



## 7. Test of Conducted Spurious Emission

### 7.1 Test Limit

According to the methods defined in ANSI C63.10-2013 Section 11.11.1

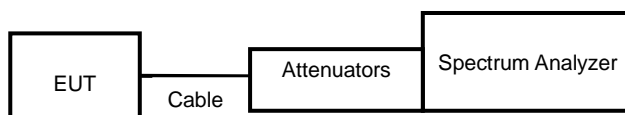
Below -30dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

### 7.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.11.2 & 11.11.3

- a. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 30dB relative to the maximum measured in-band peak PSD level.
- d. The band edges was measured and recorded.

### 7.3 Test Setup Layout



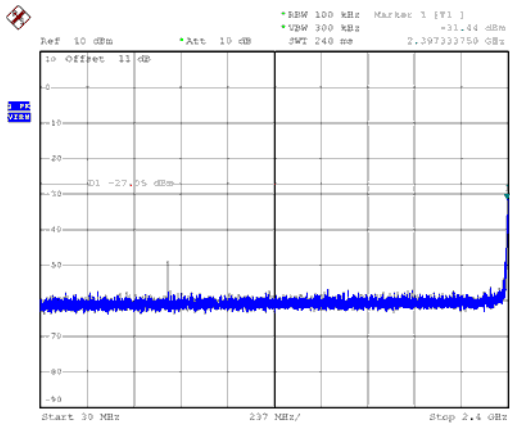
### 7.4 Test Result and Data

Note: Test plots refers to the following pages.

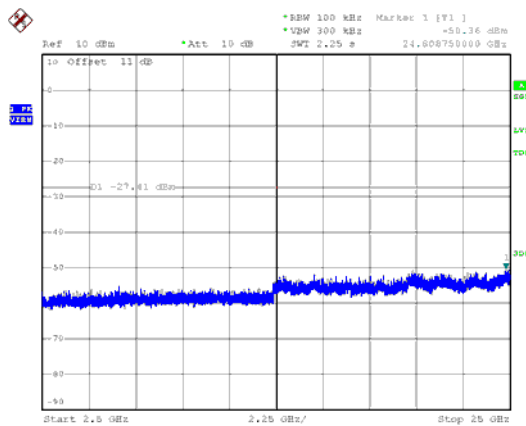
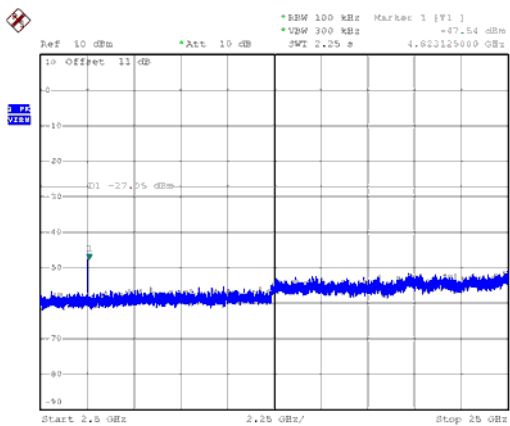
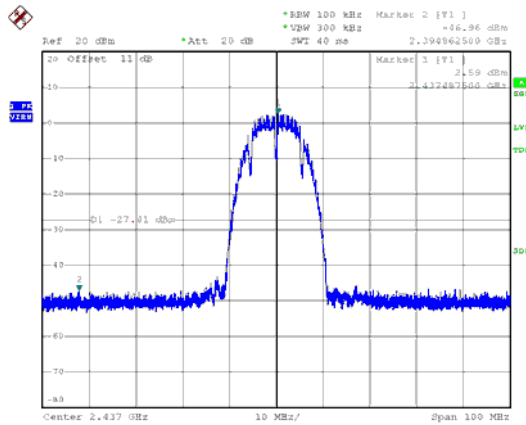
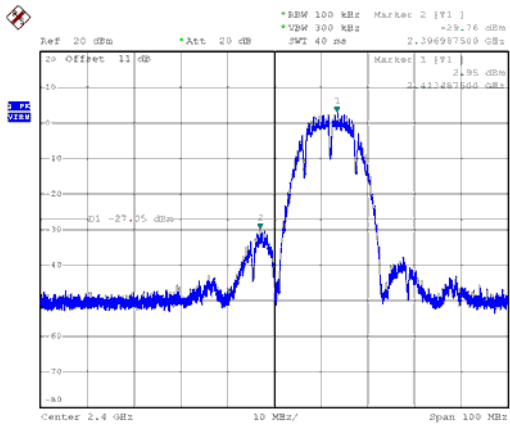
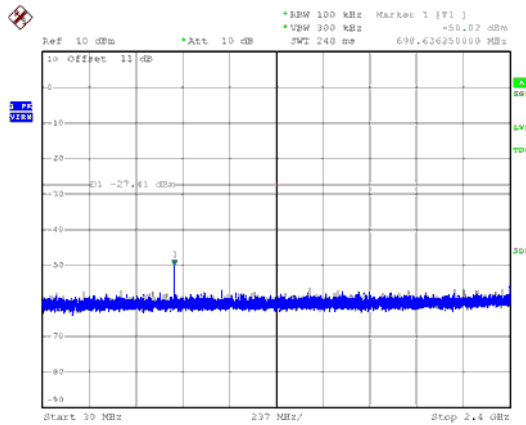


ANT A

Modulation Type: 802.11b, CH 01



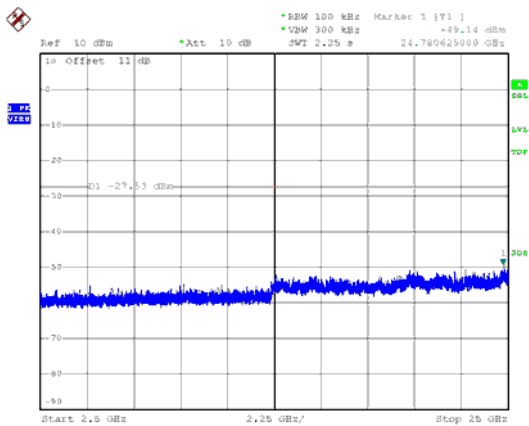
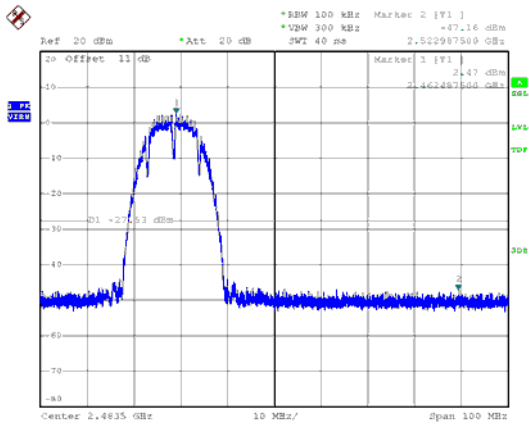
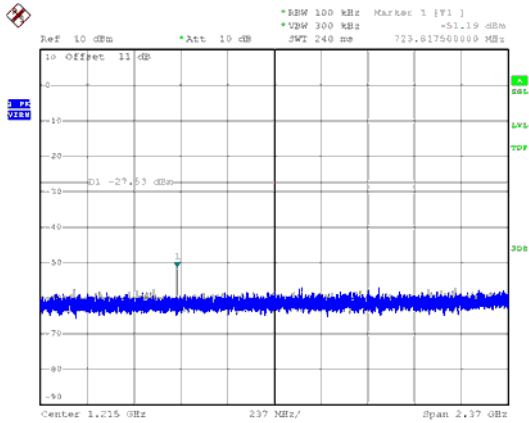
Modulation Type: 802.11b, CH 06





ANT A

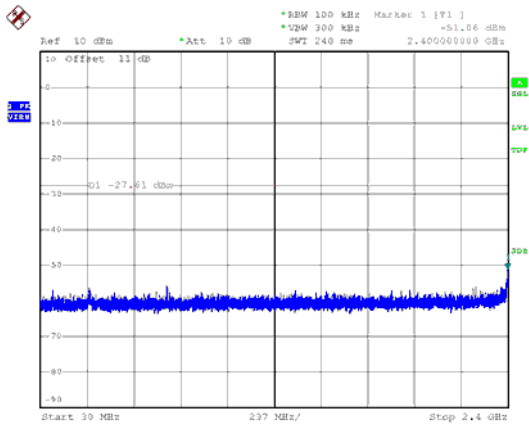
Modulation Type: 802.11b, CH 11



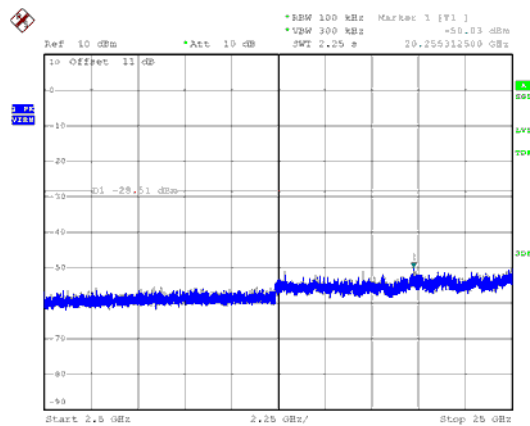
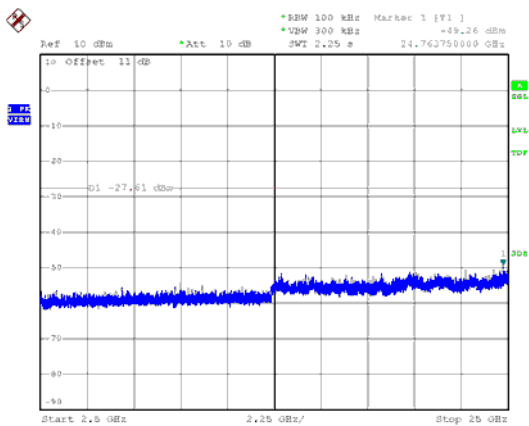
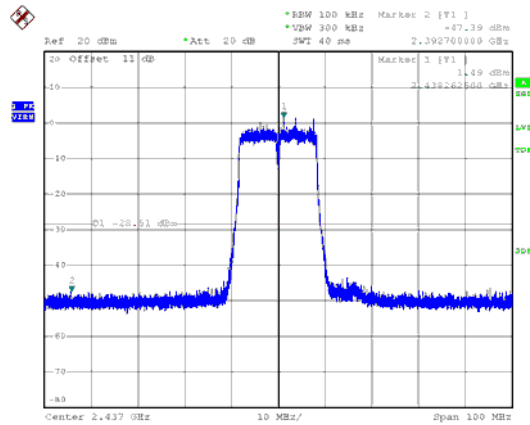
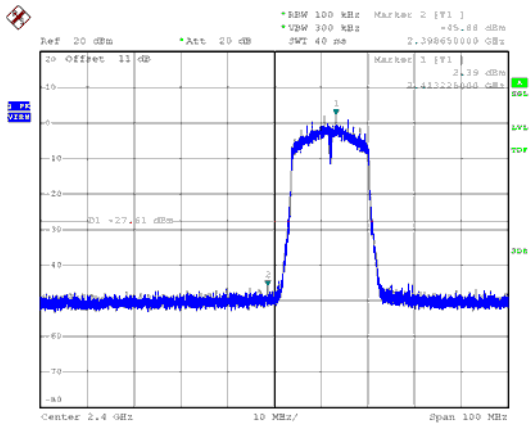
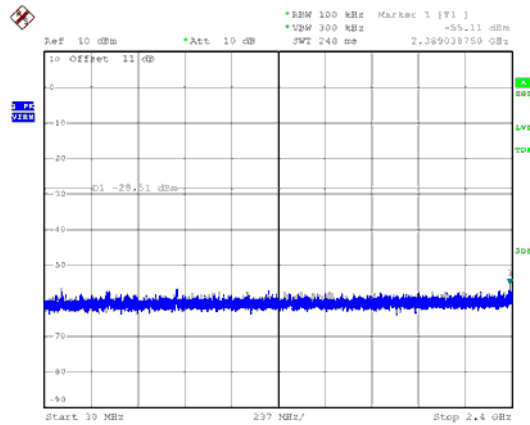


ANT A

Modulation Type: 802.11g, CH 01



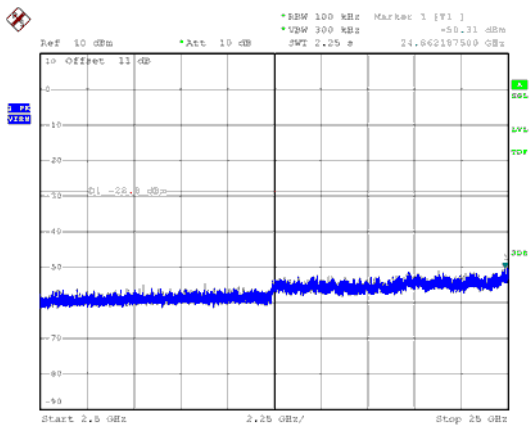
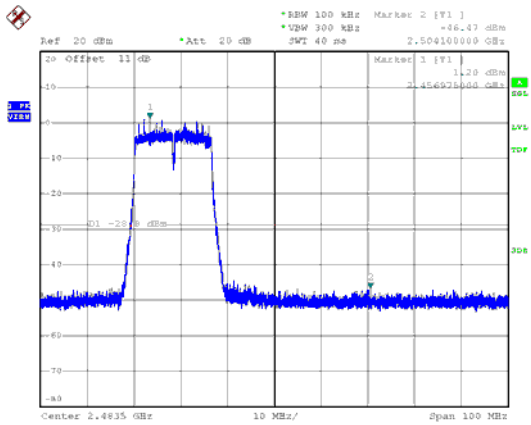
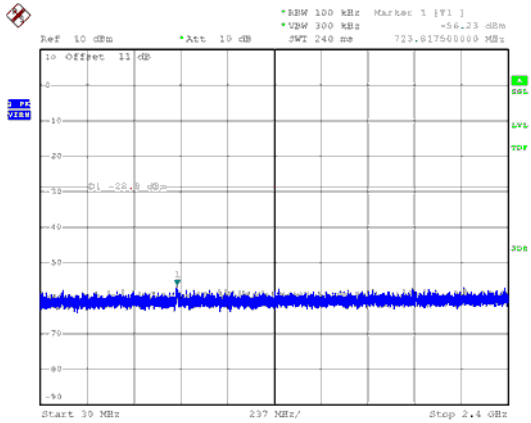
Modulation Type: 802.11g, CH 06





ANT A

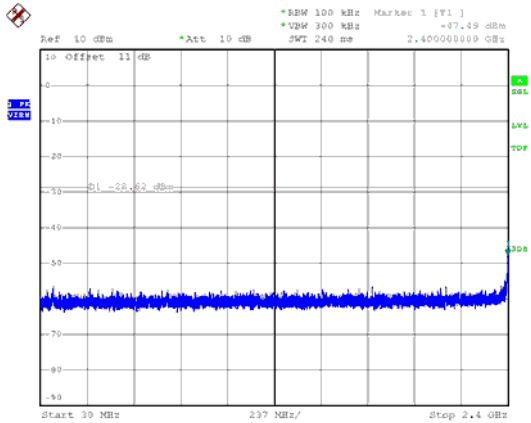
Modulation Type: 802.11g, CH 11



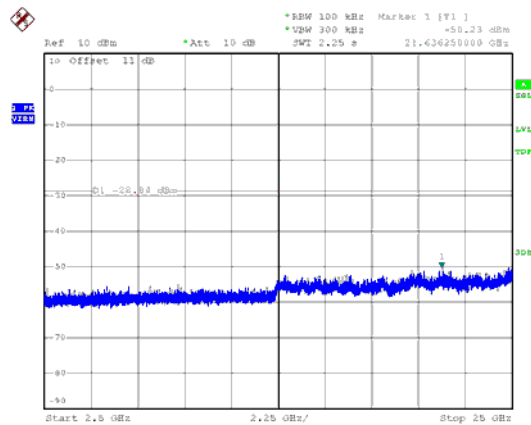
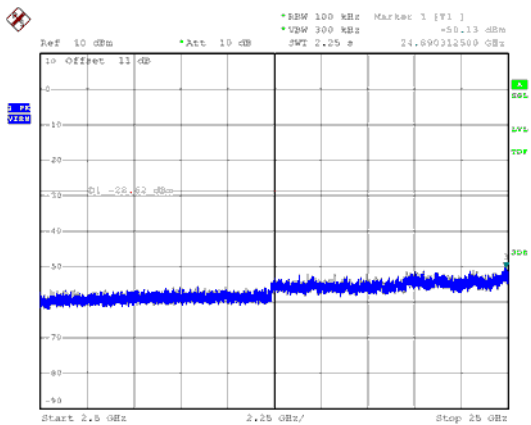
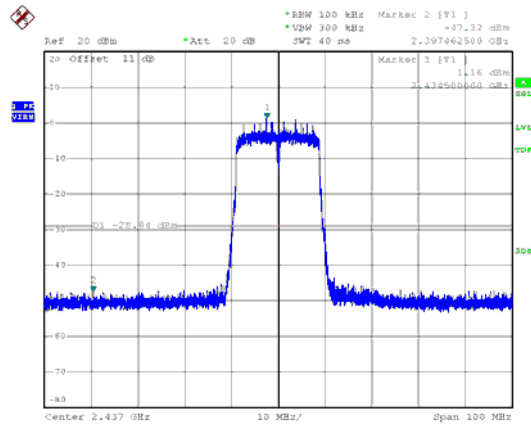
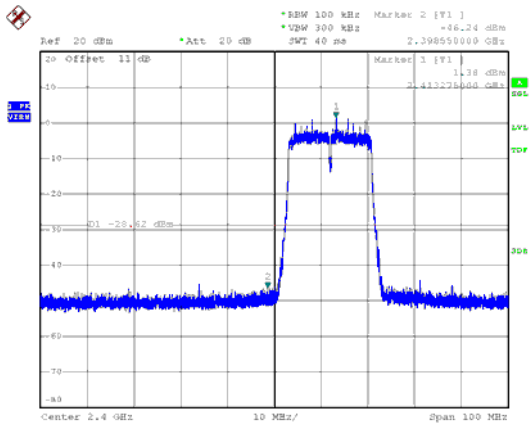
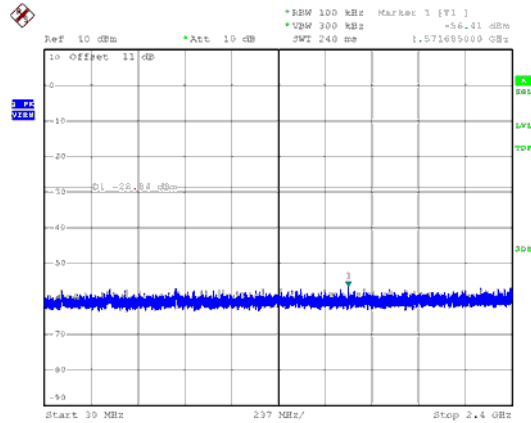


ANT A

Modulation Type: VHT20, CH01



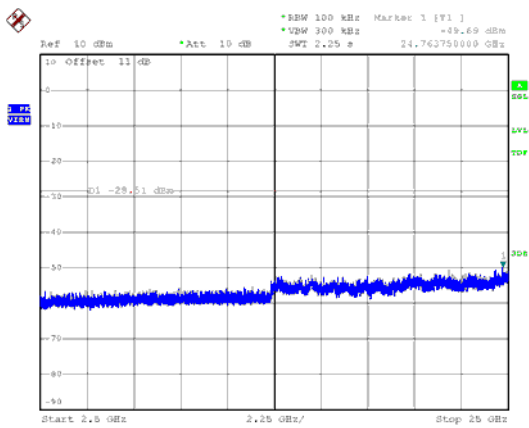
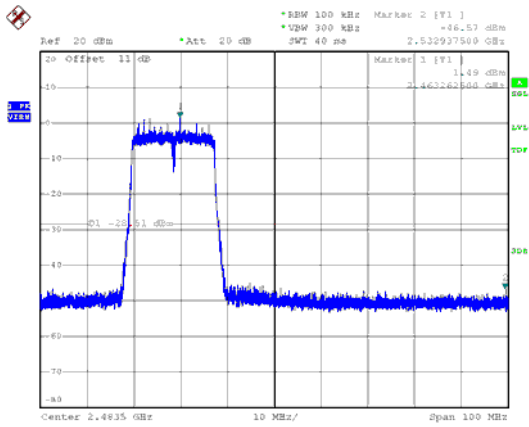
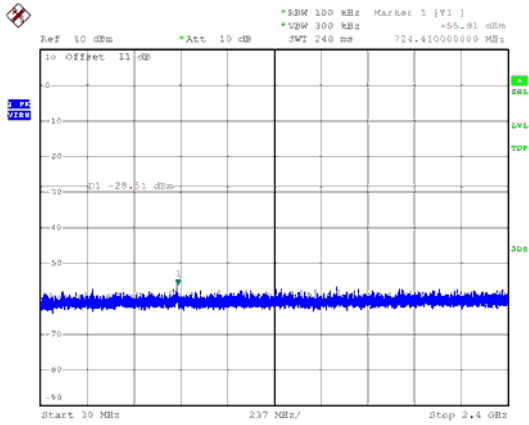
Modulation Type: VHT20, CH06





ANT A

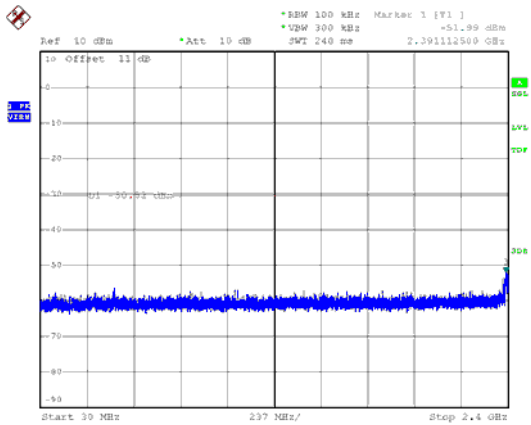
Modulation Type: VHT20, CH11



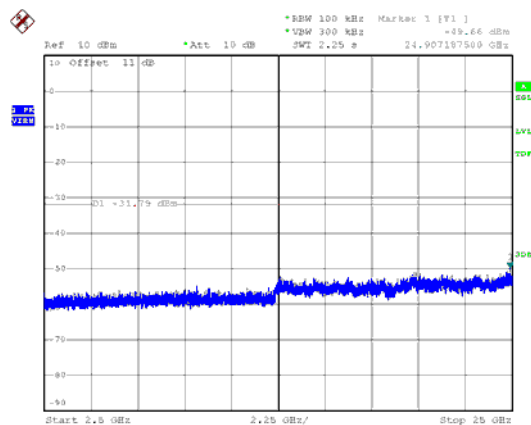
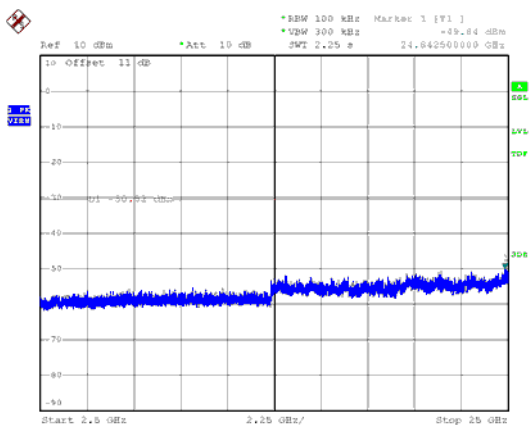
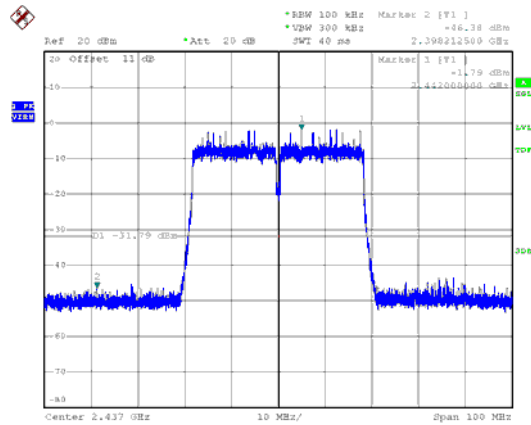
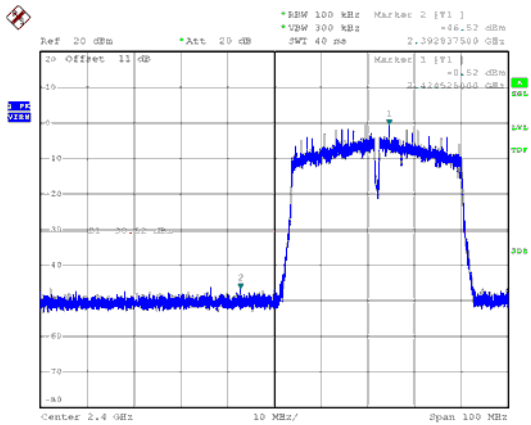
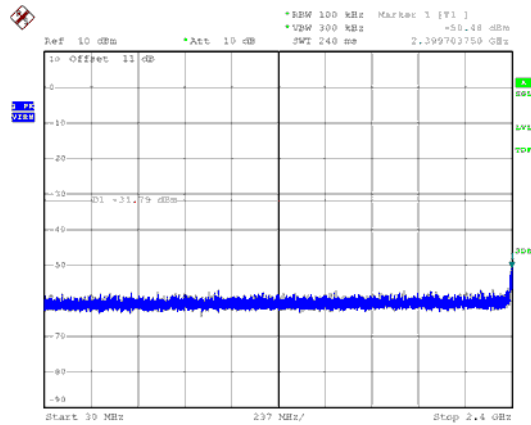


ANT A

Modulation Type: VHT40, CH03



Modulation Type: VHT40, CH06

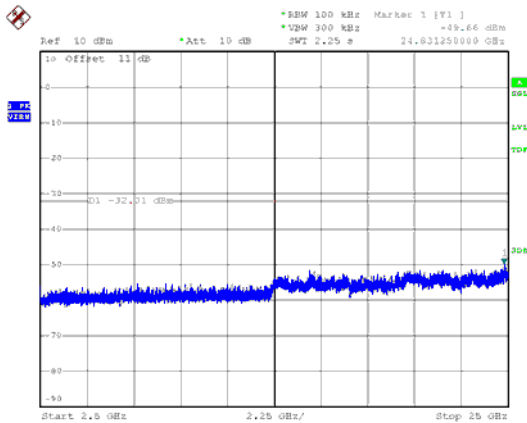
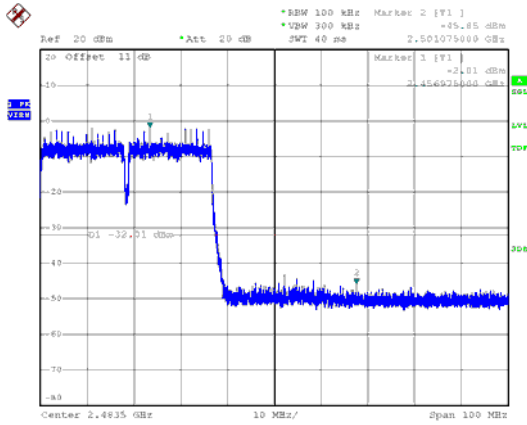
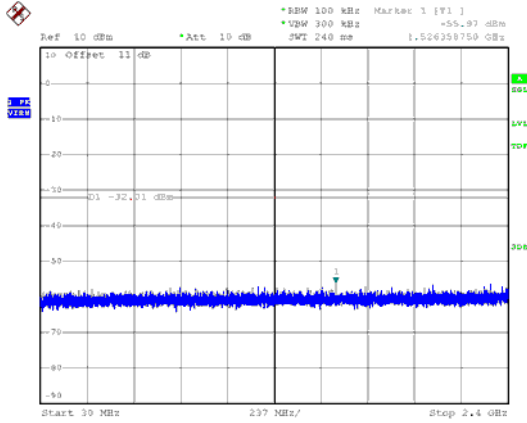






ANT A

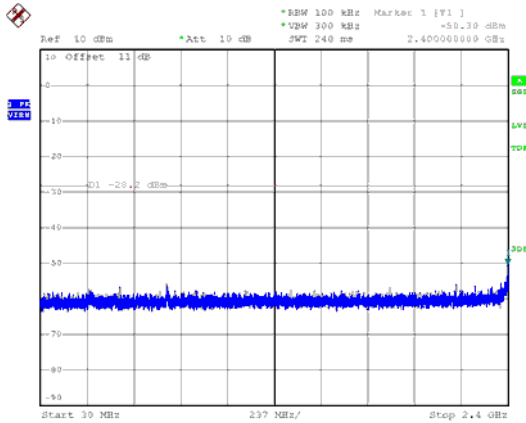
Modulation Type: VHT40, CH09



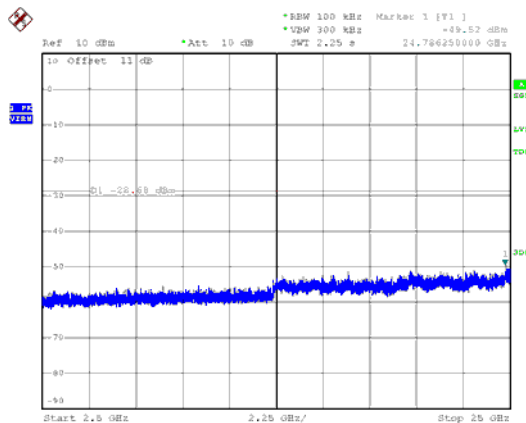
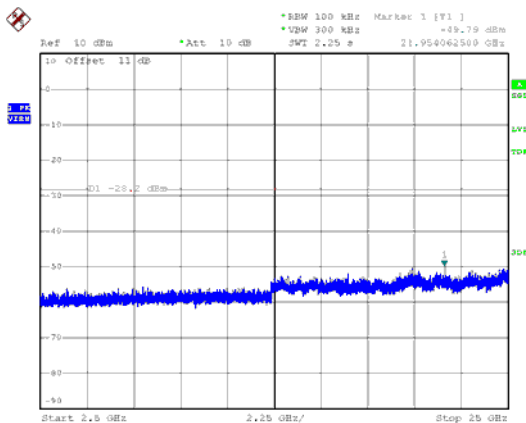
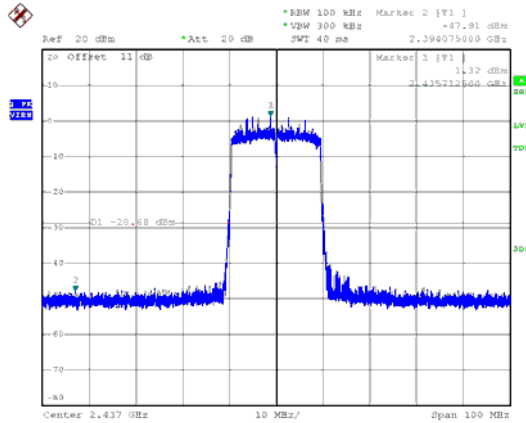
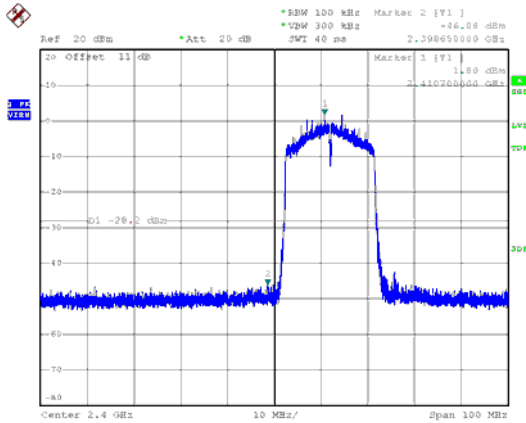
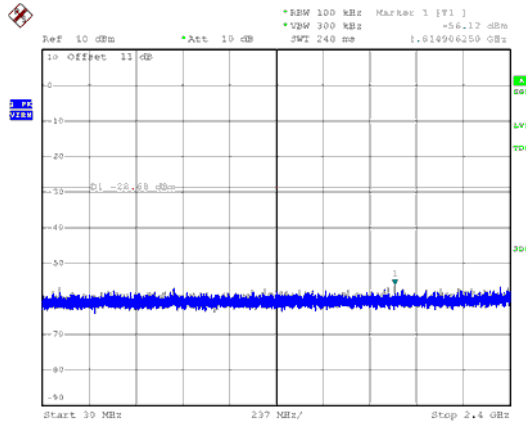


ANT A

Modulation Type: 802.11ax HE20, CH01



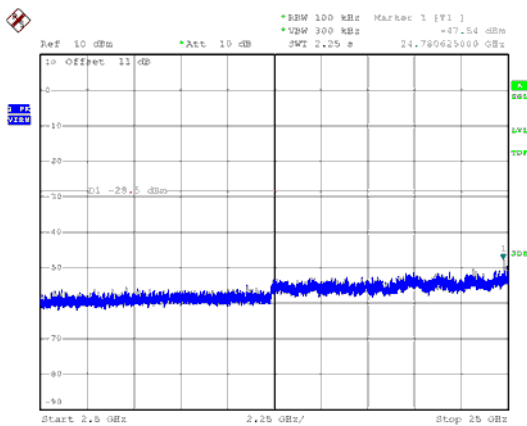
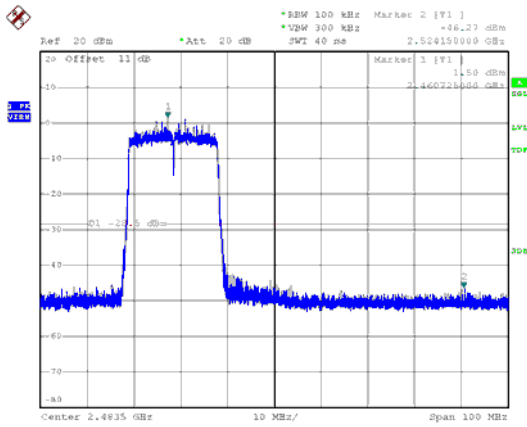
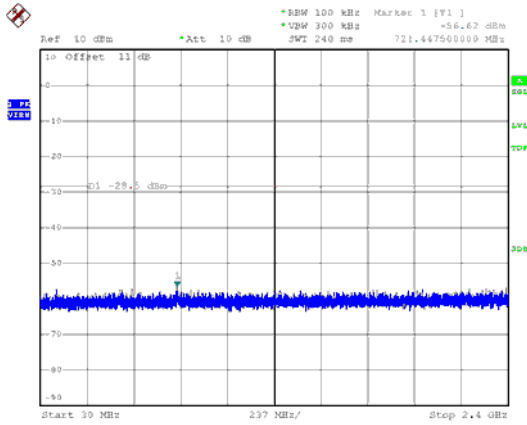
Modulation Type: 802.11ax HE20, CH06





ANT A

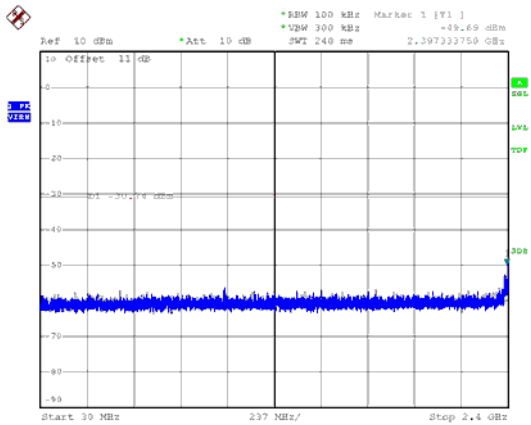
Modulation Type: 802.11ax HE20, CH11



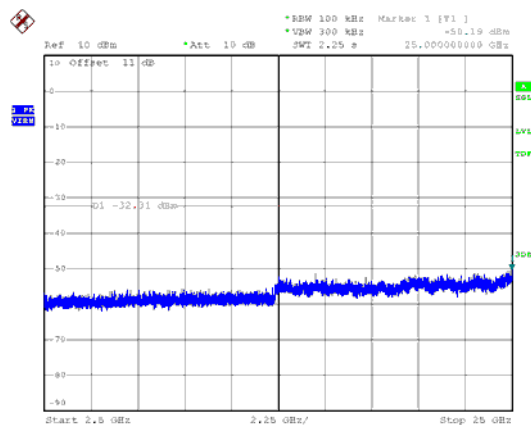
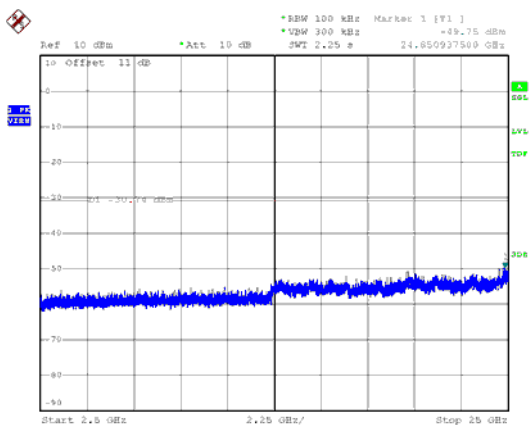
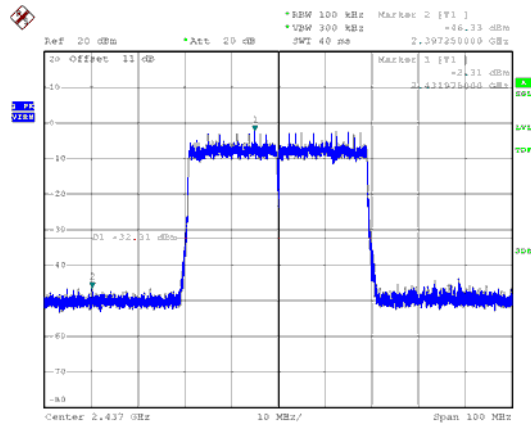
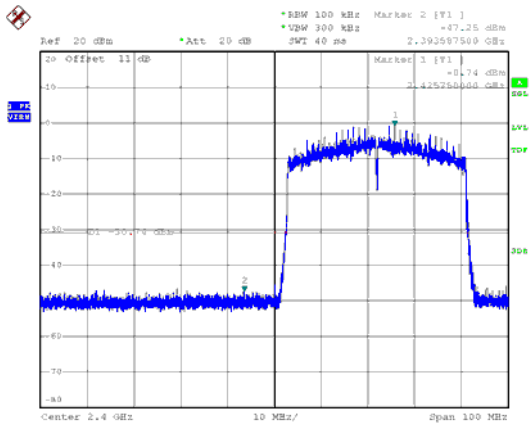
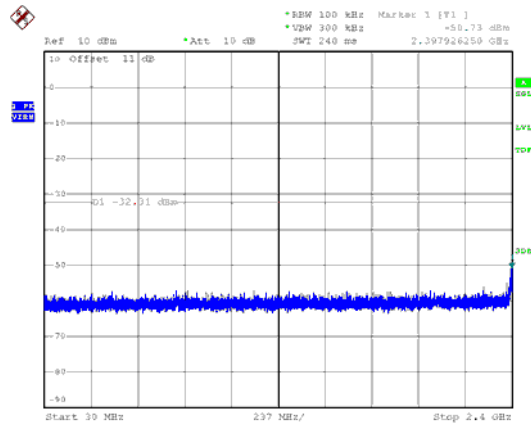


ANT A

Modulation Type: 802.11ax HE40, CH03



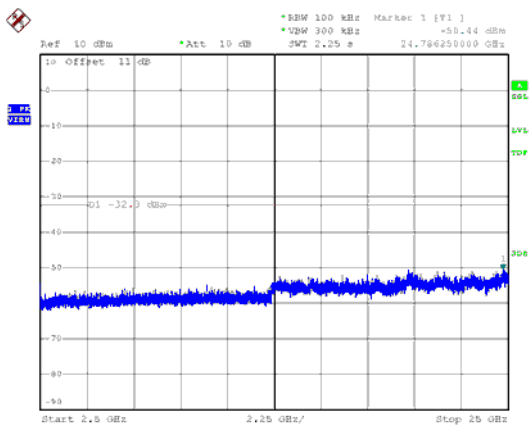
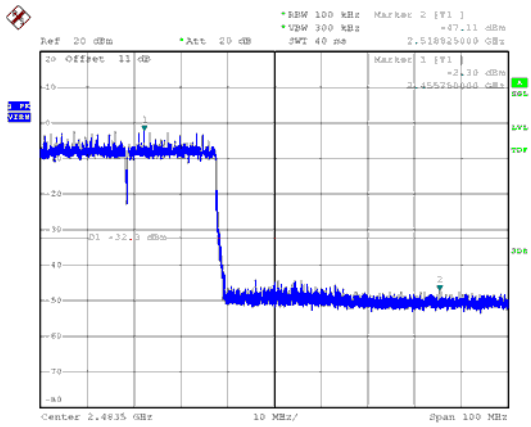
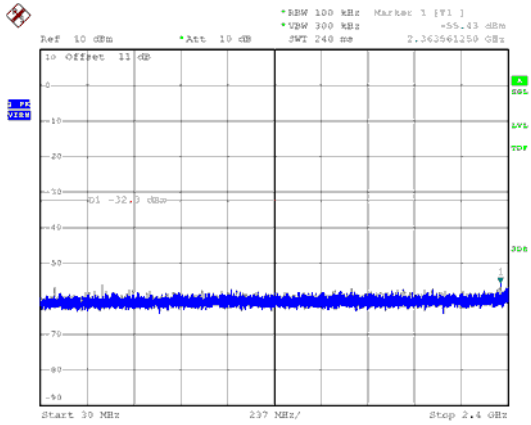
Modulation Type: 802.11ax HE40, CH06





ANT A

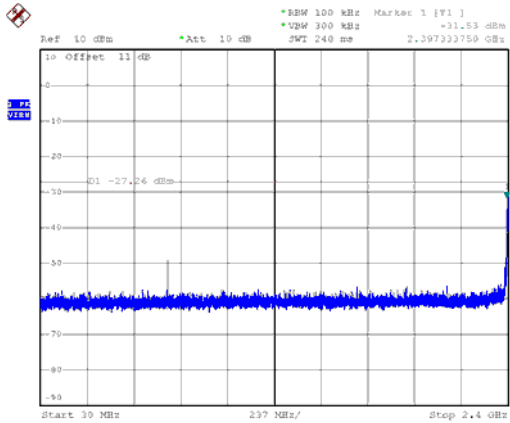
Modulation Type: 802.11ax HE40, CH09



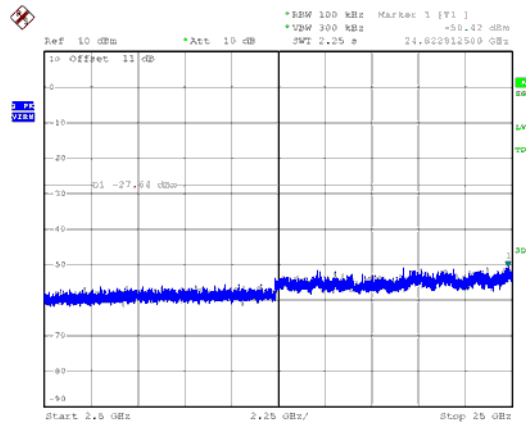
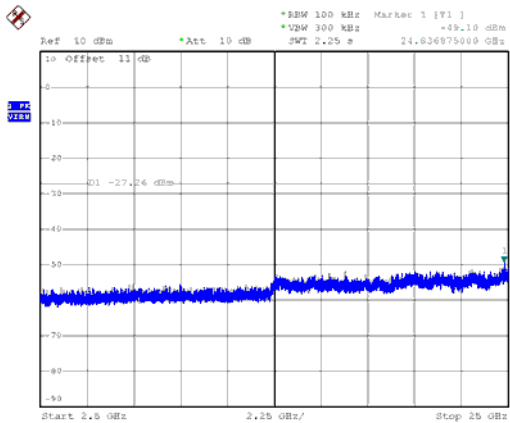
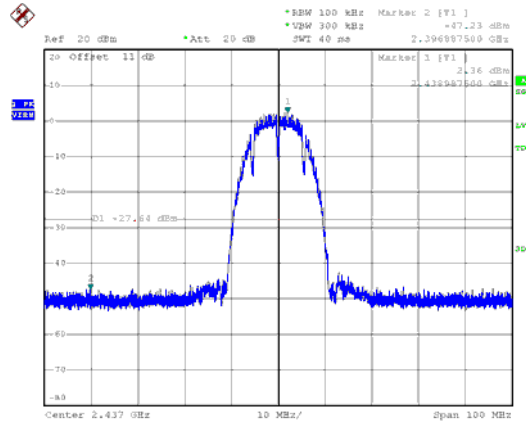
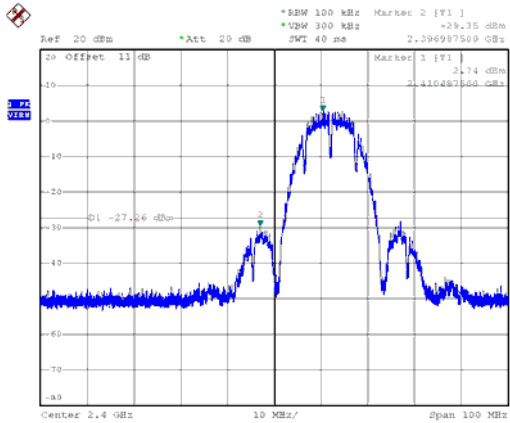
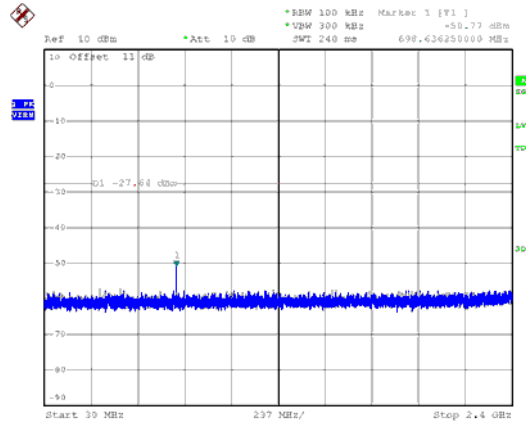


ANT B

Modulation Type: 802.11b, CH 01



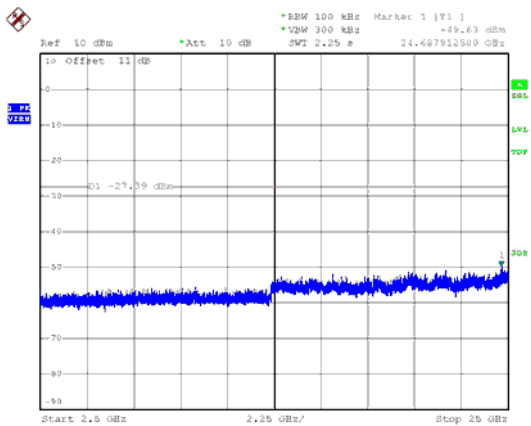
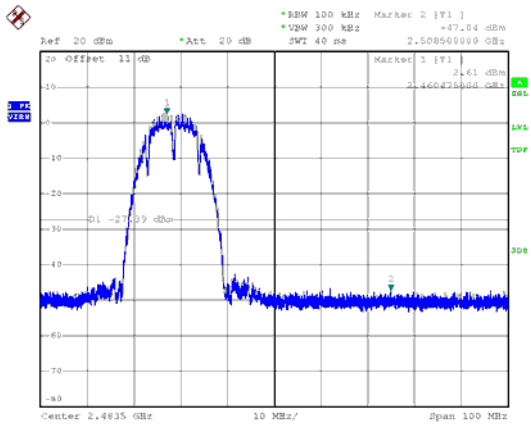
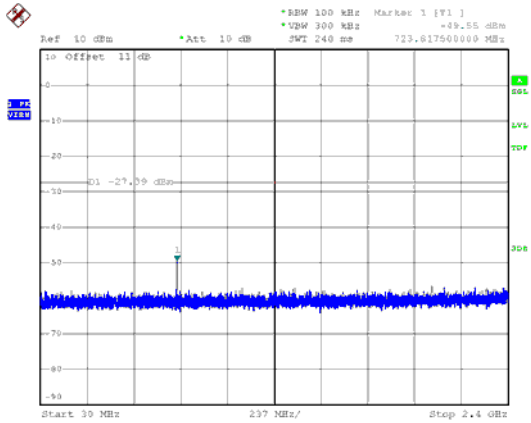
Modulation Type: 802.11b, CH 06





ANT B

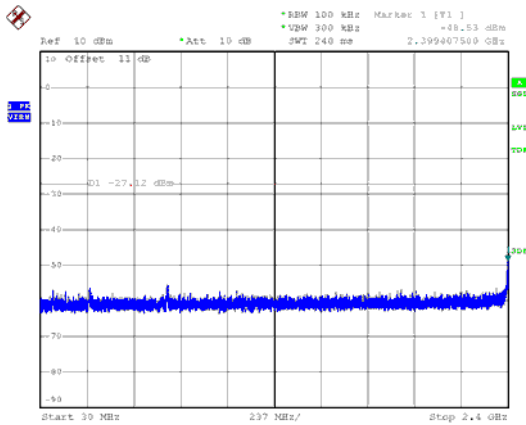
Modulation Type: 802.11b, CH 11



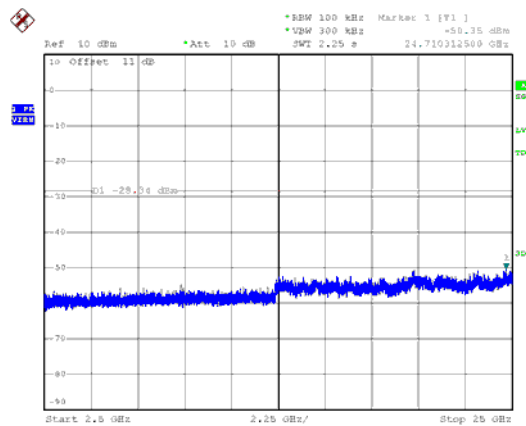
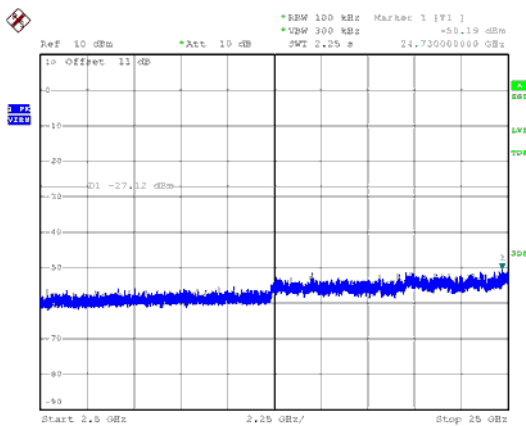
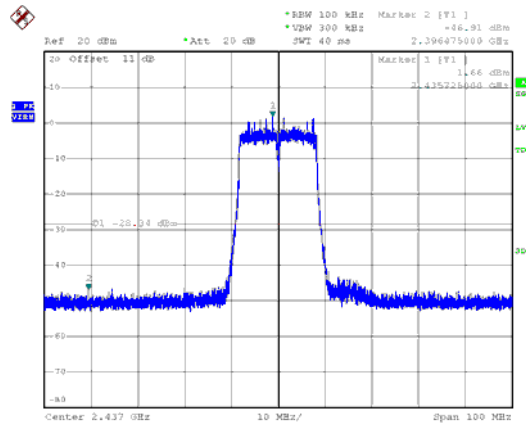
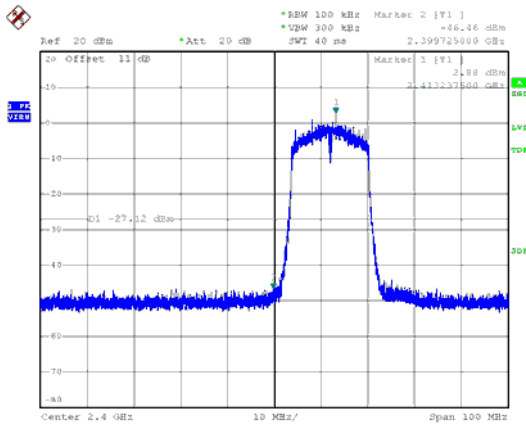
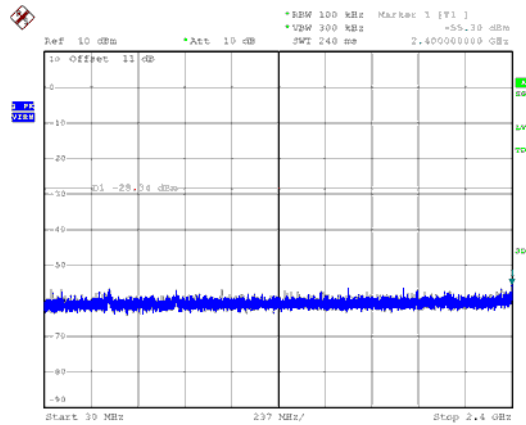


ANT B

Modulation Type: 802.11g, CH 01



Modulation Type: 802.11g, CH 06

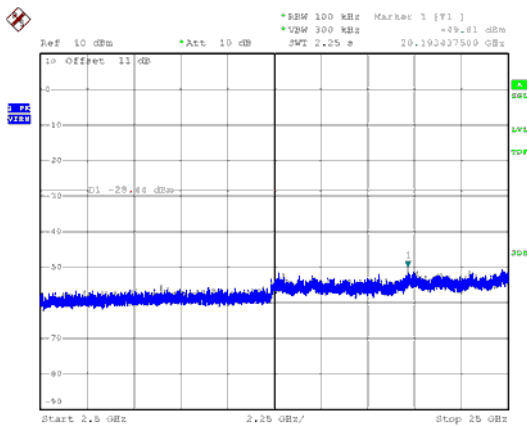
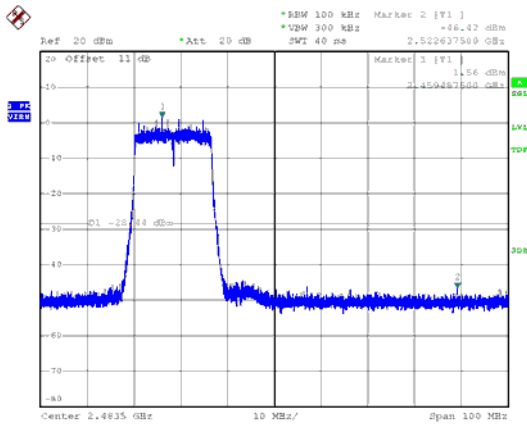
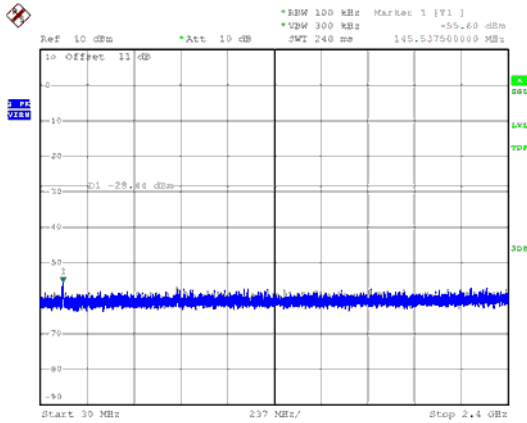






ANT B

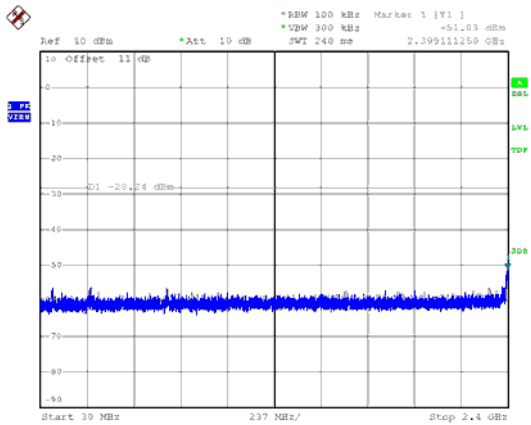
Modulation Type: 802.11g, CH 11



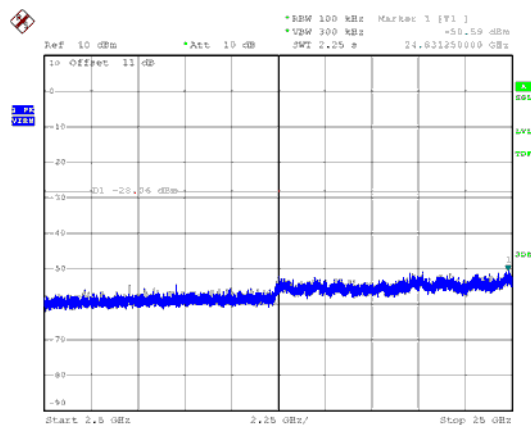
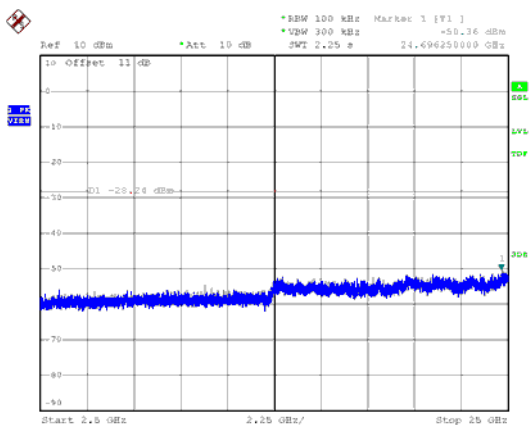
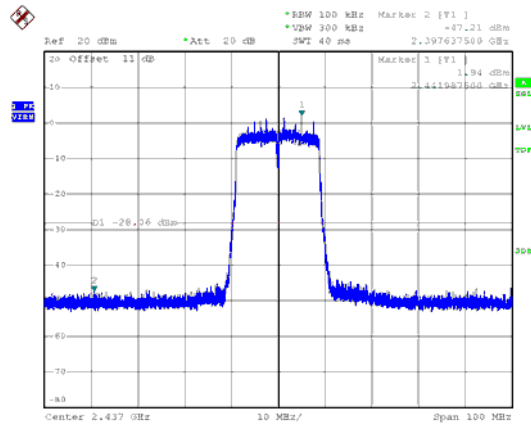
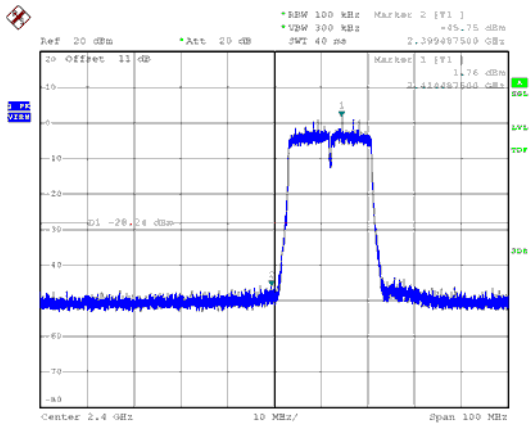
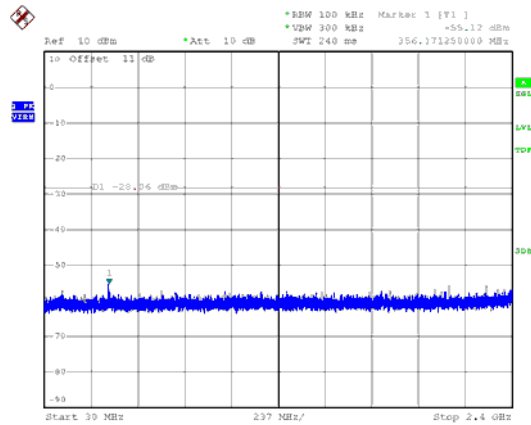


ANT B

Modulation Type: VHT20, CH01



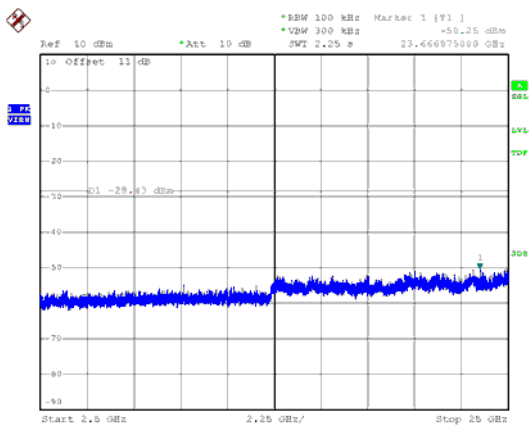
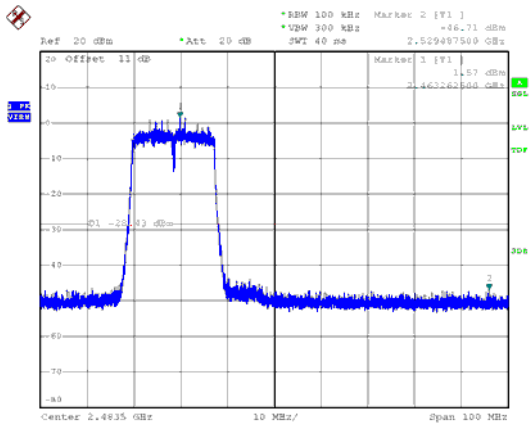
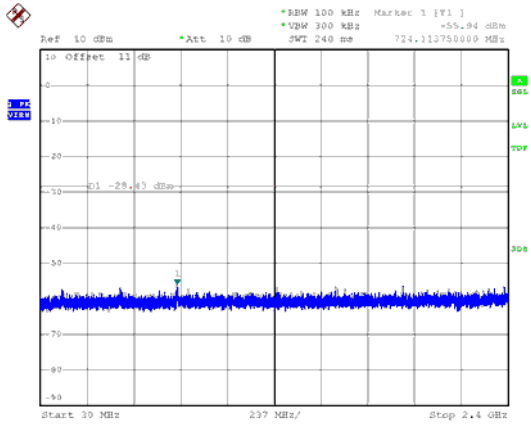
Modulation Type: VHT20, CH06





ANT B

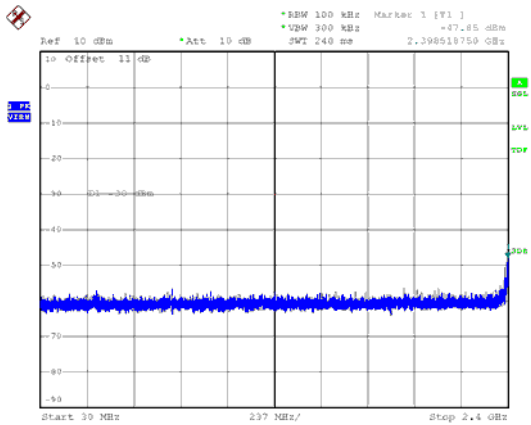
Modulation Type: VHT20, CH11



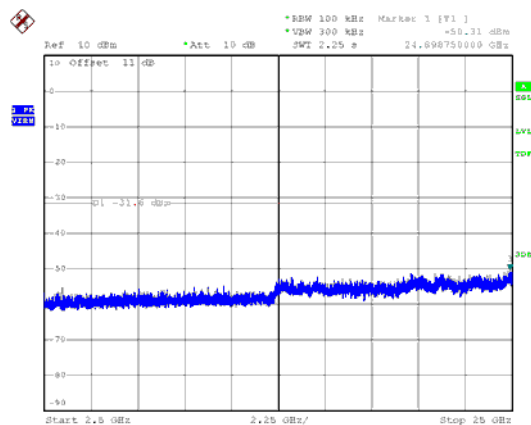
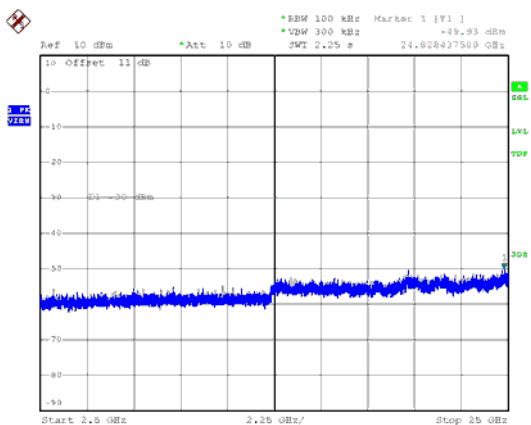
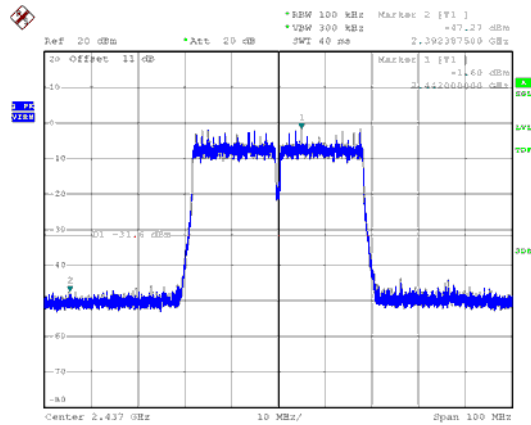
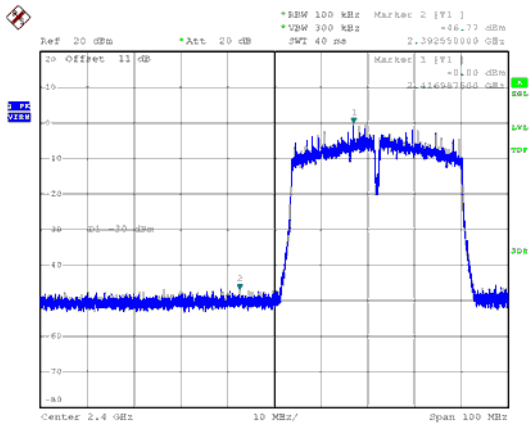
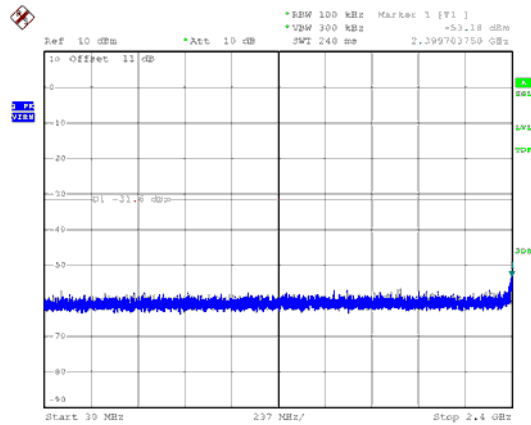


ANT B

Modulation Type: VHT40, CH03



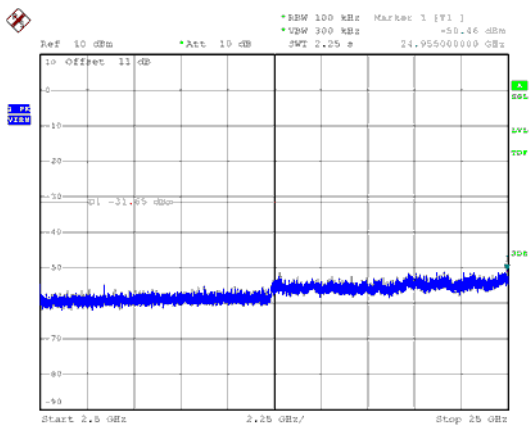
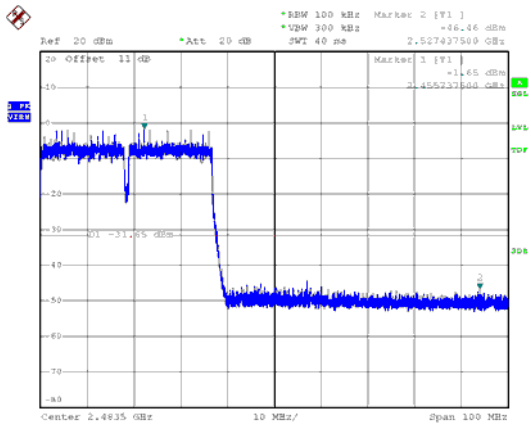
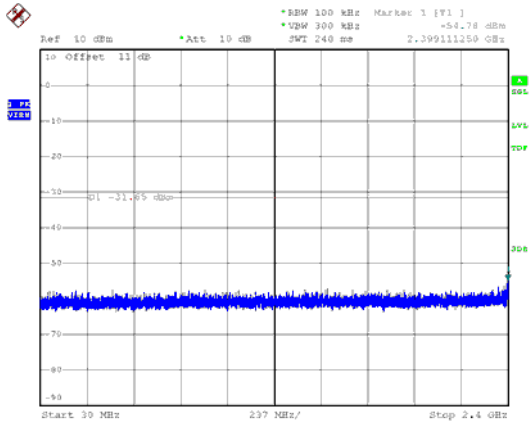
Modulation Type: VHT40, CH06





ANT B

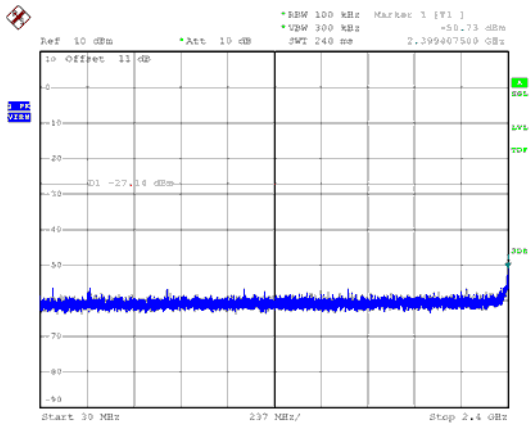
Modulation Type: VHT40, CH09



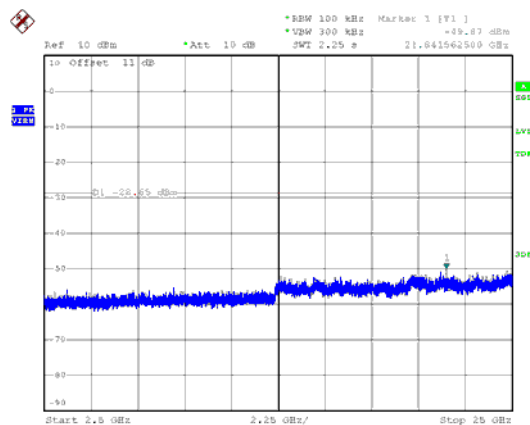
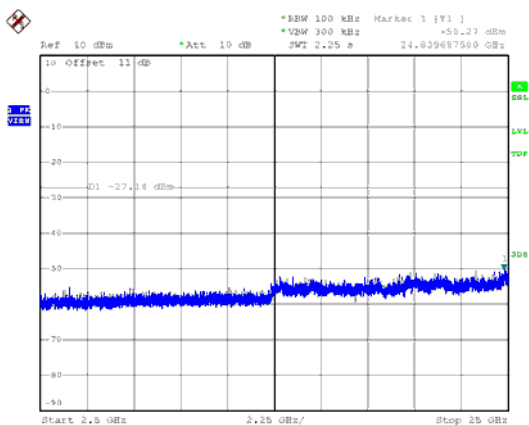
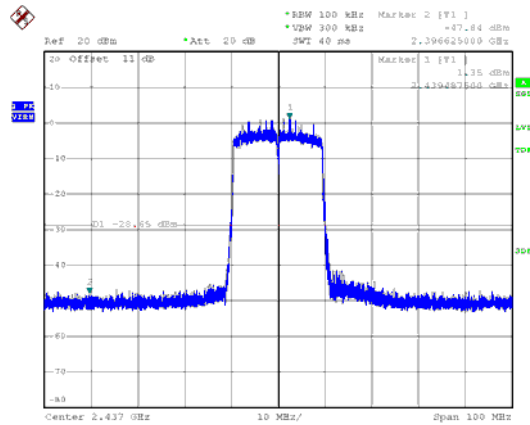
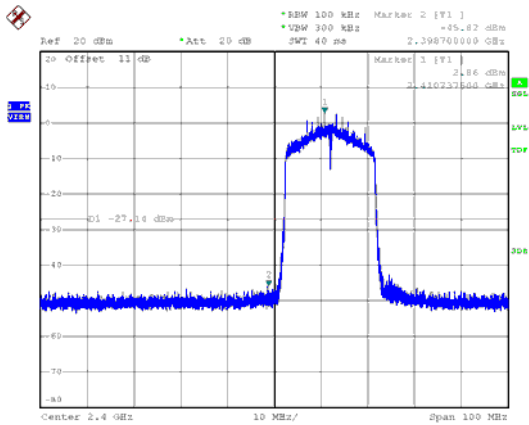
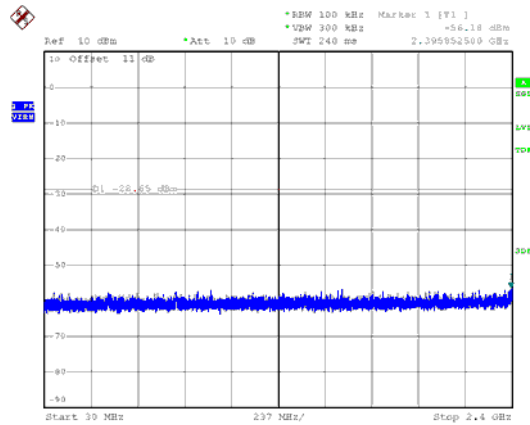


ANT B

Modulation Type: 802.11ax HE20, CH01



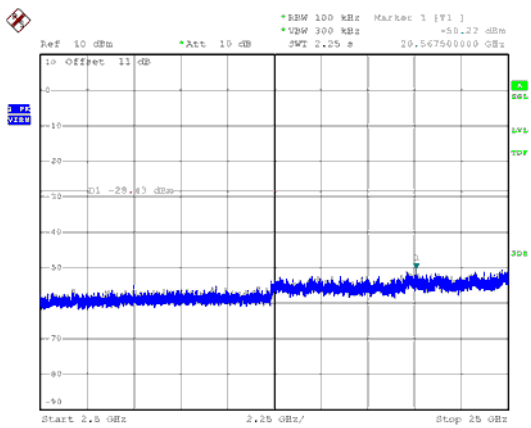
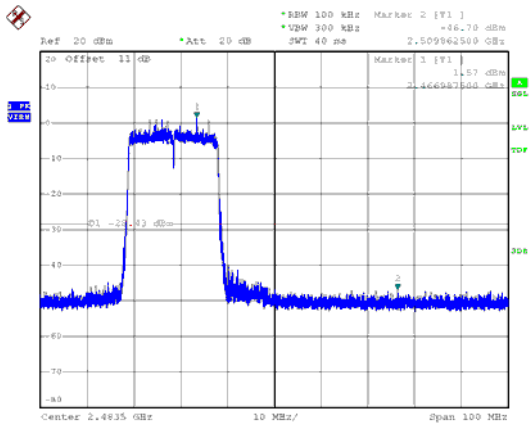
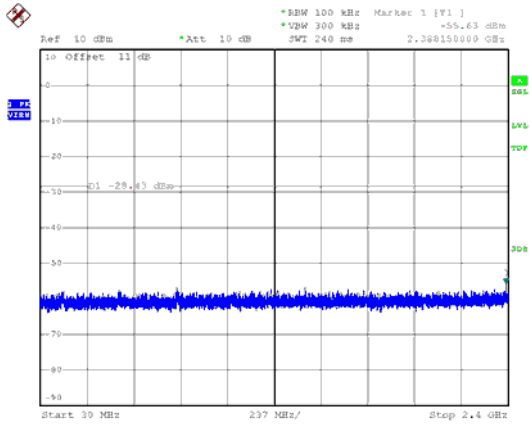
Modulation Type: 802.11ax HE20, CH06





ANT B

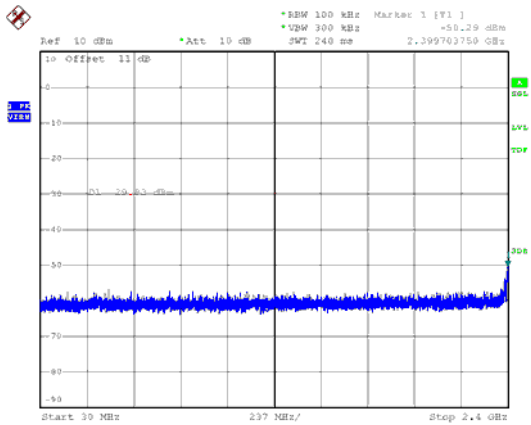
Modulation Type: 802.11ax HE20, CH11



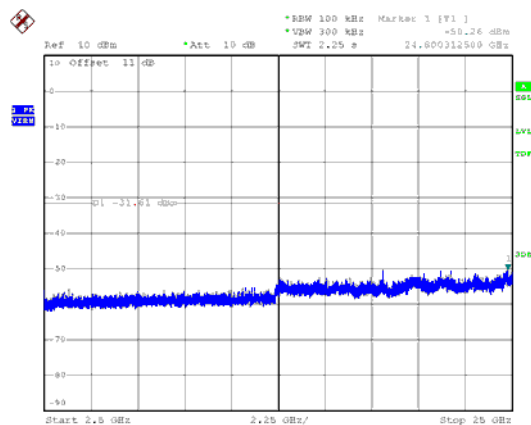
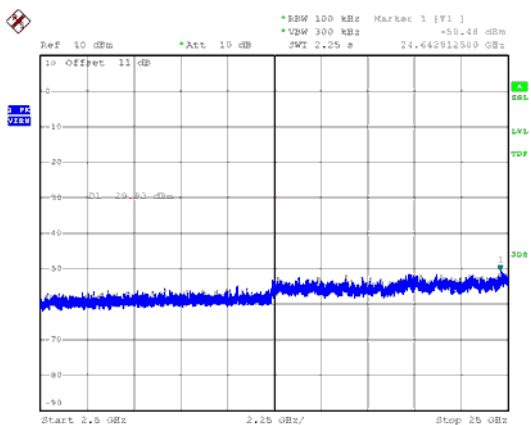
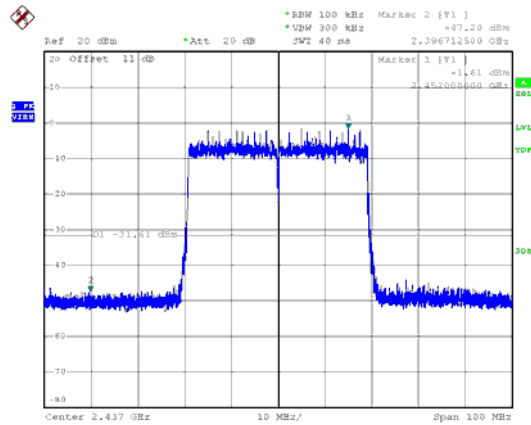
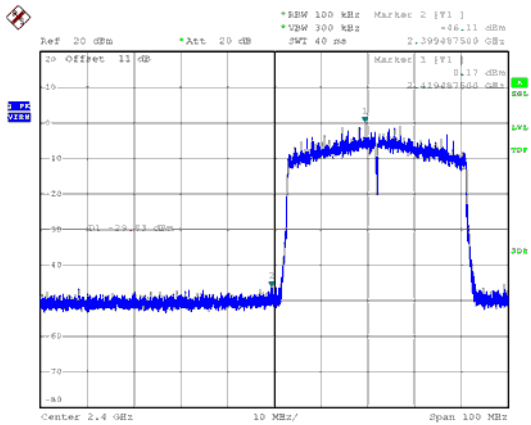
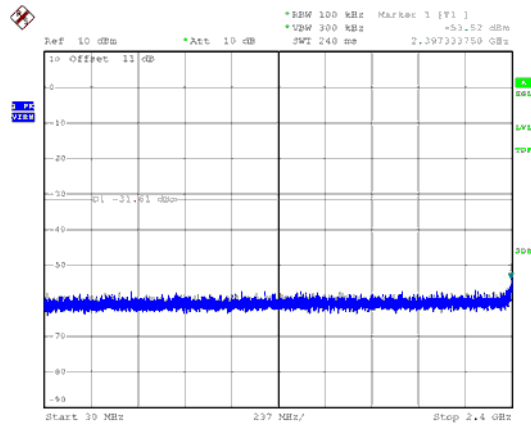


ANT B

Modulation Type: 802.11ax HE40, CH03



Modulation Type: 802.11ax HE40, CH06

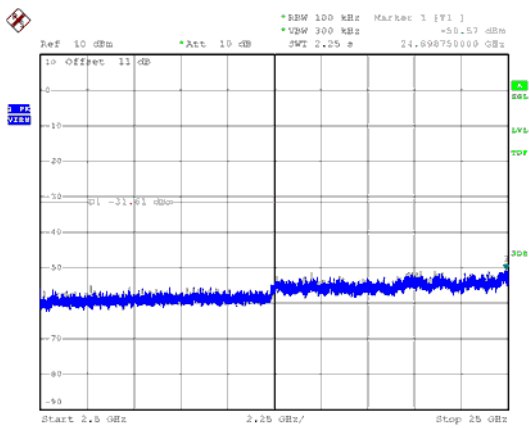
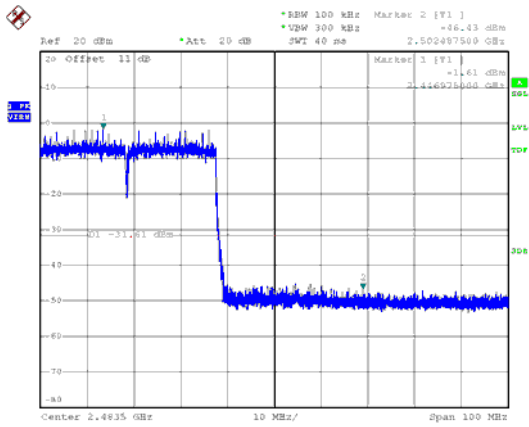
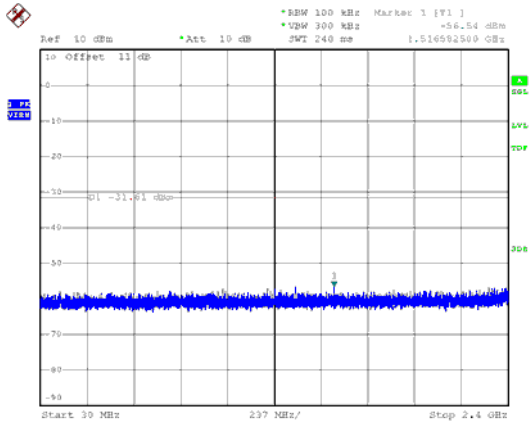






ANT B

Modulation Type: 802.11ax HE40, CH09





## 8. On Time, Duty Cycle and Measurement methods

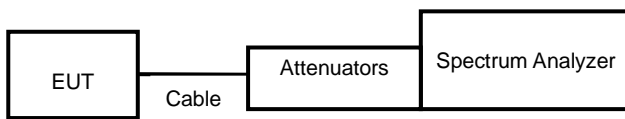
### 8.1 Test Limit

None; for reporting purposes only.

### 8.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.6  
Zero-Span Spectrum Analyzer Method.

### 8.3 Test Setup Layout

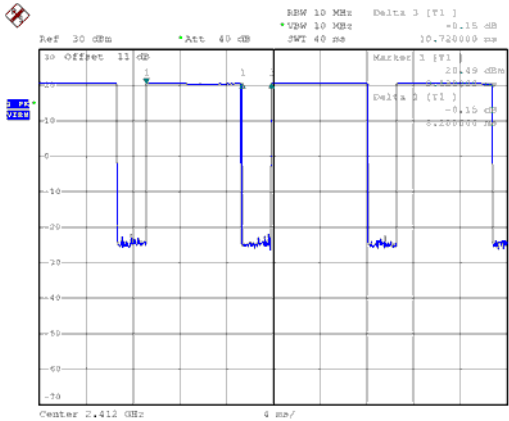


### 8.4 Test Result and Data

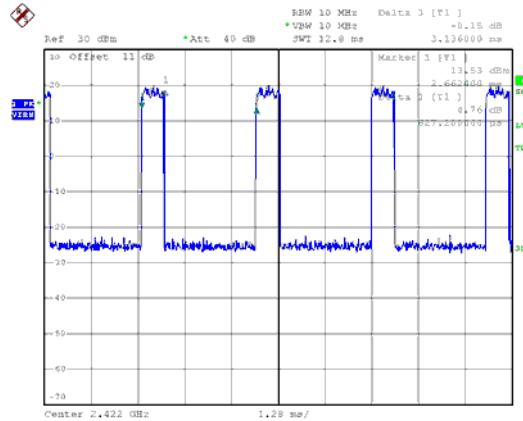
Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
11b,1M	8.20	10.72	76.49%
11g,6M	1.36	3.87	35.12%
VHT20	1.28	3.79	33.76%
VHT40	0.63	3.14	20.00%
11ax HE20	1.17	3.68	31.74%
11ax HE40	0.62	3.13	19.92%



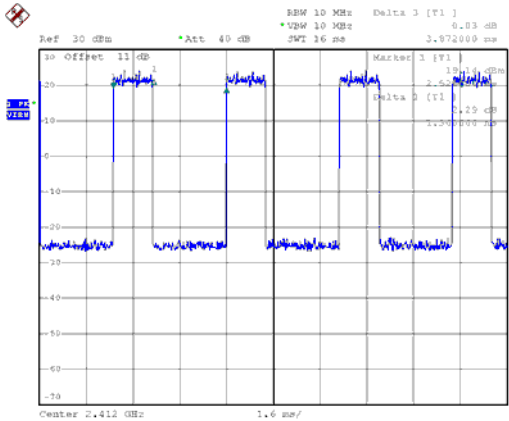
Modulation Type: 802.11b(1Mbps)



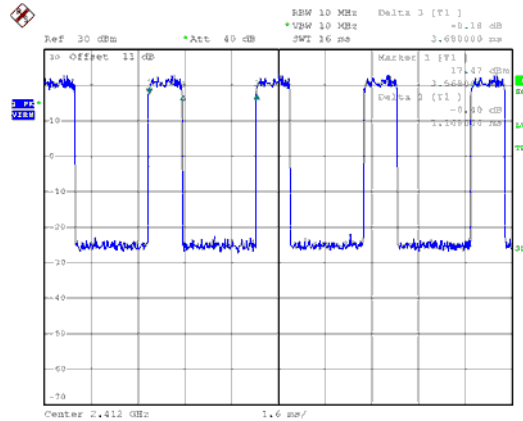
Modulation Type: VHT40 (13.5Mbps)



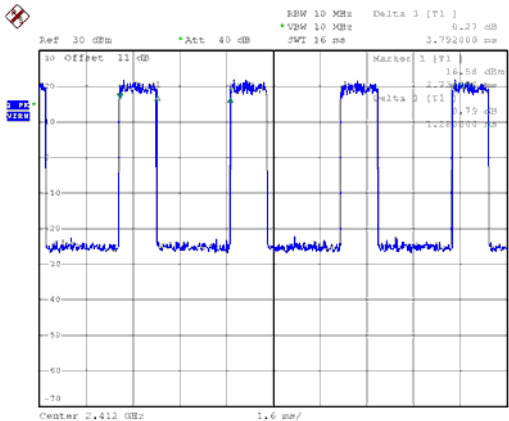
Modulation Type: 802.11g(6Mbps)



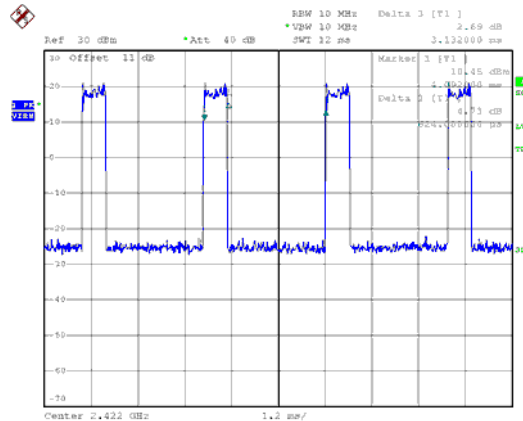
Modulation Type: 802.11ax HE20 (6.5Mbps)



Modulation Type: VHT20 (6.5Mbps)



Modulation Type: 802.11ax HE40 (13.5Mbps)





## 9. 6dB Bandwidth Measurement Data

### 9.1 Test Limit

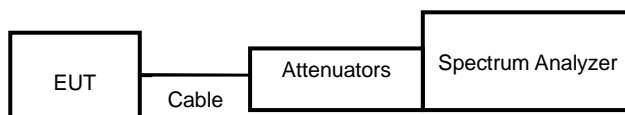
The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

### 9.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.8

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- d. The 6dB Bandwidth was measured and recorded.

### 9.3 Test Setup Layout



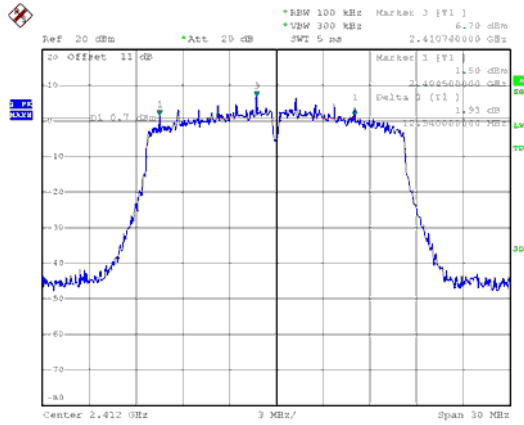
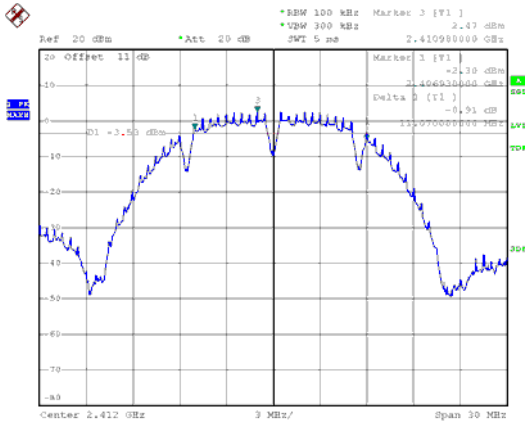
### 9.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT A	ANT B	
11b	1	2412	11.07	11.07	0.5
	6	2437	10.11	10.11	0.5
	11	2462	10.14	10.14	0.5
11g	1	2412	12.54	15.00	0.5
	6	2437	16.32	16.32	0.5
	11	2462	16.32	16.32	0.5
VHT20	1	2412	17.52	17.52	0.5
	6	2437	17.19	17.52	0.5
	11	2462	17.28	17.55	0.5
VHT40	3	2422	33.84	33.78	0.5
	6	2437	36.36	36.36	0.5
	9	2452	36.36	36.36	0.5
11ax HE20	1	2412	15.06	13.53	0.5
	6	2437	18.60	18.81	0.5
	11	2462	18.81	18.72	0.5
11ax HE40	3	2422	33.78	34.98	0.5
	6	2437	37.98	38.04	0.5
	9	2452	37.98	37.98	0.5



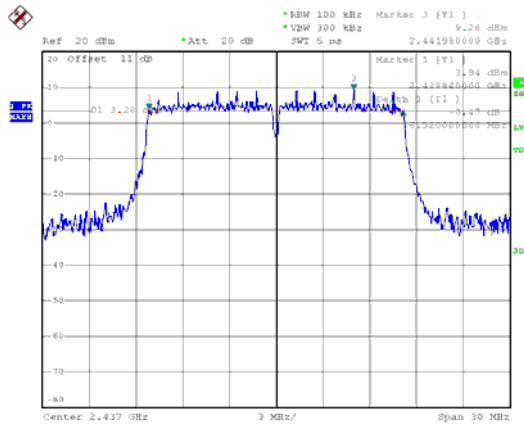
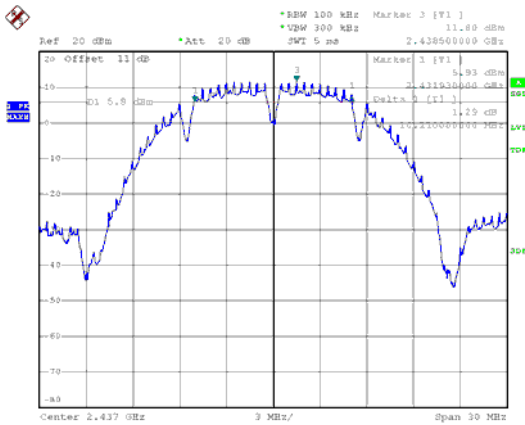
ANT A  
6dB Bandwidth  
Modulation Type: 802.11b  
CH01

Modulation Type: 802.11g  
CH01



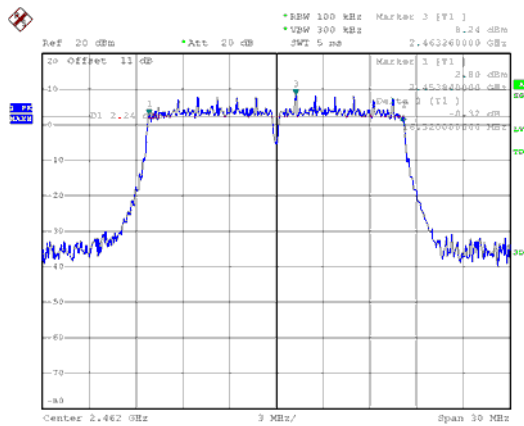
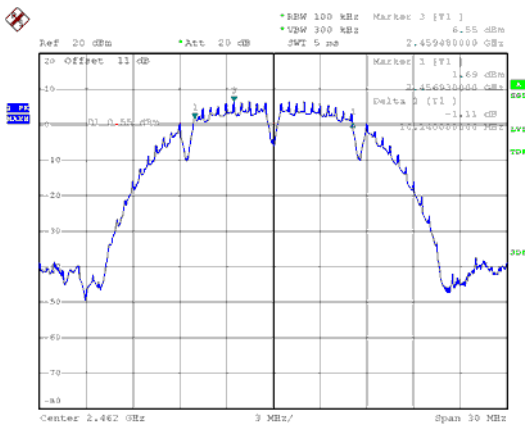
CH06

CH06



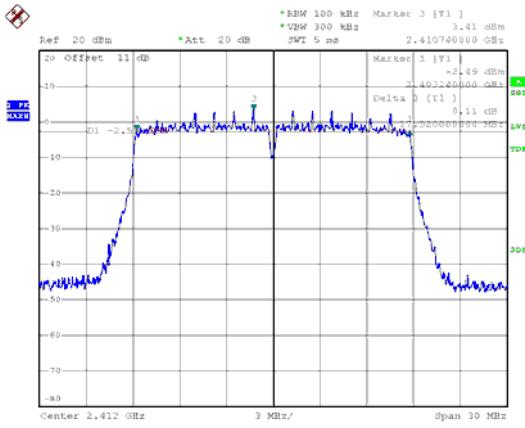
CH11

CH11

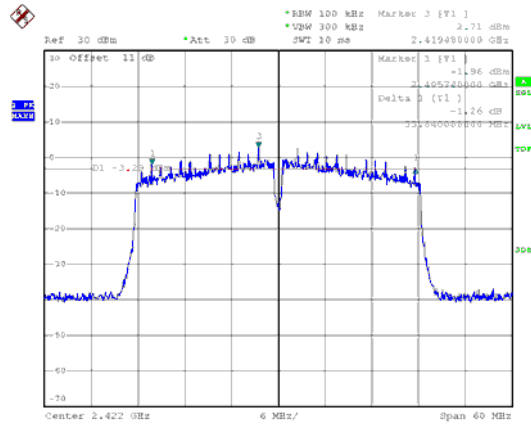




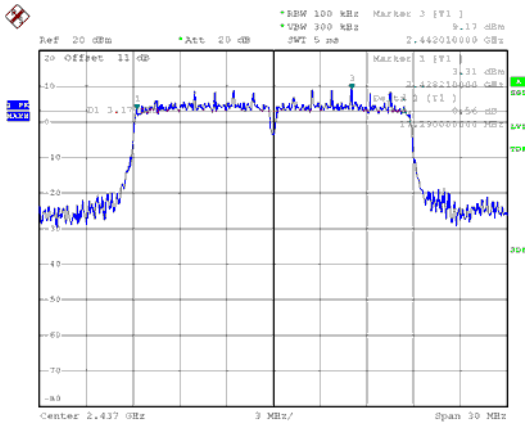
ANT A  
Modulation Type: VHT20  
CH01



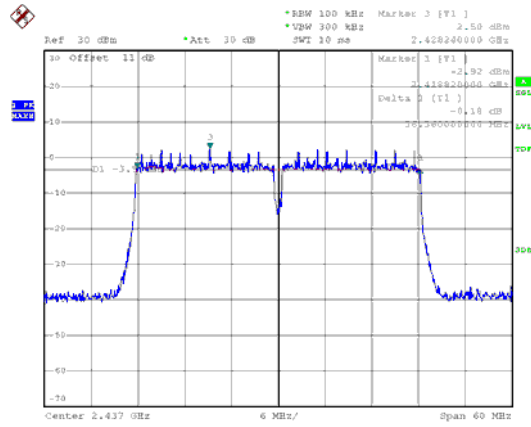
Modulation Type: VHT40  
CH03



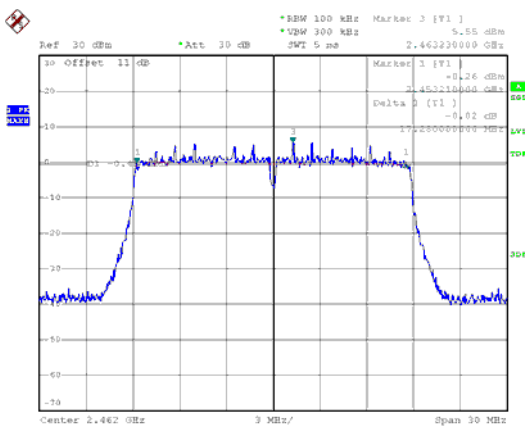
CH06



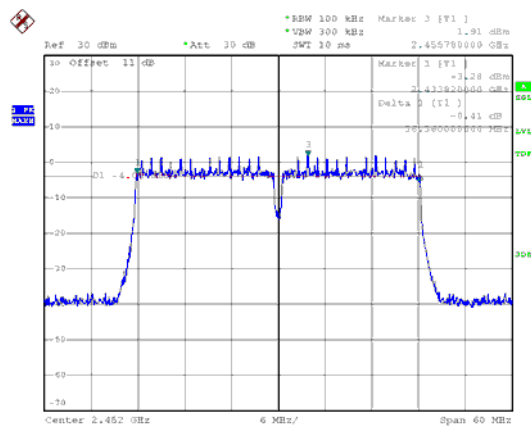
CH06



CH11

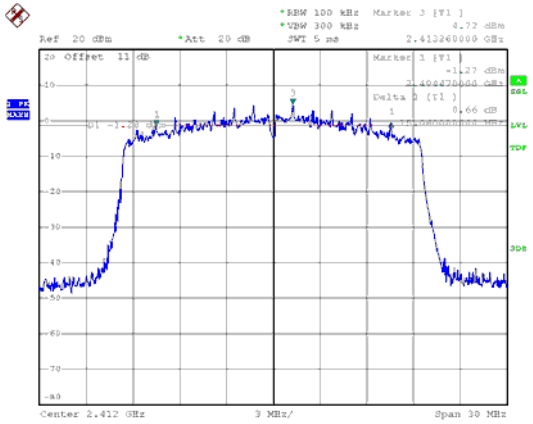


CH09

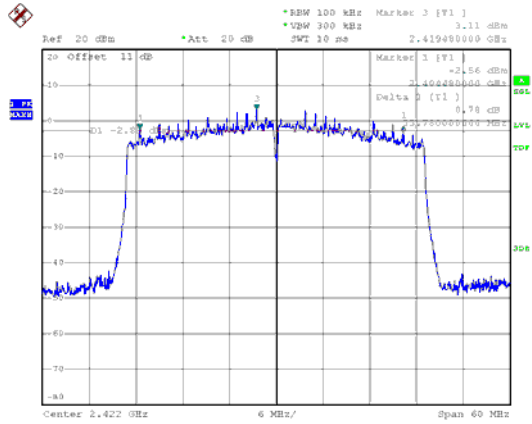




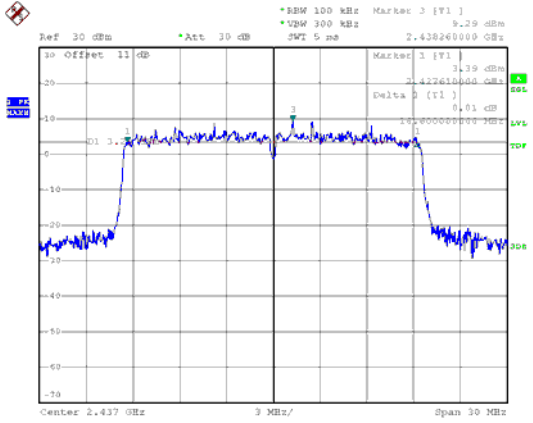
ANT A  
Modulation Type: 802.11ax HE20  
CH01



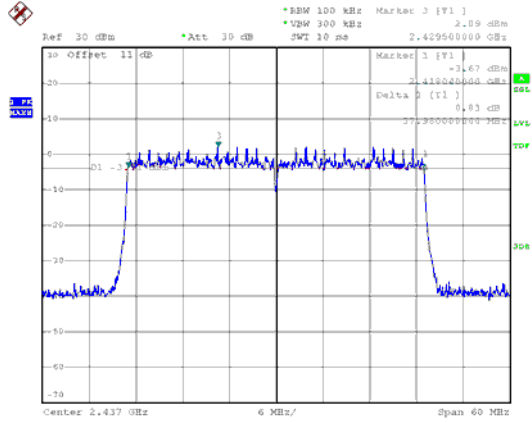
Modulation Type: 802.11ax HE40  
CH03



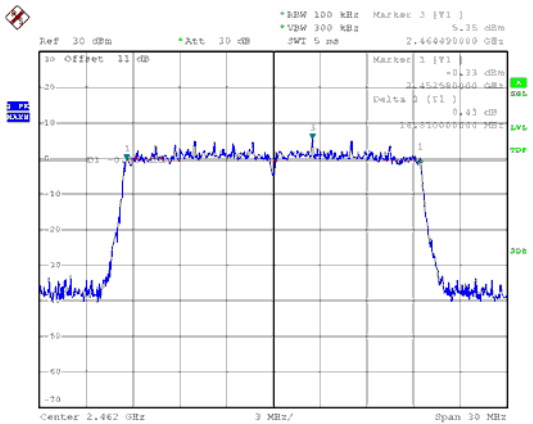
CH06



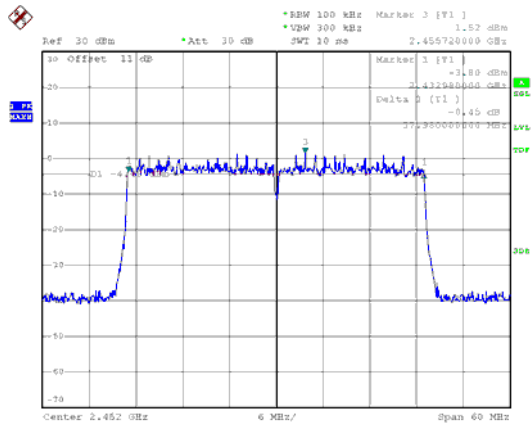
CH06



CH11



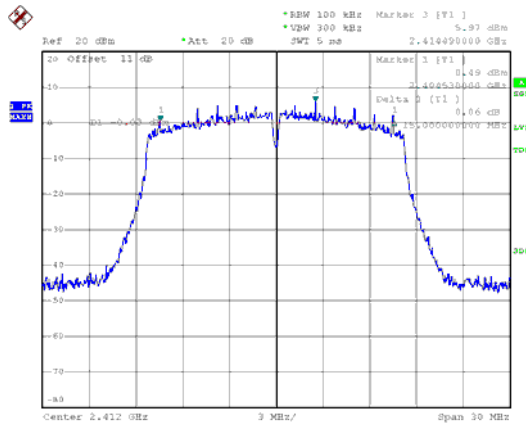
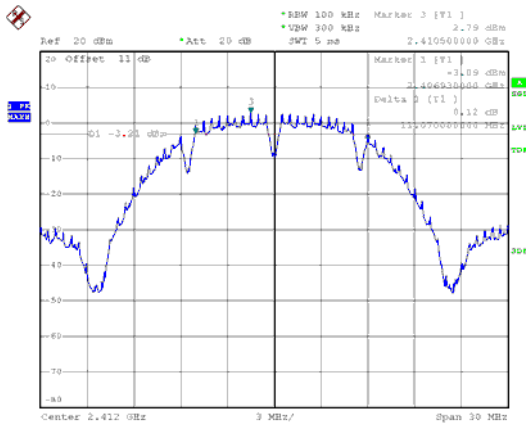
CH09





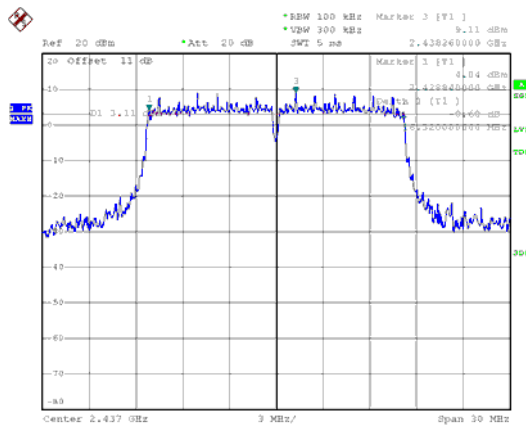
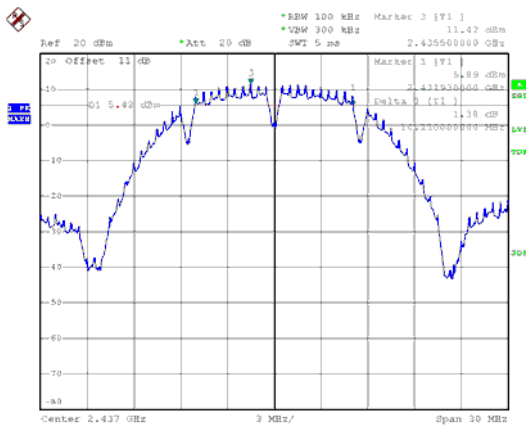
ANT B  
6dB Bandwidth  
Modulation Type: 802.11b  
CH01

Modulation Type: 802.11b  
CH01



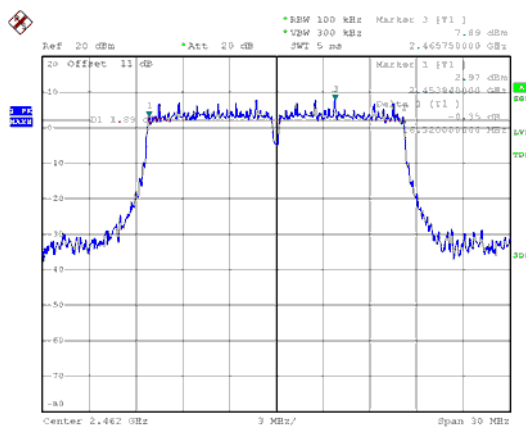
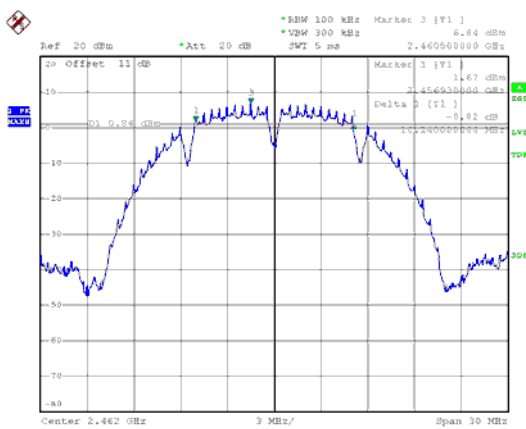
CH06

CH06



CH11

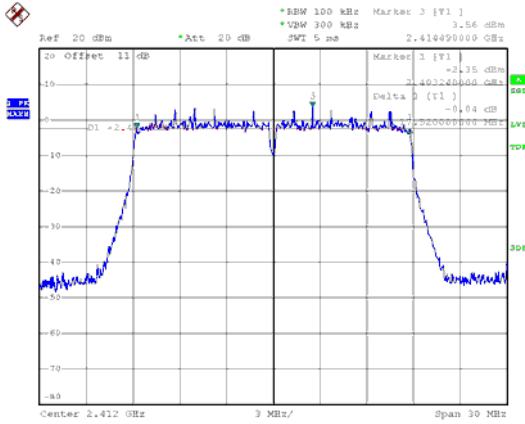
CH11



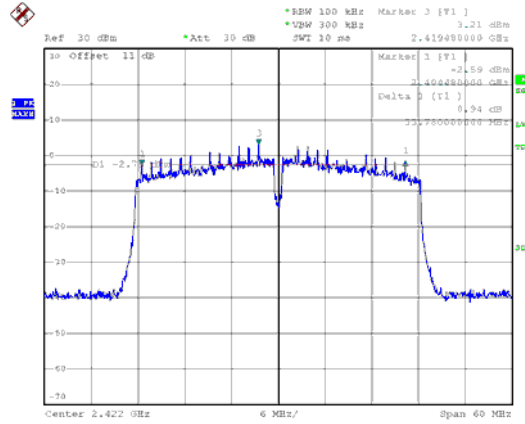




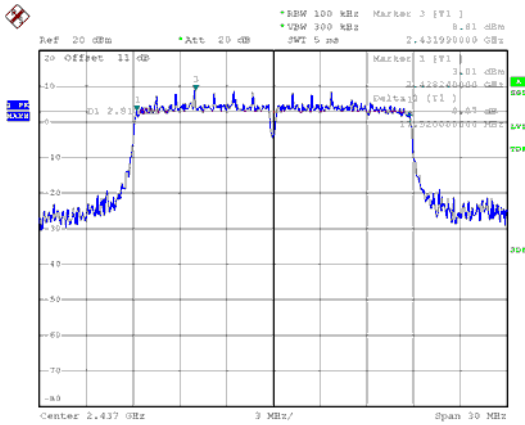
ANT B  
Modulation Type: VHT20  
CH01



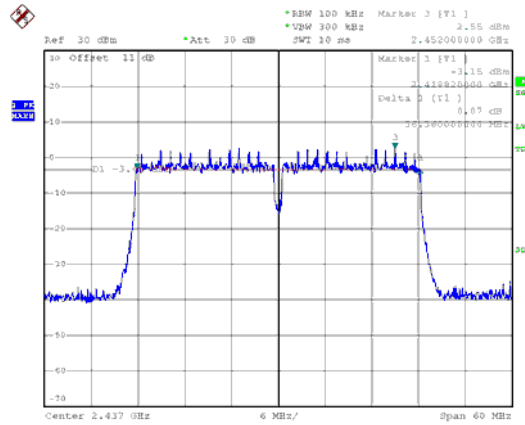
Modulation Type: VHT40  
CH03



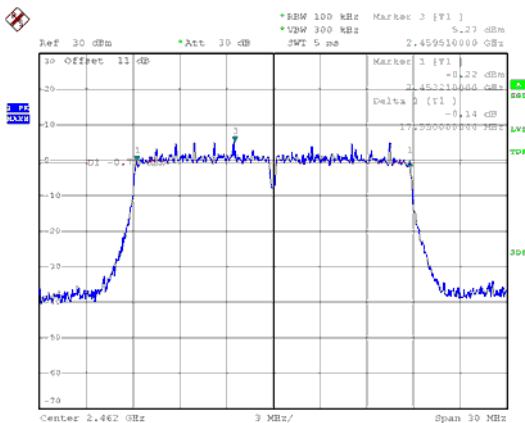
CH06



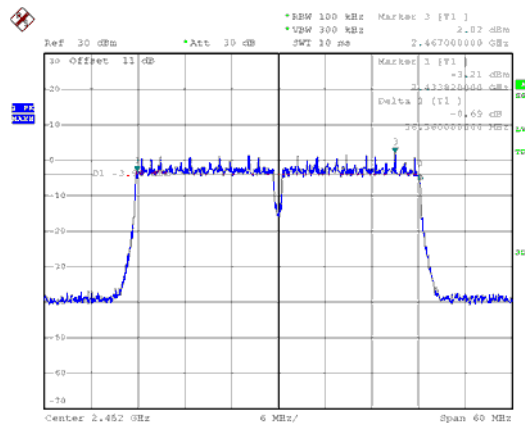
CH06



CH11

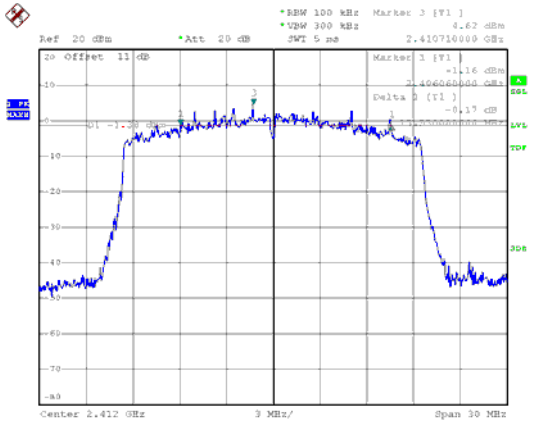


CH09

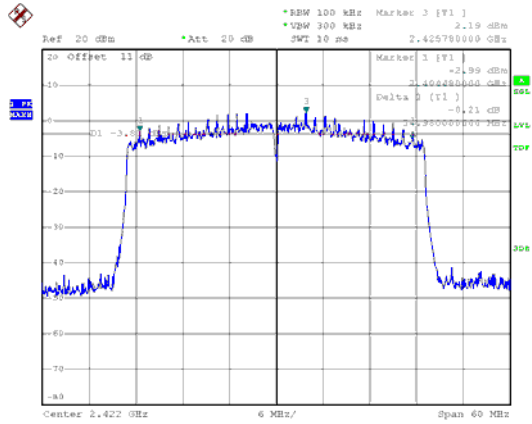




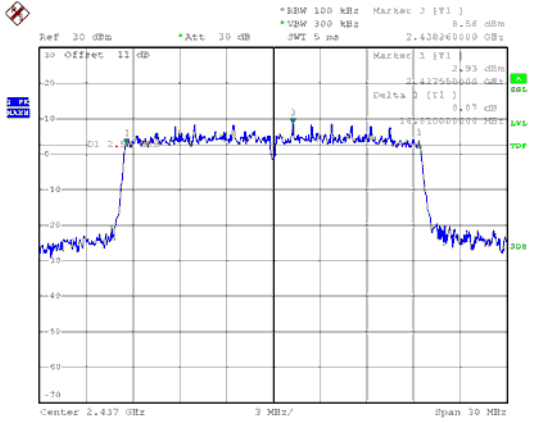
ANT B  
Modulation Type: 802.11ax HE20  
CH01



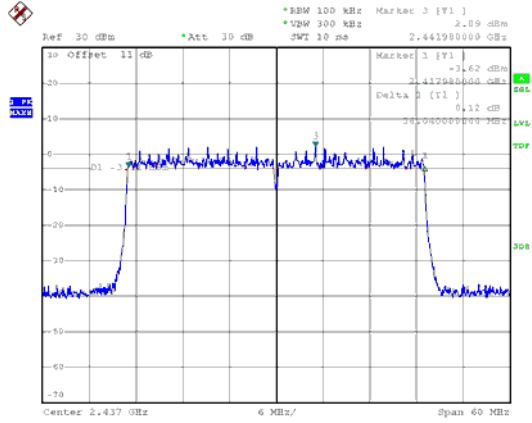
Modulation Type: 802.11ax HE40  
CH03



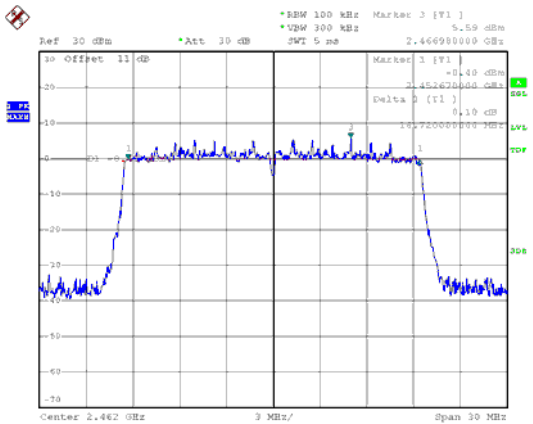
CH06



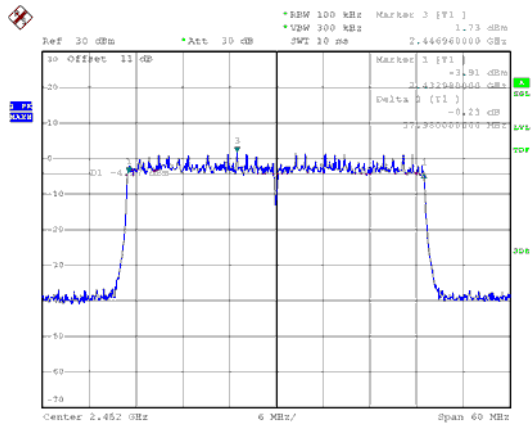
CH06



CH11



CH09





## 10. Maximum Average Output Power

### 10.1 Test Limit

The Maximum Average Output Power Measurement is 30dBm.

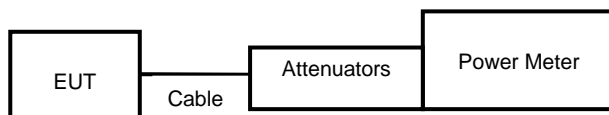
If transmitting antennas of directional gain greater than 6 dBi are used, the average output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

### 10.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.9.2.3.2

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

### 10.3 Test Setup Layout





10.4 Test Result and Data

Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Powe Limit (dBm)
				ANT A	ANT B			
13.25	11b	1	2412	13.49	13.47	16.49	44.569	30.00
12.75		6	2437	13.29	13.26	16.29	42.514	30.00
12.75		11	2462	13.19	13.35	16.28	42.472	30.00
13	11g	1	2412	13.47	13.30	16.40	43.613	30.00
12.75		6	2437	13.48	13.38	16.44	44.061	30.00
12.75		11	2462	13.34	13.46	16.41	43.759	30.00
13	11n HT20	1	2412	13.31	13.21	16.27	42.370	30.00
12.75		6	2437	13.35	13.40	16.39	43.505	30.00
12.75		11	2462	13.37	13.36	16.38	43.404	30.00
12.75	11n HT40	3	2422	12.90	13.24	16.08	40.585	30.00
12.5		6	2437	13.01	13.06	16.05	40.229	30.00
12.5		9	2452	12.91	13.17	16.05	40.293	30.00
13	VHT20	1	2412	13.34	13.26	16.31	42.761	30.00
12.75		6	2437	13.38	13.43	16.42	43.806	30.00
12.75		11	2462	13.41	13.38	16.41	43.705	30.00
12.75	VHT40	3	2422	12.93	13.27	16.11	40.866	30.00
12.5		6	2437	13.04	13.11	16.09	40.602	30.00
12.5		9	2452	12.95	13.21	16.09	40.665	30.00
13	11ax HE20	1	2412	13.35	13.28	16.33	42.909	30.00
12.75		6	2437	13.42	13.44	16.44	44.059	30.00
12.75		11	2462	13.44	13.46	16.46	44.262	30.00
12.75	11ax HE40	3	2422	13.07	13.43	16.26	42.306	30.00
12.5		6	2437	13.14	13.26	16.21	41.790	30.00
12.5		9	2452	13.08	13.36	16.23	42.001	30.00



## 11. Power Spectral Density

### 11.1 Test Limit

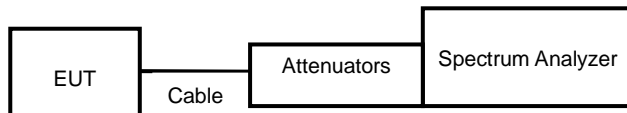
The Maximum of Power Spectral Density Measurement is 8dBm.

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

### 11.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.10

### 11.3 Test Setup Layout

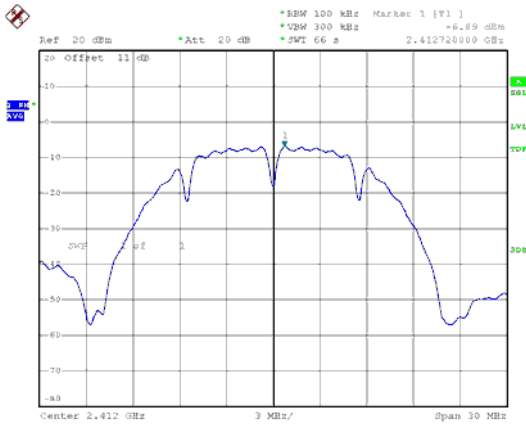


### 11.4 Test Result and Data

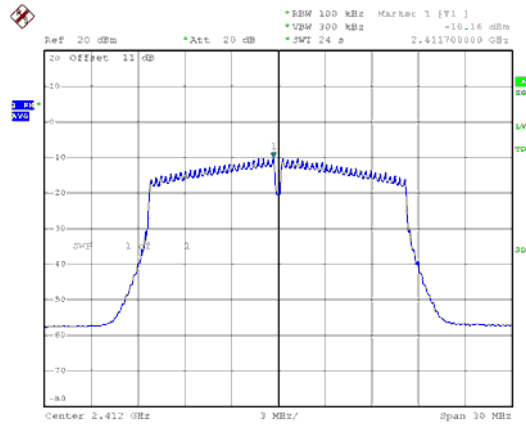
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 100KHz Bandwidth(dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
11b	1	2412	-6.89	-6.99	-3.93	1.16	-2.77	7.07
	6	2437	-6.89	-6.84	-3.85	1.16	-2.69	7.07
	11	2462	-7.09	-6.94	-4.00	1.16	-2.84	7.07
11g	1	2412	-10.16	-10.07	-7.10	4.54	-2.56	7.07
	6	2437	-11.43	-11.59	-8.50	4.54	-3.96	7.07
	11	2462	-11.87	-11.62	-8.73	4.54	-4.19	7.07
VHT20	1	2412	-12.38	-12.19	-9.27	4.72	-4.55	7.07
	6	2437	-12.27	-12.12	-9.18	4.72	-4.46	7.07
	11	2462	-12.26	-12.1	-9.17	4.72	-4.45	7.07
VHT40	3	2422	-16.1	-15.81	-12.94	6.99	-5.95	7.07
	6	2437	-17.62	-17.15	-14.37	6.99	-7.38	7.07
	9	2452	-17.7	-17.11	-14.38	6.99	-7.39	7.07
11ax HE20	1	2412	-11.96	-11.95	-8.94	4.98	-3.96	7.07
	6	2437	-13.53	-13.42	-10.46	4.98	-5.48	7.07
	11	2462	-13.51	-13.45	-10.47	4.98	-5.49	7.07
11ax HE40	3	2422	-17.31	-16.58	-13.92	7.01	-6.91	7.07
	6	2437	-18.54	-18.24	-15.38	7.01	-8.37	7.07
	9	2452	-18.83	-18.33	-15.56	7.01	-8.55	7.07



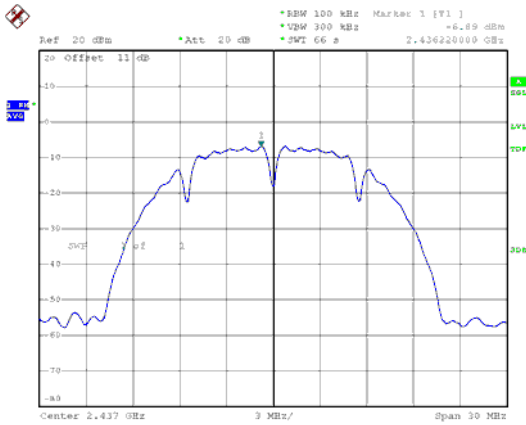
ANT A  
Modulation Type: 802.11b  
CH01



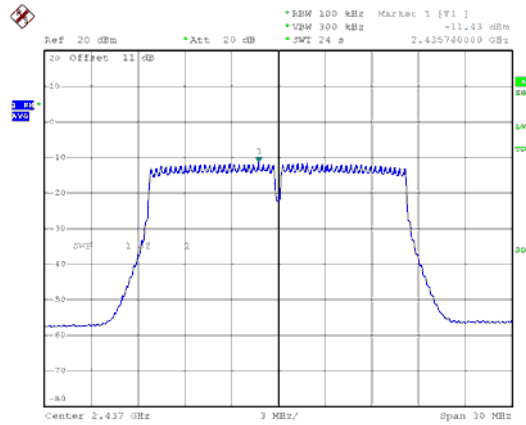
Modulation Type: 802.11g  
CH01



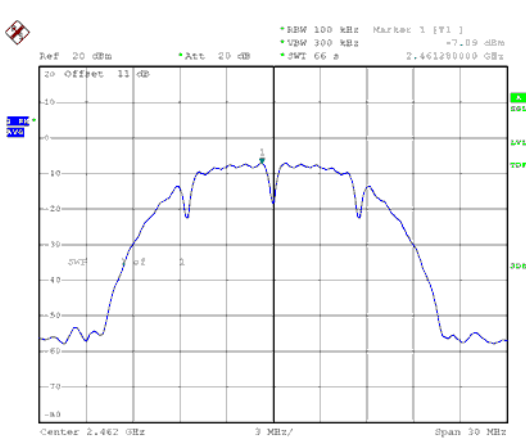
CH06



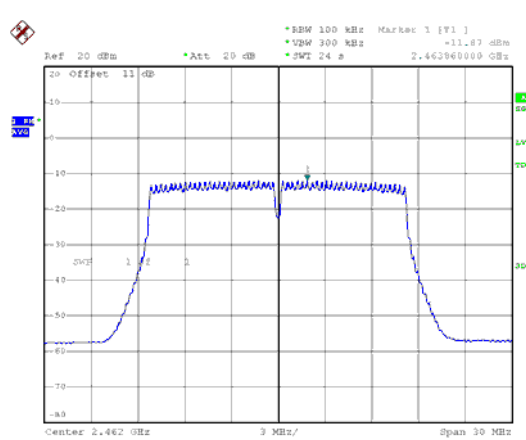
CH06



CH11

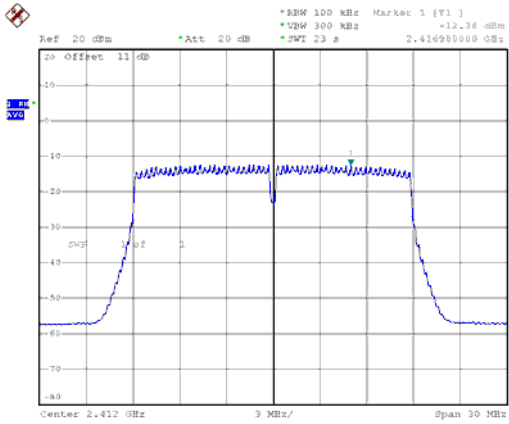


CH11

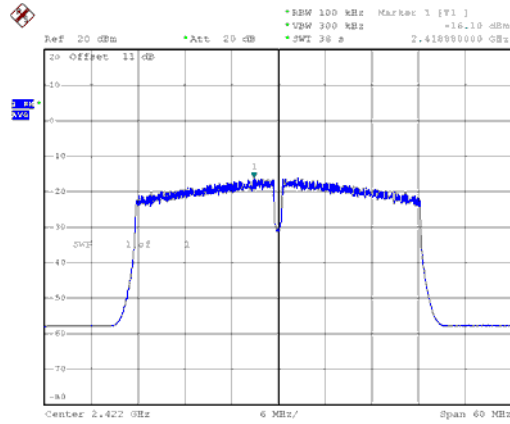




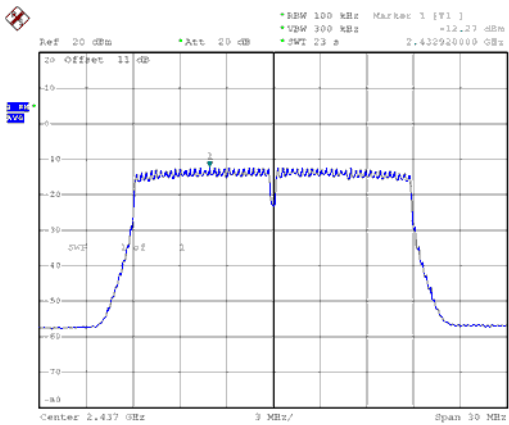
ANT A  
Modulation Type: VHT20  
CH01



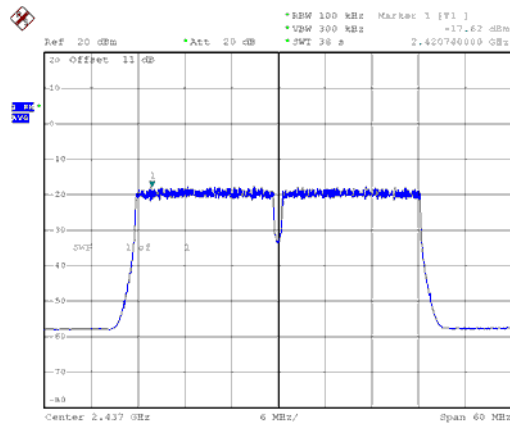
Modulation Type: VHT40  
CH03



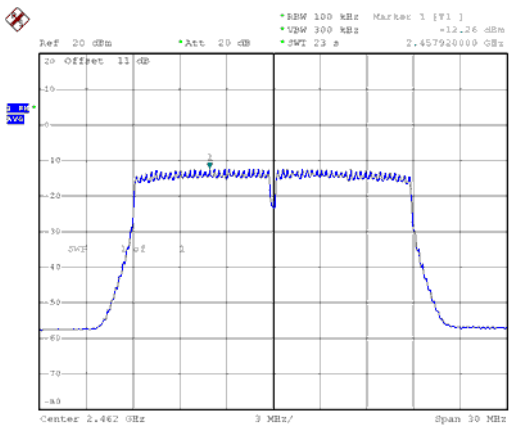
CH06



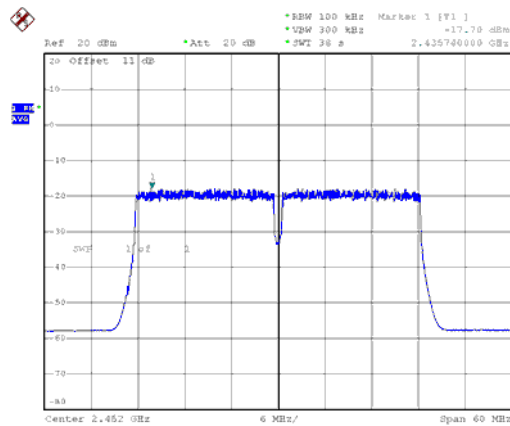
CH06



CH11

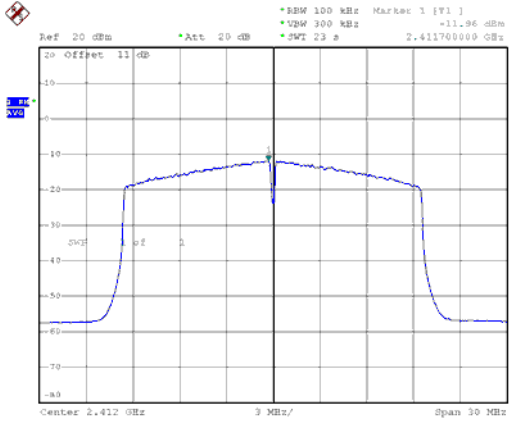


CH09

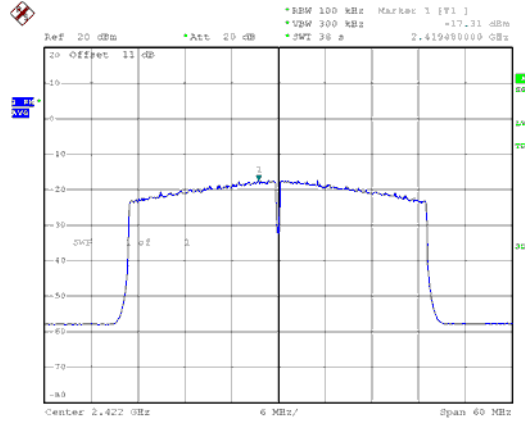




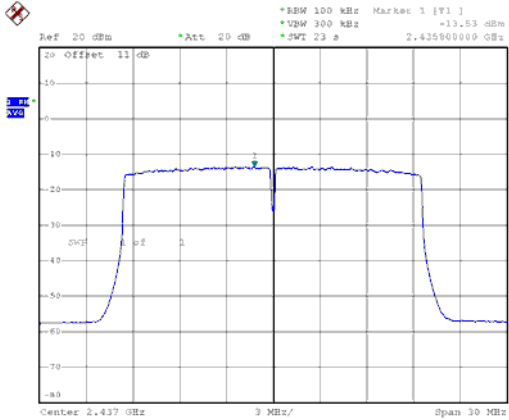
ANT A  
Modulation Type: 802.11ax HE20  
CH01



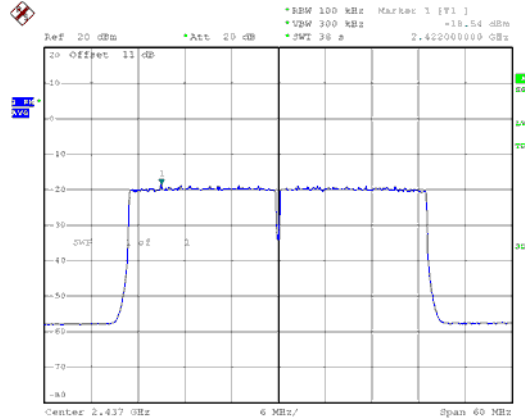
Modulation Type: 802.11ax HE40  
CH03



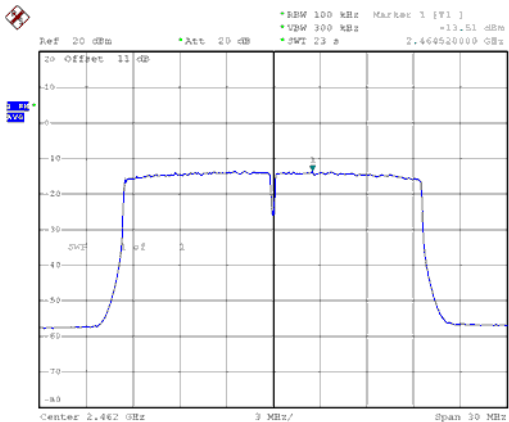
CH06



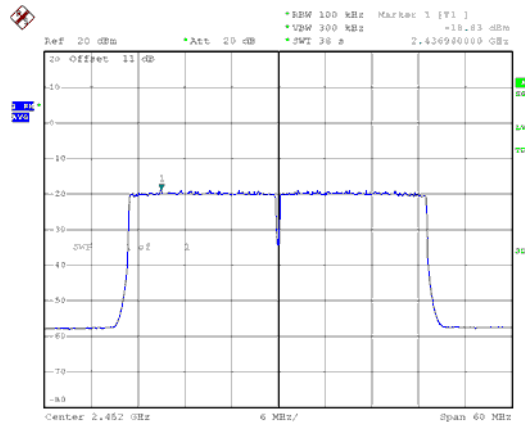
CH06



CH11



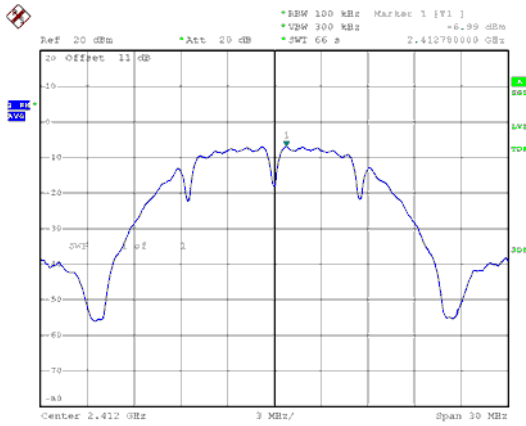
CH09



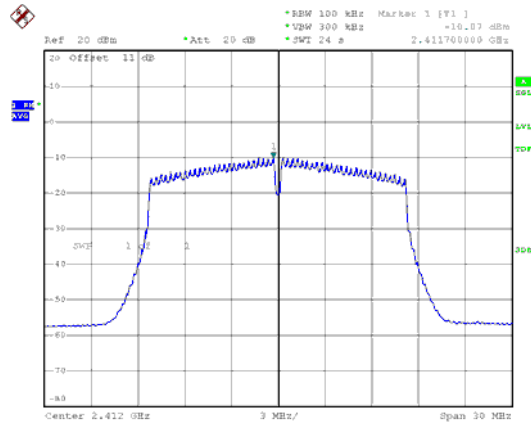




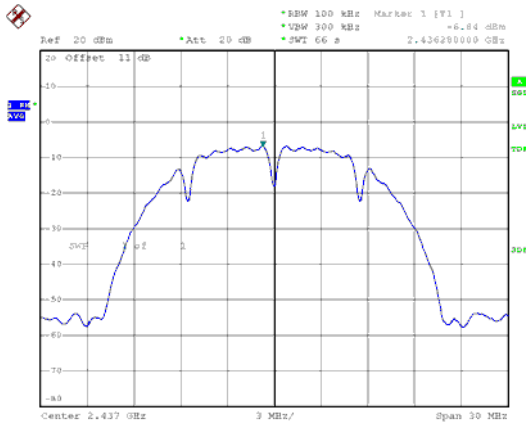
ANT B  
Modulation Type: 802.11b  
CH01



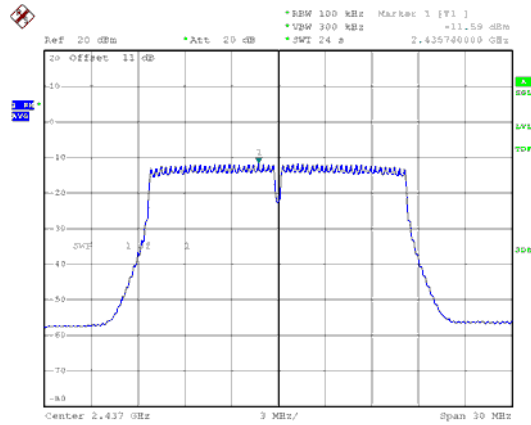
Modulation Type: 802.11g  
CH01



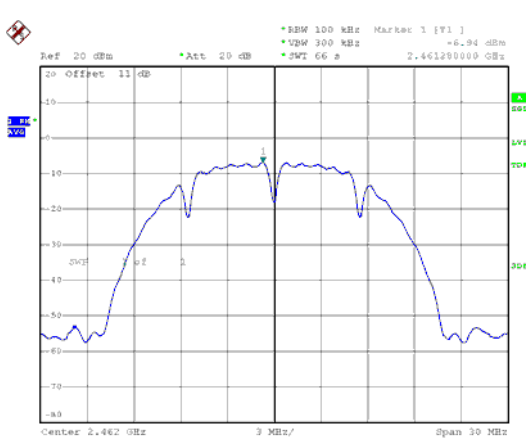
CH06



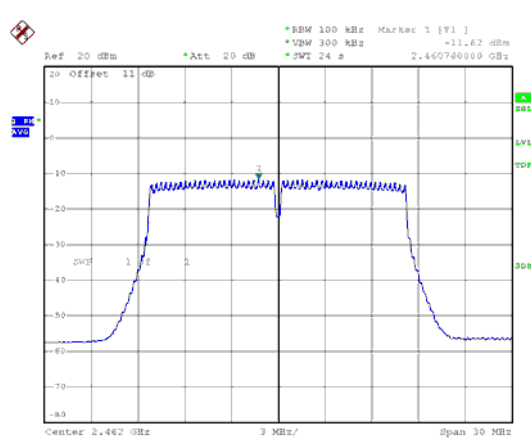
CH06



CH11

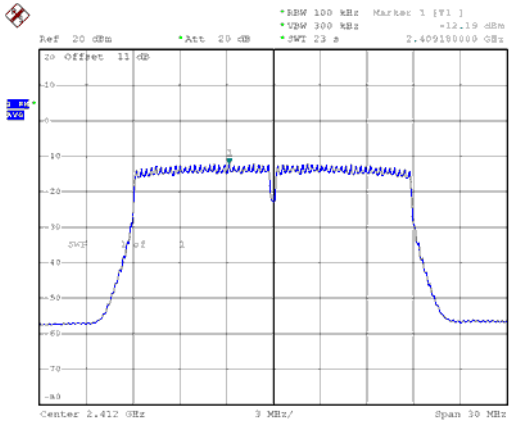


CH11

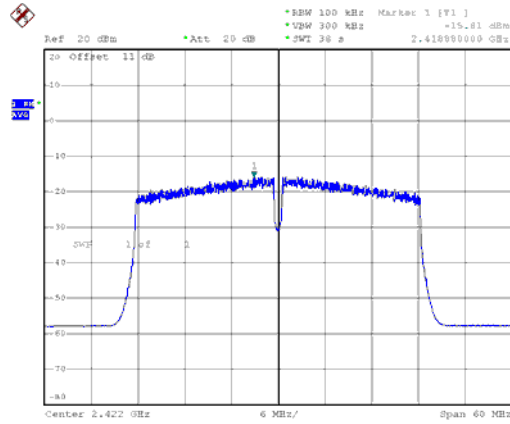




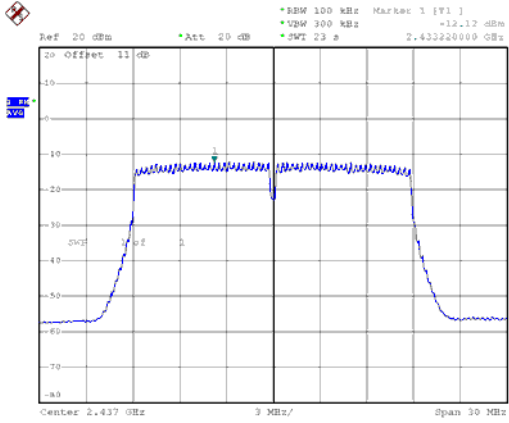
ANT B  
Modulation Type: VHT20  
CH01



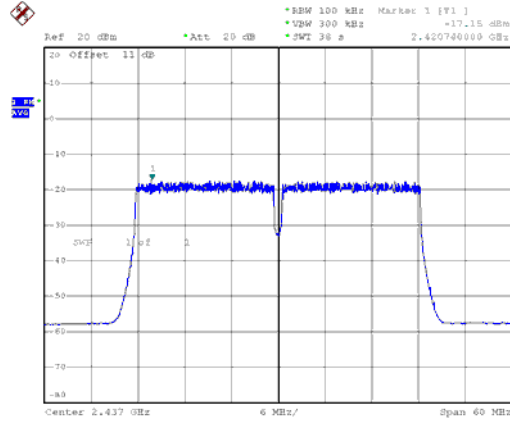
Modulation Type: VHT40  
CH03



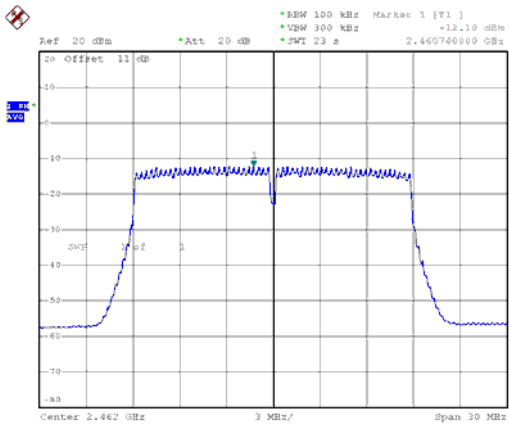
CH06



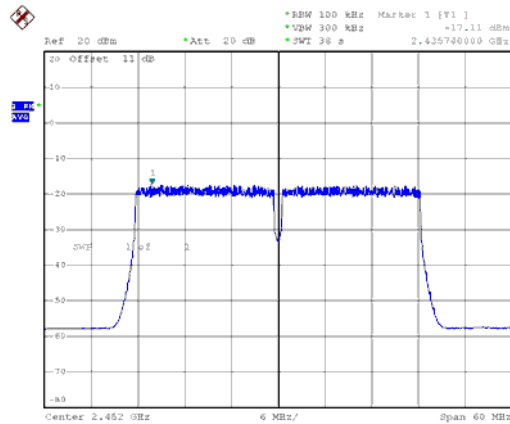
CH06



CH11

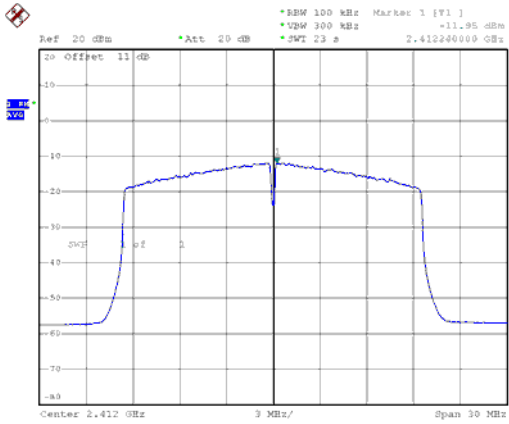


CH09

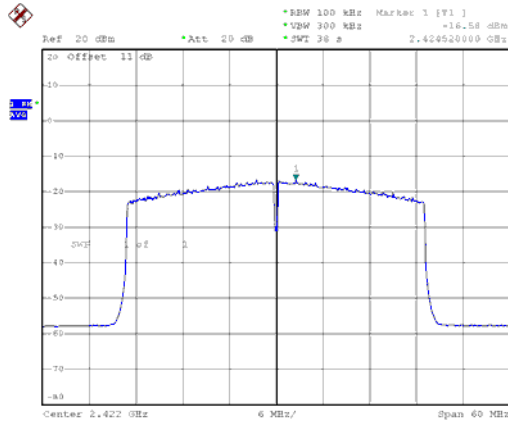




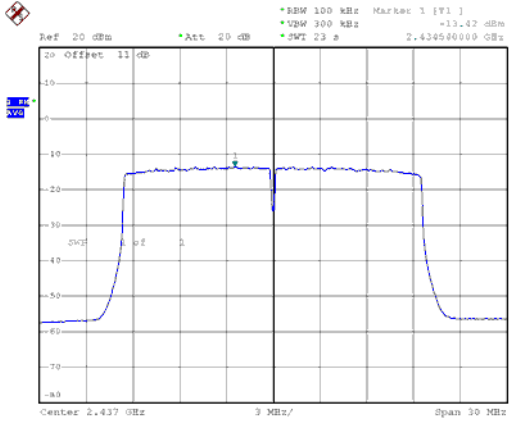
ANT B  
Modulation Type: 802.11ax HE20  
CH01



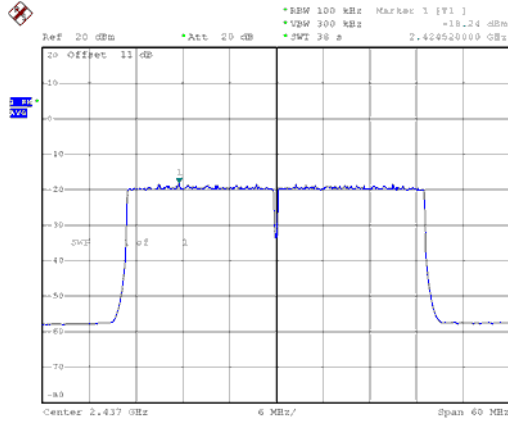
Modulation Type: 802.11ax HE40  
CH03



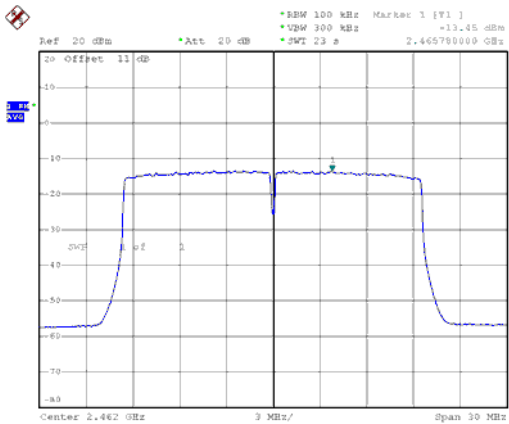
CH06



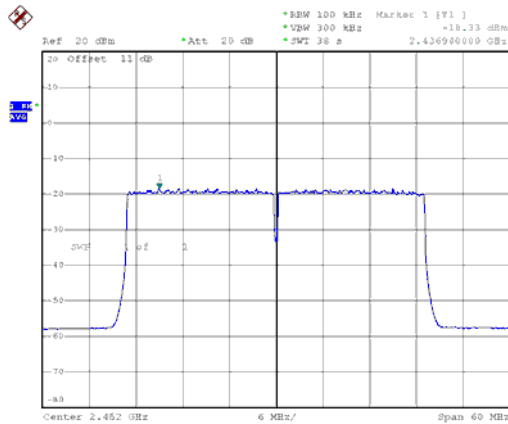
CH06



CH11



CH09



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