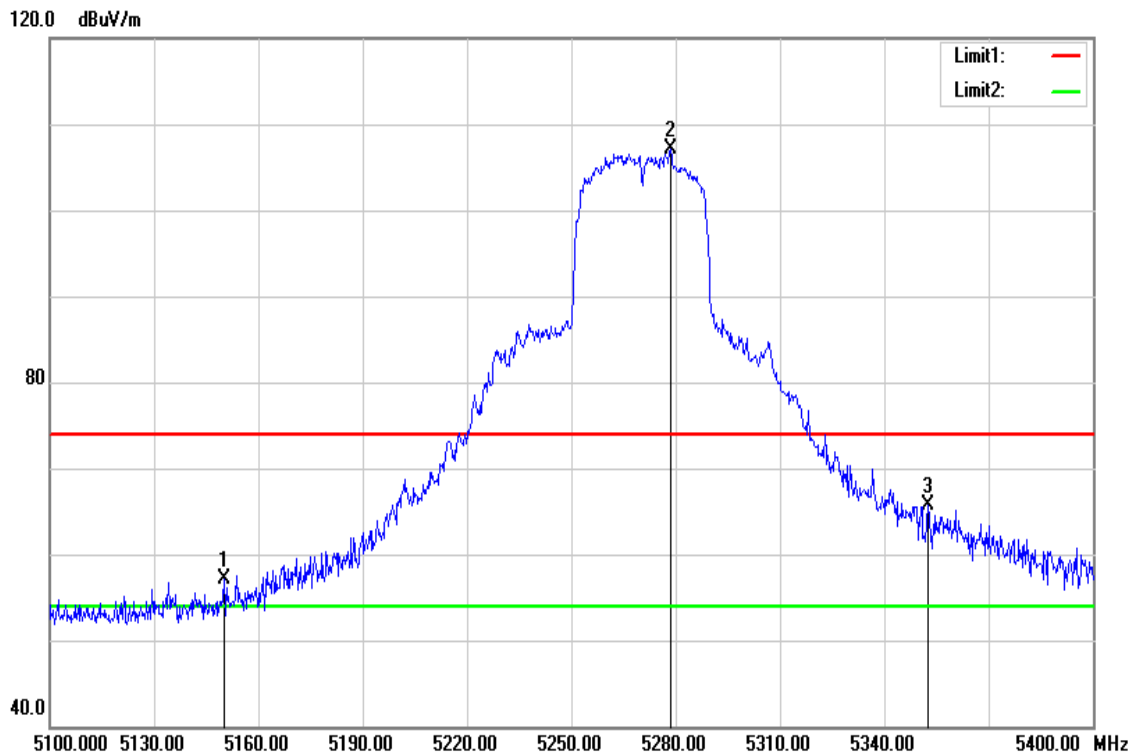
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5322.600	101.92	5.05	106.97	-	-	peak
5350.810	66.60	5.32	71.92	74.00	-2.08	peak

Test Mode	IEEE 802.11n HT20 / 5320MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



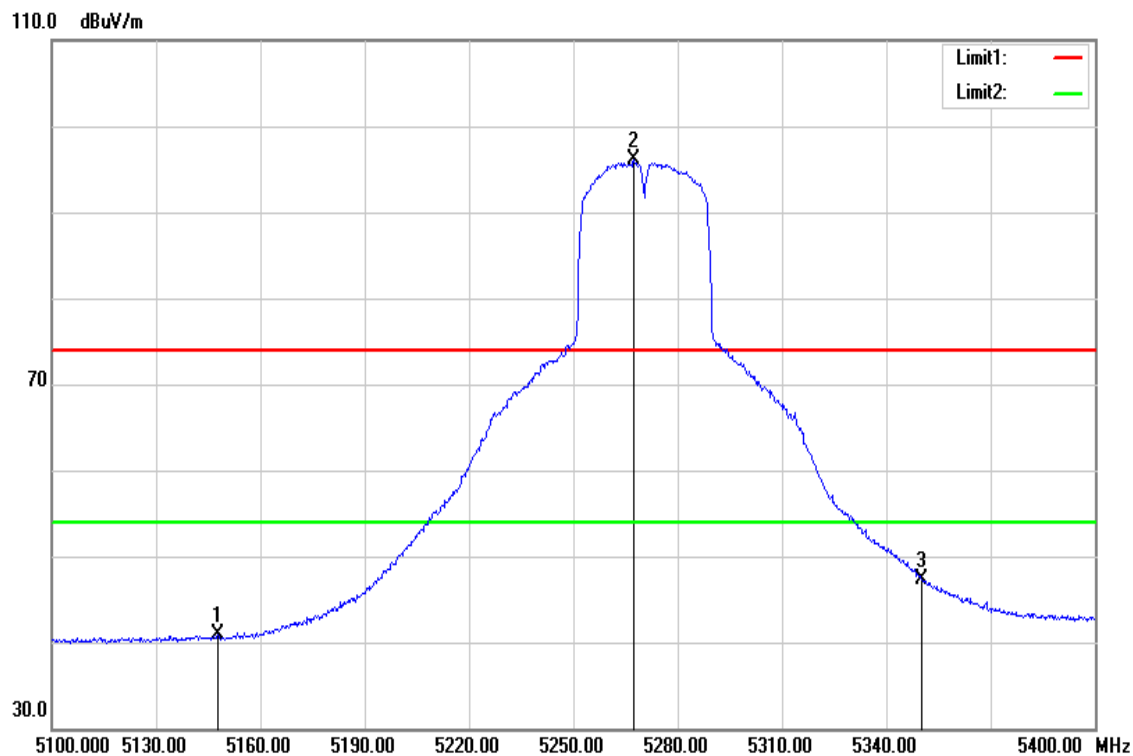
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5323.090	92.28	5.05	97.33	-	-	AVG
5350.250	47.40	5.31	52.71	54.00	-1.29	AVG

Test Mode	IEEE 802.11n HT40 / 5270MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



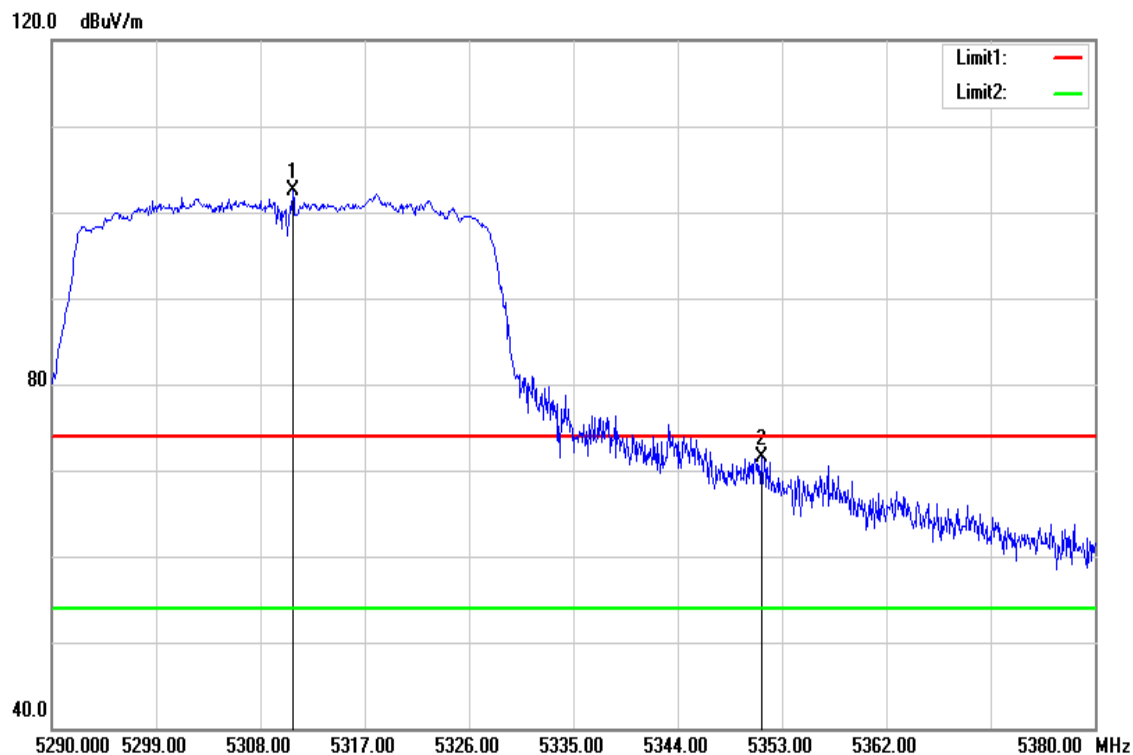
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	54.02	3.04	57.06	74.00	-16.94	peak
5278.500	102.27	4.76	107.03	-	-	peak
5352.600	60.38	5.33	65.71	74.00	-8.29	peak

Test Mode	IEEE 802.11n HT40 / 5270MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



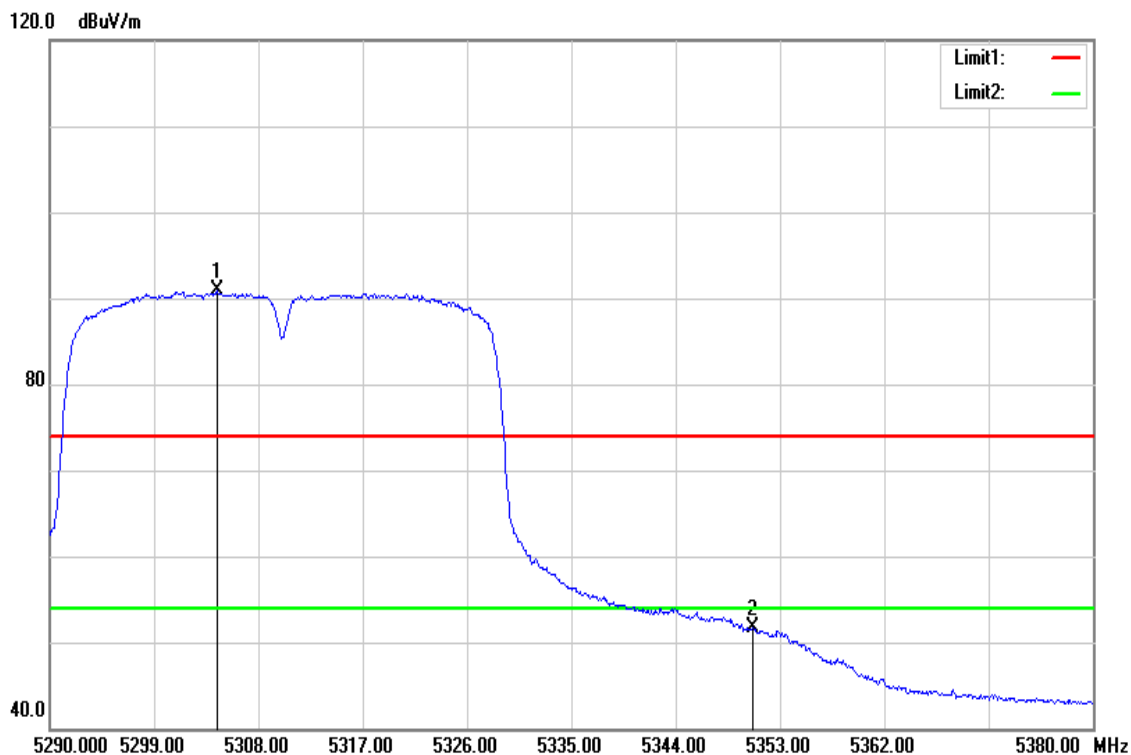
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5147.700	37.90	3.02	40.92	54.00	-13.08	AVG
5267.400	91.38	4.72	96.10	-	-	AVG
5350.000	41.90	5.31	47.21	54.00	-6.79	AVG

Test Mode	IEEE 802.11n HT40 / 5310MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



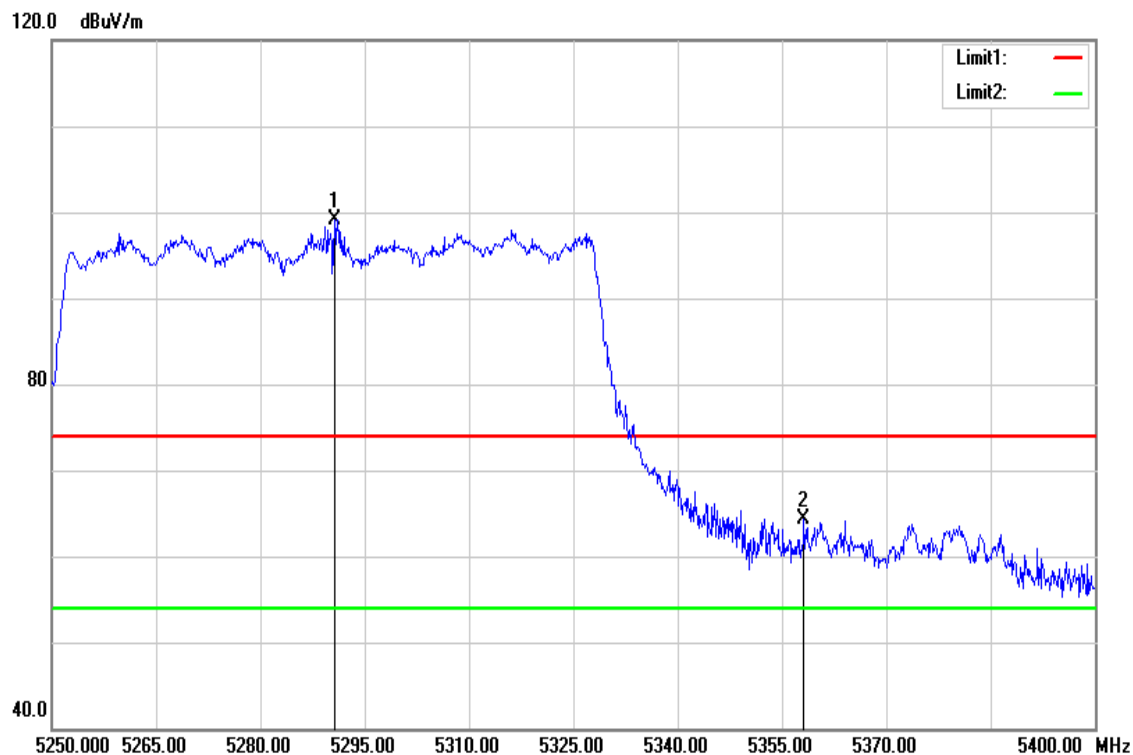
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5310.790	97.49	4.93	102.42	-	-	peak
5351.200	66.20	5.32	71.52	74.00	-2.48	peak

Test Mode	IEEE 802.11n HT40 / 5310MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



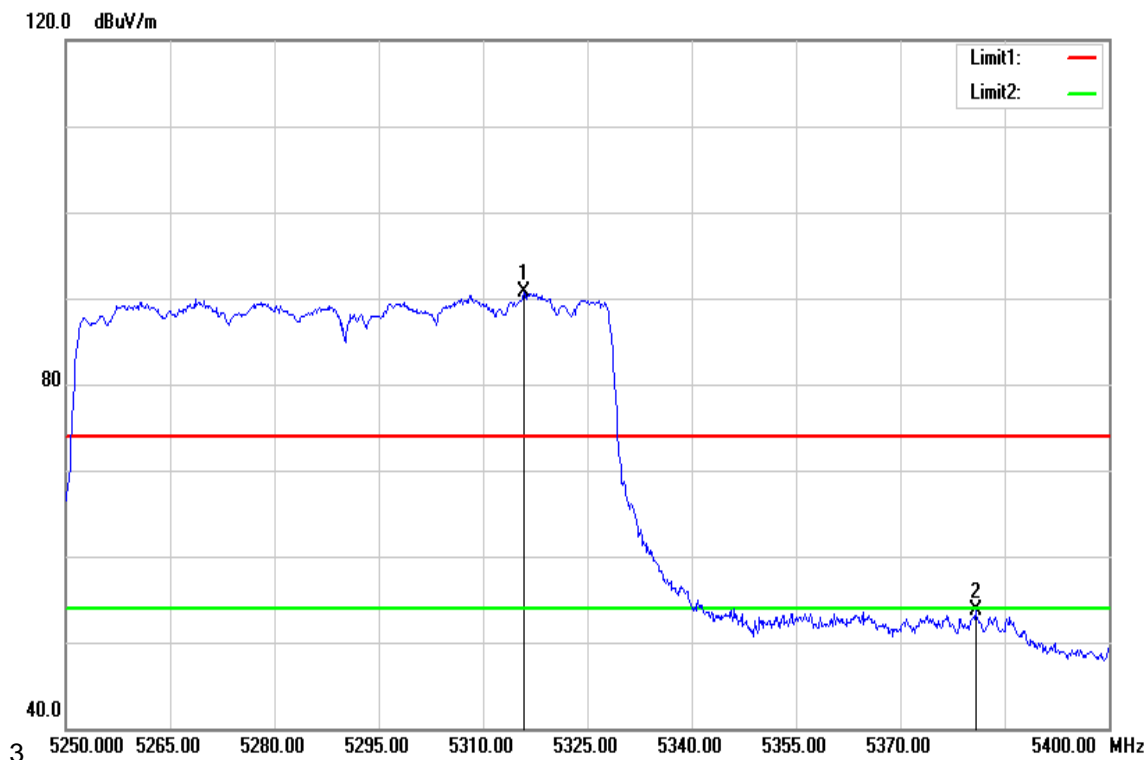
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5317.990	95.07	5.00	100.07	-	-	AVG
5350.030	47.33	5.31	52.64	54.00	-1.36	AVG

Test Mode	IEEE 802.11ac VHT80 / 5290MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5290.650	94.37	4.80	99.17	-	-	peak
5358.150	59.01	5.38	64.39	74.00	-9.61	peak

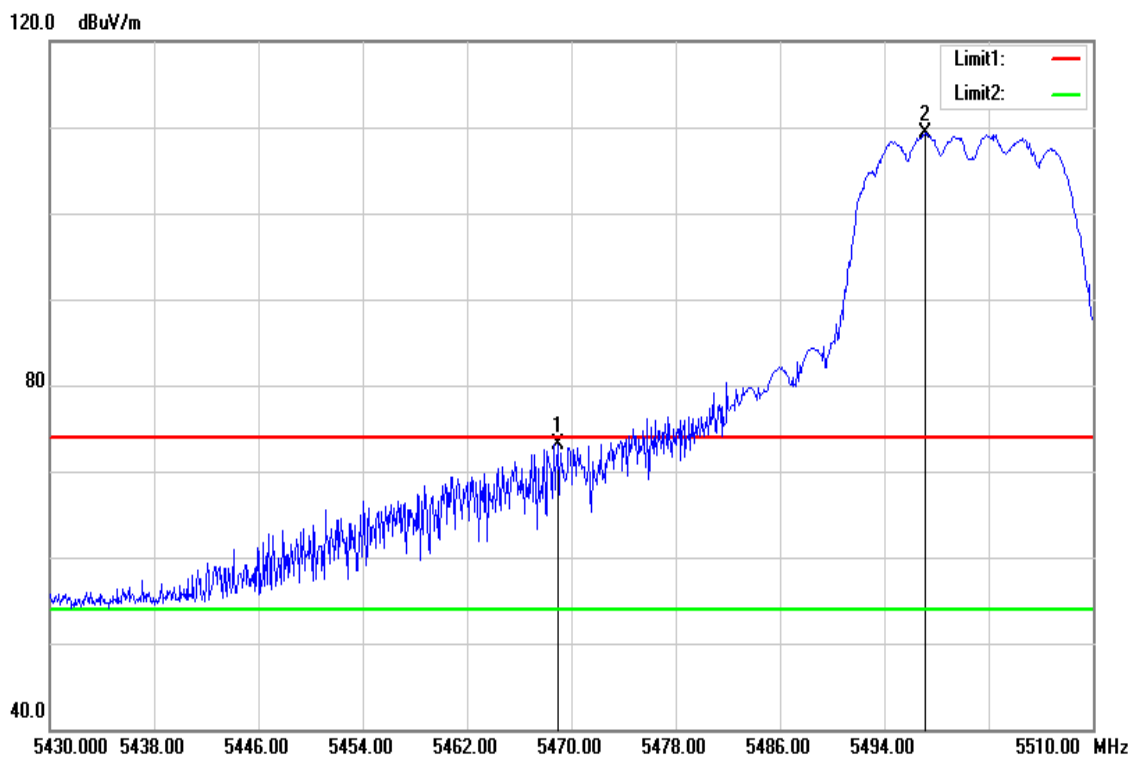
Test Mode	IEEE 802.11ac VHT80 / 5290MHz	Temperature	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5315.850	85.71	4.98	90.69	-	-	AVG
5380.800	48.09	5.56	53.65	54.00	-0.35	AVG

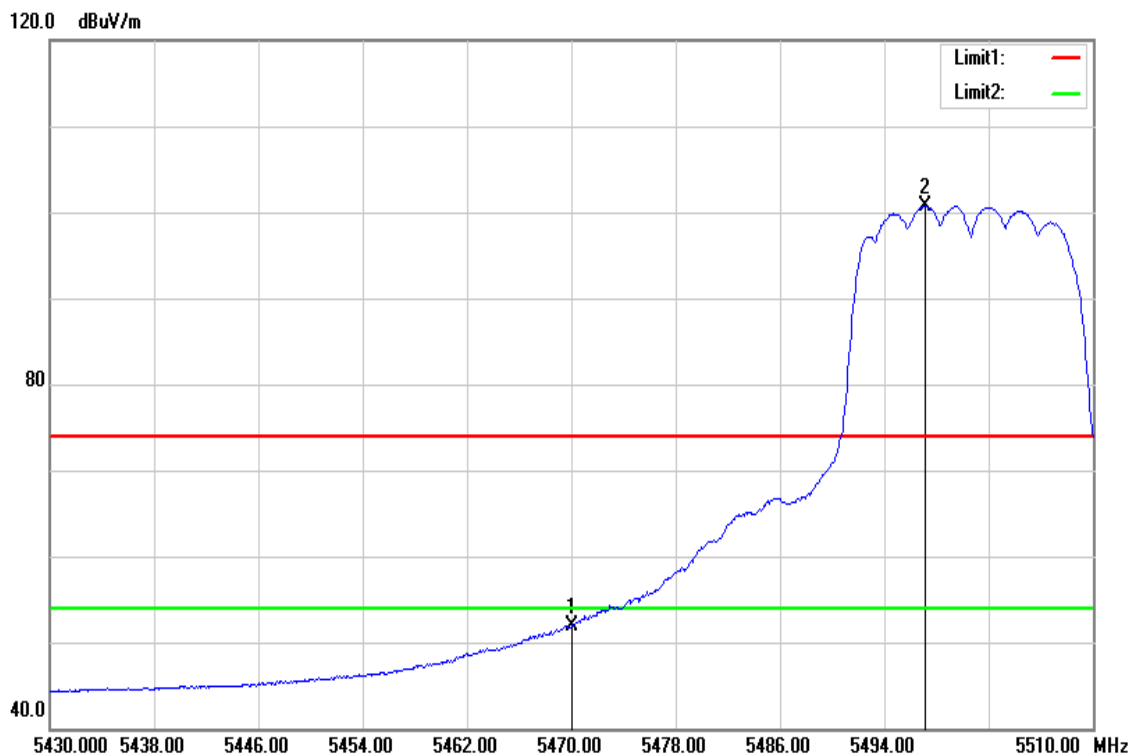
Band Edge Test Data for UNII-2c

Test Mode	IEEE 802.11a / 5500MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



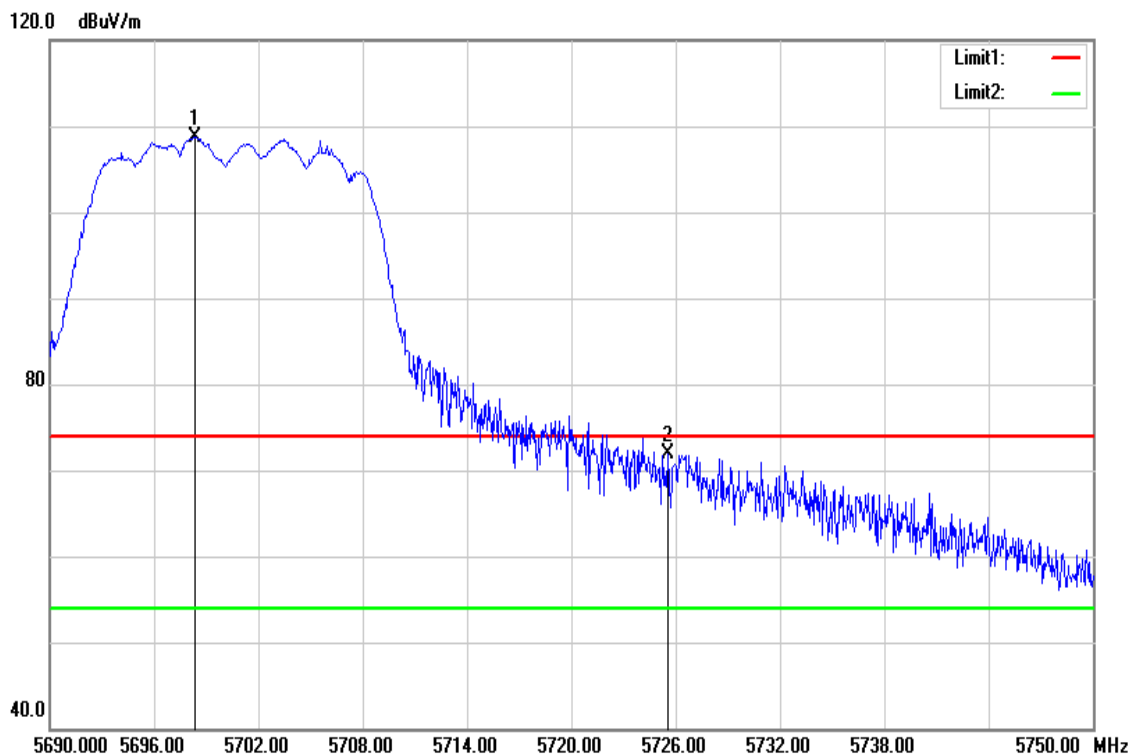
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5468.960	67.66	5.40	73.06	74.00	-0.94	peak
5497.120	104.01	5.26	109.27	-	-	peak

Test Mode	IEEE 802.11a / 5500MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



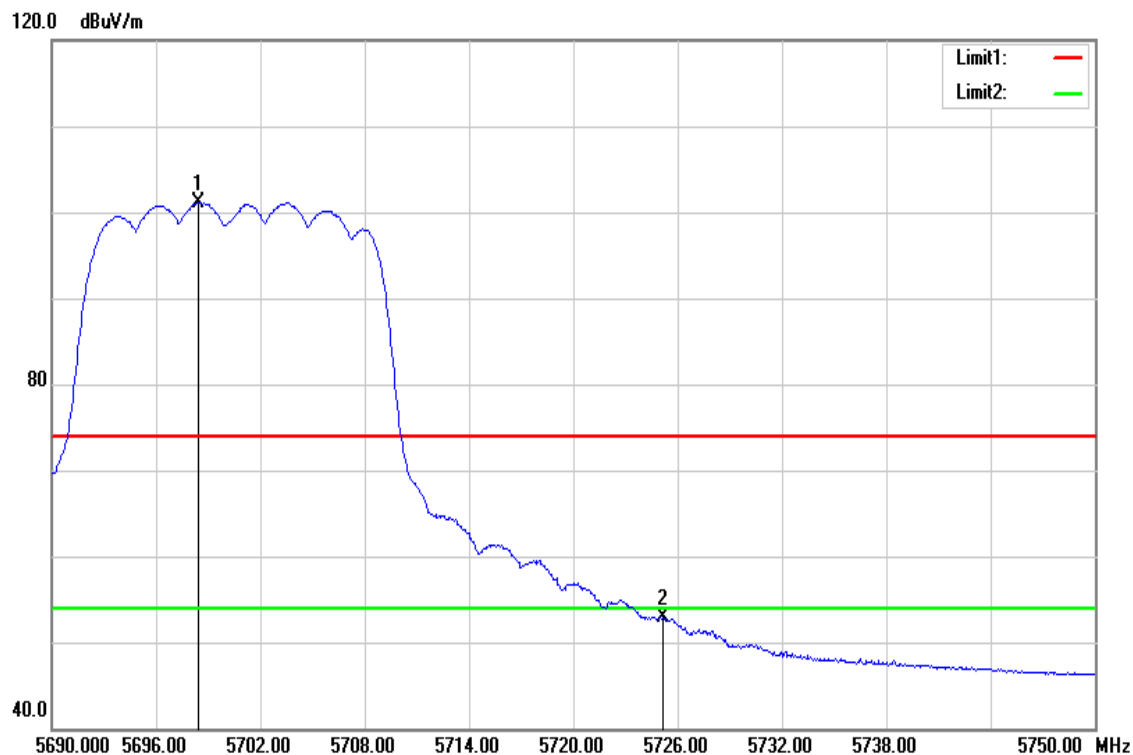
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5470.000	46.42	5.39	51.81	54.00	-2.19	AVG
5497.120	95.43	5.26	100.69	-	-	AVG

Test Mode	IEEE 802.11a / 5700 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



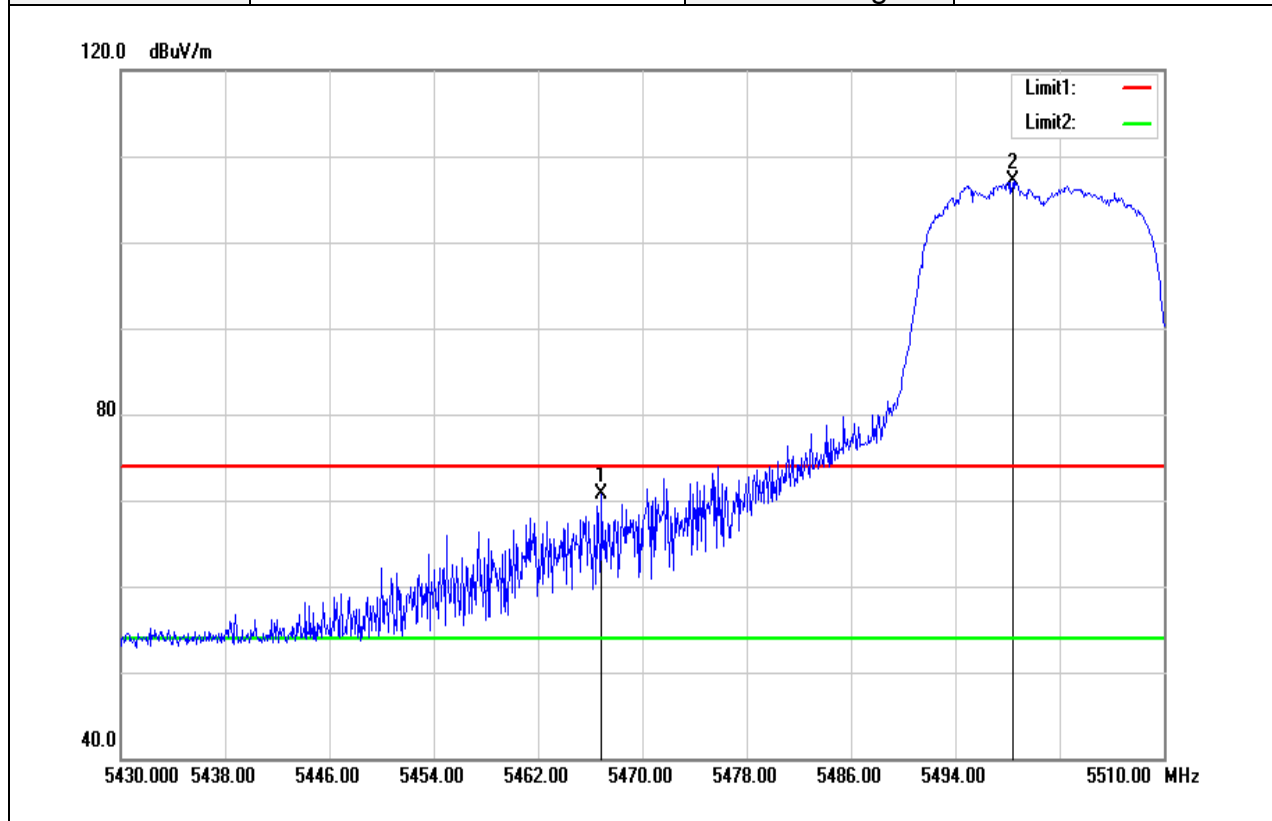
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5698.340	102.59	6.09	108.68	-	-	peak
5725.580	65.77	6.21	71.98	74.00	-2.02	peak

Test Mode	IEEE 802.11a / 5700 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



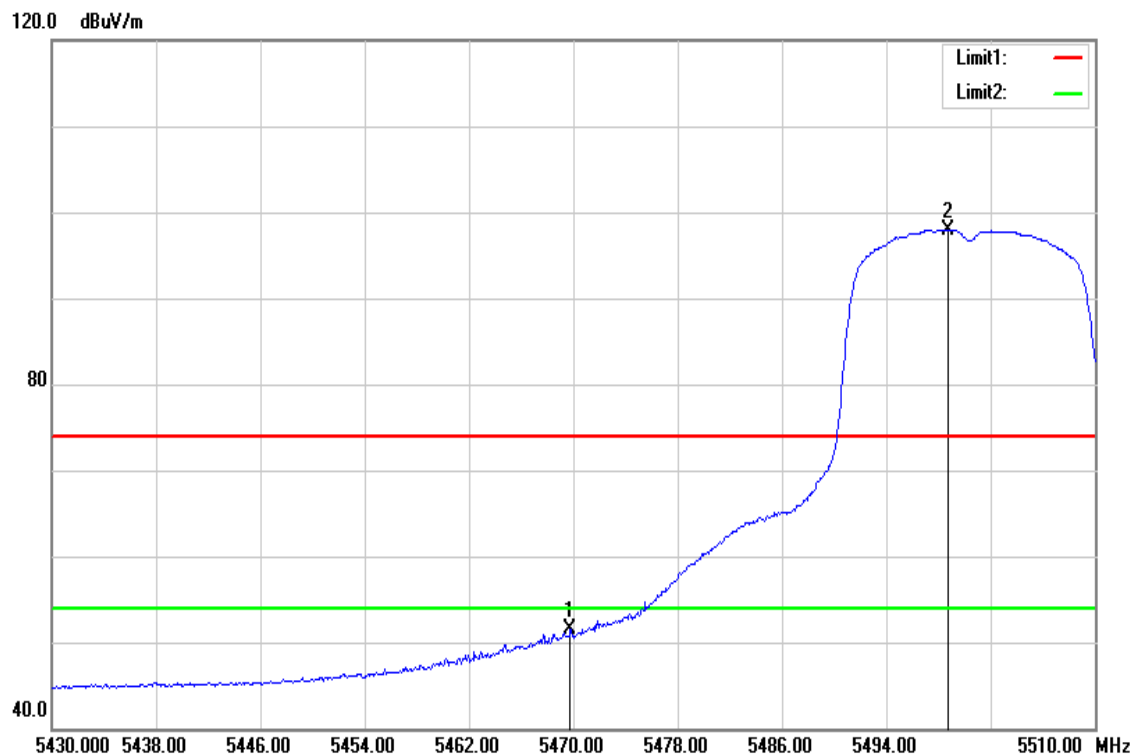
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5698.400	95.00	6.10	101.10	-	-	AVG
5725.160	46.65	6.21	52.86	54.00	-1.14	AVG

Test Mode	IEEE 802.11n HT20 / 5500MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



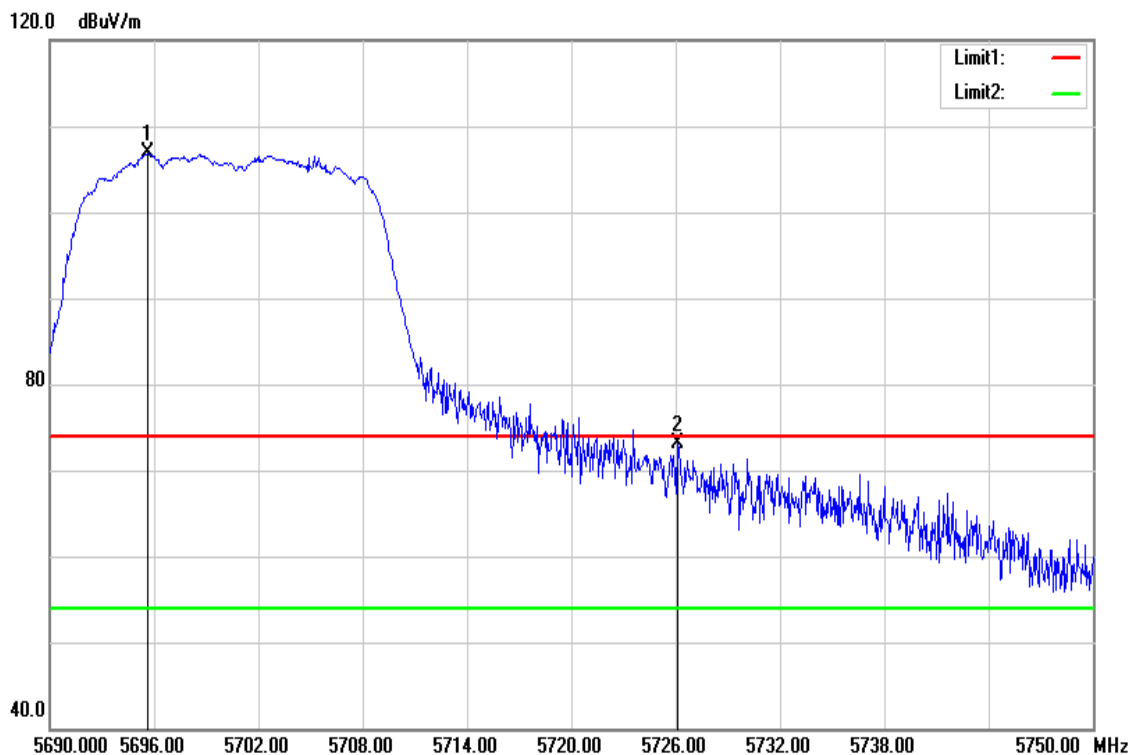
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5466.880	65.39	5.41	70.80	74.00	-3.20	peak
5498.480	101.78	5.26	107.04	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5500MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



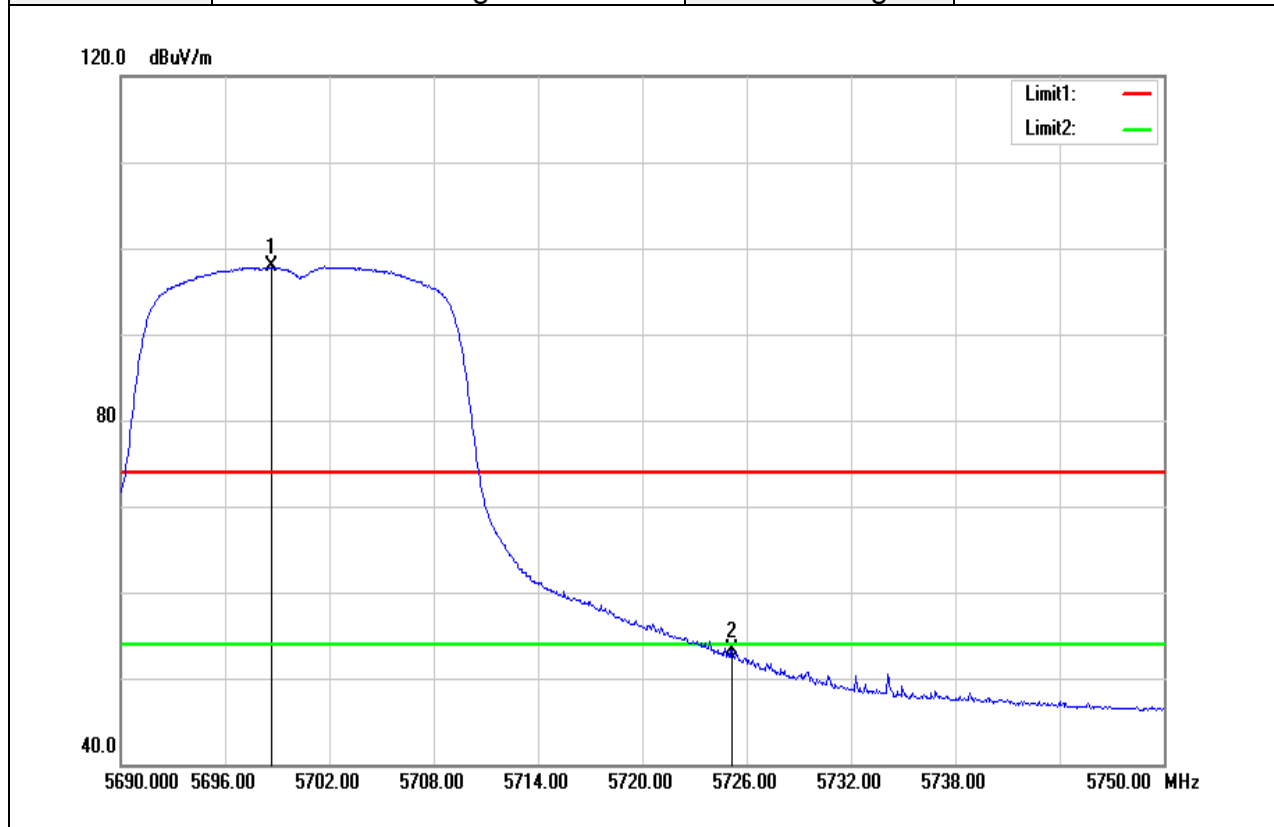
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5469.760	46.13	5.39	51.52	54.00	-2.48	AVG
5498.720	92.73	5.26	97.99	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5700 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



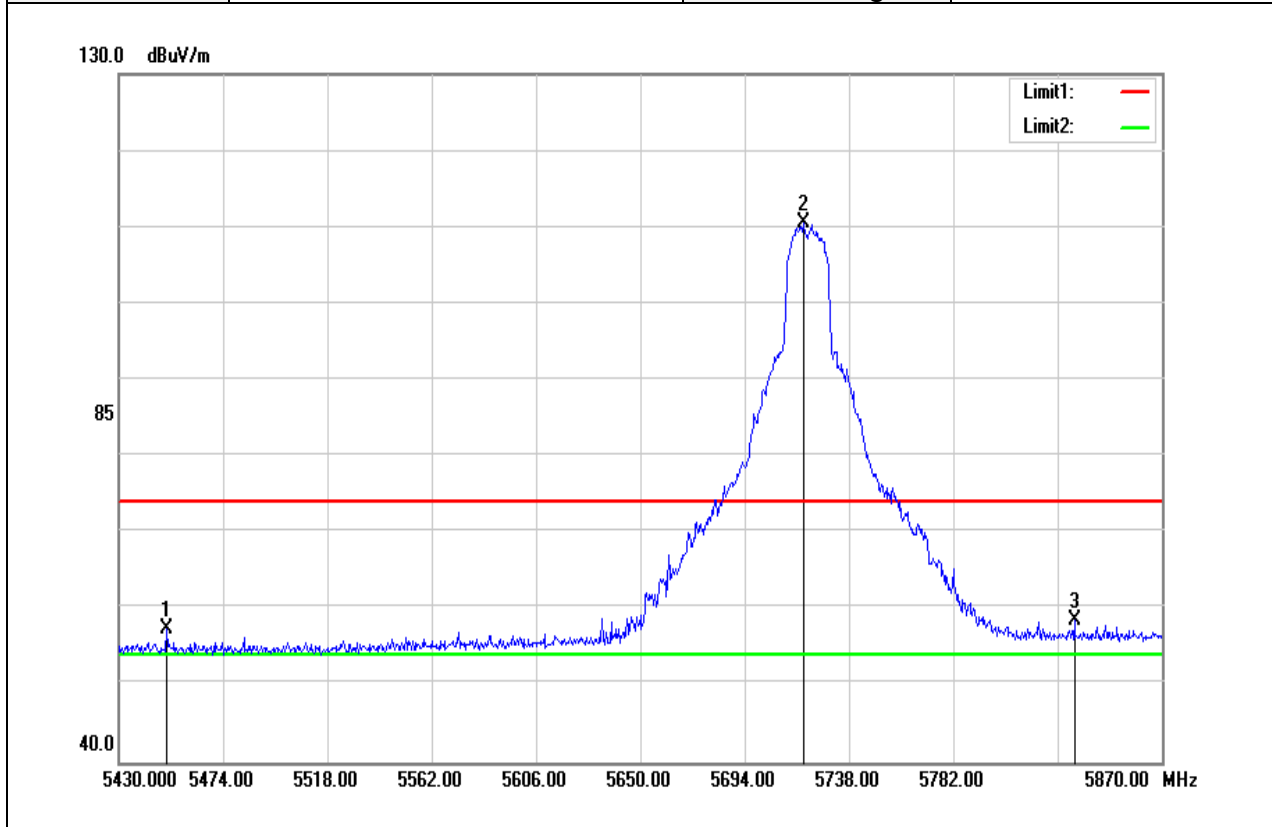
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5695.640	100.74	6.08	106.82	-	-	peak
5726.120	66.82	6.21	73.03	74.00	-0.97	peak

Test Mode	IEEE 802.11n HT20 / 5700 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



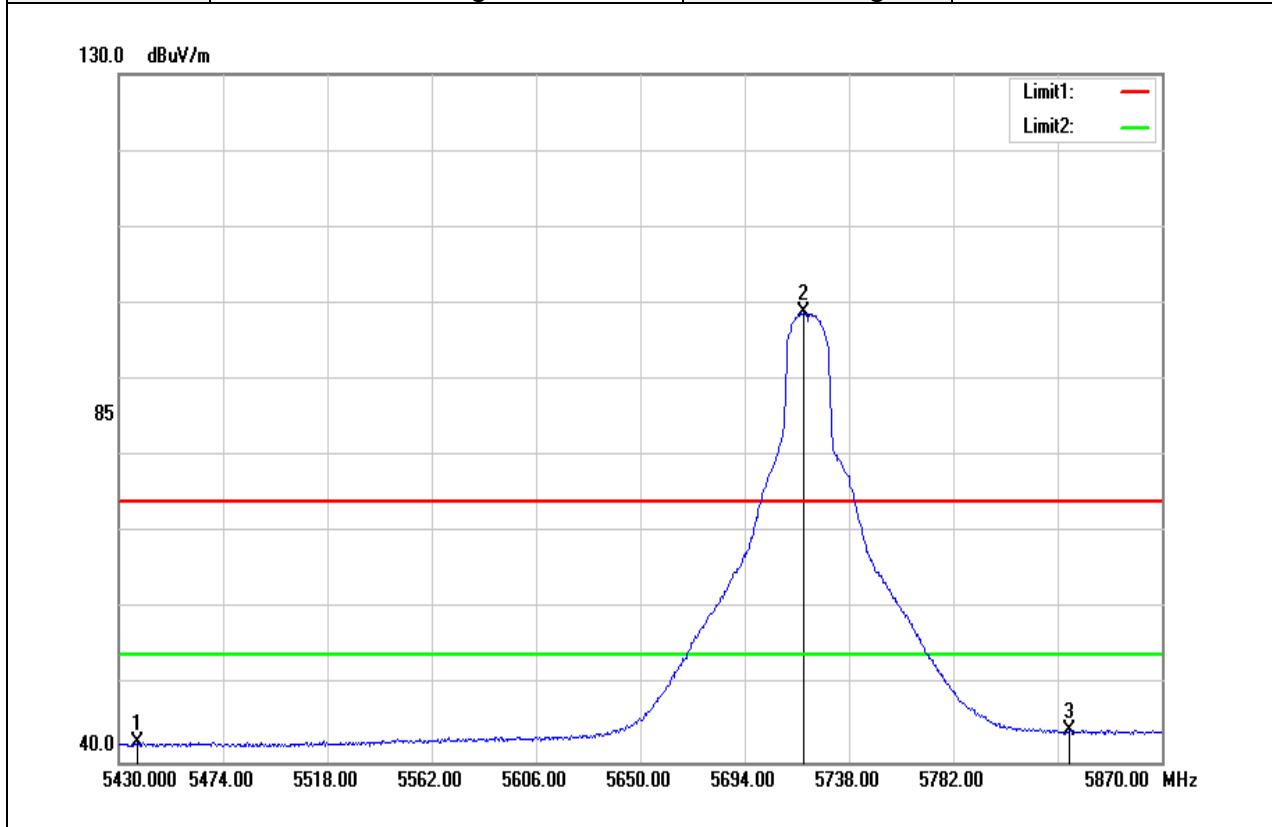
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5698.700	91.76	6.10	97.86	-	-	AVG
5725.160	47.11	6.21	53.32	54.00	-0.68	AVG

Test Mode	IEEE 802.11n HT20 / 5720 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



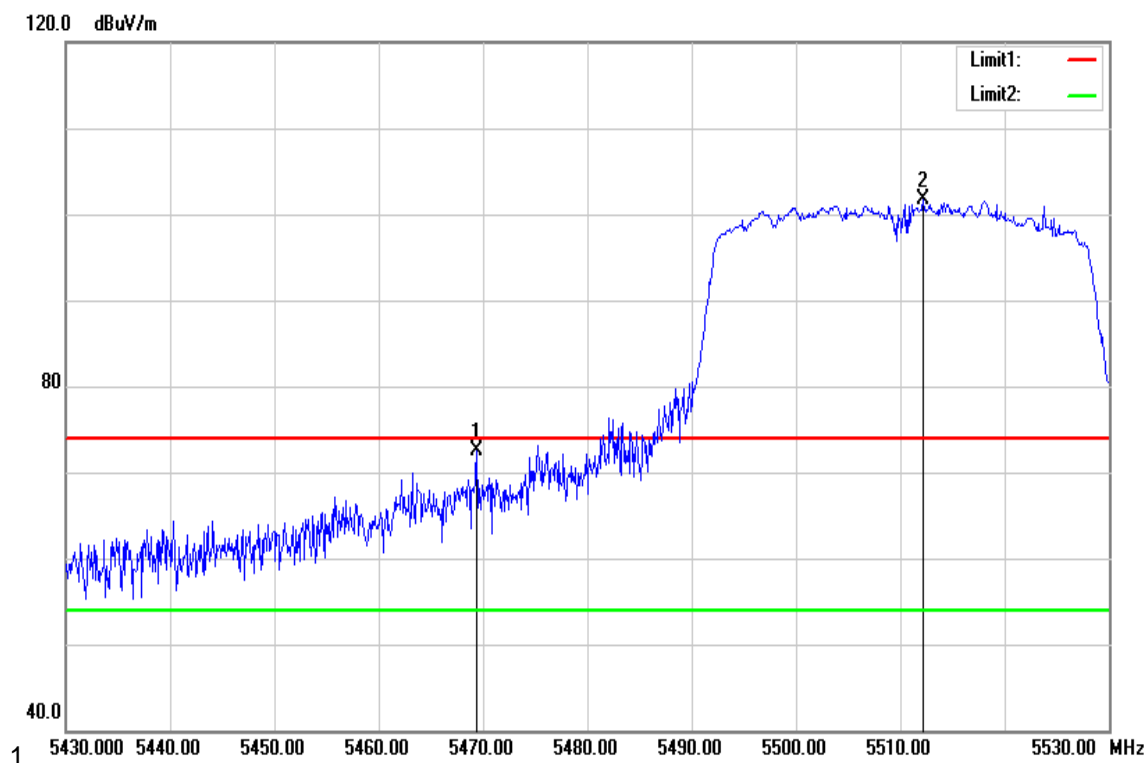
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5450.240	51.86	5.48	57.34	74.00	-16.66	peak
5719.080	104.26	6.18	110.44	-	-	peak
5833.040	51.86	6.67	58.53	74.00	-15.47	peak

Test Mode	IEEE 802.11n HT20 / 5720 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 26, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



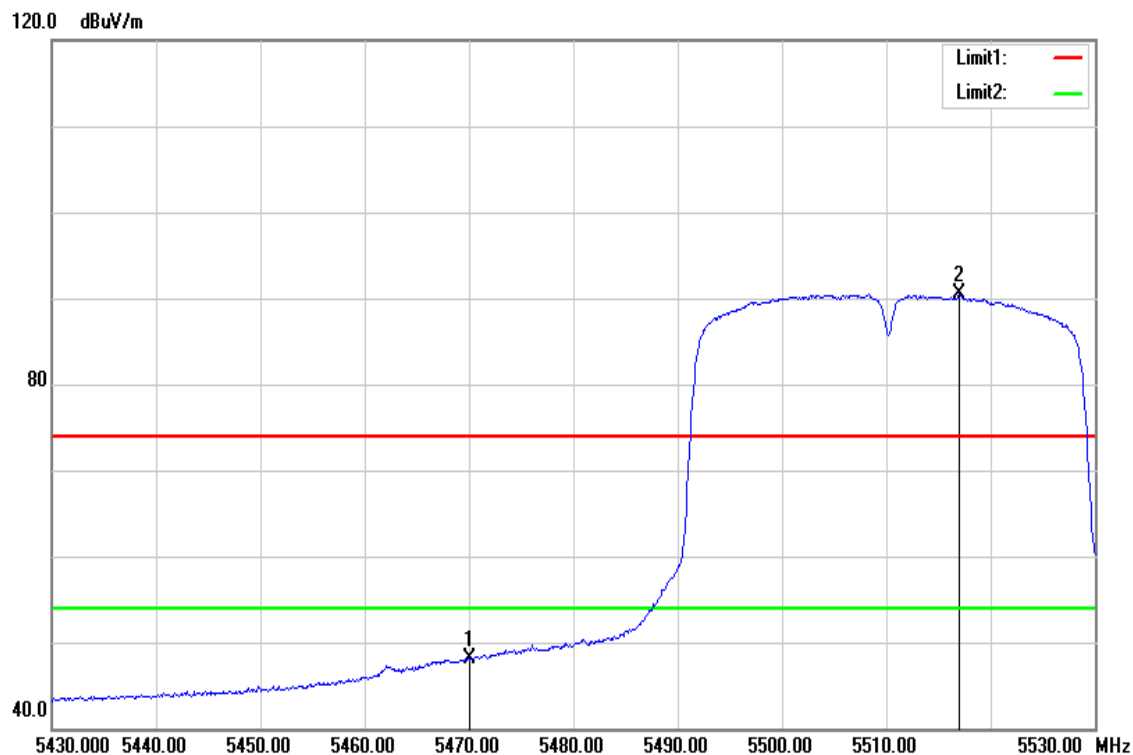
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5437.920	37.05	5.54	42.59	54.00	-11.41	AVG
5719.080	92.62	6.18	98.80	-	-	AVG
5830.840	37.57	6.66	44.23	54.00	-9.77	AVG

Test Mode	IEEE 802.11n HT40 / 5510 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



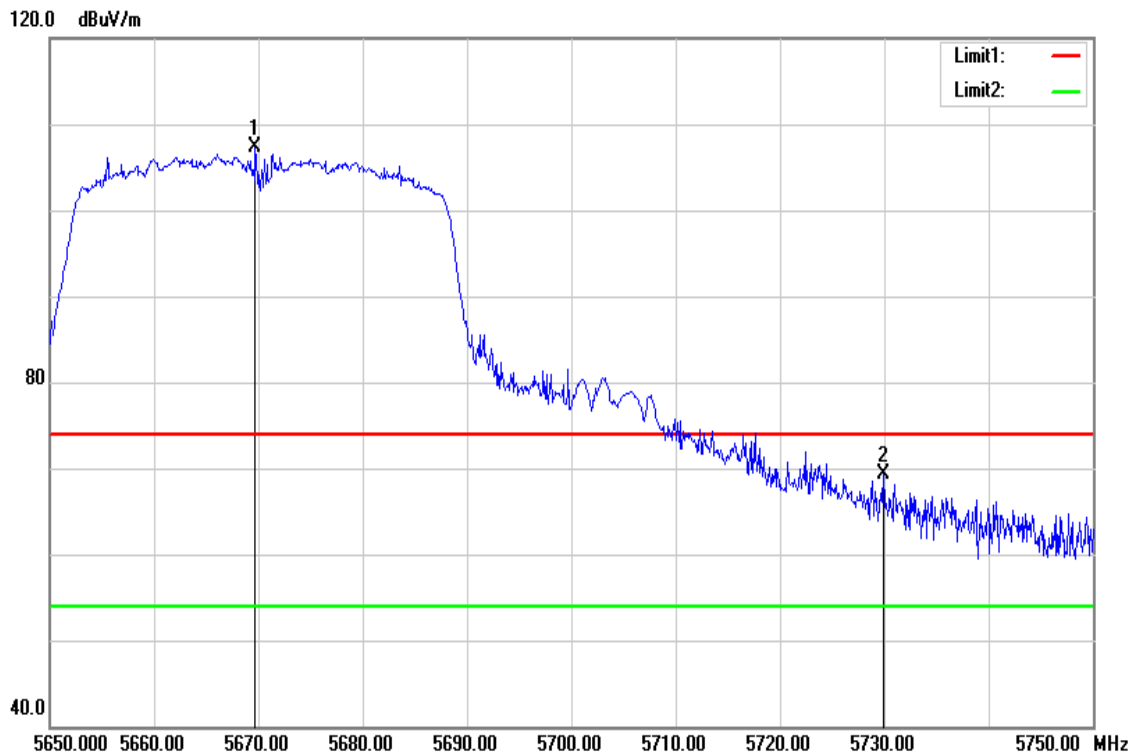
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5469.400	67.18	5.39	72.57	74.00	-1.43	peak
5512.200	96.32	5.30	101.62	-	-	peak

Test Mode	IEEE 802.11n HT40 / 5510 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



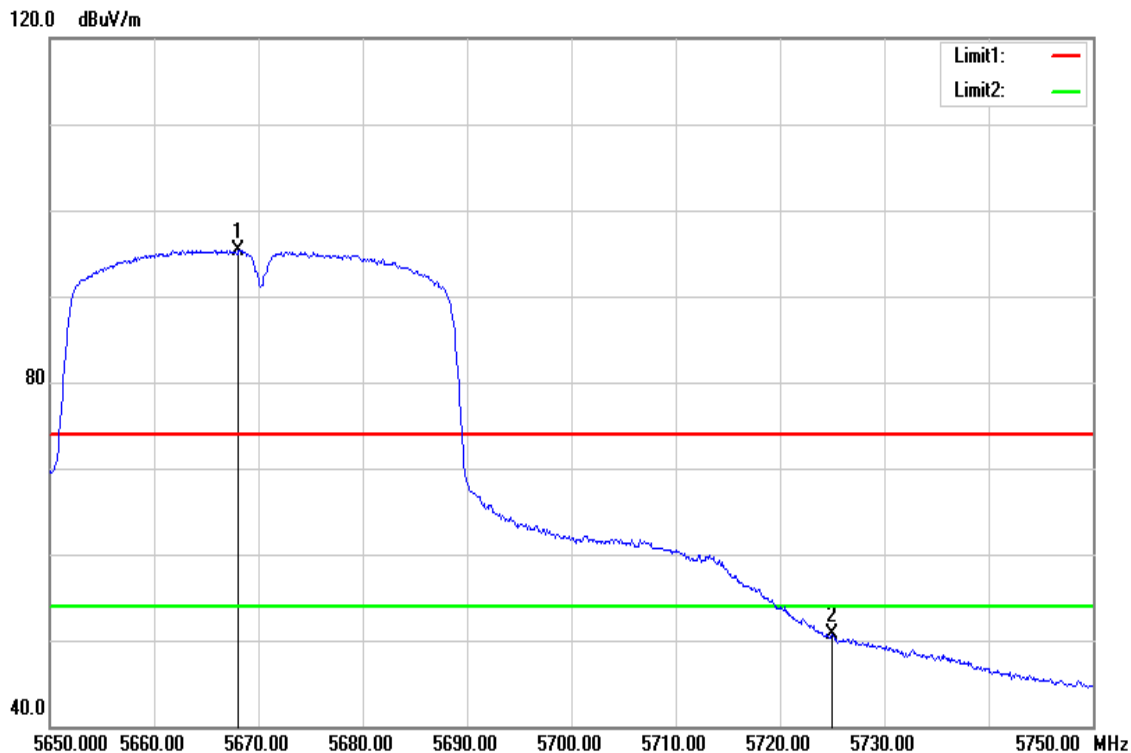
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5470.100	42.73	5.39	48.12	54.00	-5.88	AVG
5517.000	85.12	5.32	90.44	-	-	AVG

Test Mode	IEEE 802.11n HT40 / 5670 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



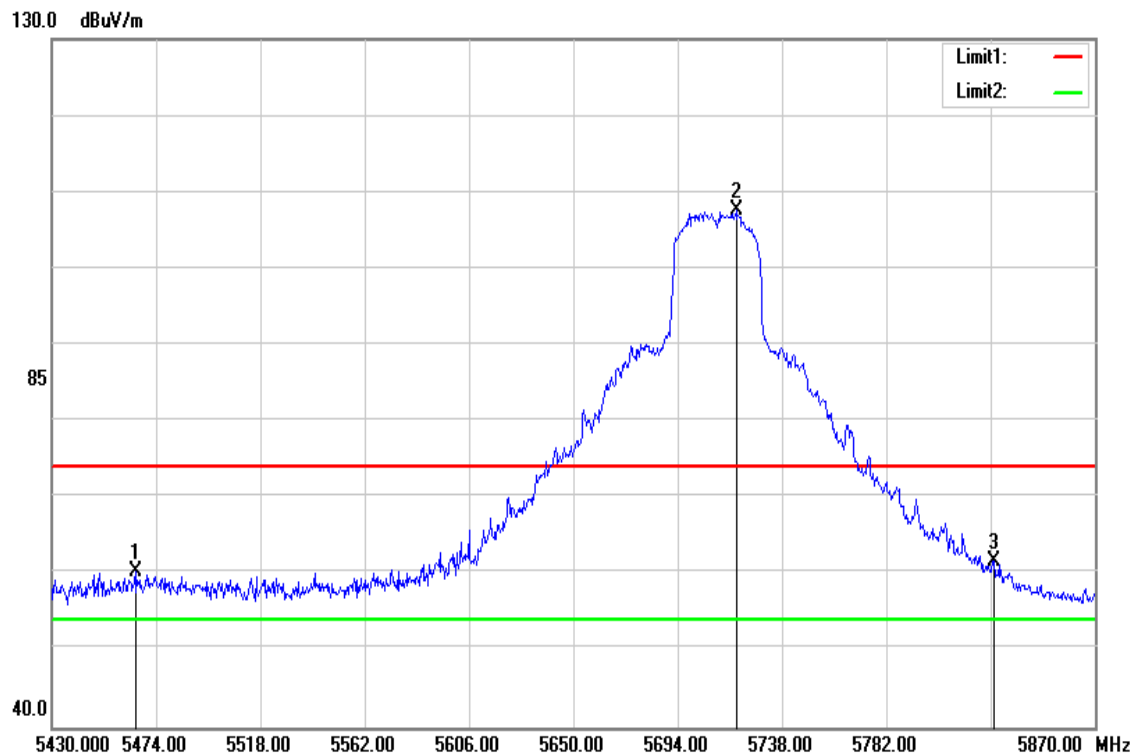
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5669.700	101.26	5.97	107.23	-	-	peak
5729.900	63.03	6.23	69.26	74.00	-4.74	peak

Test Mode	IEEE 802.11n HT40 / 5670 MHz	Temperature	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



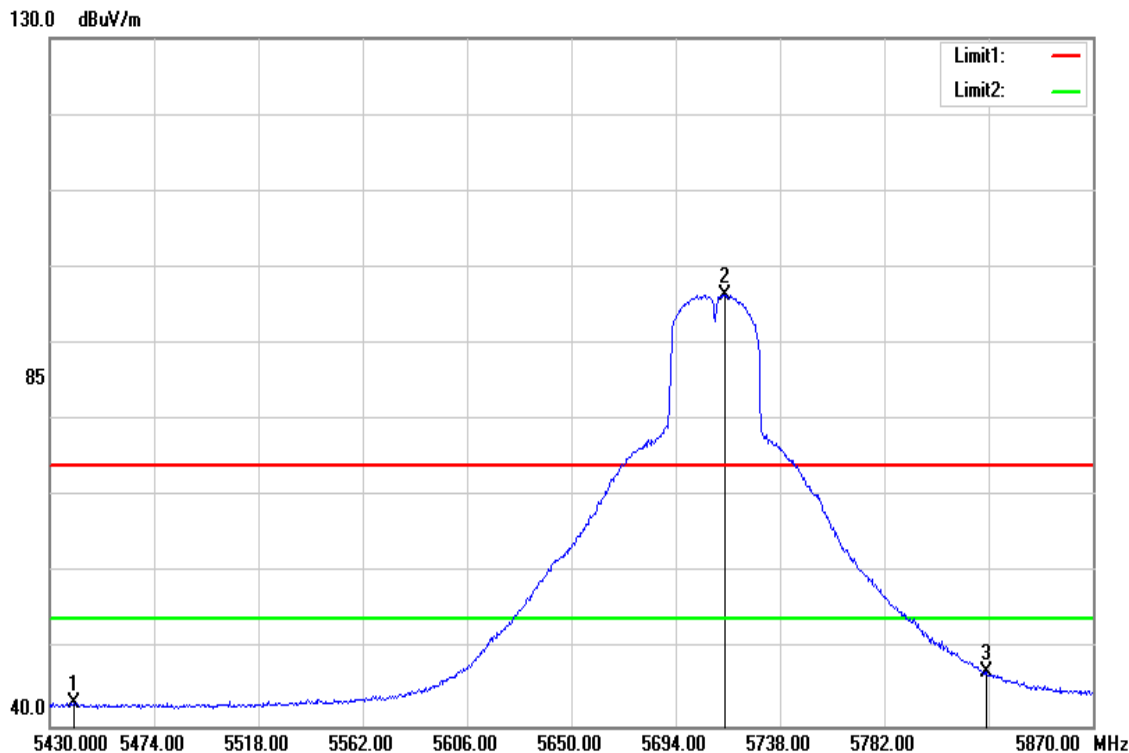
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5668.100	89.36	5.97	95.33	-	-	AVG
5725.000	44.45	6.21	50.66	54.00	-3.34	AVG

Test Mode	IEEE 802.11n HT40 / 5710 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



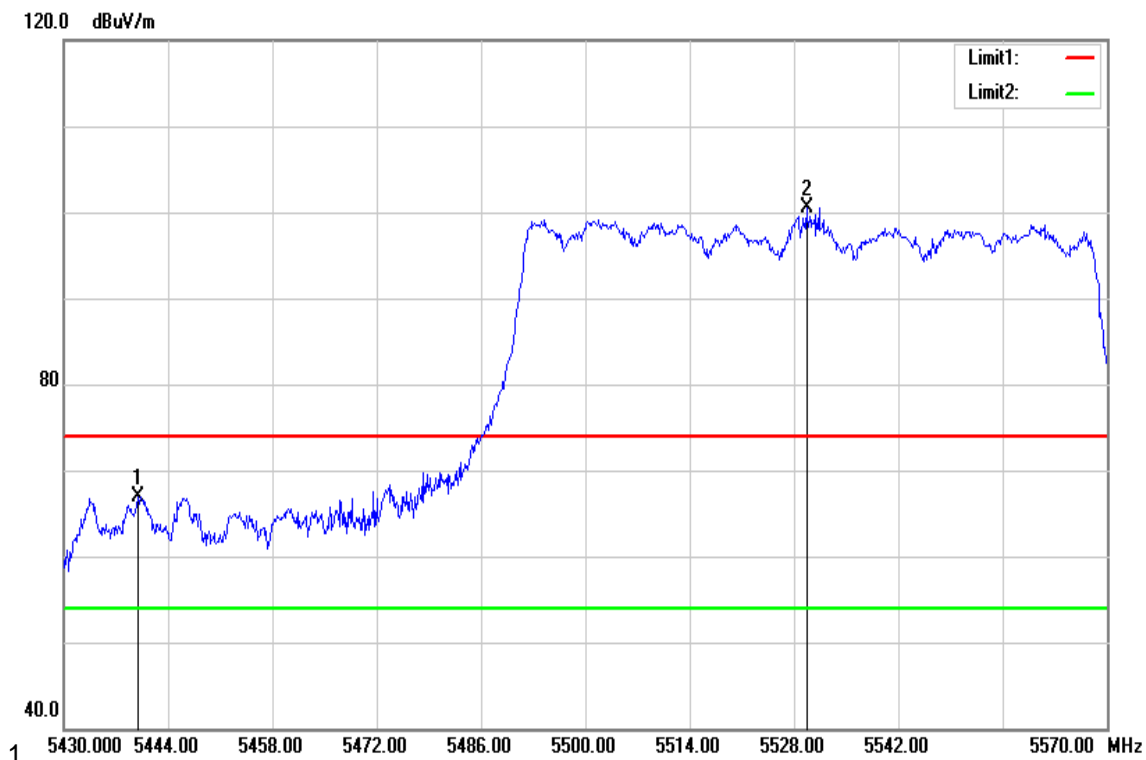
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5465.200	54.89	5.41	60.30	74.00	-13.70	peak
5718.640	101.45	6.18	107.63	-	-	peak
5827.320	55.09	6.64	61.73	74.00	-12.27	peak

Test Mode	IEEE 802.11n HT40 / 5710 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



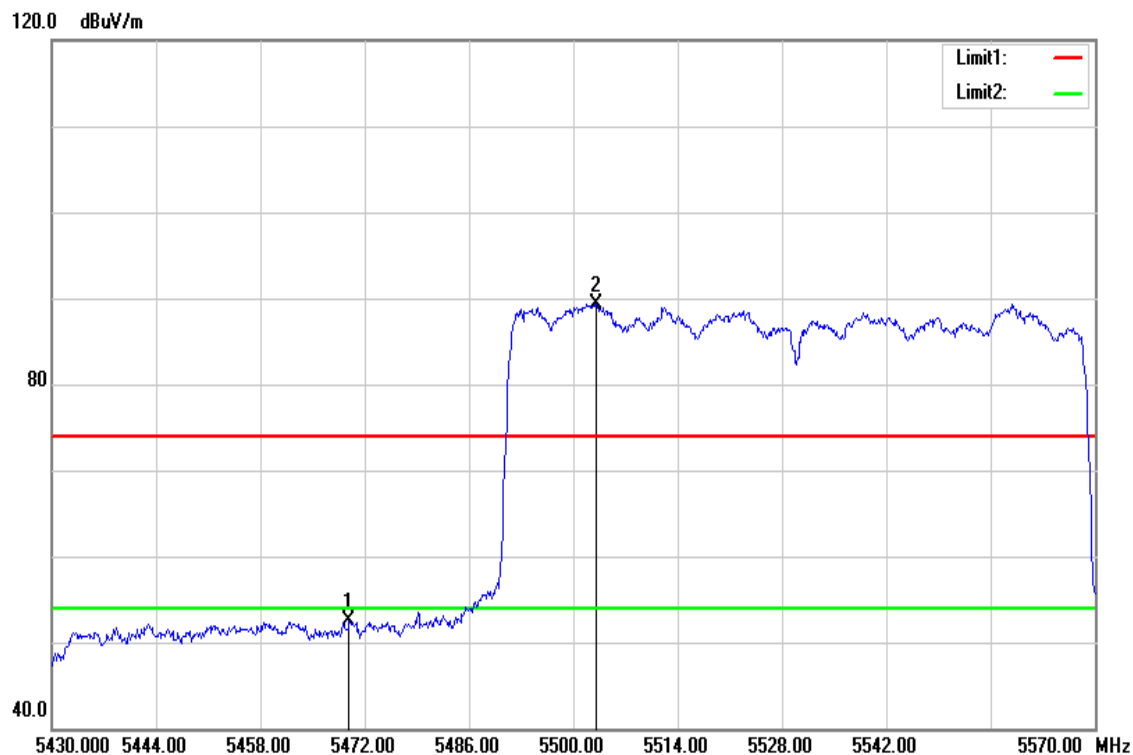
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5440.120	37.55	5.53	43.08	54.00	-10.92	AVG
5714.680	90.26	6.16	96.42	-	-	AVG
5825.000	40.46	6.63	47.09	54.00	-6.91	AVG

Test Mode	IEEE 802.11ac VHT80 / 5530 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 24, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



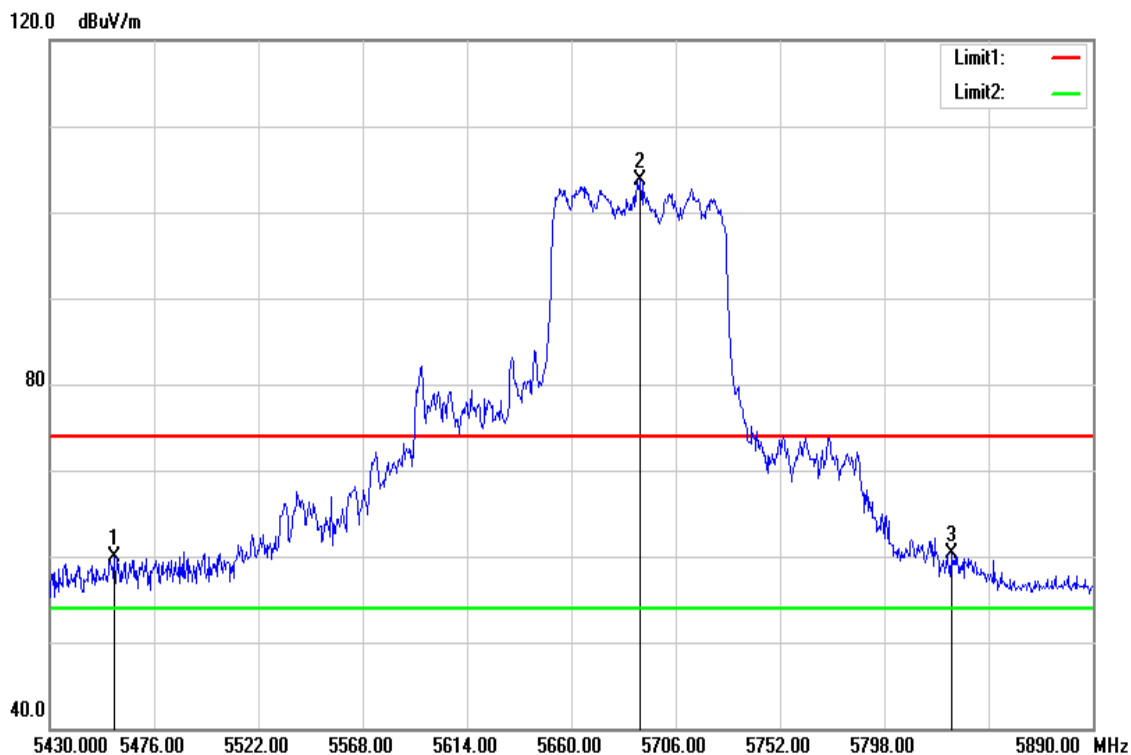
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5439.940	61.39	5.53	66.92	74.00	-7.08	peak
5529.680	95.04	5.38	100.42	-	-	peak

Test Mode	IEEE 802.11ac VHT80 / 5530 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 24, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



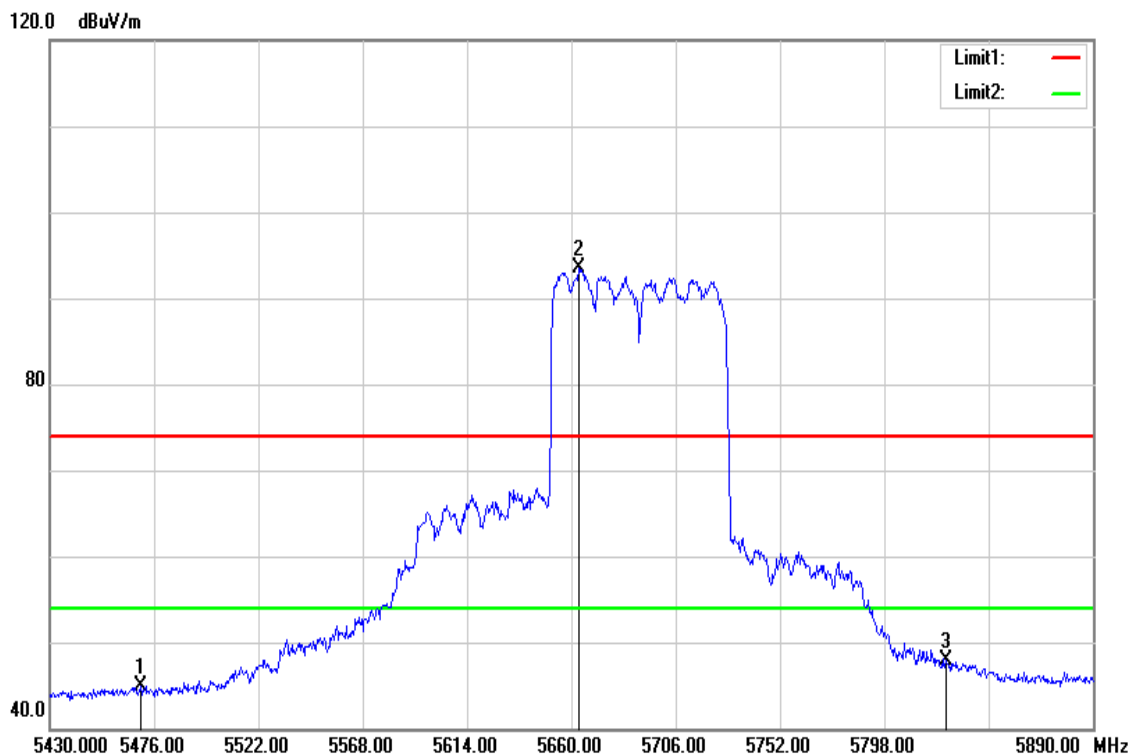
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5469.900	47.11	5.39	52.50	54.00	-1.50	AVG
5503.080	84.07	5.26	89.33	-	-	AVG

Test Mode	IEEE 802.11ac VHT80 / 5690 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5458.520	54.45	5.44	59.89	74.00	-14.11	peak
5690.360	97.65	6.06	103.71	-	-	peak
5827.440	53.59	6.64	60.23	74.00	-13.77	peak

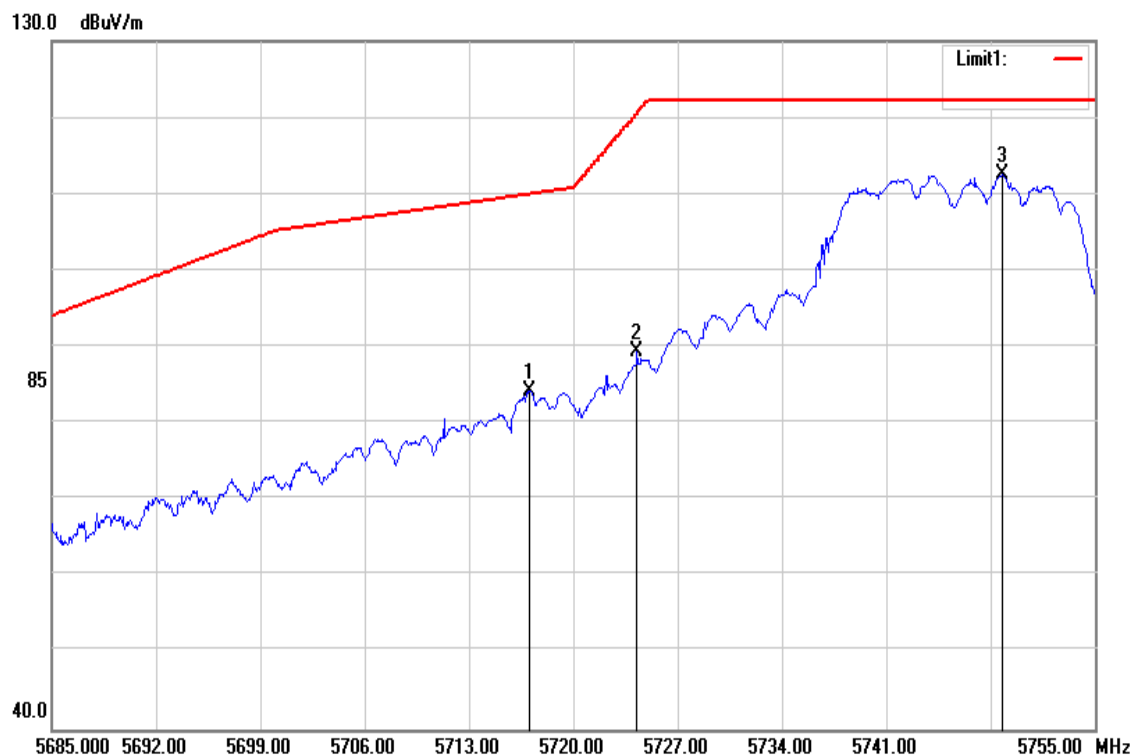
Test Mode	IEEE 802.11ac VHT80 / 5690 MHz	Temperature	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5470.000	39.59	5.39	44.98	54.00	-9.02	AVG
5663.220	87.60	5.95	93.55	-	-	AVG
5825.000	41.19	6.63	47.82	54.00	-6.18	AVG

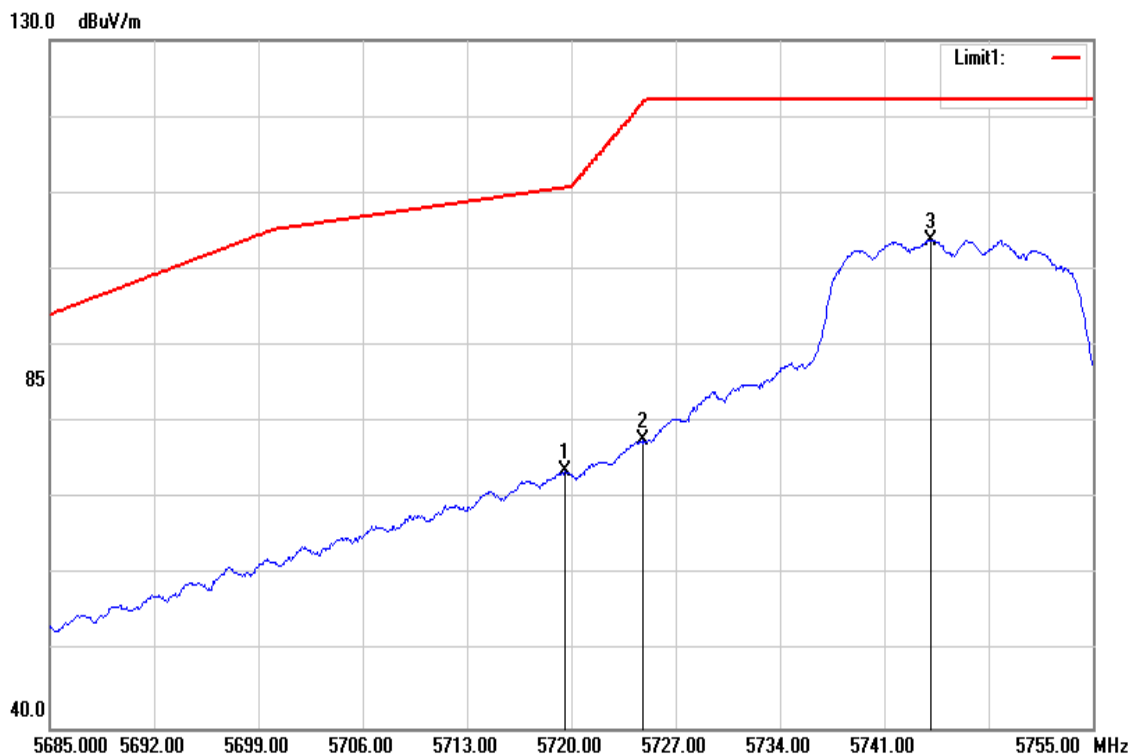
Band Edge Test Data for UNII-3

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



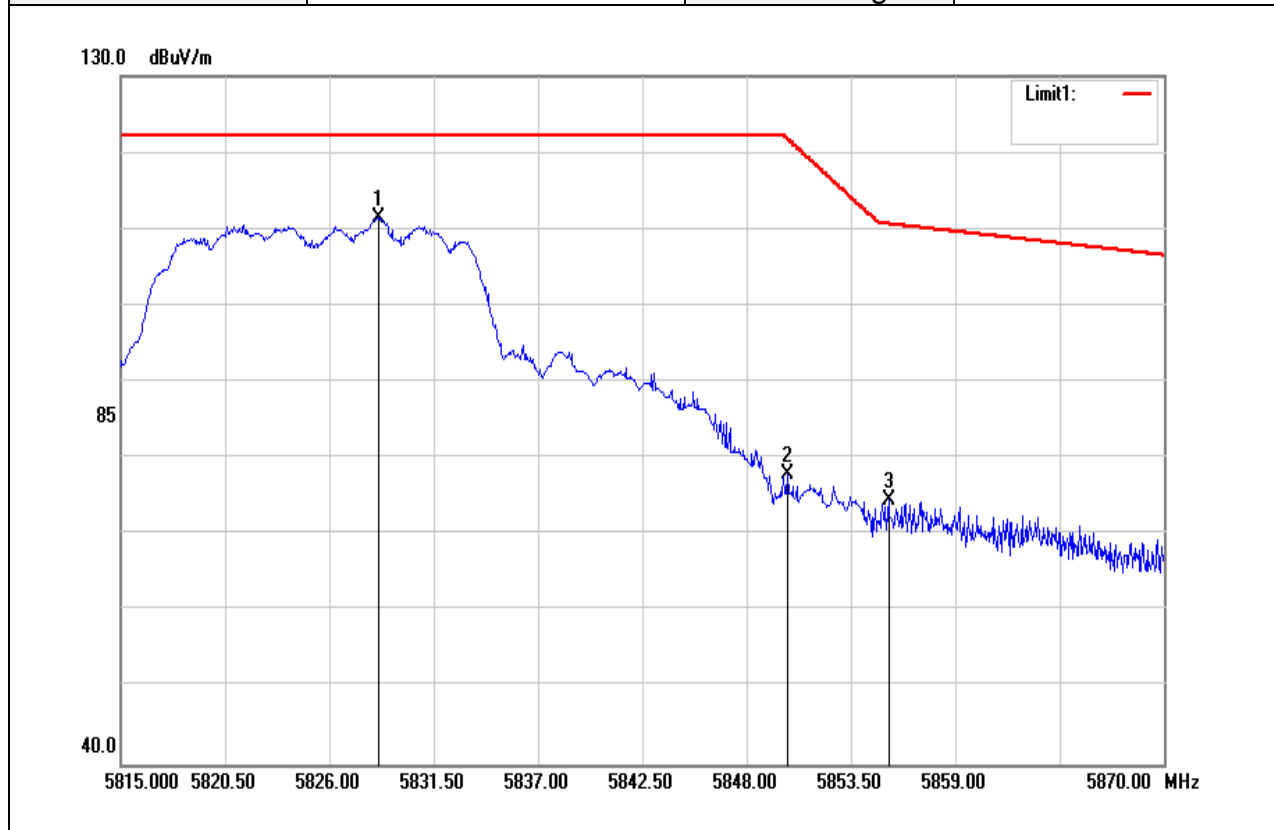
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5717.060	78.14	6.17	84.31	109.98	-25.67	peak
5724.270	83.07	6.21	89.28	120.54	-31.26	peak
5748.770	106.16	6.31	112.47	-	-	peak

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



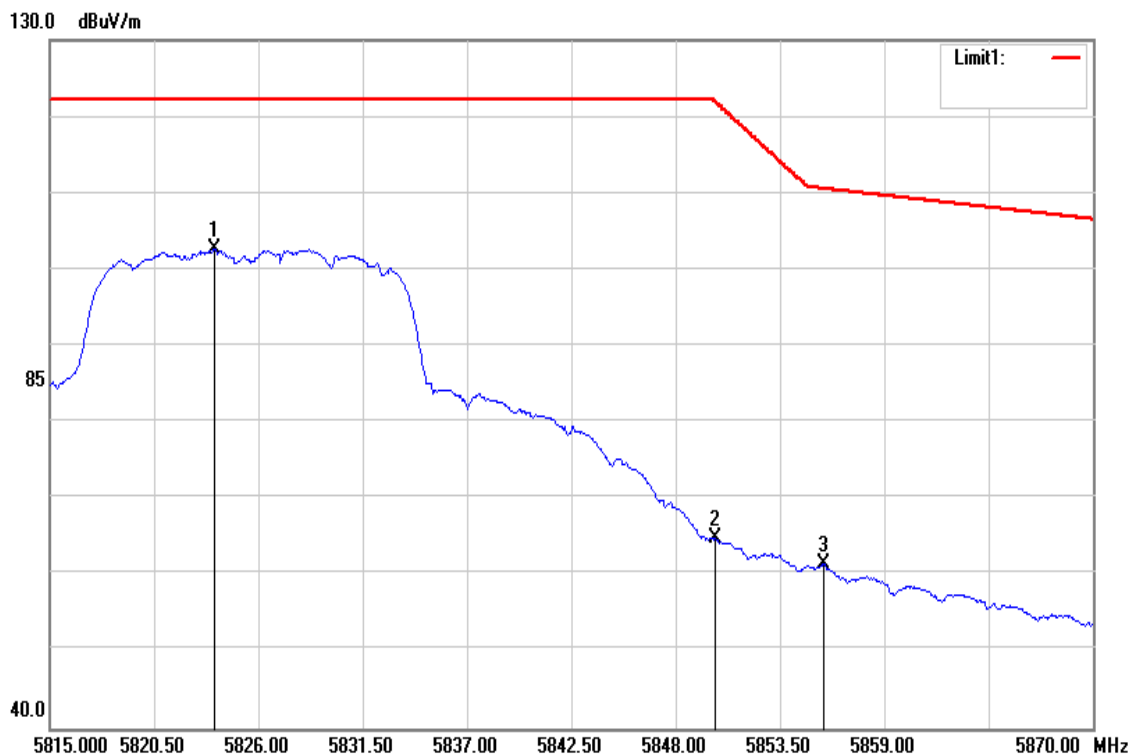
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.580	67.34	6.19	73.53	110.68	-37.15	AVG
5724.760	71.38	6.21	77.59	121.65	-44.06	AVG
5744.150	97.58	6.29	103.87	-	-	AVG

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



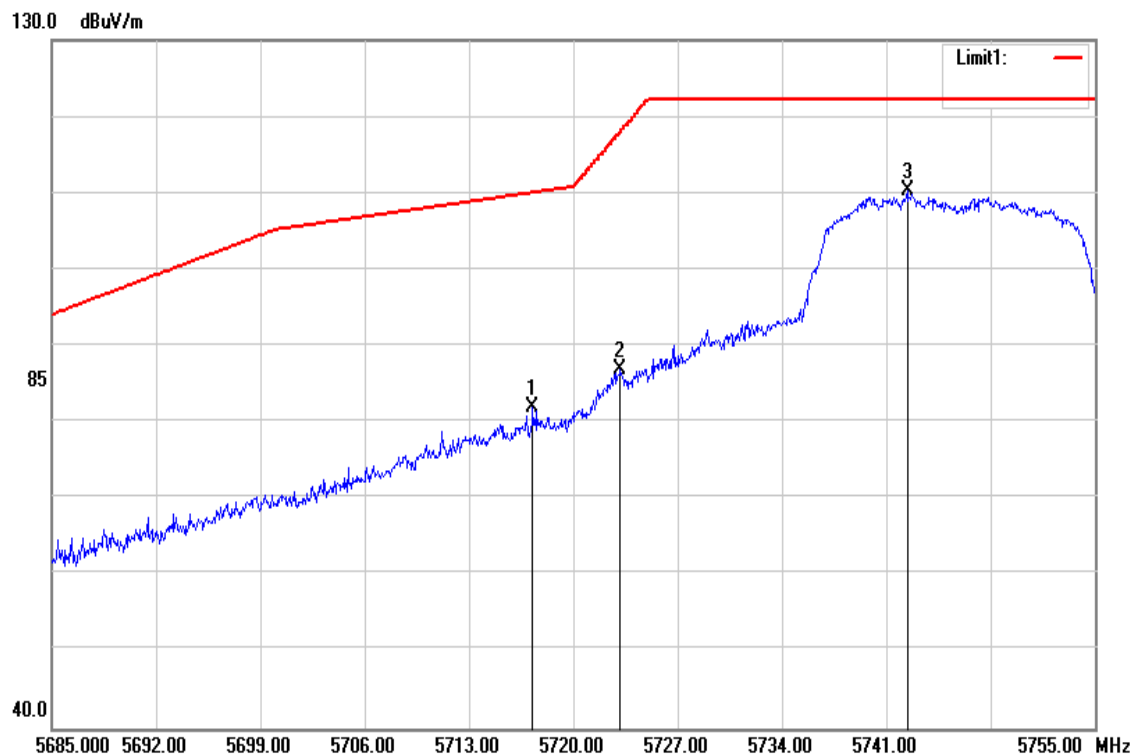
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5828.585	104.72	6.65	111.37	-	-	peak
5850.145	71.22	6.74	77.96	121.87	-43.91	peak
5855.480	67.73	6.76	74.49	110.67	-36.18	peak

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 23, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



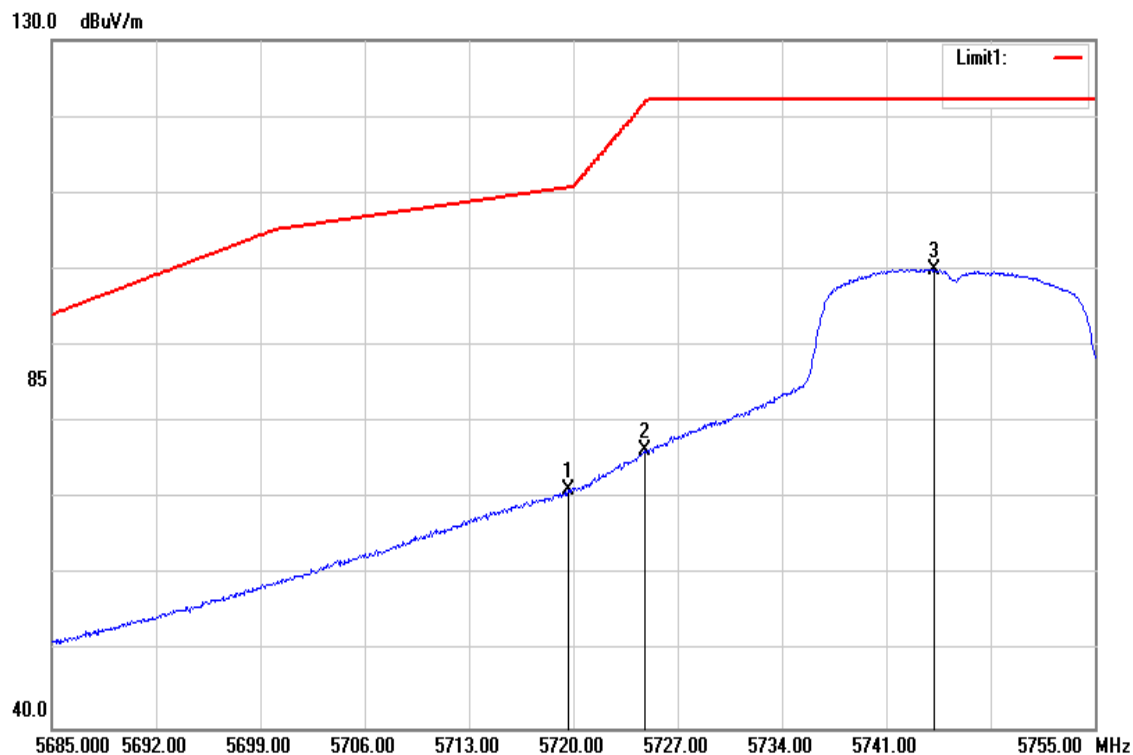
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5823.690	95.96	6.63	102.59	-	-	AVG
5850.090	58.03	6.74	64.77	121.99	-57.22	AVG
5855.810	54.72	6.77	61.49	110.57	-49.08	AVG

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



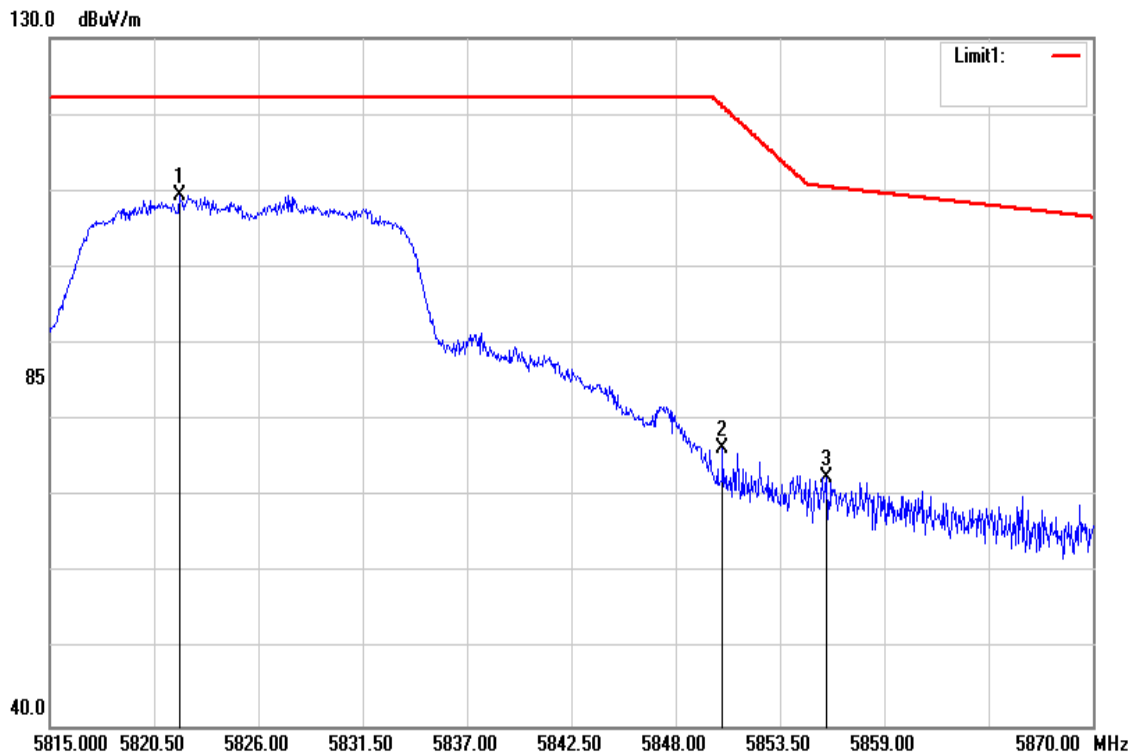
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5717.270	75.83	6.18	82.01	110.04	-28.03	peak
5723.150	80.78	6.20	86.98	117.98	-31.00	peak
5742.400	104.00	6.28	110.28	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



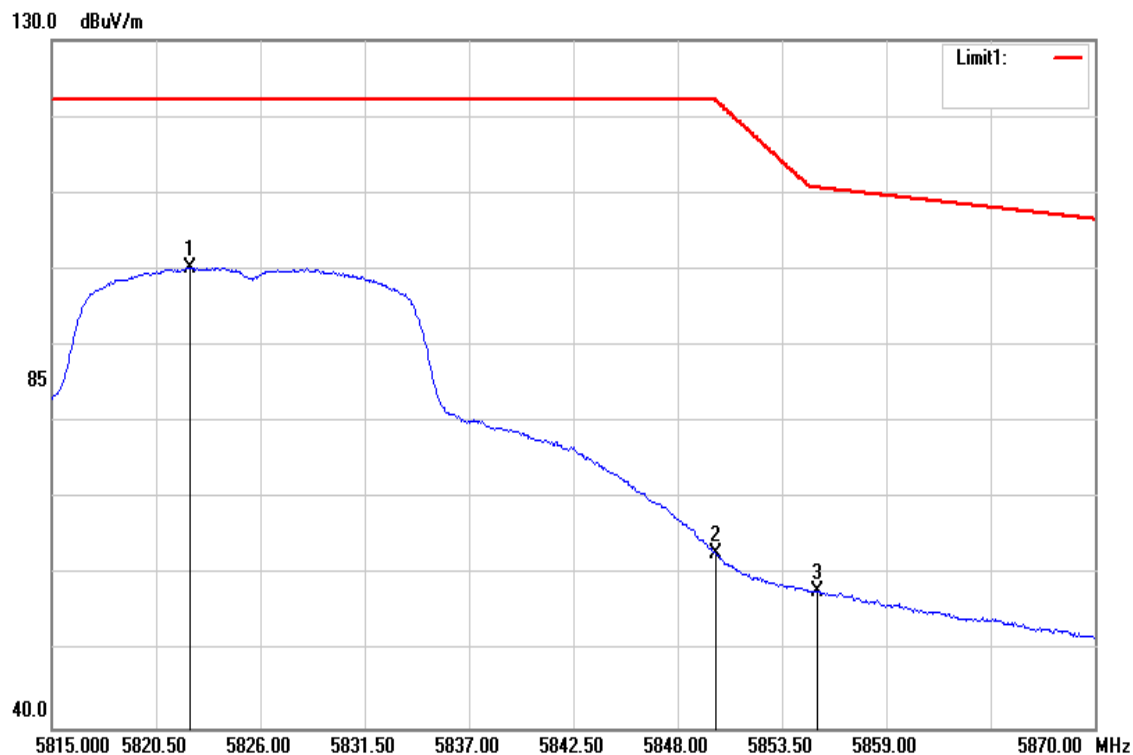
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.650	65.01	6.19	71.20	110.70	-39.50	AVG
5724.760	70.04	6.21	76.25	121.65	-45.40	AVG
5744.220	93.74	6.29	100.03	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



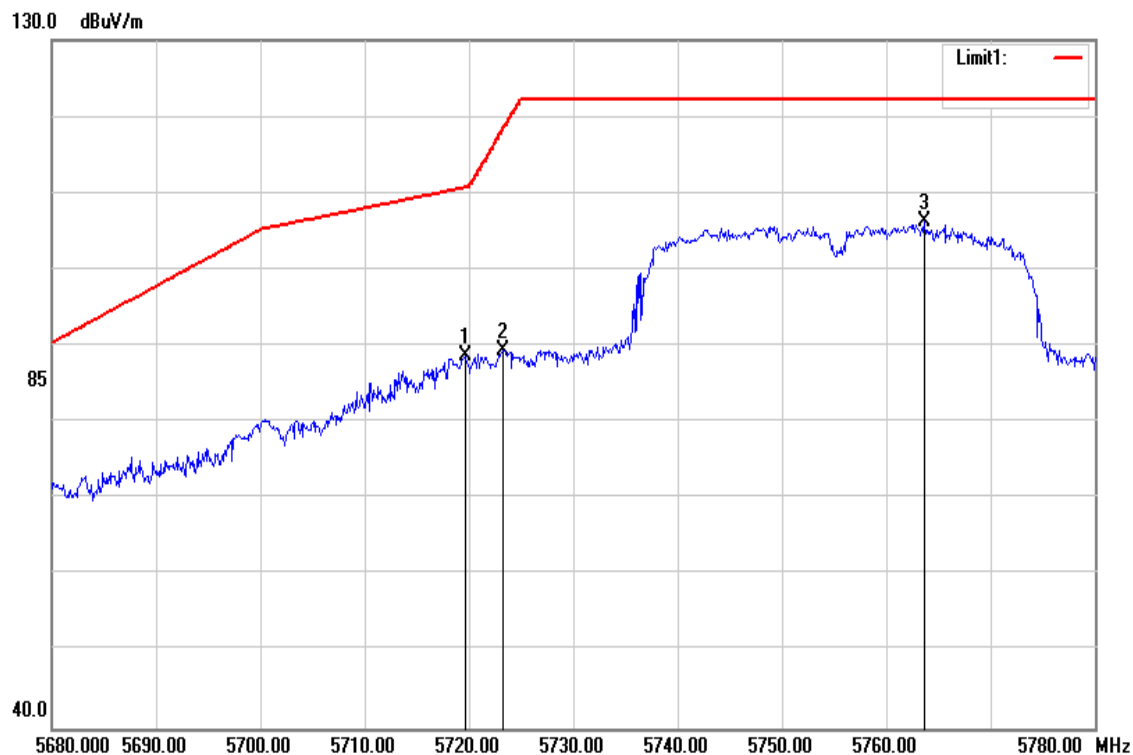
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5821.820	102.78	6.62	109.40	-	-	peak
5850.475	69.68	6.74	76.42	121.12	-44.70	peak
5855.975	65.82	6.77	72.59	110.53	-37.94	peak

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



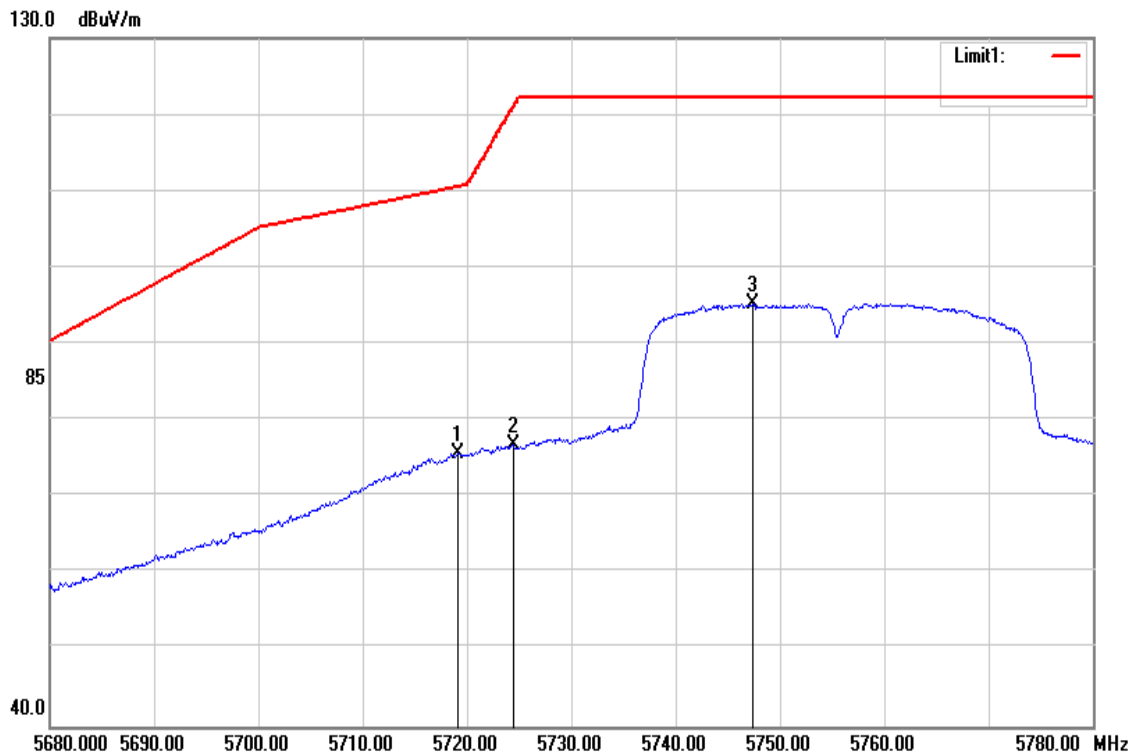
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5822.260	93.59	6.62	100.21	-	-	AVG
5850.035	56.04	6.74	62.78	122.12	-59.34	AVG
5855.370	51.21	6.76	57.97	110.70	-52.73	AVG

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



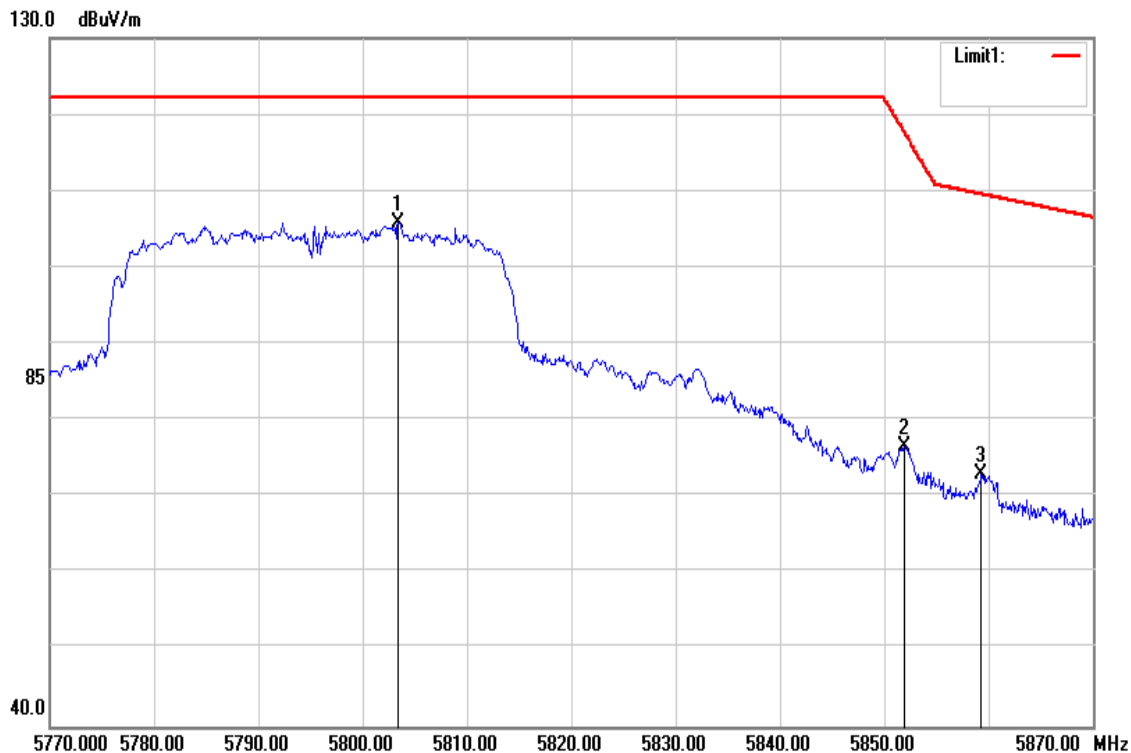
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.600	82.43	6.19	88.62	110.69	-22.07	peak
5723.300	83.25	6.20	89.45	118.32	-28.87	peak
5763.600	99.79	6.37	106.16	-	-	peak

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



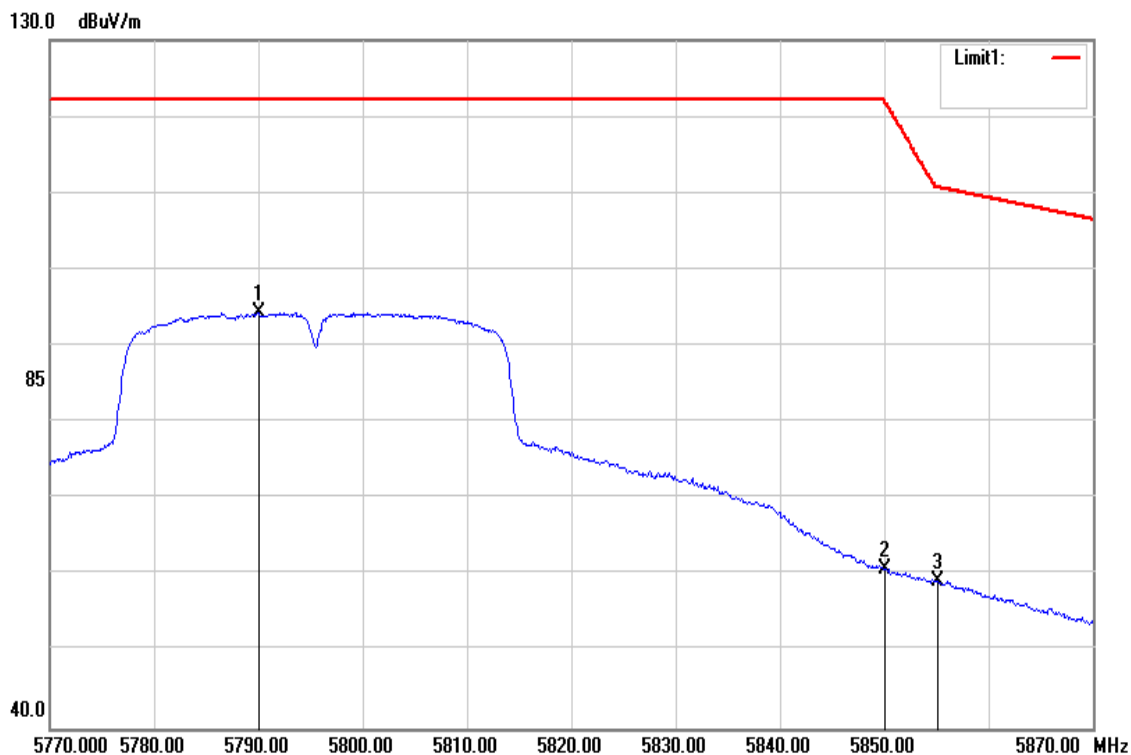
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.100	69.53	6.18	75.71	110.55	-34.84	AVG
5724.400	70.52	6.21	76.73	120.83	-44.10	AVG
5747.400	88.99	6.30	95.29	-	-	AVG

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



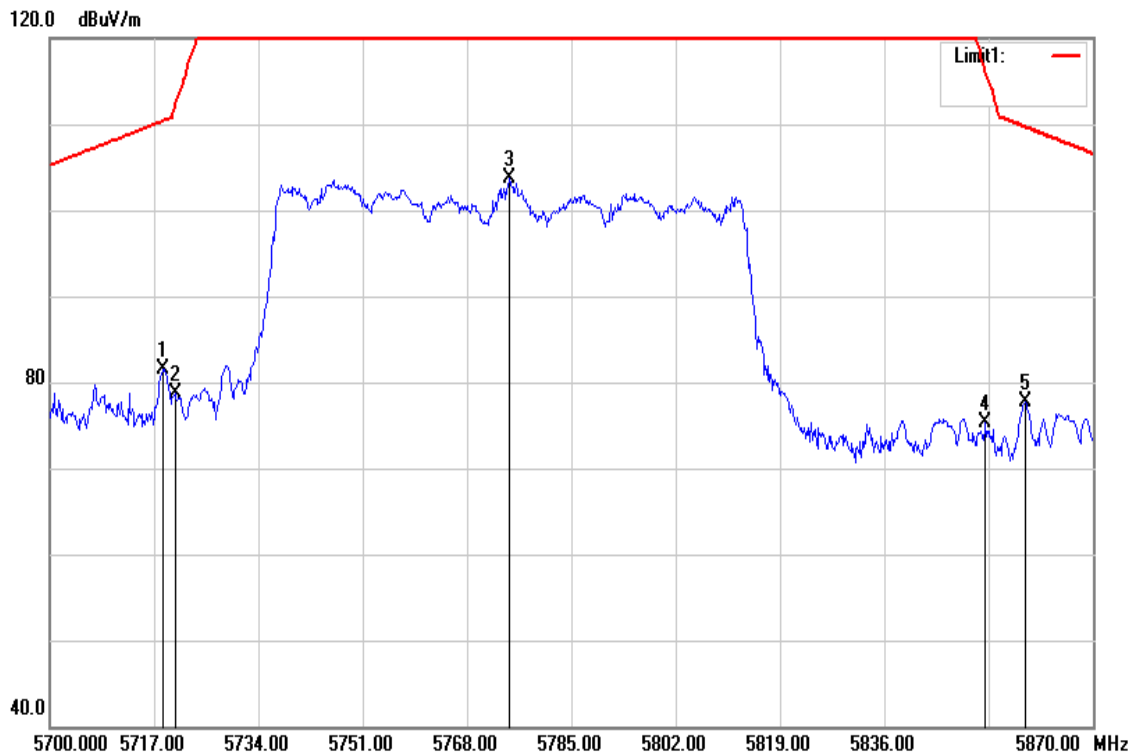
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5803.400	99.37	6.54	105.91	-	-	peak
5851.900	69.80	6.75	76.55	117.87	-41.32	peak
5859.300	66.18	6.78	72.96	109.60	-36.64	peak

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 27, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



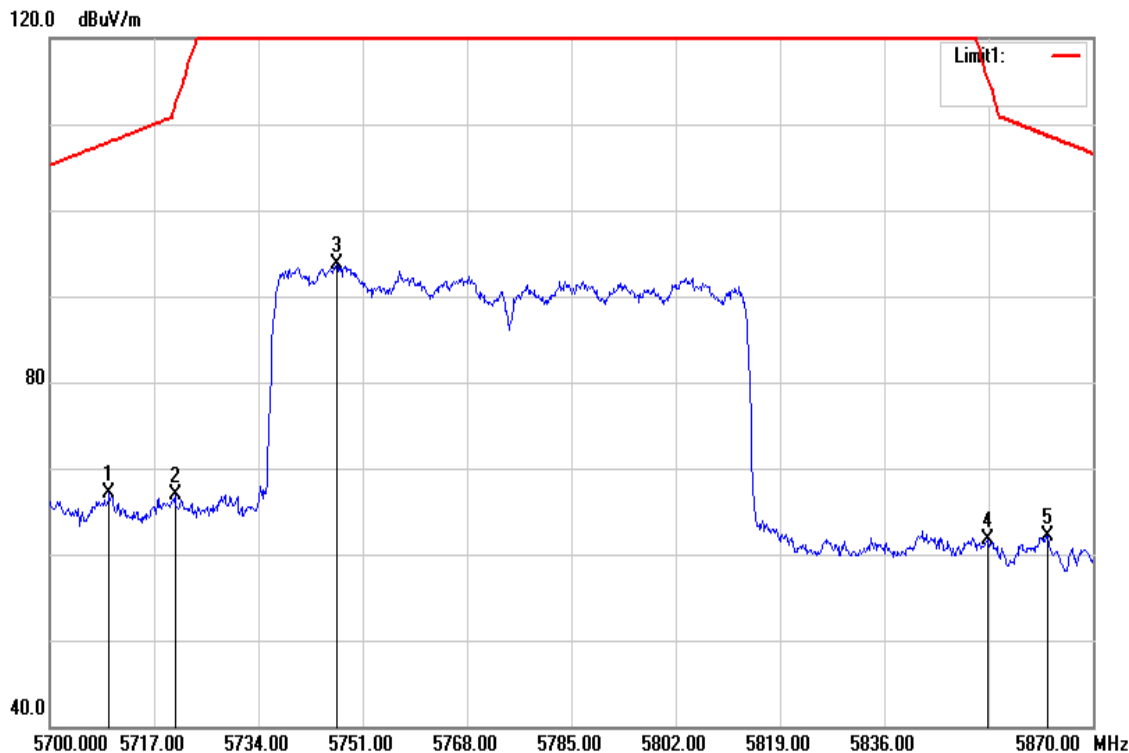
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5790.000	87.88	6.49	94.37	-	-	AVG
5850.100	54.10	6.74	60.84	121.97	-61.13	AVG
5855.100	52.55	6.76	59.31	110.77	-51.46	AVG

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	21(°C)/ 58%RH
Test Item	Band Edge	Test Date	Mar 24, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5718.530	75.25	6.18	81.43	110.39	-28.96	peak
5720.400	72.43	6.19	78.62	111.71	-33.09	peak
5774.970	97.31	6.42	103.73	-	-	peak
5852.490	68.62	6.75	75.37	116.52	-41.15	peak
5858.950	70.87	6.78	77.65	109.69	-32.04	peak

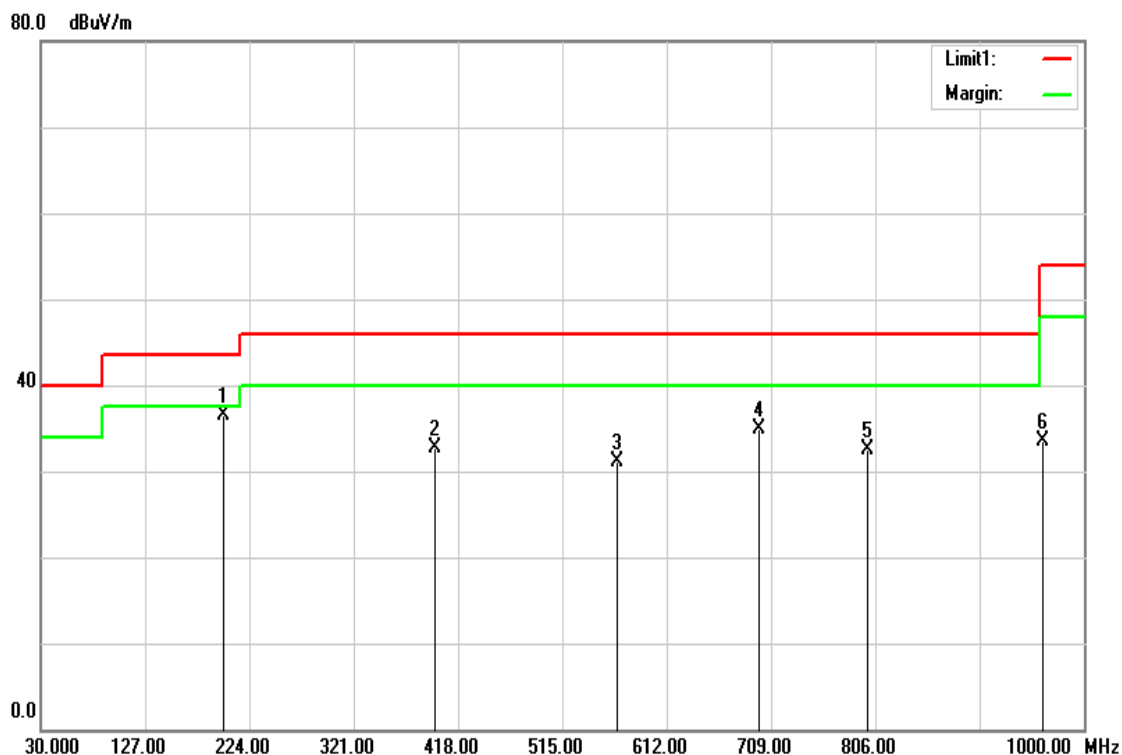
Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	21(°C) / 58%RH
Test Item	Band Edge	Test Date	Mar 24, 2017
Polarize	Horizontal	Test Engineer	Ed Chiang
Detector	Average	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5709.690	60.96	6.14	67.10	107.91	-40.81	AVG
5720.400	60.72	6.19	66.91	111.71	-44.80	AVG
5746.750	87.40	6.30	93.70	-	-	AVG
5852.830	54.89	6.75	61.64	115.75	-54.11	AVG
5862.520	55.25	6.79	62.04	108.69	-46.65	AVG

Below 1G Test Data

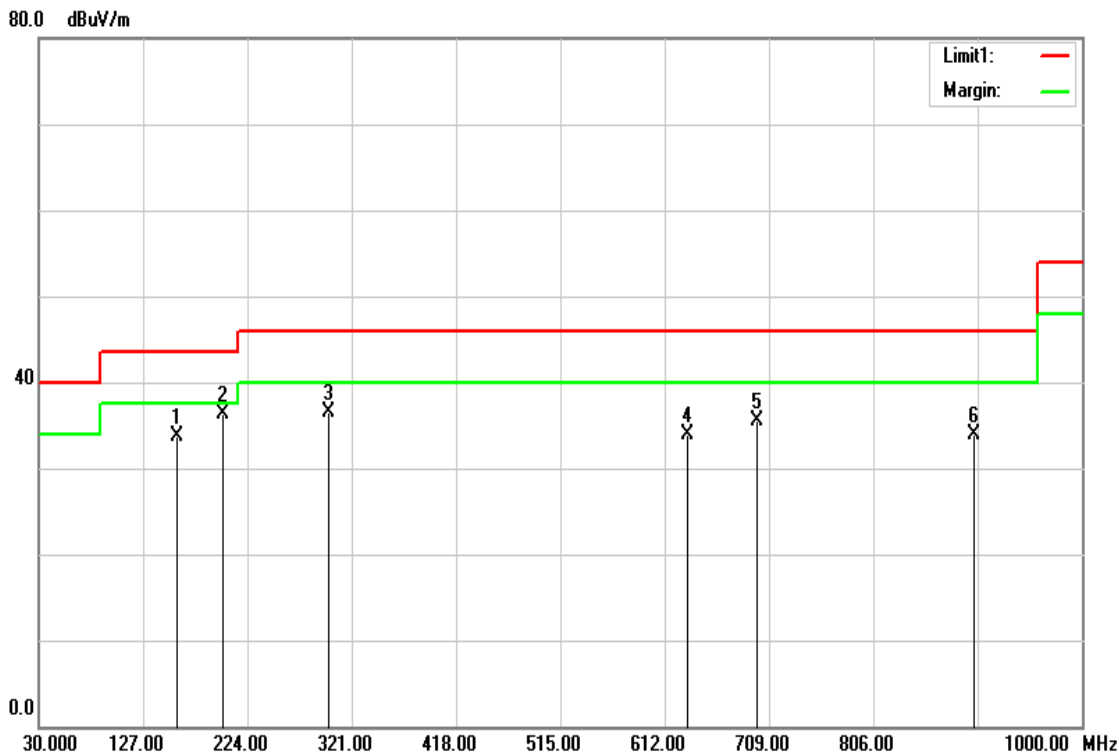
Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	30MHz-1GHz	Test Date	Mar 28, 2017
Polarize	Vertical	Test Engineer	Ed Chiang
Detector	Peak and Qusi-peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
199.7500	52.09	-15.57	36.52	43.50	-6.98	peak
396.6600	44.58	-11.78	32.80	46.00	-13.20	peak
566.4100	39.36	-8.25	31.11	46.00	-14.89	peak
697.3600	41.07	-6.10	34.97	46.00	-11.03	peak
798.2400	36.93	-4.51	32.42	46.00	-13.58	peak
962.1700	35.65	-2.20	33.45	54.00	-20.55	peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	21(°C)/ 58%RH
Test Item	30MHz-1GHz	Test Date	Mar 28, 2017
Polarize	Vertical	Test Engineer	Ed Chiang
Detector	Peak and Qusi-peak	Test Voltage	120Vac / 60Hz



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
158.0400	49.96	-16.30	33.66	43.50	-9.84	peak
200.7200	51.99	-15.60	36.39	43.50	-7.11	peak
299.6600	50.69	-14.25	36.44	46.00	-9.56	peak
633.3400	40.88	-6.97	33.91	46.00	-12.09	peak
697.3600	41.57	-6.10	35.47	46.00	-10.53	peak
900.0900	37.12	-3.19	33.93	46.00	-12.07	peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)