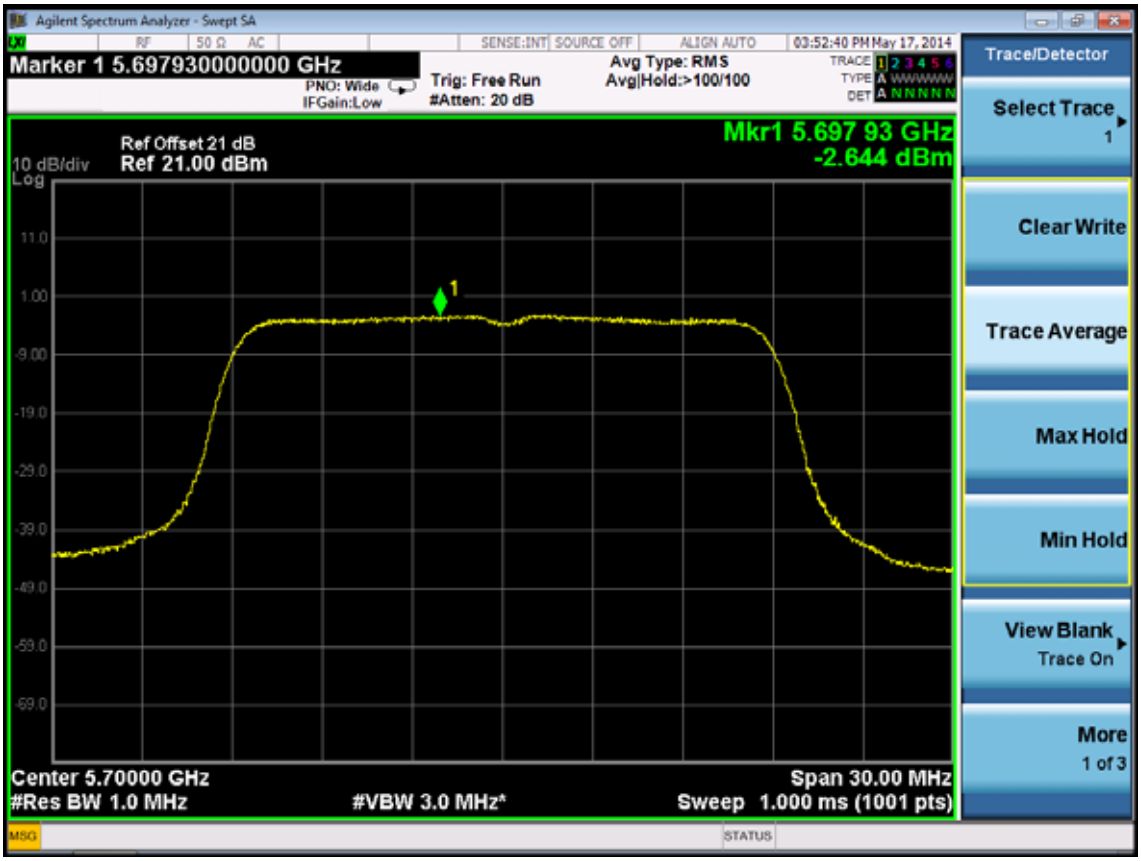
Band 3: (5470-5725MHz):

IEEE802.11a

5500MHz

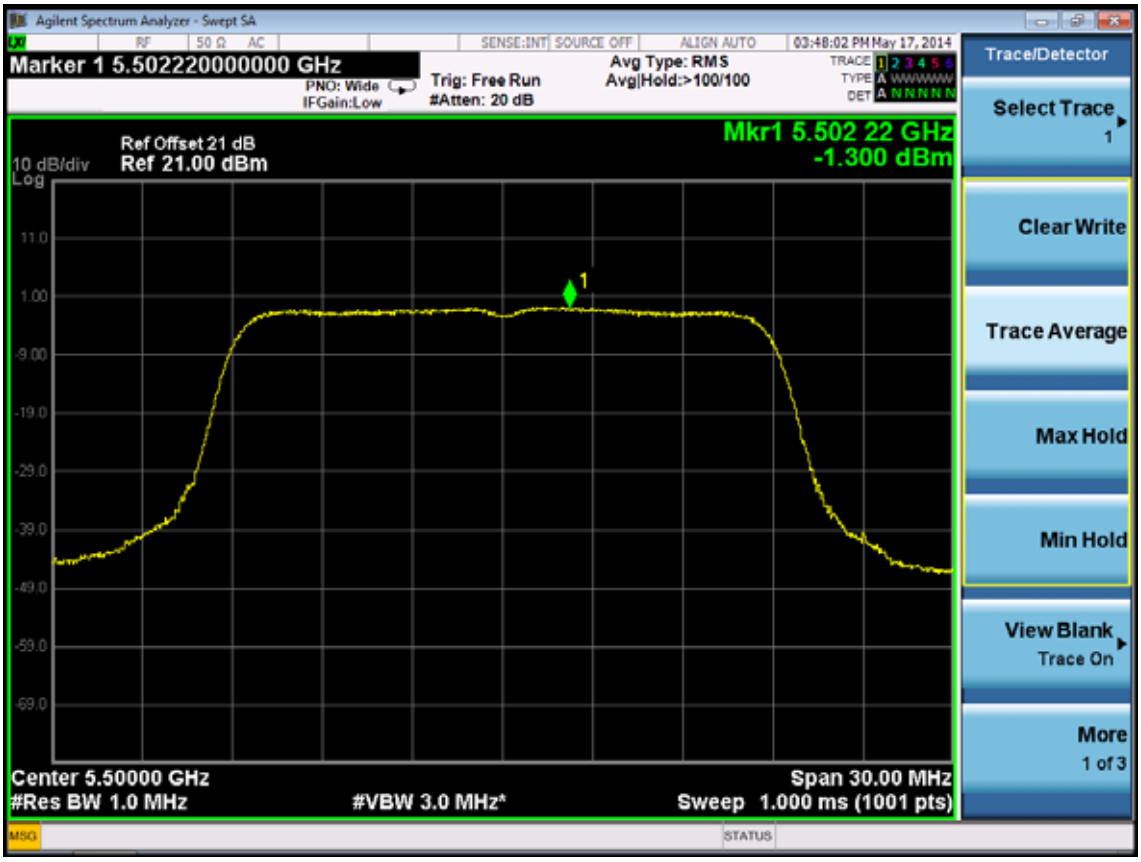
5600MHz

5700MHz

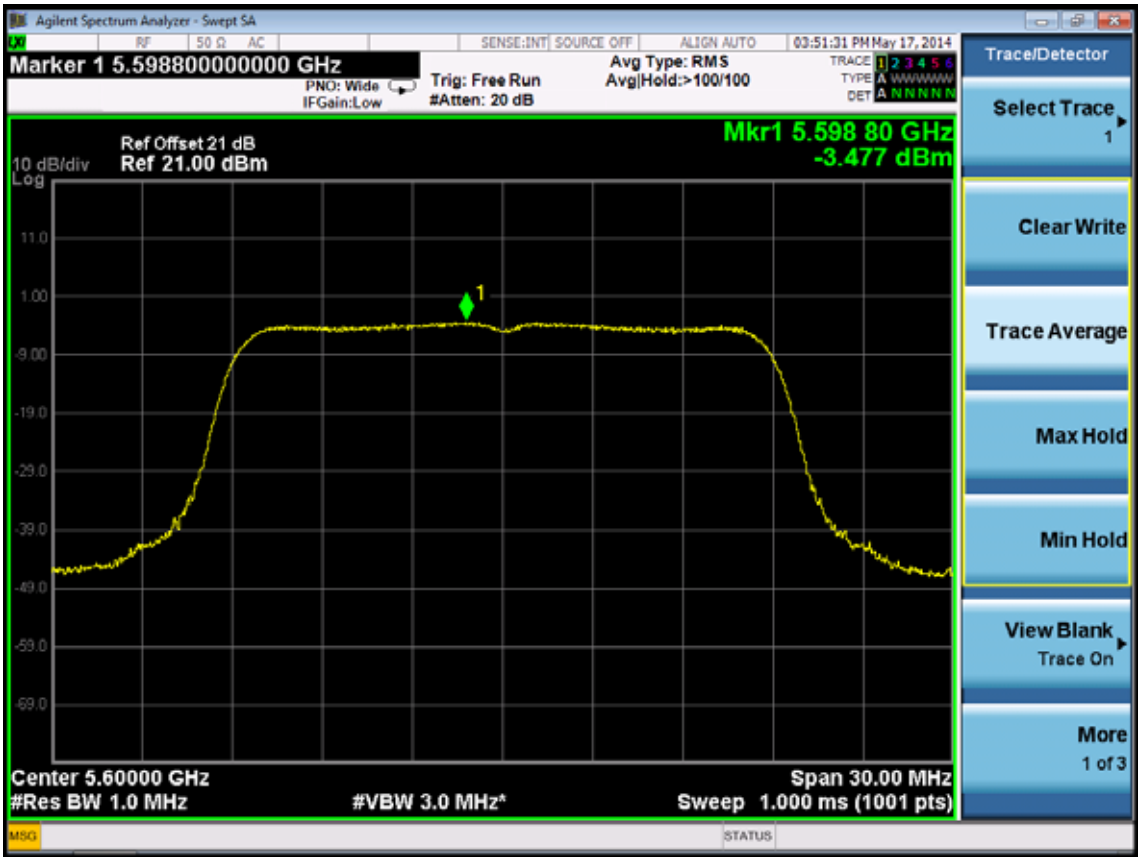


IEEE802.11ac VHT20

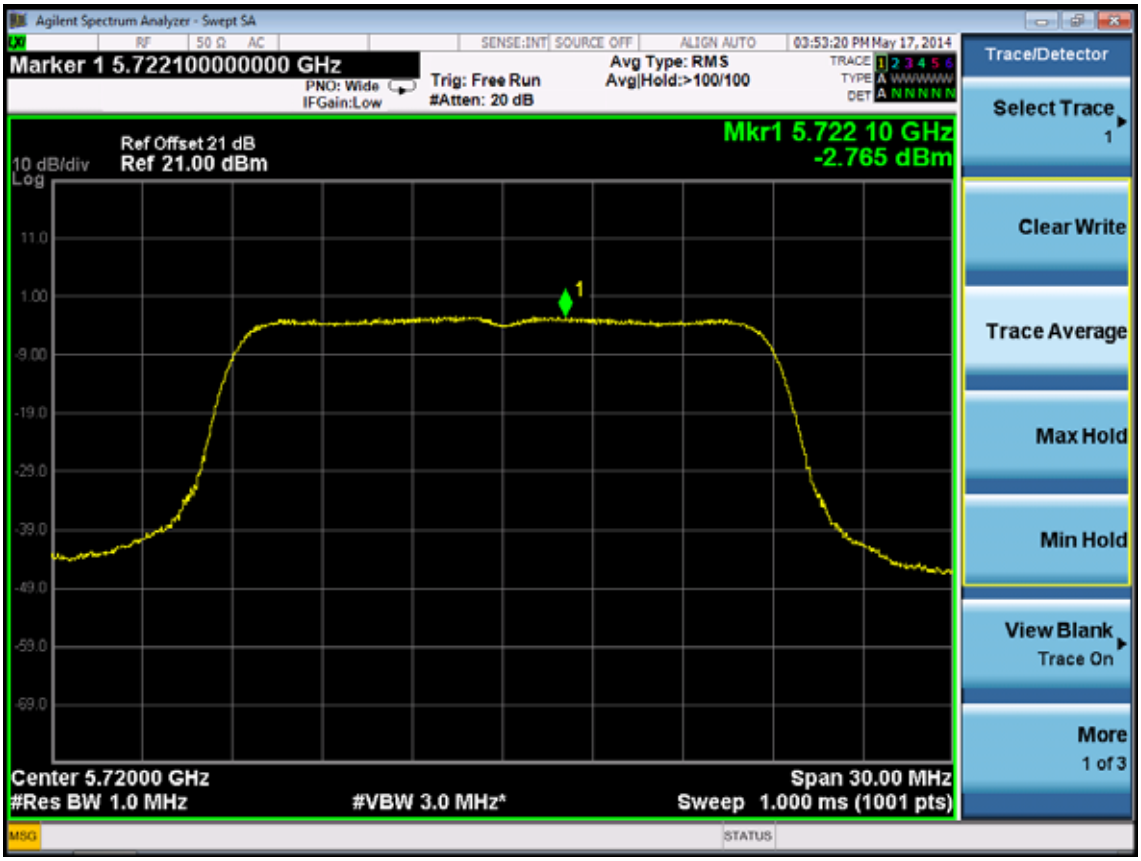
5500MHz



5600MHz



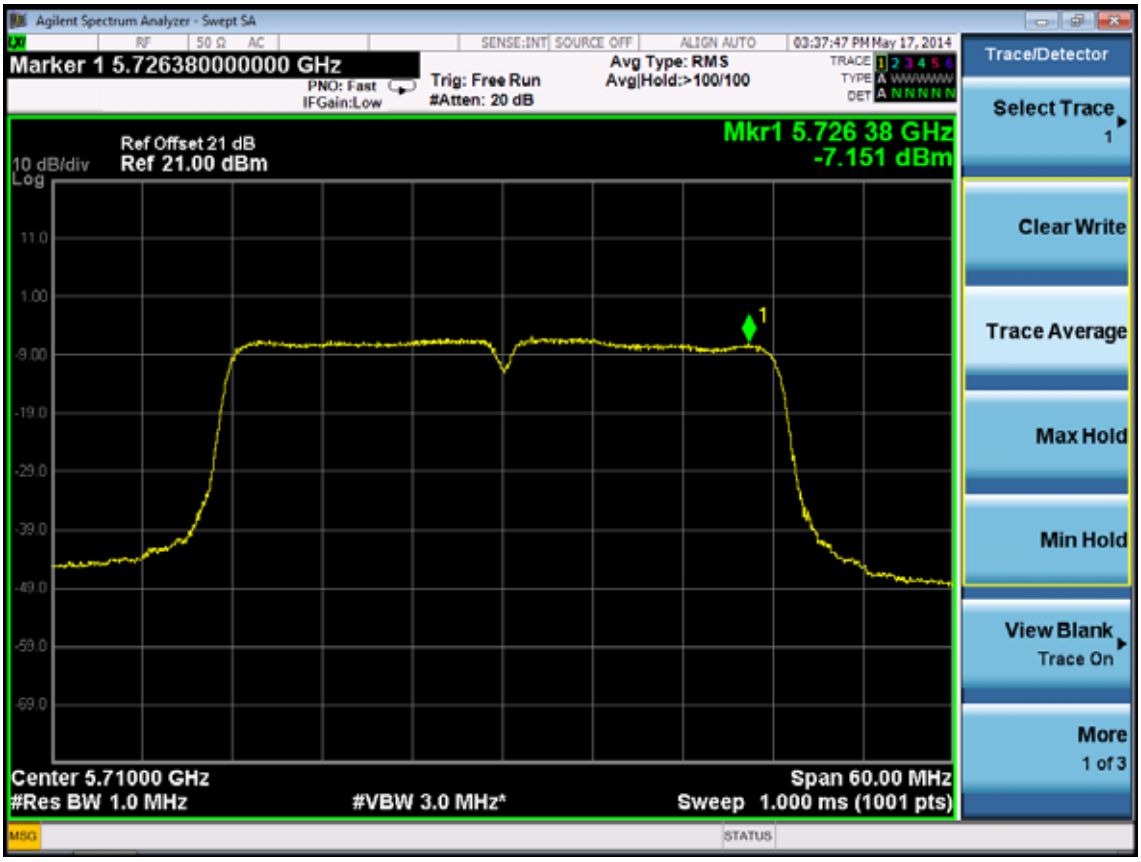
5720MHz



IEEE802.11ac VHT40

5510MHz

5710MHz



IEEE802.11ac VHT80

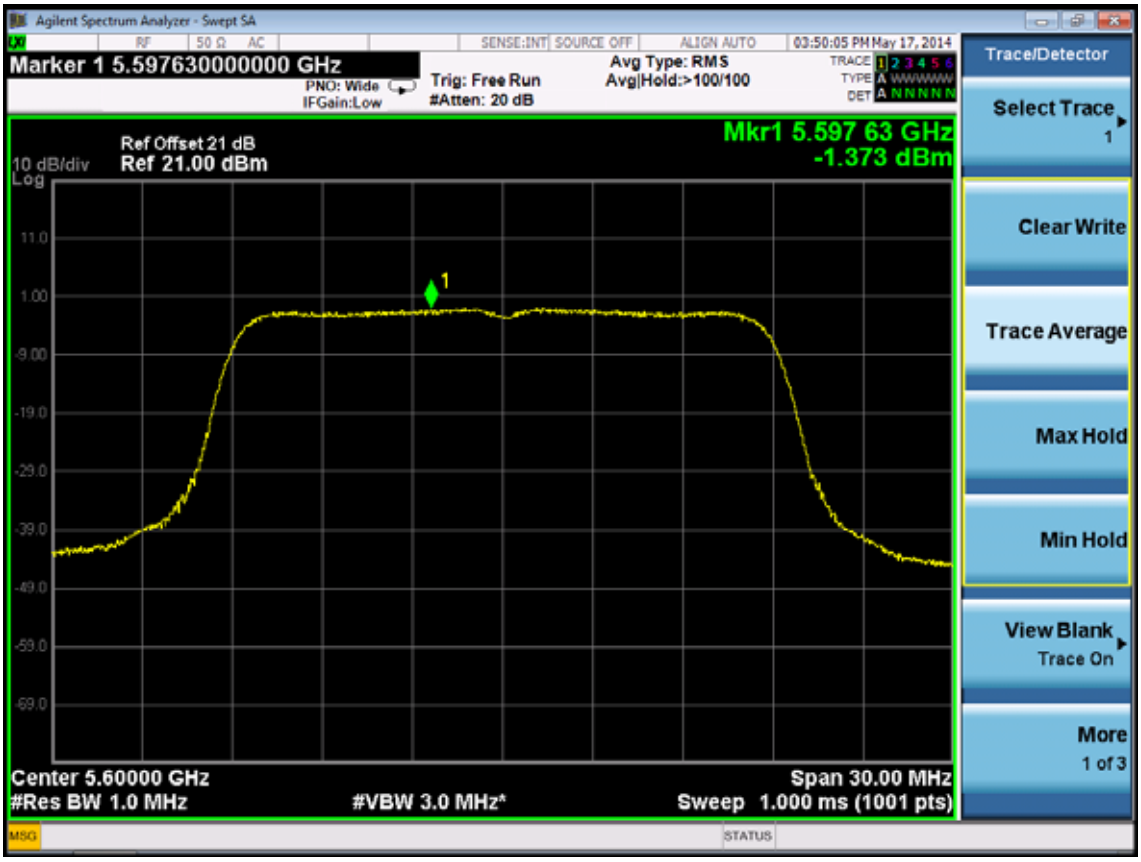
5530MHz

5690MHz

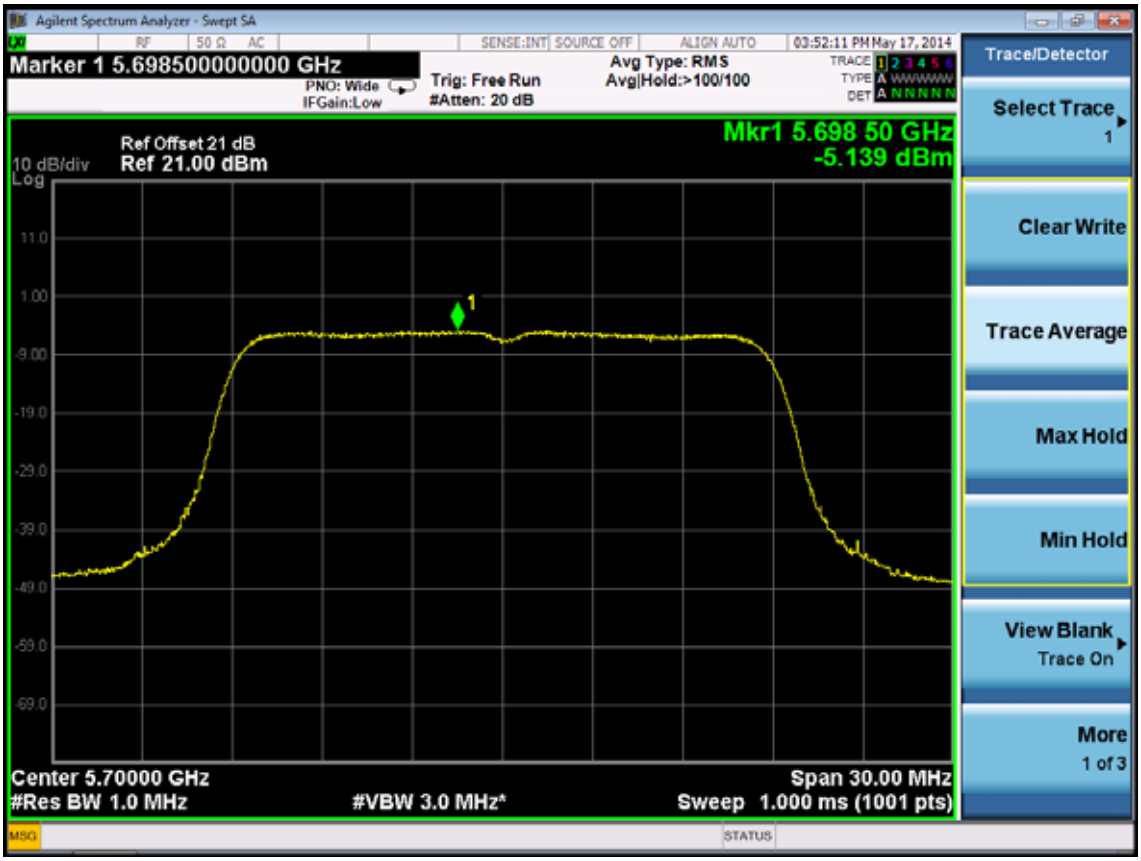
IEEE802.11nHT20

5500MHz

5600MHz

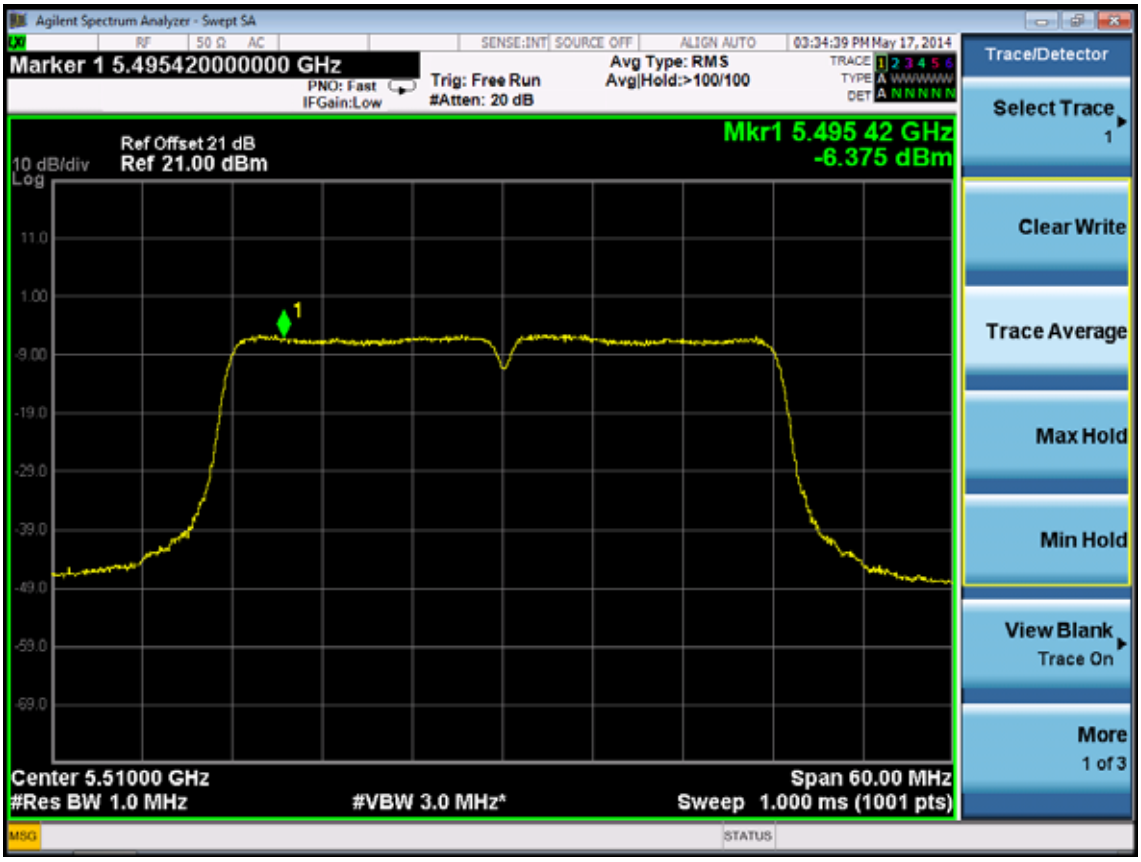


5700MHz

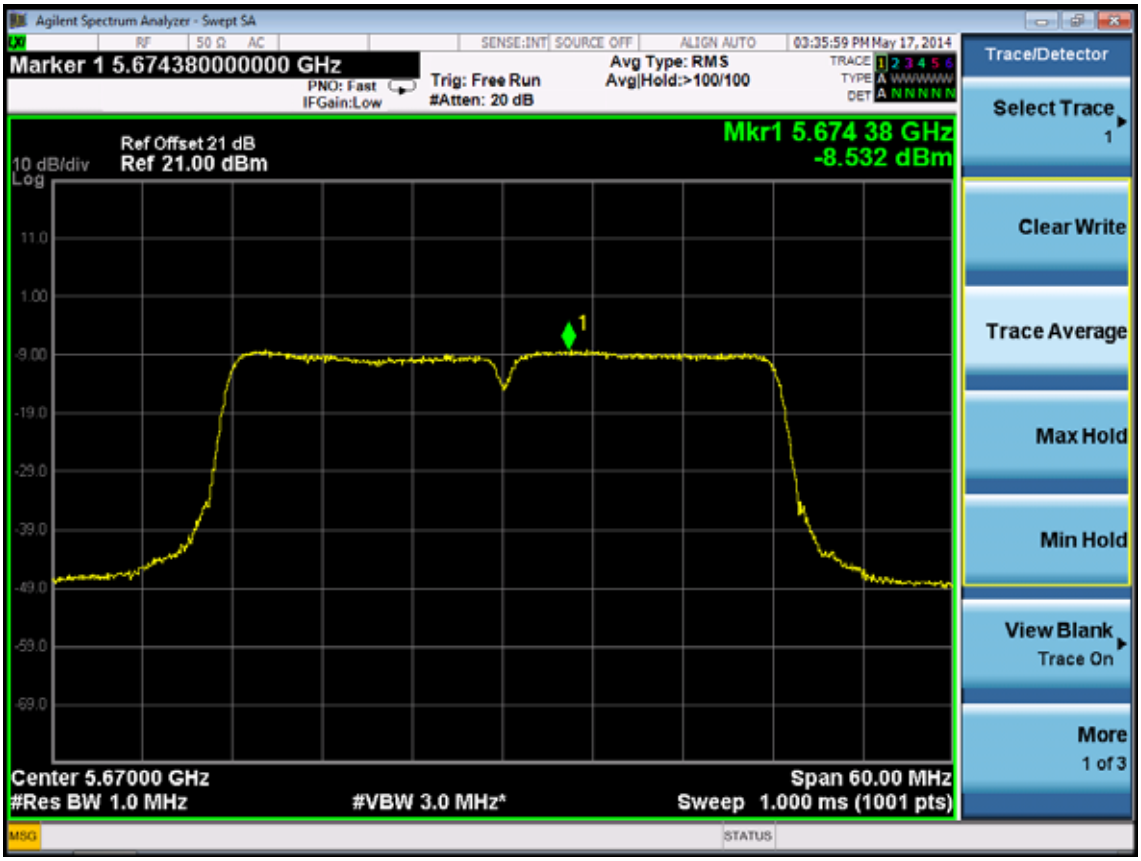


IEEE802.11nHT40

5510MHz



5670MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.674380000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold:>100/100
03:35:59 PM May 17, 2014
Ref Offset 21 dB
10 dB/div
Log
Ref 21.00 dBm
Mkr1 5.674 38 GHz
-8.532 dBm
Center 5.67000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 60.00 MHz
Sweep 1.000 ms (1001 pts)
Trace/Detector
Select Trace
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

9. PEAK EXCURSION MEASUREMENT

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	May.08, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9510-4580	May.08, 13	1Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

9.2. Limit

The ratio of the peak excursion of modulation envelope (measured using a peak hold function) to the maximum conducted power (measured as specified above) shall not exceed 13 dB across any 1MHz bandwidth whichever is less.

9.3. Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emissions bandwidth. The largest difference between the following two traces (Peak Trace and Average Trace) must be ≤ 13 dB for all frequencies across the emissions bandwidth. Submit a plot.
3. Peak Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and max-hold settings.
4. Average Trace: Method #3—video averaging with max hold--and sum power across the band. Set span to encompass the entire emissions bandwidth (EBW) of the signal. Set sweep trigger to “free run”. Set RBW = 1 MHz. Set VBW ≥ 1/T (Draft n VBW = 300kHz ≥ 1/4 μ s). Use sample detector mode if bin width (i.e., span/number of points in spectrum) < 0.5 RBW. Otherwise use peak detector mode. Set max hold. Allow max hold to run for 60 seconds.

9.4.Test Results

Band 1: (5150-5250MHz):

EUT: AC600 Wireless Dual Band USB Adapter		
M/N: T2U		
Test date: 2014-04-05	Pressure: 101.1±1.0 kpa	Humidity: 51.2±3.0%
Tested by: Kevin_Hu	Test site: RF Site	Temperature：22.3±0.6℃

Cable loss: 1 dB		Attenuator loss: 20 dB	
Test Mode	Frequency (MHz)	Power excursion(dB)	Limit (dB)
11a	5180	2.124	13
	5200	2.892	13
	5240	2.194	13
11nHT20	5180	2.181	13
	5200	2.604	13
	5240	2.407	13
11nHT40	5190	2.654	13
	5230	2.297	13
11ac VTH20	5180	2.649	13
	5200	2.141	13
	5240	2.274	13
11ac VTH40	5190	2.637	13
	5230	2.374	13
11ac VTH80	5210	2.207	13
Conclusion：PASS			

Band 2: (5250-5350MHz):

EUT: AC600 Wireless Dual Band USB Adapter		
M/N: T2U		
Test date: 2014-04-05	Pressure: 101.2±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Kevin_Hu	Test site: RF Site	Temperature：22.3±0.6℃

Cable loss: 1 dB		Attenuator loss: 20 dB	
Test Mode	Frequency（MHz）	Power excursion（dB）	Limit (dB)
11a	5260	2.415	13
	5300	2.647	13
	5320	2.37	13
11nHT20	5260	2.678	13
	5300	2.459	13
	5320	2.646	13
11nHT40	5270	2.537	13
	5310	2.302	13
11ac VTH20	5260	2.542	13
	5300	2.419	13
	5320	3.03	13
11ac VTH40	5270	2.971	13
	5310	1.92	13
11ac VTH80	5290	2.597	13
Conclusion：PASS			

Band 3: (5470-5725MHz):

EUT:Notebook		
M/N:RZ09-0116		
Test date: 2014-03-01	Pressure: 101.1±2.0 kpa	Humidity: 51.9±3.0%
Tested by: Kevin_Hu	Test site: RF Site	Temperature：22.5±0.6℃

Cable loss: 1 dB		Attenuator loss: 20 dB	
Test Mode	Frequency（MHz）	Power excursion（dB）	Limit (dB)
11a	5500	3.763	13
	5600	3.182	13
	5700	3.474	13
11nHT20	5500	2.846	13
	5600	2.931	13
	5700	2.421	13
11nHT40	5510	3.122	13
	5670	2.129	13
11ac VTH20	5500	2.655	13
	5600	3.228	13
	5720	2.572	13
11ac VTH40	5510	3.835	13
	5710	2.682	13
11ac VTH80	5530	3.814	13
	5690	3.341	13
Conclusion：PASS			

Band 1: (5150-5250MHz):

IEEE802.11a

5180MHz

5200MHz

5240MHz

IEEE802.11ac VHT20

5180MHz

5200MHz

5240MHz

IEEE802.11ac VHT40

5190MHz

5230MHz

IEEE802.11ac VHT80

5210MHz

IEEE802.11nHT20

5180MHz

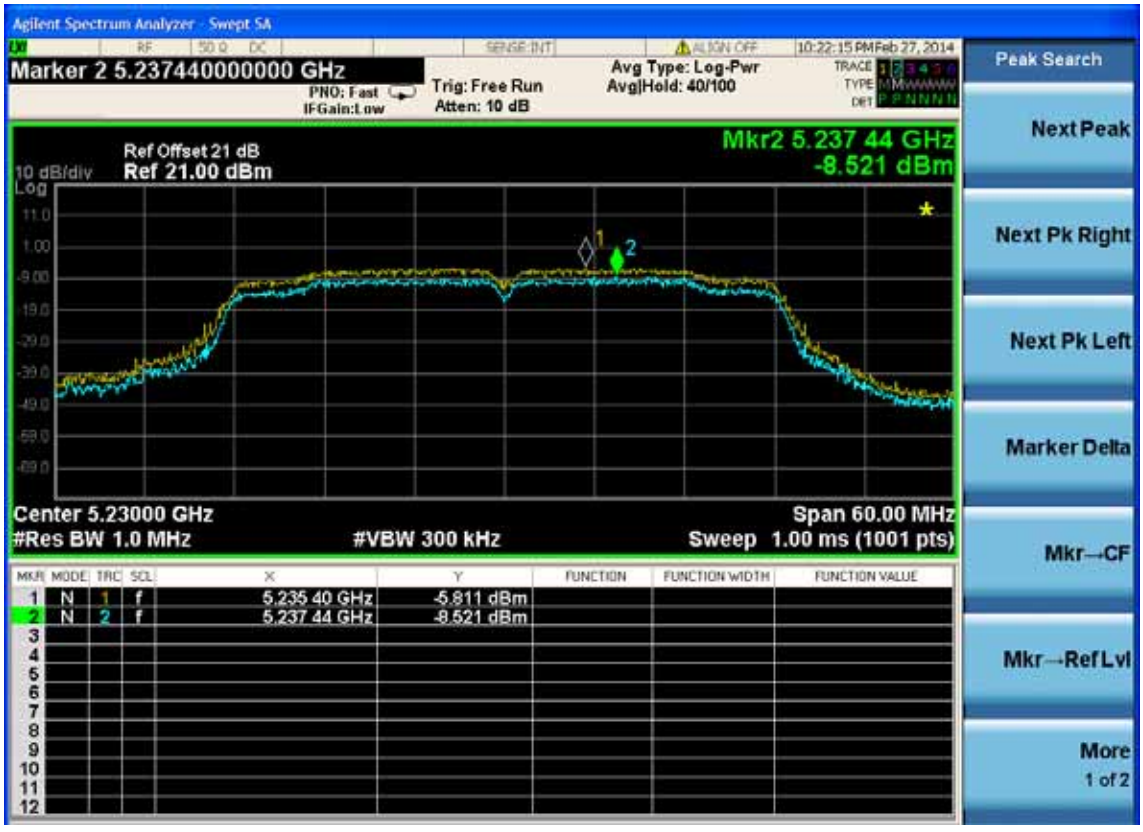
5200MHz

5240MHz

IEEE802.11nHT40

5190MHz

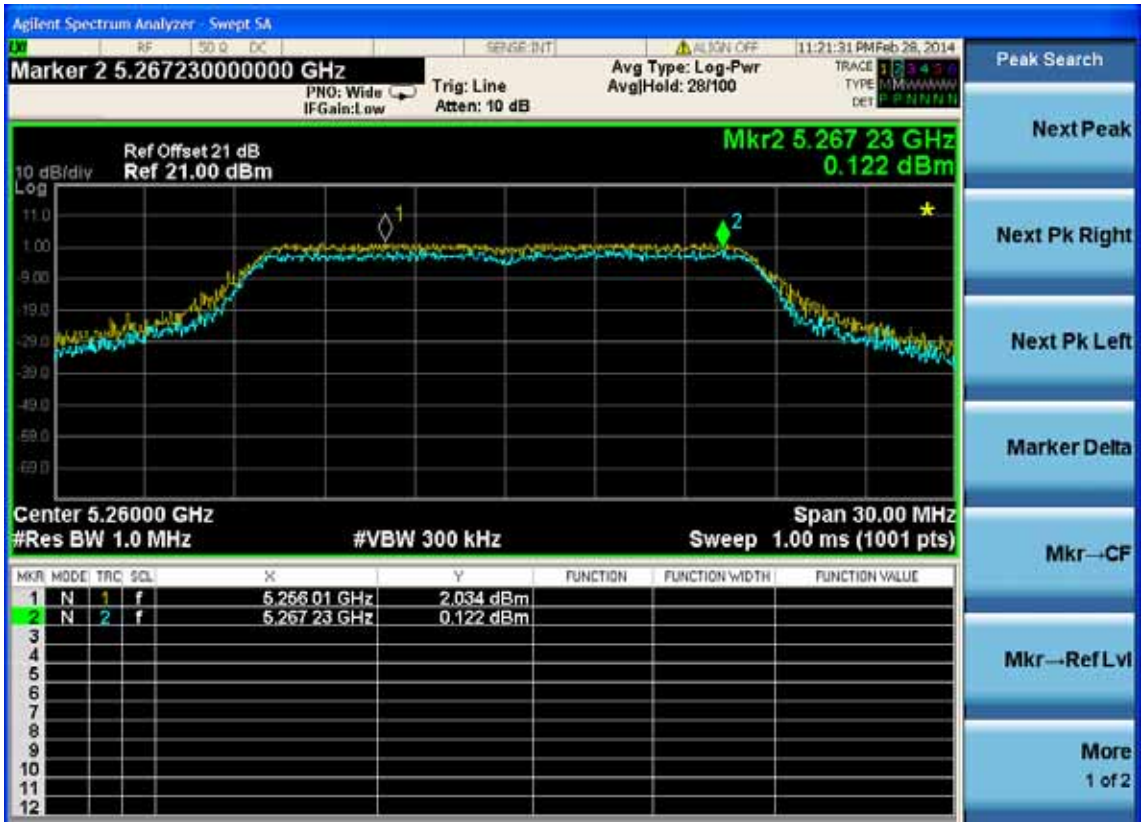
5230MHz



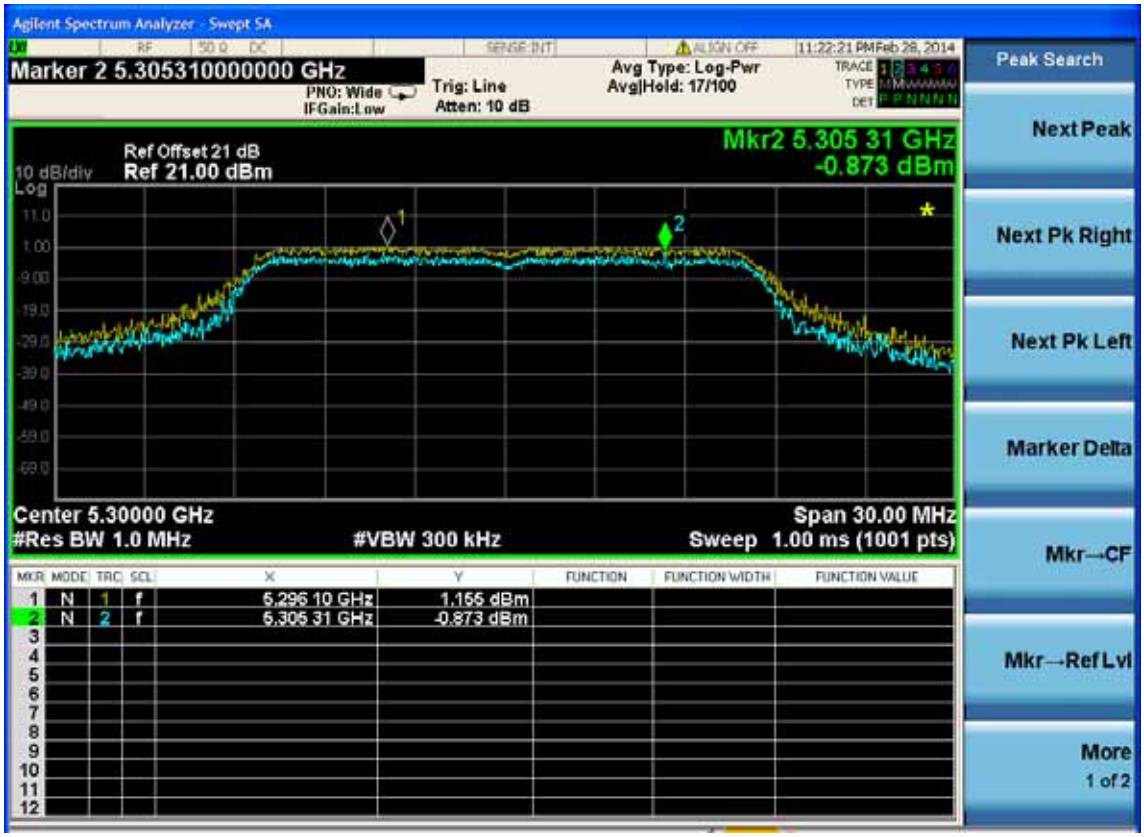
Band 2: (5250-5350MHz):

IEEE802.11a

5260MHz



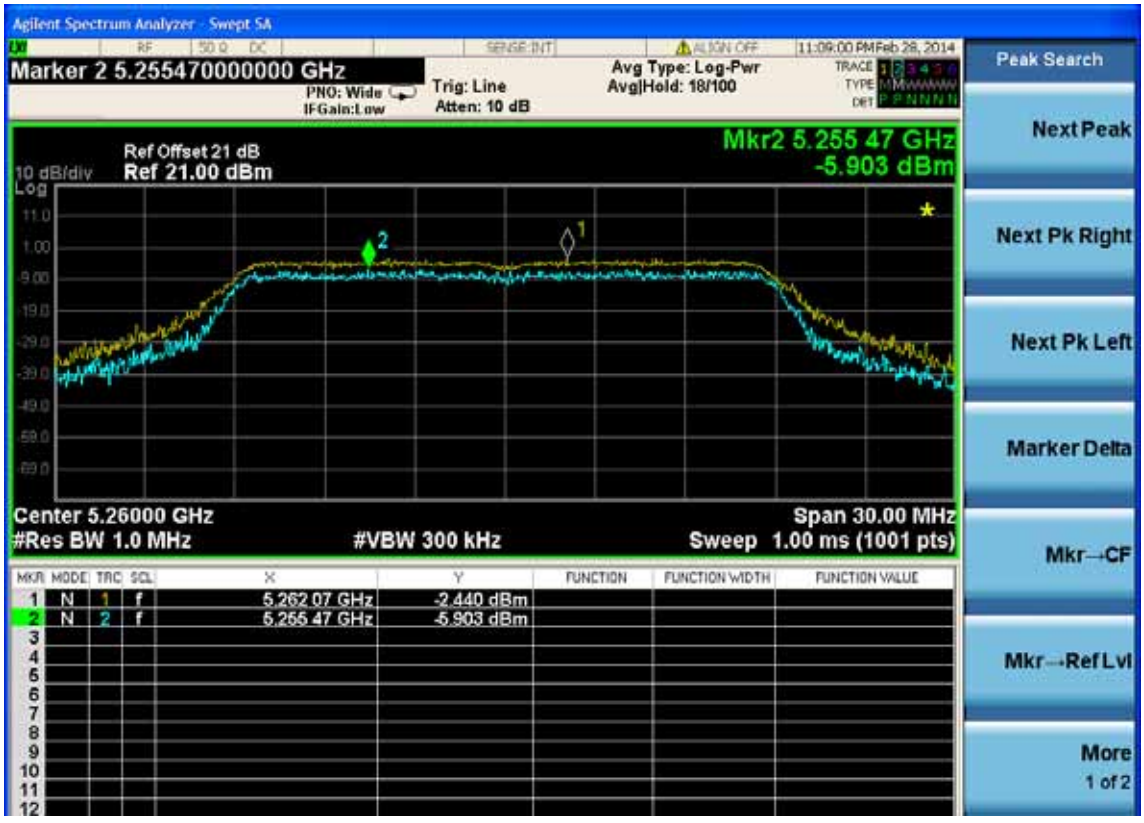
5300MHz



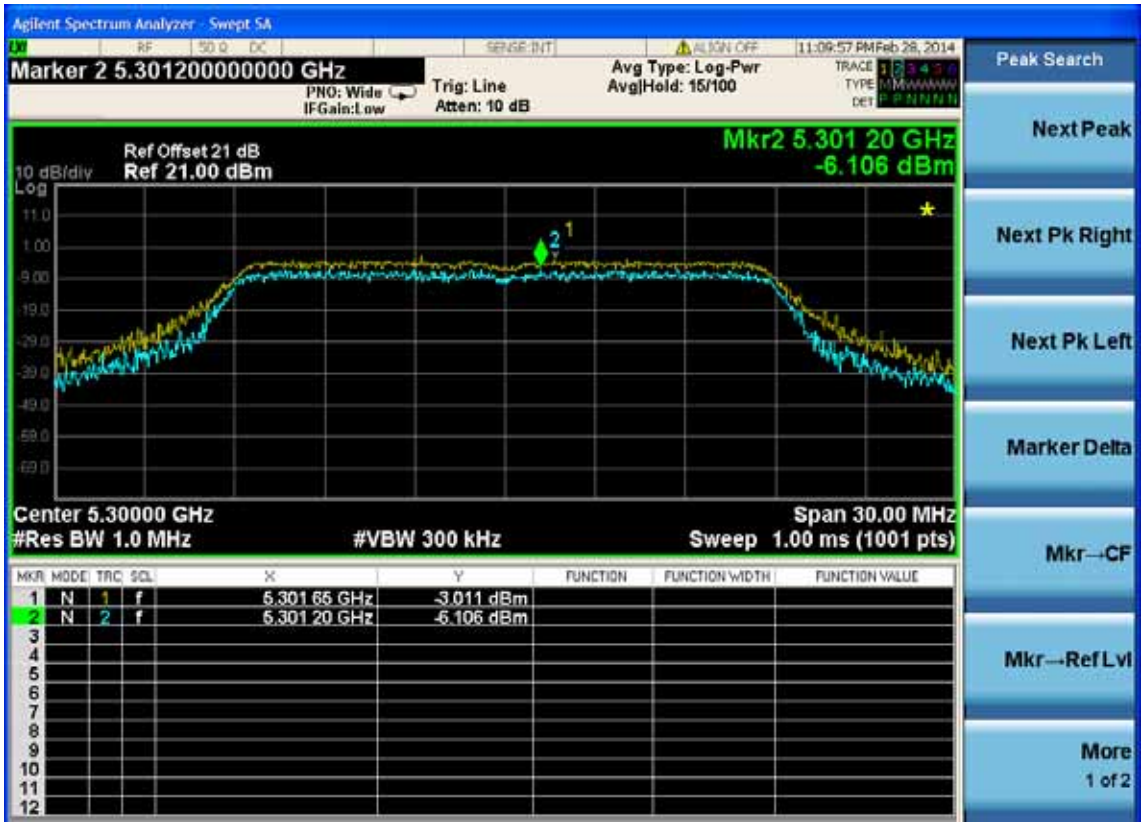
5320MHz

IEEE802.11ac VHT20

5260MHz



5300MHz



5320MHz

IEEE802.11ac VHT40

5270MHz

5310MHz

IEEE802.11ac VHT80

5290MHz

IEEE802.11nHT20

5260MHz

5300MHz

5320MHz

IEEE802.11nHT40

5270MHz

5310MHz

Band 3: (5470-5725MHz):
IEEE802.11a

5500MHz

5600MHz

5700MHz

IEEE802.11ac VHT20

5500MHz

5600MHz

5720MHz

IEEE802.11ac VHT40

5510MHz

5710MHz

IEEE802.11ac VHT80

5530MHz

5690MHz

IEEE802.11nHT20

5500MHz

5600MHz

5700MHz

IEEE802.11nHT40

5510MHz

5670MHz

Agilent Spectrum Analyzer - Swept SA
Marker 2 5.673000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold: 37/100
02:55:38 PM Apr 05, 2014
Ref Offset 21 dB
10 dB/div
Log
Ref 21.00 dBm
Mkr2 5.673 00 GHz
-8.975 dBm
Center 5.67000 GHz
#Res BW 1.0 MHz
#VBW 300 kHz
Span 60.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 1 f 5.675 52 GHz -6.846 dBm
2 N 2 f 5.673 00 GHz -8.975 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

10. FREQUENCY STABILITY MEASUREMENT

10.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	May.08, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9510-4580	May.08, 13	1Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

10.2. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or ±20ppm

10.3. Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyser. EUT have transmitted absence of modulation signal and fixed channelize. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
2. Extreme temperature rule is -30°C~50°C.

10.4.Test Result

Band 1: (5150-5250MHz):

EUT: AC600 Wireless Dual Band USB Adapter		
M/N: T2U		
Power: DC 5V From PC Input AC 120V/60Hz		
Test date: 2014-04-05	Test site: RF Chamber	Tested by: Kevin_Hu
Ambient Temperature: 22.4±1.0℃	Relative Humidity: 53.1±1.0%	Pressure: 101.2±1.0 kpa

Frequency stability VS Voltage (Temperature:20℃)

Supply Voltage（V）	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
102V	5180	5180.0165	0.0270	5.21	+/-20	PASS
120V	5180	5180.0210				
138V	5180	5180.0270				
102V	5200	5200.0175	0.0345	6.63	+/-20	
120V	5200	5200.0285				
138V	5200	5200.0345				
102V	5240	5240.0065	0.0185	3.53	+/-20	
120V	5240	5240.0140				
138V	5240	5240.0185				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)

Temperature（℃）	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5180	5180.0185	0.0230	4.44	+/-20	PASS
-20℃	5180	5180.0185				
-10℃	5180	5180.0190				
0℃	5180	5180.0195				
10℃	5180	5180.0205				
20℃	5180	5180.0210				
30℃	5180	5180.0215				
40℃	5180	5180.0220				
50℃	5180	5180.0230				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5200	5200.0270	0.0300	5.77	+/-20	PASS
-20℃	5200	5200.0270				
-10℃	5200	5200.0275				
0℃	5200	5200.0280				
10℃	5200	5200.0280				
20℃	5200	5200.0285				
30℃	5200	5200.0285				
40℃	5200	5200.0295				
50℃	5200	5200.0300				
Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5240	5240.0120	0.0160	3.05	+/-20	PASS
-20℃	5240	5240.0125				
-10℃	5240	5240.0130				
0℃	5240	5240.0135				
10℃	5240	5240.0135				
20℃	5240	5240.0140				
30℃	5240	5240.0145				
40℃	5240	5240.0150				
50℃	5240	5240.0160				

Band 2:5250MHz-5350MHz):

EUT: AC600 Wireless Dual Band USB Adapter		
M/N: T2U		
Power: DC 5V From PC Input AC 120V/60Hz		
Test date: 2014-04-05	Test site: RF Chamber	Tested by: Kevin_Hu
Ambient Temperature: 23.2±1.0℃	Relative Humidity: 52.1±1.0%	Pressure: 101.3±1.0 kpa

Frequency stability VS Voltage (Temperature:20℃)

Supply Voltage (V)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
102V	5260	5259.9785	0.0215	-4.09	+/-20	PASS
120V	5260	5259.9810				
138V	5260	5259.9868				
102V	5300	5299.9791	0.0209	-3.94	+/-20	
120V	5300	5299.9810				
138V	5300	5299.9854				
102V	5320	5319.9783	0.0217	-4.08	+/-20	
120V	5320	5319.9810				
138V	5320	5319.9849				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)

Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5260	5259.9627	0.0373	-7.09	+/-20	PASS
-20℃	5260	5259.9673				
-10℃	5260	5259.9694				
0℃	5260	5259.9731				
10℃	5260	5259.9779				
20℃	5260	5259.9810				
30℃	5260	5259.9934				
40℃	5260	5260.0124				
50℃	5260	5260.0276				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5300	5299.9635	0.0365	-6.89	+/-20	PASS
-20℃	5300	5299.9672				
-10℃	5300	5299.9691				
0℃	5300	5299.9728				
10℃	5300	5299.9786				
20℃	5300	5299.9810				
30℃	5300	5299.9962				
40℃	5300	5300.0109				
50℃	5300	5300.0234				
Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5320	5319.9652	0.0348	-6.54	+/-20	PASS
-20℃	5320	5319.9683				
-10℃	5320	5319.9701				
0℃	5320	5319.9734				
10℃	5320	5319.9778				
20℃	5320	5319.9810				
30℃	5320	5319.9922				
40℃	5320	5320.0114				
50℃	5320	5320.0257				

Band 3: (5470-5725MHz):

EUT: AC600 Wireless Dual Band USB Adapter		
M/N: T2U		
Power: DC 5V From PC Input AC 120V/60Hz		
Test date: 2014-04-05	Test site: RF Chamber	Tested by: Kevin_Hu
Ambient Temperature: 22.2±1.0℃	Relative Humidity: 51.9±1.0%	Pressure:101.2±1.0 kpa

Frequency stability VS Voltage (Temperature:20℃)

Supply Voltage (V)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
102V	5500	5499.9778	0.0222	-4.04	+/-20	PASS
120V	5500	5499.9805				
138V	5500	5499.9869				
102V	5600	5599.9757	0.0243	-4.34	+/-20	
120V	5600	5599.9800				
138V	5600	5599.9849				
102V	5700	5699.9884	0.0116	-2.04	+/-20	
120V	5700	5699.9916				
138V	5700	5699.9947				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)

Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5500	5499.9688	0.0312	-5.67	+/-20	PASS
-20℃	5500	5499.9697				
-10℃	5500	5499.9721				
0℃	5500	5499.9746				
10℃	5500	5499.9784				
20℃	5500	5499.9805				
30℃	5500	5499.9935				
40℃	5500	5500.0108				
50℃	5500	5500.0215				

Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5600	5599.9678	0.0322	-5.75	+/-20	PASS
-20℃	5600	5599.9702				
-10℃	5600	5599.9733				
0℃	5600	5599.9749				
10℃	5600	5599.9774				
20℃	5600	5599.9800				
30℃	5600	5599.9839				
40℃	5600	5599.9885				
50℃	5600	5599.9917				
Frequency stability VS Temperature (supply voltage AC 120V/60Hz)						
Temperature (℃)	Test frequency (MHz)	Test result (MHz)	Max Deviation (MHz)	Max Deviation (ppm)	Limit (ppm)	Conclusion
-30℃	5700	5699.9687	0.0313	-5.49	+/-20	PASS
-20℃	5700	5699.9713				
-10℃	5700	5699.9744				
0℃	5700	5699.9759				
10℃	5700	5699.9774				
20℃	5700	5699.9800				
30℃	5700	5699.9828				
40℃	5700	5699.9955				
50℃	5700	5700.0127				

11. NTENNA REQUIREMENT

11.1. STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2. ANTENNA CONNECTED CONSTRUCTION

The antennas used for this product are Monopole antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 4.38dBi.

12.DEVIATION TO TEST SPECIFICATIONS

[NONE]