FCC TEST REPORT

Test report

On Behalf of

Ralinwi Nanjing Electronic Technology Co., Ltd.

For

PCIe WIFI Network Card

Model No.: Hicon 3220,Hicon 3210-PE

FCC ID: 2ADGH3220

Prepared for :	**Ralinwi Nanjing Electronic Technology Co., Ltd.** **3rdFloor,BuildingB,R&D Block3,XuzhuangSoftware Park,Nanjing City, China**
Prepared By :	**Shenzhen HUAK Testing Technology Co., Ltd.** **1F, B2 Building, JunfengZhongchengZhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China**
Date of Test:	**Mar. 12, 2019 ~ Mar. 28, 2019**
Date of Report:	**Mar. 28, 2019**
Report Number:	**HK1903210619-2ER**

TEST RESULTCERTIFICATION

Applicant's name	:	Ralinwi Nanjing Electronic Technology Co., Ltd.
Address	:	3rdFloor,BuildingB,R&D Block3,XuzhuangSoftware Park,Nanjing City, China
Manufacture's Name	:	Ralinwi Nanjing Electronic Technology Co., Ltd.
Address	:	3rdFloor,BuildingB,R&D Block3,XuzhuangSoftware Park,Nanjing City, China

Product description

Trade Mark:		N/A
Product name	:	PCIe WIFI Network Card
Model and/or type reference	:	Hicon 3220,Hicon 3210-PE
Standards	:	FCC 47 CFR Part 15 Subpart E

Date of Test	:	
Date (s) of performance of tests	:	Mar. 12, 2019 ~ Mar. 28, 2019
Date of Issue	:	Mar. 28, 2019
Test Result	:	**Pass**

Testing Engineer	:	Gary Qian
		(Gary Qian)
Technical Manager	:	Eden Hu
		(Eden Hu)
Authorized Signatory	:	Jason Zhou
		(Jason Zhou)

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Revision History

Rev.	IssueDate	ReportNO.	EffectPage	Contents
00	Mar. 28, 2019	HK1903210619-2ER	ALL	N/A

1 EUT DESCRIPTION

<table>
<tr><td>ProductName:</td><td colspan="4">PCIe WIFI Network Card</td></tr>
<tr><td>BrandName:</td><td colspan="4">N/A</td></tr>
<tr><td>ModelName:</td><td colspan="4">Hicon 3220</td></tr>
<tr><td>SeriesModel:</td><td colspan="4">Hicon 3210-PE</td></tr>
<tr><td>Model Difference:</td><td colspan="4">All model’s the function, software and electric circuit arethe same, only with a product color and model nameddifferent. Test sample model: Hicon 3220.</td></tr>
<tr><td>PowerAdapter:</td><td colspan="4">N/A</td></tr>
<tr><td rowspan="13">Frequency Range :</td><td>Band</td><td>Mode</td><td>Frequency Range(MHz)</td><td>Number of Channels</td></tr>
<tr><td rowspan="4">Band I UNII-I</td><td>IEEE802.11a mode</td><td rowspan="4">5150 MHz~5250 MHz</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT20 mode</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT40 mode</td><td>2</td></tr>
<tr><td>IEEE802.11 ac HT80 mode</td><td>1</td></tr>
<tr><td rowspan="4">Band II UNII-2A</td><td>IEEE802.11a mode mode</td><td rowspan="4">5250 MHz ~5350 MHz</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT20 mode</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT40 mode</td><td>2</td></tr>
<tr><td>IEEE802.11 ac HT80 mode</td><td>1</td></tr>
<tr><td rowspan="4">Band III UNII-2C</td><td>IEEE802.11a mode</td><td rowspan="4">5470 MHz ~5725 MHz</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT20 mode</td><td>4</td></tr>
<tr><td>IEEE802.11 n/ac HT40 mode</td><td>3</td></tr>
<tr><td>IEEE802.11 ac HT80 mode</td><td>1</td></tr>
<tr><td>Transmit Power:</td><td colspan="4">IEEE802.11a mode: 19.86dBm
IEEE802.11n HT20 mode: 18.88dBm
IEEE802.11n HT40 mode: 18.96dBm
IEEE802.11ac HT20 mode: 18.81dBm
IEEE802.11ac HT40 mode: 18.94dBm
IEEE802.11 ac HT80 mode:17.65dBm</td></tr>
<tr><td>ModulationTechnique:</td><td colspan="4">IEEE802.11a mode: OFDM (6,9,12,18,24,36,48 and 54 Mbps)
IEEE802.11 n/ac HT20 mode: OFDM (MCS0~MCS7)
IEEE802.11 n/ac HT40 mode: OFDM (MCS0~MCS7)
IEEE802.11 ac HT80 mode: OFDM (MCS0~MCS7)</td></tr>
<tr><td>Antenna Specification:</td><td colspan="4">Dipole Antenna
Gain: Antenna 1:1dBi
Antenna 2:1dBi
MIMO: 4.010dBi</td></tr>
<tr><td>Operating Mode:</td><td colspan="4">Client without radardetection</td></tr>
</table>

Remark:

1. Thesampleselectedfortestwasengineeringsamplethatapproximatedtoproductionproduct and was provided by manufacturer.
2. This submittal(s) (test report) is intended for ***FCCID:2ADGH3220*** filing to complywith FCC Part 15, Subpart E Rules.

2 TEST METHODOLOGY

The tests documented in this report were performed in accordance withANSI C63.10:2013 and FCC CFR 47 15.207, 15.209 and 15.407.

2.1 EUT CONFIGURATION

The EUTconfiguration 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 emissionin a continuous normal application.

2.2 EUT EXERCISE

The EUTis operated in the engineering mode to fix theTxfrequency for the purposes of measurement.

According to its specifications, the EUTmust comply with the requirements of Section 15.407 under the FCC Rules Part 15 SubpartE.

2.3 GENERAL TEST PROCEDURES

ConductedEmissions

The EUTis placed on the turntable,which is positioned at 0.8 m above the ground plane.According to the requirements in Section 13.3 ofANSI C63.10:2013, the conducted emission from the EUTis measuredinthefrequencyrangebetween0.15MHzand30MHz,usingtheCISPRQuasi-Peakdetector mode.

RadiatedEmissions

Under 1GHz

The EUTis placed on a turn table, which is 0.8m above groundplane.The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUTis set 3m away fromthe receiving antenna, which varied from 1m to 4m to find outthe highest emission.And also, each emission was to be maximized by changing the polarization of receiving antennaboth horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 ofANSI C63.10:2013.

Above 1GHz

The EUTis placed on a turn table, which is 1.5m above groundplane.The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUTis set 3m away fromthe receiving antenna, which varied from 1m to 4m to find outthe highest emission.And also, each emission was to be maximized by changing the polarization of receiving antennaboth horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 ofANSI C63.10:2013.

2.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

Exceptasshowninparagraph(d)ofthissection,onlyspuriousemissionsarepermittedinanyofthe frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.50 - 5.15
0.495 - 0.505 (1)	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960.0 - 1240	7.25 - 7.75
4.125 - 4.128	25.50 - 25.67	1300 - 1427	8.025 - 8.500
4.17725 - 4.17775	37.50 - 38.25	1435.0 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73.00 - 74.60	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.80 - 75.20	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108.00 - 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	149.90 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -156.52525	2483.5 – 2500.0	17.7 - 21.4
8.37625 - 8.38675	156.70 - 156.90	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.1700	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.20	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358.0	36.43 - 36.5(2)
12.57675 - 12.57725	322.0- 335.4	3600 - 4400	
13.36 - 13.41			

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

[2] Above 38.6

Except as provided in paragraphs (d) and (e),the field strength of emissions appearing within these frequencybandsshallnotexceedthelimitsshowninSection15.209.Atfrequenciesequaltoorless than 1000 MHz, compliance with the limitsinSection 15.209 shall be demonstrated using measurement instrumentation employing aCISPR quasi-peak detector.Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on theaverage value of the measured emissions.The provisionsin Section 15.35 apply to these measurements.

2.5 DESCRIPTION OF TEST MODES

Description	Modulation Technology	ModulationType
26dB Bandwidth and 99% bandwidth	OFDM	BPSK
Maximum conducted output power	OFDM	BPSK
Band edges measurement	OFDM	BPSK
Peak Power SpectralDensity	OFDM	BPSK
Radiated undesirable emission	OFDM	BPSK
Powerlineconducted emission	OFDM	BPSK

IEEE802.11amode:

Channel (5180MHz),Channel (5220MHz),Channel (5240MHz), Channel (5260MHz), Channel (5280MHz),Channel (5320MHz),Channel (5500MHz),Channel (5580MHz)and Channel (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11nHT20mode:

Channel (5180MHz),Channel (5220MHz),Channel (5240MHz), Channel (5260MHz), Channel (5280MHz),Channel (5320MHz),Channel (5500MHz),Channel (5580MHz)and Channel (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11nHT40mode:

Channel (5180MHz),Channel (5220MHz),Channel (5240MHz), Channel (5260MHz), Channel (5280MHz),Channel (5320MHz),Channel (5500MHz),Channel (5580MHz)and Channel (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11acHT20mode:

Channel (5180MHz),Channel (5220MHz),Channel (5240MHz), Channel (5260MHz), Channel (5280MHz),Channel (5320MHz),Channel (5500MHz),Channel (5580MHz)and Channel (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11acHT40mode:

Channel (5180MHz),Channel (5220MHz),Channel (5240MHz), Channel (5260MHz), Channel (5280MHz),Channel (5320MHz),Channel (5500MHz),Channel (5580MHz)and Channel (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE802.11acHT80mode:

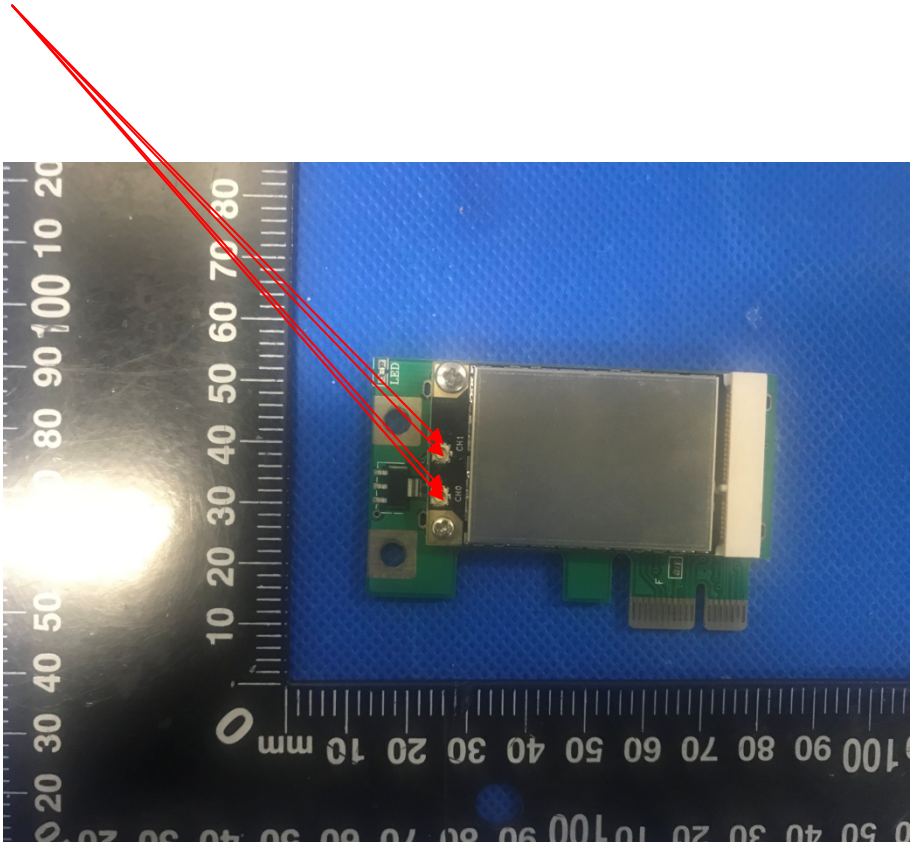
Channel (5210MHz),Channel (5290MHz),Channel (5530MHz)with MCS0 data rate were chosen for full testing.

2.6 ANTENNA DESCRIPTION

anintentional radiator antenna shall be designed to ensure thatno antennaother than that furnished by theresponsiblepartycanbeusedwiththedevice.Theuseofapermanentlyattachedoranantennathat uses a unique coupling to the intentional radiator shall be consideredsufficient to complywith the provisions of this section”

* theantenna of this EUTis a unique(Dipole Antenna for WiFi).
* theEUTcomplies with the requirement of 15.203.

WIFI ANTENNA



3 INSTRUMENT CALIBRATION

The measuring equipment, whichwas utilized in performing the tests documented herein,has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

3.1 MEASUREMENT EQUIPMENT USED

ConductedEmissionsTestSite					
NameofEquipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**CalibrationDue**
Spectrum analyzer	Agilent	N9020A	HKE-048	2018-12-27	2019-12-26
Spectrum analyzer	R&S	FSP40	HKE-025	2018-12-27	2019-12-26
Power meter	Agilent	E4419B	HKE-085	2018-12-27	2019-12-26
Power Sensor	Agilent	E9300A	HKE-086	2018-12-27	2019-12-26
Power SPLITTER	Mini-Circuits	ZN2PD-9G	HKE-125	N.C.R	N.C.R
programmable power	Agilent	E3634A	HKE-091	N.C.R	N.C.R
Temperature and humidity	Boyang	HTC-1	HKE-079	2018-12-27	2019-12-26

977 Chamber					
NameofEquipment	**Manufacturer**	**Model**	**Serial Number**	**CalibrationDate**	**CalibrationDue**
Spectrum analyzer	Agilent	N9020A	HKE-048	2018-12-27	2019-12-26
Spectrum analyzer	R&S	FSP40	HKE-025	2018-12-27	2019-12-26
Spectrum analyzer	Agilent	N9020A	HKE-089	2018-12-27	2019-12-26
Receiver	R&S	ESCI 7	HKE-010	2018-12-27	2019-12-26
Preamplifier	EMCI	EMC051845SE	HKE-015	2018-12-27	2019-12-26
Preamplifier	Agilent	83051A	HKE-016	2018-12-27	2019-12-26
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	2018-12-27	2019-12-26
Horn antenna	Schwarzbeck	9120D	HKE-013	2018-12-27	2019-12-26
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	2018-12-27	2019-12-26
Position controller	Taiwan MF	MF7802	HKE-011	N.C.R	N.C.R
Antenna tower	Taiwan MF	CTERG23	HKE-120	N.C.R	N.C.R
Controller	Taiwan MF	CT1OO	HKE-121	N.C.R	N.C.R
Test Software			EZ-EMC		

ConductedEmission					
NameofEquipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Receiver	R&S	ESCI 7	HKE-010	2018-12-27	2019-12-26
LISN	R&S	ENV216	HKE-002	2018-12-27	2019-12-26
LISN	ENV216	R&S	HKE-059	2018-12-27	2019-12-26
ISN	Schwarzbeck	ISN CAT5 8158	HKE-062	2018-12-27	2019-12-26
Test Software	EZ-EMC				

Remark:*Each pieceof equipmentisscheduled for calibration oncea year.*

3.2 MEASUREMENT UNCERTAINTY

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance withTR 100 028-1 [2] and shall correspond toanexpansionfactor(coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95% and 95,45% in the case where the distributions characterizingthe actual measurementuncertainties are normal (Gaussian)).

Table 6 is based on such expansion factors.

Table6:Maximummeasurementuncertainty

Parameter	UNCERTAINTY
Radio frequency	±0.8 × 10-7
RF power, conducted	0.2054
Maximum frequency deviation: -within 300 Hzand 6 kHz of audio frequency	1.3%
-within 6 kHz and 25 kHz of audio frequency	0.65 dB
Adjacent channel power	0.2054
Conducted spurious emission of transmitter, valid up to 6 GHz	0.2892
Conducted emission of receivers	+1.2/-1.1 dB
Radiated emission of transmitter,valid up to 6 GHz	±3.94 dB
Radiated emission of receiver, valid up to 6 GHz	±3.94 dB
RF level uncertainty for a given BER	±0.3 dB
Temperature	0.1979
Humidity	±1 %

4 FACILITIES AND ACCREDITATIONS

4.1 FACILITIES

All measurement facilities used tocollect the measurement data are locatedat
☒ **No.10WeiyeRd.,Innovationpark,Eco&Tec,DevelopmentZone,KunshanCity,Jiangsu,China.**
The sites are constructed in conformance with the requirements ofANSI C63.10:2013 andCISPR Publication 22.AllreceivingequipmentconformstoCISPRPublication16-1,“RadioInterference MeasuringApparatusandMeasurementMethods.”

4.2 EQUIPMENT

Radiatedemissionsaremeasuredwithoneormoreof thefollowingtypesoflinearlypolarizedantennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectorsand quasi-peak detectors are used to perform radiated measurements.

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

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

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference MeasuringApparatus and Measurement Methods.”

4.3 TABLE OF ACCREDITATIONS AND LISTINGS

The test facilities used toperform radiated and conducted emissions tests are accreditedbyAmerican Association for LaboratoryAccreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listedwith USA, Certification and Engineering Bureau, 424105 for 10m chamber,238958 for 3m chamber.

5 SETUP OF EQUIPMENT UNDER TEST

5.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for theactual connectionsbetween EUT and support equipment.

5.2 SUPPORT EQUIPMENT

No.	DeviceType	Brand	Model	Series No.	FCC ID
1.	Notebook	/	TP00067A	N/A	N/A

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2.Groundingwas established in accordance with the manufacturer's requirements and conditions for the intendeduse.

6 FCC PART 15 REQUIREMENTS

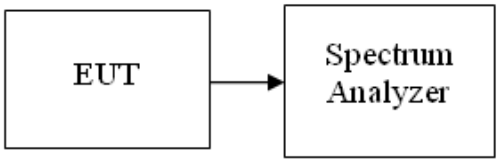
6.1 26 DB EMISSION BANDWIDTH

LIMIT

According to§15.403(i),for purposesof thissubpartthe emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carriercenter 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 isbased on the use of measurement instrumentation employing a peak detector function with an instrument resolutionsbandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

TestConfiguration

TESTPROCEDURE



1. Place the EUTon the table andset it in the transmitting mode.
2. Remove the antenna from the EUTand then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzeras RBW = approximately 1% of the emission bandwidth, VBW >RBW, Detector = Peak ,Span>26dB bandwidth, and Sweep = auto ,Trace mode = max hold.
4. Measurethemaximumwidthoftheemissionthatis26dBdownfromthemaximumofthe emission. Compare thiswith the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
5. Repeat until all the rest channels were investigated.

TESTRESULTS

No non-compliance noted

Test Data

Antenna 1

Testmode:IEEE802.11a mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.37
Mid	5220	21.70
High	5240	21.40

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	22.34
Mid	5280	21.90
High	5320	21.12

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	22.07
Mid	5580	21.57
High	5700	21.34

Testmode:IEEE802.11nHT20MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.17
Mid	5220	21.50
High	5240	21.71

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	21.05
Mid	5280	21.71
High	5320	21.60

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	21.89
Mid	5580	21.14
High	5700	22.03

Testmode:IEEE802.11 n HT40MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5190	43.89
High	5230	42.49

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5270	42.63
High	5310	43.09

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5510	42.94
Mid	5550	43.89
High	5670	43.10

Testmode:IEEE802.11 ac HT20MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.55
Mid	5220	21.53
High	5240	21.55

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	21.67
Mid	5280	21.15
High	5320	21.53

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	21.88
Mid	5580	21.32
High	5700	21.68

Testmode:IEEE802.11 ac HT40MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5190	44.47
High	5230	42.54

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5270	42.56
High	5310	42.81

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5510	43.62
Mid	5550	42.52
High	5670	42.88

Testmode:IEEE802.11ac HT80MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
	5210	94.16

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
	5290	91.12

5470~5725MHz

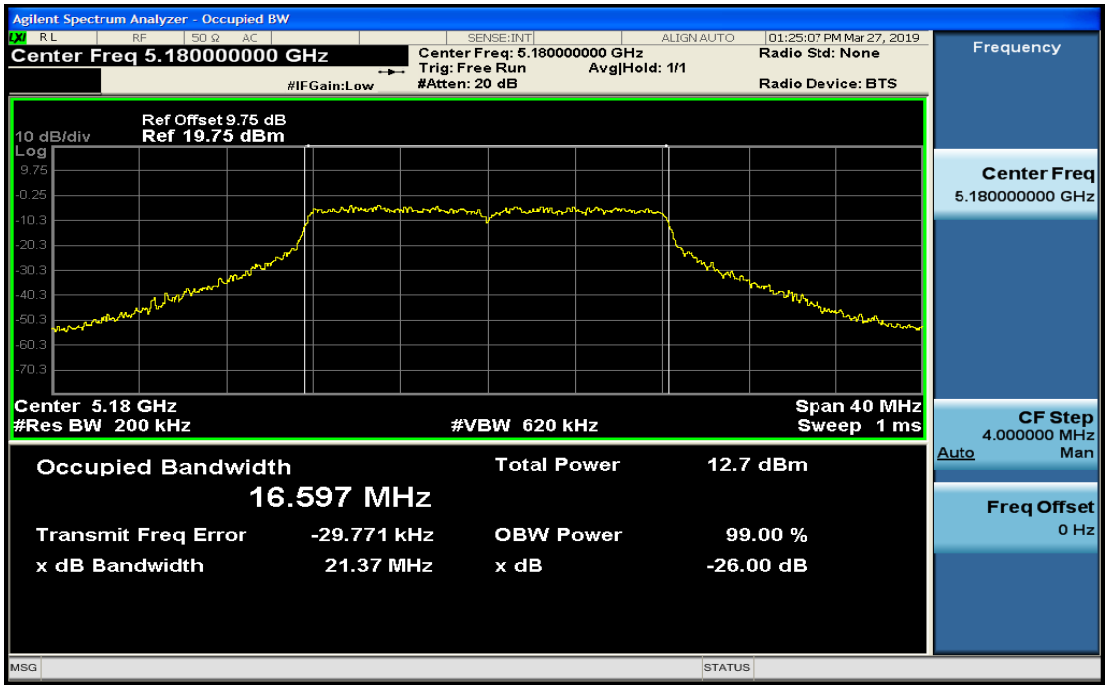
Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5530	93.63

TestPlot

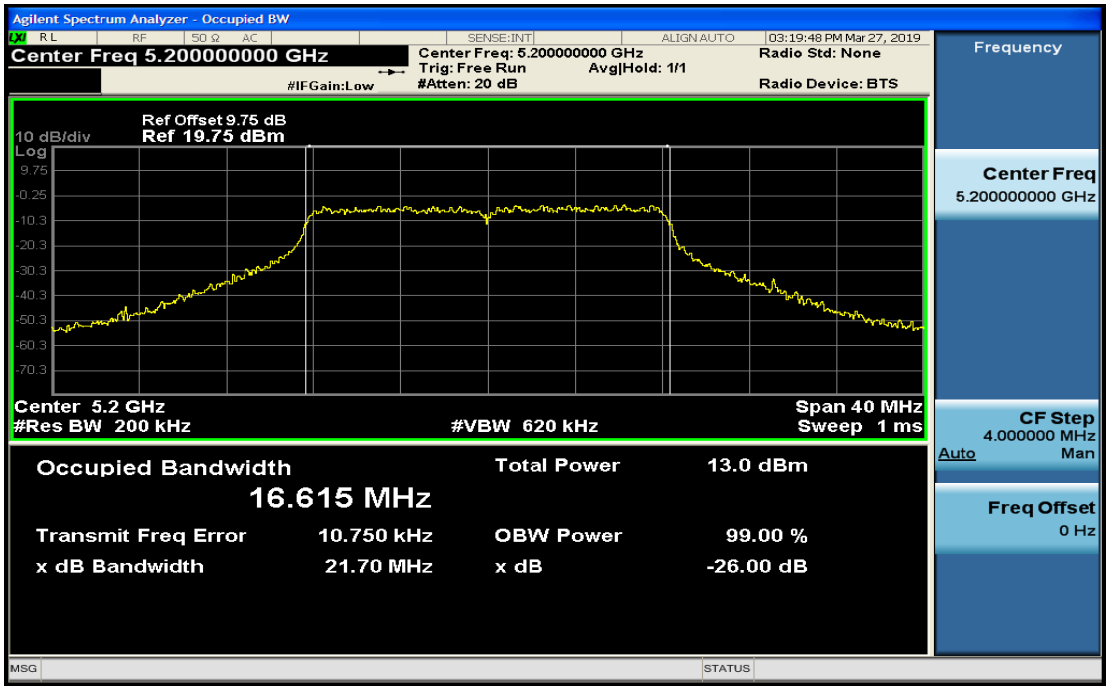
IEEE802.11amode:

5150~5250MHz

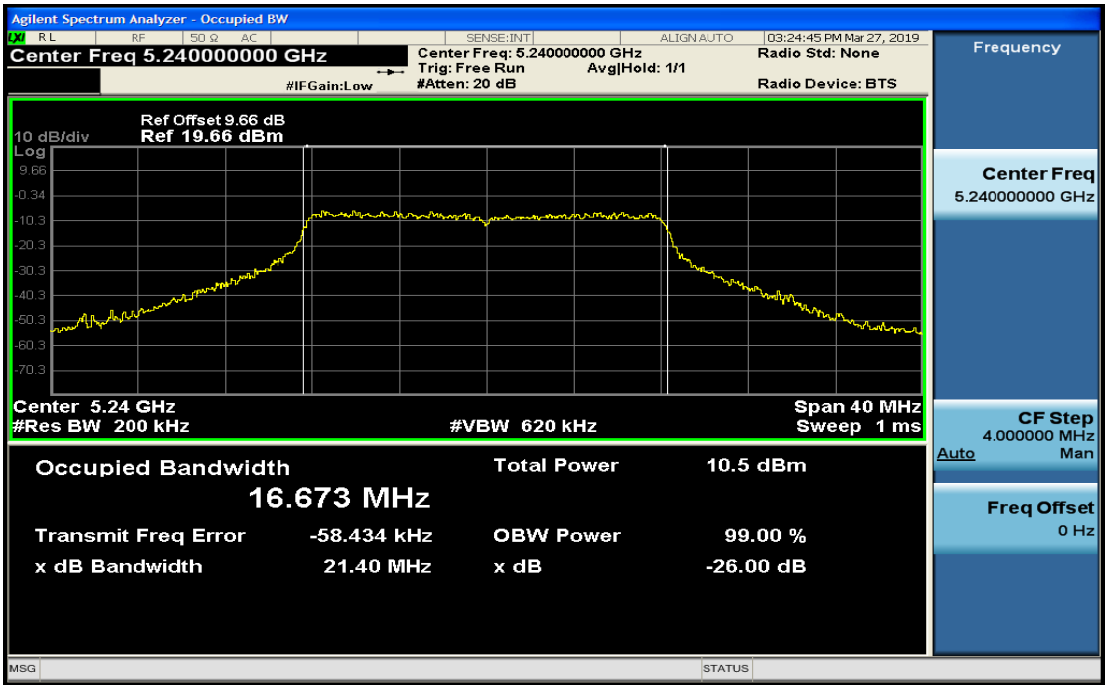
CHLow



CHMid

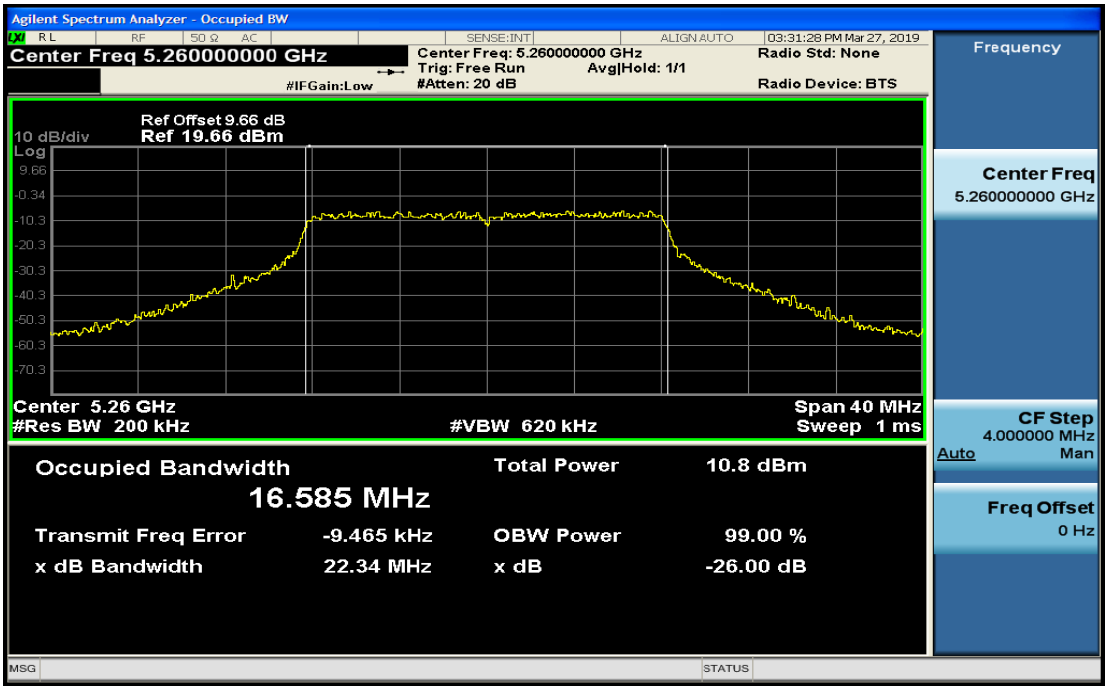


CHHigh

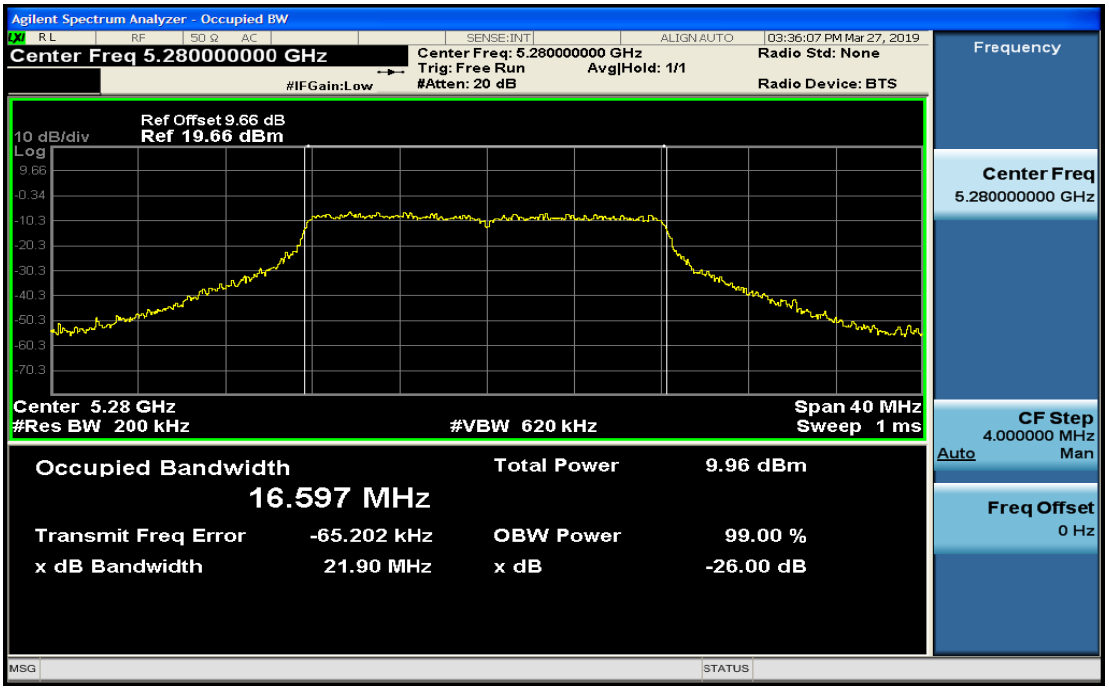


5250~5350MHz

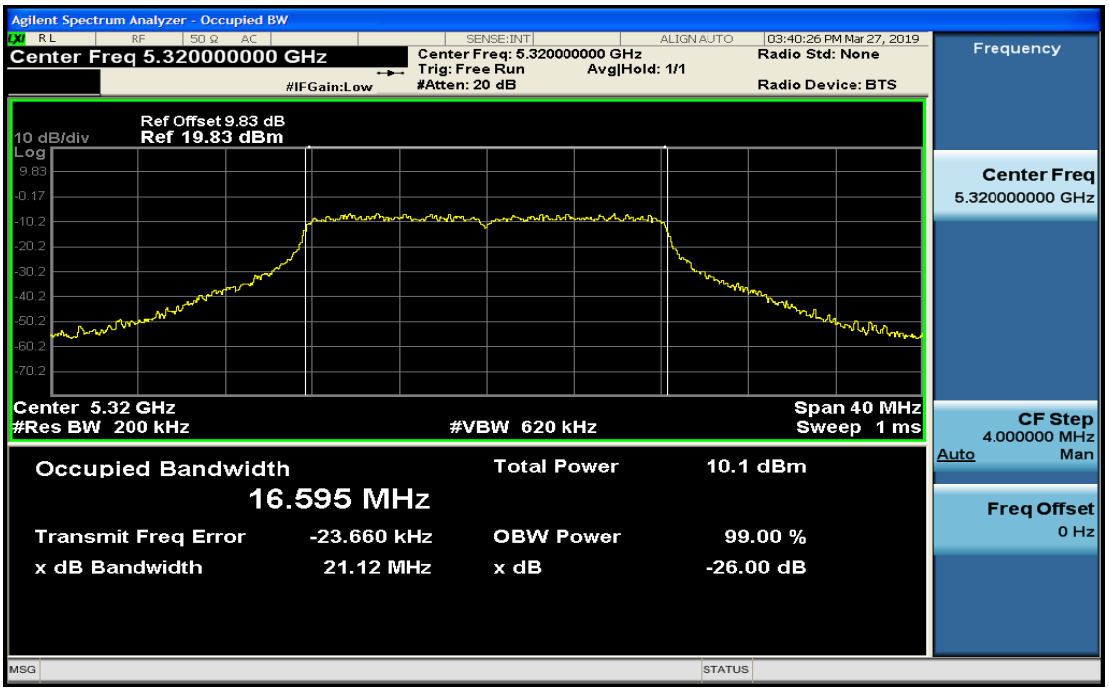
CHLow



CHMid

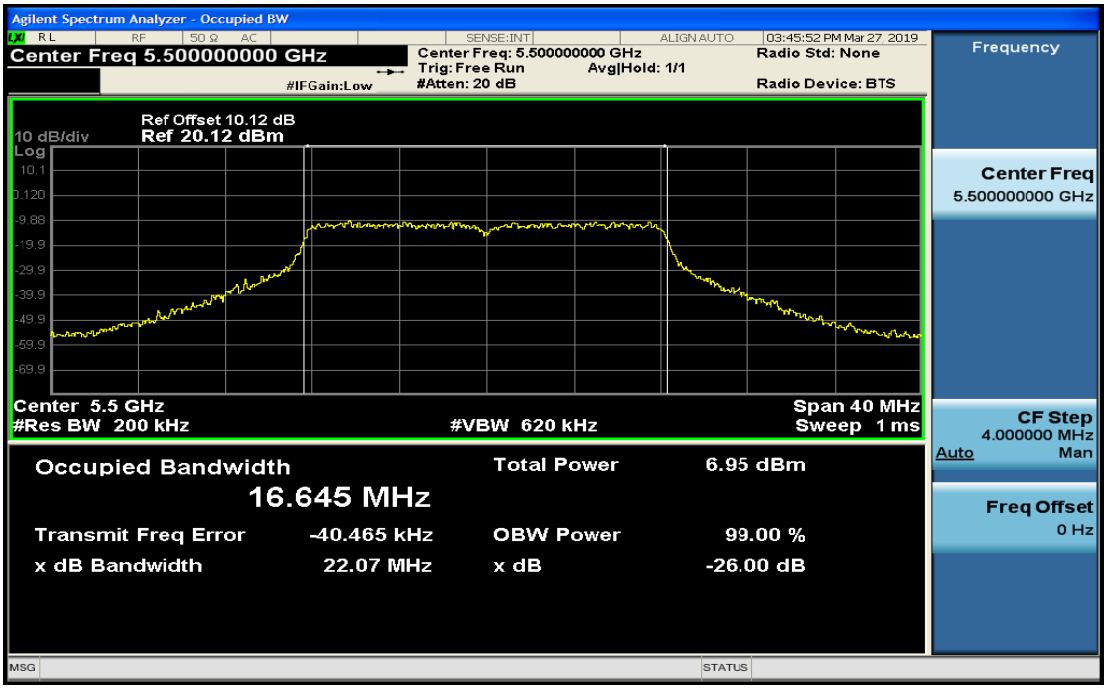


CHHigh

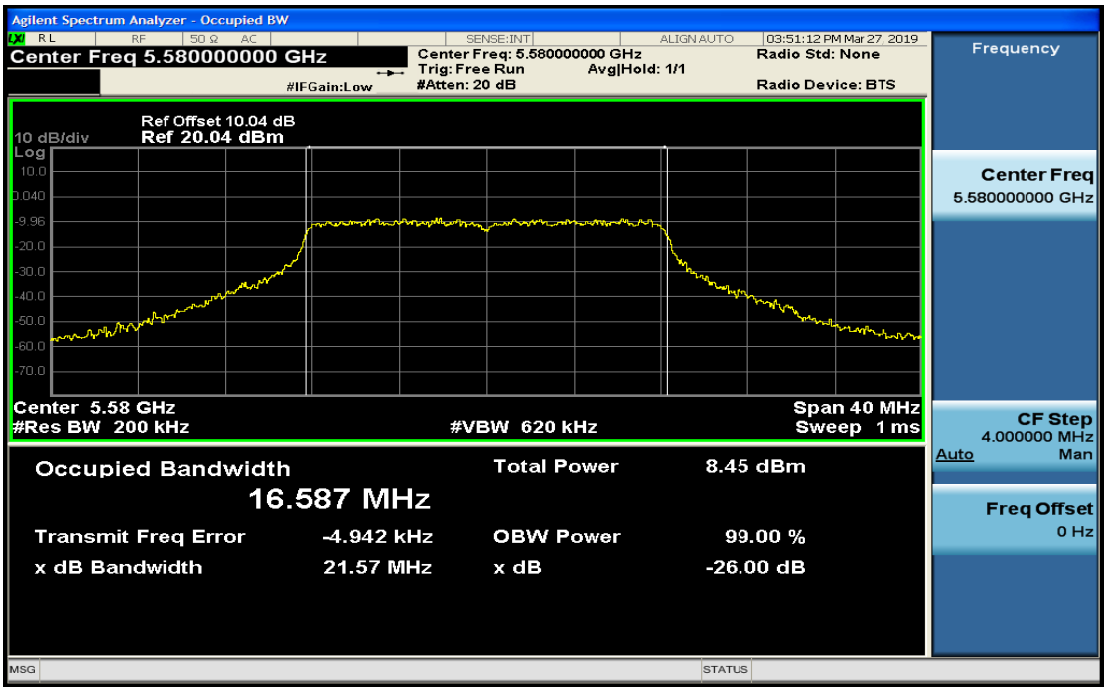


5470~5725MHz

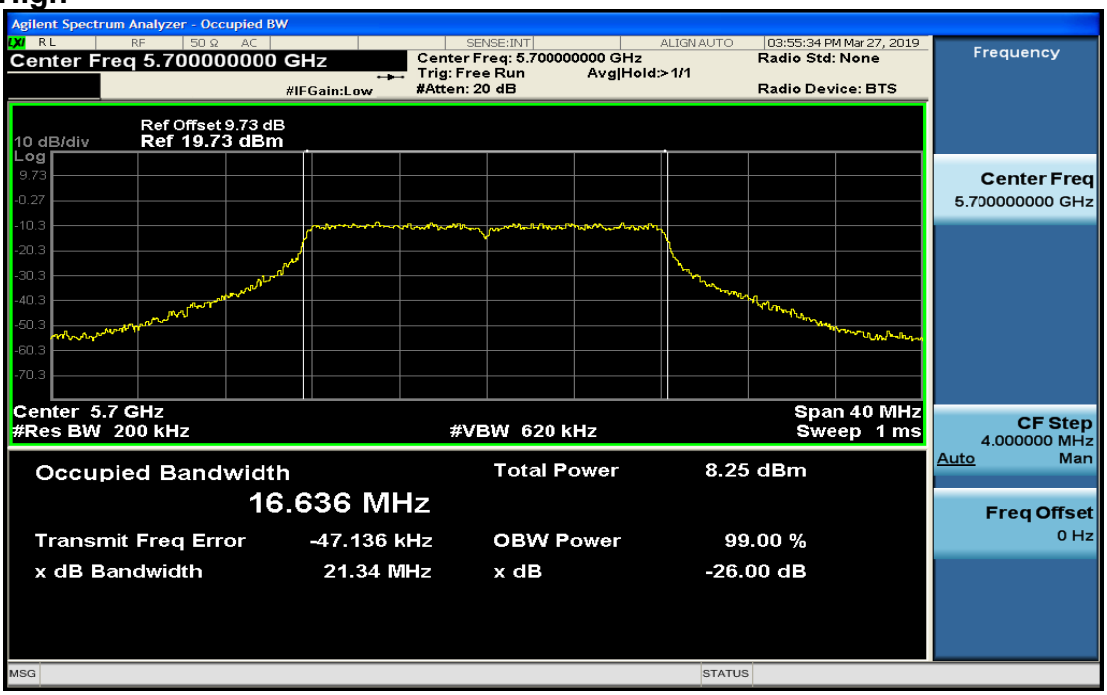
CHLow



CHMid



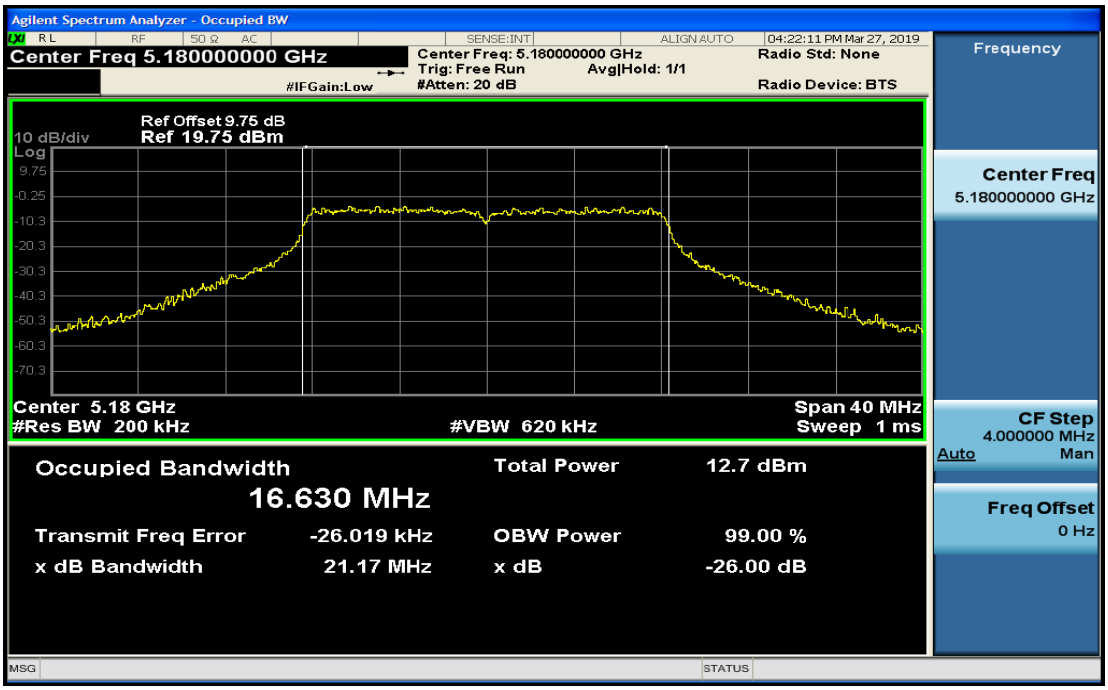
CHHigh



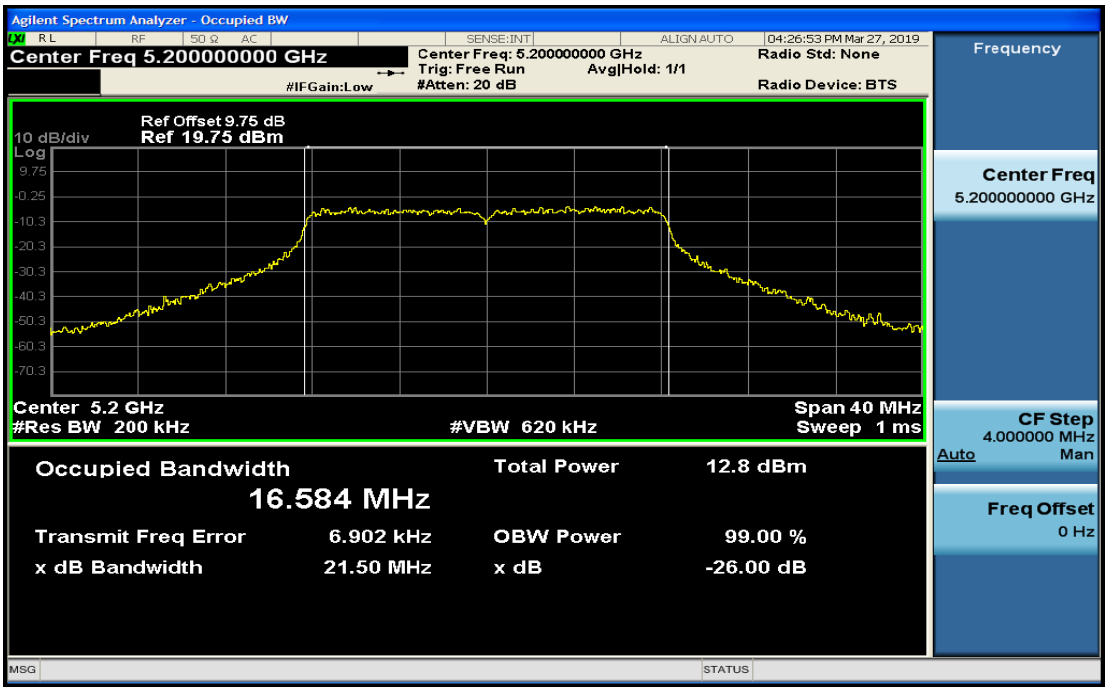
IEEE802.11nHT20mode

5150~5250MHz

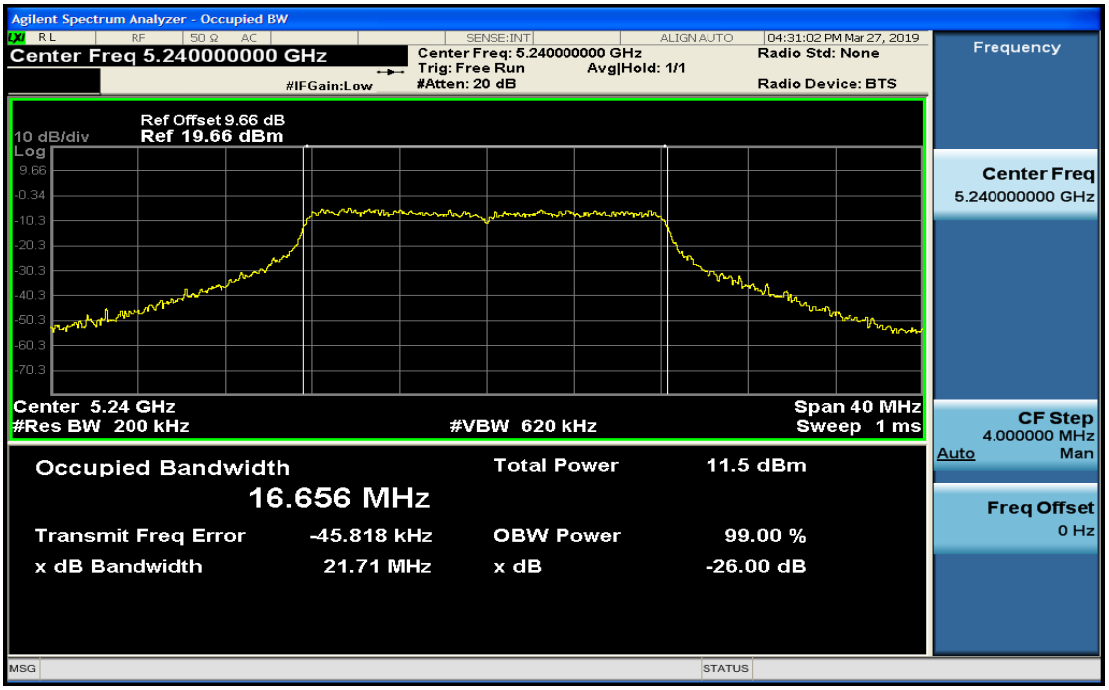
CHLow



CHMid

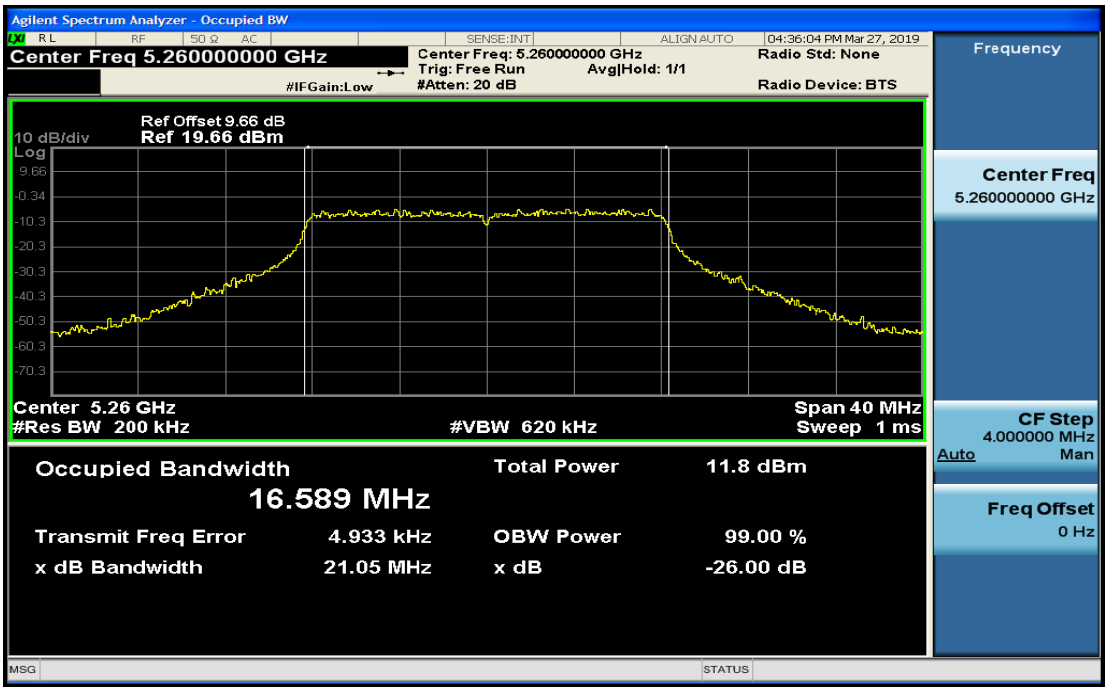


CHHigh



5250~5350MHz

CHLow



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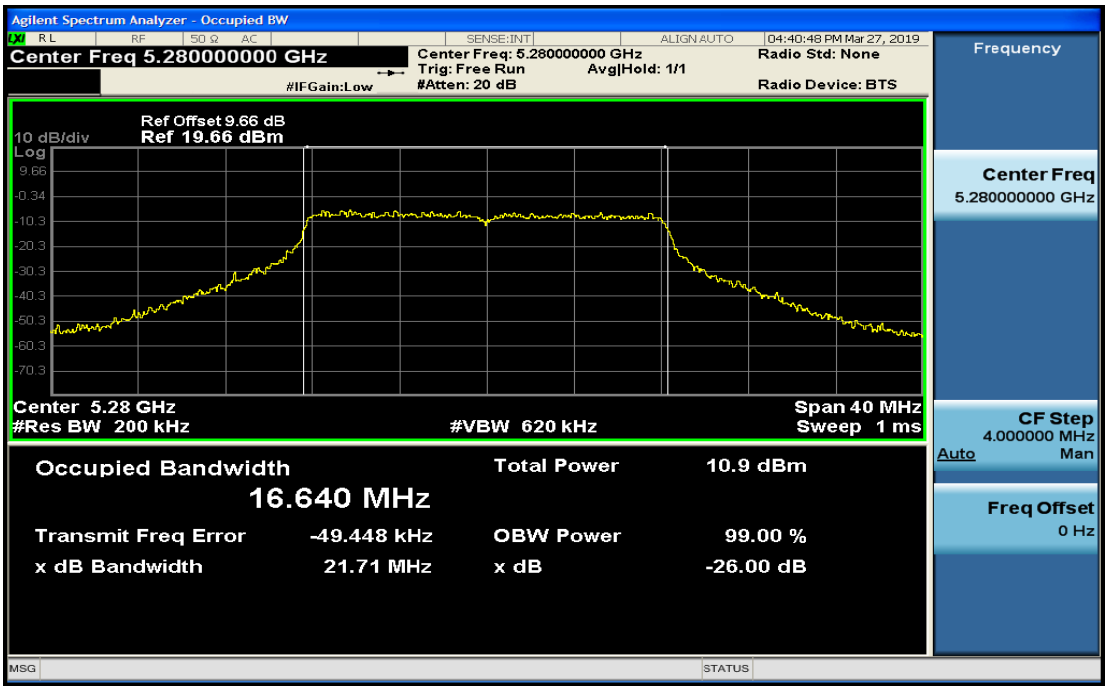
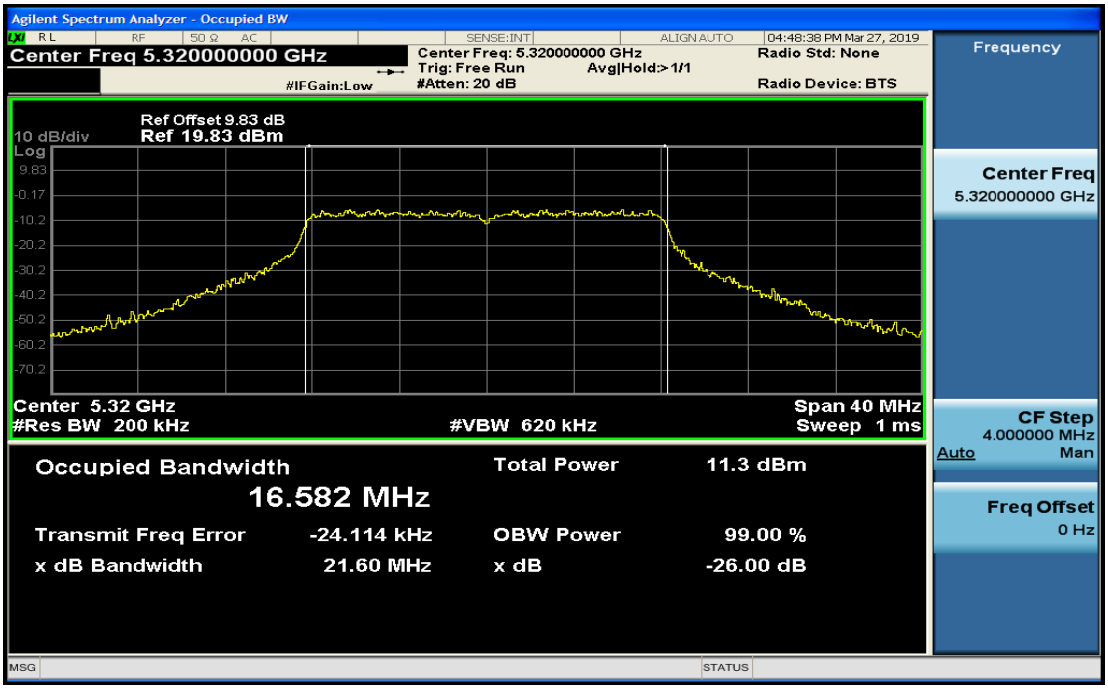
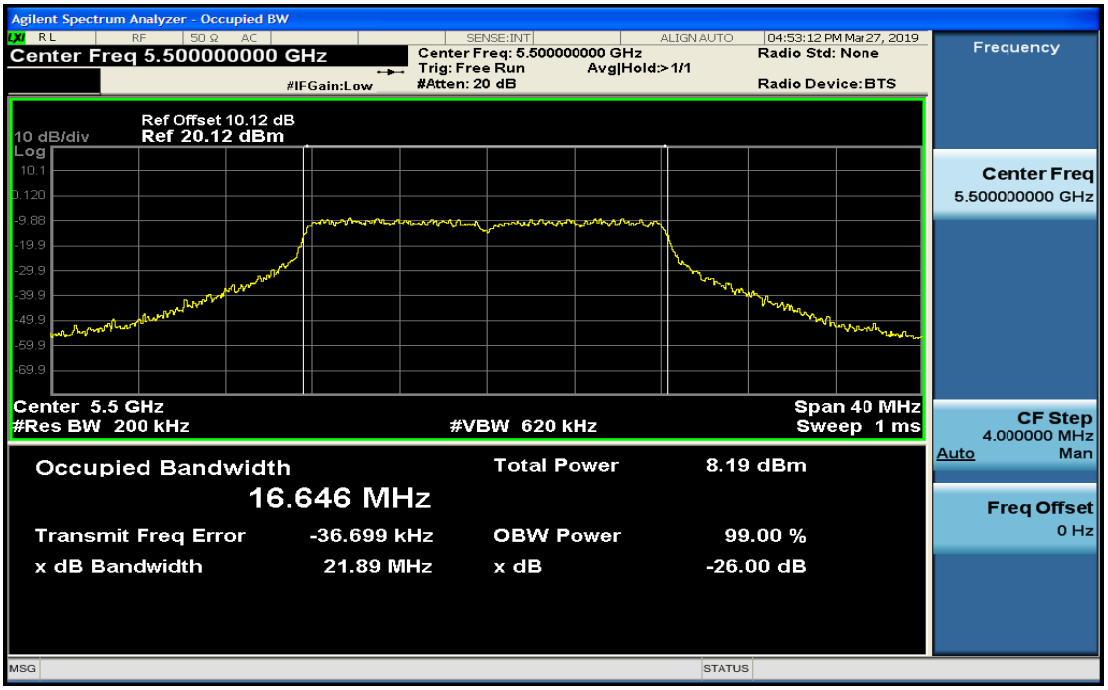


CHHigh



5470~5725MHz

CHLow



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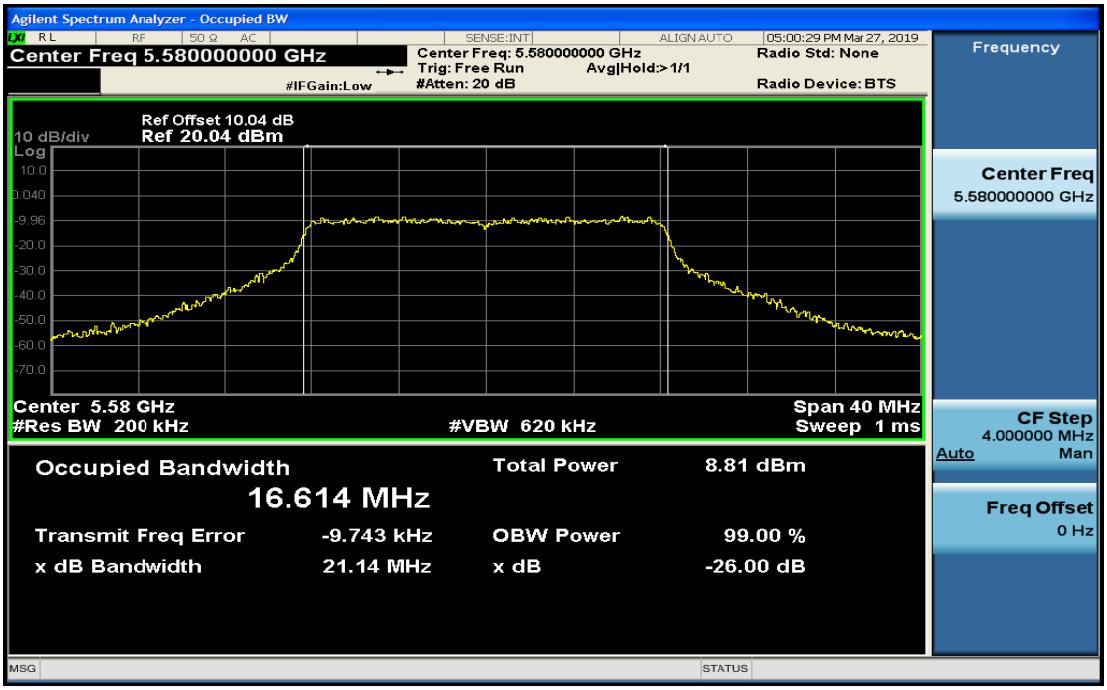
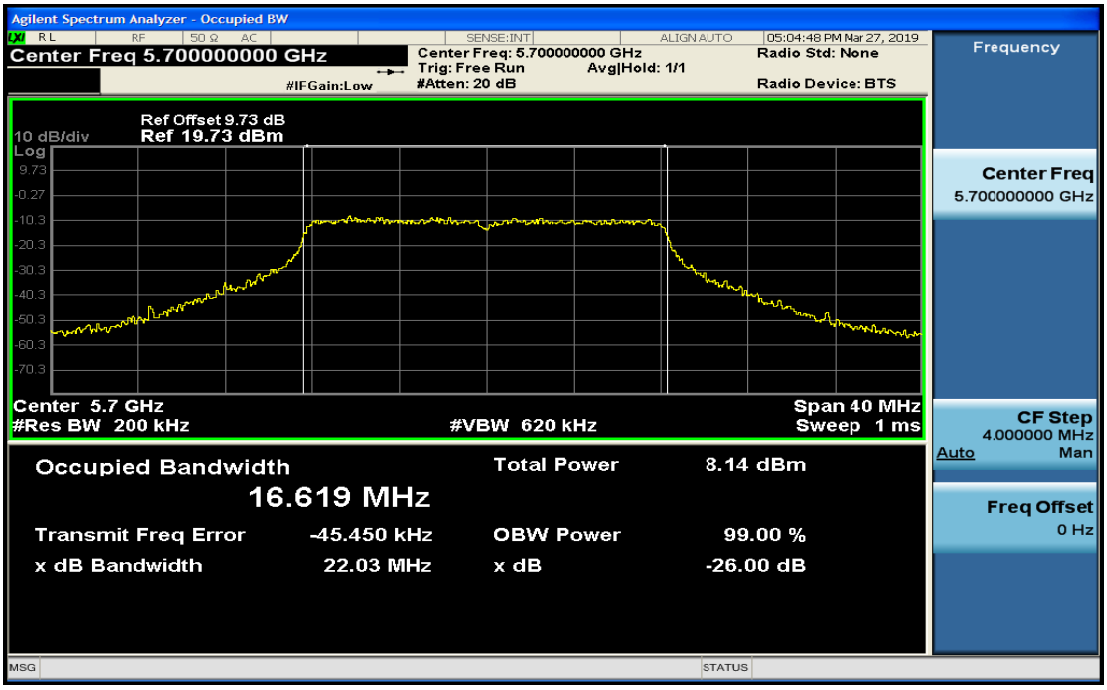


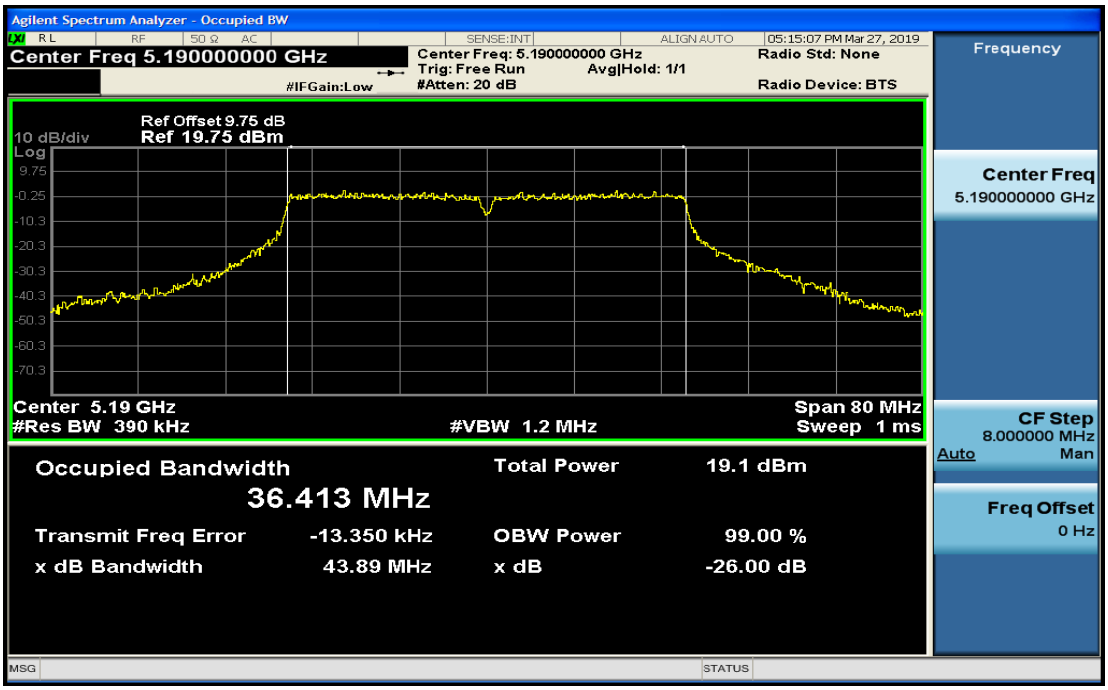
CHHigh



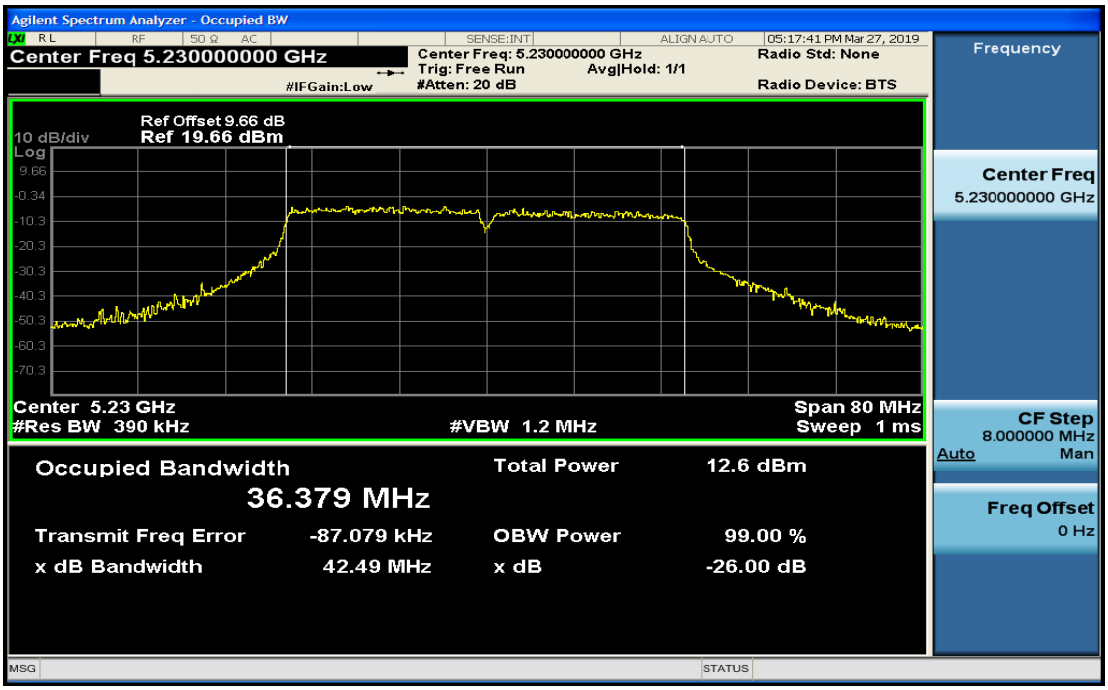
IEEE802.11nHT40mode

5150~5250MHz

CHLow

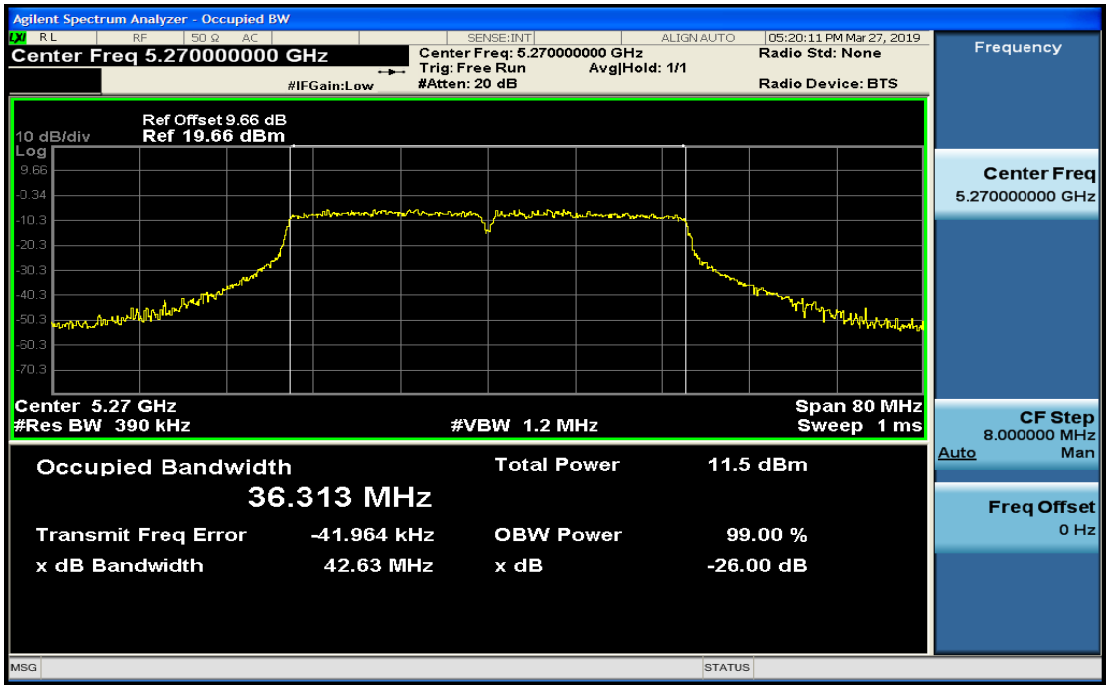


CHHigh

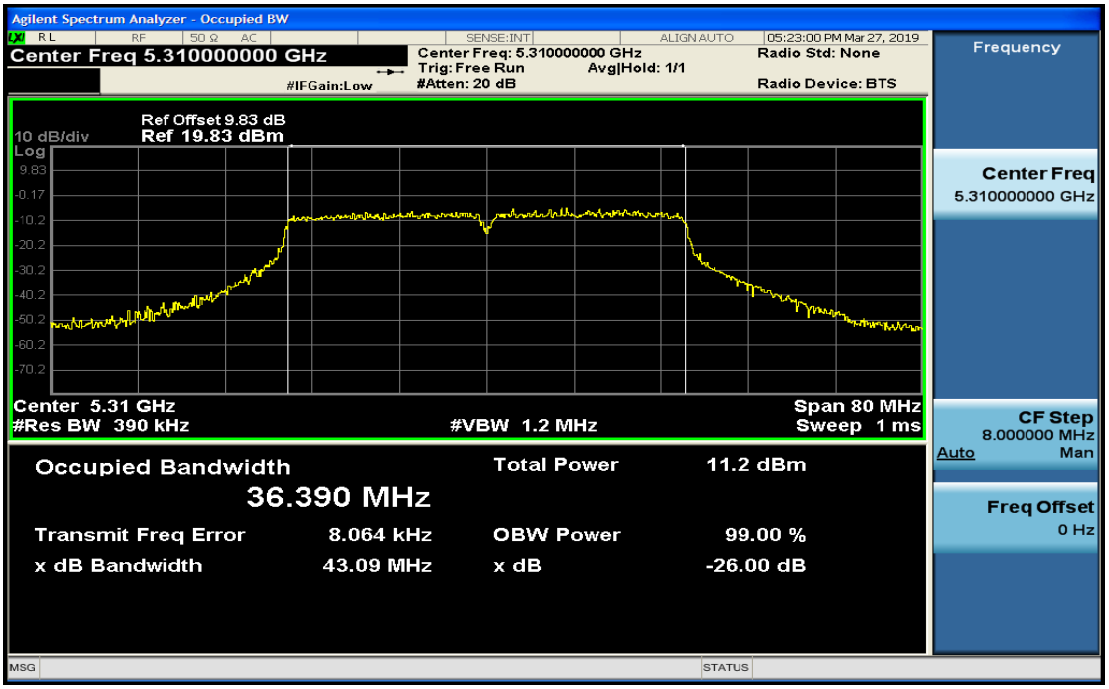


5250~5350MHz

CHLow

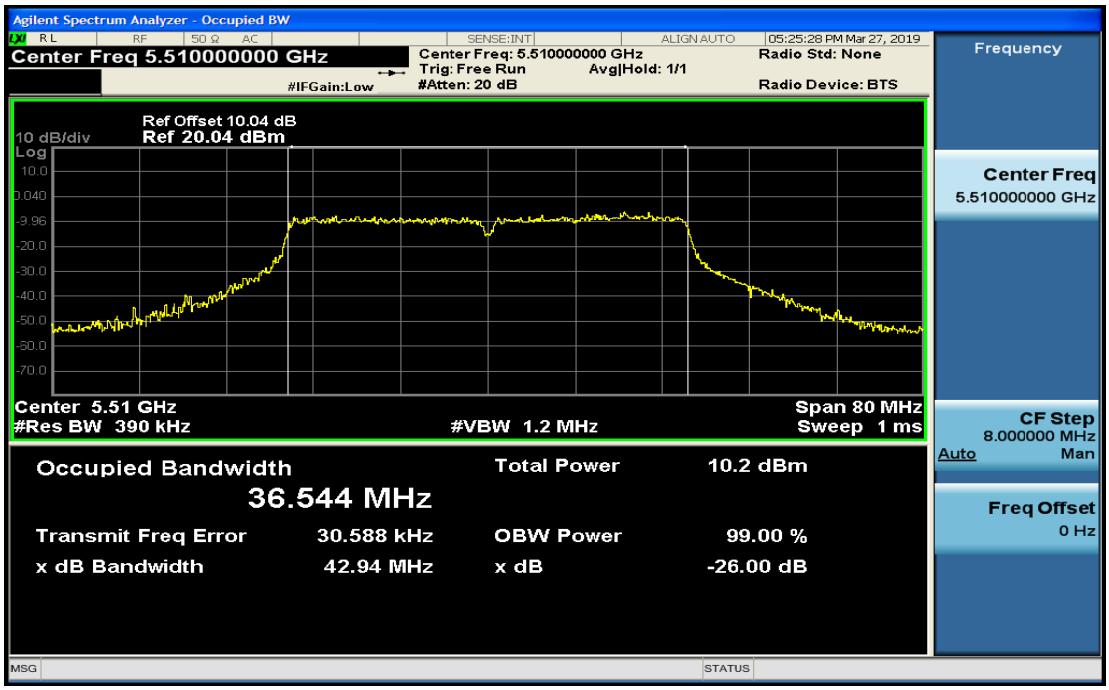


CHHigh

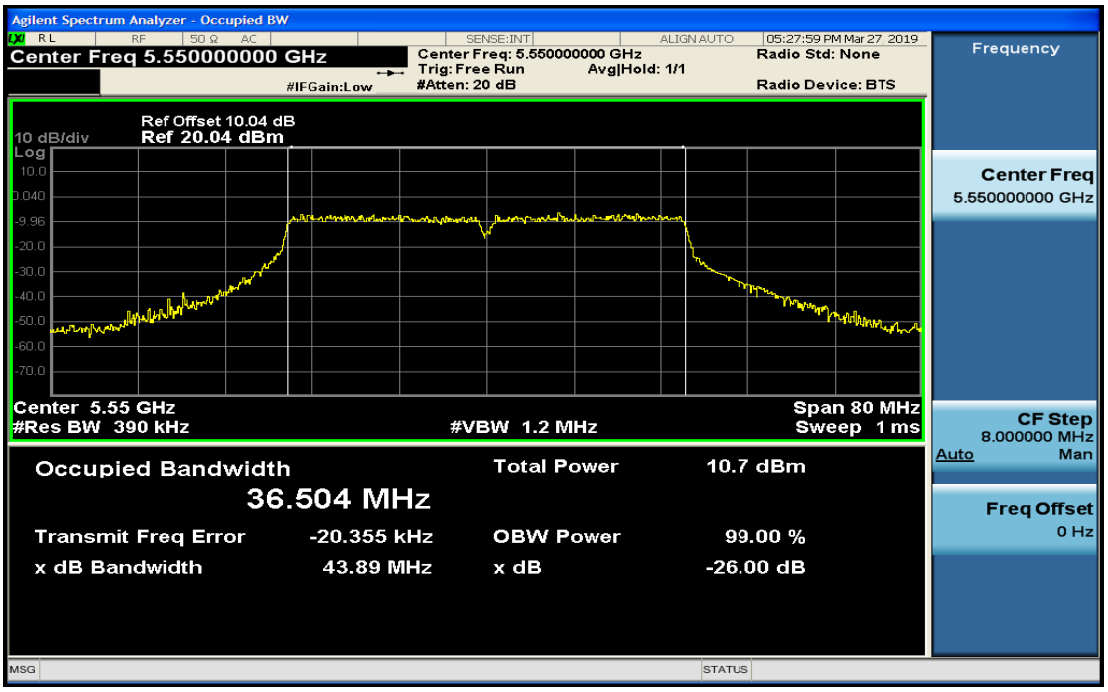


5470~5725MHz

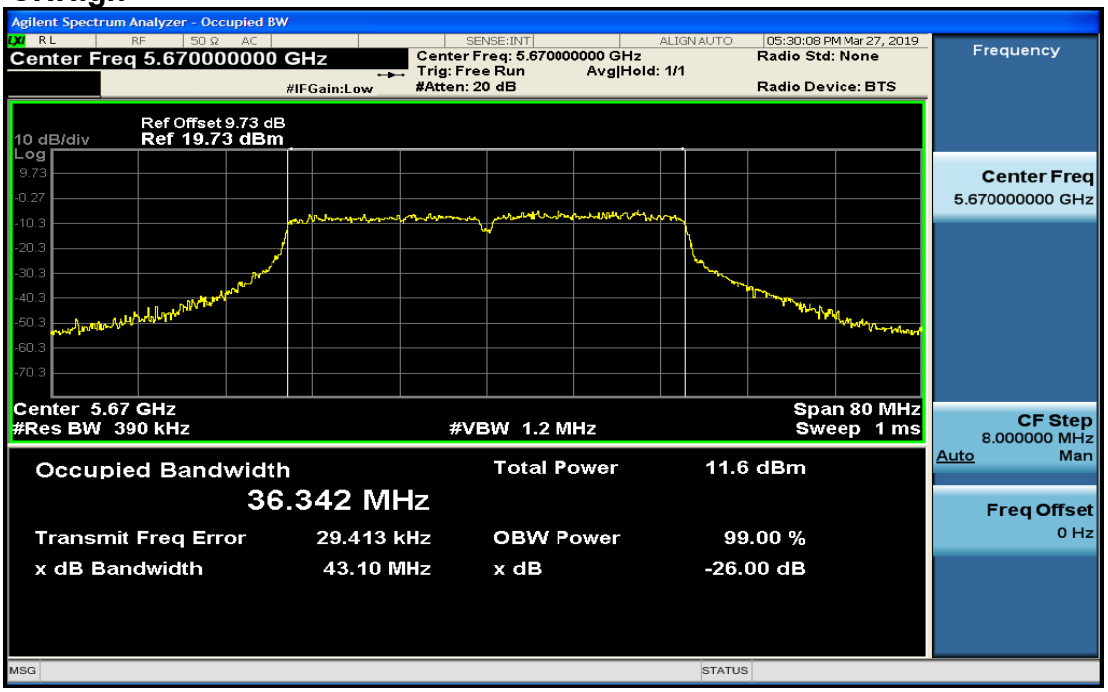
CHLow



CHMid



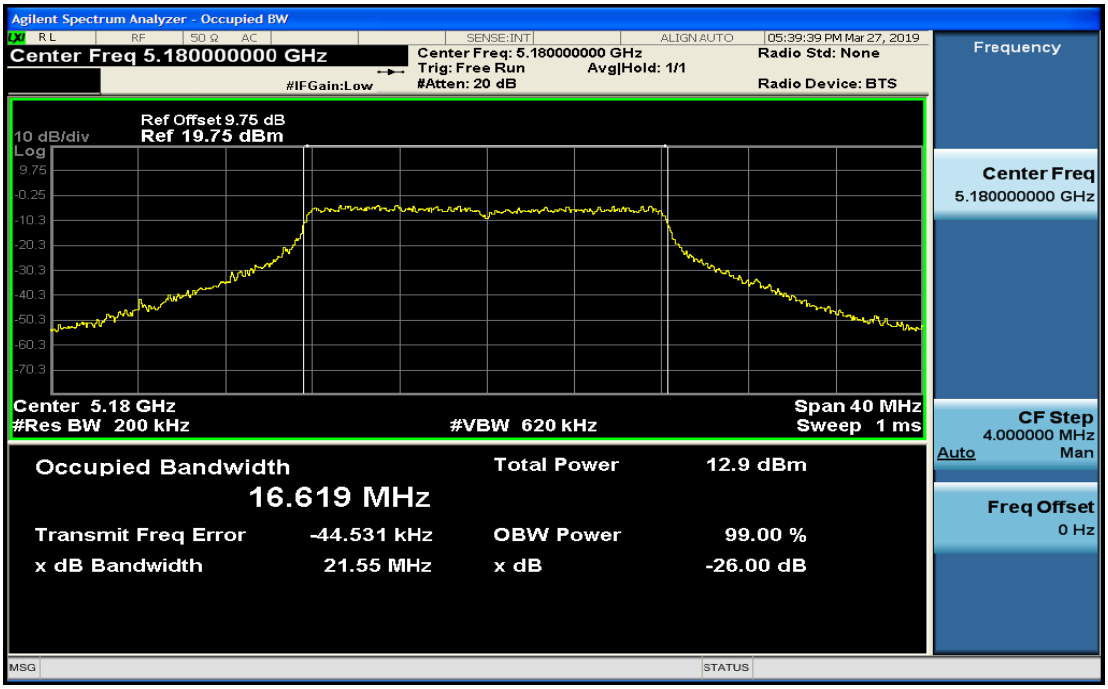
CHHigh



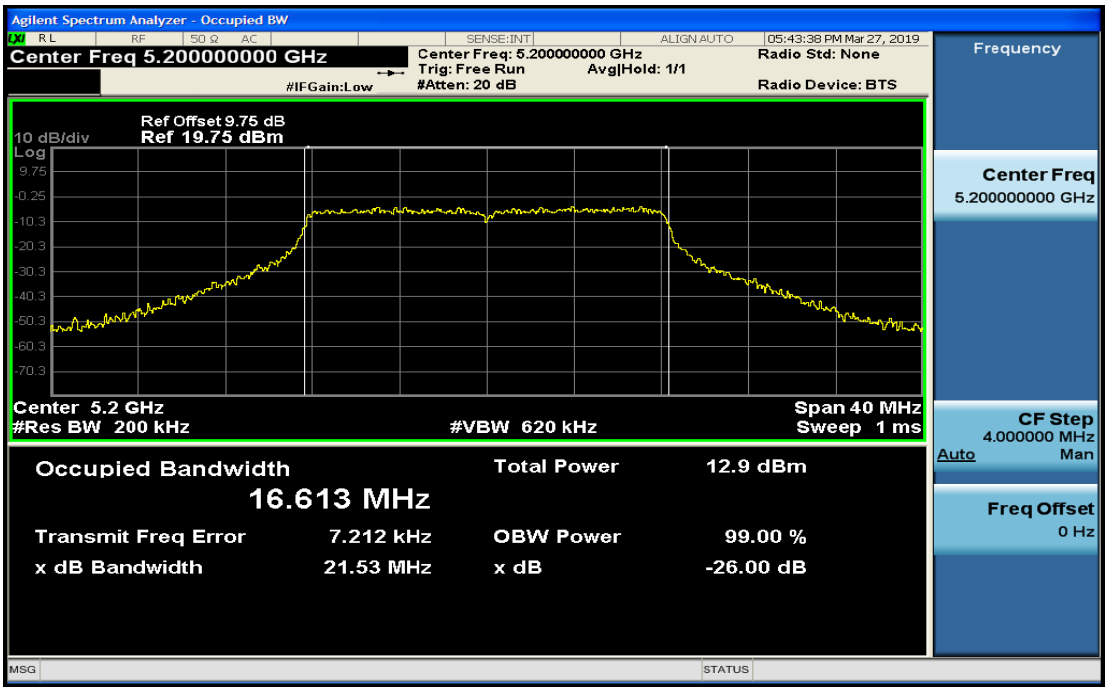
IEEE802.11acHT20mode

5150~5250MHz

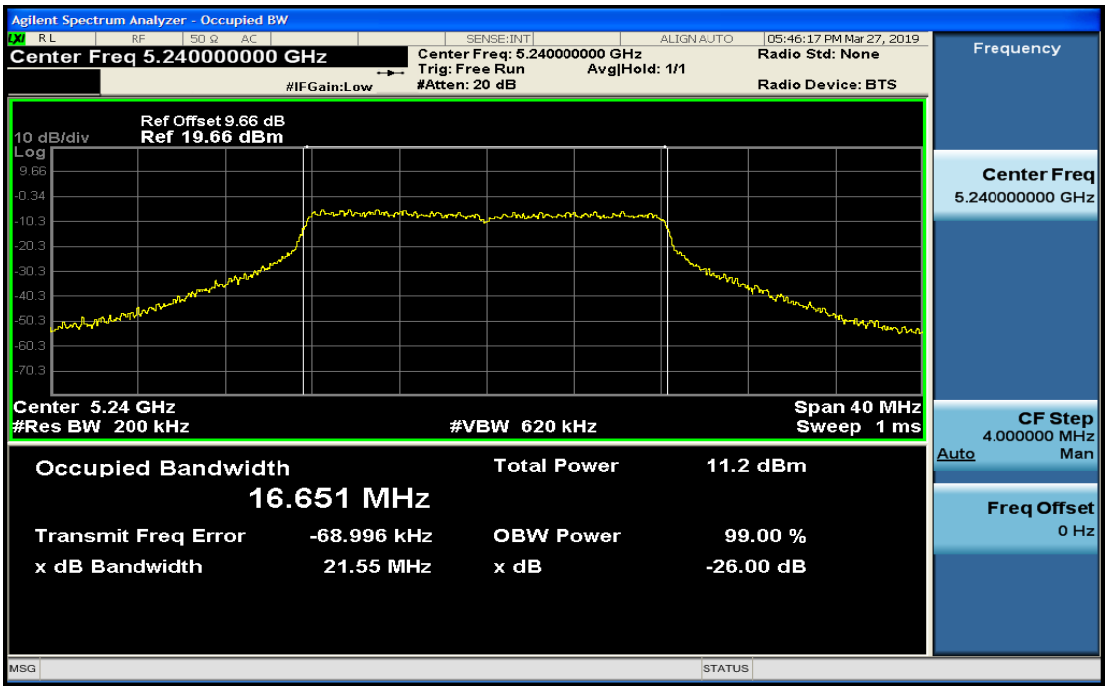
CHLow



CHMid

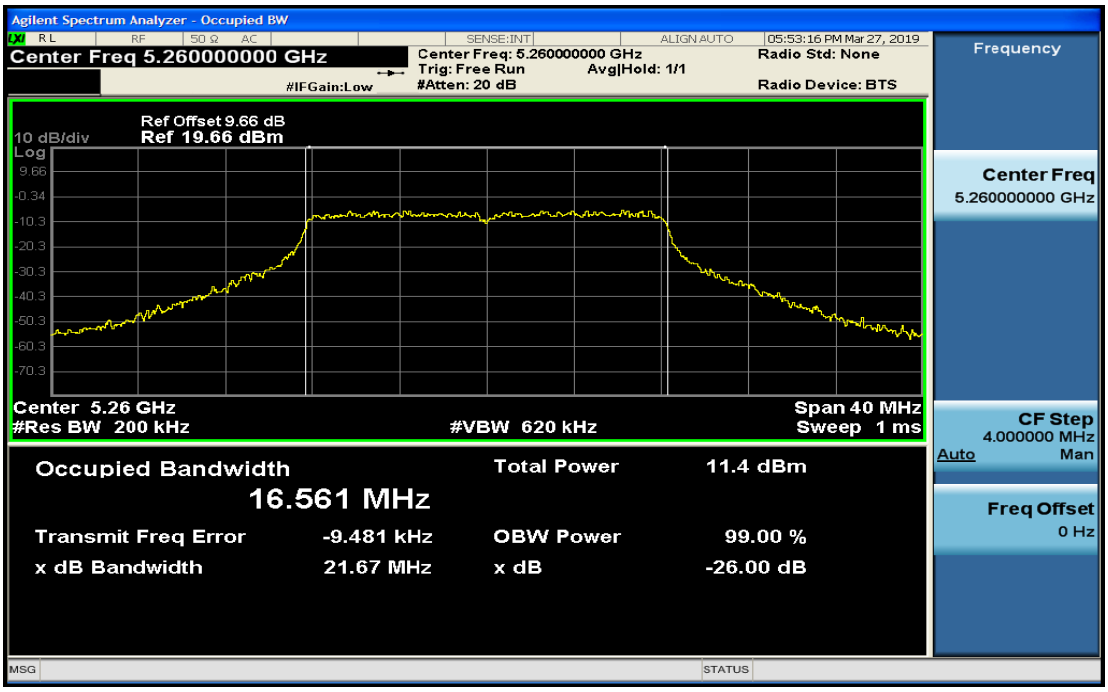


CHHigh

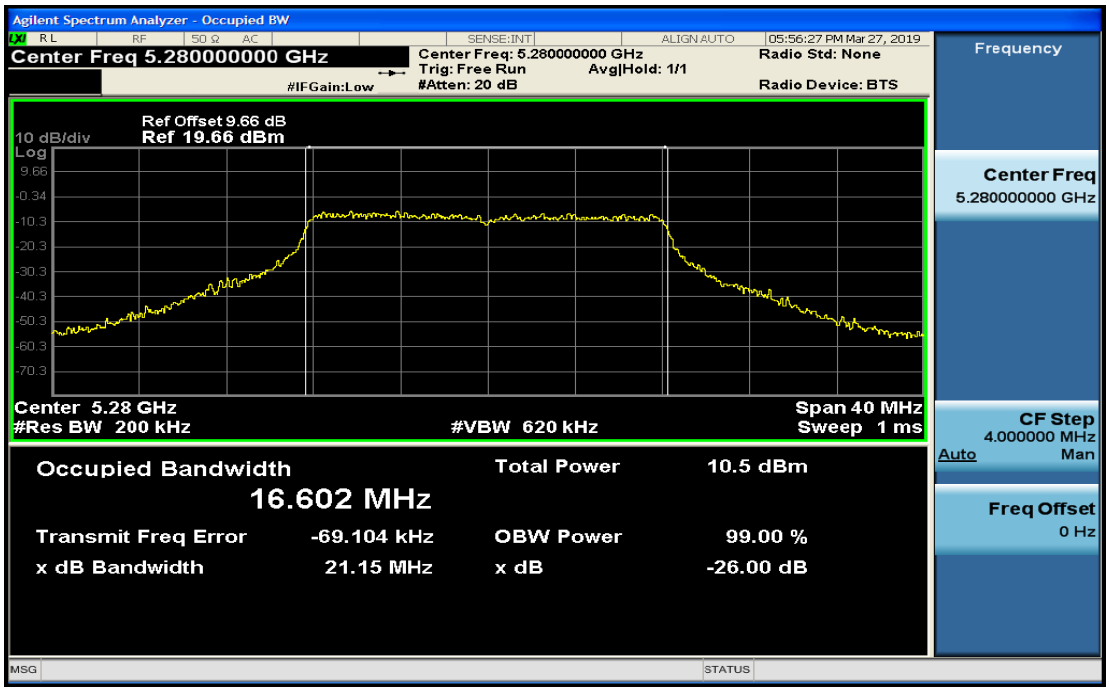


5250~5350MHz

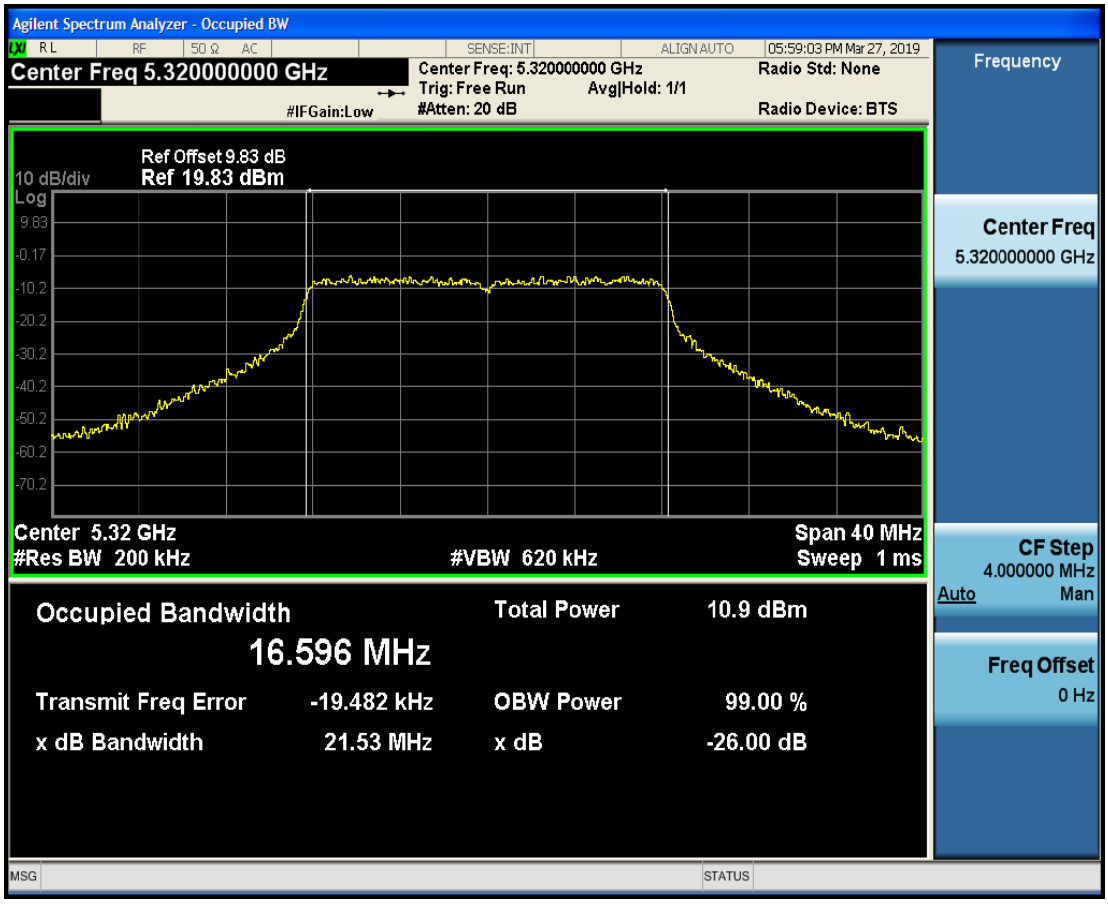
CHLow



CHMid

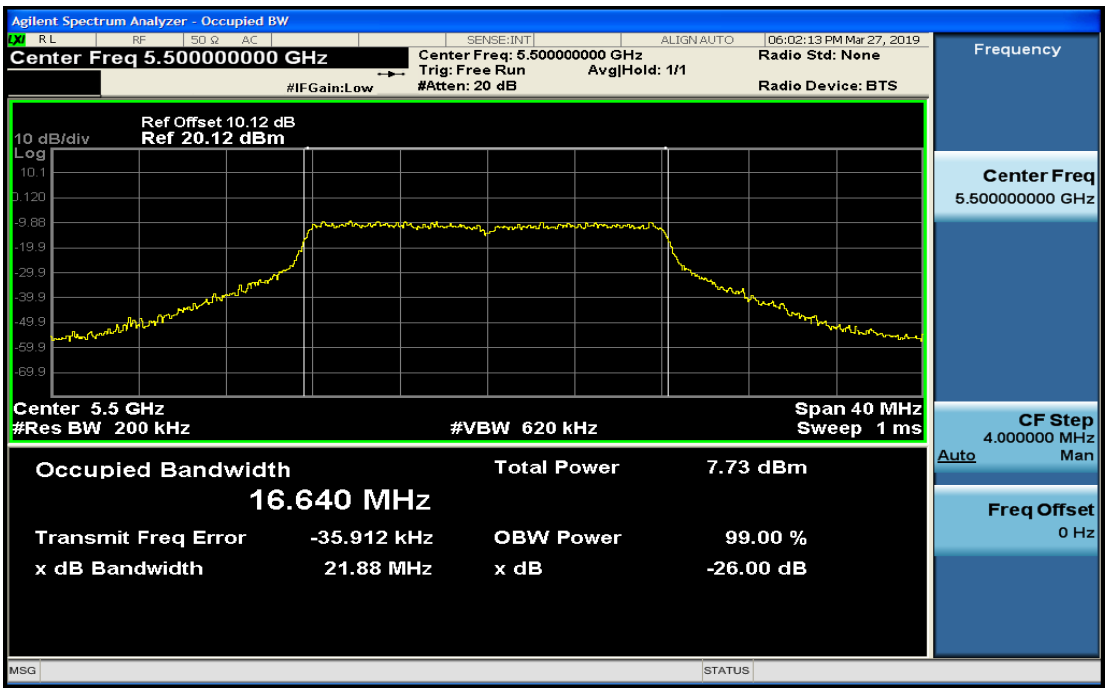


CHHigh

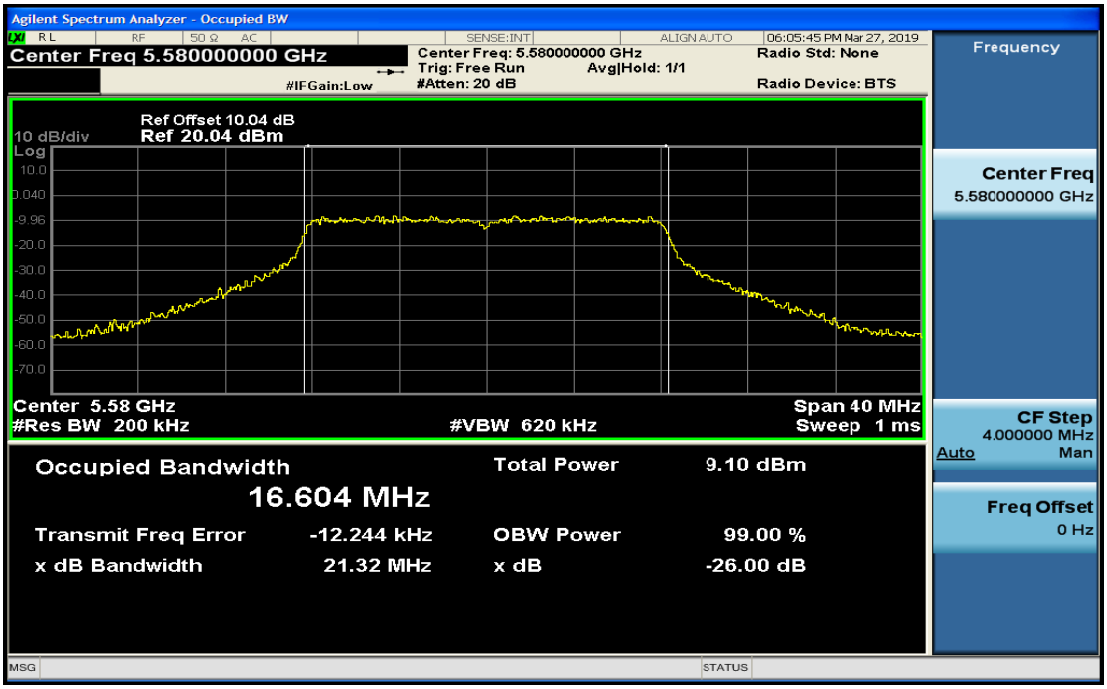


5470~5725MHz

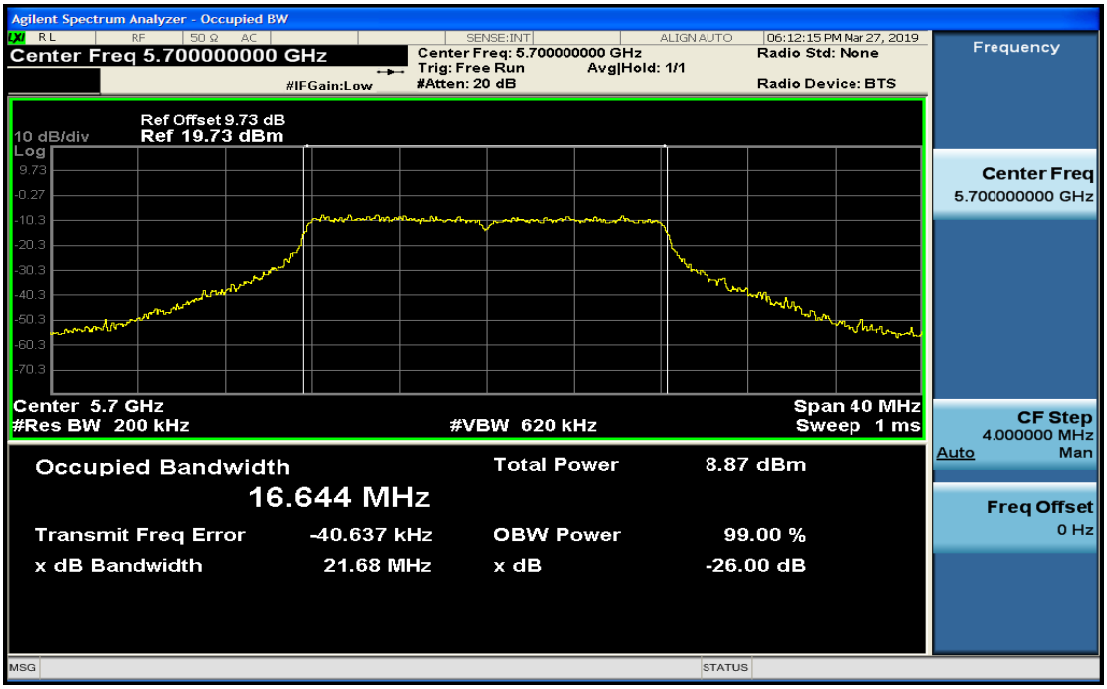
CHLow



CHMid



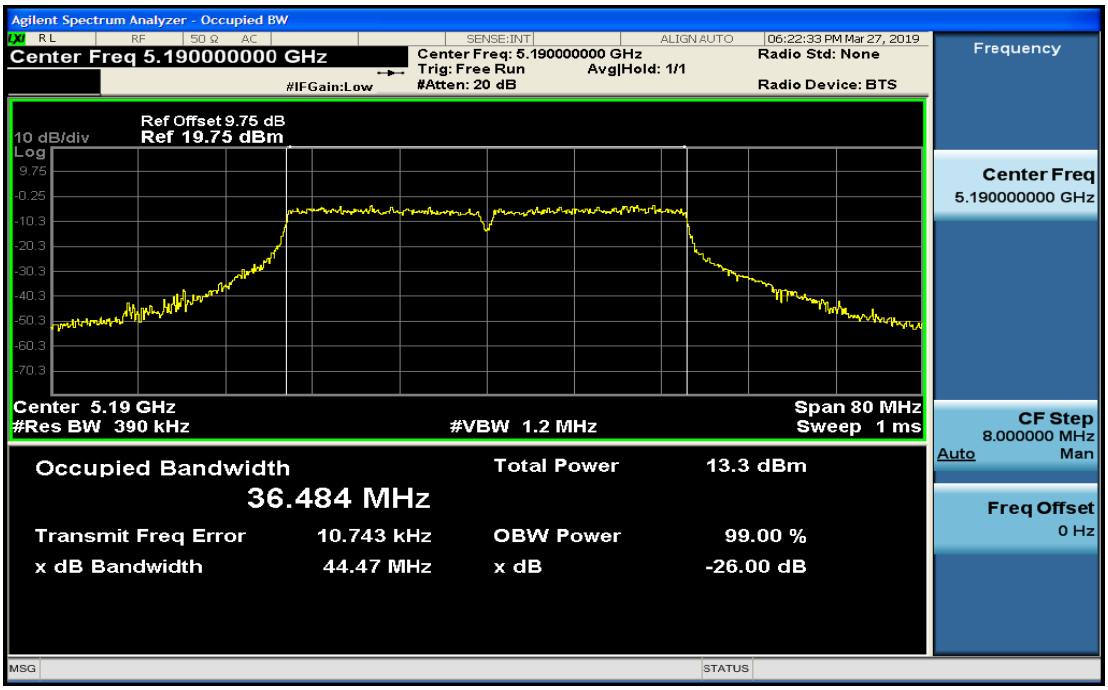
CHHigh



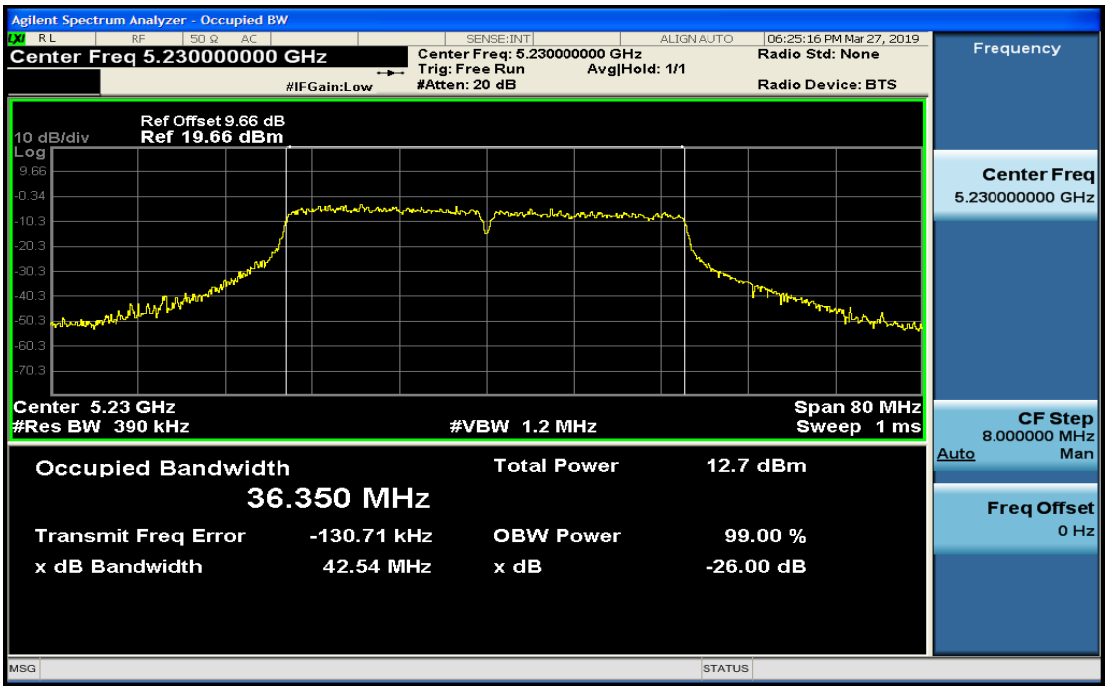
IEEE802.11acHT40mode

5150~5250MHz

CHLow

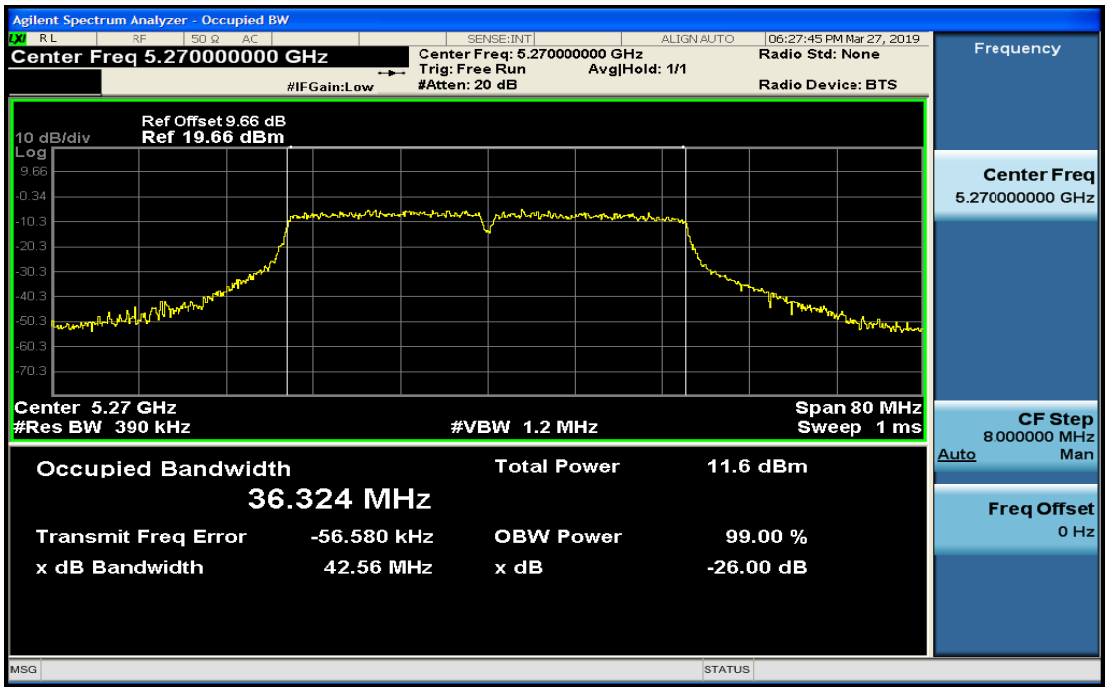


CHHigh

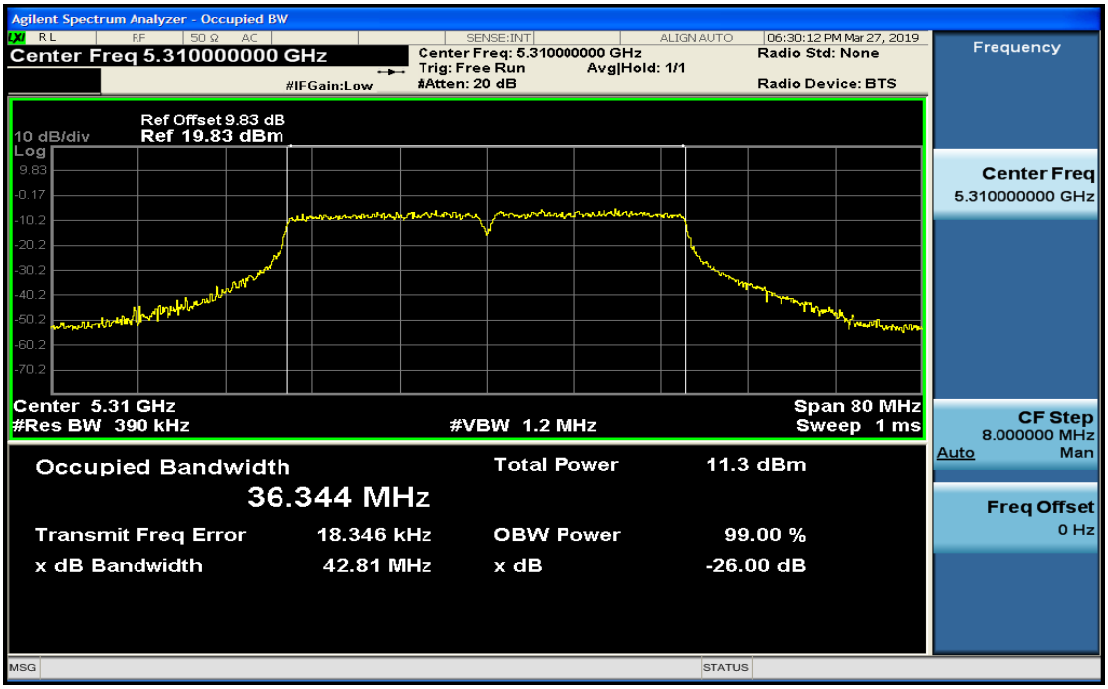


5250~5350MHz

CHLow

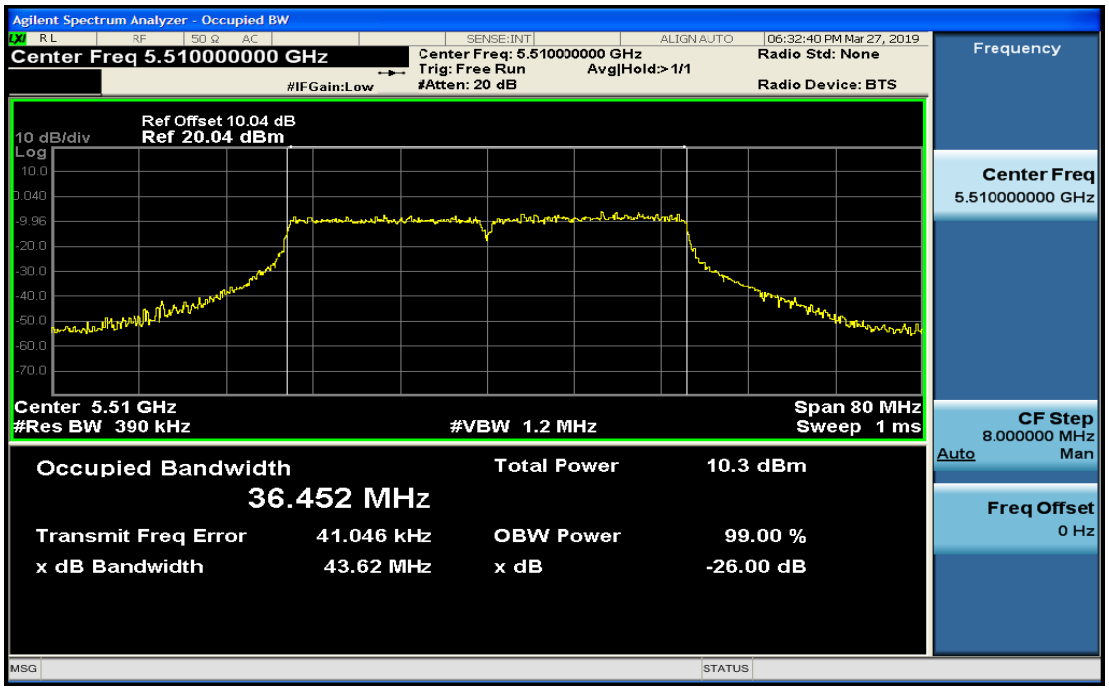


CHHigh

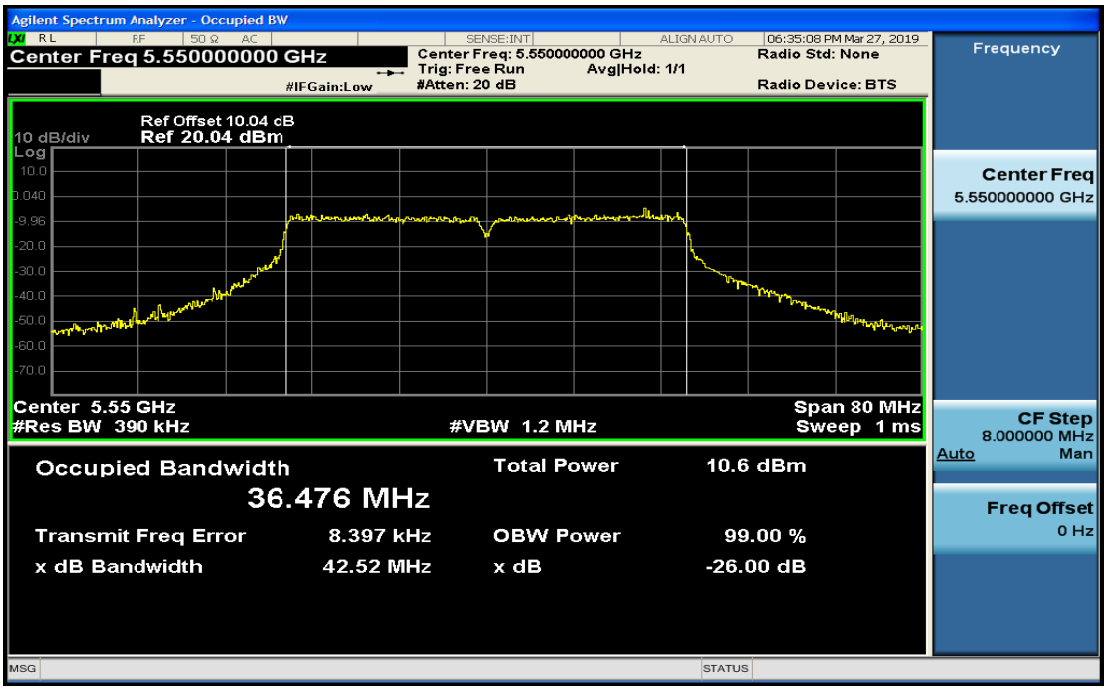


5470~5725MHz

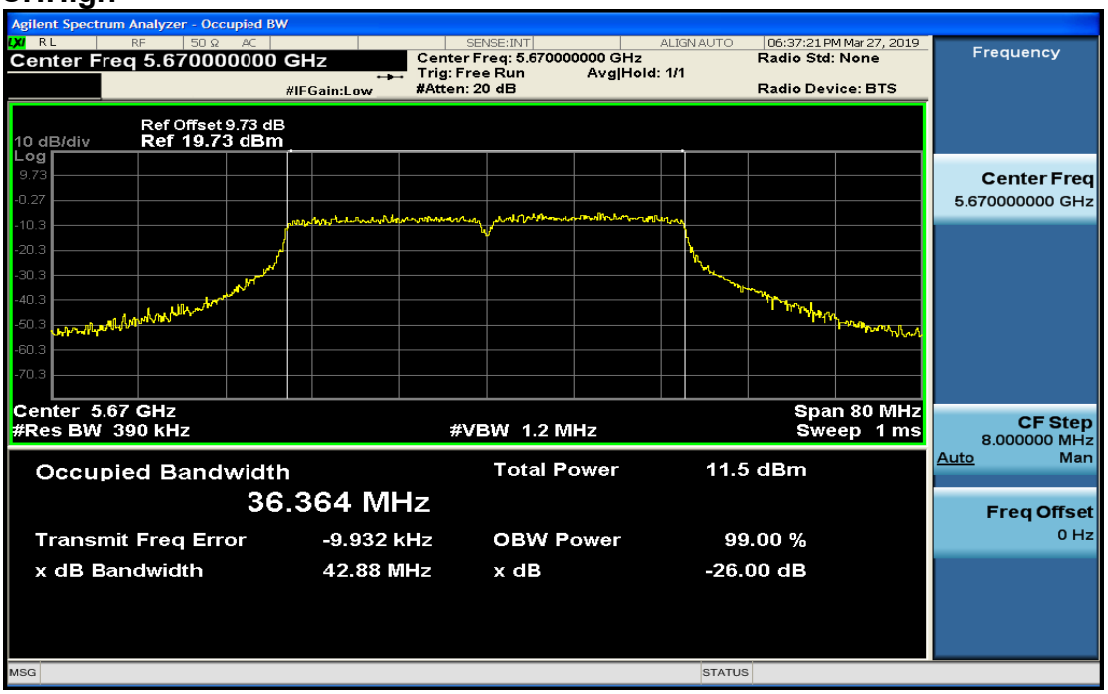
CHLow



CHMid

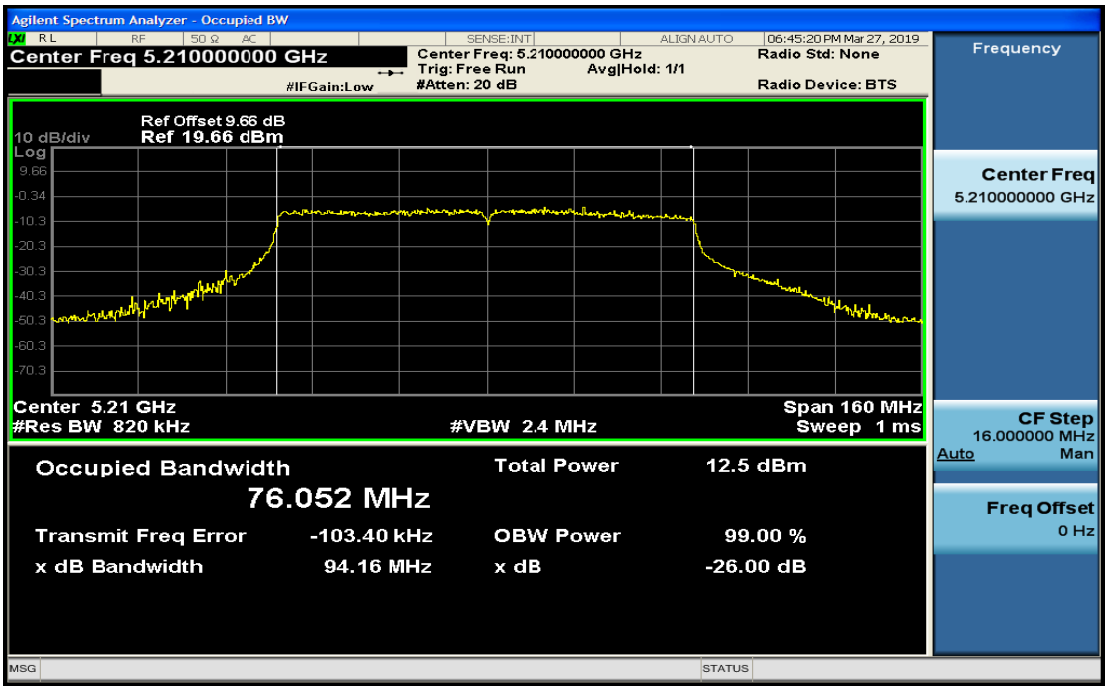


CHHigh

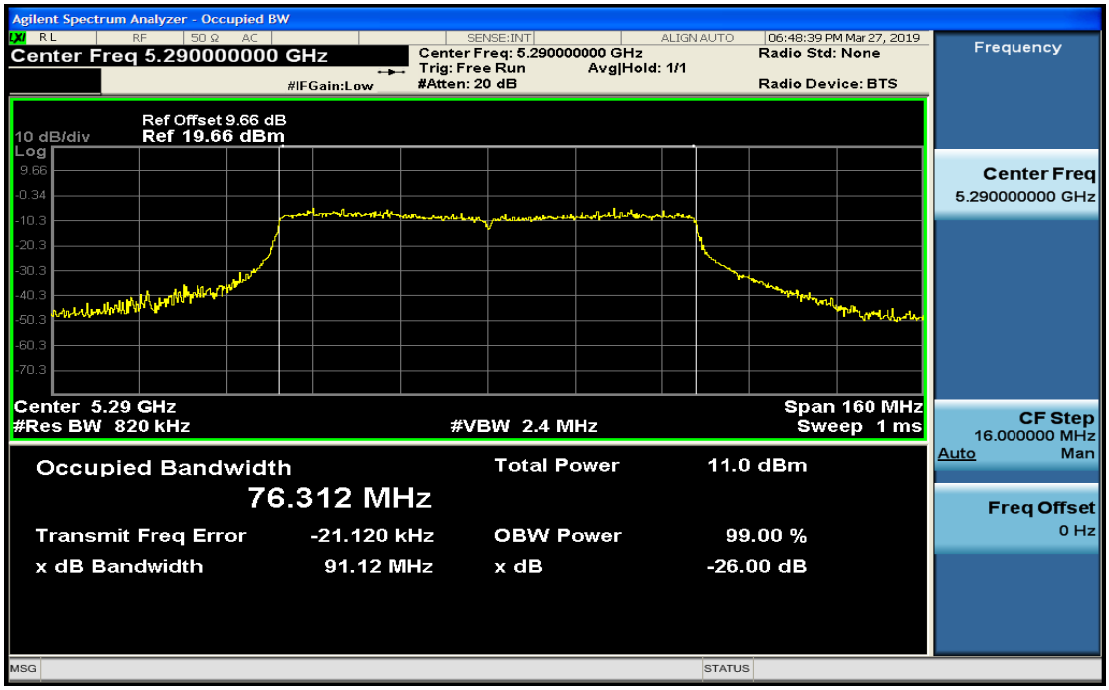


IEEE802.11acHT80mode

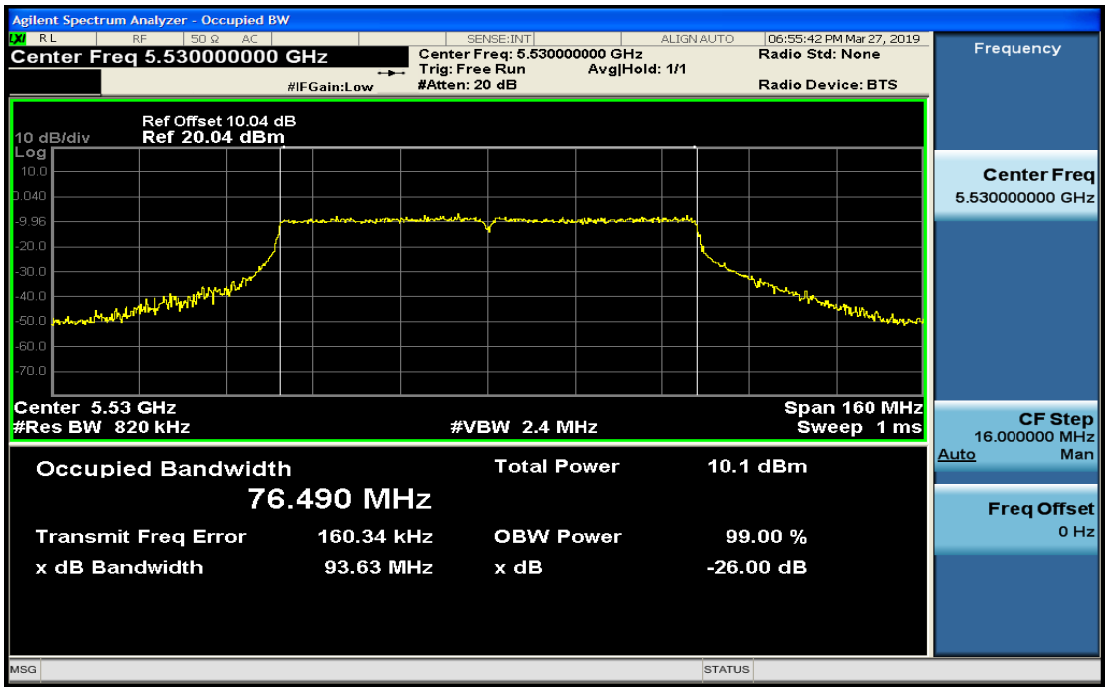
5150~5250MHz



5250~5350MHz



5470~5725MHz



Antenna 2

Testmode:IEEE802.11a mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.73
Mid	5220	21.82
High	5240	22.18

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	21.74
Mid	5280	21.18
High	5320	21.15

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	21.56
Mid	5580	21.21
High	5700	22.18

Testmode:IEEE802.11n HT20MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.27
Mid	5220	21.70
High	5240	21.27

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	21.56
Mid	5280	21.10
High	5320	21.23

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	22.29
Mid	5580	21.82
High	5700	21.52

Testmode:IEEE802.11n HT40MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5190	44.19
High	5230	42.35

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5270	42.50
High	5310	42.27

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5510	43.61
Mid	5550	43.84
High	5670	43.62

Testmode:IEEE802.11ac HT20MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5180	21.08
Mid	5220	21.21
High	5240	21.63

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5260	22.28
Mid	5280	20.78
High	5320	20.96

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5500	21.34
Mid	5580	22.09
High	5700	21.63

Testmode:IEEE802.11ac HT40MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5190	43.56
High	5230	42.93

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5270	43.09
High	5310	43.25

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
Low	5510	42.46
Mid	5550	44.34
High	5670	42.63

Testmode:IEEE802.11ac HT80MHz mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
	5210	91.98

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth(B) (MHz)
	5290	89.23

5470~5725MHz

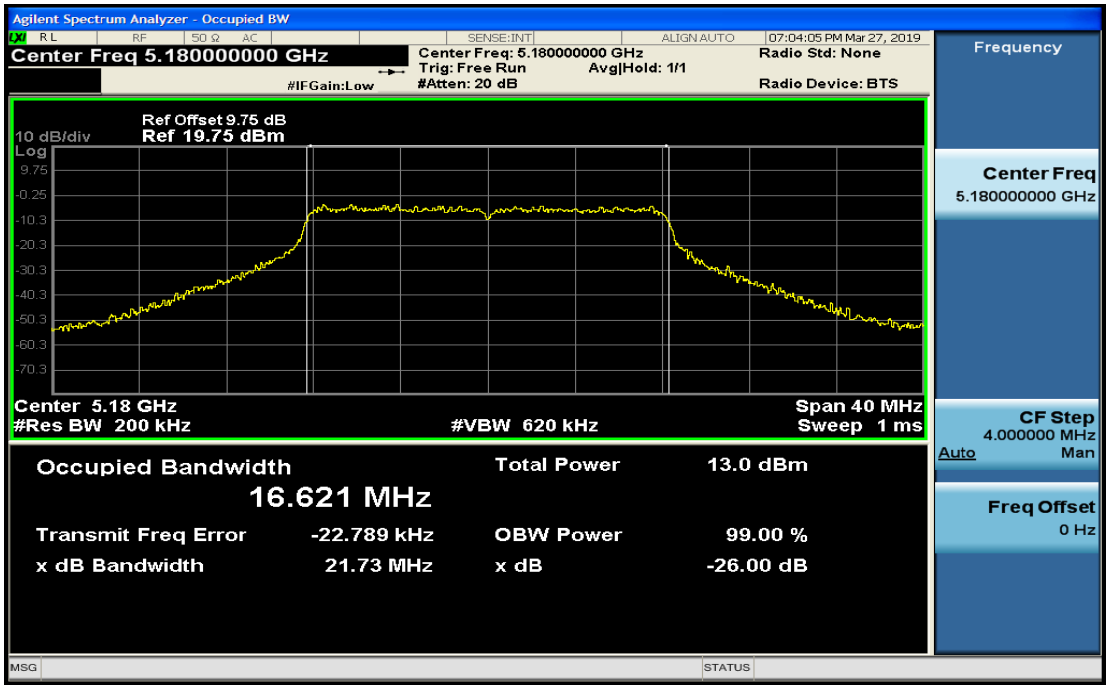
Channel	Frequency (MHz)	Bandwidth(B) (MHz)
	5530	99.53

TestPlot

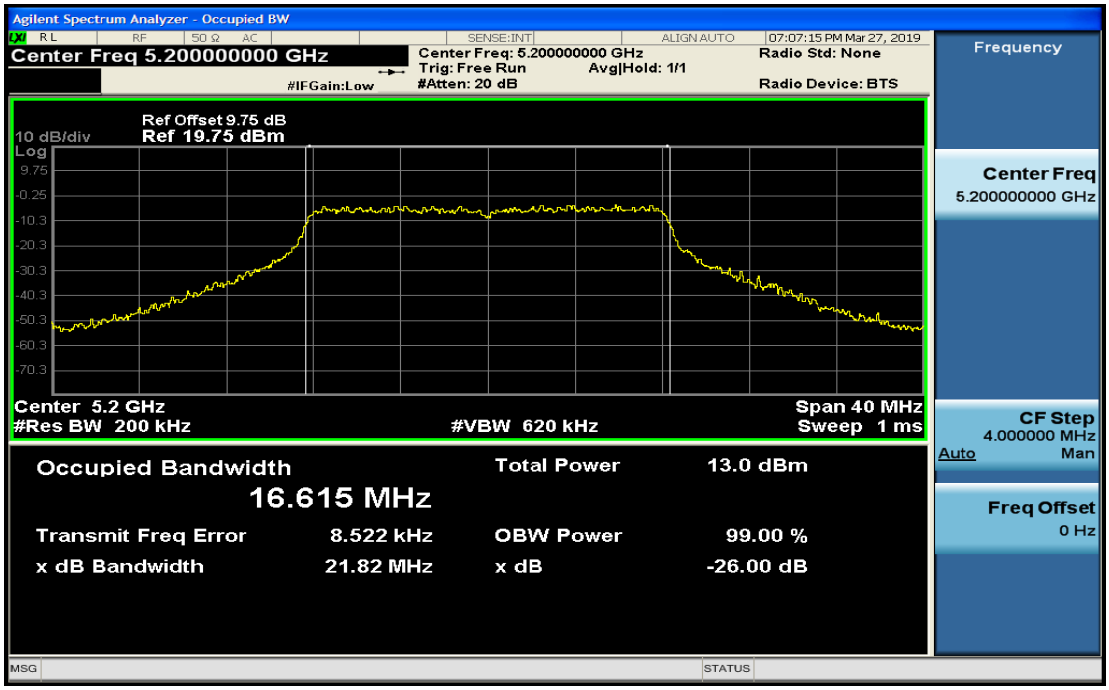
IEEE802.11amode:

5150~5250MHz

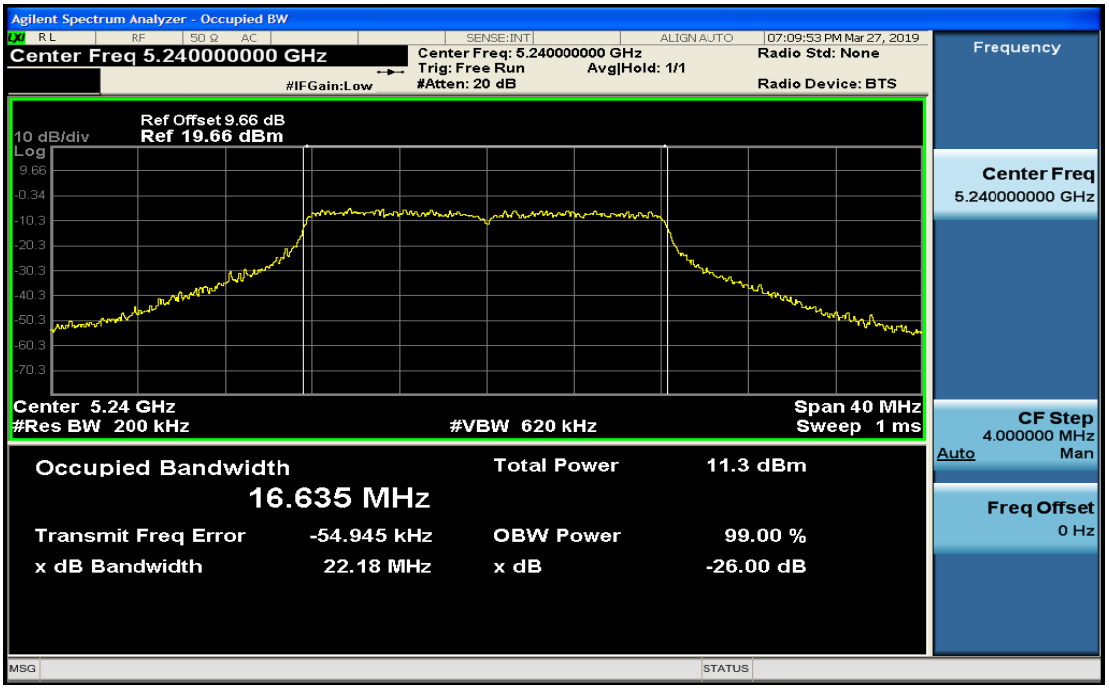
CHLow



CHMid

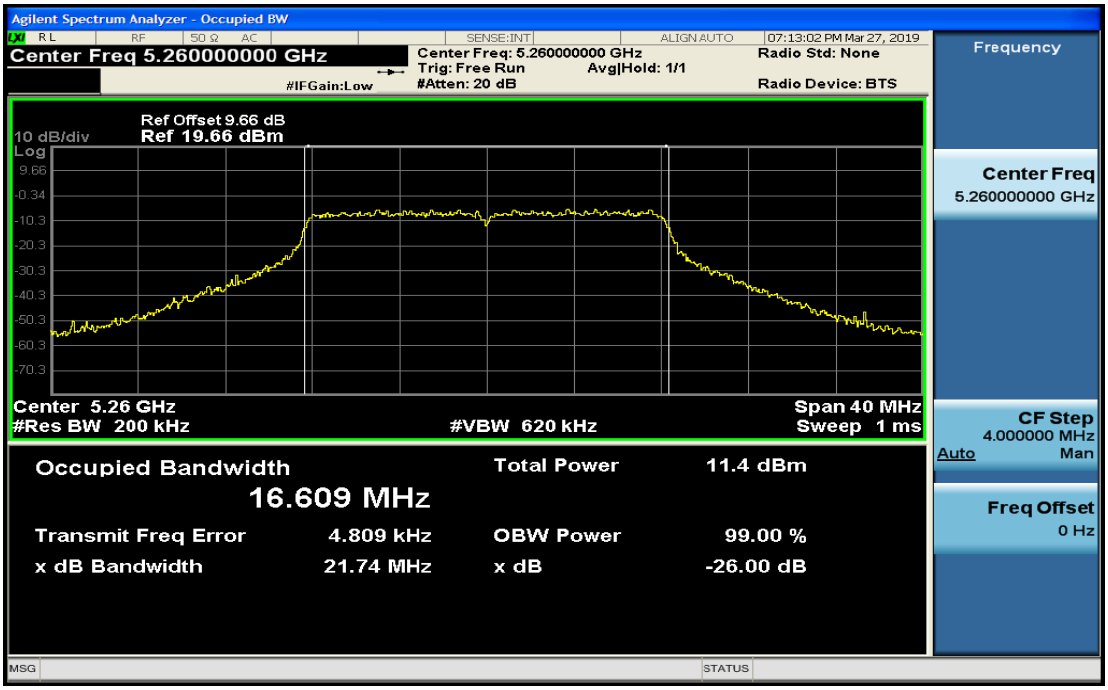


CHHigh

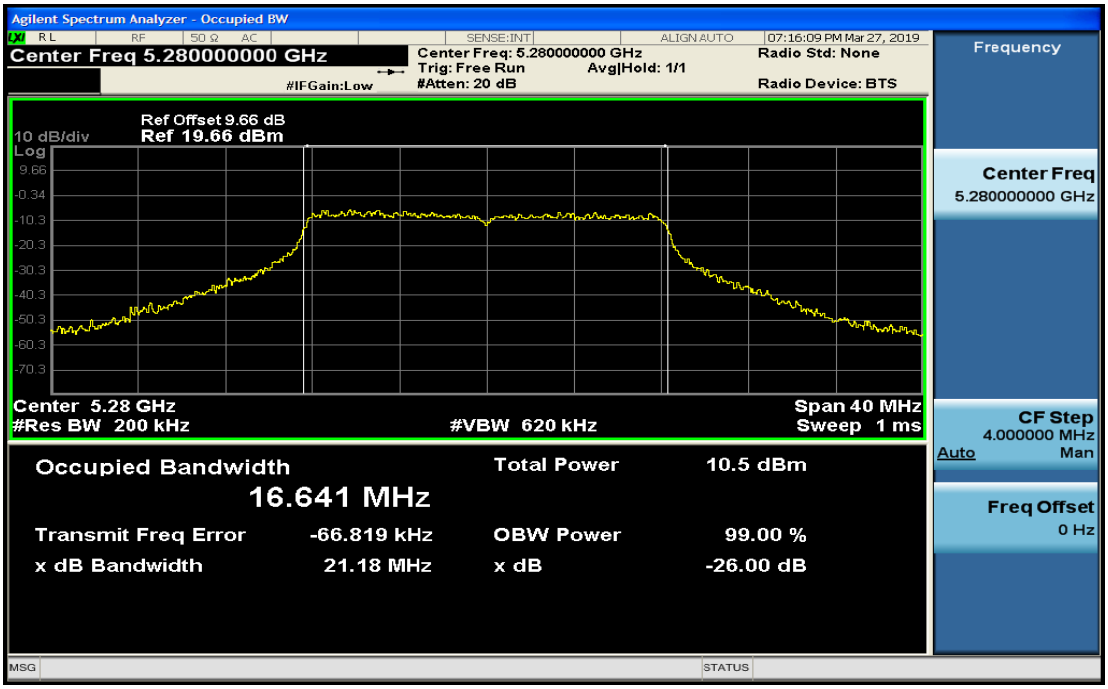


5250~5350MHz

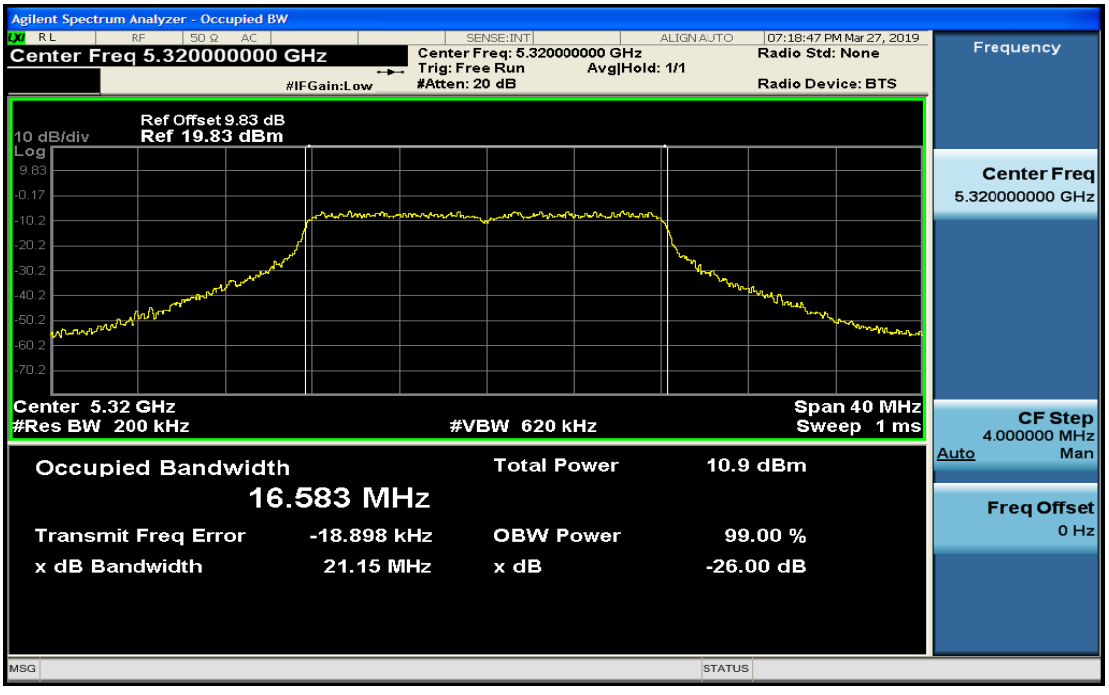
CHLow



CHMid

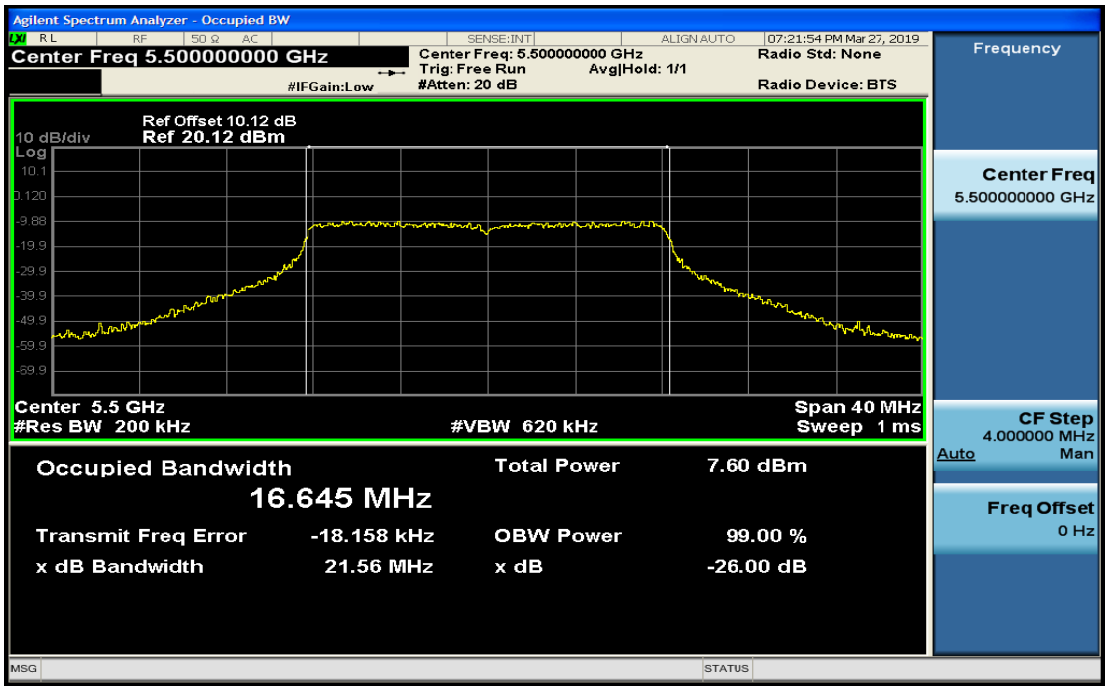


CHHigh

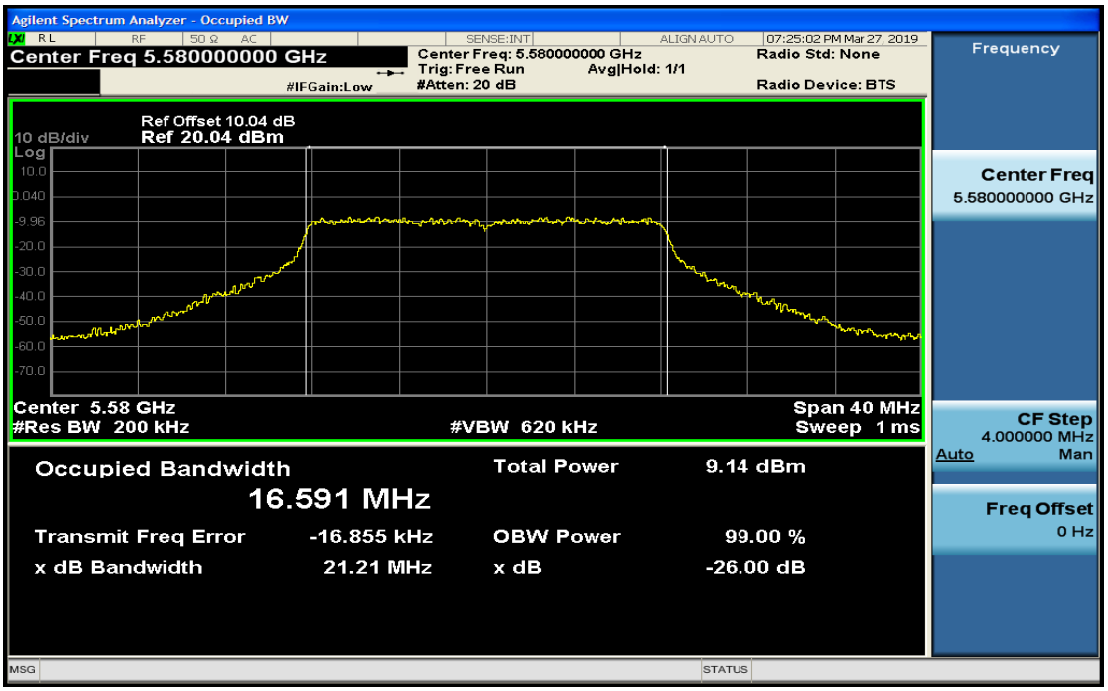


5470~5725MHz

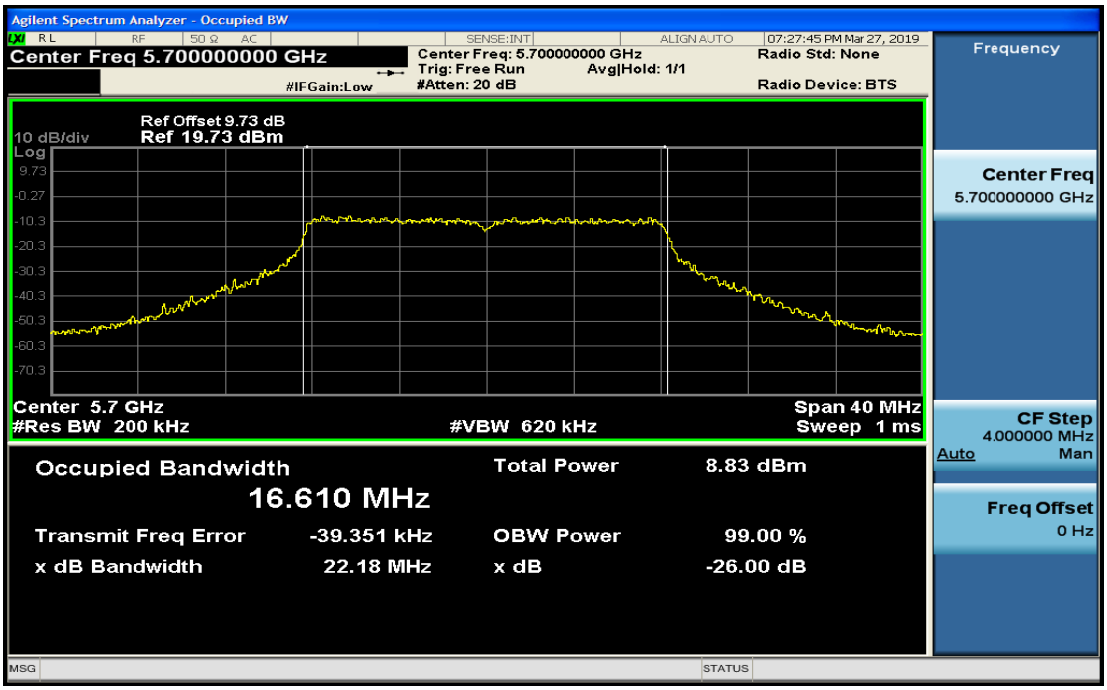
CHLow



CHMid



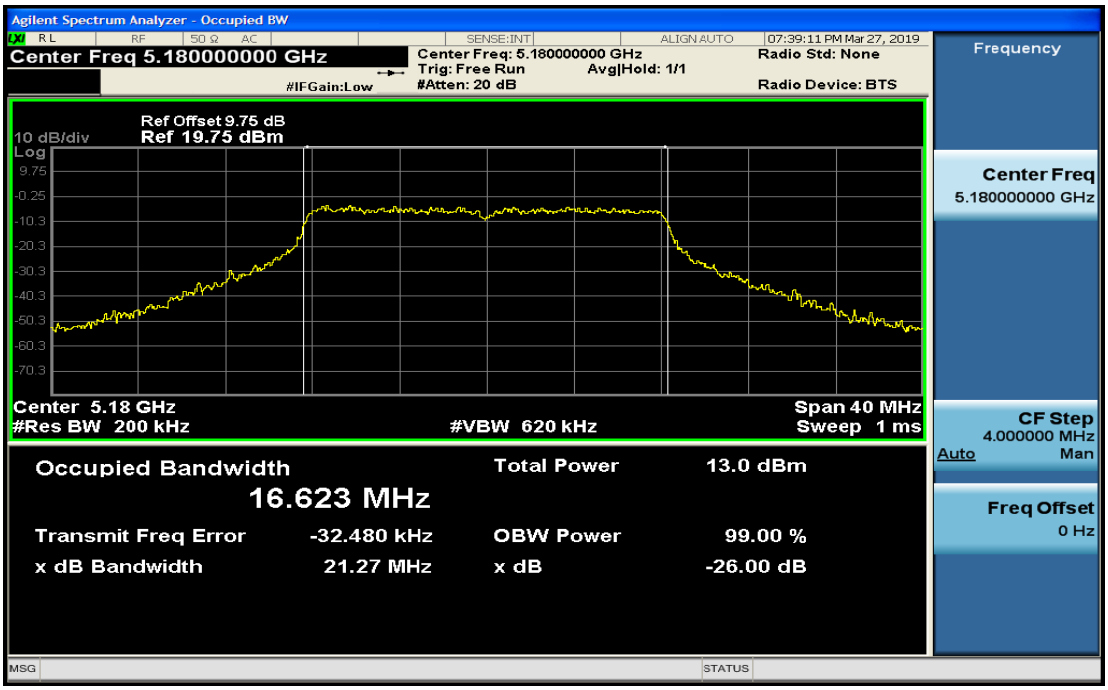
CHHigh



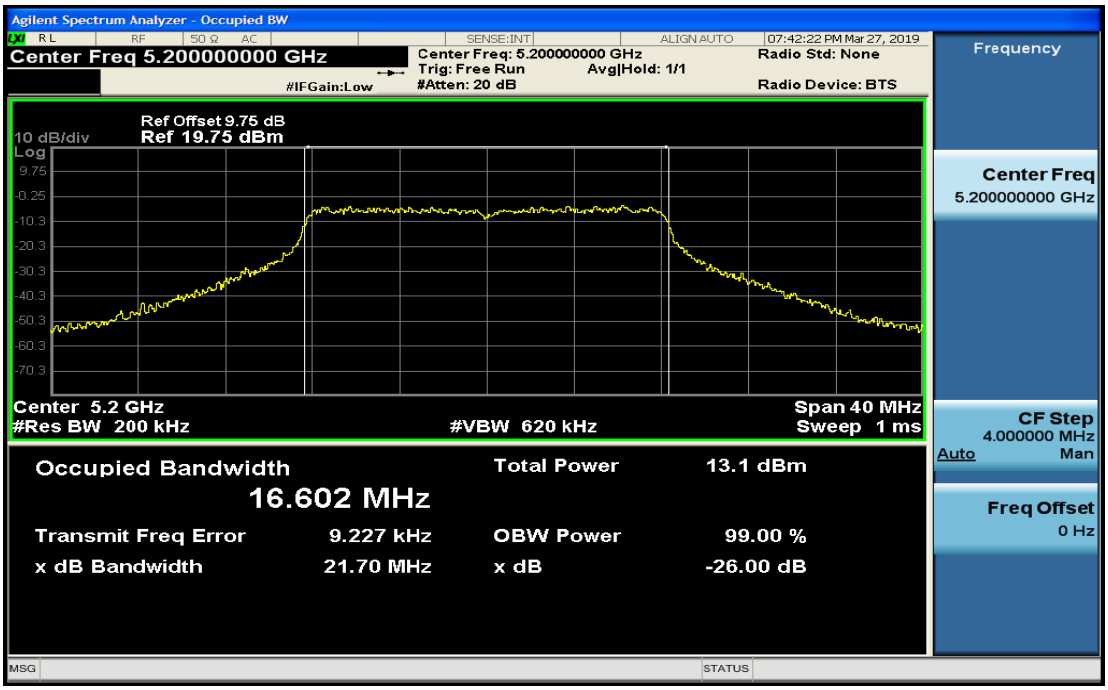
IEEE802.11nHT20mode

5150~5250MHz

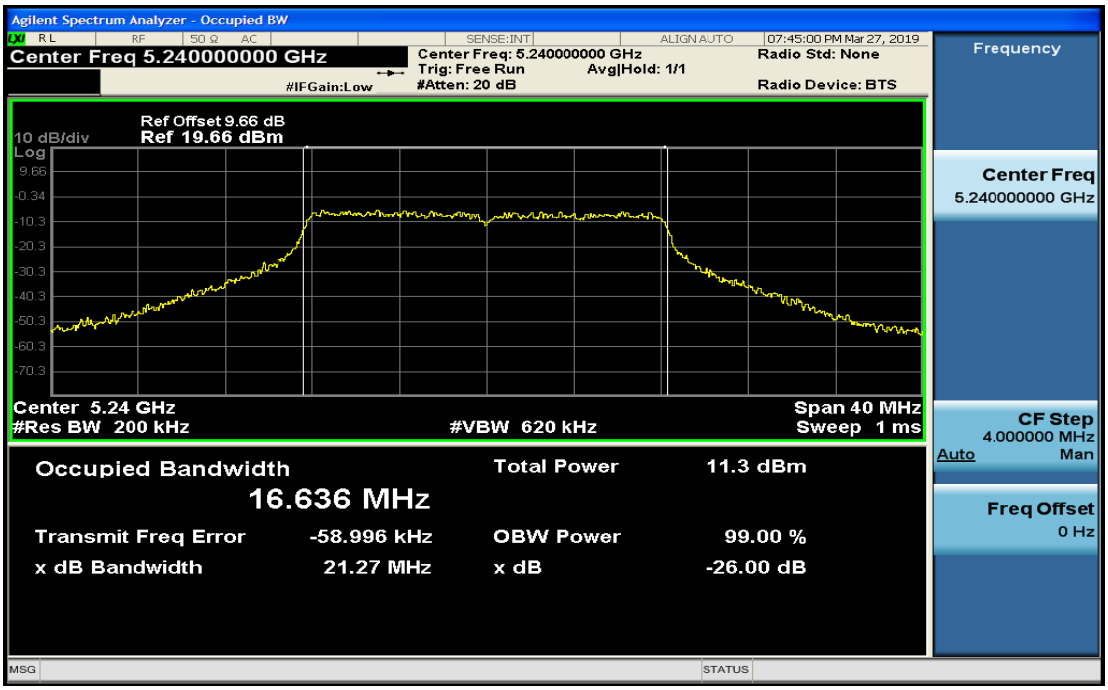
CHLow



CHMid

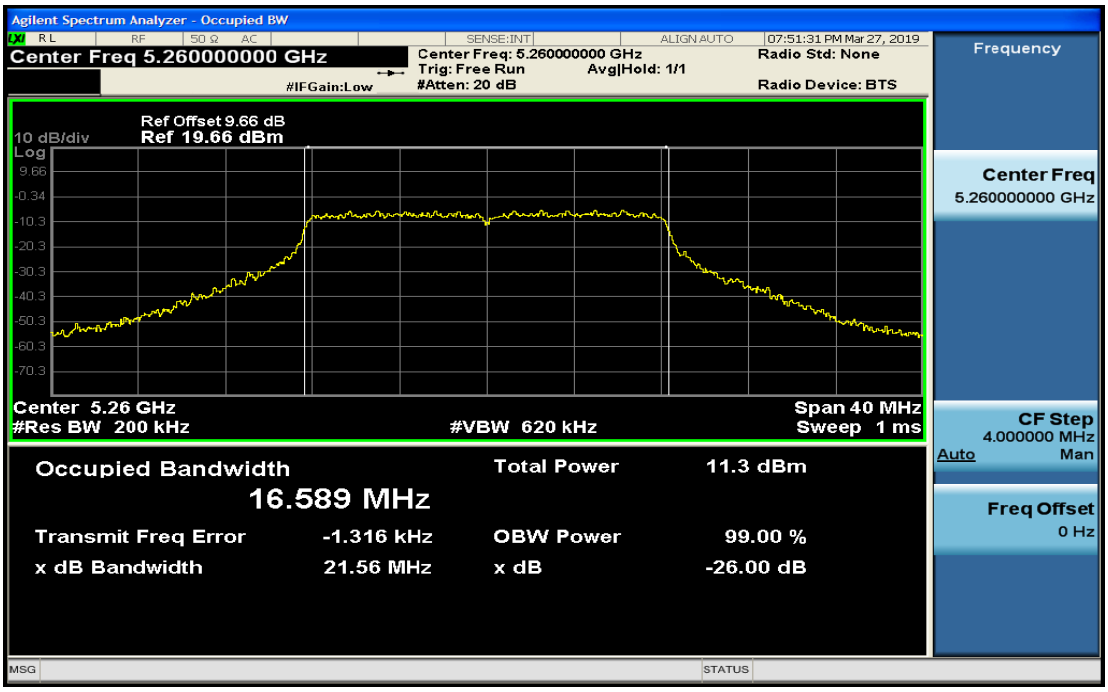


CHHigh

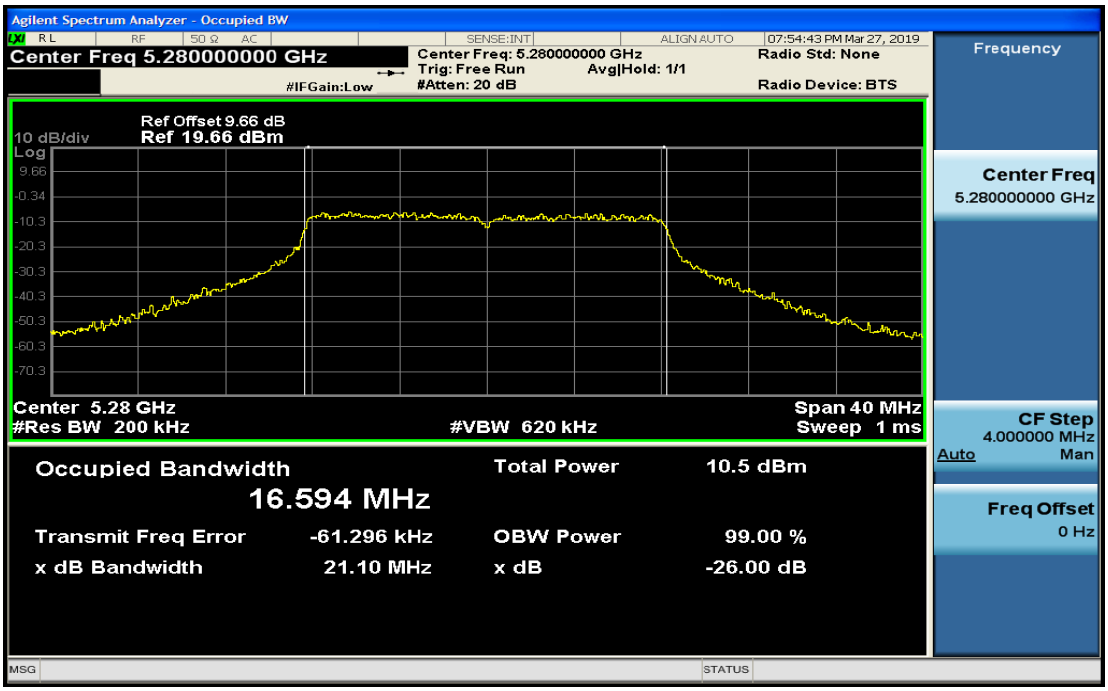


5250~5350MHz

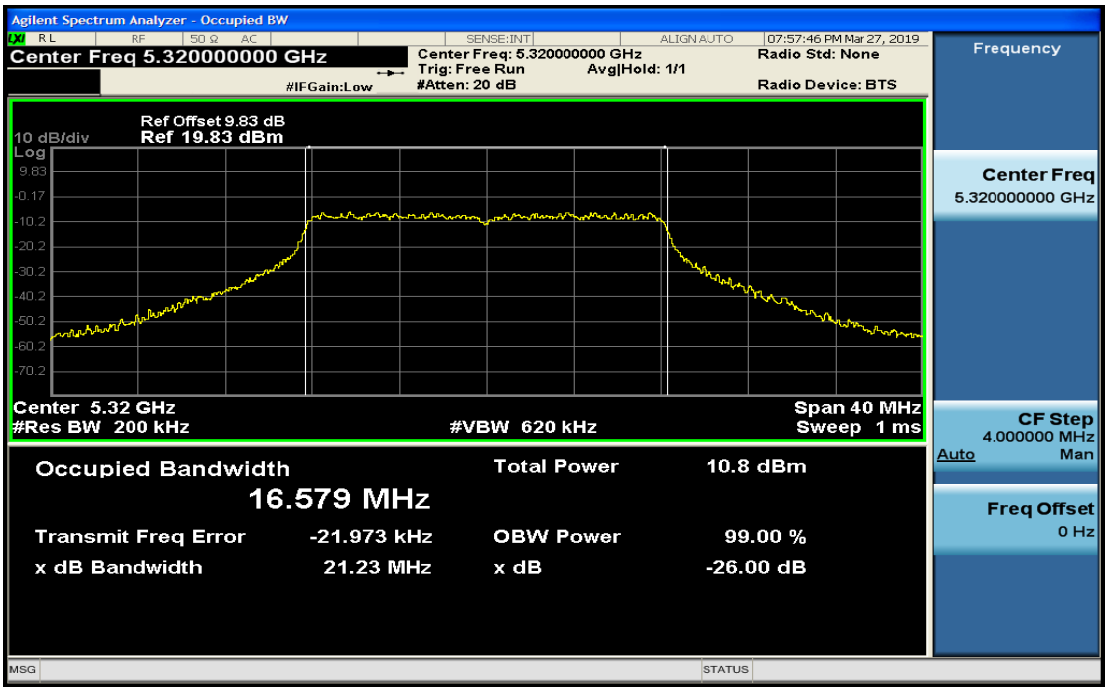
CHLow



CHMid

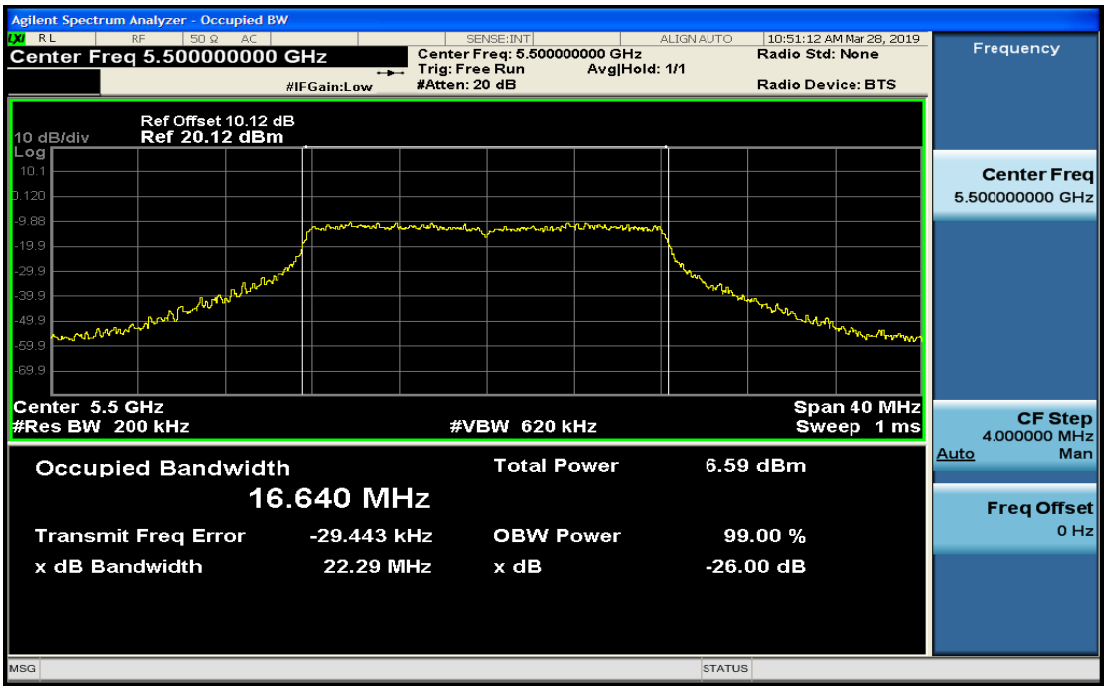


CHHigh

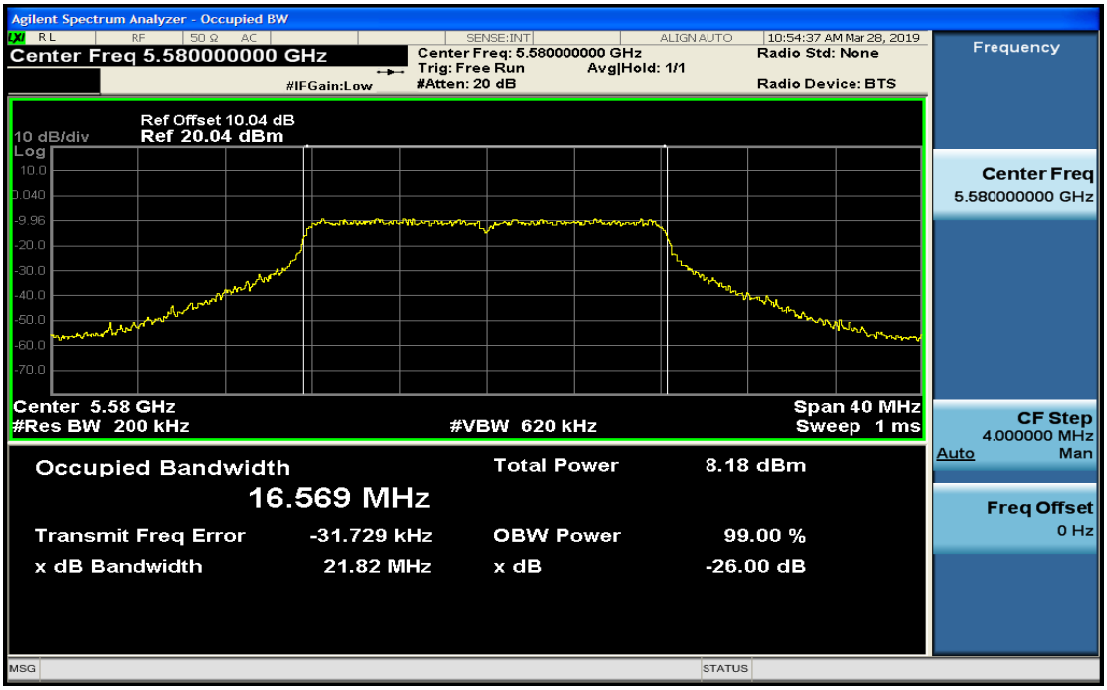


5470~5725MHz

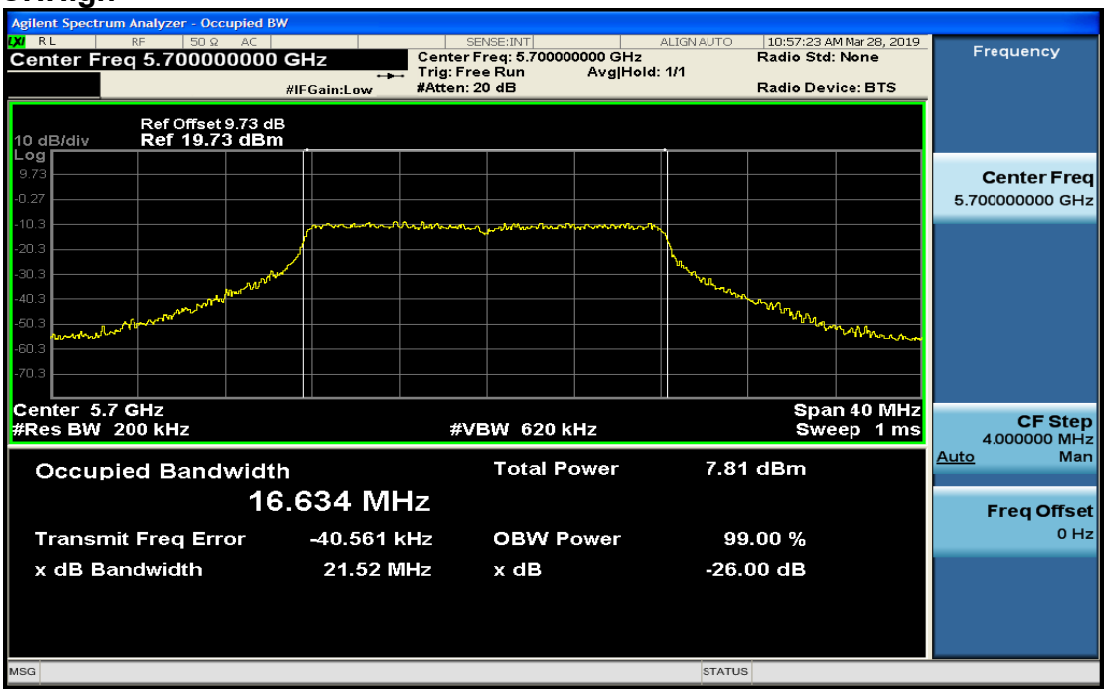
CHLow



CHMid



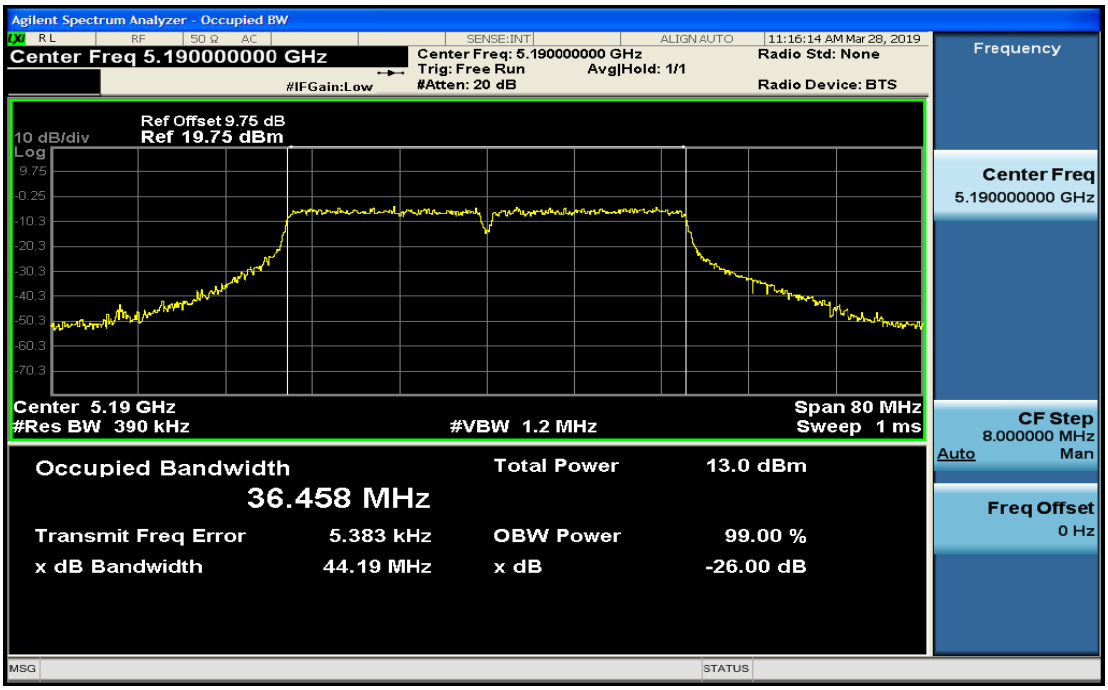
CHHigh



IEEE802.11nHT40mode

5150~5250MHz

CHLow



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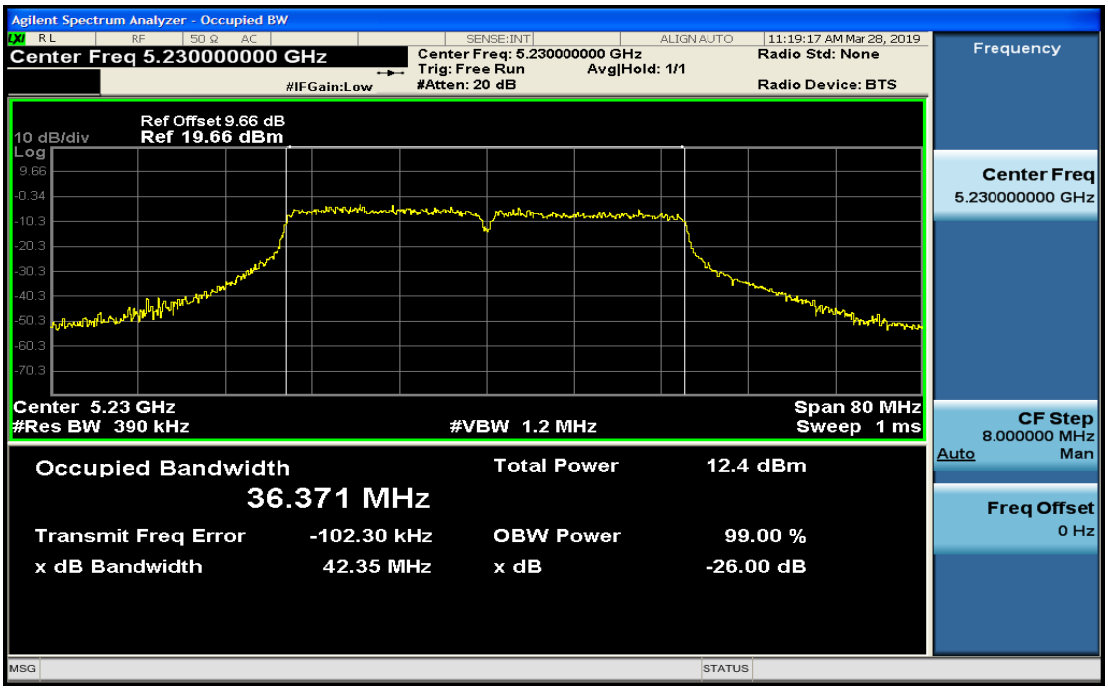
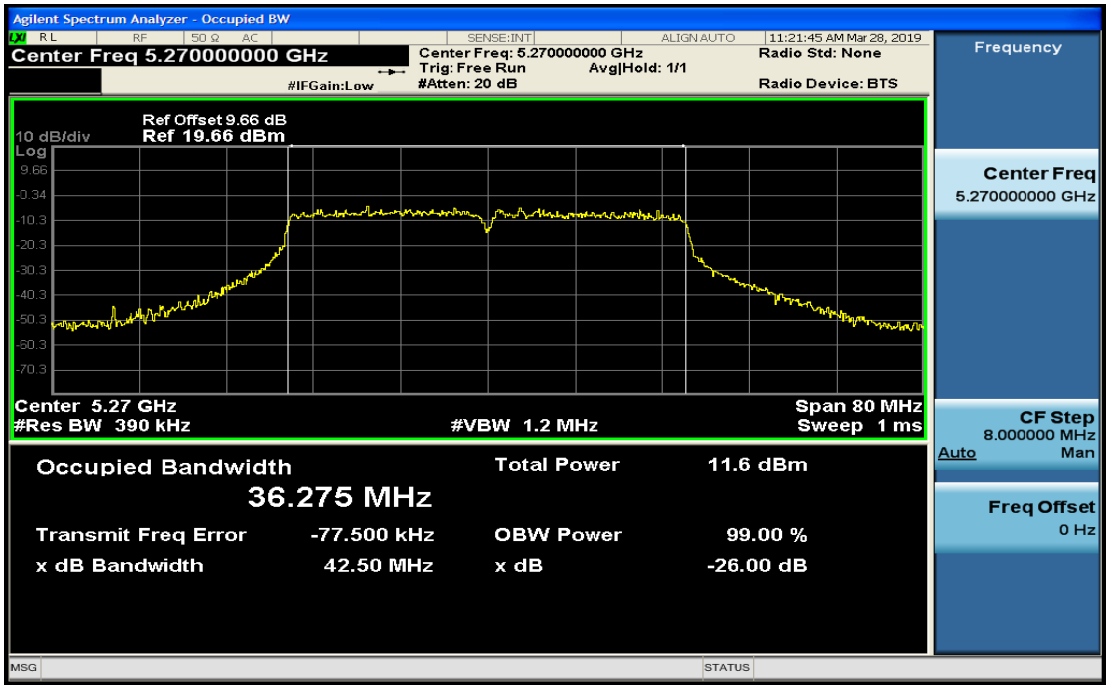
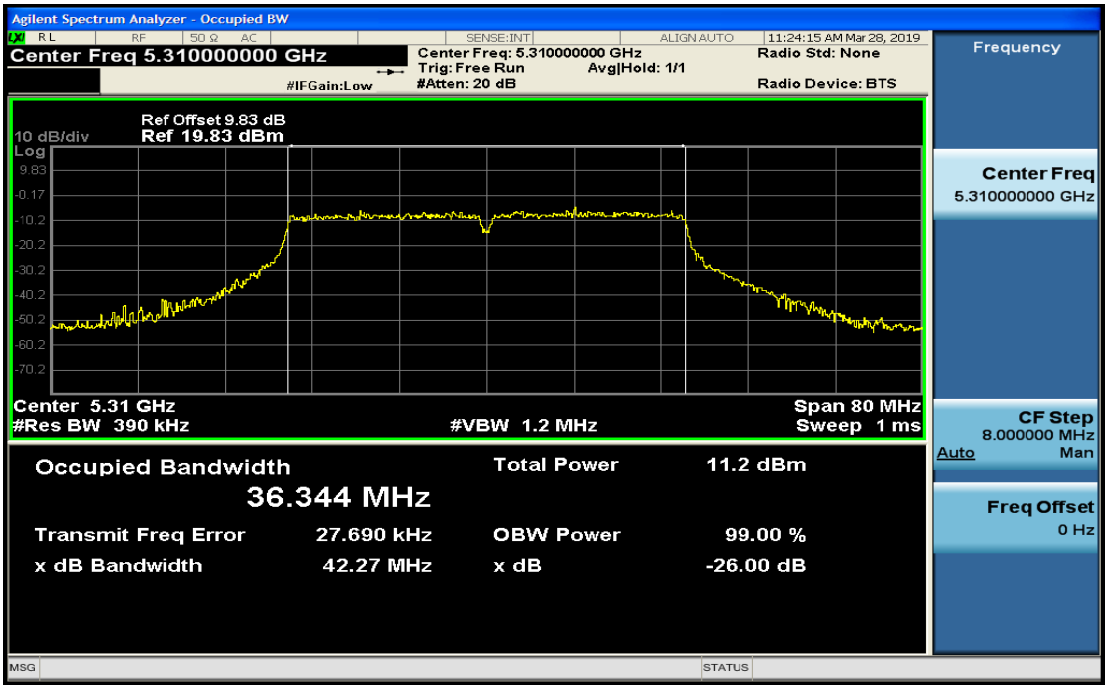


5250~5350MHz

CHLow

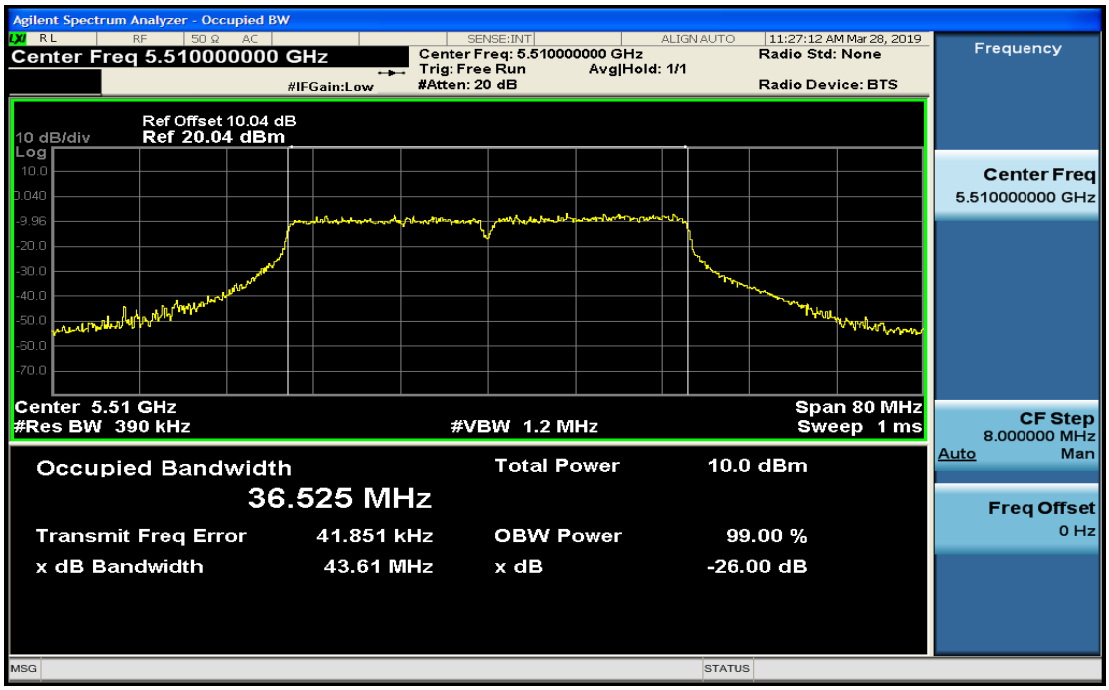


CHHigh

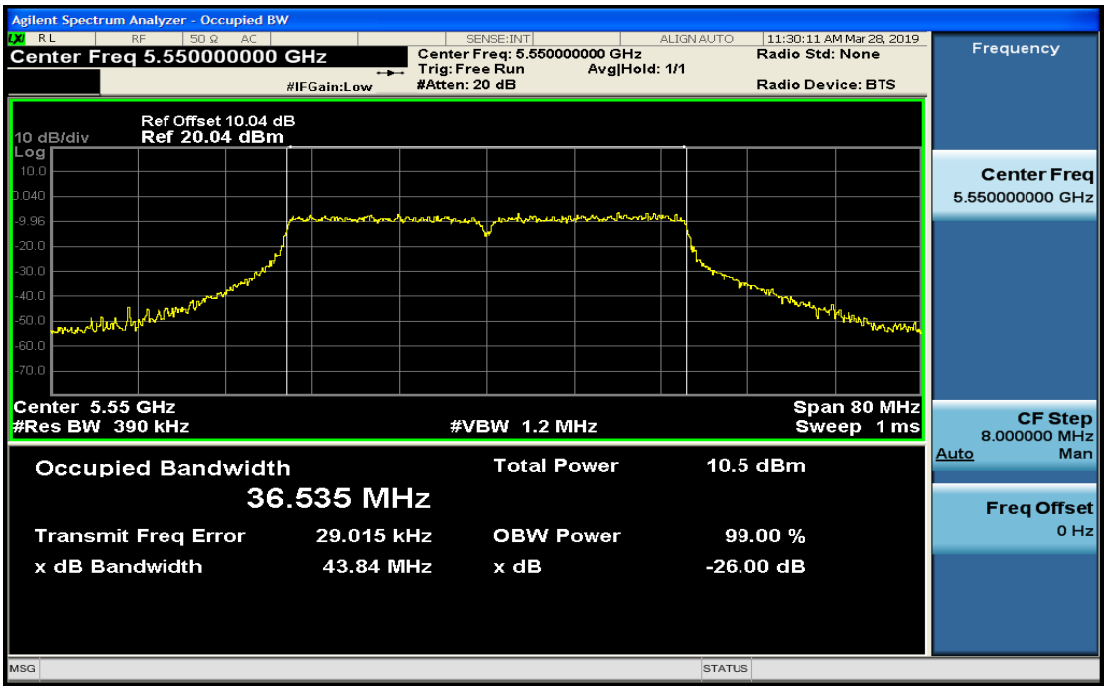


5470~5725MHz

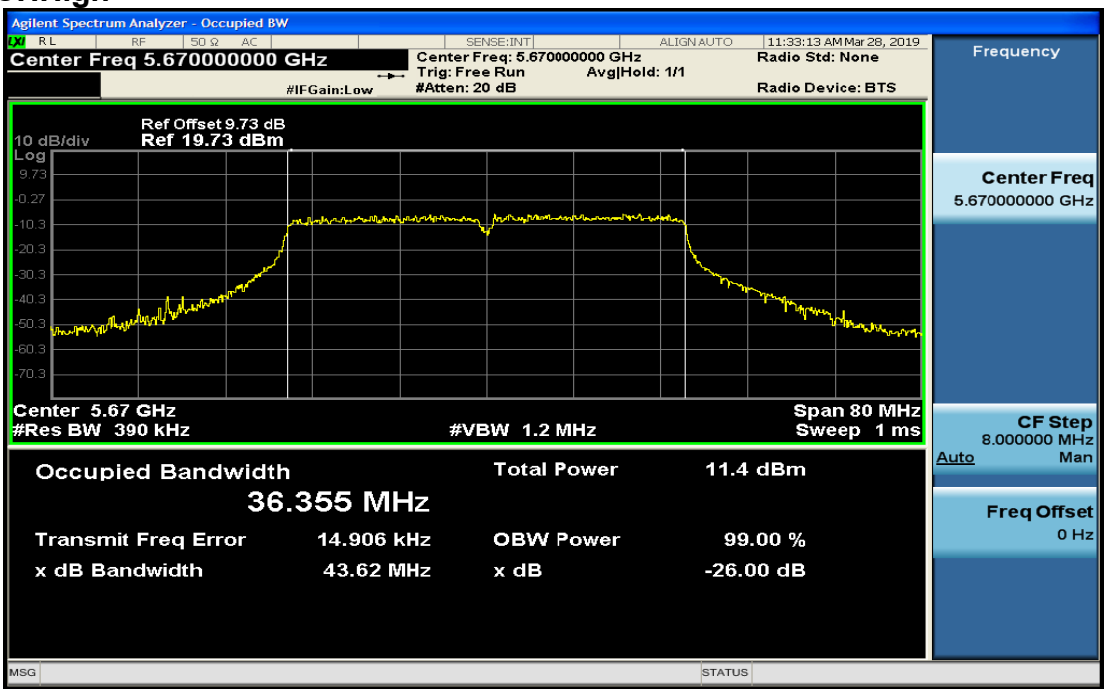
CHLow



CHMid



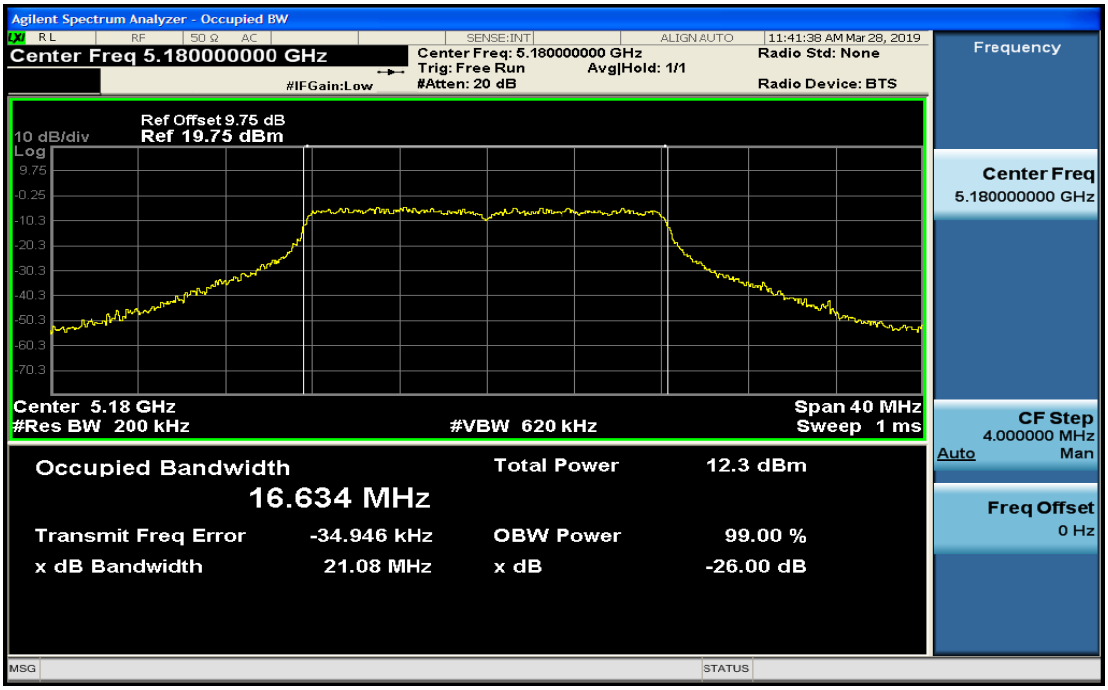
CHHigh



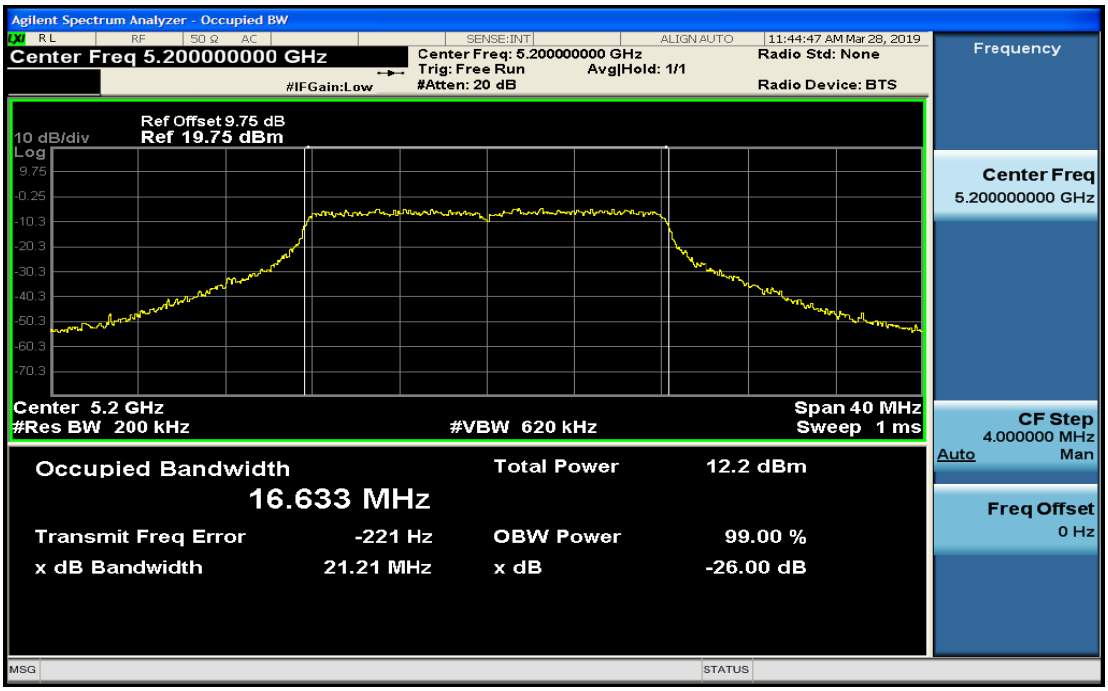
IEEE802.11acHT20mode

5150~5250MHz

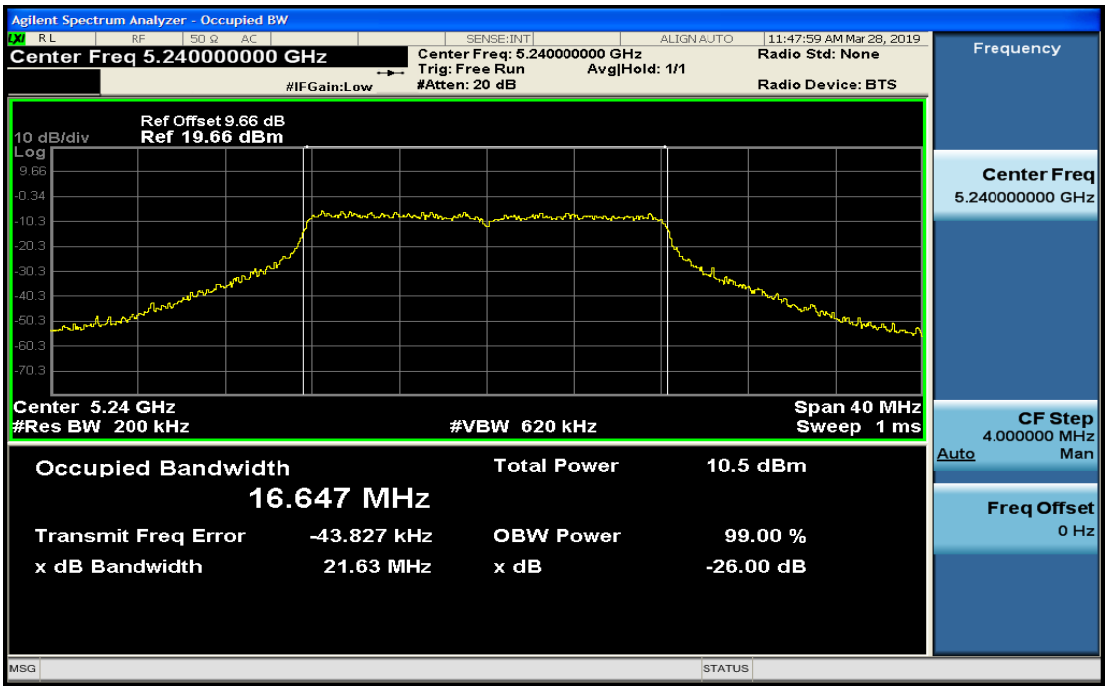
CHLow



CHMid

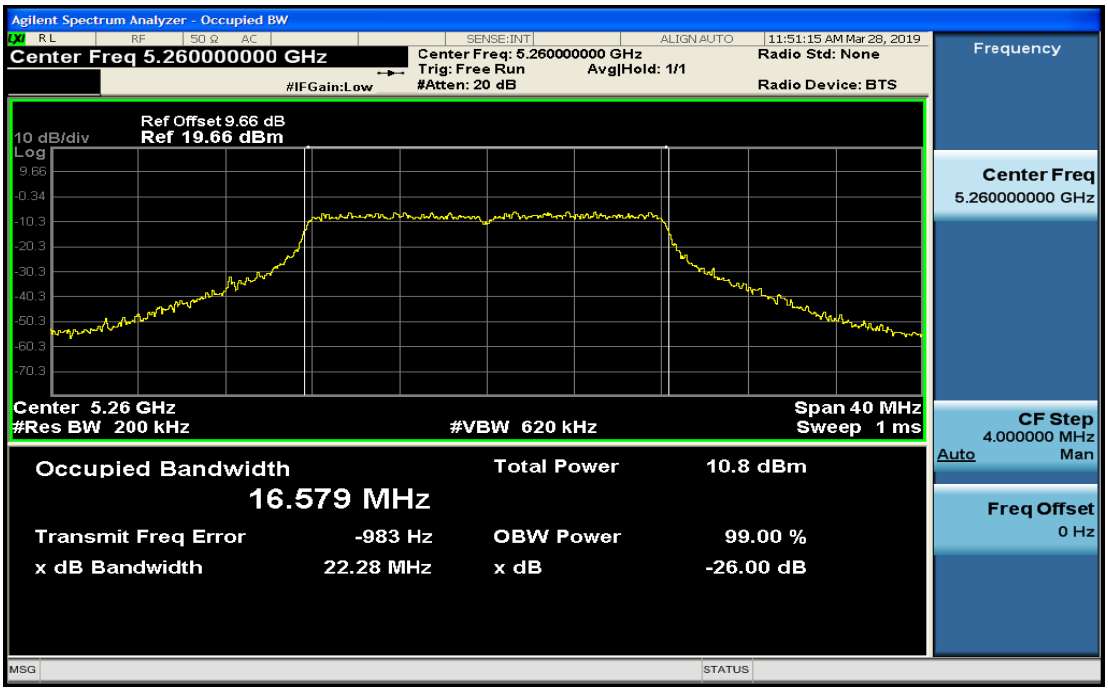


CHHigh

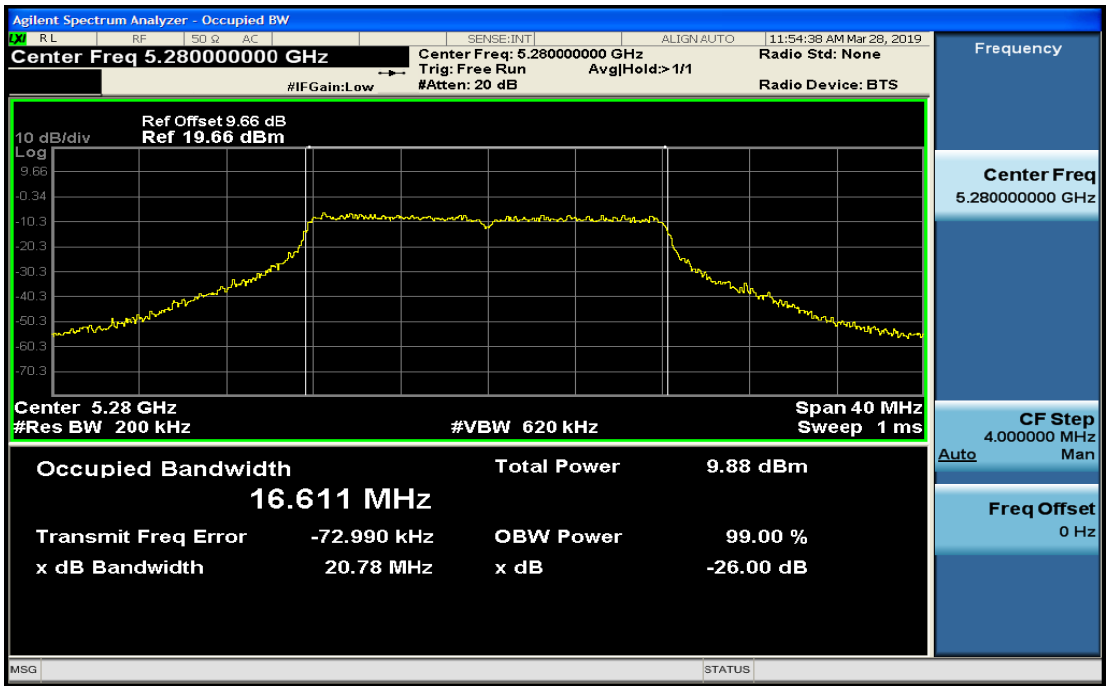


5250~5350MHz

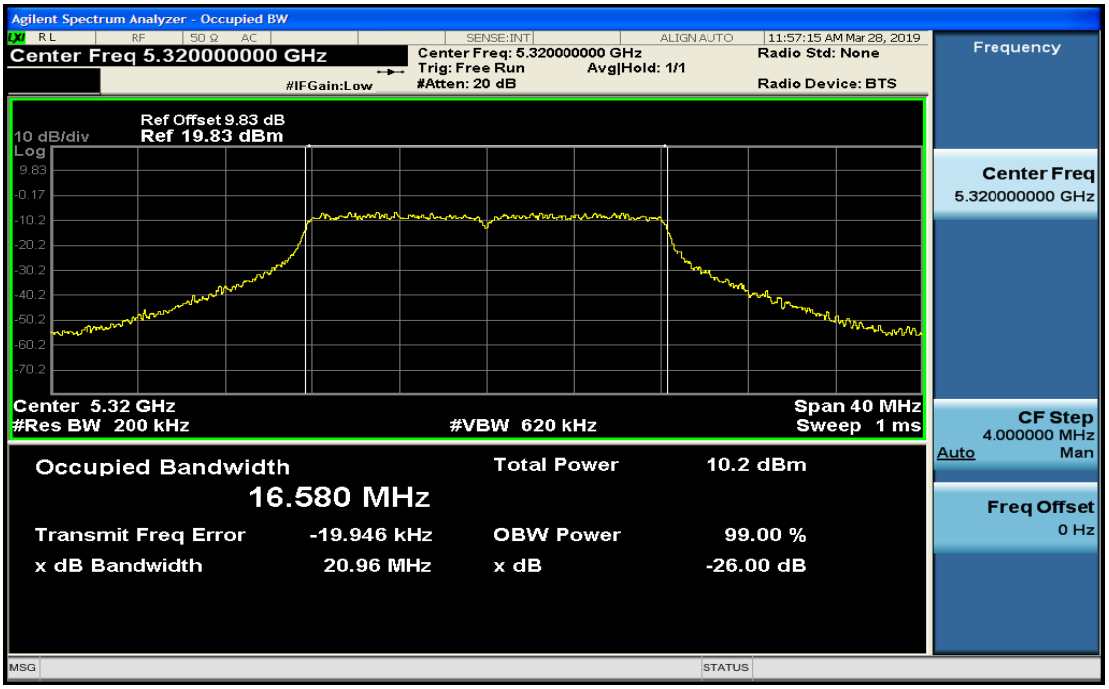
CHLow



CHMid

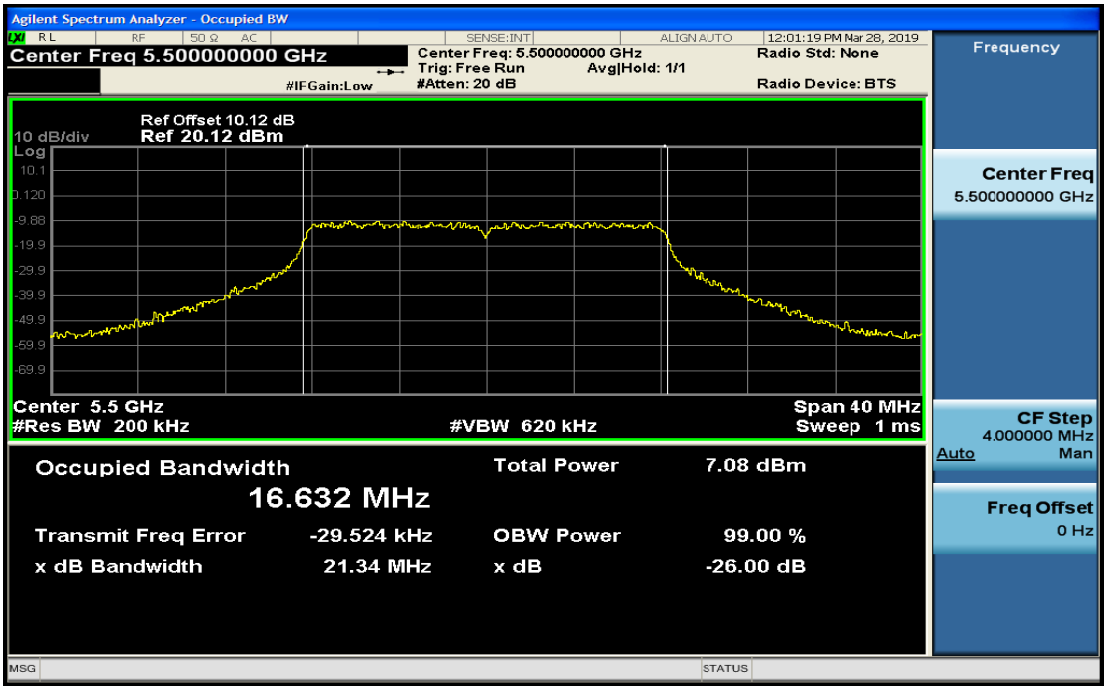


CHHigh

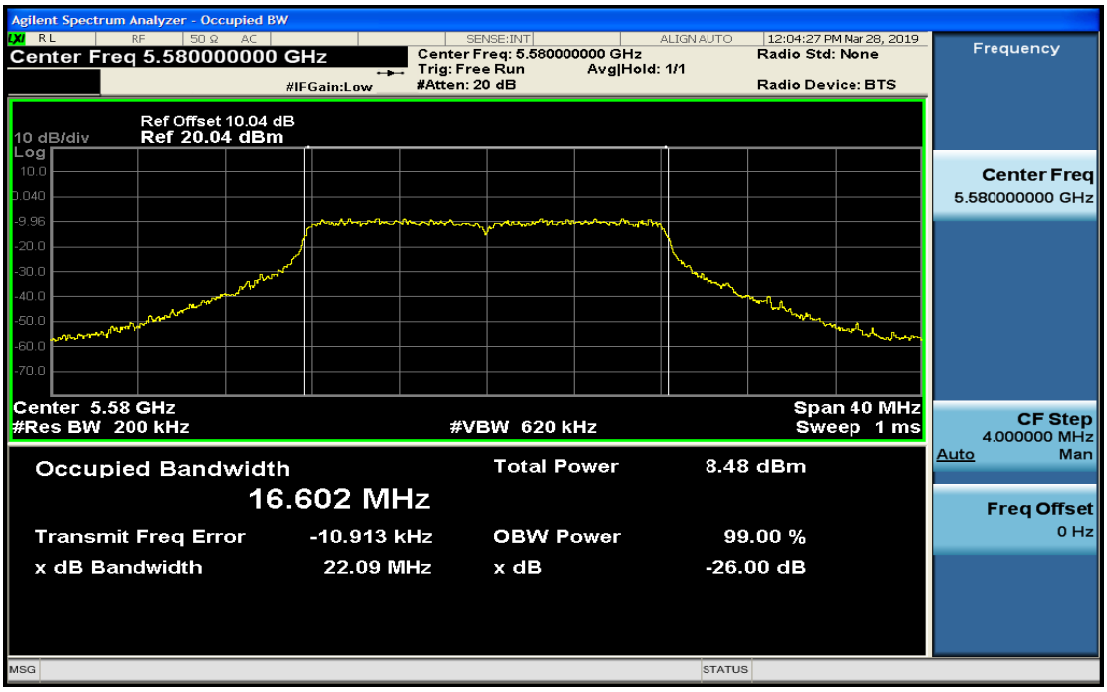


5470~5725MHz

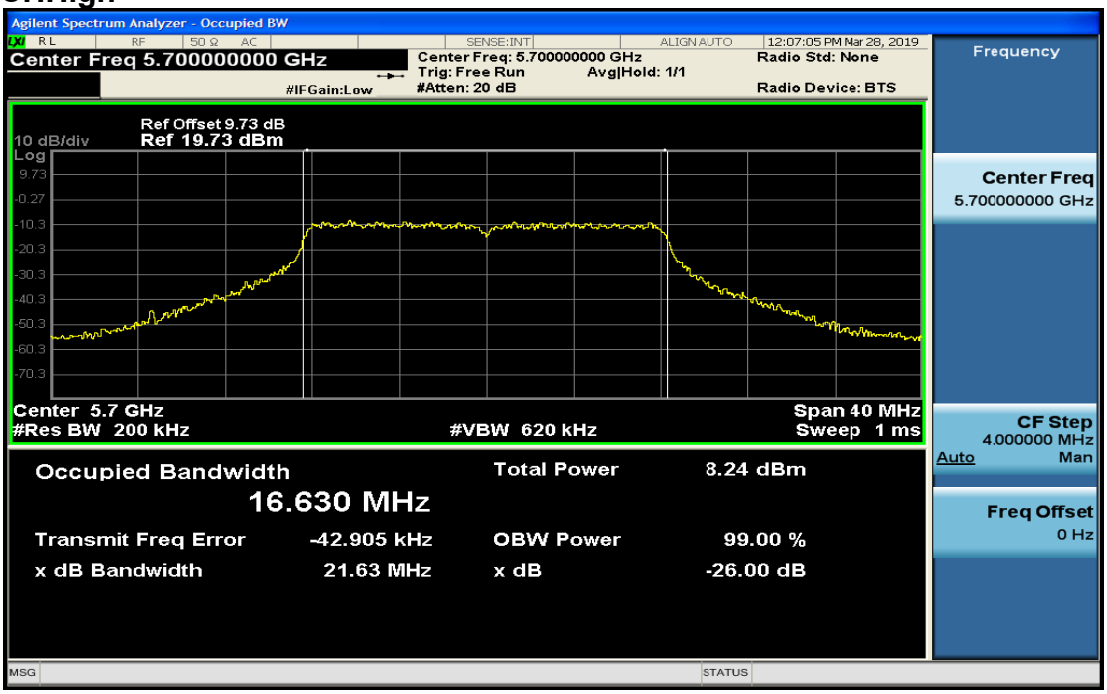
CHLow



CHMid



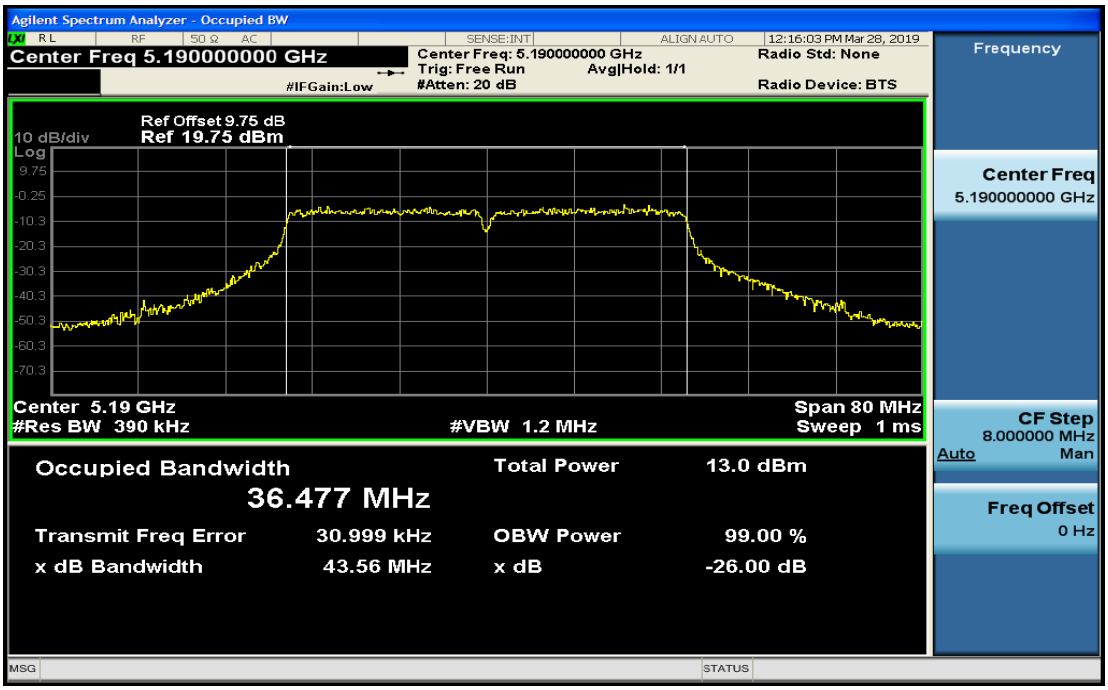
CHHigh



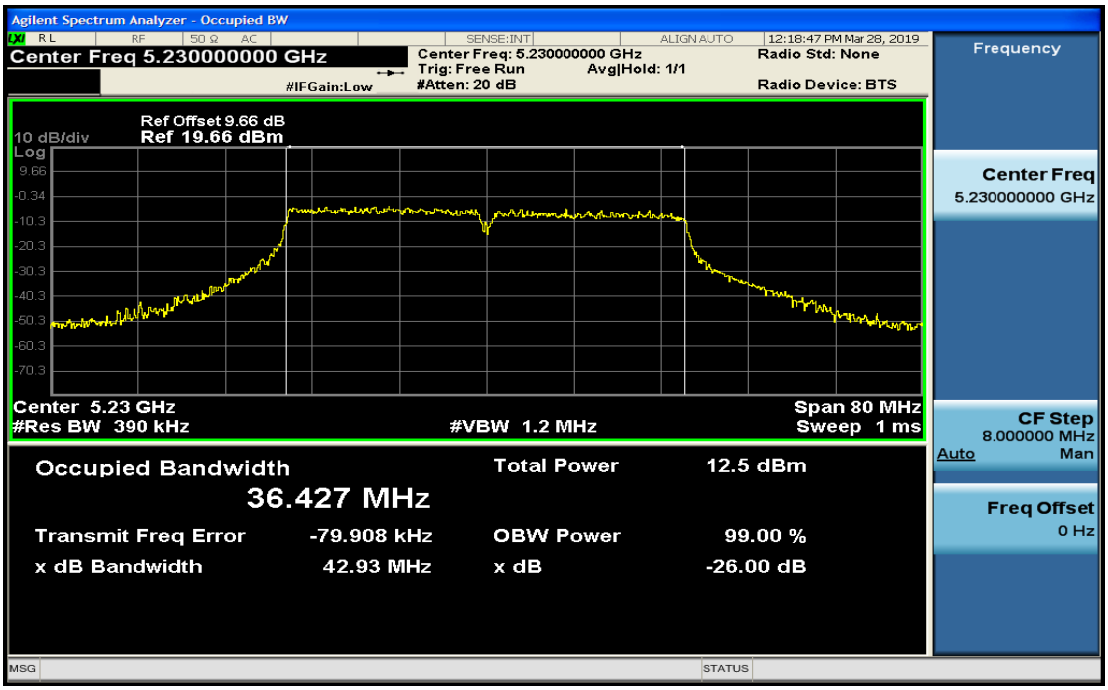
IEEE802.11acHT40mode

5150~5250MHz

CHLow

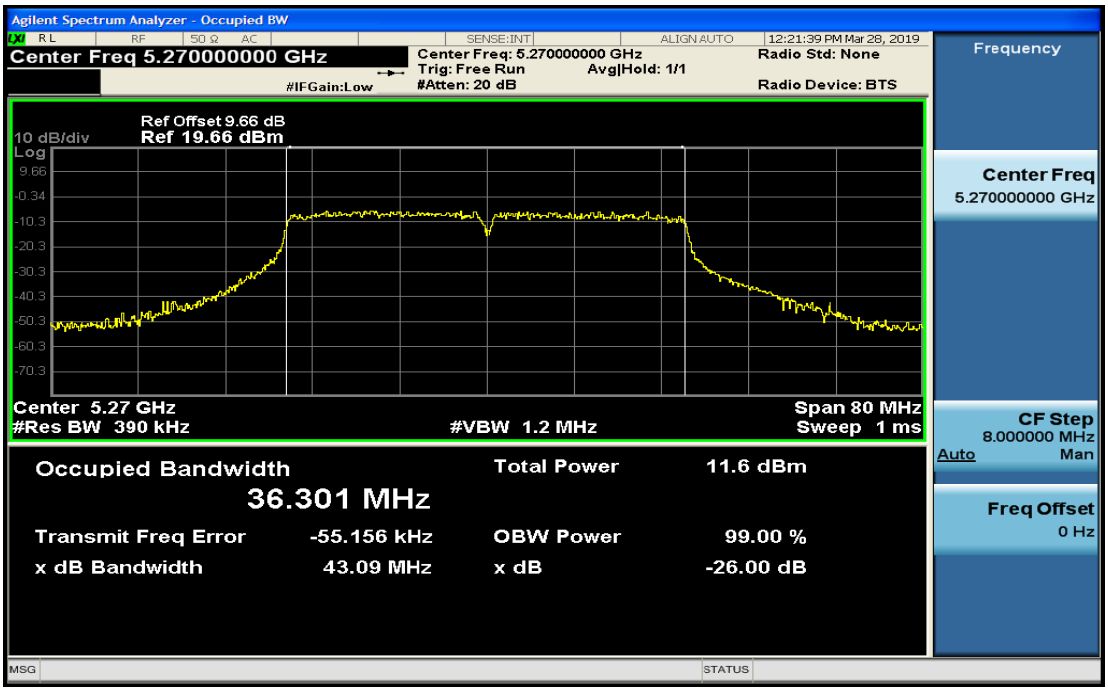


CHHigh

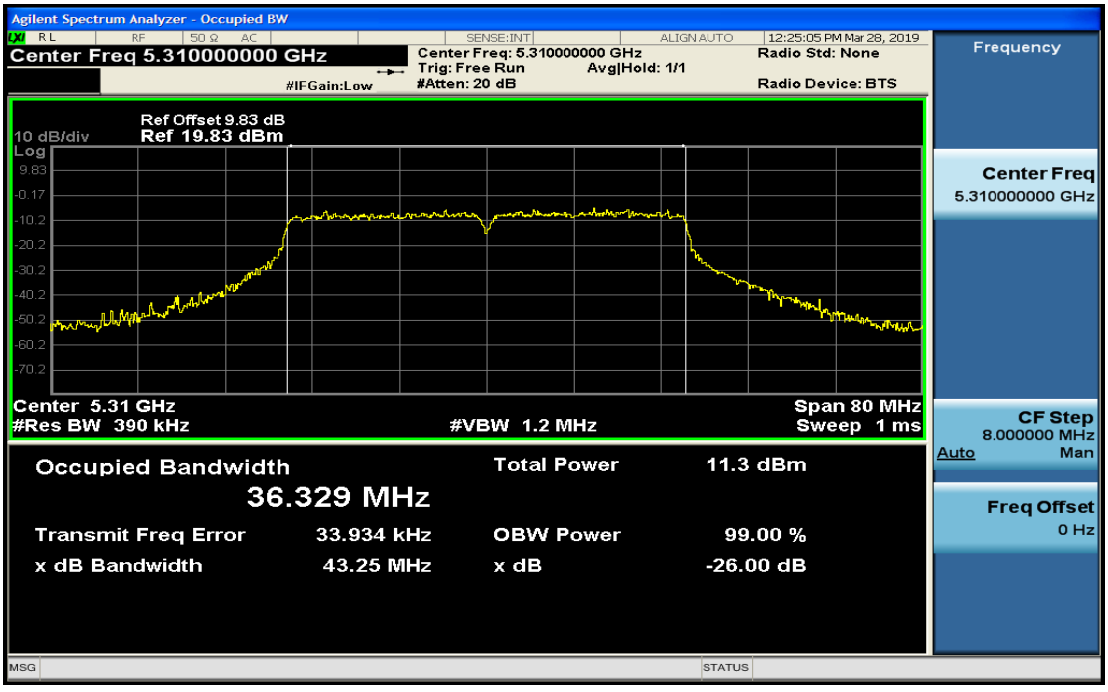


5250~5350MHz

CHLow

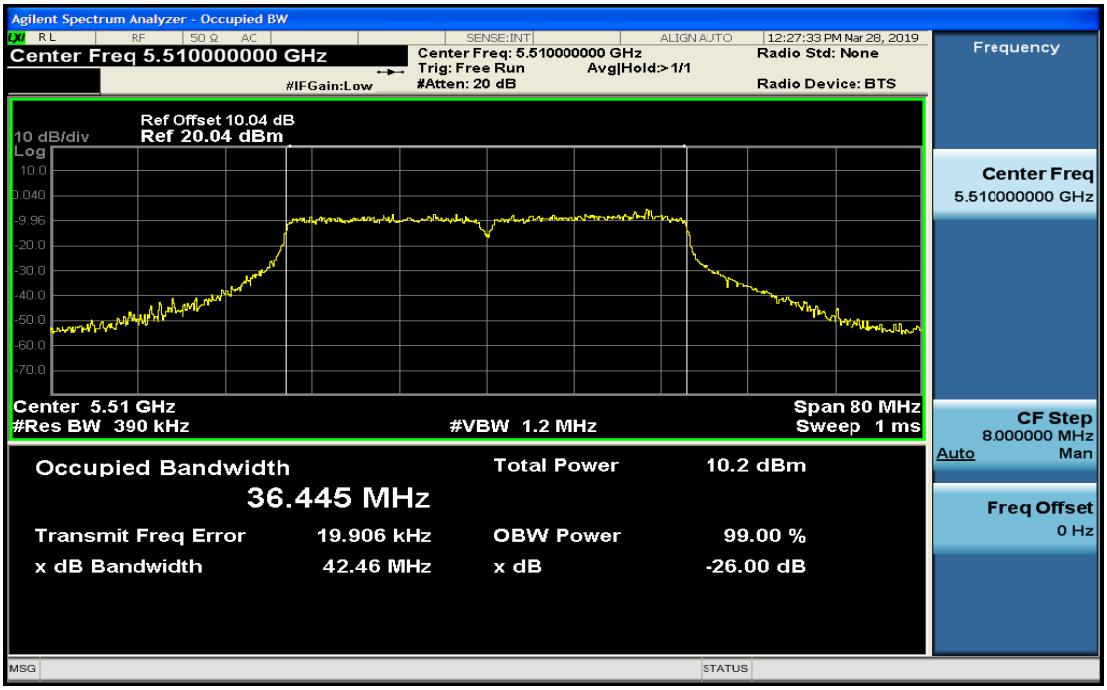


CHHigh

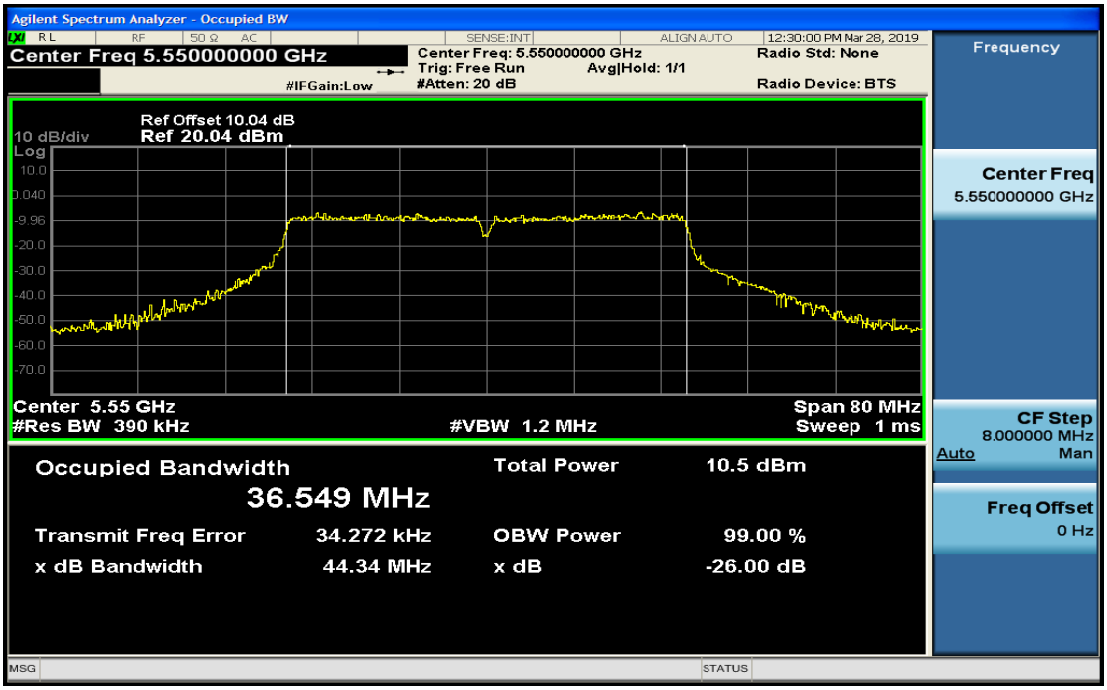


5470~5725MHz

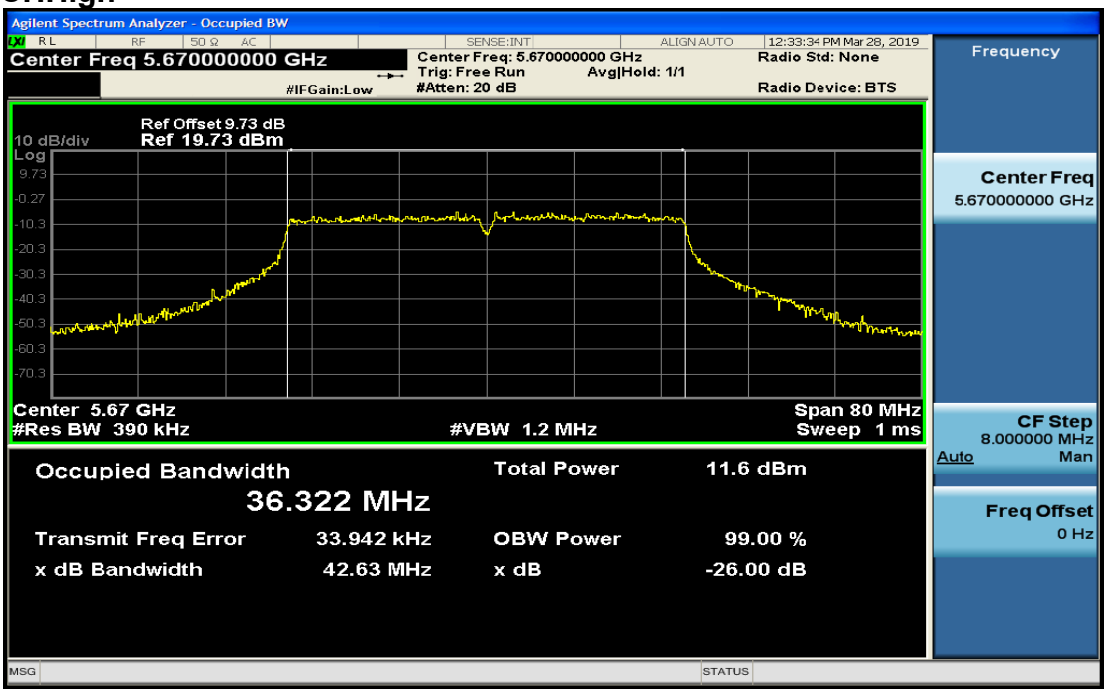
CHLow



CHMid

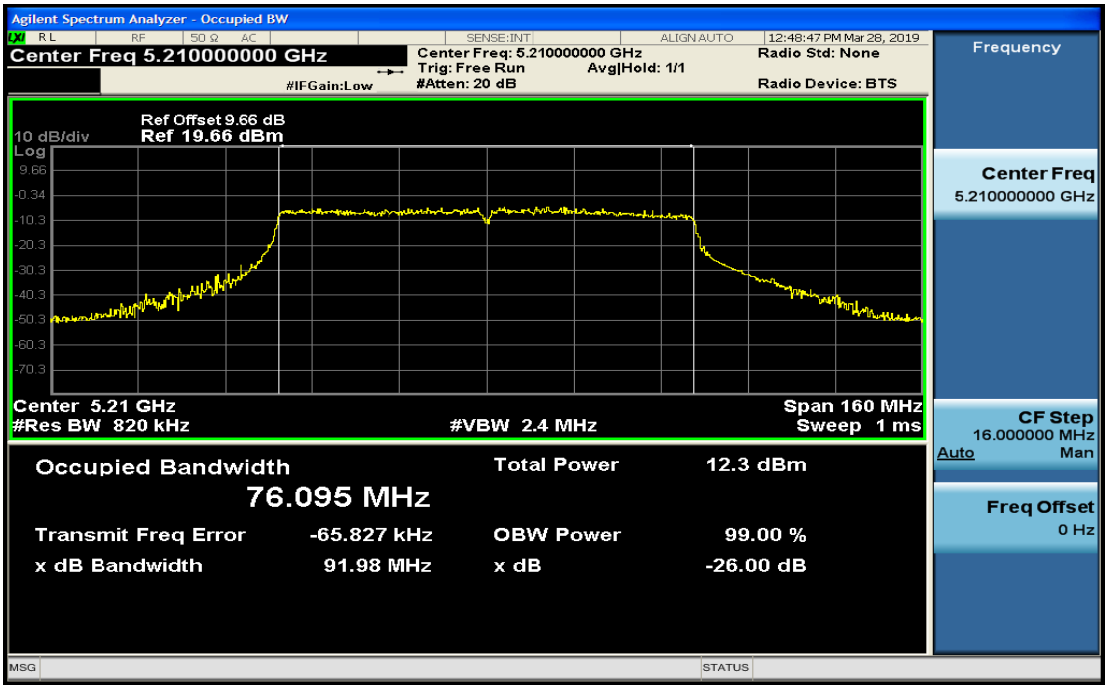


CHHigh

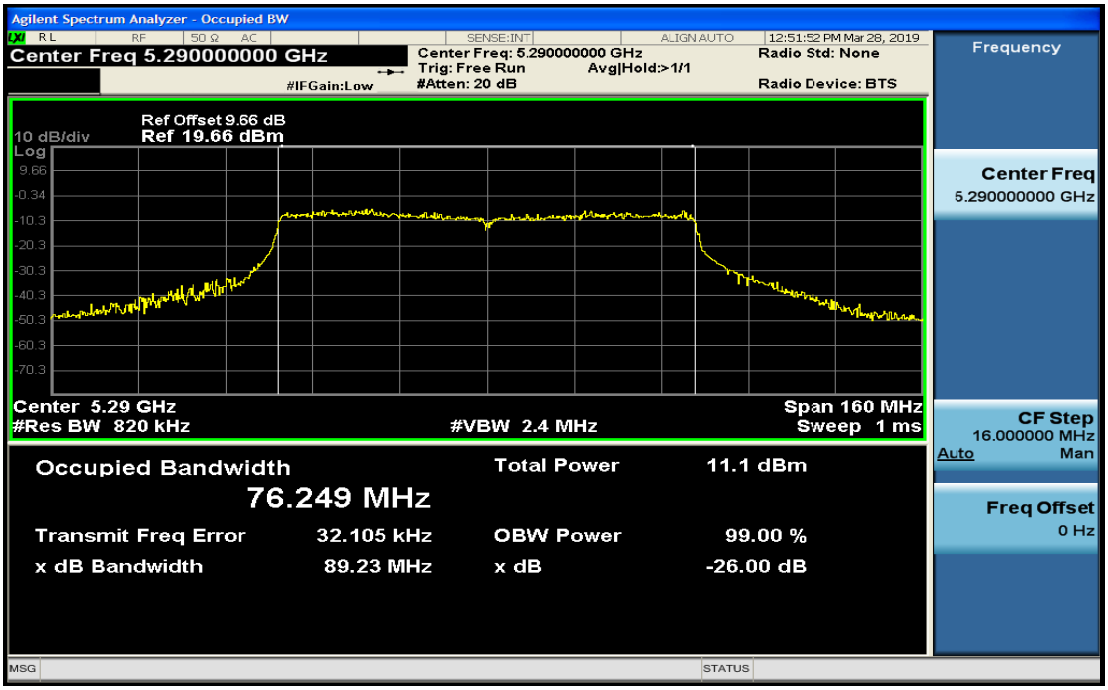


IEEE802.11acHT80mode

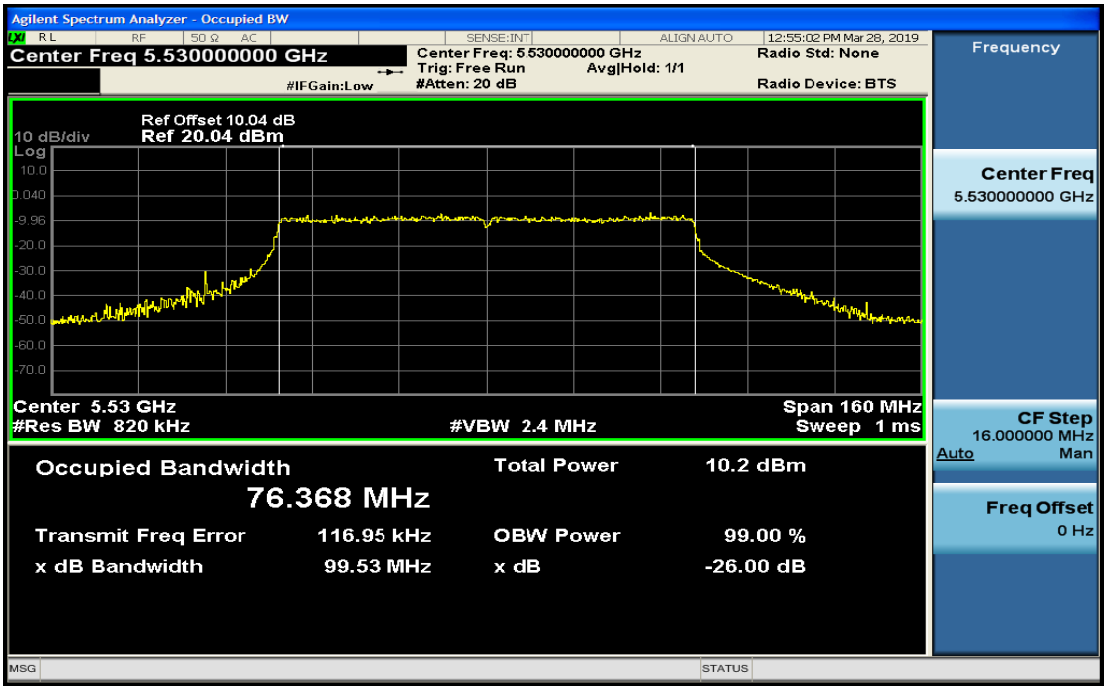
5150~5250MHz



5250~5350MHz



5470~5725MHz

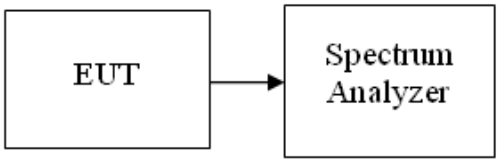


6.2 99% DB EMISSION BANDWIDTH

LIMIT

None; for reporting purposes only.

TestConfiguration



Test Procedure

2. Set center frequency to the nominal EUTchannel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1%to 5 % ofthe OBW
5. Set VBW≥3 · RBW
6. Video averaging is not permitted. Where practical, a sample detection and single sweepmode shall be used. Otherwise, peak detection and max holdmode (until the trace stabilizes) shall be used.
7. Use the 99 % power bandwidth function of the instrument (if available).

TESTRESULTS

No non-compliance noted

Test Data

Antenna 1

Testmode:IEEE802.11a mode

5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.627
Mid	5220	16.614
High	5240	16.639

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.634
Mid	5280	16.652
High	5320	16.616

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.817
Mid	5580	16.648
High	5700	16.720

Testmode:IEEE802.11nHT20MHzmode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.624
Mid	5220	16.595
High	5240	16.641

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.596
Mid	5280	16.629
High	5320	16.616

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.729
Mid	5580	16.673
High	5700	16.716

Testmode:IEEE802.11nHT40MHz mode 5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.461
High	5230	36.402

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.359
High	5310	36.417

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.568
Mid	5550	36.674
High	5670	36.382

Testmode:IEEE802.11acHT20MHz mode 5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.640
Mid	5220	16.614
High	5240	16.653

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.598
Mid	5280	16.665
High	5320	16.624

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.746
Mid	5580	16.615
High	5700	16.684

Testmode:IEEE802.11acHT40MHz mode 5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.479
High	5230	36.424

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.381
High	5310	36.448

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.566
Mid	5550	36.591
High	5670	36.398

Testmode:IEEE802.11acHT80MHz mode

5150~5250M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5210	76.274

5250~5350M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5290	76.611

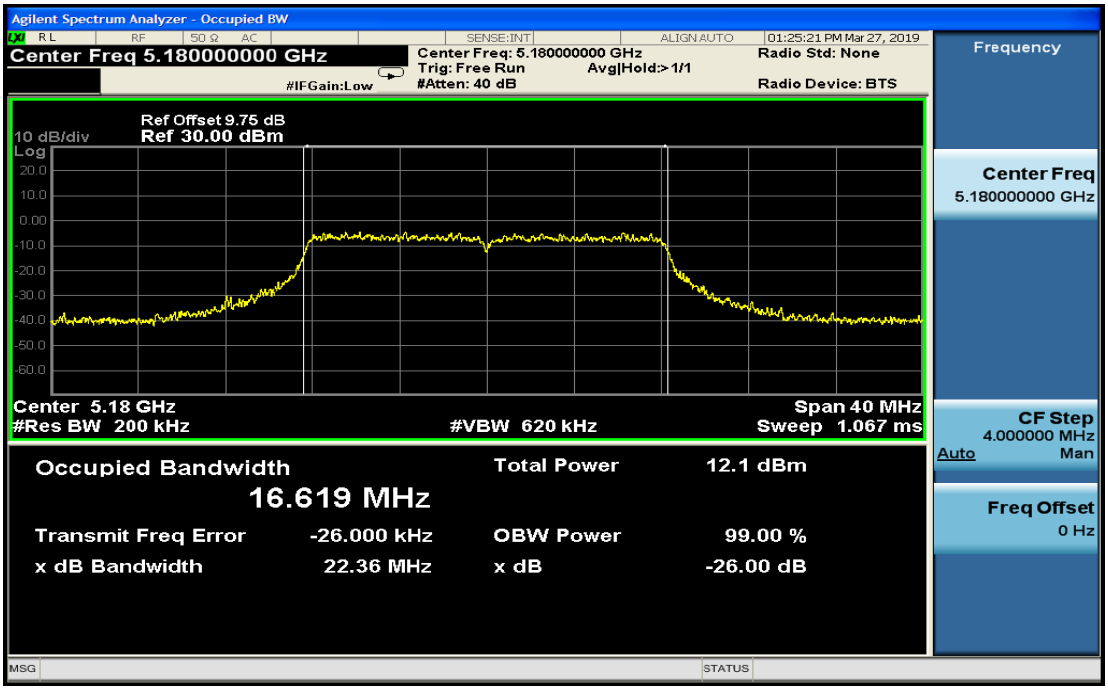
5470~5725M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5530	77.052

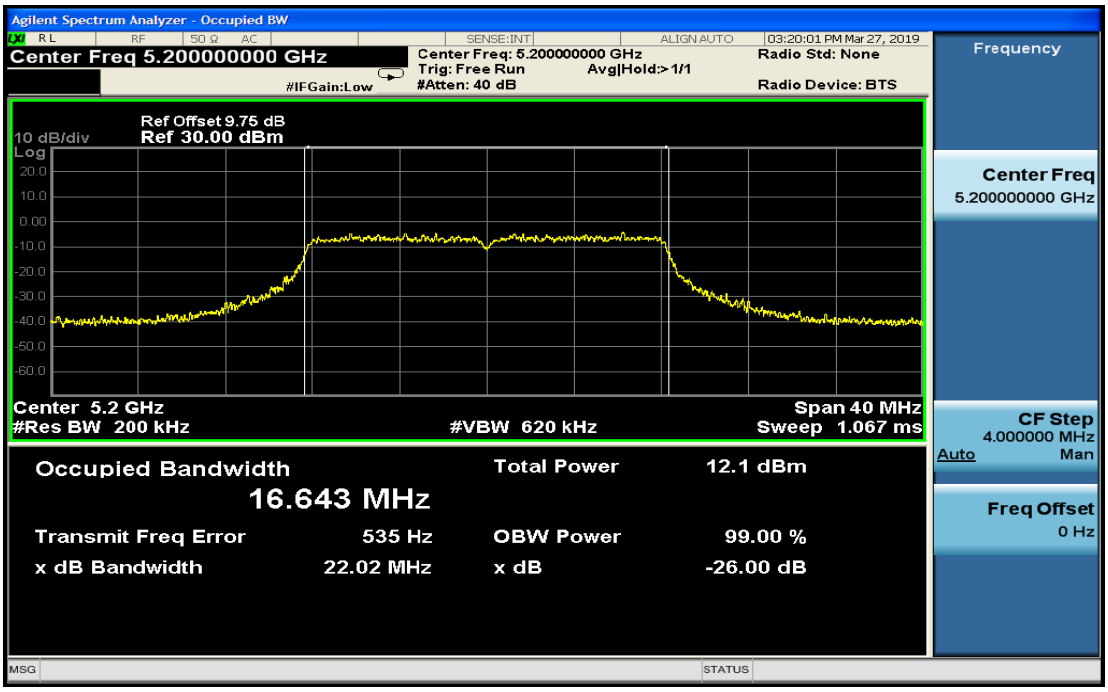
TestPlot

IEEE802.11amode: 5150~5250MHz

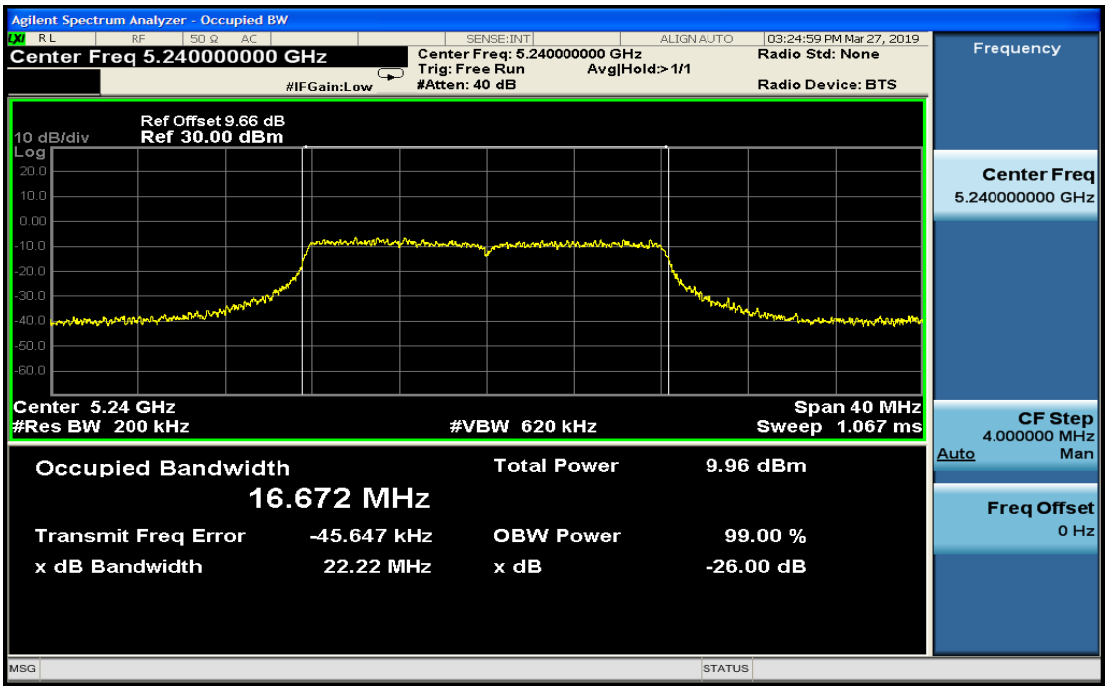
CHLow



CHMid

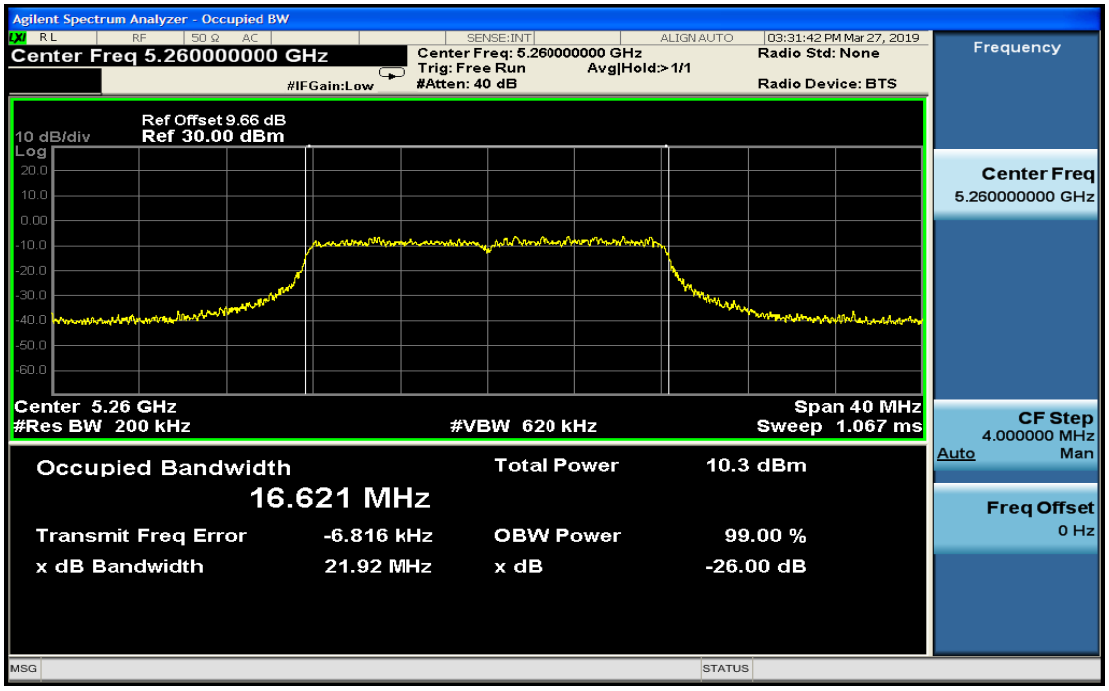


CHHigh

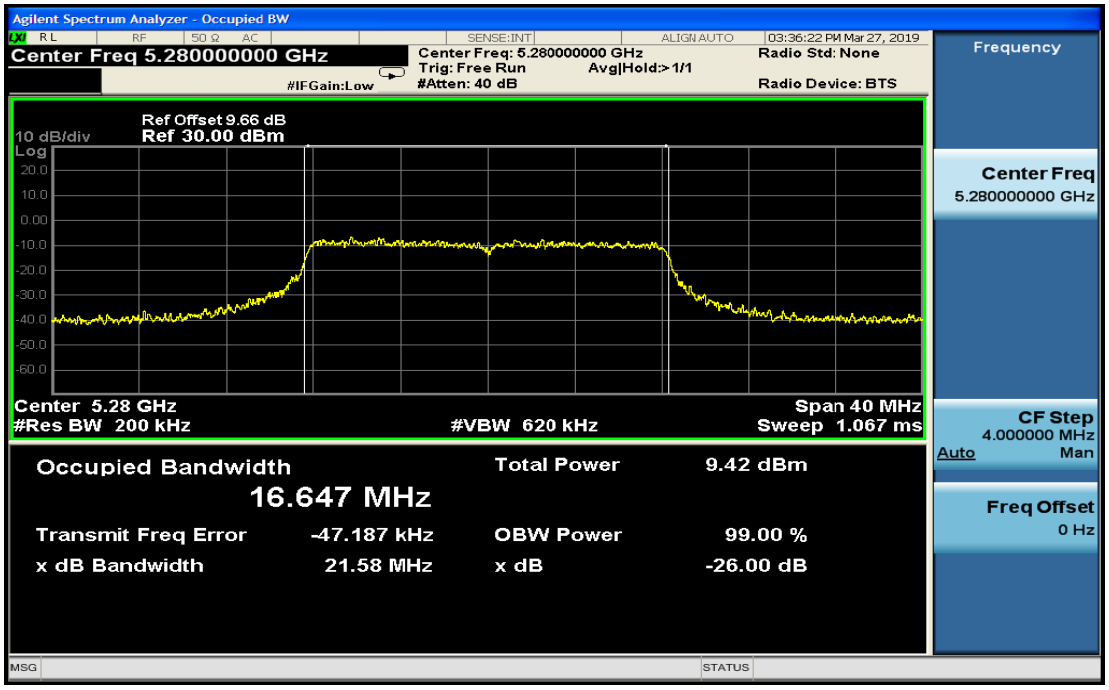


5250~5350MHz

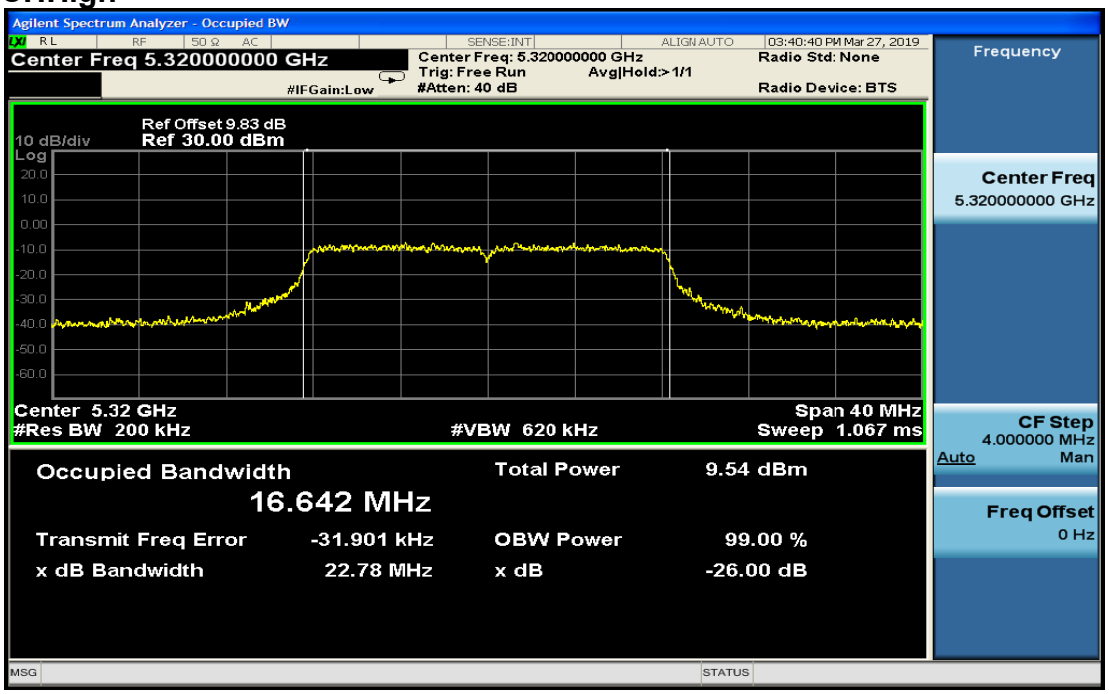
CHLow



CHMid

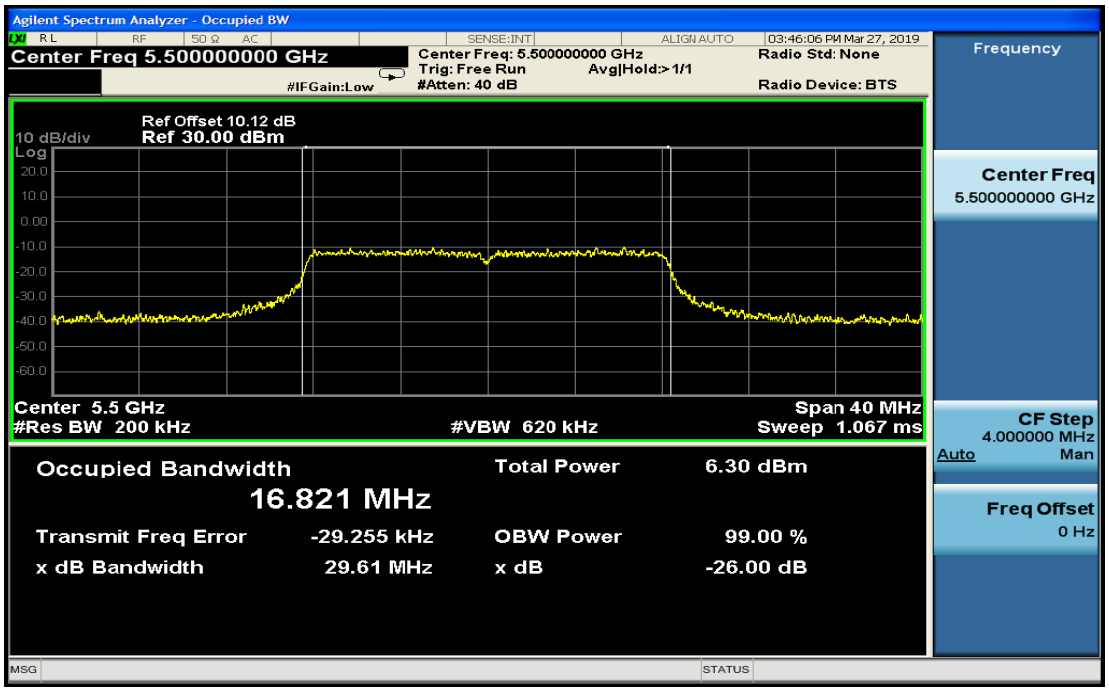


CHHigh

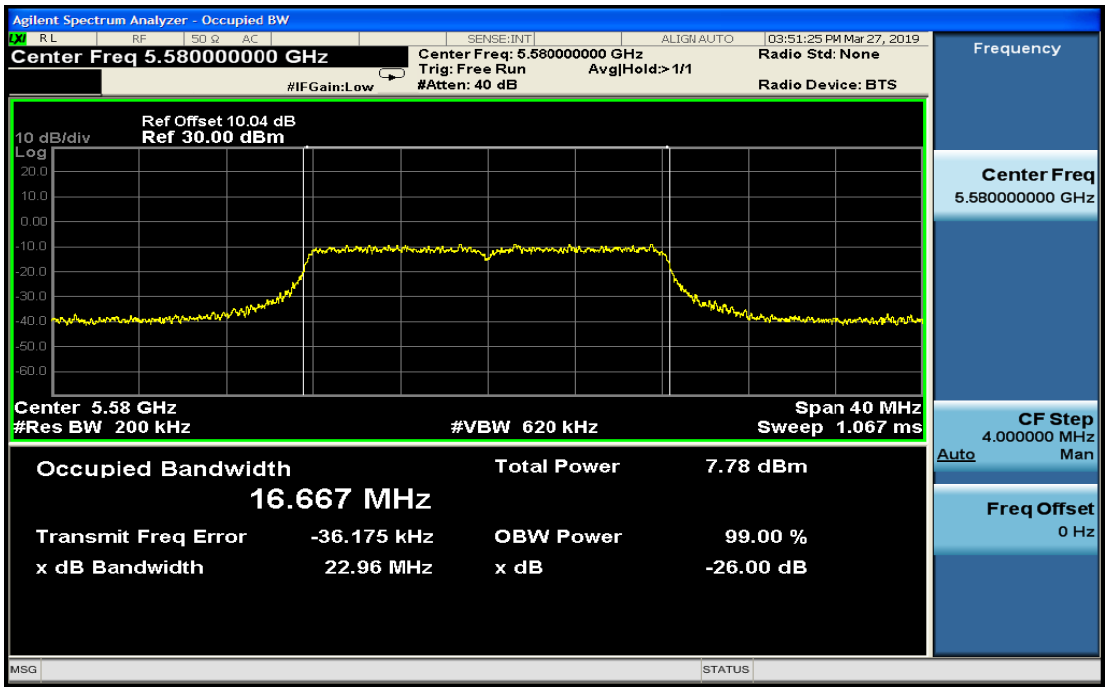


5470~5725MHz

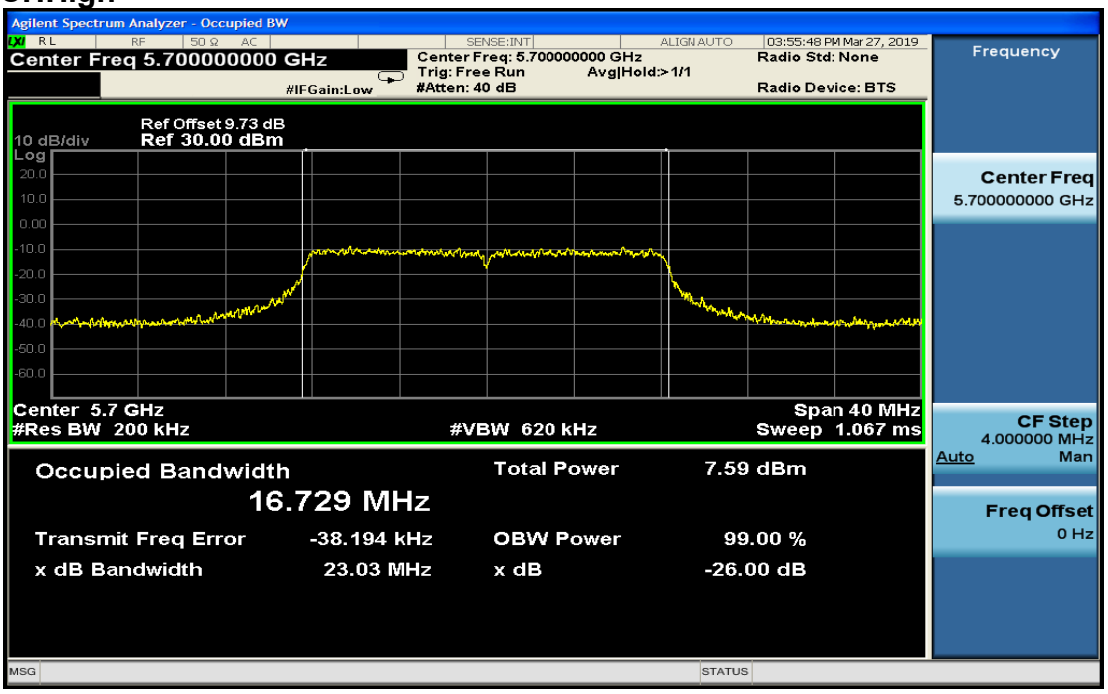
CHLow



CHMid



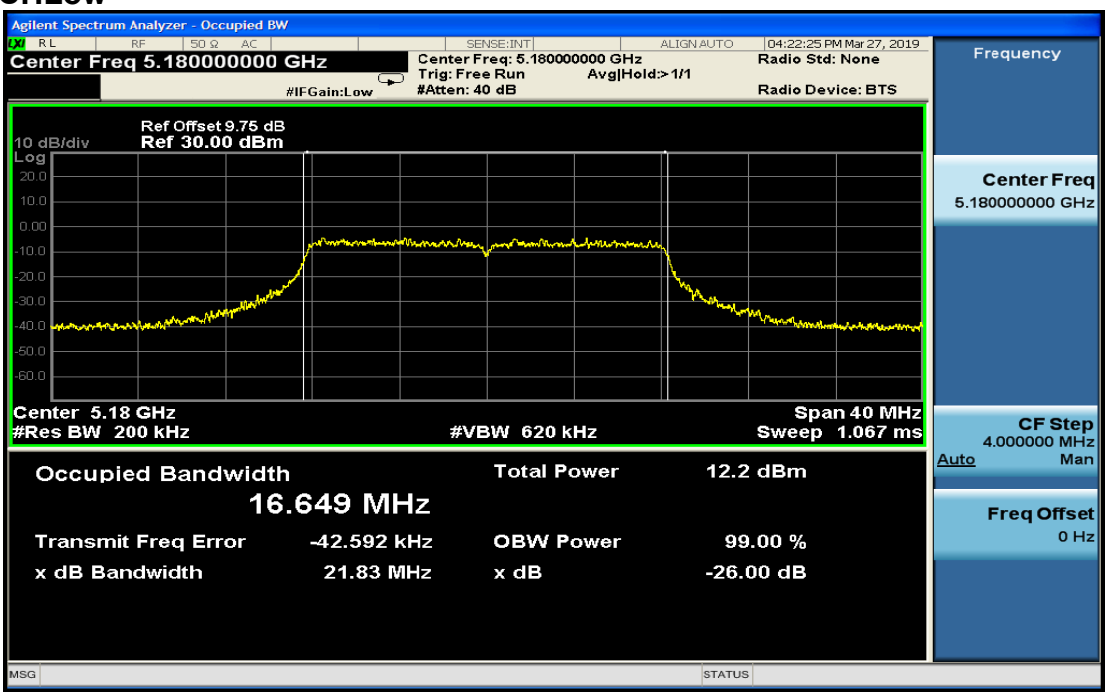
CHHigh



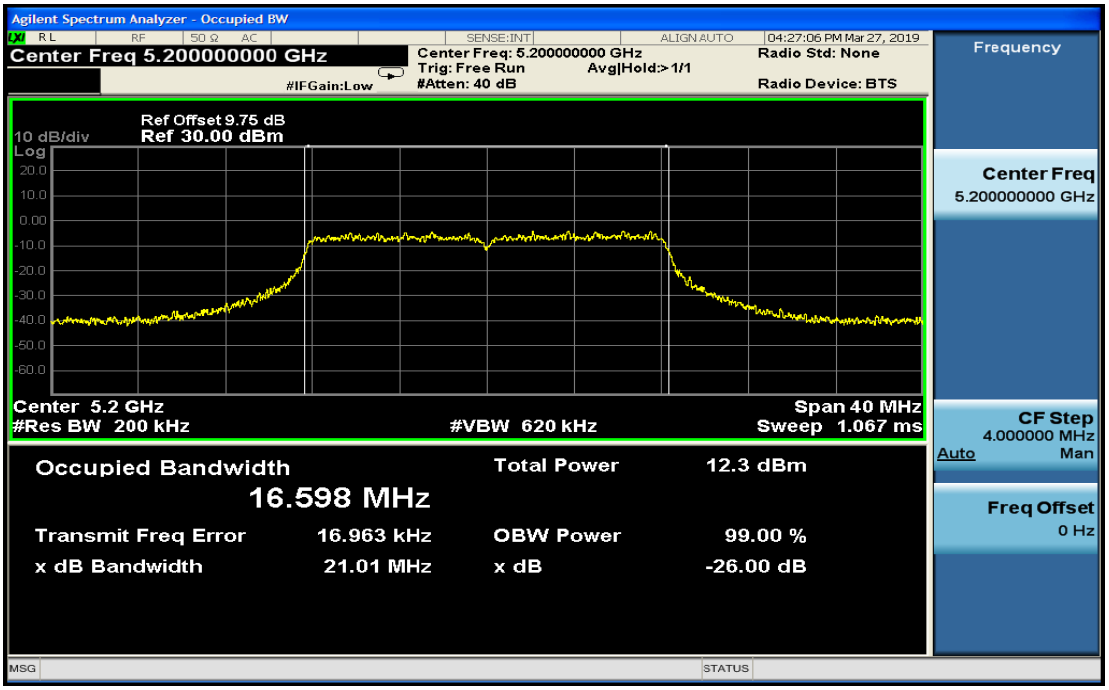
IEEE802.11nHT20mode

5150~5250MHz

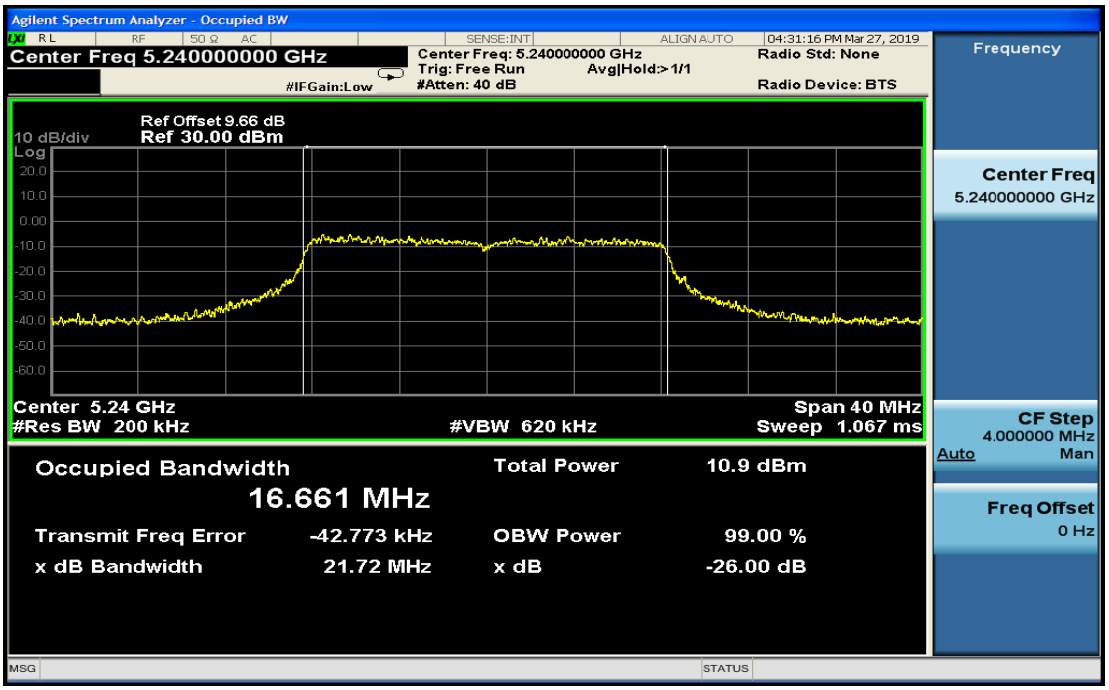
CHLow



CHMid

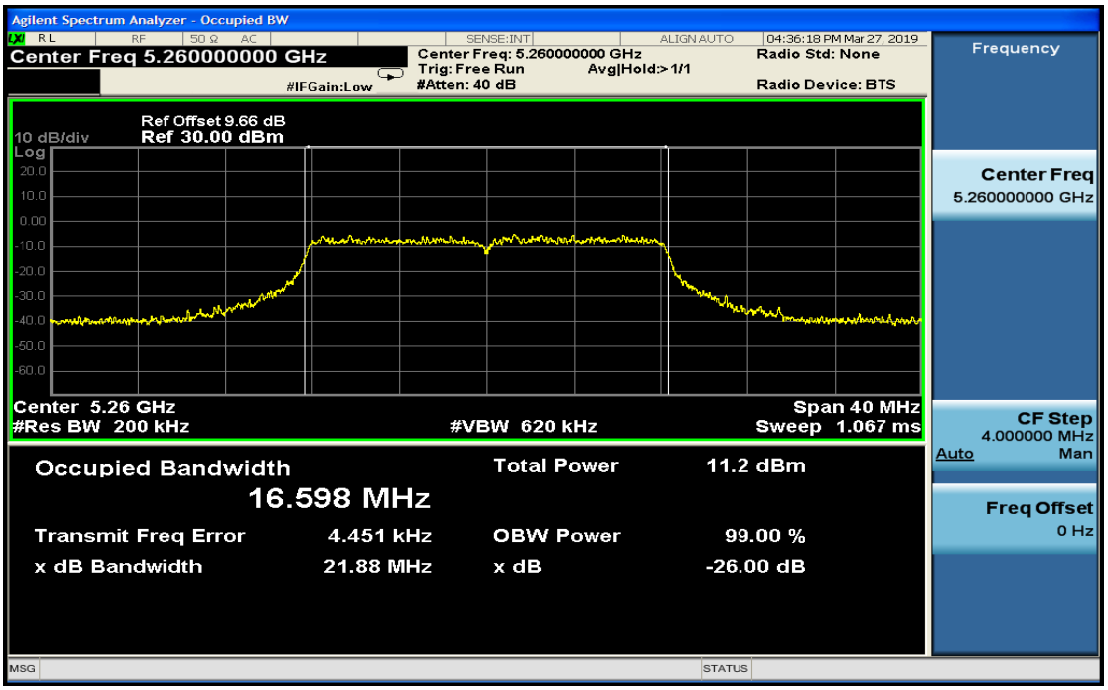


CHHigh

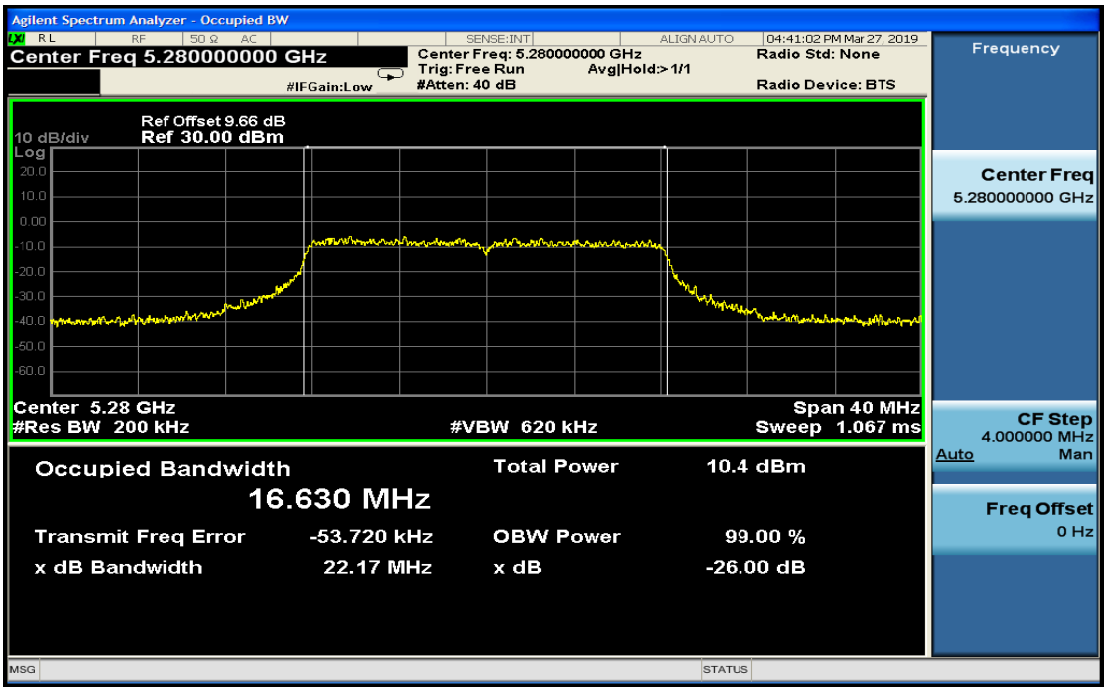


5250~5350MHz

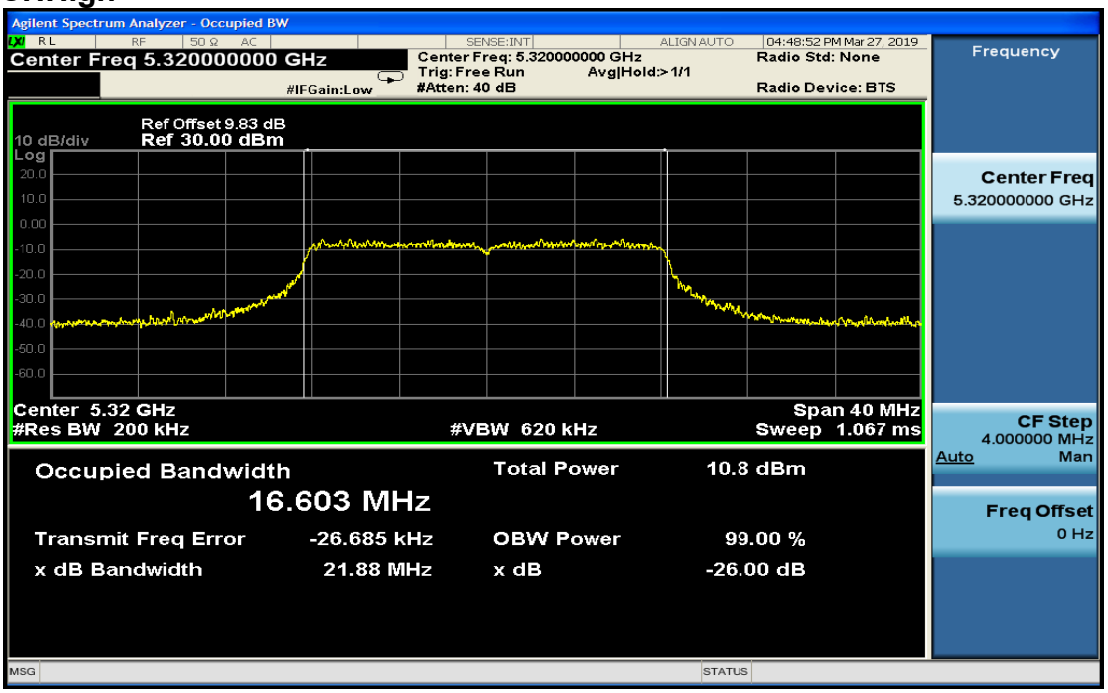
CHLow



CHMid

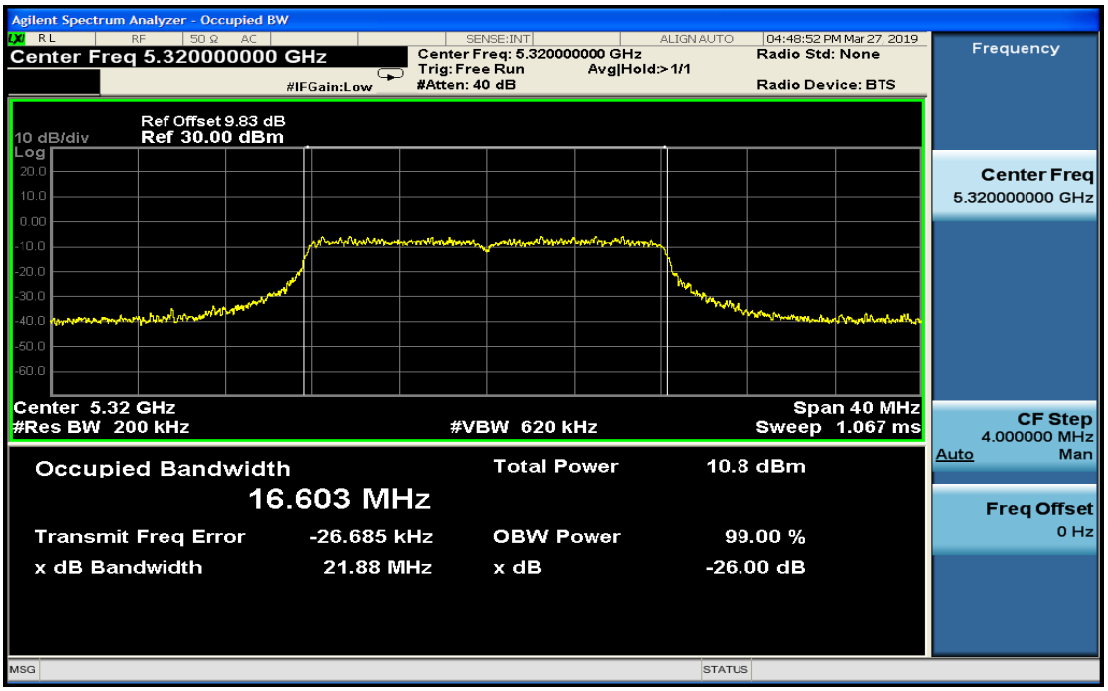


CHHigh

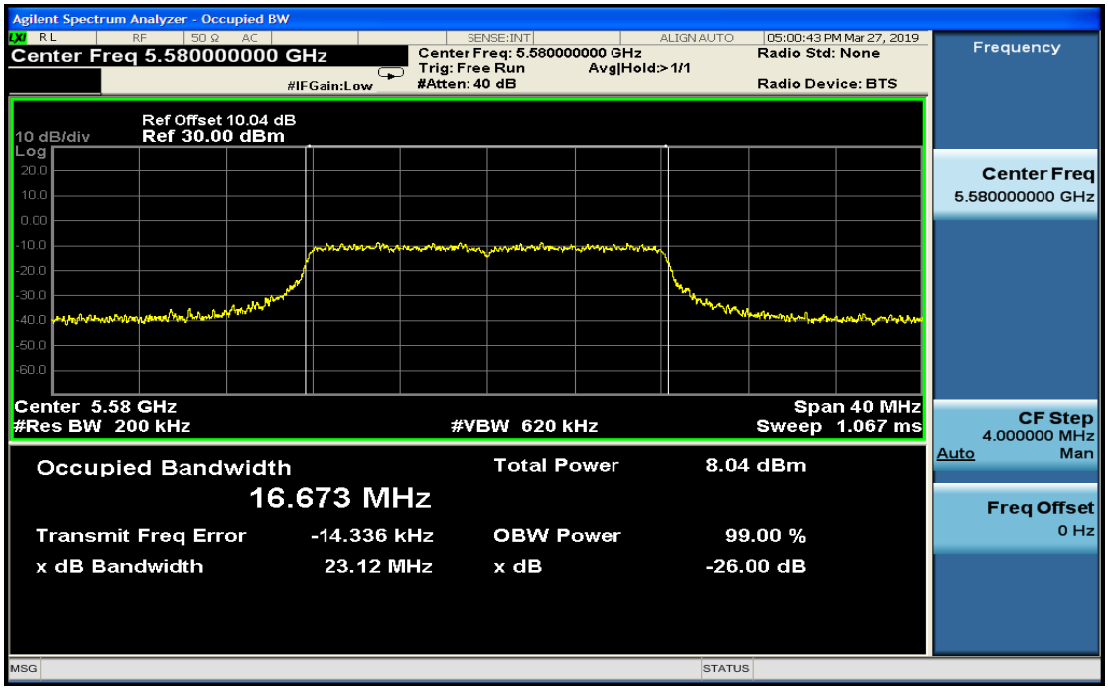


5470~5725MHz

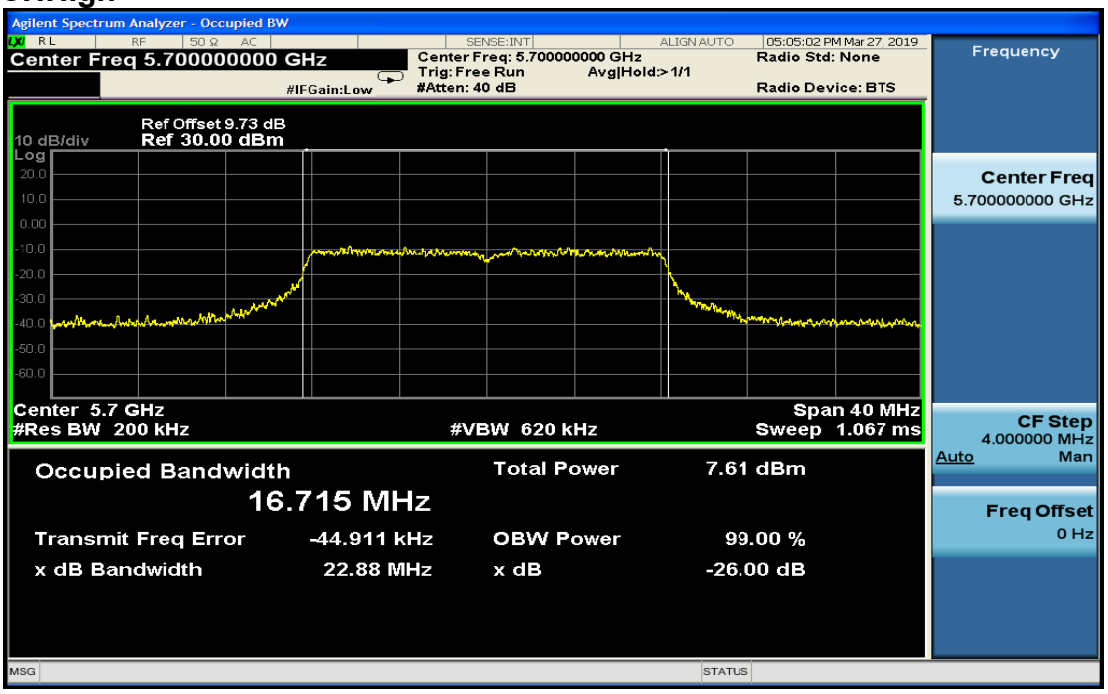
CHLow



CHMid



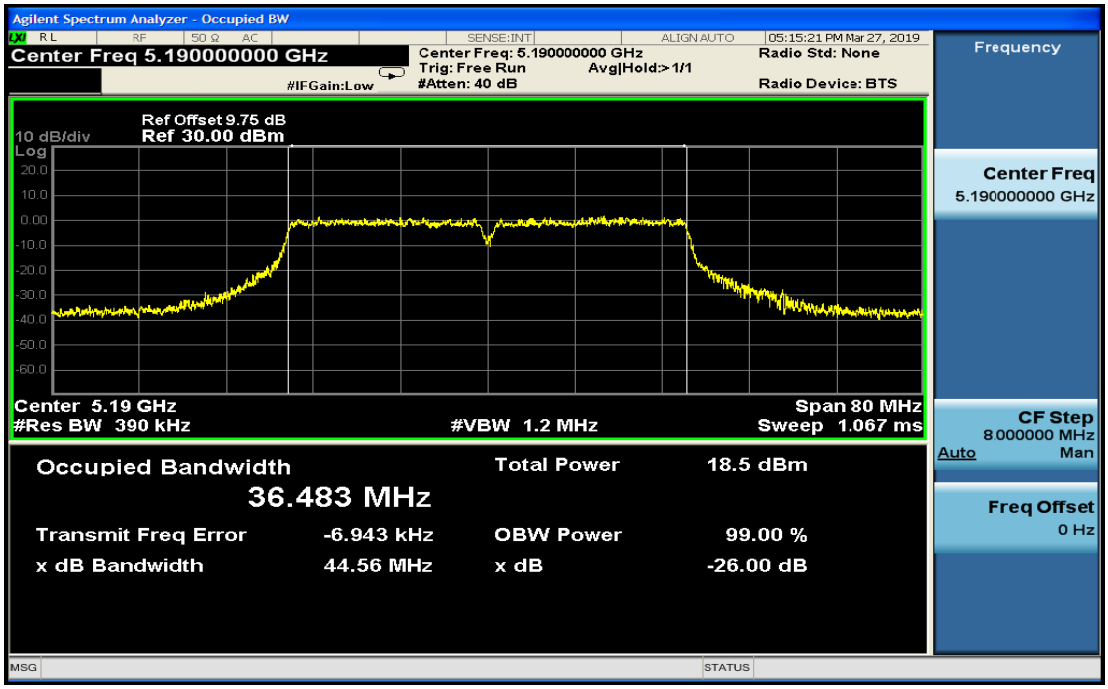
CHHigh



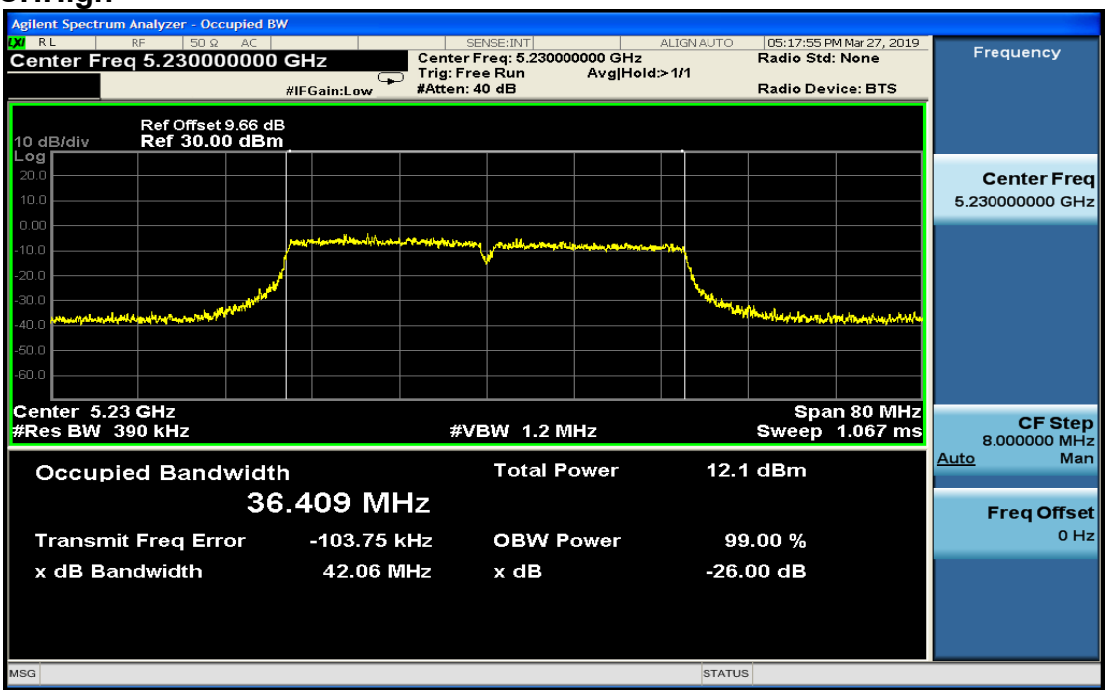
IEEE802.11nHT40mode

5150~5250MHz

CHLow

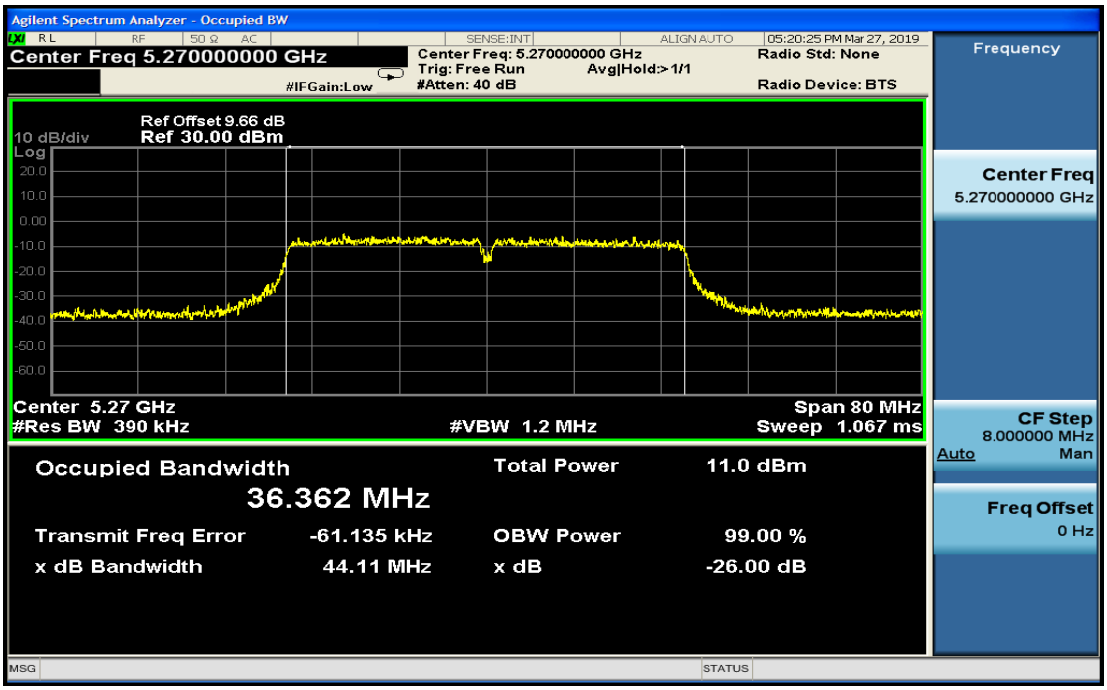


CHHigh

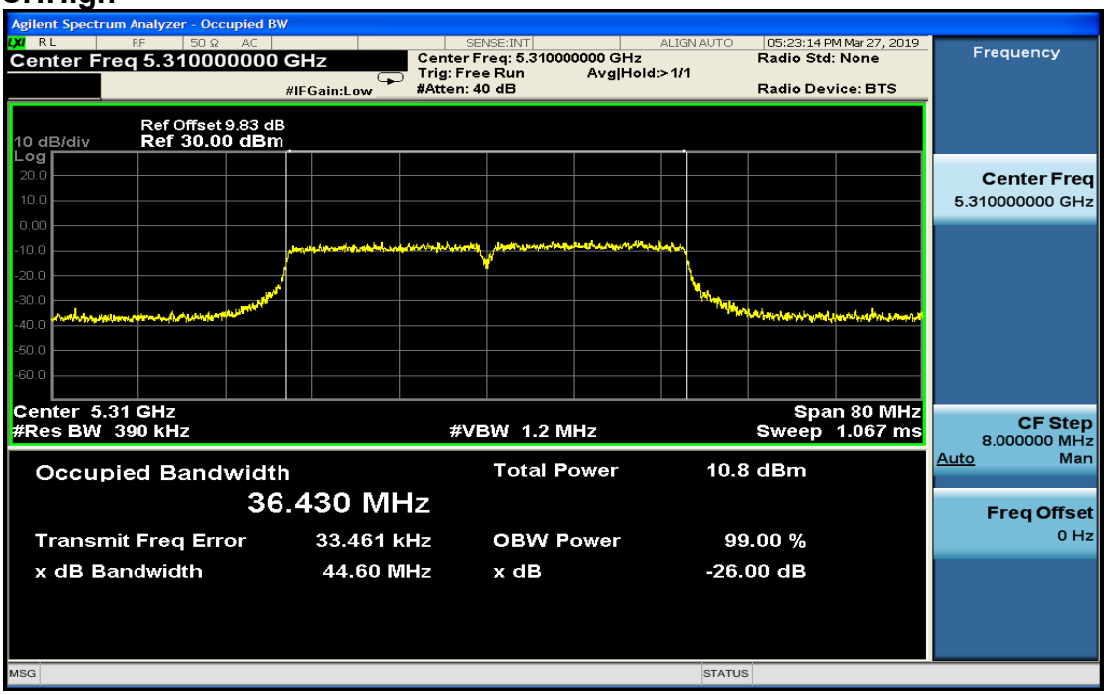


5250~5350MHz

CHLow

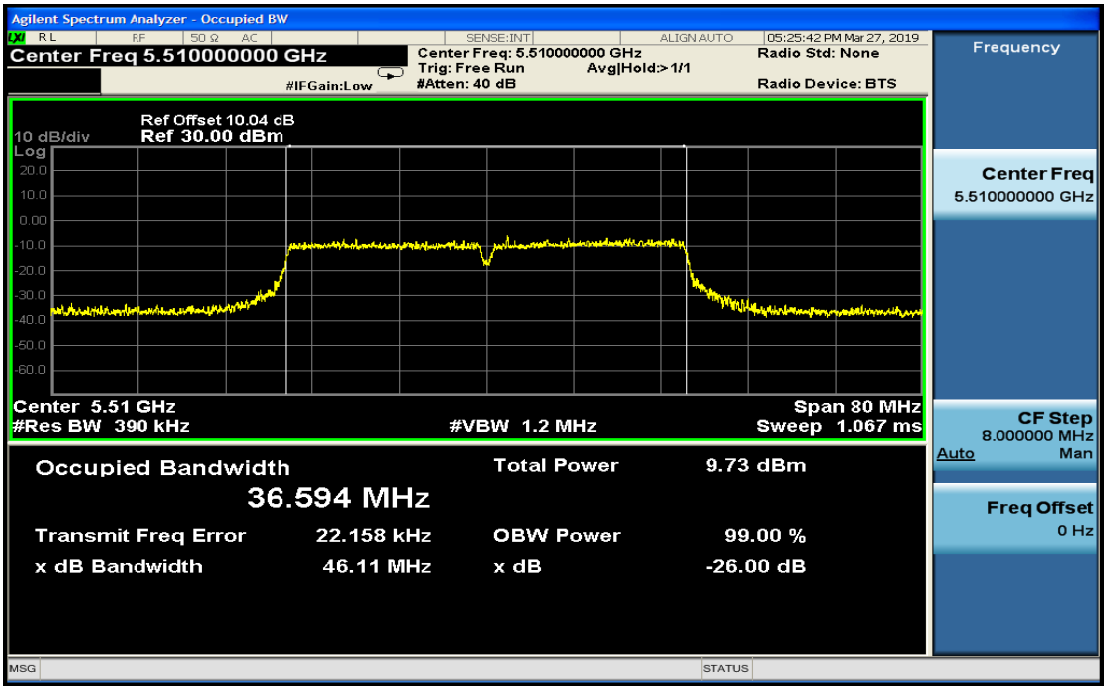


CHHigh

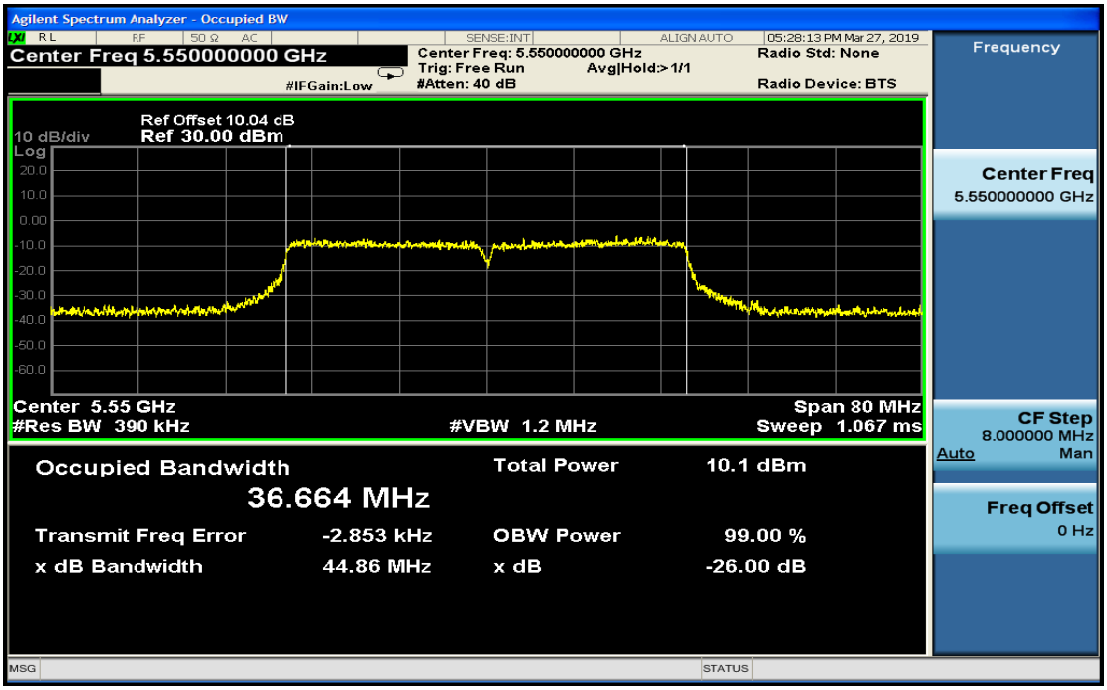


5470~5725MHz

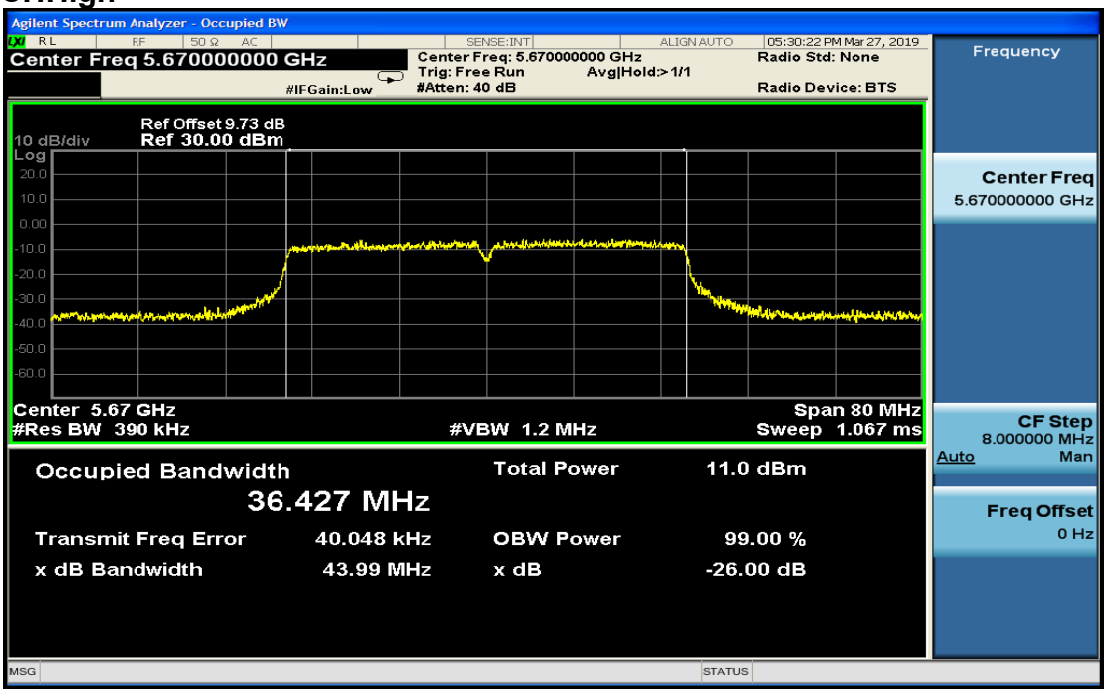
CHLow



CHMid



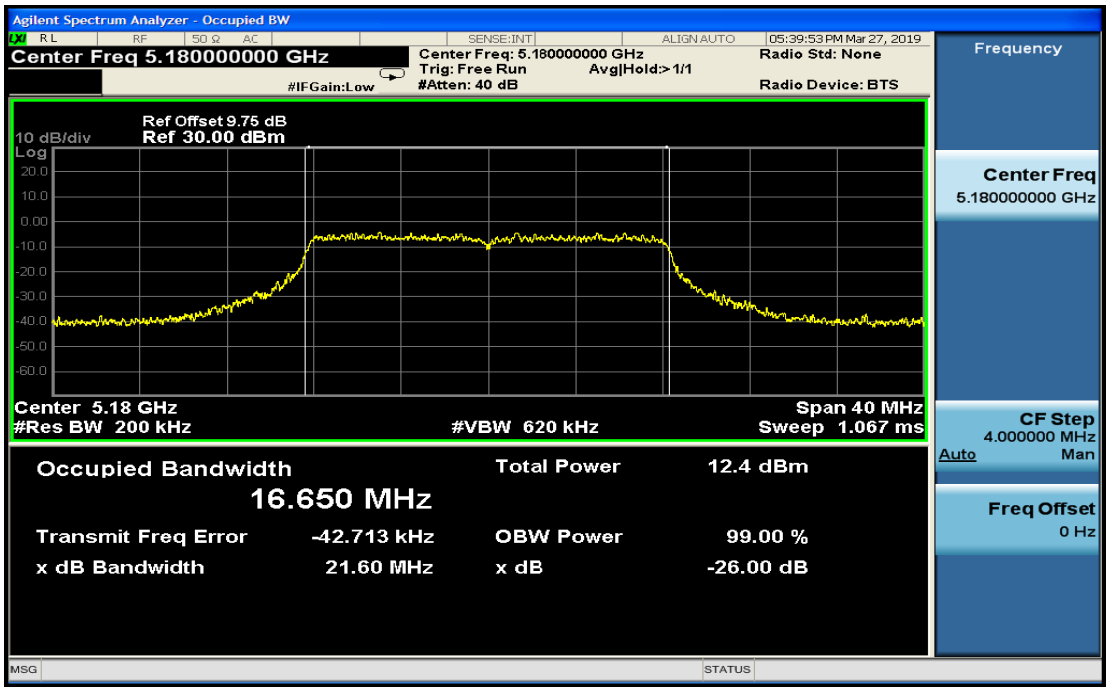
CHHigh



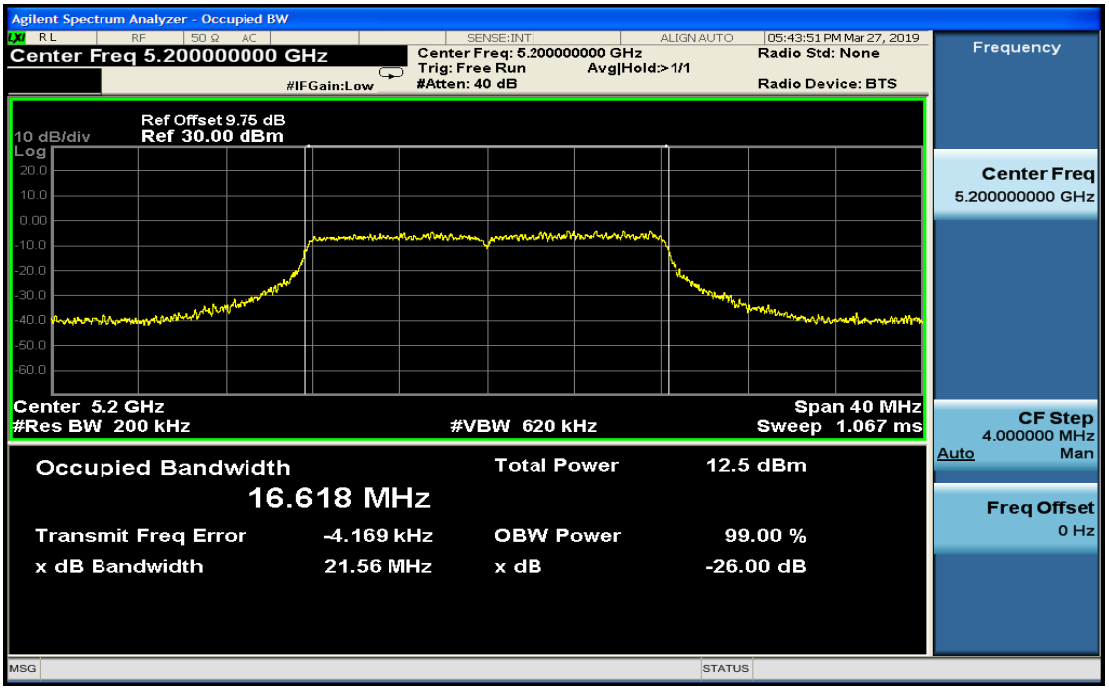
IEEE802.11acHT20mode

5150~5250MHz

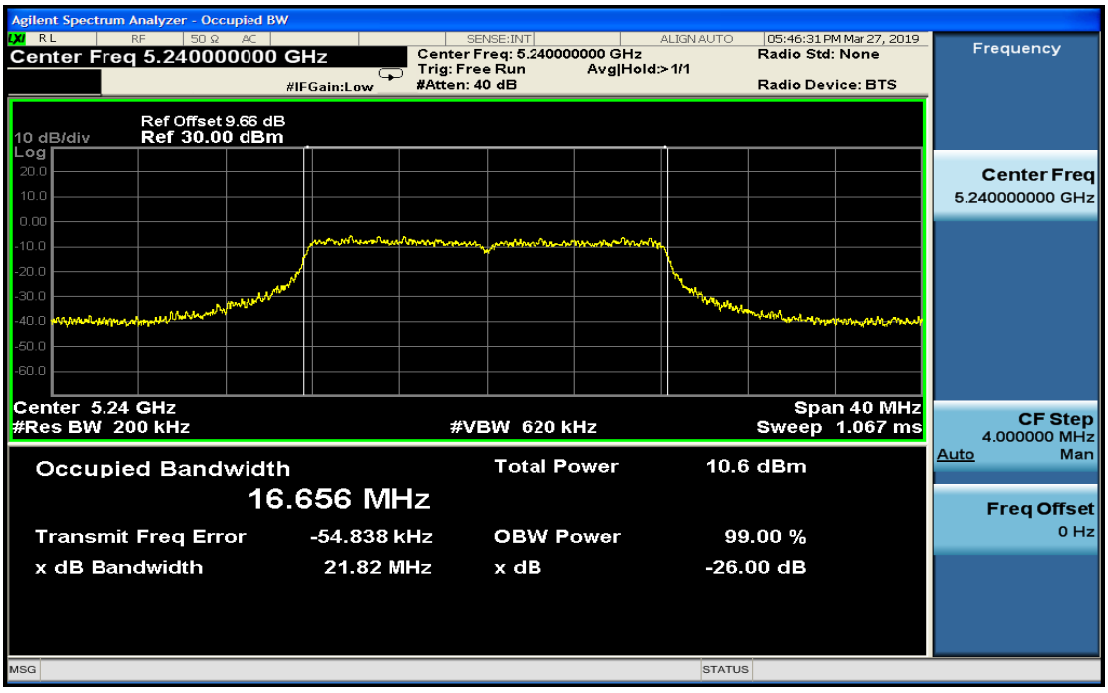
CHLow



CHMid

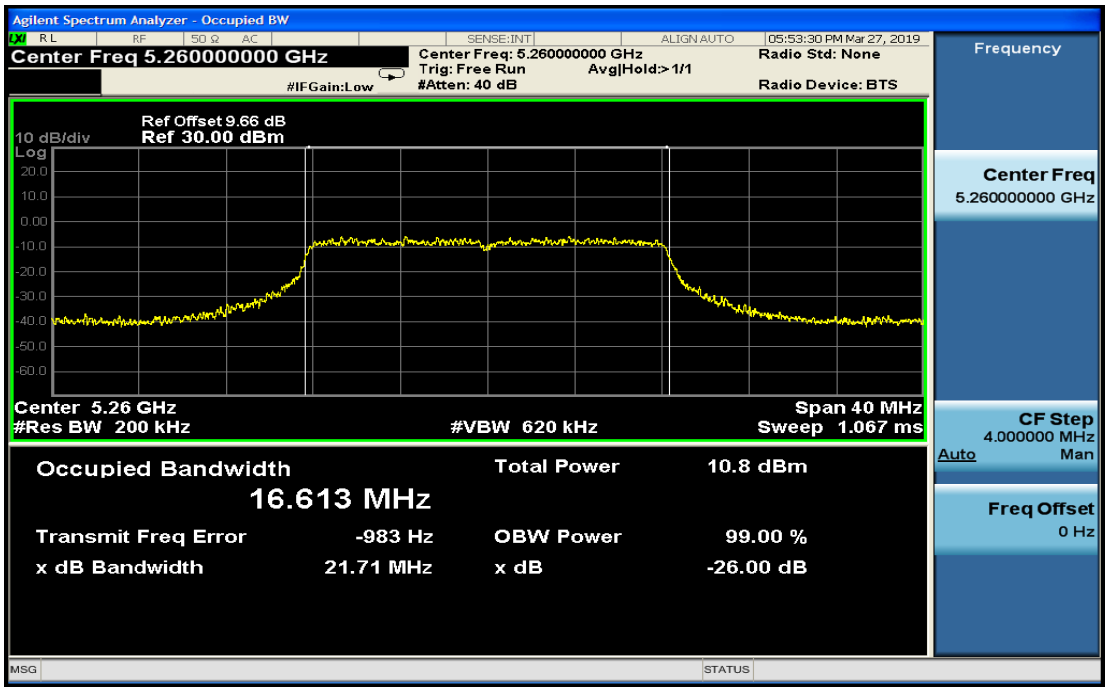


CHHigh

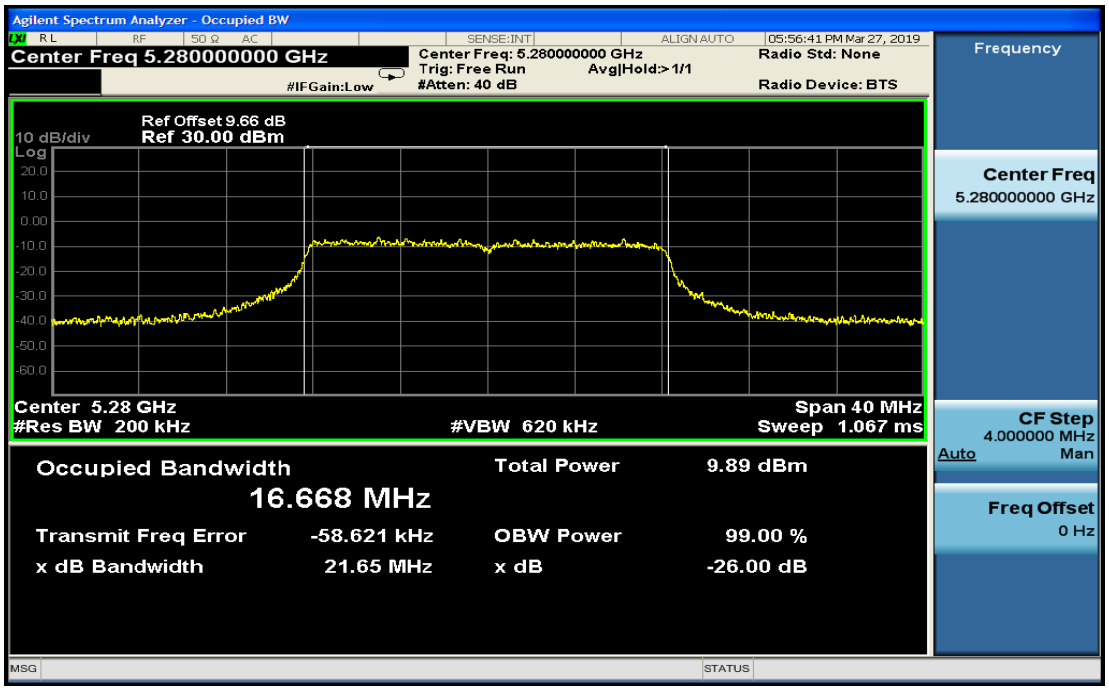


5250~5250MHz

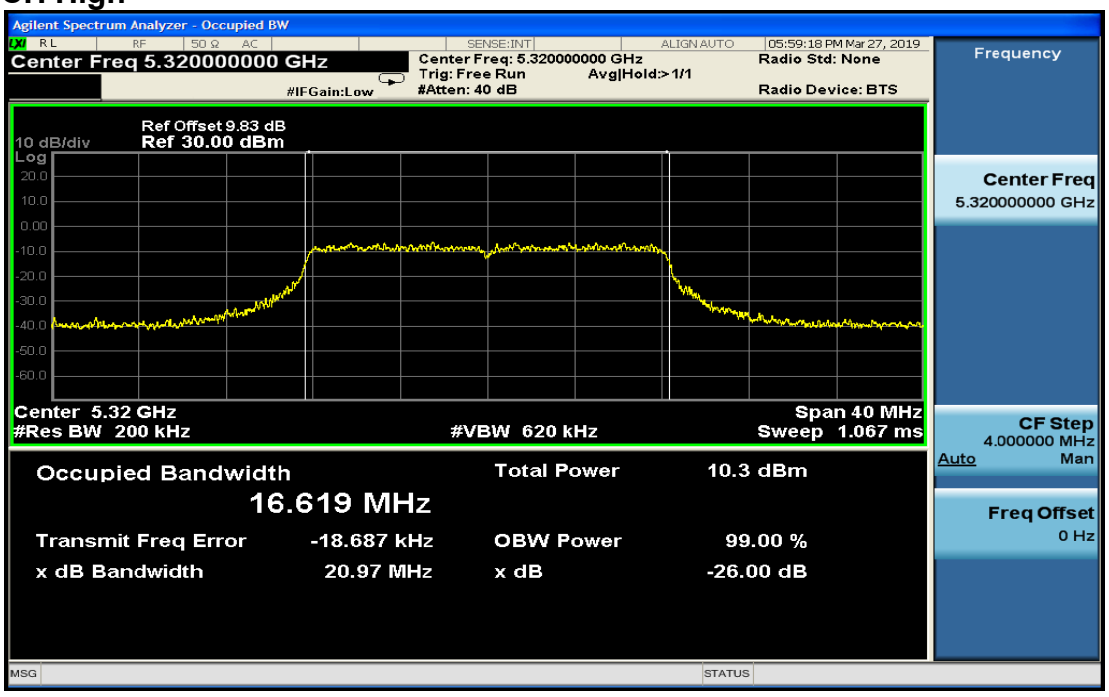
CHLow



CHMid

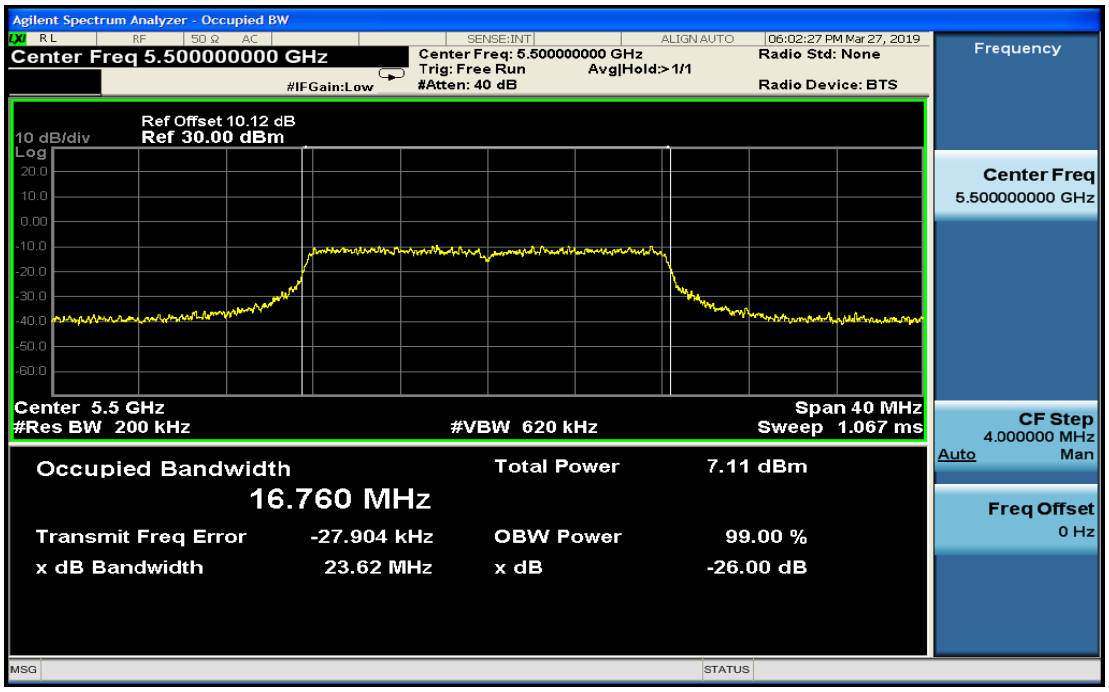


CH High

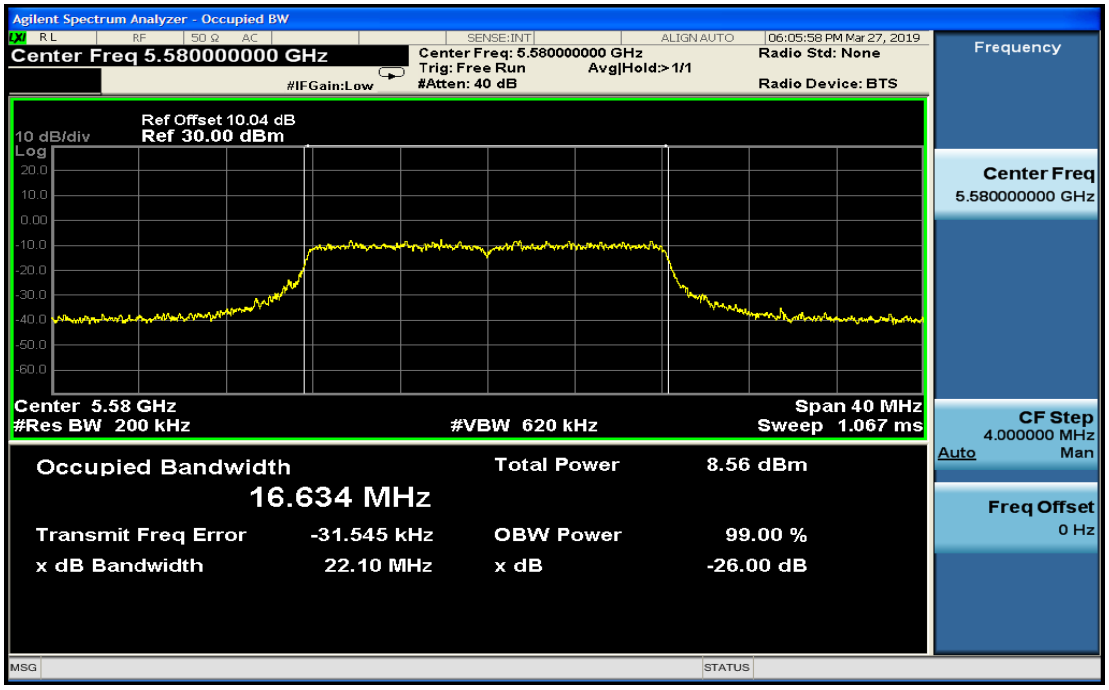


5470~5725MHz

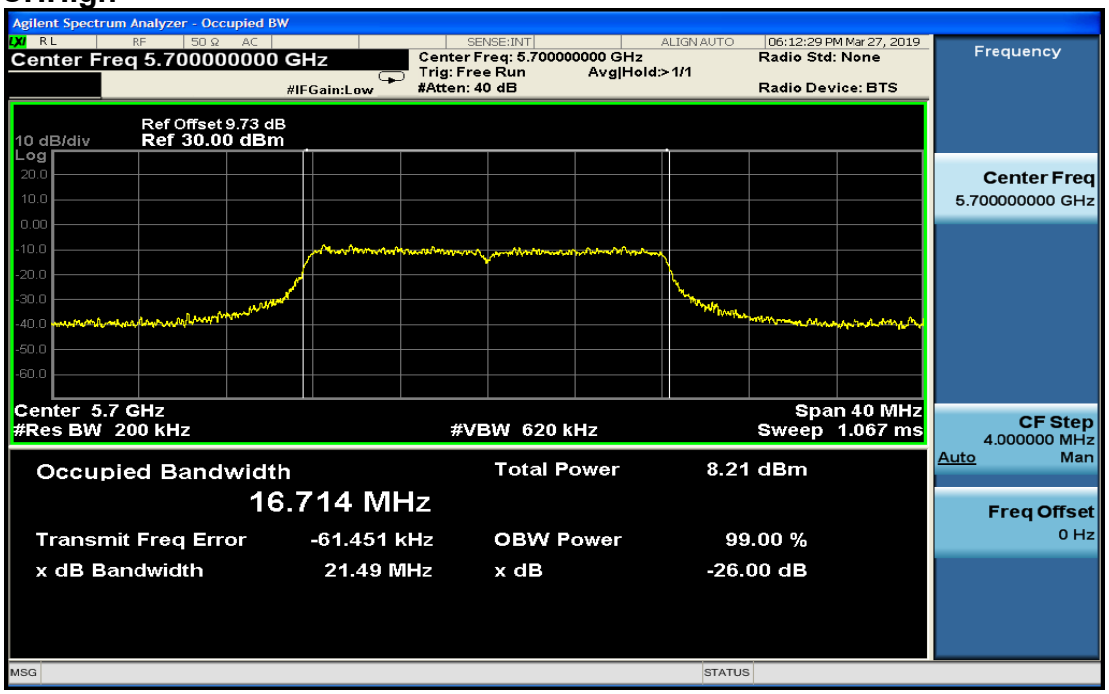
CHLow



CHMid



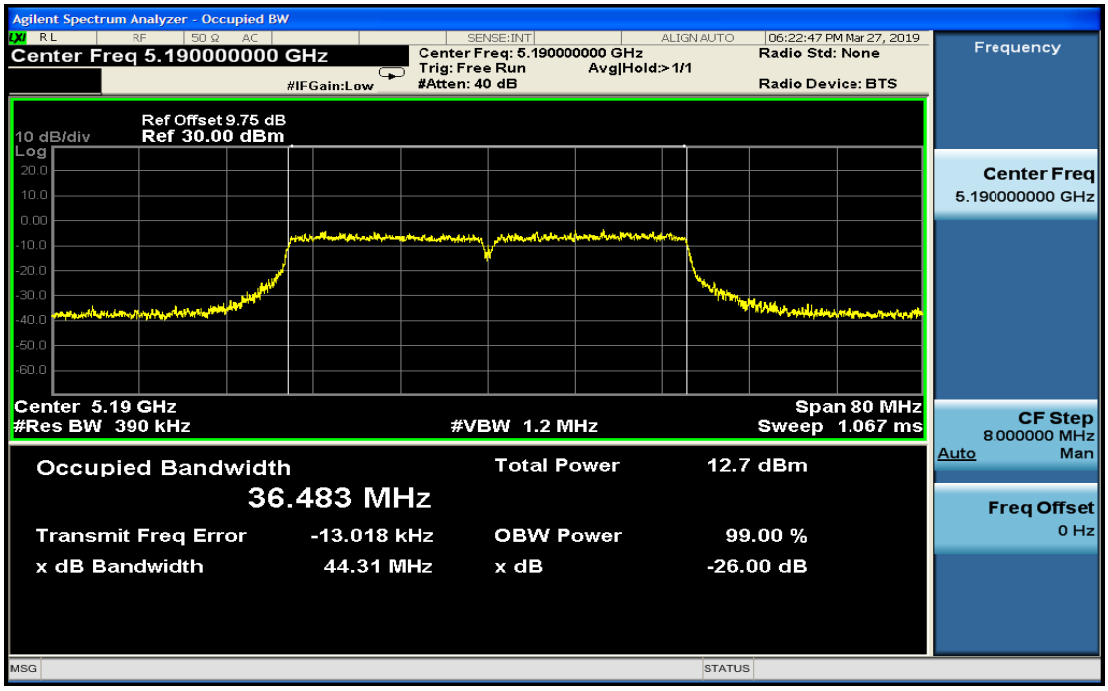
CHHigh



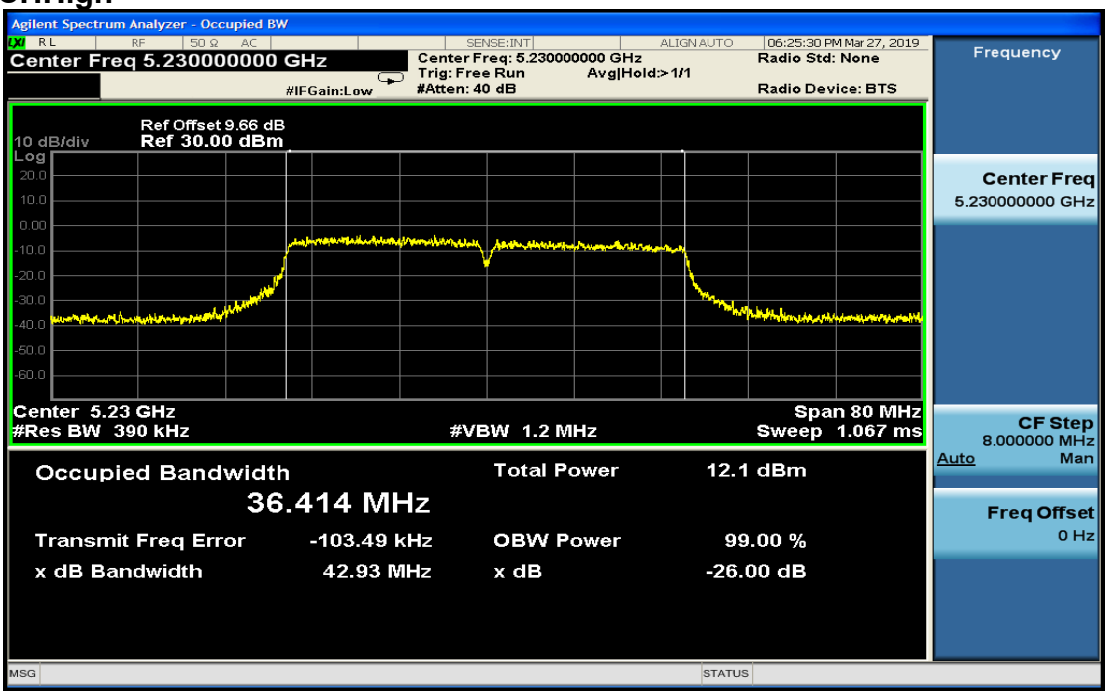
IEEE802.11acHT40mode

5150~5250MHz

CHLow

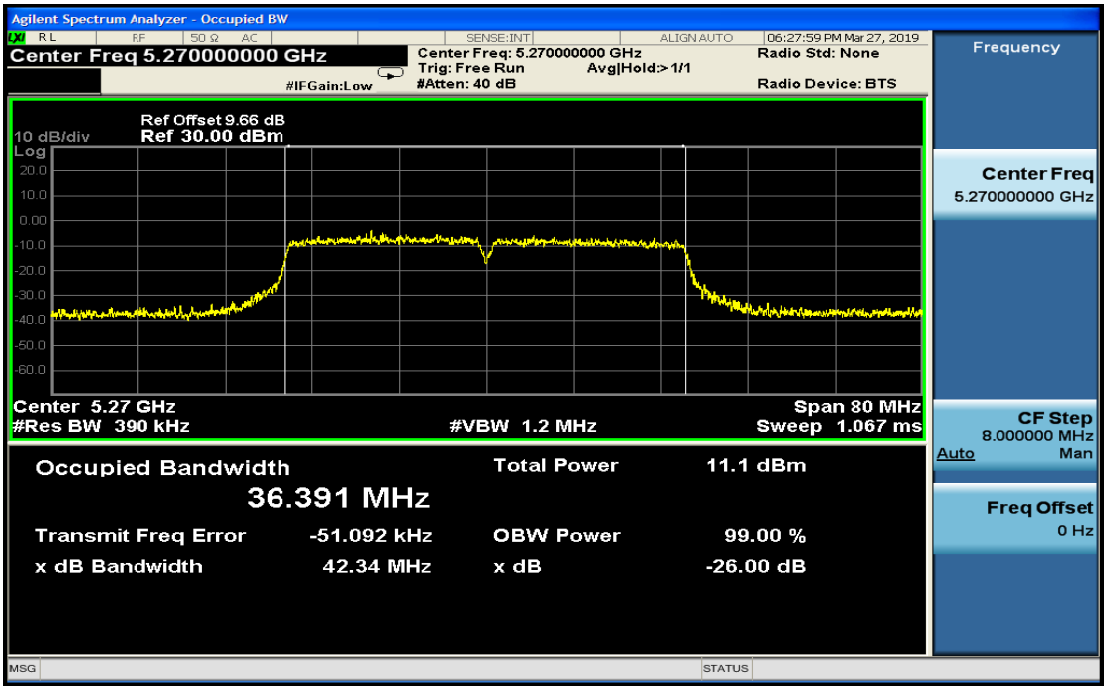


CHHigh

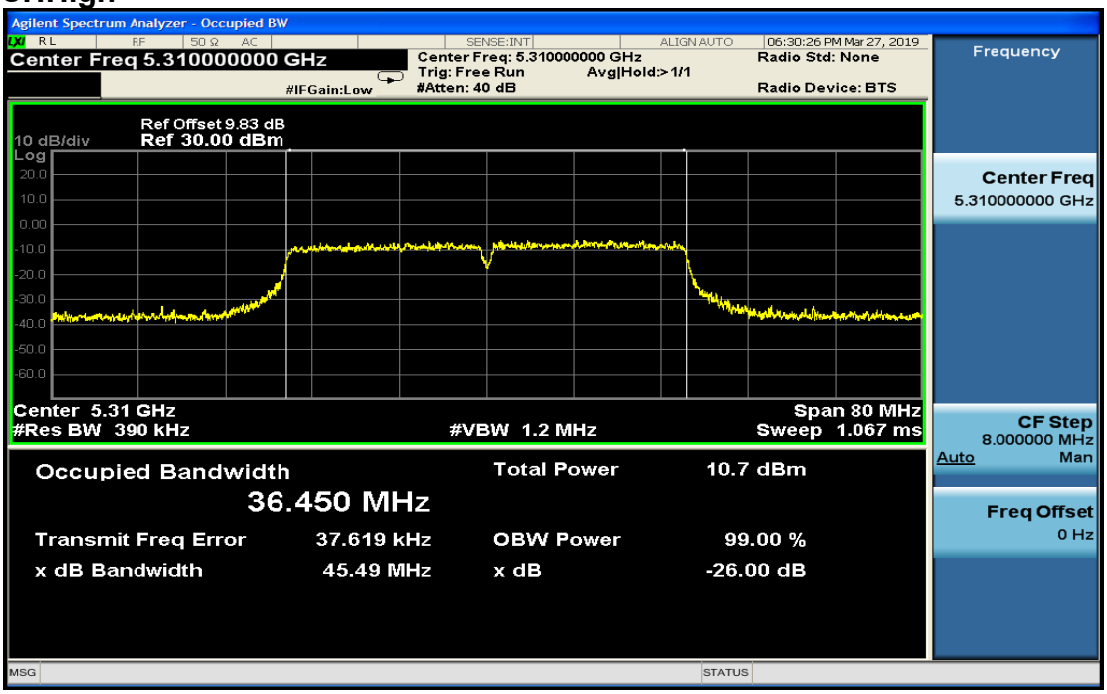


5250~5350MHz

CHLow

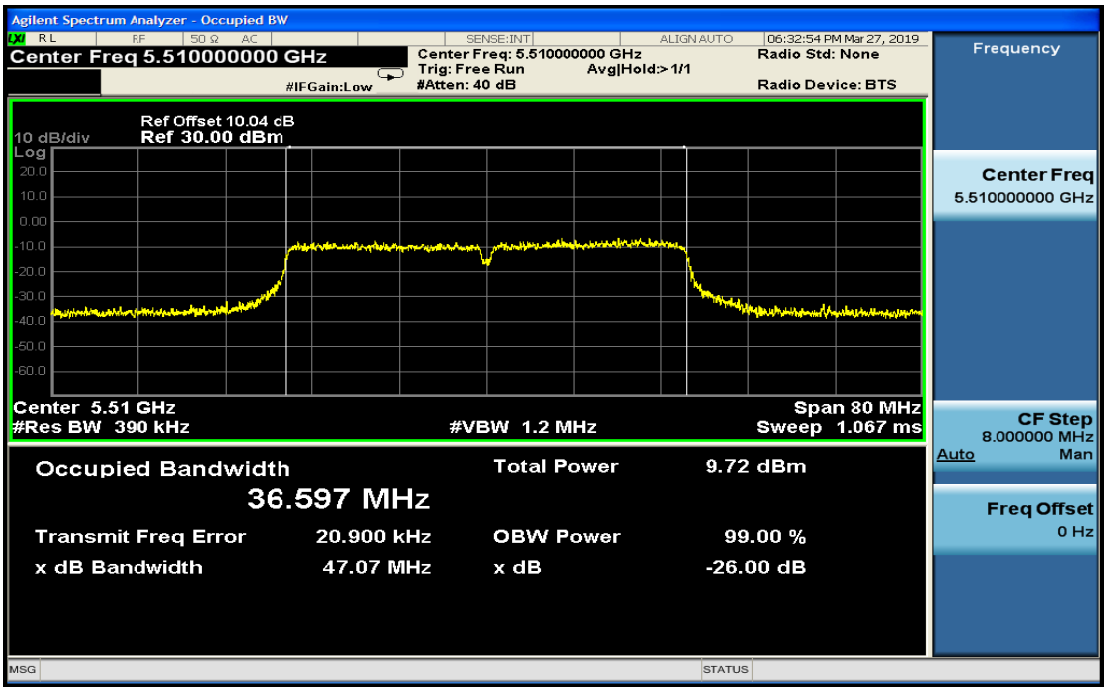


CHHigh

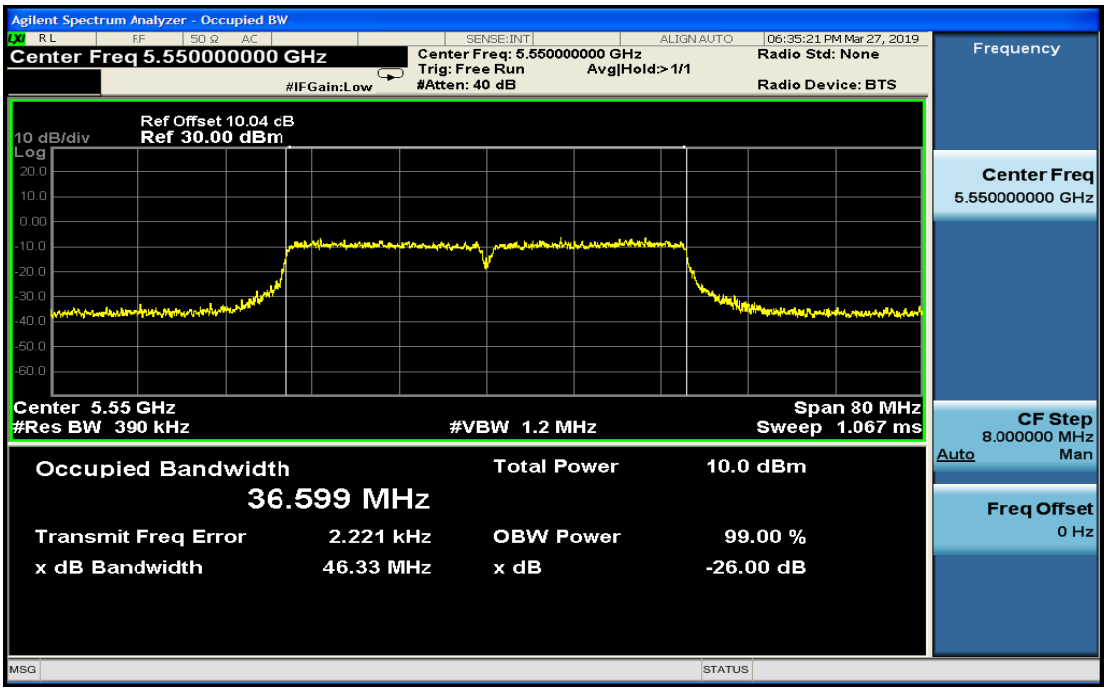


5470~5725MHz

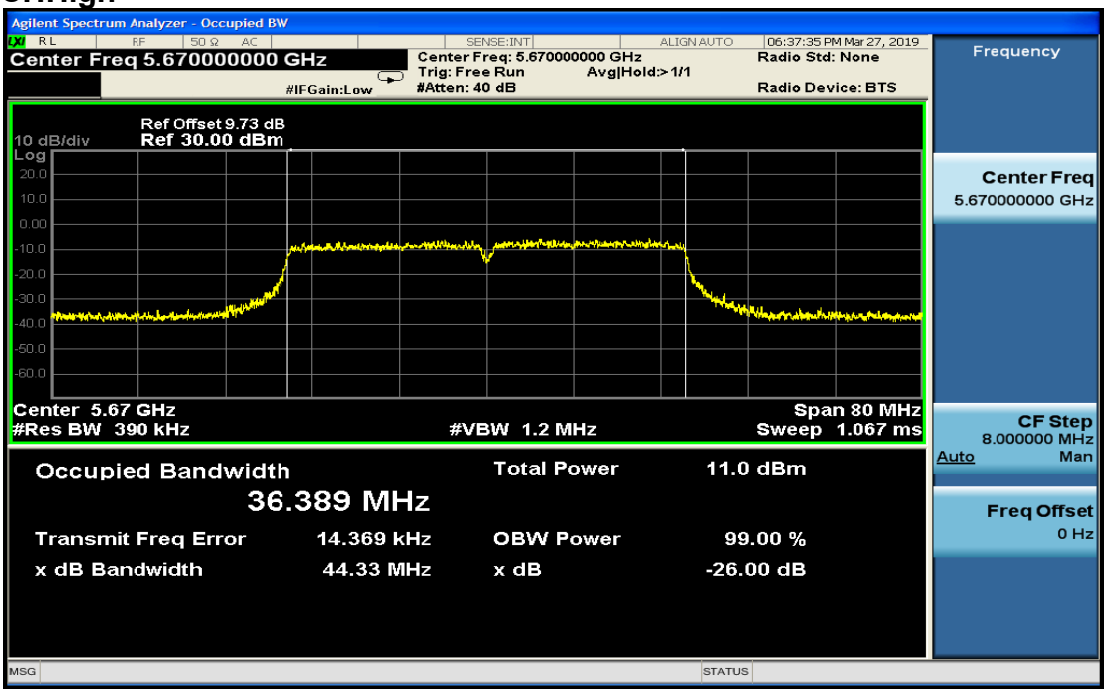
CHLow



CHMid

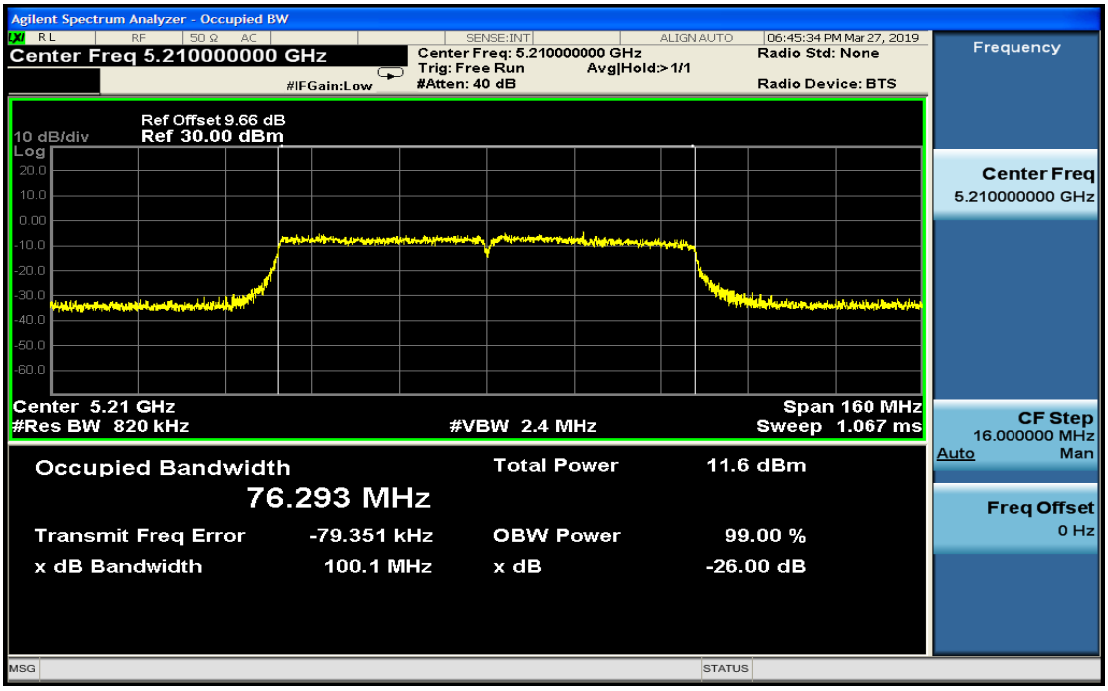


CHHigh

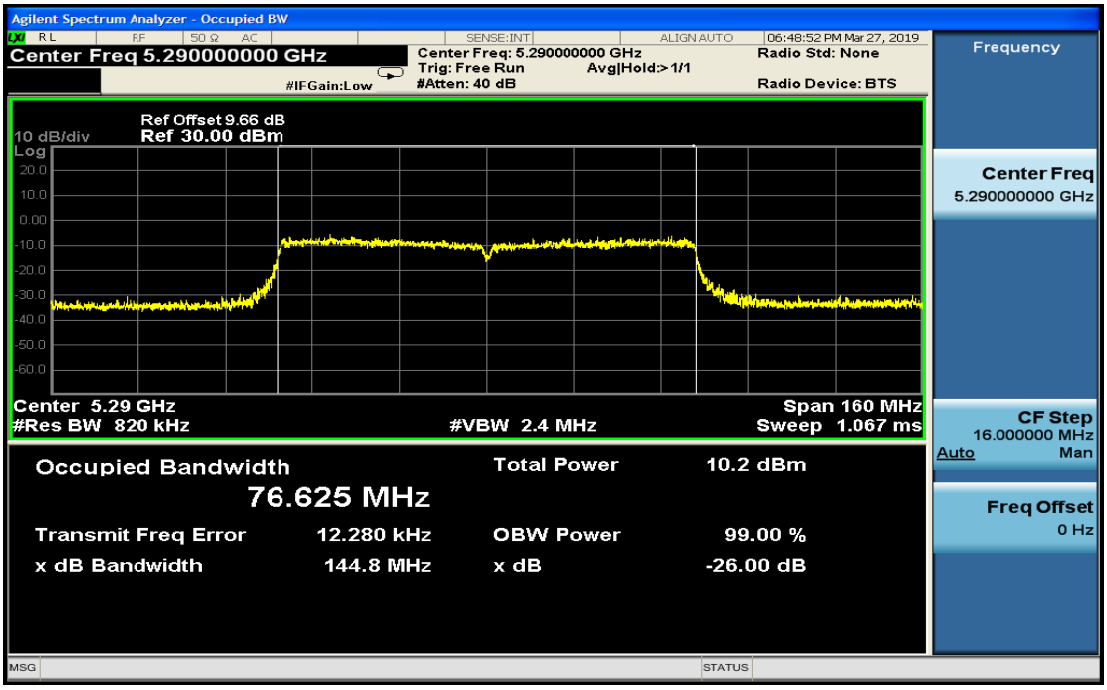


IEEE802.11acHT80mode

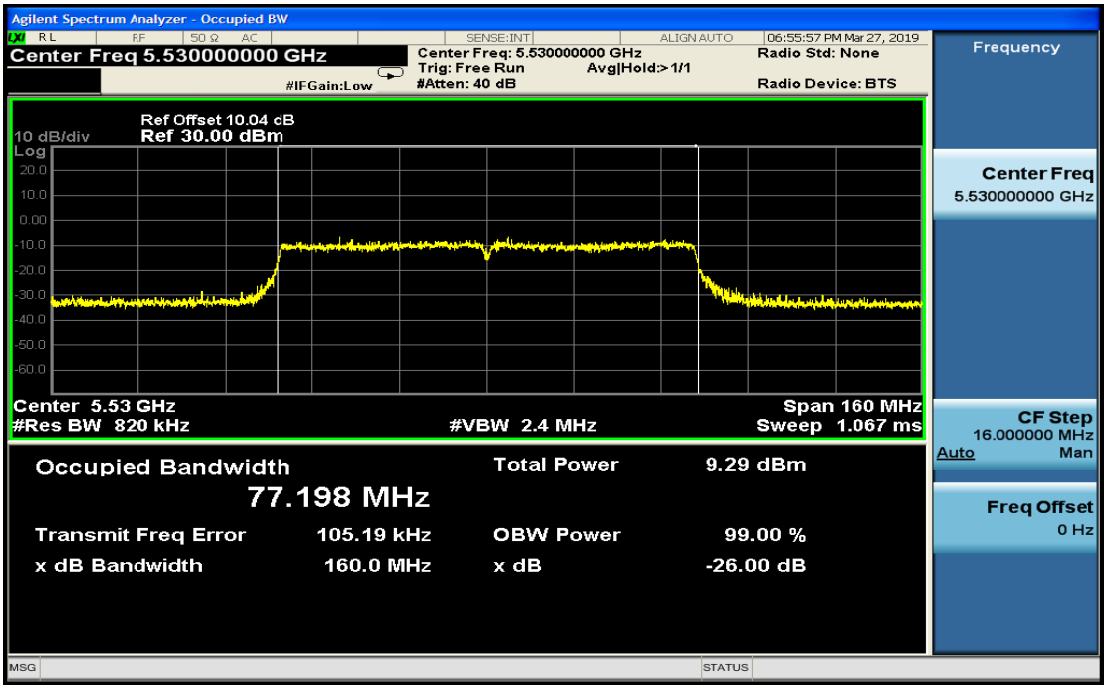
5150~5250MHz



5250~5350MHz



5470~5725MHz



Antenna 2

Testmode:IEEE802.11amode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.612
Mid	5220	16.613
High	5240	16.649

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.584
Mid	5280	16.651
High	5320	16.629

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.757
Mid	5580	16.637
High	5700	16.690

Testmode:IEEE802.11nHT20MHzmode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.610
Mid	5220	16.597
High	5240	16.672

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.608
Mid	5280	16.645
High	5320	16.626

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.785
Mid	5580	16.653
High	5700	16.701

Testmode:IEEE802.11nHT40MHzmode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.452
High	5230	36.365

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.424
High	5310	36.470

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.525
Mid	5550	36.624
High	5670	36.449

Testmode:IEEE802.11acHT20MHzmode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	16.607
Mid	5220	16.632
High	5240	16.658

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.634
Mid	5280	16.679
High	5320	16.611

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.750
Mid	5580	16.662
High	5700	16.715

Testmode:IEEE802.11acHT40MHzmode5150~5250MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.494
High	5230	36.405

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.427
High	5310	36.419

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.623
Mid	5550	36.613
High	5670	36.400

Testmode:IEEE802.11acHT80MHz mode 5150~5250M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5210	76.228

Testmode:IEEE802.11acHT80MHz mode 5250~5350M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5270	76.582

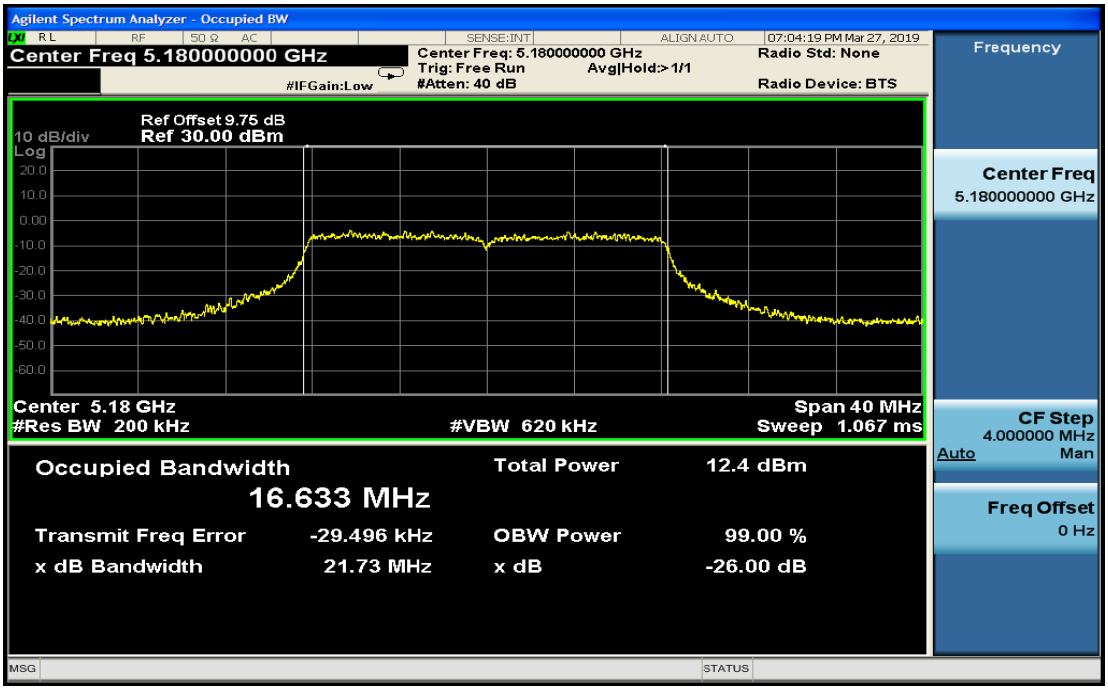
Testmode:IEEE802.11acHT80MHz mode 5470~5725M

Channel	Frequency (MHz)	Bandwidth (MHz)
	5530	77.010

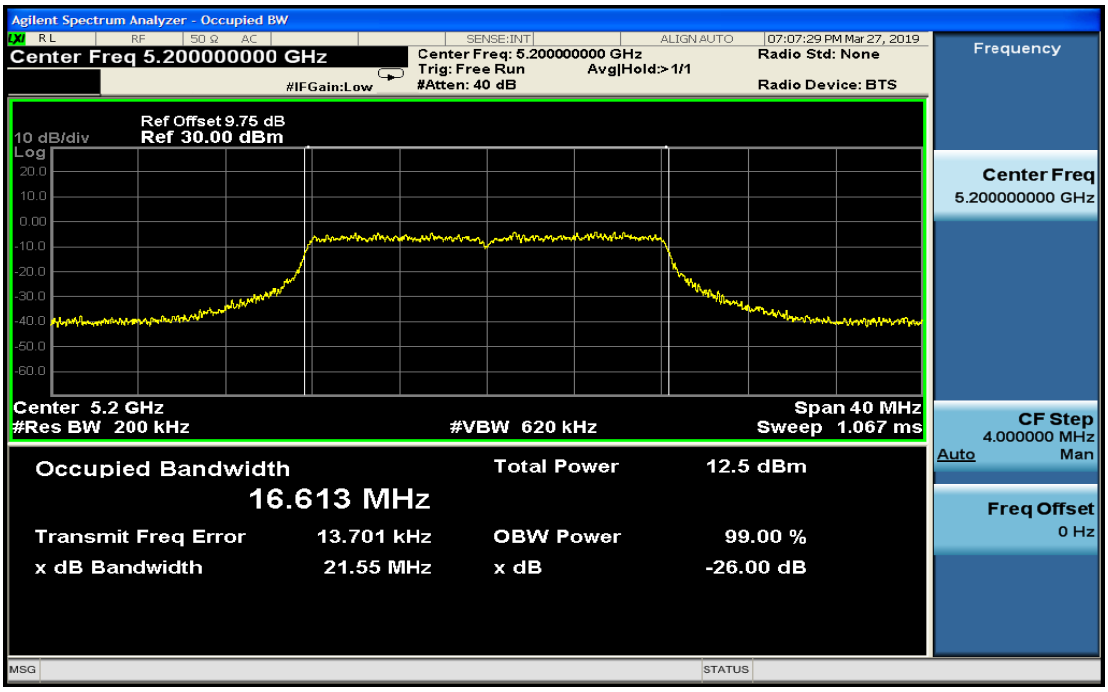
TestPlot

IEEE802.11amode: 5150~5250MHz

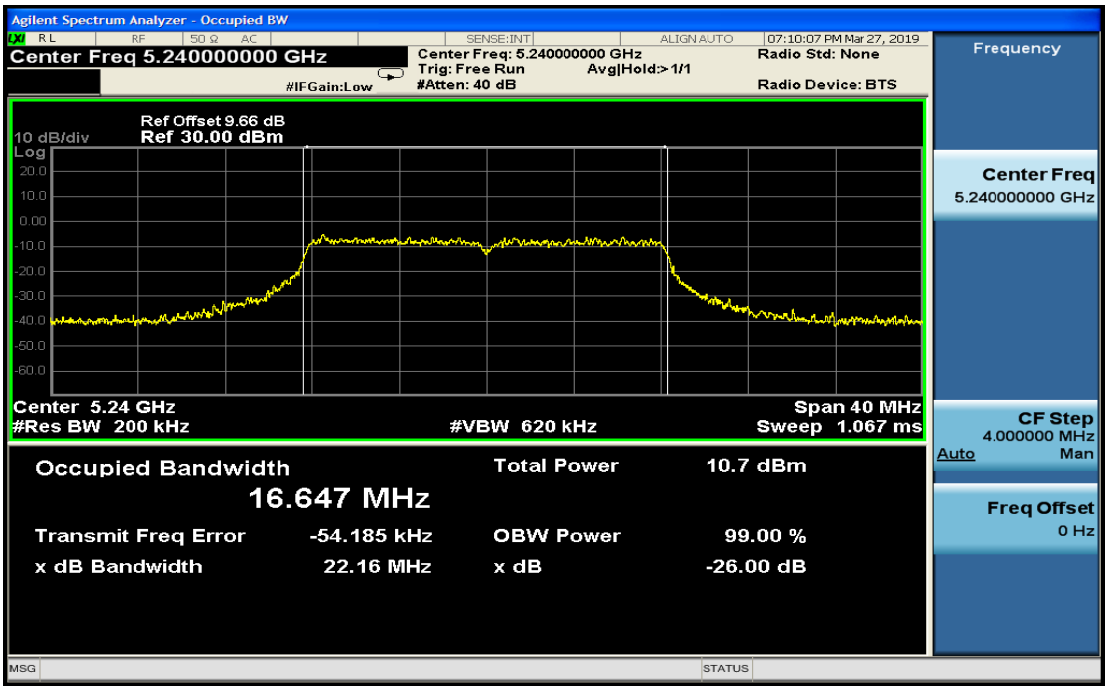
CHLow



CHMid

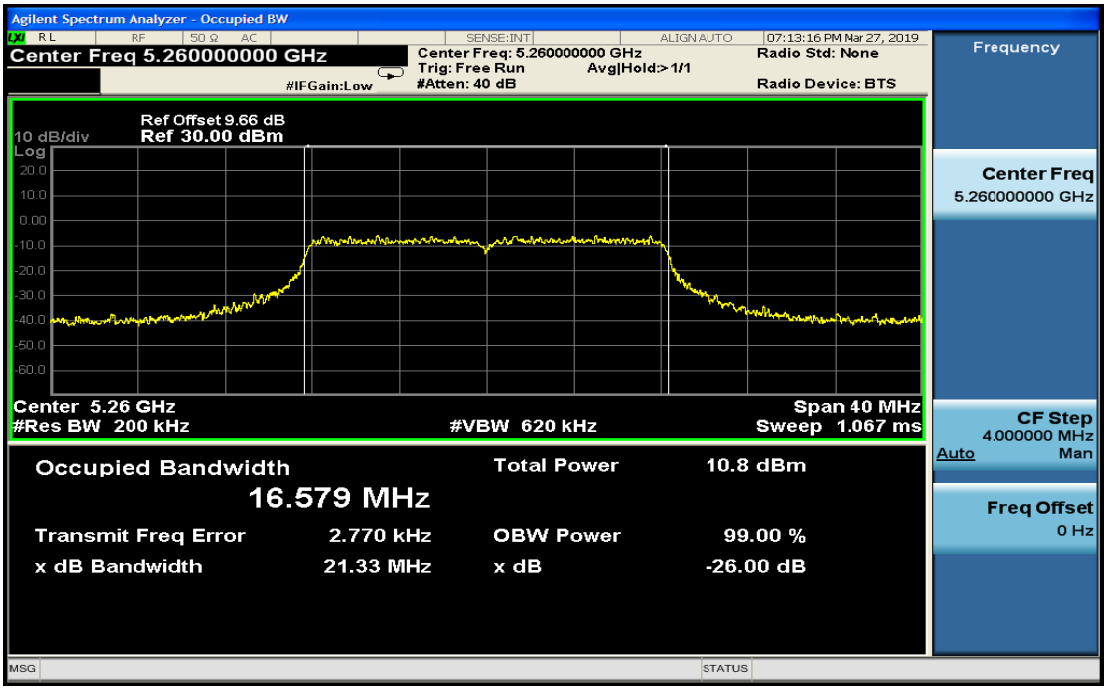


CHHigh

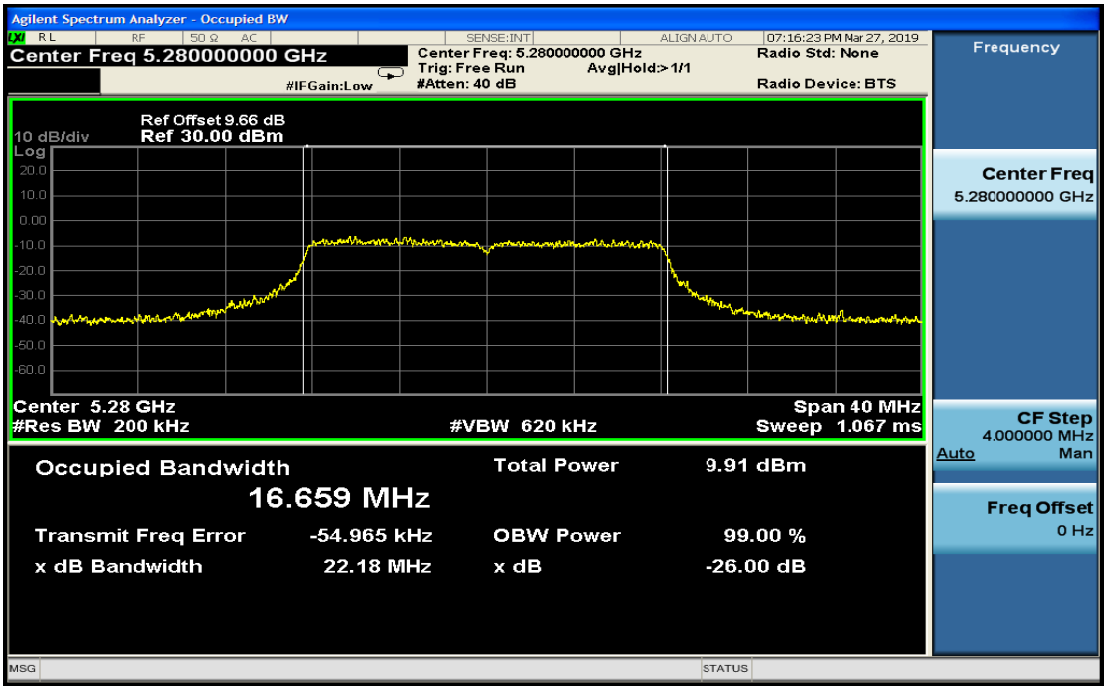


5250~5350MHz

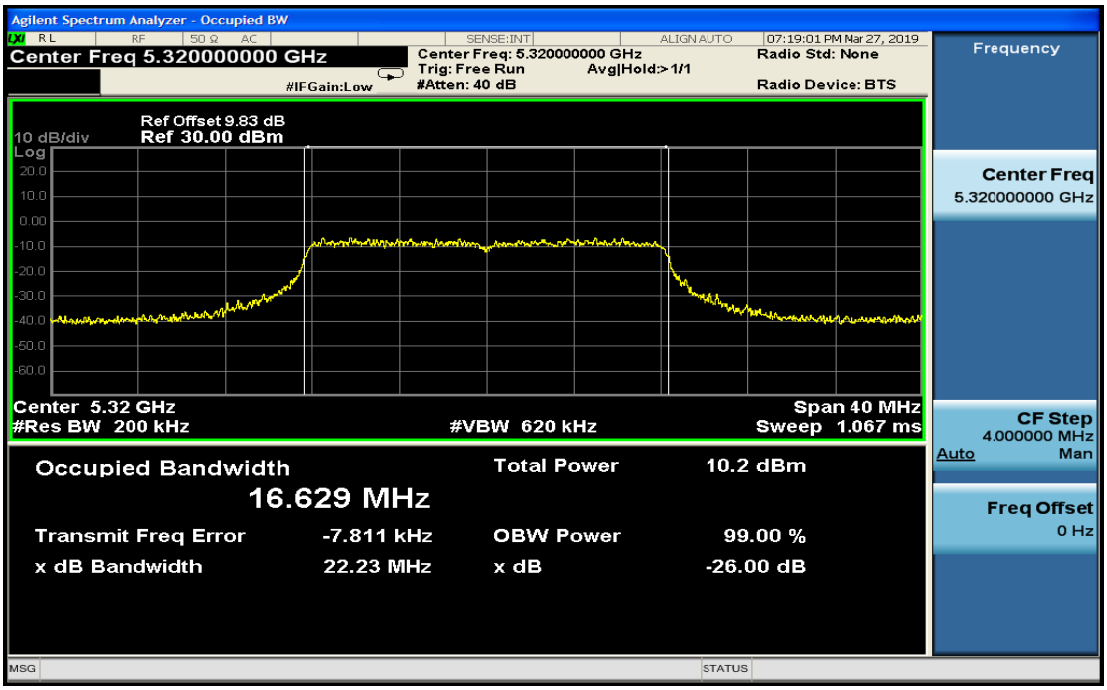
CHLow



CHMid

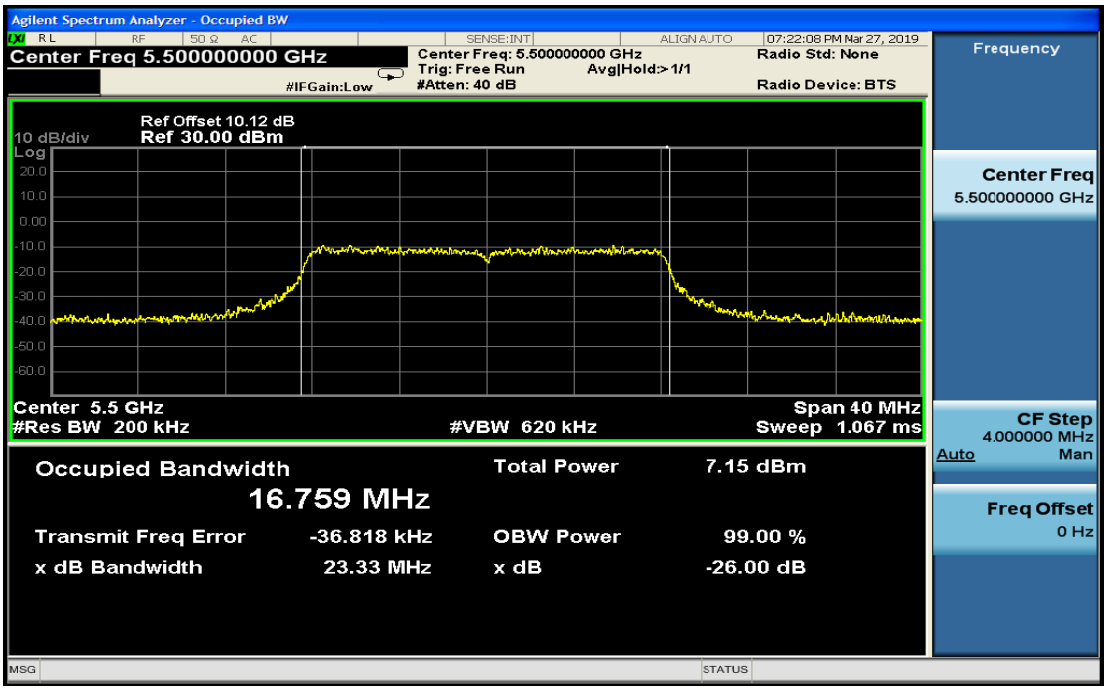


CHHigh

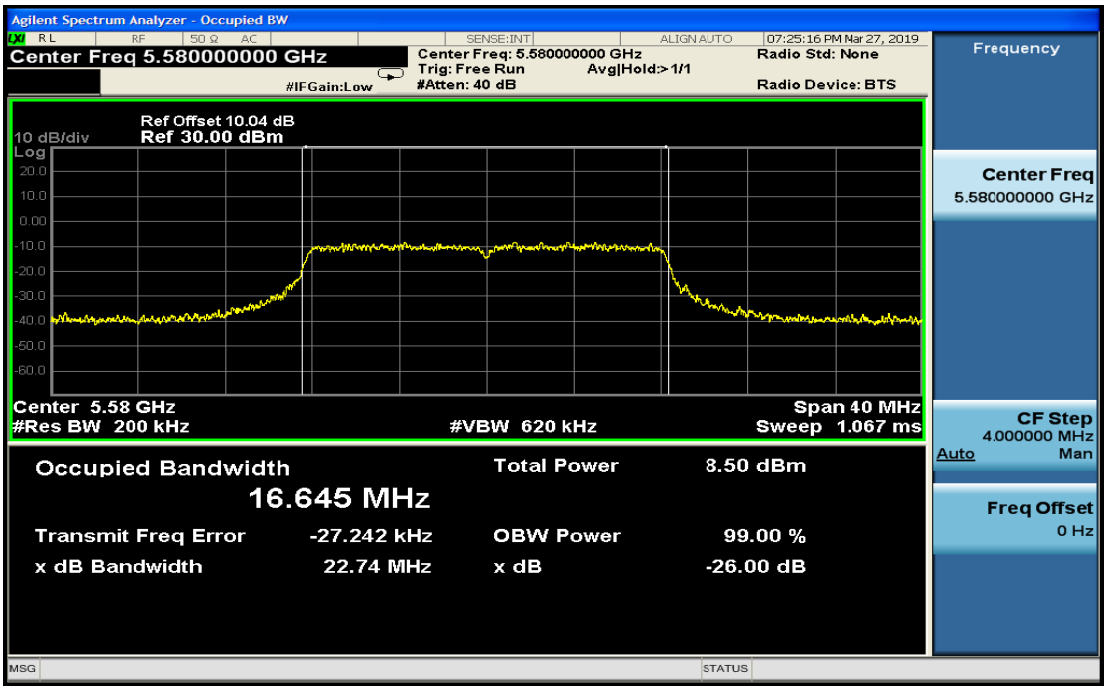


5470~5725MHz

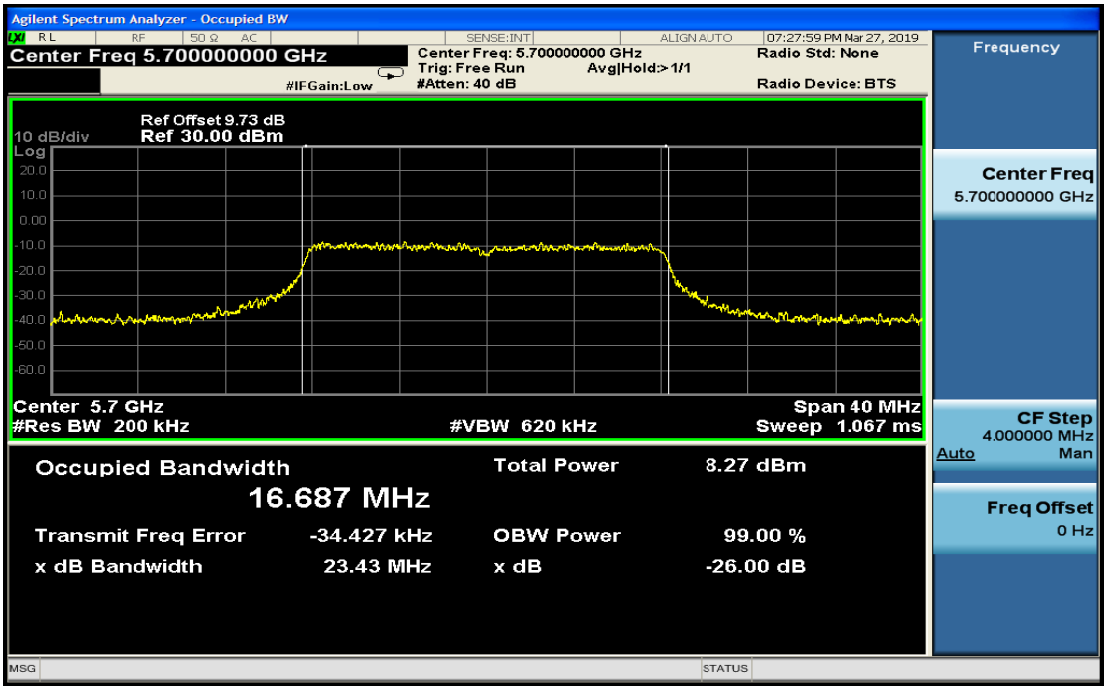
CHLow



CHMid



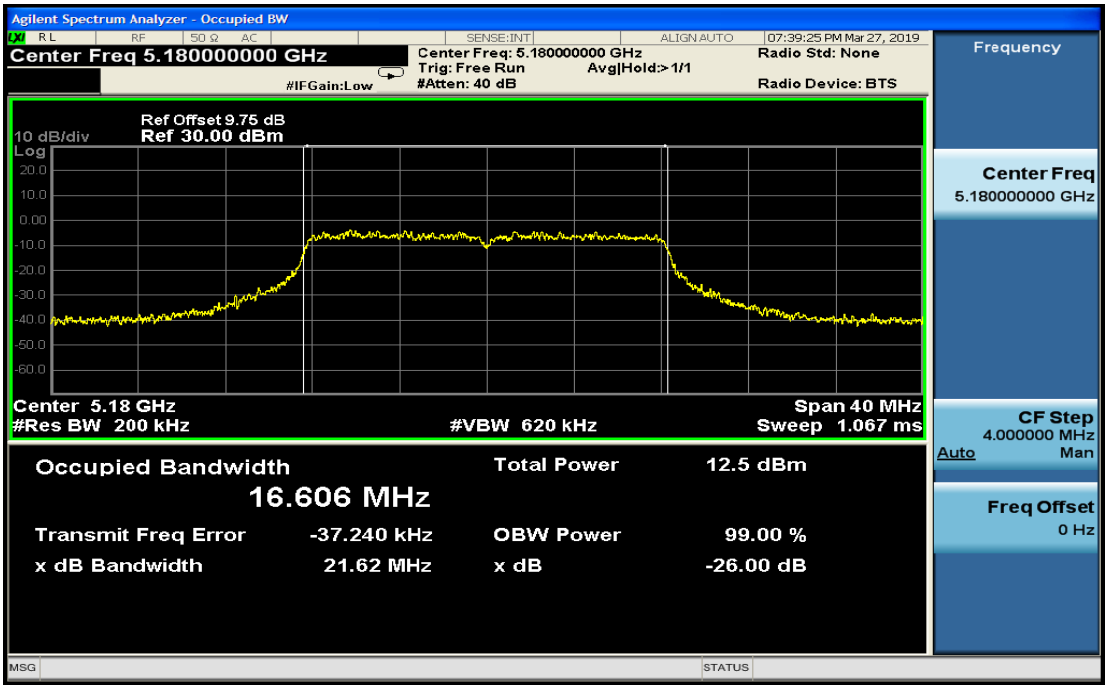
CHHigh



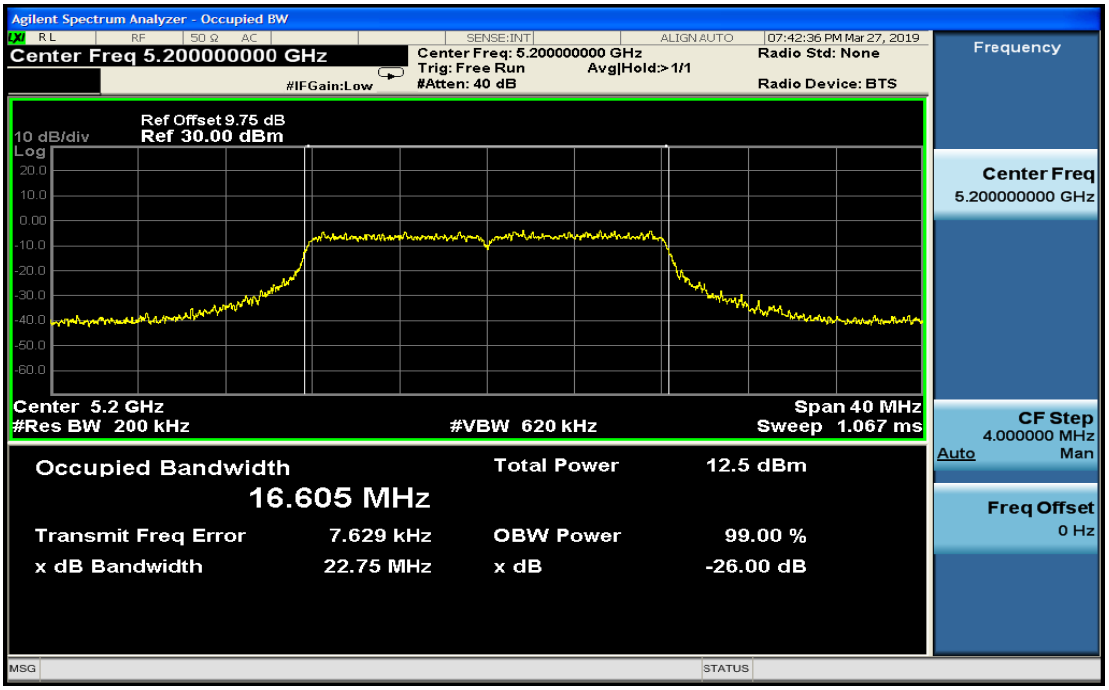
IEEE802.11nHT20mode

5150~5250MHz

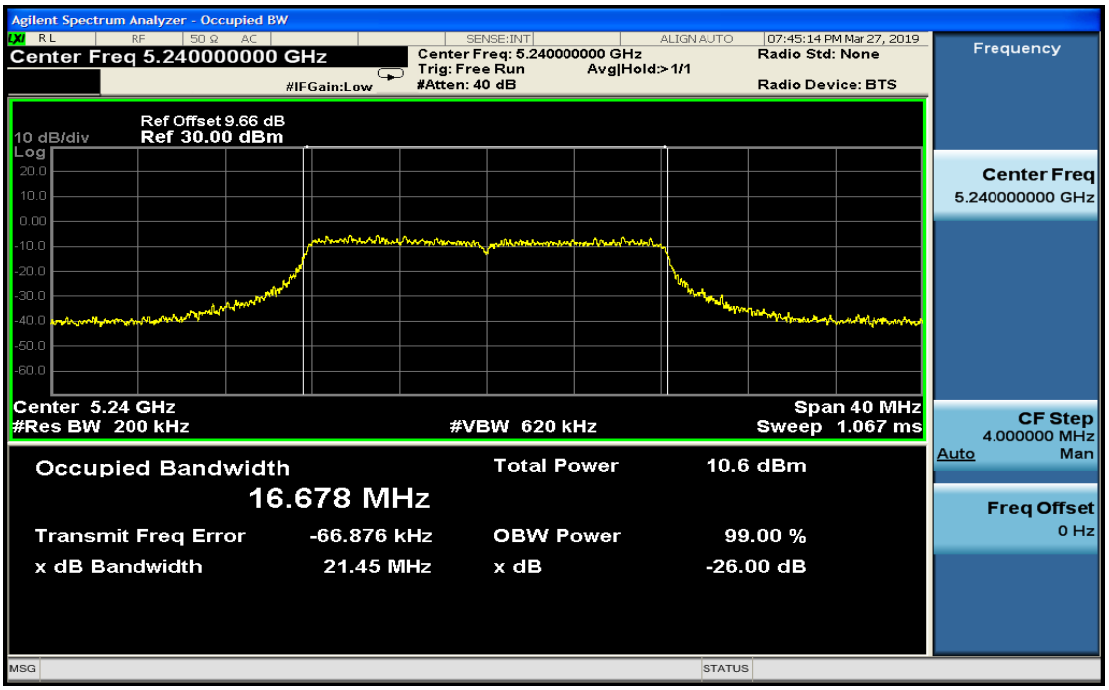
CHLow



CHMid

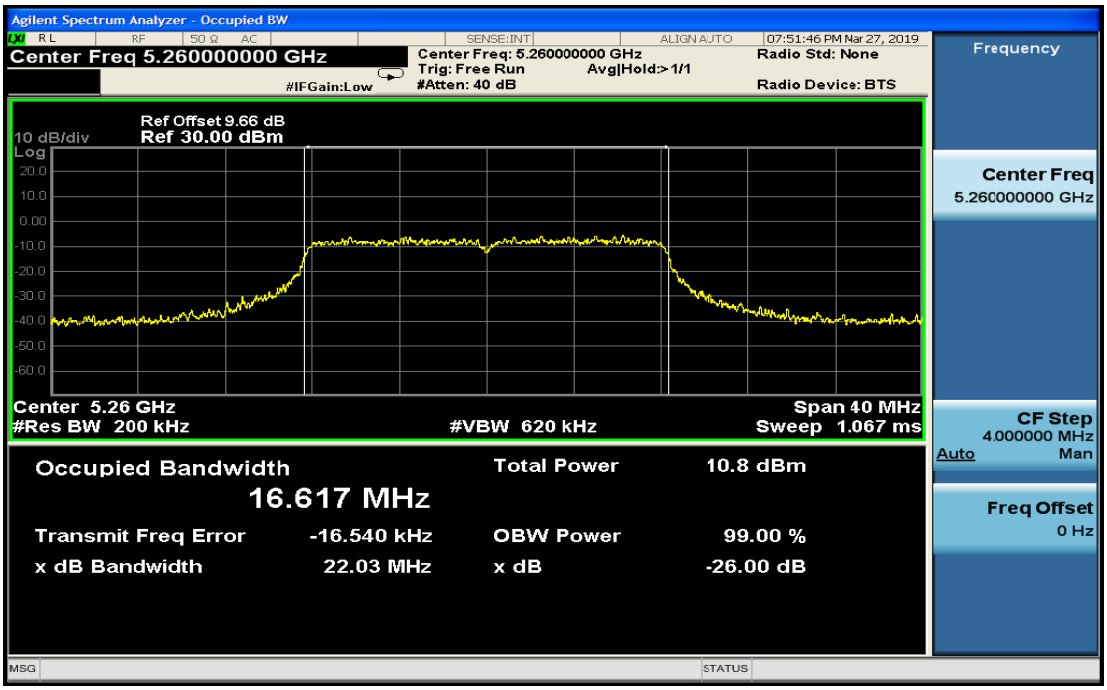


CHHigh

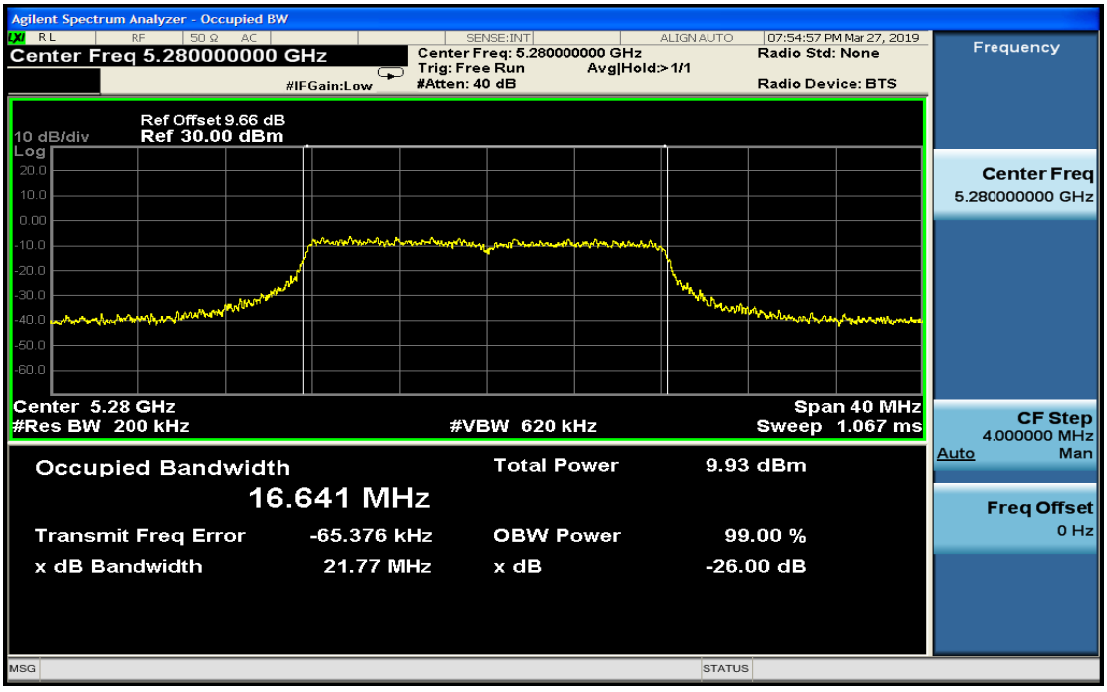


5250~5350MHz

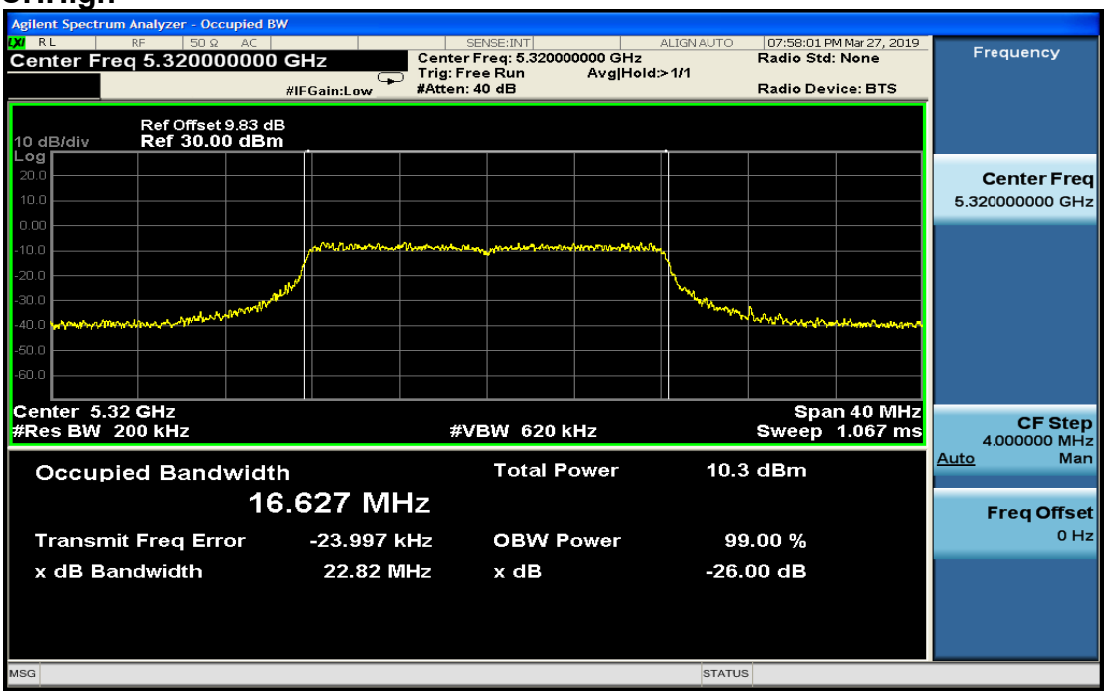
CHLow



CHMid

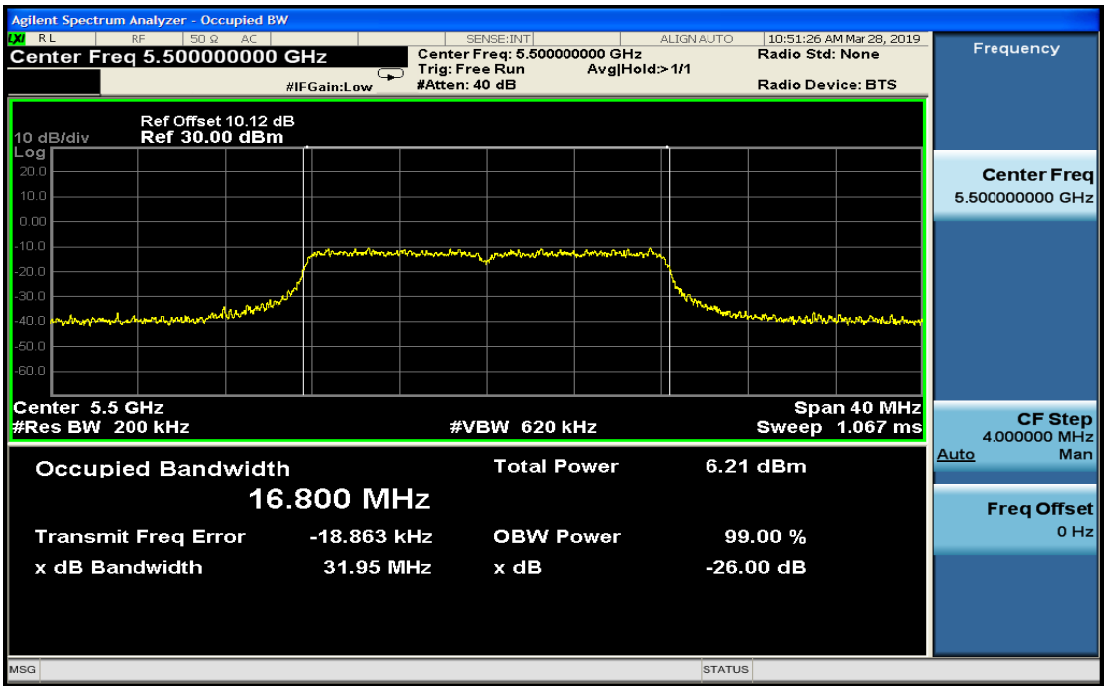


CHHigh

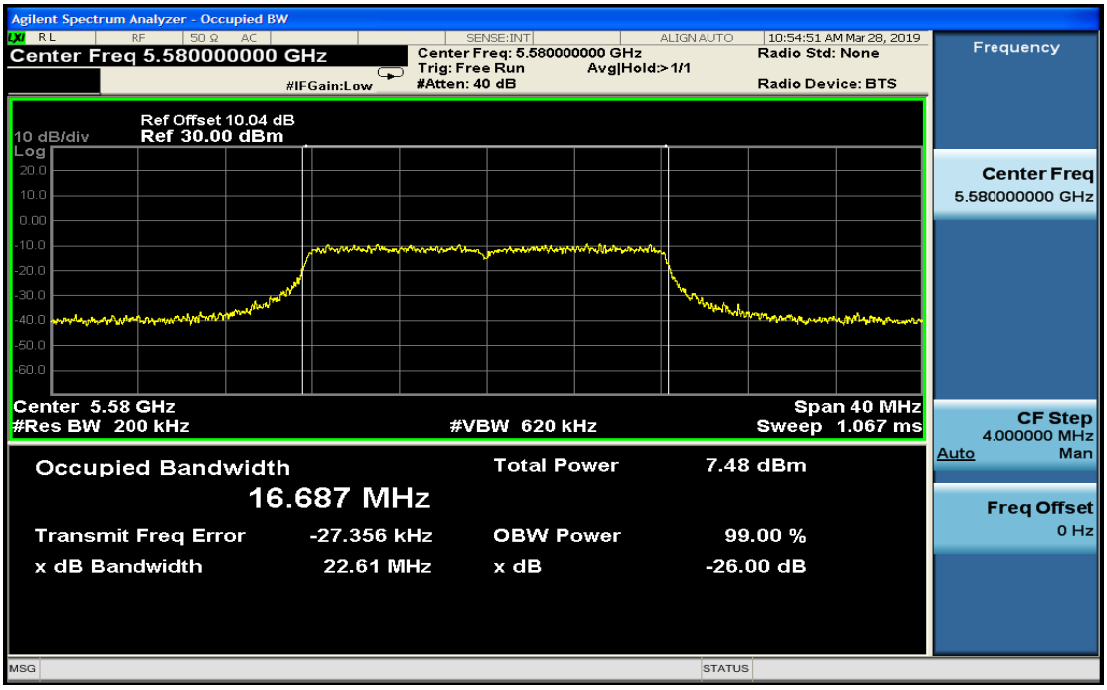


5470~5725MHz

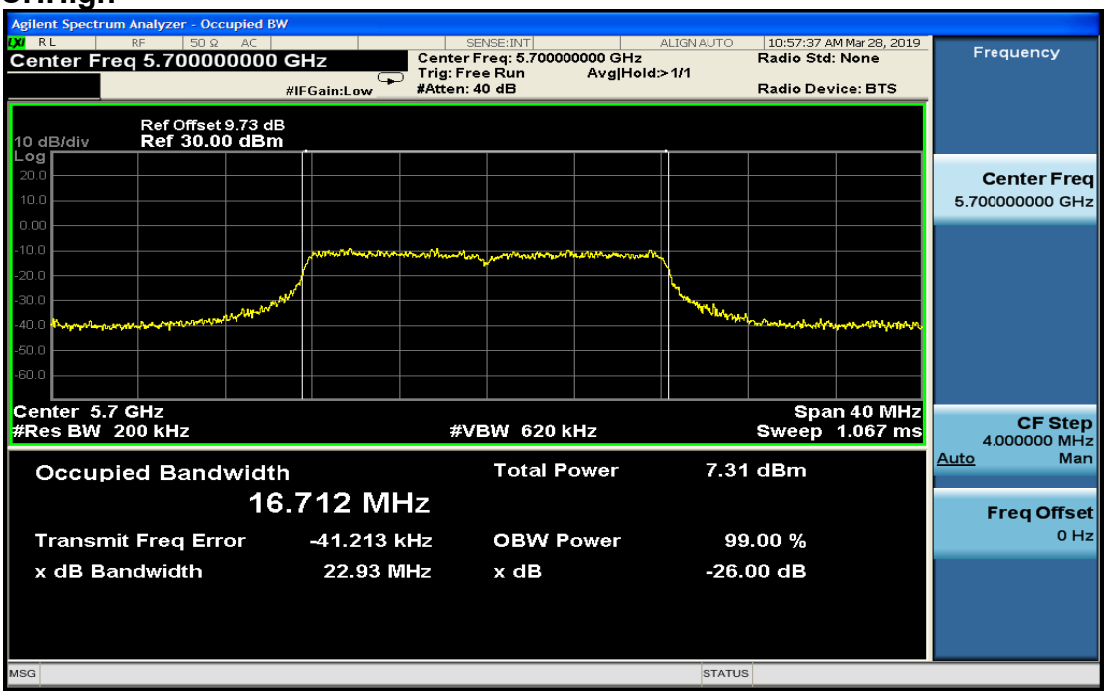
CHLow



CHMid



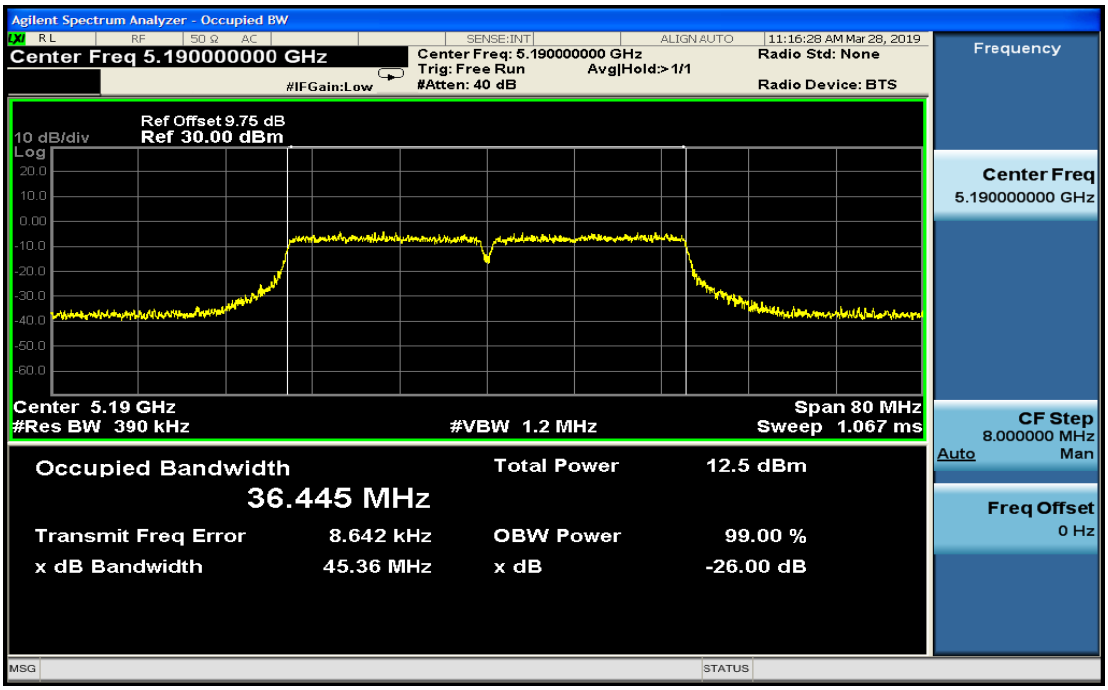
CHHigh



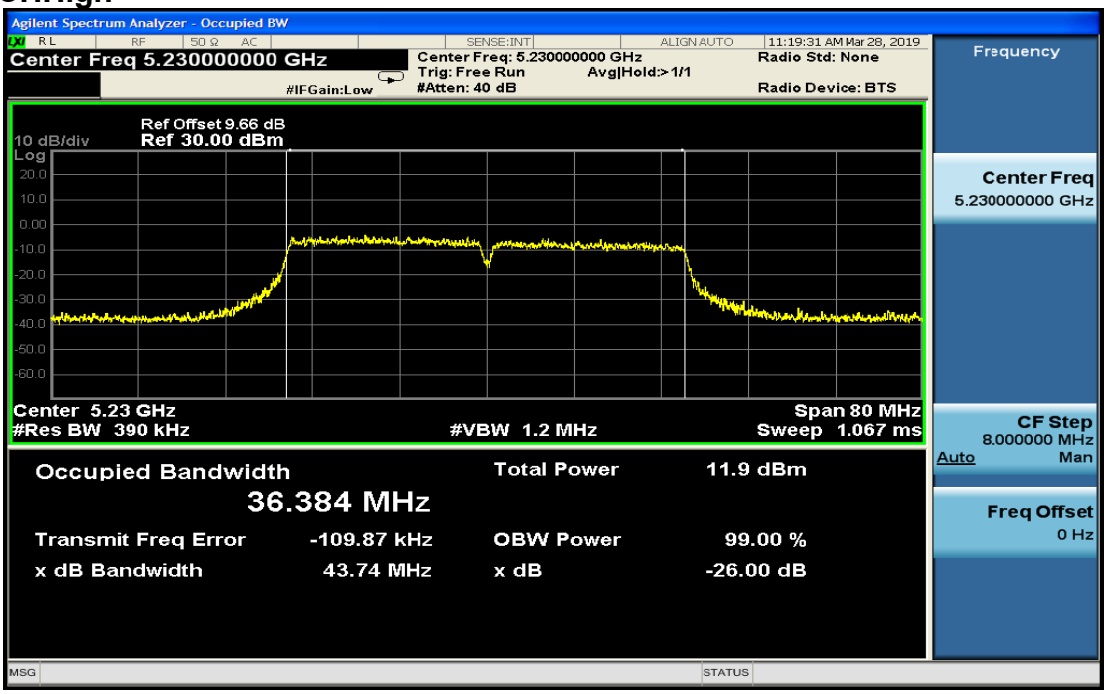
IEEE802.11nHT40mode

5150~5250MHz

CHLow

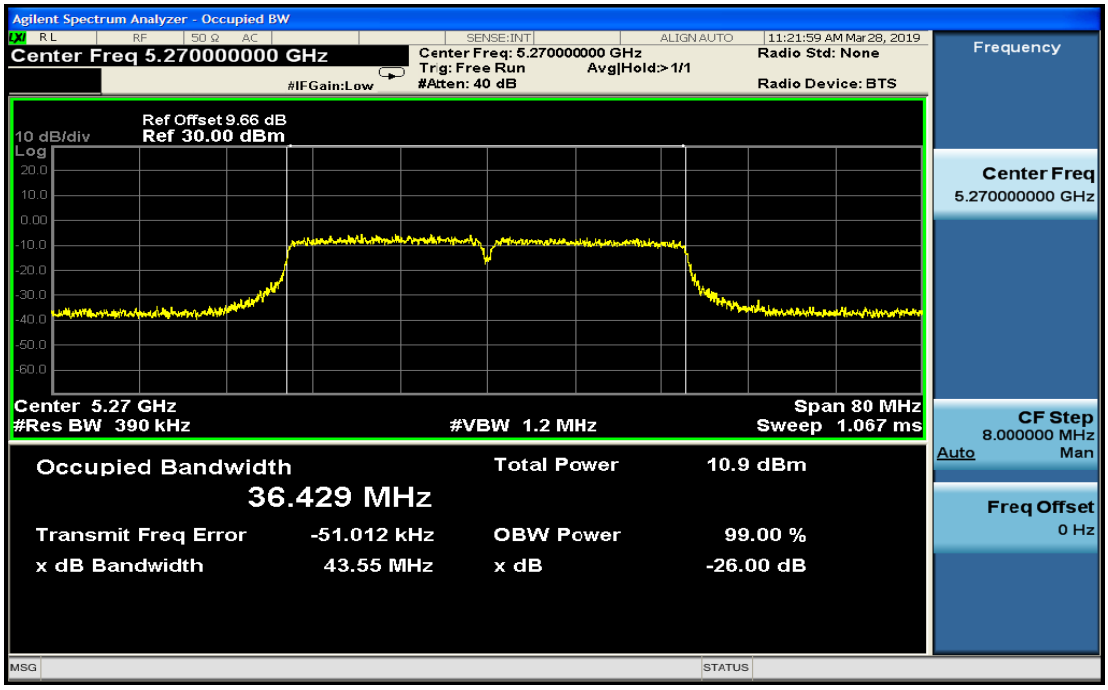


CHHigh

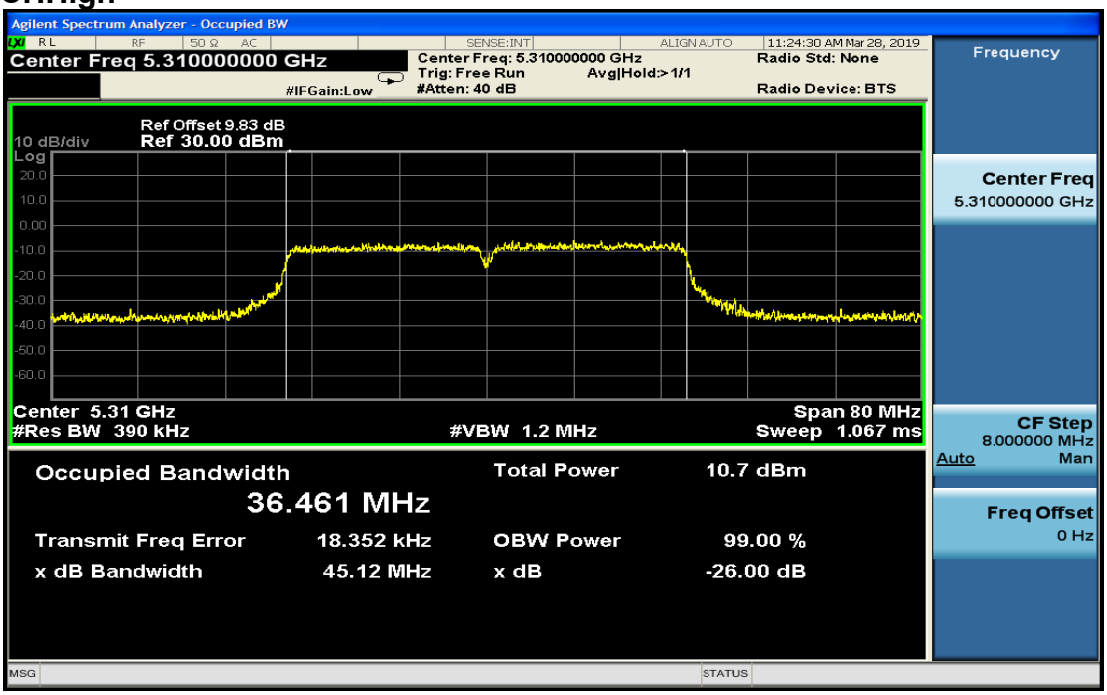


5250~5350MHz

CHLow

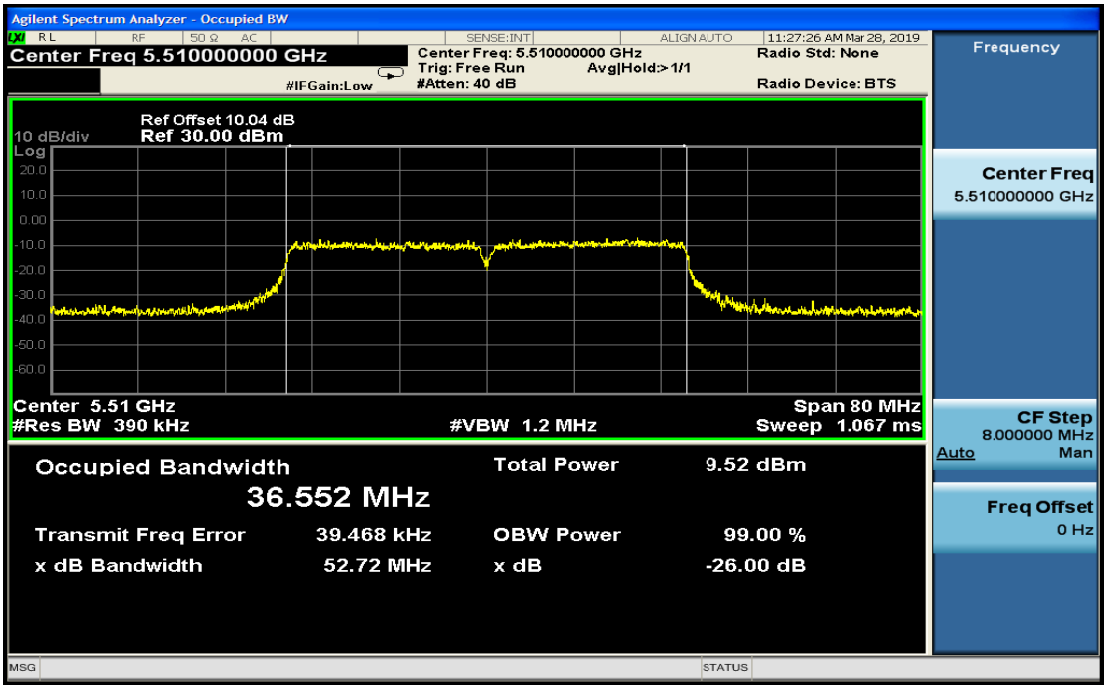


CHHigh

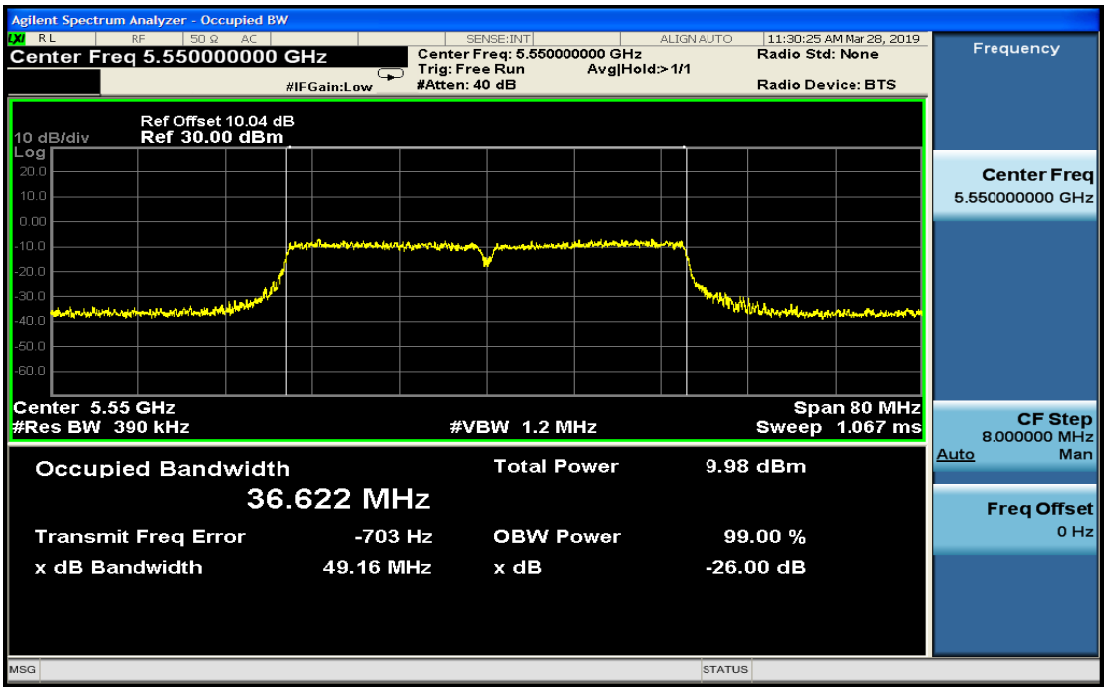


5470~5725MHz

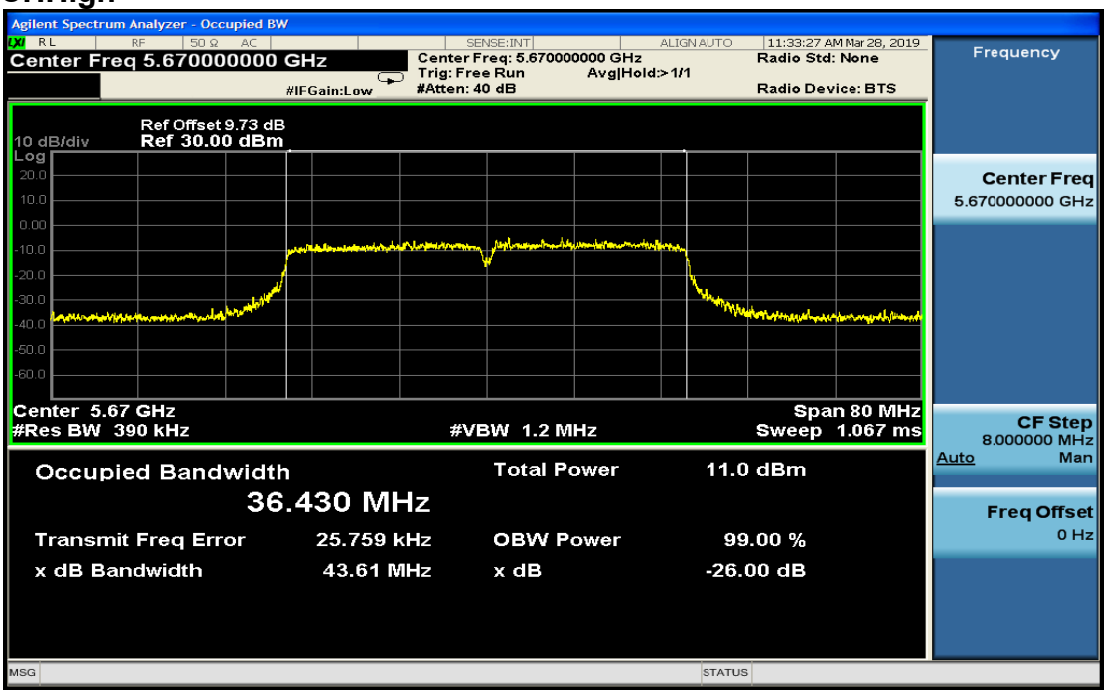
CHLow



CHMid



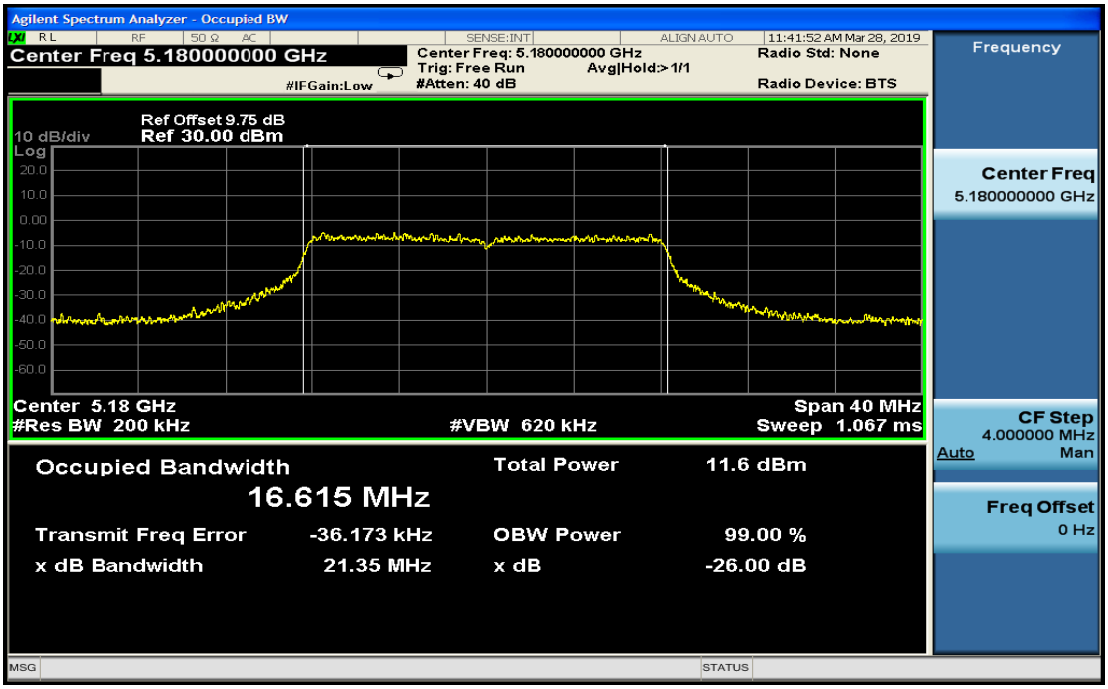
CHHigh



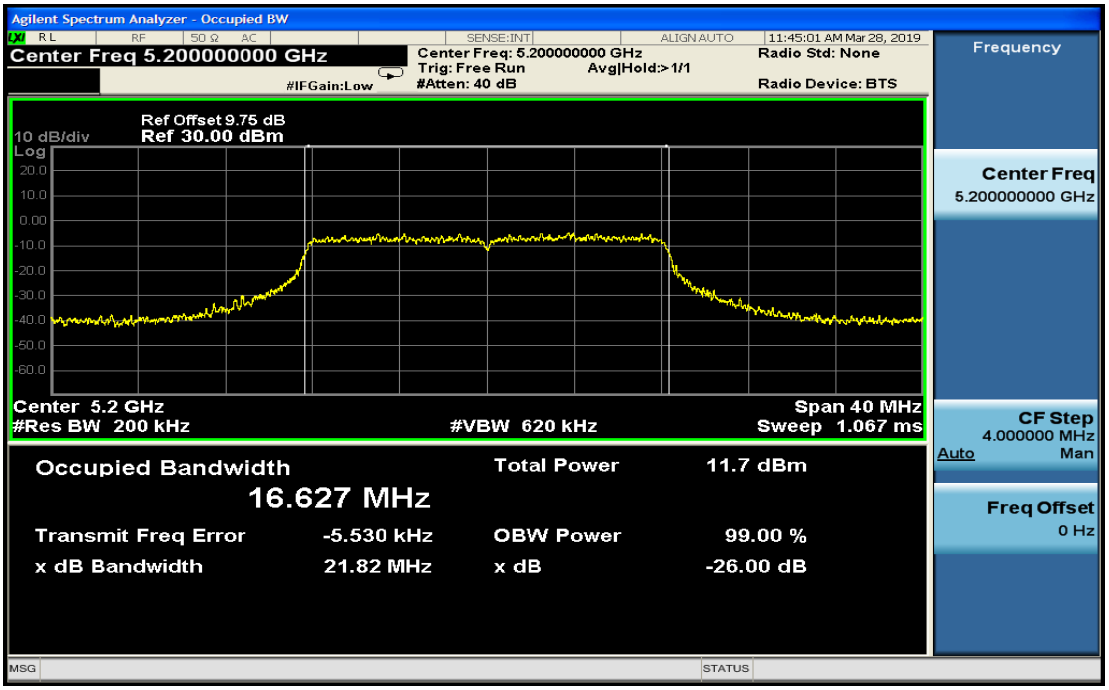
IEEE802.11acHT20mode

5150~5250MHz

CHLow



CHMid



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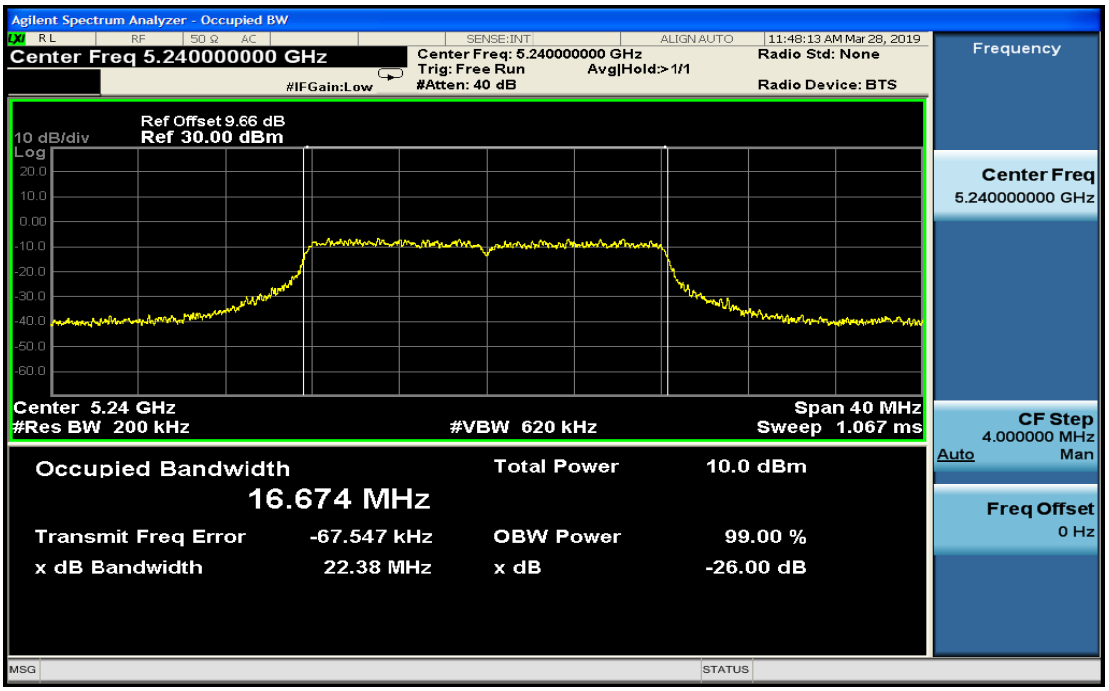
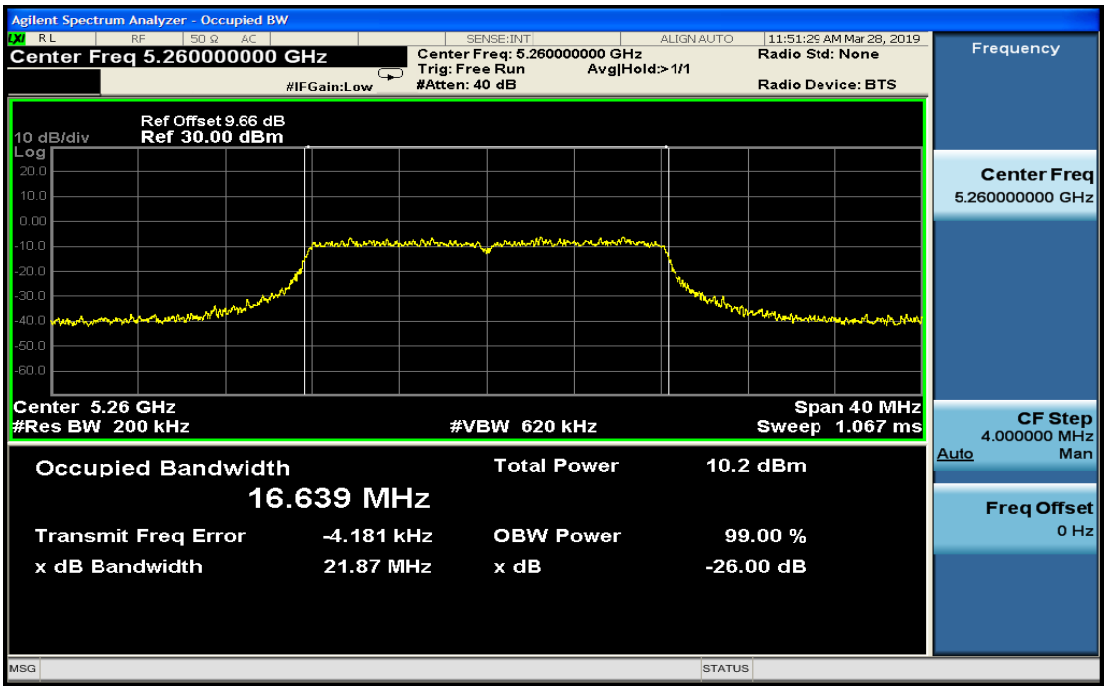
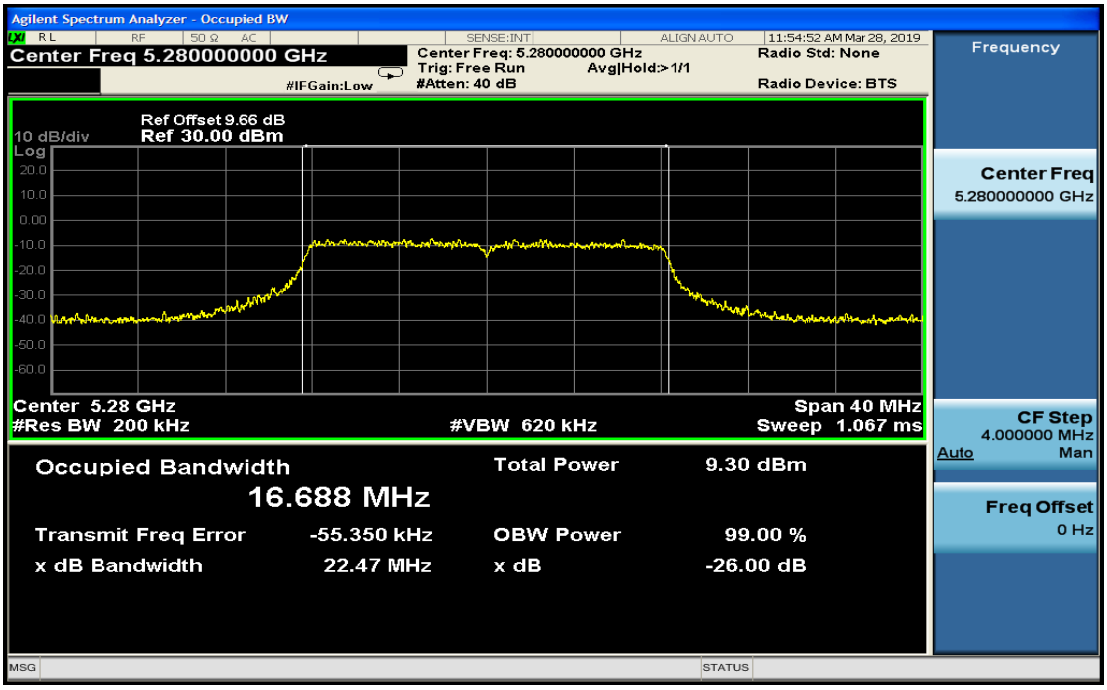


5250~5350MHz

CHLow



CHMid



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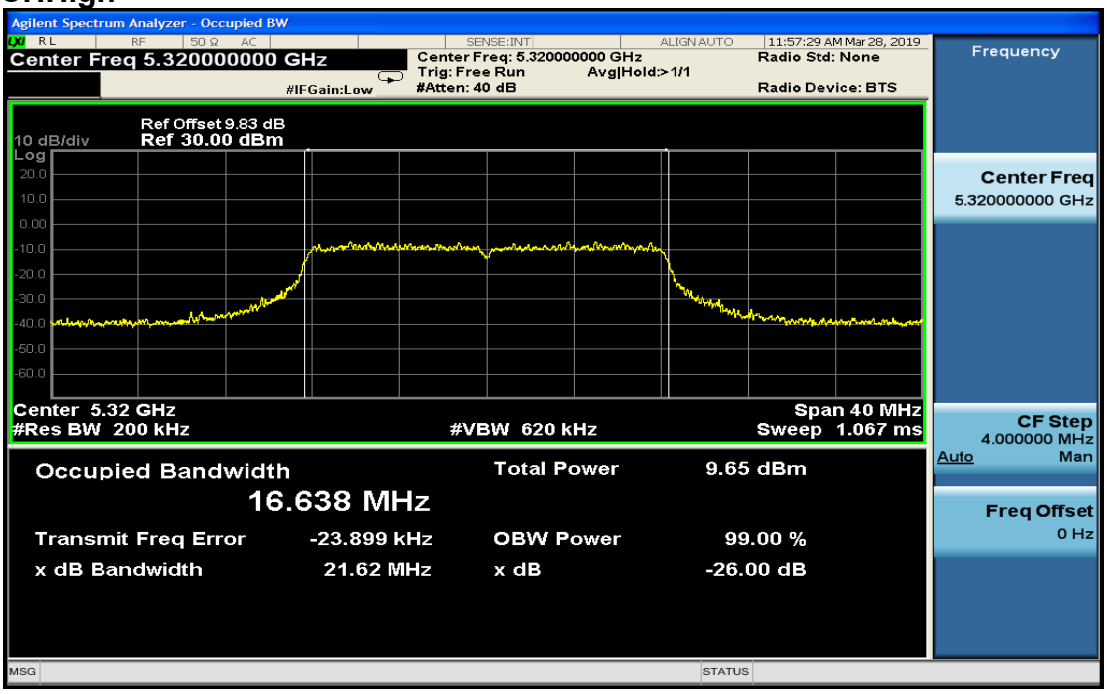
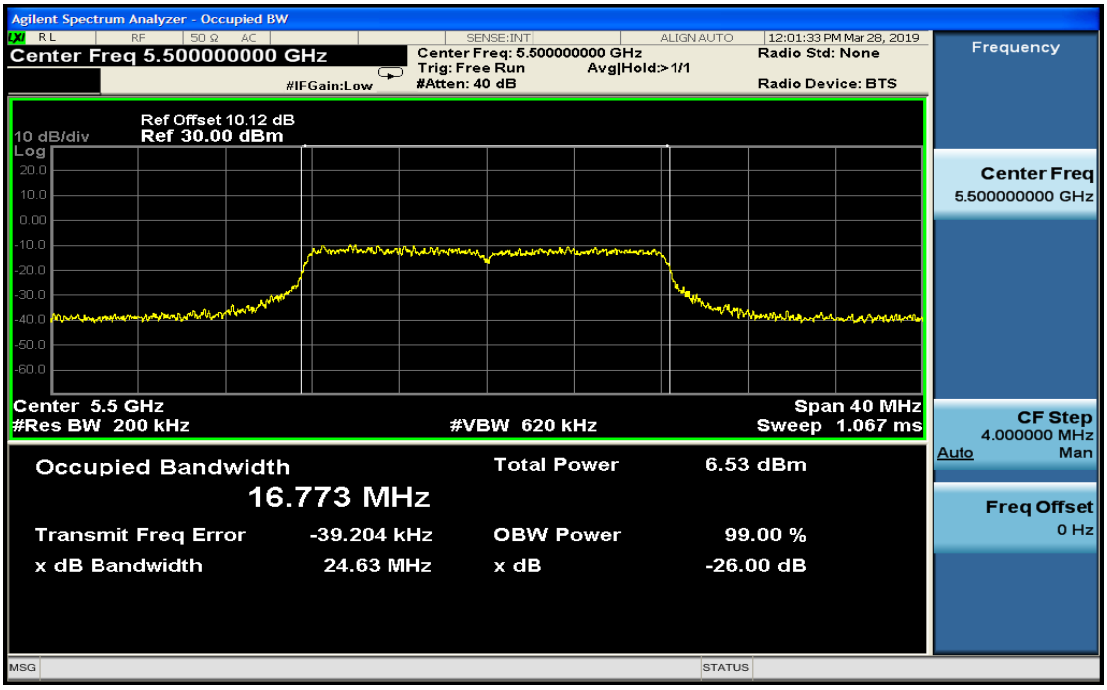


5470~5725MHz

CHLow



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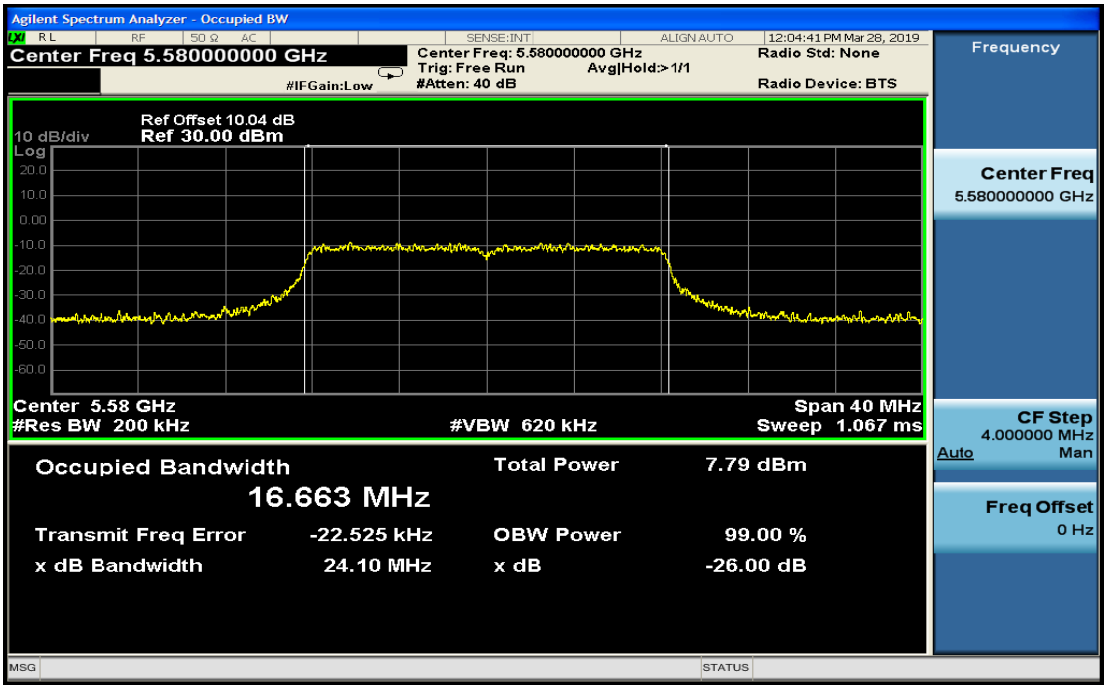
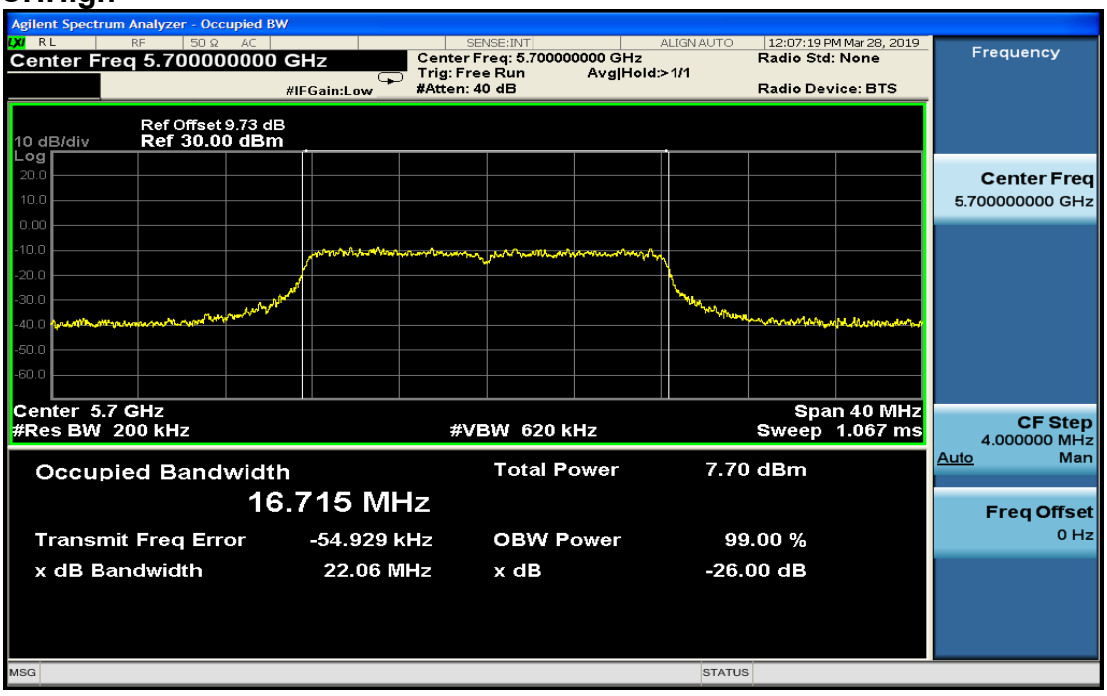


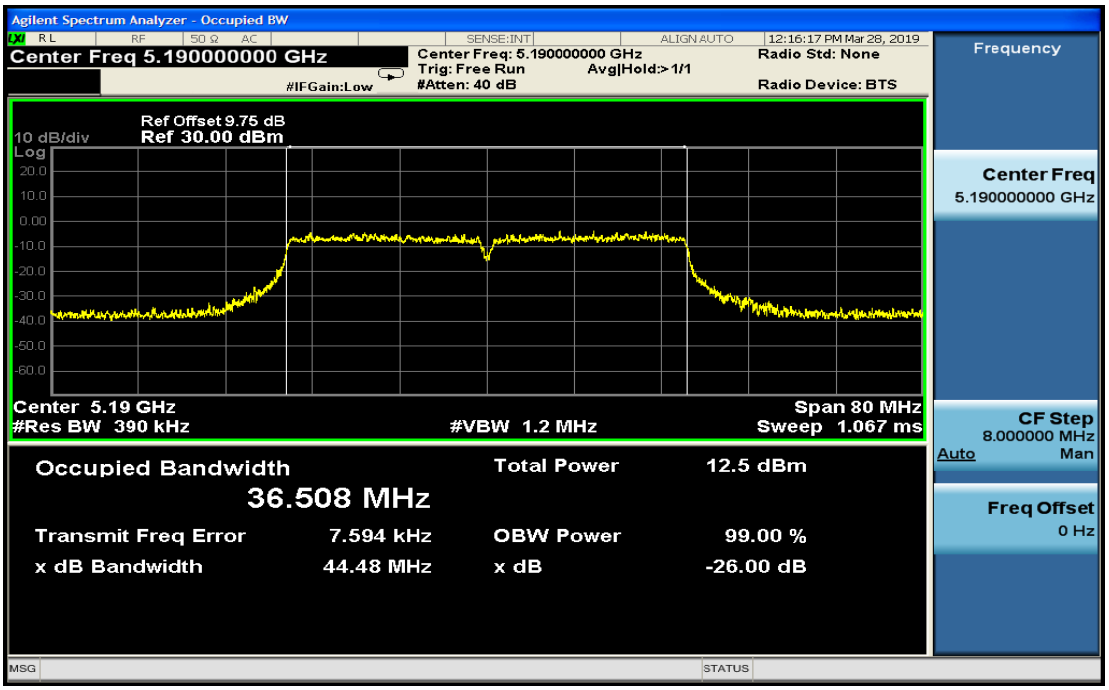
CHHigh



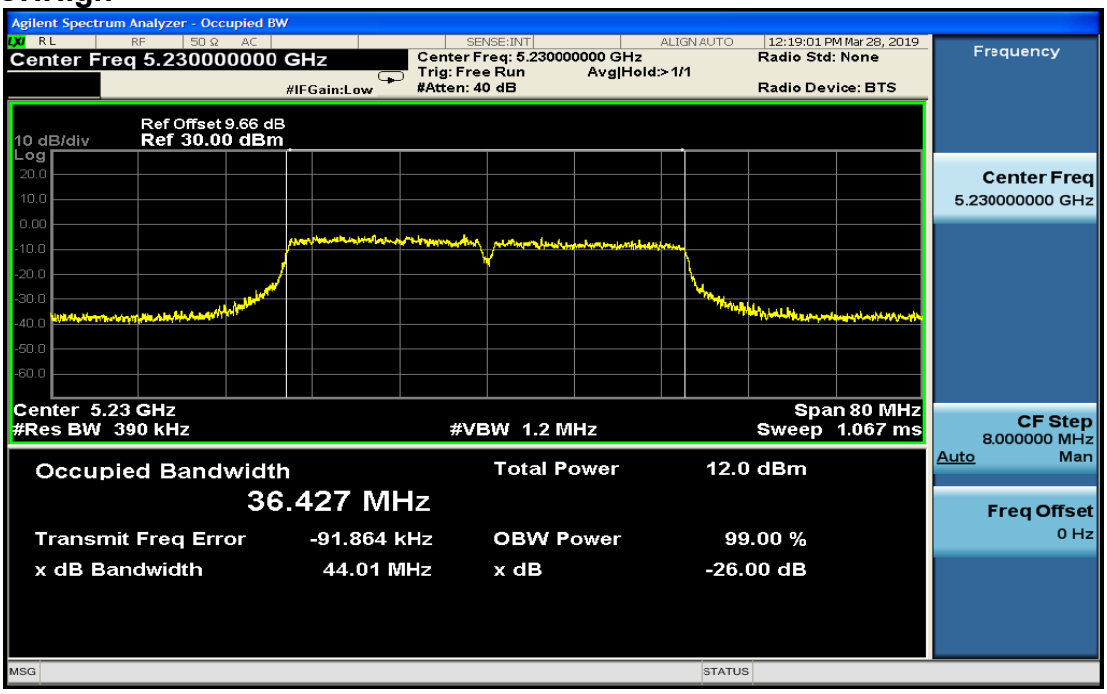
IEEE802.11acHT40mode

5150~5250MHz

CHLow

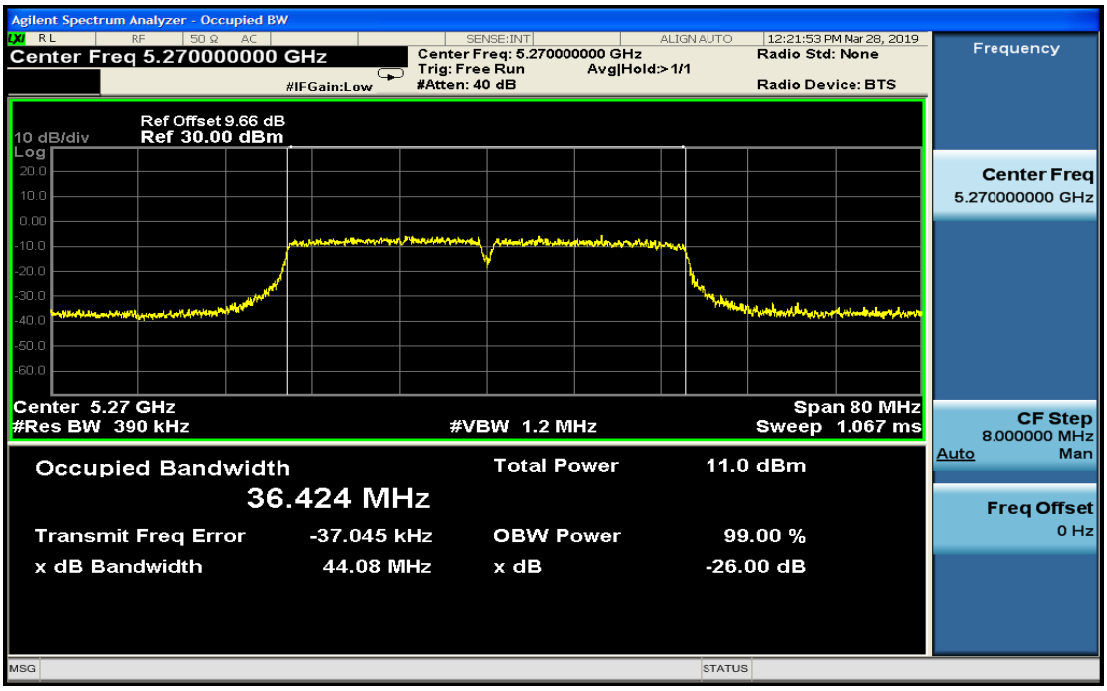


CHHigh



5250~5350MHz

CHLow



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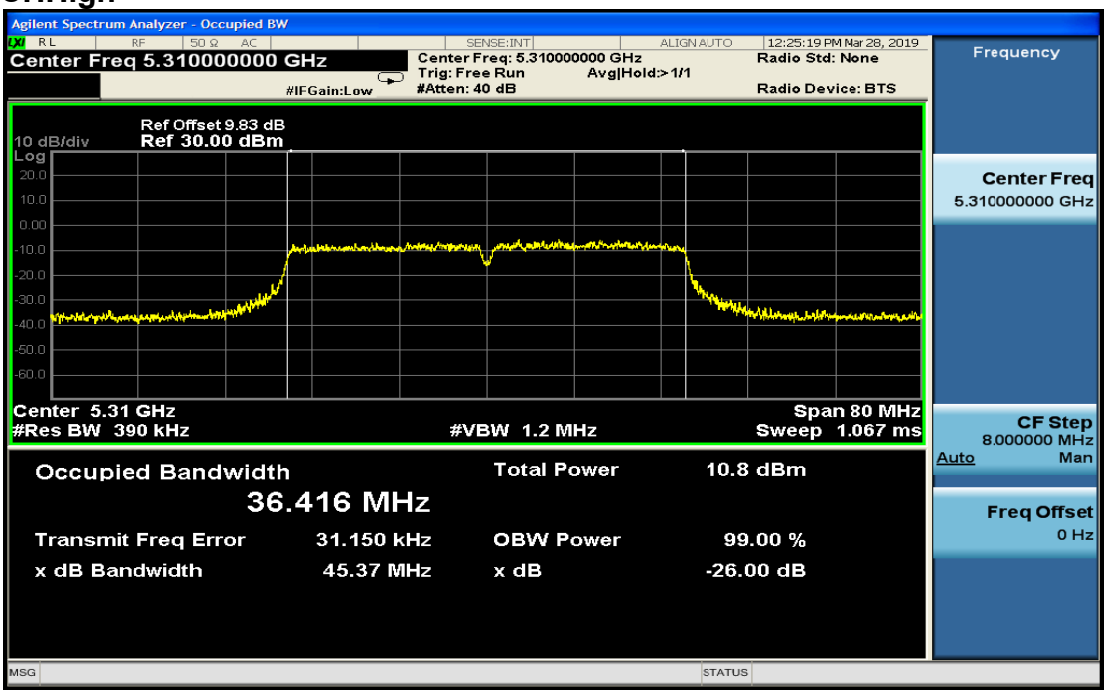
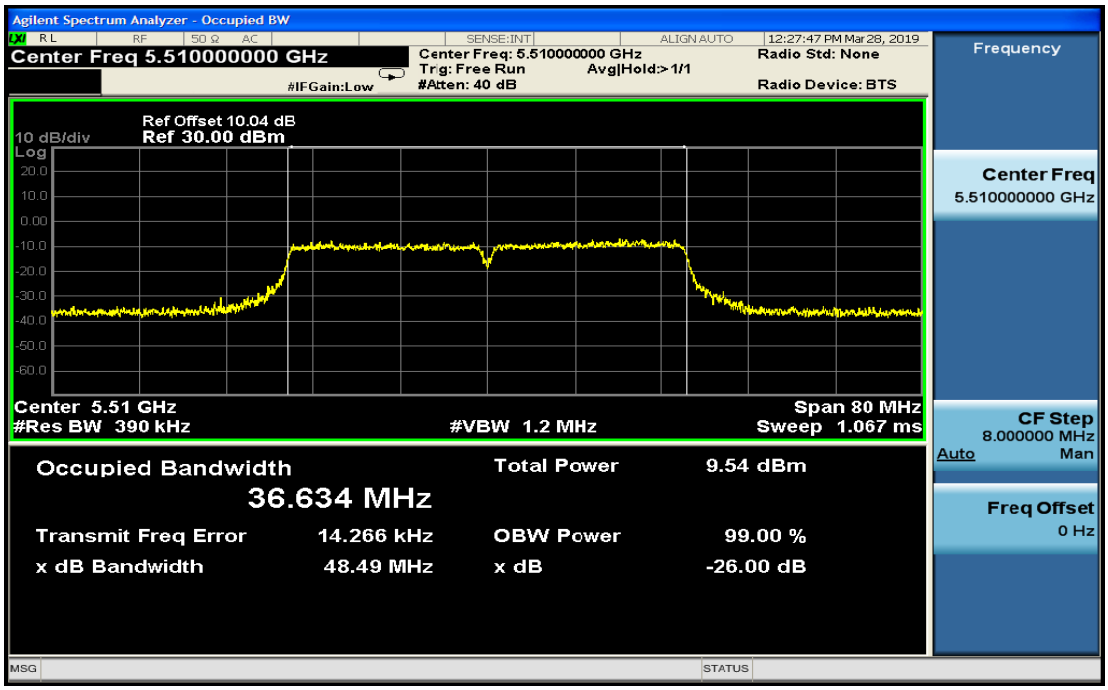
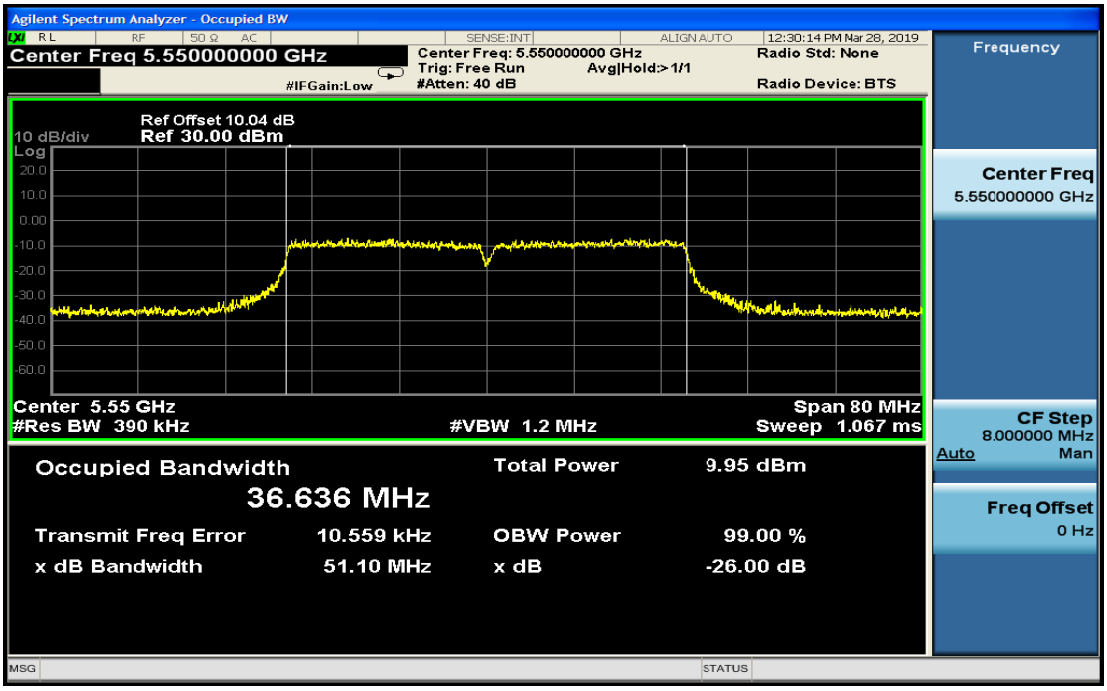


5470~5725MHz

CHLow



CHMid



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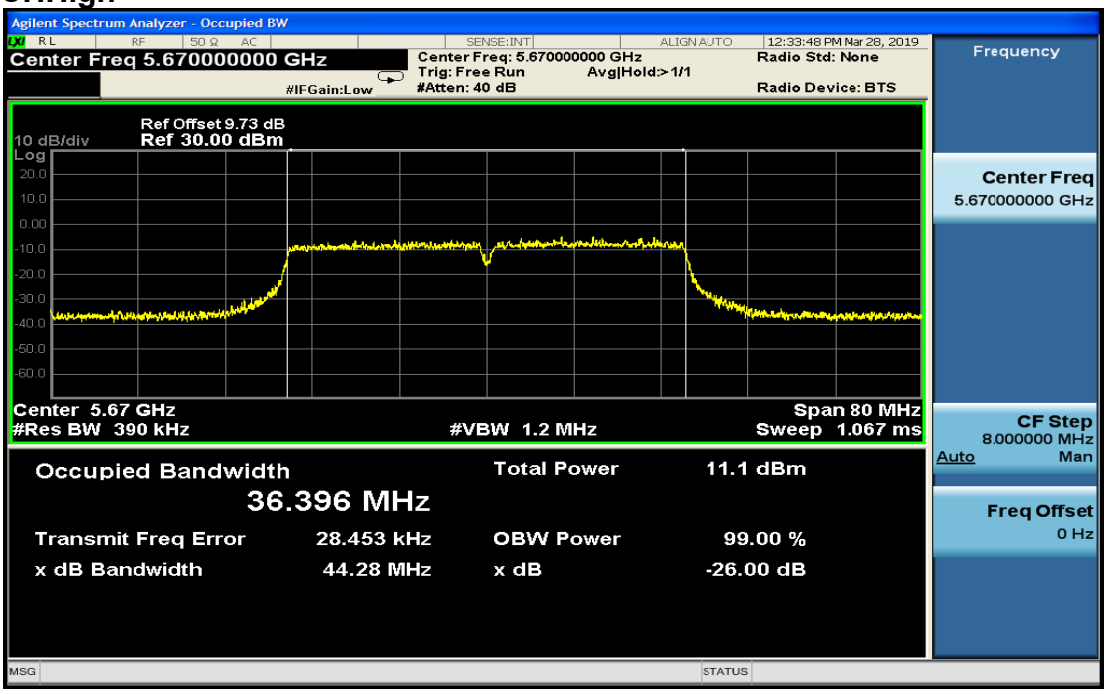
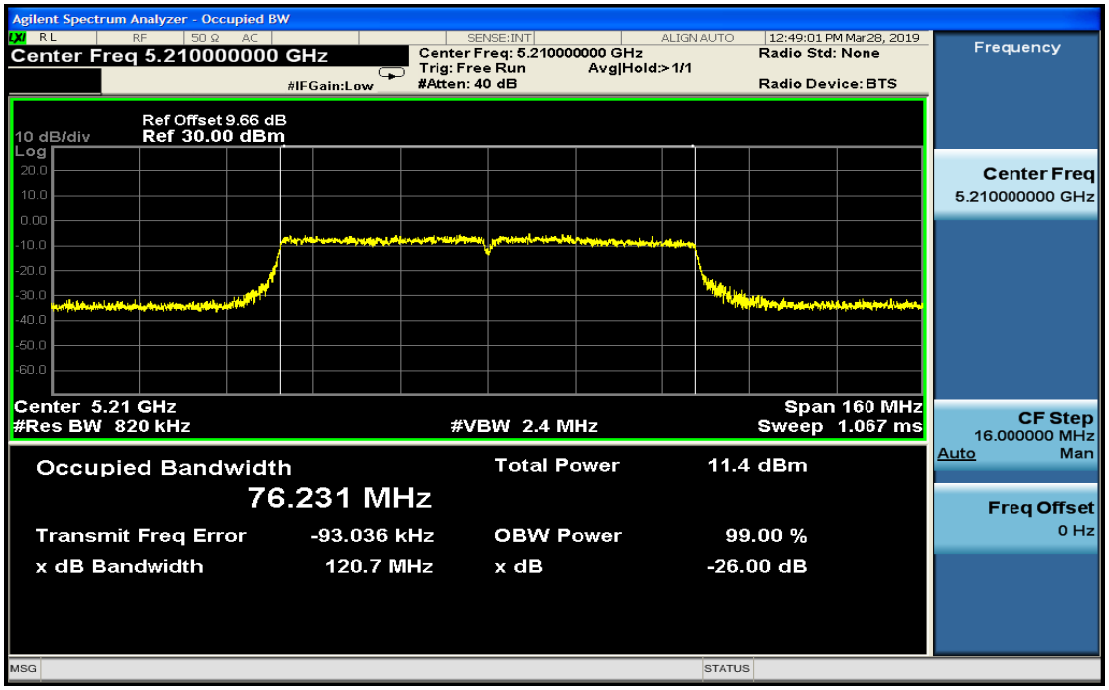
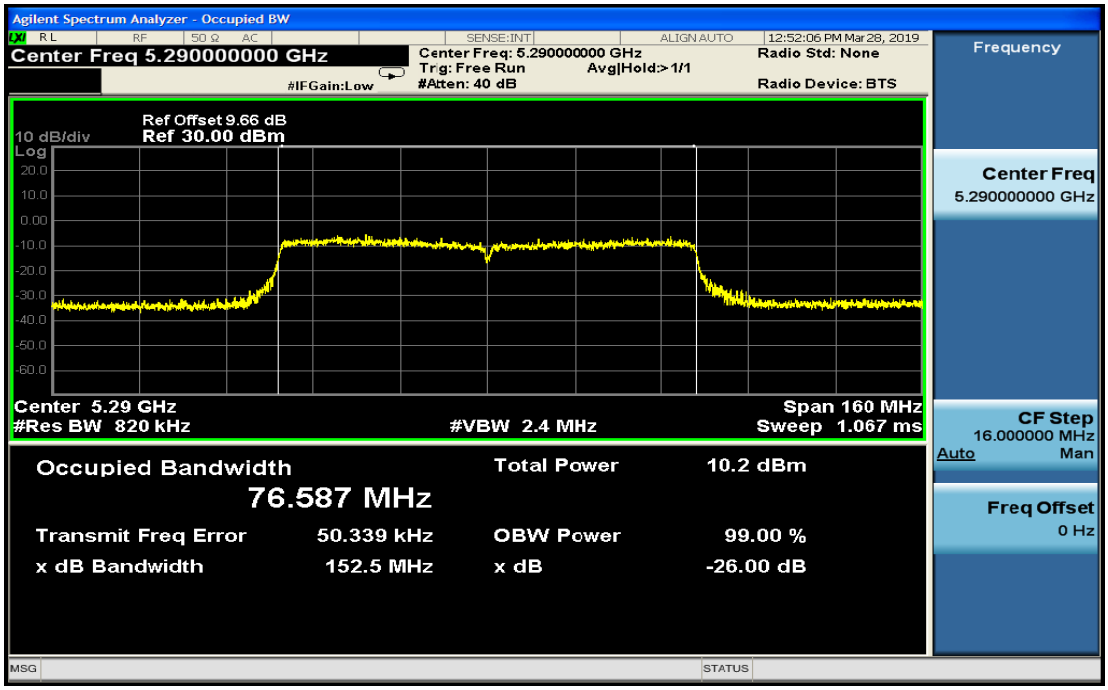


IEEE802.11acHT80mode

5150~5250MHz



5250~5350MHz



5470~5725MHz