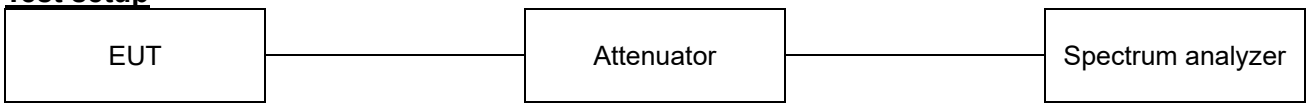
7.3. 26 dB Bandwidth & 99% Bandwidth

Test setup



Limit

N/A

Test procedure

ANSI C63.10-2013 Section 12.4
KDB 789033 D02 v02r01 - Section C.1 (26dB bandwidth)
KDB 789033 D02 v02r01 - Section D (99% bandwidth)

Test settings

1. 26 dB Bandwidth

a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. 99% Occupied Bandwidth

a. Set center frequency to the nominal EUT channel center frequency.
b. Set span = 1.5 times to 5.0 times the OBW.
c. Set RBW = 1% to 5% of the OBW
d. Set VBW ≥ 3 x RBW
e. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f. Use the 99% power bandwidth function of the instrument (if available).
g. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

Test results

SISO

Test mode	Band	Frequency(㎒)	26 ㏈ bandwidth (㎒)		99% bandwidth (㎒)	
			ANT1	ANT2	ANT1	ANT2
802.11a	UNII-1	5 180	28.12	28.47	17.88	17.83
		5 200	27.47	27.42	17.83	17.73
		5 240	27.62	27.57	17.88	17.88
	UNII-2A	5 260	27.17	26.72	17.83	17.88
		5 280	27.22	27.37	17.83	17.78
		5 320	26.62	27.17	17.88	17.83
	UNII-2C	5 500	26.02	26.12	17.68	17.73
		5 600	26.62	25.82	17.68	17.68
		5 700	26.82	27.97	17.73	17.83
802.11n HT20	UNII-1	5 180	28.22	26.97	18.38	18.33
		5 200	26.97	27.02	18.28	18.33
		5 240	27.87	27.02	18.38	18.38
	UNII-2A	5 260	27.82	27.02	18.33	18.38
		5 280	26.62	27.22	18.33	18.38
		5 320	26.52	26.82	18.33	18.38
	UNII-2C	5 500	27.22	27.27	18.28	18.28
		5 600	26.07	27.17	18.28	18.23
		5 700	26.52	26.52	18.33	18.33
802.11n HT40	UNII-1	5 190	40.96	40.86	36.16	36.16
		5 230	62.34	54.95	36.36	36.36
	UNII-2A	5 270	45.05	40.96	36.16	36.16
		5 310	40.86	40.66	36.16	36.06
	UNII-2C	5 510	40.56	40.96	36.06	36.16
		5 590	40.86	45.65	36.16	36.26
		5 670	40.76	65.33	36.16	36.36

Test mode	Band	Frequency(㎒)	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
			ANT1	ANT2	ANT1	ANT2
802.11ac VHT20	UNII-1	5 180	26.97	26.62	18.38	18.28
		5 200	26.57	27.02	18.38	18.33
		5 240	27.42	26.82	18.38	18.43
	UNII-2A	5 260	26.72	26.72	18.33	18.43
		5 280	25.77	27.12	18.33	18.38
		5 320	27.12	27.62	18.38	18.38
	UNII-2C	5 500	26.32	27.02	18.28	18.33
		5 600	26.62	27.12	18.38	18.33
		5 700	27.17	26.77	18.38	18.33
802.11ac VHT40	UNII-1	5 190	40.66	40.66	36.16	36.16
		5 230	40.46	40.46	36.16	36.06
	UNII-2A	5 270	40.56	40.36	36.06	36.06
		5 310	40.46	40.46	36.16	36.06
	UNII-2C	5 510	40.76	40.76	36.16	36.06
		5 590	40.66	40.86	36.16	36.06
		5 670	40.36	40.66	36.16	36.16
802.11ac VHT80	UNII-1	5 210	80.92	80.68	75.88	75.76
	UNII-2A	5 290	81.28	80.92	75.64	75.76
	UNII-2C	5 530	81.16	81.04	75.88	75.76
		5 610	80.92	80.92	75.88	75.88

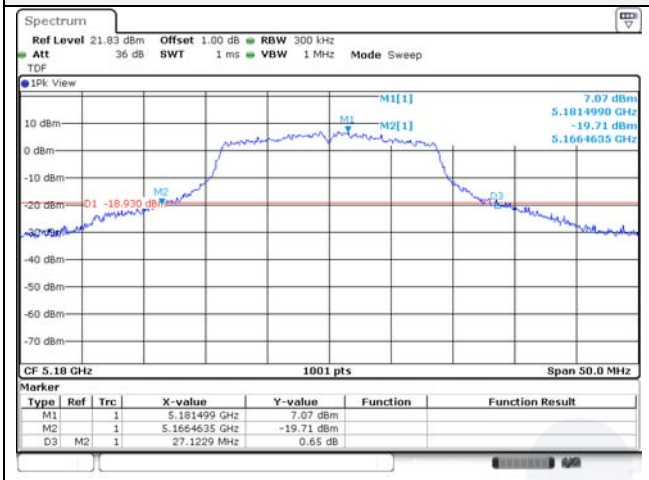
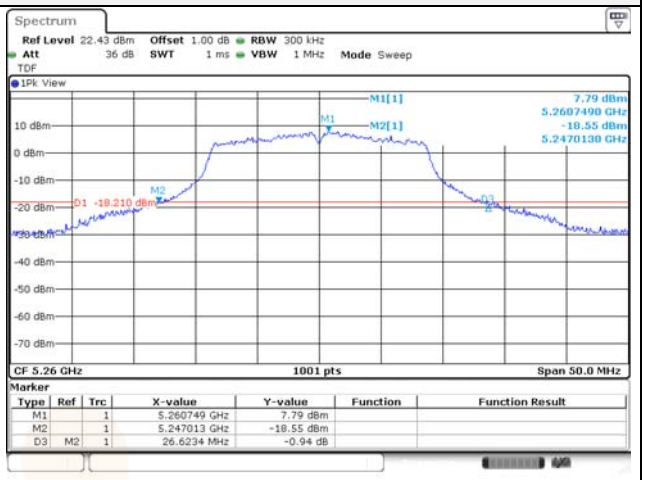
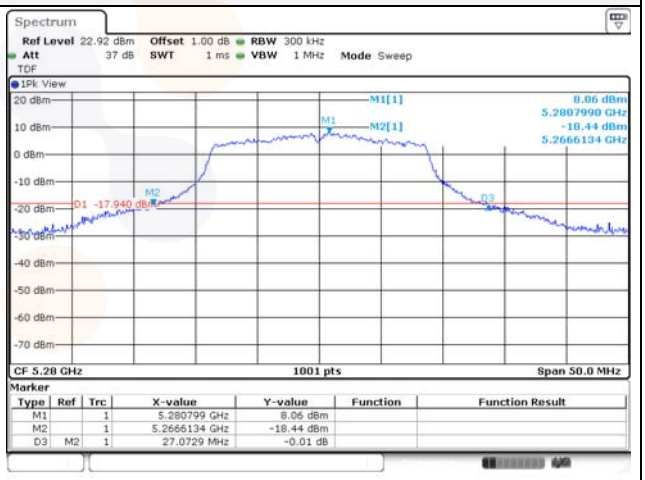
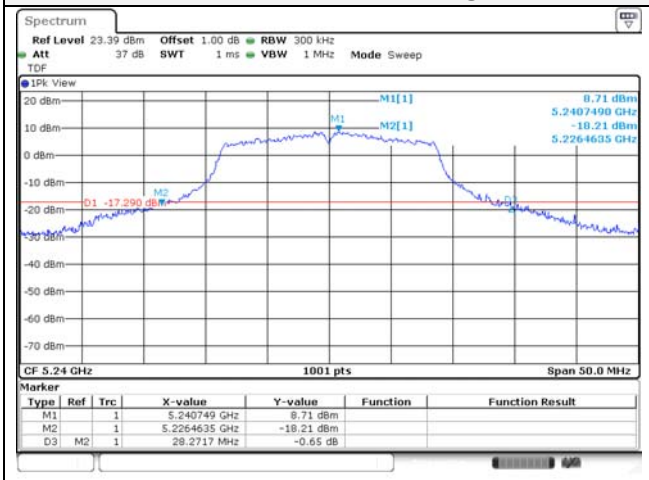
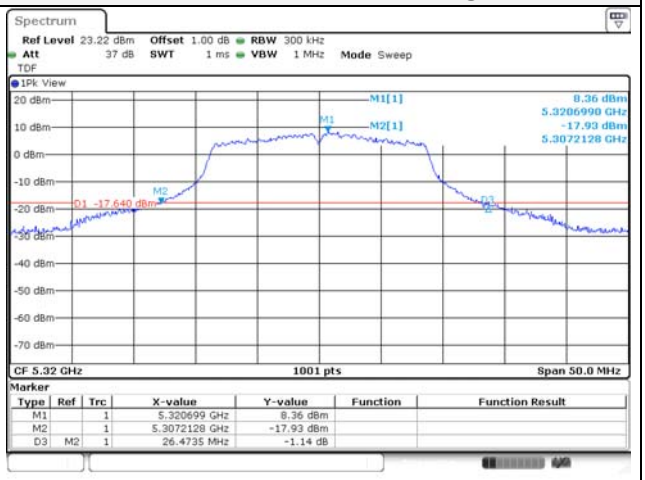
MIMO

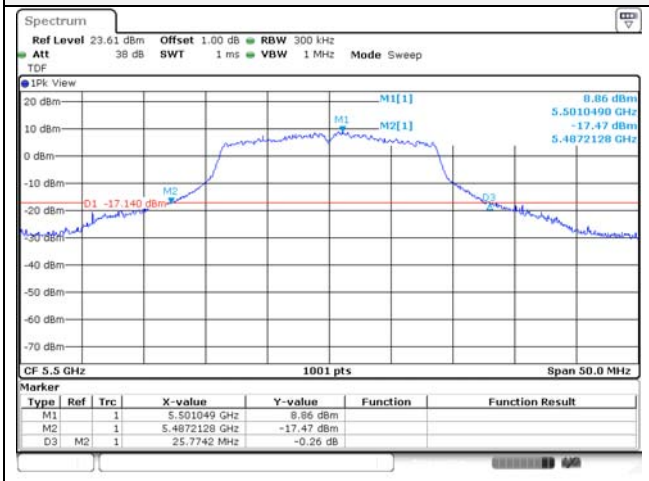
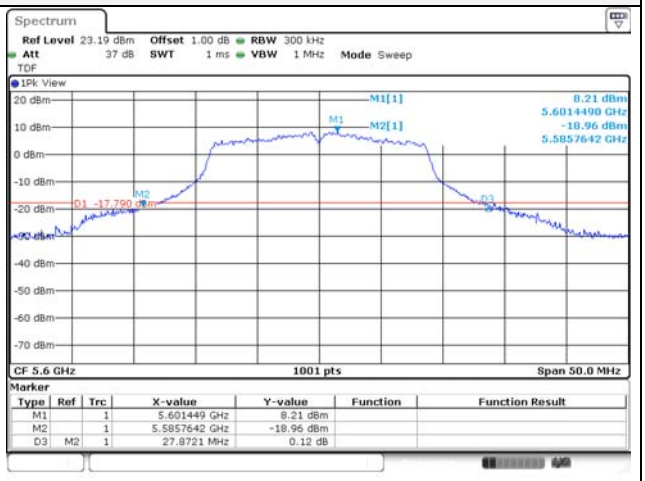
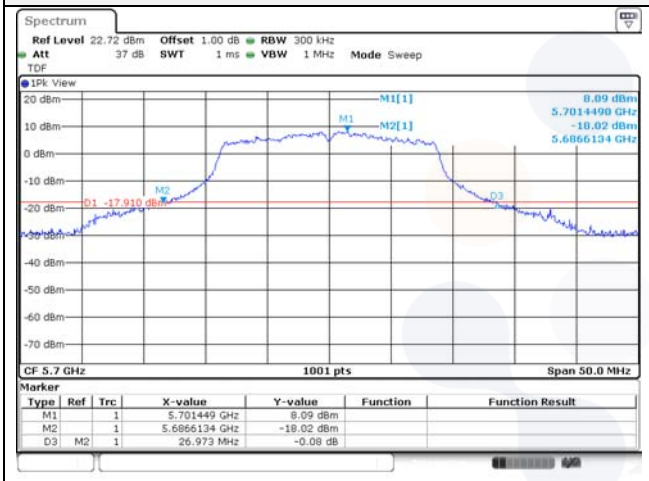
Test mode	Band	Frequency(㎒)	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
			ANT1	ANT2	ANT1	ANT2
802.11a	UNII-1	5 180	26.67	25.92	17.83	16.93
		5 200	27.52	24.93	17.83	16.98
		5 240	27.67	24.83	17.78	17.03
	UNII-2A	5 260	27.37	24.48	17.78	16.98
		5 280	26.37	24.63	17.83	16.98
		5 320	27.72	25.07	17.88	17.03
	UNII-2C	5 500	25.57	24.43	17.68	16.93
		5 600	25.87	24.38	17.83	16.88
		5 700	26.47	24.58	17.78	16.88
802.11n HT20	UNII-1	5 180	27.12	27.67	18.33	17.83
		5 200	27.22	27.62	18.33	17.83
		5 240	28.27	27.87	18.43	17.88
	UNII-2A	5 260	26.62	26.02	18.33	17.78
		5 280	27.07	25.97	18.38	17.78
		5 320	26.47	27.37	18.33	17.83
	UNII-2C	5 500	25.77	27.47	18.28	17.78
		5 600	27.87	23.98	18.28	17.78
		5 700	26.97	25.57	18.33	17.83
802.11n HT40	UNII-1	5 190	40.86	40.26	36.26	36.16
		5 230	53.65	39.86	36.36	36.16
	UNII-2A	5 270	42.26	40.36	36.16	36.16
		5 310	40.56	39.76	36.16	36.06
	UNII-2C	5 510	40.76	39.96	36.16	36.16
		5 590	41.06	40.36	36.16	36.06
		5 670	40.96	40.26	36.16	36.16

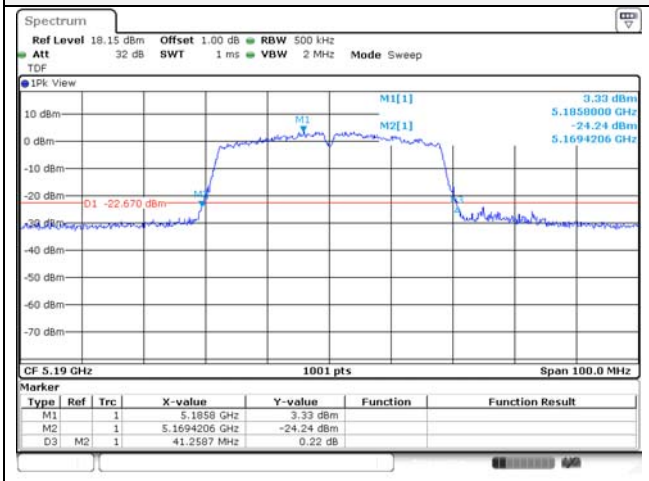
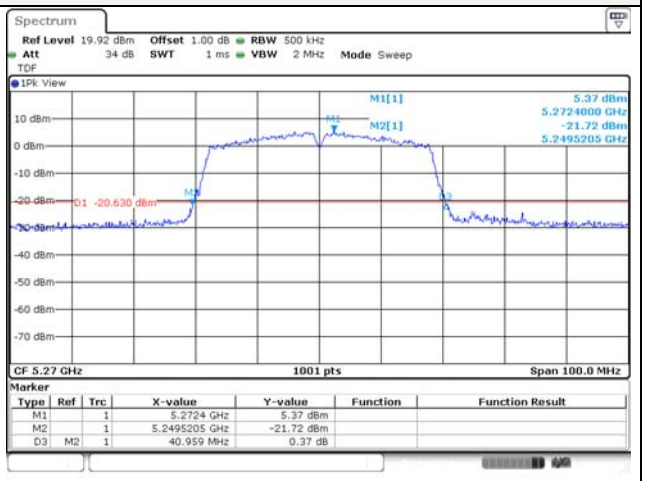
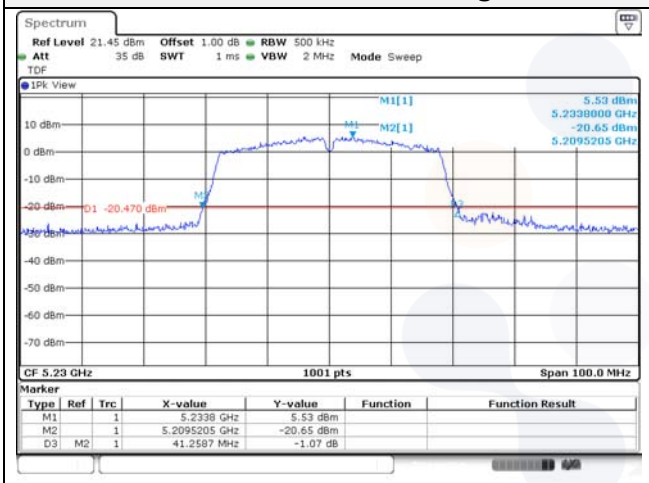
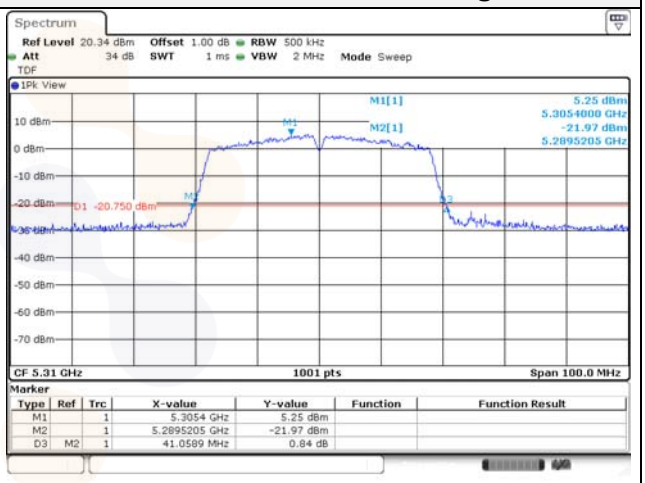
Test mode	Band	Frequency(㎒)	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
			ANT1	ANT2	ANT1	ANT2
802.11ac VHT20	UNII-1	5 180	27.22	24.58	18.58	17.93
		5 200	26.72	23.98	18.53	17.93
		5 240	26.92	25.08	18.63	18.03
	UNII-2A	5 260	26.32	24.63	18.58	17.98
		5 280	26.77	24.43	18.68	18.03
		5 320	26.92	24.93	18.63	18.08
	UNII-2C	5 500	26.77	24.38	18.58	17.93
		5 600	26.77	23.63	18.58	17.98
		5 700	26.62	25.27	18.63	17.93
802.11ac VHT40	UNII-1	5 190	41.26	40.36	36.06	35.96
		5 230	41.26	40.16	36.16	36.06
	UNII-2A	5 270	40.96	40.36	36.06	35.96
		5 310	41.06	40.26	36.06	35.96
	UNII-2C	5 510	40.96	40.06	36.16	35.96
		5 590	41.16	40.46	36.16	35.96
		5 670	41.16	39.96	36.06	35.96
802.11ac VHT80	UNII-1	5 210	80.56	80.20	75.64	75.76
	UNII-2A	5 290	80.80	80.44	75.64	75.76
	UNII-2C	5 530	80.44	80.44	75.76	75.88
		5 610	80.68	80.44	75.76	75.64

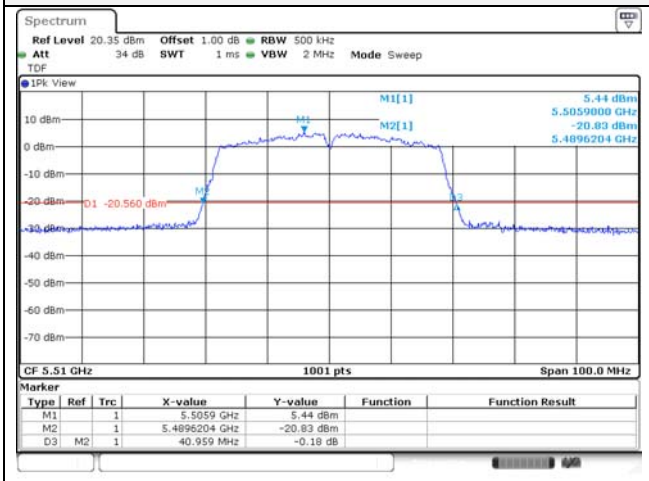
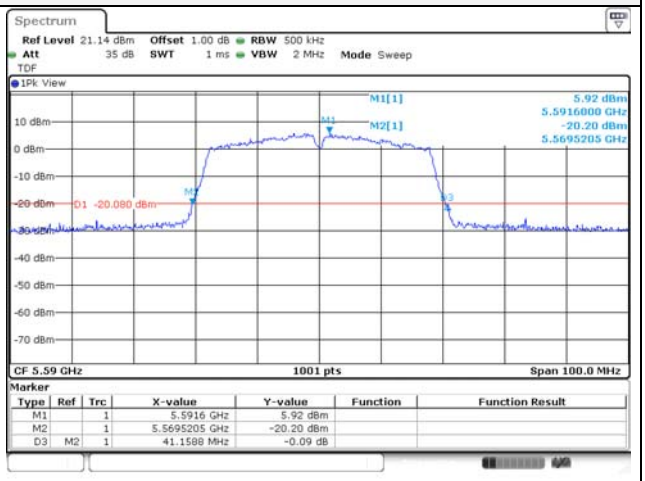
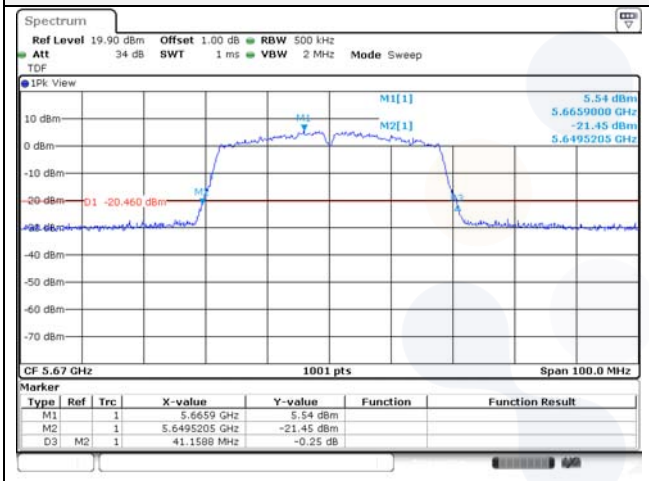
In order to simplify the report, attached plots were only MIMO ANT 1

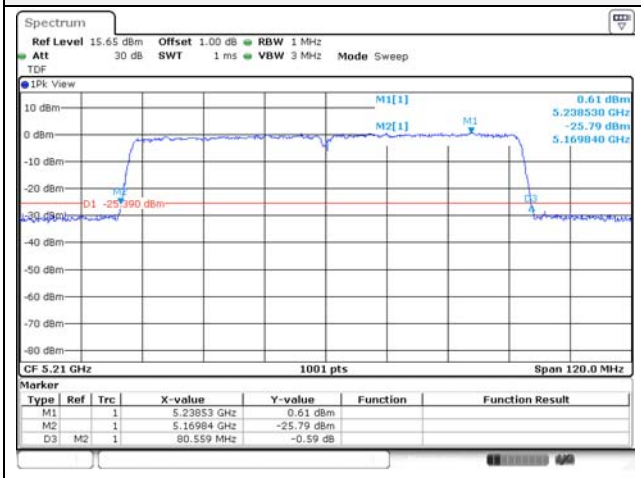
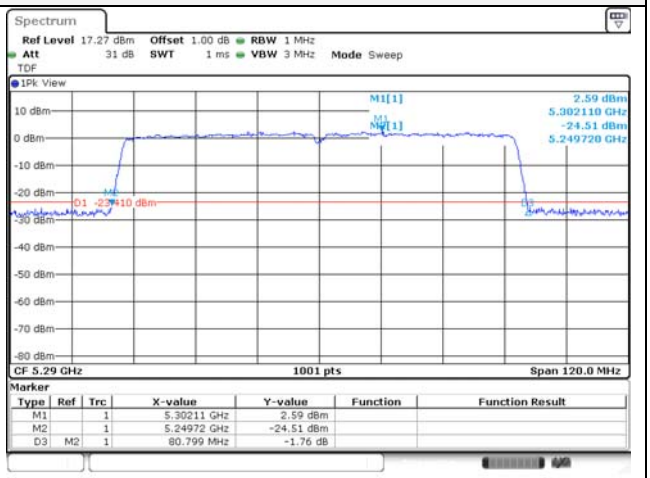
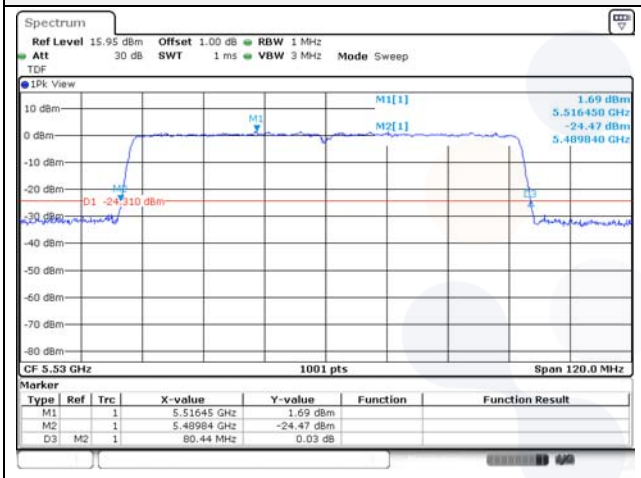
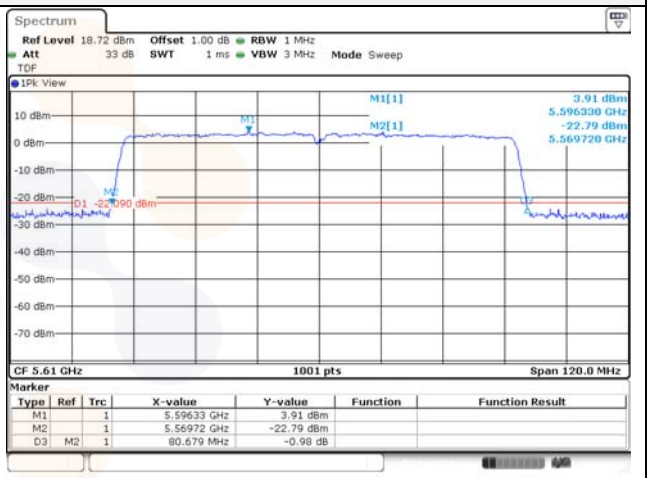
26 dB bandwidth

UNII-1 / 802. 11n HT20 / Low ch.	UNII-2A / 802. 11n HT20 / Low ch.
	
UNII-1 / 802. 11n HT20 / Mid ch.	**UNII-2A / 802. 11n HT20 / Mid ch.**
	
UNII-1 / 802. 11n HT20 / High ch.	**UNII-2A / 802. 11n HT20 / High ch.**
	

UNII-2C / 802. 11n HT20 / Low ch.	UNII-2C / 802. 11n HT20 / Mid ch.
	
UNII-2C / 802. 11n HT20 / High ch.	
	Blank

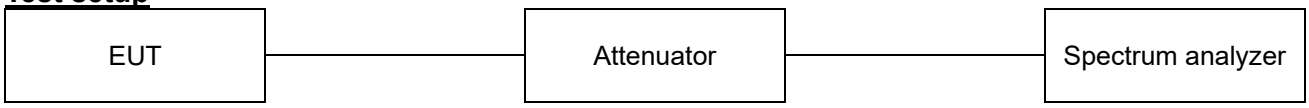
UNII-1 / 802.11ac VHT40 / Low ch.	UNII-2A / 802.11ac VHT40 / Low ch.
	
UNII-1 / 802.11ac VHT40 / High ch.	**UNII-2A / 802.11ac VHT40 / High ch.**
	

UNII-2C / 802.11ac VHT40 / Low ch.	UNII-2C / 802.11ac VHT40 / Mid ch.
	
UNII-2C / 802.11ac VHT40 / High ch.	
	Blank

UNII-1 / 802.11ac VHT80 / Mid ch.	UNII-2A / 802.11ac VHT80 / Mid ch.
	
UNII-2C / 802.11ac VHT80 / Low ch.	**UNII-2C / 802.11ac VHT80 / High ch.**
	

7.4. 6 dB Bandwidth

Test setup



Limit

According to §15.407(e), Within the 5.725-5.850 ㎓ and 5.850-5.895 ㎓ bands, the minimum 6 ㏈ bandwidth of U-NII devices shall be at least 500㎑.

Test procedure

ANSI C63.10-2013 Section 6.9.2
KDB 789033 D02 v02r01 - Section C.2

Test settings

Minimum Emission Bandwidth for the band 5.725−5.85 ㎓ and 5.850–5.895 ㎓.

Section 15.407(e) specifies the minimum 6 ㏈ emission bandwidth of at least 500 ㎑ for the band 5.725−5.85 ㎓ and 5.850-5.895 ㎓ band. The following procedure shall be used for measuring this Bandwidth:

1. Set RBW = 100 ㎑.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 ㏈ relative to the maximum level measured in the fundamental emission.

Test results

SISO

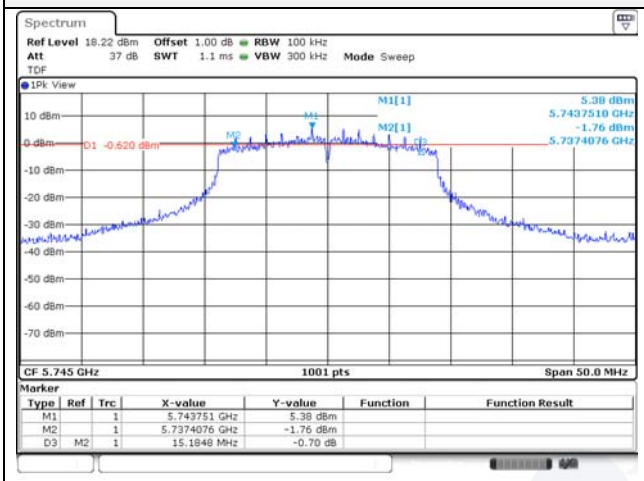
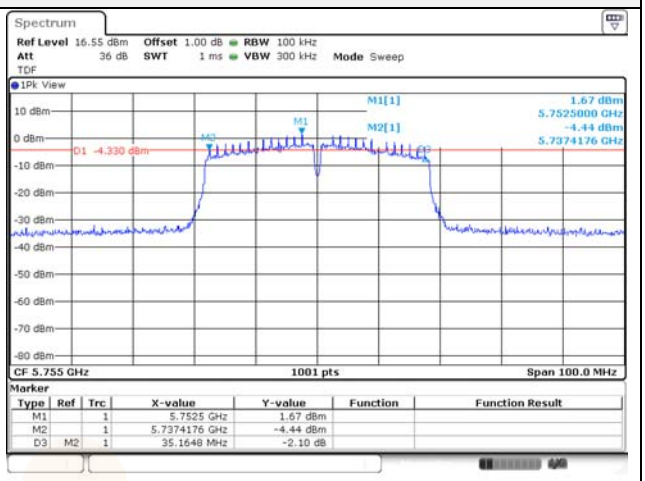
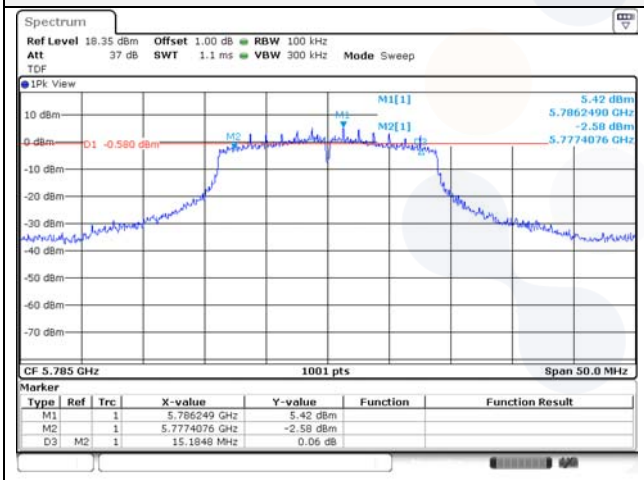
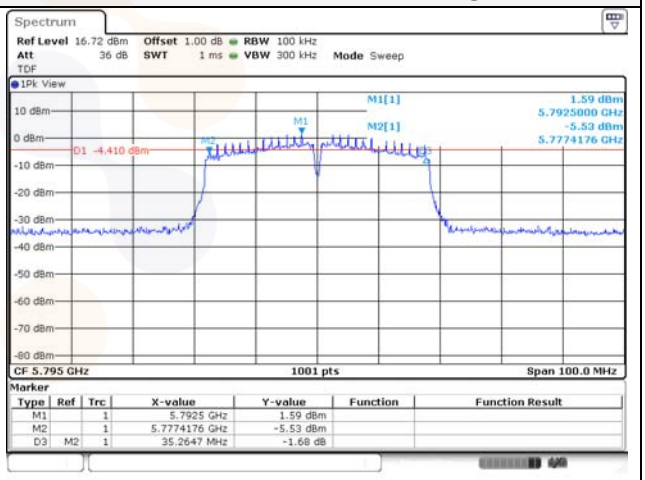
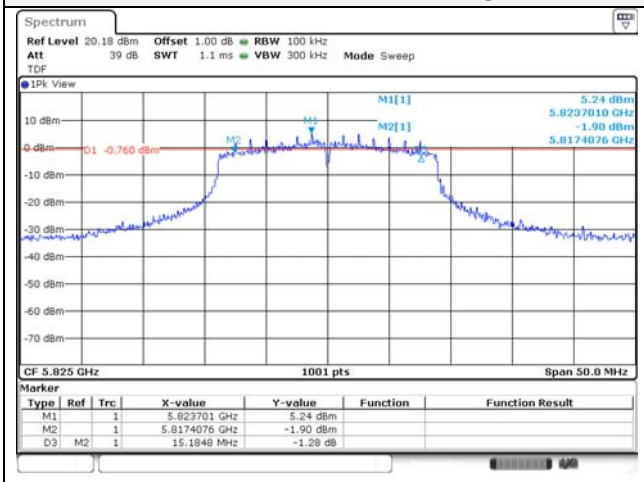
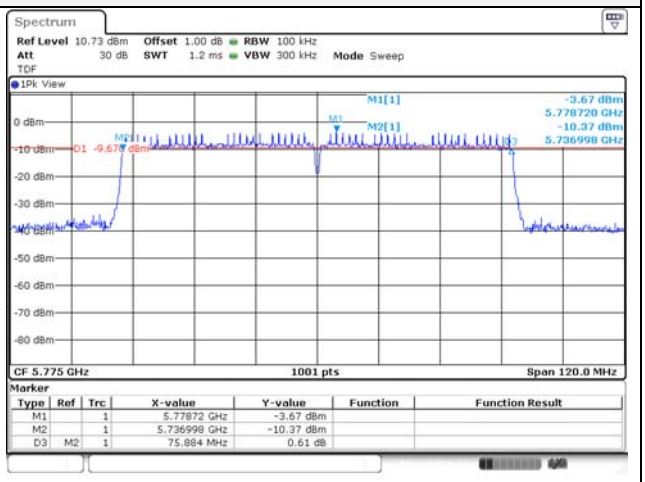
Test mode	Band	Frequency (㎒)	6㏈ bandwidth (㎒)		Limit (㎒)
			ANT1	ANT2	
802.11a	UNII-3	5 745	13.99	16.33	0.50
		5 785	13.89	15.18	0.50
		5 825	12.99	15.18	0.50
802.11n HT20	UNII-3	5 745	15.18	15.23	0.50
		5 785	15.18	15.13	0.50
		5 825	15.18	15.18	0.50
802.11n HT40	UNII-3	5 755	35.16	35.16	0.50
		5 795	35.26	35.26	0.50
802.11ac VHT20	UNII-3	5 745	15.13	15.18	0.50
		5 785	15.18	13.89	0.50
		5 825	15.18	15.18	0.50
802.11ac VHT40	UNII-3	5755	35.16	35.16	0.50
		5795	35.26	35.26	0.50
802.11ac VHT80	UNII-3	5775	76.24	76.00	0.50

MIMO

Test mode	Band	Frequency (㎒)	6㏈ bandwidth (㎒)		Limit (㎒)
			ANT1	ANT2	
802.11a	UNII-3	5 745	13.99	14.54	0.50
		5 785	15.13	14.54	0.50
		5 825	15.13	15.18	0.50
802.11n HT20	UNII-3	5 745	15.18	15.18	0.50
		5 785	13.04	15.78	0.50
		5 825	15.18	15.18	0.50
802.11n HT40	UNII-3	5 755	35.16	35.16	0.50
		5 795	35.26	35.16	0.50
802.11ac VHT20	UNII-3	5 745	15.18	15.13	0.50
		5 785	15.18	15.18	0.50
		5 825	15.18	15.18	0.50
802.11ac VHT40	UNII-3	5 755	35.16	35.16	0.50
		5 795	35.26	35.16	0.50
802.11ac VHT80	UNII-3	5 775	75.88	75.88	0.50

In order to simplify the report, attached plots were only MIMO ANT 1

6 dB bandwidth

UNII-3 / 802.11ac VHT 20 / Low ch.	UNII-3 / 802.11ac VHT40 / Low ch.
	
UNII-3 / 802.11ac VHT 20 / Mid ch.	**UNII-3 / 802.11ac VHT40 / High ch.**
	
UNII-3 / 802.11ac VHT 20 / High ch.	**UNII-3 / 802.11ac VHT80 / Mid ch.**
	

7.5. Straddle channel

26dB bandwidth

SISO

Test mode	Band	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT1	ANT2
802.11a	UNII-2C	5 720	18.04	18.34
802.11n HT20			18.29	18.59
802.11ac VHT20			18.89	18.39
802.11a	UNII-3	5 720	7.94	9.14
802.11n HT20			8.54	8.49
802.11ac VHT20			8.24	8.34
802.11n HT40	UNII-2C	5 710	35.58	35.88
802.11ac VHT40			35.38	35.48
802.11n HT40	UNII-3	5 710	5.58	17.87
802.11ac VHT40			5.18	5.28
802.11ac VHT80	UNII-2C	5 690	75.40	75.64
	UNII-3	5 690	5.64	5.52

Notes:

1. [UNII-2C] 26dB Bandwidth = 5 725㎒ – Measured Frequency[㎒]
   [UNII-3] 26dB Bandwidth = Measured Frequency[㎒] – 5 725㎒

MIMO

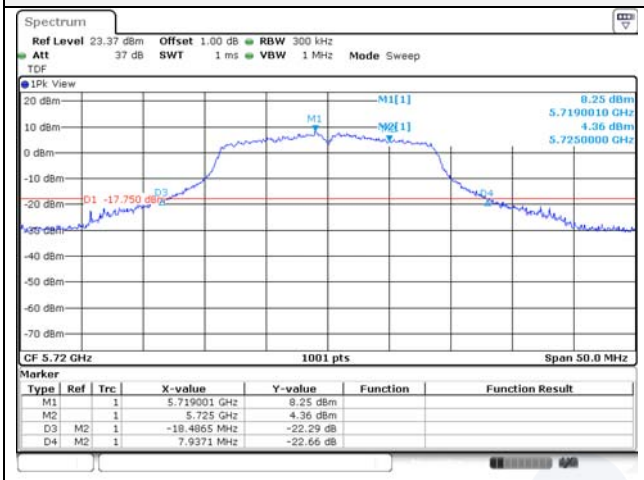
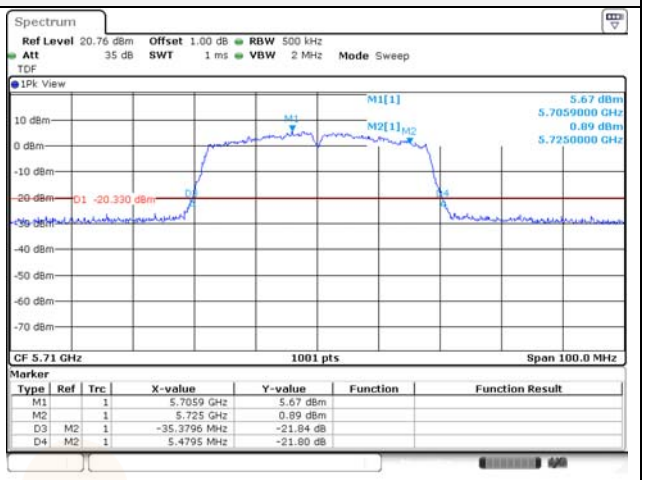
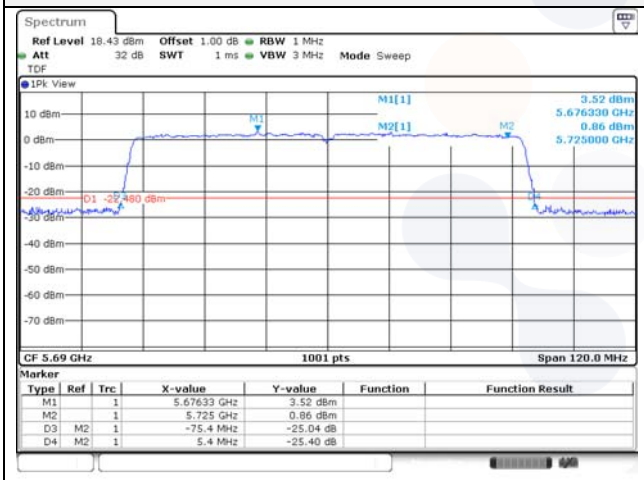
Test mode	Band	Frequency (㎒)	26㏈ Bandwidth (㎒)	
			ANT1	ANT2
802.11a	UNII-2C	5 720	18.14	17.59
802.11n HT20			18.09	18.64
802.11ac VHT20			18.49	17.49
802.11a	UNII-3	5 720	7.79	7.64
802.11n HT20			8.64	8.84
802.11ac VHT20			7.94	8.04
802.11n HT40	UNII-2C	5 710	35.18	35.08
802.11ac VHT40			35.38	35.08
802.11n HT40	UNII-3	5 710	5.28	4.98
802.11ac VHT40			5.48	5.18
802.11ac VHT80	UNII-2C	5 690	75.40	75.04
	UNII-3	5 690	5.40	5.40

Notes:

1. [UNII-2C] 26dB Bandwidth = 5 725㎒ – Measured Frequency[㎒]
   [UNII-3] 26dB Bandwidth = Measured Frequency[㎒] – 5 725㎒

In order to simplify the report, attached plots were only MIMO ANT 1

26dB bandwidth

802.11ac VHT20	802.11ac VHT40
	
802.11ac VHT80	
	Blank

6dB bandwidth

SISO

Test mode	Band	Frequency (㎒)	6dB Bandwidth (㎒)		Limit (㎒)
			ANT1	ANT2	
802.11a	UNII-3	5 720	2.59	2.59	0.50
802.11n HT20			2.59	2.59	0.50
802.11ac VHT20			2.59	2.59	0.50
802.11n HT40	UNII-3	5 710	2.68	2.68	0.50
802.11ac VHT40			2.68	2.68	0.50
802.11ac VHT80	UNII-3	5 690	3.00	3.00	0.50

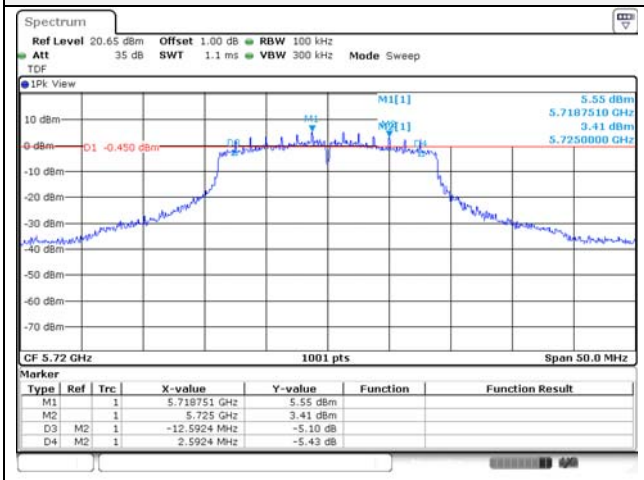
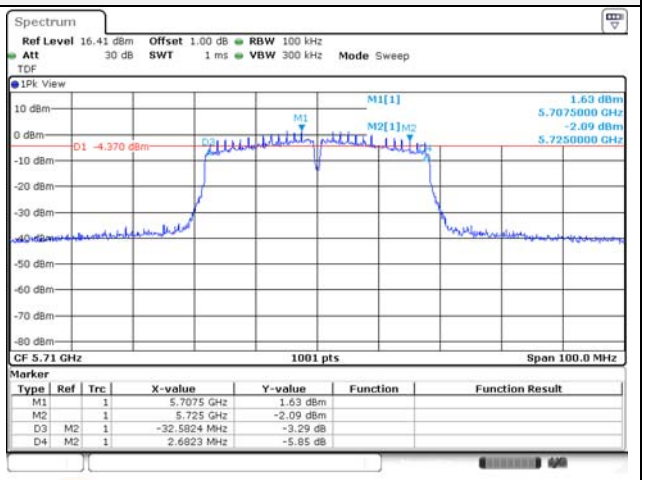
MIMO

Test mode	Band	Frequency (㎒)	6dB Bandwidth (㎒)		Limit (㎒)
			ANT1	ANT2	
802.11a	UNII-3	5 720	2.59	2.59	0.50
802.11n HT20			2.59	2.59	0.50
802.11ac VHT20			2.59	2.59	0.50
802.11n HT40	UNII-3	5 710	2.68	2.58	0.50
802.11ac VHT40			2.68	2.68	0.50
802.11ac VHT80	UNII-3	5 690	2.88	3.24	0.50

Notes:

1. 6dB Bandwidth = Measured Frequency[㎒] – 5 725㎒

In order to simplify the report, attached plots were only MIMO ANT 1

802.11ac VHT 20	802.11ac VHT 40
	
802.11ac VHT80	
	Blank

Output Power

-SISO

Test mode	Band	Frequency (㎒)	Measured output power					Limit (dBm)
			Reading (dBm)		DCF (dB)	Result (dBm)		
			ANT1	ANT2		ANT1	ANT2	
802.11a	UNII-2C	5 720	16.27	16.06	0.30	16.57	16.36	23.98
802.11n HT20			15.04	14.99	0.32	15.36	15.31	23.98
802.11ac VHT20			14.00	14.12	0.32	14.32	14.44	23.98
802.11a	UNII-3	5 720	8.60	8.20	0.30	8.90	8.50	30.00
802.11n HT20			7.87	7.66	0.32	8.19	7.98	
802.11ac VHT20			6.91	6.78	0.32	7.23	7.10	
802.11n HT40	UNII-2C	5 710	15.23	15.42	0.62	15.85	16.04	23.98
802.11ac VHT40			13.37	13.50	0.61	13.98	14.11	
802.11n HT40	UNII-3	5 710	2.56	2.67	0.62	3.18	3.29	30.00
802.11ac VHT40			0.51	0.90	0.61	1.12	1.51	
802.11ac VHT80	UNII-2C	5 690	11.36	11.05	1.14	12.50	12.19	23.98
	UNII-3	5 690	-2.59	-3.10	1.14	-1.45	-1.96	30.00

Notes.

1. Result(dBm) = Reading Power + D.C.F

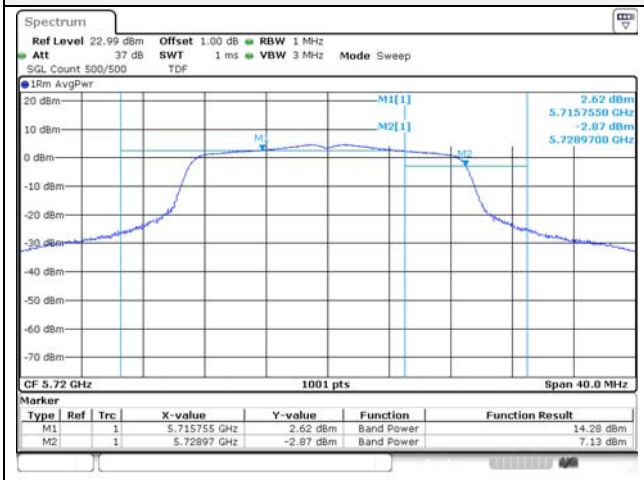
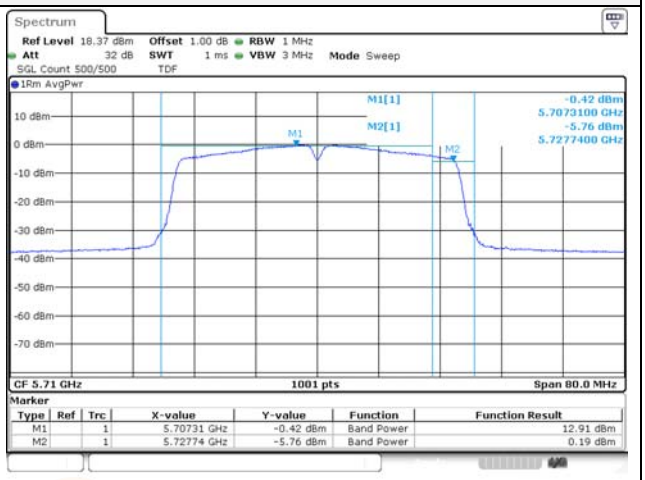
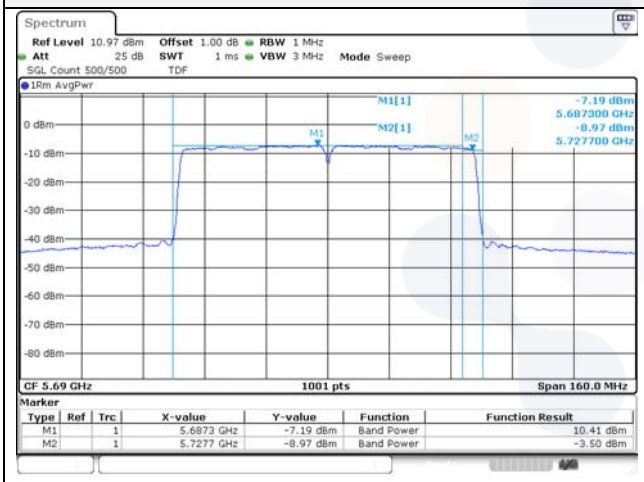
-MIMO

Test mode	Band	Frequency (㎒)	Measured output power					Limit (dBm)
			Reading (dBm)		DCF (dB)	Result (dBm)		
			ANT1	ANT2		ANT1	ANT2	
802.11a	UNII-2C	5 720	15.96	15.54	0.29	16.25	15.83	23.98
802.11n HT20			15.12	15.08	0.31	15.43	15.39	23.98
802.11ac VHT20			14.28	14.23	0.58	14.86	14.81	23.98
802.11a	UNII-3	5 720	8.33	7.72	0.29	8.62	8.01	30.00
802.11n HT20			7.89	7.79	0.31	8.20	8.10	
802.11ac VHT20			7.13	6.97	0.58	7.71	7.55	
802.11n HT40	UNII-2C	5 710	14.89	14.68	0.61	15.50	15.29	23.98
802.11ac VHT40			12.91	12.75	1.07	13.98	13.82	
802.11n HT40	UNII-3	5 710	2.03	1.97	0.61	2.64	2.58	30.00
802.11ac VHT40			0.19	0.05	1.07	1.26	1.12	
802.11ac VHT80	UNII-2C	5 690	10.41	9.74	1.81	12.22	11.55	23.98
	UNII-3	5 690	-3.50	-1.99	1.81	-1.69	-0.18	30.00

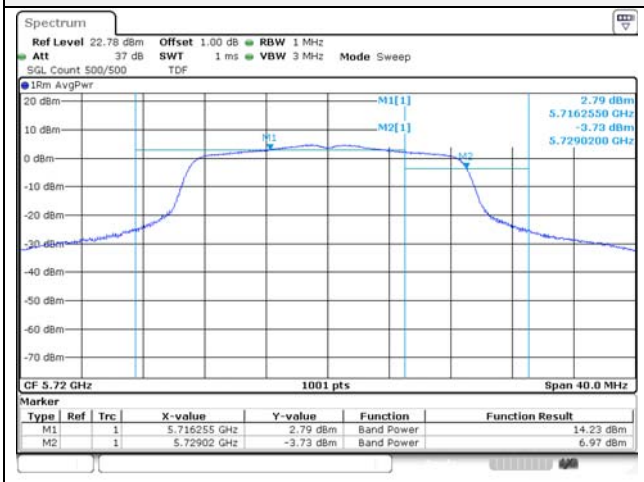
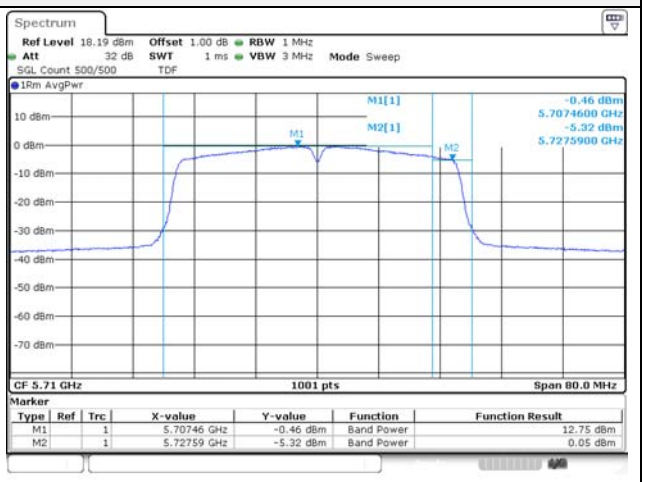
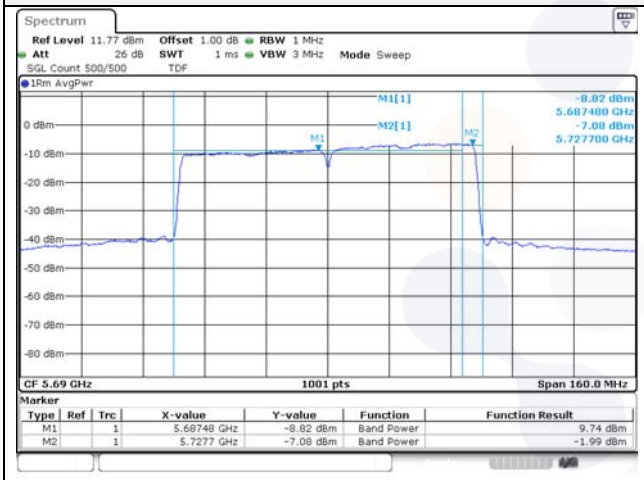
Notes:

1. Result(dBm) = $10\log(10^{(ANT\ 1/10)} + 10^{(ANT\ 2/10)})$ + D.C.F

In order to simplify the report, attached plots were only MIMO
ANT 1

802.11ac VHT20	802.11ac VHT40
	
802.11ac VHT80	
	Blank

ANT2

802.11ac VHT20	802.11ac VHT40
	
802.11ac VHT80	
	Blank

Power Spectral Density

-SISO

Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)		DCF (dB)	Maximum PSD (dB m/㎒)		Limit (dBm/㎒)
			ANT1	ANT2		ANT1	ANT2	
802.11a	UNII-2C	5 720	7.08	6.93	0.30	7.38	7.23	11.00
802.11n HT20			5.63	5.70	0.32	5.95	6.02	
802.11ac VHT20			4.64	4.76	0.32	4.96	5.08	
802.11n HT40		5 710	2.30	2.51	0.62	2.92	3.13	
802.11ac VHT40			0.44	0.66	0.61	1.05	1.27	
802.11ac VHT80		5 690	-6.09	-6.57	1.14	-4.95	-5.43	

Test mode	Band	Frequency (㎒)	Measured PSD (dBm/ 500 ㎑)		DCF (dB)	Maximum PSD (dBm/ 500 ㎑)		Limit (dBm /500 ㎑)
			ANT1	ANT2		ANT1	ANT2	
802.11a	UNII-3	5 720	1.69	1.32	0.30	1.99	1.62	30.00
802.11n HT20			0.39	0.36	0.32	0.71	0.68	
802.11ac VHT20			-0.67	-0.69	0.32	-0.35	-0.37	
802.11n HT40		5 710	-4.53	-4.31	0.62	-3.91	-3.69	
802.11ac VHT40			-6.41	-5.97	0.61	-5.80	-5.36	
802.11ac VHT80		5 690	-9.74	-10.40	1.14	-8.60	-9.26	

Notes:

1. Maximum PSD calculation

- Maximum PSD = Measured PSD + D.C.F

-MIMO

Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)		DCF (dB)	Maximum PSD (dB m/㎒)	Limit (dBm/㎒)
			ANT1	ANT2			
802.11a	UNII-2C	5 720	6.76	6.35	0.29	9.86	11.00
802.11n HT20			5.77	5.74	0.31	9.08	
802.11ac VHT20			5.02	4.87	0.58	8.54	
802.11n HT40		5 710	2.06	1.87	0.61	5.59	
802.11ac VHT40			-0.17	-0.17	1.07	3.91	
802.11ac VHT80		5 690	-6.82	-6.31	1.81	-1.74	

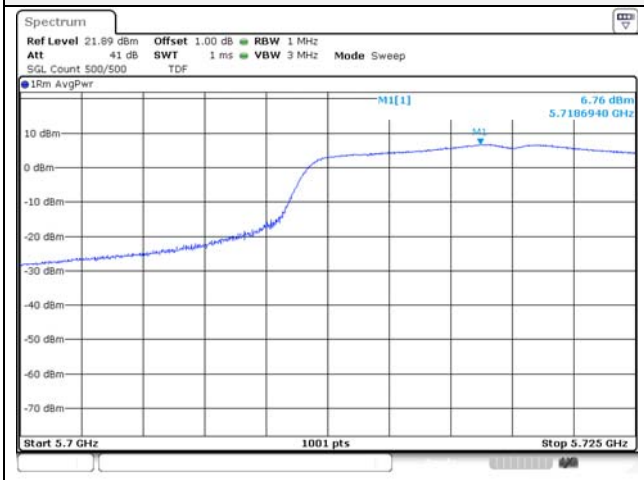
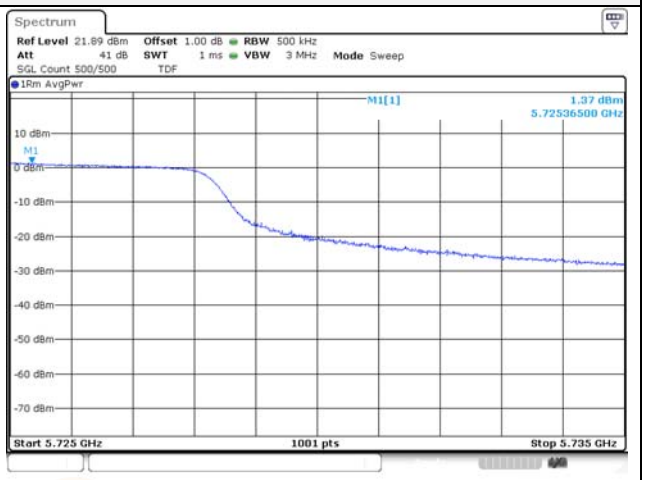
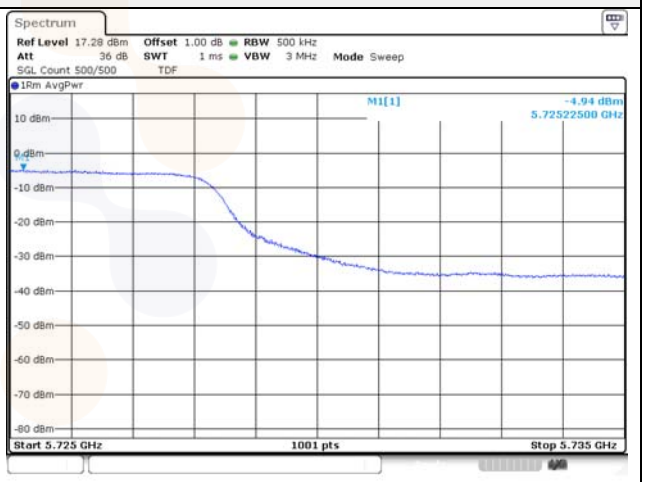
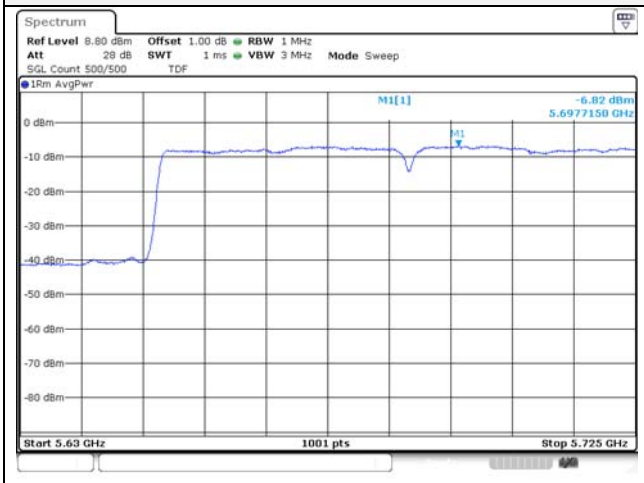
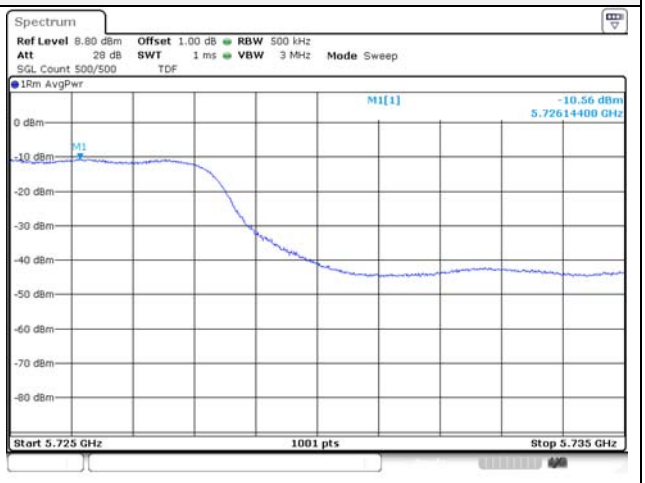
Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)		DCF (dB)	Maximum PSD (dB m/㎒)	Limit (dBm /500 ㎑)
			ANT1	ANT2			
802.11a	UNII-3	5 720	1.37	0.97	0.29	4.48	30.00
802.11n HT20			0.47	0.39	0.31	3.75	
802.11ac VHT20			-0.36	-0.60	0.58	3.11	
802.11n HT40		5 710	-4.94	-5.11	0.61	-1.40	
802.11ac VHT40			-6.85	-6.86	1.07	-2.78	
802.11ac VHT80		5 690	-10.56	-8.88	1.81	-4.82	

Notes:

1. Maximum PSD calculation

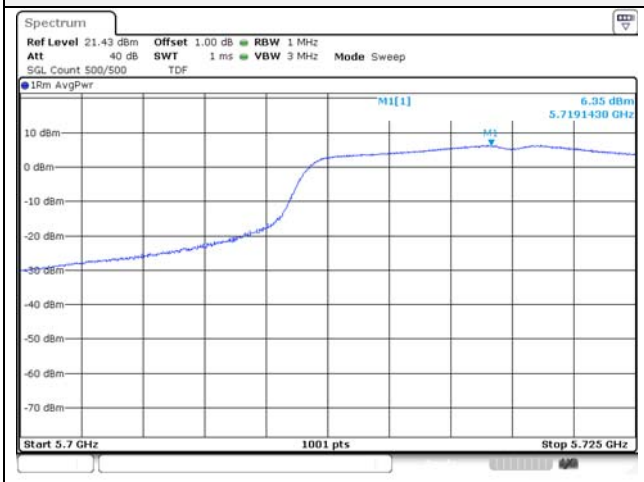
- Maximum PSD = Measured $10\log(10^{(ANT\ 1/10)} + 10^{(ANT\ 2/10)}) + D.C.F$

In order to simplify the report, attached plots were only MIMO
MIMO ANT1

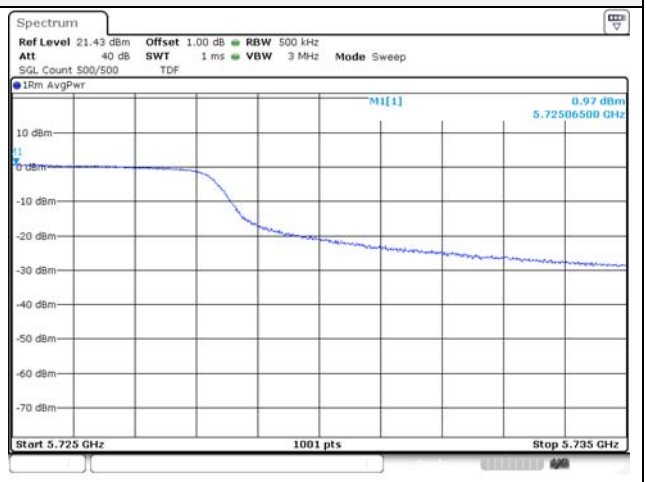
UNII-2C / 802.11a	UNII-3 / 802.11a
	
UNII-2C / 802.11n HT40	**UNII-3 / 802.11n HT40**
	
UNII-2C / 802.11ac VHT80	**UNII-3 / 802.11ac VHT80**
	

MIMO ANT2

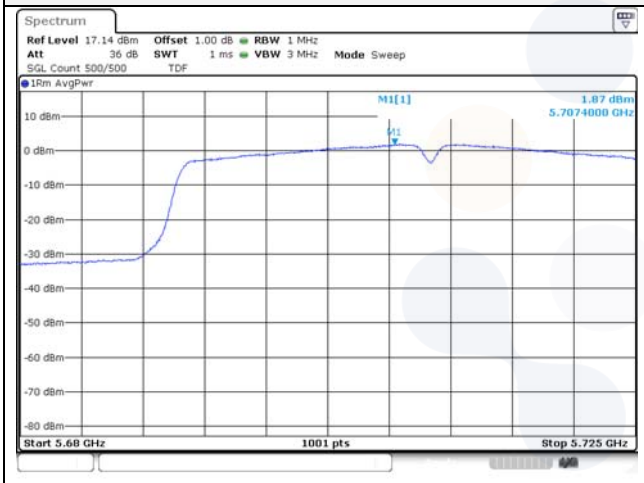
UNII-2C / 802.11a



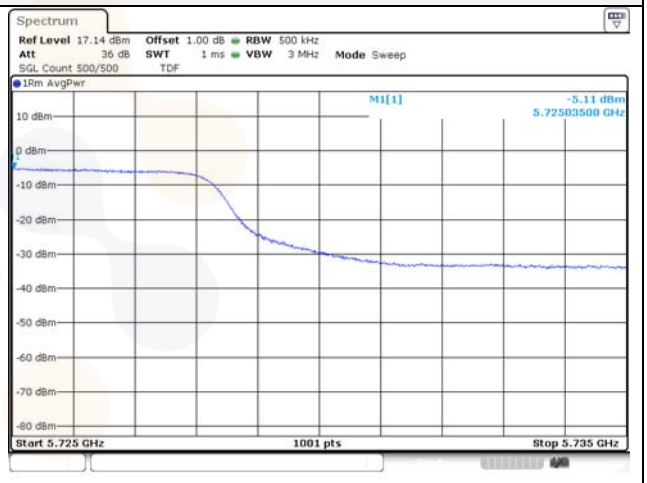
UNII-3 / 802.11a



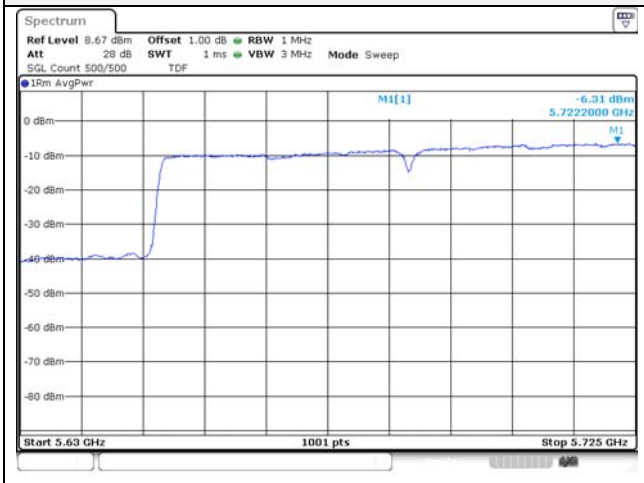
UNII-2C / 802.11n HT40



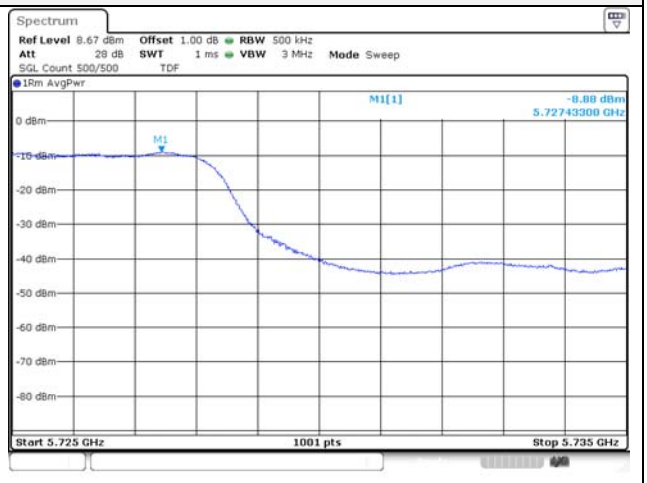
UNII-3 / 802.11n HT40



UNII-2C / 802.11ac VHT80



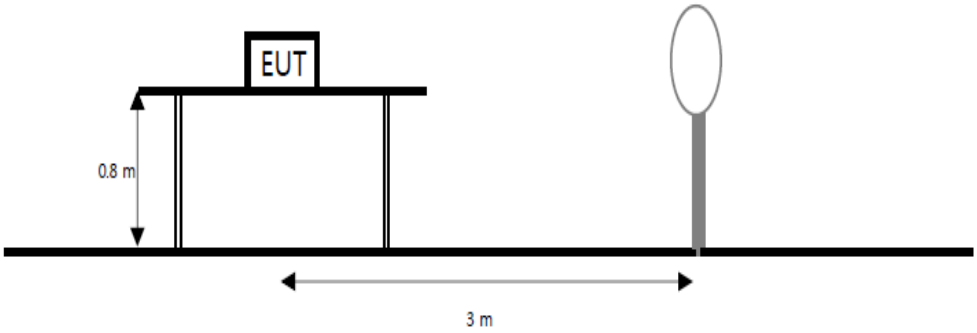
UNII-3 / 802.11ac VHT80



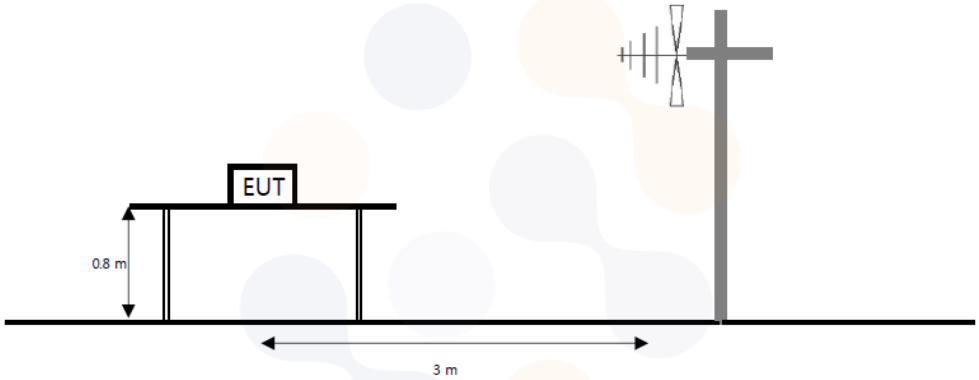
7.6. Spurious Emission, Band Edge and Restricted bands

Test setup

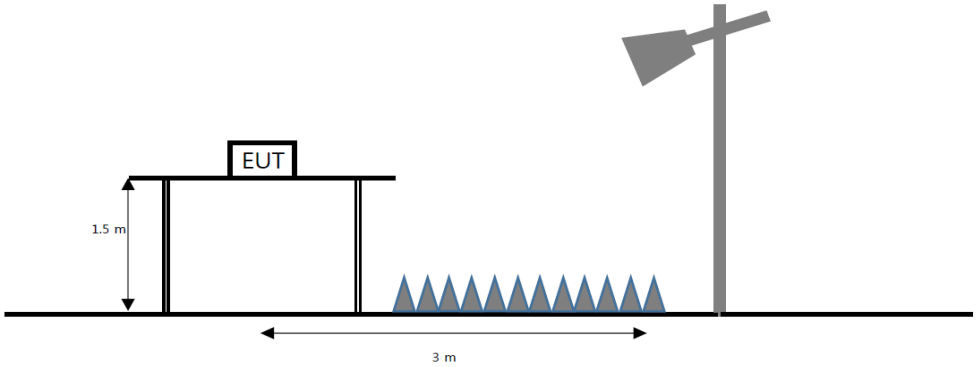
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to the tenth harmonic of the highest fundamental frequency or to 40 ㎓ emissions, whichever is lower.



Limit

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

Frequency (㎒)	Field strength (㎶/m)	Measurement distance (m)
0.009 - 0.490	2 400/F(㎑)	300
0.490 - 1.705	24 000/F(㎑)	30
1.705 - 30	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 ㎒, 76–88 ㎒, 174–216 ㎒ or 470–806 ㎒. However, operation within these frequency bands is permitted under other sections of this part, e.g., Section15.231 and 15.241.

According to section 15.205(a) and (b) only spurious emissions are permitted in any of the frequency bands listed below:

㎒	㎒	㎒	㎓
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 – 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 – 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 – 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 – 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 – 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 – 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 – 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 – 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525 25	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	156.7 - 156.9	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	162.012 5 - 167.17	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	240 - 285	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	322 - 335.4	3 600 – 4 400	Above 38.6
13.36 - 13.41			

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 ㎒, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 ㎒, compliance with the emission limits in section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in section 15.35 apply to these measurements.

According to section 15.407(b), undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

For transmitters operating in the 5.15-5.25 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒
For transmitters operating in the 5.25-5.35 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒.

For transmitters operating in the 5.725-5.85 ㎓ band: All emissions shall be limited to a level of -27 ㏈m/㎒ at 75 ㎒ or more above or below the band edge increasing linearly to 10 ㏈m/㎒ at 25 ㎒ above or below the band edge, and form 25 ㎒ above or below the band edge increasing linearly to a level of 15.6 ㏈m/㎒ at 5 ㎒ above or below the band edge, and from 5 ㎒ above or below the band edge increasing linearly to a level of 27 ㏈m/㎒ at the band edge.

Test procedure

ANSI C63.10-2013 Section 12.7.7.2, 12.7.5, 12.7.6
KDB 789033 D02 v02r01 – Section G

Test settings

Peak field strength measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW ≥ (3×RBW)
4. Detector = peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

Frequency	RBW
9 ㎑ to 150 ㎑	200 ㎐ to 300 ㎐
0.15 ㎒ to 30 ㎒	9 ㎑ to 10 ㎑
30 ㎒ to 1 000 ㎒	100 ㎑ to 120 ㎑
> 1 000 ㎒	1 ㎒

Average field strength measurements

Trace averaging with continuous EUT transmission at full power

If the EUT can be configured or modified to transmit continuously (D ≥ 98%), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

1. RBW = 1 ㎒ (unless otherwise specified).
2. VBW ≥ (3×RBW).
3. Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
4. Averaging type = power (i.e., rms):
   1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
   2) Some instruments require linear display mode to use linear voltage averaging. Log or ㏈ averaging shall not be used.
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.

Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (D ≥ 98%) cannot be achieved and the duty cycle is constant (duty cycle variations are less than ±2%), then the following procedure shall be used:

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. Measure the duty cycle D of the transmitter output signal as described in 11.6.
3. RBW = 1 ㎒ (unless otherwise specified).
4. VBW ≥ [3 × RBW].
5. Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

6. Averaging type = power (i.e., rms):
   1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
   2) Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
7. Sweep time = auto.
8. Perform a trace average of at least 100 traces.
9. A correction factor shall be added to the measurement results prior to comparing with the emission limit to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
   1) If power averaging (rms) mode was used in step f), then the applicable correction factor is [10 log (1 / D)], where D is the duty cycle.
   2) If linear voltage averaging mode was used in step f), then the applicable correction factor is [20 log (1 / D)], where D is the duty cycle.
   3) If a specific emission is demonstrated to be continuous (D ≥ 98%) rather than turning ON and OFF with with the transmit cycle, then no duty cycle correction is required for that emission.

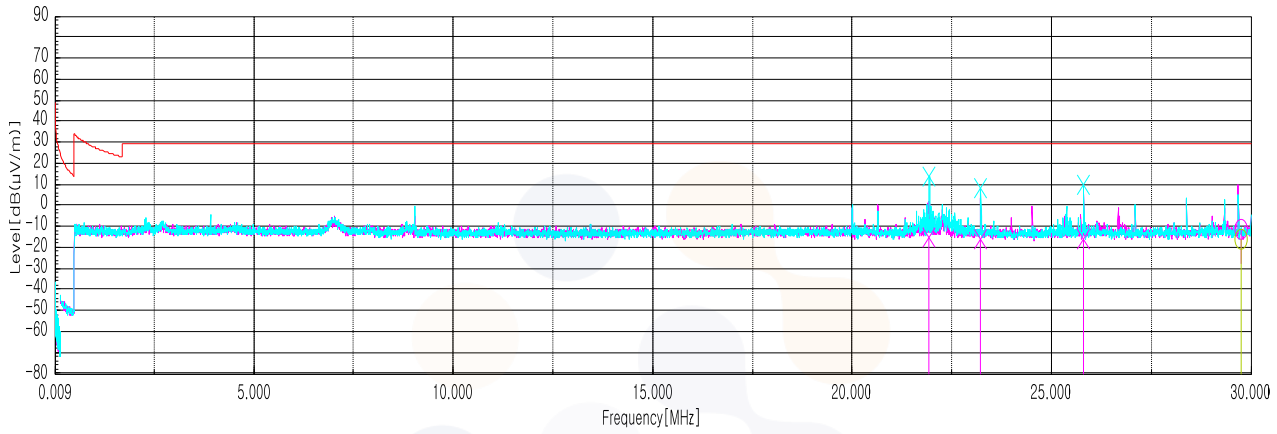
Notes:

1. *f* <30 ㎒, extrapolation factor of 40 dB/decade of distance. $F_d = 40\log(D_m/D_s)$
   f ≥30 ㎒, extrapolation factor of 20 dB/decade of distance. $F_d = 20\log(D_m/D_s)$
   Where:
   F_d= Distance factor in dB
   D_m= Measurement distance in meters
   D_s= Specification distance in meters
2. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or F_d(dB)
3. The worst-case emissions are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
4. Average test would be performed if the peak result were greater than the average limit.
5. 1) means restricted band.
6. Below 30 ㎒ frequency range, In order to search for the worst result, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported. when the emission level was higher than 20 dB of the limit, then the following statement shall be made: “No spurious emissions were detected within 20 dB of the limit.”
7. For above 1 ㎓ pre-scan to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 ㎒; the video bandwidth is set to 30 ㎑ for peak measurements.

Test results (Below 30 ㎒) – Worst case: 802.11a MIMO / UNII-1_5 240 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
21.94	V	34.20	20.82	-30.72	40.00	-15.70	29.50	45.20
23.23	V	33.70	20.89	-30.67	40.00	-16.08	29.50	45.30
25.81	V	33.80	20.87	-30.54	40.00	-15.87	29.50	45.30
29.77	H	33.70	20.24	-30.48	40.00	-16.54	29.50	45.80

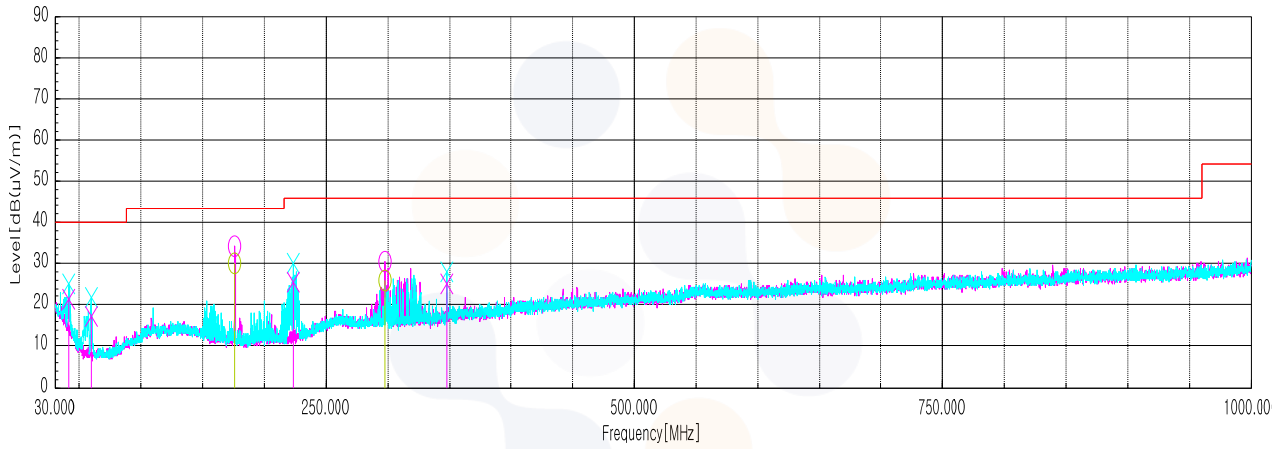
Horizontal/Vertical



Test results (Below 1 000 ㎒) – Worst case: 802.11a MIMO / UNII-1_5 240 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
41.64	V	32.50	18.29	-29.39	-	21.40	40.00	18.60
59.95	V	34.10	12.19	-28.90	-	17.39	40.00	22.61
175.99	H	41.70	15.00	-26.63	-	30.07	43.50	13.43
223.52	V	36.20	15.38	-25.99	-	25.59	46.00	20.41
297.96	H	31.90	19.06	-25.06	-	25.90	46.00	20.10
348.04	V	29.60	20.02	-24.46	-	25.16	46.00	20.84

Horizontal/Vertical



Test results (Above 1 000 ㎒)

802.11a_UNII-1 ANT1

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 148.48[1)]	H	44.51	33.88	-23.82	-	54.57	74.00	19.43
10 348.91	H	59.22	37.08	-47.96	-	48.34	68.20	19.86
15 530.09[1)]	V	58.96	40.32	-46.84	-	52.44	74.00	21.56
Average Data								
5 148.48[1)]	H	37.08	33.88	-23.82	0.30	47.44	54.00	6.56
15 530.09[1)]	V	48.41	40.32	-46.84	0.30	42.19	54.00	11.81

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 467.86	V	58.59	37.17	-47.88	-	47.88	68.20	20.32
15 630.16[1)]	V	58.54	40.40	-46.74	-	52.20	74.00	21.80
Average Data								
15 630.16[1)]	V	48.17	40.40	-46.74	0.30	42.13	54.00	11.87

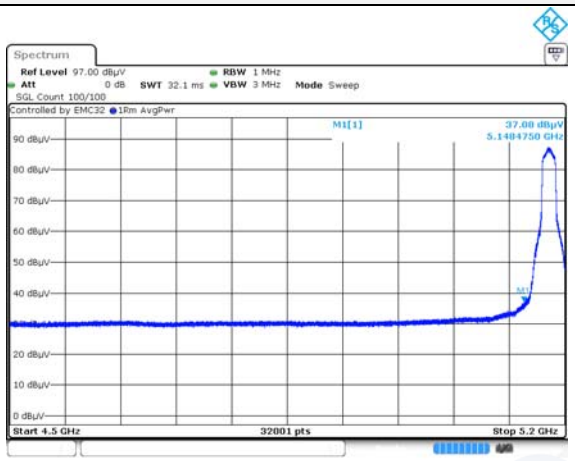
Highest Channel (5 240 ㎒)

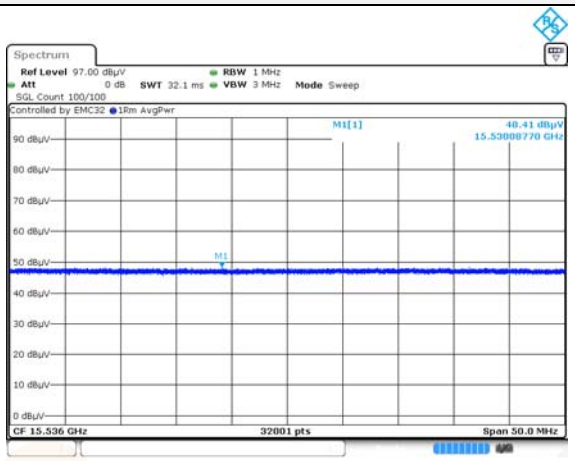
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 402.09	H	59.63	37.12	-47.92	-	48.83	68.20	19.37
15 691.82[1)]	H	58.47	40.45	-46.68	-	52.24	74.00	21.76
Average Data								
15 691.82[1)]	H	48.66	40.45	-46.68	0.30	42.73	54.00	11.27

802.11a_UNII-1 ANT1

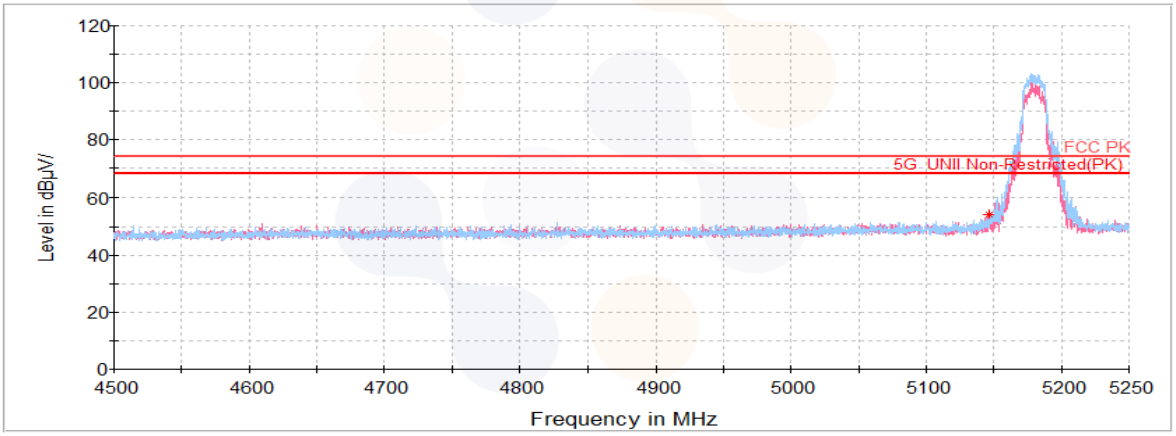
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11a UNII-1 ANT2

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.59[1)]	H	48.77	33.88	-23.82	-	58.83	74.00	15.17
10 119.27	H	61.06	36.90	-48.10	-	49.86	68.20	18.34
10 365.80	H	58.01	37.09	-47.95	-	47.15	68.20	21.05
15 485.23[1)]	V	59.76	40.19	-46.88	-	53.07	74.00	20.93
Average Data								
5 149.59[1)]	H	38.57	33.88	-23.82	0.30	48.93	54.00	5.07
15 485.23[1)]	V	48.26	40.19	-46.88	0.30	41.87	54.00	12.13

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 468.94	V	59.21	37.18	-47.88	-	48.51	68.20	19.69
15 553.34[1)]	V	57.99	40.34	-46.81	-	51.52	74.00	22.48
Average Data								
15 553.34[1)]	V	48.27	40.34	-46.81	0.30	42.10	54.00	11.90

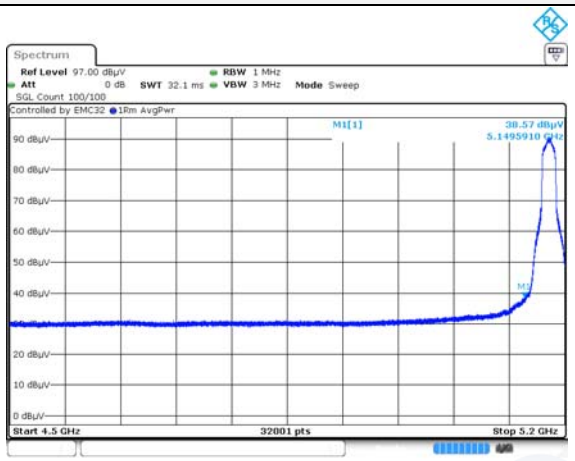
Highest Channel (5 240 ㎒)

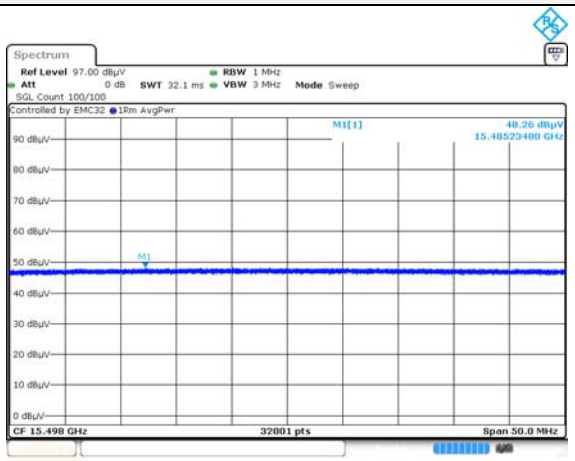
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 490.86	H	58.30	37.19	-47.86	-	47.63	68.20	20.57
15 667.61[1)]	H	58.10	40.43	-46.71	-	51.82	74.00	22.18
Average Data								
15 667.61[1)]	H	48.62	40.43	-46.71	0.30	42.64	54.00	11.36

802.11a_UNII-1 ANT2

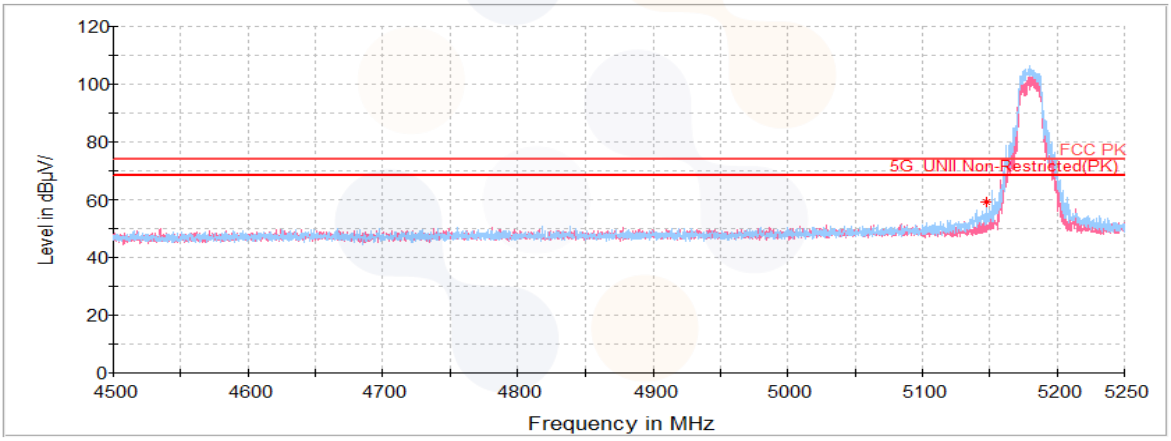
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11a UNII-1 2TX MIMO

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.94[1)]	H	50.99	33.88	-23.82	-	61.05	74.00	12.95
10 395.63	H	59.70	37.12	-47.93	-	48.89	68.20	19.31
15 568.83[1)]	V	57.21	40.36	-46.80	-	50.77	74.00	23.23
Average Data								
5 149.94[1)]	H	41.32	33.88	-23.82	0.29	51.67	54.00	2.33

Middle Channel (5 200 ㎒)

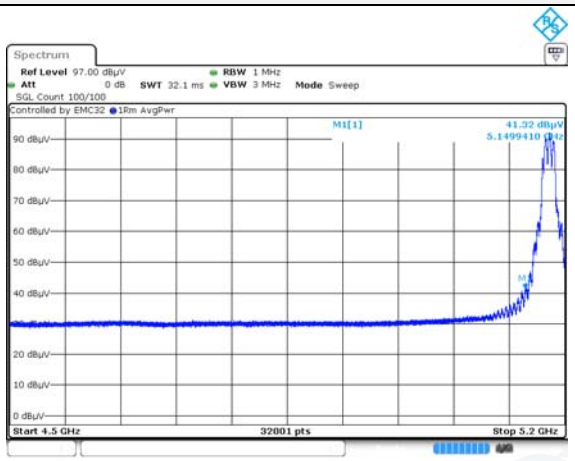
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 416.83	V	57.42	37.13	-47.91	-	46.64	68.20	21.56
15 550.21[1)]	V	58.43	40.34	-46.82	-	51.95	74.00	22.05
Average Data								
15 550.21[1)]	V	47.76	40.34	-46.82	0.29	41.57	54.00	12.43

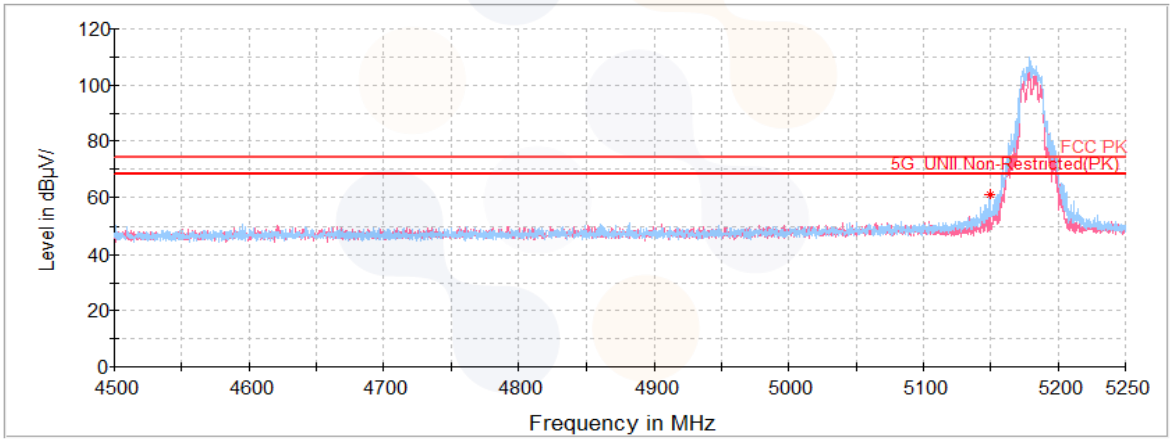
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 464.63	H	58.93	37.17	-47.88	-	48.22	68.20	19.98
15 733.06[1)]	H	57.15	40.49	-46.65	-	50.99	74.00	23.01
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-1 2TX MIMO

Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11n HT20 UNII-1 ANT1

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.11[1)]	H	44.63	33.88	-23.82	-	54.69	74.00	19.31
7 510.92[1)]	V	63.22	35.20	-51.65	-	46.77	74.00	27.23
10 234.98	H	59.52	36.99	-48.03	-	48.48	68.20	19.72
15 587.07[1)]	H	58.14	40.37	-46.78	-	51.73	74.00	22.27
Average Data								
5 149.11[1)]	H	37.07	33.88	-23.82	0.32	47.45	54.00	6.55
15 587.07[1)]	H	47.81	40.37	-46.78	0.32	41.72	54.00	12.28

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 599.39	H	59.79	37.26	-47.82	-	49.23	68.20	18.97
15 684.45[1)]	H	59.93	40.45	-46.69	-	53.69	74.00	20.31
Average Data								
15 684.45[1)]	H	48.36	40.45	-46.69	0.32	42.44	54.00	11.56

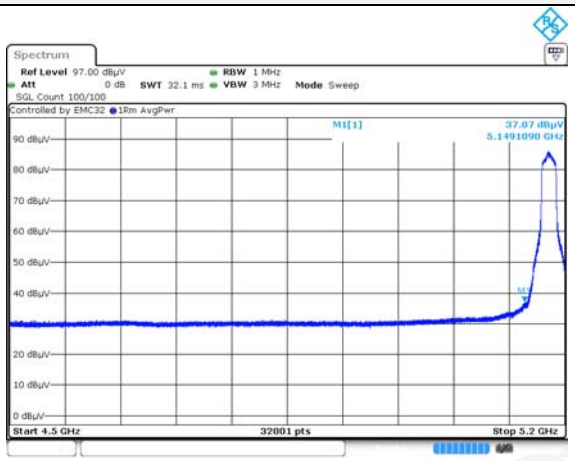
Highest Channel (5 240 ㎒)

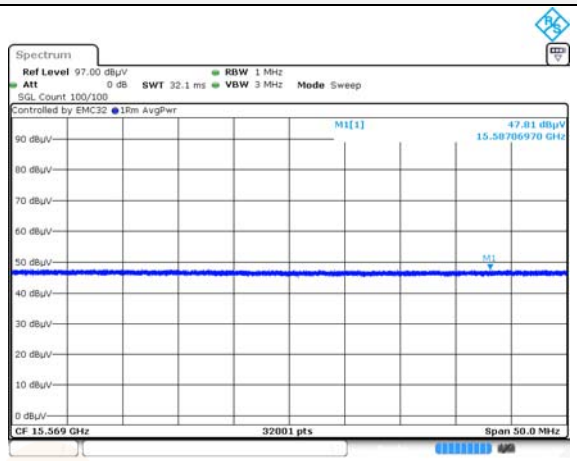
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 480.08	H	58.91	37.18	-47.87	-	48.22	68.20	19.98
15 890.67[1)]	H	57.74	40.61	-46.50	-	51.85	74.00	22.15
Average Data								
15 890.67[1)]	H	47.31	40.61	-46.50	0.32	41.74	54.00	12.26

802.11n HT20 UNII-1 ANT1

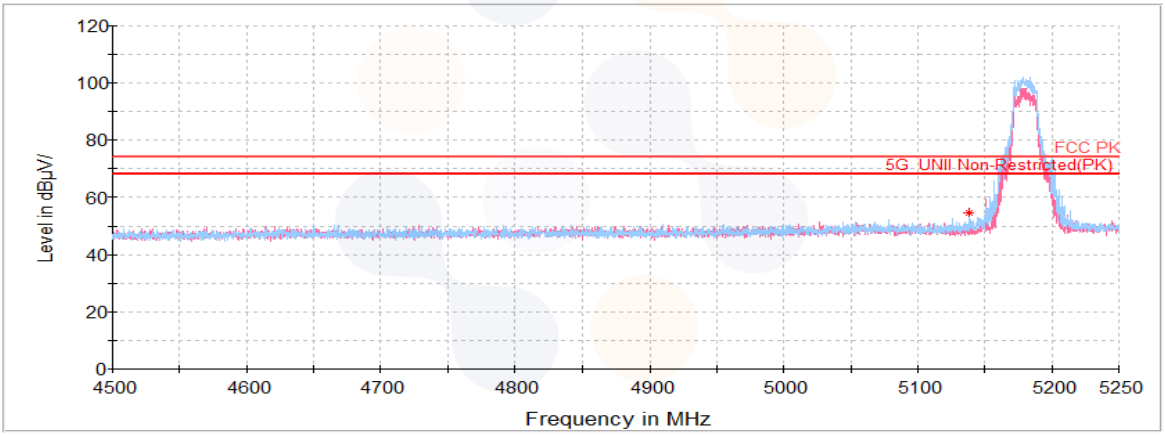
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT20 UNII-1 ANT2

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.07[1)]	H	45.79	33.88	-23.82	-	55.85	74.00	18.15
10 265.53	V	59.32	37.01	-48.01	-	48.32	68.20	19.88
15 507.53[1)]	H	58.60	40.31	-46.86	-	52.05	74.00	21.95
Average Data								
5 149.07[1)]	H	39.19	33.88	-23.82	0.32	49.57	54.00	4.43
15 507.53[1)]	H	47.96	40.31	-46.86	0.32	41.73	54.00	12.27

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 279.91	H	58.86	37.02	-48.00	-	47.88	68.20	20.32
15 712.31[1)]	V	57.69	40.47	-46.67	-	51.49	74.00	22.51
Average Data								
15 712.31[1)]	V	47.58	40.47	-46.67	0.32	41.70	54.00	12.30

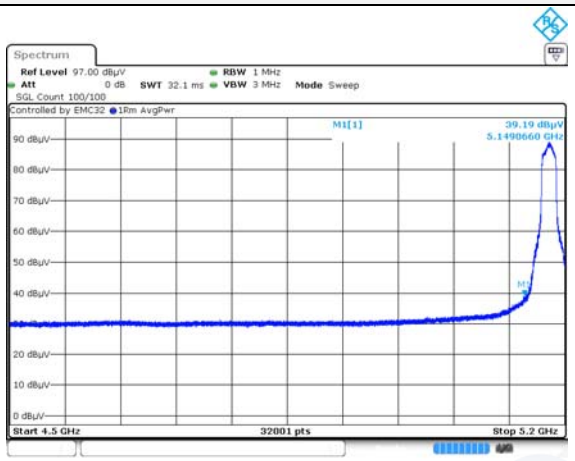
Highest Channel (5 240 ㎒)

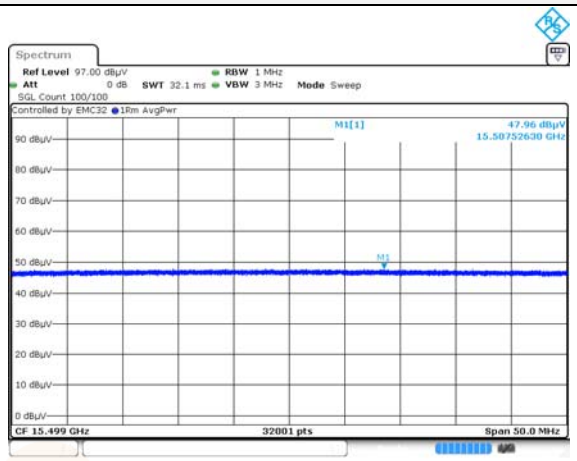
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 477.56	V	58.38	37.18	-47.87	-	47.69	68.20	20.51
15 859.63[1)]	H	57.93	40.59	-46.53	-	51.99	74.00	22.01
Average Data								
15 859.63[1)]	H	47.20	40.59	-46.53	0.32	41.58	54.00	12.42

802.11n HT20 UNII-1 ANT2

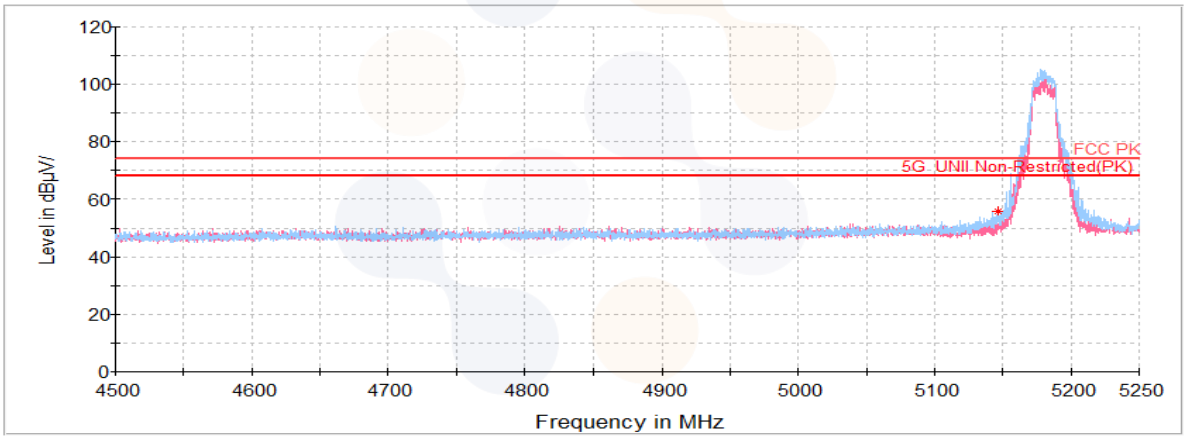
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT20 UNII-1 2TX MIMO

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 148.91[1)]	H	50.46	33.88	-23.82	-	60.52	74.00	13.48
10 343.16	V	59.13	37.07	-47.96	-	48.24	68.20	19.96
15 680.99[1)]	V	58.75	40.44	-46.69	-	52.50	74.00	21.50
Average Data								
5 148.91[1)]	H	40.36	33.88	-23.82	0.31	50.73	54.00	3.27
15 680.99[1)]	V	48.06	40.44	-46.69	0.31	42.12	54.00	11.88

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 413.59	H	57.75	37.13	-47.91	-	46.97	68.20	21.23
15 552.77[1)]	H	57.87	40.34	-46.81	-	51.40	74.00	22.60
Average Data								
15 552.77[1)]	H	47.69	40.34	-46.81	0.31	41.53	54.00	12.47

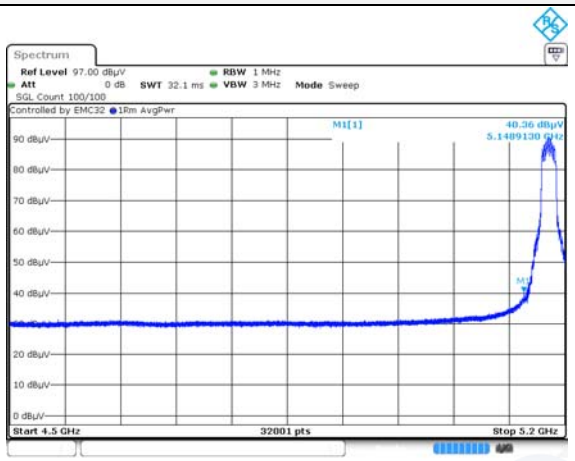
Highest Channel (5 240 ㎒)

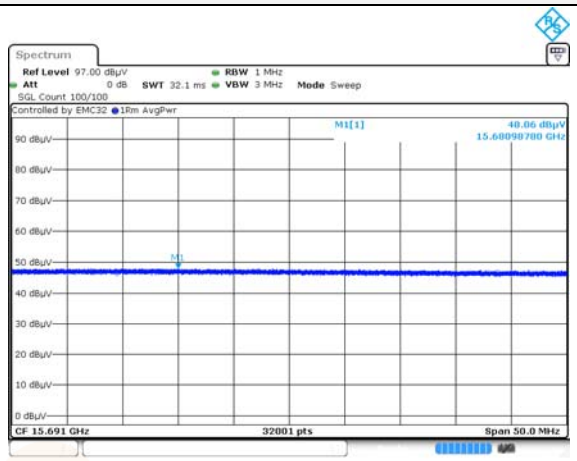
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 497.33	V	58.37	37.20	-47.86	-	47.71	68.20	20.49
15 677.33[1)]	V	57.11	40.44	-46.70	-	50.85	74.00	23.15
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11n HT20 UNII-1 2TX MIMO

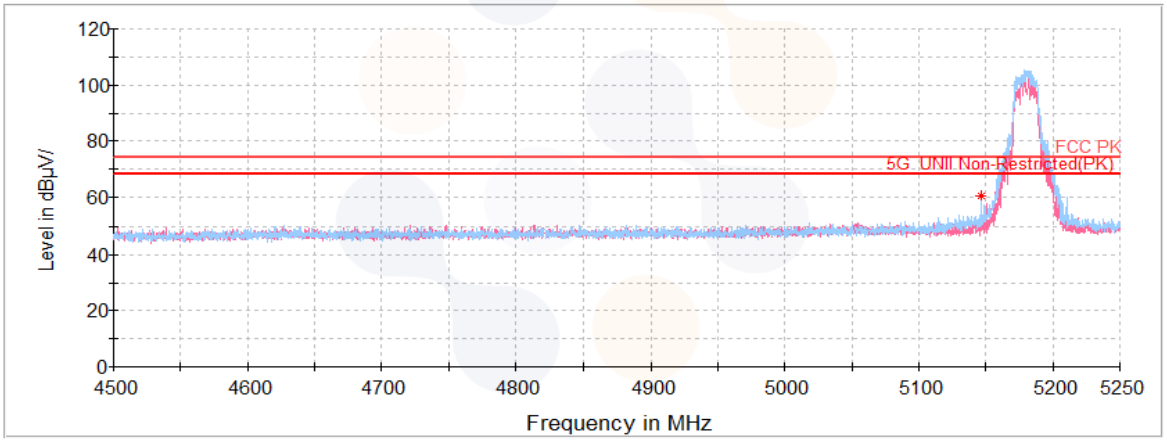
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40 UNII-1 ANT1

Lowest Channel (5 190 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.79[1)]	H	45.34	33.88	-23.82	-	55.40	74.00	18.60
10 321.23	H	58.74	37.06	-47.97	-	47.83	68.20	20.37
15 372.78[1)]	H	58.83	40.12	-47.01	-	51.94	74.00	22.06
Average Data								
5 149.79[1)]	H	36.25	33.88	-23.82	0.62	46.93	54.00	7.07
15 372.78[1)]	H	48.06	40.12	-47.01	0.62	41.79	54.00	12.21

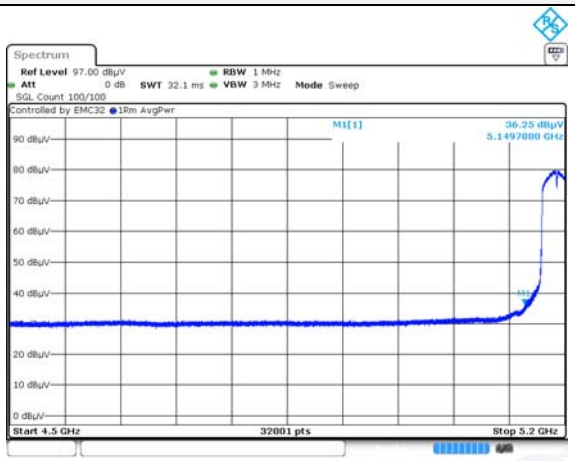
Highest Channel (5 230 ㎒)

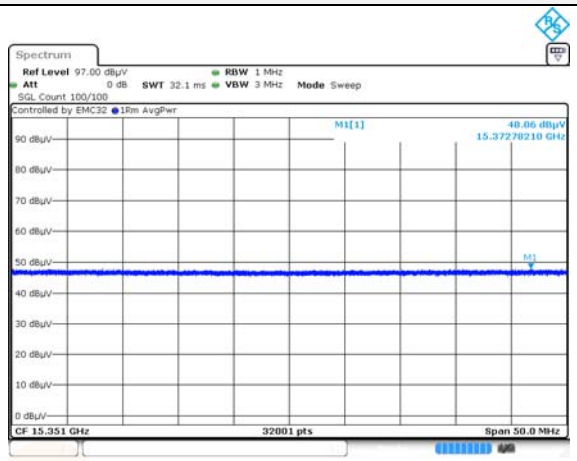
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 472.17	H	58.54	37.18	-47.88	-	47.84	68.20	20.36
15 669.26[1)]	V	58.01	40.44	-46.71	-	51.74	74.00	22.26
Average Data								
15 669.26[1)]	V	48.33	40.44	-46.71	0.62	42.68	54.00	11.32

802.11n HT40 UNII-1 ANT1

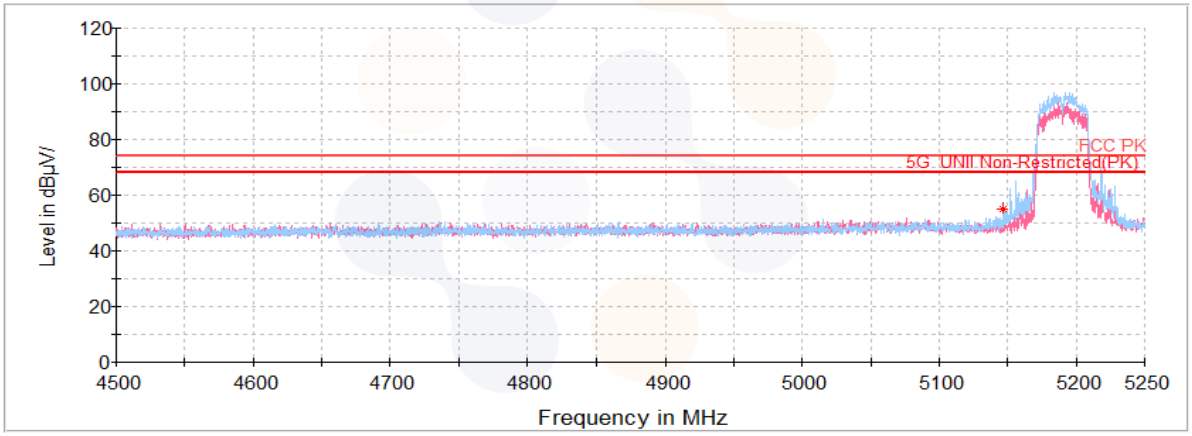
Lowest Channel (5 190 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40 UNII-1 ANT2

Lowest Channel (5 190 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.74[1)]	H	47.89	33.88	-23.82	-	57.95	74.00	16.05
10 284.58	H	58.53	37.03	-48.00	-	47.56	68.20	20.64
15 547.88[1)]	V	57.99	40.34	-46.82	-	51.51	74.00	22.49
Average Data								
5 149.74[1)]	H	40.73	33.88	-23.82	0.62	51.41	54.00	2.59
15 547.88[1)]	V	47.63	40.34	-46.82	0.62	41.77	54.00	12.23

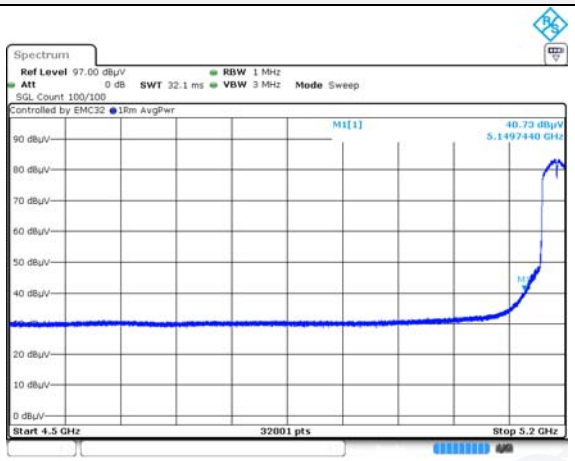
Highest Channel (5 230 ㎒)

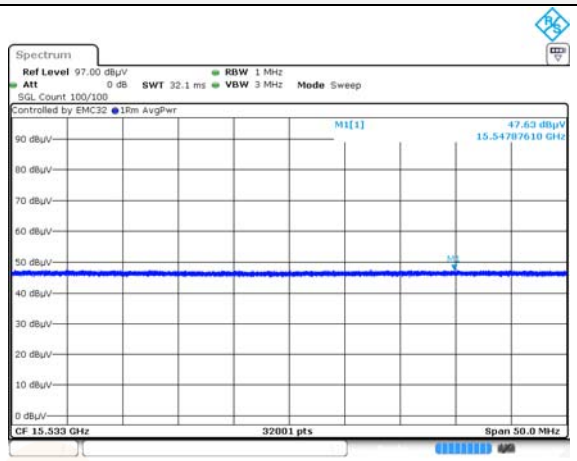
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 645.39[1)]	H	58.30	37.29	-47.81	-	47.78	74.00	26.22
15 480.06[1)]	V	57.48	40.19	-46.89	-	50.78	74.00	23.22
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n HT40 UNII-1 ANT2

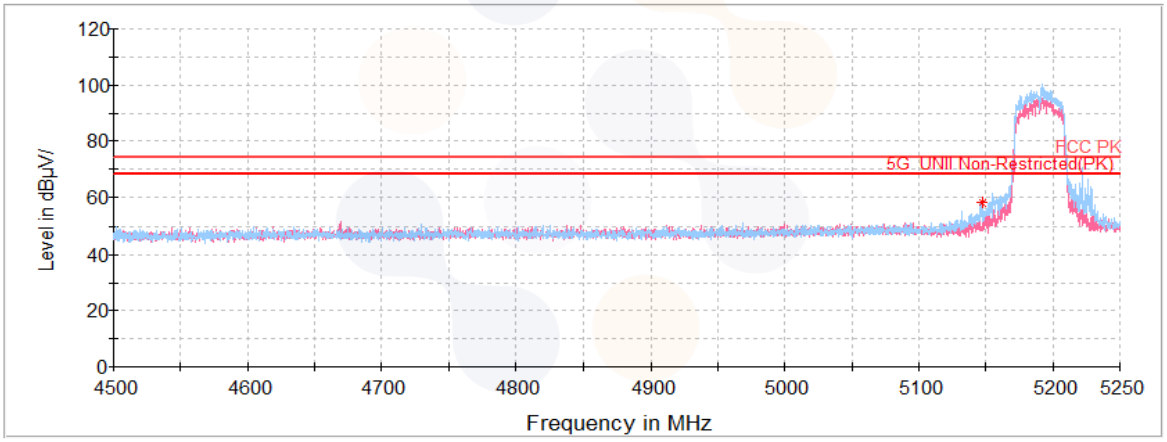
Lowest Channel (5 190 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40 UNII-1 2TX MIMO

Lowest Channel (5 190 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.48[1)]	H	48.72	33.88	-23.82	-	58.78	74.00	15.22
10 365.44	V	57.70	37.09	-47.95	-	46.84	68.20	21.36
15 496.09[1)]	H	58.44	40.20	-46.87	-	51.77	74.00	22.23
Average Data								
5 149.48[1)]	H	40.47	33.88	-23.82	0.61	51.14	54.00	2.86
15 496.09[1)]	H	47.84	40.20	-46.87	0.61	41.78	54.00	12.22

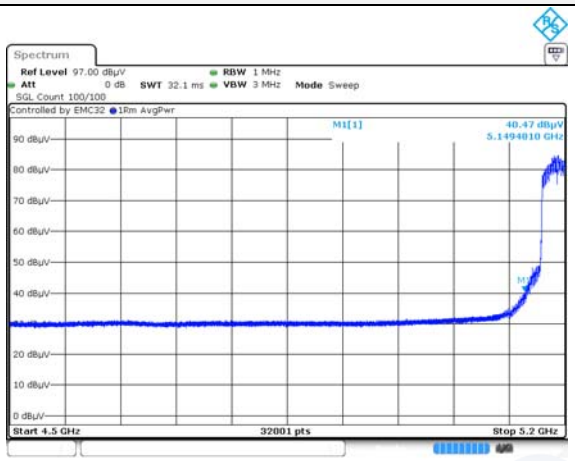
Highest Channel (5 230 ㎒)

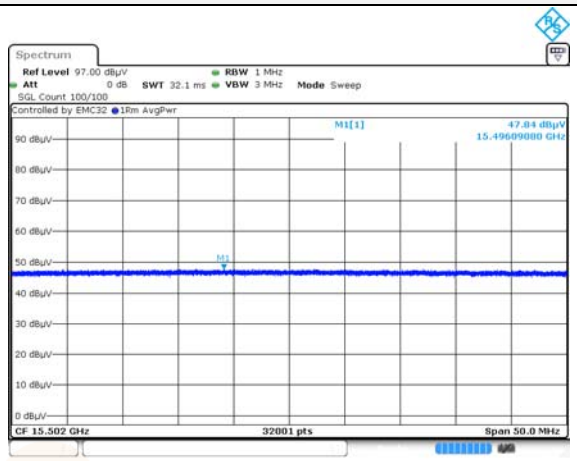
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 513.14	H	57.96	37.21	-47.85	-	47.32	68.20	20.88
15 673.05[1)]	H	56.93	40.44	-46.70	-	50.67	74.00	23.33
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

802.11n HT40 UNII-1 2TX MIMO

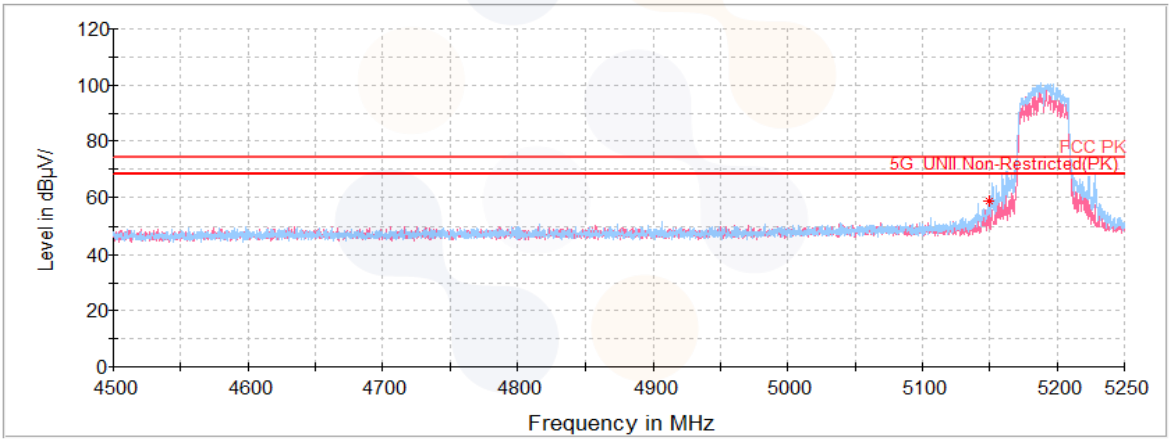
Lowest Channel (5 190 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT20 UNII-1 ANT1

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.90[1)]	H	43.30	33.88	-23.82	-	53.36	74.00	20.64
10 184.67	H	59.53	36.95	-48.06	-	48.42	68.20	19.78
15 555.08[1)]	H	59.09	40.34	-46.81	-	52.62	74.00	21.38
Average Data								
5 149.90[1)]	H	37.45	33.88	-23.82	0.32	47.83	54.00	6.17
15 555.08[1)]	H	47.71	40.34	-46.81	0.32	41.56	54.00	12.44

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 132.92	H	59.84	36.91	-48.10	-	48.65	68.20	19.55
15 681.44[1)]	H	58.21	40.45	-46.69	-	51.97	74.00	22.03
Average Data								
15 681.44[1)]	H	48.16	40.45	-46.69	0.32	42.24	54.00	11.76

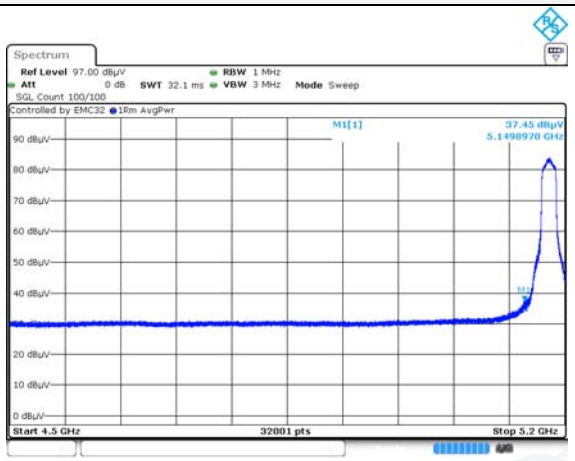
Highest Channel (5 240 ㎒)

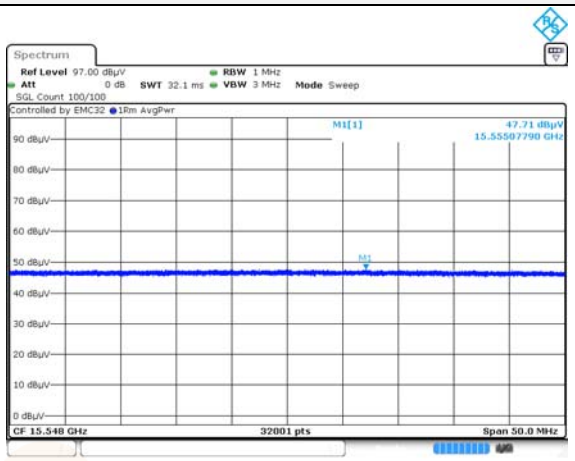
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 580.70	H	58.25	37.25	-47.83	-	47.67	68.20	20.53
15 679.88[1)]	H	58.49	40.44	-46.70	-	52.23	74.00	21.77
Average Data								
15 679.88[1)]	H	48.22	40.44	-46.70	0.32	42.28	54.00	11.72

802.11ac VHT20 UNII-1 ANT1

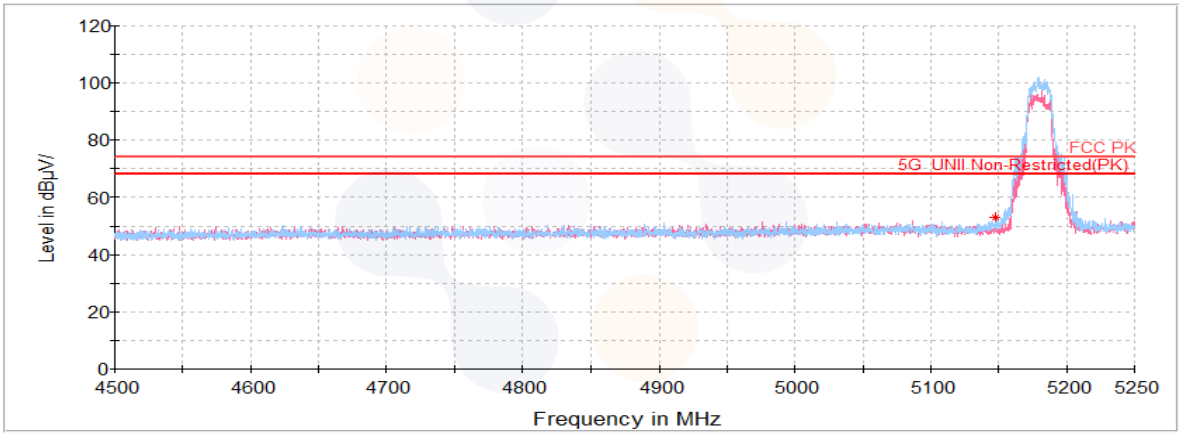
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT20 UNII-1 ANT2

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 147.75[1)]	H	45.53	33.88	-23.83	-	55.58	74.00	18.42
10 283.14	V	58.35	37.03	-48.00	-	47.38	68.20	20.82
15 498.75[1)]	V	57.39	40.20	-46.87	-	50.72	74.00	23.28
Average Data								
5 147.75[1)]	H	37.76	33.88	-23.83	0.32	48.13	54.00	5.87

Middle Channel (5 200 ㎒)

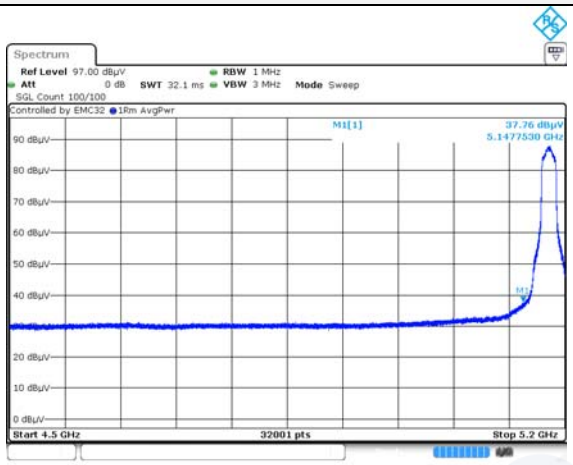
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 425.81	H	58.38	37.14	-47.91	-	47.61	68.20	20.59
15 665.51[1)]	V	57.62	40.43	-46.71	-	51.34	74.00	22.66
Average Data								
15 665.51[1)]	V	48.24	40.43	-46.71	0.32	42.28	54.00	11.72

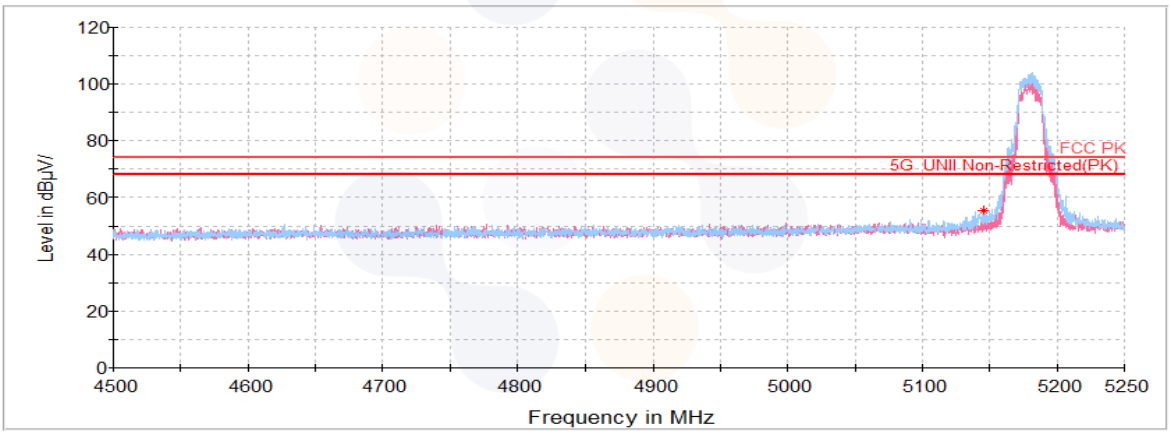
Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 511.70	V	58.85	37.21	-47.85	-	48.21	68.20	19.99
15 862.52[1)]	H	58.42	40.59	-46.53	-	52.48	74.00	21.52
Average Data								
15 862.52[1)]	H	47.31	40.59	-46.53	0.32	41.69	54.00	12.31

802.11ac VHT20 UNII-1 ANT2

Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11ac VHT20 UNII-1 2TX MIMO

Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 148.91[1)]	H	45.96	33.88	-23.82	-	56.02	74.00	17.98
10 419.70	V	58.77	37.14	-47.91	-	48.00	68.20	20.20
15 492.15[1)]	H	58.11	40.20	-46.87	-	51.44	74.00	22.56
Average Data								
5 148.91[1)]	H	37.22	33.88	-23.82	0.58	47.86	54.00	6.14
15 492.15[1)]	H	47.85	40.20	-46.87	0.58	41.76	54.00	12.24

Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 311.89	V	58.42	37.05	-47.98	-	47.49	68.20	20.71
15 660.83[1)]	H	56.84	40.43	-46.71	-	50.56	74.00	23.44
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

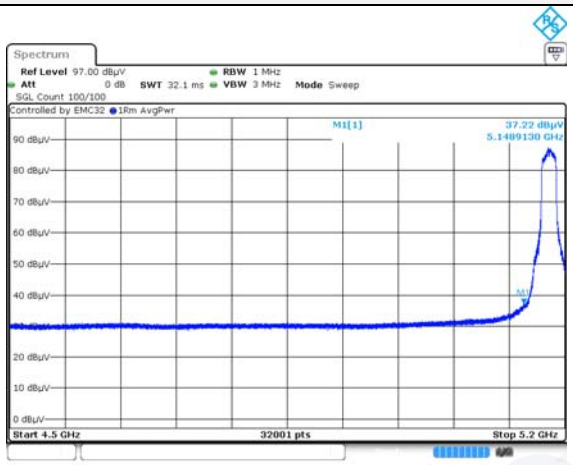
Highest Channel (5 240 ㎒)

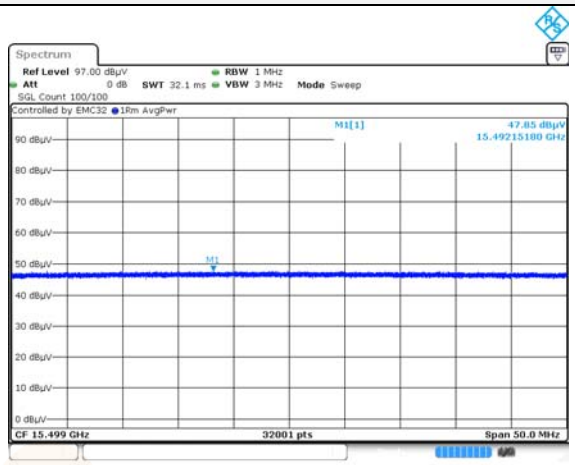
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 357.89	H	58.46	37.09	-47.95	-	47.60	68.20	20.60
15 791.74[1)]	H	57.39	40.53	-46.59	-	51.33	74.00	22.67
Average Data								
15 791.74[1)]	H	46.92	40.53	-46.59	0.58	41.44	54.00	12.56

802.11ac VHT20 UNII-1 2TX MIMO

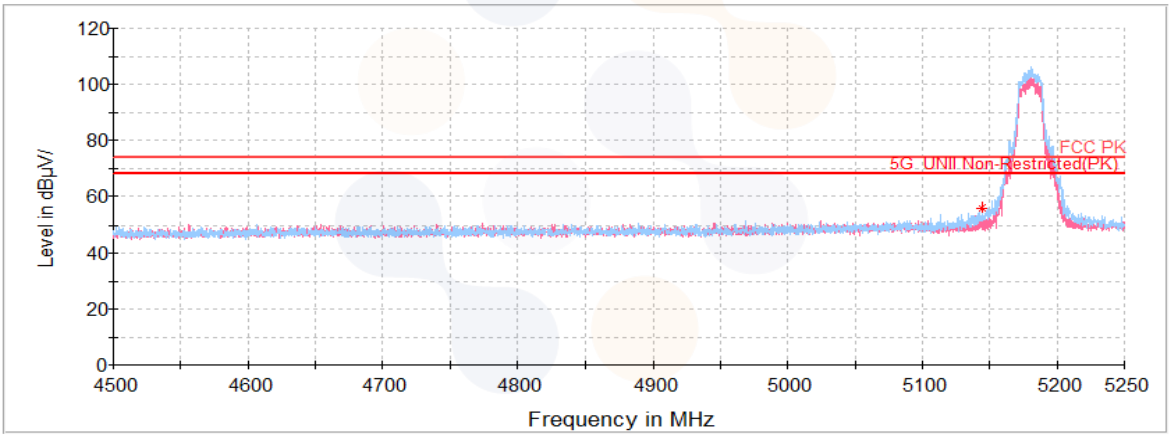
Lowest Channel (5 180 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT40 UNII-1 ANT1

Lowest Channel (5 190 ㎒)

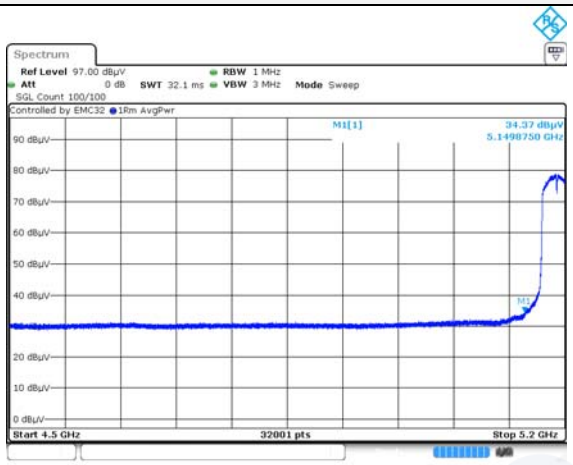
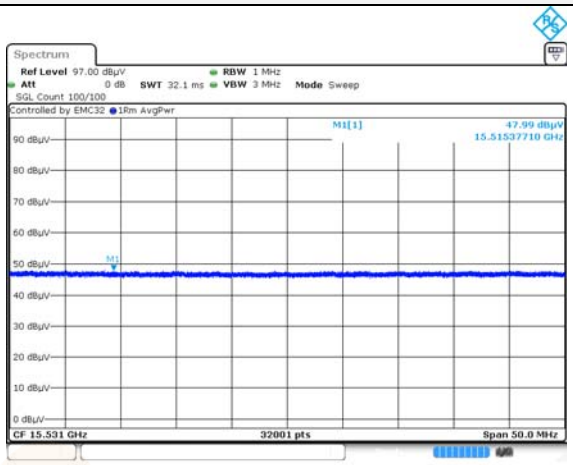
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.88[1)]	H	42.79	33.88	-23.82	-	52.85	74.00	21.15
10 295.00	H	58.81	37.04	-47.99	-	47.86	68.20	20.34
15 515.38[1)]	H	58.46	40.31	-46.85	-	51.92	74.00	22.08
Average Data								
5 149.88[1)]	H	34.37	33.88	-23.82	0.61	45.04	54.00	8.96
15 515.38[1)]	H	47.99	40.31	-46.85	0.61	42.06	54.00	11.94

Highest Channel (5 230 ㎒)

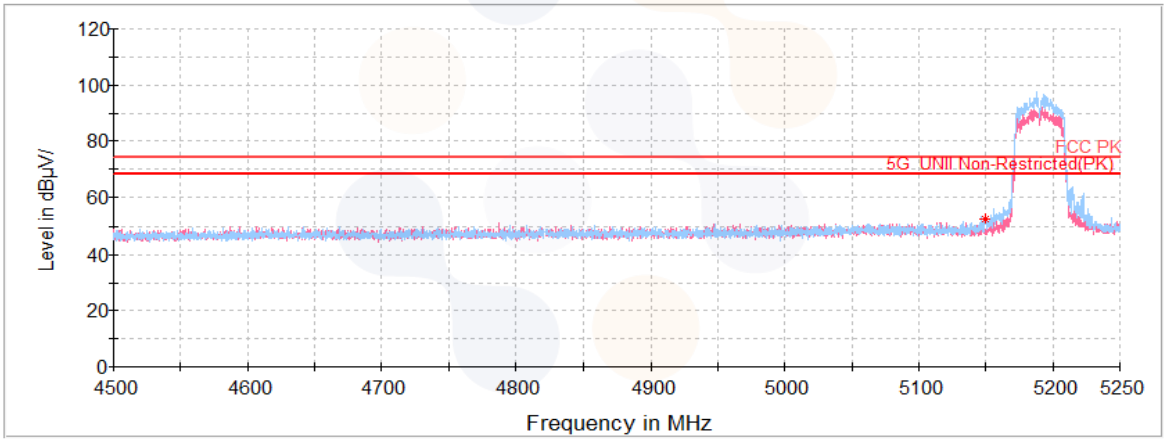
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 471.81	H	58.61	37.18	-47.88	-	47.91	68.20	20.29
15 660.27[1)]	V	58.91	40.43	-46.71	-	52.63	74.00	21.37
Average Data								
15 660.27[1)]	V	48.22	40.43	-46.71	0.61	42.55	54.00	11.45

802.11ac VHT40 UNII-1 ANT1

Lowest Channel (5 190 ㎒)

Average data	
	

Horizontal/Vertical for Band-edge



802.11ac VHT40_UNII-1 ANT2

Lowest Channel (5 190 ㎒)

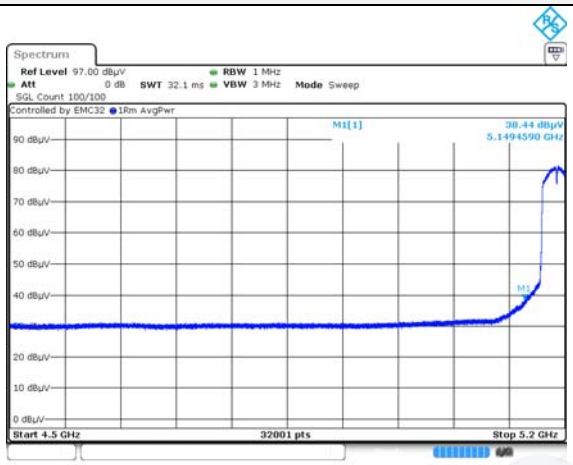
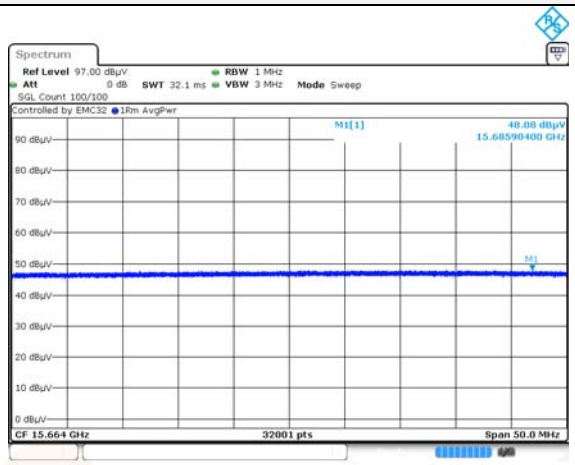
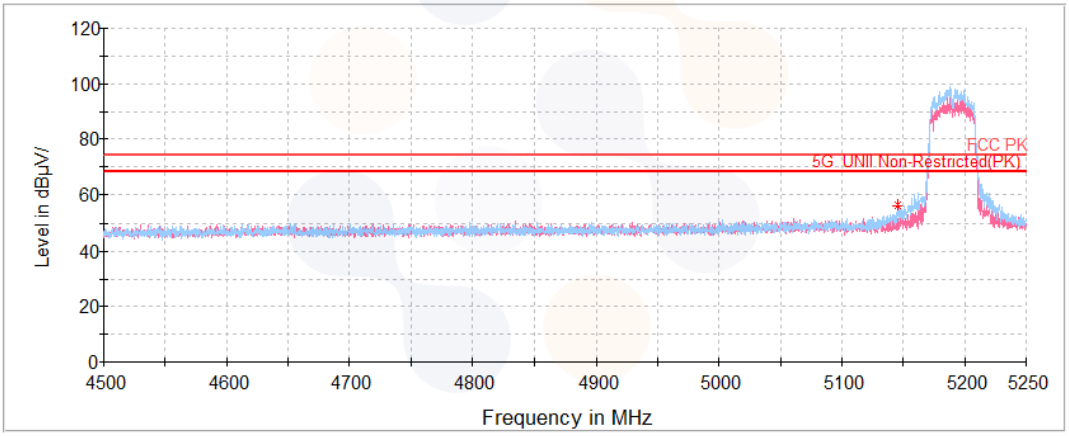
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.46[1)]	H	46.48	33.88	-23.82	-	56.54	74.00	17.46
10 327.70	V	58.06	37.06	-47.97	-	47.15	68.20	21.05
15 685.90[1)]	V	58.44	40.45	-46.69	-	52.20	74.00	21.80
Average Data								
5 149.46[1)]	H	38.44	33.88	-23.82	0.61	49.11	54.00	4.89
15 685.90[1)]	V	48.08	40.45	-46.69	0.61	42.45	54.00	11.55

Highest Channel (5 230 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 418.98	H	58.07	37.14	-47.91	-	47.30	68.20	20.90
15 652.44[1)]	V	58.59	40.42	-46.72	-	52.29	74.00	21.71
Average Data								
15 652.44[1)]	V	47.71	40.42	-46.72	0.61	42.02	54.00	11.98

802.11ac VHT40 UNII-1 ANT2

Lowest Channel (5 190 ㎒)

Average data	
	
Horizontal/Vertical for Band-edge	
	

802.11ac VHT40_UNII-1 2TX MIMO

Lowest Channel (5 190 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 149.49[1)]	H	47.95	33.88	-23.82	-	58.01	74.00	15.99
10 338.48	H	58.01	37.07	-47.96	-	47.12	68.20	21.08
15 670.87[1)]	V	57.41	40.44	-46.70	-	51.15	74.00	22.85
Average Data								
5 149.49[1)]	H	40.60	33.88	-23.82	1.07	51.73	54.00	2.27
15 670.87[1)]	V	48.14	40.44	-46.70	1.07	42.95	54.00	11.05

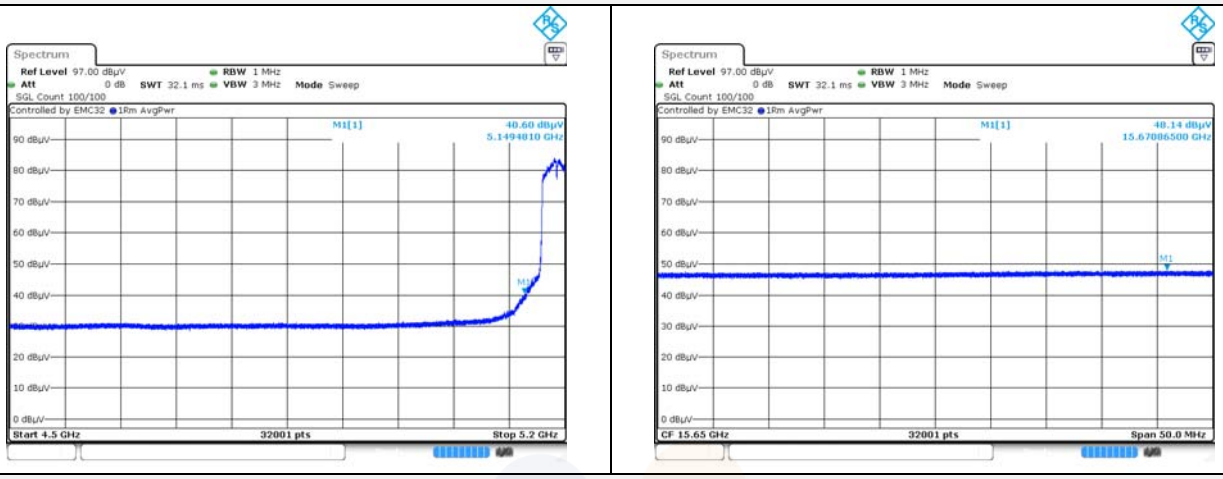
Highest Channel (5 230 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 410.72	V	58.06	37.13	-47.92	-	47.27	68.20	20.93
15 689.65[1)]	V	57.56	40.45	-46.69	-	51.32	74.00	22.68
Average Data								
15 689.65[1)]	V	48.65	40.45	-46.69	1.07	43.48	54.00	10.52

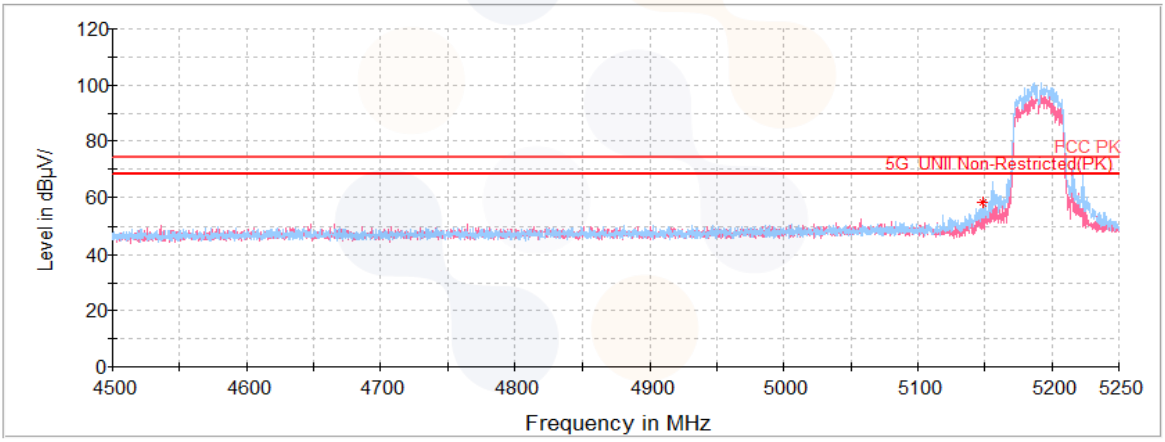
802.11ac VHT40_UNII-1 2TX MIMO

Lowest Channel (5 190 ㎒)

Average data



Horizontal/Vertical for Band-edge

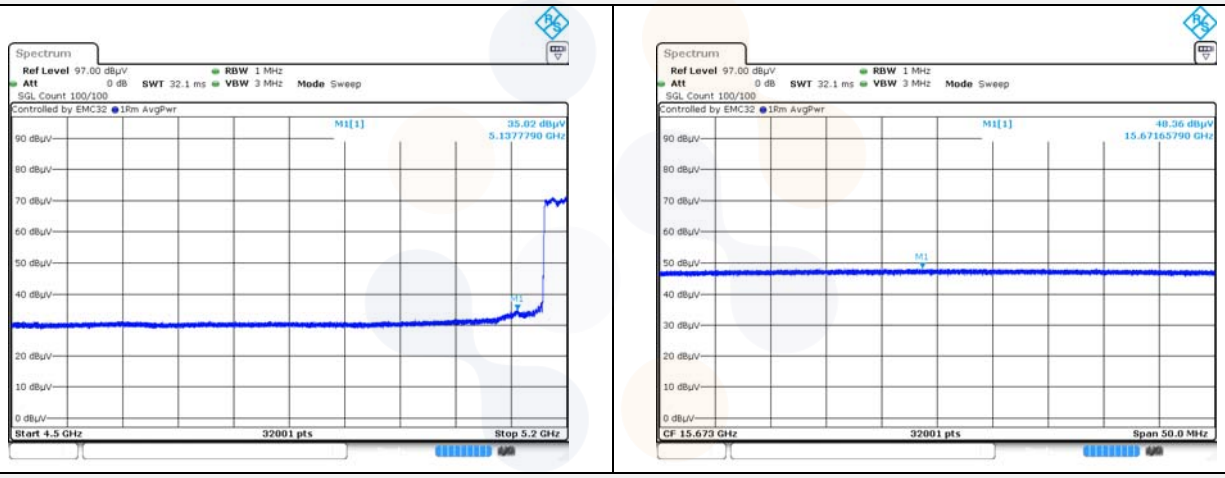


802.11ac VHT80 UNII-1 ANT1

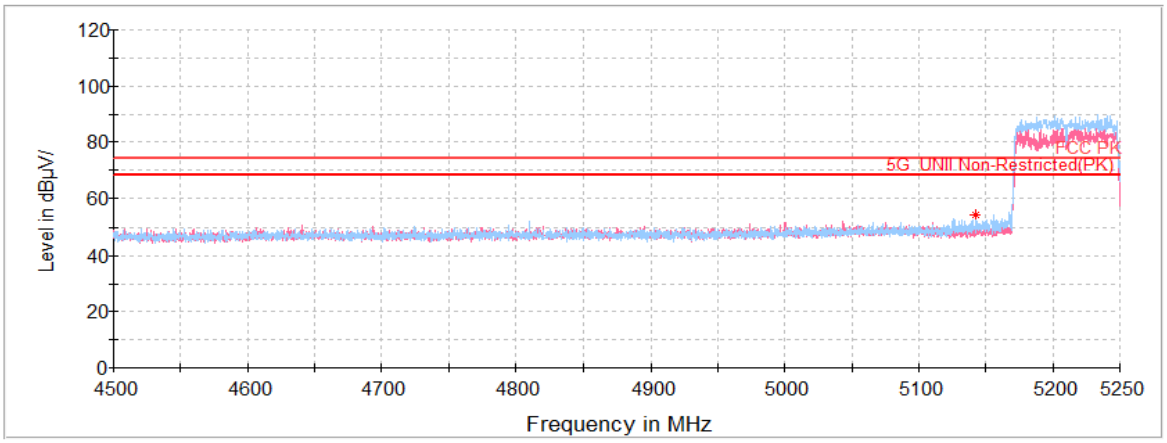
Lowest Channel (5 210 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 137.78[1)]	H	44.26	33.87	-23.84	-	54.29	74.00	19.71
10 593.28	V	58.73	37.26	-47.83	-	48.16	68.20	20.04
15 671.66[1)]	V	58.55	40.44	-46.70	-	52.29	74.00	21.71
Average Data								
5 137.78[1)]	H	35.02	33.87	-23.84	1.14	46.19	54.00	7.81
15 671.66[1)]	V	48.36	40.44	-46.70	1.14	43.24	54.00	10.76

Average data



Horizontal/Vertical for Band-edge

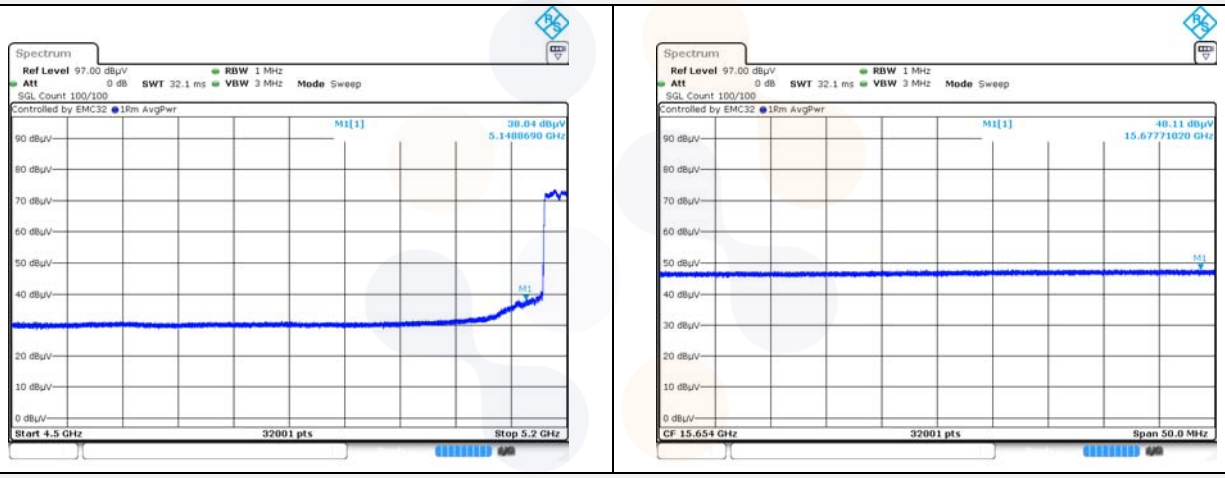


802.11ac VHT80 UNII-1 ANT2

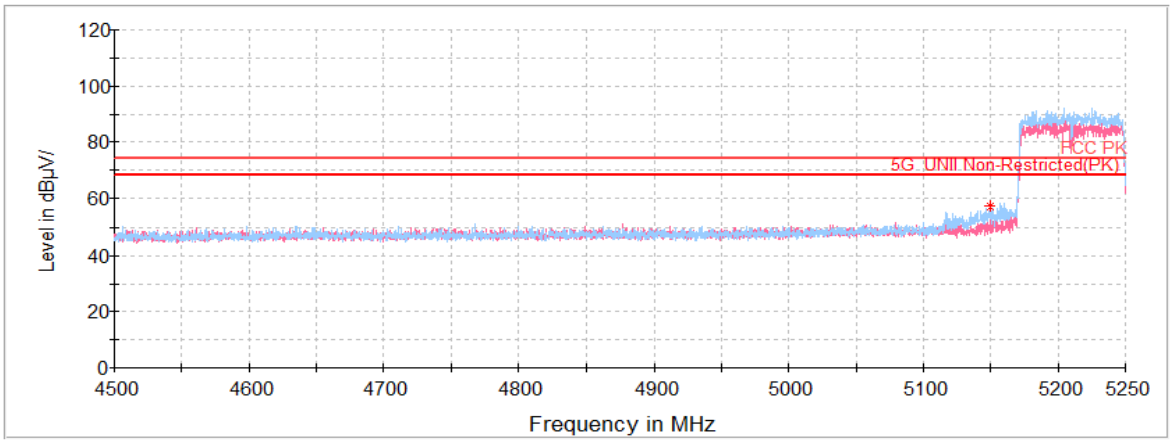
Lowest Channel (5 210 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 148.87[1)]	H	47.26	33.88	-23.82	-	57.32	74.00	16.68
10 500.92	V	57.99	37.20	-47.86	-	47.33	68.20	20.87
15 677.71[1)]	H	57.43	40.44	-46.70	-	51.17	74.00	22.83
Average Data								
5 148.87[1)]	H	38.04	33.88	-23.82	1.14	49.24	54.00	4.76
15 677.71[1)]	H	48.11	40.44	-46.70	1.14	42.99	54.00	11.01

Average data



Horizontal/Vertical for Band-edge

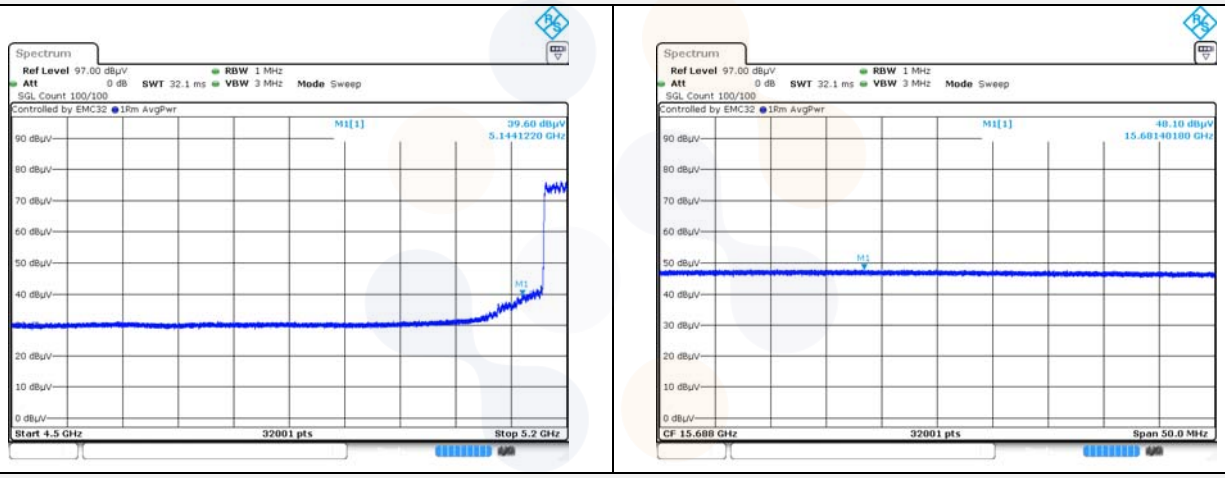


802.11ac VHT80_UNII-1 2TX MIMO

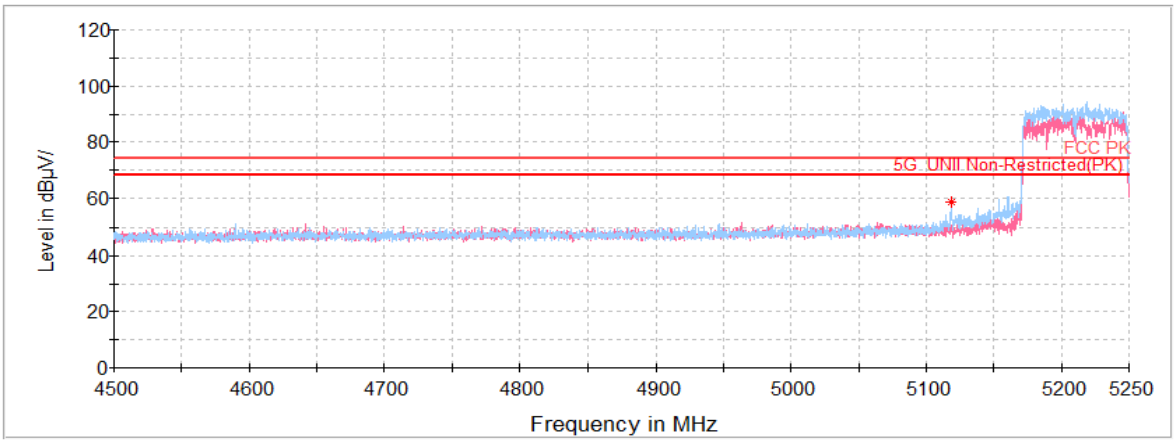
Lowest Channel (5 210 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 144.12[1)]	H	48.44	33.87	-23.83	-	58.48	74.00	15.52
10 480.80	V	56.88	37.18	-47.87	-	46.19	68.20	22.01
15 681.40[1)]	H	57.98	40.45	-46.69	-	51.74	74.00	22.26
Average Data								
5 144.12[1)]	H	39.60	33.87	-23.83	1.81	51.45	54.00	2.55
15 681.40[1)]	H	48.10	40.45	-46.69	1.81	43.67	54.00	10.33

Average data



Horizontal/Vertical for Band-edge

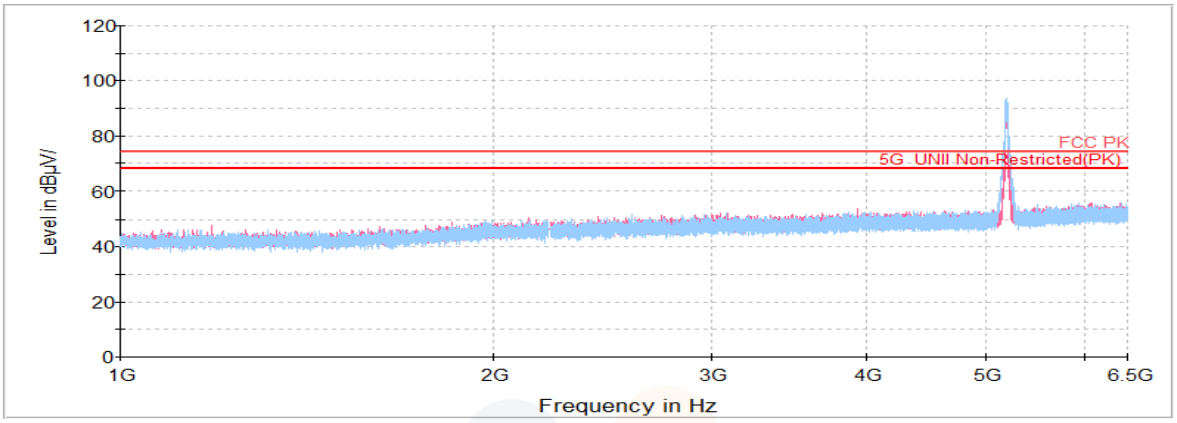


Plot of Harmonics and Spurious Emissions

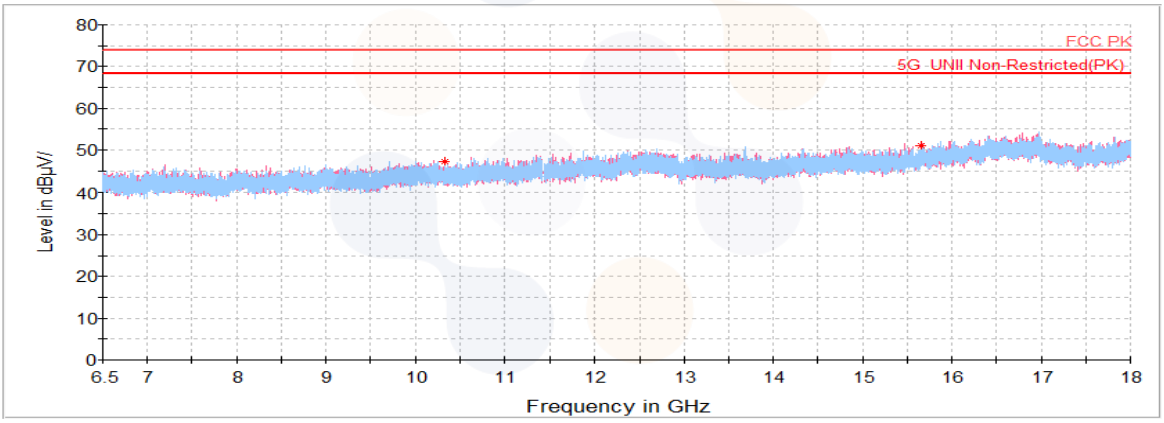
In order to simplify the report, attached plots were only the lowest margin condition

802.11ac VHT40_2TX MIMO_UNII-1_Lowest Channel (5 190 ㎒)

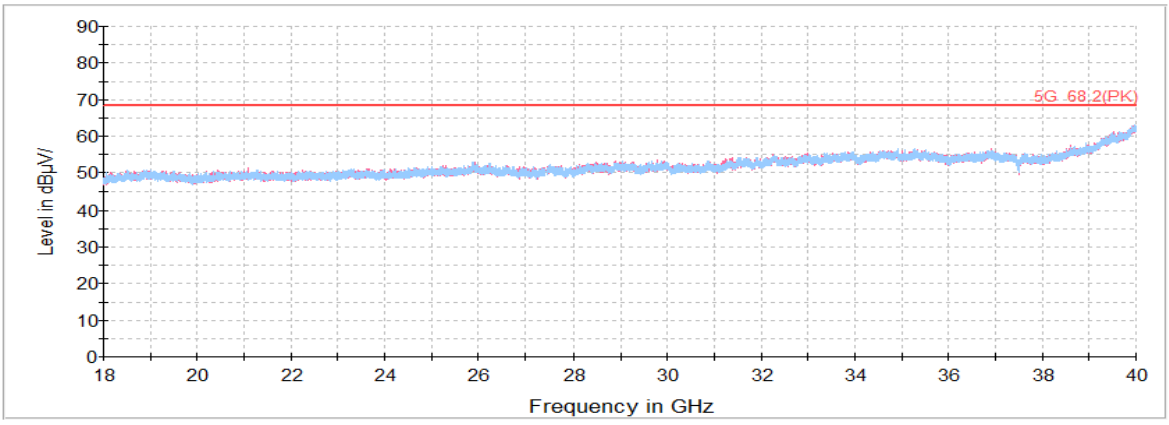
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a UNII-2A_ANT1

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 552.67	H	58.87	37.23	-47.84	-	48.26	68.20	19.94
15 738.62[1)]	H	57.87	40.49	-46.64	-	51.72	74.00	22.28
Average Data								
15 738.62[1)]	H	47.62	40.49	-46.64	0.30	41.77	54.00	12.23

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 564.89	V	58.19	37.24	-47.84	-	47.59	68.20	20.61
15 889.96[1)]	H	58.20	40.61	-46.50	-	52.31	74.00	21.69
Average Data								
15 889.96[1)]	H	47.33	40.61	-46.50	0.30	41.74	54.00	12.26

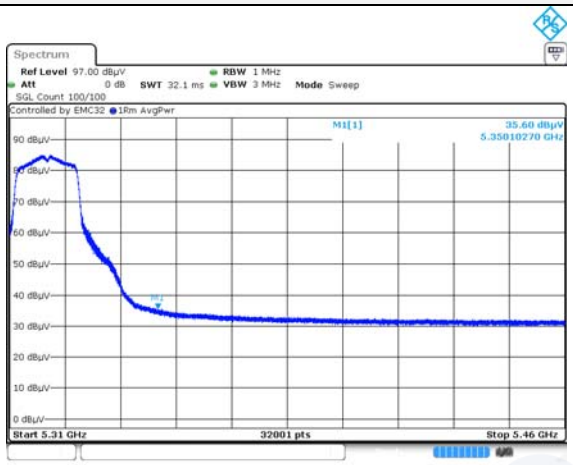
Highest Channel (5 320 ㎒)

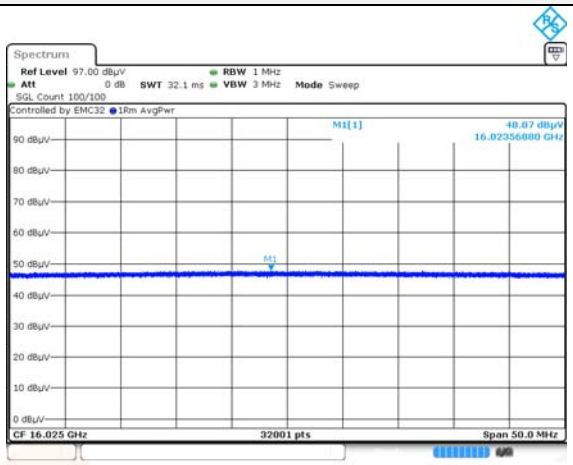
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.10[1)]	H	42.25	34.12	-23.57	-	52.80	74.00	21.20
10 714.75[1)]	V	59.72	37.33	-47.79	-	49.26	74.00	24.74
16 023.57[1)]	V	57.64	41.45	-46.31	-	52.78	74.00	21.22
Average Data								
5 350.10[1)]	H	35.60	34.12	-23.57	0.30	46.45	54.00	7.55
16 023.57[1)]	V	48.07	41.45	-46.31	0.30	43.51	54.00	10.49

802.11a UNII-2A_ANT1

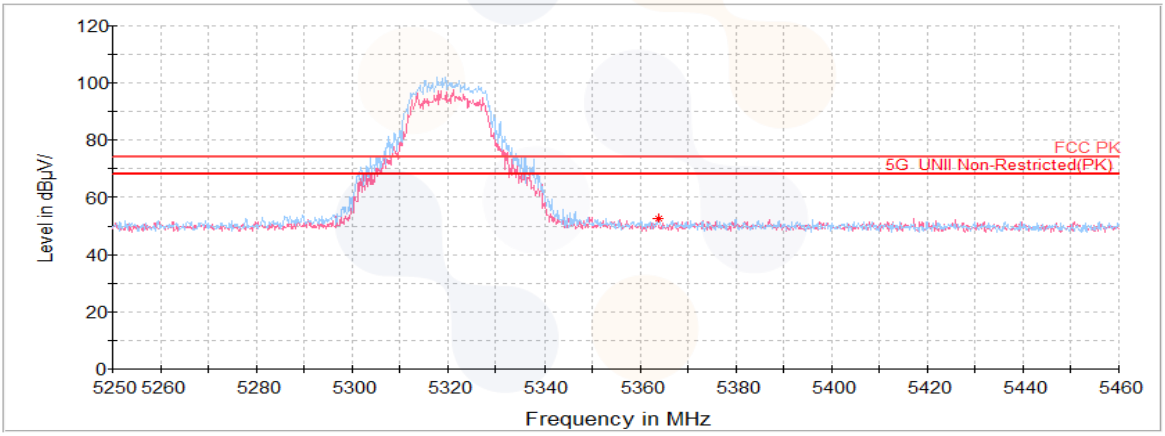
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11a UNII-2A_ANT2

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
8 086.28[1)]	H	63.05	35.40	-50.55	-	47.90	74.00	26.10
10 567.05	H	58.23	37.24	-47.84	-	47.63	68.20	20.57
15 843.91[1)]	V	57.53	40.58	-46.54	-	51.57	74.00	22.43
Average Data								
15 843.91[1)]	V	47.76	40.58	-46.54	0.30	42.10	54.00	11.90

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 583.58	V	59.26	37.25	-47.83	-	48.68	68.20	19.52
15 845.69[1)]	V	57.79	40.58	-46.54	-	51.83	74.00	22.17
Average Data								
15 845.69[1)]	V	47.62	40.58	-46.54	0.30	41.96	54.00	12.04

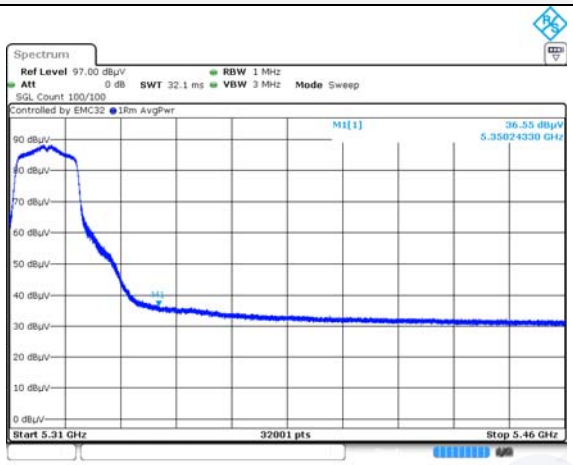
Highest Channel (5 320 ㎒)

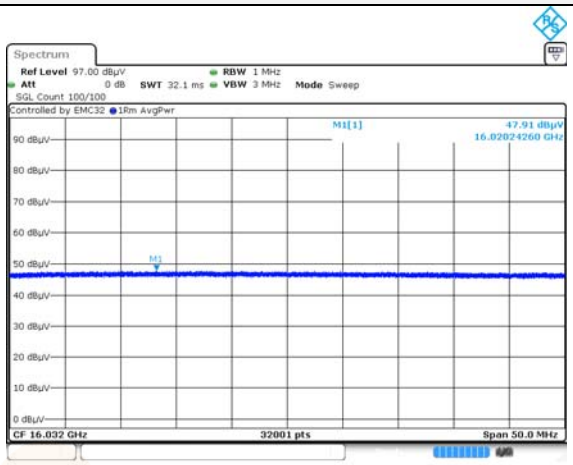
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.24[1)]	H	44.69	34.12	-23.57	-	55.24	74.00	18.76
10 629.94[1)]	H	58.73	37.28	-47.81	-	48.20	74.00	25.80
16 020.24[1)]	H	58.73	41.44	-46.32	-	53.85	74.00	20.15
Average Data								
5 350.24[1)]	H	36.55	34.12	-23.57	0.30	47.40	54.00	6.60
16 020.24[1)]	H	47.91	41.44	-46.32	0.30	43.33	54.00	10.67

802.11a UNII-2A_ANT2

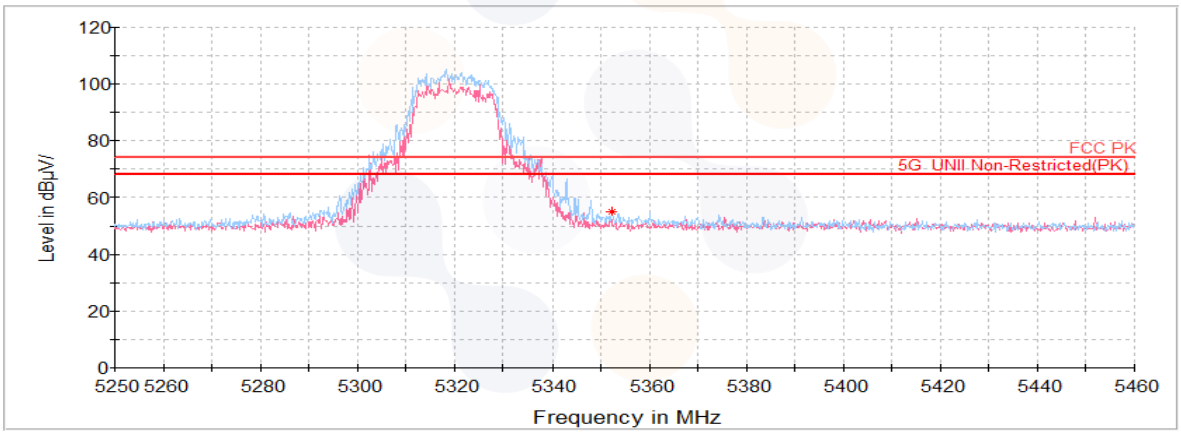
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11a UNII-2A_2TX MIMO

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 550.16	V	57.86	37.23	-47.84	-	47.25	68.20	20.95
15 788.38[1)]	V	57.08	40.53	-46.59	-	51.02	74.00	22.98
Average Data								
15 788.38[1)]	V	47.30	40.53	-46.59	0.29	41.53	54.00	12.47

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 552.31	V	57.93	37.23	-47.84	-	47.32	68.20	20.88
15 841.77[1)]	V	57.49	40.57	-46.54	-	51.52	74.00	22.48
Average Data								
15 841.77[1)]	V	47.48	40.57	-46.54	0.29	41.80	54.00	12.20

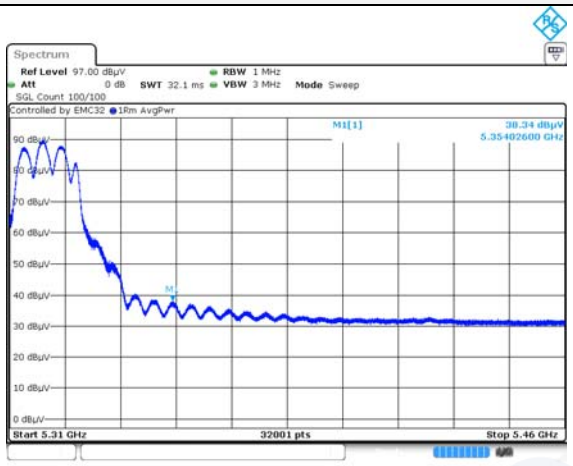
Highest Channel (5 320 ㎒)

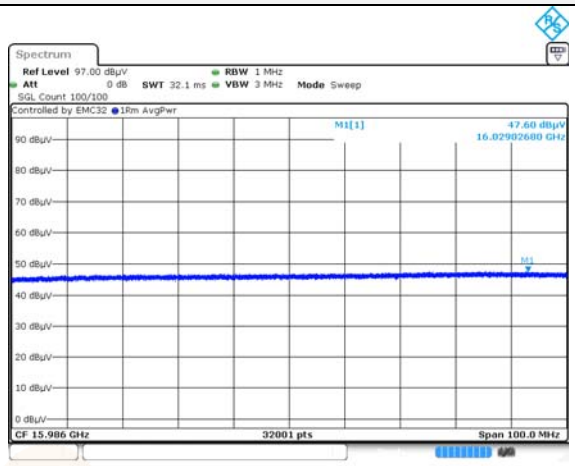
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 354.03[1)]	H	46.43	34.12	-23.56	-	56.99	74.00	17.01
10 643.23[1)]	V	58.89	37.29	-47.81	-	48.37	74.00	25.63
16 029.03[1)]	V	57.22	41.46	-46.29	-	52.39	74.00	21.61
Average Data								
5 354.03[1)]	H	38.34	34.12	-23.56	0.29	49.19	54.00	4.81
16 029.03[1)]	V	47.60	41.46	-46.29	0.29	43.06	54.00	10.94

802.11a UNII-2A_2TX MIMO

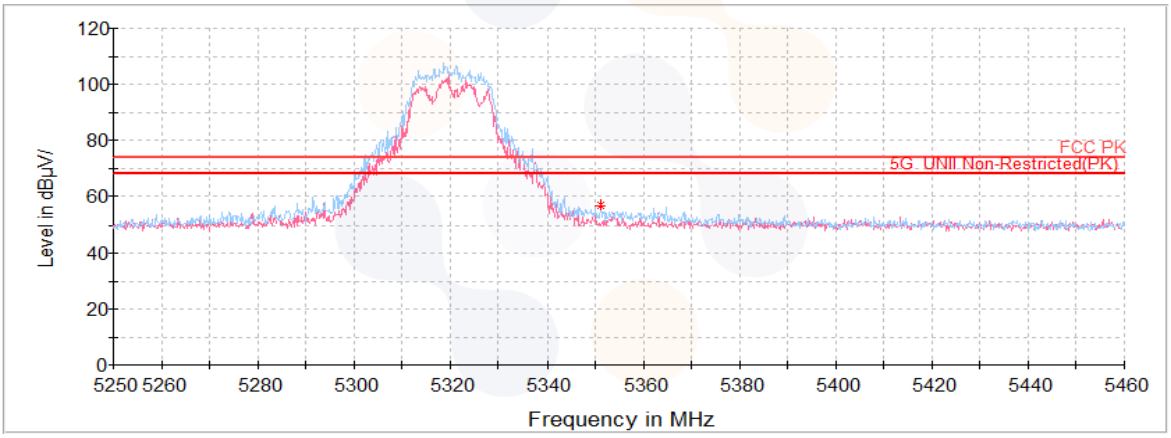
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2A_ANT1

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 700.73[1)]	V	59.19	37.32	-47.79	-	48.72	74.00	25.28
15 845.04[1)]	V	58.29	40.58	-46.54	-	52.33	74.00	21.67
Average Data								
15 845.04[1)]	V	47.27	40.58	-46.54	0.32	41.63	54.00	12.37

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 776.56[1)]	V	58.73	37.37	-47.76	-	48.34	74.00	25.66
15 891.55[1)]	V	58.62	40.61	-46.50	-	52.73	74.00	21.27
Average Data								
15 891.55[1)]	V	47.02	40.61	-46.50	0.32	41.45	54.00	12.55

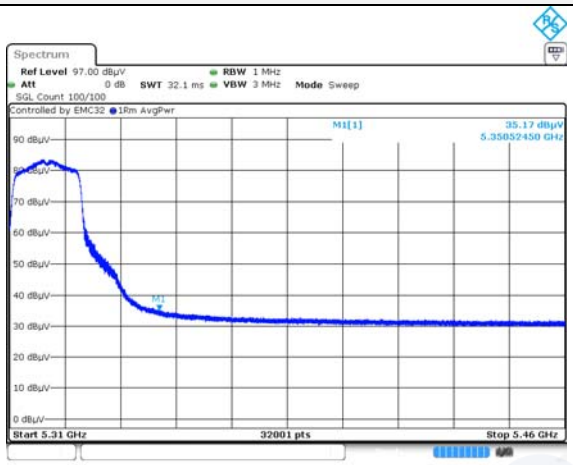
Highest Channel (5 320 ㎒)

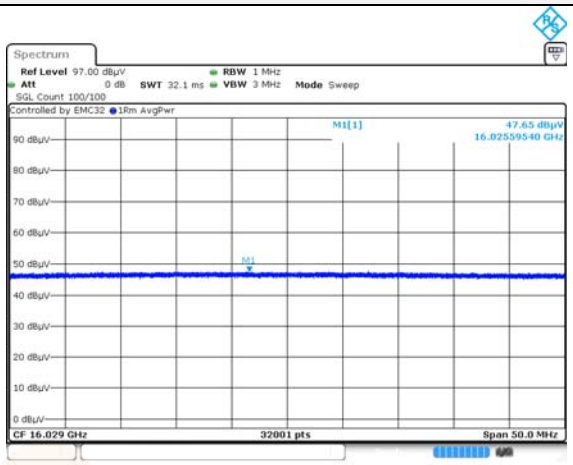
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.52[1)]	H	44.20	34.12	-23.57	-	54.75	74.00	19.25
10 631.02[1)]	V	58.51	37.28	-47.81	-	47.98	74.00	26.02
16 025.60[1)]	V	58.03	41.46	-46.30	-	53.19	74.00	20.81
Average Data								
5 350.52[1)]	H	35.17	34.12	-23.57	0.32	46.04	54.00	7.96
16 025.60[1)]	V	47.65	41.46	-46.30	0.32	43.13	54.00	10.87

802.11n HT20_UNII-2A_ANT1

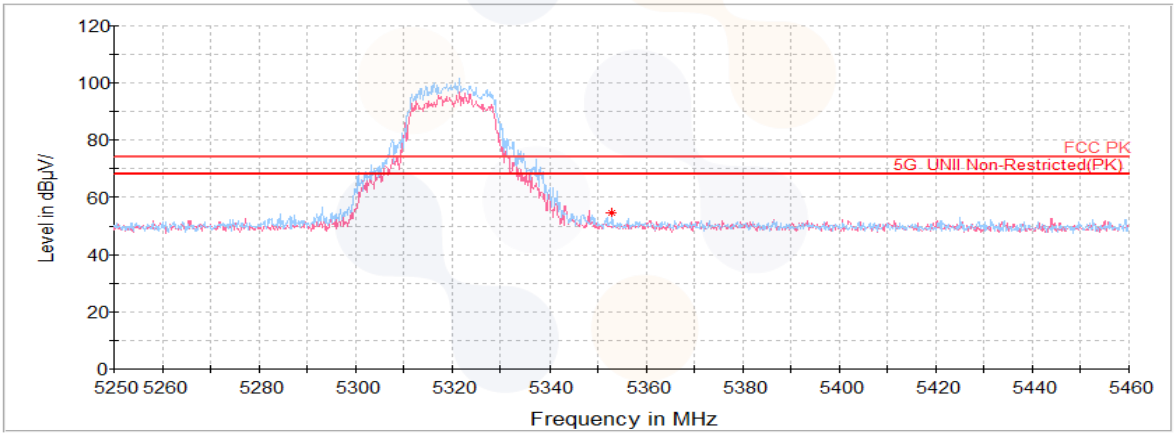
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2A_ANT2

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 629.94[1)]	H	59.49	37.28	-47.81	-	48.96	74.00	25.04
15 835.89[1)]	H	58.51	40.57	-46.55	-	52.53	74.00	21.47
Average Data								
15 835.89[1)]	H	47.25	40.57	-46.55	0.32	41.59	54.00	12.41

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 615.20[1)]	H	58.54	37.27	-47.82	-	47.99	74.00	26.01
15 842.82[1)]	H	57.69	40.57	-46.54	-	51.72	74.00	22.28
Average Data								
15 842.82[1)]	H	47.29	40.57	-46.54	0.32	41.64	54.00	12.36

Highest Channel (5 320 ㎒)

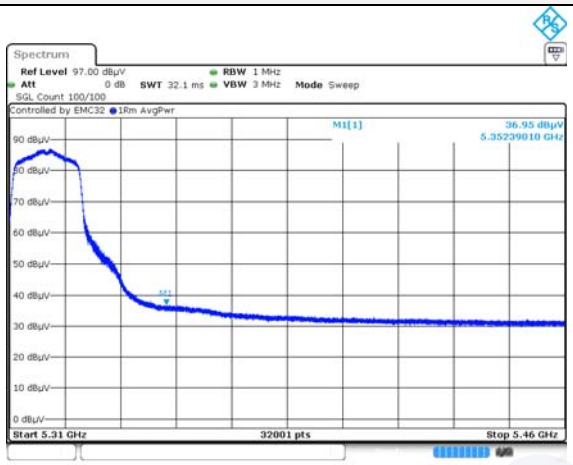
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 352.39[1)]	H	44.12	34.12	-23.57	-	54.67	74.00	19.33
10 647.55[1)]	V	57.41	37.29	-47.81	-	46.89	74.00	27.11
16 008.41[1)]	H	56.46	41.42	-46.36	-	51.52	74.00	22.48
Average Data								
5 352.39[1)]	H	36.95	34.12	-23.57	0.32	47.82	54.00	6.18
16 008.41[1)]	H	47.71	41.42	-46.36	0.32	43.09	54.00	10.91

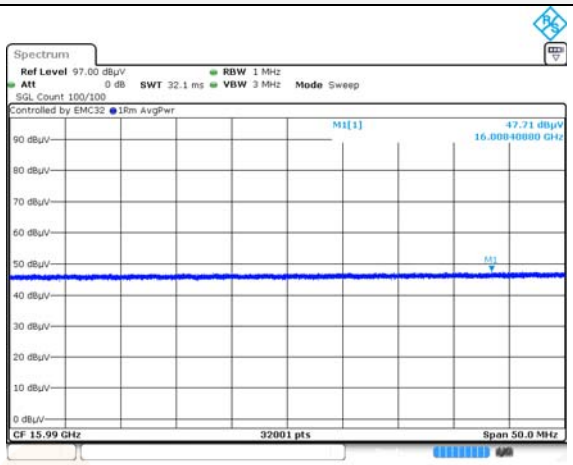
.

802.11n HT20_UNII-2A_ANT2

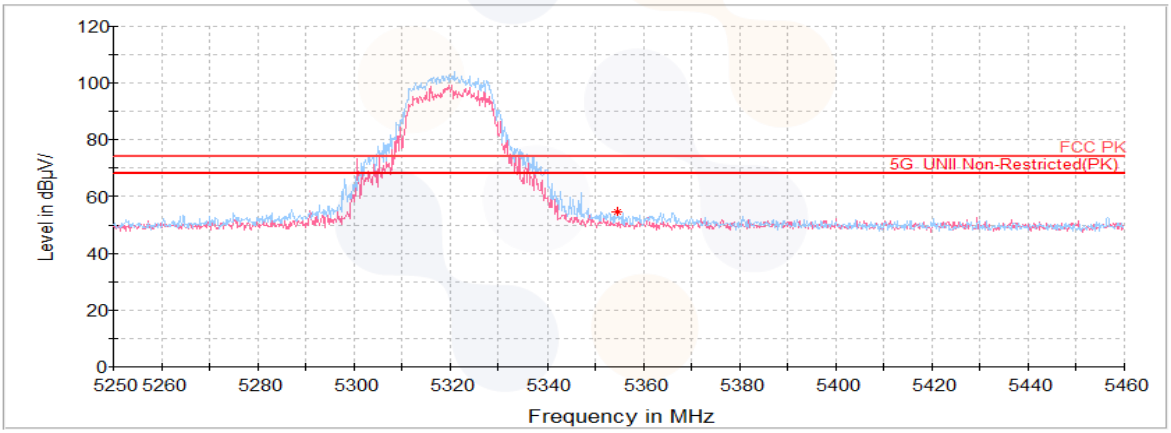
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT20_UNII-2A_2TX MIMO

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 608.02[1)]	H	59.22	37.26	-47.82	-	48.66	74.00	25.34
15 838.32[1)]	H	58.34	40.57	-46.55	-	52.36	74.00	21.64
Average Data								
15 838.32[1)]	H	47.69	40.57	-46.55	0.31	42.02	54.00	11.98

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 569.56	H	58.07	37.24	-47.83	-	47.48	68.20	20.72
15 848.96[1)]	H	59.96	40.58	-46.54	-	54.00	74.00	20.00
Average Data								
15 848.96[1)]	H	47.47	40.58	-46.54	0.31	41.82	54.00	12.18

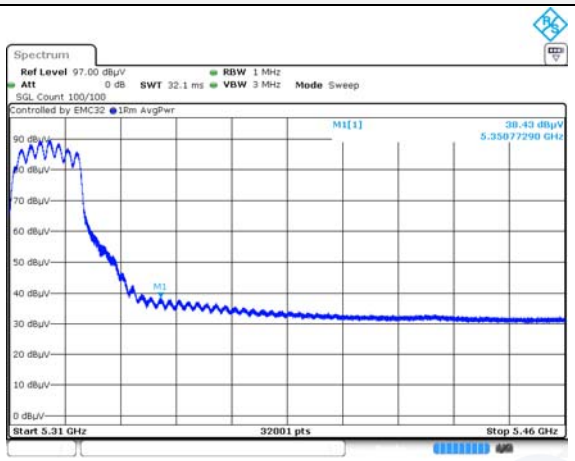
Highest Channel (5 320 ㎒)

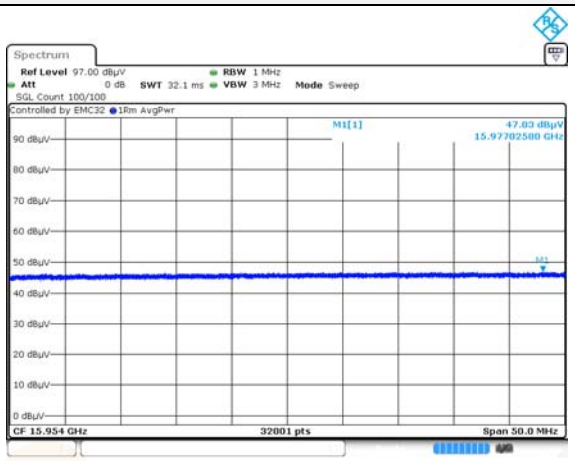
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.77[1)]	H	45.84	34.12	-23.57	-	56.39	74.00	17.61
10 657.97[1)]	V	58.49	37.29	-47.80	-	47.98	74.00	26.02
15 977.03[1)]	H	57.70	40.68	-46.42	-	51.96	74.00	22.04
Average Data								
5 350.77[1)]	H	38.43	34.12	-23.57	0.31	49.29	54.00	4.71
15 977.03[1)]	H	47.03	40.68	-46.42	0.31	41.60	54.00	12.40

802.11n HT20_UNII-2A_2TX MIMO

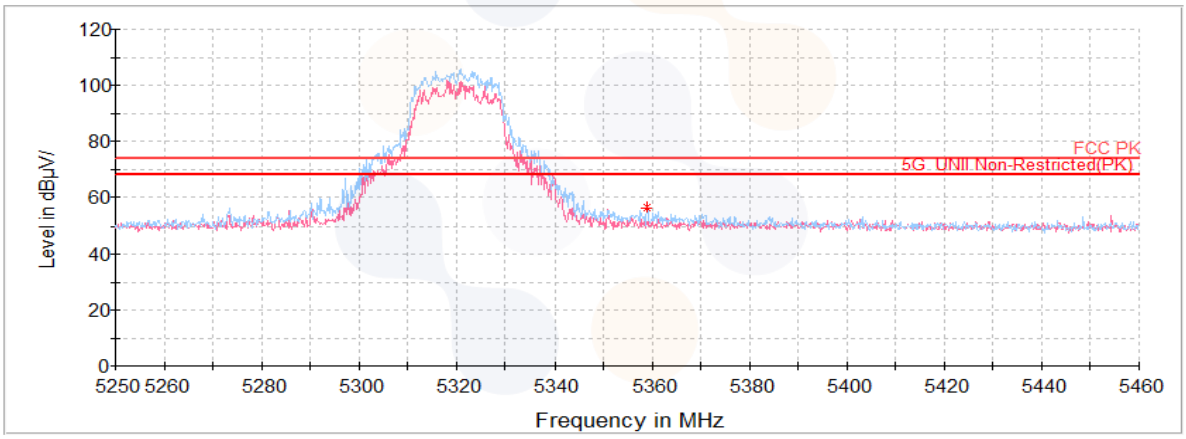
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40_UNII-2A ANT1

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 745.30[1)]	H	58.95	37.35	-47.78	-	48.52	74.00	25.48
15 895.59[1)]	H	57.87	40.62	-46.49	-	52.00	74.00	22.00
Average Data								
15 895.59[1)]	H	46.92	40.62	-46.49	0.62	41.67	54.00	12.33

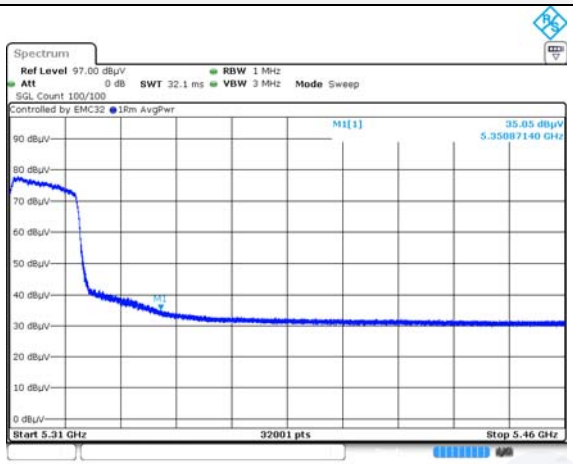
Highest Channel (5 310 ㎒)

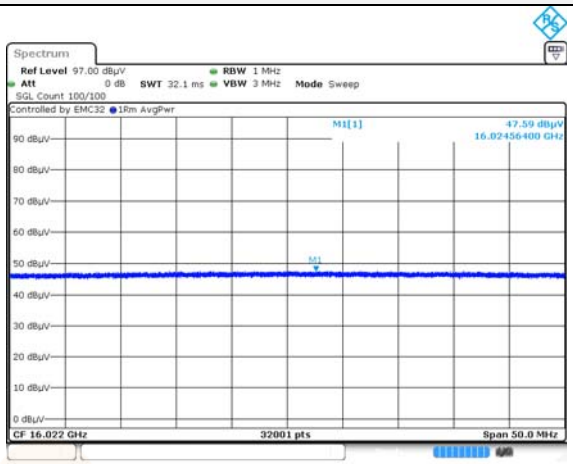
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.87[1)]	H	43.47	34.12	-23.57	-	54.02	74.00	19.98
10 699.30[1)]	V	59.48	37.32	-47.79	-	49.01	74.00	24.99
16 024.56[1)]	V	57.88	41.45	-46.30	-	53.03	74.00	20.97
Average Data								
5 350.87[1)]	H	35.05	34.12	-23.57	0.62	46.22	54.00	7.78
16 024.56[1)]	V	47.59	41.45	-46.30	0.62	43.36	54.00	10.64

802.11n HT40_UNII-2A ANT1

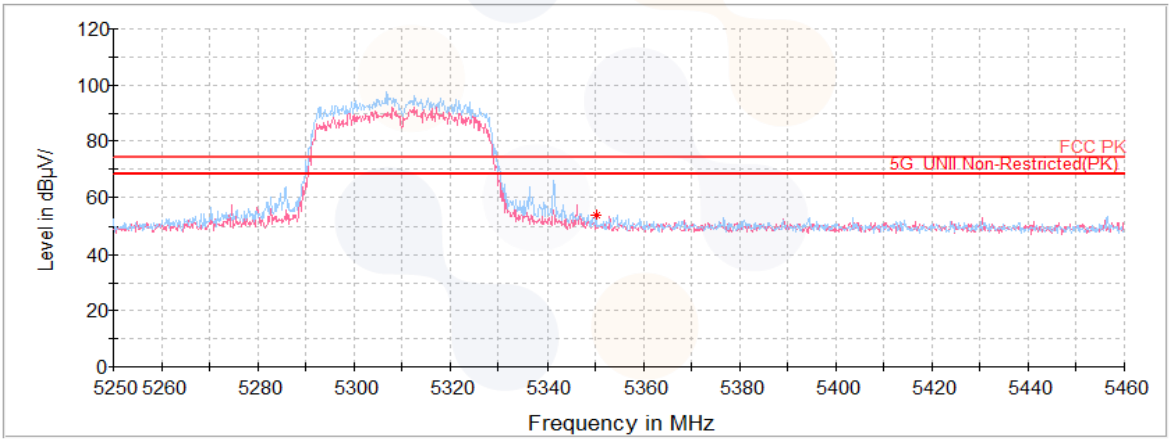
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40_UNII-2A ANT2

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 545.13	H	58.37	37.23	-47.84	-	47.76	68.20	20.44
15 853.79[1)]	V	58.95	40.58	-46.53	-	53.00	74.00	21.00
Average Data								
15 853.79[1)]	V	47.49	40.58	-46.53	0.62	42.16	54.00	11.84

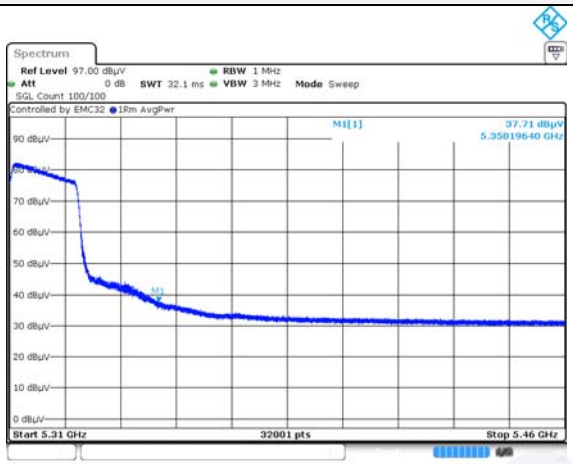
Highest Channel (5 310 ㎒)

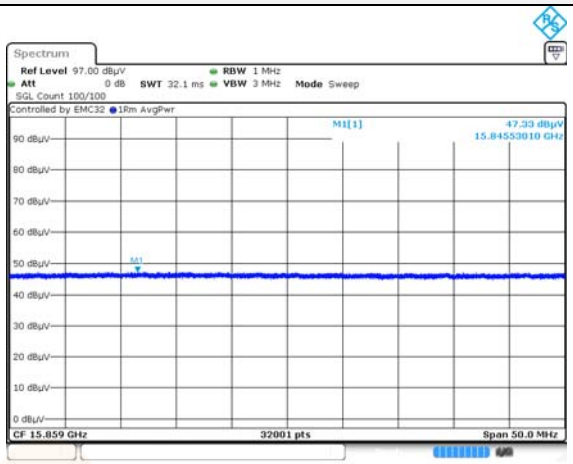
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.20[1)]	H	45.40	34.12	-23.57	-	55.95	74.00	18.05
10 615.56[1)]	H	57.73	37.27	-47.82	-	47.18	74.00	26.82
15 845.53[1)]	H	57.93	40.58	-46.54	-	51.97	74.00	22.03
Average Data								
5 350.20[1)]	H	37.71	34.12	-23.57	0.62	48.88	54.00	5.12
15 845.53[1)]	H	47.33	40.58	-46.54	0.62	41.99	54.00	12.01

802.11n HT40_UNII-2A ANT2

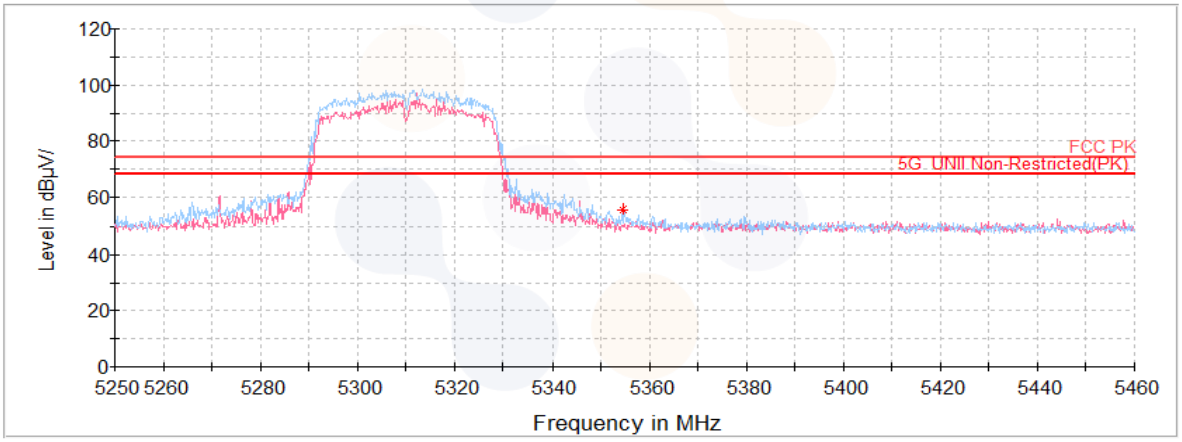
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11n HT40_UNII-2A 2TX MIMO

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 489.06	H	57.82	37.19	-47.87	-	47.14	68.20	21.06
15 848.65[1)]	V	57.80	40.58	-46.54	-	51.84	74.00	22.16
Average Data								
15 848.65[1)]	V	47.23	40.58	-46.54	0.61	41.88	54.00	12.12

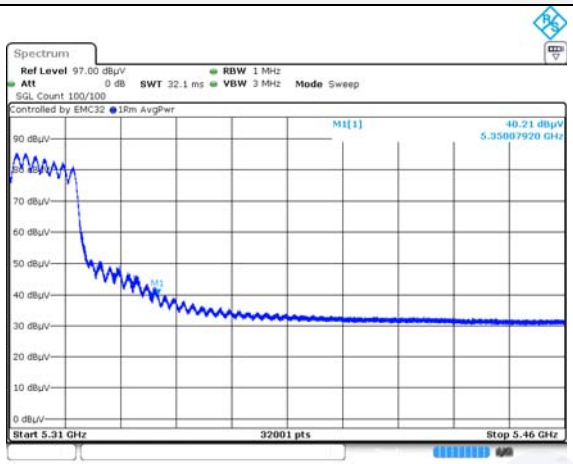
Highest Channel (5 310 ㎒)

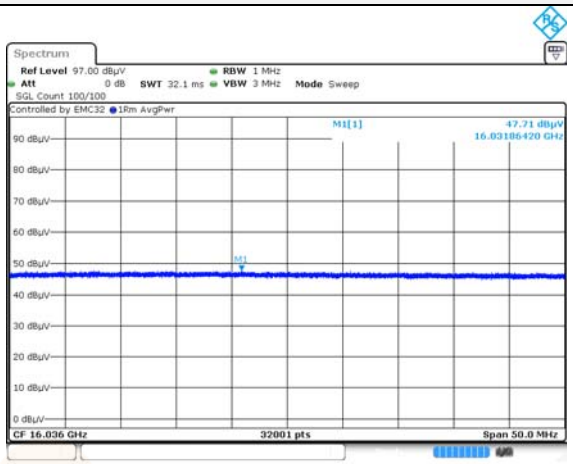
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.08[1)]	H	46.46	34.12	-23.57		57.01	74.00	16.99
10 642.88[1)]	V	58.14	37.29	-47.81		47.62	74.00	26.38
16 031.86[1)]	V	57.48	41.47	-46.27		52.68	74.00	21.32
Average Data								
5 350.08[1)]	H	40.21	34.12	-23.57	0.61	51.37	54.00	2.63
16 031.86[1)]	V	47.71	41.47	-46.27	0.61	43.52	54.00	10.48

802.11n HT40_UNII-2A 2TX MIMO

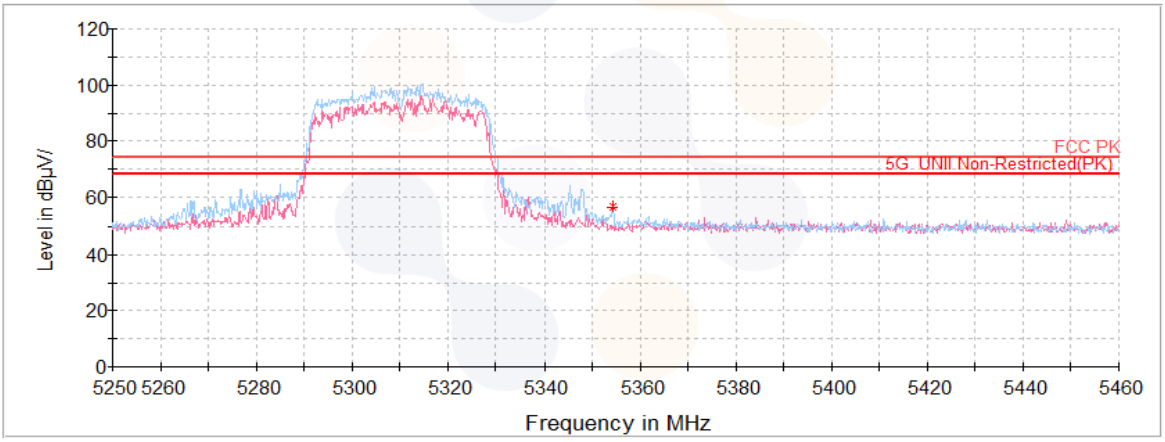
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2A_ANT1

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 700.38[1)]	V	58.61	37.32	-47.79	-	48.14	74.00	25.86
15 725.77[1)]	H	58.67	40.48	-46.65	-	52.50	74.00	21.50
Average Data								
15 725.77[1)]	H	47.66	40.48	-46.65	0.32	41.81	54.00	12.19

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 652.94[1)]	H	58.52	37.29	-47.81	-	48.00	74.00	26.00
15 888.87[1)]	H	58.38	40.61	-46.50	-	52.49	74.00	21.51
Average Data								
15 888.87[1)]	H	46.98	40.61	-46.50	0.32	41.41	54.00	12.59

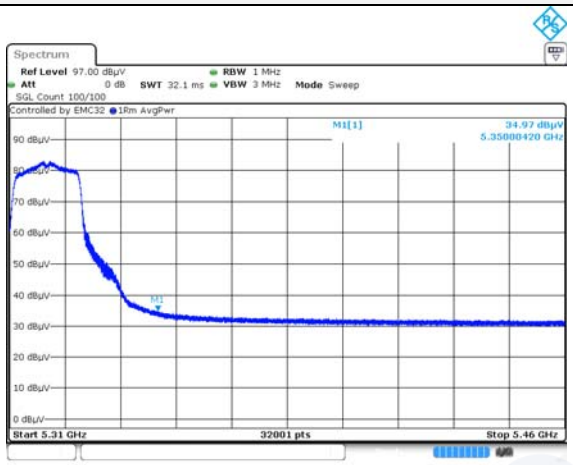
Highest Channel (5 320 ㎒)

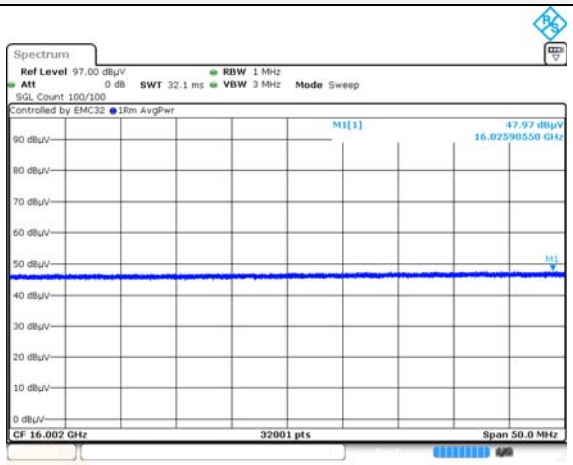
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.00[1)]	H	42.34	34.12	-23.57	-	52.89	74.00	21.11
10 634.97[1)]	V	58.42	37.28	-47.81	-	47.89	74.00	26.11
16 025.91[1)]	V	57.81	41.46	-46.30	-	52.97	74.00	21.03
Average Data								
5 350.00[1)]	H	34.97	34.12	-23.57	0.32	45.84	54.00	8.16
16 025.91[1)]	V	47.97	41.46	-46.30	0.32	43.45	54.00	10.55

802.11ac VHT20_UNII-2A ANT1

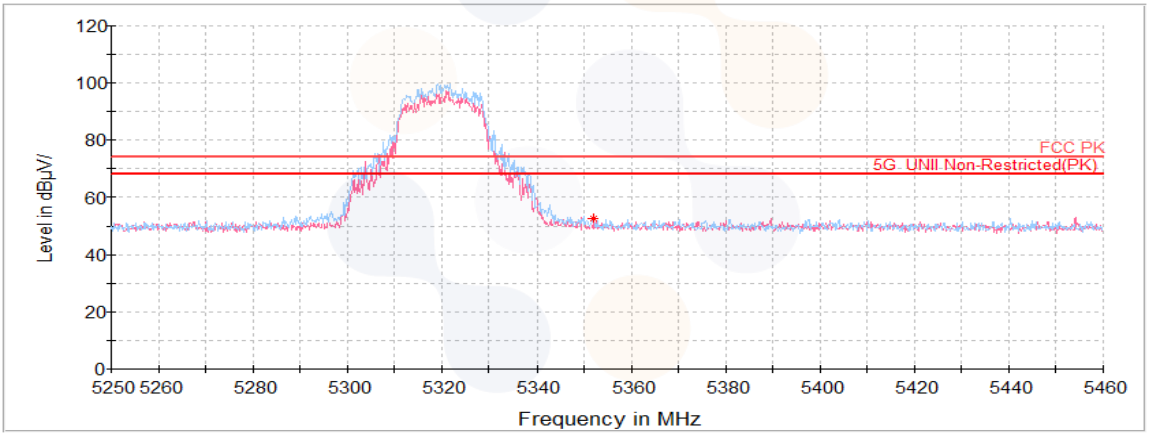
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2A ANT2

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 558.06	V	58.26	37.23	-47.84	-	47.65	68.20	20.55
15 786.61[1)]	V	56.67	40.53	-46.60	-	50.60	74.00	23.40
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 674.14[1)]	V	59.07	37.30	-47.80	-	48.57	74.00	25.43
15 850.04[1)]	H	57.25	40.58	-46.54	-	51.29	74.00	22.71
Average Data								
15 850.04[1)]	H	47.39	40.58	-46.54	0.32	41.75	54.00	12.25

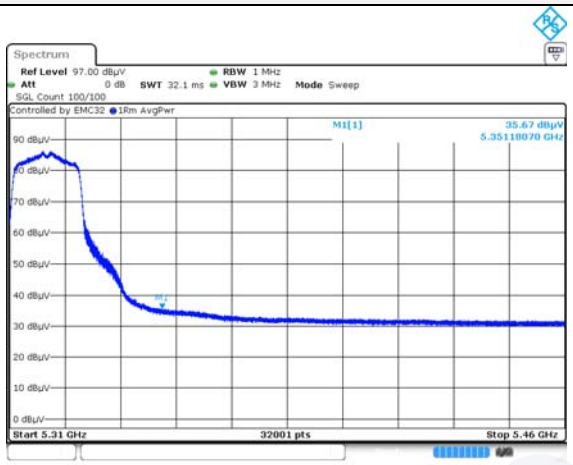
Highest Channel (5 320 ㎒)

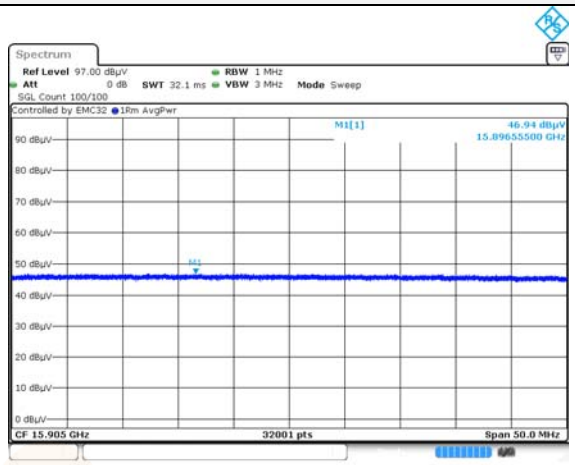
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 351.18[1)]	H	43.67	34.12	-23.57	-	54.22	74.00	19.78
10 625.27[1)]	H	58.68	37.28	-47.82	-	48.14	74.00	25.86
15 896.56[1)]	H	58.39	40.62	-46.49	-	52.52	74.00	21.48
Average Data								
5 351.18[1)]	H	35.67	34.12	-23.57	0.32	46.54	54.00	7.46
15 896.56[1)]	H	46.94	40.62	-46.49	0.32	41.39	54.00	12.61

802.11ac VHT20_UNII-2A ANT2

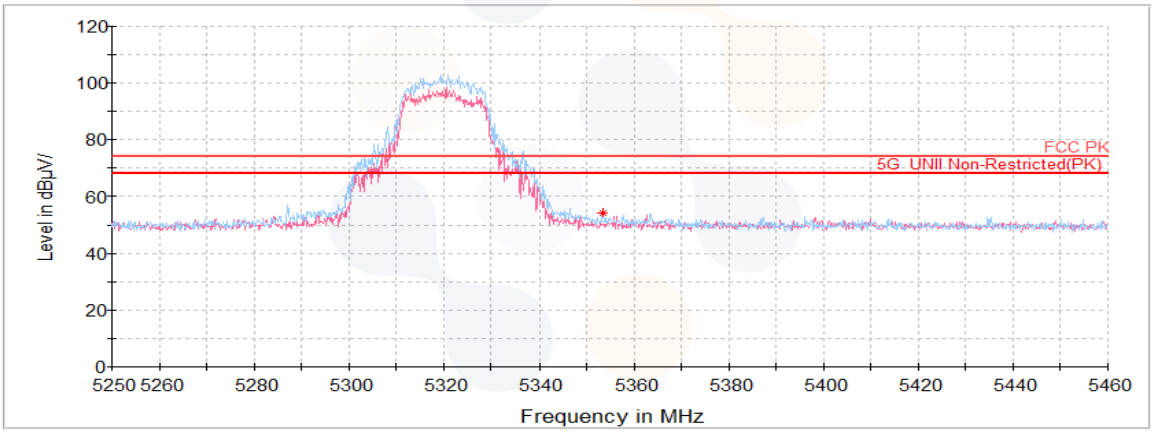
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT20_UNII-2A 2TX MIMO

Lowest Channel (5 260 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 551.95	H	57.16	37.23	-47.84	-	46.55	68.20	21.65
15 793.96[1)]	H	57.93	40.54	-46.59	-	51.88	74.00	22.12
Average Data								
15 793.96[1)]	H	47.21	40.54	-46.59	0.58	41.74	54.00	12.26

Middle Channel (5 280 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 629.22[1)]	H	58.12	37.28	-47.81	-	47.59	74.00	26.41
15 774.39[1)]	V	57.65	40.52	-46.61	-	51.56	74.00	22.44
Average Data								
15 774.39[1)]	V	47.18	40.52	-46.61	0.58	41.67	54.00	12.33

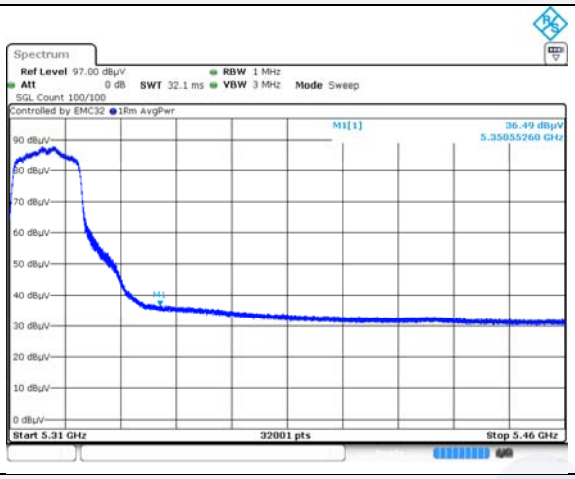
Highest Channel (5 320 ㎒)

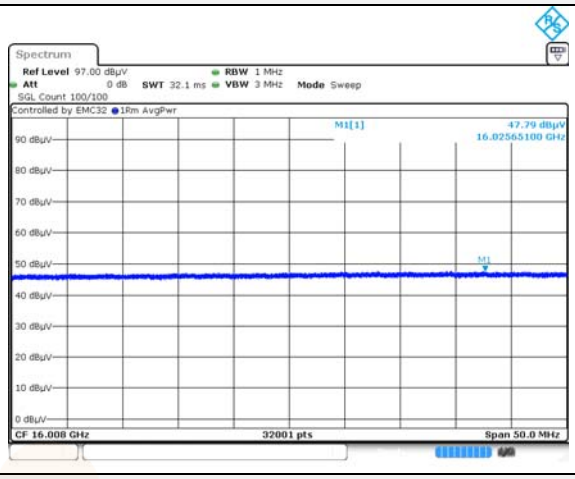
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.55[1)]	H	45.67	34.12	-23.57	-	56.22	74.00	17.78
10 642.16[1)]	H	57.95	37.29	-47.81	-	47.43	74.00	26.57
16 025.65[1)]	V	57.18	41.46	-46.30	-	52.34	74.00	21.66
Average Data								
5 350.55[1)]	H	36.49	34.12	-23.57	0.58	47.62	54.00	6.38
16 025.65[1)]	V	47.79	41.46	-46.30	0.58	43.53	54.00	10.47

802.11ac VHT20_UNII-2A_2TX MIMO

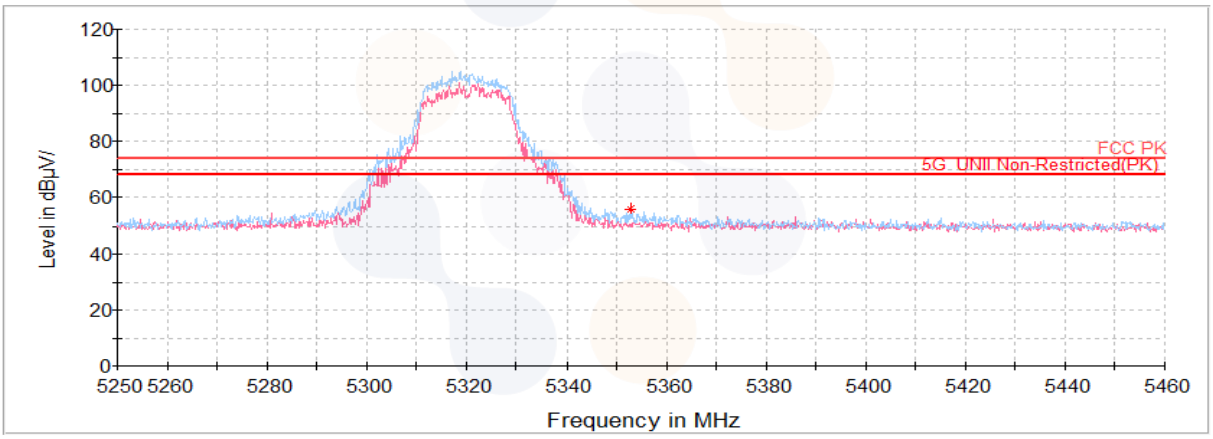
Highest Channel (5 320 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT40_UNII-2A ANT1

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 658.69[1)]	H	58.37	37.30	-47.80	-	47.87	74.00	26.13
15 887.22[1)]	V	58.44	40.61	-46.50	-	52.55	74.00	21.45
Average Data								
15 887.22[1)]	V	47.11	40.61	-46.50	0.61	41.83	54.00	12.17

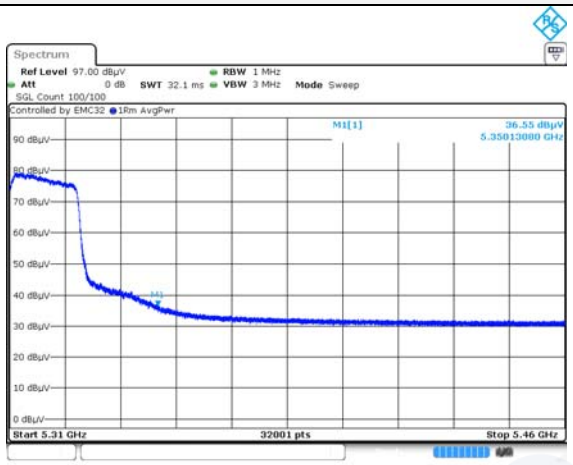
Highest Channel (5 310 ㎒)

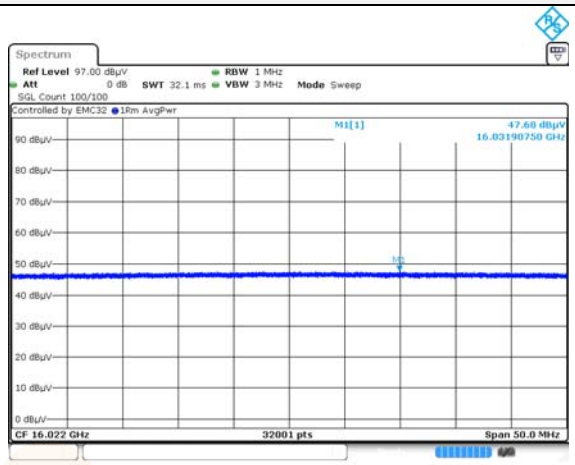
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.13[1)]	H	43.41	34.12	-23.57	-	53.96	74.00	20.04
10 687.80[1)]	V	58.40	37.31	-47.79	-	47.92	74.00	26.08
16 031.91[1)]	H	57.67	41.47	-46.27	-	52.87	74.00	21.13
Average Data								
5 350.13[1)]	H	36.55	34.12	-23.57	0.61	47.71	54.00	6.29
16 031.91[1)]	H	47.68	41.47	-46.27	0.61	43.49	54.00	10.51

802.11ac VHT40_UNII-2A ANT1

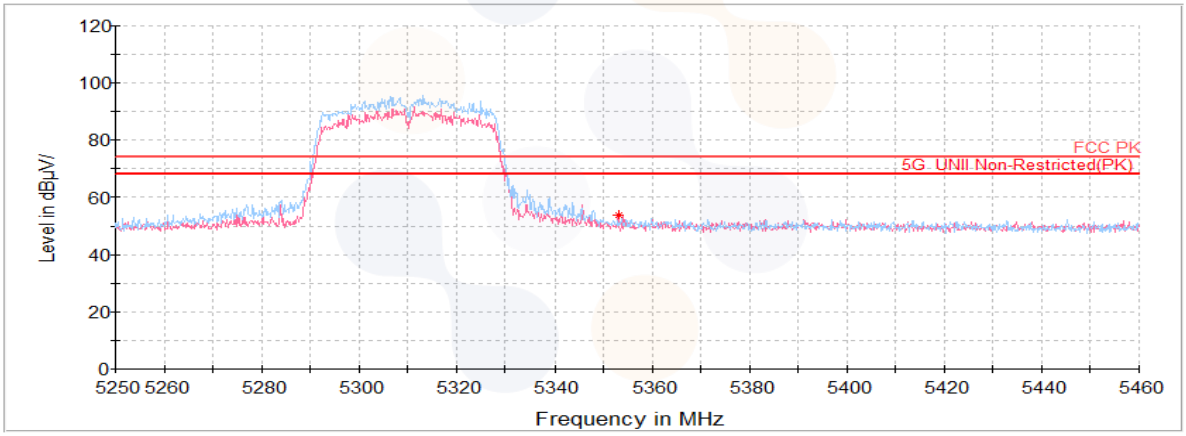
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT40_UNII-2A ANT2

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 571.72	V	58.04	37.24	-47.83	-	47.45	68.20	20.75
15 832.25[1)]	H	56.97	40.57	-46.55	-	50.99	74.00	23.01
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

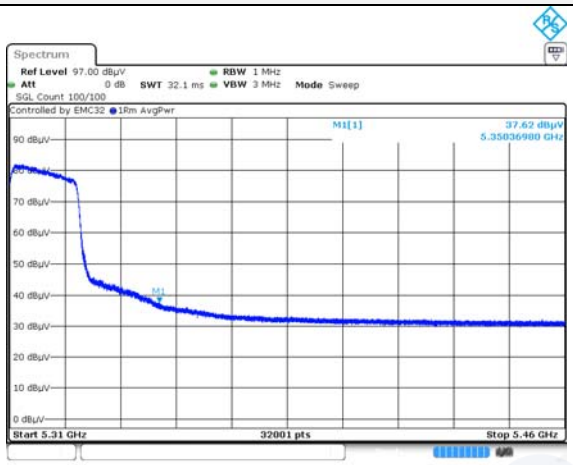
Highest Channel (5 310 ㎒)

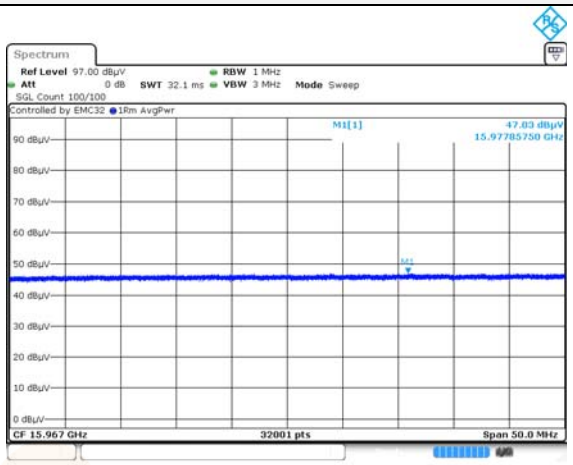
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.37[1)]	H	47.00	34.12	-23.57	-	57.55	74.00	16.45
10 630.30[1)]	V	58.64	37.28	-47.81	-	48.11	74.00	25.89
15 977.86[1)]	V	57.50	40.68	-46.42	-	51.76	74.00	22.24
Average Data								
5 350.37[1)]	H	37.62	34.12	-23.57	0.61	48.78	54.00	5.22
15 977.86[1)]	V	47.03	40.68	-46.42	0.61	41.90	54.00	12.10

802.11ac VHT40_UNII-2A ANT2

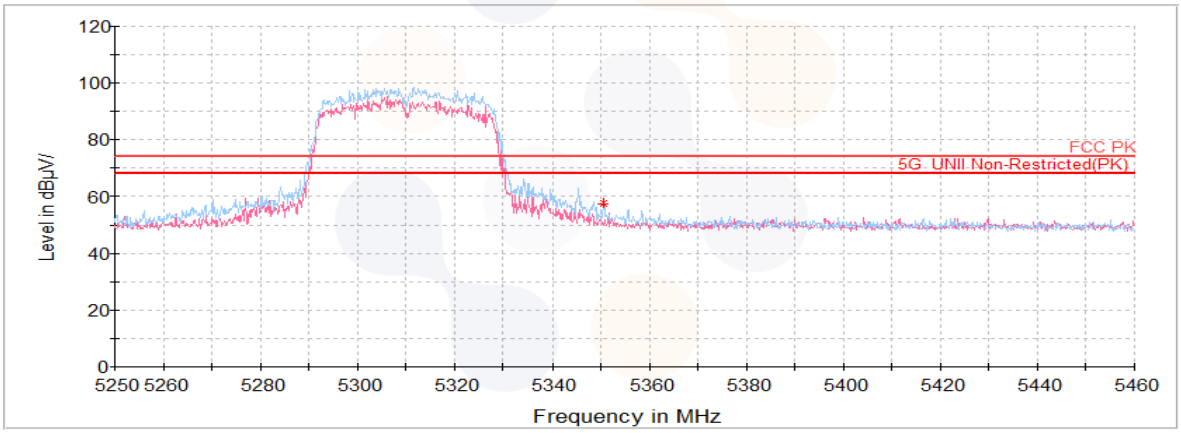
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge



802.11ac VHT40_UNII-2A 2TX MIMO

Lowest Channel (5 270 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 523.92	H	57.98	37.21	-47.85	-	47.34	68.20	20.86
15 792.09[1)]	H	58.49	40.53	-46.59	-	52.43	74.00	21.57
Average Data								
15 792.09[1)]	H	47.08	40.53	-46.59	1.07	42.09	54.00	11.91

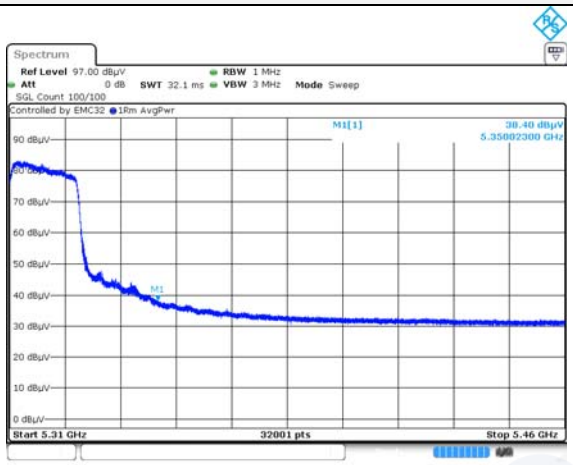
Highest Channel (5 310 ㎒)

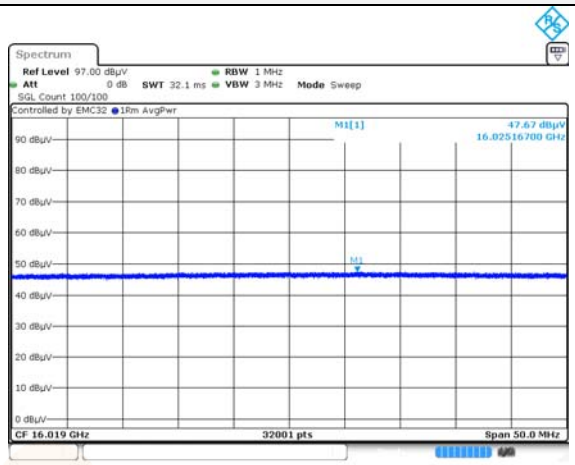
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.02[1)]	H	45.86	34.12	-23.57	-	56.41	74.00	17.59
10 604.06[1)]	V	58.08	37.26	-47.82	-	47.52	74.00	26.48
16 025.17[1)]	H	58.20	41.46	-46.30	-	53.36	74.00	20.64
Average Data								
5 350.02[1)]	H	38.40	34.12	-23.57	1.07	50.02	54.00	3.98
16 025.17[1)]	H	47.67	41.46	-46.30	1.07	43.90	54.00	10.10

802.11ac VHT40_UNII-2A 2TX MIMO

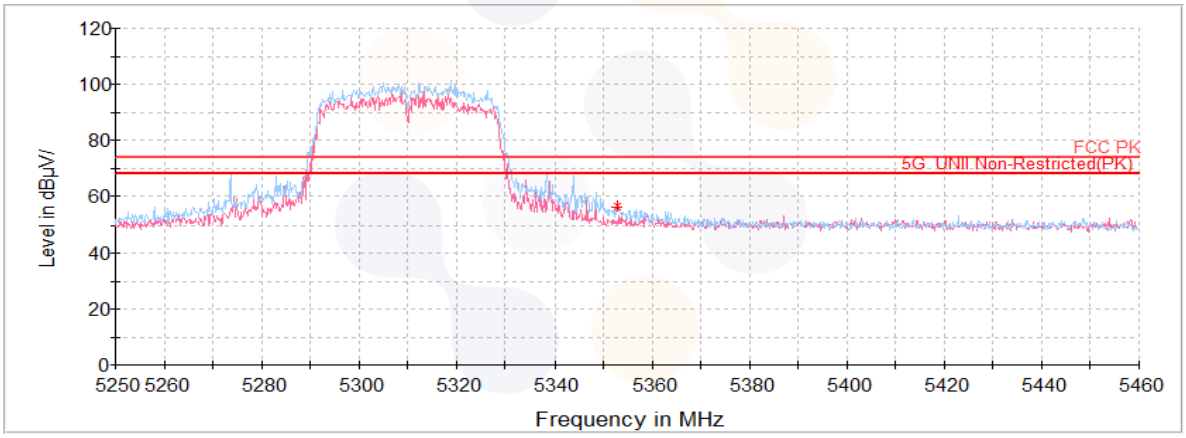
Highest Channel (5 310 ㎒)

Average data





Horizontal/Vertical for Band-edge

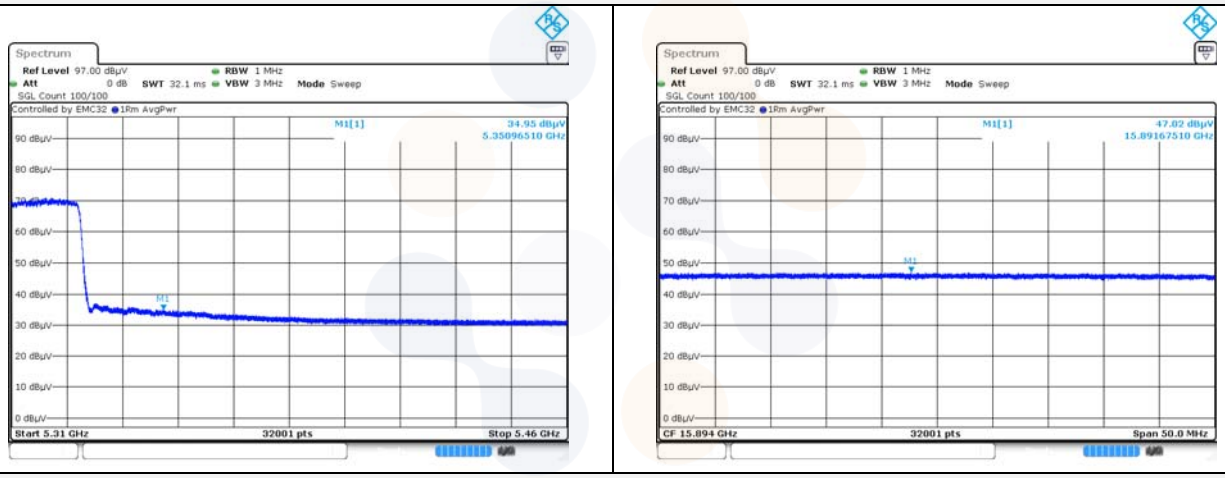


802.11ac VHT80_UNII-2A_ANT1

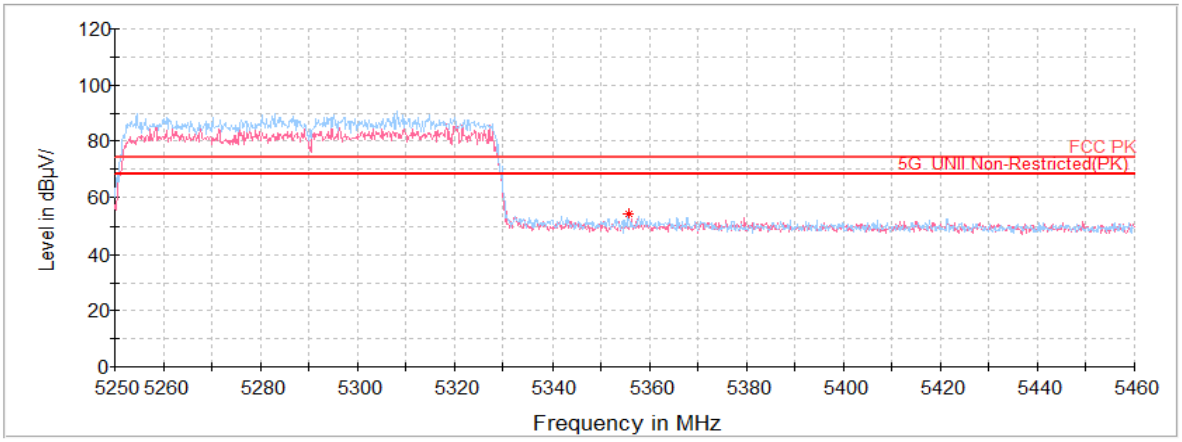
Middle Channel (5 290 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.97[1)]	H	44.15	34.12	-23.57	-	54.70	74.00	19.30
10 620.23[1)]	H	58.62	37.27	-47.82	-	48.07	74.00	25.93
15 891.68[1)]	V	58.19	40.61	-46.50	-	52.30	74.00	21.70
Average Data								
5 350.97[1)]	H	34.95	34.12	-23.57	1.14	46.64	54.00	7.36
15 891.68[1)]	V	47.02	40.61	-46.50	1.14	42.27	54.00	11.73

Average data



Horizontal/Vertical for Band-edge

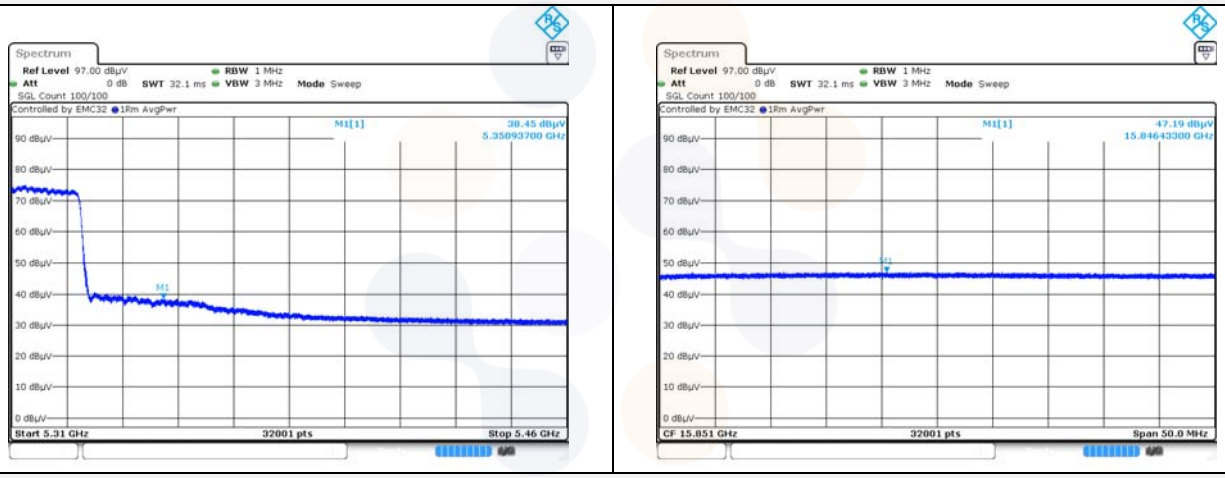


802.11ac VHT80_UNII-2A_ANT2

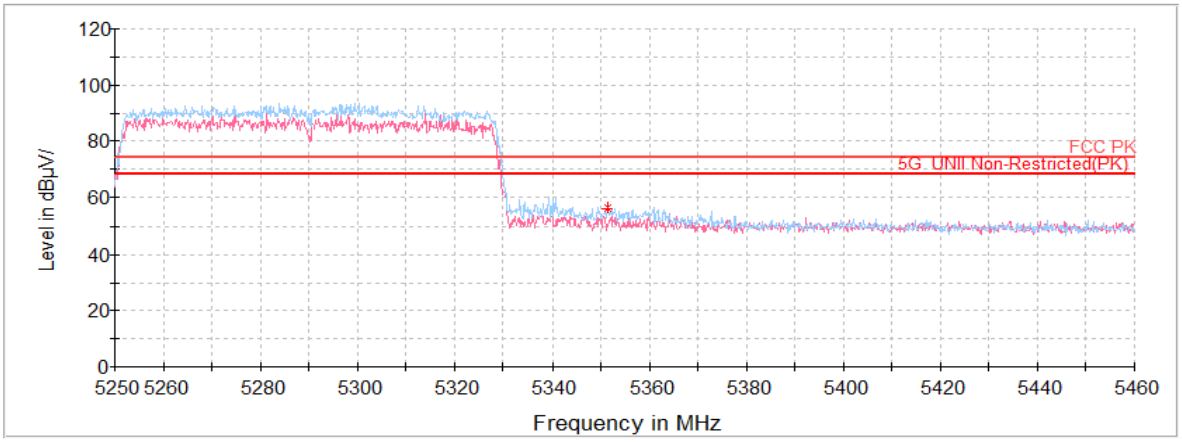
Middle Channel (5 290 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 350.94[1)]	H	45.66	34.12	-23.57	-	56.21	74.00	17.79
10 643.59[1)]	H	57.91	37.29	-47.81	-	47.39	74.00	26.61
15 846.43[1)]	H	58.01	40.58	-46.54	-	52.05	74.00	21.95
Average Data								
5 350.94[1)]	H	38.45	34.12	-23.57	1.14	50.14	54.00	3.86
15 846.43[1)]	H	47.19	40.58	-46.54	1.14	42.37	54.00	11.63

Average data



Horizontal/Vertical for Band-edge

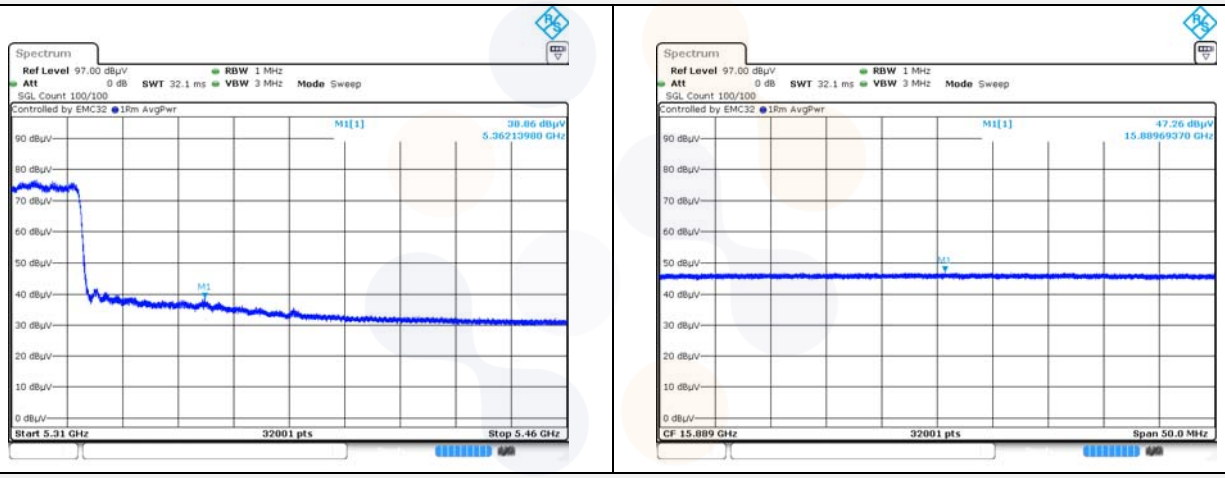


802.11ac VHT80_UNII-2A_2TX MIMO

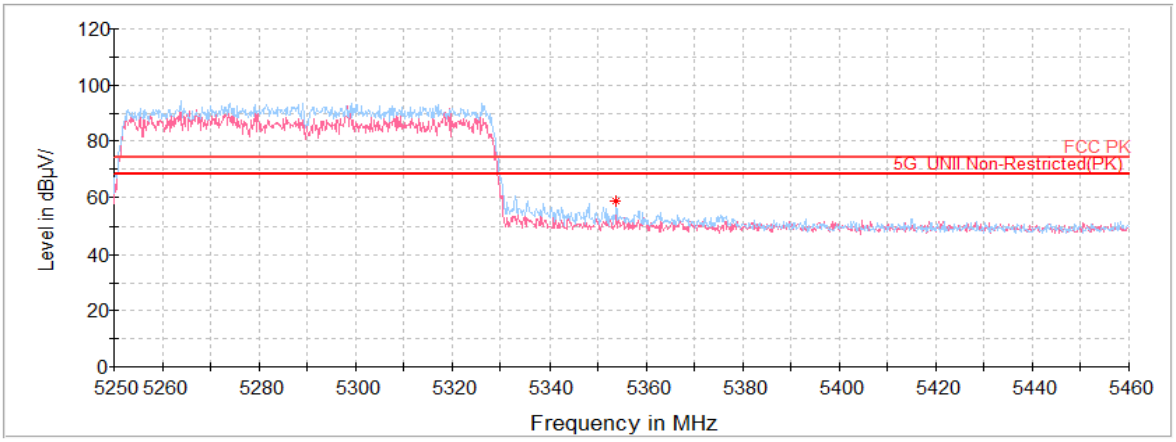
Middle Channel (5 290 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 362.14[1)]	H	48.22	34.13	-23.55	-	58.80	74.00	15.20
10 591.84	H	57.46	37.26	-47.83	-	46.89	68.20	21.31
15 889.69[1)]	H	57.63	40.61	-46.50	-	51.74	74.00	22.26
Average Data								
5 362.14[1)]	H	38.86	34.13	-23.55	1.81	51.25	54.00	2.75
15 889.69[1)]	H	47.26	40.61	-46.50	1.81	43.18	54.00	10.82

Average data



Horizontal/Vertical for Band-edge

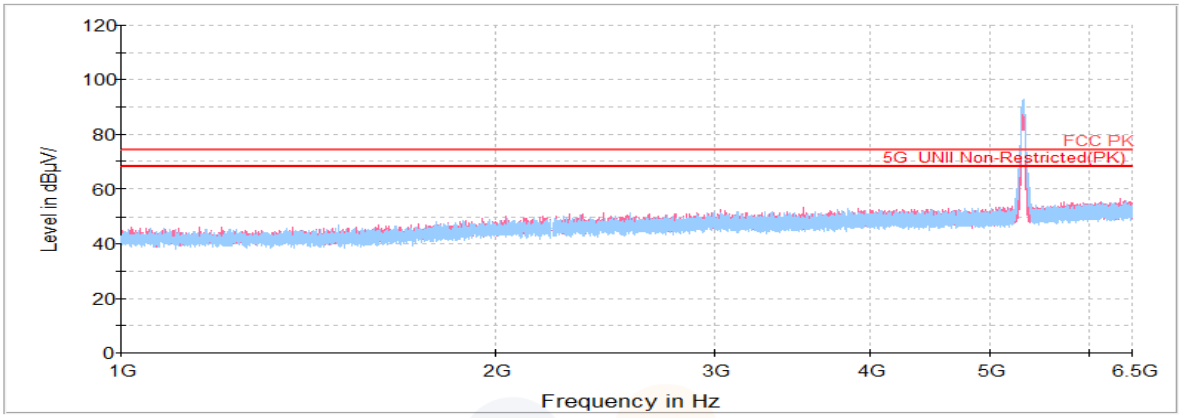


Plot of Harmonics and Spurious Emissions

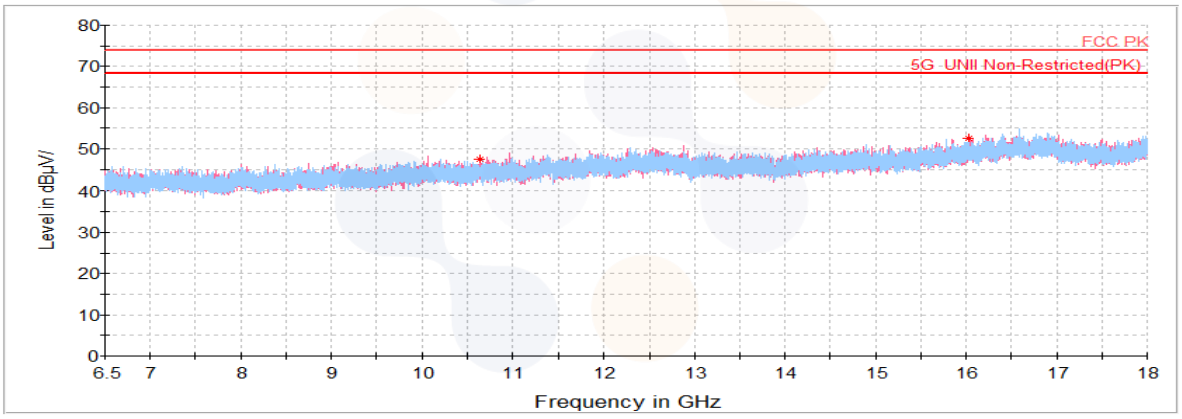
In order to simplify the report, attached plots were only the lowest margin condition

802.11n HT40 UNII-2A_2TX MIMO_ Highest Channel (5 310 ㎒)

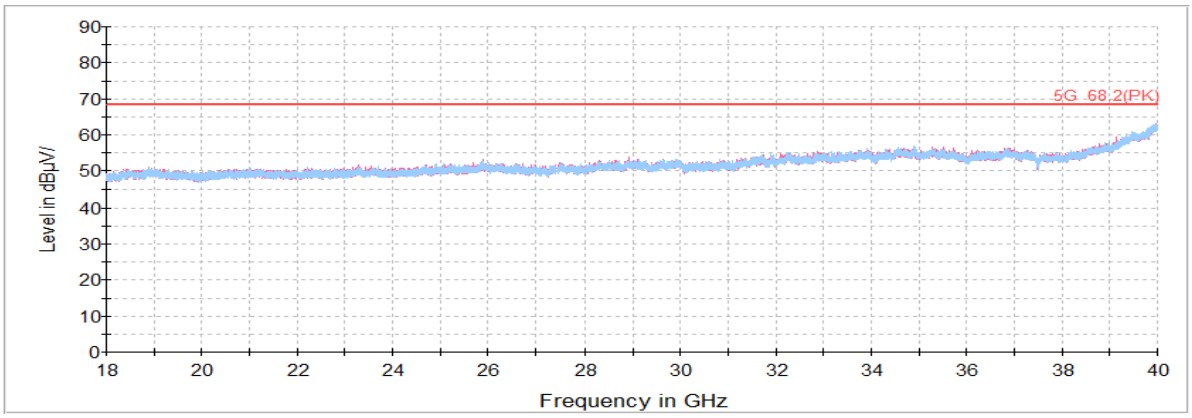
Horizontal/Vertical for 1 ㎓ ~ 6.5 ㎓



Horizontal/Vertical for 6.5 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



802.11a_UNII-2C_ANT1

Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 459.33[1)]	H	42.69	34.25	-23.43	-	53.51	74.00	20.49
10 999.73[1)]	H	58.68	37.50	-47.69	-	48.49	74.00	25.51
16 492.42	V	56.08	42.48	-44.51	-	54.05	68.20	14.15
Average Data								
5 459.33[1)]	H	36.05	34.25	-23.43	0.30	47.17	54.00	6.83

Middle Channel (5 600 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 216.44[1)]	H	58.84	37.72	-47.67	-	48.89	74.00	25.11
16 837.06	V	55.89	42.74	-44.50	-	54.13	68.20	14.07
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

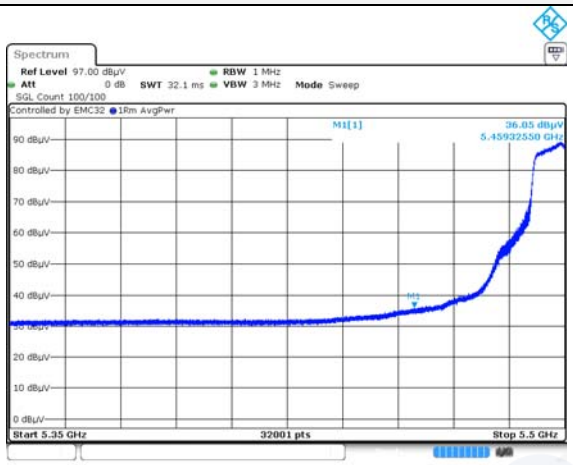
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 726.73	H	44.72	34.71	-22.96	-	56.47	68.20	11.73
11 391.09[1)]	V	59.33	37.89	-47.65	-	49.57	74.00	24.43
17 153.31	H	55.77	41.55	-44.79	-	52.53	68.20	15.67
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-2C_ANT1

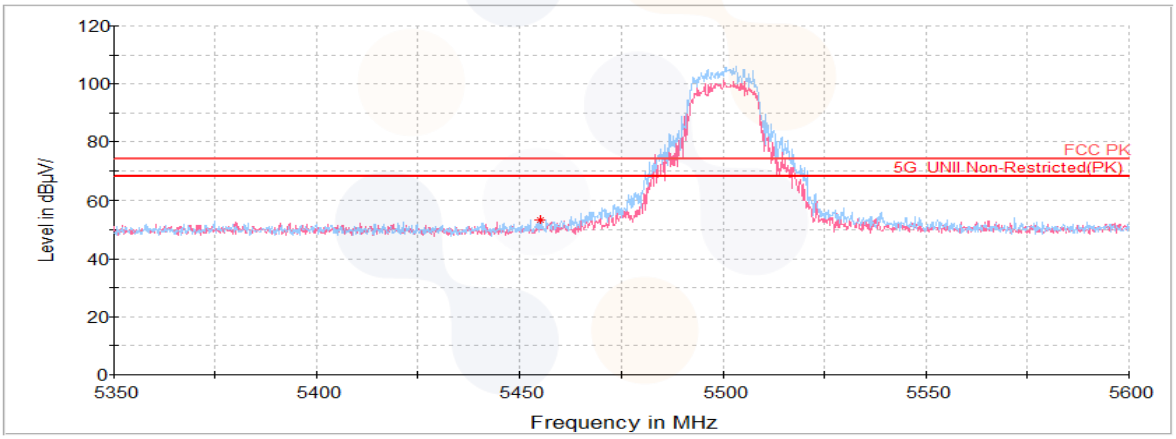
Lowest Channel (5 500 ㎒)

Average data



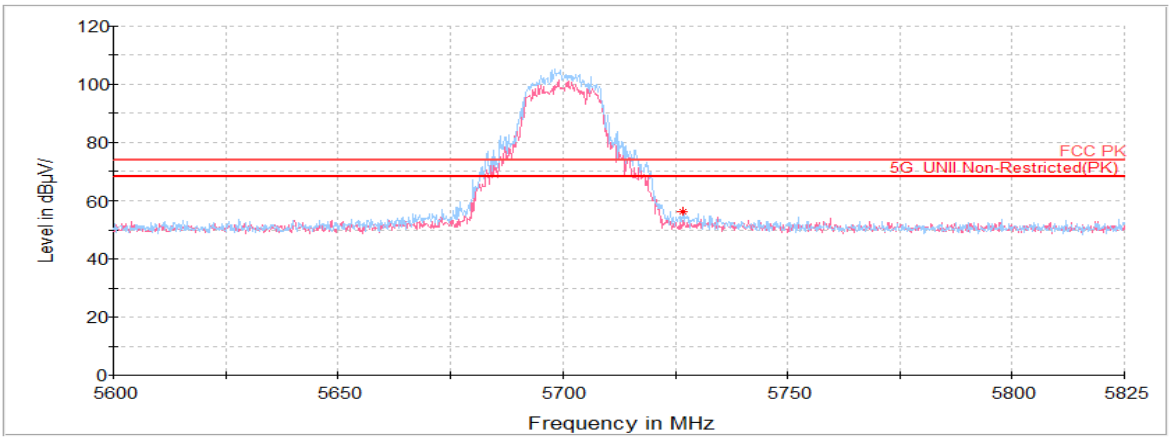
Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11a_UNII-2C_ANT2

Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 459.30[1)]	H	43.91	34.25	-23.43	-	54.73	74.00	19.27
10 975.66[1)]	V	58.66	37.49	-47.70	-	48.45	74.00	25.55
16 543.09	V	56.57	42.27	-44.48	-	54.36	68.20	13.84
Average Data								
5 459.30[1)]	H	36.53	34.25	-23.43	0.30	47.65	54.00	6.35

Middle Channel (5 600 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 187.69[1)]	V	58.21	37.69	-47.67	-	48.23	74.00	25.77
16 774.89	V	56.23	42.64	-44.50	-	54.37	68.20	13.83
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

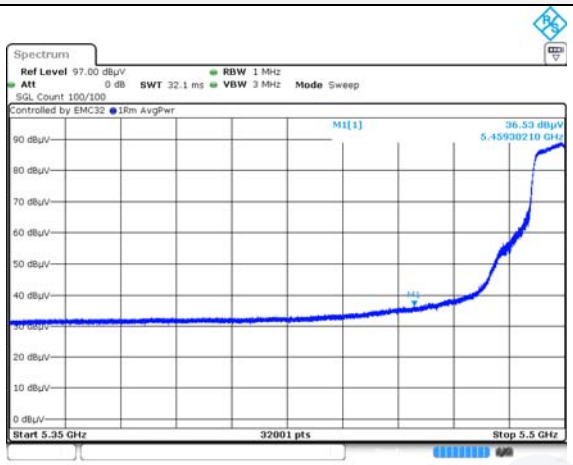
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 726.91	H	46.28	34.71	-22.96	-	58.03	68.20	10.17
11 373.84[1)]	V	58.79	37.87	-47.65	-	49.01	74.00	24.99
17 107.67	V	56.22	41.59	-44.70	-	53.11	68.20	15.09
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-2C_ANT2

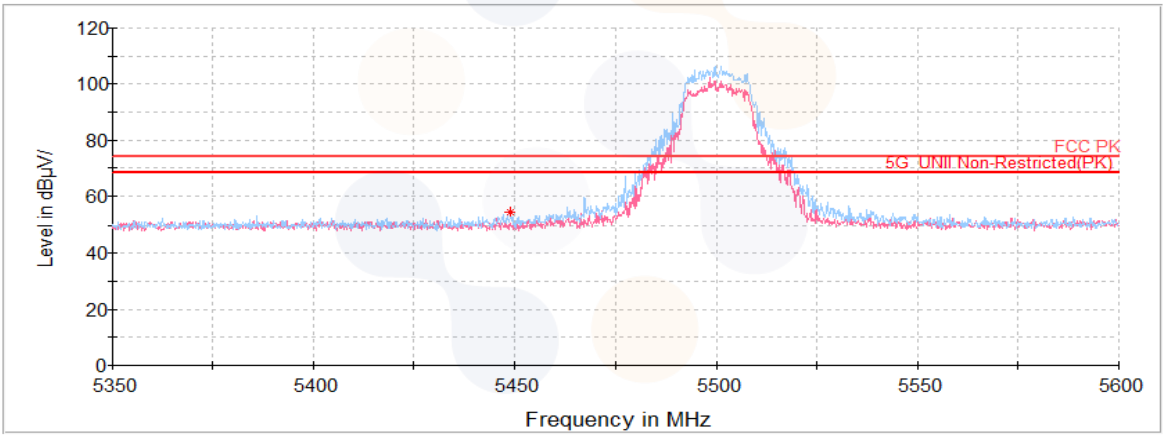
Lowest Channel (5 500 ㎒)

Average data



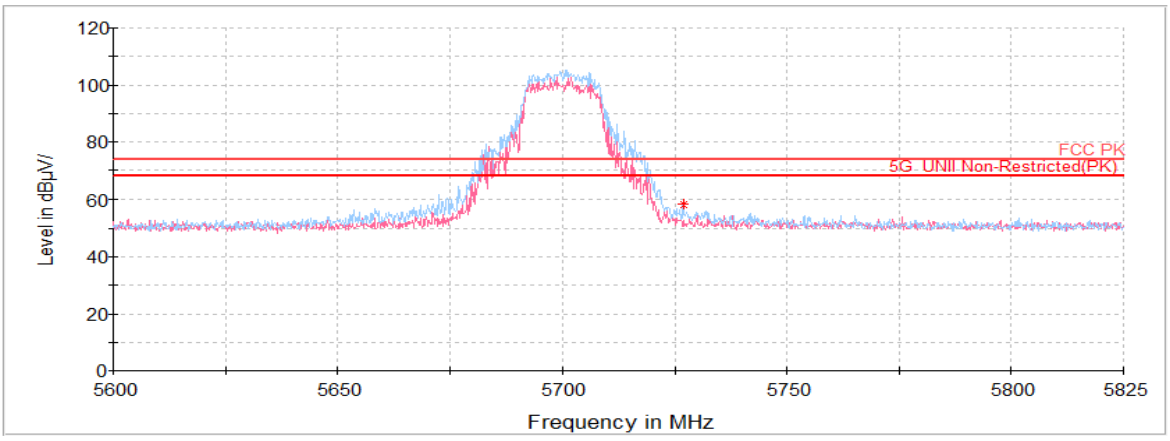
Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge



802.11a_UNII-2C_2TX MIMO

Lowest Channel (5 500 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 459.74[1)]	H	46.07	34.25	-23.43	-	56.89	74.00	17.11
11 035.67[1)]	H	58.16	37.54	-47.69	-	48.01	74.00	25.99
16 545.25	V	55.89	42.27	-44.49	-	53.67	68.20	14.53
Average Data								
5 459.74[1)]	H	37.17	34.25	-23.43	0.29	48.28	54.00	5.72

Middle Channel (5 600 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 261.36[1)]	H	57.81	37.76	-47.66	-	47.91	74.00	26.09
16 853.23	H	55.87	42.77	-44.50	-	54.14	68.20	14.06
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

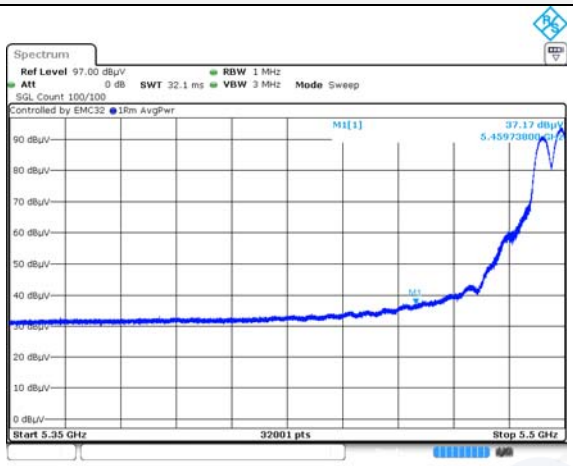
Highest Channel (5 700 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 729.48	H	45.32	34.71	-22.95	-	57.08	68.20	11.12
11 381.75[1)]	V	58.20	37.88	-47.65	-	48.43	74.00	25.57
17 139.66	H	55.28	41.56	-44.76	-	52.08	68.20	16.12
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

802.11a_UNII-2C_2TX MIMO

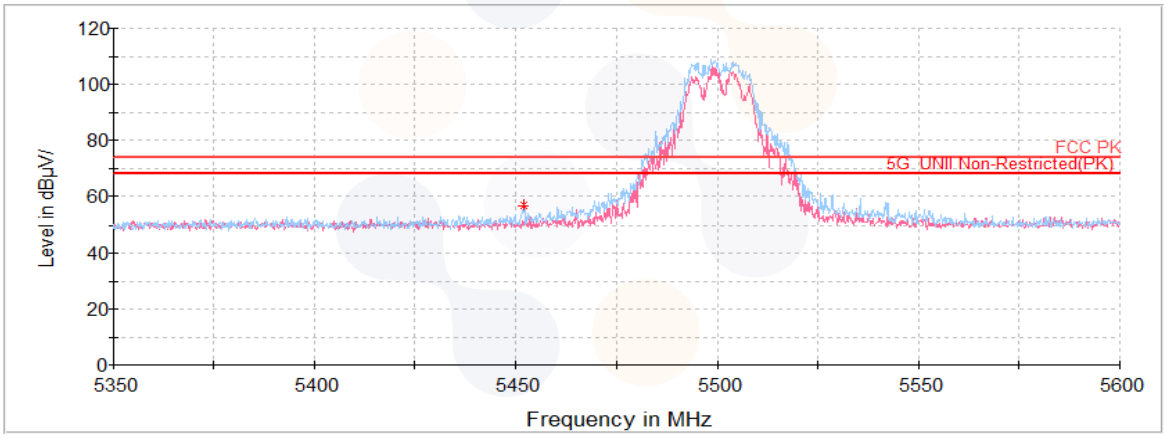
Lowest Channel (5 500 ㎒)

Average data



Blank

Horizontal/Vertical for Band-edge



Highest Channel (5 700 ㎒)

Horizontal/Vertical for Band-edge