6.4.6 TEST DATA

IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)		AVG Output Power (W)		Limit (dBm)	Result
		Antenna 0	Antenna 1	Antenna 0	Antenna 1		
Low	5180	14.47	13.77	0.02799	0.02382	24.00	PASS
Mid	5200	13.06	14.27	0.02023	0.02673		PASS
High	5240	14.35	13.64	0.02723	0.02312		PASS

IEEE 802.11a mode / 5260~ 5320MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)		AVG Output Power (W)		Limit (dBm)	Result
		Antenna 0	Antenna 1	Antenna 0	Antenna 1		
Low	5260	14.31	13.98	0.02698	0.02500	24.00	PASS
Mid	5300	14.39	14.31	0.02748	0.02698		PASS
High	5320	15.49	15.49	0.03540	0.03540		PASS

IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)		AVG Output Power (W)		Limit (dBm)	Result
		Antenna 0	Antenna 1	Antenna 0	Antenna 1		
Low	5500	12.97	12.58	0.01982	0.01811	24.00	PASS
Mid	5580	14.39	13.78	0.02748	0.02388		PASS
High	5700	13.97	13.82	0.02495	0.02410		PASS

IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)		AVG Output Power (W)		Limit (dBm)	Result
		Antenna 0	Antenna 1	Antenna 0	Antenna 1		
Low	5745	13.68	13.04	0.02333	0.02014	30.00	PASS
Mid	5785	13.62	13.92	0.02301	0.02466		PASS
High	5825	14.29	14.14	0.02685	0.02594		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5180	13.22	12.53	15.90	0.03890	24.00	PASS
Mid	5200	13.91	13.50	16.72	0.04699		PASS
High	5240	14.12	13.69	16.92	0.04921		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5260	14.32	13.81	17.08	0.05108	24.00	PASS
Mid	5300	15.19	14.29	17.77	0.05989		PASS
High	5320	15.21	14.05	17.68	0.05860		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5500	13.05	12.53	15.81	0.03809	24.00	PASS
Mid	5580	14.59	13.59	17.13	0.05163		PASS
High	5700	14.18	13.89	17.05	0.05067		PASS

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5745	13.82	12.67	16.29	0.04259	30.00	PASS
Mid	5785	13.45	13.07	16.27	0.04241		PASS
High	5825	13.99	13.57	16.80	0.04781		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5190	11.77	11.26	14.53	0.02840	24.00	PASS
High	5230	12.35	11.97	15.17	0.03292		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5270	13.75	13.30	16.54	0.04509	24.00	PASS
High	5310	13.66	13.80	16.74	0.04722		PASS

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

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5510	13.35	11.56	15.56	0.03595	24.00	PASS
Mid	5550	12.91	12.88	15.91	0.03895		PASS
High	5670	13.23	13.17	16.21	0.04179		PASS

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
Low	5755	12.94	12.38	15.68	0.03698	30.00	PASS
High	5795	13.23	12.38	15.84	0.03834		PASS

IEEE 802.11ac 80 mode / 5210MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
	5210	12.17	11.63	14.92	0.03104	24.00	PASS

IEEE 802.11ac 80 mode / 5290MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
	5290	13.57	13.33	16.46	0.04428	24.00	PASS

IEEE 802.11ac 80 mode / 5530MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
	5530	12.33	11.89	15.13	0.03255	24.00	PASS

IEEE 802.11ac 80 mode / 5775MHz

Channel	Frequency (MHz)	AVG Output Power (dBm)			AVG Output Power (W)	Limit (dBm)	Result
		Antenna 0	Antenna 1	Total			
	5775	12.60	12.22	15.42	0.03487	30.00	PASS

6.5 BAND EDGES MEASUREMENT

6.5.1 LIMIT

According to §15.407(b)

(1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

6.5.2 MEASUREMENT EQUIPMENT USED

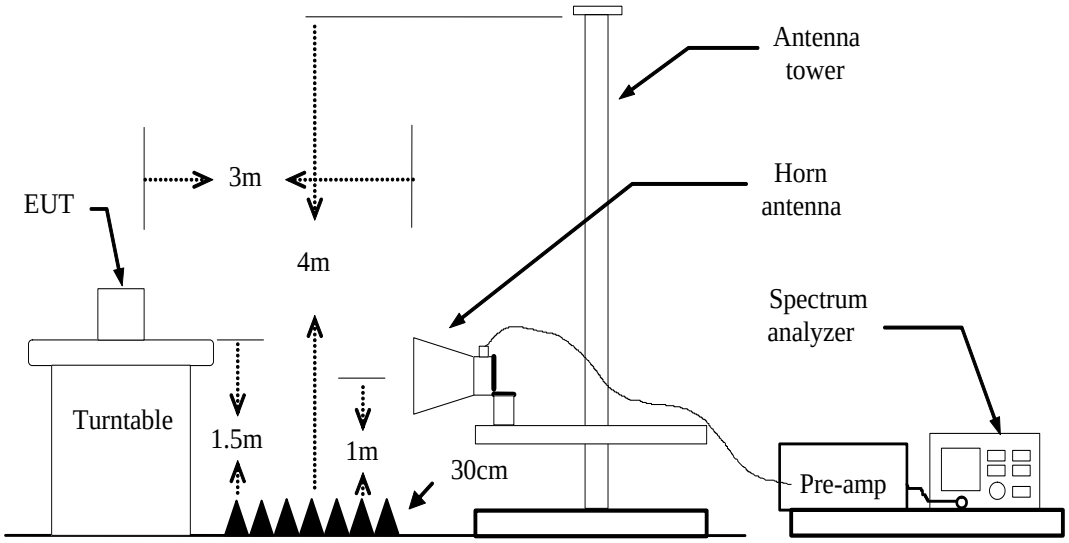
Radiated Emission Test Site 966(2)					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
Amplifier	EMEC	EM330	060661	03/18/2016	03/17/2017
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2016	02/20/2017
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2016	02/27/2017
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

6.5.3 TEST CONFIGURATION



6.5.4 TEST PROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=1 / VBW=3MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO / Detector=Peak
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

6.5.5 TEST RESULT

IEEE 802.11a mode / 5500 ~ 5700MHz

Antenna 0:

1. Operating Frequency: 5500-5700MHz
2. CH Low: 5500MHz, CH High: 5700MHz
3. 26dB bandwidth: CH Low: 20.97MHz, CH High: 20.87MHz
4. Frequency Range: 5489.5150MHz, 5710.4350MHz

Antenna 1:

1. Operating Frequency: 5500-5700MHz
2. CH Low: 5500MHz, CH High: 5700MHz
3. 26dB bandwidth: CH Low: 21.06MHz, CH High: 20.83MHz
4. Frequency Range: 5489.4700MHz, 5710.4150MHz

IEEE 802.11a mode / 5745 ~ 5825MHz

Antenna 0:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 20.80MHz, CH High: 21.21MHz
4. Frequency Range: 5734.6000MHz, 5835.6050MHz

Antenna 1:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 20.94MHz, CH High: 21.00MHz
4. Frequency Range: 5734.5300MHz, 5835.5000MHz

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

Antenna 0:

1. Operating Frequency: 5500-5700MHz
2. CH Low: 5500MHz, CH High: 5700MHz
3. 26dB bandwidth: CH Low: 21.35MHz, CH High: 21.62MHz
4. Frequency Range: 5489.3250MHz, 5710.8100MHz

Antenna 1:

1. Operating Frequency: 5500-5700MHz
2. CH Low: 5500MHz, CH High: 5700MHz
3. 26dB bandwidth: CH Low: 21.86MHz, CH High: 21.43MHz
4. Frequency Range: 5489.0700MHz, 5710.7150MHz

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Antenna 0:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 21.62MHz, CH High: 21.38MHz
4. Frequency Range: 5734.1900MHz, 5835.6900MHz

Antenna 1:

1. Operating Frequency: 5745-5825MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 26dB bandwidth: CH Low: 21.41MHz, CH High: 21.77MHz
4. Frequency Range: 5734.2950MHz, 5835.8850MHz

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

Antenna 0:

1. Operating Frequency: 5510-5670MHz
2. CH Low: 5510MHz, CH High: 5670MHz
3. 26dB bandwidth: CH Low: 42.90MHz, CH High: 43.57MHz
4. Frequency Range: 5488.5500MHz, 5691.7850MHz

Antenna 1:

1. Operating Frequency: 5510-5670MHz
2. CH Low: 5510MHz, CH High: 5670MHz
3. 26dB bandwidth: CH Low: 43.23MHz, CH High: 43.65MHz
4. Frequency Range: 5488.8850MHz, 5691.8250MHz

IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Antenna 0:

1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 44.04MHz, CH High: 43.68MHz
4. Frequency Range: 5732.9800MHz, 5816.8400MHz

Antenna 1:

1. Operating Frequency: 5755-5795MHz
2. CH Low: 5755MHz, CH High: 5795MHz
3. 26dB bandwidth: CH Low: 43.76MHz, CH High: 44.11MHz
4. Frequency Range: 5733.1200MHz, 5817.05500MHz

IEEE 802.11ac 80 mode / 5530MHz

Antenna 0:

1. Operating Frequency: 5530MHz
2. CH: 5530MHz
3. 26dB bandwidth: CH: 80.85MHz
4. Frequency Range: 5489.5750MHz, 5570.4250MHz

Antenna 1:

1. Operating Frequency: 5530MHz
2. CH: 5530MHz
3. 26dB bandwidth: CH: 81.24MHz
4. Frequency Range: 5489.3800MHz, 5570.6200MHz

IEEE 802.11ac 80 mode / 5775MHz

Antenna 0:

1. Operating Frequency: 5775MHz
2. CH: 5775MHz
3. 26dB bandwidth: CH: 81.86MHz
4. Frequency Range: 5734.0700MHz, 5815.9300MHz

Antenna 1:

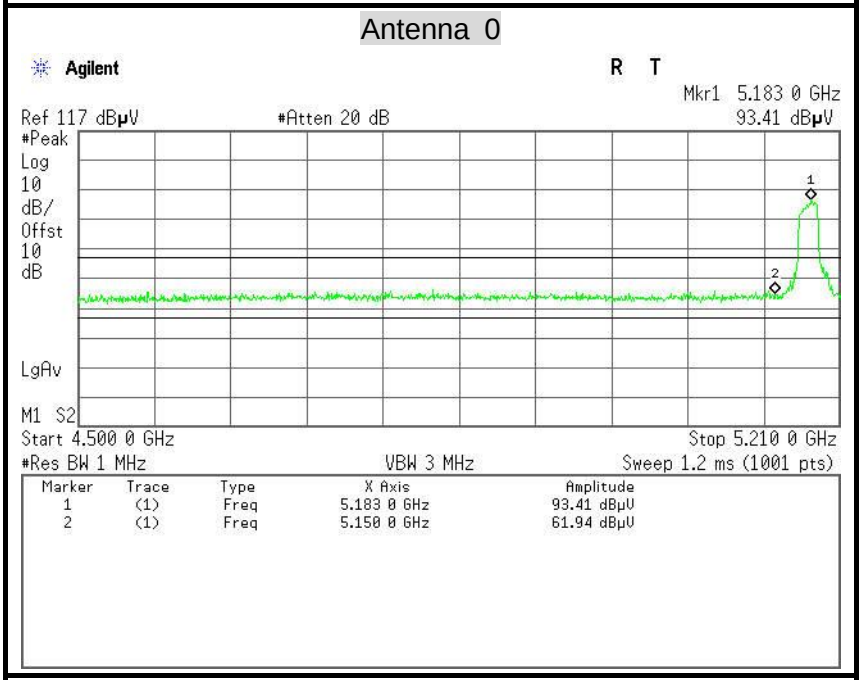
1. Operating Frequency: 5775MHz
2. CH: 5775MHz
3. 26dB bandwidth: CH: 82.26MHz
4. Frequency Range: 5733.8700MHz, 5816.1300MHz

Because the mentioned conditions the Fundamental Frequency Range was far away from the restricted bands in the table published in 15.205, the test is not applicable.

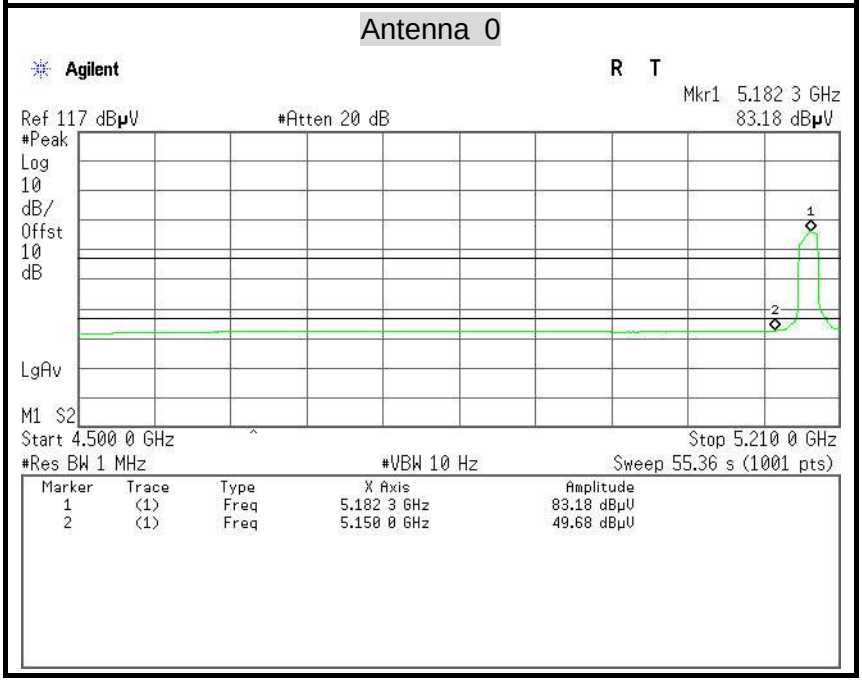
Test Plot

IEEE 802.11a mode / 5180MHz

Detector mode: Peak **Polarity: Vertical**



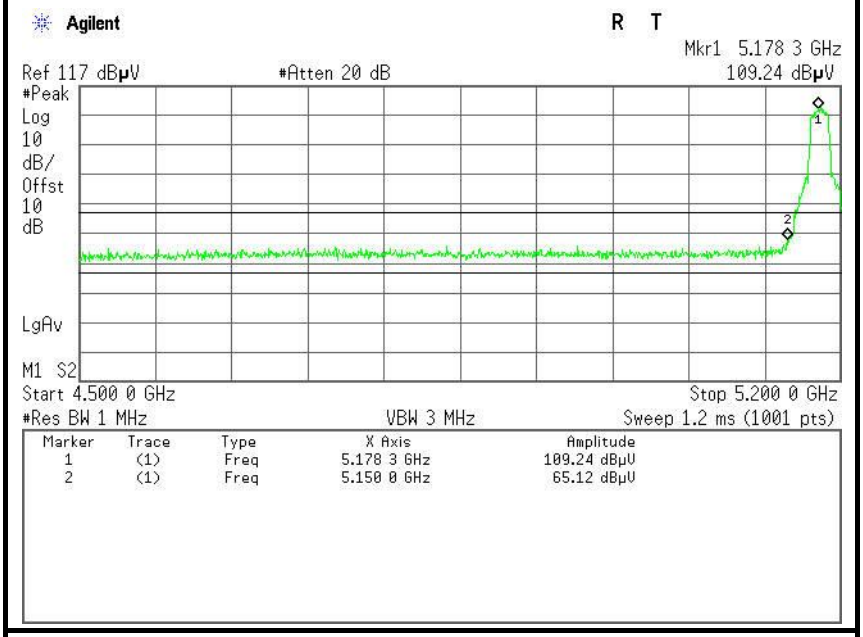
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	56.34	5.60	61.94	74.00	-12.06	Peak	Vertical
2	5150.0000	44.08	5.60	49.68	54.00	-4.32	Average	Vertical

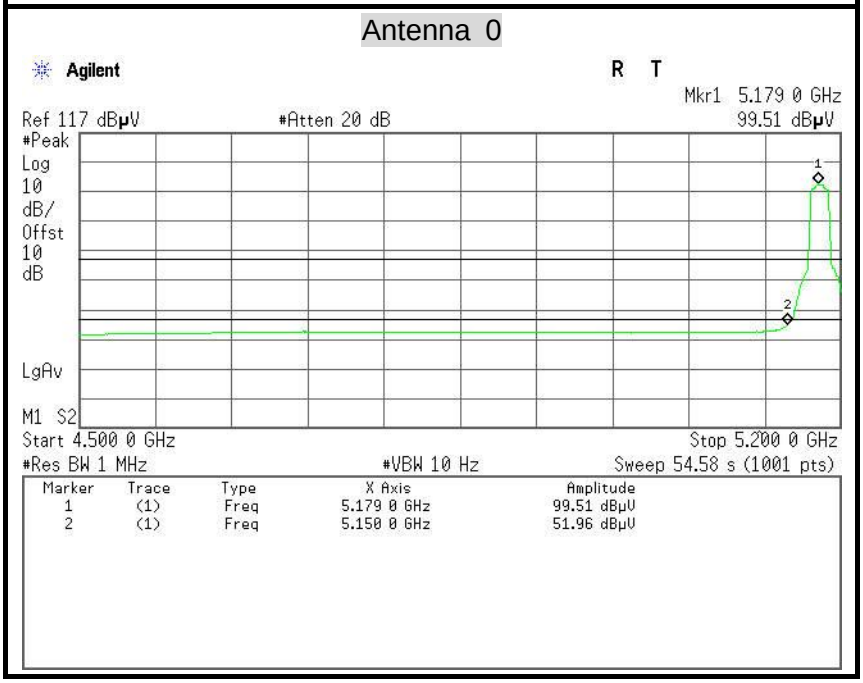
Detector mode: Peak **Polarity: Horizontal**

Antenna 0



Detector mode: Average **Polarity: Horizontal**

Antenna 0

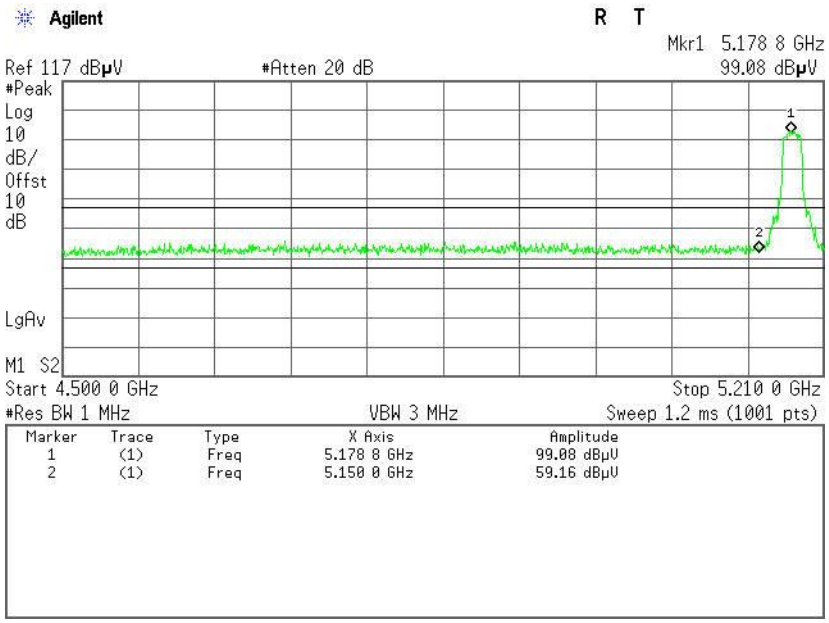


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	59.52	5.60	65.12	74.00	-8.88	Peak	Horizontal
2	5150.0000	46.36	5.60	51.96	54.00	-2.04	Average	Horizontal

IEEE 802.11a mode / 5180MHz

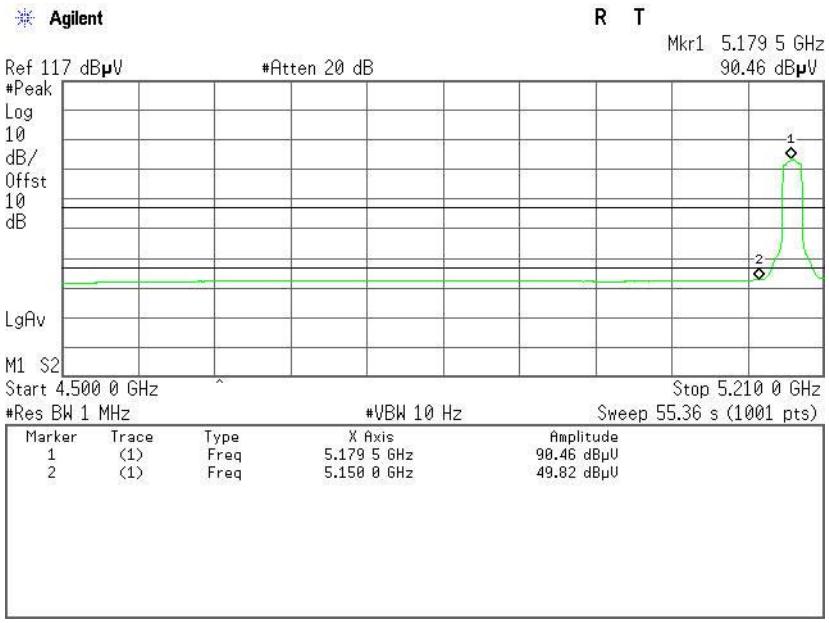
Detector mode: Peak **Polarity: Vertical**

Antenna 1



Detector mode: Average **Polarity: Vertical**

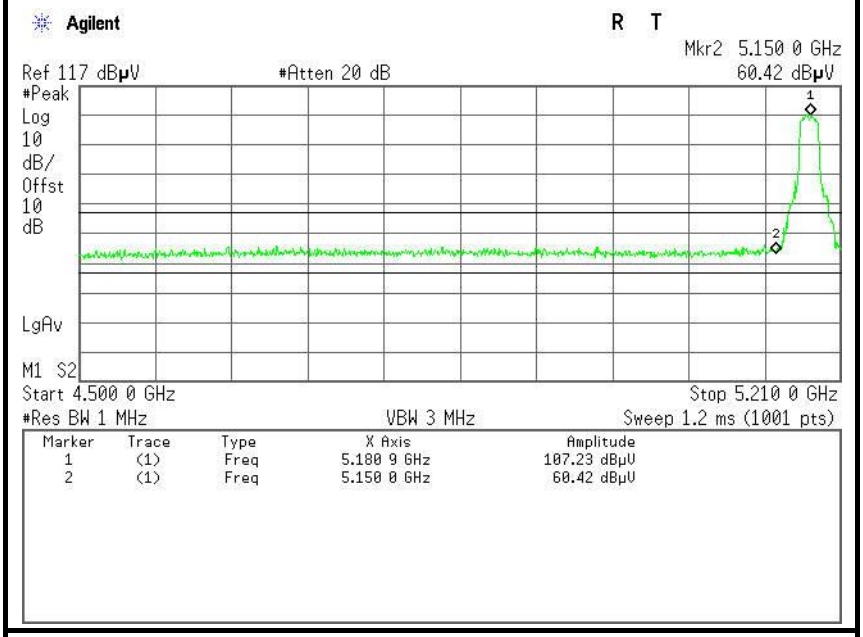
Antenna 1



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	53.56	5.60	59.16	74.00	-14.84	Peak	Vertical
2	5150.0000	44.22	5.60	49.82	54.00	-4.18	Average	Vertical

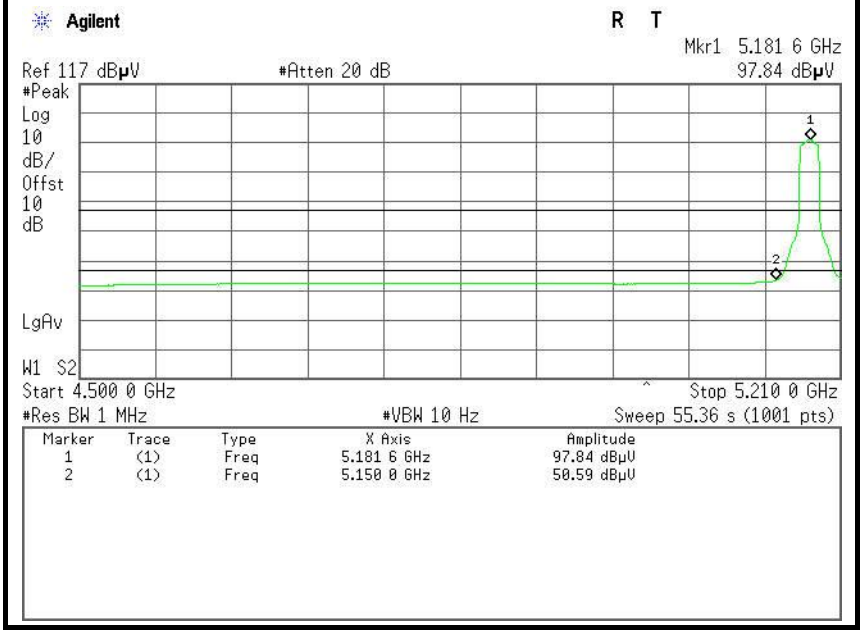
Detector mode: Peak **Polarity: Horizontal**

Antenna 1



Detector mode: Average **Polarity: Horizontal**

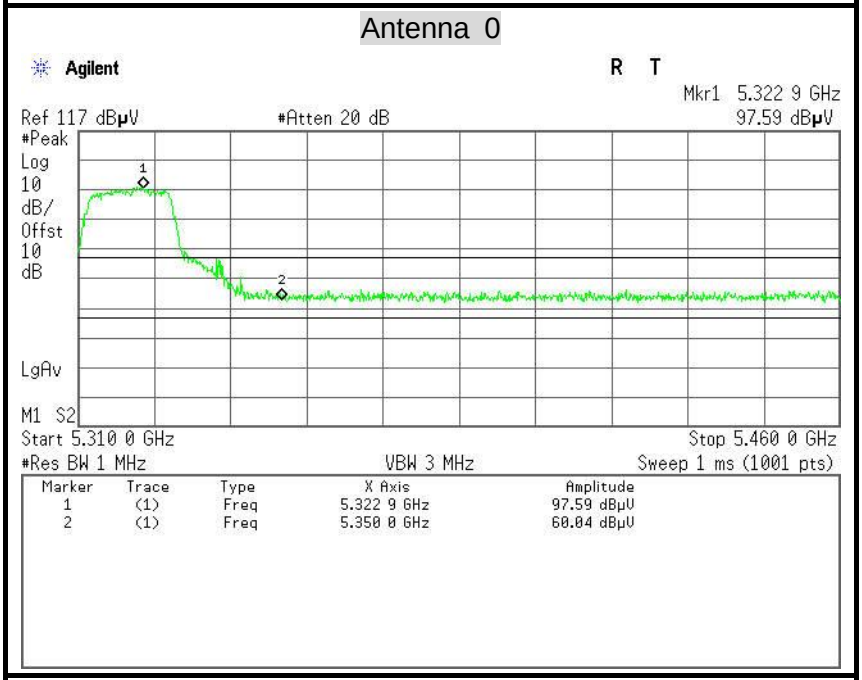
Antenna 1



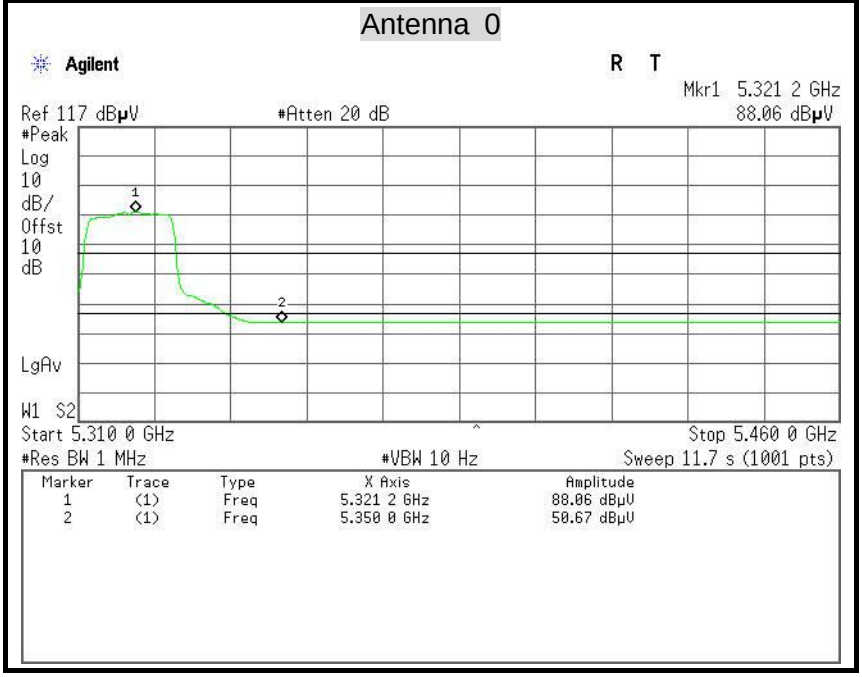
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	54.82	5.60	60.42	74.00	-13.58	Peak	Horizontal
2	5150.0000	44.99	5.60	50.59	54.00	-3.41	Average	Horizontal

IEEE 802.11a mode / 5320MHz

Detector mode: Peak **Polarity: Vertical**



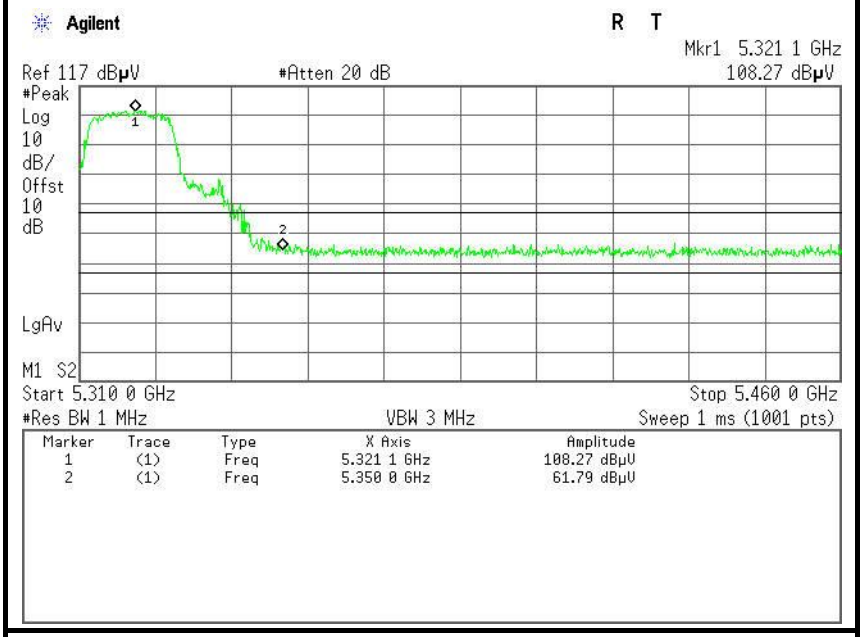
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	54.44	5.60	60.04	74.00	-13.96	Peak	Vertical
2	5350.0000	45.07	5.60	50.67	54.00	-3.33	Average	Vertical

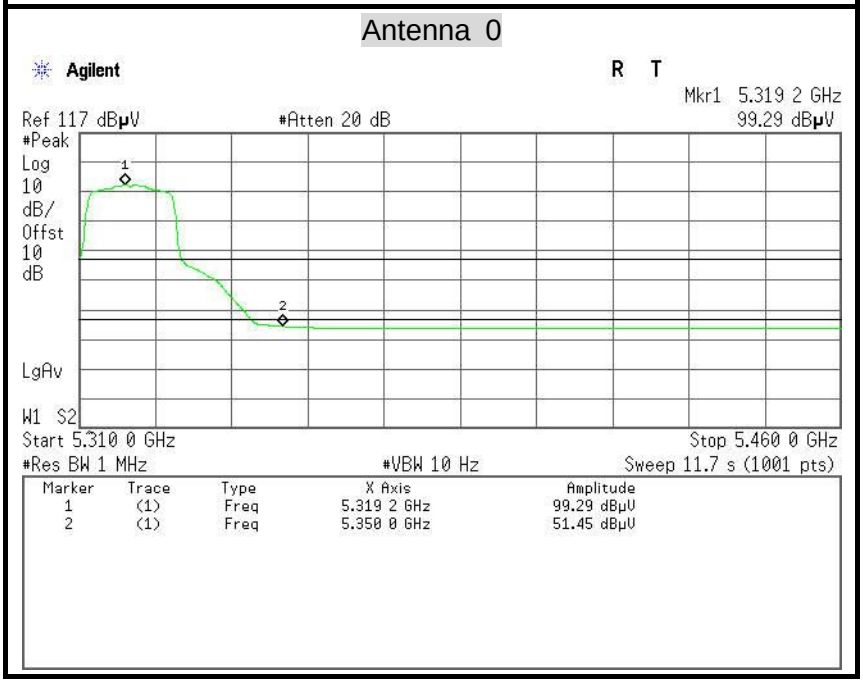
Detector mode: Peak **Polarity: Horizontal**

Antenna 0



Detector mode: Average **Polarity: Horizontal**

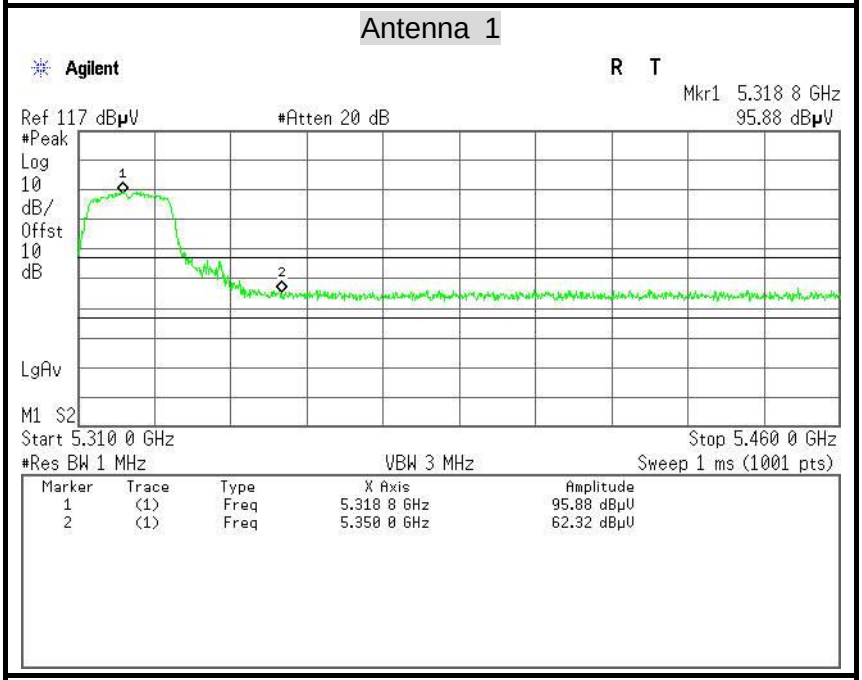
Antenna 0



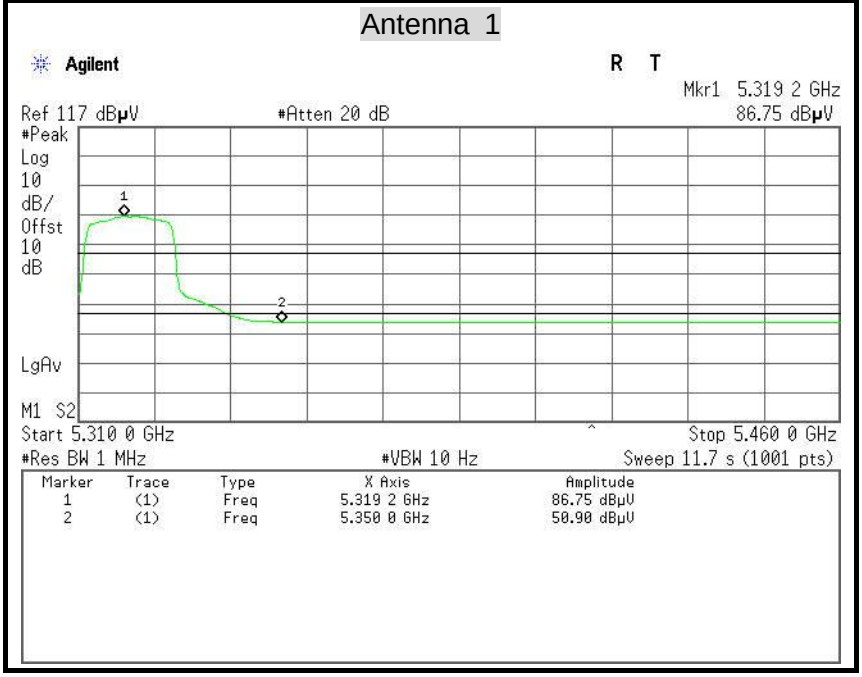
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	56.19	5.60	61.79	74.00	-12.21	Peak	Horizontal
2	5350.0000	45.85	5.60	51.45	54.00	-2.55	Average	Horizontal

IEEE 802.11a mode / 5320MHz

Detector mode: Peak **Polarity: Vertical**



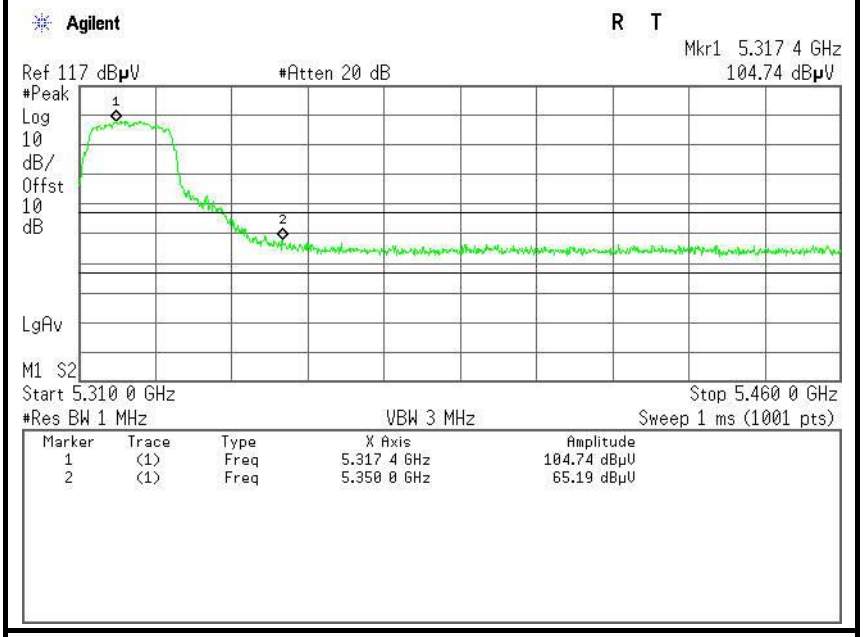
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	57.72	5.60	63.32	74.00	-10.68	Peak	Vertical
2	5350.0000	45.30	5.60	50.90	54.00	-3.10	Average	Vertical

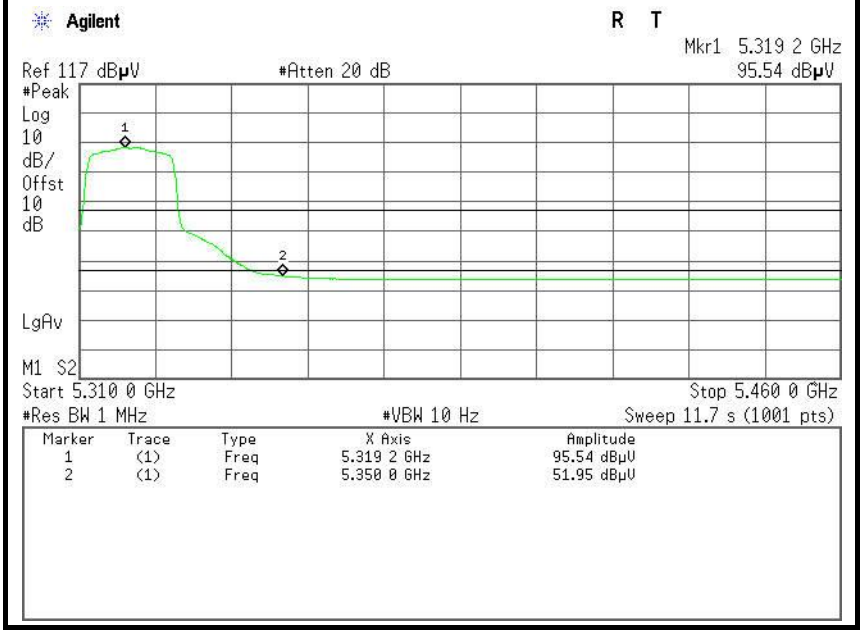
Detector mode: Peak **Polarity: Horizontal**

Antenna 1



Detector mode: Average **Polarity: Horizontal**

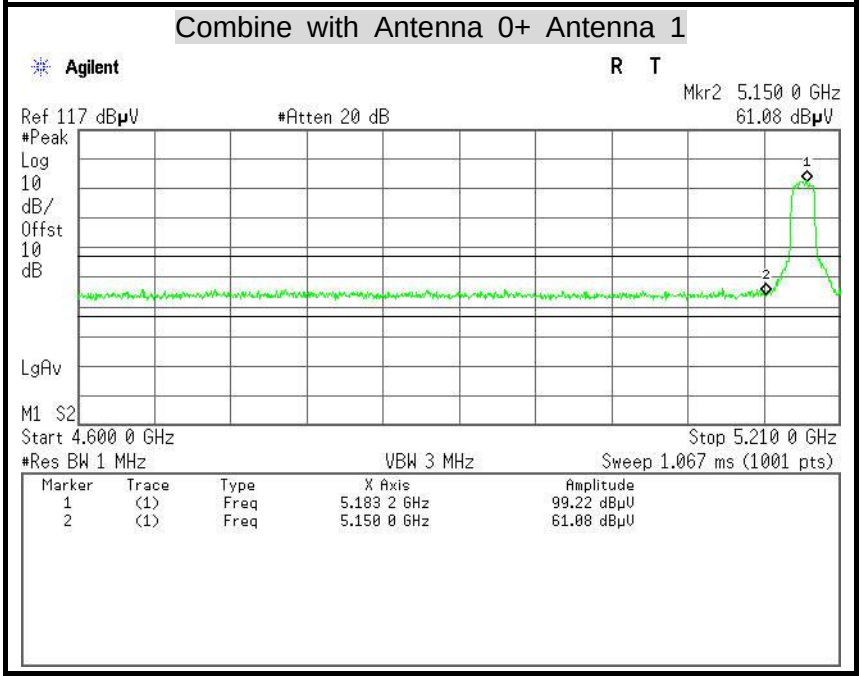
Antenna 1



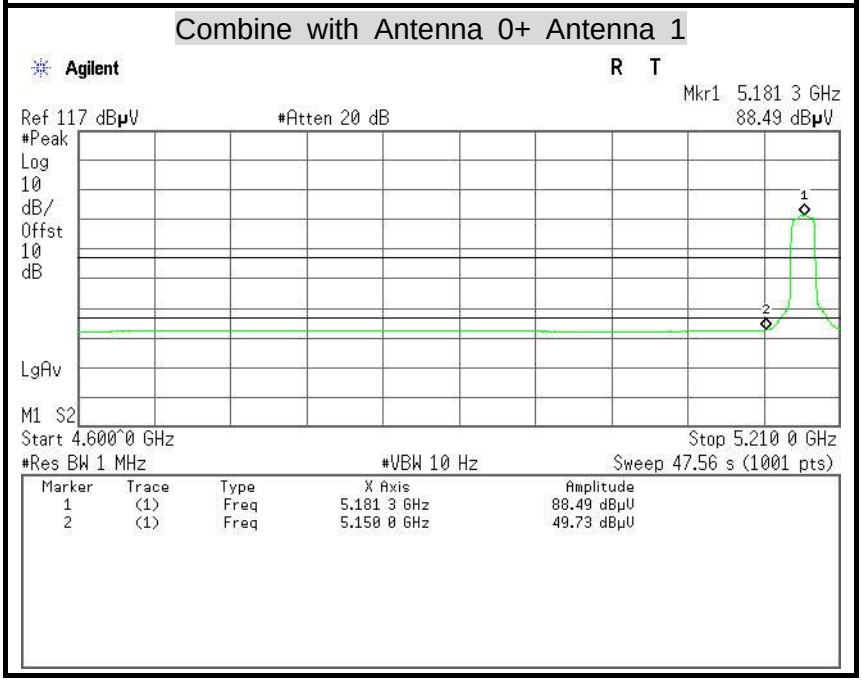
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	59.59	5.60	65.19	74.00	-8.81	Peak	Horizontal
2	5350.0000	46.35	5.60	51.95	54.00	-2.05	Average	Horizontal

IEEE 802.11n HT 20 MHz mode / 5180 MHz

Detector mode: Peak **Polarity: Vertical**



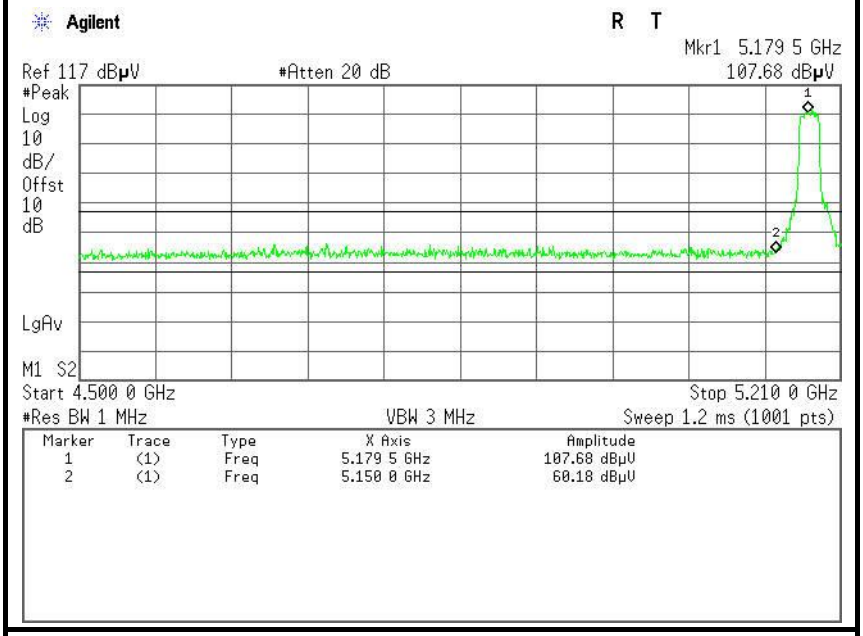
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	55.48	5.60	61.08	74.00	-12.92	Peak	Vertical
2	5150.0000	44.13	5.60	49.73	54.00	-4.27	Average	Vertical

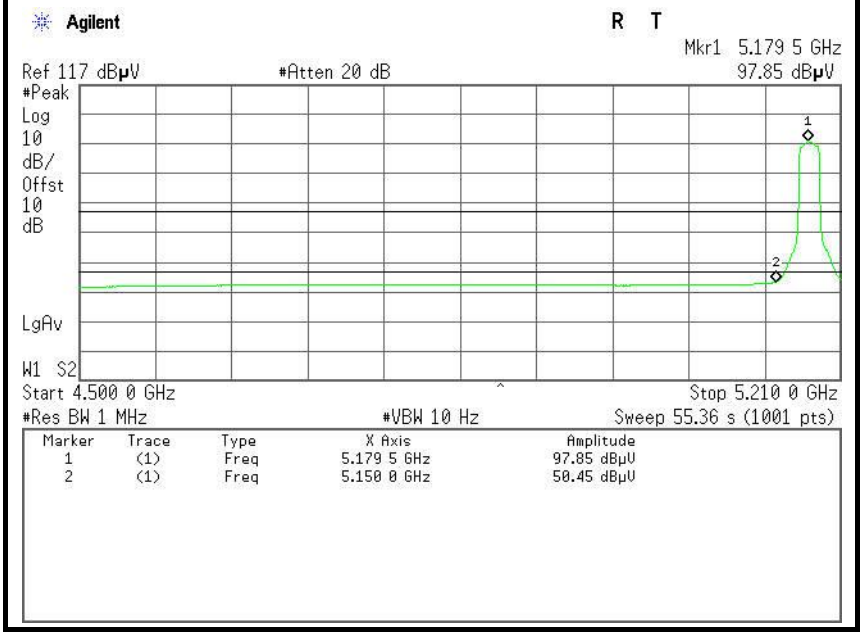
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

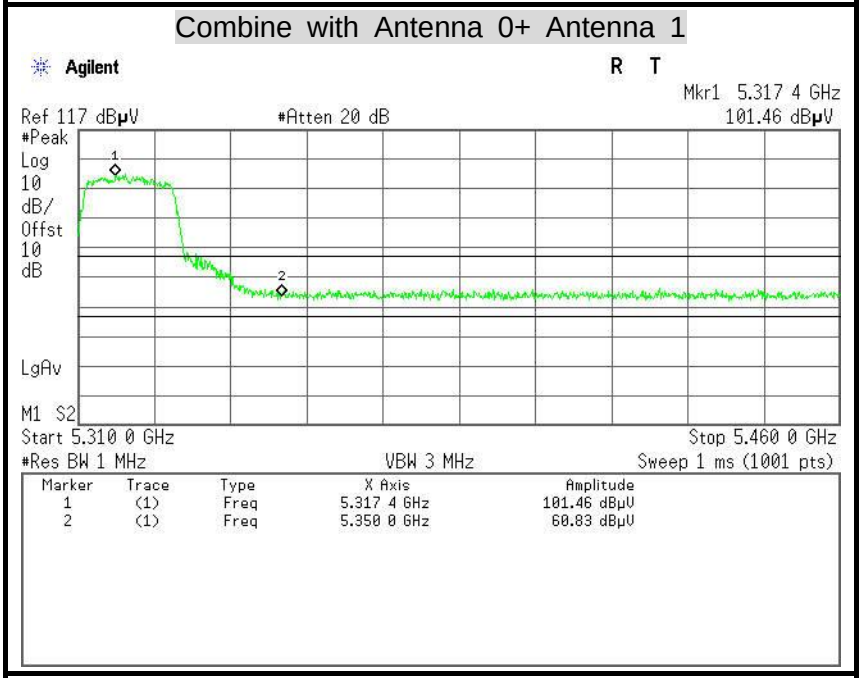
Combine with Antenna 0+ Antenna 1



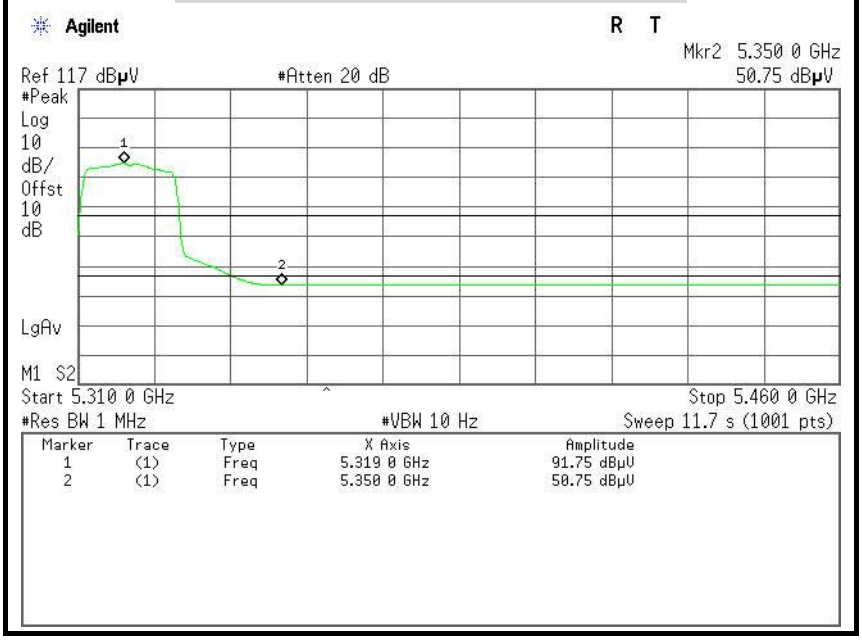
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	54.58	5.60	60.18	74.00	-13.82	Peak	Horizontal
2	5150.0000	44.85	5.60	50.45	54.00	-3.55	Average	Horizontal

IEEE 802.11n HT 20 MHz mode / 5320 MHz

Detector mode: Peak **Polarity: Vertical**



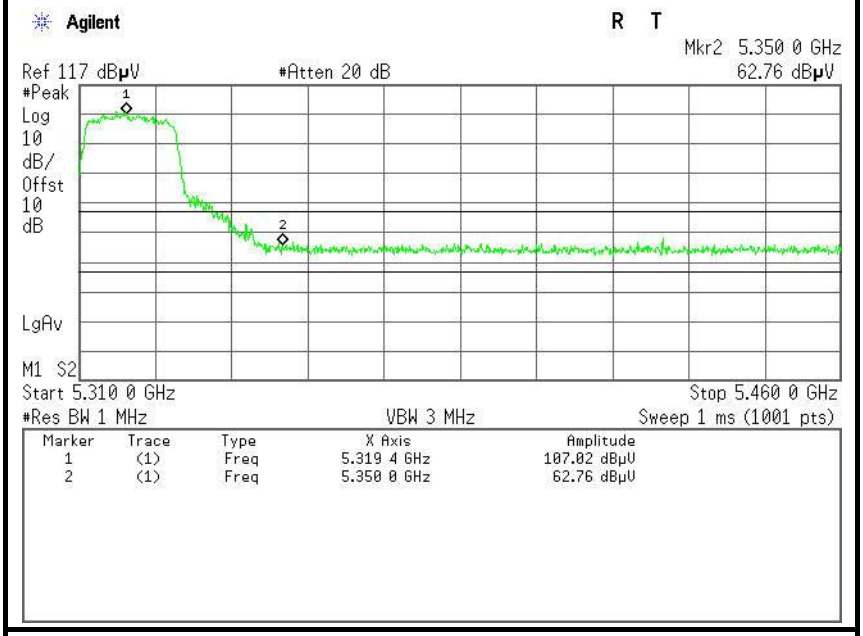
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	55.23	5.60	60.83	74.00	-13.17	Peak	Vertical
2	5350.0000	45.15	5.60	50.75	54.00	-3.25	Average	Vertical

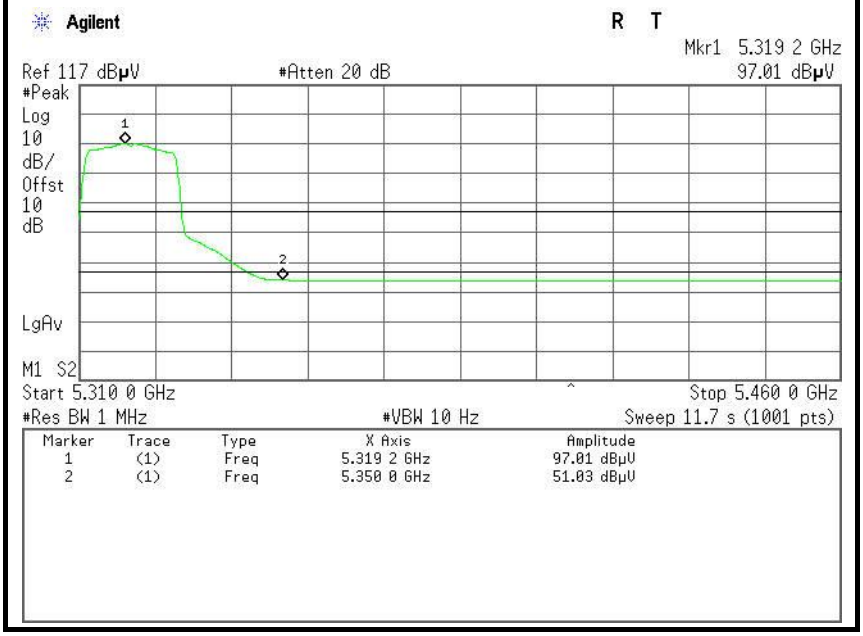
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

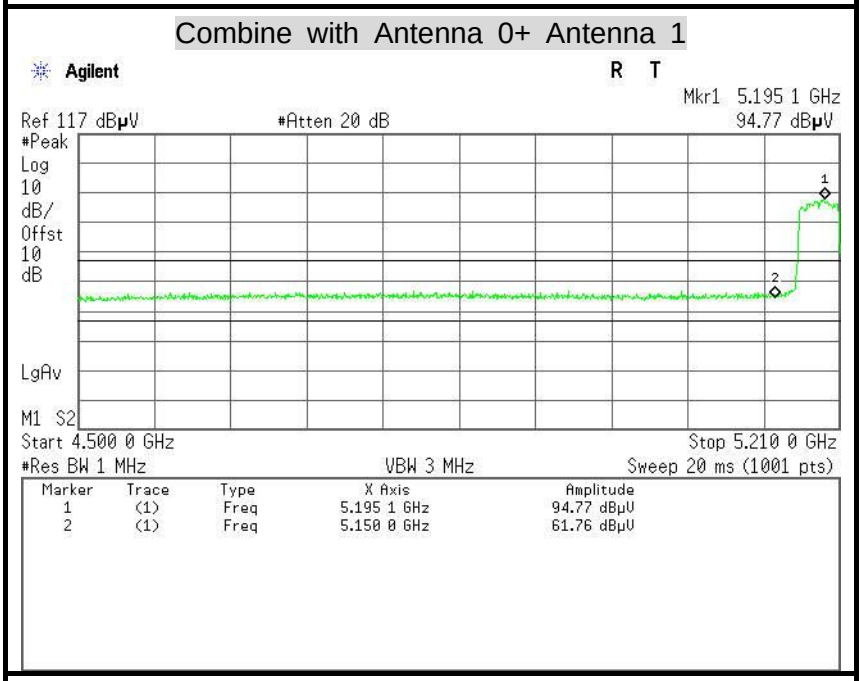
Combine with Antenna 0+ Antenna 1



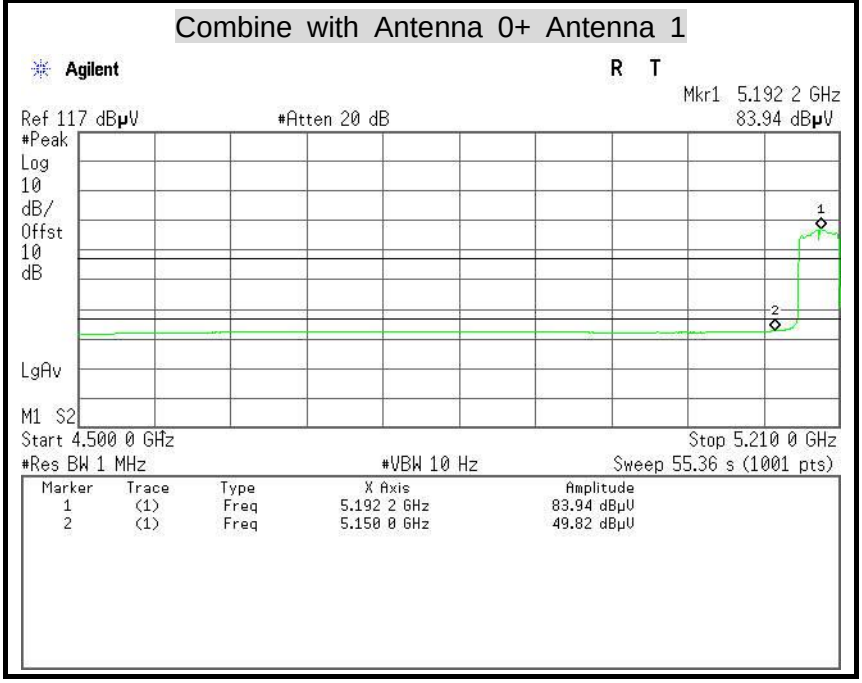
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	57.16	5.60	62.76	74.00	-11.24	Peak	Horizontal
2	5350.0000	45.43	5.60	51.03	54.00	-2.97	Average	Horizontal

IEEE 802.11n HT 40 MHz mode / 5190 MHz

Detector mode: Peak **Polarity: Vertical**



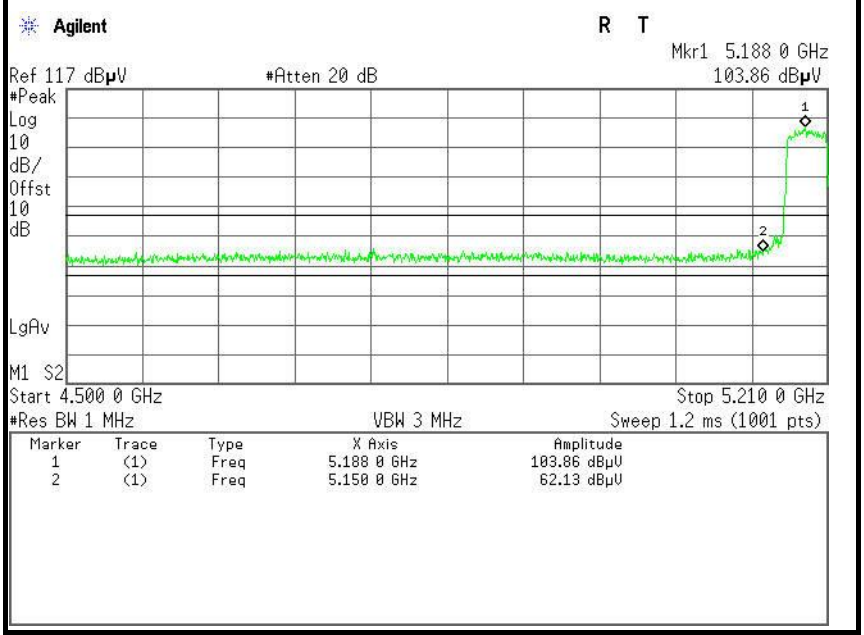
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	56.16	5.60	61.76	74.00	-12.24	Peak	Vertical
2	5150.0000	44.22	5.60	49.82	54.00	-4.18	Average	Vertical

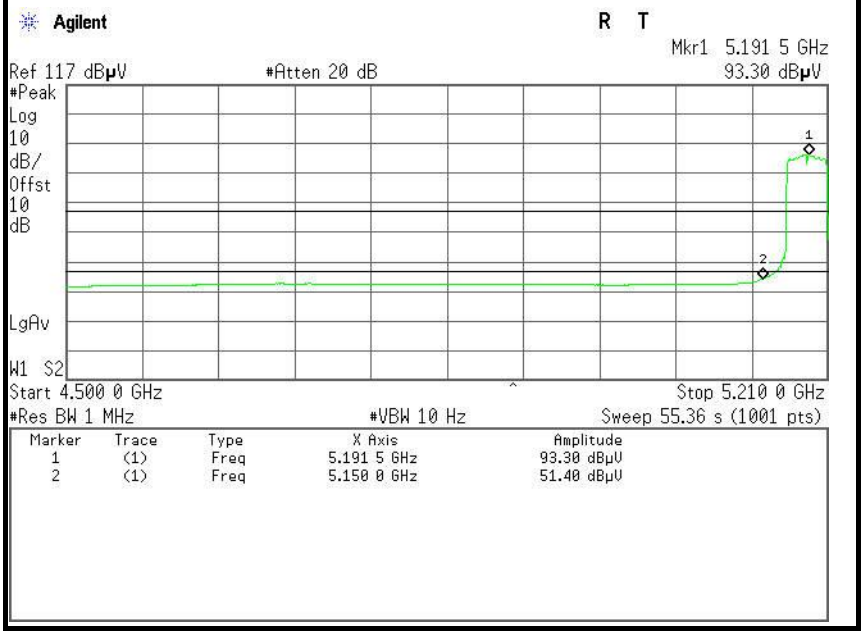
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1

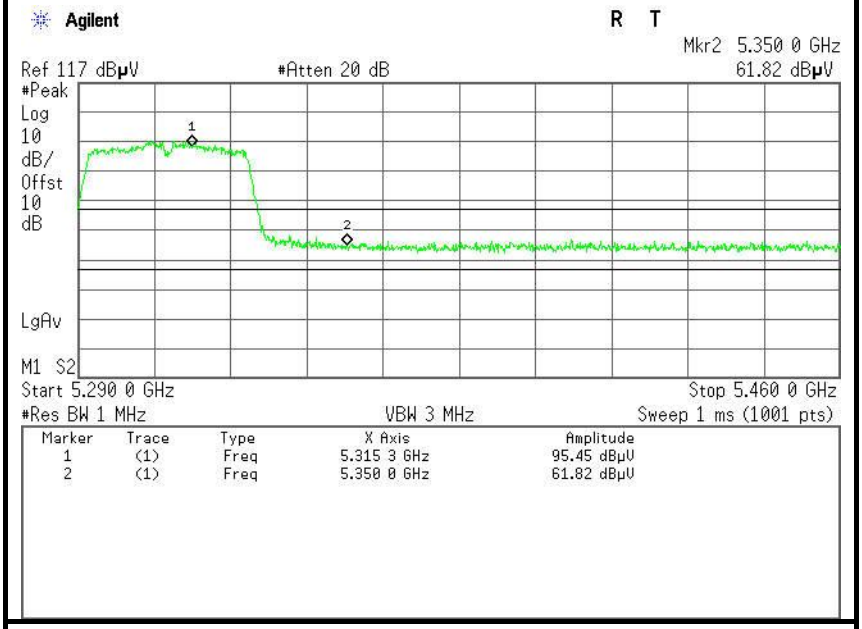


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	56.53	5.60	62.13	74.00	-11.87	Peak	Horizontal
2	5150.0000	45.80	5.60	51.40	54.00	-2.60	Average	Horizontal

IEEE 802.11n HT 40 MHz mode / 5310 MHz

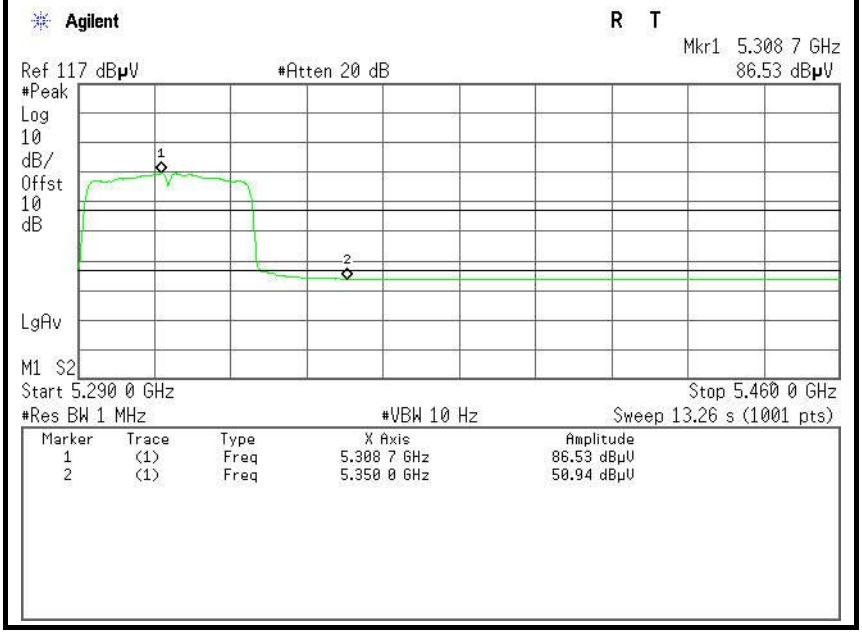
Detector mode: Peak **Polarity: Vertical**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Vertical**

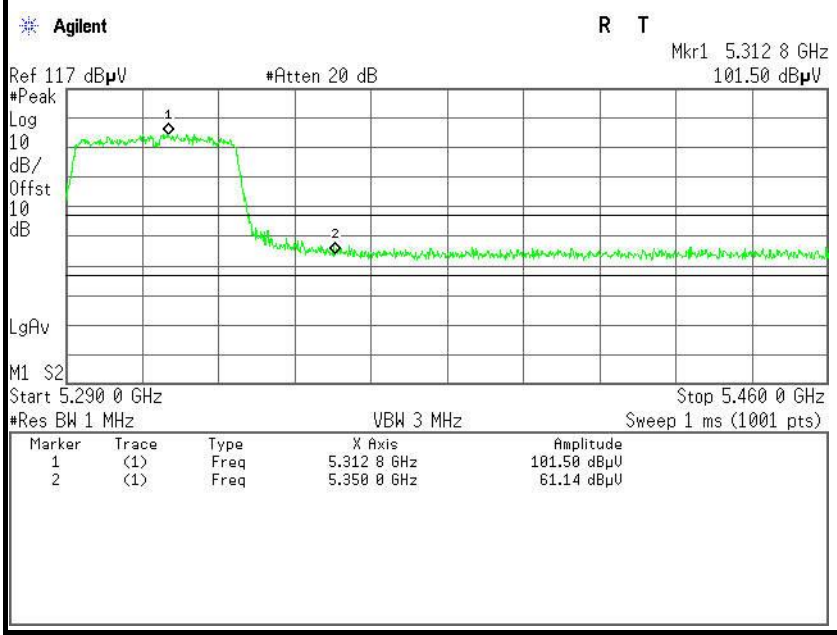
Combine with Antenna 0+ Antenna 1



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	56.22	5.60	61.82	74.00	-12.18	Peak	Vertical
2	5350.0000	45.34	5.60	50.94	54.00	-3.06	Average	Vertical

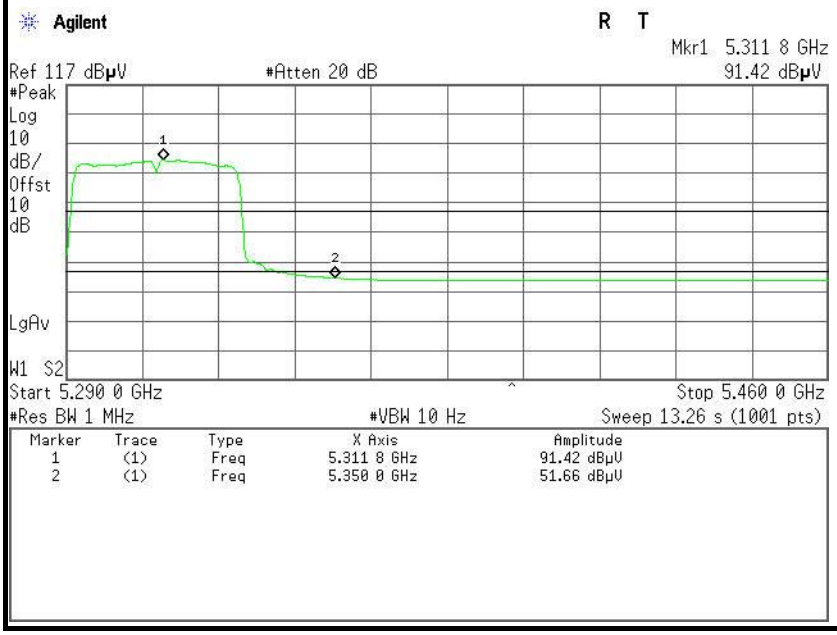
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

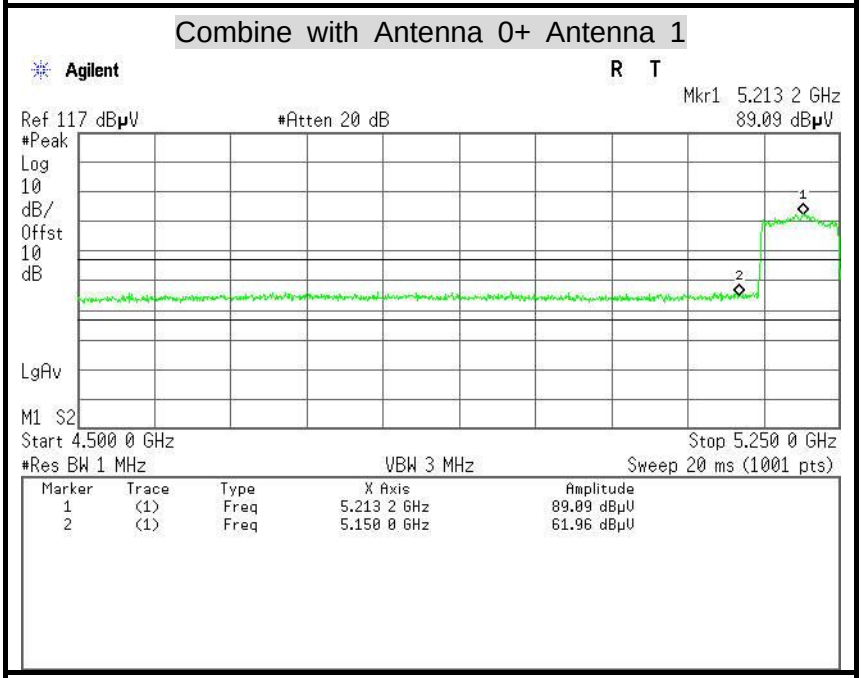
Combine with Antenna 0+ Antenna 1



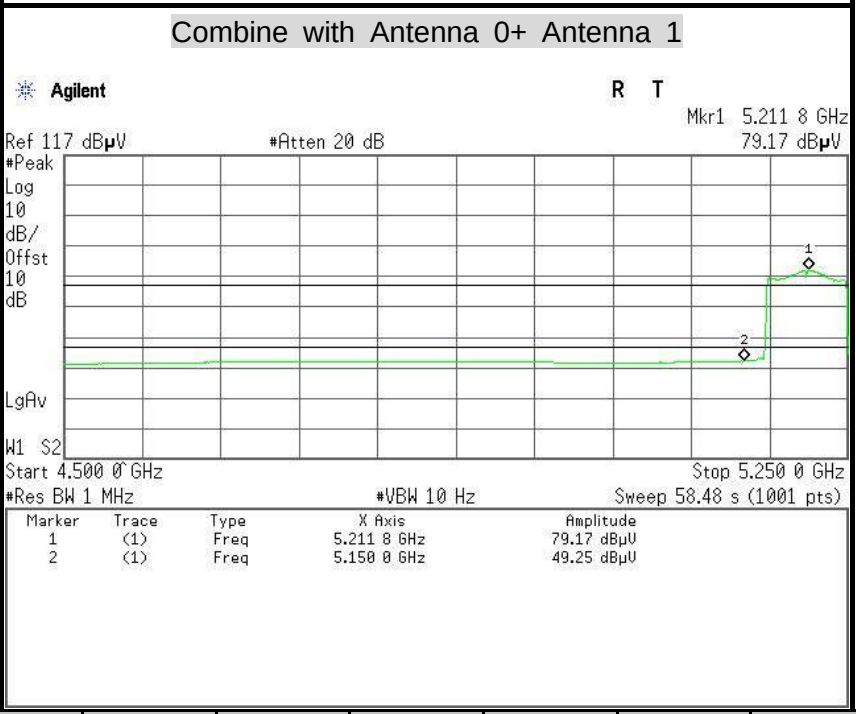
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	55.54	5.60	61.14	74.00	-12.86	Peak	Horizontal
2	5350.0000	46.06	5.60	51.66	54.00	-2.34	Average	Horizontal

IEEE 802.11ac 80 mode / 5210 MHz

Detector mode: Peak **Polarity: Vertical**



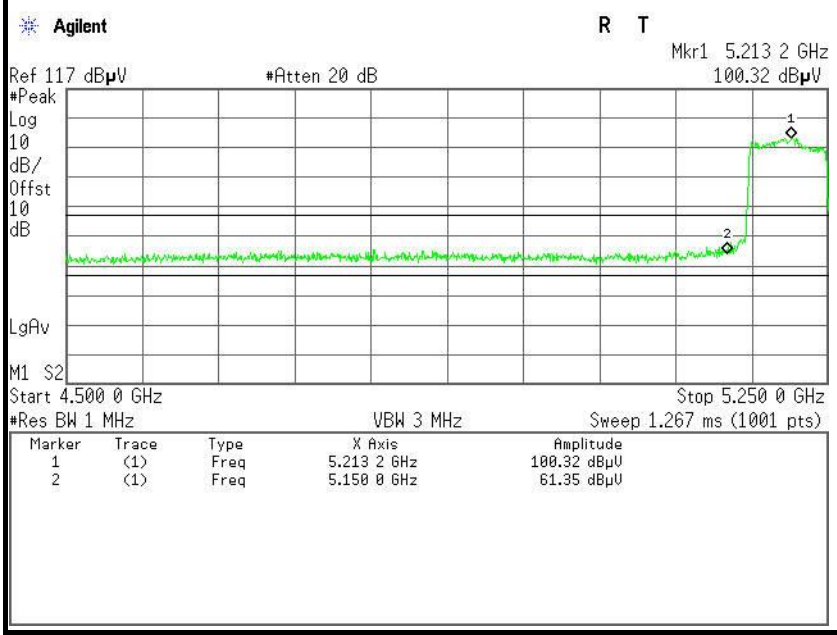
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	55.48	5.60	61.96	74.00	-12.04	Peak	Vertical
2	5150.0000	44.13	5.60	49.25	54.00	-4.75	Average	Vertical

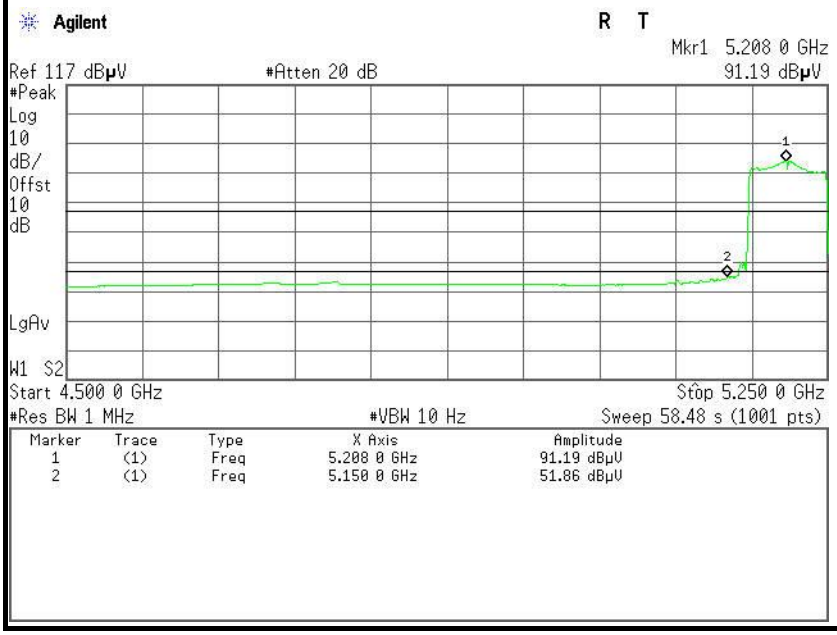
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

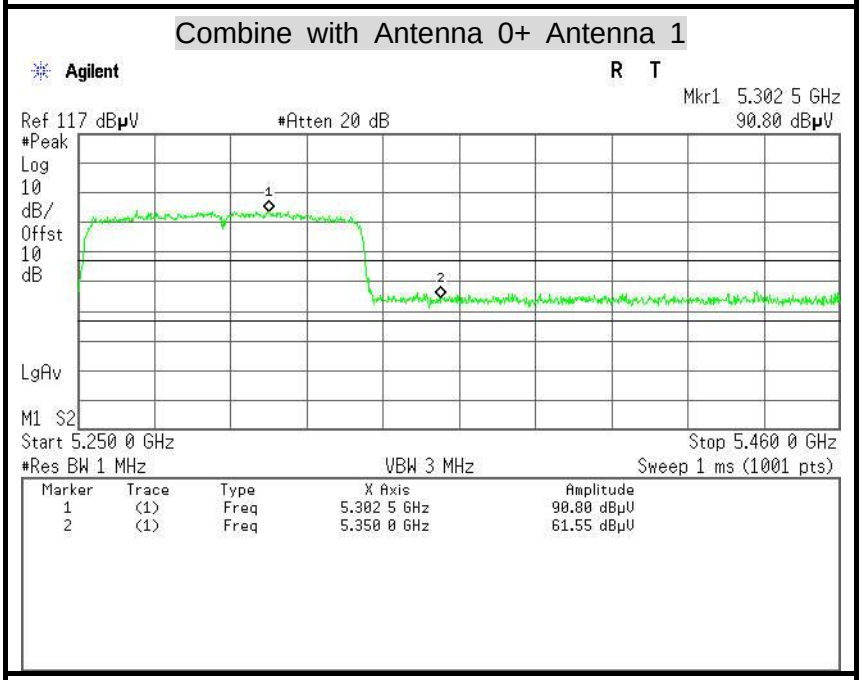
Combine with Antenna 0+ Antenna 1



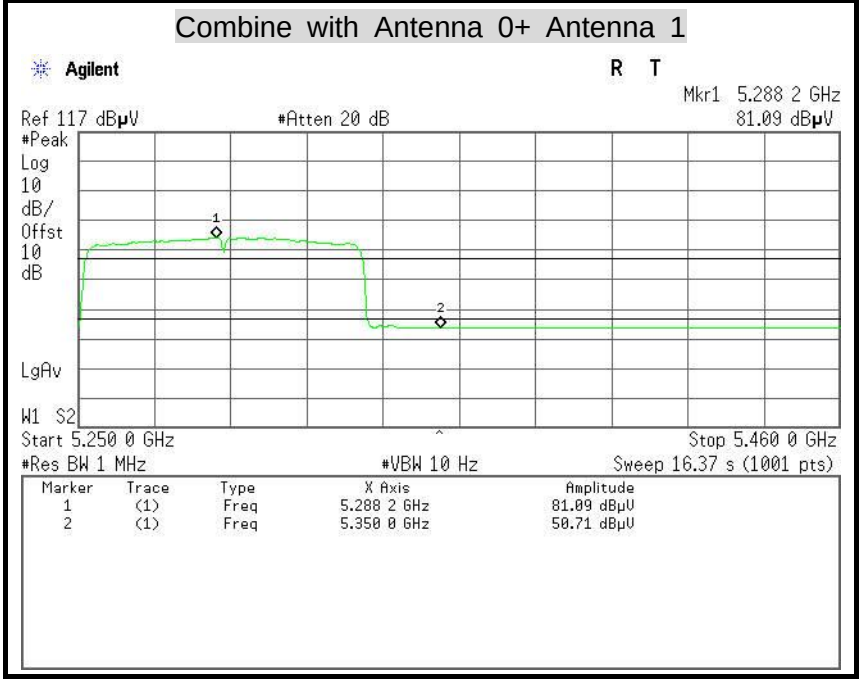
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	55.48	5.60	61.35	74.00	-12.65	Peak	Horizontal
2	5150.0000	44.13	5.60	51.86	54.00	-2.14	Average	Horizontal

IEEE 802.11ac 80 mode / 5290 MHz

Detector mode: Peak **Polarity: Vertical**



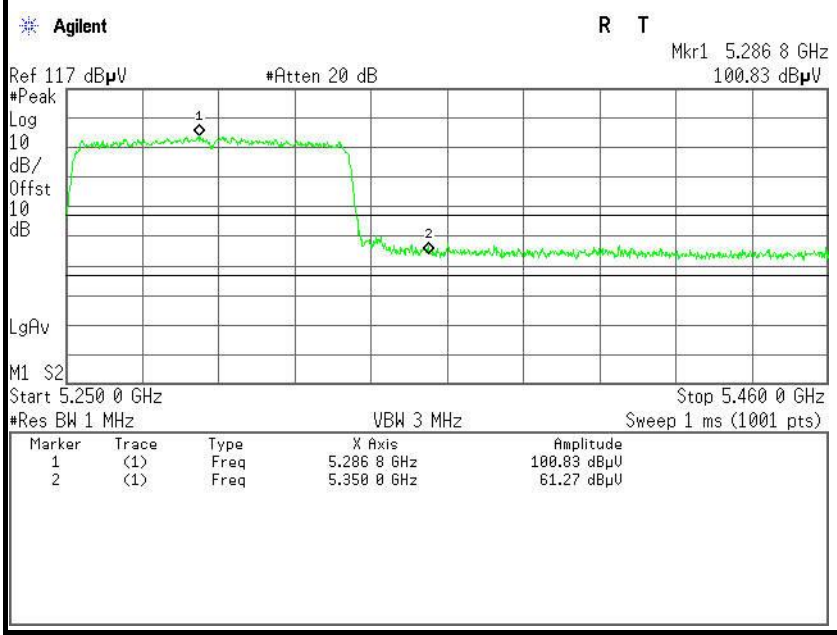
Detector mode: Average **Polarity: Vertical**



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	55.48	5.60	61.55	74.00	-12.45	Peak	Vertical
2	5350.0000	44.13	5.60	50.71	54.00	-3.29	Average	Vertical

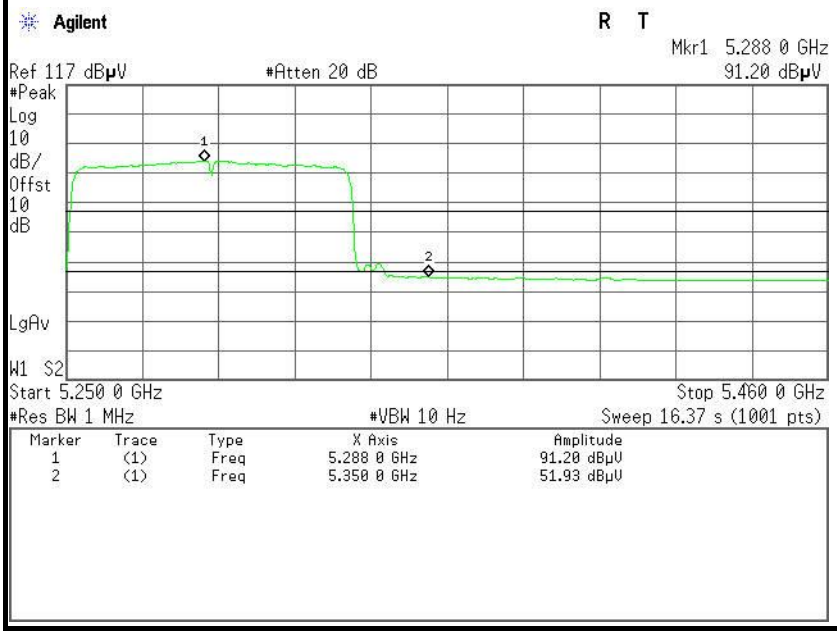
Detector mode: Peak **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



Detector mode: Average **Polarity: Horizontal**

Combine with Antenna 0+ Antenna 1



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	55.48	5.60	61.27	74.00	-12.73	Peak	Horizontal
2	5350.0000	44.13	5.60	51.93	54.00	-2.07	Average	Horizontal

6.6 PEAK POWER SPECTAL DENSITY

6.6.1 LIMIT

According to §15.407(a) & FCC R&O FCC 14-30

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

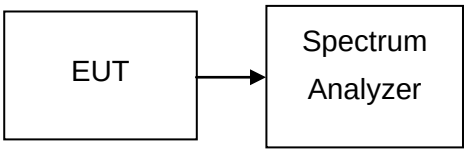
Note to paragraph (a)(3): The Commission strongly recommends that parties employing U-NII devices to provide critical communications services should determine if there are any nearby Government radar systems that could affect their operation.

6.6.2MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017

Remark: *Each piece of equipment is scheduled for calibration once a year.*

6.6.3 TEST CONFIGURATION



6.6.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. For devices operating in the bands 5.15-5.25 GHz,Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span > 26dB bandwidth, Sweep=1ms
3. For devices operating in the bands 5.725-5.85 GHz,Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span > 26dB bandwidth, Sweep=1ms
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed

6.6.5 TEST RESULTS

Test Data

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margain		Result
		Antenna 0	Antenna 1		Antenna 0	Antenna 1	
Low	5180	3.850	2.958	11	-7.150	-8.042	PASS
Mid	5200	3.282	5.856		-7.718	-5.144	PASS
High	5240	3.507	5.746		-7.493	-5.254	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margain		Result
		Antenna 0	Antenna 1		Antenna 0	Antenna 1	
Low	5260	4.535	4.085	11	-6.465	-6.915	PASS
Mid	5300	5.267	4.643		-5.733	-6.357	PASS
High	5320	5.243	4.933		-5.757	-6.067	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margain		Result
		Antenna 0	Antenna 1		Antenna 0	Antenna 1	
Low	5500	2.212	2.238	11	-8.788	-8.762	PASS
Mid	5580	3.917	3.587		-7.083	-7.413	PASS
High	5700	6.376	5.823		-4.624	-5.177	PASS

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Limit (dBm)	Margain		Result
		Antenna 0	Antenna 1			Antenna 0	Antenna 1	
Low	5745	6.001	5.684	-3.01	30	-27.009	-27.326	PASS
Mid	5785	5.844	6.021	-3.01		-27.166	-26.989	PASS
High	5825	5.956	6.043	-3.01		-27.054	-26.967	PASS

Remark: factor =10*log10 (500/RBW)

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5180	1.820	1.778	4.809	11.00	-6.191	PASS
Mid	5200	1.411	1.364	4.398		-6.602	PASS
High	5240	1.563	1.515	4.549		-6.451	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5260	4.182	4.350	7.277	11.00	-3.723	PASS
Mid	5300	4.106	4.781	7.467		-3.533	PASS
High	5320	4.890	4.939	7.925		-3.075	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5500	2.045	2.210	5.139	11.00	-5.861	PASS
Mid	5580	3.815	3.614	6.726		-4.274	PASS
High	5700	6.015	5.742	8.891		-2.109	PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1					
Low	5745	5.489	5.942	-3.01	5.722	30.00	-24.278	PASS
Mid	5785	5.683	5.632	-3.01	5.658		-24.342	PASS
High	5825	5.944	5.887	-3.01	5.916		-24.084	PASS

Remark: factor =10*log10 (500/RBW)

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5190	-0.575	-0.854	2.298	11.00	-8.702	PASS
High	5230	-0.155	-0.070	2.898		-8.102	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5270	0.480	-0.788	2.902	11.00	-8.098	PASS
High	5310	0.368	-0.051	3.174		-7.826	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
Low	5510	-1.928	-2.825	0.657	11.00	-10.343	PASS
Mid	5550	-1.723	-2.053	1.125		-9.875	PASS
High	5670	1.727	0.760	4.281		-6.719	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1					
Low	5755	1.861	0.984	-3.01	1.445	30.00	-28.555	PASS
High	5795	1.589	1.055	-3.01	1.331		-28.669	PASS

Remark: factor =10*log10 (500/RBW)

Test mode: IEEE 802.11ac 80 mode / 5210MHz

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
	5210	-2.887	-2.547	0.297	11.00	-10.703	PASS

Test mode: IEEE 802.11ac 80 mode / 5290MHz

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
	5290	-0.231	-1.682	2.114	11.00	-8.886	PASS

Test mode: IEEE 802.11ac 80 mode / 5530MHz

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1				
	5530	-3.445	-3.972	-0.690	11.00	-11.690	PASS

Test mode: IEEE 802.11ac 80 mode / 5775MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1					
	5775	-0.258	-1.130	-3.01	-0.672	30.00	-30.672	PASS

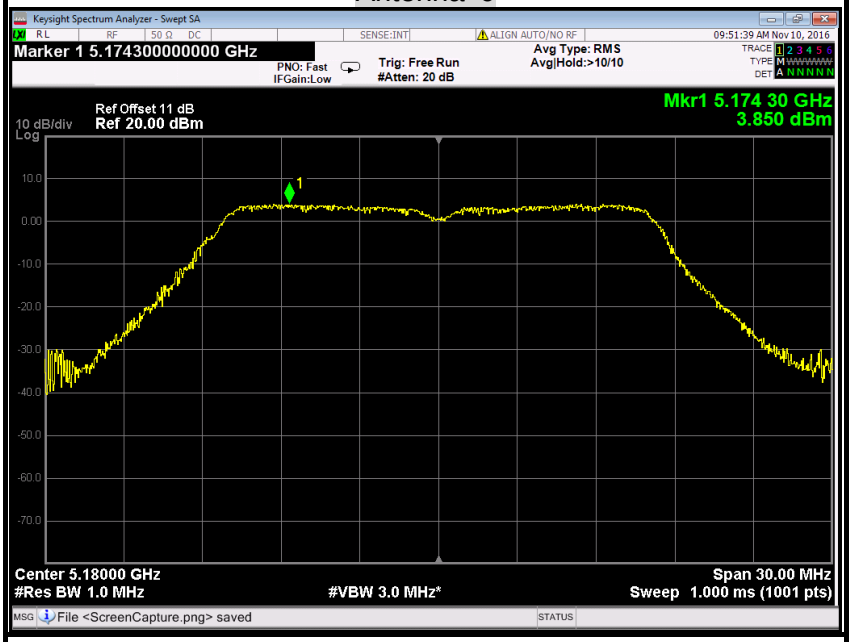
Remark: factor =10*log10 (500/RBW)

Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

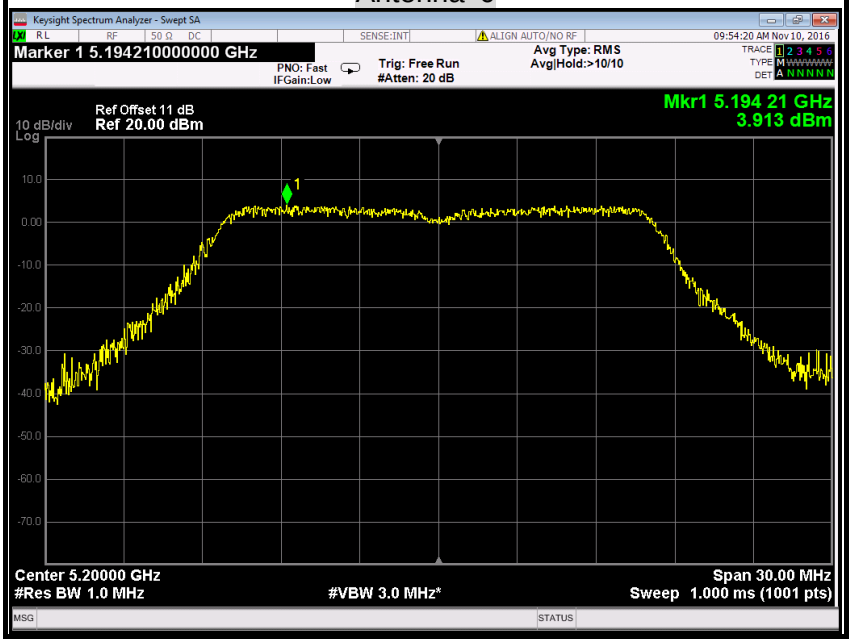
PPSD (CH Low)

Antenna 0



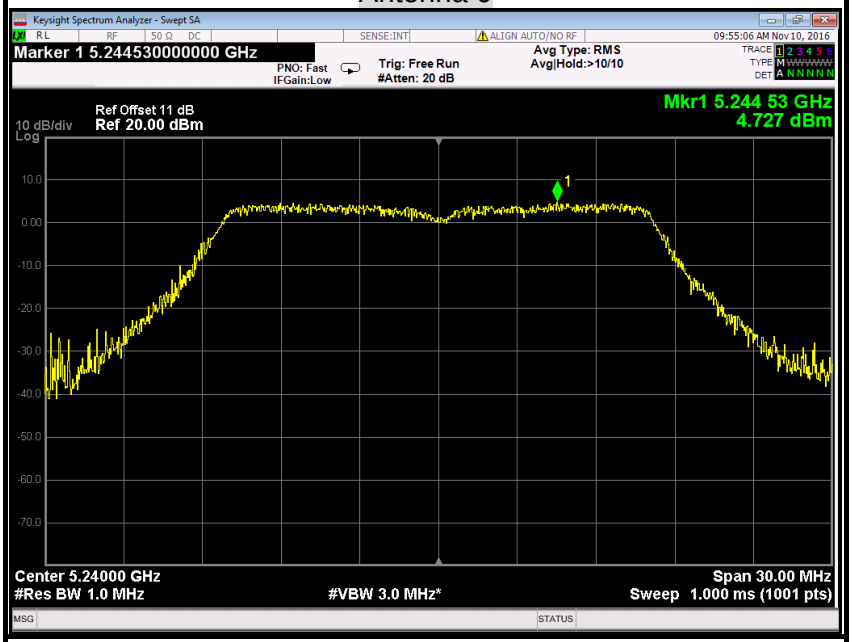
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

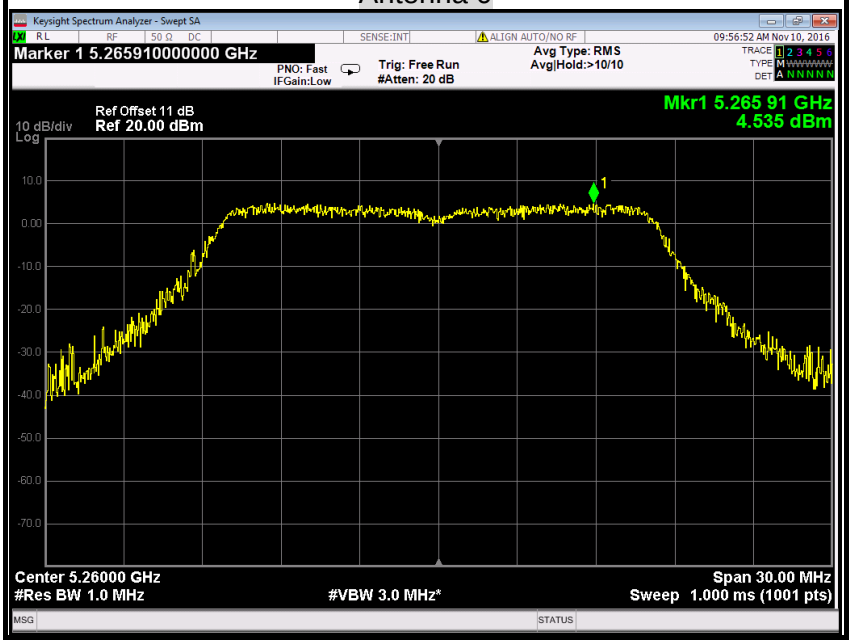
Antenna 0



IEEE 802.11a mode / 5260~ 5320MHz

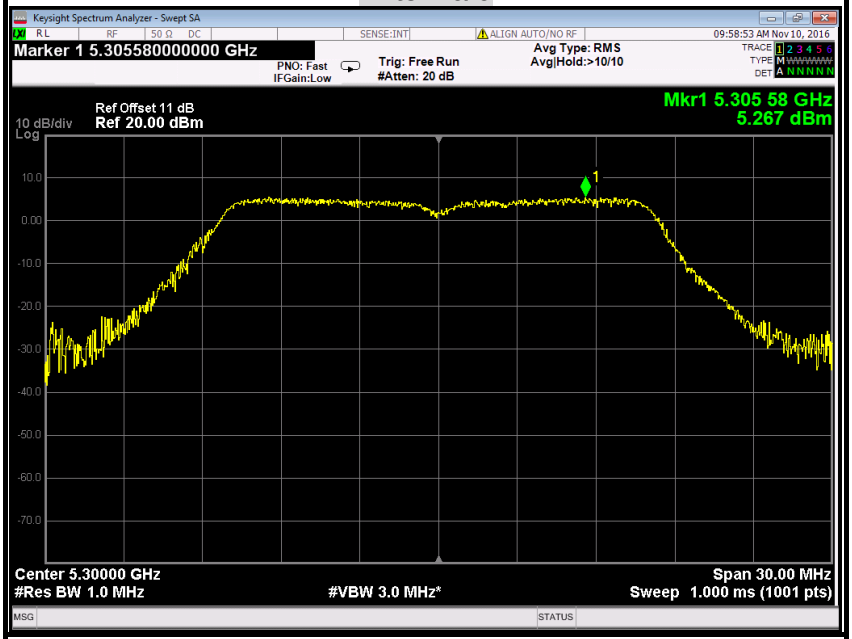
PPSD (CH Low)

Antenna 0



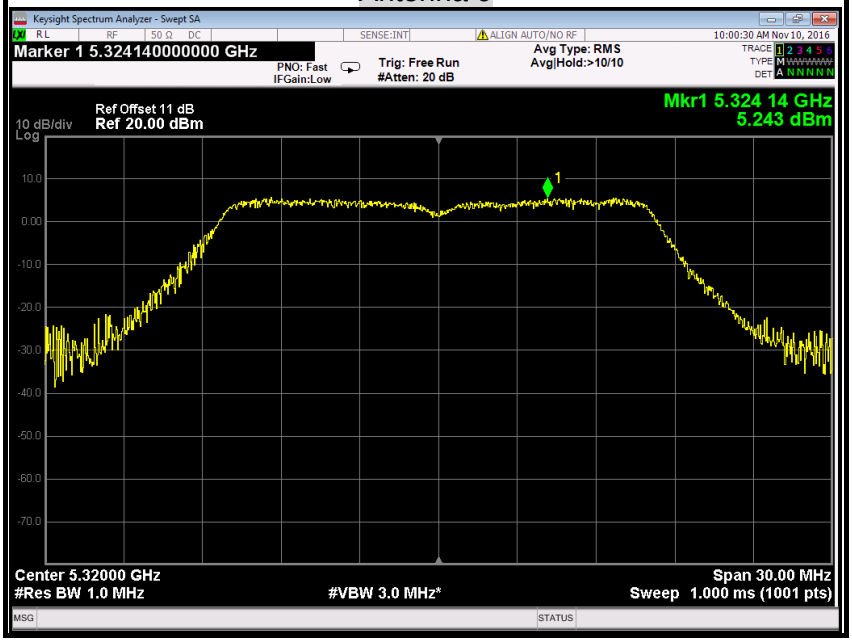
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

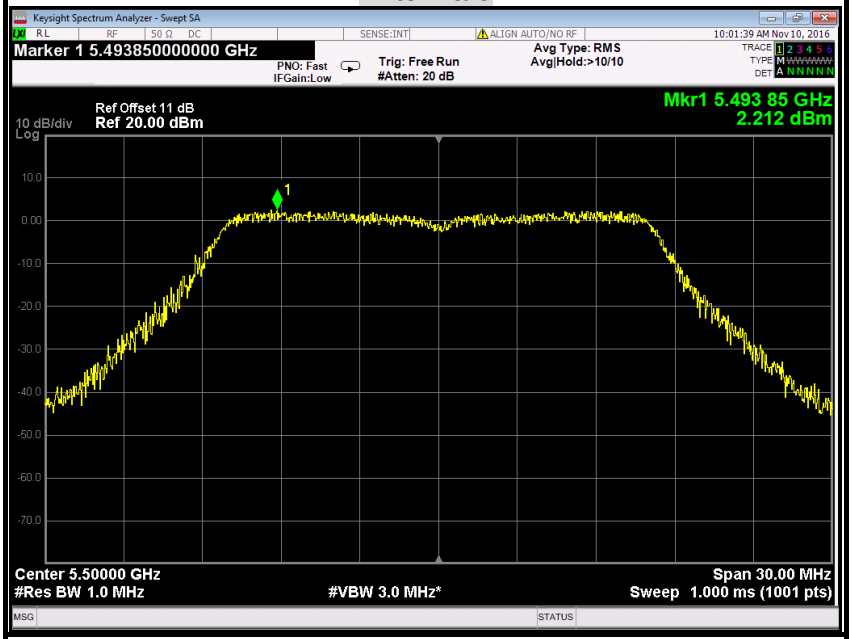
Antenna 0



IEEE 802.11a mode / 5500 ~ 5700MHz

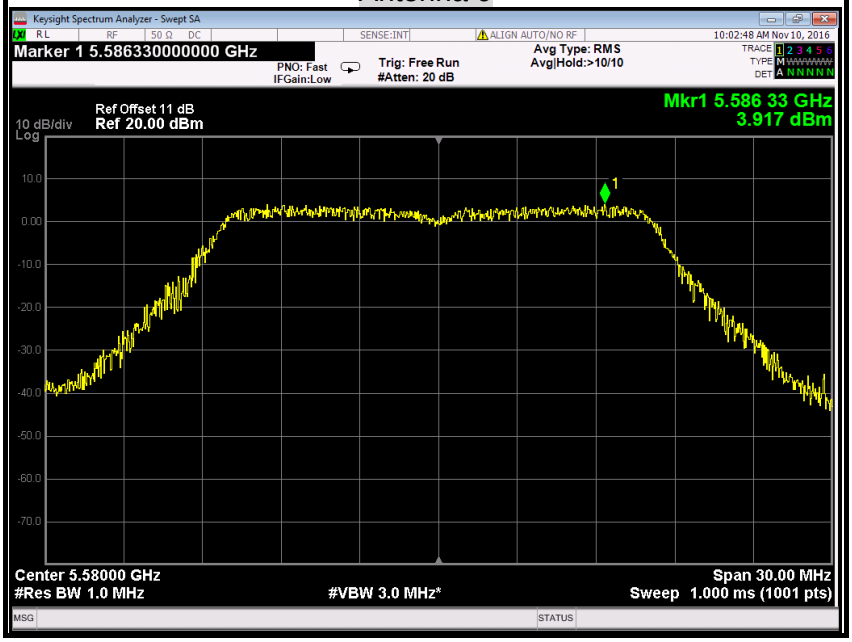
PPSD (CH Low)

Antenna 0



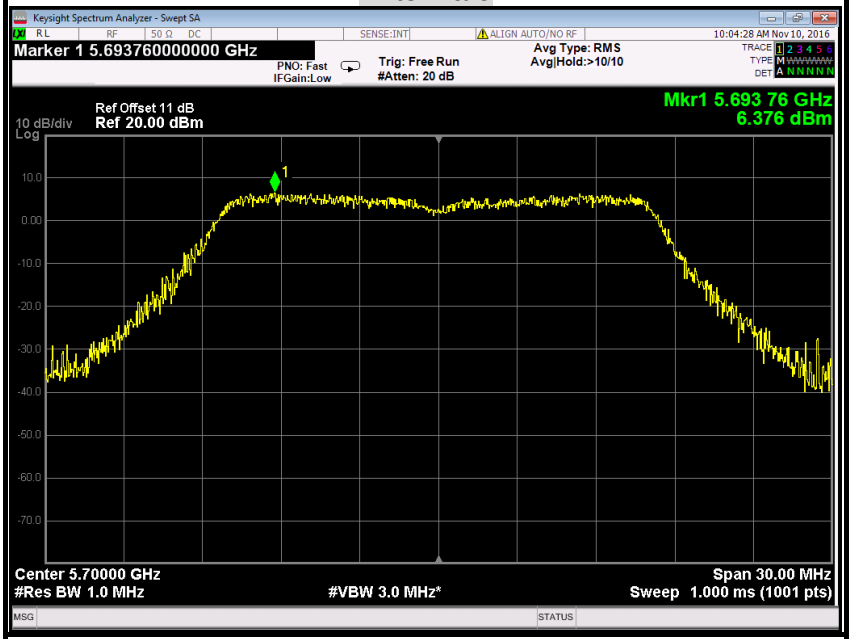
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

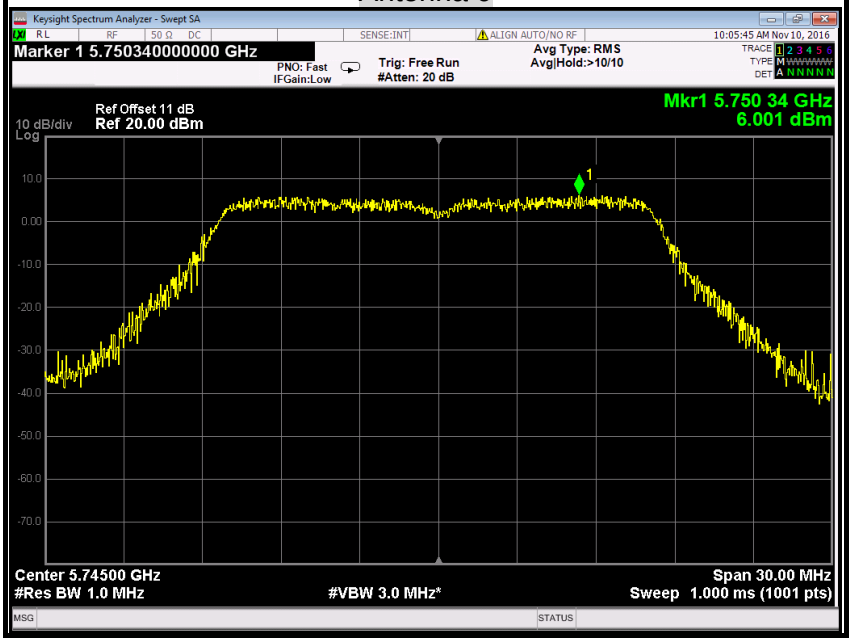
Antenna 0



IEEE 802.11a mode / 5745 ~ 5825MHz

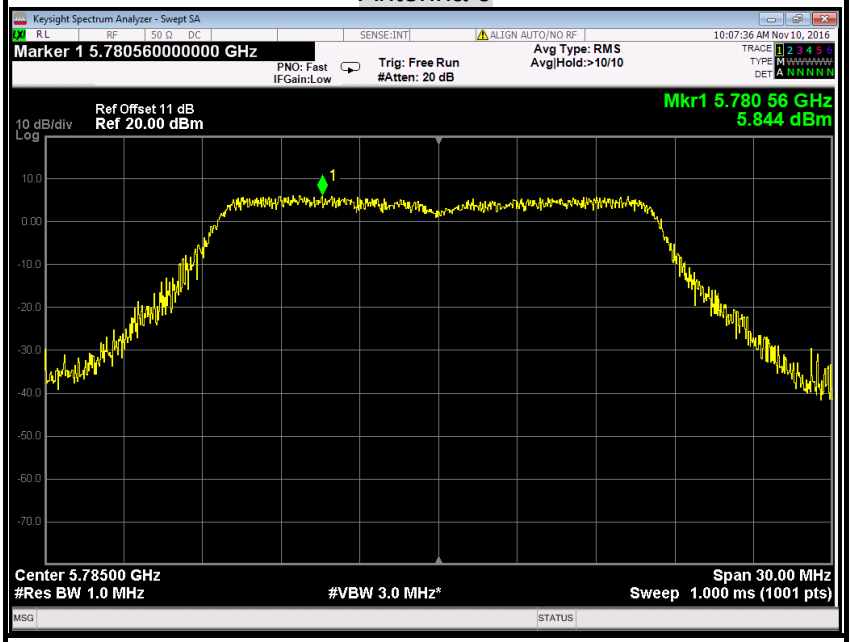
PPSD (CH Low)

Antenna 0



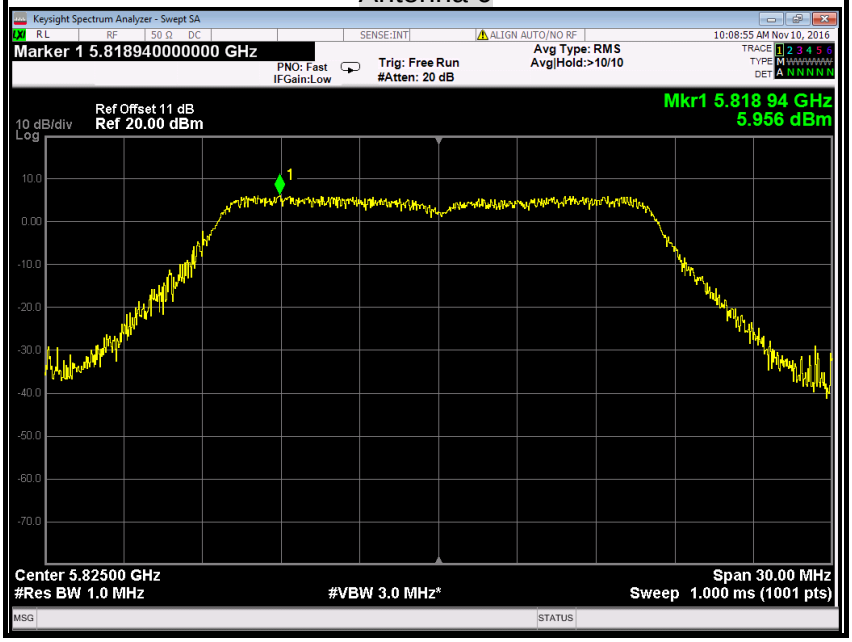
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

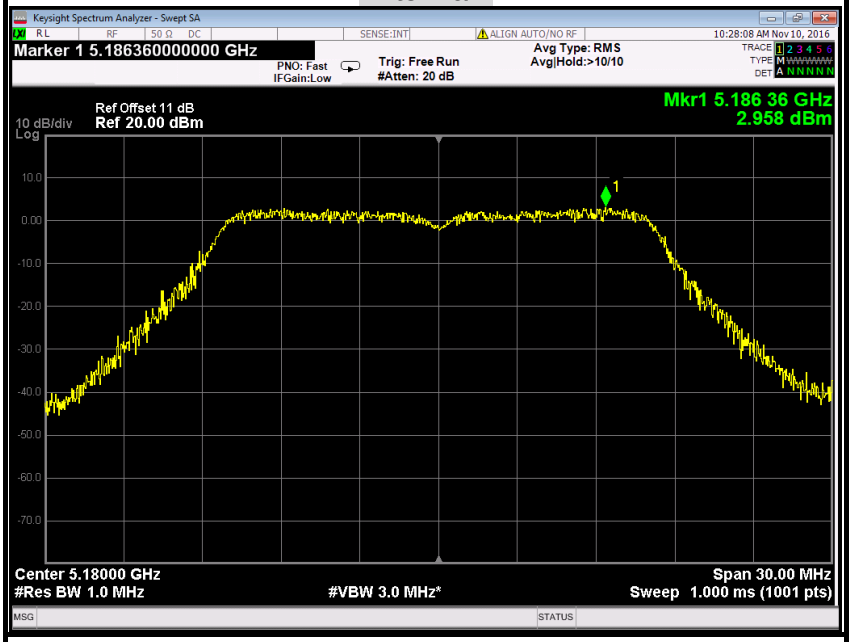
Antenna 0



IEEE 802.11a mode / 5180 ~ 5240MHz

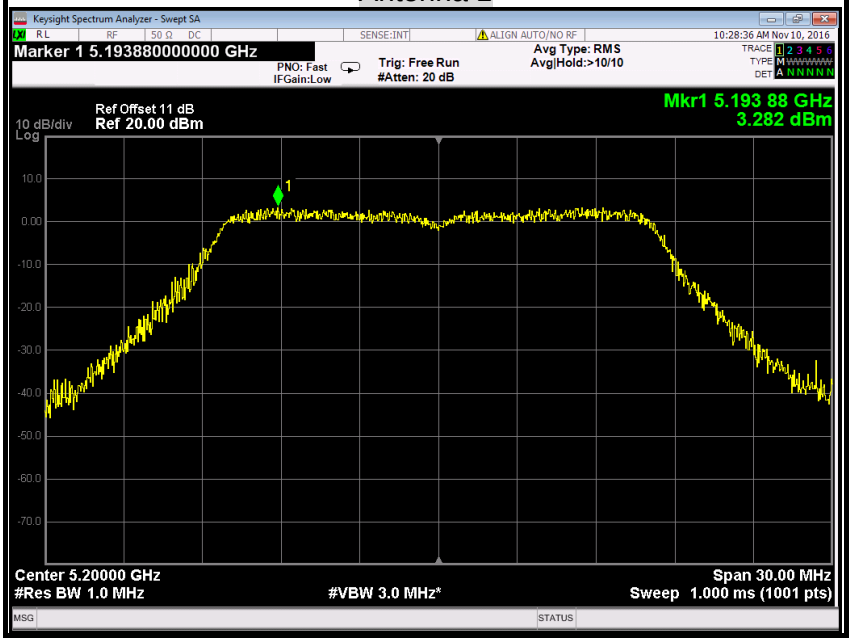
PPSD (CH Low)

Antenna 1



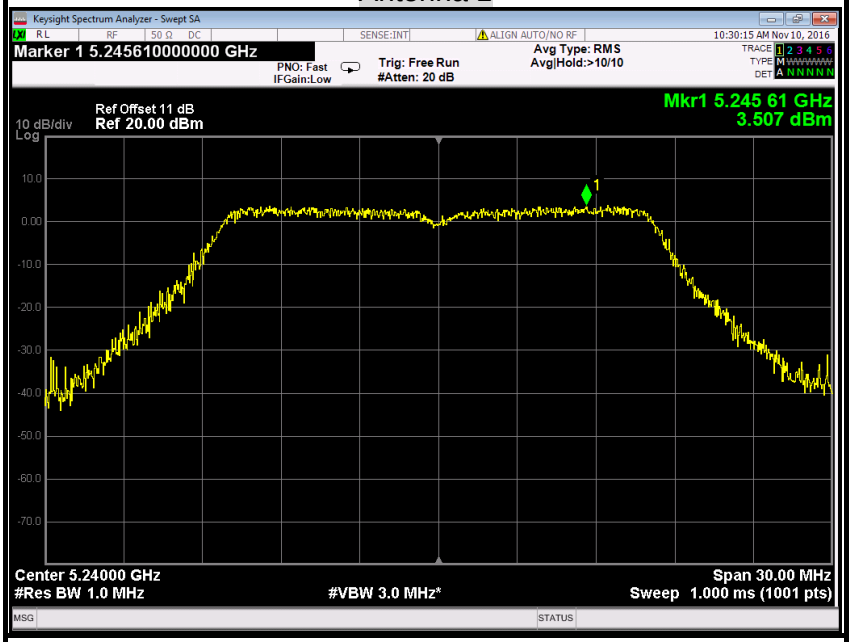
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

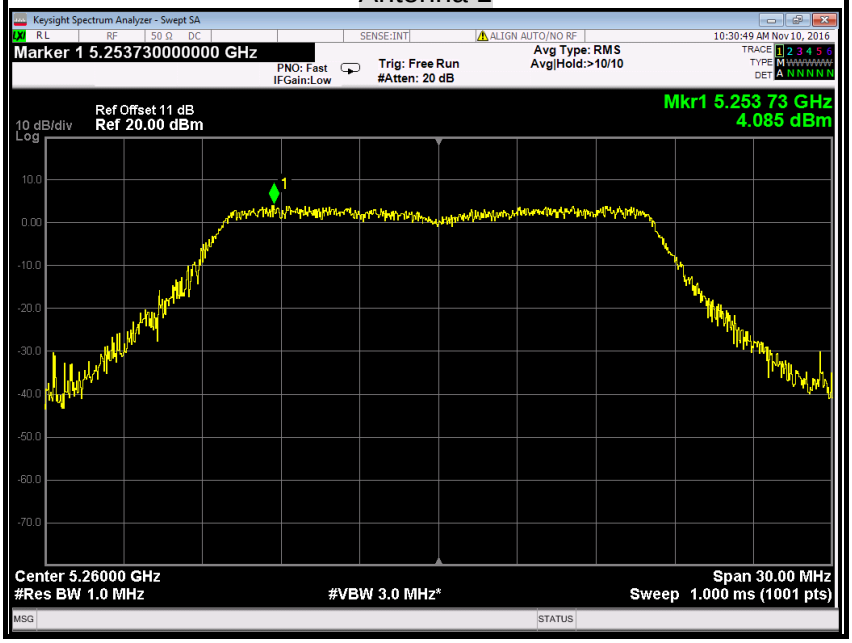
Antenna 1



IEEE 802.11a mode / 5260~ 5320MHz

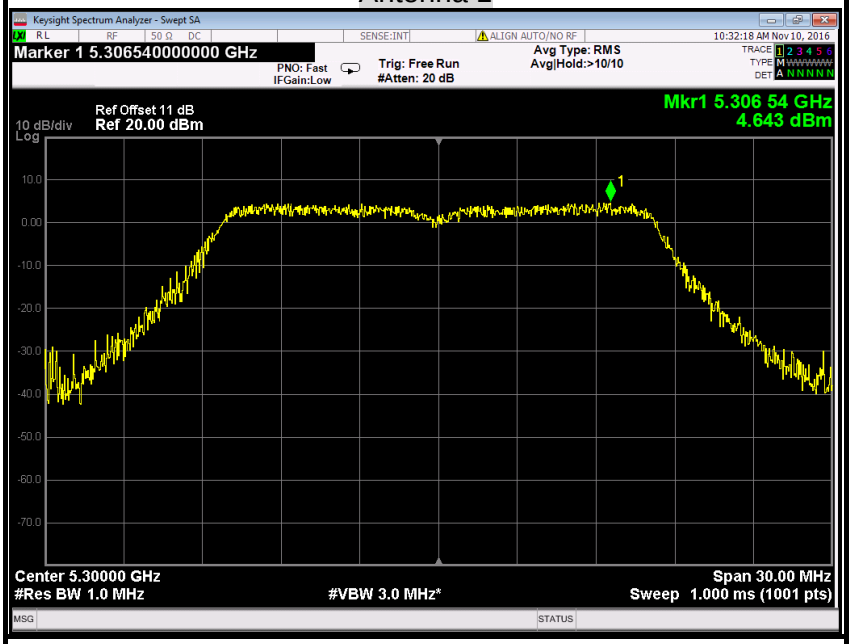
PPSD (CH Low)

Antenna 1



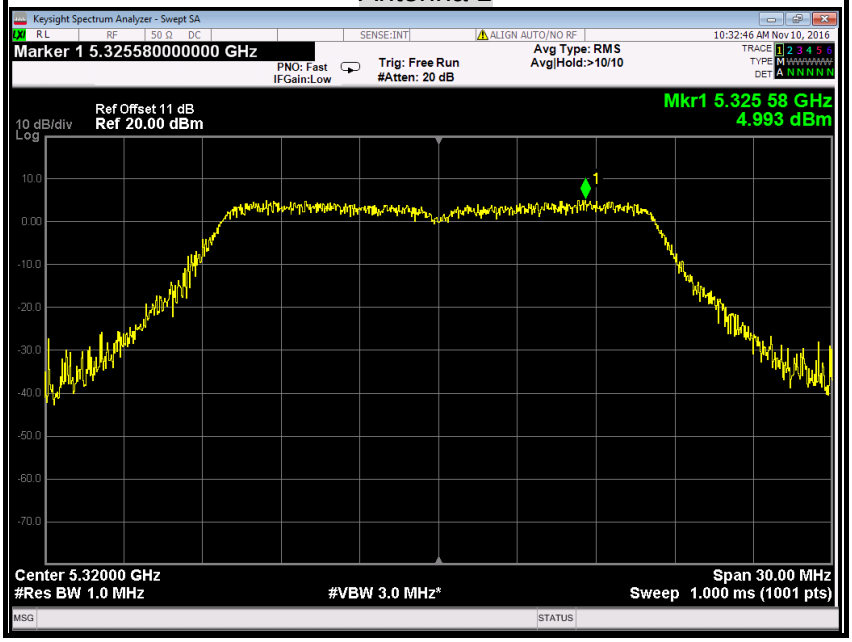
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

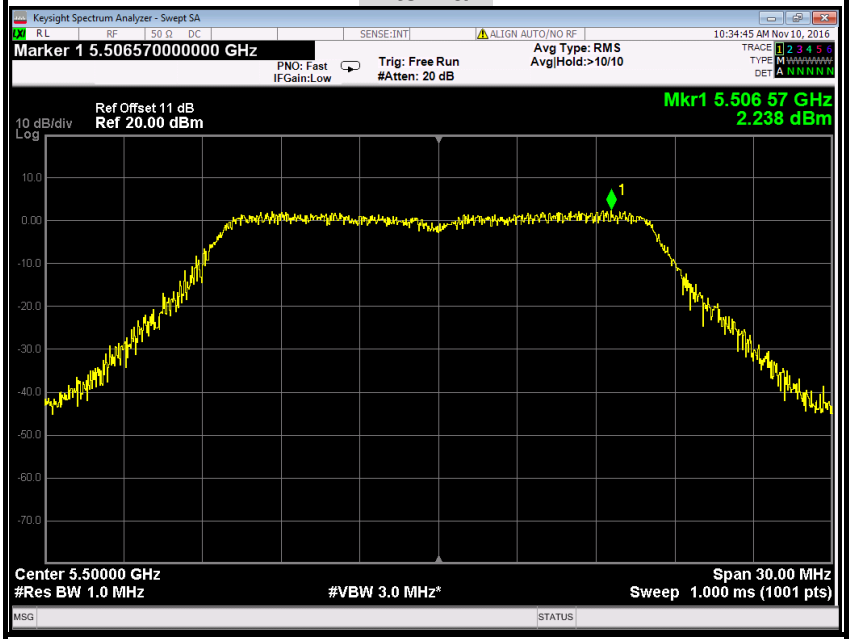
Antenna 1



IEEE 802.11a mode / 5500 ~ 5700MHz

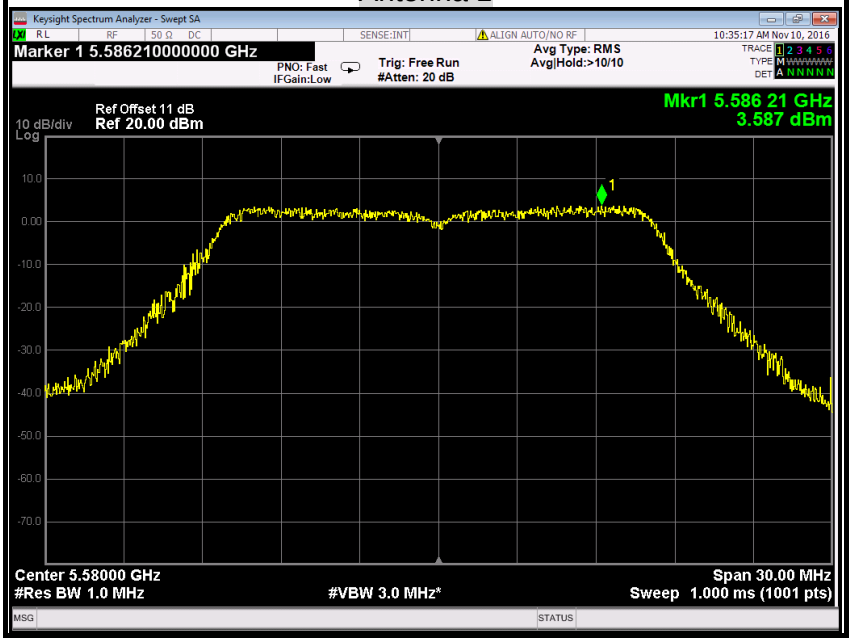
PPSD (CH Low)

Antenna 1



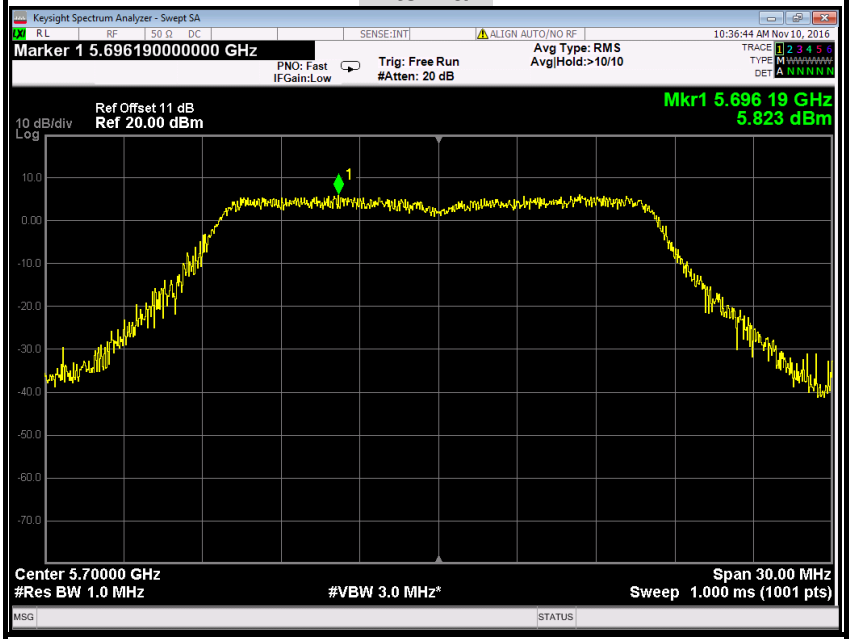
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

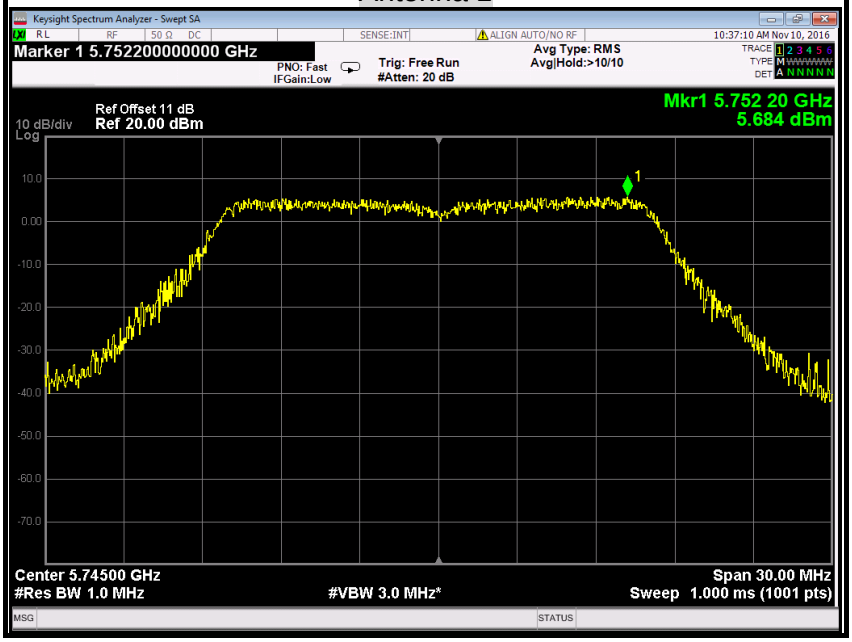
Antenna 1



IEEE 802.11a mode / 5745 ~ 5825MHz

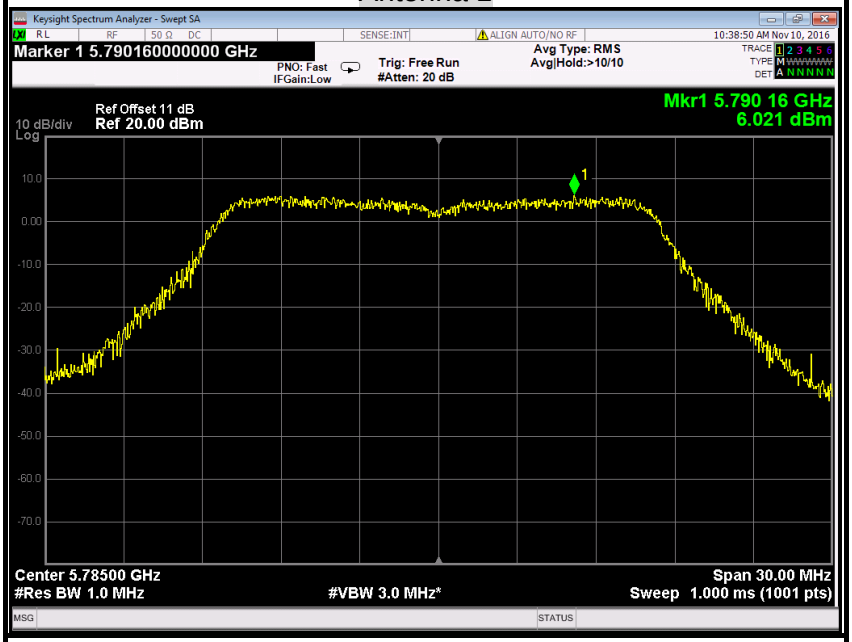
PPSD (CH Low)

Antenna 1



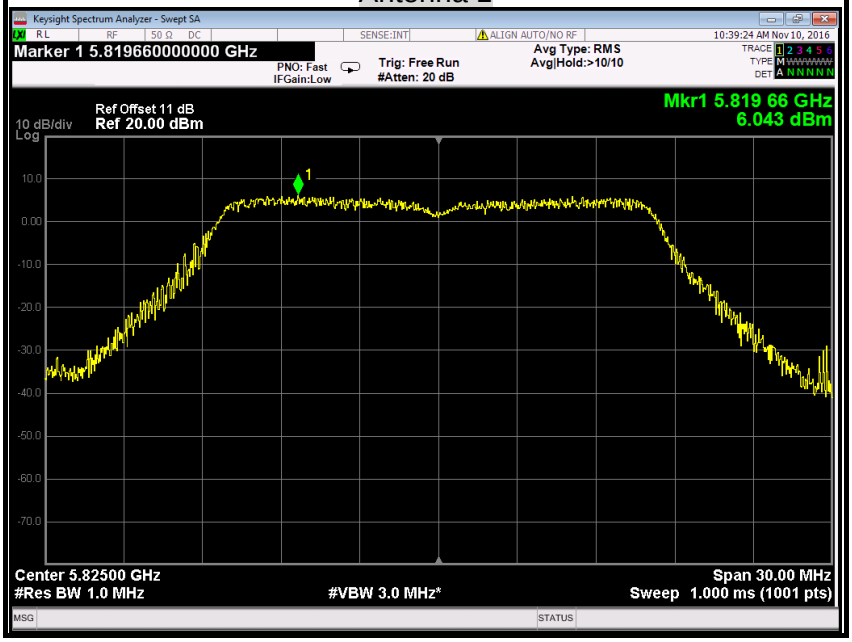
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

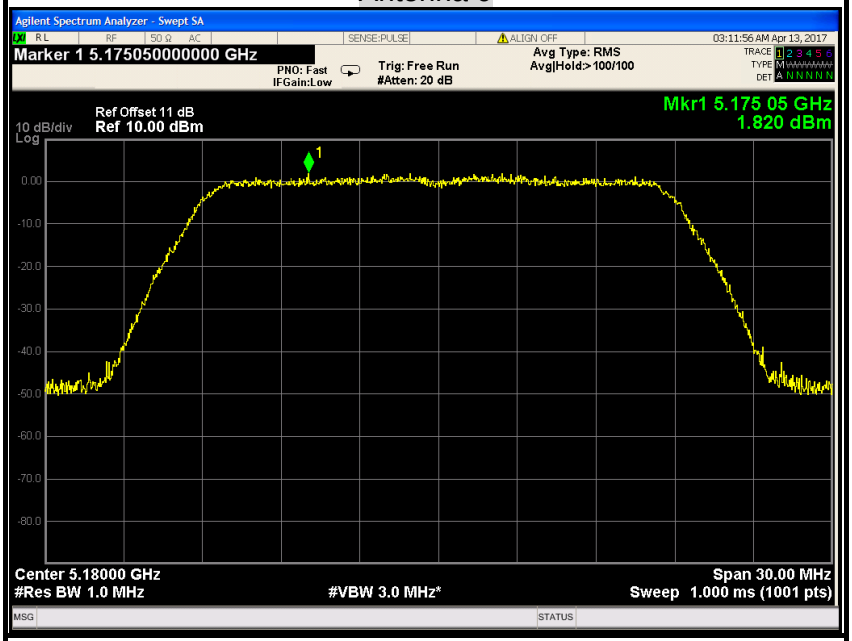
Antenna 1



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

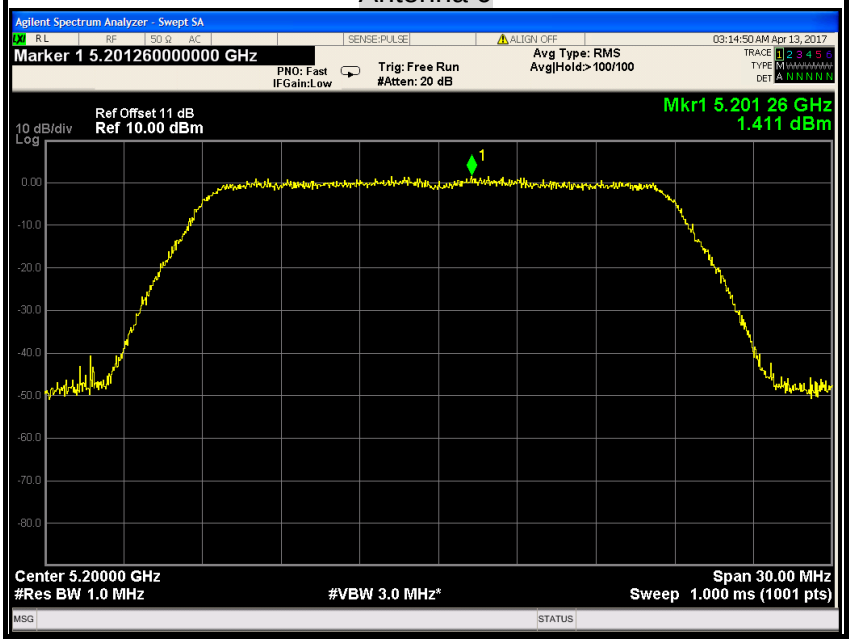
PPSD (CH Low)

Antenna 0



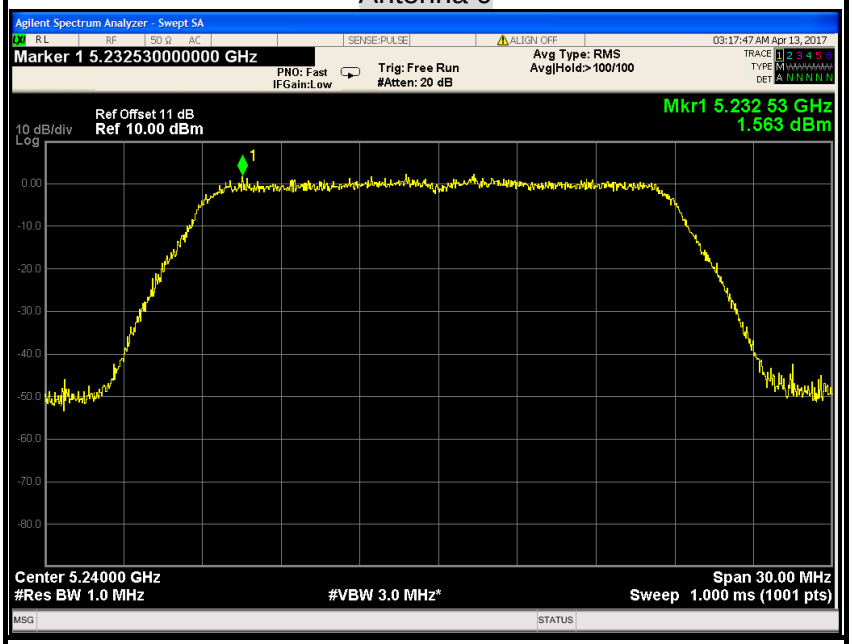
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

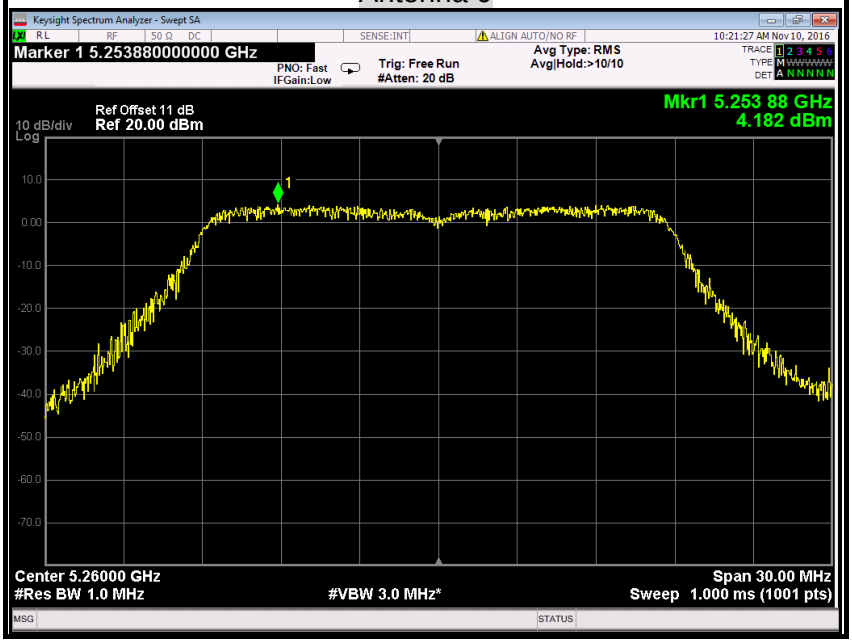
Antenna 0



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

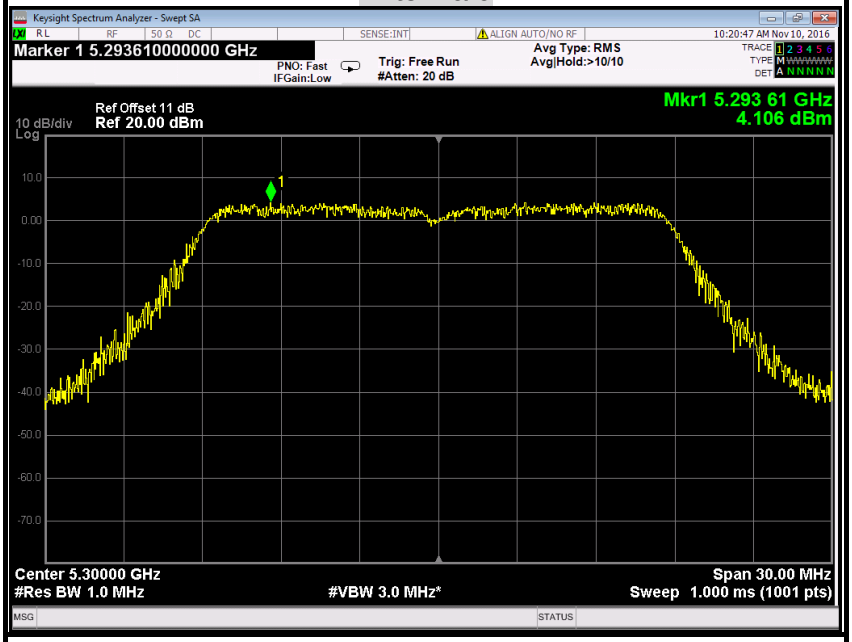
PPSD (CH Low)

Antenna 0



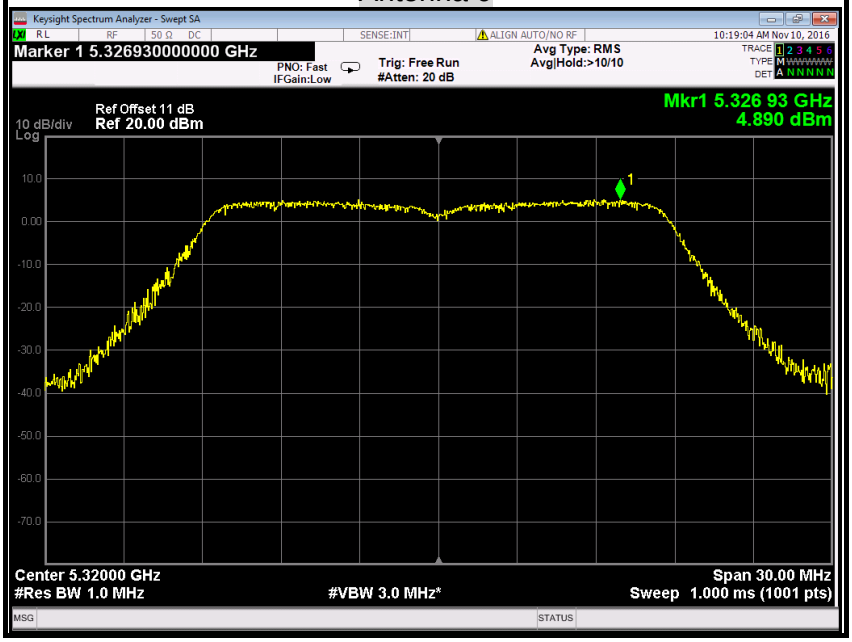
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

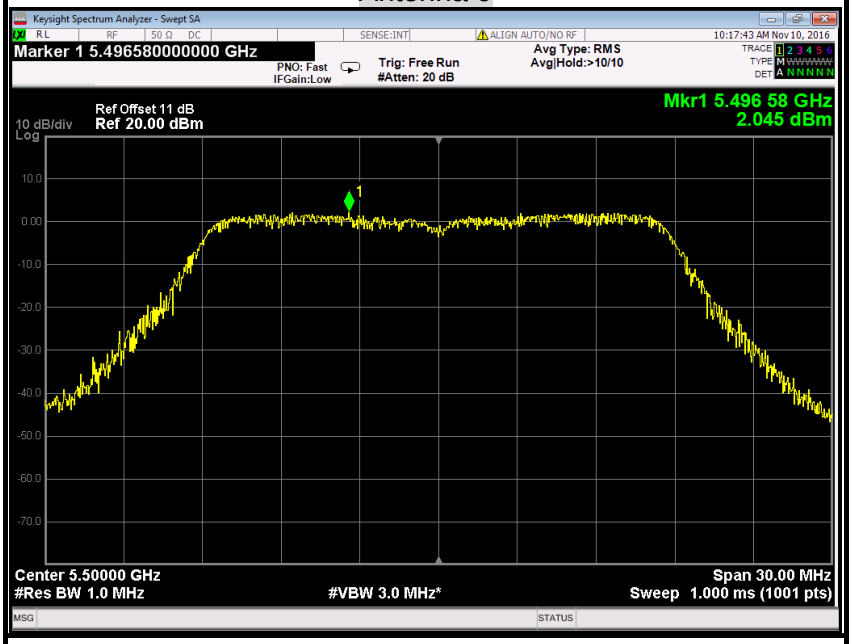
Antenna 0



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

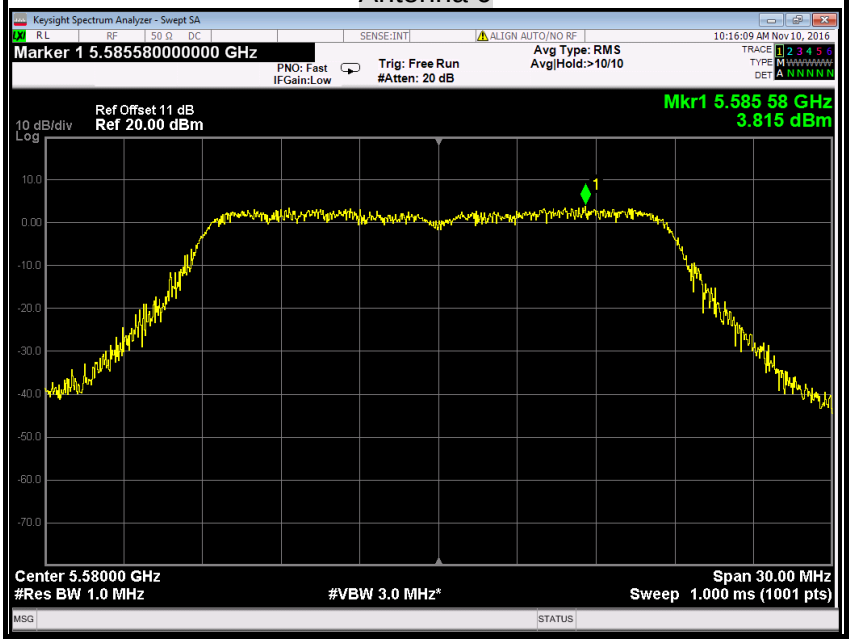
PPSD (CH Low)

Antenna 0



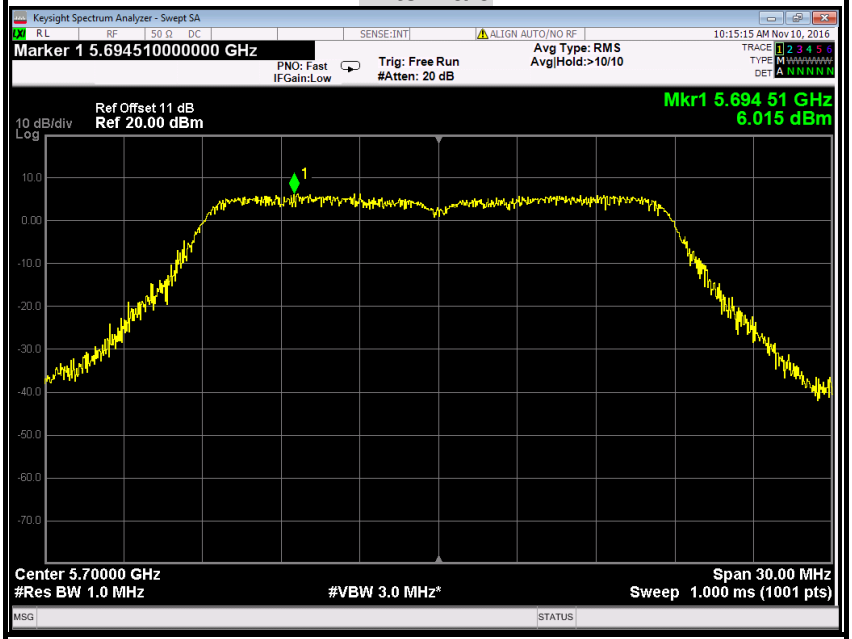
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

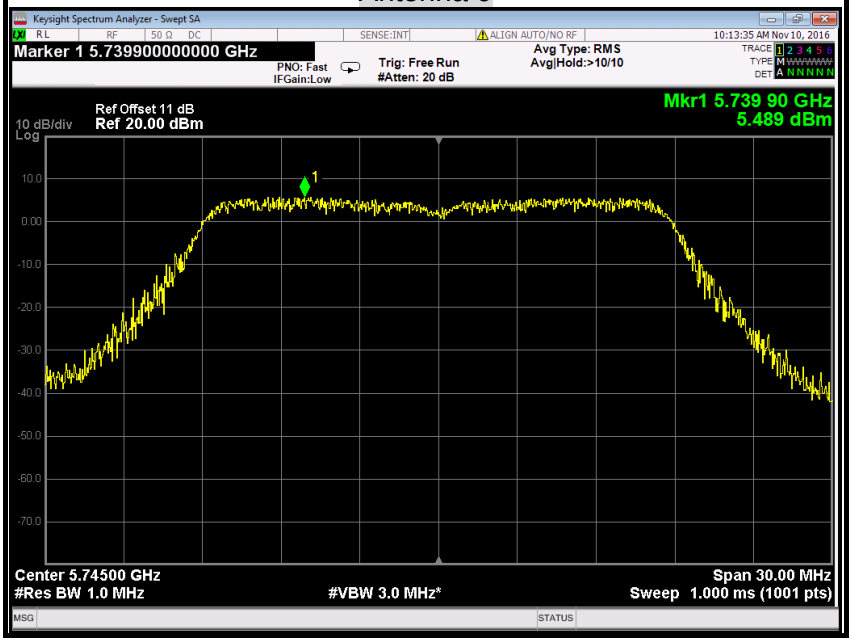
Antenna 0



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

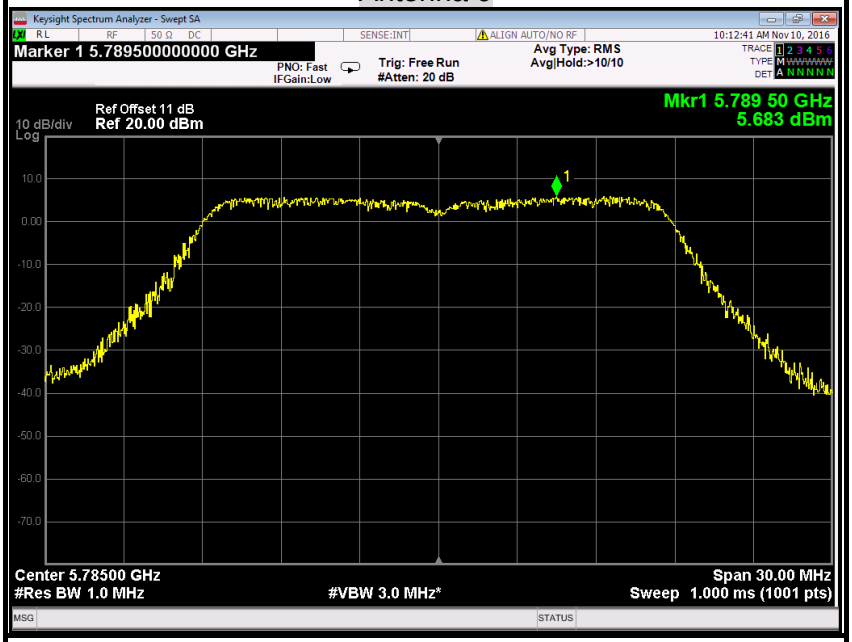
PPSD (CH Low)

Antenna 0



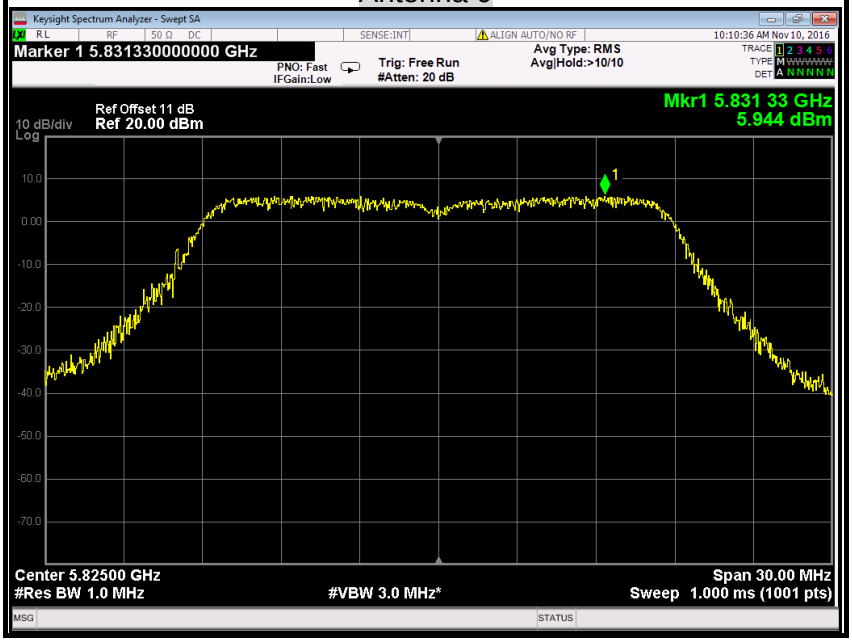
PPSD (CH Mid)

Antenna 0



PPSD (CH High)

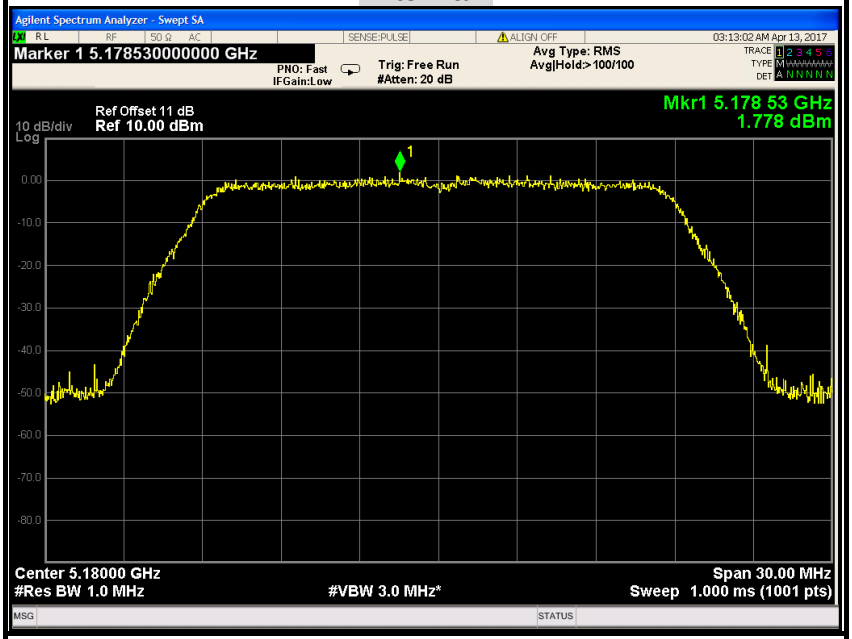
Antenna 0



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

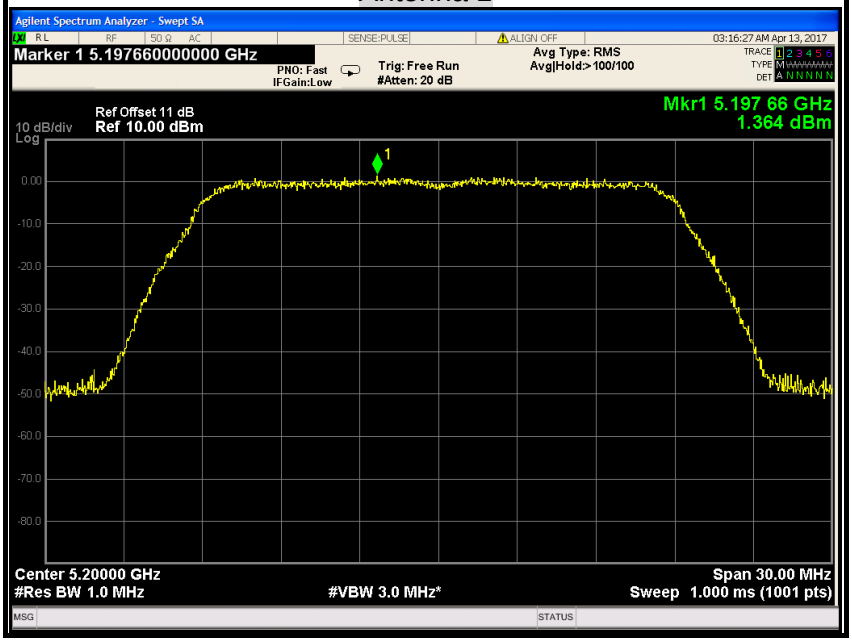
PPSD (CH Low)

Antenna 1



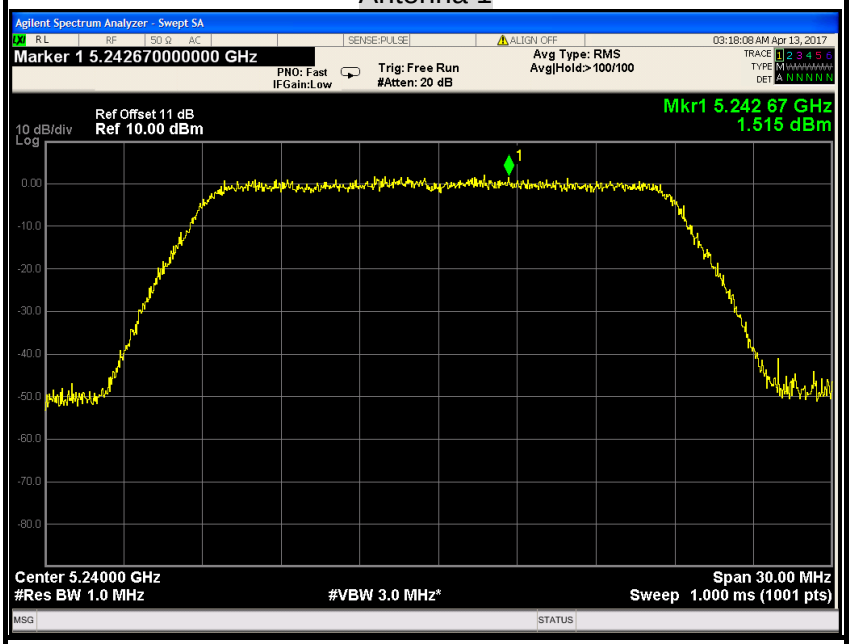
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

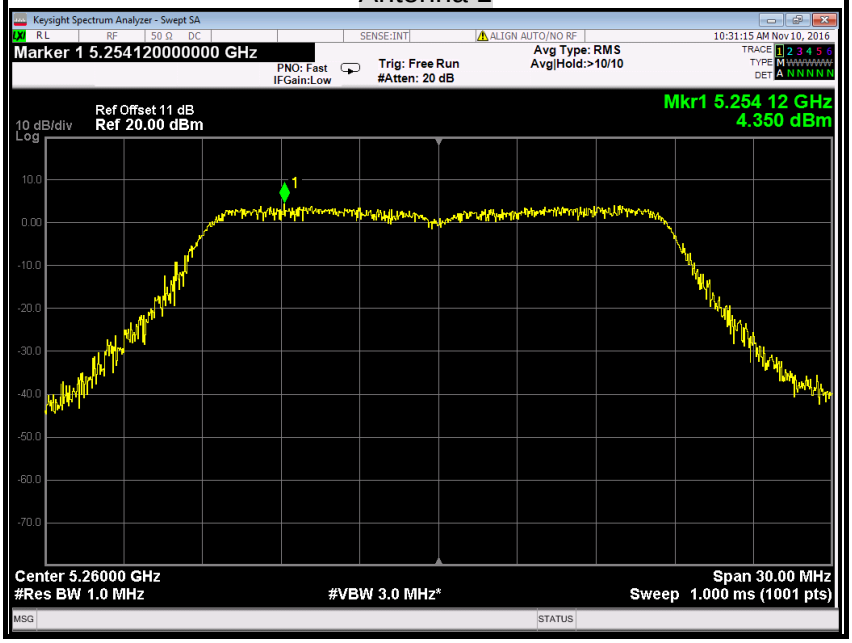
Antenna 1



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

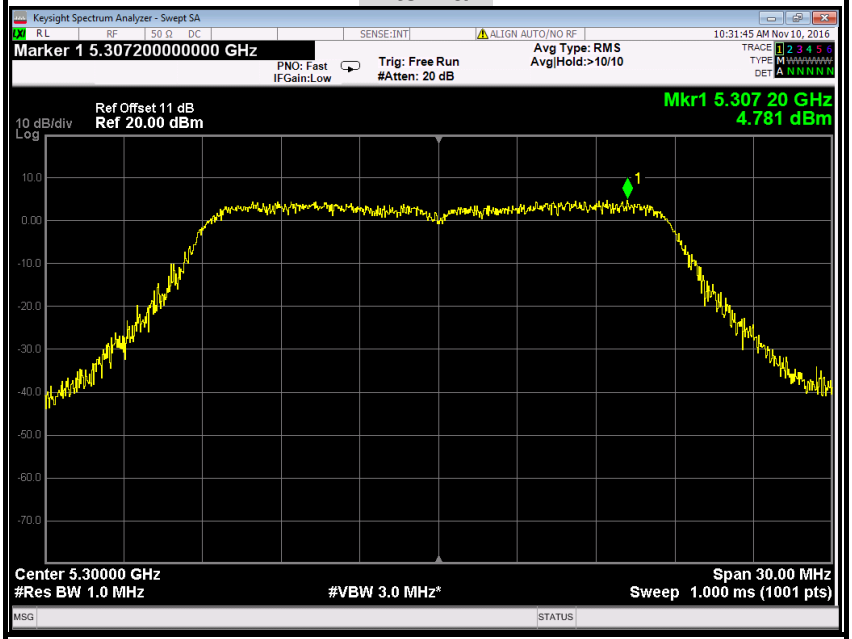
PPSD (CH Low)

Antenna 1



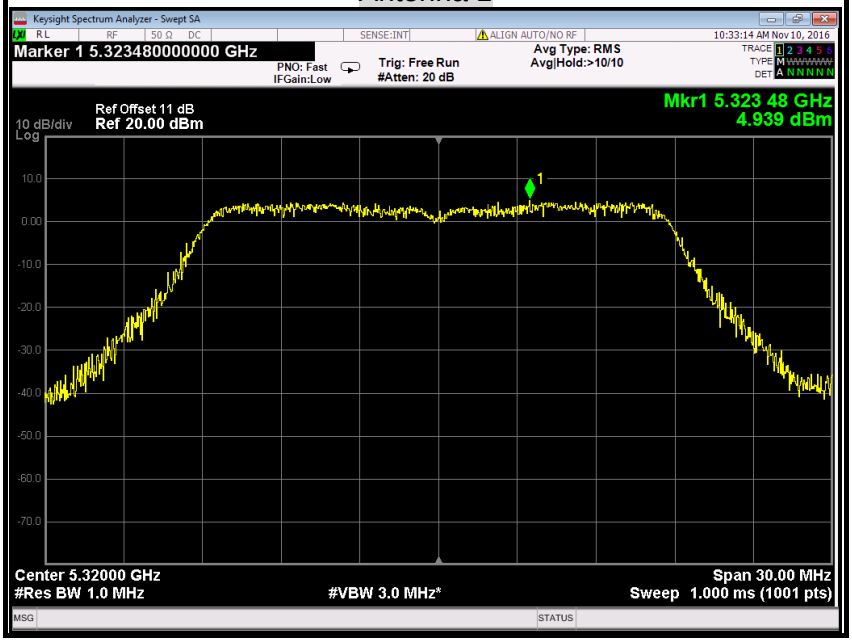
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

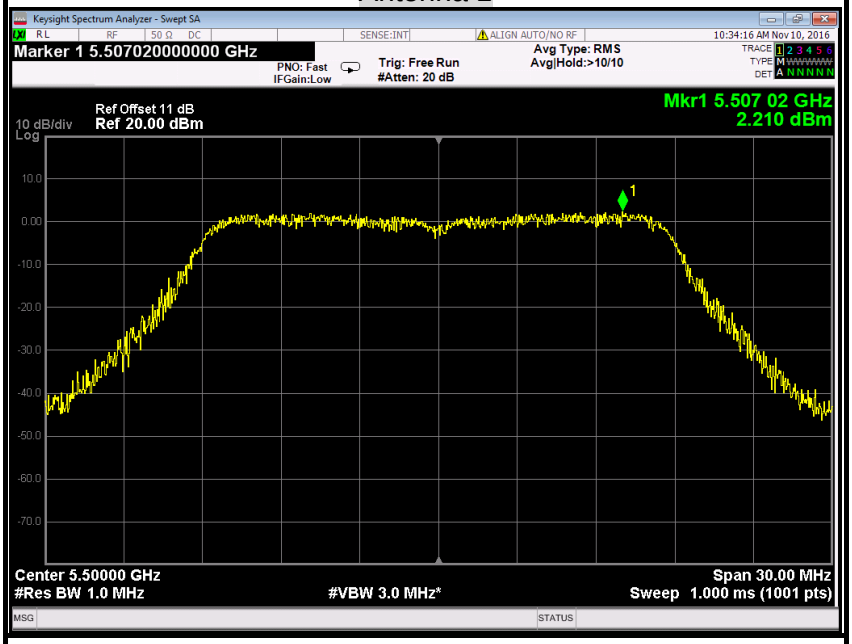
Antenna 1



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

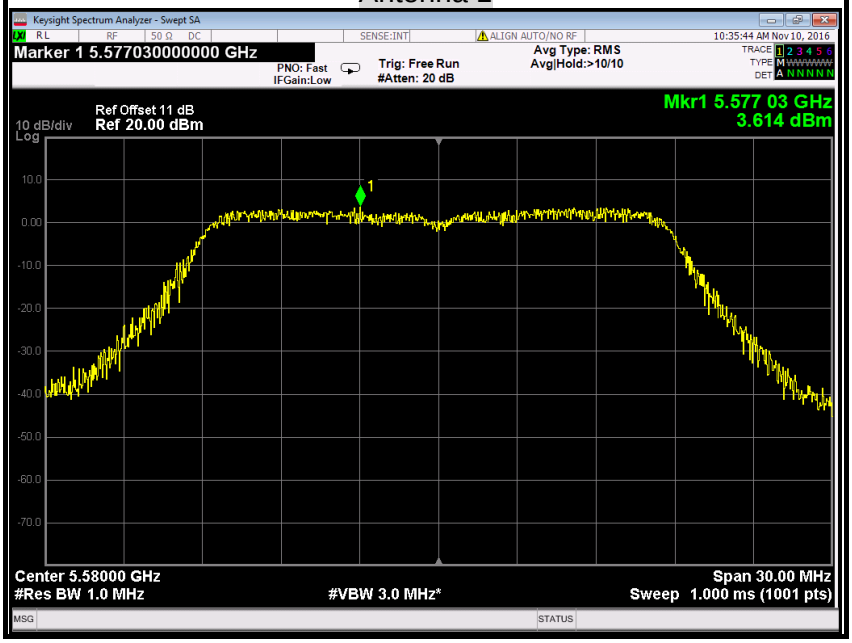
PPSD (CH Low)

Antenna 1



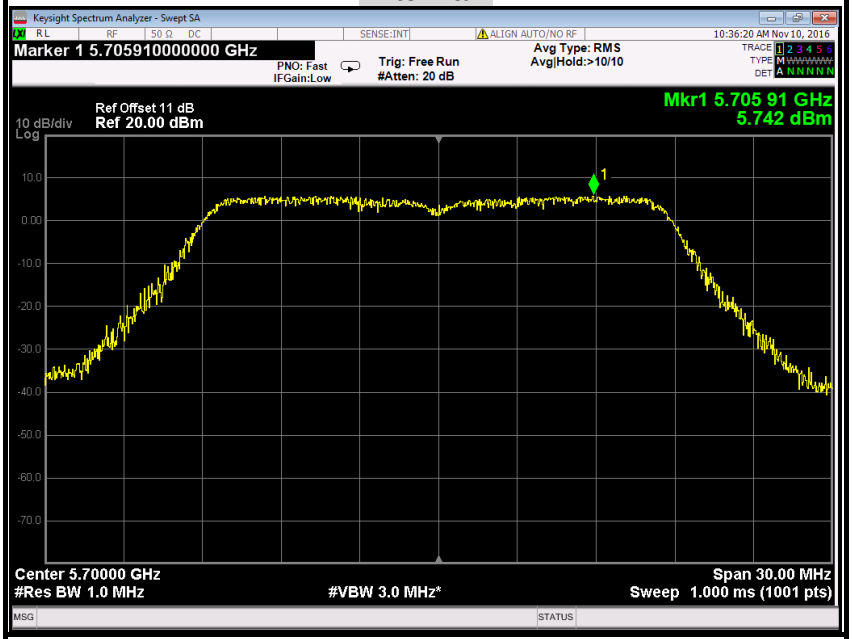
PPSD (CH Mid)

Antenna 1



PPSD (CH High)

Antenna 1



IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

PPSD (CH Low)

Antenna 1