FCC 47 CFR PART 15 SUBPART E

UNII

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac, ANT+ and NFC

MODEL NUMBER : SM-T395C

FCC ID: A3LSMT395C

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac, ANT+ and NFC
MODEL NUMBER:	SM-T395C
SERIAL NUMBER:	R32J500AM6J (RADIATED, Original model); R32J500B6RB (CONDUCTED, Original model) R22J9005ZNF, R22J9008P2V (RADIATED, Spot check model);
DATE TESTED:	AUG 02, 2017 - AUG 25, 2017 (Original Test) OCT 10 – OCT 12, 2017 (Spot check and Additional Test)

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

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1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMT395, UNII WLAN(FCC CFR 47 Part 15E). And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The FCC ID: A3LSMT395C shares the same enclosure and circuit board as FCC ID: A3LSMT395. The WLAN circuitry and layout are identical between these two units. The WLAN antennas and surrounding circuitry are the same between these two units.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMT395 remains representative of FCC ID: A3LSMT395C. The test data of FCC ID: A3LSMT395 being submitted for this application to cover WLAN features.

Due to difference of charger, radiated emission under 1GHz and AC line conducted test were performed newly.

1.3. SPOT CHECK VERIFICATION DATA

Band	Test Item	Mode	Frequency	Bandwidth	Test Limit	Original model SM-T395 Results FCC ID : A3LSMT395	Spot check model SM-T395C Results FCC ID : A3LSMT395C	Deviation	Remark
UNII WLAN (5GHz)	Band Edge	802.11ac	5210 MHz	80MHz	54 dBuV/m	47.44 dBuV/m	46.34 dBuV/m	-1.1 dB	
	RSE	802.11a	5180 MHz	20MHz	68.2 dBuV/m	59.1 dBuV/m	58.37 dBuV/m	-0.73dB	
	Band Edge	802.11ac	5290 MHz	80MHz	54 dBuV/m	47.24 dBuV/m	48.06 dBuV/m	0.82 dB	
	RSE	802.11n	5260 MHz	20MHz	68.2 dBuV/m	57.96 dBuV/m	55.32 dBuV/m	-2.64 dB	
	Band Edge	802.11n	5700 MHz	20MHz	68.2 dBuV/m	65.82 dBuV/m	65.16 dBuV/m	-0.66dB	
	RSE	802.11a	5700 MHz	20MHz	54 dBuV/m	50.74 dBuV/m	45.87 dBuV/m	-4.87 dB	
	Band Edge	802.11n	5825 MHz	20MHz	-27 dBm	-32.27 dBm	-33.63 dBm	-1.36 dB	
	RSE	802.11a	5825 MHz	20MHz	54 dBuV/m	50.86 dBuV/m	43.3 dBuV/m	-7.56 dB	

Comparison of two models, upper deviation is within 3dB range and all test results are under FCC Technical Limits.

1.4. REFERENCE DETAIL

Reference application that contains the reused reference data.

Equipment Class	Reference FCC ID	Type Grant/Permissive Change	Reference Application	Folder Test/RF Exposure	Report Tittle / Section
DTS	A3LSMT395	Grant	4788060215-E2V2	Test	FCC Report BLE / All sections (Except Section 10.5, 11)
			4788060215-E1V2	Test	FCC Report DTS / All sections (Except Section 10.5, 11)
DSS	A3LSMT395	Grant	4788060215-E3V2	Test	FCC Report BT / All sections (Except Section 10.5, 11)
DXX	A3LSMT395	Grant	4788060215-E5V1	Test	FCC Report ANT+ / All sections (Except Section 7.2.4, 8)
			4788060215-E6V2	Test	FCC Report NFC / All sections (Except Section 8.1.2, 9)
NII	A3LSMT395	Grant	4788060215-E4V3	Test	FCC Report UNII / All sections (Except Section 11, 12)

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 789033 D02 General UNII Test Procedures New Rules v01r04
4. KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
5. KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02
6. ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☒ Chamber 1
☒ Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at http://www.iasonline.org/PDF/TL/TL-637.pdf.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.32 dB
Radiated Disturbance, Below 1GHz	4.14 dB
Radiated Disturbance, Above 1 GHz	5.97 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac, ANT+ and NFC Tablet. This test report addresses the NII (UNII) operational mode.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
5180 - 5240	802.11a	12.088	16.17
	802.11n HT20	10.760	11.91
5190 - 5230	802.11n HT40	11.358	13.67
5210	802.11ac VHT80	11.333	13.59
5260 - 5320	802.11a	12.063	16.08
	802.11n HT20	10.697	11.74
5270 - 5310	802.11n HT40	11.278	13.42
5290	802.11ac VHT80	10.539	11.32
5500 - 5720	802.11a	12.004	15.86
	802.11n HT20	10.569	11.40
5510 - 5710	802.11n HT40	11.141	13.00
5530 - 5690	802.11ac VHT80	10.886	12.26
5745 - 5825	802.11a	12.236	16.73
	802.11n HT20	10.924	12.37
5755 - 5795	802.11n HT40	10.784	11.98
5775	802.11ac VHT80	11.401	13.81

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of:

Frequency Range [MHz]	Antenna Gain [dBi]
UNII 1 5150 – 5250	-0.7
UNII 2A 5250 – 5350	-0.5
UNII 2C 5470 – 5725	-0.1
UNII 3 5725 – 5850	-0.1

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that the X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in the X orientation.

Based on the baseline scan, the worst-case data rates were:

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ac VHT80 mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA12CBC	DK2J606HS/B- E	N/A
Data Cable	SAMSUNG	EP-DN930CWE	N/A	N/A
Earphone	SAMSUNG	EO-EG920BW	N/A	N/A

I/O CABLES

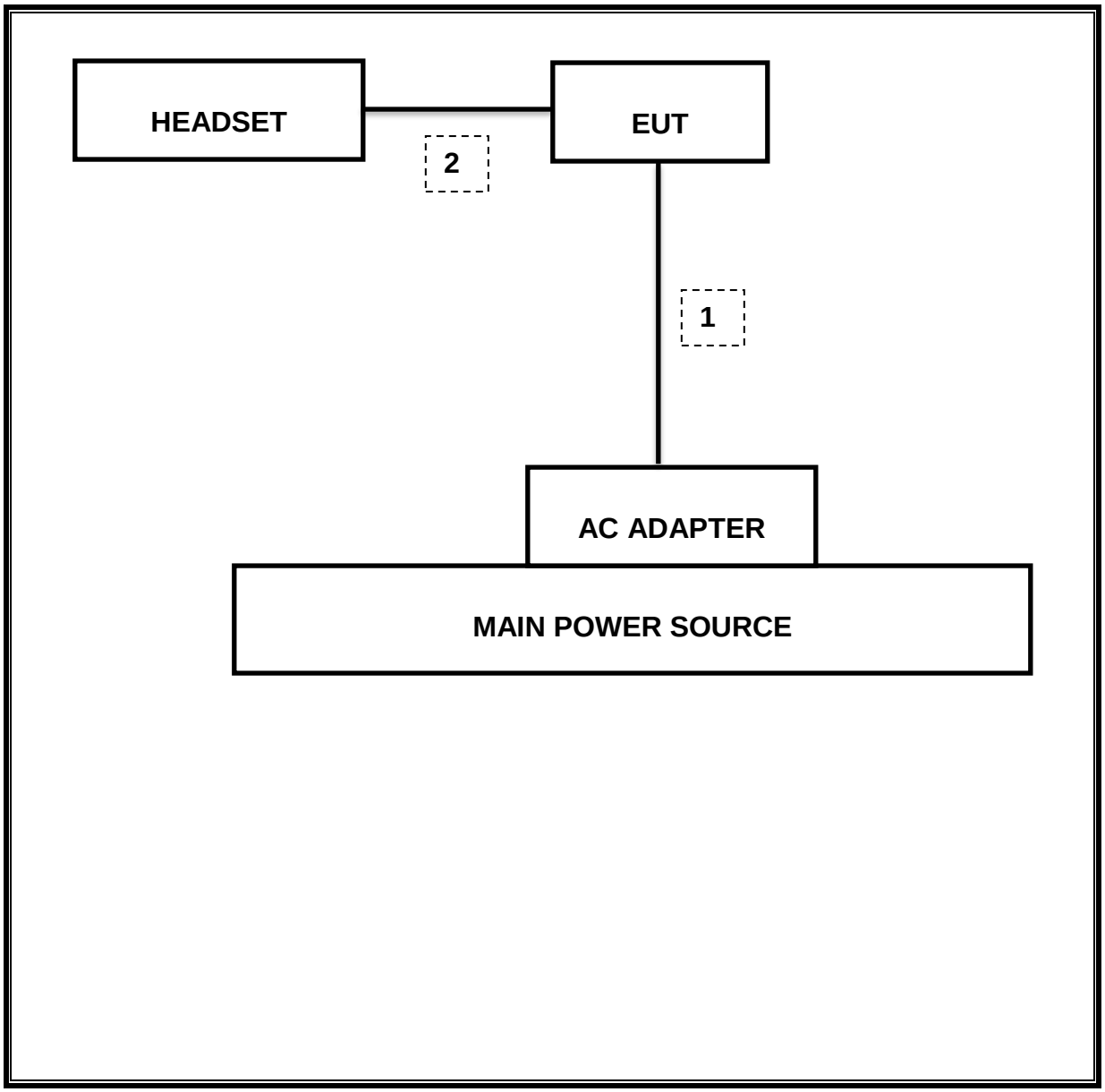
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	C-type	Shielded	1.2m	N/A
2	Audio	2	Mini-Jack	Unshielded	1.2m	N/A

NOTE : Protective cover (with S-pen) is in-box item. So additional radiated spurious emission measurements were performed on worst case equipped with protective case.

TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable NII mode.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**S/N**	**Cal Due**
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-31-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-14-19
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3115	00161451	03-10-19
Antenna, Horn, 18 GHz	ETS	3117	00168724	05-31-19
Antenna, Horn, 18 GHz	ETS	3117	00168717	05-31-19
Antenna, Horn, 40 GHz	ETS	3116C	00166155	11-30-17
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	12-15-17
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-09-18
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-07-18
Preamplifier	ETS	3115-PA	00167475	08-09-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-08-18
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-08-18
Attenuator	PASTERNACK	PE7087-10	A009	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-08-18
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-07-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-08-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-08-18
LISN	R&S	ENV-216	101837	08-09-18
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	11-25-17
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.407(e)	6dB Band width (5.8Ghz)	500KHz		2.35 MHz (Straddle Ch.)
15.407 (a)(2)	TX Cond. Power 5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		12.088 dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		12.236 dBm
15.407 (a)(5)	PSD (5.2,5.3,5.5GHz)	<11dBm		2.11 dBm
15.407 (a)(5)	PSD (5.8GHz)	30dBm per 500kHz		-0.83 dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	45.19 dBuV (Pk)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		50.86 dBuV/m (Pk)
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Condcuted	Pass

8. REFERENCE MEASUREMENTS RESULTS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 D02 v01r04 Zero-Span Spectrum Analyzer Method.

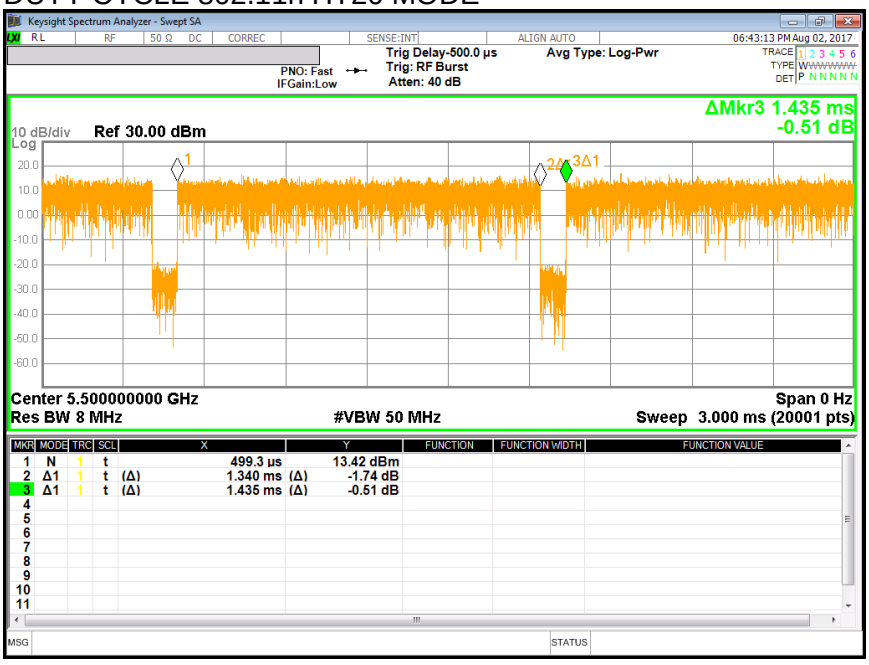
8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B [msec]	Period [msec]	Duty Cycle x [linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
802.11a	1.432	1.523	0.940	94.0%	0.27	0.698
802.11n HT20	1.340	1.435	0.934	93.4%	0.30	0.746
802.11n HT40	0.664	0.755	0.880	88.0%	0.56	1.506
802.11ac VHT80	0.332	0.422	0.786	78.6%	1.04	3.013

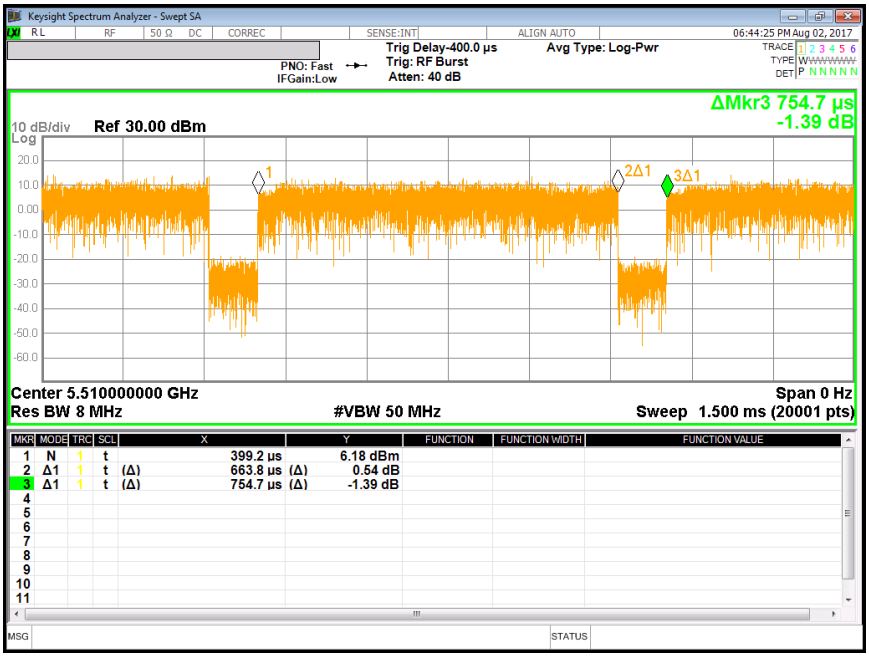
8.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a MODE

DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



DUTY CYCLE 802.11ac VHT80 MODE

8.3. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01r04: The transmitter output is connected to a spectrum analyzer with the RBW set to approximately 1% of EBW, the VBW > RBW, peak detector and max hold.

NOTE

- Calculation for 26dB Bandwidth of UNII-2C and UNII-3 Straddle Channel

ex) Fundamental frequency : 5720MHz
  - 26dB BW : 21.00MHz
  - Turning Frequency : 5725MHz
  - 26dB Bandwidth of UNII-2C band Portion
    = (5725 – (5720 - (21.00 / 2)) = 15.50 MHz
  - 26dB Bandwidth of UNII-3 band Portion
    = (5720 + (21.00 / 2) -5725) = 5.50 MHz

RESULTS

8.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5180	18.78
Mid	5200	19.60
High	5240	19.10
Worst		19.60

8.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5180	19.58
Mid	5200	19.53
High	5240	19.65
Worst		19.65

8.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5190	40.59
High	5230	40.78
Worst		40.78

8.3.4. 802.11n VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Mid	5210	82.18
Worst		82.18

8.3.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5260	18.88
Mid	5300	18.66
High	5320	18.88
Worst		18.88

8.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5260	19.84
Mid	5300	19.88
High	5320	19.66
Worst		19.88

8.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5270	40.33
High	5310	39.89
Worst		40.33

8.3.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Middle	5290	83.16
Worst		83.16

8.3.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5500	19.33
Mid	5580	19.05
High	5700	19.20
Straddle	5720	14.58
Worst		19.33

8.3.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5500	20.09
Mid	5580	19.83
High	5700	19.88
Straddle	5720	14.73
Worst		20.09

8.3.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5510	40.06
Mid	5550	40.93
Mid	5590	41.28
High	5670	39.73
Straddle	5710	34.87
Worst		41.28

8.3.12. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Low	5530	83.35
High	5610	88.43
Straddle	5690	76.75
Worst		83.35

8.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Straddle	5720	4.58
Low	5745	18.90
Mid	5785	19.62
High	5825	18.49
Worst		19.62

8.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Straddle	5720	4.73
Low	5745	19.73
Mid	5785	19.78
High	5825	19.45
Worst		19.78

8.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Straddle	5710	4.87
Low	5755	40.31
High	5795	40.33
Worst		40.33

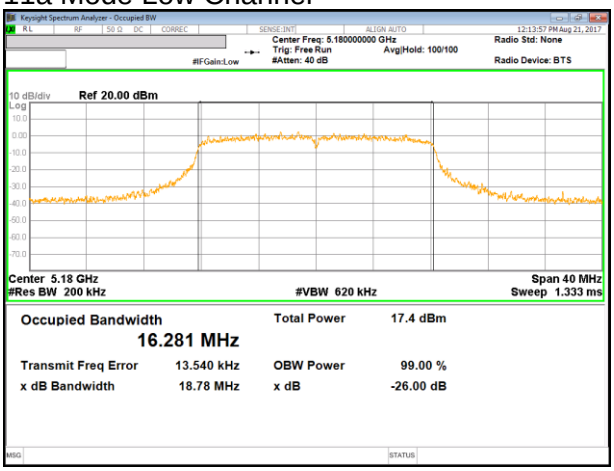
8.3.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	26 dB Bandwidth [MHz]
Straddle	5690	6.75
Middle	5775	82.81
Worst		82.81

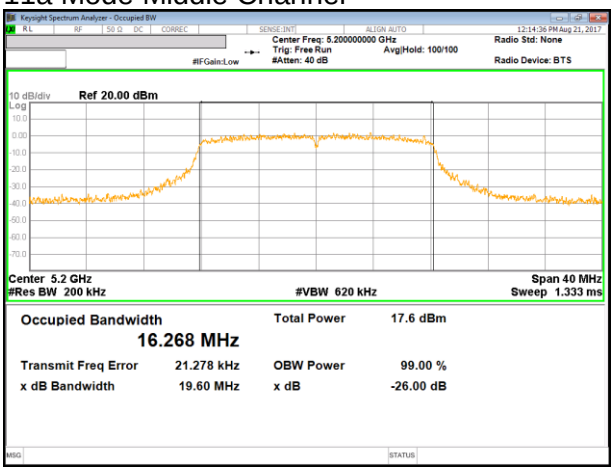
8.3.17. 26 dB BANDWIDTH PLOTS

UNII 5.2 GHz IEEE 802.11a mode

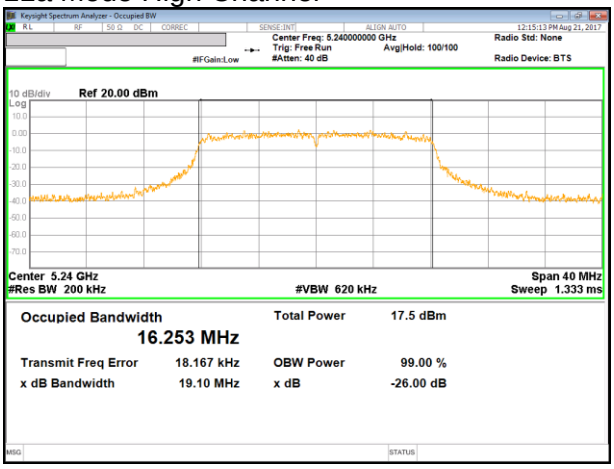
11a Mode Low Channel



11a Mode Middle Channel

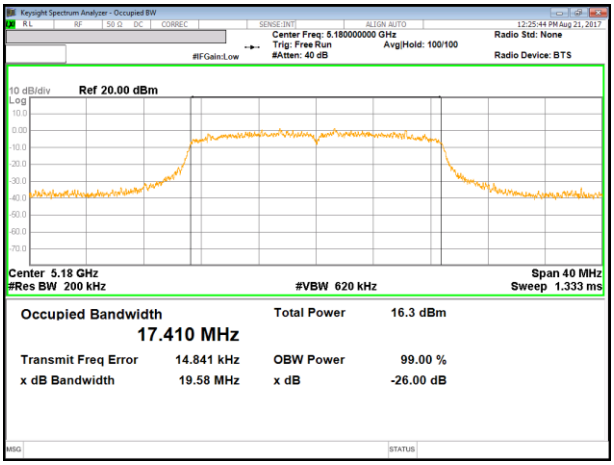


11a Mode High Channel

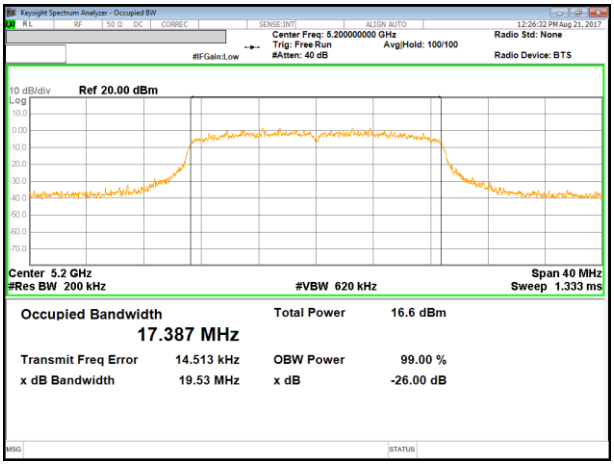


UNII 5.2 GHz IEEE 802.11n HT20 mode

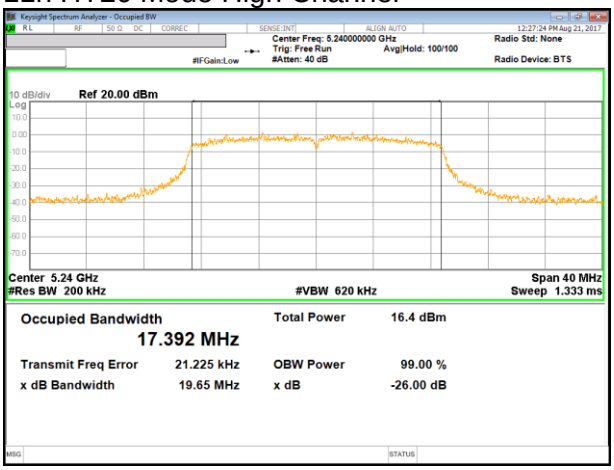
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

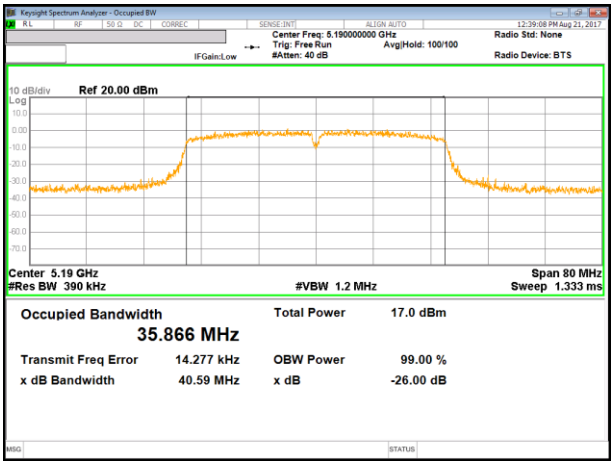


11n HT20 Mode High Channel

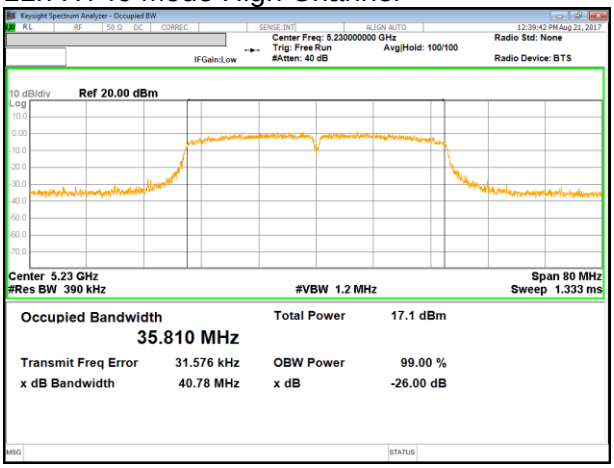


UNII 5.2 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

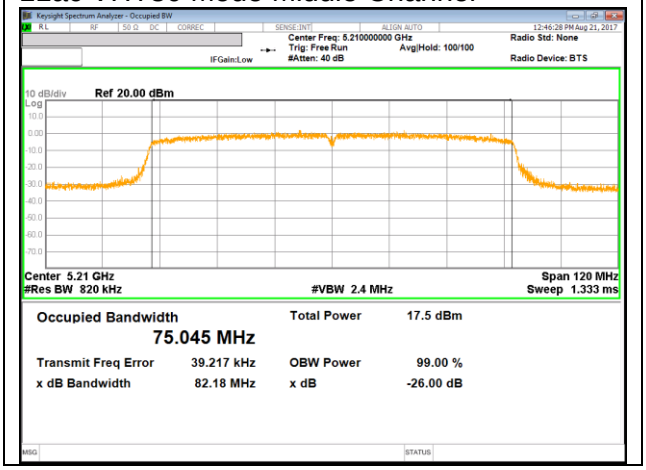


11n HT40 Mode High Channel



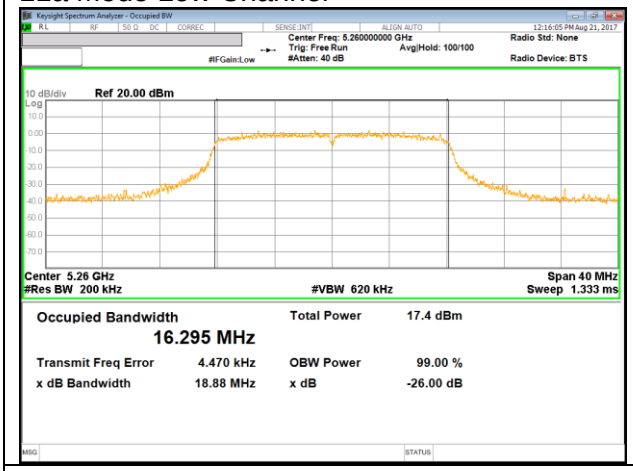
UNII 5.2 GHz IEEE 802.11ac VHT80 mode

11ac VHT80 Mode Middle Channel

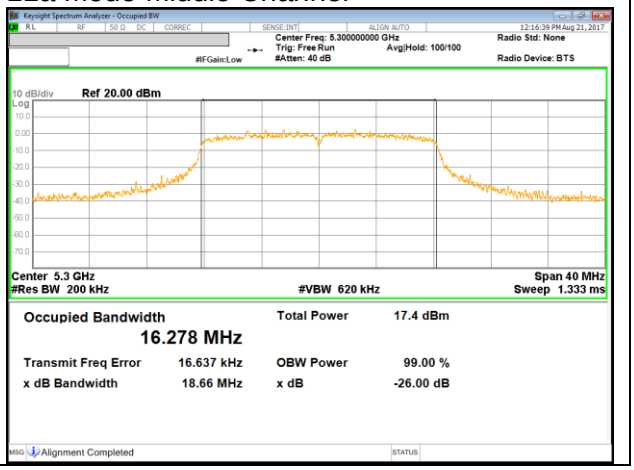


UNII 5.3 GHz IEEE 802.11a mode

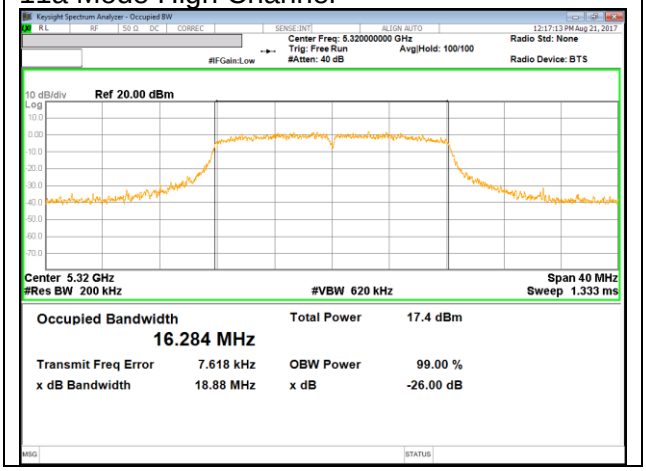
11a Mode Low Channel



11a Mode Middle Channel

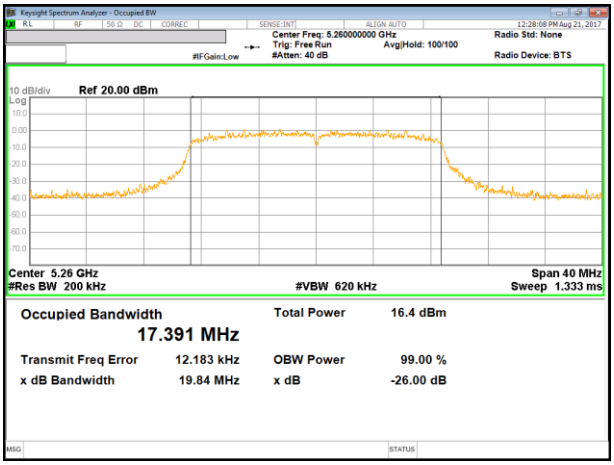


11a Mode High Channel

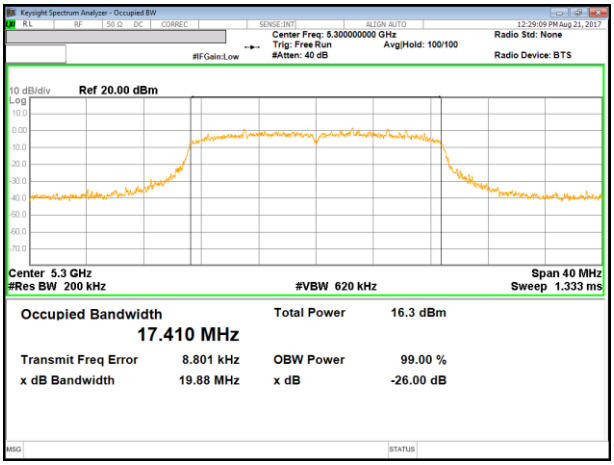


UNII 5.3 GHz IEEE 802.11n HT20 mode

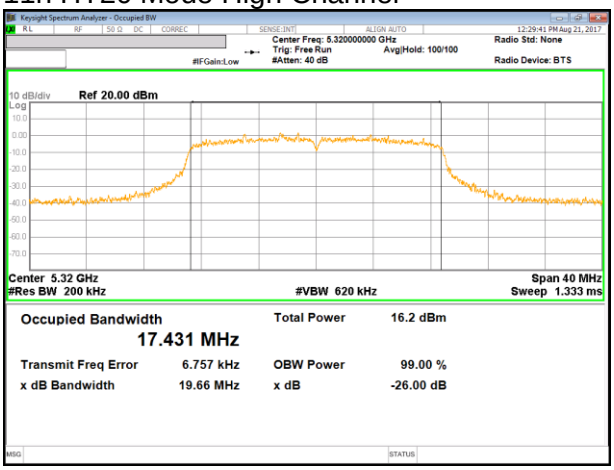
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

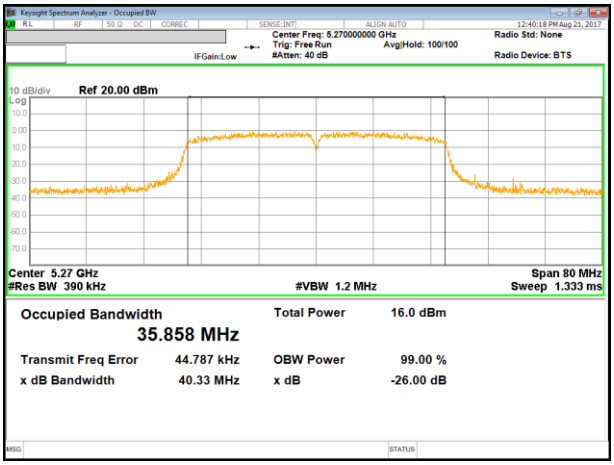


11n HT20 Mode High Channel

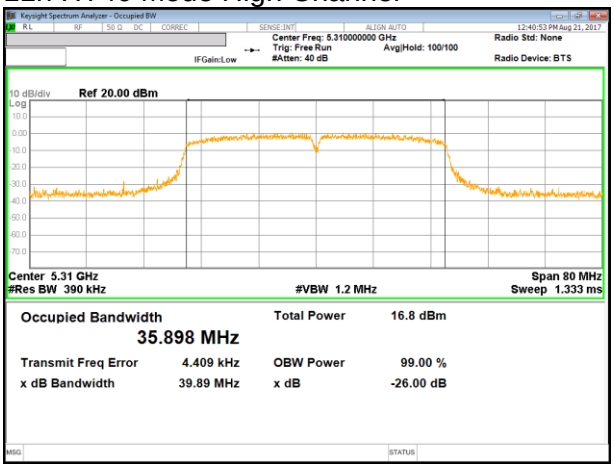


UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

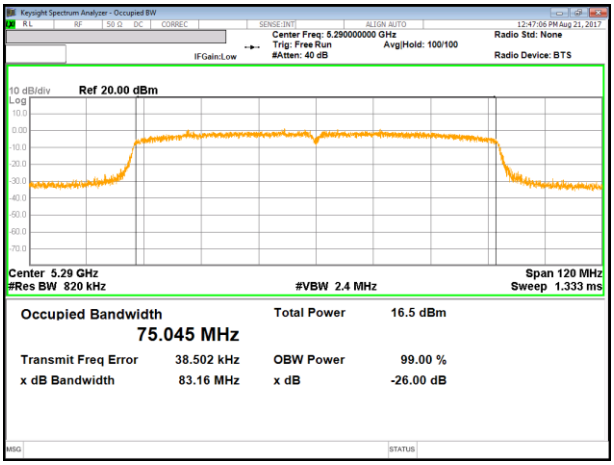


11n HT40 Mode High Channel



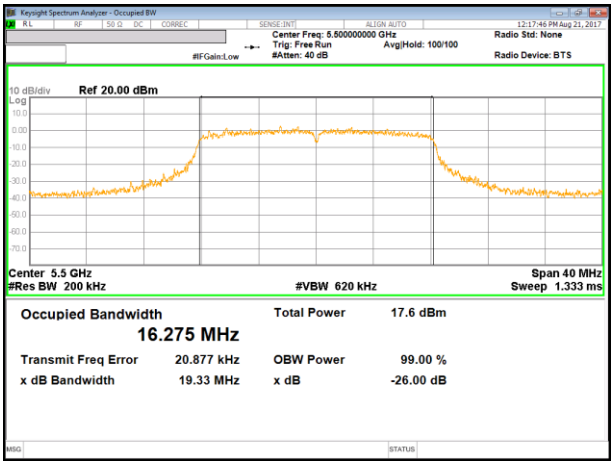
UNII 5.3 GHz IEEE 802.11ac VHT80 mode

11ac VHT80 Mode Middle Channel

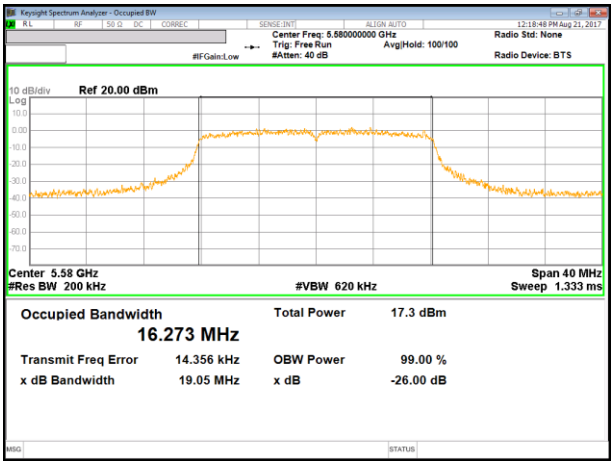


UNII 5.5 GHz IEEE 802.11a mode

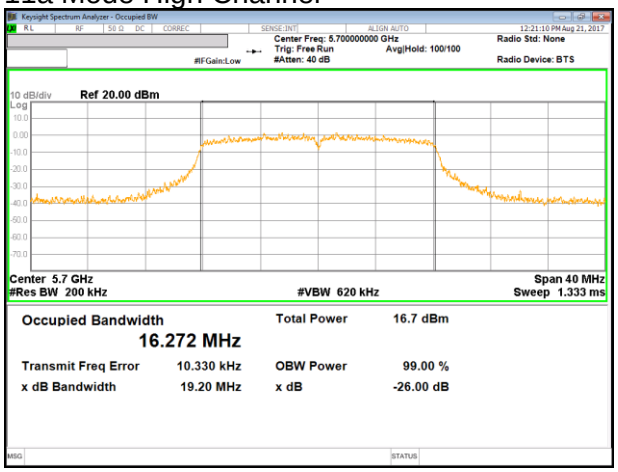
11a Mode Low Channel



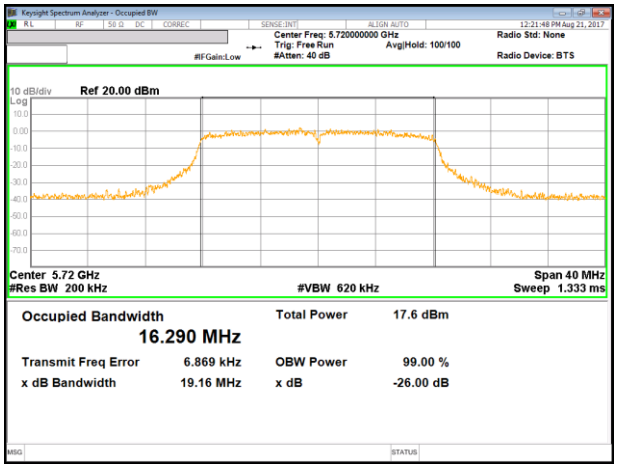
11a Mode Middle Channel



11a Mode High Channel

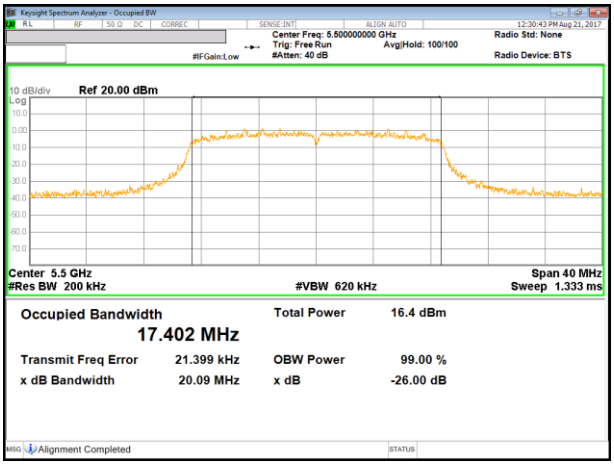


11a Mode Straddle Channel

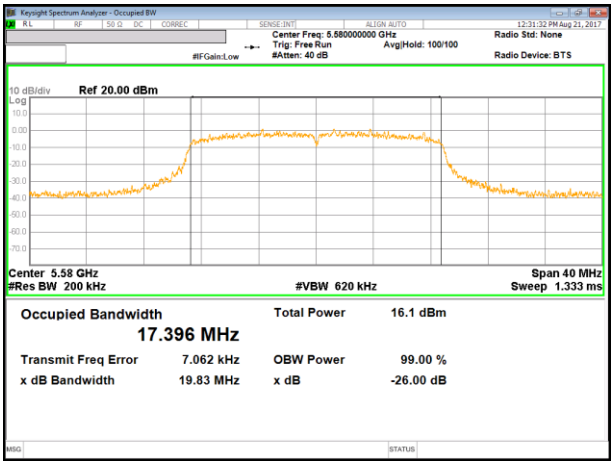


UNII 5.5 GHz IEEE 802.11n HT20 mode

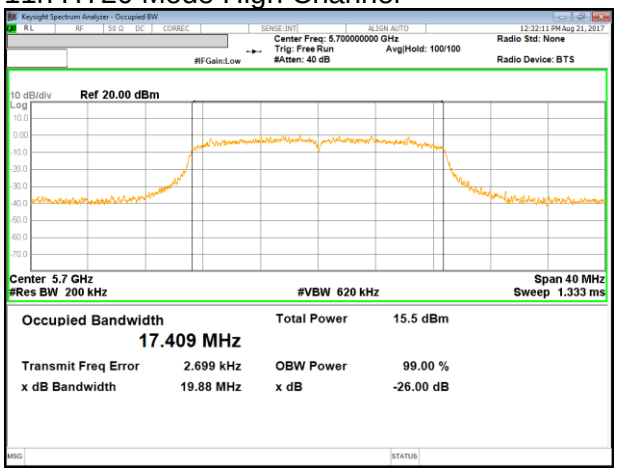
11n HT20 Mode Low Channel



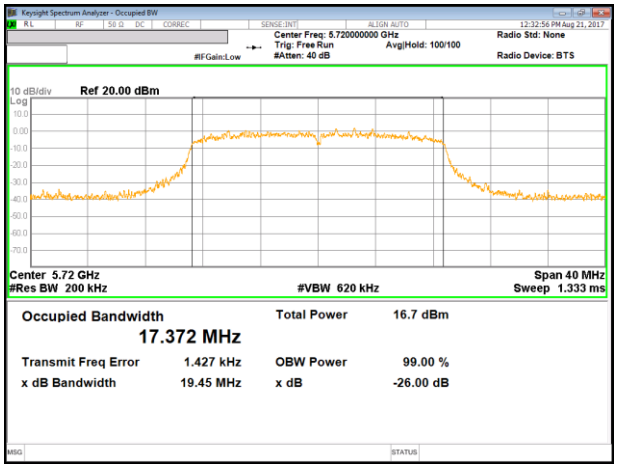
11n HT20 Mode Middle Channel



11n HT20 Mode High Channel

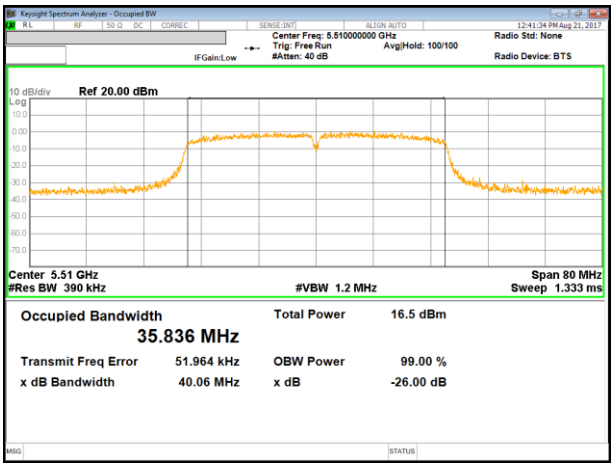


11n HT20 Mode Straddle Channel

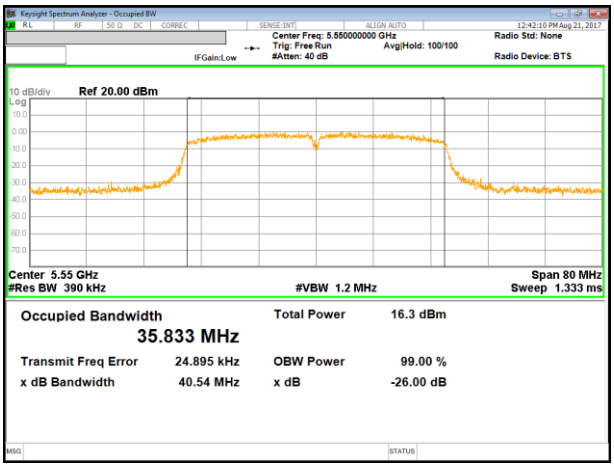


UNII 5.5 GHz IEEE 802.11n HT40 mode

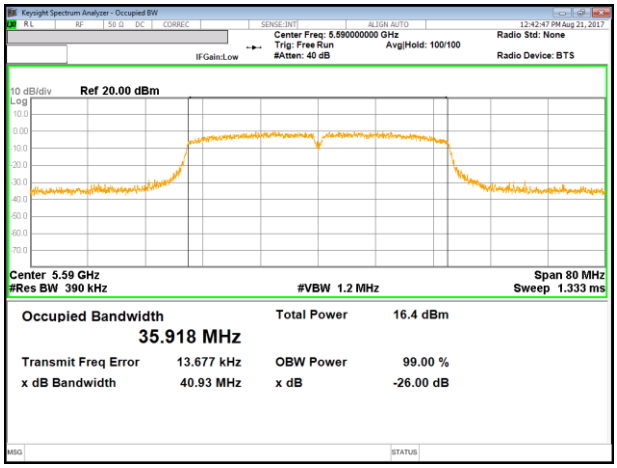
11n HT40 Mode Low Channel



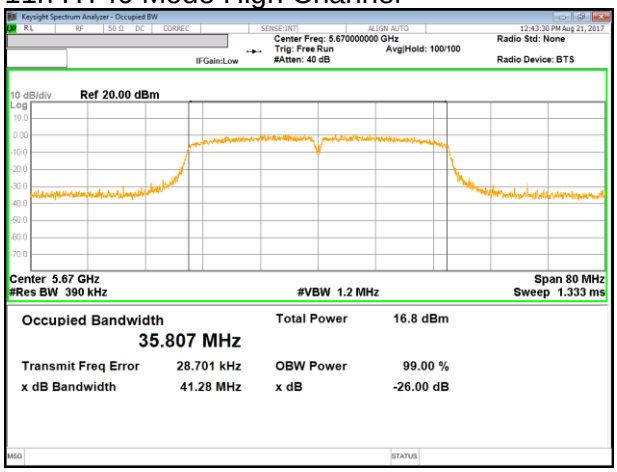
11n HT40 Mode Middle Channel



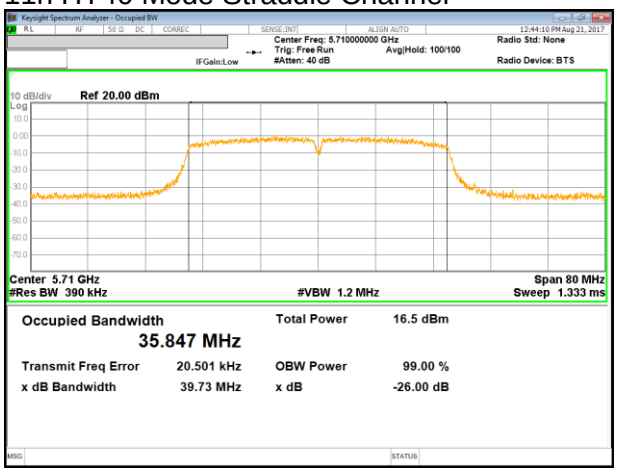
11n HT40 Mode Middle Channel



11n HT40 Mode High Channel

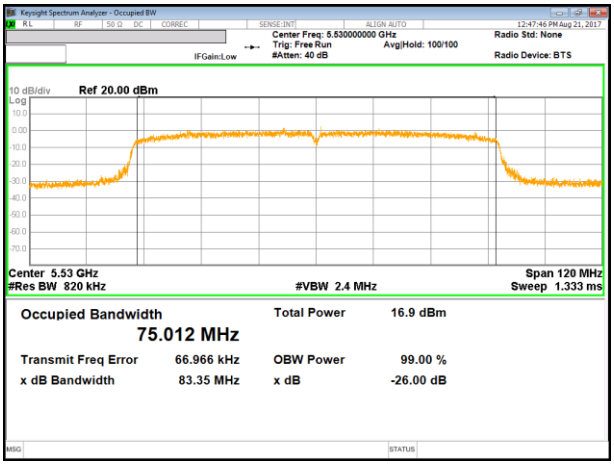


11n HT40 Mode Straddle Channel

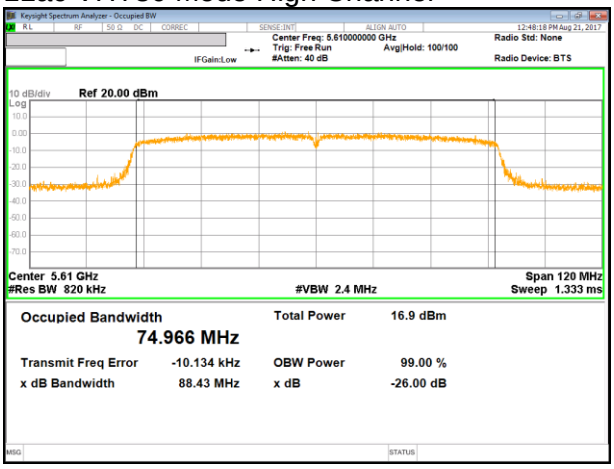


UNII 5.5 GHz IEEE 802.11ac VHT80 mode

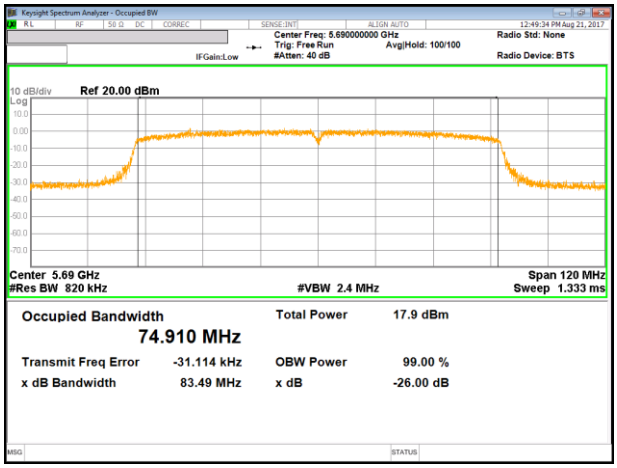
11ac VHT80 Mode Low Channel



11ac VHT80 Mode High Channel

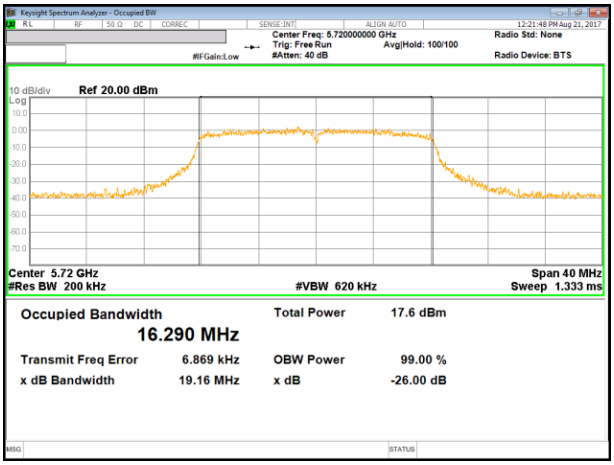


11ac VHT80 Mode Straddle Channel

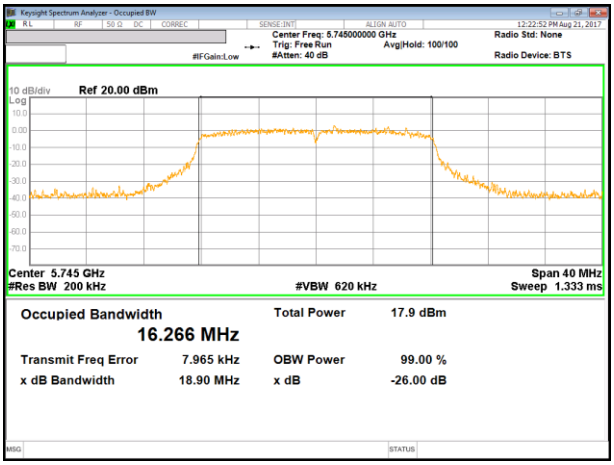


UNII 5.8 GHz IEEE 802.11a mode

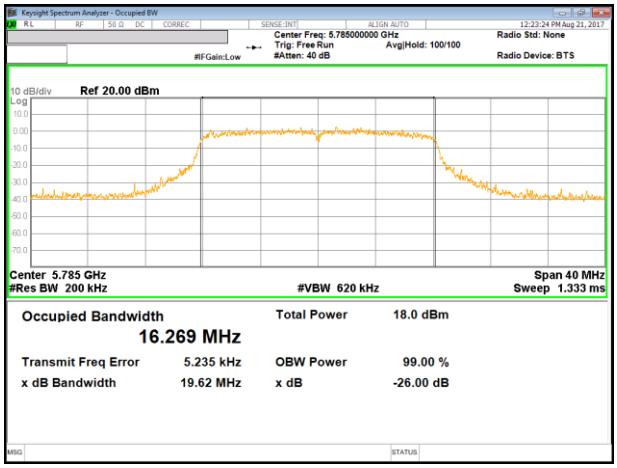
11a Mode Straddle Channel



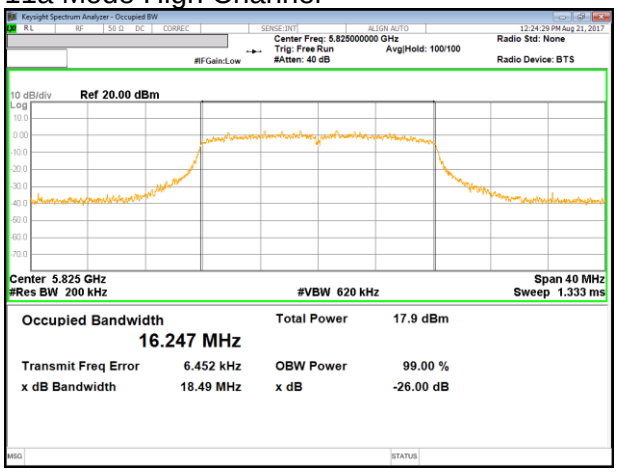
11a Mode Low Channel



11a Mode Middle Channel

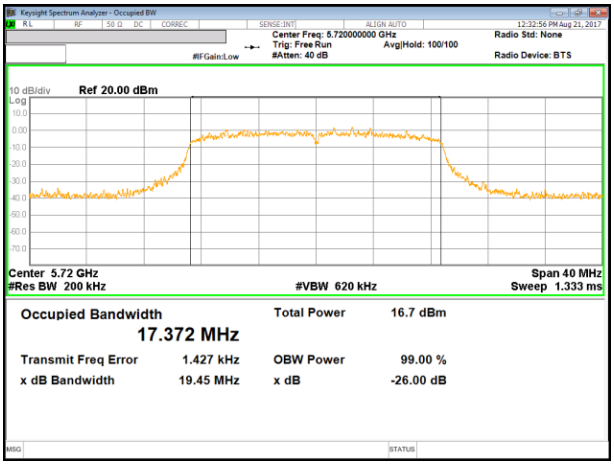


11a Mode High Channel

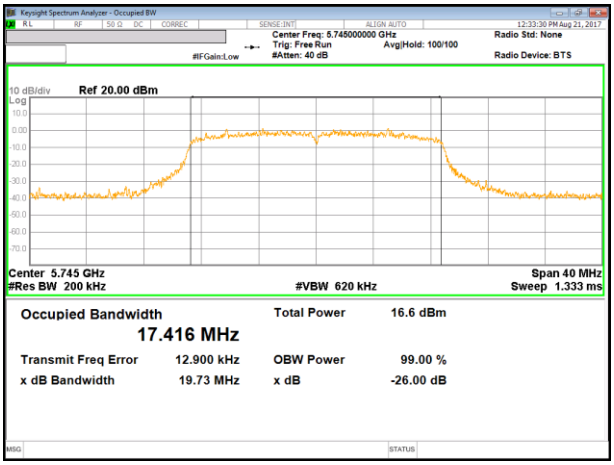


UNII 5.8 GHz IEEE 802.11n HT20 mode

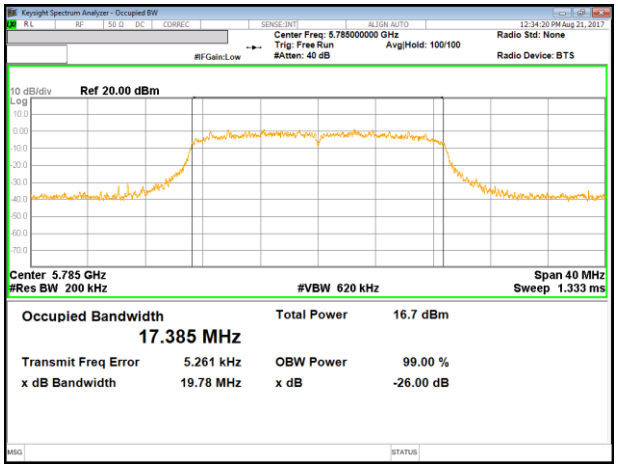
11n HT20 Mode Straddle Channel



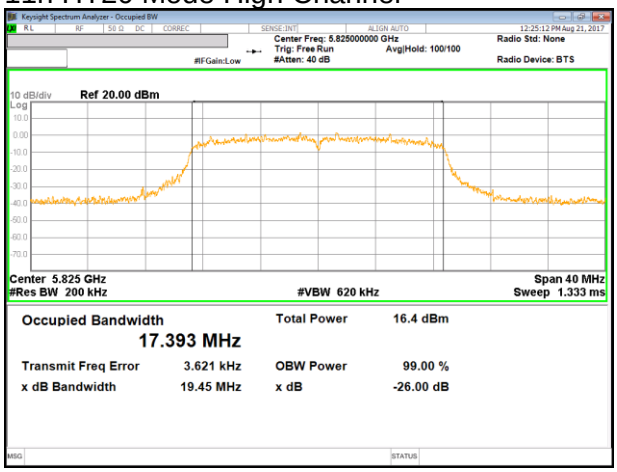
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel

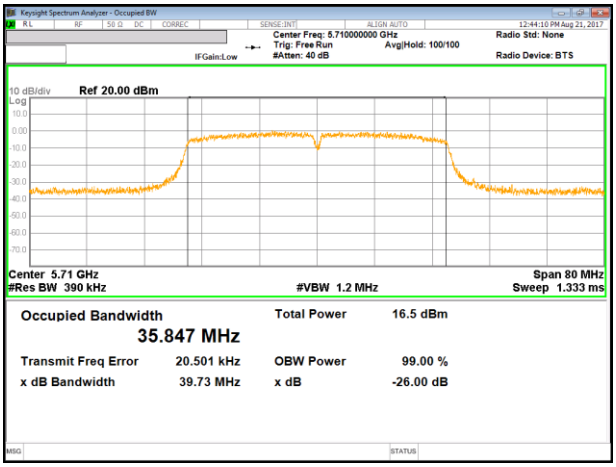


11n HT20 Mode High Channel

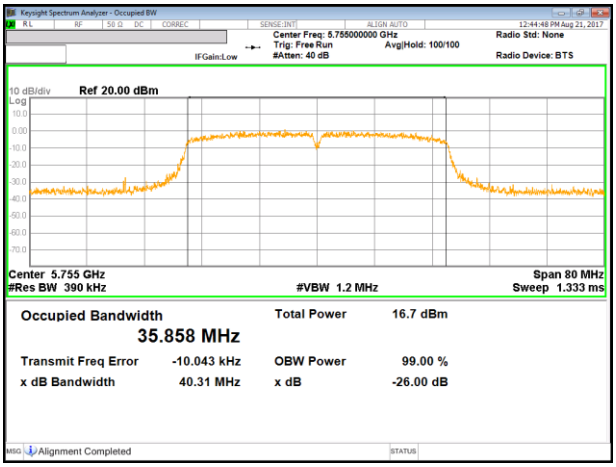


UNII 5.8 GHz IEEE 802.11n HT40 mode

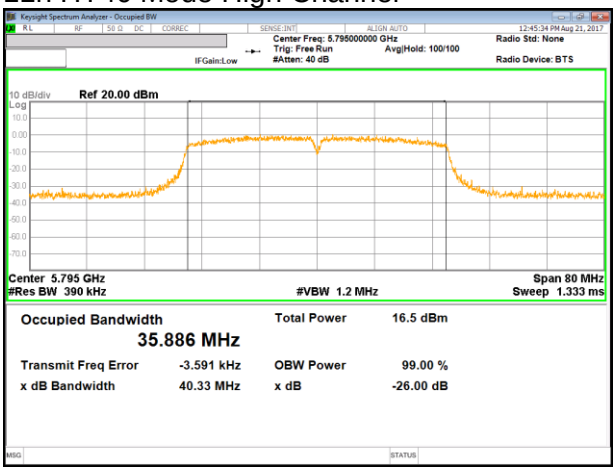
11n HT40 Mode Straddle Channel



11n HT40 Mode Low Channel

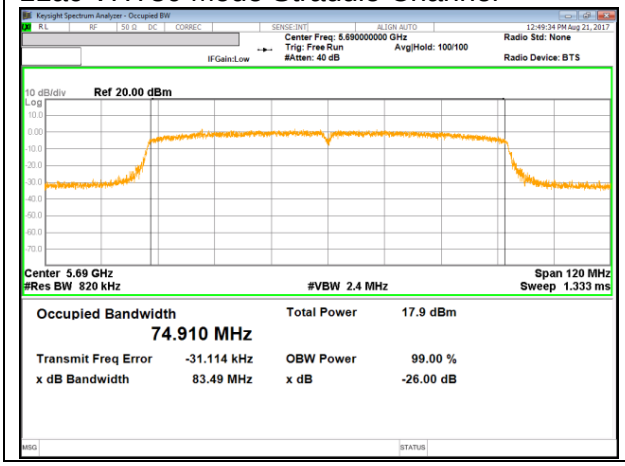


11n HT40 Mode High Channel

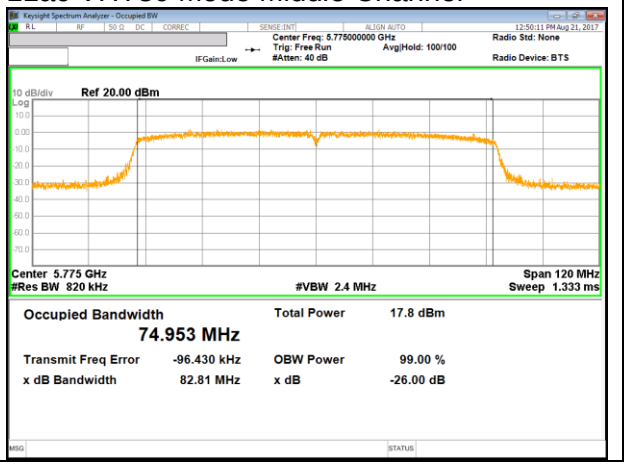


UNII 5.8 GHz IEEE 802.11ac VHT80 mode

11ac VHT80 Mode Straddle Channel



11ac VHT80 Mode Middle Channel



8.4. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01r04: The transmitter output is connected to a spectrum analyzer with the RBW set to approximately 1% to 5% of OBW, the VBW >= 3 x RBW, single sweep.

NOTE

- Calculation for 99% Bandwidth of UNII-2C and UNII-3 Straddle Channel

ex) Fundamental frequency : 5720MHz
  - 99% BW : 21.00MHz
  - Turning Frequency : 5725MHz
  - 99% Bandwidth of UNII-2C band Portion
    = (5725 – (5720 - (21.00 / 2)) = 15.50 MHz
  - 99% Bandwidth of UNII-3 band Portion
    = (5720 + (21.00 / 2) -5725) = 5.50 MHz

RESULTS

8.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5180	16.37
Mid	5200	16.33
High	5240	16.37
Worst		16.37

8.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5180	17.46
Mid	5200	17.50
High	5240	17.49
Worst		17.50

8.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5190	35.90
High	5230	35.84
Worst		35.90

8.4.4. 802.11n VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Mid	5210	75.13
Worst		75.13

8.4.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5260	16.30
Mid	5300	16.35
High	5320	16.34
Worst		16.35

8.4.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5260	17.46
Mid	5300	17.52
High	5320	17.51
Worst		17.52

8.4.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5270	35.83
High	5310	35.83
Worst		35.83

8.4.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Middle	5290	75.07
Worst		75.07

8.4.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5500	16.37
Mid	5580	16.36
High	5700	16.27
Straddle	5720	13.18
Worst		16.37

8.4.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5500	17.53
Mid	5580	17.54
High	5700	17.45
Straddle	5720	13.74
Worst		17.54

8.4.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5510	35.86
Mid	5550	35.95
Mid	5590	35.84
High	5670	36.01
Straddle	5710	32.92
Worst		36.01

8.4.12. 802.11ac VHT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	5530	75.08
High	5610	75.12
Straddle	5690	72.53
Worst		75.08

8.4.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Straddle	5720	3.18
Low	5745	16.36
Mid	5785	16.34
High	5825	16.34
Worst		16.36

8.4.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Straddle	5720	3.74
Low	5745	17.45
Mid	5785	17.51
High	5825	17.46
Worst		17.51

8.4.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Straddle	5710	2.92
Low	5755	35.78
High	5795	35.89
Worst		35.89

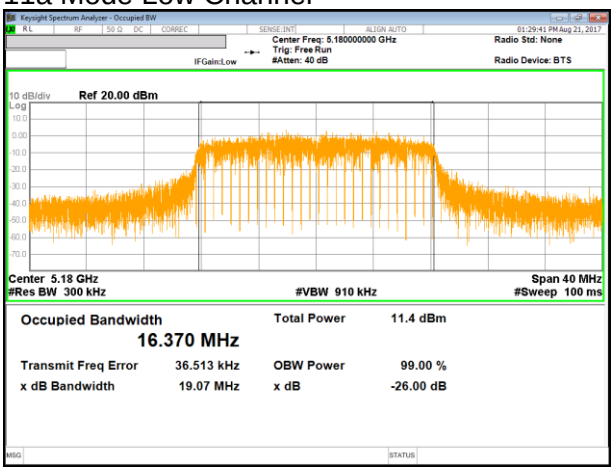
8.4.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Straddle	5690	2.53
Middle	5775	75.09
Worst		75.09

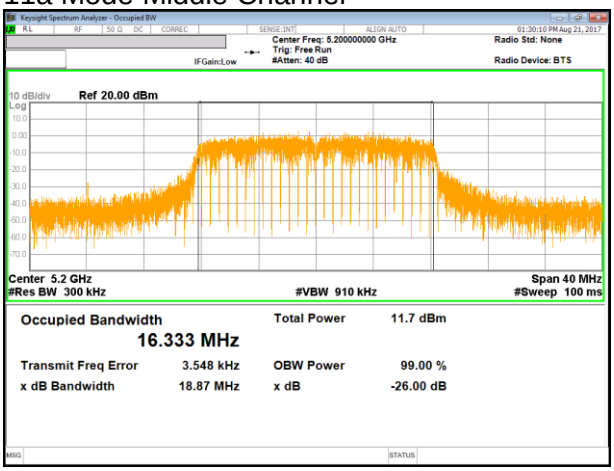
8.4.17. 99% BANDWIDTH PLOTS

UNII 5.2 GHz IEEE 802.11a mode

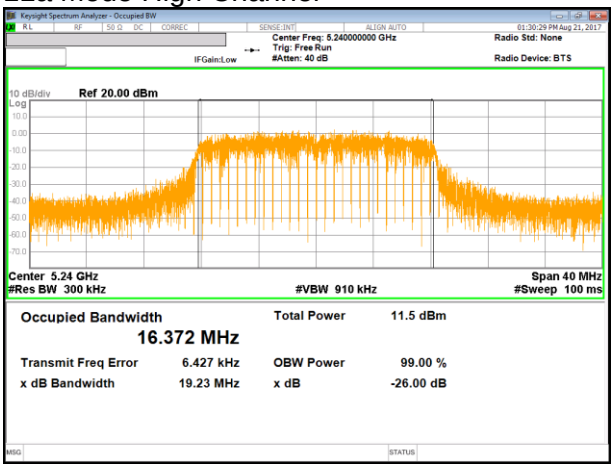
11a Mode Low Channel



11a Mode Middle Channel

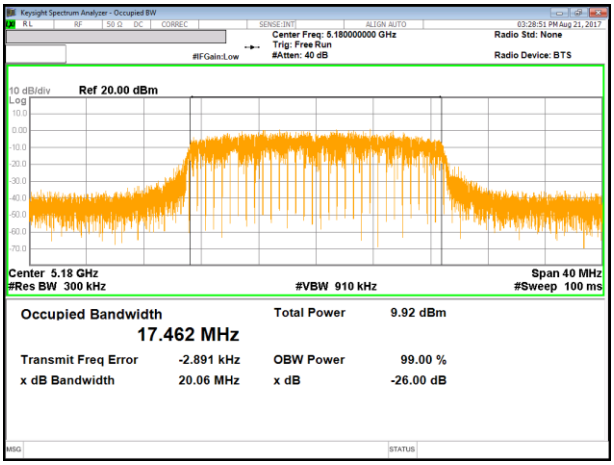


11a Mode High Channel

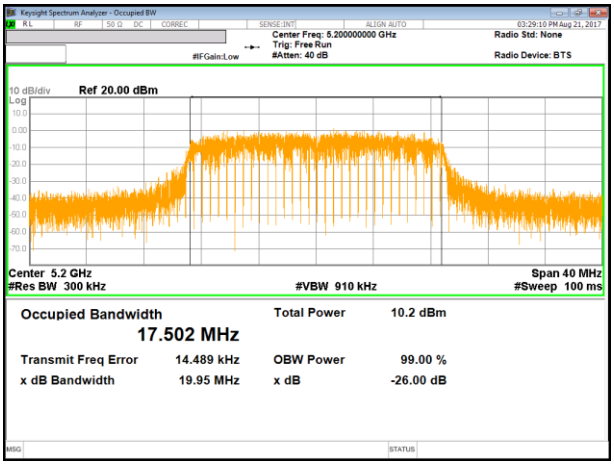


UNII 5.2 GHz IEEE 802.11n HT20 mode

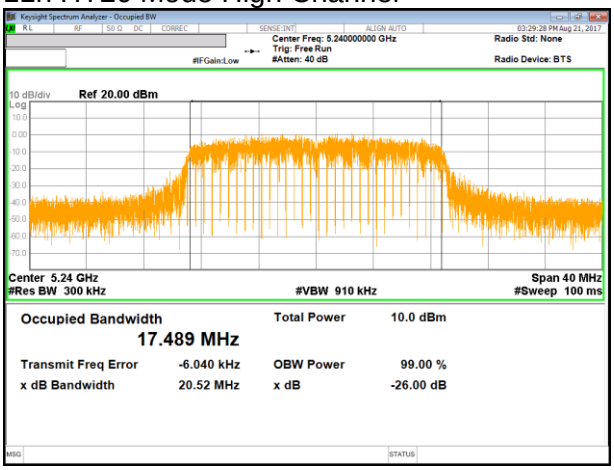
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel



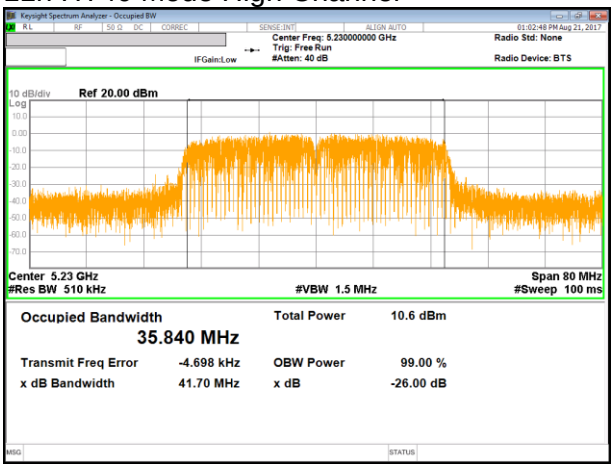
11n HT20 Mode High Channel



UNII 5.2 GHz IEEE 802.11n HT40 mode

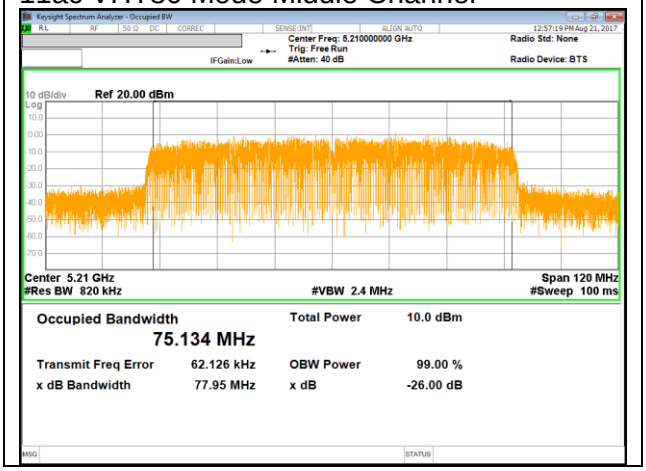
11n HT40 Mode Low Channel

11n HT40 Mode High Channel



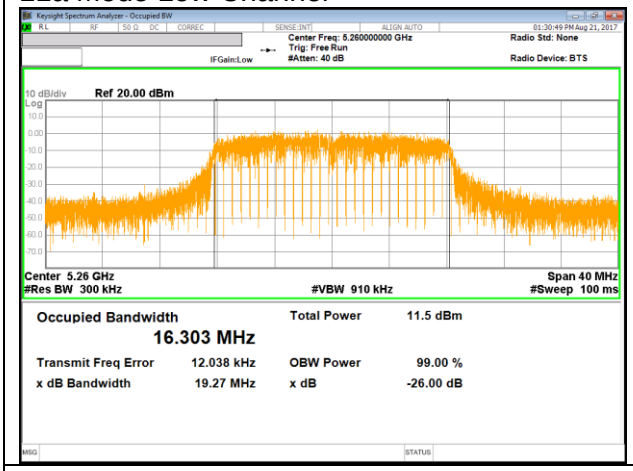
UNII 5.2 GHz IEEE 802.11ac VHT80 mode

11ac VHT80 Mode Middle Channel

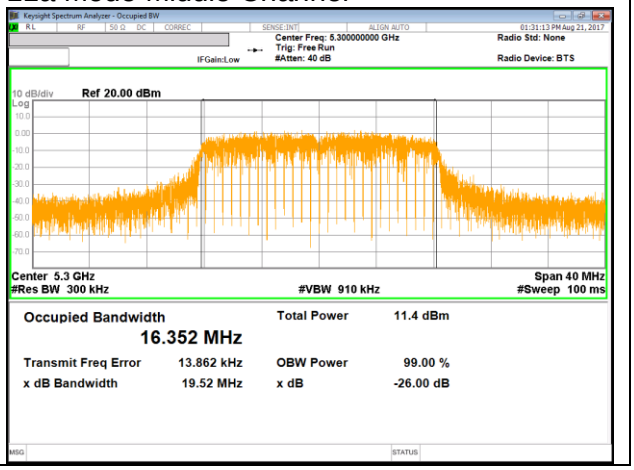


UNII 5.3 GHz IEEE 802.11a mode

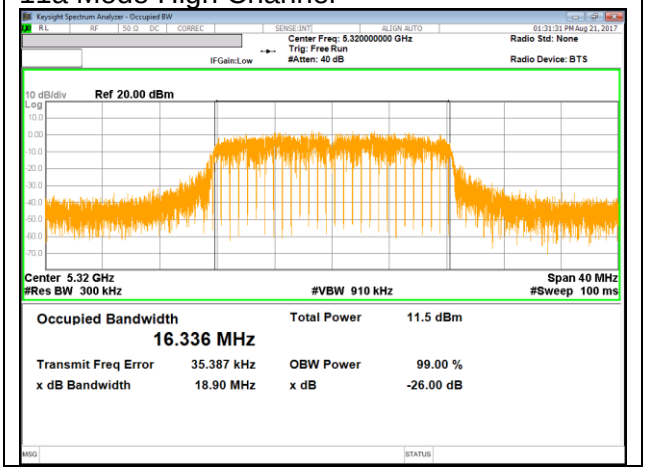
11a Mode Low Channel



11a Mode Middle Channel

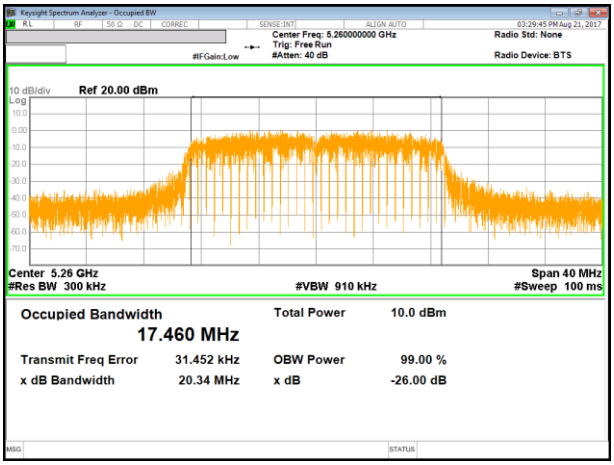


11a Mode High Channel

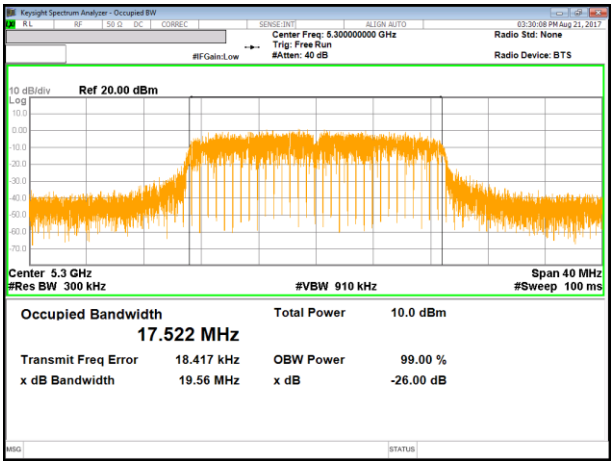


UNII 5.3 GHz IEEE 802.11n HT20 mode

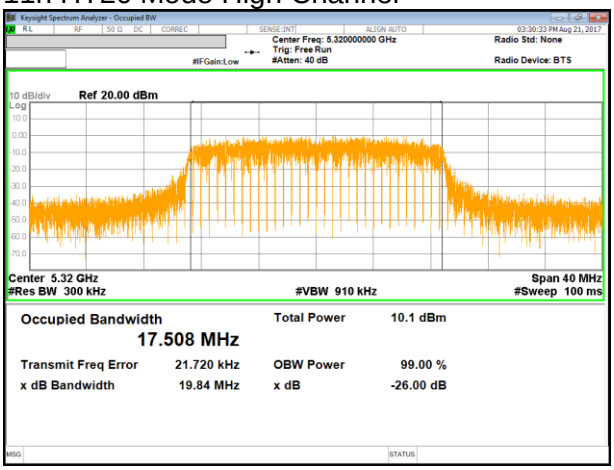
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel



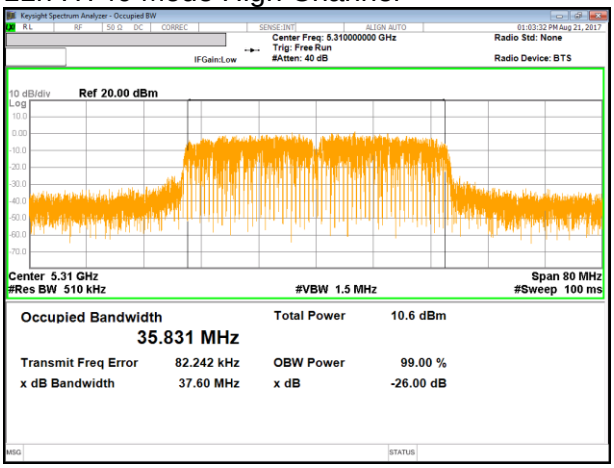
11n HT20 Mode High Channel



UNII 5.3 GHz IEEE 802.11n HT40 mode

11n HT40 Mode Low Channel

11n HT40 Mode High Channel

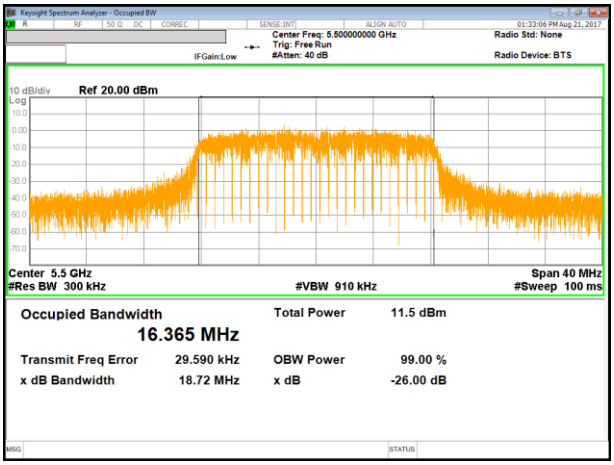


UNII 5.3 GHz IEEE 802.11ac VHT80 mode

11ac VHT80 Mode Middle Channel

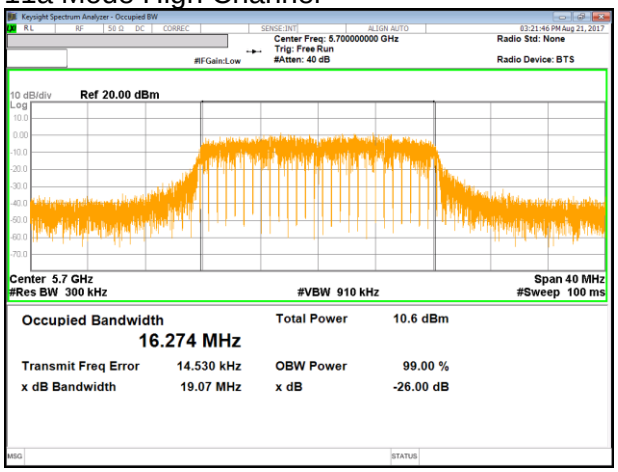
UNII 5.5 GHz IEEE 802.11a mode

11a Mode Low Channel

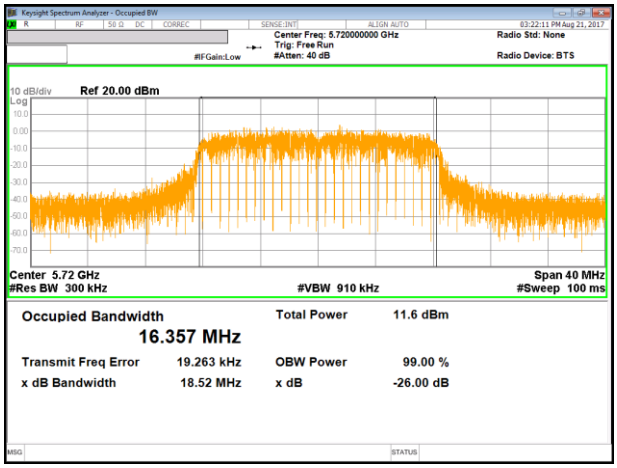


11a Mode Middle Channel

11a Mode High Channel

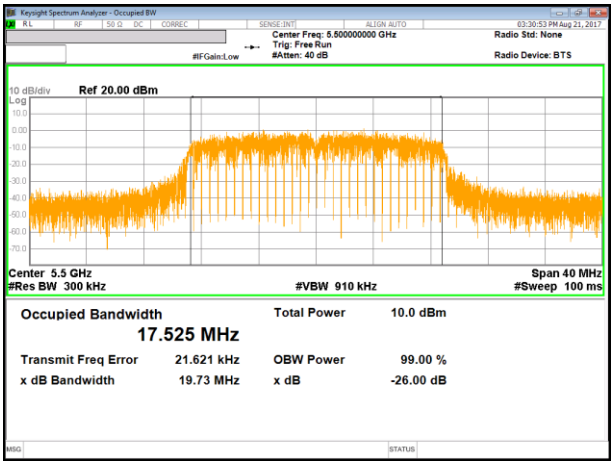


11a Mode Straddle Channel

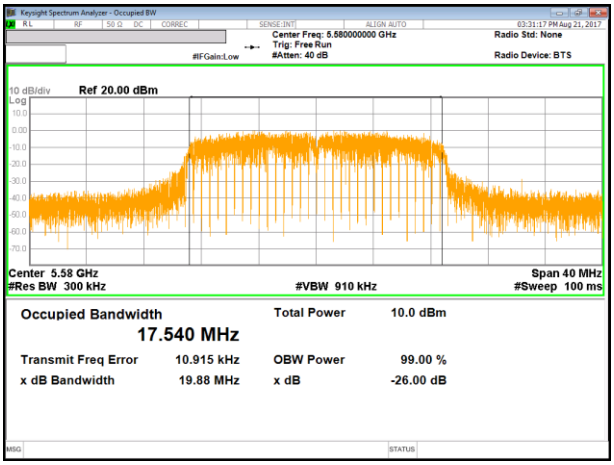


UNII 5.5 GHz IEEE 802.11n HT20 mode

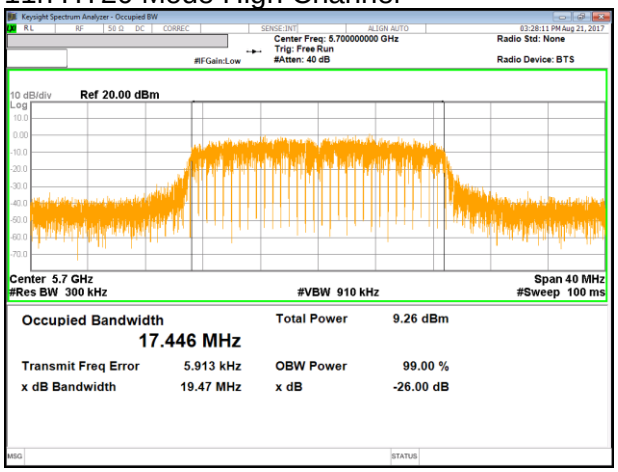
11n HT20 Mode Low Channel



11n HT20 Mode Middle Channel



11n HT20 Mode High Channel



11n HT20 Mode Straddle Channel