ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

Applicant:	silex technology, Inc. 2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237, Japan
Product Name:	SX-PCEAC-DB Rev2
Brand Name:	SILEX TECHNOLOGY
Model No.:	SX-PCEAC-DB, SX-PCEAC
Model Difference:	Both hardware is identical. SX-PCEAC-DB works on 2.4GHz and 5GHz, SX-PCEAC does on 5GHz only. It's controlled by driver software.
Report Number:	ER/2020/10096
FCC ID:	N6C-PCEACDBR2
FCC Rule Part:	§15.407, Cat: NII
Issue Date:	Apr. 17, 2020
Date of Test:	Feb. 15, 2020 ~ Feb. 26, 2020
Date of EUT Received:	Jan. 16, 2020

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Approved By: Jim Chang

Jim Chang / Manager

Testing Laboratory
0513

Revision History				
Report Number	**Revision**	**Description**	**Issue Date**	**Remark**
ER/2020/10096	Rev.00	Original.	Apr. 17, 2020	Revised By: Yuri Tsai

Note:

1、Multiple Model numbers or Trademarks
The variant model numbers are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

2、Disclaimer
Variant information between model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received.

Contents

1 GENERAL INFORMATION

1.1 Product Description

Product Name:	SX-PCEAC-DB Rev2	
Brand Name:	SILEX TECHNOLOGY	
Model No.:	SX-PCEAC-DB, SX-PCEAC	
Model Difference:	Both hardware is identical. SX-PCEAC-DB works on 2.4GHz and 5GHz, SX-PCEAC does on 5GHz only. It's controlled by driver software.	
Hardware Version:	PW104021XX	
Firmware Version:	10.2-00082-4	
Software Version:	Ver.1	
Power Supply:	3.3V from DC Power Supply	
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only	
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 216.7Mbps 802.11 n_40MHz: 13.5 – 450.0Mbps	802.11 ac_20MHz: 6.5 –288.9Mbps 802.11 ac_40MHz: 13.5 –600.0Mbps 802.11 ac_80MHz: 29.3 – 1300.0Mbps

1.2 Antenna Designation

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
ROD	STAF	1019-015A	5150~5850	4	V
	Sansei Denki	ANTDC-081A0		2	
	Sansei Denki	ANTDP-027A0		2.1	
	JOYMAX	KWM-619BMPXX		3.81	
PCB	Molex	146153		5	V
	Unictron	H2B1PC1A1C (AA258)		4.4	
	Unictron	H2B1PD1A1C (AA222)		4.2	
Note: Pre-scanned was done on the above 7 antennas, the 1019-015A & 146153 results higher emission at 5GHz. Therefore, the completed set of measurement was done on the antenna to be presented on this test report.					

1.3 FCC worst power

Wi-Fi 802.11	Frequency Range	Channels	Rated Power (Avg.) (dBm) (Worst case)	Modulation Technology
a	5150~5250	4	11.87	OFDM
	5250~5350	4	19.28	
	5470~5725	11	18.84	
	5725~5850	5	23.25	
n_HT ac_VHT 20M	5150~5250	4	HT: 12.65	OFDM
	5250~5350	4	HT: 14.84	
	5470~5725	11	HT: 18.52	
	5725~5850	5	HT: 23.29	
n_HT ac_VHT 40M	5150~5250	2	HT: 13.20	OFDM
	5250~5350	2	HT: 15.03	
	5470~5725	5	HT: 19.03	
	5725~5850	2	HT: 22.41	
ac_VHT 80M	5150~5250	1	13.02	OFDM
	5250~5350	1	15.70	
	5470~5725	2	20.03	
	5725~5850	1	14.87	

1.4 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10:2013

1.5 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory (TAF code 0513)
No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

FCC Designation number: TW0001

1.6 Special Accessories

There are no special accessories used while test was conducted.

1.7 Equipment Modifications

There was no modification incorporated into the EUT.

2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.3 Radiated Emissions

The EUT is a placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*9m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.
There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

2.5 Configuration of Tested System

Fig. 2-1 Radiated Emission & Conducted (Antenna Port)

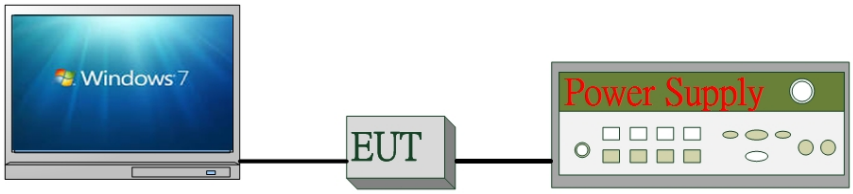


Fig. 2-2 Conducted (AC Power Line) Emission

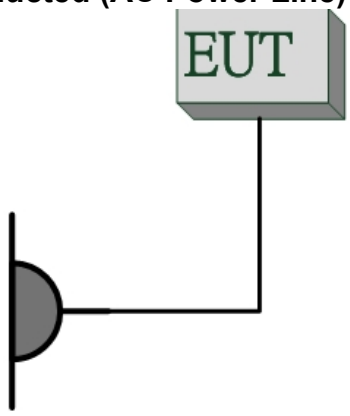


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	DC Power Supply	Agilent	E3640A	MY40000811	N/A	N/A
3.	Notebook	Lenovo	L480	PF-1S9Q32	N/A	N/A

3 SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB & 6dB Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.205 §15.209 §15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.203 §15.407(a)	Antenna Requirement	Compliant

4 DESCRIPTION OF TEST MODES

4.1 802.11a/n/ac operated in U-NII Bands

Operated band in 5150 MHz ~5250 MHz:

20 M	
CH	Freq (MHz)
36	5180
40	5200
44	5220
48	5240

40 M	
CH	Freq (MHz)
38	5190
46	5230

80 M	
CH	Freq (MHz)
42	5210

Operated band in 5250 MHz ~5350 MHz:

20 M	
CH	Freq (MHz)
52	5260
56	5280
60	5300
64	5320

40 M	
CH	Freq (MHz)
54	5270
62	5310

80 M	
CH	Freq (MHz)
58	5290

Operated band in 5470 MHz ~5725 MHz:

20 M	
CH	Freq (MHz)
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700

40 M	
CH	Freq (MHz)
102	5510
110	5550
118	5590
126	5630
134	5670

80 M	
CH	Freq (MHz)
106	5530
122	5610

Operated band in 5745 MHz ~5850 MHz:

20	
CH	Freq (MHz)
149	5745
153	5765
157	5785
161	5805
165	5825

40	
CH	Freq (MHz)
151	5755
159	5795

80 M	
CH	Freq (MHz)
155	5775

4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case. The given UE is pre-scanned among below modes.

Modulation	Transmission Chain				Multiple Transmission Spatial
☒ 802.11 a	☒ Ch0	☒ Ch1	☒ Ch2	☐ Ch3	☒ 3TX
☒ 802.11 n	☒ Ch0	☒ Ch1	☒ Ch2	☐ Ch3	☒ MIMO
☒ 802.11 ac	☒ Ch0	☒ Ch1	☒ Ch2	☐ Ch3	☒ MIMO
☐ 802.11 ax	☐ Ch0	☐ Ch1	☐ Ch2	☐ Ch3	☐ MIMO

4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

4.2.1 RADIATED EMISSION TEST:

RADIATED EMISSION TEST (BELOW 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	44	OFDM	6	3TX
	5260~5320	52 to 64	60			
	5500~5700	100 to 140	116			
	5745~5825	149 to 165	157			
802.11ac_VHT80	5210	42	42		MCS16	MIMO
	5290	58	58			
	5530~5610	106 to 122	122			
	5775	155	155			

RADIATED EMISSION TEST (ABOVE 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	3TX
	5260~5320	52 to 64	52,60,64			
	5500~5700	100 to 140	100,116,140			
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48		MCS16	MIMO
	5260~5320	52 to 64	52,60,64			
	5500~5700	100 to 140	100,116,140			
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46		MCS16	MIMO
	5270~5310	54 to 62	54,62			
	5510~5670	102 to 134	102,110,134			
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42		MCS16	MIMO
	5290	58	58			
	5530~5610	106 to 122	106,122			
	5775	155	155			

Note:
The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n/ac WLAN Transmitter for channel Low, Mid and High, the worst case H position was reported.

4.2.2 ANTENNA PORT CONDUCTED MEASUREMENT:

CONDUCTED TEST						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	3TX
	5260~5320	52 to 64	52,60,64			
	5500~5700	100 to 140	100,116,140			
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48		MCS16	MIMO
	5260~5320	52 to 64	52,60,64			
	5500~5700	100 to 140	100,116,140			
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46		MCS16	MIMO
	5270~5310	54 to 62	54,62			
	5510~5670	102 to 134	102,110,134			
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42		MCS16	MIMO
	5290	58	58			
	5530~5610	106 to 122	106,122			
	5775	155	155			

5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Measurement	+/- 0.96 dB
Peak Power Spectral Density Measurement	+/- 1.67 dB
Frequency Stability	+/- 123.36 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission Measurement Uncertainty	
Polarization: Vertical	9kHz~30MHz: +-2.3dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB
Polarization: Horizontal	9kHz~30MHz: +-2.3dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

6 CONDUCTED EMISSION TEST

6.1 Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Note
1.The lower limit shall apply at the transition frequencies
2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

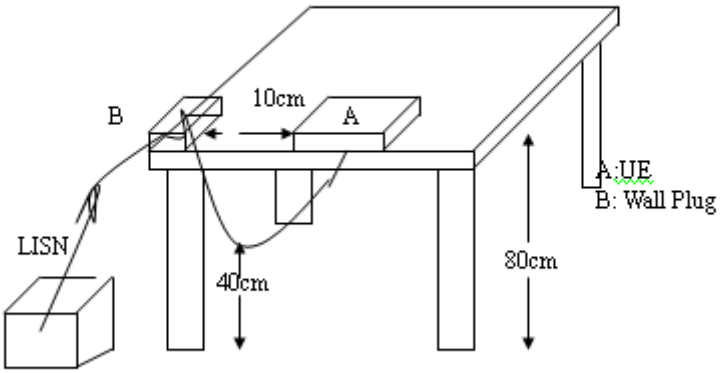
6.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMI Test Receiver	R&S	ESCI 7	1166.5950.07	07/04/2019	07/03/2020
LISN	SCHWARZ-BECK	NSLK 8127	8127-649	04/02/2019	04/01/2020
Test Software	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R	N.C.R
Coaxial Cables	N/A	WK CE Cable	N/A	01/02/2020	01/01/2021

6.3 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The LISN was connected with 120Vac/60Hz power source.

6.4 Test SET-UP



6.5 Measurement Procedure

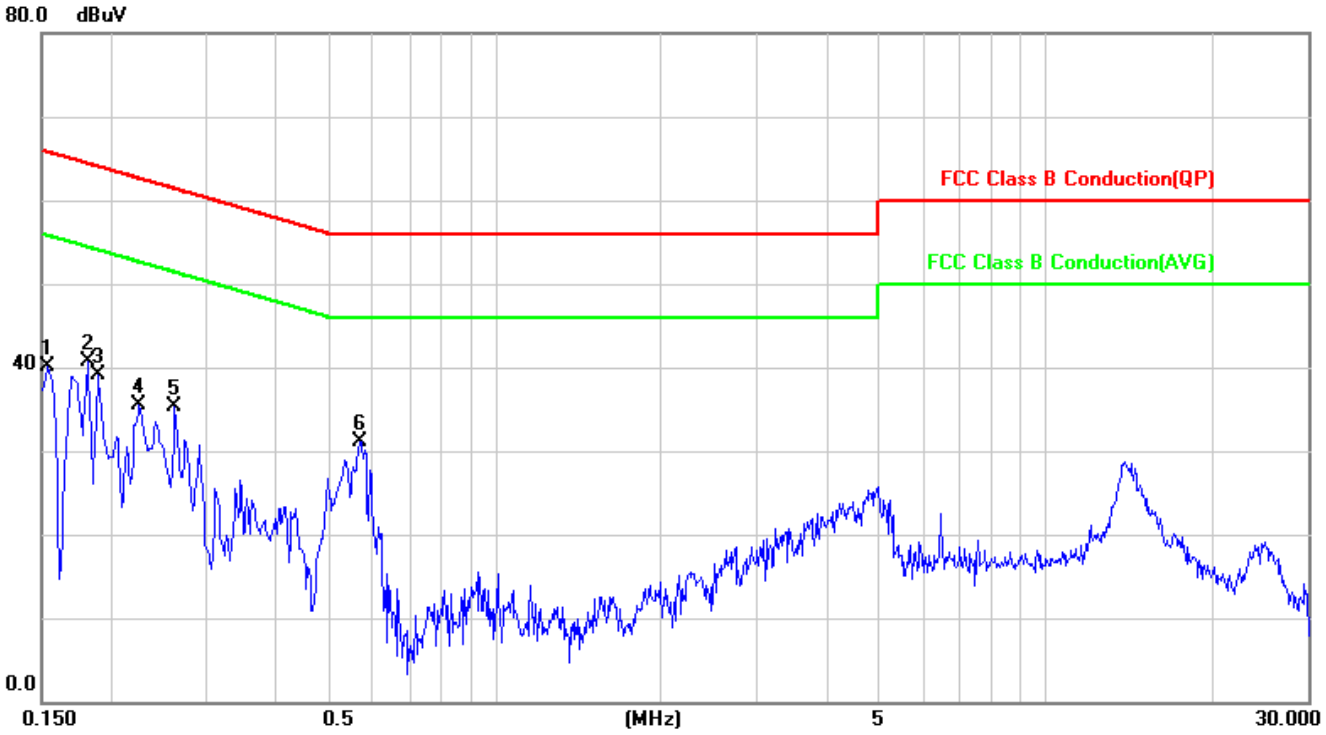
1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed.

6.6 Measurement Result

Note: Refer to next page for measurement data and plots.
Note2: The * reveals the worst-case results that closet to the limit.

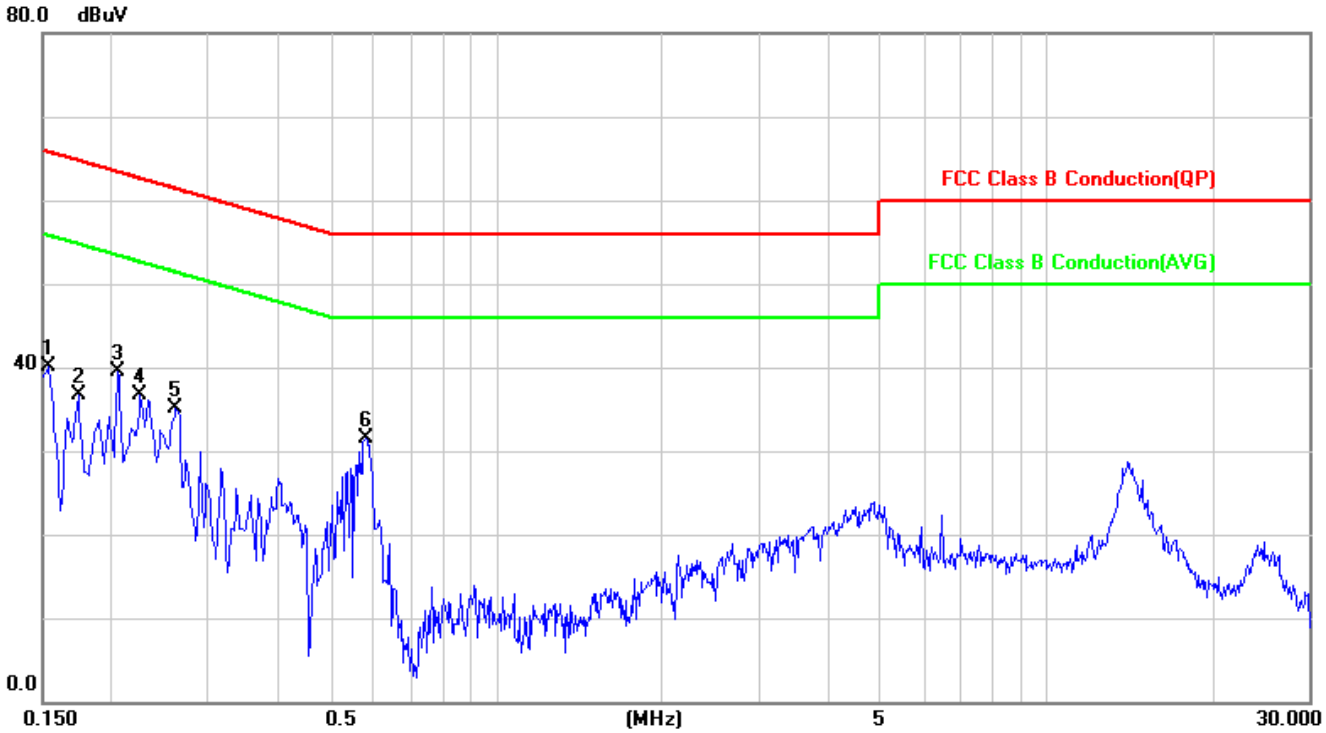
AC POWER LINE CONDUCTED EMISSION TEST DATA

Description:	**Operation**	**Date:**	**2020/02/26**
Line:	**L1**	**Temp.(℃)/Hum.(%):**	**20.5(℃)/51%**
Test Voltage:	**AC 120V/60Hz**	**Test By:**	**Nick**
Report Number:	**ER/2020/10096**	**Note:**	**ROD Antenna**



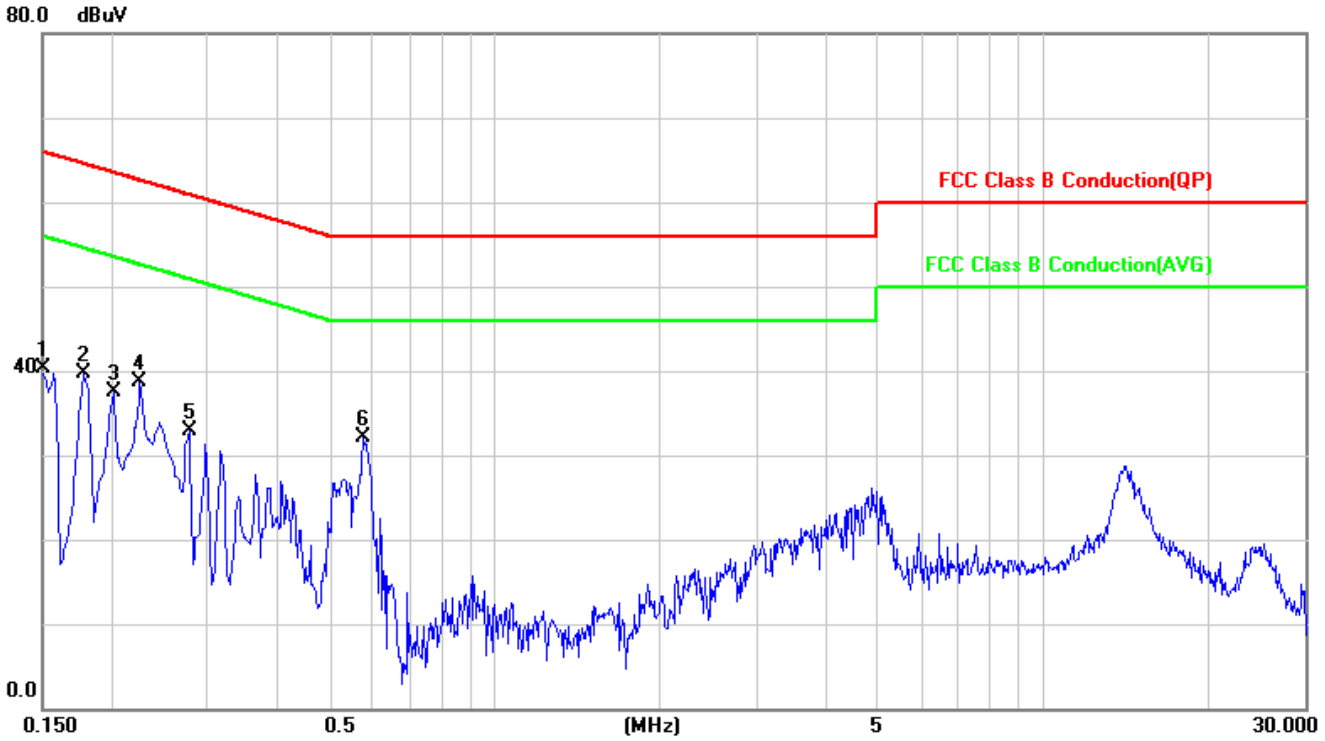
No.	Mk.	Freq.	Reading	Factor	Measure-ment	Limit	Over	Detector	Comment
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1540	40.04	0.00	40.04	65.78	-25.74	peak	
2	*	0.1820	40.67	0.01	40.68	64.39	-23.71	peak	
3		0.1900	39.10	0.01	39.11	64.04	-24.93	peak	
4		0.2260	35.40	0.01	35.41	62.60	-27.19	peak	
5		0.2620	35.23	0.01	35.24	61.37	-26.13	peak	
6		0.5700	31.06	0.01	31.07	56.00	-24.93	peak	

Description:	**Operation**	**Date:**	**2020/02/26**
Line:	**N**	**Temp.(℃)/Hum.(%):**	**20.5(℃)/51%**
Test Voltage:	**AC 120V/60Hz**	**Test By:**	**Nick**
Report Number:	**ER/2020/10096**	**Note:**	**ROD Antenna**



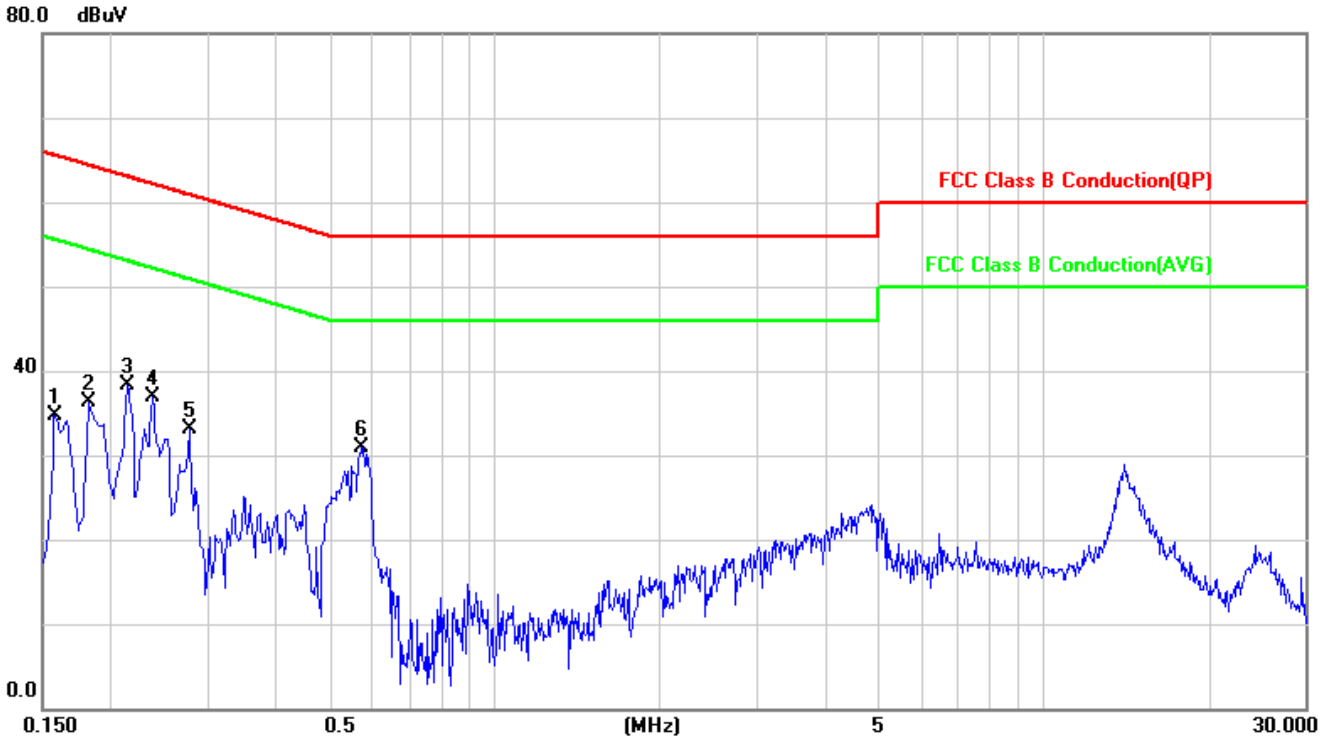
No.	Mk.	Freq.	Reading	Factor	Measure-ment	Limit	Over	Detector	Comment
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1540	40.15	0.03	40.18	65.78	-25.60	peak	
2		0.1740	36.59	0.03	36.62	64.77	-28.15	peak	
3	*	0.2060	39.53	0.03	39.56	63.37	-23.81	peak	
4		0.2260	36.62	0.03	36.65	62.60	-25.95	peak	
5		0.2620	35.03	0.03	35.06	61.37	-26.31	peak	
6		0.5820	31.43	0.03	31.46	56.00	-24.54	peak	

Description:	**Operation**	**Date:**	**2020/02/26**
Line:	**L1**	**Temp.(℃)/Hum.(%):**	**20.5(℃)/51%**
Test Voltage:	**AC 120V/60Hz**	**Test By:**	**Nick**
Report Number:	**ER/2020/10096**	**Note:**	**PCB Antenna**



No.	Mk.	Freq.	Reading	Factor	Measure-ment	Limit	Over	Detector	Comment
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1500	40.37	0.00	40.37	66.00	-25.63	peak	
2		0.1780	39.79	0.01	39.80	64.58	-24.78	peak	
3		0.2020	37.55	0.01	37.56	63.53	-25.97	peak	
4	*	0.2260	38.76	0.01	38.77	62.60	-23.83	peak	
5		0.2780	32.87	0.01	32.88	60.88	-28.00	peak	
6		0.5780	32.07	0.01	32.08	56.00	-23.92	peak	

Description:	**Operation**	**Date:**	**2020/02/26**
Line:	**N**	**Temp.(℃)/Hum.(%):**	**20.5(℃)/51%**
Test Voltage:	**AC 120V/60Hz**	**Test By:**	**Nick**
Report Number:	**ER/2020/10096**	**Note:**	**PCB Antenna**



No.	Mk.	Freq.	Reading	Factor	Measure-ment	Limit	Over	Detector	Comment
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1580	34.70	0.03	34.73	65.57	-30.84	peak	
2		0.1820	36.23	0.03	36.26	64.39	-28.13	peak	
3	*	0.2140	38.35	0.03	38.38	63.05	-24.67	peak	
4		0.2380	36.85	0.03	36.88	62.17	-25.29	peak	
5		0.2780	32.99	0.03	33.02	60.88	-27.86	peak	
6		0.5740	30.86	0.03	30.89	56.00	-25.11	peak	

7 DUTY CYCLE TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

7.1 Measurement Procedure:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

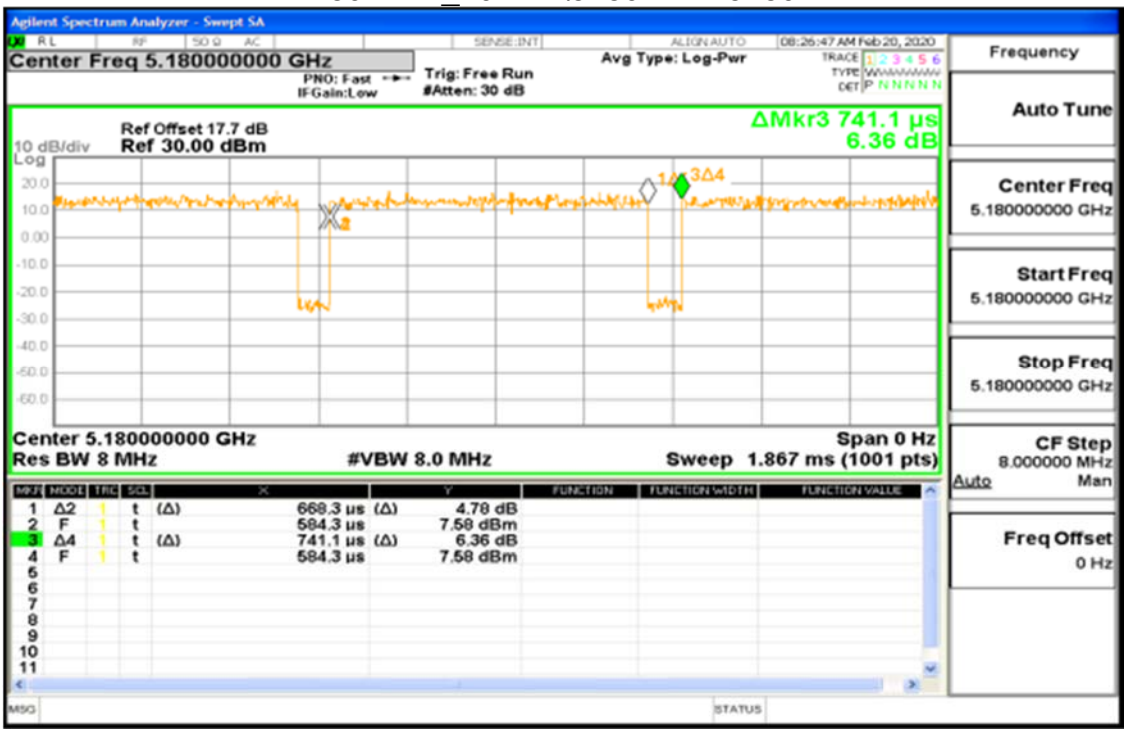
Duty Cycle:

Mode	Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	96.69	0.15	0.49	1.00
802.11n_20	90.18	0.45	1.50	2.00
802.11ac_20	90.68	0.42	1.49	2.00
802.11n_40	83.85	0.76	2.87	3.00
802.11ac_40	83.83	0.77	2.84	3.00
802.11ac_80	73.63	1.33	5.20	6.00

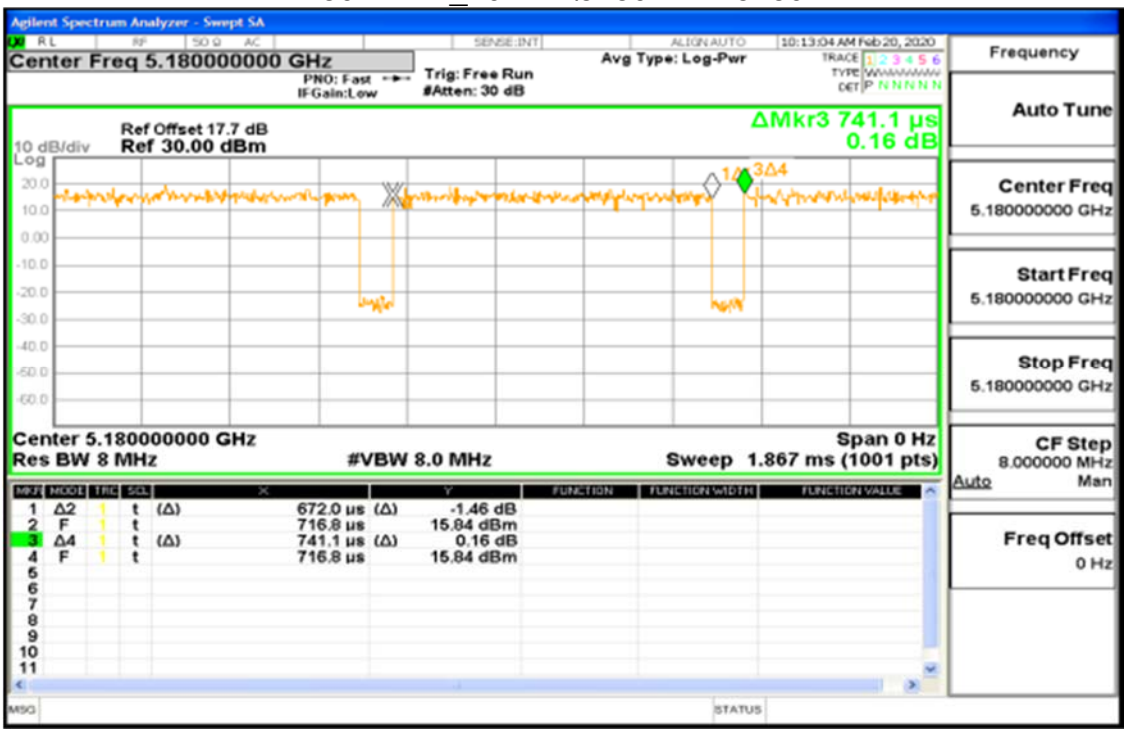
7.2 DUTY CYCLE TEST SIGNAL MEASUREMENT RESULT

802.11a_20MHz\5180 MHz-5180

802.11n_20MHz\5180 MHz-5180



802.11ac_20MHz\5180 MHz-5180



802.11n_40MHz\5190 MHz-5190

802.11ac_40MHz\5190 MHz-5190

802.11ac_80MHz\5210 MHz-5210

8 26DB &6DB EMISSION BANDWIDTH MEASUREMENT

8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.
The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3.

8.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.

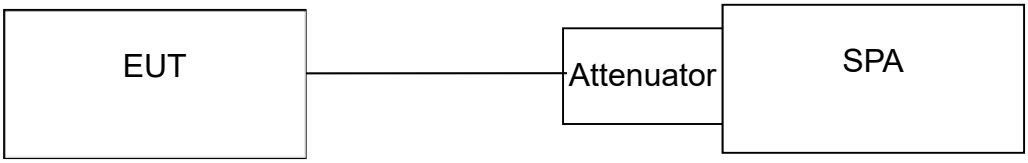
   3.a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW
   Sweep=auto,
   Detector = Peak,
   Trace Mode = Max Hold,
   Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.

   3.b. Mark the peak frequency and –26dB (upper and lower) frequency.
4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.
   a. Set the spectrum analyzer as
   RBW = 100 kHz,
   VBW = 3*RBW,
   Span = 30M/50MHz,
   Detector=Peak,
   Sweep=auto
   b. Mark the peak frequency and –6dB (upper and lower) frequency.
6. Repeat above procedures until all frequency of interest measured was complete.

8.3 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	05/02/2019	05/01/2020
DC Power Supply	Agilent	E3640A	MY40000811	12/23/2019	12/22/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021

8.4 Test Set-up



8.5 Measurement Result

8.5.1 FCC 26dB Bandwidth

802.11a_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.9	13.404
5220	21.18	13.259
5240	20.97	13.216
5260	21.71	13.367
5300	22.26	13.475
5320	23.27	13.668
5500	26.3	14.200
5580	21.36	13.296
5700	21.06	13.235

802.11a_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	20.39	13.094
5220	20.74	13.168
5240	19.56	12.914
5260	21.72	13.369
5300	19.73	12.951
5320	19.61	12.925
5500	25.03	13.985
5580	20.45	13.107
5700	20.62	13.143

802.11a_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.18	13.460
5220	21.94	13.412
5240	22.17	13.458
5260	21.5	13.324
5300	21.62	13.349
5320	21.78	13.381
5500	23.35	13.683
5580	21.61	13.347
5700	21.31	13.286

802.11n_HT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.89	13.402
5220	21.77	13.379
5240	22.04	13.432
5260	21.46	13.316
5300	21.66	13.357
5320	22.04	13.432
5500	21.34	13.292
5580	22.07	13.438
5700	21.65	13.355

802.11n_HT20_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.72	13.369
5220	21.7	13.365
5240	21.3	13.284
5260	21.02	13.226
5300	20.71	13.162
5320	21.26	13.276
5500	21.56	13.336
5580	21.28	13.280
5700	21.72	13.369

802.11n_HT20_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.08	13.440
5220	22.04	13.432
5240	22.47	13.516
5260	22.33	13.489
5300	22.65	13.551
5320	22.01	13.426
5500	22.29	13.481
5580	22.83	13.585
5700	22.44	13.510

802.11n _HT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	44.54	16.488
5230	44.83	16.516
5270	44.88	16.521
5310	44.42	16.476
5510	46.31	16.657
5550	**45.91**	16.619
5670	44.22	16.456

802.11n _HT40_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	43.7	16.405
5230	44.01	16.436
5270	41.41	16.171
5310	43.49	16.384
5510	43.42	16.377
5550	**43.3**	16.365
5670	44.14	16.448

802.11n _HT40_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	42.34	16.268
5230	42.26	16.259
5270	41.63	16.194
5310	43.76	16.411
5510	43.55	16.390
5550	**43.33**	16.368
5670	43.44	16.379

802.11ac _VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	85.26	19.307
5290	88.09	19.449
5530	86.56	19.373
5610	86.46	19.368

802.11ac _VHT80_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	86.89	19.390
5290	87.81	19.435
5530	85.31	19.310
5610	86.42	19.366

802.11ac _VHT80_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	87.17	19.404
5290	86.11	19.351
5530	84.7	19.279
5610	85.49	19.319

8.5.2 6dB Bandwidth (5725 MHz~ 5850 MHz) measure with Peak detector for FCC

802.11a_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	15.98	12.036
5785	15.91	12.017
5825	15.79	11.984

802.11a_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	15.79	11.984
5785	16.34	12.133
5825	16.36	12.138

802.11a_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.35	12.135
5785	16.37	12.140
5825	16.37	12.140

802.11n_HT20_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.2	12.355
5785	17.32	12.385
5825	17.33	12.388

802.11n_HT20_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.6	12.455
5785	17.6	12.455
5825	17.32	12.385

802.11n_HT20_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.57	12.448
5785	17.59	12.453
5825	17.57	12.448

802.11n_HT40_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.19	15.464
5795	35.49	15.501

802.11n_HT40_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.32	15.601
5795	35.78	15.536

802.11n_HT40_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.92	15.553
5795	35.74	15.532

802.11ac _VHT80_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	73.19	18.645

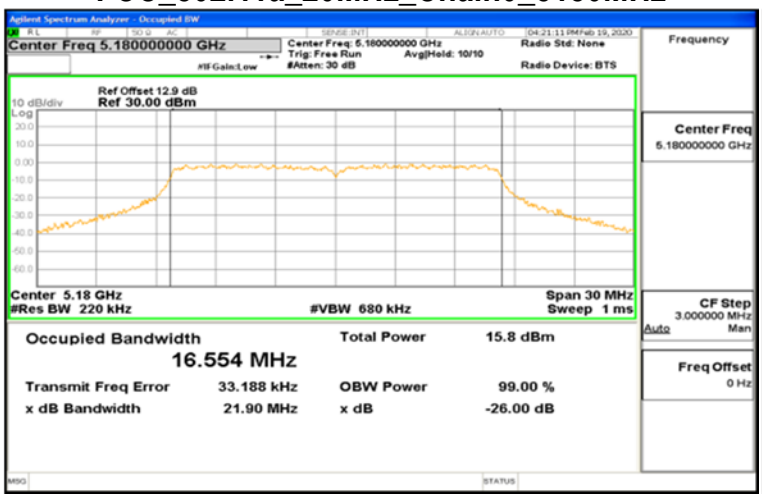
802.11ac _VHT80_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	76.45	18.834

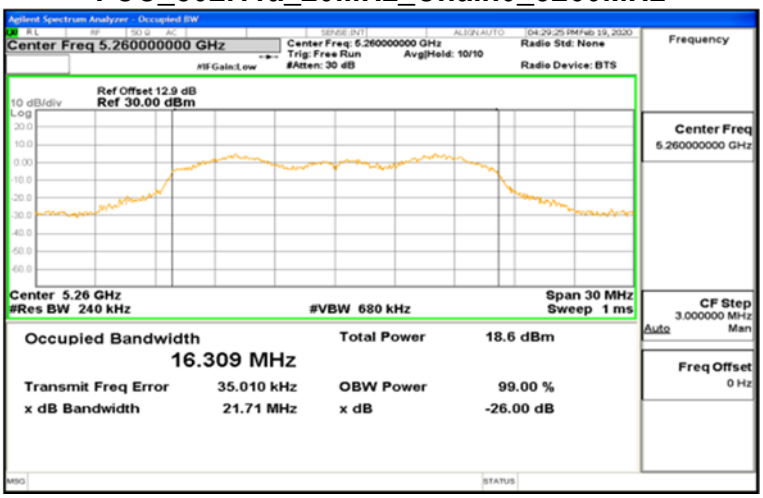
802.11ac _VHT80_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	75.65	18.788

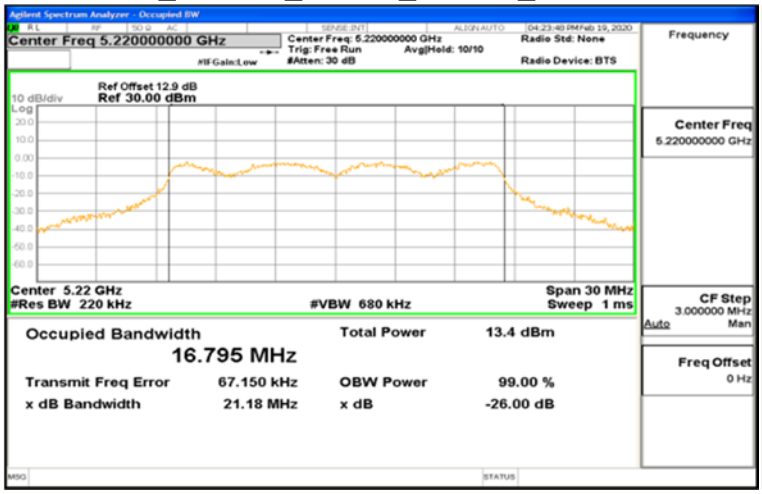
FCC_802.11a_20MHz_Chain0_5180MHz



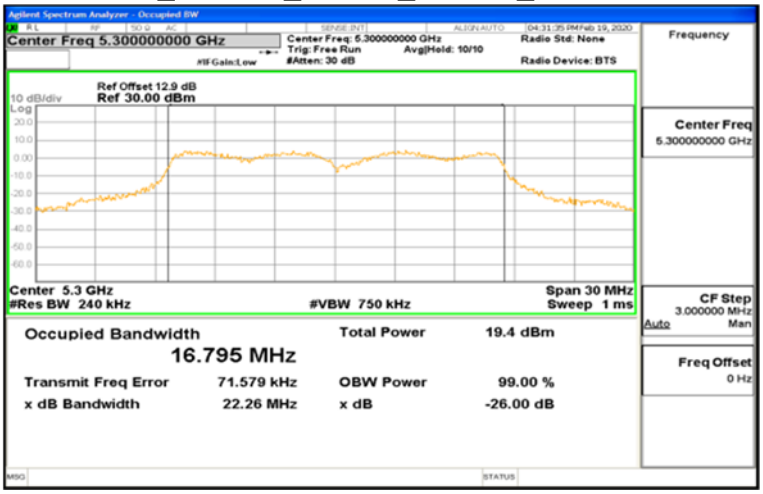
FCC_802.11a_20MHz_Chain0_5260MHz



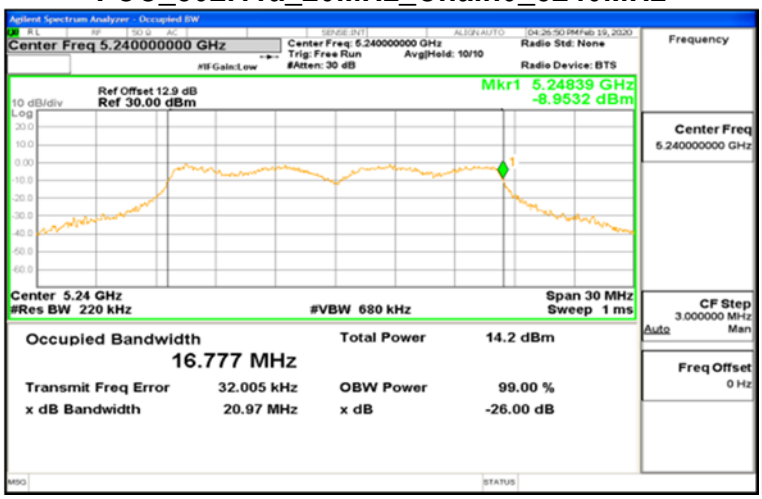
FCC_802.11a_20MHz_Chain0_5220MHz



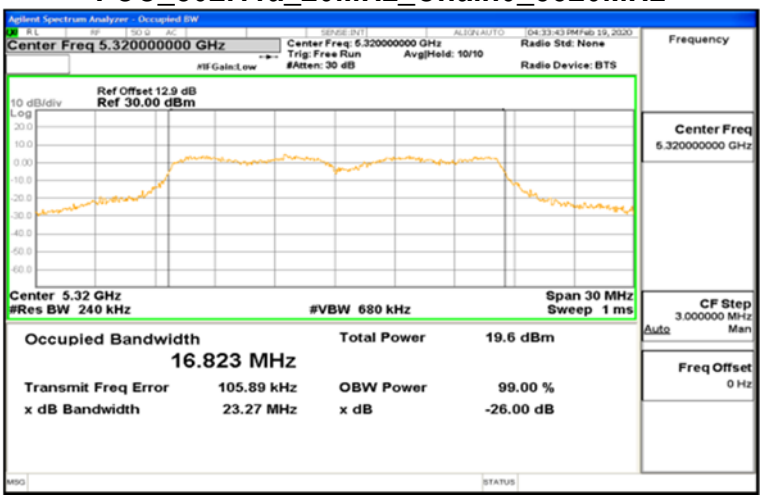
FCC_802.11a_20MHz_Chain0_5300MHz



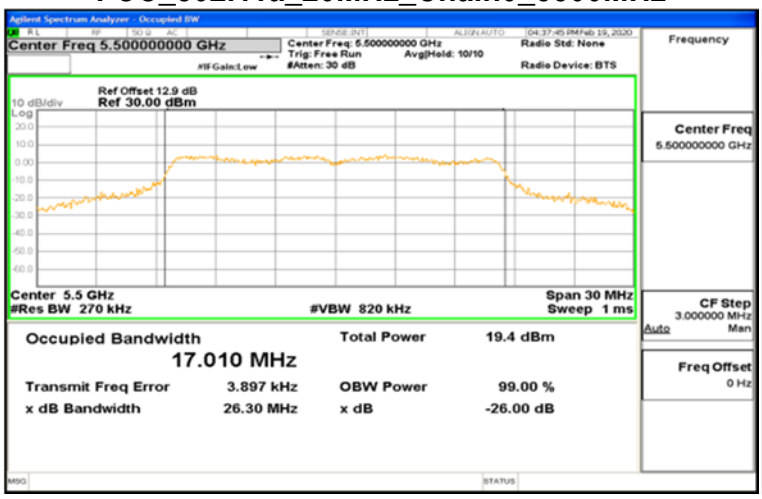
FCC_802.11a_20MHz_Chain0_5240MHz



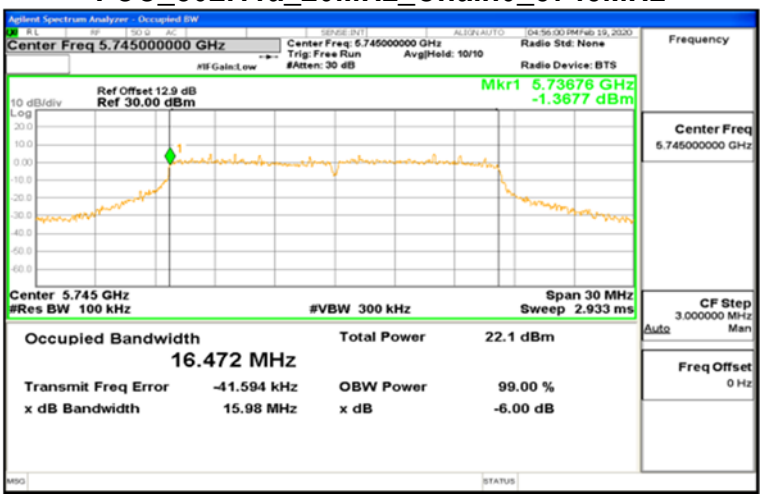
FCC_802.11a_20MHz_Chain0_5320MHz



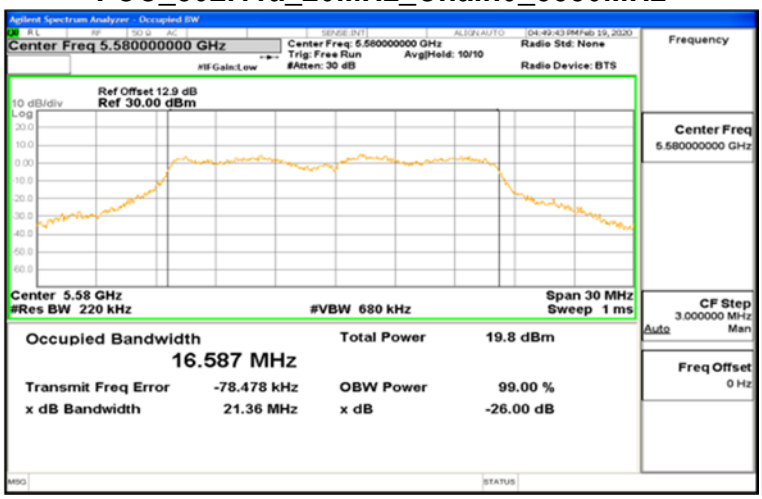
FCC_802.11a_20MHz_Chain0_5500MHz



FCC_802.11a_20MHz_Chain0_5745MHz



FCC_802.11a_20MHz_Chain0_5580MHz



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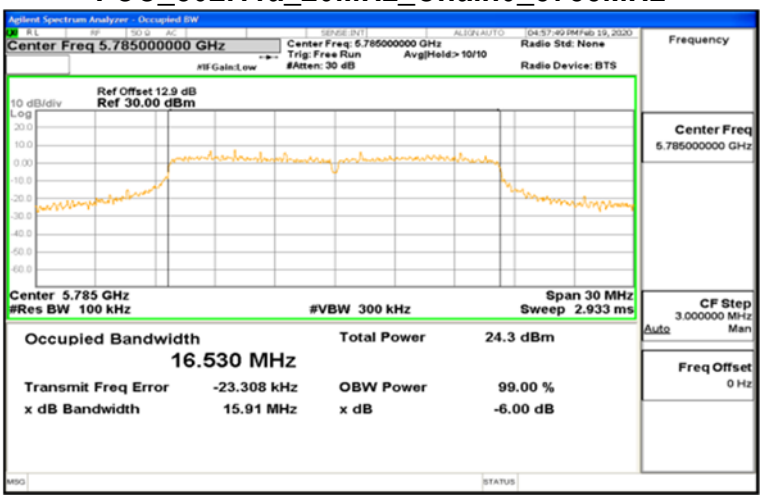
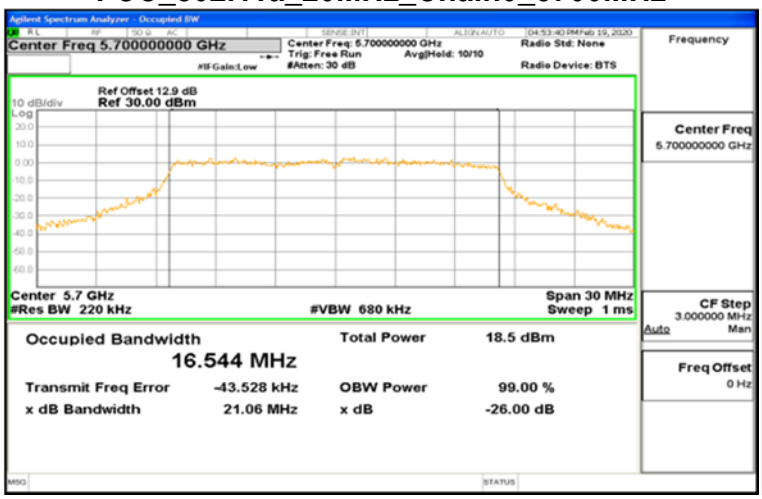
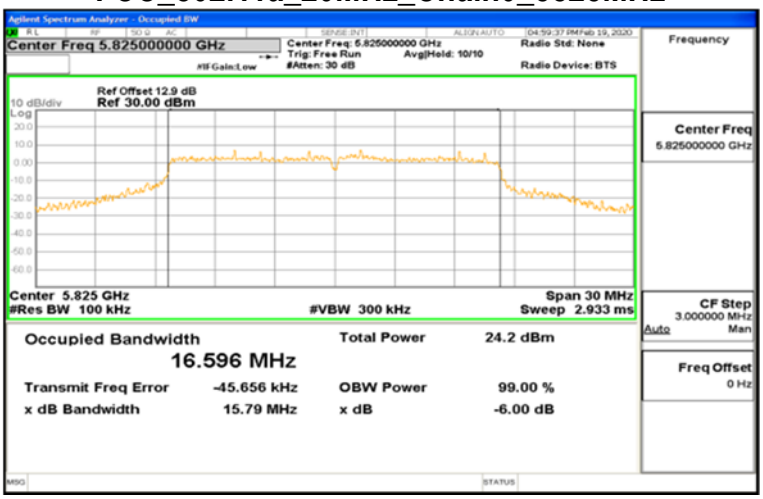


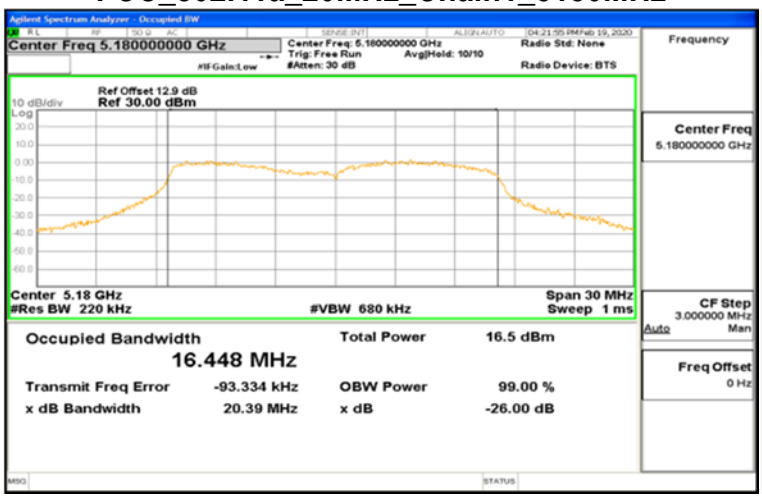
FCC_802.11a_20MHz_Chain0_5700MHz



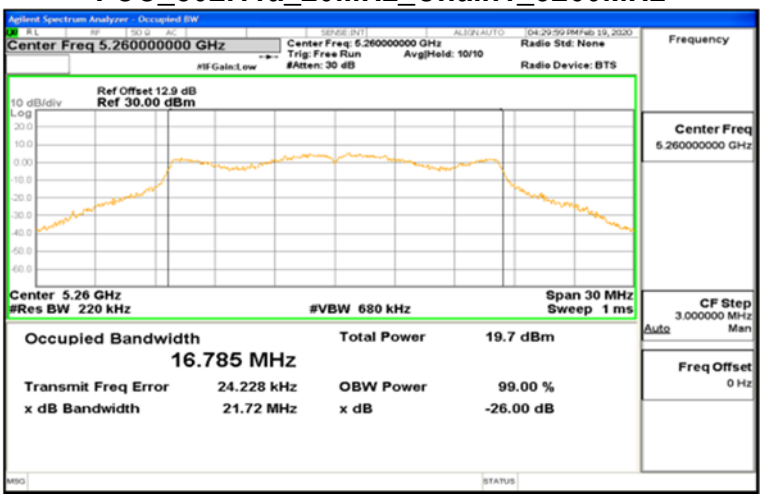
FCC_802.11a_20MHz_Chain0_5825MHz



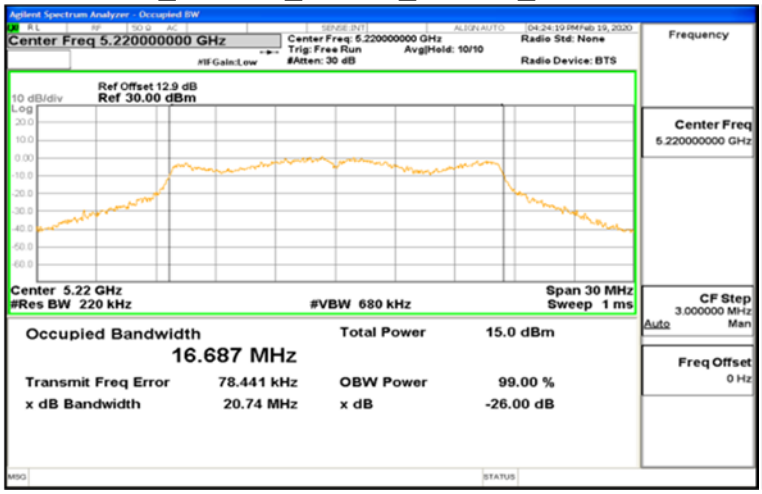
FCC_802.11a_20MHz_Chain1_5180MHz



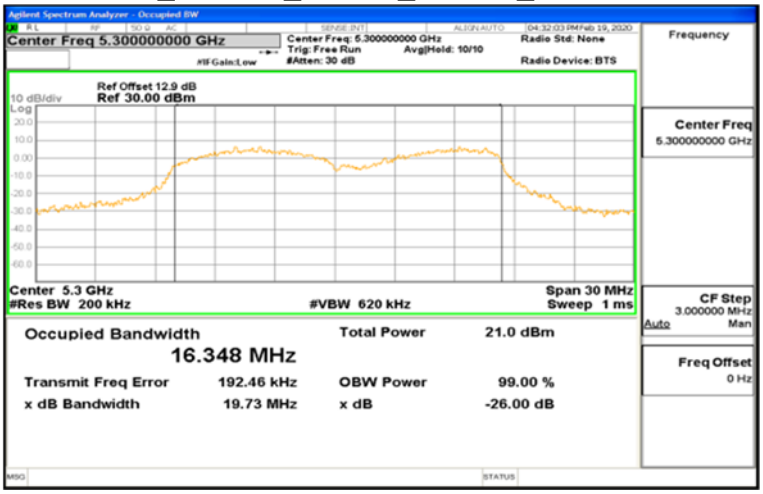
FCC_802.11a_20MHz_Chain1_5260MHz



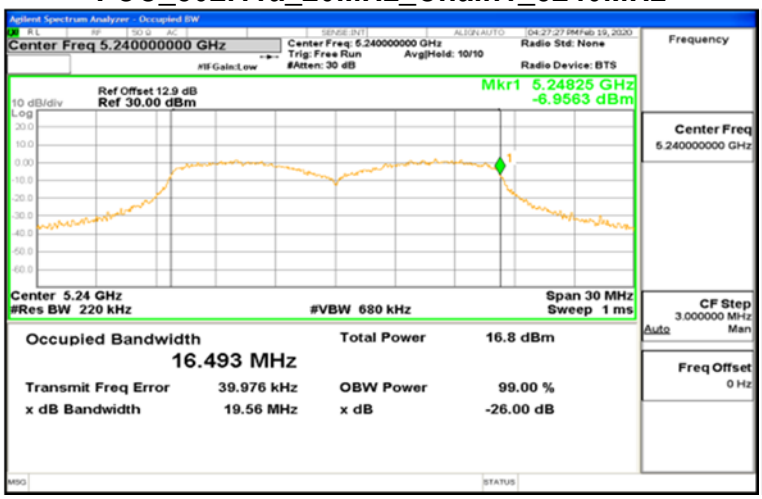
FCC_802.11a_20MHz_Chain1_5220MHz



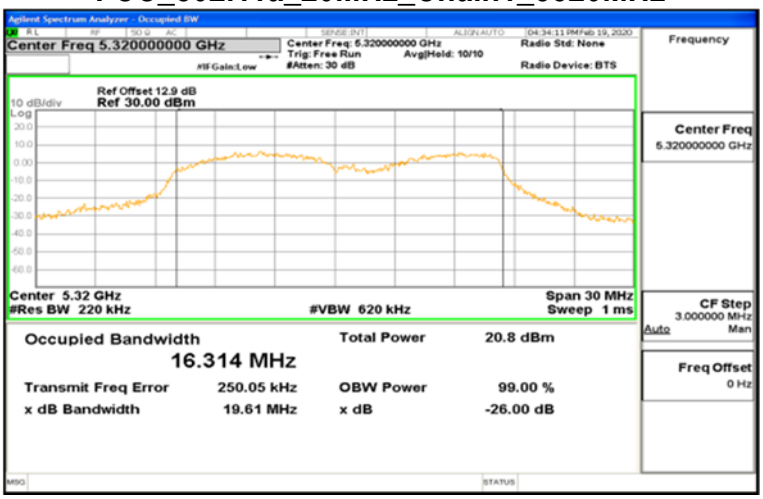
FCC_802.11a_20MHz_Chain1_5300MHz



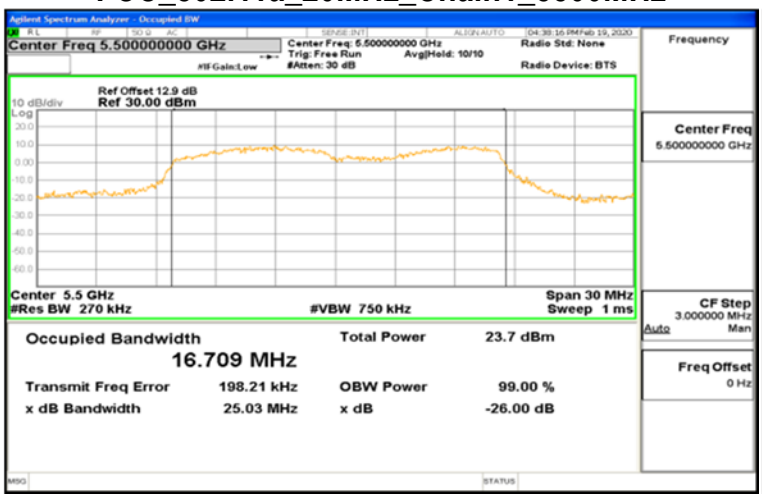
FCC_802.11a_20MHz_Chain1_5240MHz



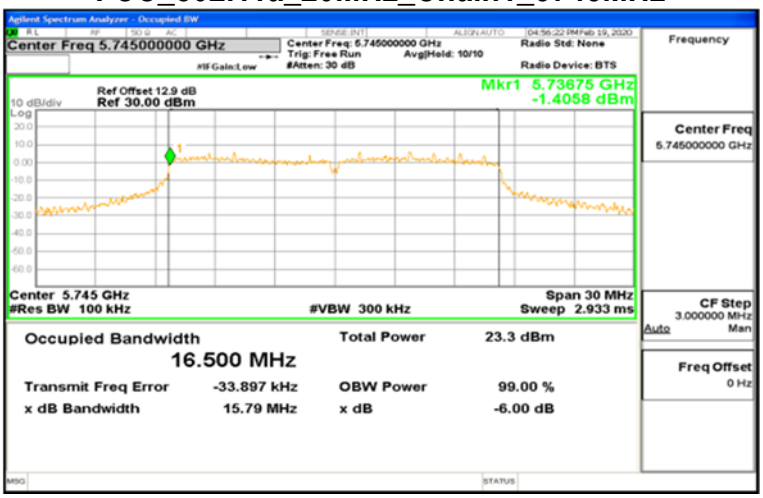
FCC_802.11a_20MHz_Chain1_5320MHz



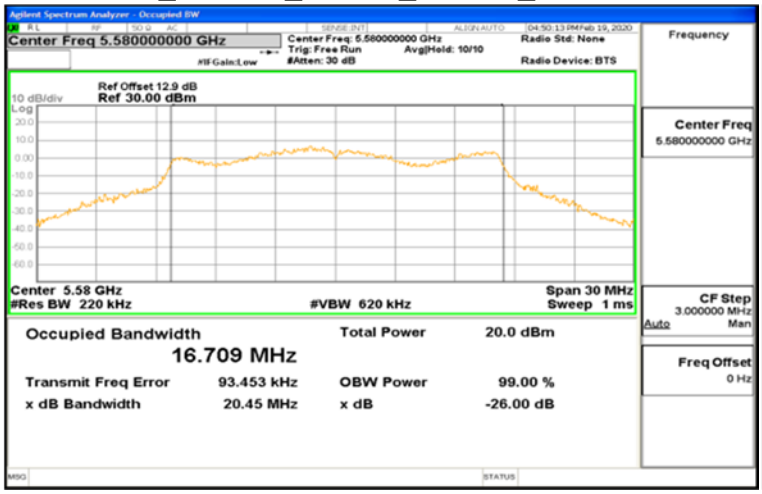
FCC_802.11a_20MHz_Chain1_5500MHz



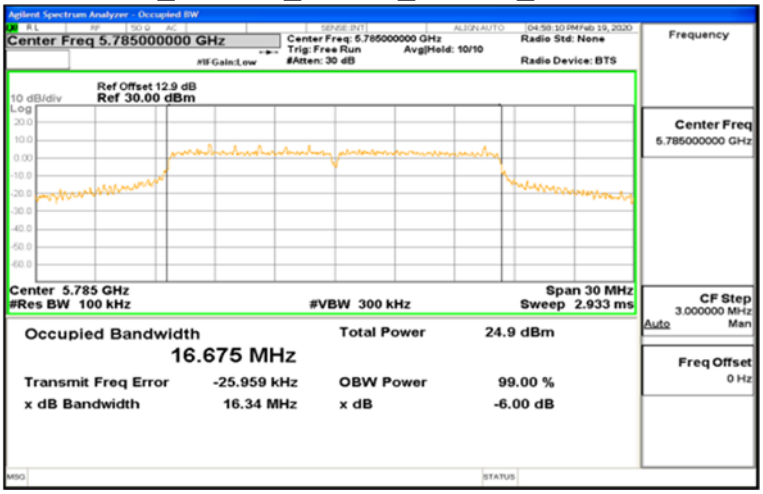
FCC_802.11a_20MHz_Chain1_5745MHz



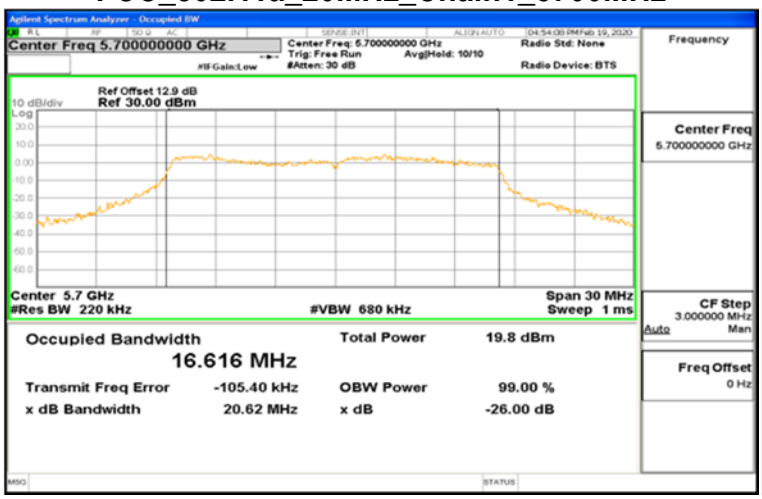
FCC_802.11a_20MHz_Chain1_5580MHz



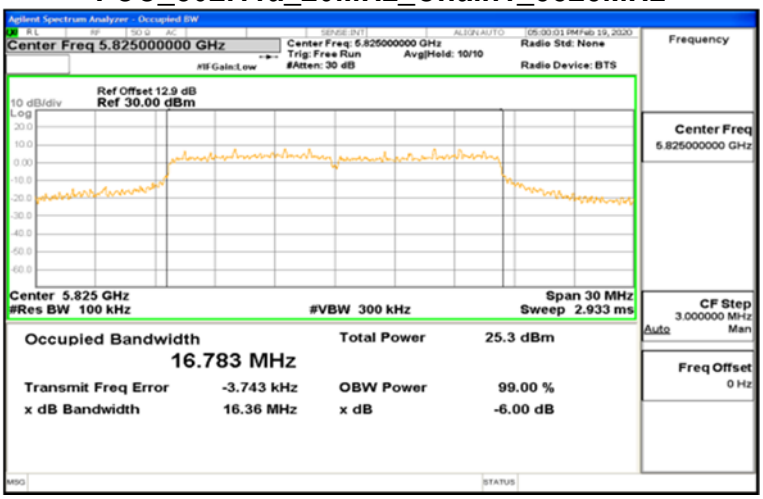
FCC_802.11a_20MHz_Chain1_5785MHz



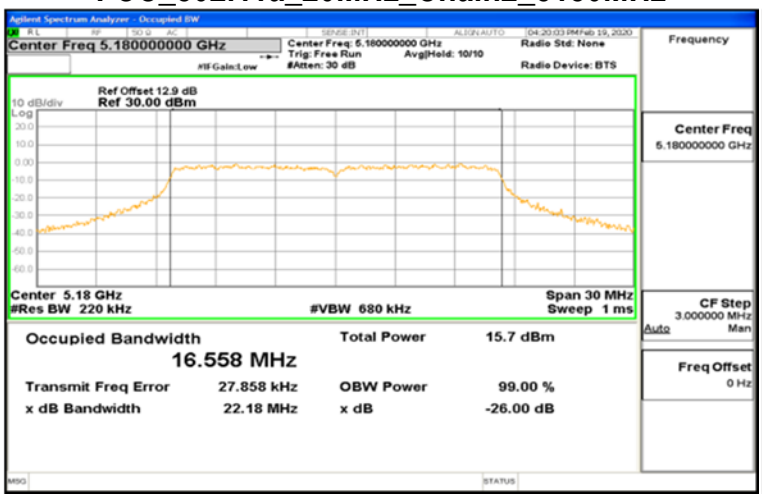
FCC_802.11a_20MHz_Chain1_5700MHz



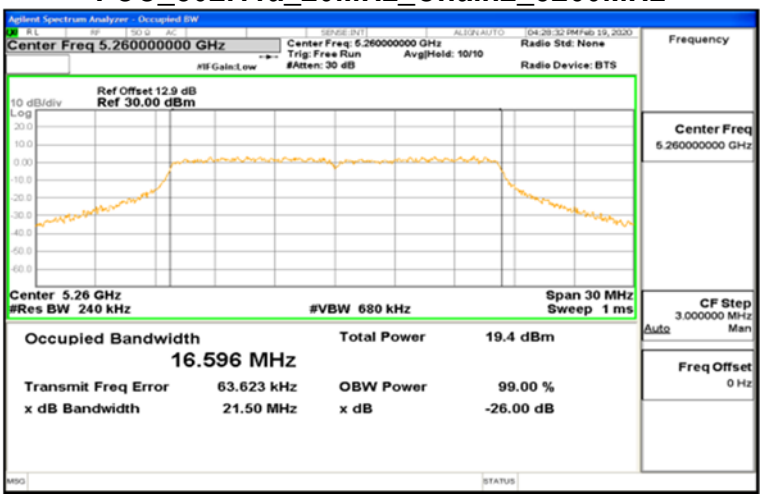
FCC_802.11a_20MHz_Chain1_5825MHz



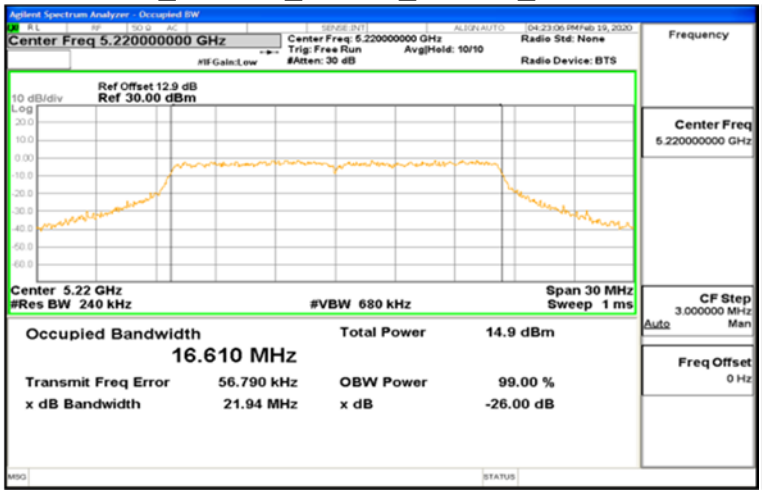
FCC_802.11a_20MHz_Chain2_5180MHz



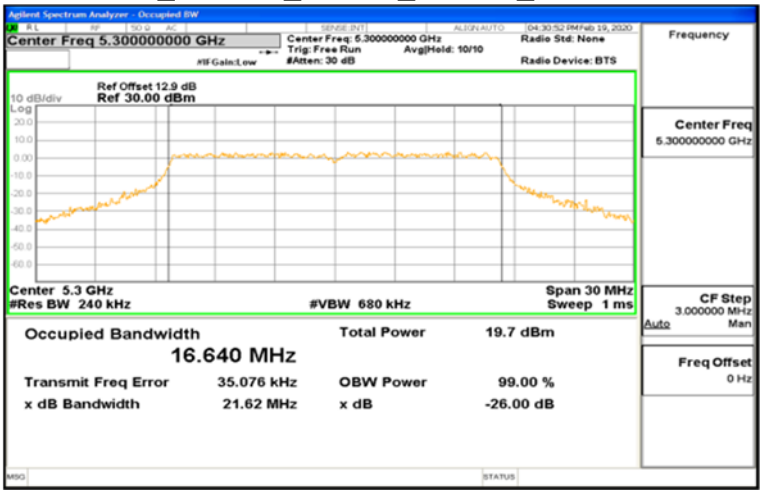
FCC_802.11a_20MHz_Chain2_5260MHz



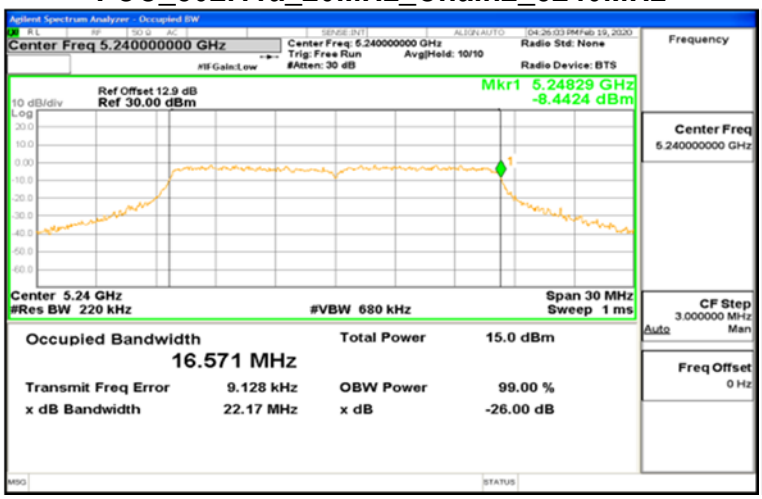
FCC_802.11a_20MHz_Chain2_5220MHz



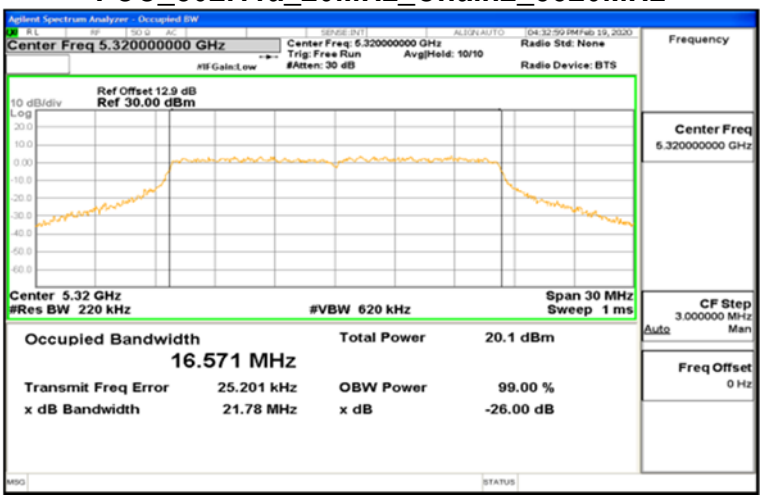
FCC_802.11a_20MHz_Chain2_5300MHz



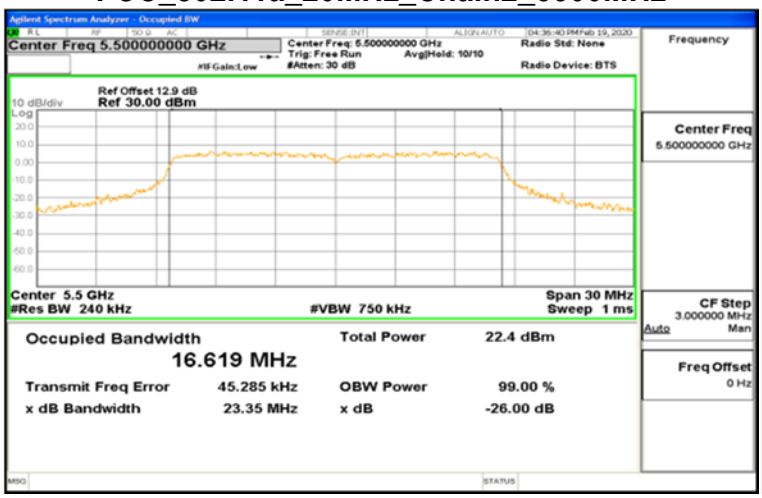
FCC_802.11a_20MHz_Chain2_5240MHz



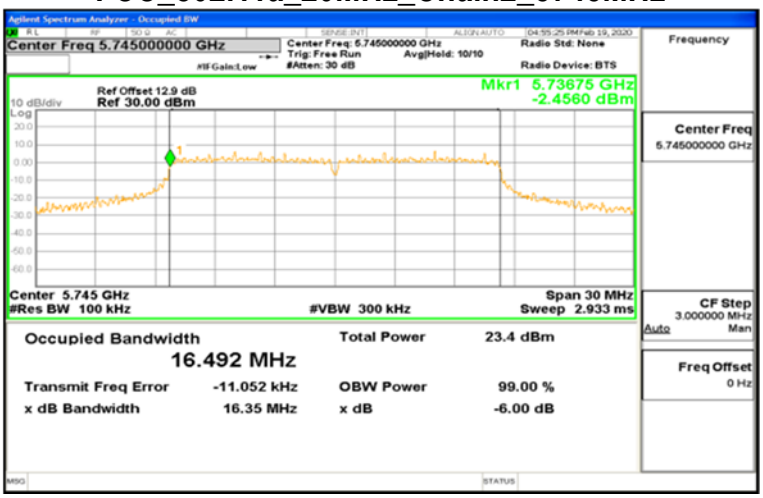
FCC_802.11a_20MHz_Chain2_5320MHz



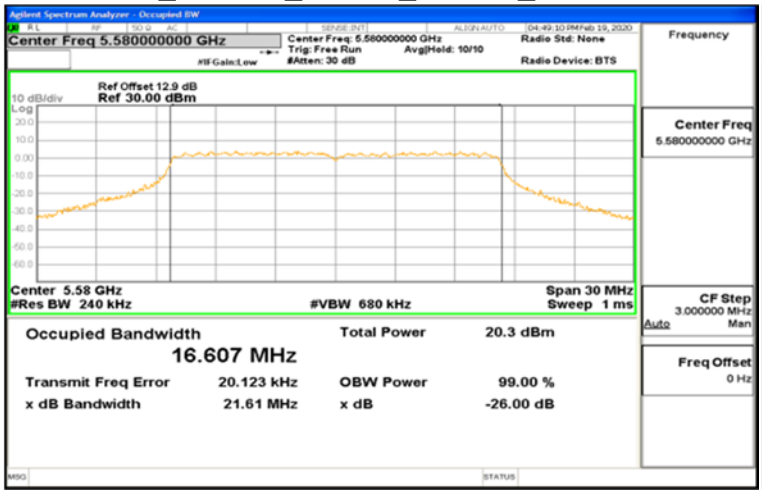
FCC_802.11a_20MHz_Chain2_5500MHz



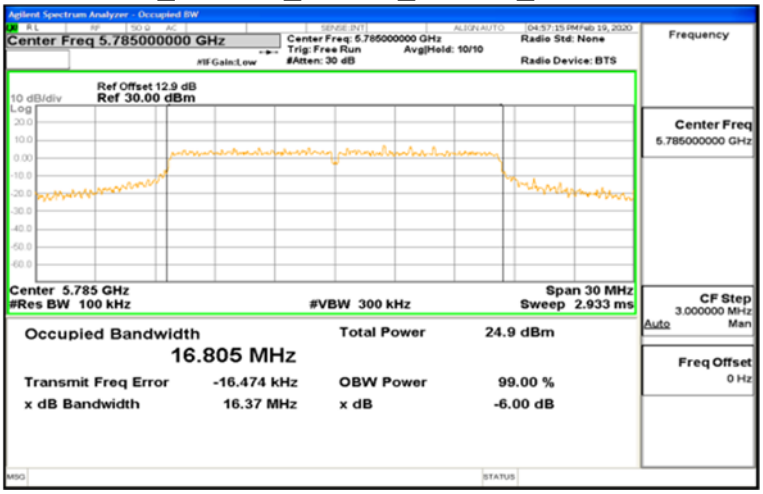
FCC_802.11a_20MHz_Chain2_5745MHz



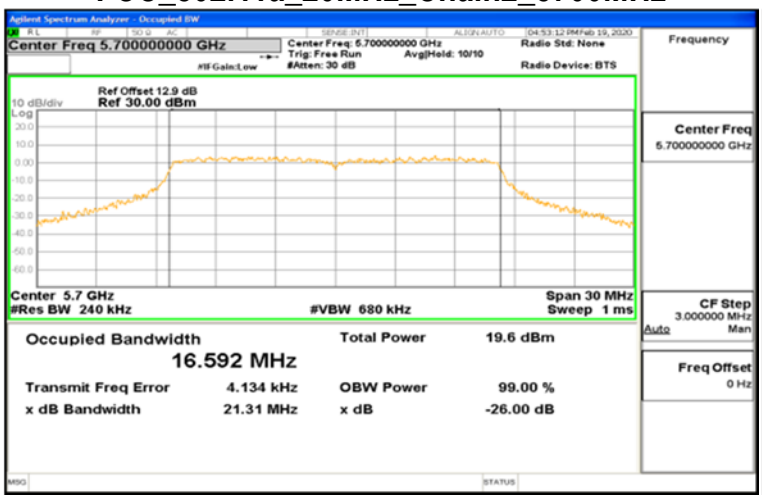
FCC_802.11a_20MHz_Chain2_5580MHz



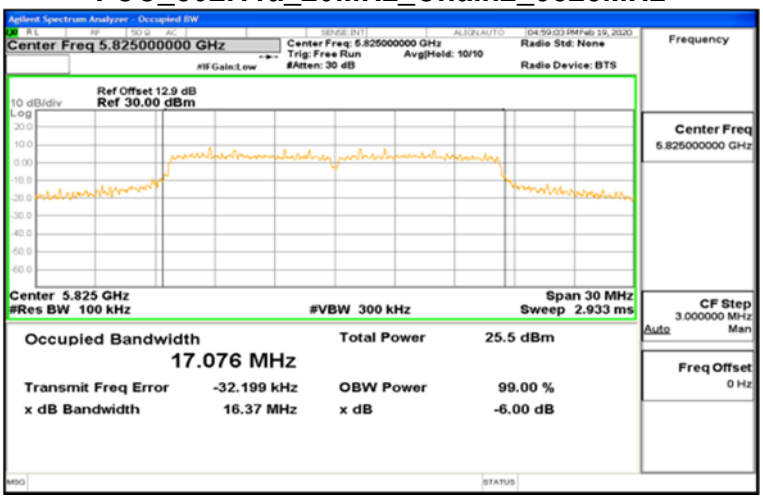
FCC_802.11a_20MHz_Chain2_5785MHz



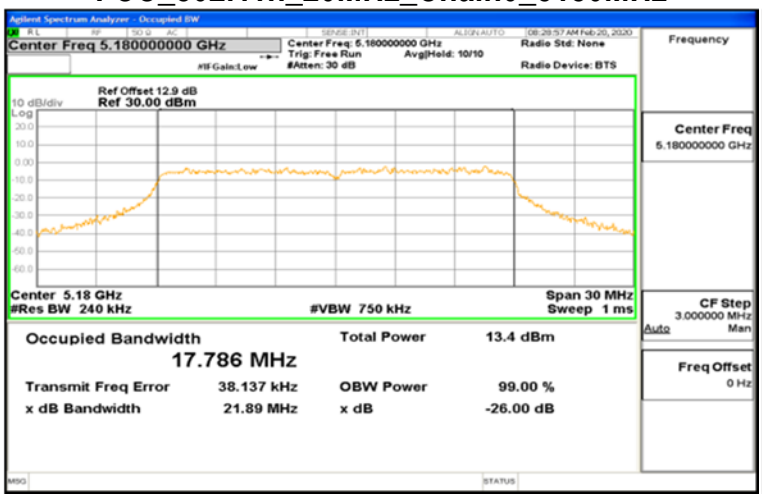
FCC_802.11a_20MHz_Chain2_5700MHz



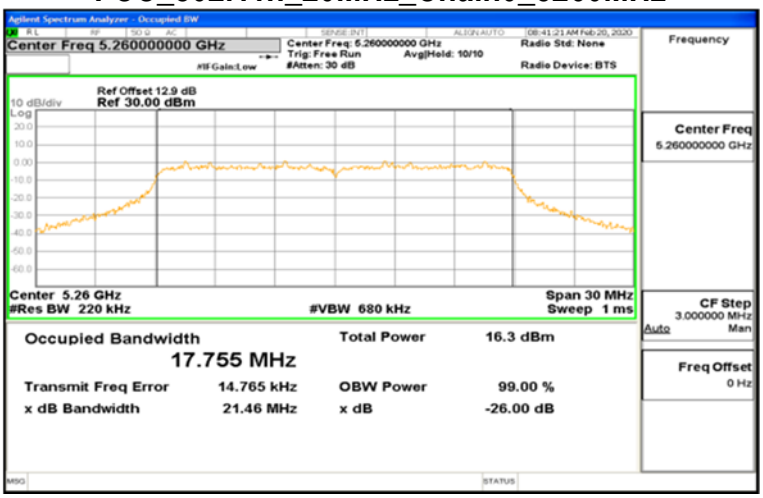
FCC_802.11a_20MHz_Chain2_5825MHz



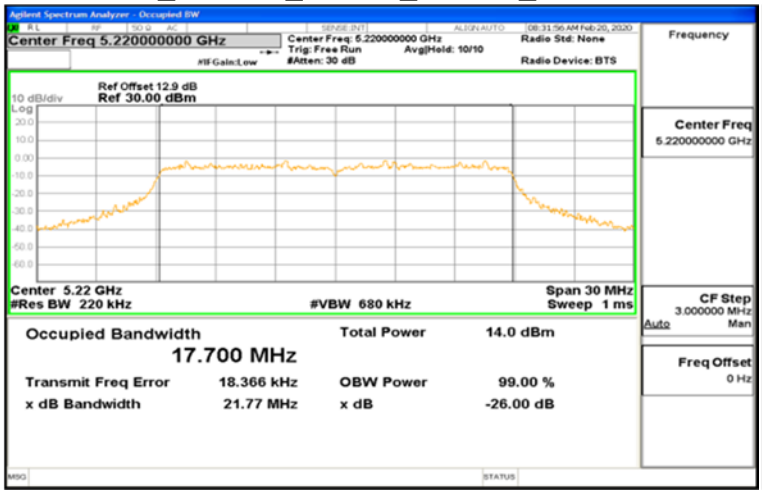
FCC_802.11n_20MHz_Chain0_5180MHz



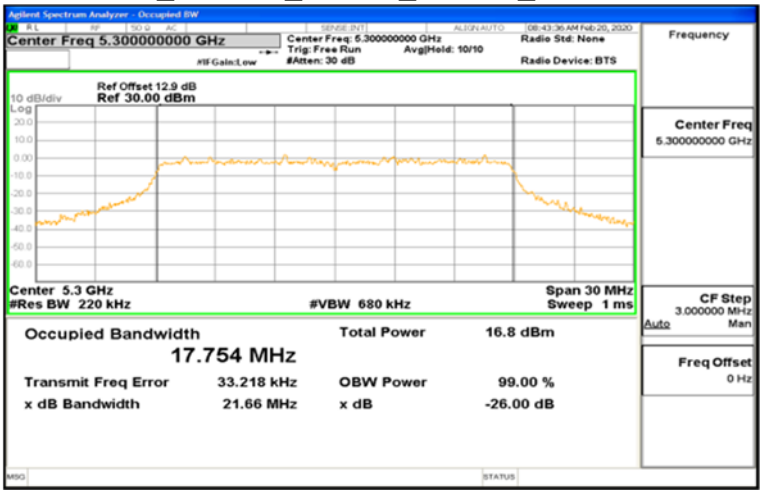
FCC_802.11n_20MHz_Chain0_5260MHz



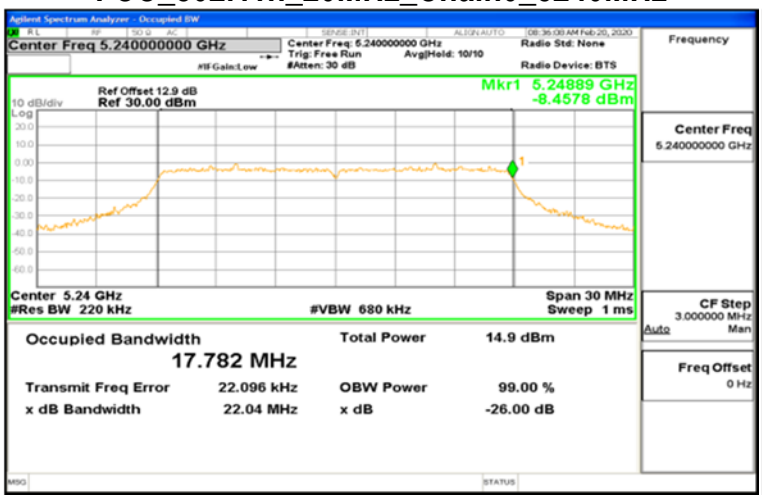
FCC_802.11n_20MHz_Chain0_5220MHz



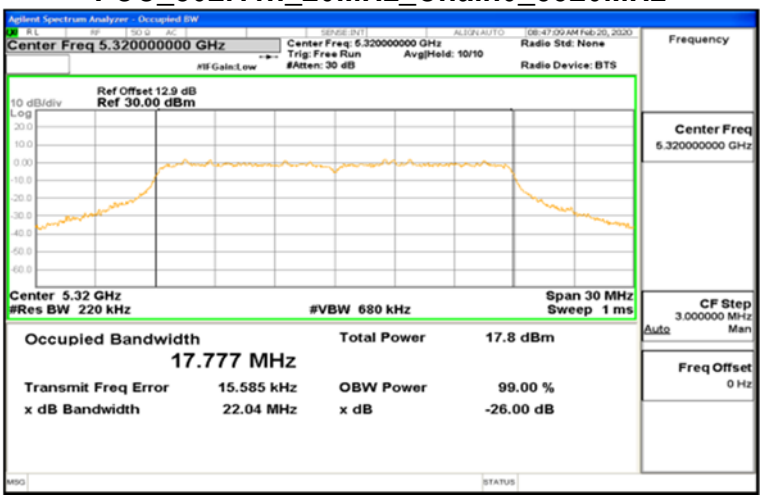
FCC_802.11n_20MHz_Chain0_5300MHz



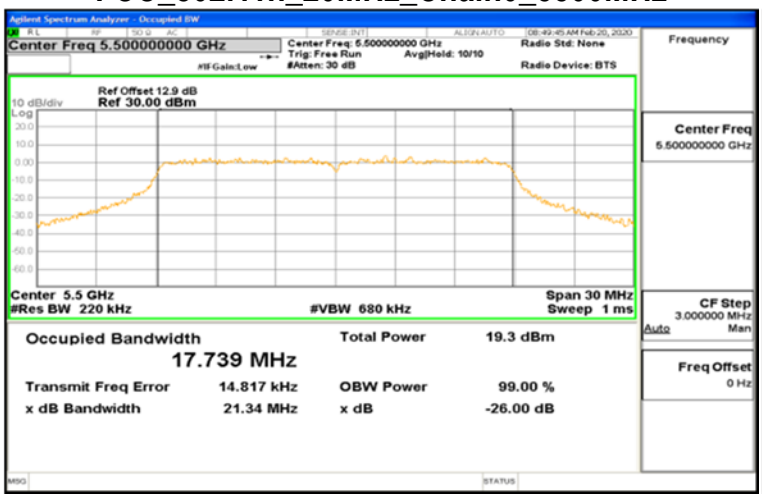
FCC_802.11n_20MHz_Chain0_5240MHz



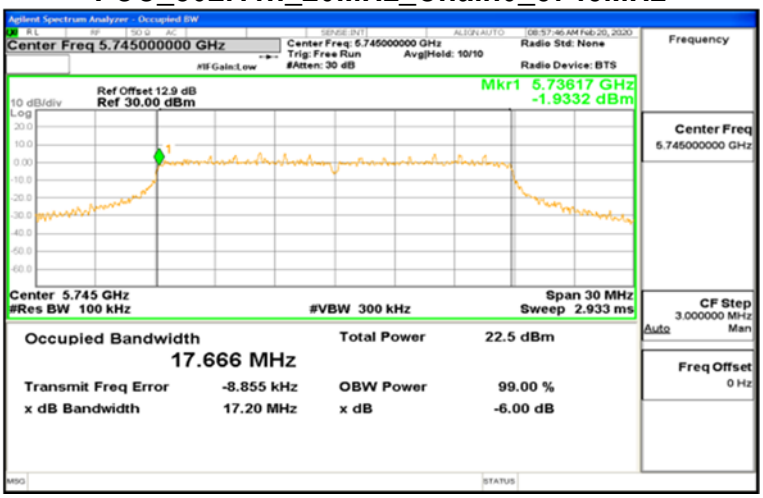
FCC_802.11n_20MHz_Chain0_5320MHz



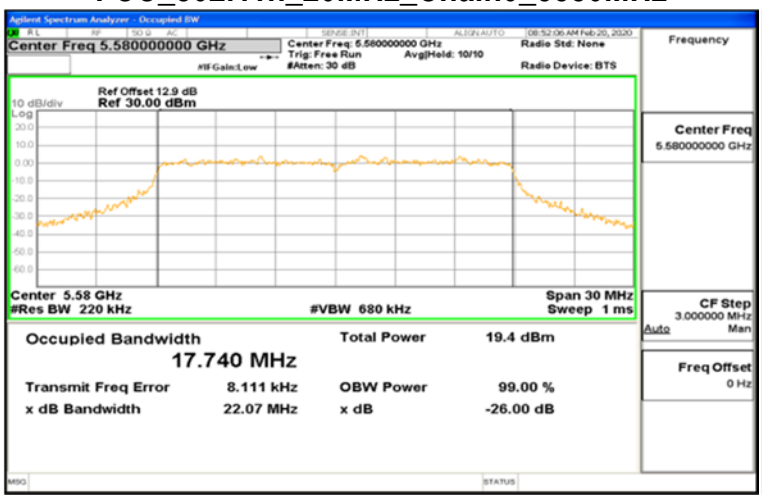
FCC_802.11n_20MHz_Chain0_5500MHz



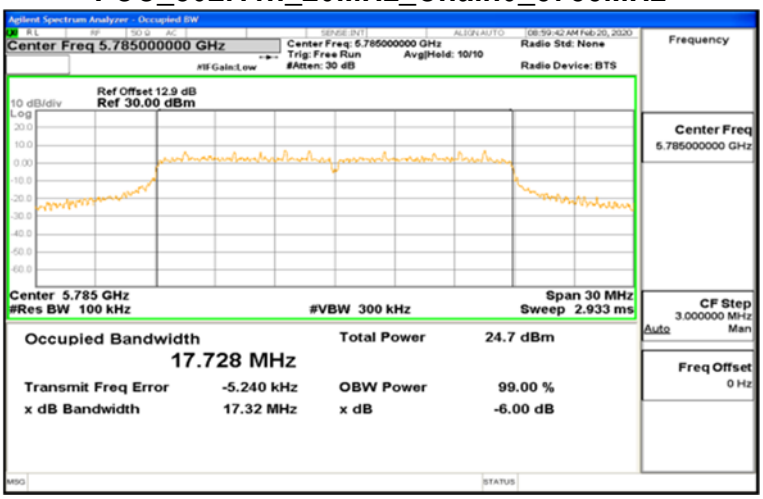
FCC_802.11n_20MHz_Chain0_5745MHz



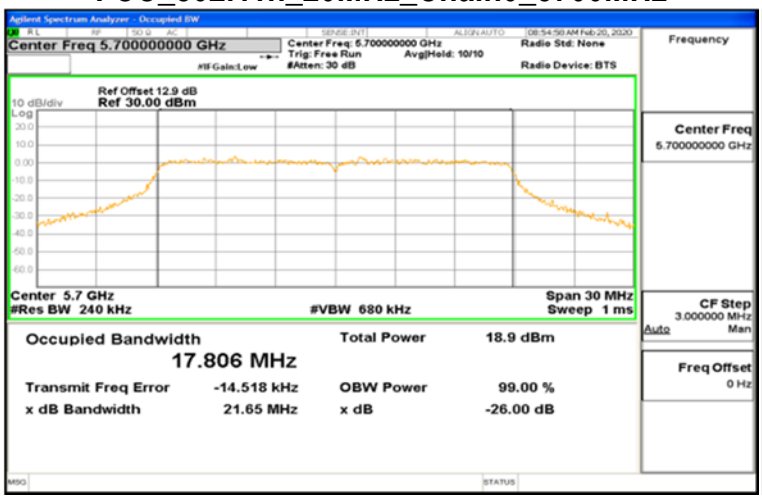
FCC_802.11n_20MHz_Chain0_5580MHz



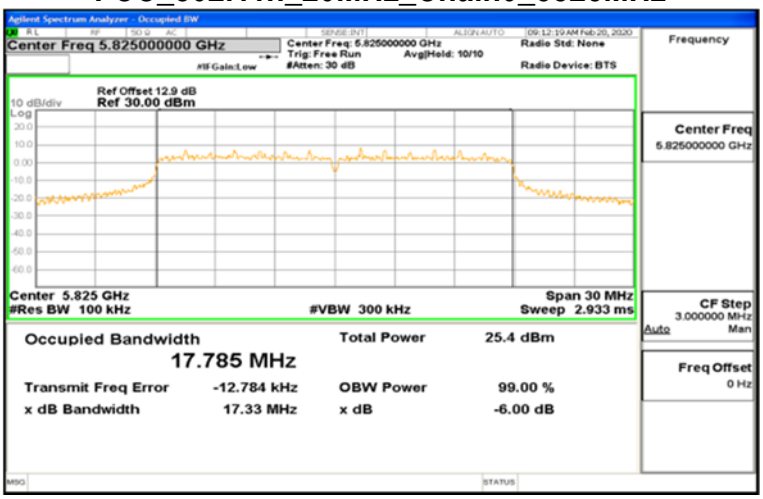
FCC_802.11n_20MHz_Chain0_5785MHz



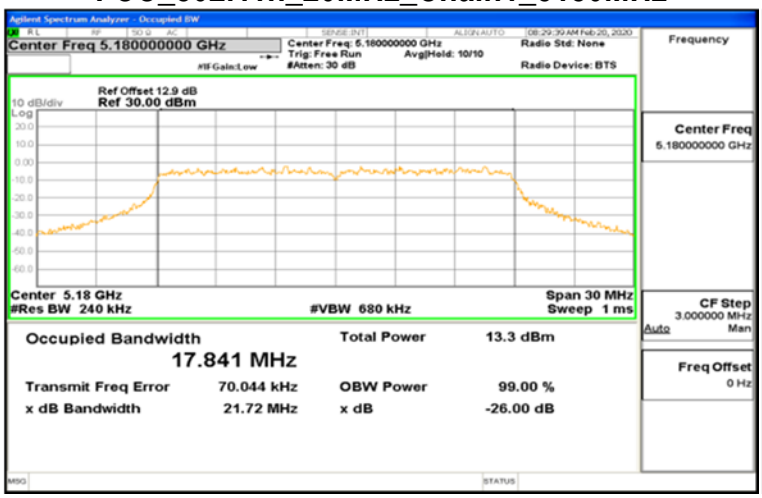
FCC_802.11n_20MHz_Chain0_5700MHz



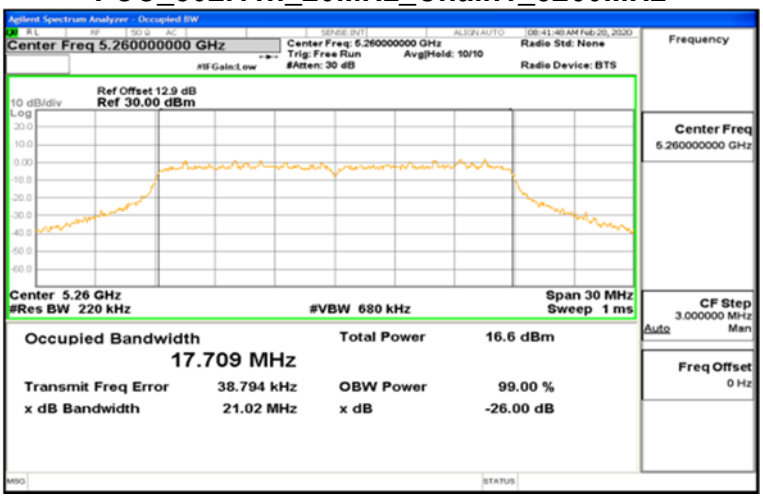
FCC_802.11n_20MHz_Chain0_5825MHz



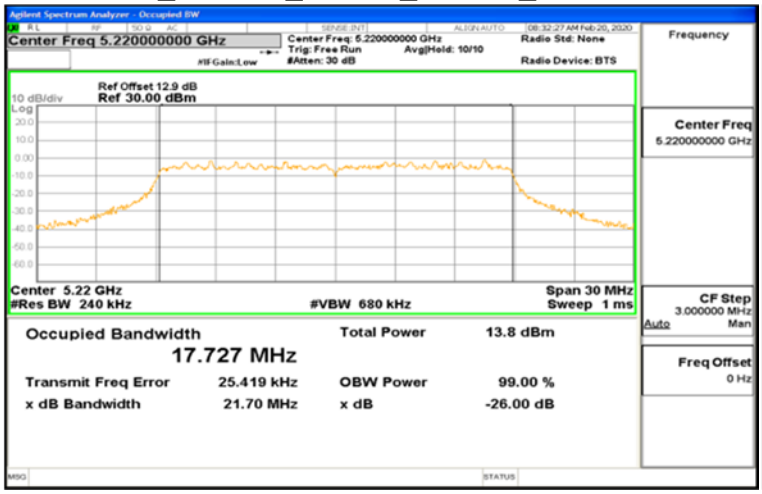
FCC_802.11n_20MHz_Chain1_5180MHz



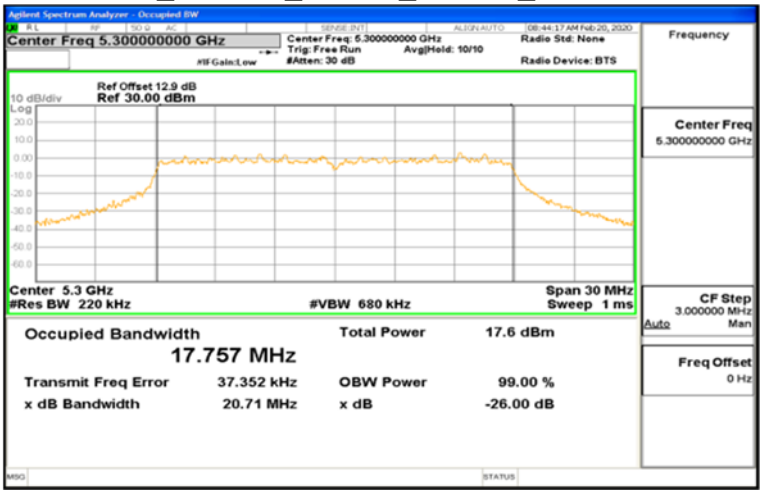
FCC_802.11n_20MHz_Chain1_5260MHz



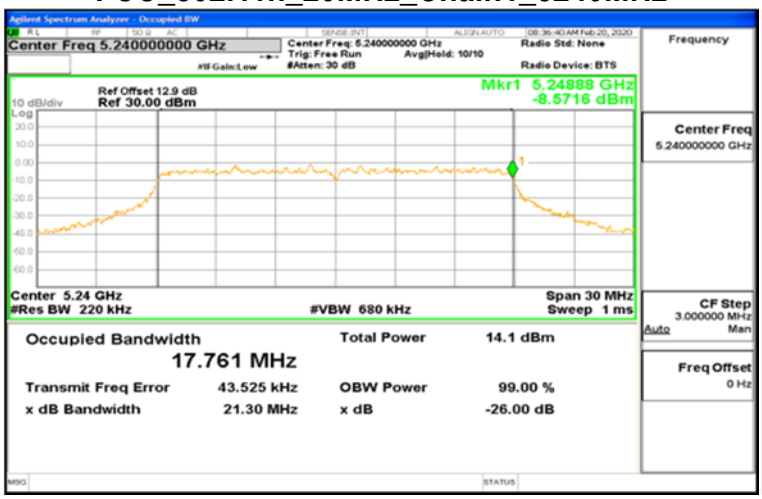
FCC_802.11n_20MHz_Chain1_5220MHz



FCC_802.11n_20MHz_Chain1_5300MHz



FCC_802.11n_20MHz_Chain1_5240MHz



FCC_802.11n_20MHz_Chain1_5320MHz