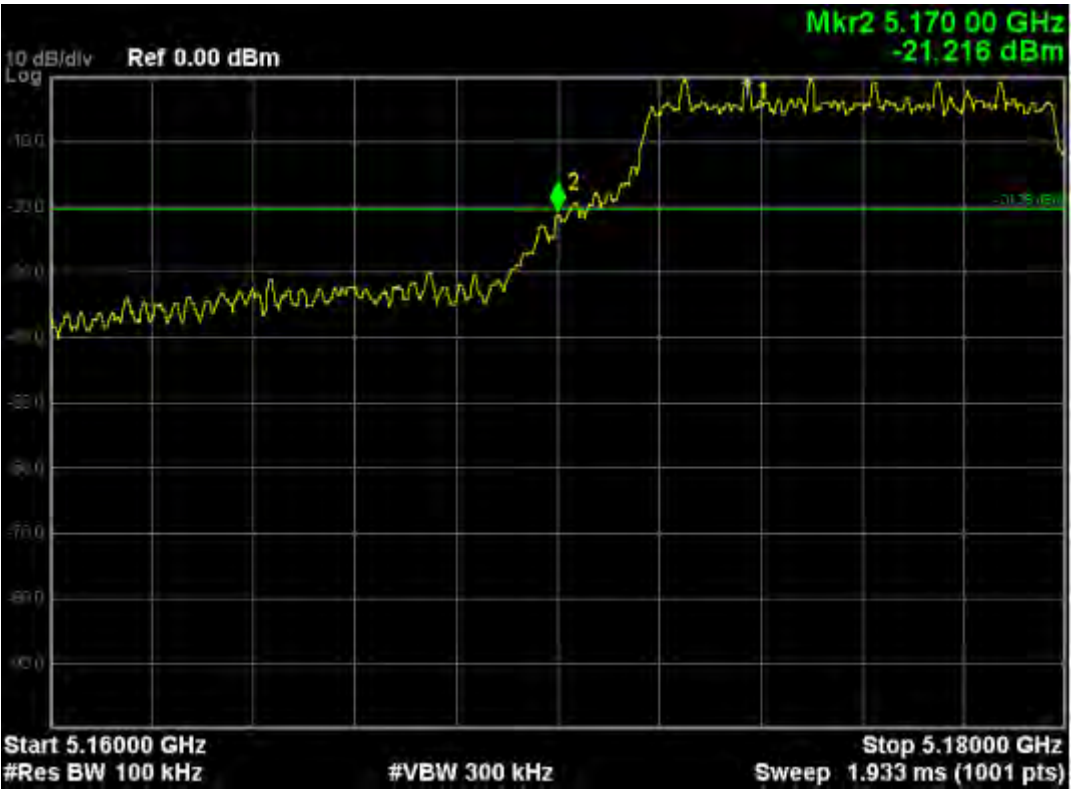
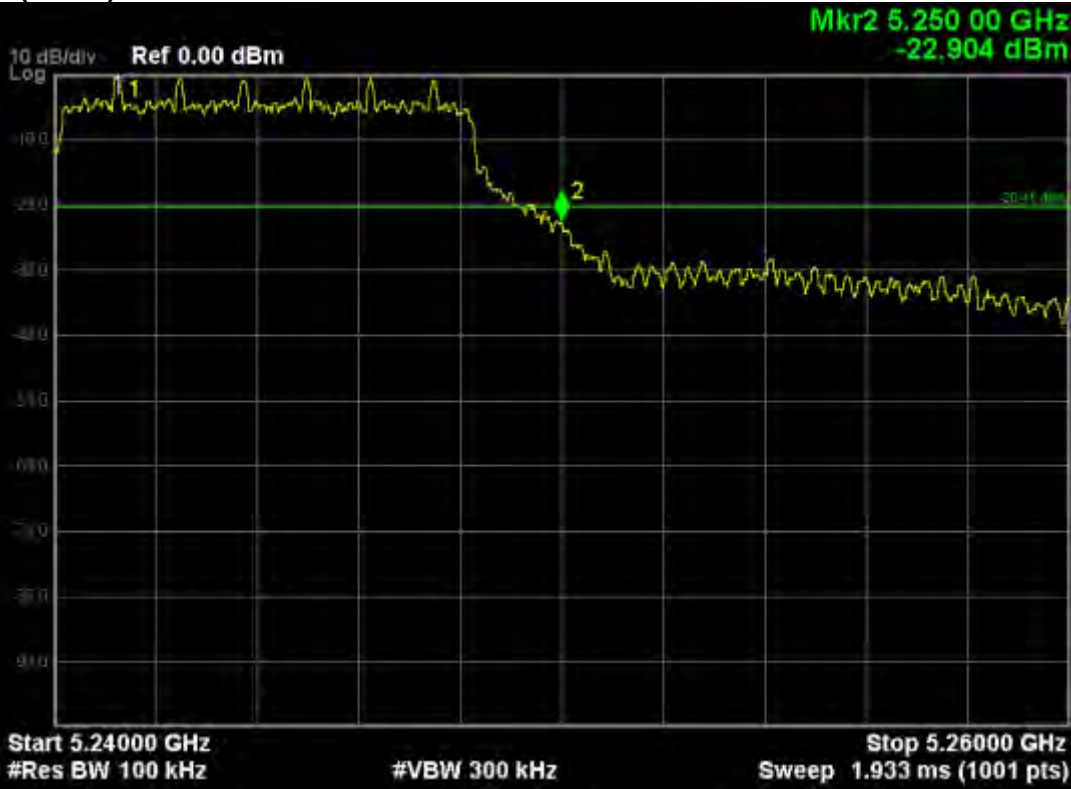


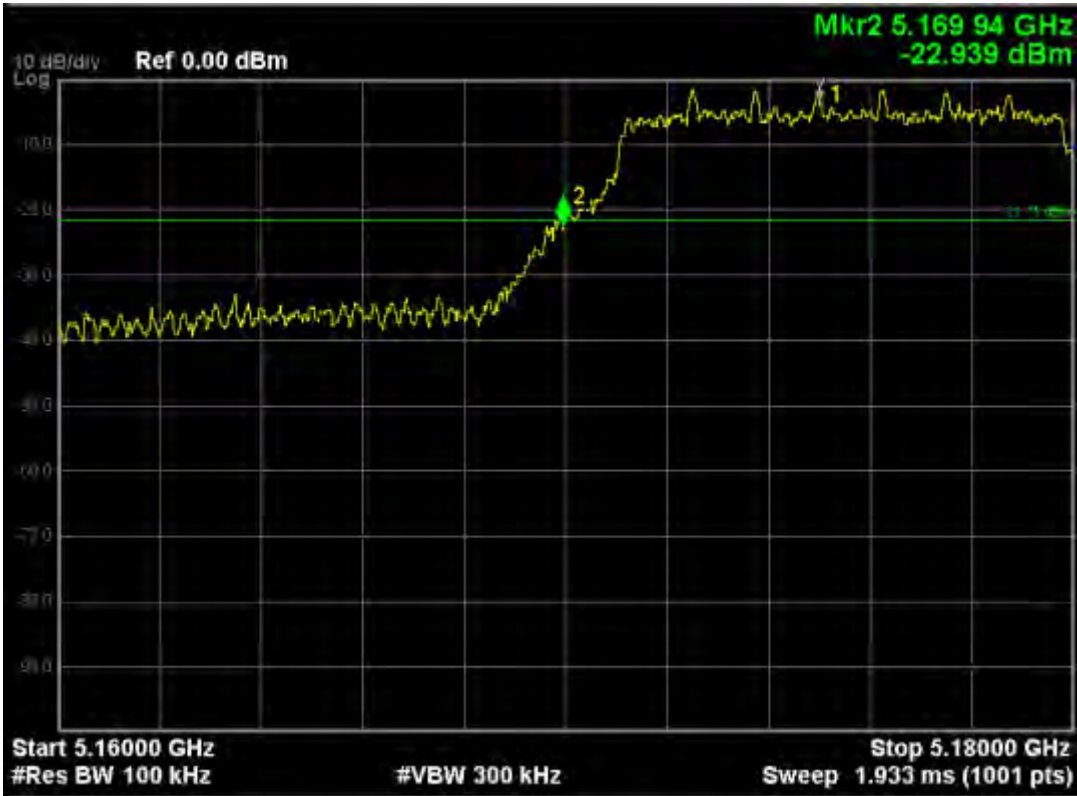
WIFI 5G(5150MHz-5250MHz)
802.11a(Ch36)



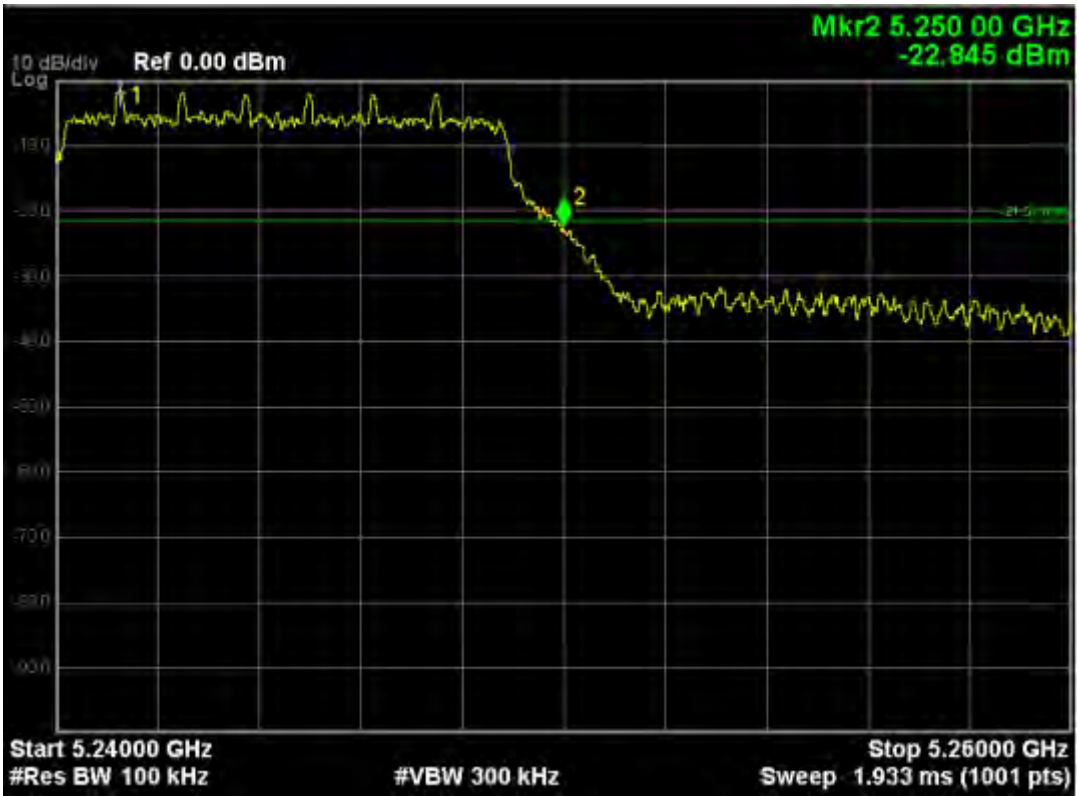
802.11a (Ch48)



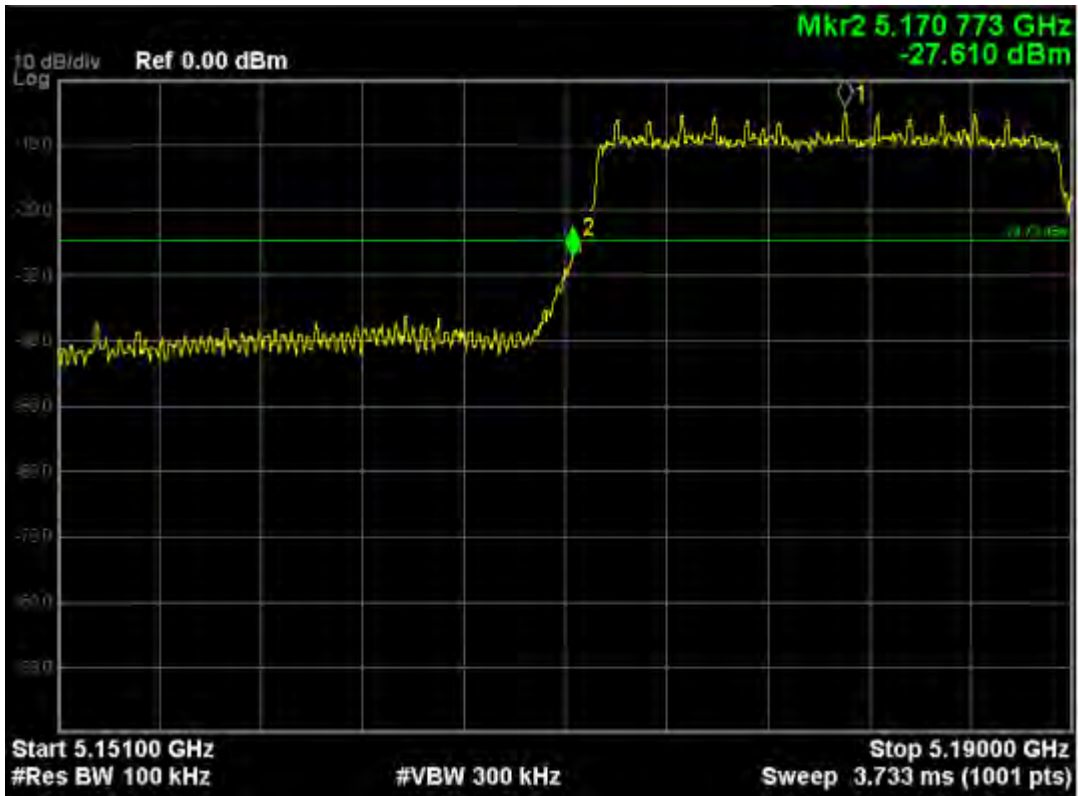
802.11n20 (Ch36)



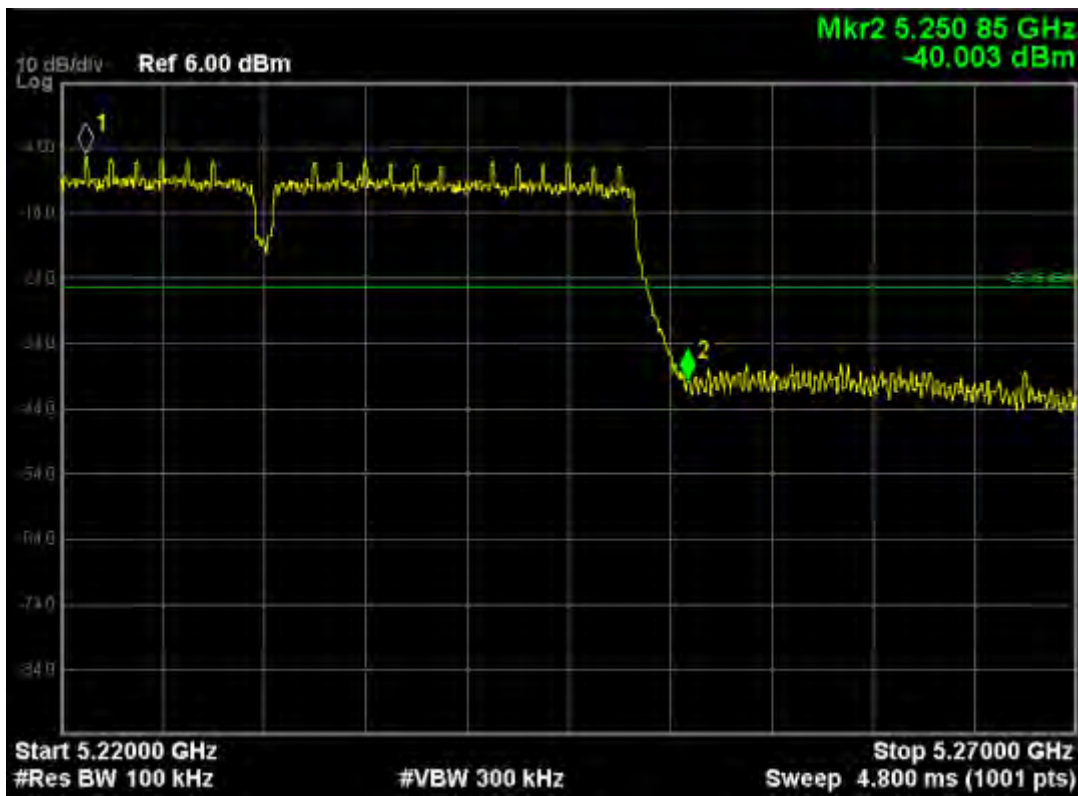
802.11n20 (Ch48)



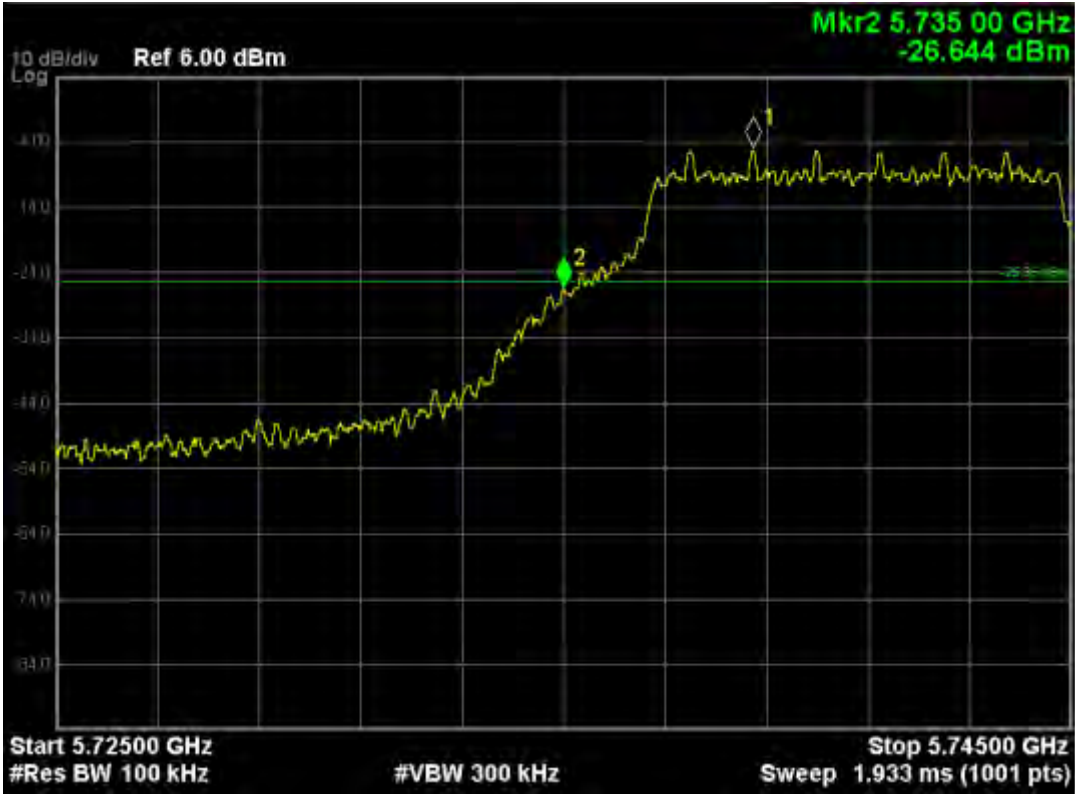
802.11n40 (Ch38)



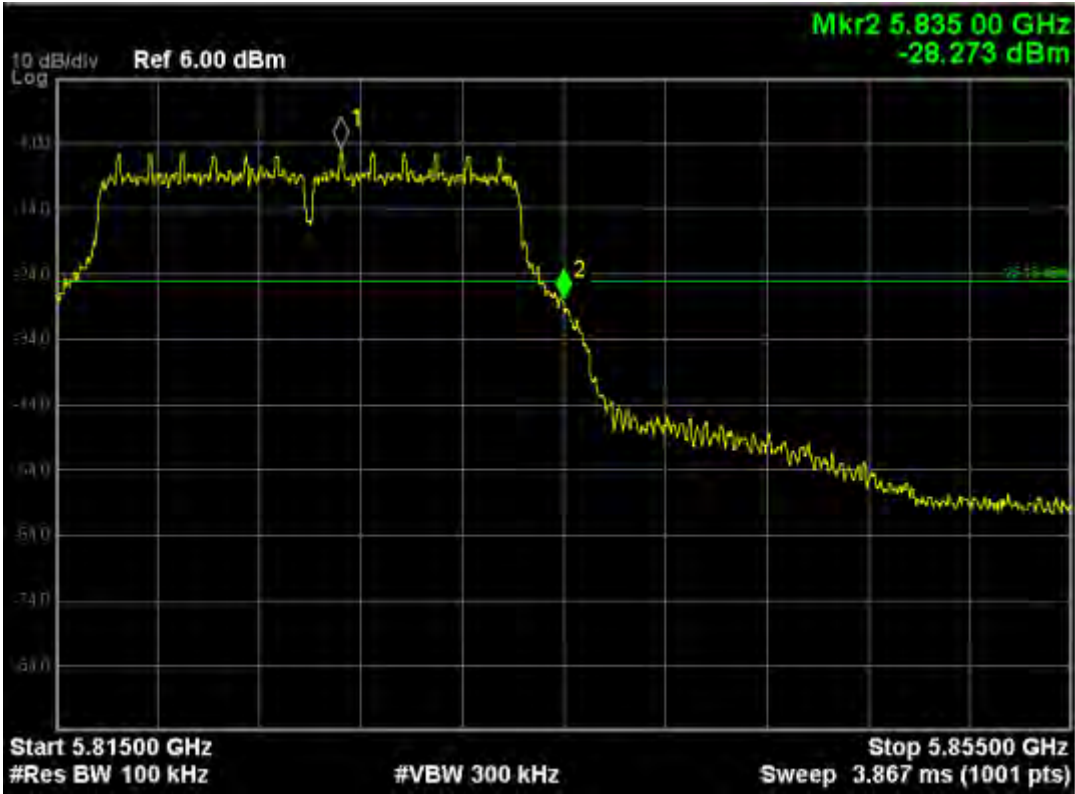
802.11n40 (Ch46)



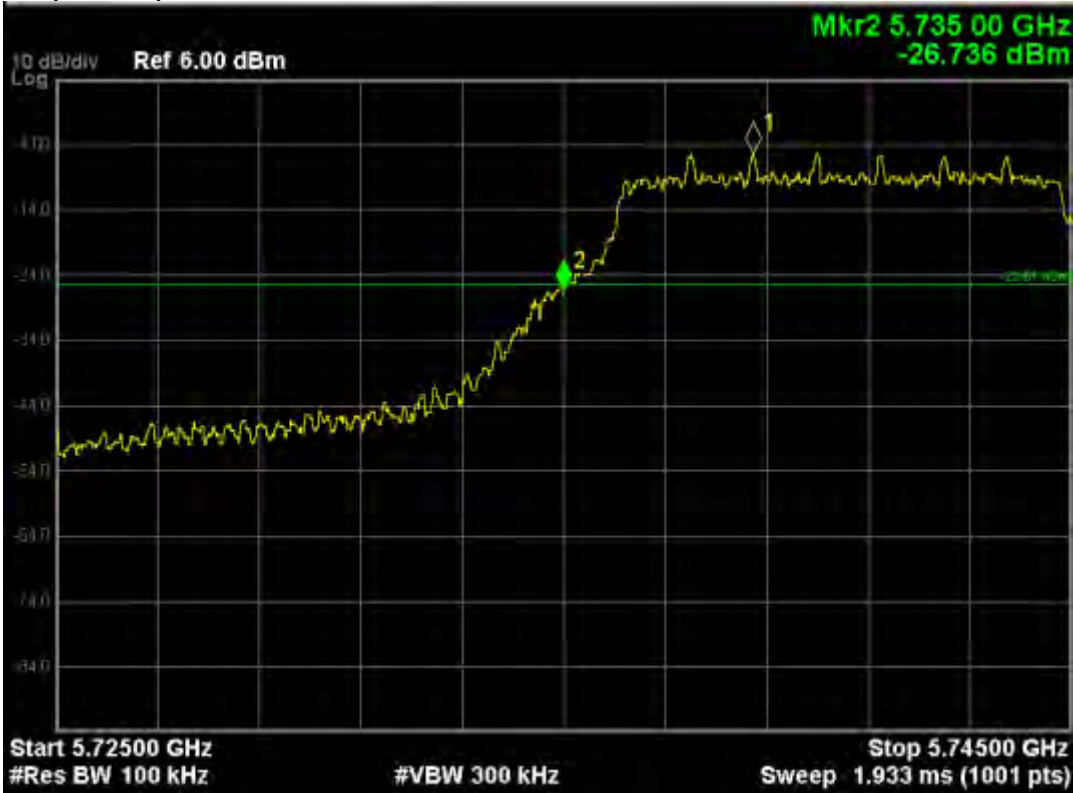
WIFI 5G(5725MHz-5850MHz)
802.11a(Ch149)



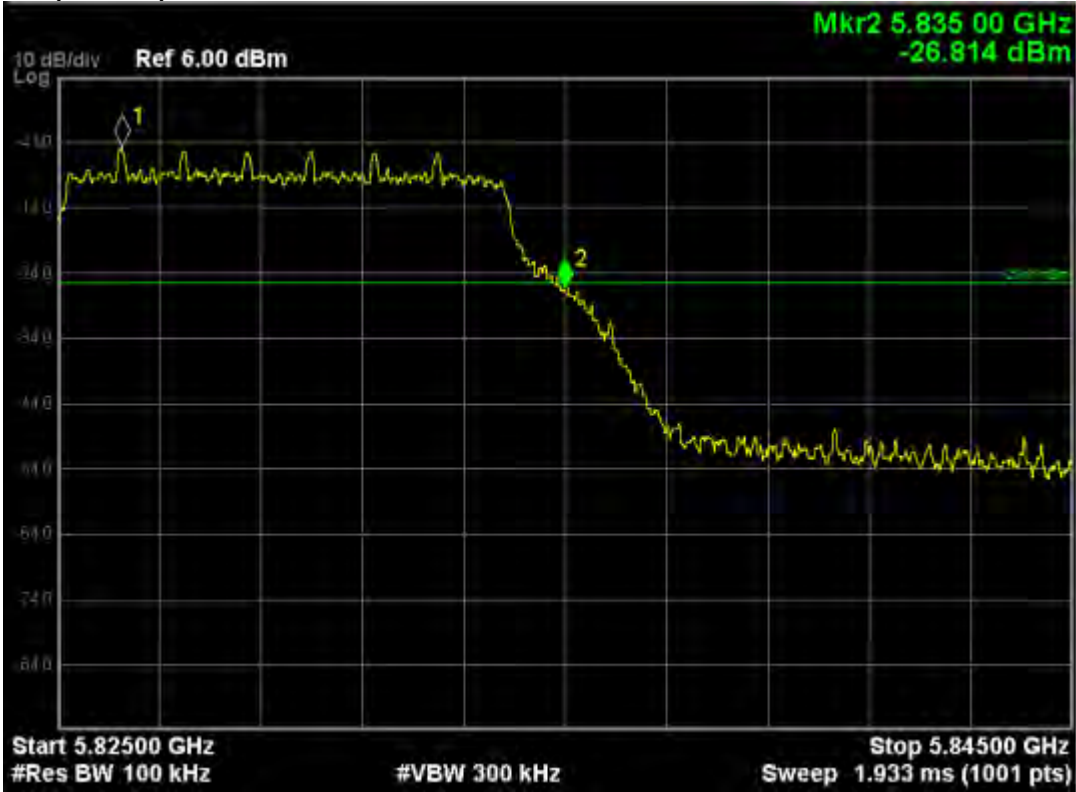
802.11a(Ch165)



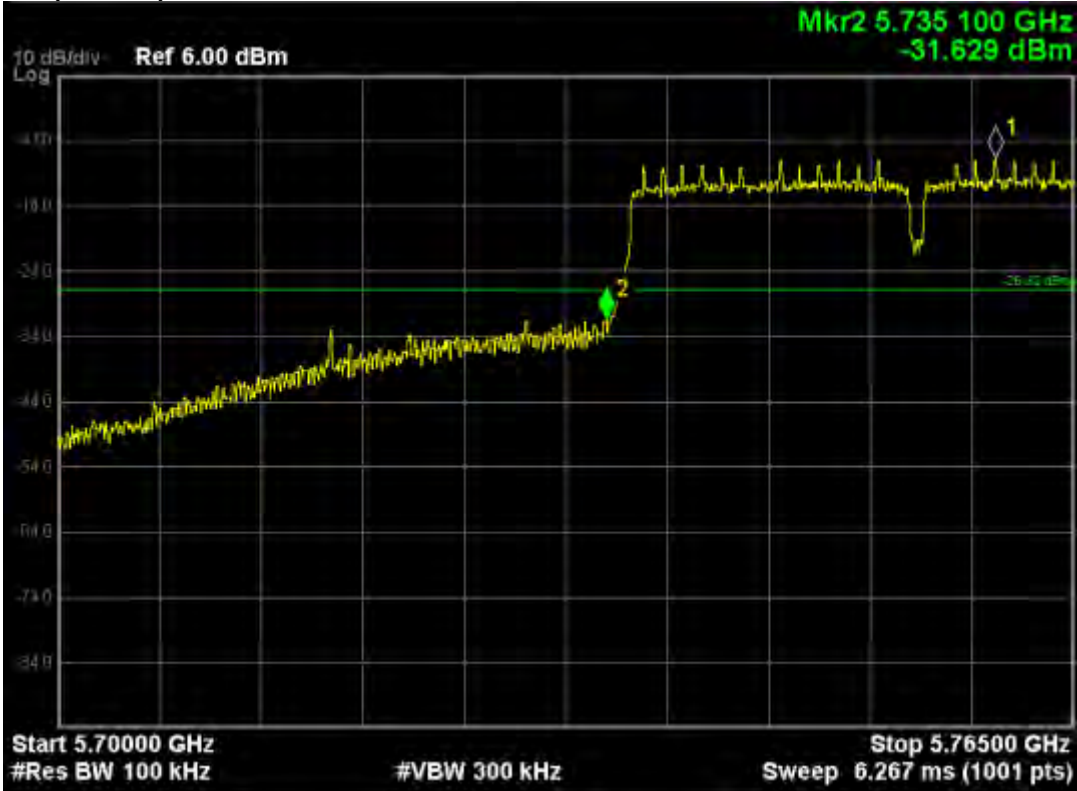
802.11n20(Ch149)



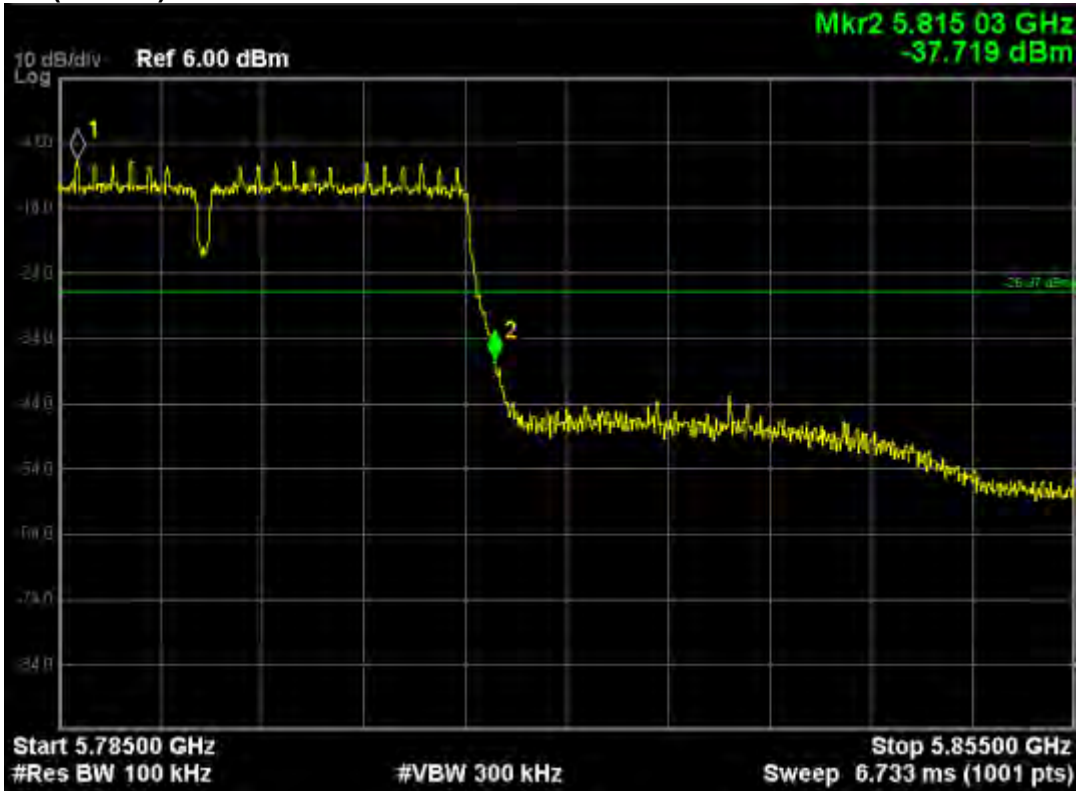
802.11n20(Ch165)



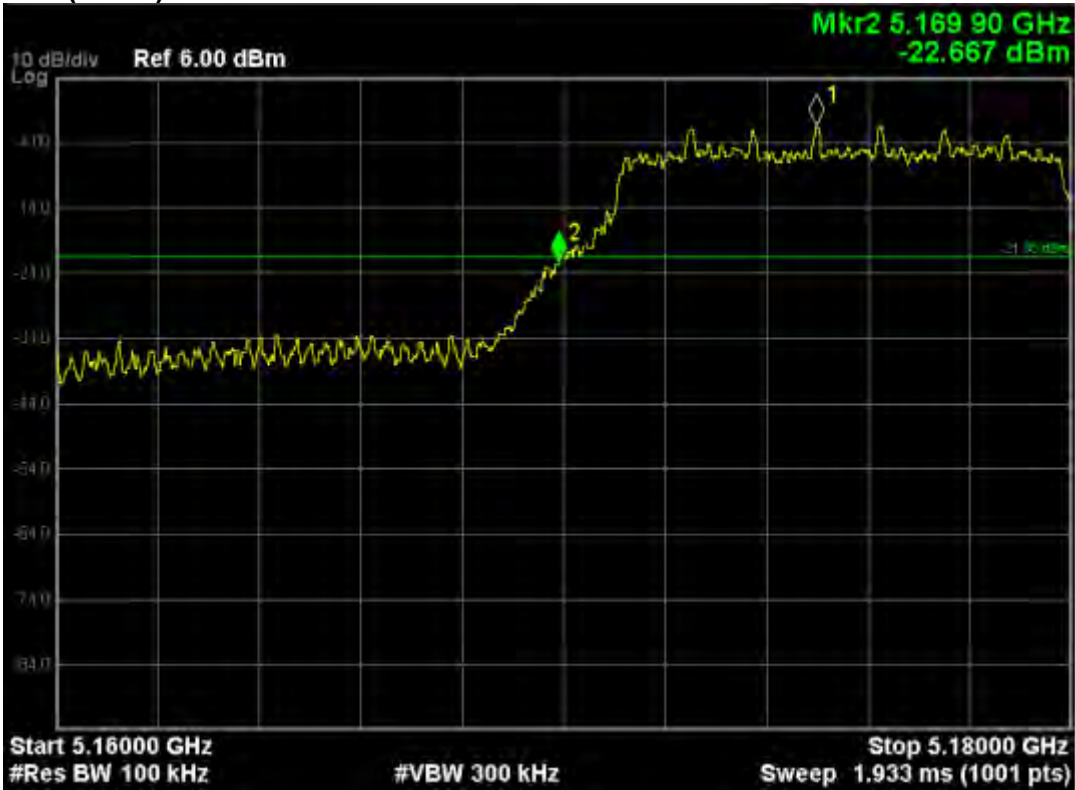
802.11n40(Ch151)



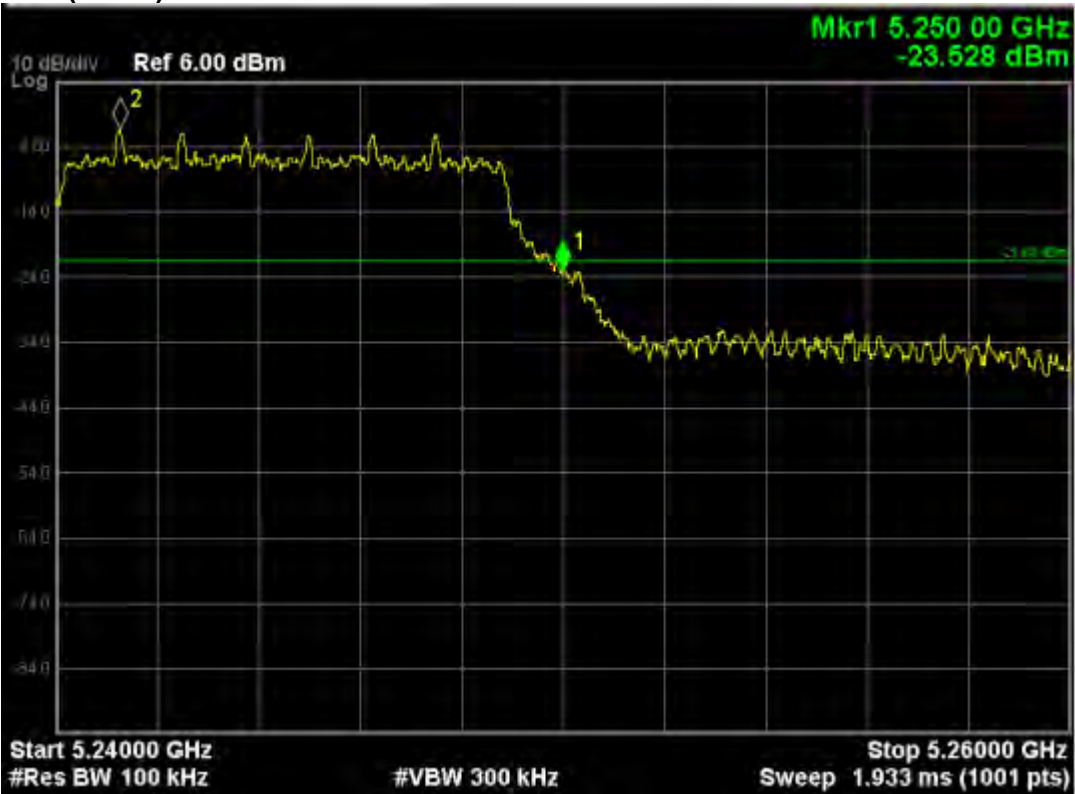
802.11n40(Ch159)



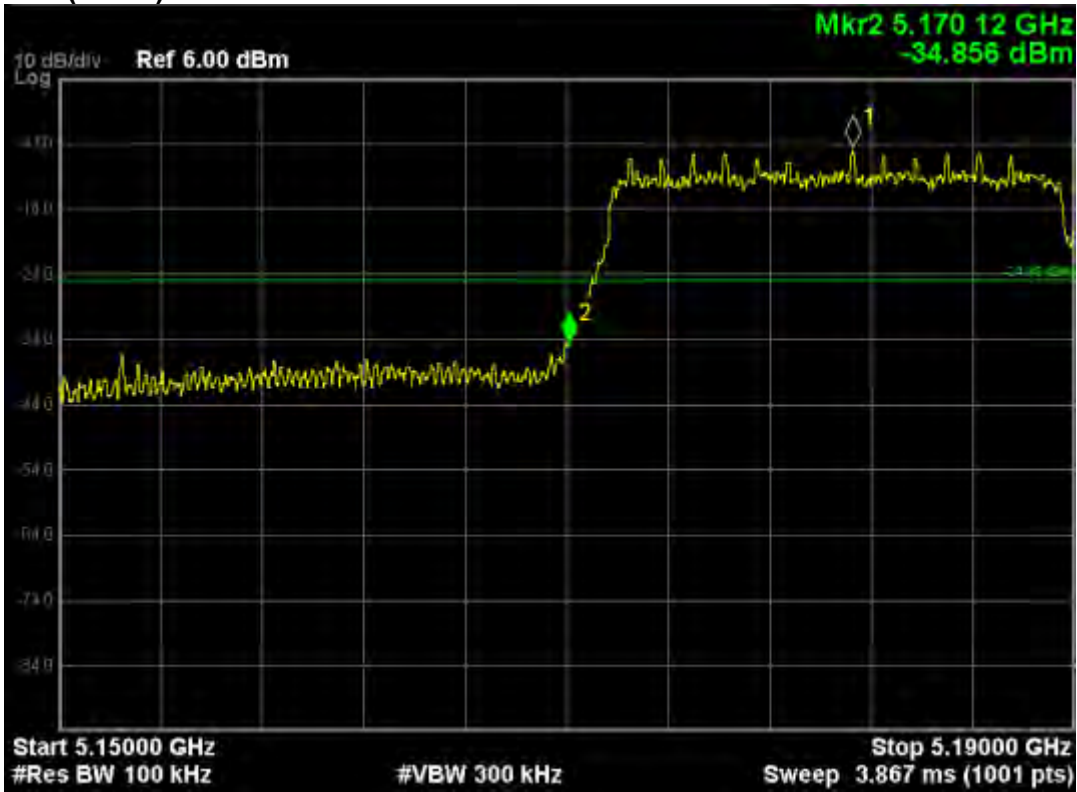
802.11ac(5150MHz-5250MHz)
802.11ac20(Ch36)



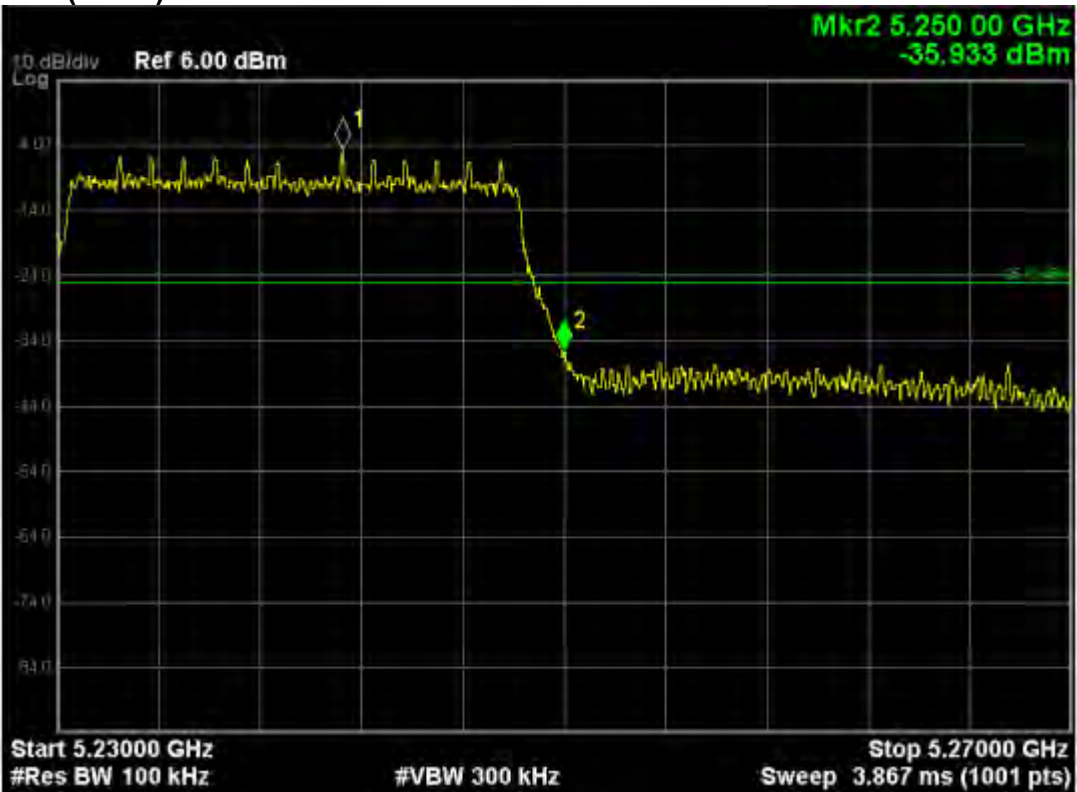
802.11ac20(Ch48)



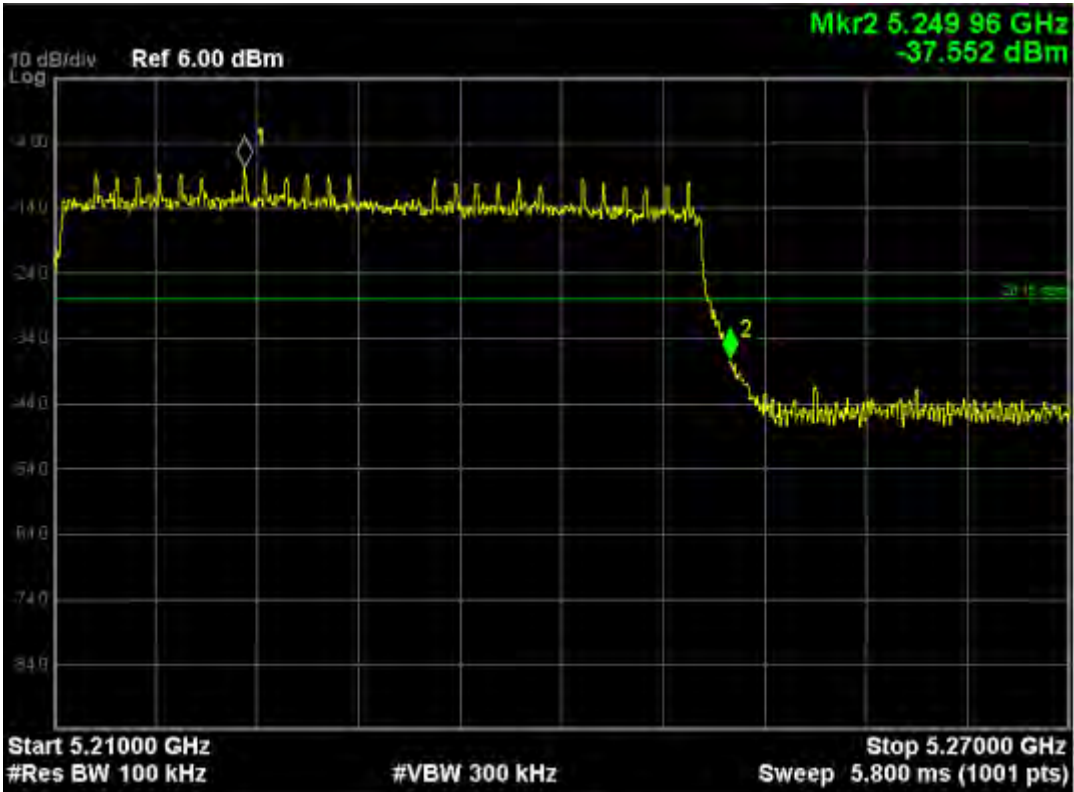
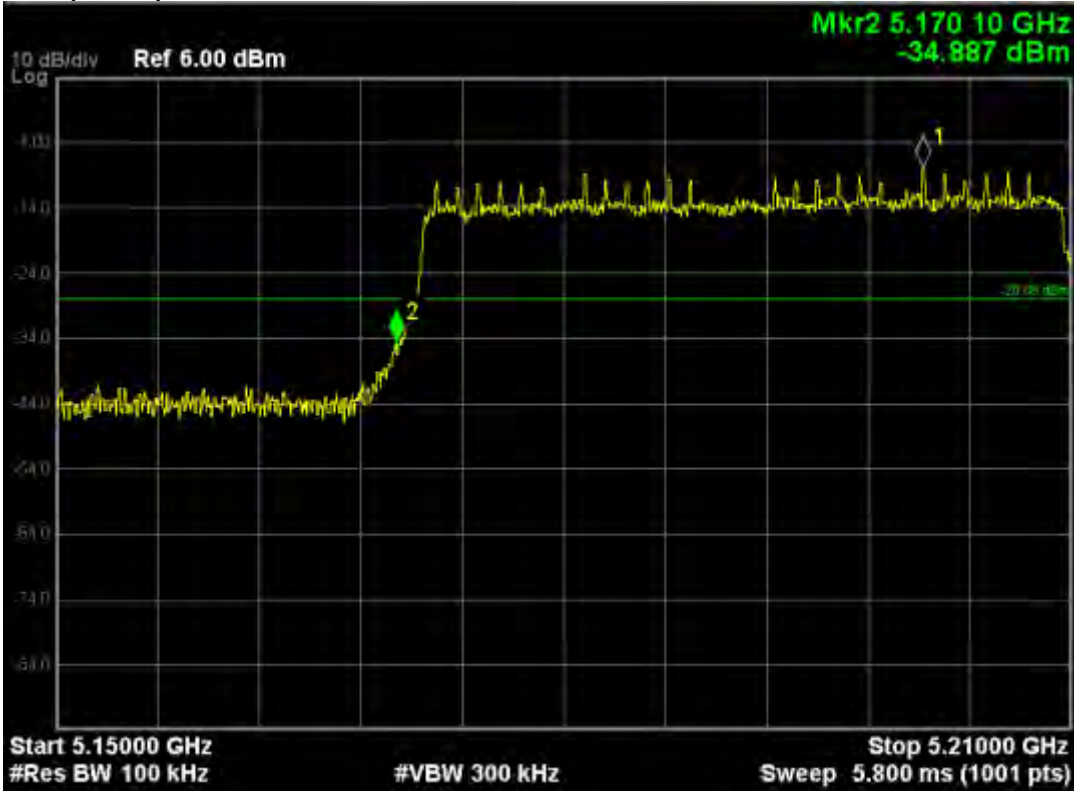
802.11ac40(Ch38)



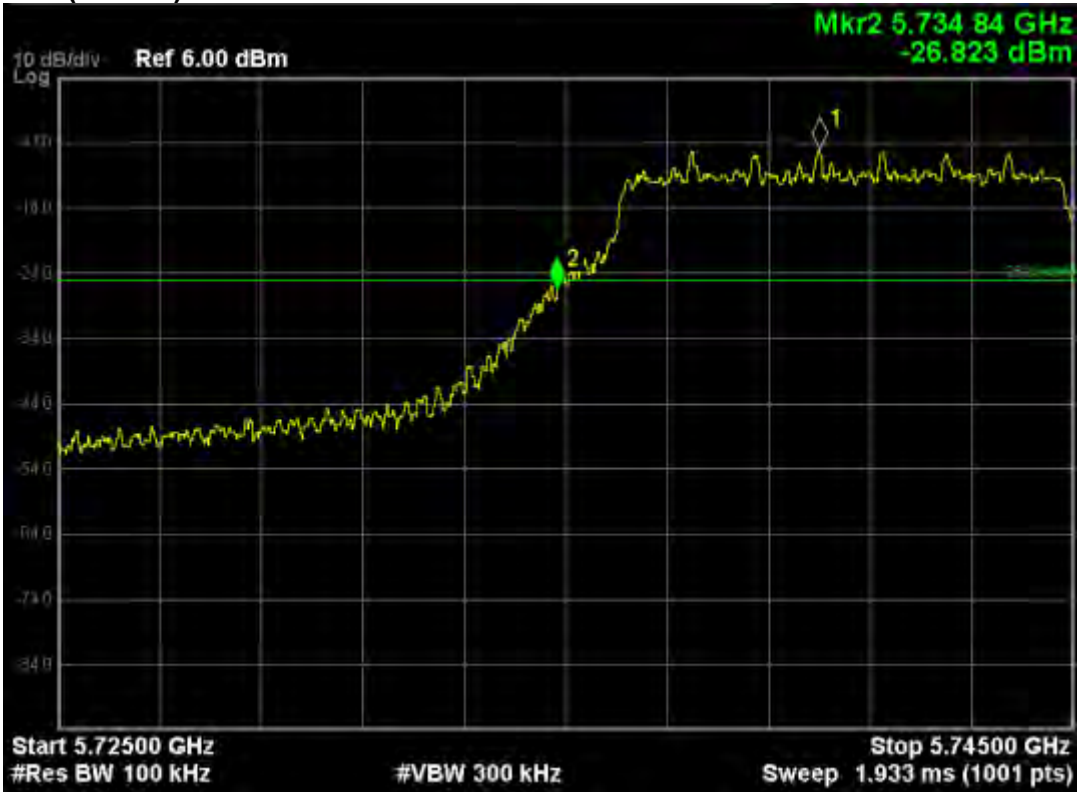
802.11ac40(Ch46)



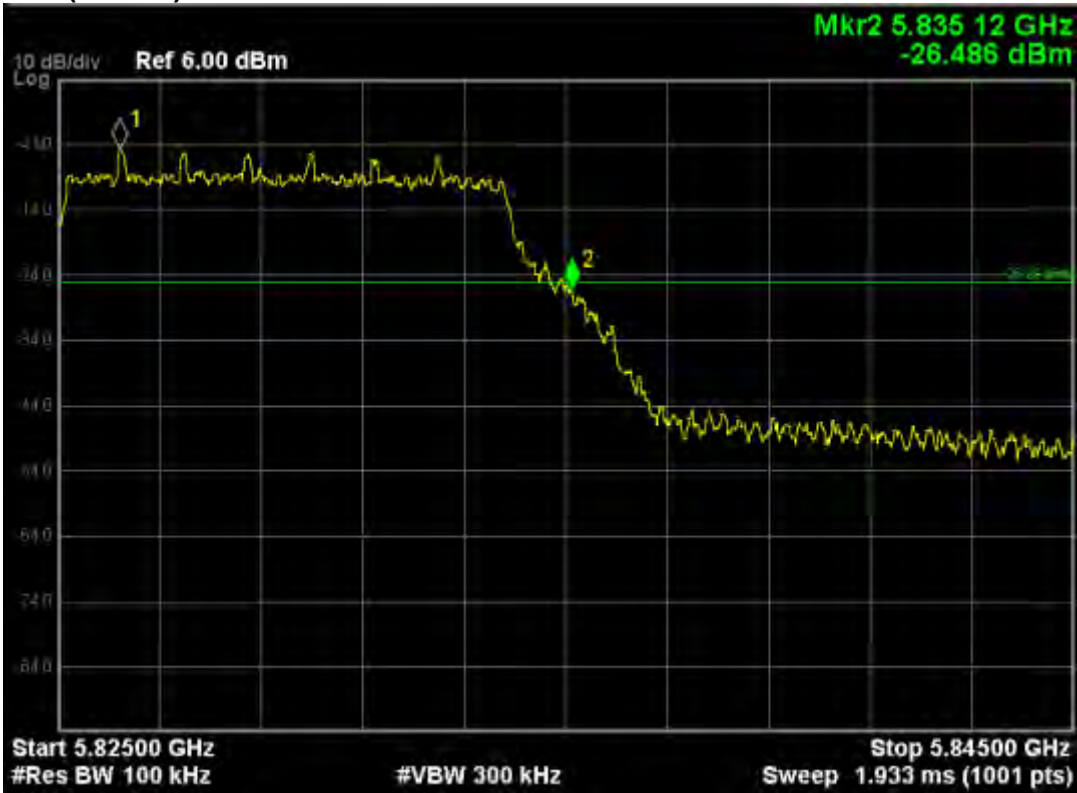
802.11ac80(Ch42)



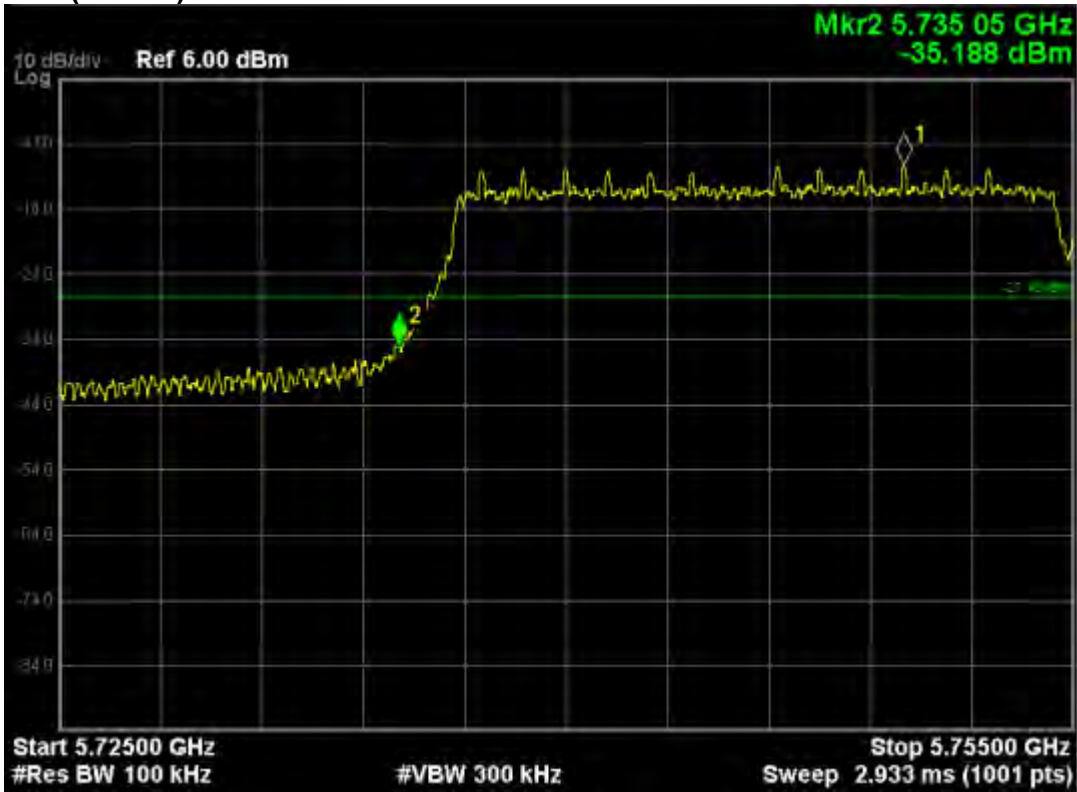
802.11ac (5725MHz-5850MHz)
802.11ac20(Ch149)



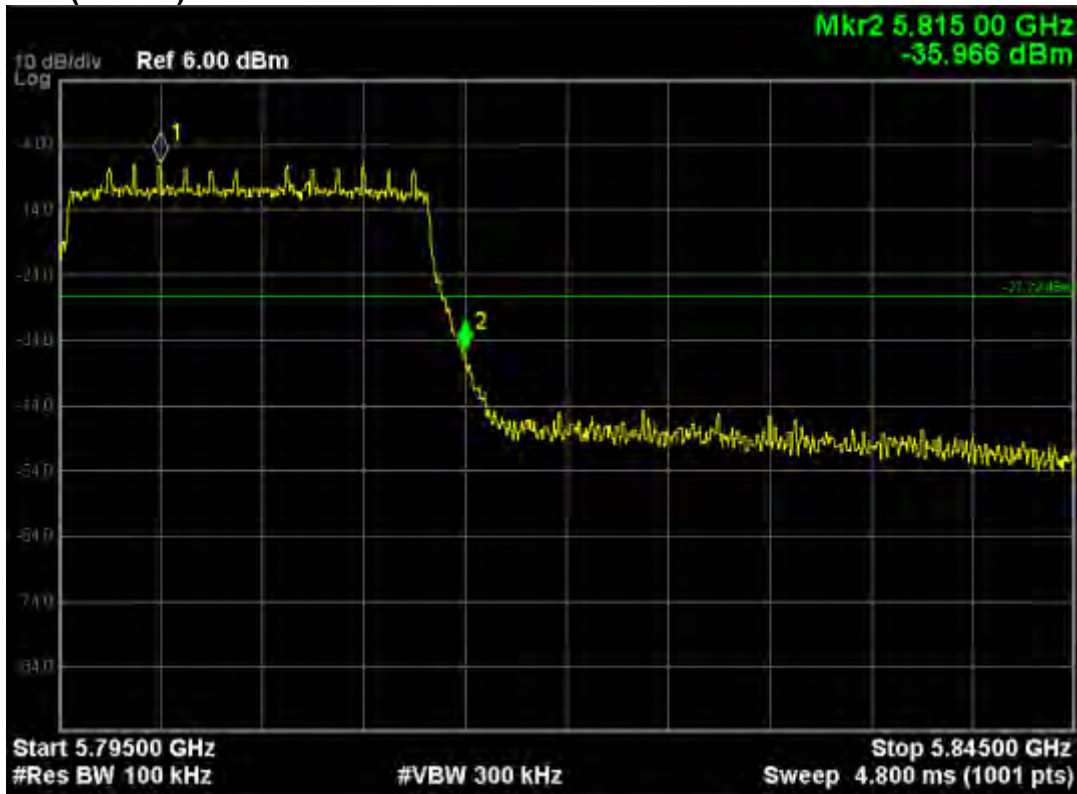
802.11ac20(Ch165)



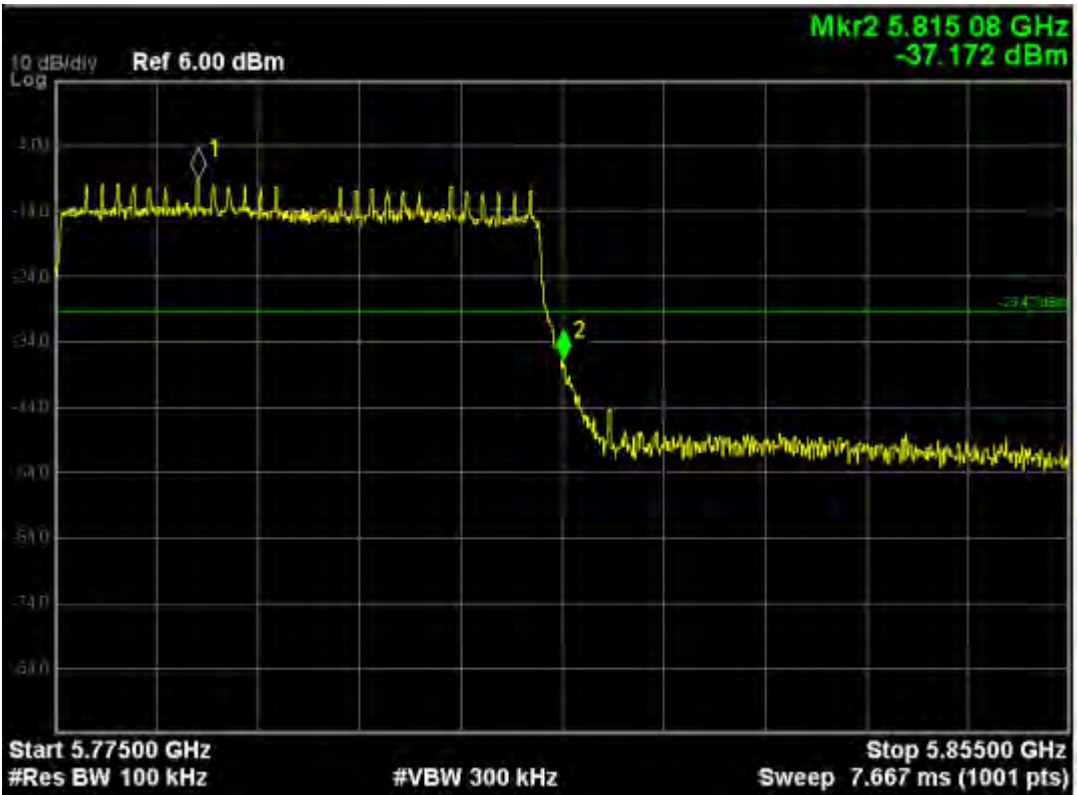
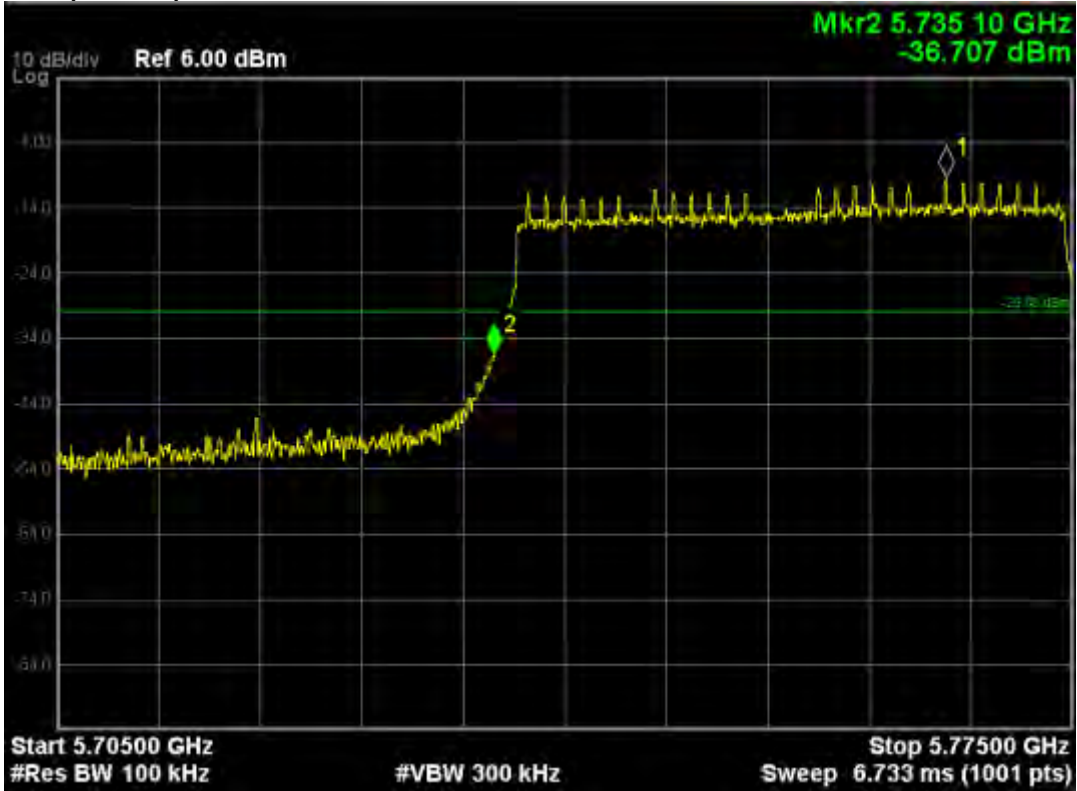
802.11ac40(Ch151)



802.11ac40(Ch159)



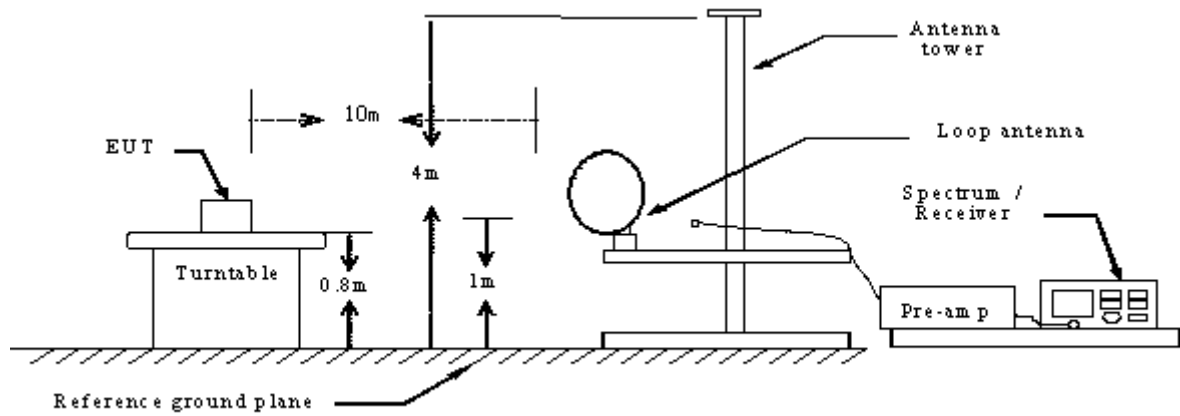
802.11ac80(Ch155)



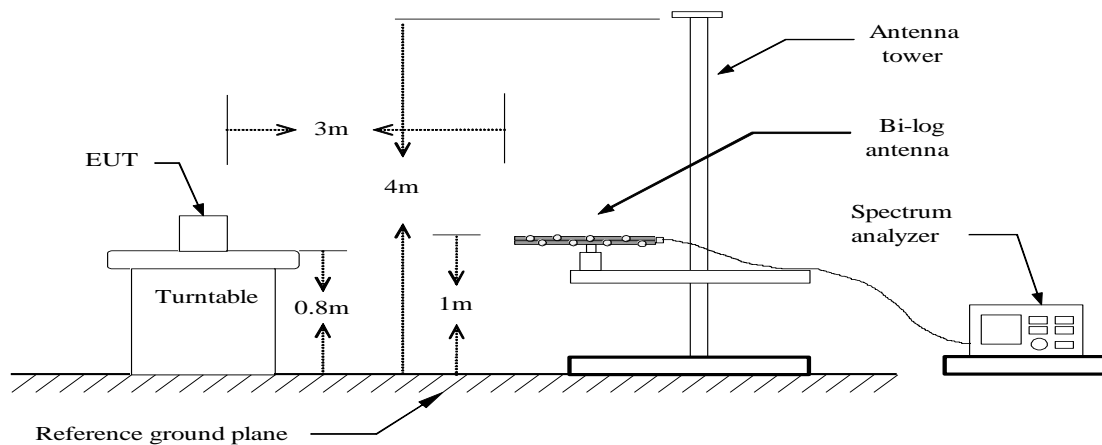
10. SPURIOUS EMISSIONS (RADIATION)

10.1 TEST SETUP

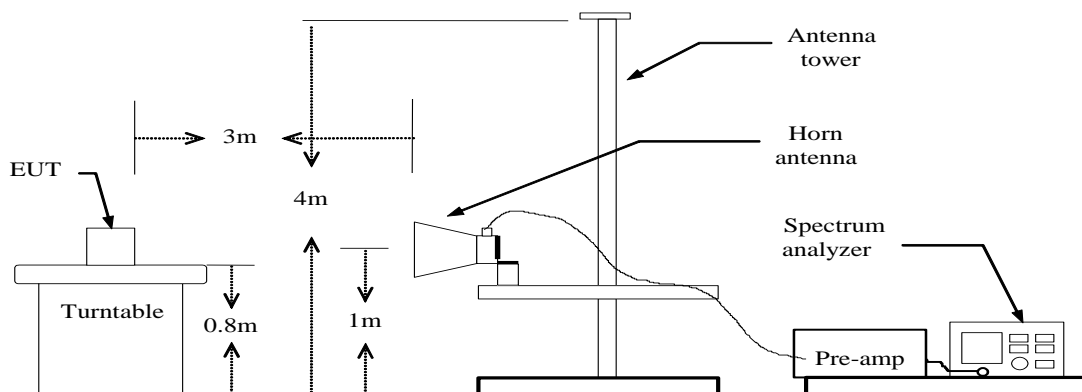
Radiated Spurious Measurement: below 30MHz



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



10.2 LIMITS

Frequency (MHz)	Limits (uV/m)	Limits(dBuV/m) At 3m	Measured Distance (m)
0.009-0.490	2400/F(KHz)	128.5-93.80	300
0.490-1.705	24000/F(KHz)	73.80-63.00	30
1.705-30.0	30	69.5	30
30~88	100	40	3
88~216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Notes: the calculate formula for below 30MHz

$$L2 = 20\lg(L1) + 40\lg(d1/d2)$$

L2: is the specified limit in dB microvolts per metre at distance d2.

L1: is the specified limit in microvolts per metre at distance d1.

For example:

L1 = 2400/9 (uV/m), d1 = 300 (m), d2 = 3 (m), so L2 as follows:

$$20\lg(2400/9) + 40\lg(300/3) = 128.5(\text{dBuV/m})$$

10.3 TEST PROCEDURE

Radiated Emission (9 kHz – 30 MHz) :

Spurious emissions from the EUT are measured in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3 meters horizontally from the EUT. The RBW of the spectrum analyzer is set to 200Hz(measured frequency range was 9KHz~150KHz) or 9KHz(measured frequency range was 150KHz~30MHz).Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions. The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz (these two bands employing a average detector).

Radiated Emission (30 MHz – 1000 MHz):

According to description of ANSI C63.4: 2014 sec.13.4, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT. The EUT configuration (in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements. The measurement is carried out using a spectrum analyzer or receiver. The Quasi-peak detector is used and RBW is set to 120kHz.The antenna height and turn table rotation is adjusted until the maximum power value is founded on spectrum analyzer or receiver.

Radiated Emission (Above 1 GHz):

According to description of ANSI C63.4: 2014 sec.13.4, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT. The EUT configuration (in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements. The measurement is carried out using a spectrum analyzer or receiver. The spectrum analyzer scans from 1GHz to 25GHz (higher than the 10th harmonic of the carrier). The peak detector is used for Peak limit and RBW is set to 1MHz ,VBW \geq 3RBW. The peak detector is used for Average limit and RBW is set to 1MHz ,VBW is not smaller than 1/T, T = to the shortest pulse width. The antenna height and turn table rotation is adjusted until the maximum power value is founded on spectrum analyzer or receiver.

10.4 RESULTS & PERFORMANCE

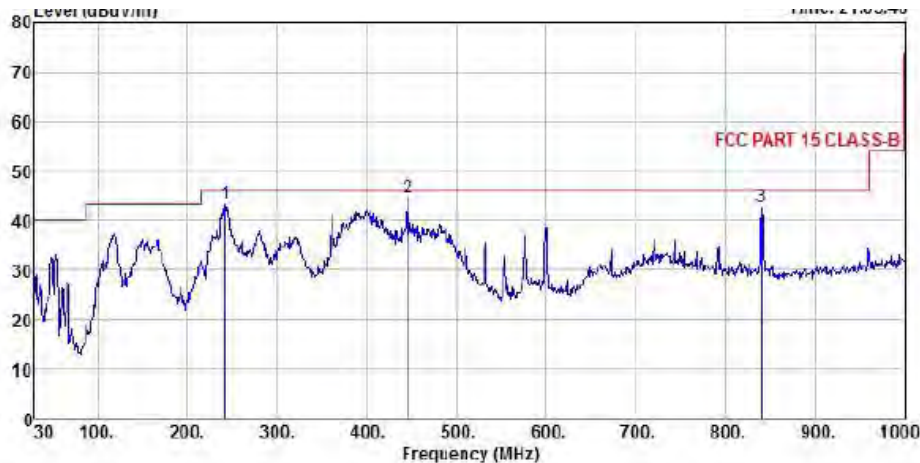
Note: All of the EUT Configure Mode and were tested under different antenna setting before,there only show the worst condition of each mode.

From 9KHz to 30MHz:

The test data was 20dB lower than the permissible limit was not recorded in the report.

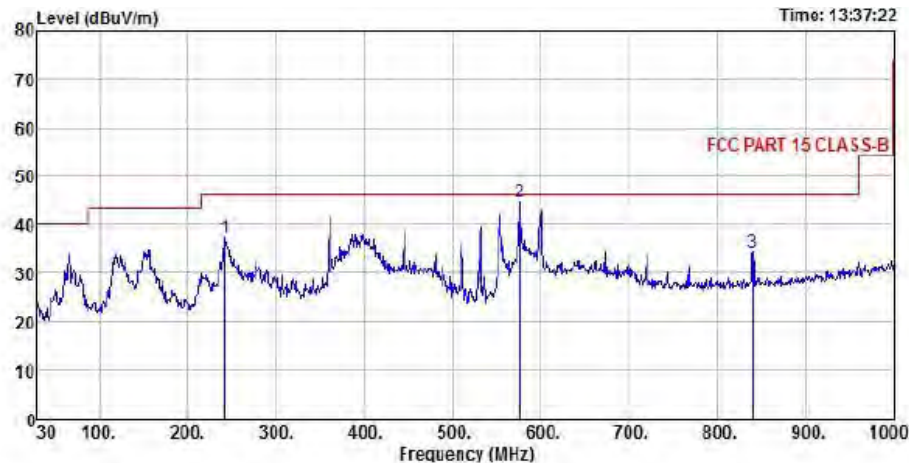
From 30MHz to 1GHz:

WIFI 2.4G
802.11b



Site : site
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 2.4G 802.11b ANT1
Memo :

		ReadAntenna		Cable Preamp		Limit		Over			
		Freq		Level		Factor		Loss Factor		Line Limit	
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Remark	
1	242.43	29.40	11.75	2.13	0.00	43.28	46.00	-2.72	Peak		
2	445.16	25.52	16.30	2.87	0.00	44.69	46.00	-1.31	Peak		
3	839.95	16.86	22.01	3.94	0.00	42.81	46.00	-3.19	Peak		

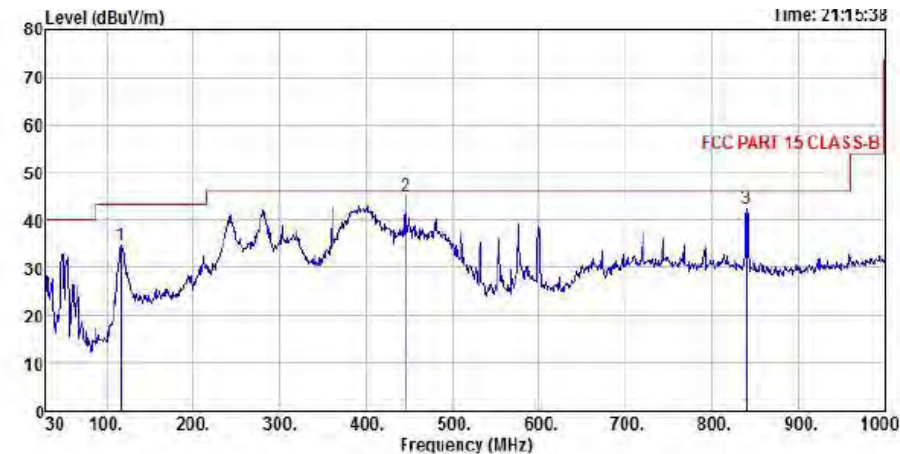


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 2.4G 802.11b ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	242.43	23.21	11.75	2.13	0.00	37.09	46.00 -8.91 Peak
2	576.11	22.83	18.53	3.26	0.00	44.62	46.00 -1.38 Peak
3	839.95	8.42	22.01	3.94	0.00	34.37	46.00 -11.63 Peak

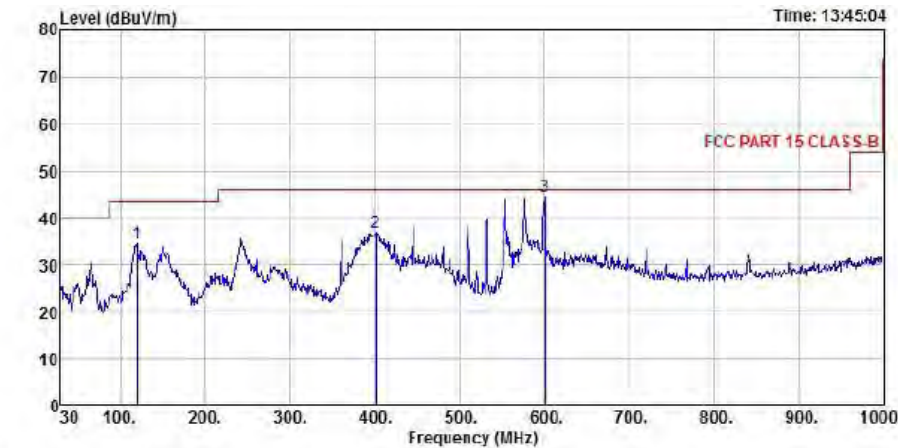
802.11g



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 2.4G 802.11g ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

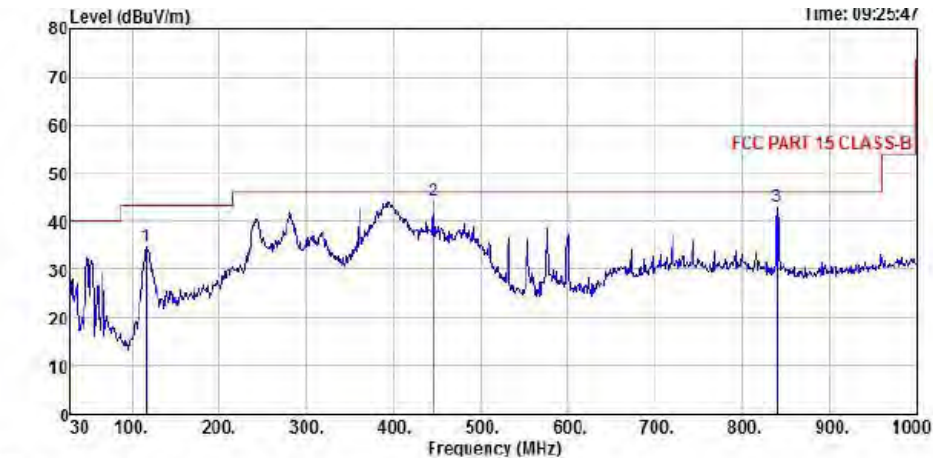
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	116.33	21.66	11.55	1.42	0.00	34.73	43.50 -8.77 Peak
2	445.16	25.91	16.30	2.87	0.00	45.09	46.00 -0.92 Peak
3	839.95	16.50	22.01	3.94	0.00	42.45	46.00 -3.55 Peak



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 2.4G 802.11g ANT1
Memo :

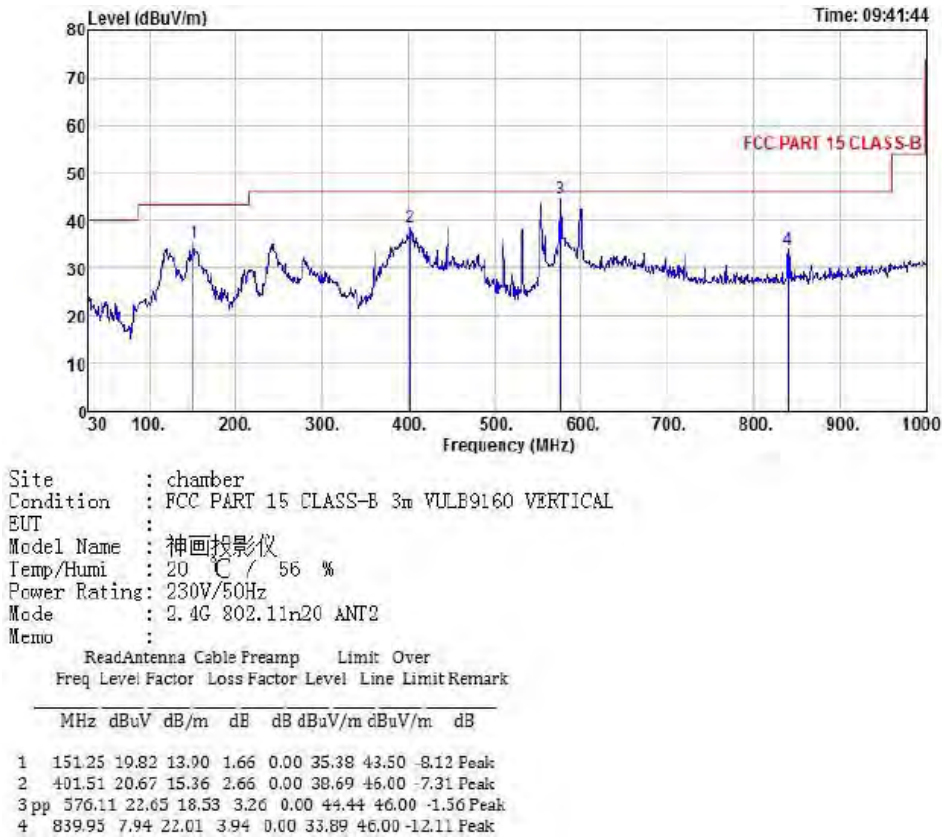
	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	119.24	21.07	12.03	1.44	0.00	34.54	43.50 -8.96 Peak
2	400.54	18.96	15.32	2.65	0.00	36.93	46.00 -9.07 Peak
3pp	600.36	22.02	19.16	3.34	0.00	44.52	46.00 -1.48 Peak

802.11n20

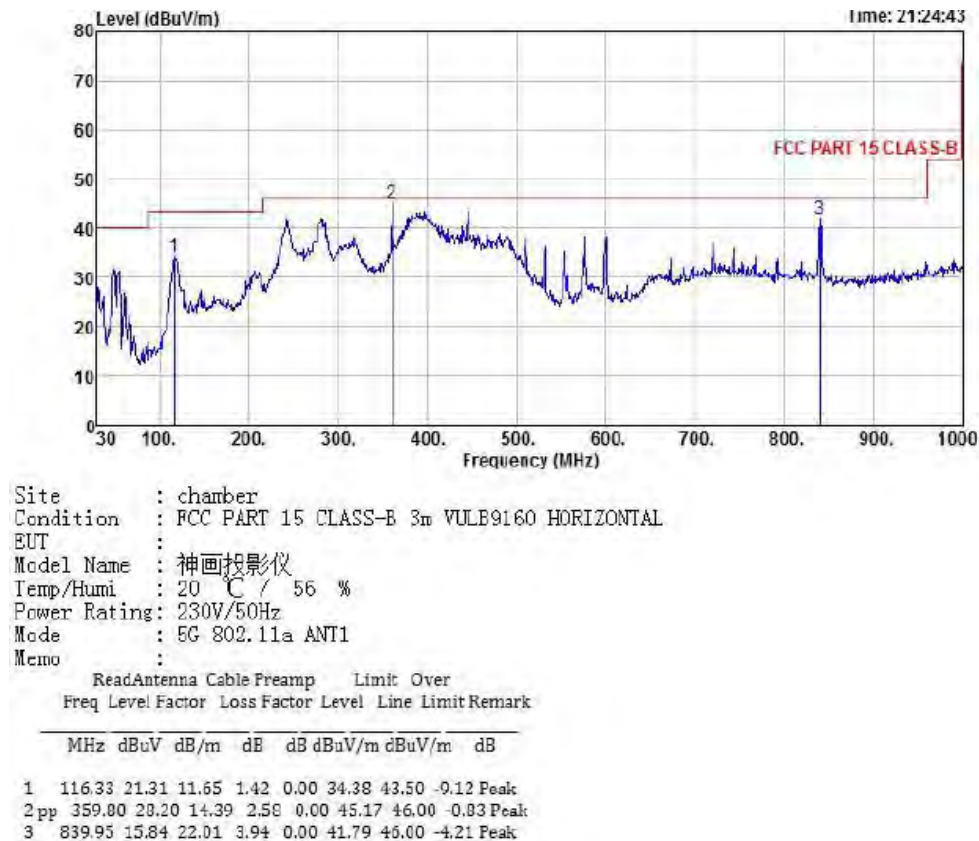


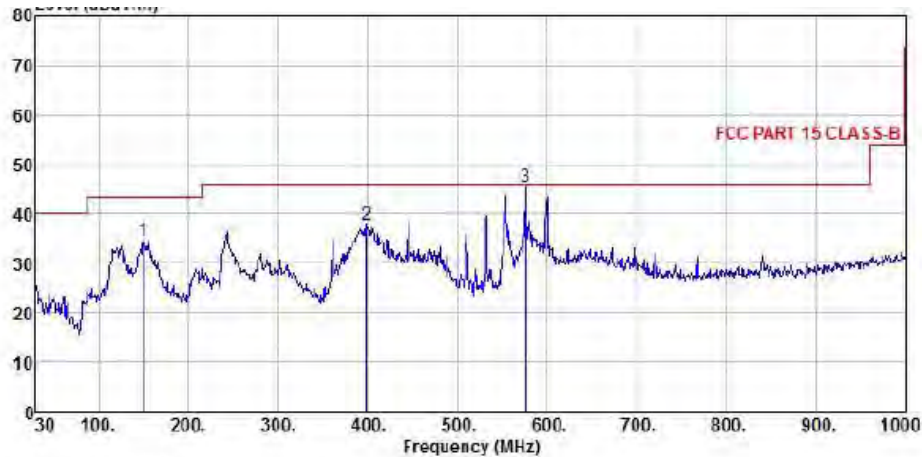
Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 2.4G 802.11n20 ANT2
Memo :

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	116.33	21.69	11.65	1.42	0.00	34.76	43.50 -8.74 Peak
2pp	445.16	21.98	16.30	2.87	0.00	44.15	46.00 -1.85 Peak
3	839.95	17.05	22.01	3.94	0.00	43.00	46.00 -3.00 Peak



WIFI 5G
(5150MHz-5250MHz)
802.11a



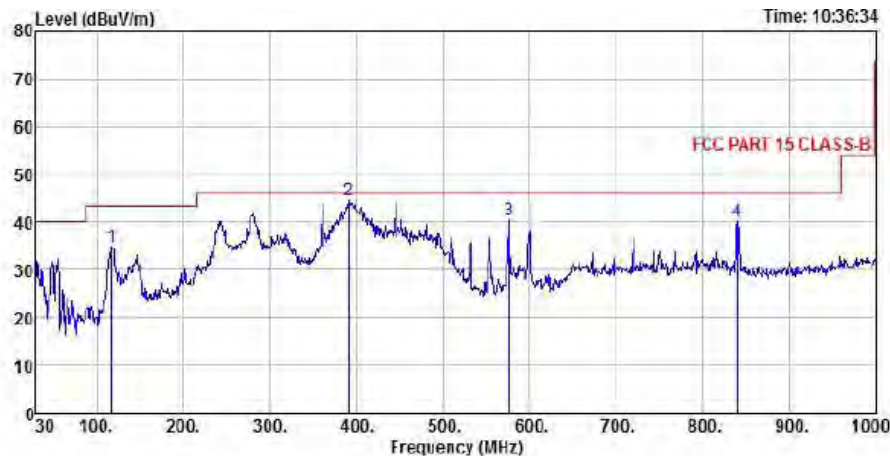


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5G 802.11a ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	150.28	19.01	13.90	1.66	0.00	34.57	43.50 -8.93 Peak
2	398.60	19.84	15.28	2.65	0.00	37.77	46.00 -8.23 Peak
3pp	576.11	23.72	18.53	3.26	0.00	45.51	46.00 -0.49 Peak

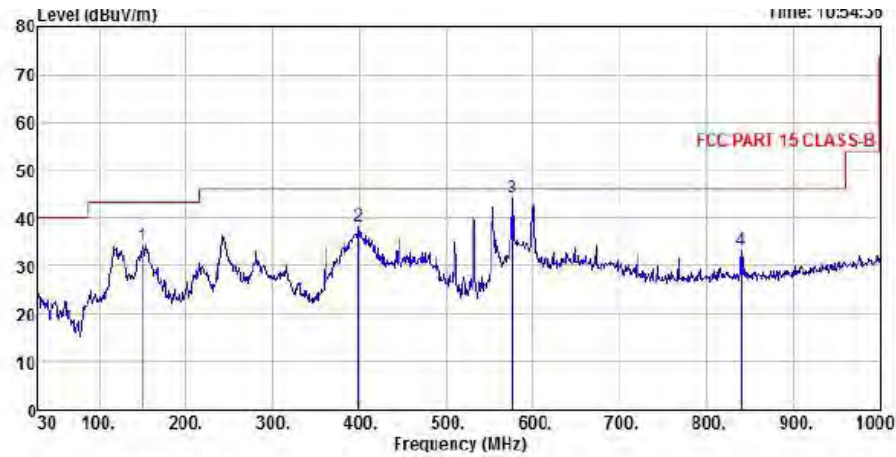
802.11n20



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5G 802.11n20 MIMO
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	117.30	21.57	11.84	1.43	0.00	34.84	43.50 -8.66 Peak
2pp	390.84	26.71	15.10	2.63	0.00	44.44	46.00 -1.56 Peak
3	576.11	18.64	18.53	3.26	0.00	40.43	46.00 -5.57 Peak
4	839.95	14.30	22.01	3.94	0.00	40.25	46.00 -5.75 Peak

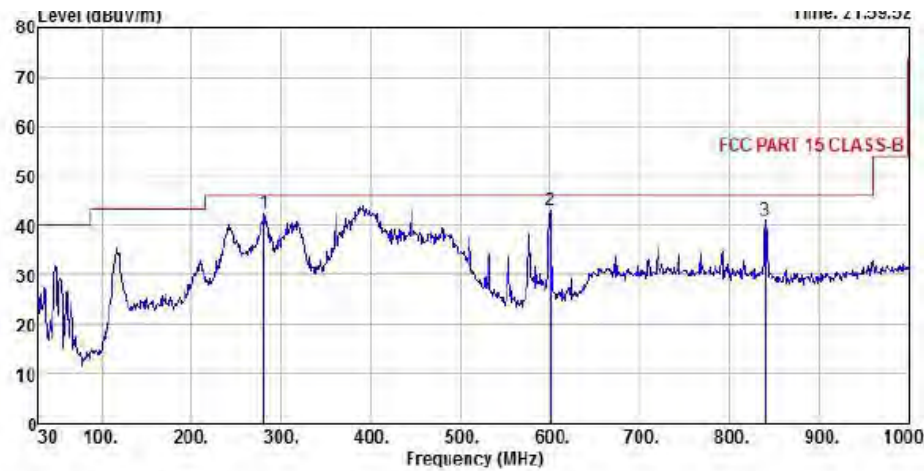


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5G 802.11n20 MIMO
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	149.31	18.60	13.90	1.65	0.00	34.15	43.50	-9.35 Peak
2	398.60	20.40	15.28	2.65	0.00	38.33	46.00	-7.67 Peak
3 pp	576.11	22.61	18.53	3.26	0.00	44.40	46.00	-1.60 Peak
4	839.95	7.38	22.01	3.94	0.00	33.33	46.00	-12.67 Peak

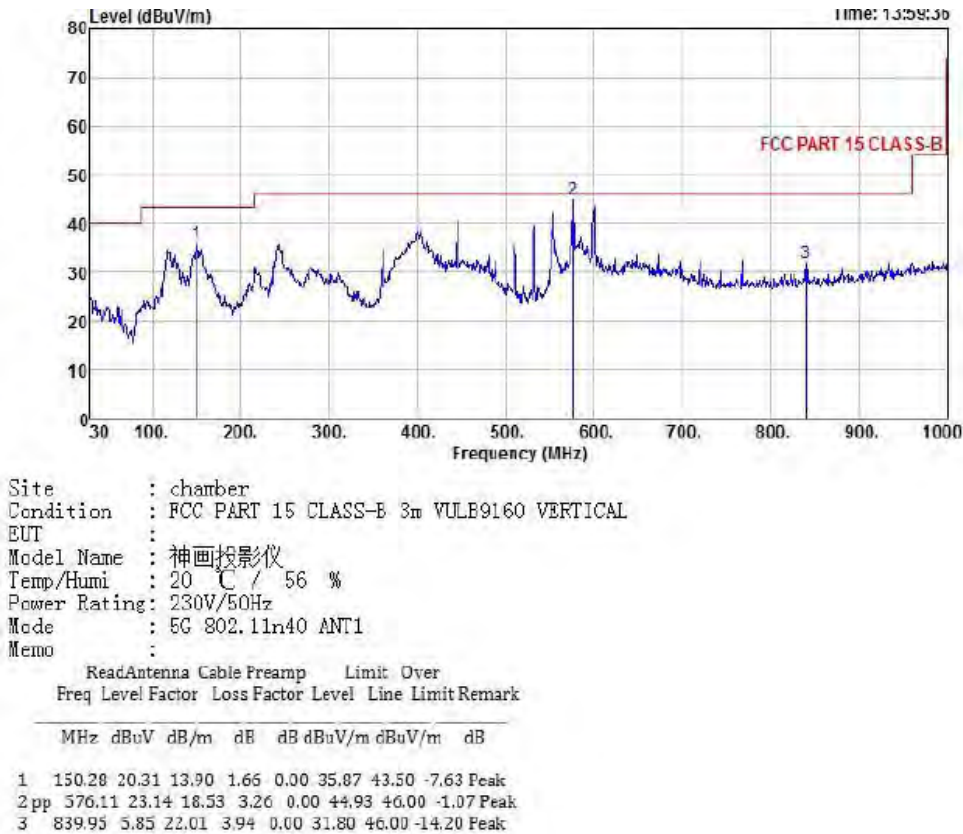
802.11n40



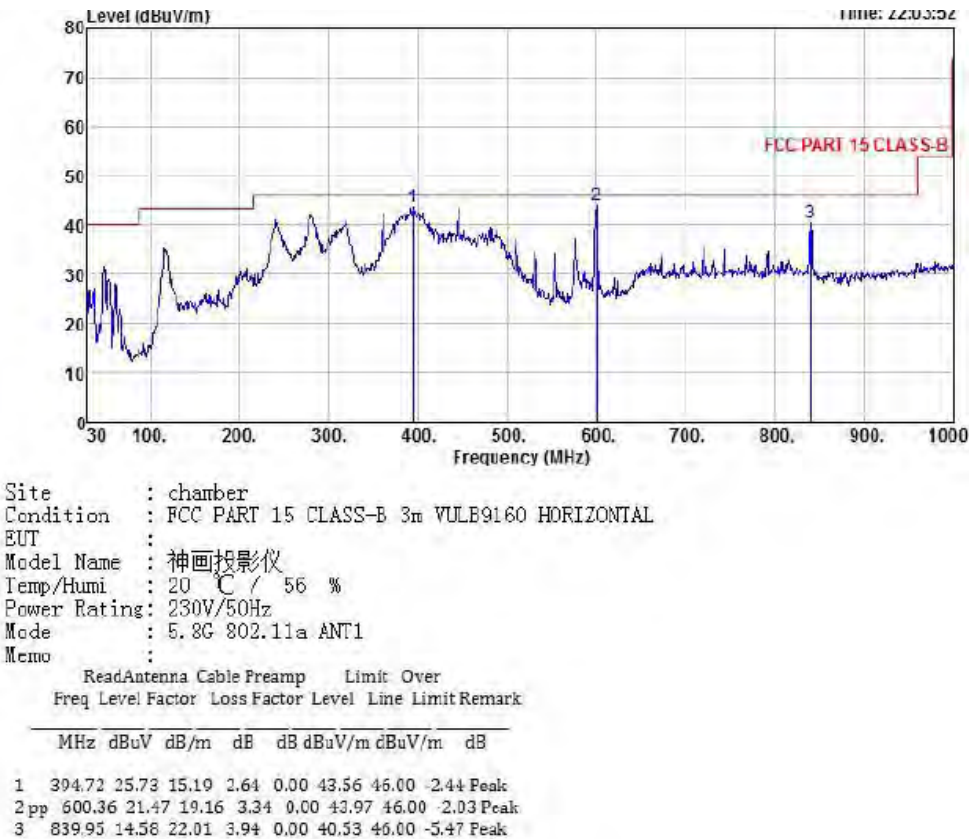
Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5G 802.11n40 ANT1
Memo :

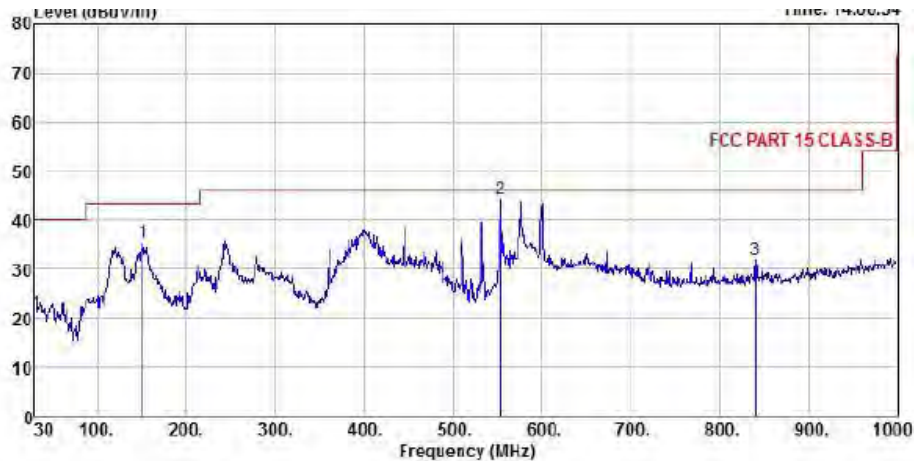
ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	281.23	27.36	12.85	2.22	0.00	42.43	46.00	-3.57 Peak
2 pp	600.36	20.50	19.16	3.34	0.00	43.00	46.00	-3.00 Peak
3	839.95	15.11	22.01	3.94	0.00	41.06	46.00	-4.94 Peak



(5725MHz-5850MHz)
802.11a



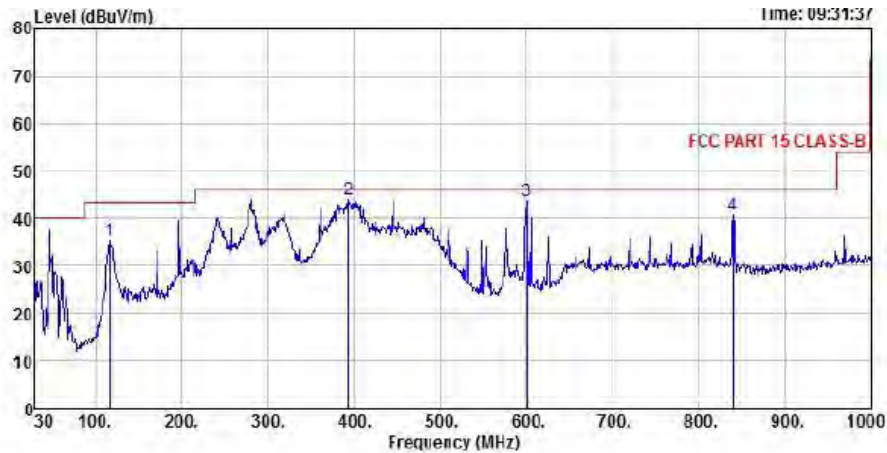


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5.8G 802.11a ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	151.25	19.75	13.90	1.66	0.00	35.31	43.50 -8.19 Peak
2	553.80	23.10	18.02	3.18	0.00	44.30	46.00 -1.70 Peak
3	839.95	5.99	22.01	3.94	0.00	31.94	46.00 -14.06 Peak

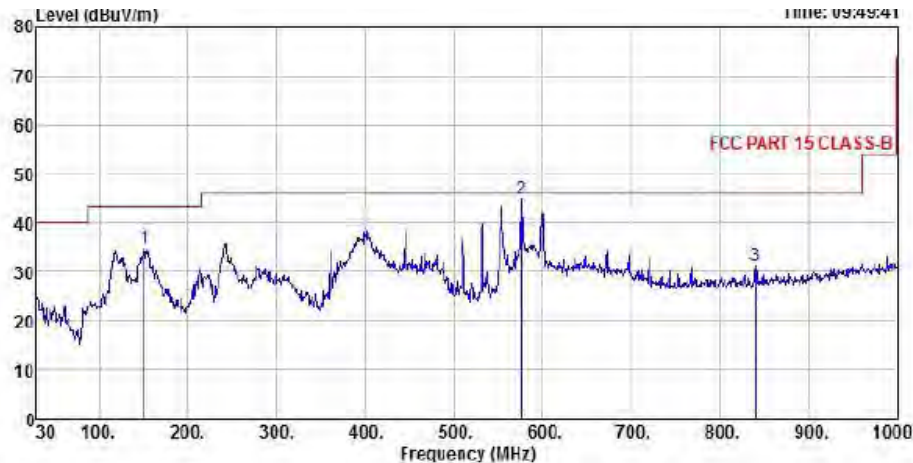
802.11n20



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5.8G 802.11n20 ANT2
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	116.33	22.31	11.65	1.42	0.00	35.38	43.50 -8.12 Peak
2	393.75	25.01	15.19	2.64	0.00	43.84	46.00 -2.16 Peak
3	600.36	21.13	19.16	3.34	0.00	43.63	46.00 -2.37 Peak
4	839.95	14.68	22.01	3.94	0.00	40.63	46.00 -5.37 Peak

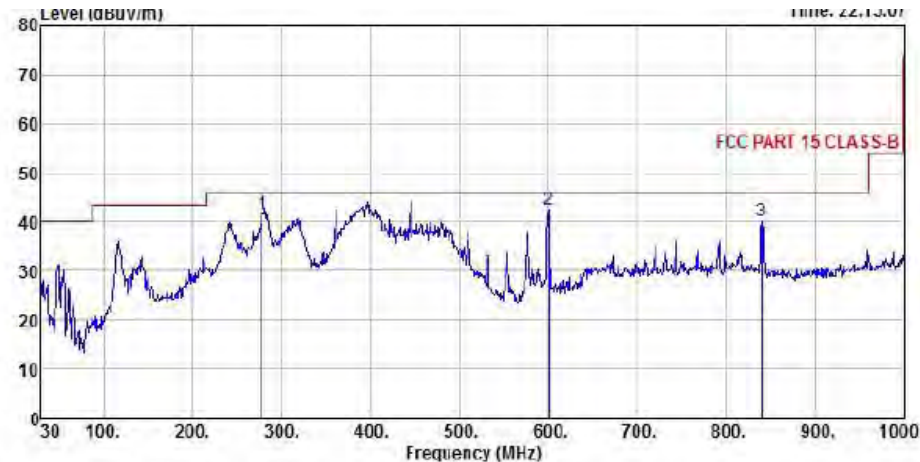


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5.8G 802.11n20 ANT2
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	151.25	19.16	13.90	1.66	0.00	34.72	43.50	-8.78 Peak
2	576.11	23.09	18.53	3.26	0.00	44.89	46.00	-1.12 Peak
3	839.95	5.34	22.01	3.94	0.00	31.29	46.00	-14.71 Peak

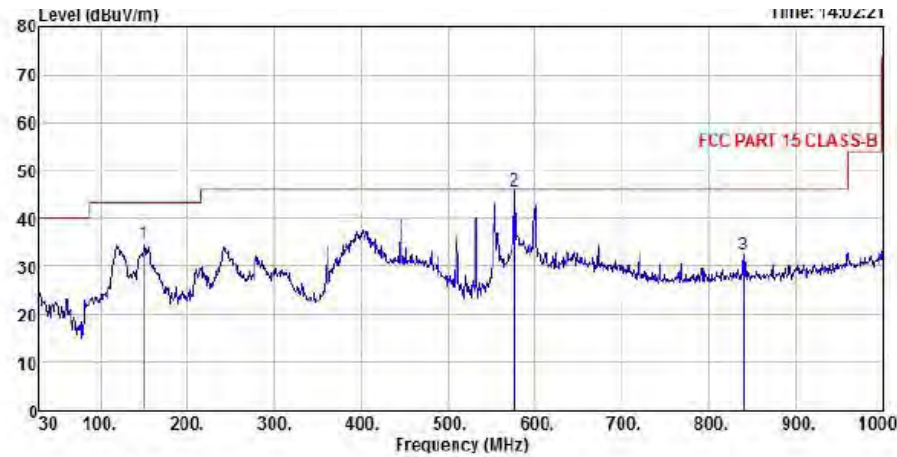
802.11n40



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5.8G 802.11n40 ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

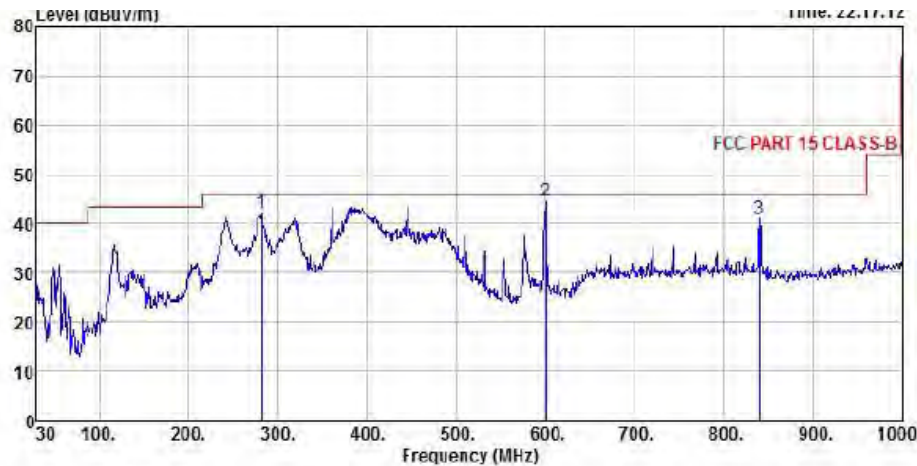
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	278.32	26.77	12.74	1.20	0.00	41.71	46.00	-4.29 Peak
2	600.36	20.04	19.16	3.34	0.00	42.54	46.00	-3.46 Peak
3	839.95	14.16	22.01	3.94	0.00	40.11	46.00	-5.89 Peak



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 5.8G 802.11n40 ANT1
Memo :

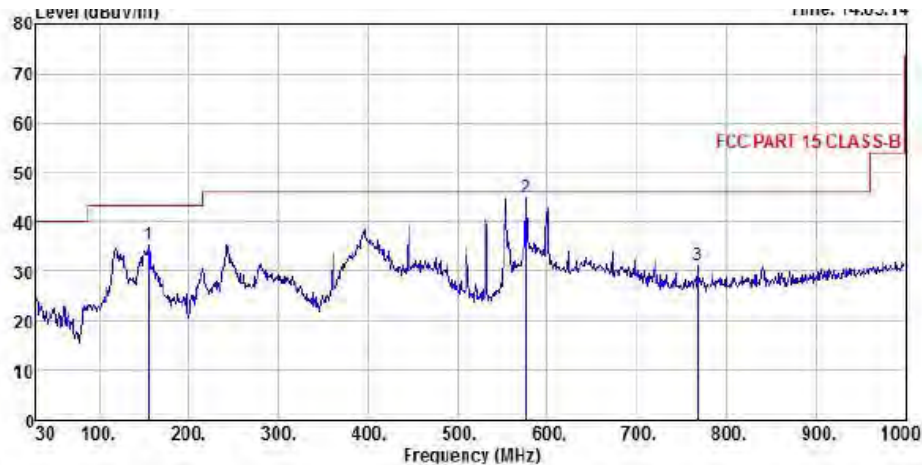
		ReadAntenna		Cable Preamp		Limit		Over			
		Freq	Level	Factor	Loss Factor	Level	Line	Limit	Remark		
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	150.28	19.16	13.90	1.66	0.00	34.72	43.50	-8.78	Peak		
2	576.11	23.83	18.53	3.26	0.00	45.62	46.00	-0.38	Peak		
3	839.95	6.58	22.01	3.94	0.00	32.53	46.00	-13.47	Peak		

802.11ac20



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac20 ANT1
Memo :

		ReadAntenna		Cable Preamp		Limit		Over			
		Freq	Level	Factor	Loss Factor	Level	Line	Limit	Remark		
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	282.20	27.10	12.85	2.24	0.00	42.19	46.00	-3.81	Peak		
2	600.36	22.04	19.16	3.34	0.00	44.54	46.00	-1.46	Peak		
3	839.95	15.00	22.01	3.94	0.00	40.95	46.00	-5.05	Peak		

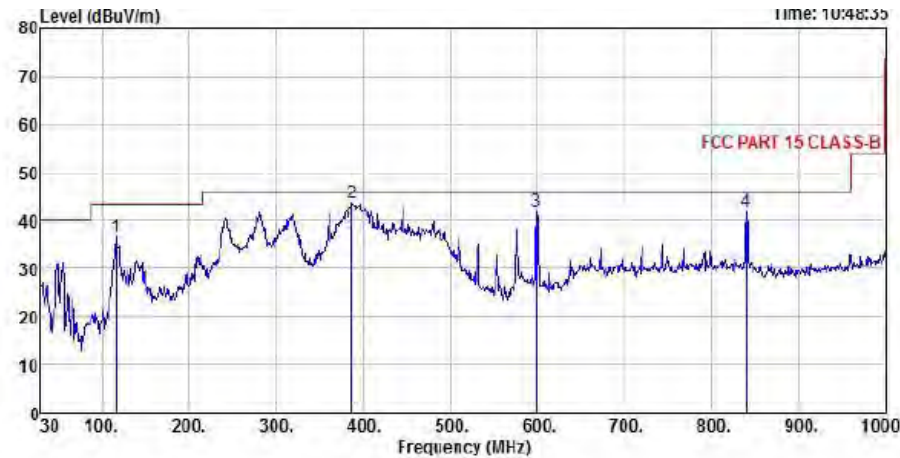


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac20 ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	155.13	19.78	13.89	1.67	0.00	35.34	43.50	-8.16 Peak
2pp	576.11	23.00	18.53	3.26	0.00	44.79	46.00	-1.21 Peak
3	768.17	6.03	21.39	3.80	0.00	31.22	46.00	-14.78 Peak

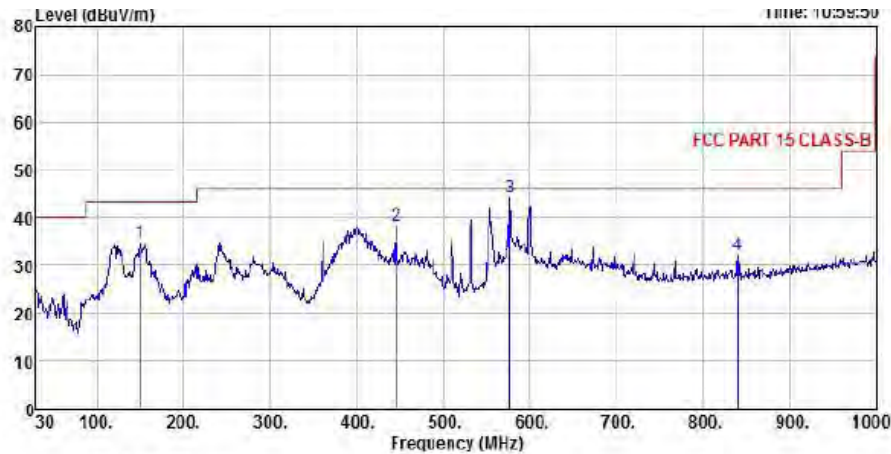
802.11ac40



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac40 MIMO
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	116.33	23.46	11.55	1.42	0.00	36.53	43.50	-6.97 Peak
2pp	386.96	26.04	15.01	2.63	0.00	43.69	46.00	-2.32 Peak
3	599.39	19.36	19.16	3.34	0.00	41.86	46.00	-4.14 Peak
4	839.95	15.89	22.01	3.94	0.00	41.84	46.00	-4.16 Peak

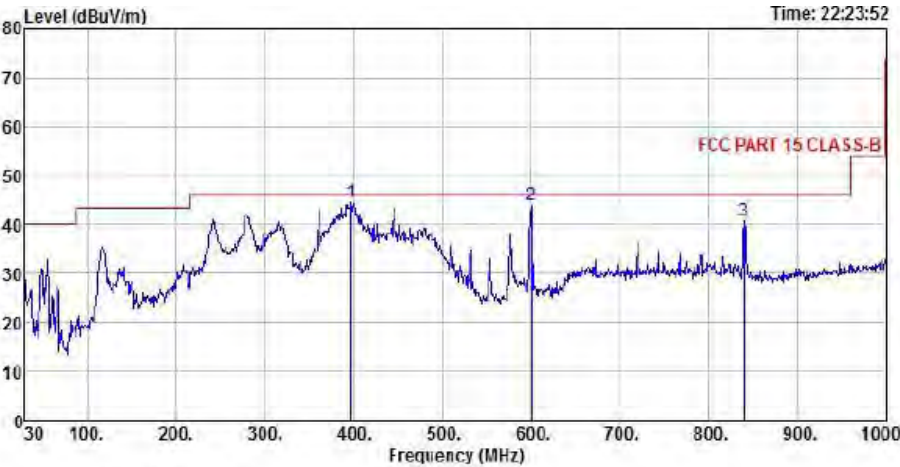


Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac40 MIMO
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	150.28	19.26	13.90	1.66	0.00	34.82	43.50 -8.68 Peak
2	445.16	19.25	16.30	2.87	0.00	38.42	46.00 -7.58 Peak
3pp	577.08	22.33	18.58	3.26	0.00	44.17	46.00 -1.83 Peak
4	839.95	6.08	22.01	3.94	0.00	32.03	46.00 -13.97 Peak

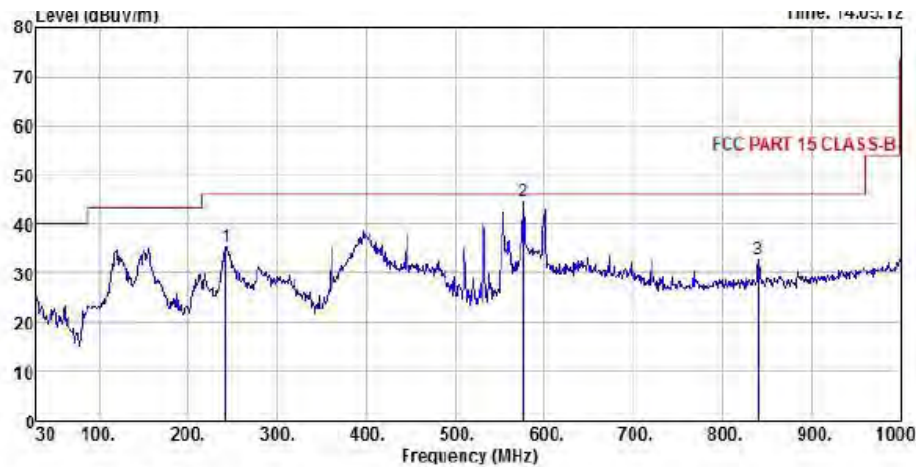
802.11ac80



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac80 ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1pp	396.66	26.63	15.23	2.64	0.00	44.50	46.00 -1.50 Peak
2	600.36	21.43	19.16	3.34	0.00	43.93	46.00 -2.07 Peak
3	839.95	14.82	22.01	3.94	0.00	40.77	46.00 -5.23 Peak



Site : chamber
Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL
EUT :
Model Name : 神画投影仪
Temp/Humi : 20 °C / 56 %
Power Rating: 230V/50Hz
Mode : 802.11ac80 ANT1
Memo :

ReadAntenna Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	242.43	21.62	11.75	2.13	0.00	35.50	46.00	-10.50	Peak
2pp	576.11	22.78	18.53	3.26	0.00	44.57	46.00	-1.43	Peak
3	839.95	6.88	22.01	3.94	0.00	32.83	46.00	-13.17	Peak

**Above 1G:
WIFI 2.4G**

802.11b, traffic mode; Channel 1

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
2412	106.87	-3.54	Horizontal	103.33	/	/	Peak
2412	/	-3.54	Horizontal	/	/	/	Average
4824	42.62	4.76	Horizontal	47.38	74	26.62	Peak
4824	/	4.76	Horizontal	/	54	/	Average
7236	43.32	11.24	Horizontal	54.56	74	19.44	Peak
7236	27.41	11.24	Horizontal	38.65	54	15.35	Average
2412	99.23	-3.54	Vertical	95.69	/	/	Peak
2412	/	-3.54	Vertical	/	/	/	Average
4824	41.81	4.76	Vertical	46.57	74	27.43	Peak
4824	/	4.76	Vertical	/	54	/	Average
7236	42.48	11.24	Vertical	53.72	74	20.28	Peak
7236	28.44	11.24	Vertical	39.68	54	14.32	Average

Note: 1, Total=Reading+Correct factor

2, 2412 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

802.11g, traffic mode; Channel 6

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
2437	106.54	-3.49	Horizontal	103.05	/	/	Peak
2437	/	-3.49	Horizontal	/	/	/	Average
4874	42.56	4.81	Horizontal	47.37	74	26.63	Peak
4874	/	4.81	Horizontal	/	54	/	Average
7311	43.24	11.56	Horizontal	54.80	74	19.20	Peak
7311	29.29	11.56	Horizontal	40.85	54	13.15	Average
2437	99.95	-3.49	Vertical	96.46	/	/	Peak
2437	/	-3.49	Vertical	/	/	/	Average
4874	41.65	4.81	Vertical	46.46	74	27.54	Peak
4874	/	4.81	Vertical	/	54	/	Average
7311	41.40	11.56	Vertical	52.96	74	21.04	Peak
7311	28.01	11.56	Vertical	39.57	54	14.43	Average

Note: 1, Total=Reading+Correct factor

2, 2437 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise

802.11n20, traffic mode; Channel 6

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
2437	106.29	-3.49	Horizontal	102.80	/	/	Peak
2437	/	-3.49	Horizontal	/	/	/	Average
4874	42.06	4.81	Horizontal	46.87	74	27.13	Peak
4874	/	4.81	Horizontal	/	54	/	Average
7311	42.84	11.56	Horizontal	54.40	74	19.60	Peak
7311	28.45	11.56	Horizontal	40.01	54	13.99	Average
2437	102.03	-3.49	Vertical	98.54	/	/	Peak
2437	/	-3.49	Vertical	/	/	/	Average
4874	39.34	4.81	Vertical	44.15	74	29.85	Peak
4874	/	4.81	Vertical	/	54	/	Average
7311	41.34	11.56	Vertical	52.90	74	21.10	Peak
7311	25.54	11.56	Vertical	37.10	54	16.90	Average

/Note: 1, Total=Reading+Correct factor

2, 2437 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise

WIFI 5G(5150MHz-5250MHz)

802.11a, traffic mode; Channel 36

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5180	100.06	8.76	Horizontal	108.82	/	/	Peak
5180	/	8.76	Horizontal	/	/	/	Average
10360	32.10	17.86	Horizontal	49.96	74	24.04	Peak
10360	/	17.86	Horizontal	/	54	/	Average
15540	32.80	28.54	Horizontal	61.34	74	12.66	Peak
15540	17.23	28.54	Horizontal	45.77	54	8.23	Average
5180	100.01	8.76	Vertical	108.77	/	/	Peak
5180	/	8.76	Vertical	/	/	/	Average
10360	34.84	17.86	Vertical	52.70	74	21.30	Peak
10360	/	17.86	Vertical	/	54	/	Average
15540	31.75	28.54	Vertical	60.29	74	13.71	Peak
15540	16.31	28.54	Vertical	44.85	54	9.15	Average

Note: 1, Total=Reading+Correct factor

2, 5180 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

802.11n20, traffic mode; Channel 36

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5180	100.55	8.76	Horizontal	109.31	/	/	Peak
5180	/	8.76	Horizontal	/	/	/	Average
10360	34.11	17.86	Horizontal	51.97	74	22.03	Peak
10360	/	17.86	Horizontal	/	54	/	Average
15540	32.57	28.54	Horizontal	61.11	74	12.89	Peak
15540	19.22	28.54	Horizontal	47.76	54	6.24	Average
5180	99.95	8.76	Vertical	108.71	/	/	Peak
5180	/	8.76	Vertical	/	/	/	Average
10360	33.76	17.86	Vertical	51.62	74	22.38	Peak
10360	/	17.86	Vertical	/	54	/	Average
15540	30.89	28.54	Vertical	59.43	74	14.57	Peak
15540	18.36	28.54	Vertical	46.90	54	7.10	Average

Note: 1, Total=Reading+Correct factor

2, 5180 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

802.11n40, traffic mode; Channel 38

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5190	99.06	8.81	Horizontal	107.87	/	/	Peak
5190	/	8.81	Horizontal	/	/	/	Average
10380	33.08	18.04	Horizontal	51.12	74	22.88	Peak
10380	/	18.04	Horizontal	/	54	/	Average
15570	32.68	28.63	Horizontal	61.31	74	12.69	Peak
15570	15.23	28.63	Horizontal	43.86	54	10.14	Average
5190	100.21	8.81	Vertical	109.02	/	/	Peak
5190	/	8.81	Vertical	/	/	/	Average
10380	34.65	18.04	Vertical	52.69	74	21.31	Peak
10380	/	18.04	Vertical	/	54	/	Average
15570	30.98	28.63	Vertical	59.61	74	14.39	Peak
15570	16.73	28.63	Vertical	45.36	54	8.64	Average

Note: 1, Total=Reading+Correct factor

2, 5190 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

WIFI 5G(5725MHz-5850MHz)

802.11a, traffic mode; Channel 149

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5745	95.24	10.12	Horizontal	105.36	/	/	Peak
5745	/	10.12	Horizontal	/	/	/	Average
11490	31.05	21.45	Horizontal	52.5	74	21.50	Peak
11490	/	21.45	Horizontal	/	54	/	Average
17235	33.21	31.25	Horizontal	64.46	74	9.54	Peak
17235	18.56	31.25	Horizontal	49.81	54	4.19	Average
5745	97.58	10.12	Vertical	107.70	/	/	Peak
5745	/	10.12	Vertical	/	/	/	Average
11490	33.70	21.45	Vertical	55.15	74	18.85	Peak
11490	/	21.45	Vertical	/	54	/	Average
17235	29.87	31.25	Vertical	61.12	74	12.88	Peak
17235	17.21	31.25	Vertical	48.46	54	5.54	Average

Note: 1, Total=Reading+Correct factor

2, 5745 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

802.11n20, traffic mode; Channel 149

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5745	97.66	10.12	Horizontal	107.78	/	/	Peak
5745	/	10.12	Horizontal	/	/	/	Average
11490	32.42	21.45	Horizontal	53.87	74	20.13	Peak
11490	/	21.45	Horizontal	/	54	/	Average
17235	30.89	31.25	Horizontal	62.14	74	11.86	Peak
17235	20.03	31.25	Horizontal	51.28	54	2.72	Average
5745	101.23	10.12	Vertical	111.35	/	/	Peak
5745	/	10.12	Vertical	/	/	/	Average
11490	31.75	21.45	Vertical	53.20	74	20.80	Peak
11490	/	21.45	Vertical	/	54	/	Average
17235	30.15	31.25	Vertical	61.40	74	12.60	Peak
17235	18.69	31.25	Vertical	49.94	54	4.06	Average

Note: 1, Total=Reading+Correct factor

2, 5745 MHz was fundamental signal which can be ignored.

3, Other harmonics are lower than background noise.

802.11n40, traffic mode; Channel 151

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5755	90.86	10.26	Horizontal	101.12	/	/	Peak
5755	/	10.26	Horizontal	/	/	/	Average
11510	29.87	21.61	Horizontal	51.48	74	22.52	Peak
11510	/	21.61	Horizontal	/	54	/	Average
17265	32.16	31.59	Horizontal	63.75	74	10.25	Peak
17265	17.38	31.59	Horizontal	48.97	54	5.03	Average
5755	93.58	10.26	Vertical	103.84	/	/	Peak
5755	/	10.26	Vertical	/	/	/	Average
11510	29.34	21.61	Vertical	50.95	74	23.05	Peak
11510	/	21.61	Vertical	/	54	/	Average
17265	31.72	31.59	Vertical	63.31	74	10.69	Peak
17265	17.63	31.59	Vertical	49.22	54	4.78	Average

Note: 1, Total=Reading+Correct factor
2, 5755 MHz was fundamental signal which can be ignored.
3, Other harmonics are lower than background noise.

802.11ac

802.11ac20, traffic mode; Channel 36

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5180	95.65	8.76	Horizontal	104.41	/	/	Peak
5180	/	8.76	Horizontal	/	/	/	Average
10360	38.68	17.86	Horizontal	56.54	74	17.46	Peak
10360	/	17.86	Horizontal	/	54	/	Average
15540	34.35	28.54	Horizontal	62.89	74	11.11	Peak
15540	18.65	28.54	Horizontal	47.19	54	6.81	Average
5180	100.37	8.76	Vertical	109.13	/	/	Peak
5180	/	8.76	Vertical	/	/	/	Average
10360	37.69	17.86	Vertical	55.55	74	18.45	Peak
10360	/	17.86	Vertical	/	54	/	Average
15540	33.48	28.54	Vertical	62.02	74	11.98	Peak
15540	17.57	28.54	Vertical	46.11	54	7.89	Average

Note: 1, Total=Reading+Correct factor
2, 5180 MHz was fundamental signal which can be ignored.
3, Other harmonics are lower than background noise.

802.11ac40, traffic mode; Channel 151

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5755	93.76	10.26	Horizontal	104.02	/	/	Peak
5755	/	10.26	Horizontal	/	/	/	Average
11510	33.33	21.61	Horizontal	54.94	74	19.06	Peak
11510	/	21.61	Horizontal	/	54	/	Average
17265	35.28	31.59	Horizontal	66.87	74	7.13	Peak
17265	20.12	31.59	Horizontal	51.71	54	2.29	Average
5755	98.78	10.26	Vertical	108.90	/	/	Peak
5755	/	10.26	Vertical	/	/	/	Average
11510	29.55	21.61	Vertical	51.16	74	22.84	Peak
11510	/	21.61	Vertical	/	54	/	Average
17265	32.35	31.59	Vertical	63.94	74	10.06	Peak
17265	18.27	31.59	Vertical	49.86	54	4.14	Average

- Note: 1, Total=Reading+Correct factor
2, 5755 MHz was fundamental signal which can be ignored.
3, Other harmonics are lower than background noise.

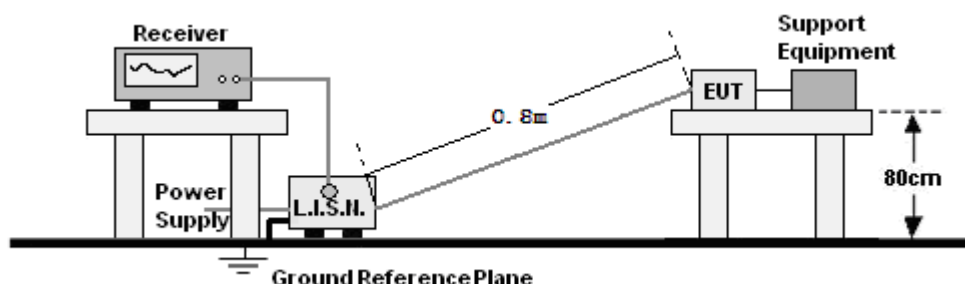
802.11ac80, traffic mode; Channel 42

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Antenna Polarity	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
5210	98.23	8.99	Horizontal	107.22	/	/	Peak
5210	/	8.99	Horizontal	/	/	/	Average
10420	29.78	18.78	Horizontal	48.56	74	25.44	Peak
10420	/	18.78	Horizontal	/	54	/	Average
15630	30.32	29.23	Horizontal	59.55	74	14.45	Peak
15630	18.75	29.23	Horizontal	47.98	54	6.02	Average
5210	97.25	8.99	Vertical	106.24	/	/	Peak
5210	/	8.99	Vertical	/	/	/	Average
10420	27.69	18.78	Vertical	46.47	74	27.53	Peak
10420	/	18.78	Vertical	/	54	/	Average
15630	29.21	29.23	Vertical	58.44	74	15.56	Peak
15630	17.25	29.23	Vertical	46.48	54	7.52	Average

- Note: 1, Total=Reading+Correct factor
2, 5210 MHz was fundamental signal which can be ignored.
3, Other harmonics are lower than background noise.

11. AC POWER LINE CONDUCTED EMISSIONS

11.1 TEST SETUP



11.2 LIMITS

Frequency range (MHz)	Limits dB(μV)	
	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

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

11.3 TEST PROCEDURE

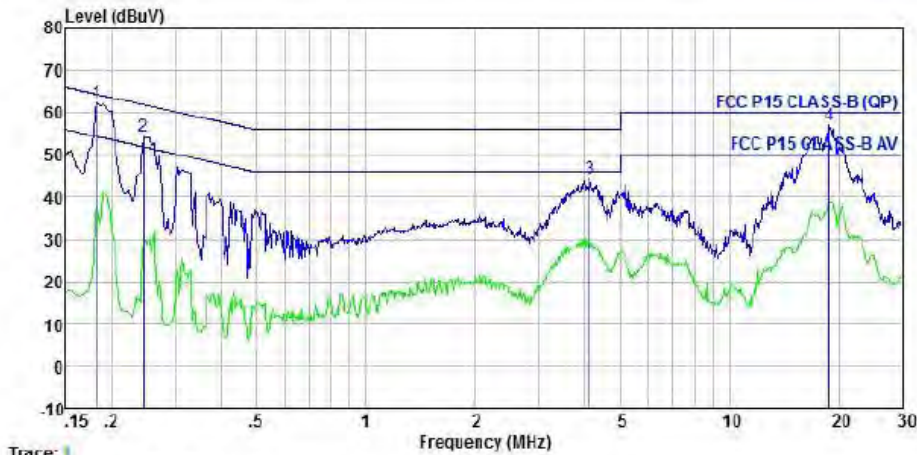
According to description of ANSI C63.4: 2014 sec.13.1.3, the AC power line preliminary conducted emissions measurements were carried out. The preliminary conducted measurements were performed using the spectrum analyzer to observe the emission characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for final AC power line conducted emissions measurements. The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT is connected to LISN and LISN is connected to the reference ground. All other supplemental devices are connected with EUT through other LISN. The distance between EUT and LISN is 80cm. A radio link is established between EUT and the tester. The output power of the EUT is controlled by the tester and driven to maximum value. An initial pre-scan was performed on the live L line and neutral line with peak detector (9kHz RBW). Both average detector and quasi-peak detector are performed at the frequencies with maximized peak emission. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

11.4 RESULTS & PERFORMANCE

Note: All of the EUT Configure Mode and were tested under different antenna setting before, there only show the worst condition of each mode.

WIFI 2.4G

802.11b Ch1



Trace: 1

Site : chamber

Condition : FCC P15 CLASS-B (QP) ENV216(L) LINE

EUT :

Model Name : 神画

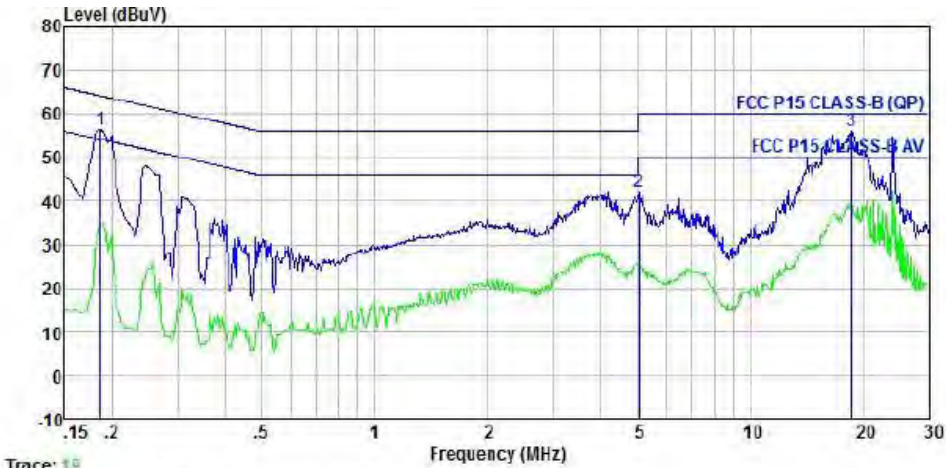
Temp/Humi : 21 °C /56 %

Power Rating: 230V/50Hz

Mode : 802.11b ch1 ANT1

Memo :

	Read	LISN	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB
1	0.18	52.83	9.46	0.23	0.00	62.52	64.42 -1.90 Peak
2	0.24	44.79	9.52	0.20	0.00	54.51	61.95 -7.44 Peak
3	4.14	34.64	9.66	0.14	0.00	44.44	56.00 -11.56 Peak
4	18.92	47.28	9.73	0.11	0.00	57.12	60.00 -2.88 Peak



Trace: 19

Site : chamber

Condition : FCC P15 CLASS-B (QP) ENV216(N) NEUTRAL

EUT :

Model Name : 神画

Temp/Humi : 21 °C /56 %

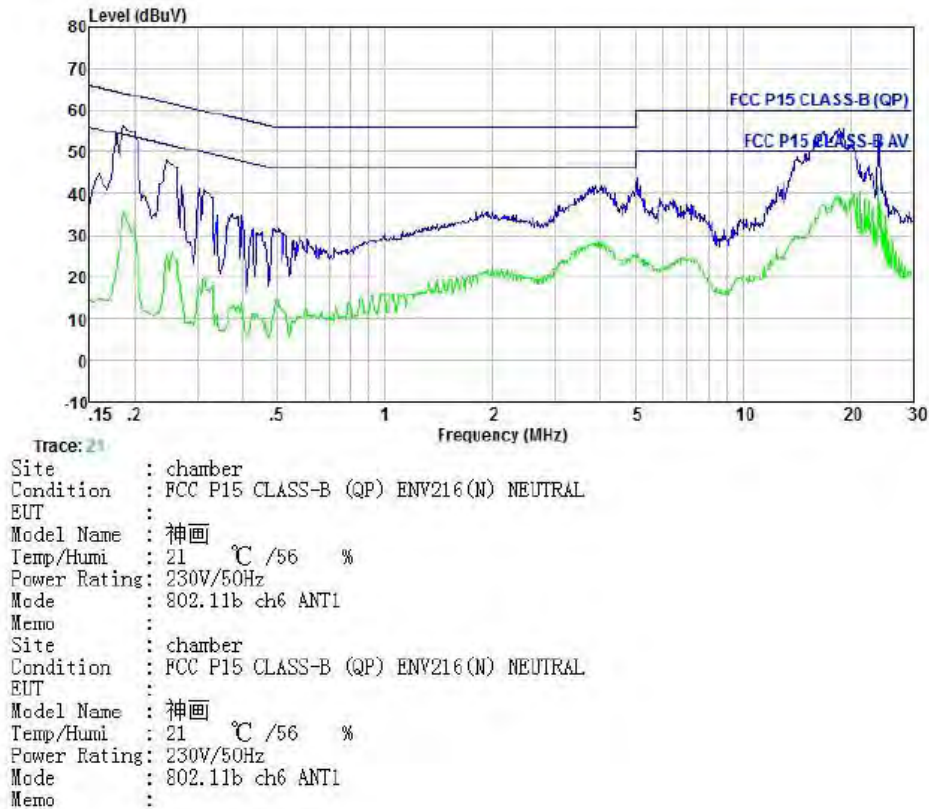
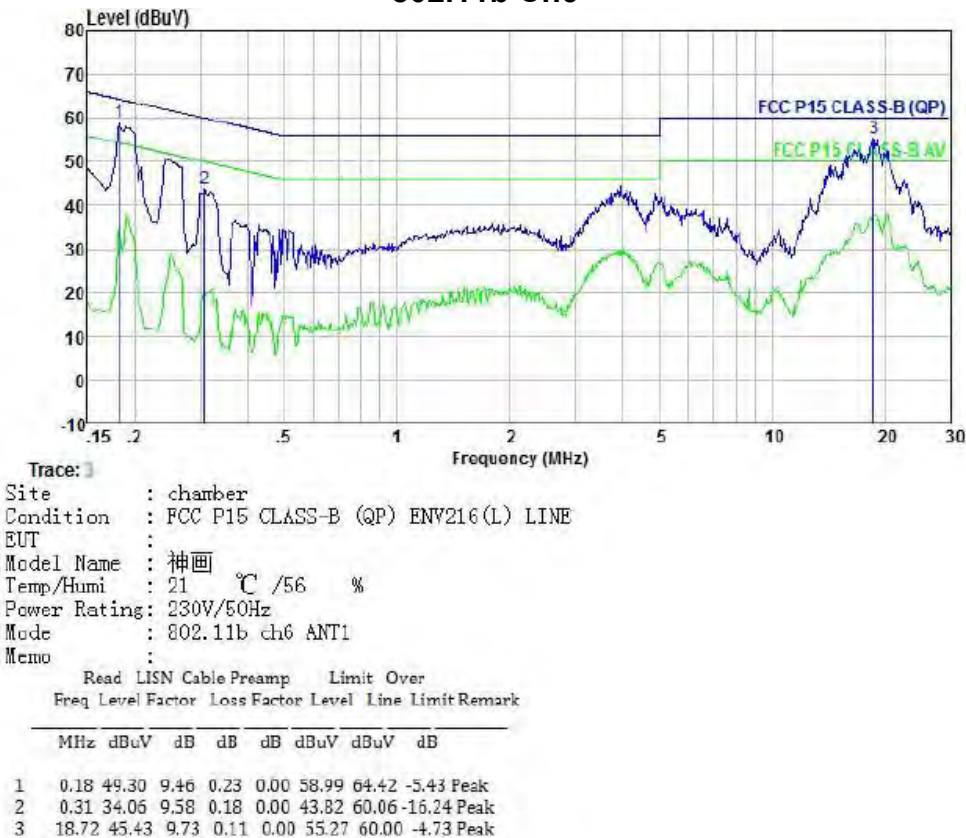
Power Rating: 230V/50Hz

Mode : 802.11b ch1 ANT1

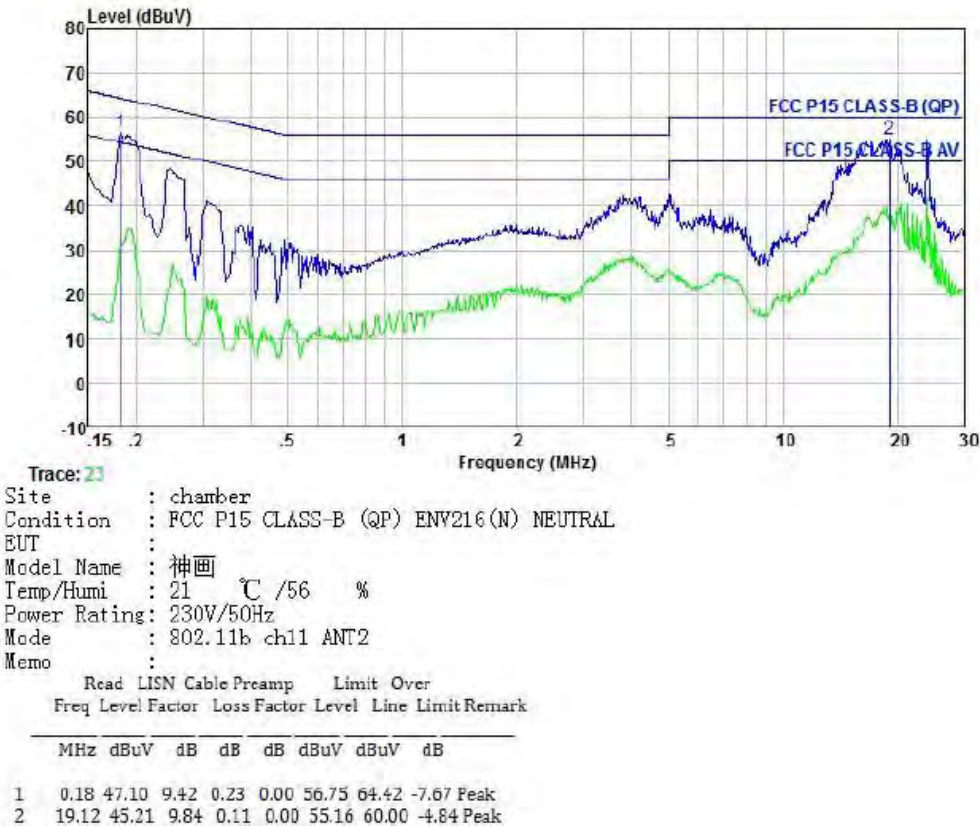
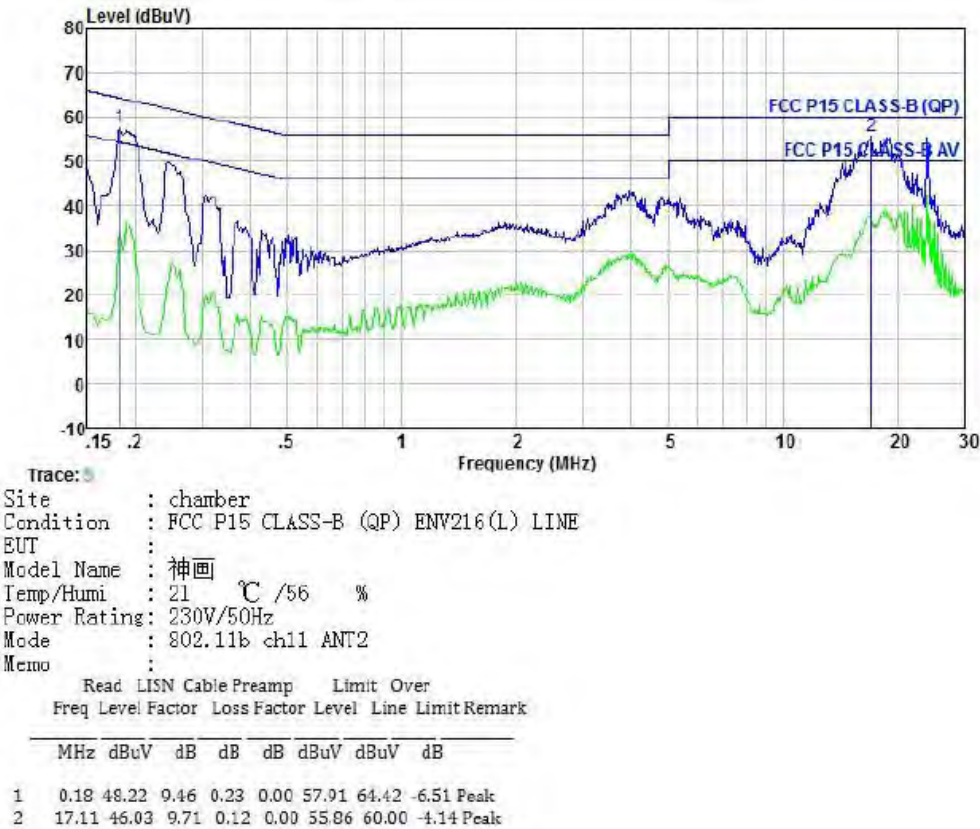
Memo :

	Read	LISN	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB
1	0.19	46.79	9.42	0.23	0.00	56.44	64.20 -7.76 Peak
2	5.06	32.46	9.53	0.15	0.00	42.14	60.00 -17.86 Peak
3	18.62	46.09	9.83	0.11	0.00	56.03	60.00 -3.97 Peak

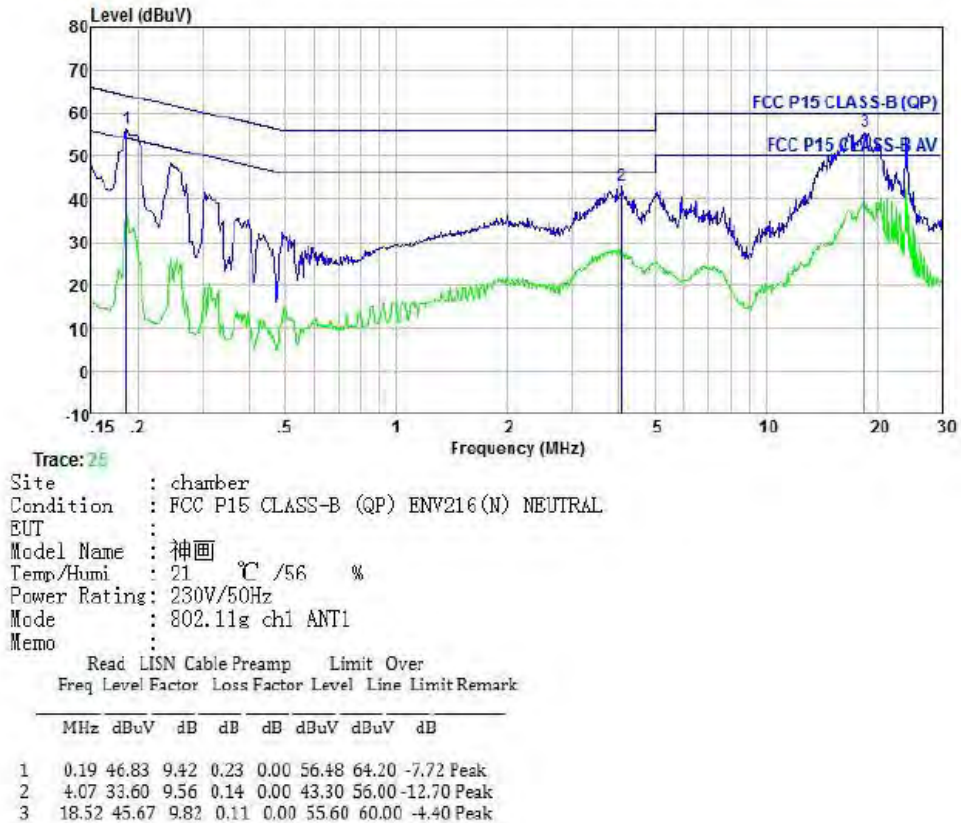
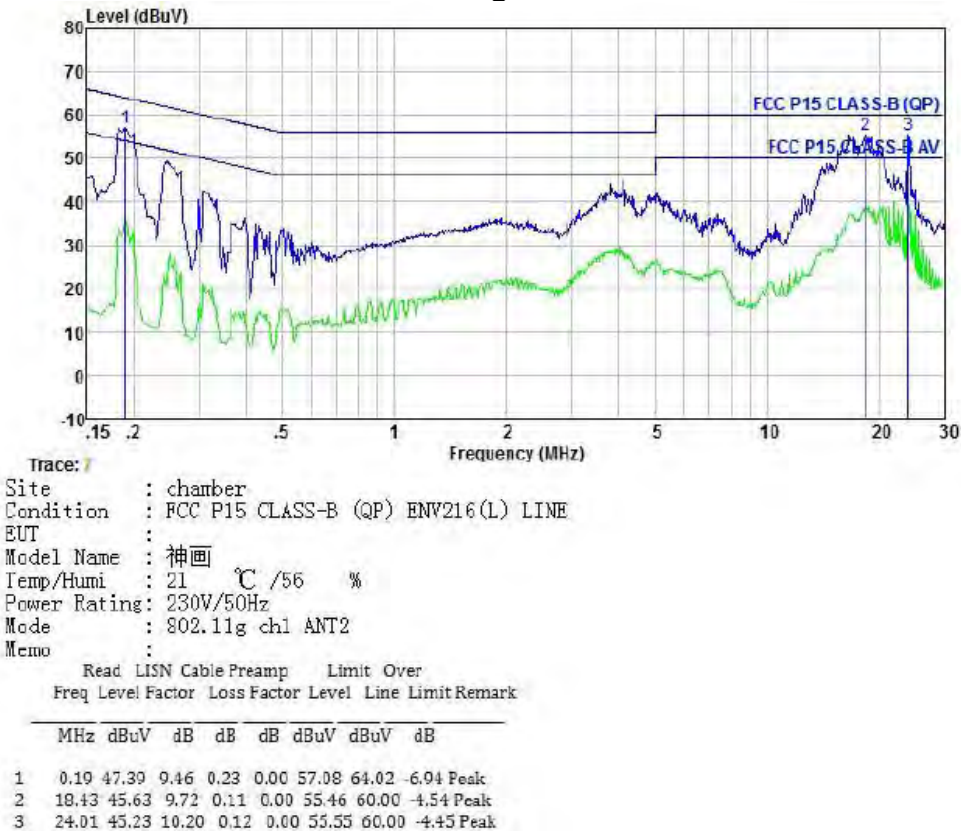
802.11b Ch6



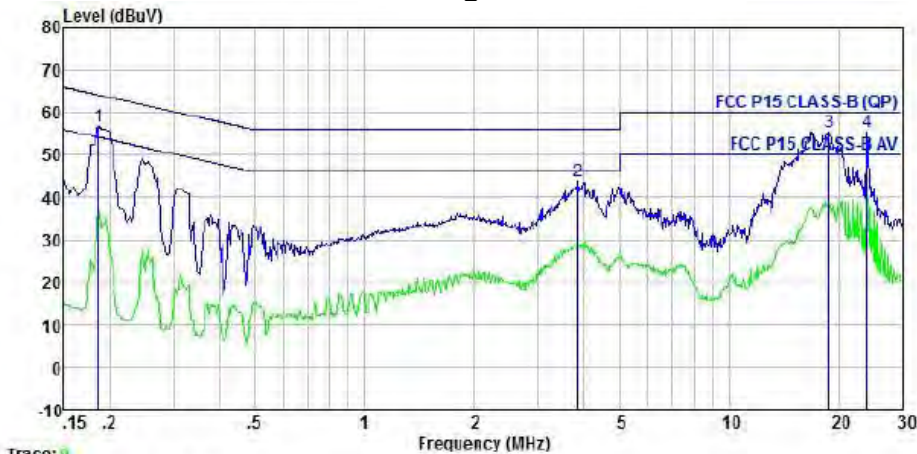
802.11b Ch11



802.11g Ch1



802.11g Ch6

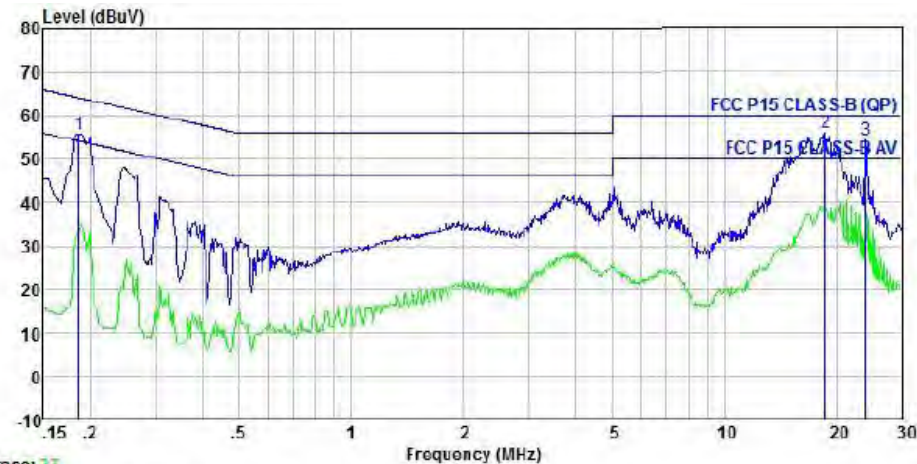


Trace: 9

Site : chamber
Condition : FCC P15 CLASS-B (QP) ENV216(L) LINE
EUT :
Model Name : 神画
Temp/Humi : 21 °C /56 %
Power Rating: 230V/50Hz
Mode : 802.11g ch6 ANT1
Memo :

Read LISN Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB
1	0.19	47.22	9.46	0.23	0.00	56.91	64.20	-7.29 Peak
2	3.86	34.12	9.66	0.14	0.00	43.92	56.00	-12.08 Peak
3	18.92	45.07	9.73	0.11	0.00	55.51	60.00	-4.49 Peak
4	24.01	45.26	10.20	0.12	0.00	55.58	60.00	-4.42 Peak



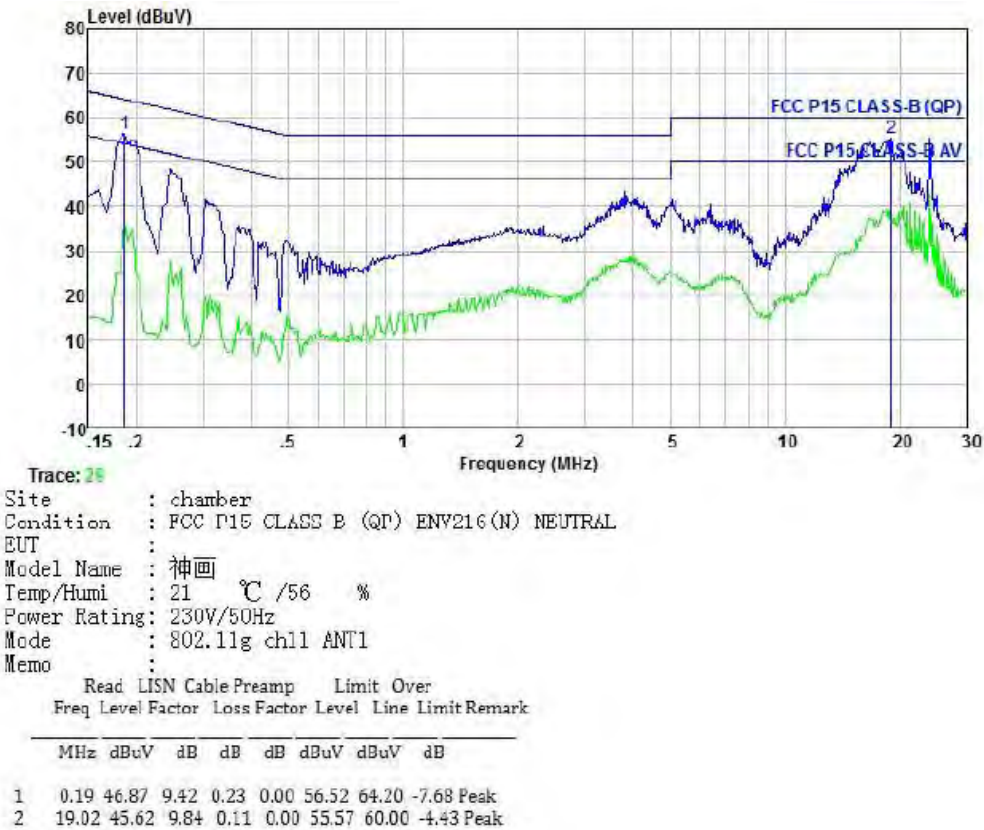
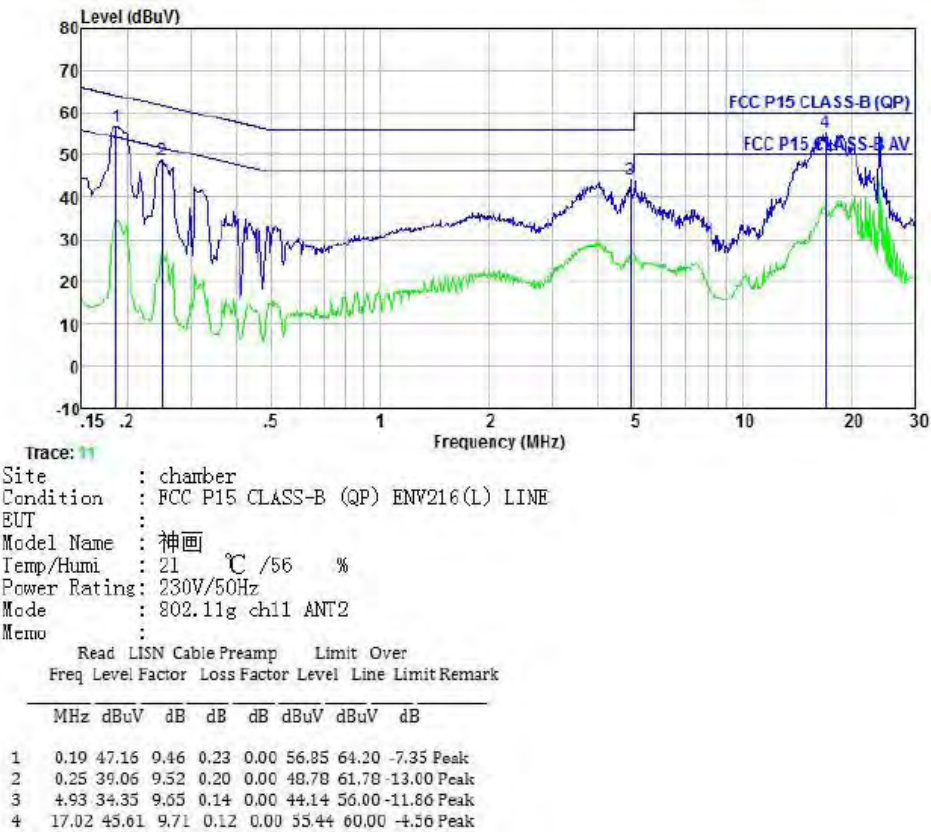
Trace: 27

Site : chamber
Condition : FCC P15 CLASS-B (QP) ENV216(N) NEUTRAL
EUT :
Model Name : 神画
Temp/Humi : 21 °C /56 %
Power Rating: 230V/50Hz
Mode : 802.11g ch6 ANT2
Memo :

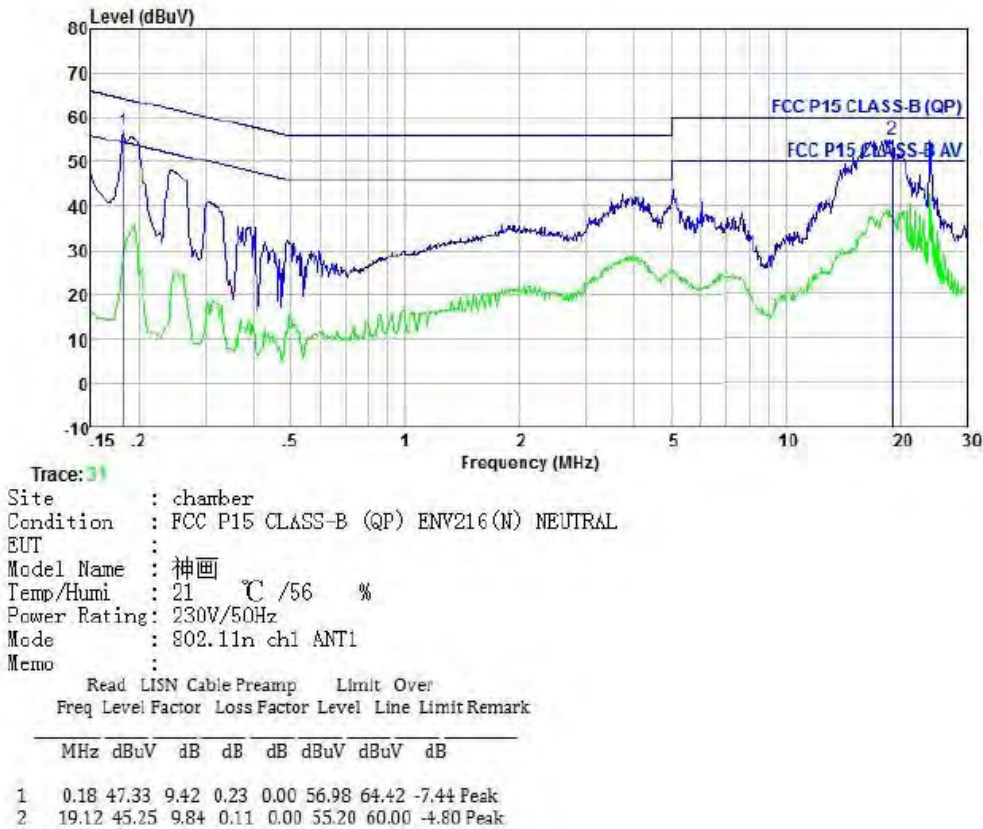
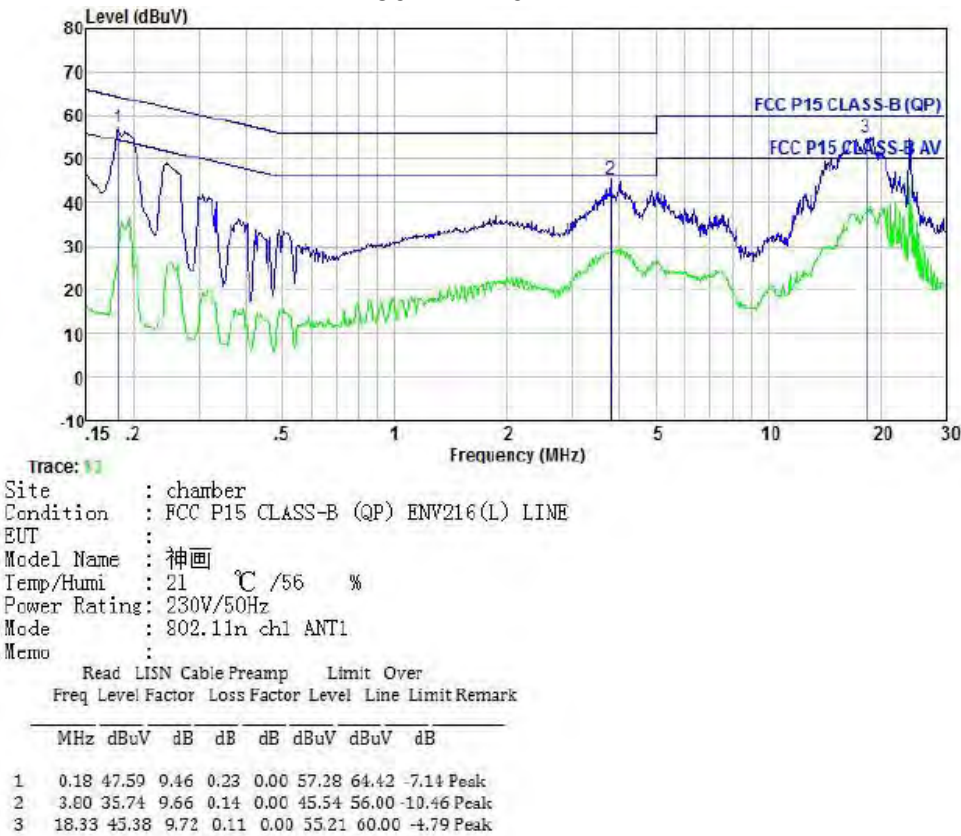
Read LISN Cable Preamp Limit Over
Freq Level Factor Loss Factor Level Line Limit Remark

	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB
1	0.19	46.21	9.42	0.23	0.00	55.86	64.20	-8.34 Peak
2	18.72	46.23	9.83	0.11	0.00	56.17	60.00	-3.83 Peak
3	24.01	44.28	9.92	0.12	0.00	54.32	60.00	-5.68 Peak

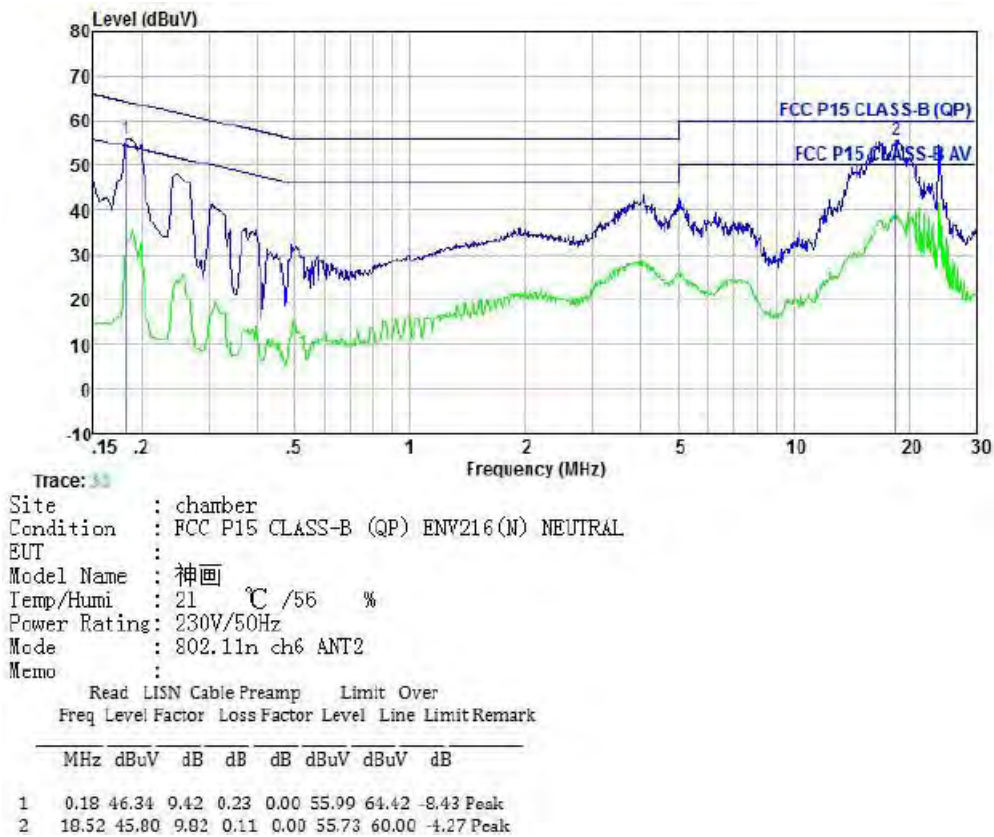
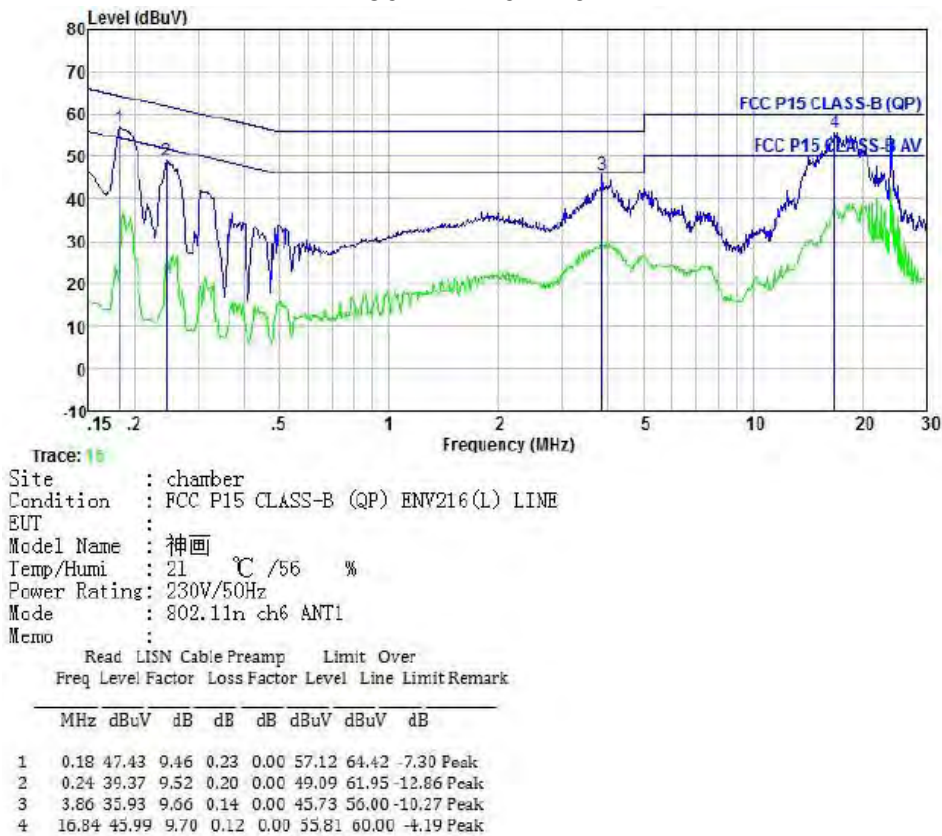
802.11g Ch11



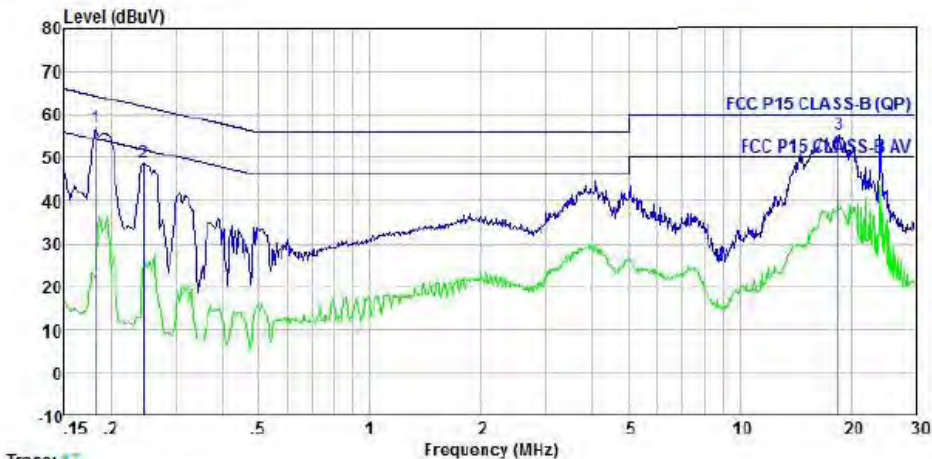
802.11n20 Ch1



802.11n20 Ch6

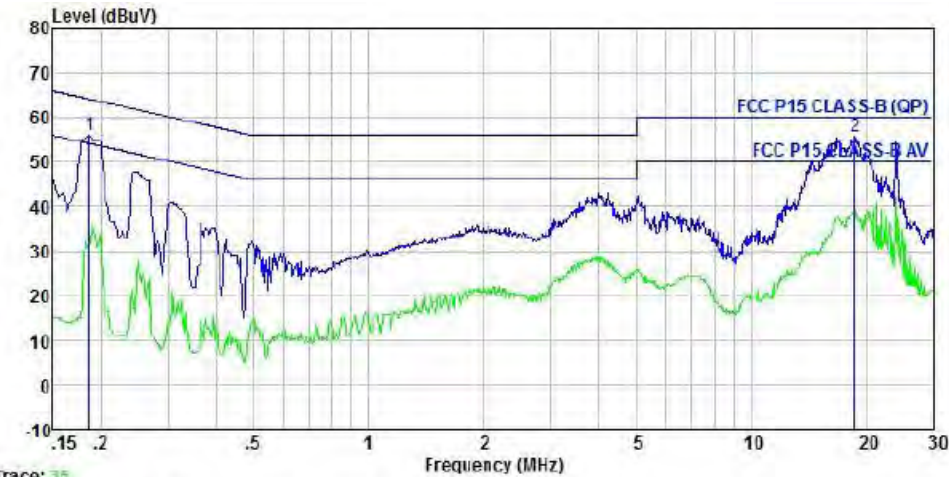


802.11n20 Ch11



Trace: 17
Site : chamber
Condition : FCC P15 CLASS-B (QP) ENV216(L) LINE
EUT :
Model Name : 神画
Temp/Humi : 21 °C /56 %
Power Rating: 230V/50Hz
Mode : 802.11n ch11 MIMO
Memo :

Read LISN Cable Preamp Limit Over							
Freq	Level	Factor	Loss Factor	Level	Line	Limit	Remark
MHz	dBuV	dB	dB	dB	dBuV	dB	
1	0.18	47.24	9.46	0.23	0.00	56.93	64.42 -7.49 Peak
2	0.24	39.20	9.52	0.20	0.00	48.92	61.95 -13.03 Peak
3	18.52	45.69	9.73	0.11	0.00	55.53	60.00 -4.47 Peak

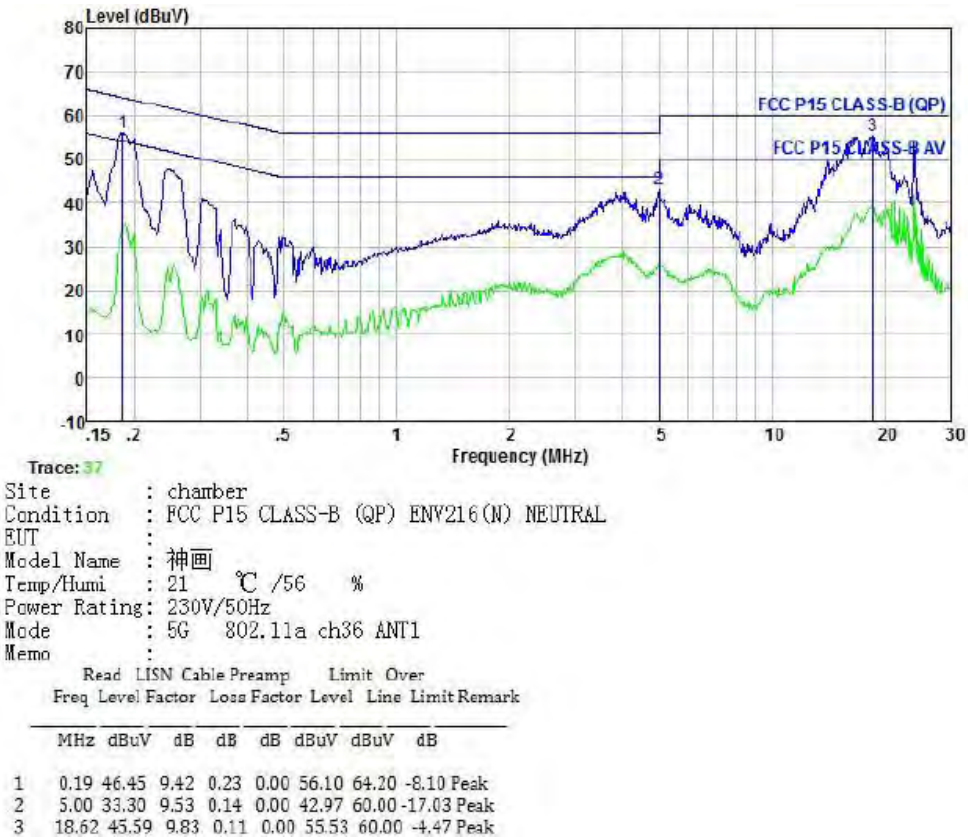


Trace: 35
Site : chamber
Condition : FCC P15 CLASS-B (QP) ENV216(N) NEUTRAL
EUT :
Model Name : 神画
Temp/Humi : 21 °C /56 %
Power Rating: 230V/50Hz
Mode : 802.11n ch11 MIMO
Memo :

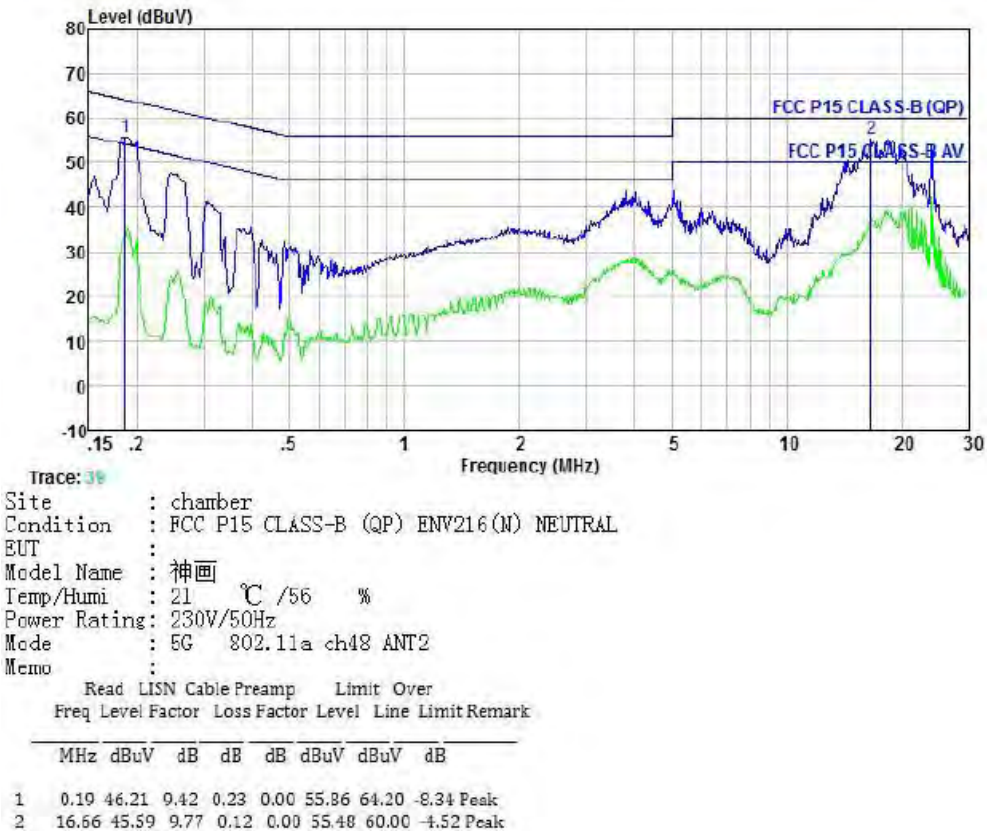
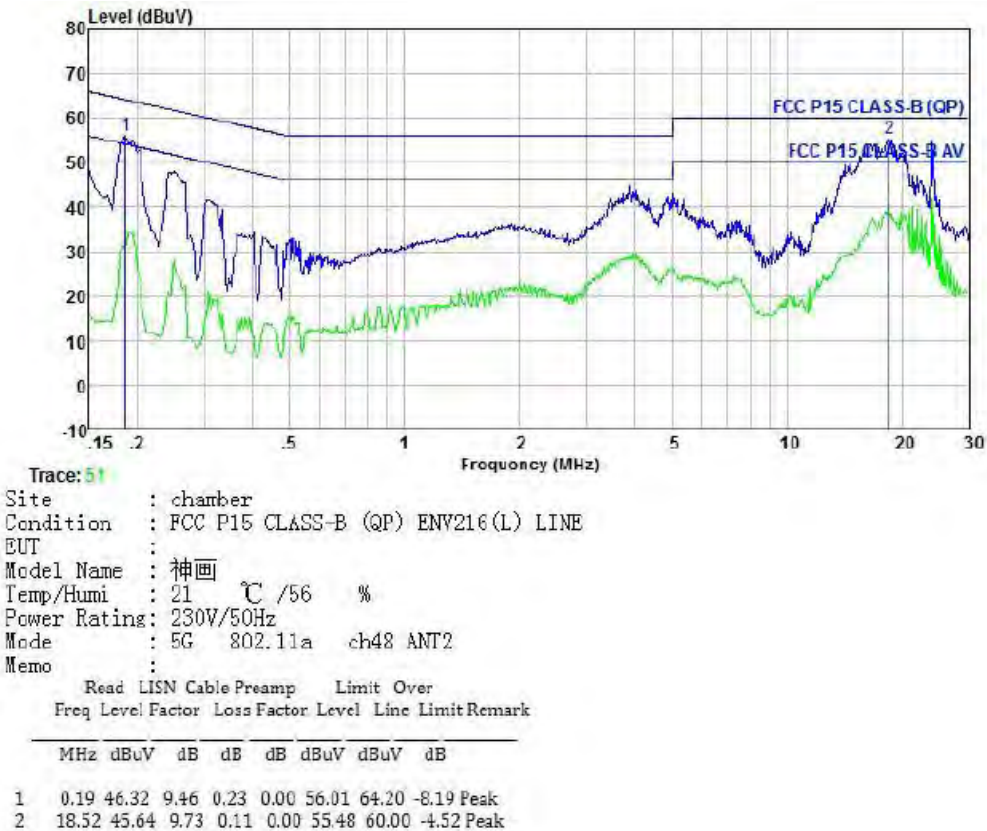
Read LISN Cable Preamp Limit Over							
Freq	Level	Factor	Loss Factor	Level	Line	Limit	Remark
MHz	dBuV	dB	dB	dB	dBuV	dB	
1	0.19	46.31	9.42	0.23	0.00	55.96	64.20 -8.24 Peak
2	18.72	45.80	9.83	0.11	0.00	55.74	60.00 -4.26 Peak

WIFI 5G(5150MHz-5250MHz)

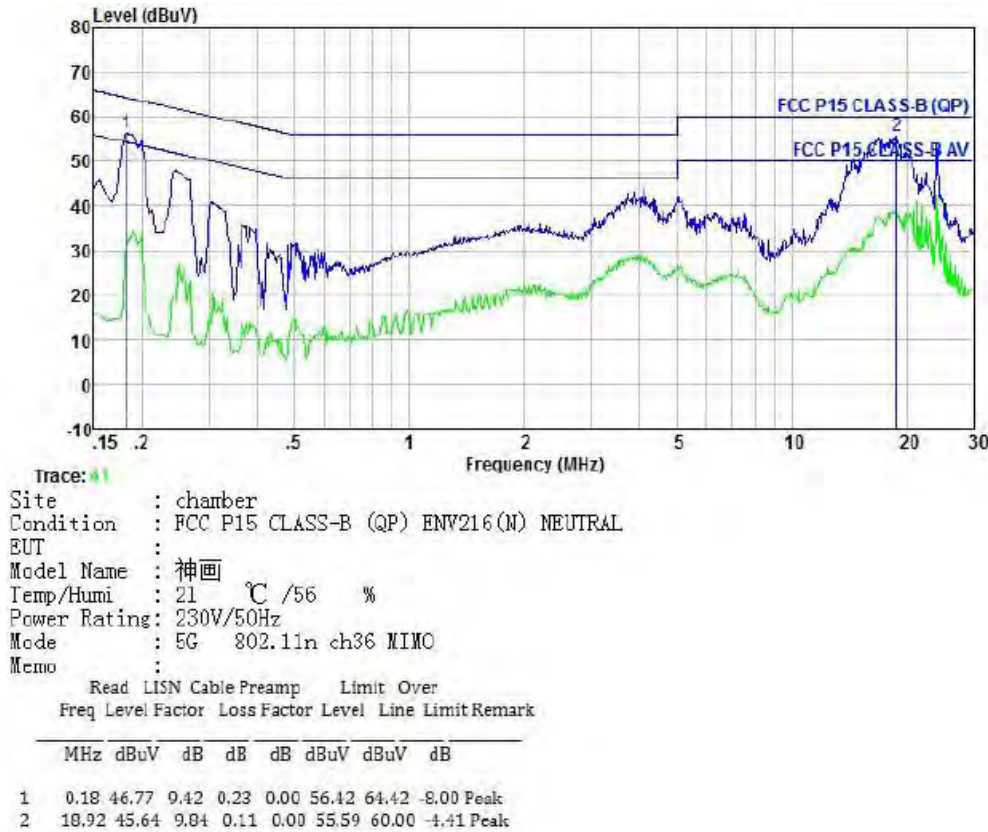
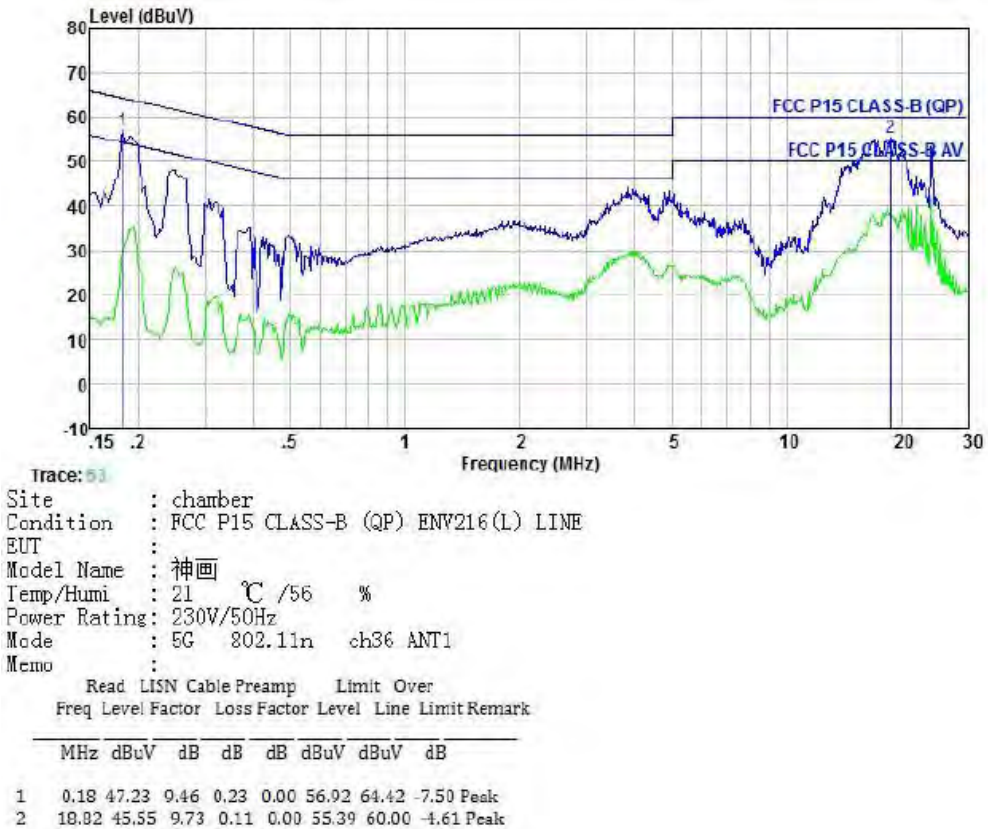
802.11a Ch36



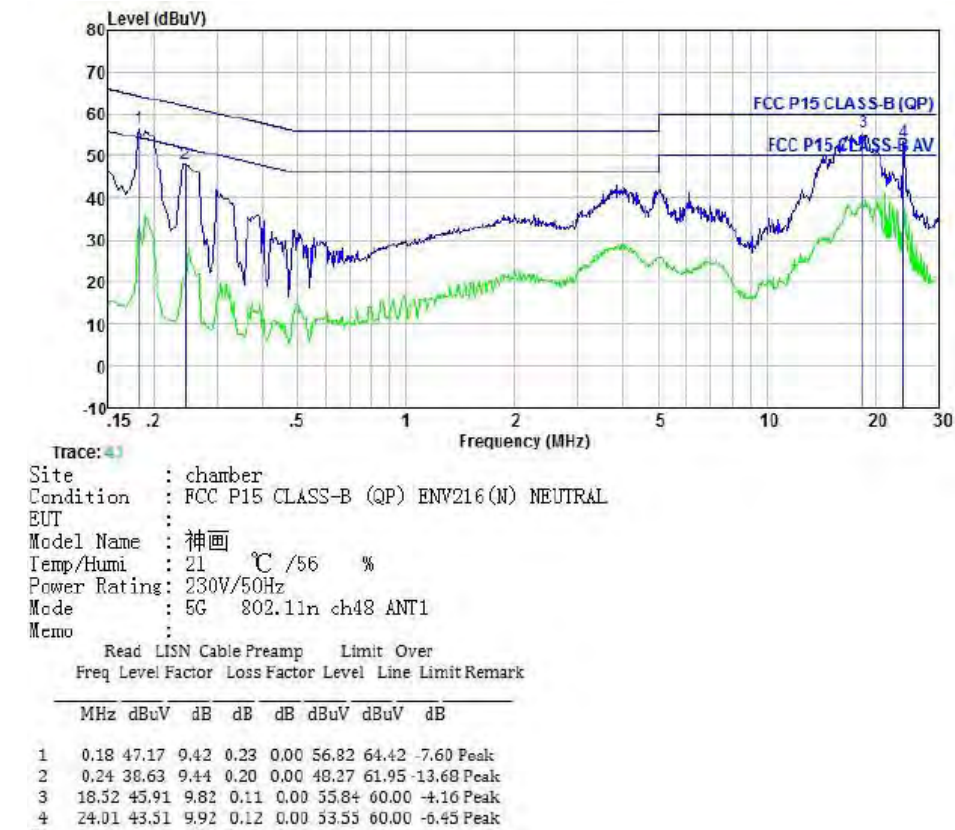
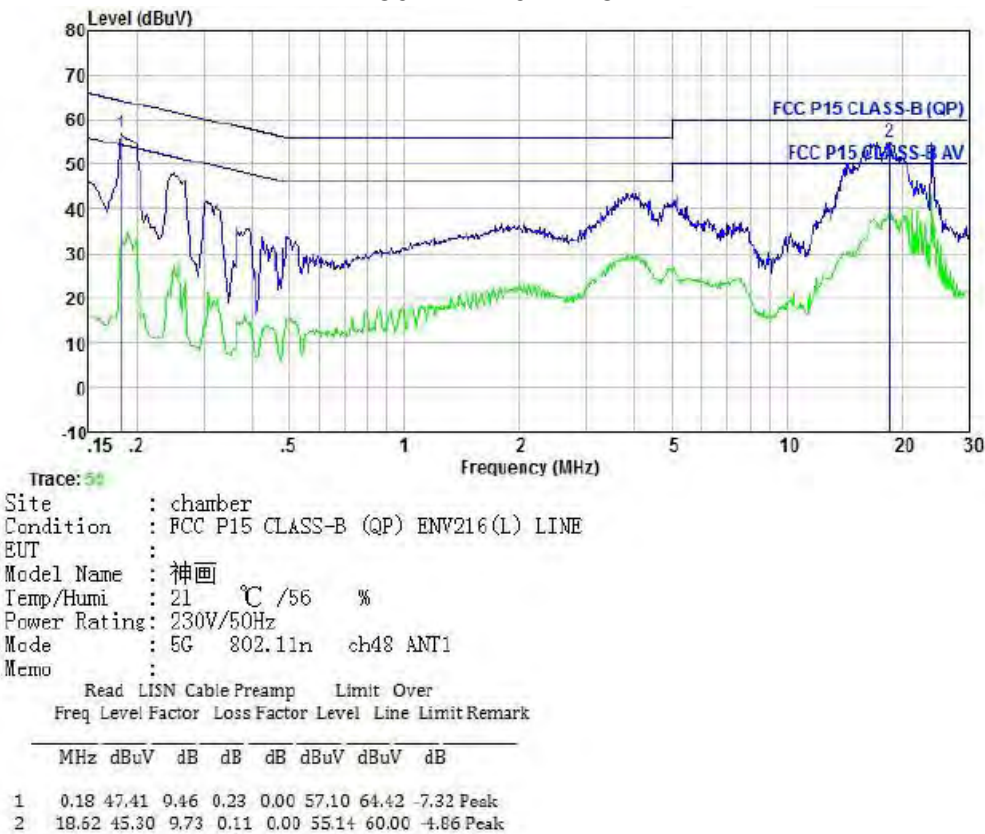
802.11a Ch48



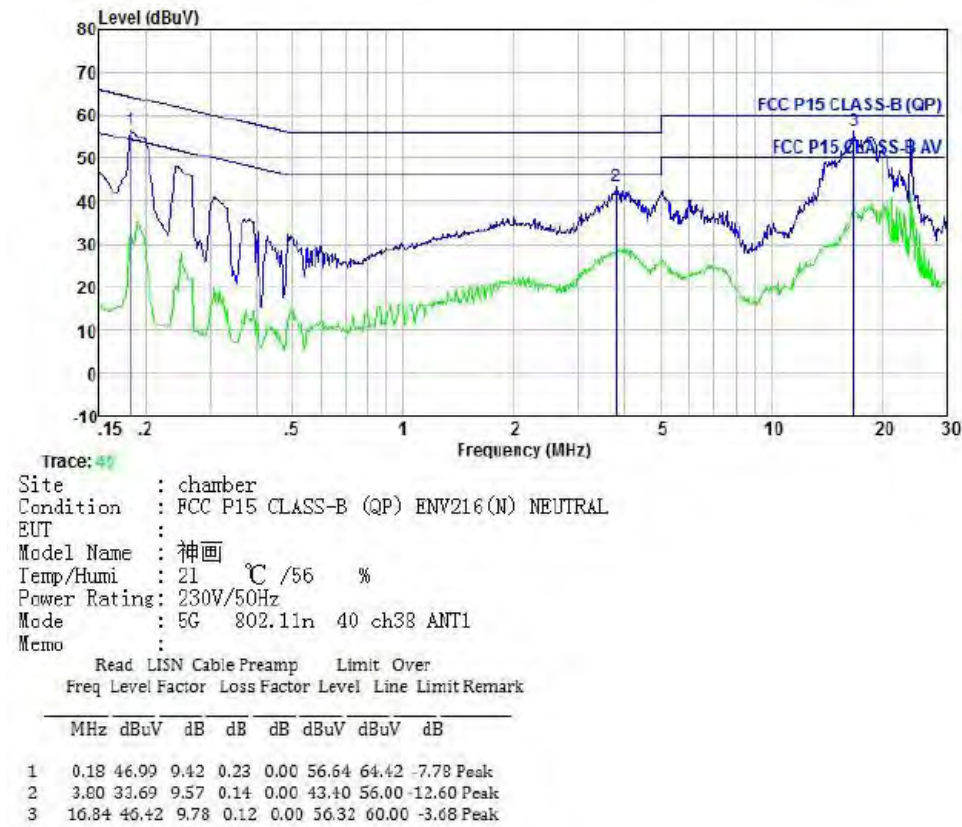
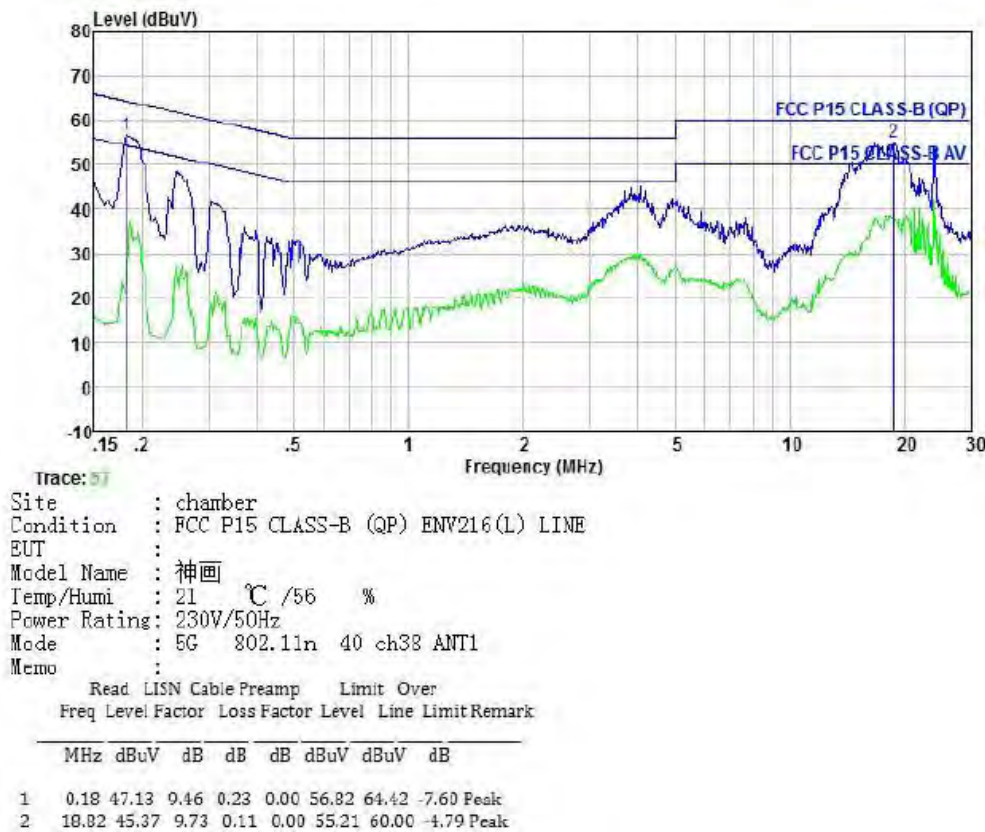
802.11n20 Ch36



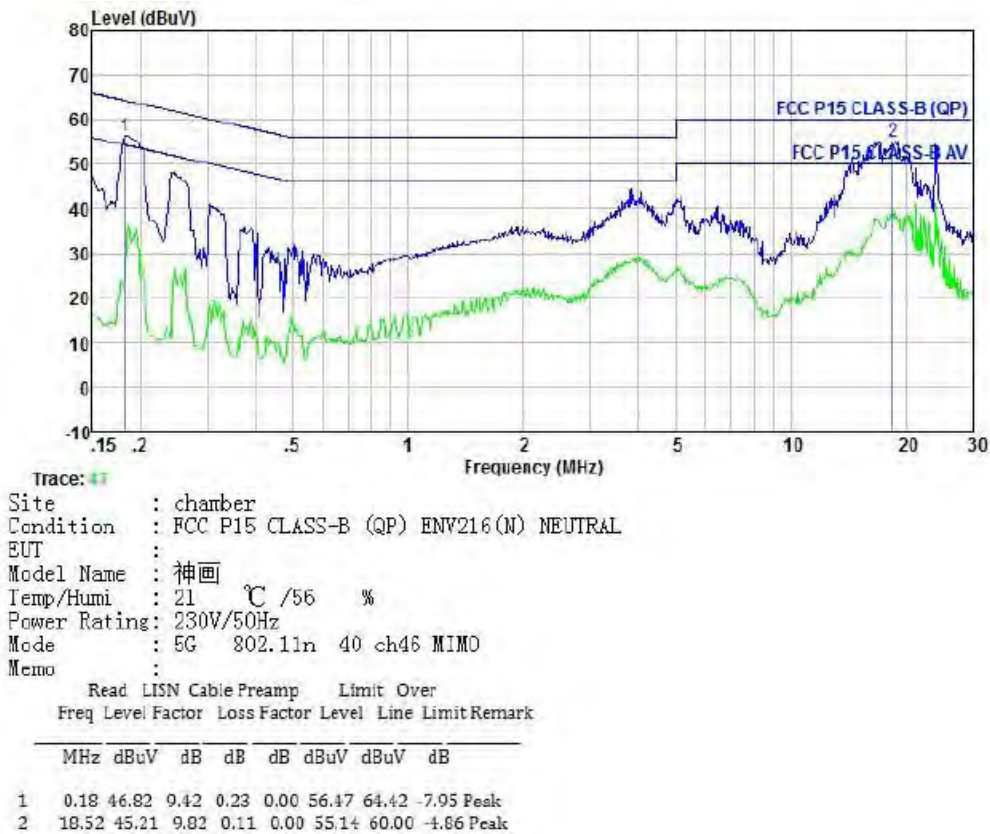
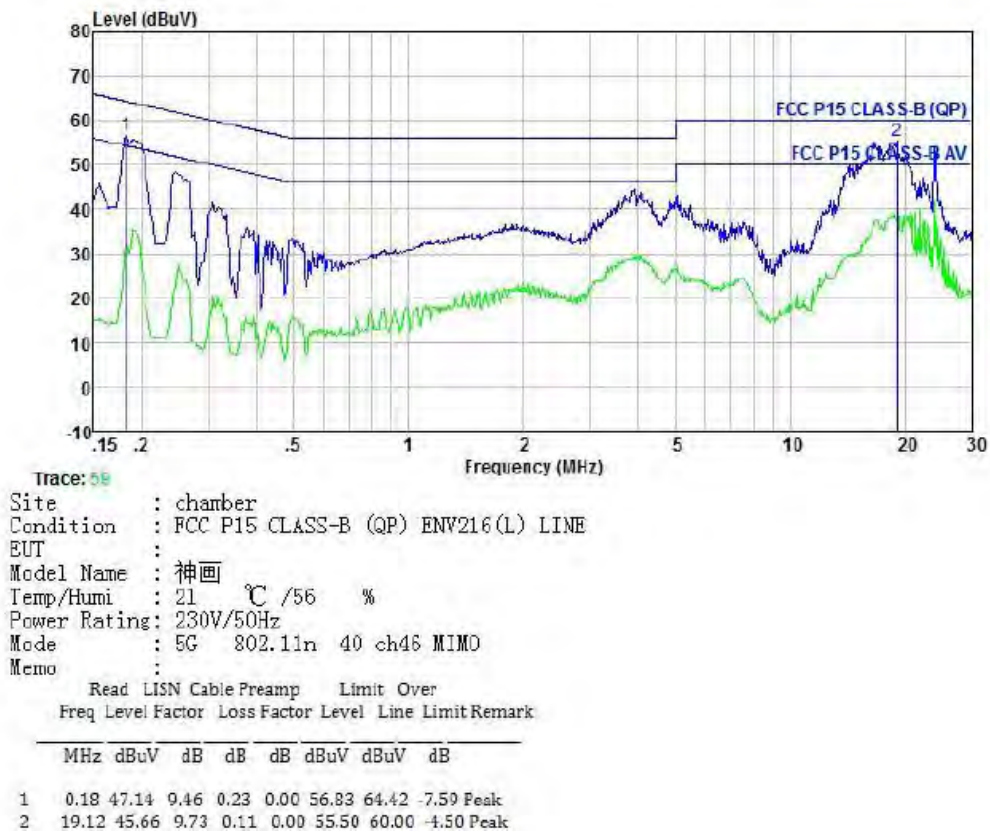
802.11n20 Ch48



802.11n40 Ch38

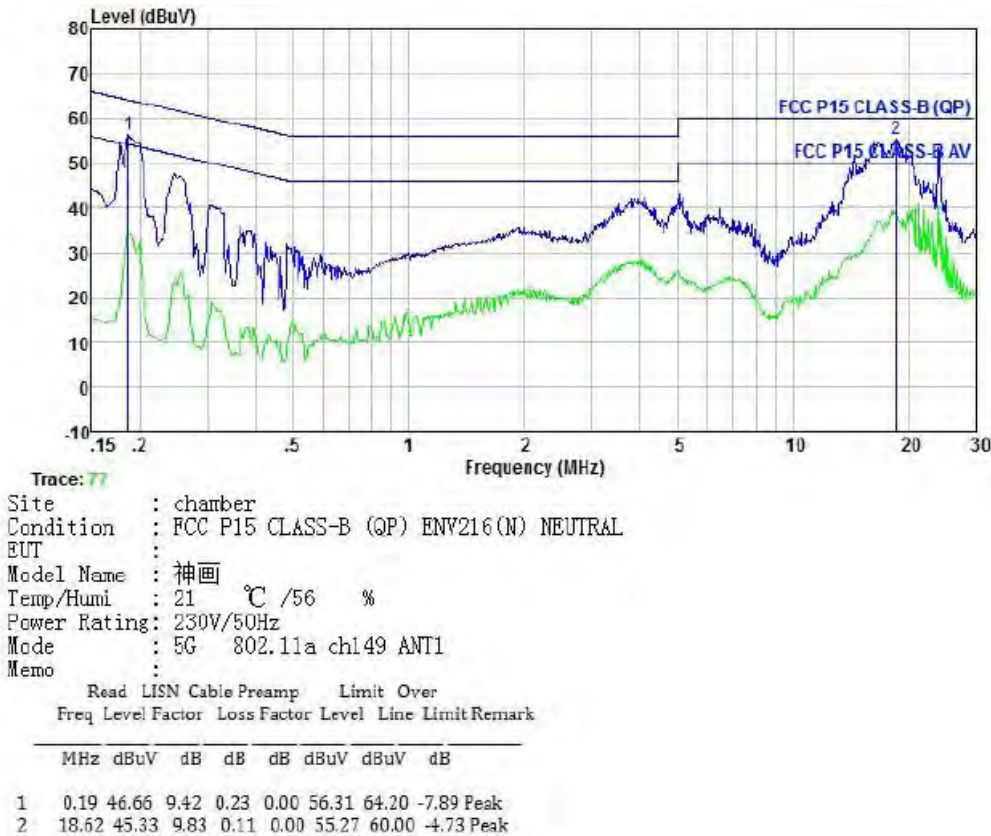
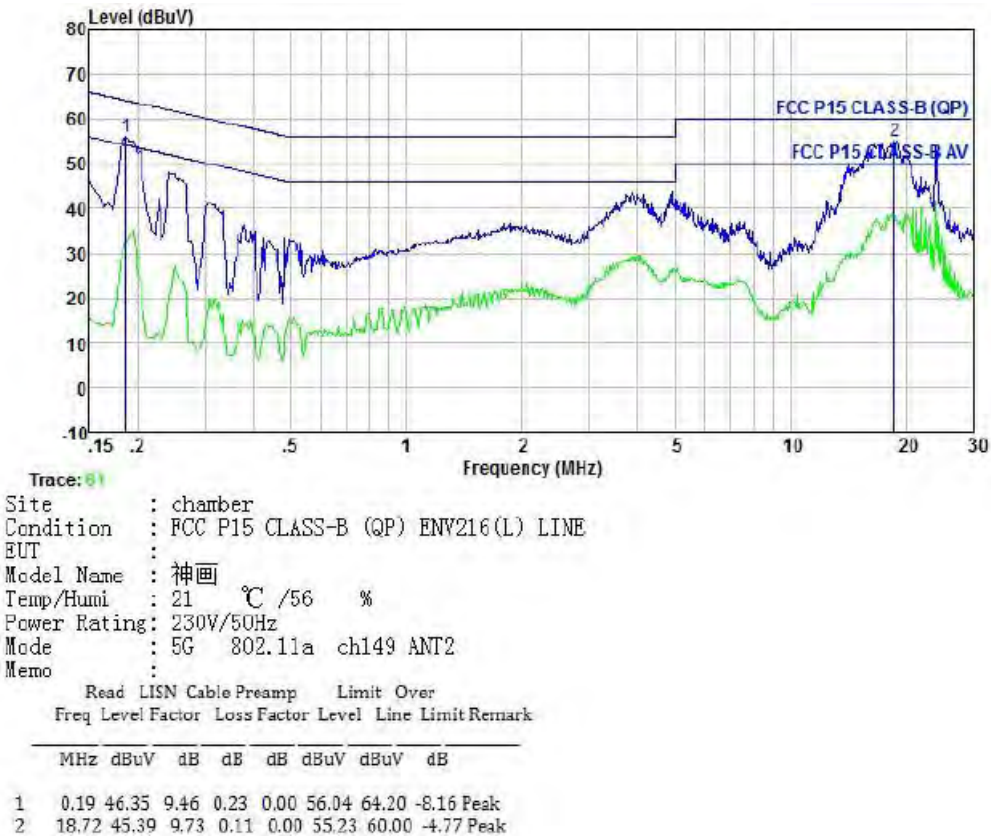


802.11n40 ch46

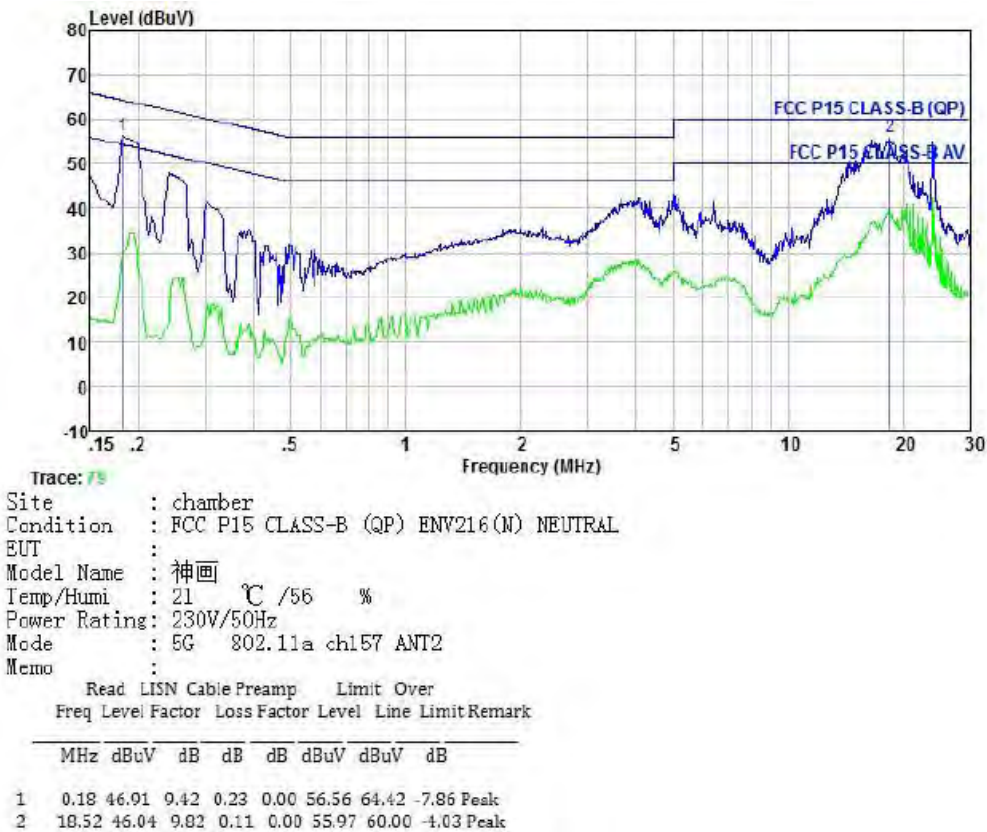
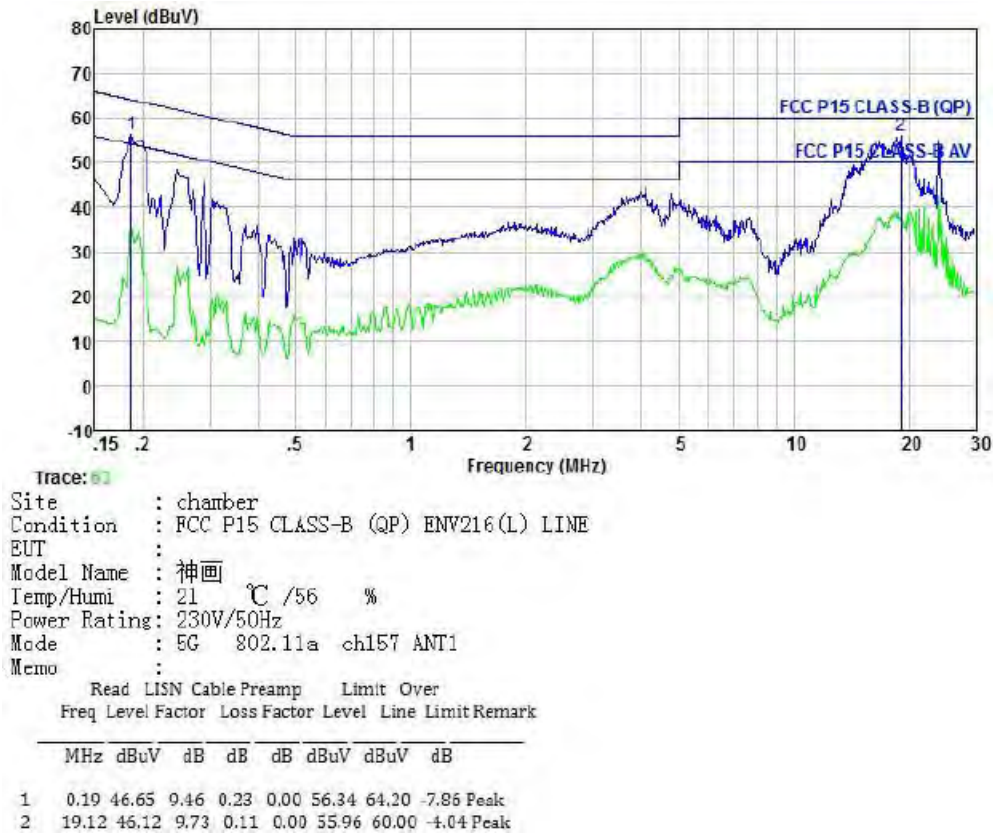


WIFI 5G(5725MHz-5850MHz)

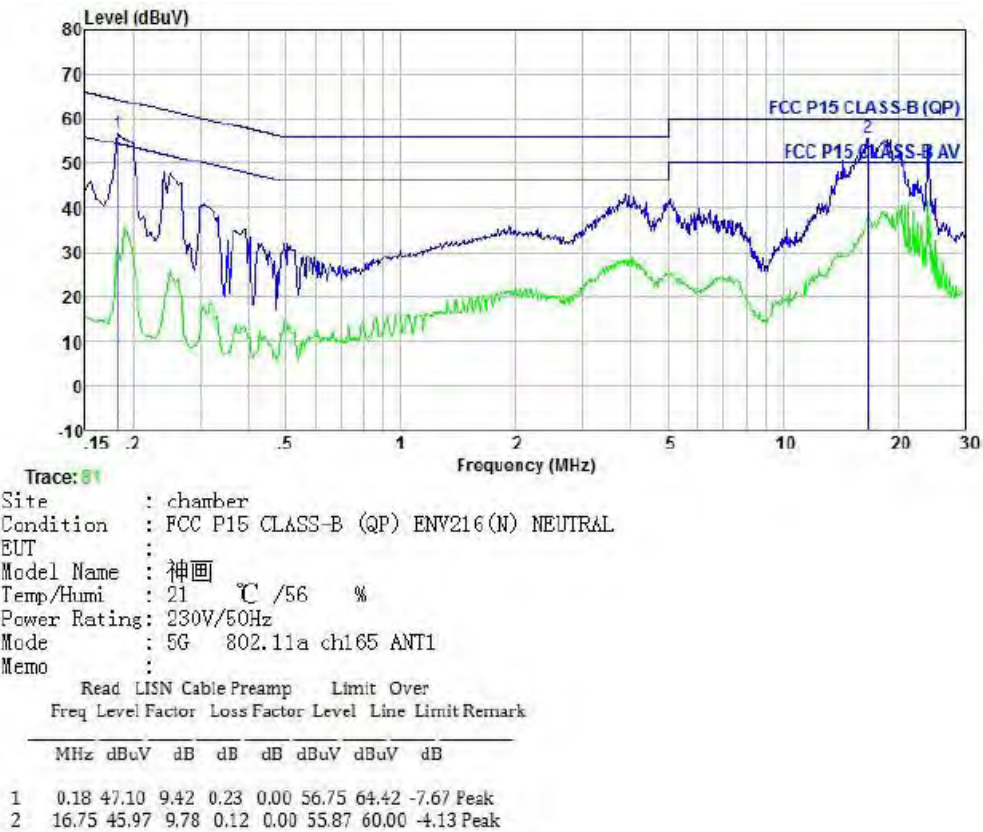
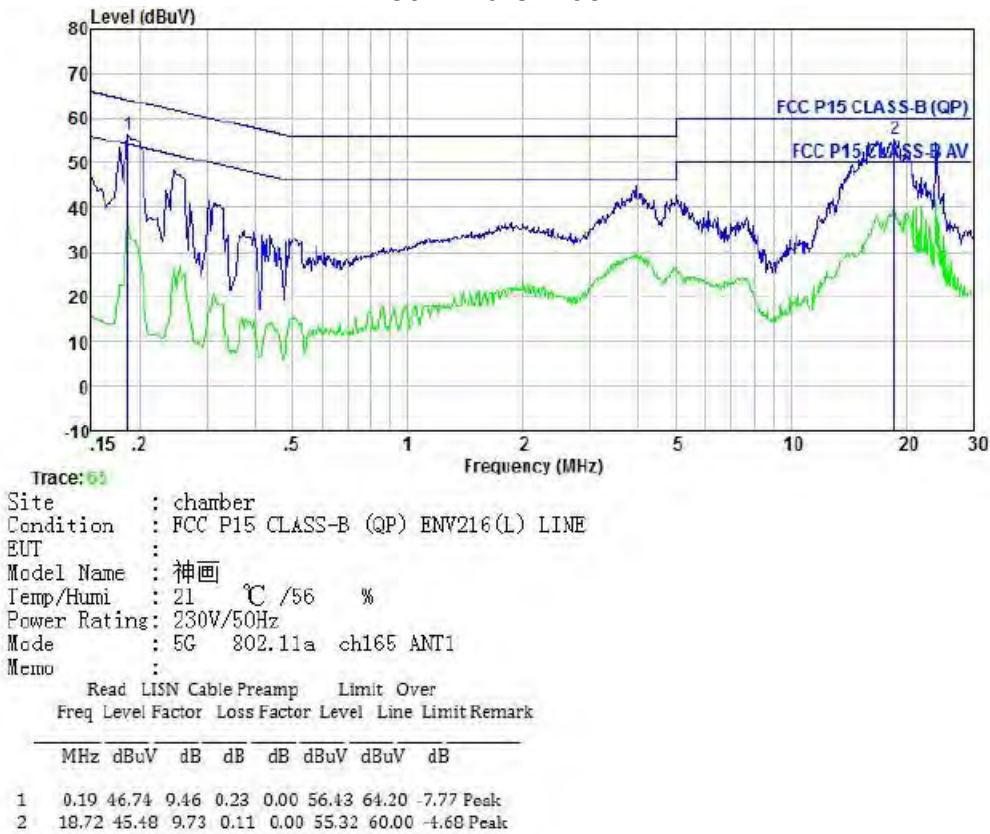
802.11a ch149



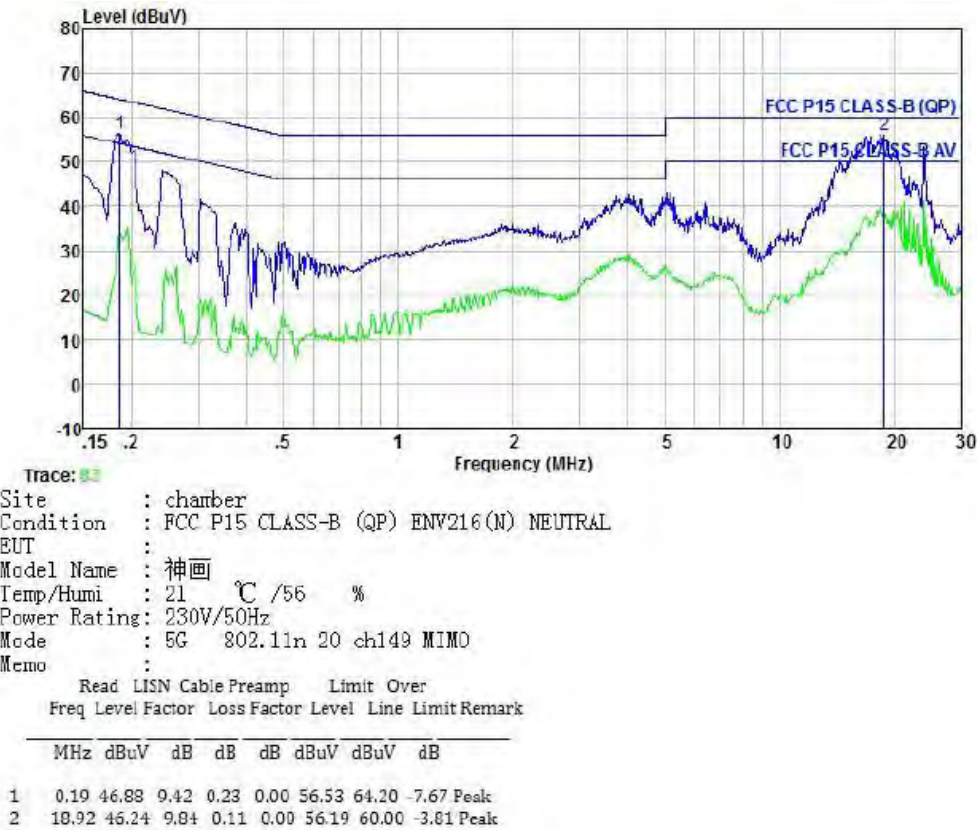
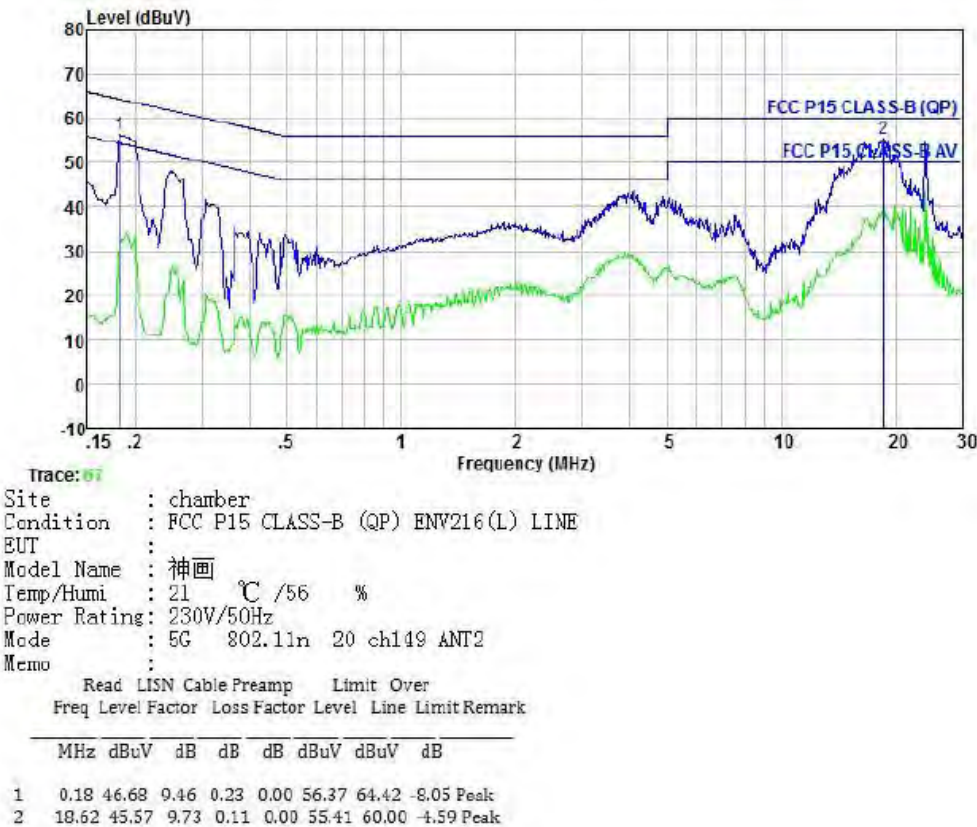
802.11a ch157



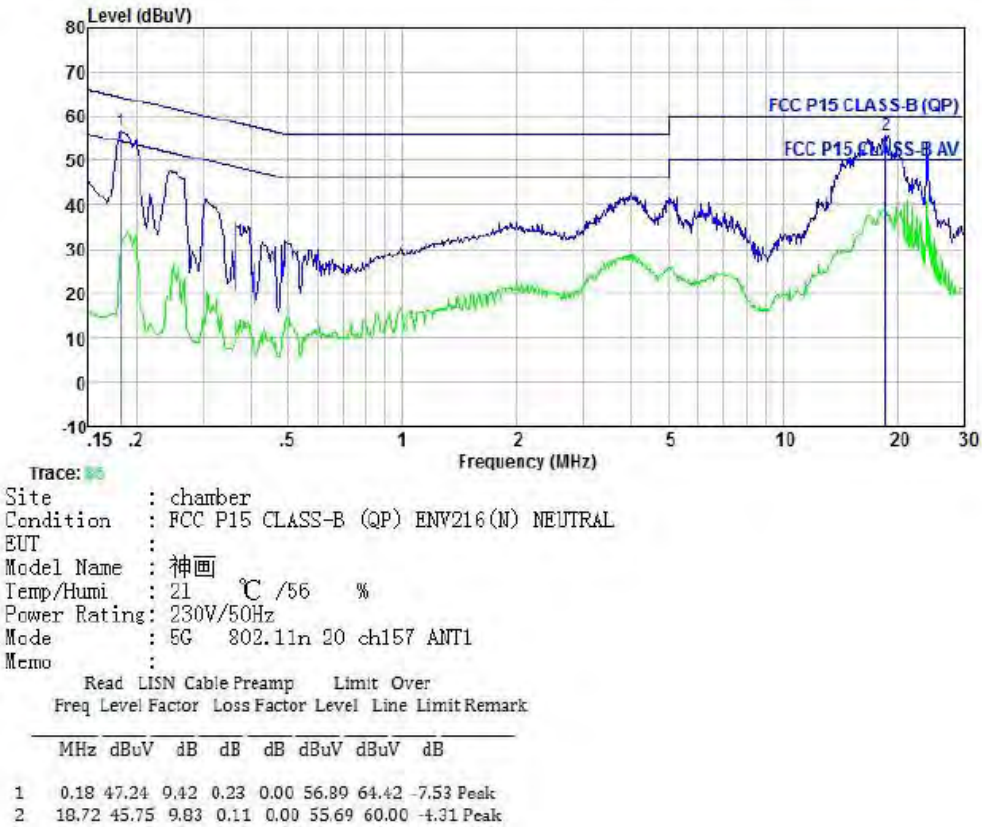
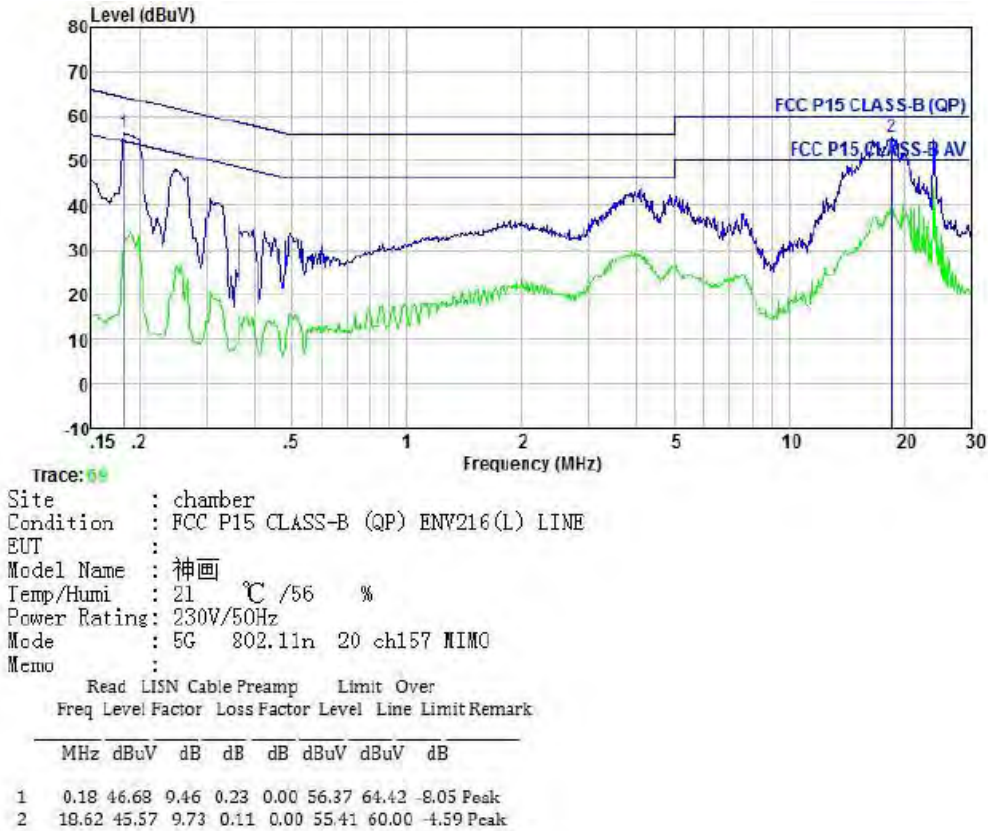
802.11a ch165



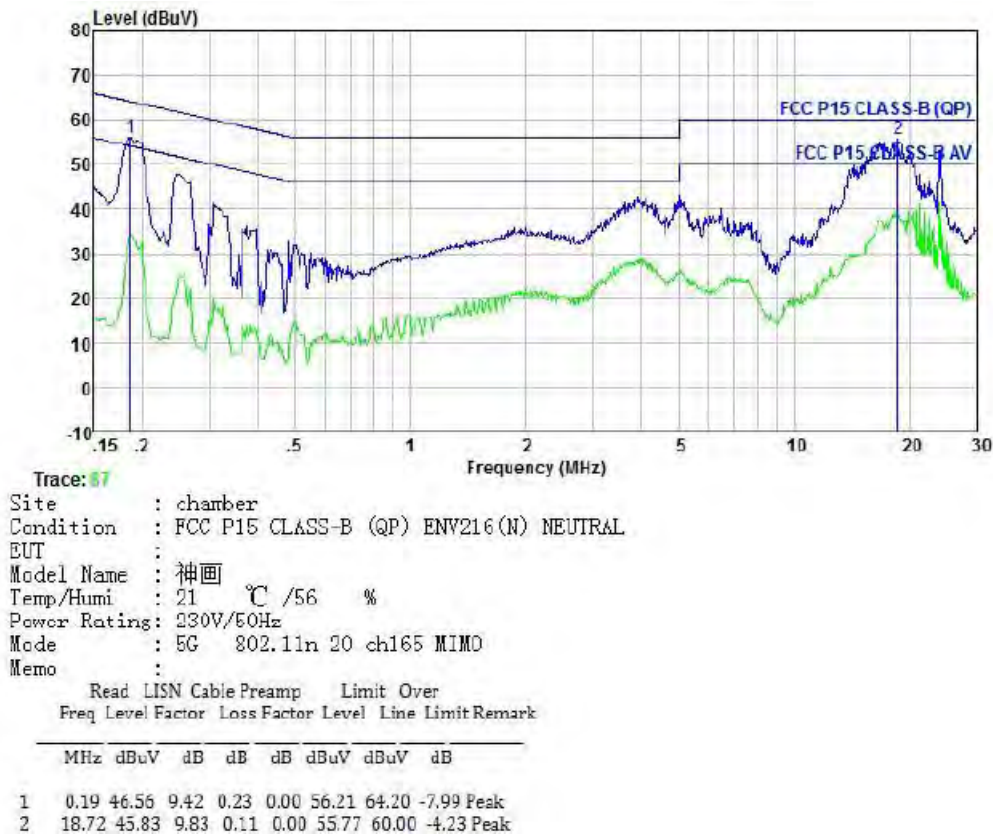
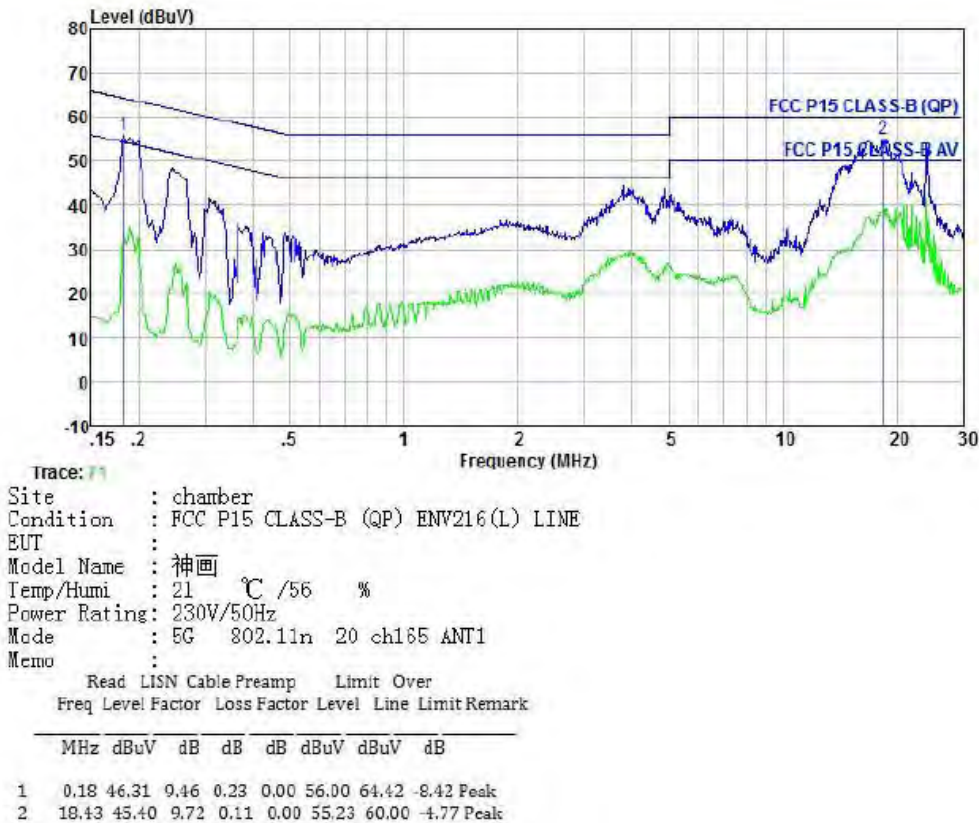
802.11n20 ch149



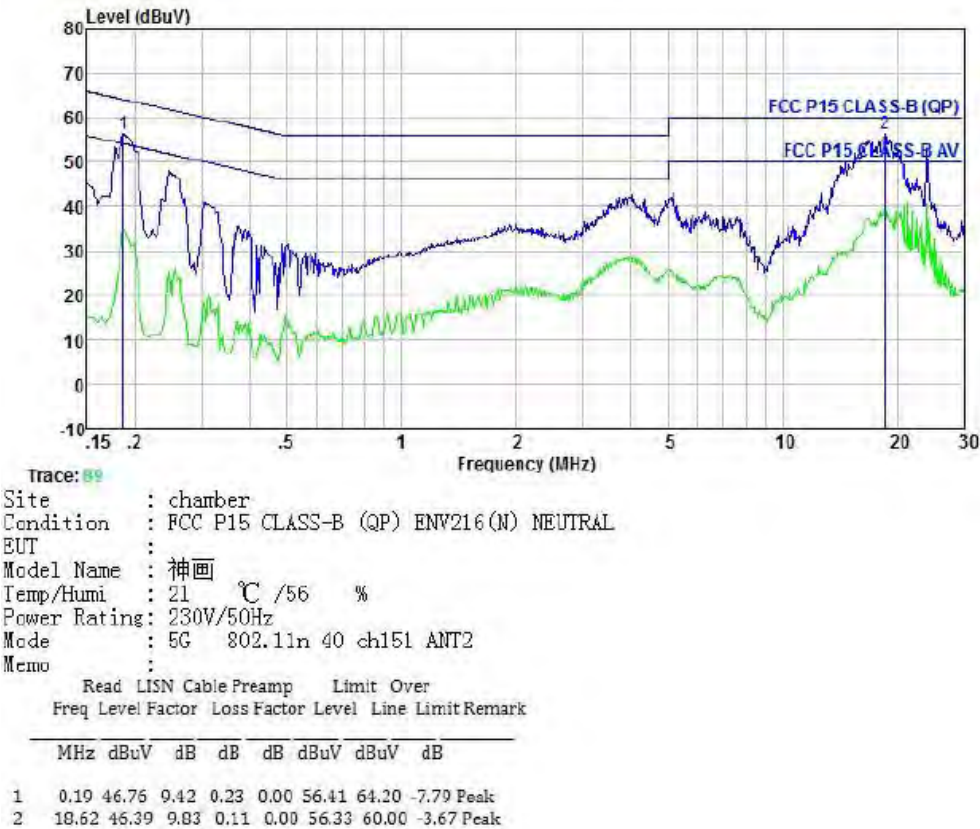
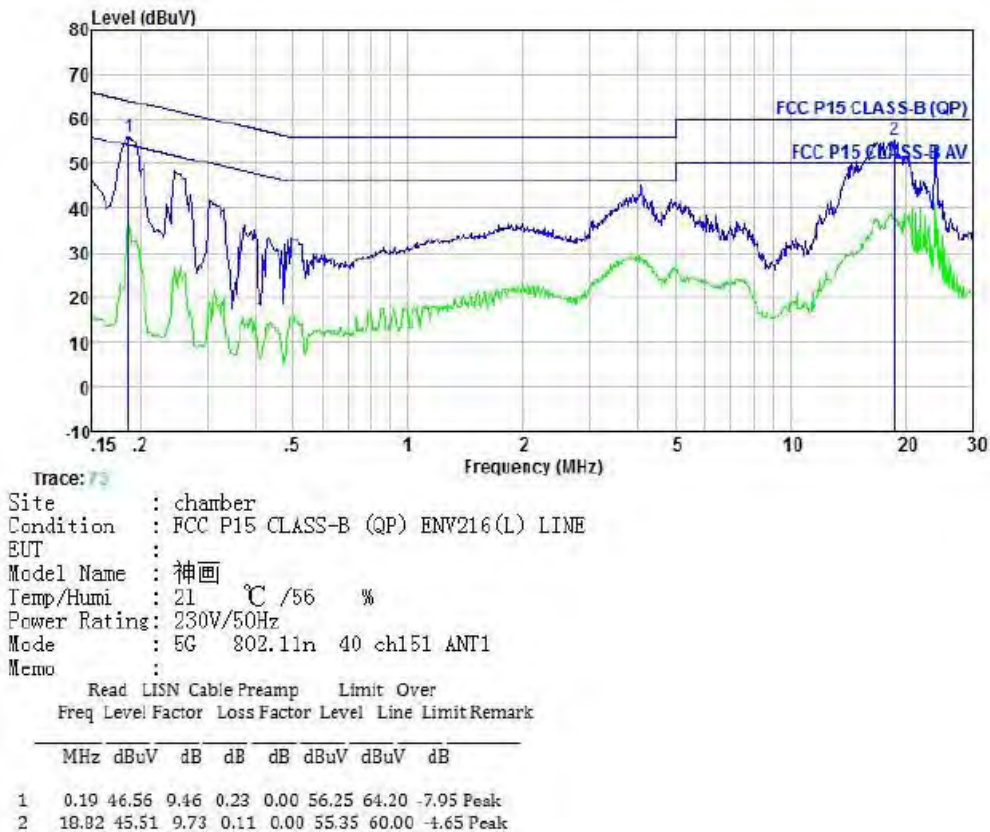
802.11n20 ch157



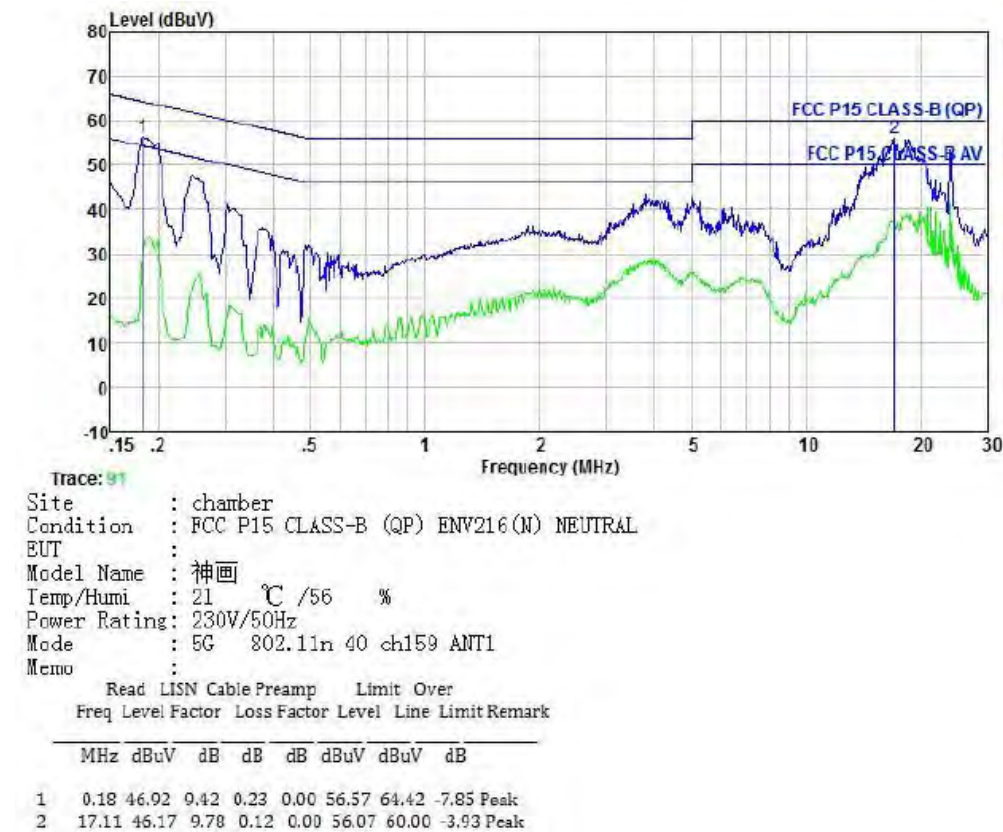
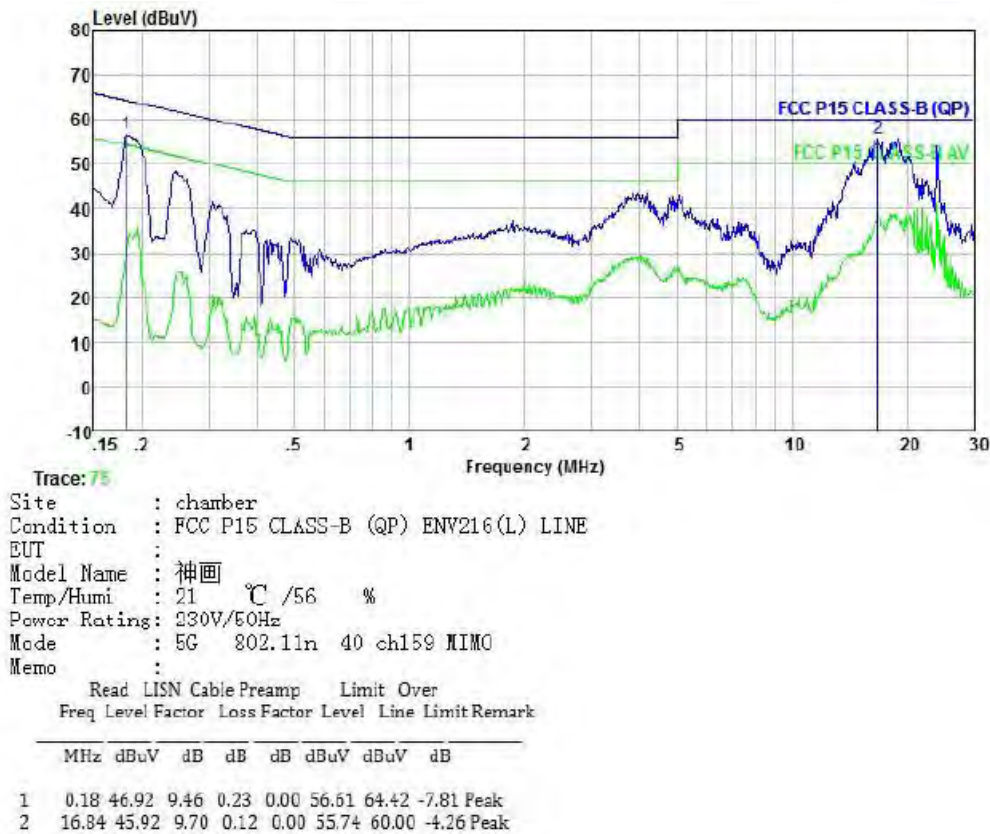
802.11n20 ch165



802.11n40 ch151

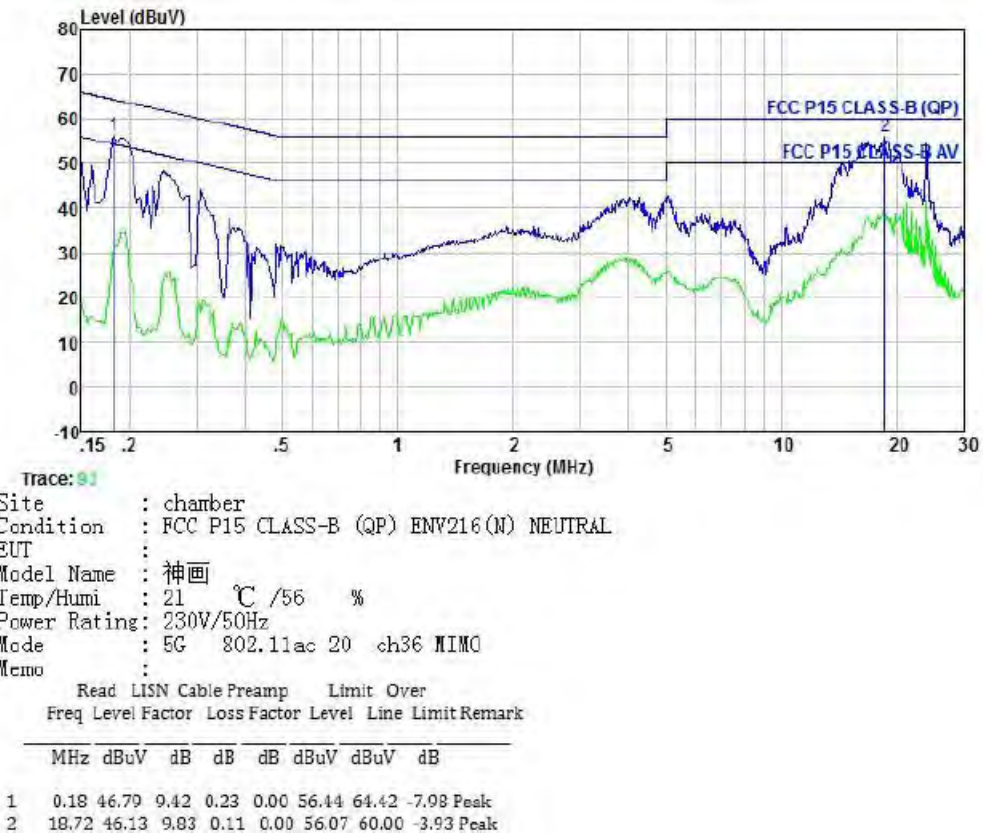
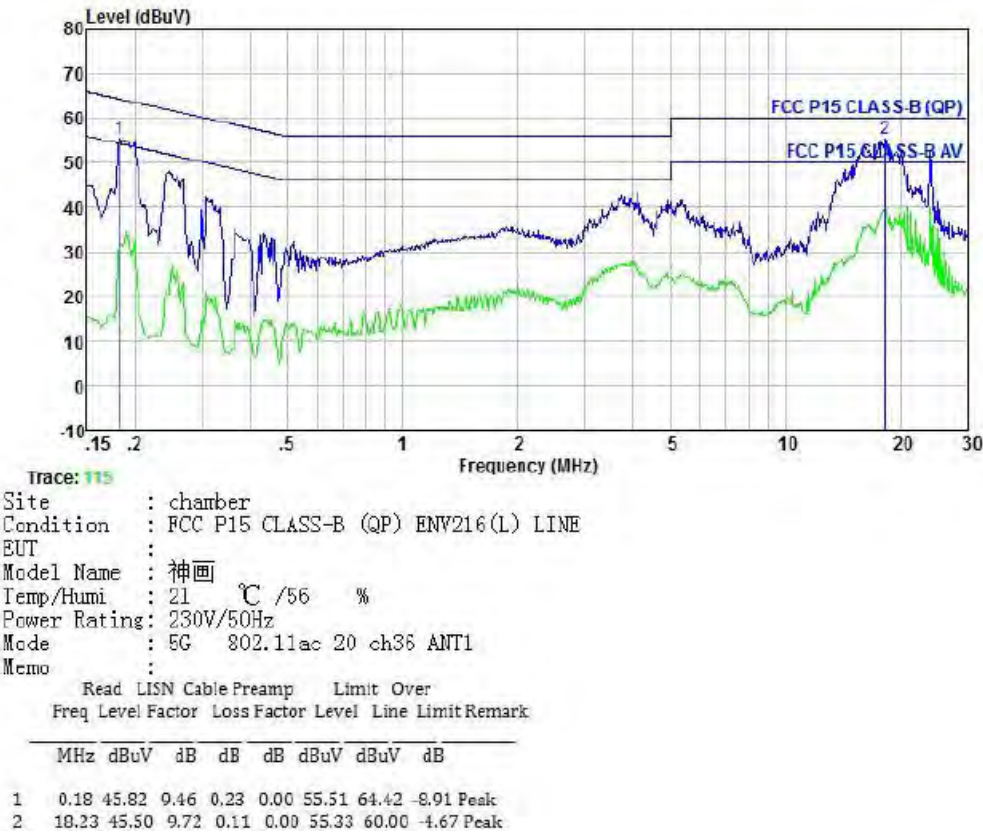


802.11n40 ch159

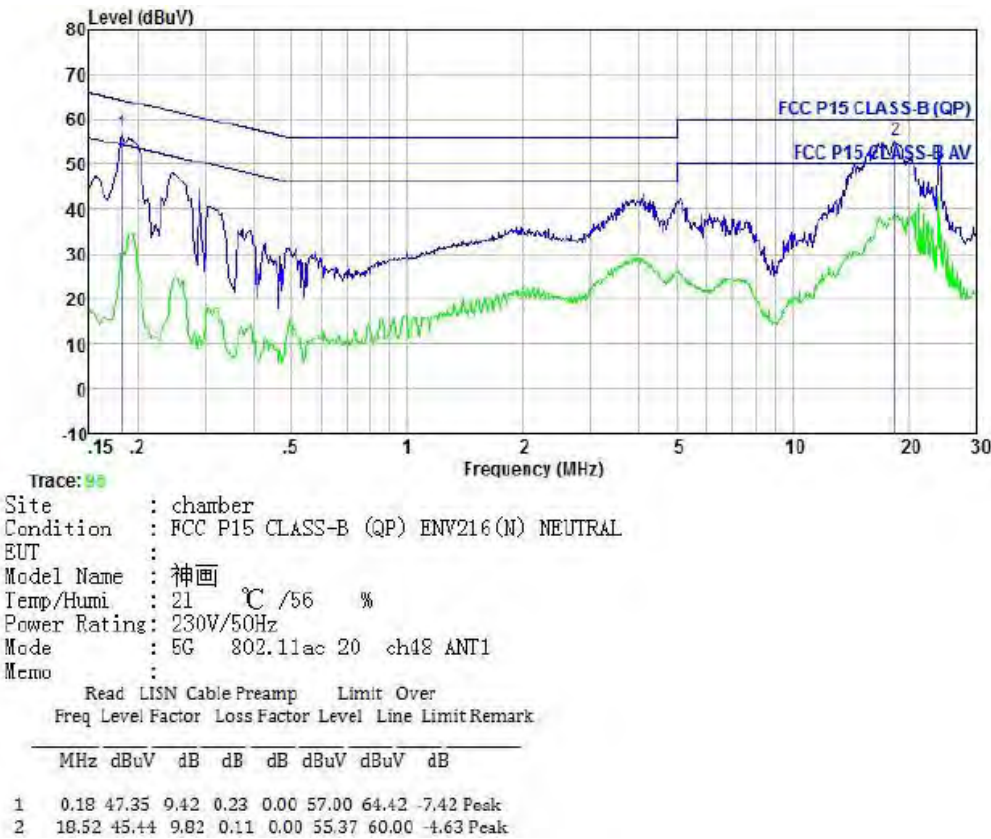
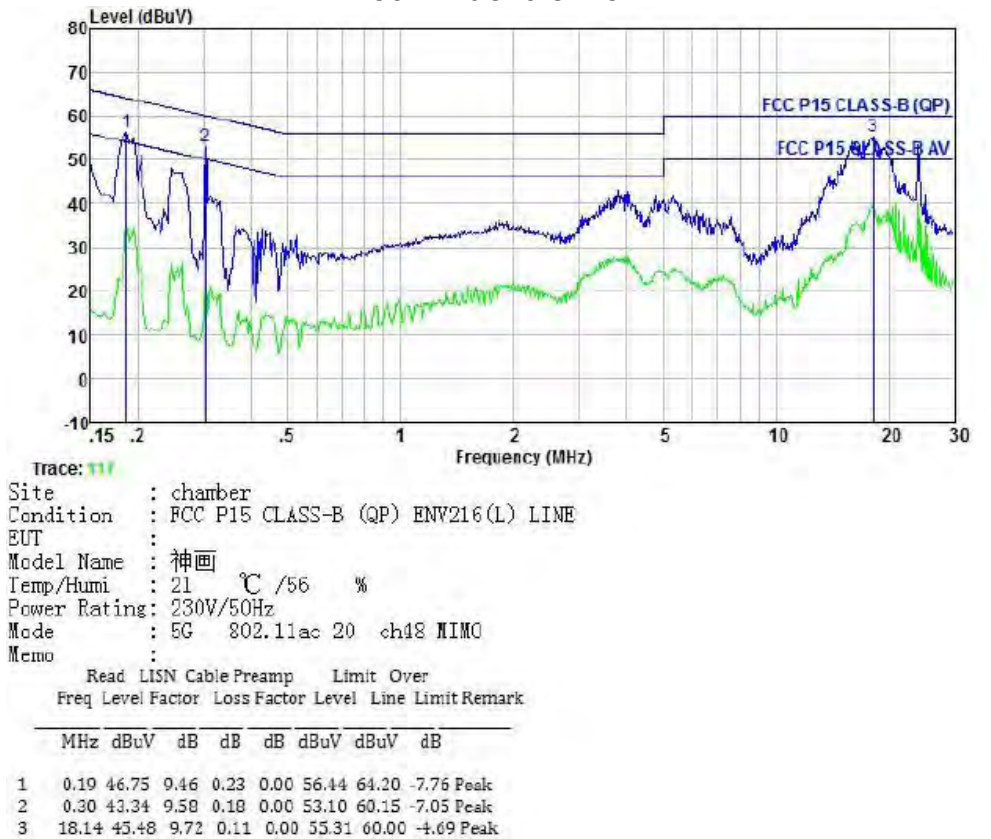


802.11ac(5150MHz-5250MHz)

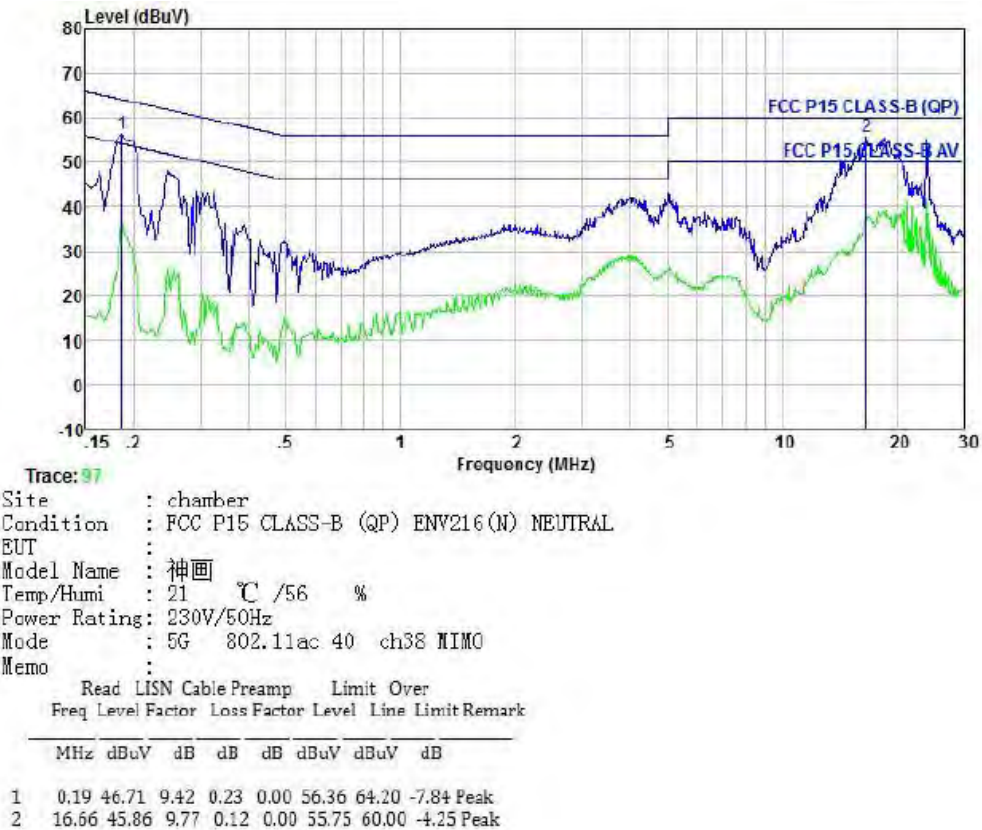
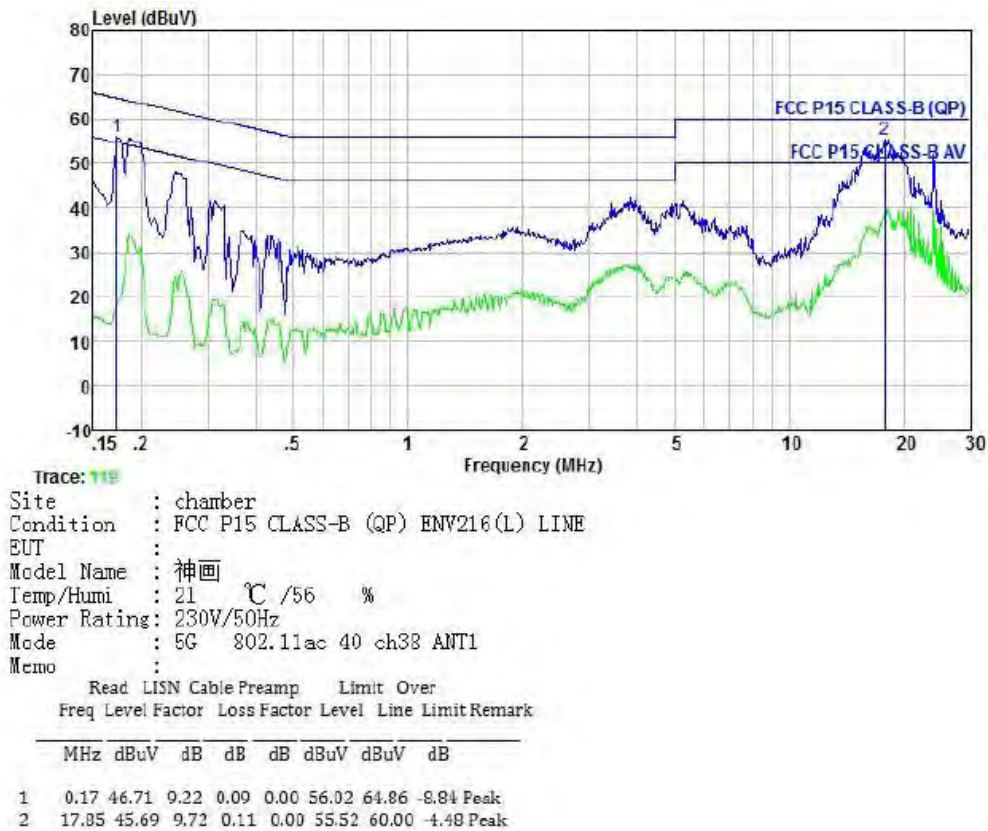
802.11ac20 ch36



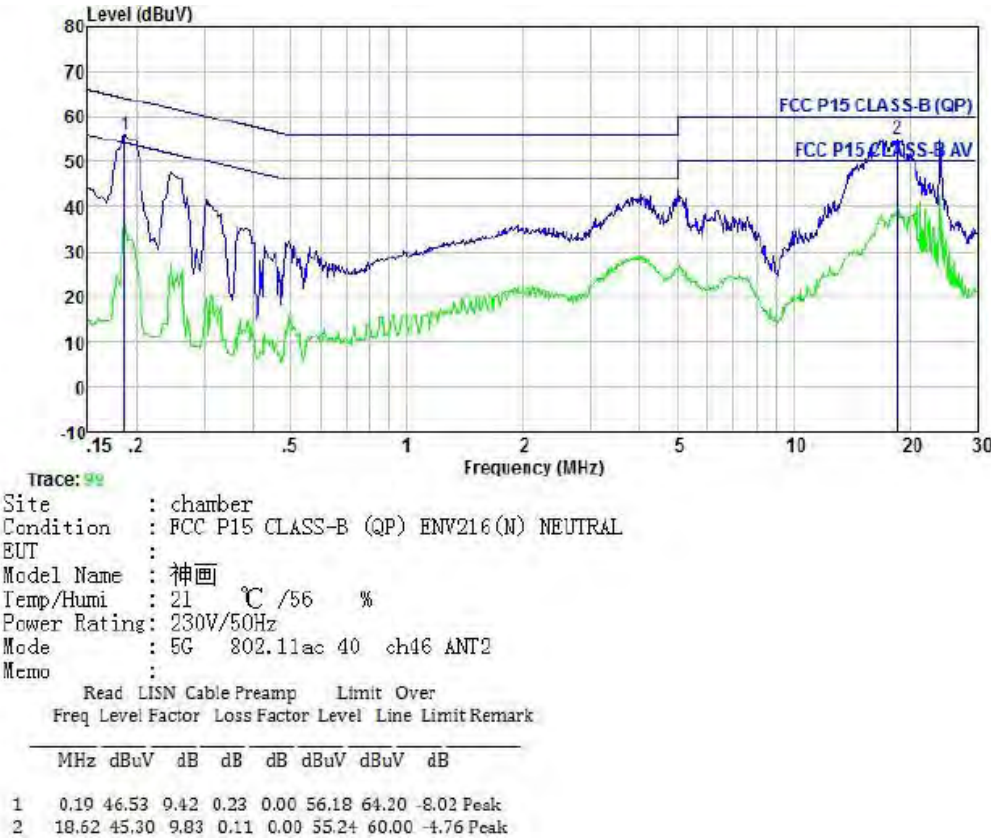
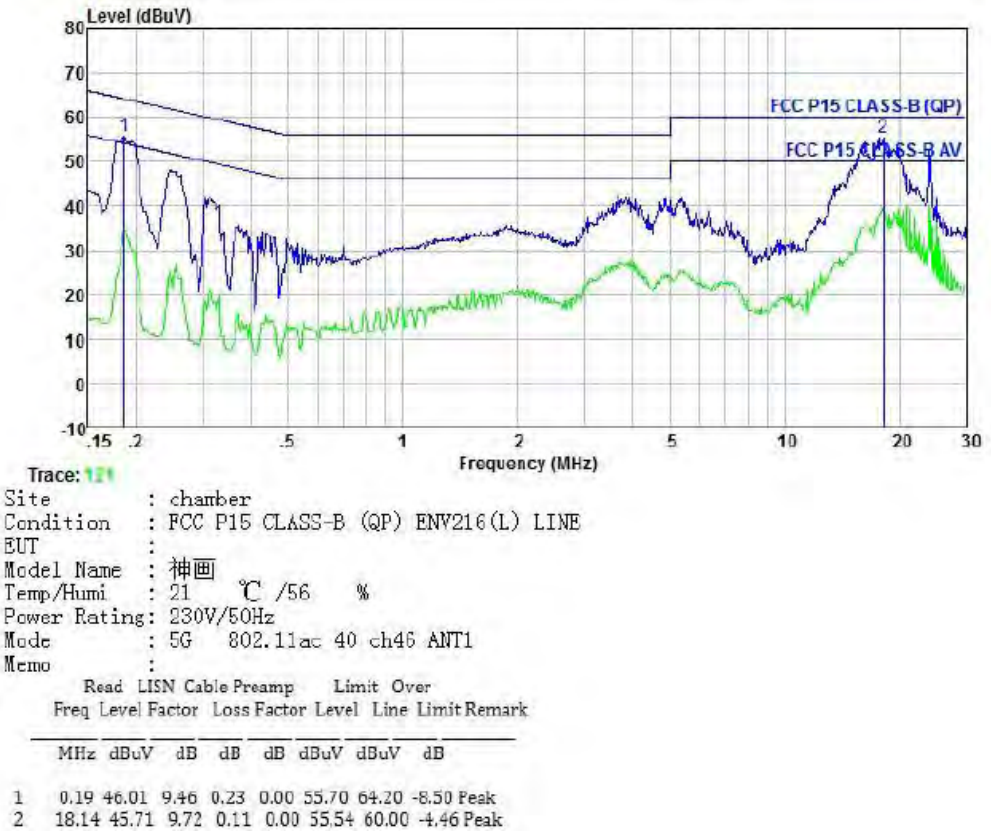
802.11ac20 ch48



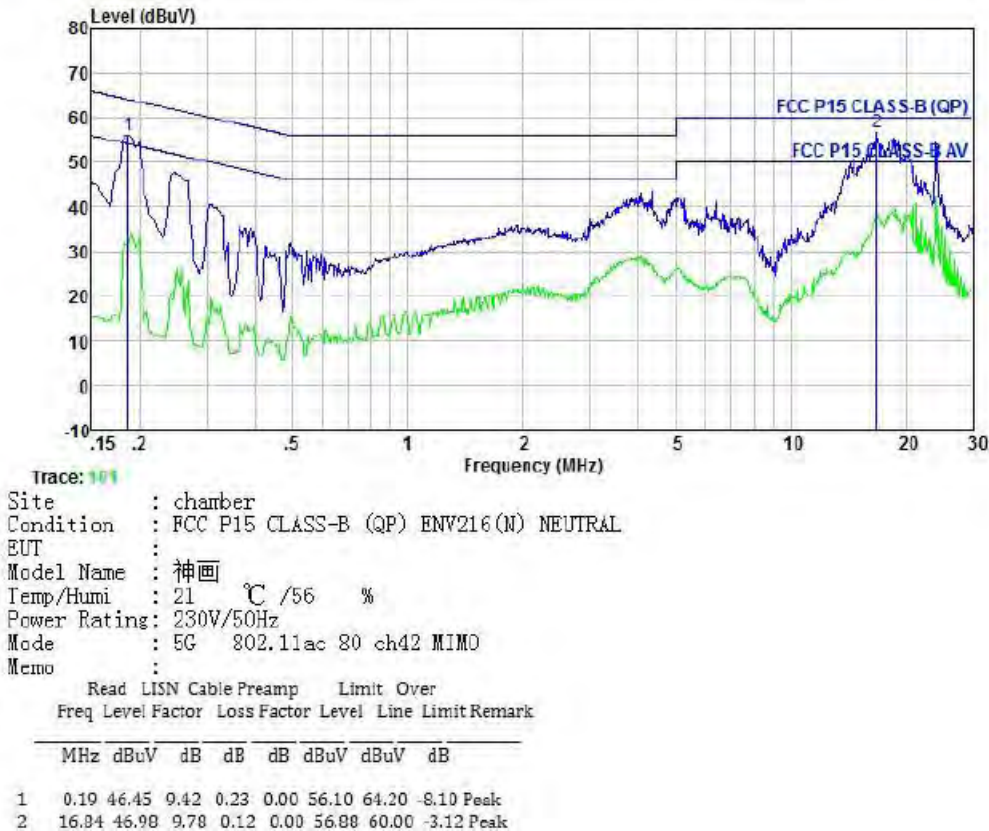
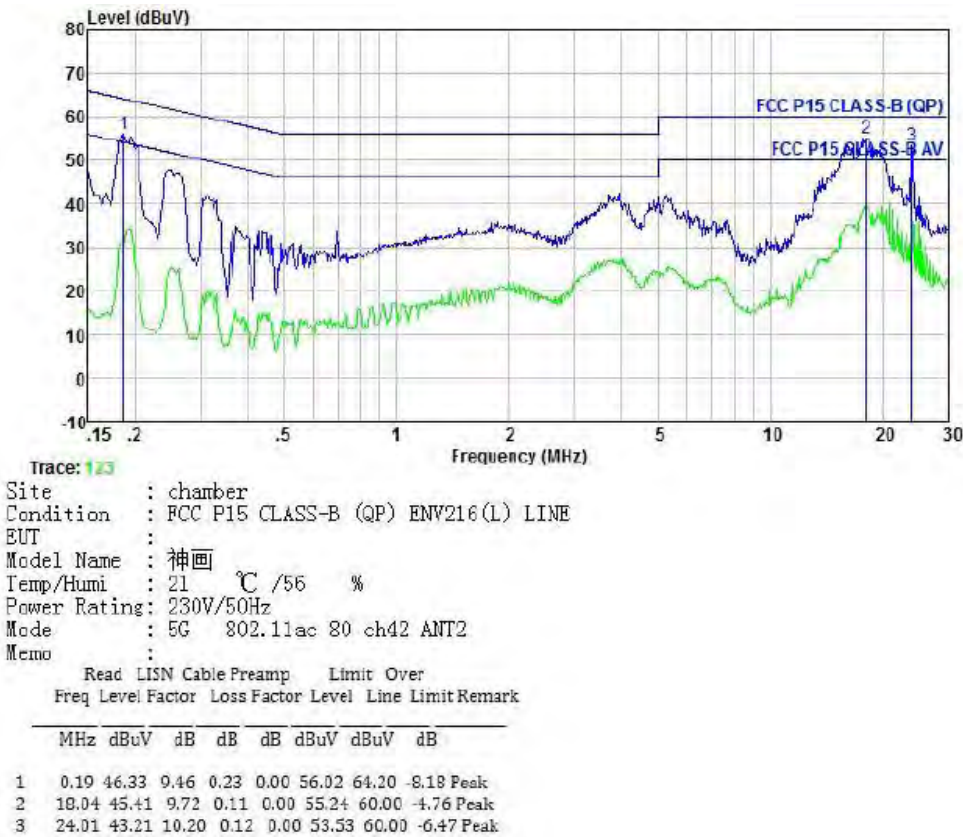
802.11ac40 ch38



802.11ac40 ch46

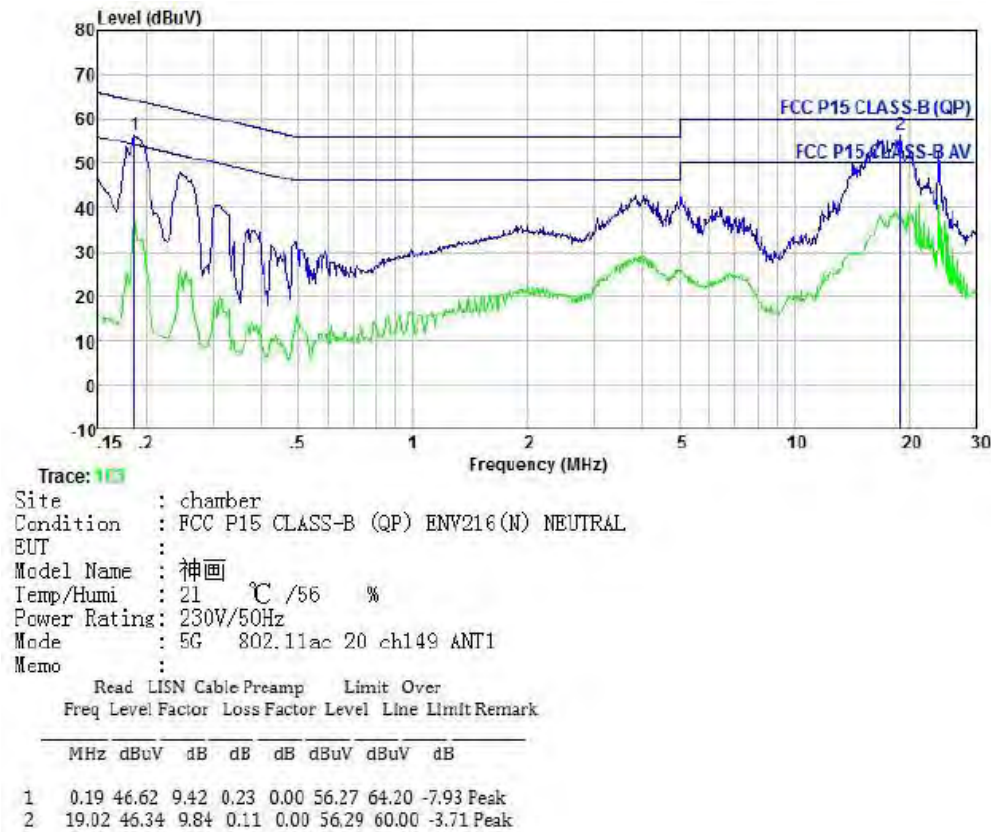
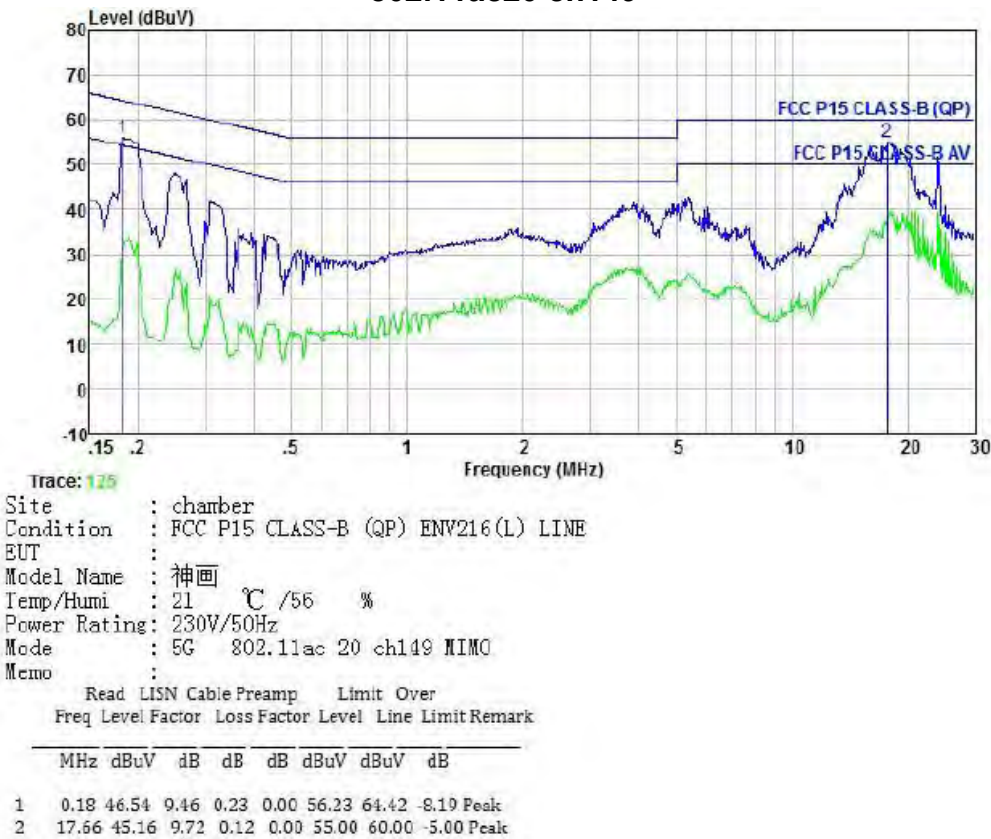


802.11ac80 ch42

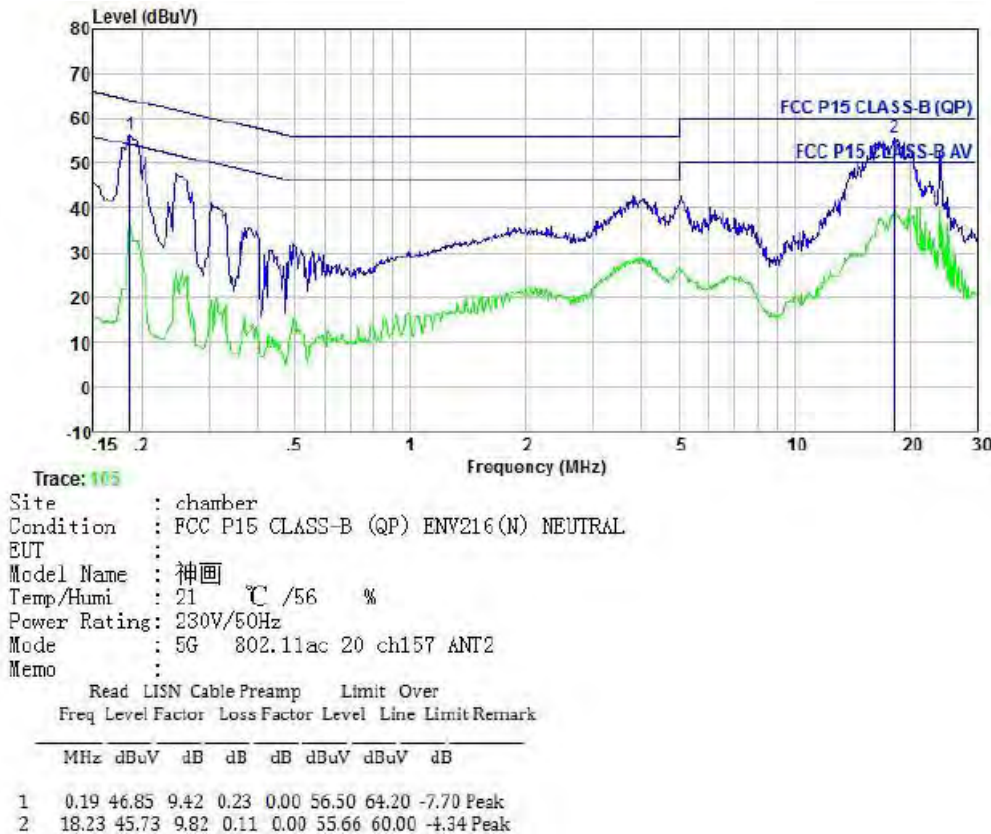
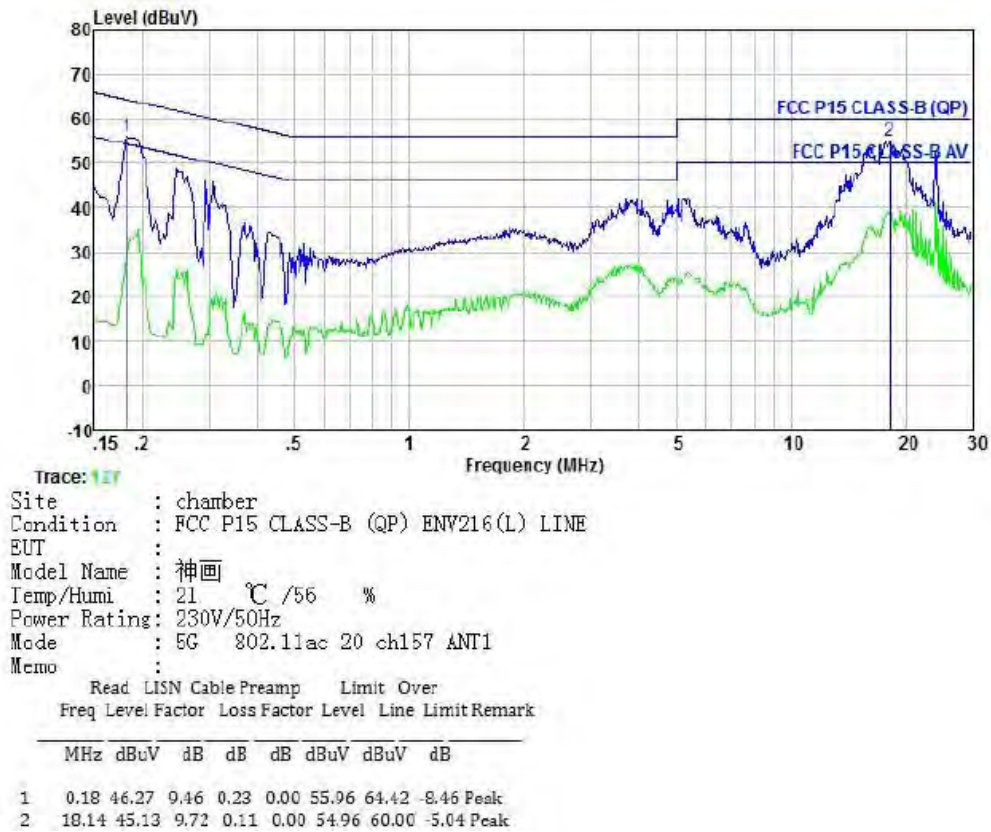


802.11ac (5725MHz-5850MHz)

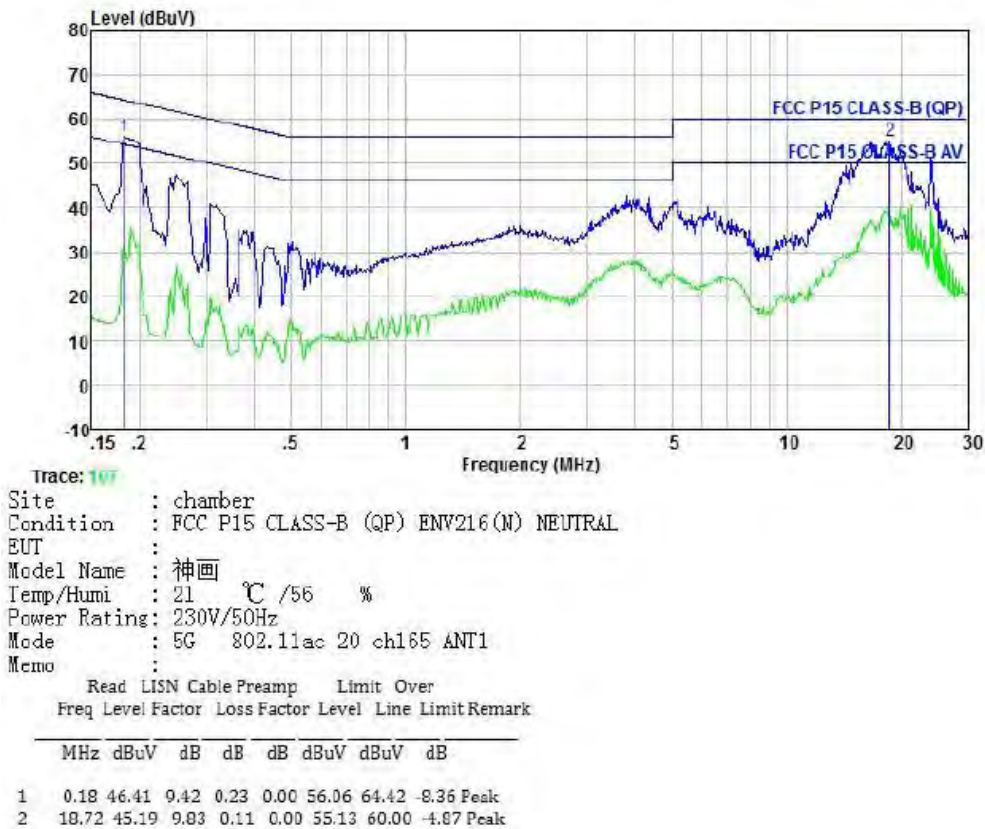
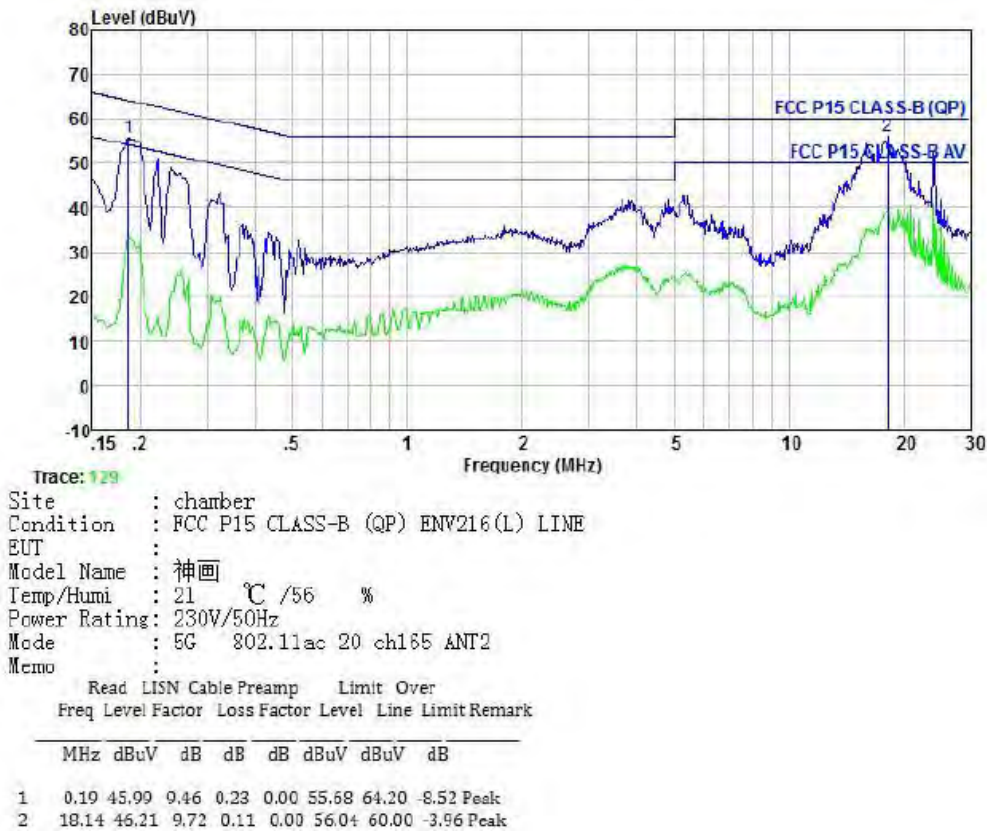
802.11ac20 ch149



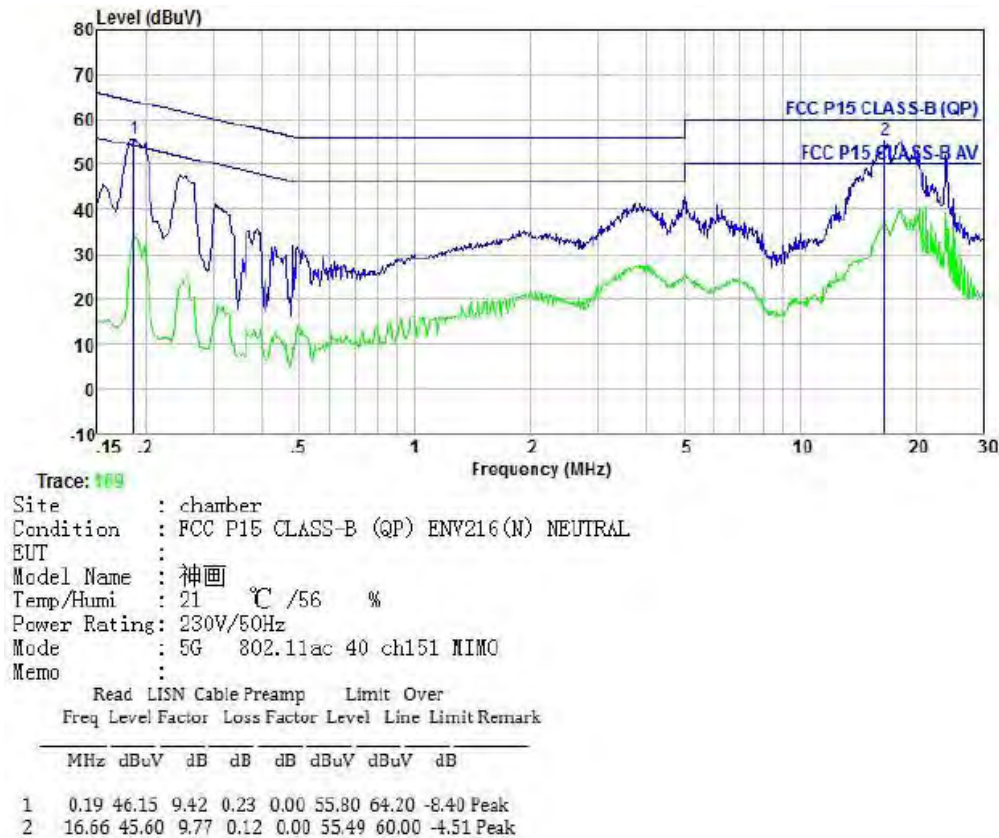
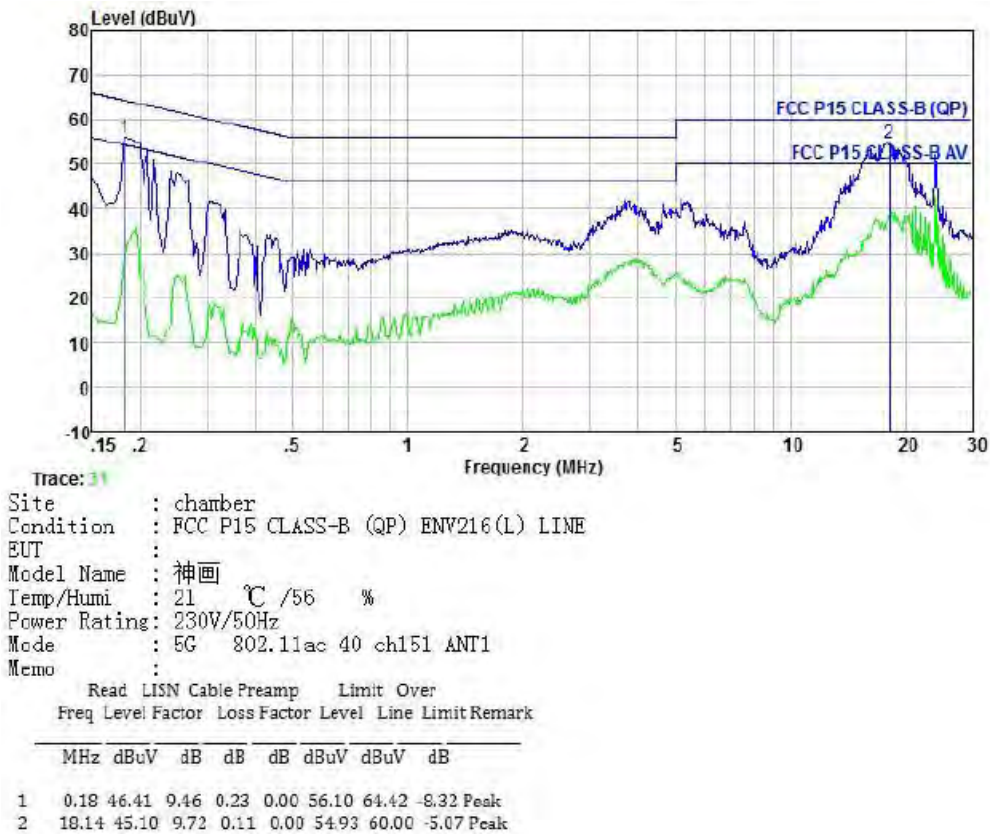
802.11ac20 ch157



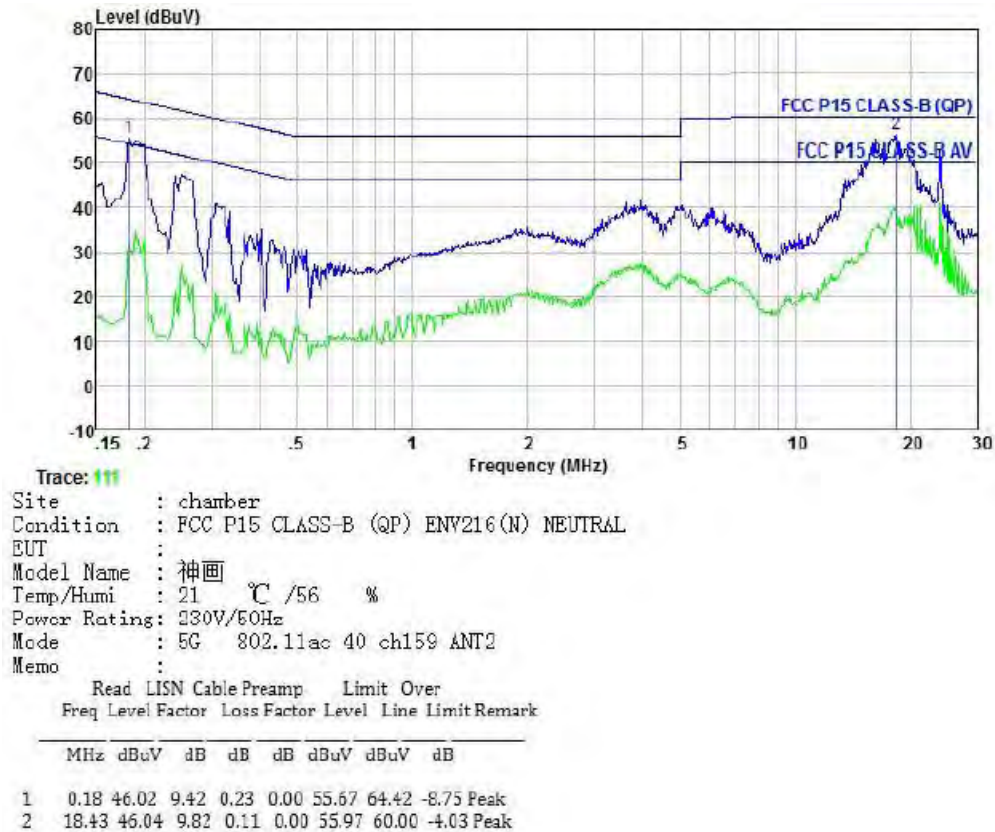
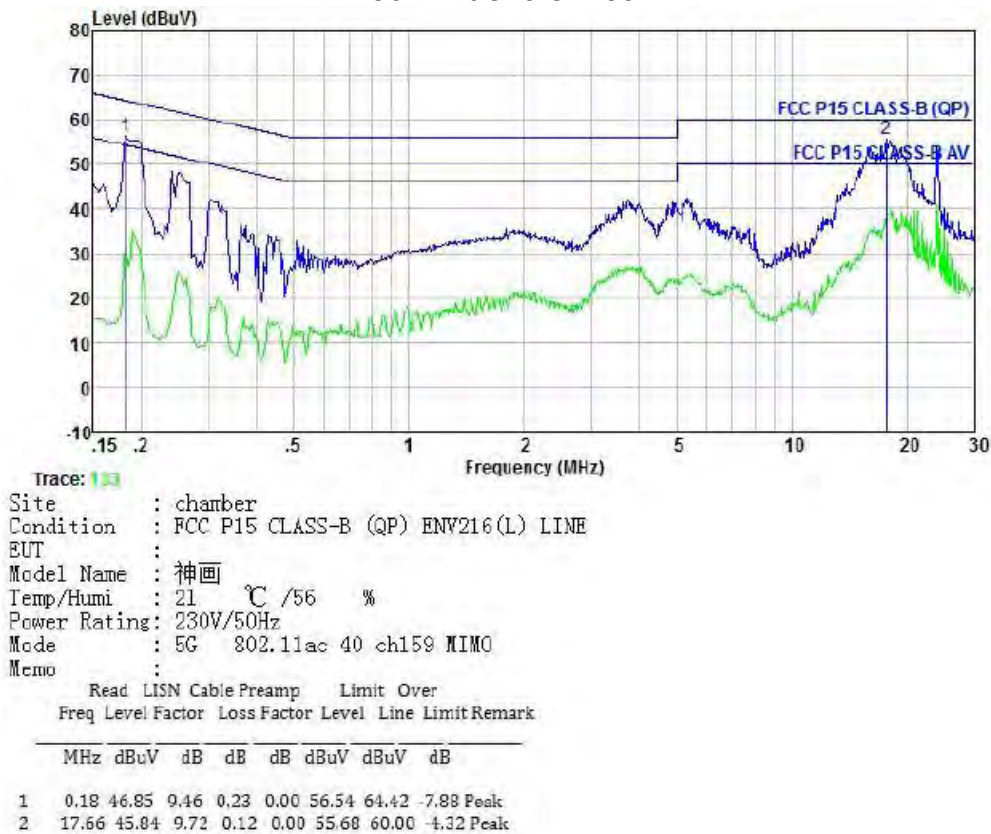
802.11ac20 ch165



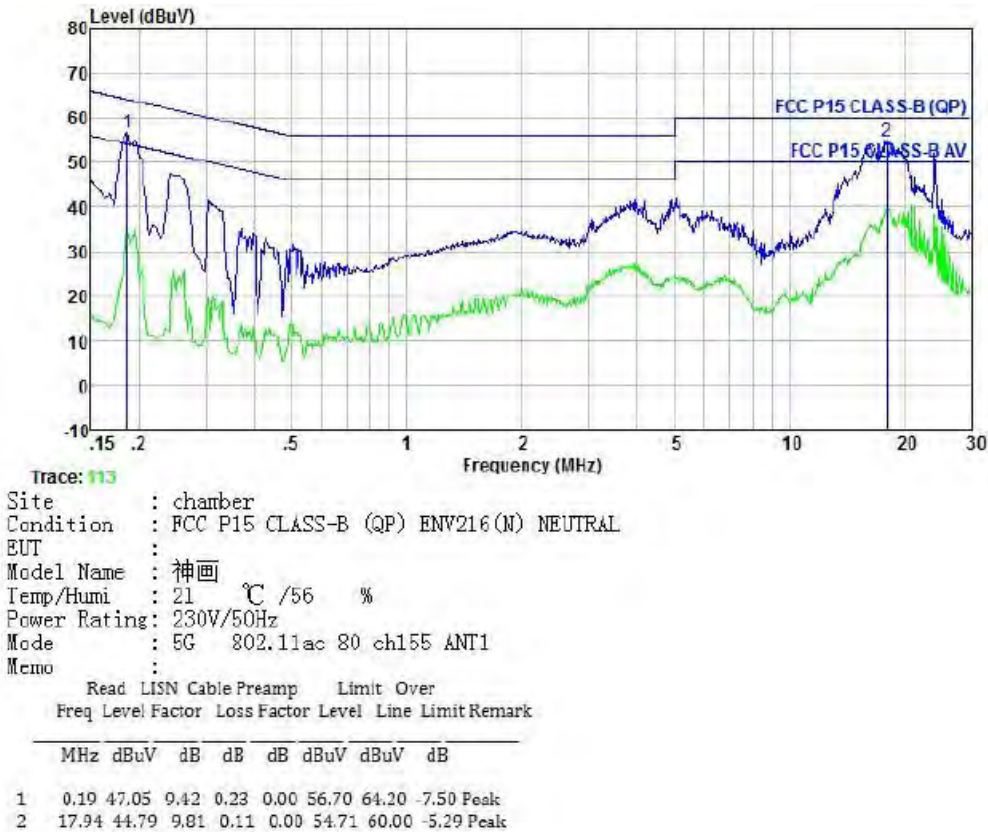
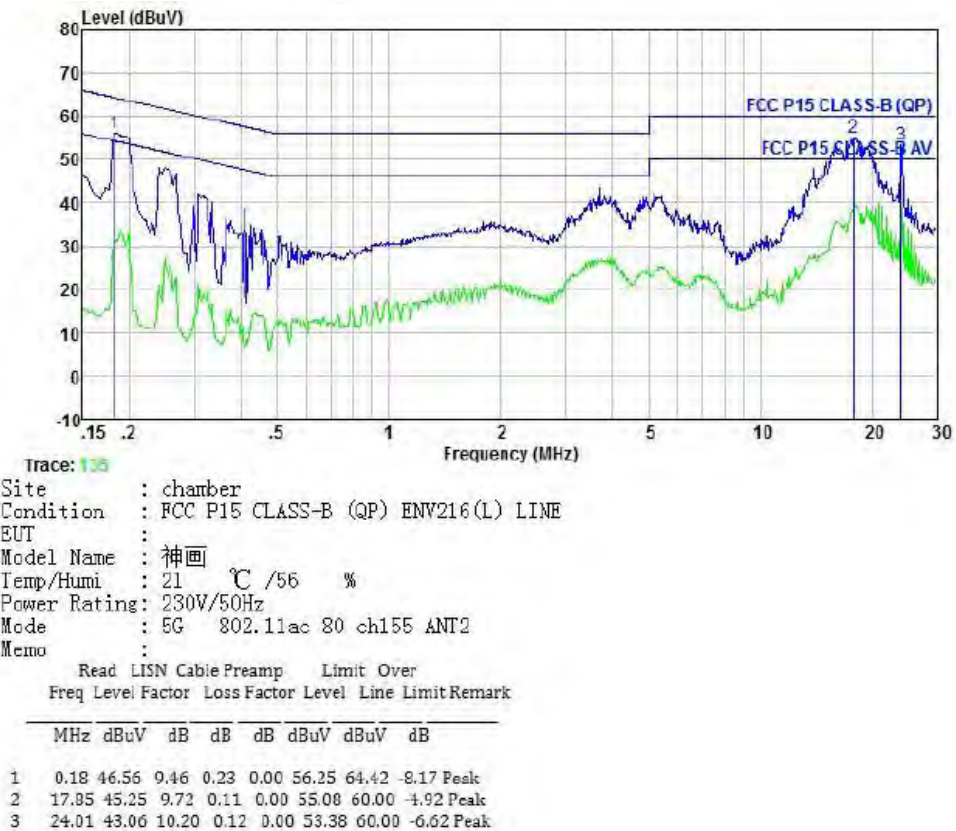
802.11ac40 ch151



802.11ac40 ch159



802.11ac80 ch155



APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Please refer to the file named “Part 15C Setup Photos”

APPENDIX 2 PHOTOGRAPHS OF EUT

Please refer to the files named “External Photos” and” Internal Photos” .

----End of the report---