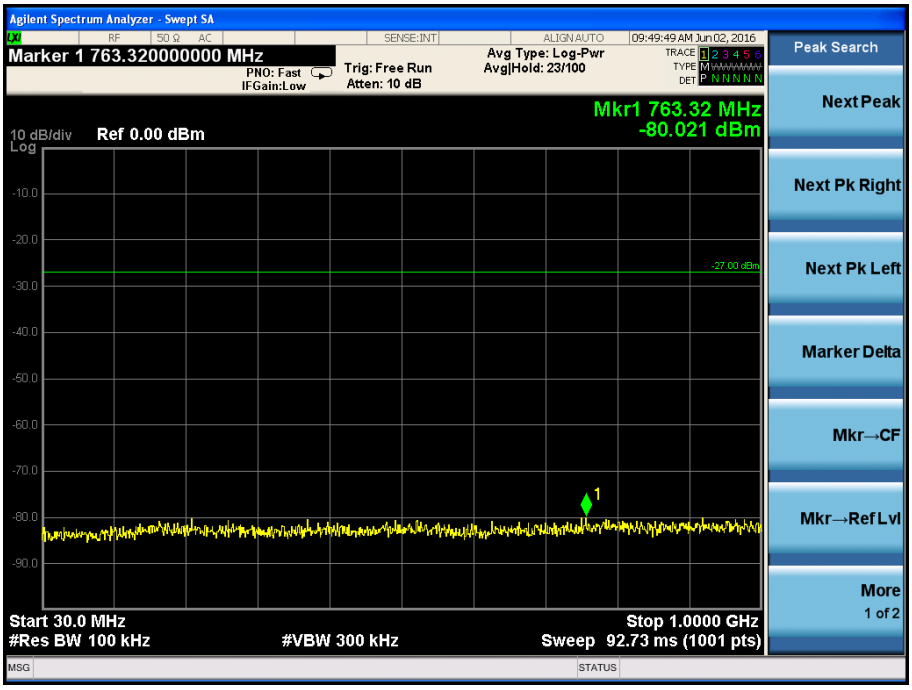
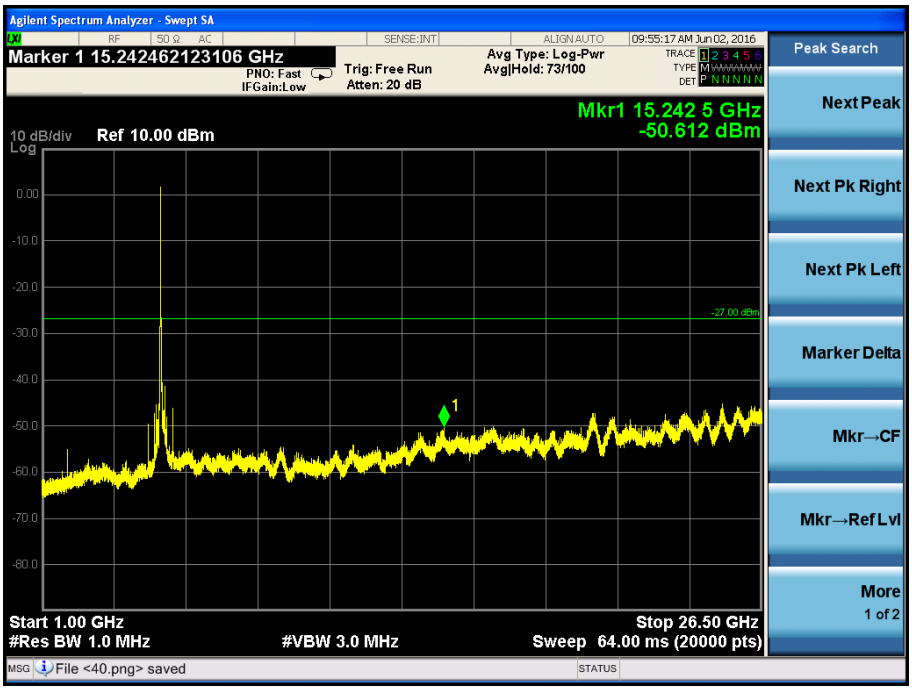
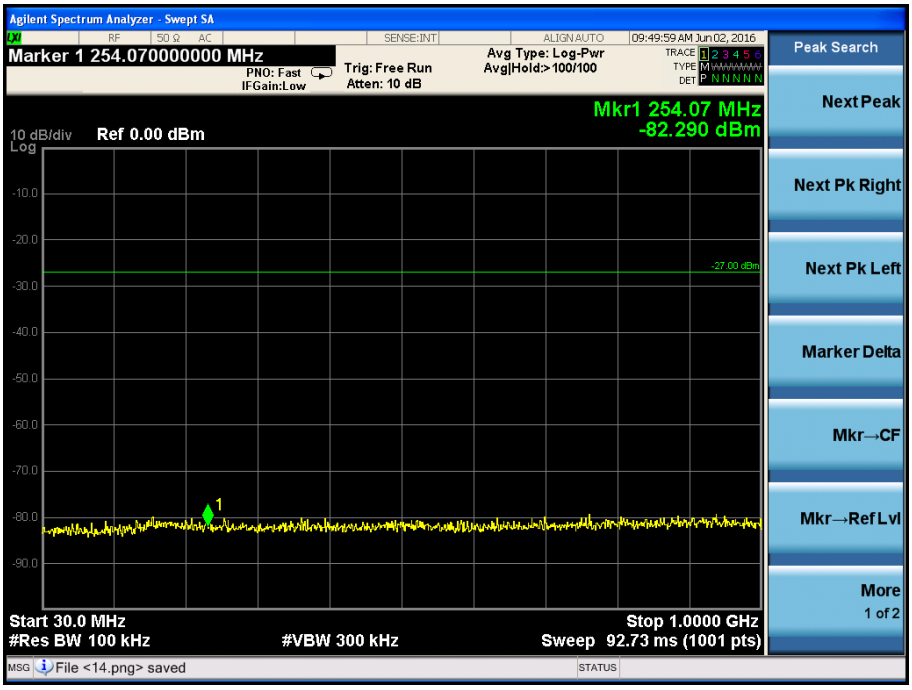
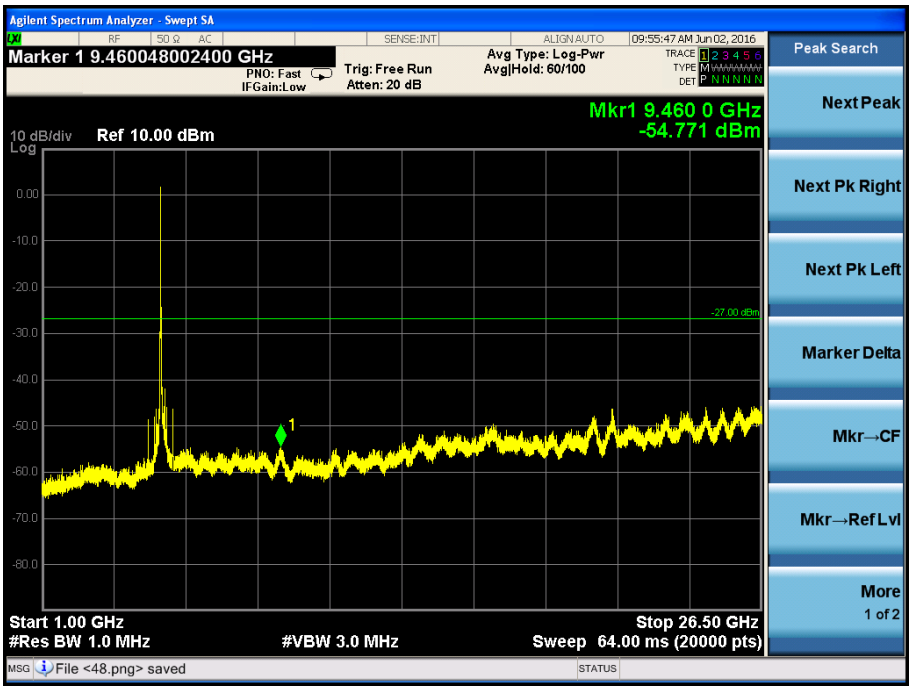
5200MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 763.320000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
09:49:49 AM Jun 02, 2016
Mkr1 763.32 MHz
-80.021 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

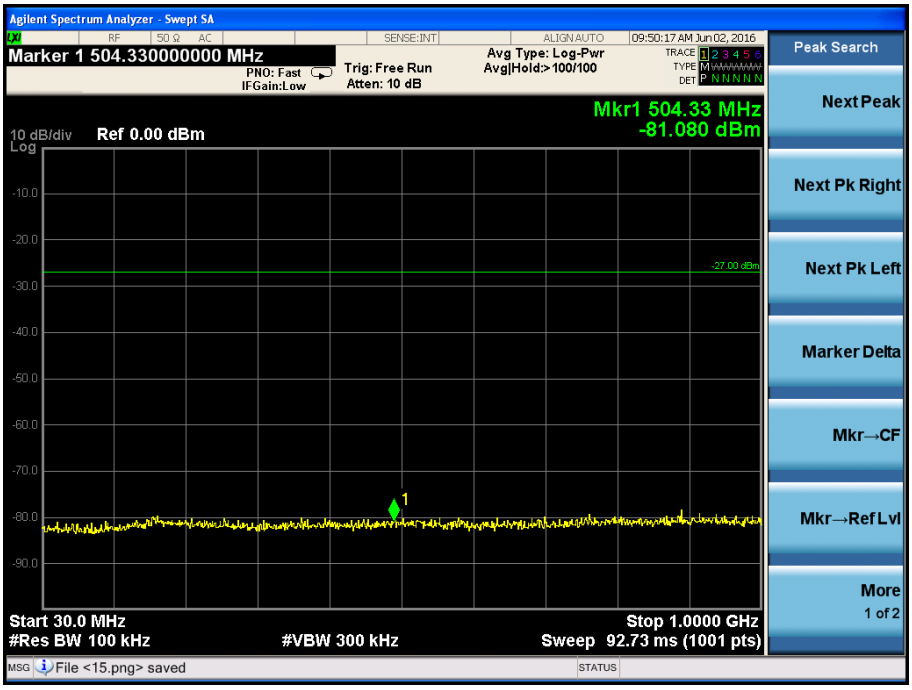

Agilent Spectrum Analyzer - Swept SA
Marker 1 15.242462123106 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 73/100
09:55:17 AM Jun 02, 2016
Mkr1 15.242 5 GHz
-50.612 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
File <40.png> saved
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

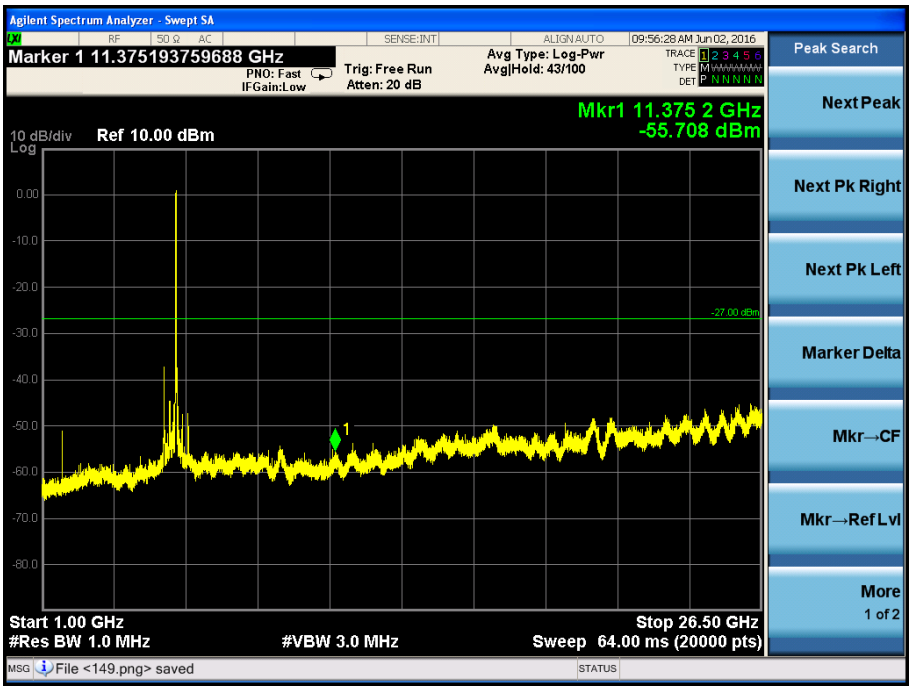
5240MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 254.070000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:49:59 AM Jun 02, 2016
Mkr1 254.07 MHz
-82.290 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <14.png> saved

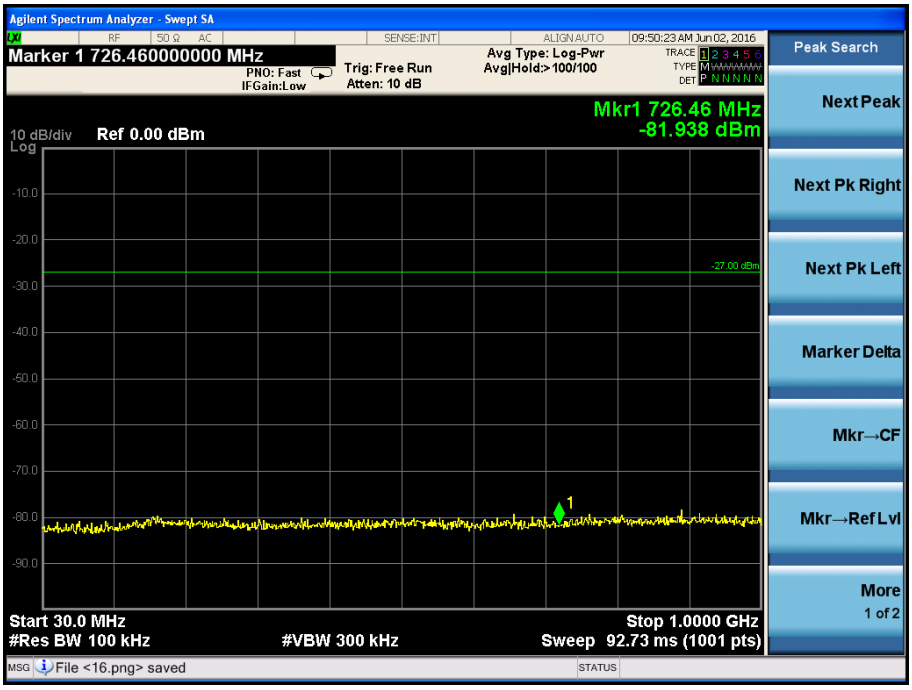

Agilent Spectrum Analyzer - Swept SA
Marker 1 9.460048002400 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 60/100
09:55:47 AM Jun 02, 2016
Mkr1 9.460 0 GHz
-54.771 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <48.png> saved

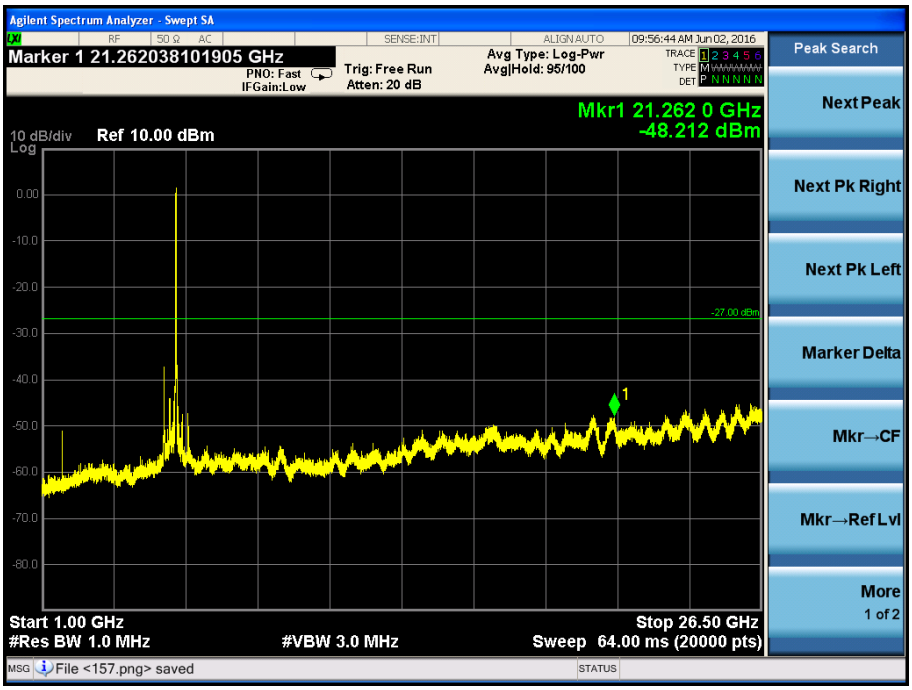
5745MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 504.330000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:50:17 AM Jun 02, 2016
Mkr1 504.33 MHz
-81.080 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <15.png> saved

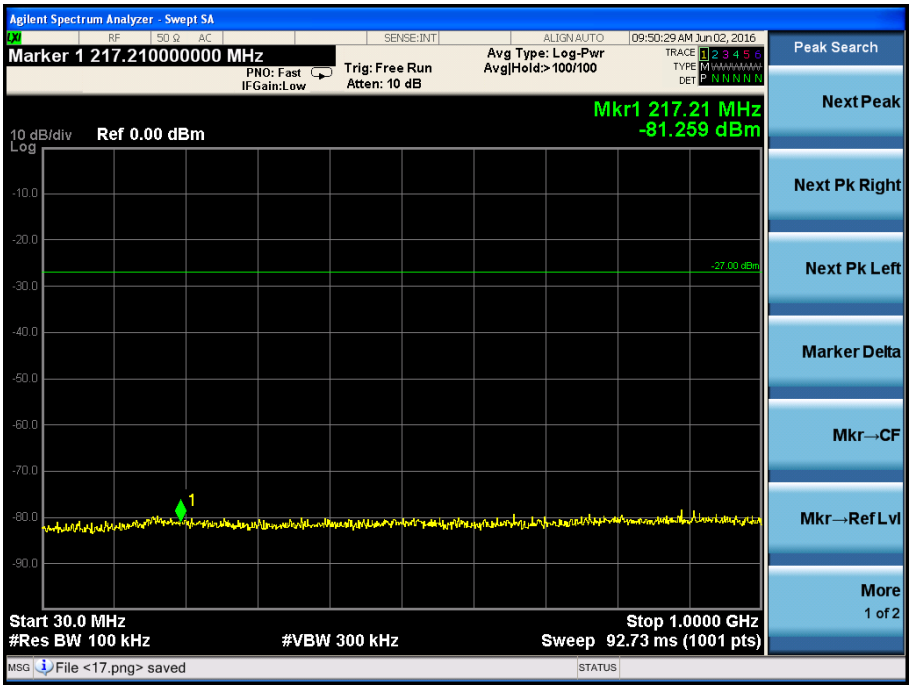

Agilent Spectrum Analyzer - Swept SA
Marker 1 11.375193759688 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 43/100
09:56:28 AM Jun 02, 2016
Mkr1 11.375 2 GHz
-55.708 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <149.png> saved

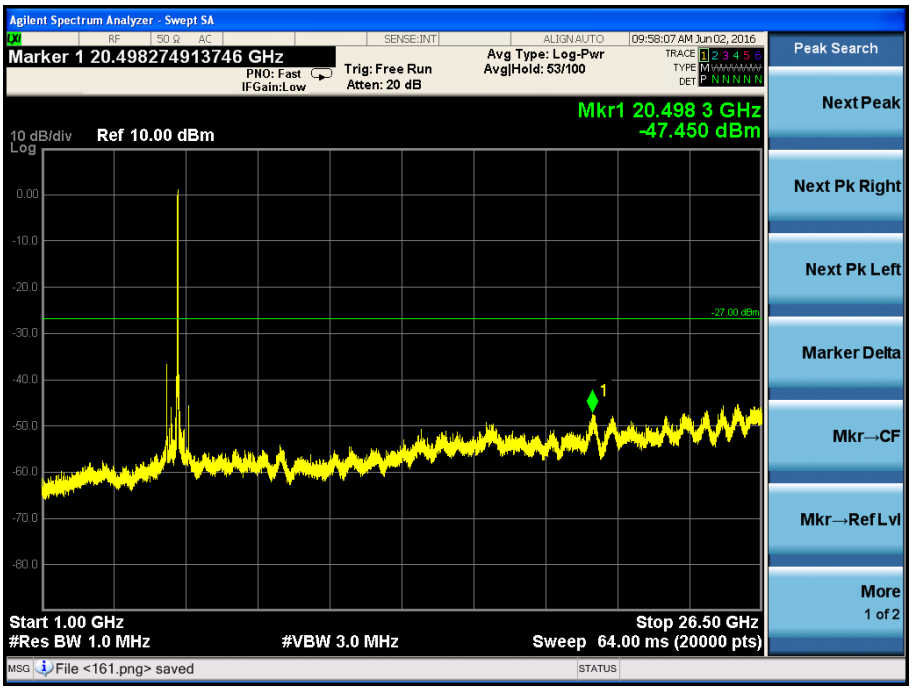
5785MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 726.460000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:50:23 AM Jun 02, 2016
Mkr1 726.46 MHz
-81.938 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <16.png> saved


Agilent Spectrum Analyzer - Swept SA
Marker 1 21.262038101905 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 95/100
09:56:44 AM Jun 02, 2016
Mkr1 21.262 0 GHz
-48.212 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <157.png> saved

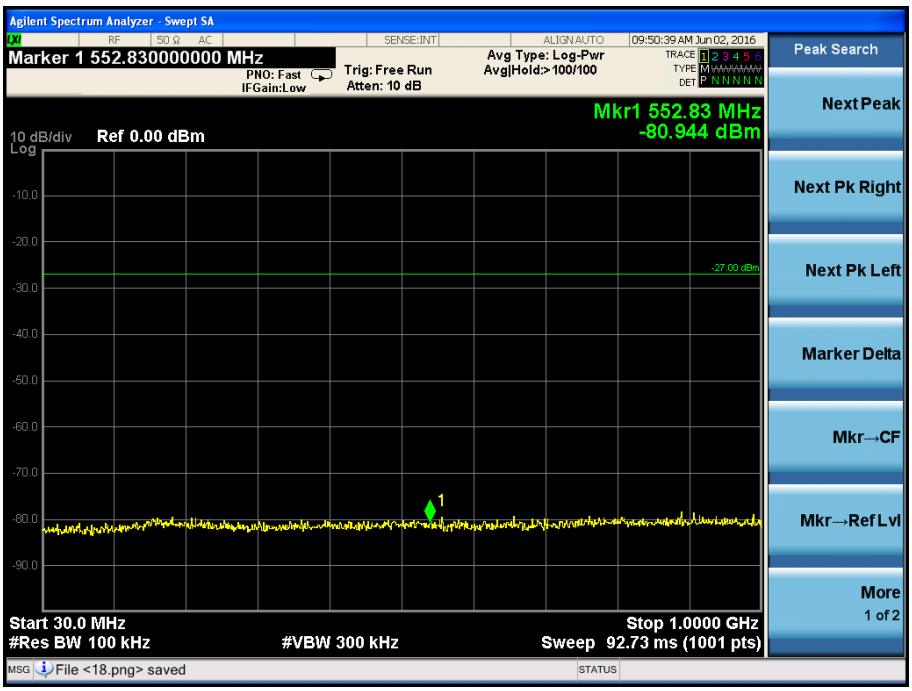
5825MHz

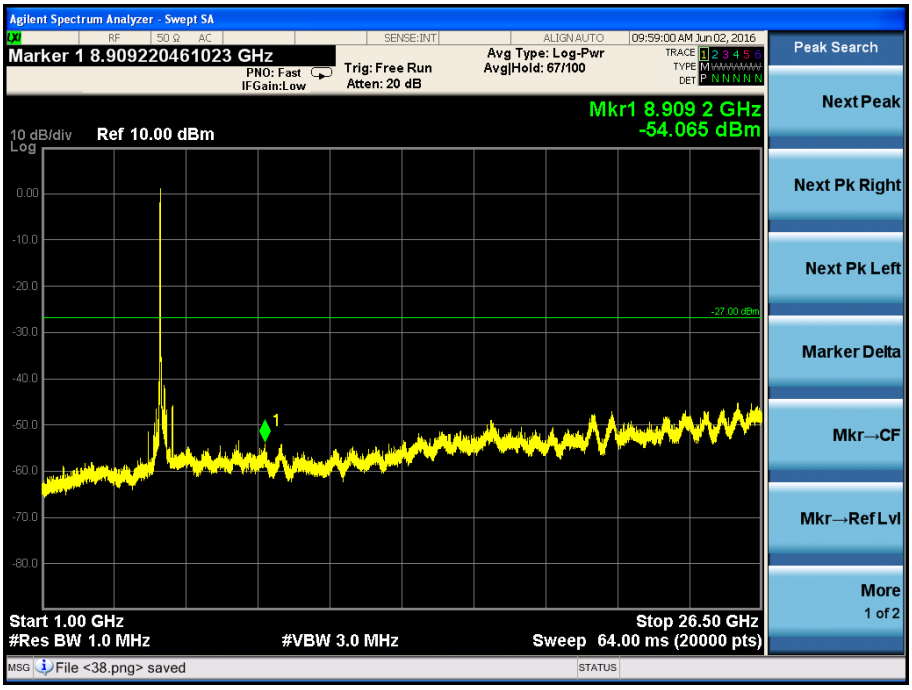

Agilent Spectrum Analyzer - Swept SA
Marker 1 217.210000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:50:29 AM Jun 02, 2016
Mkr1 217.21 MHz
-81.259 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <17.png> saved


Agilent Spectrum Analyzer - Swept SA
Marker 1 20.498274913746 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 53/100
09:58:07 AM Jun 02, 2016
Mkr1 20.498 3 GHz
-47.450 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <161.png> saved

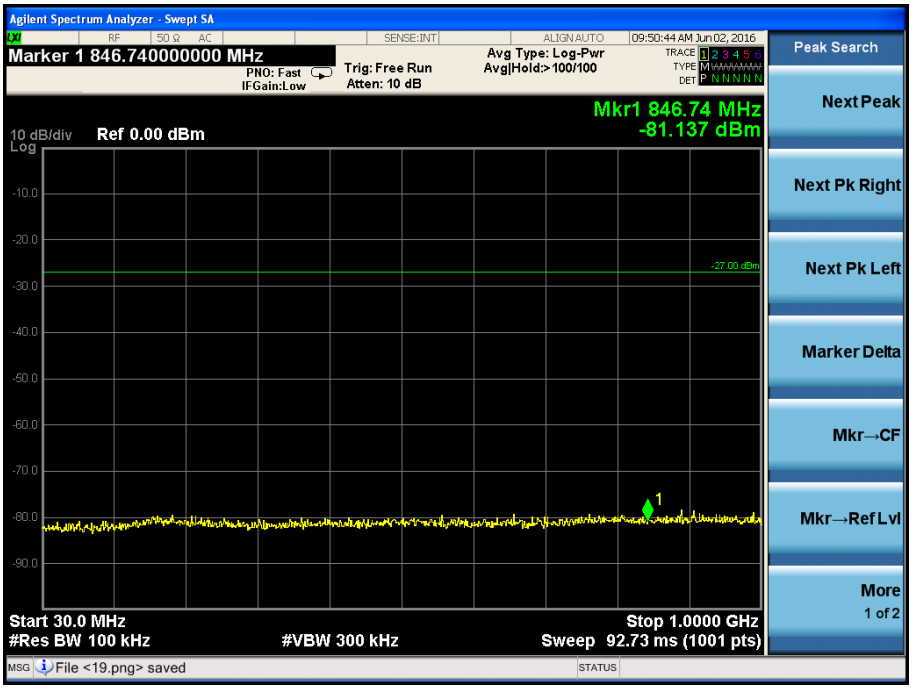
802.11n-HT40

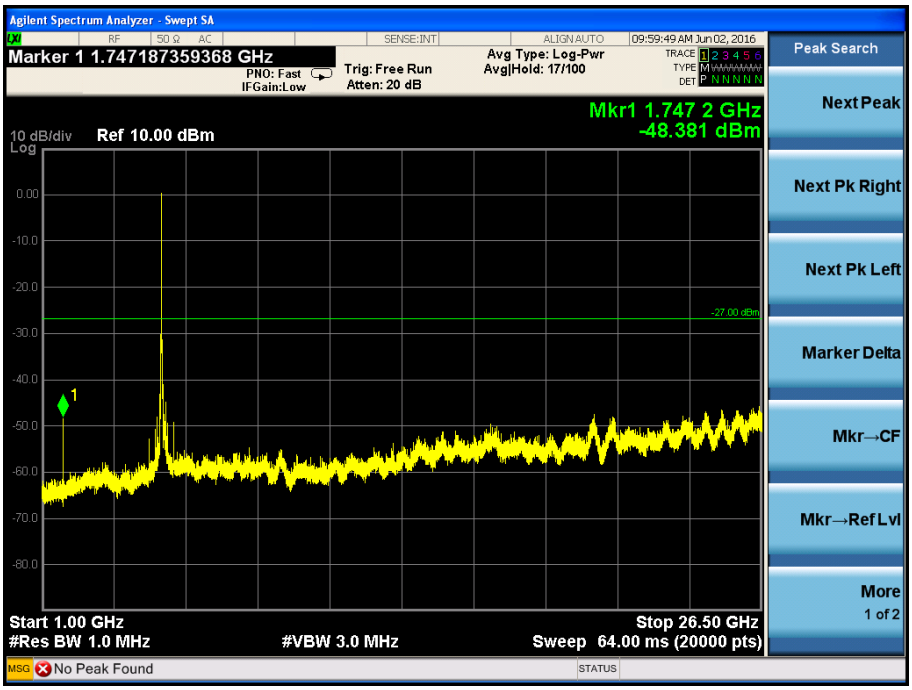
5190MHz



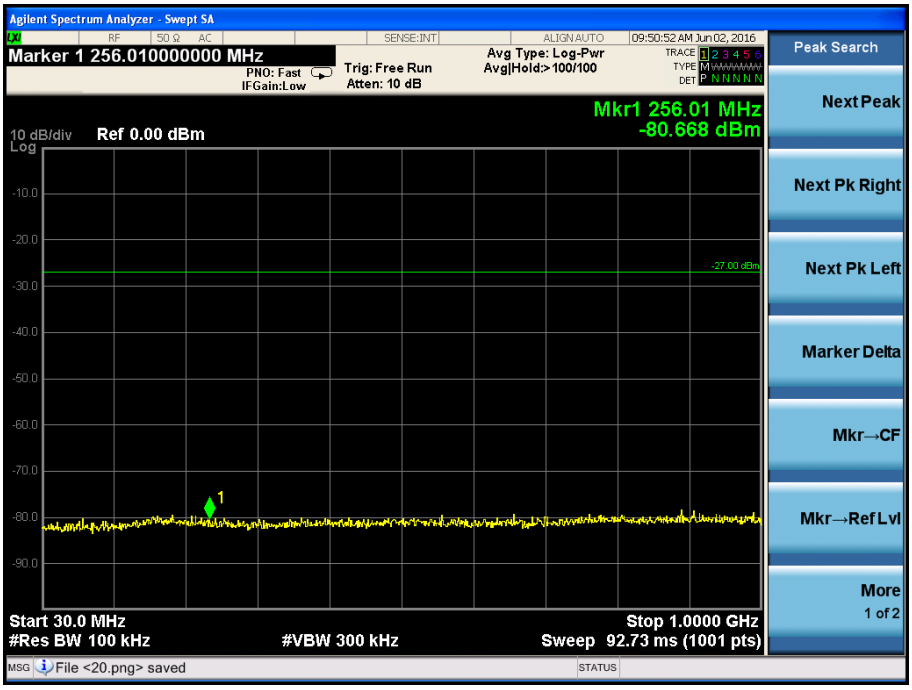


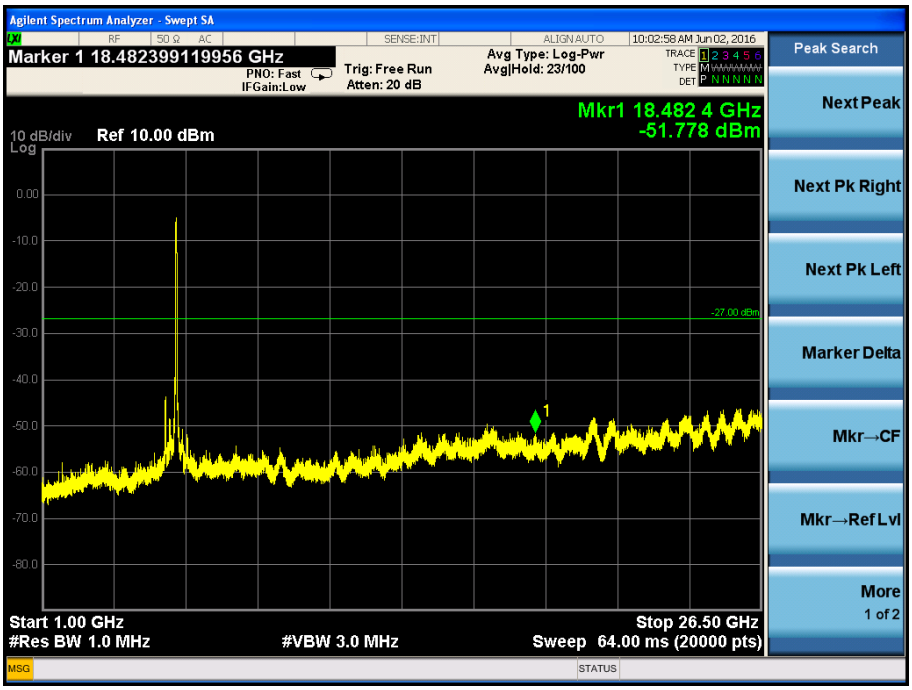
5230MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 846.740000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:50:44 AM Jun 02, 2016
Mkr1 846.74 MHz
-81.137 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <19.png> saved

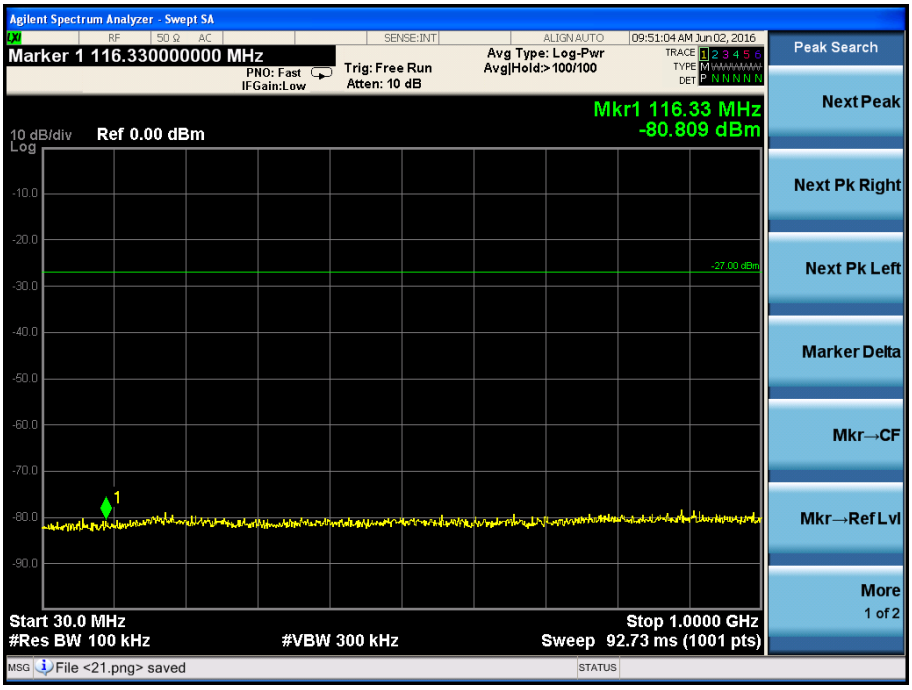

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.747187359368 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 17/100
09:59:49 AM Jun 02, 2016
Mkr1 1.747 2 GHz
-48.381 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
No Peak Found

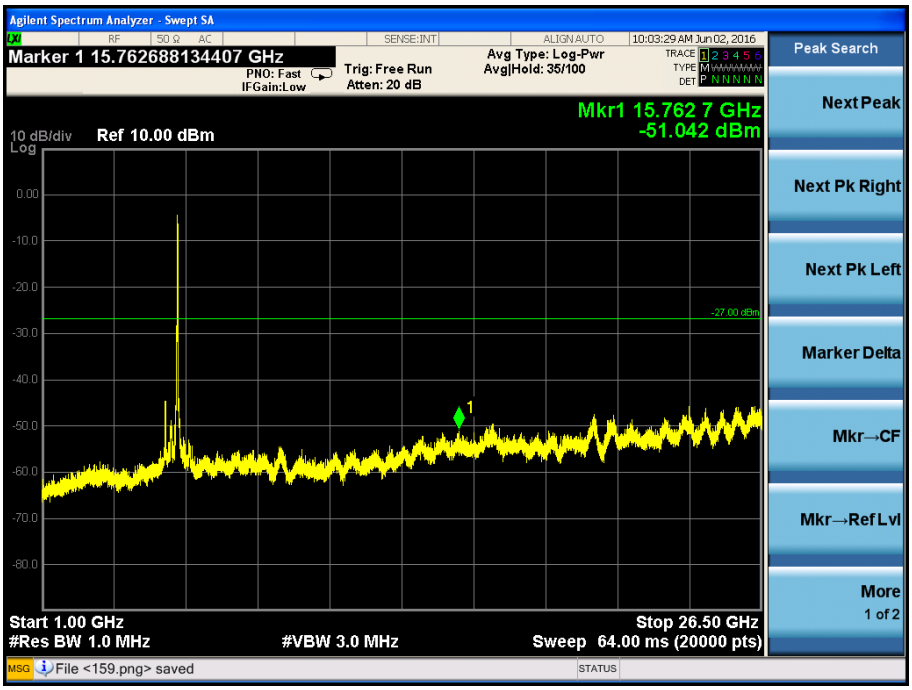
5755MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 256.010000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:50:52 AM Jun 02, 2016
Mkr1 256.01 MHz
-80.668 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <20.png> saved


Agilent Spectrum Analyzer - Swept SA
Marker 1 18.482399119956 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
10:02:58 AM Jun 02, 2016
Mkr1 18.482 4 GHz
-51.778 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

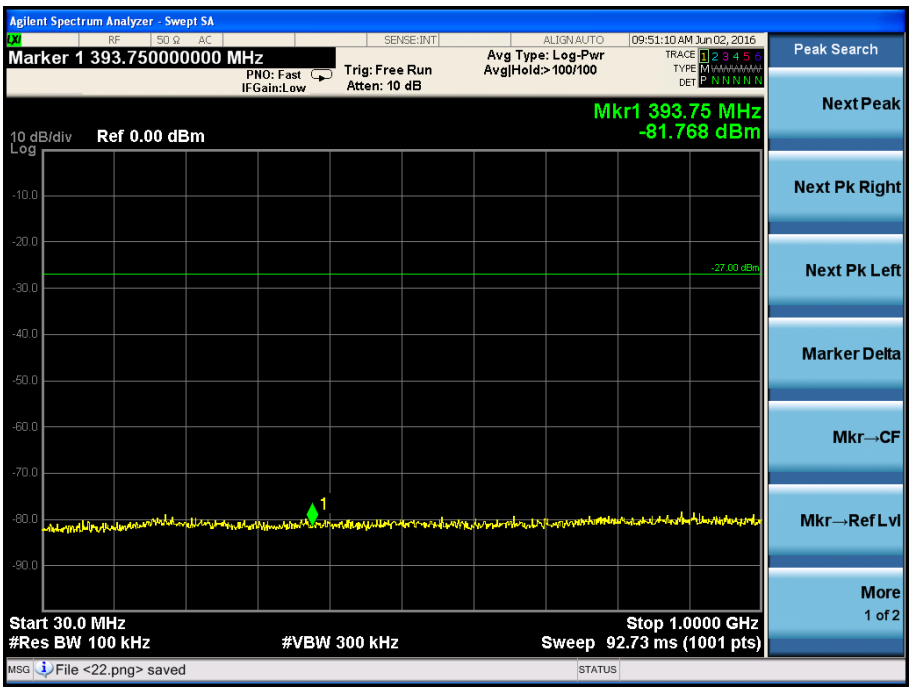
5795MHz

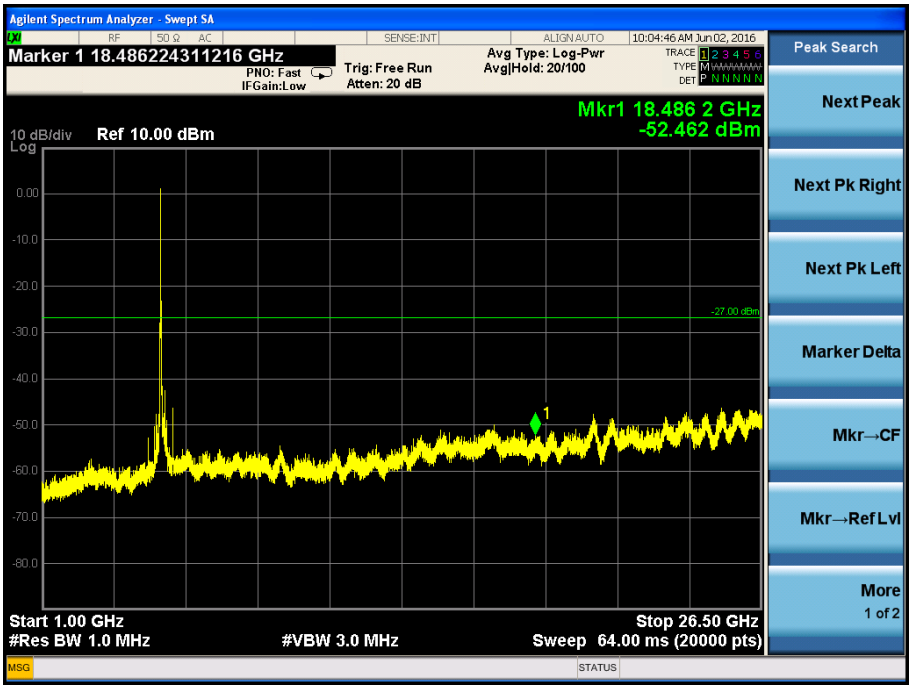

Agilent Spectrum Analyzer - Swept SA
Marker 1 116.330000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:51:04 AM Jun 02, 2016
Mkr1 116.33 MHz
-80.809 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <21.png> saved


Agilent Spectrum Analyzer - Swept SA
Marker 1 15.762688134407 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
10:03:29 AM Jun 02, 2016
Mkr1 15.762 7 GHz
-51.042 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <159.png> saved

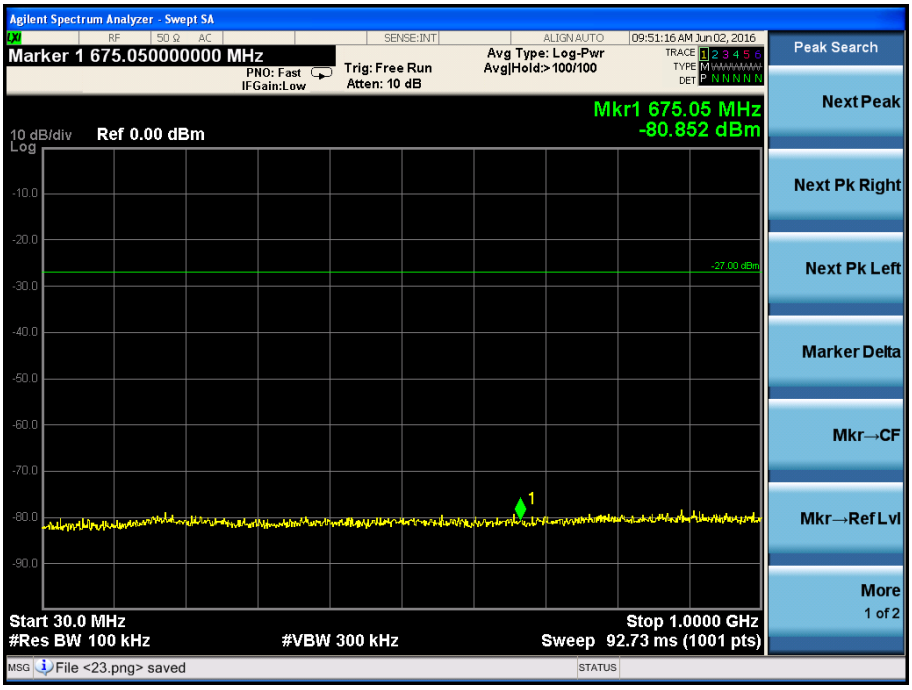
802.11ac-HT80

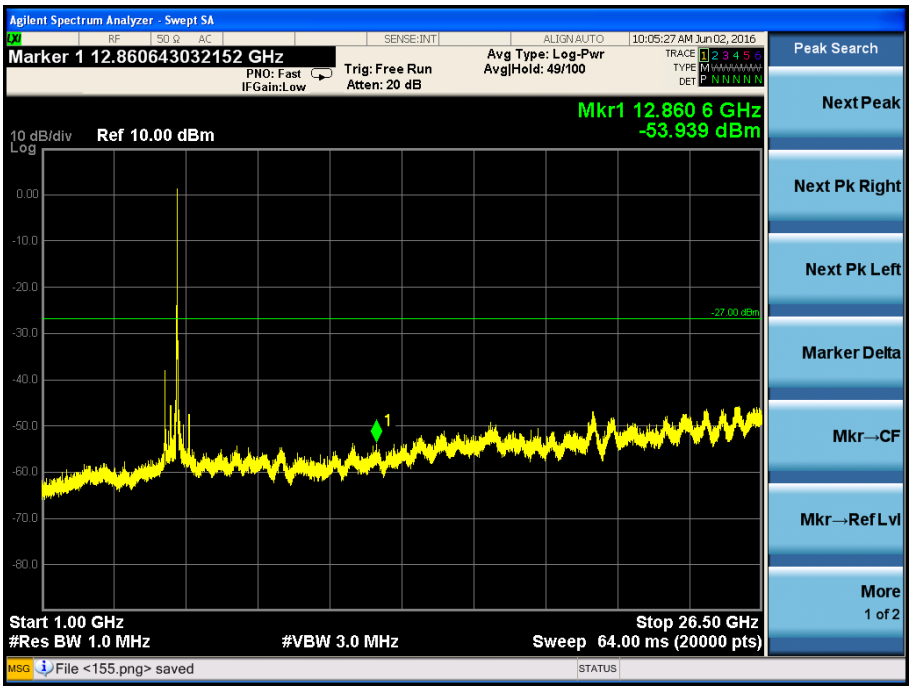
5210MHz





5775MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 675.050000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:51:16 AM Jun 02, 2016
Mkr1 675.05 MHz
-80.852 dBm
10 dB/div
Ref 0.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <23.png> saved


Agilent Spectrum Analyzer - Swept SA
Marker 1 12.860643032152 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 49/100
10:05:27 AM Jun 02, 2016
Mkr1 12.860 6 GHz
-53.939 dBm
10 dB/div
Ref 10.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 64.00 ms (20000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
File <155.png> saved

11. Radiated Spurious Emissions

11.1 Standard Applicable

According to §15.407(b)(6), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209.
According to §15.407(b)(7),The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
789033 D02 v01r02 General UNII Test Procedures New Rules v01
If radiated measurements are performed, field strength is then converted to EIRP as follows:

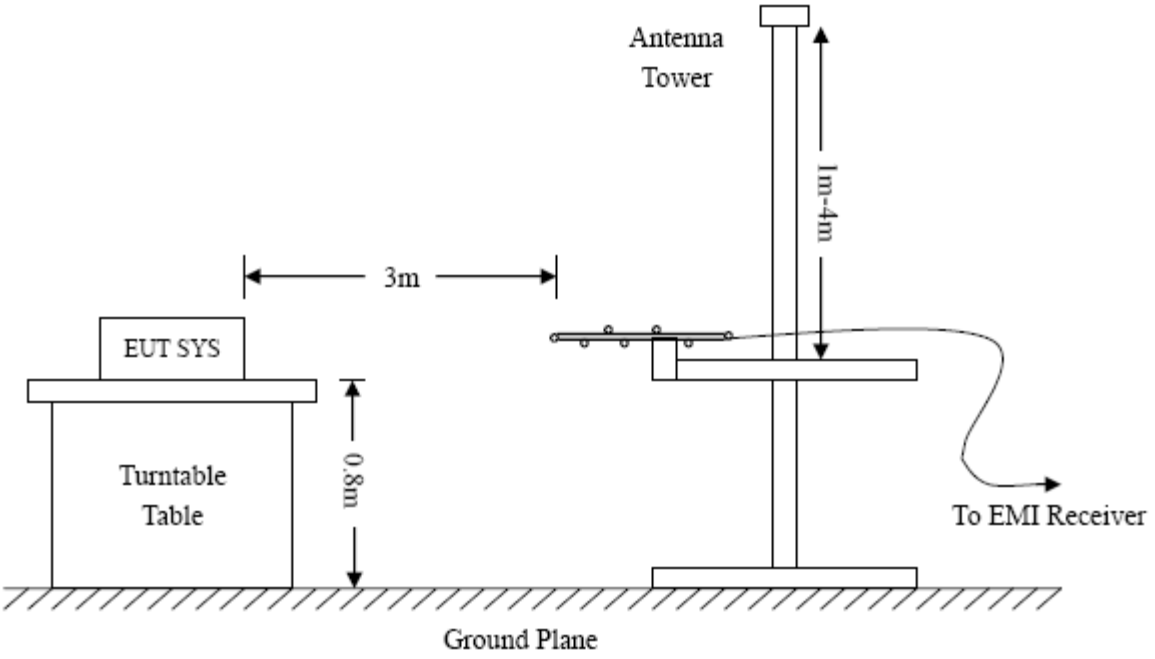
EIRP = ((E*d)^2) / 30

where:

- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotropically radiated power in watts.

11.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



11.3 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:
RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:
RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

11.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

11.5 Environmental Conditions

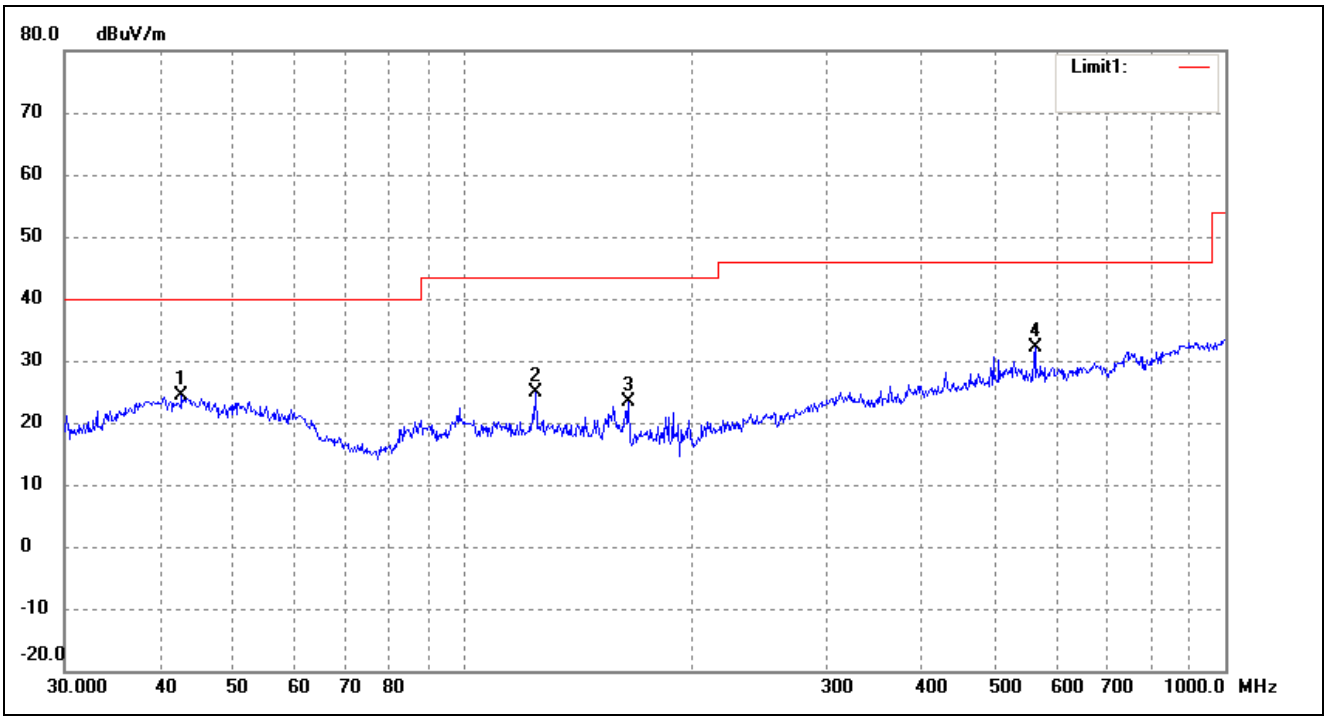
Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

11.6 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.407(b)(6) standards, and had the worst margin of:

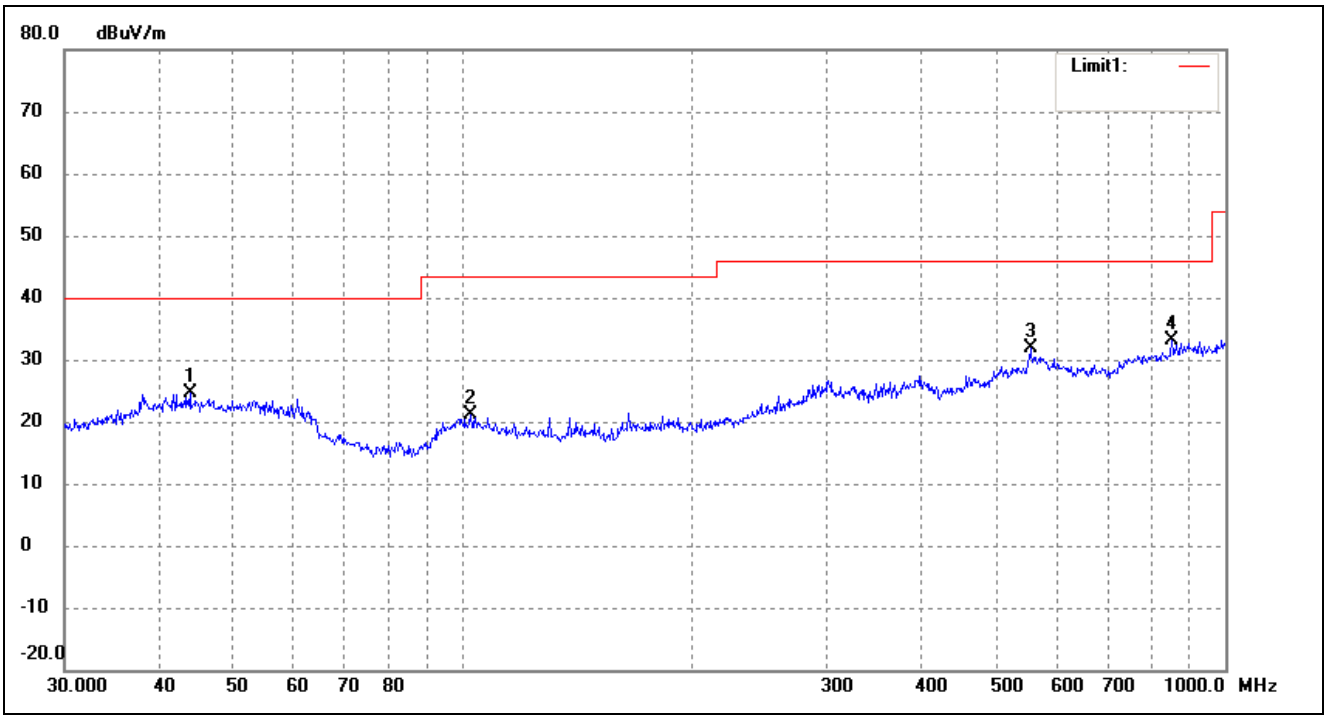
Note: *this EUT was tested in 3 orthogonal positions and the worst case position data was reported.*
Note: this EUT was tested in the low, high channel and the worst case position data was reported.

For 802.11n-HT20
Spurious Emission From 30 MHz to 1 GHz
Test mode: Transmitting Channel 5180MHz
Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	42.7496	17.30	6.98	24.28	40.00	-15.72	35	100	peak
2	124.5690	21.12	3.65	24.77	43.50	-18.73	68	100	peak
3	164.9071	20.76	2.65	23.41	43.50	-20.09	105	100	peak
4	562.6624	20.52	11.67	32.19	46.00	-13.81	138	100	peak

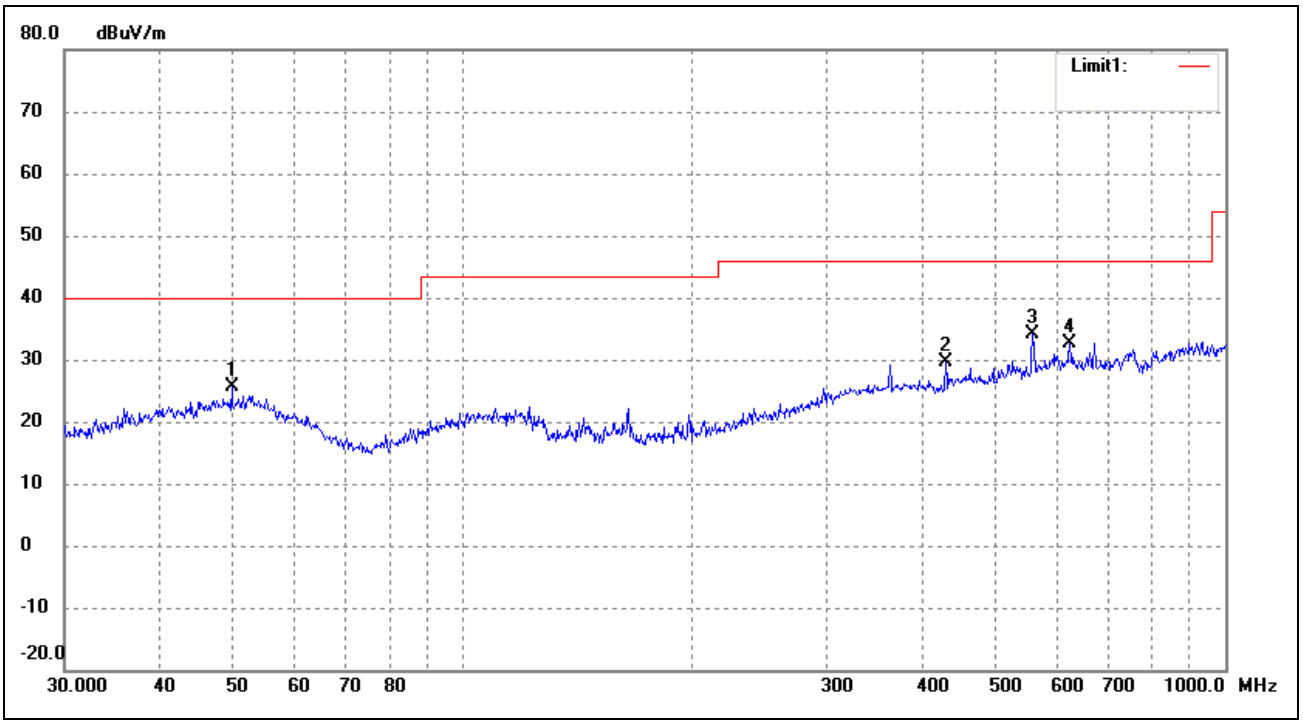
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	43.8119	16.42	8.12	24.54	40.00	-15.46	41	100	peak
2	102.3597	15.15	5.88	21.03	43.50	-22.47	77	100	peak
3	554.8252	20.44	11.46	31.90	46.00	-14.10	114	100	peak
4	851.0353	17.11	15.97	33.08	46.00	-12.92	172	100	peak

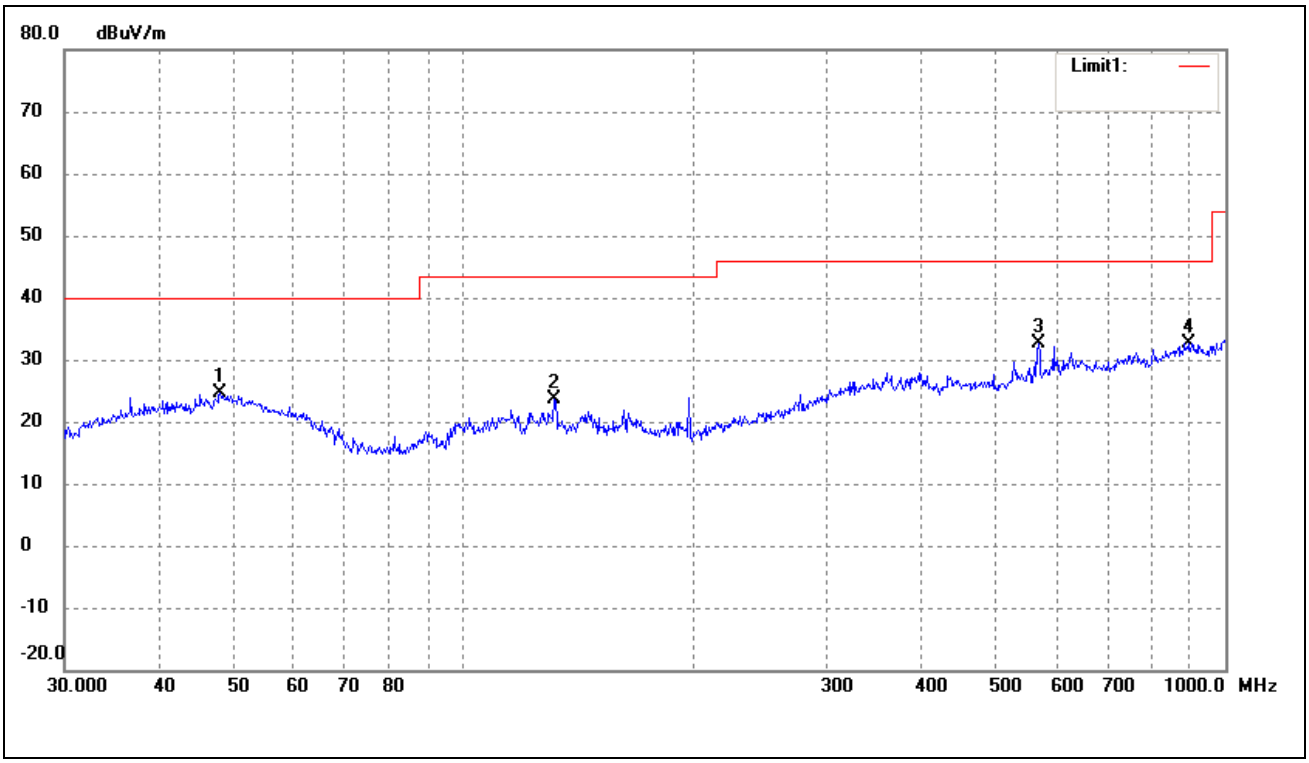
Test mode: Transmitting Channel 5745MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	49.7068	19.33	6.29	25.62	40.00	-14.38	46	100	peak
2	429.5228	19.86	9.68	29.54	46.00	-16.46	149	100	peak
3	558.7300	22.54	11.52	34.06	46.00	-11.94	169	100	peak
4	625.0778	20.58	12.11	32.69	46.00	-13.31	212	100	peak

Test Specification: *Vertical*

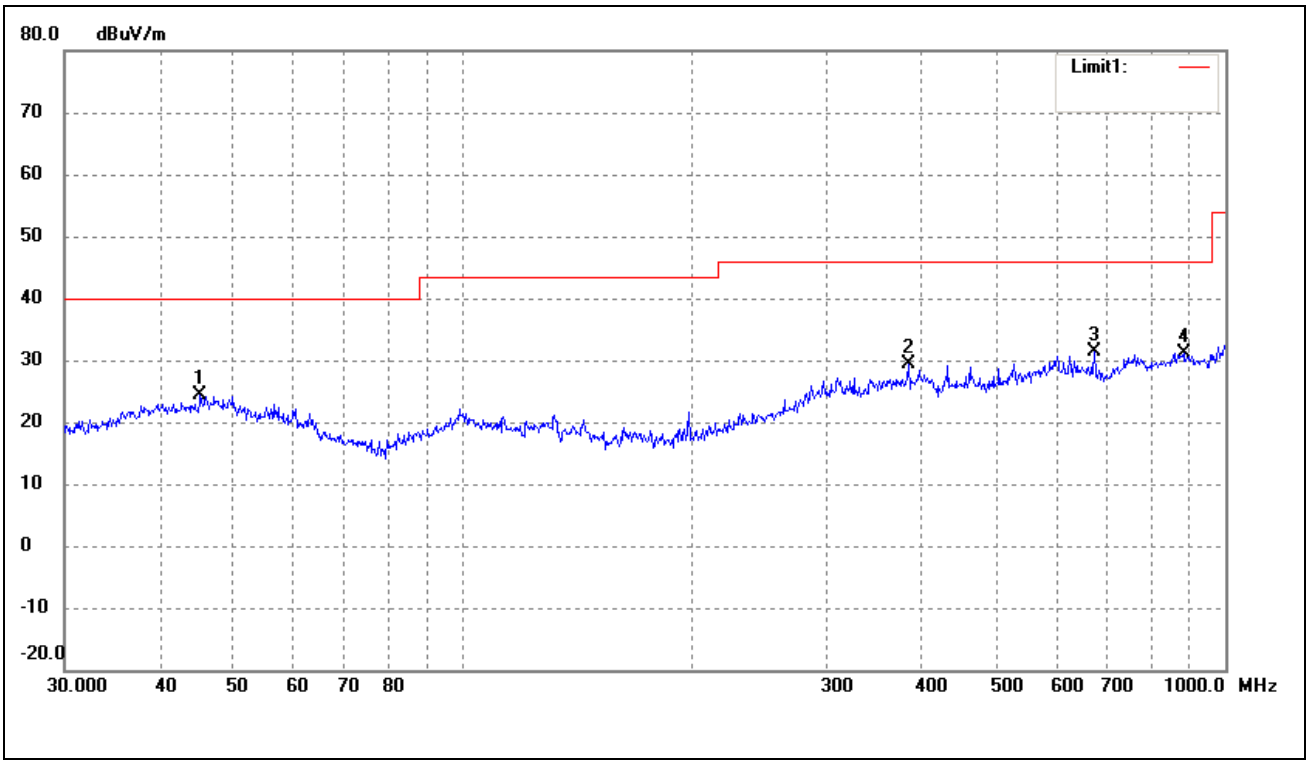


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	47.9938	17.73	6.86	24.59	40.00	-15.41	39	100	peak
2	131.7574	20.50	3.07	23.57	43.50	-19.93	97	100	peak
3	568.6127	20.66	11.98	32.64	46.00	-13.36	156	100	peak
4	893.8567	15.68	16.85	32.53	46.00	-13.47	221	100	peak

For 802.11n-HT40

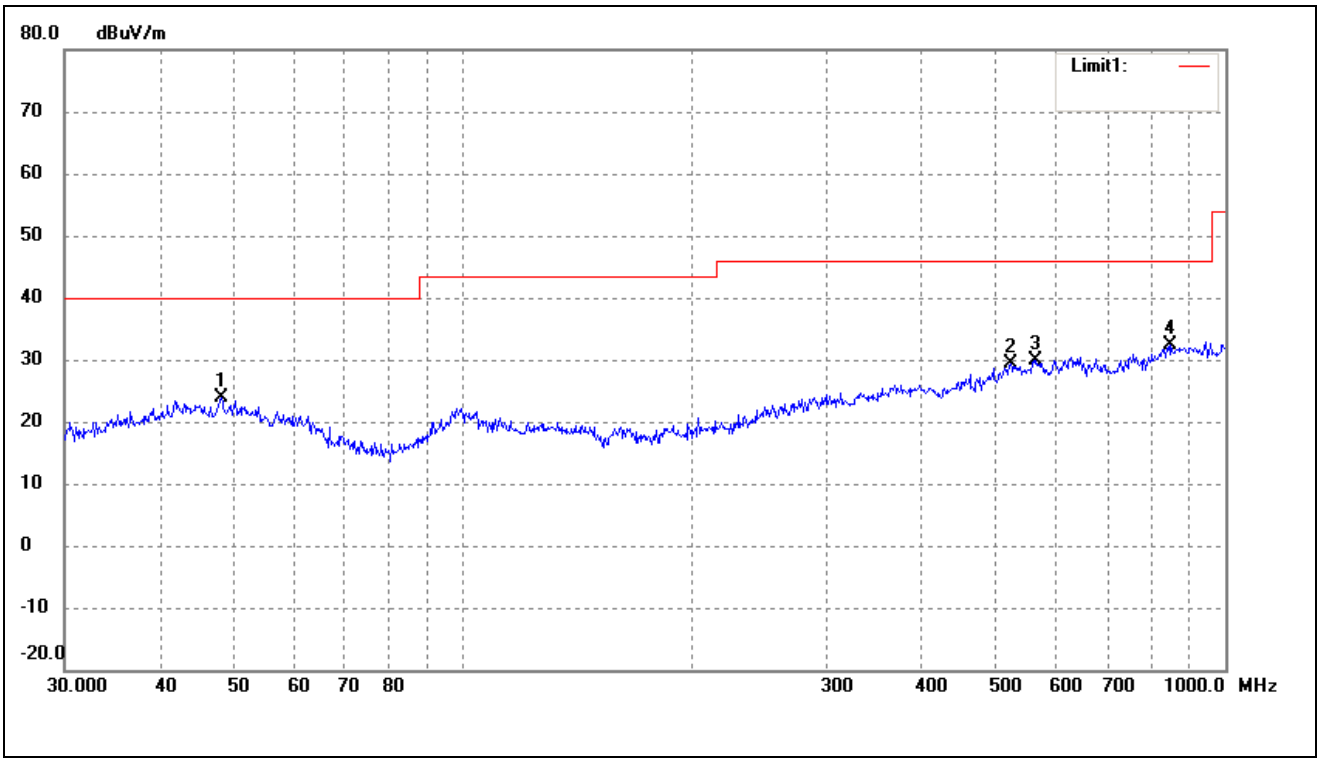
Test mode: Transmitting Channel 5190MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	45.2165	17.53	6.74	24.27	40.00	-15.73	54	100	peak
2	383.9318	20.07	9.38	29.45	46.00	-16.55	125	100	peak
3	672.8445	19.24	12.22	31.46	46.00	-14.54	167	100	peak
4	881.4067	14.27	16.82	31.09	46.00	-14.91	241	100	peak

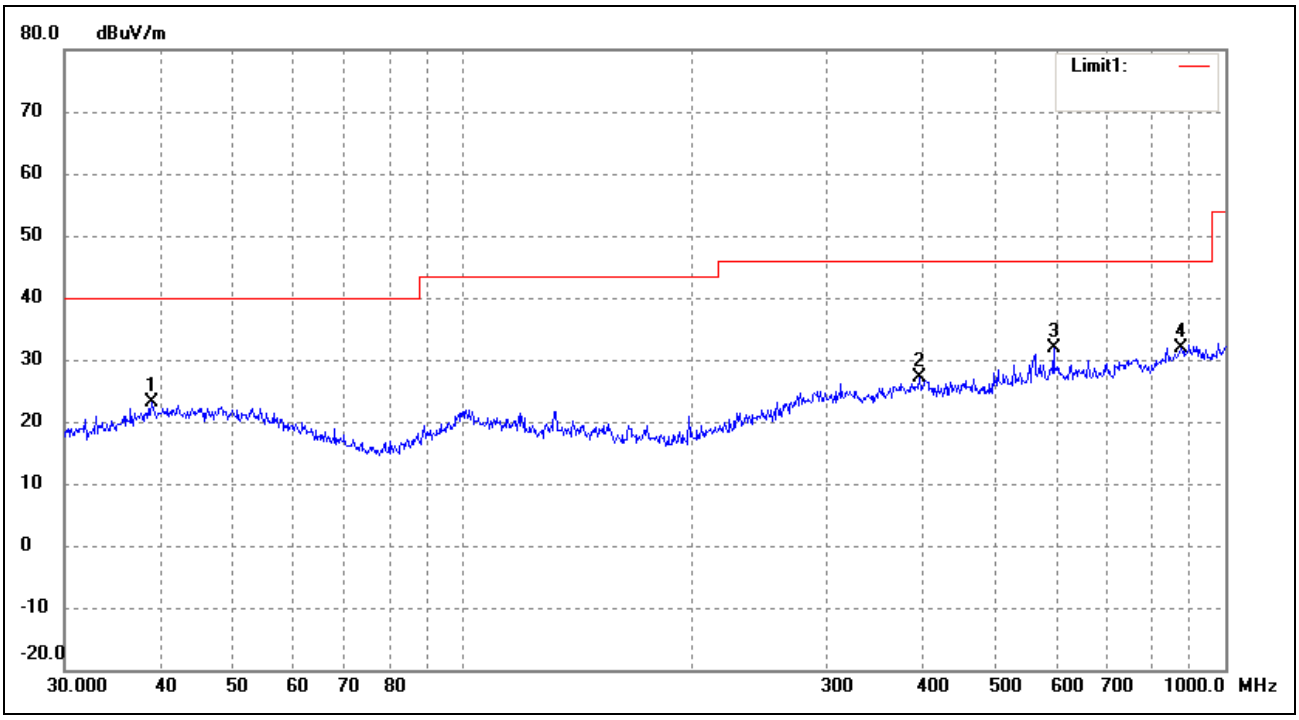
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.1625	16.97	6.81	23.78	40.00	-16.22	37	100	peak
2	522.7178	18.12	11.37	29.49	46.00	-16.51	204	100	peak
3	564.6389	18.12	11.77	29.89	46.00	-16.11	232	100	peak
4	848.0561	16.42	15.86	32.28	46.00	-13.72	268	100	peak

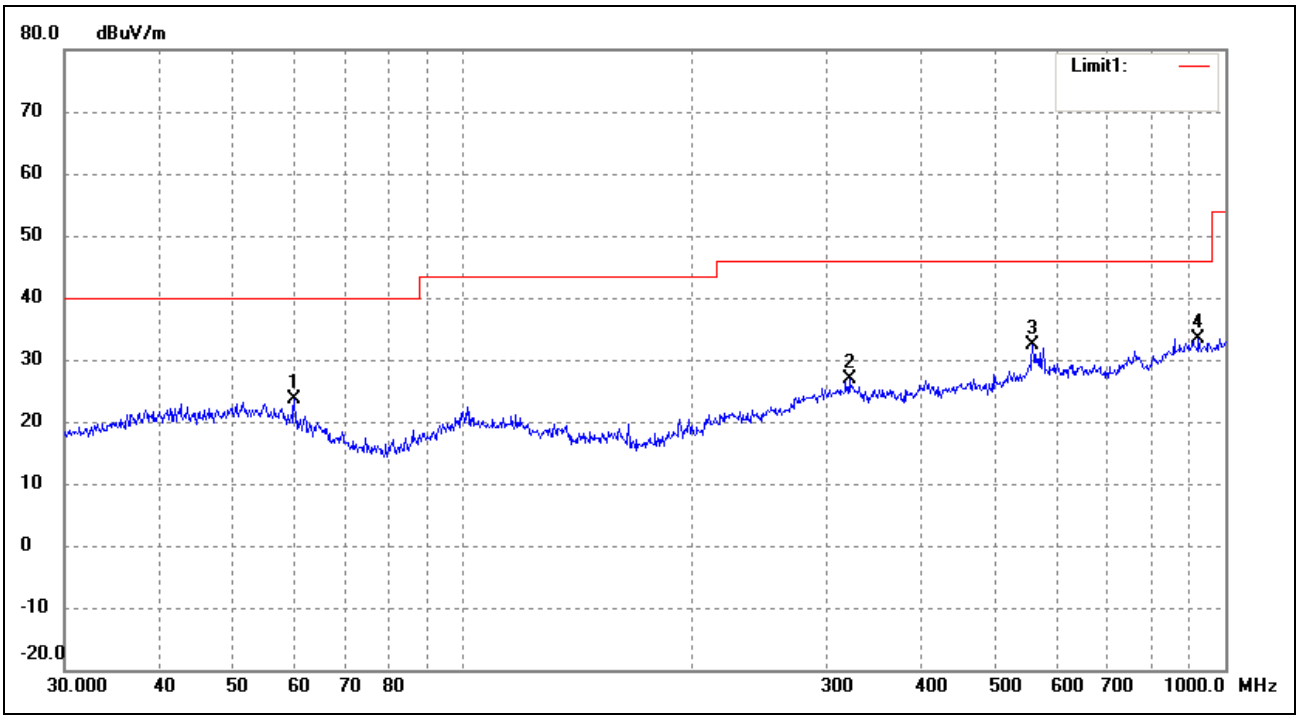
Test mode: Transmitting Channel 5755MHz

Horizontal



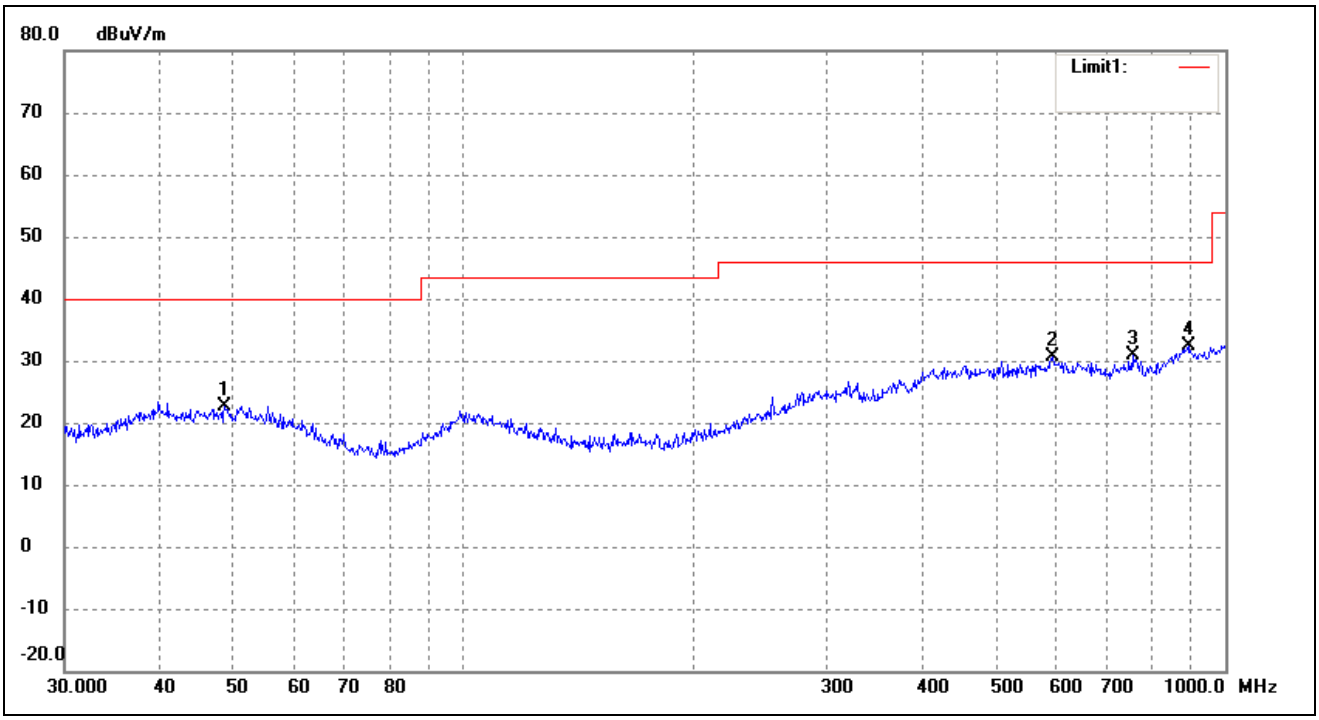
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	39.0245	14.03	9.08	23.11	40.00	-16.89	29	100	peak
2	396.2413	17.29	9.95	27.24	46.00	-18.76	135	100	peak
3	595.1326	18.85	13.14	31.99	46.00	-14.01	174	100	peak
4	875.2468	15.18	16.70	31.88	46.00	-14.12	218	100	peak

Test Specification: *Vertical*



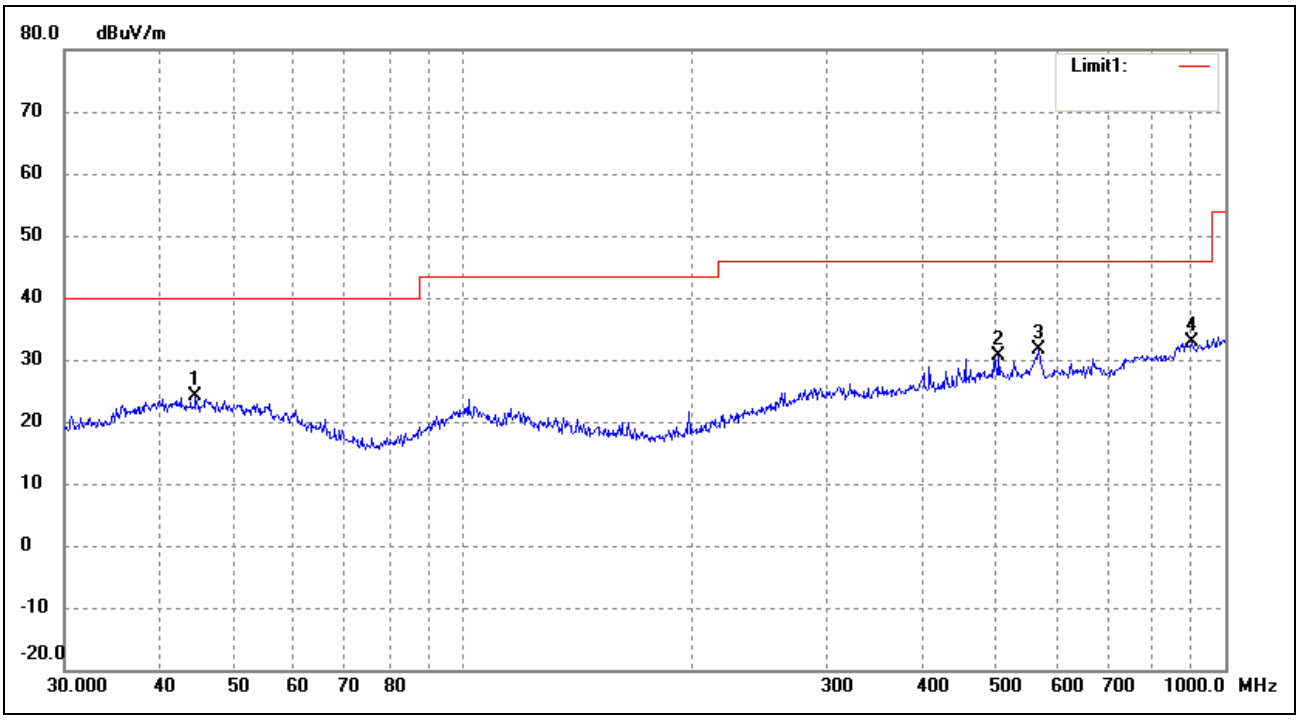
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	60.0690	18.15	5.36	23.51	40.00	-16.49	54	100	peak
2	321.0606	17.67	9.26	26.93	46.00	-19.07	165	100	peak
3	558.7300	20.75	11.52	32.27	46.00	-13.73	194	100	peak
4	922.5157	16.89	16.44	33.33	46.00	-12.67	237	100	peak

For 802.11ac-HT80
Spurious Emission From 30 MHz to 1 GHz
Test mode: Transmitting Channel 5210MHz
Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.6719	16.24	6.39	22.63	40.00	-17.37	36	100	peak
2	593.0497	17.45	13.06	30.51	46.00	-15.49	121	100	peak
3	755.3872	16.46	14.40	30.86	46.00	-15.14	167	100	peak
4	893.8567	15.46	16.85	32.31	46.00	-13.69	195	100	peak

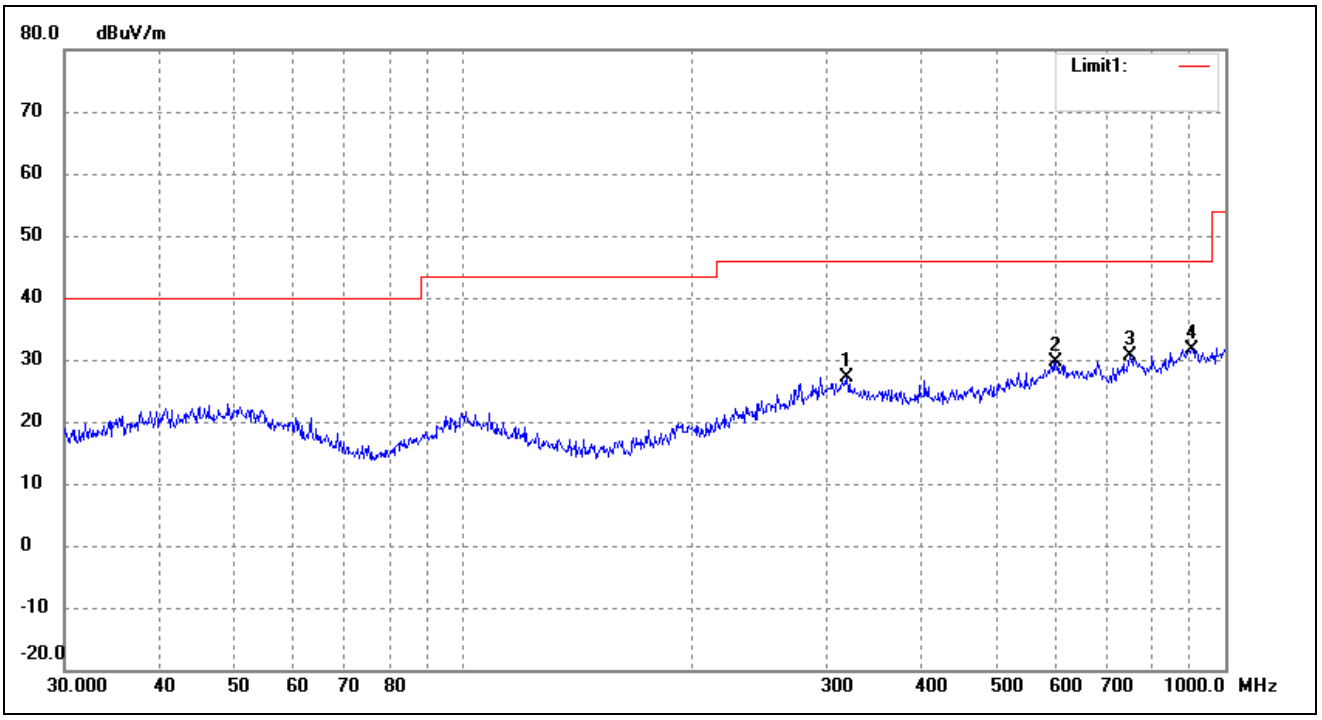
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	44.5867	16.15	7.88	24.03	40.00	-15.97	44	100	peak
2	504.7062	19.72	10.98	30.70	46.00	-15.30	135	100	peak
3	568.6127	19.54	11.98	31.52	46.00	-14.48	197	100	peak
4	903.3093	15.99	16.79	32.78	46.00	-13.22	251	100	peak

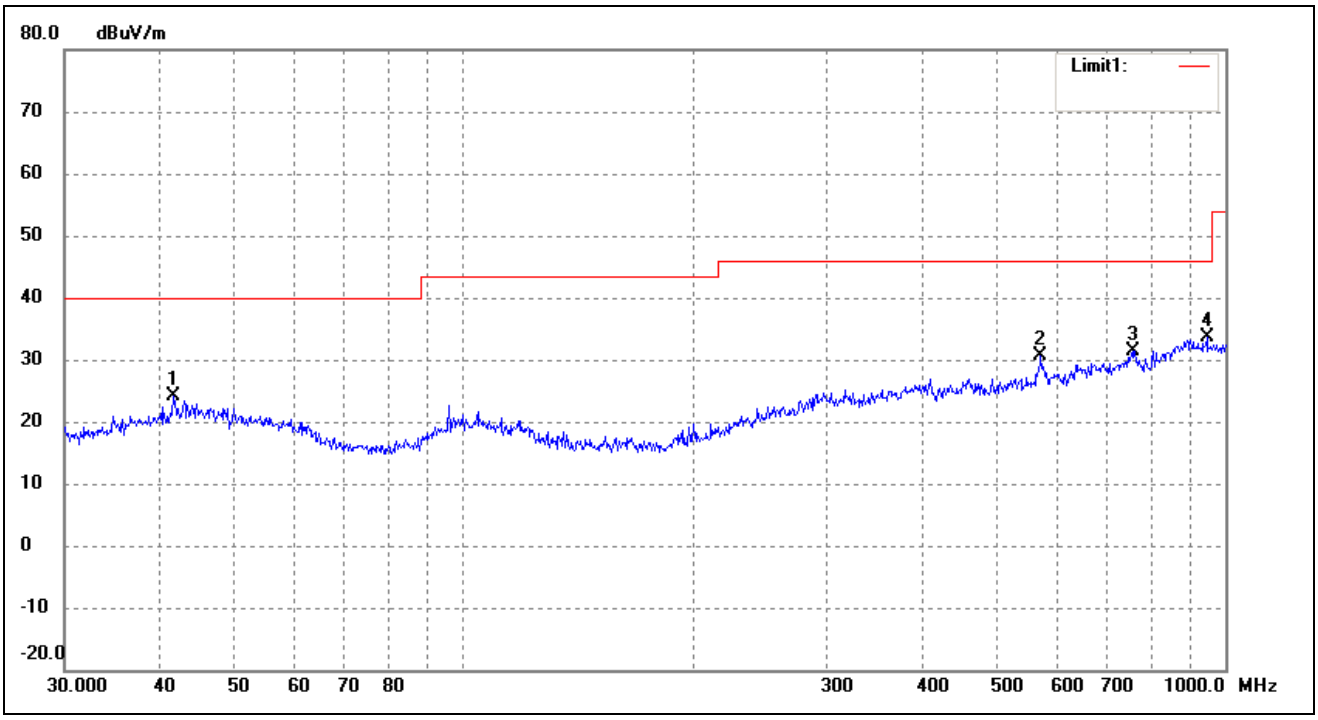
Test mode: Transmitting Channel 5775MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	318.8170	17.91	9.28	27.19	46.00	-18.81	85	100	peak
2	599.3212	16.34	13.30	29.64	46.00	-16.36	147	100	peak
3	750.1082	16.64	14.10	30.74	46.00	-15.26	203	100	peak
4	903.3093	14.92	16.79	31.71	46.00	-14.29	269	100	peak

Test Specification: *Vertical*



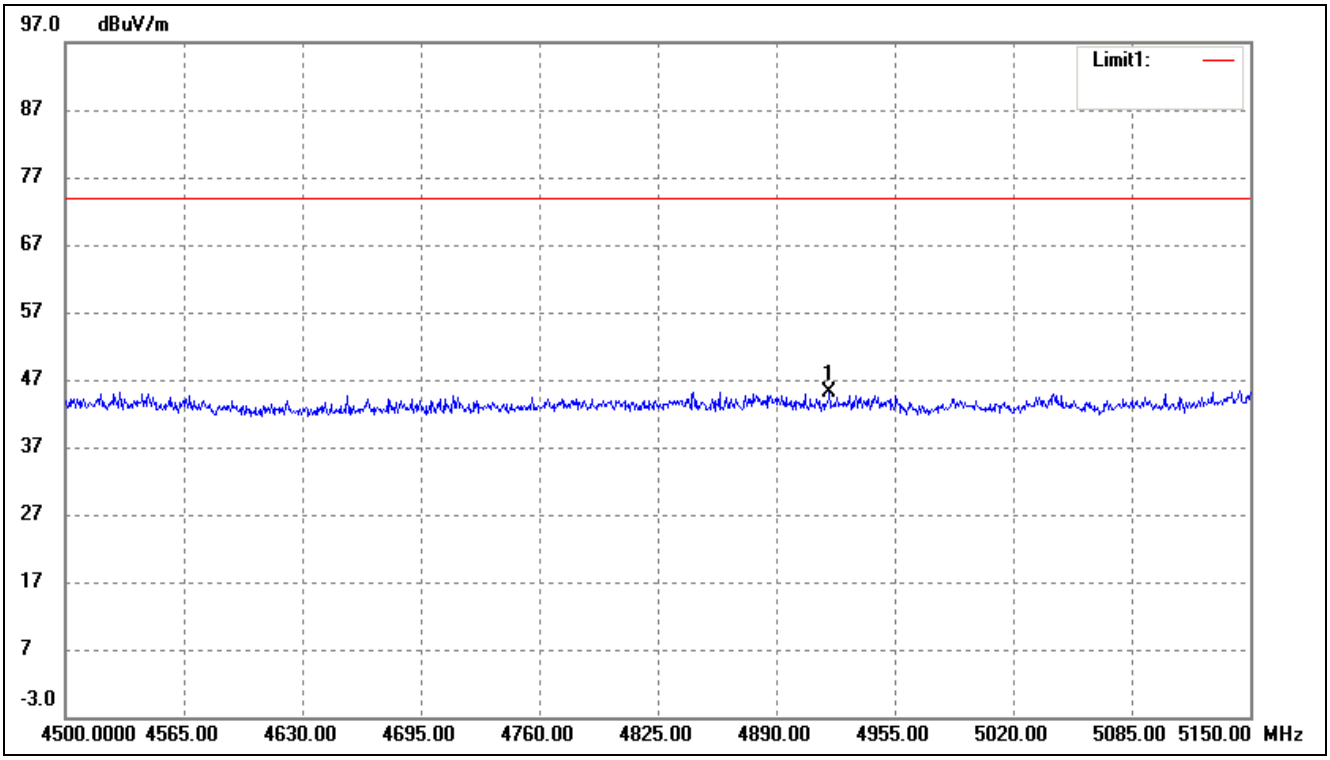
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	41.7130	15.31	8.74	24.05	40.00	-15.95	26	100	peak
2	572.6144	18.56	12.19	30.75	46.00	-15.25	164	100	peak
3	755.3872	16.60	14.86	31.46	46.00	-14.54	215	100	peak
4	945.4397	17.32	16.25	33.57	46.00	-12.43	283	100	peak

802.11n HT20

Spurious Emission above 1GHz

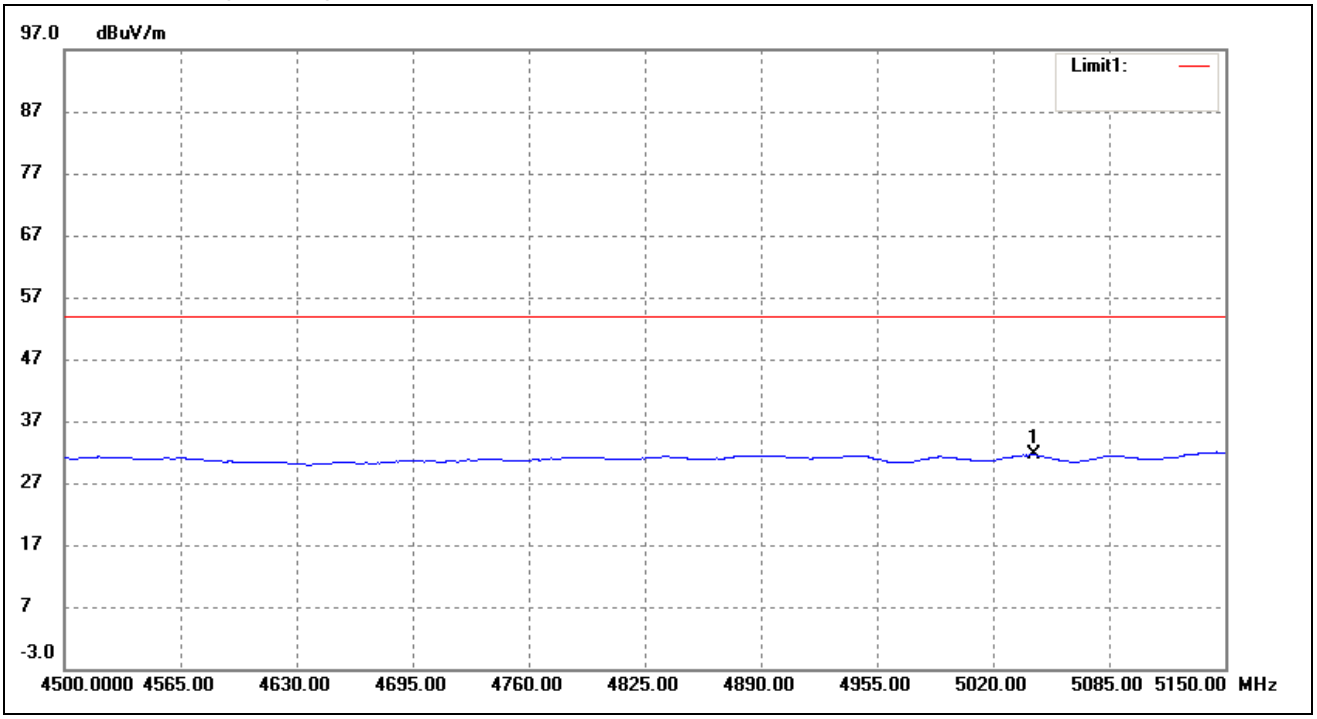
For the frequency band 5.15-5.25GHz(802.11n HT20)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	4919.250	45.89	-0.69	45.20	74.00	-28.80	55	100	peak

Restricted Bandedge Average



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5042.750	31.94	-0.38	31.56	54.00	-22.44	55	100	Ave

Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5180MHz)										
15540	PK	45.0	55	V	40.7	10.9	39.6	57.0	74	-17.0
15540	PK	46.1	55	H	40.7	10.9	39.6	58.1	74	-15.9
15540	AV	30.3	55	V	40.7	10.9	39.6	42.3	54	-11.7
15540	AV	30.4	55	H	40.7	10.9	39.6	42.4	54	-11.6
High Channel (5240MHz)										
15720	PK	46.3	55	V	40.7	10.9	39.6	58.3	74	-15.7
15720	PK	45.6	55	H	40.7	10.9	39.6	57.6	74	-16.4
15720	AV	31.2	55	V	40.7	10.9	39.6	43.2	54	-10.8
15720	AV	30.3	55	H	40.7	10.9	39.6	42.3	54	-11.7

Out of Band edge

Test CH.	**Test Segment**	**Result**	**Limit**
	MHz	**dBm/MHz**	**dBm/MHz**
Lowest	Below 5150	-47.34	-27
Highest	Above 5350	-46.55	-27
Note: the data just list the worst cases			

For the frequency band 5.725-5.825GHz (802.11n HT20)

Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5725MHz)										
11450	PK	48.5	360	V	38.9	9.8	40.1	57.1	74	-16.9
11450	PK	49.3	360	H	38.9	9.8	40.1	57.9	74	-16.1
11450	AV	31.1	360	V	38.9	9.8	40.1	39.7	54	-14.3
11450	AV	31.3	360	H	38.9	9.8	40.1	39.9	54	-14.1
High Channel (5825MHz)										
11610	PK	48.9	360	V	38.9	9.8	40.1	57.5	74	-16.5
11610	PK	48.5	360	H	38.9	9.8	40.1	57.1	74	-16.9
11610	AV	32.2	360	V	38.9	9.8	40.1	40.8	54	-13.2
11610	AV	31.4	360	H	38.9	9.8	40.1	40.0	54	-14.0

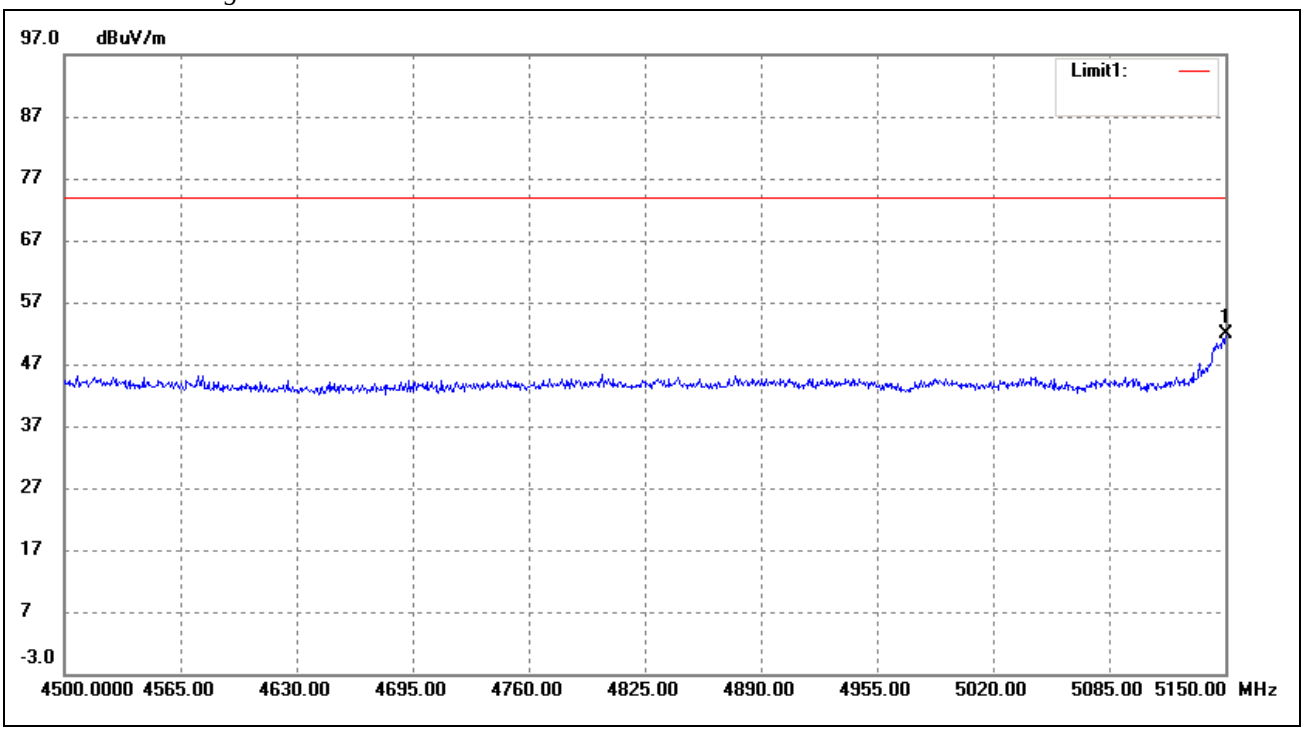
Out of Band edge

Test CH.	**Test Segment**	**Result**	**Limit**
	MHz	**dBm/MHz**	**dBm/MHz**
Lowest	Below 5150	-48.36	-27
Highest	Above 5350	-46.30	-27
Note: the data just list the worst cases			

802.11n HT40

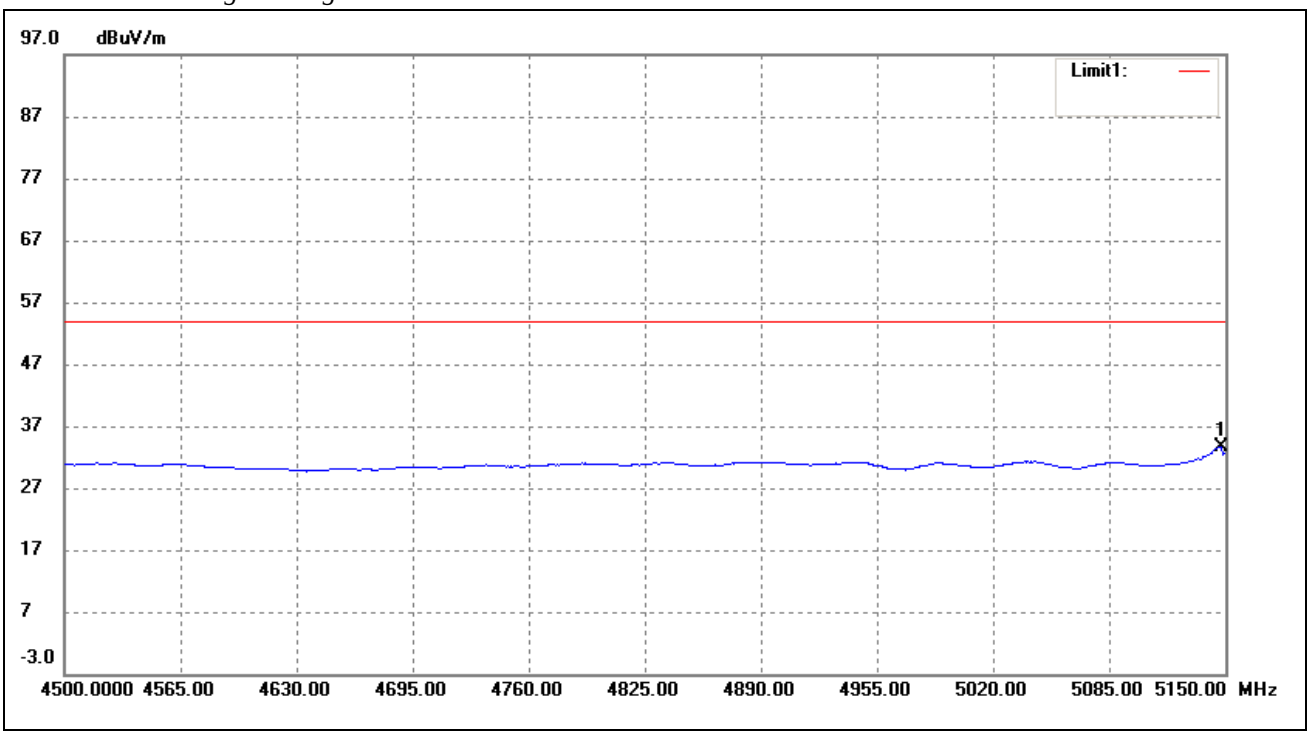
For the frequency band 5.15-5.25GHz(802.11n HT40)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5150.000	52.07	-0.13	51.94	74.00	-22.06	345	100	peak

Restricted Bandedge Average



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5147.400	33.87	-0.14	33.73	54.00	-20.27	345	100	Ave

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5180MHz)										
10360	PK	44.4	360	V	40.7	10.9	39.6	56.4	74	-17.6
10360	PK	43.8	360	H	40.7	10.9	39.6	55.8	74	-18.2
10360	AV	29.8	360	V	40.7	10.9	39.6	41.8	54	-12.2
10360	AV	28.9	360	H	40.7	10.9	39.6	40.9	54	-13.1
High Channel (5240MHz)										
10480	PK	43.9	360	V	40.7	10.9	39.6	55.9	74	-18.1
10480	PK	43.3	360	H	40.7	10.9	39.6	55.3	74	-18.7
10480	AV	29.7	360	V	40.7	10.9	39.6	41.7	54	-12.3
10480	AV	28.2	360	H	40.7	10.9	39.6	40.2	54	-13.8

Out of Band edge

Test CH.	**Test Segment**	**Result**	**Limit**
	MHz	**dBm/MHz**	**dBm/MHz**
Lowest	Below 5150	-46.36	-27
Highest	Above 5350	-46.32	-27
Note: the data just list the worst cases			

For the frequency band 5.725-5.850GHz(802.11n HT40)

Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5745MHz)										
11490	PK	49.2	360	V	38.9	9.8	40.1	57.8	74	-16.2
11490	PK	48.7	360	H	38.9	9.8	40.1	57.3	74	-16.7
11490	AV	32.6	360	V	38.9	9.8	40.1	41.2	54	-12.8
11490	AV	32.0	360	H	38.9	9.8	40.1	40.6	54	-13.4
High Channel (5825MHz)										
11610	PK	48.6	360	V	38.9	9.8	40.1	57.2	74	-16.8
11610	PK	48.9	360	H	38.9	9.8	40.1	57.5	74	-16.5
11610	AV	32.5	360	V	38.9	9.8	40.1	41.1	54	-12.9
11610	AV	32.1	360	H	38.9	9.8	40.1	40.7	54	-13.3

Out of Band edge

Test CH.	**Test Segment**	**Result**	**Limit**
	MHz	**dBm/MHz**	**dBm/MHz**
Lowest	Below 5715	-49.34	-27
	5715 to 5725	-46.32	-17
Highest	5850 to 5860	-47.31	-17
	Above 5860	-49.29	-27
Note: the data just list the worst cases			

Note: Testing is carried out with frequency rang 30MHz to 40GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

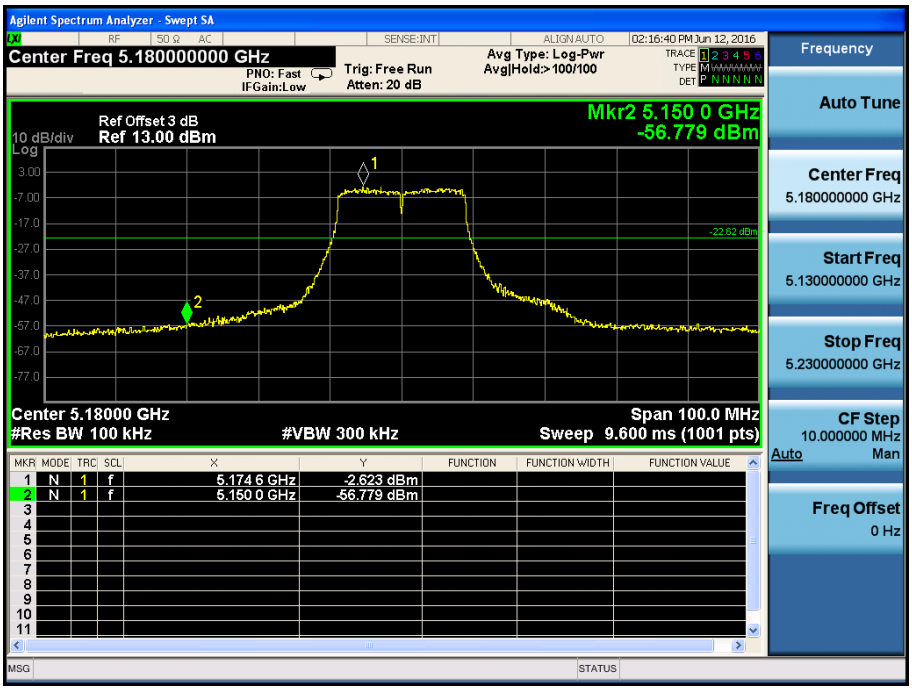
Emissions above 26.5GHz are attenuated more than 20dB below the permissible limits and test data are not reported.

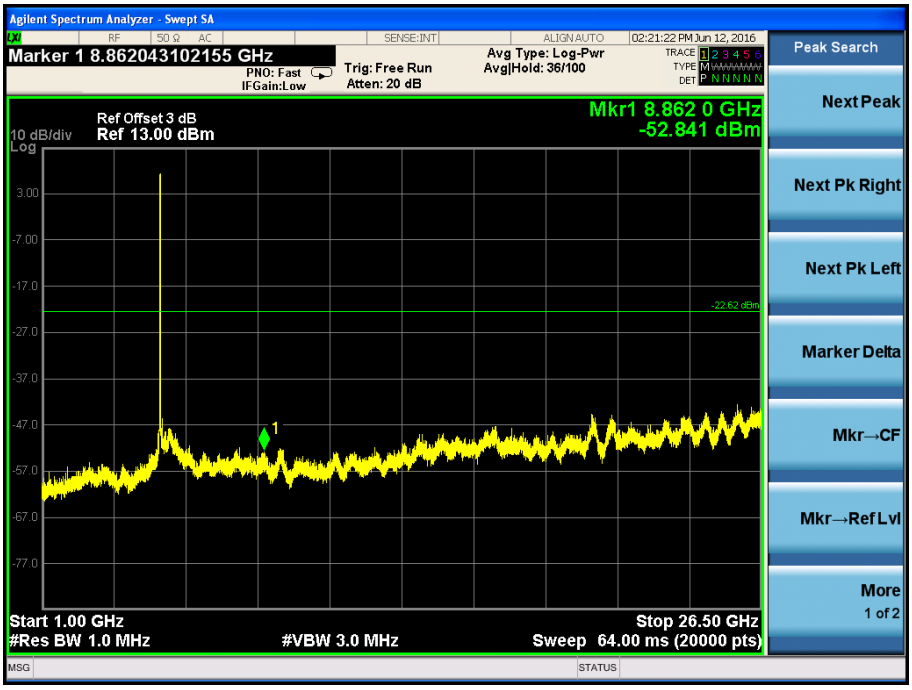
Out-of-Band and Spurious Emission (Conducted)

Antenna 1

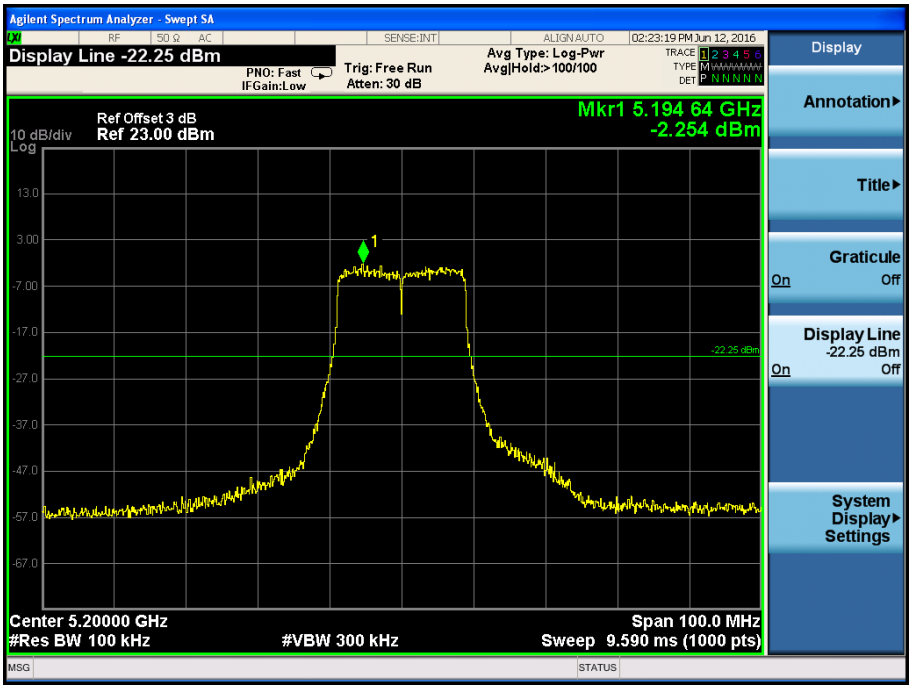
802.11n-HT20

5180MHz



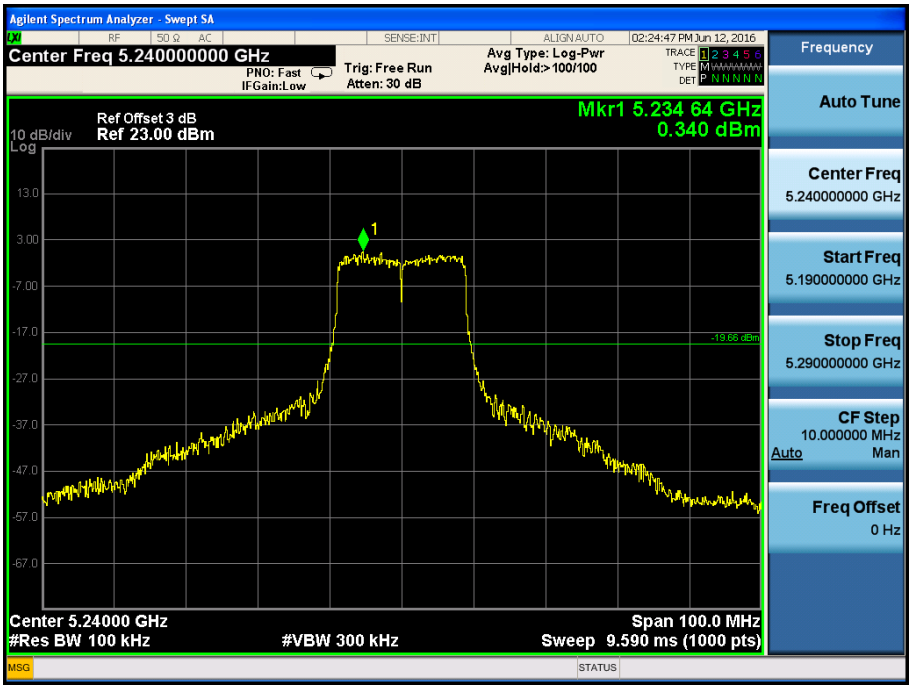


5200MHz


Agilent Spectrum Analyzer - Swept SA
Display Line -22.25 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:> 100/100
02:23:19 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.194 64 GHz
-2.254 dBm
Center 5.20000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.590 ms (1000 pts)
Display
Annotation
Title
Graticule
On
Off
Display Line
-22.25 dBm
On
Off
System
Display
Settings

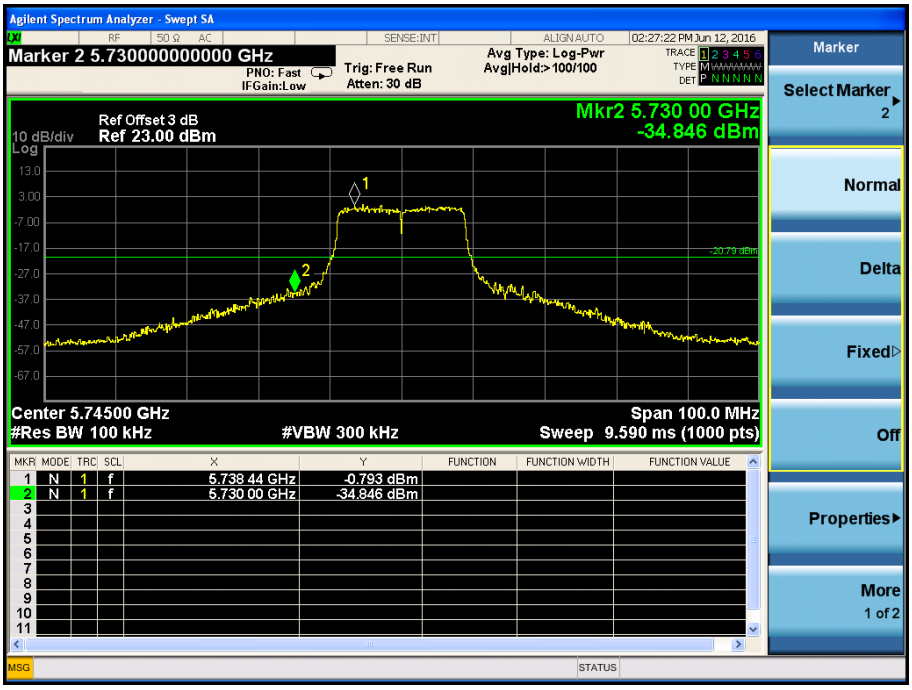
Agilent Spectrum Analyzer - Swept SA
Marker 1 20.552552552553 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
02:23:46 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 20.553 GHz
-35.290 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
No Peak Found
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

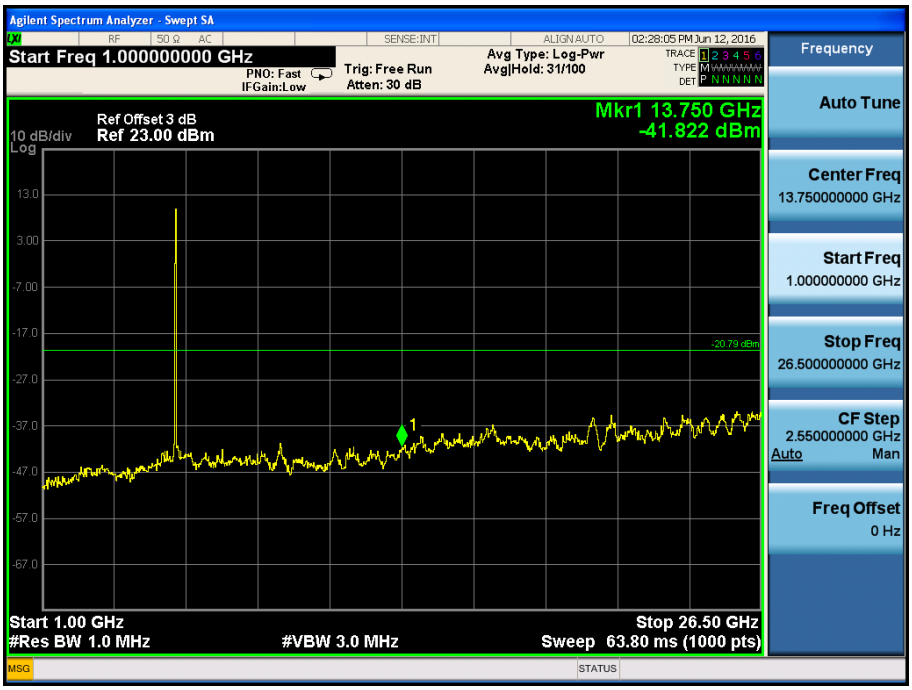
5240MHz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.240000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:24:47 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 5.234 64 GHz
0.340 dBm
Center 5.24000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.590 ms (1000 pts)
Frequency
Auto Tune
Center Freq
5.240000000 GHz
Start Freq
5.190000000 GHz
Stop Freq
5.290000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

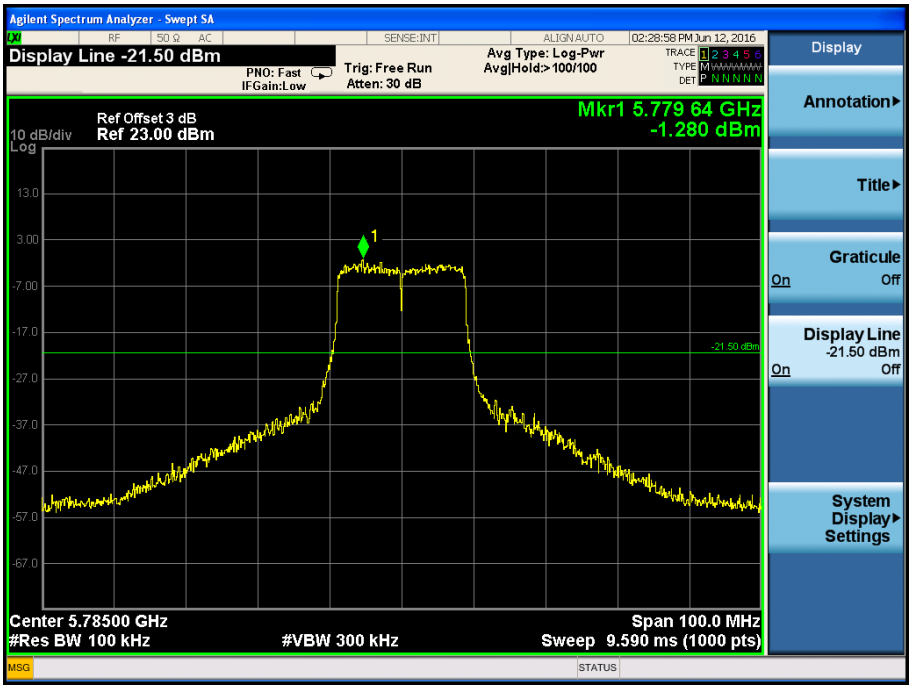
Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 58/100
02:25:33 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 16.800 GHz
-38.004 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz

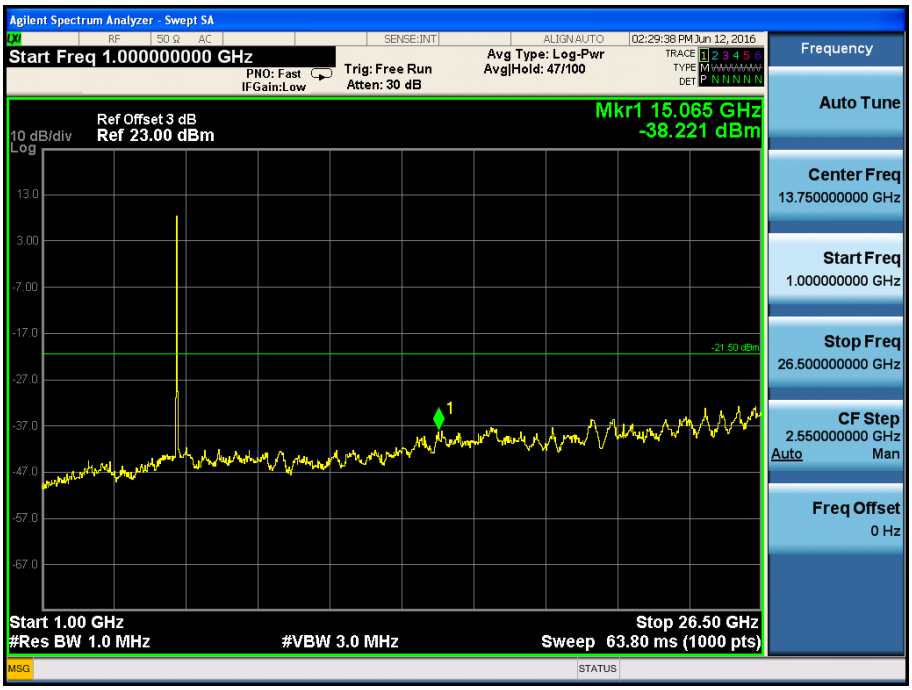
5745MHz


Agilent Spectrum Analyzer - Swept SA
Marker 2 5.730000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:27:22 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 5.730 00 GHz
-34.846 dBm
-20.79 dBm
Center 5.74500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.590 ms (1000 pts)
1 N 1 f 5.738 44 GHz -0.793 dBm
2 N 1 f 5.730 00 GHz -34.846 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2

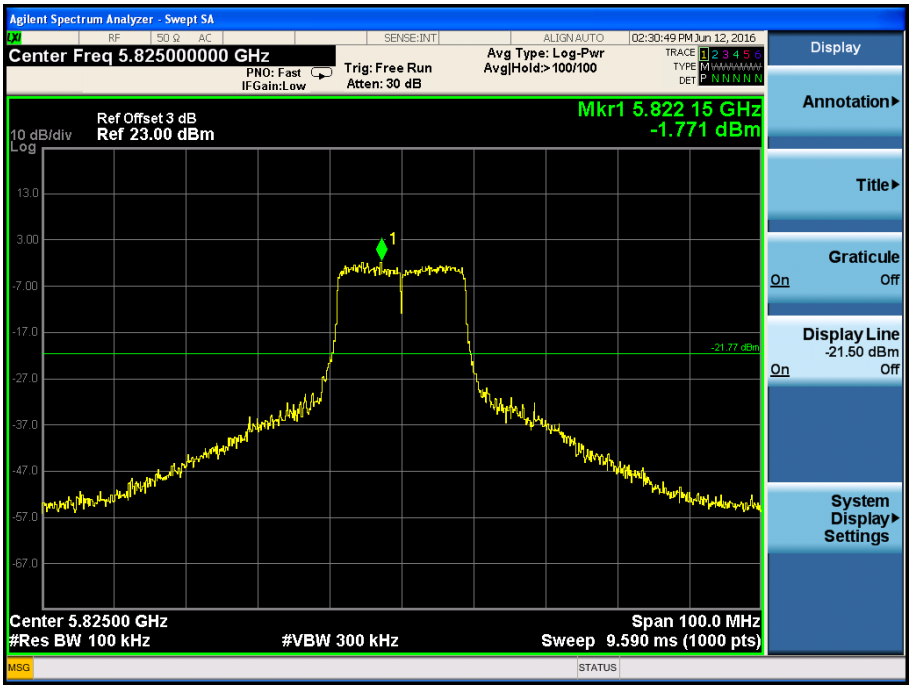

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 31/100
02:28:05 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 13.750 GHz
-41.822 dBm
-20.79 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Frequency
Auto Tune
Center Freq 13.750000000 GHz
Start Freq 1.000000000 GHz
Stop Freq 26.500000000 GHz
CF Step 2.550000000 GHz
Auto Man
Freq Offset 0 Hz

5785MHz


Agilent Spectrum Analyzer - Swept SA
Display Line -21.50 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:28:58 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.779 64 GHz
-1.280 dBm
Center 5.78500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.590 ms (1000 pts)
Display
Annotation
Title
Graticule
On
Off
Display Line
-21.50 dBm
On
Off
System
Display
Settings


Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 47/100
02:29:38 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 15.065 GHz
-38.221 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz

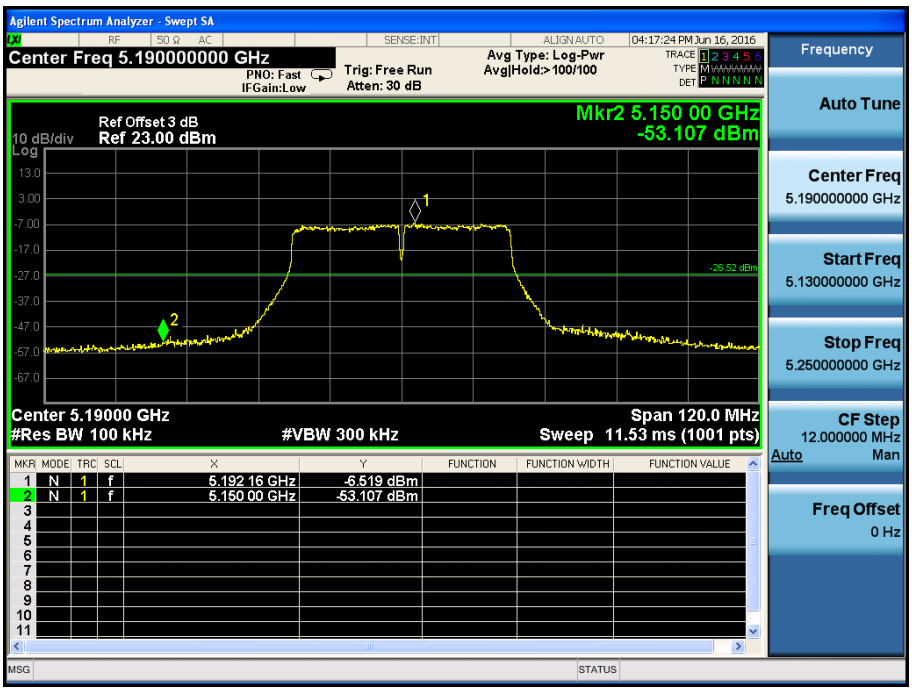
5825MHz

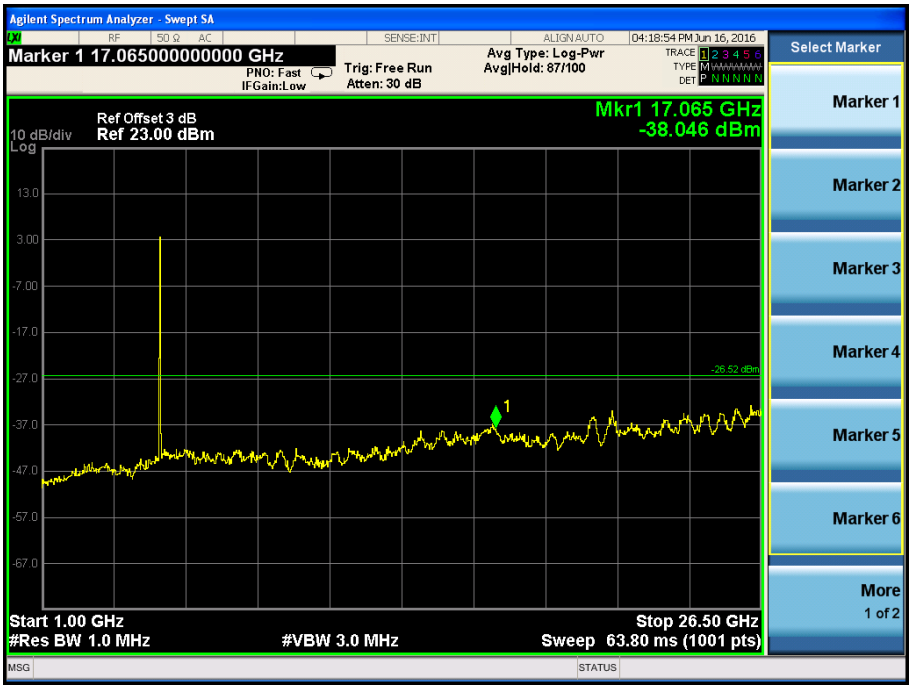

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.825000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:30:49 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.822 15 GHz
-1.771 dBm
-21.77 dBm
Center 5.82500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.590 ms (1000 pts)
Display
Annotation
Title
Graticule
On
Off
Display Line
-21.50 dBm
On
Off
System Display Settings

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:34:14 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 17.056 GHz
-36.186 dBm
-21.77 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz

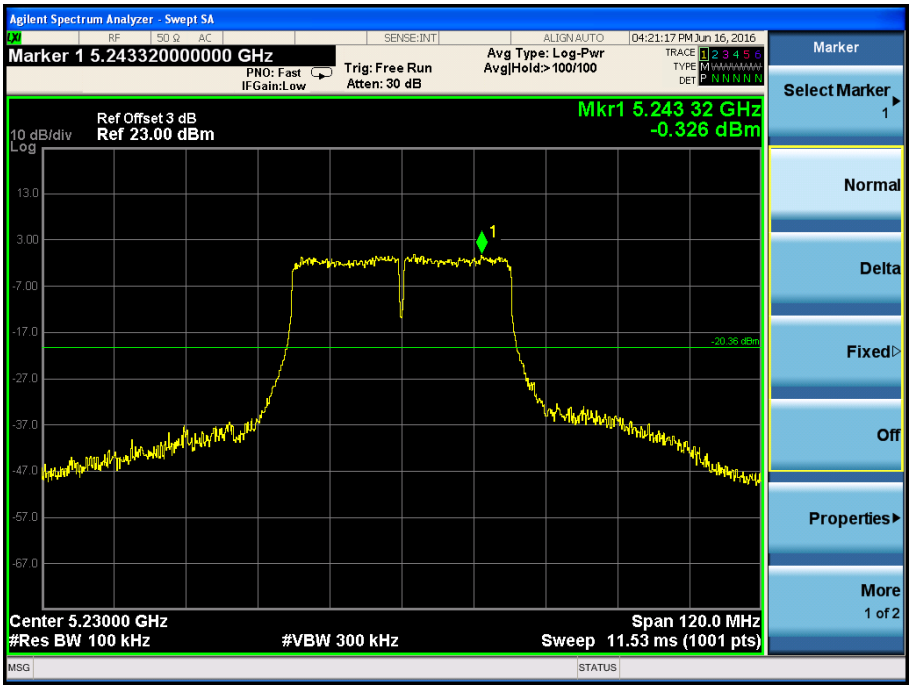
802.11n-HT40

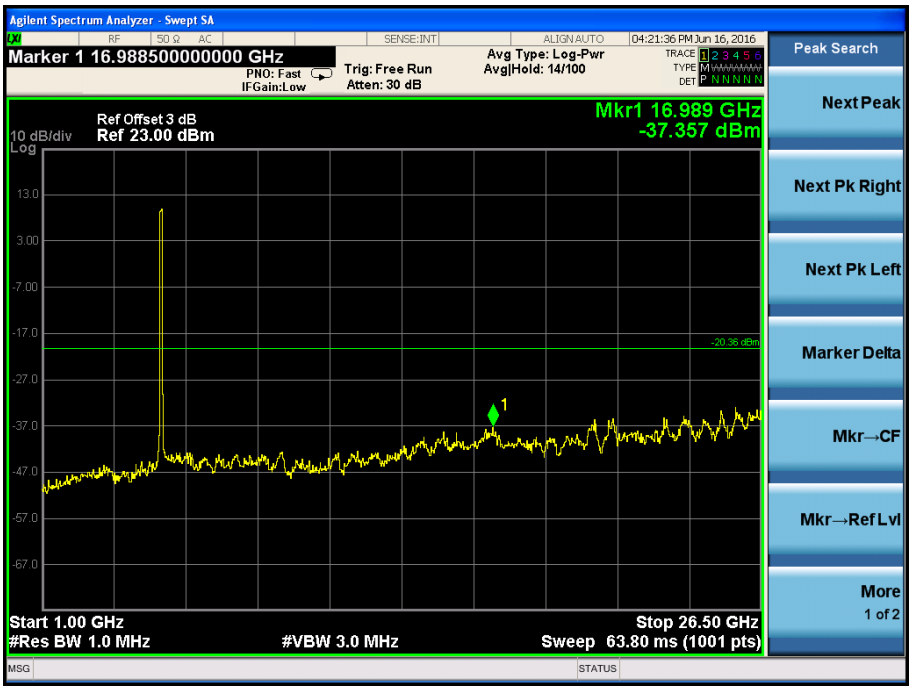
5190MHz



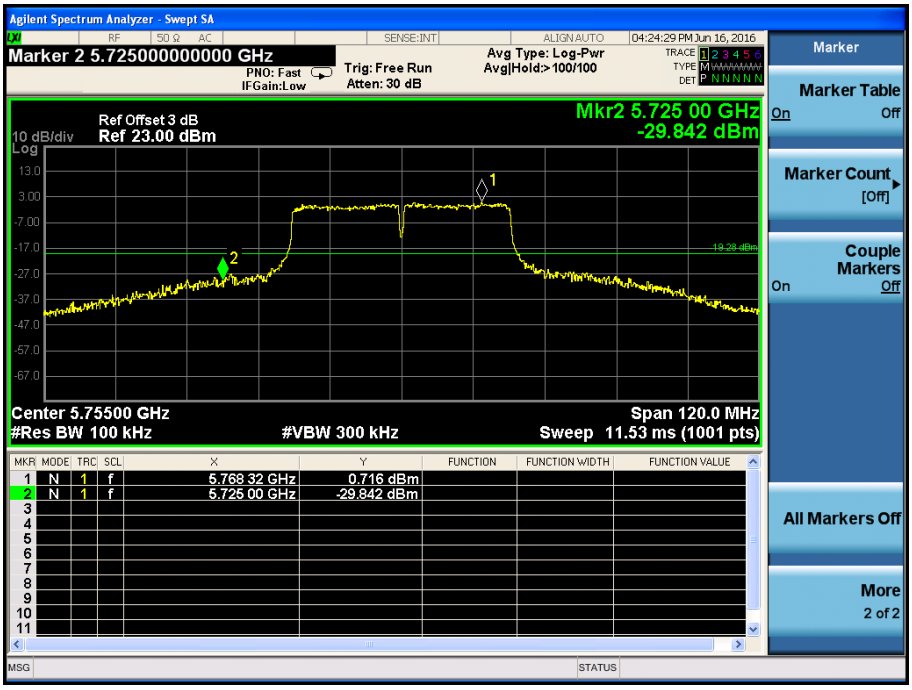


5230MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.243320000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:21:17 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.243 32 GHz
-0.326 dBm
-20.36 dBm
Center 5.23000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
Marker
Select Marker
Normal
Delta
Fixed
Off
Properties
More
1 of 2

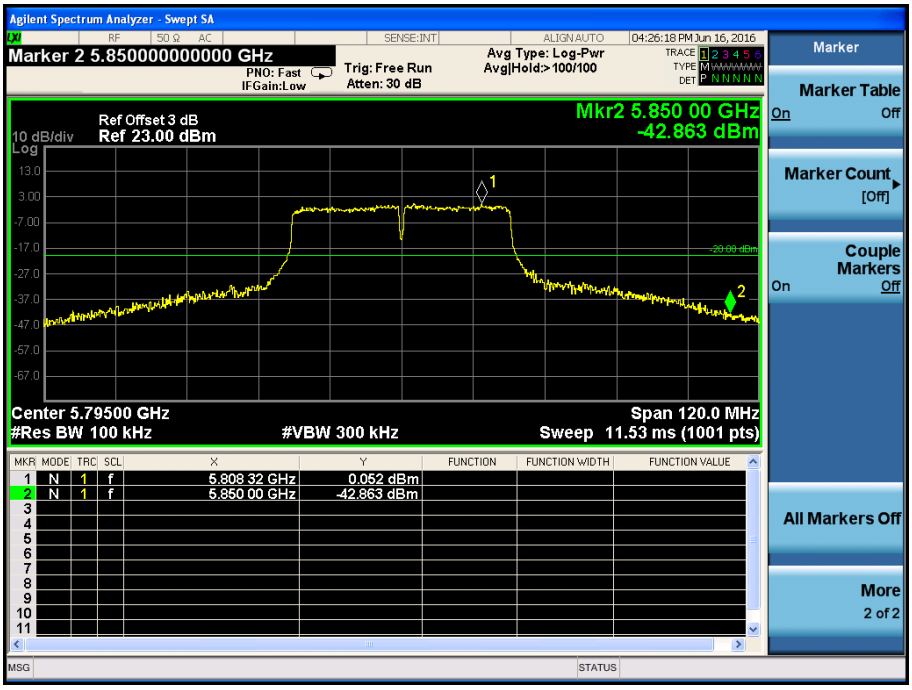

Agilent Spectrum Analyzer - Swept SA
Marker 1 16.988500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 14/100
04:21:36 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 16.989 GHz
-37.357 dBm
-20.36 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

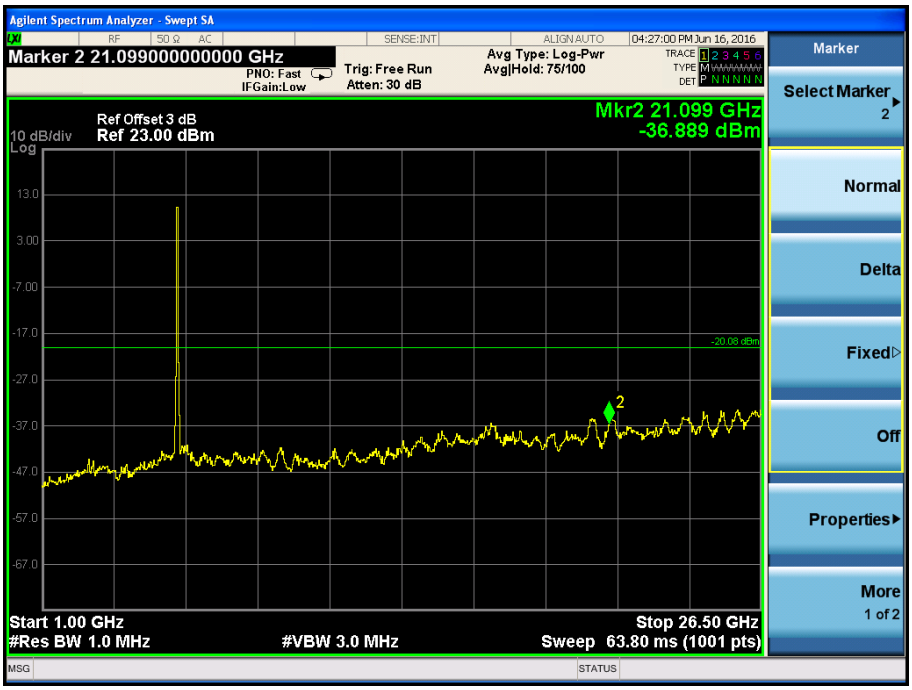
5755MHz


Agilent Spectrum Analyzer - Swept SA
Marker 2 5.725000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:24:29 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 5.725 00 GHz
-29.842 dBm
Center 5.75500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 5.768 32 GHz 0.716 dBm
2 N 1 f 5.725 00 GHz -29.842 dBm
Marker
Marker Table
On Off
Marker Count
[Off]
Couple Markers
On Off
All Markers Off
More
2 of 2

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
04:25:14 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 11.404 GHz
-42.808 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

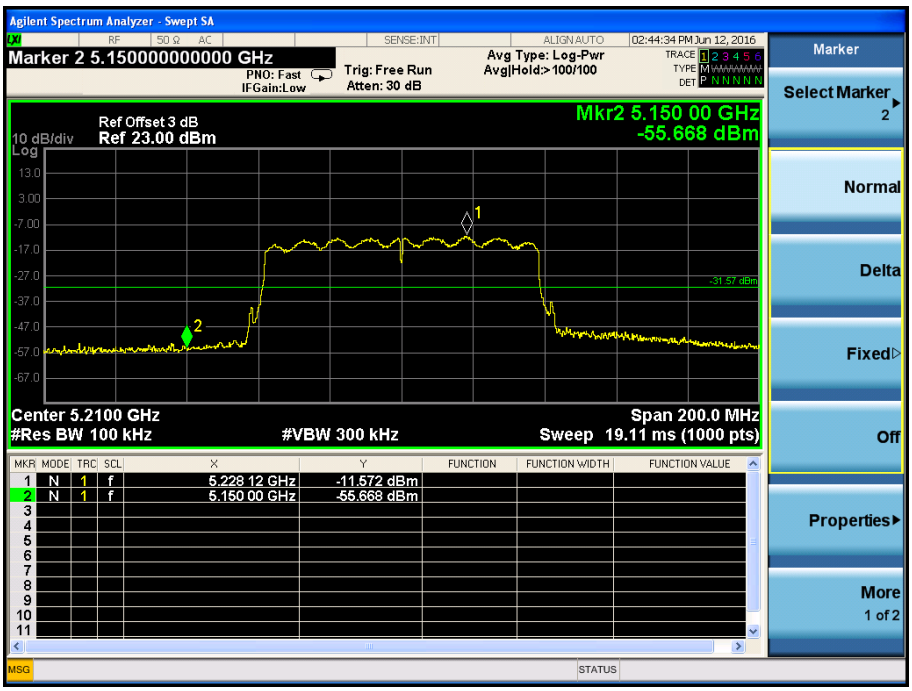
5795MHz

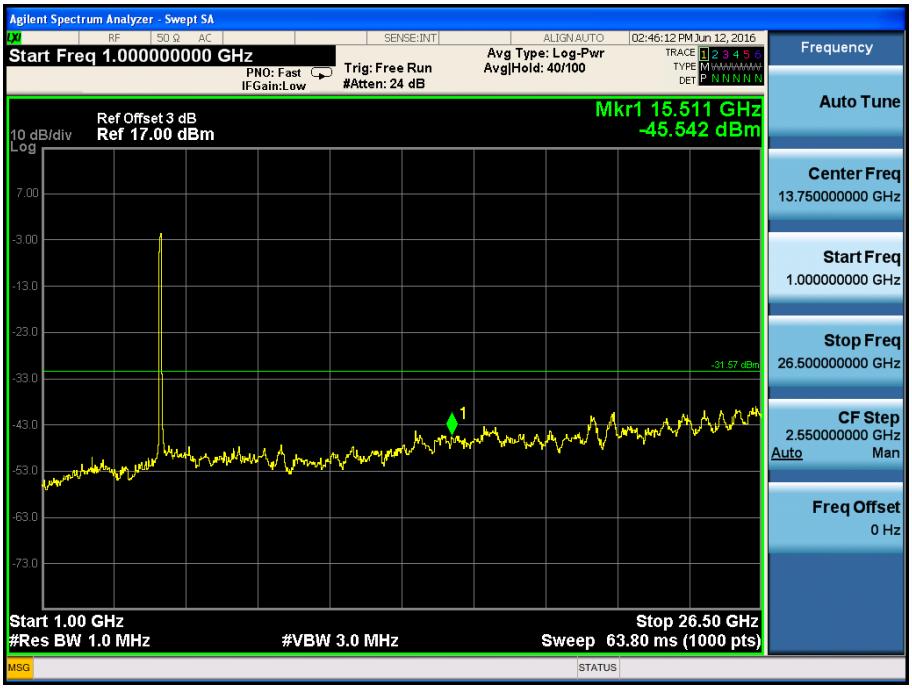

Agilent Spectrum Analyzer - Swept SA
Marker 2 5.850000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:26:18 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 5.850 00 GHz
-42.863 dBm
Center 5.79500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 5.808 32 GHz 0.052 dBm
2 N 1 f 5.850 00 GHz -42.863 dBm
Marker
Marker Table
On Off
Marker Count
[Off]
Couple Markers
On Off
All Markers Off
More
2 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 2 21.099000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 75/100
04:27:00 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 21.099 GHz
-36.889 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Marker
Select Marker
2
Normal
Delta
Fixed
Off
Properties
More
1 of 2

802.11ac-HT80

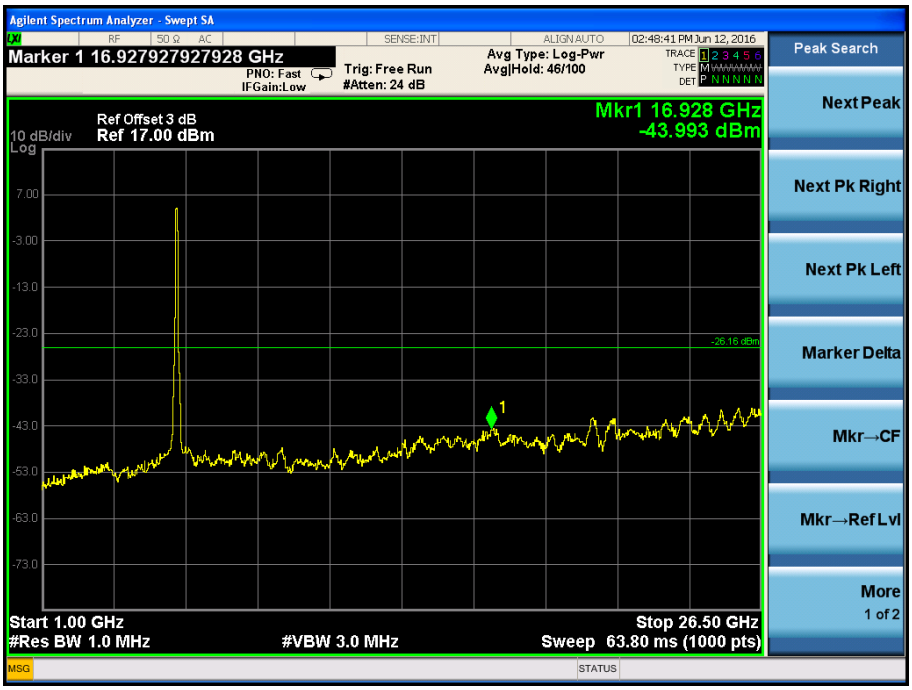
5210MHz



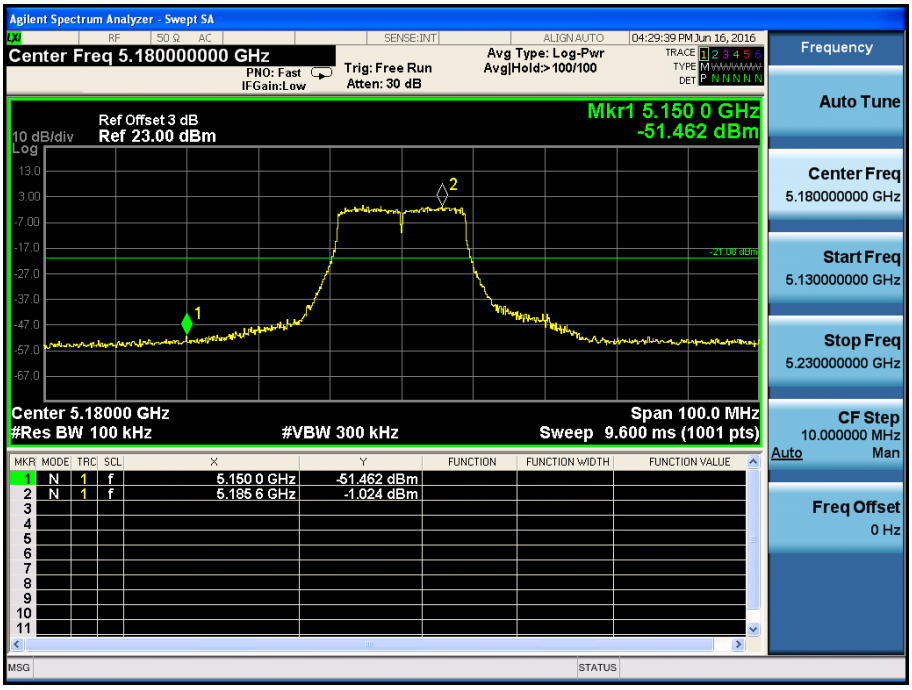


5755MHz

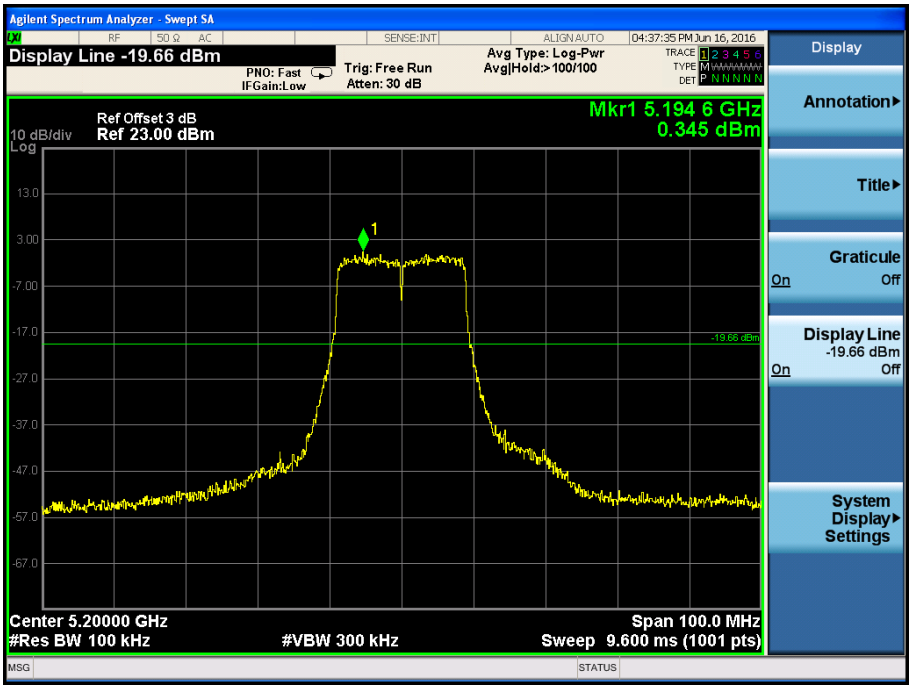
Agilent Spectrum Analyzer - Swept SA
Marker 2 5.725000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:47:51 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 17.00 dBm
Log
Mkr2 5.725 00 GHz
-37.097 dBm
Center 5.7750 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 200.0 MHz
Sweep 19.11 ms (1000 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.793 12 GHz -6.150 dBm
2 N 1 f 5.725 00 GHz -37.097 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2
MSG
STATUS

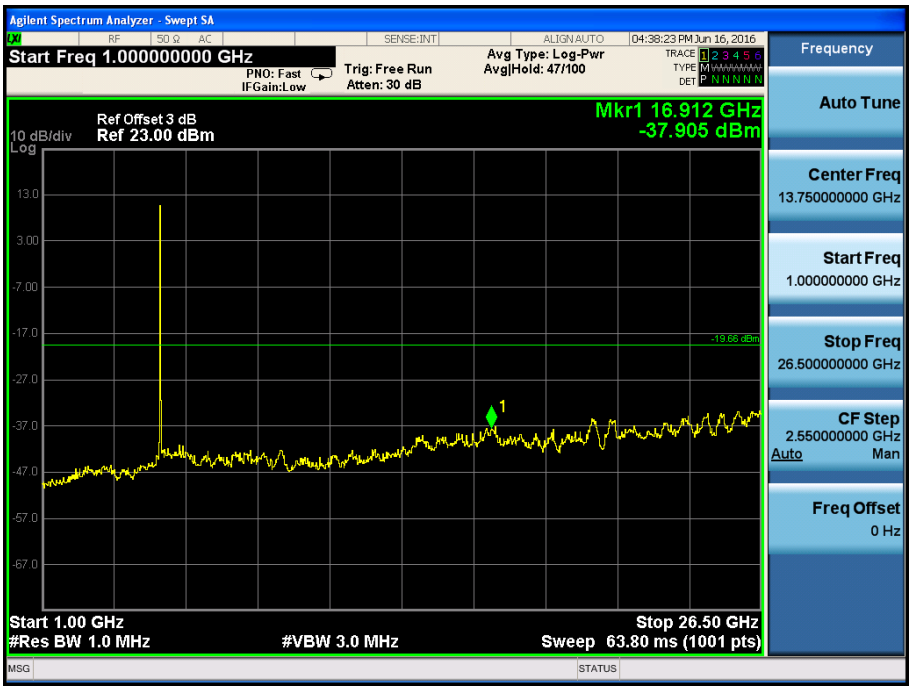

Agilent Spectrum Analyzer - Swept SA
Marker 1 16.927927927928 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
02:48:41 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 17.00 dBm
Log
Mkr1 16.928 GHz
-43.993 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2
MSG
STATUS

Antenna 2
802.11n-HT20
5180MHz

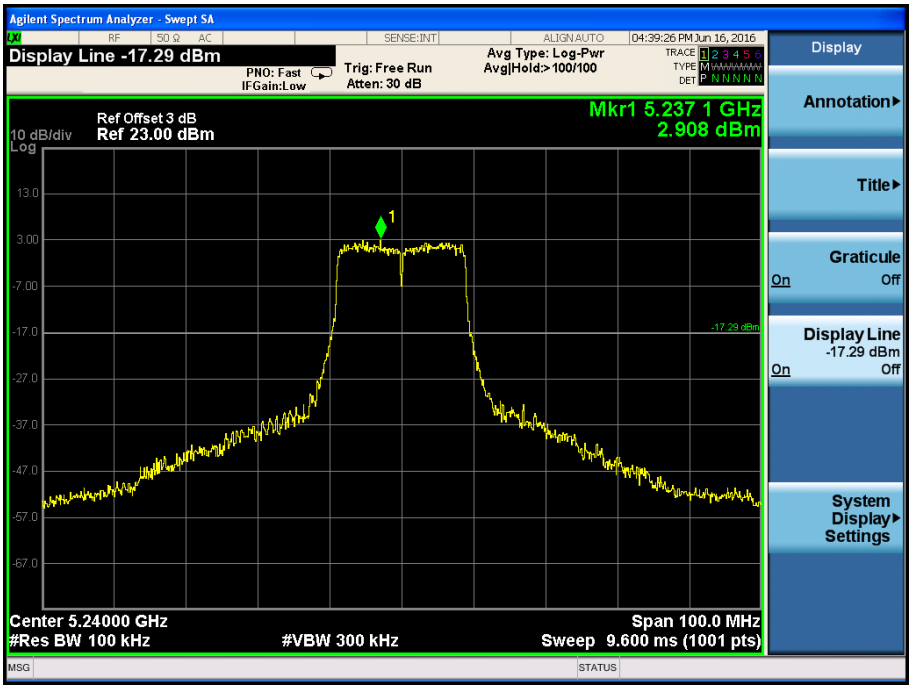


5200MHz


Agilent Spectrum Analyzer - Swept SA
Display Line -19.66 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:37:35 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.194 6 GHz
0.345 dBm
Center 5.20000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
Display
Annotation
Title
Graticule
On Off
Display Line
-19.66 dBm
On Off
System Display Settings

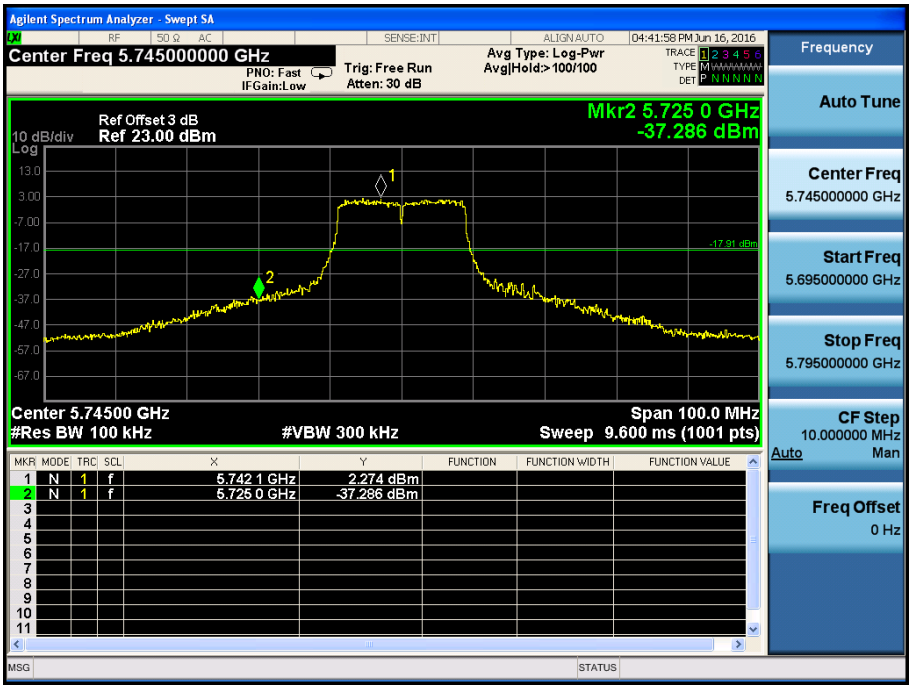

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 47/100
04:38:23 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 16.912 GHz
-37.905 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

5240MHz


Agilent Spectrum Analyzer - Swept SA
Display Line -17.29 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:39:26 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.237 1 GHz
2.908 dBm
-17.29 dBm
Center 5.24000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
Display
Annotation
Title
Graticule
On Off
Display Line
-17.29 dBm
On Off
System Display Settings

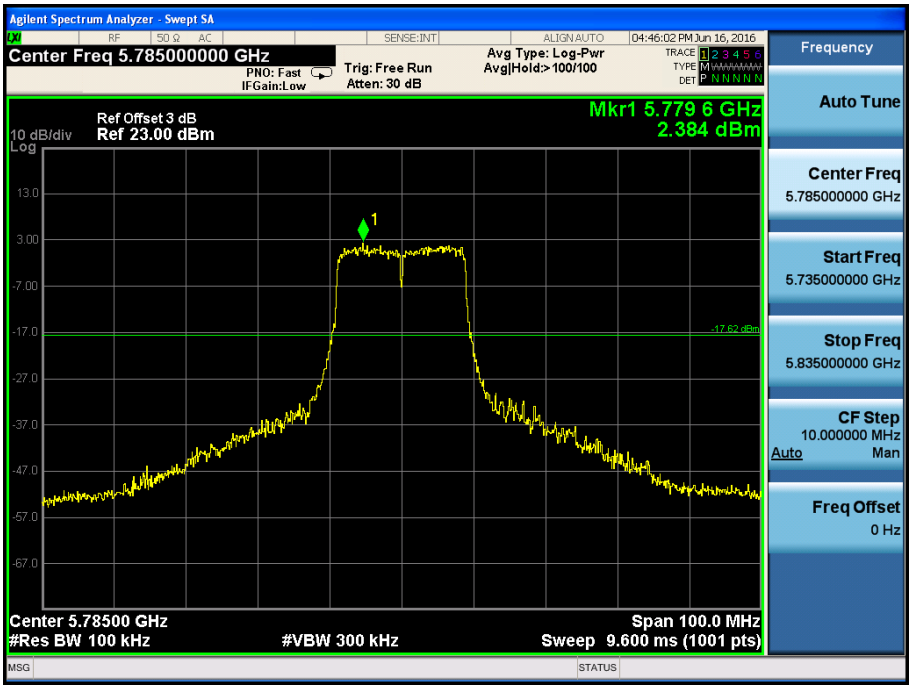
Agilent Spectrum Analyzer - Swept SA
Marker 1 16.708000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 18/100
04:40:01 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 16.708 GHz
-37.305 dBm
-17.29 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

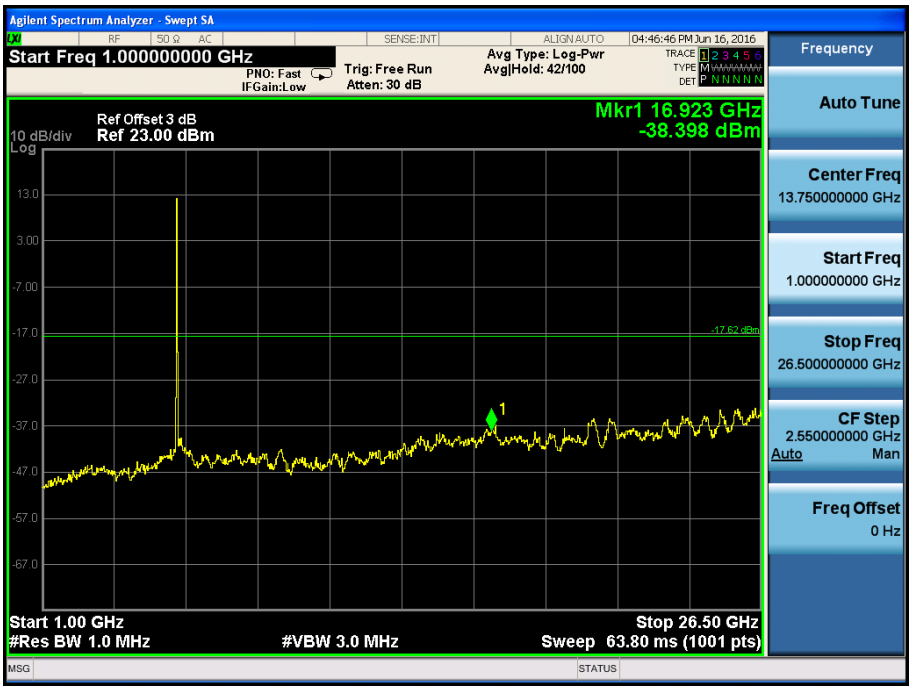
5745MHz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.745000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:41:58 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr2 5.725 0 GHz
-37.286 dBm
Center 5.74500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 5.742 1 GHz 2.274 dBm
2 N 1 f 5.725 0 GHz -37.286 dBm
Frequency
Auto Tune
Center Freq
5.745000000 GHz
Start Freq
5.695000000 GHz
Stop Freq
5.795000000 GHz
CF Step
10.000000 MHz
Auto Man
Freq Offset
0 Hz

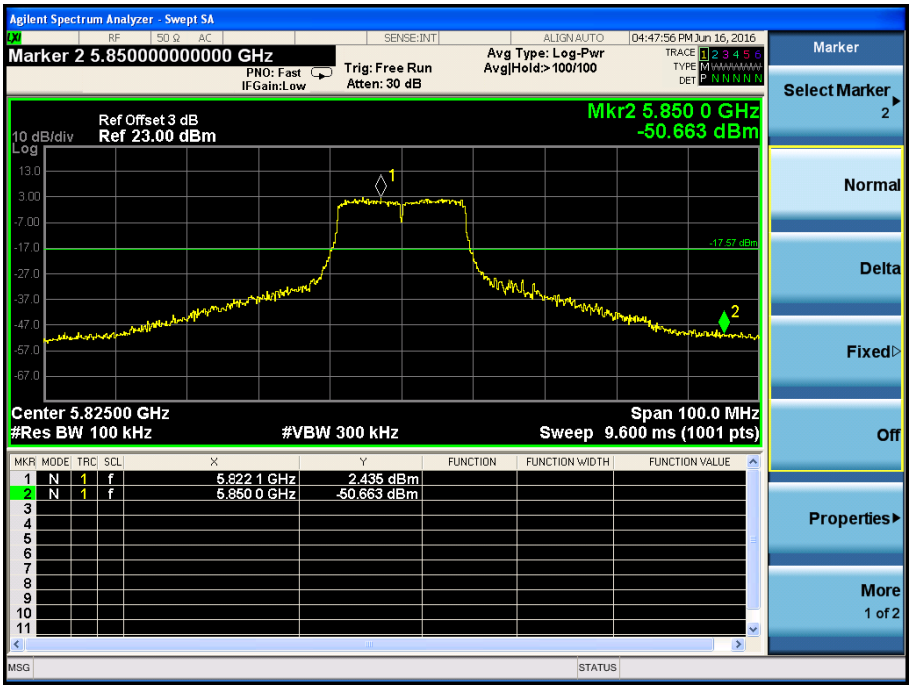
Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 60/100
04:43:02 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 16.861 GHz
-38.640 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

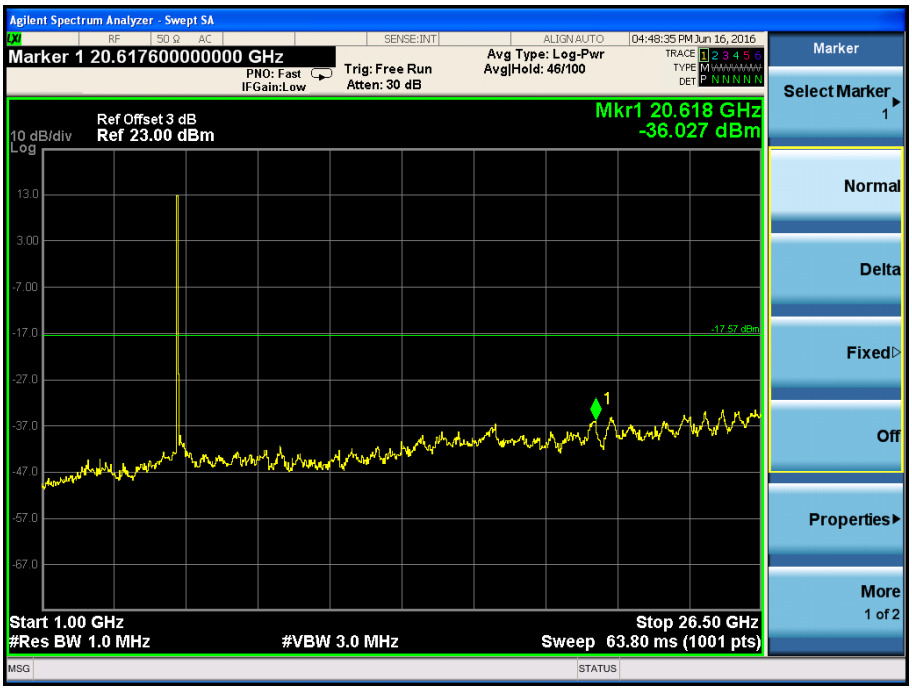
5785MHz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.785000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:46:02 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 5.779 6 GHz
2.384 dBm
-17.62 dBm
Center 5.78500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.785000000 GHz
Start Freq
5.735000000 GHz
Stop Freq
5.835000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 42/100
04:46:46 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 16.923 GHz
-38.398 dBm
-17.62 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz

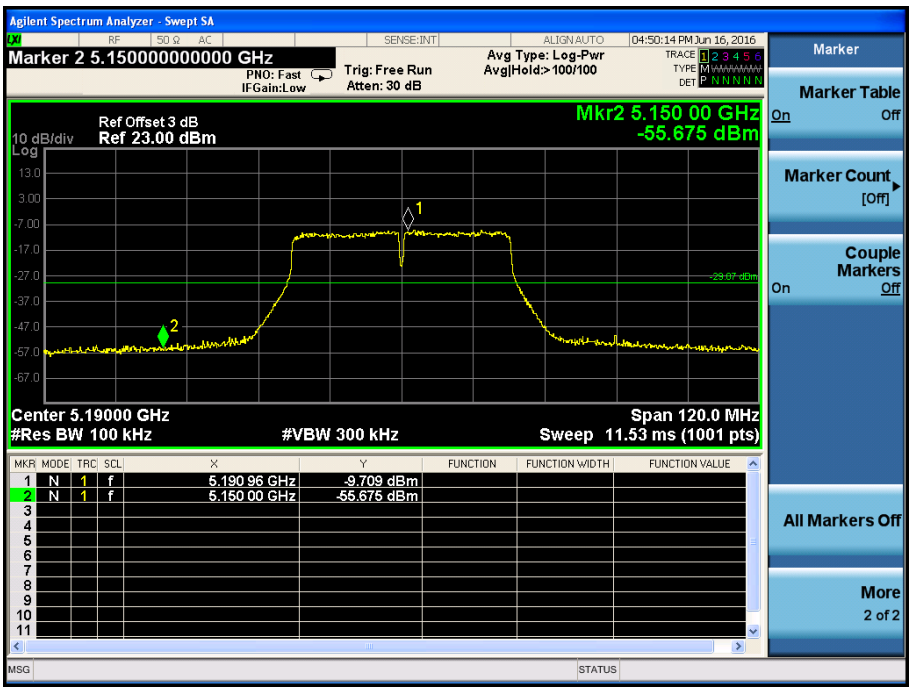
5825MHz

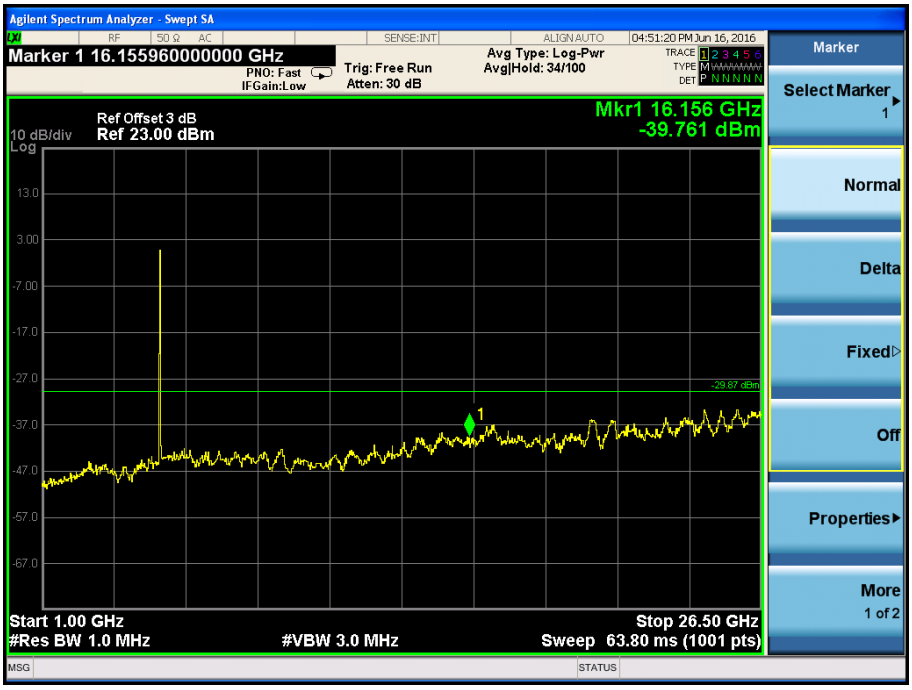

Agilent Spectrum Analyzer - Swept SA
Marker 2 5.850000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:47:56 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 5.850 0 GHz
-50.663 dBm
-17.57 dBm
Center 5.82500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 5.822 1 GHz 2.435 dBm
2 N 1 f 5.850 0 GHz -50.663 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 20.617600000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
04:48:35 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 20.618 GHz
-36.027 dBm
-17.57 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

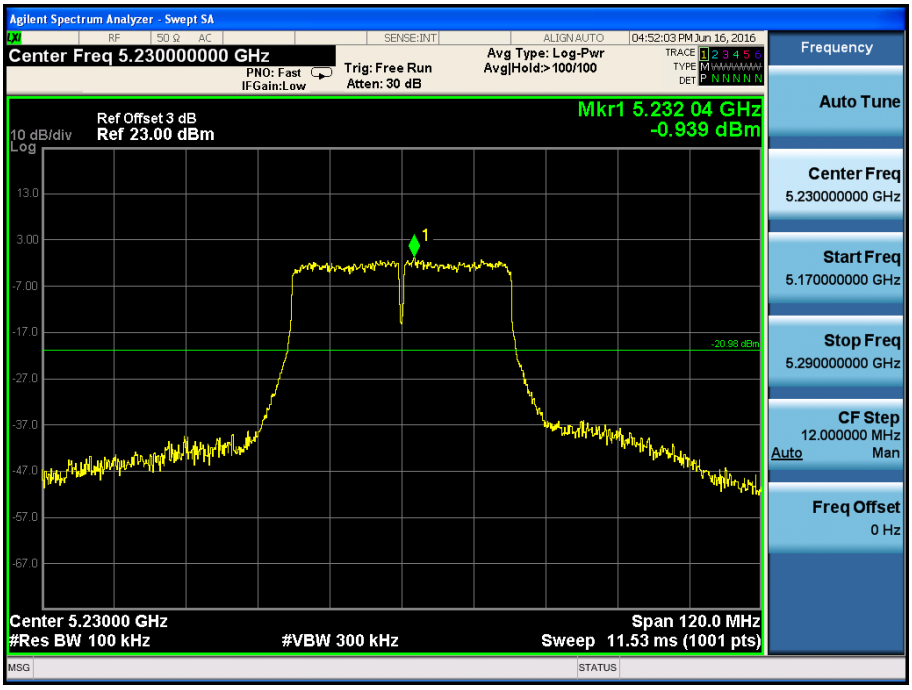
802.11n-HT40

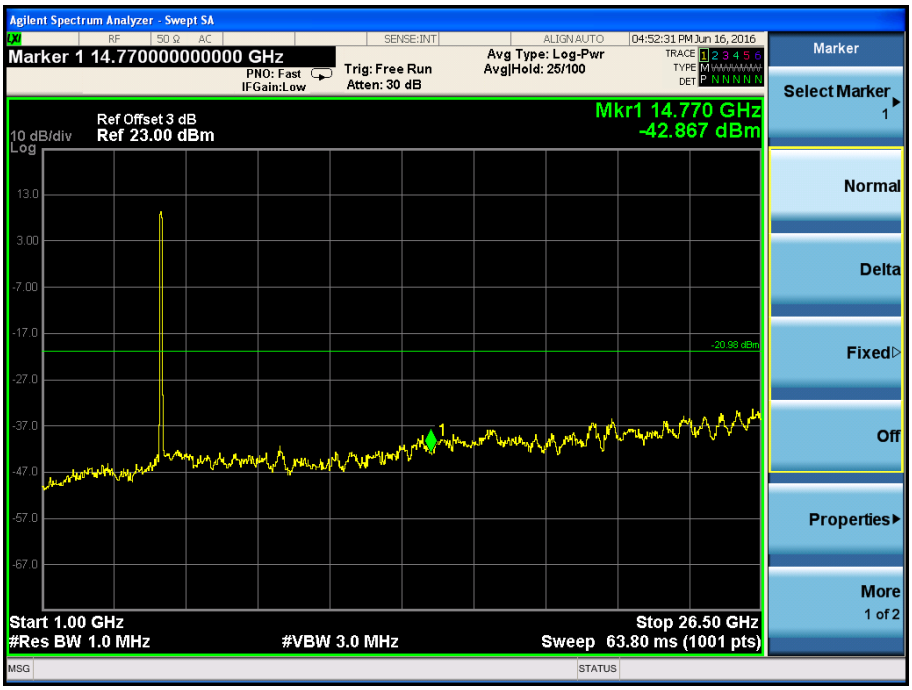
5190MHz



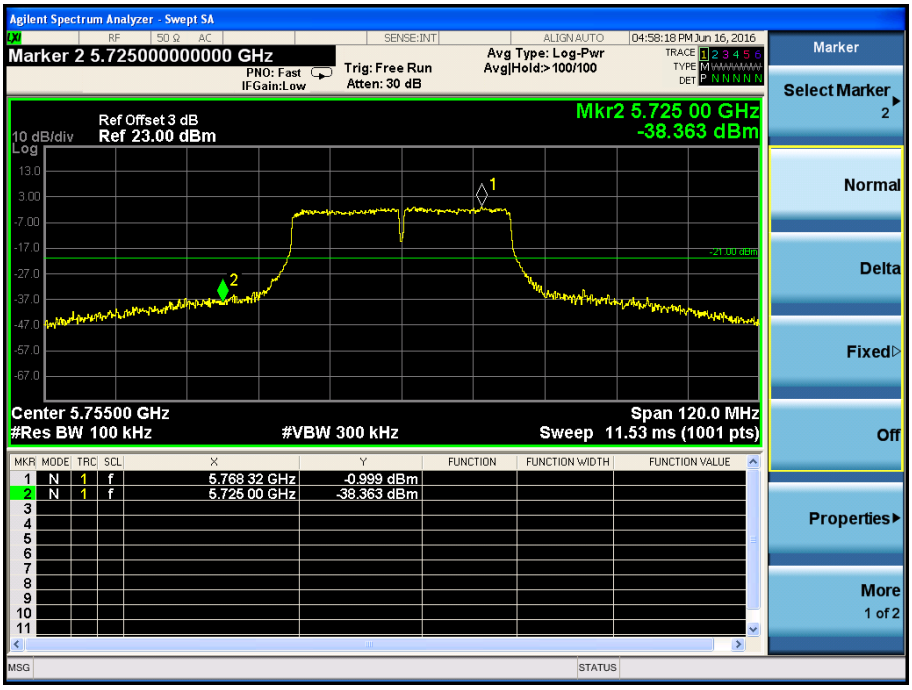


5230MHz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:52:03 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 5.232 04 GHz
-0.939 dBm
-20.98 dBm
Center 5.23000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.170000000 GHz
Stop Freq
5.290000000 GHz
CF Step
12.000000 MHz
Auto
Man
Freq Offset
0 Hz

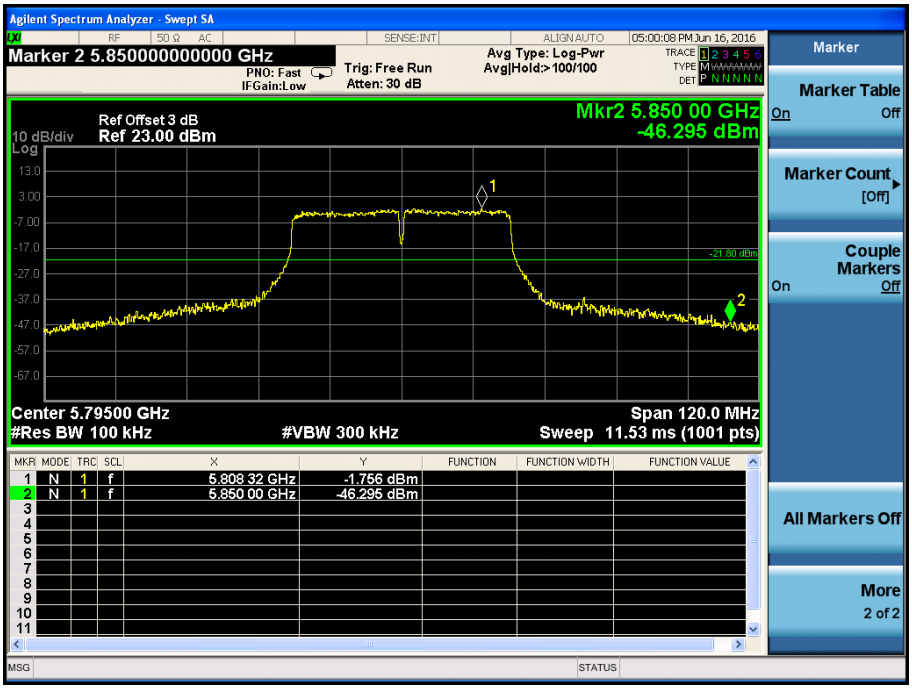

Agilent Spectrum Analyzer - Swept SA
Marker 1 14.770000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 25/100
04:52:31 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 14.770 GHz
-42.867 dBm
-20.98 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Marker
Select Marker
1
Normal
Delta
Fixed
Off
Properties
More
1 of 2

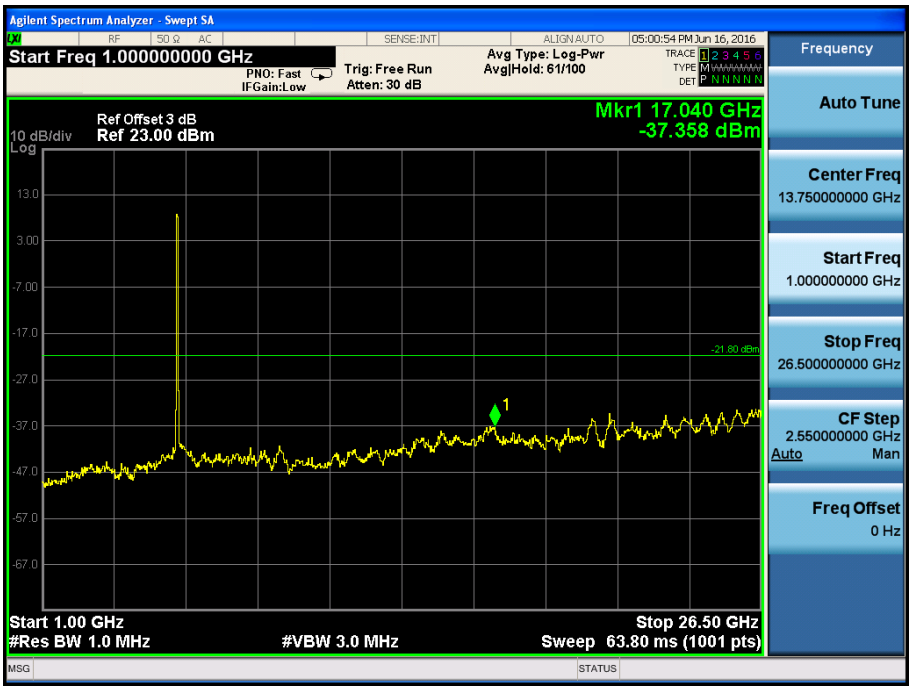
5755MHz


Agilent Spectrum Analyzer - Swept SA
Marker 2 5.725000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:58:18 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr2 5.725 00 GHz
-38.363 dBm
Center 5.75500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 5.768 32 GHz -0.999 dBm
2 N 1 f 5.725 00 GHz -38.363 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.558500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
04:59:00 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Mkr1 20.559 GHz
-35.762 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Marker
Marker Table On Off
Marker Count [Off]
Couple Markers On Off
All Markers Off
More 2 of 2

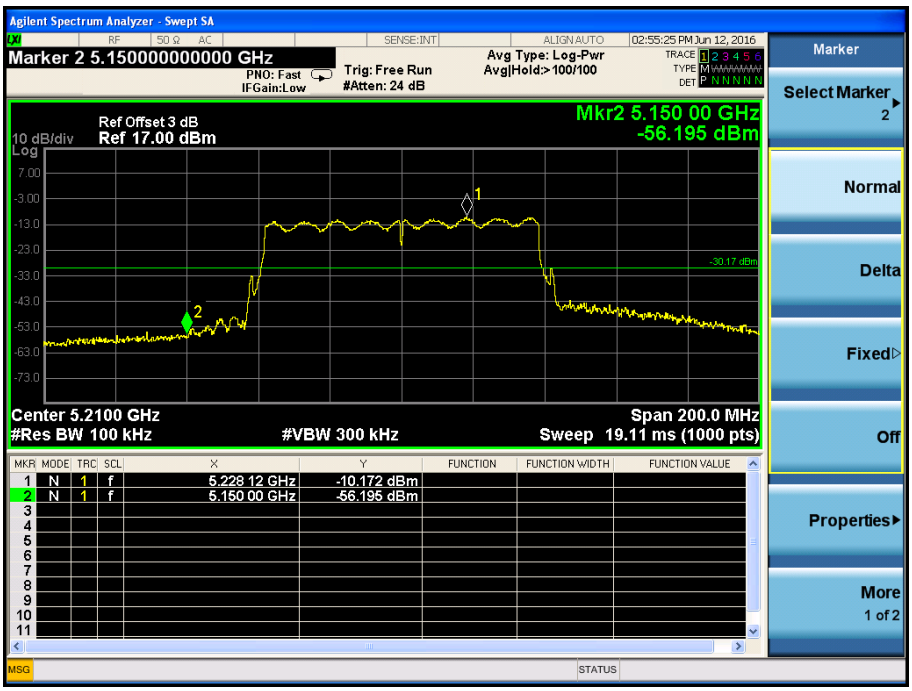
5795MHz

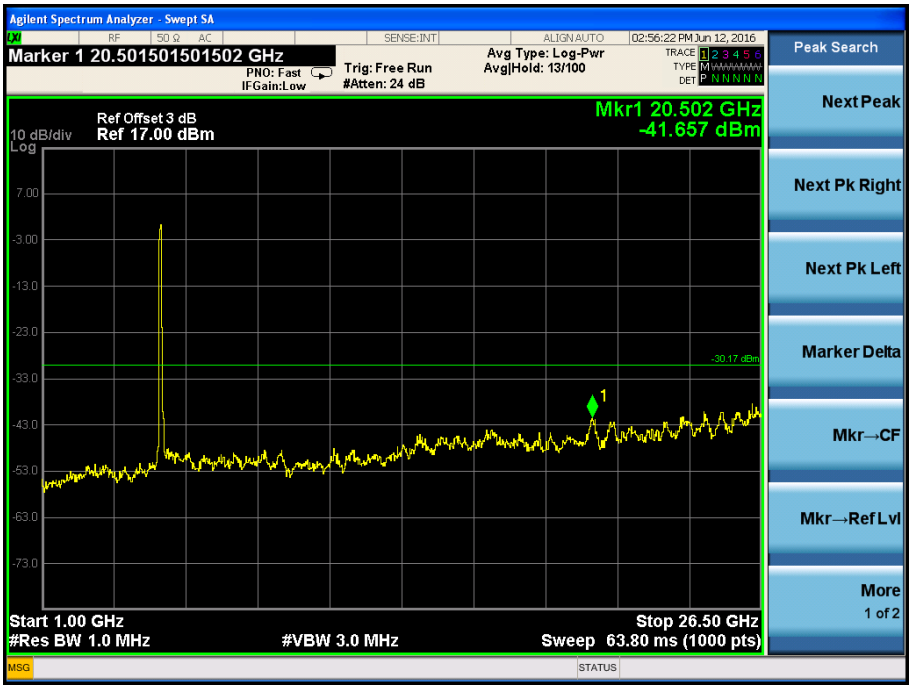

Agilent Spectrum Analyzer - Swept SA
Marker 2 5.850000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
05:00:08 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr2 5.850 00 GHz
-46.295 dBm
-21.80 dBm
Center 5.79500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 120.0 MHz
Sweep 11.53 ms (1001 pts)
1 N 1 f 5.808 32 GHz -1.756 dBm
2 N 1 f 5.850 00 GHz -46.295 dBm
Marker
Marker Table
On Off
Marker Count
[Off]
Couple Markers
On Off
All Markers Off
More
2 of 2


Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 61/100
05:00:54 PM Jun 16, 2016
Ref Offset 3 dB
10 dB/div
Ref 23.00 dBm
Log
Mkr1 17.040 GHz
-37.358 dBm
-21.80 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

802.11ac-HT80

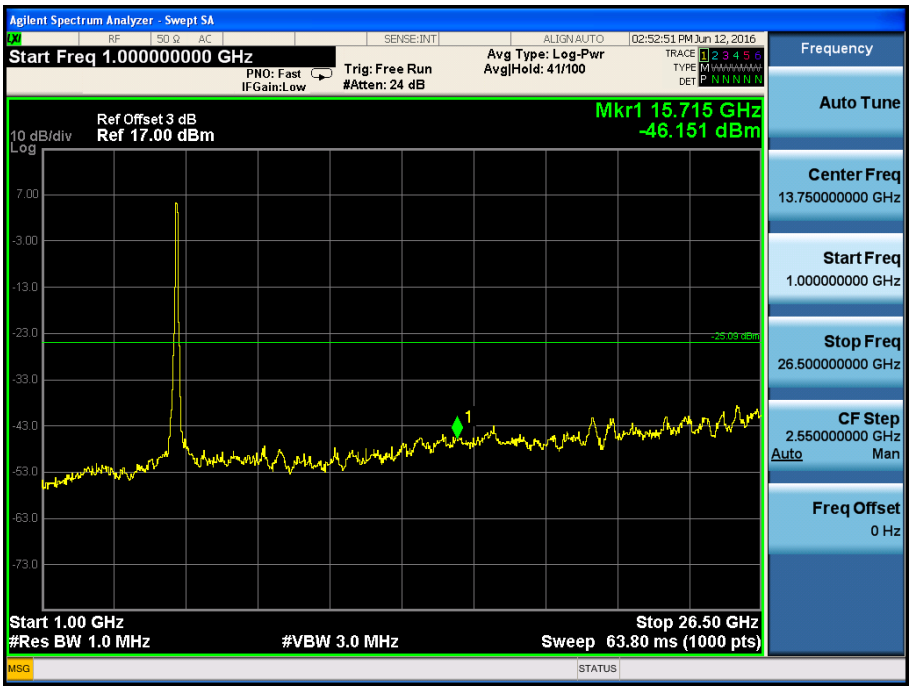
5210MHz





5755MHz

Agilent Spectrum Analyzer - Swept SA
Marker 2 5.725000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:51:33 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 17.00 dBm
Log
Mkr2 5.725 00 GHz
-29.452 dBm
Center 5.7750 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 200.0 MHz
Sweep 19.11 ms (1000 pts)
1 N 1 f 5.757 08 GHz -5.055 dBm
2 N 1 f 5.725 00 GHz -29.452 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2


Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
02:52:51 PM Jun 12, 2016
Ref Offset 3 dB
10 dB/div
Ref 17.00 dBm
Log
Mkr1 15.715 GHz
-46.151 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)
Frequency
Auto Tune
Center Freq 13.750000000 GHz
Start Freq 1.000000000 GHz
Stop Freq 26.500000000 GHz
CF Step 2.550000000 GHz
Auto Man
Freq Offset 0 Hz

12. Frequency Stability

12.1 Standard Applicable

According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

12.2 Test Procedure

According to §2.1055, the following test procedure was performed.
The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.
The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	85-115% of declared nominal voltage
-30°C to +50°C	Normal

12.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

12.4 Summary of Test Results/Plots

5150-5250MHz

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	124	0.0238
40	3.3	116	0.0223
30	3.3	139	0.0267
20	3.3	146	0.0281
10	3.3	133	0.0256
0	3.3	129	0.0248
-10	3.3	136	0.0262
-20	3.3	134	0.0258
-30	3.3	128	0.0246

802.11n_HT40

Reference Frequency(Middle Channel): 5190 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	116	0.0224
40	3.3	113	0.0218
30	3.3	121	0.0233
20	3.3	108	0.0208
10	3.3	106	0.0204
0	3.3	103	0.0198
-10	3.3	107	0.0206
-20	3.3	101	0.0195
-30	3.3	100	0.0193

802.11ac_HT80

Reference Frequency(Low/Middle/High Channel): 5210 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	131	0.0251
40	3.3	140	0.0269
30	3.3	138	0.0265
20	3.3	129	0.0248
10	3.3	134	0.0257
0	3.3	140	0.0269
-10	3.3	134	0.0257
-20	3.3	129	0.0248
-30	3.3	125	0.0240

5725-5850MHz

802.11n_HT20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	156	0.0270
40	3.3	151	0.0261
30	3.3	142	0.0245
20	3.3	135	0.0233
10	3.3	129	0.0223
0	3.3	158	0.0273
-10	3.3	148	0.0256
-20	3.3	167	0.0289
-30	3.3	139	0.0240

802.11n_HT40

Reference Frequency(High Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	123	0.0212
40	3.3	178	0.0307
30	3.3	190	0.0328
20	3.3	171	0.0295
10	3.3	126	0.0217
0	3.3	138	0.0238
-10	3.3	128	0.0221
-20	3.3	139	0.0240
-30	3.3	177	0.0305

802.11ac_HT80

Reference Frequency(Low/Middle/High Channel): 5775 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.3	120	0.0208
40	3.3	145	0.0251
30	3.3	169	0.0293
20	3.3	154	0.0267
10	3.3	125	0.0216
0	3.3	136	0.0235
-10	3.3	122	0.0211
-20	3.3	118	0.0204
-30	3.3	152	0.0263

So, Frequency Stability Versus Input Voltage is:

5150-5250MHz

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	145	0.0279
	3.3	146	0.0281
	3.8	129	0.0248

802.11n_HT40

Reference Frequency(Middle Channel): 5190 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	127	0.0245
	3.3	108	0.0208
	3.8	136	0.0262

802.11ac_HT80

Reference Frequency(Low/Middle/High Channel): 5210 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	108	0.0207
	3.3	129	0.0248
	3.8	112	0.0215

5725-5850MHz

802.11n_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	118	0.0204
	3.3	135	0.0233
	3.8	152	0.0263

802.11n_HT40

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	125	0.0216
	3.3	171	0.0295
	3.8	136	0.0235

802.11ac_HT80

Reference Frequency(Low/Middle/High Channel): 5775 MHz			
Environment Temperature (°C)	Power Supplied (VAC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	2.8	168	0.0291
	3.3	154	0.0267
	3.8	149	0.0258

******* END OF REPORT *******