



REPORT No.: SZ18030098W02

TEST REPORT

APPLICANT : Universal Electronics Inc

PRODUCT NAME : Wi-Fi Dongle

MODEL NAME : UEI2236B

BRAND NAME : UNIVERSAL ELECTRONICS INC

FCC ID : MG3-2236B

STANDARD(S) : 47 CFR Part 15 Subpart E

TEST DATE : 2018-03-16 to 2018-05-12

ISSUE DATE : 2018-05-14

Tested by:

Su Hang
Su Hang (Test Engineer)

Approved by:

Andy Yeh
Andy Yeh (Technical Director)

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MORLAB

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Change History		
Issue	Date	Reason for change
1.0	2018-05-14	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Universal Electronics Inc
Applicant Address:	201 East Sandpointe Ave, 8th Floor, Santa Ana, CA, United States
Manufacturer:	ITON Technology Corp.
Manufacturer Address:	Room 1302, Block A, Building 4, Tianan Cyber Park, Huangge Road, Longgang District, Shenzhen, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Wi-Fi Dongle
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	V1.1
Software Version:	V1.0
Modulation Type:	OFDM
Modulation Mode:	802.11a, 802.11n(HT20), 802.11n(HT40)
Operating Frequency Range:	5.180GHz- 5.240GHz; 5.260GHz- 5.320GHz; 5.500GHz- 5.700GHz ; 5.745GHz- 5.825GHz
Channel Number:	Refer to 1.3
Antenna Type:	PCB Antenna
Antenna Gain:	Ant0: 1.5 dBi; ANT1: 1.5 dBi
Directional Gain:	4.51 dBi Note 2

Note 1: The EUT has two antennas and supports a MIMO function. Physically, the EUT provides two completed transmitters and two receivers for 802.11n modulation mode.

Modulation Mode:	TX Function
802.11a	1TX
802.11n	2TX

Note 2: According to KDB 662911 D01, the directional gain = $G_{ANT} + 10\log(N_{ANT})$ dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

Note 3: During test, the duty cycle of the EUT was setting to 100%.

Note 4: All radiation test items for 802.11n modulation mode operate at MIMO mode during the test. Other modulation mode operate at SISO mode, both of the two antennas were tested separately,



we only recorded the worst test result(ANT1) in this report.

Note 5: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3.The channel number and frequency of EUT

Frequency Range: 5180MHz-5240MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	36	5180	40	5200
	44	5220	48	5240
40MHz	38	5190	46	5230
Frequency Range: 5260MHz-5320MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	52	5260	56	5280
	60	5300	64	5320
40MHz	54	5270	62	5310
Frequency Range: 5500MHz-5700MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	100	5500	105	5520
	108	5540	112	5560
	116	5580	120	5600
	124	5620	128	5640
	132	5660	136	5680
	140	5700		
40MHz	102	5510	110	5550
	118	5590	126	5630
	134	5670		
Frequency Range: 5725-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	149	5745	153	5765
	157	5785	161	5805
	165	5825		
40MHz	151	5775	159	5795



1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart E (UNII band) for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 15 (5-1-14 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	15.407(a) (e)	Emission Bandwidth	May 09, 2018	Su Hang	PASS
3	15.407(a)	Maximum conducted output Power	May 12, 2018	Su Hang	PASS
4	15.407(a)	Peak Power spectral density	May 09, 2018	Su Hang	PASS
5	15.407(g)	Frequency Stability	May 12, 2018	Su Hang	PASS
6	15.205,15.209 15.407(b)	Restricted Frequency Bands	May 12, 2018	Peng Xuwei	PASS
7	15.207	Conducted Emission	Mar 16, 2018	Peng Xuwei	PASS
8	15.407(b)	Radiated Emission	Apr 16&19, 2018 May 11, 2018	Peng Xuwei	PASS
9	15.407(c)	Automatically discontinue transmission requirement	N/A	N/A	PASS

Note1: EUT is a Client Device Without Radar Detection, WIFI hotspot does not support U-NII band; A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

Note2: The DFS test report was documented in a separate report (Report No.: SZ18030098W03).

Note3: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013.

Note4: These RF tests were performed according to the method of measurements prescribed in KDB789033 D02 General UNII Test Procedures New Rules v02r01, KDB662911 D01 Multiple Transmitter Output v02r01.



1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106



2.47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

2.1.2. 2.1.2 Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

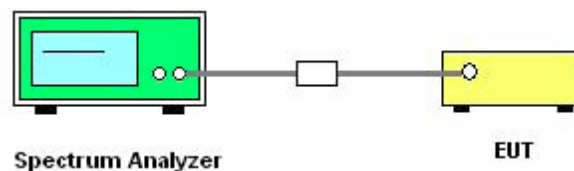
2.2. Emission Bandwidth

2.2.1. Requirement

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement. Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

2.2.2. Test Description

A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading.

B. Test Procedure

1. KDB 789033 Section C) 1) Emission Bandwidth was used in order to prove compliance
 - a) Set RBW = approximately 1% of the emission bandwidth.
 - b) Set the VBW > RBW.
 - c) Detector = Peak.
 - d) Trace mode = max hold.
 - e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission.
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
2. KDB 789033 Section C) 2) minimum emission bandwidth for the band 5.725-5.85GHz was used in order to prove compliance.
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
 - a) Set RBW = 100 kHz.
 - b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
 - c) Detector = Peak.



- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

2.2.3. Test Result

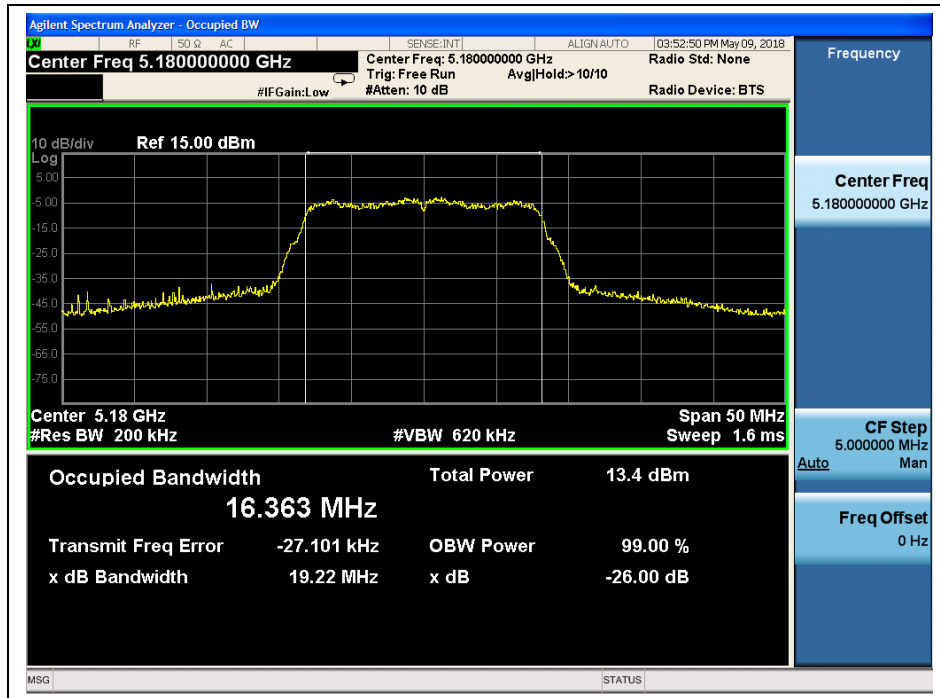
802.11a Test mode

A. Test Verdict:

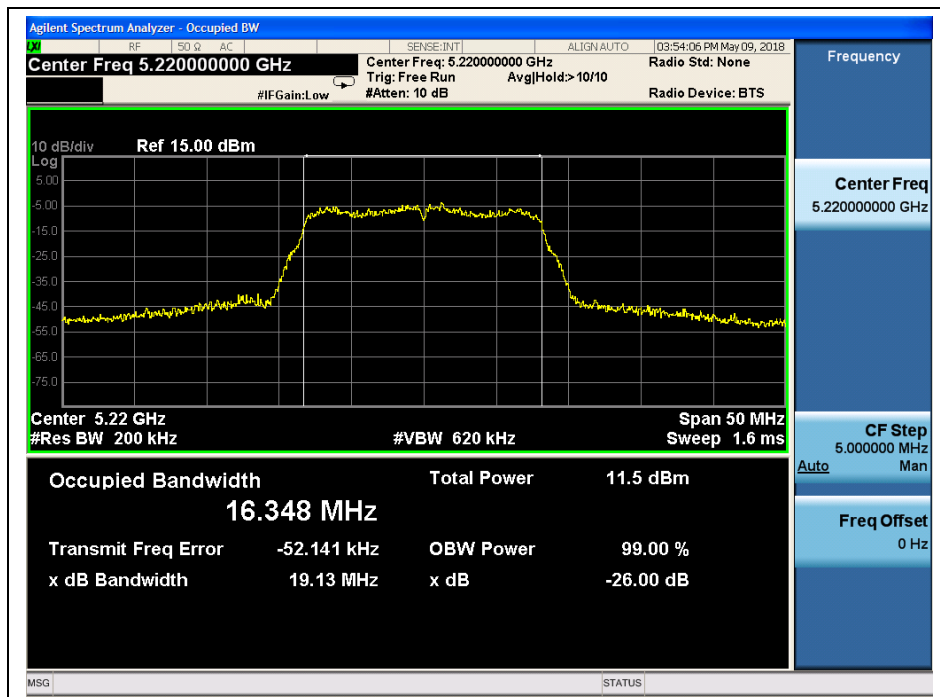
Channel	Frequency (MHz)	ANT0 26 dB Bandwidth (MHz)	ANT1 26 dB Bandwidth (MHz)
36	5180	19.22	19.00
44	5220	19.13	19.13
48	5240	18.96	19.11
52	5260	19.06	19.12
60	5300	18.99	19.06
64	5320	19.14	19.21
100	5500	19.01	19.28
120	5600	19.11	19.05
140	5700	19.20	19.25
Channel	Frequency (MHz)	ANT0 6dB Bandwidth (MHz)	ANT1 6dB Bandwidth (MHz)
149	5745	15.63	15.67
157	5785	16.06	15.55
165	5825	15.63	15.53



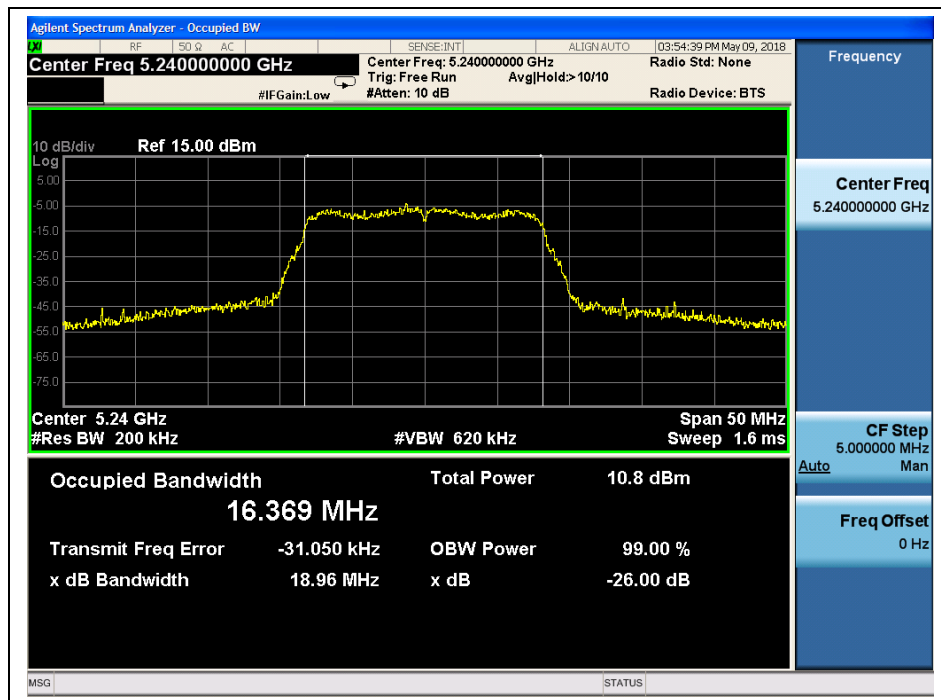
B. Test Plots



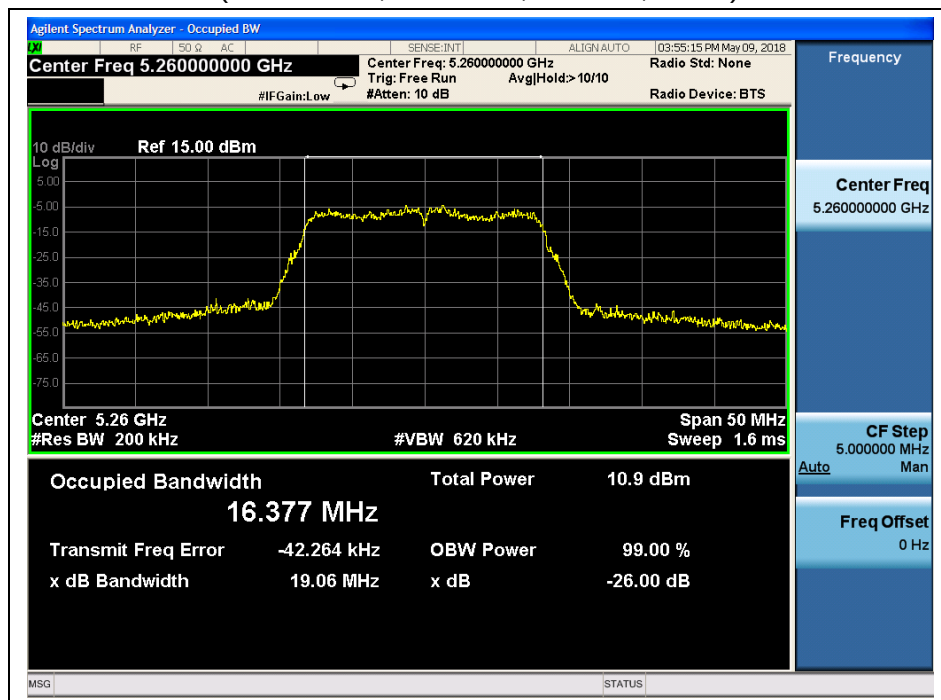
(Channel 36, 5180MHz, 802.11a, ANT0)



(Channel 44, 5220 MHz, 802.11a, ANT0)



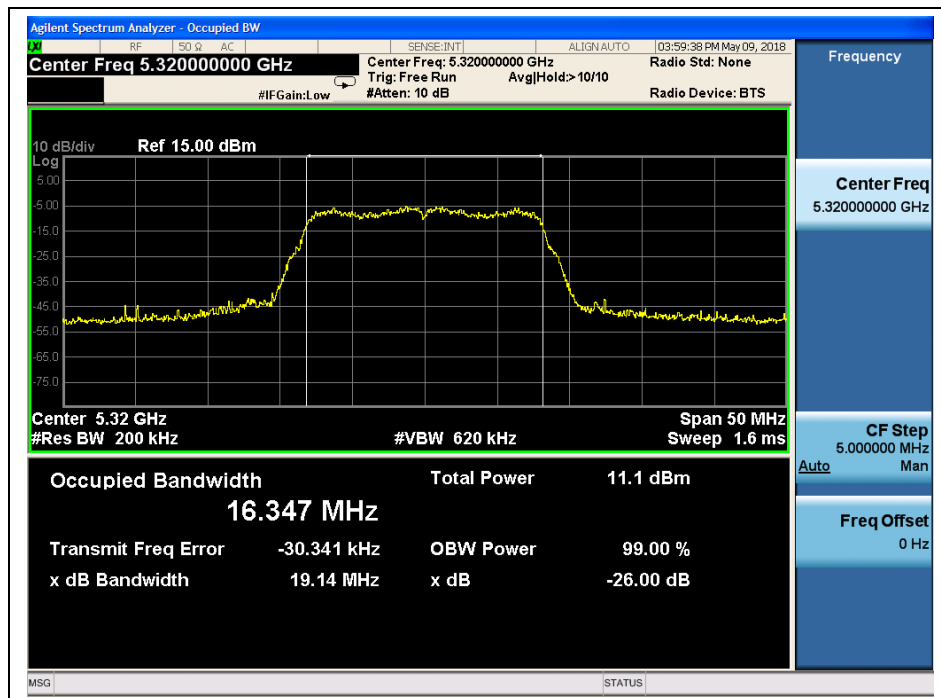
(Channel 48, 5240MHz, 802.11a, ANT0)



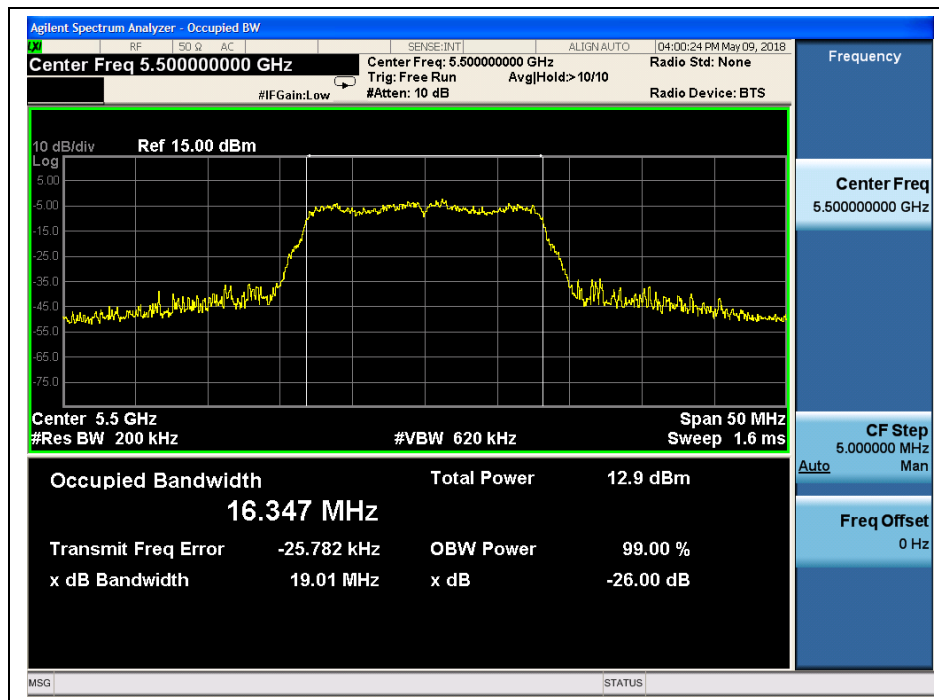
(Channel 52, 5260MHz, 802.11a, ANT0)



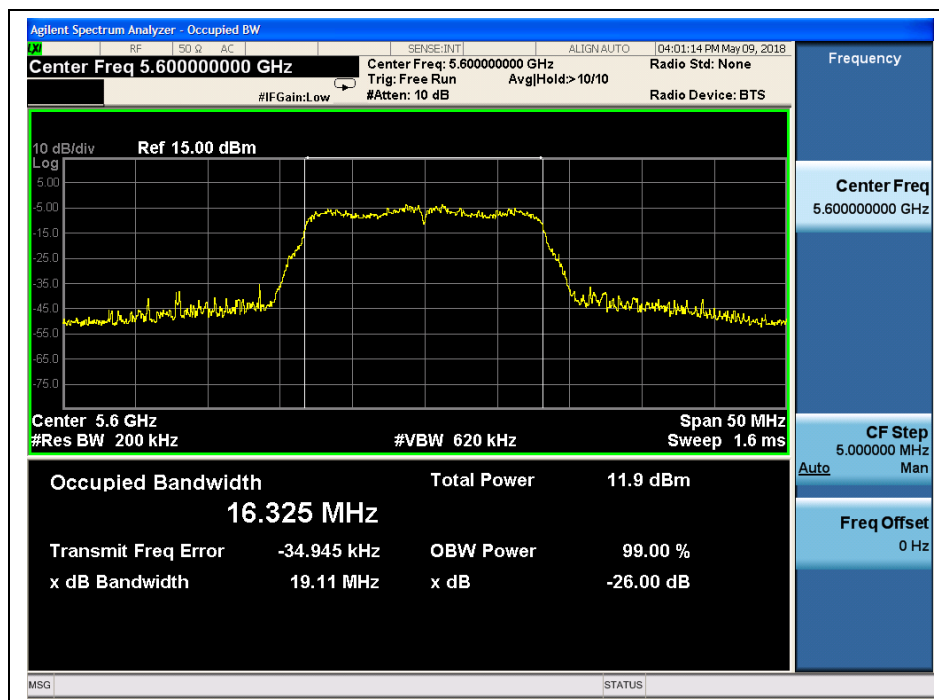
(Channel 60, 5300 MHz, 802.11a, ANT0)



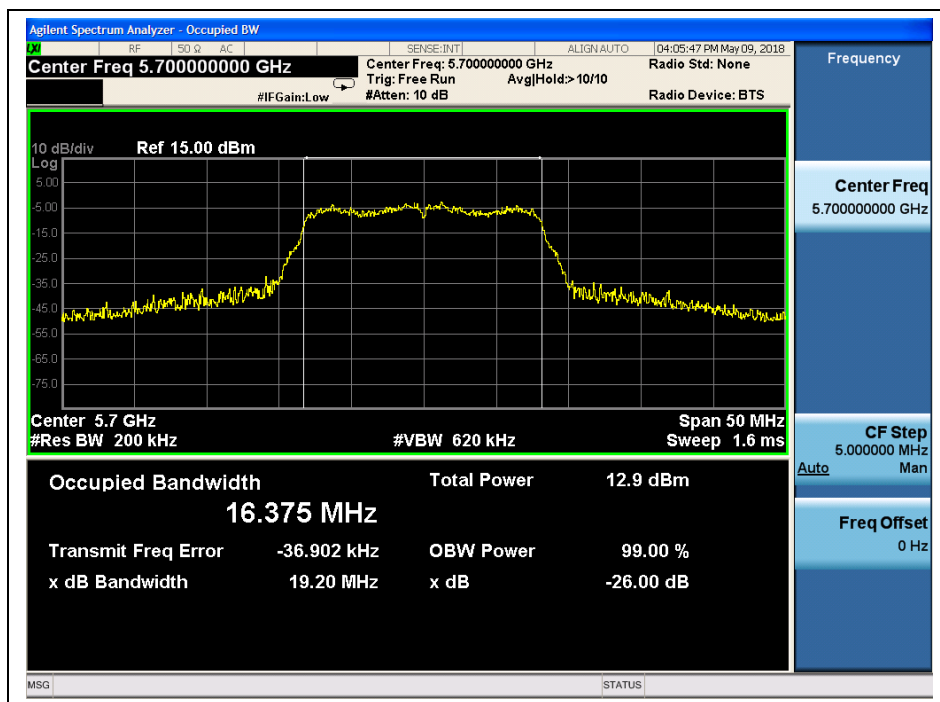
(Channel 64, 5320MHz, 802.11a, ANT0)



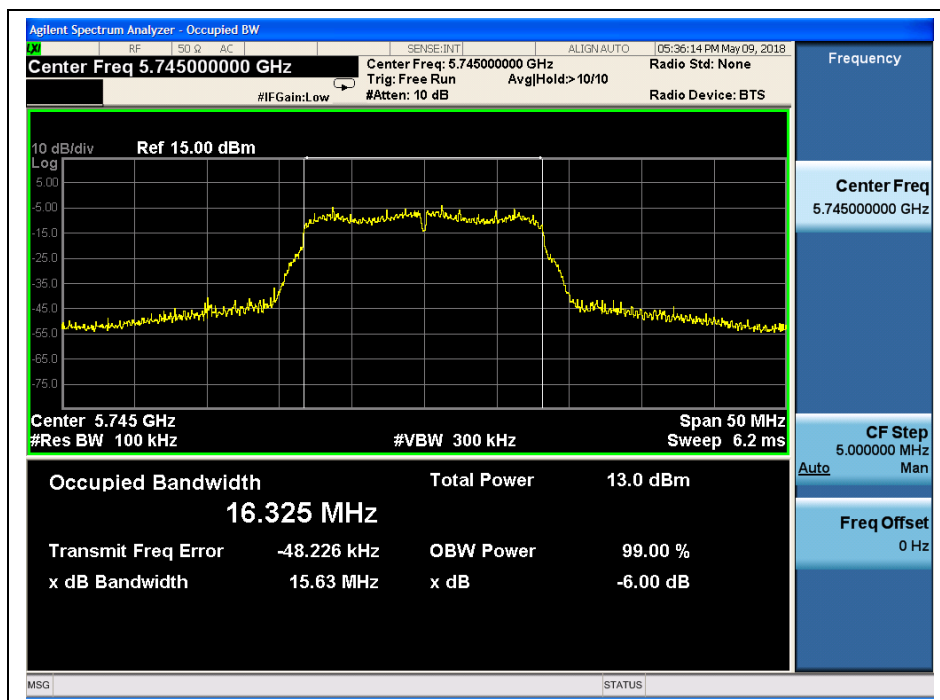
(Channel 100, 5500MHz, 802.11a, ANT0)



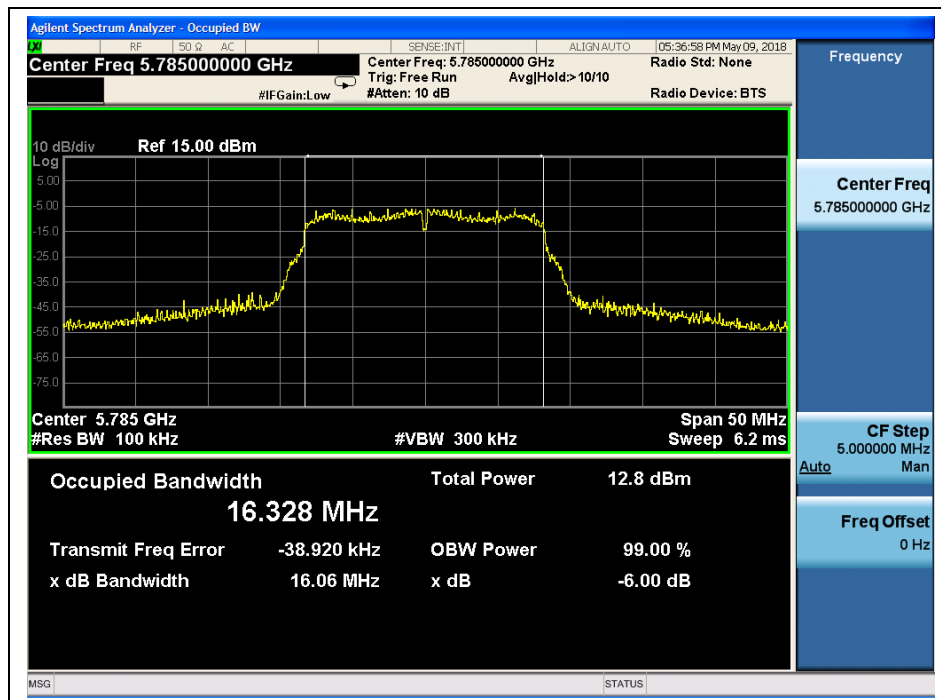
(Channel 120, 5600 MHz, 802.11a, ANT0)



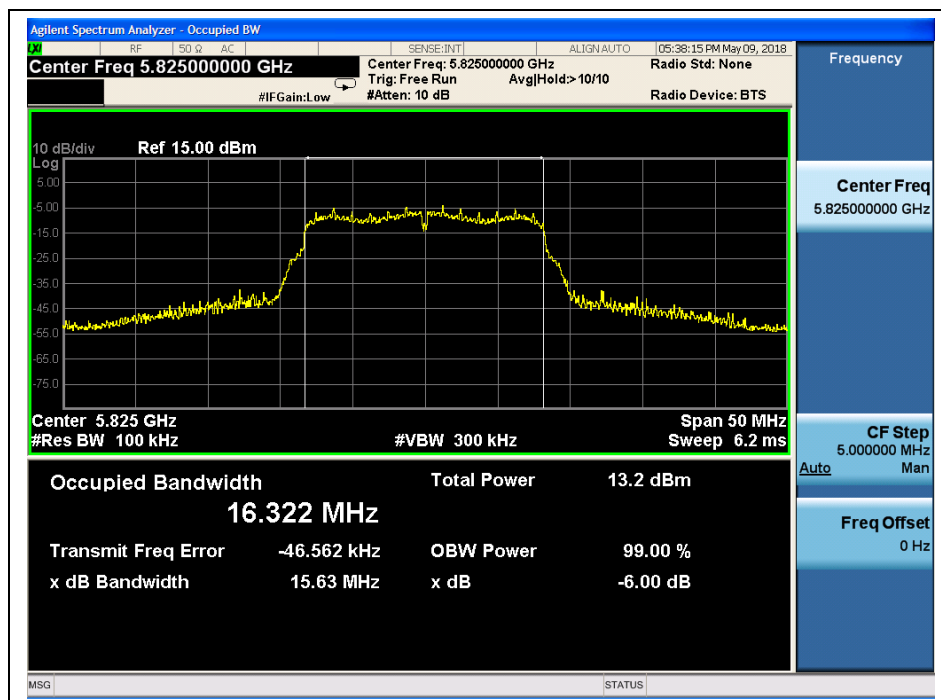
(Channel 140, 5700MHz, 802.11a, ANT0)



(Channel 149, 5745MHz, 802.11a, ANT0)



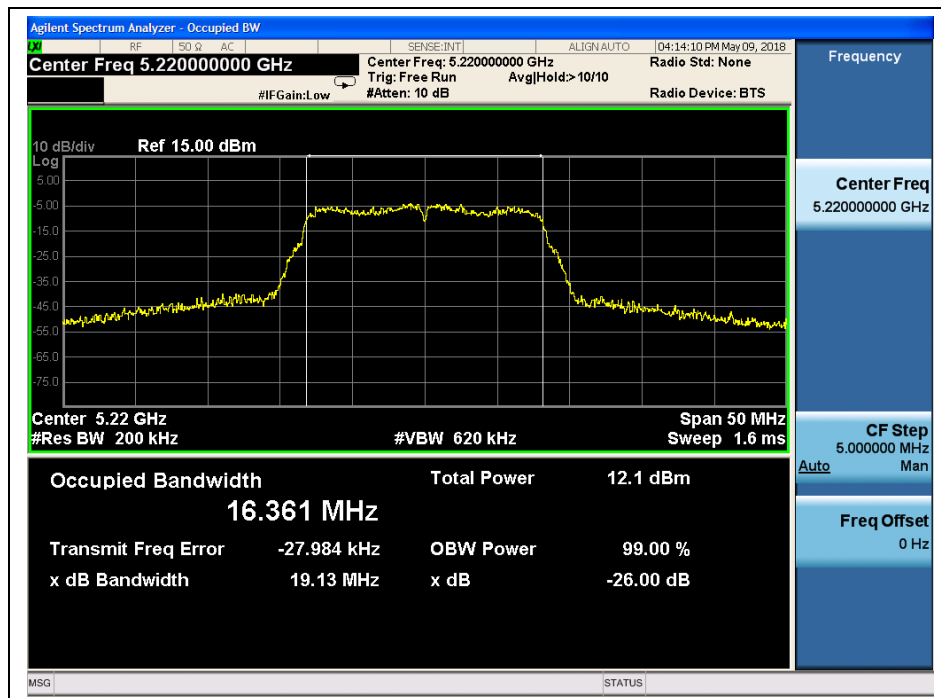
(Channel 157, 5785MHz, 802.11a, ANT0)



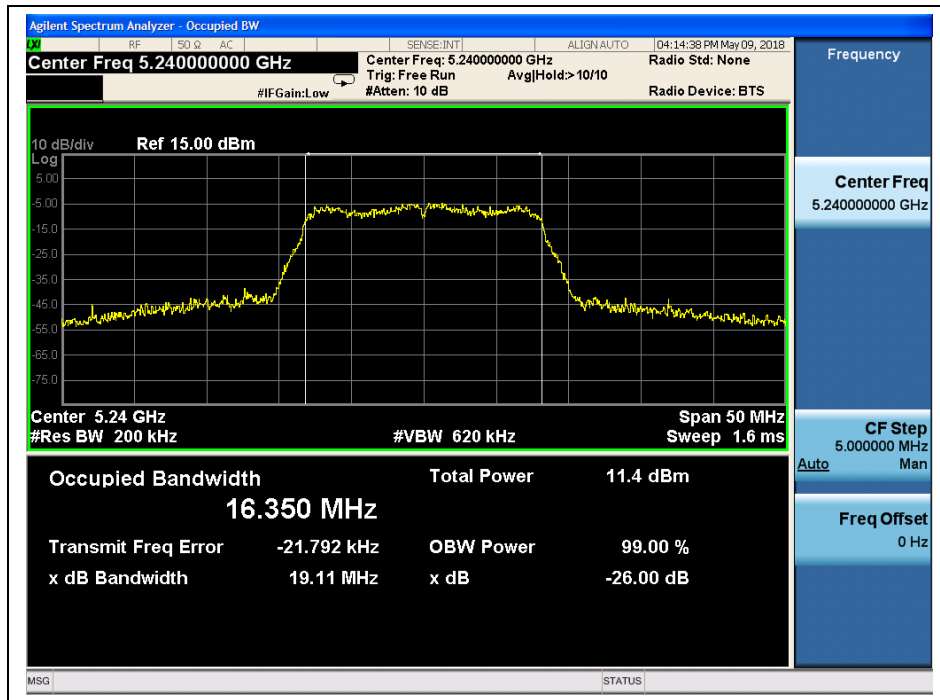
(Channel 165, 5825MHz, 802.11a, ANT0)



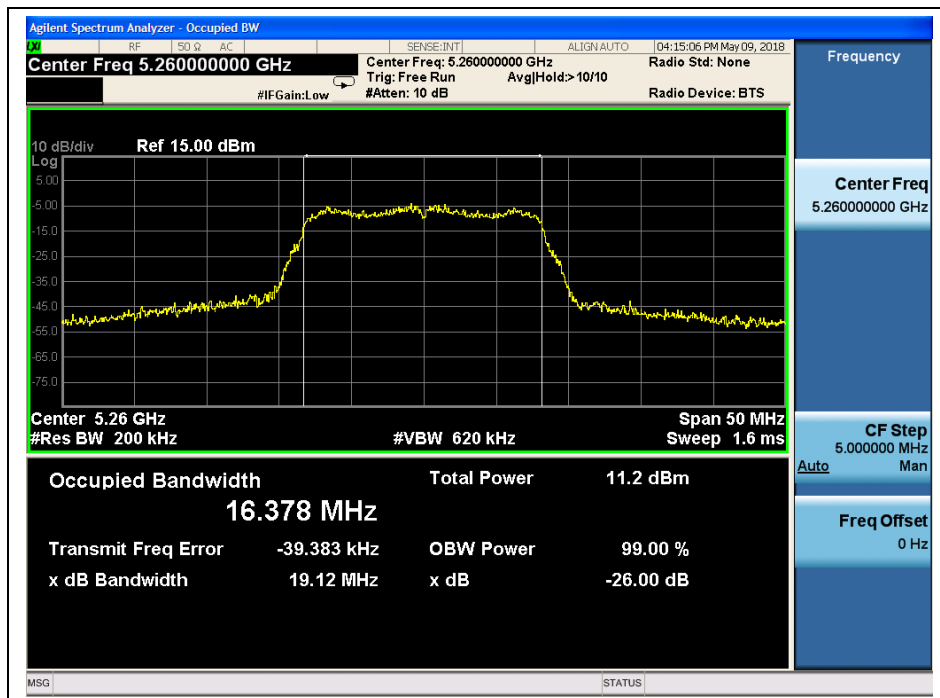
(Channel 36, 5180MHz, 802.11a, ANT1)



(Channel 44, 5220 MHz, 802.11a, ANT1)



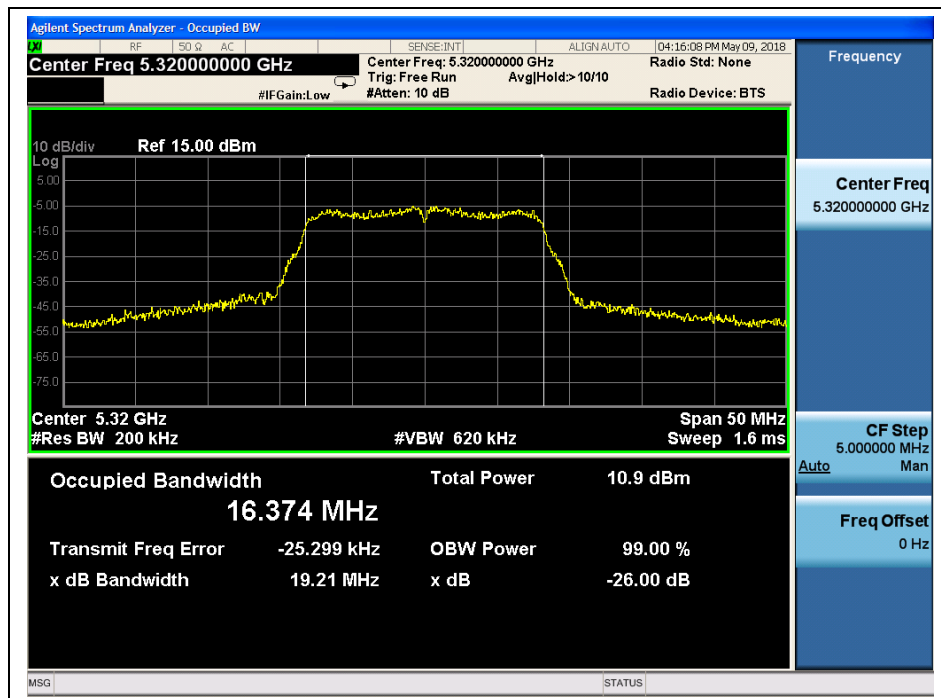
(Channel 48, 5240MHz, 802.11a, ANT1)



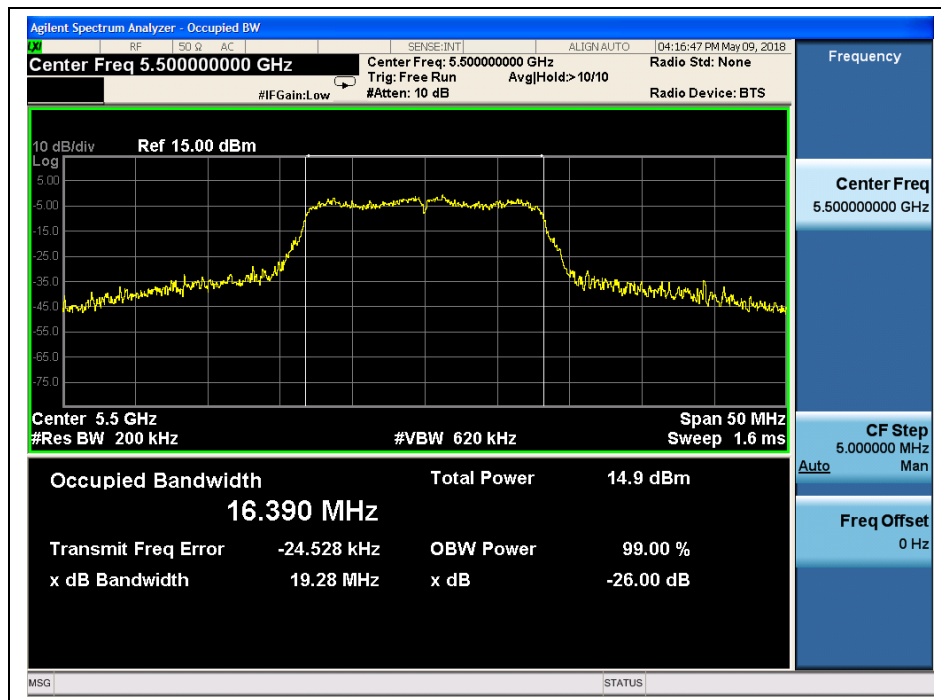
(Channel 52, 5260MHz, 802.11a, ANT1)



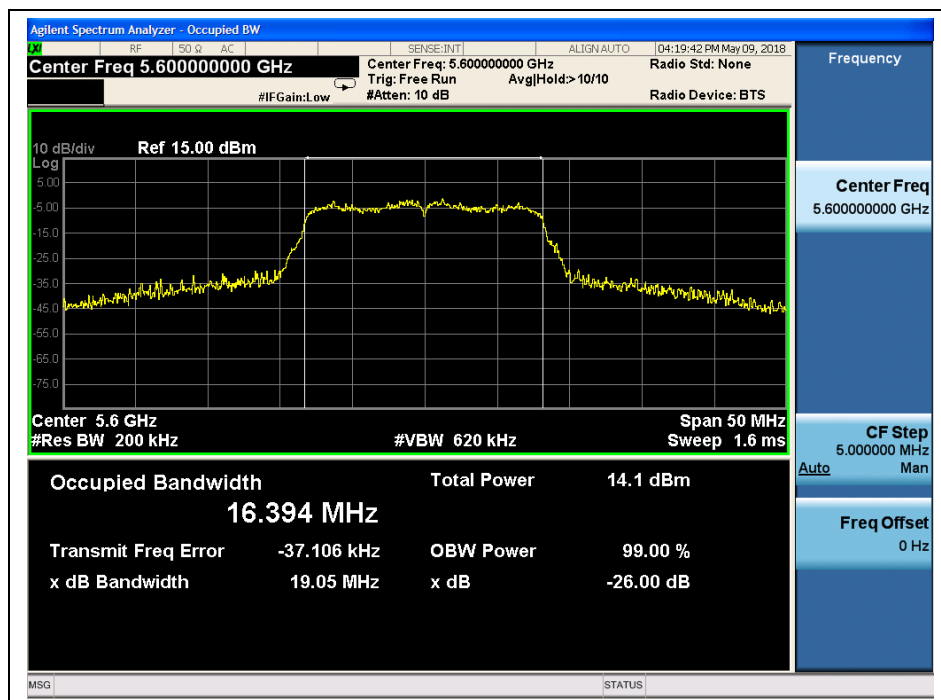
(Channel 60, 5300 MHz, 802.11a, ANT1)



(Channel 64, 5320MHz, 802.11a, ANT1)



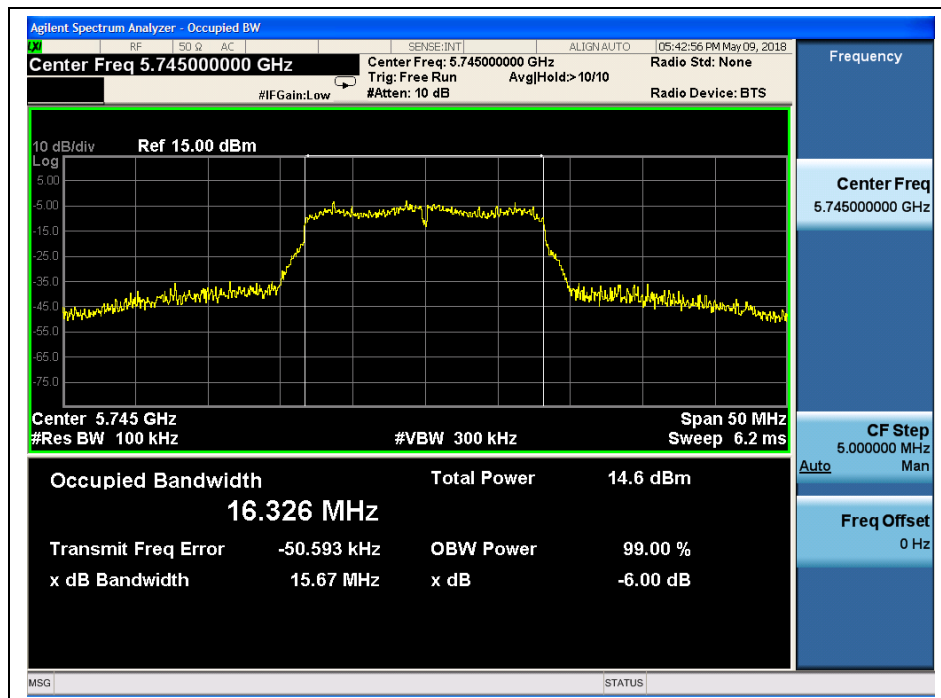
(Channel 100, 5500MHz, 802.11a, ANT1)



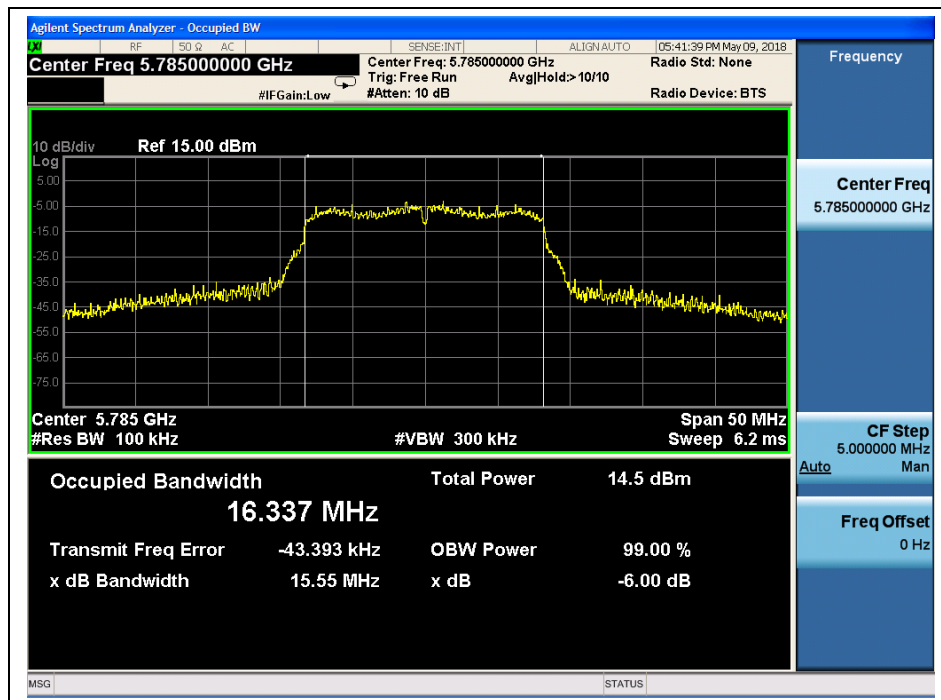
(Channel 120, 5600 MHz, 802.11a, ANT1)



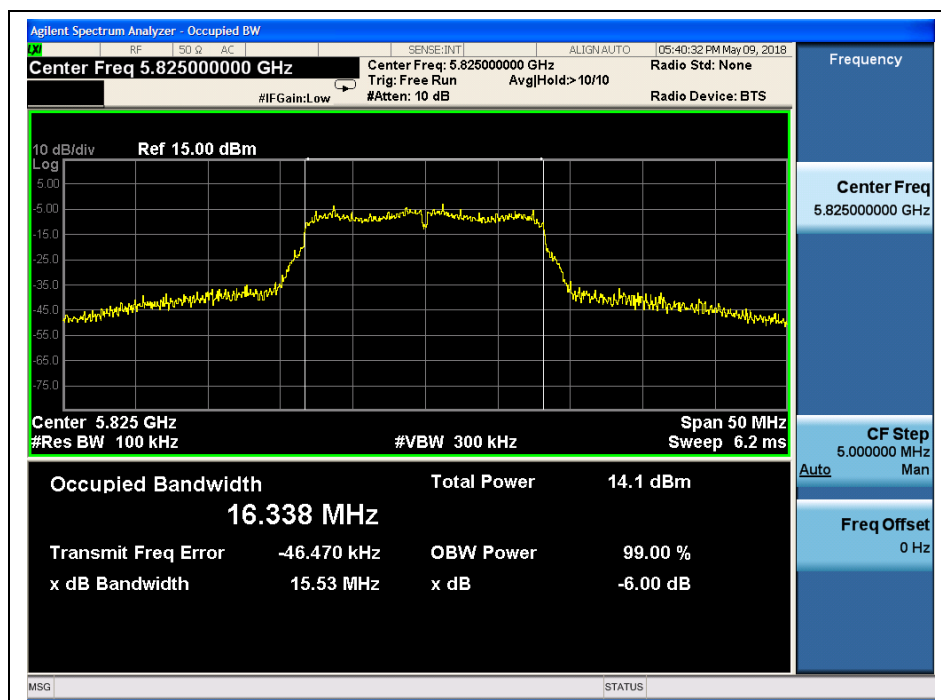
(Channel 140, 5700MHz, 802.11a, ANT1)



(Channel 149, 5745MHz, 802.11a, ANT1)



(Channel 157, 5785MHz, 802.11a, ANT1)



(Channel 165, 5825MHz, 802.11a, ANT1)



802.11n (HT20) Test mode

A. Test Verdict:

Channel	Frequency (MHz)	ANT0 26 dB Bandwidth (MHz)	ANT1 26 dB Bandwidth (MHz)
36	5180	19.35	19.24
44	5220	19.34	19.25
48	5240	19.45	19.34
52	5260	19.32	19.32
60	5300	19.35	19.16
64	5320	19.18	19.30
100	5500	19.35	19.45
120	5600	19.23	19.49
140	5700	19.46	19.38
Channel	Frequency (MHz)	ANT0 6dB Bandwidth (MHz)	ANT1 6dB Bandwidth (MHz)
149	5745	15.10	16.92
157	5785	15.17	17.51
165	5825	15.12	16.64

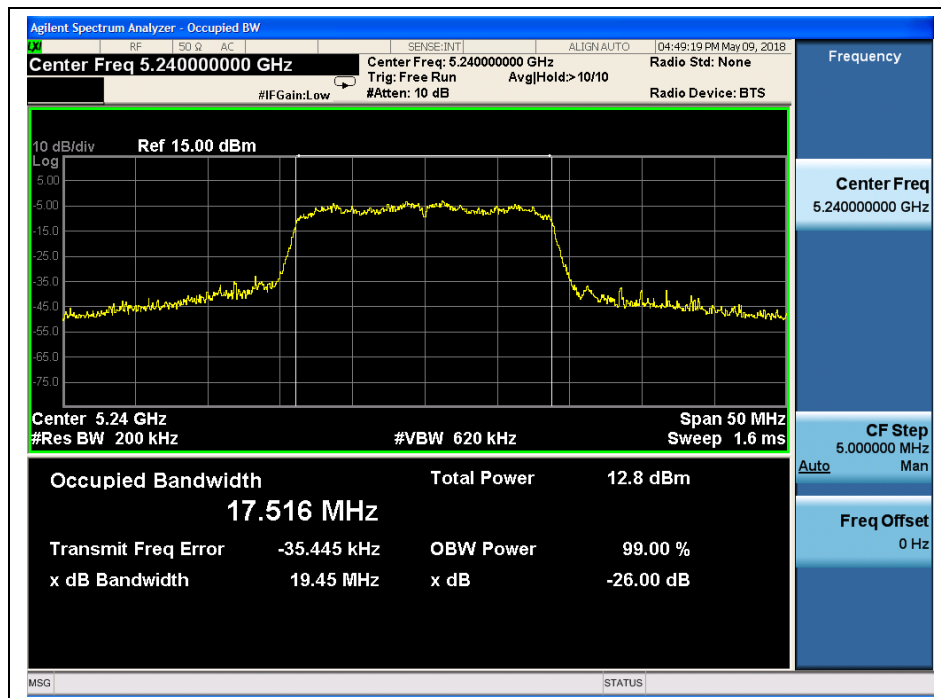
B. Test Plots



(Channel 36, 5180MHz, 802.11n (HT20), ANT0)



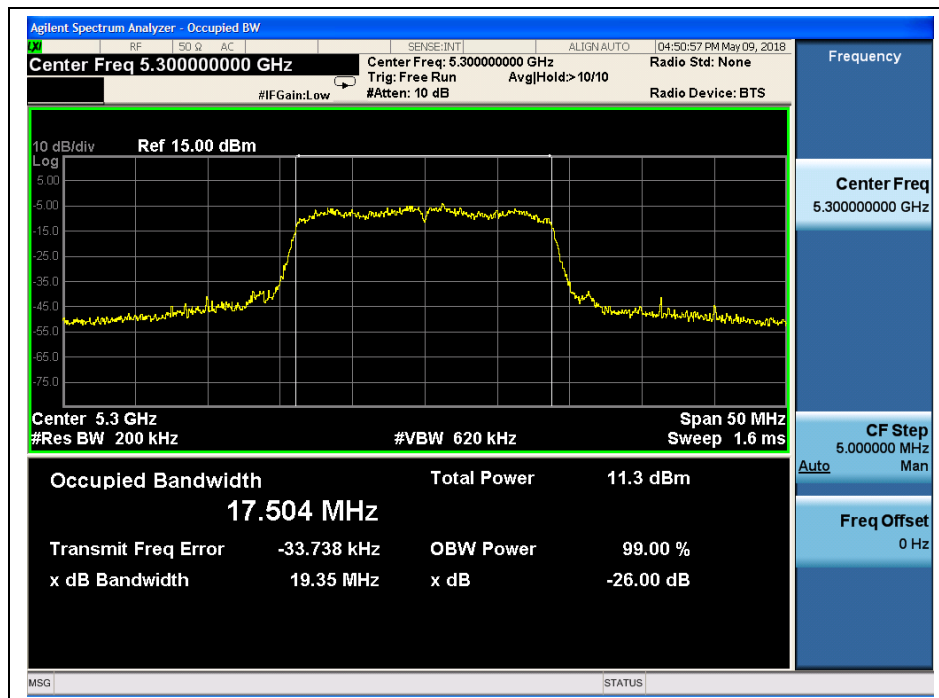
(Channel 44, 5220 MHz, 802.11n (HT20), ANT0)



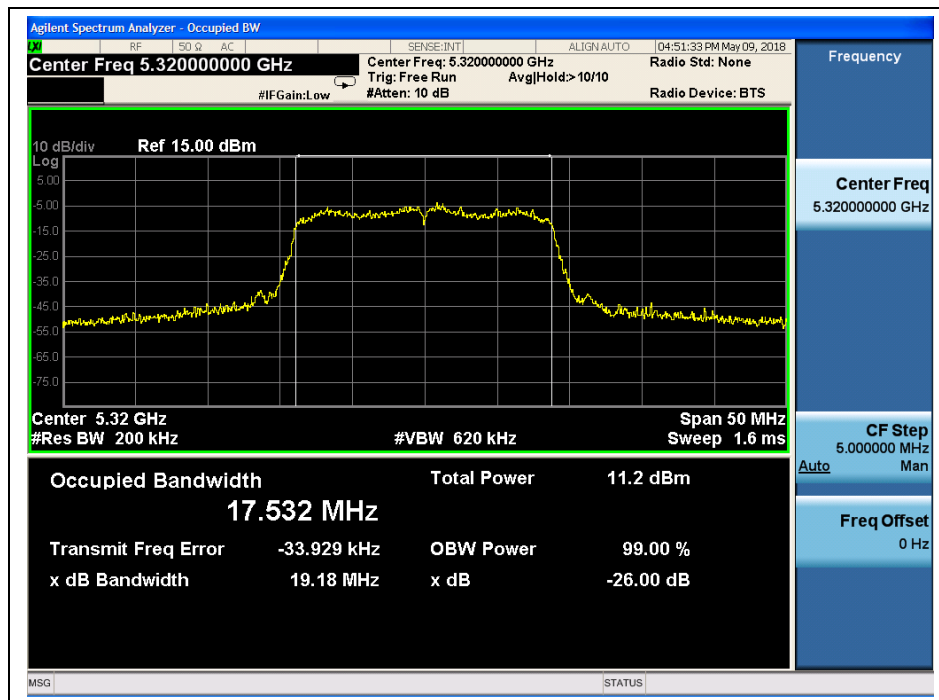
(Channel 48, 5240MHz, 802.11 n (HT20), ANT0)



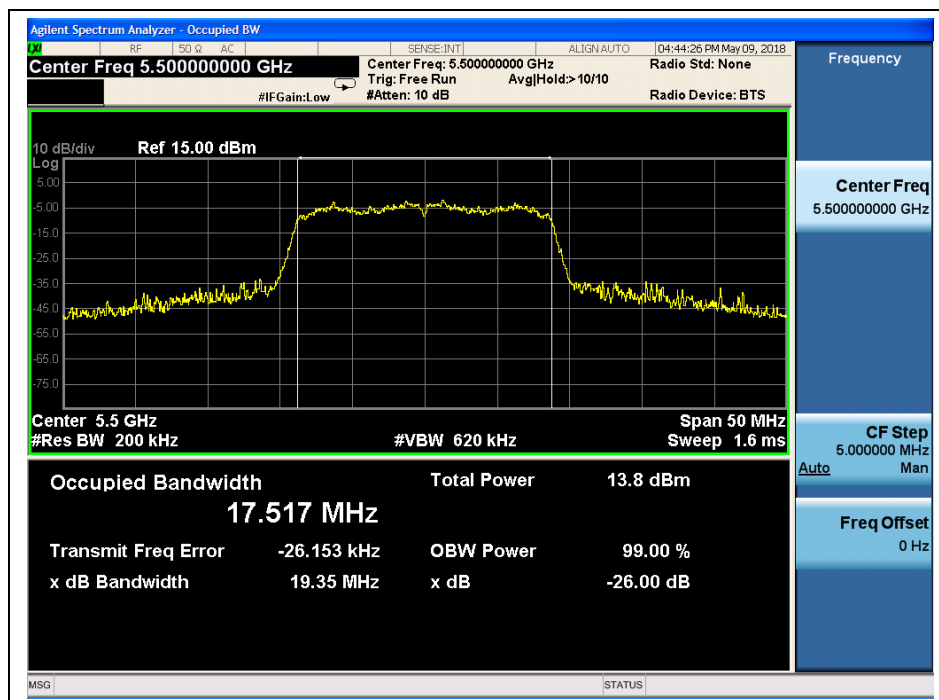
(Channel 52, 5260MHz, 802.11n (HT20), ANT0)



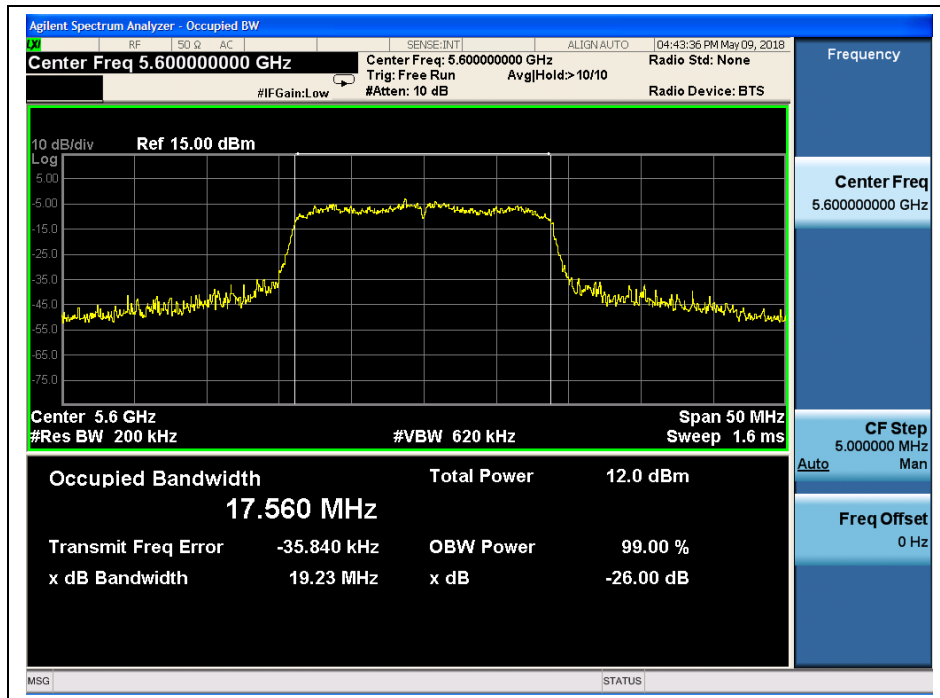
(Channel 60, 5300 MHz, 802.11n (HT20), ANT0)



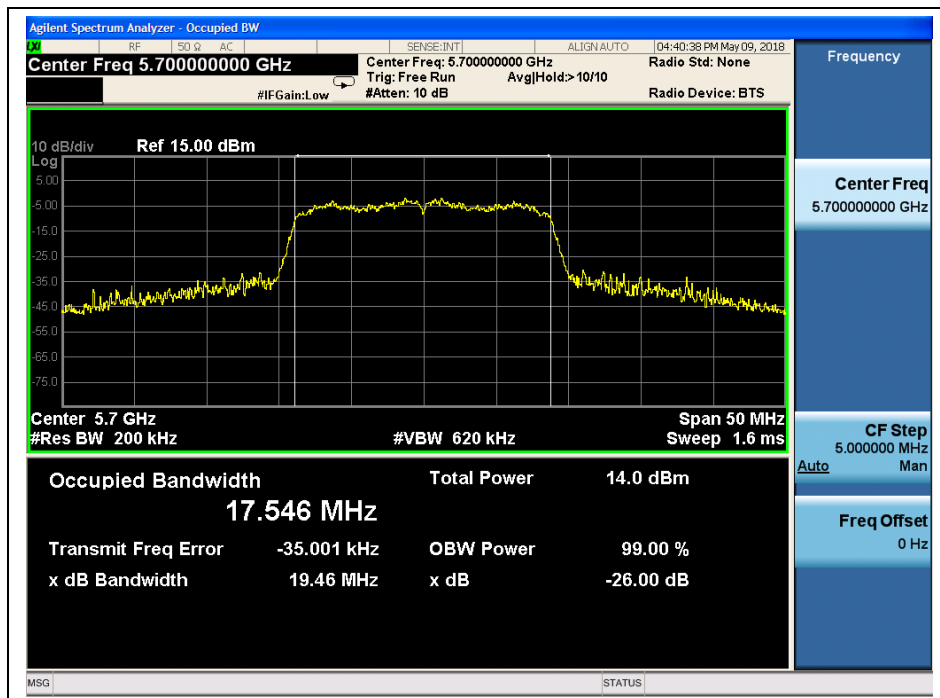
(Channel 64, 5320MHz, 802.11 n (HT20), ANT0)



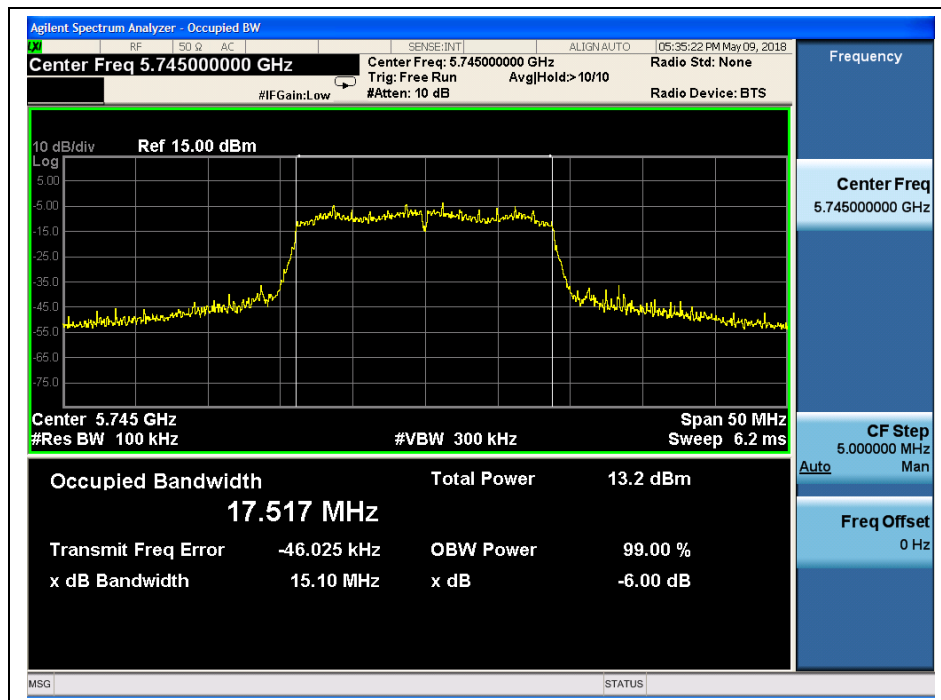
(Channel 100, 5500MHz, 802.11n (HT20), ANT0)



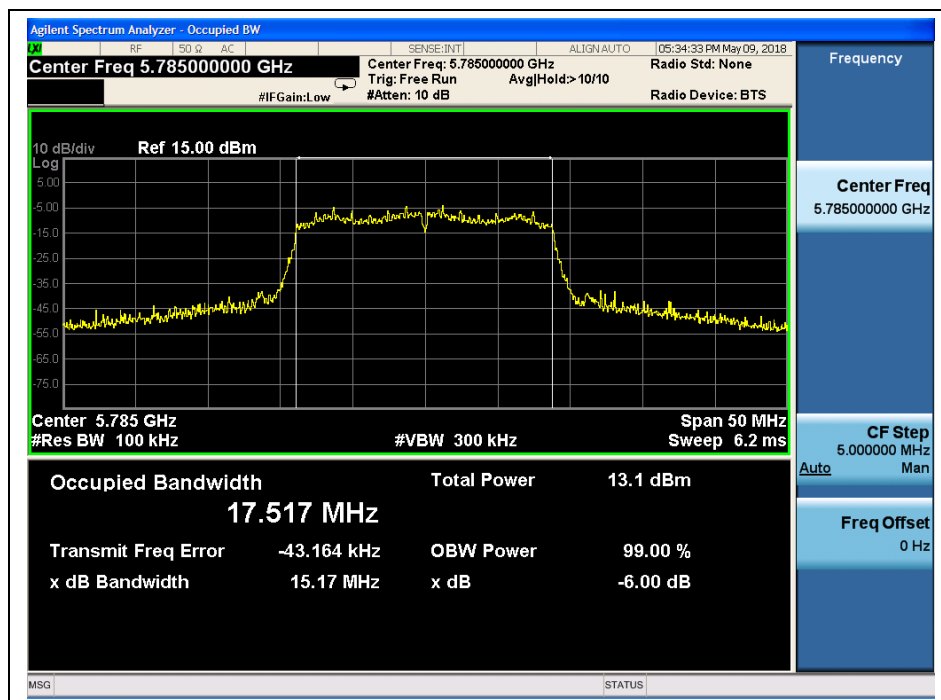
(Channel 120, 5600 MHz, 802.11n (HT20), ANT0)



(Channel 140, 5700MHz, 802.11 n (HT20), ANT0)



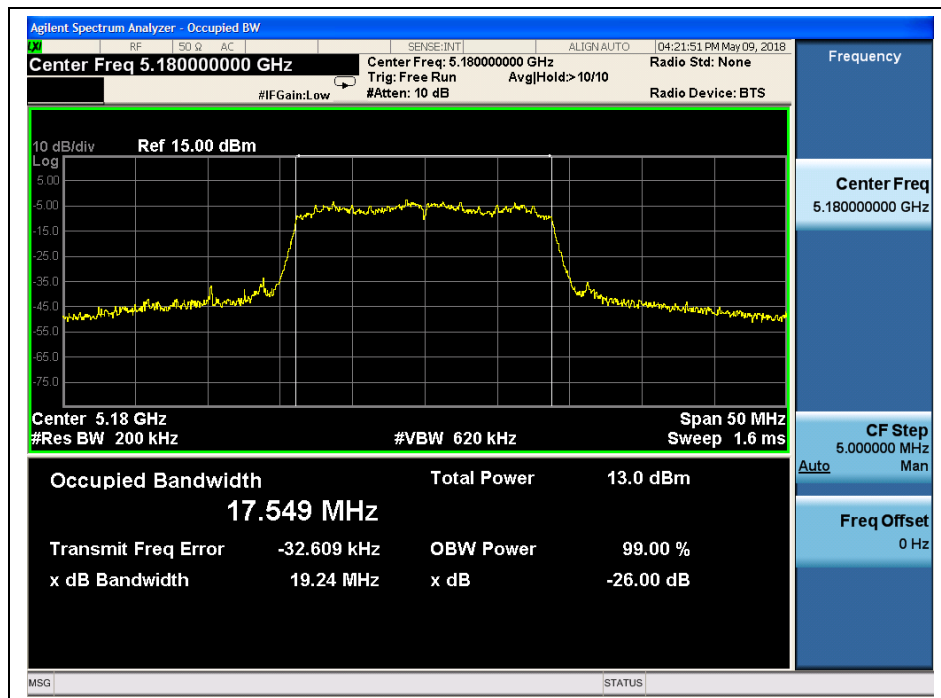
(Channel 149, 5745MHz, 802.11 n (HT20), ANT0)



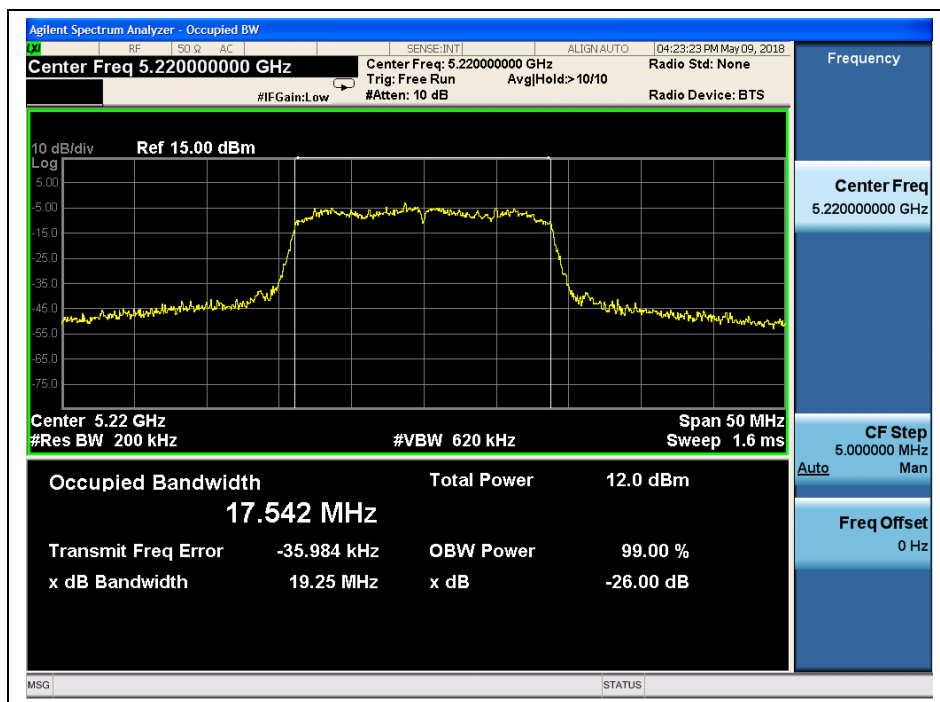
(Channel 157, 5785MHz, 802.11 n (HT20), ANT0)



(Channel 165, 5825MHz, 802.11 n (HT20), ANT0)



(Channel 36, 5180MHz, 802.11 n (HT20), ANT1)



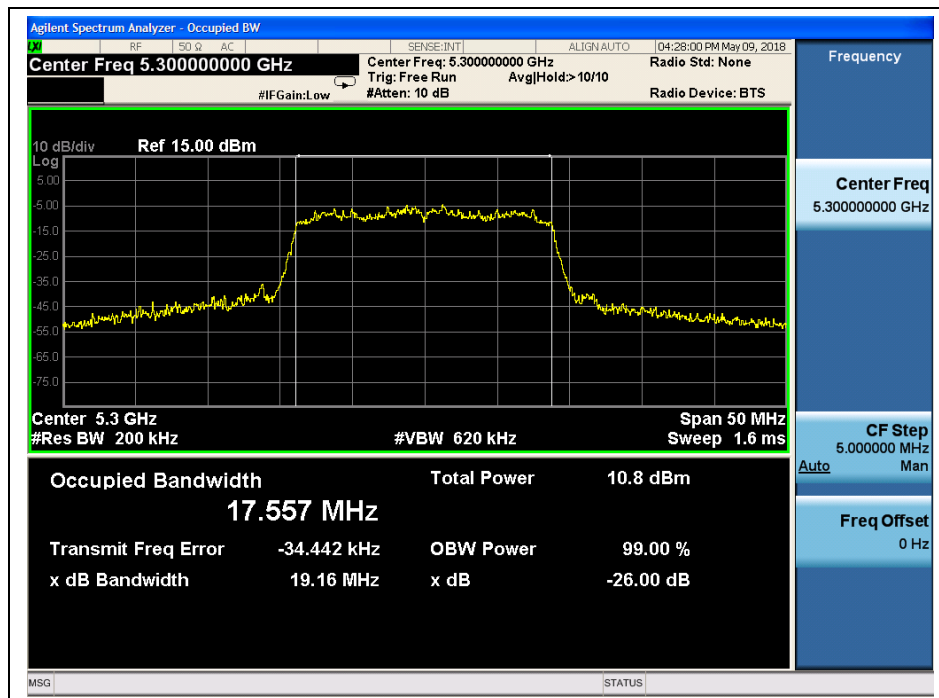
(Channel 44, 5220 MHz, 802.11 n (HT20), ANT1)



(Channel 48, 5240MHz, 802.11 n (HT20), ANT1)



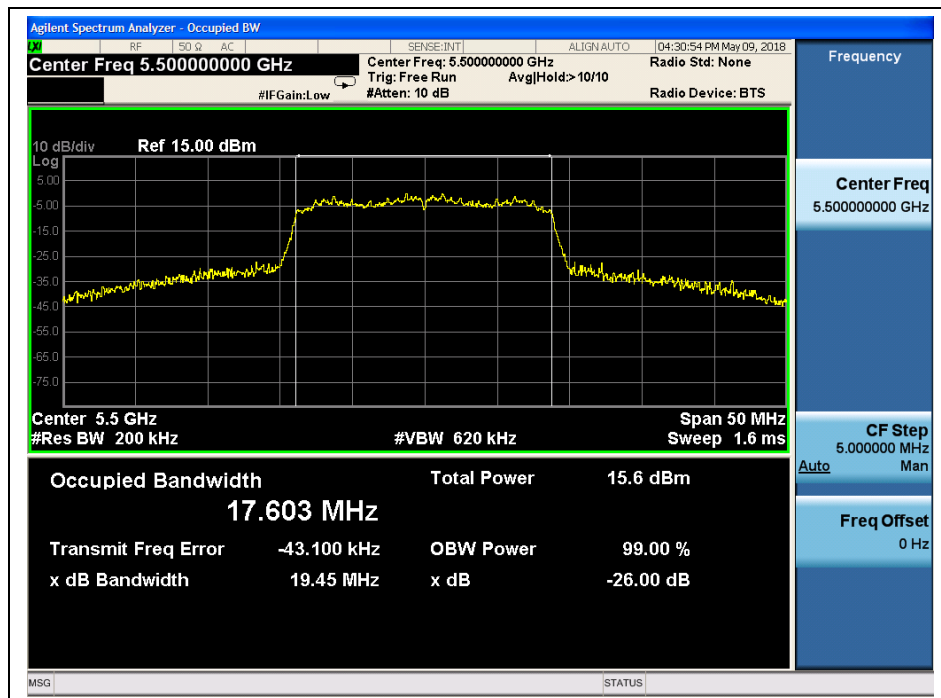
(Channel 52, 5260MHz, 802.11n (HT20), ANT1)



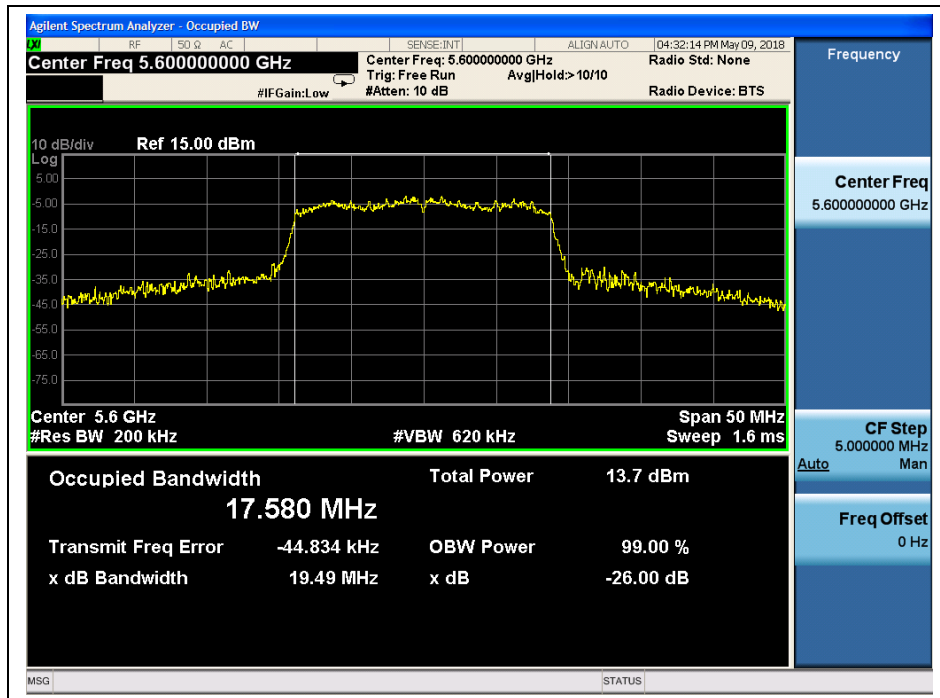
(Channel 60, 5300 MHz, 802.11n (HT20), ANT1)



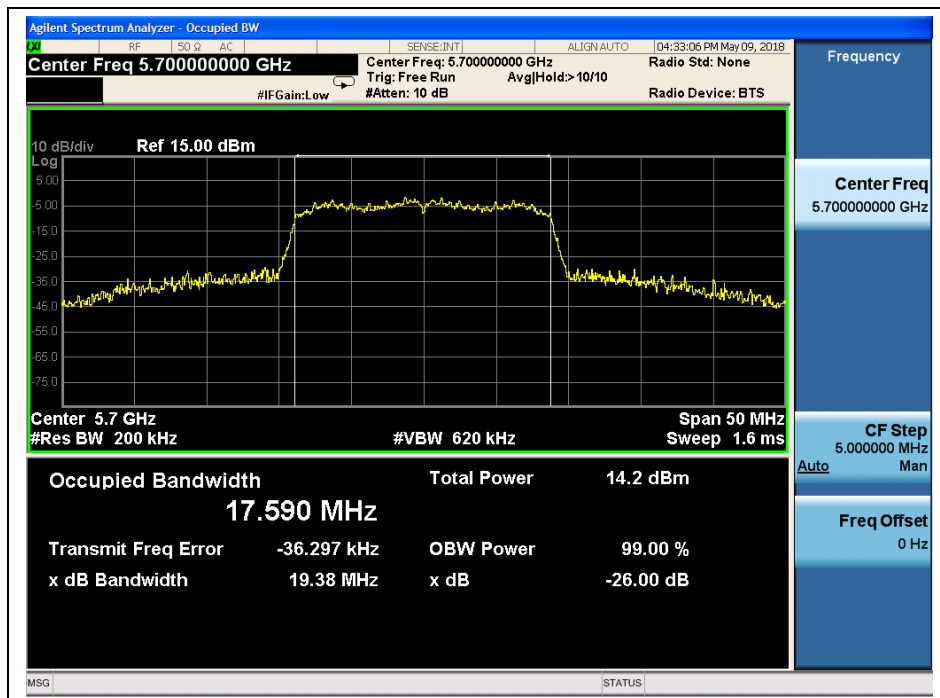
(Channel 64, 5320MHz, 802.11 n (HT20), ANT1)



(Channel 100, 5500MHz, 802.11n (HT20), ANT1)



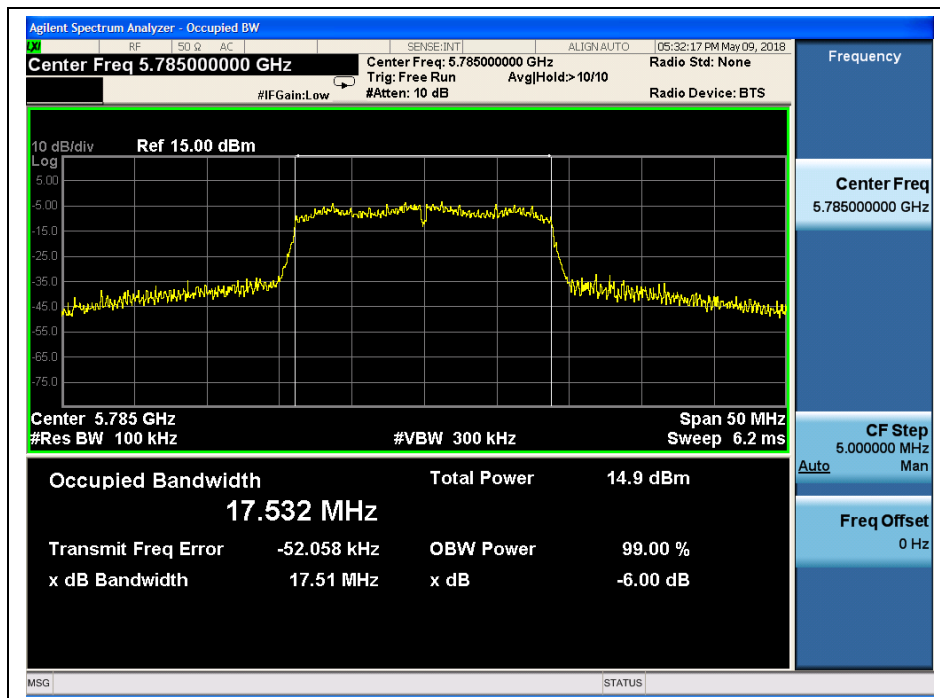
(Channel 120, 5600 MHz, 802.11n (HT20), ANT1)



(Channel 140, 5700MHz, 802.11 n (HT20), ANT1)



(Channel 149, 5745MHz, 802.11 n (HT20), ANT1)



(Channel 157, 5785MHz, 802.11 n (HT20), ANT1)



(Channel 165, 5825MHz, 802.11 n (HT20), ANT1)



802.11n (HT40) Test mode

A. Test Verdict:

Channel	Frequency (MHz)	ANT0 26 dB Bandwidth (MHz)	ANT1 26 dB Bandwidth (MHz)
38	5190	39.44	39.16
46	5230	39.27	38.73
54	5270	39.48	39.08
62	5310	39.63	39.07
102	5510	39.35	45.42
126	5630	39.20	38.94
134	5670	39.52	39.03
Channel	Frequency (MHz)	ANT0 6dB Bandwidth (MHz)	ANT1 6dB Bandwidth (MHz)
151	5755	36.31	36.31
159	5795	36.35	36.32

B. Test Plots



(Channel 38, 5190MHz, 802.11n (HT40), ANT0)



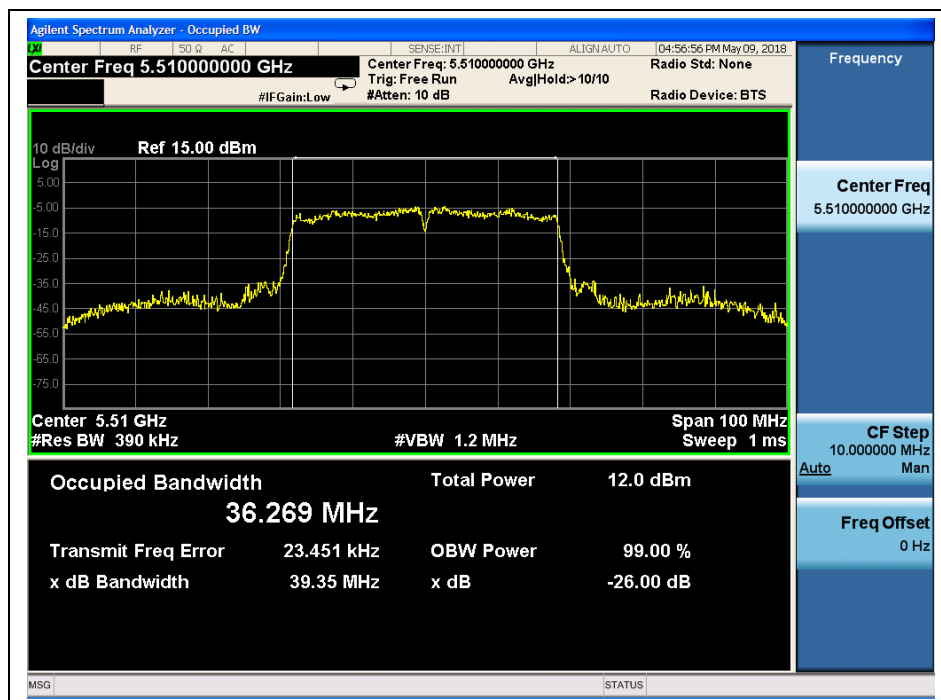
(Channel 46, 5230 MHz, 802.11n (HT40), ANT0)



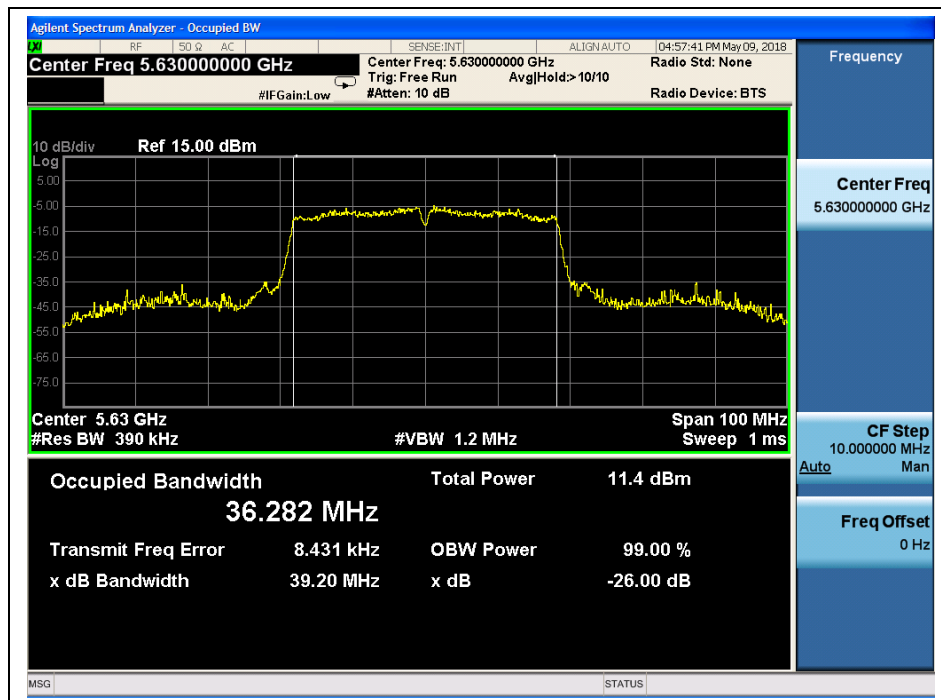
(Channel 54, 5270MHz, 802.11n (HT40), ANT0)



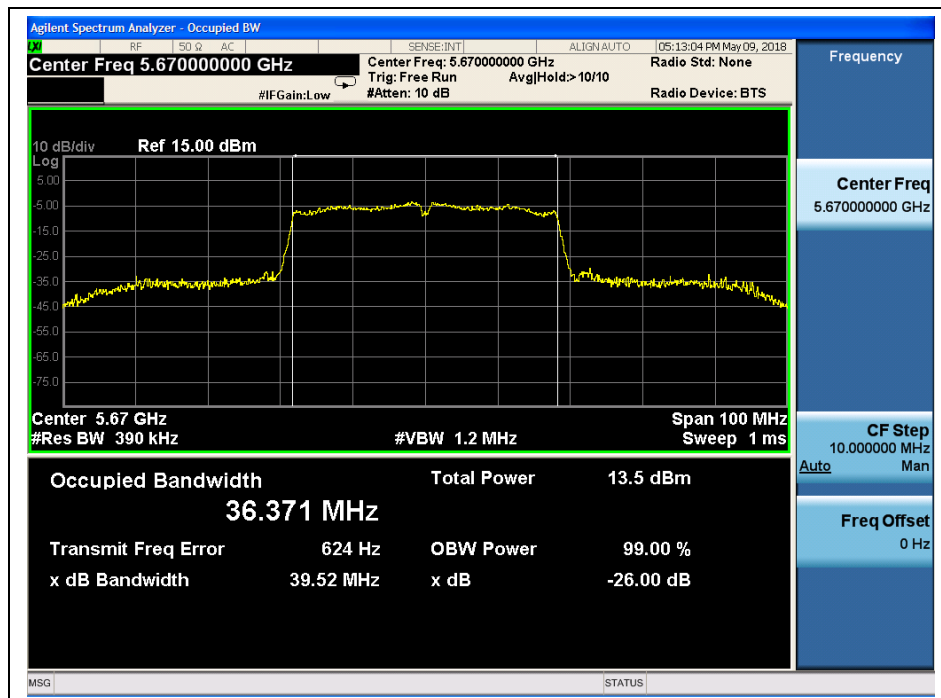
(Channel 62, 5310 MHz, 802.11n (HT40), ANT0)



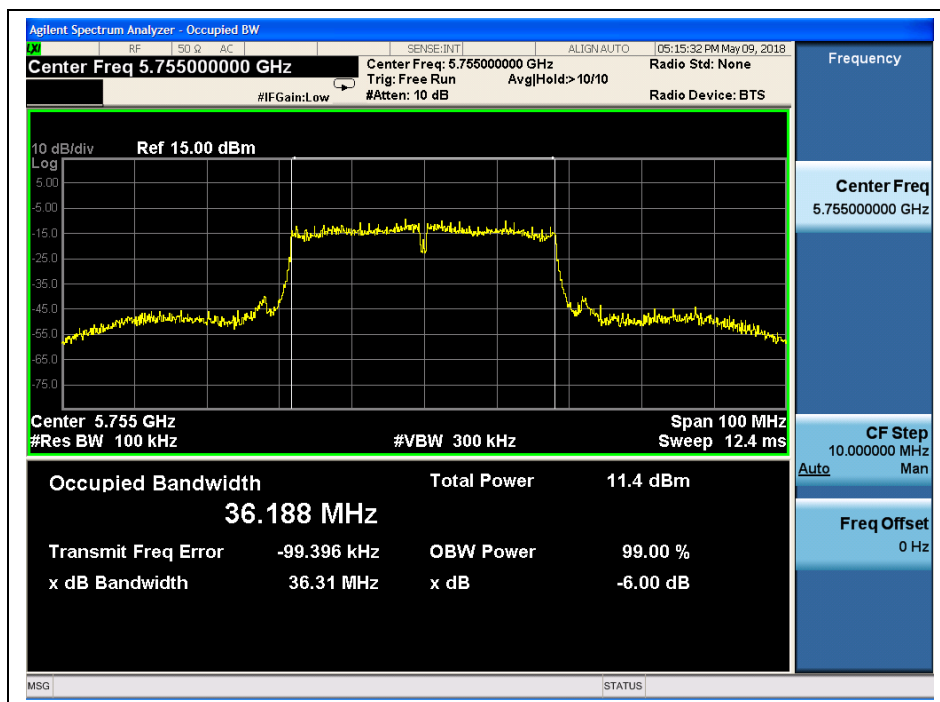
(Channel 102, 5510 MHz, 802.11n (HT40), ANT0)



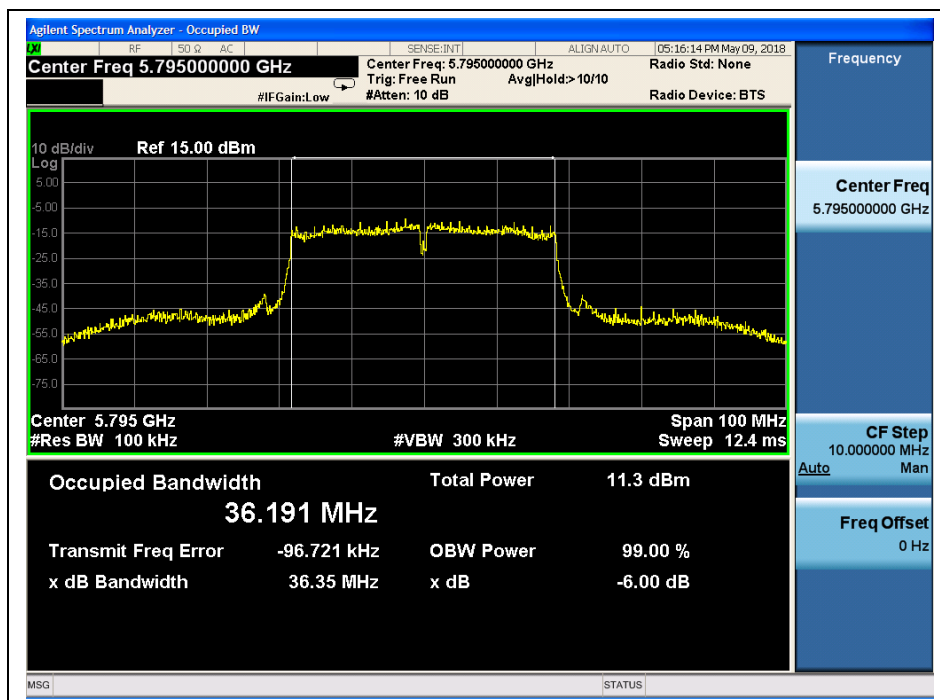
(Channel 126, 5630MHz, 802.11n (HT40), ANT0)



(Channel 134, 5670MHz, 802.11n (HT40), ANT0)



(Channel 151, 5755 MHz, 802.11n (HT40), ANT0)



(Channel 159, 5795MHz, 802.11n (HT40), ANT0)



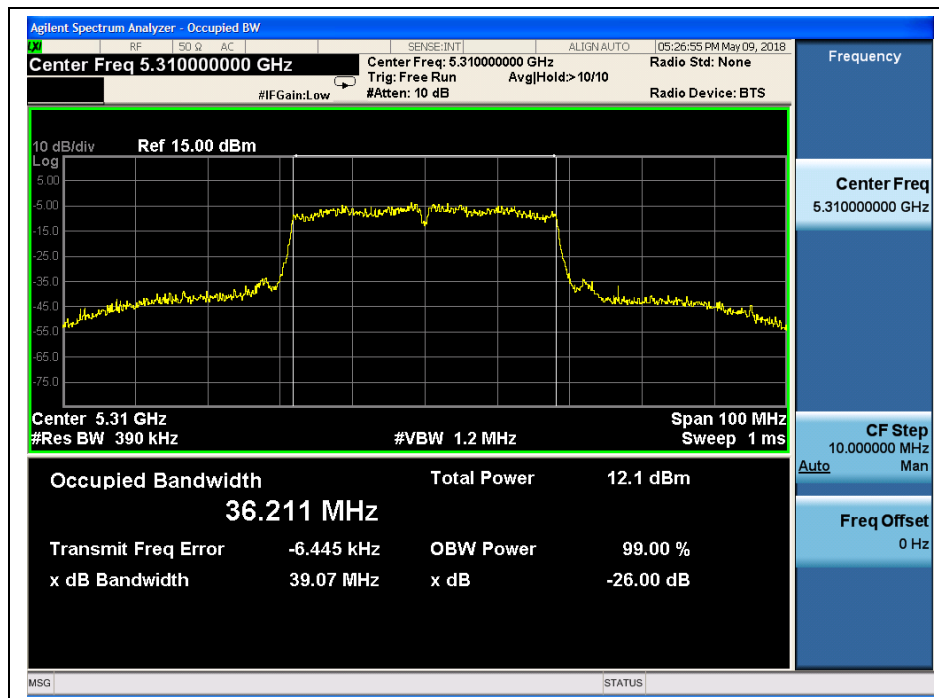
(Channel 38, 5190MHz, 802.11n (HT40), ANT1)



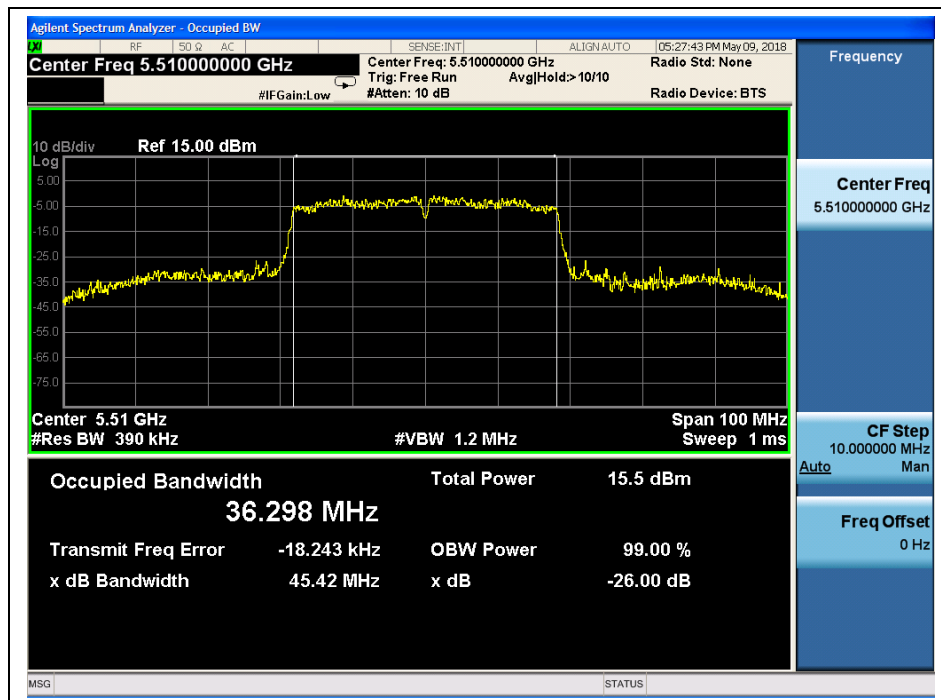
(Channel 46, 5230 MHz, 802.11n (HT40), ANT1)



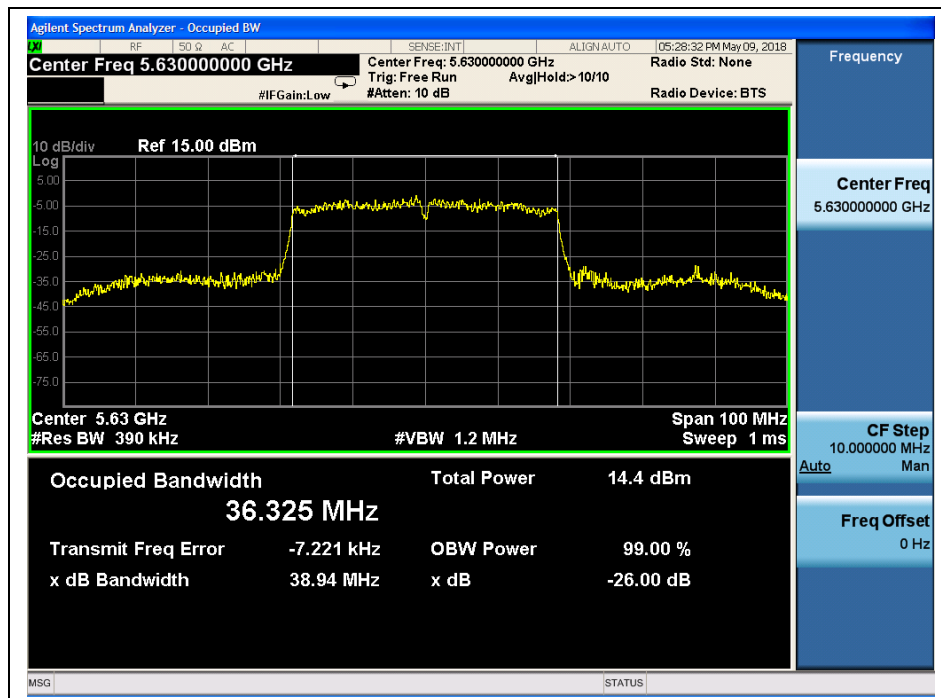
(Channel 54, 5270MHz, 802.11n (HT40), ANT1)



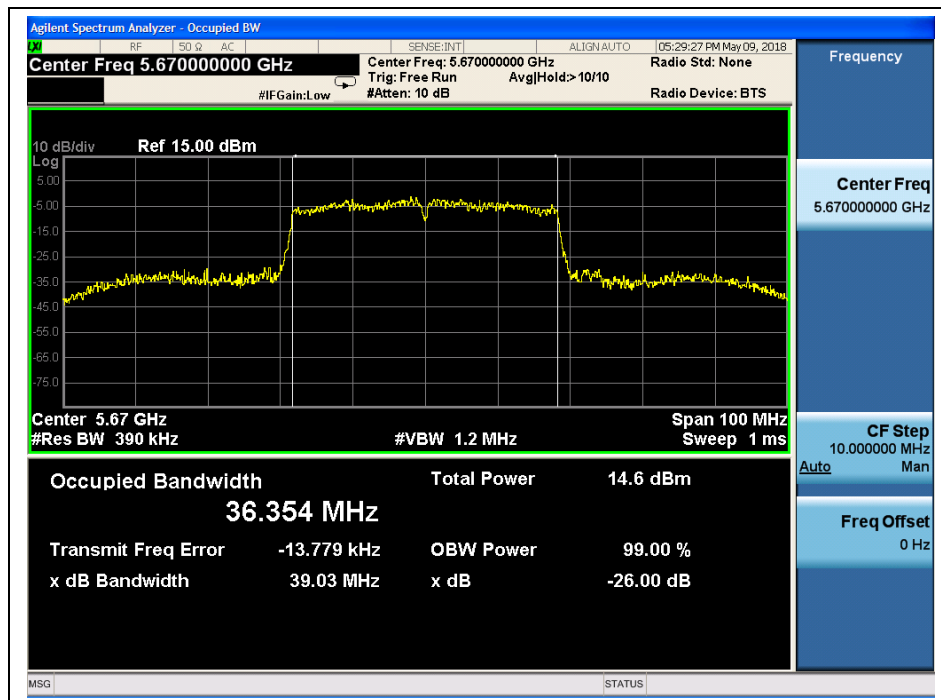
(Channel 62, 5310 MHz, 802.11n (HT40), ANT1)



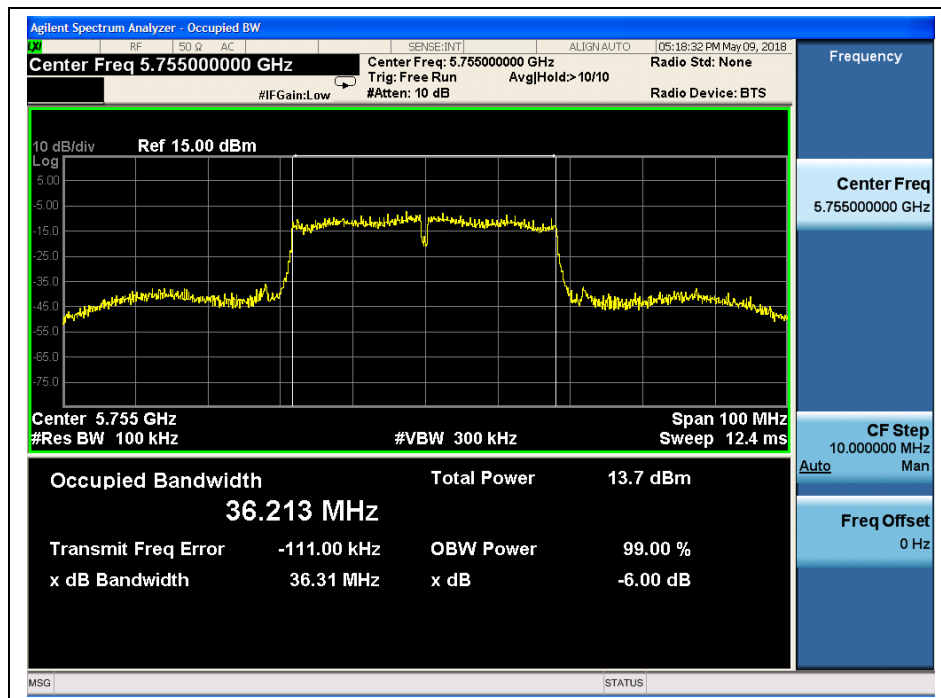
(Channel 102, 5510 MHz, 802.11n (HT40), ANT1)



(Channel 126, 5630MHz, 802.11n (HT40), ANT1)



(Channel 134, 5670MHz, 802.11n (HT40), ANT1)



(Channel 151, 5755 MHz, 802.11n (HT40), ANT1)



(Channel 159, 5795MHz, 802.11n (HT40), ANT1)

2.3. Maximum conducted output power

2.3.1. Requirement

(1) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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

(4) According to KDB662911D01 Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.

(5) According to KDB 662911 D01, the directional gain = $G_{\text{ANT}} + 10 \log(N_{\text{ANT}})$ dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

2.3.2. Test Description

Section E) 3) of KDB 789033 defines a methodology using a USB Wideband Power Sensor.

A. Test Setup:



The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading, all test result in USB Wideband Power Sensor.

**2.3.3. Test Result****802.11a Test mode**

Channel	Frequency (MHz)	ANT0 Measured Peak Power (dBm)	ANT1 Measured Peak Power (dBm)	Limit (dBm)	Verdict
36	5180	16.77	17.89	24	PASS
44	5220	15.91	18.08		
48	5240	15.80	17.87		
52	5260	19.73	19.06		
60	5300	19.34	19.07		
64	5320	18.87	18.68		
100	5500	19.24	19.70		
120	5600	17.79	18.97		
140	5700	18.80	18.7		
149	5745	19.35	19.63	30	
157	5785	19.30	19.54		
165	5825	18.22	19.40		

Channel	Frequency (MHz)	ANT0 Measured Average Power (dBm)	ANT1 Measured Average Power (dBm)	Limit (dBm)	Verdict
36	5180	5.70	6.48	24	PASS
44	5220	4.89	6.72		
48	5240	4.23	6.73		
52	5260	8.22	8.03		
60	5300	7.90	7.85		
64	5320	7.53	7.71		
100	5500	8.65	10.84		
120	5600	7.80	9.73		
140	5700	8.44	9.99		
149	5745	8.65	10.39	30	
157	5785	8.59	10.52		
165	5825	8.05	10.02		

**802.11n (HT20) Test mode**

Channel	Frequency (MHz)	ANT0 Measured Peak Power (dBm)	ANT1 Measured Peak Power (dBm)	Limit (dBm)	Verdict
36	5180	15.88	18.28	24	PASS
44	5220	15.33	17.11		
48	5240	15.38	17.48		
52	5260	17.57	18.35		
60	5300	18.32	17.59		
64	5320	18.27	17.10		
100	5500	18.21	19.00		
120	5600	18.17	17.92		
140	5700	18.61	17.64		
149	5745	19.59	18.41	30	
157	5785	17.65	18.95		
165	5825	18.00	18.06		

Channel	Frequency (MHz)	ANT0 Measured Average Power (dBm)	ANT1 Measured Average Power (dBm)	Limit (dBm)	Verdict
36	5180	5.48	6.61	24	PASS
44	5220	4.80	6.22		
48	5240	4.51	6.76		
52	5260	6.56	7.97		
60	5300	7.05	7.16		
64	5320	6.76	6.87		
100	5500	8.32	9.79		
120	5600	7.62	8.88		
140	5700	8.66	9.11		
149	5745	8.73	9.22	30	
157	5785	7.79	9.62		
165	5825	7.81	8.66		

**Total Peak Power (ANT0+ANT1)**

Channel	Frequency (MHz)	Total Peak Power (dBm))	Total Peak Power (W)	Limit _{Note} (dBm)	Verdict
36	5180	20.25	0.1059	24	PASS
44	5220	19.32	0.0855		
48	5240	19.57	0.0906		
52	5260	20.99	0.1256		
60	5300	20.98	0.1253		
64	5320	20.73	0.1183		
100	5500	21.63	0.1455		
120	5600	21.06	0.1276		
140	5700	21.16	0.1306		
149	5745	22.05	0.1603	30	
157	5785	21.36	0.1368		
165	5825	21.04	0.1271		
Note: Directional gain = 1.5dBi + 10log(2) = 4.51dBi<6dBi, so the power limit shall be 24dBm for 5.18-5.24 GHz band, 5.26-5.32 GHz band, 5.50-5.70 GHz band and 30dBm for 5.745-5.825 GHz band.					

**802.11n (HT40) Test mode**

Channel	Frequency (MHz)	ANT0 Measured Peak Power (dBm)	ANT1 Measured Peak Power (dBm)	Limit (dBm)	Verdict
38	5190	13.22	15.19	24	PASS
46	5230	12.18	15.02		
54	5270	17.64	17.6		
62	5310	17.84	17.27		
102	5510	17.38	18.93		
126	5630	17.23	17.61		
134	5670	17.04	17.89		
151	5755	18.06	18.78	30	
159	5795	18.24	18.37		

Channel	Frequency (MHz)	ANT0 Measured Average Power (dBm)	ANT1 Measured Average Power (dBm)	Limit (dBm)	Verdict
38	5190	3.08	4.85	24	PASS
46	5230	2.94	5.39		
54	5270	5.77	6.45		
62	5310	5.45	6.37		
102	5510	7.01	8.79		
126	5630	6.22	8.05		
134	5670	6.67	8.1		
151	5755	7.30	8.78	30	
159	5795	7.25	8.43		

**Total Peak Power (ANT0+ANT1)**

Channel	Frequency (MHz)	Total Peak Power (dBm)	Total Peak Power (W)	Limit _{Note} (dBm)	Verdict
38	5190	17.33	0.0541	24	PASS
46	5230	16.84	0.0483		
54	5270	20.63	0.1156		
62	5310	20.57	0.1140		
102	5510	21.23	0.1327		
126	5630	20.43	0.1104		
142	5710	20.50	0.1122		
151	5755	21.45	0.1396	30	
159	5795	21.32	0.1355		
Note: Directional gain = 1.5dBi + 10log(2) = 4.51dBi<6dBi, so the power limit shall be 24dBm for 5.18-5.24 GHz band, 5.26-5.32 GHz band, 5.50-5.70 GHz band and 30dBm for 5.745-5.825 GHz band.					

2.4. Peak Power spectral density

2.4.1. Requirement

- (1) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.
- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.
- (3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band.

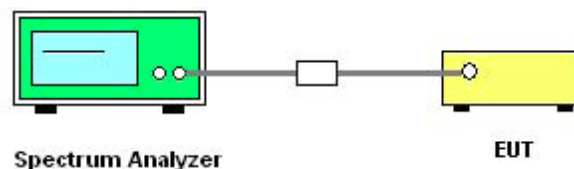
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(4) According to KDB662911D01Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.

(5) According to KDB 662911 D01, the directional gain = $G_{ANT} + 10\log(N_{ANT})$ dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

2.4.2. Test Description

A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

B. Test Procedure

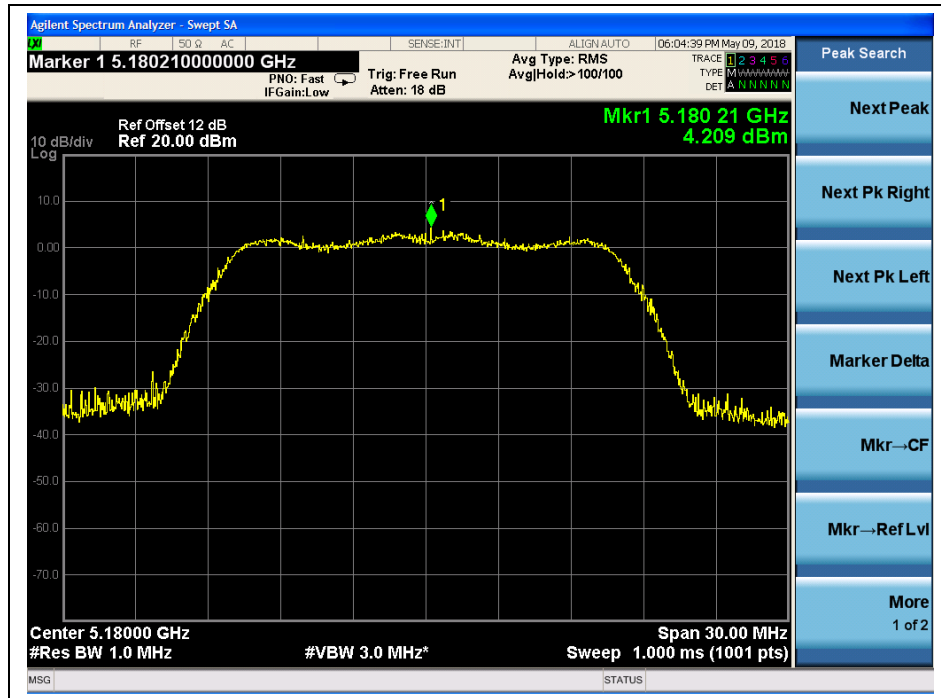
KDB 789033 Section F) Maximum Power Spectral Density (PSD) Method SA-1 was used in order to prove compliance

- 1) Set span to encompass the entire 26-dB emission bandwidth
- 2) Set RBW = 1 MHz. Set VBW $\geq$ 3 MHz.
- 3) Number of points in sweep $\geq$ 2 Span / RBW. Sweep time = auto.
- 4) Detector = RMS (i.e., power averaging)
- 5) Trace average at least 100 traces in power averaging (i.e., RMS) mode
- 6) Record the max value

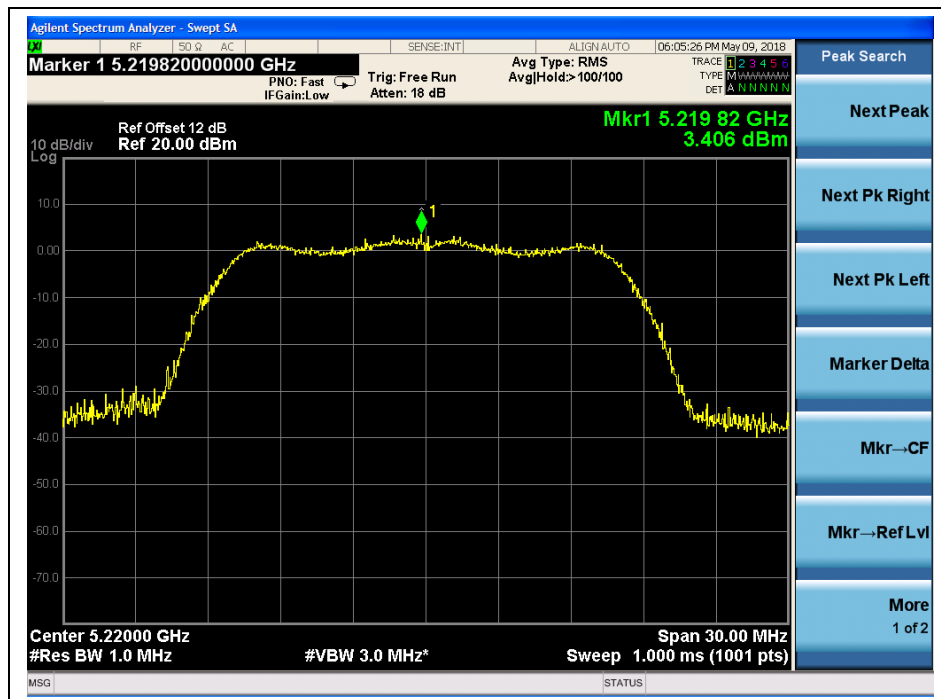
**2.4.3. Test Result****802.11a Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	ANT0 Measured PPSD (dBm/MHz)	ANT1 Measured PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
36	5180	4.21	4.07	11	PASS
44	5220	3.41	3.09		
48	5240	3.40	3.07		
52	5260	2.20	1.46		
60	5300	2.13	2.18		
64	5320	2.18	1.44		
100	5500	3.53	6.51		
120	5600	3.92	4.78		
140	5700	3.34	4.62		
Channel	Frequency (MHz)	ANT0 Measured PPSD (dBm/500KHz)	ANT1 Measured PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
149	5745	1.95	3.52	30	PASS
157	5785	1.25	3.17		
165	5825	1.20	3.13		

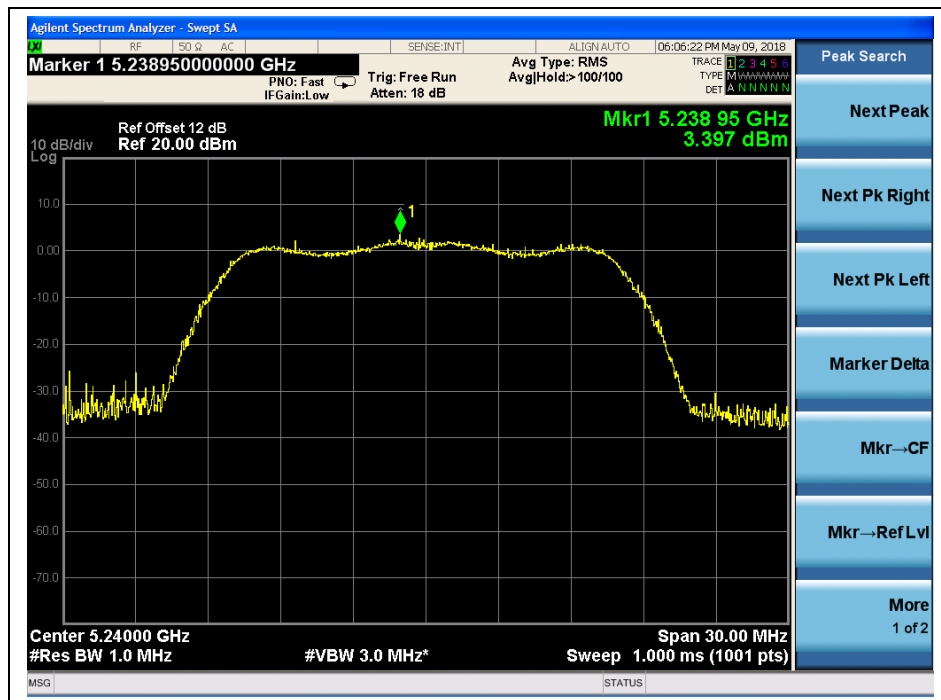
B. Test Plots



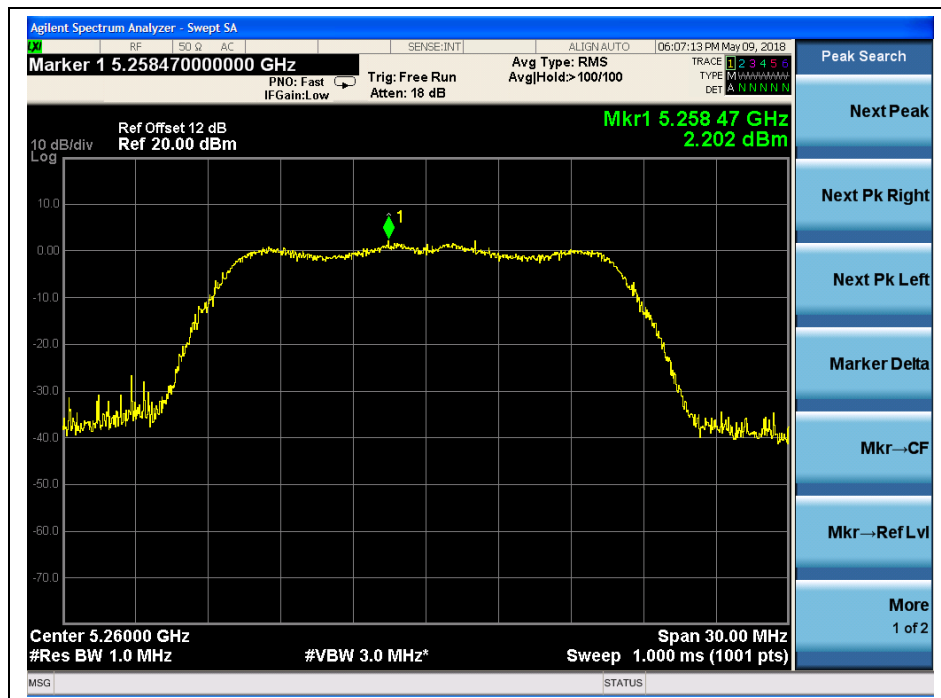
(Channel 36, 5180MHz, 802.11a, ANT0)



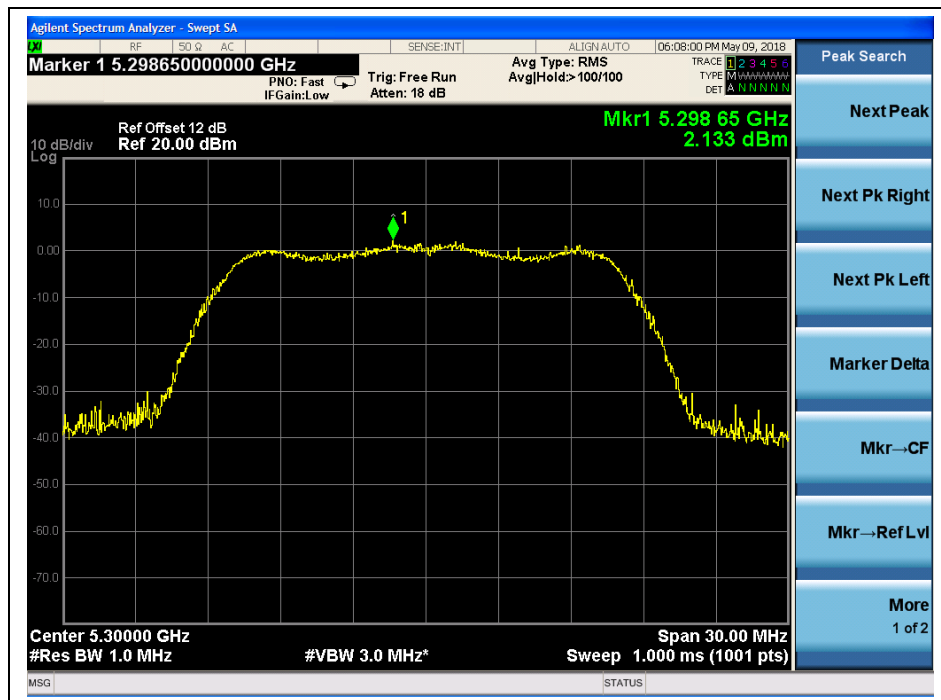
(Channel 44, 5220 MHz, 802.11a, ANT0)



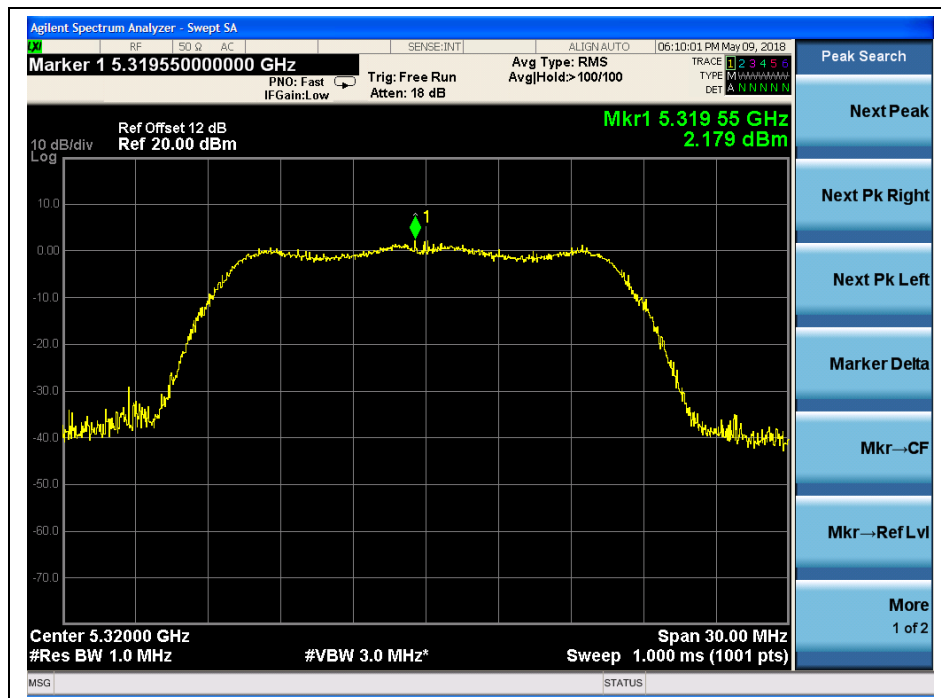
(Channel 48, 5240MHz, 802.11a, ANT0)



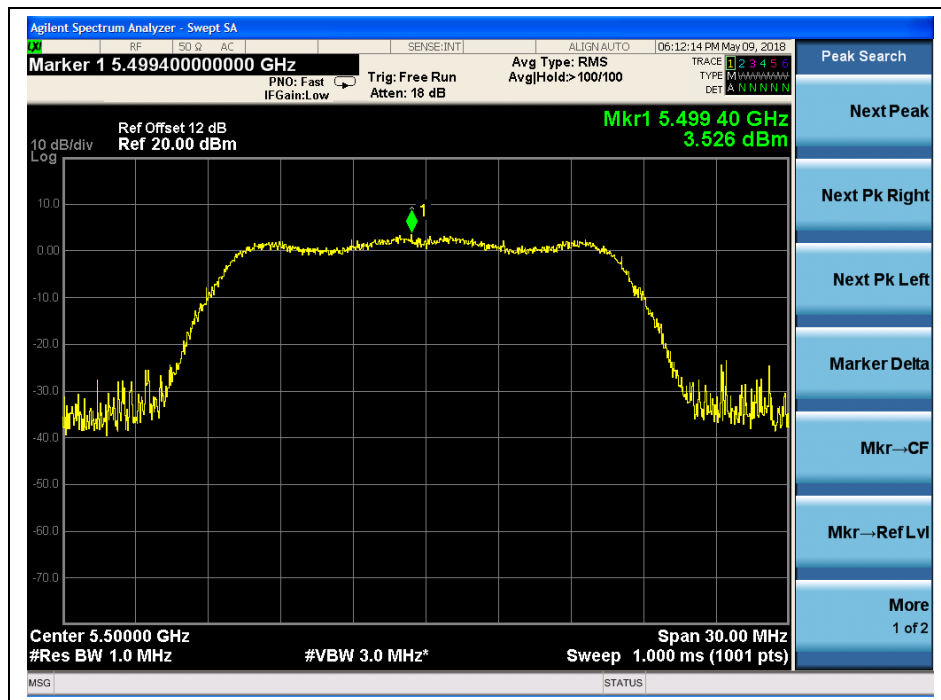
(Channel 52, 5260MHz, 802.11a, ANT0)



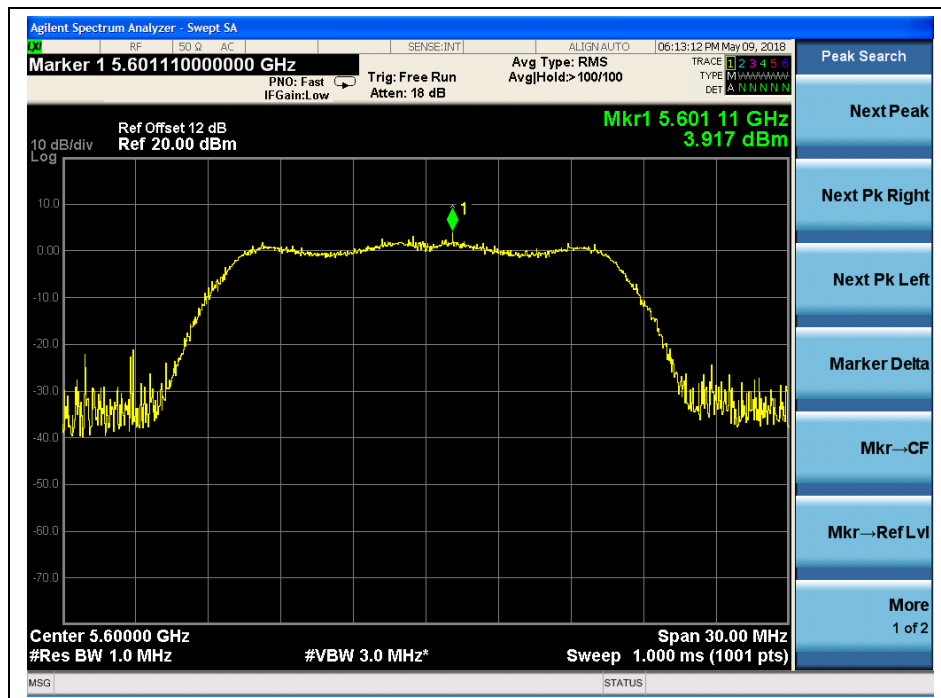
(Channel 60, 5300 MHz, 802.11a, ANT0)



(Channel 64, 5320MHz, 802.11a, ANT0)



(Channel 100, 5500MHz, 802.11a, ANT0)



(Channel 120, 5600 MHz, 802.11a, ANT0)