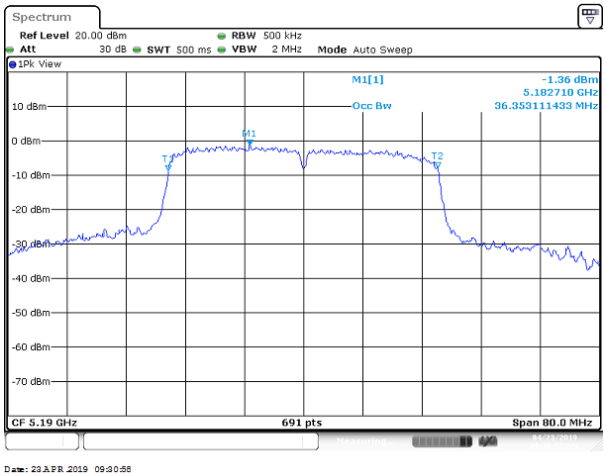
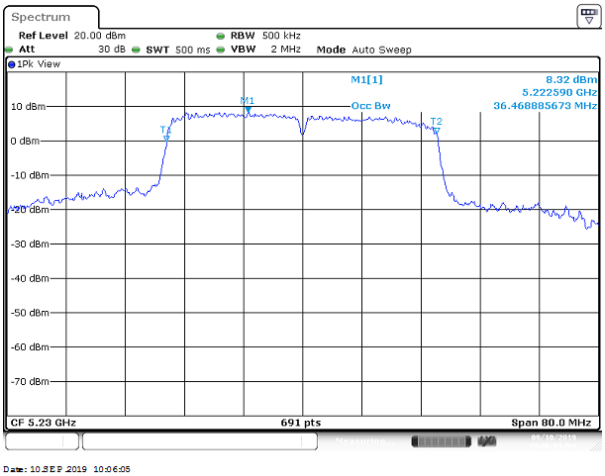
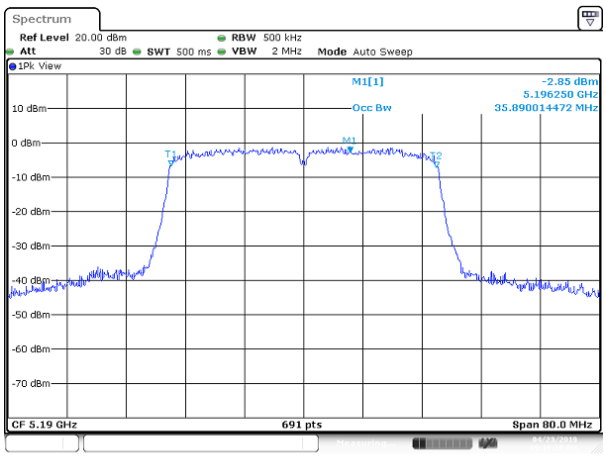
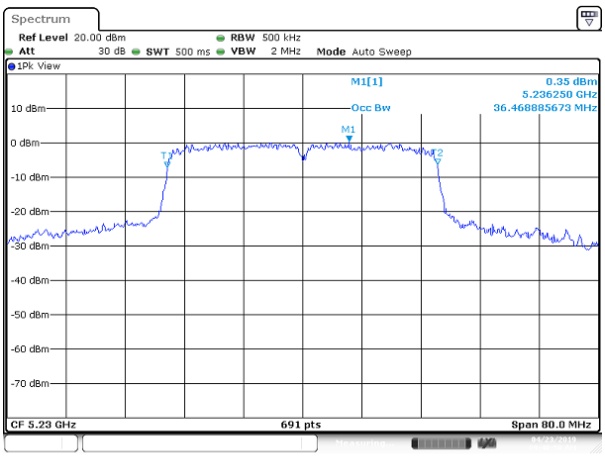
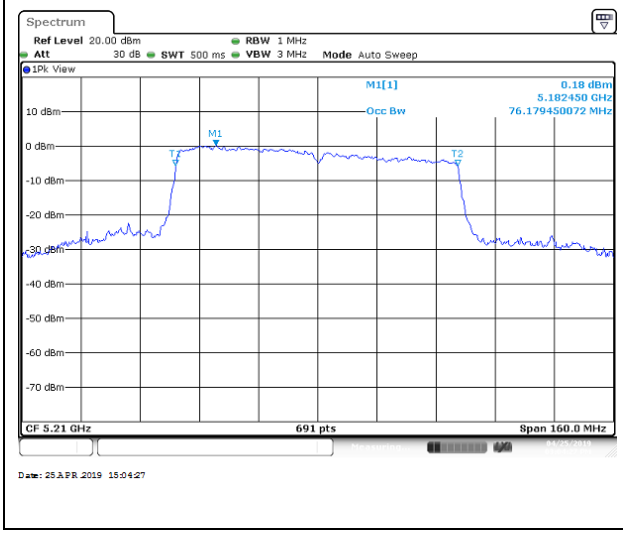
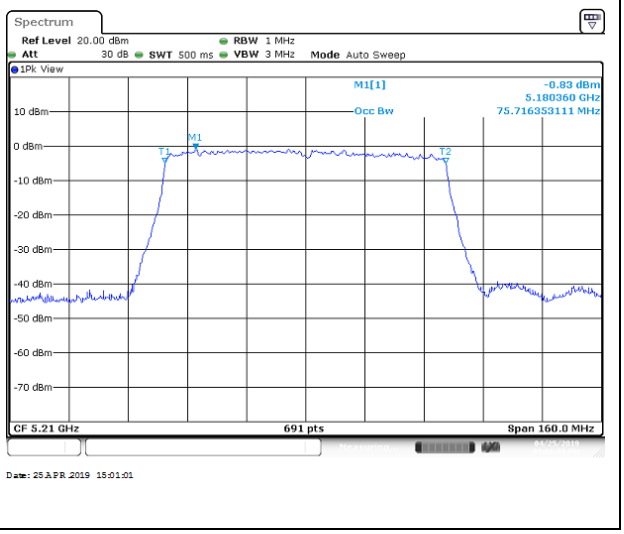
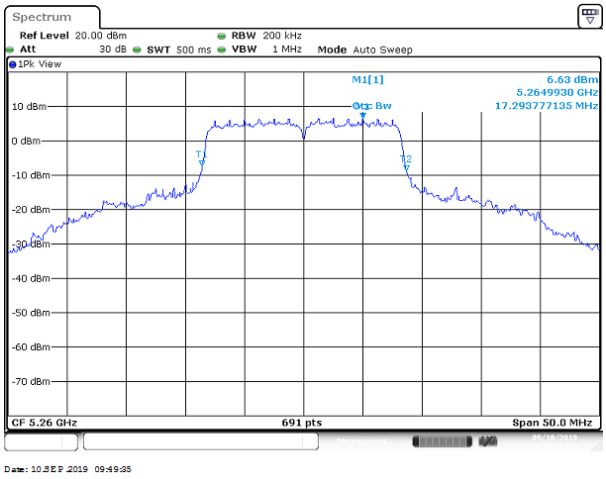
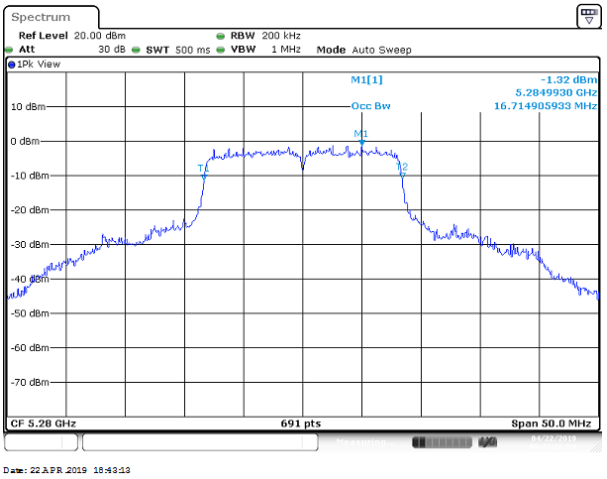
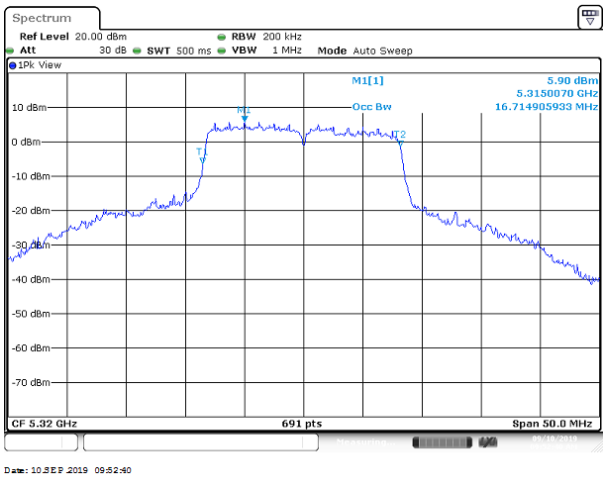
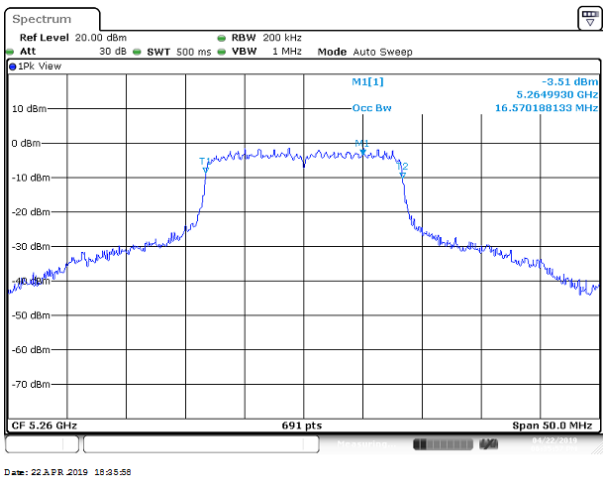
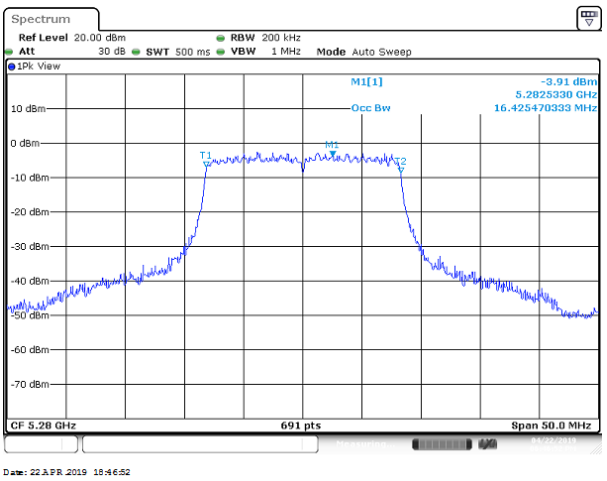
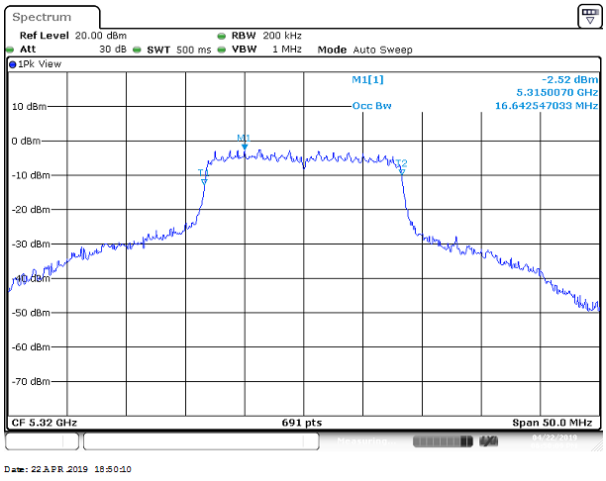
UNII-1 IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**High CH**
	

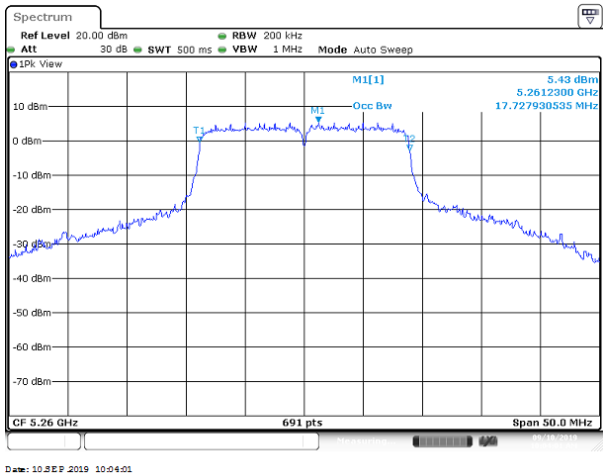
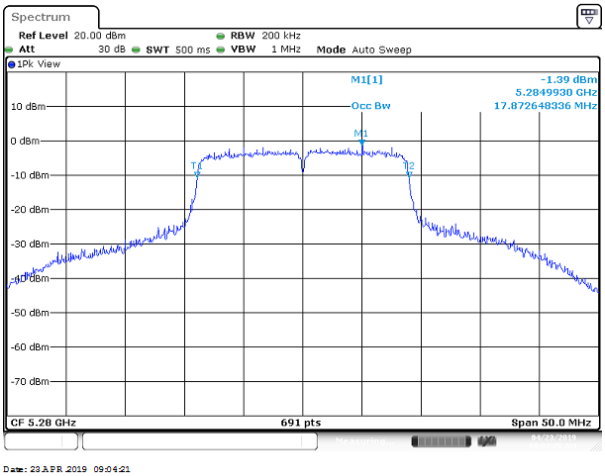
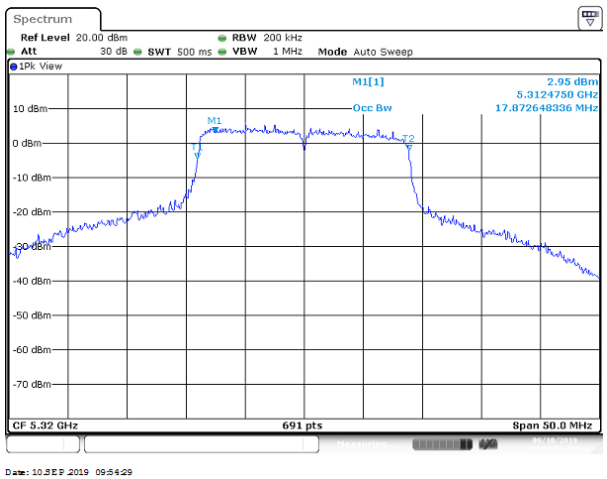
UNII-1 IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**High CH**
	

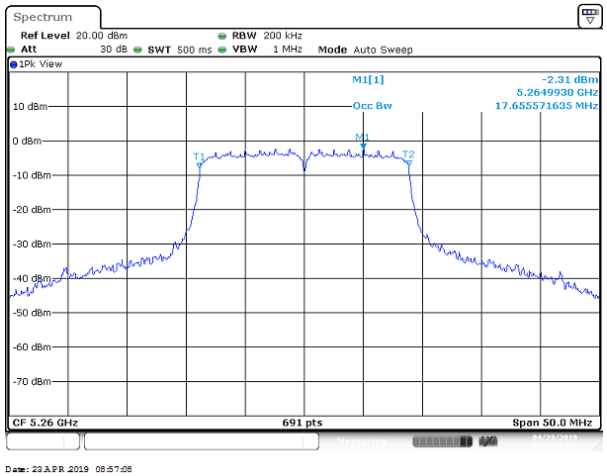
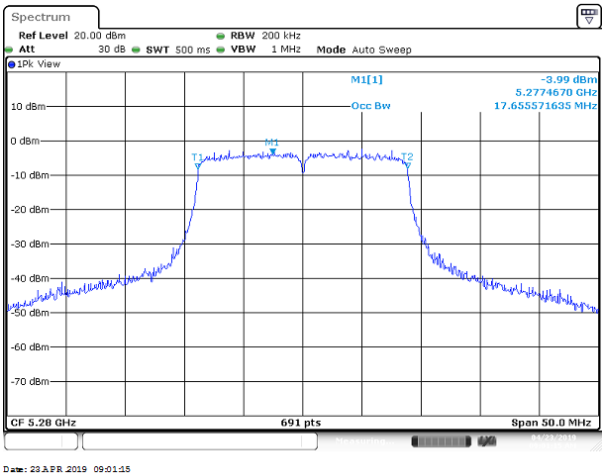
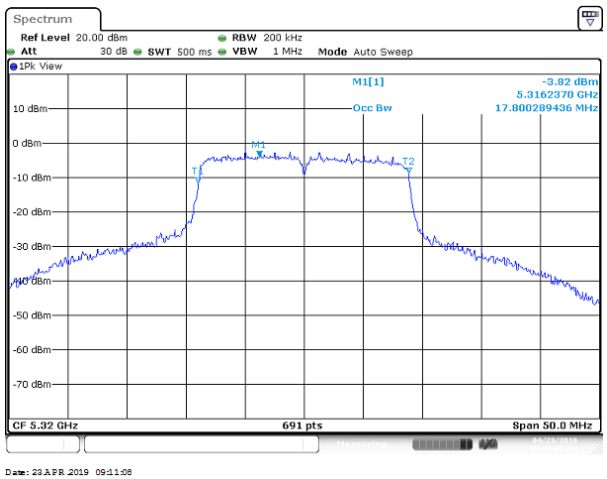
UNII-1 IEEE 802.11ac VHT80 mode	
Mid CH-chain 0	**Mid CH-chain 1**
	

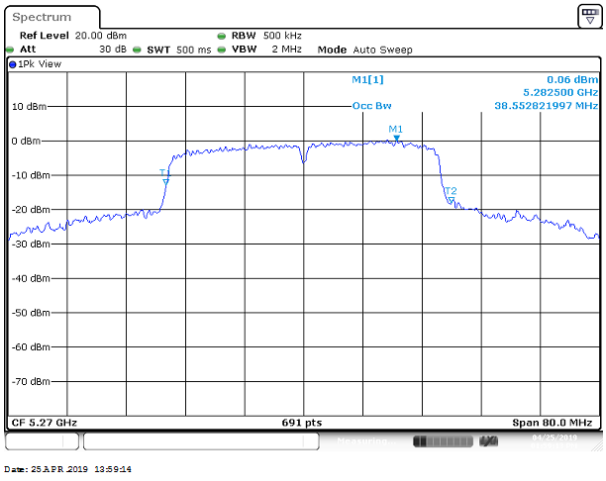
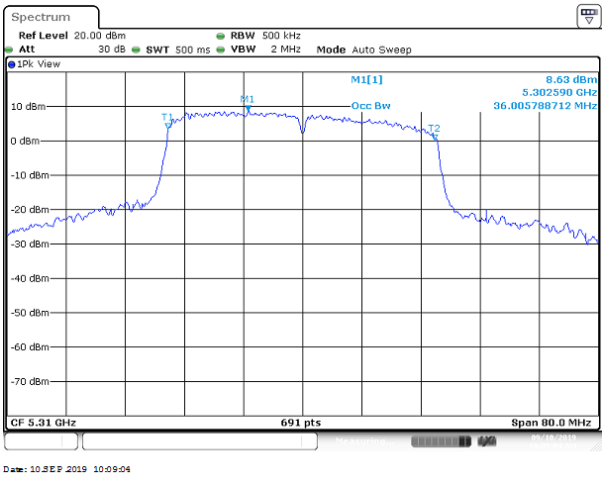
Test Data

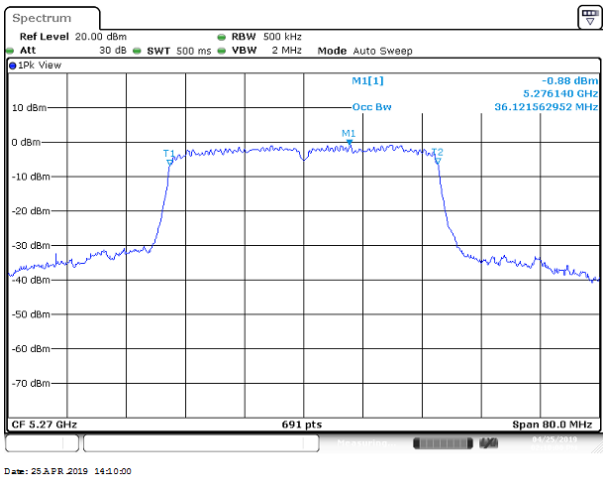
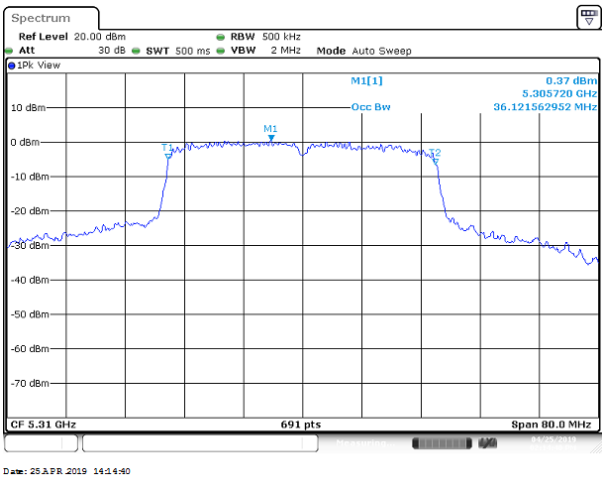
UNII-2a IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

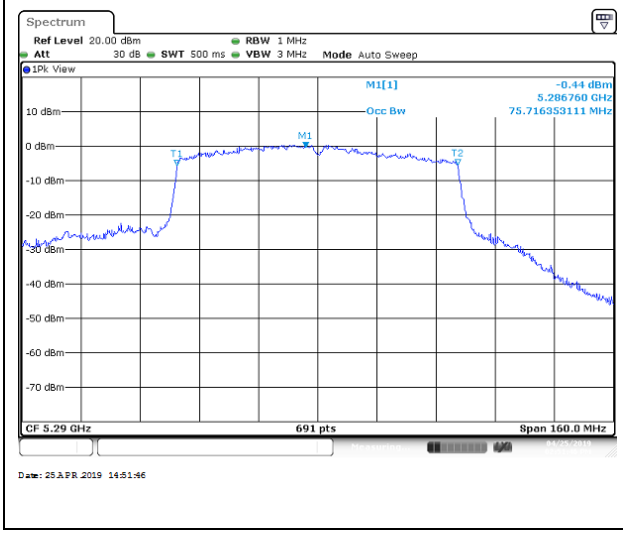
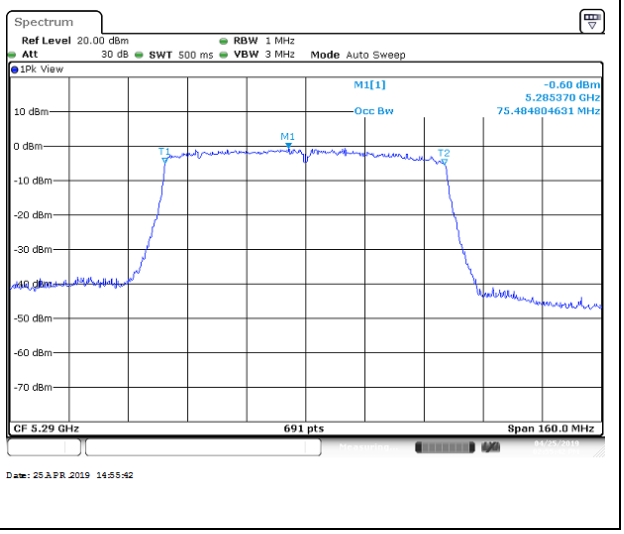
UNII-2a IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-2a IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

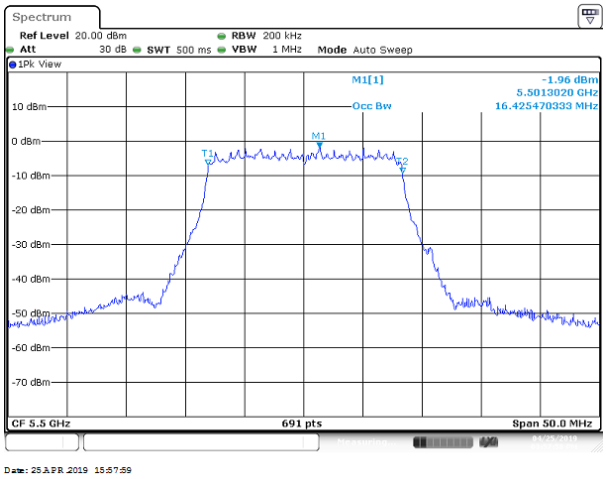
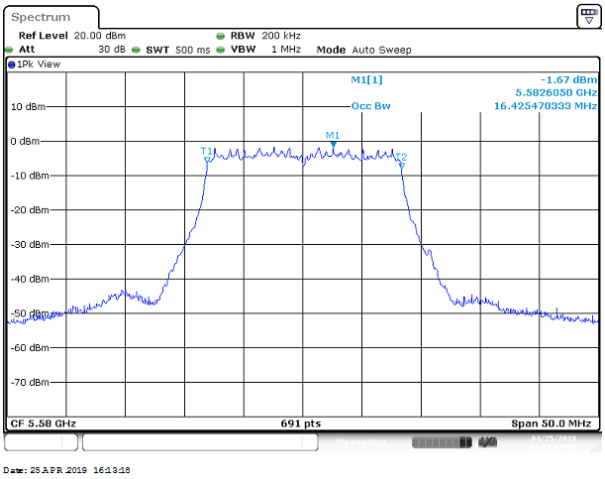
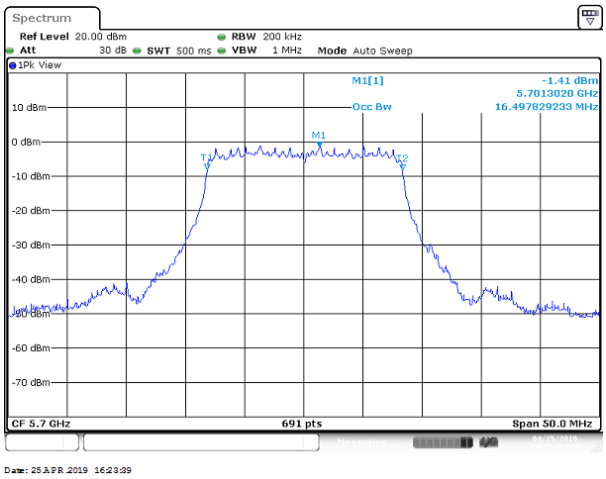
UNII-2a IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

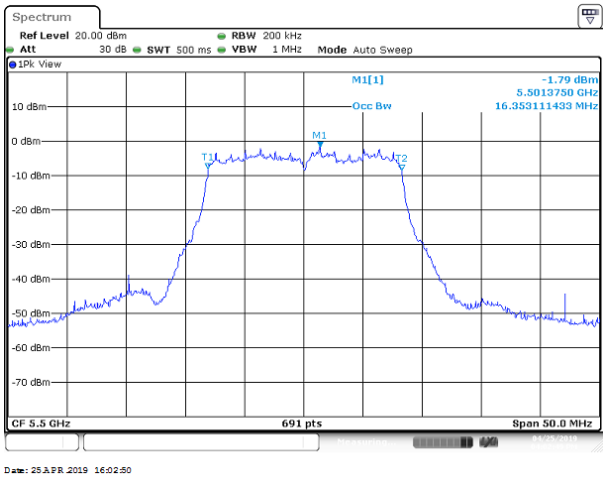
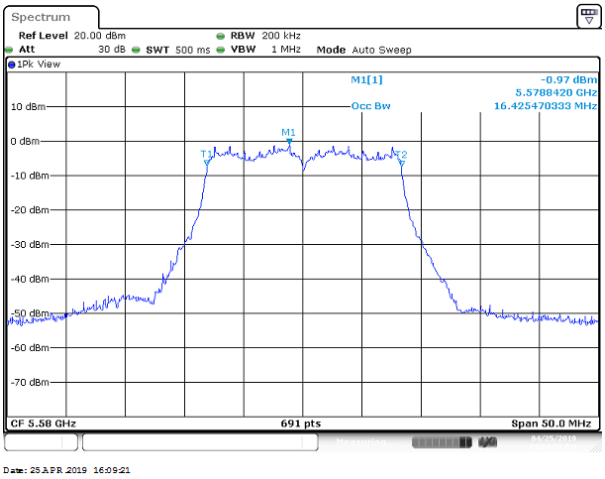
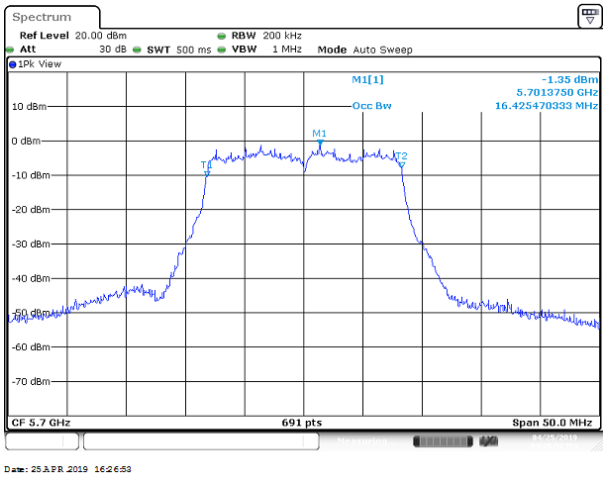
UNII-2a IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**High CH**
	

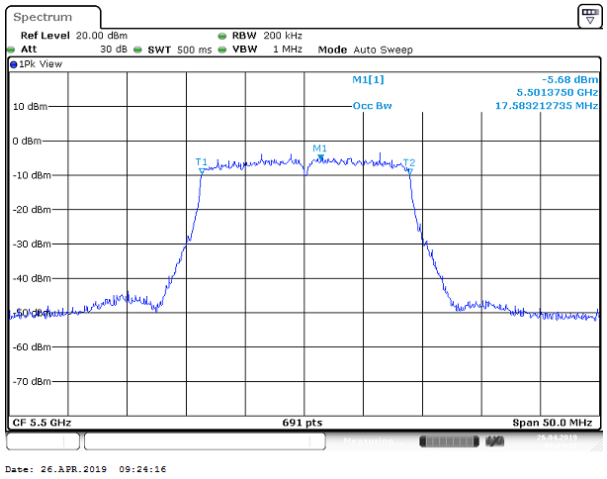
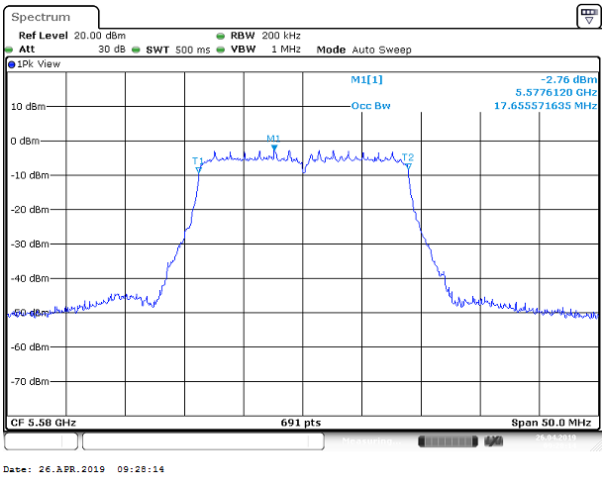
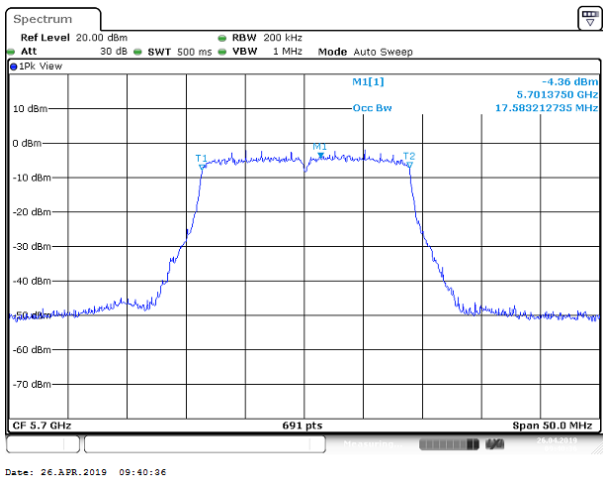
UNII-2a IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**High CH**
	

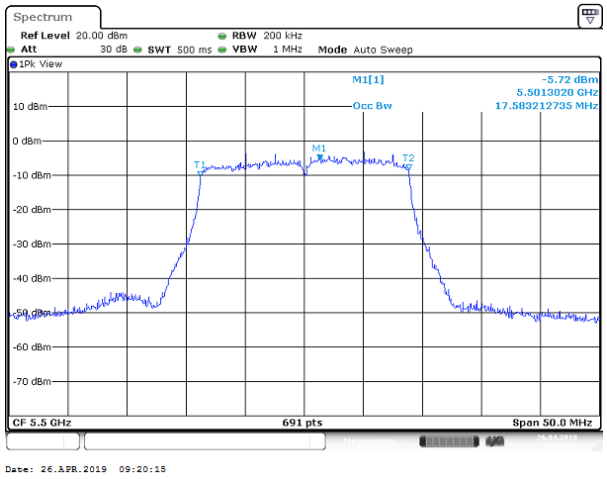
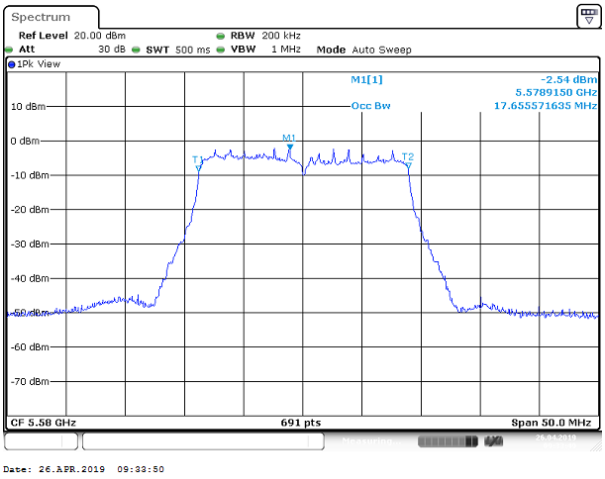
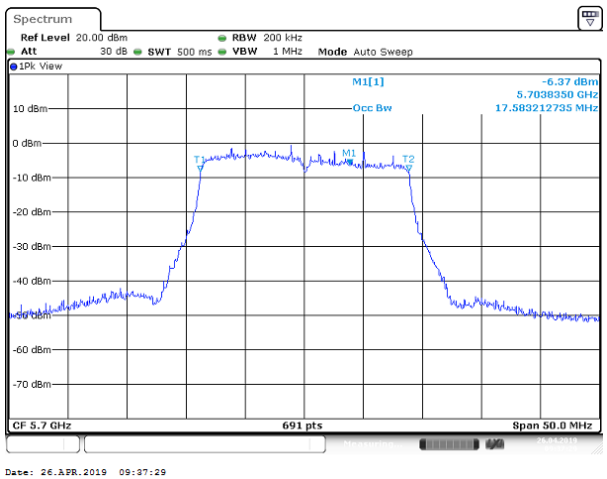
UNII-2a IEEE 802.11ac VHT80 mode	
Mid CH- chain 0	**Mid CH- chain 1**
	

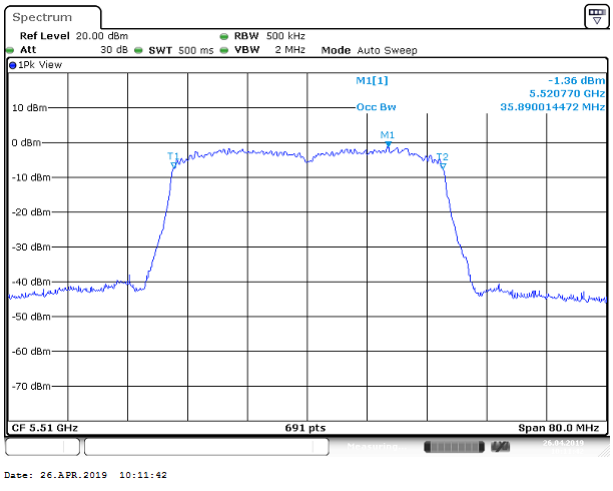
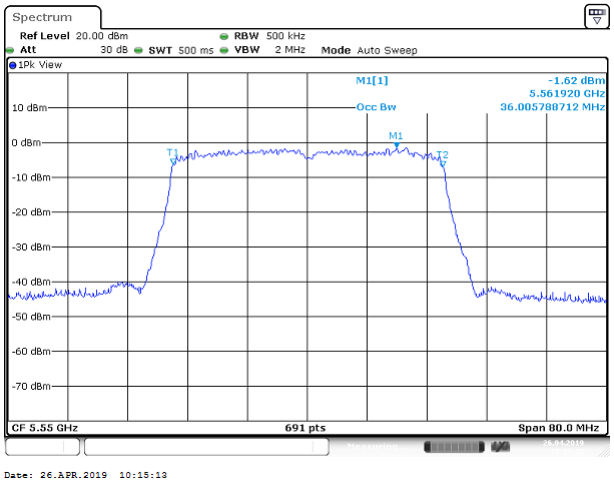
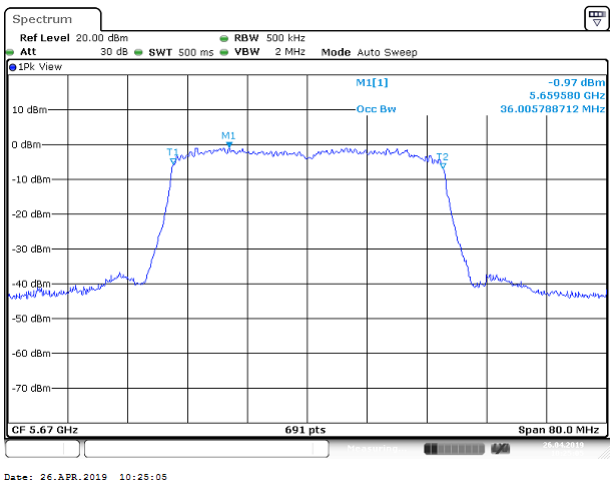
Test Data

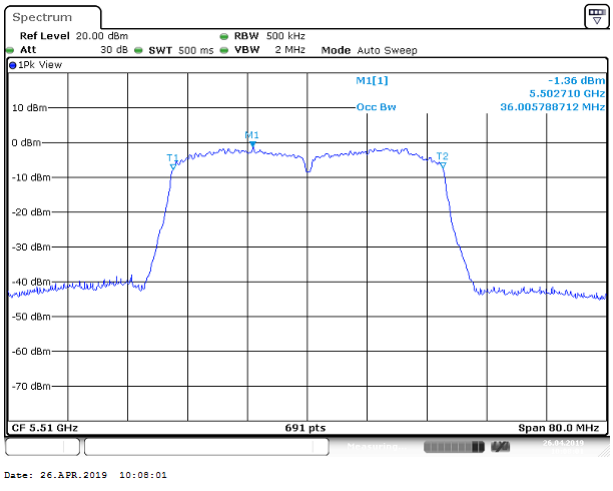
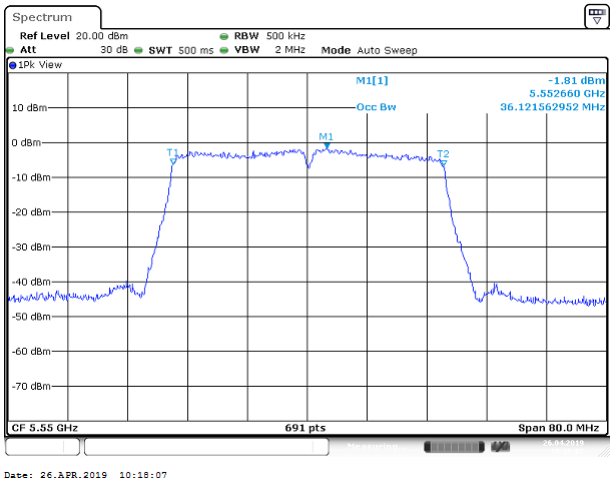
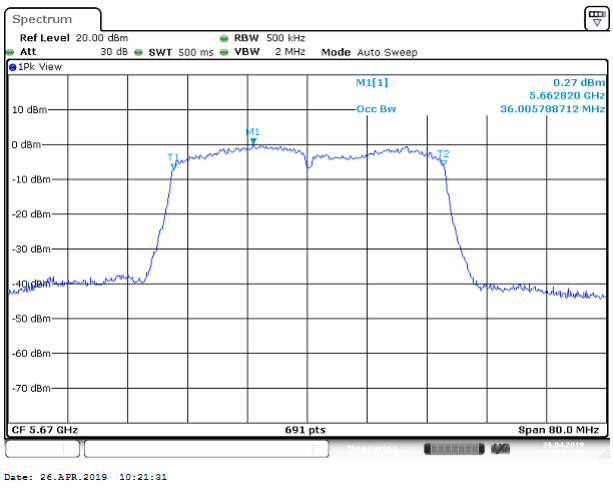
UNII-2c IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

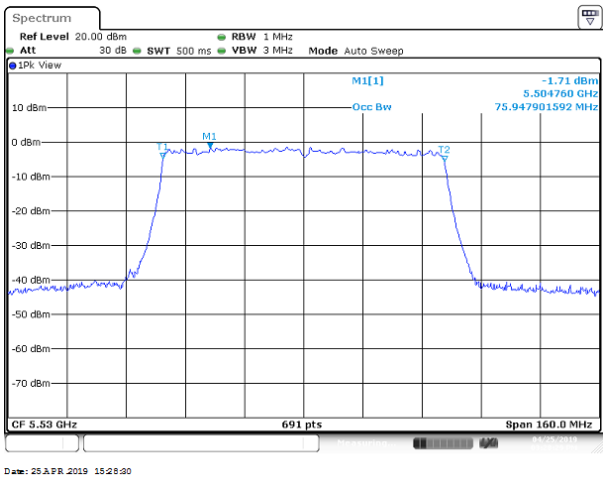
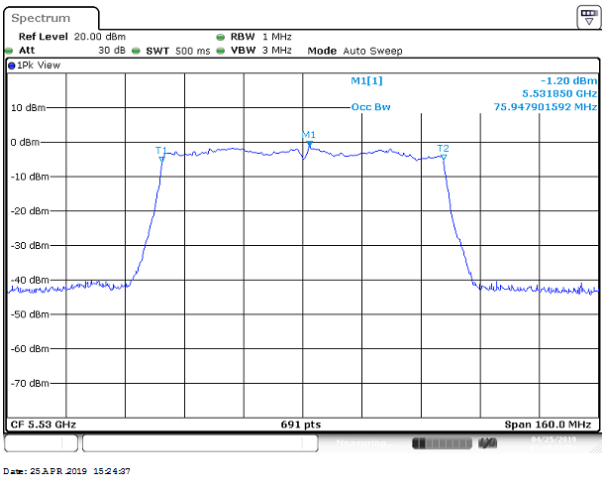
UNII-2c IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-2c IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

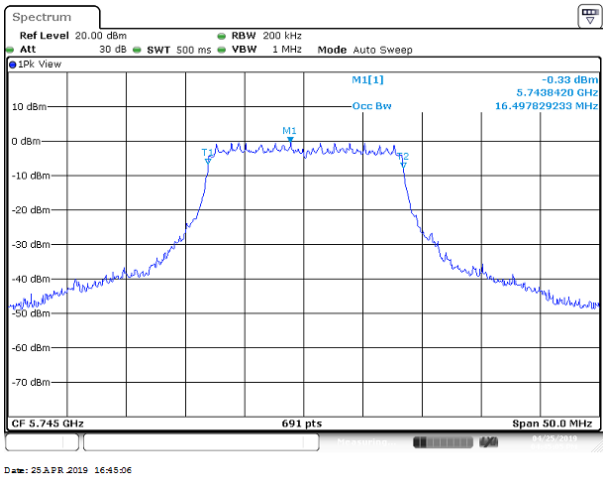
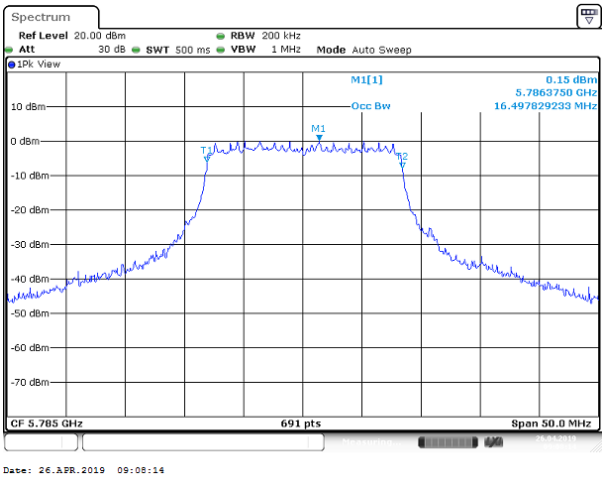
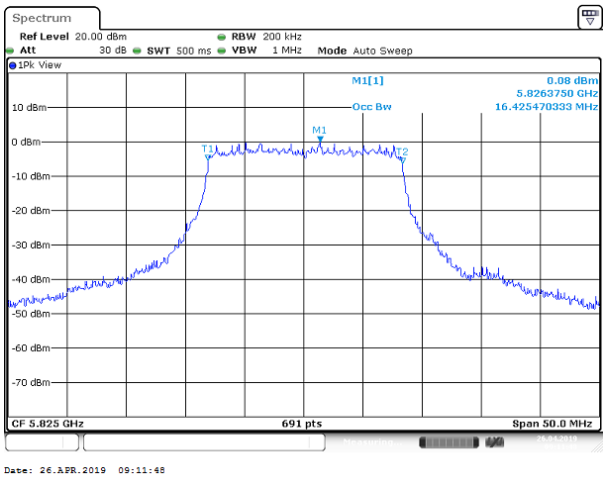
UNII-2c IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

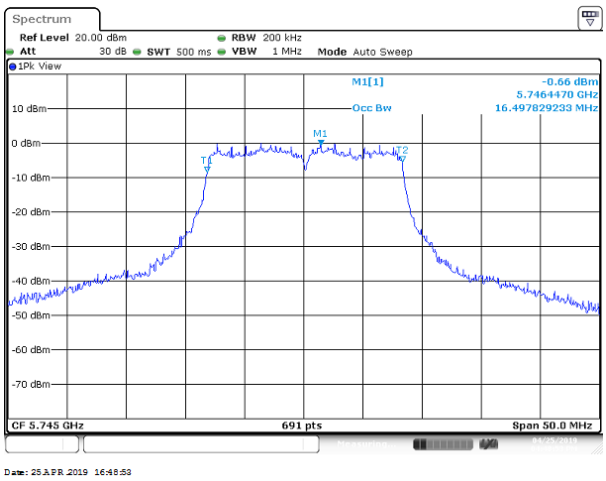
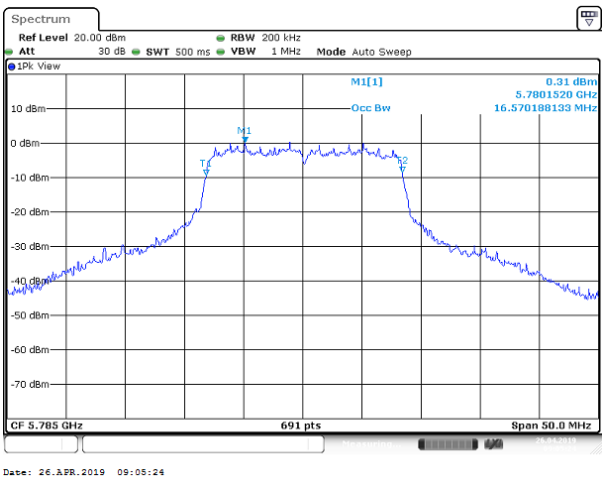
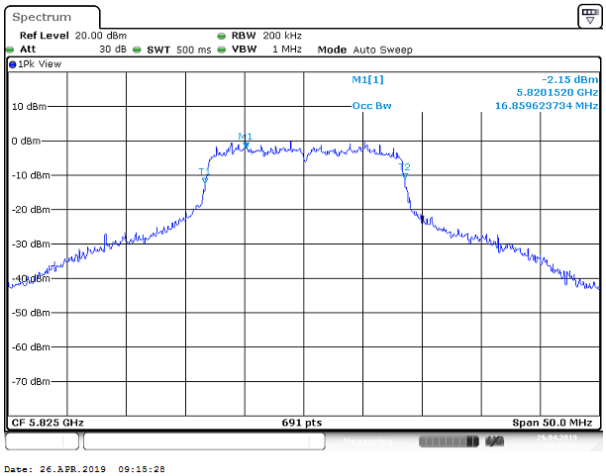
UNII-2c IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

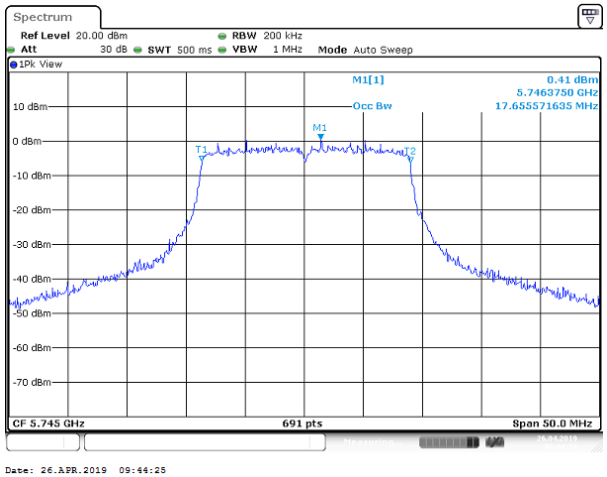
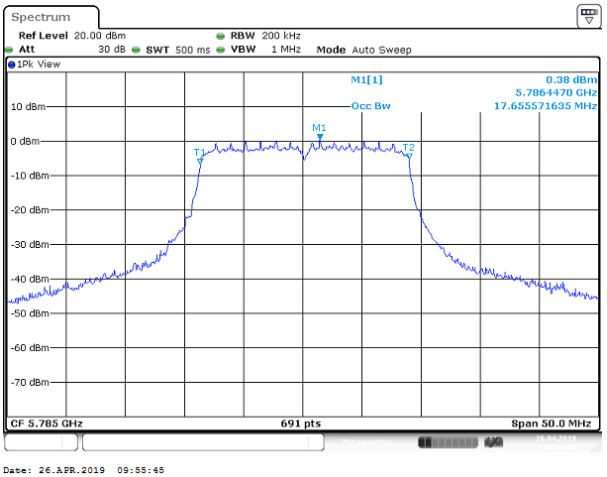
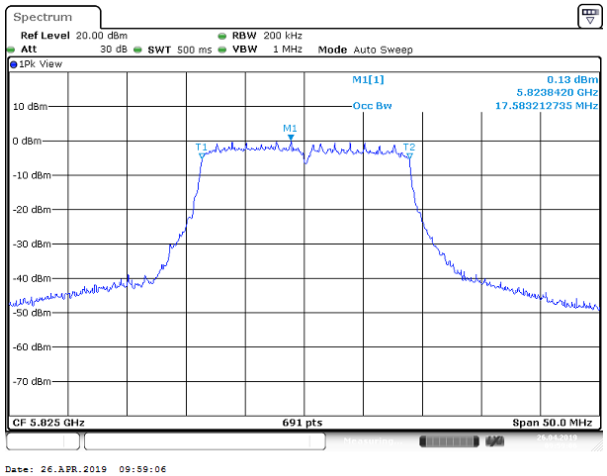
UNII-2c IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

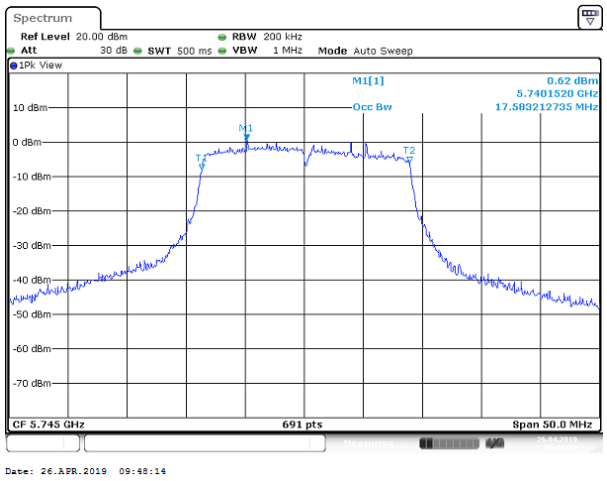
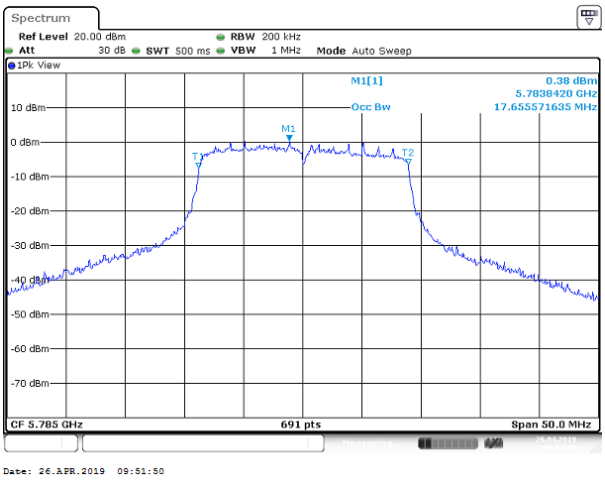
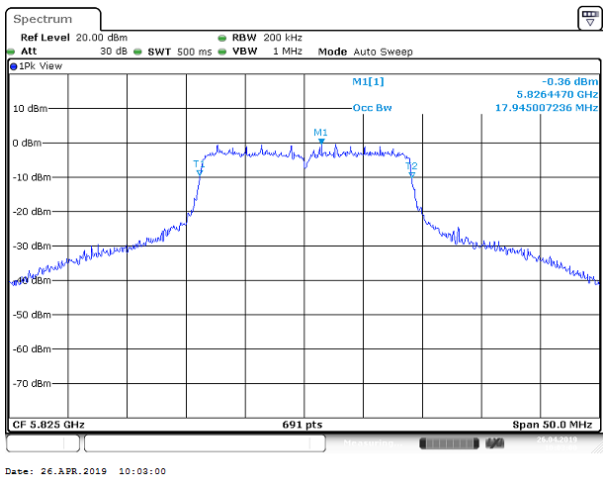
UNII-2c IEEE 802.11ac VHT80 mode	
Mid CH- chain 0	**Mid CH- chain 1**
	

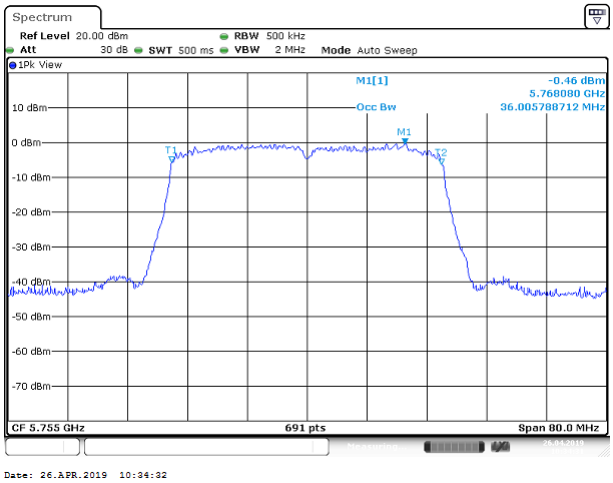
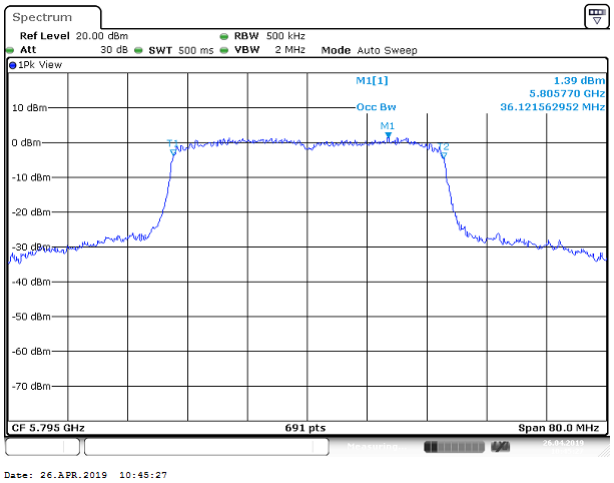
Test Data

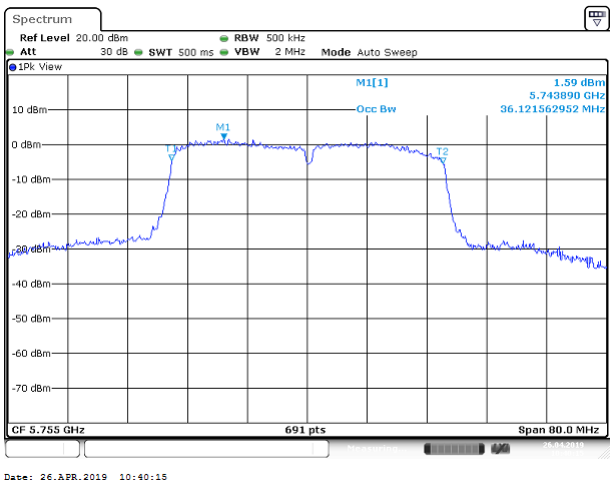
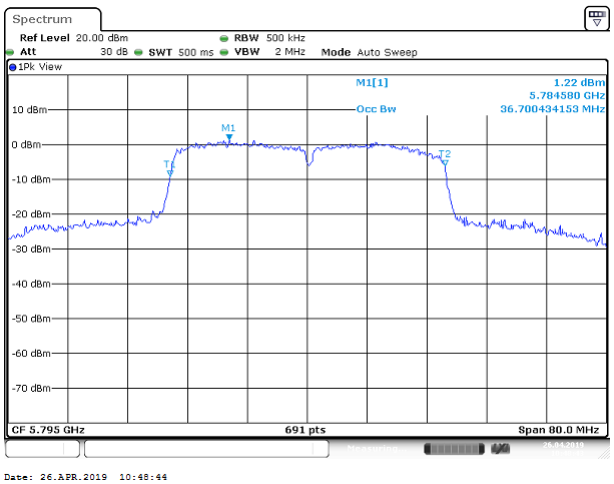
UNII-3 IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

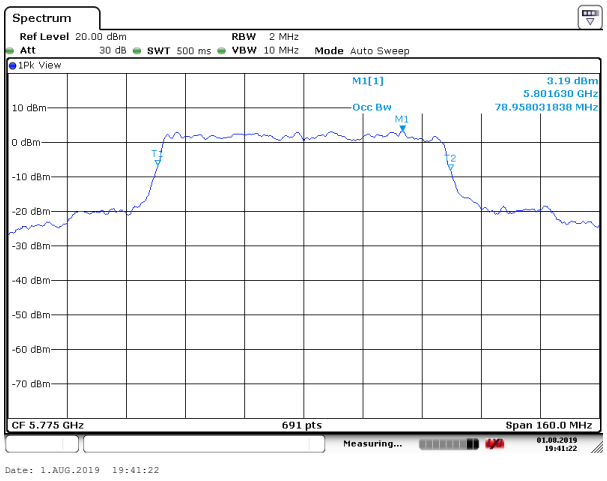
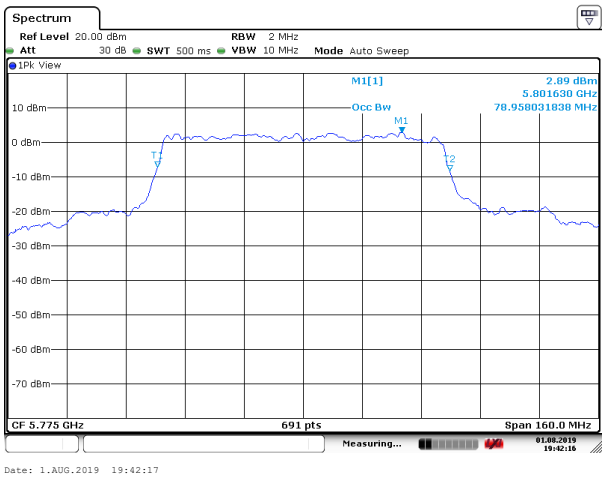
UNII-3 IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**High CH**
	

UNII-3 IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**High CH**
	

UNII-3 IEEE 802.11ac VHT80 mode	
Mid CH- chain 0	**Mid CH- chain 1**
	

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(2) and 15.407(a)(3),

UNII-1 :

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz 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.

UNII-2a and 2c:

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. and The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 Log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. 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.

UNII-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.

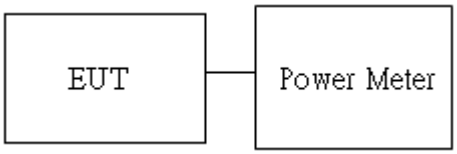
UNII-1 Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 24 – (DG – 6)]
UNII-2a/2c Limit	☒ Antenna not exceed 6 dBi：24dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 24 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]

4.3.2 Test Procedure

Test method Refer as KDB 789033 D02.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Average output power. in the test report.

4.3.3 Test Setup



4.3.4 Test Result

Conducted output power：

UNII-1									
Config	CH	Freq. (MHz)	Power Set		AV Power(dBm)		AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
			chain0	chain1	chain0	chain1			
IEEE 802.11a Data rate: 6Mbps	36	5180	13	13	14.25	14.30	17.29	0.0535	30
	44	5220	13	13	14.46	14.64	17.56	0.0570	
	48	5240	13	13	13.59	14.48	17.07	0.0509	
IEEE 802.11n HT20 Data rate: MCS0	36	5180	14	14	14.31	14.94	17.65	0.0582	
	44	5220	13	13	14.33	14.34	17.35	0.0543	
	48	5240	14	14	14.65	15.56	18.14	0.0651	
IEEE 802.11n HT40 Data rate: MCS8	38	5190	14	14	14.63	15.03	17.84	0.0609	
	46	5230	14	14	14.89	15.05	17.98	0.0628	
IEEE 802.11ac VHT80 Data rate: MCS8	42	5210	7	7	15.89	15.06	18.51	0.0709	

UNII-2a									
Config	CH	Freq. (MHz)	Power Set		AV Power(dBm)		AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
			chain0	chain1	chain0	chain1			
IEEE 802.11a Data rate: 6Mbps	52	5260	17	17	17.22	17.27	20.26	0.1061	24
	56	5280	17	17	18.02	18.82	21.45	0.1396	
	64	5320	17	17	16.96	18.82	21.00	0.1259	
IEEE 802.11n HT20 Data rate: MCS0	52	5260	18	18	18.46	18.56	21.52	0.1419	
	56	5280	18	18	19.55	19.44	22.51	0.1781	
	64	5320	17	17	16.95	18.15	20.60	0.1149	
IEEE 802.11n HT40 Data rate: MCS8	54	5270	17	17	18.69	18.83	21.77	0.1503	
	62	5310	16	16	17.51	17.1	20.32	0.1076	
IEEE 802.11ac VHT80 Data rate: MCS8	58	5290	15	15	16.13	15.79	18.97	0.0790	

UNII-2c									
Config	CH	Freq. (MHz)	Power Set		AV Power(dBm)		AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
			chain0	chain1	chain0	chain1			
IEEE 802.11a Data rate: 6Mbps	100	5500	20	20	18.96	18.25	21.63	0.1455	24
	116	5580	18	18	19.04	18.96	22.01	0.1589	
	140	5700	18	18	19.61	19.68	22.66	0.1843	
IEEE 802.11n HT20 Data rate: MCS0	100	5500	19	19	19.59	19.22	22.42	0.1746	
	116	5580	18	18	18.82	18.98	21.91	0.1553	
	140	5700	19	19	20.37	20.64	23.52	0.2248	
IEEE 802.11n HT40 Data rate: MCS8	102	5510	19	19	20.43	20.32	23.39	0.2181	
	110	5550	18	18	18.50	19.28	21.92	0.1555	
	134	5670	18	18	17.65	17.59	20.63	0.1156	
IEEE 802.11ac VHT80 Data rate: MCS8	106	5530	16	16	13.89	13.94	16.93	0.0493	

UNII-3									
Config	CH	Freq. (MHz)	Power Set		AV Power(dBm)		AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
			chain0	chain1	chain0	chain1			
IEEE 802.11a Data rate: 6Mbps	149	5745	23	23	22.43	24.91	26.85	0.4847	30
	157	5785	22	22	21.41	21.07	24.25	0.2663	
	165	5825	21	21	22.02	21.86	24.95	0.3127	
IEEE 802.11n HT20 Data rate: MCS0	149	5745	20	20	21.57	21.59	24.59	0.2878	
	157	5785	21	21	22.33	22.01	25.18	0.3299	
	165	5825	20	20	21.74	21.61	24.69	0.2942	
IEEE 802.11n HT40 Data rate: MCS8	151	5755	21	21	25.09	20.63	26.42	0.4385	
	159	5795	21	21	22.87	22.57	25.73	0.3744	
IEEE 802.11ac VHT80 Data rate: MCS8	155	5775	20	20	18.55	17.35	21.00	0.1259	

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(2) and 15.407(a)(3),

UNII-1 :

FCC: The maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

UNII-2a and 2c:

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.

UNII-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.

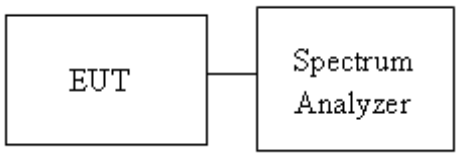
UNII-1 Limit	☒ Antenna not exceed 6 dBi：17 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 11 – (DG – 6)]
UNII-2a Limit	☒ Antenna not exceed 6 dBi：11 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 11 – (DG – 6)]
UNII-2c Limit	☒ Antenna not exceed 6 dBi：11 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 11 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]

4.4.2 Test Procedure

Test method Refer as KDB 789033 D02

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1, UNII-2a and UNII-2c, SA set RBW = 1MHz, VBW = 3MHz and Detector = RMS, to measurement Power Density.
4. UNII-3, SA set RBW = 500kHz, VBW = 2MHz and Detector = RMS, to measurement Power Density
5. The path loss and Duty Factor were compensated to the results for each measurement by SA.
6. Mark the maximum level.
7. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup



4.4.4 Test Result

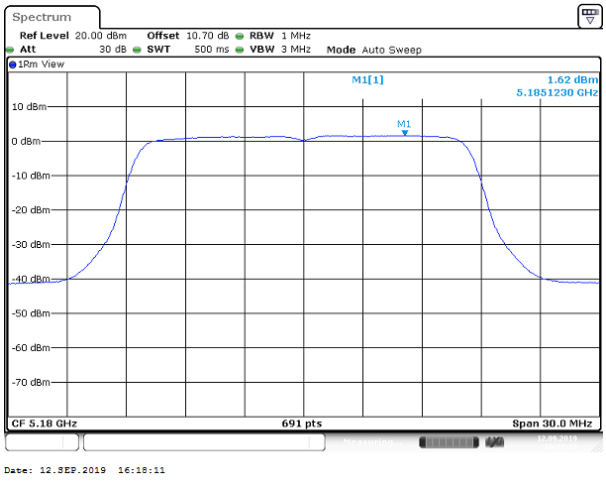
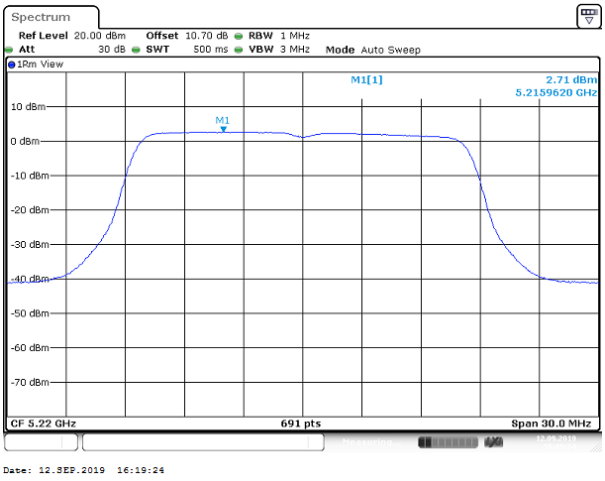
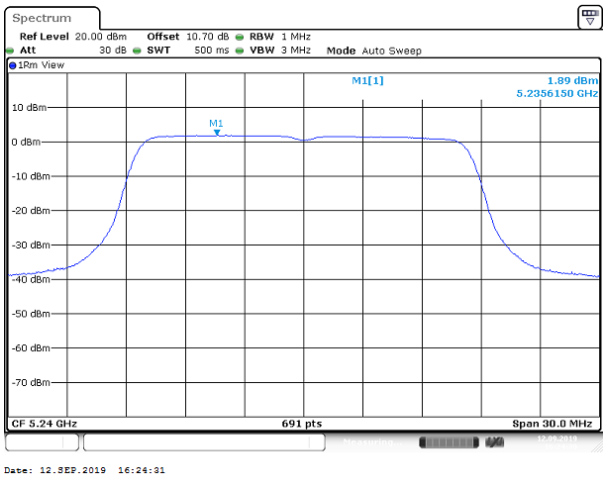
UNII-1 5150-5250 MHz					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5180	1.62	0.24	8.25	17
Mid	5220	2.71	2	9.64	
High	5240	1.89	1.85	9.14	
Test mode: IEEE 802.11n 20 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5180	2.4	2.11	9.52	17
Mid	5220	1.79	1.85	9.09	
High	5240	2.44	2.69	9.83	
Test mode: IEEE 802.11n 40 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5190	0.14	-0.18	7.25	17
High	5230	0.58	0.33	7.72	
Test mode: IEEE 802.11ac VHT80 mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Mid	5210	1.76	0.84	8.59	17

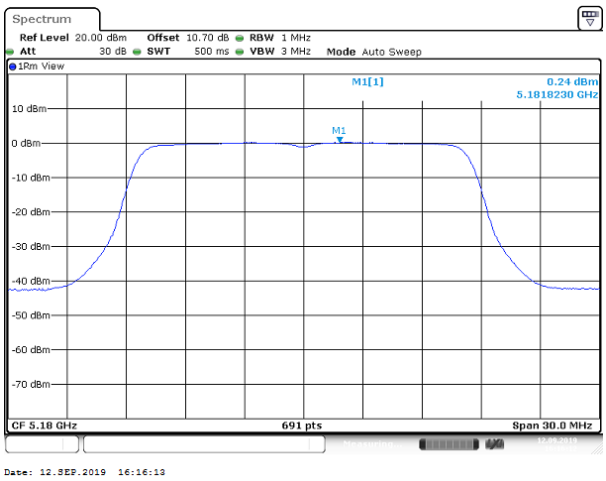
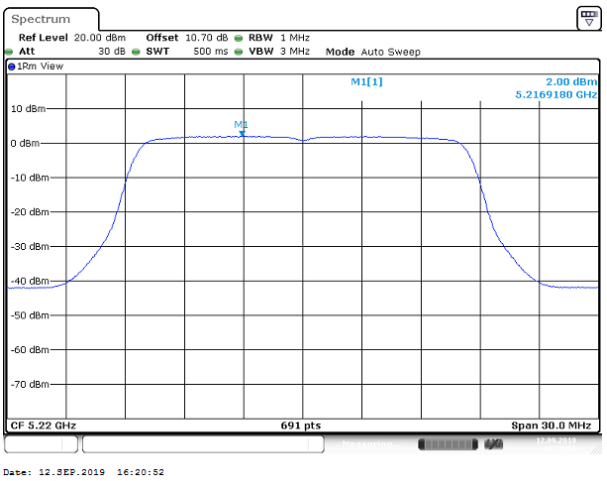
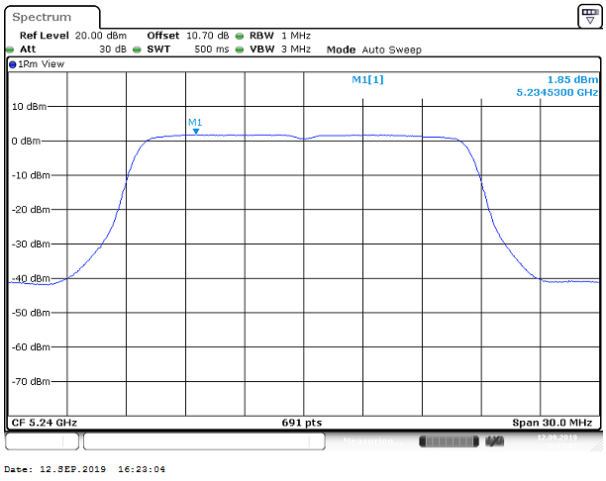
UNII-2a 5250-5350 MHz					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5260	7.19	7.07	10.14	11
Mid	5280	7.98	7.18	10.61	
High	5320	5.65	6.81	9.28	
Test mode: IEEE 802.11n 20 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5260	7.01	6.92	9.98	11
Mid	5280	7.94	7.02	10.51	
High	5320	5.6	6.7	9.20	
Test mode: IEEE 802.11n 40 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5270	5.57	4.28	7.98	11
High	5310	5.77	5.73	8.76	
Test mode: IEEE 802.11ac VHT80 mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Mid	5290	2.38	1.09	4.79	11

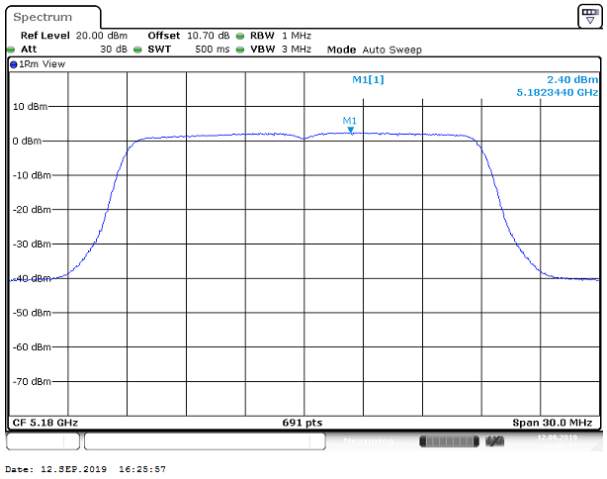
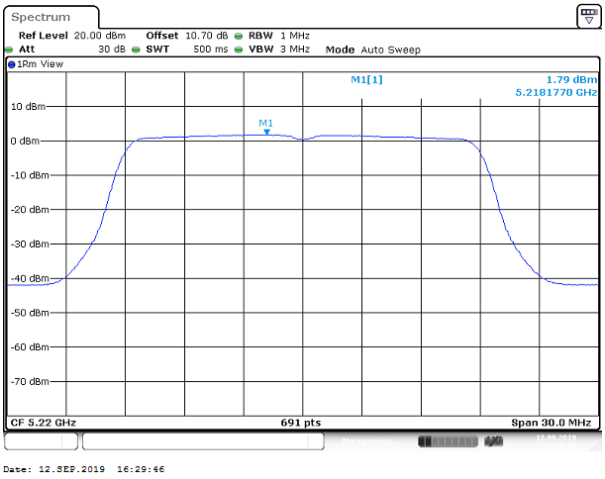
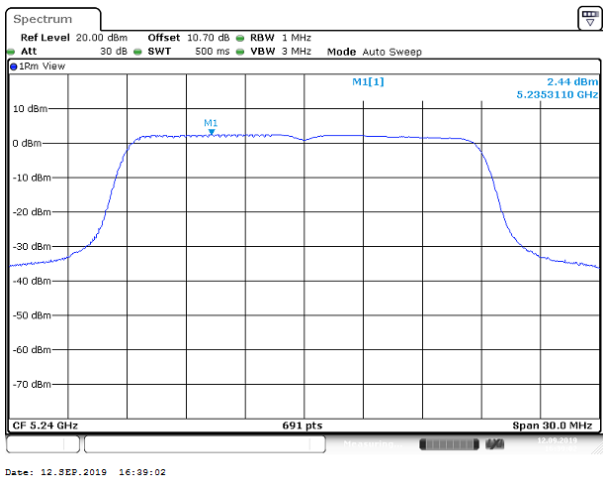
UNII-2c 5470-5725 MHz					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5500	6.95	6.8	9.89	11
Mid	5580	7.42	7.84	10.65	
High	5700	6.65	7.56	10.14	
Test mode: IEEE 802.11n 20 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5500	5.45	5.61	8.54	11
Mid	5580	5.39	5.99	8.71	
High	5700	6.71	7.25	10.00	
Test mode: IEEE 802.11n 40 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5510	3.49	3.77	6.64	11
Mid	5550	3.68	4.17	6.94	
High	5670	4.2	5.27	7.78	
Test mode: IEEE 802.11ac VHT80 mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Mid	5530	0.28	0.5	3.40	11

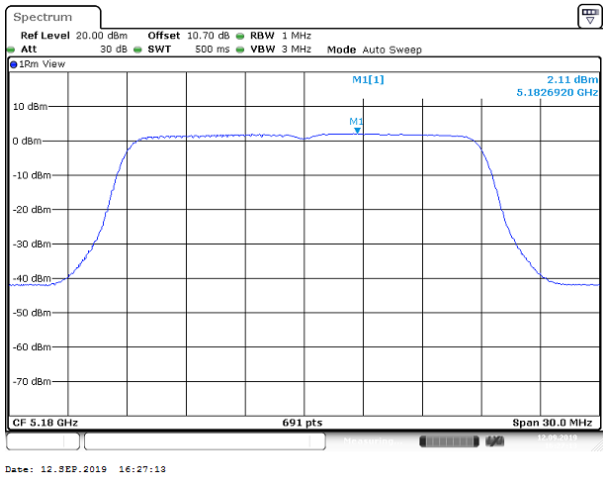
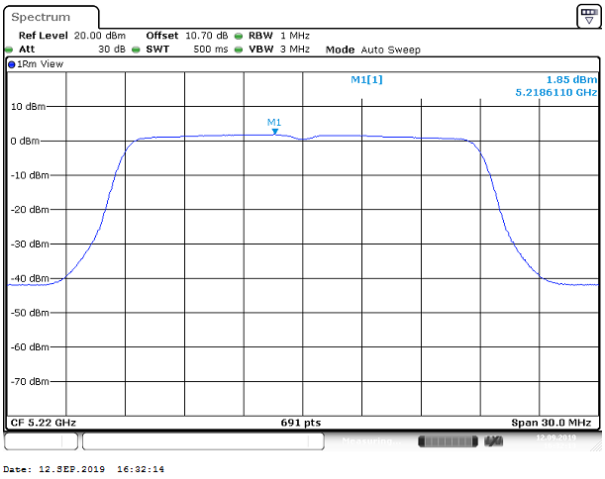
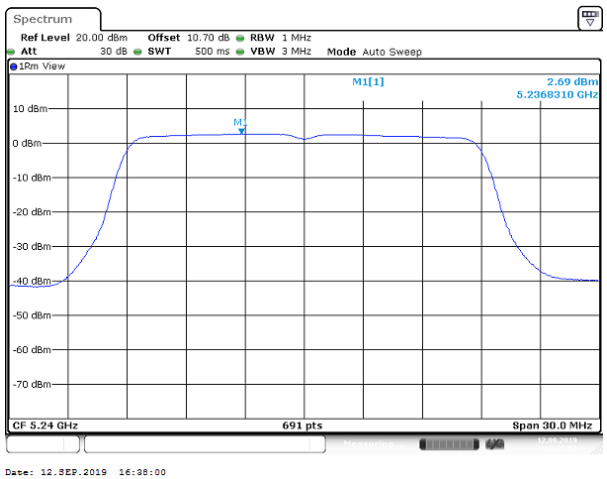
UNII-3 5725-5825 MHz					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5745	15.56	15.18	18.38	30
Mid	5785	16.23	14.71	18.55	
High	5825	15.99	14.4	18.28	
Test mode: IEEE 802.11n 20 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5745	15.01	15.09	18.06	30
Mid	5785	14.99	14.7	17.86	
High	5825	14.46	13.67	17.09	
Test mode: IEEE 802.11n 40 MHz mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Low	5755	12.16	12.15	15.17	30
High	5795	12.13	11.99	15.07	
Test mode: IEEE 802.11ac VHT80 mode					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PPSD (dBm)**	**Limit (dBm)**
Mid	5775	11.74	10	13.97	30

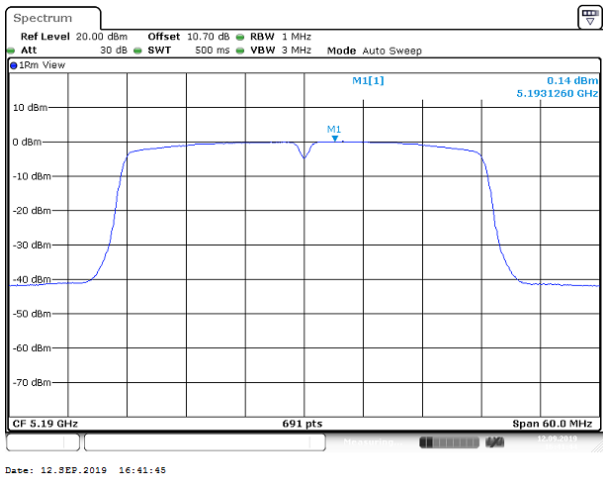
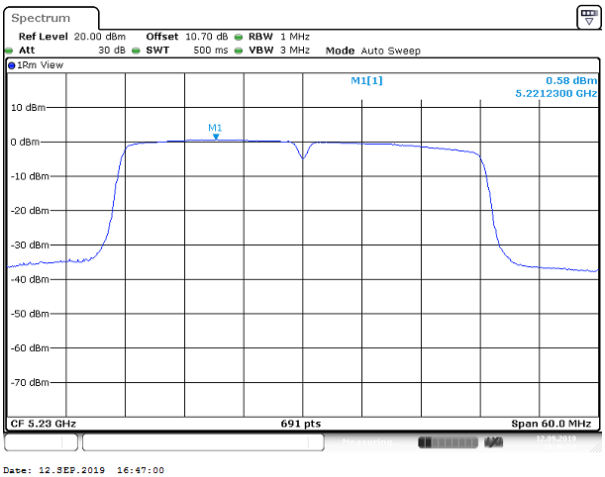
Test Data

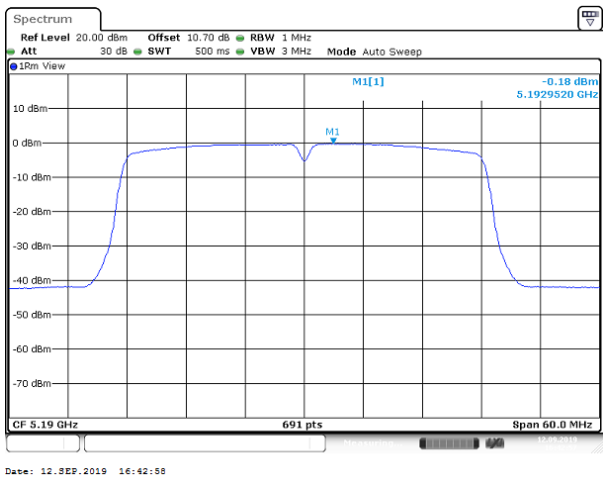
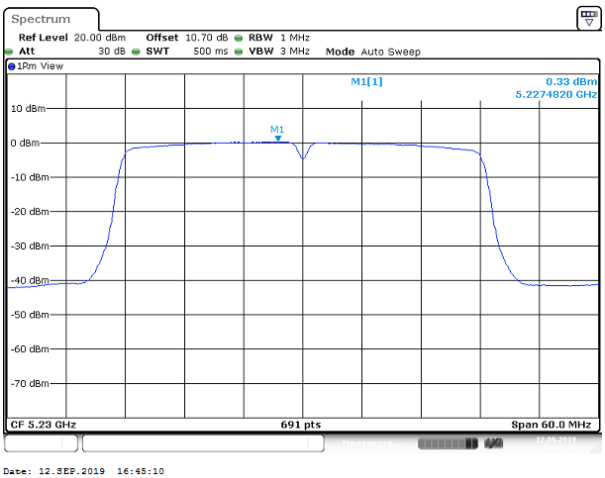
UNII-1 IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

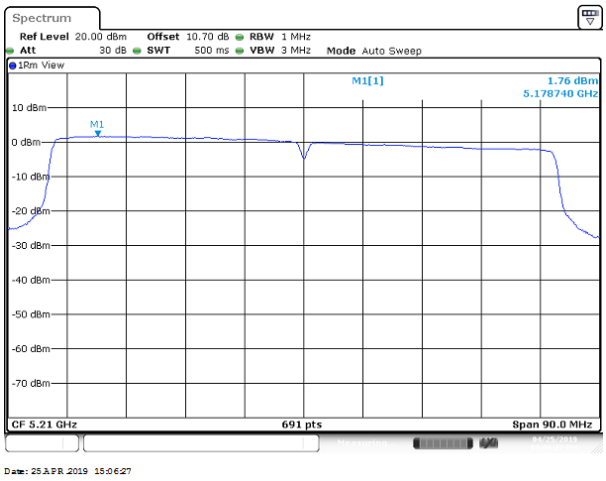
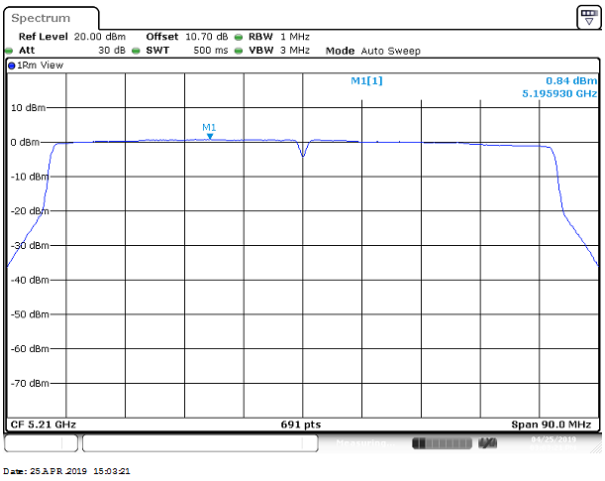
UNII-1 IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-1 IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

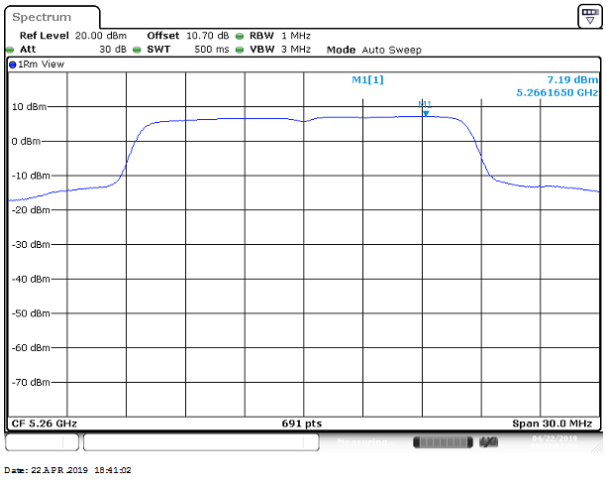
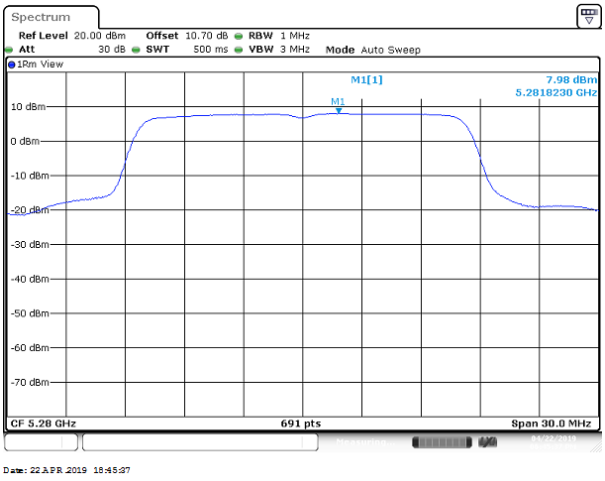
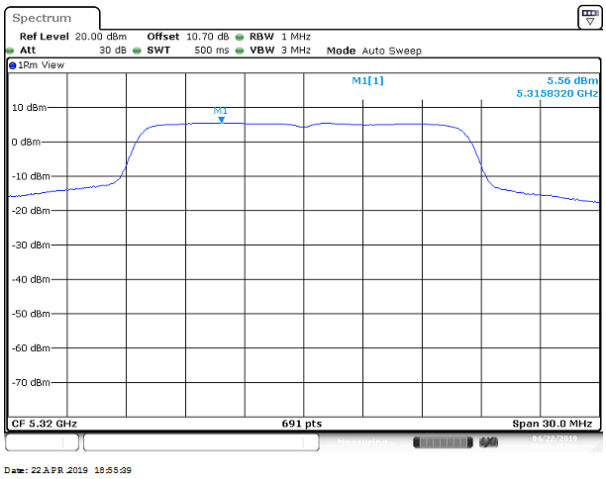
UNII-1 IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

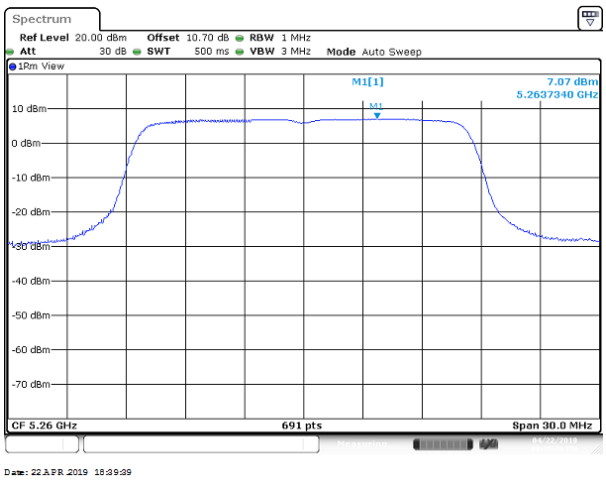
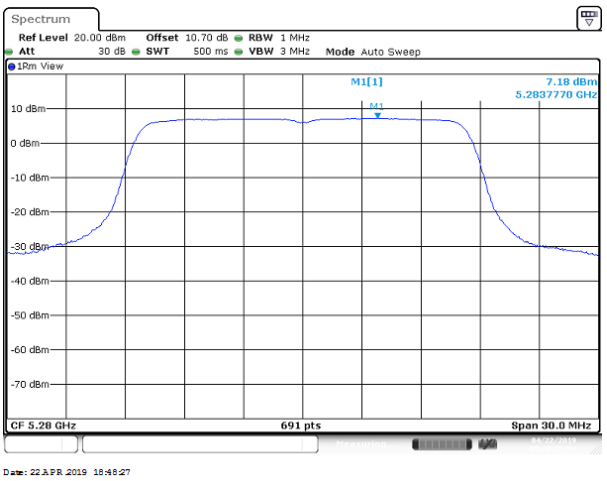
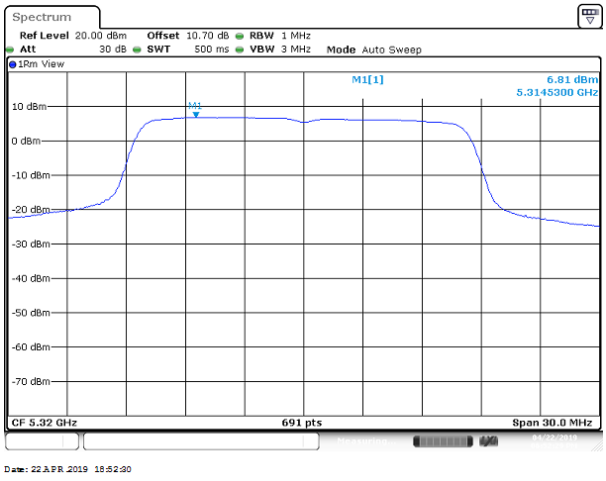
UNII-1 IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**High CH**
	

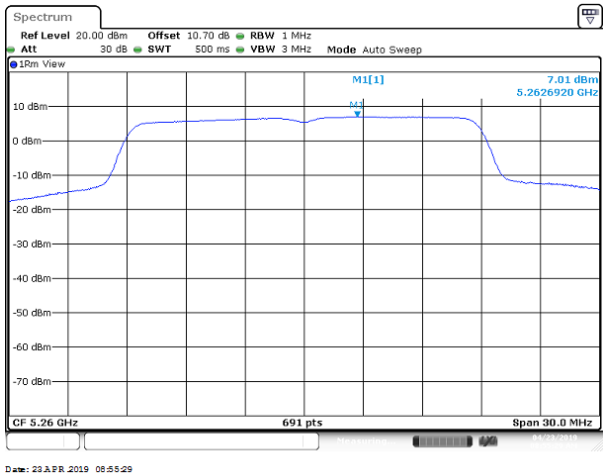
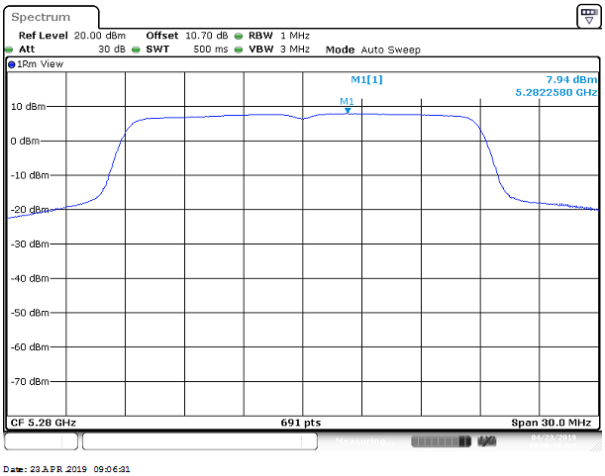
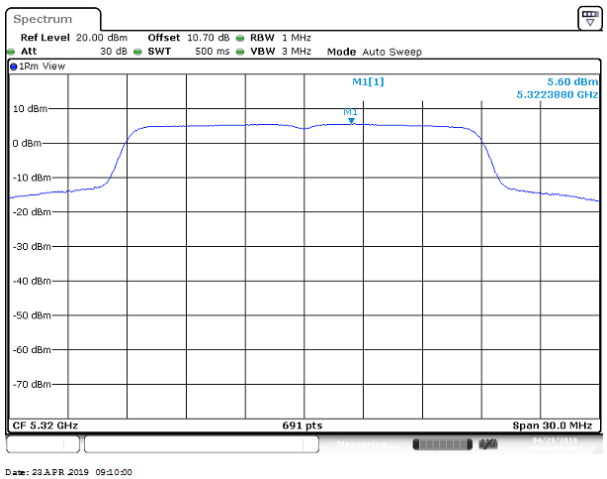
UNII-1 IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**High CH**
	

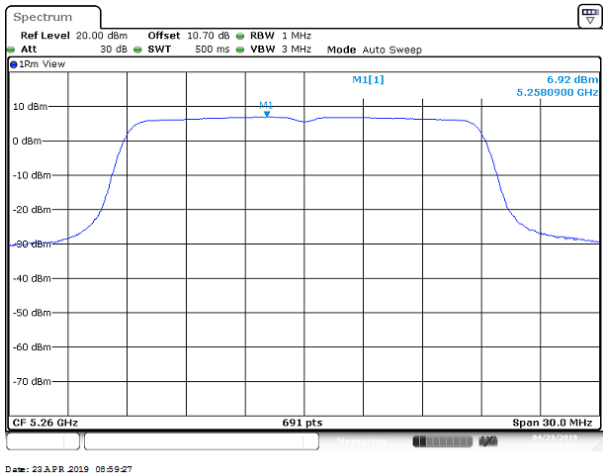
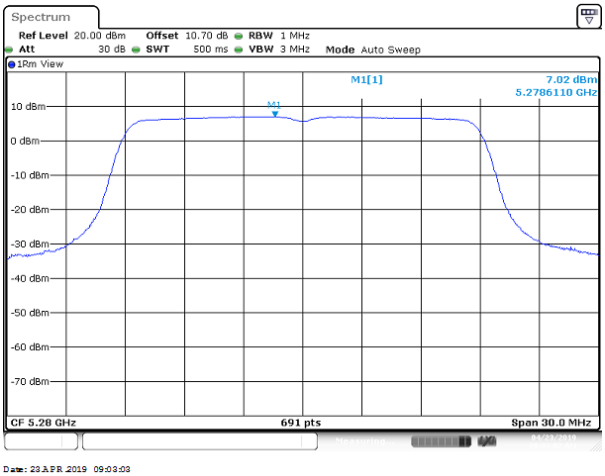
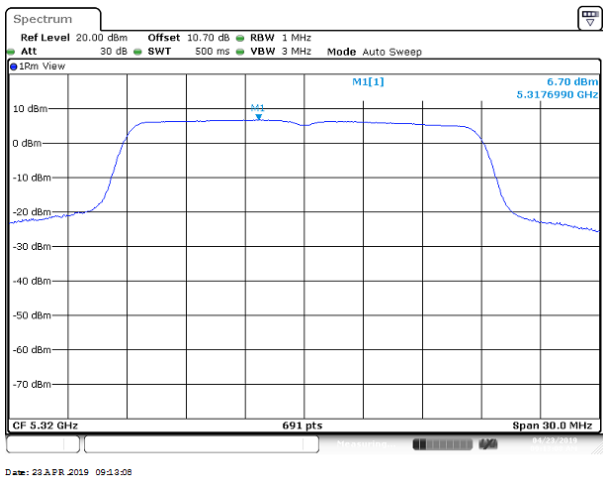
UNII-1 IEEE 802.11ac VHT80 mode	
Mid CH- chain 0	**Mid CH- chain 1**
	

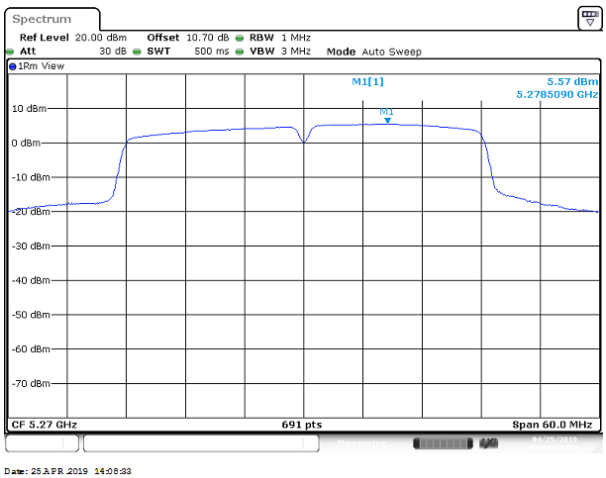
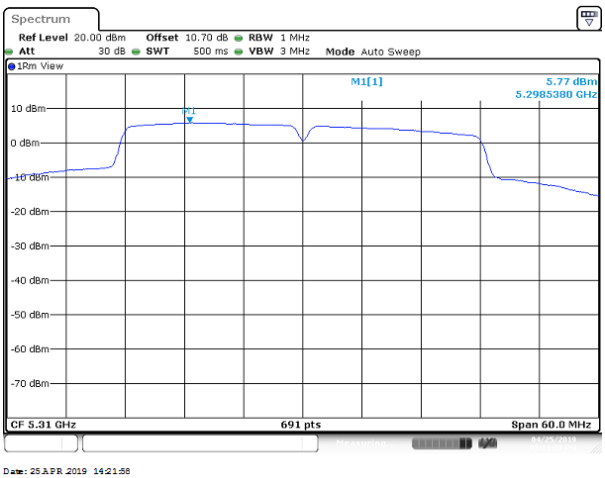
Test Data

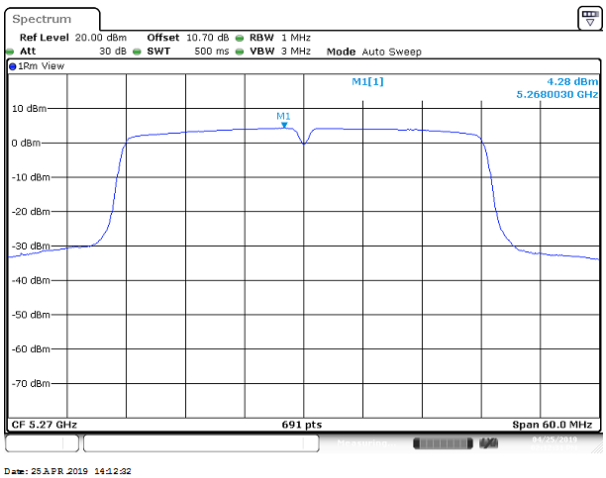
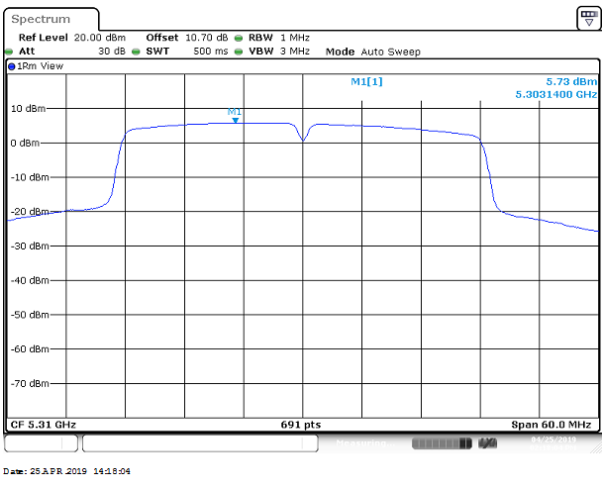
UNII-2a IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

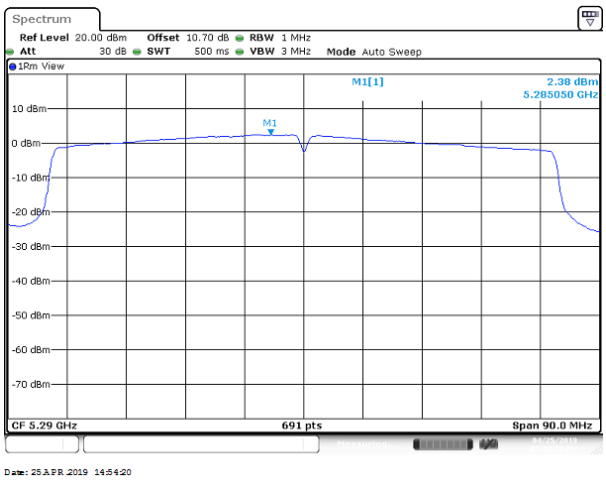
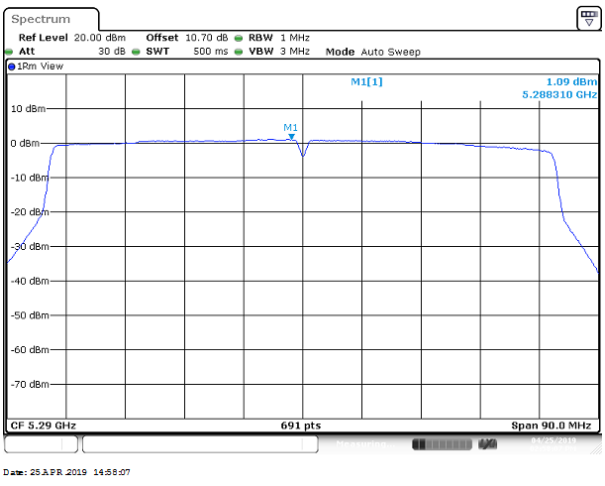
UNII-2a IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-2a IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

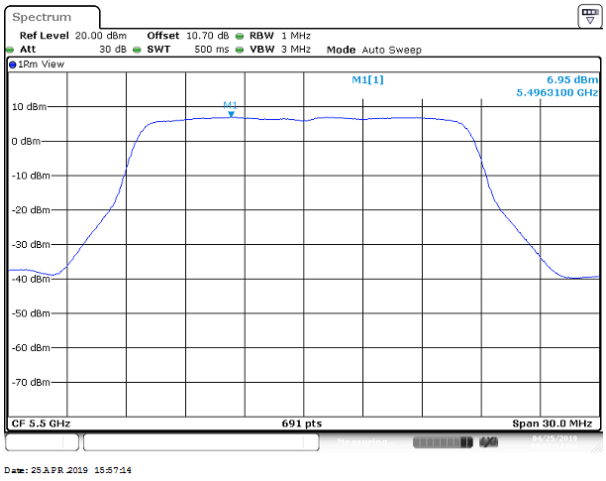
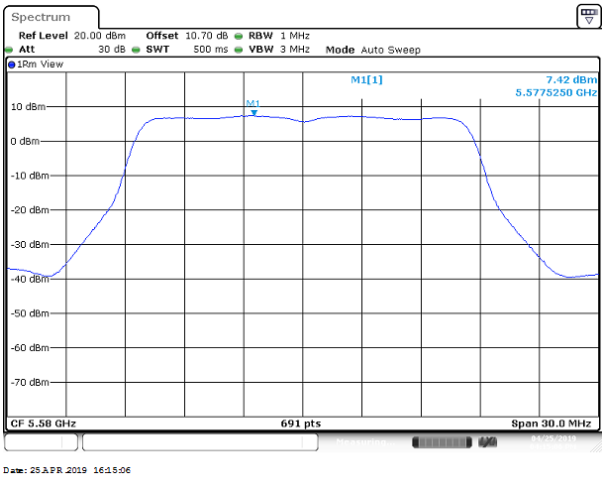
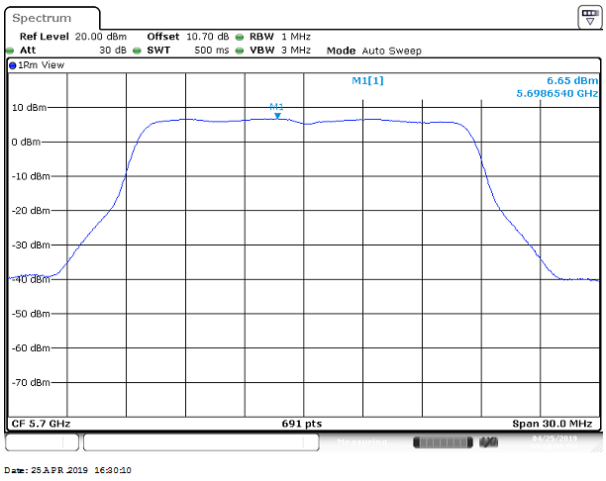
UNII-2a IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

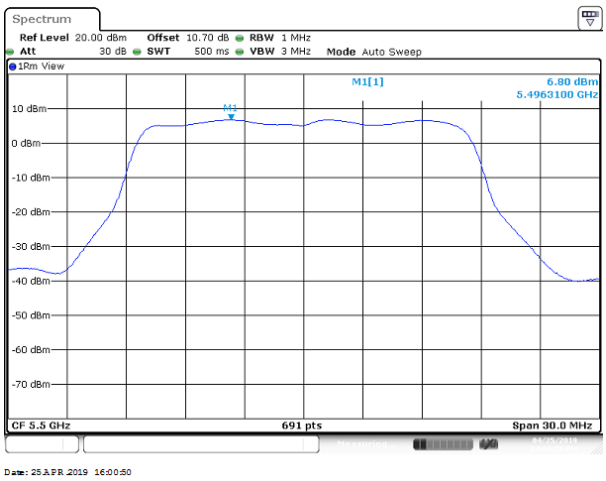
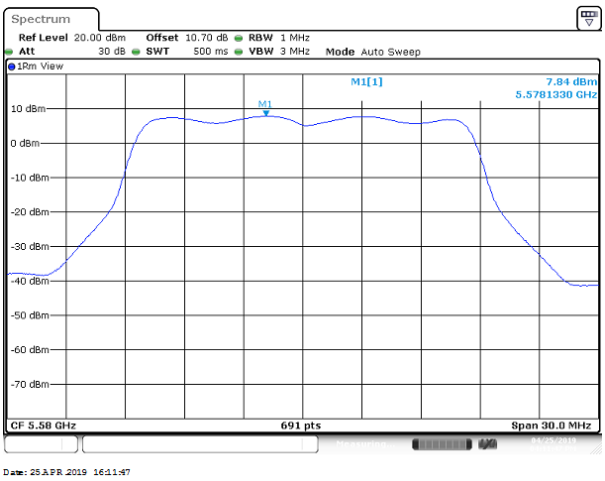
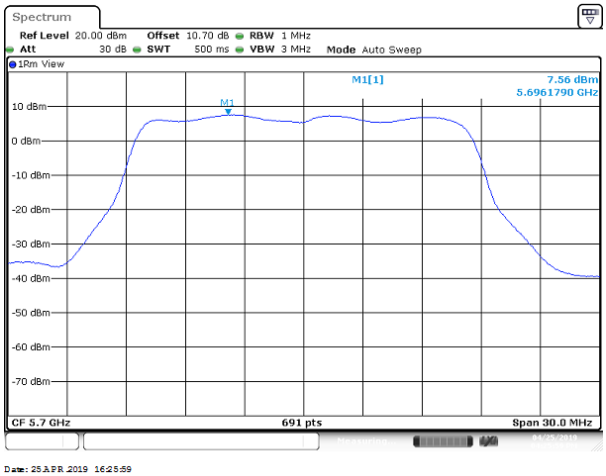
UNII-2a IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**High CH**
	

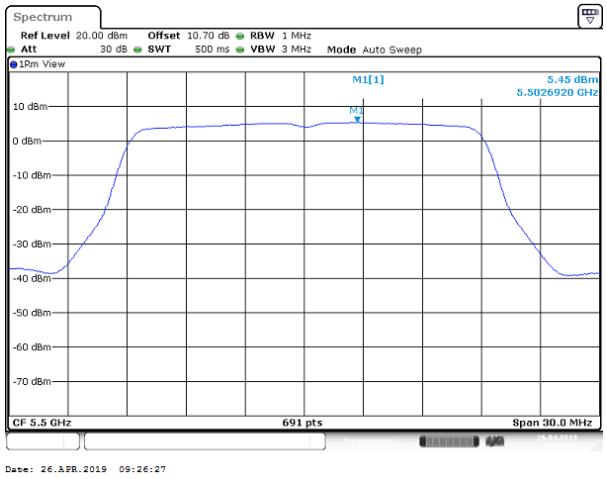
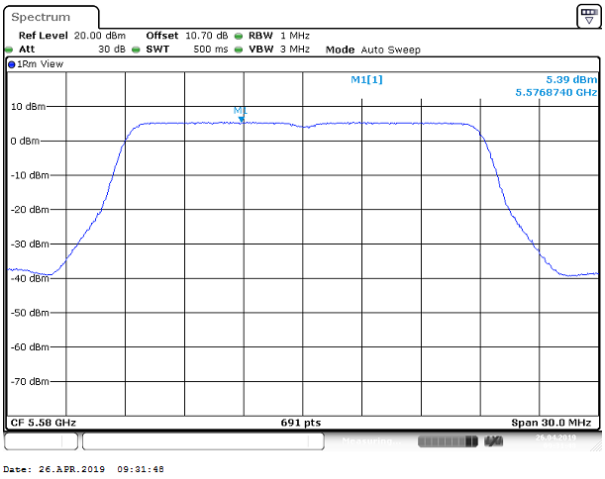
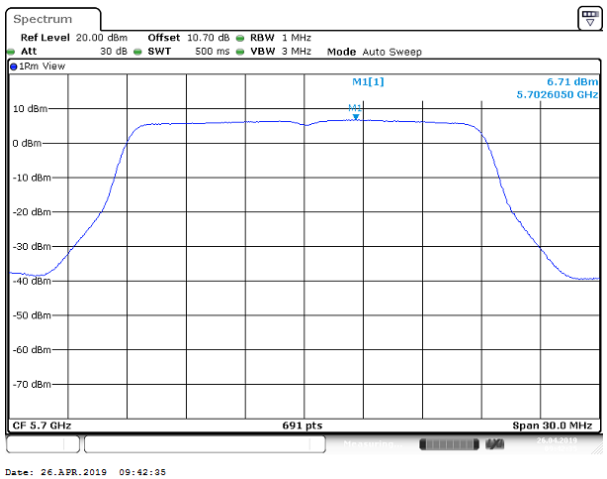
UNII-2a IEEE 802.11n 40 MHz mode- chain 1	
Low CH	**High CH**
	

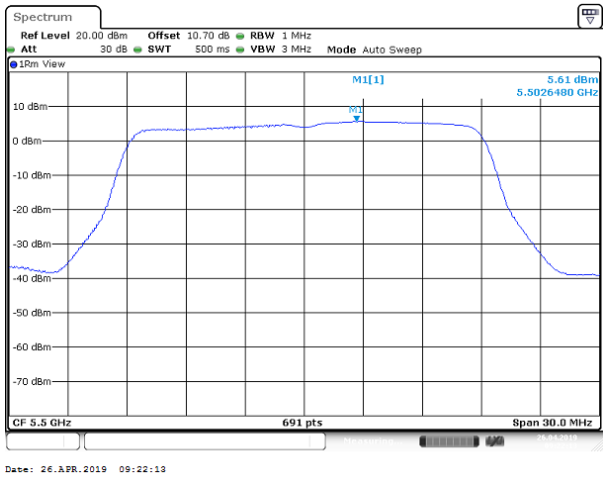
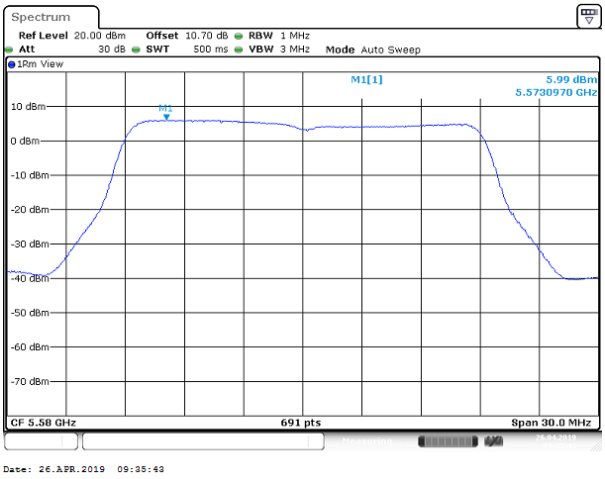
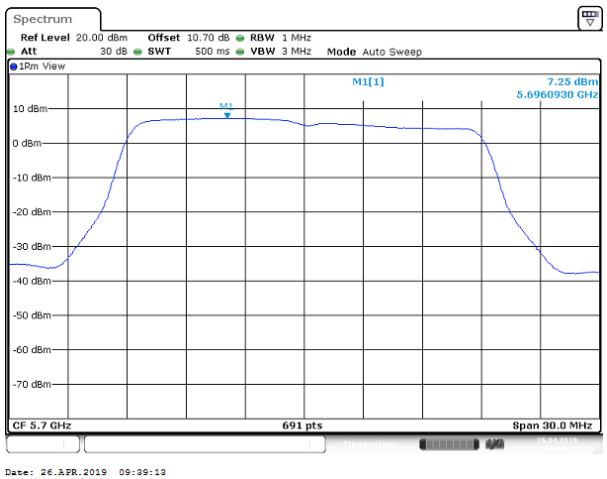
UNII-2a IEEE 802.11ac VHT80 mode	
Mid CH- chain 0	**Mid CH- chain 1**
	

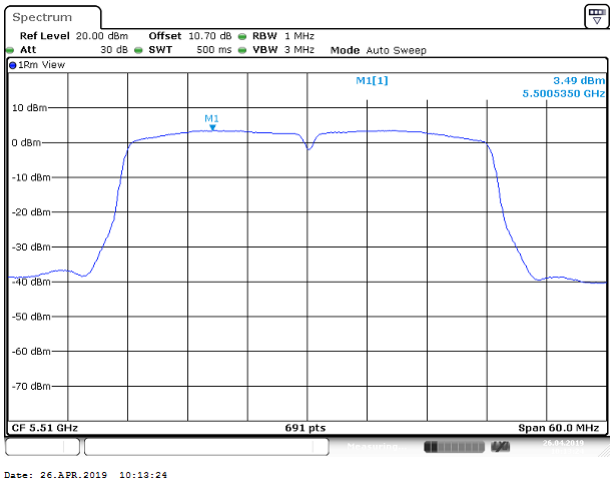
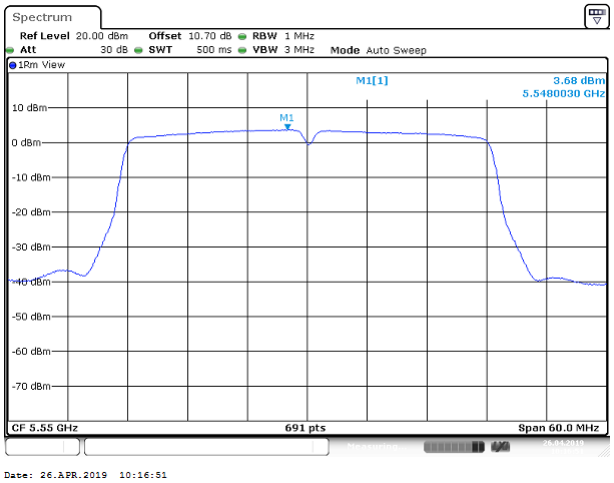
Test Data

UNII-2c IEEE 802.11a mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

UNII-2c IEEE 802.11a mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-2c IEEE 802.11n 20 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

UNII-2c IEEE 802.11n 20 MHz mode- chain 1	
Low CH	**Mid CH**
	
High CH	
	

UNII-2c IEEE 802.11n 40 MHz mode- chain 0	
Low CH	**Mid CH**
	
High CH