

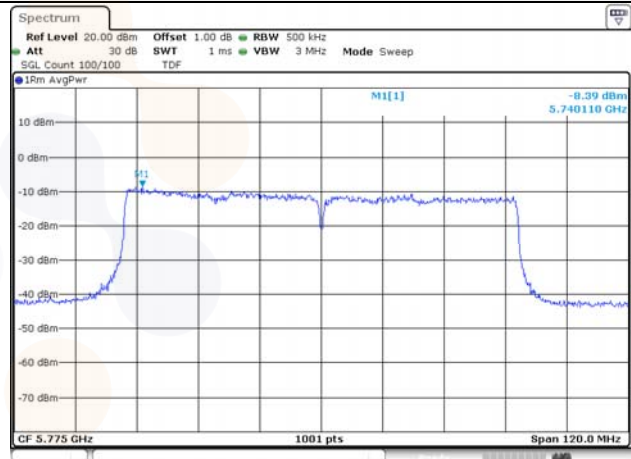
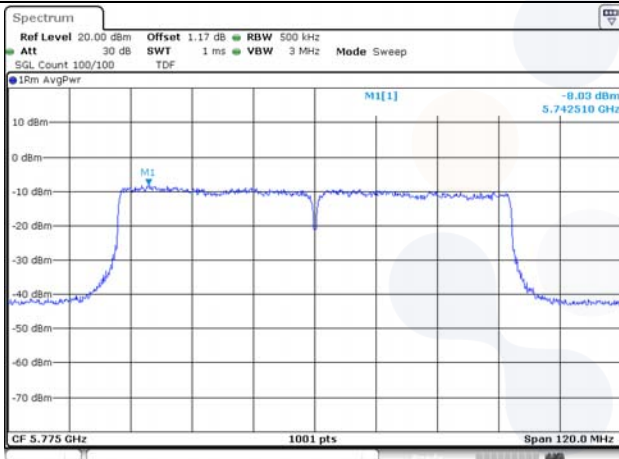
ANT 1

ANT 2

UNII-2C / 802.11ac VHT80 / Low ch.

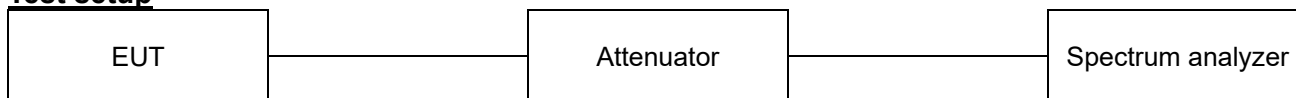


UNII-3 / 802.11ac VHT80 / Mid ch.



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

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1% to 5% of the OBW
- Set VBW $\geq 3 \times$ RBW
- 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.
- Use the 99% power bandwidth function of the instrument (if available).
- 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(MHz)	26 dB bandwidth (MHz)	99% bandwidth (MHz)
			ANT2	ANT2
802.11a	UNII-1	5 180	25.42	17.23
		5 200	25.67	17.23
		5 240	24.98	17.18
	UNII-2A	5 260	25.62	17.28
		5 280	25.52	17.28
		5 320	24.98	17.18
	UNII-2C	5 500	25.52	17.18
		5 600	25.82	17.23
		5 700	24.83	17.23
802.11n HT20	UNII-1	5 180	26.07	18.38
		5 200	27.32	18.38
		5 240	26.27	18.33
	UNII-2A	5 260	26.42	18.43
		5 280	26.42	18.38
		5 320	28.67	18.63
	UNII-2C	5 500	26.27	18.43
		5 600	28.32	18.63
		5 700	26.27	18.48
802.11n HT40	UNII-1	5 190	71.33	37.26
		5 230	62.04	37.06
	UNII-2A	5 270	73.63	37.36
		5 310	53.15	37.06
	UNII-2C	5 510	57.14	37.26
		5 590	57.94	37.36
		5 670	62.54	37.06

Test mode	Band	Frequency(MHz)	26 dB bandwidth (MHz)	99% bandwidth (MHz)
			ANT2	ANT2
802.11ac VHT20	UNII-1	5 180	26.52	18.38
		5 200	26.37	18.33
		5 240	26.02	18.33
	UNII-2A	5 260	26.72	18.48
		5 280	26.57	18.48
		5 320	26.42	18.33
	UNII-2C	5 500	26.37	18.43
		5 600	28.87	18.63
		5 700	26.12	18.43
802.11ac VHT40	UNII-1	5 190	46.55	36.96
		5 230	47.25	37.06
	UNII-2A	5 270	52.25	37.16
		5 310	46.25	37.06
	UNII-2C	5 510	47.25	37.16
		5 590	46.35	37.36
		5 670	46.85	37.06
802.11ac VHT80	UNII-1	5 210	97.82	76.36
	UNII-2A	5 290	102.86	76.60
	UNII-2C	5 530	97.94	76.72
		5 610	102.50	76.60

MIMO

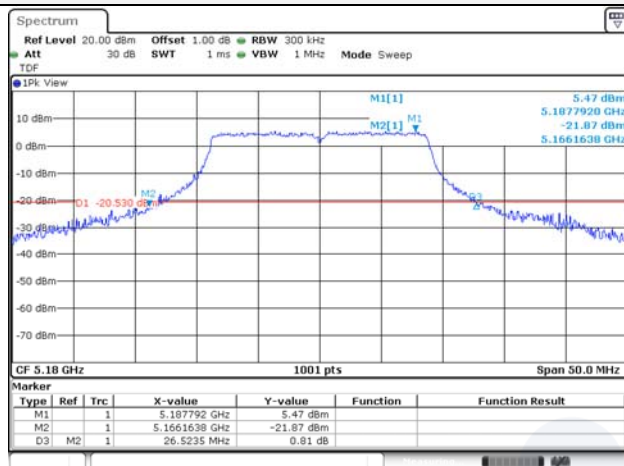
Test mode	Band	Frequency(MHz)	26 dB bandwidth (MHz)		99% bandwidth (MHz)	
			ANT1	ANT2	ANT1	ANT2
802.11a	UNII-1	5 180	25.17	23.08	17.18	17.03
		5 200	24.33	23.58	17.23	17.03
		5 240	24.28	23.68	17.23	17.03
	UNII-2A	5 260	26.37	23.48	17.33	17.03
		5 280	24.28	23.48	17.28	17.08
		5 320	24.38	23.63	17.23	17.03
	UNII-2C	5 500	27.47	24.13	17.38	17.08
		5 600	25.67	25.07	17.28	17.23
		5 700	23.78	24.23	16.98	17.08
802.11n HT20	UNII-1	5 180	25.97	24.03	18.28	18.03
		5 200	26.07	24.93	18.28	18.03
		5 240	26.12	24.83	18.33	18.03
	UNII-2A	5 260	26.37	24.83	18.33	17.98
		5 280	26.22	24.78	18.33	18.03
		5 320	25.67	24.98	18.33	18.03
	UNII-2C	5 500	26.97	25.87	18.38	18.08
		5 600	28.67	26.47	18.48	18.18
		5 700	25.97	25.57	18.13	18.13
802.11n HT40	UNII-1	5 190	45.75	44.66	36.96	36.56
		5 230	46.75	44.46	36.96	36.66
	UNII-2A	5 270	46.25	44.96	36.96	36.66
		5 310	46.15	44.56	36.96	36.56
	UNII-2C	5 510	46.65	44.36	37.16	36.66
		5 590	46.85	44.86	36.96	36.66
		5 670	47.05	47.15	37.06	36.76

Test mode	Band	Frequency(MHz)	26 dB bandwidth (MHz)		99% bandwidth (MHz)	
			ANT1	ANT2	ANT1	ANT2
802.11ac VHT20	UNII-1	5 180	26.02	24.83	18.28	18.03
		5 200	25.87	24.63	18.33	18.03
		5 240	25.87	24.78	18.28	18.03
	UNII-2A	5 260	26.72	24.88	18.38	18.03
		5 280	26.12	24.63	18.33	18.03
		5 320	25.92	24.88	18.28	17.98
	UNII-2C	5 500	28.52	24.93	18.38	18.08
		5 600	29.72	27.47	18.48	18.18
		5 700	24.73	24.48	18.13	18.13
802.11ac VHT40	UNII-1	5 190	45.85	44.26	36.96	36.56
		5 230	46.45	44.16	36.86	36.56
	UNII-2A	5 270	46.55	44.96	37.06	36.56
		5 310	46.25	44.16	36.96	36.56
	UNII-2C	5 510	46.55	44.26	37.16	36.66
		5 590	45.95	46.75	37.06	36.66
		5 670	47.35	46.65	37.06	36.56
802.11ac VHT80	UNII-1	5 210	85.36	85.83	76.24	76.12
	UNII-2A	5 290	85.36	86.55	76.24	76.12
	UNII-2C	5 530	86.67	99.74	76.24	76.24
		5 610	86.91	99.14	76.24	76.24

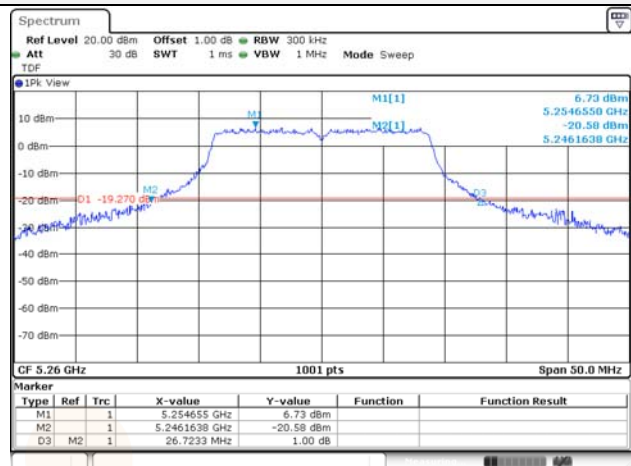
In order to simplify the report, only ac mode test plots are attached.

26 dB bandwidth
SISO

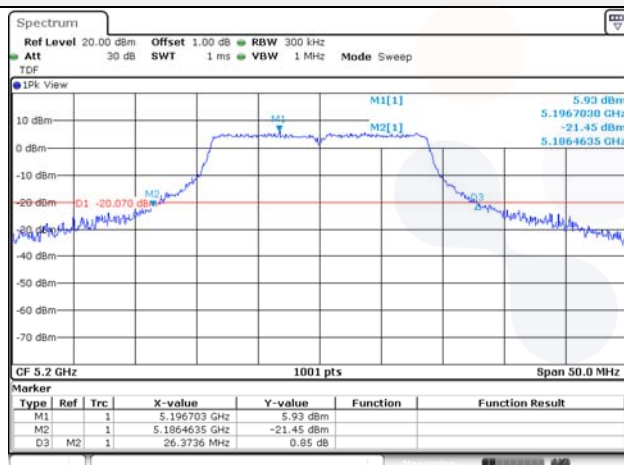
UNII-1 / 802.11ac VHT20 / Low ch.



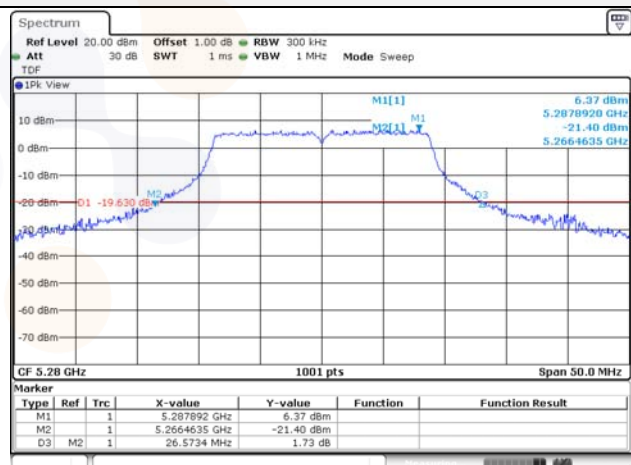
UNII-2A / 802.11ac VHT20 / Low ch.



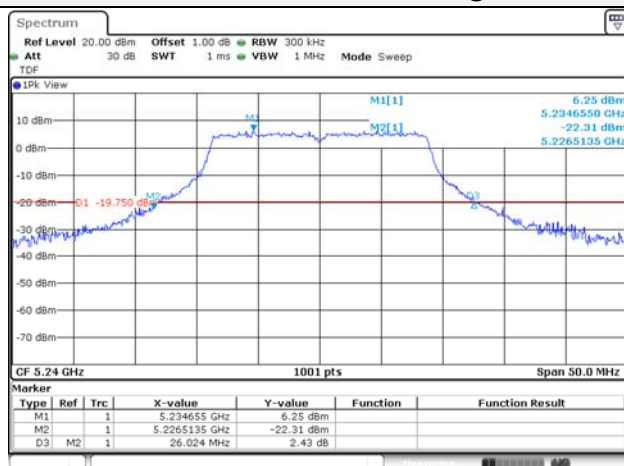
UNII-1 / 802.11ac VHT20 / Mid ch.



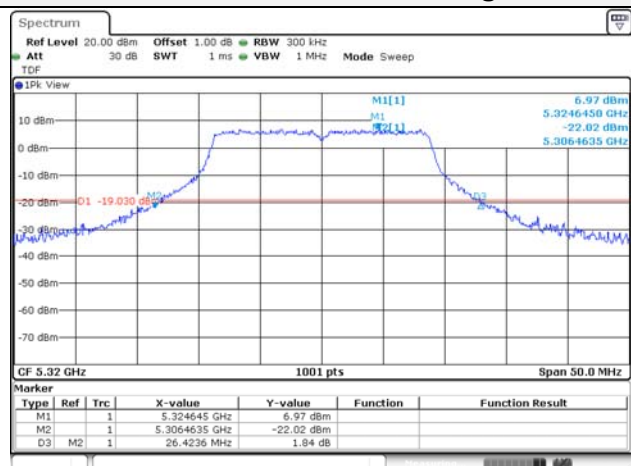
UNII-2A / 802.11ac VHT20 / Mid ch.



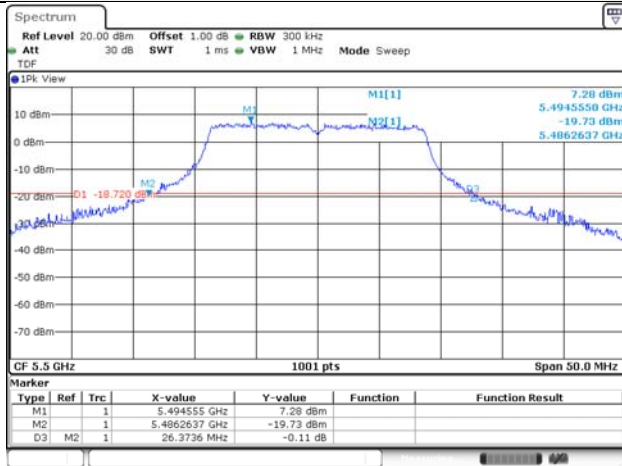
UNII-1 / 802.11ac VHT20 / High ch.



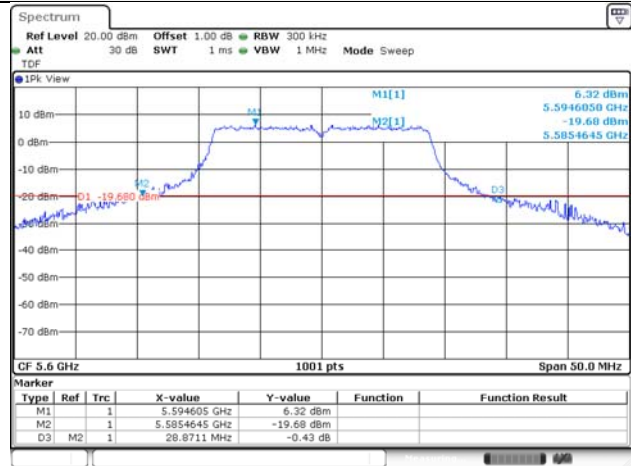
UNII-2A / 802.11ac VHT20 / High ch.



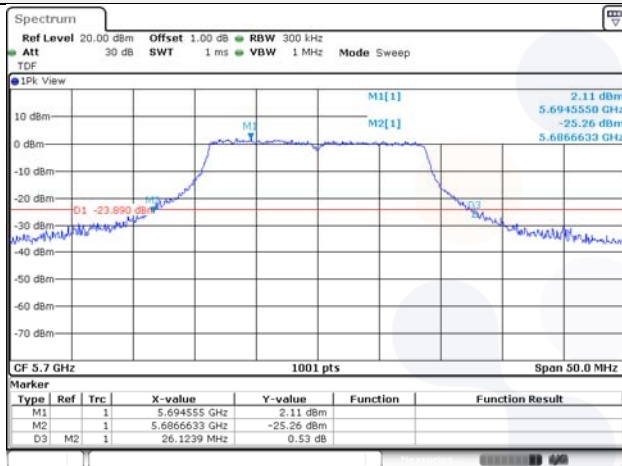
UNII-2C / 802.11ac VHT20 / Low ch.



UNII-2C / 802.11ac VHT20 / Mid ch.

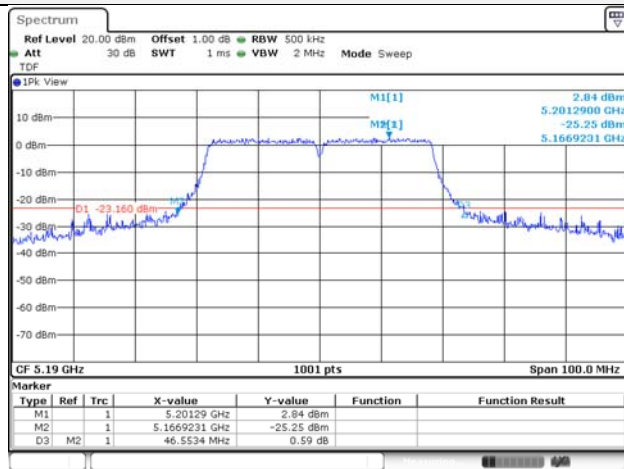


UNII-2C / 802.11ac VHT20 / High ch.

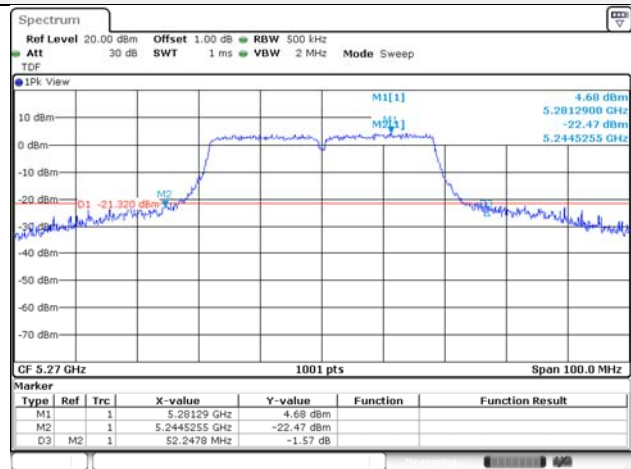


Blank

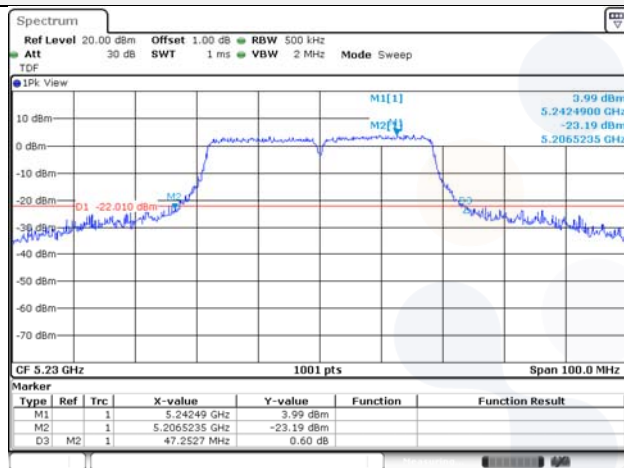
UNII-1 / 802.11ac VHT40 / Low ch.



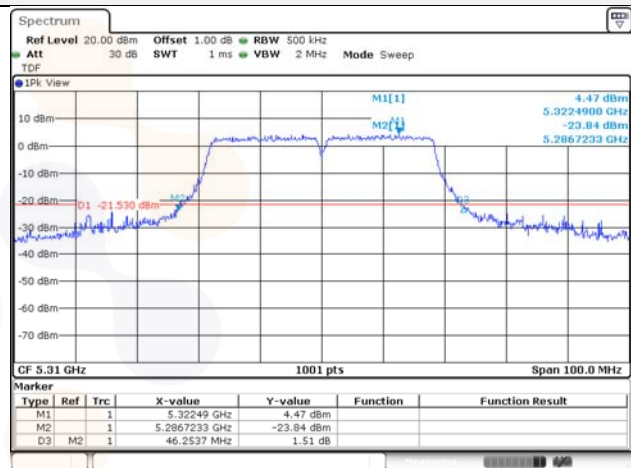
UNII-2A / 802.11ac VHT40 / Low ch.



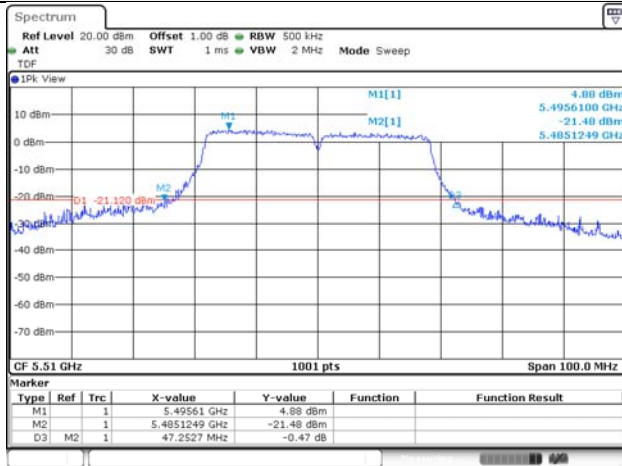
UNII-1 / 802.11ac VHT40 / High ch.



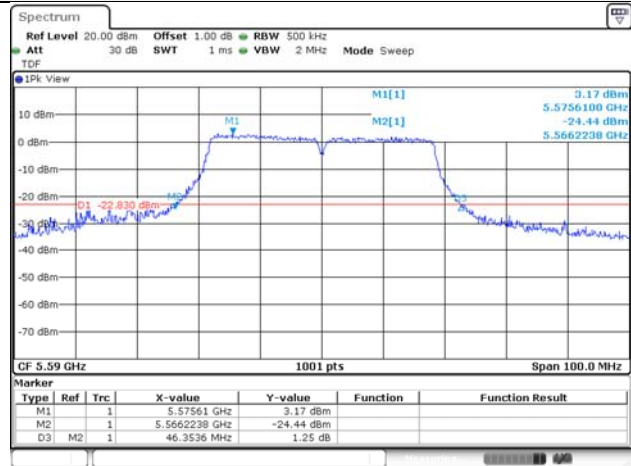
UNII-2A / 802.11ac VHT40 / High ch.



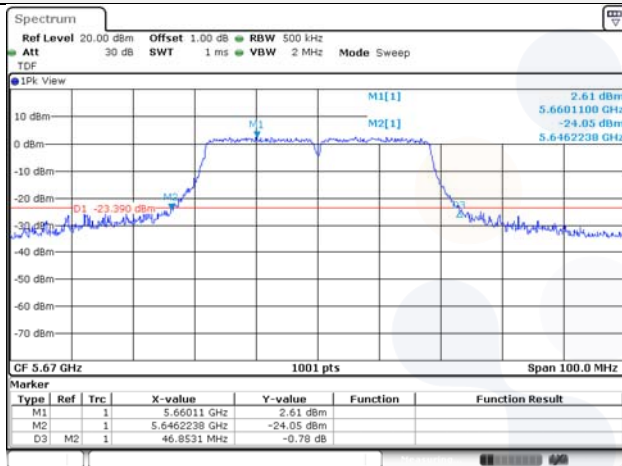
UNII-2C / 802.11ac VHT40 / Low ch.



UNII-2C / 802.11ac VHT40 / Mid ch.

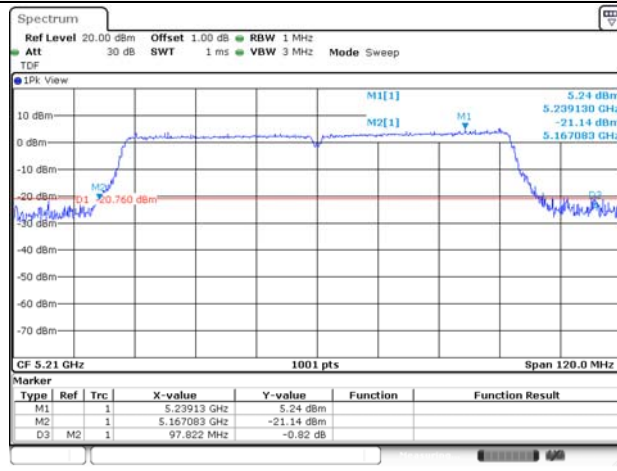


UNII-2C / 802.11ac VHT40 / High ch.

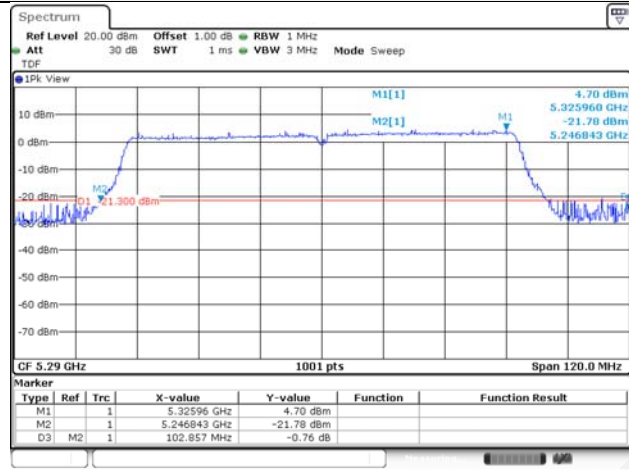


Blank

UNII-1 / 802.11ac VHT80 / Mid ch.



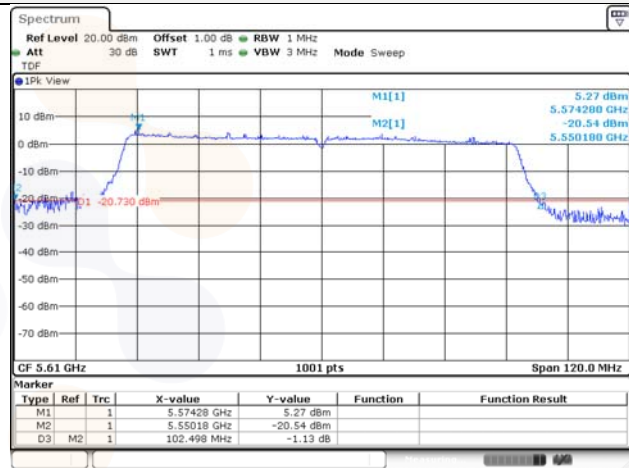
UNII-2A / 802.11ac VHT80 / Mid ch.



UNII-2C / 802.11ac VHT80 / Low ch.



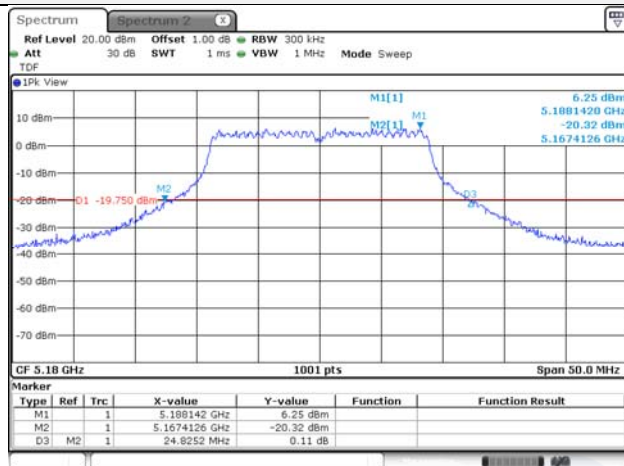
UNII-2C / 802.11ac VHT80 / High ch.



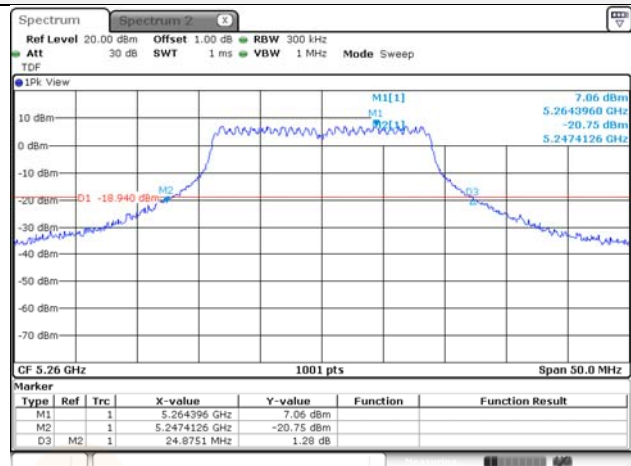
In order to simplify the report, only ANT 2 ac mode test plots are attached.

MIMO

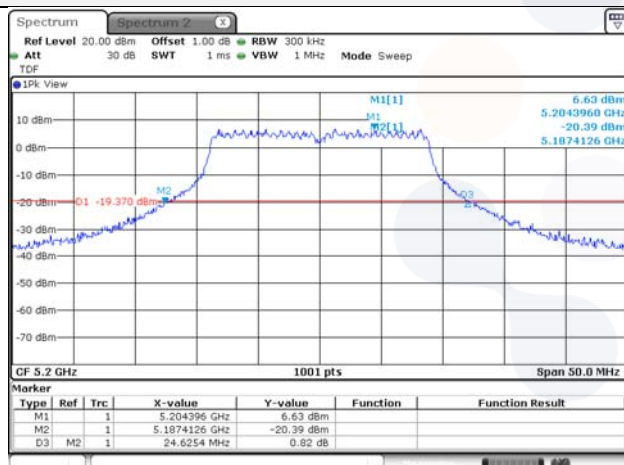
UNII-1 / 802.11ac VHT20 / Low ch.



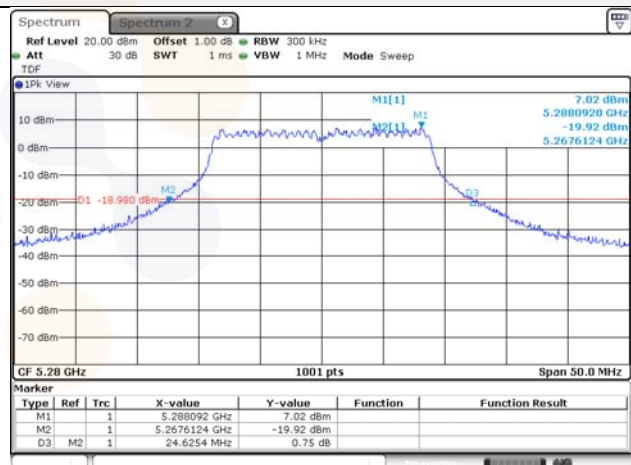
UNII-2A / 802.11ac VHT20 / Low ch.



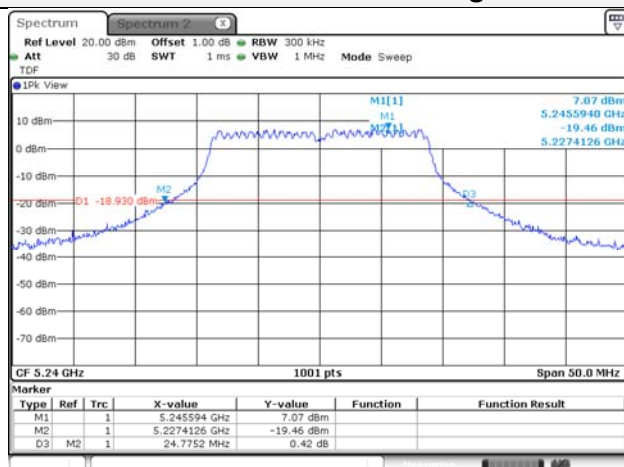
UNII-1 / 802.11ac VHT20 / Mid ch.



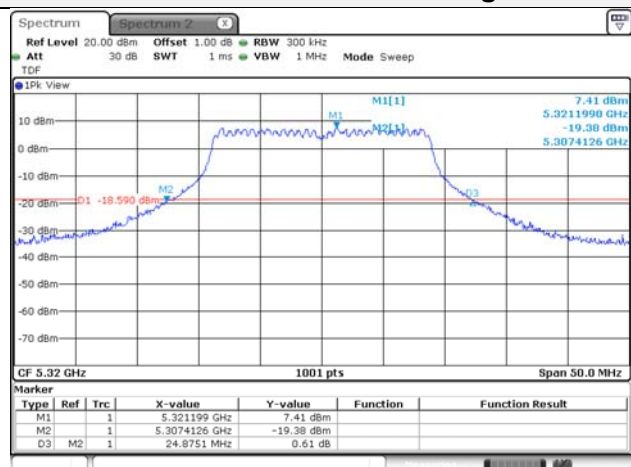
UNII-2A / 802.11ac VHT20 / Mid ch.



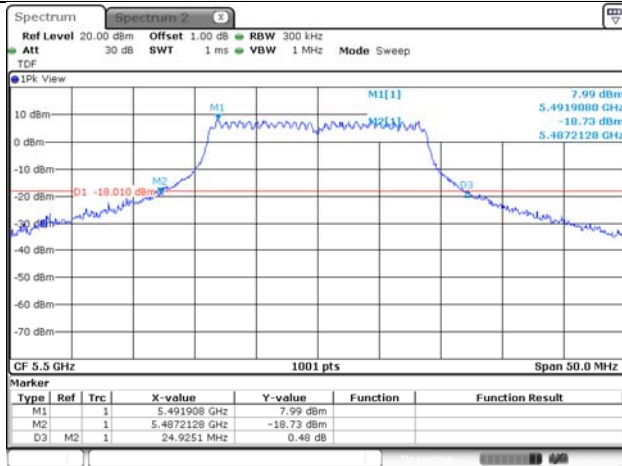
UNII-1 / 802.11ac VHT20 / High ch.



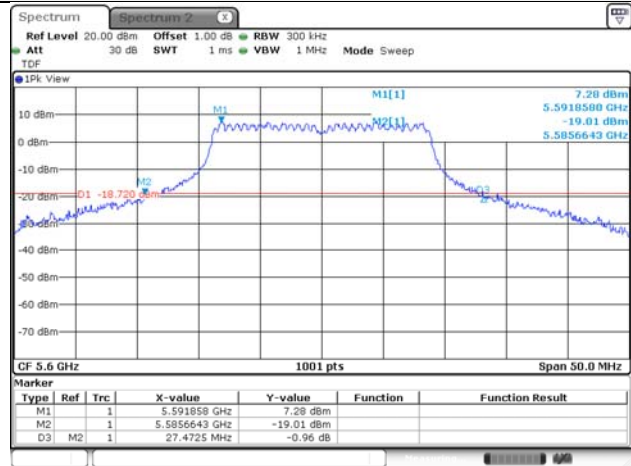
UNII-2A / 802.11ac VHT20 / High ch.



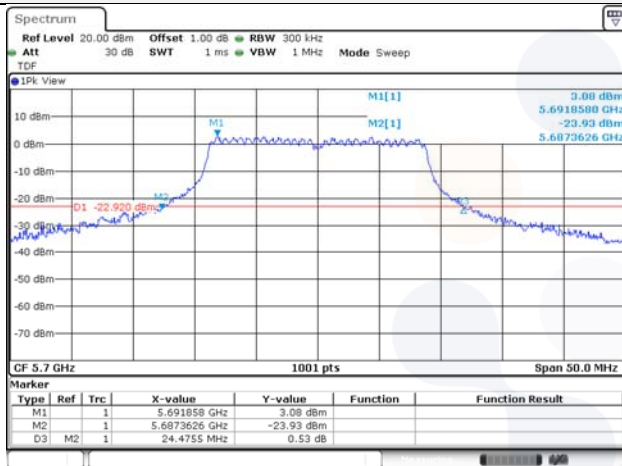
UNII-2C / 802.11ac VHT20 / Low ch.



UNII-2C / 802.11ac VHT20 / High ch.

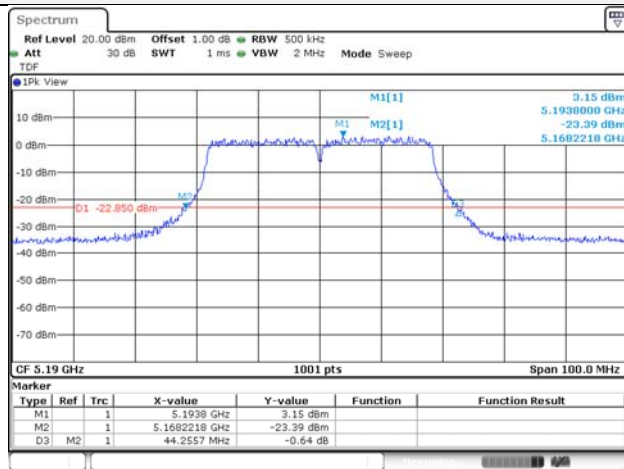


UNII-2C / 802.11ac VHT20 / Mid ch.

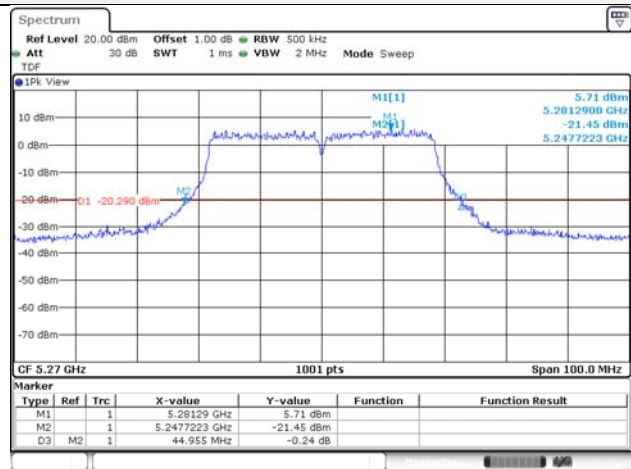


Blank

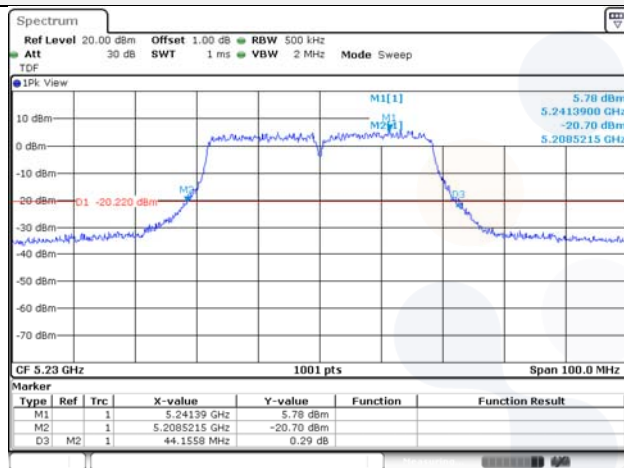
UNII-1 / 802.11ac VHT40 / Low ch.



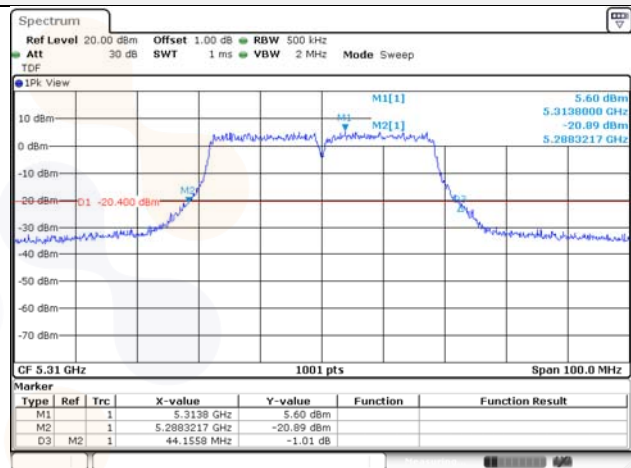
UNII-2A / 802.11ac VHT40 / Low ch.



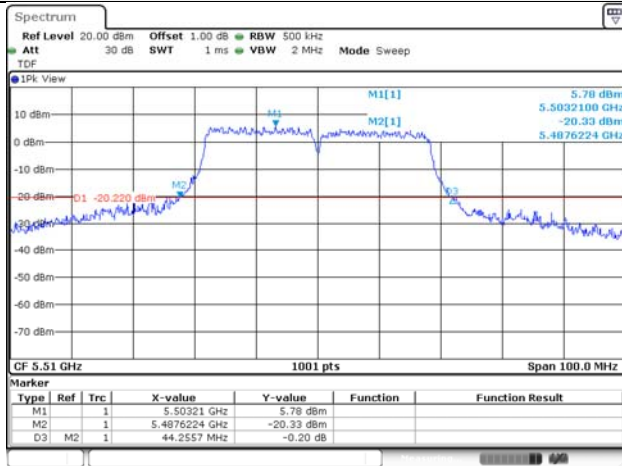
UNII-1 / 802.11ac VHT40 / High ch.



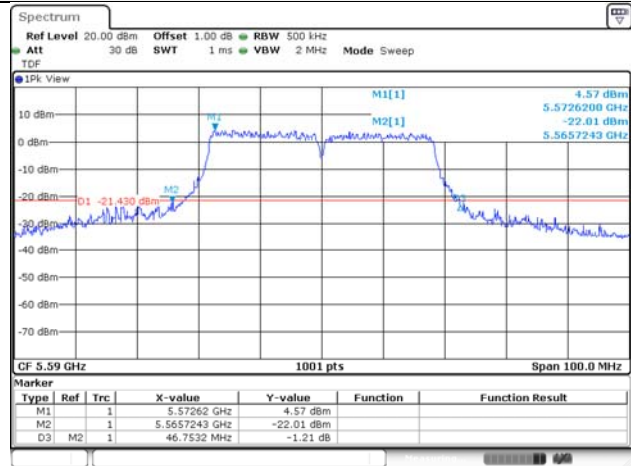
UNII-2A / 802.11ac VHT40 / High ch.



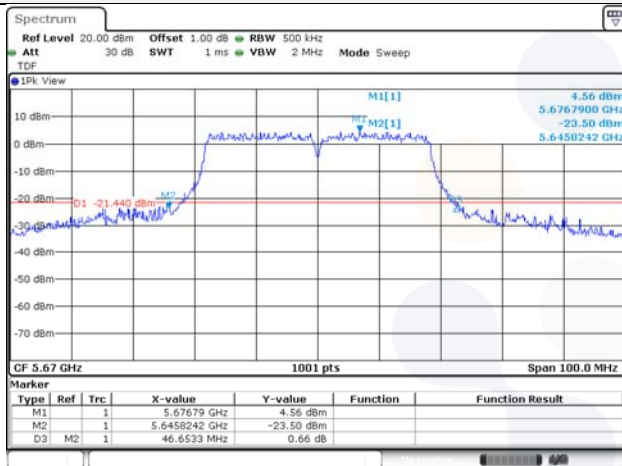
UNII-2C / 802.11ac VHT40 / Low ch.



UNII-2C / 802.11ac VHT40 / Mid ch.

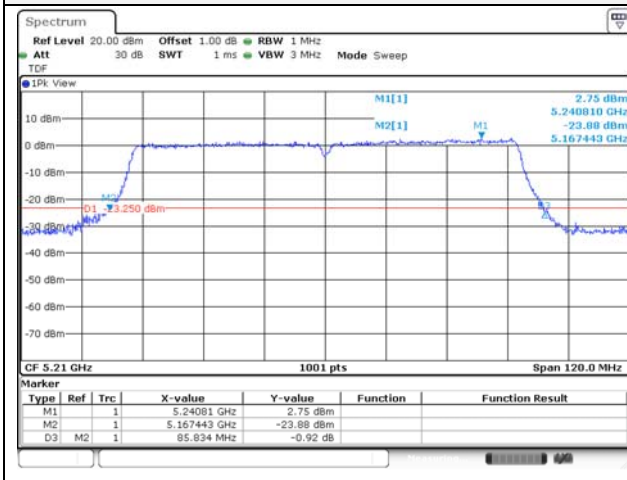


UNII-2C / 802.11ac VHT40 / High ch.

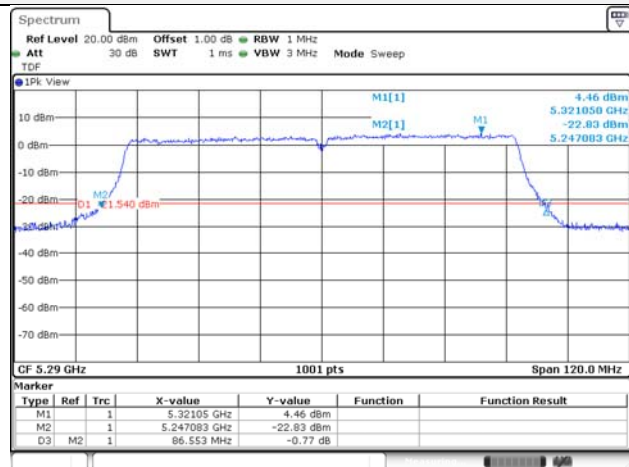


Blank

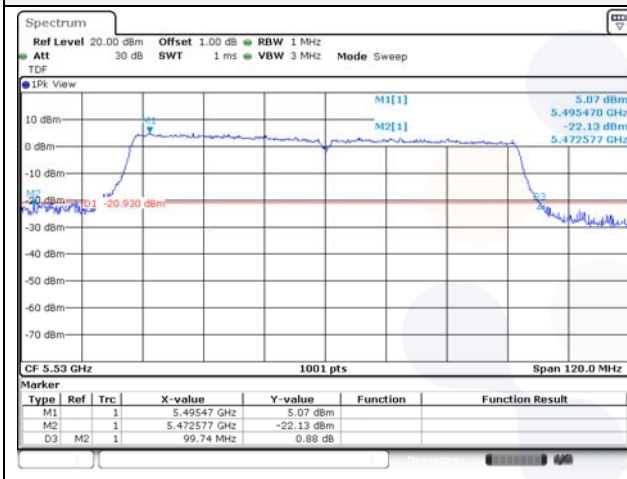
UNII-1 / 802.11ac VHT80 / Mid ch.



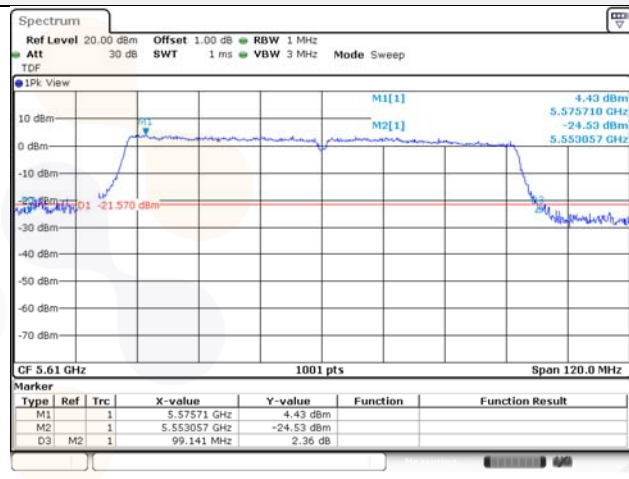
UNII-2A / 802.11ac VHT80 / Mid ch.



UNII-2C / 802.11ac VHT80 / Low ch.



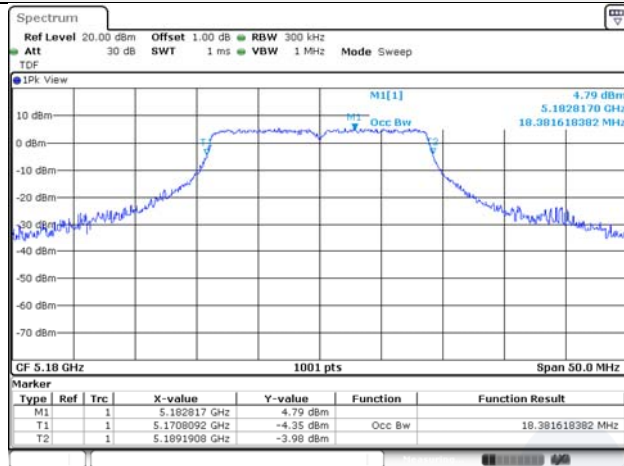
UNII-2C / 802.11ac VHT80 / High ch.



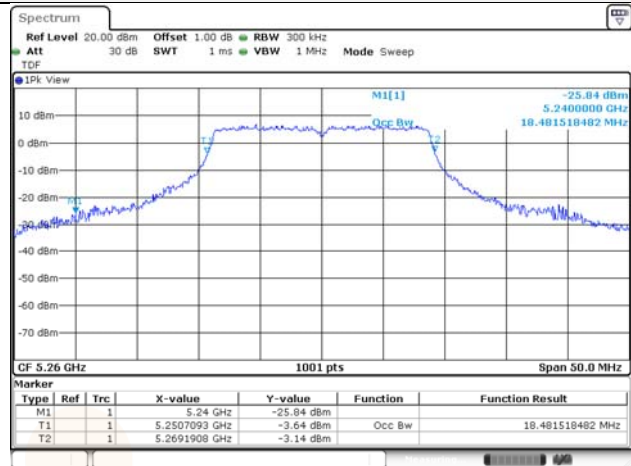
In order to simplify the report, only ac mode test plots are attached.

**99% bandwidth
SISO**

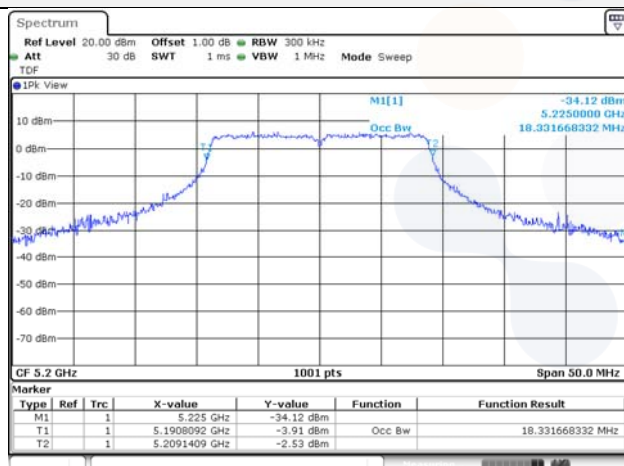
UNII-1 / 802.11ac VHT20 / Low ch.



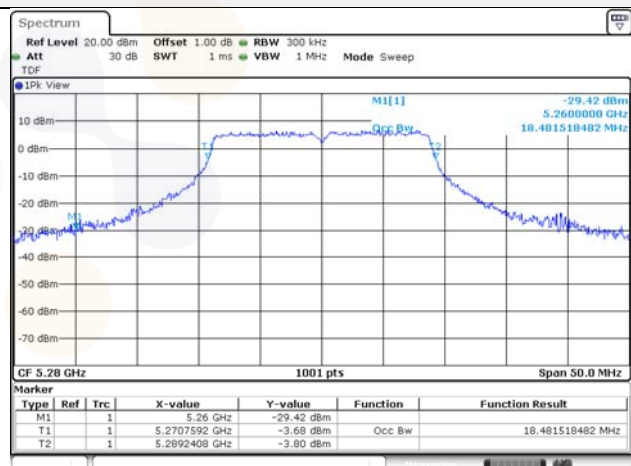
UNII-2A / 802.11ac VHT20 / Low ch.



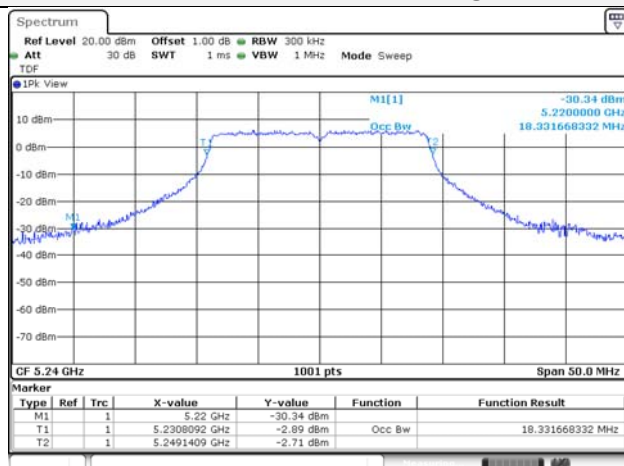
UNII-1 / 802.11ac VHT20 / Mid ch.



UNII-2A / 802.11ac VHT20 / Mid ch.



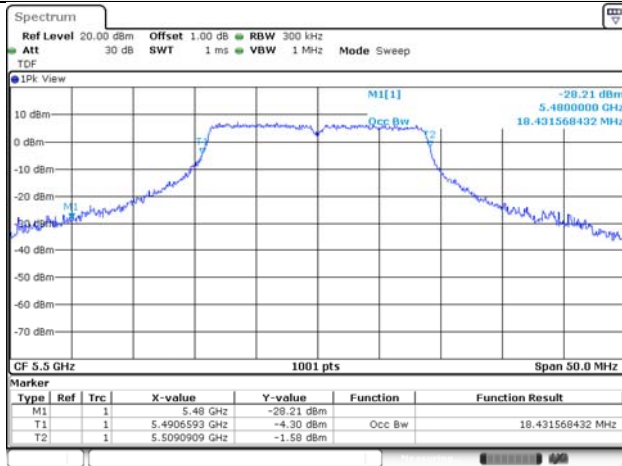
UNII-1 / 802.11ac VHT20 / High ch.



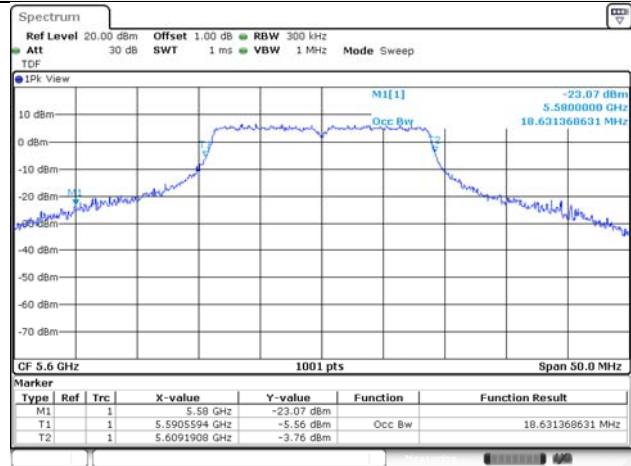
UNII-2A / 802.11ac VHT20 / High ch.



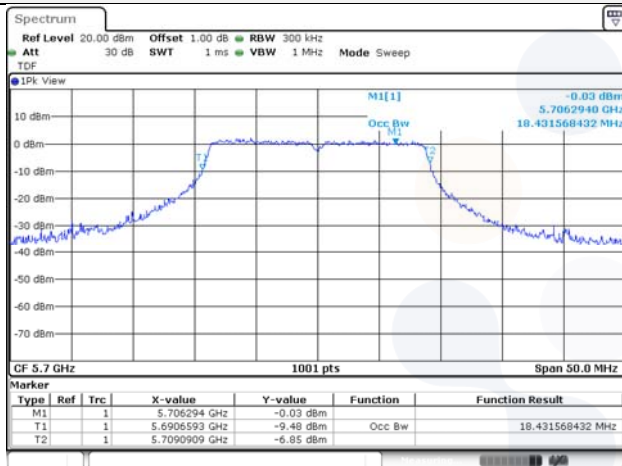
UNII-2C / 802.11ac VHT20 / Low ch.



UNII-2C / 802.11ac VHT20 / Mid ch.

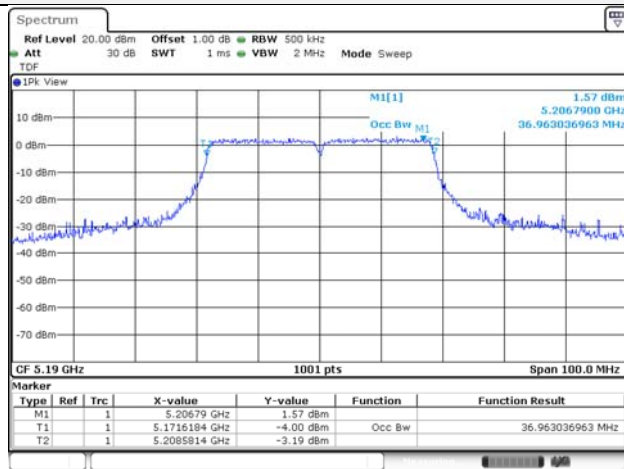


UNII-2C / 802.11ac VHT20 / High ch.

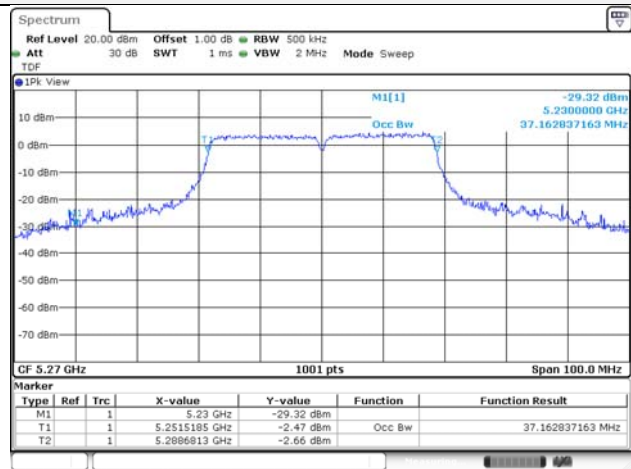


Blank

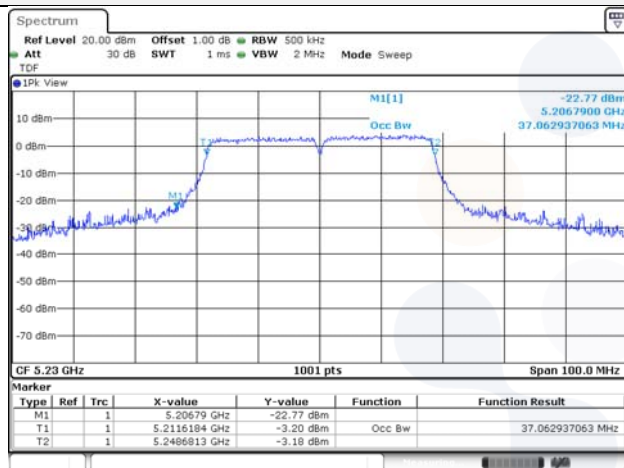
UNII-1 / 802.11ac VHT40 / Low ch.



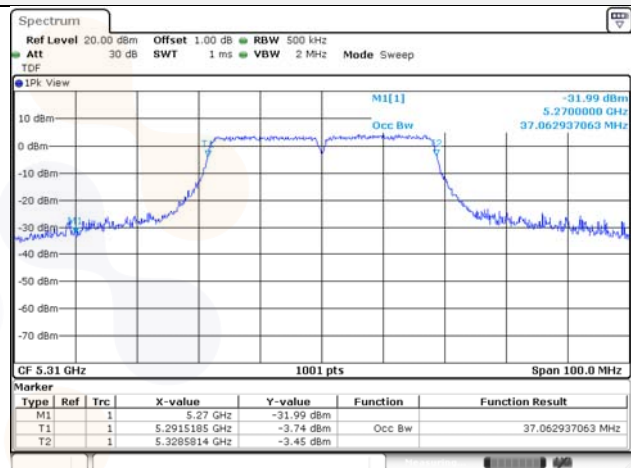
UNII-2A / 802.11ac VHT40 / Low ch.



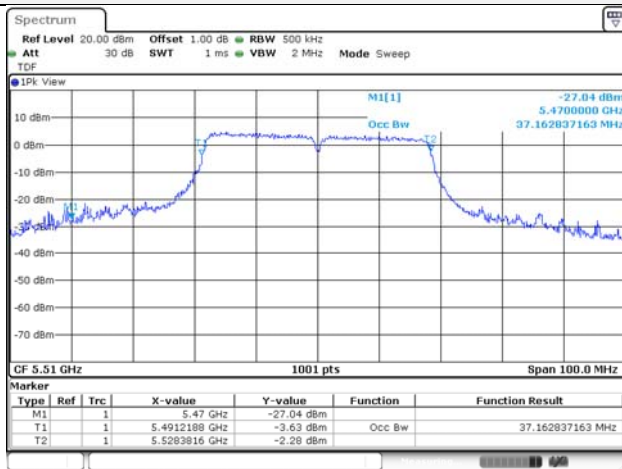
UNII-1 / 802.11ac VHT40 / High ch.



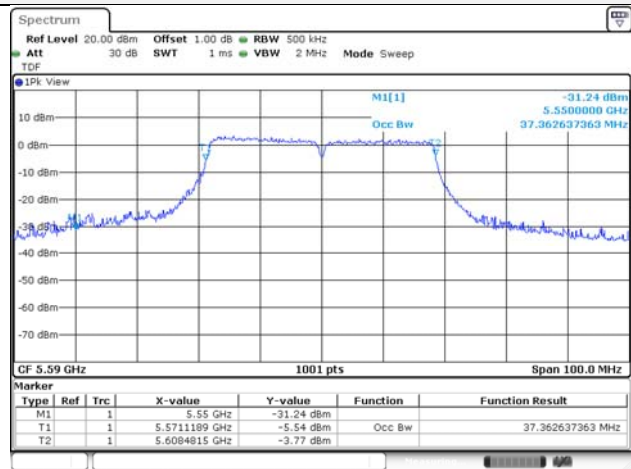
UNII-2A / 802.11ac VHT40 / High ch.



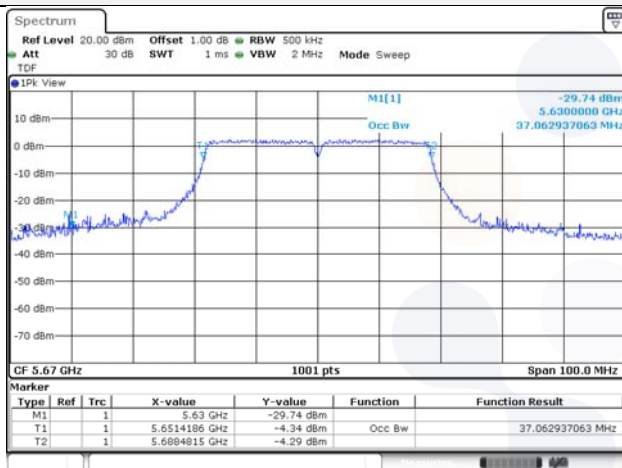
UNII-2C / 802.11ac VHT40 / Low ch.



UNII-2C / 802.11ac VHT40 / Mid ch.

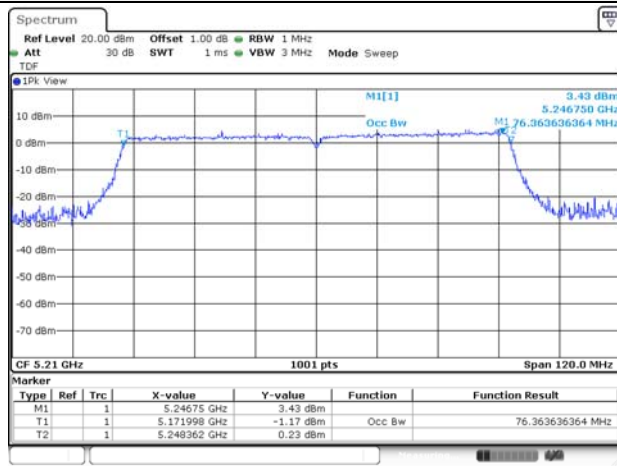


UNII-2C / 802.11ac VHT40 / High ch.

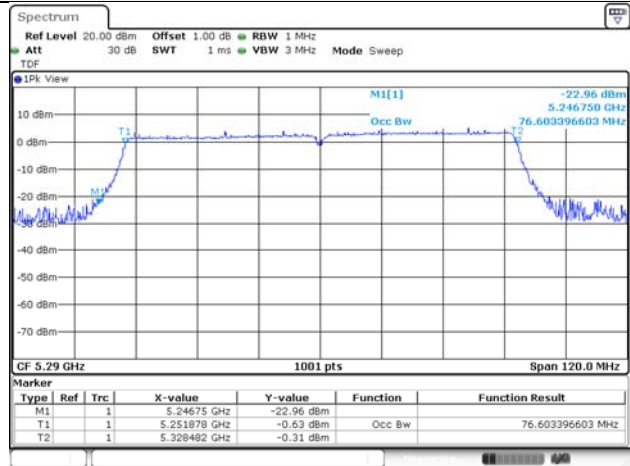


Blank

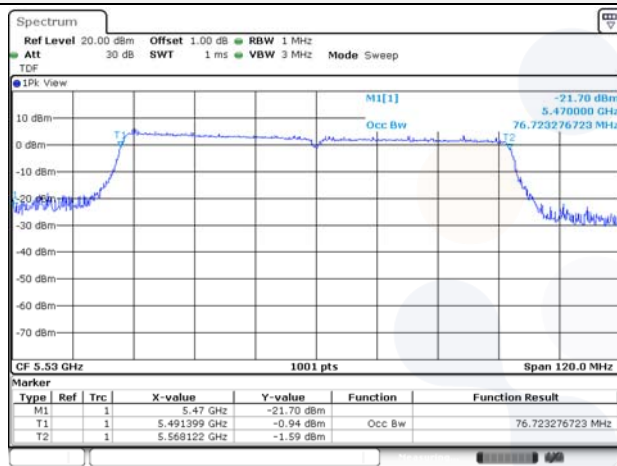
UNII-1 / 802.11ac VHT80 / Mid ch.



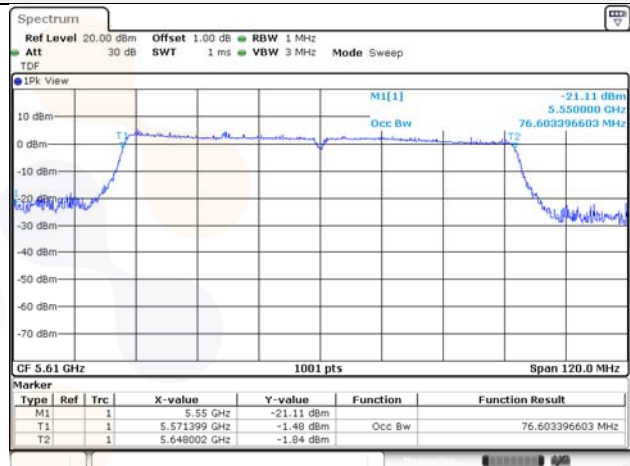
UNII-2A / 802.11ac VHT80 / Mid ch.



UNII-2C / 802.11ac VHT80 / Low ch.



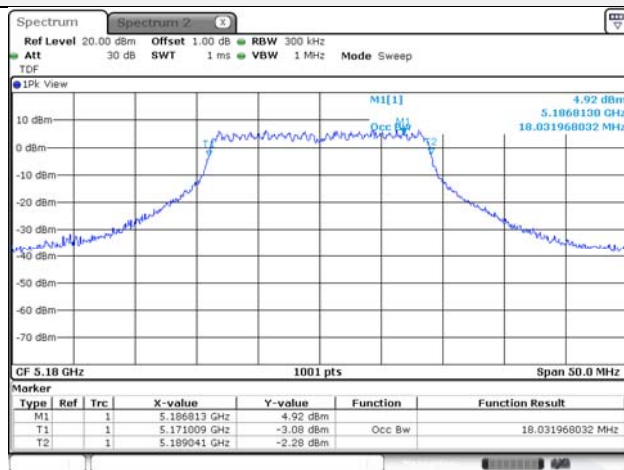
UNII-2C / 802.11ac VHT80 / High ch.



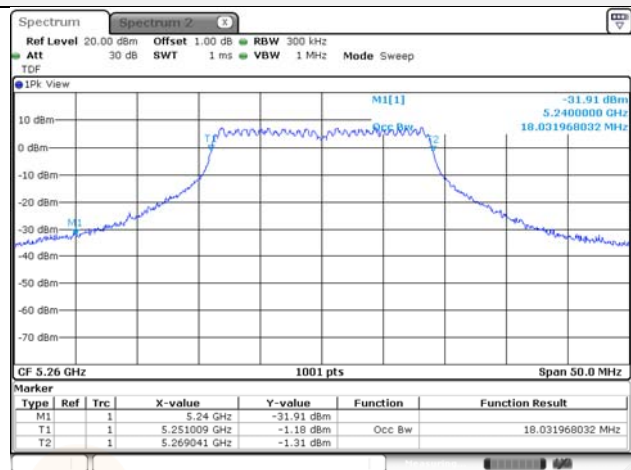
In order to simplify the report, only ANT 2 ac mode test plots are attached.

MIMO

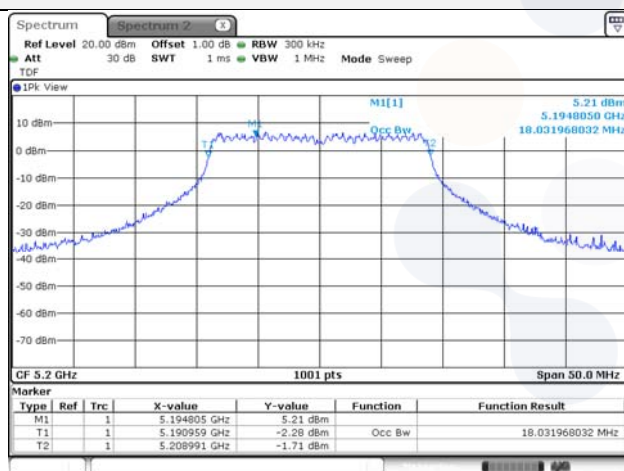
UNII-1 / 802.11ac VHT20 / Low ch.



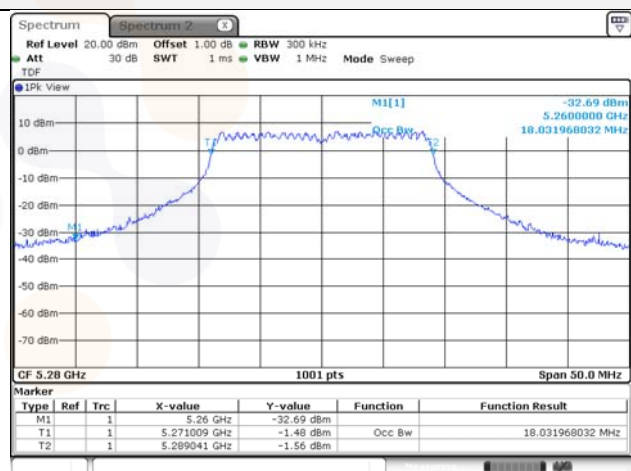
UNII-2A / 802.11ac VHT20 / Low ch.



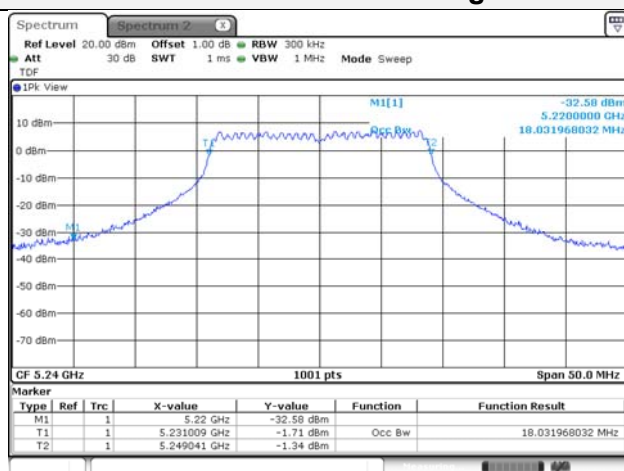
UNII-1 / 802.11ac VHT20 / Mid ch.



UNII-2A / 802.11ac VHT20 / Mid ch.



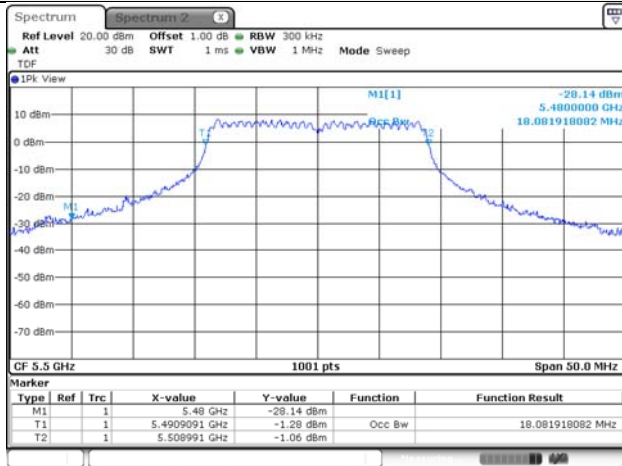
UNII-1 / 802.11ac VHT20 / High ch.



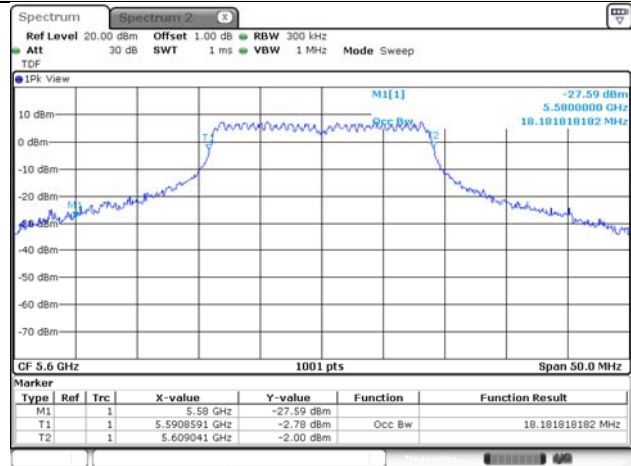
UNII-2A / 802.11ac VHT20 / High ch.



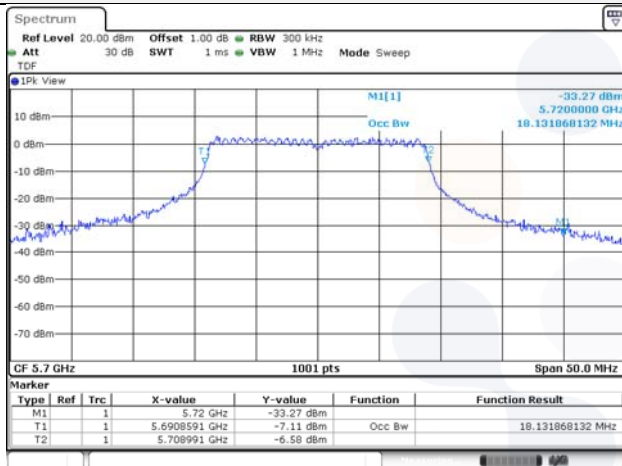
UNII-2C / 802.11ac VHT20 / Low ch.



UNII-2C / 802.11ac VHT20 / Mid ch.

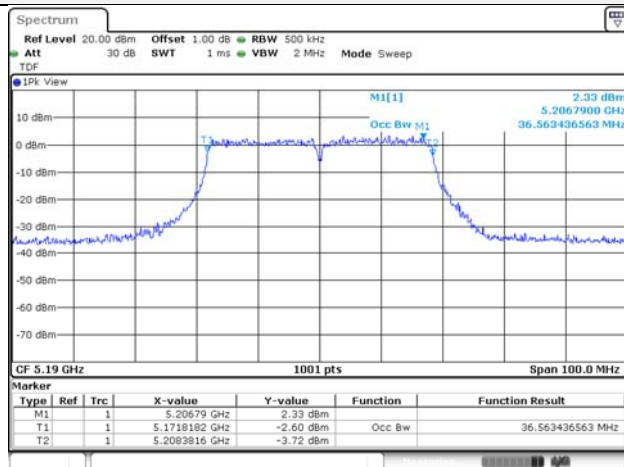


UNII-2C / 802.11ac VHT20 / High ch.

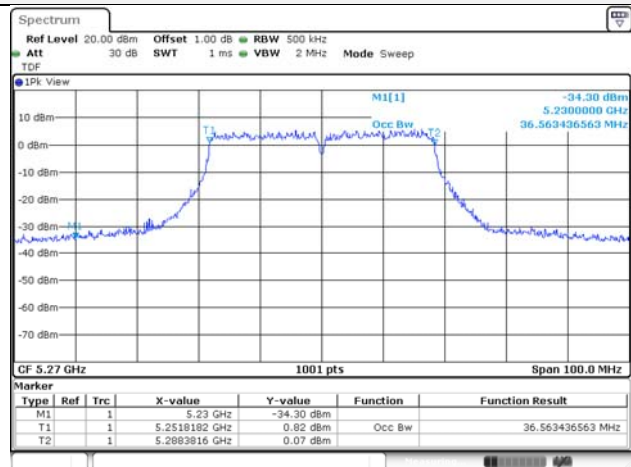


Blank

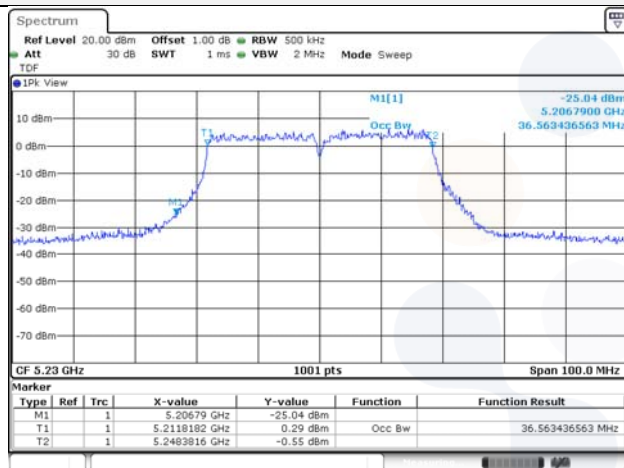
UNII-1 / 802.11ac VHT40 / Low ch.



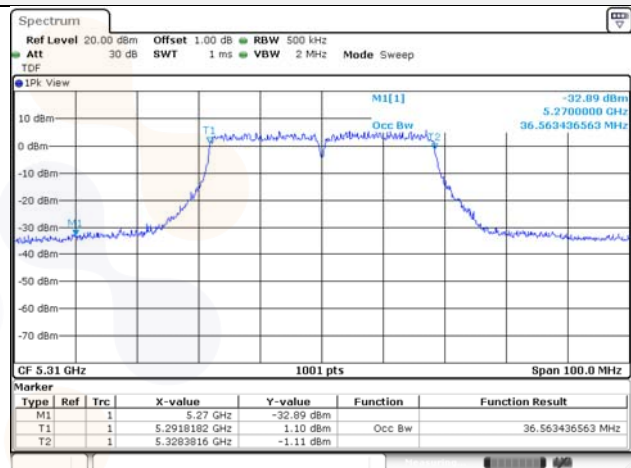
UNII-2A / 802.11ac VHT40 / Low ch.



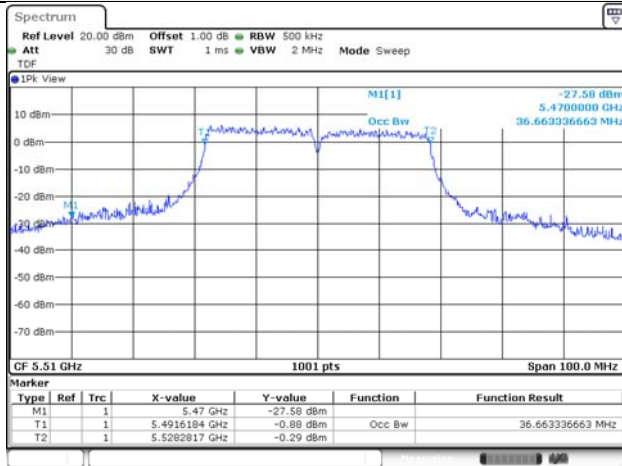
UNII-1 / 802.11ac VHT40 / High ch.



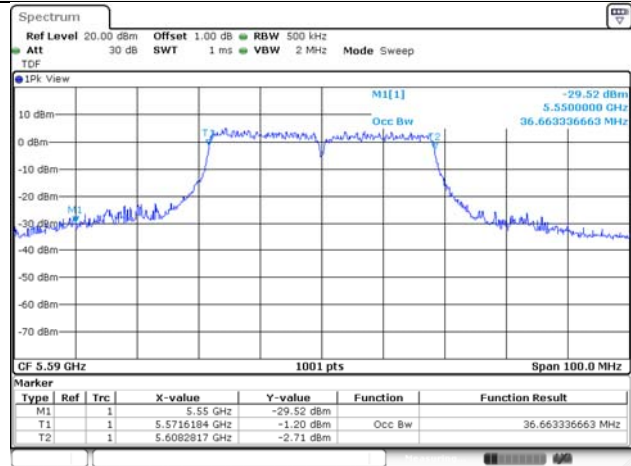
UNII-2A / 802.11ac VHT40 / High ch.



UNII-2C / 802.11ac VHT40 / Low ch.



UNII-2C / 802.11ac VHT40 / Mid ch.

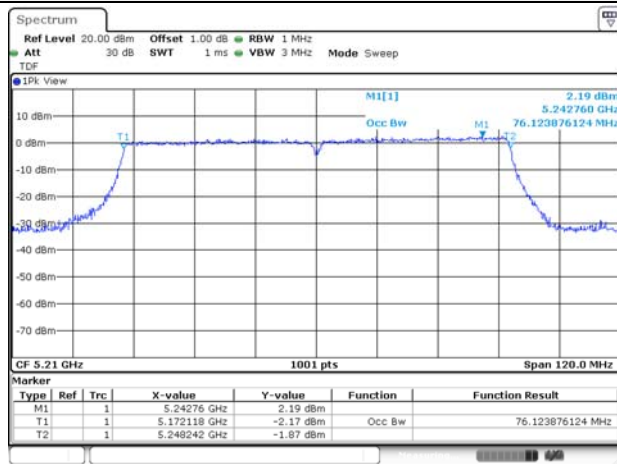


UNII-2C / 802.11ac VHT40 / High ch.



Blank

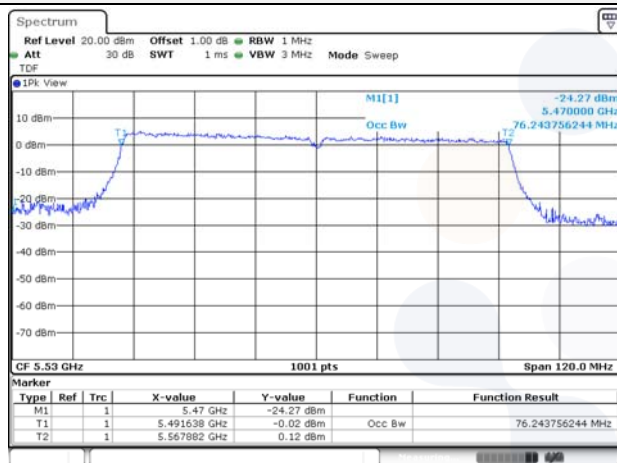
UNII-1 / 802.11ac VHT80 / Mid ch.



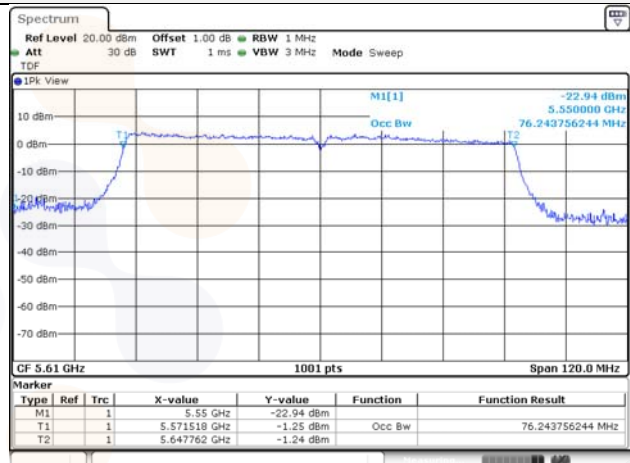
UNII-2A / 802.11ac VHT80 / Mid ch.



UNII-2C / 802.11ac VHT80 / Low ch.

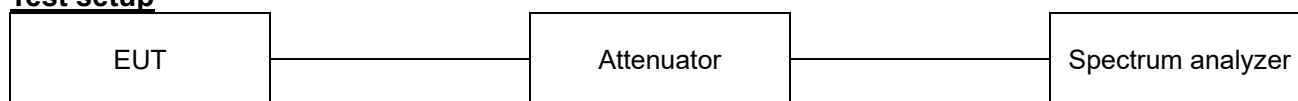


UNII-2C / 802.11ac VHT80 / High ch.



7.4. 6 dB Bandwidth & 99% Bandwidth

Test setup



Limit

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

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 GHz.

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

1. Set RBW = 100 kHz.
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 dB relative to the maximum level measured in the fundamental emission.

Test results

SISO

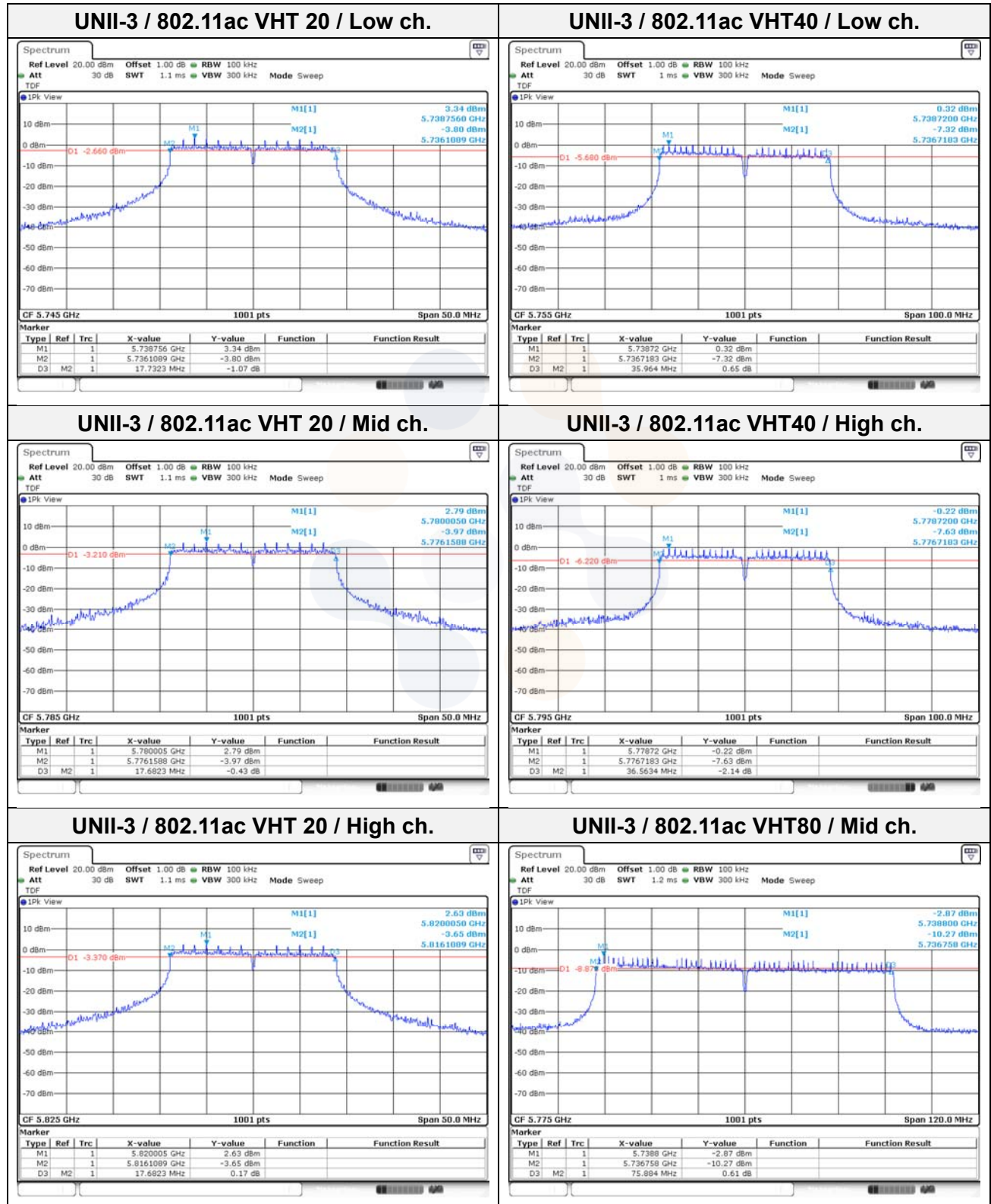
Test mode	Band	Frequency (MHz)	6dB bandwidth (MHz)	Limit (MHz)	99% bandwidth (MHz)
			ANT2		ANT2
802.11a	UNII-3	5 745	16.43	0.50	17.28
		5 785	16.43	0.50	17.28
		5 825	16.43	0.50	17.33
802.11n HT20	UNII-3	5 745	17.68	0.50	18.48
		5 785	17.68	0.50	18.48
		5 825	17.63	0.50	18.88
802.11n HT40	UNII-3	5 755	36.26	0.50	37.16
		5 795	36.56	0.50	37.06
802.11ac VHT20	UNII-3	5 745	17.73	0.50	18.53
		5 785	17.68	0.50	18.53
		5 825	17.68	0.50	18.83
802.11ac VHT40	UNII-3	5 755	35.96	0.50	37.06
		5 795	36.56	0.50	37.06
802.11ac VHT80	UNII-3	5 775	75.88	0.50	76.60

MIMO

Test mode	Band	Frequency (MHz)	6dB bandwidth (MHz)		Limit (MHz)	99% bandwidth (MHz)	
			ANT1	ANT2		ANT1	ANT2
802.11a	UNII-3	5 745	16.43	16.43	0.50	17.43	17.03
		5 785	16.43	16.43	0.50	17.38	17.28
		5 825	16.43	16.43	0.50	17.48	17.23
802.11n HT20	UNII-3	5 745	17.63	17.73	0.50	18.33	18.08
		5 785	17.63	17.73	0.50	18.48	18.13
		5 825	17.68	17.68	0.50	18.48	18.18
802.11n HT40	UNII-3	5 755	36.46	36.46	0.50	37.06	36.56
		5 795	36.46	36.56	0.50	36.96	36.66
802.11ac VHT20	UNII-3	5 745	17.63	17.73	0.50	18.38	18.03
		5 785	17.63	17.63	0.50	18.53	18.13
		5 825	17.68	17.68	0.50	18.48	18.18
802.11ac VHT40	UNII-3	5 755	36.46	36.46	0.50	37.16	36.66
		5 795	36.46	36.56	0.50	37.06	36.56
802.11ac VHT80	UNII-3	5 775	75.88	75.88	0.50	76.36	76.24

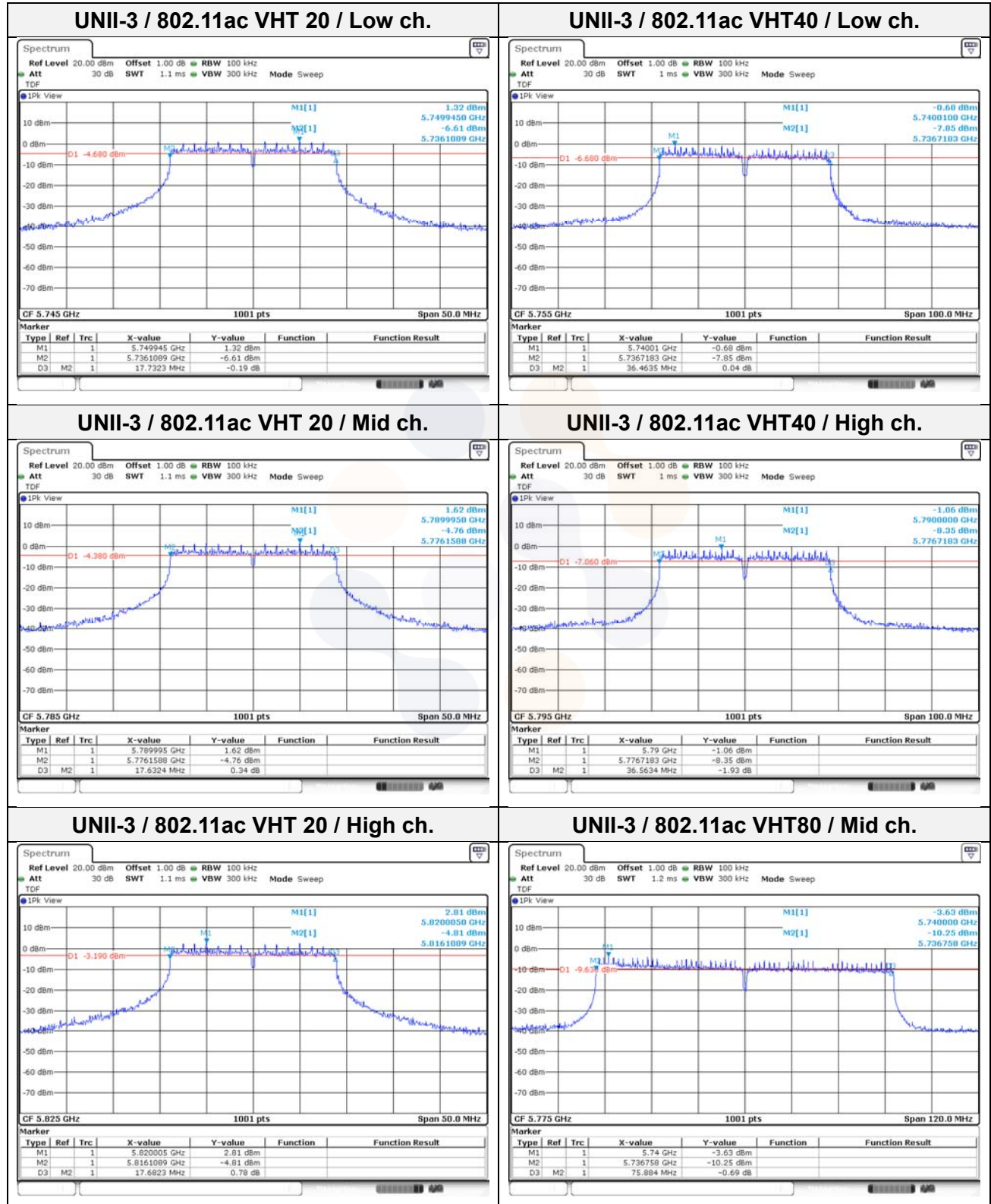
In order to simplify the report, only ac mode test plots are attached.

6 dB bandwidth
SISO



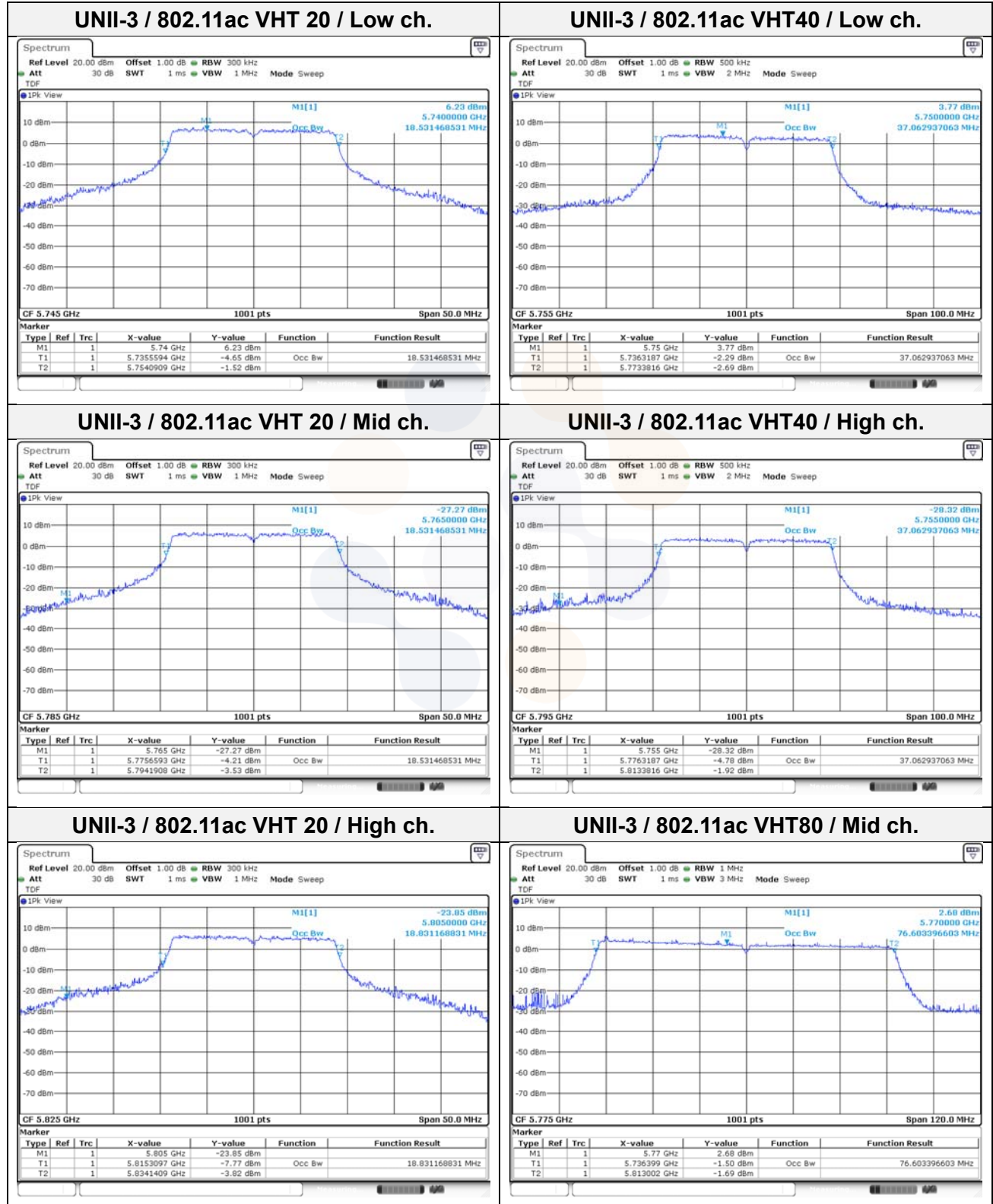
In order to simplify the report, only ANT 2 ac mode test plots are attached.

MIMO



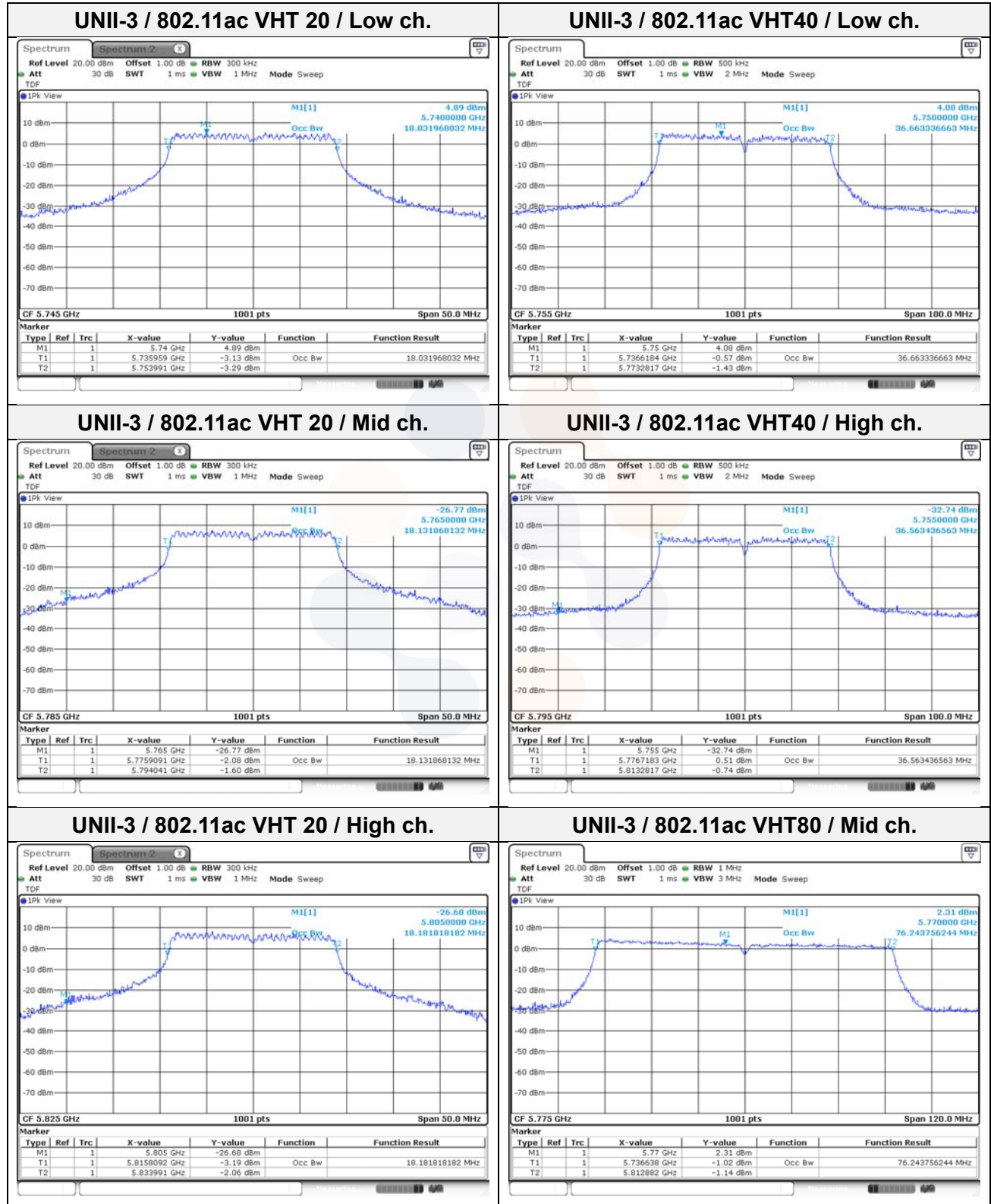
In order to simplify the report, only ac mode test plots are attached.

**99% bandwidth
SISO**



In order to simplify the report, only ANT 2 ac mode test plots are attached.

MIMO



7.5. Straddle channel

26dB bandwidth & 99% Bandwidth

SISO

Test mode	Band	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
			ANT2	ANT2
802.11a	UNII-2C	5 720	17.99	13.64
802.11n HT20			19.64	14.44
802.11ac VHT20			19.54	14.49
802.11a	UNII-3	5 720	7.54	3.59
802.11n HT20			8.74	4.19
802.11ac VHT20			8.89	4.24
802.11n HT40	UNII-2C	5 710	50.16	33.88
802.11ac VHT40			39.68	33.78
802.11n HT40	UNII-3	5 710	13.77	3.58
802.11ac VHT40			7.88	3.48
802.11ac VHT80	UNII-2C	5 690	94.94	73.48
	UNII-3	5 690	19.07	3.12

Notes:

- For 99% Bandwidth, measured 99% occupied bandwidth is separated as below.
 - For UNII band 2C = 5 725 MHz – T1 (Measured frequency on the marker table)
 - For UNII band 3 = T2 (Measured frequency on the marker table) – 5 725 MHz

MIMO

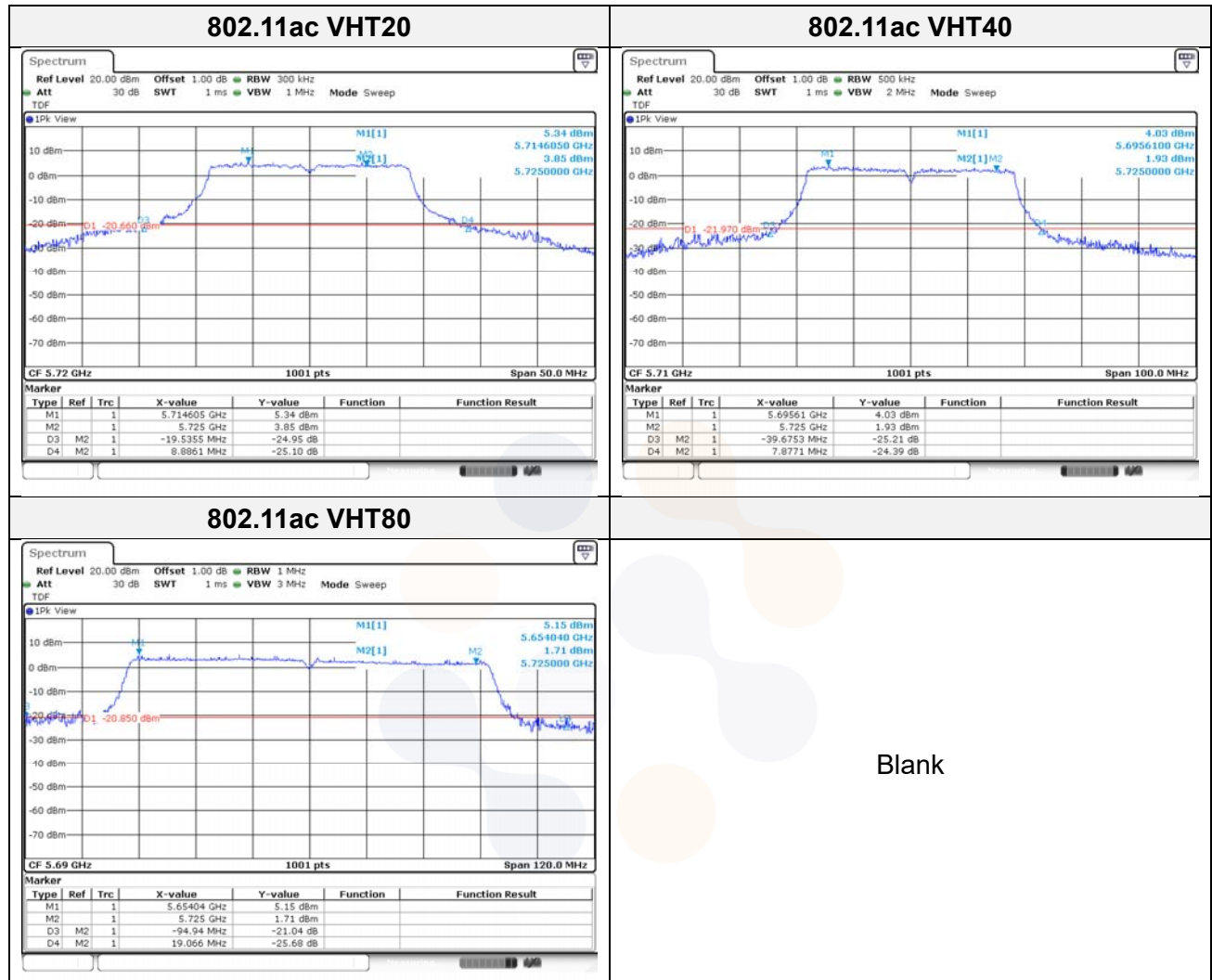
Test mode	Band	Frequency (MHz)	26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			ANT1	ANT2	ANT1	ANT2
802.11a	UNII-2C	5 720	17.94	16.99	13.84	13.49
802.11n HT20			18.99	17.39	14.29	14.04
802.11ac VHT20			17.99	17.44	14.29	14.04
802.11a	UNII-3	5 720	7.59	7.14	3.69	3.59
802.11n HT20			8.24	7.34	4.14	3.99
802.11ac VHT20			7.84	7.44	4.19	4.04
802.11n HT40	UNII-2C	5 710	38.48	37.48	33.58	33.38
802.11ac VHT40			38.38	37.38	33.68	33.38
802.11n HT40	UNII-3	5 710	7.98	7.38	3.48	3.38
802.11ac VHT40			7.88	7.58	3.48	3.28
802.11ac VHT80	UNII-2C	5 690	78.64	91.34	73.36	73.24
	UNII-3	5 690	8.16	7.92	2.88	3.00

Notes:

- For 99% Bandwidth, measured 99% occupied bandwidth is separated as below.
 - For UNII band 2C = 5 725 MHz – T1 (Measured frequency on the marker table)
 - For UNII band 3 = T2 (Measured frequency on the marker table) – 5 725 MHz

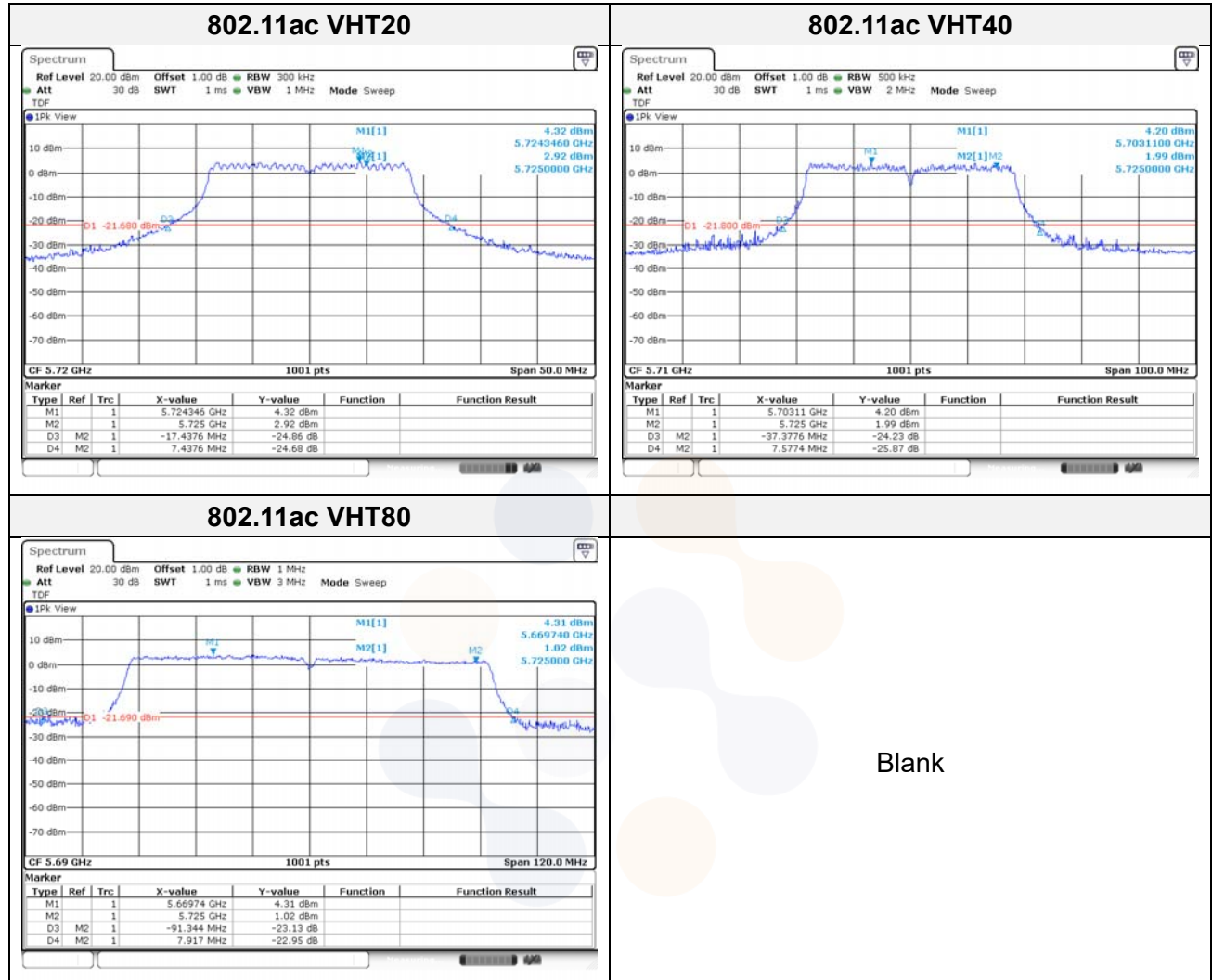
In order to simplify the report, only ac mode test plots are attached.

26dB bandwidth
SISO



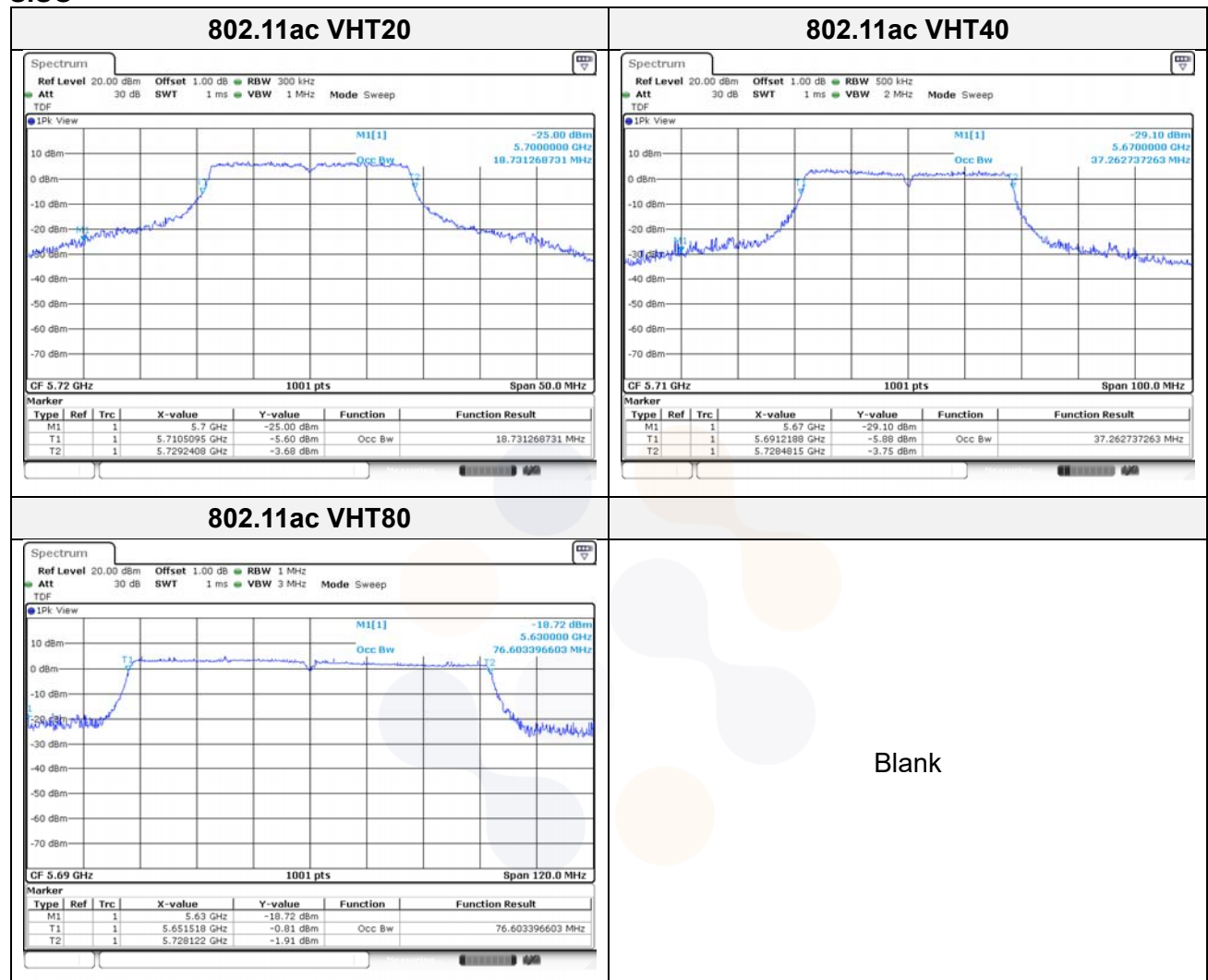
In order to simplify the report, only ANT2 ac mode test plots are attached.

MIMO



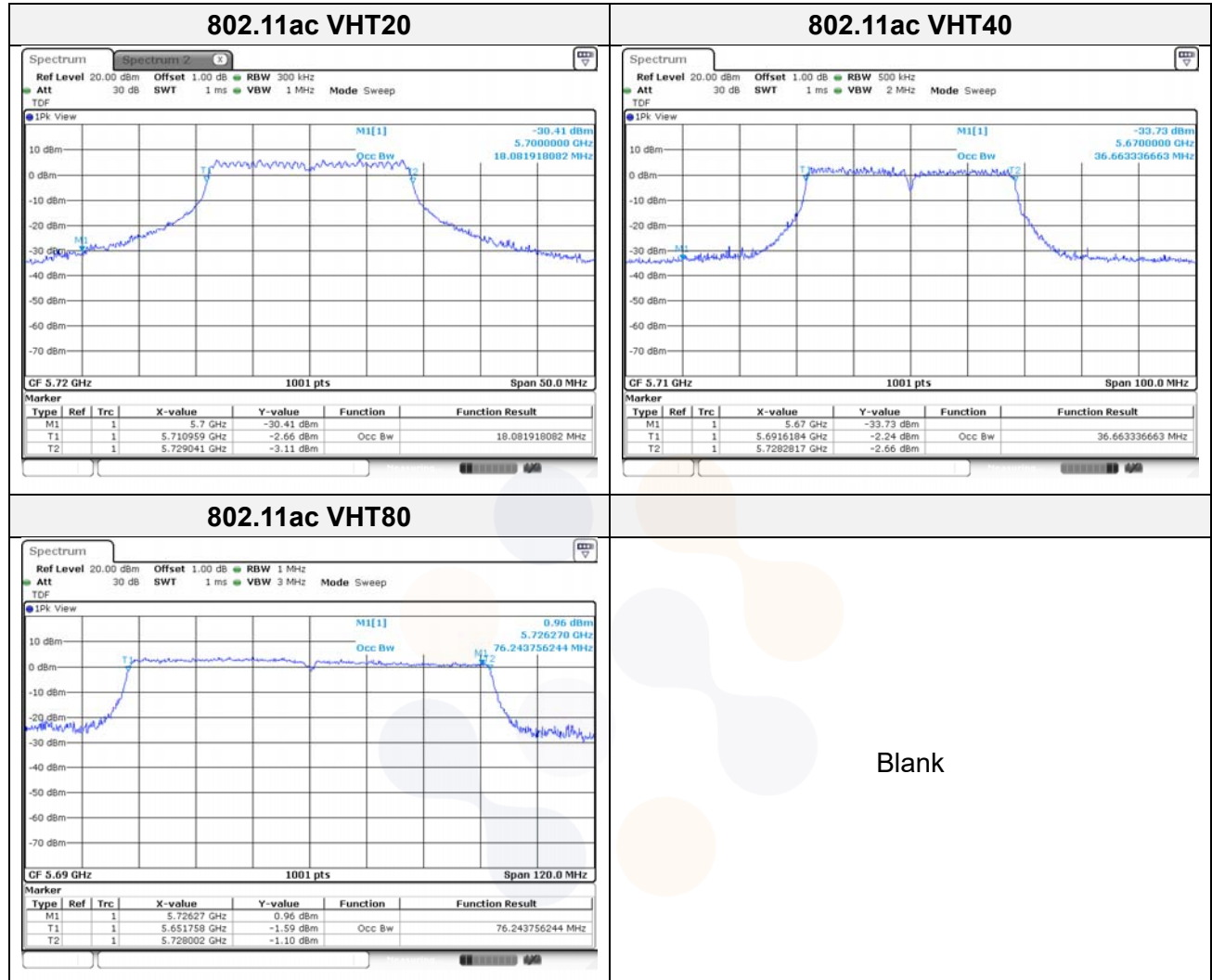
In order to simplify the report, only ac mode test plots are attached.

99% bandwidth
SISO



In order to simplify the report, only ANT2 ac mode test plots are attached.

MIMO



6dB bandwidth

SISO

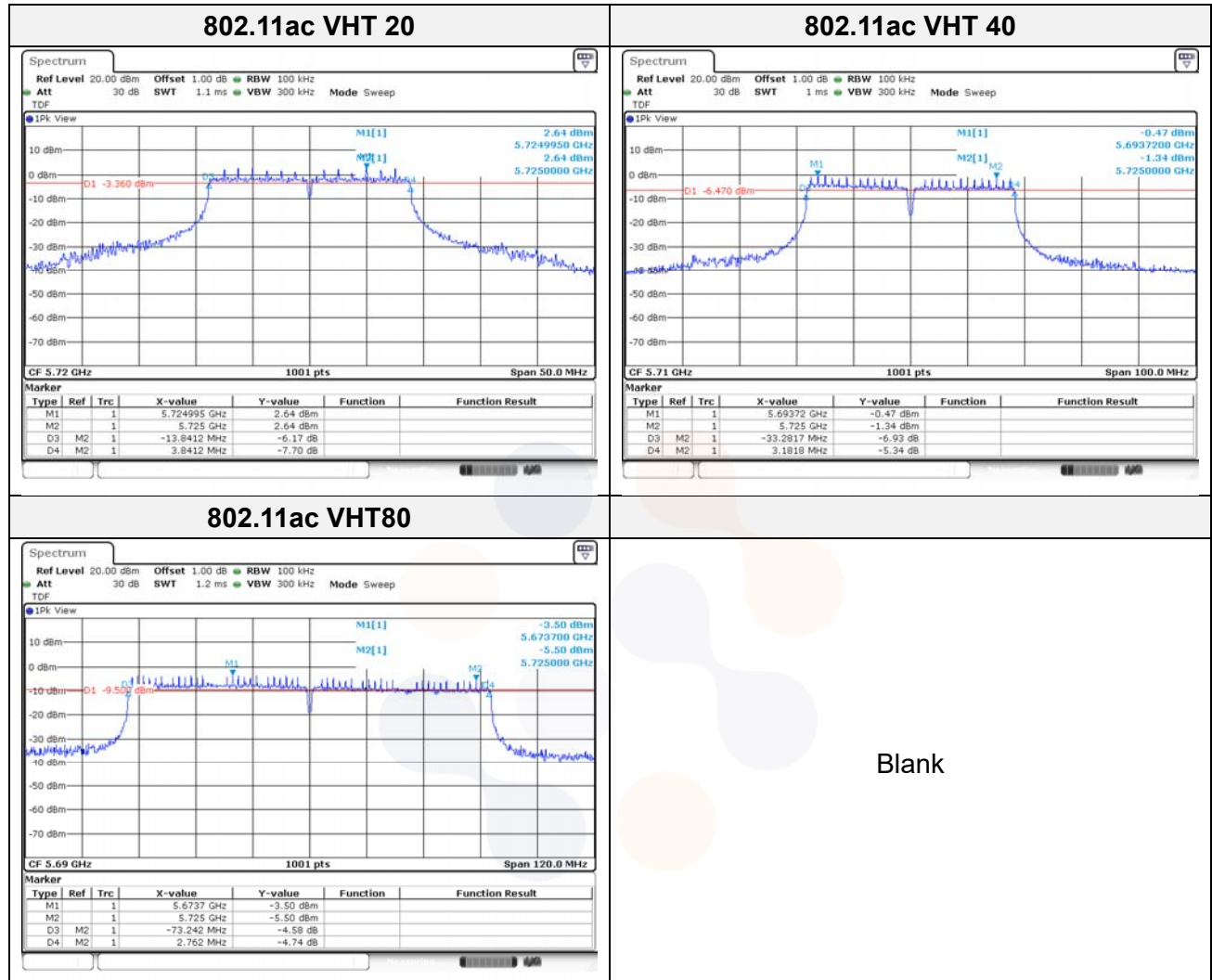
Test mode	Band	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
			ANT2	
802.11a	UNII-3	5 720	3.24	0.50
802.11n HT20			3.84	0.50
802.11ac VHT20			3.84	0.50
802.11n HT40	UNII-3	5 710	3.28	0.50
802.11ac VHT40			3.18	0.50
802.11ac VHT80	UNII-3	5 690	2.76	0.50

MIMO

Test mode	Band	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT1	ANT2	
802.11a	UNII-3	5 720	3.19	3.19	0.50
802.11n HT20			3.79	3.79	0.50
802.11ac VHT20			3.79	3.79	0.50
802.11n HT40	UNII-3	5 710	3.18	3.18	0.50
802.11ac VHT40			3.18	3.28	0.50
802.11ac VHT80	UNII-3	5 690	2.64	2.88	0.50

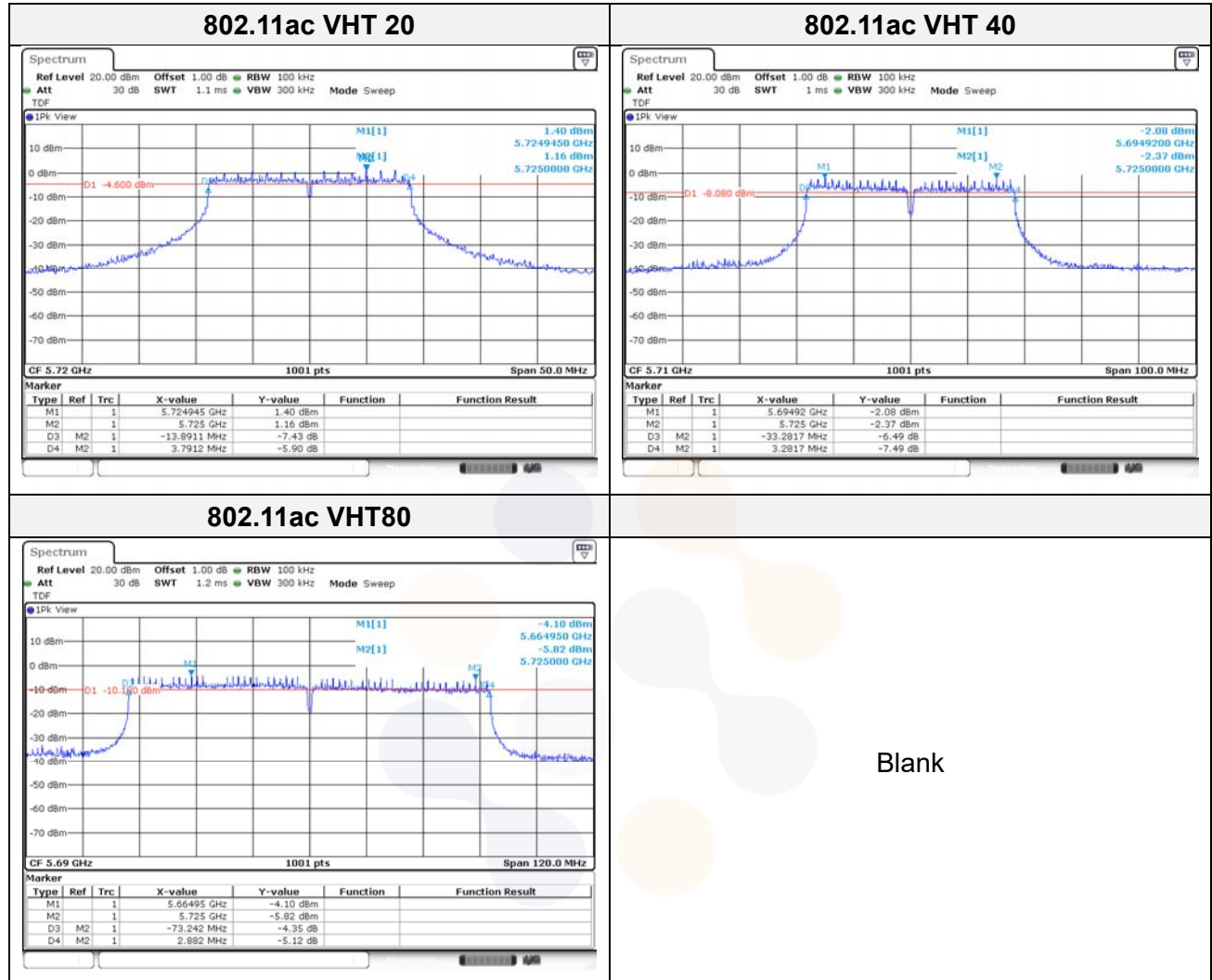
In order to simplify the report, only ac mode test plots are attached.

6dB bandwidth
SISO



In order to simplify the report, only ANT2 ac mode test plots are attached.

MIMO



Conducted Output Power

SISO

Test mode	Band	Frequency (MHz)	Measured output power			FCC Limit (dBm)	IC Limit (dBm)
			Reading (dBm)	DCF (dB)	Result (dBm)		
			ANT2				
802.11a	UNII-2C	5 720	12.73	0.27	13.00	23.55	23.36
802.11n HT20			12.71	0.32	13.03	23.93	23.70
802.11ac VHT20			12.69	0.29	12.98	23.91	23.73
802.11a	UNII-3	5 720	6.81	0.27	7.08	30.00	30.00
802.11n HT20			7.13	0.32	7.45	30.00	30.00
802.11ac VHT20			7.24	0.29	7.53	30.00	30.00
802.11n HT40	UNII-2C	5 710	12.13	0.61	12.74	23.98	23.98
802.11ac VHT40			12.05	0.66	12.71	23.98	23.98
802.11n HT40	UNII-3	5 710	2.01	0.61	2.62	30.00	30.00
802.11ac VHT40			1.73	0.66	2.39	30.00	30.00
802.11ac VHT80	UNII-2C	5 690	11.50	1.15	12.65	23.98	23.98
	UNII-3	5 690	-3.07	1.15	-1.92	30.00	30.00

Note:

1. Conducted Output power(dBm) = Average Reading (dBm) + DCF(dB)

E.I.R.P.

Test mode	Band	Frequency (MHz)	Measured output power			MAX e.i.r.p Limit (dBm)
			Conducted Output Power (dBm)	ANT gain (dB)	MAX e.i.r.p (dBm)	
			ANT2	ANT2	ANT2	
802.11a	UNII-2C	5 720	13.00	-5.00	8.00	29.36
802.11n HT20			13.03		8.03	29.70
802.11ac VHT20			12.98		7.98	29.73
802.11a	UNII-3	5 720	7.08	-4.40	2.68	30.00
802.11n HT20			7.45		3.05	30.00
802.11ac VHT20			7.53		3.13	30.00
802.11n HT40	UNII-2C	5 710	12.74	-5.00	7.74	30.00
802.11ac VHT40			12.71		7.71	30.00
802.11n HT40	UNII-3	5 710	2.62	-4.40	-1.78	30.00
802.11ac VHT40			2.39		-2.01	30.00
802.11ac VHT80	UNII-2C	5 690	12.65	-5.00	7.65	30.00
	UNII-3	5 690	-1.92	-4.40	-6.32	30.00

Notes:

1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)

MIMO

Test mode	Band	Frequency (MHz)	Measured output power				FCC Limit (dBm)	IC Limit (dBm)
			Reading (dBm)		DCF (dB)	Result (dBm)		
			ANT1	ANT2				
802.11a	UNII-2C	5 720	13.11	12.42	0.25	16.04	23.33	23.32
802.11n HT20			11.77	10.94	0.54	14.93	23.40	23.56
802.11ac VHT20			11.58	10.90	0.64	14.90	23.42	23.57
802.11a	UNII-3	5 720	6.94	6.41	0.25	9.94	30.00	30.00
802.11n HT20			6.14	5.39	0.54	9.33	30.00	30.00
802.11ac VHT20			6.06	5.14	0.64	9.27	30.00	30.00
802.11n HT40	UNII-2C	5 710	11.40	11.02	1.17	15.39	23.98	23.98
802.11ac VHT40			10.94	10.89	0.90	14.83	23.98	23.98
802.11n HT40	UNII-3	5 710	1.26	0.64	1.17	5.14	30.00	30.00
802.11ac VHT40			0.62	0.60	0.90	4.52	30.00	30.00
802.11ac VHT80	UNII-2C	5 690	9.13	10.13	1.87	14.54	23.98	23.98
	UNII-3	5 690	-5.06	-4.29	1.87	0.22	30.00	30.00

Note:

1. Conducted Output power(dB m) = $10\log(10^{(\text{ANT } 1/10)} + 10^{(\text{ANT } 2/10)})$ (dB m) + DCF(dB)

E.I.R.P.

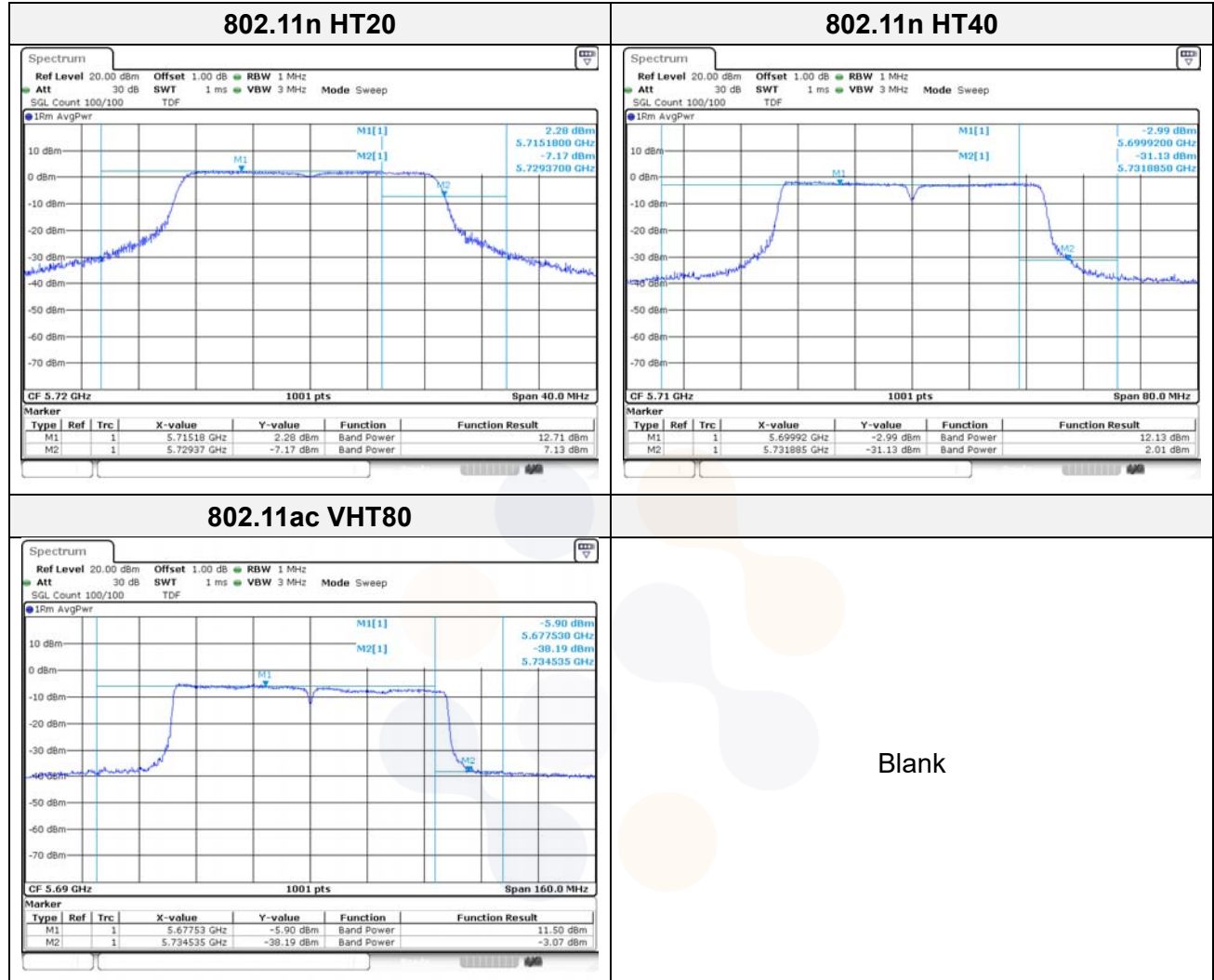
Test mode	Band	Frequency (MHz)	Measured output power			Limit (dBm)
			Conducted output Power (dBm)	ANT gain (dBi)	MAX e.i.r.p (dBm)	
802.11a	UNII-2C	5 720	16.04	-1.54	14.50	29.32
802.11n HT20			14.93	-4.55	10.38	29.56
802.11ac VHT20			14.90		10.35	29.57
802.11a	UNII-3	5 720	9.94	-2.06	7.88	30.00
802.11n HT20			9.33	-5.04	4.29	
802.11ac VHT20			9.27		4.23	
802.11n HT40	UNII-2C	5 710	15.39	-4.55	10.84	30.00
802.11ac VHT40			14.83		10.28	
802.11n HT40	UNII-3	5 710	5.14	-5.04	0.10	30.00
802.11ac VHT40			4.52		-0.52	
802.11ac VHT80	UNII-2C	5 690	14.54	-4.55	9.99	30.00
	UNII-3	5 690	0.22	-5.04	-4.82	30.00

Notes:

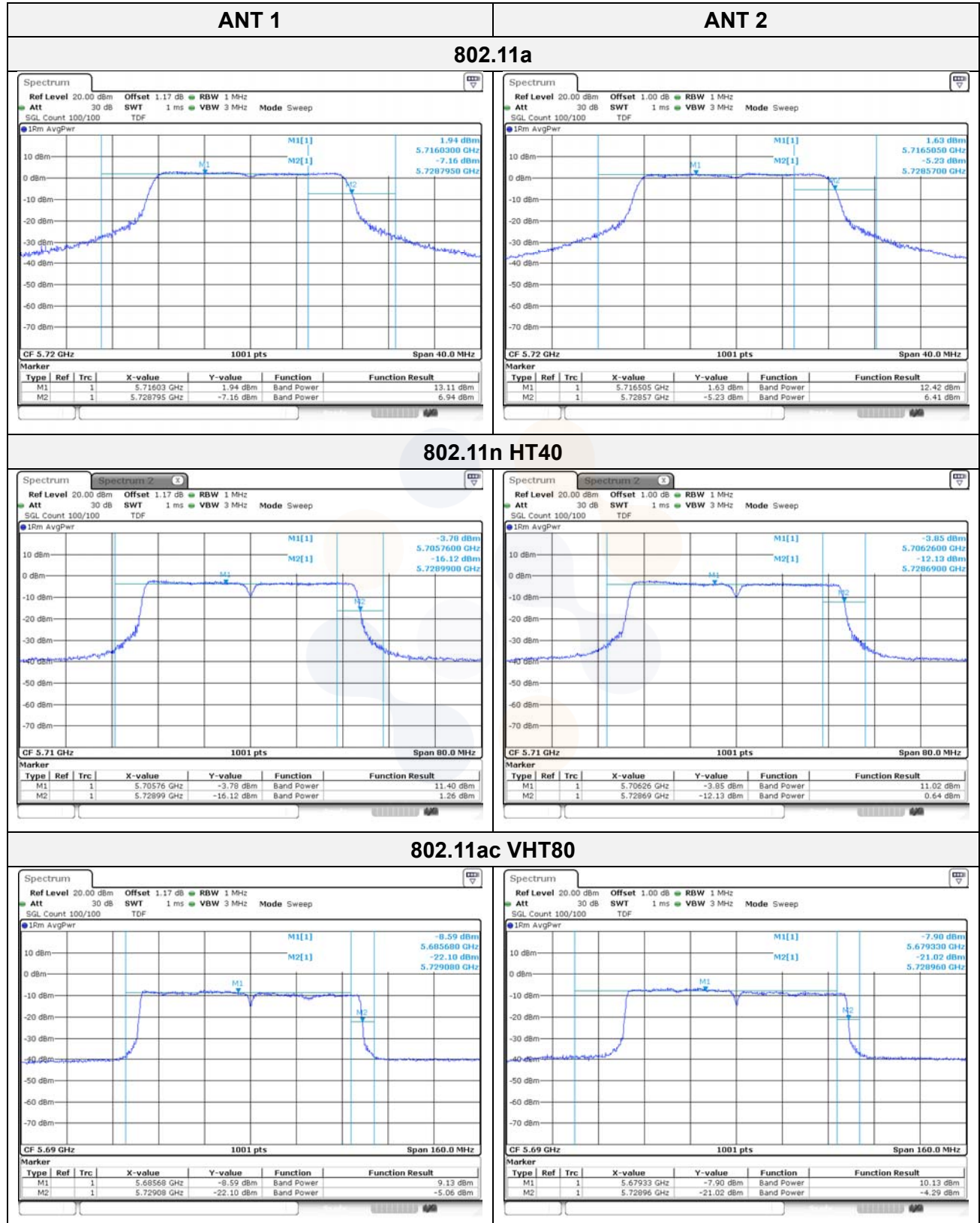
1. E.I.R.P. Calculation: E.I.R.P. (dBm) = Conducted output power (dBm) + Antenna gain (dBi)
2. The max e.i.r.p. limit has reported Ant1 or Ant2, whichever is less

In order to simplify the report, attached plots were the worst case per bandwidth

SISO



MIMO



Power Spectral Density

SISO

Test mode	Band	Frequency (MHz)	Measured PSD (dBm/MHz)	DCF (dB)	Maximum PSD (dB m/MHz)	Limit (dBm/MHz)
			ANT2			
802.11a	UNII-2C	5 720	2.81	0.27	3.08	11.00
802.11n HT20			2.34	0.32	2.66	
802.11ac VHT20			2.46	0.29	2.75	
802.11n HT40		5 710	-1.39	0.61	-0.78	
802.11ac VHT40			-0.84	0.66	-0.18	
802.11ac VHT80		5 690	-5.23	1.15	-4.08	

Test mode	Band	Frequency (MHz)	Measured PSD (dBm/MHz)	DCF (dB)	Maximum PSD (dB m/MHz)	Limit (dBm/MHz)
			ANT2			
802.11a	UNII-3	5 720	-0.38	0.27	-0.11	11.00
802.11n HT20			-0.74	0.32	-0.42	
802.11ac VHT20			-0.39	0.29	-0.10	
802.11n HT40		5 710	-5.36	0.61	-4.75	
802.11ac VHT40			-5.25	0.66	-4.59	
802.11ac VHT80		5 690	-10.00	1.15	-8.85	

Note:

- Maximum PSD(dB m/MHz) = Reading (dB m/MHz) + DCF(dB)
- The Unit of UNII-2C is (dB m / MHz) and Unit of UNII-3 is (dB m / 500kHz)

MIMO

Test mode	Band	Frequency (MHz)	Measured PSD (dBm/MHz)		DCF (dB)	Maximum PSD (dB m/MHz)	Limit (dBm/MHz)
			ANT1	ANT2			
802.11a	UNII-2C	5 720	2.86	2.40	0.25	5.90	11.00
802.11n HT20			1.43	0.95	0.54	4.75	
802.11ac VHT20			1.45	0.20	0.64	4.52	
802.11n HT40		5 710	-2.09	-1.89	1.17	2.19	
802.11ac VHT40			-2.96	-3.58	0.90	0.65	
802.11ac VHT80		5 690	-7.38	-6.19	1.87	-1.87	

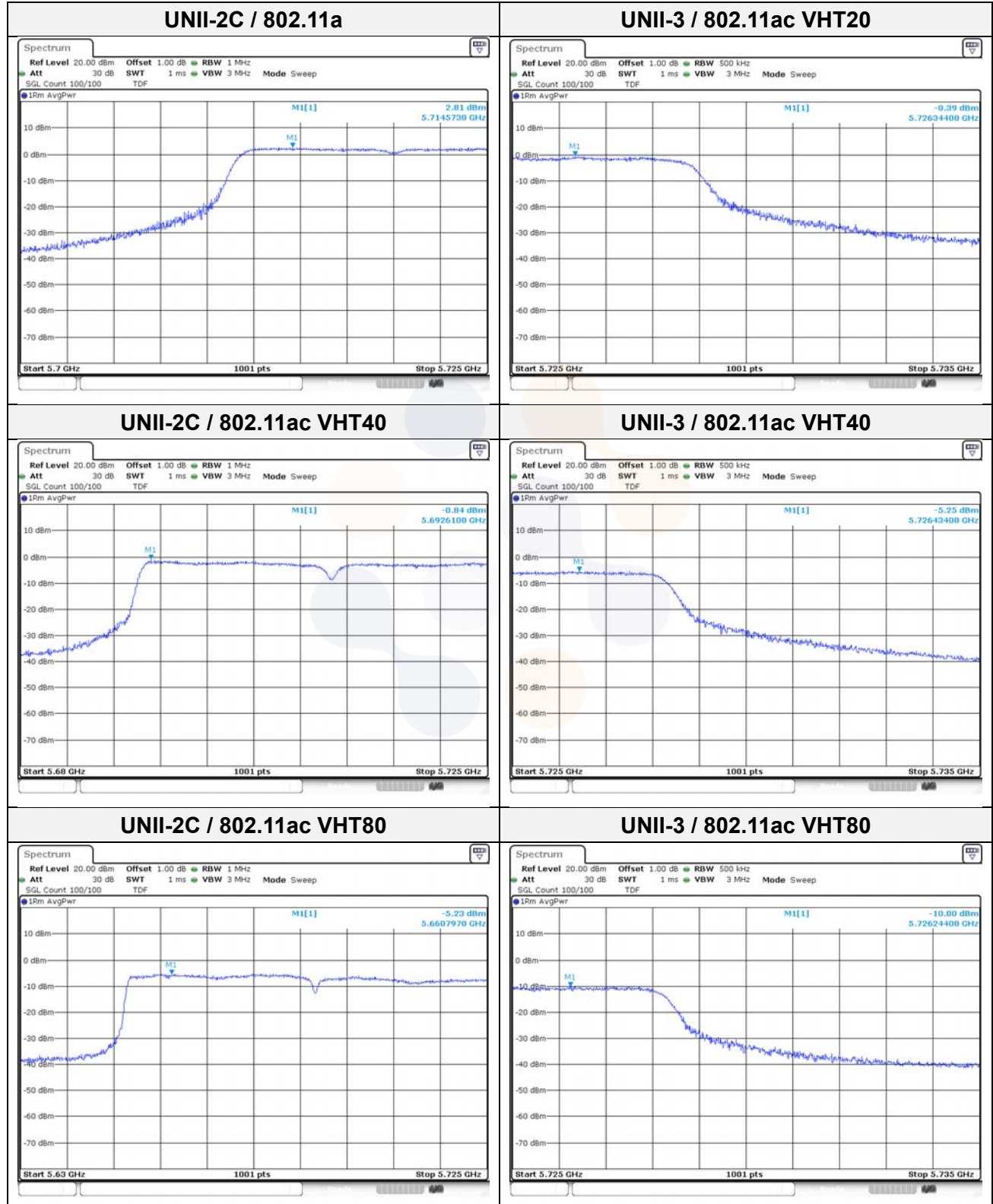
Test mode	Band	Frequency (MHz)	Measured PSD (dBm/MHz)		DCF (dB)	Maximum PSD (dB m/MHz)	Limit (dBm/MHz)
			ANT1	ANT2			
802.11a	UNII-3	5 720	-0.32	-0.53	0.25	2.84	11.00
802.11n HT20			-1.80	-2.09	0.54	1.61	
802.11ac VHT20			-1.65	-2.95	0.64	1.40	
802.11n HT40		5 710	-6.15	-5.94	1.17	-1.86	
802.11ac VHT40			-6.70	-7.71	0.90	-3.26	
802.11ac VHT80		5 690	-12.12	-10.52	1.87	-6.37	

Note:

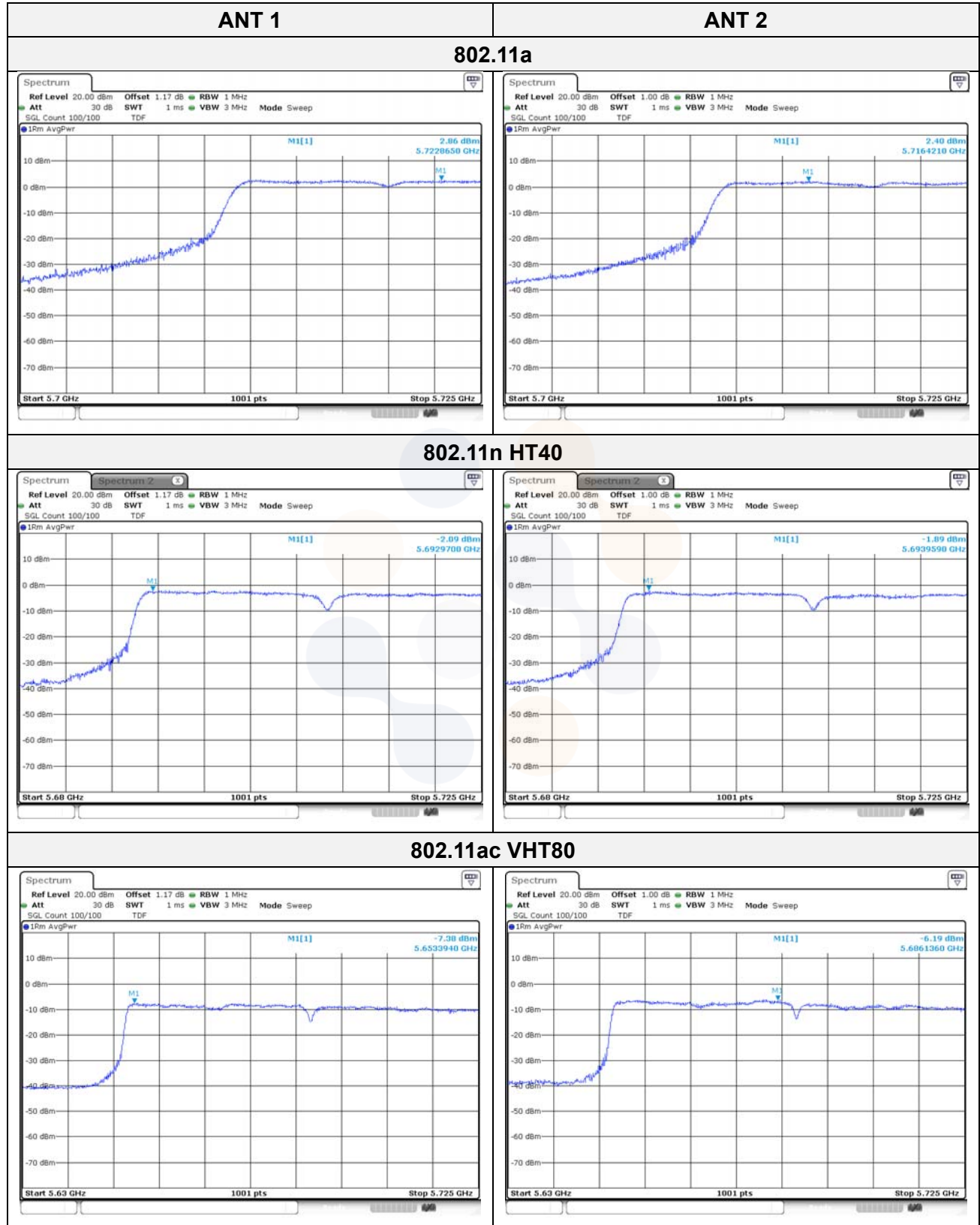
- Maximum PSD(dB m/MHz) = $10\log(10^{(ANT\ 1/10)} + 10^{(ANT\ 2/10)})$ (dB m/MHz) + DCF(dB)
- The Unit of UNII-2C is (dB m / MHz) and Unit of UNII-3 is (dB m / 500 kHz)

In order to simplify the report, attached plots were the worst case per bandwidth

SISO



MIMO UNII-2C



MIMO UNII-3

