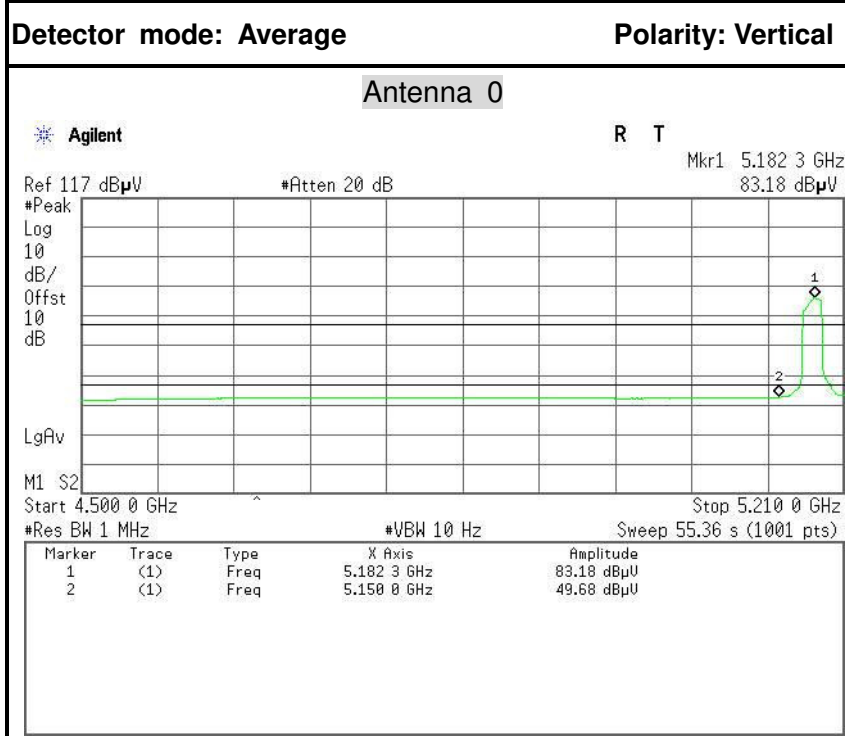
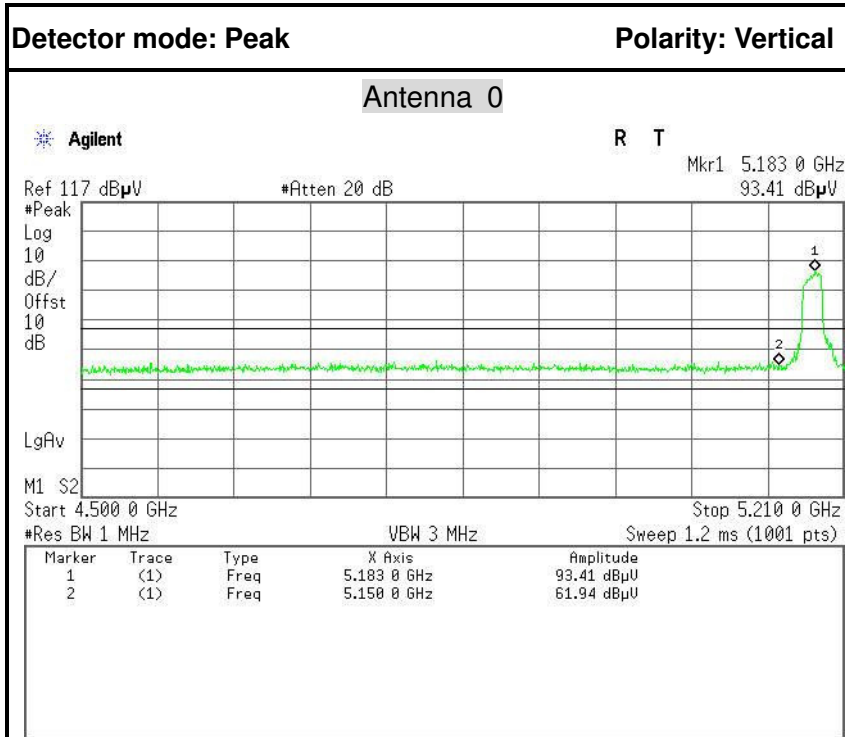


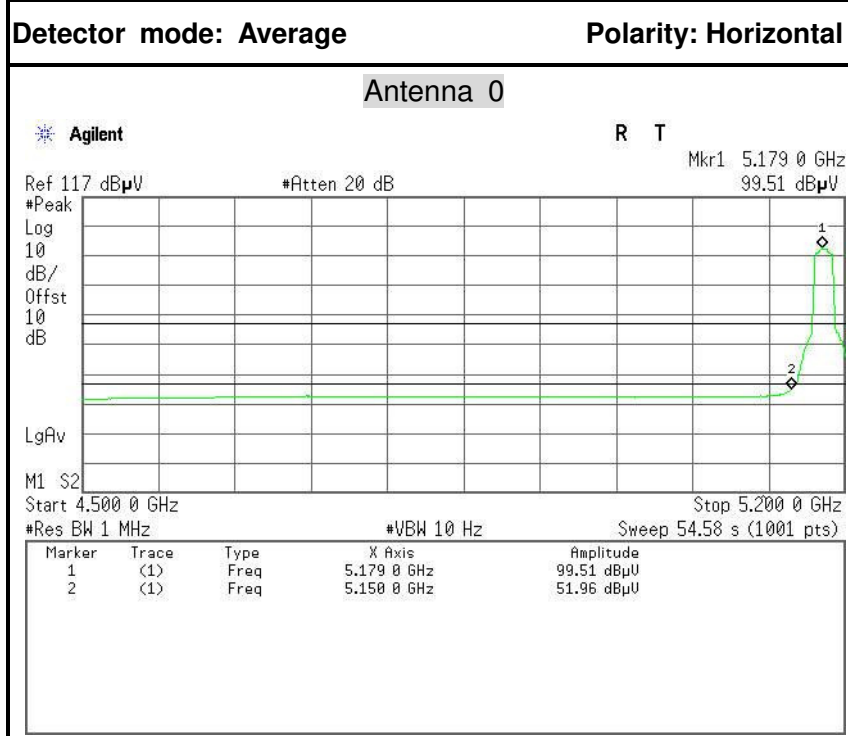
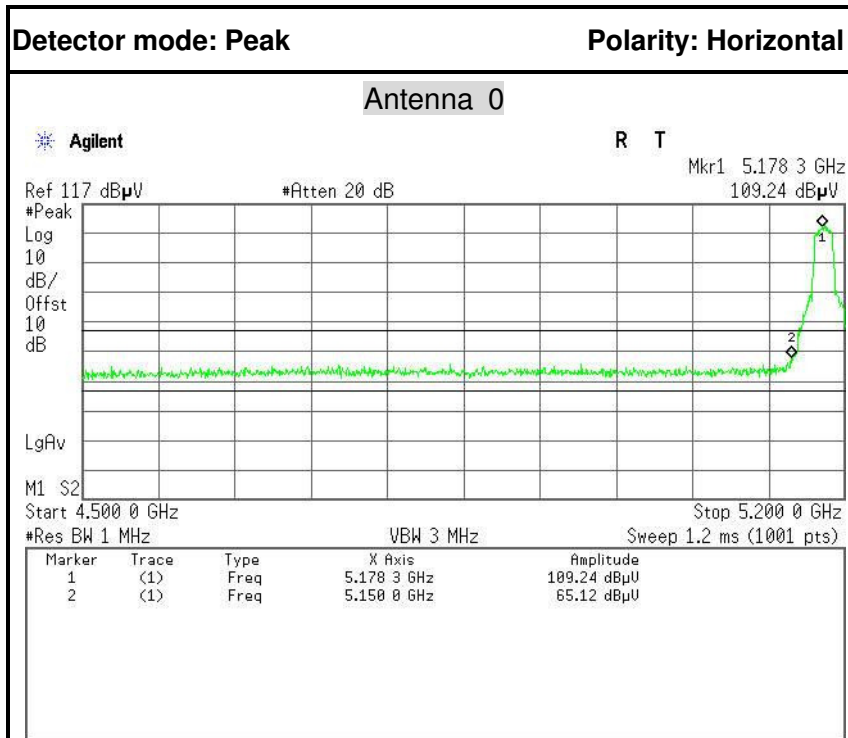


Test Plot

IEEE 802.11a mode / 5180MHz



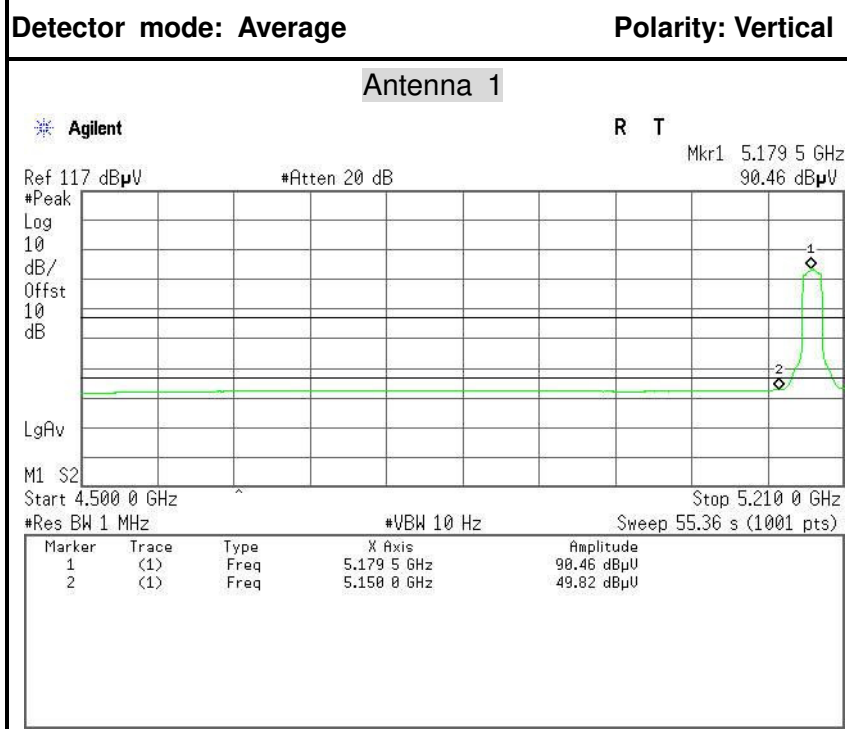
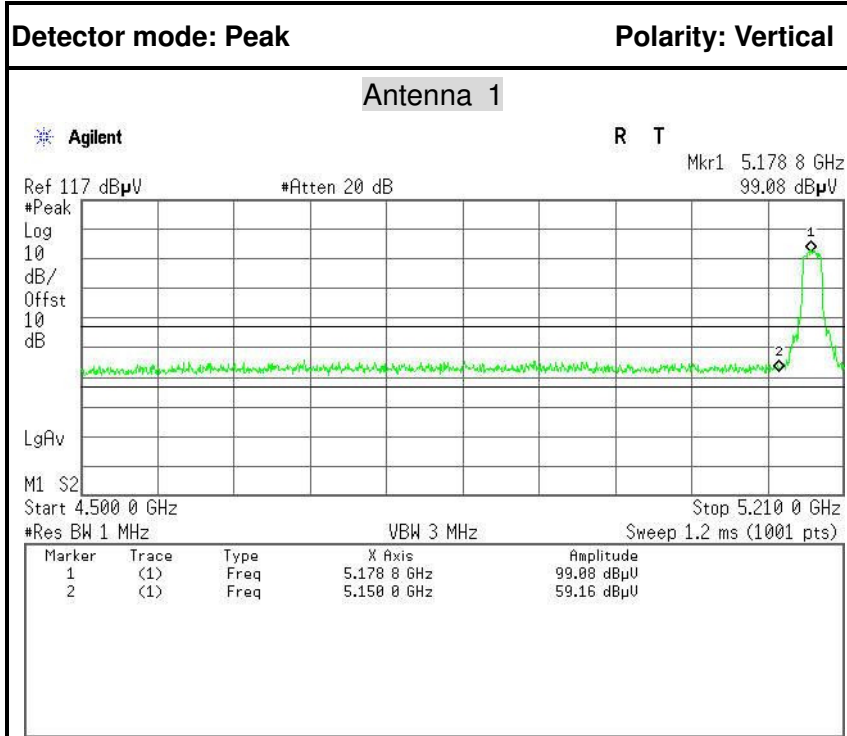
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	67.54	5.60	61.94	74.00	-12.06	Peak	Vertical
2	5150.0000	55.28	5.60	49.68	54.00	-4.32	Average	Vertical



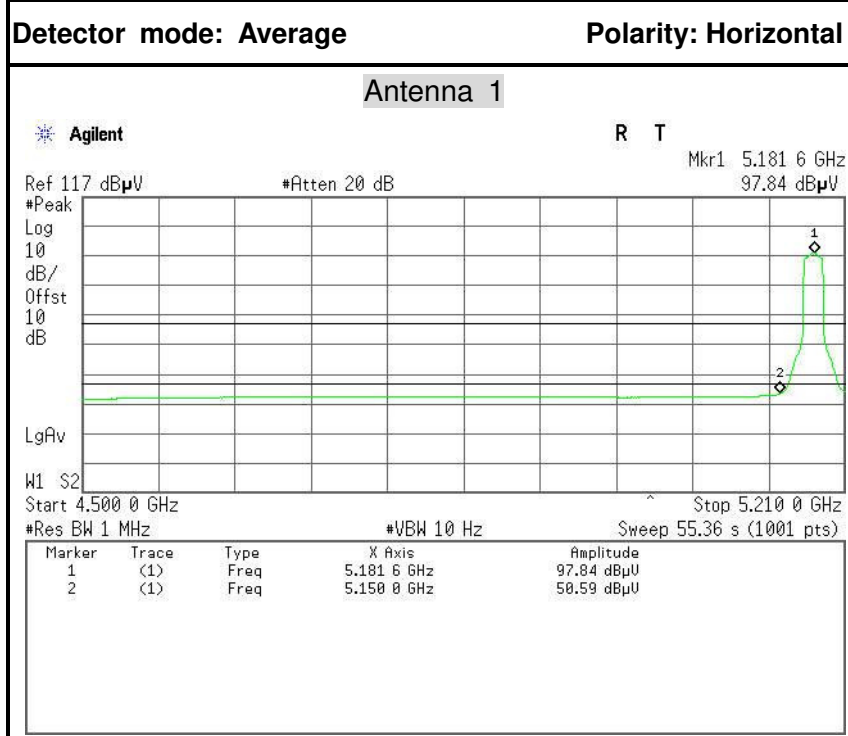
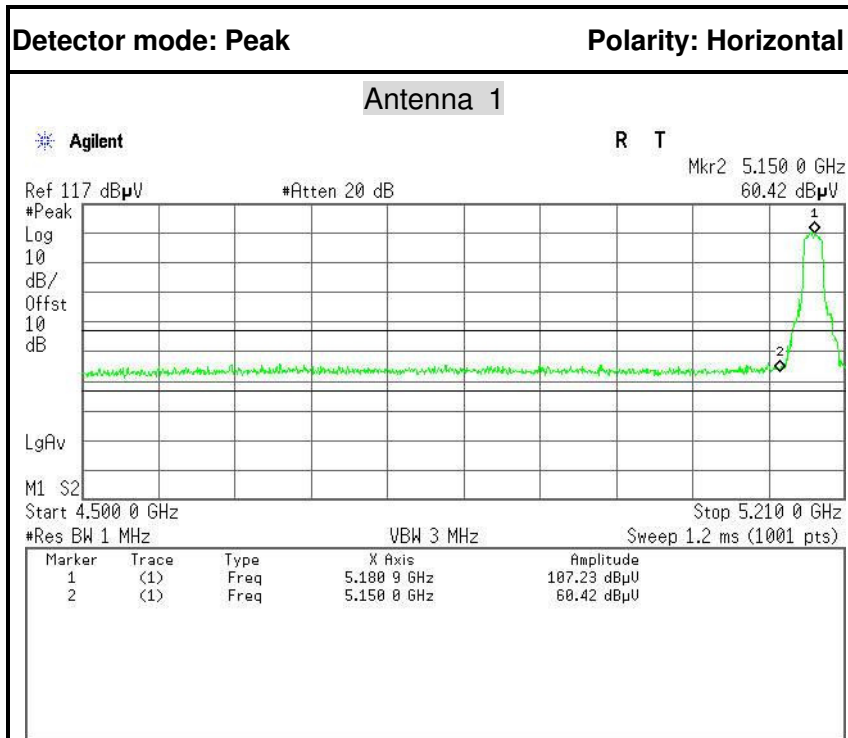
No.	Frequency (MHz)	Reading (dB μ V)	Corrected (dB)	Result (dB μ V)	Limit (dB μ V)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	70.72	5.60	65.12	74.00	-8.88	Peak	Horizontal
2	5150.0000	57.56	5.60	51.96	54.00	-2.04	Average	Horizontal



IEEE 802.11a mode / 5180MHz



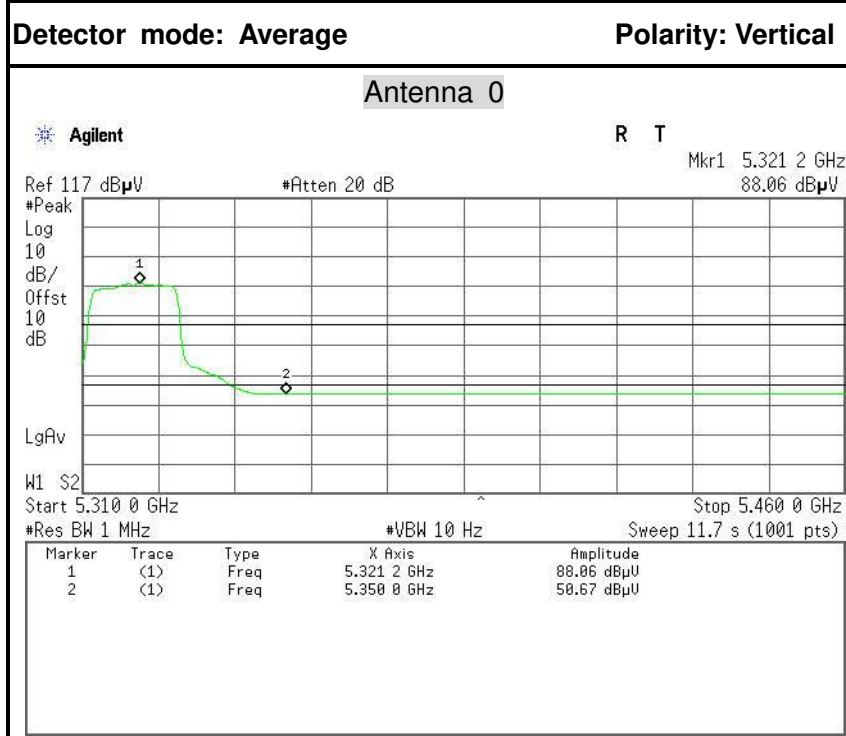
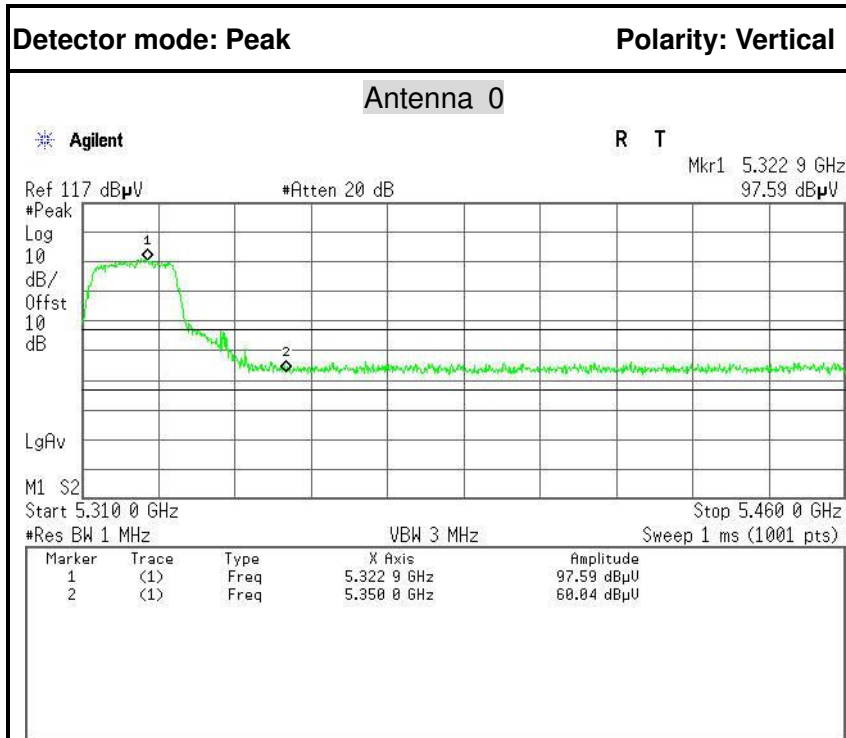
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	64.76	5.60	59.16	74.00	-14.84	Peak	Vertical
2	5150.0000	55.42	5.60	49.82	54.00	-4.18	Average	Vertical



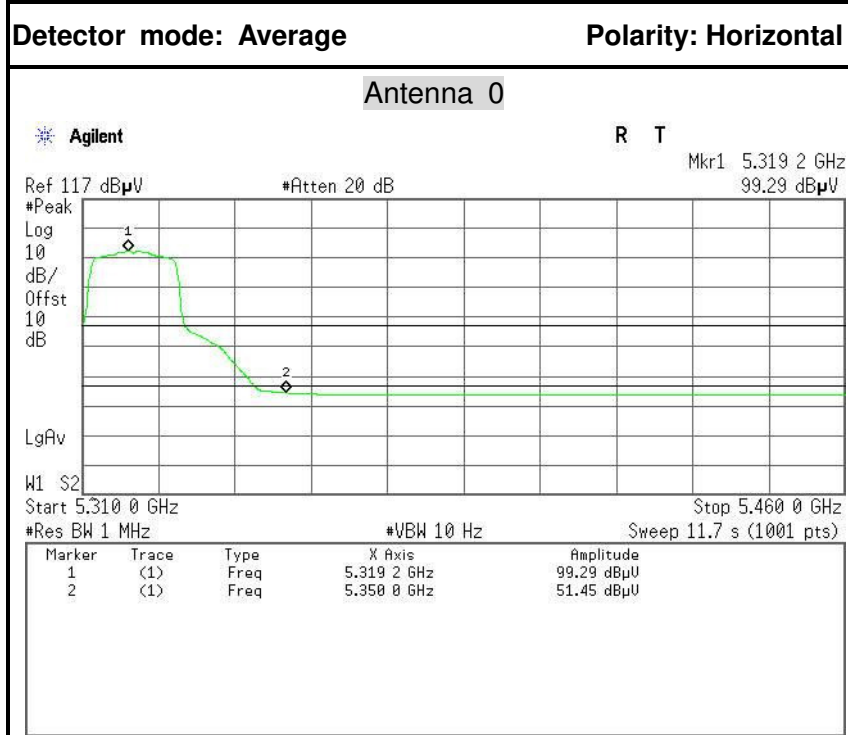
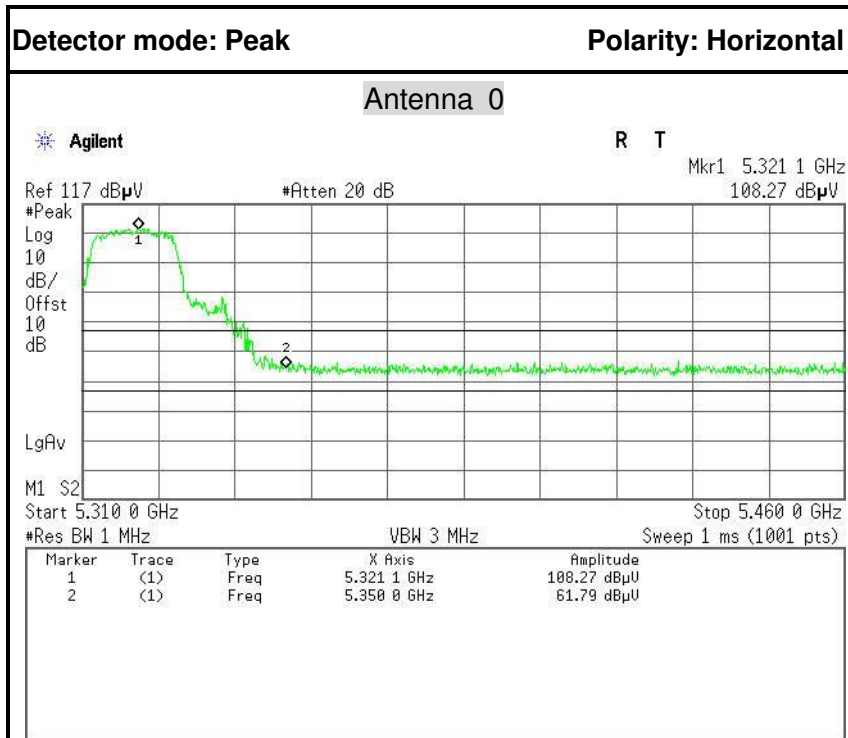
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	66.02	5.60	60.42	74.00	-13.58	Peak	Horizontal
2	5150.0000	56.19	5.60	50.59	54.00	-3.41	Average	Horizontal



IEEE 802.11a mode / 5320MHz



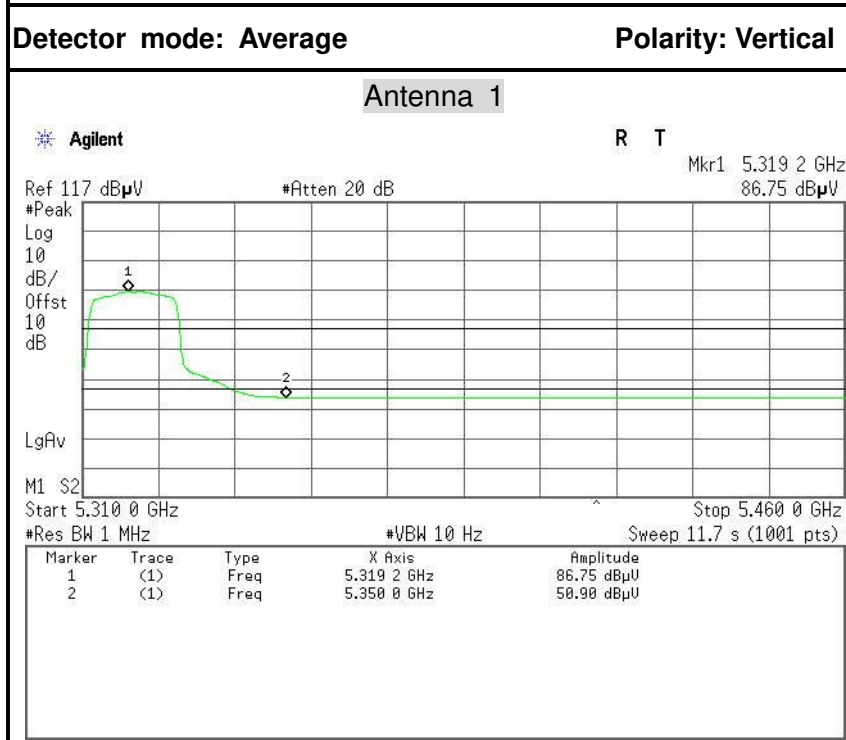
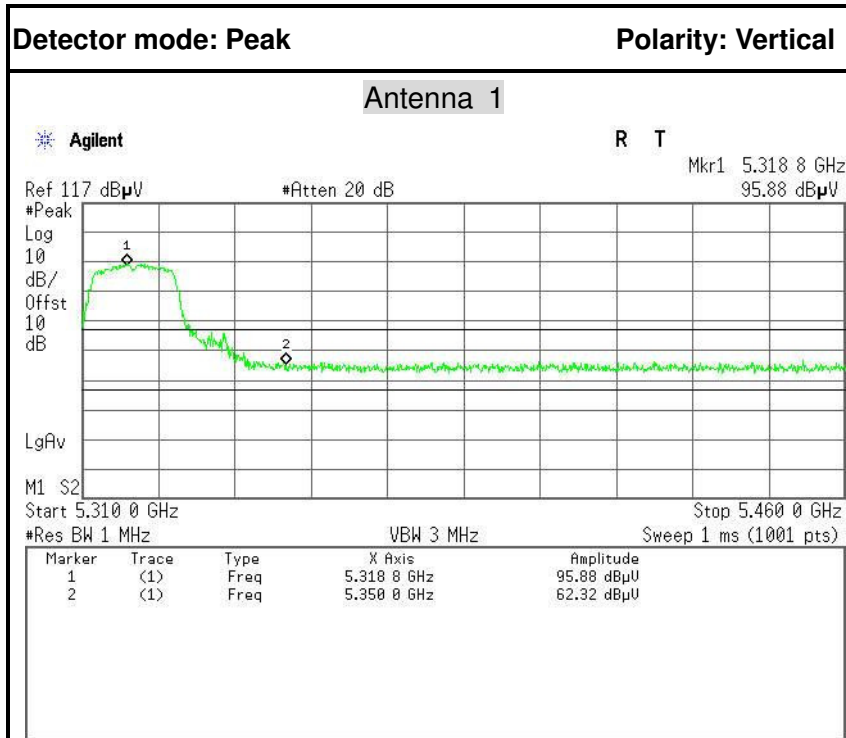
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	65.64	5.60	60.04	74.00	-13.96	Peak	Vertical
2	5350.0000	56.27	5.60	50.67	54.00	-3.33	Average	Vertical



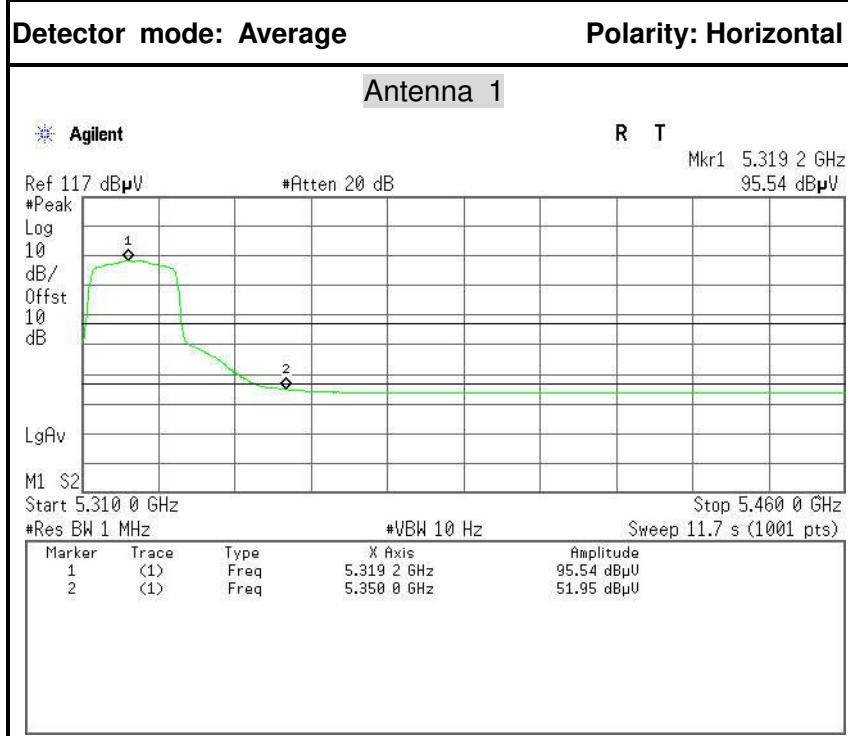
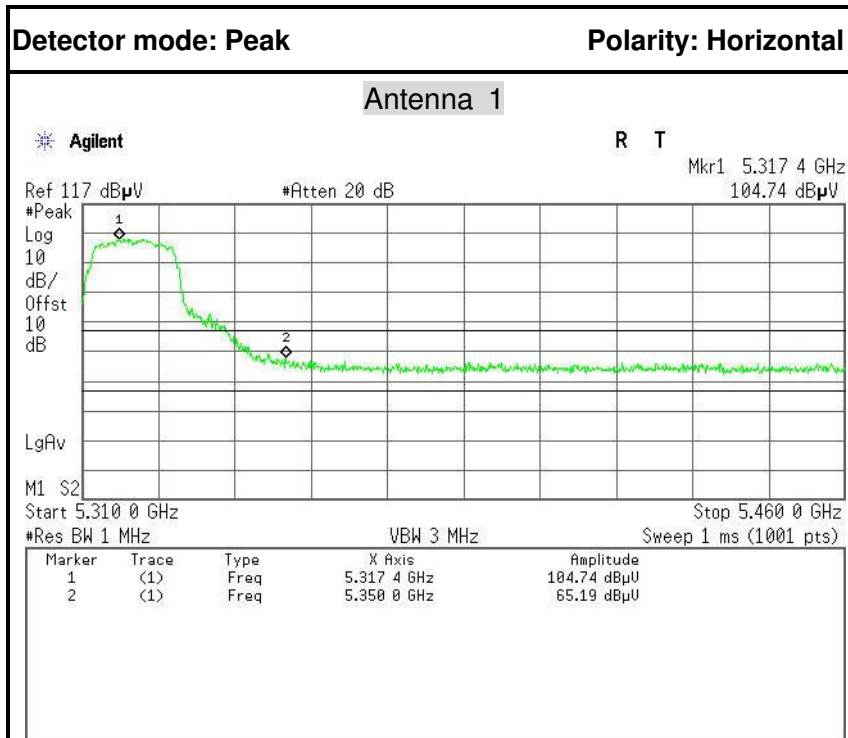
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	67.39	5.60	61.79	74.00	-12.21	Peak	Horizontal
2	5350.0000	57.05	5.60	51.45	54.00	-2.55	Average	Horizontal



IEEE 802.11a mode / 5320MHz



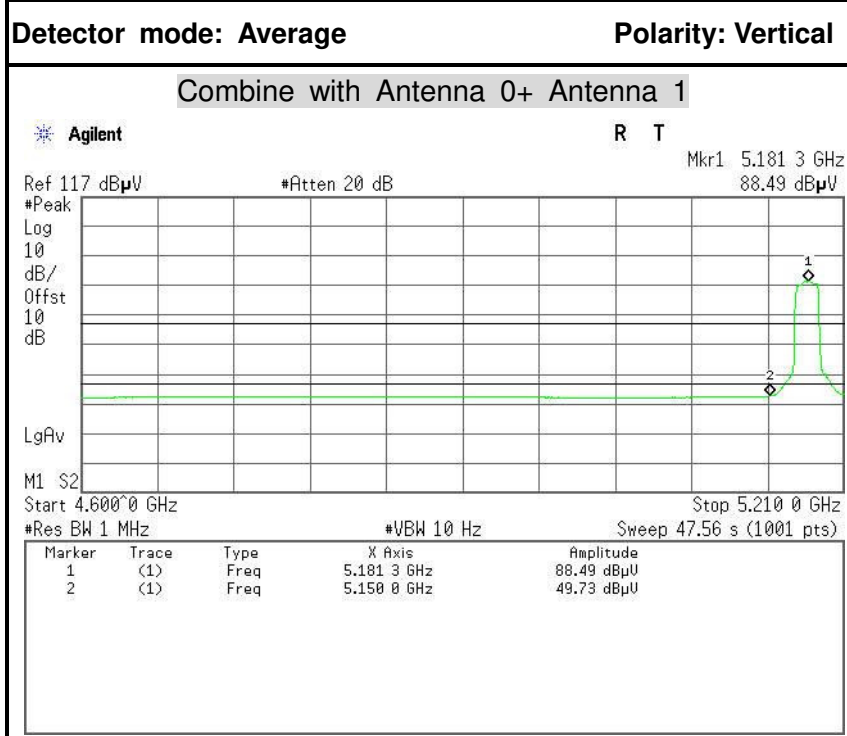
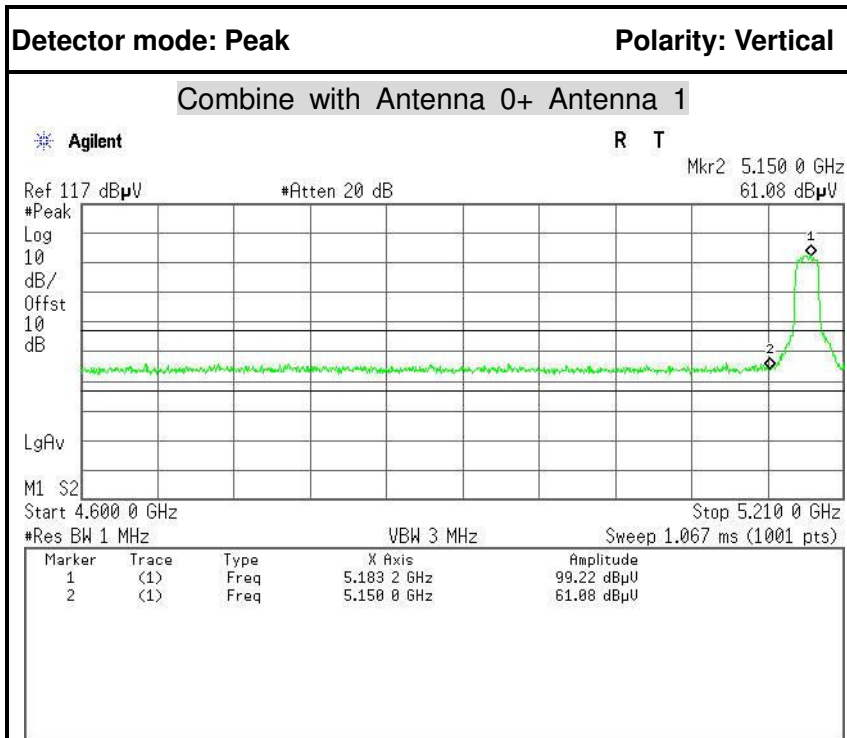
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	67.92	5.60	62.32	74.00	-11.68	Peak	Vertical
2	5350.0000	56.50	5.60	50.90	54.00	-3.10	Average	Vertical



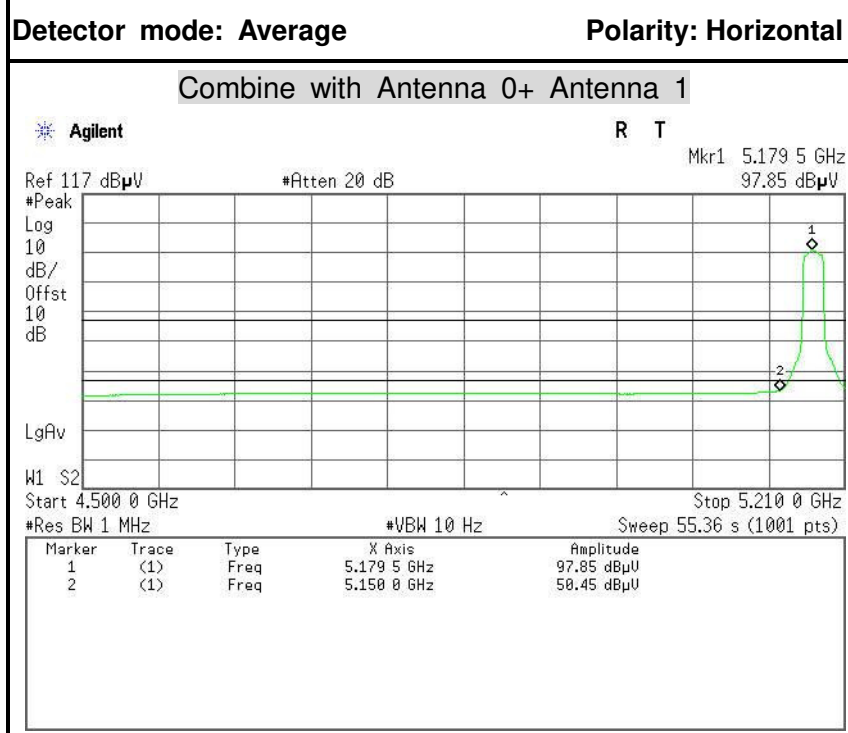
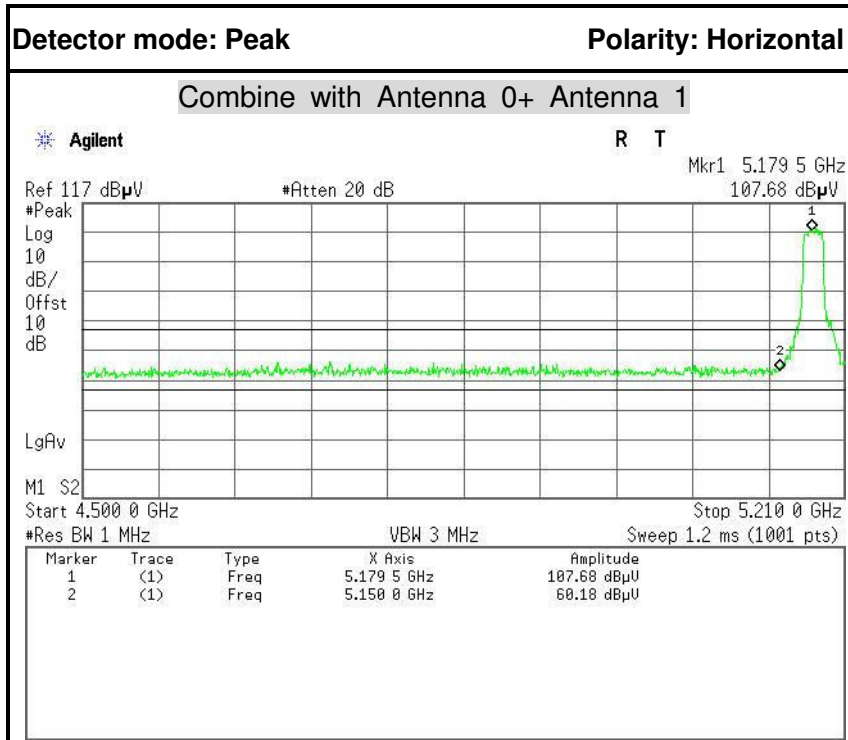
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	70.79	5.60	65.19	74.00	-8.81	Peak	Horizontal
2	5350.0000	57.55	5.60	51.95	54.00	-2.05	Average	Horizontal



IEEE 802.11n HT 20 MHz mode / 5180 MHz



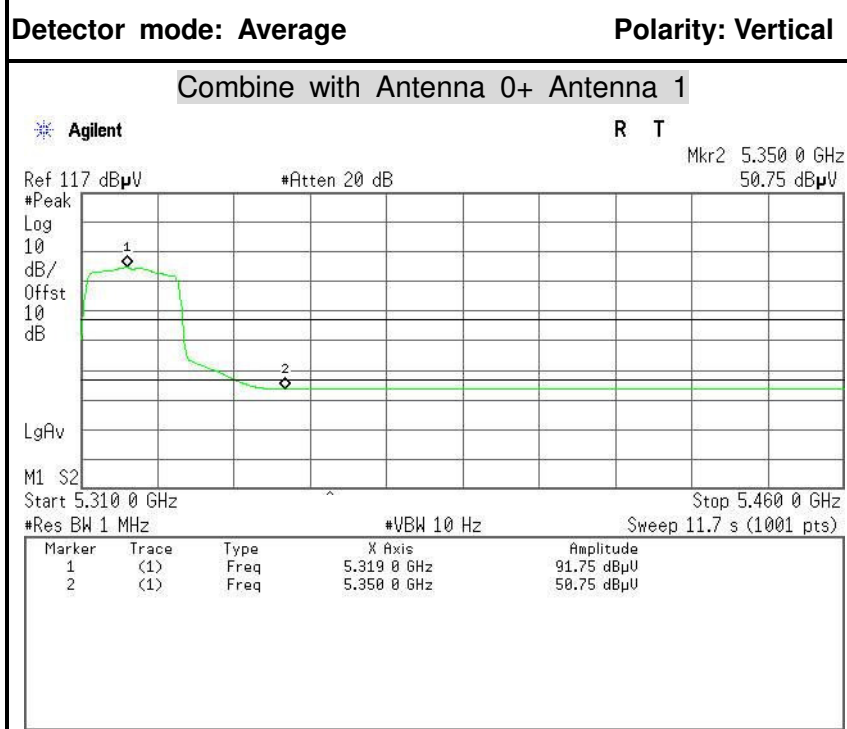
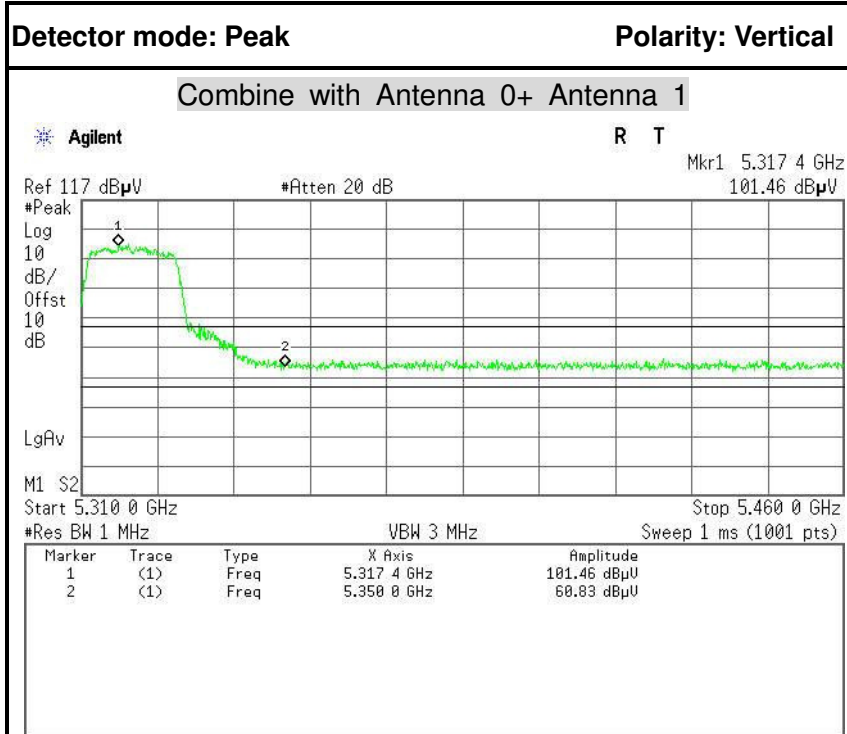
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	66.68	5.60	61.08	74.00	-12.92	Peak	Vertical
2	5150.0000	55.33	5.60	49.73	54.00	-4.27	Average	Vertical



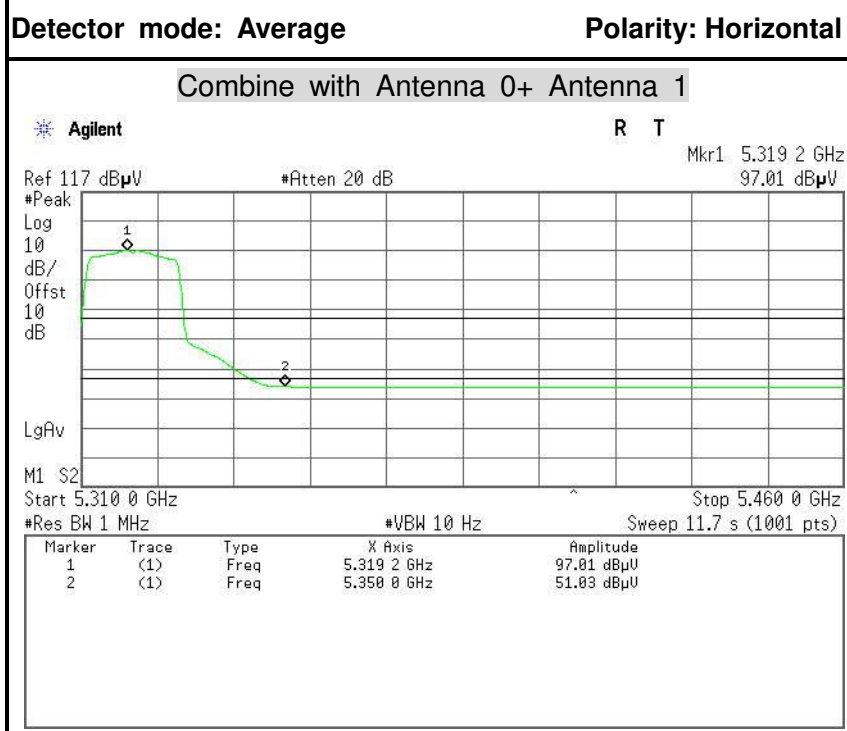
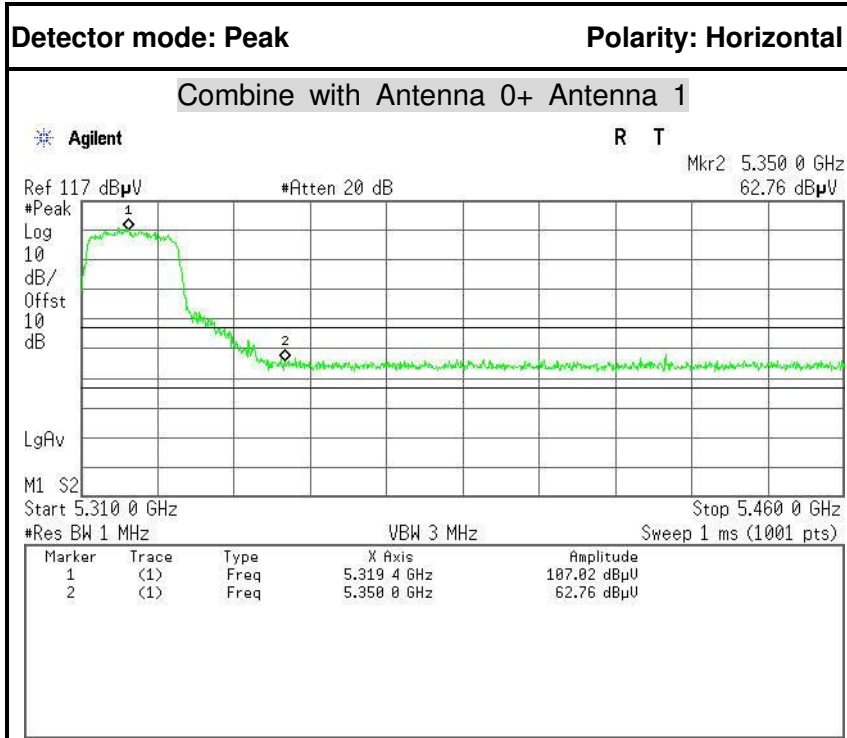
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	65.78	5.60	60.18	74.00	-13.82	Peak	Horizontal
2	5150.0000	56.05	5.60	50.45	54.00	-3.55	Average	Horizontal



IEEE 802.11n HT 20 MHz mode / 5320 MHz



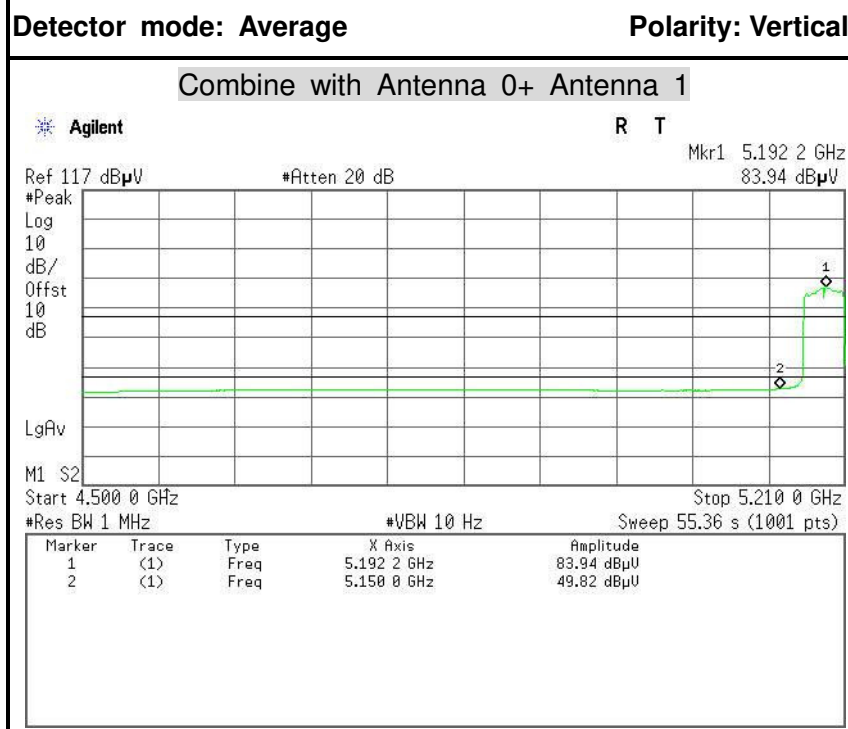
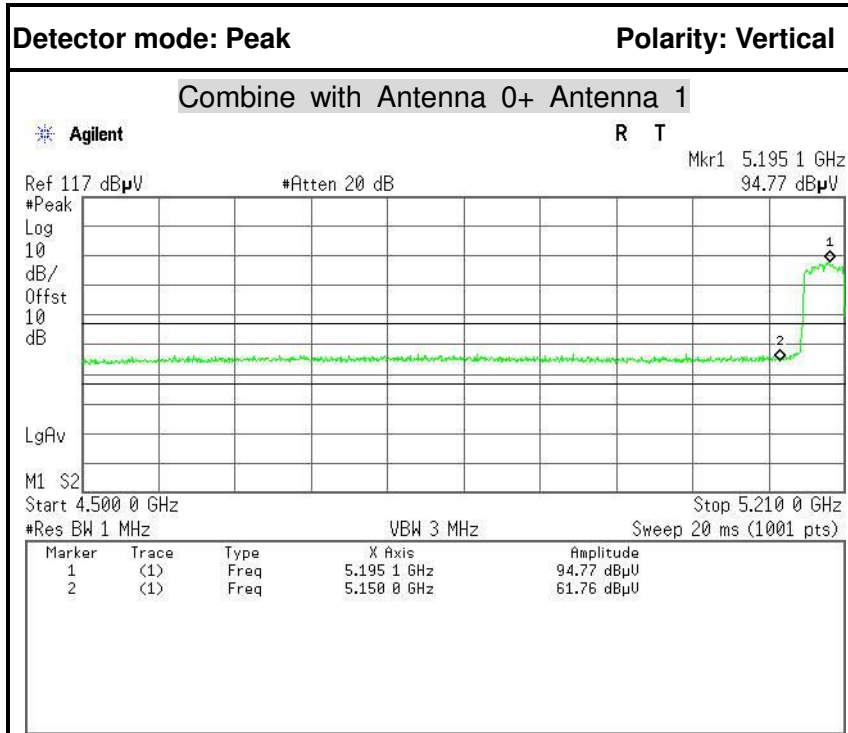
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	66.43	5.60	60.83	74.00	-13.17	Peak	Vertical
2	5350.0000	56.35	5.60	50.75	54.00	-3.25	Average	Vertical



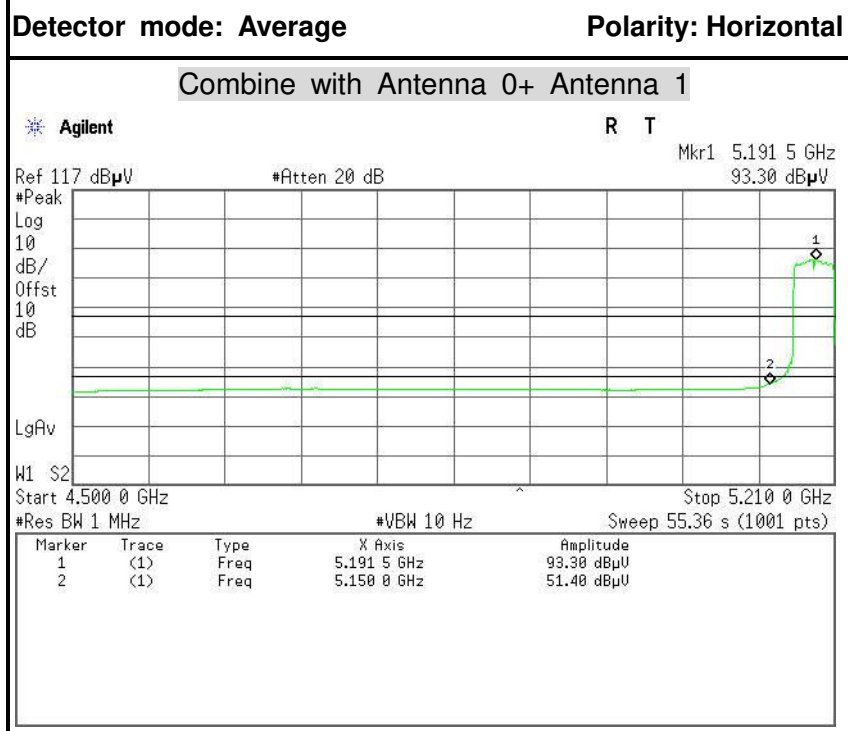
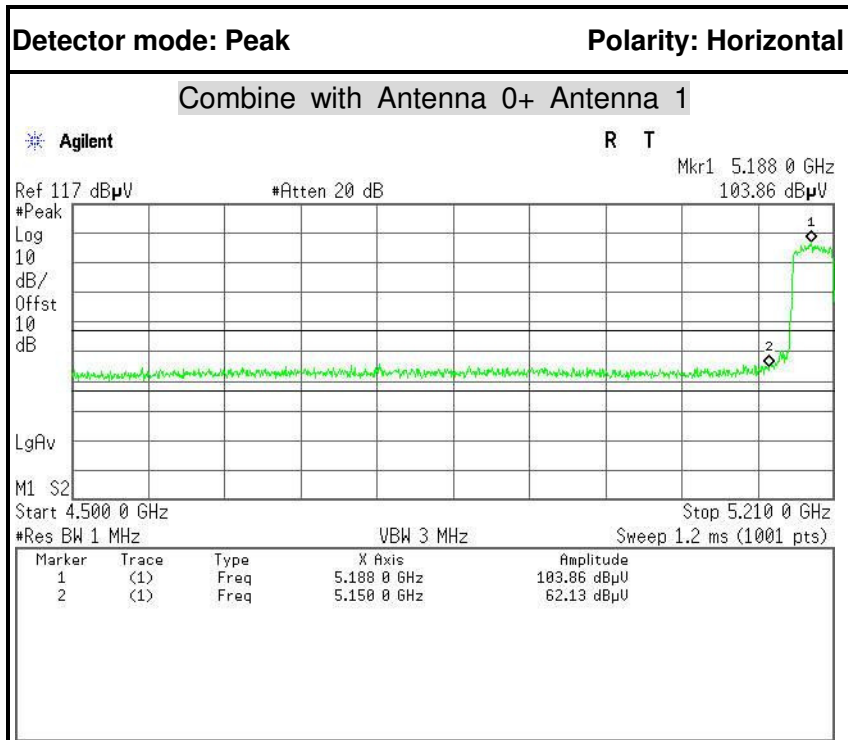
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	68.36	5.60	62.76	74.00	-11.24	Peak	Horizontal
2	5350.0000	56.63	5.60	51.03	54.00	-2.97	Average	Horizontal



IEEE 802.11n HT 40 MHz mode / 5190 MHz



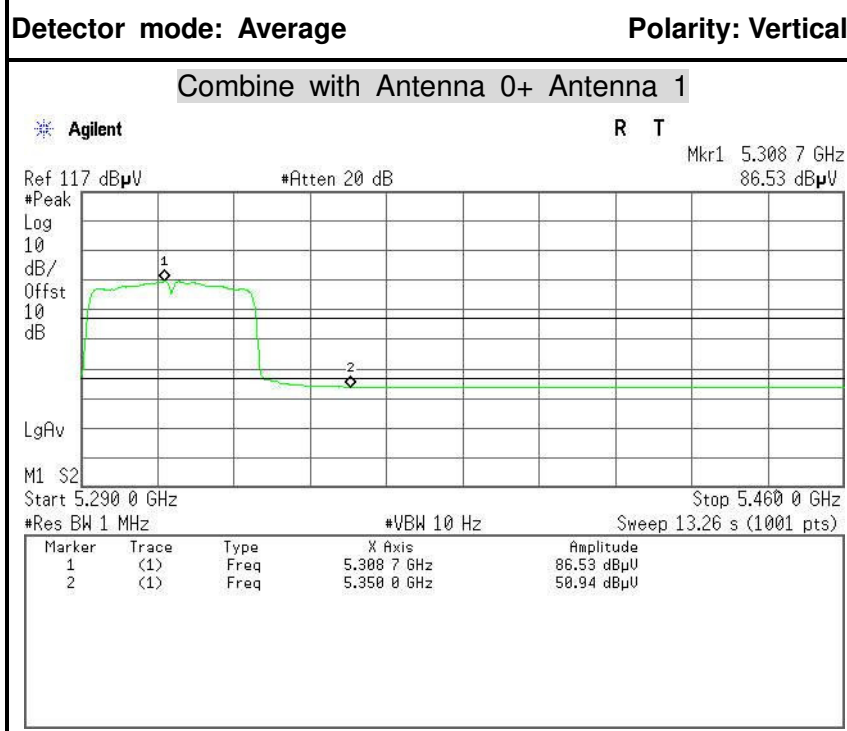
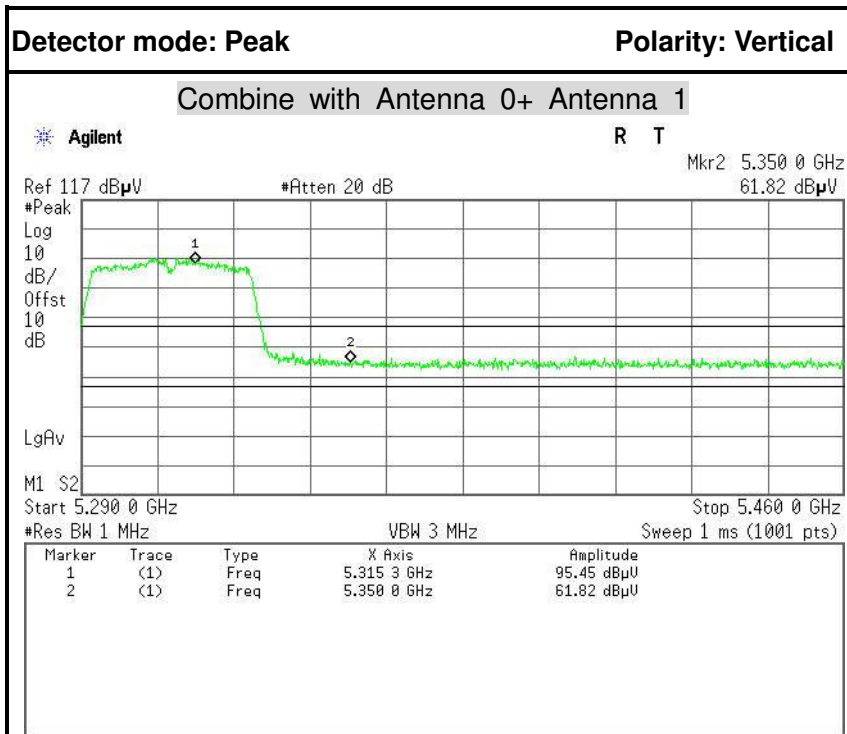
No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	67.36	5.60	61.76	74.00	-12.24	Peak	Vertical
2	5150.0000	55.42	5.60	49.82	54.00	-4.18	Average	Vertical



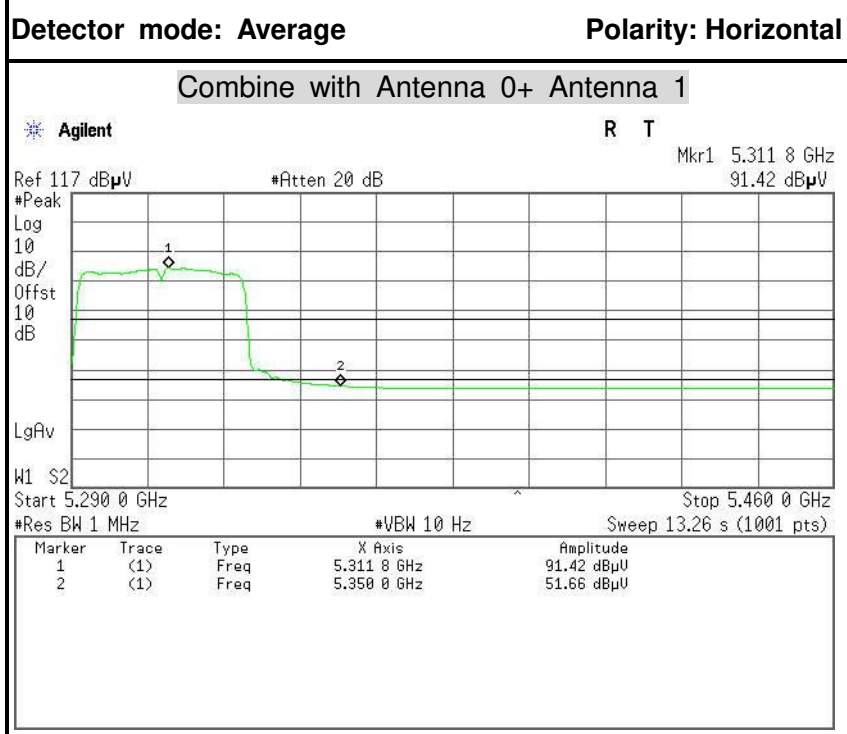
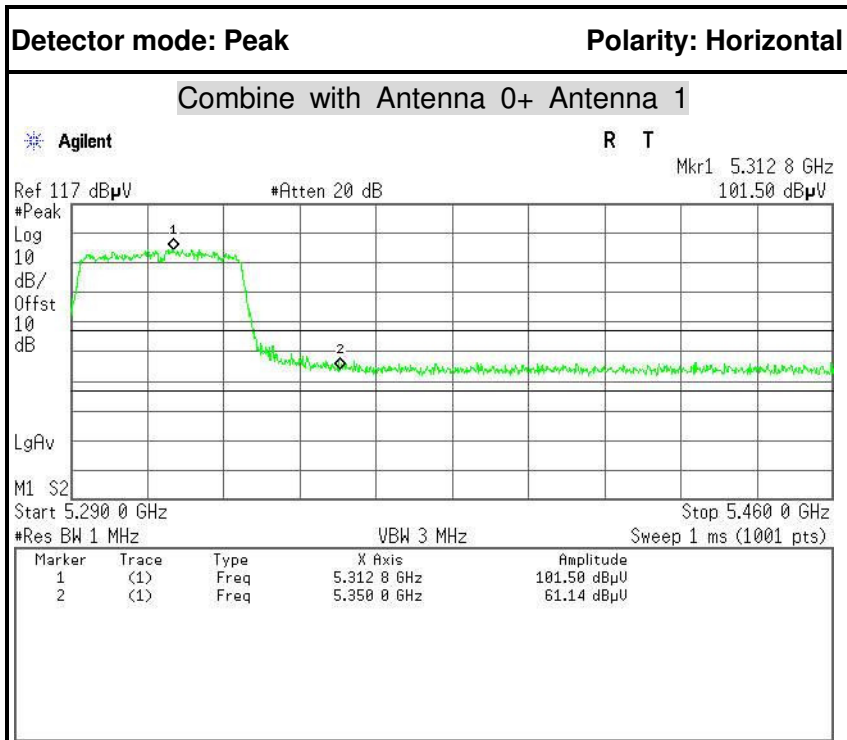
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	67.73	5.60	62.13	74.00	-11.87	Peak	Horizontal
2	5150.0000	57.00	5.60	51.40	54.00	-2.60	Average	Horizontal



IEEE 802.11n HT 40 MHz mode / 5310 MHz



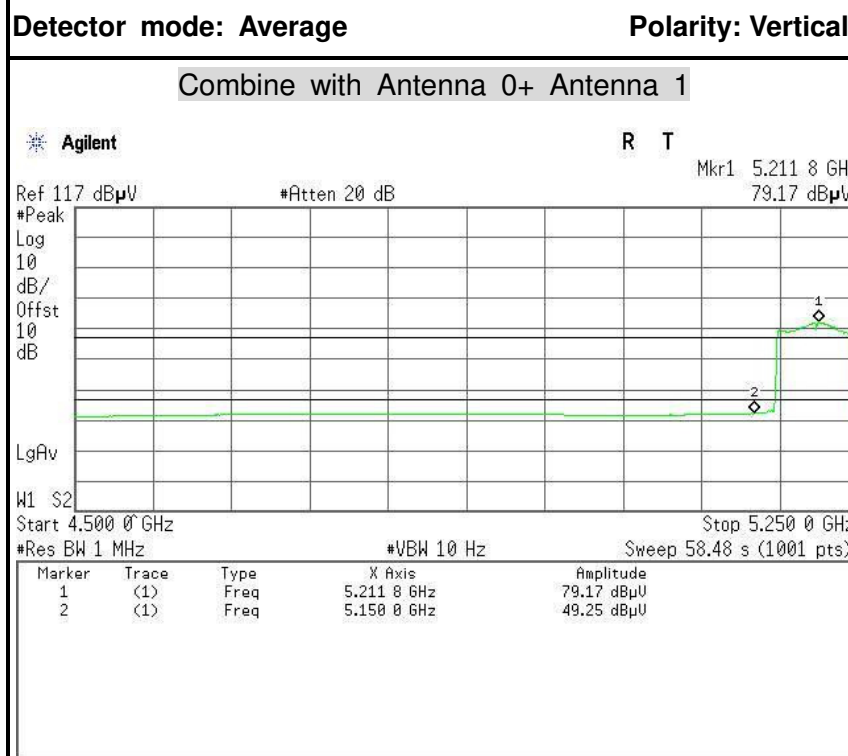
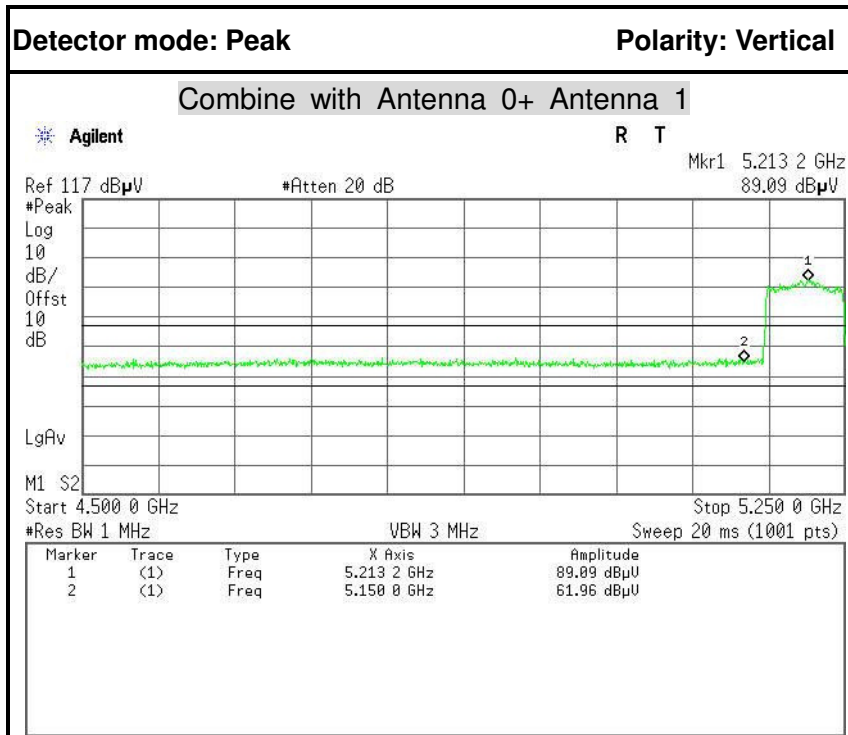
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	67.42	5.60	61.82	74.00	-12.18	Peak	Vertical
2	5350.0000	56.54	5.60	50.94	54.00	-3.06	Average	Vertical



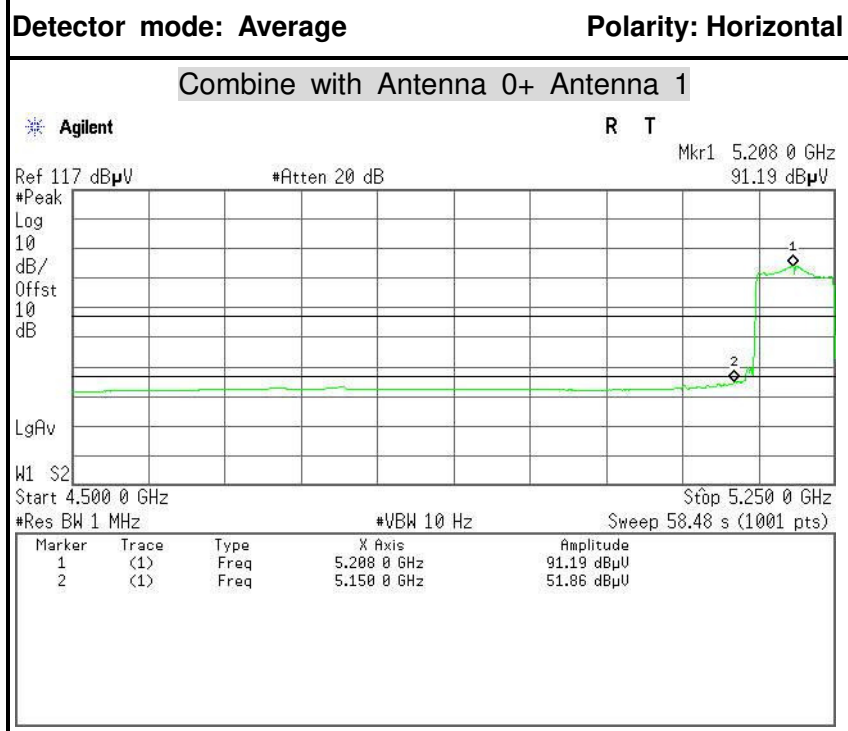
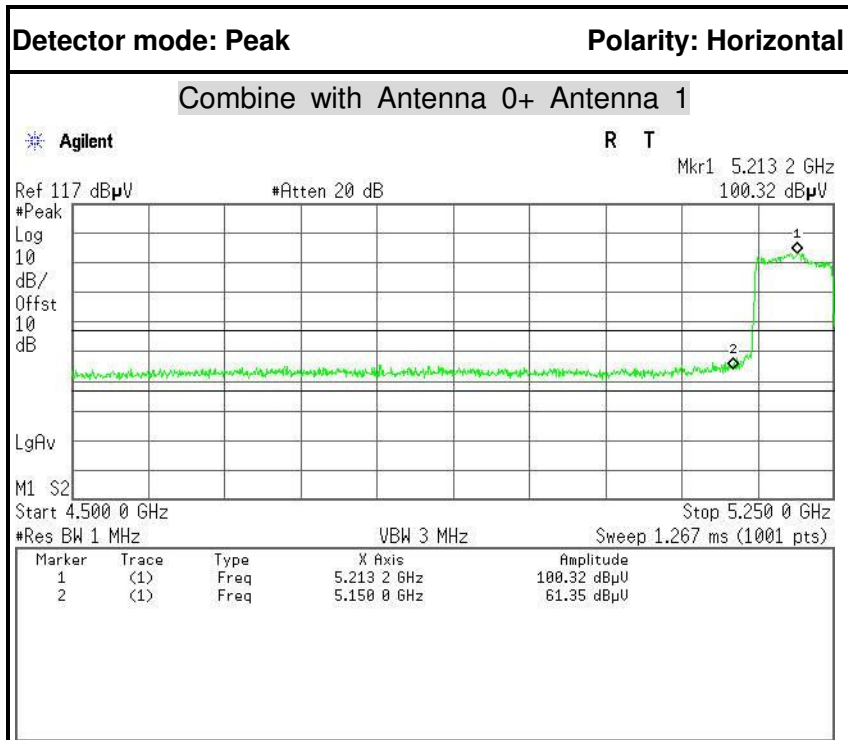
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	66.74	5.60	61.14	74.00	-12.86	Peak	Horizontal
2	5350.0000	57.26	5.60	51.66	54.00	-2.34	Average	Horizontal



IEEE 802.11ac 80 mode / 5210 MHz



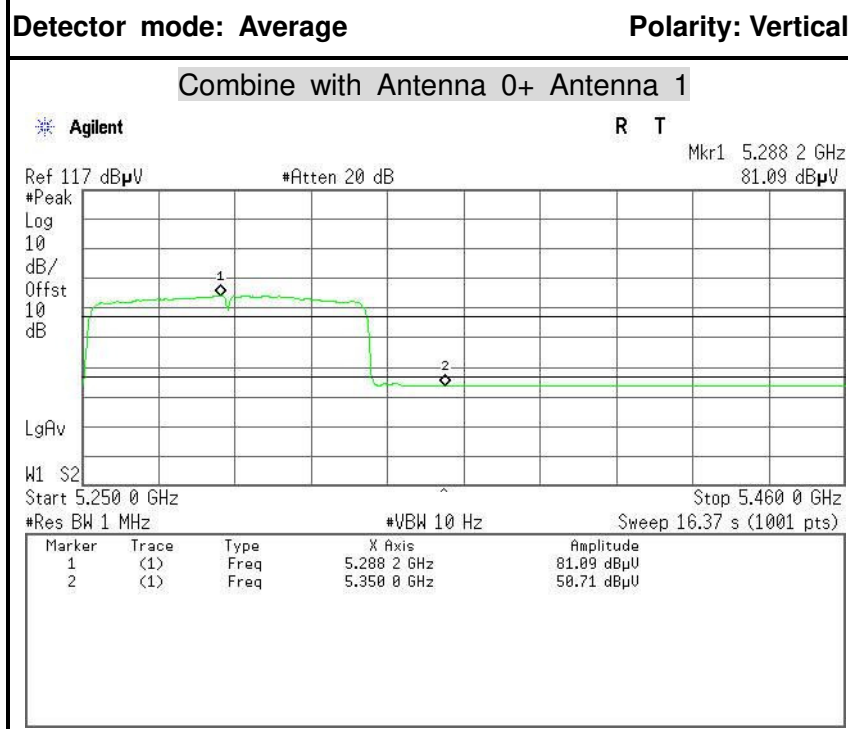
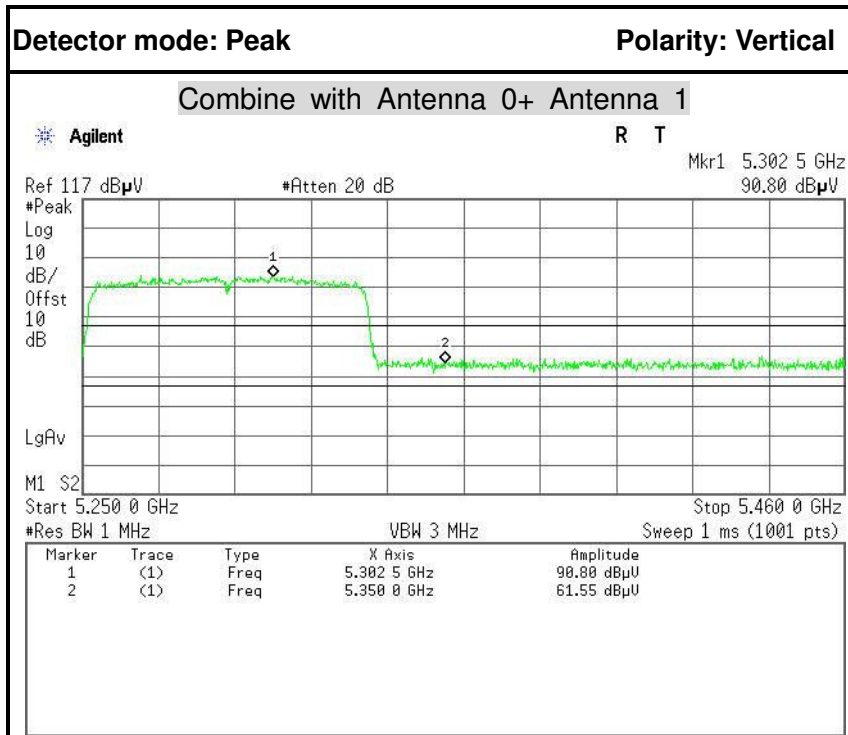
No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	67.56	5.60	61.96	74.00	-12.04	Peak	Vertical
2	5150.0000	54.85	5.60	49.25	54.00	-4.75	Average	Vertical



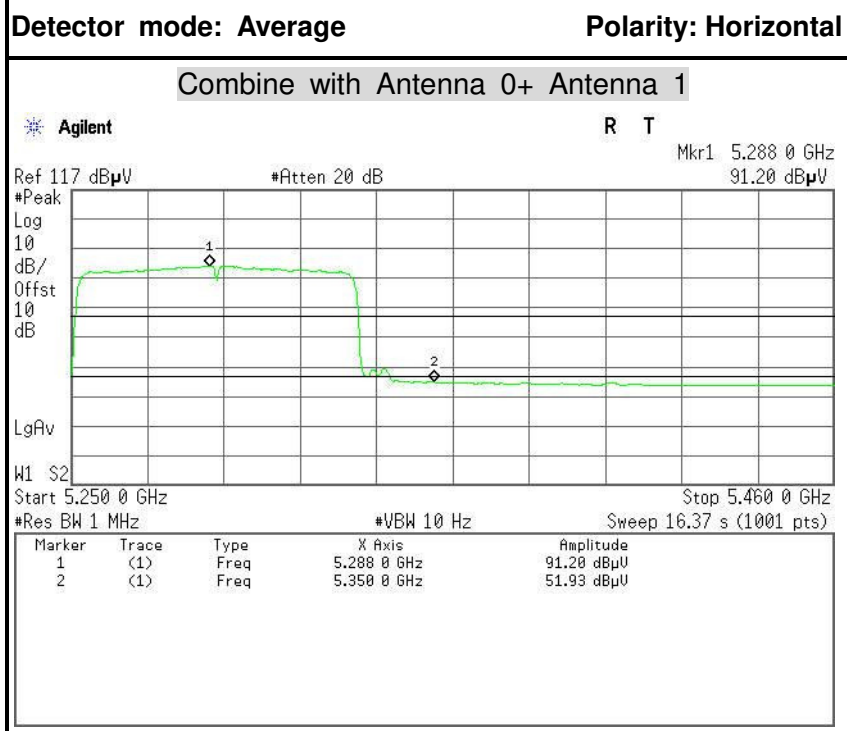
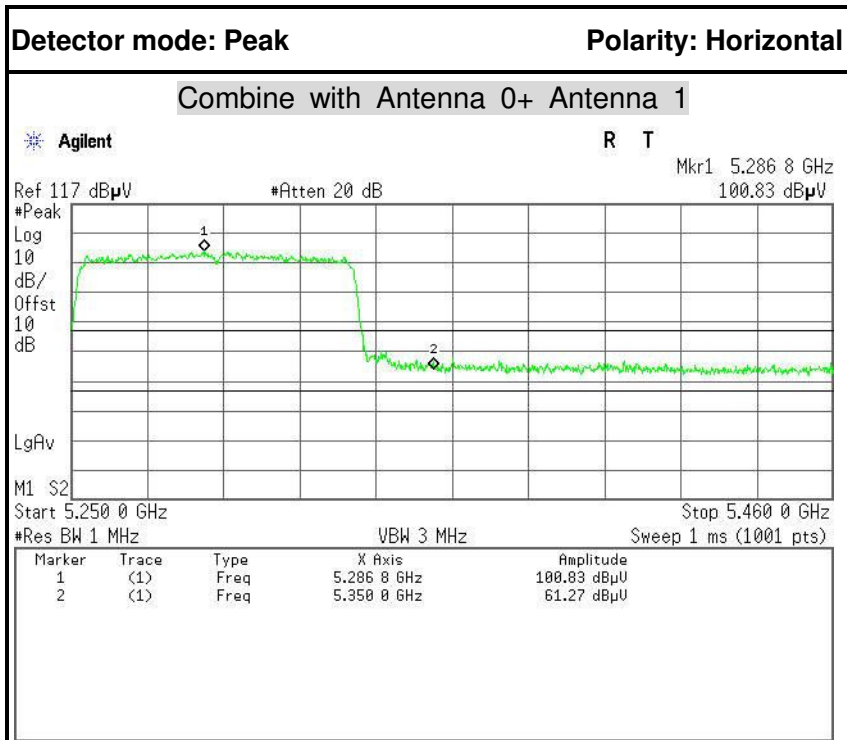
No.	Frequency (MHz)	Reading (dBμV)	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector	Antenna Pole
1	5150.0000	66.95	5.60	61.35	74.00	-12.65	Peak	Horizontal
2	5150.0000	57.46	5.60	51.86	54.00	-2.14	Average	Horizontal



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	67.15	5.60	61.55	74.00	-12.45	Peak	Vertical
2	5350.0000	56.31	5.60	50.71	54.00	-3.29	Average	Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	5350.0000	66.87	5.60	61.27	74.00	-12.73	Peak	Horizontal
2	5350.0000	57.53	5.60	51.93	54.00	-2.07	Average	Horizontal



6.6 PEAK POWER SPECTRAL 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 $11 \text{ dBm} + 10 \log B$, 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.

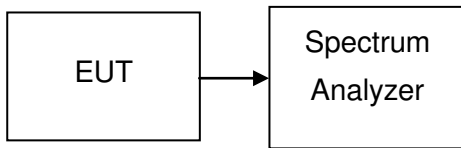
6.6.2 MEASUREMENT EQUIPMENT USED

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 = 30MHz, Sweep=1ms
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=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	-5.641	-5.207	17	-22.641	-22.207	PASS
Mid	5200	-5.286	-4.877		-22.286	-21.877	PASS
High	5240	-4.866	-4.624		-21.866	-21.624	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	-5.730	-4.092	11	-16.730	-15.092	PASS
Mid	5300	-4.932	-4.819		-15.932	-15.819	PASS
High	5320	-5.304	-4.995		-16.304	-15.995	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	-5.828	-7.141	11	-16.828	-18.141	PASS
Mid	5580	-4.541	-6.953		-15.541	-17.953	PASS
High	5700	-2.869	-5.767		-13.869	-16.767	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	-2.393	-2.272	-3.01	17	-22.403	-22.282	PASS
Mid	5785	0.944	1.419	-3.01		-2.066	-18.591	PASS
High	5825	0.801	2.090	-3.01		-2.209	-17.920	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	-6.575	-6.295	-3.422	17	-20.422	PASS
Mid	5200	-5.331	-5.432	-2.371		-19.371	PASS
High	5240	-6.046	-6.506	-3.260		-20.260	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	-4.544	-5.098	-1.802	11	-12.802	PASS
Mid	5300	-4.721	-4.059	-1.367		-12.367	PASS
High	5320	-4.803	-5.272	-2.021		-13.021	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	-7.517	-8.916	-5.150	11	-16.150	PASS
Mid	5580	-6.600	-7.005	-3.787		-14.787	PASS
High	5700	-5.852	-6.786	-3.284		-14.284	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	-3.767	-3.026	-3.01	-3.380	17	-20.380	PASS
Mid	5785	-0.855	0.192	-3.01	-0.300		-17.300	PASS
High	5825	-0.783	0.797	-3.01	0.079		-16.921	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	-5.917	-3.552	-1.565	17	-18.565	PASS
High	5230	-4.611	-3.939	-1.252		-18.252	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	-2.099	-2.907	0.526	11	-10.474	PASS
High	5310	-3.971	-3.448	-0.691		-11.691	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	-6.760	-8.032	-4.339	11	-15.339	PASS
Mid	5550	-4.159	-3.861	-0.997		-11.997	PASS
High	5670	-2.798	-4.021	-0.356		-11.356	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	-5.935	-6.200	-3.01	-6.065	17	-23.065	PASS
High	5795	-3.940	-1.547	-3.01	-2.580		-19.580	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	-8.780	-9.276	-6.011	17	-23.011	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	-10.037	-9.545	-6.774	11	-17.774	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	-10.313	-9.874	-7.078	11	-18.078	PASS

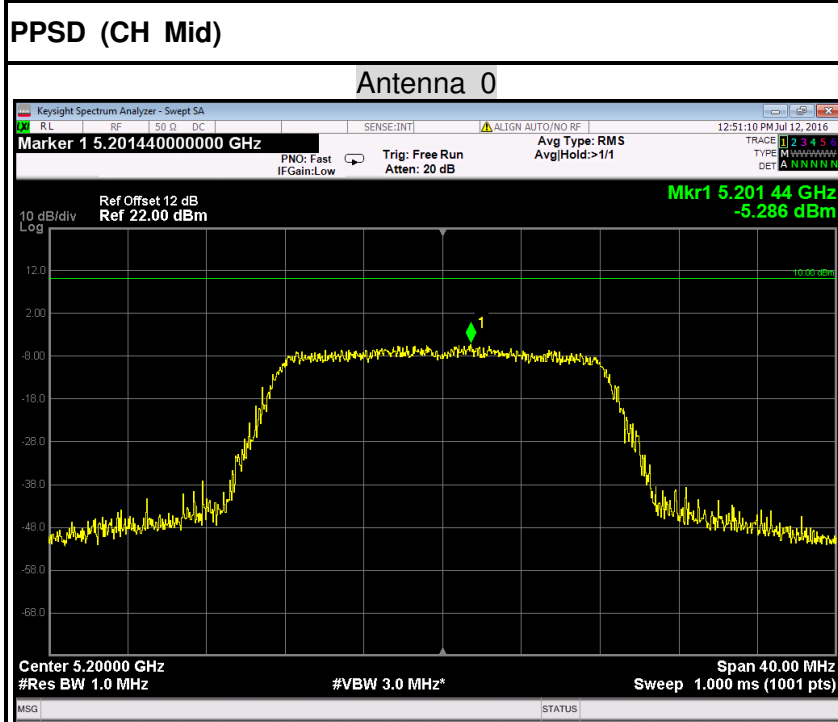
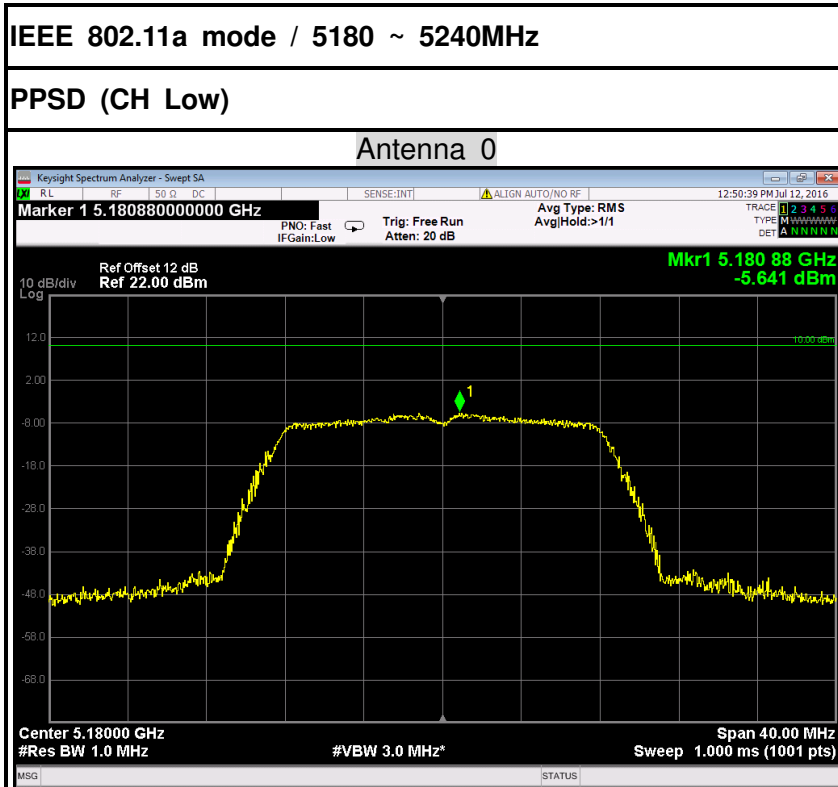
Test mode: IEEE 802.11ac 80 mode / 5775MHz

Channel	Frequency (MHz)	PPSD (dBm)		factor	Total (dBm)	Limit (dBm)	Margain	Result
		Antenna 0	Antenna 1					
	5775	-9.341	-7.472	-3.01	-8.306	17	-25.306	PASS

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

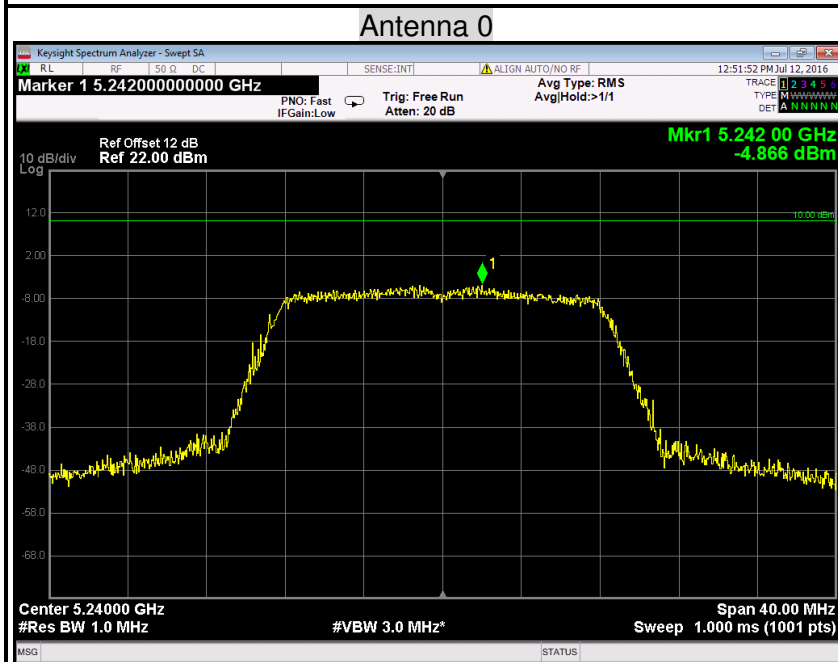


Test Plot



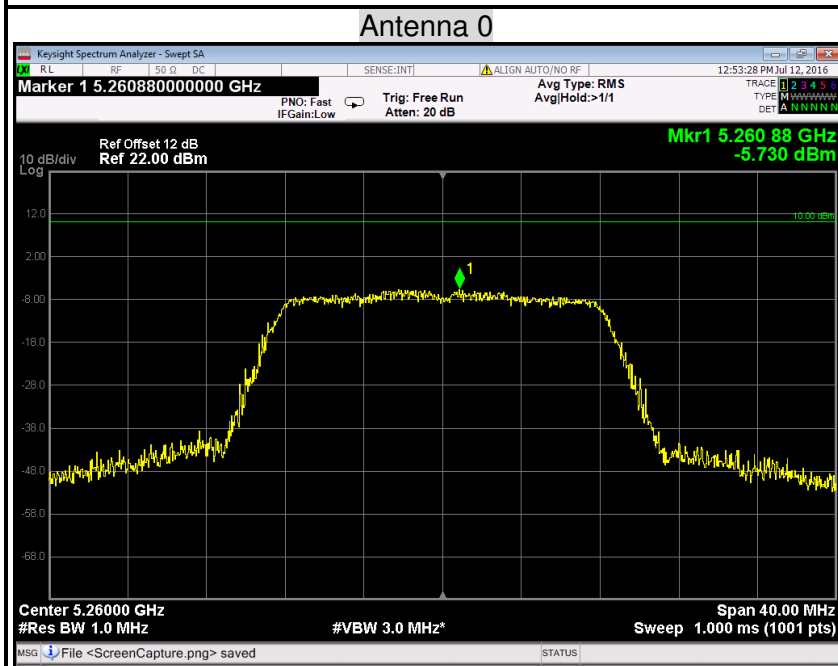


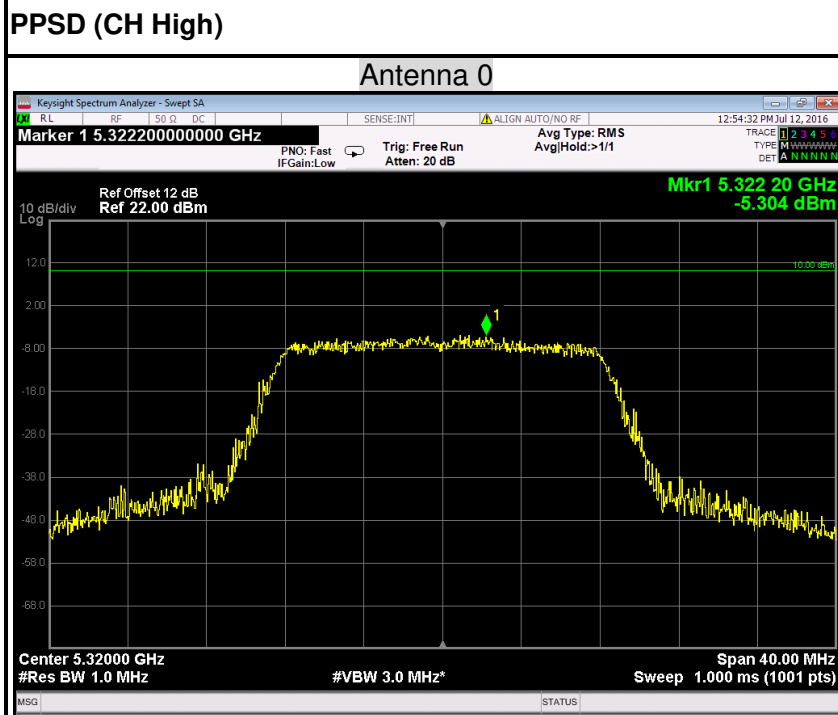
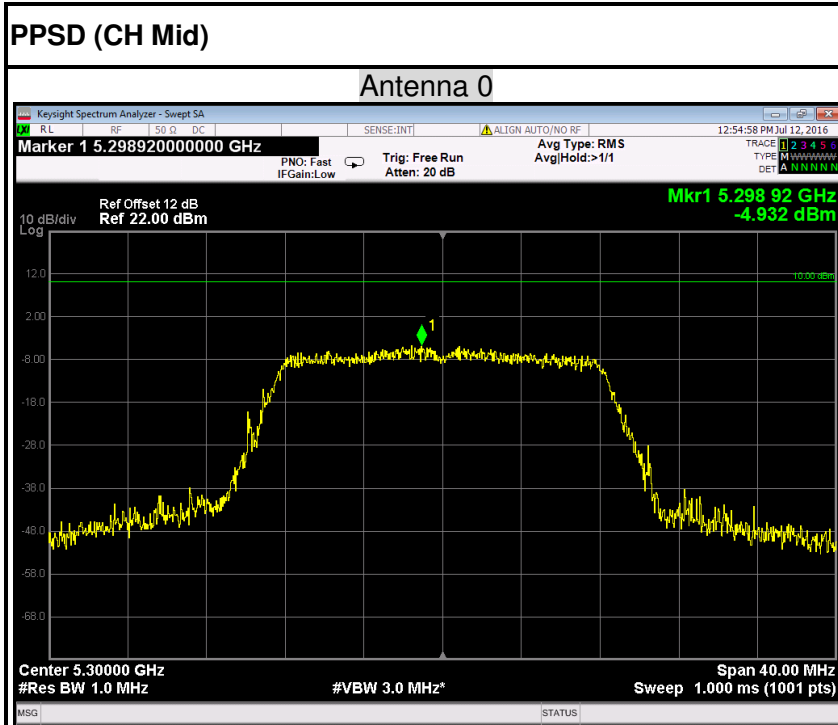
PPSD (CH High)

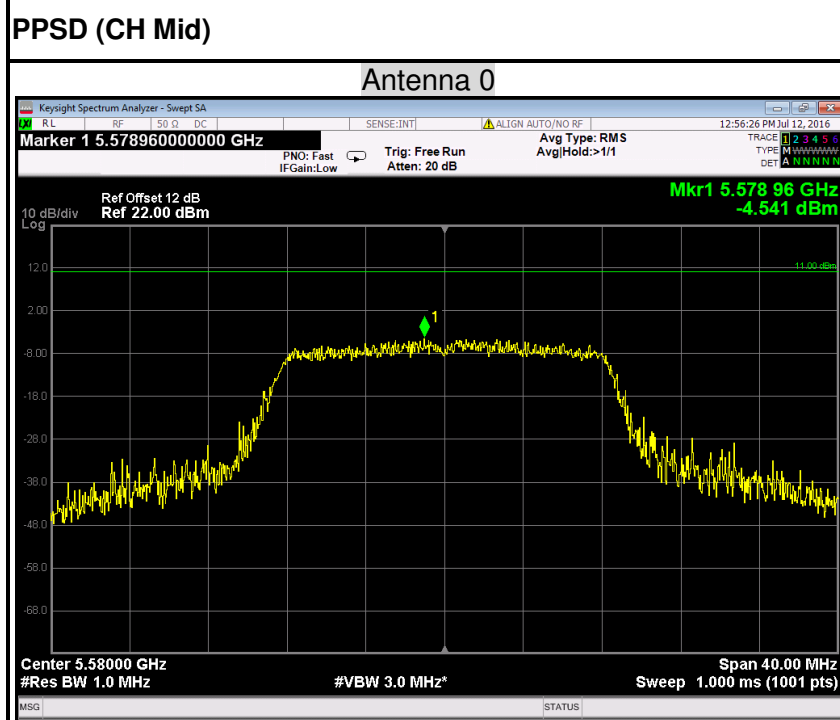
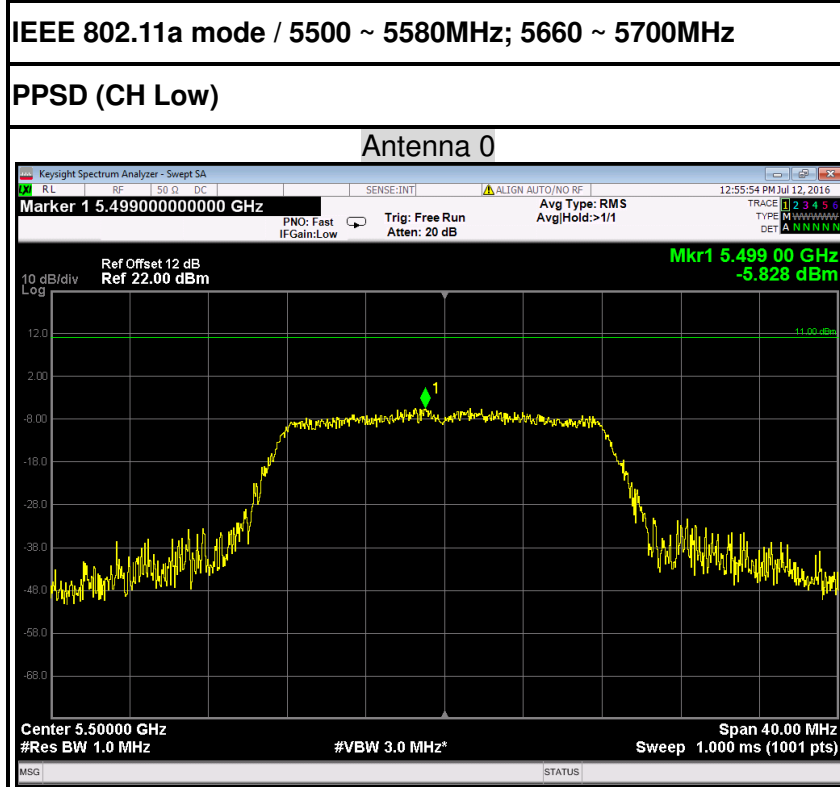


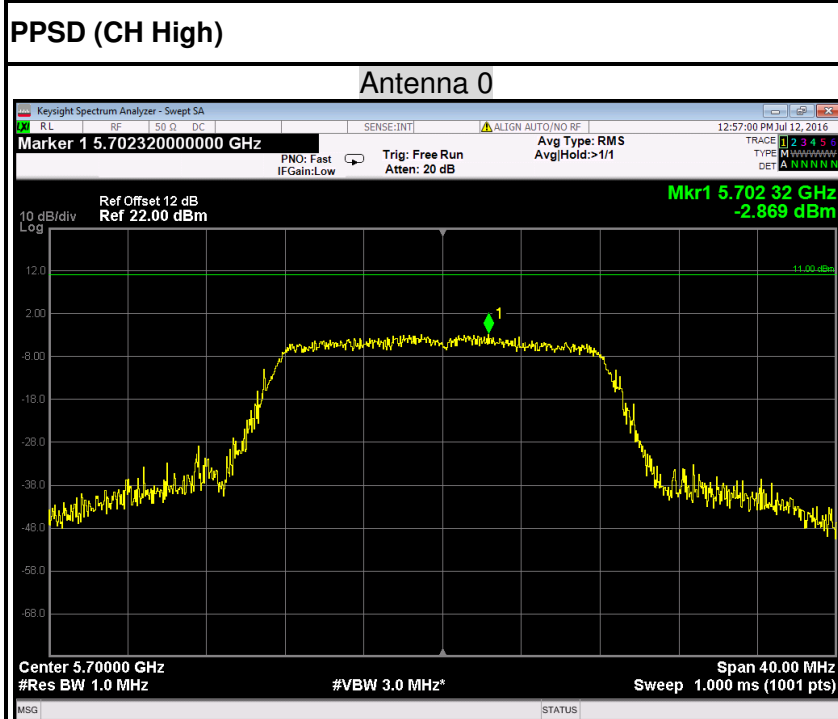
IEEE 802.11a mode / 5260~ 5320MHz

PPSD (CH Low)

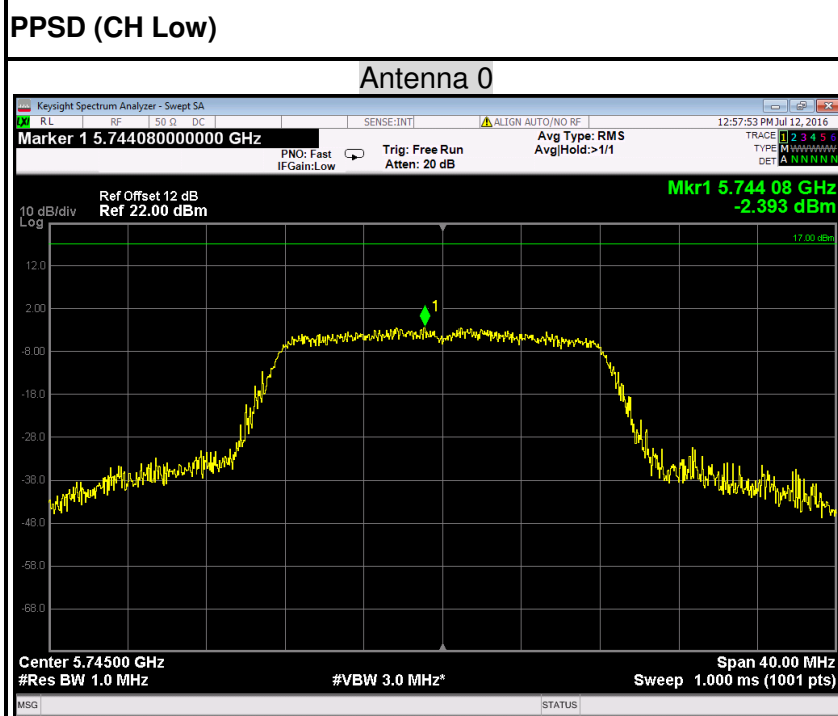


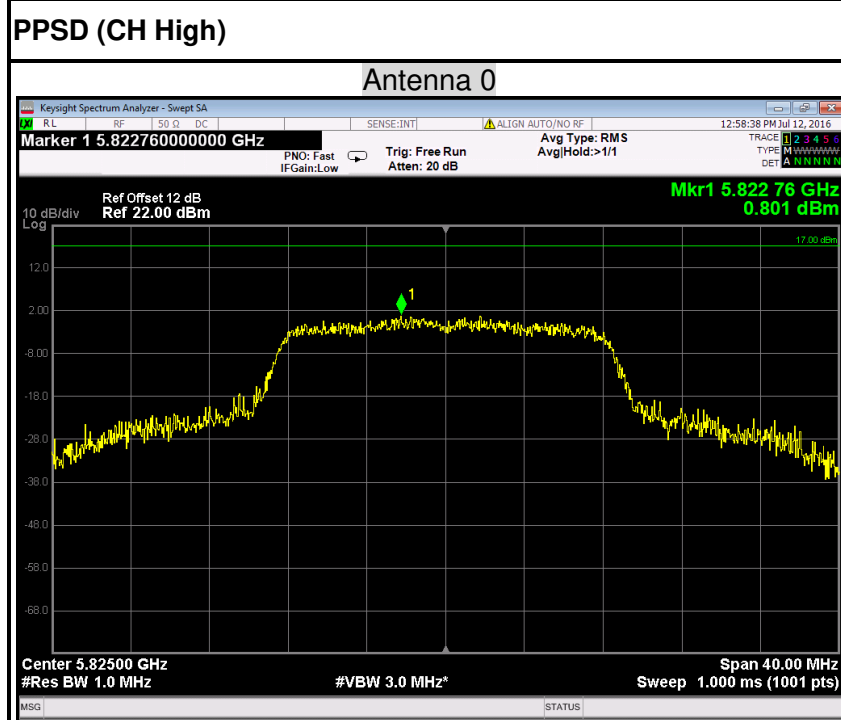
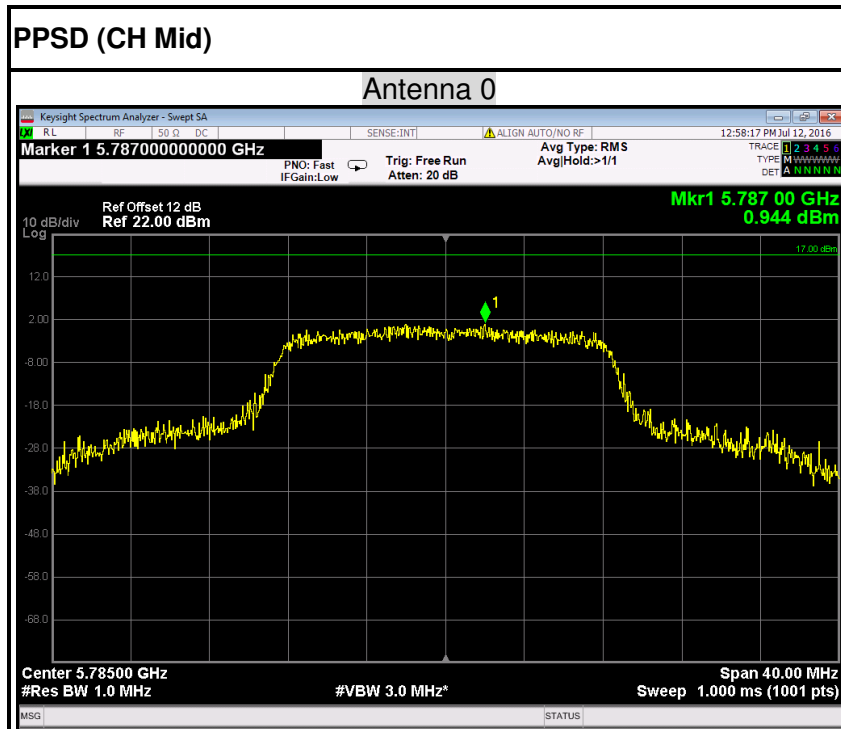


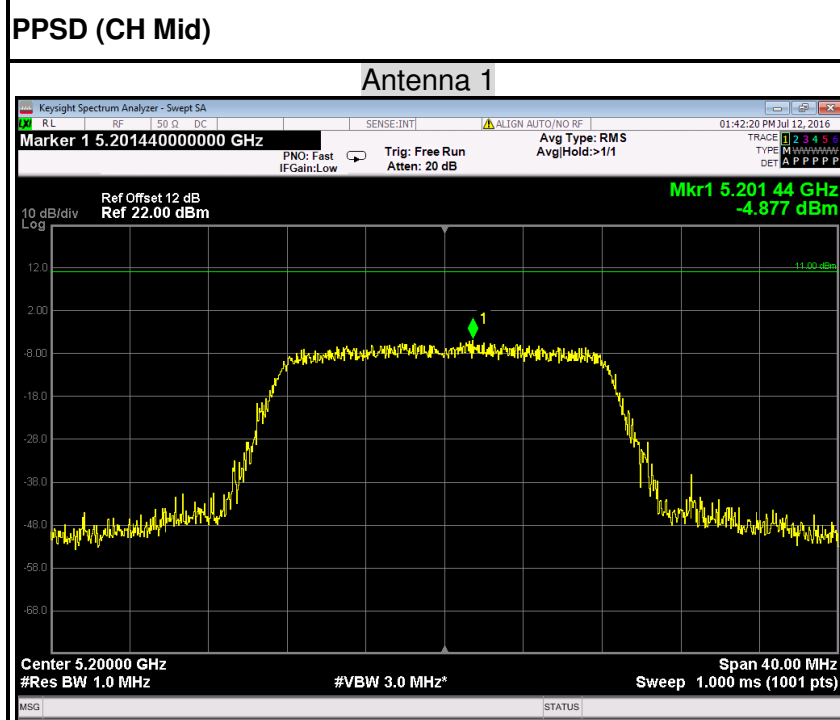
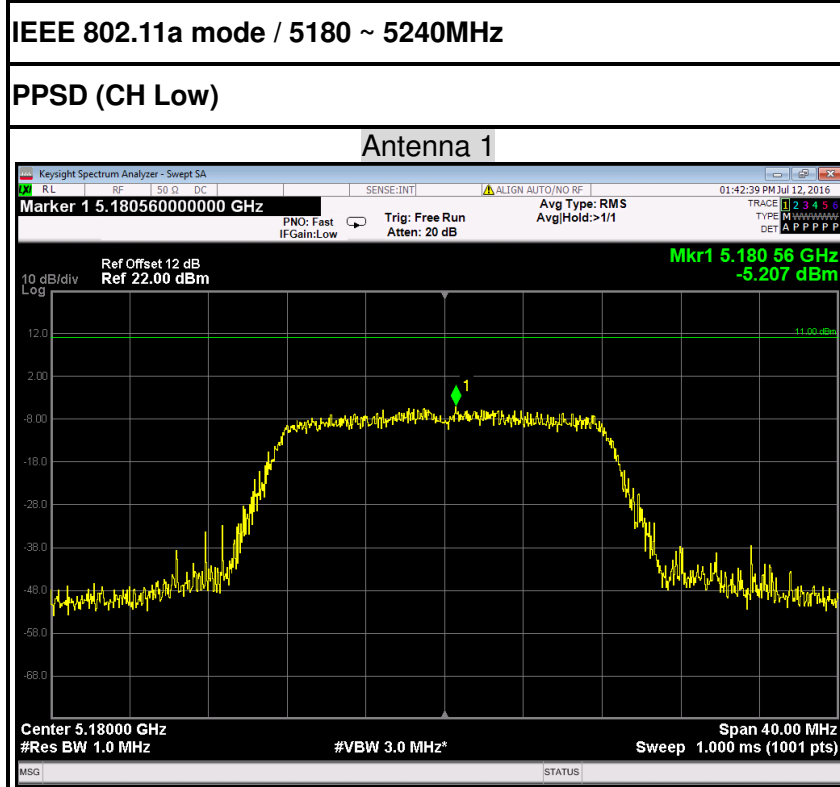


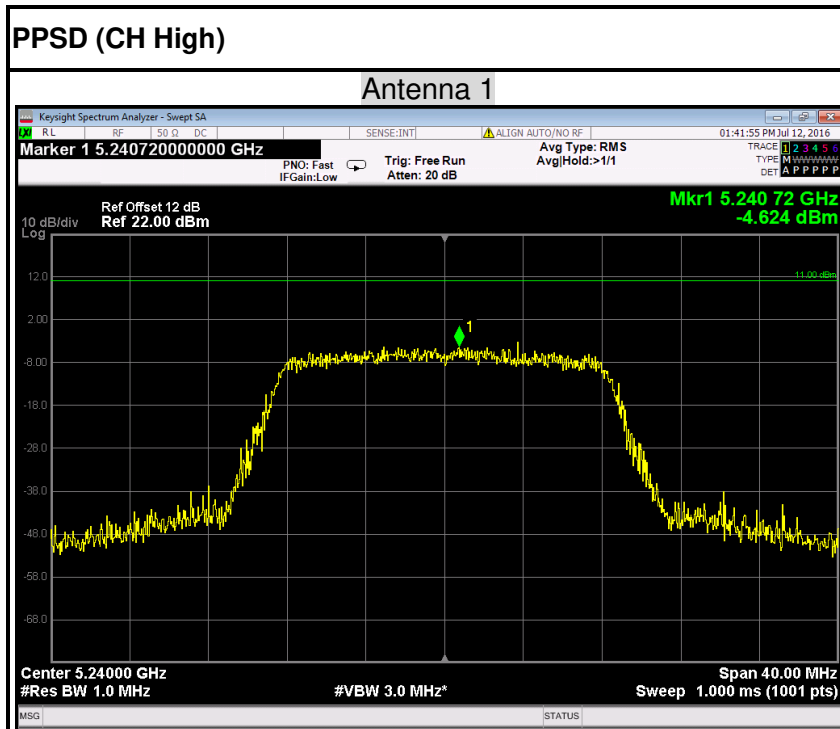


IEEE 802.11a mode / 5745 ~ 5825MHz

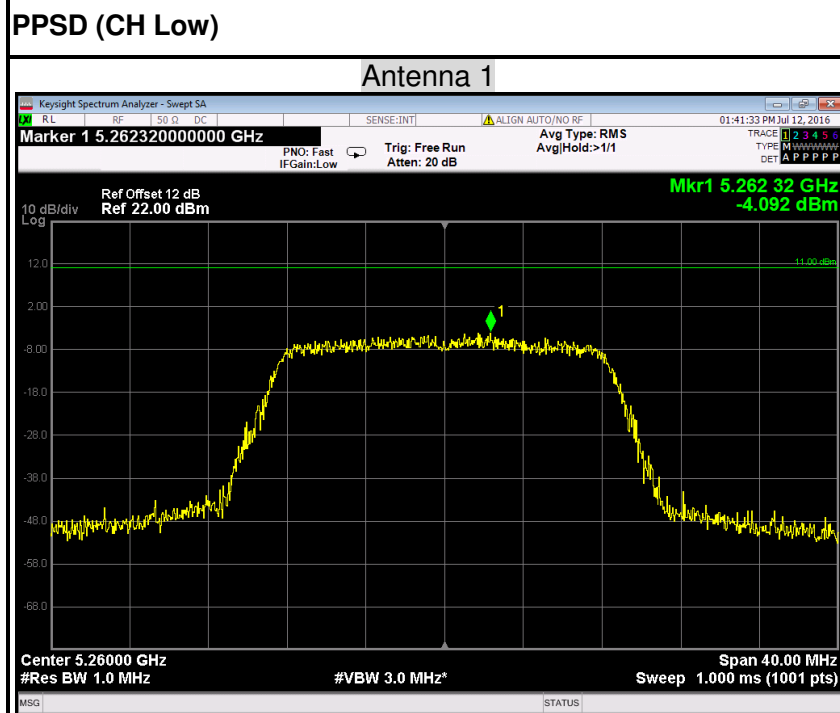


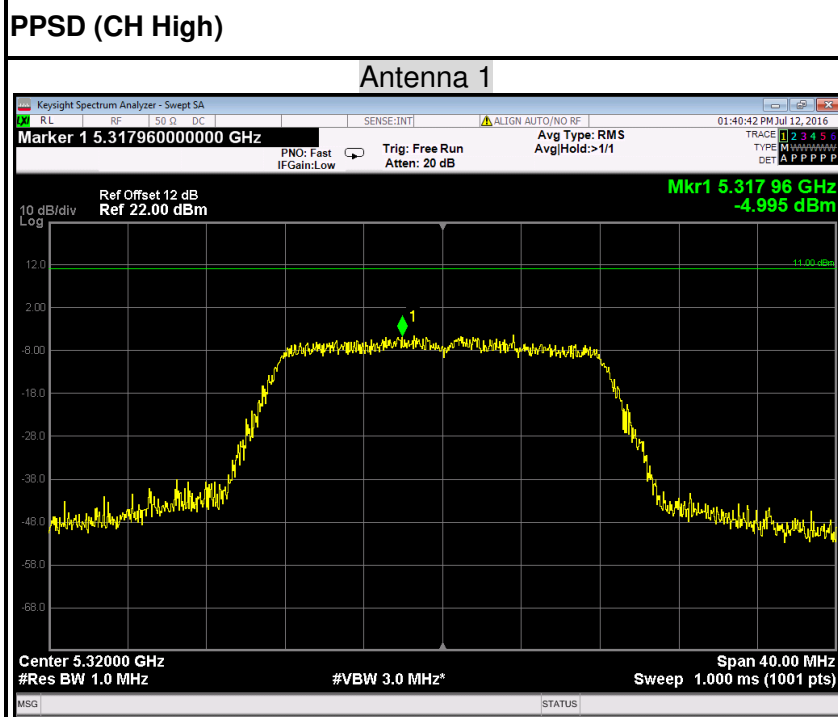
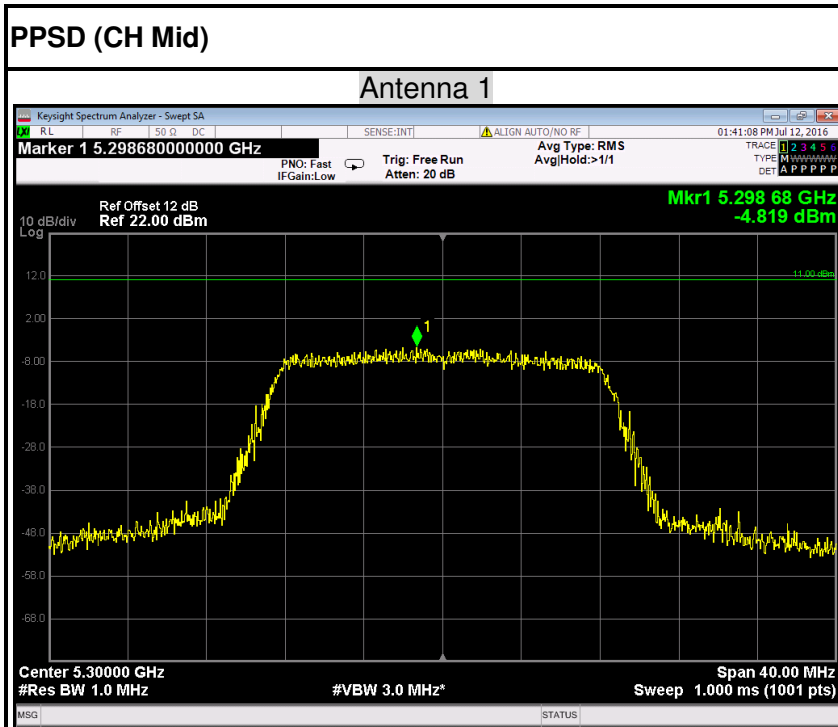


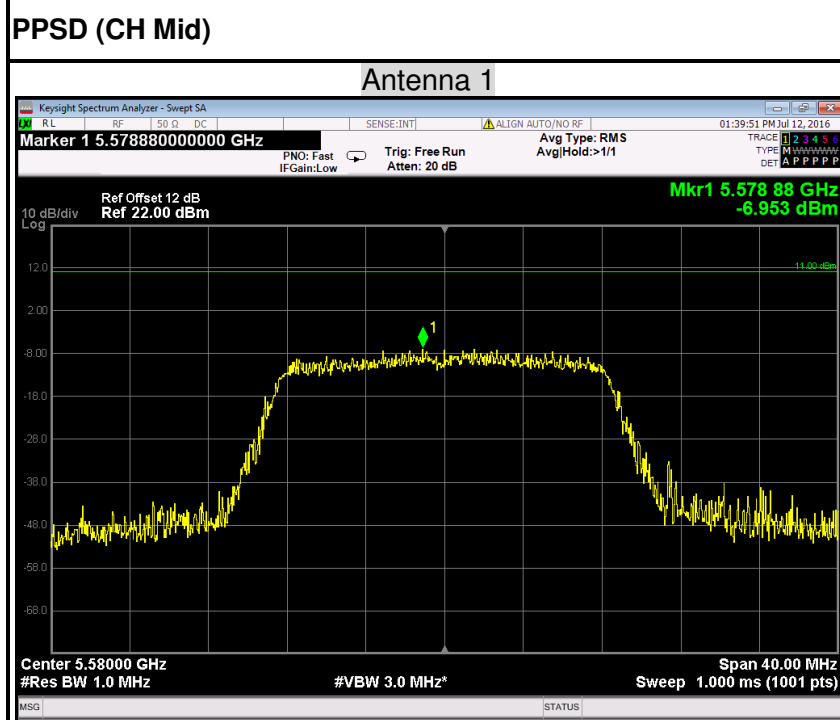
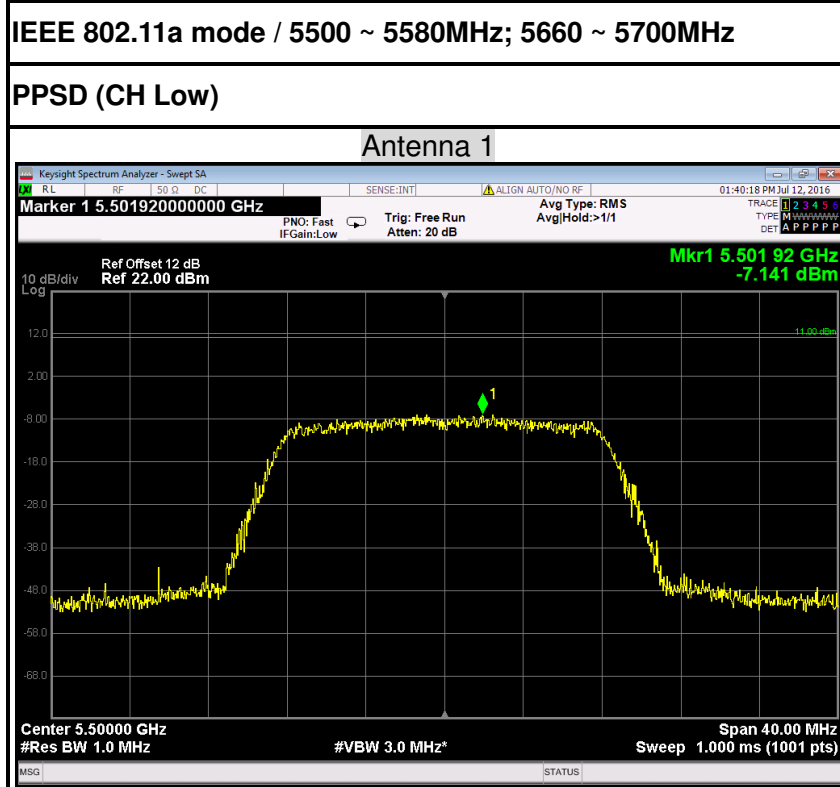


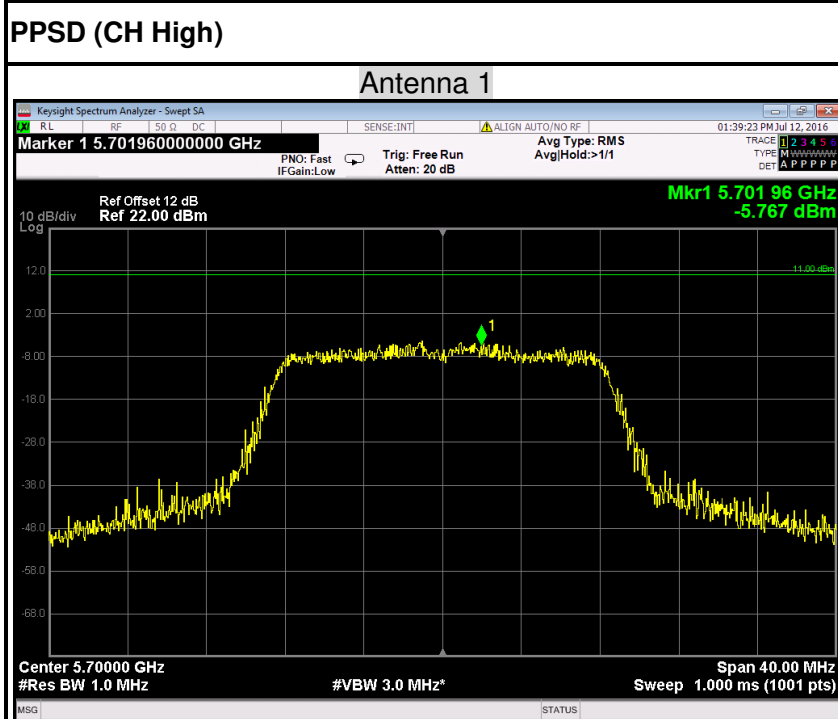


IEEE 802.11a mode / 5260~ 5320MHz

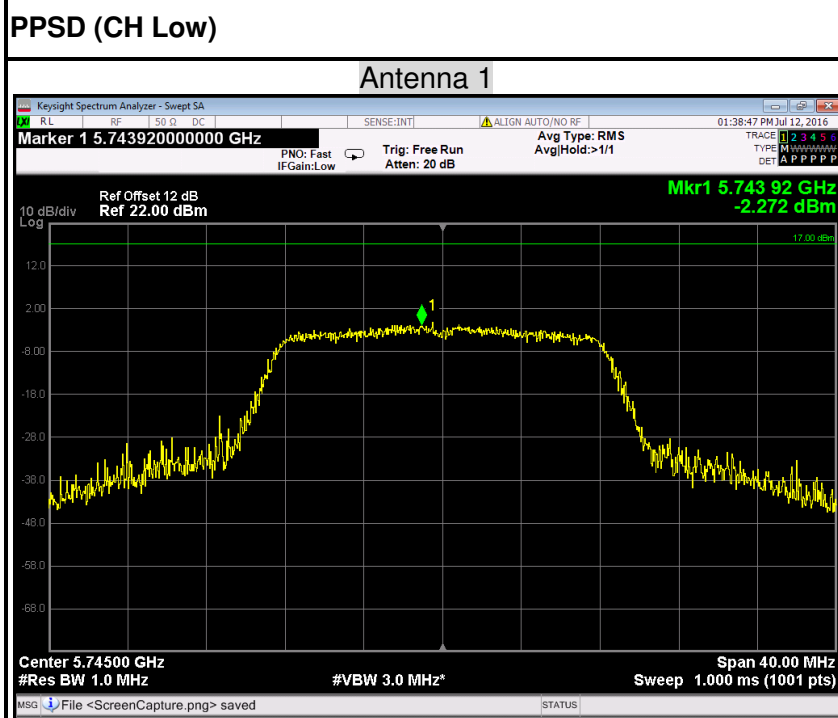


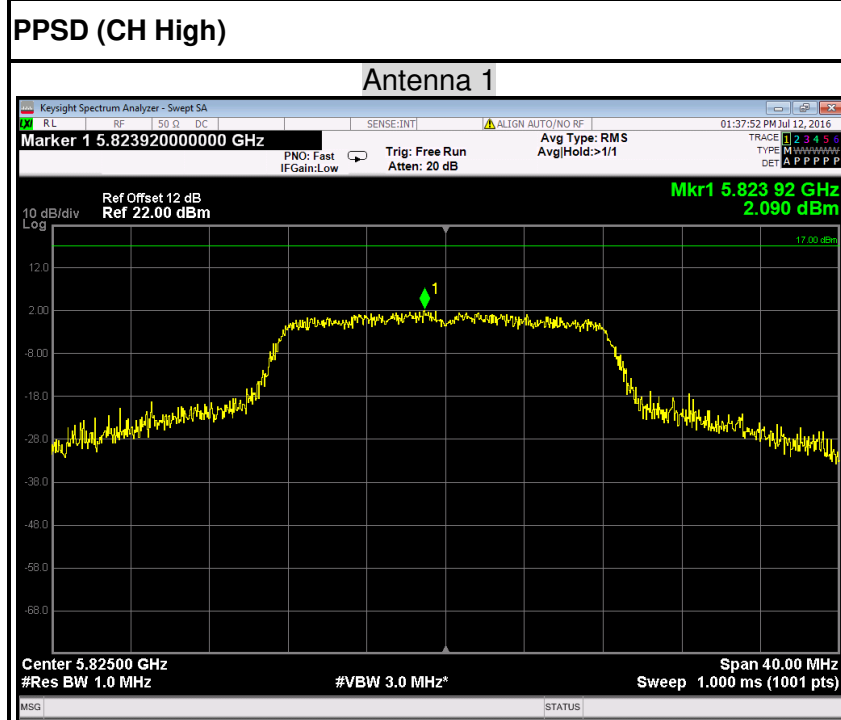
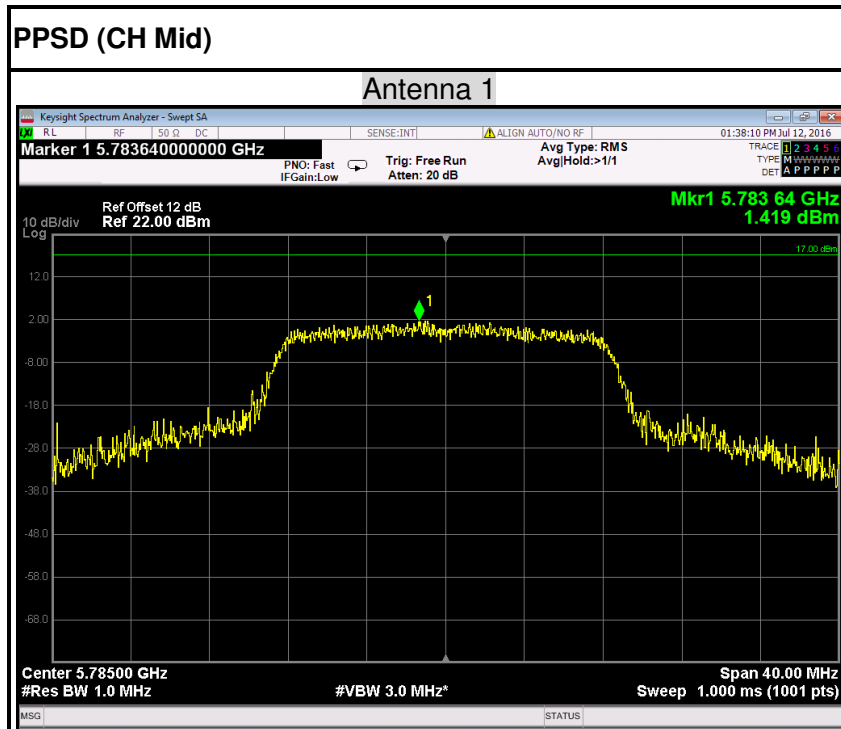


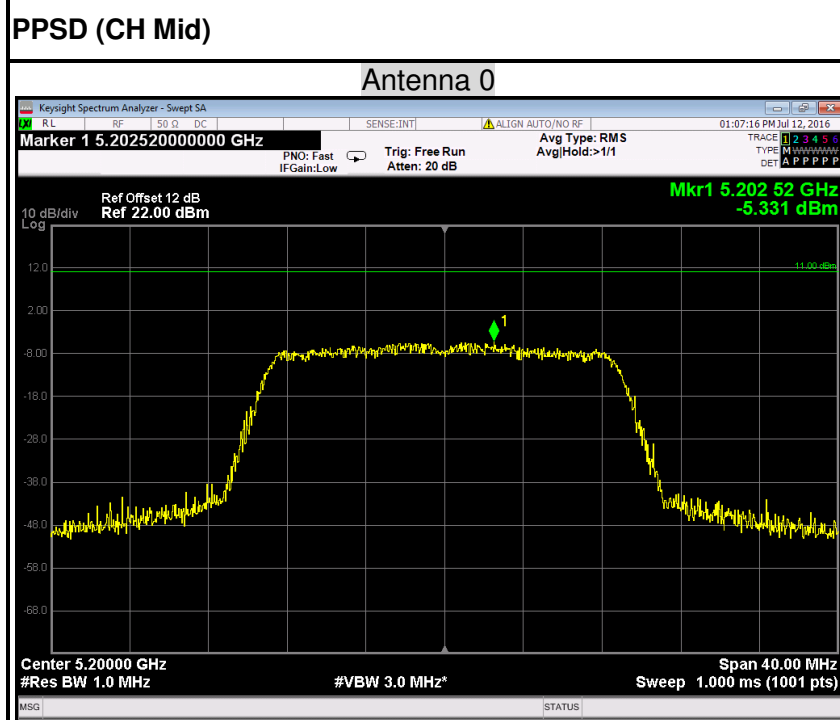
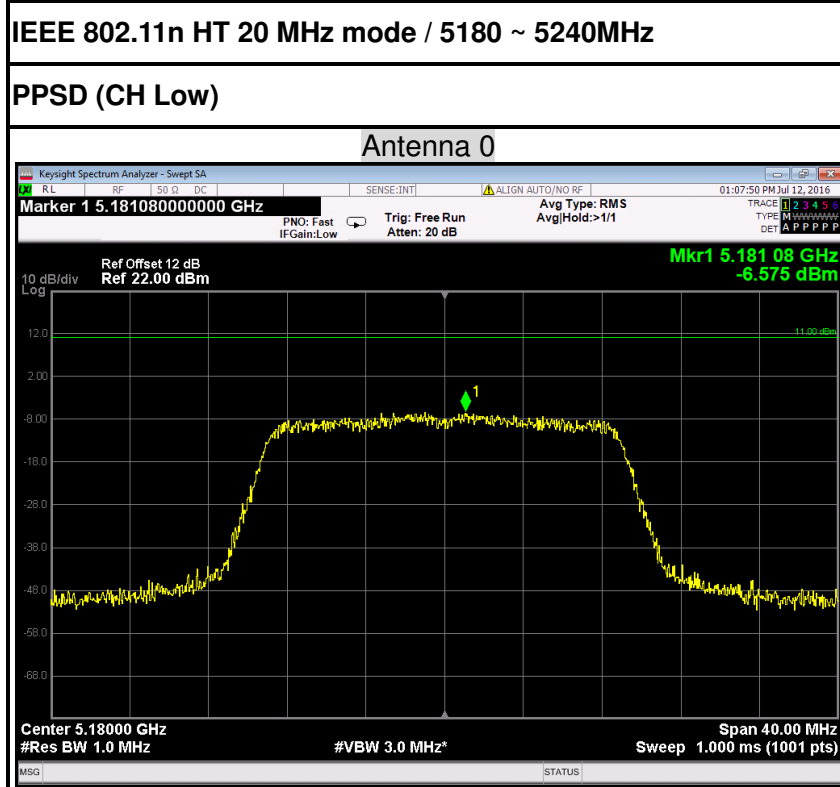


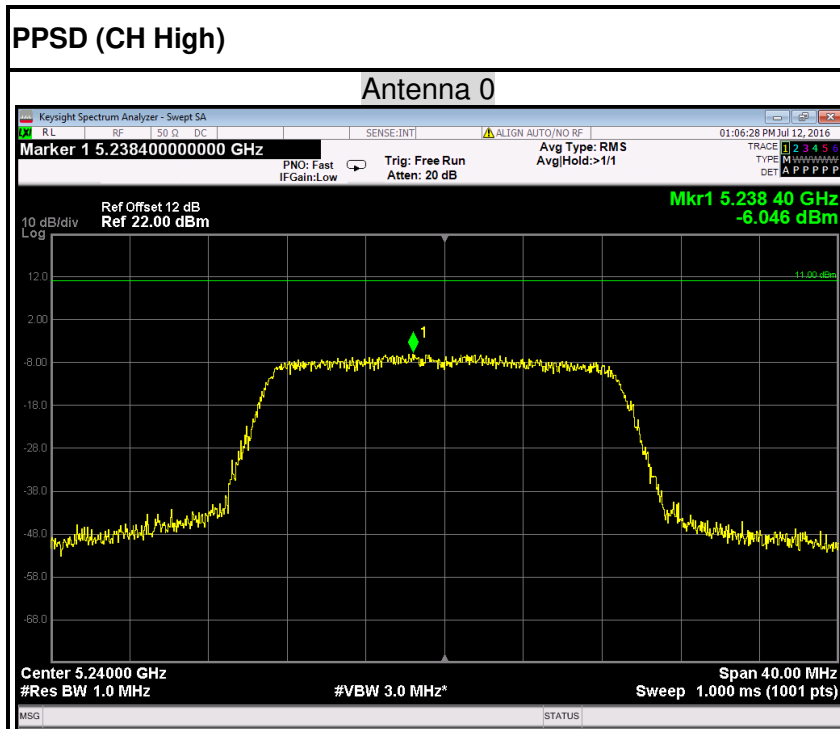


IEEE 802.11a mode / 5745 ~ 5825MHz

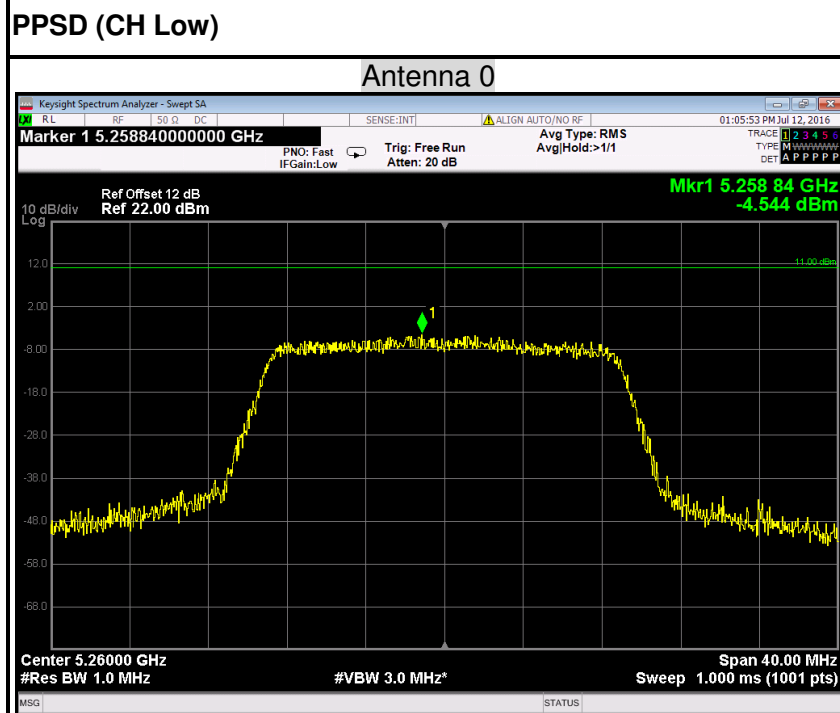


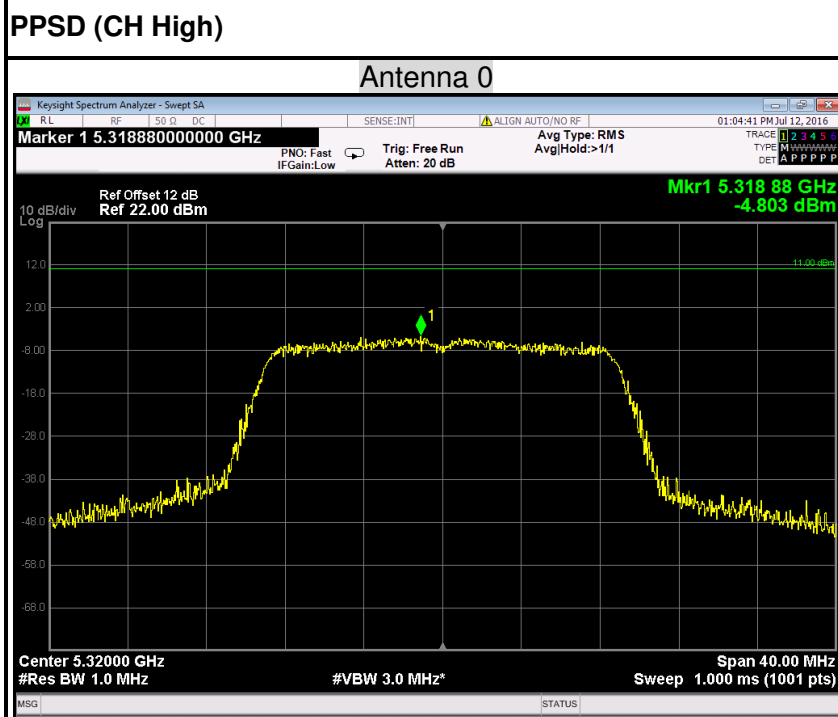
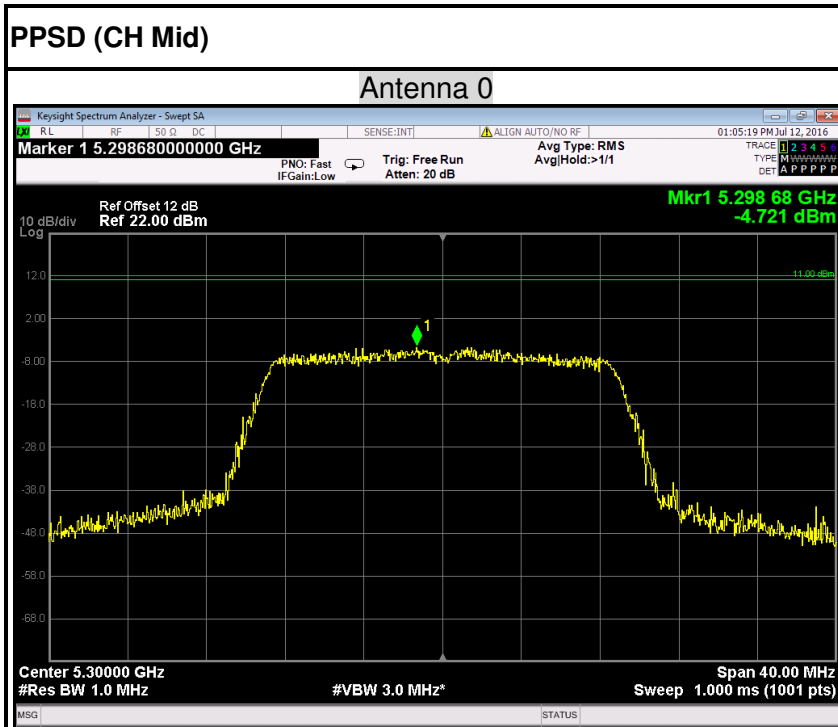






IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

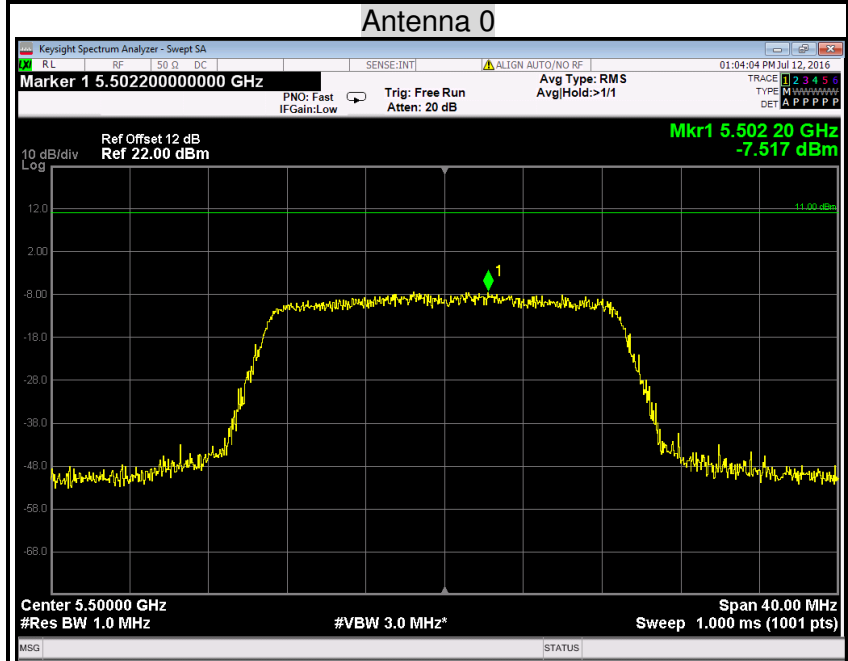




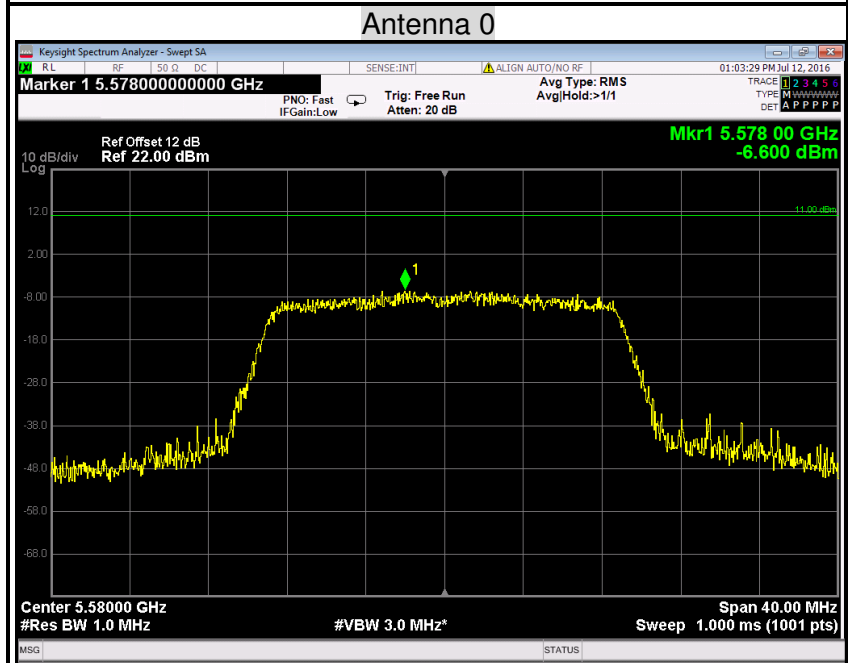


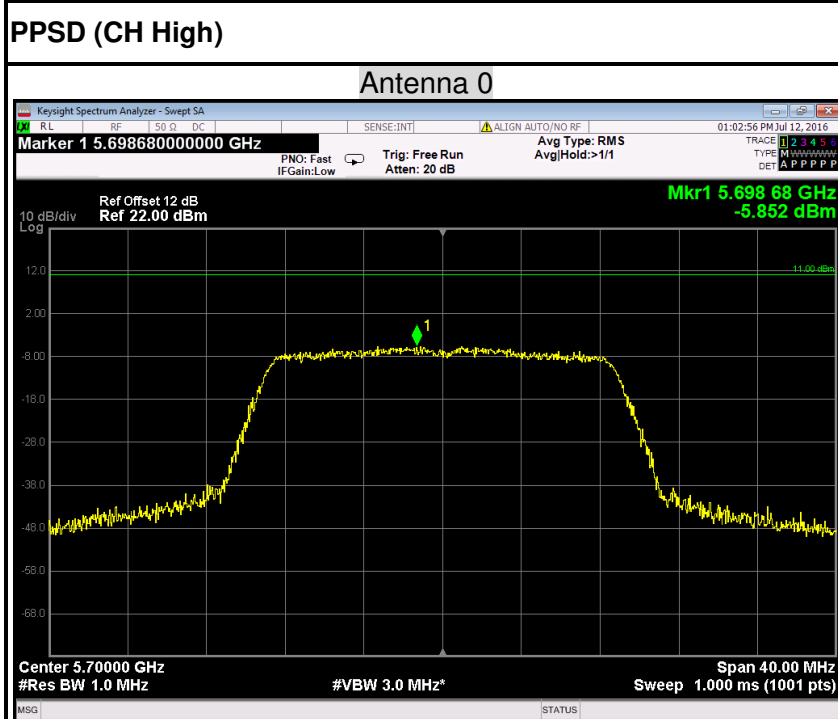
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5580MHz; 5660 ~ 5700MHz

PPSD (CH Low)

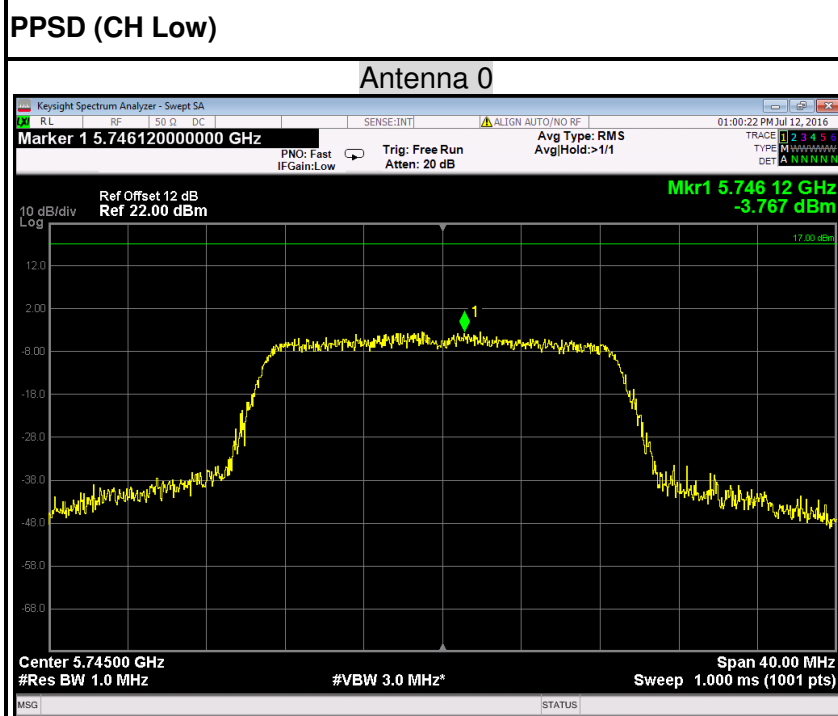


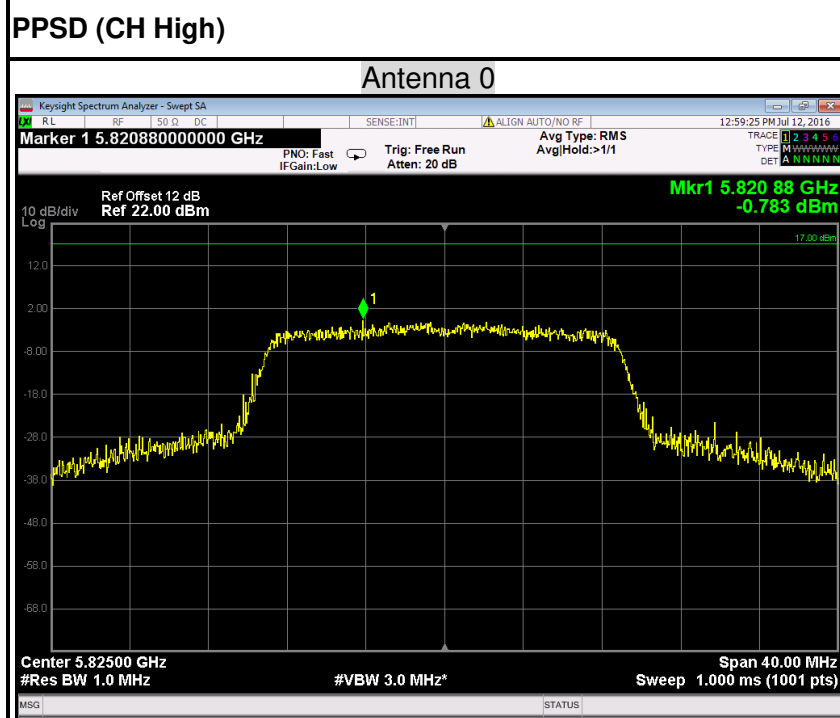
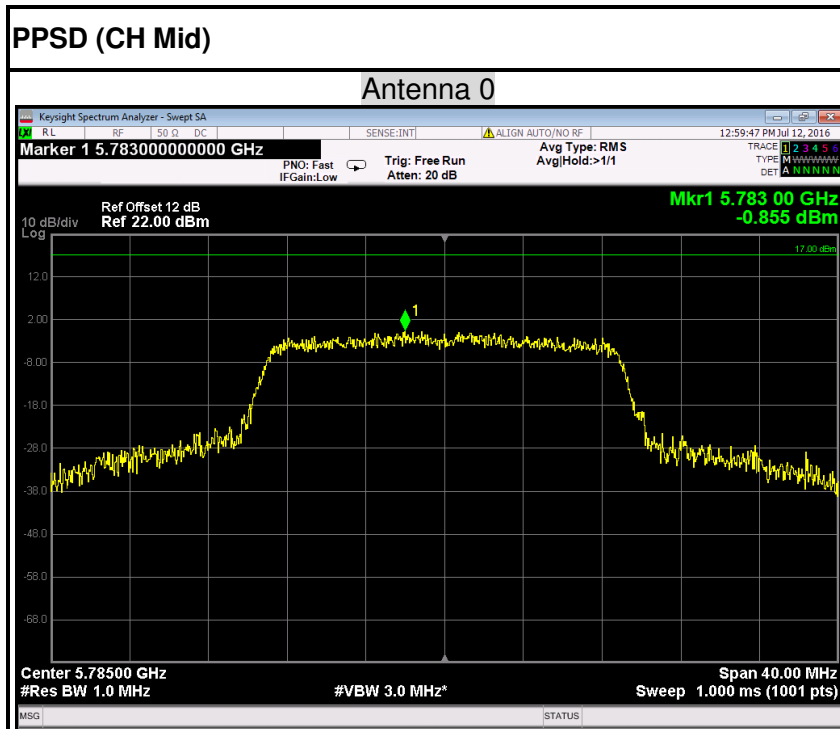
PPSD (CH Mid)

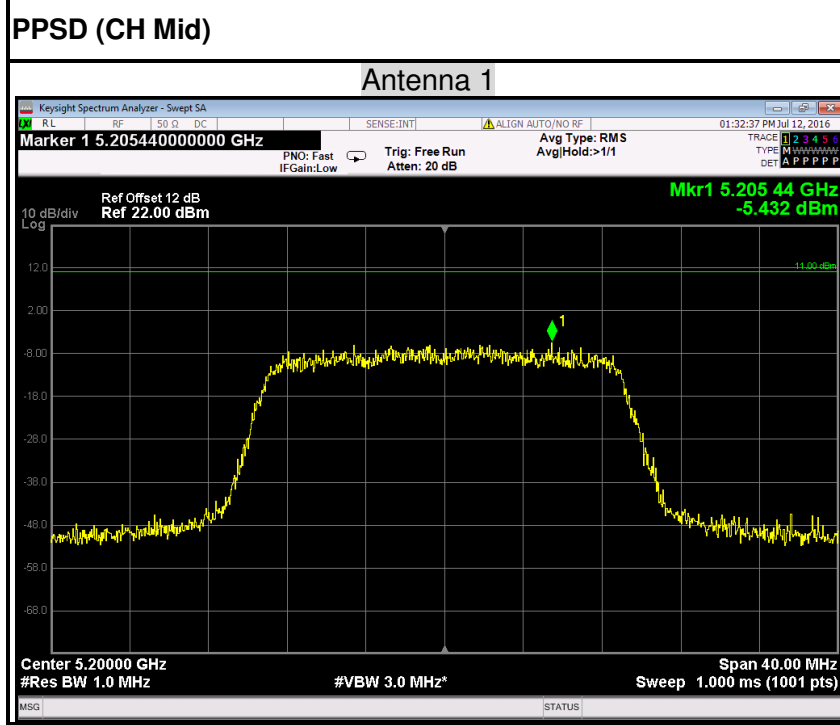
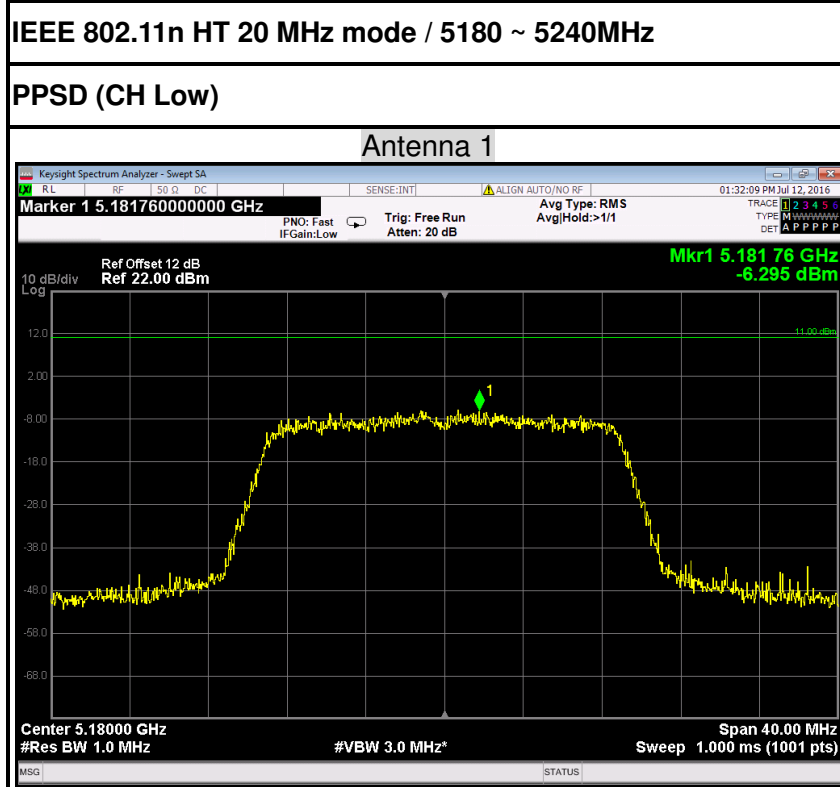


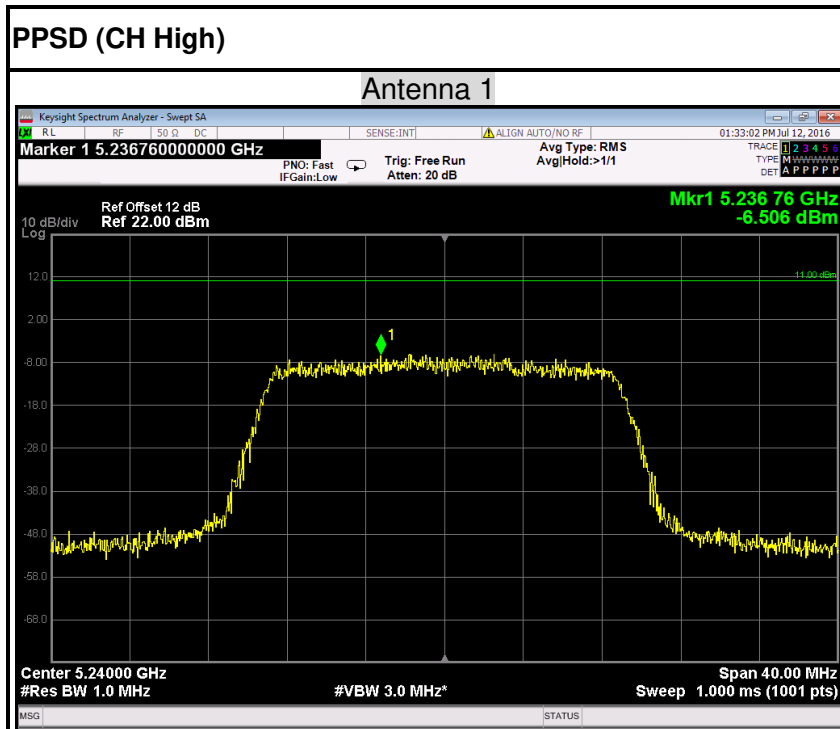


IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

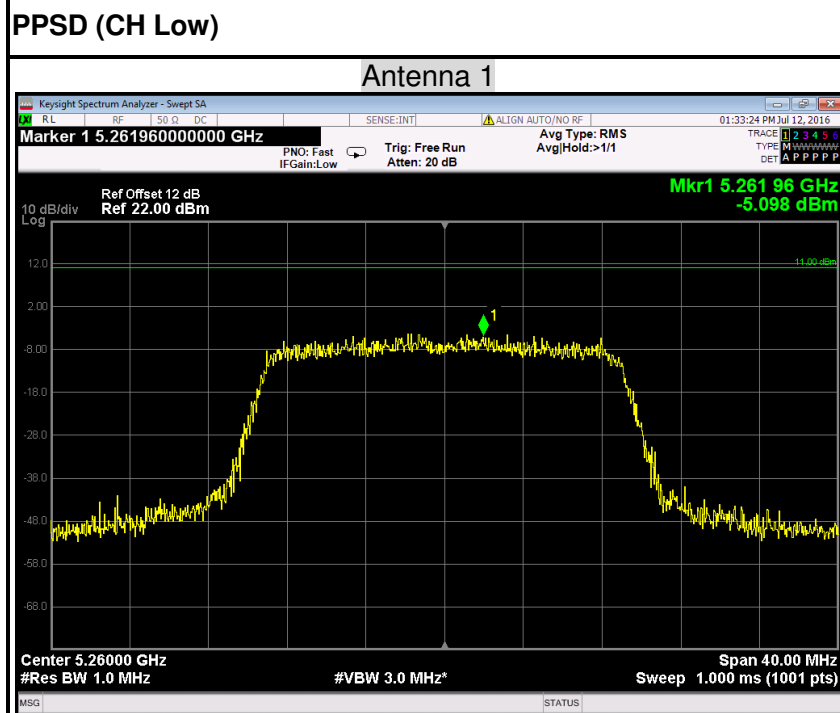


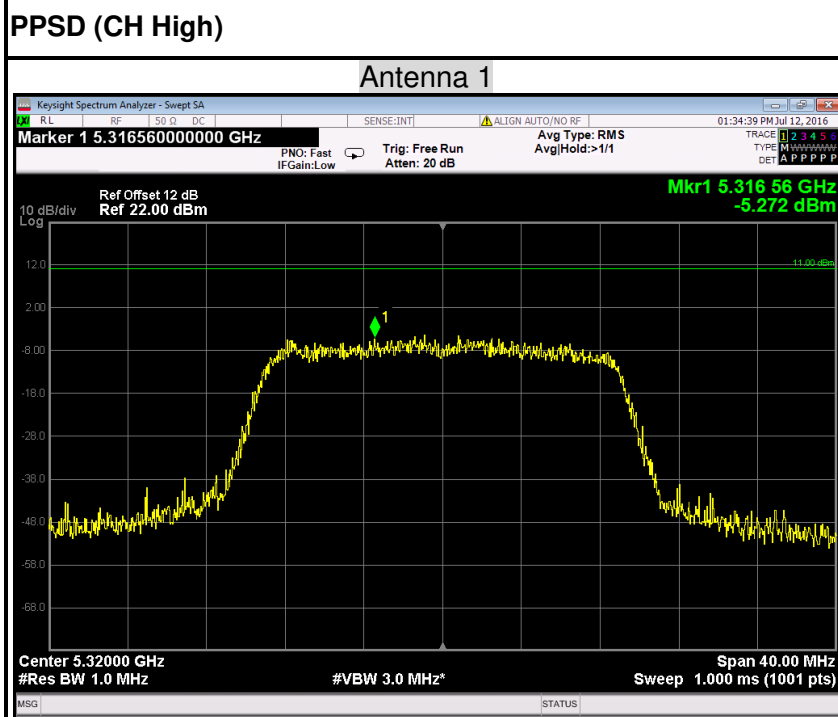
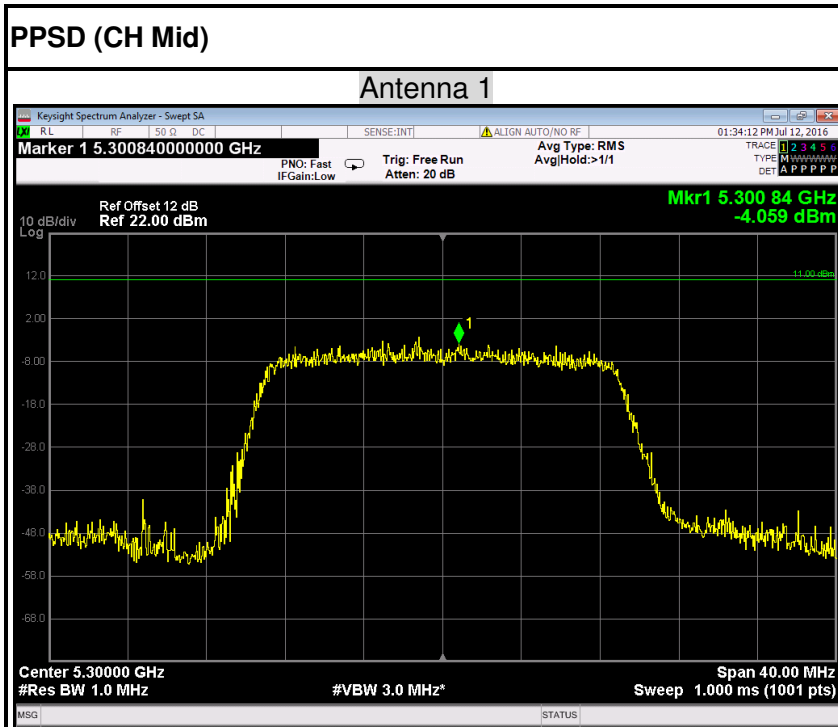






IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

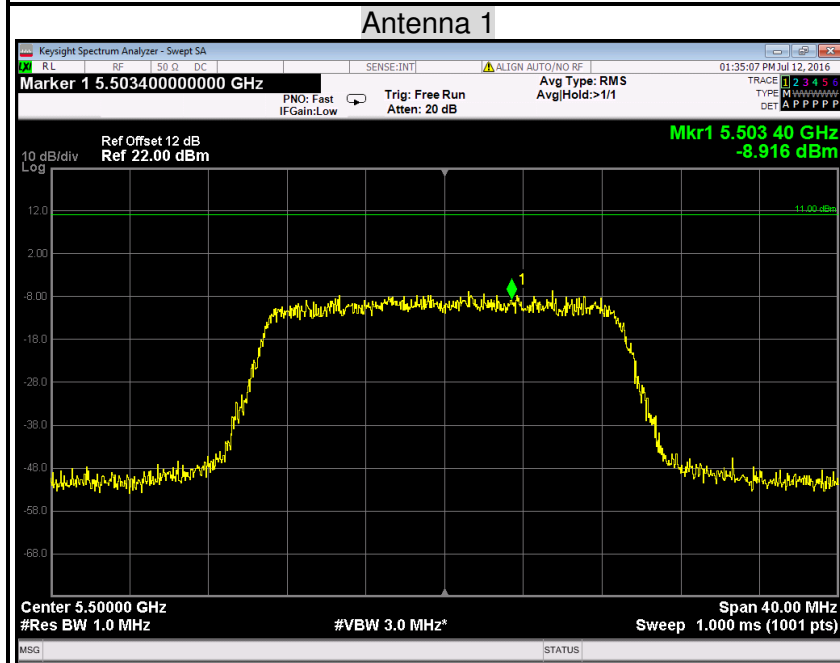




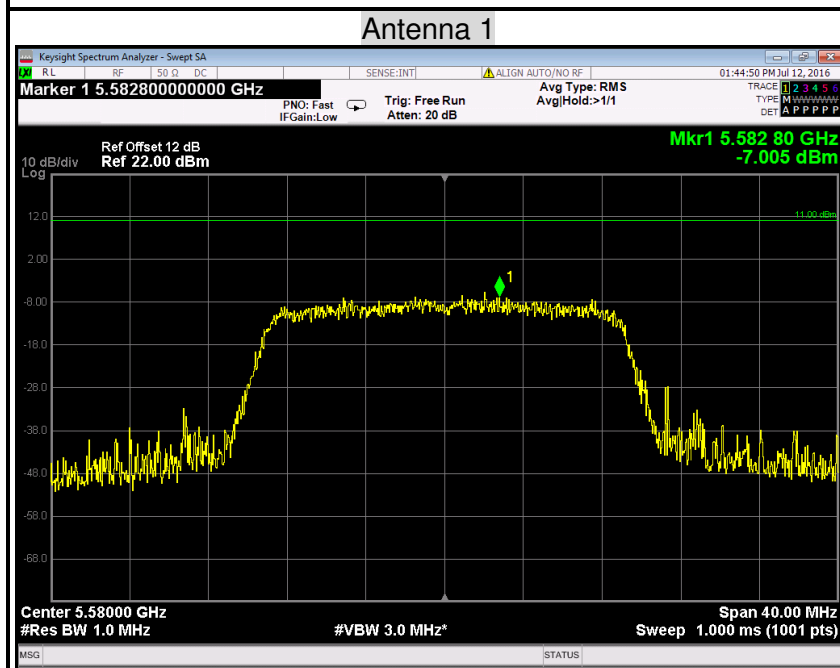


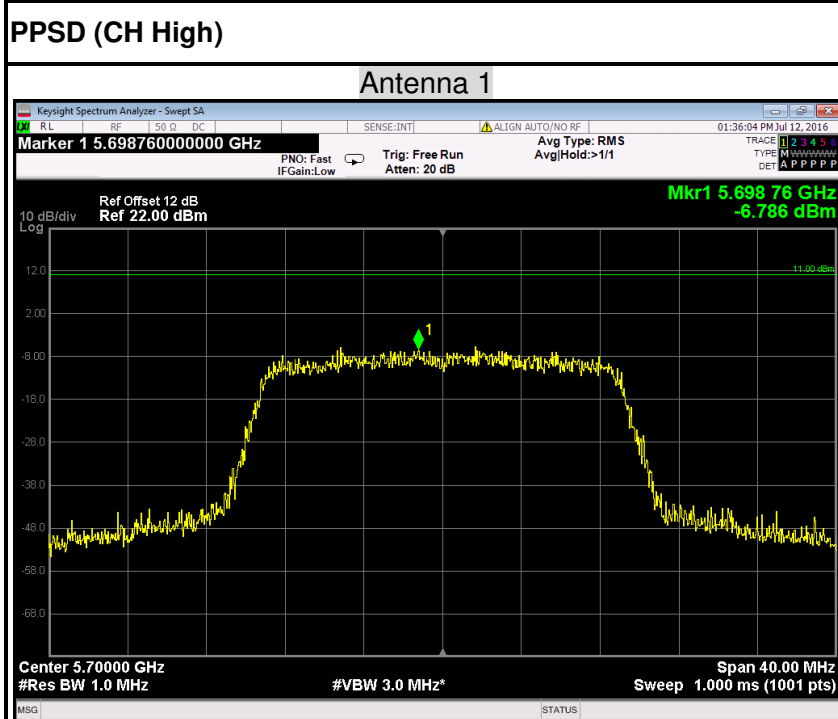
IEEE 802.11n HT 20 MHz mode /
5500 ~ 5580MHz; 5660 ~ 5700MHz

PPSD (CH Low)



PPSD (CH Mid)





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

