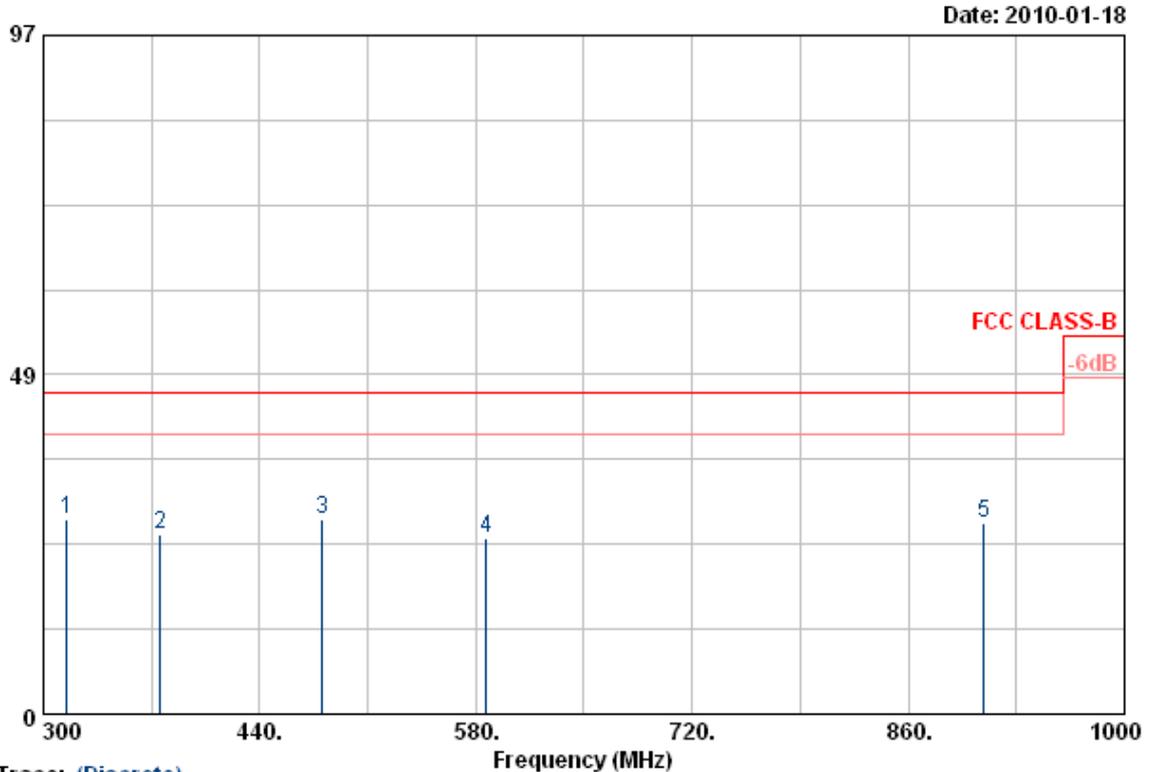




Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11an HT40, CH159	Temperature	: 25 °C
Memo	: EUT with USB cable	Humidity	: 65 %



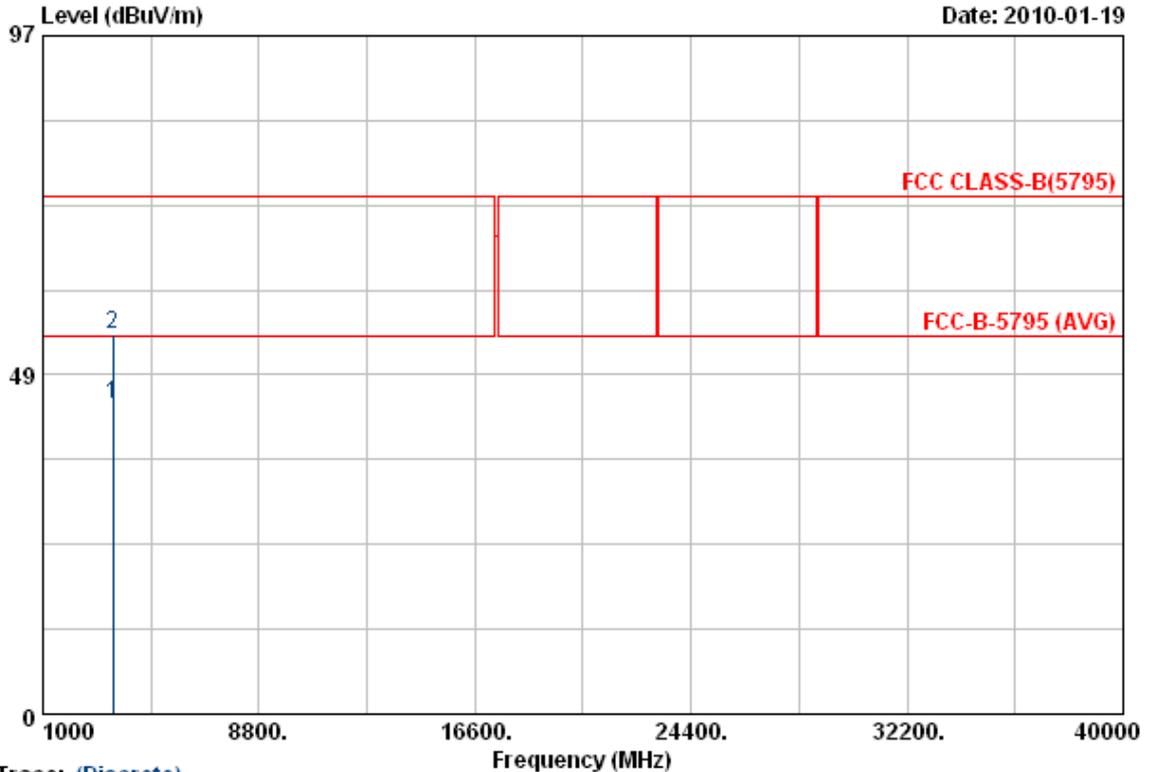
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		cm	Deg
1	315.40	39.88	-12.14	27.74	46.00	-18.26	Peak	150	0
2	375.60	37.46	-11.68	25.78	46.00	-20.22	Peak	150	0
3	480.60	33.09	-5.17	27.92	46.00	-18.08	Peak	150	0
4	587.00	27.12	-2.05	25.07	46.00	-20.93	Peak	150	0
5	909.00	24.78	2.38	27.16	46.00	-18.84	Peak	150	0

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. According to technical experiences, all spurious emission of 802.11a/an mode at Band1~4 channel are almost the same below 1GHz, so that the channel 36 or 38 (for HT40), channel 149 or 151 (for HT40) was chosen as representative in final test.
5. The data is worse case.



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: 802.11an HT40, CH159	Temperature	: 22 °C
Memo	: EUT with USB cable	Humidity	: 65 %



Trace: (Discrete)

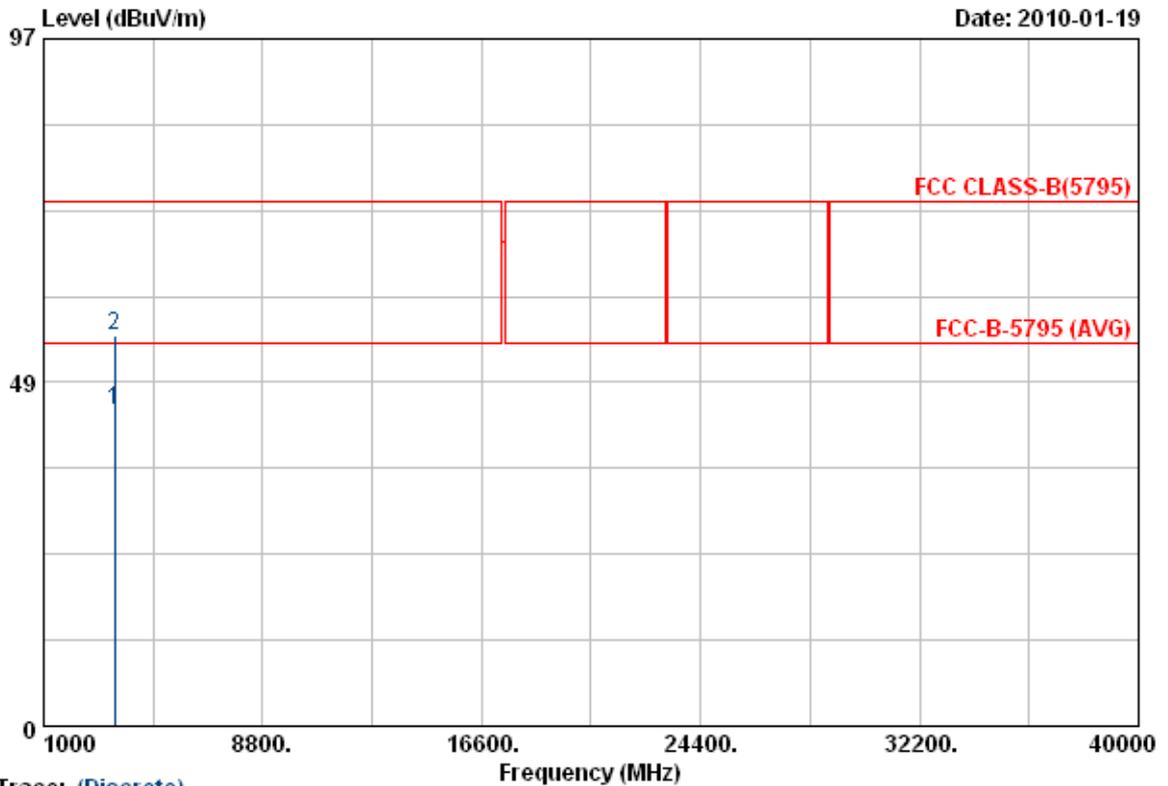
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	3520.00	40.50	3.83	44.33	54.00	-9.67	Average	100	145
2	3520.00	50.42	3.83	54.25	74.00	-19.75	Peak	100	251

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.
7. The data is worse case.



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11an HT40, CH159	Temperature	: 22 °C
Memo	: EUT with USB cable	Humidity	: 65 %



Trace: (Discrete)

Item	Read Freq	Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	3521.00	40.31	4.35	44.66	54.00	-9.34	Average	100	121
2	3521.00	50.82	4.35	55.17	74.00	-18.83	Peak	100	203

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.
7. The data is worse case.

Test engineer: Ben



## 6. 6dB Bandwidth Measurement Data

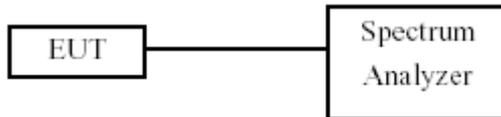
### 6.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

### 6.2 Test Procedures

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

### 6.3 Test Setup Layout



### 6.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	FSP40	R&S	10047	2009/02/21	2010/02/20



## 6.5 Test Result and Data

Test Date: Mar. 05, 2009

Temperature: 24°C

Atmospheric pressure: 1026 hPa

Humidity: 49%

Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		99% Bandwidth	
			Ant R	Ant L	Ant R	Ant L
802.11b (11Mbps)	01	2412	10.17	10.17	15.14	15.14
	06	2437	10.17	10.17	15.06	14.82
	11	2462	10.17	10.25	15.14	14.98
802.11g (54Mbps)	01	2412	16.58	16.58	18.10	17.54
	06	2437	16.50	16.58	17.86	17.70
	11	2462	16.58	16.50	17.70	17.70
802.11n HT20 (130Mbps)	01	2412	17.70	17.70	18.42	18.66
	06	2437	17.78	17.70	18.50	18.83
	11	2462	17.78	17.62	18.83	18.58
802.11n HT40 (270Mbps)	03	2422	36.53	36.37	37.17	37.17
	06	2437	36.53	35.73	37.33	37.17
	09	2452	36.37	35.57	37.17	37.17

Test Date: Mar. 10, 2009

Temperature: 25°C

Atmospheric pressure: 1024 hPa

Humidity: 48%

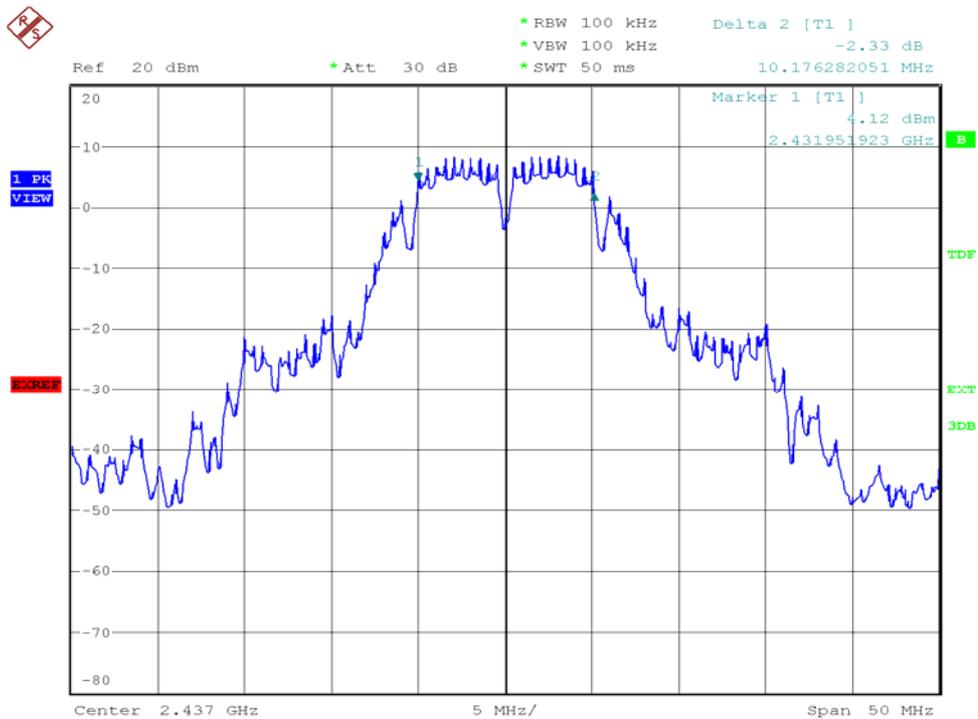
Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		99% Bandwidth	
			Ant R	Ant L	Ant R	Ant L
802.11a (6Mbps)	149	5745	16.42	16.50	18.58	18.66
	157	5785	16.50	16.42	18.58	18.26
	165	5825	16.42	16.42	18.34	18.50
802.11an HT20 (130Mbps)	149	5745	17.70	17.62	18.99	18.99
	157	5785	17.70	17.70	18.83	18.99
	165	5825	17.70	17.70	18.99	18.99
802.11an HT40 (270Mbps)	159	5795	36.21	36.37	37.17	37.33



Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 01

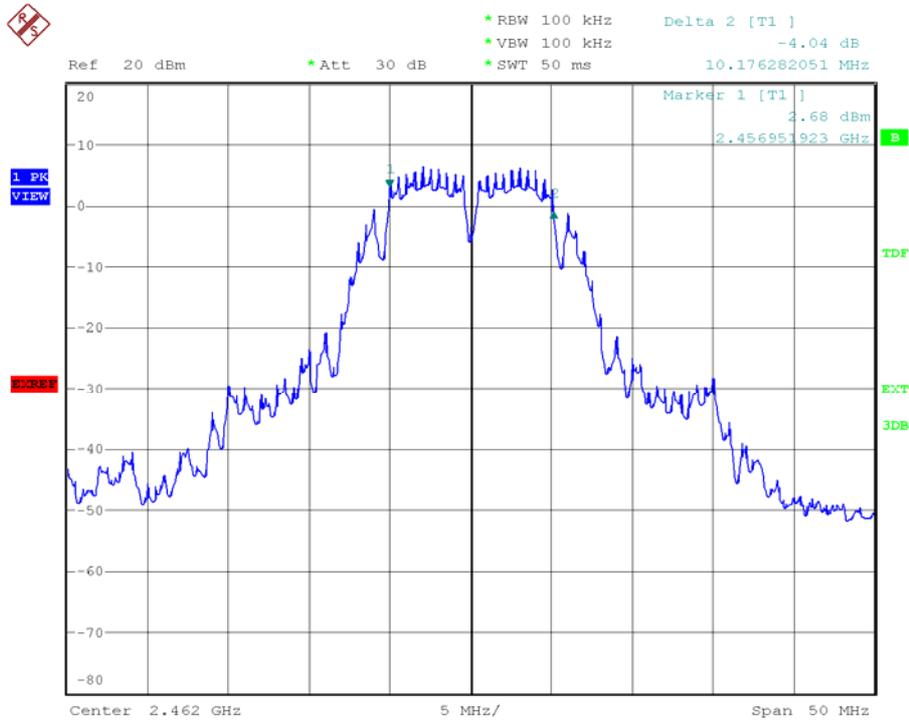


Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 06

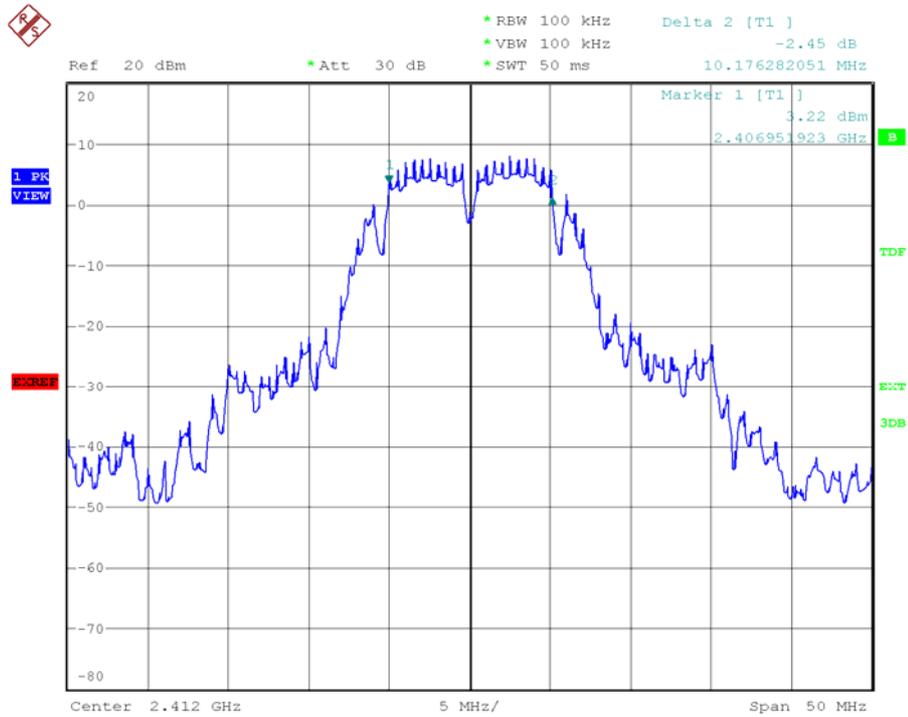




Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 11



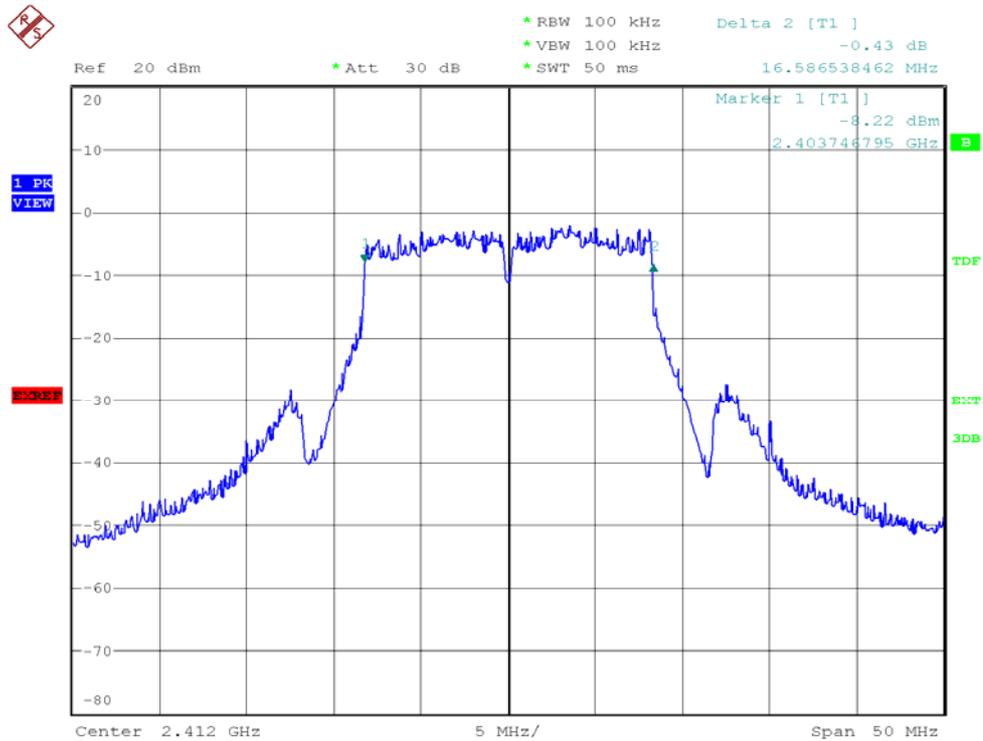
Modulation Standard: 802.11b (11Mbps), Ant L  
Channel: 01



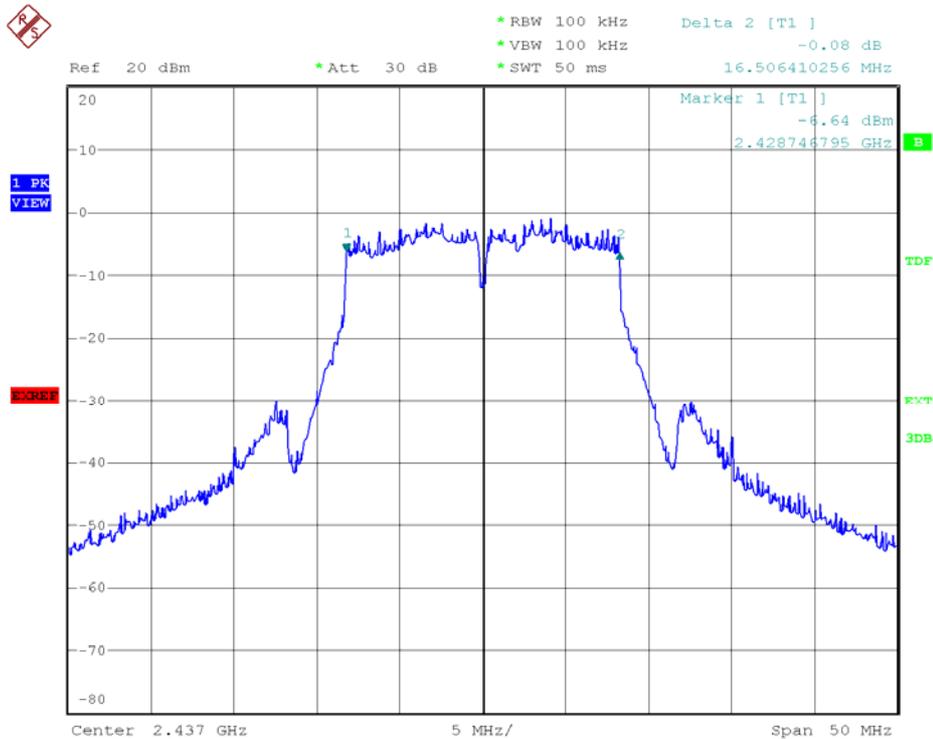




Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 01

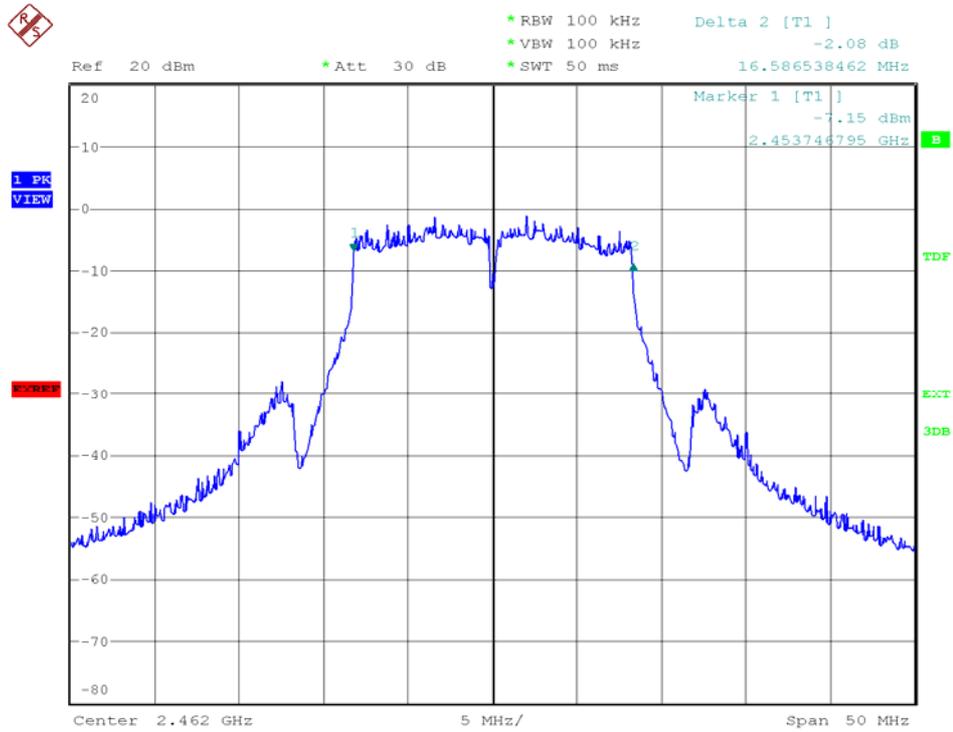


Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 06

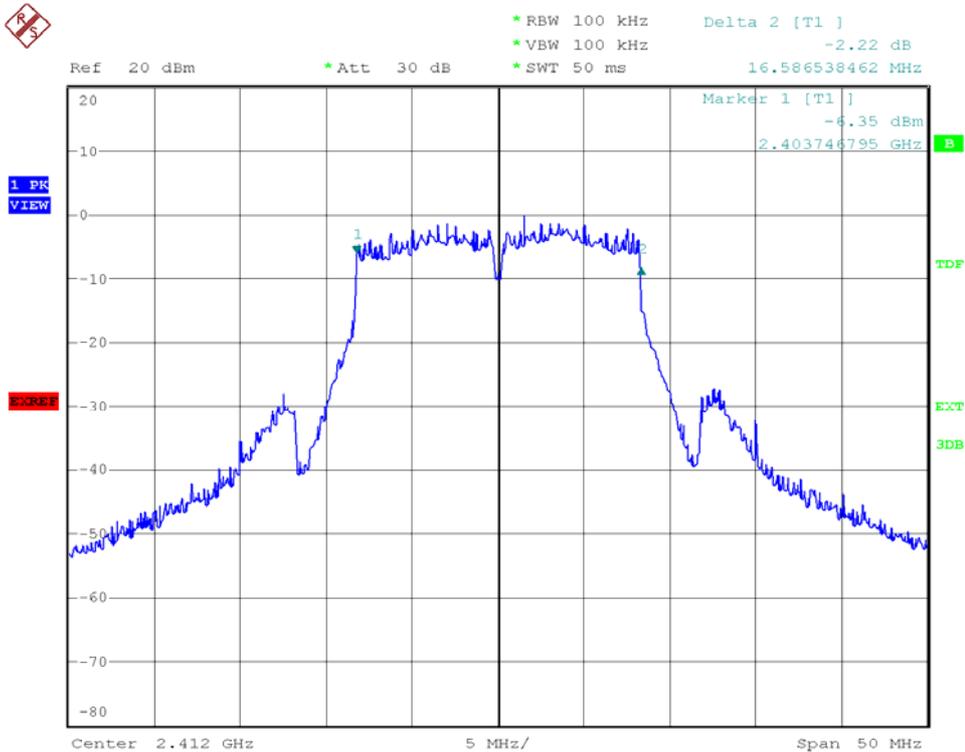




Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 11

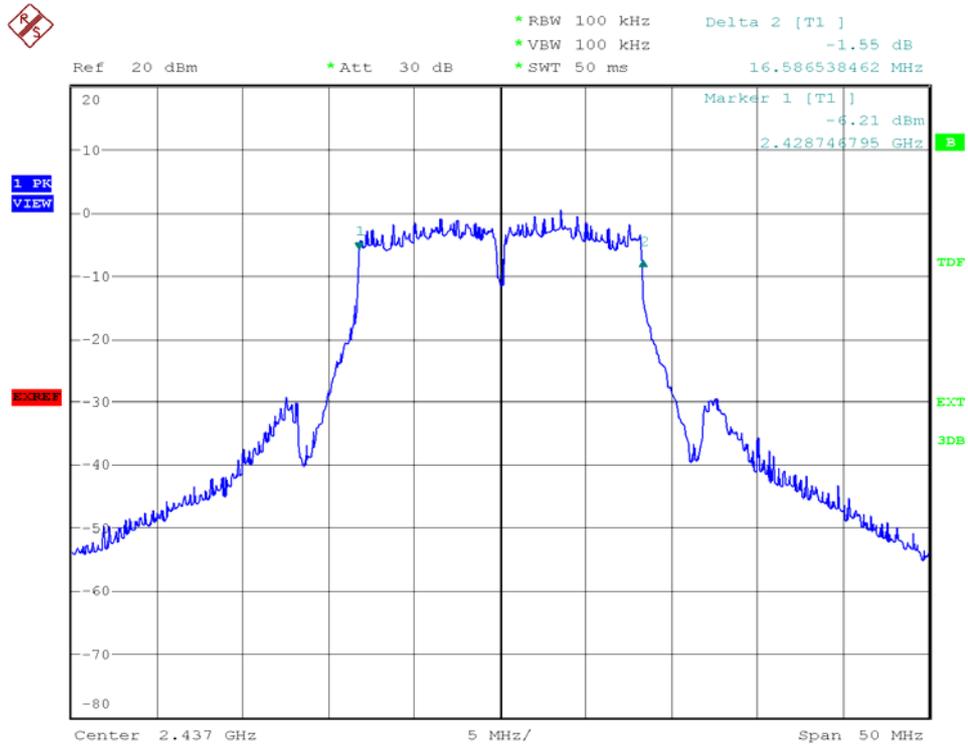


Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 01

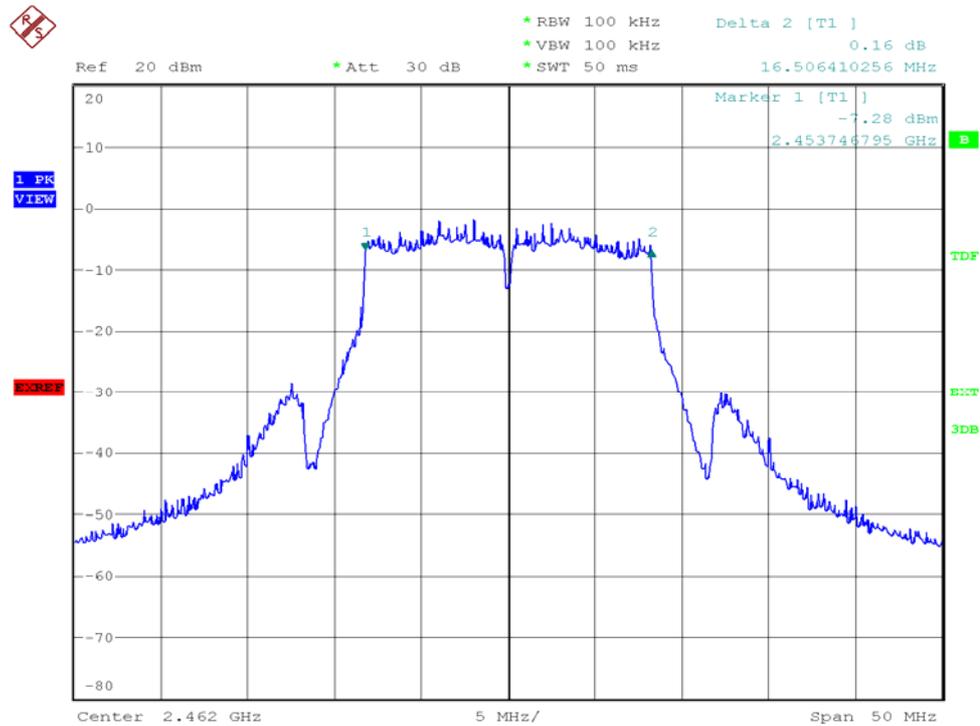




Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 06

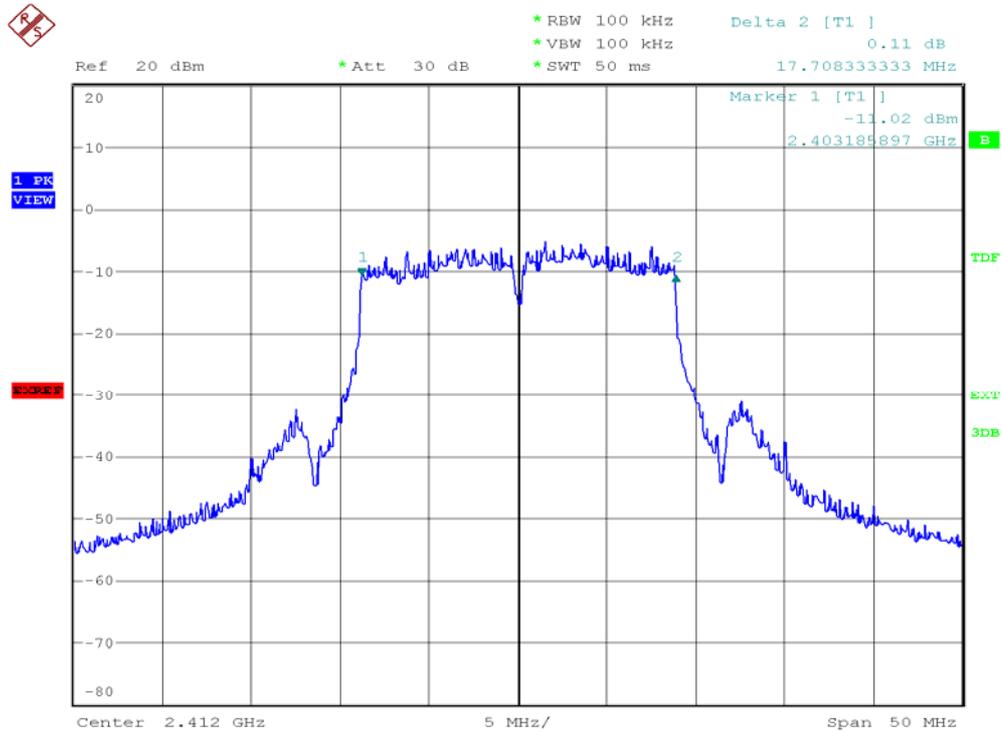


Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 11

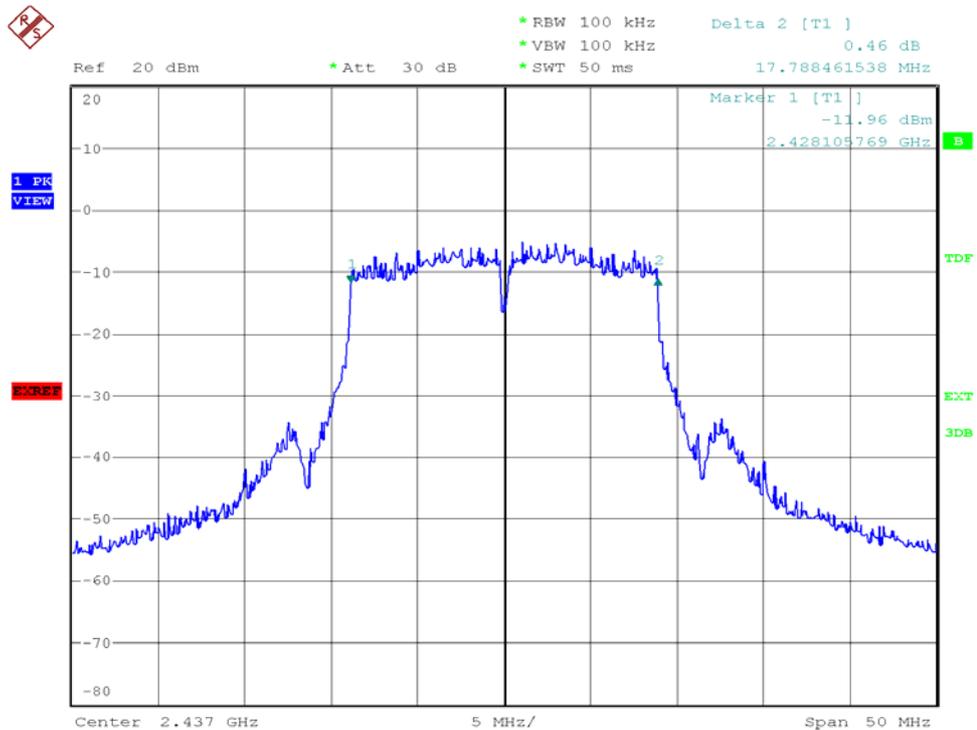




Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 01

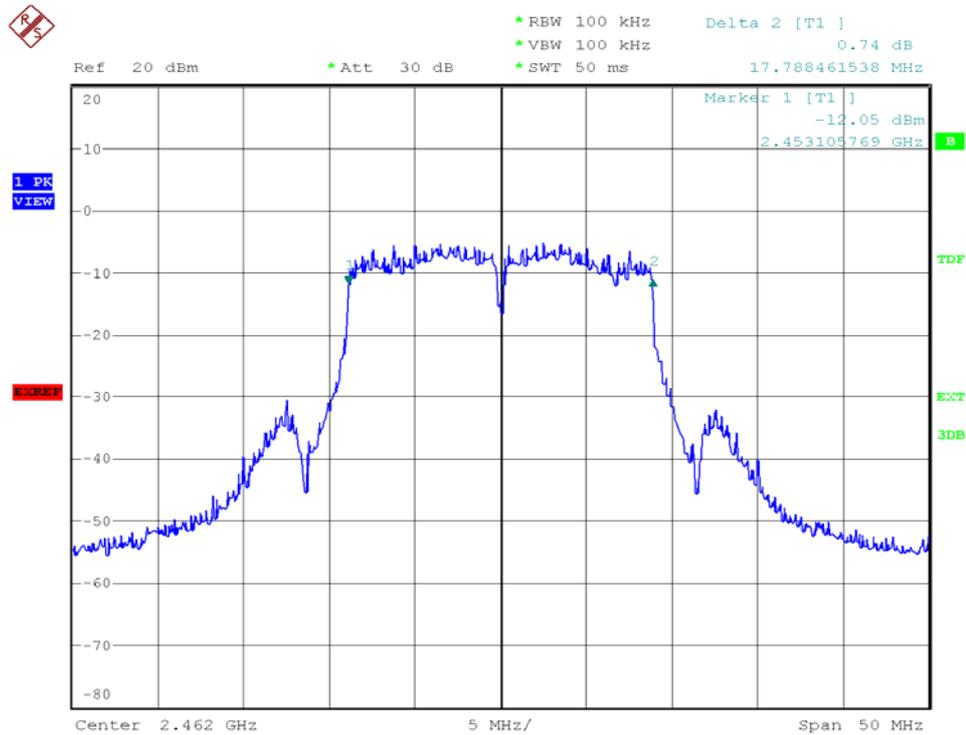


Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 06

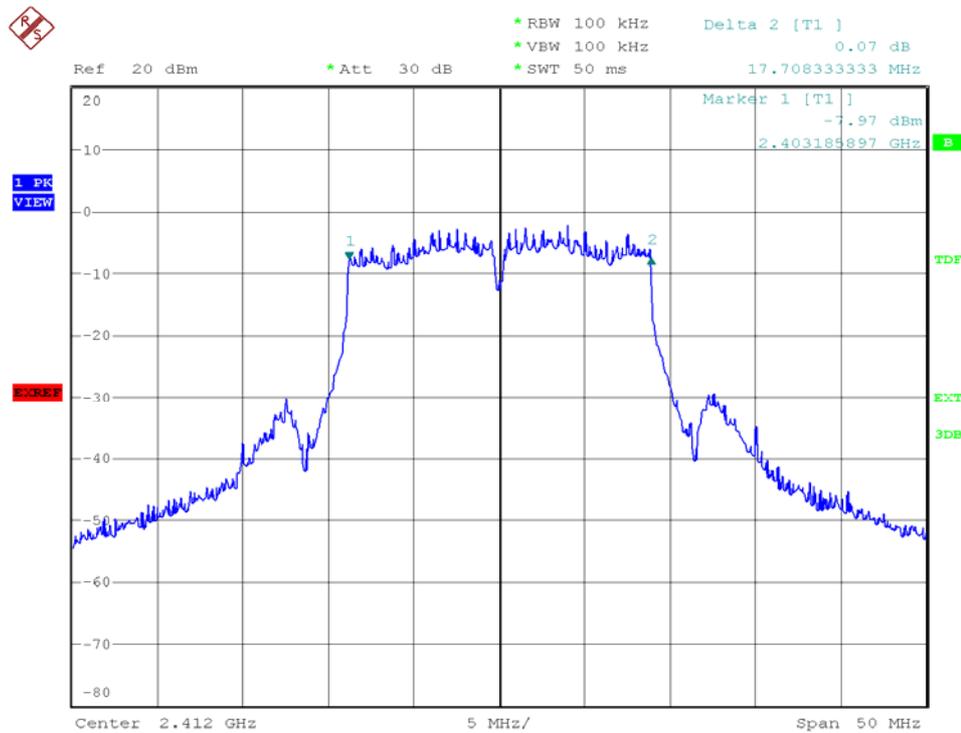




Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 11

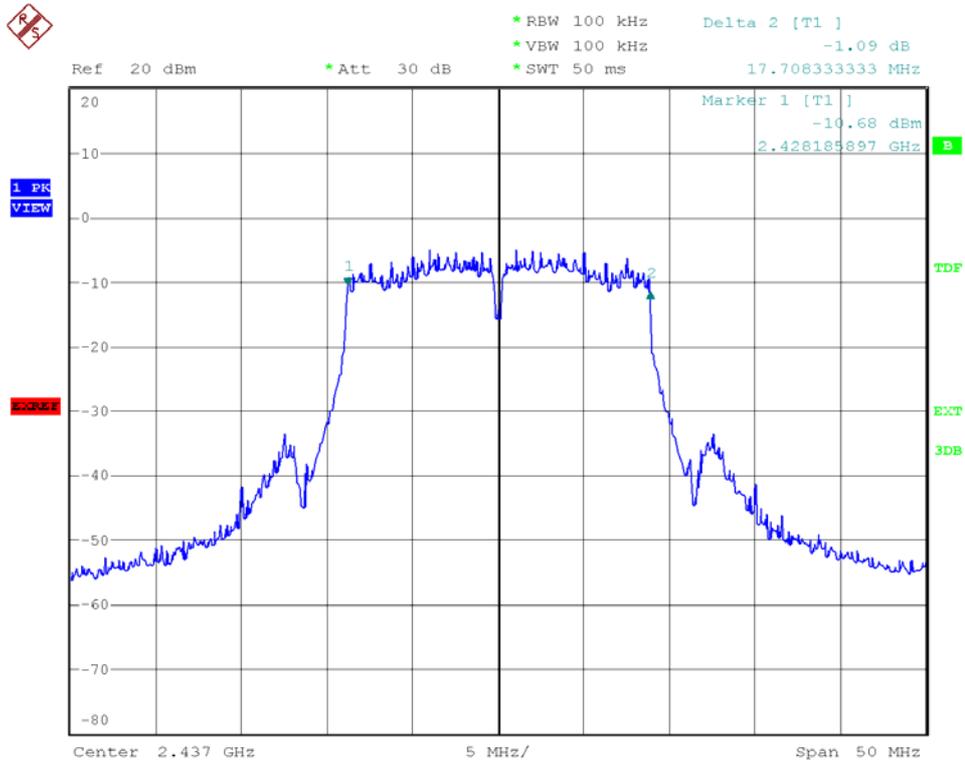


Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
Channel: 01

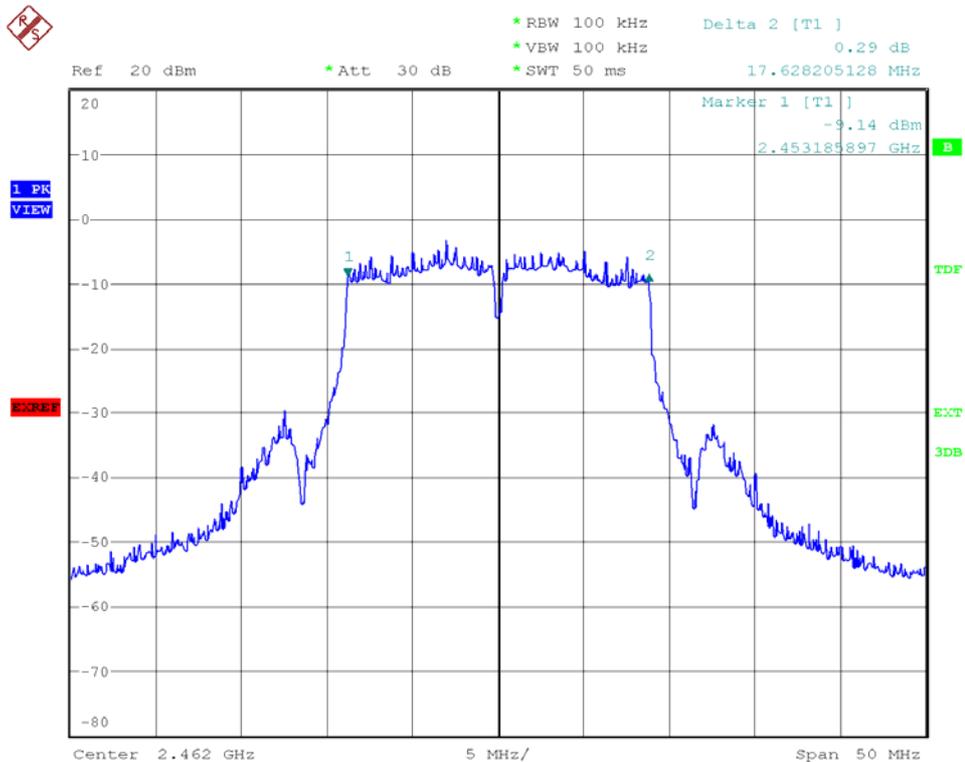




Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
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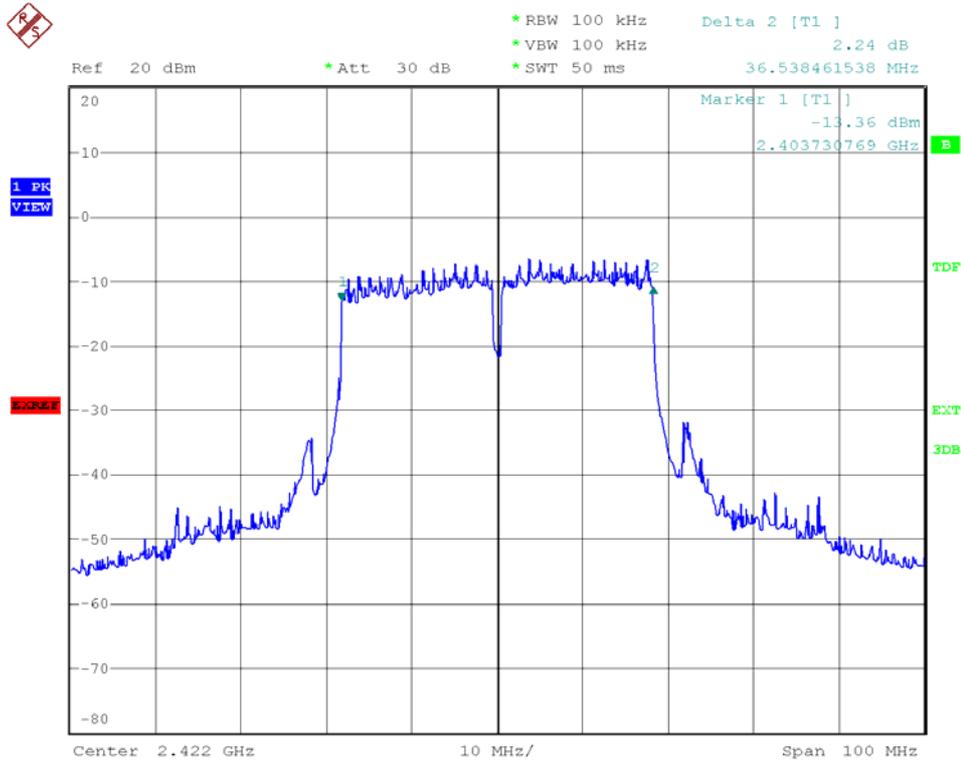


Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
Channel: 11

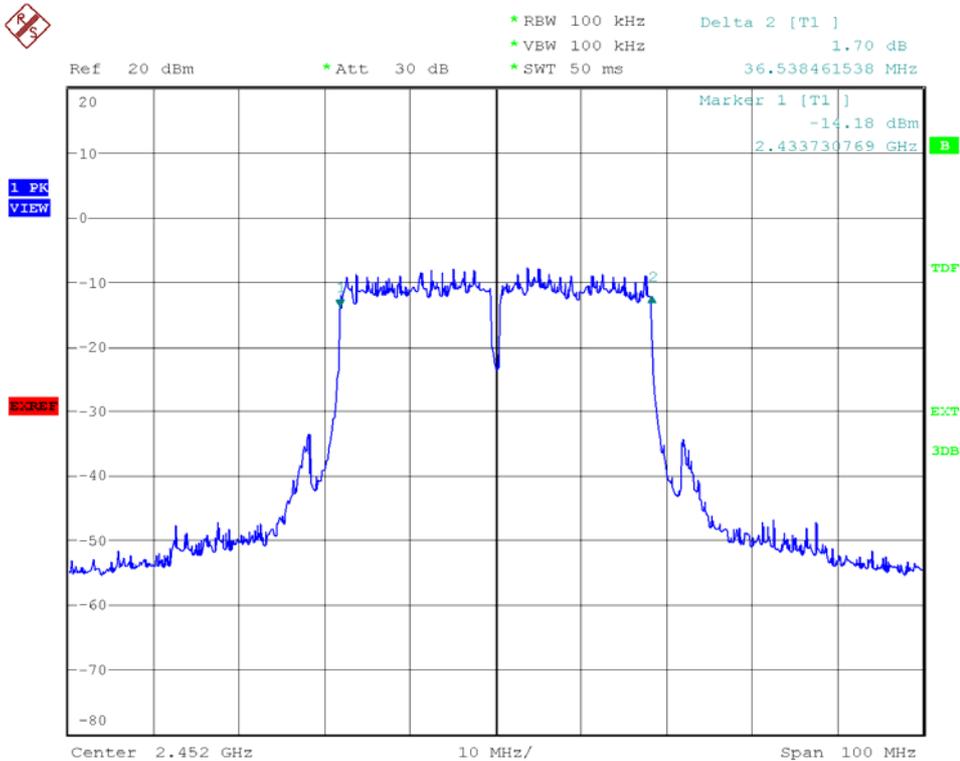




Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 03

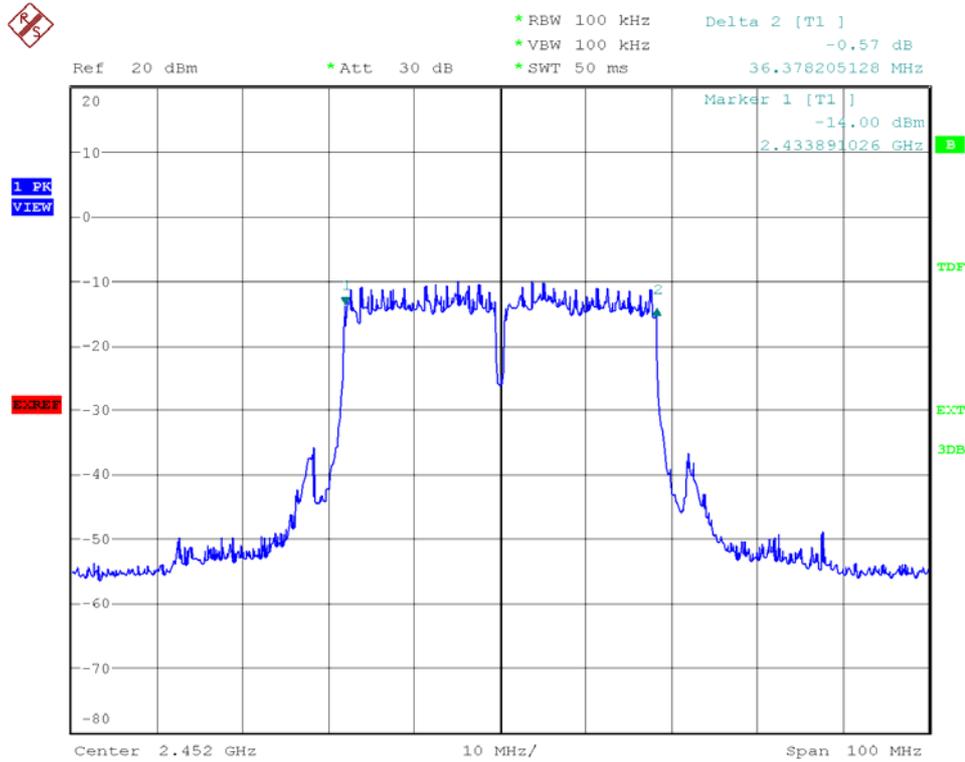


Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 06

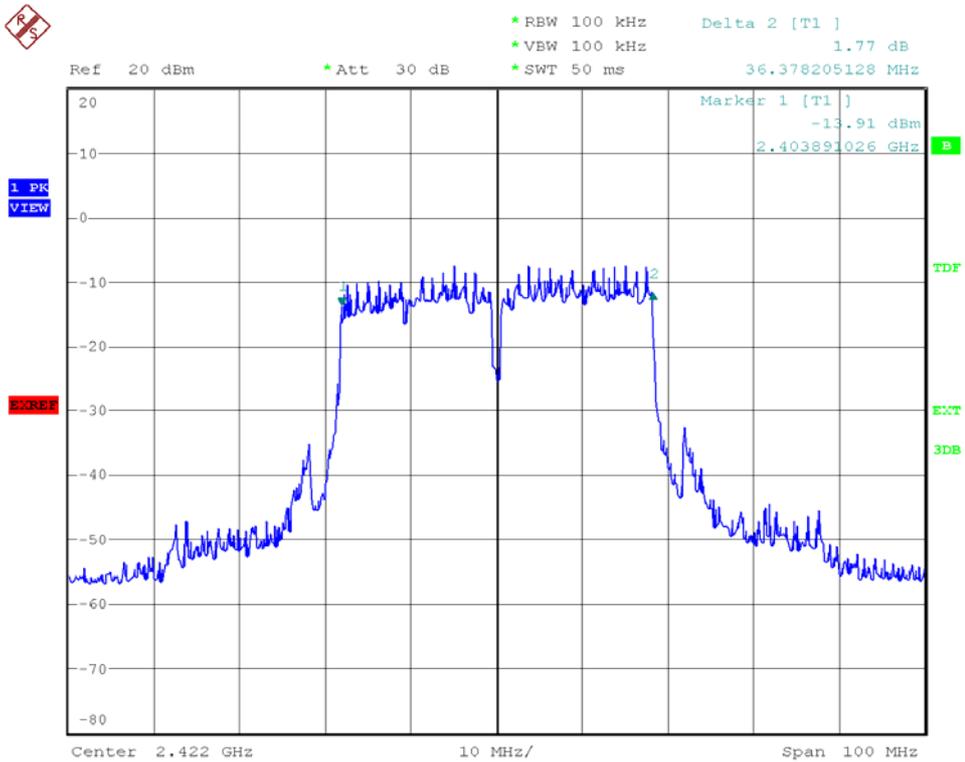




Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 09

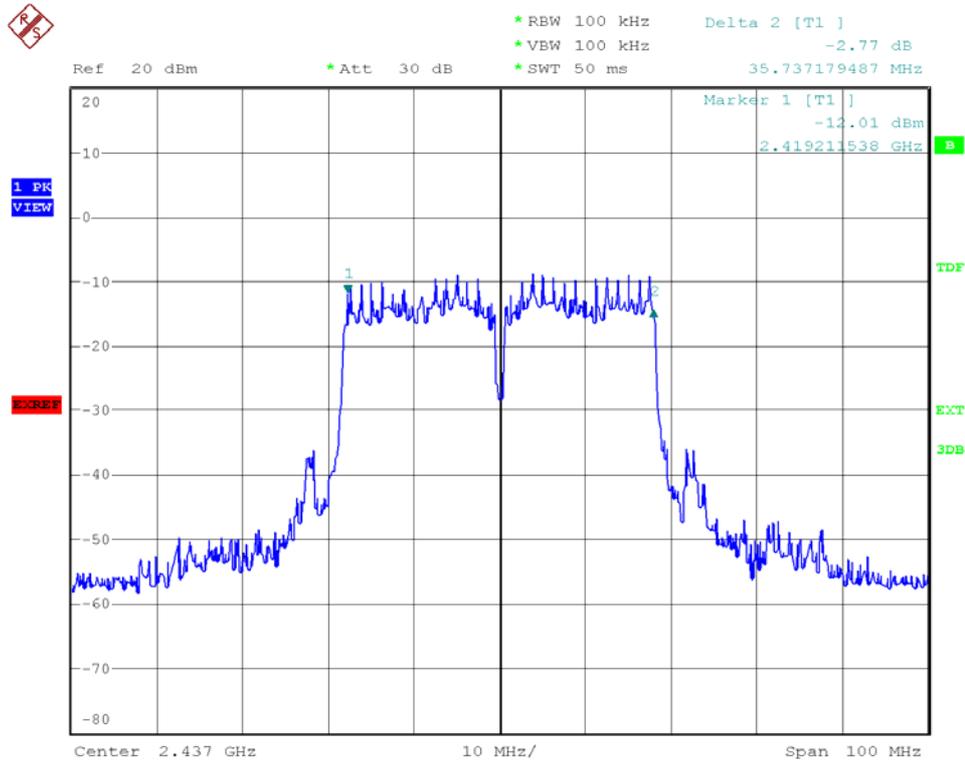


Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 03

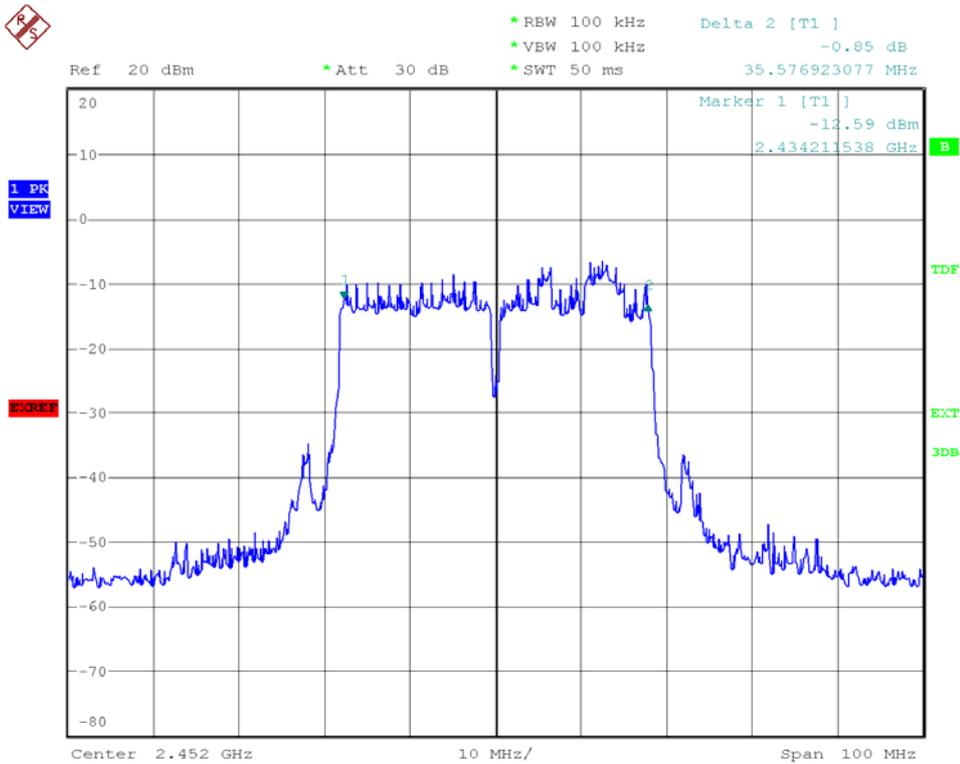




Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 06

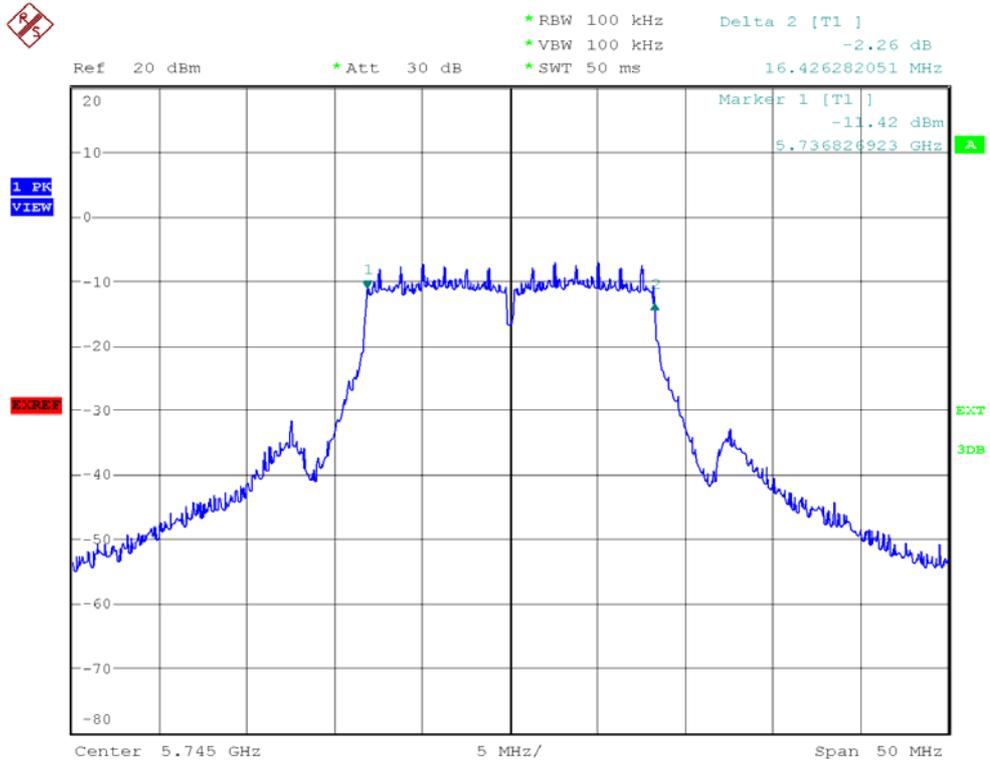


Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 09

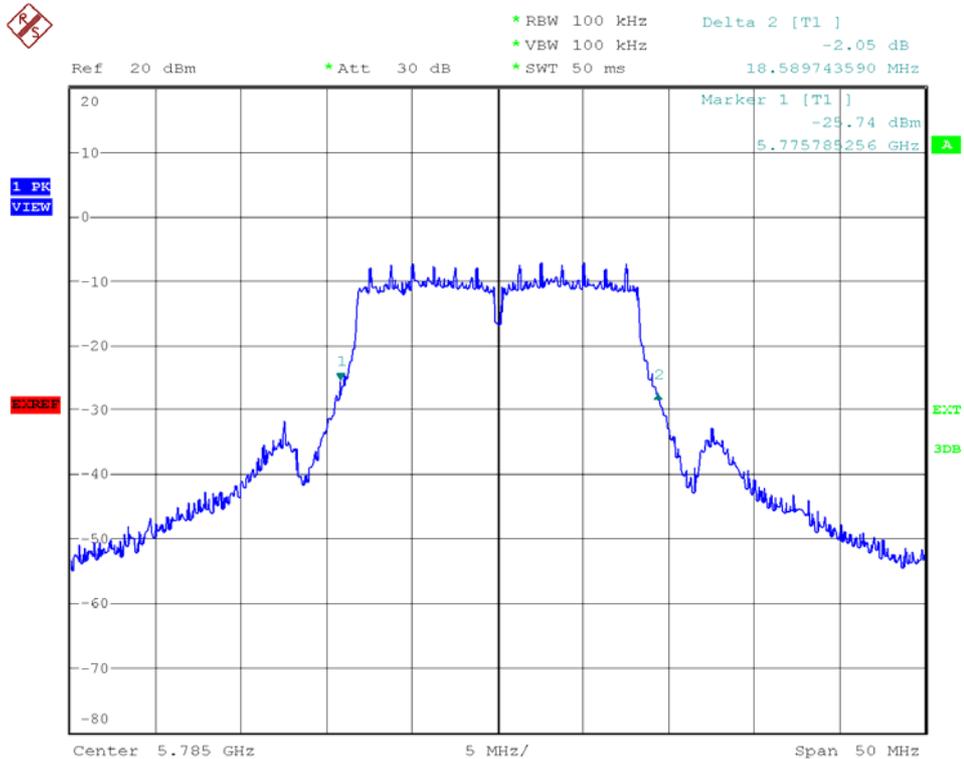




Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 149

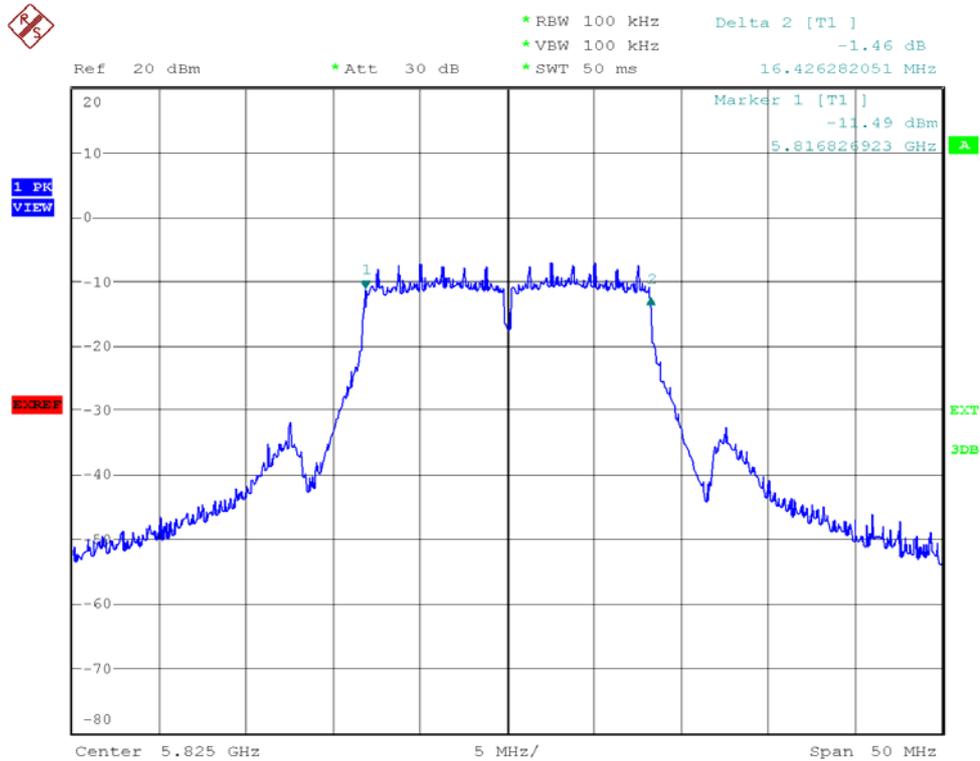


Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 157

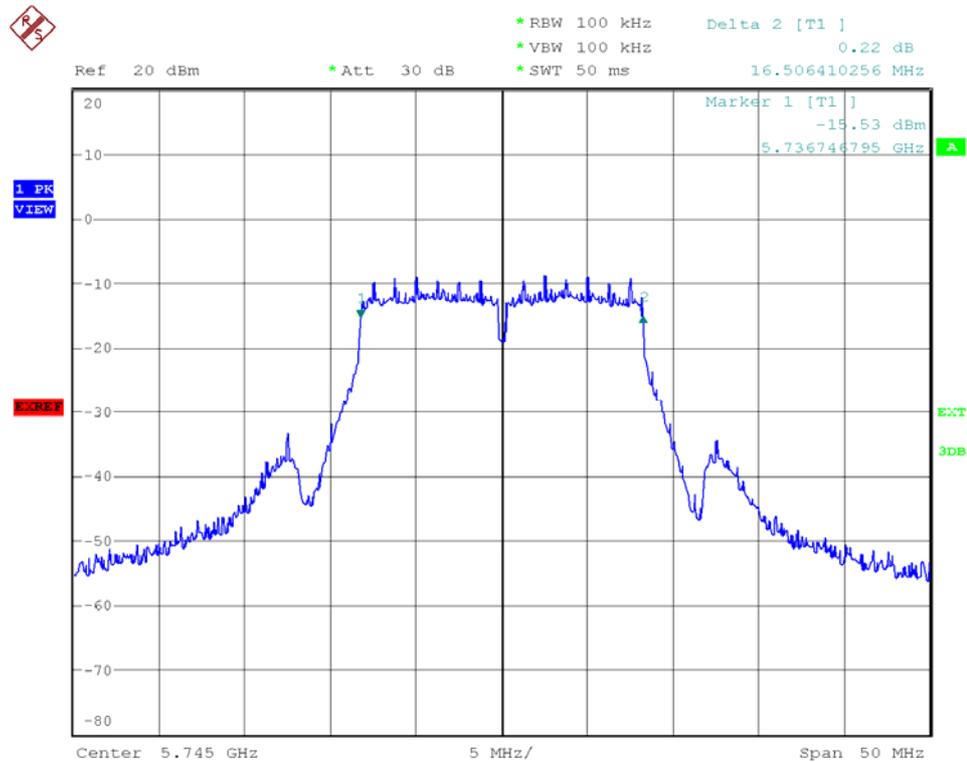




Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 165

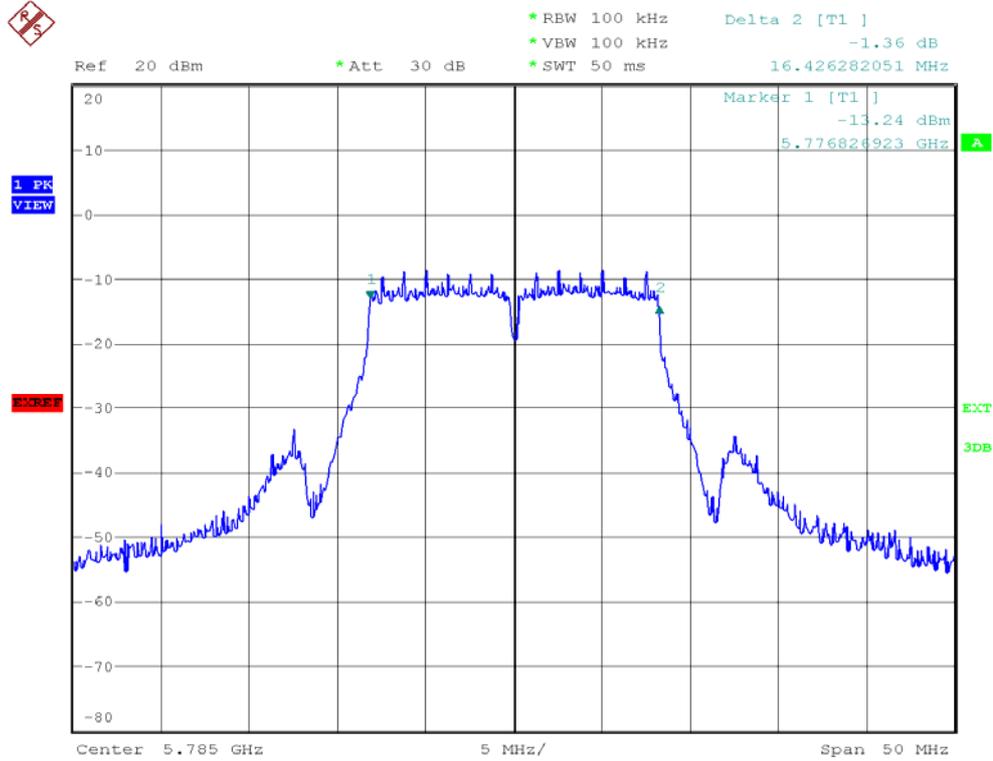


Modulation Standard: 802.11a (6Mbps), Ant L  
Channel: 149

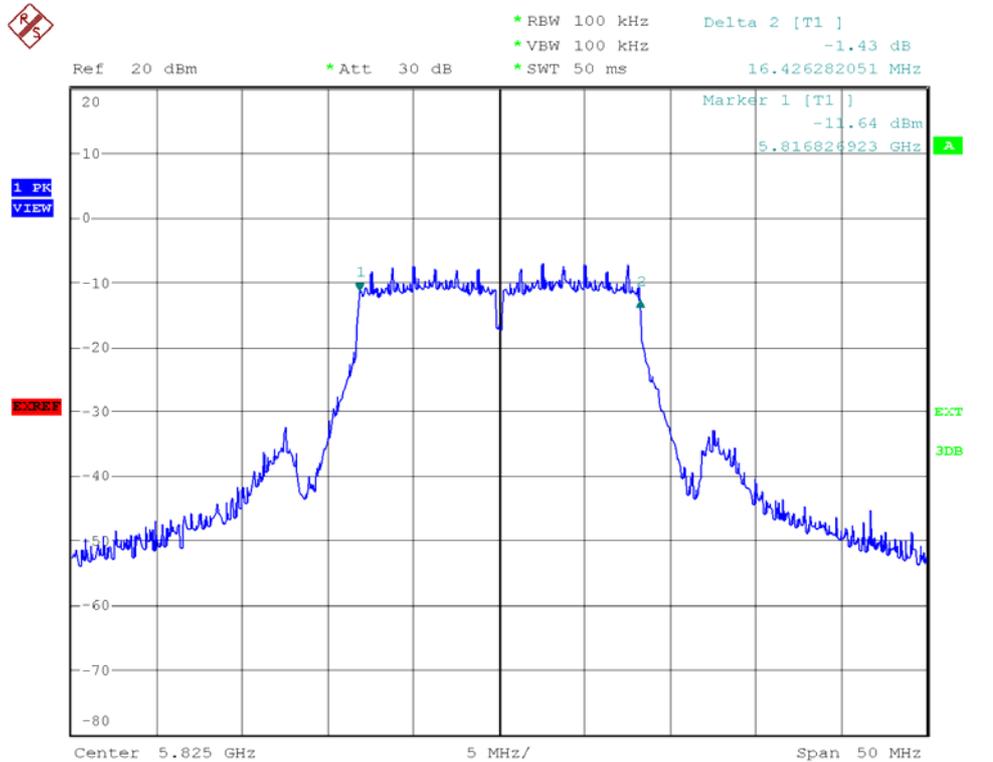




Modulation Standard: 802.11a (6Mbps), Ant L  
Channel: 157

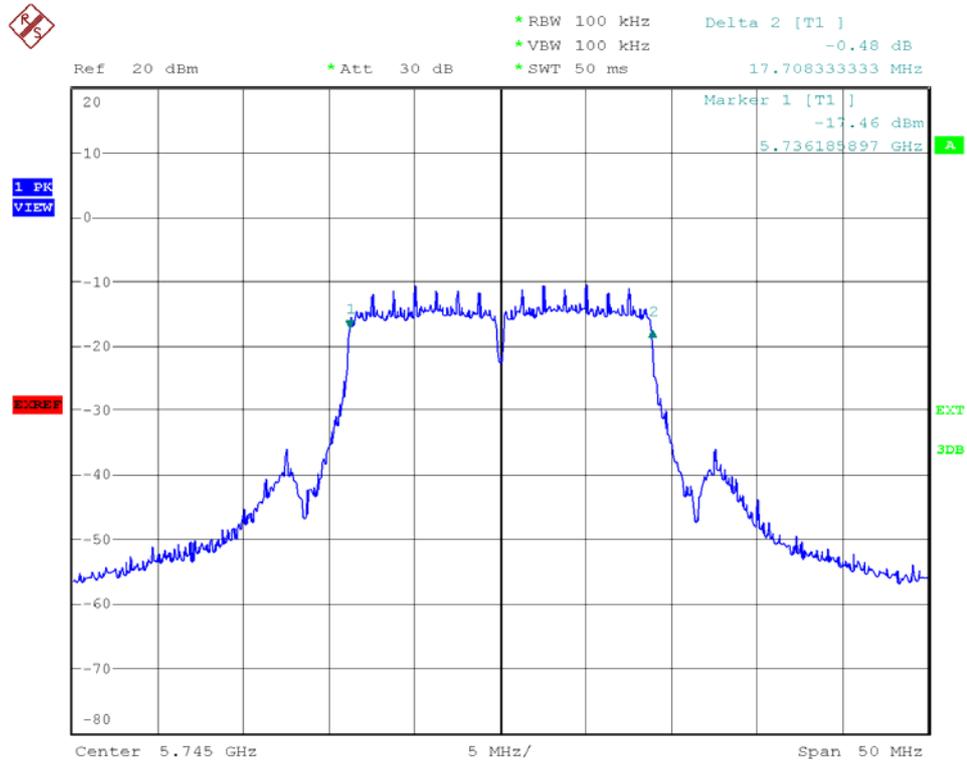


Modulation Standard: 802.11a (6Mbps), Ant L  
Channel: 165

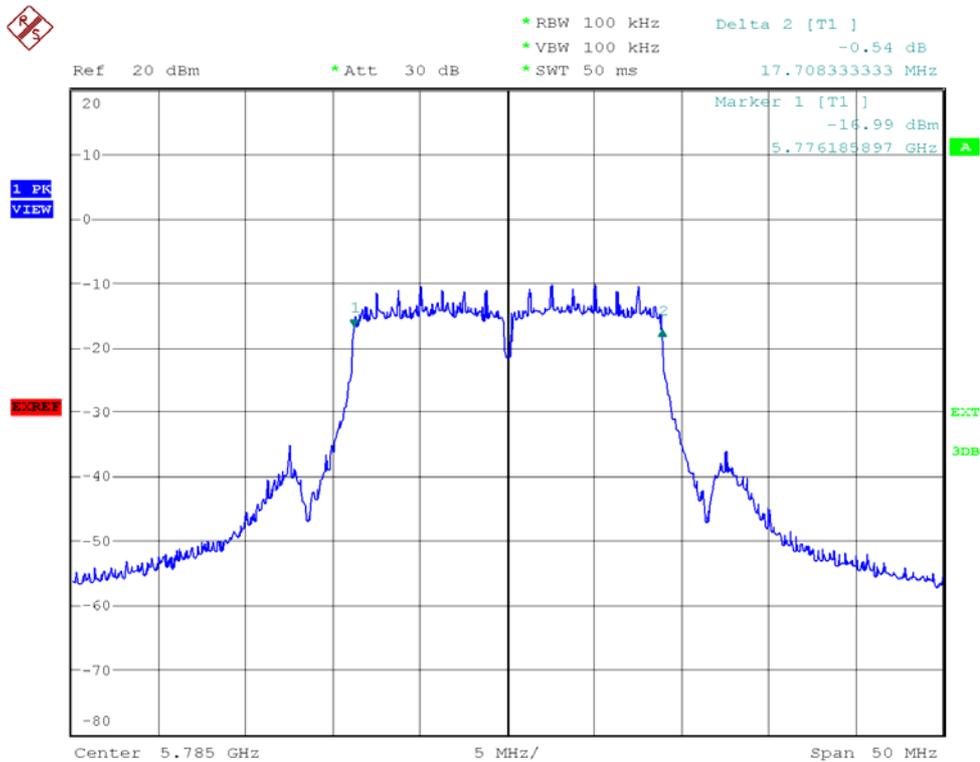




Modulation Standard: 802.11an HT20 (130Mbps), Ant R  
Channel: 149

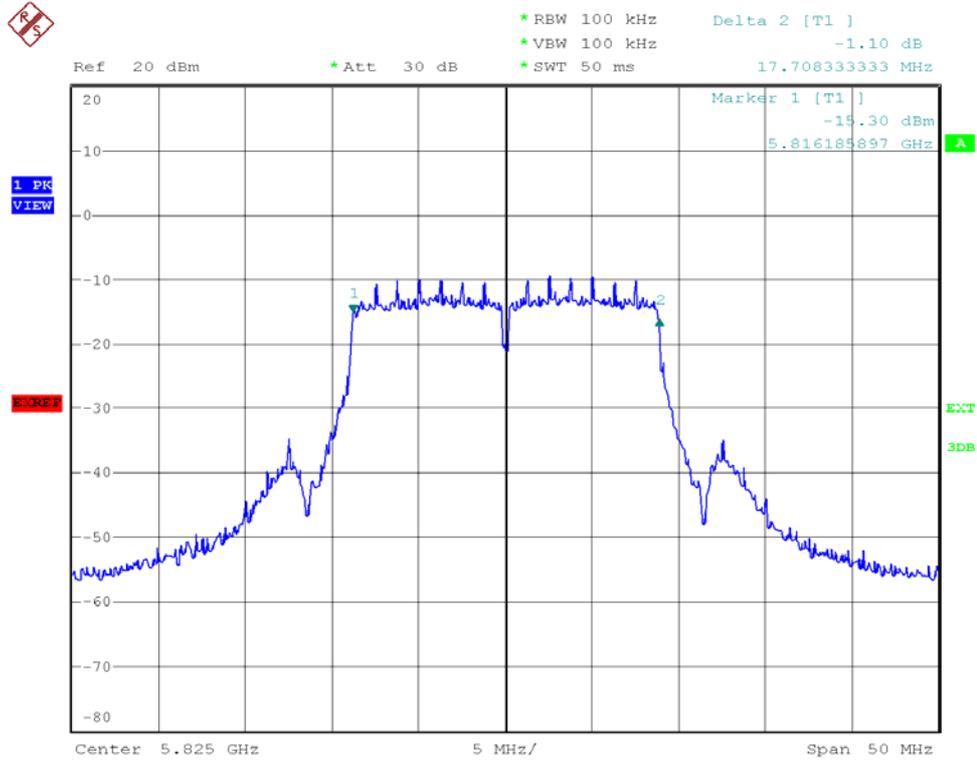


Modulation Standard: 802.11an HT20 (130Mbps), Ant R  
Channel: 157

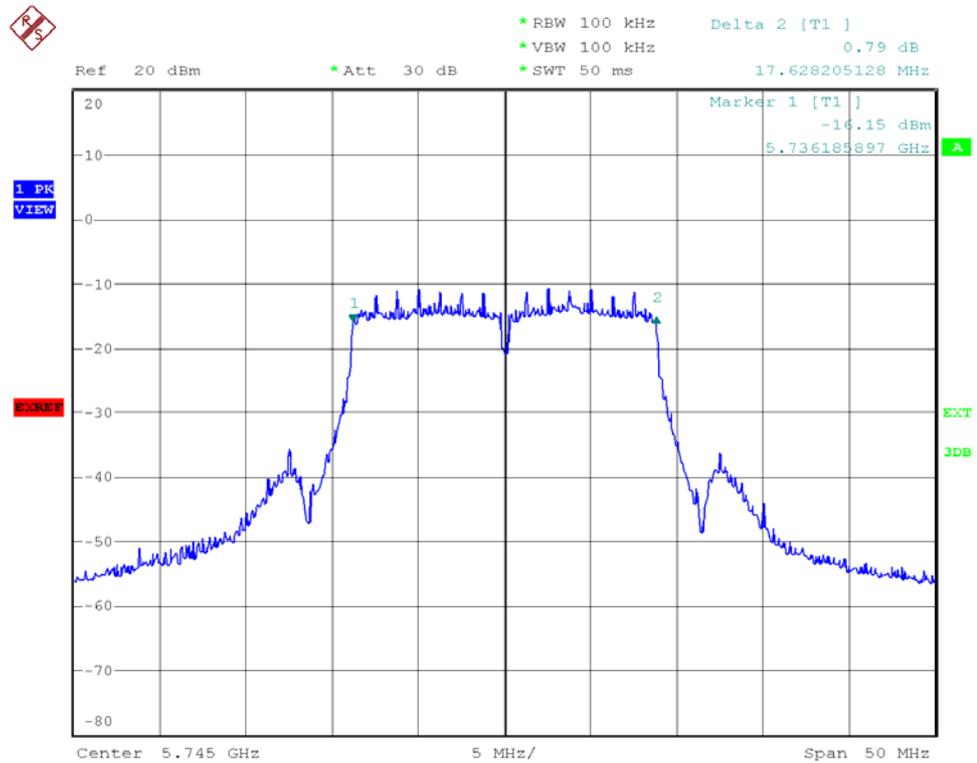




Modulation Standard: 802.11an HT20 (130Mbps), Ant R  
Channel: 165

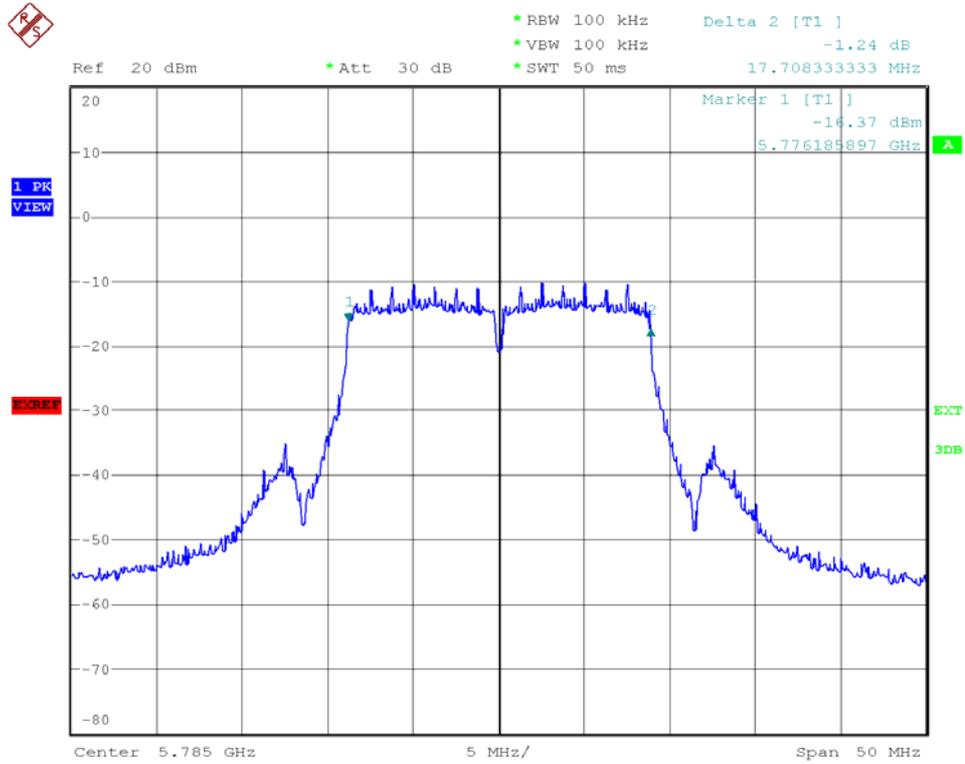


Modulation Standard: 802.11an HT20 (130Mbps), Ant L  
Channel: 149

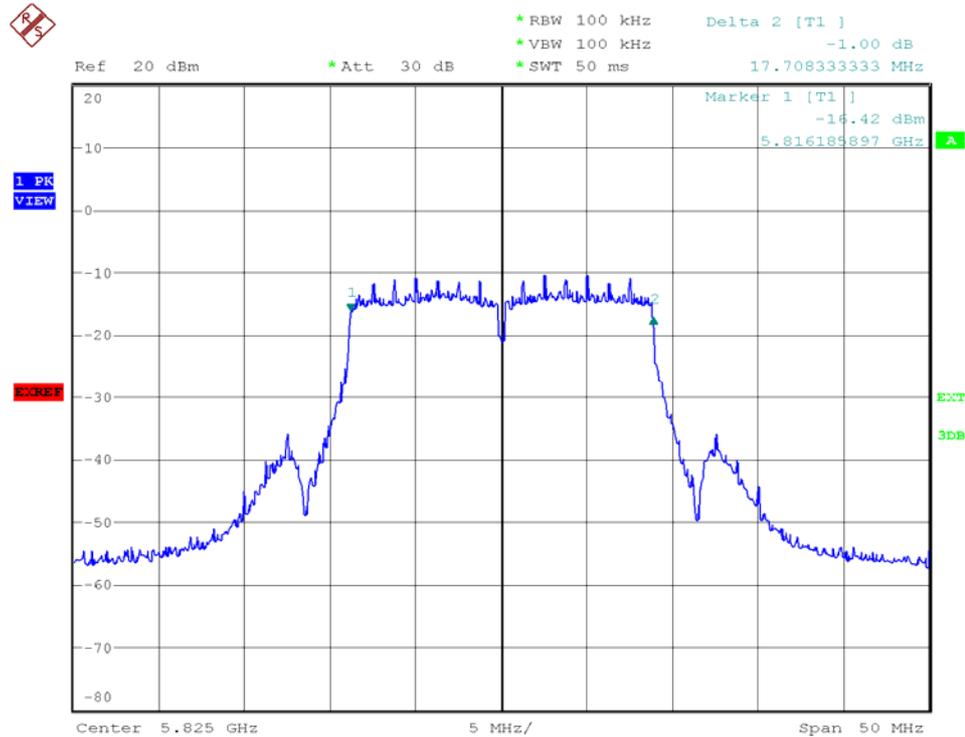




Modulation Standard: 802.11an HT20 (130Mbps), Ant L  
Channel: 157

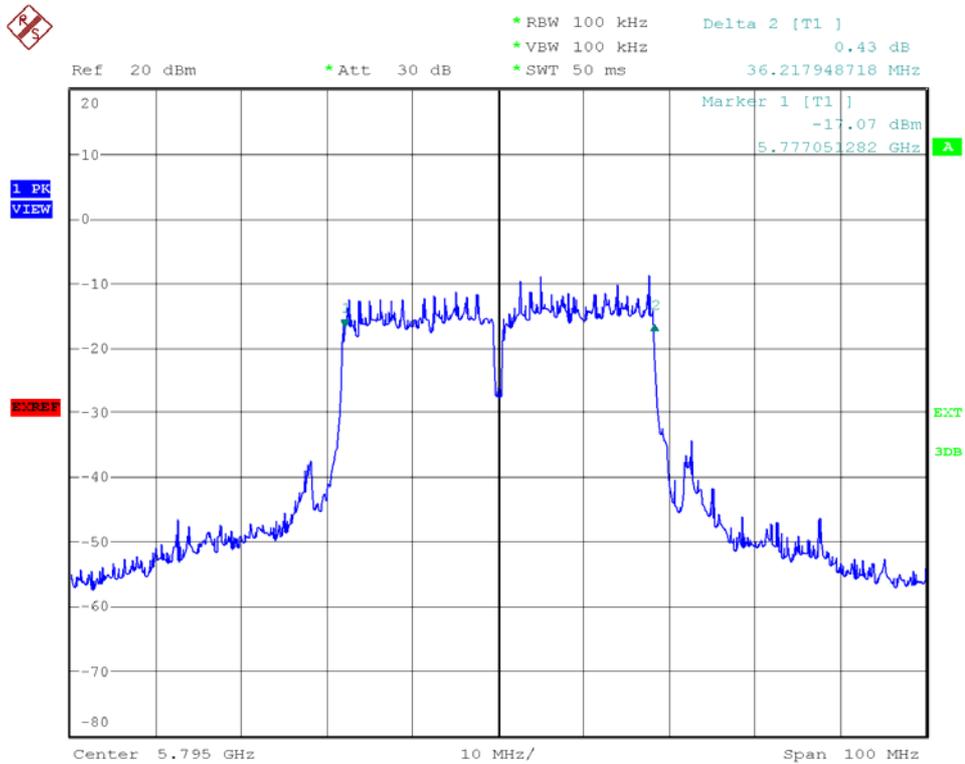


Modulation Standard: 802.11an HT20 (130Mbps), Ant L  
Channel: 165

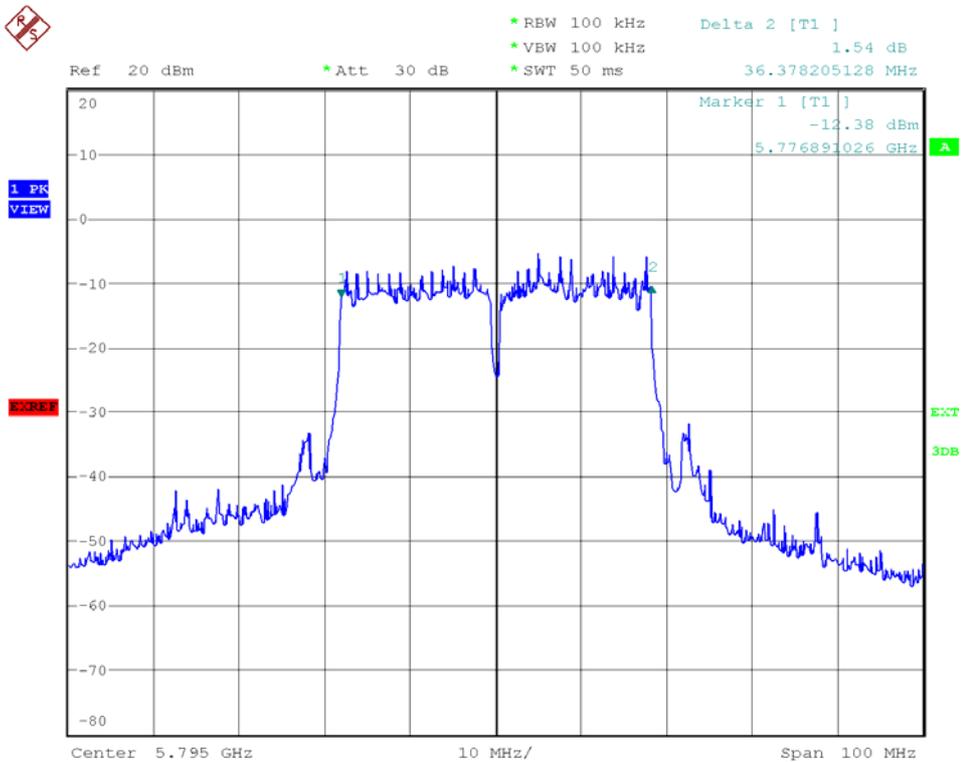




Modulation Standard: 802.11an HT40 (270Mbps), Ant R  
Channel: 159

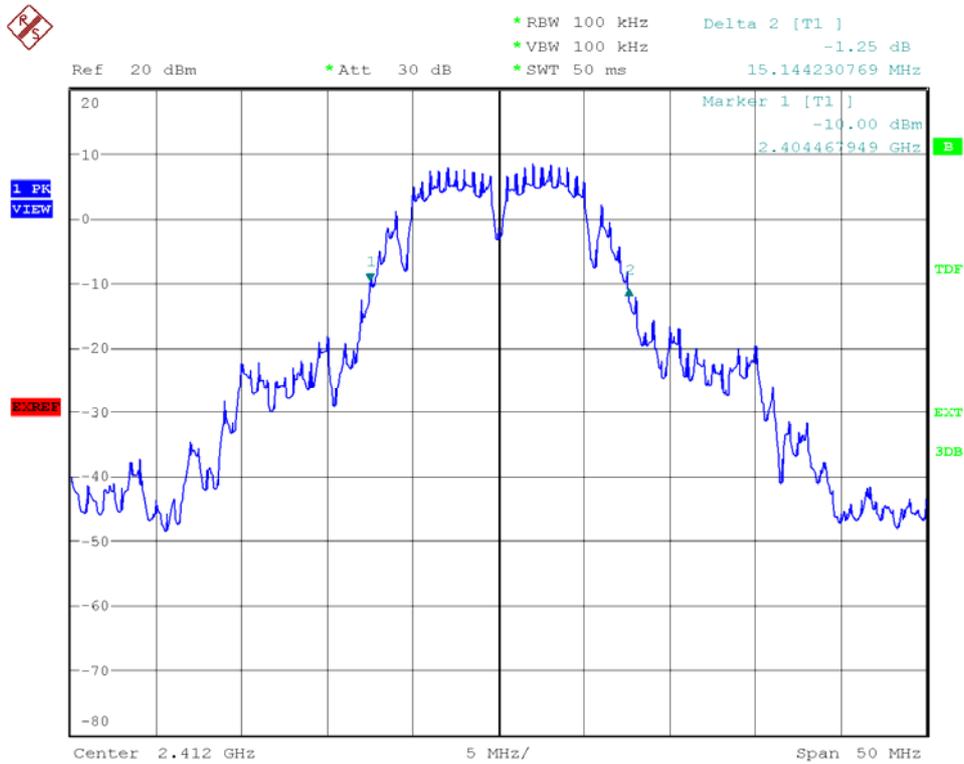


Modulation Standard: 802.11an HT40 (270Mbps), Ant L  
Channel: 159

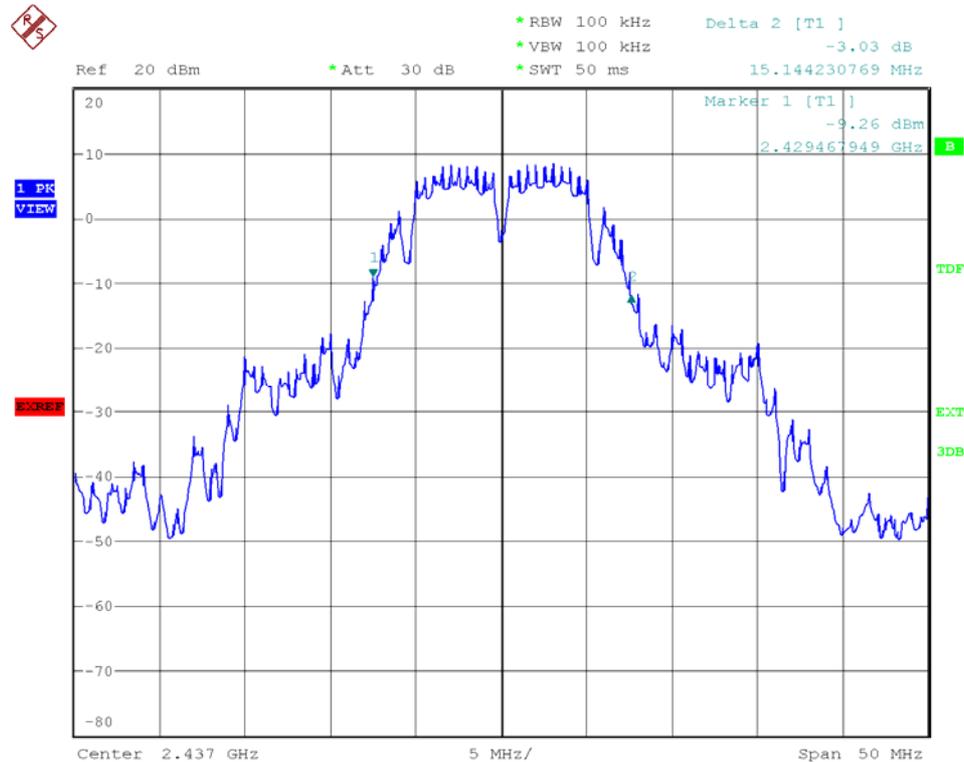




Modulation Standard: 802.11b (11Mbps), Ant R, 99% Bandwidth  
Channel: 01

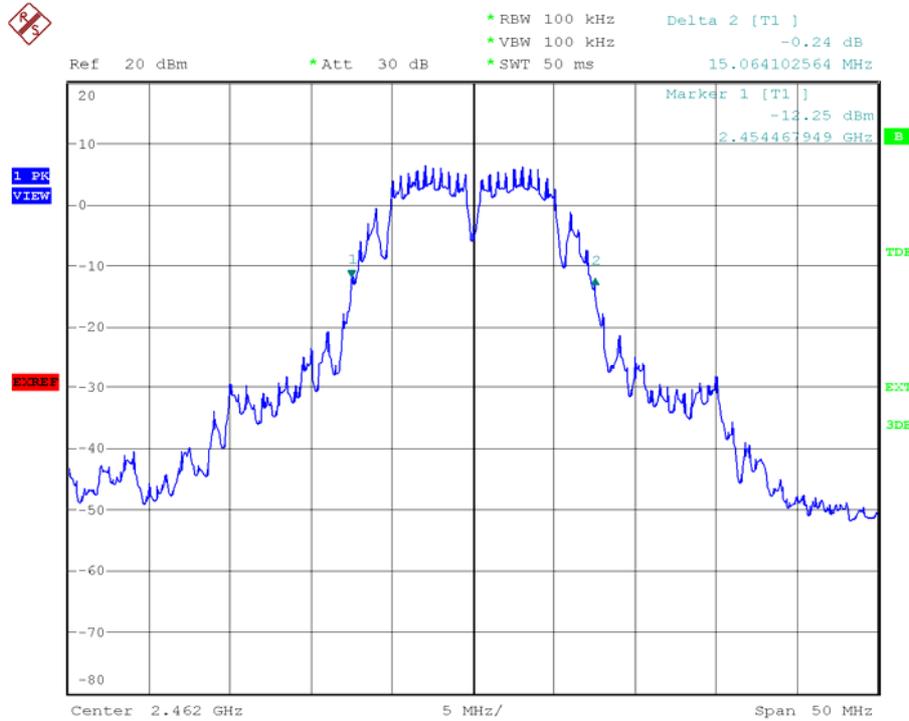


Modulation Standard: 802.11b (11Mbps), Ant R, 99% Bandwidth  
Channel: 06

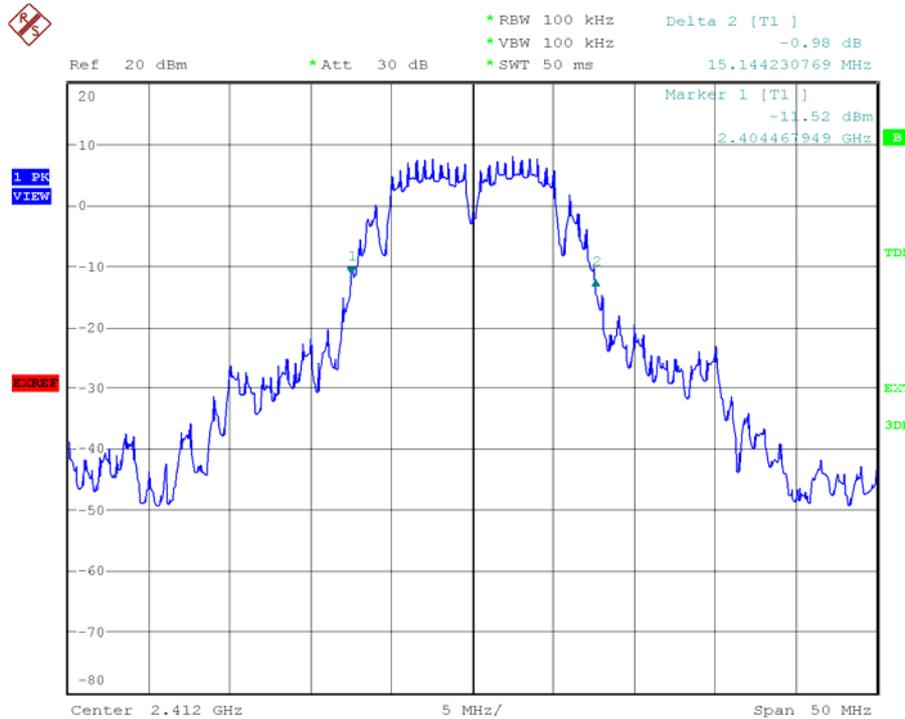




Modulation Standard: 802.11b (11Mbps), Ant R, 99% Bandwidth  
Channel: 11

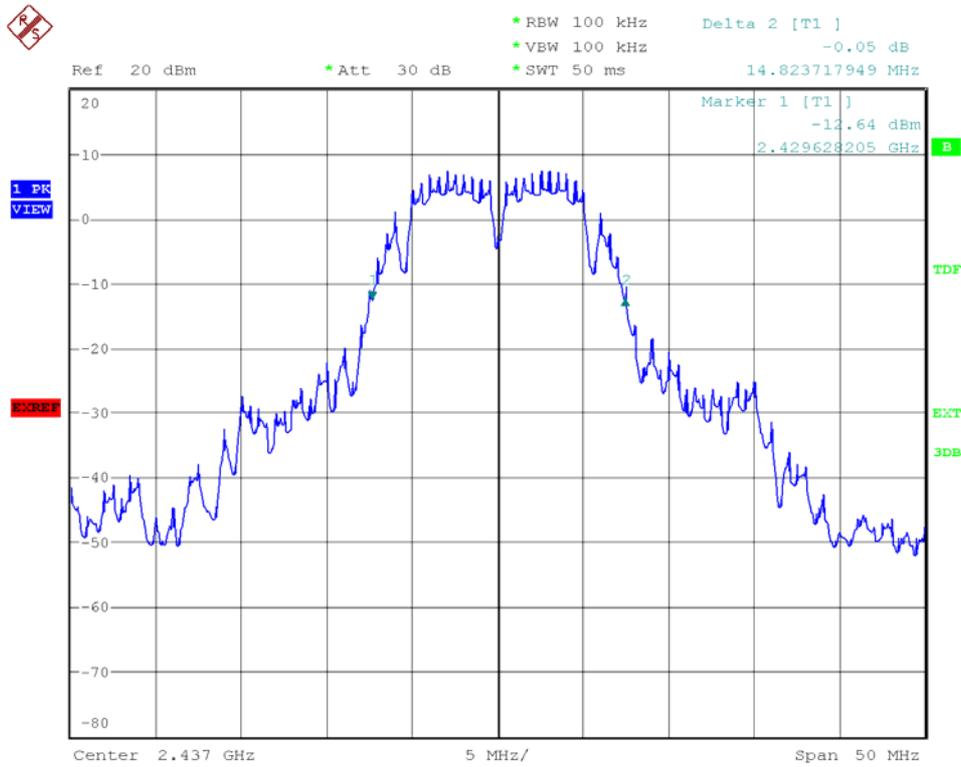


Modulation Standard: 802.11b (11Mbps), Ant L, 99% Bandwidth  
Channel: 01

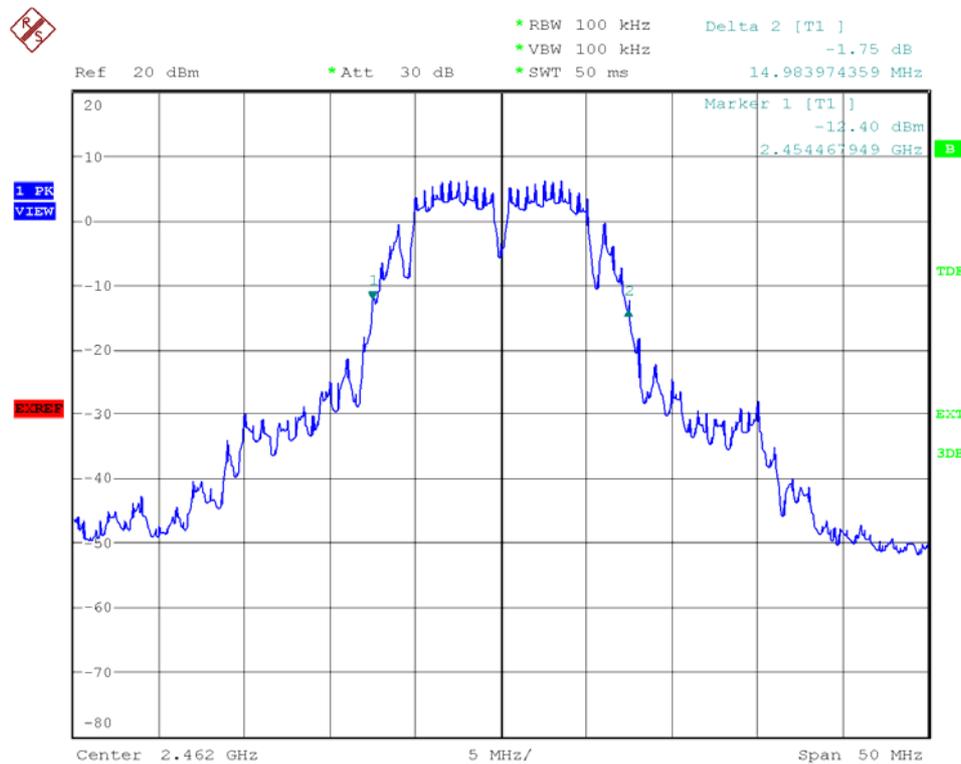




Modulation Standard: 802.11b (11Mbps), Ant L, 99% Bandwidth  
Channel: 06

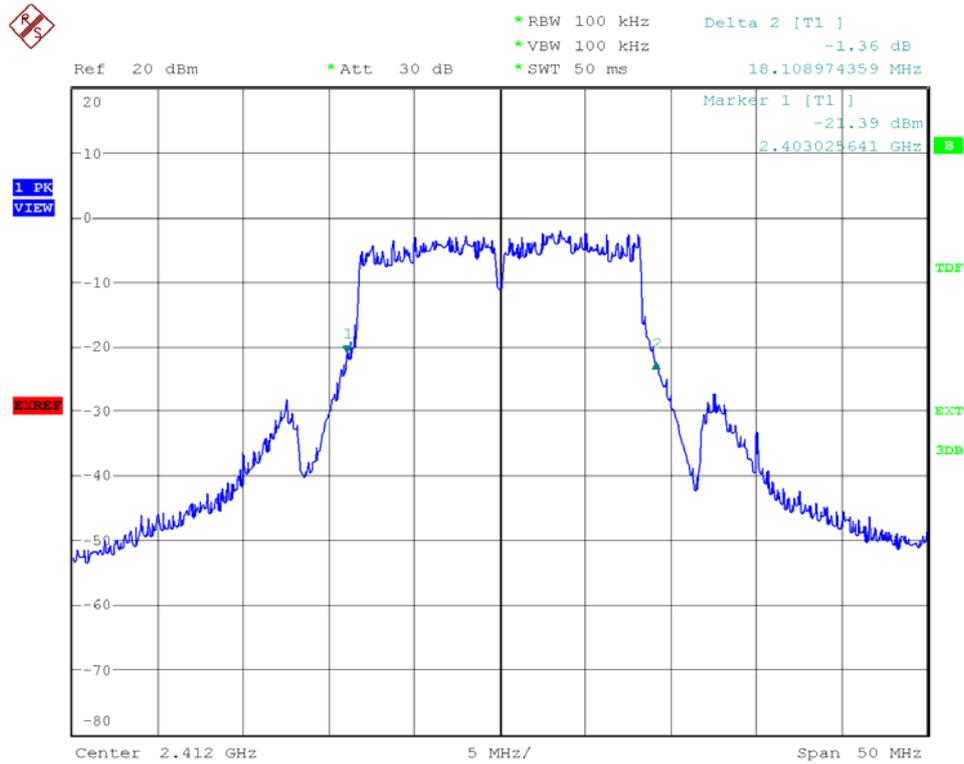


Modulation Standard: 802.11b (11Mbps), Ant L, 99% Bandwidth  
Channel: 11

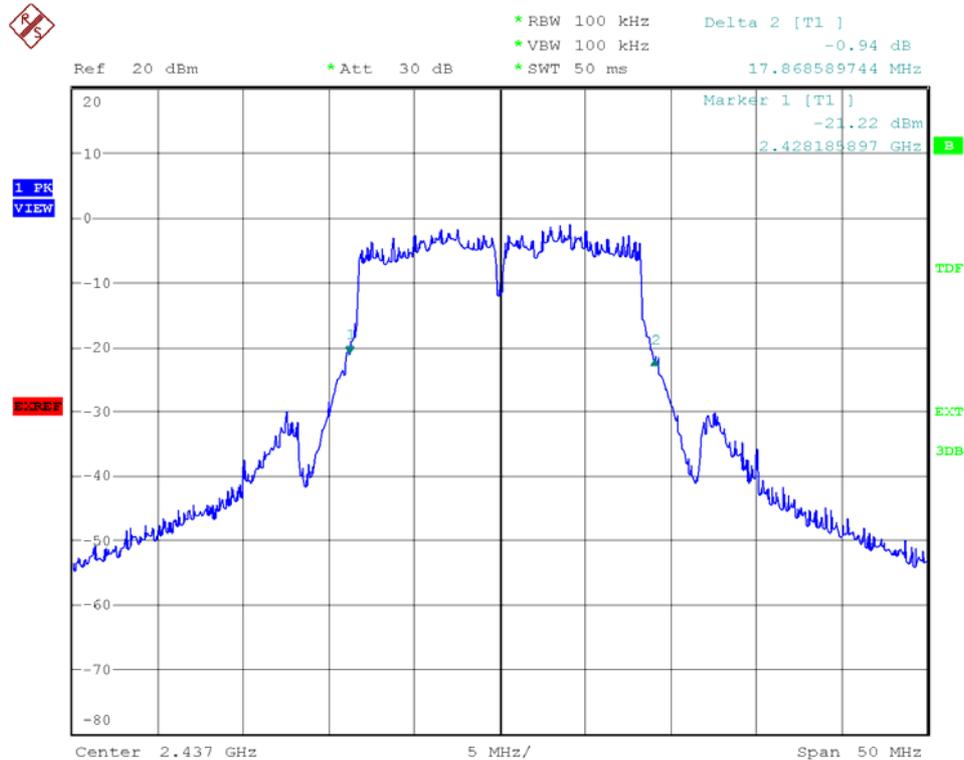




Modulation Standard: 802.11g (54Mbps), Ant R, 99% Bandwidth  
Channel: 01

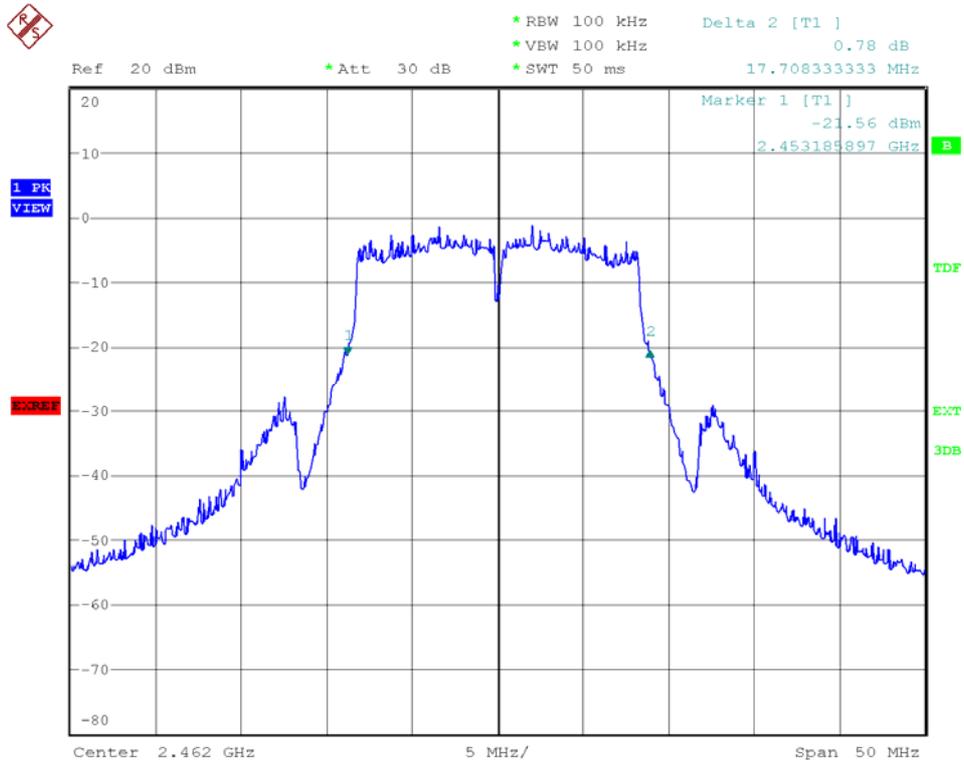


Modulation Standard: 802.11g (54Mbps), Ant R, 99% Bandwidth  
Channel: 06

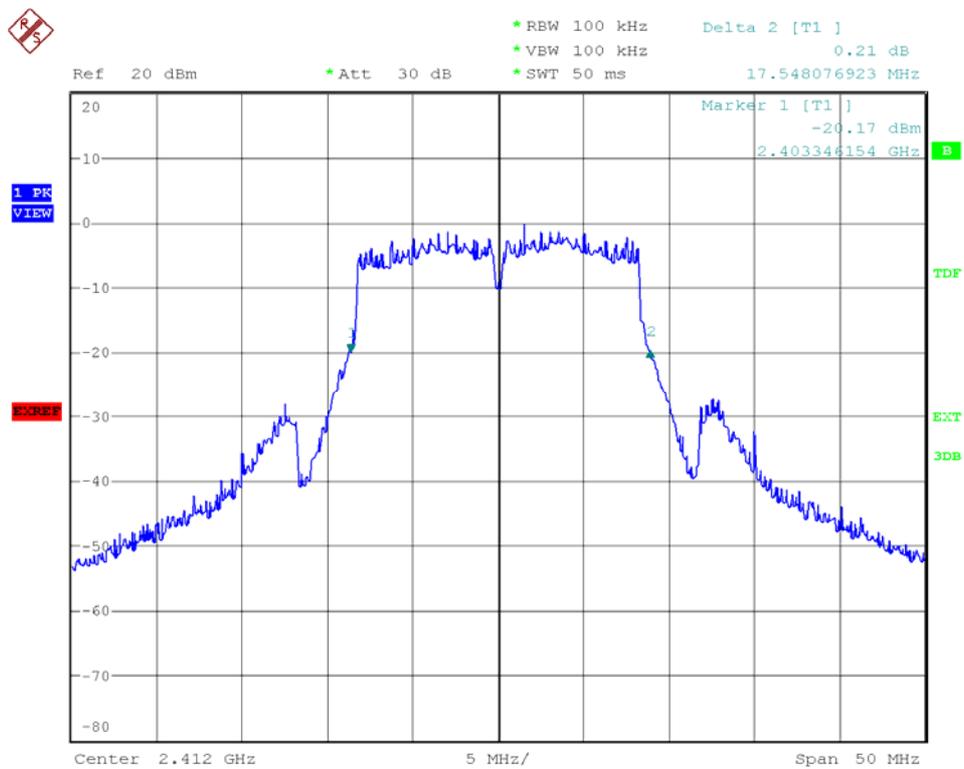




Modulation Standard: 802.11g (54Mbps), Ant R, 99% Bandwidth  
Channel: 11

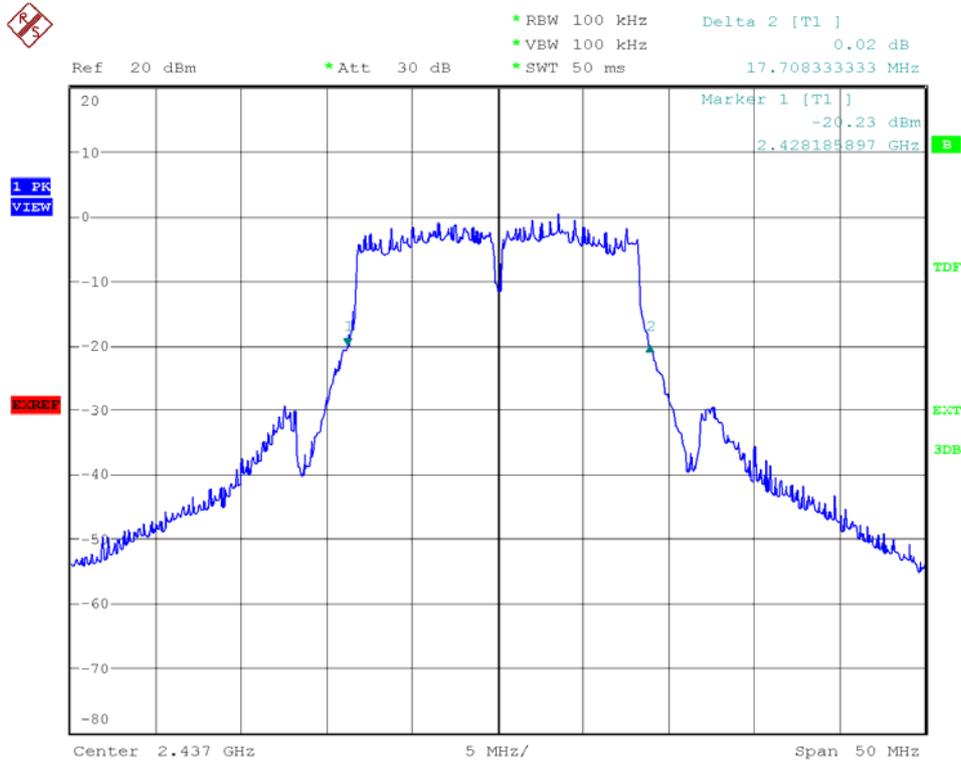


Modulation Standard: 802.11g (54Mbps), Ant L, 99% Bandwidth  
Channel: 01

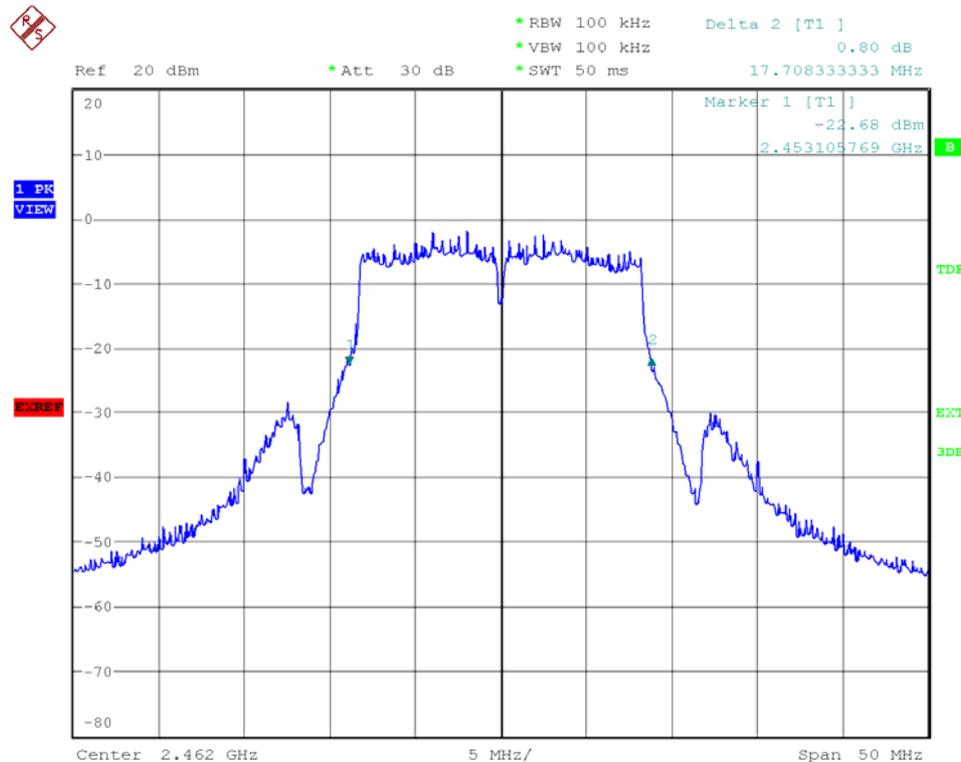




Modulation Standard: 802.11g (54Mbps), Ant L, 99% Bandwidth  
Channel: 06

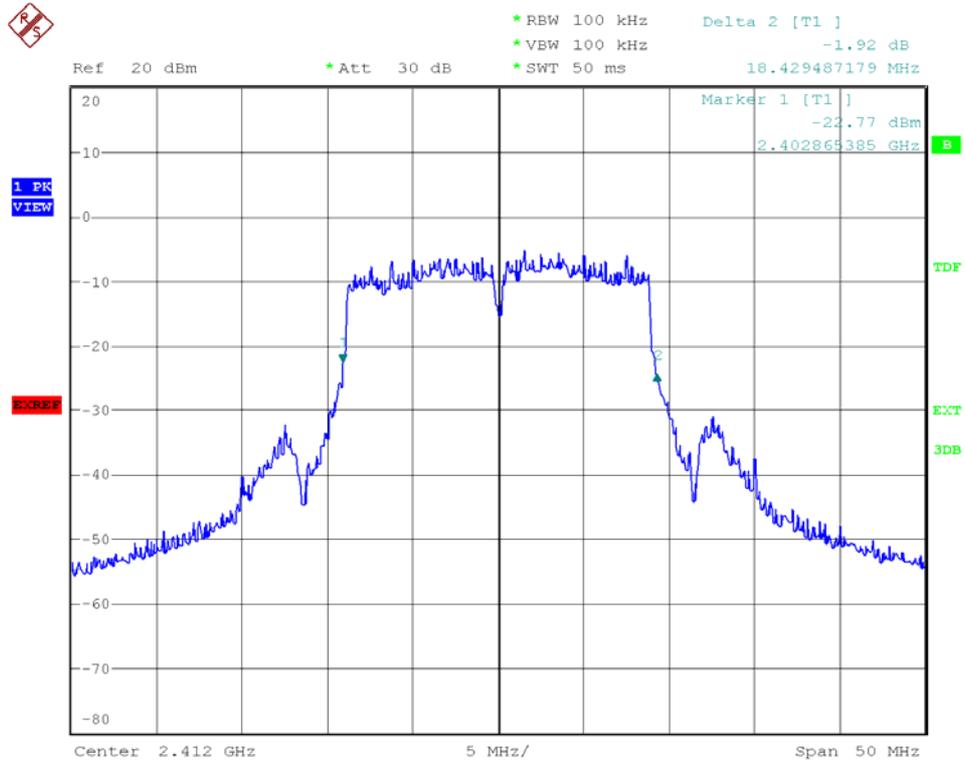


Modulation Standard: 802.11g (54Mbps), Ant L, 99% Bandwidth  
Channel: 11

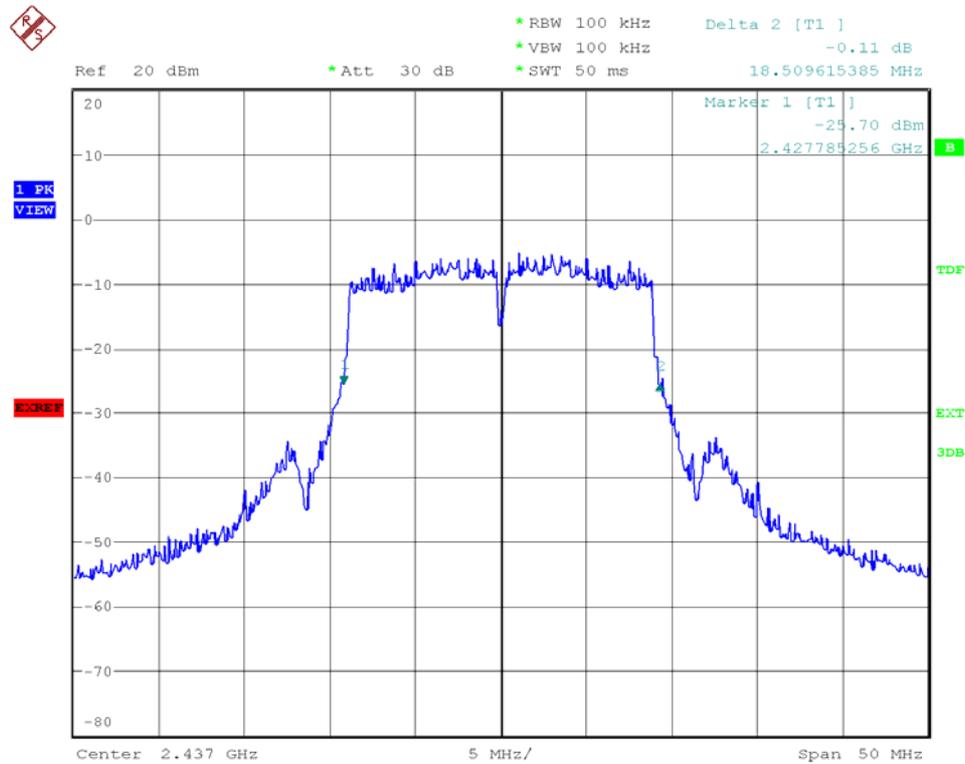




Modulation Standard: 802.11n HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 01

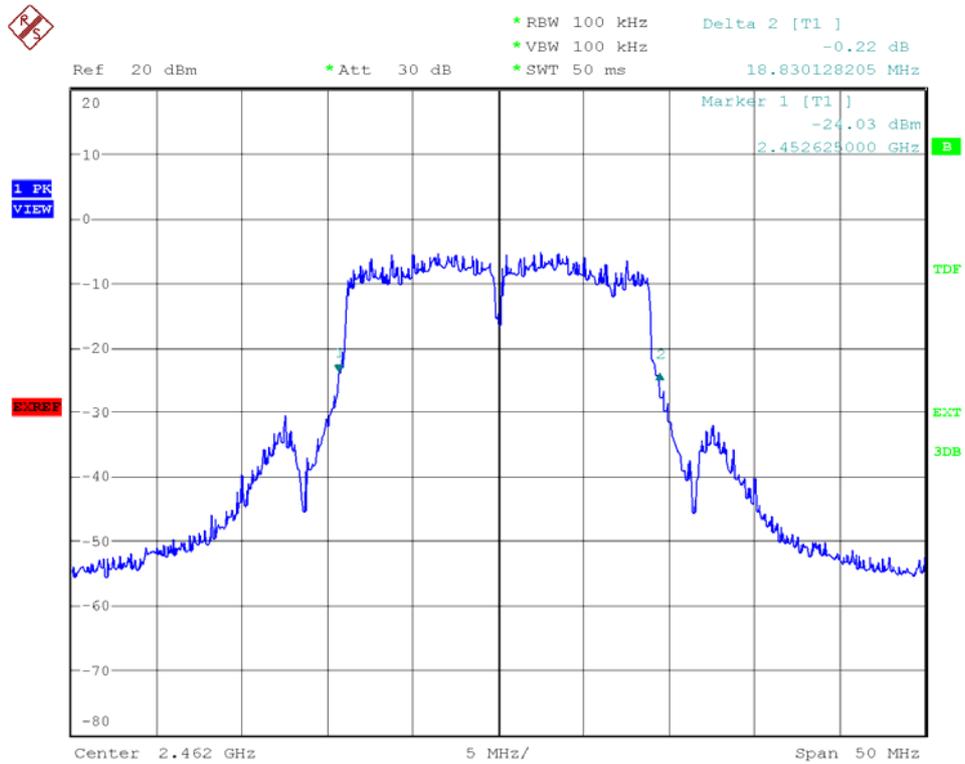


Modulation Standard: 802.11n HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 06

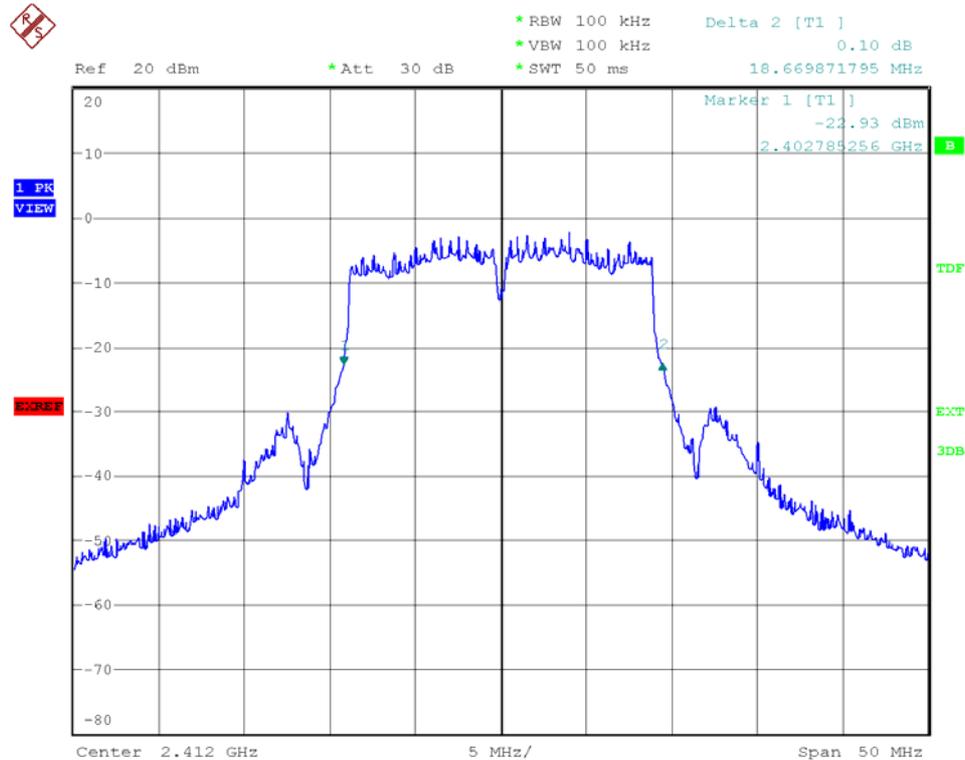




Modulation Standard: 802.11n HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 11

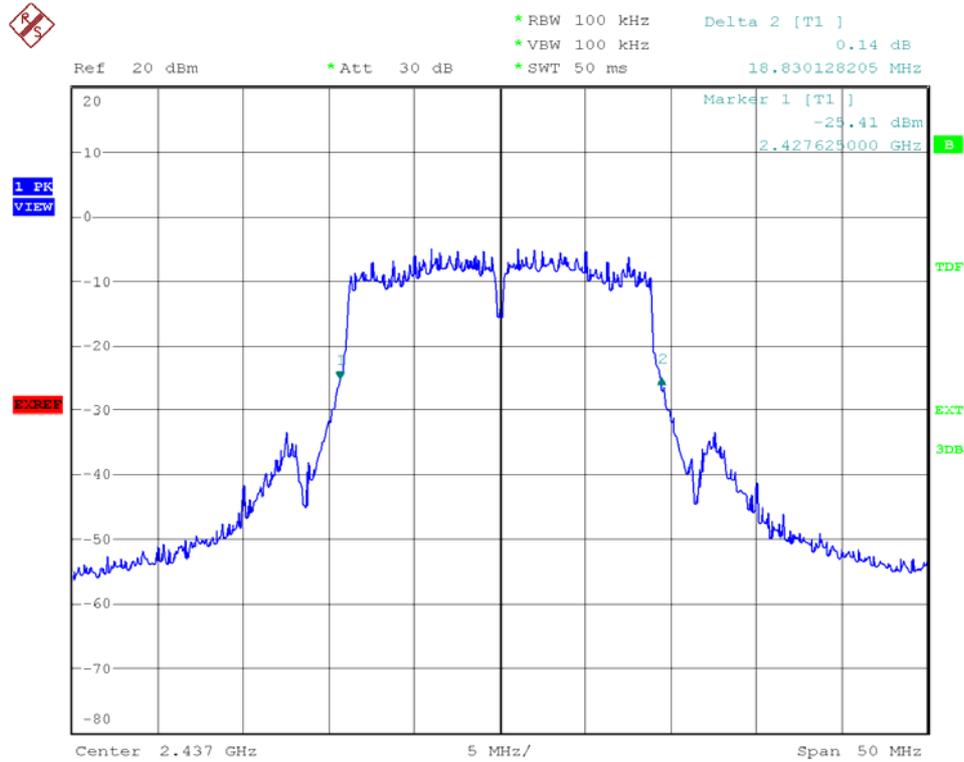


Modulation Standard: 802.11n HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 01

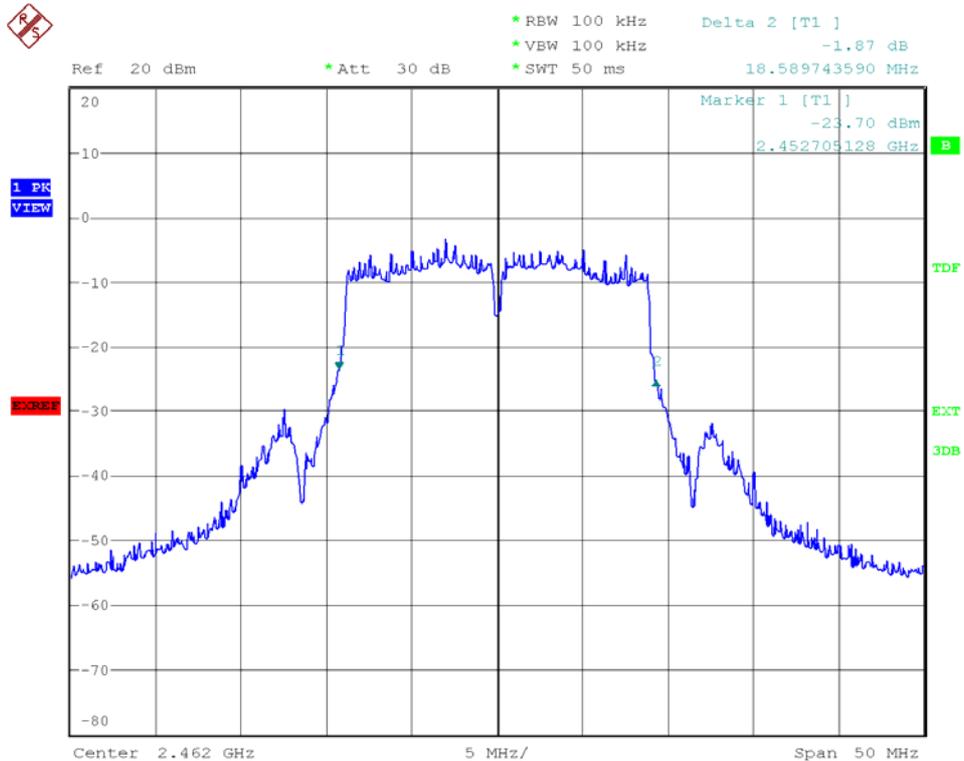




Modulation Standard: 802.11n HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 06

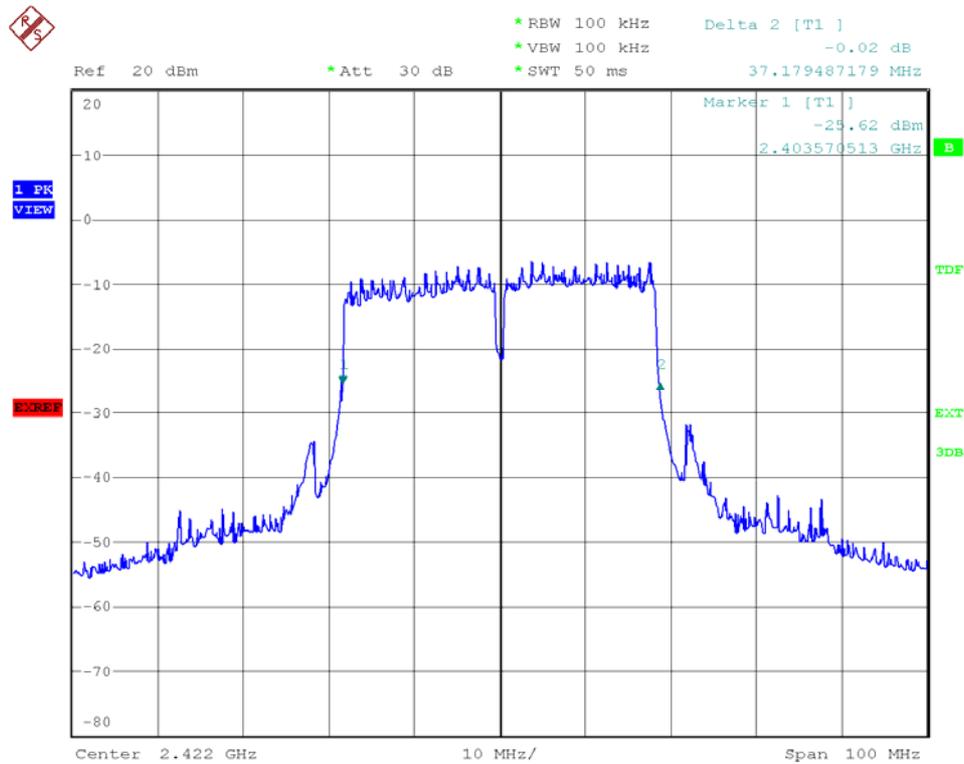


Modulation Standard: 802.11n HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 11

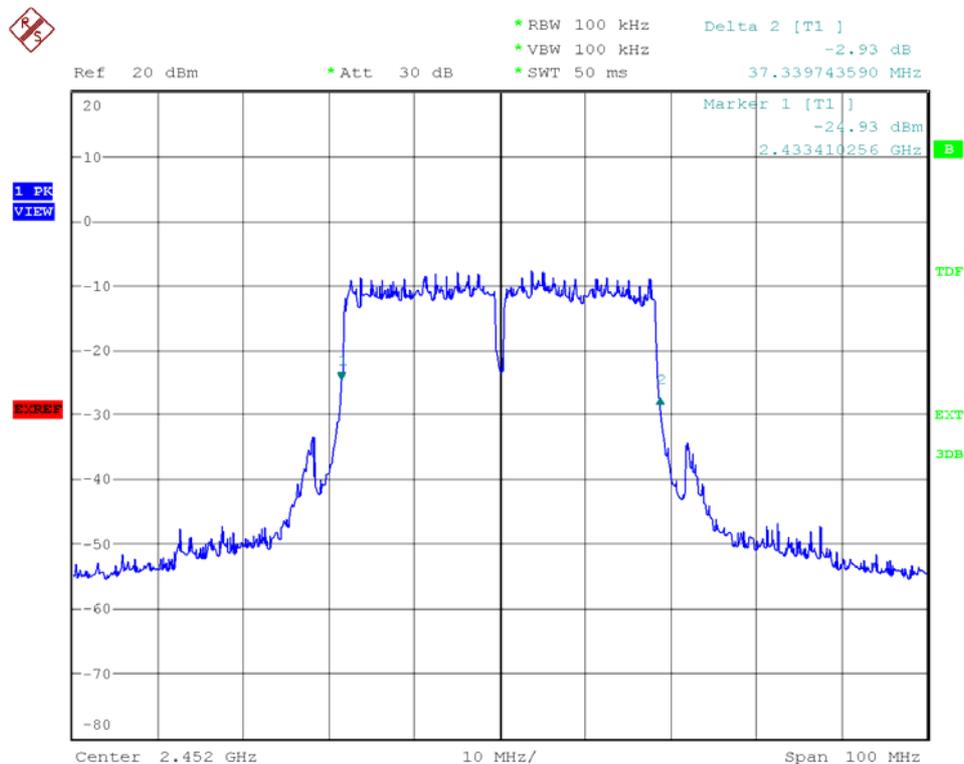




Modulation Standard: 802.11n HT40 (270Mbps), Ant R, 99% Bandwidth  
Channel: 03

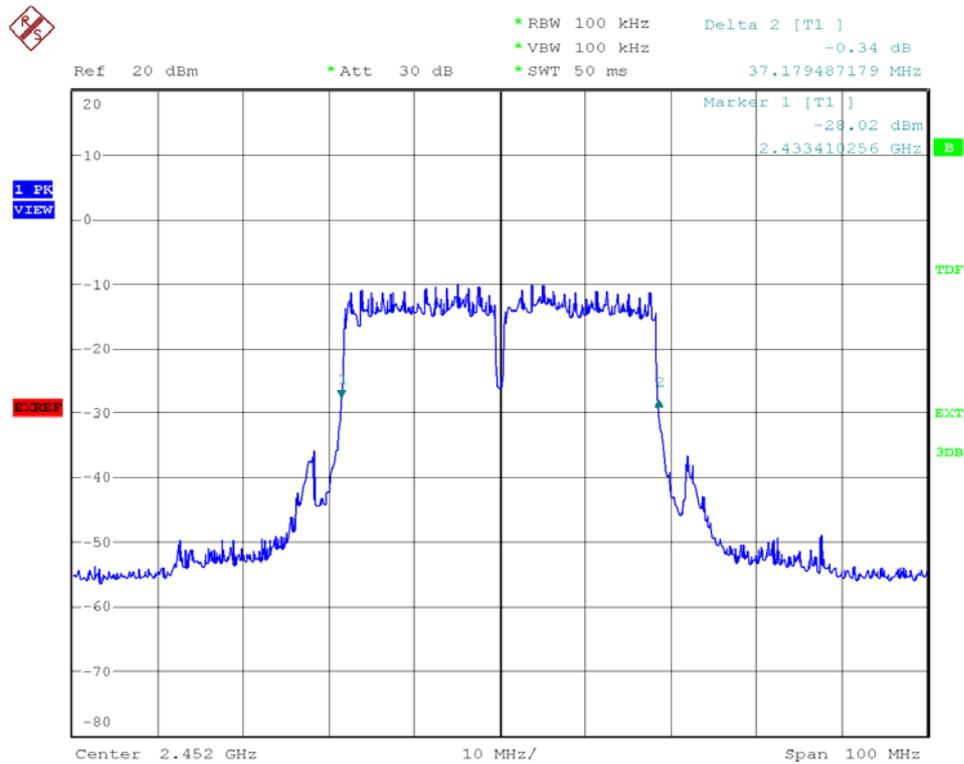


Modulation Standard: 802.11n HT40 (270Mbps), Ant R, 99% Bandwidth  
Channel: 06

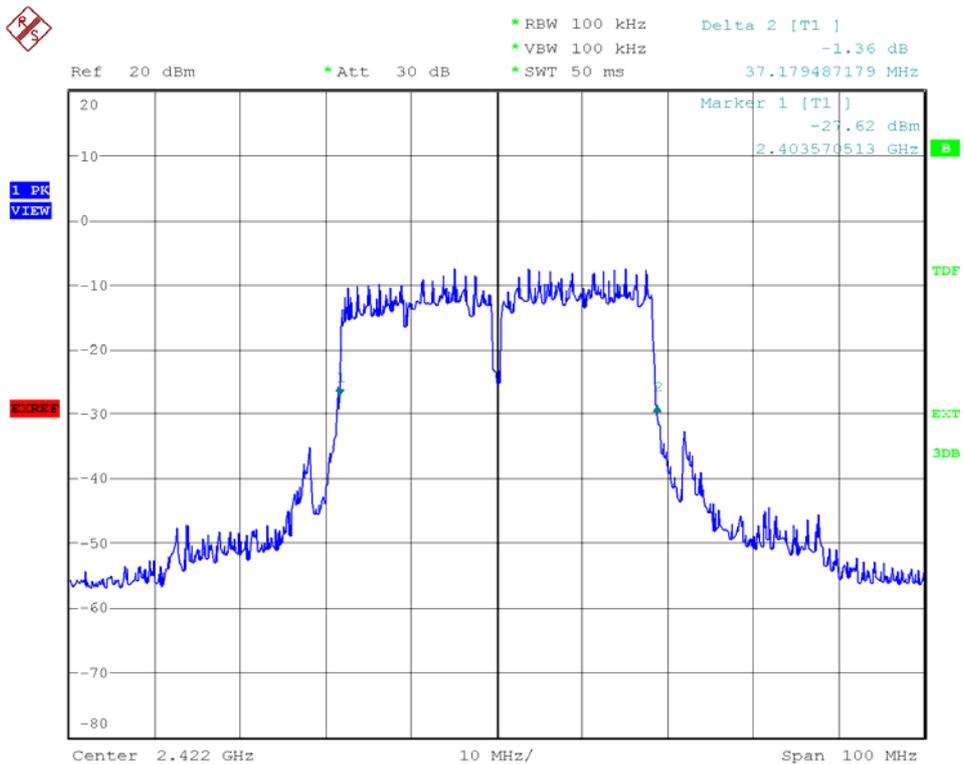




Modulation Standard: 802.11n HT40 (270Mbps), Ant R, 99% Bandwidth  
Channel: 09

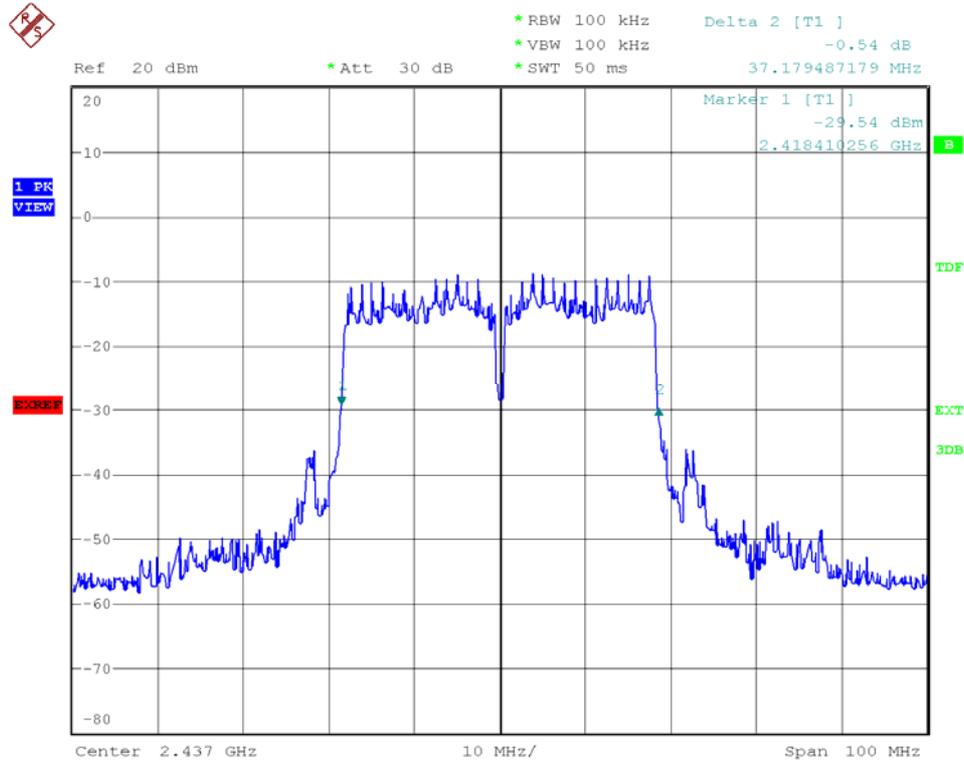


Modulation Standard: 802.11n HT40 (270Mbps), Ant L, 99% Bandwidth  
Channel: 03

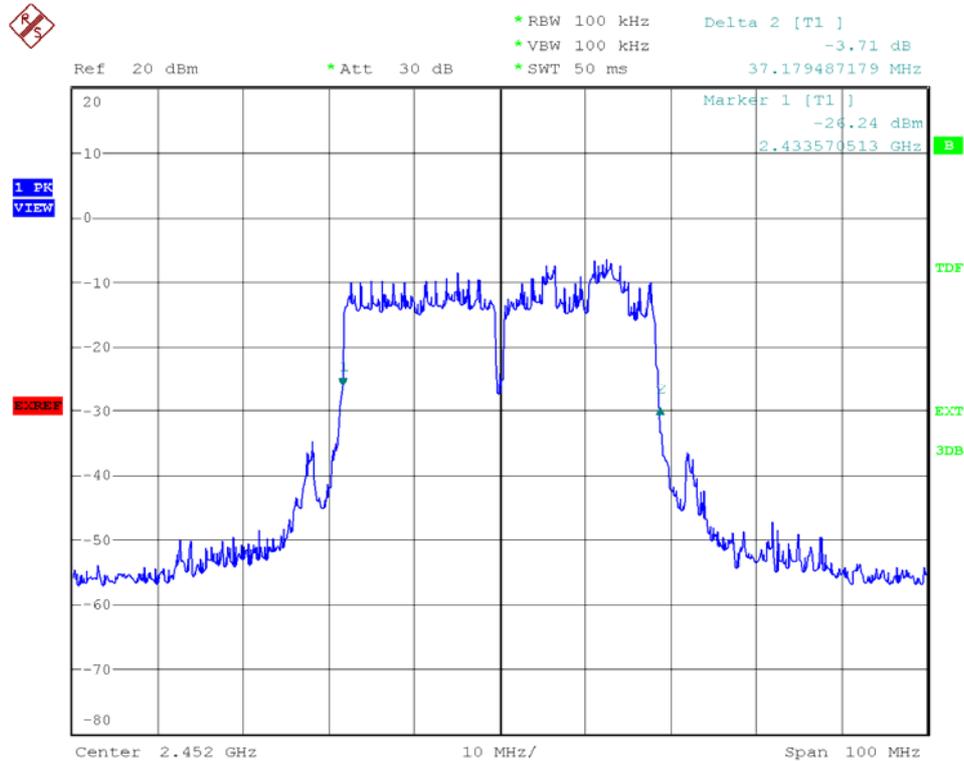




Modulation Standard: 802.11n HT40 (270Mbps), Ant L, 99% Bandwidth  
Channel: 06

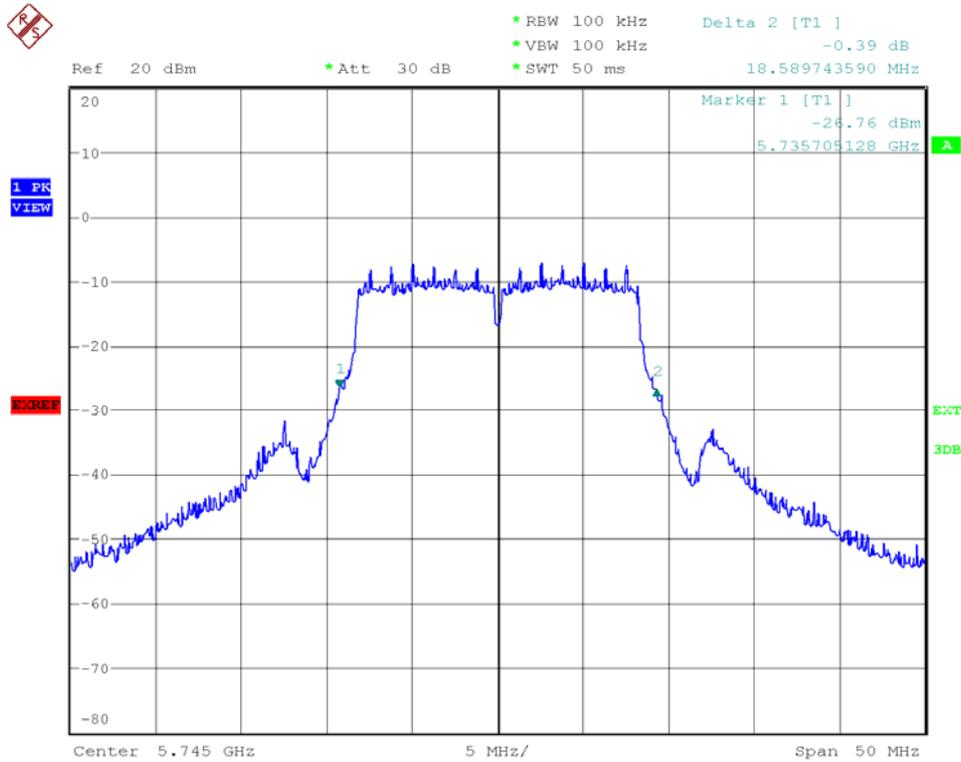


Modulation Standard: 802.11n HT40 (270Mbps), Ant L, 99% Bandwidth  
Channel: 09

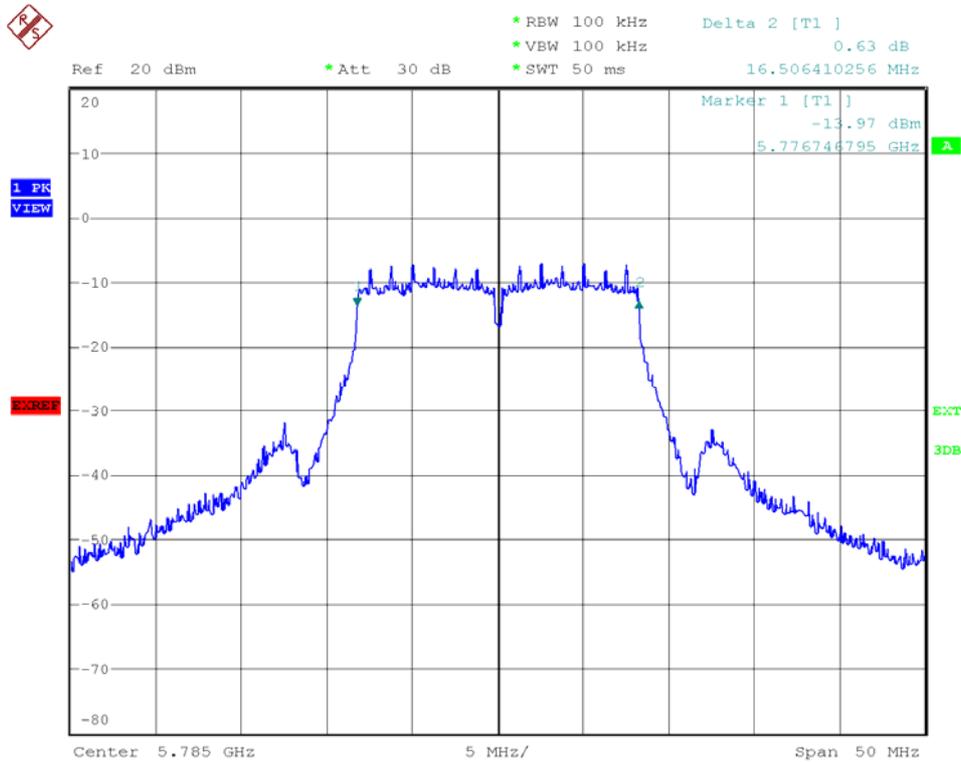




Modulation Standard: 802.11a (6Mbps), Ant R, 99% Bandwidth  
Channel: 149

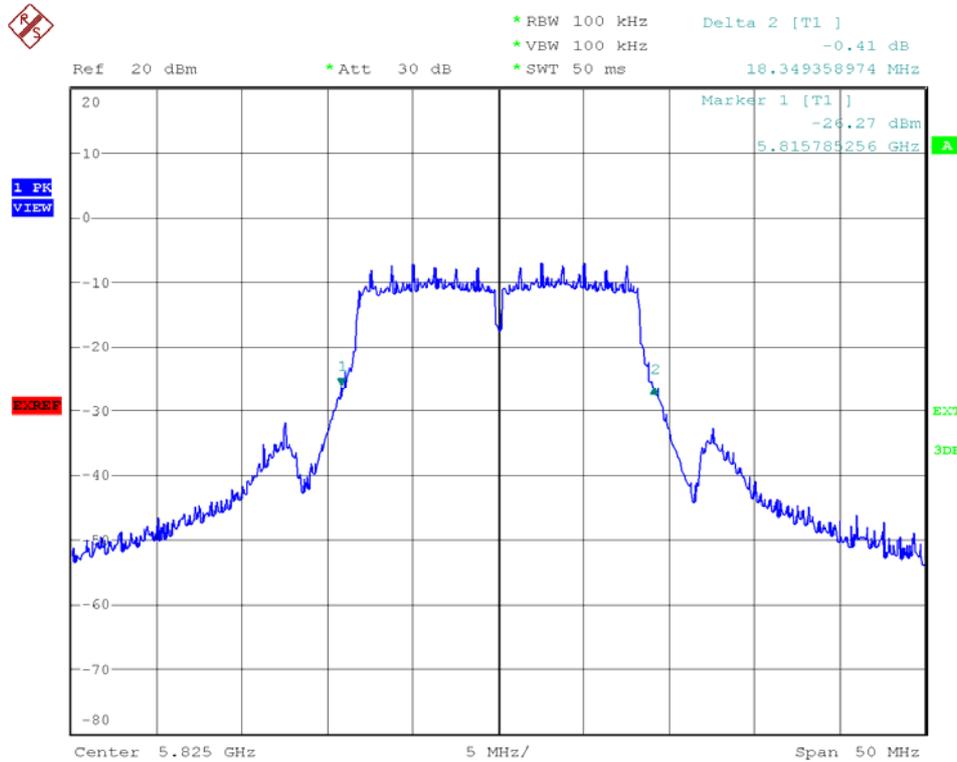


Modulation Standard: 802.11a (6Mbps), Ant R, 99% Bandwidth  
Channel: 157

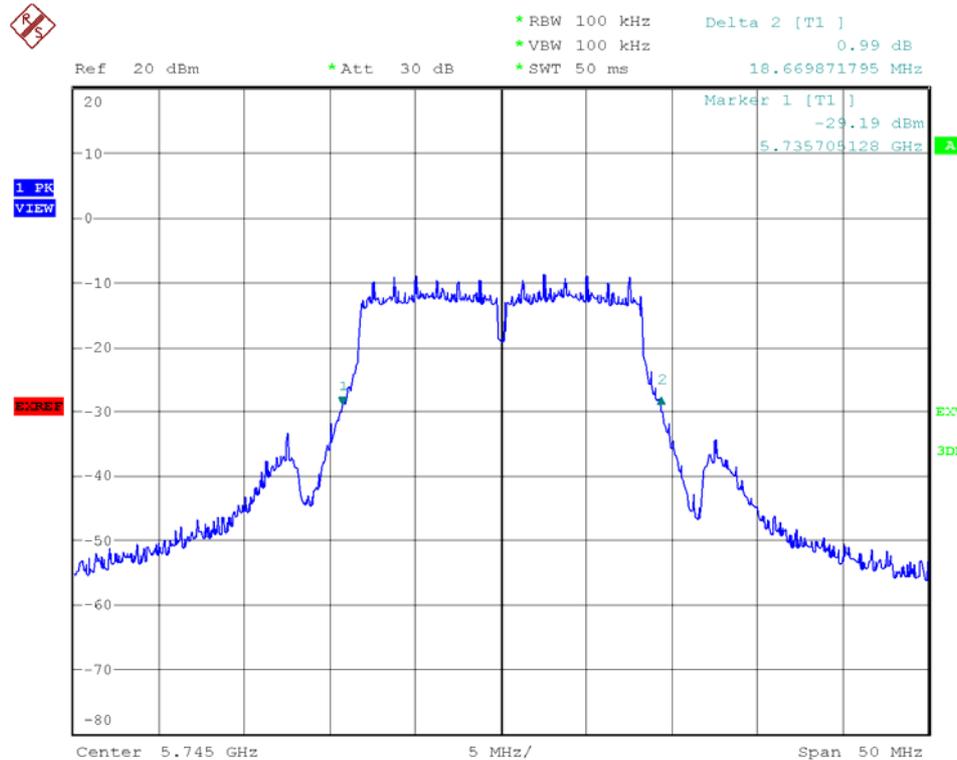




Modulation Standard: 802.11a (6Mbps), Ant R, 99% Bandwidth  
Channel: 165

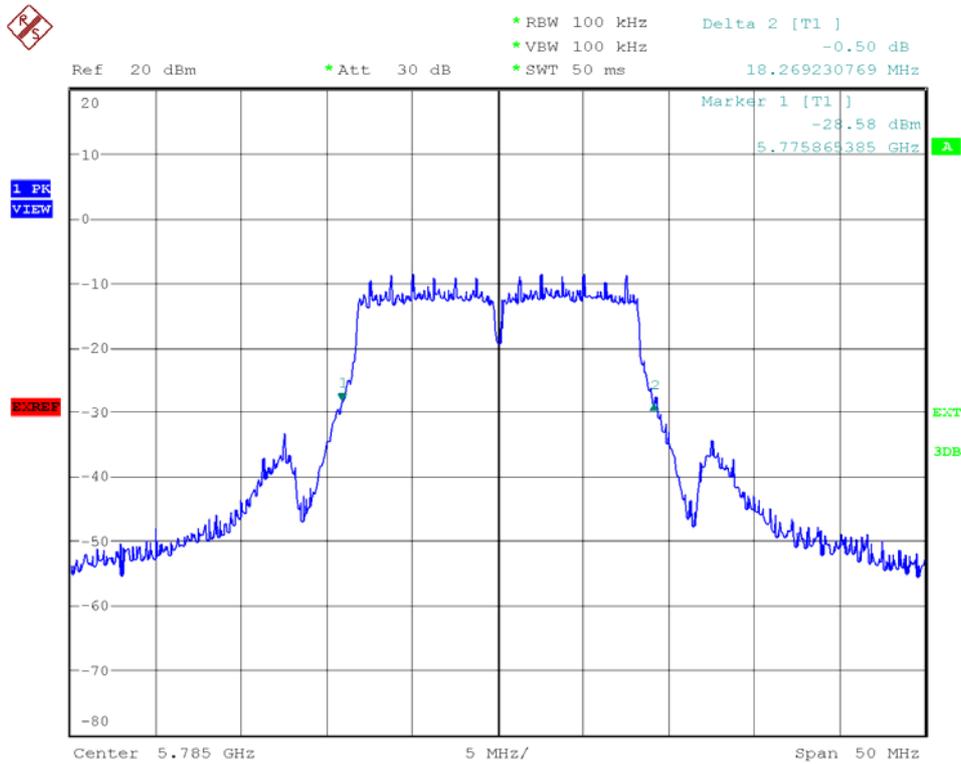


Modulation Standard: 802.11a (6Mbps), Ant L, 99% Bandwidth  
Channel: 149

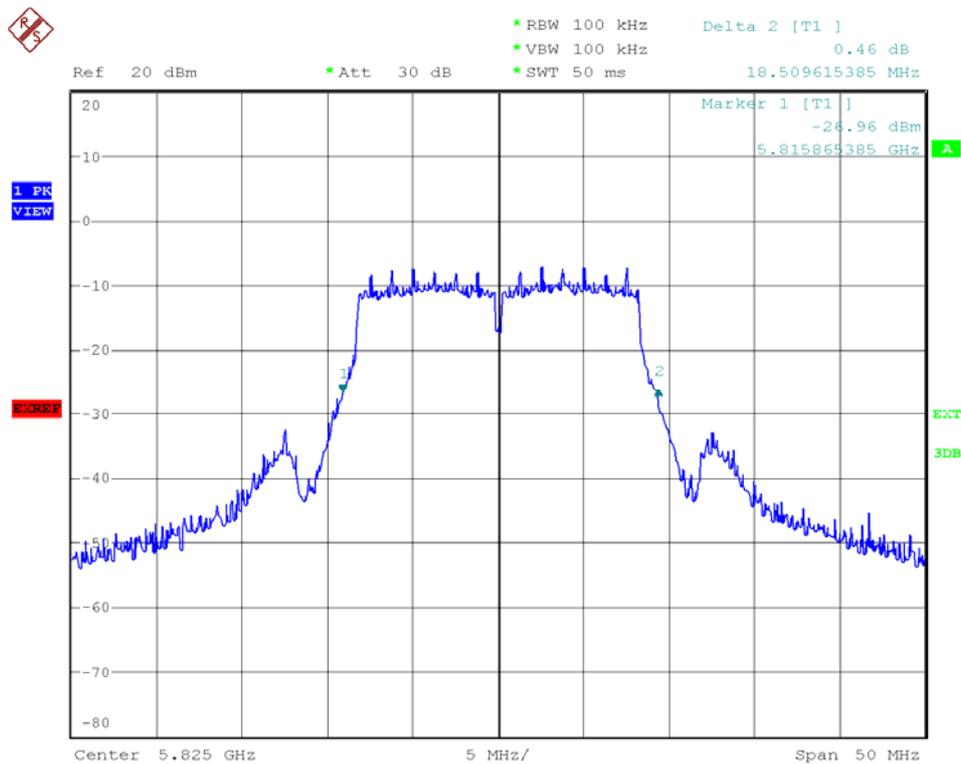




Modulation Standard: 802.11a (6Mbps), Ant L, 99% Bandwidth  
Channel: 157

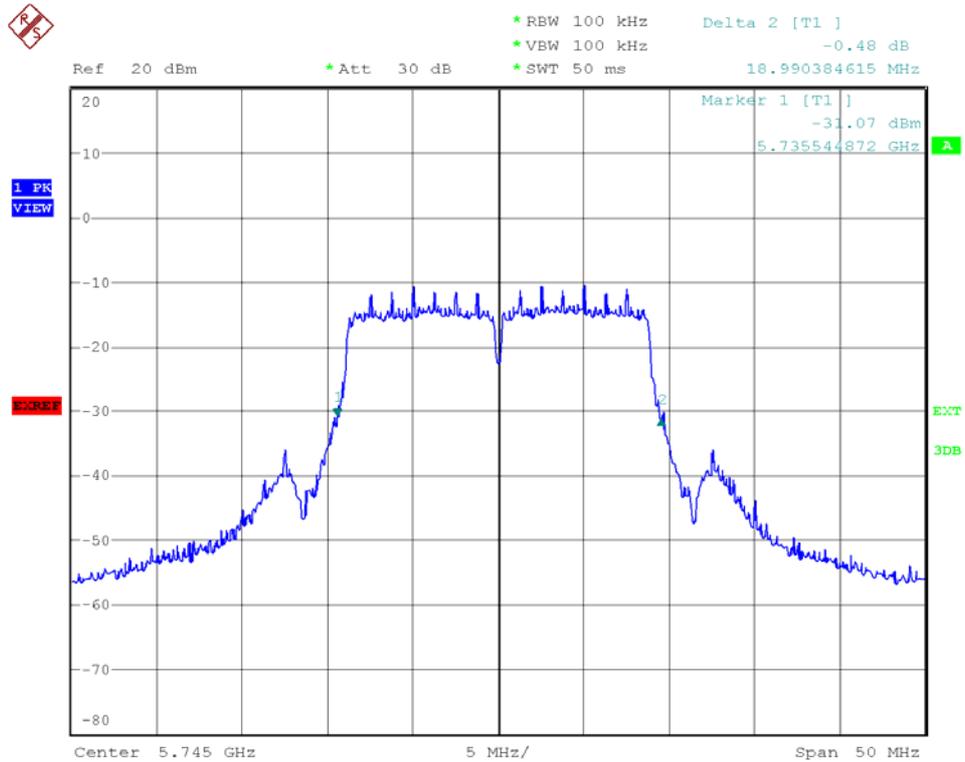


Modulation Standard: 802.11a (6Mbps), Ant L, 99% Bandwidth  
Channel: 165

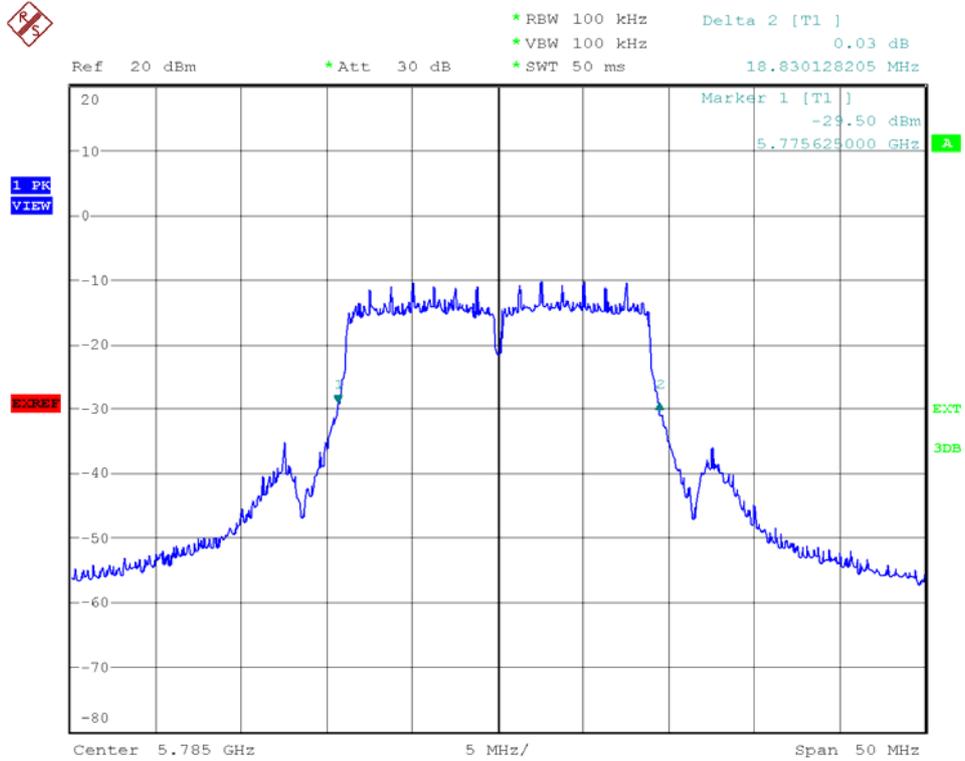




Modulation Standard: 802.11an HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 149

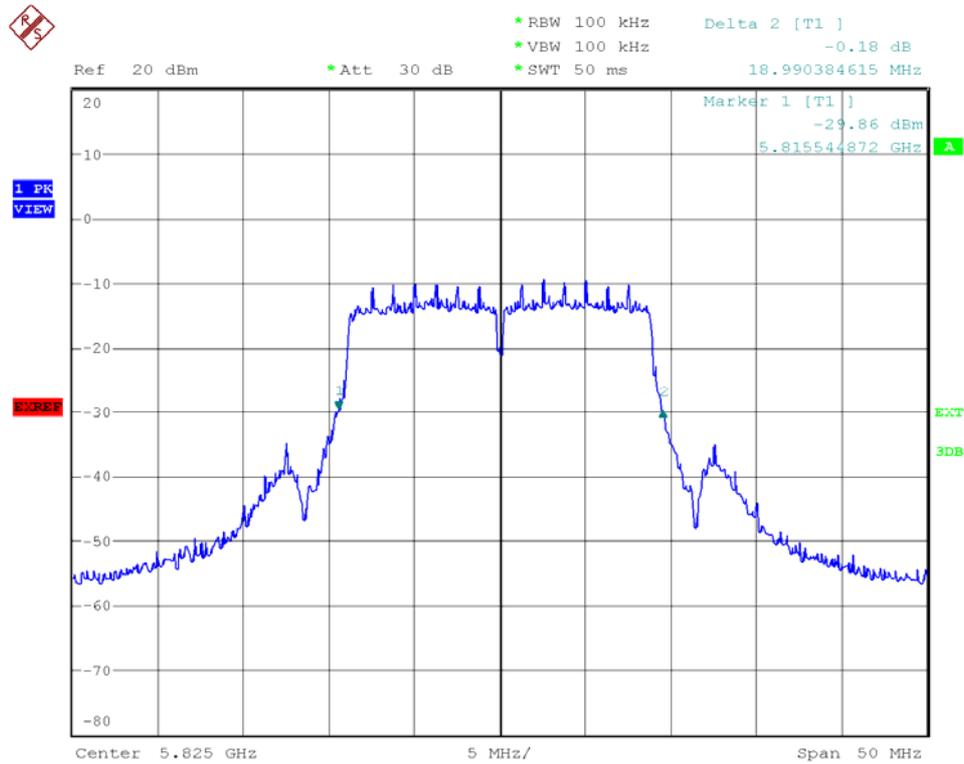


Modulation Standard: 802.11an HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 157

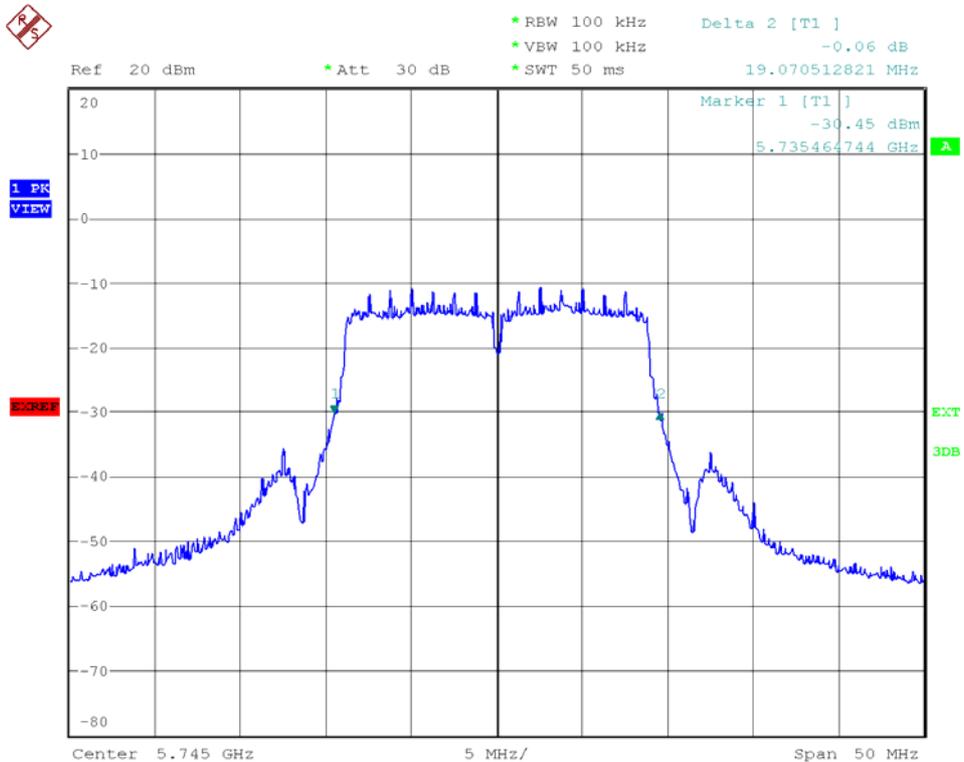




Modulation Standard: 802.11an HT20 (130Mbps), Ant R, 99% Bandwidth  
Channel: 165

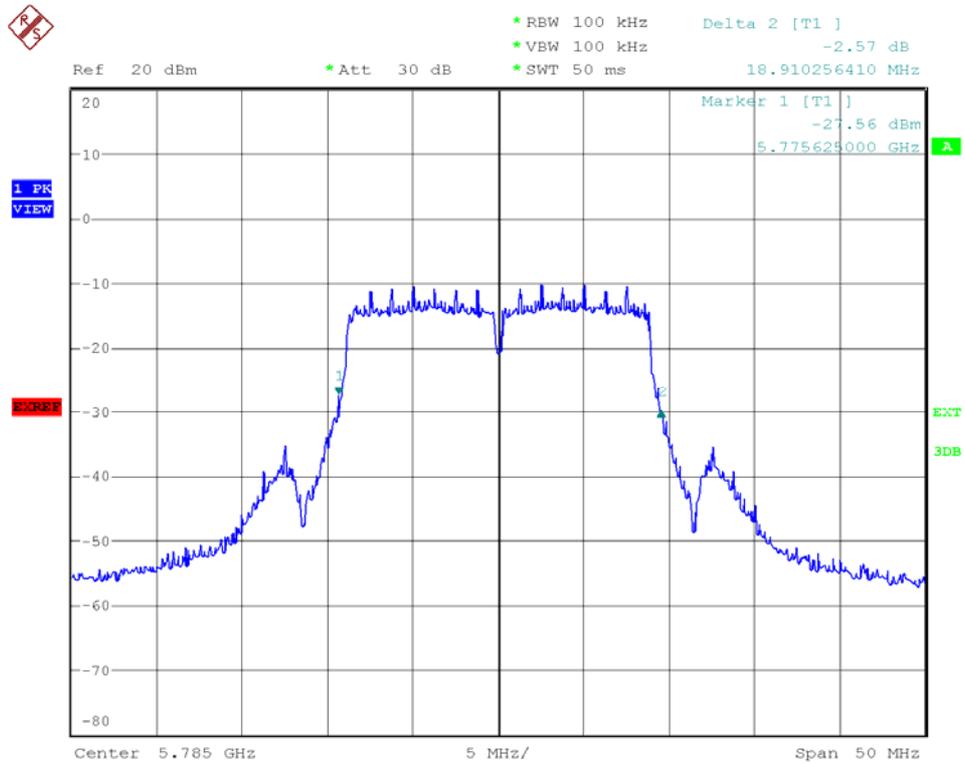


Modulation Standard: 802.11an HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 149

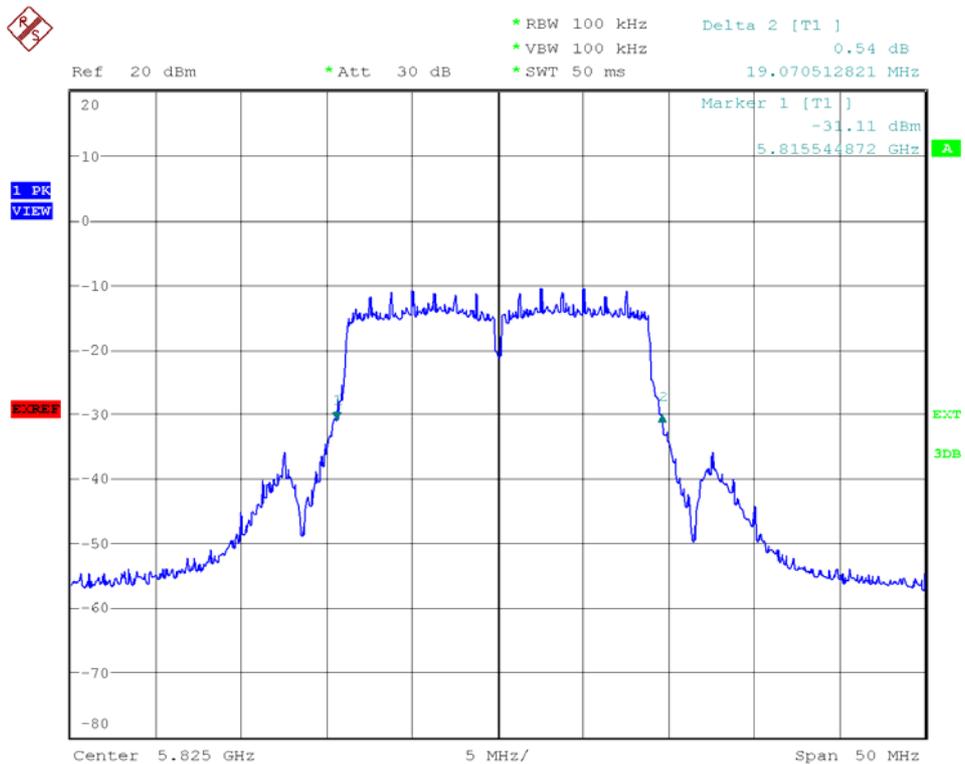




Modulation Standard: 802.11an HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 157

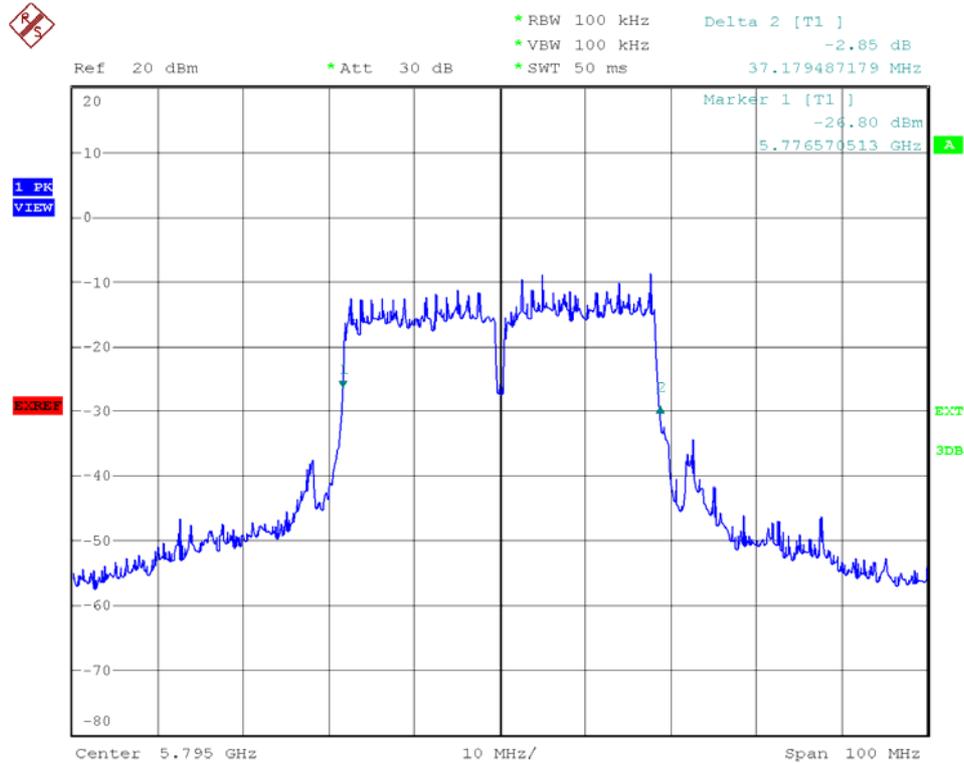


Modulation Standard: 802.11an HT20 (130Mbps), Ant L, 99% Bandwidth  
Channel: 165

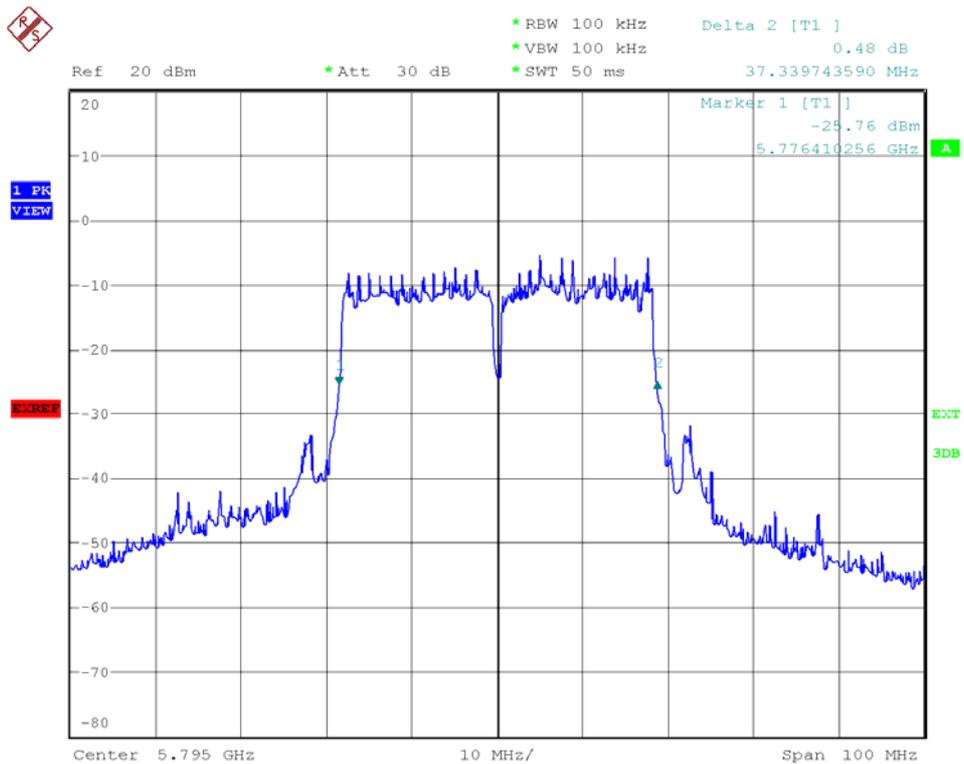




Modulation Standard: 802.11an HT40 (270Mbps), Ant R, 99% Bandwidth  
Channel: 159



Modulation Standard: 802.11an HT40 (270Mbps), Ant L, 99% Bandwidth  
Channel: 159





## 7. Maximum Peak Output Power

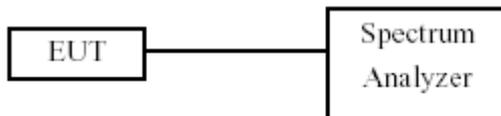
### 7.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

### 7.2 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.

### 7.3 Test Setup Layout



### 7.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	FSP40	R&S	10047	2009/02/21	2010/02/20

### 7.5 Test Result and Data

Test Date: Mar. 02, 2009

Temperature: 23°C

Atmospheric pressure: 1025 hPa

Humidity: 48%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)		Peak Power Output (mW)	
			Ant R	Ant L	Ant R	Ant L
802.11b (11Mbps)	01	2412	19.17	18.92	82.60	78.00
	06	2437	19.37	19.11	86.50	81.50
	11	2462	19.40	19.03	87.10	80.00
802.11g (54Mbps)	01	2412	16.37	16.43	43.40	44.00
	06	2437	16.39	16.02	43.60	40.00
	11	2462	16.31	16.08	42.80	40.60



Test Date: Mar. 02, 2009

Temperature: 23°C

Atmospheric pressure: 1025 hPa

Humidity: 48%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)			Peak Power Output (mW)
			Ant R	Ant L	Ant R+L	Ant R+L
802.11n HT20 (130Mbps)	01	2412	12.96	13.3	16.14	41.15
	06	2437	13.07	13.08	16.09	40.60
	11	2462	13.14	13.31	16.24	42.04
802.11n HT40 (270Mbps)	03	2422	13.38	13.23	16.32	42.81
	06	2437	13.28	13.00	16.15	41.23
	09	2452	13.12	13.02	16.08	40.56

Test Date: Mar. 10, 2009

Temperature: 25°C

Atmospheric pressure: 1024 hPa

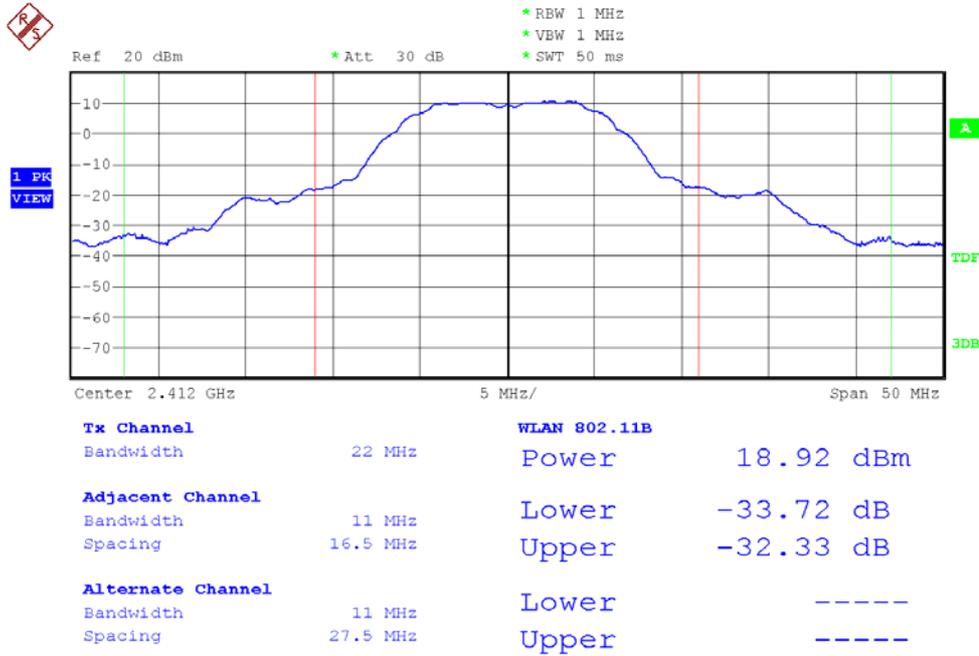
Humidity: 48%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)		Peak Power Output (mW)	
			Ant R	Ant L	Ant R	Ant L
802.11a (6Mbps)	149	5745	15.29	14.60	34.81	29.84
	157	5785	15.20	14.57	34.11	29.64
	165	5825	15.22	14.91	34.27	31.97

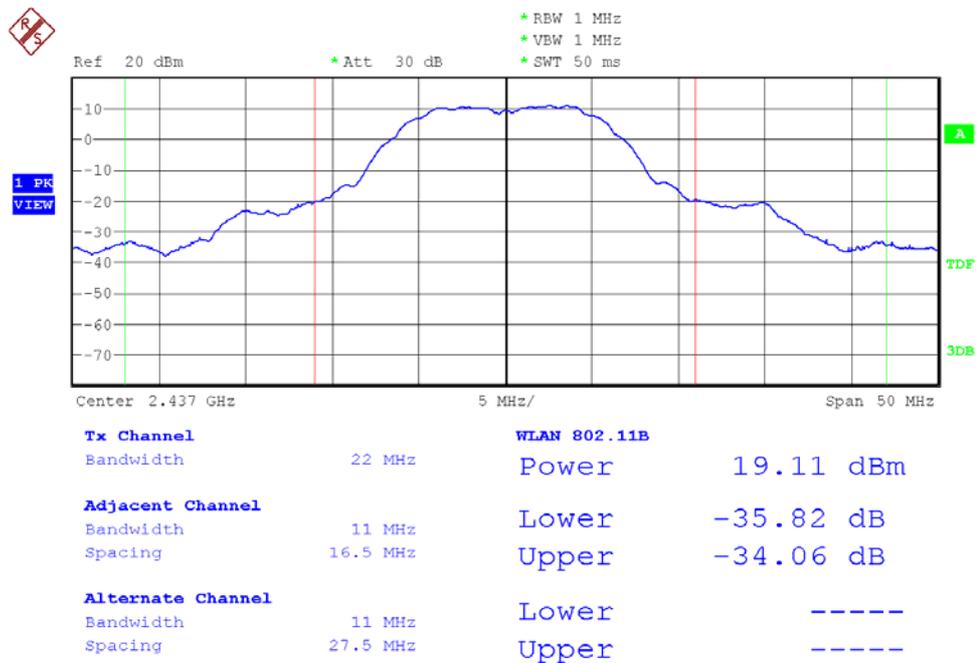
Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)			Peak Power Output (mW)
			Ant R	Ant L	Ant R+L	Ant R+L
802.11an HT20 (130Mbps)	149	5745	12.50	11.65	15.11	32.40
	157	5785	12.30	11.86	15.10	32.33
	165	5825	12.21	11.73	14.99	31.53
802.11an HT40 (270Mbps)	159	5795	12.43	13.71	16.13	40.99



Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 01

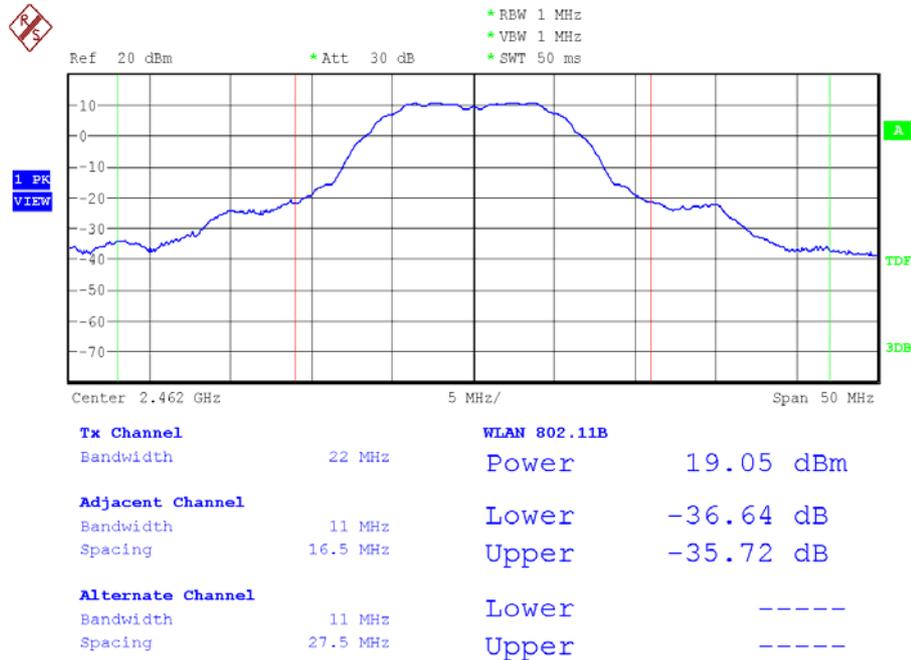


Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 06

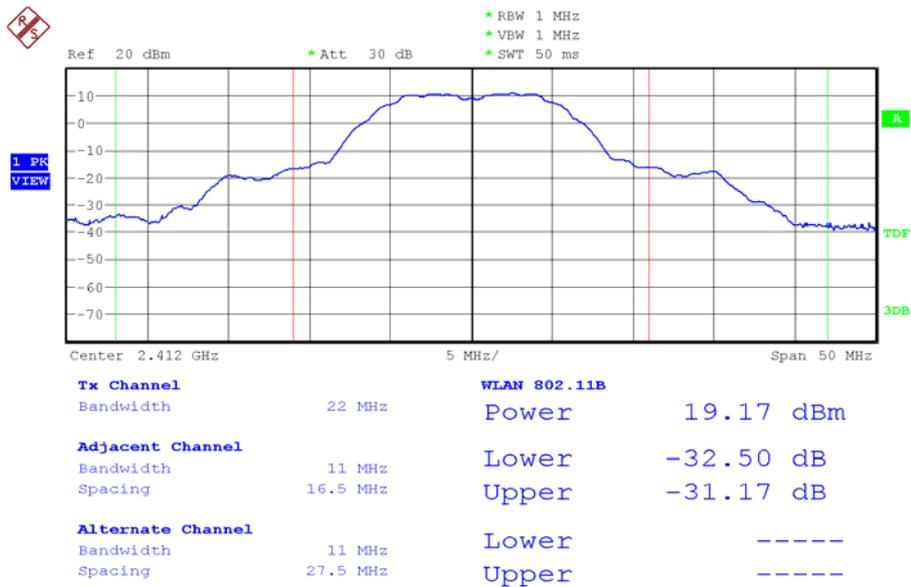




Modulation Standard: 802.11b (11Mbps), Ant R  
Channel: 11

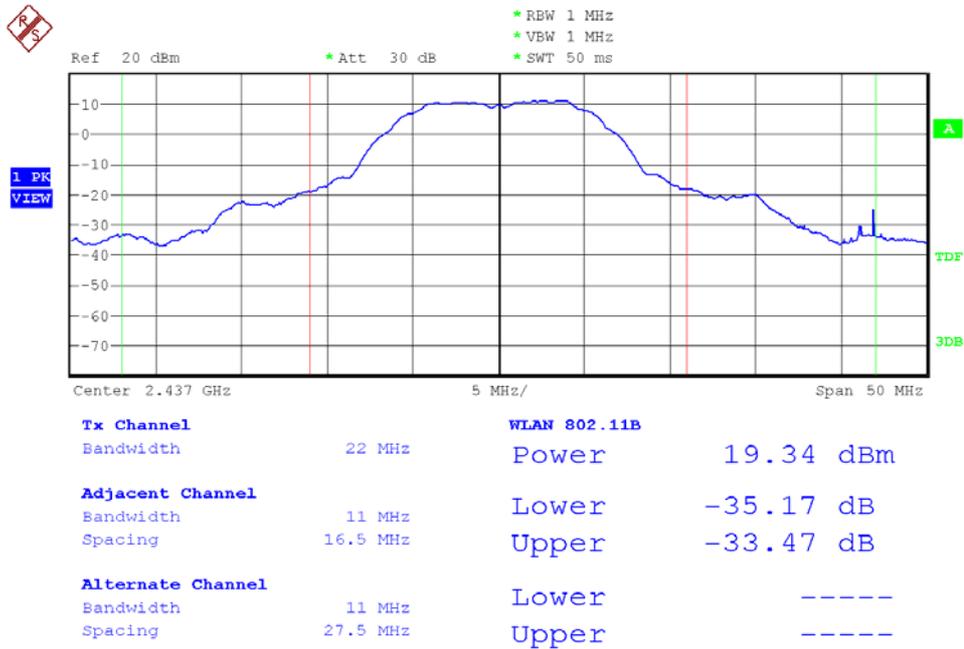


Modulation Standard: 802.11b (11Mbps), Ant L  
Channel: 01

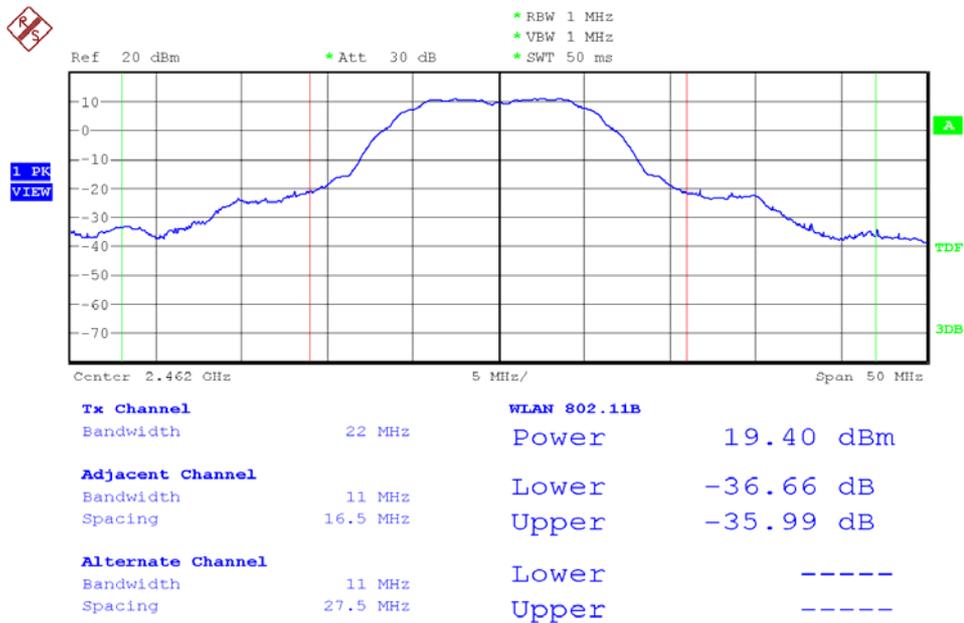




Modulation Standard: 802.11b (11Mbps), Ant L  
Channel: 06

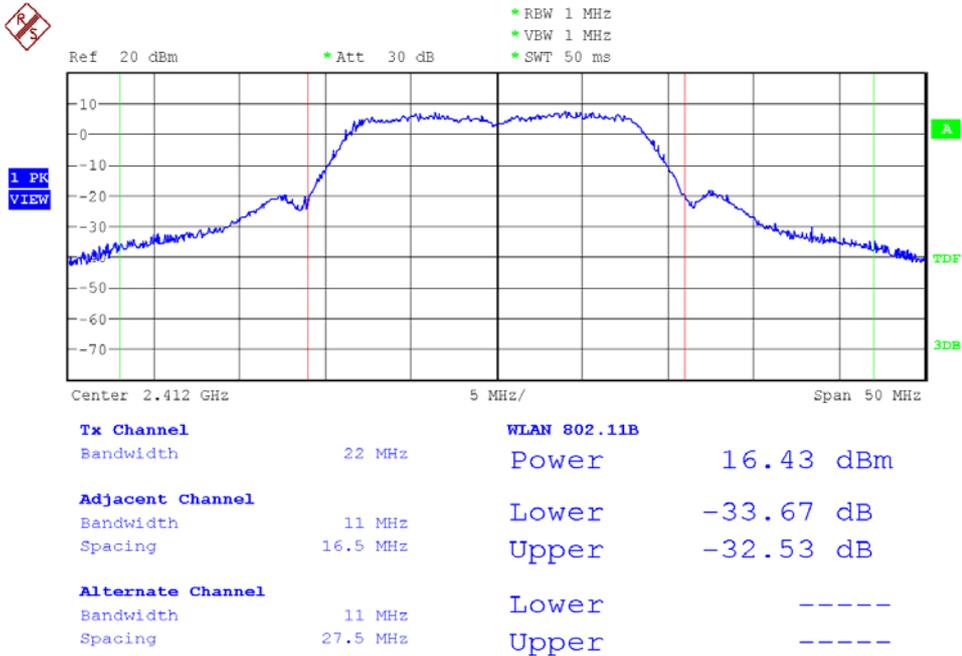


Modulation Standard: 802.11b (11Mbps), Ant L  
Channel: 11

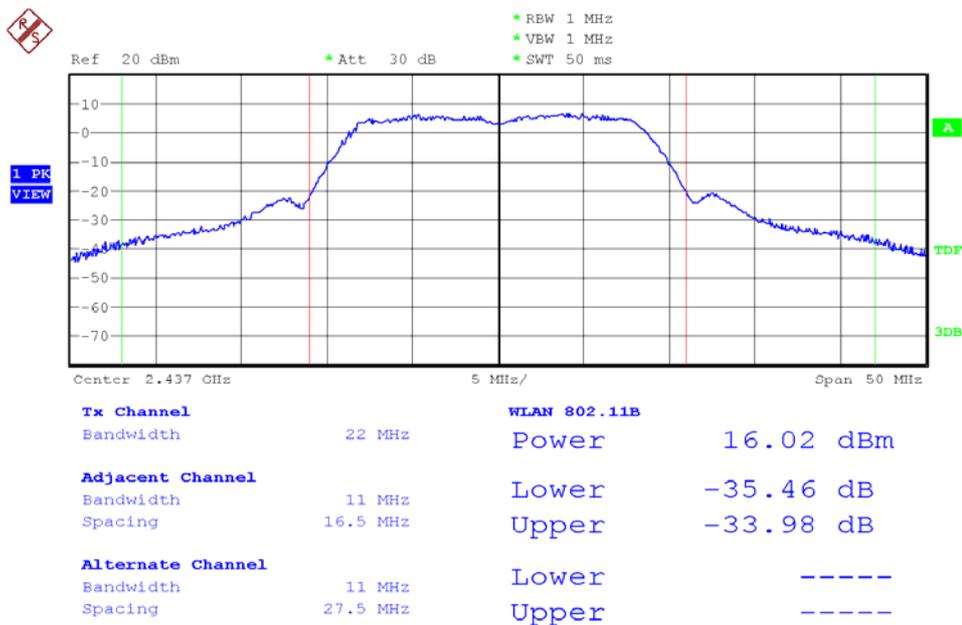




Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 01

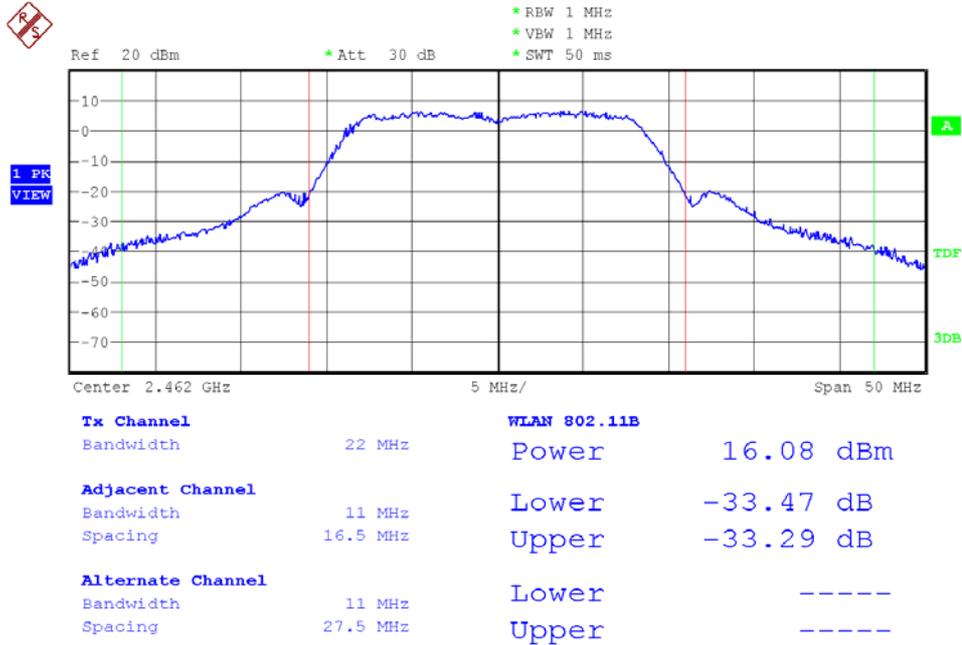


Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 06

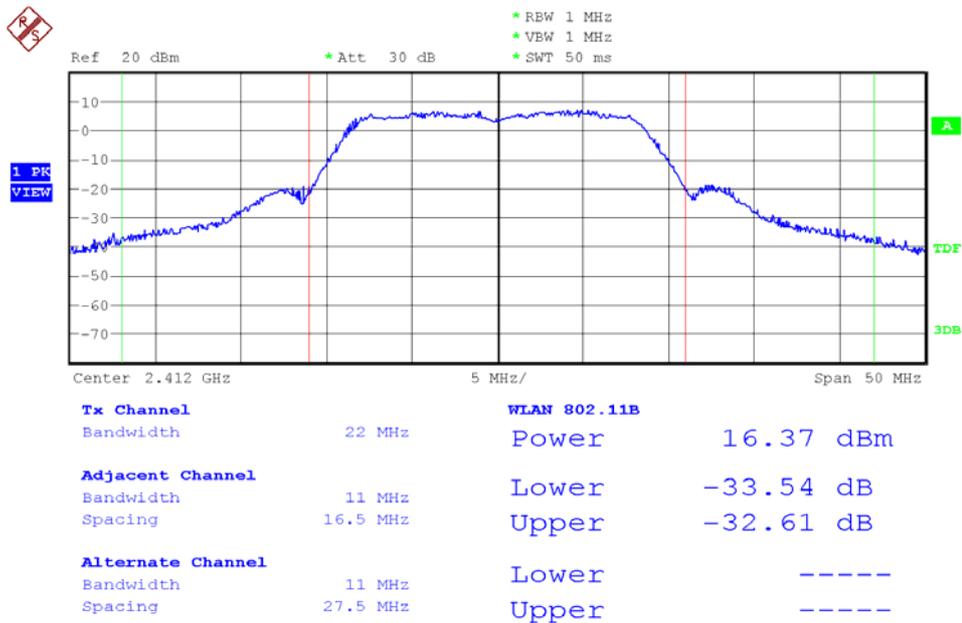




Modulation Standard: 802.11g (54Mbps), Ant R  
Channel: 11

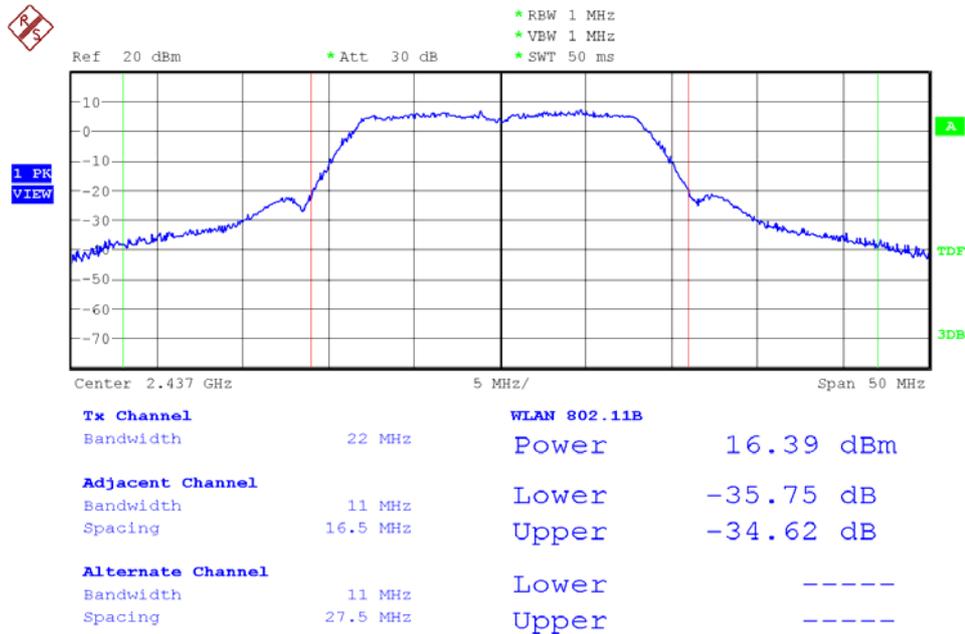


Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 01

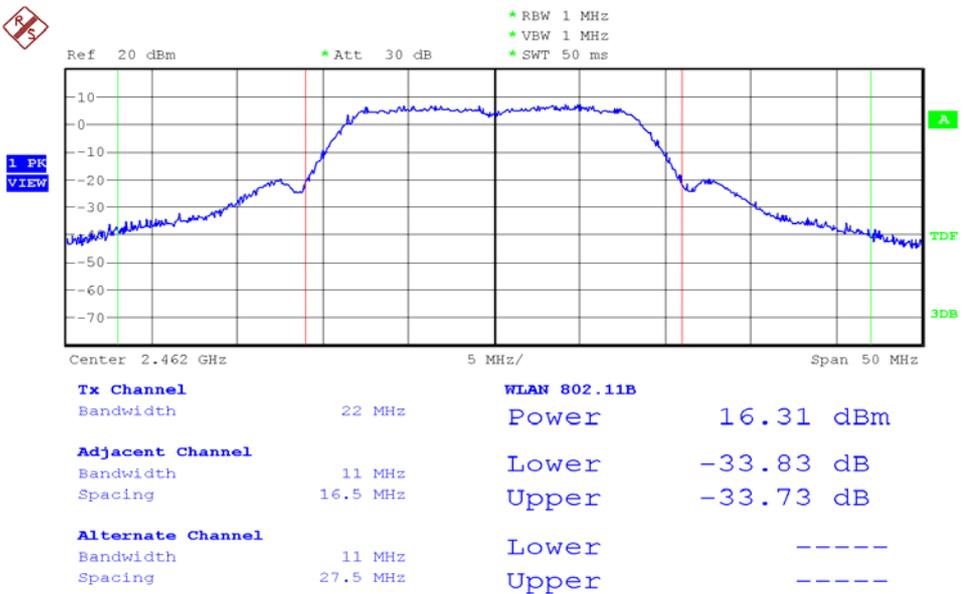




Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 06

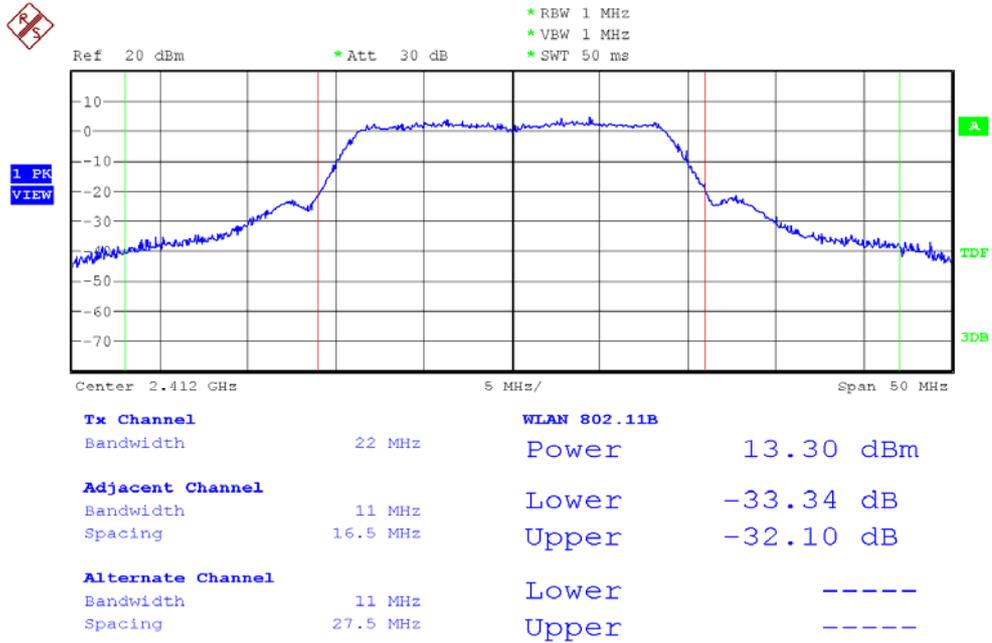


Modulation Standard: 802.11g (54Mbps), Ant L  
Channel: 11

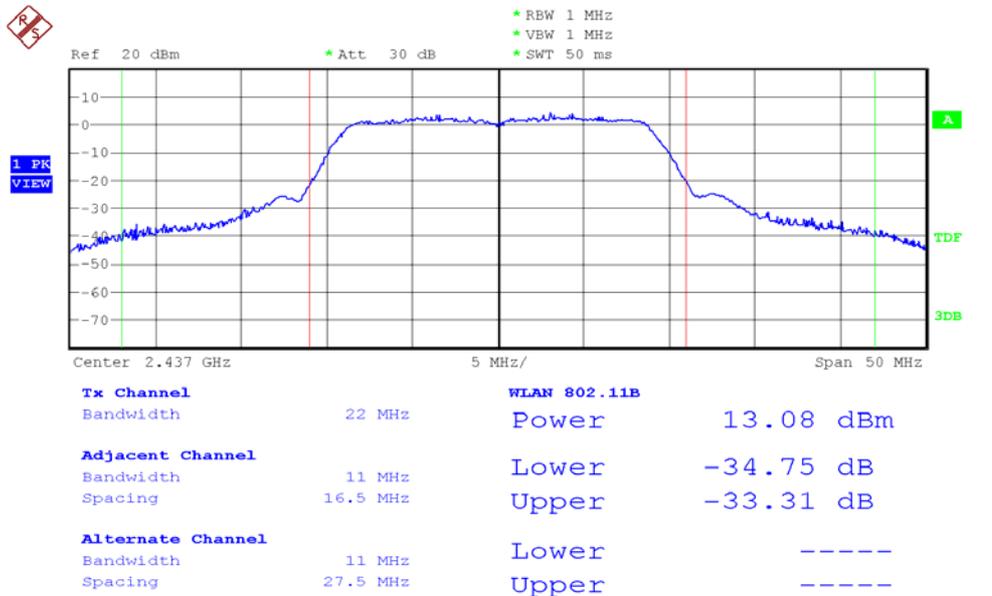




Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 01

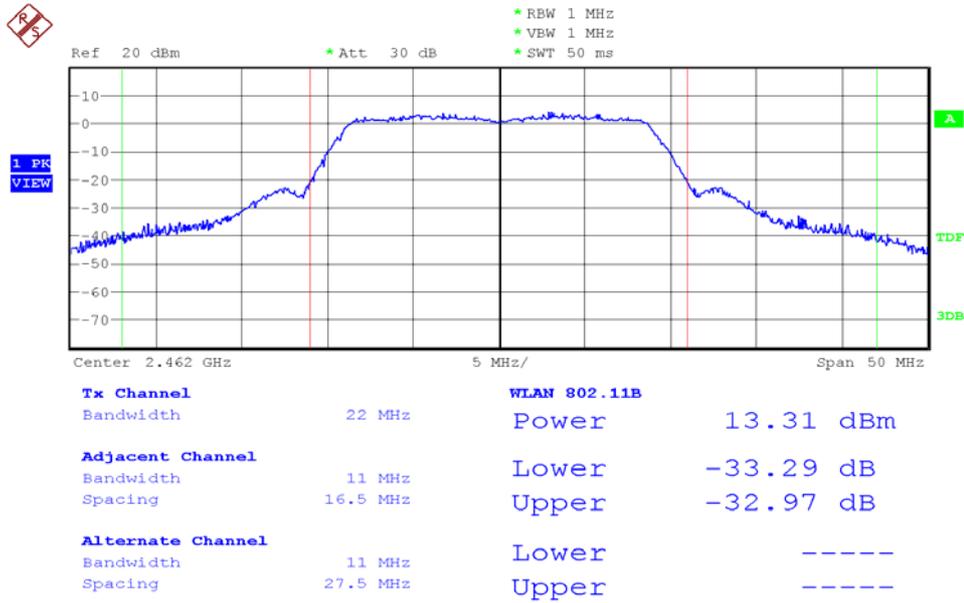


Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 06

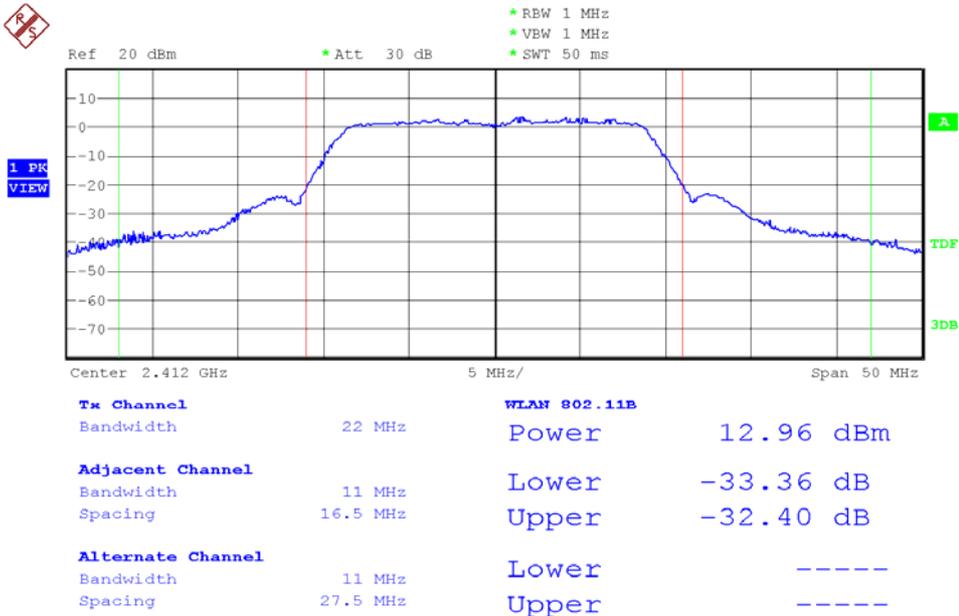




Modulation Standard: 802.11n HT20 (130Mbps), Ant R  
Channel: 11

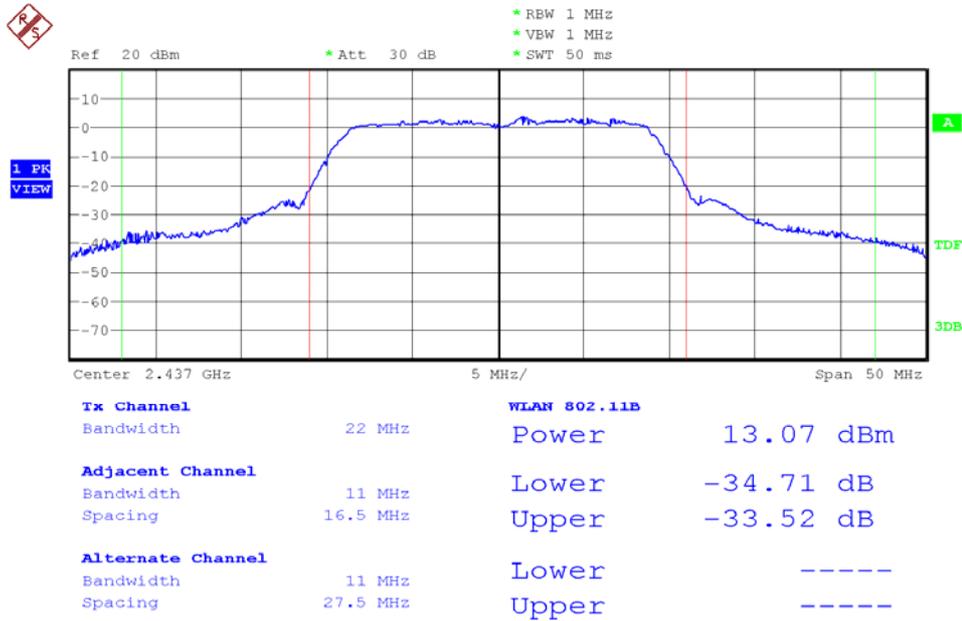


Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
Channel: 01

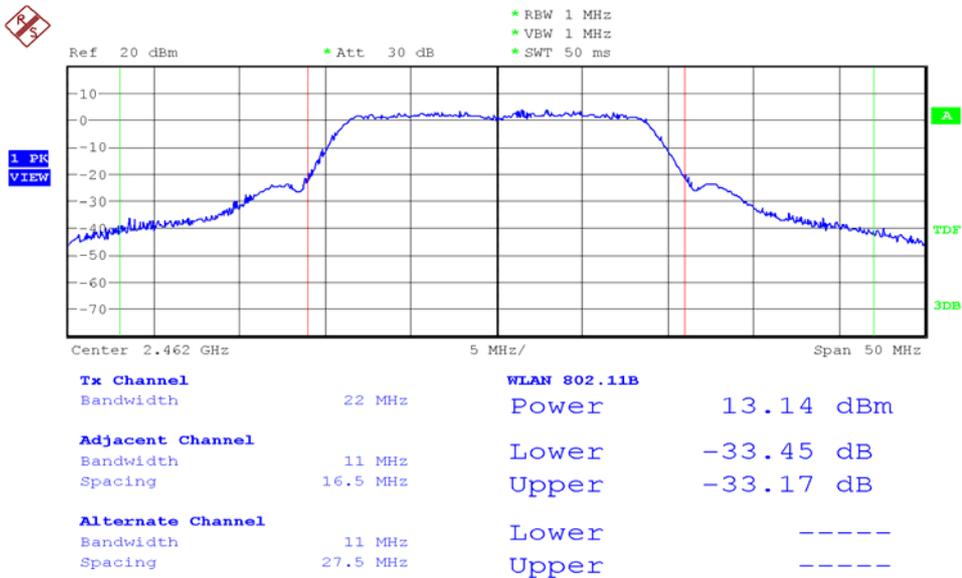




Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
Channel: 06

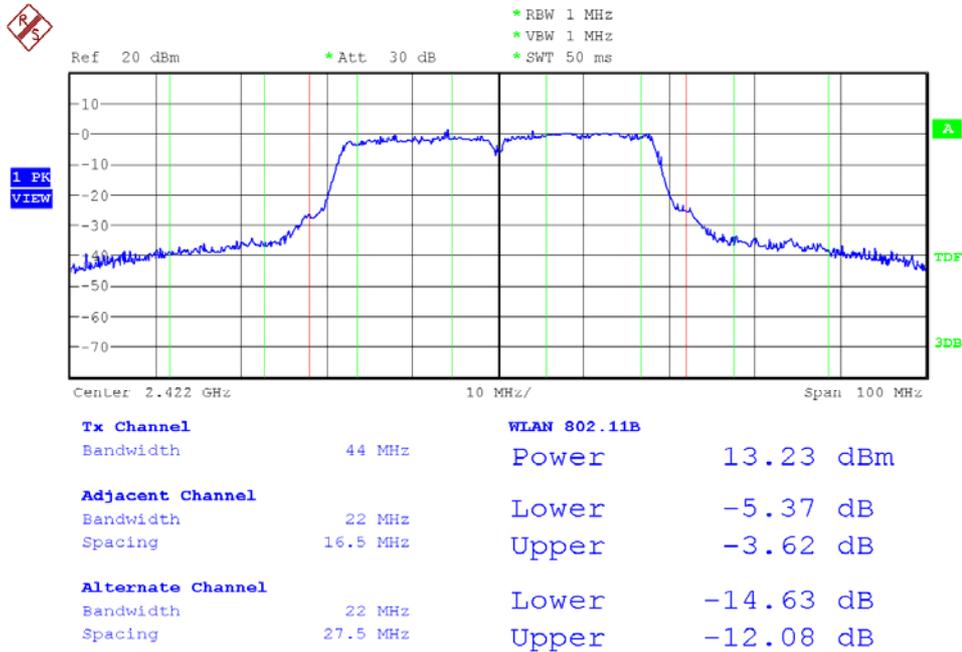


Modulation Standard: 802.11n HT20 (130Mbps), Ant L  
Channel: 11

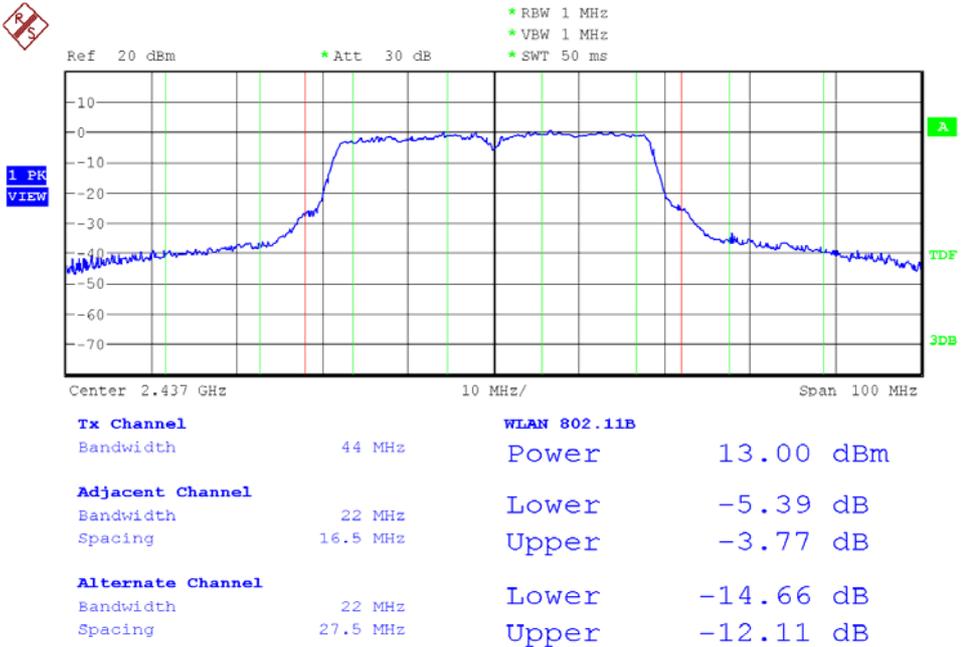




Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 03

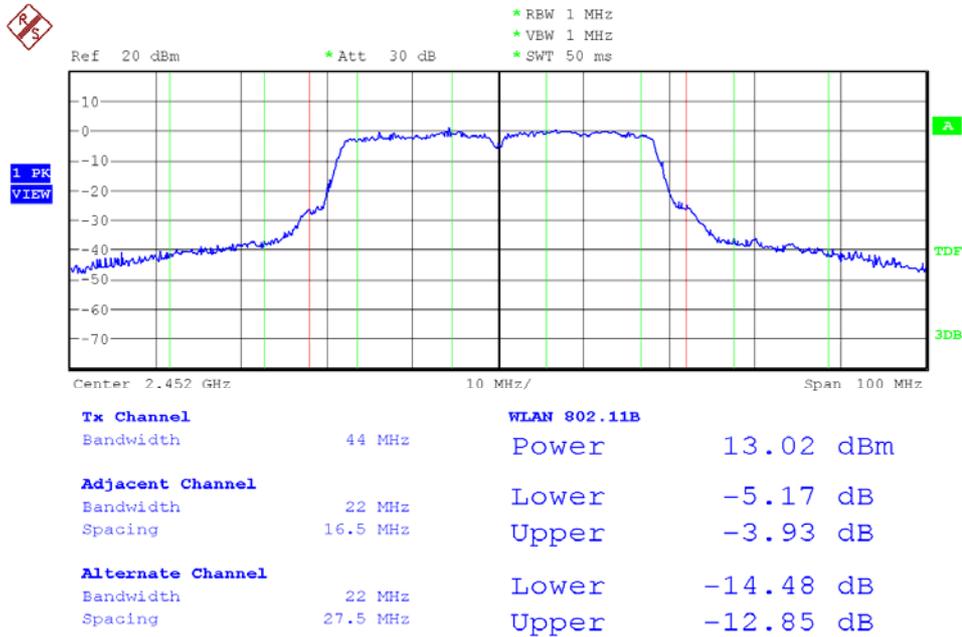


Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 06

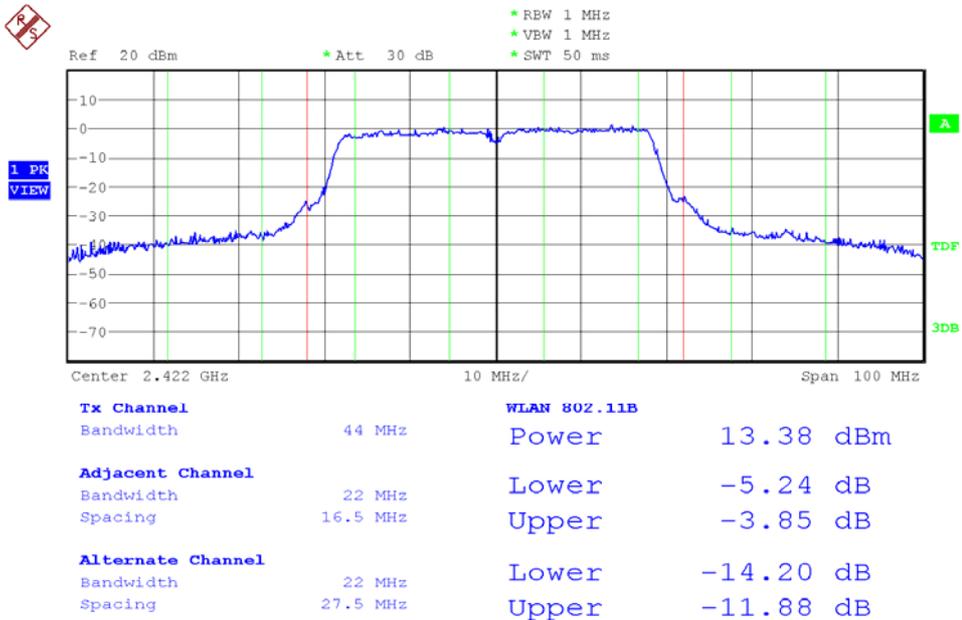




Modulation Standard: 802.11n HT40 (270Mbps), Ant R  
Channel: 09

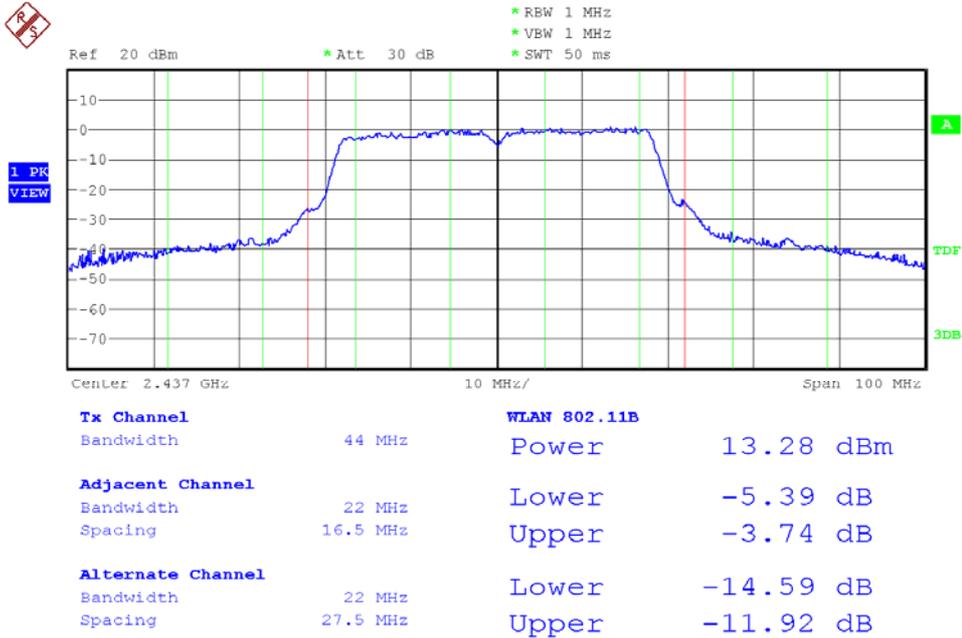


Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 03

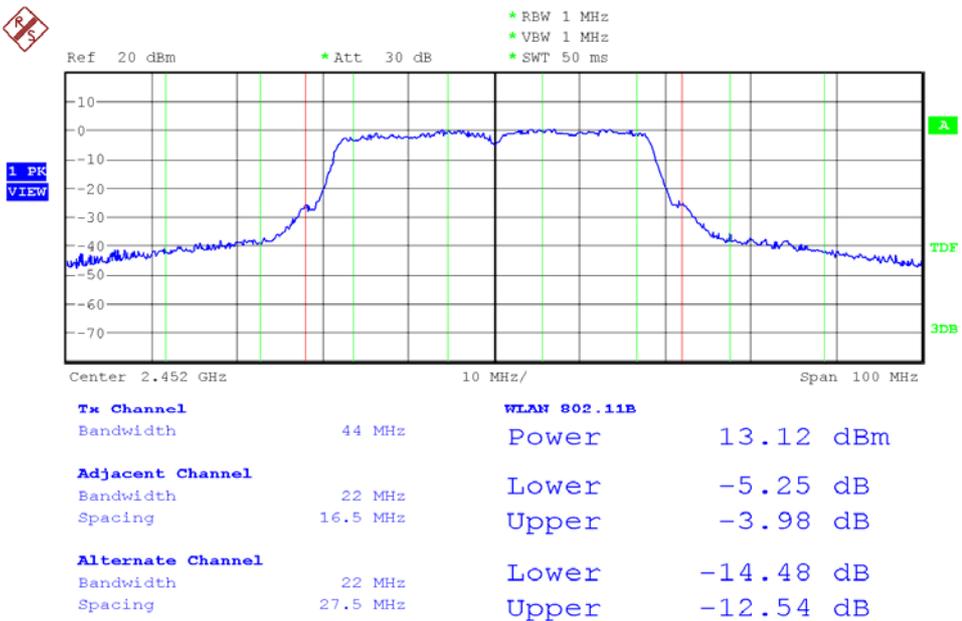




Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 06

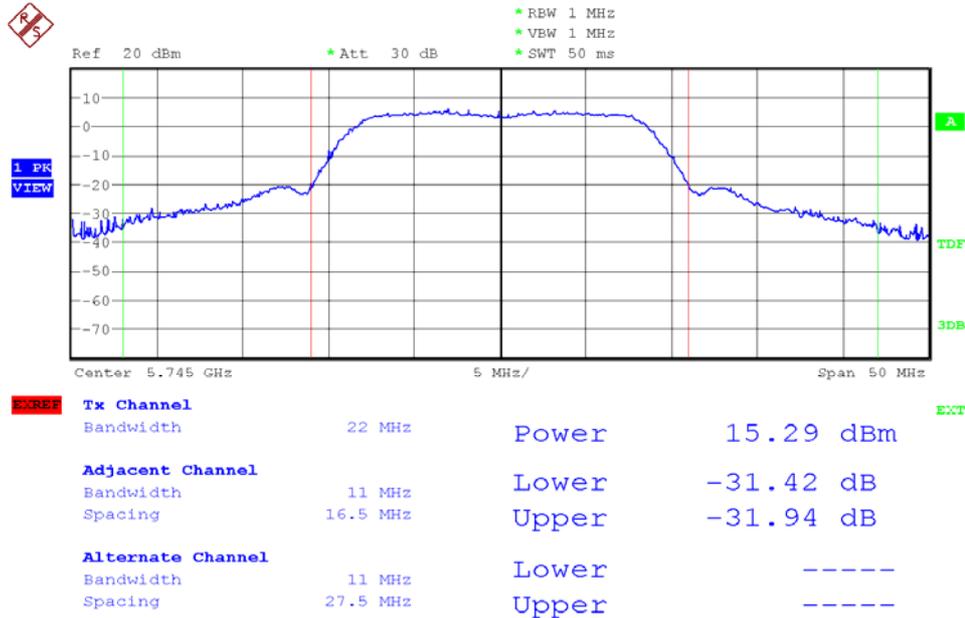


Modulation Standard: 802.11n HT40 (270Mbps), Ant L  
Channel: 09

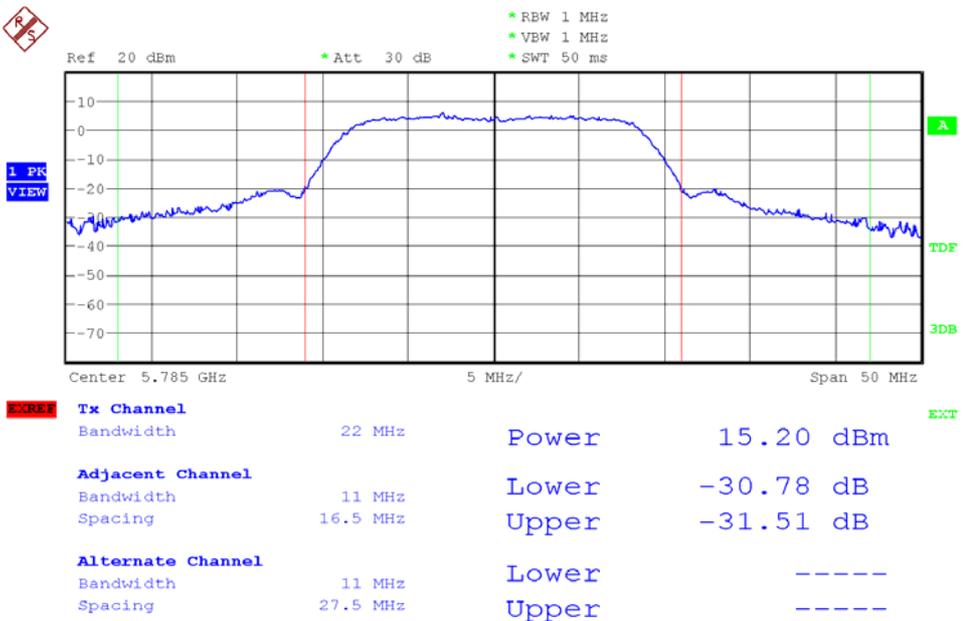




Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 149

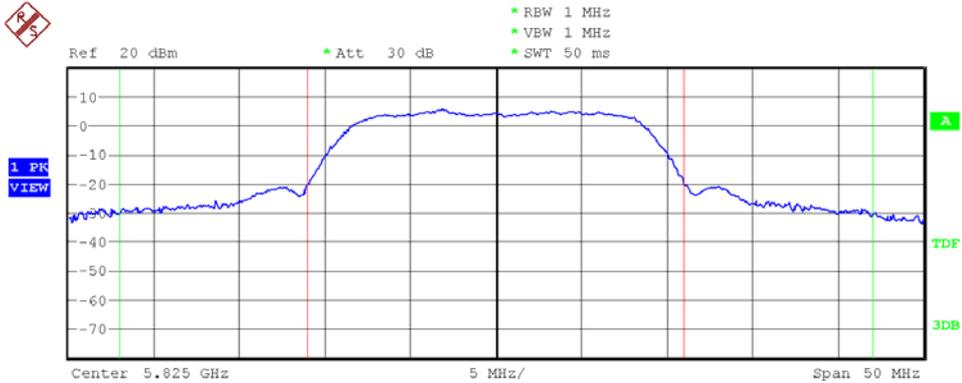


Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 157



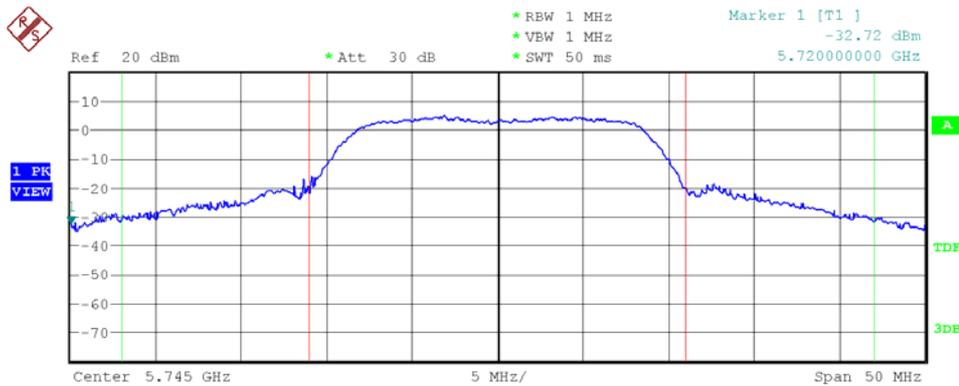


Modulation Standard: 802.11a (6Mbps), Ant R  
Channel: 165



<b>Tx Channel</b>	Bandwidth	22 MHz	Power	15.22 dBm
<b>Adjacent Channel</b>	Bandwidth	11 MHz	Lower	-31.36 dB
	Spacing	16.5 MHz	Upper	-31.28 dB
<b>Alternate Channel</b>	Bandwidth	11 MHz	Lower	-----
	Spacing	27.5 MHz	Upper	-----

Modulation Standard: 802.11a (6Mbps), Ant L  
Channel: 149



<b>Tx Channel</b>	Bandwidth	22 MHz	Power	14.60 dBm
<b>Adjacent Channel</b>	Bandwidth	11 MHz	Lower	-29.81 dB
	Spacing	16.5 MHz	Upper	-29.34 dB
<b>Alternate Channel</b>	Bandwidth	11 MHz	Lower	-----
	Spacing	27.5 MHz	Upper	-----