TEST REPORT

CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

Report No.: CTK-2019-02421

1. Client

◦ Name : KAONMEDIA Co., Ltd.

◦ Address : KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea

◦ Date of Receipt : 2019-5-31

2. Manufacturer

◦ Name : KAONMEDIA Co., Ltd.

◦ Address : KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea

3. Use of Report : For FCC Certification

4. Test Sample / Model: WiFi Mesh Repeater / AR1031

5. Date of Test : 2019-06-11 to 2019-06-25

6. Test Standard(method) used : FCC 47 CFR part 15 subpart E 15.407

7. Testing Environment: Temp.: (25 ± 5) ℃, Humidity: (50 ± 3) % R.H.

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Ji-Hye Kim: (Signature)	Technical Manager Won-Jae, Hwang: (Signature)

2019-06-28

Republic of KOREA **CTK Co., Ltd.**

CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT REVISION HISTORY

Date	Revision	Page No
2019-06-28	Issued (CTK-2019-02421)	all

CONTENTS

1. General Product Description

1.1 Client Information

Company	KAONMEDIA Co., Ltd.
Contact Point	KAONMEDIA Building, 884-3 Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
Contact Person	Name : Kim tae-Sung E-mail : kkam@kaonmedia.com Tel : +82-31-724-8861

1.2 Product Information

FCC ID	WQT-AR1031
Product Description	WiFi Mesh Repeater
Model name	AR1031
Variant Model name	-
Operating Frequency	UNII 2A : 5 260 MHz – 5 320 MHz (20 MHz_BW) 5 270 MHz – 5 310 MHz (40 MHz_BW) 5 290 MHz (80 MHz_BW) UNII 2C : 5 500 MHZ – 5 720 MHz (20 MHz_BW) 5 510 MHz – 5 710 MHz (40 MHz_BW) 5 530 MHz – 5 690 MHz (80 MHz_BW)
RF Output Power	CDD Mode_802.11a : 20.97 dBm (125.03 mW) CDD Mode_802.11n_HT20 : 21.19 dBm (131.52 mW) CDD Mode_802.11n_HT40 : 23.00 dBm (199.53 mW) CDD Mode_802.11ac_VHT20 : 21.31 dBm (135.21 mW) CDD Mode_802.11ac_VHT40 : 23.32 dBm (214.78 mW) CDD Mode_802.11ac_VHT80 : 22.09 dBm (161.81 mW) SDM Mode_802.11n_HT20 : 21.34 dBm (136.14 mW) SDM Mode_802.11n_HT40 : 22.52 dBm (178.65 mW) SDM Mode_802.11ac_VHT20 : 21.25 dBm (133.35 mW) SDM Mode_802.11ac_VHT40 : 22.63 dBm (183.23 mW) SDM Mode_802.11ac_VHT80 : 21.99 dBm (158.12 mW)
Antenna Specification	ANT1, ANT2 type : metal Antenna ANT1, ANT2 Peak Gain : 2 dBi
Type of Modulation	OFDM
Data Rate	802.11a : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 300 Mbps 802.11ac : up to 866.7 Gbps
Power Source	DC 12 V (Adapter)
Hardware Rev	Rev 1.0
Software Rev	v.2.00.80

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253R6N
AC/DC Adapter	HP	HSTNN-CA40	-
AD/DC Adapter	SHENZHEN FRECOM ELECTRONICS CO., LTD.	F12L33-120100SPAU	-

2. Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A-2
KOREA	NRRA	KR0025

2.3 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

3. Test Specifications

3.1 Standards

FCC Part Section(s)	Requirement(s)	Status (Note 1)	Test Condition
15.407(e)	6 dB Bandwidth	C	Conducted
15.407(a)	26 dB Bandwidth and 99% Bandwidth	C	
15.407(a)(1)	Conducted Output Power	C	
15.407(a)(1)	Power Spectral Density	C	
15.407(g)	Frequency Stability	C	
15.407 (b)	Undesirable emission	C	Radiated
15.205, 15.407 (b)(5),(6)	Radiated Spurious Emission	C	
15.207	AC Conducted Emissions	C	Line Conducted

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

Note 3: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2013

Note 4: The tests were performed according to the method of measurements prescribed in KDB No.789033.

3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments.
During at testing, system components were manipulated within the confines of typical usage to maximize each emission.
For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit
All modulation modes were tests. The results are only attached worst cases.

Test Frequency

- 802.11a, 802.11n_HT20, 802.11ac_VHT20

	Lowest channel	Middle channel	Highest channel
UNII 2A	5 260 MHz	5 300 MHz	5 320 MHz
UNII 2C	5 500 MHz	5 600 MHz	5 720 MHz

- 802.11n_HT40, 802.11ac_VHT40

	Lowest channel	Middle channel	Highest channel
UNII 2A	5 270 MHz	-	5 310 MHz
UNII 2C	5 510 MHz	5 590 MHz	5 710 MHz

- 802.11ac_VHT80

	Lowest channel	Middle channel	Highest channel
UNII 2A	5 290 MHz	-	-
UNII 2C	5 530 MHz	-	5 690 MHz

Test mode

- CDD mode

Test mode	Modulation	Data rate	Duty Cycle	Duty Cycle Factor
802.11a	DSSS	6 Mbps	97.4%	0.16 dB
802.11n_HT20	OFDM	MCS 0	96.7%	0.17 dB
802.11n_HT40	OFDM	MCS 0	93.7%	0.33 dB
802.11ac_VHT20	OFDM	MNSS 0	96.1%	0.17 dB
802.11ac_VHT40	OFDM	MNSS 0	92.6%	0.33 dB
802.11ac_VHT80	OFDM	MNSS 0	89.1%	0.63 dB

- SDM mode

Test mode	Modulation	Data rate	Duty Cycle	Duty Cycle Factor
802.11n_HT20	OFDM	MCS 8	93.5%	0.32 dB
802.11n_HT40	OFDM	MCS 8	86.1%	0.60 dB
802.11ac_VHT20	OFDM	MNSS 0	90.9%	0.32 dB
802.11ac_VHT40	OFDM	MNSS 0	87.2%	0.71 dB
802.11ac_VHT80	OFDM	MNSS 0	79.2%	1.25 dB

3.3 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.
Coverage factor *k* = 2, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	± 1.5 dB
Power Spectral Density	± 1.5 dB
Occupied Bandwidth	± 0.1 MHz
Unwanted Emission(conducted)	± 3.0 dB
Radiated Emissions (f ≤ 1 GHz)	± 4.0 dB
Radiated Emissions (f > 1 GHz)	± 5.0 dB

3.4 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	TOYO EMI software EP5RE Ver. 5.1.0
Line Conducted Test	ESCI7, ESCI3 : EMC32 Ver. 8.50.0 ESR7 : EMC32 Ver. 8.53.0

4. Technical Characteristic Test

4.1 26 dB Bandwidth and 99% Bandwidth

Test Procedures

KDB 789033 – Section C.1
ANSI C63.10-2013 - Section 6.9.2

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 26 dB relative to the maximum level measured in the fundamental emission.

Test Procedures

KDB 789033 – Section C.1
ANSI C63.10-2013 - Section 6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

Test Settings :

Center frequency = the highest, middle and the lowest channels

a) RBW = approximately 1 % of the emission bandwidth

b) 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 maximum 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%.

Minimum Standard:

NA

Test Data:

ANT1

	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11a		802.11n_HT20		802.11ac_VHT20	
Frequency	26 dB	99%	26 dB	99%	26 dB	99%
5 260 MHz	22.15	16.62	21.60	17.69	21.11	17.67
5 300 MHz	23.04	16.63	21.61	17.69	21.55	17.74
5 320 MHz	22.37	16.65	21.57	17.69	21.50	17.73
5 500 MHz	20.93	16.62	21.56	17.69	21.50	17.74
5 600 MHz	27.41	16.79	24.79	17.81	29.34	17.91
5 720 MHz	31.13	17.22	31.87	18.14	34.57	18.44
Measurement uncertainty	± 0.1 MHz					

	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11n_HT40		802.11ac_VHT40	
Frequency	26 dB	99 %	26 dB	99 %
5 270 MHz	78.08	37.45	76.78	37.51
5 310 MHz	76.25	37.70	77.03	37.94
5 510 MHz	79.15	39.77	79.59	39.71
5 590 MHz	88.26	49.56	88.68	49.50
5 710 MHz	89.24	56.96	89.63	57.64
Measurement uncertainty	± 0.1 MHz			

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5 290 MHz	121.1	76.19
5 530 MHz	127.8	76.41
5 690 MHz	169.4	89.29
Measurement uncertainty	± 0.1 MHz	

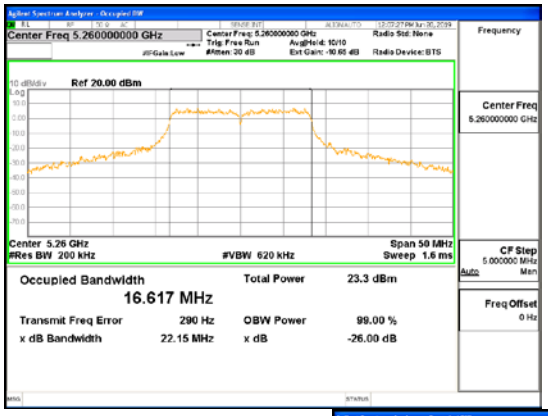
ANT2

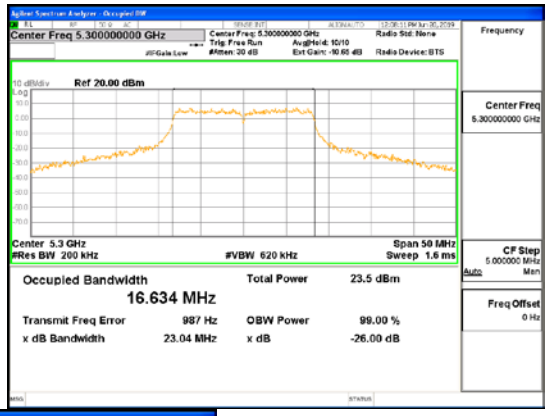
	26 dB Bandwidth and 99% Bandwidth (MHz)					
Mode	802.11a		802.11n_HT20		802.11ac_VHT20	
Frequency	26 dB	99%	26 dB	99%	26 dB	99%
5 260 MHz	23.08	16.55	20.44	17.61	20.40	17.63
5 300 MHz	23.20	16.57	21.53	17.64	21.14	17.65
5 320 MHz	23.86	16.62	21.04	17.64	21.02	17.64
5 500 MHz	20.74	16.54	20.35	17.58	20.49	17.60
5 600 MHz	23.64	16.58	21.52	17.65	21.57	17.69
5 720 MHz	25.27	16.71	27.33	17.79	27.47	17.83
Measurement uncertainty	± 0.1 MHz					

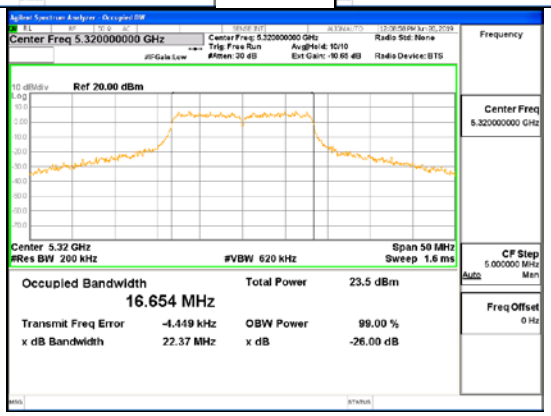
	26 dB Bandwidth and 99% Bandwidth (MHz)			
Mode	802.11n_HT40		802.11ac_VHT40	
Frequency	26 dB	99 %	26 dB	99 %
5 270 MHz	73.58	36.92	79.53	40.13
5 310 MHz	74.13	36.97	81.07	41.49
5 510 MHz	64.29	36.69	77.05	37.19
5 590 MHz	74.21	36.94	82.74	41.86
5 710 MHz	78.46	38.75	86.48	48.37
Measurement uncertainty	± 0.1 MHz			

	26 dB Bandwidth and 99% Bandwidth (MHz)	
Mode	802.11ac_VHT80	
Frequency	26 dB	99 %
5 290 MHz	125.3	76.10
5 530 MHz	103.3	75.86
5 690 MHz	128.1	76.25
Measurement uncertainty	± 0.1 MHz	

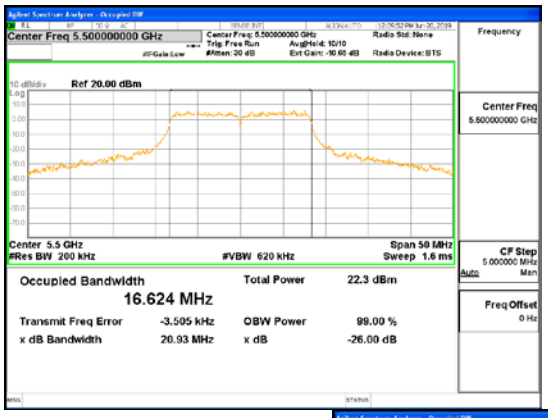
See next pages for actual measured spectrum plots.

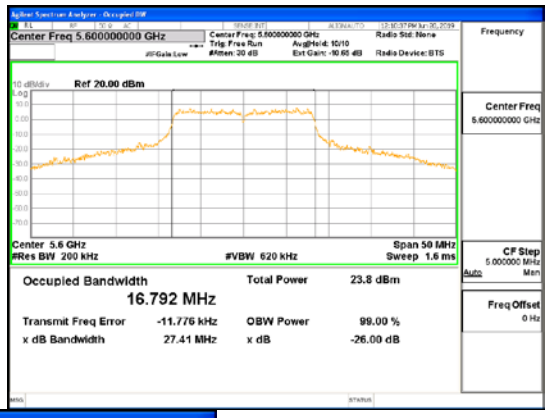


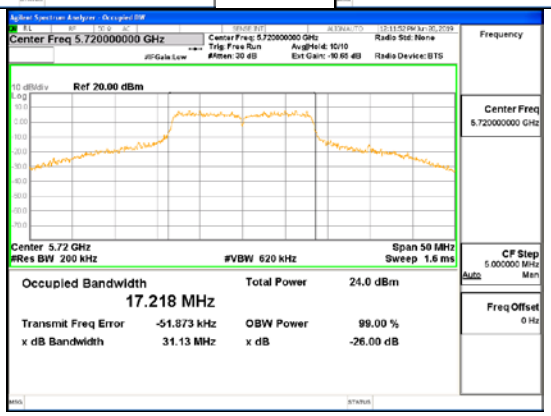




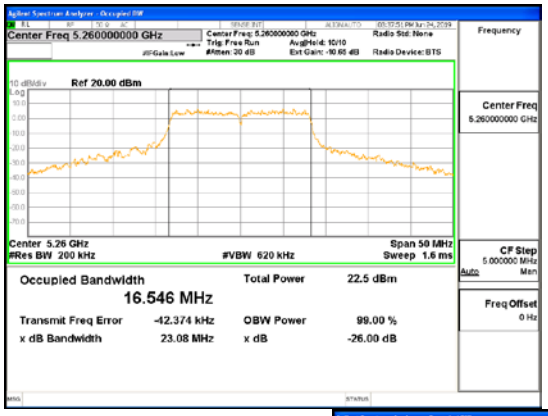
ANT1_802.11a_UNII 2A

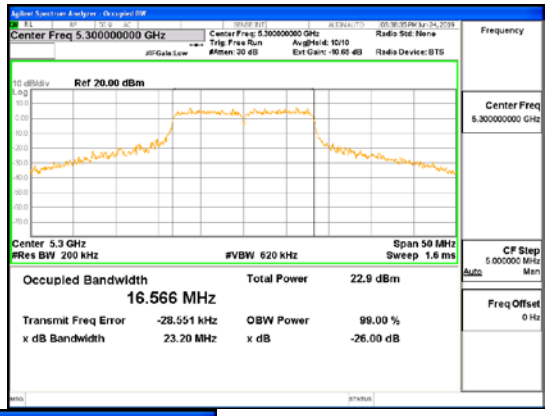


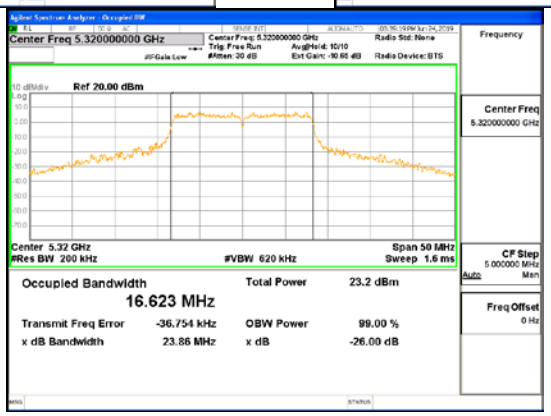




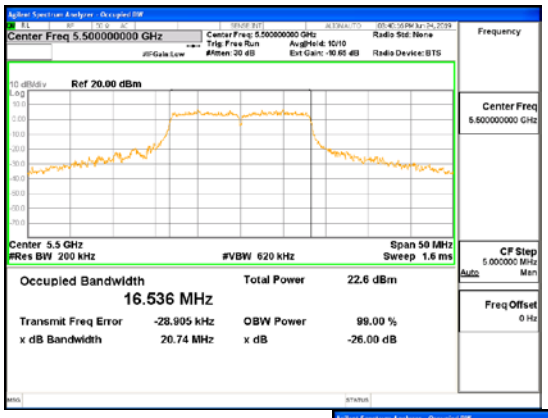
ANT1_802.11a_UNII 2C

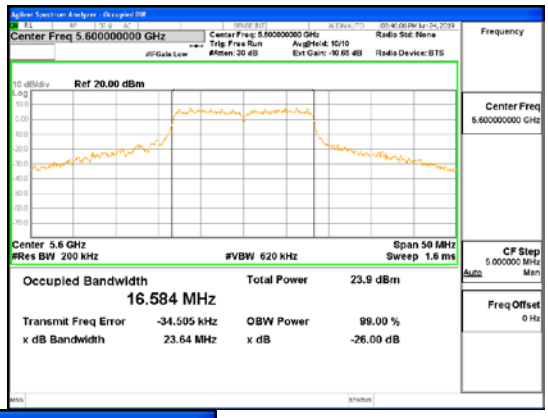


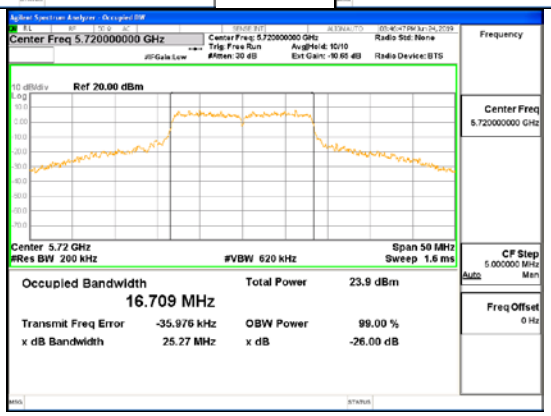




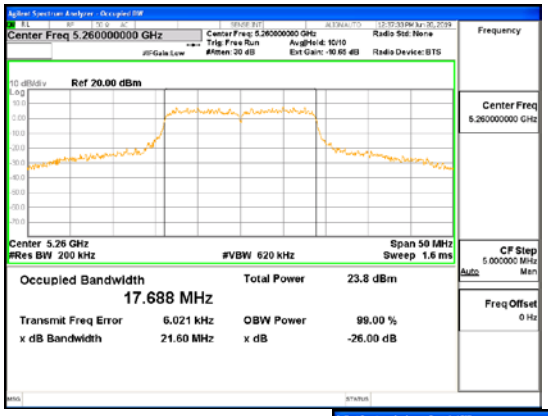
ANT2_802.11a_UNII 2A

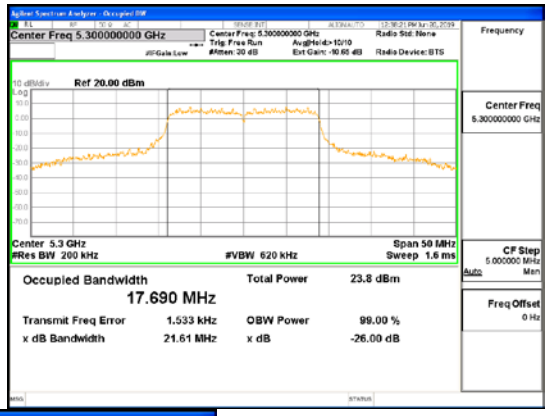


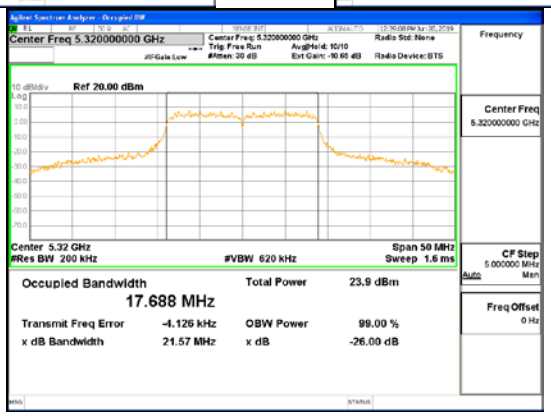




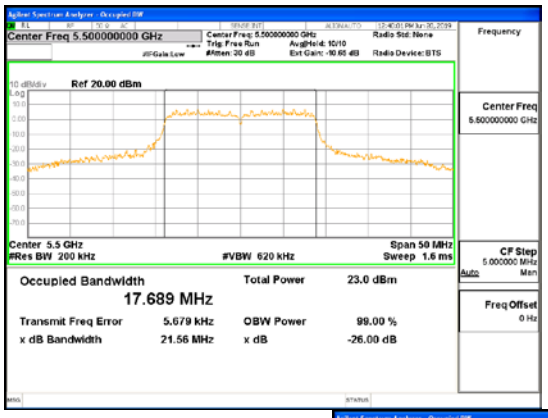
ANT2_802.11a_UNII 2C

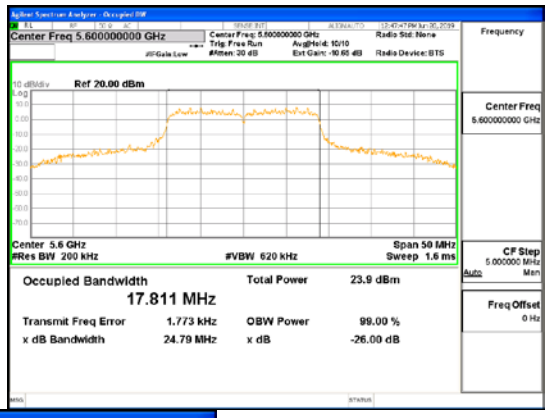


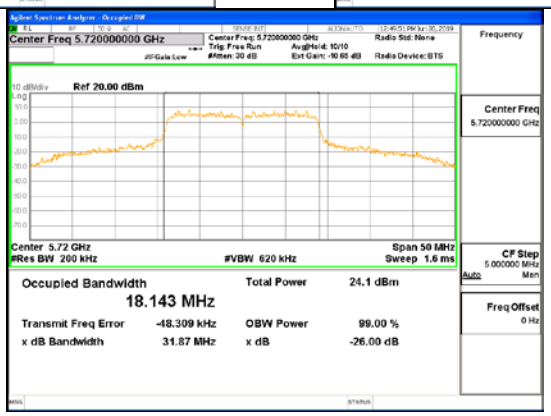




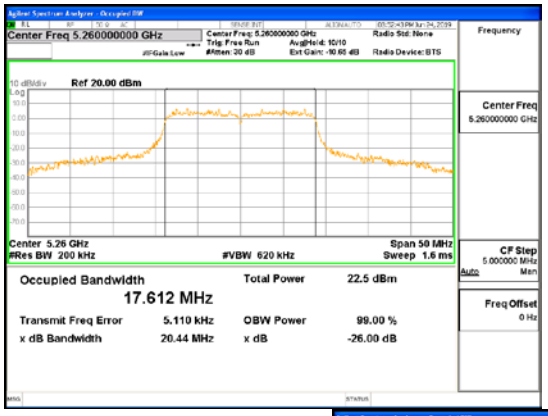
ANT1_802.11n_HT20_UNII 2A

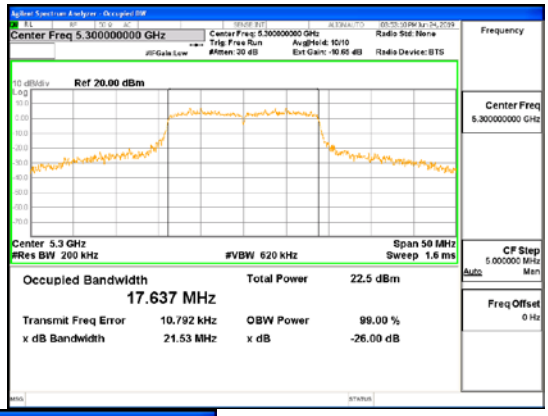


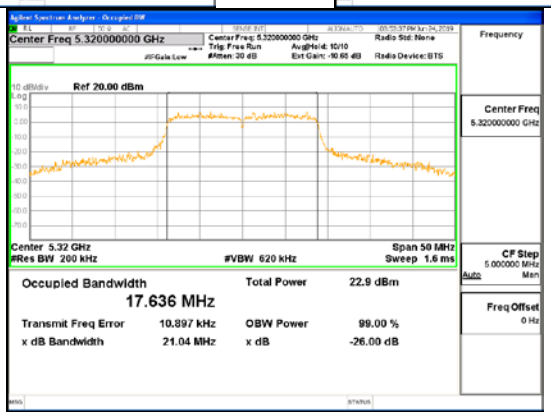




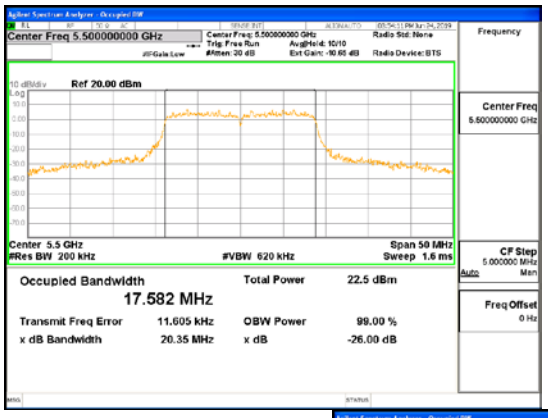
ANT1_802.11n_HT20_UNII 2C

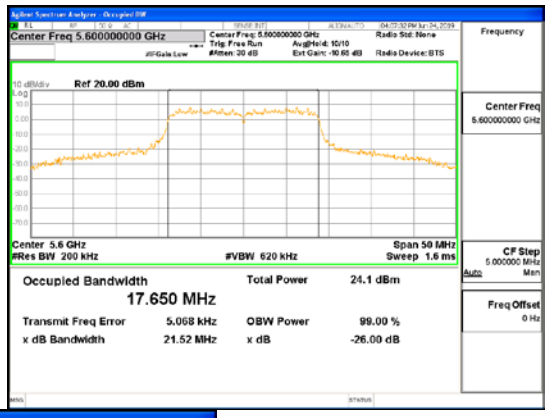


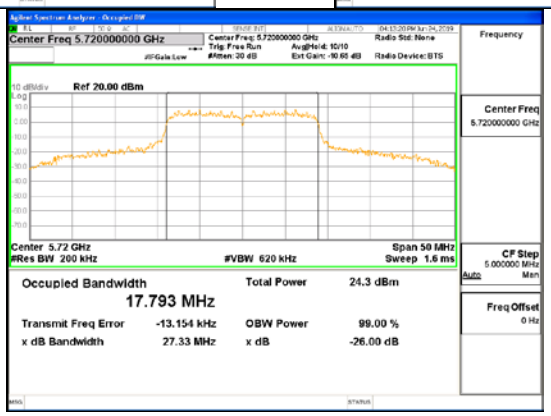




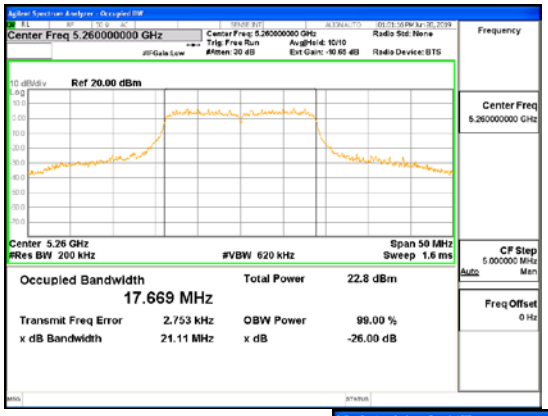
ANT2_802.11n_HT20_UNII 2A

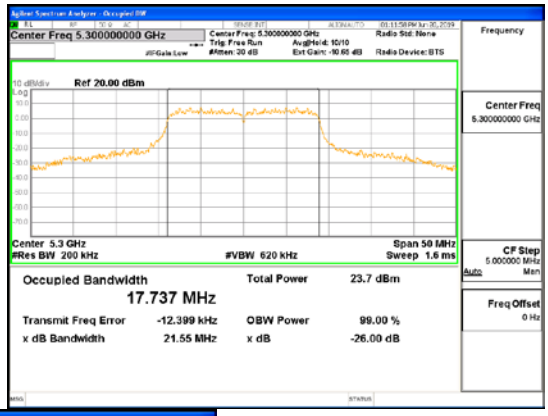


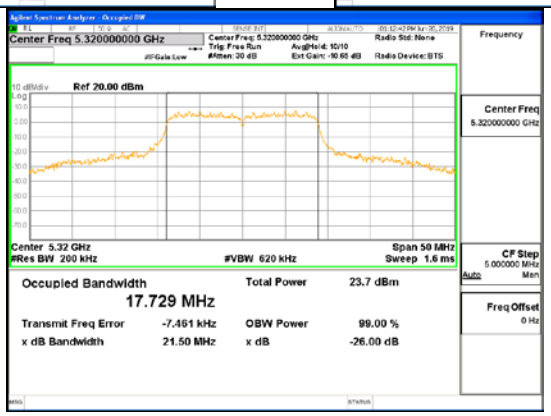




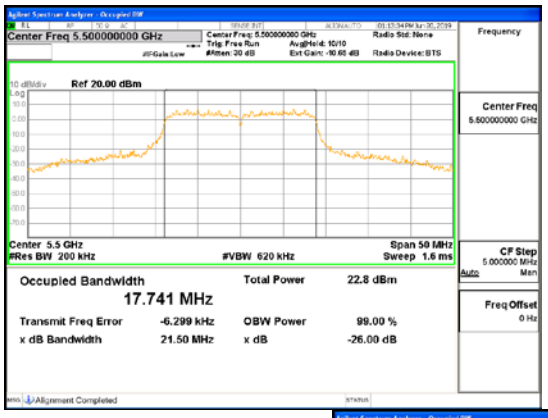
ANT2_802.11n_HT20_UNII 2C

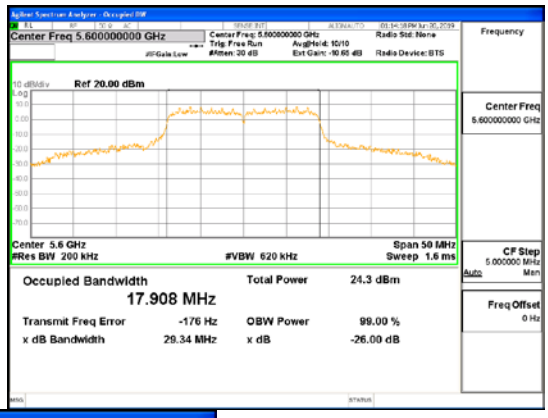


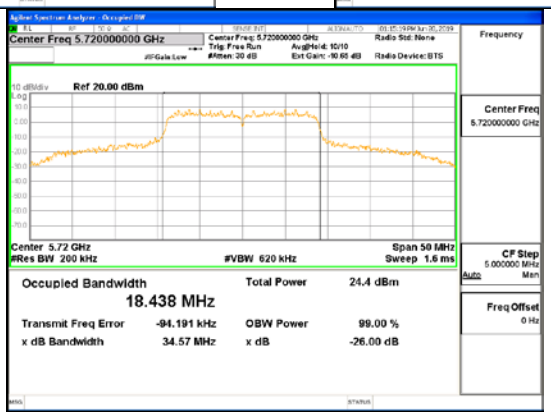




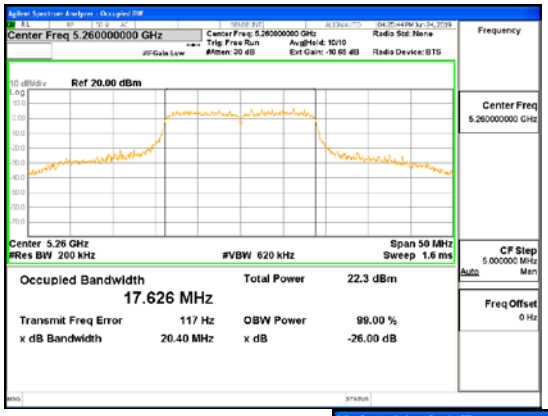
ANT1_802.11ac_VHT20_UNII 2A

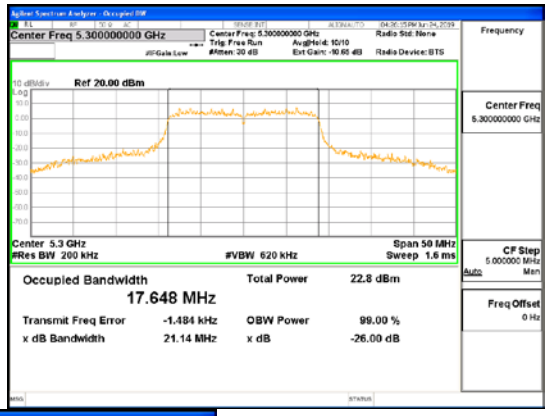


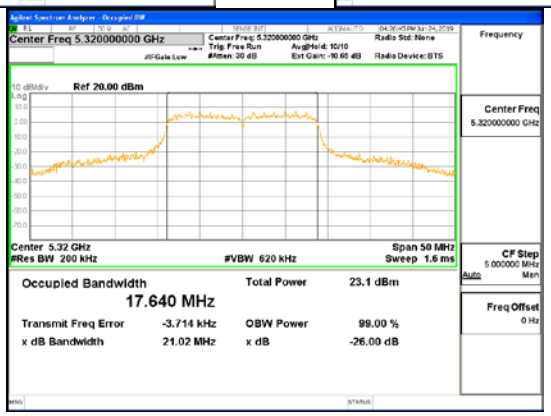




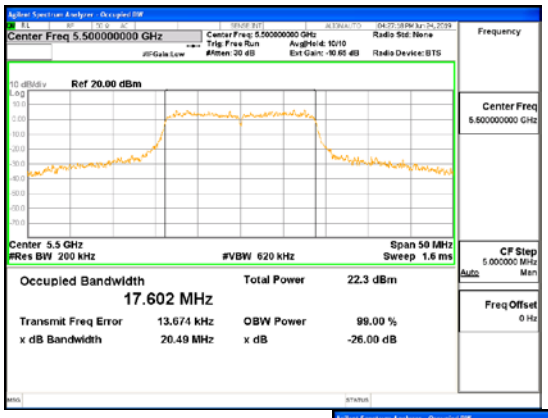
ANT1_802.11ac_VHT20_UNII 2C

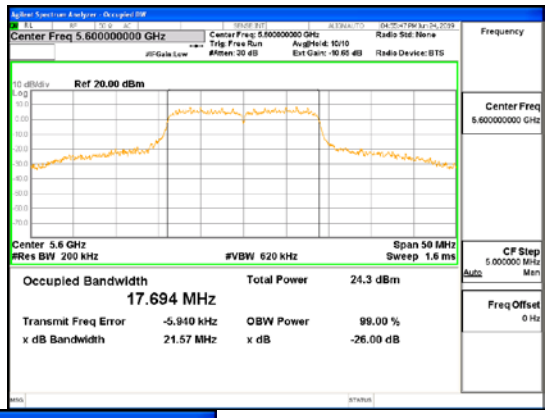


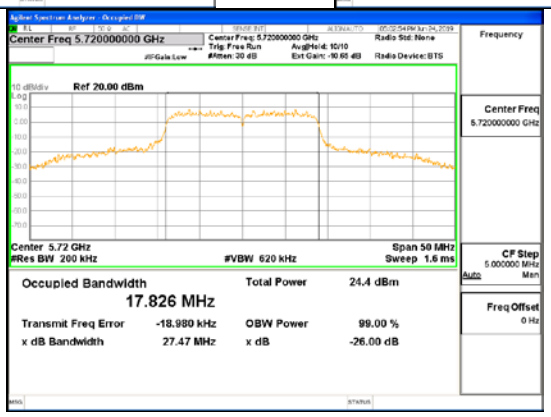




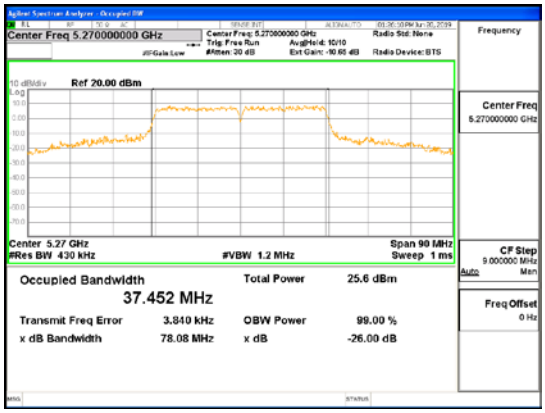
ANT2_802.11ac_VHT20_UNII 2A

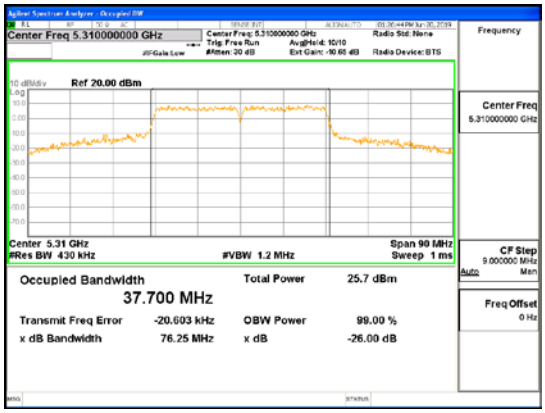




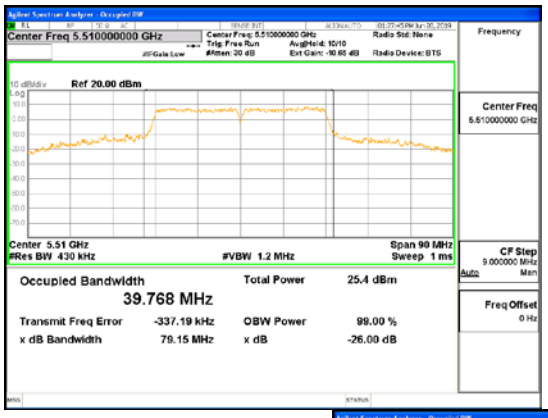


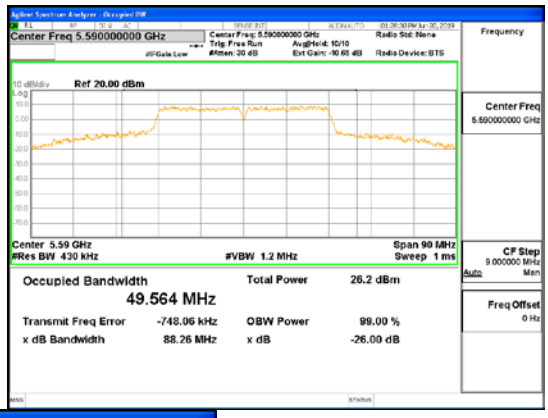
ANT2_802.11ac_VHT20_UNII 2C

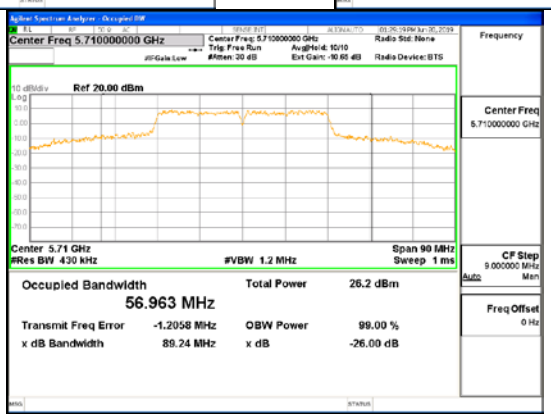




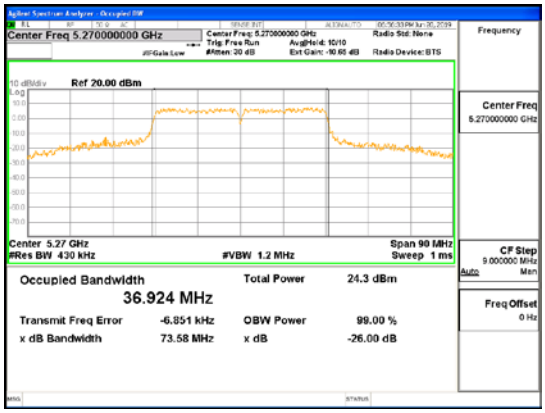
ANT1_802.11n_HT40_UNII 2A

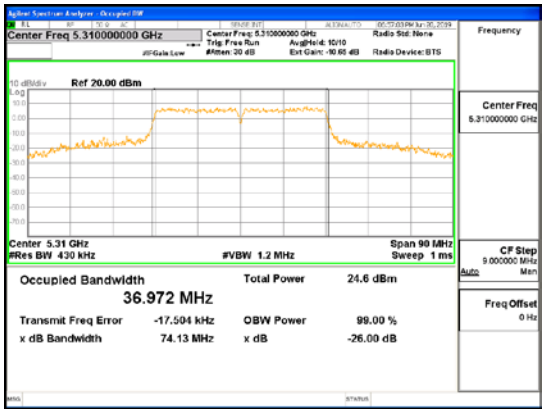




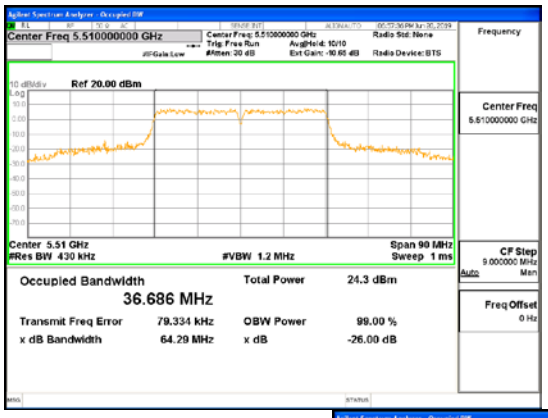


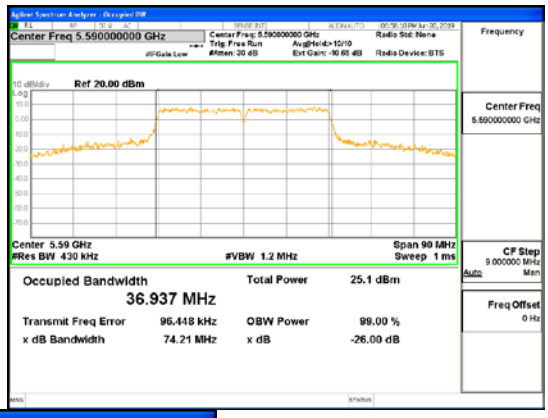
ANT1_802.11n_HT40_UNII 2C

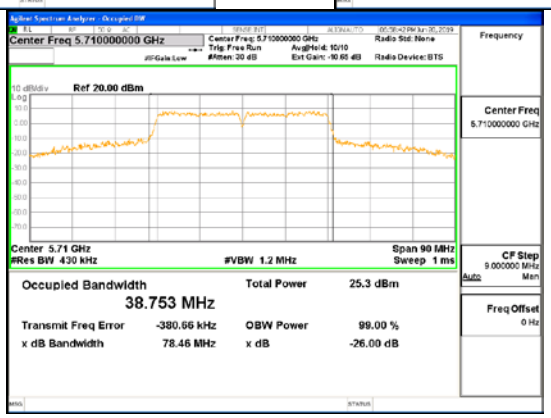




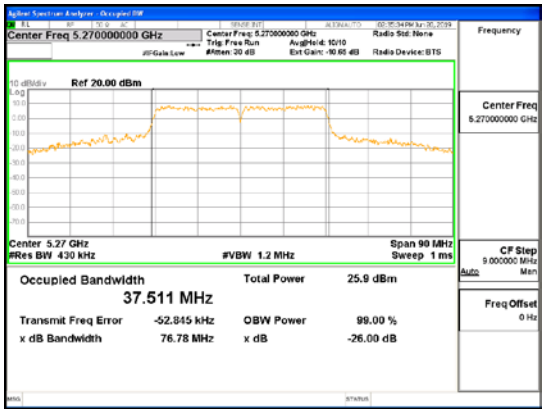
ANT2_802.11n_HT40_UNII 2A

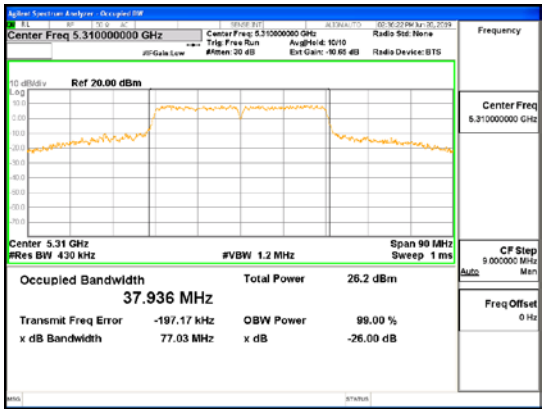




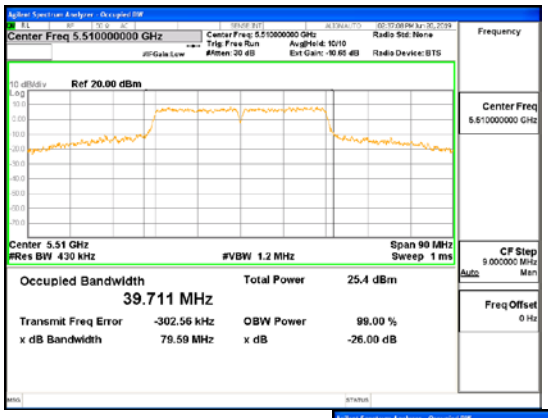


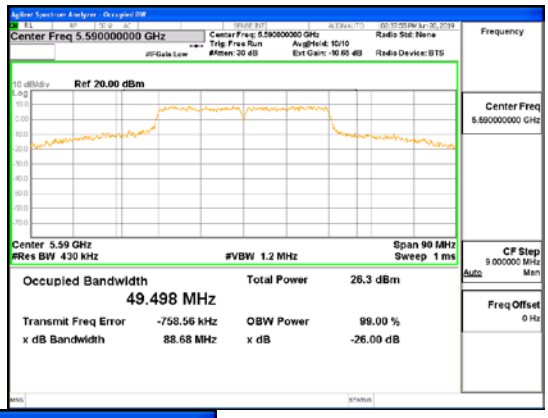
ANT2_802.11n_HT40_UNII 2C

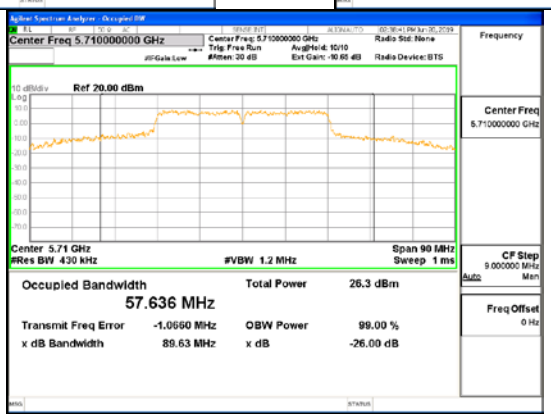




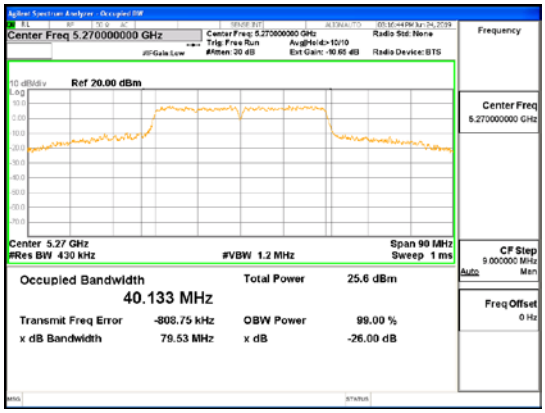
ANT1_802.11ac_VHT40_UNII 2A

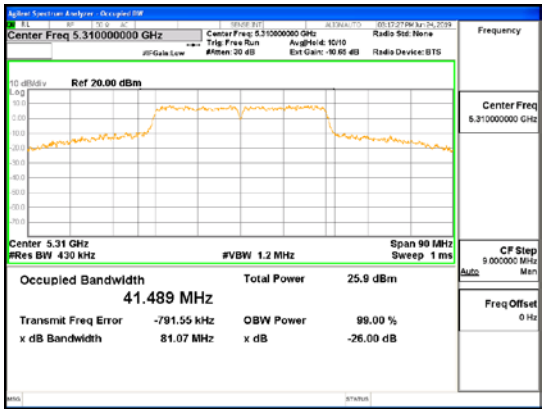




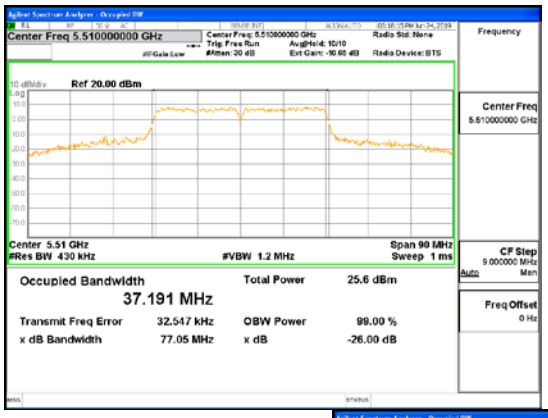


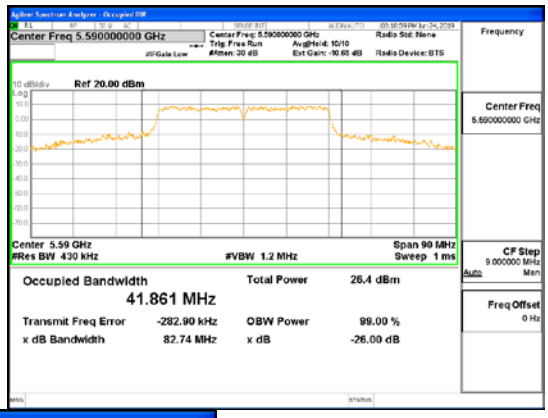
ANT1_802.11ac_VHT40_UNII 2C

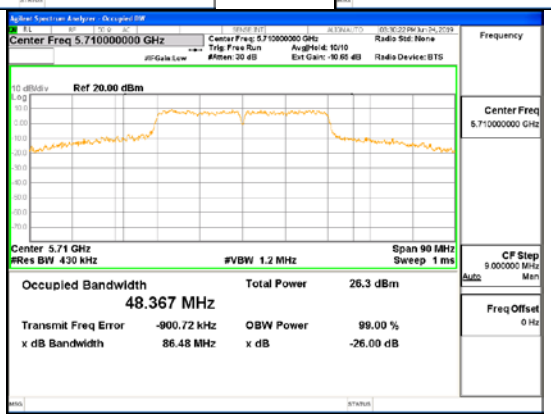




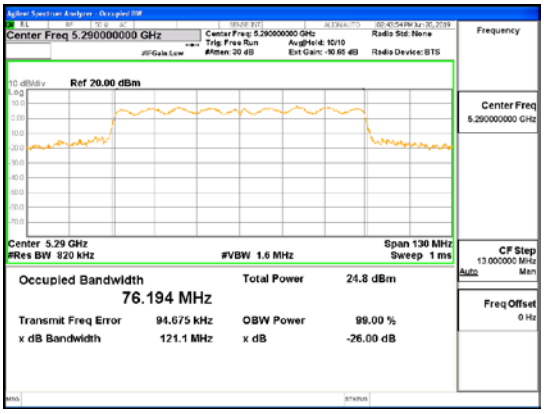
ANT2_802.11ac_VHT40_UNII 2A



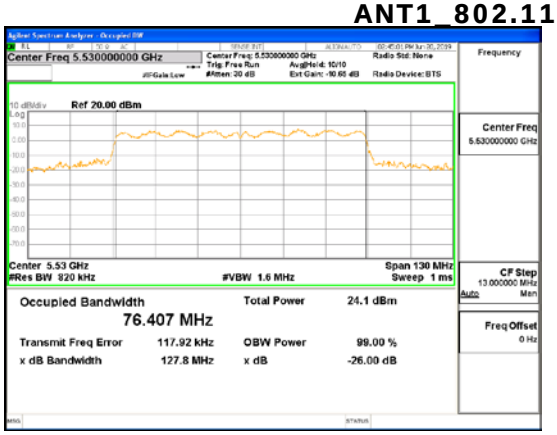


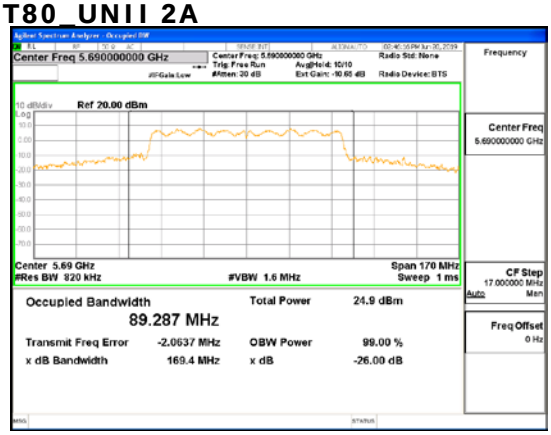


ANT2_802.11ac_VHT40_UNII 2C

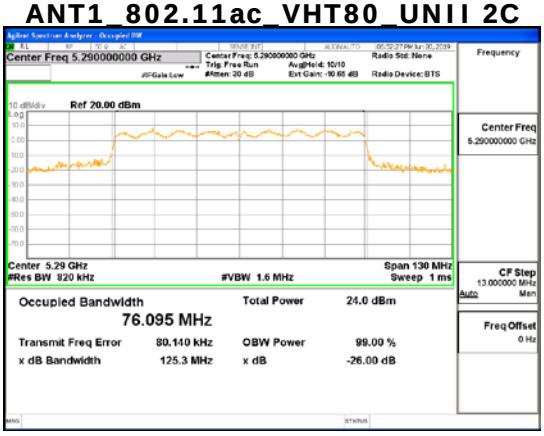


ANT1_802.11ac_VHT80_UNII 2A

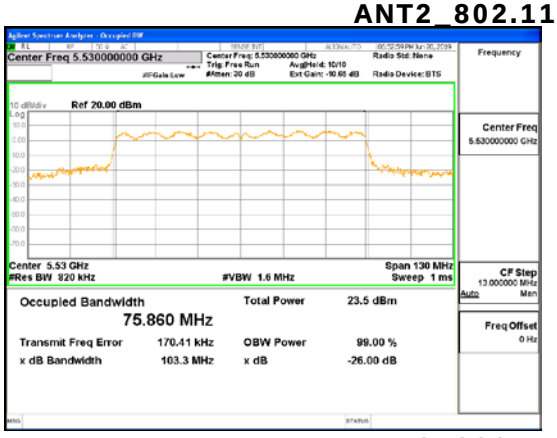


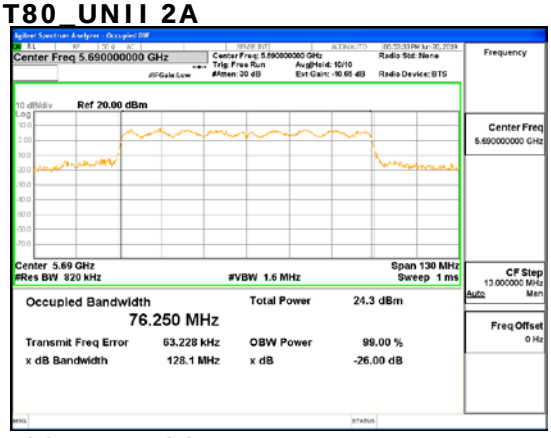


ANT1_802.11ac_VHT80_UNII 2C



ANT2_802.11ac_VHT80_UNII 2A





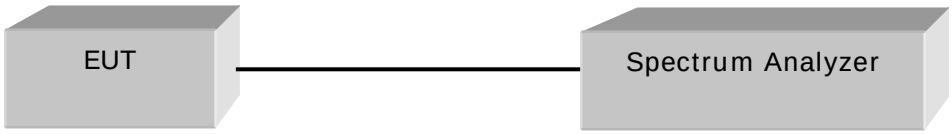
ANT2_802.11ac_VHT80_UNII 2C

4.2 OUTPUT POWER

Test Procedures

KDB 789033 – Section E.2.d (Method SA-2, Maximum Conducted Output Power)
KDB 662911 D01, D02 (Multiple Transmitter Output)

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Test Settings :

Center frequency = the highest, middle and the lowest channels

a) RBW = 1 MHz

b) VBW ≥ 3 x RBW

c) Sweep time = auto

d) Detector = power averaging (rms)

e) Trace mode = Average at least 100

f) Duty cycle factor = 10log(1/x)

Test mode		Duty Cycle Factor (dB)
CDD Mode	802.11a	0.16
	802.11n_HT20	0.17
	802.11n_HT40	0.33
	802.11ac_VHT20	0.17
	802.11ac_VHT40	0.33
	802.11ac_VHT80	0.63
SDM Mode	802.11n_HT20	0.32
	802.11n_HT40	0.60
	802.11ac_VHT20	0.32
	802.11ac_VHT40	0.71
	802.11ac_VHT80	1.25

Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 2A	802.11a/n/ac	ANT1, ANT2	2.00	24.00
	UNII 2C				
MIMO (2Tx)	UNII 2A	802.11a/n/ac	ANT1 + ANT2	5.01	24.00
	UNII 2C				

Test Data

CDD Mode_ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	16.88	0.16	17.04	24.00	6.96
	5 300	17.15	0.16	17.31	24.00	6.69
	5 320	17.21	0.16	17.37	24.00	6.63
	5 500	15.99	0.16	16.15	24.00	7.85
	5 600	17.51	0.16	17.67	24.00	6.33
	5 720	17.65	0.16	17.81	24.00	6.19
802.11n _HT20	5 260	17.44	0.17	17.61	24.00	6.39
	5 300	17.61	0.17	17.78	24.00	6.22
	5 320	17.64	0.17	17.81	24.00	6.19
	5 500	16.71	0.17	16.88	24.00	7.12
	5 600	17.80	0.17	17.97	24.00	6.03
	5 720	17.87	0.17	18.04	24.00	5.96
802.11ac _VHT20	5 260	16.59	0.17	16.76	24.00	7.24
	5 300	17.44	0.17	17.61	24.00	6.39
	5 320	17.54	0.17	17.71	24.00	6.29
	5 500	16.66	0.17	16.83	24.00	7.17
	5 600	18.04	0.17	18.21	24.00	5.79
	5 720	18.07	0.17	18.24	24.00	5.76
802.11n _HT40	5 270	19.54	0.33	19.87	24.00	4.13
	5 310	19.85	0.33	20.18	24.00	3.82
	5 510	19.20	0.33	19.53	24.00	4.47
	5 590	20.03	0.33	20.36	24.00	3.64
	5 710	19.90	0.33	20.23	24.00	3.77
802.11ac _VHT40	5 270	19.54	0.33	19.87	24.00	4.13
	5 310	19.83	0.33	20.16	24.00	3.84
	5 510	19.19	0.33	19.52	24.00	4.48
	5 590	19.94	0.33	20.27	24.00	3.73
	5 710	19.85	0.33	20.18	24.00	3.82
802.11ac _VHT80	5 290	18.70	0.63	19.33	24.00	4.67
	5 530	18.06	0.63	18.69	24.00	5.31
	5 690	18.65	0.63	19.28	24.00	4.72
Measurement uncertainty		± 1.5 dB				

CDD Mode_ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	16.47	0.16	16.63	24.00	7.37
	5 300	17.05	0.16	17.21	24.00	6.79
	5 320	17.37	0.16	17.53	24.00	6.47
	5 500	16.77	0.16	16.93	24.00	7.07
	5 600	17.82	0.16	17.98	24.00	6.02
	5 720	17.95	0.16	18.11	24.00	5.89
802.11n _HT20	5 260	16.75	0.17	16.92	24.00	7.08
	5 300	17.21	0.17	17.38	24.00	6.62
	5 320	17.46	0.17	17.63	24.00	6.37
	5 500	16.77	0.17	16.94	24.00	7.06
	5 600	18.05	0.17	18.22	24.00	5.78
	5 720	18.15	0.17	18.32	24.00	5.68
802.11ac _VHT20	5 260	16.57	0.17	16.74	24.00	7.26
	5 300	17.01	0.17	17.18	24.00	6.82
	5 320	17.19	0.17	17.36	24.00	6.64
	5 500	16.60	0.17	16.77	24.00	7.23
	5 600	18.12	0.17	18.29	24.00	5.71
	5 720	18.18	0.17	18.35	24.00	5.65
802.11n _HT40	5 270	18.30	0.33	18.63	24.00	5.37
	5 310	18.66	0.33	18.99	24.00	5.01
	5 510	18.34	0.33	18.67	24.00	5.33
	5 590	19.26	0.33	19.59	24.00	4.41
	5 710	19.30	0.33	19.63	24.00	4.37
802.11ac _VHT40	5 270	19.23	0.33	19.56	24.00	4.44
	5 310	19.60	0.33	19.93	24.00	4.07
	5 510	19.38	0.33	19.71	24.00	4.29
	5 590	20.02	0.33	20.35	24.00	3.65
	5 710	20.02	0.33	20.35	24.00	3.65
802.11ac _VHT80	5 290	18.10	0.63	18.73	24.00	5.27
	5 530	17.61	0.63	18.24	24.00	5.76
	5 690	18.24	0.63	18.87	24.00	5.13
Measurement uncertainty		± 1.5 dB				

CDD Mode_ANT1+ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 260	19.69	0.16	19.85	24.00	4.15
	5 300	20.11	0.16	20.27	24.00	3.73
	5 320	20.30	0.16	20.46	24.00	3.54
	5 500	19.41	0.16	19.57	24.00	4.43
	5 600	20.68	0.16	20.84	24.00	3.16
	5 720	20.81	0.16	20.97	24.00	3.03
802.11n _HT20	5 260	20.12	0.17	20.29	24.00	3.71
	5 300	20.42	0.17	20.59	24.00	3.41
	5 320	20.56	0.17	20.73	24.00	3.27
	5 500	19.75	0.17	19.92	24.00	4.08
	5 600	20.94	0.17	21.11	24.00	2.89
	5 720	21.02	0.17	21.19	24.00	2.81
802.11ac _VHT20	5 260	19.59	0.17	19.76	24.00	4.24
	5 300	20.24	0.17	20.41	24.00	3.59
	5 320	20.38	0.17	20.55	24.00	3.45
	5 500	19.64	0.17	19.81	24.00	4.19
	5 600	21.09	0.17	21.26	24.00	2.74
	5 720	21.14	0.17	21.31	24.00	2.69
802.11n _HT40	5 270	21.97	0.33	22.30	24.00	1.70
	5 310	22.31	0.33	22.64	24.00	1.36
	5 510	21.80	0.33	22.13	24.00	1.87
	5 590	22.67	0.33	23.00	24.00	1.00
	5 710	22.62	0.33	22.95	24.00	1.05
802.11ac _VHT40	5 270	22.40	0.33	22.73	24.00	1.27
	5 310	22.73	0.33	23.06	24.00	0.94
	5 510	22.30	0.33	22.63	24.00	1.37
	5 590	22.99	0.33	23.32	24.00	0.68
	5 710	22.95	0.33	23.28	24.00	0.72
802.11ac _VHT80	5 290	21.42	0.63	22.05	24.00	1.95
	5 530	20.85	0.63	21.48	24.00	2.52
	5 690	21.46	0.63	22.09	24.00	1.91
Measurement uncertainty		± 1.5 dB				

SDM Mode_ANT1

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	17.86	0.32	18.18	24.00	5.82
	5 300	18.25	0.32	18.57	24.00	5.43
	5 320	17.67	0.32	17.99	24.00	6.01
	5 500	16.71	0.32	17.03	24.00	6.97
	5 600	17.99	0.32	18.31	24.00	5.69
	5 720	18.01	0.32	18.33	24.00	5.67
802.11ac _VHT20	5 260	17.51	0.32	17.83	24.00	6.17
	5 300	17.68	0.32	18.00	24.00	6.00
	5 320	17.71	0.32	18.03	24.00	5.97
	5 500	16.71	0.32	17.03	24.00	6.97
	5 600	17.98	0.32	18.30	24.00	5.70
	5 720	17.78	0.32	18.10	24.00	5.90
802.11n _HT40	5 270	17.91	0.60	18.51	24.00	5.49
	5 310	18.30	0.60	18.90	24.00	5.10
	5 510	17.73	0.60	18.33	24.00	5.67
	5 590	18.64	0.60	19.24	24.00	4.76
	5 710	18.66	0.60	19.26	24.00	4.74
802.11ac _VHT40	5 270	18.19	0.71	18.90	24.00	5.10
	5 310	18.30	0.71	19.01	24.00	4.99
	5 510	17.63	0.71	18.34	24.00	5.66
	5 590	18.59	0.71	19.30	24.00	4.70
	5 710	18.65	0.71	19.36	24.00	4.64
802.11ac _VHT80	5 290	17.26	1.25	18.51	24.00	5.49
	5 530	16.63	1.25	17.88	24.00	6.12
	5 690	17.43	1.25	18.68	24.00	5.32
Measurement uncertainty		± 1.5 dB				

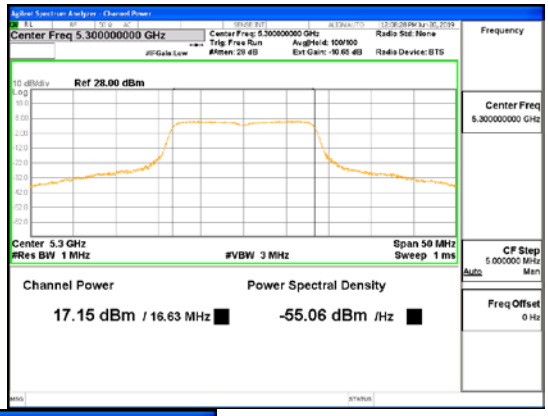
SDM Mode_ANT2

Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	17.28	0.32	17.60	24.00	6.40
	5 300	17.41	0.32	17.73	24.00	6.27
	5 320	17.59	0.32	17.91	24.00	6.09
	5 500	16.82	0.32	17.14	24.00	6.86
	5 600	18.03	0.32	18.35	24.00	5.65
	5 720	17.79	0.32	18.11	24.00	5.89
802.11ac _VHT20	5 260	17.55	0.32	17.87	24.00	6.13
	5 300	17.20	0.32	17.52	24.00	6.48
	5 320	17.31	0.32	17.63	24.00	6.37
	5 500	16.65	0.32	16.97	24.00	7.03
	5 600	17.85	0.32	18.17	24.00	5.83
	5 720	17.80	0.32	18.12	24.00	5.88
802.11n _HT40	5 270	17.94	0.60	18.54	24.00	5.46
	5 310	18.38	0.60	18.98	24.00	5.02
	5 510	18.14	0.60	18.74	24.00	5.26
	5 590	19.09	0.60	19.69	24.00	4.31
	5 710	19.14	0.60	19.74	24.00	4.26
802.11ac _VHT40	5 270	18.07	0.71	18.78	24.00	5.22
	5 310	18.48	0.71	19.19	24.00	4.81
	5 510	18.22	0.71	18.93	24.00	5.07
	5 590	19.14	0.71	19.85	24.00	4.15
	5 710	19.16	0.71	19.87	24.00	4.13
802.11ac _VHT80	5 290	17.85	1.25	19.10	24.00	4.90
	5 530	17.35	1.25	18.60	24.00	5.40
	5 690	18.01	1.25	19.26	24.00	4.74
Measurement uncertainty		± 1.5 dB				

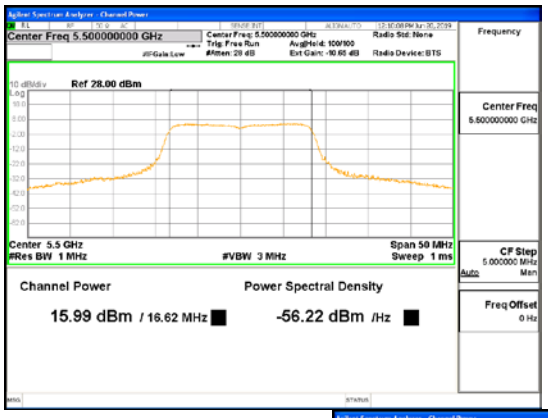
SDM Mode_ANT1+ANT2

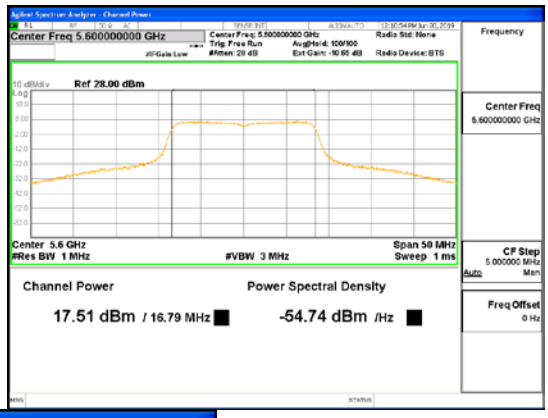
Test Mode	Frequency (MHz)	Measured Output Power (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 260	20.59	0.32	20.91	24.00	3.09
	5 300	20.86	0.32	21.18	24.00	2.82
	5 320	20.64	0.32	20.96	24.00	3.04
	5 500	19.78	0.32	20.10	24.00	3.90
	5 600	21.02	0.32	21.34	24.00	2.66
	5 720	20.91	0.32	21.23	24.00	2.77
802.11ac _VHT20	5 260	20.54	0.32	20.86	24.00	3.14
	5 300	20.46	0.32	20.78	24.00	3.22
	5 320	20.52	0.32	20.84	24.00	3.16
	5 500	19.69	0.32	20.01	24.00	3.99
	5 600	20.93	0.32	21.25	24.00	2.75
	5 720	20.80	0.32	21.12	24.00	2.88
802.11n _HT40	5 270	20.94	0.60	21.54	24.00	2.46
	5 310	21.35	0.60	21.95	24.00	2.05
	5 510	20.95	0.60	21.55	24.00	2.45
	5 590	21.88	0.60	22.48	24.00	1.52
	5 710	21.92	0.60	22.52	24.00	1.48
802.11ac _VHT40	5 270	21.14	0.71	21.85	24.00	2.15
	5 310	21.40	0.71	22.11	24.00	1.89
	5 510	20.95	0.71	21.66	24.00	2.34
	5 590	21.88	0.71	22.59	24.00	1.41
	5 710	21.92	0.71	22.63	24.00	1.37
802.11ac _VHT80	5 290	20.58	1.25	21.83	24.00	2.17
	5 530	20.02	1.25	21.27	24.00	2.73
	5 690	20.74	1.25	21.99	24.00	2.01
Measurement uncertainty		± 1.5 dB				

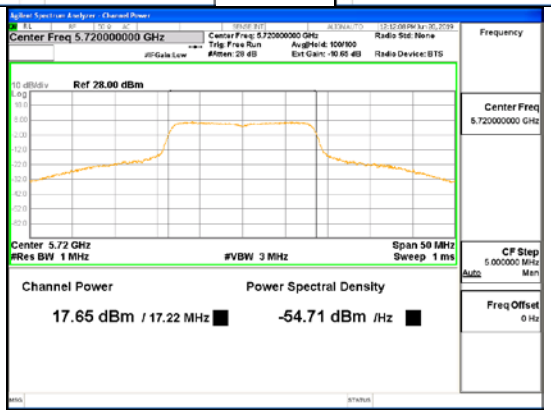
See next pages for actual measured spectrum plots.



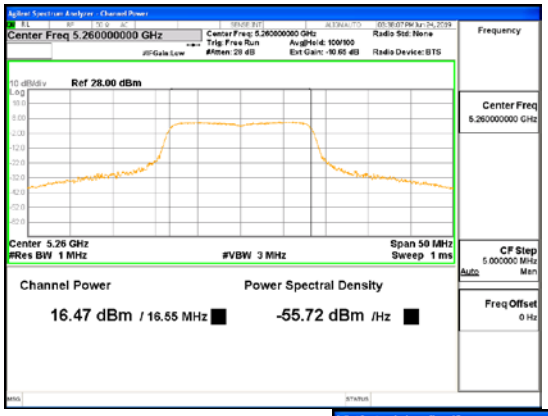
CDD Mode_ANT1_802.11a_UNII 2A

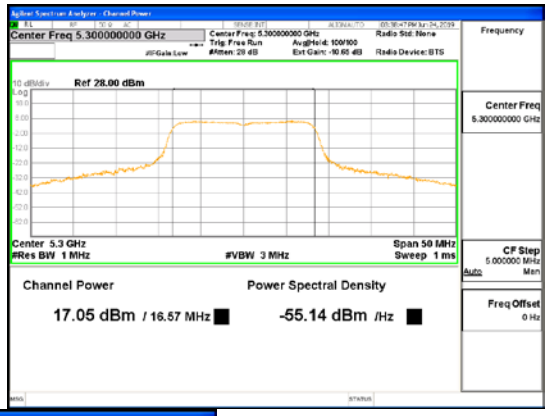




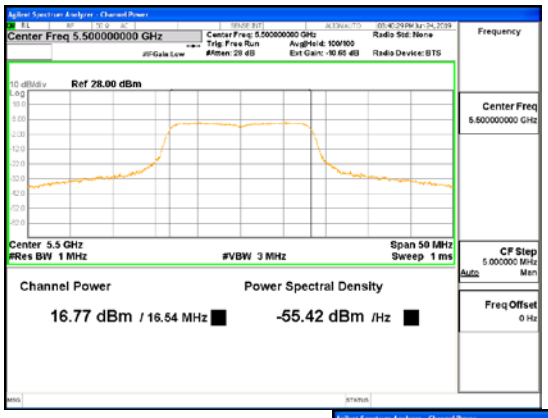


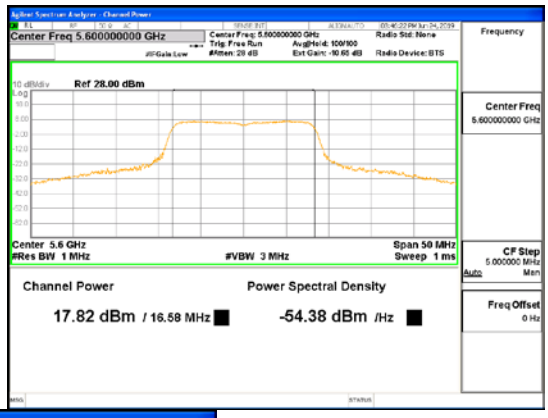
CDD Mode_ANT1_802.11a_UNII 2C



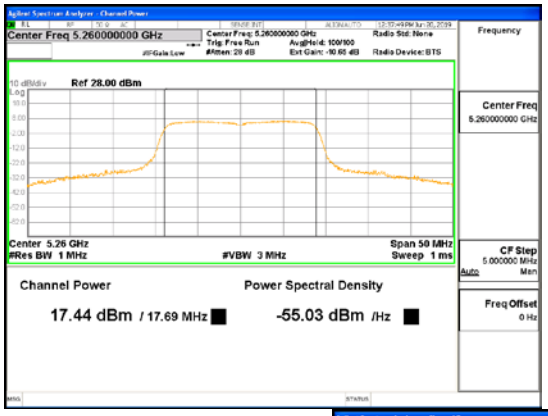


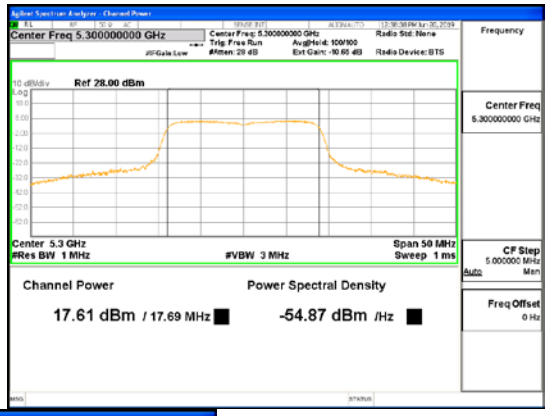
CDD Mode_ANT2_802.11a_UNII 2A



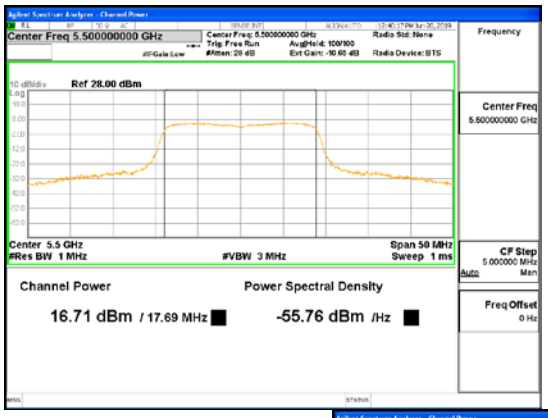


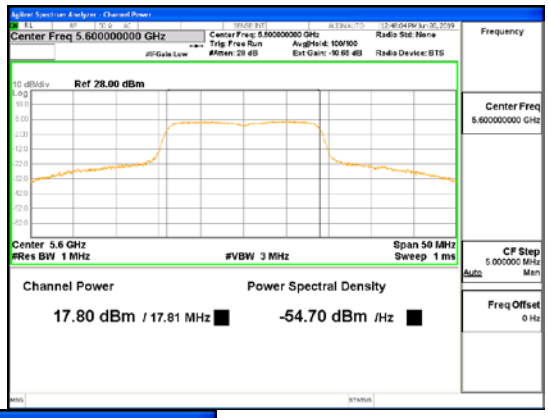
CDD Mode_ANT2_802.11a_UNII 2C

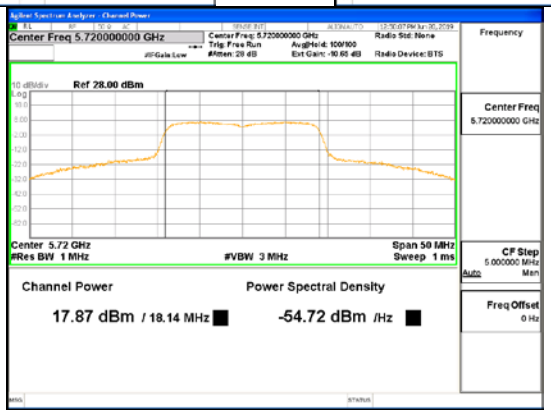




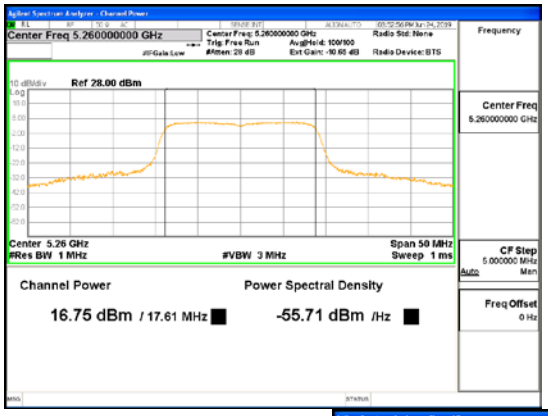
CDD Mode_ANT1_802.11n_HT20_UNII 2A

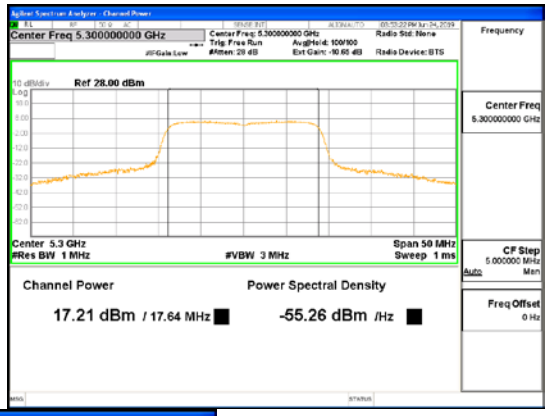




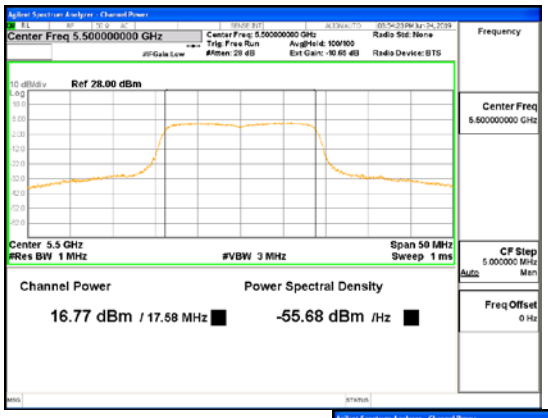


CDD Mode_ANT1_802.11n_HT20_UNII 2C

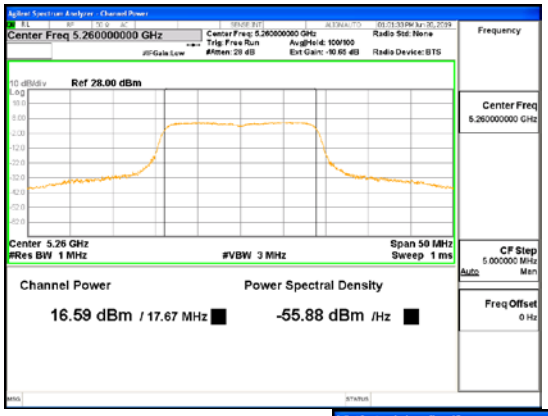


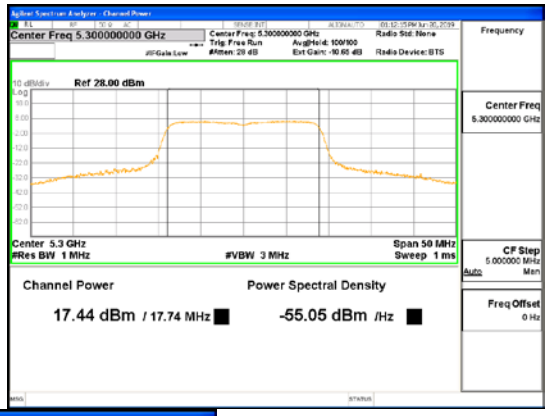


CDD Mode_ANT2_802.11n_HT20_UNII 2A

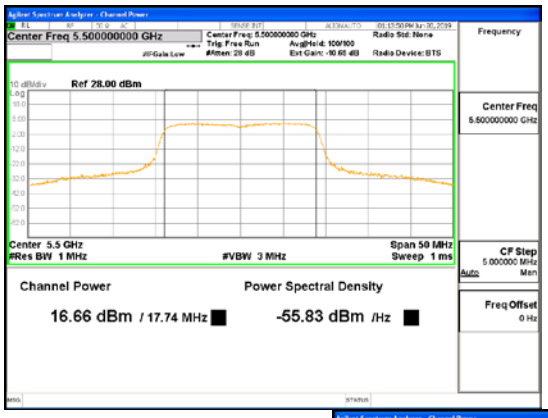


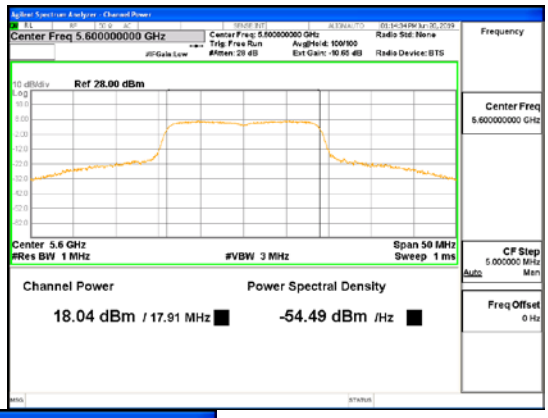
CDD Mode_ANT2_802.11n_HT20_UNII 2C

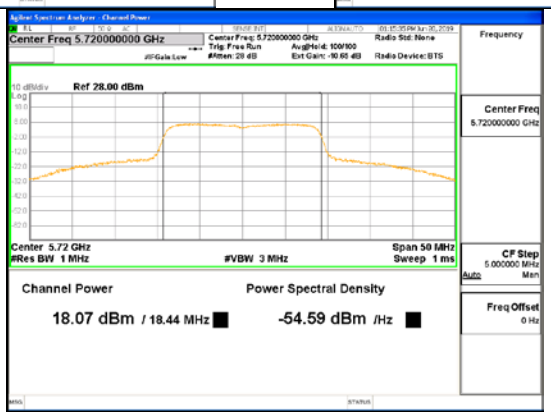




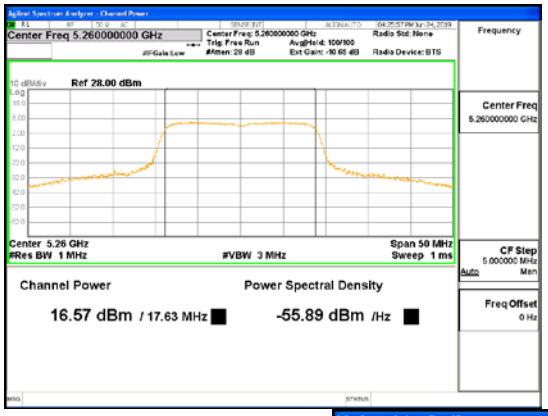
CDD Mode_ANT1_802.11ac_VHT20_UNII 2A

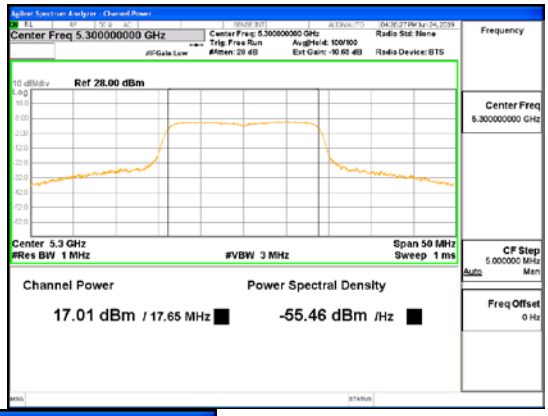


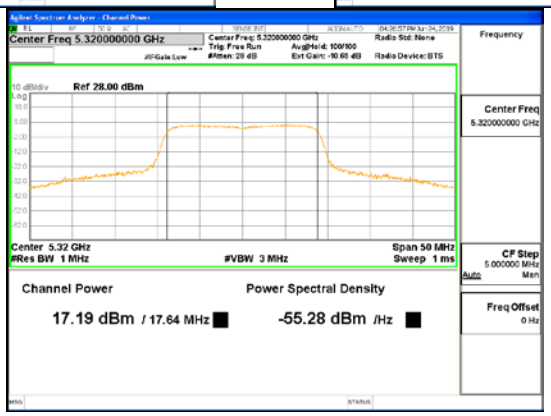




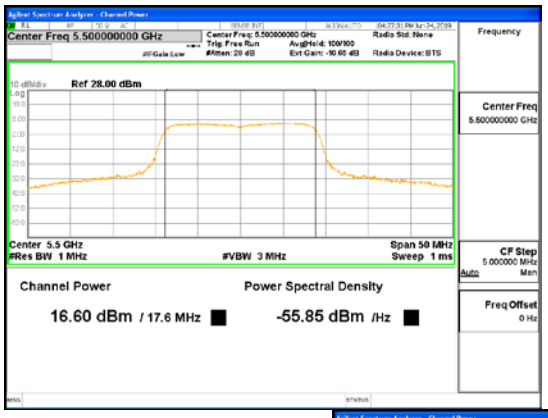
CDD Mode_ANT1_802.11ac_VHT20_UNII 2C

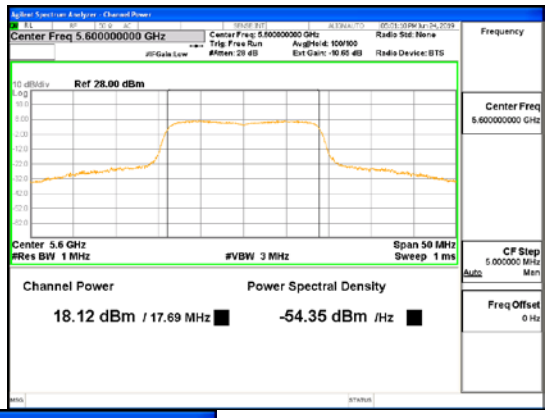


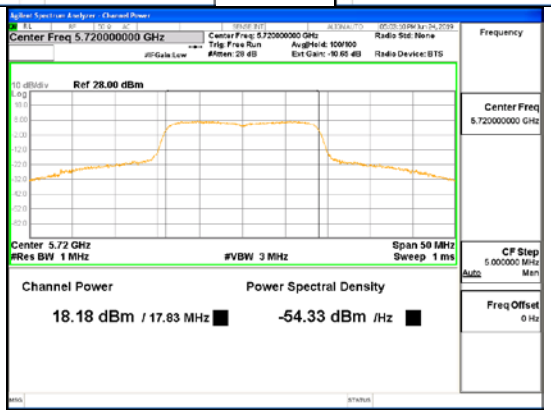




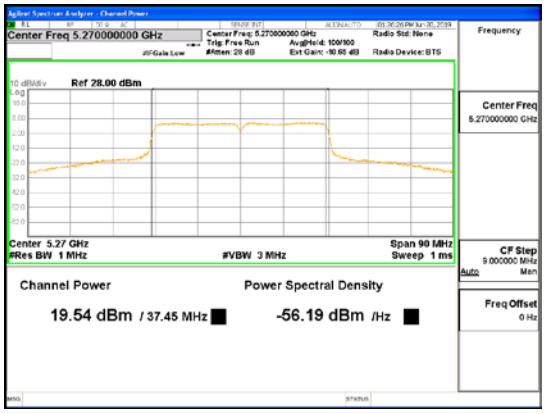
CDD Mode_ANT2_802.11ac_VHT20_UNII 2A

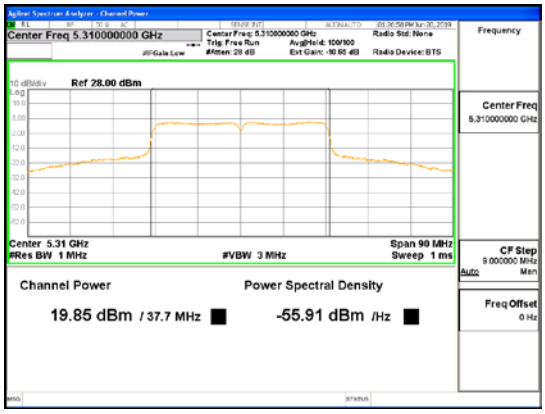




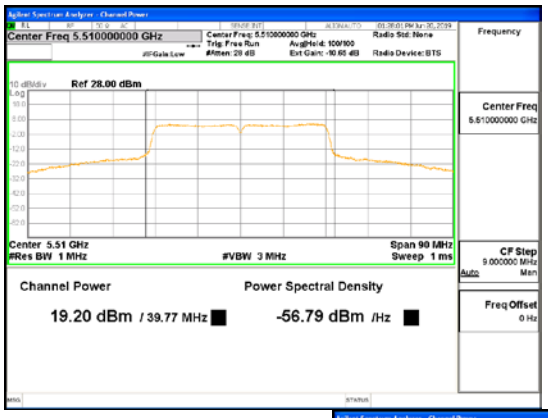


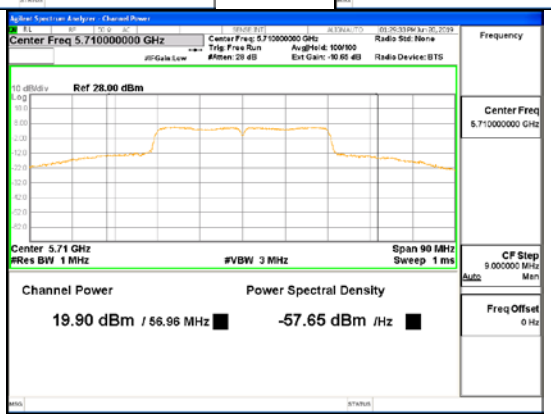
CDD Mode_ANT2_802.11ac_VHT20_UNII 2C



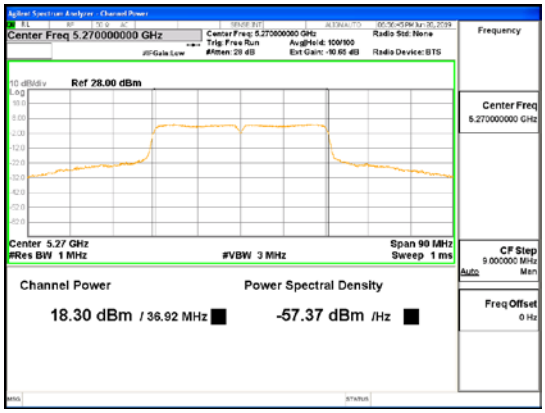


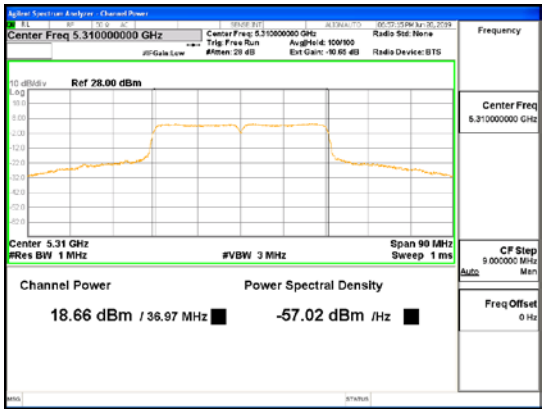
CDD Mode_ANT1_802.11n_HT40_UNII 2A



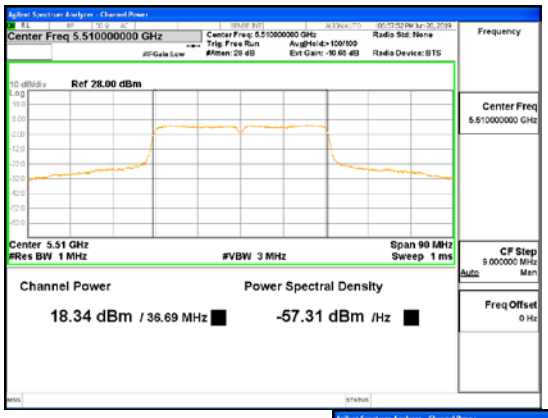


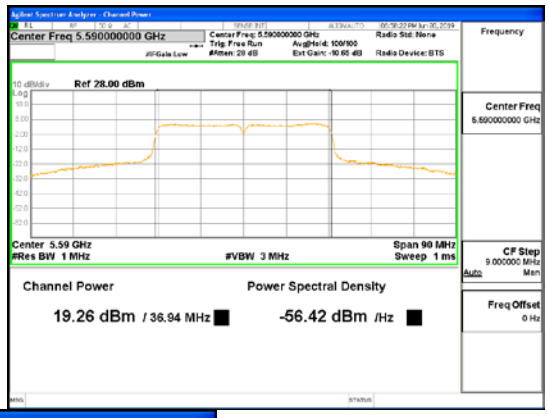
CDD Mode_ANT1_802.11n_HT40_UNII 2C

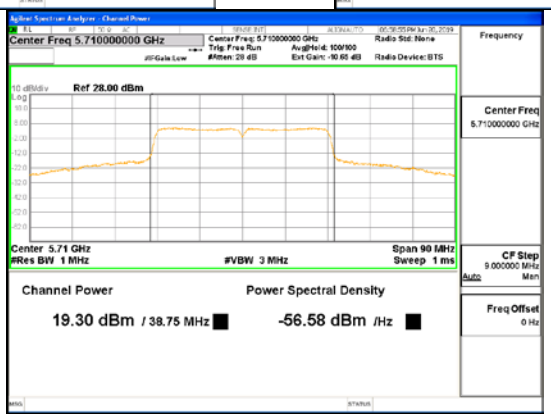




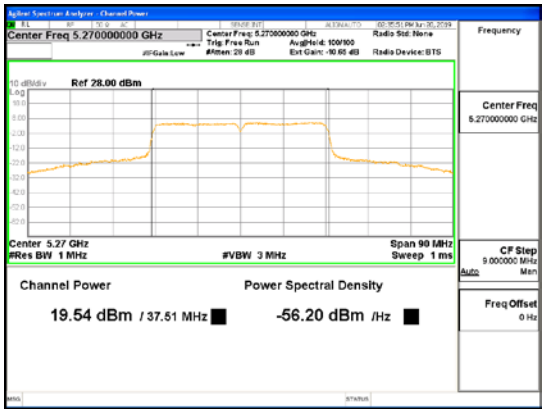
CDD Mode_ANT2_802.11n_HT40_UNII 2A

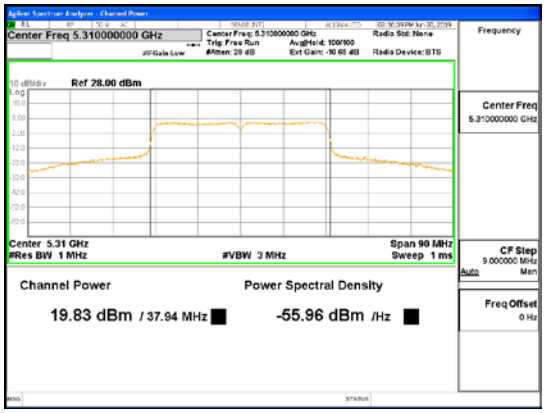




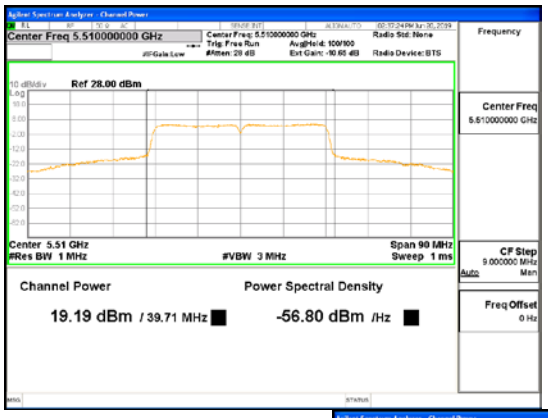


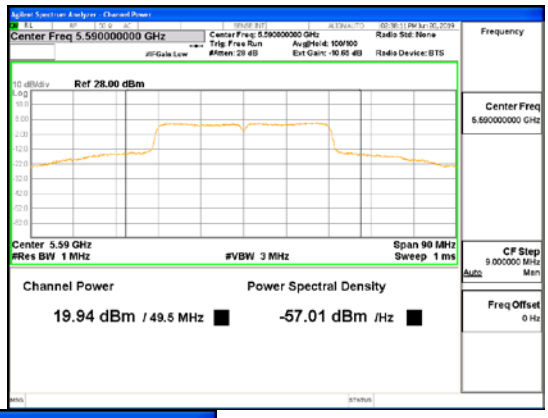
CDD Mode_ANT2_802.11n_HT40_UNII 2C

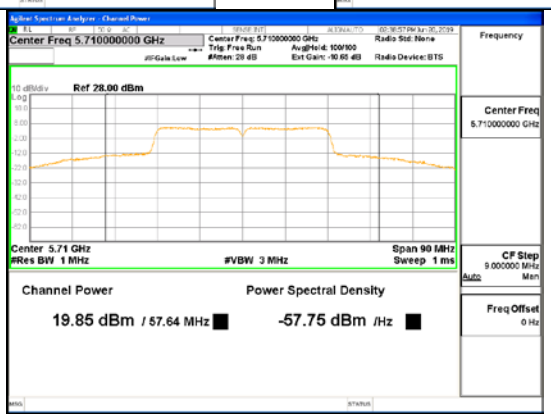




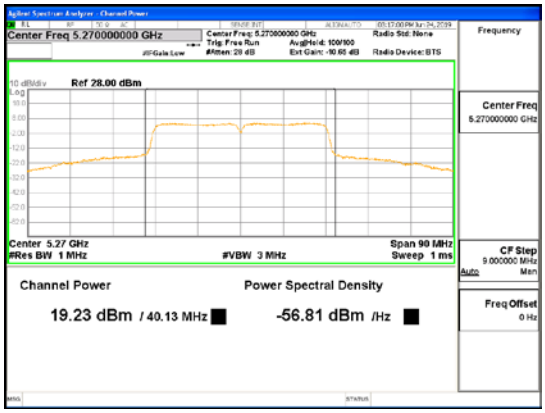
CDD Mode_ANT1_802.11ac_VHT40_UNII 2A



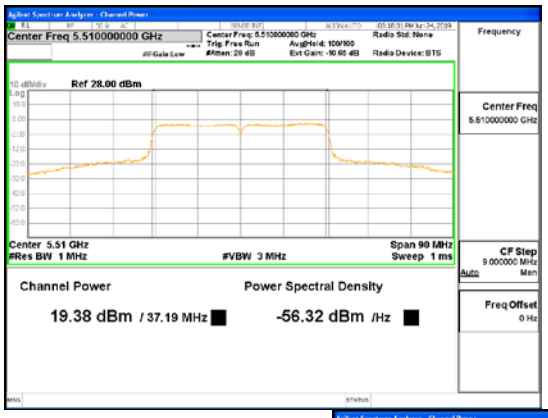


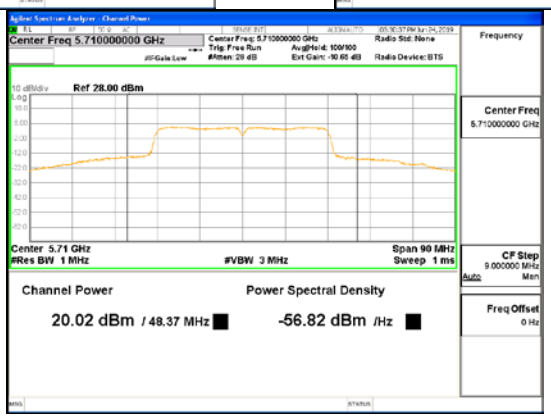


CDD Mode_ANT1_802.11ac_VHT40_UNII 2C

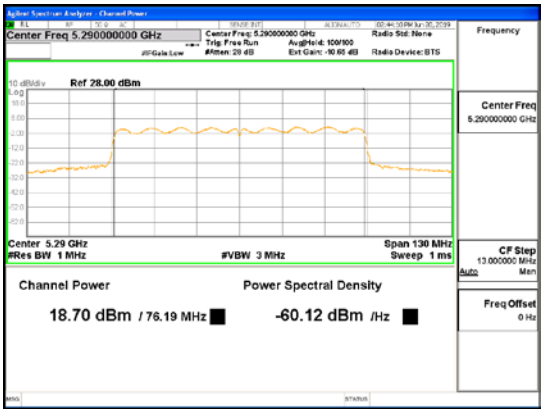


CDD Mode_ANT2_802.11ac_VHT40_UNII 2A

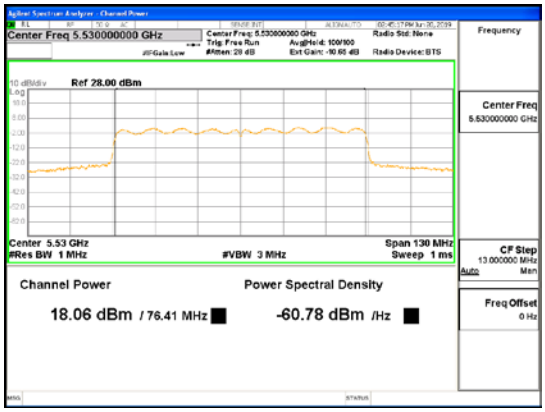


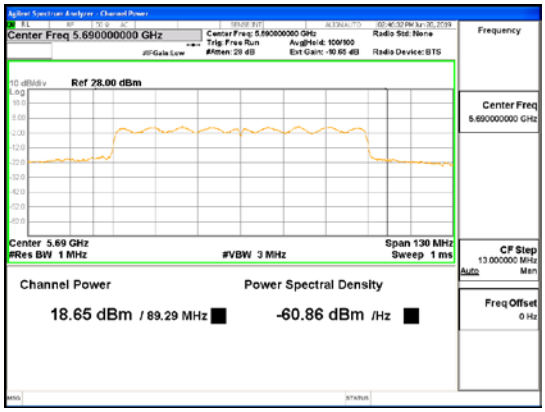


CDD Mode_ANT2_802.11ac_VHT40_UNII 2C

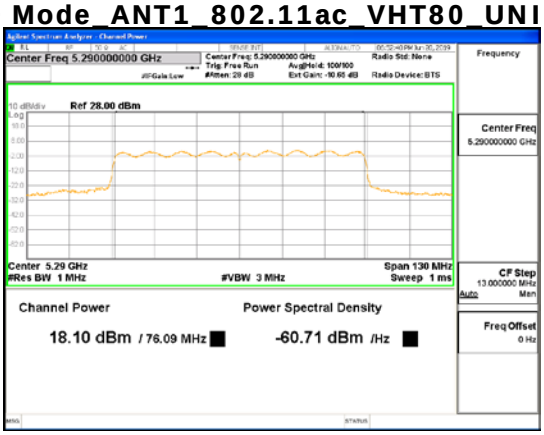


CDD Mode_ANT1_802.11ac_VHT80_UNII 2A

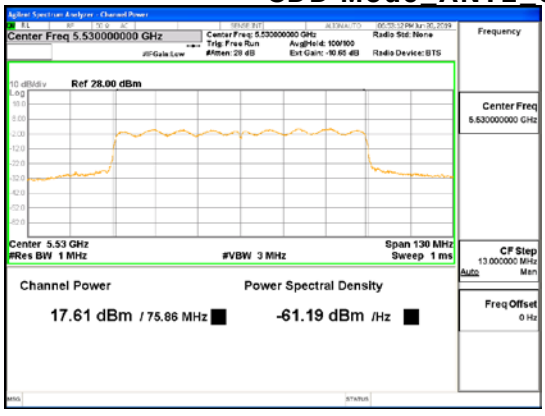


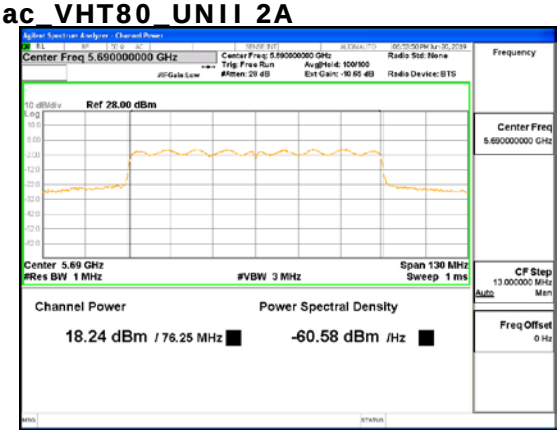


CDD Mode_ANT1_802.11ac_VHT80_UNII 2C

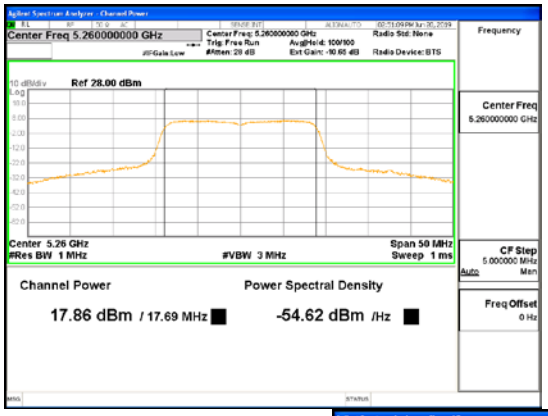


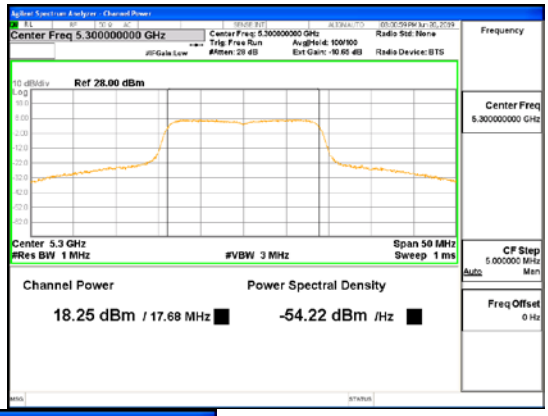
CDD Mode_ANT2_802.11ac_VHT80_UNII 2A

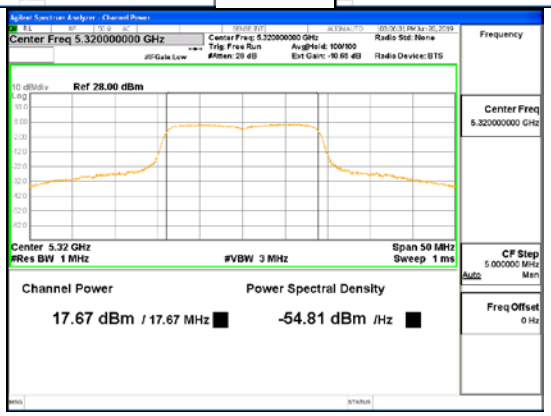




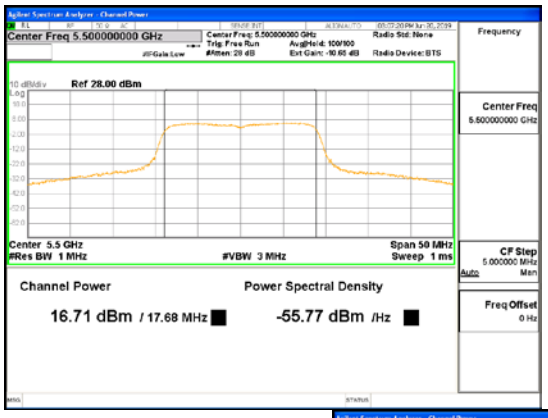
CDD Mode_ANT2_802.11ac_VHT80_UNII 2C

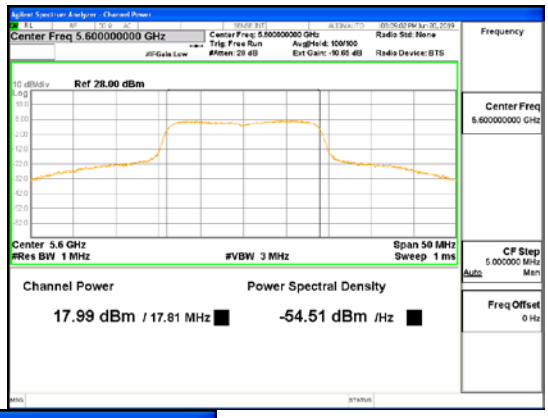


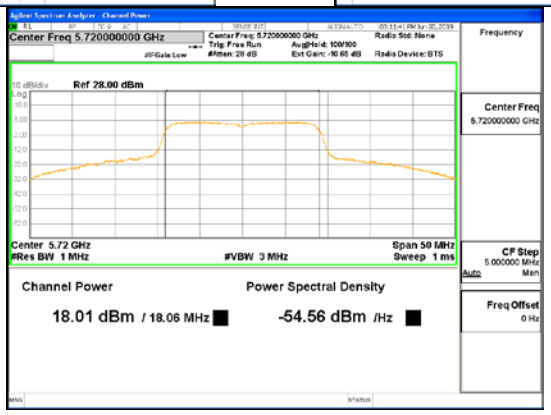




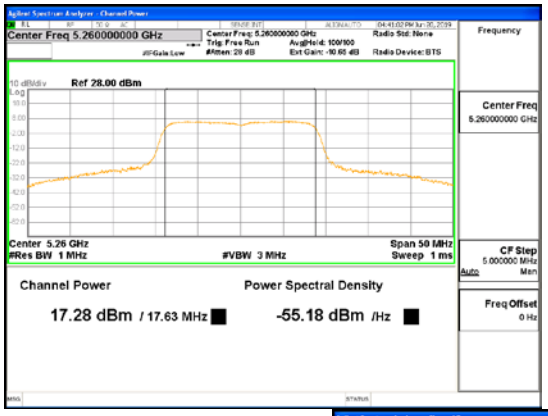
SDM Mode_ANT1_802.11n_HT20_UNII 2A

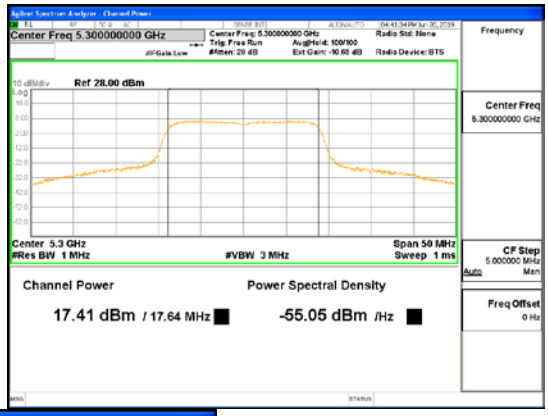




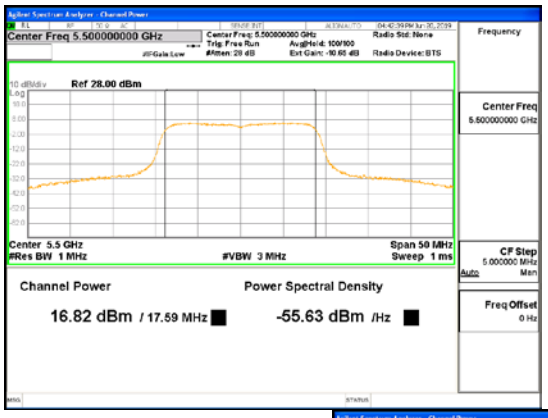


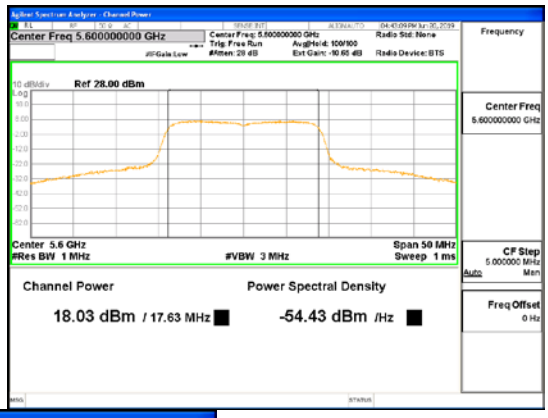
SDM Mode_ANT1_802.11n_HT20_UNII 2C





SDM Mode_ANT2_802.11n_HT20_UNII 2A





SDM Mode_ANT2_802.11n_HT20_UNII 2C