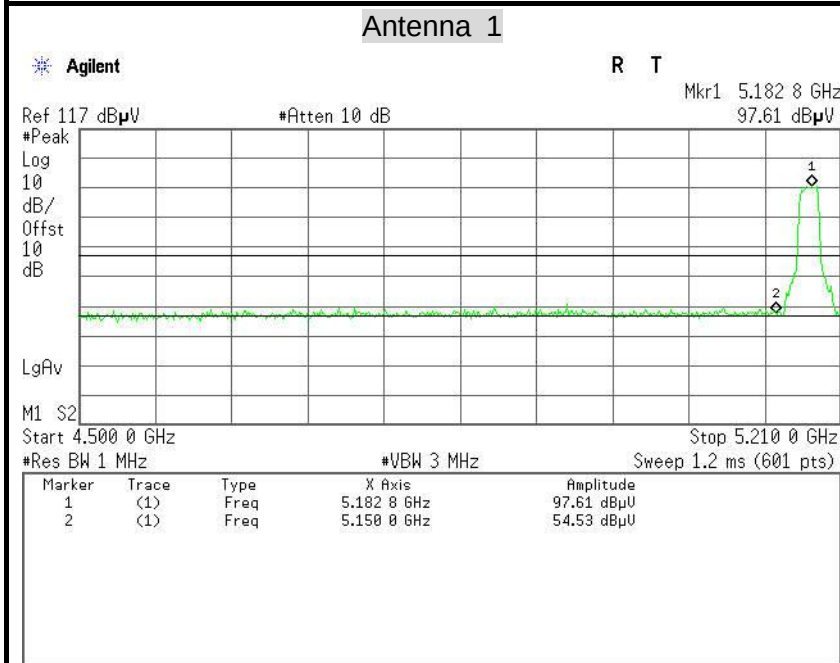
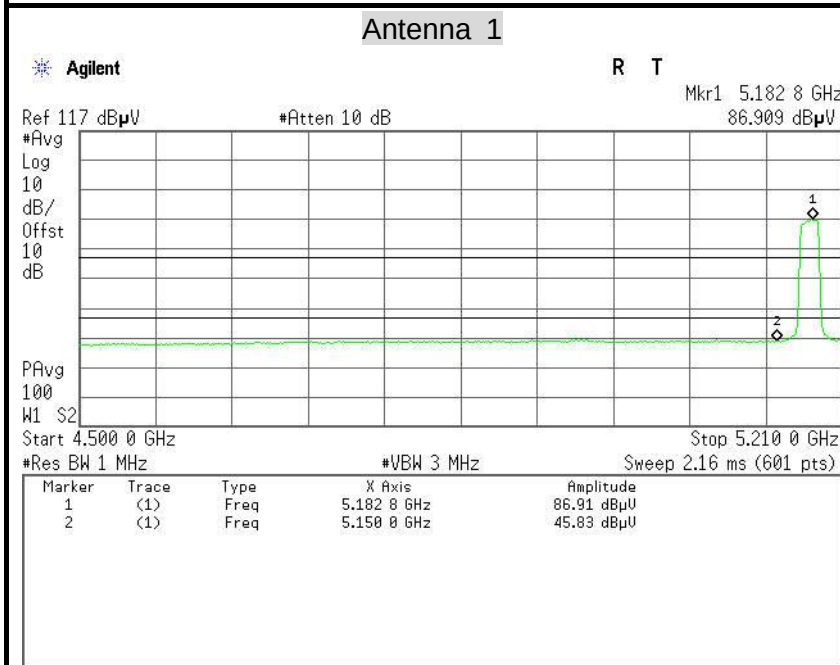
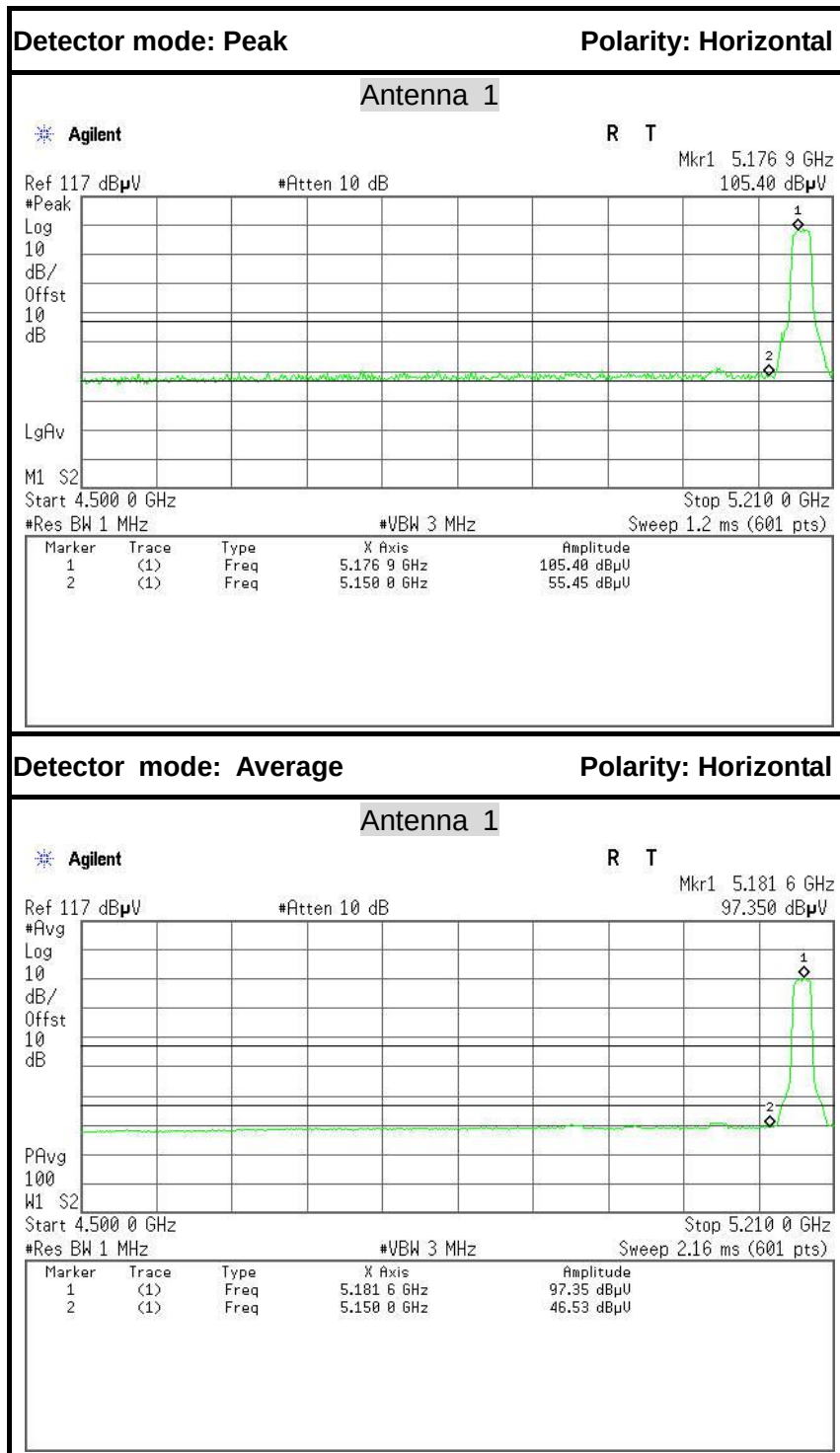


**Test Plot****IEEE 802.11a mode / 5180MHz****Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

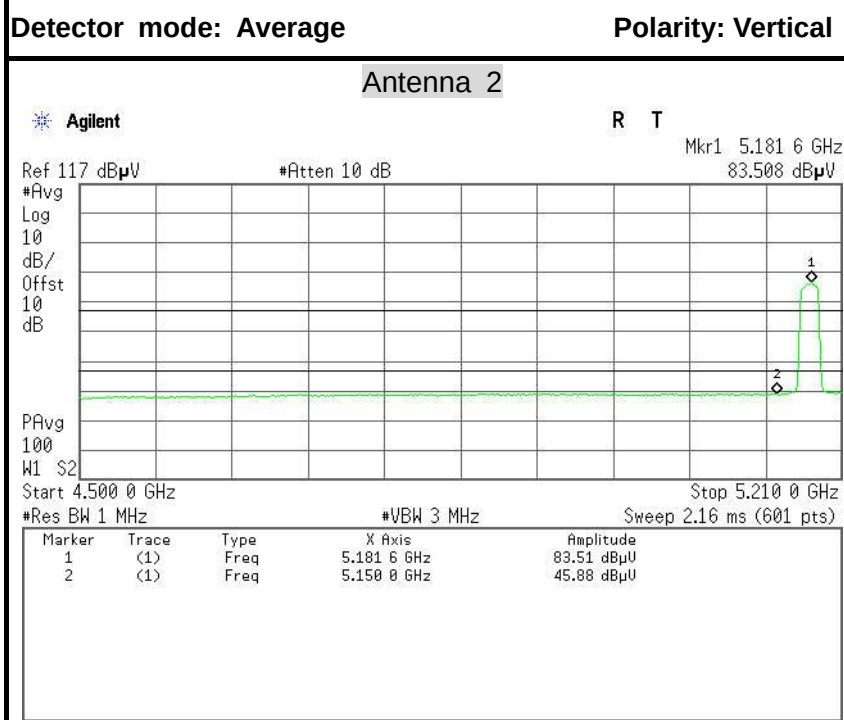
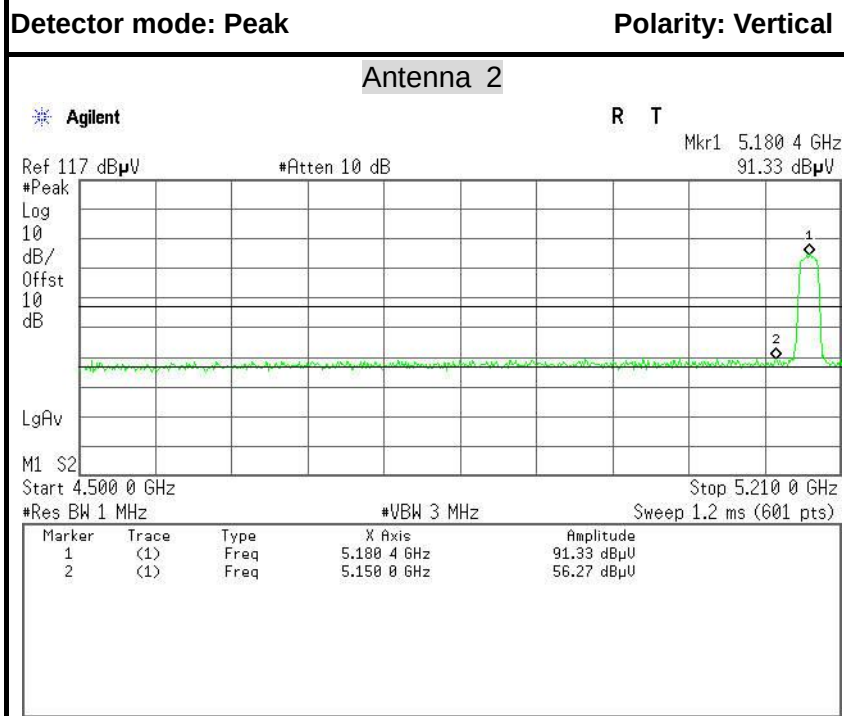
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	47.93	-6.60	54.53	74.00	-19.47	Peak	Vertical
2	5150.0000	39.23	-6.60	45.83	54.00	-8.17	Average	Vertical



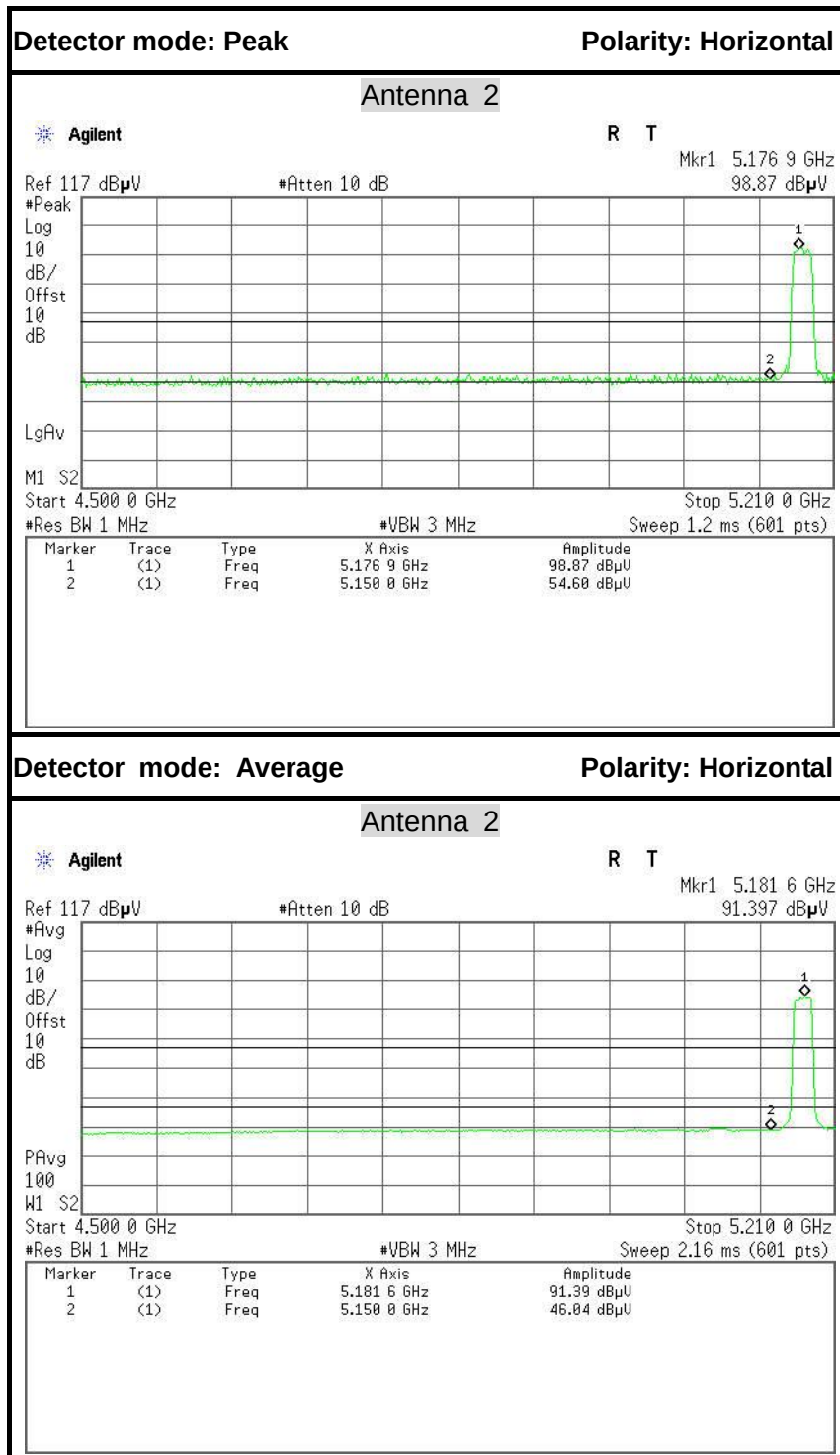
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	48.85	-6.60	55.45	74.00	-18.55	Peak	Horizontal
2	5150.0000	39.93	-6.60	46.53	54.00	-7.47	Average	Horizontal



IEEE 802.11a mode / 5180MHz



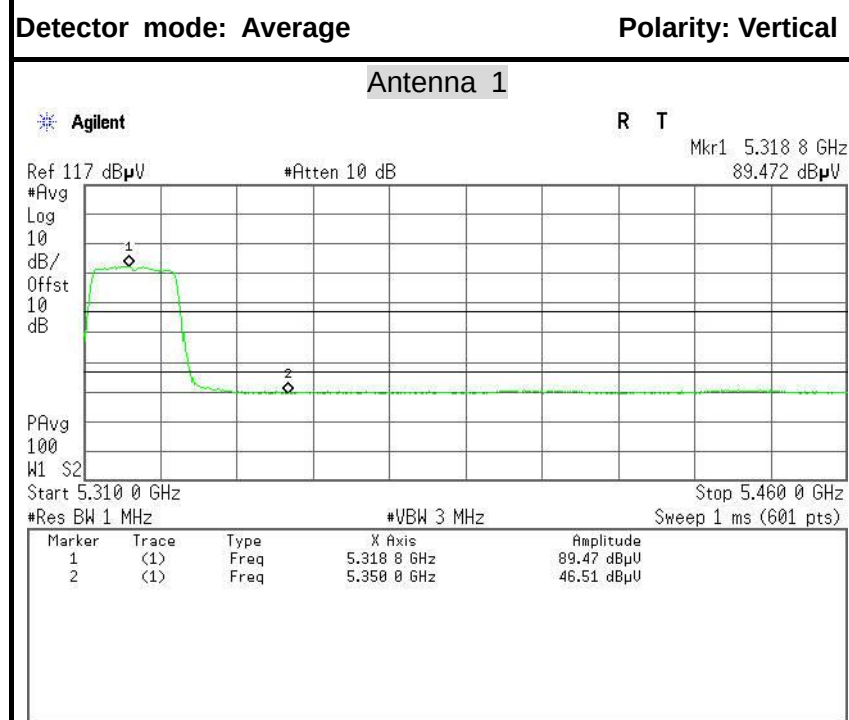
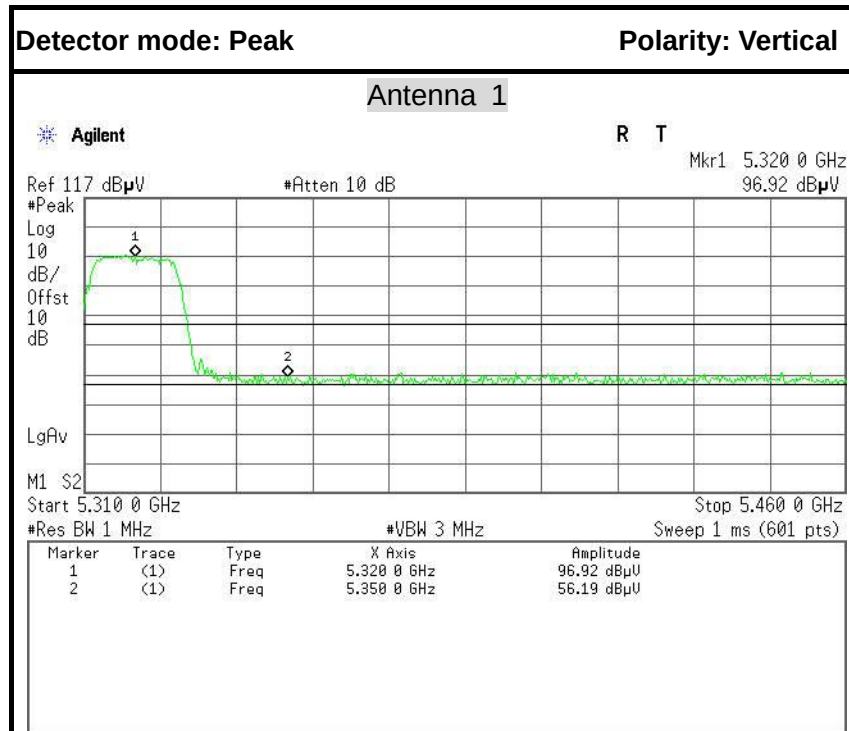
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	49.67	-6.60	56.27	74.00	-17.73	Peak	Vertical
2	5150.0000	39.28	-6.60	45.88	54.00	-8.12	Average	Vertical



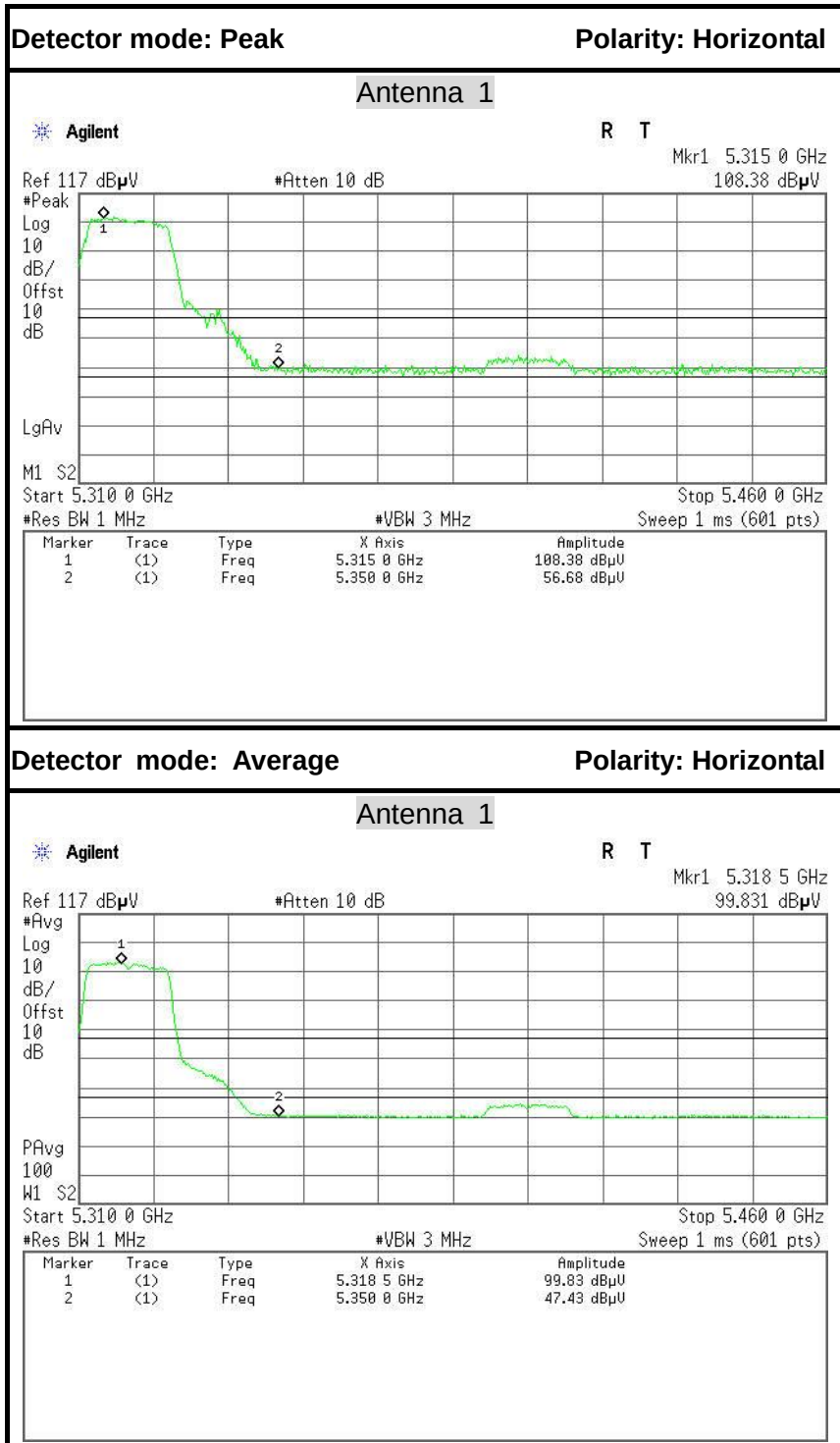
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	48.00	-6.60	54.60	74.00	-19.40	Peak	Horizontal
2	5150.0000	39.44	-6.60	46.04	54.00	-7.96	Average	Horizontal



IEEE 802.11a mode / 5320MHz



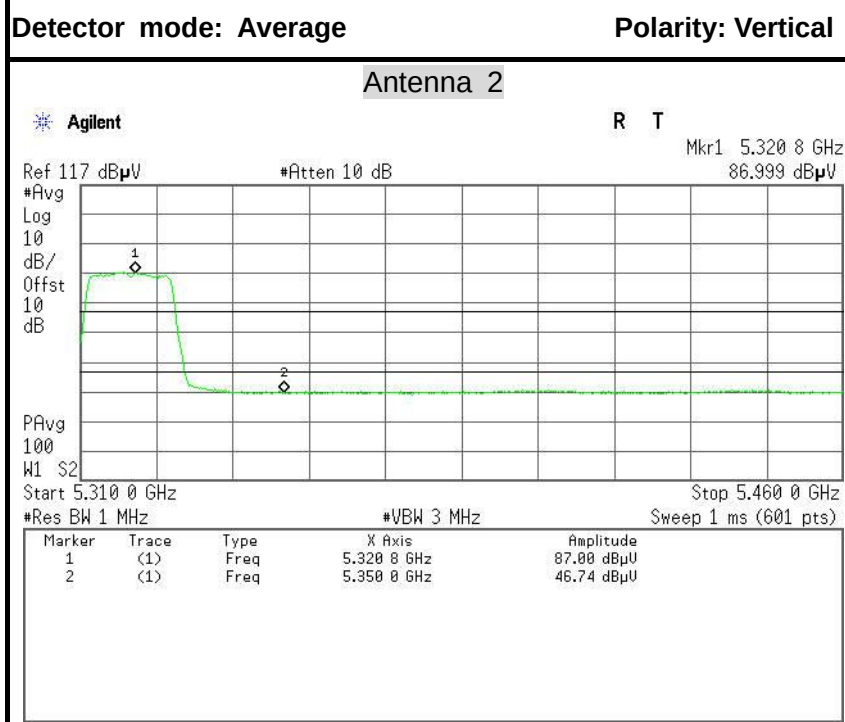
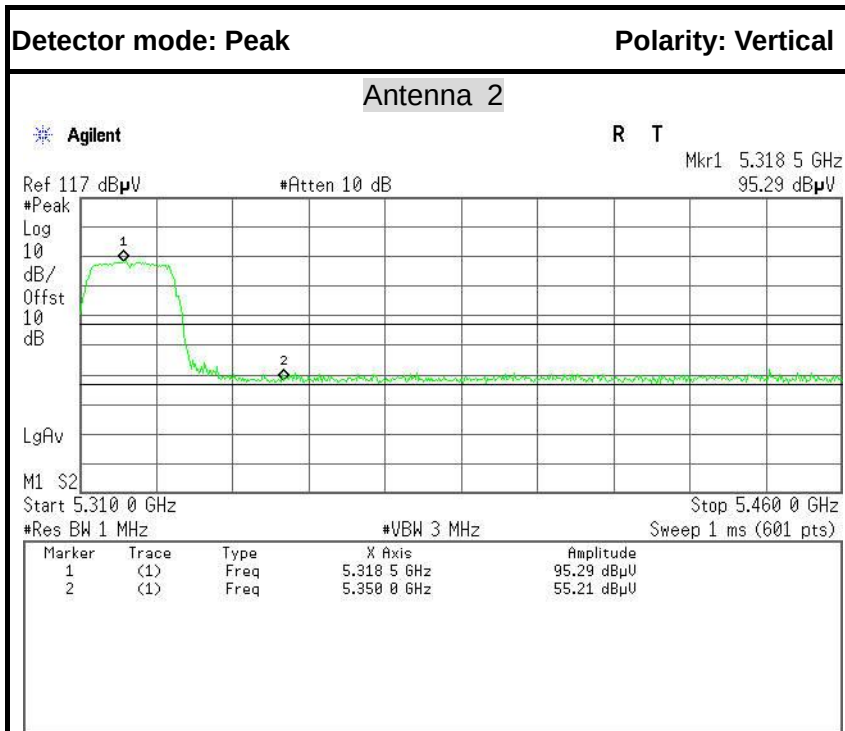
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	49.59	-6.60	56.19	74.00	-17.81	Peak	Vertical
2	5350.0000	39.91	-6.60	46.51	54.00	-7.49	Average	Vertical



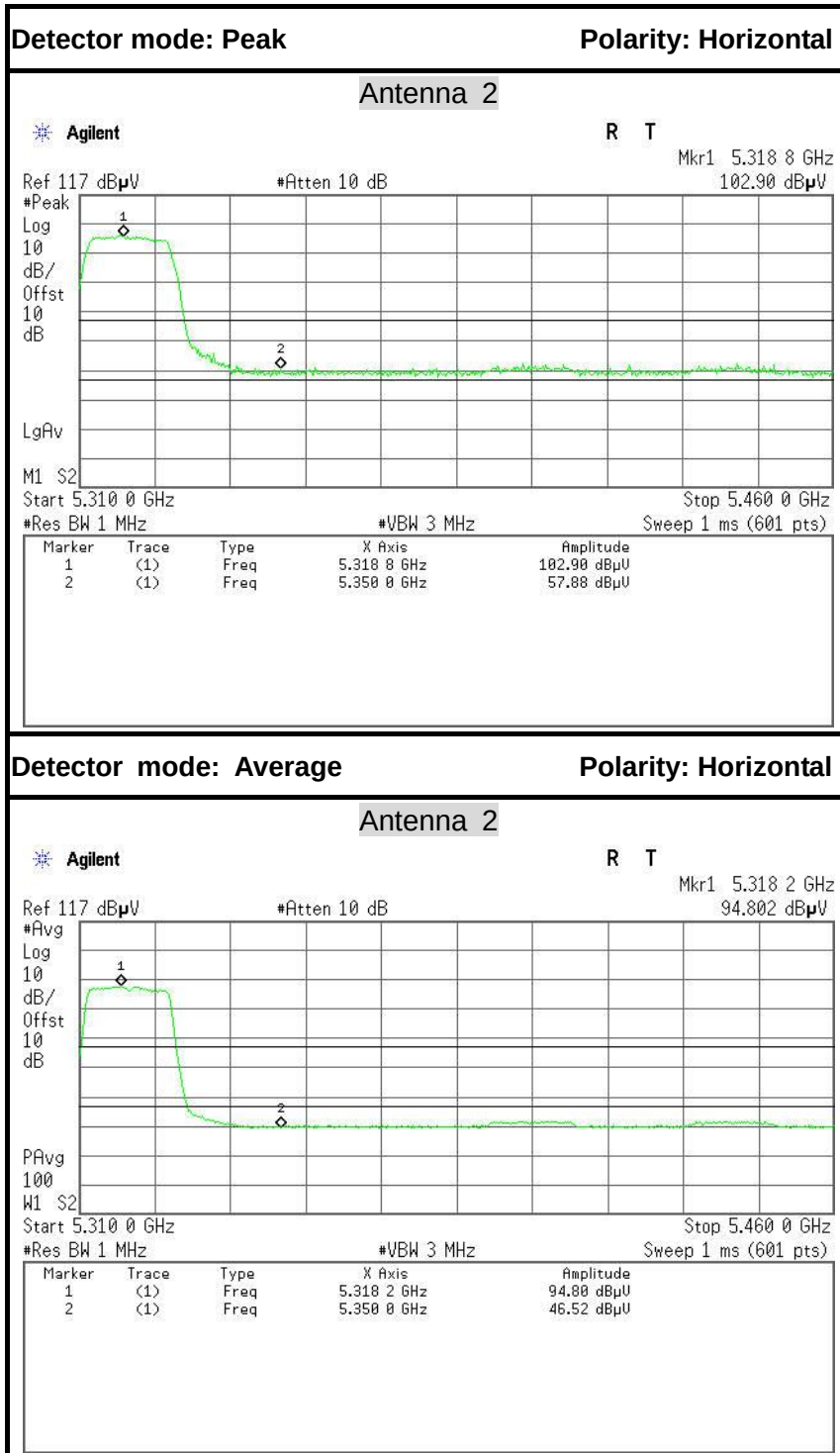
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	50.08	-6.60	56.68	74.00	-17.32	Peak	Horizontal
2	5350.0000	40.83	-6.60	47.43	54.00	-6.57	Average	Horizontal



IEEE 802.11a mode / 5320MHz



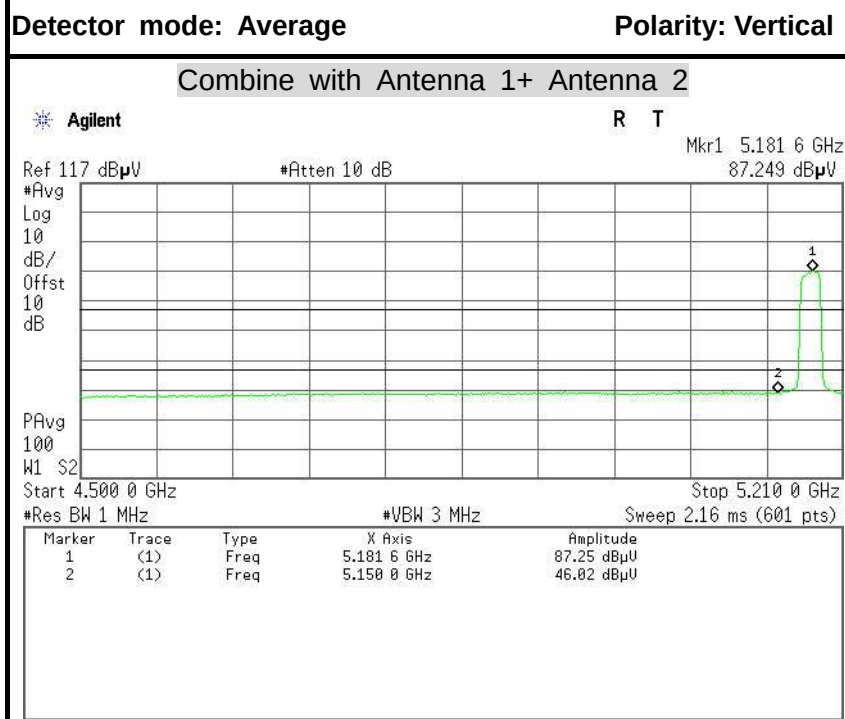
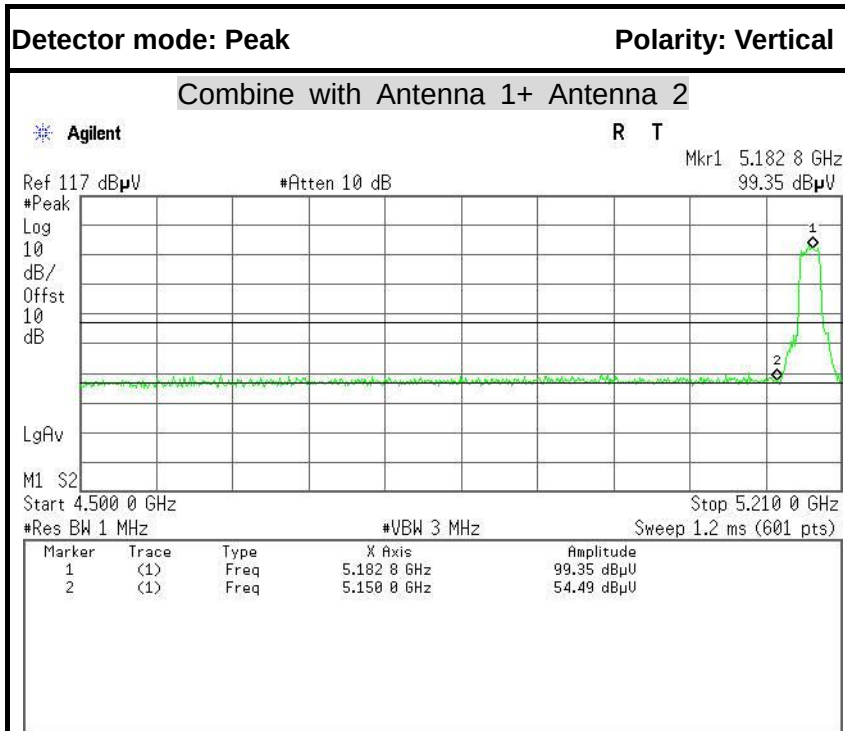
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	48.61	-6.60	55.21	74.00	-18.79	Peak	Vertical
2	5350.0000	40.14	-6.60	46.74	54.00	-7.26	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	51.28	-6.60	57.88	74.00	-16.12	Peak	Horizontal
2	5350.0000	39.92	-6.60	46.52	54.00	-7.48	Average	Horizontal



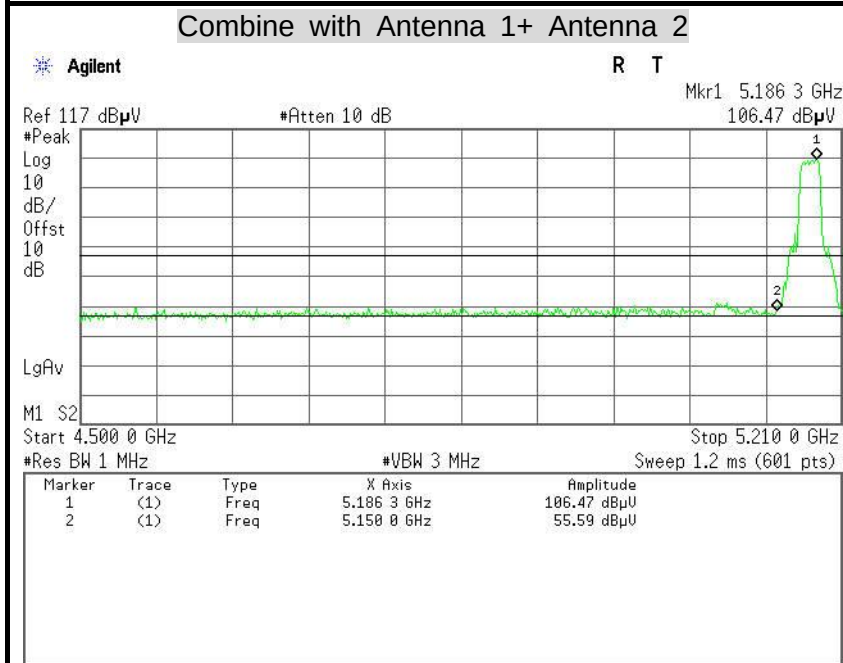
IEEE 802.11n HT 20 MHz mode / 5180 MHz



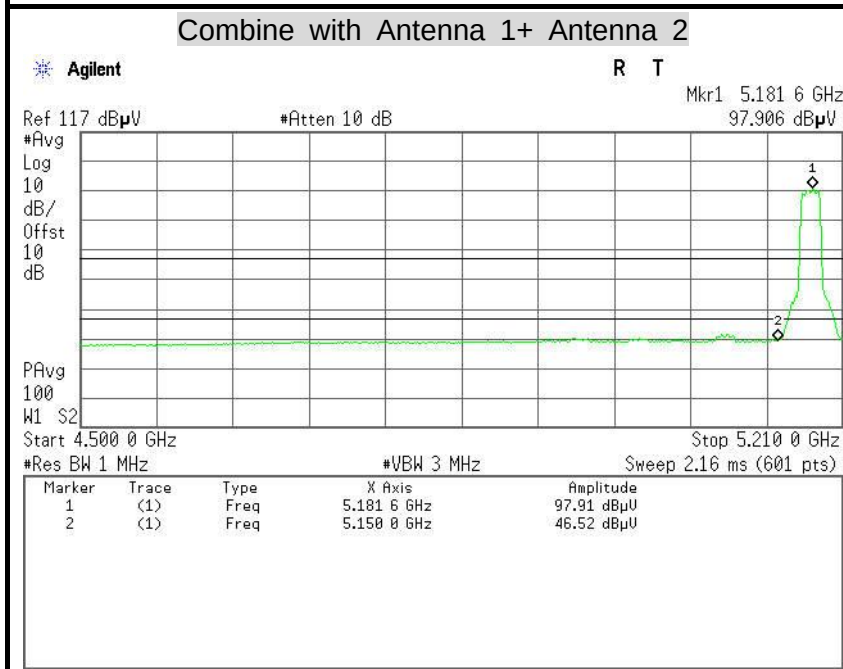
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	47.89	-6.60	54.49	74.00	-19.51	Peak	Vertical
2	5150.0000	39.42	-6.60	46.02	54.00	-7.98	Average	Vertical



Detector mode: Peak Polarity: Horizontal



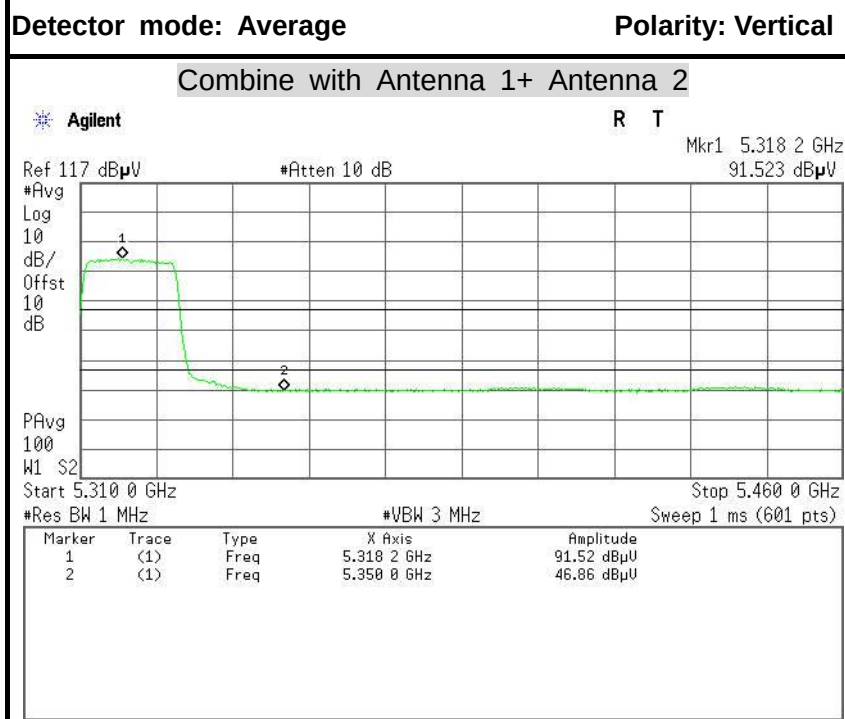
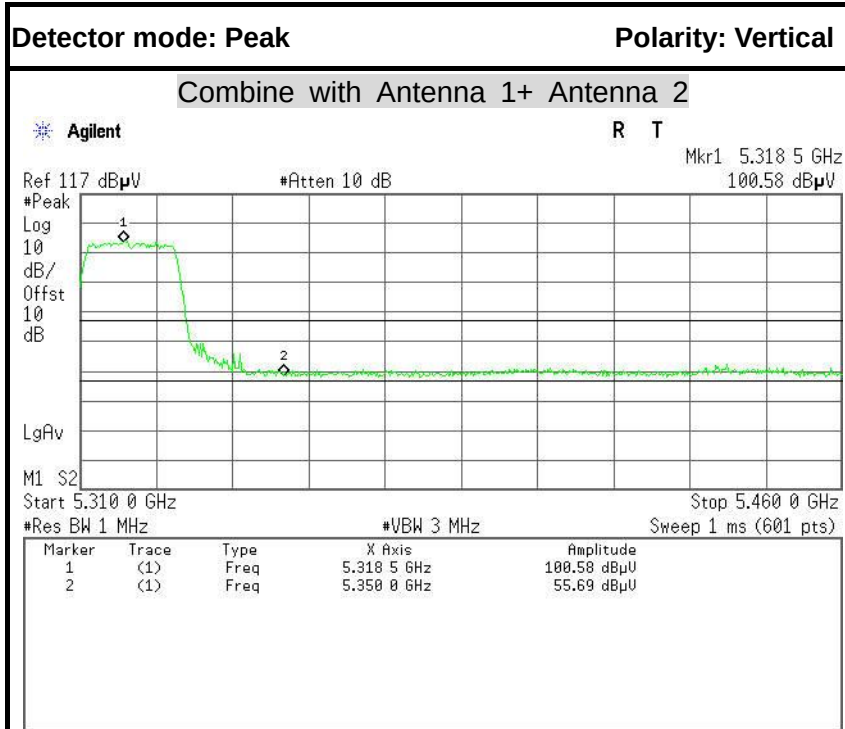
Detector mode: Average Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	48.99	-6.60	55.59	74.00	-18.41	Peak	Horizontal
2	5150.0000	39.92	-6.60	46.52	54.00	-7.48	Average	Horizontal



IEEE 802.11n HT 20 MHz mode / 5320 MHz

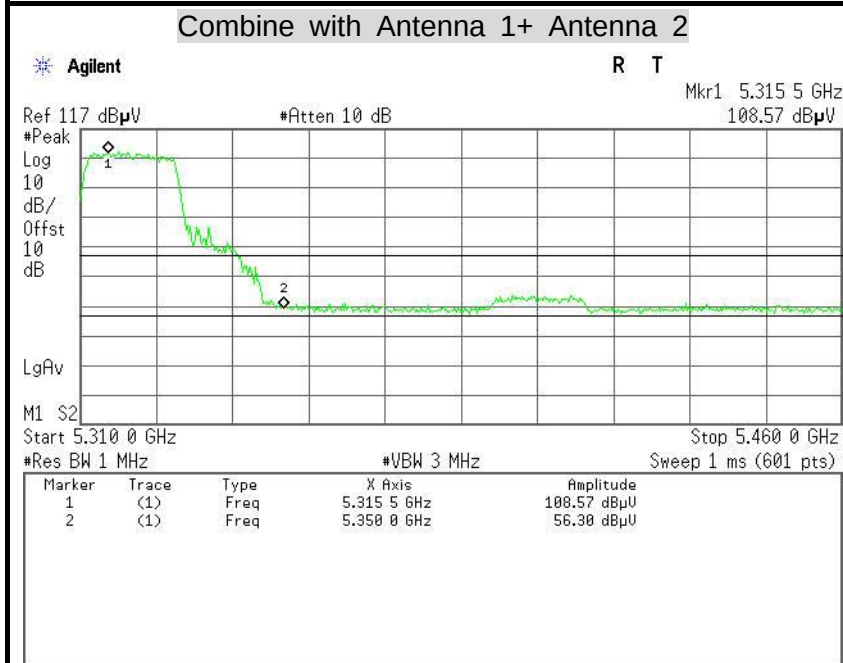


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	49.09	-6.60	55.69	74.00	-18.31	Peak	Vertical
2	5350.0000	40.26	-6.60	46.86	54.00	-7.14	Average	Vertical



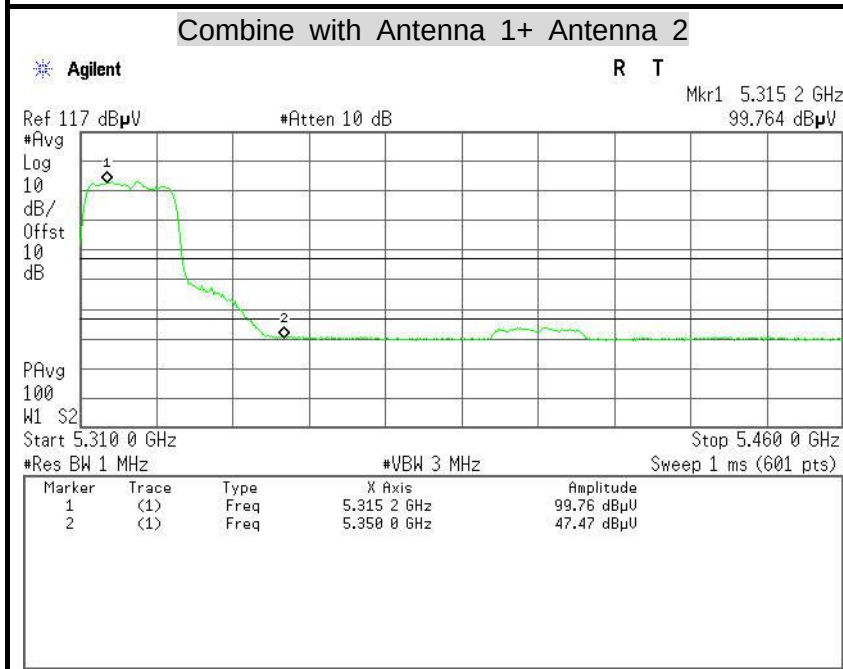
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

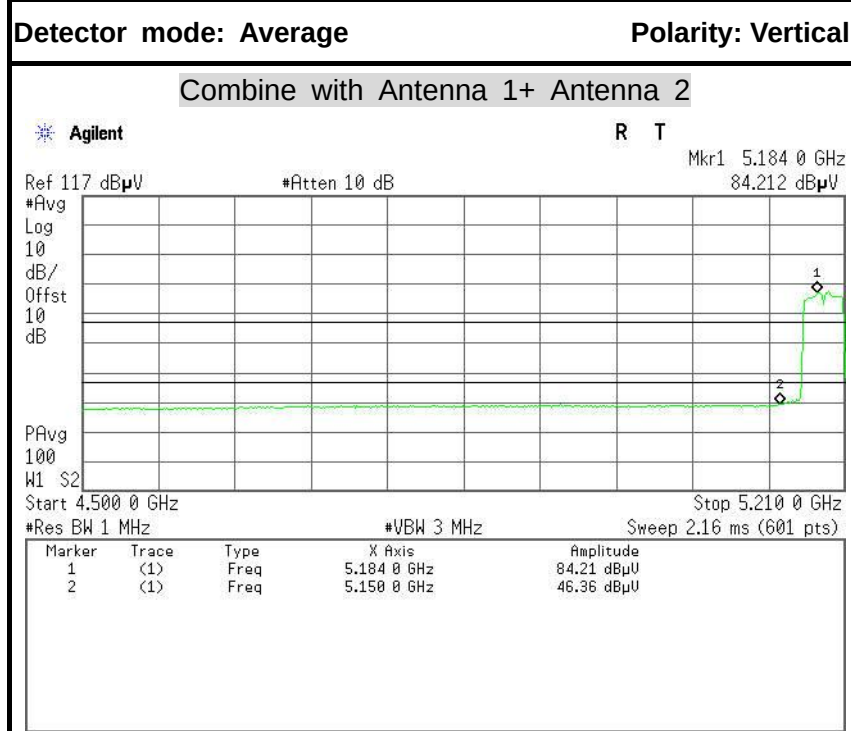
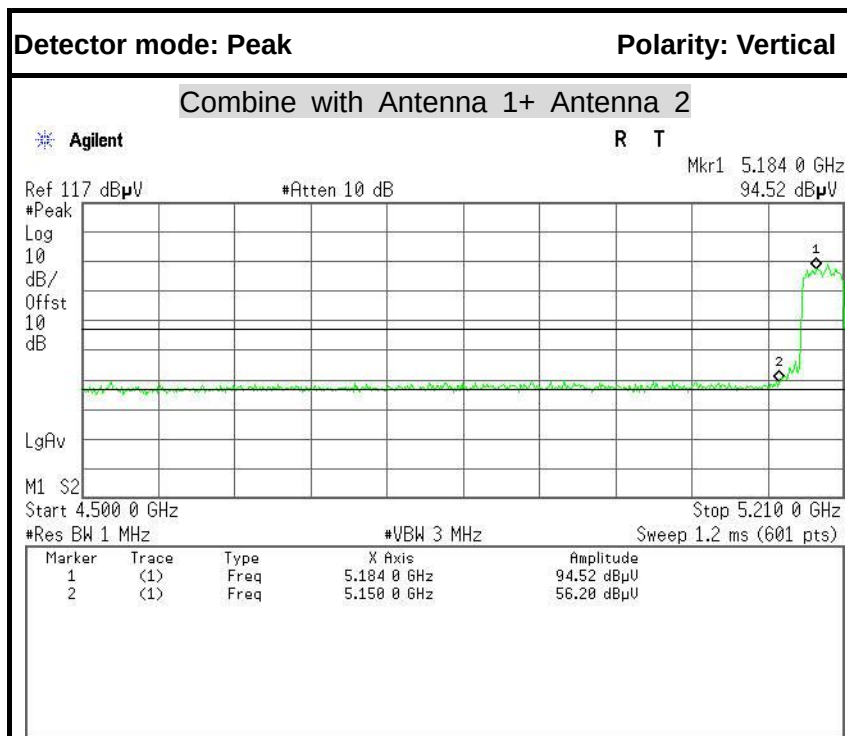
Polarity: Horizontal



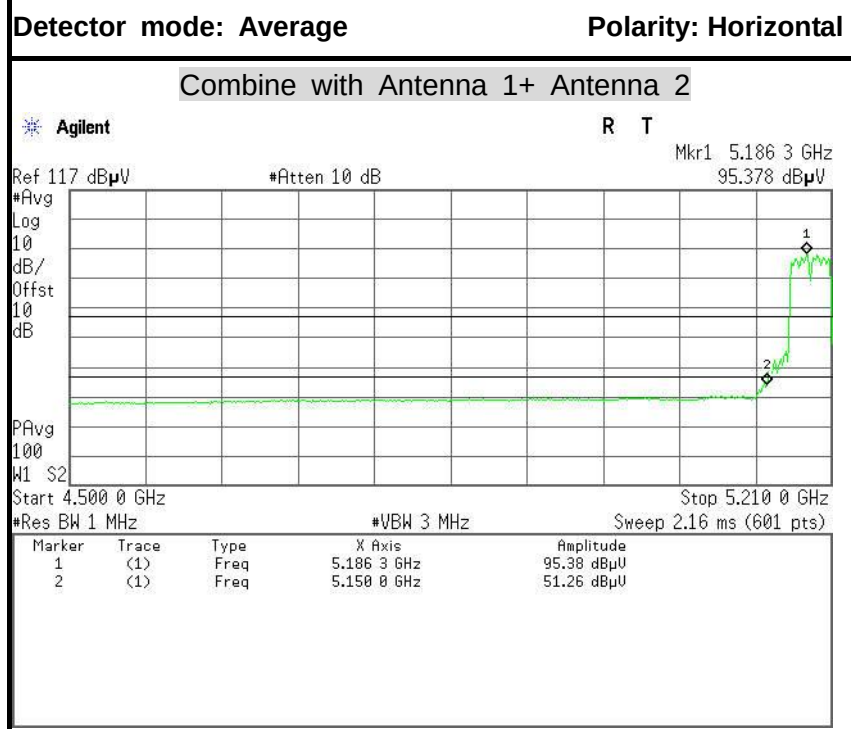
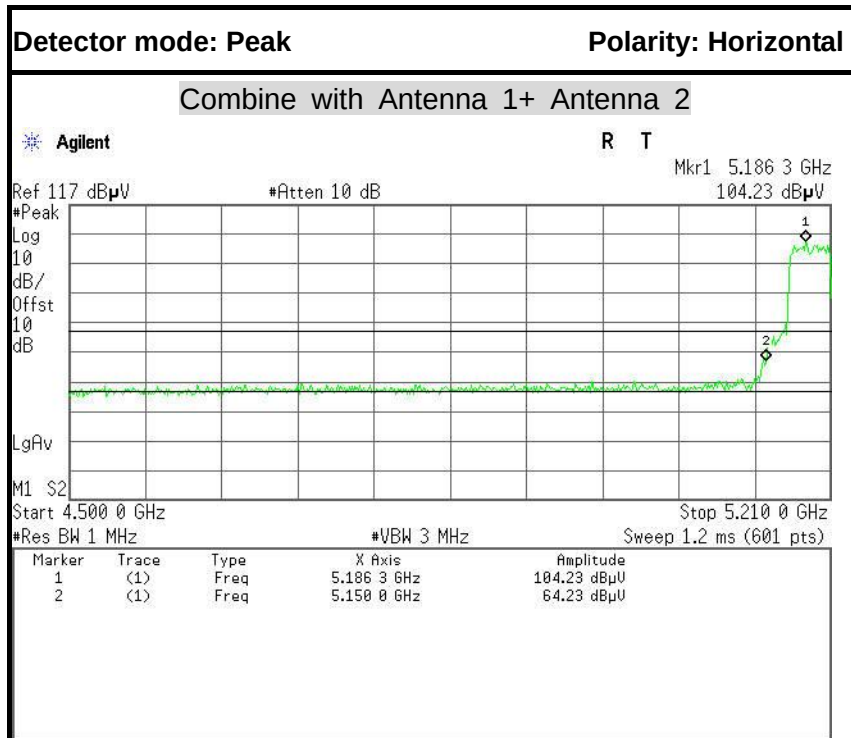
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	49.70	-6.60	56.30	74.00	-17.70	Peak	Horizontal
2	5350.0000	40.87	-6.60	47.47	54.00	-6.53	Average	Horizontal



IEEE 802.11n HT 40 MHz mode / 5190 MHz



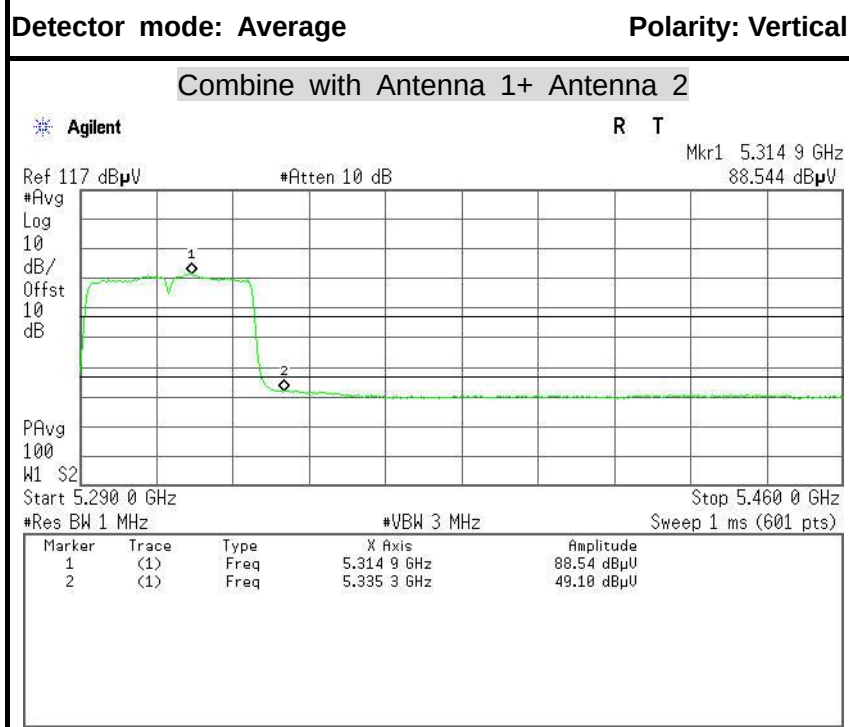
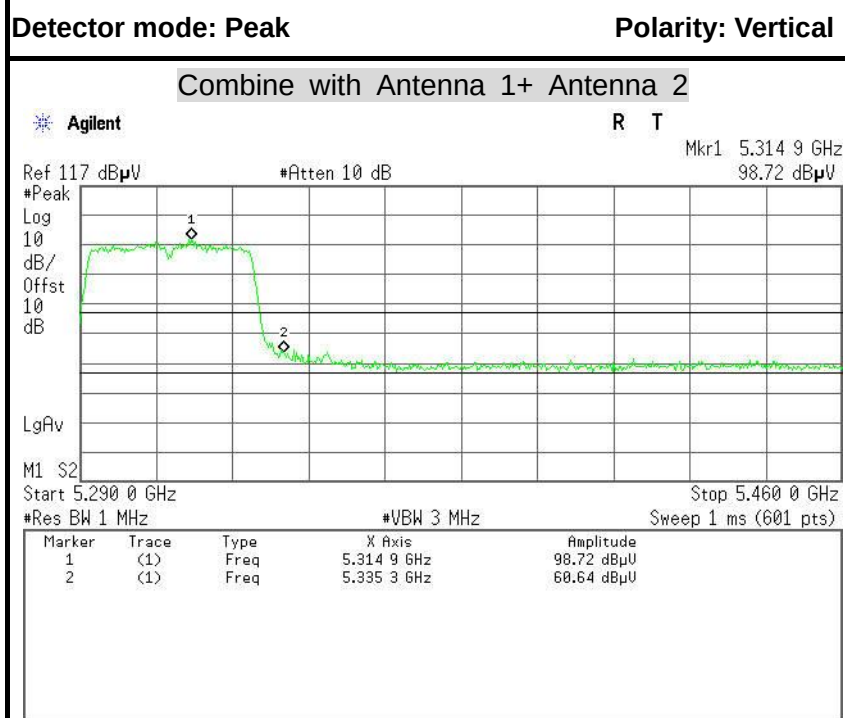
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	49.60	-6.60	56.20	74.00	-17.80	Peak	Vertical
2	5150.0000	39.76	-6.60	46.36	54.00	-7.64	Average	Vertical



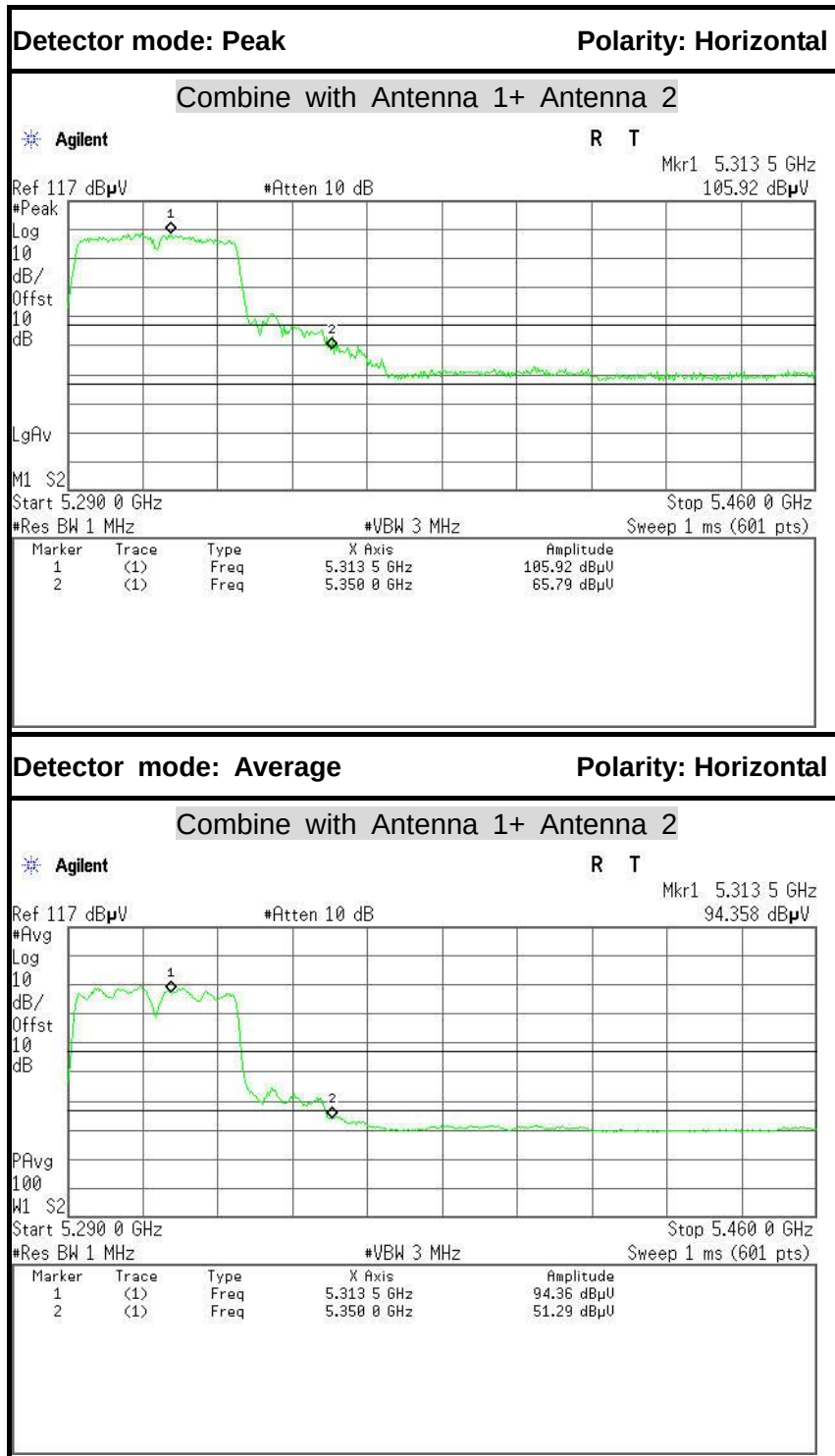
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	57.63	-6.60	64.23	74.00	-9.77	Peak	Horizontal
2	5150.0000	44.66	-6.60	51.26	54.00	-2.74	Average	Horizontal



IEEE 802.11n HT 40 MHz mode / 5310 MHz



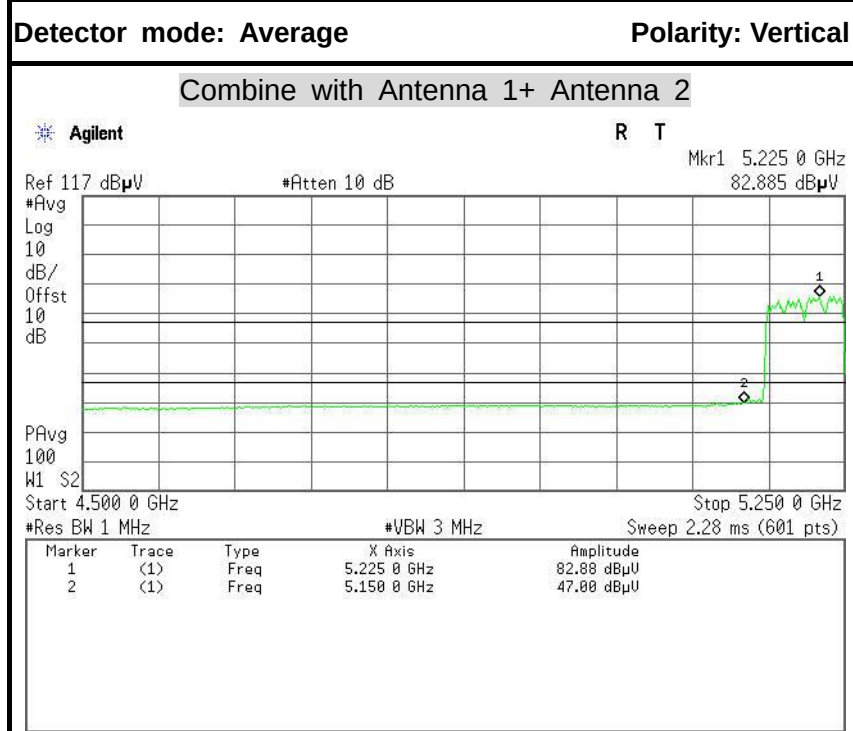
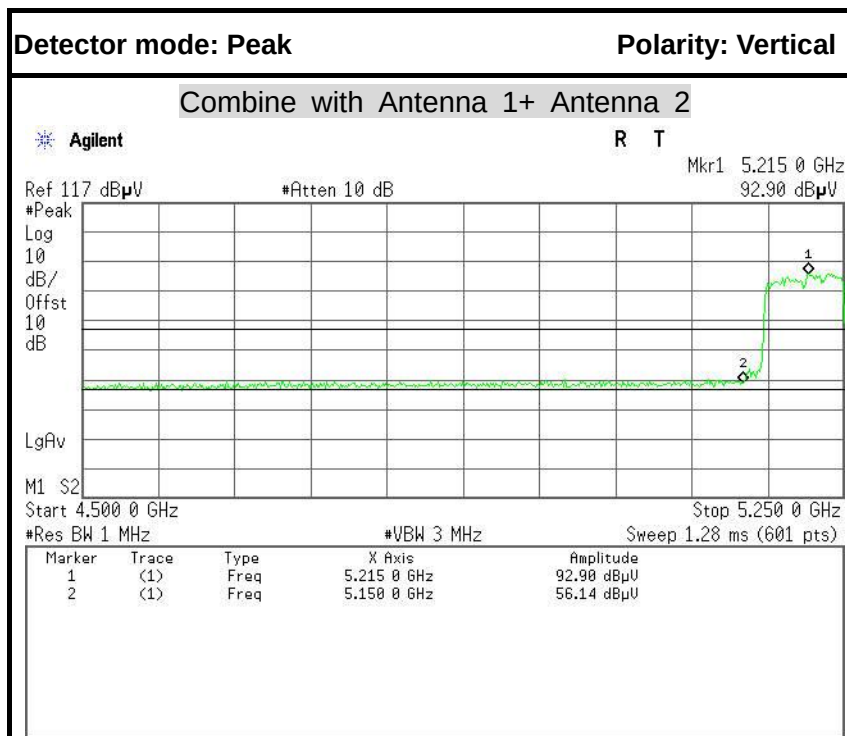
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	54.04	-6.60	60.64	74.00	-13.36	Peak	Vertical
2	5350.0000	42.50	-6.60	49.10	54.00	-4.90	Average	Vertical



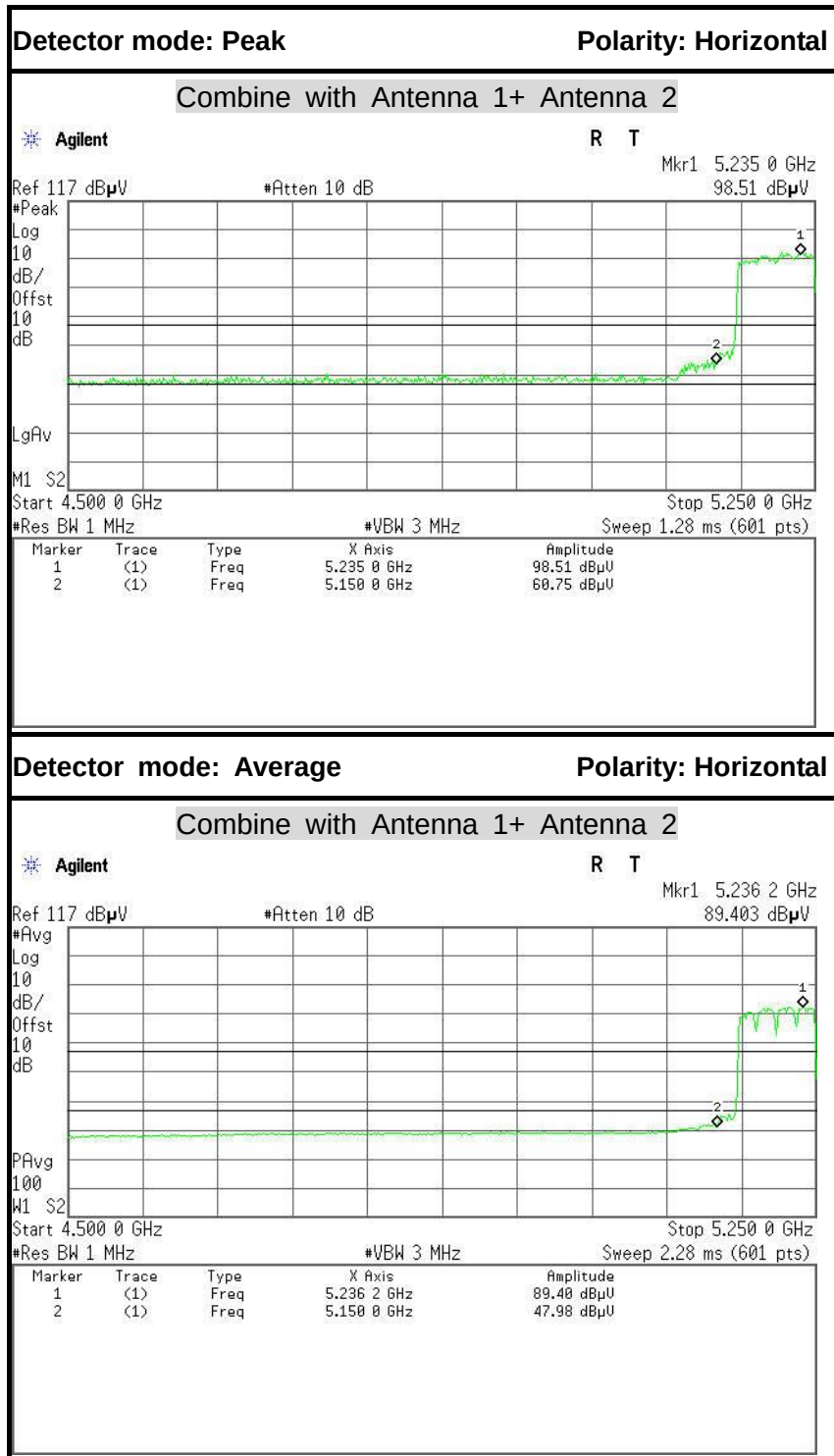
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	59.19	-6.60	65.79	74.00	-8.21	Peak	Horizontal
2	5350.0000	44.69	-6.60	51.29	54.00	-2.71	Average	Horizontal



IEEE 802.11ac 80 mode / 5210 MHz



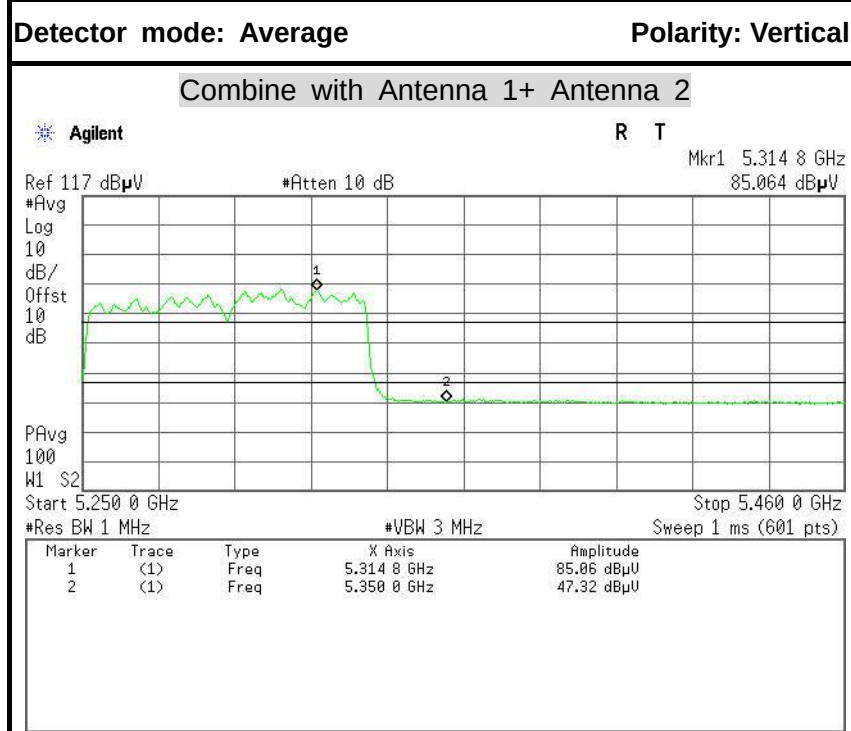
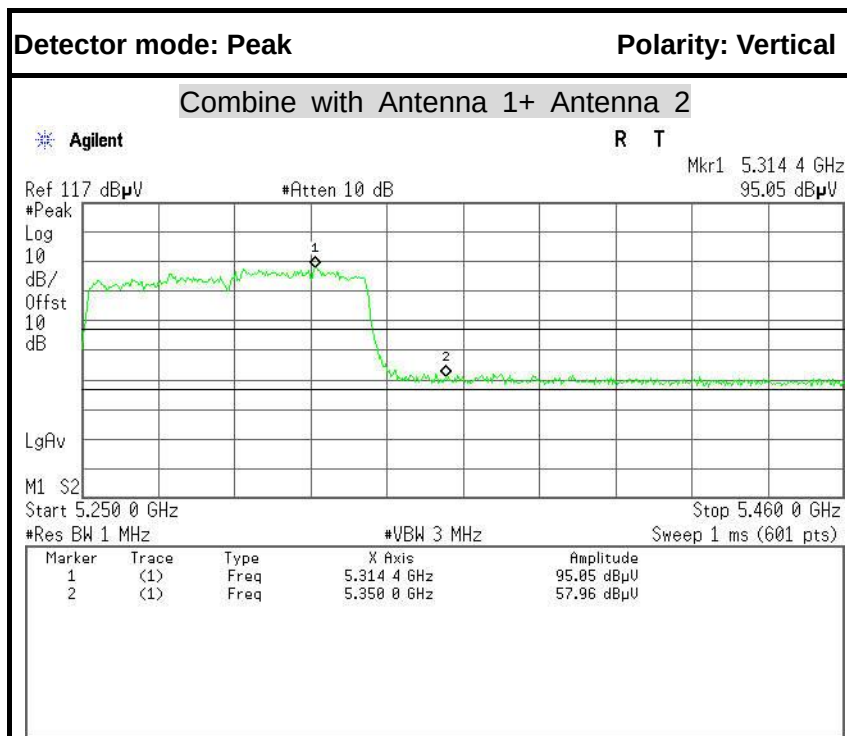
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	49.54	-6.60	56.14	74.00	-17.86	Peak	Vertical
2	5150.0000	40.40	-6.60	47.00	54.00	-7.00	Average	Vertical



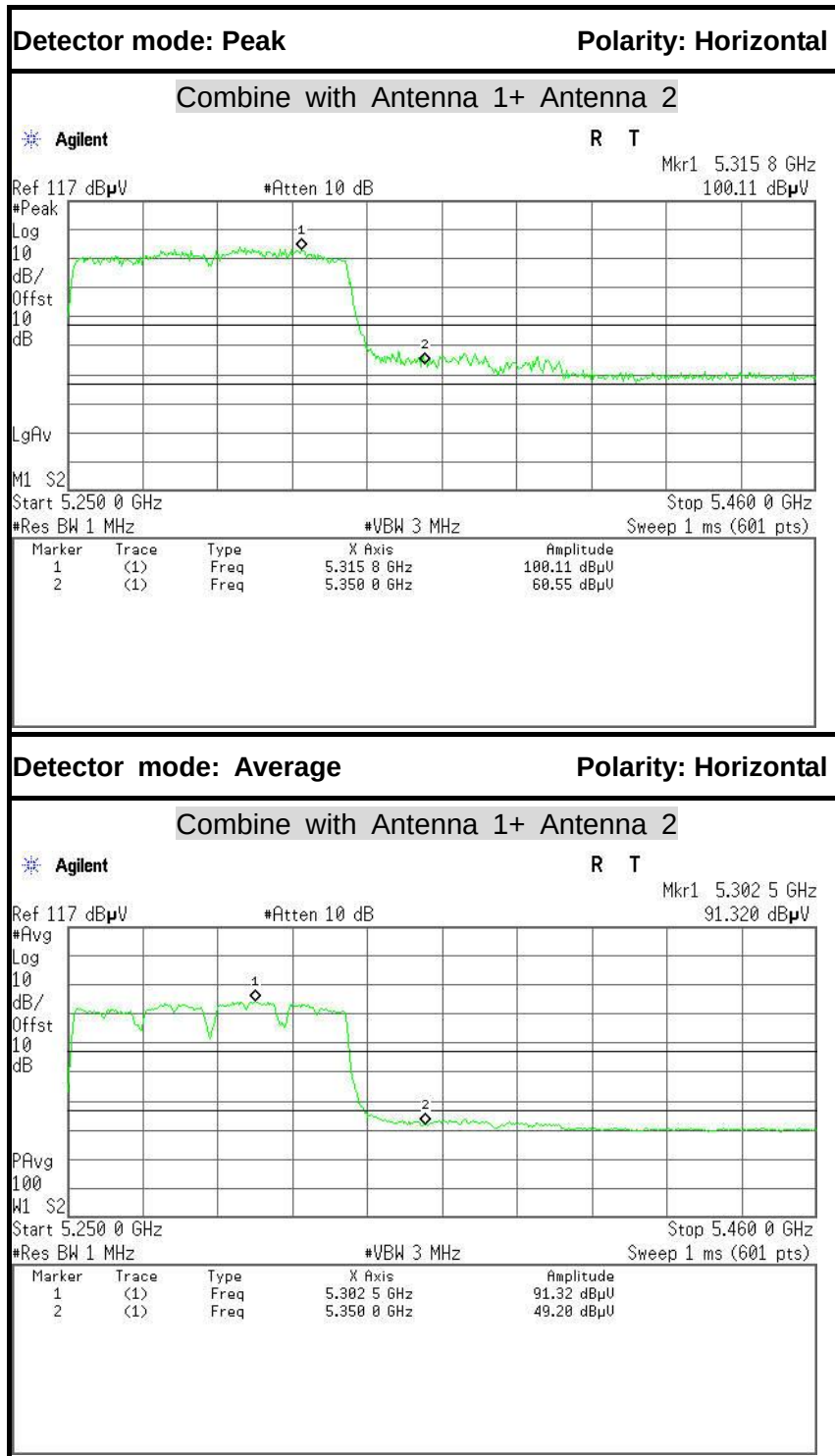
No.	Frequency (MHz)	Reading (dBUV)	Corrected (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	54.15	-6.60	60.75	74.00	-13.25	Peak	Horizontal
2	5150.0000	41.38	-6.60	47.98	54.00	-6.02	Average	Horizontal



IEEE 802.11ac 80 mode / 5290 MHz



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	51.36	-6.60	57.96	74.00	-16.04	Peak	Vertical
2	5350.0000	40.72	-6.60	47.32	54.00	-6.68	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	53.95	-6.60	60.55	74.00	-13.45	Peak	Horizontal
2	5350.0000	42.60	-6.60	49.20	54.00	-4.80	Average	Horizontal



6.5 PEAK POWER SPECTAL DENSITY

6.5.1 LIMIT

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

- (1) (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).
- (2) (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.
- (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 30dBm 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.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

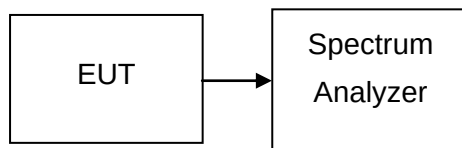
6.5.2 MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	02/28/2015	02/27/2016

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



6.5.3 TEST CONFIGURATION



6.5.4 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 = 30MHz, Sweep=1.2ms
3. For devices operating in the bands 5.725-5.85 GHz, Set the spectrum analyzer as RBW = 500kHz, VBW = 1.5MHz, Span = 30MHz, Sweep=1.2ms
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed



6.5.5 TEST RESULTS

Test Data

IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5180	-7.587	-7.079	17	-24.587	-24.079	PASS
Mid	5220	-7.462	-6.913		-24.462	-23.913	PASS
High	5240	-5.466	-7.949		-22.466	-24.949	PASS

IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5260	-6.318	-5.782	11	-17.318	-16.782	PASS
Mid	5300	-6.232	-5.880		-17.232	-16.880	PASS
High	5320	-5.080	-5.999		-16.080	-16.999	PASS

IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5500	-6.245	-4.715	11	-17.245	-15.715	PASS
Mid	5580	-6.802	-5.188		-17.802	-16.188	PASS
High	5700	-6.859	-3.064		-17.859	-14.064	PASS

IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2			Antenna 1	Antenna 2	
Low	5745	-9.248	-15.807	0.27	17	-25.978	-32.537	PASS
Mid	5785	-9.804	-15.411	0.27		-26.534	-32.141	PASS
High	5825	-7.884	-12.430	0.27		-24.614	-29.430	PASS

Remark: factor = $10 \cdot \log_{10}(500/\text{RBW})$

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5180	-9.190	-8.405	17	-26.190	-25.405	PASS
Mid	5220	-8.103	-7.674		-25.103	-24.674	PASS
High	5240	-9.155	-9.337		-26.155	-26.337	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5260	-9.859	-8.708	11	-20.859	-19.708	PASS
Mid	5300	-9.487	-9.894		-20.487	-20.894	PASS
High	5320	-9.274	-7.844		-20.274	-18.844	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Limit (dBm)	Margin		Result
		Antenna 1	Antenna 2		Antenna 1	Antenna 2	
Low	5500	-6.921	-8.618	11	-17.921	-19.618	PASS
Mid	5580	-9.773	-6.305		-20.773	-17.305	PASS
High	5700	-7.535	-7.776		-18.535	-18.776	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margin	Result
		Antenna 1	Antenna 2					
Low	5745	-12.622	-11.287	0.27	-8.624	30	-38.624	PASS
Mid	5785	-10.613	-12.927	0.27	-8.339		-38.339	PASS
High	5825	-10.774	-15.310	0.27	-9.196		-39.196	PASS

Remark: factor = $10 \cdot \log_{10}(500/\text{RBW})$

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margin	Result
		Antenna 1	Antenna 2				
Low	5190	-13.803	16.552	16.556	17	-0.444	PASS
High	5230	-14.681	-15.549	-12.083		-29.083	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margin	Result
		Antenna 1	Antenna 2				
Low	5270	-15.610	16.083	16.086	11	5.086	PASS
High	5310	-14.154	15.915	15.919		4.919	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margin	Result
		Antenna 1	Antenna 2				
Low	5510	-14.859	-14.496	-11.663	11	-22.663	PASS
Mid	5590	-14.797	-16.642	-12.612		-12.612	PASS
High	5670	-13.482	-13.208	-10.333		-21.333	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margin	Result
		Antenna 1	Antenna 2					
Low	5755	-14.592	-16.368	0.27	-12.111	17	-29.111	PASS
High	5795	-16.338	-17.611	0.27	-13.649		-30.649	PASS

Remark: factor = $10 \cdot \log_{10}(500/\text{RBW})$

**IEEE 802.11ac 80 mode / 5210MHz**

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2				
	5210	-25.028	-25.314	-22.158	17	-39.158	PASS

IEEE 802.11ac 80 mode / 5290MHz

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2				
	5290	-22.893	-25.853	-21.115	11	-32.115	PASS

IEEE 802.11ac 80 mode / 5530 ~ 5610MHz

Channel	Frequency (MHz)	PPSD (dBm)		Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2				
Low	5530	-18.098	-23.892	-17.083	11	-28.083	PASS
High	5610	-24.118	-24.655	-21.368		-32.368	PASS

IEEE 802.11ac 80 mode / 5775MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 1	Antenna 2					
	5775	-23.081	-24.523	0.27	-20.463	17	-37.463	PASS

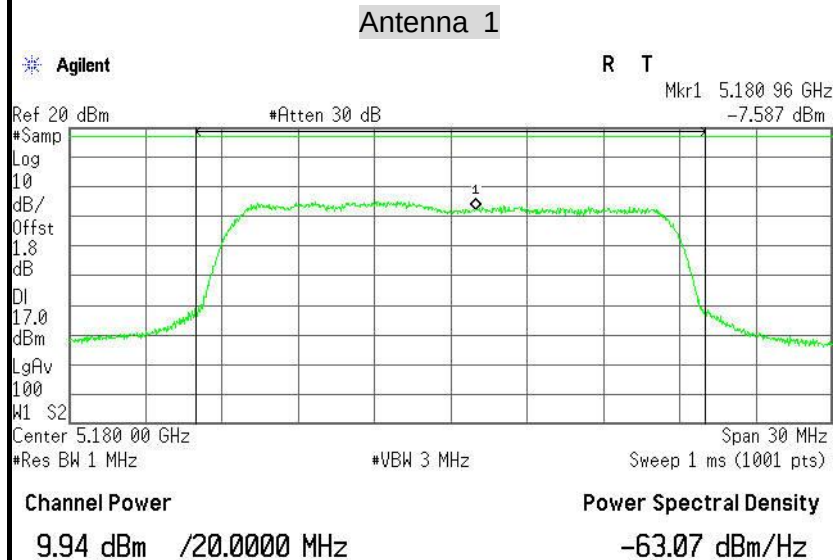
Remark: factor =10*log10(500/RBW)



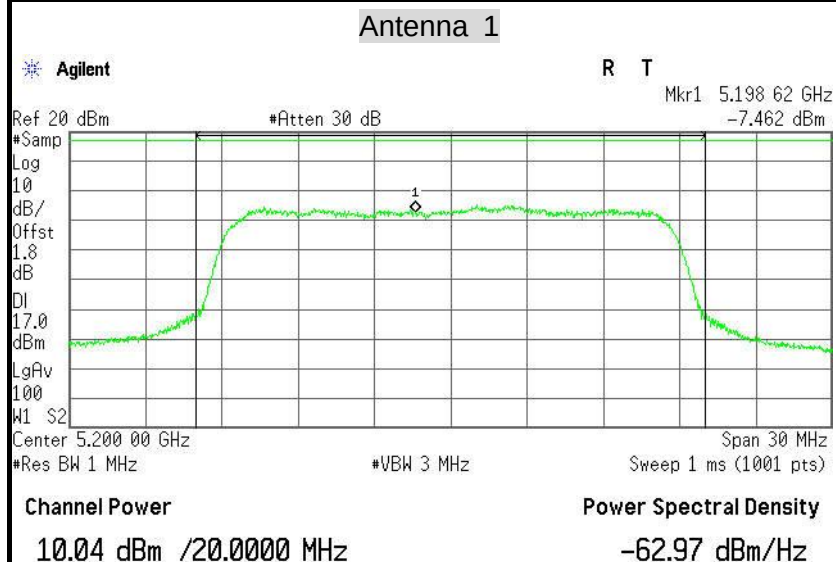
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

PPSD (CH Low)

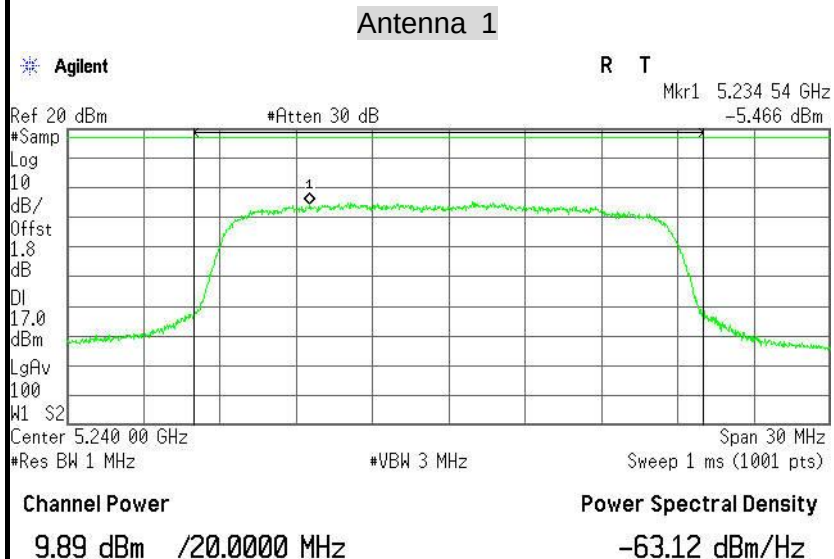


PPSD (CH Mid)



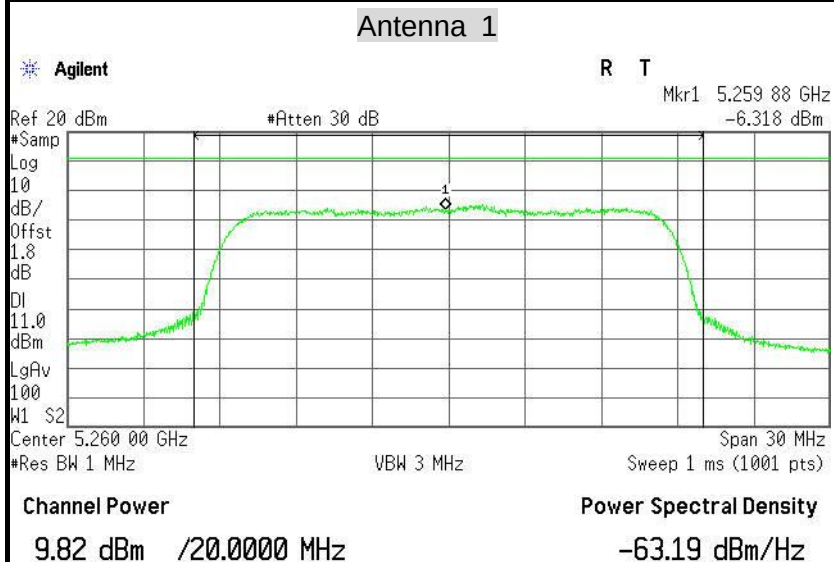


PPSD (CH High)



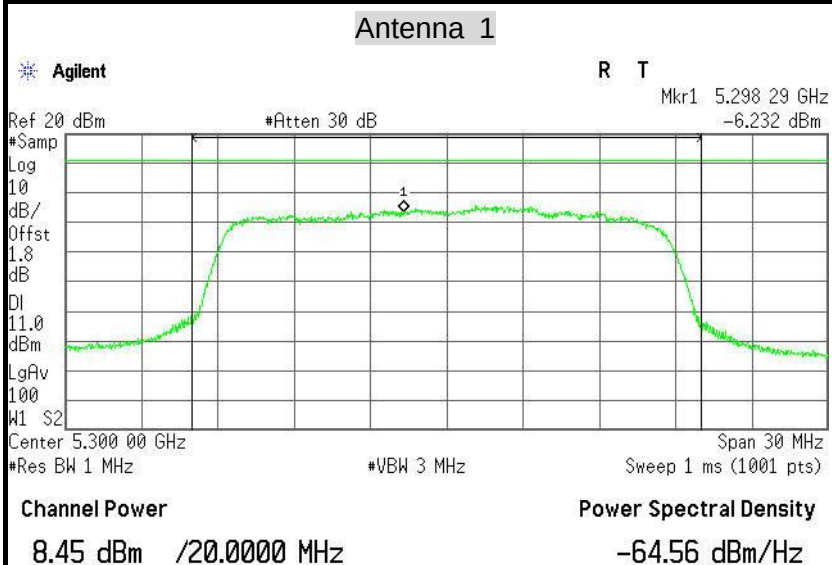
IEEE 802.11a mode / 5260~ 5320MHz

PPSD (CH Low)

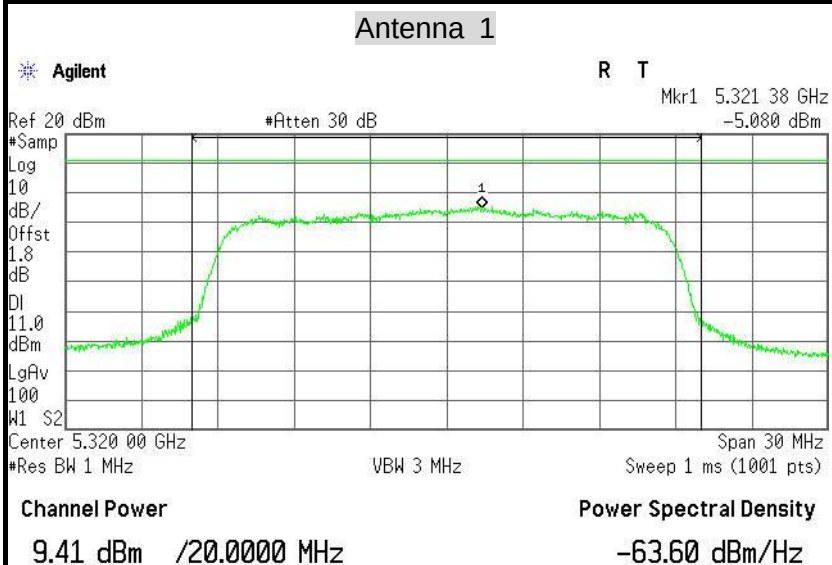




PPSD (CH Mid)



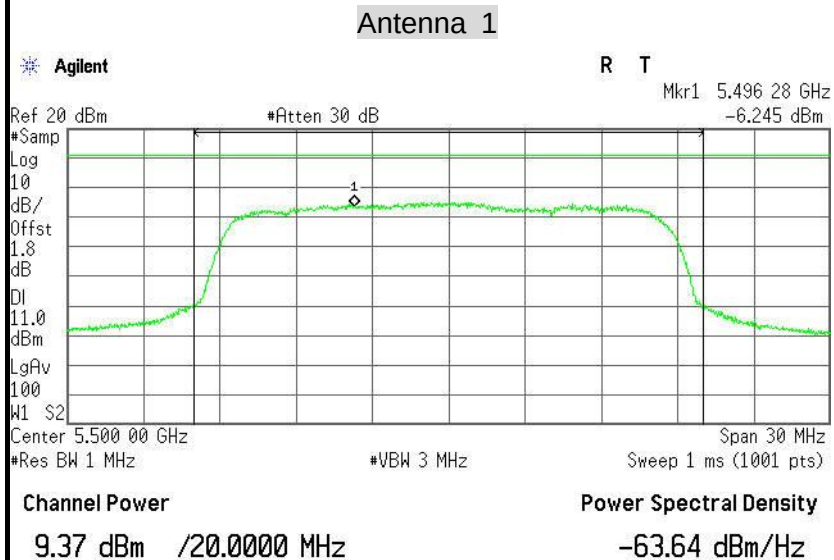
PPSD (CH High)



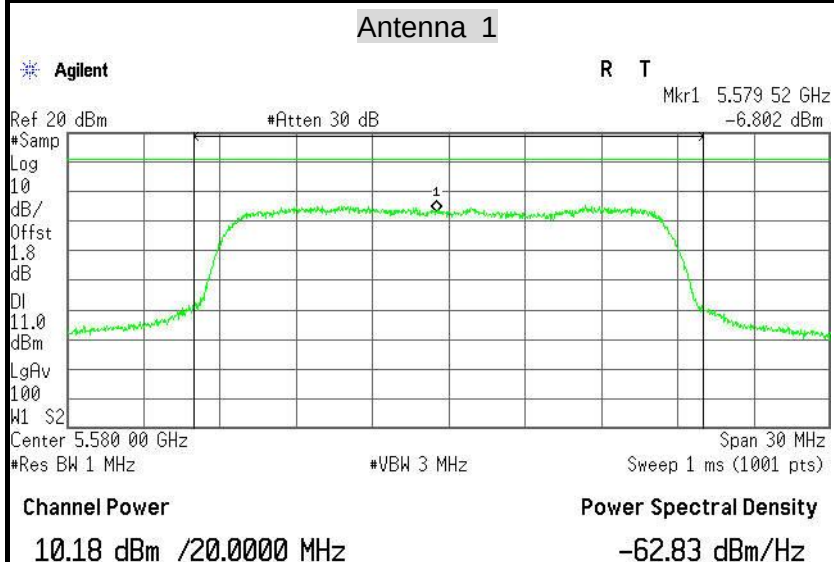


IEEE 802.11a mode / 5500 ~ 5700MHz

PPSD (CH Low)

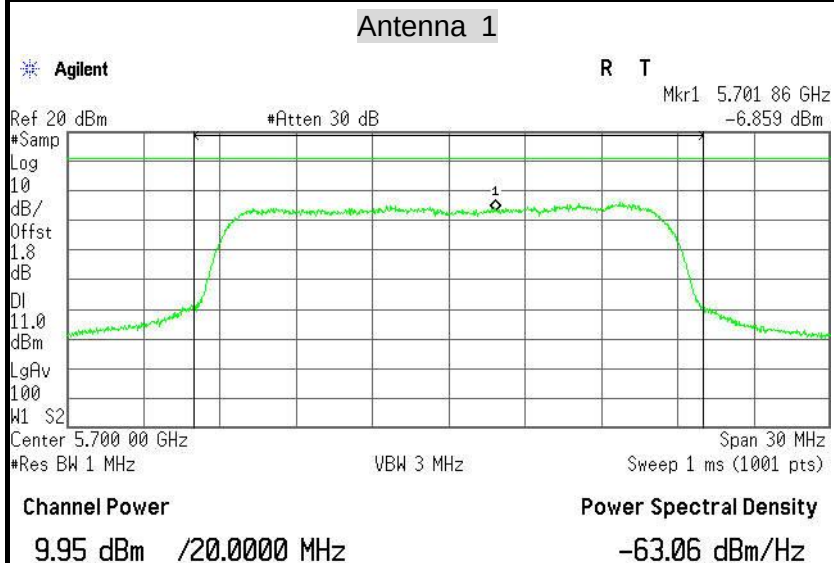


PPSD (CH Mid)



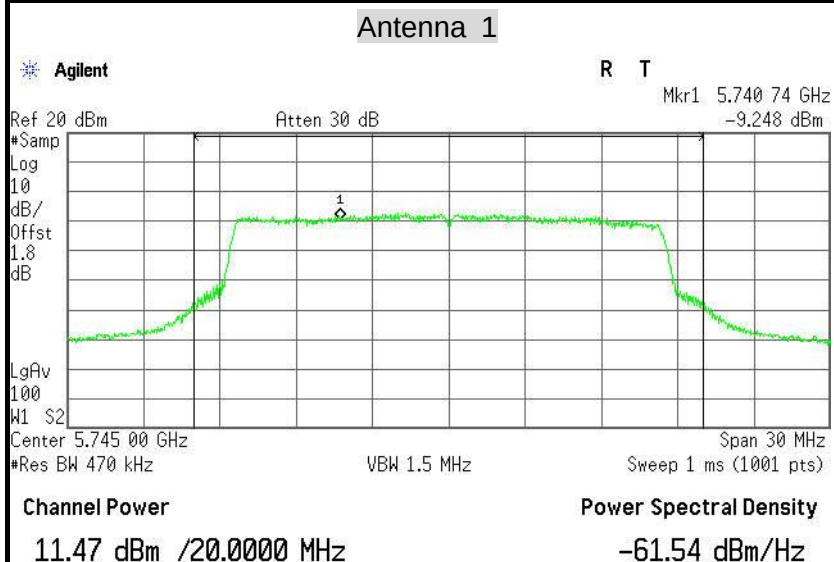


PPSD (CH High)



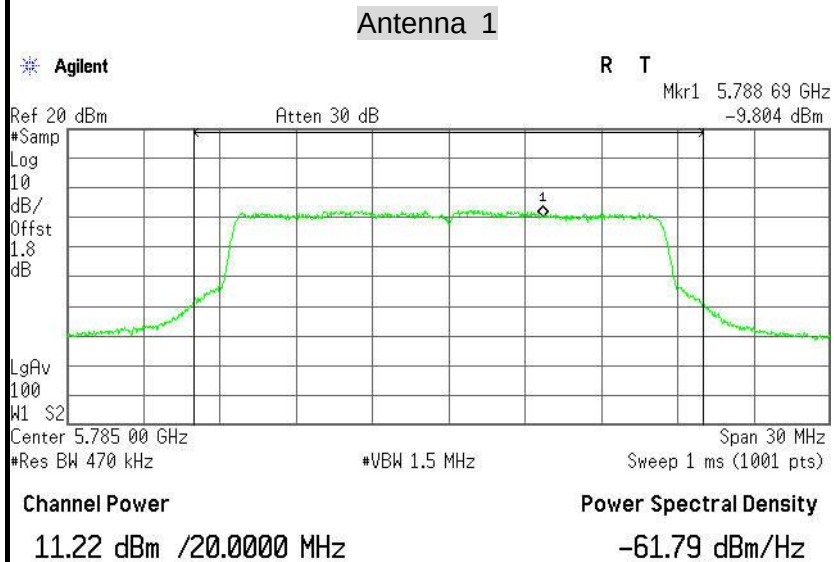
IEEE 802.11a mode / 5745 ~ 5825MHz

PPSD (CH Low)

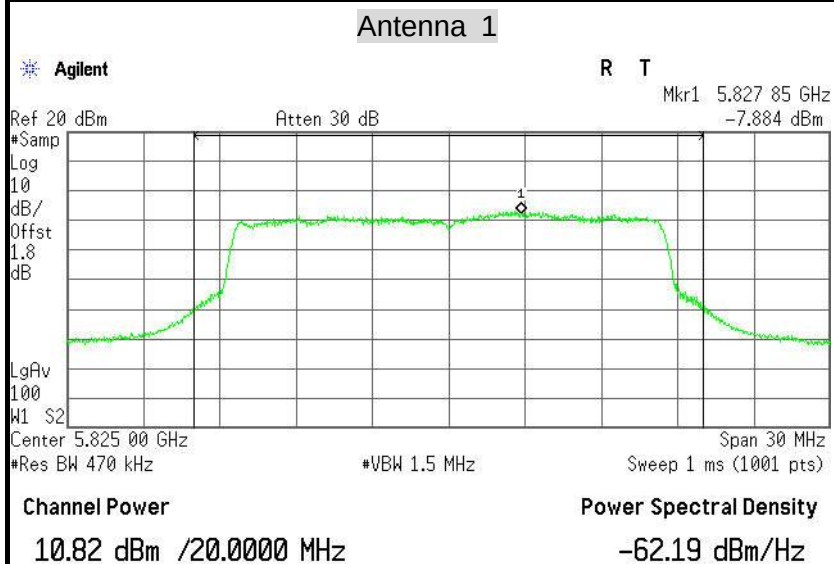




PPSD (CH Mid)



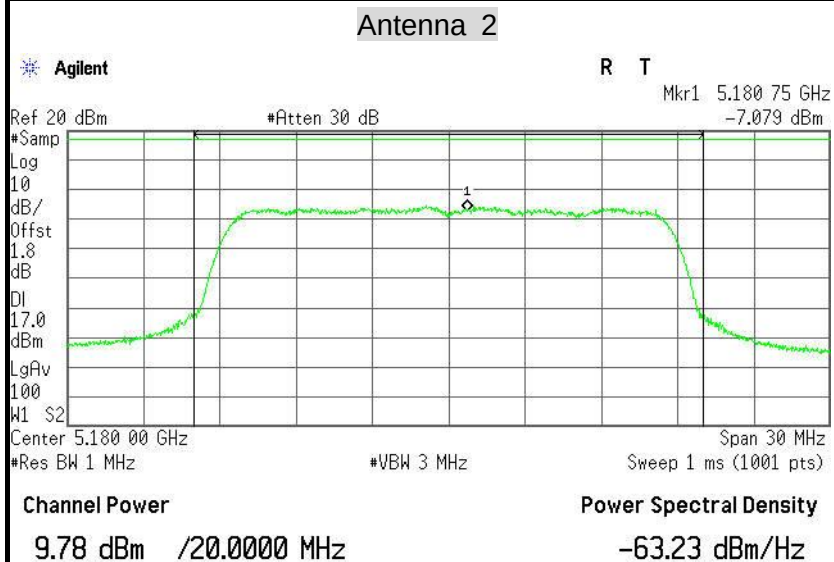
PPSD (CH High)



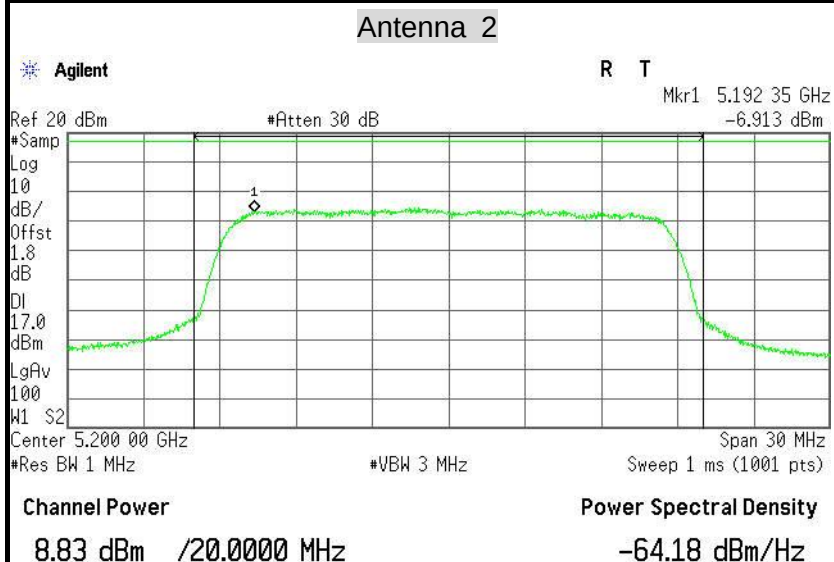


IEEE 802.11a mode / 5180 ~ 5240MHz

PPSD (CH Low)

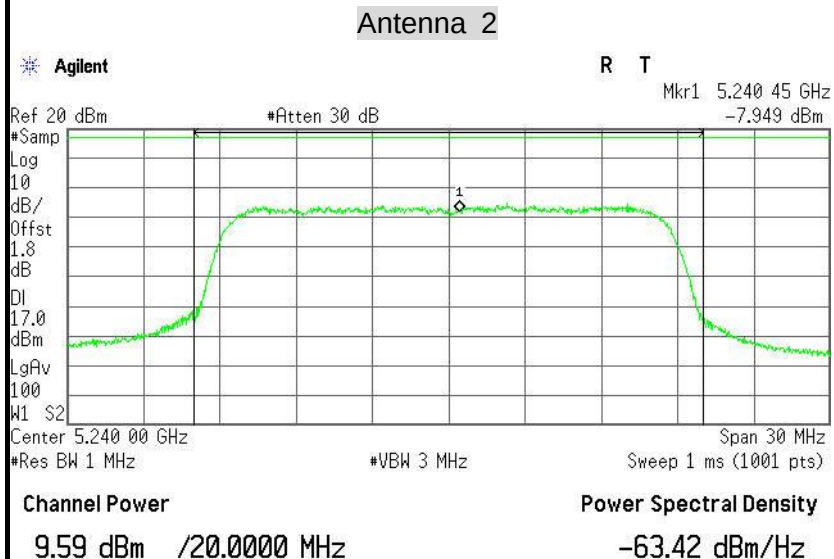


PPSD (CH Mid)



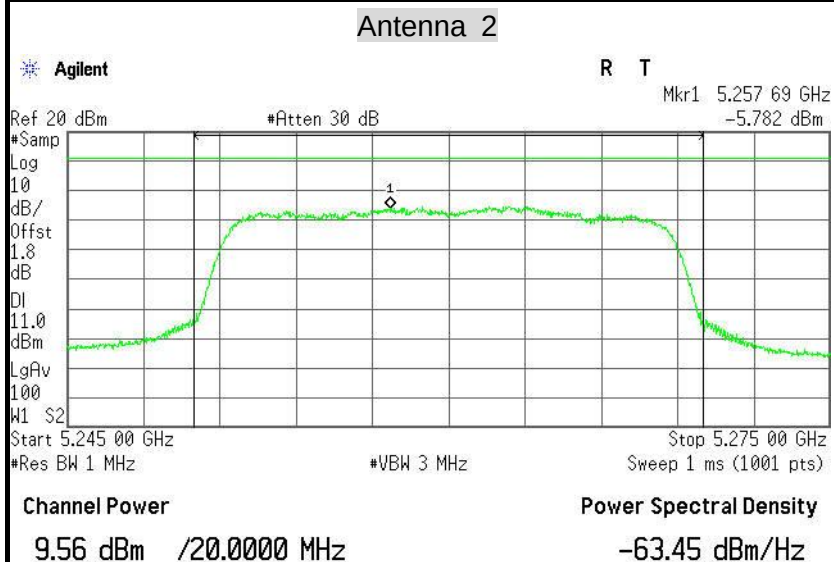


PPSD (CH High)



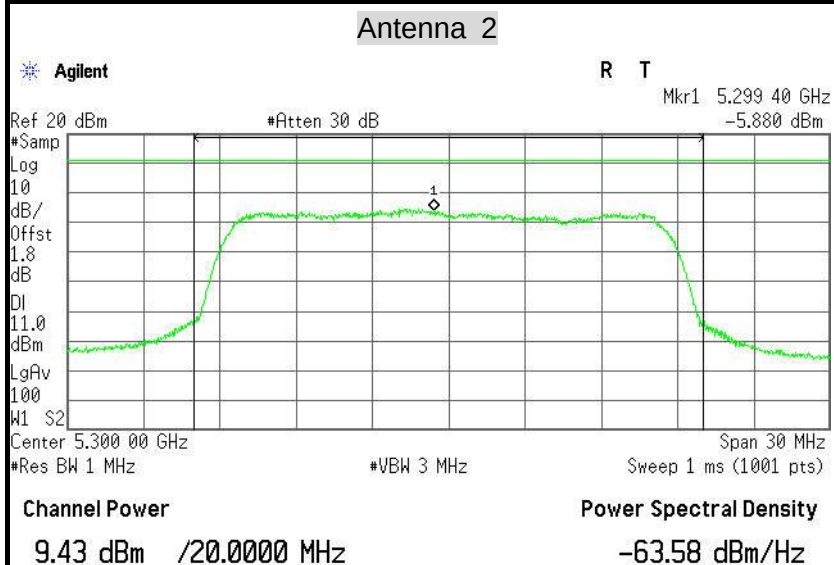
IEEE 802.11a mode / 5260~ 5320MHz

PPSD (CH Low)

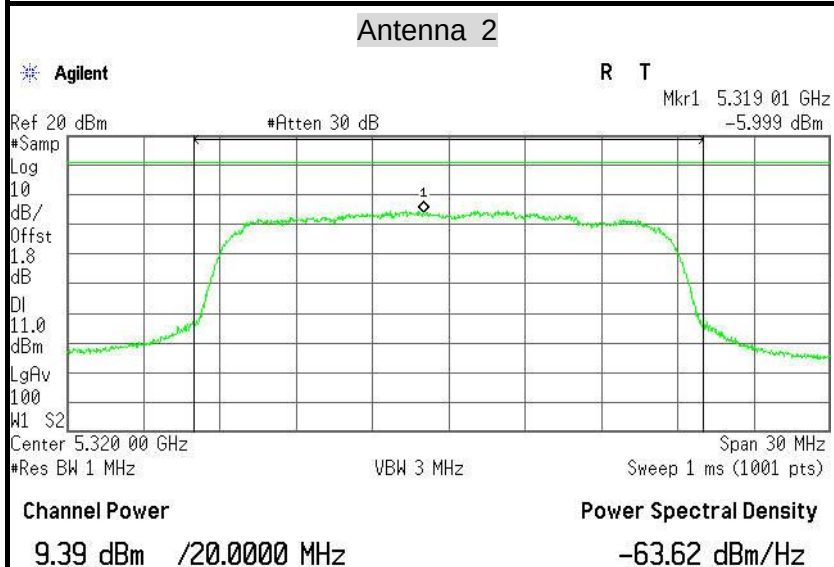




PPSD (CH Mid)



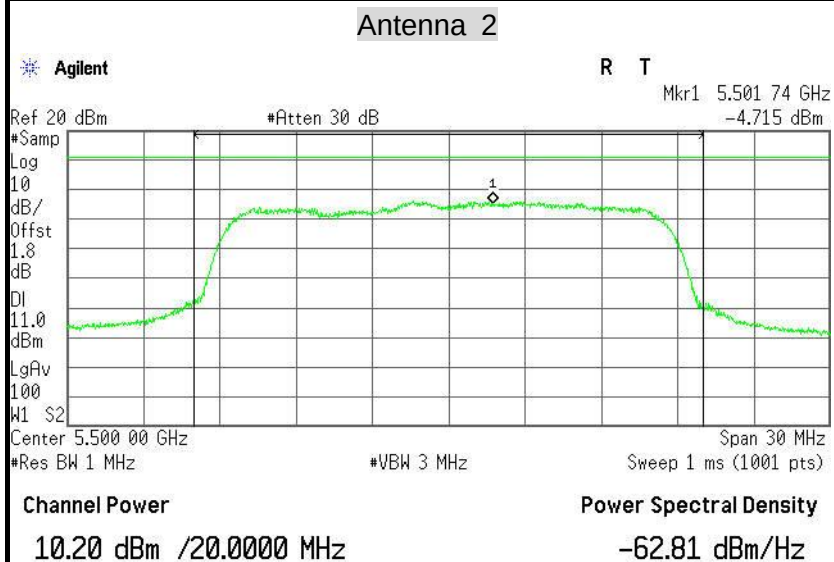
PPSD (CH High)



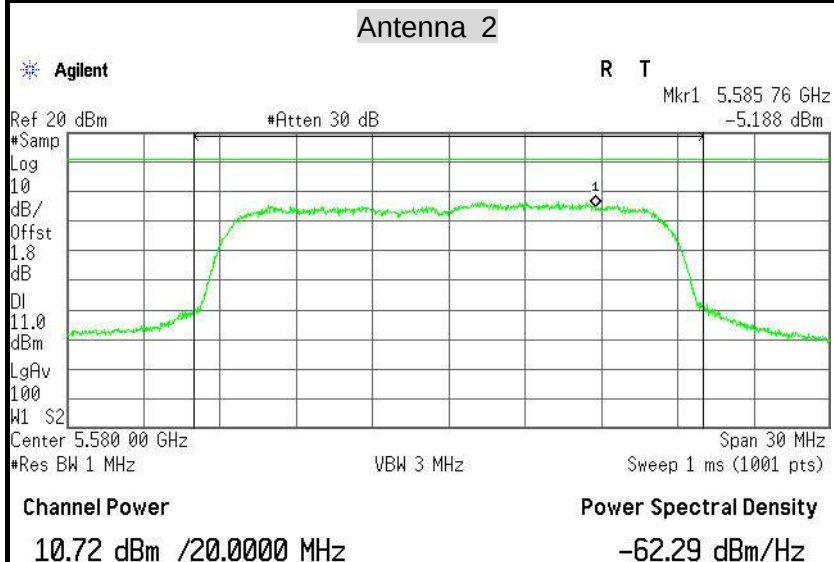


IEEE 802.11a mode / 5500 ~ 5700MHz

PPSD (CH Low)

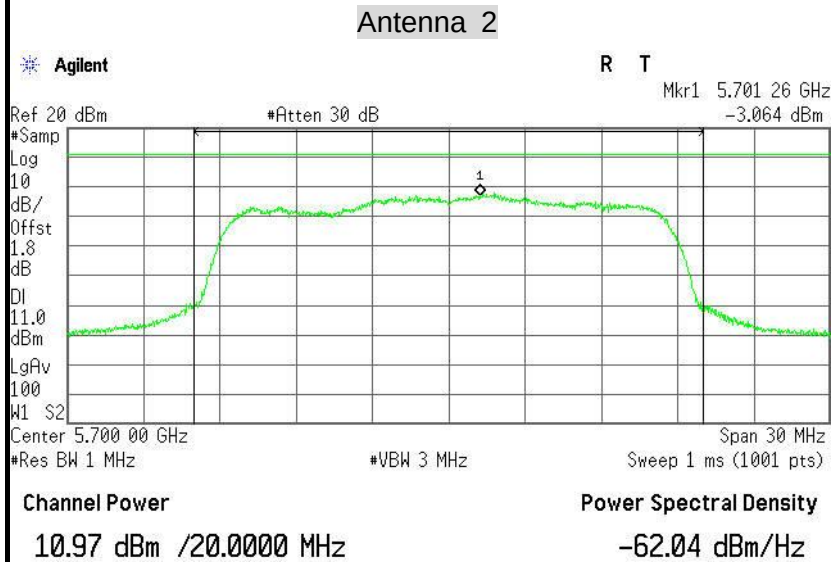


PPSD (CH Mid)



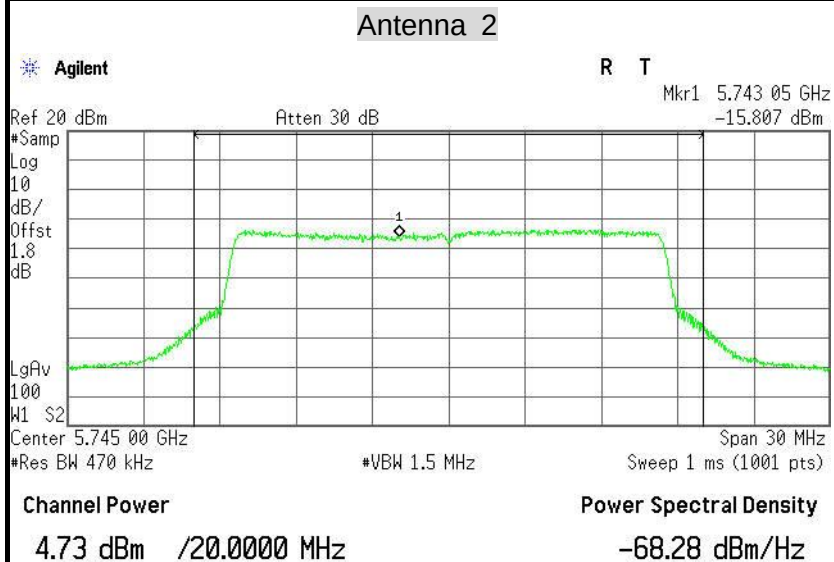


PPSD (CH High)



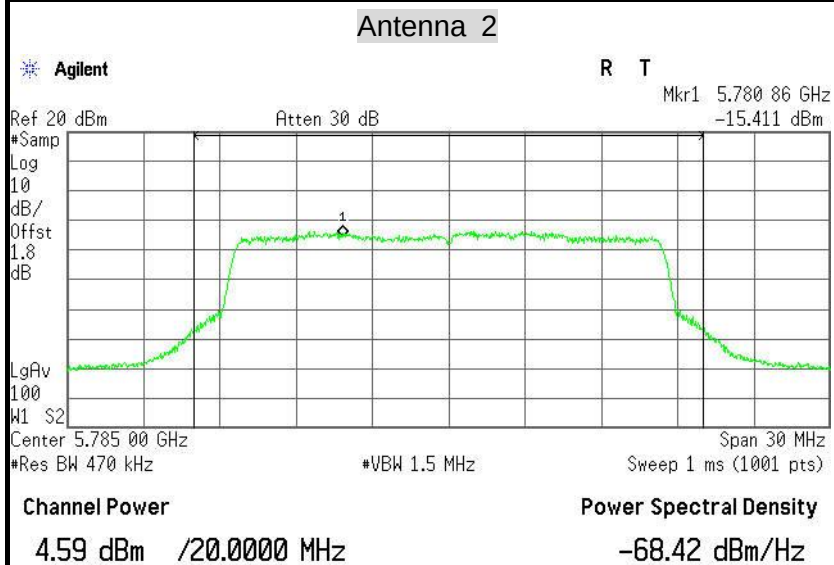
IEEE 802.11a mode / 5745 ~ 5825MHz

PPSD (CH Low)

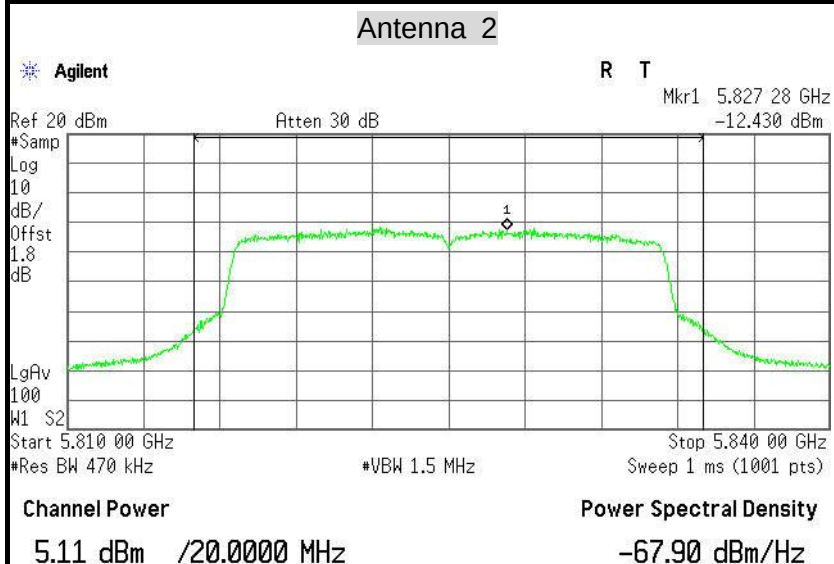




PPSD (CH Mid)



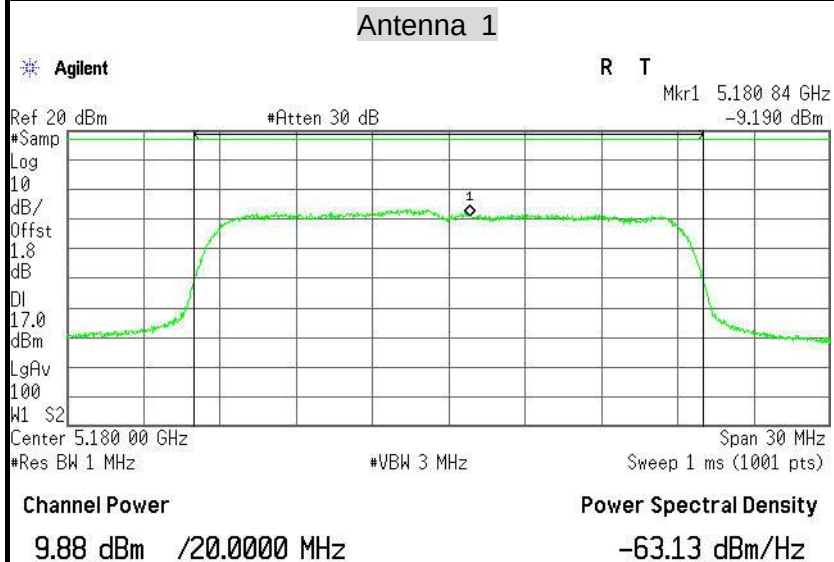
PPSD (CH High)



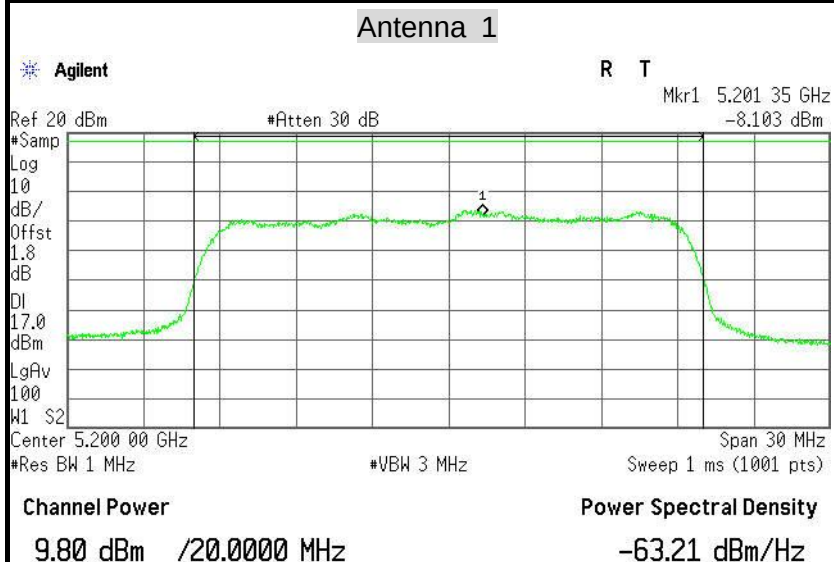


IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

PPSD (CH Low)

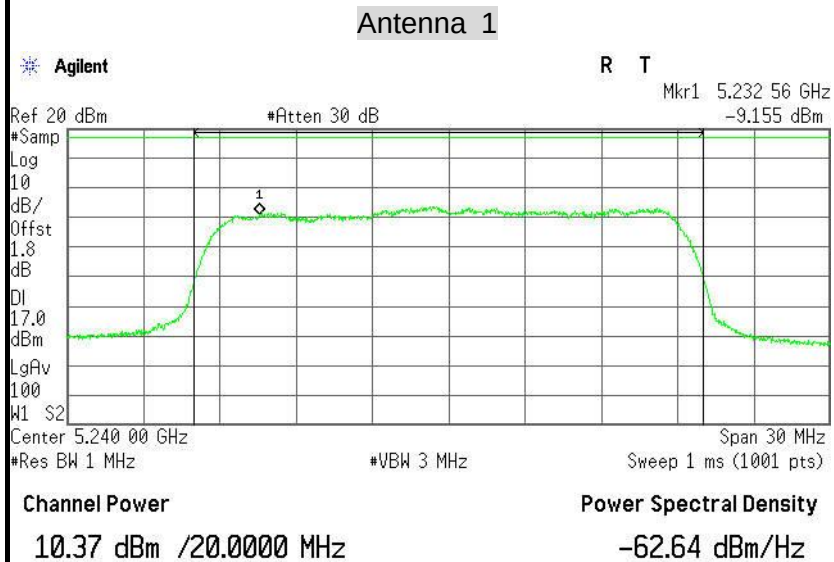


PPSD (CH Mid)



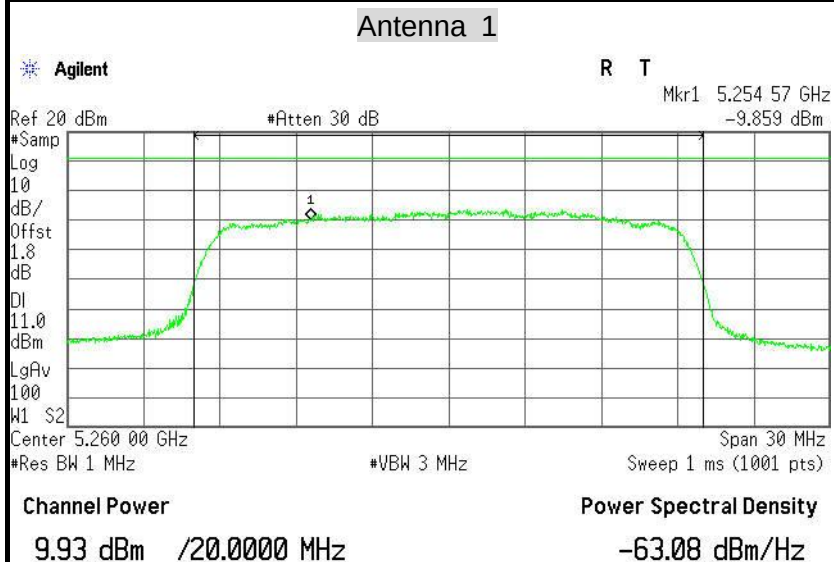


PPSD (CH High)



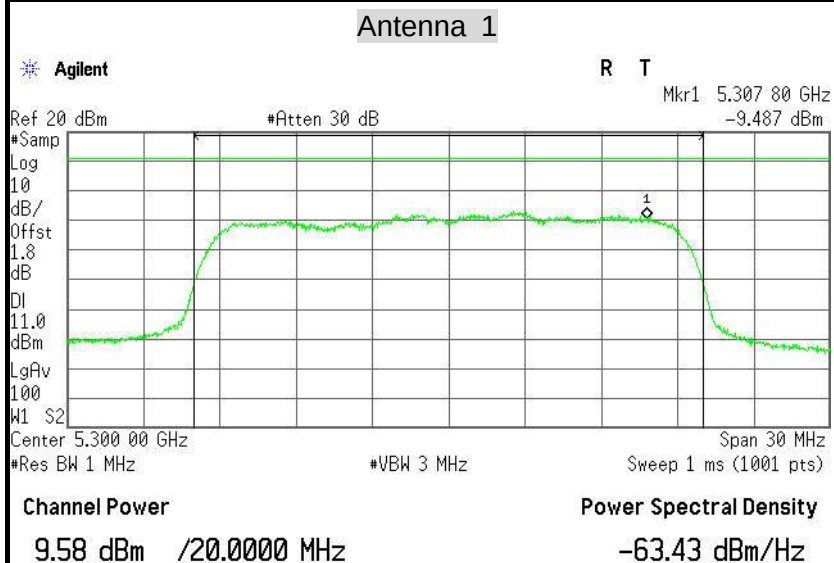
IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

PPSD (CH Low)

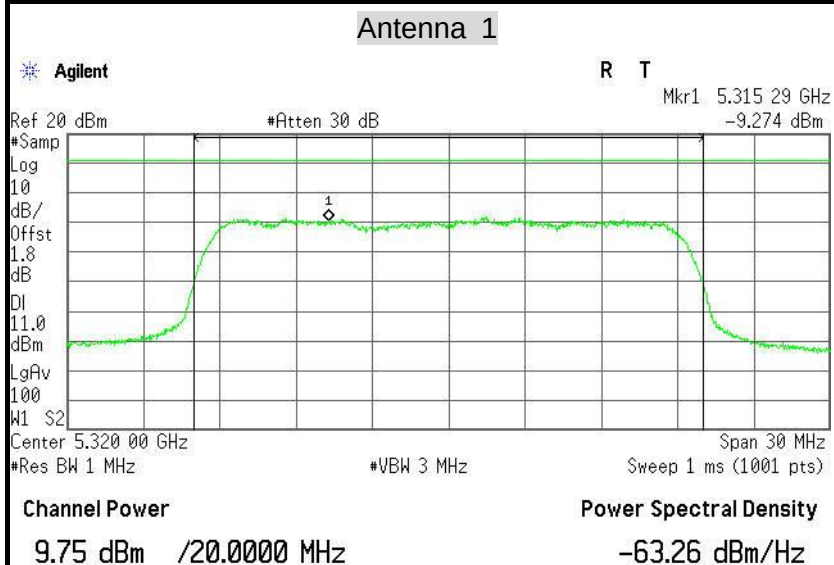




PPSD (CH Mid)



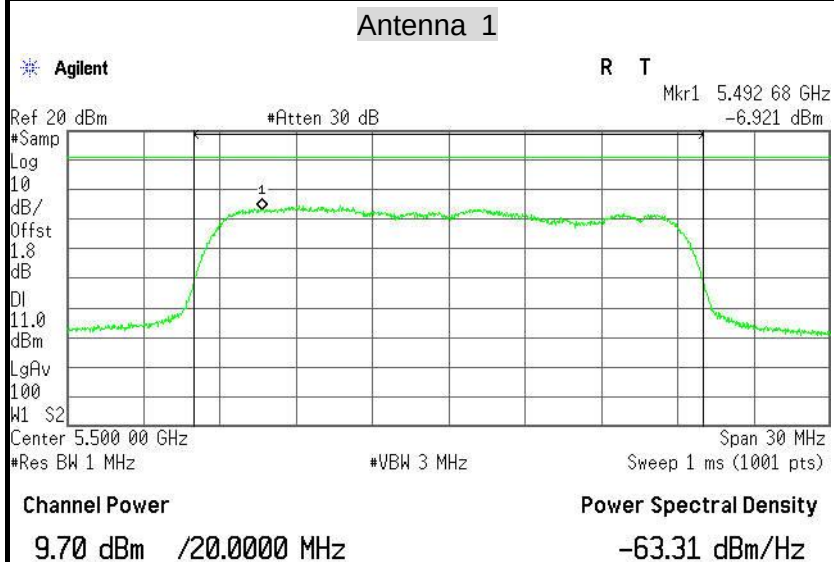
PPSD (CH High)



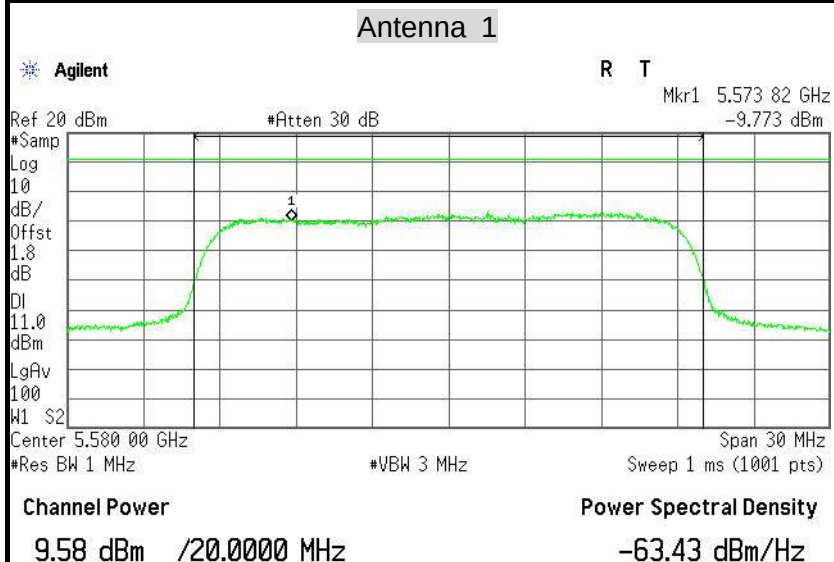


IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

PPSD (CH Low)

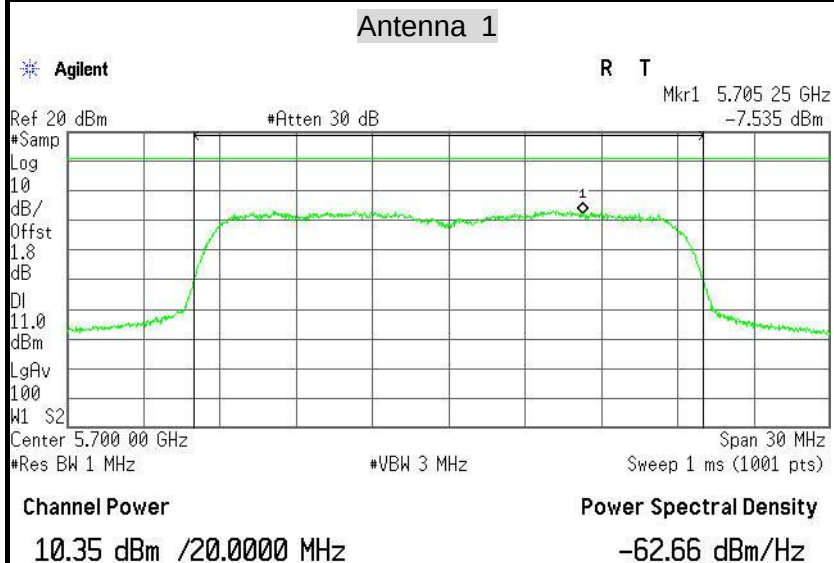


PPSD (CH Mid)



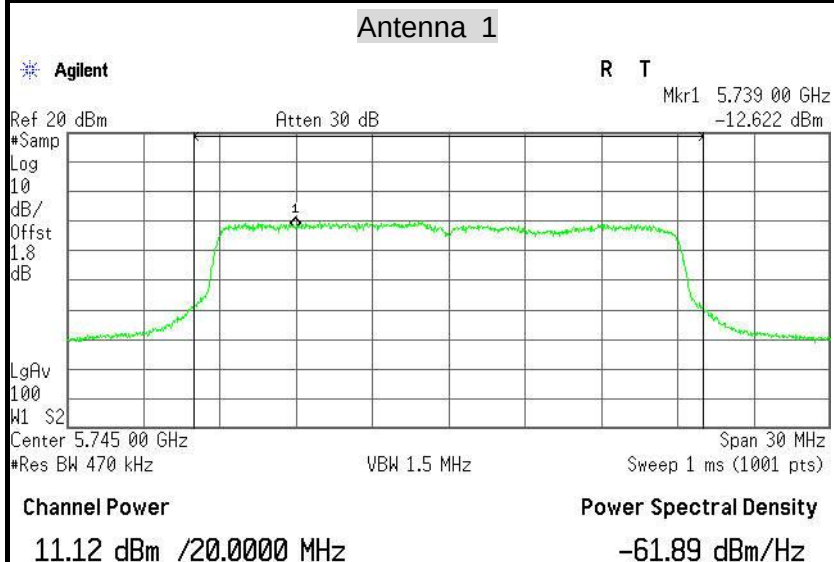


PPSD (CH High)



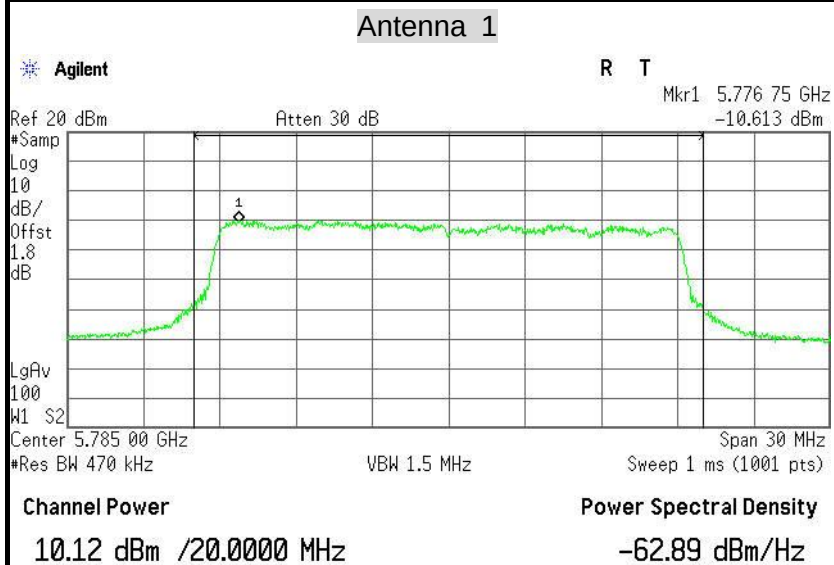
IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

PPSD (CH Low)

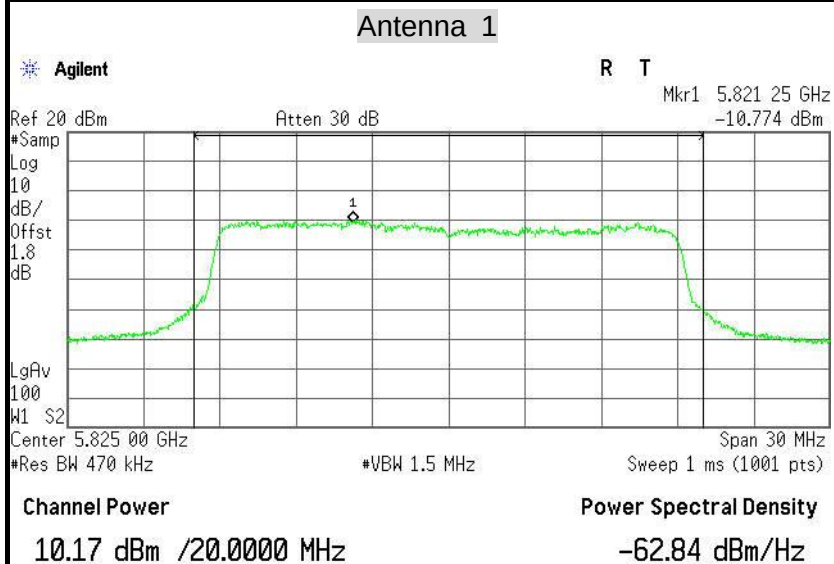




PPSD (CH Mid)



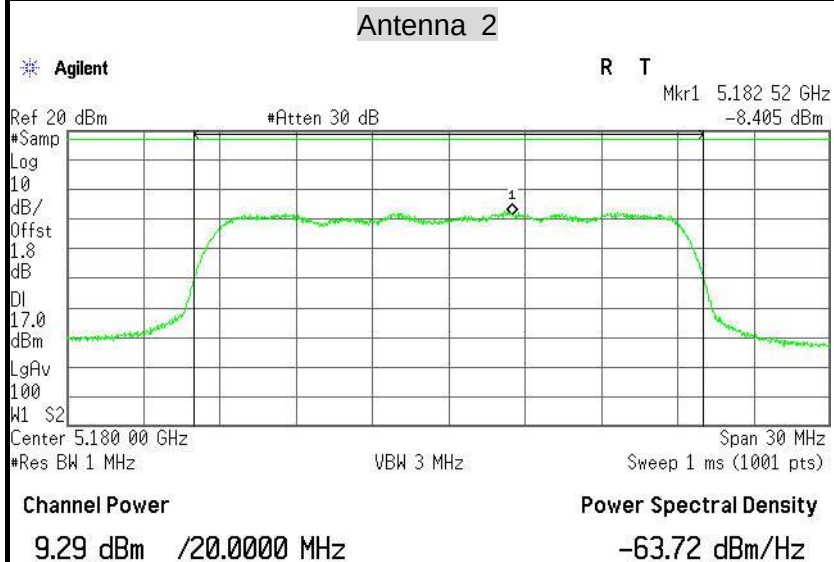
PPSD (CH High)





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

PPSD (CH Low)



PPSD (CH Mid)

