



FCC 47 CFR PART 15 SUBPART E

for

**802.11ac VDSL2 Bonding IAD, 802.11ac VDSL2 Bonding
Gateway**

Model: SR655ac, SR555ac

Brand: SmartRG

Test Report Number:

C160218Z03-RP1-2

Issued Date: June 2 2016

Issued for

SmartRG Inc.

**501 SE Columbia Shores Blvd.Suit 500 Vancouver, WA 98661 United
States**

Issued by:

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TESTING CERT #2861.01

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 2 2016	Initial Issue	ALL	Sabrina Wang



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1. TEST CERTIFICATION

Product	802.11ac VDSL2 Bonding IAD, 802.11ac VDSL2 Bonding Gateway
Model	SR655ac, SR555ac
Brand	SmartRG
Tested	February 18~June 2 2016
Applicant	SmartRG Inc. 501 SE Columbia Shores Blvd.Suit 500 Vancouver, WA 98661 United States
Manufacturer	SmartRG Inc. 501 SE Columbia Shores Blvd.Suit 500 Vancouver, WA 98661 United States

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart E	No non-compliance noted

We hereby certify that:

Compliance Certification Services (Shenzhen) Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.10: 2013** and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407、FCC 14-30.

The TEST RESULTS of this report relate only to the tested sample identified in this report.

Approved by:

Reviewed by:

Sunday Hu
Supervisor of EMC Dept.
Compliance Certification Services (Shenzhen) Inc.

Ruby Zhang
Supervisor of Report Dept.
Compliance Certification Services (Shenzhen) Inc.



2. EUT DESCRIPTION

Product	802.11ac VDSL2 Bonding IAD, 802.11ac VDSL2 Bonding Gateway	
Model Number	SR655ac, SR555ac	
Brand	SmartRG	
Model Discrepancy	The models are identical to each other except for input spec and ports.	
Serial Number	C160218Z03-RP1-2	
Received Date	February 18, 2016	
Power Supply	SR655ac: DC12V 3A supplied by the adapter SR555ac: DC12V 2.5A supplied by the adapter	
Adapter 1# Manufacturer / Model No.	Shenzhen Gongjin Electronics Co., Ltd / S36B52-120A300-04 I/P: 100-240Vac, 50-60Hz, 1.0A Max O/P: 12Vdc, 3A DC Cable: Unshielded 1.40m	
Adapter 2# Manufacturer / Model No.	Shenzhen Gongjin Electronics Co., Ltd / S36B52-120A250-04 I/P: 100-240Vac, 50-60Hz, 1.0A Max O/P: 12Vdc, 2.5A DC Cable: Unshielded 1.40m	
Frequency Range	UNII Band I: IEEE 802.11a, 802.11n HT20 : 5180MHz ~ 5240MHz; IEEE 802.11n HT40: 5190MHz ~ 5230MHz IEEE 802.11ac 80: 5210MHz UNII Band II IEEE 802.11a, 802.11n HT20 : 5260MHz ~ 5320MHz IEEE 802.11n HT40: 5270MHz ~ 5310MHz IEEE 802.11ac 80: 5290MHz UNII Band III IEEE 802.11a, 802.11n HT20 : 5500MHz ~ 5700MHz IEEE 802.11n HT40: 5510MHz ~ 5670MHz IEEE 802.11ac 80: 5530MHz UNII Band IV IEEE 802.11a, 802.11n HT20 : 5745MHz ~ 5825MHz IEEE 802.11n HT40: 5755MHz ~ 5795MHz IEEE 802.11ac 80: 5775MHz	
Transmit Power	UNII Band I: IEEE 802.11a: 18.99dBm (Antenna 0) 18.98dBm (Antenna 1) 18.96dBm (Antenna 2) IEEE 802.11n HT 20 MHz mode: 13.67dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2) IEEE 802.11n HT 40 MHz mode: 13.47dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2) IEEE 802.11ac 80: 13.62dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2) UNII Band II IEEE 802.11a: 19.17dBm (Antenna 0) 20.18dBm (Antenna 1) 21.32dBm (Antenna 2)	



	<p>IEEE 802.11n HT 20 MHz mode: 20.65dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11n HT 40 MHz mode: 20.69dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11ac 80: 17.10dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>UNII Band III</p> <p>IEEE 802.11a: 20.99dBm (Antenna 0) 20.41dBm (Antenna 1) 20.77dBm (Antenna 2)</p> <p>IEEE 802.11n HT 20 MHz mode: 20.48dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11n HT 40 MHz mode: 20.74dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11ac 80: 20.37dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>UNII Band IV</p> <p>IEEE 802.11a: 20.79dBm (Antenna 0) 19.86dBm (Antenna 1) 20.39dBm (Antenna 2)</p> <p>IEEE 802.11n HT 20 MHz mode: 23.91dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11n HT 40 MHz mode: 23.68dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p> <p>IEEE 802.11ac 80: 21.43dBm (Combine with Antenna 0 and Antenna 1 and Antenna 2)</p>
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Transmit Data Rate	<p>IEEE 802.11a mode: 48, 36, 24, 18, 12, 9, 6Mbps</p> <p>IEEE802.11n HT20MHz mode(800ns GI): 13,26,39,52,78,104,117,130Mbps</p> <p>IEEE802.11n HT40MHz mode(800ns GI): 27,54,81,108,162,216,243,270Mbps</p> <p>IEEE802.11ac VHT80MHz mode(800ns GI): 58.6,117,175.6,234,351,468,526.6,585,702,780Mbps</p>
Number of Channels	<p>UNII Band I:</p> <p>IEEE 802.11a, 802.11n HT20 : 4 Channels</p> <p>IEEE 802.11n HT40 : 2 Channels</p> <p>IEEE 802.11ac 80: 1 Channel</p> <p>UNII Band II</p> <p>IEEE 802.11a, 802.11n HT20 : 4 Channels</p> <p>IEEE 802.11n HT40: 2 Channels</p> <p>IEEE 802.11ac 80: 1 Channel</p> <p>UNII Band III</p> <p>IEEE 802.11a, 802.11n HT20 : 9 Channels</p> <p>IEEE 802.11n HT 40 MHz mode: 4 Channels</p> <p>IEEE 802.11ac 80: 1 Channels</p> <p>UNII Band IV</p> <p>IEEE 802.11a, 802.11n HT20 : 5 Channels</p> <p>IEEE 802.11n HT 40 MHz mode: 2 Channels</p> <p>IEEE 802.11ac 80: 1 Channel</p>
Antenna Specification	Embedded Antenna with 3.8dBi gain (Max)



Channels Spacing	IEEE 802.11a, 802.11n HT20 : 20MHz IEEE 802.11n HT40: 40MHz IEEE 802.11ac 80: 80MHz
Temperature Range	0°C ~ +40°C
Hardware Version	REV1.0
Software Version	GURNVBC5.RT281-Z_DBC-SRG-R5B011-US.EN

Note: 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.



Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)	
CHANNEL	MHz
36	5180
38	5190
40	5200
42	5210
44	5220
46	5230
48	5240
52	5260
54	5270
56	5280
58	5290
60	5300
62	5310
64	5320
100	5500
102	5510
104	5520
106	5530
108	5540
110	5550
112	5560
116	5580
132	5660
134	5670
136	5680
140	5700
149	5745
151	5755
153	5765
155	5775
157	5785
159	5795
161	5805
165	5825

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for **FCC ID: 2AGPP-SR655AC** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules and FCC 14-30.



3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 Part 15.207, 15.209, 15.407 and FCC 14-30.

Radio testing was performed according to KDB DA 02-2138、KDB 789033 D02、KDB 905462 D06;

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

The EUT is placed on the turntable, which is 0.8 m (below 1GHz) /1.5m (Above 1GHz) above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.10.



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



3.5 DESCRIPTION OF TEST MODES

The EUT is a 3x3 configuration spatial MIMO (3TX & 3RX) without beam forming function. Software used to control the EUT for staying in continuous transmitting mode was programmed.

Test Item	Test mode	Worse mode
Conducted Emission	Mode 1: Normal Link for SR655ac with Adapter 1# (S36B52-120A300-04)	Mode 2
	Mode 2: Normal Link for SR555ac with Adapter 2# (S36B52-120A250-04)	
Radiated Emission	Mode 1: TX	Mode 1

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

UNII Band I:

IEEE 802.11a for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5190 ~ 5230MHz:

Channel Low (5190MHz) and Channel High (5230MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5210MHz:

Channel Low (5210MHz) with 27Mbps data rate were chosen for full testing.



UNII Band II:

IEEE 802.11a for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5270~ 5310MHz:

Channel Low (5270MHz) and Channel High (5310MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5290MHz:

Channel Low (5290MHz) with 27Mbps data rate were chosen for full testing.

UNII Band III:

IEEE 802.11a for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5510~ 5670MHz:

Channel Low (5510MHz) and Channel High (5670MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5530MHz:

Channel Low (5530MHz) with 27Mbps data rate were chosen for full testing.

UNII Band IV:

IEEE 802.11a for 5745 ~ 5825MHz:

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5745 ~ 5825MHz:

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5755~ 5795MHz:

Channel Low (5755MHz) and Channel High (5795MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5775MHz:

Channel Low (5775MHz) with 27Mbps data rate were chosen for full testing.



4. SETUP OF EQUIPMENT UNDER TEST

4.1 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook #1	E335	R9-WN1EF	DoC	Thinkpad	Unshielded 1.50m (RJ45 Cable)	Shielded 1.60m (AC Cable) Unshielded 1.80m (DC Cable)
2	Notebook #2	Probook 5310M	N/A	DoC	HP	Unshielded 1.80m (RJ45 Cable)	Shielded 1.80m (AC Cable) Unshielded 1.70m (DC Cable)
3	Ipod #1	A1285	YM9149223 QX	DoC	APPLE	Shielded 1.00m	N/A
4	Ipod #2	A1285	YM914GTH 3RO	DoC	APPLE	Shielded 1.00m	N/A
5	VDSL	9806H	N/A	DoC	ZTE	Unshielded 2.00m	Unshielded 1.70m
6	Telephone #1	HCD868(17B)TSD	HCD868(17 B)TSD	DoC	TCL	Unshielded 1.20m (RJ11 Cable)	N/A
7	Telephone #2	HCD6238P/TSDL 23B	HCD6238P/ TSDL	DoC	CHINOE	Unshielded 1.20m (RJ11 Cable)	N/A
8	Telephone #3	HCD6238P/TSDL 23B	HCD6238P/ TSDL	DoC	CHINOE	Unshielded 1.20m (RJ11 Cable)	N/A

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2 CONFIGURATION OF SYSTEM UNDER TEST

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at **No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China**

The sites are constructed in conformance with the requirements of ANSI C63.10, ANSI C63.7 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	A2LA
China	CNAS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	FCC
Japan	VCCI(C-3478, R-3135, T-652, G-10624)
Canada	INDUSTRY CANADA

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.ccssz.com>



5.4 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
RF frequency	+/-1 * 10 ⁻⁵
RF power conducted	+/- 1,5 dB
RF power radiated	+/- 6 dB
Spurious emissions, conducted	+/- 3 dB
Spurious emissions, radiated	+/- 6 dB
Humidity	+/- 5 %
Temperature	+/- 1°C
Time	+/-10 %

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



6. FCC PART 15 REQUIREMENTS

6.1 26dB EMISSION BANDWIDTH

6.1.1 LIMIT

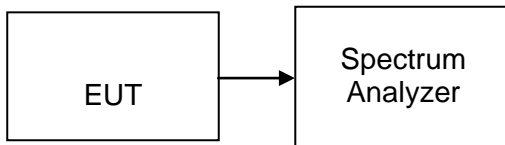
According to §15.303(c), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

6.1.2 MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017

Remark: Each piece of equipment is scheduled for calibration once a year.

6.1.3 TEST CONFIGURATION



6.1.4 TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW > 1%EBW, VBW > RBW, Span >26dB bandwidth, Detector = Peak, and Sweep = auto.
4. Mark the peak frequency and -26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.



6.1.5 TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5180	20.237	20.319	20.205
Mid	5200	20.066	20.500	20.117
High	5240	20.285	19.961	20.083

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5260	20.007	20.165	20.417
Mid	5300	20.455	19.858	19.948
High	5320	19.980	20.140	19.867

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5500	20.422	20.091	20.466
Mid	5580	19.898	20.259	20.466
High	5700	20.512	20.038	20.191

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5745	20.304	20.169	20.198
Mid	5785	20.535	19.930	20.300
High	5825	20.209	20.252	20.210



Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5180	20.306	20.357	20.352
Mid	5200	20.352	20.333	20.277
High	5240	20.508	20.395	20.336

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5260	20.360	20.463	20.445
Mid	5300	20.435	20.302	20.346
High	5320	20.478	20.284	20.101

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5500	20.548	20.343	19.893
Mid	5580	20.559	20.629	20.523
High	5700	20.403	20.539	20.257

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5745	20.672	20.641	20.334
Mid	5785	20.331	20.388	20.499
High	5825	20.621	20.595	20.288



Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5190	38.187	36.661	38.583
High	5230	38.622	38.555	38.549

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5270	38.565	38.619	38.624
High	5310	38.365	38.591	38.687

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5510	38.689	38.928	38.674
Mid	5550	38.818	38.784	38.721
High	5670	38.867	38.762	38.298

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
Low	5755	38.699	38.647	38.671
High	5795	38.629	38.803	38.575



Test mode: IEEE 802.11ac 80 mode / 5210MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
	5210	78.383	78.243	78.285

Test mode: IEEE 802.11ac 80 mode / 5290MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
	5290	78.590	78.447	78.315

Test mode: IEEE 802.11ac 80 mode / 5530MHz

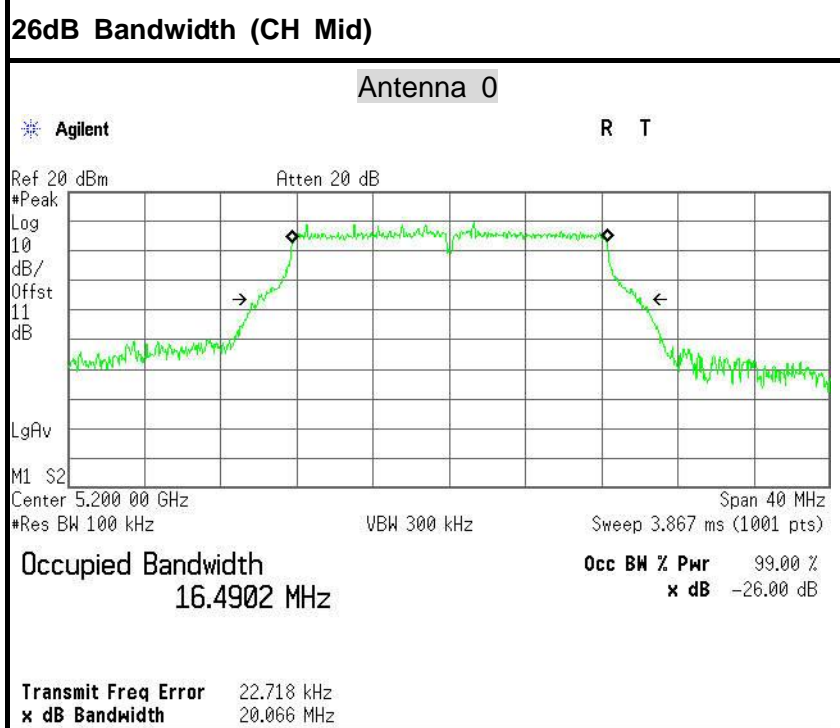
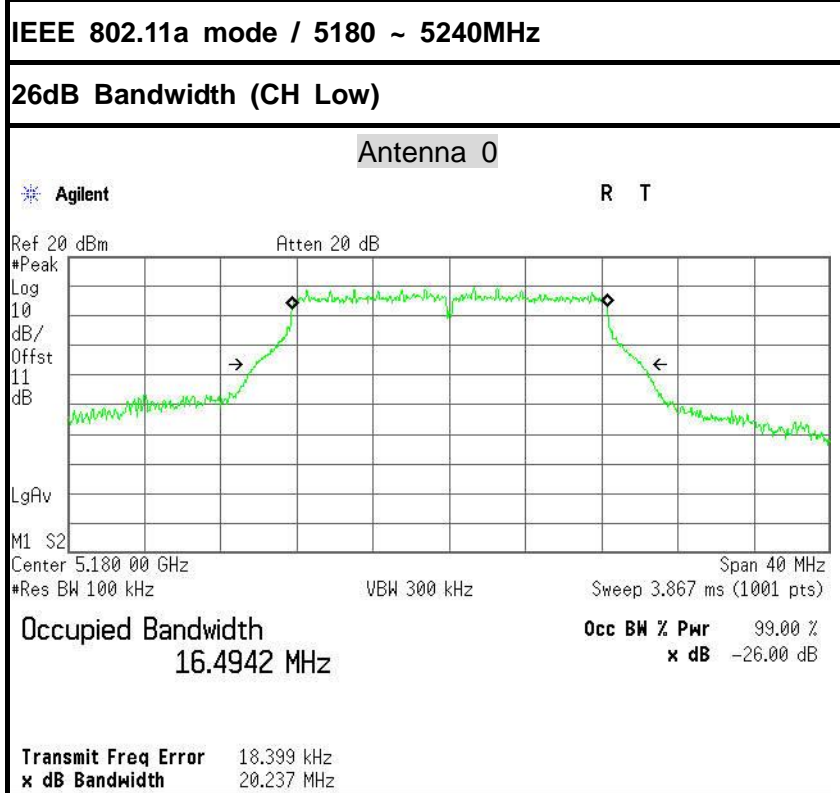
Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
	5530	78.726	78.737	78.430

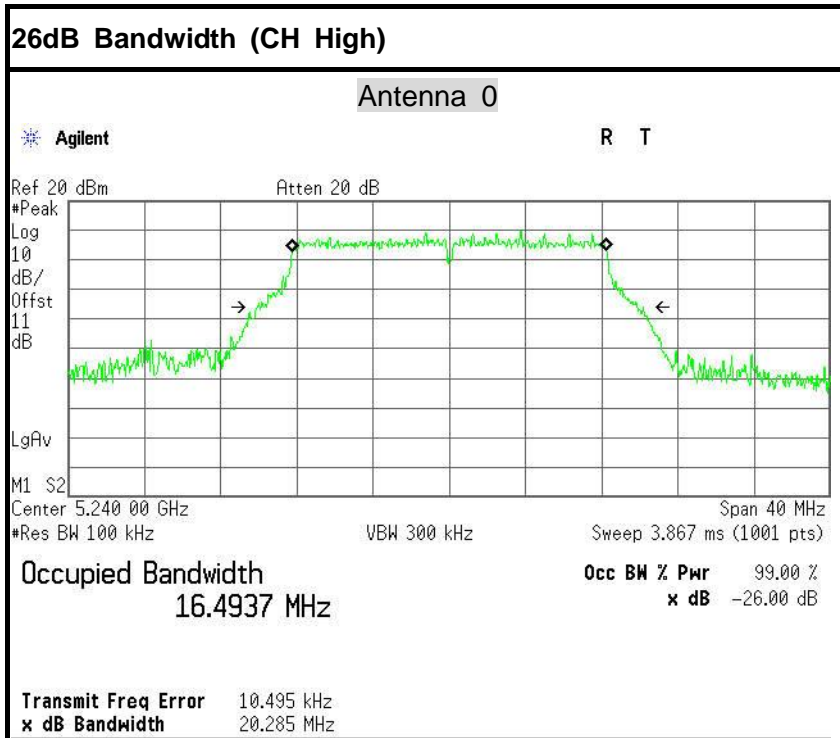
Test mode: IEEE 802.11ac 80 mode / 5775MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)		
		Antenna 0	Antenna 1	Antenna 2
	5775	78.450	78.326	78.313

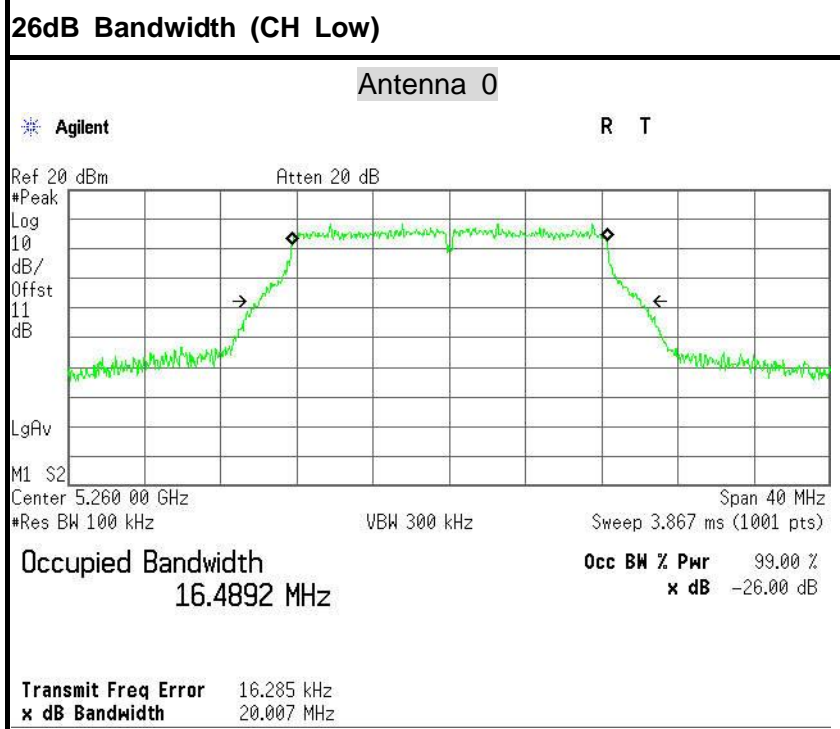


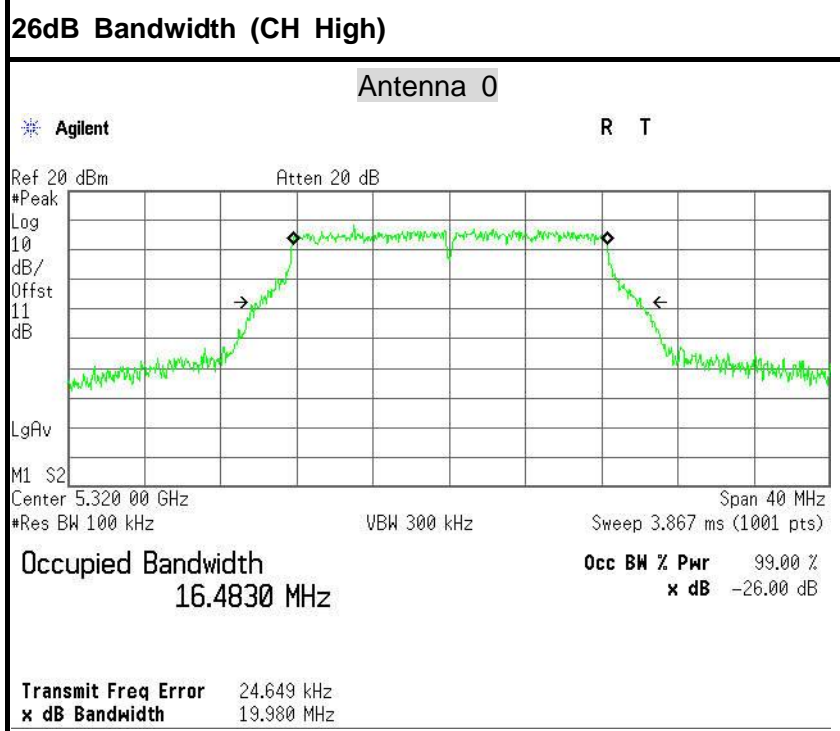
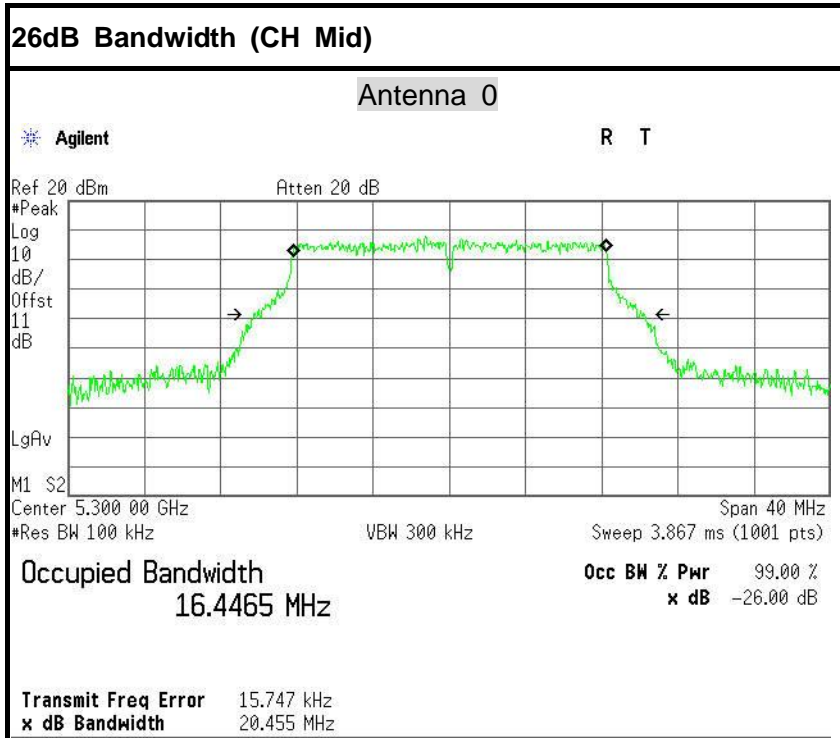
Test Plot





IEEE 802.11a mode / 5260~ 5320MHz

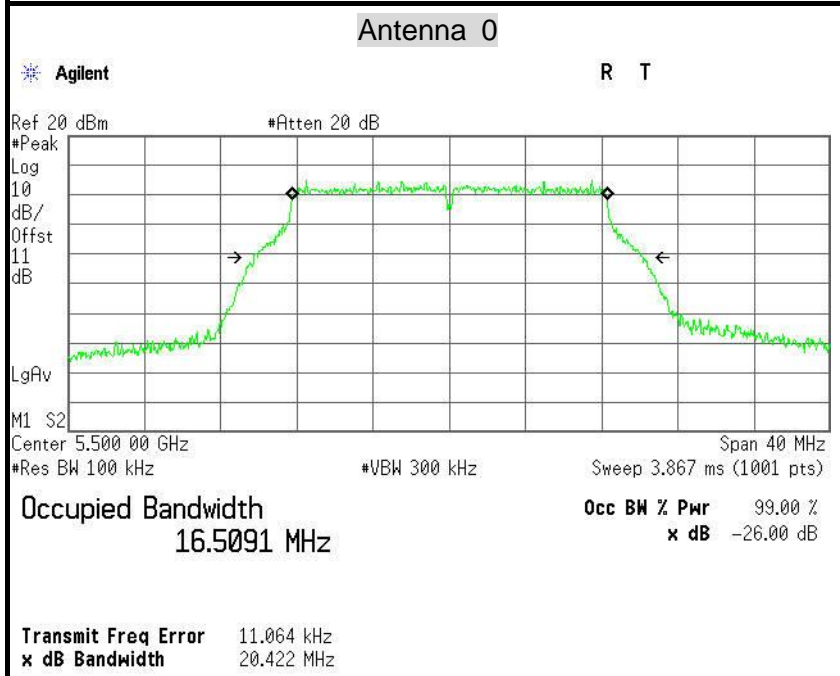




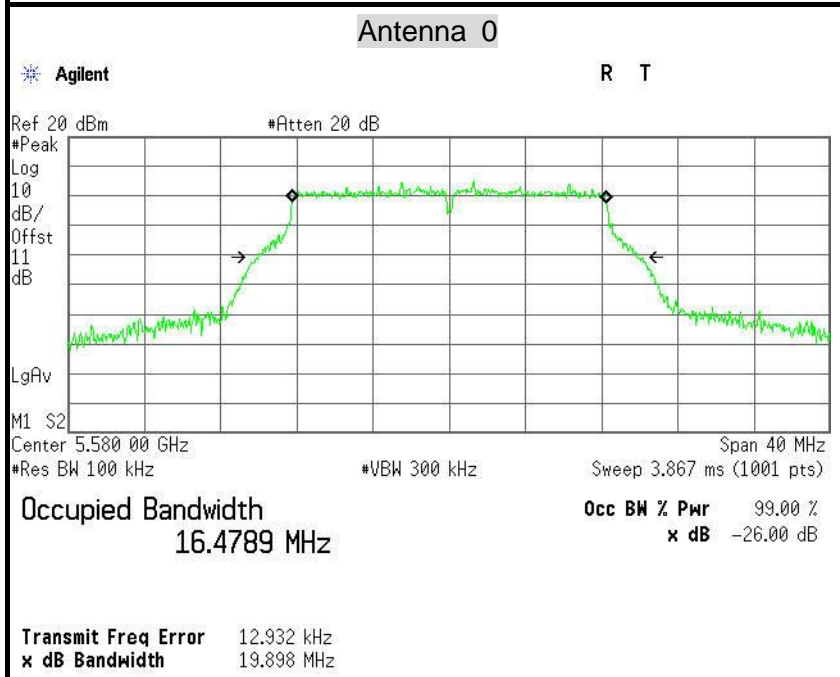


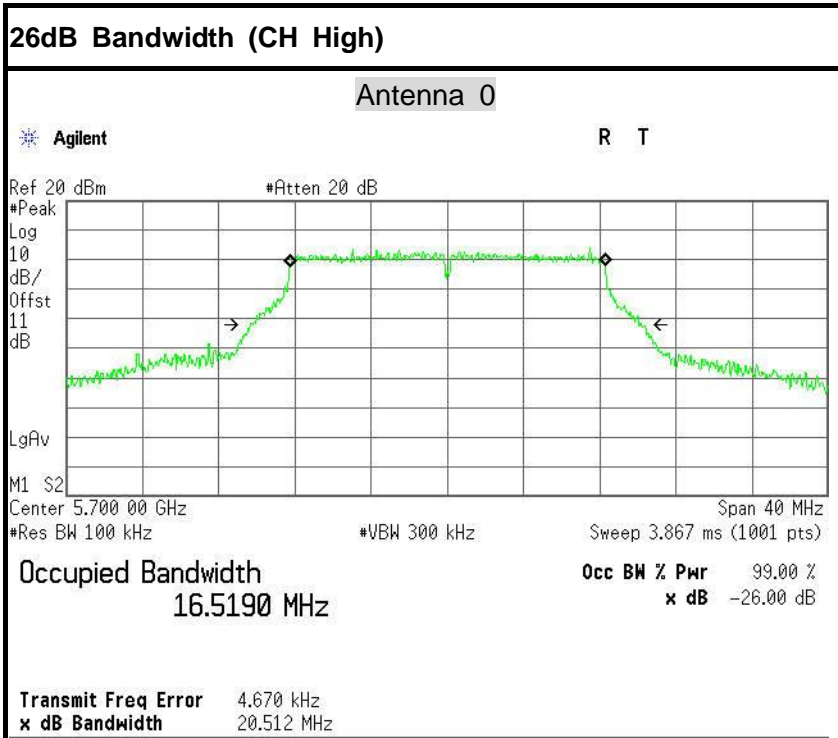
IEEE 802.11a mode / 5500 ~ 5700MHz

26dB Bandwidth (CH Low)

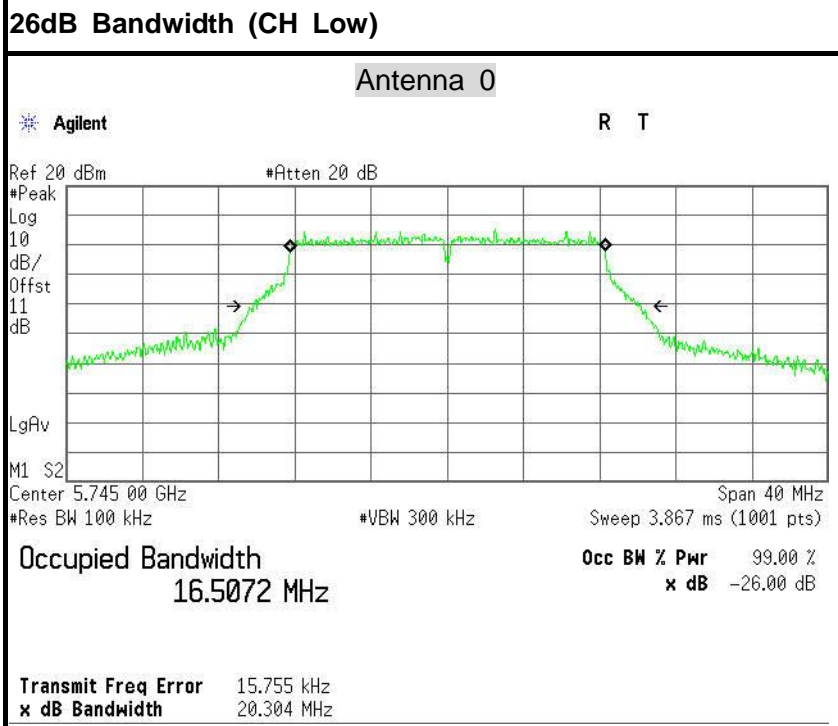


26dB Bandwidth (CH Mid)



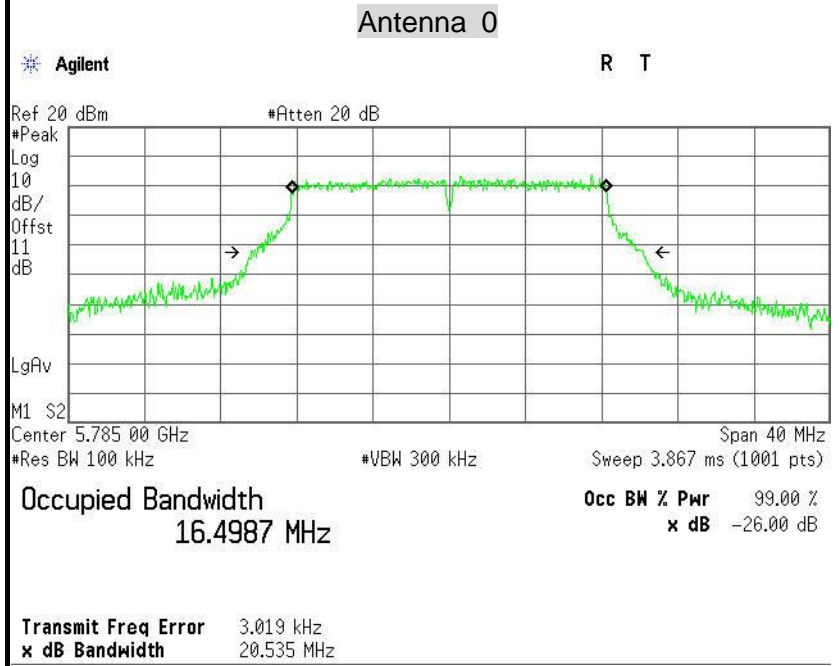


IEEE 802.11a mode / 5745 ~ 5825MHz

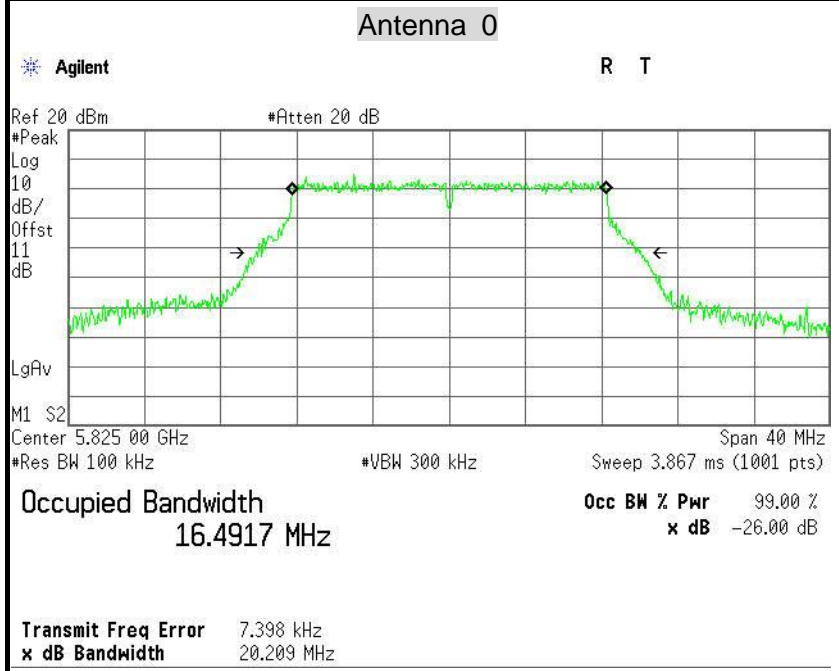


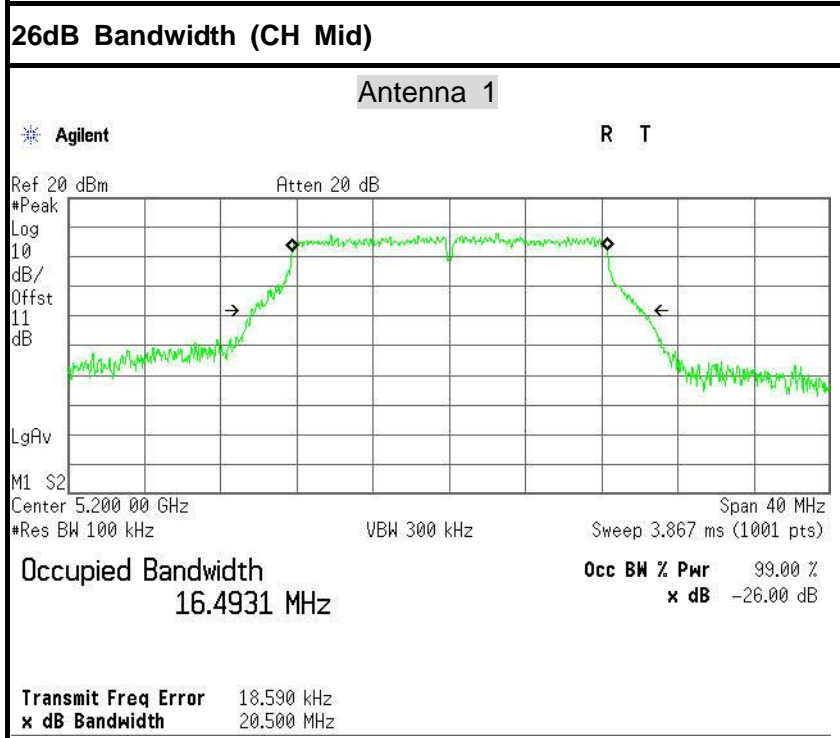
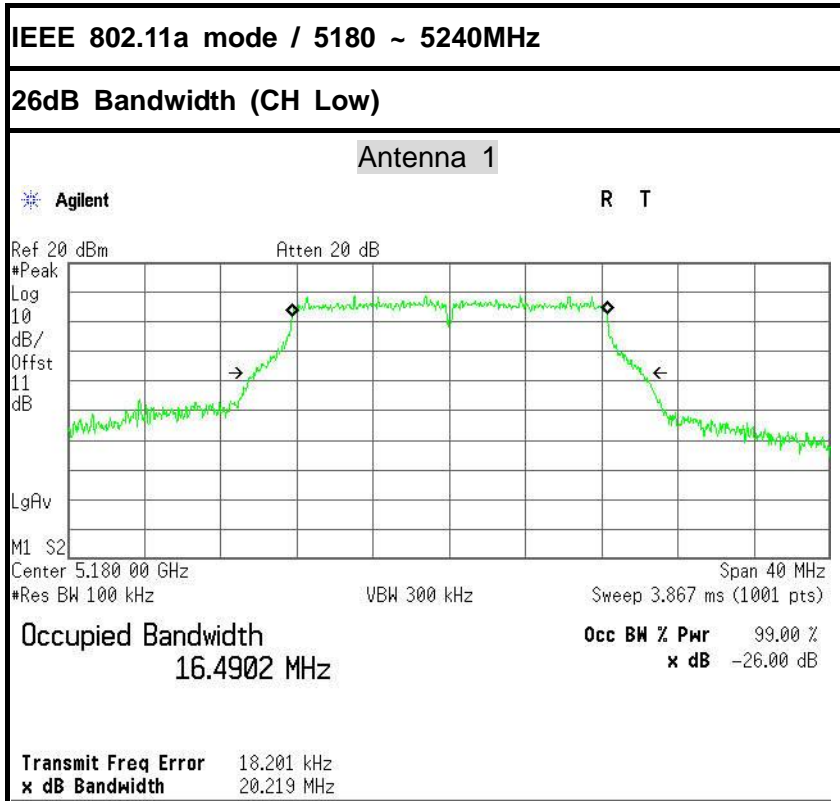


26dB Bandwidth (CH Mid)



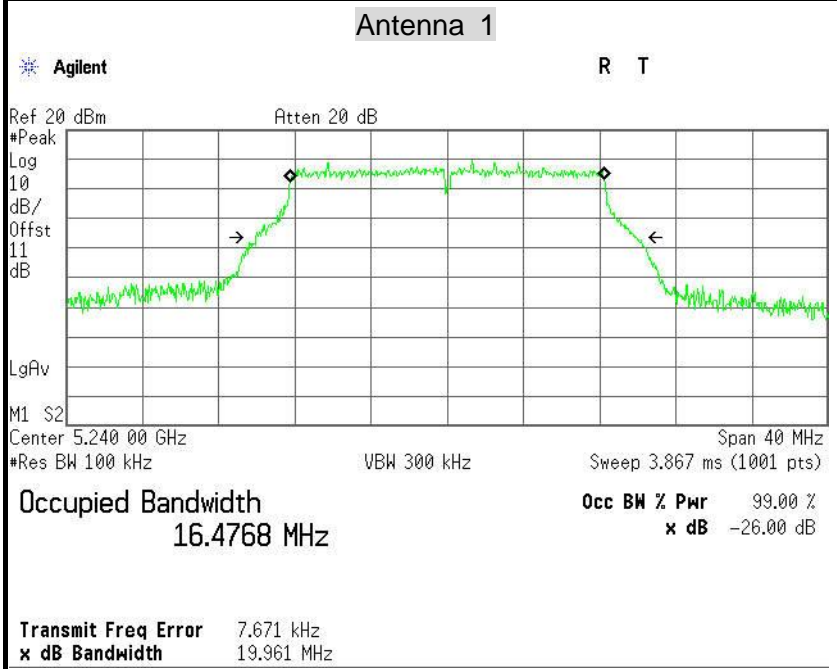
26dB Bandwidth (CH High)





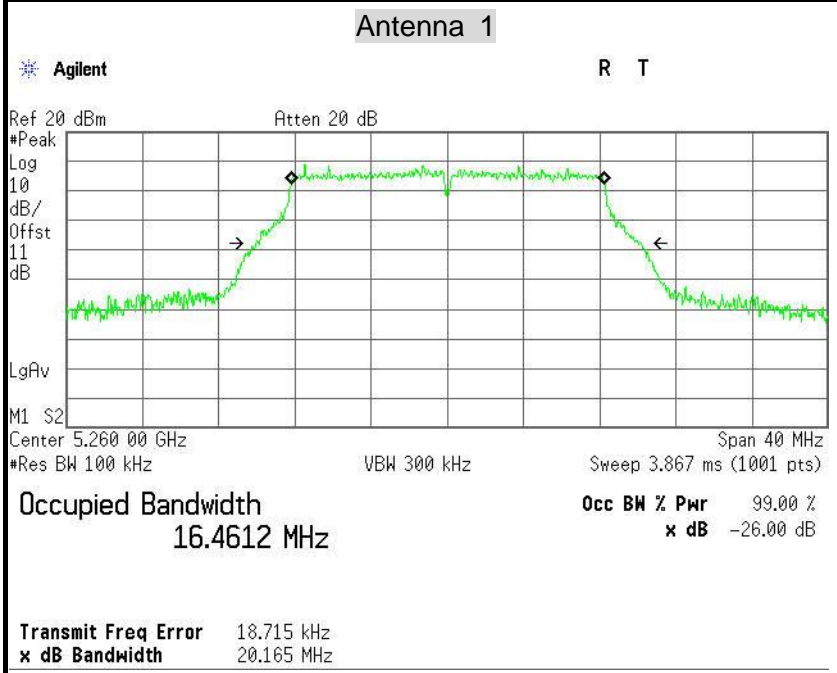


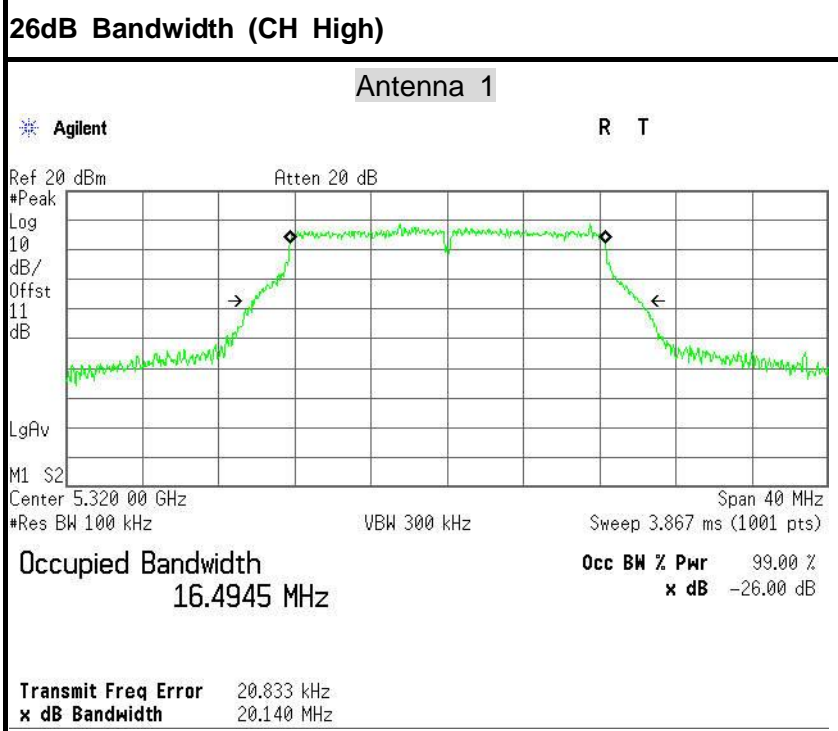
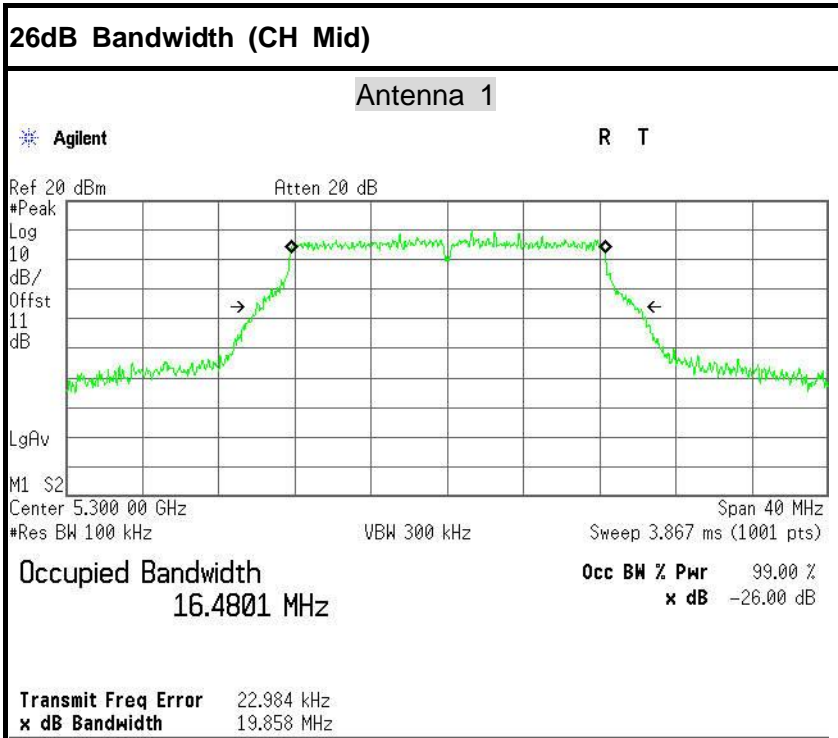
26dB Bandwidth (CH High)



IEEE 802.11a mode / 5260~ 5320MHz

26dB Bandwidth (CH Low)

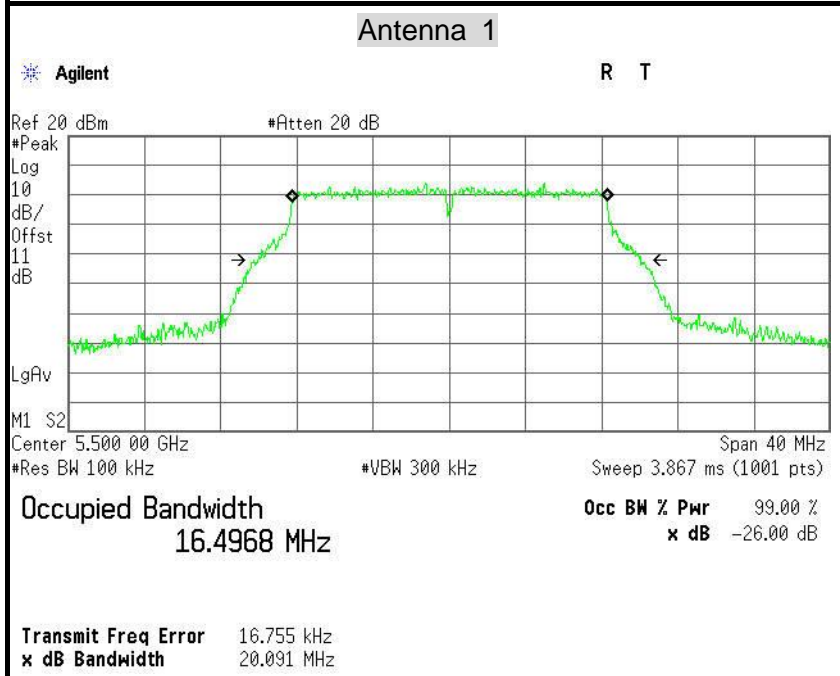




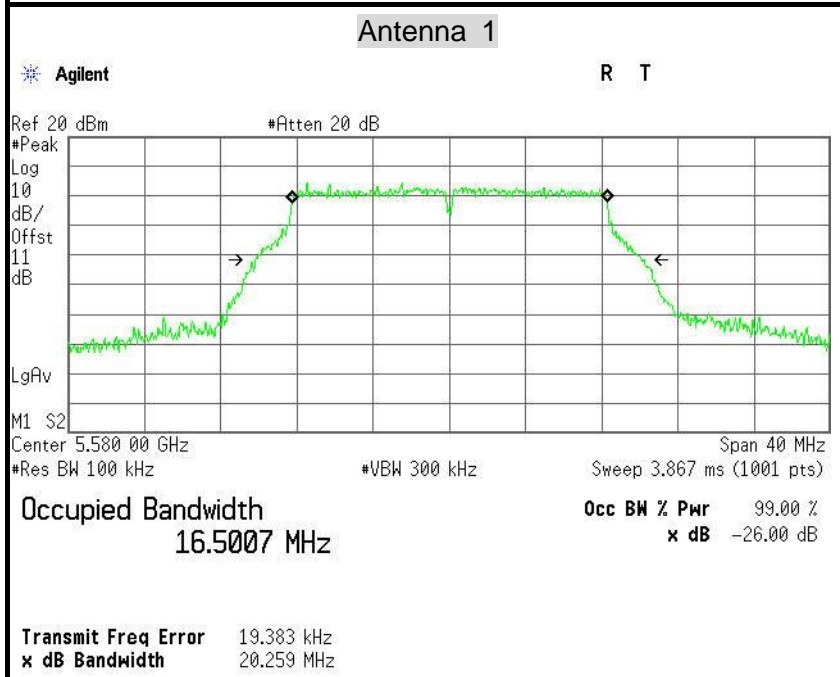


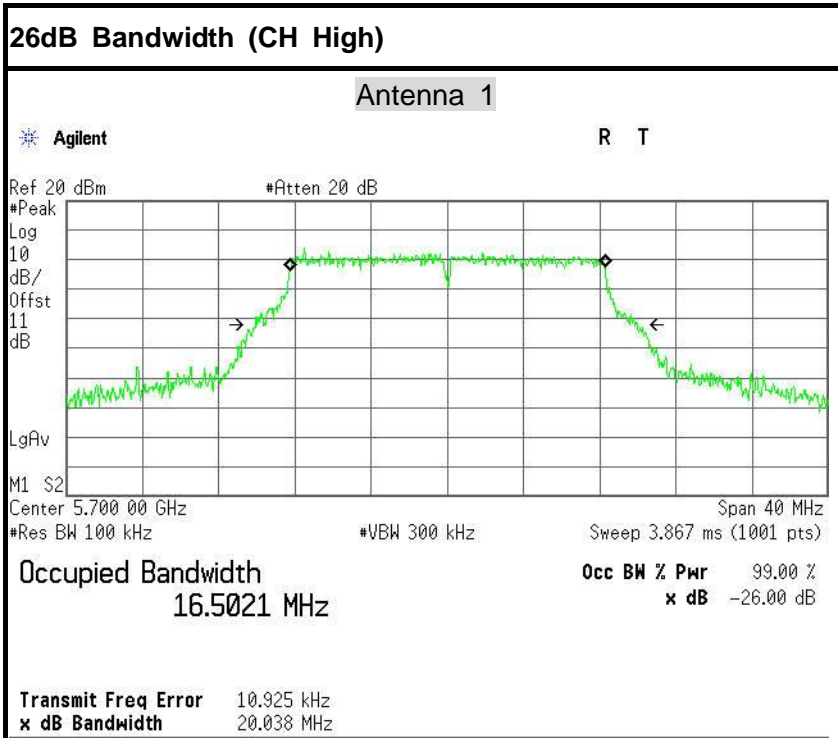
IEEE 802.11a mode / 5500 ~ 5700MHz

26dB Bandwidth (CH Low)

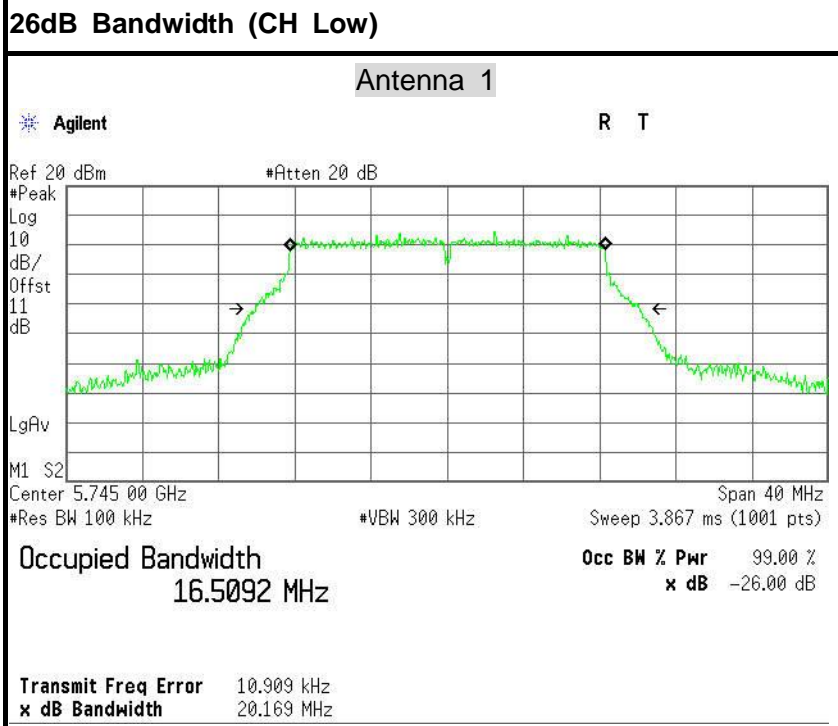


26dB Bandwidth (CH Mid)



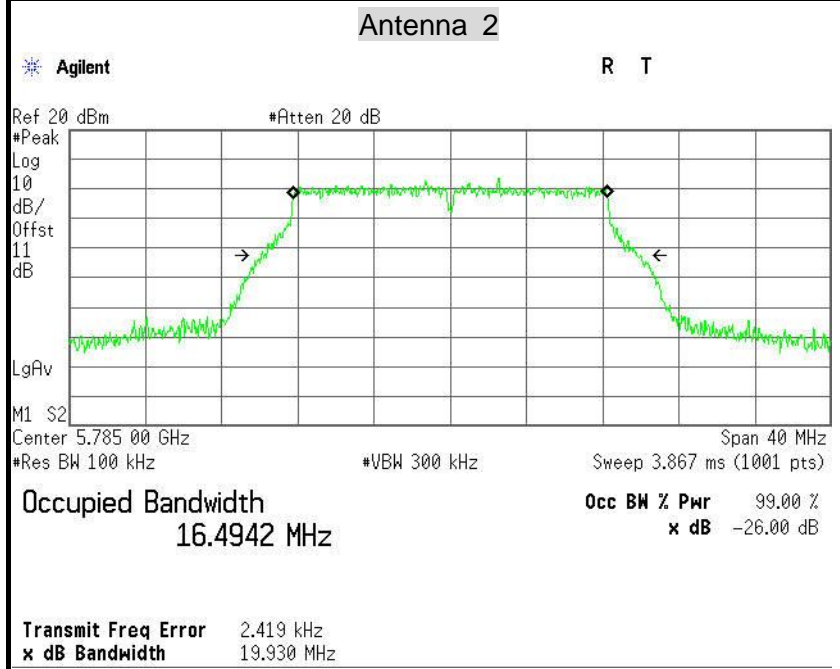


IEEE 802.11a mode / 5745 ~ 5825MHz

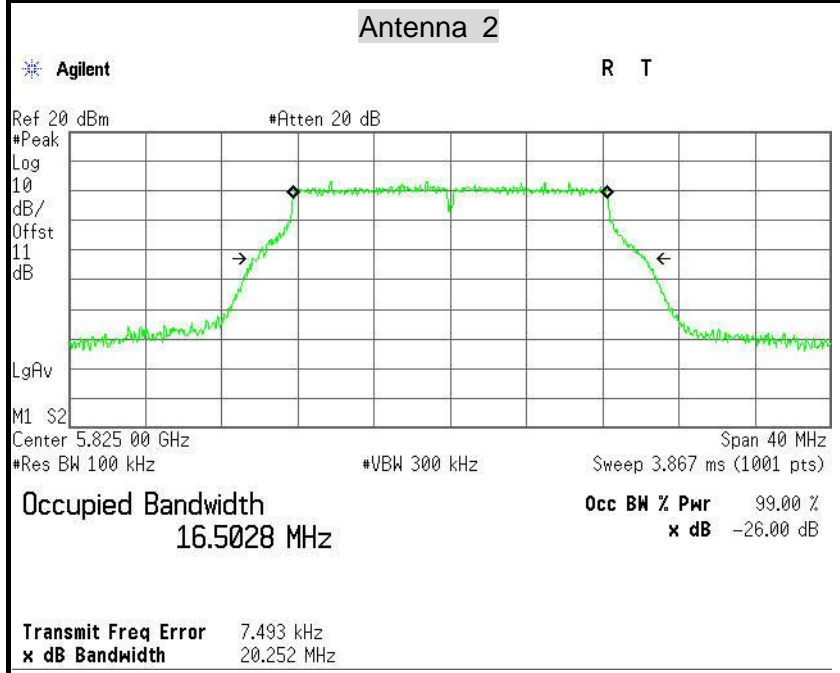


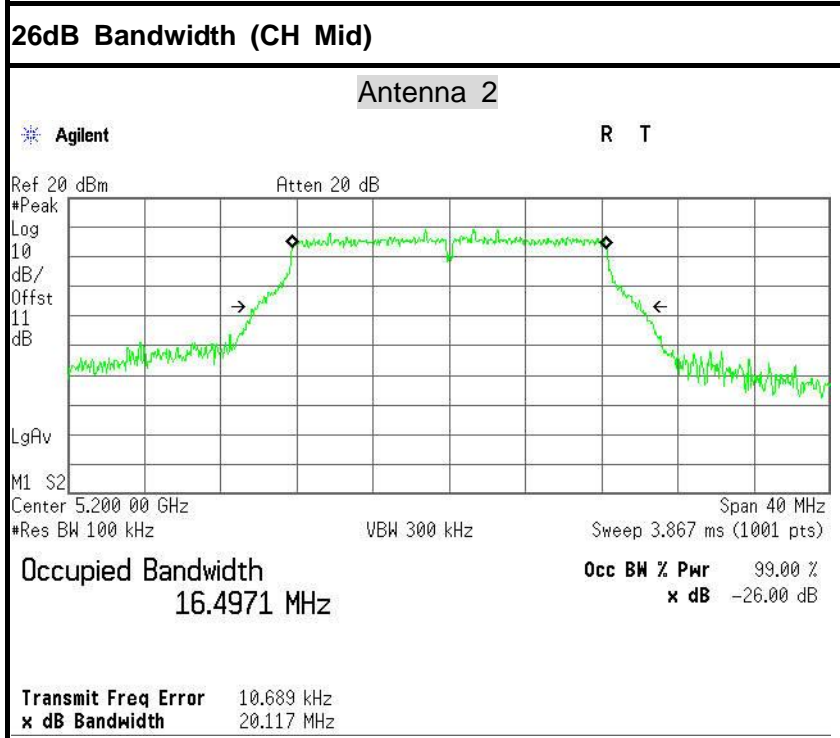
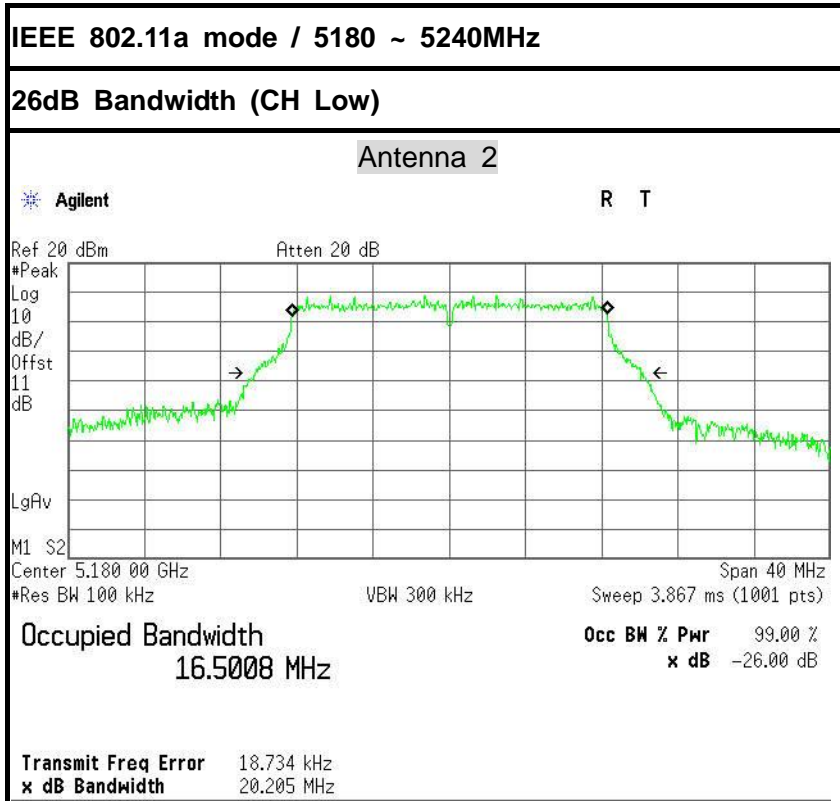


26dB Bandwidth (CH Mid)



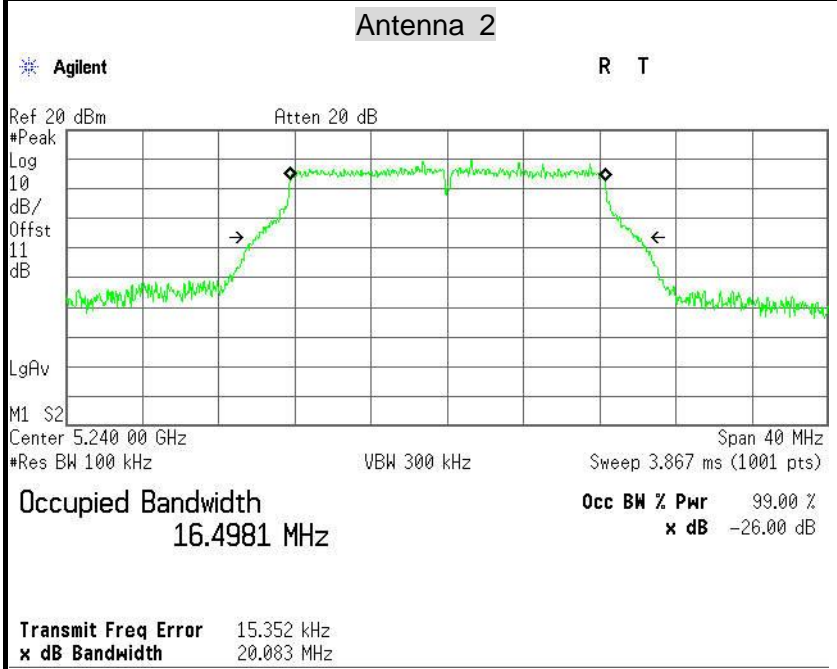
26dB Bandwidth (CH High)





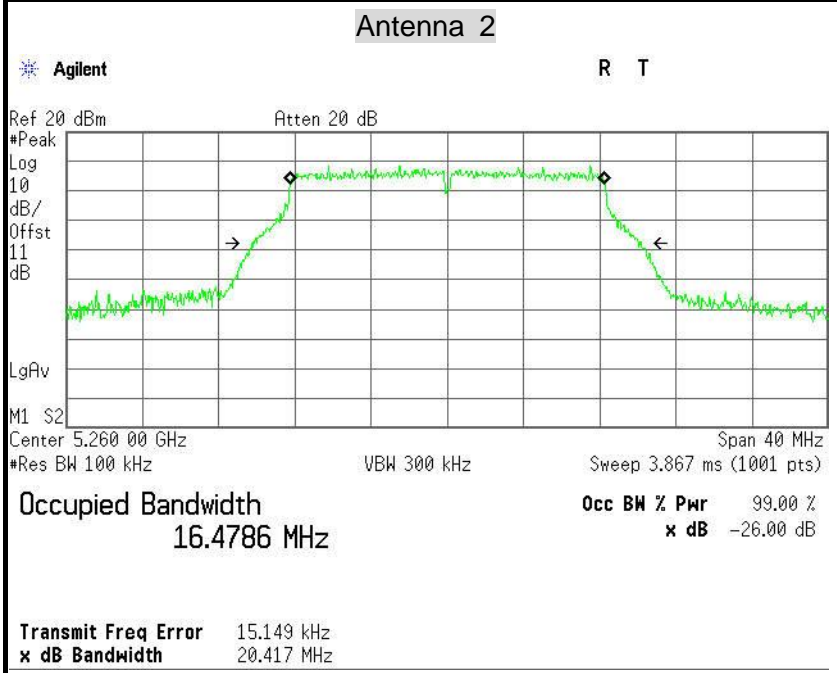


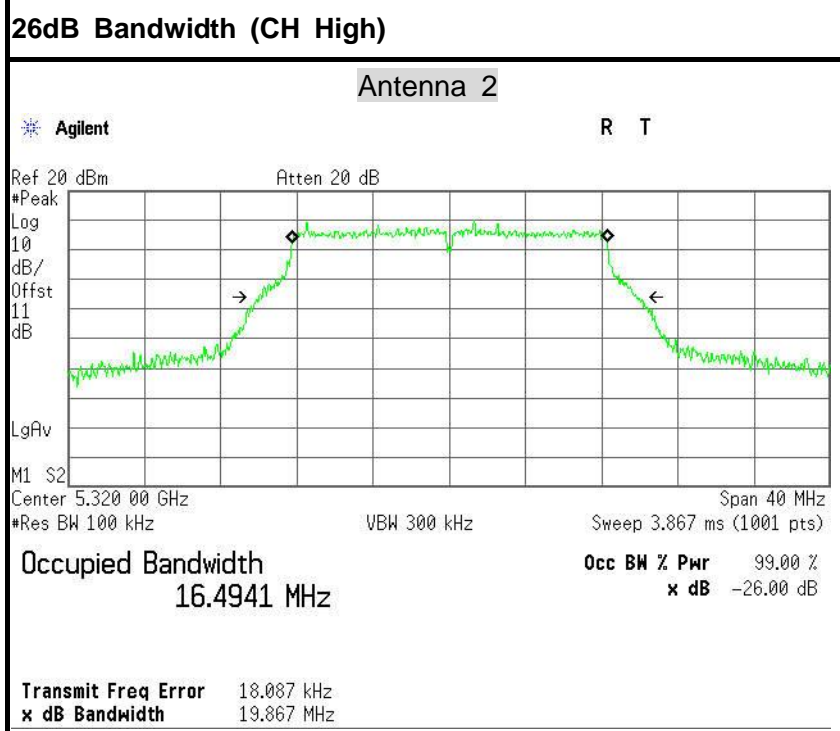
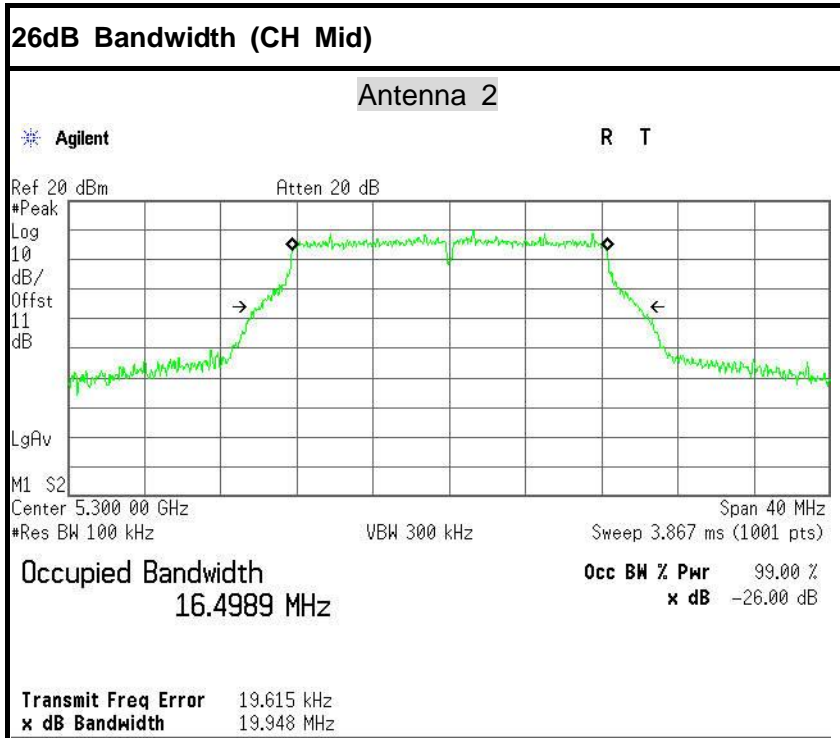
26dB Bandwidth (CH High)



IEEE 802.11a mode / 5260~ 5320MHz

26dB Bandwidth (CH Low)

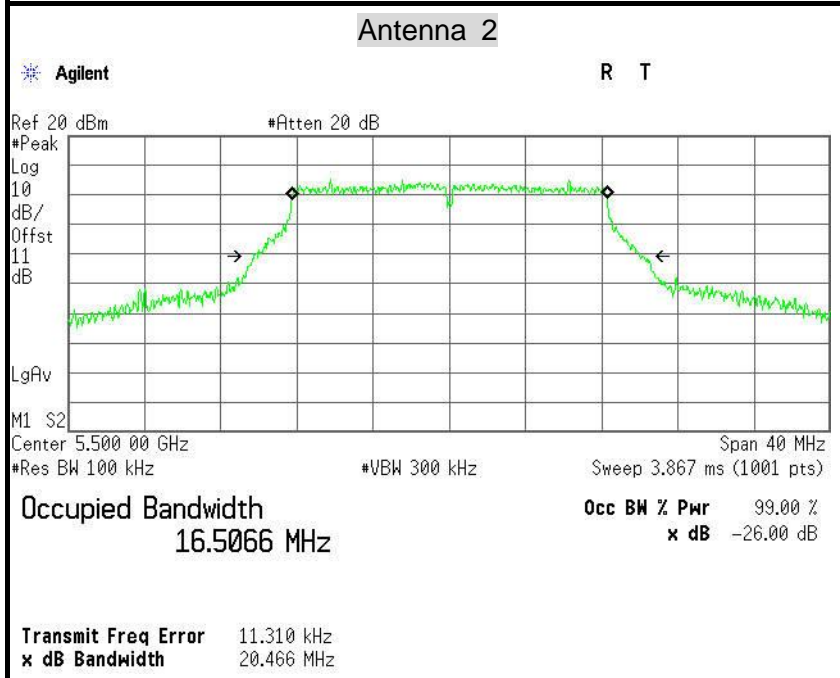




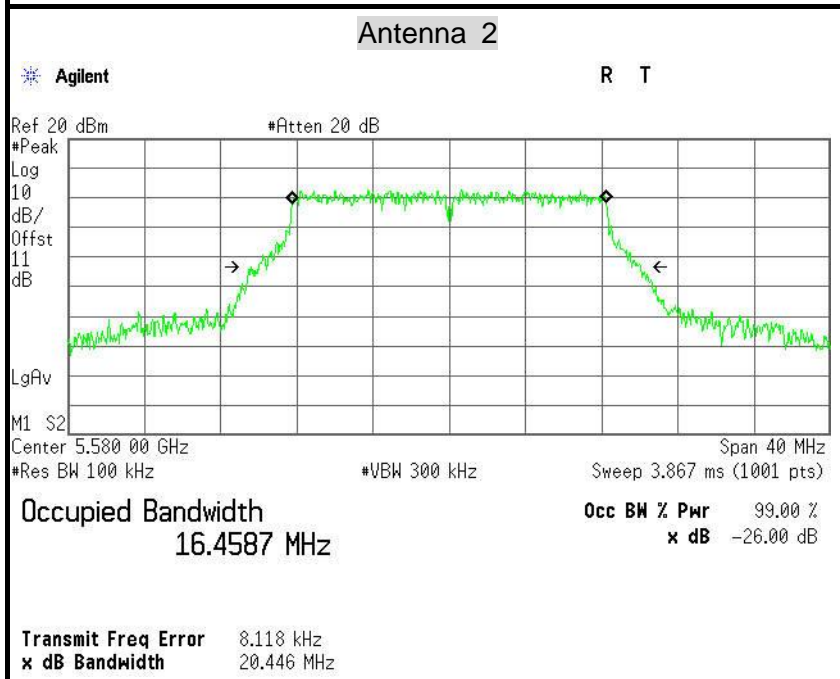


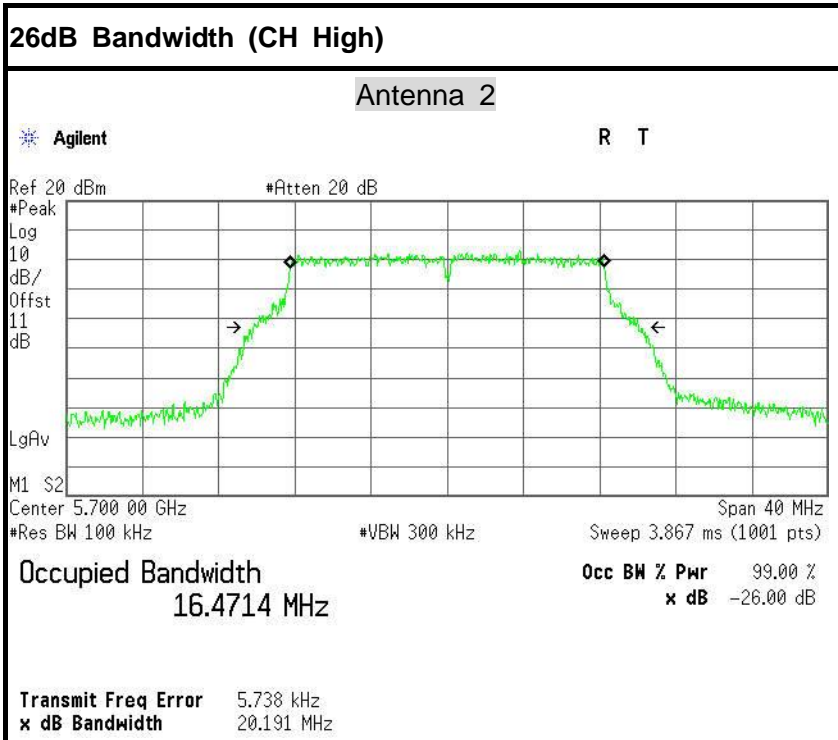
IEEE 802.11a mode / 5500 ~ 5700MHz

26dB Bandwidth (CH Low)

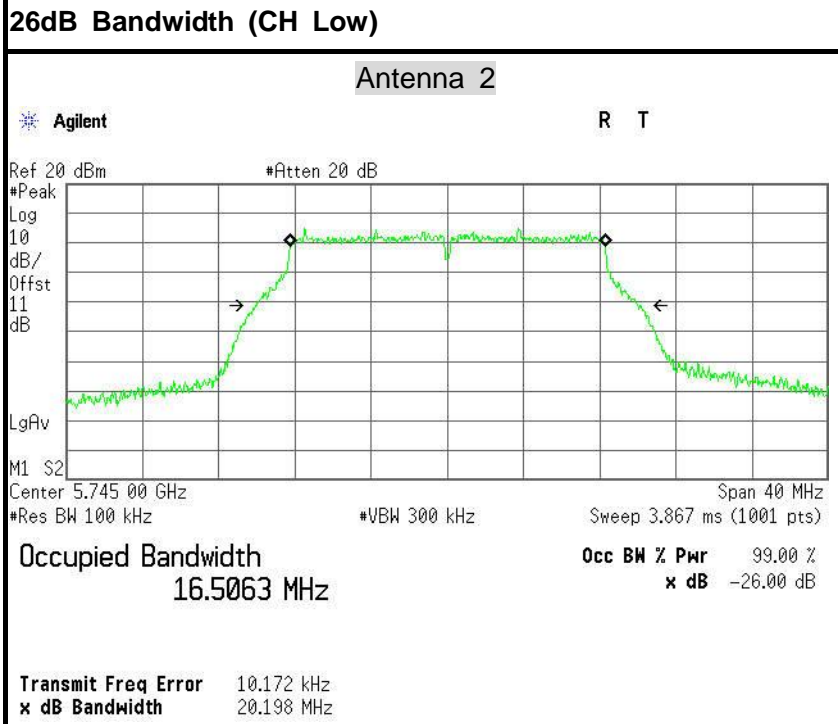


26dB Bandwidth (CH Mid)



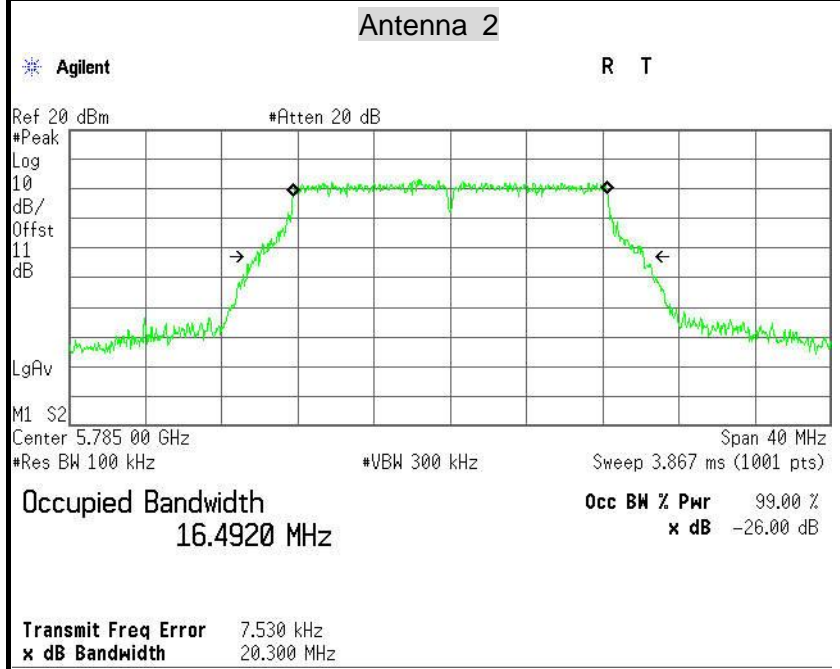


IEEE 802.11a mode / 5745 ~ 5825MHz

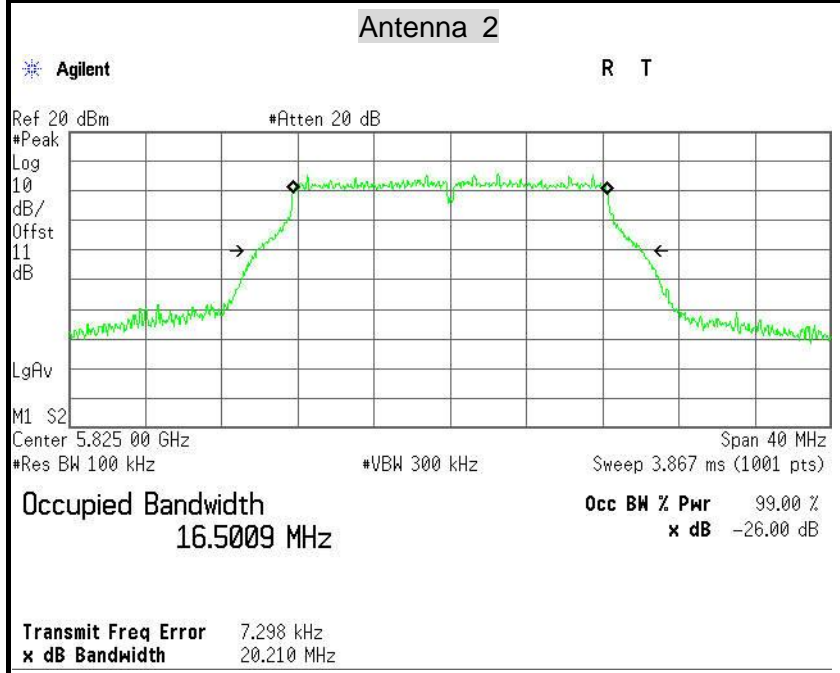


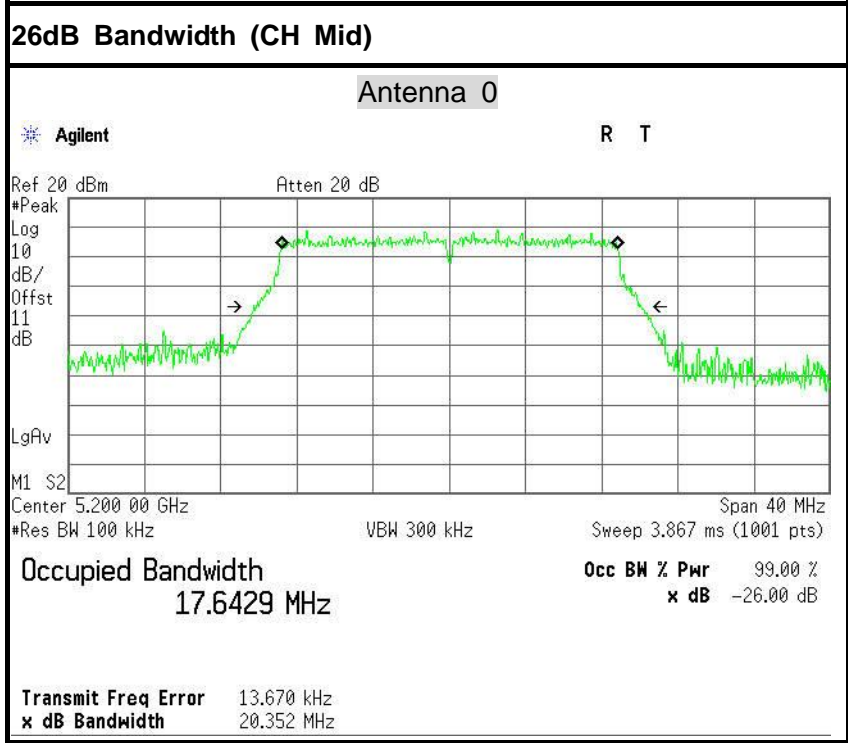
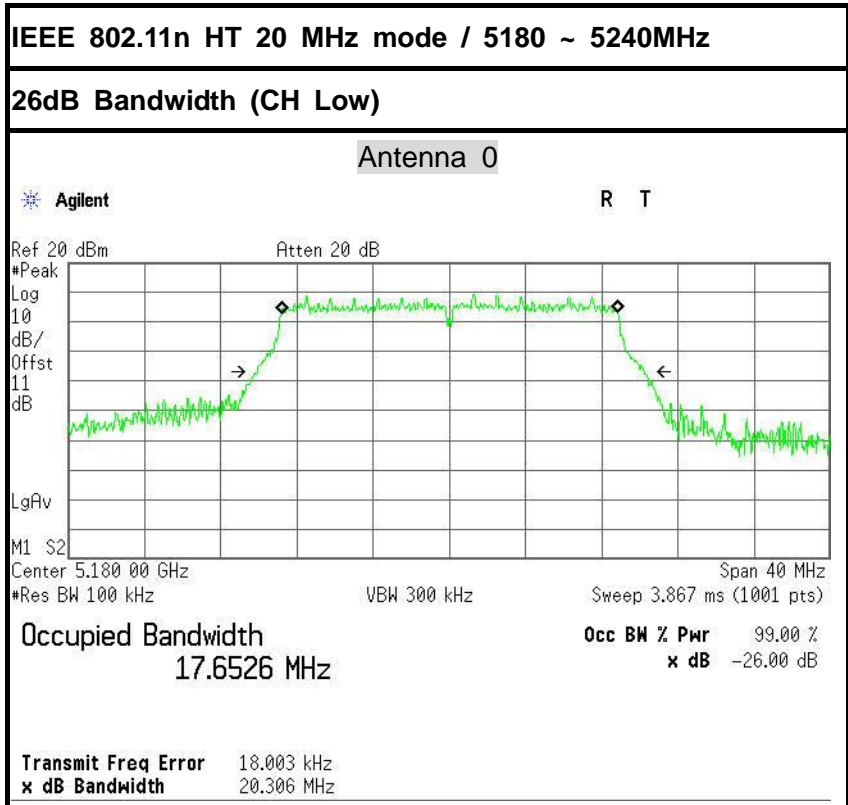


26dB Bandwidth (CH Mid)



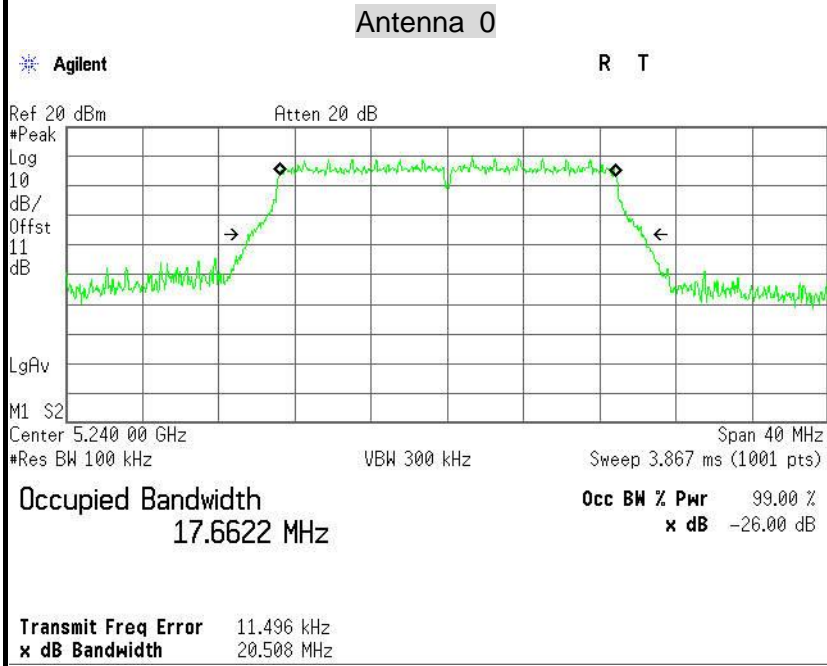
26dB Bandwidth (CH High)







26dB Bandwidth (CH High)



IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

26dB Bandwidth (CH Low)

