

A.6 POWER SPECTRAL DENSITY

Test Date	2017/09/26 ~ 10/31	Temp./Hum.	25°C/55%
Cable Loss+	4.59dB for 802.11a	Test Voltage	DC 3.3V (Via Notebook PC)
Duty Cycle	4.56dB for 802.11n-HT20		
Factor	4.91dB for 802.11n-HT40		
Simultaneous Factor $10 \log(n)$ (Note: "n" is antenna number)			3 for PCB Antenna, 0 for Omni-S Antenna

A.6.1 Power Spectral Density Result

Antenna: PCB Antenna

Mode	UNII Band	Centre Frequency (MHz)	Power Spectral Density (dBm)	Limit
802.11a	I	5180	-2.288	11 dBm/MHz
		5200	-2.651	
		5240	-2.306	
	II-2A	5260	-1.458	
		5300	-1.933	
		5320	-2.913	
	II-2C	5500	-2.492	
		5600	-1.431	
		5700	-1.230	
	III ^{Note2}	5745	0.135	30dBm/500 kHz
		5785	-0.914	
		5825	-0.435	

Note 1: All results have been included cable loss and Simultaneous Factor.

Note 2: BWCF 6.99dB (100kHz converted to 500kHz) has been included in the test result.

Mode	UNII Band	Centre Frequency (MHz)	Power Spectral Density (dBm)	Limit	
802.11n- HT20	I	5180	-3.145	11 dBm/MHz	
		5200	-3.390		
		5240	-3.163		
	II-2A	5260	1.678		
		5300	1.678		
		5320	0.446		
	II-2C	5500	1.079	30dBm/500 kHz	
		5600	2.017		
		5700	2.372		
	III ^{Note2}	5745	-0.403		
5785		-1.355			
5825		-0.501			
802.11n- HT40	I	5190	-3.958		11 dBm/MHz
		5230	-4.329		
	II-2A	5270	-0.983		
		5310	-4.928		
	II-2C	5510	-1.886		
		5590	-1.489		
		5670	0.598		
	III ^{Note2}	5755	-3.752	30dBm/500 kHz	
		5795	-4.589		

Note 1: All results have been included cable loss and Simultaneous Factor.

Note 2: BWCF 6.99dB (100kHz converted to 500kHz) has been included in the test result.

Antenna: Omni-S Antenna

Mode	UNII Band	Centre Frequency (MHz)	Power Spectral Density (dBm)	Limit
802.11a	I	5180	1.746	11 dBm/MHz
		5200	1.201	
		5240	1.669	
	II-2A	5260	1.562	
		5300	-2.638	
		5320	-3.173	
	II-2C	5500	-2.076	
		5600	0.515	
		5700	0.538	
	III ^{Note2}	5745	1.720	30dBm/500 kHz
		5785	-0.221	
		5825	-0.147	

Note 1: All results have been included cable loss and Simultaneous Factor.

Note 2: BWCF 6.99dB (100kHz converted to 500kHz) has been included in the test result.

Mode	UNII Band	Centre Frequency (MHz)	Power Spectral Density (dBm)	Limit	
802.11n-HT20	I	5180	-1.940	9dBm/MHz Note3	
		5200	-2.463		
		5240	-1.537		
	II-2A	5260	-0.483		
		5300	-0.590		
		5320	-2.129		
	II-2C	5500	-1.645	28dBm/500 kHz Note4	
		5600	-0.679		
		5700	0.151		
	III ^{Note2}	5745	-2.927		
5785		-3.259			
5825		-3.141			
802.11n-HT40	I	5190	-7.721		9dBm/MHz Note3
		5230	-7.599		
	II-2A	5270	-4.206		
		5310	-8.094		
	II-2C	5510	-5.169	28dBm/500 kHz Note4	
		5590	-4.687		
		5670	-3.701		
	III ^{Note2}	5755	-6.233		
		5795	-6.039		

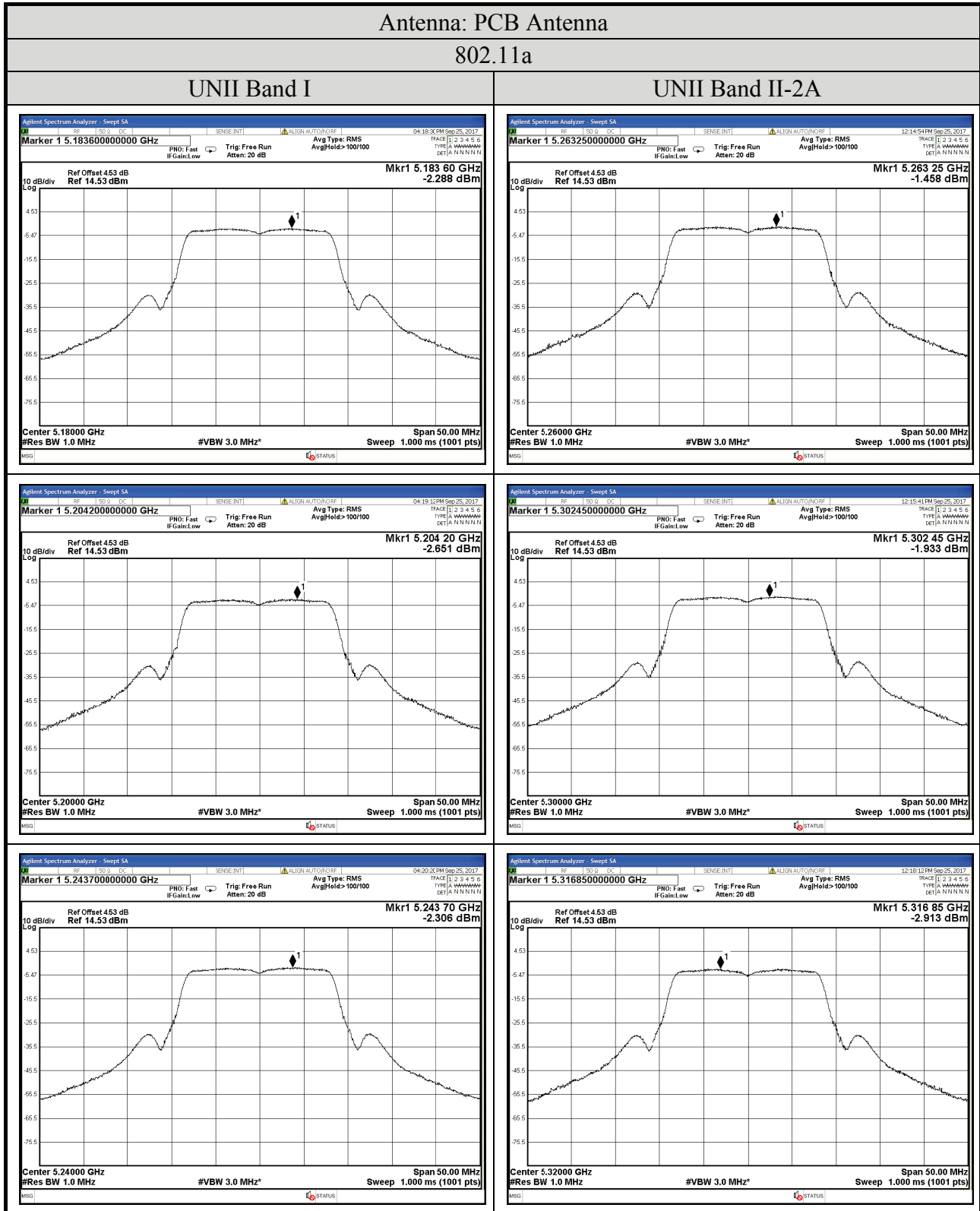
Note 1: All results have been included cable loss and Simultaneous Factor.

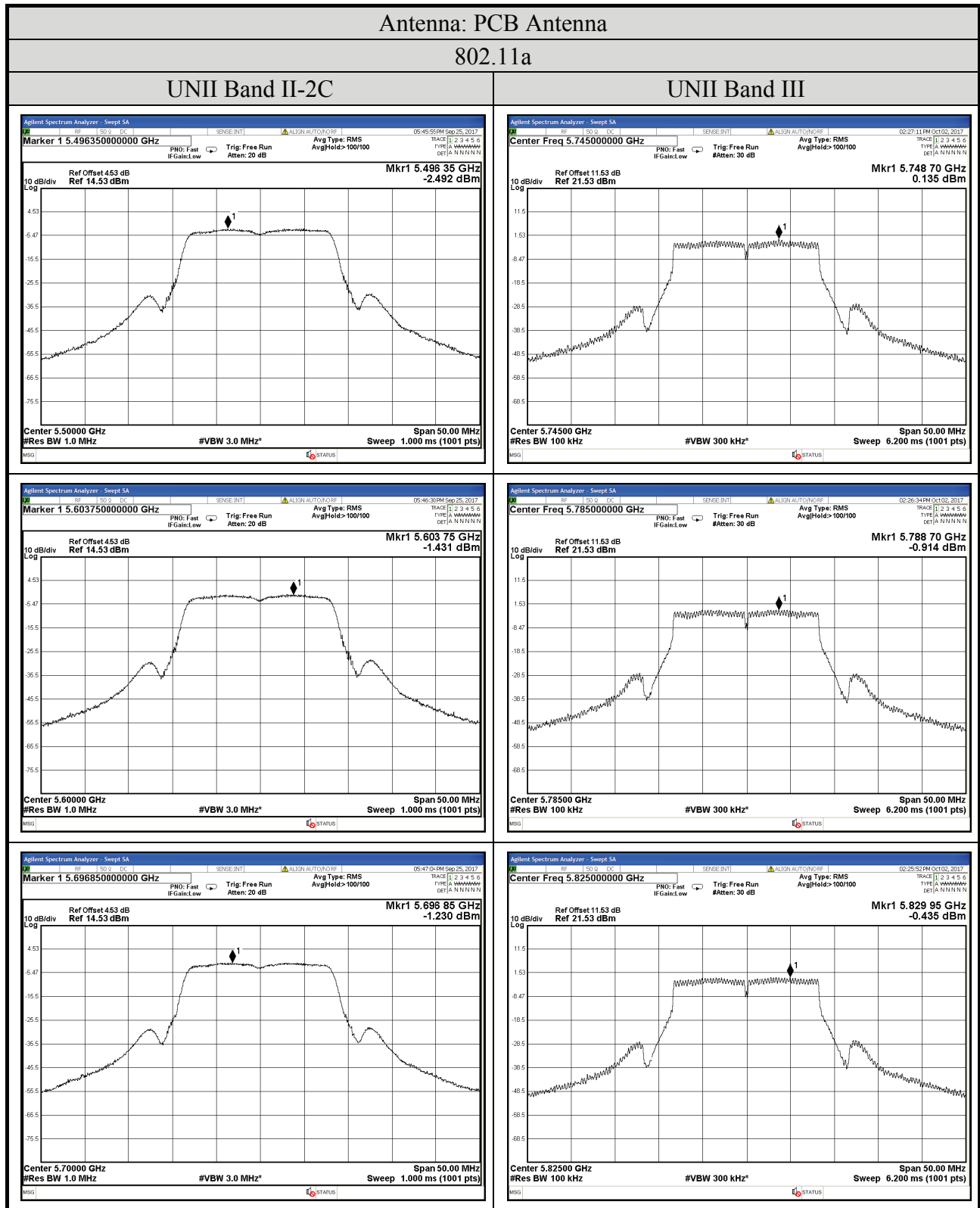
Note 2: BWCF 6.99dB (100kHz converted to 500kHz) has been included in the test result.

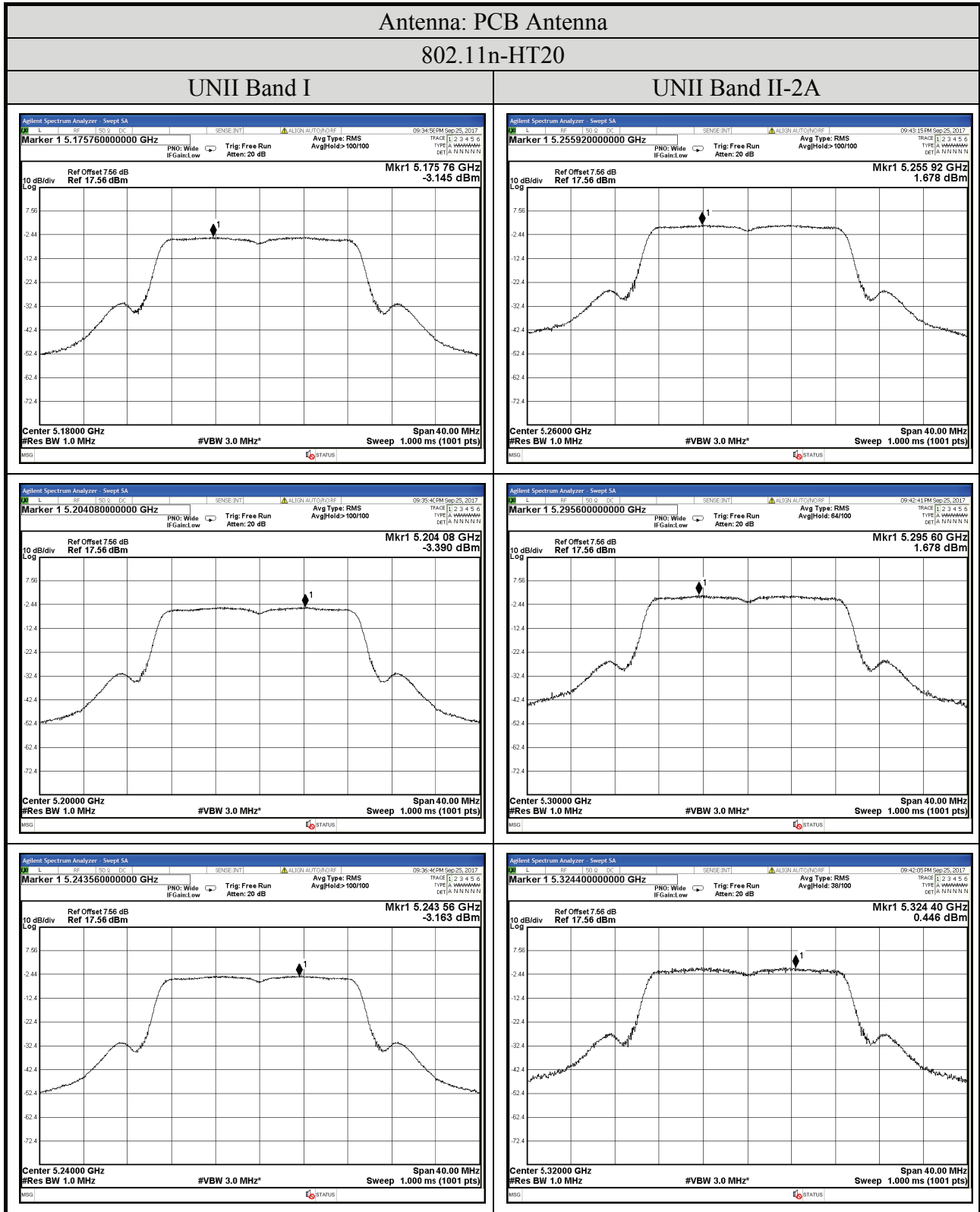
Note 3: 802.11n Directional gain is 8dBi > 6dBi, the Limit is 11 – (8-6) = 9 dBm

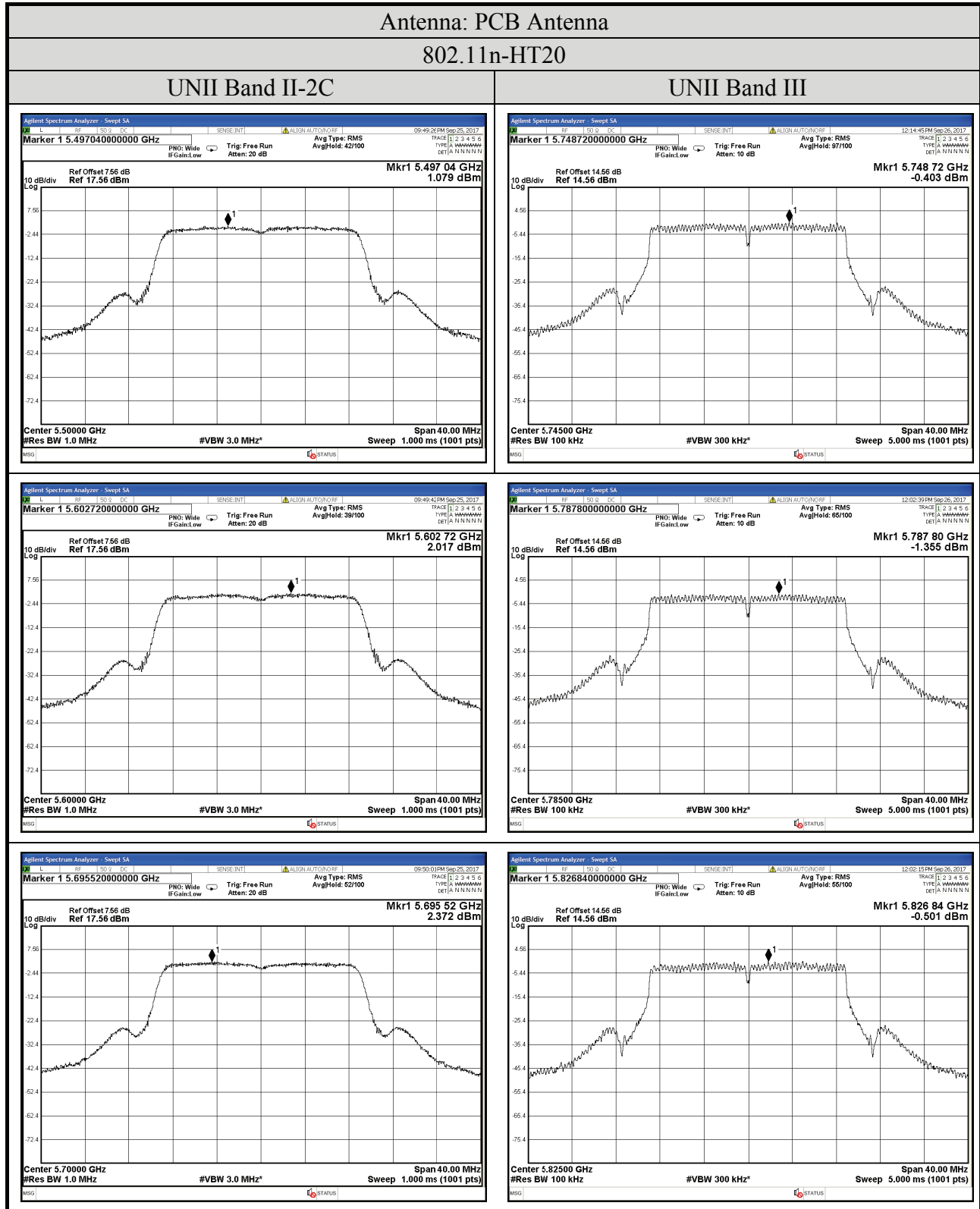
Note 4: 802.11n Directional gain is 8dBi > 6dBi, the Limit is 30 – (8-6) = 28 dBm

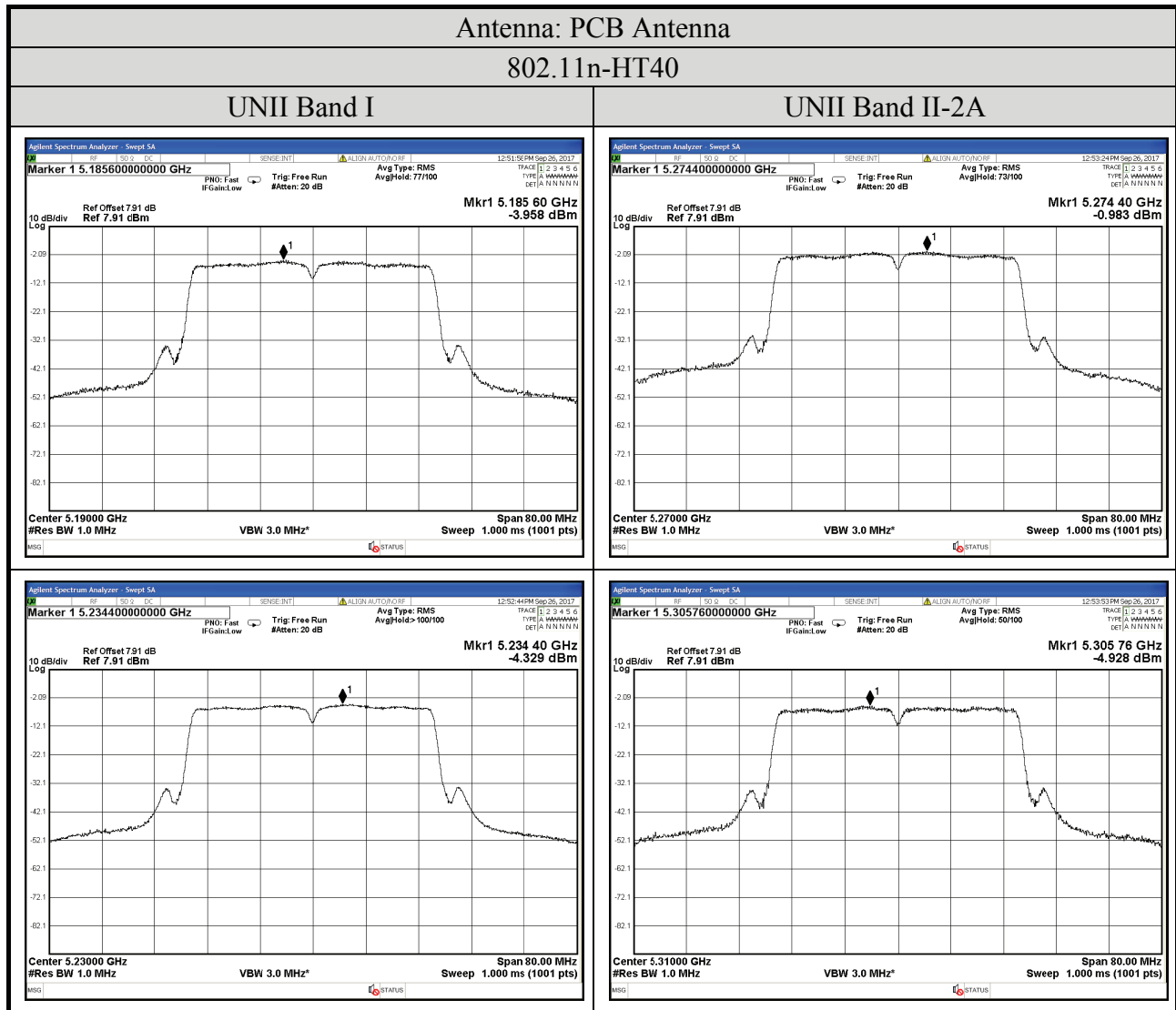
A.6.2 Measurement Plots

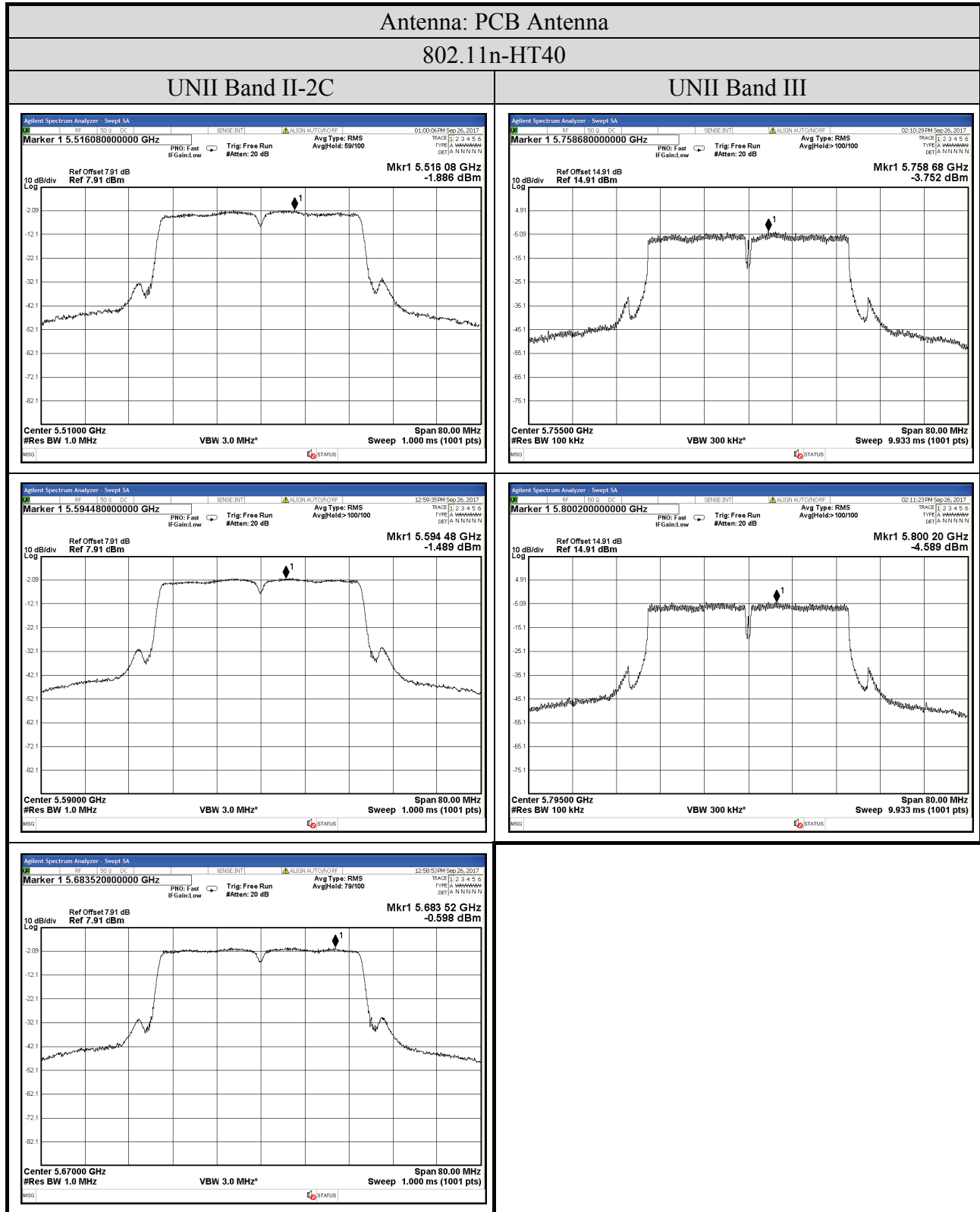


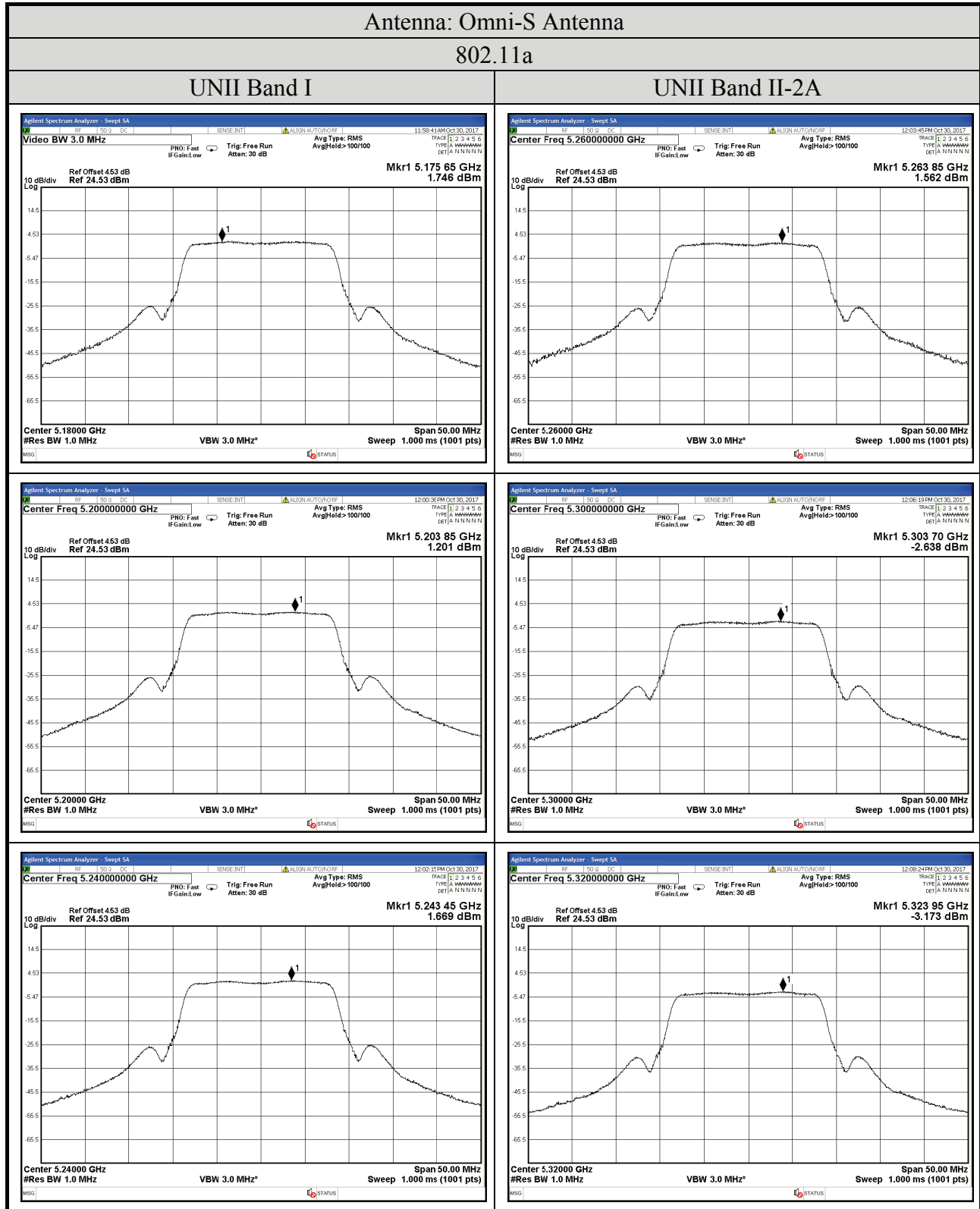


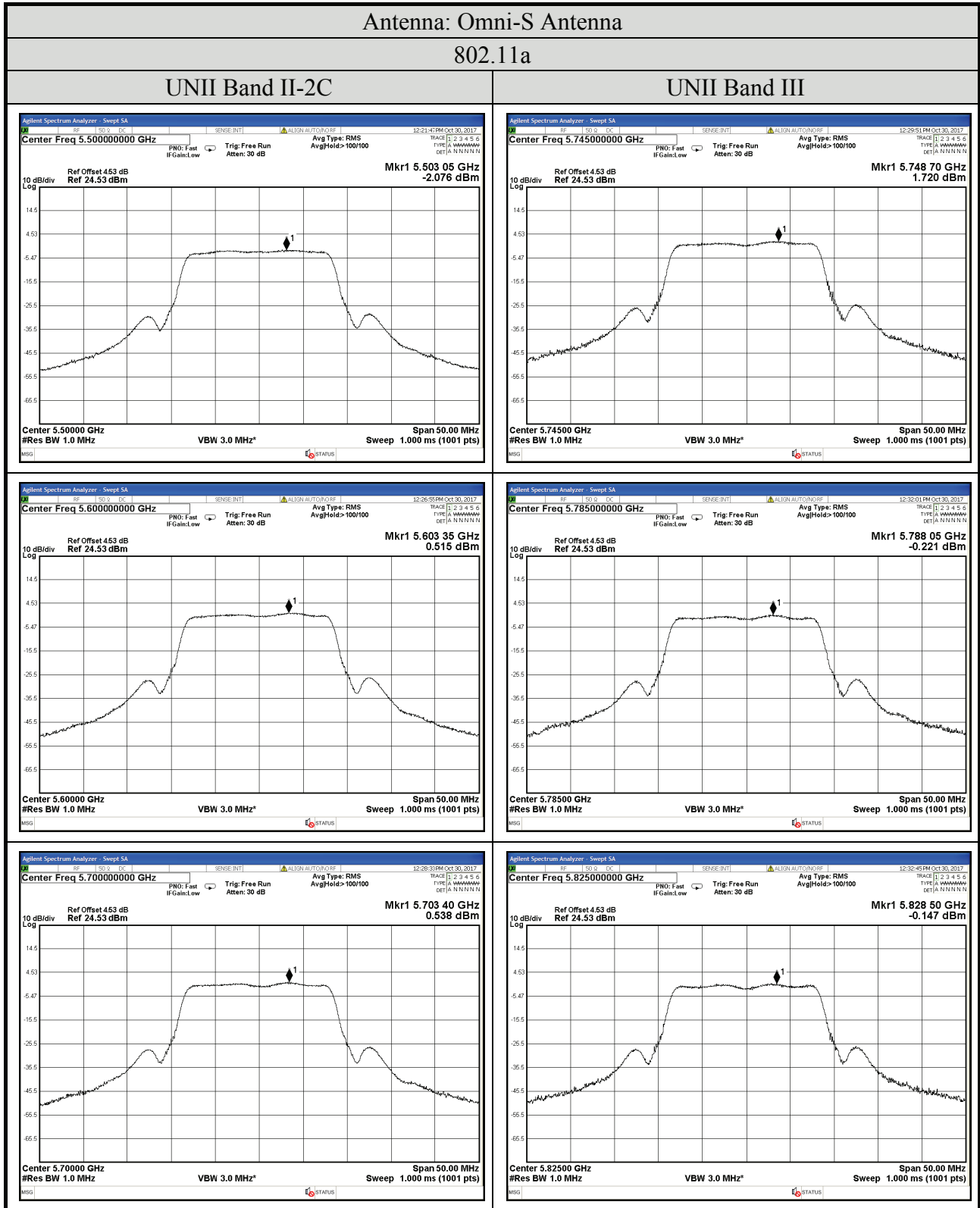


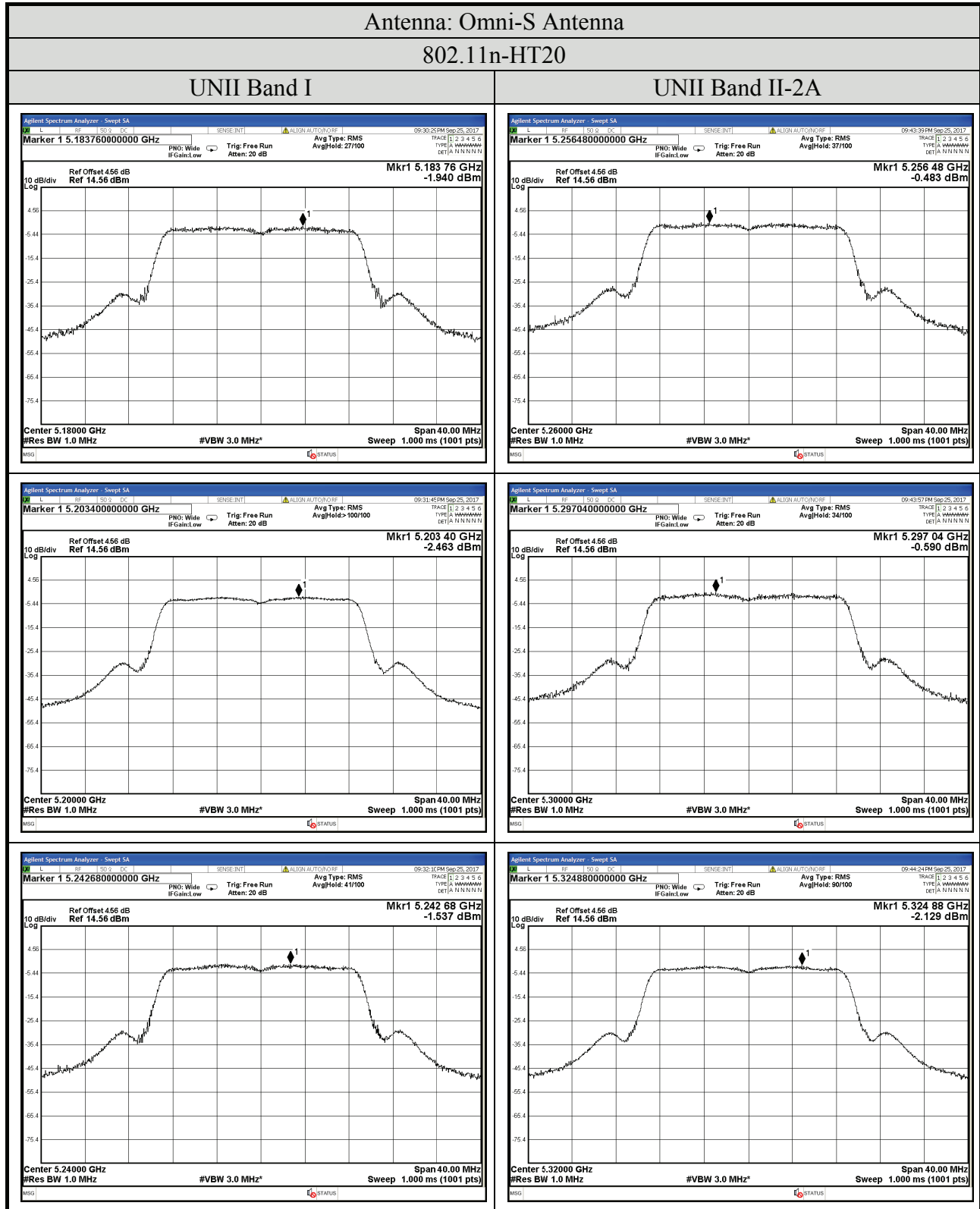










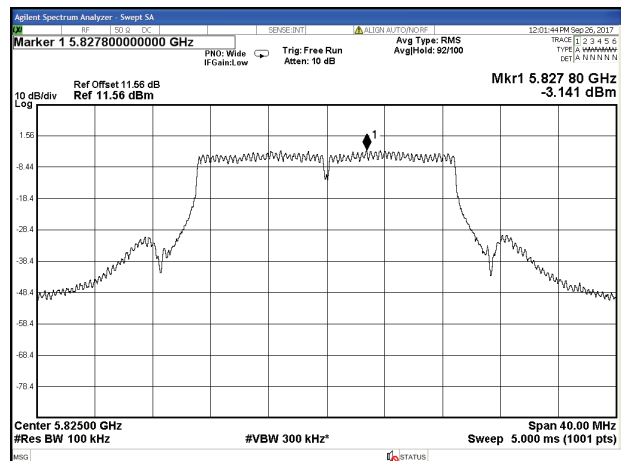
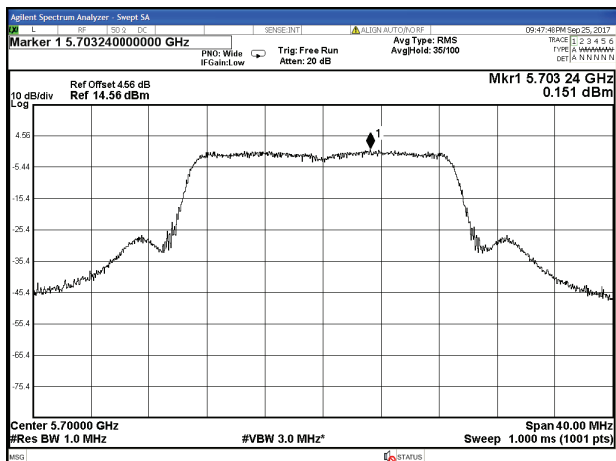
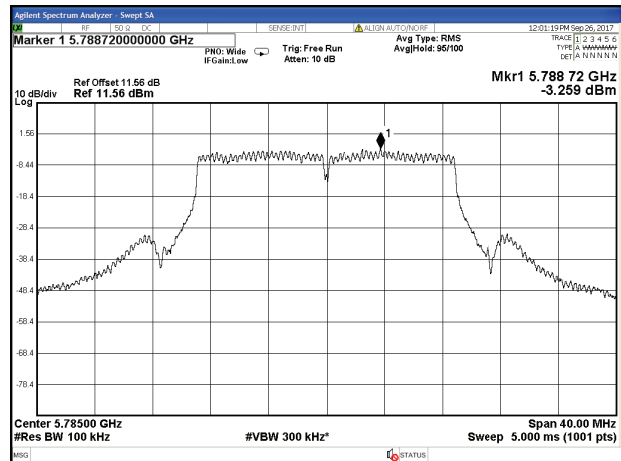
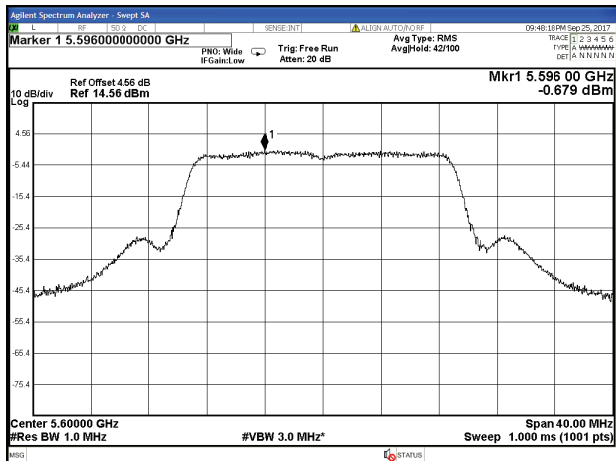
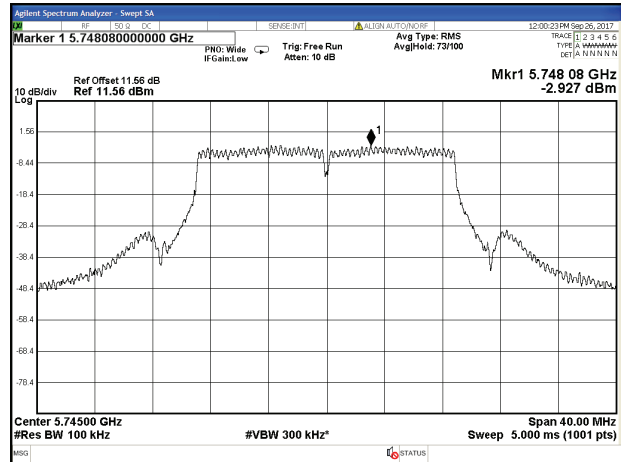
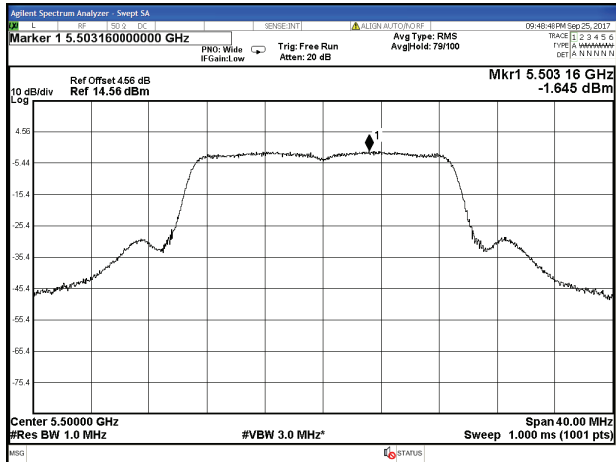


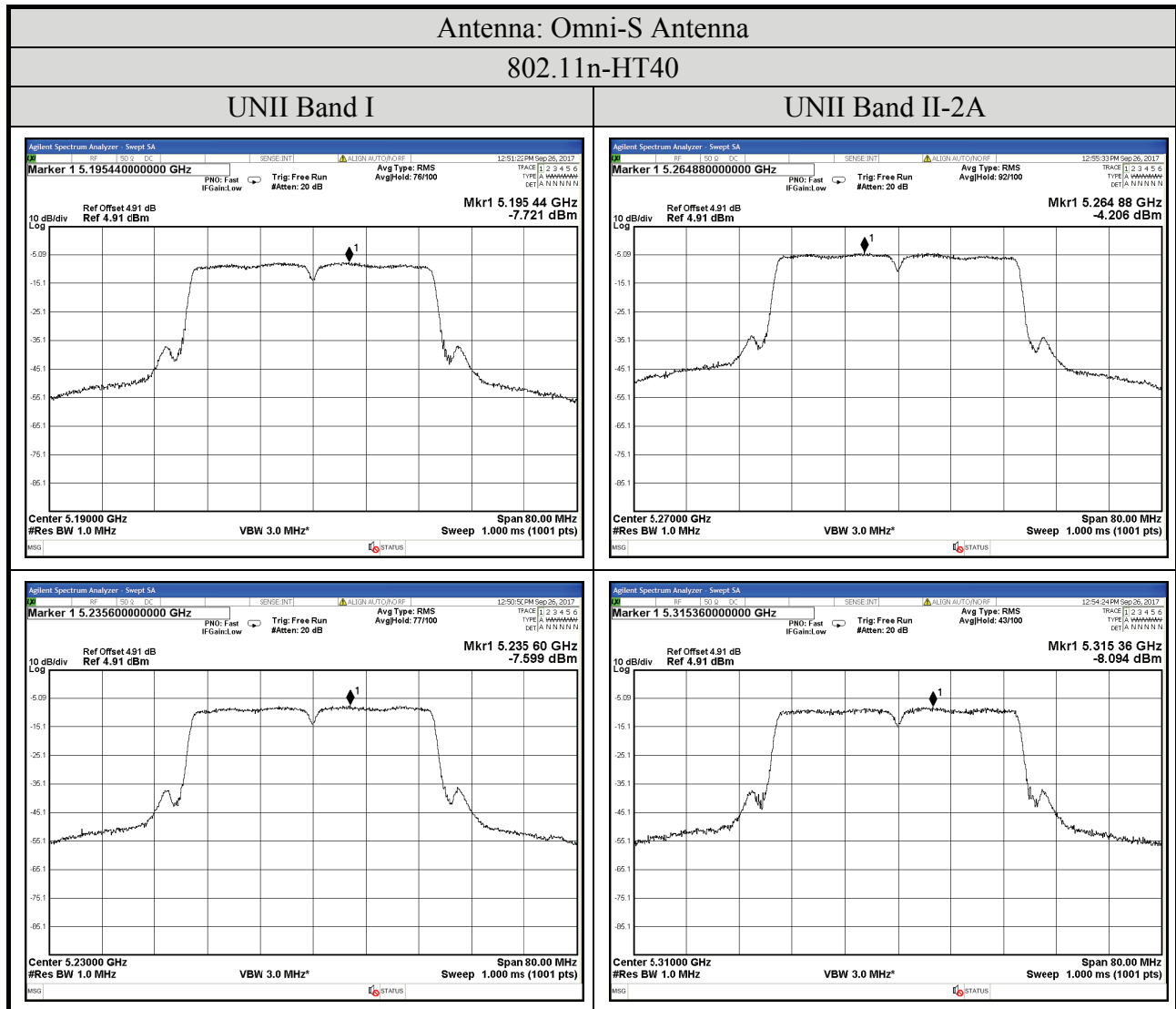
Antenna: Omni-S Antenna

802.11n-HT20

UNII Band II-2C

UNII Band III



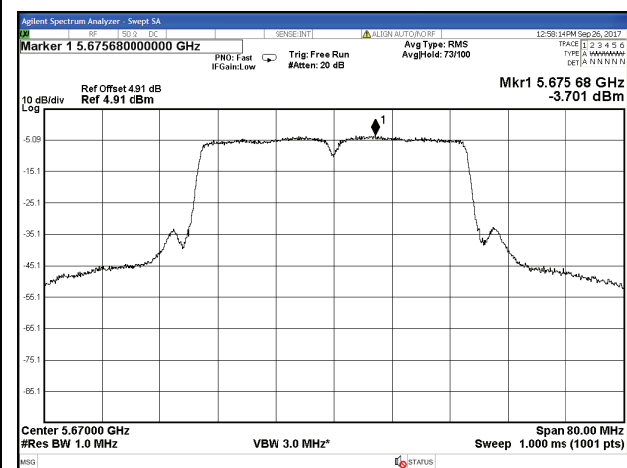
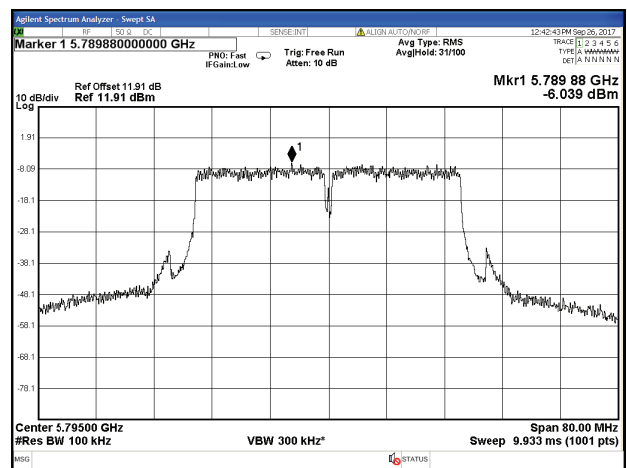
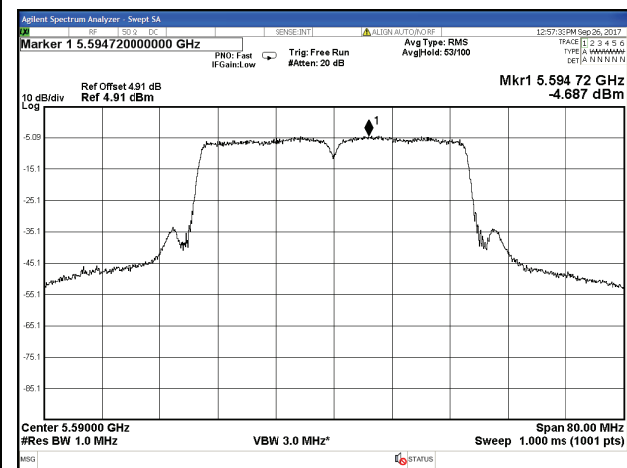
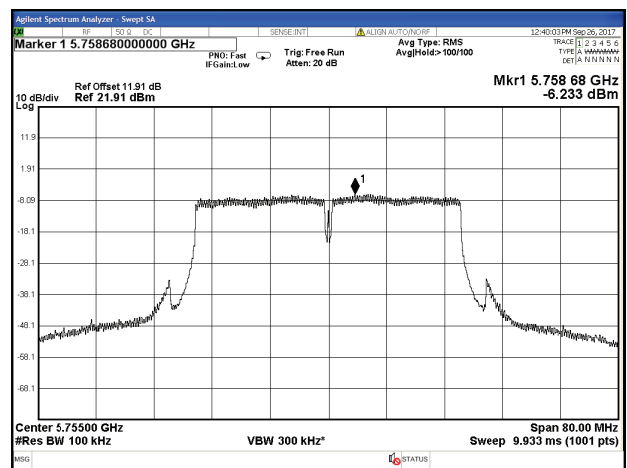
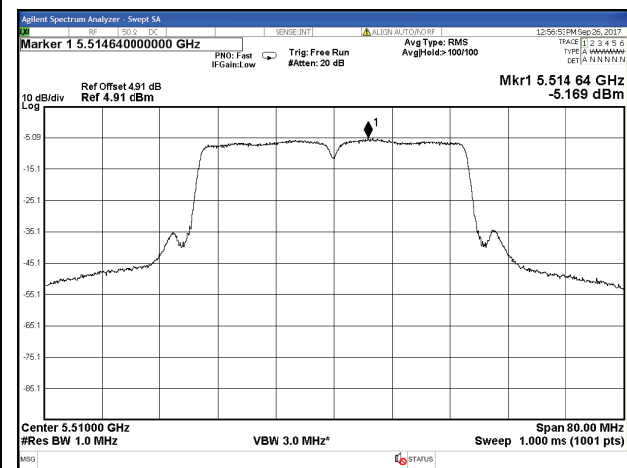


Antenna: Omni-S Antenna

802.11n-HT40

UNII Band II-2C

UNII Band III



A.7 FREQUENCY STABILITY

Test Date	2017/10/11	Temp./Hum.	25°C/55%
Cable Loss	---	Test Voltage	DC 3.3V (Via Notebook PC)
Simultaneous Factor 10 log(n) (Note: "n" is antenna number)			3 for PCB Antenna, 0 for Omni-S Antenna

A.7.1 Frequency stability Result

5180MHz					
Temperature(°C)	-30	-20	-10	0	25
Voltage	3.795Vdc	3.795Vdc	3.795Vdc	3.795Vdc	3.3Vdc
Frequency(MHz)	5180.006	5180.007	5180.016	5180.022	5179.997
Frequency Stability (ppm)	1.158	1.351	3.089	4.247	-0.579
Temperature(°C)	-30	-20	-10	0	/
Voltage	2.805Vdc	2.805Vdc	2.805Vdc	2.805Vdc	
Frequency(MHz)	5179.995	5179.983	5180.014	5179.986	
Frequency Stability (ppm)	-0.965	-3.282	2.703	-2.703	
Temperature(°C)	50	40	30	20	10
Voltage	3.795Vdc	3.795Vdc	3.795Vdc	3.795Vdc	3.795Vdc
Frequency(MHz)	5179.991	5179.979	5180.009	5180.019	5180.002
Frequency Stability (ppm)	-1.737	-4.054	1.737	3.668	0.386
Temperature(°C)	50	40	30	20	10
Voltage	2.805Vdc	2.805Vdc	2.805Vdc	2.805Vdc	2.805Vdc
Frequency(MHz)	5180.011	5179.994	5179.992	5180.020	5179.983
Frequency Stability (ppm)	2.124	-1.158	-1.544	3.861	-3.282