▣ Straddle channels TEST RESULTS_Internal Ant

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	35.24	N/A	Pass
802.11ac			35.32	N/A	Pass

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	5.56	N/A	Pass
802.11ac			5.24	N/A	Pass

▣ Straddle channels TEST Plot for 802.11n_HT40/ac_VHT40_Internal Ant

802.11n_HT40 CH.142 Bandwidth	802.11ac_VHT40 CH.142 Bandwidth
	

▣ Straddle channels TEST RESULTS_External Ant

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	34.60	N/A	Pass
802.11ac			34.68	N/A	Pass

Conducted Bandwidth Measurements for 802.11n_HT40/ac_VHT40 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11n	5710	142	5.00	N/A	Pass
802.11ac			4.76	N/A	Pass

▣ Straddle channels TEST Plot for 802.11n_HT40/ac_VHT40_External Ant

802.11n_HT40 CH.142 Bandwidth	802.11ac_VHT40 CH.142 Bandwidth
	

▣ Straddle channels TEST RESULTS_Internal Ant

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	75.44	N/A	Pass

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	6.64	N/A	Pass

▣ Straddle channels TEST Plot for 802.11ac_VHT80_Internal Ant

802.11ac_VHT80 CH.138 Bandwidth

▣ Straddle channels TEST RESULTS_External Ant

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 2C Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	75.32	N/A	Pass

Conducted Bandwidth Measurements for 802.11ac_VHT80 (UNII 3 Band)

Mode	Frequency [MHz]	Channel No.	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
802.11ac	5690	138	5.56	N/A	Pass

▣ Straddle channels TEST Plot for 802.11ac_VHT80_External Ant

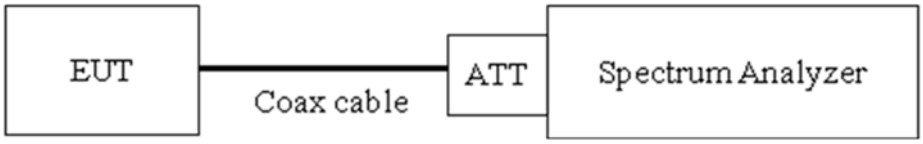
802.11ac_VHT80 CH.138 Bandwidth

10.3 99% BANDWIDTH MEASUREMENT

None; for IC reporting purposes only

The 99 % bandwidth is used to determine the conducted power limits. (For IC).

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to as close to 1% of the selected span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RBW = 1% of the total span
VBW ≥ 3 x RBW
Detector = Peak
Trace mode = max hold
Sweep = auto couple
Allow the trace to stabilize

▣ TEST RESULTS for Internal Ant_802.11a

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	16.606
5200	40	16.611
5240	48	16.633

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	16.610
5300	60	16.591
5320	64	16.609

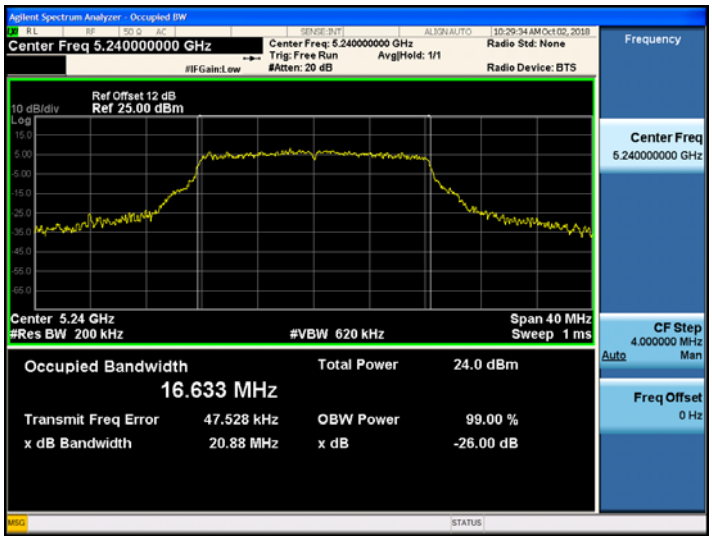
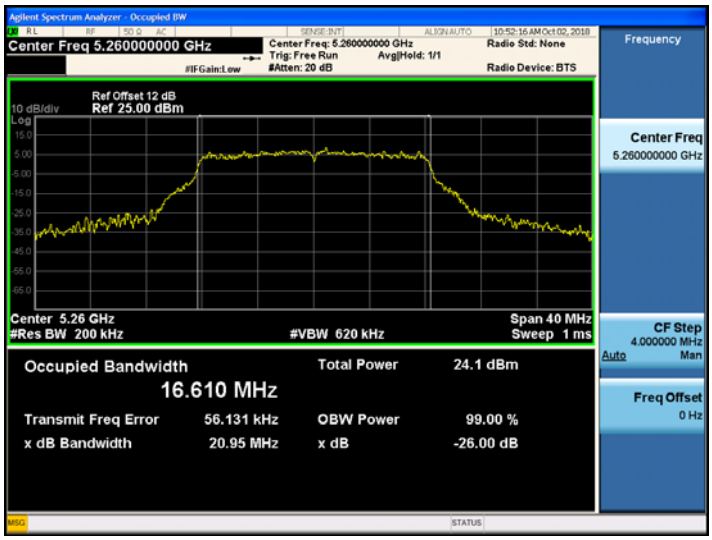
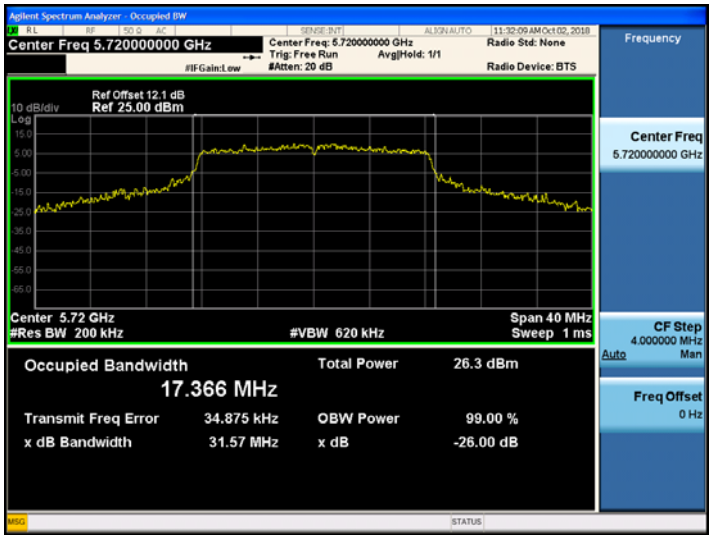
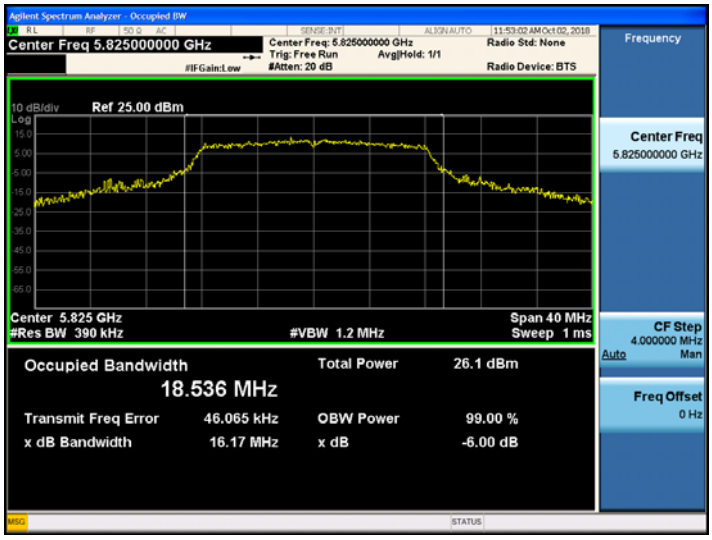
99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	16.645
5580	116	16.826
5720	144	17.366

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	18.116
5785	157	18.433
5825	165	18.536

▣ TEST Plot for Internal Ant_802.11a

802.11a UNII 1 BAND 99% Bandwidth (CH 48)	802.11a UNII 2A BAND 99% Bandwidth (CH 52)
	
802.11a UNII 2C BAND 99% Bandwidth (CH 144)	**802.11a UNII 3 BAND 99% Bandwidth (CH 165)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_802.11a

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	16.741
5200	40	16.727
5240	48	16.725

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	16.731
5300	60	16.723
5320	64	16.689

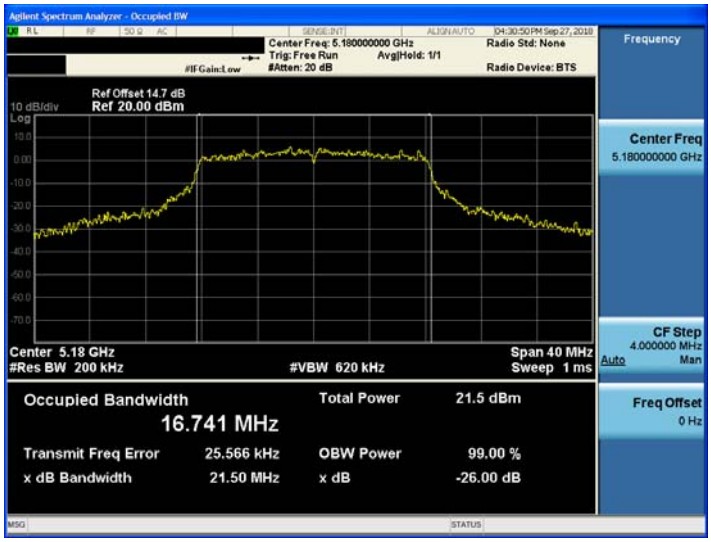
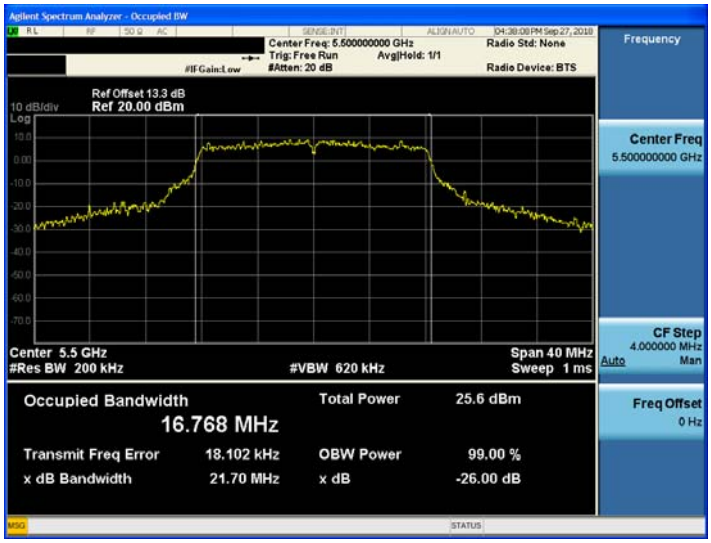
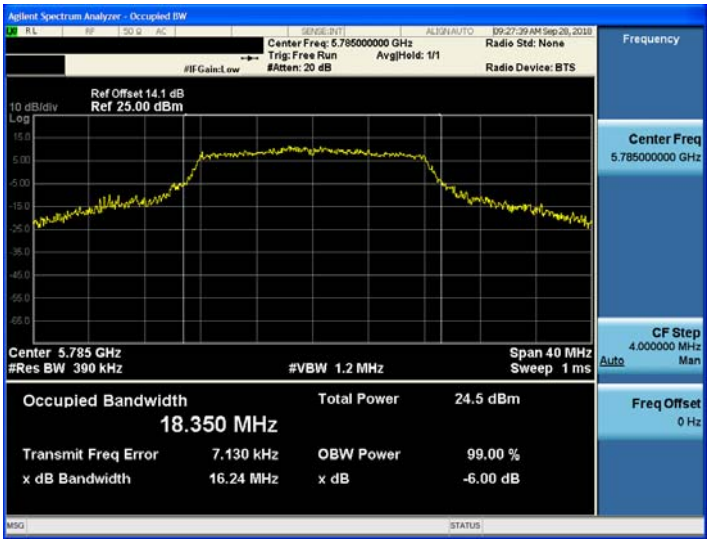
99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	16.768
5580	116	16.709
5720	144	16.737

99% Bandwidth Measurements for 802.11a

802.11a Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	17.588
5785	157	18.350
5825	165	17.969

▣ TEST Plot for External Ant_802.11a

802.11a UNII 1 BAND 99% Bandwidth (CH 36)	802.11a UNII 2A BAND 99% Bandwidth (CH 52)
	
802.11a UNII 2C BAND 99% Bandwidth (CH 100)	**802.11a UNII 3 BAND 99% Bandwidth (CH 157)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for Internal Ant_802.11n_HT20

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	17.789
5200	40	17.780
5240	48	17.805

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	17.814
5300	60	17.791
5320	64	17.779

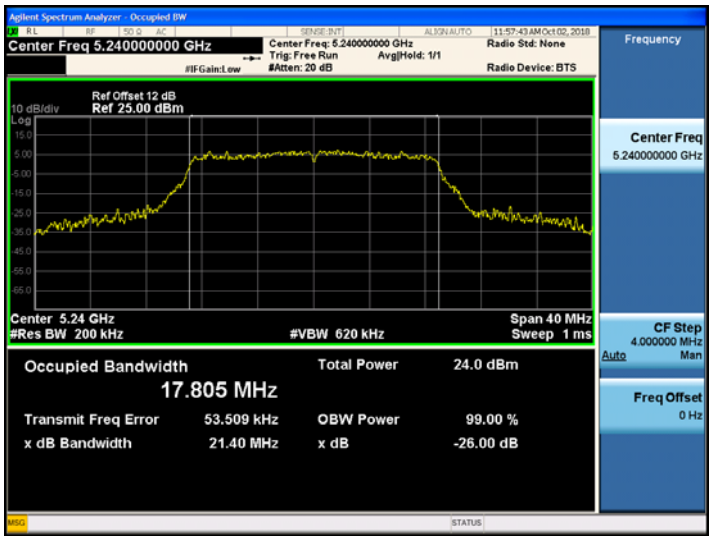
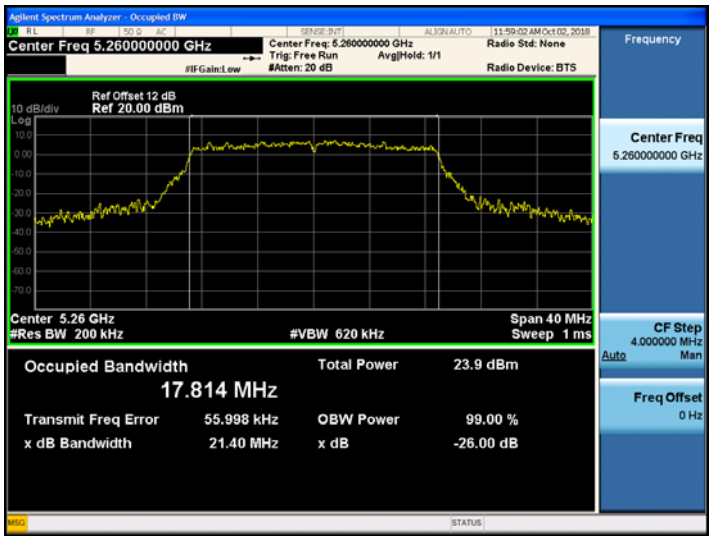
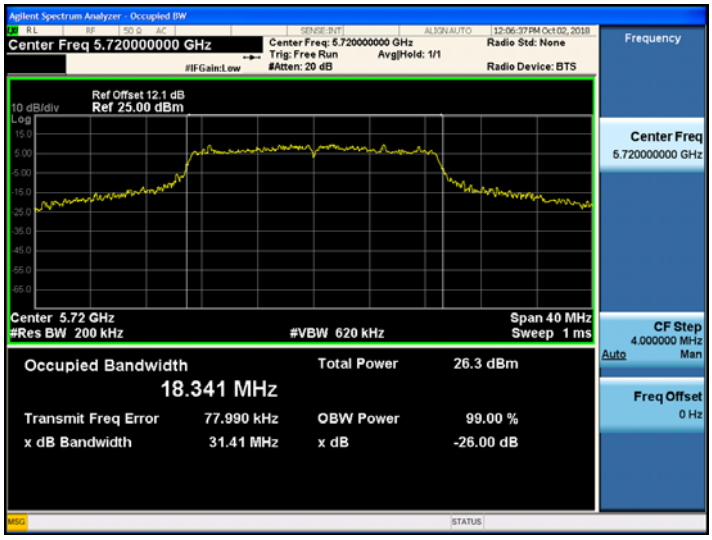
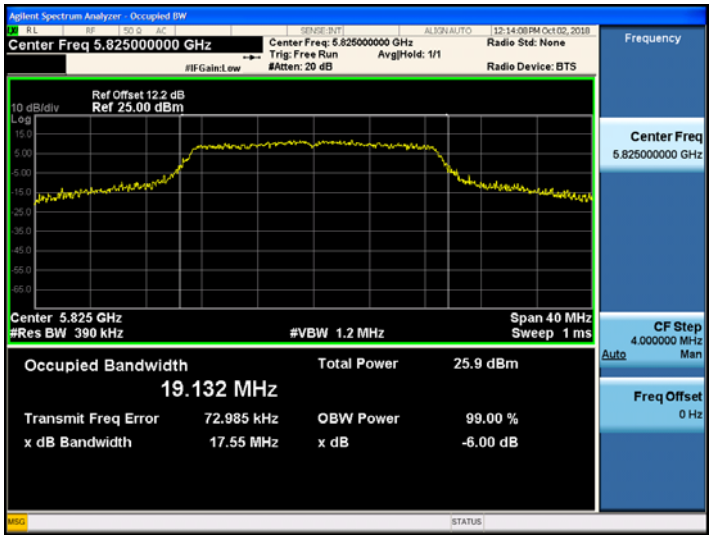
99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	17.770
5580	116	17.934
5720	144	18.341

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	18.819
5785	157	18.907
5825	165	19.132

▣ TEST Plot for Internal Ant_802.11n_HT20

802.11n_HT20 UNII 1 BAND 99% Bandwidth(CH 48)	802.11n_HT20 UNII 2A BAND 99% Bandwidth(CH 52)
	
802.11n_HT20 UNII 2C BAND 99% Bandwidth(CH 144)	**802.11n_HT20 UNII 3 BAND 99% Bandwidth(CH 165)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_802.11n_HT20

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	17.940
5200	40	17.906
5240	48	17.905

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	17.868
5300	60	17.919
5320	64	17.785

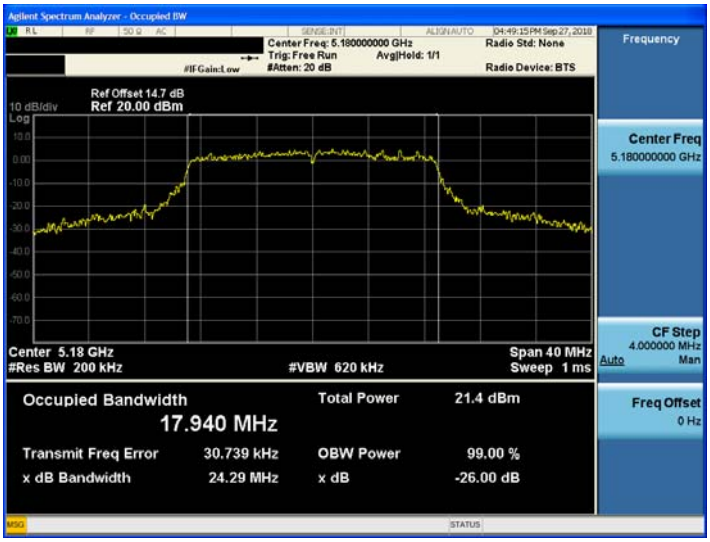
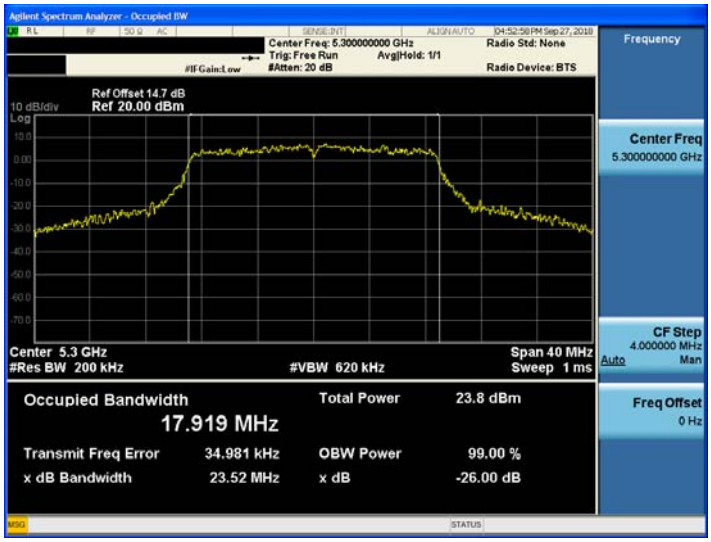
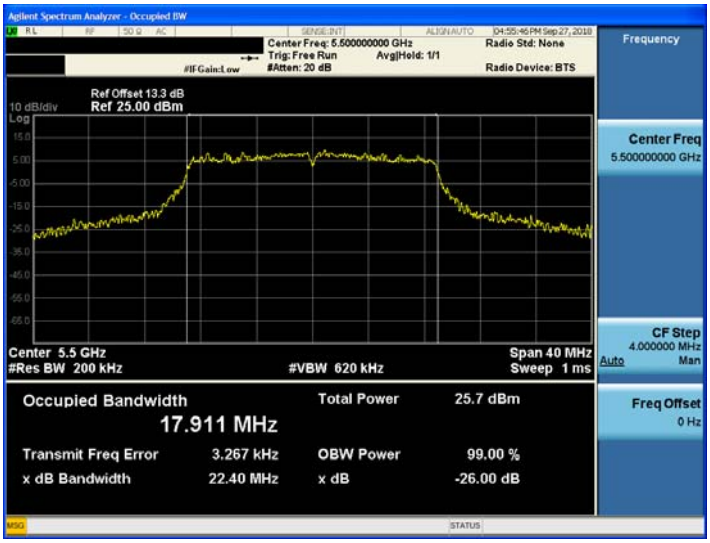
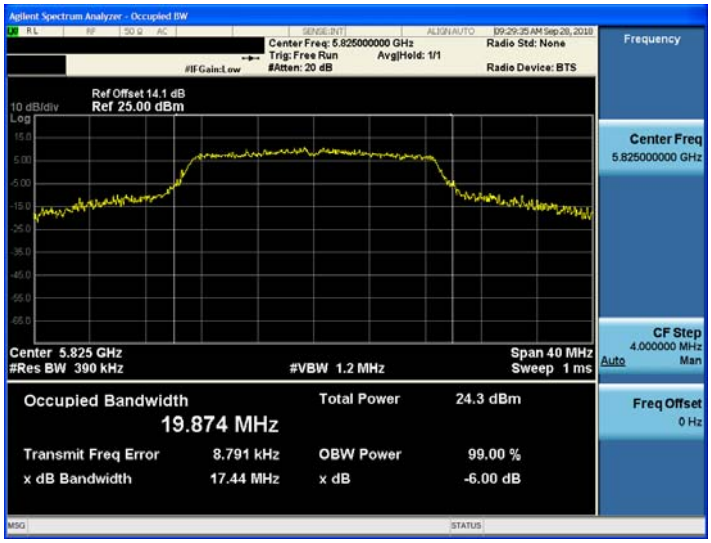
99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	17.911
5580	116	17.872
5720	144	17.884

99% Bandwidth Measurements for 802.11n_HT20

802.11n_HT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	18.580
5785	157	18.961
5825	165	19.874

▣ TEST Plot for External Ant_802.11n_HT20

802.11n_HT20 UNII 1 BAND 99% Bandwidth(CH 36)	802.11n_HT20 UNII 2A BAND 99% Bandwidth(CH 60)
	
802.11n_HT20 UNII 2C BAND 99% Bandwidth(CH 100)	**802.11n_HT20 UNII 3 BAND 99% Bandwidth(CH 165)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for Internal Ant_ 802.11ac_VHT20

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	17.753
5200	40	17.815
5240	48	17.768

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	17.836
5300	60	17.847
5320	64	17.784

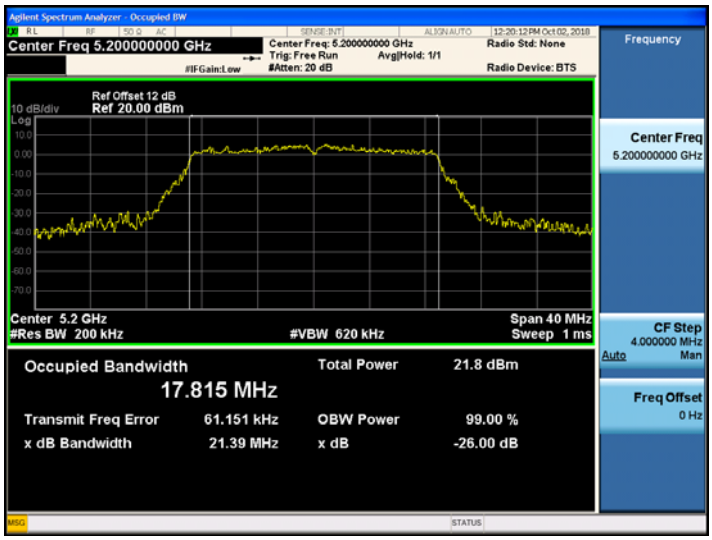
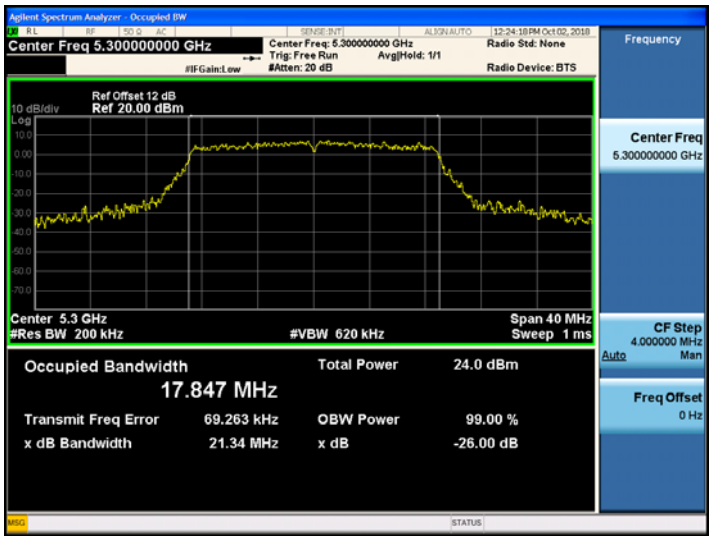
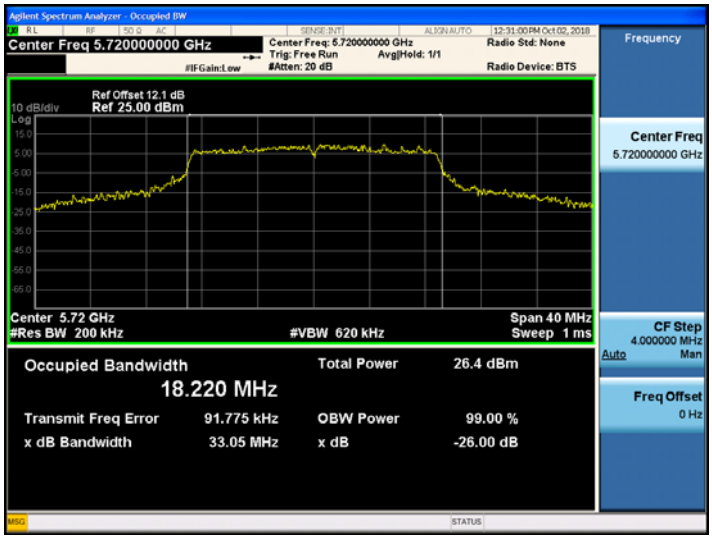
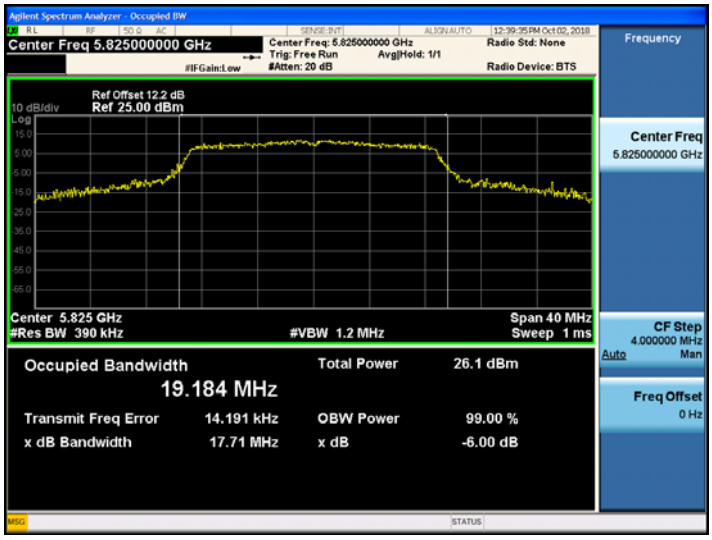
99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	17.777
5580	116	17.875
5720	144	18.220

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	18.752
5785	157	18.964
5825	165	19.184

▣ TEST Plot for Internal Ant_ 802.11ac_VHT20

802.11ac_VHT20 UNII 1 BAND 99% Bandwidth(CH 40)	802.11ac_VHT20 UNII 2A BAND 99% Bandwidth(CH 60)
	
802.11ac_VHT20 UNII 2C BAND 99% Bandwidth(CH 144)	**802.11ac_VHT20 UNII 3 BAND 99% Bandwidth(CH 165)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_ 802.11ac_VHT20

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5180	36	17.930
5200	40	17.880
5240	48	17.869

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5260	52	17.889
5300	60	17.842
5320	64	17.845

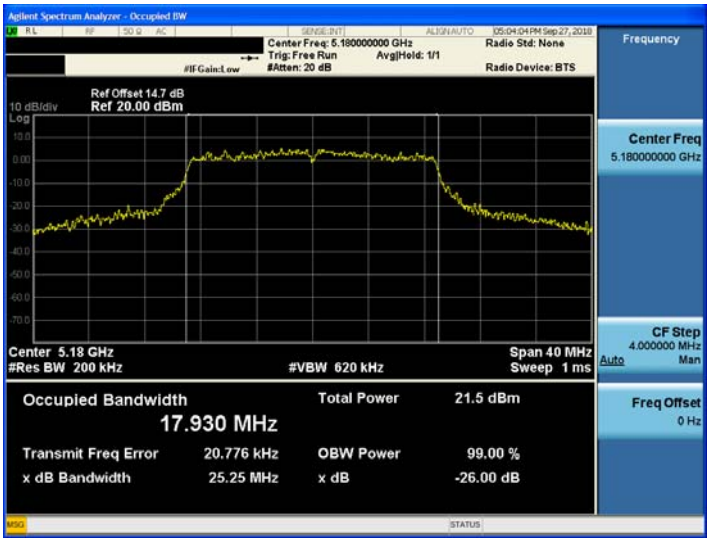
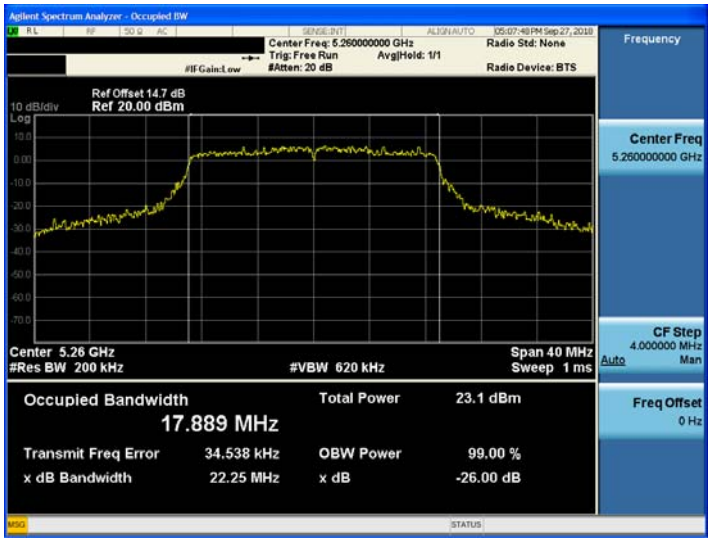
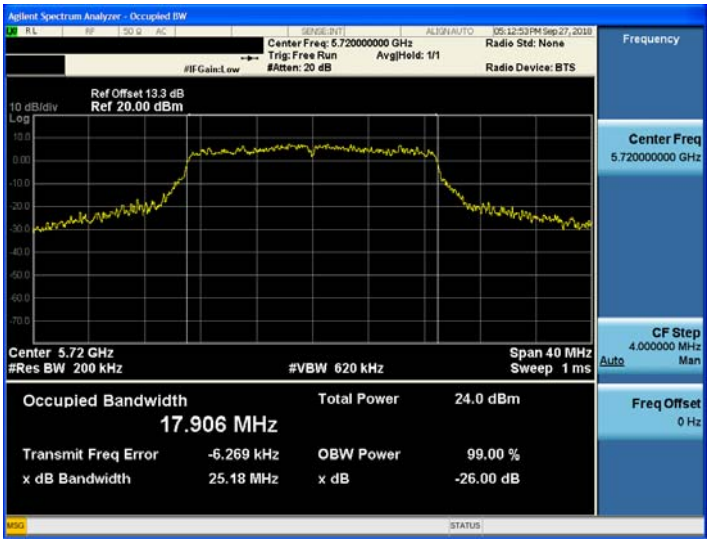
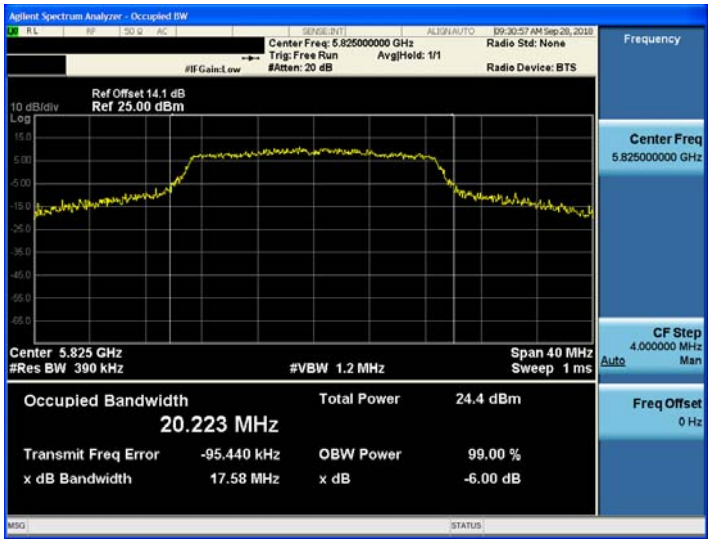
99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5500	100	17.892
5580	116	17.876
5720	144	17.906

99% Bandwidth Measurements for 802.11ac_VHT20

802.11ac_VHT20 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5745	149	18.479
5785	157	19.001
5825	165	20.223

▣ TEST Plot for External Ant_ 802.11ac_VHT20

802.11ac_VHT20 UNII 1 BAND 99% Bandwidth(CH 36)	802.11ac_VHT20 UNII 2A BAND 99% Bandwidth(CH 52)
	
802.11ac_VHT20 UNII 2C BAND 99% Bandwidth(CH 144)	**802.11ac_VHT20 UNII 3 BAND 99% Bandwidth(CH 165)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for Internal Ant_802.11n_HT40

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5190	38	36.134
5230	46	36.113

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5270	54	36.107
5310	62	36.099

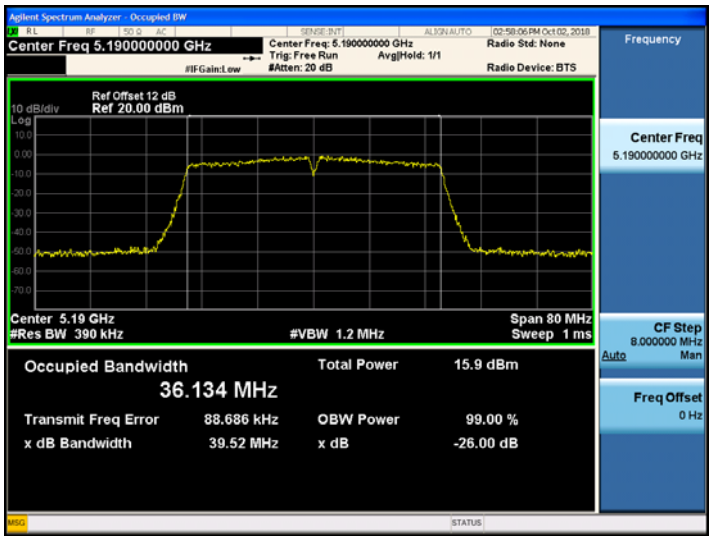
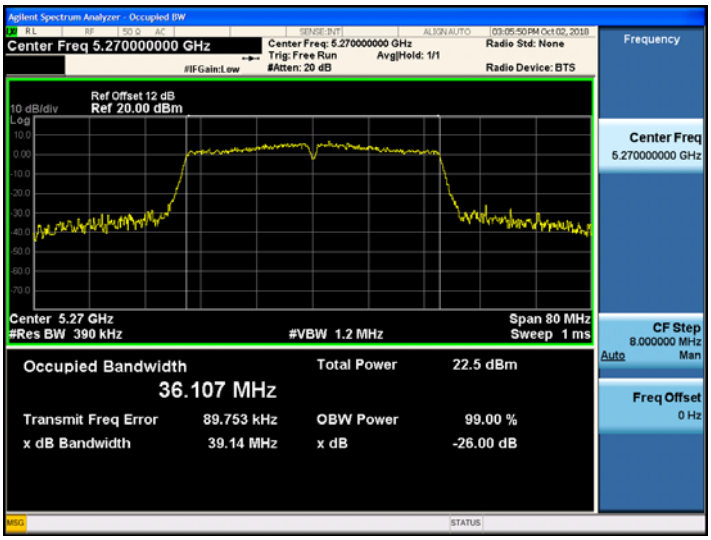
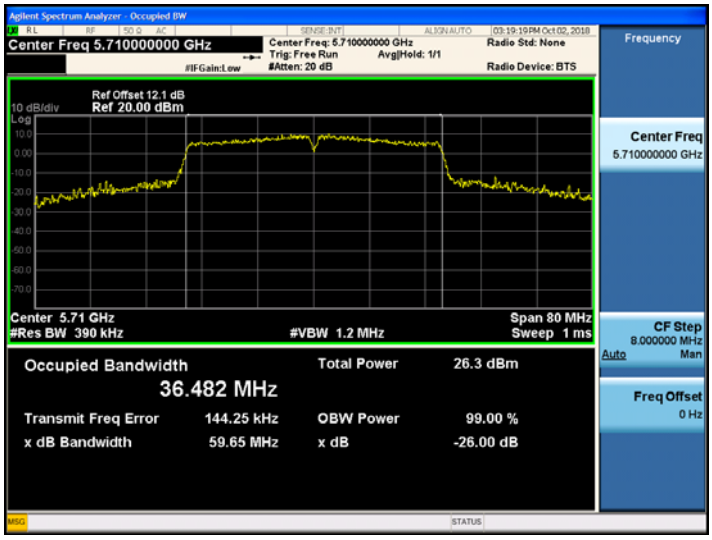
99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5510	102	36.105
5550	110	36.262
5710	142	36.482

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5755	151	36.847
5795	159	36.707

▣ TEST Plot for Internal Ant_802.11n_HT40

802.11n_HT40 UNII 1 BAND 99% Bandwidth(CH 38)	802.11n_HT40 UNII 2A BAND 99% Bandwidth (CH 54)
	
802.11n_HT40 UNII 2C BAND 99% Bandwidth(CH 142)	**802.11n_HT40 UNII 3 BAND 99% Bandwidth (CH 151)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_802.11n_HT40

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5190	38	36.103
5230	46	36.198

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5270	54	36.203
5310	62	36.150

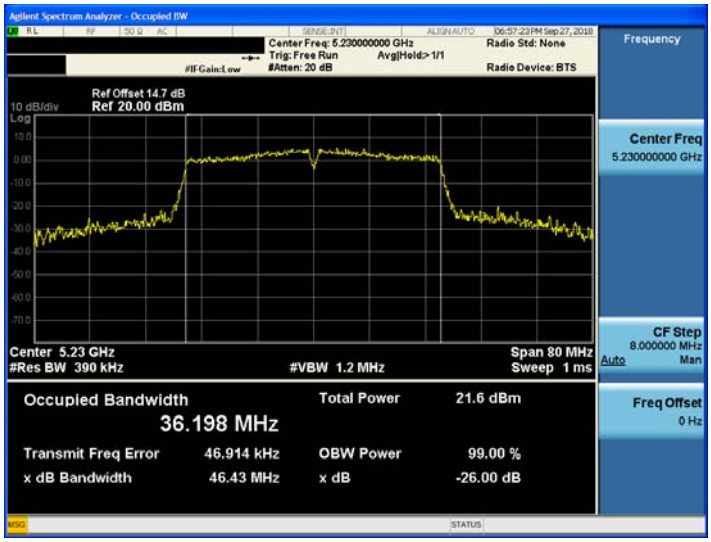
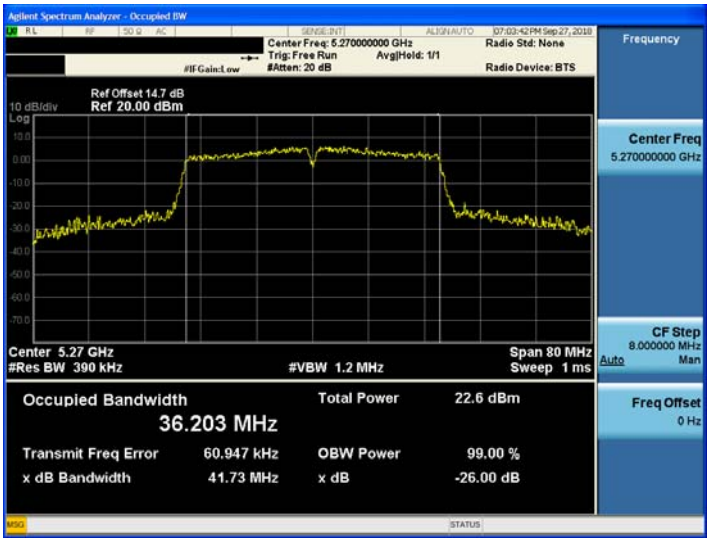
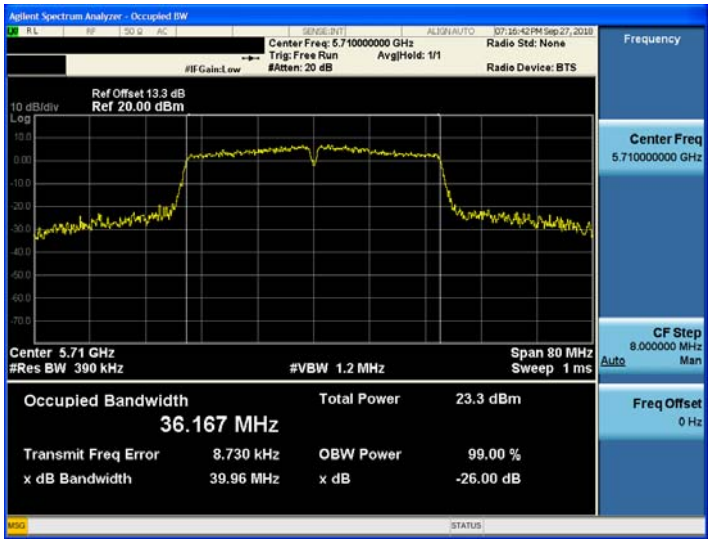
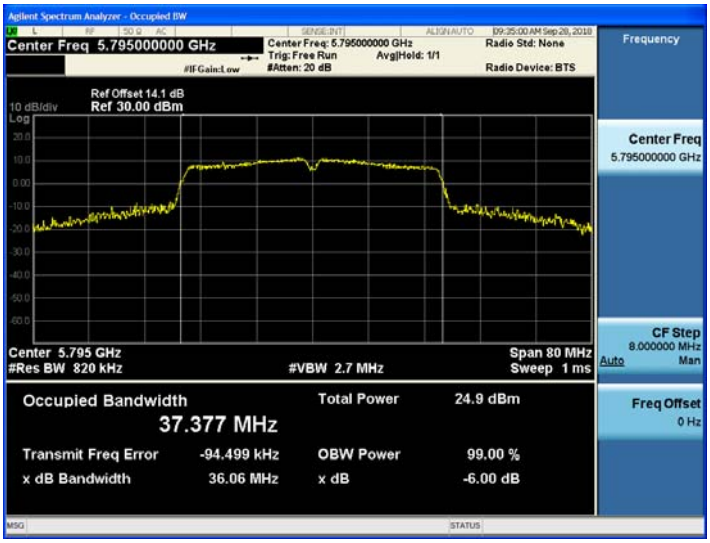
99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5510	102	36.085
5550	110	36.152
5710	142	36.167

99% Bandwidth Measurements for 802.11n_HT40

802.11n_HT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5755	151	36.929
5795	159	37.377

▣ TEST Plot for External Ant_802.11n_HT40

802.11n_HT40 UNII 1 BAND 99% Bandwidth(CH 46)	802.11n_HT40 UNII 2A BAND 99% Bandwidth (CH 54)
	
802.11n_HT40 UNII 2C BAND 99% Bandwidth(CH 142)	**802.11n_HT40 UNII 3 BAND 99% Bandwidth (CH 159)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for Internal Ant_802.11ac_VHT40

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5190	38	36.082
5230	46	36.094

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5270	54	36.119
5310	62	36.114

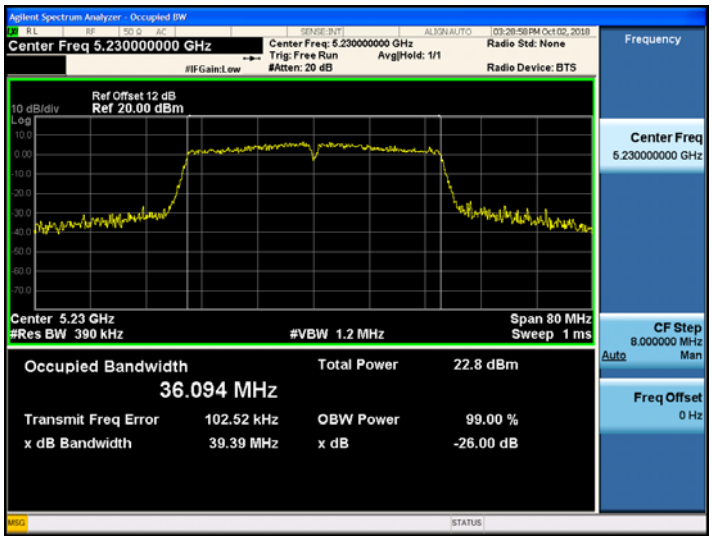
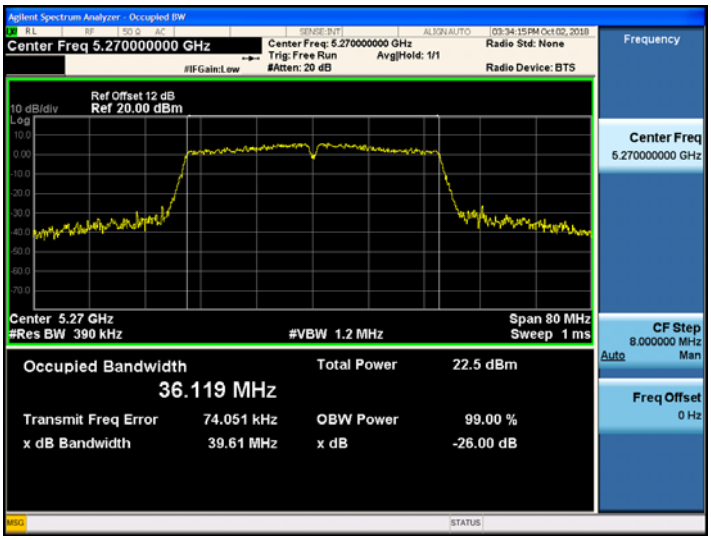
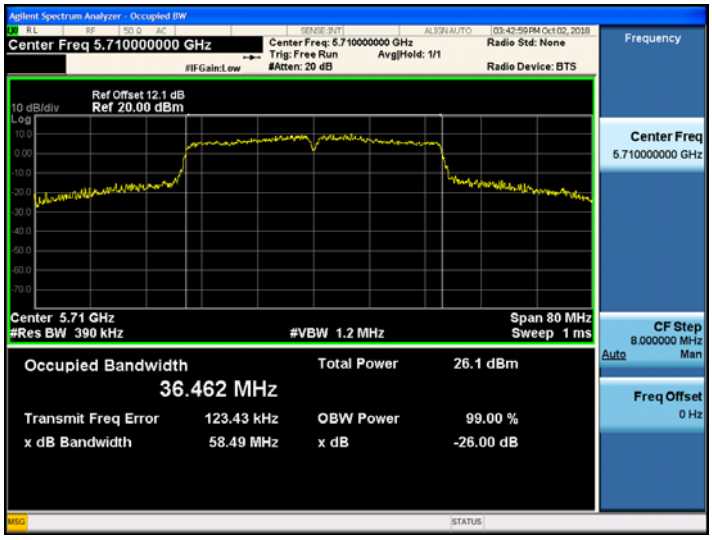
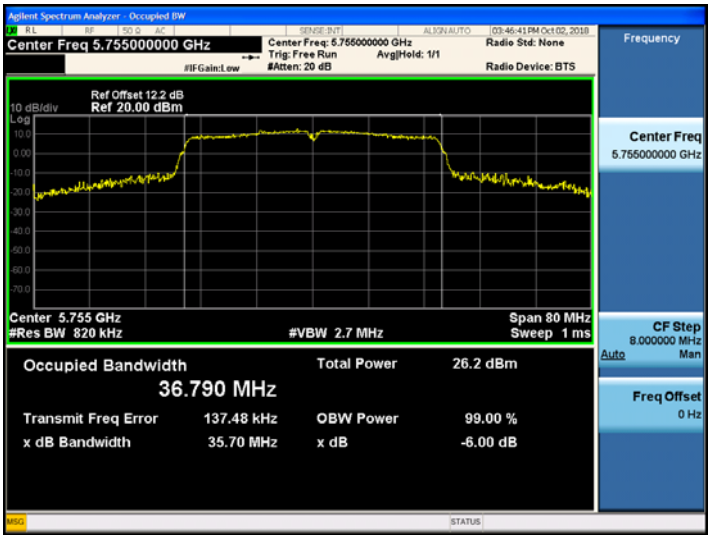
99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5510	102	36.142
5550	110	36.175
5710	142	36.462

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5755	151	36.790
5795	159	36.783

▣ TEST Plot for Internal Ant_802.11ac_VHT40

802.11ac_VHT40 UNII 1 BAND 99% Bandwidth(CH 46)	802.11ac_VHT40 UNII 2A BAND 99% Bandwidth (CH 54)
	
802.11ac_VHT40 UNII 2C BAND 99% Bandwidth(CH 142)	**802.11ac_VHT40 UNII 3 BAND 99% Bandwidth (CH 151)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_802.11ac_VHT40

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5190	38	36.140
5230	46	36.183

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5270	54	36.172
5310	62	36.112

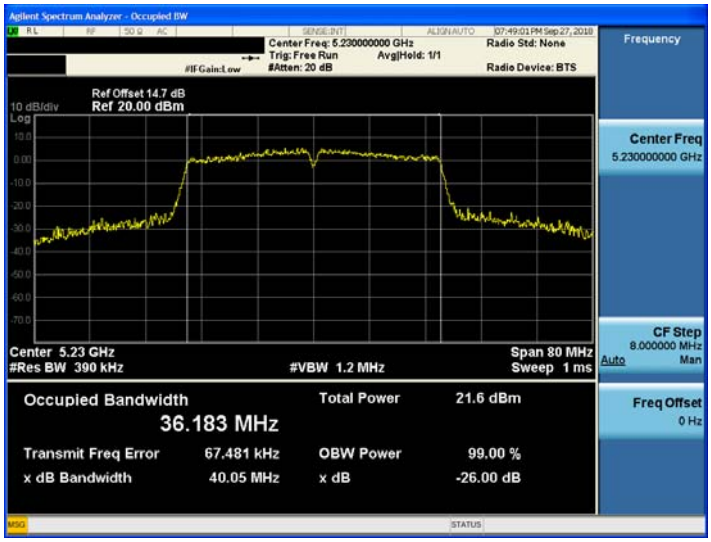
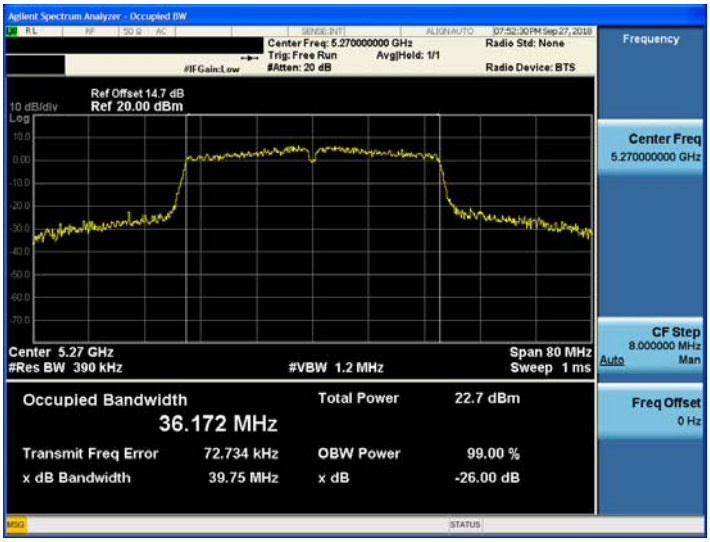
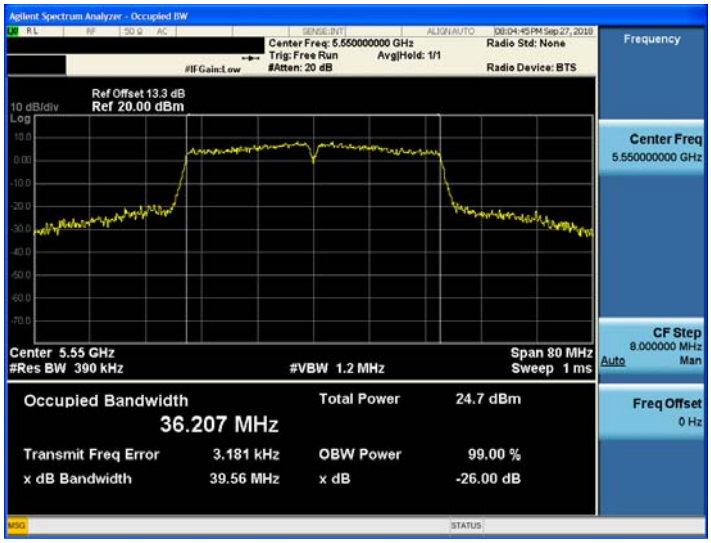
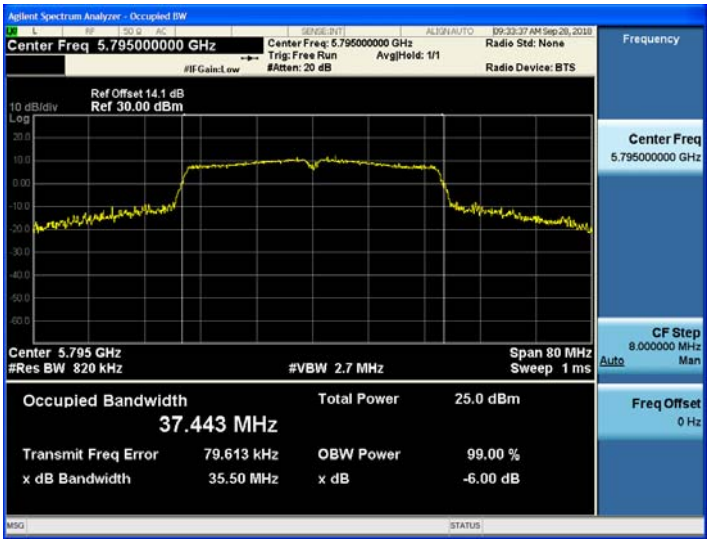
99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5510	102	36.126
5550	110	36.207
5710	142	36.161

99% Bandwidth Measurements for 802.11ac_VHT40

802.11ac_VHT40 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5755	151	36.760
5795	159	37.443

▣ TEST Plot for External Ant_802.11ac_VHT40

802.11ac_VHT40 UNII 1 BAND 99% Bandwidth(CH 46)	802.11ac_VHT40 UNII 2A BAND 99% Bandwidth (CH 54)
	
802.11ac_VHT40 UNII 2C BAND 99% Bandwidth(CH 110)	**802.11ac_VHT40 UNII 3 BAND 99% Bandwidth (CH 159)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for Internal Ant_802.11ac_VHT80

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5210	42	75.491

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5290	58	75.482

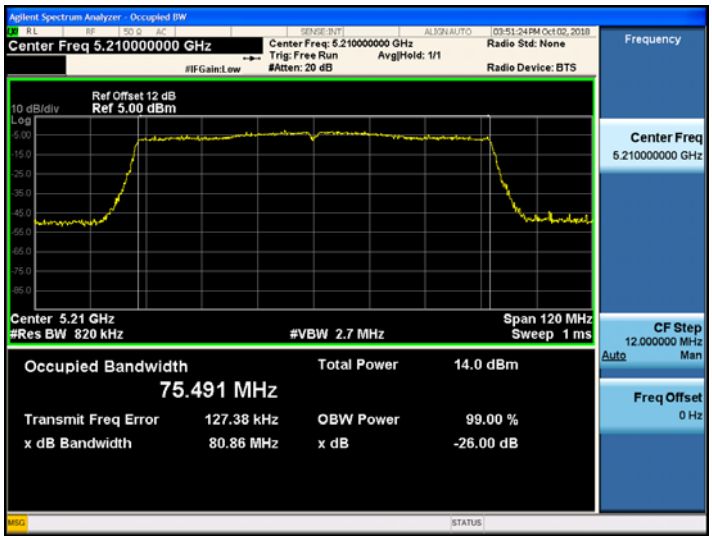
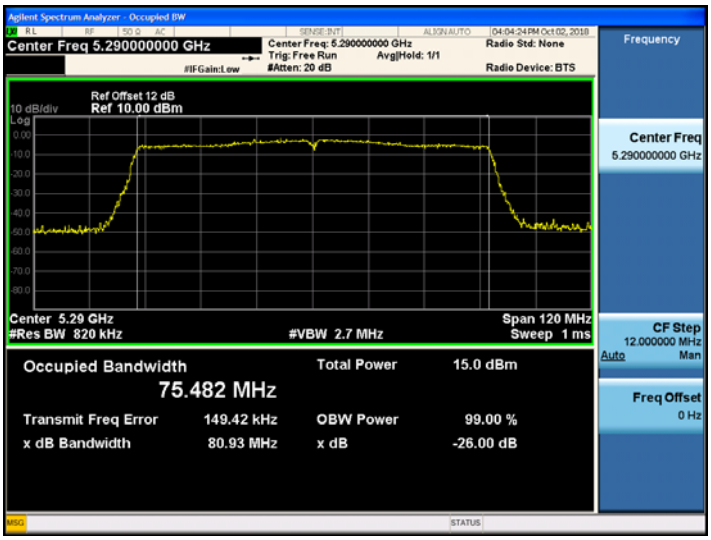
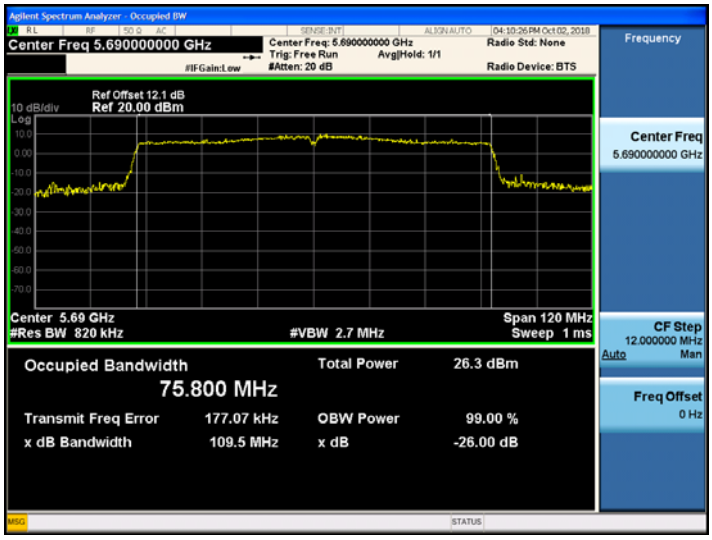
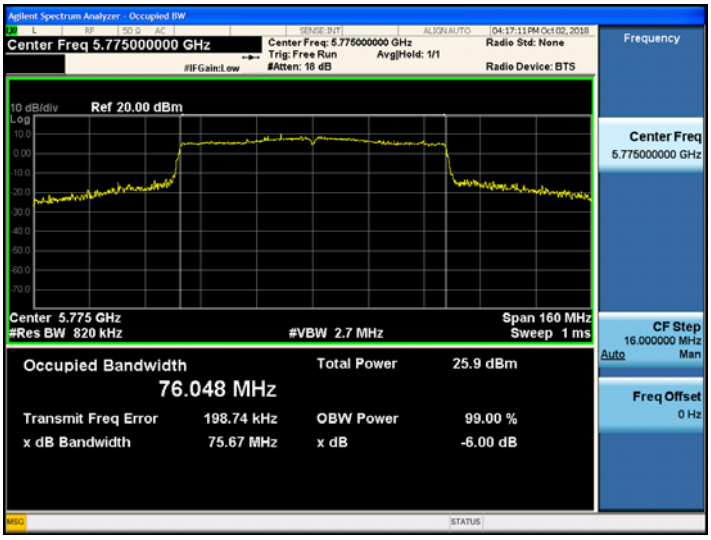
99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5530	106	75.454
5610	122	75.706
5690	138	75.800

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5775	155	76.048

▣ TEST Plot for Internal Ant_802.11ac_VHT80

802.11ac_VHT80 UNII 1 BAND 99% Bandwidth(CH 42)	802.11ac_VHT80 UNII 2A BAND 99% Bandwidth(CH 58)
	
802.11ac_VHT80 UNII 2C BAND 99% Bandwidth(CH 138)	**802.11ac_VHT80 UNII 3 BAND 99% Bandwidth(CH 155)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

▣ TEST RESULTS for External Ant_802.11ac_VHT80

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5210	42	75.626

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5290	58	75.475

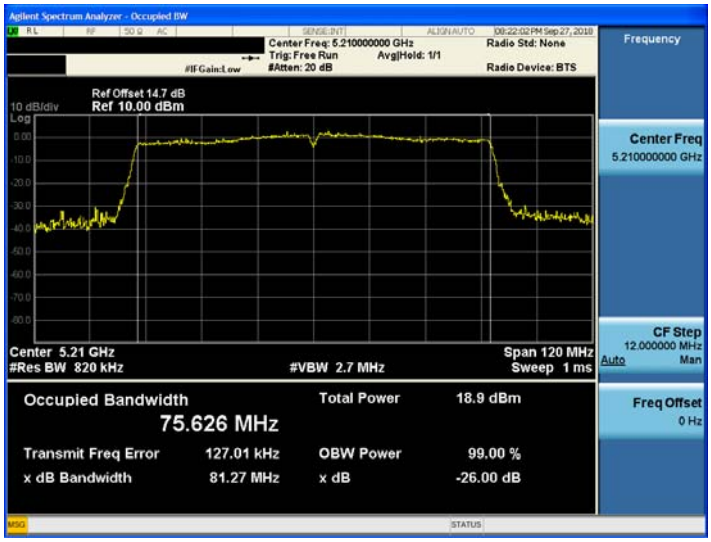
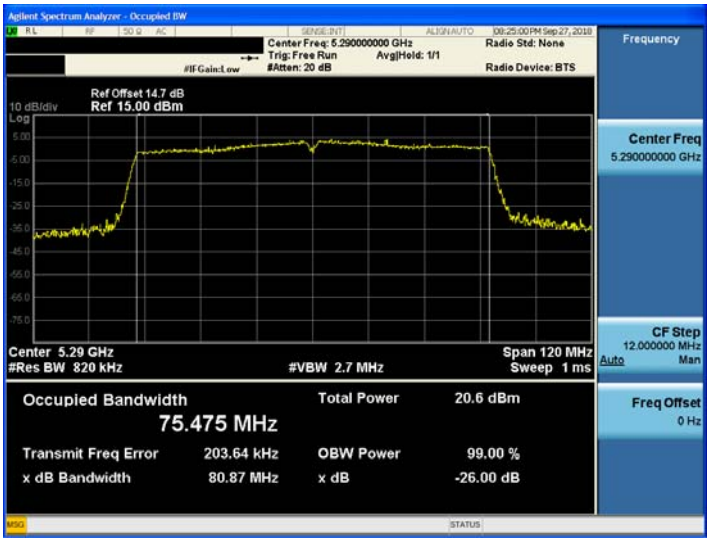
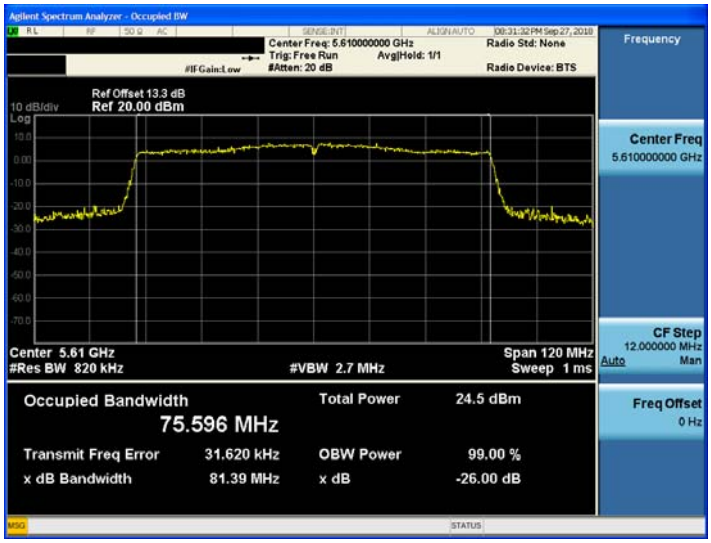
99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5530	106	75.417
5610	122	75.596
5690	138	75.515

99% Bandwidth Measurements for 802.11ac_VHT80

802.11ac_VHT80 Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
5775	155	76.027

▣ TEST Plot for External Ant_802.11ac_VHT80

802.11ac_VHT80 UNII 1 BAND 99% Bandwidth(CH 42)	802.11ac_VHT80 UNII 2A BAND 99% Bandwidth(CH 58)
	
802.11ac_VHT80 UNII 2C BAND 99% Bandwidth(CH 122)	**802.11ac_VHT80 UNII 3 BAND 99% Bandwidth(CH 155)**
	

Note : In order to simplify the report, attached plots were only the most wide channel.

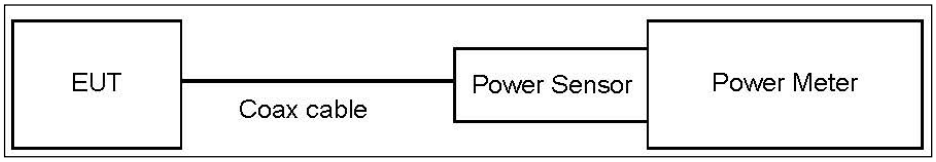
10.4 OUTPUT POWER MEASUREMENT

A transmitter antenna terminal of EUT is connected to the input of a Power meter or Spectrum Analyzer .Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

▣ LIMIT

Band	Mode	Limit
UNII 1	802.11a,n,ac	IC : 30mW e.i.r.p (=14.77dBm) FCC : 250mW (=23.98dBm)
UNII 2A	802.11a,n,ac	IC : 30mW e.i.r.p (=14.77dBm) FCC : 250mW (=23.98dBm)
UNII 2C	802.11a,n,ac	250mW (=23.98dBm)
UNII 3	802.11a,n,ac	1W (=30.00dBm)

▣ TEST CONFIGURATION(20 MHz BW)



▣ TEST PROCEDURE(20 MHz BW)

▪ Average Power (Procedure E.3.a in KDB 789033 D02 v02r01).

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Note :

Actual value of loss for the attenuator and cable combination is below table.

Internal

Band	Loss(dB)
UNII 1, 2A	12
UNII 2C	12.1
UNII 3	12.2

External

Band	Loss(dB)
UNII 1, 2A	14.7
UNII 2C	13.3
UNII 3	14.1

10.4.1 TEST RESULTS(IC)

Internal Ant

Mod : 802.11a

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5180	36	6 Mbps	7.66	5.10	0.21	12.97	14.77
5200	40	6 Mbps	7.65	5.10	0.21	12.96	14.77
5240	48	6 Mbps	7.75	5.10	0.21	13.06	14.77

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5260	52	6 Mbps	7.96	5.10	0.21	13.27	14.77
5300	60	6 Mbps	7.96	5.10	0.21	13.27	14.77
5320	64	6 Mbps	8.04	5.10	0.21	13.35	14.77

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6	14.92	0.20	15.12	23.98
5580	116	6	20.22	0.20	20.42	23.98
5720	144	6	20.16	0.20	20.36	23.98

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6	19.76	0.20	19.96	30
5785	157	6	18.72	0.20	18.92	30
5825	165	6	17.22	0.20	17.42	30

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5180	36	0	7.59	5.10	0.21	12.90	14.77
5200	40	0	7.54	5.10	0.21	12.85	14.77
5240	48	0	7.71	5.10	0.21	13.02	14.77

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	Measured E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5260	52	0	7.89	5.10	0.21	13.20	14.77
5300	60	0	7.87	5.10	0.21	13.18	14.77
5320	64	0	8.01	5.10	0.21	13.32	14.77

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	14.78	0.22	15.00	23.98
5580	116	0	20.10	0.22	20.32	23.98
5720	144	0	20.08	0.22	20.30	23.98

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	19.57	0.22	19.79	30
5785	157	0	18.66	0.22	18.88	30
5825	165	0	17.35	0.22	17.57	30

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5190	38	0	7.59	5.10	0.44	13.14	14.77
5230	46	0	8.06	5.10	0.44	13.60	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5270	54	0	7.67	5.10	0.44	13.21	14.77
5310	62	0	7.60	5.10	0.44	13.14	14.77

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	10.78	0.45	11.22	23.98
5550	110	0	19.09	0.45	19.54	23.98
5710	142	0	19.18	0.45	19.63	23.98

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	18.68	0.45	19.13	30
5795	159	0	17.32	0.45	17.76	30

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5180	36	0	7.59	5.10	0.22	12.91	14.77
5200	40	0	7.68	5.10	0.22	13.00	14.77
5240	48	0	7.87	5.10	0.22	13.19	14.77

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain (dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5260	52	0	7.70	5.10	0.22	13.02	14.77
5300	60	0	7.97	5.10	0.22	13.29	14.77
5320	64	0	7.95	5.10	0.22	13.27	14.77

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	14.69	0.22	14.91	23.98
5580	116	0	20.13	0.22	20.35	23.98
5720	144	0	20.06	0.22	20.28	23.98

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	19.75	0.22	19.97	30
5785	157	0	18.48	0.22	18.70	30
5825	165	0	17.19	0.22	17.41	30

Mod : 802.11ac(VHT40)

802.11ac(40MHz) Mode		MCS Index	MCS Index	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5190	38	0	7.52	5.10	0.44	13.06	14.77
5230	46	0	7.94	5.10	0.44	13.48	14.77

802.11ac(40MHz) Mode		MCS Index	MCS Index	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5270	54	0	7.67	5.10	0.44	13.21	14.77
5310	62	0	7.53	5.10	0.44	13.07	14.77

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	10.46	0.44	10.90	23.98
5550	110	0	18.76	0.44	19.20	23.98
5710	142	0	19.18	0.44	19.62	23.98

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	18.47	0.44	18.91	30
5795	159	0	17.38	0.44	17.83	30

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5210	42	0	7.72	5.10	0.86	13.68	14.77

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5290	58	0	7.33	5.10	0.86	13.30	14.77

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	0	8.21	0.86	9.07	23.98
5610	122	0	18.39	0.86	19.25	23.98
5690	138	0	18.46	0.86	19.32	23.98

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	0	17.73	0.86	18.59	30

External Ant

Mod : 802.11a

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5180	36	12 Mbps	12.53	1.60	0.40	14.53	14.77
5200	40	12 Mbps	12.60	1.60	0.40	14.60	14.77
5240	48	12 Mbps	12.43	1.60	0.40	14.43	14.77

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5260	52	12 Mbps	12.26	1.60	0.40	14.26	14.77
5300	60	12 Mbps	12.63	1.60	0.40	14.63	14.77
5320	64	12 Mbps	11.91	1.60	0.40	13.91	14.77

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	12	18.42	0.40	18.82	23.98
5580	116	12	18.20	0.40	18.60	23.98
5720	144	12	17.03	0.40	17.43	23.98

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	12	17.85	0.40	18.25	30
5785	157	12	17.60	0.40	18.00	30
5825	165	12	16.10	0.40	16.50	30

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5180	36	2	12.18	1.60	0.61	14.39	14.77
5200	40	7	11.28	1.60	1.60	14.48	14.77
5240	48	2	11.97	1.60	0.61	14.18	14.77

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5260	52	2	11.80	1.60	0.61	14.01	14.77
5300	60	2	12.31	1.60	0.61	14.52	14.77
5320	64	2	11.60	1.60	0.61	13.81	14.77

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	2	18.27	0.61	18.88	23.98
5580	116	2	17.92	0.61	18.53	23.98
5720	144	2	16.80	0.61	17.41	23.98

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	2	17.60	0.61	18.21	30
5785	157	2	17.25	0.61	17.86	30
5825	165	2	17.40	0.21	17.61	30

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5190	38	3	10.90	1.60	1.41	13.91	14.77
5230	46	7	9.48	1.60	2.53	13.62	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5270	54	7	9.65	1.60	2.53	13.78	14.77
5310	62	7	9.32	1.60	2.53	13.45	14.77

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	3	13.80	1.41	15.21	23.98
5550	110	7	15.65	2.53	18.18	23.98
5710	142	3	15.23	1.41	16.64	23.98

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	3	16.61	1.41	18.02	30
5795	159	2	16.83	1.14	17.97	30

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain (dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5180	36	2	12.35	1.60	0.61	14.56	14.77
5200	40	2	12.38	1.60	0.61	14.59	14.77
5240	48	2	12.00	1.60	0.61	14.21	14.77

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain (dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5260	52	2	11.93	1.60	0.61	14.14	14.77
5300	60	2	12.26	1.60	0.61	14.47	14.77
5320	64	2	11.54	1.60	0.61	13.75	14.77

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	2	18.26	0.61	18.87	23.98
5580	116	2	18.04	0.61	18.65	23.98
5720	144	2	16.83	0.61	17.44	23.98

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	2	17.66	0.61	18.27	30
5785	157	2	17.38	0.61	17.99	30
5825	165	2	17.03	0.61	17.64	30

Mod : 802.11ac(VHT40)

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5190	38	3	10.90	1.60	1.41	13.91	14.77
5230	46	7	9.48	1.60	2.53	13.62	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.						
5270	54	7	9.65	1.60	2.53	13.78	14.77
5310	62	7	9.32	1.60	2.53	13.45	14.77

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	9	12.48	2.80	15.28	23.98
5550	110	9	15.30	2.80	18.10	23.98
5710	142	3	15.03	1.39	16.42	23.98

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	3	16.70	1.39	18.09	30
5795	159	9	15.16	2.80	17.96	30

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5210	42	3	9.63	1.60	2.26	13.49	14.77

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Ant Gain(dBi)	Duty Cycle Factor (dB)	E.I.R.P (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.						
5290	58	9	8.84	1.60	3.84	14.28	14.77

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	9	9.55	3.84	13.40	23.98
5610	122	9	13.75	3.84	17.59	23.98
5690	138	9	12.74	3.84	16.58	23.98

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	9	13.88	3.84	17.72	30

Internal Ant + External Ant

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5180	36	MCS8	0.906	5.100	5.75	3.92	7.94	13.95	14.77
5200	40	MCS8	0.906	5.100	5.80	4.15	8.06	14.07	14.77
5240	48	MCS8	0.906	5.100	6.10	4.40	8.34	14.35	14.77

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5260	52	MCS8	0.906	5.100	5.86	5.24	8.57	14.58	14.77
5300	60	MCS8	0.906	5.100	6.04	5.18	8.64	14.65	14.77
5320	64	MCS8	0.906	5.100	6.00	5.23	8.64	14.65	14.77

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5500	100	MCS8	0.428	13.85	13.60	16.74	17.17	23.98
5580	116	MCS8	0.428	17.00	16.45	19.74	20.17	23.98
5720	144	MCS8	0.428	17.32	15.23	19.41	19.84	23.98

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5745	149	MCS8	0.428	18.97	18.59	21.79	22.22	30.00
5785	157	MCS8	0.428	19.03	18.10	21.60	22.03	30.00
5825	165	MCS8	0.428	19.00	17.38	21.28	21.70	30.00

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5190	38	MCS8	0.804	5.100	5.20	3.37	7.39	13.29	14.77
5230	46	MCS8	0.804	5.100	5.37	3.82	7.67	13.58	14.77

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5270	54	MCS8	0.804	5.100	5.30	4.44	7.90	13.81	14.77
5310	62	MCS8	0.804	5.100	5.80	5.38	8.61	14.51	14.77

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5510	102	MCS8	0.804	10.51	10.21	13.37	14.18	23.98
5550	110	MCS8	0.804	18.12	17.68	20.92	21.72	23.98
5710	142	MCS8	0.804	18.31	16.59	20.54	21.35	23.98

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5755	151	MCS8	0.804	18.03	18.04	21.05	21.85	30.00
5795	159	MCS8	0.804	17.96	17.32	20.66	21.47	30.00

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5180	36	MCS9	0.422	5.100	5.77	3.74	7.88	13.41	14.77
5200	40	MCS9	0.422	5.100	5.81	3.87	7.96	13.48	14.77
5240	48	MCS9	0.422	5.100	5.82	4.22	8.10	13.63	14.77

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5260	52	MCS9	0.422	5.100	6.10	5.16	8.67	14.19	14.77
5300	60	MCS9	0.422	5.100	6.11	5.63	8.89	14.41	14.77
5320	64	MCS9	0.422	5.100	6.28	5.67	9.00	14.52	14.77

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5500	100	MCS9	0.422	14.00	13.66	16.84	17.27	23.98
5580	116	MCS9	0.422	16.95	16.40	19.69	20.12	23.98
5720	144	MCS9	0.422	17.36	15.64	19.59	20.02	23.98

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5745	149	MCS9	0.422	19.16	18.56	21.88	22.30	30.00
5785	157	MCS9	0.422	19.02	18.16	21.62	22.04	30.00
5825	165	MCS9	0.422	19.00	17.43	21.30	21.72	30.00

Mod : 802.11ac(VHT40)

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5190	38	MCS10	0.797	5.100	5.06	3.21	7.24	13.14	14.77
5230	46	MCS10	0.797	5.100	5.34	3.86	7.67	13.57	14.77

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5270	54	MCS10	0.797	5.100	5.33	4.61	8.00	13.89	14.77
5310	62	MCS10	0.797	5.100	5.50	5.27	8.40	14.29	14.77

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5510	102	MCS10	0.797	10.46	10.23	13.36	14.15	23.98
5550	110	MCS10	0.797	18.05	17.72	20.90	21.70	23.98
5710	142	MCS10	0.797	18.18	16.66	20.49	21.29	23.98

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5755	151	MCS10	0.797	18.09	18.01	21.06	21.86	30.00
5795	159	MCS10	0.797	17.87	17.29	20.60	21.40	30.00

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5210	42	MCS10	1.447	5.100	4.82	2.75	6.92	13.47	14.77

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Peak. Ant Gain (dBi)	Measured Power [dBm]			E.I.R.P (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.				Internal Antenna	External Antenna	Sum		
5290	58	MCS10	1.447	5.100	4.88	4.05	7.49	14.04	14.77

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5530	106	MCS10	1.447	7.53	7.26	10.41	11.85	23.98
5610	122	MCS10	1.447	17.26	16.46	19.89	21.34	23.98
5690	138	MCS10	1.447	17.37	15.84	19.68	21.13	23.98

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5775	155	MCS10	1.447	17.23	16.57	19.93	21.37	30.00

10.4.2 TEST RESULTS(FCC)

Internal Ant

Mod : 802.11a

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	6 Mbps	7.66	0.21	7.87	14.77
5200	40	6 Mbps	7.65	0.21	7.86	14.77
5240	48	6 Mbps	7.75	0.21	7.96	14.77

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	6 Mbps	7.96	0.21	8.17	14.77
5300	60	6 Mbps	7.96	0.21	8.17	14.77
5320	64	6 Mbps	8.04	0.21	8.25	14.77

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	6	14.92	0.20	15.12	23.98
5580	116	6	20.22	0.20	20.42	23.98
5720	144	6	20.16	0.20	20.36	23.98

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	6	19.76	0.20	19.96	30
5785	157	6	18.72	0.20	18.92	30
5825	165	6	17.22	0.20	17.42	30

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	0	7.59	0.21	7.80	14.77
5200	40	0	7.54	0.21	7.75	14.77
5240	48	0	7.71	0.21	7.92	14.77

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	0	7.89	0.21	8.10	14.77
5300	60	0	7.87	0.21	8.08	14.77
5320	64	0	8.01	0.21	8.22	14.77

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	14.78	0.22	15.00	23.98
5580	116	0	20.10	0.22	20.32	23.98
5720	144	0	20.08	0.22	20.30	23.98

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	19.57	0.22	19.79	30
5785	157	0	18.66	0.22	18.88	30
5825	165	0	17.35	0.22	17.57	30

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	0	7.59	0.44	8.03	14.77
5230	46	0	8.06	0.44	8.50	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	0	7.67	0.44	8.11	14.77
5310	62	0	7.60	0.44	8.04	14.77

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	10.78	0.45	11.22	23.98
5550	110	0	19.09	0.45	19.54	23.98
5710	142	0	19.18	0.45	19.63	23.98

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	18.68	0.45	19.13	30
5795	159	0	17.32	0.45	17.76	30

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5180	36	0	7.59	0.22	7.81	14.77
5200	40	0	7.68	0.22	7.90	14.77
5240	48	0	7.87	0.22	8.09	14.77

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5260	52	0	7.70	0.22	7.92	14.77
5300	60	0	7.97	0.22	8.19	14.77
5320	64	0	7.95	0.22	8.17	14.77

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	0	14.69	0.22	14.91	23.98
5580	116	0	20.13	0.22	20.35	23.98
5720	144	0	20.06	0.22	20.28	23.98

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	0	19.75	0.22	19.97	30
5785	157	0	18.48	0.22	18.70	30
5825	165	0	17.19	0.22	17.41	30

Mod : 802.11ac(VHT40)

802.11ac(40MHz) Mode		MCS Index	MCS Index	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5190	38	0	7.52	0.44	7.96	14.77
5230	46	0	7.94	0.44	8.38	14.77

802.11ac(40MHz) Mode		MCS Index	MCS Index	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5270	54	0	7.67	0.44	8.11	14.77
5310	62	0	7.53	0.44	7.97	14.77

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	0	10.46	0.44	10.90	23.98
5550	110	0	18.76	0.44	19.20	23.98
5710	142	0	19.18	0.44	19.62	23.98

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	0	18.47	0.44	18.91	30
5795	159	0	17.38	0.44	17.83	30

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5210	42	0	7.72	0.86	8.58	14.77

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5290	58	0	7.33	0.86	8.19	14.77

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	0	8.21	0.86	9.07	23.98
5610	122	0	18.39	0.86	19.25	23.98
5690	138	0	18.46	0.86	19.32	23.98

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	0	17.73	0.86	18.59	30

External Ant

Mod : 802.11a

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	12 Mbps	12.53	0.40	12.93	14.77
5200	40	12 Mbps	12.60	0.40	13.00	14.77
5240	48	12 Mbps	12.43	0.40	12.83	14.77

802.11a Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	12 Mbps	12.26	0.40	12.66	14.77
5300	60	12 Mbps	12.63	0.40	13.03	14.77
5320	64	12 Mbps	11.91	0.40	12.31	14.77

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	12	18.42	0.40	18.82	23.98
5580	116	12	18.20	0.40	18.60	23.98
5720	144	12	17.03	0.40	17.43	23.98

802.11a Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	12	17.85	0.40	18.25	30
5785	157	12	17.60	0.40	18.00	30
5825	165	12	16.10	0.40	16.50	30

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	2	12.18	0.61	12.79	14.77
5200	40	7	11.28	1.60	12.88	14.77
5240	48	2	11.97	0.61	12.58	14.77

802.11n(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5260	52	2	11.80	0.61	12.41	14.77
5300	60	2	12.31	0.61	12.92	14.77
5320	64	2	11.60	0.61	12.21	14.77

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	2	18.27	0.61	18.88	23.98
5580	116	2	17.92	0.61	18.53	23.98
5720	144	2	16.80	0.61	17.41	23.98

802.11n_HT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	2	17.60	0.61	18.21	30
5785	157	2	17.25	0.61	17.86	30
5825	165	2	17.40	0.21	17.61	30

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	3	10.90	1.41	12.31	14.77
5230	46	7	9.48	2.53	12.01	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	7	9.65	2.53	12.18	14.77
5310	62	7	9.32	2.53	11.85	14.77

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	3	13.80	1.41	15.21	23.98
5550	110	7	15.65	2.53	18.18	23.98
5710	142	3	15.23	1.41	16.64	23.98

802.11n_HT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	3	16.61	1.41	18.02	30
5795	159	2	16.83	1.14	17.97	30

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5180	36	2	12.35	0.61	12.96	14.77
5200	40	2	12.38	0.61	12.99	14.77
5240	48	2	12.00	0.61	12.61	14.77

802.11ac(20MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5260	52	2	11.93	0.61	12.54	14.77
5300	60	2	12.26	0.61	12.87	14.77
5320	64	2	11.54	0.61	12.15	14.77

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5500	100	2	18.26	0.61	18.87	23.98
5580	116	2	18.04	0.61	18.65	23.98
5720	144	2	16.83	0.61	17.44	23.98

802.11ac_VHT20 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5745	149	2	17.66	0.61	18.27	30
5785	157	2	17.38	0.61	17.99	30
5825	165	2	17.03	0.61	17.64	30

Mod : 802.11ac(VHT40)

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	3	10.90	1.41	12.31	14.77
5230	46	7	9.48	2.53	12.01	14.77

802.11n(40MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5270	54	7	9.65	2.53	12.18	14.77
5310	62	7	9.32	2.53	11.85	14.77

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5510	102	9	12.48	2.80	15.28	23.98
5550	110	9	15.30	2.80	18.10	23.98
5710	142	3	15.03	1.39	16.42	23.98

802.11ac_VHT40 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5755	151	3	16.70	1.39	18.09	30
5795	159	9	15.16	2.80	17.96	30

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5210	42	3	9.63	2.26	11.89	14.77

802.11ac(80MHz) Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)
Frequency[MHz]	Channel No.					
5290	58	9	8.84	3.84	12.68	14.77

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5530	106	9	9.55	3.84	13.40	23.98
5610	122	9	13.75	3.84	17.59	23.98
5690	138	9	12.74	3.84	16.58	23.98

802.11ac_VHT80 Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
5775	155	9	13.88	3.84	17.72	30

Internal Ant + External Ant

Mod : 802.11n(HT20)

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5180	36	MCS8	0.906	5.75	3.92	7.94	8.85	14.77
5200	40	MCS8	0.906	5.80	4.15	8.06	8.97	14.77
5240	48	MCS8	0.906	6.10	4.40	8.34	9.25	14.77

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5260	52	MCS8	0.906	5.86	5.24	8.57	9.48	14.77
5300	60	MCS8	0.906	6.04	5.18	8.64	9.55	14.77
5320	64	MCS8	0.906	6.00	5.23	8.64	9.55	14.77

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5500	100	MCS8	0.428	13.85	13.60	16.74	17.17	23.98
5580	116	MCS8	0.428	17.00	16.45	19.74	20.17	23.98
5720	144	MCS8	0.428	17.32	15.23	19.41	19.84	23.98

802.11n(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5745	149	MCS8	0.428	18.97	18.59	21.79	22.22	30.00
5785	157	MCS8	0.428	19.03	18.10	21.60	22.03	30.00
5825	165	MCS8	0.428	19.00	17.38	21.28	21.70	30.00

Mod : 802.11n(HT40)

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5190	38	MCS8	0.804	5.20	3.37	7.39	8.19	14.77
5230	46	MCS8	0.804	5.37	3.82	7.67	8.48	14.77

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5270	54	MCS8	0.804	5.30	4.44	7.90	8.71	14.77
5310	62	MCS8	0.804	5.80	5.38	8.61	9.41	14.77

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5510	102	MCS8	0.804	10.51	10.21	13.37	14.18	23.98
5550	110	MCS8	0.804	18.12	17.68	20.92	21.72	23.98
5710	142	MCS8	0.804	18.31	16.59	20.54	21.35	23.98

802.11n(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5755	151	MCS8	0.804	18.03	18.04	21.05	21.85	30.00
5795	159	MCS8	0.804	17.96	17.32	20.66	21.47	30.00

Mod : 802.11ac(VHT20)

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5180	36	MCS9	0.422	5.77	3.74	7.88	8.31	14.77
5200	40	MCS9	0.422	5.81	3.87	7.96	8.38	14.77
5240	48	MCS9	0.422	5.82	4.22	8.10	8.53	14.77

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5260	52	MCS9	0.422	6.10	5.16	8.67	9.09	14.77
5300	60	MCS9	0.422	6.11	5.63	8.89	9.31	14.77
5320	64	MCS9	0.422	6.28	5.67	9.00	9.42	14.77

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5500	100	MCS9	0.422	14.00	13.66	16.84	17.27	23.98
5580	116	MCS9	0.422	16.95	16.40	19.69	20.12	23.98
5720	144	MCS9	0.422	17.36	15.64	19.59	20.02	23.98

802.11ac(20MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5745	149	MCS9	0.422	19.16	18.56	21.88	22.30	30.00
5785	157	MCS9	0.422	19.02	18.16	21.62	22.04	30.00
5825	165	MCS9	0.422	19.00	17.43	21.30	21.72	30.00

Mod : 802.11ac(VHT40)

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5190	38	MCS10	0.797	5.06	3.21	7.24	8.04	14.77
5230	46	MCS10	0.797	5.34	3.86	7.67	8.47	14.77

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5270	54	MCS10	0.797	5.33	4.61	8.00	8.79	14.77
5310	62	MCS10	0.797	5.50	5.27	8.40	9.19	14.77

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5510	102	MCS10	0.797	10.46	10.23	13.36	14.15	23.98
5550	110	MCS10	0.797	18.05	17.72	20.90	21.70	23.98
5710	142	MCS10	0.797	18.18	16.66	20.49	21.29	23.98

802.11ac(40MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5755	151	MCS10	0.797	18.09	18.01	21.06	21.86	30.00
5795	159	MCS10	0.797	17.87	17.29	20.60	21.40	30.00

Mod : 802.11ac(VHT80)

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5210	42	MCS10	1.447	4.82	2.75	6.92	8.37	14.77

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5290	58	MCS10	1.447	4.88	4.05	7.49	8.94	14.77

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5530	106	MCS10	1.447	7.53	7.26	10.41	11.85	23.98
5610	122	MCS10	1.447	17.26	16.46	19.89	21.34	23.98
5690	138	MCS10	1.447	17.37	15.84	19.68	21.13	23.98

802.11ac(80MHz) Mode		Rate (Mbps)	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
Frequency [MHz]	Channel No.			Internal Antenna	External Antenna	Sum		
5775	155	MCS10	1.447	17.23	16.57	19.93	21.37	30.00

10.4.3 TEST RESULTS(Straddle channels)

Internal Ant

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 2C Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	18.92	0.205	19.12	22.35
802.11n			18.83	0.222	19.05	22.38
802.11ac			18.81	0.223	19.03	22.22

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 3 Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	11.57	0.205	11.77	24.96
802.11n			12.16	0.222	12.38	24.89
802.11ac			12.35	0.223	12.57	25.22

Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 2C Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	18.74	0.446	19.19	23.34
802.11ac			19.07	0.442	19.51	23.38

Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 3 Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	6.84	0.446	7.29	21.34
802.11ac			7.15	0.442	7.59	21.11

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 2C Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	18.81	0.861	19.67	23.61

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 3 Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	3.60	0.861	4.46	19.08

External Ant

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 2C Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	16.52	0.399	16.92	22.63
802.11n			15.97	0.614	16.58	22.59
802.11ac			16.06	0.610	16.67	22.60

Conducted Output Power Measurements (802.11a/n_HT20/ac_VHT20 Mode: UNII 3 Band 5720MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11a	5720	144	9.14	0.399	9.54	24.28
802.11n			9.10	0.614	9.71	24.37
802.11ac			9.18	0.610	9.79	24.36

Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 2C Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	14.88	1.409	16.29	23.39
802.11ac			15.14	1.389	16.53	23.42

Conducted Output Power Measurements (802.11n_HT40/ac_VHT40 Mode: UNII 3 Band 5710MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11n	5710	142	3.23	1.409	4.64	21.01
802.11ac			3.42	1.389	4.81	20.82

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 2C Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	12.63	3.843	16.47	23.67

Conducted Output Power Measurements (802.11ac_VHT80 Mode: UNII 3 Band 5690MHz)

Mode	Frequency [MHz]	Channel No.	Measured Power (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
802.11ac	5690	138	-0.90	3.843	2.94	18.37

10.5 POWER SPECTRAL DENSITY

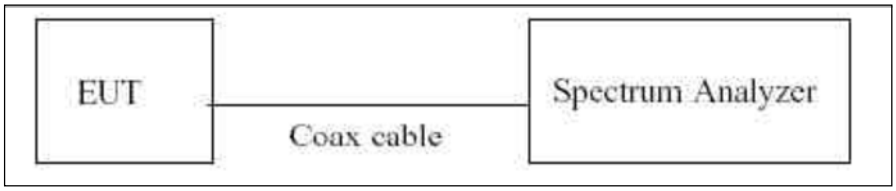
The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

▣ Limit

Power Spectral Density

Band	Mode	Limit
UNII 1	802.11a,n,ac	11 dBm/MHz
UNII 2A	802.11a,n,ac	11 dBm/MHz
UNII 2C	802.11a,n,ac	11 dBm/MHz
UNII 3	802.11a,n,ac	30 dBm/500 kHz

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to Method in KDB 789033 D02 v02r01.

The spectrum analyzer is set to :

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
3. VBW ≥ 3 MHz
4. Number of points in sweep ≥ 2*span/RBW.
5. Sweep time = auto.
6. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector mode.
7. Do not use sweep triggering. Allow the sweep to “free run”.
8. Trace average at least 100 traces in power averaging(RMS) mode
9. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
10. If Method SA-2 was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.

▣ SAMPLE CALCULATION

PSD = Reading Value + ATT loss + Cable loss(1 ea) + Duty Cycle Factor

Ex) PSD = -3 dBm + 10 dB + 0.8 dB + 0.2 dB = 8.0 dBm

Note :

1. Spectrum reading values are not plot data. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

Internal

Band	Loss(dB)
UNII 1, 2A	12
UNII 2C	12.1
UNII 3	12.2

External

Band	Loss(dB)
UNII 1, 2A	14.7
UNII 2C	13.3
UNII 3	14.1

(Actual value of loss for the attenuator and cable combination)

Internal Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11a	-2.578	0.214	-2.364	11	Pass
5200	40		-2.743	0.214	-2.529	11	Pass
5240	48		-2.888	0.214	-2.674	11	Pass
5260	52		-2.518	0.214	-2.304	11	Pass
5300	60		-2.484	0.214	-2.270	11	Pass
5320	64		-2.313	0.214	-2.099	11	Pass

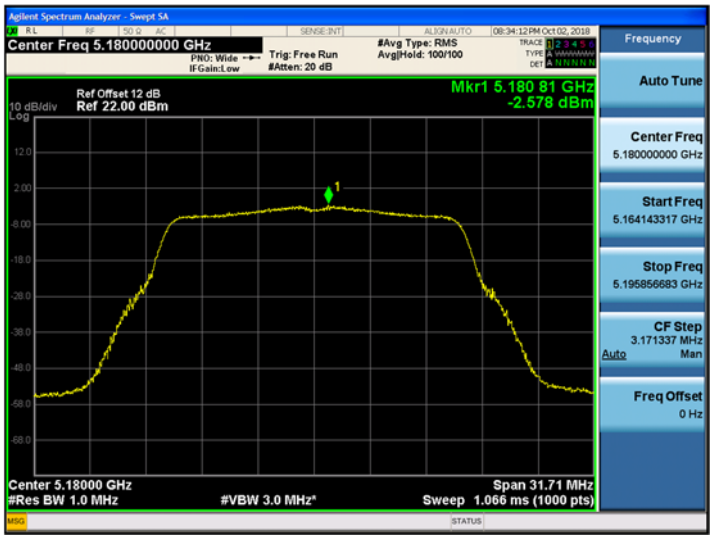
External Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11a	1.917	0.399	2.316	11	Pass
5200	40		1.906	0.399	2.305	11	Pass
5240	48		1.726	0.399	2.125	11	Pass
5260	52		1.696	0.399	2.095	11	Pass
5300	60		2.087	0.399	2.486	11	Pass
5320	64		1.999	0.399	2.398	11	Pass

▣ TEST Plot for 802.11a 20 MHz BW

802.11a UNII 1 BAND PSD CH 36_Internal Ant	802.11a UNII 1 BAND PSD CH 40_External Ant
	
802.11a UNII 2A BAND PSD CH 64_Internal Ant	**802.11a UNII 2A BAND PSD CH 60_External Ant**
	

Internal Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11n 20MHz BW	-3.507	0.215	-3.292	11	Pass
5200	40		-3.116	0.215	-2.901	11	Pass
5240	48		-3.085	0.215	-2.870	11	Pass
5260	52		-3.304	0.215	-3.089	11	Pass
5300	60		-2.723	0.215	-2.508	11	Pass
5320	64		-2.879	0.215	-2.664	11	Pass

External Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11n 20MHz BW	1.301	0.614	1.915	11	Pass
5200	40		1.589	1.604	3.193	11	Pass
5240	48		1.383	0.614	1.997	11	Pass
5260	52		1.356	0.614	1.970	11	Pass
5300	60		1.478	0.614	2.092	11	Pass
5320	64		1.331	0.614	1.945	11	Pass

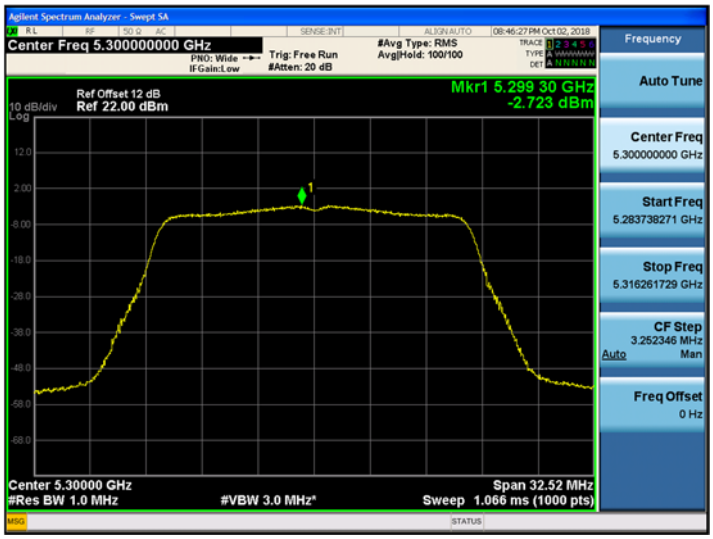
▣ **Sum Data of Internal Ant and External Ant**

▣ **TEST RESULTS**

Conducted Power Density Measurements

Mode	Frequency [MHz]	Channel No.	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
				Internal Antenna	External Antenna	Sum		
802.11n (HT20)	5180	36	0.428	-5.570	-7.567	-3.44	-3.02	11.00
	5200	40	0.428	-5.265	-6.839	-2.97	-2.54	11.00
	5240	48	0.428	-5.049	-6.658	-2.77	-2.34	11.00
	5260	52	0.428	-4.683	-5.751	-2.17	-1.75	11.00
	5300	60	0.428	-4.513	-4.823	-1.65	-1.23	11.00
	5320	64	0.428	-4.448	-4.880	-1.65	-1.22	11.00

▣ TEST Plot for 802.11n_HT20

802.11n_HT20 UNII 1 BAND PSD CH 48_Internal Ant	802.11n_HT20 UNII 1 BAND PSD CH 40_External Ant
	
802.11n_HT20 UNII 2A BAND PSD CH 60_Internal Ant	**802.11n_HT20 UNII 2A BAND PSD CH 60_External Ant**
	

Internal Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11ac 20MHz BW	-3.243	0.223	-3.020	11	Pass
5200	40		-3.199	0.223	-2.976	11	Pass
5240	48		-3.047	0.223	-2.824	11	Pass
5260	52		-2.705	0.223	-2.482	11	Pass
5300	60		-3.123	0.223	-2.900	11	Pass
5320	64		-2.920	0.223	-2.697	11	Pass

External Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5180	36	802.11ac 20MHz BW	0.916	0.610	1.526	11	Pass
5200	40		1.512	0.610	2.122	11	Pass
5240	48		1.069	0.610	1.679	11	Pass
5260	52		1.182	0.610	1.792	11	Pass
5300	60		1.810	0.610	2.420	11	Pass
5320	64		1.144	0.610	1.754	11	Pass

▣ **Sum Data of Internal Ant and External Ant**

▣ **TEST RESULTS**

Conducted Power Density Measurements

Mode	Frequency [MHz]	Channel No.	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
				Internal Antenna	External Antenna	Sum		
802.11ac (VHT20)	5180	36	0.422	-5.248	-7.047	-3.04	-2.62	11.00
	5200	40	0.422	-5.442	-7.115	-3.19	-2.77	11.00
	5240	48	0.422	-4.910	-6.638	-2.68	-2.26	11.00
	5260	52	0.422	-5.136	-5.841	-2.46	-2.04	11.00
	5300	60	0.422	-4.538	-5.288	-1.89	-1.46	11.00
	5320	64	0.422	-4.724	-4.818	-1.76	-1.34	11.00

▣ **TEST Plot for 802.11ac_VHT20**

802.11ac_VHT20 UNII 1 BAND PSD CH 48_Internal Ant	802.11ac_VHT20 UNII 1 BAND PSD CH 40_External Ant
	
802.11ac_VHT20 UNII 2A BAND PSD CH 52_Internal Ant	**802.11ac_VHT20 UNII 2A BAND PSD CH 60_External Ant**


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.260000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 100/100
08:54:12 PM Oct 02, 2018
Frequency
Auto Tune
Ref Offset 12 dB
10 dB/div
Log
Ref 22.00 dBm
Mkr1 5.261 36 GHz
-2.705 dBm
Center Freq
5.260000000 GHz
Start Freq
5.244049542 GHz
Stop Freq
5.275950458 GHz
CF Step
3.190092 MHz
Auto
Man
Freq Offset
0 Hz
Center 5.26000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 31.90 MHz
Sweep 1.066 ms (1000 pts)
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: Pwr(RMS)
Avg|Hold: 100/100
10:40:06 PM Sep 27, 2018
Frequency
Auto Tune
Ref Offset 14.7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 5.301 14 GHz
1.810 dBm
Center Freq
5.300000000 GHz
Start Freq
5.283912051 GHz
Stop Freq
5.316087949 GHz
CF Step
3.217590 MHz
Auto
Man
Freq Offset
0 Hz
Center 5.30000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 32.18 MHz
Sweep 1.07 ms (1000 pts)
MSG
STATUS

Internal Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5190	38	802.11n 40MHz BW	-5.838	0.443	-5.395	11	Pass
5230	46		-5.376	0.443	-4.933	11	Pass
5270	54		-5.503	0.443	-5.060	11	Pass
5310	62		-5.647	0.443	-5.204	11	Pass

External Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5190	38	802.11n 40MHz BW	-3.013	1.409	-1.604	11	Pass
5230	46		-3.341	2.533	-0.808	11	Pass
5270	54		-2.609	2.533	-0.076	11	Pass
5310	62		-3.678	2.533	-1.145	11	Pass

▣ **Sum Data of Internal Ant and External Ant**

▣ **TEST RESULTS**

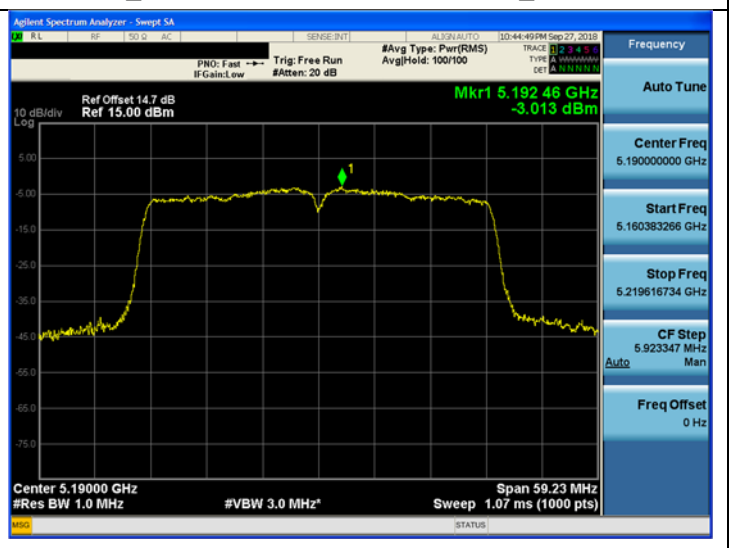
Conducted Power Density Measurements

Mode	Frequency [MHz]	Channel No.	Duty Cycle Factor (dB)	Measured Power [dBm]			Result (dBm)	Limit (dBm)
				Internal Antenna	External Antenna	Sum		
802.11n (HT40)	5190	38	0.804	-7.897	-9.824	-5.74	-4.94	11.00
	5230	46	0.804	-7.804	-9.288	-5.47	-4.67	11.00
	5270	54	0.804	-7.682	-8.535	-5.08	-4.27	11.00
	5310	62	0.804	-7.527	-7.634	-4.57	-3.77	11.00

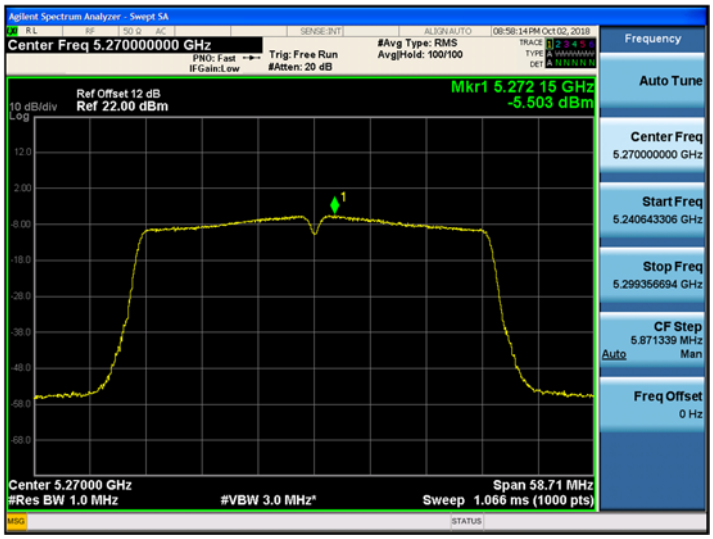
▣ **TEST Plot for 802.11n_HT40**

802.11n_HT40 UNII 1 BAND PSD CH 46_Internal Ant

802.11n_HT40 UNII 1 BAND PSD CH 38_External Ant



802.11n_HT40 UNII 2A BAND PSD CH 54_Internal Ant



802.11n_HT40 UNII 2A BAND PSD CH 54_External Ant

Internal Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5190	38	802.11ac 40MHz BW	-5.697	0.442	-5.255	11	Pass
5230	46		-5.141	0.442	-4.699	11	Pass
5270	54		-5.646	0.442	-5.204	11	Pass
5310	62		-5.710	0.442	-5.268	11	Pass

External Ant

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result				
			Measured Power Density (dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor (dB)	Limit (dBm)	Pass/Fail
5190	38	802.11ac 40MHz BW	-2.744	1.389	-1.355	11	Pass
5230	46		-1.427	2.798	1.371	11	Pass
5270	54		-2.235	2.798	0.563	11	Pass
5310	62		-3.455	2.798	-0.657	11	Pass