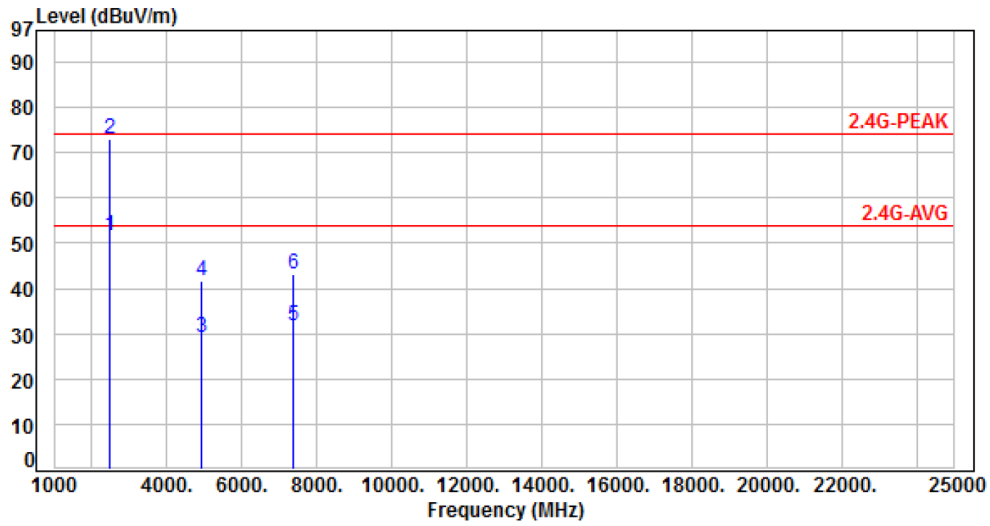




Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH11	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

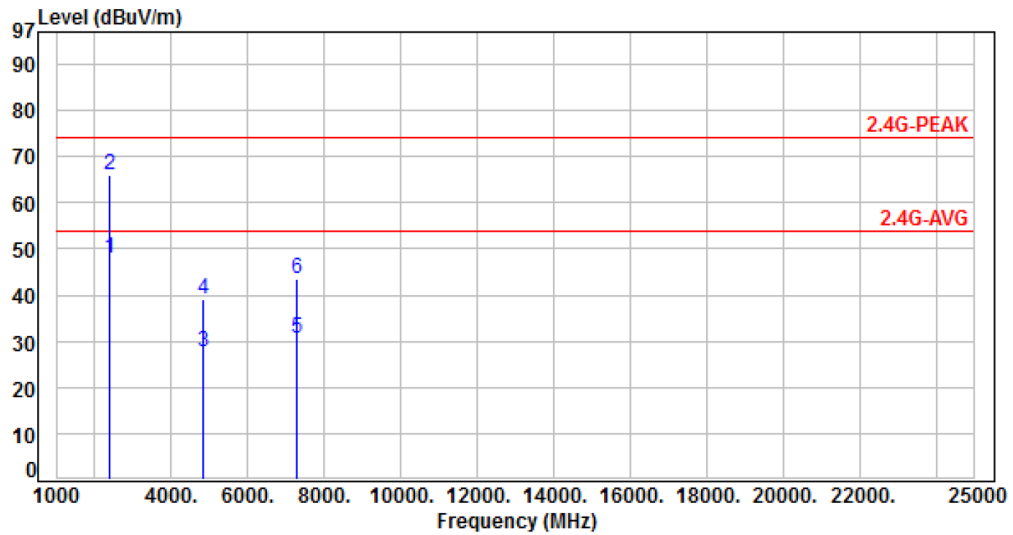


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.65	67.20	51.55	54.00	-2.45	Average	100	275	P
2	2483.50	-15.65	88.60	72.95	74.00	-1.05	Peak	100	275	P
3	4924.00	-8.49	37.54	29.05	54.00	-24.95	Average	177	82	P
4	4924.00	-8.49	50.19	41.70	74.00	-32.30	Peak	177	82	P
5	7386.00	-4.48	36.22	31.74	54.00	-22.26	Average	104	188	P
6	7386.00	-4.48	47.50	43.02	74.00	-30.98	Peak	104	188	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH03	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

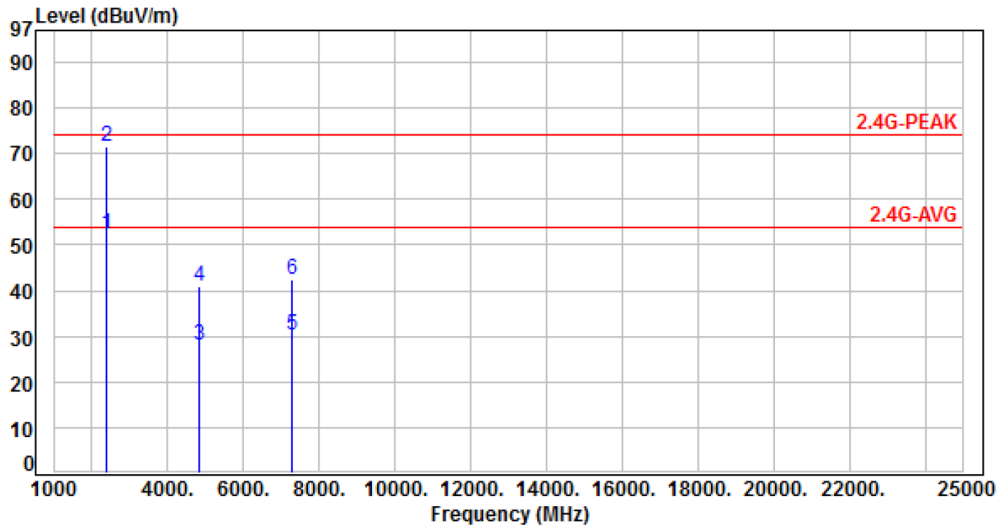


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2385.60	-15.97	63.90	47.93	54.00	-6.07	Average	356	111	P
2	2385.60	-15.97	82.10	66.13	74.00	-7.87	Peak	356	111	P
3	4844.00	-8.74	36.50	27.76	54.00	-26.24	Average	107	133	P
4	4844.00	-8.74	47.92	39.18	74.00	-34.82	Peak	107	133	P
5	7266.00	-4.83	35.31	30.48	54.00	-23.52	Average	100	251	P
6	7266.00	-4.83	48.34	43.51	74.00	-30.49	Peak	100	251	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH03	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

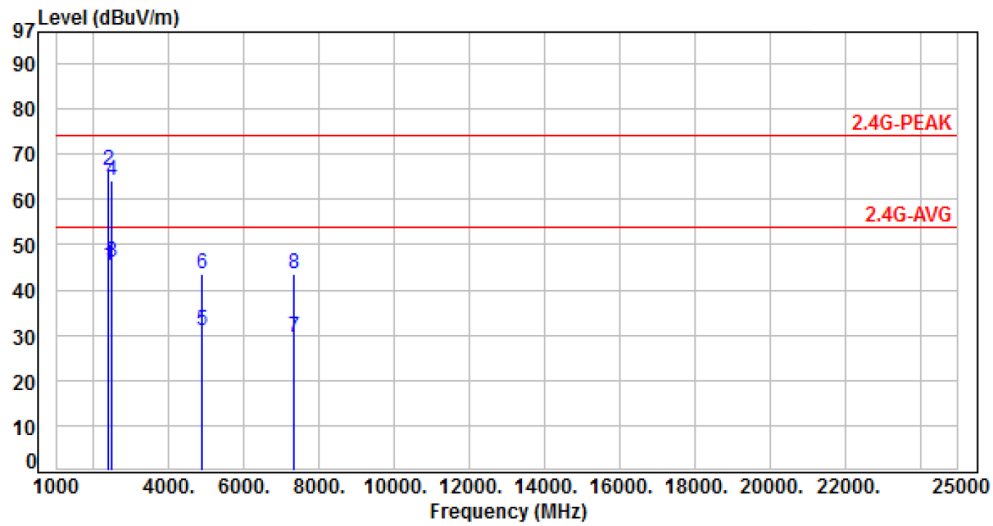


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2385.60	-15.97	68.50	52.53	54.00	-1.47	Average	100	278	P
2	2385.60	-15.97	87.70	71.73	74.00	-2.27	Peak	100	278	P
3	4844.00	-8.74	36.88	28.14	54.00	-25.86	Average	100	299	P
4	4844.00	-8.74	49.50	40.76	74.00	-33.24	Peak	100	299	P
5	7266.00	-4.83	35.21	30.38	54.00	-23.62	Average	104	211	P
6	7266.00	-4.83	47.31	42.48	74.00	-31.52	Peak	104	211	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH06	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

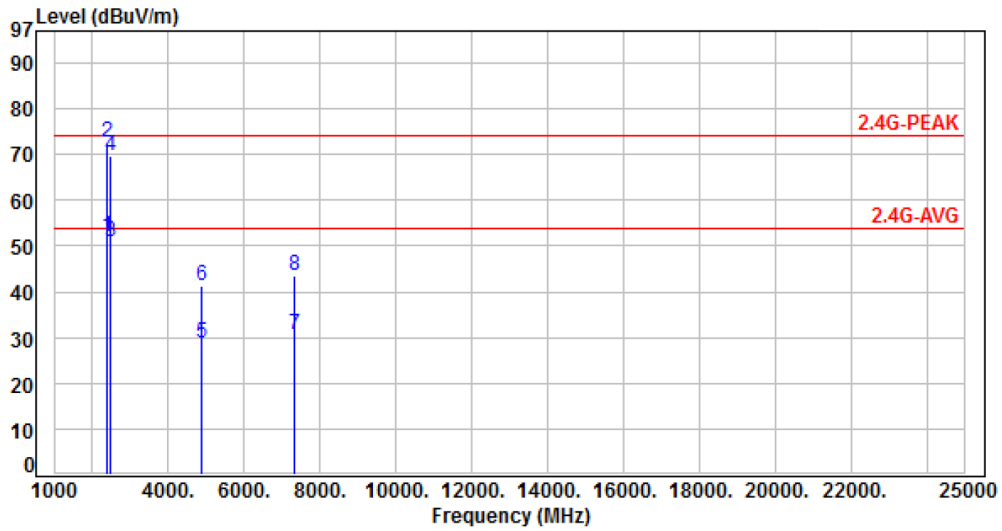


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.96	61.51	45.55	54.00	-8.45	Average	375	150	P
2	2390.00	-15.96	82.41	66.45	74.00	-7.55	Peak	375	150	P
3	2483.50	-15.65	61.80	46.15	54.00	-7.85	Average	375	150	P
4	2483.50	-15.65	79.90	64.25	74.00	-9.75	Peak	375	150	P
5	4874.00	-8.65	39.60	30.95	54.00	-23.05	Average	100	260	P
6	4874.00	-8.65	52.20	43.55	74.00	-30.45	Peak	100	260	P
7	7311.00	-4.69	34.14	29.45	54.00	-24.55	Average	110	158	P
8	7311.00	-4.69	48.29	43.60	74.00	-30.40	Peak	110	158	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH06	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

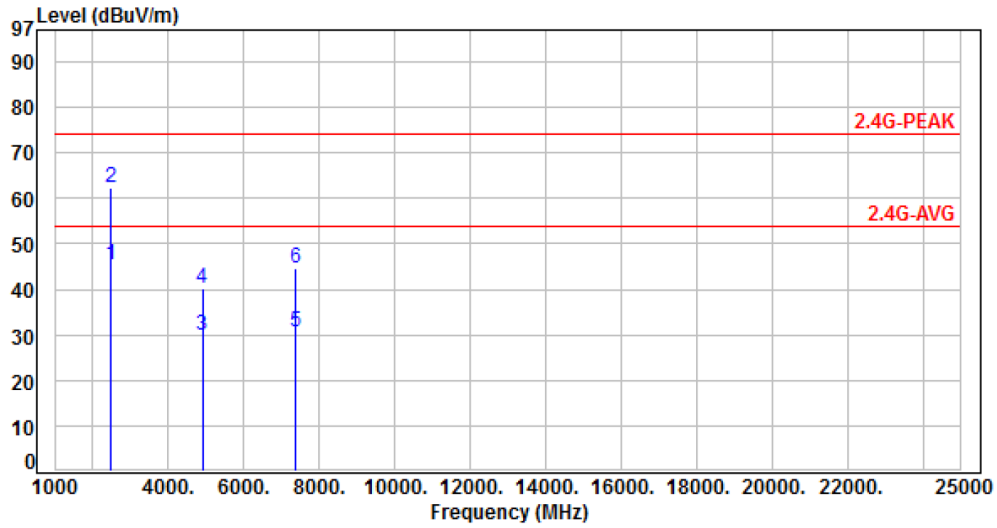


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.96	67.81	51.85	54.00	-2.15	Average	100	267	P
2	2390.00	-15.96	88.61	72.65	74.00	-1.35	Peak	100	267	P
3	2483.50	-15.65	66.70	51.05	54.00	-2.95	Average	100	267	P
4	2483.50	-15.65	85.20	69.55	74.00	-4.45	Peak	100	267	P
5	4874.00	-8.65	37.56	28.91	54.00	-25.09	Average	105	88	P
6	4874.00	-8.65	50.10	41.45	74.00	-32.55	Peak	105	88	P
7	7311.00	-4.69	35.21	30.52	54.00	-23.48	Average	100	274	P
8	7311.00	-4.69	48.19	43.50	74.00	-30.50	Peak	100	274	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH09	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %

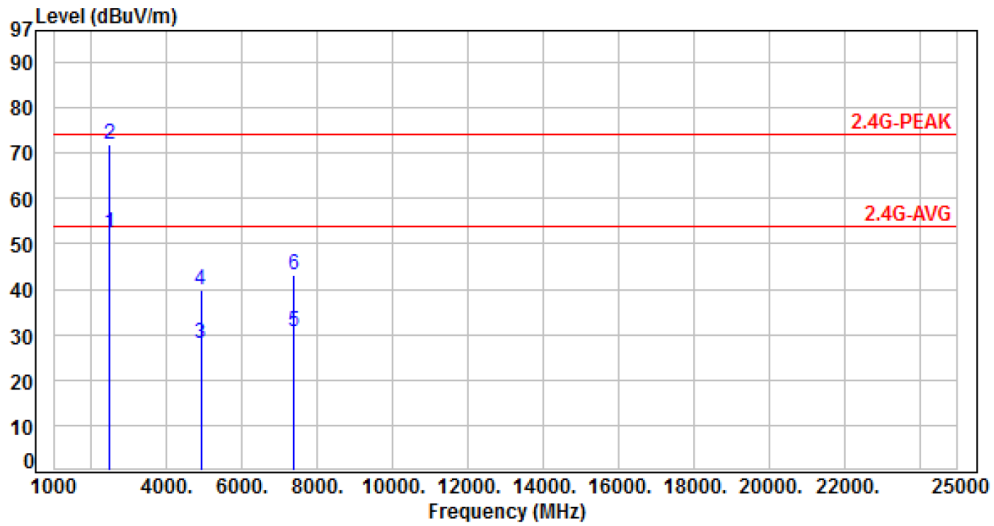


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.65	61.20	45.55	54.00	-8.45	Average	400	300	P
2	2483.50	-15.65	78.10	62.45	74.00	-11.55	Peak	400	300	P
3	4904.00	-8.56	38.53	29.97	54.00	-24.03	Average	133	125	P
4	4904.00	-8.56	48.61	40.05	74.00	-33.95	Peak	133	125	P
5	7356.00	-4.57	35.02	30.45	54.00	-23.55	Average	106	311	P
6	7356.00	-4.57	49.22	44.65	74.00	-29.35	Peak	106	311	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH09	Temperature	: 21 °C
Test Date	: Apr. 30, 2018	Humidity	: 62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.65	68.00	52.35	54.00	-1.65	Average	100	267	P
2	2483.50	-15.65	87.50	71.85	74.00	-2.15	Peak	100	267	P
3	4904.00	-8.56	36.50	27.94	54.00	-26.06	Average	122	67	P
4	4904.00	-8.56	48.22	39.66	74.00	-34.34	Peak	122	67	P
5	7356.00	-4.57	35.33	30.76	54.00	-23.24	Average	100	153	P
6	7356.00	-4.57	47.63	43.06	74.00	-30.94	Peak	100	153	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



6.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



7. Test of Conducted Spurious Emission

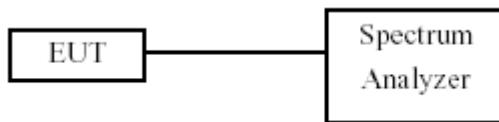
7.1 Test Limit

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

7.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer via a low lose 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

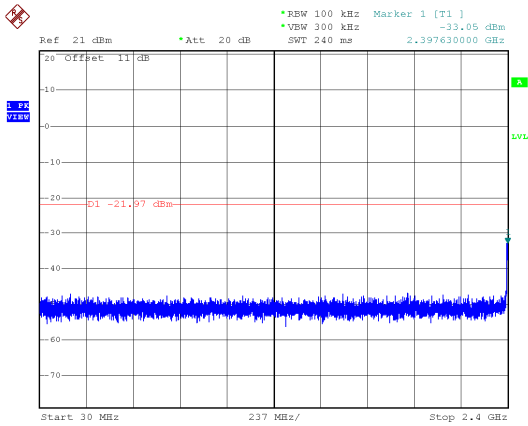
Test Result	: PASS	Temperature	: 21°C
Test Date	: May 03, 2018	Humidity	: 62%

Note: Test plots refers to the following pages.

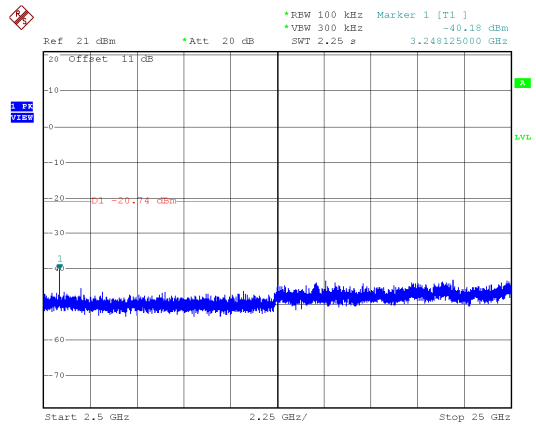
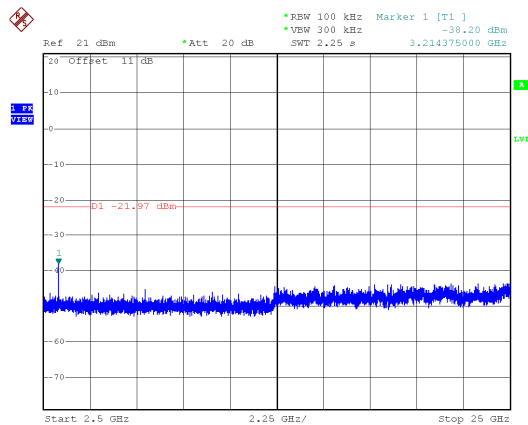
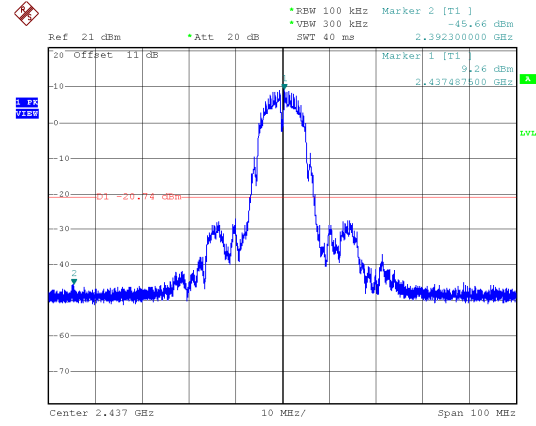
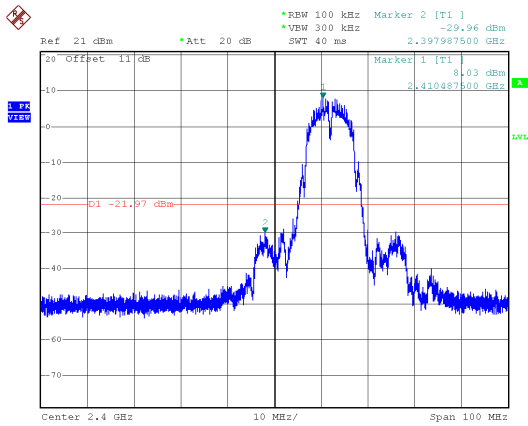
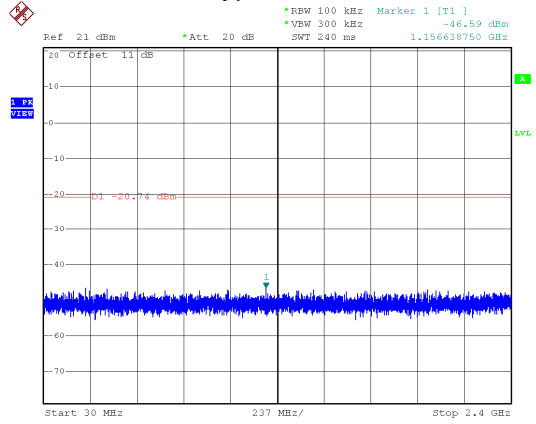


ANT A

Modulation Type: 802.11b, CH 01



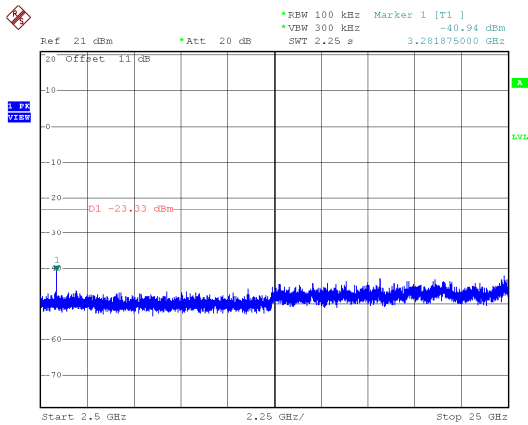
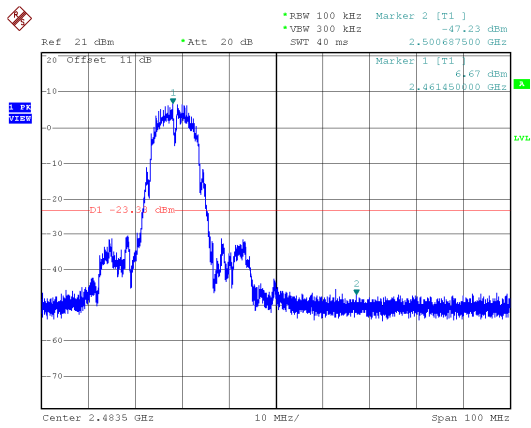
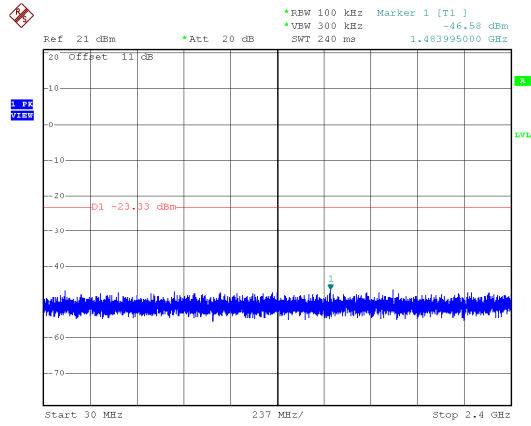
Modulation Type: 802.11b, CH 06





ANT A

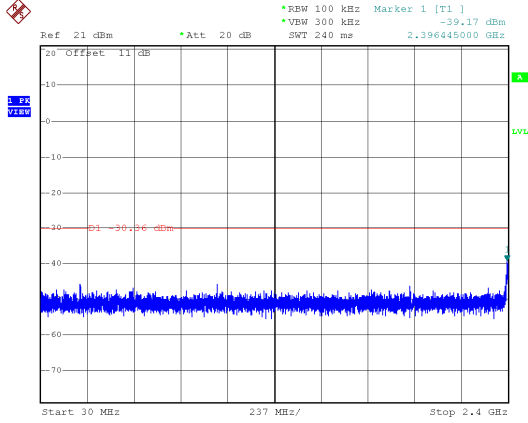
Modulation Type: 802.11b, CH 11



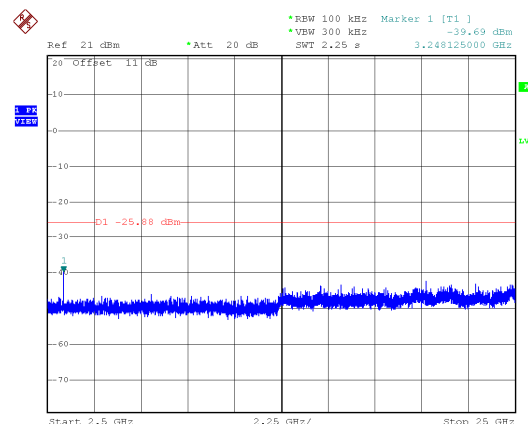
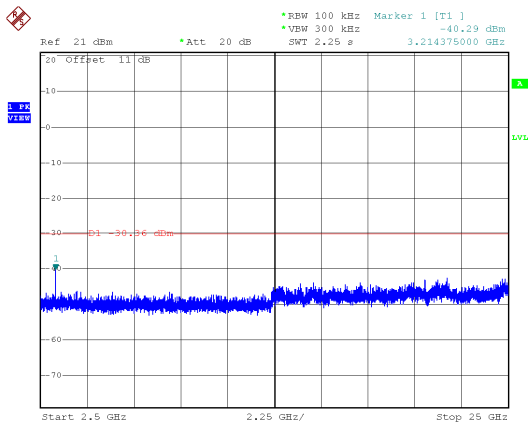
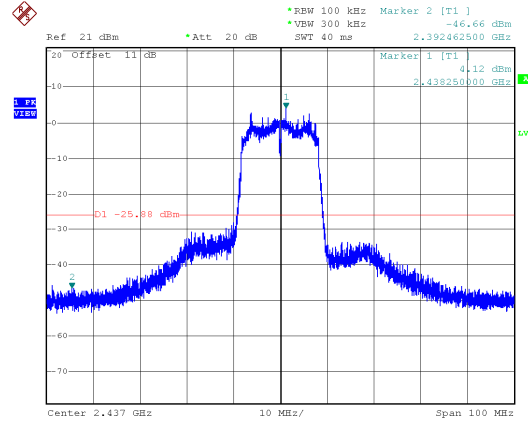
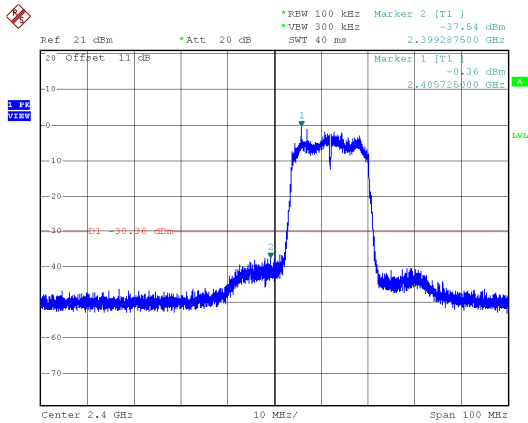
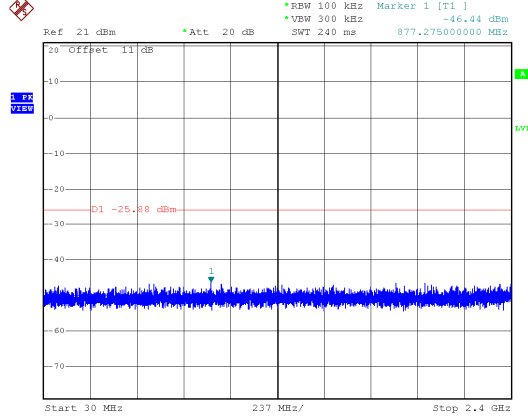


ANT A

Modulation Type: 802.11g, CH 01



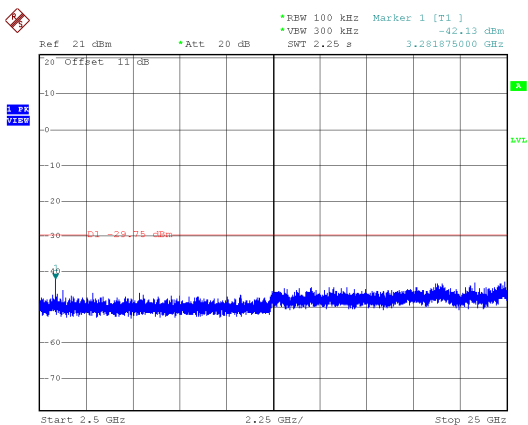
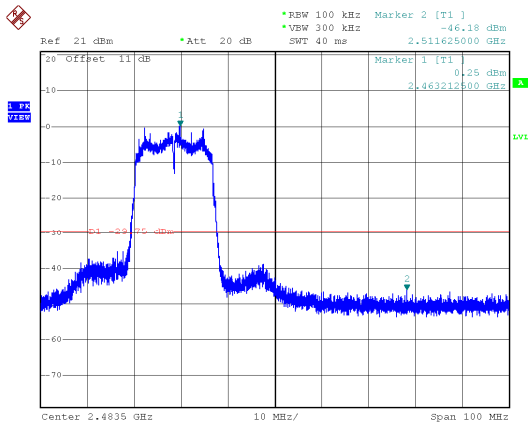
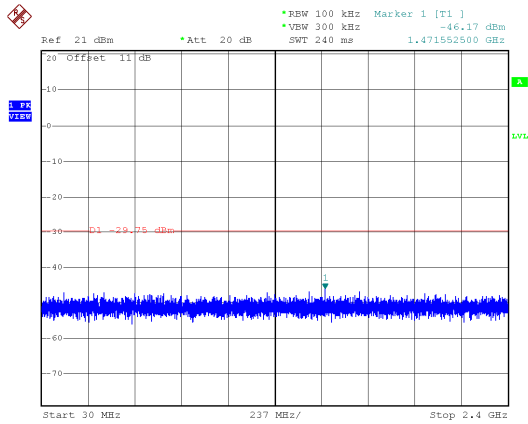
Modulation Type: 802.11g, CH 06





ANT A

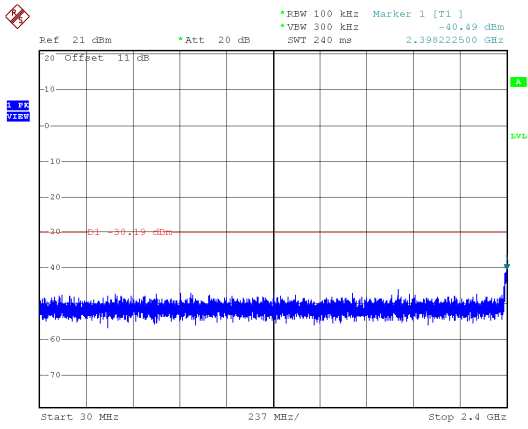
Modulation Type: 802.11g, CH 11



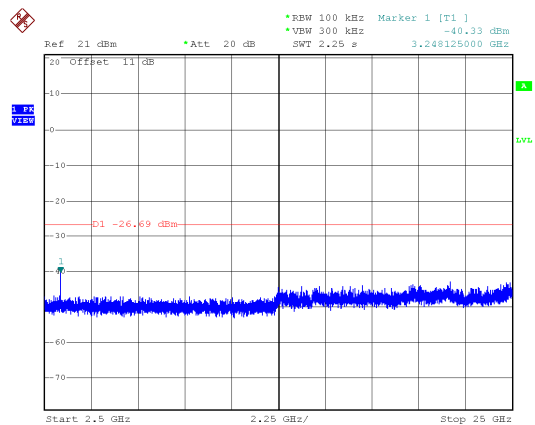
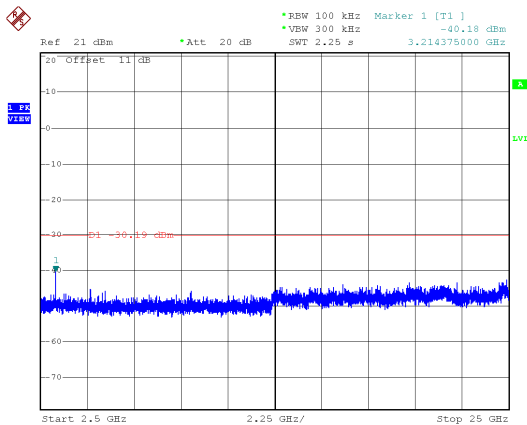
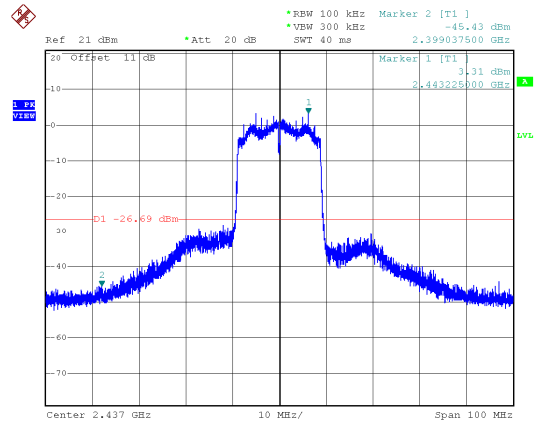
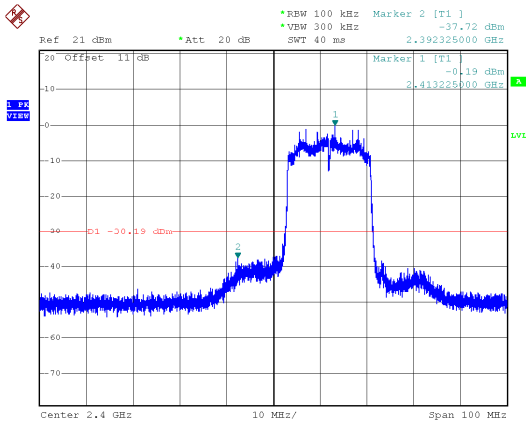
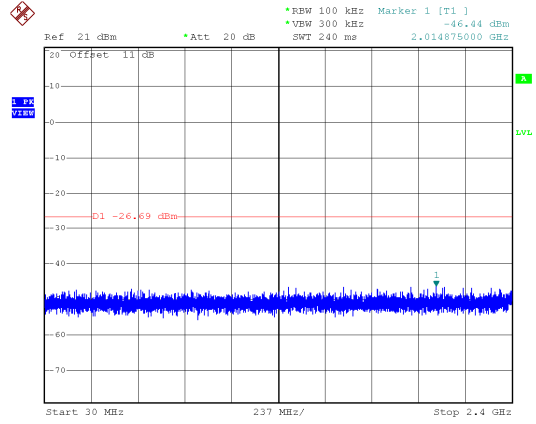


ANT A

Modulation Type: 802.11n HT20, CH01



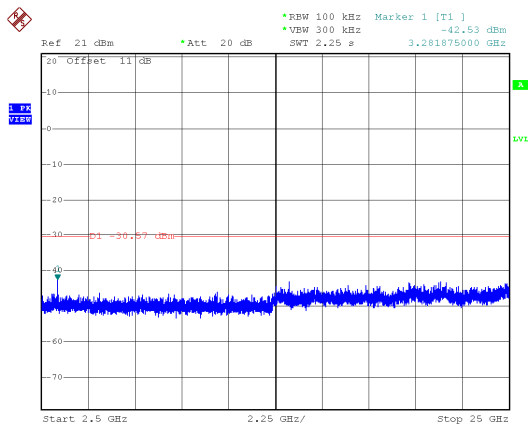
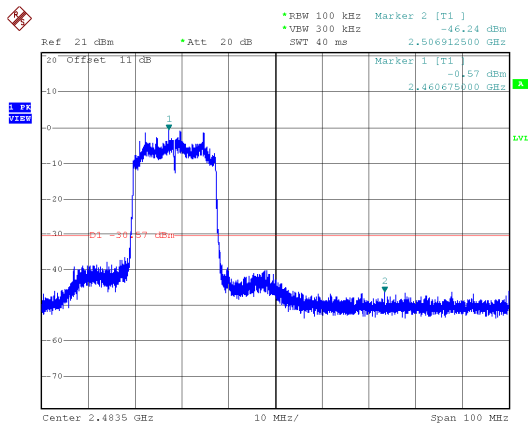
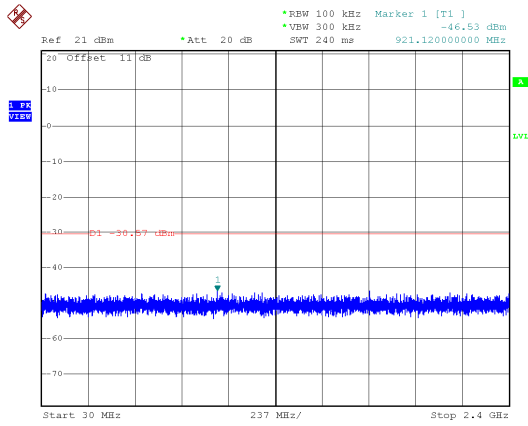
Modulation Type: 802.11n HT20, CH06





ANT A

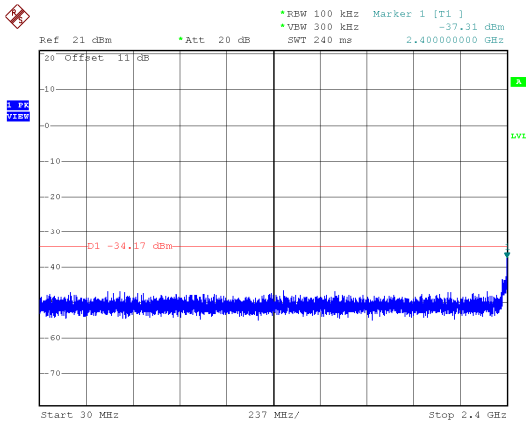
Modulation Type: 802.11n HT20, CH11



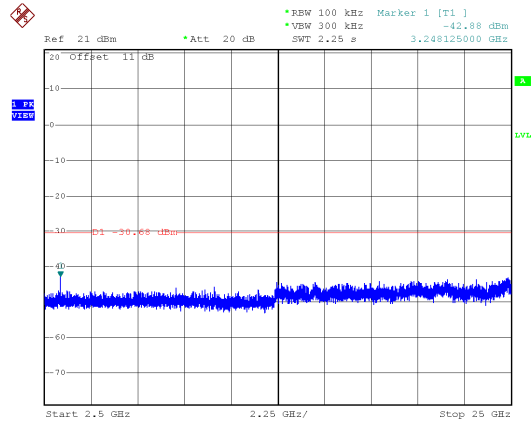
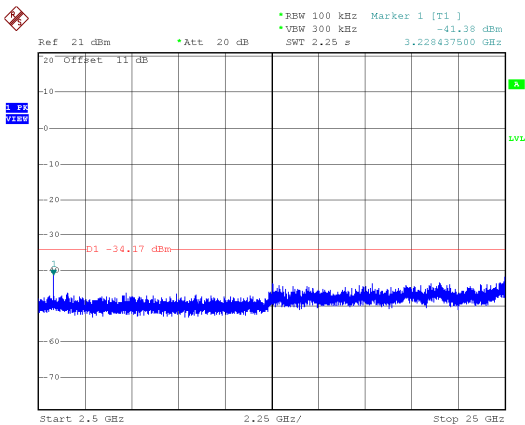
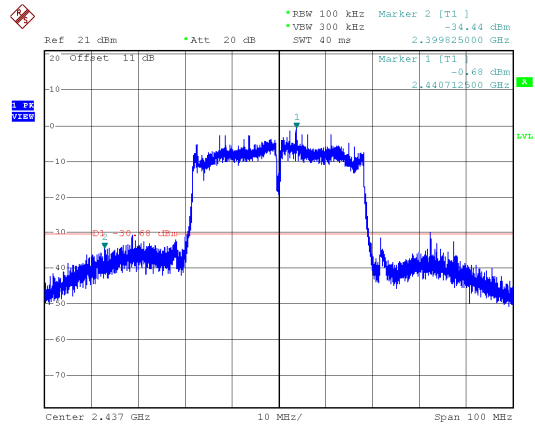
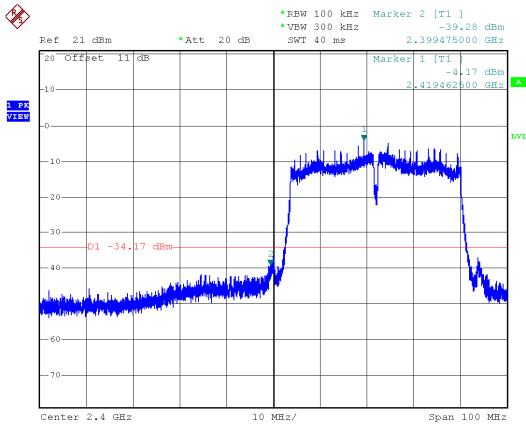
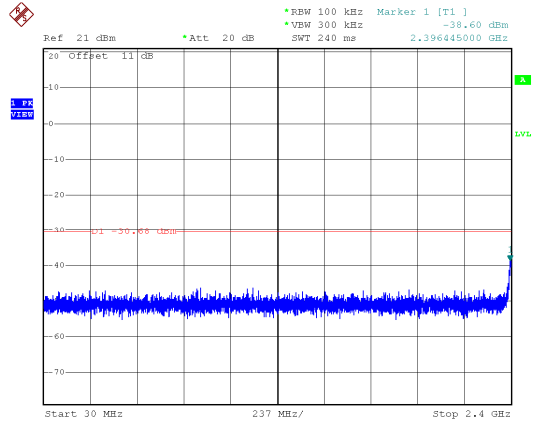


ANT A

Modulation Type: 802.11n HT40, CH03



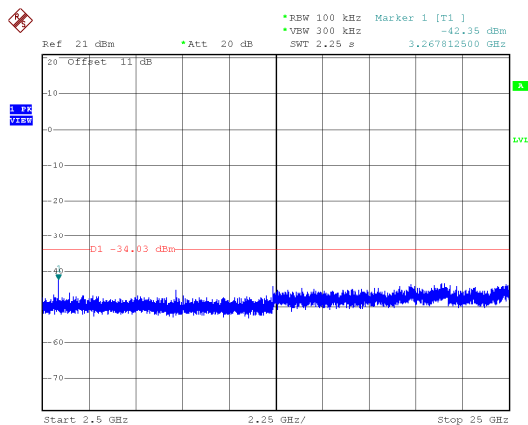
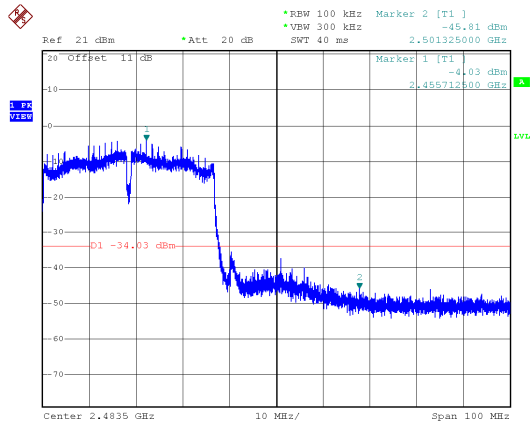
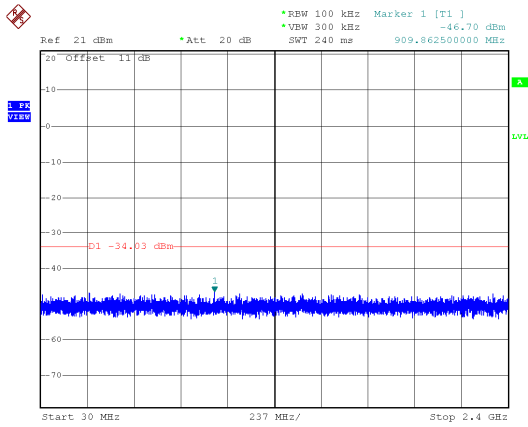
Modulation Type: 802.11n HT40, CH06





ANT A

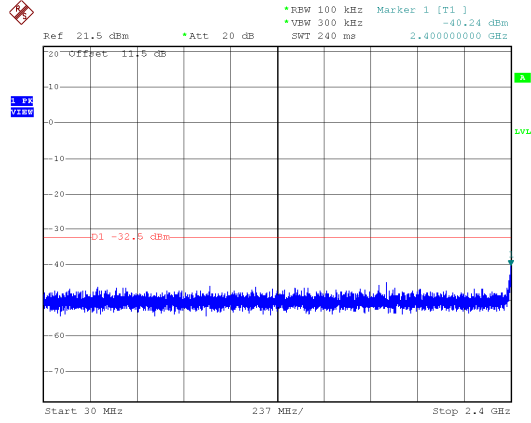
Modulation Type: 802.11n HT40, CH09



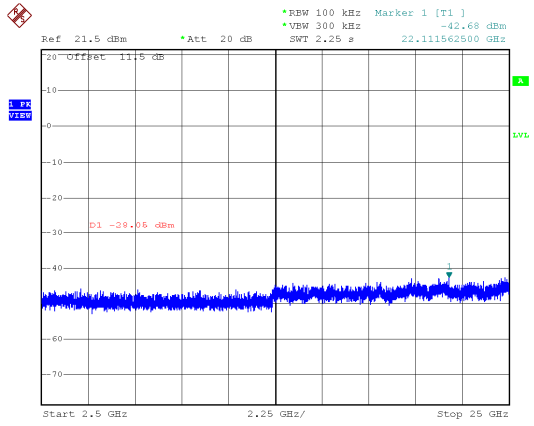
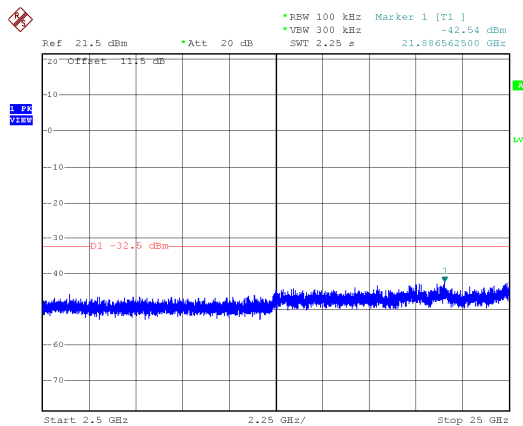
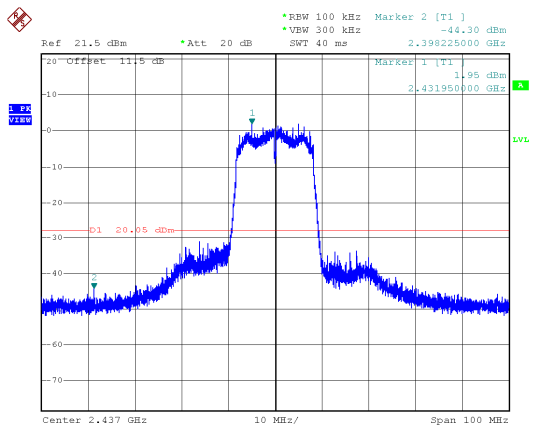
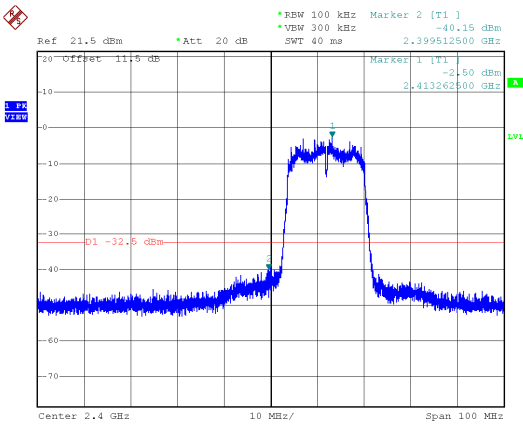
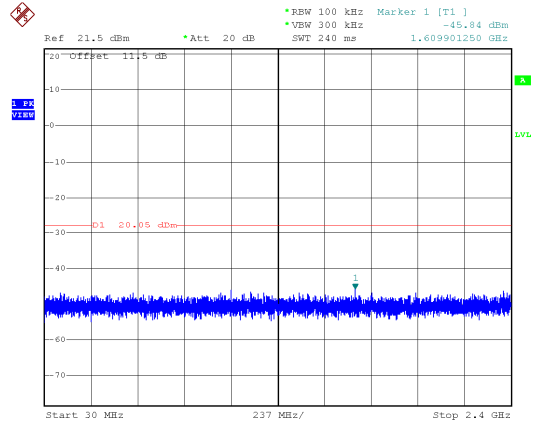


ANT B

Modulation Type: 802.11g, CH 01



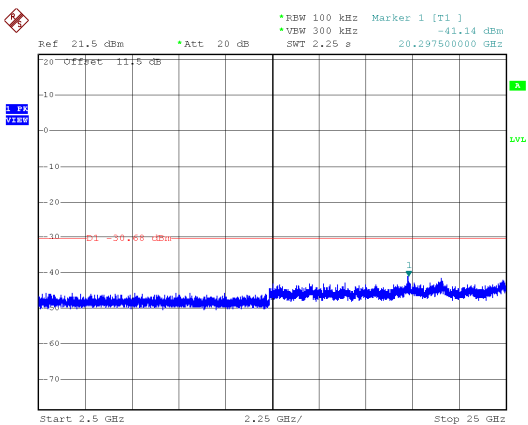
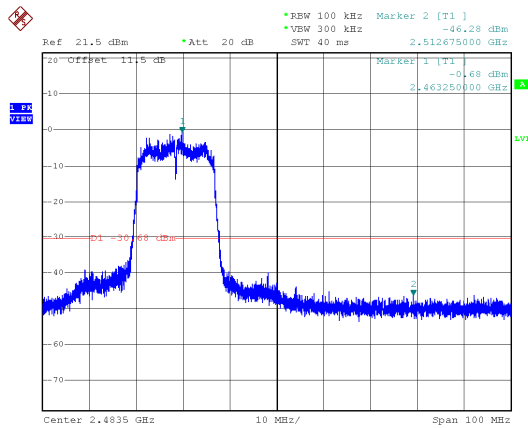
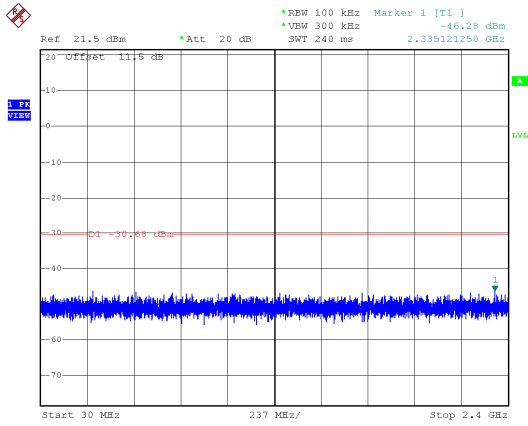
Modulation Type: 802.11g, CH 06





ANT B

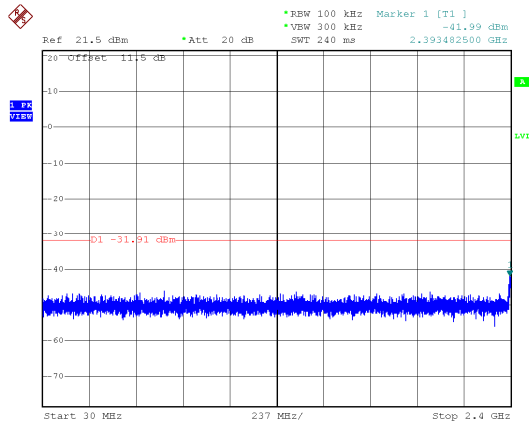
Modulation Type: 802.11g, CH 11



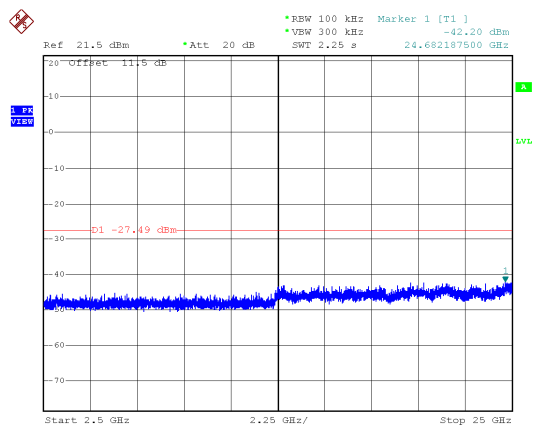
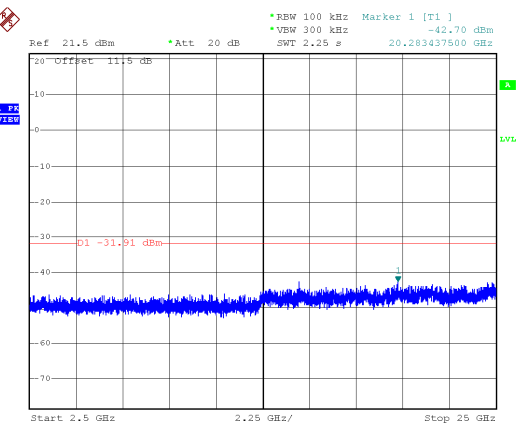
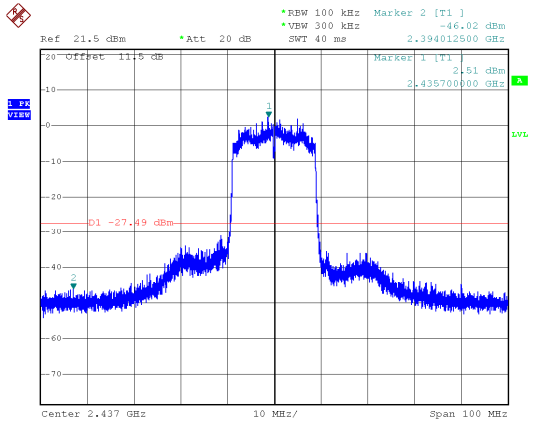
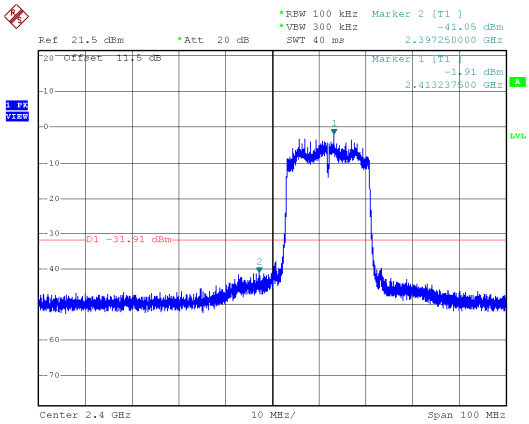
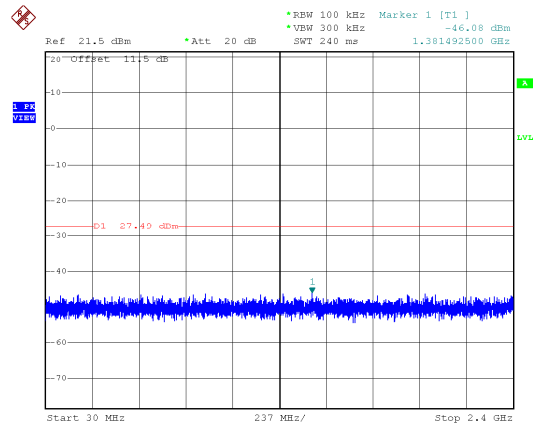


ANT B

Modulation Type: 802.11n HT20, CH01



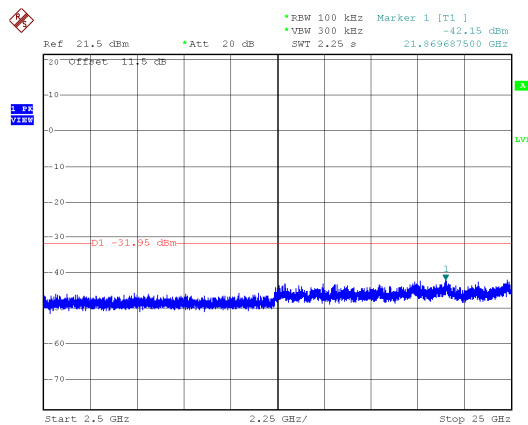
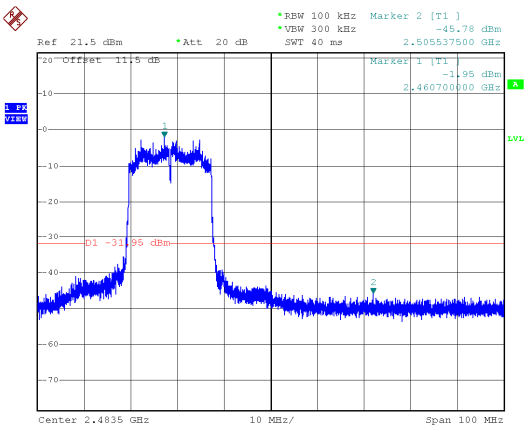
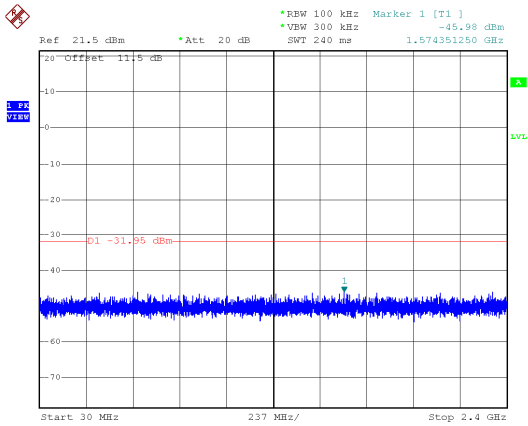
Modulation Type: 802.11n HT20, CH06





ANT B

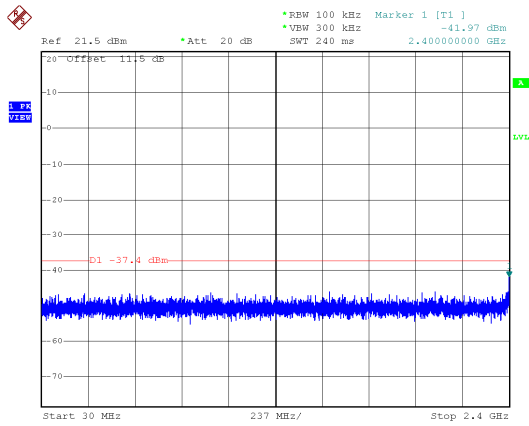
Modulation Type: 802.11n HT20, CH11



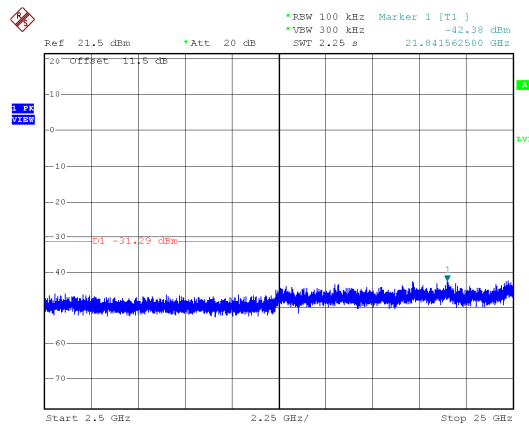
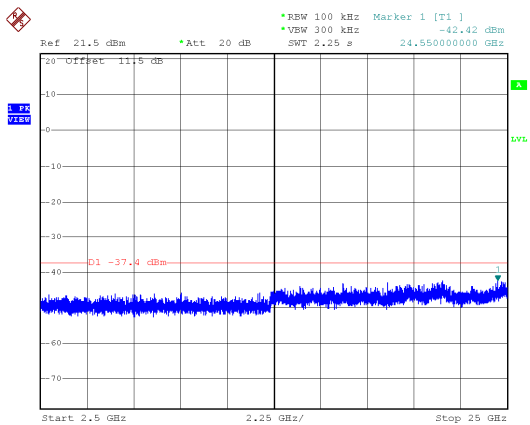
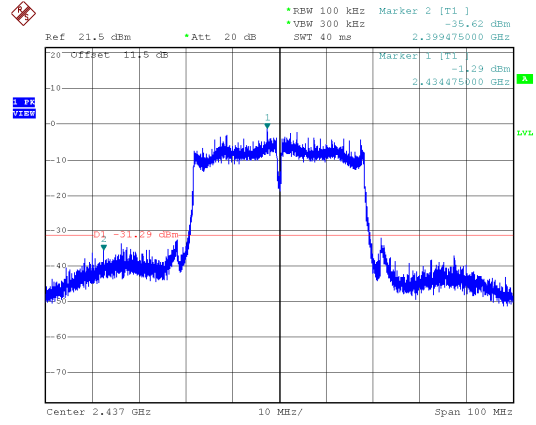
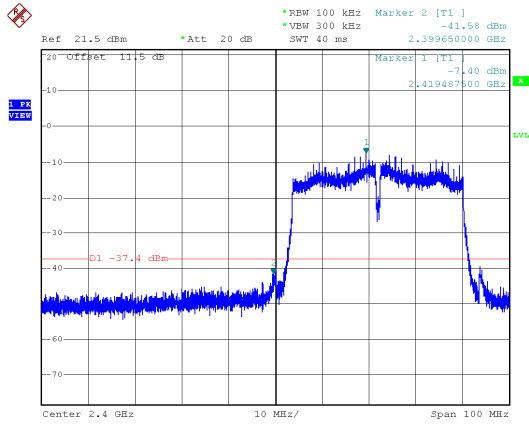
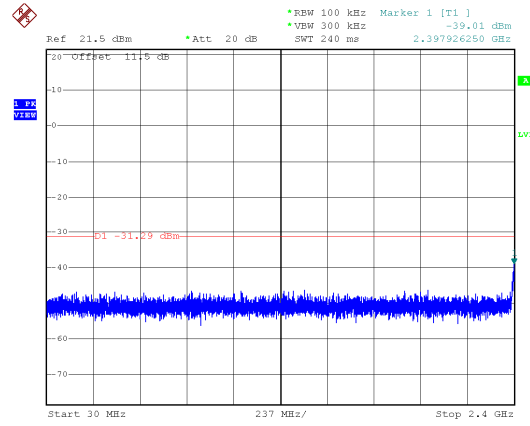


ANT B

Modulation Type: 802.11n HT40, CH03



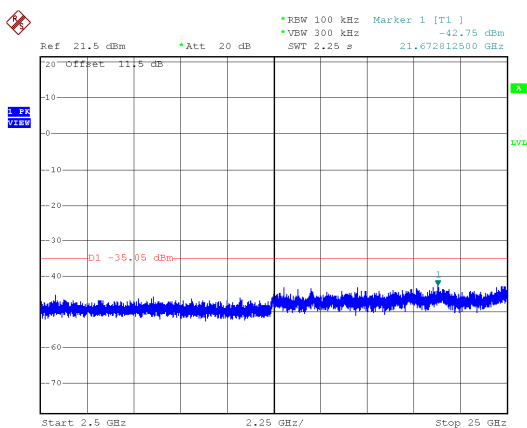
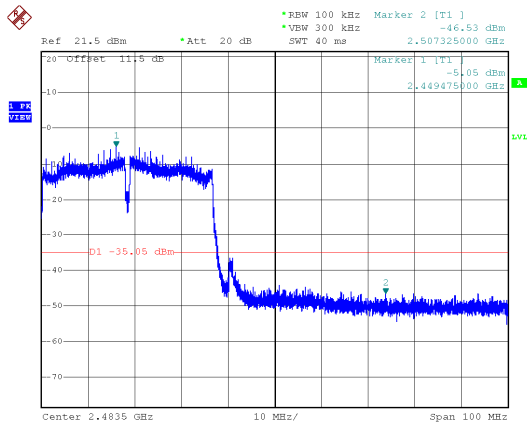
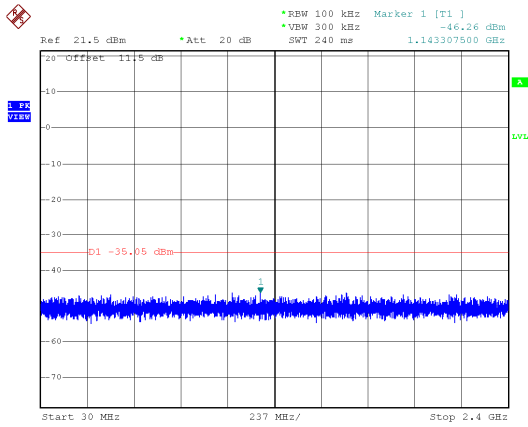
Modulation Type: 802.11n HT40, CH06





ANT B

Modulation Type: 802.11n HT40, CH09





8. 6dB Bandwidth Measurement Data

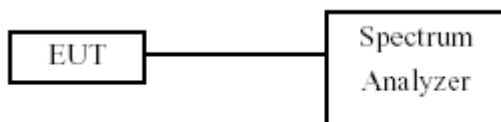
8.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

8.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 1~5% of the emission bandwidth and VBW ≥ 3x RBW.
- 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.

8.3 Test Setup Layout



8.4 Test Result and Data

Temperature : 21°C

Humidity : 62%

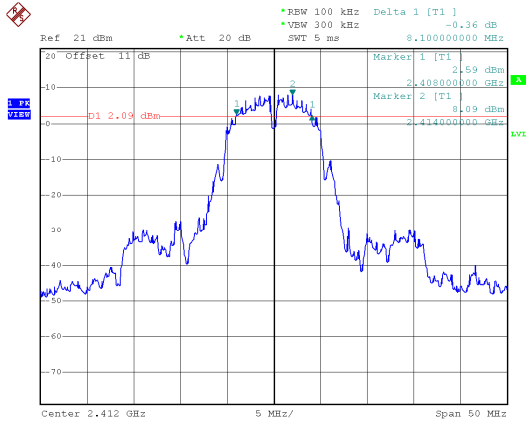
Test Date : May 03, 2018

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT A	ANT B	
IEEE 802.11b (1Mbps)	01	2412	8.10	---	0.5
	06	2437	8.00	---	0.5
	11	2462	8.10	---	0.5
IEEE 802.11g (6Mbps)	01	2412	15.00	15.10	0.5
	06	2437	14.80	15.60	0.5
	11	2462	13.80	15.10	0.5
IEEE 802.11n HT20 (6.5Mbps)	01	2412	16.00	15.10	0.5
	06	2437	14.50	15.20	0.5
	11	2462	15.00	15.70	0.5
IEEE 802.11n HT40 (13.5Mbps)	03	2422	35.30	35.10	0.5
	06	2437	36.10	36.30	0.5
	09	2452	35.10	36.50	0.5

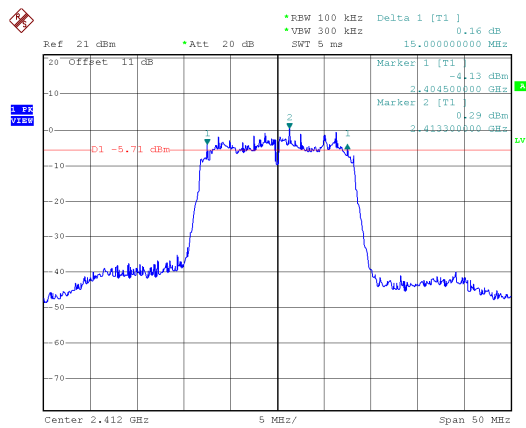


ANT A

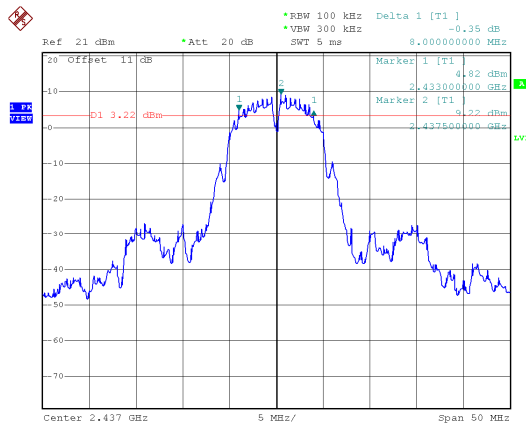
Modulation Type: 802.11b
CH01



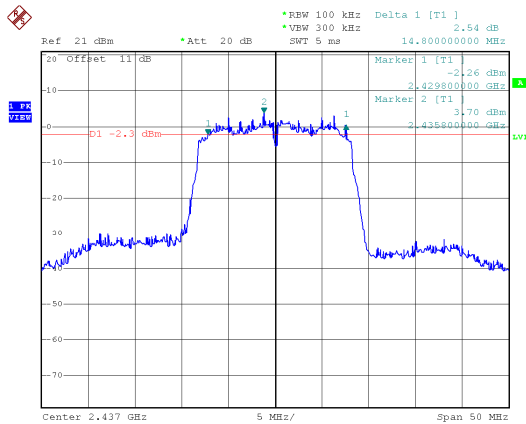
Modulation Type: 802.11g
CH01



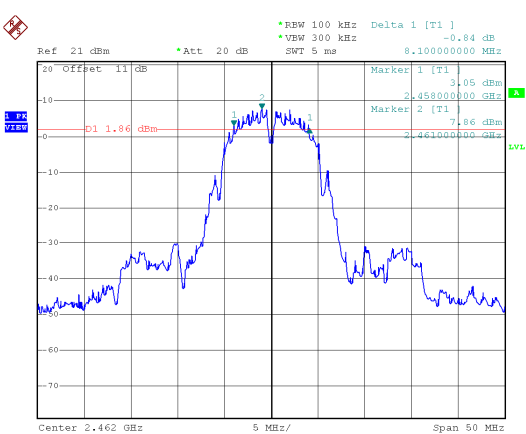
CH06



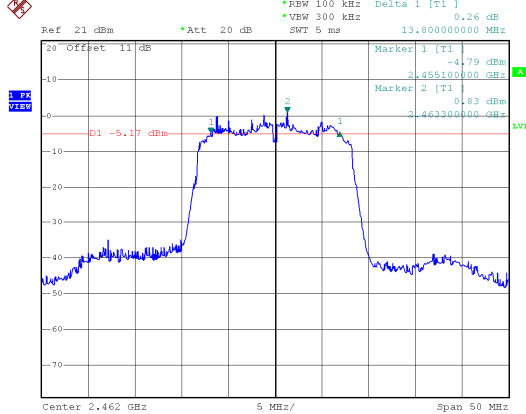
CH06



CH11



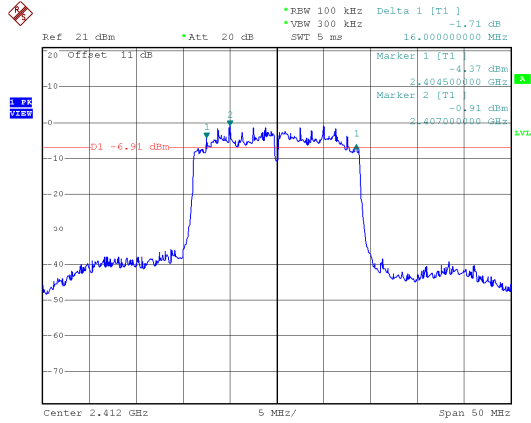
CH11



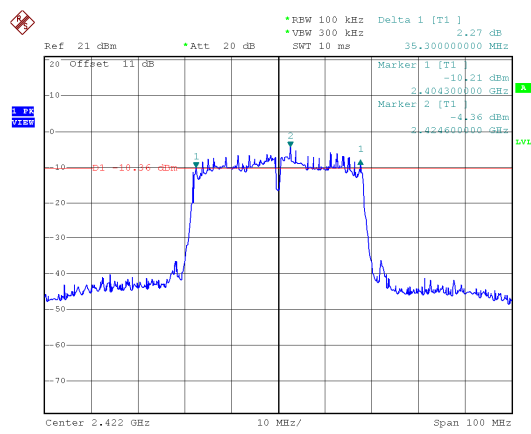


ANT A

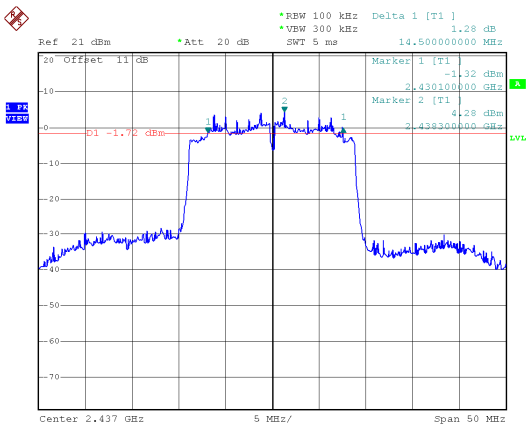
Modulation Type: 802.11n HT20
CH01



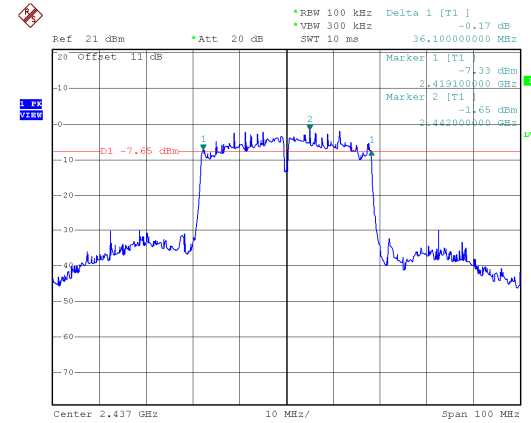
Modulation Type: 802.11n HT40
CH03



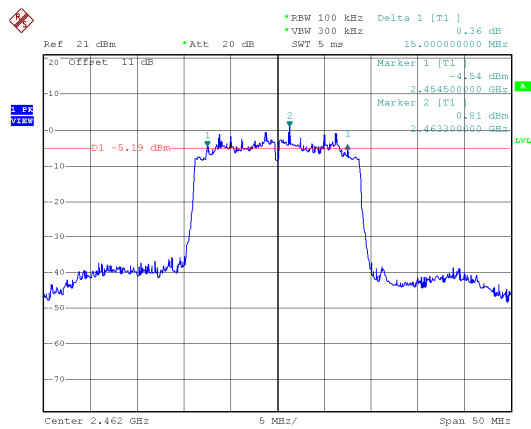
CH06



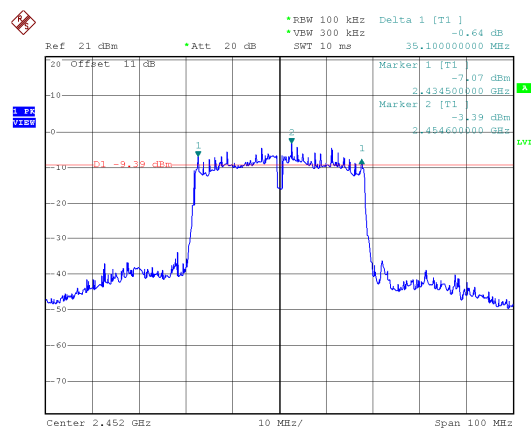
CH06



CH11

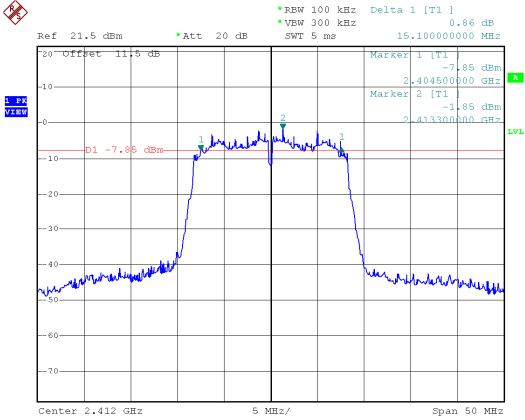


CH09

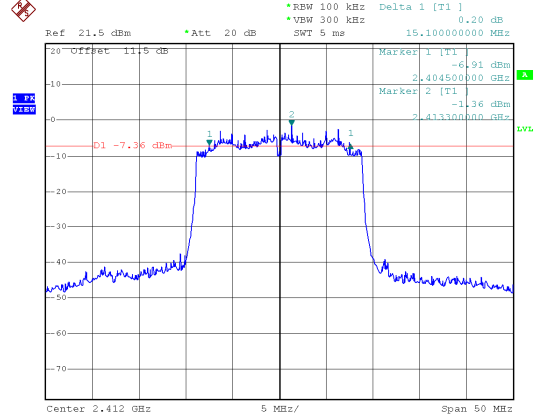




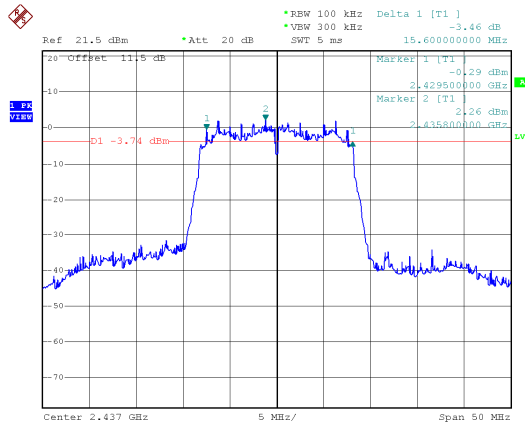
ANT B
Modulation Type: 802.11g
CH01



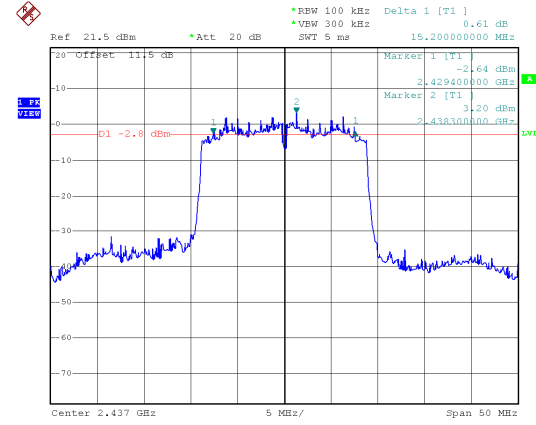
Modulation Type: 802.11n HT20
CH01



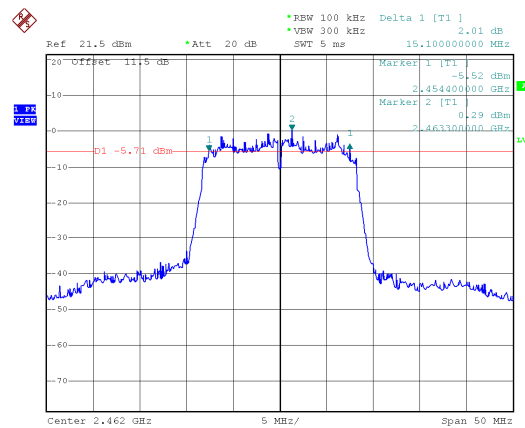
CH06



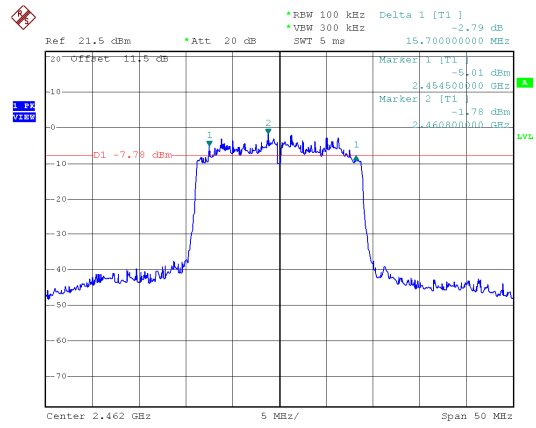
CH06



CH11



CH11

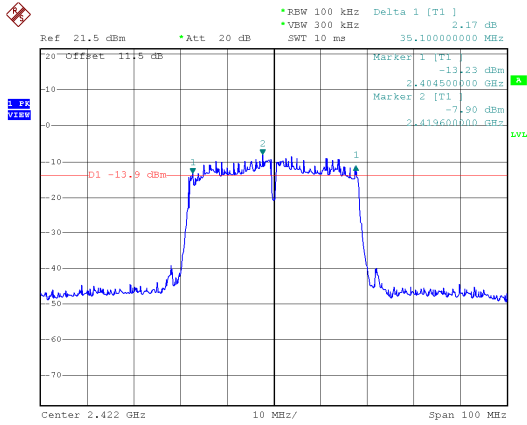




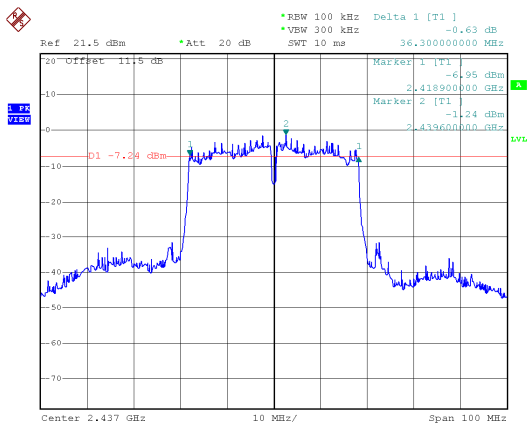
ANT B

Modulation Type: 802.11n HT40

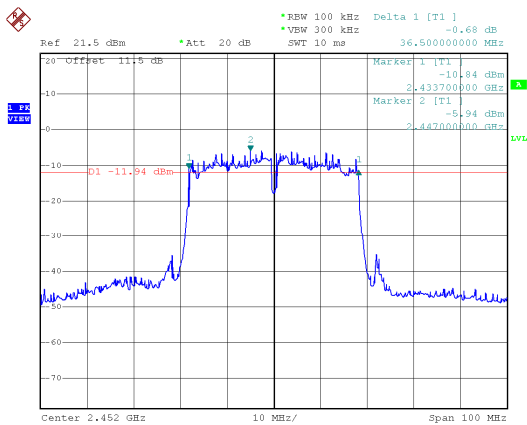
CH03



CH06



CH09





9. Maximum Average Output Power

9.1 Test Limit

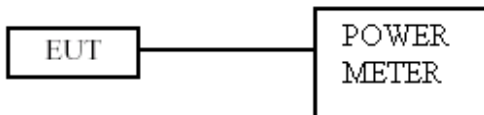
The Maximum Average Output Power Measurement is 30dBm.

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

9.2 Test Procedures

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.

9.3 Test Setup Layout



9.4 Test Result and Data

Temperature : 21°C
 Test Date : May 03, 2018

Humidity : 62%

Modulation Type	Channel	Freq. (MHz)	Average Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)	Total e.i.r.p. Power (dBm)	Total e.i.r.p. Power (mW)	e.i.r.p. Limit (dBm)
			ANT A	ANT B						
IEEE 802.11b (1Mbps)	01	2412	17.19	---	17.19	52.36	30.00	20.97	125.03	36.00
	06	2437	17.71	---	17.71	59.02	30.00	21.49	140.93	36.00
	11	2462	16.39	---	16.39	43.55	30.00	20.17	103.99	36.00
IEEE 802.11g (6Mbps)	01	2412	10.84	9.81	13.37	21.71	30.00	17.15	51.83	36.00
	06	2437	14.52	14.39	17.47	55.79	30.00	21.25	133.22	36.00
	11	2462	11.51	10.81	14.18	26.21	30.00	17.96	62.58	36.00
IEEE 802.11n HT20 (6.5Mbps)	01	2412	10.72	9.14	13.01	20.01	30.00	16.79	47.77	36.00
	06	2437	14.79	13.97	17.41	55.08	30.00	21.19	131.51	36.00
	11	2462	10.59	9.62	13.14	20.62	30.00	16.92	49.23	36.00
IEEE 802.11n HT40 (13.5Mbps)	03	2422	9.07	7.91	11.54	14.25	30.00	11.54	14.25	36.00
	06	2437	12.77	12.16	15.49	35.37	30.00	15.49	35.37	36.00
	09	2452	9.56	8.81	12.21	16.64	30.00	12.21	16.64	36.00



10. Power Spectral Density

10.1 Test Limit

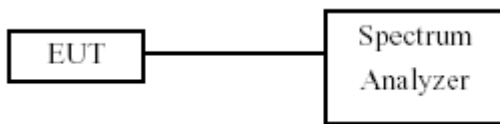
The Maximum of Power Spectral Density Measurement is 8dBm.

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

10.2 Test Procedures

KDB 558074 Method AVGPSD-2 (trace averaging across on- and off-times of the EUT transmissions, followed by duty cycle correction).

10.3 Test Setup Layout



10.4 Test Result and Data

Temperature : 21°C

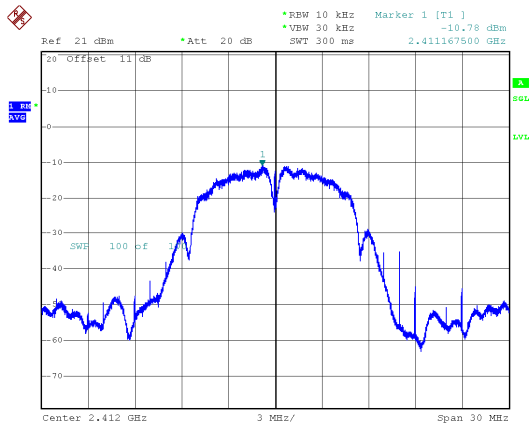
Humidity : 62%

Test Date : May 03, 2018

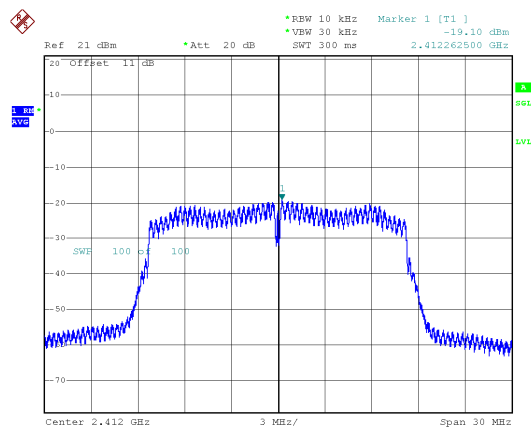
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density (dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
IEEE 802.11b (1Mbps)	01	2412	-10.78	---	-10.78	0.00	-10.78	8.00
	06	2437	-10.02	---	-10.02	0.00	-10.02	8.00
	11	2462	-11.61	---	-11.61	0.00	-11.61	8.00
IEEE 802.11g (6Mbps)	01	2412	-19.1	-20.58	-16.77	0.00	-16.77	7.87
	06	2437	-14.83	-15.66	-12.21	0.00	-12.21	7.87
	11	2462	-18.07	-19.12	-15.55	0.00	-15.55	7.87
IEEE 802.11n HT20 (6.5Mbps)	01	2412	-19.21	-21.01	-17.01	0.00	-17.01	7.87
	06	2437	-15.12	-16.23	-12.63	0.00	-12.63	7.87
	11	2462	-19.46	-20.63	-17.00	0.00	-17.00	7.87
IEEE 802.11n HT40 (13.5Mbps)	03	2422	-19.23	-20.6	-16.85	0.00	-16.85	7.87
	06	2437	-15.21	-16.21	-12.67	0.00	-12.67	7.87
	09	2452	-18.41	-21.46	-16.66	0.00	-16.66	7.87



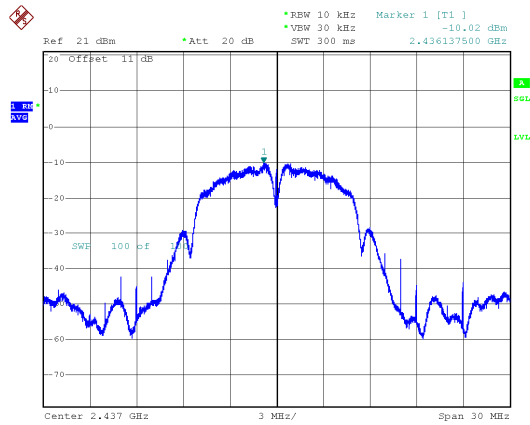
ANT A
Modulation Type: 802.11b
CH01



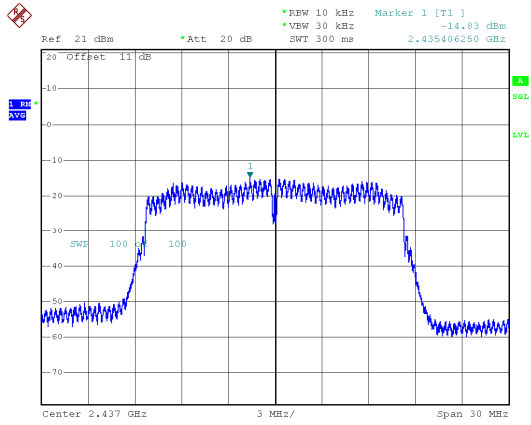
Modulation Type: 802.11g
CH01



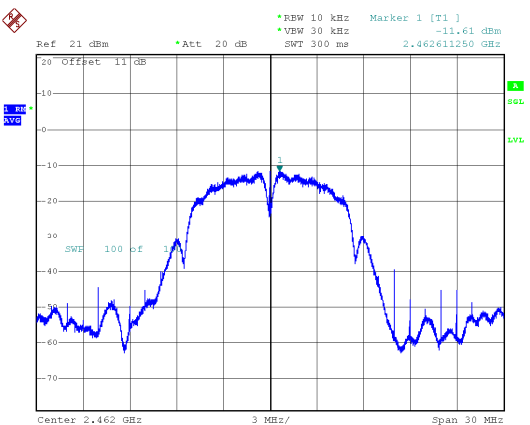
CH06



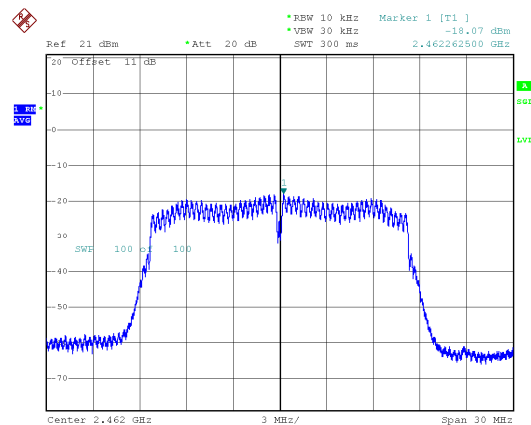
CH06



CH11

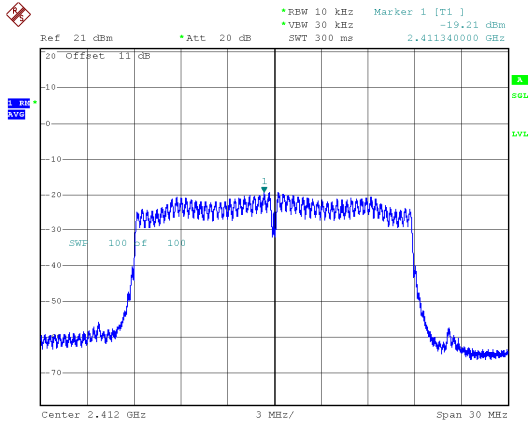


CH11

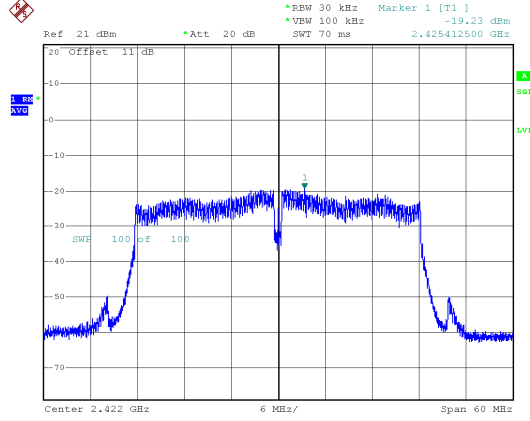




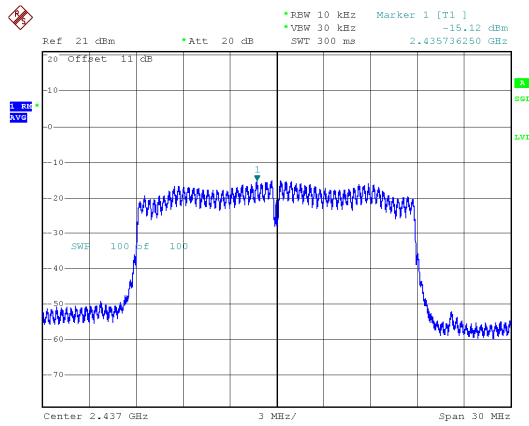
ANT A
Modulation Type: 802.11n HT20
CH01



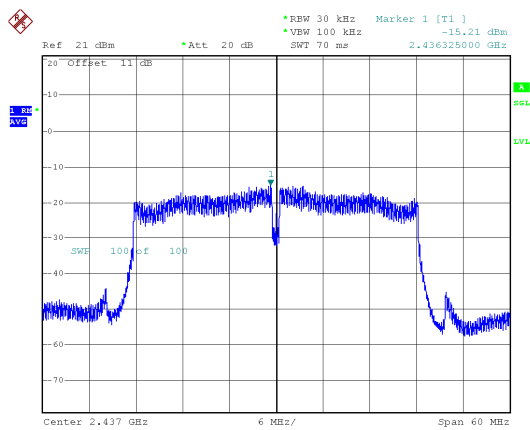
Modulation Type: 802.11n HT40
CH03



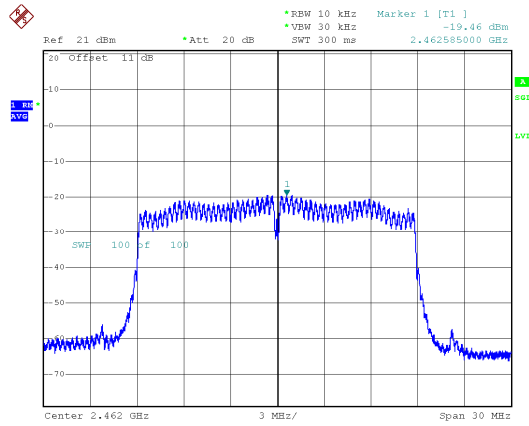
CH06



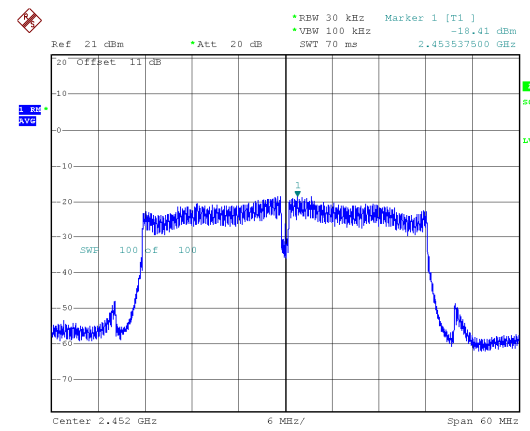
CH06



CH11

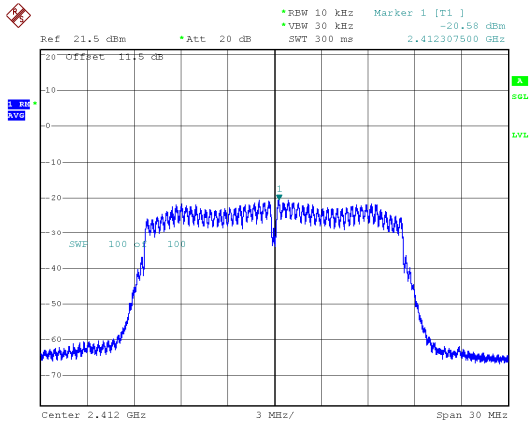


CH09

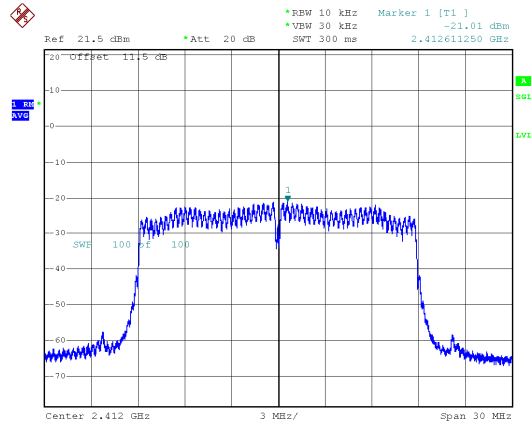




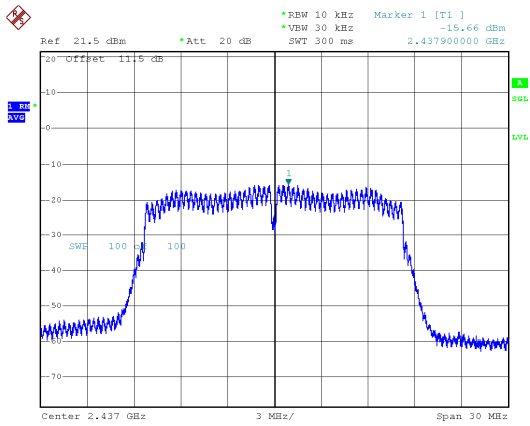
ANT B
Modulation Type: 802.11g
CH01



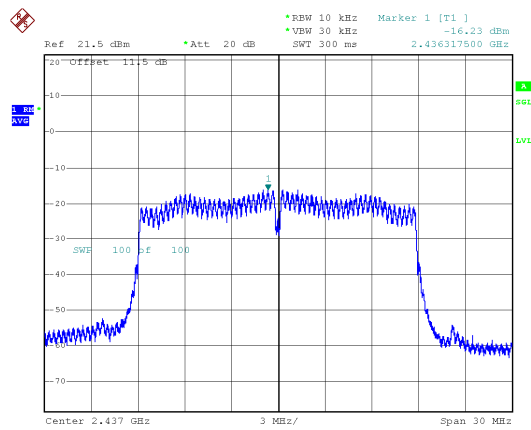
Modulation Type: 802.11n HT20
CH01



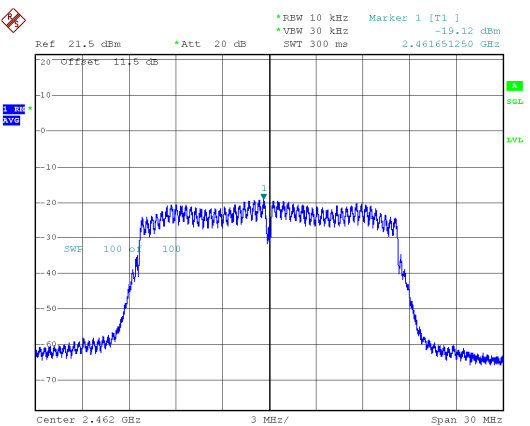
CH06



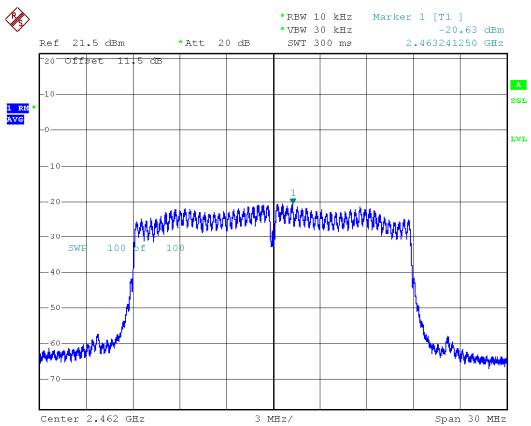
CH06



CH11

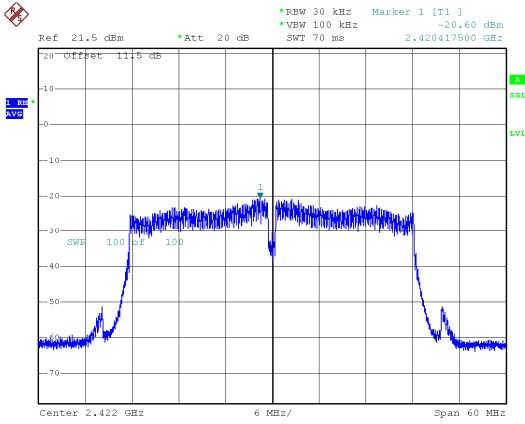


CH11

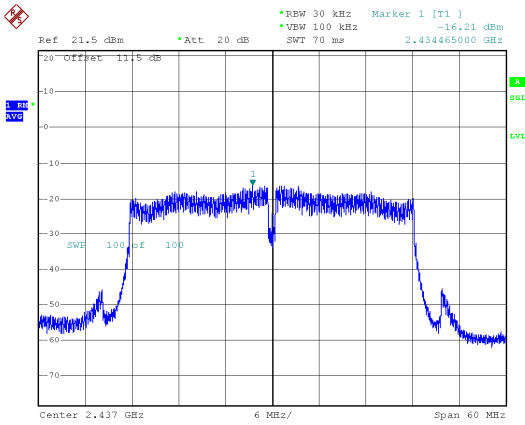




ANT B
Modulation Type: 802.11n HT40
CH03



CH06



CH09

