

Prüfbericht-Nr.: <i>Test Report No.:</i>	50148969 001	Auftrags-Nr.: <i>Order No.:</i>	114077170	Seite 1 von 142 <i>Page 1 of 142</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	31-Mar-2018	
Auftraggeber: <i>Client:</i>	Hon Hai Precision Industry Co., Ltd. No.151, Sec. 1, Nankan Rd., Lujhu Township, Taoyuan County, Taiwan			
Prüfgegenstand: <i>Test item:</i>	IEEE 802.11 a/b/g/n/ac 2x2 WiFi Module			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	WFU033-LGA			
Auftrags-Inhalt: <i>Order content:</i>	FCC / IC Test report			
Prüfgrundlage: <i>Test specification:</i>	FCC CFR 47 Part 15 Subpart E Section 15.407 ISED RSS-247 Issue2			
Wareneingangsdatum: <i>Date of receipt:</i>	8-May-2018			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000736956-001 A000736956-002			
Prüfzeitraum: <i>Testing period:</i>	11-May-2018 - 21-May-2018			
Ort der Prüfung: <i>Place of testing:</i>	EMC/RF Laboratory Taipei			
Prüflaboratorium: <i>Testing laboratory:</i>	TUV Rheinland Taiwan Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
2018-05-30 Sam C.J. Kuo/Project Engineer <i>Date</i> <i>Name / Stellung</i> <i>Date</i> <i>Name / Position</i>		2018-05-30 Arvin Ho/Vice General Manager <i>Date</i> <i>Name / Stellung</i> <i>Date</i> <i>Name / Position</i>		
<i>Unterschrift</i> <i>Signature</i>		<i>Unterschrift</i> <i>Signature</i>		
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

v04

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: Passed

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER

RESULT: Passed

5.1.3 ON TIME AND DUTY CYCLE**5.1.4 26 dB BANDWIDTH AND 99% BANDWIDTH**

RESULT: Passed

5.1.5 6 dB BANDWIDTH

RESULT: Passed

5.1.6 POWER SPECTRAL DENSITY

RESULT: Passed

5.1.7 MASK EMISSION

RESULT: Passed

5.1.8 SPURIOUS EMISSION

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Passed

6.2.1 MAINS CONDUCTED EMISSIONS

RESULT: Passed

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix P: Photo Documentation internal view
(File Name: 50148969APPENDIXP)

Appendix D: Test Result of Radiated Emissions
(File Name: 50148969APPENDIXD)

Test Specifications

The following standards were applied:

Table 1: Applied Standard and Test Levels

Radio
FCC CFR 47 Part 15 Subpart E Section 15.407
FCC CFR 47 Part 2 Subpart J Section 2.1091
FCC CFR 47 Part 1 Subpart I Section 1.1307
ISED RSS-247 Issue 2 (Feb 2017)
ISED RSS-102 Issue 5
ISED RSS-GEN Issue 4
ANSI C63.10:2013
FCC KDB 789033 D02
FCC KDB 662911
FCC KDB 644545
FCC KDB 447498 D01 General RF Exposure Guidance v06

2. Test Sites

2.1 Test Facilities

TUV Rheinland Taiwan Ltd.
Taipei Office

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

FCC Registration No.: 340738
IC Canada Registration No.: 9465A-1
TAF Accredited NCC Test Lab. No.:0759
TAF ISO17025 Certification effective periods: 2016-Jul-1st to 2019-Jun-30th



Testing Laboratory
0759

2.2 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Last Calibration	Next Calibration
Test Software	Farad	EZ_EMC	Ver. TUV3A1	N/A	N/A
EMI Test Receiver	R&S	ESR 7	101549	2017/11/10	2018/11/10
Spectrum Analyzer	R&S	FSV 40	100921	2018/05/02	2019/05/02
Spectrum Analyzer	Agilent	N9010A	MY53470241	2018/02/05	2019/02/05
Preamplifier (30MHz -1GHz)	HP	8447F	2805A03335	2017/08/14	2018/08/14
Preamplifier (18 GHz -40 GHz)	COM-POWER	PAM-840	461257	2018/01/18	2019/01/18
Pre-Amplifier (1GHz~18GHz)	EM Electronics	EM01G18G	60558	2017/11/21	2018/11/21
Bilog Antenna	TESEQ	CBL6111D	29804	2017/08/18	2018/08/18
Horn Antenna	ETS-Lindgren	3117	201918	2017/08/18	2018/08/18
Horn Antenna (18GHz~40GHz)	COM-POWER	AH-840	101029	2017/11/28	2018/11/28
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2017/06/14	2018/06/14
EMI Test Receiver	R&S	ESR 7	101549	2017/11/10	2018/11/10
Spectrum Analyzer	R&S	FSL3	101943	2015/09/07	2018/09/07
Temp. & Humid. Chamber	Giant Force	GCT-099-40-S	MAF0103-007	2017/03/09	2019/03/09
LISN (1 phase)	R&S	ENV216	101243	2017/06/18	2018/06/18
LISN	R&S	ENV216	101262	2017/06/22	2018/06/21

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular schedule using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are:

Table 3: Emission Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF power, conducted	± 1.5 dB
Adjacent channel power	± 3 dB
Radiated emission of transmitter, valid up to 40 GHz	± 6 dB
Radiated emission of receiver, valid up to 40 GHz	± 6 dB
Temperature	± 2 °C
Humidity	± 10 %

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a 802.11 a/b/g/n/ac module. It contains a WiFi 2.4GHz and 5GHz compatible module enabling the user to communicate data through a Wireless interface.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 Ratings and System Details

Table 4: Basic Information of EUT

Item	EUT information
Kind of Equipment	IEEE 802.11 a/b/g/n/ac 2x2 WiFi Module
Type Designation	WFU033-LGA
Product Type	WLAN (2TX, 2RX)
FCC ID	RX3-WFU033LGA
IC ID	2878F-WFU033LGA
HVIN	WFU033-LGA

Table 5: Technical Specification of EUT

Operating Frequency	5150 ~ 5350MHz, 5470 ~ 5725MHz, 5725 ~ 5850MHz
Operation Voltage	3.3V
Channel number	Refer to Table 6
Modulation	OFDM with BPSK, QPSK, QAM
Antenna gain	Refer to Table 7
Antenna Type	PIFA Antenna

Table 6: Channel Frequency Table

There are three bandwidth systems.

For 20MHz bandwidth systems, use channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165.

For 40MHz Bandwidth systems, use channel 38, 46, 54, 62, 102, 110, 118, 126, 134, 142, 151, 159.

For 80MHz Bandwidth systems, use channel 42, 58, 106, 122, 138, 155

	CH	Frequency
		(MHz)
5150 ~ 5250MHz	36	5180
	38	5190
	40	5200
	42	5210
	44	5220
	46	5230
	48	5240
5250 ~ 5350MHz	52	5260
	54	5270
	56	5280
	58	5290
	60	5300
	62	5310
	64	5320

	CH	Frequency
		(MHz)
5470 ~ 5725MHz	100	5500
	102	5510
	104	5520
	106	5530
	108	5540
	110	5550
	112	5560
	116	5580
	118	5590
	120	5600
	122	5610
	124	5620
	126	5630
	128	5640
	132	5660
	134	5670
	136	5680
	138	5690
	140	5700
	142	5710
	144	5720
5725 ~ 5850MHz	149	5745
	151	5755
	153	5765
	155	5775
	157	5785
	159	5795
	161	5805
	165	5825

Table 7: Table for Filed Antenna

Combination 1

Ant.	Model Name	Antenna Type	Gain (dB)	
			2.4GHz	5GHz
1	79011W000-600-G	PIFA Antenna	0.88	2.97
2	79011VR00-600-G	PIFA Antenna	2.41	3.1

Combination 2

Ant.	Model Name	Antenna Type	Gain (dB)	
			2.4GHz	5GHz
1	79011VS00-600-G	PIFA Antenna	1.77	4.77
2	79011W100-600-G	PIFA Antenna	1.71	4.55

For 5GHz Radiated Emission test:
Combination2

3.3 Independent Operation Modes

The basic operation modes are:

- A. Transmitting
- B. Receiving
- C. Normal link
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Description of Test Setup

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Setup for testing: Test samples are provided with a SPI interface which makes it possible to control them through test software installed on a notebook computer.

This software, MT7662UQA was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed in section 3.3 as appropriate.

Full test was applied on all test modes, but only worst case was shown.

ANT1 stands for Antenna port one.

ANT2 stands for Antenna port two.

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Description	Manufacturer	Model No.	Serial No.
Notebook(EMC-06)	Lenovo	TP00048A	PB-0F8B2

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

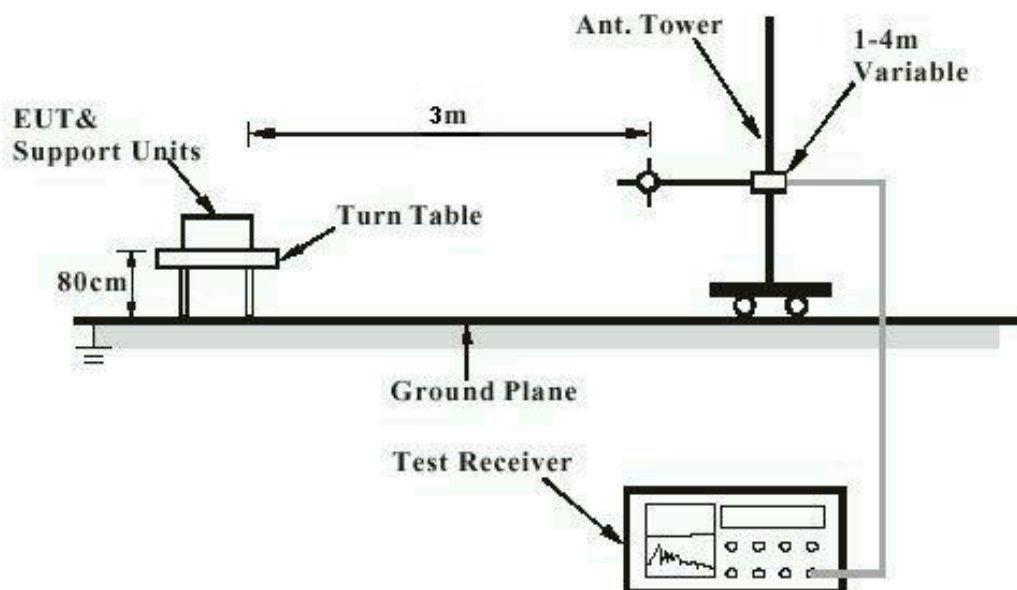


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

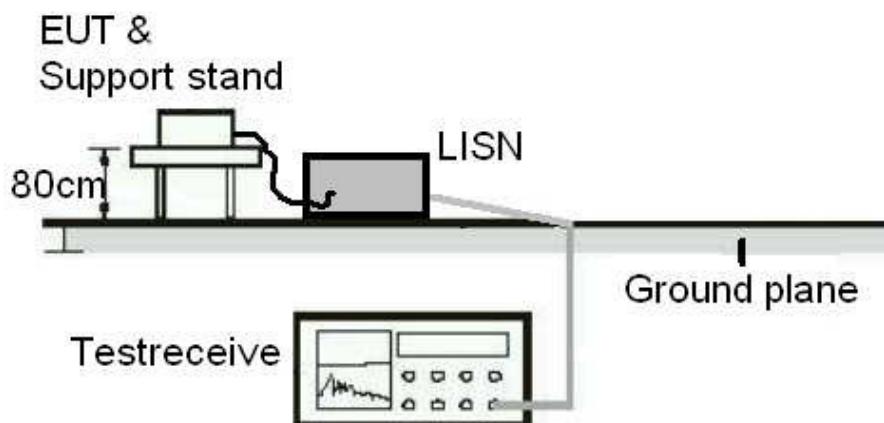
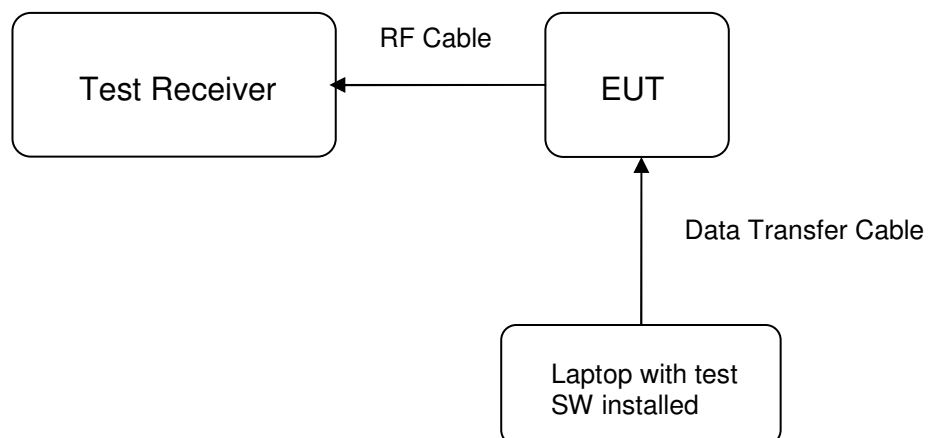


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement

ANT1 or ANT2 testing



4.6 Environmental Conditions

Temperature	18 - 25°C
Humidity	35 – 75%

5. Antenna Port Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test standard : FCC Part 15.407(a), Part 15.203 and RSS-Gen 7.1.4
Limit : the use of antennas with directional gains that do not exceed 6 dBi

According to the antenna report, the EUT has two antennas. The antenna is PCB antenna with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Combination 1

Ant.	Model Name	Antenna Type	Gain (dB)	
			2.4GHz	5GHz
1	79011W000-600-G	PIFA Antenna	0.88	2.97
2	79011VR00-600-G	PIFA Antenna	2.41	3.1

Combination 2

Ant.	Model Name	Antenna Type	Gain (dB)	
			2.4GHz	5GHz
1	79011VS00-600-G	PIFA Antenna	1.77	4.77
2	79011W100-600-G	PIFA Antenna	1.71	4.55

Refer to EUT photo and antenna report for detailed information.

5.1.2 Maximum Conducted Output Power

RESULT:**Passed**

Test standard : FCC Part 15.407(a), RSS-247 6.2

Kind of test site : Shielded room/Conducted room

Test setup

Test Channel : Refer to the Table 8 ~ 11

Operation Mode : A

Limit

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Table 8: Test result of Maximum Output Power (802.11a)

Channel	Frequency	Conducted power (dBm)		Max. Limit (dBm)	Duty Fac. (dB)	RESULT
		Aux1	Aux2			
36	5180 MHz	15.81	15.83	22.33	0.56	Pass
40	5200 MHz	15.93	15.90	22.33	0.56	Pass
48	5240 MHz	15.87	15.84	22.33	0.56	Pass
56	5280 MHz	15.88	15.89	22.33	0.56	Pass
60	5300 MHz	15.80	15.83	22.33	0.56	Pass
64	5320 MHz	15.90	15.85	22.33	0.56	Pass
100	5500 MHz	15.85	15.92	22.33	0.56	Pass
112	5560 MHz	15.89	15.87	22.33	0.56	Pass
140	5700 MHz	15.96	15.92	22.33	0.56	Pass
144	5720 MHz	15.89	15.94	22.33	0.56	Pass
149	5745 MHz	15.92	15.81	28.33	0.56	Pass
157	5785 MHz	15.82	15.86	28.33	0.56	Pass
165	5825 MHz	15.94	15.93	28.33	0.56	Pass

Note: Conducted power is equal to measured power plus duty factor, where duty factor is $10\log(1/0.88)$.

Table 9: Test result of Maximum Output Power (802.11ac VHT20)

Channel	Frequency	Conducted power (dBm)			Max. Limit (dBm)	Duty Fac. (dB)	RESULT
		Aux1	Aux2	Total			
36	5180 MHz	12.20	11.59	14.91	22.33	0.56	Pass
40	5200 MHz	11.85	11.79	14.83	22.33	0.56	Pass
48	5240 MHz	12.03	11.80	14.92	22.33	0.56	Pass
56	5280 MHz	12.00	11.88	14.95	22.33	0.56	Pass
60	5300 MHz	12.18	11.76	14.98	22.33	0.56	Pass
64	5320 MHz	12.26	11.66	14.98	22.33	0.56	Pass
100	5500 MHz	12.10	11.84	14.98	22.33	0.56	Pass
112	5560 MHz	11.91	11.72	14.82	22.33	0.56	Pass
140	5700 MHz	12.09	11.86	14.98	22.33	0.56	Pass
144	5720 MHz	11.85	12.12	14.99	22.33	0.56	Pass
149	5745 MHz	12.05	11.81	14.94	28.33	0.56	Pass
157	5785 MHz	12.22	11.69	14.97	28.33	0.56	Pass
165	5825 MHz	11.93	11.79	14.87	28.33	0.56	Pass

Note: Conducted power is equal to measured power plus duty factor, where duty factor is $10\log(1/0.88)$.

Table 10: Test result of Maximum Output Power (802.11ac VHT40)

Channel	Frequency	Conducted power (dBm)			Max. Limit (dBm)	Duty Fac. (dB)	RESULT
		Aux1	Aux2	Total			
38	5190 MHz	11.85	11.63	14.75	22.33	1.08	Pass
46	5230 MHz	10.94	10.38	13.68	22.33	1.08	Pass
54	5270 MHz	12.07	11.67	14.88	22.33	1.08	Pass
62	5310 MHz	12.05	11.87	14.97	22.33	1.08	Pass
102	5510 MHz	10.90	10.72	13.82	22.33	1.08	Pass
118	5590 MHz	11.64	12.07	14.87	22.33	1.08	Pass
134	5670 MHz	11.78	11.72	14.76	22.33	1.08	Pass
142	5710 MHz	12.06	11.63	14.86	22.33	1.08	Pass
151	5755 MHz	11.86	11.58	14.73	28.33	1.08	Pass
159	5795 MHz	12.07	11.60	14.85	28.33	1.08	Pass

Note: Conducted power is equal to measured power plus duty factor, where duty factor is $10\log(1/0.78)$.

Table 11: Test result of Maximum Output Power (802.11ac VHT80)

Channel	Frequency	Conducted power (dBm)			Max. Limit (dBm)	Duty Fac. (dB)	Duty Fac. (dB)
		Aux1	Aux2	Total			
42	5210 MHz	10.68	10.88	13.79	22.33	1.87	Pass
58	5290 MHz	10.93	10.95	13.95	22.33	1.87	Pass
106	5530 MHz	10.70	11.07	13.90	22.33	1.87	Pass
122	5610 MHz	10.81	10.83	13.83	22.33	1.87	Pass
138	5690 MHz	10.79	10.80	13.81	22.33	1.87	Pass
155	5775 MHz	11.02	10.94	13.99	28.33	1.87	Pass

Note: Conducted power is equal to measured power plus duty factor, where duty factor is $10\log(1/0.65)$.

5.1.3 On Time and Duty Cycle

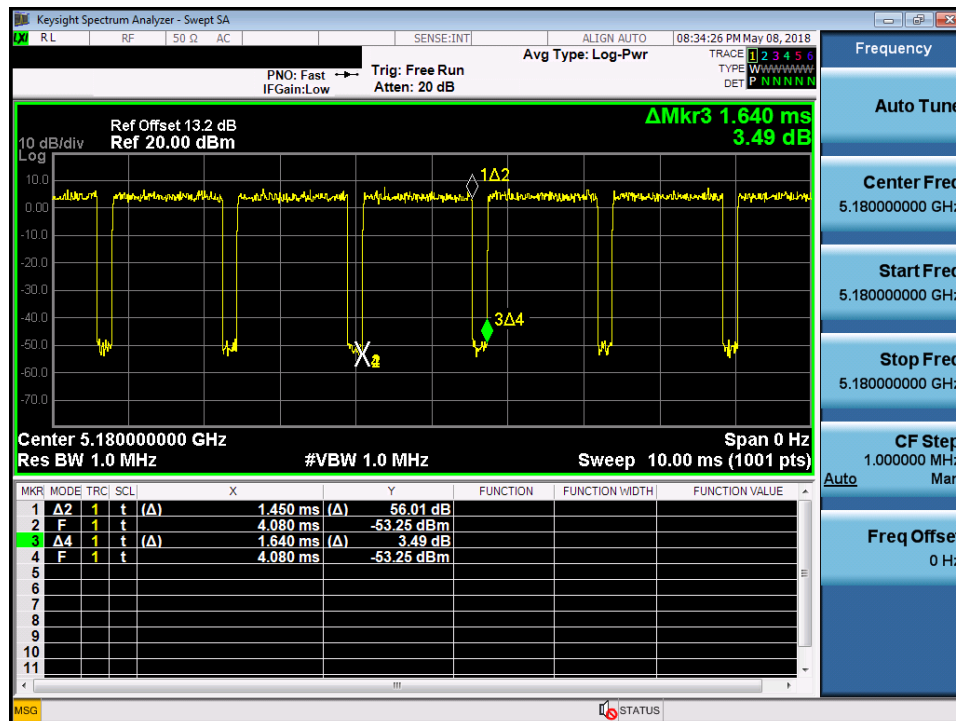
Test standard : KDB 789033 Zero-Span Spectrum Analyzer Method
Limit : None; for reporting purposes only
Kind of test site : Shielded room/Conducted room

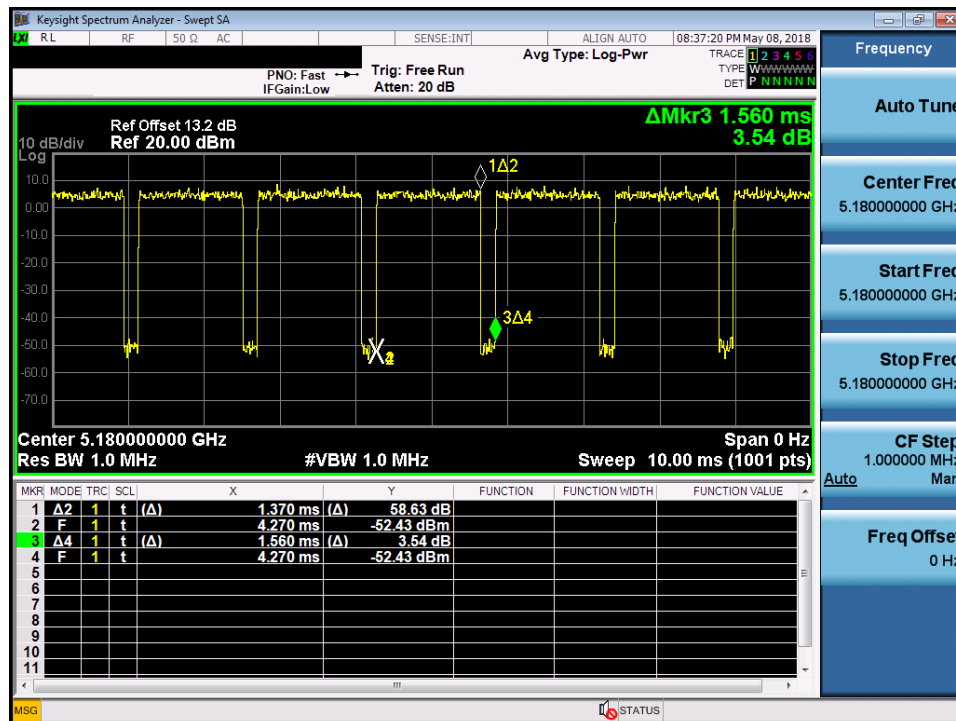
Test setup

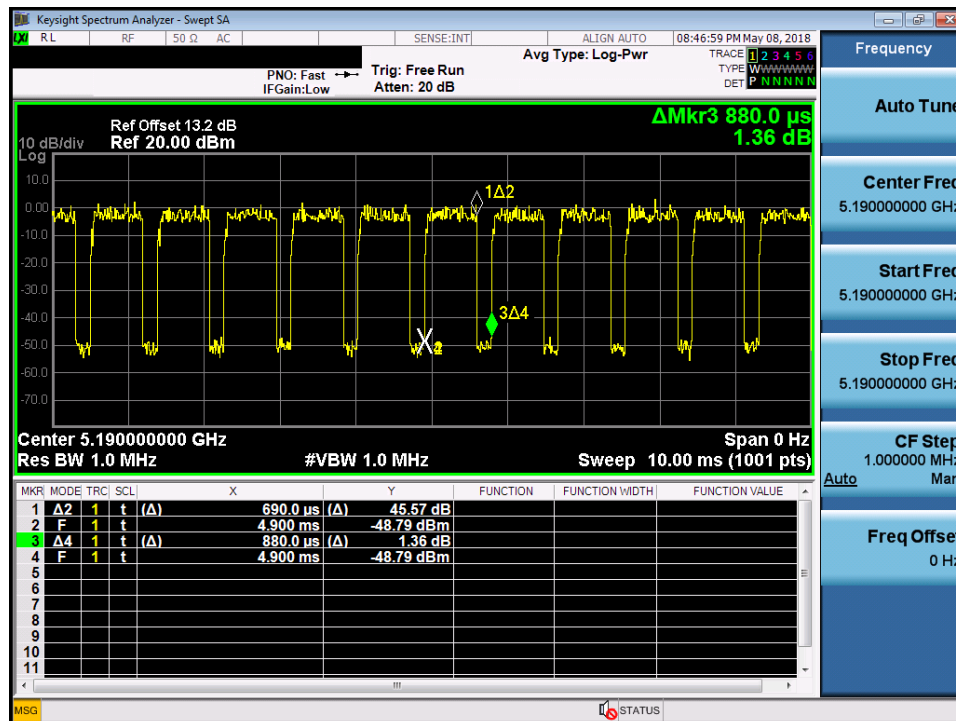
Operation Mode : A

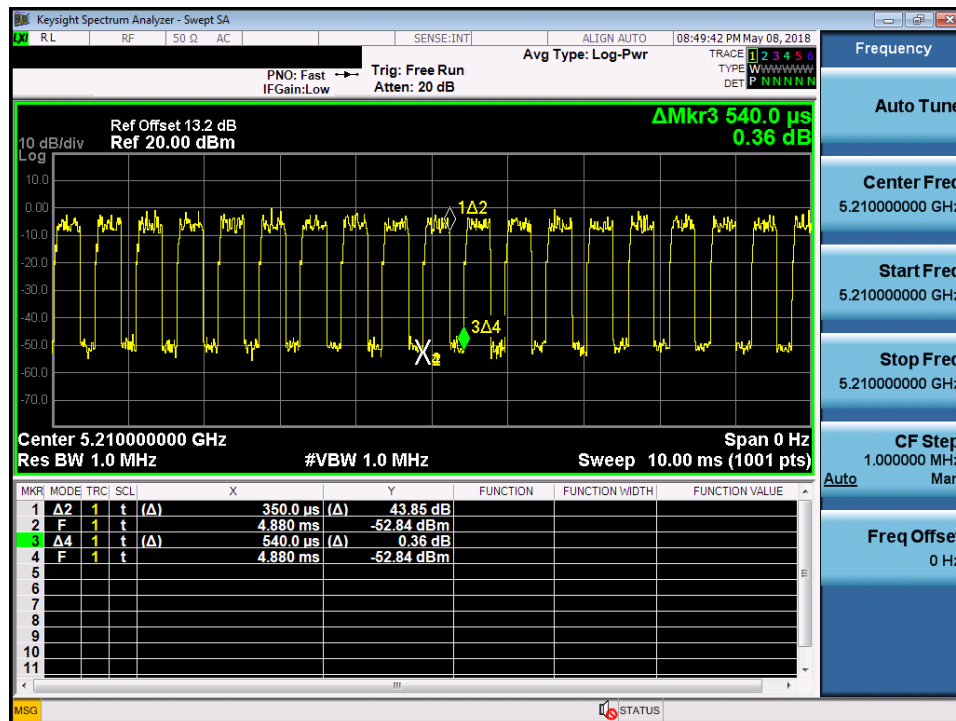
Table 12: Result of Duty Cycle

Mode	ON Time (msec)	Period (msec)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	1.45	1.64	88	0.56
802.11ac VHT20	1.37	1.56	88	0.56
802.11ac VHT40	0.67	0.88	78	1.08
802.11ac VHT80	0.35	0.54	65	1.87

DUTY CYCLE PLOT, 802.11a








5.1.4 26 dB Bandwidth and 99% Bandwidth

RESULT:

Passed

Test standard : FCC Part 15.407(a), RSS-247;
 Limit : FCC Part 15.407(a), RSS-247;
 Kind of test site : Shielded room/Conducted room

Test setup

Test Channel : Refer to the Table 11 ~14
 Operation Mode : A

Table 13: Test result of 26dB/99% Bandwidth (802.11a)

Channel	Channel Frequency (MHz)	26dB Bandwidth ANT1 (MHz)	99% Bandwidth ANT1 (MHz)
36	5180	27.78	16.823
40	5200	27.86	16.902
48	5240	22.61	16.703
56	5280	23.17	16.676
60	5300	25.93	16.736
64	5320	27.79	16.835
100	5500	25.71	16.780
112	5560	22.03	16.660
140	5700	19.73	16.585
149	5745	19.77	16.586
157	5785	21.87	16.617
165	5825	20.13	16.625
144 ₁	5720	20.04	16.447

Note1: Channel 144 is operated in both U-NII-2C and U-NII-3

Table 14: Test result of 26dB/99% Bandwidth (802.11ac VHT20)

Channel	Channel Frequency (MHz)	26dB Bandwidth ANT0+ANT1 (MHz)	99% Bandwidth ANT0+ANT1 (MHz)
36	5180	19.93	17.597
40	5200	20.03	17.607
48	5240	20.12	17.631
56	5280	20.27	17.656
60	5300	20.11	17.615
64	5320	20.12	17.642
100	5500	19.94	17.591
112	5560	20.15	17.673
140	5700	20.12	17.619
149	5745	20.32	17.629
157	5785	20.09	17.603
165	5825	20.19	17.728
144 ₁	5720	20.52	17.596

Note1: Channel 144 is operated in both U-NII-2C and U-NII-3

Table 15: Test result of 26dB/99% Bandwidth (802.11ac VHT40)

Channel	Channel Frequency (MHz)	26dB Bandwidth ANT0+ANT1 (MHz)	99% Bandwidth ANT0+ANT1 (MHz)
38	5190	40.56	36.046
46	5230	40.44	36.108
54	5270	40.16	35.996
62	5310	40.53	36.049
102	5510	40.58	36.088
118	5590	40.67	36.051
134	5670	40.15	36.090
151	5755	41	36.257
159	5795	40.79	36.237
142 ₁	5710	40.5	35.884

Note1: Channel 142 is operated in both U-NII-2C and U-NII-3

Table 16: Test result of 26dB/99% Bandwidth (802.11ac VHT80)

Channel	Channel Frequency (MHz)	26dB Bandwidth ANT0+ANT1 (MHz)	99% Bandwidth ANT0+ANT1 (MHz)
42	5210	80.57	75.138
58	5290	80.38	74.9
106	5530	80.5	74.879
122	5610	81	75.874
151	5755	79.84	74.656
138 ₁	5690	80	74.787

Note1: Channel 138 is operated in both U-NII-2C and U-NII-3

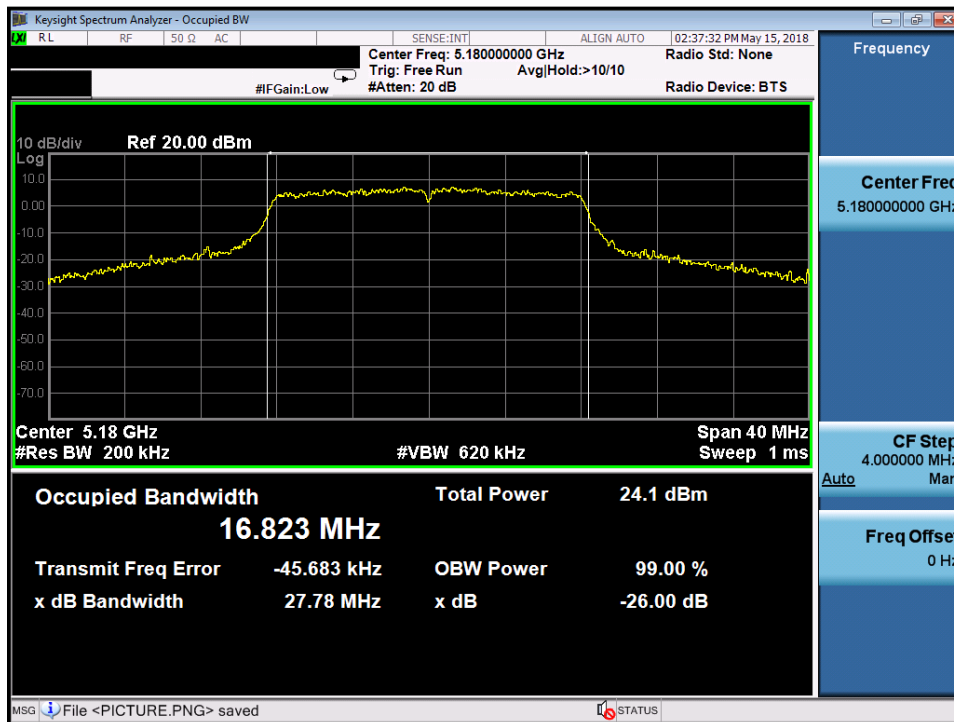
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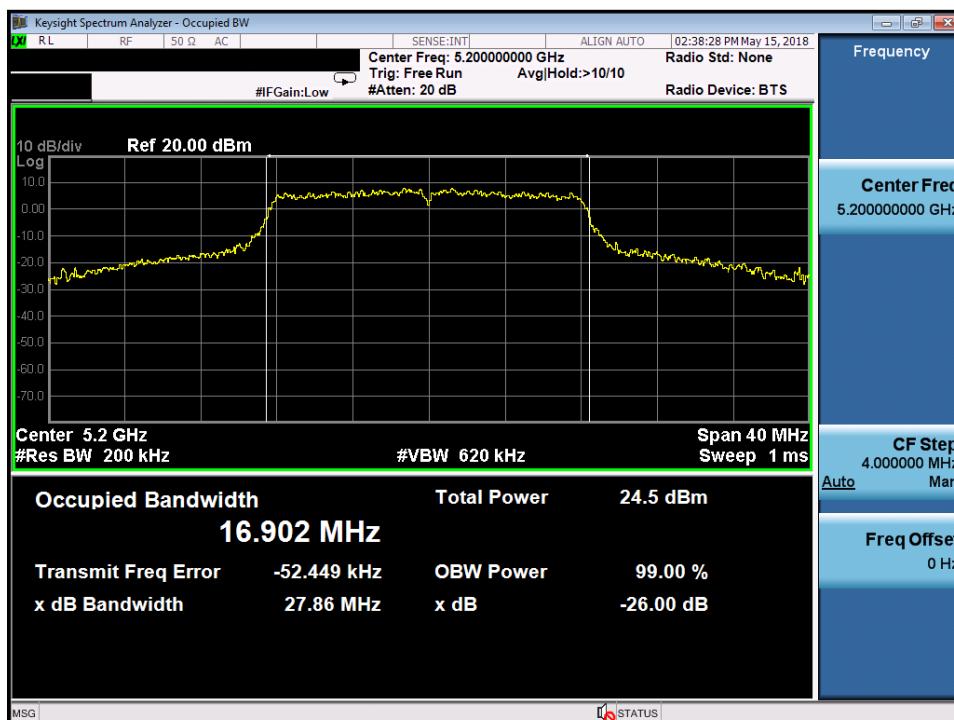
Test Plot of 26dB Bandwidth (802.11a)

Antenna 1

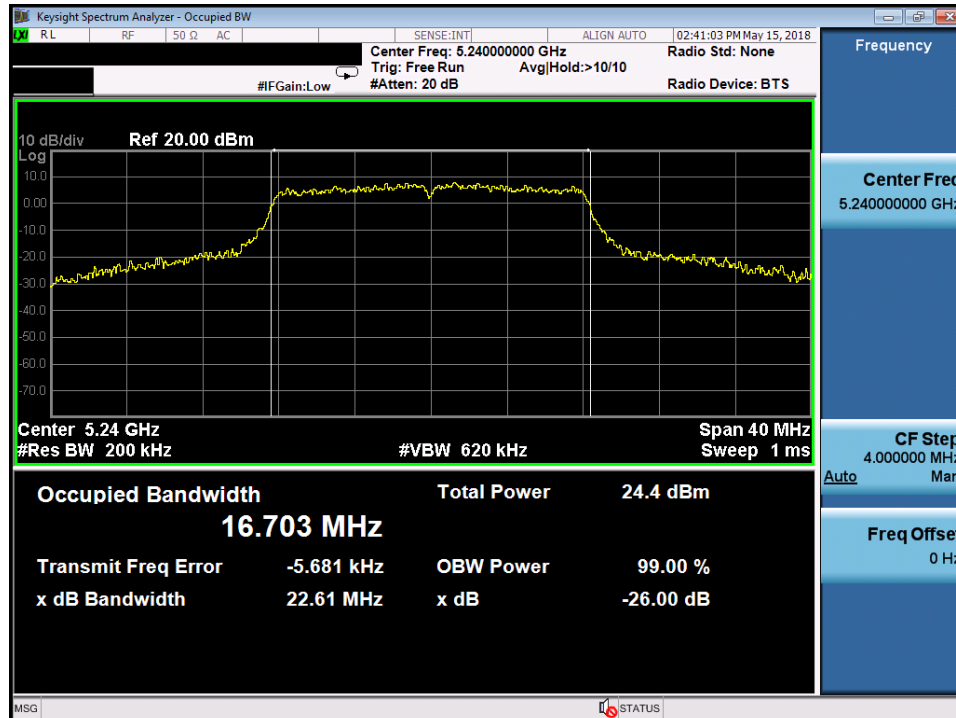
5180MHz



5200MHz



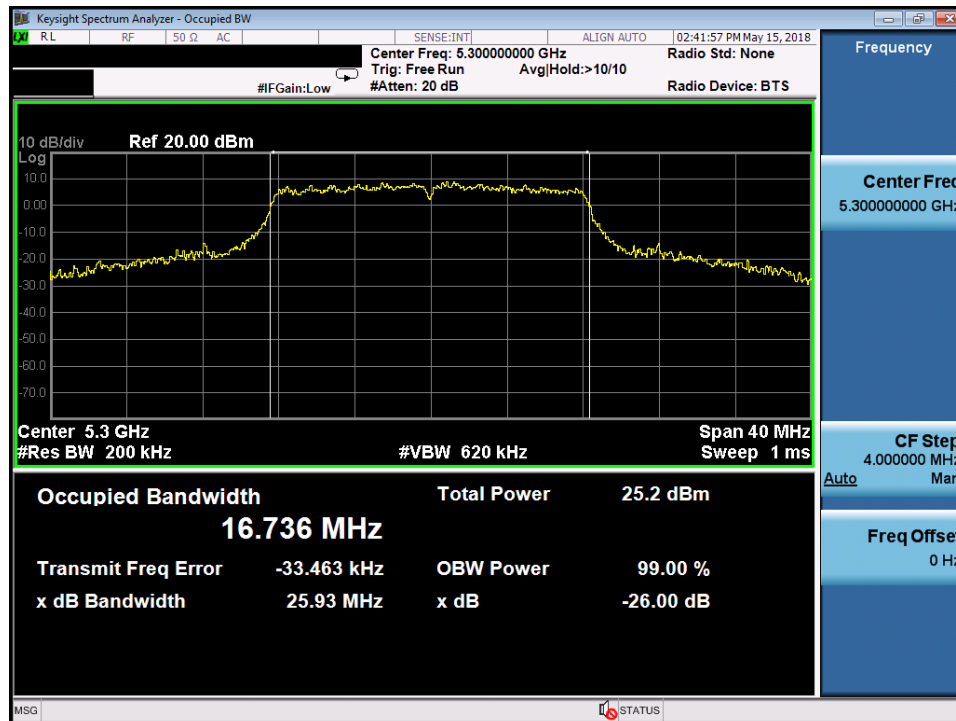
5240MHz



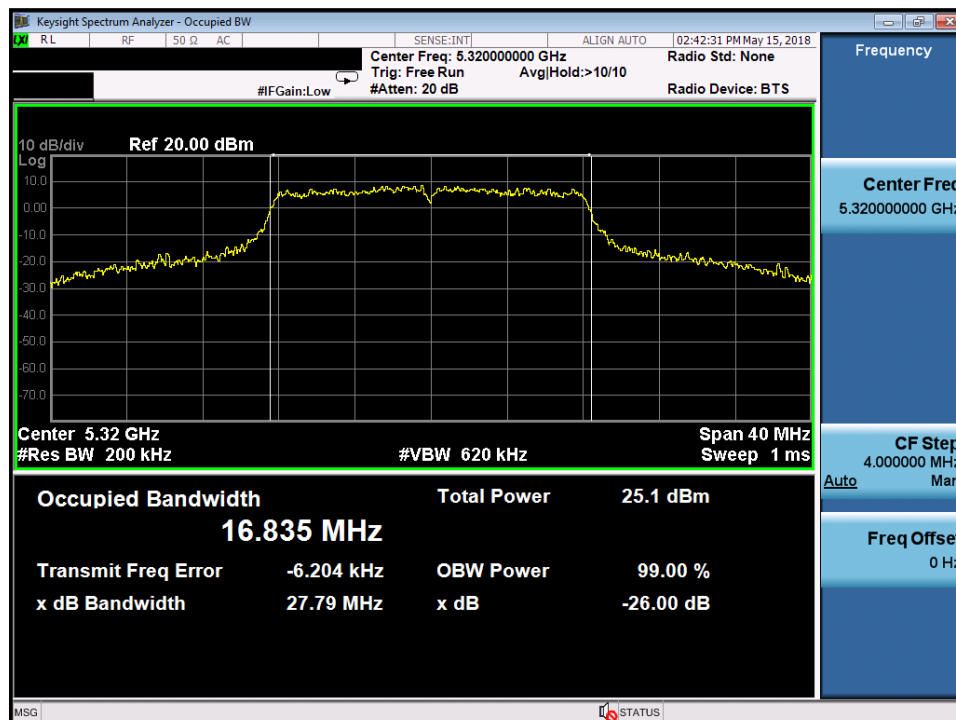
5280MHz

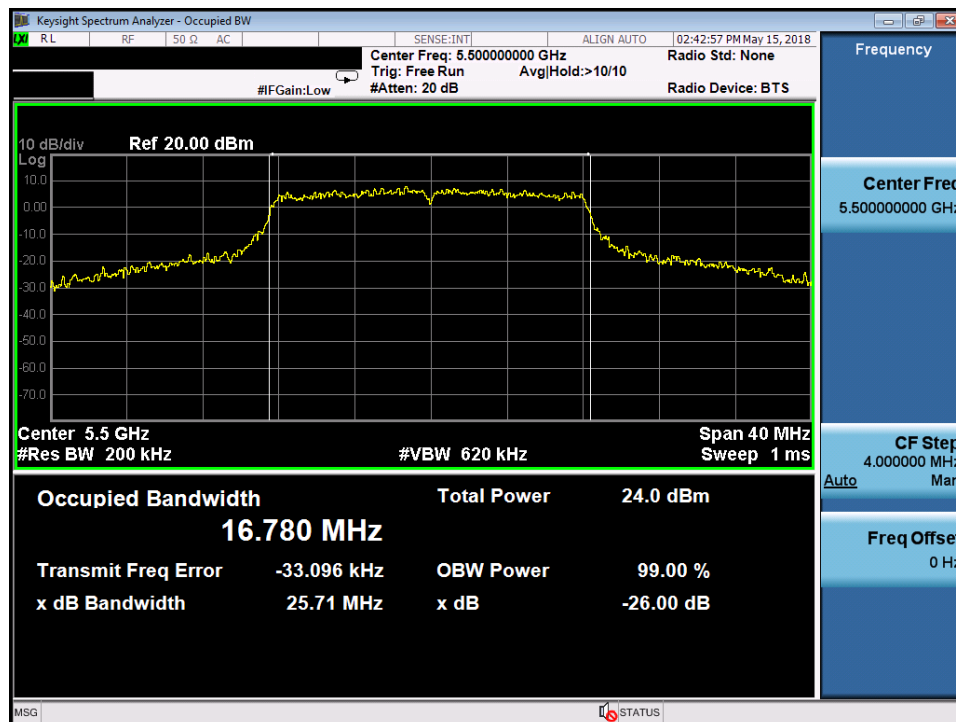
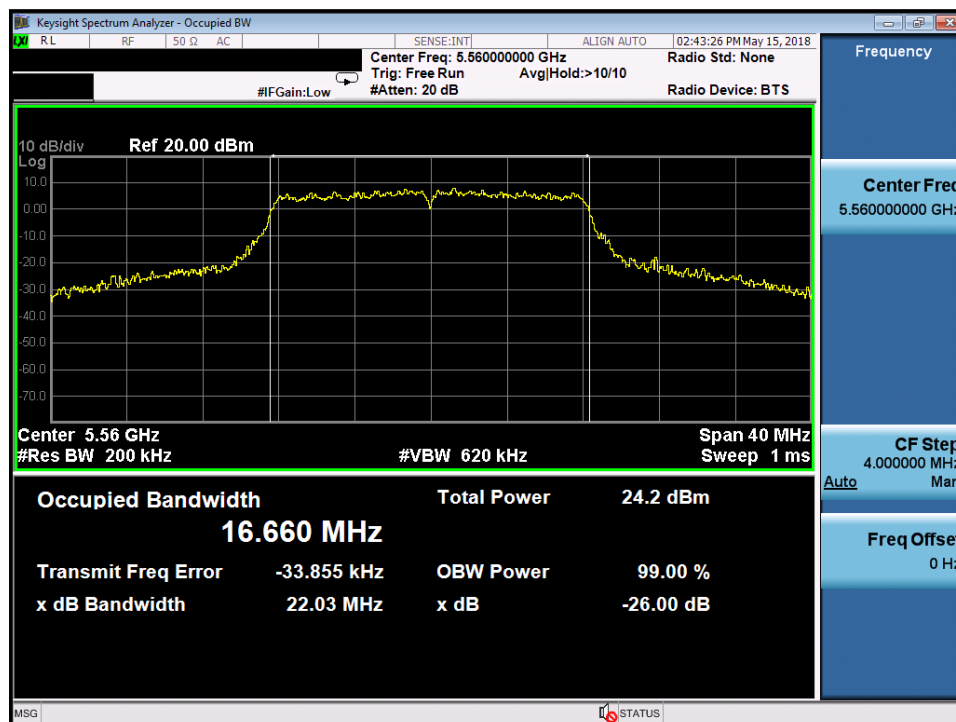


5300MHz

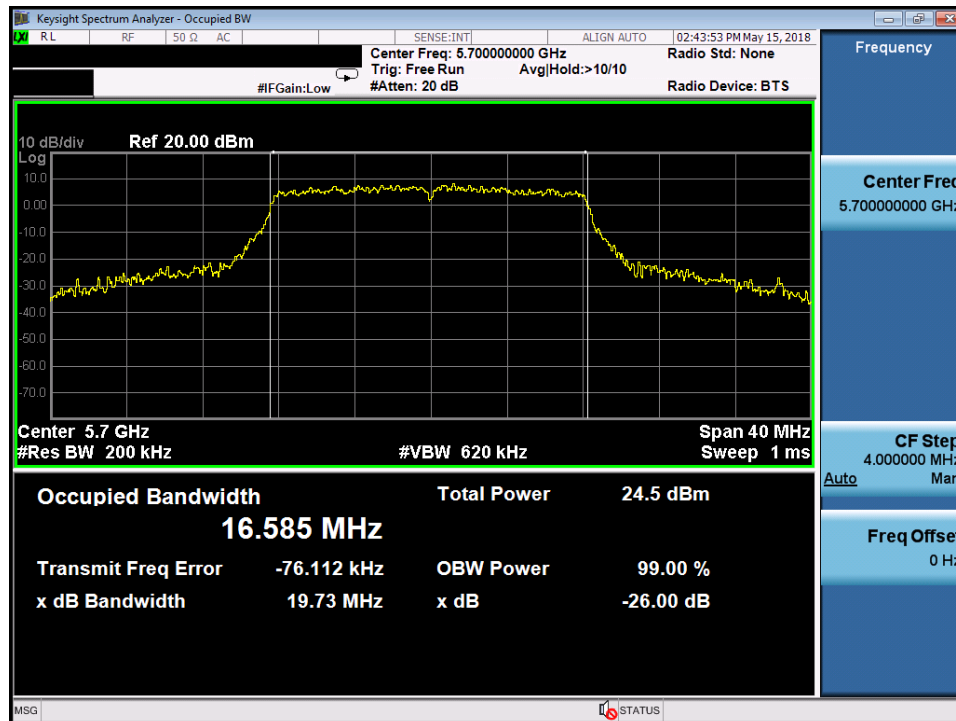


5320MHz



5500MHz

5560MHz


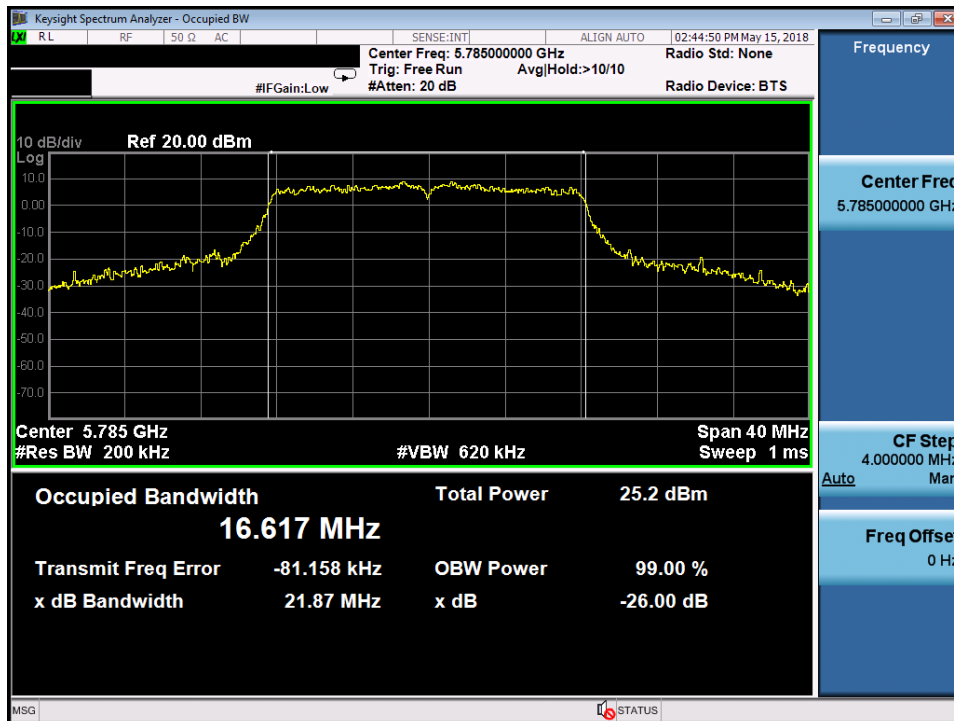
5700MHz



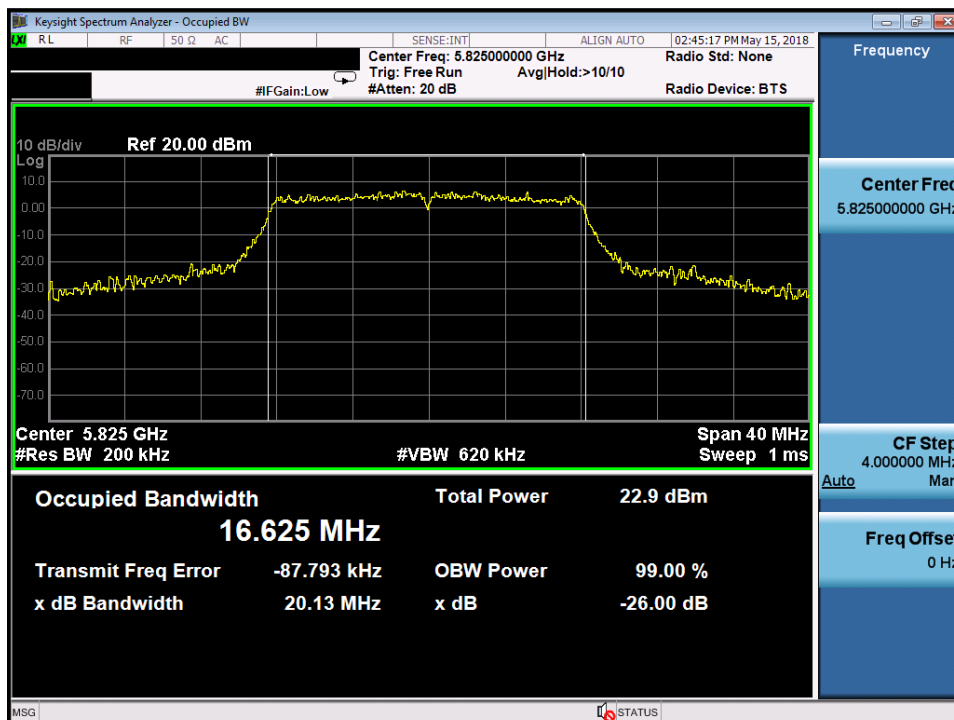
5745MHz



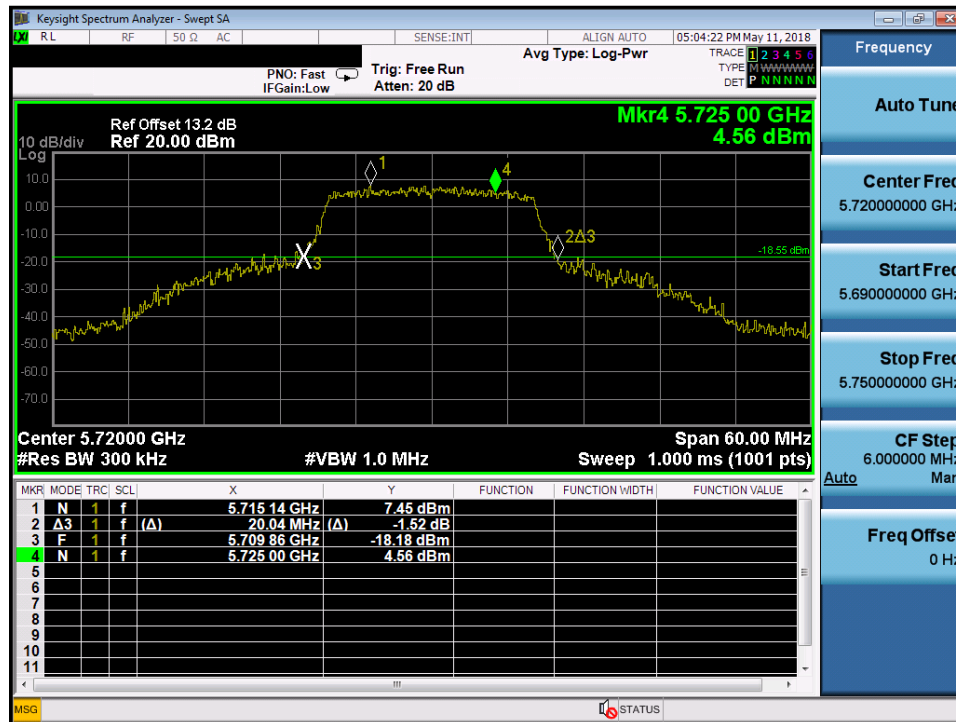
5785MHz



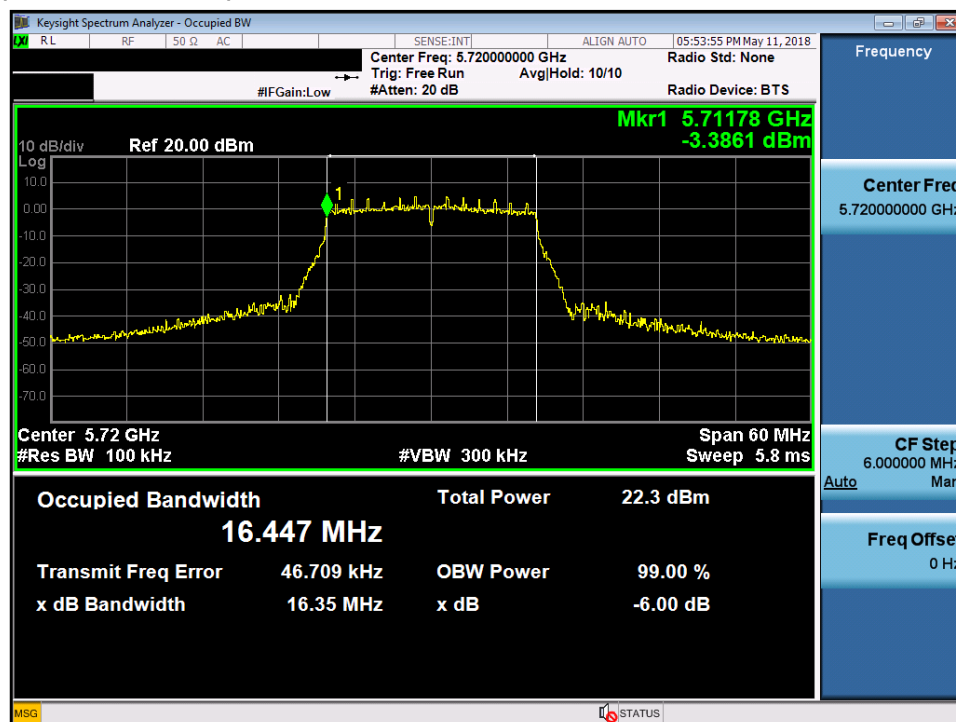
5825MHz



5720MHz (Straddle Channel), 26dB



5720MHz (Straddle Channel), 99%



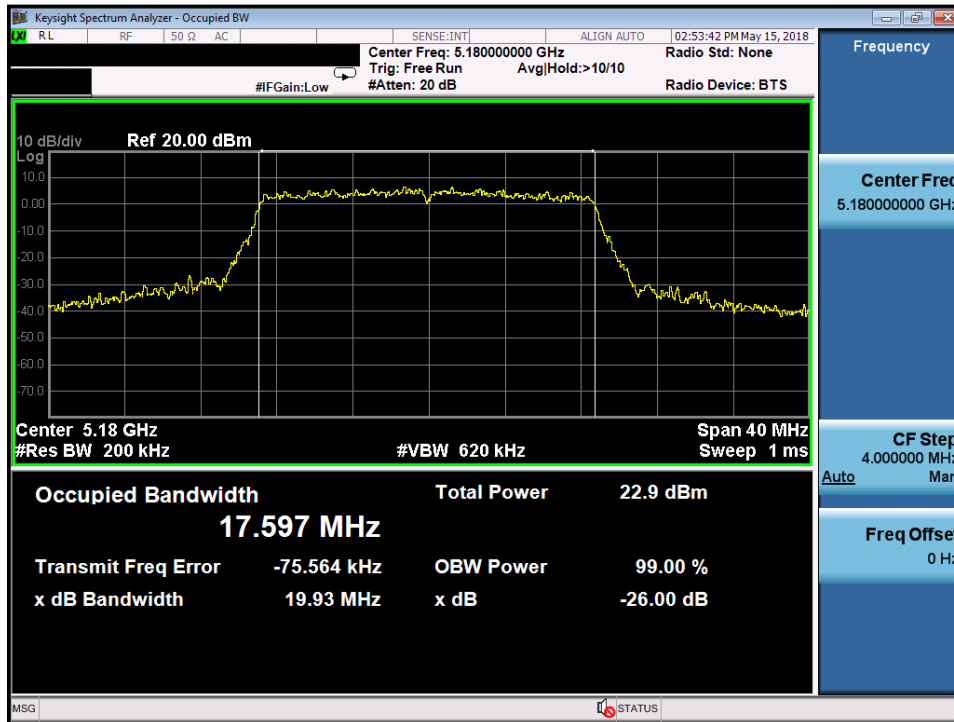
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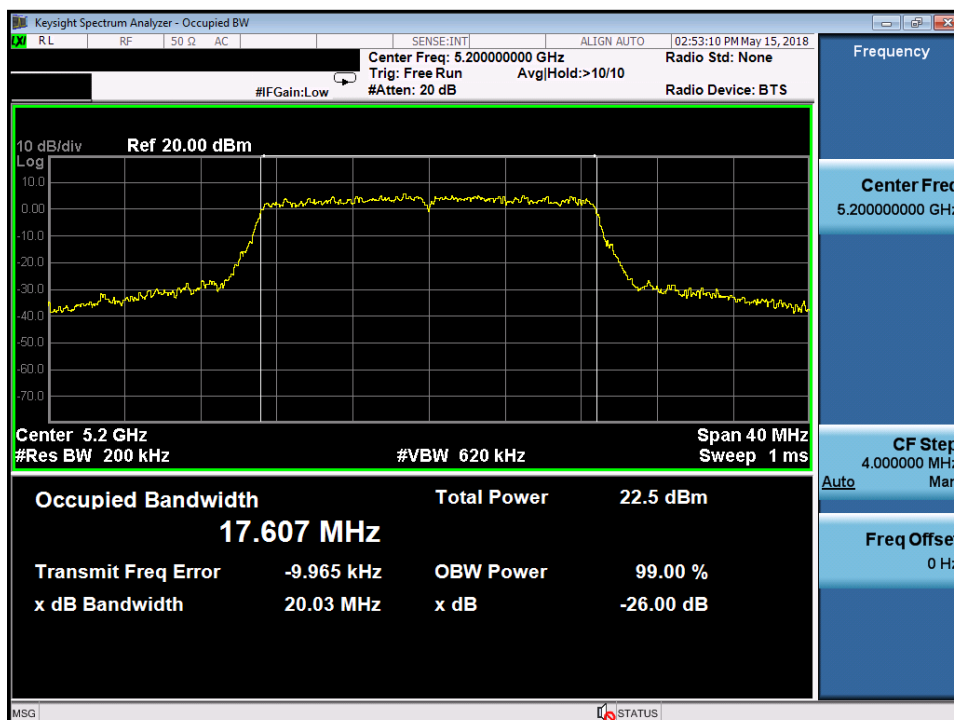
Test Plot of 26dB Bandwidth (802.11ac VHT20)

Antenna 1 + Antenna 2

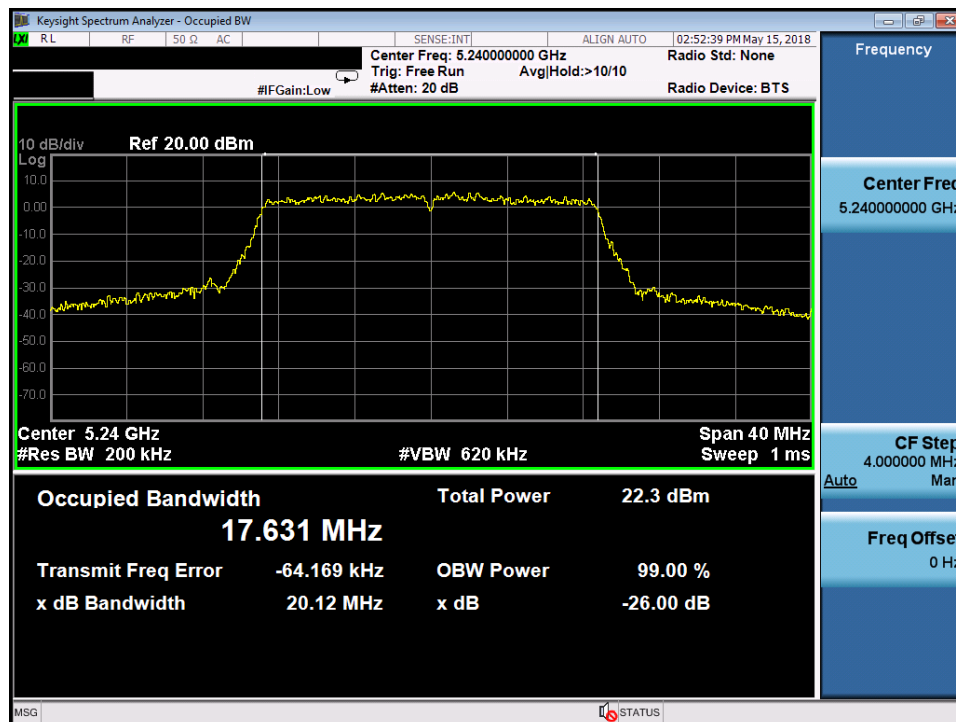
5180MHz



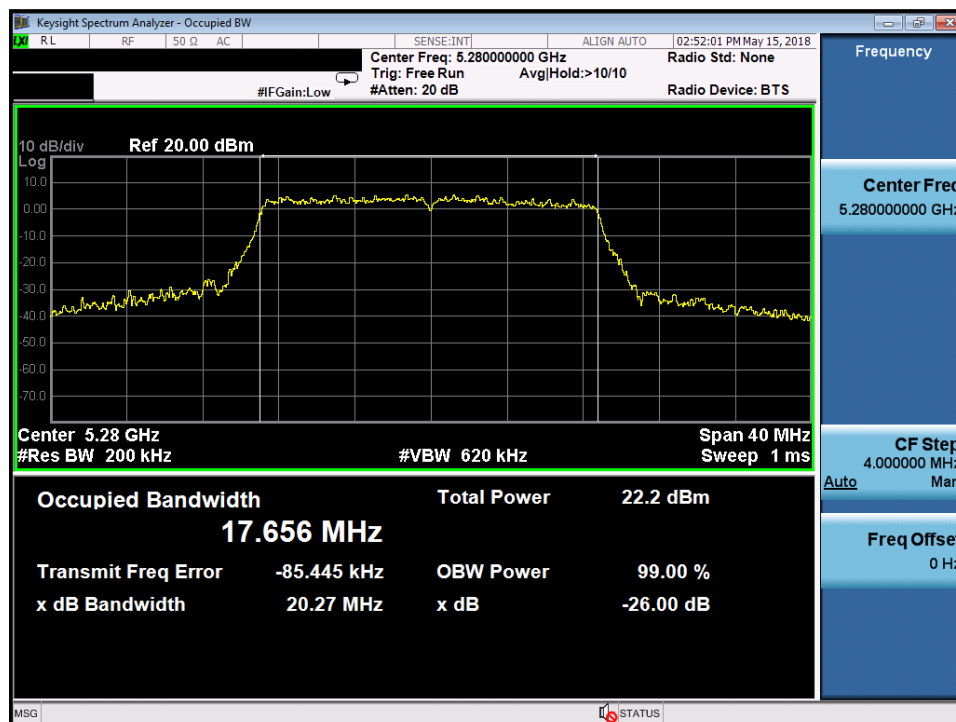
5200MHz



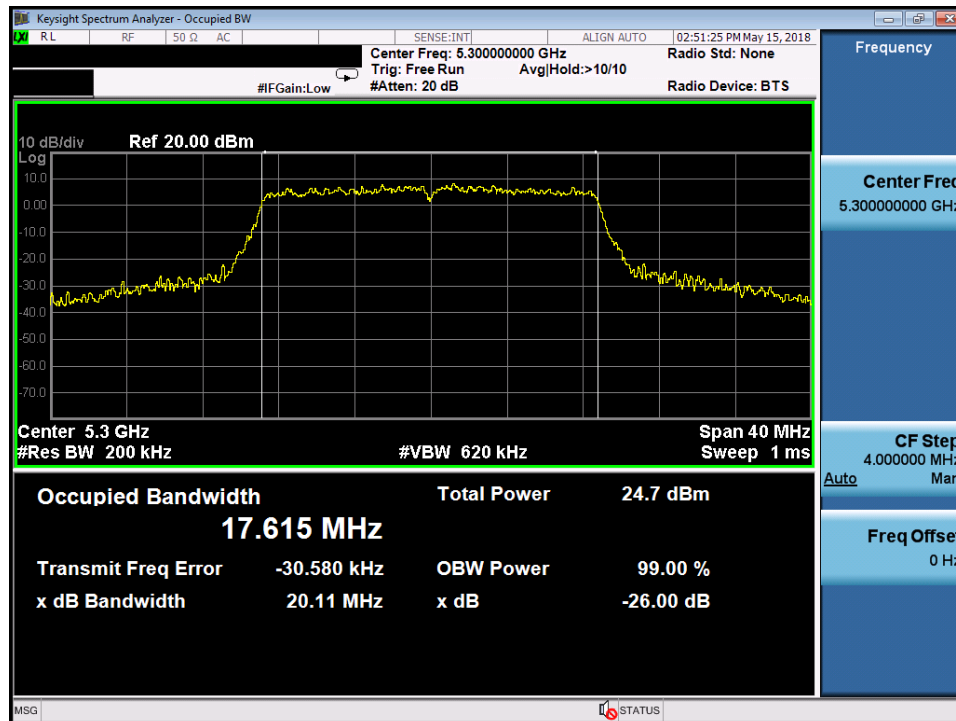
5240MHz



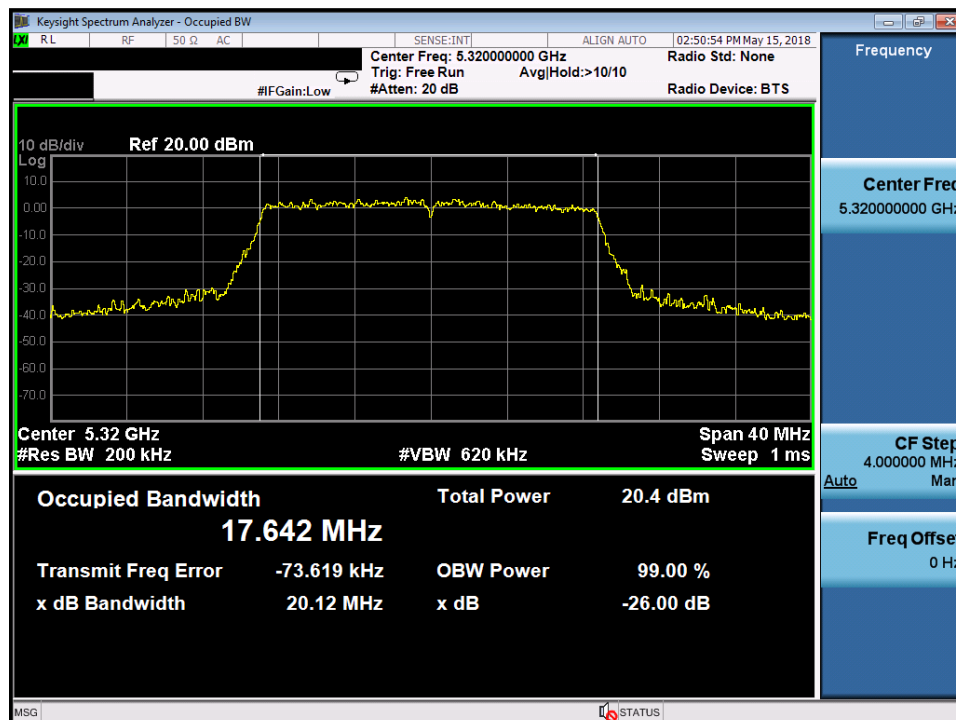
5280MHz



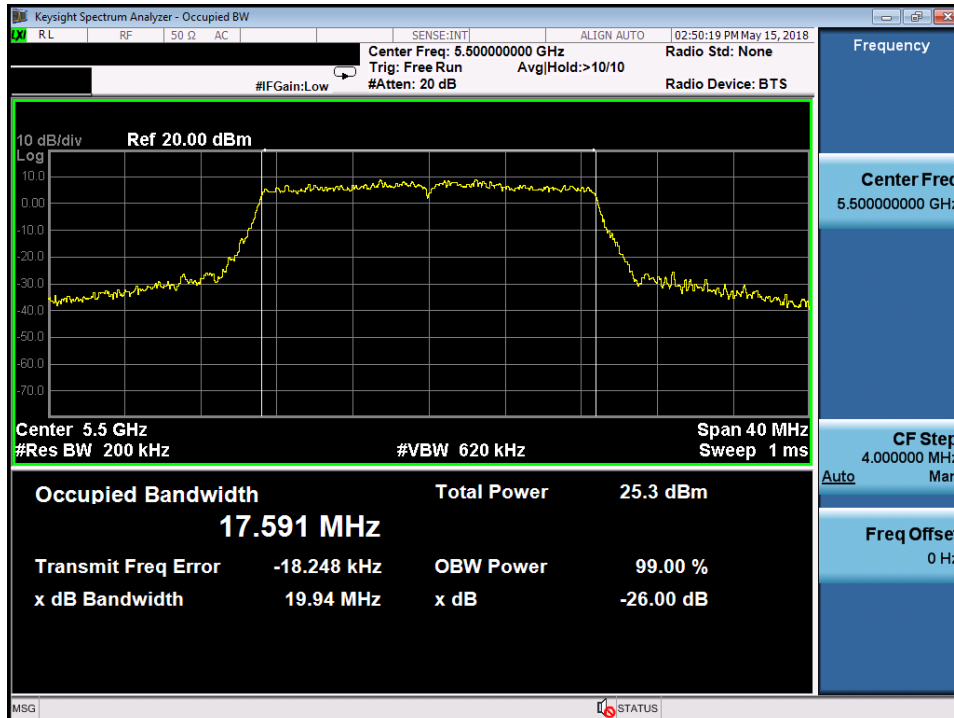
5300MHz



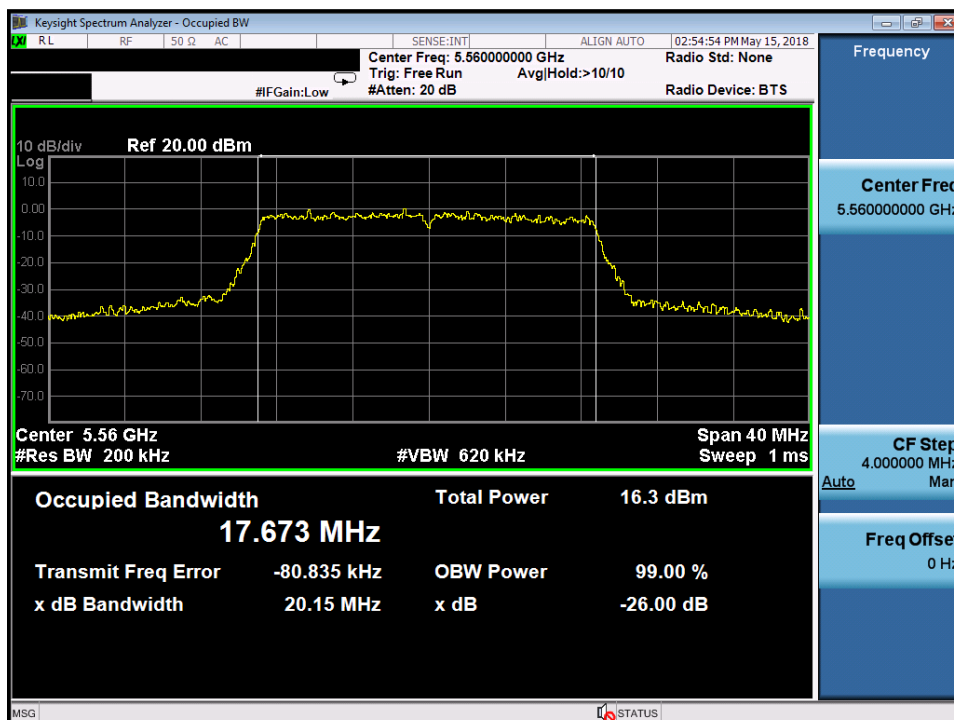
5320MHz



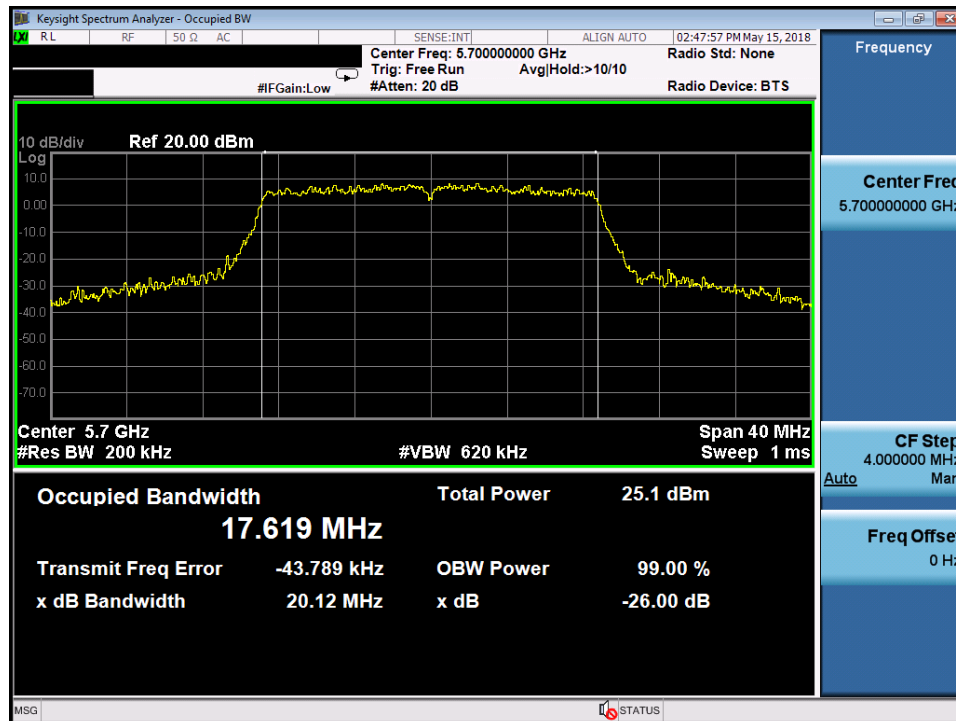
5500MHz



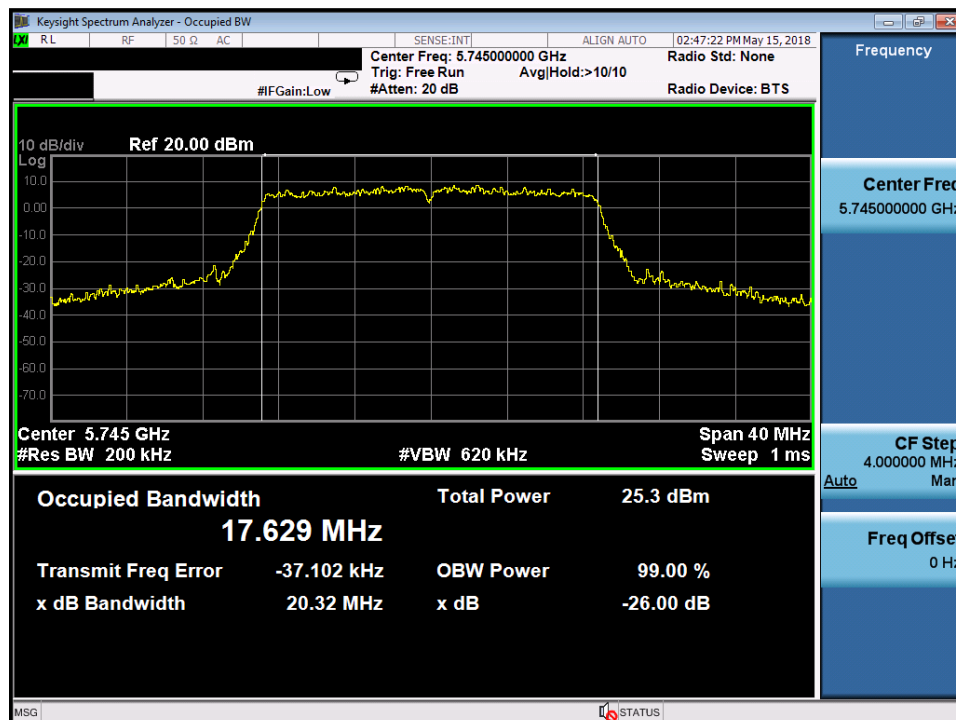
5560MHz



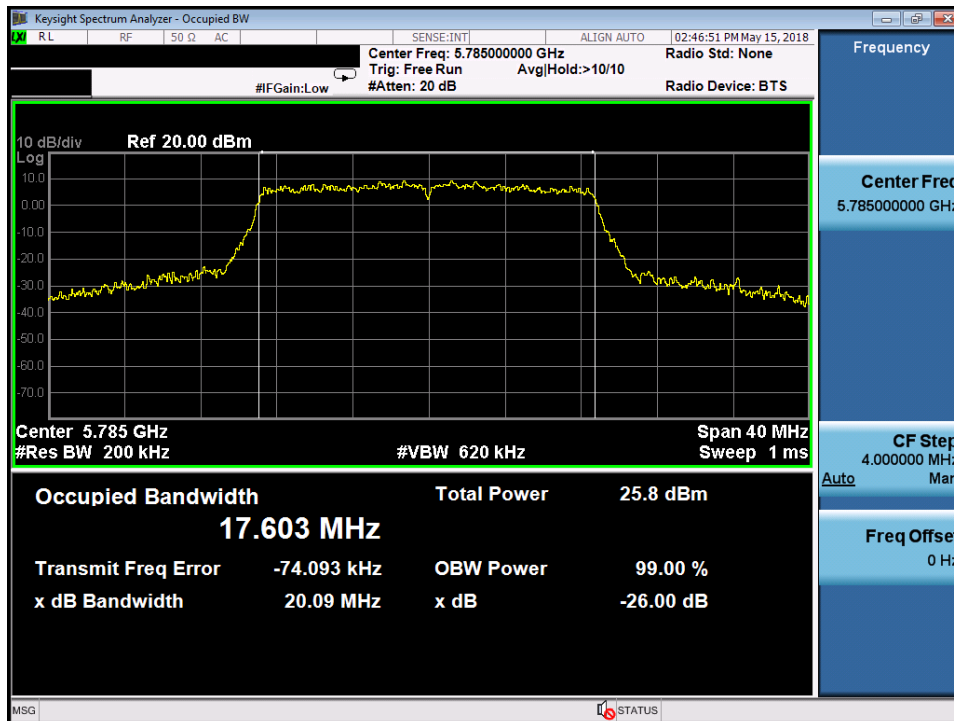
5700MHz



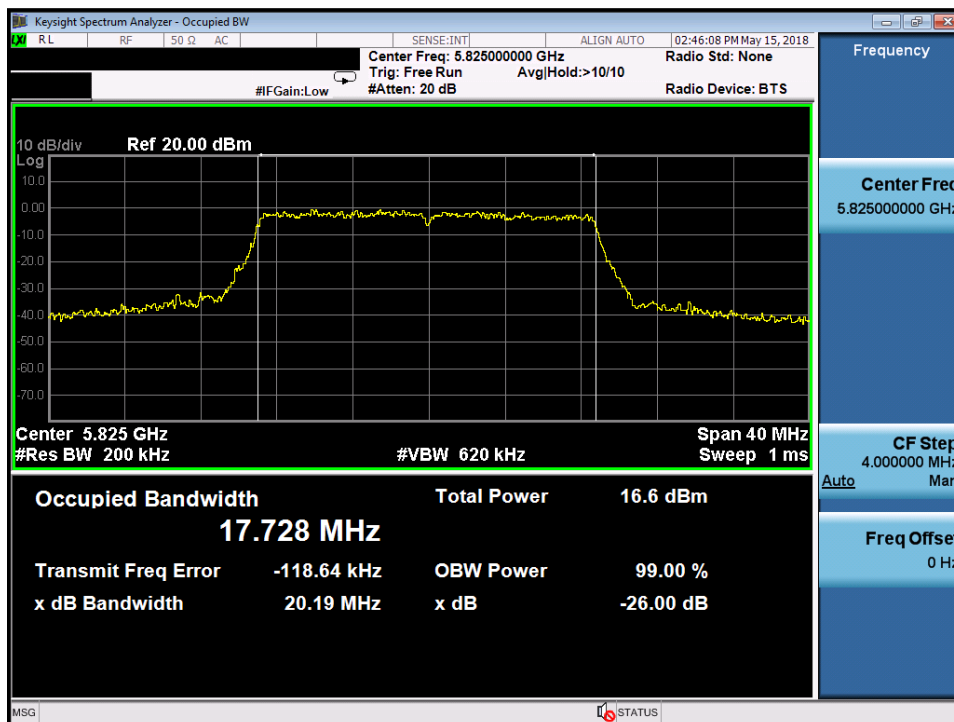
5745MHz



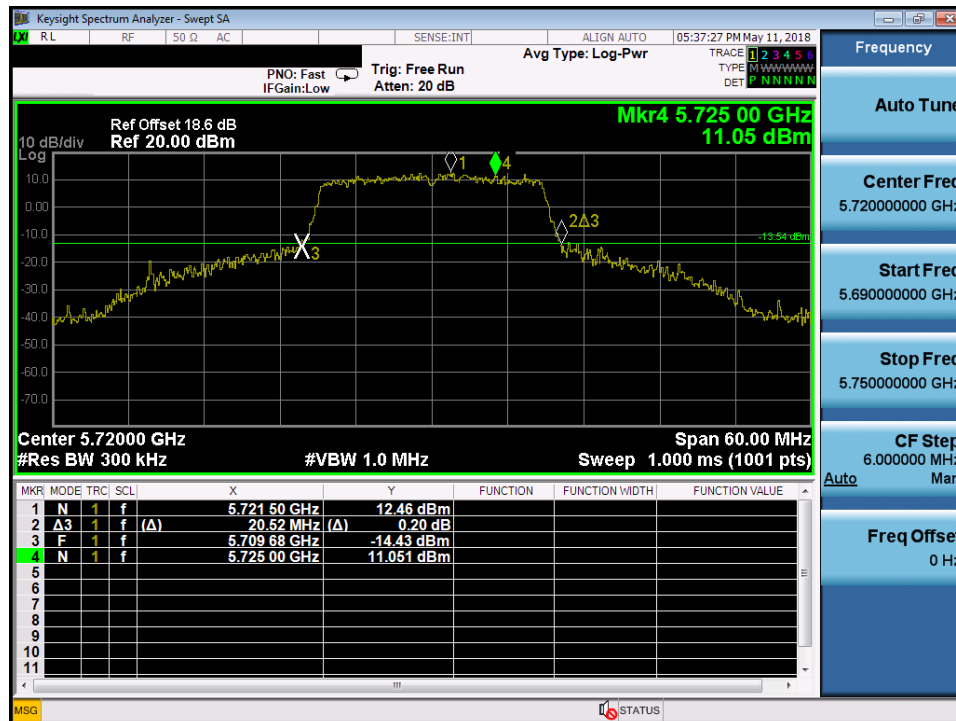
5785MHz



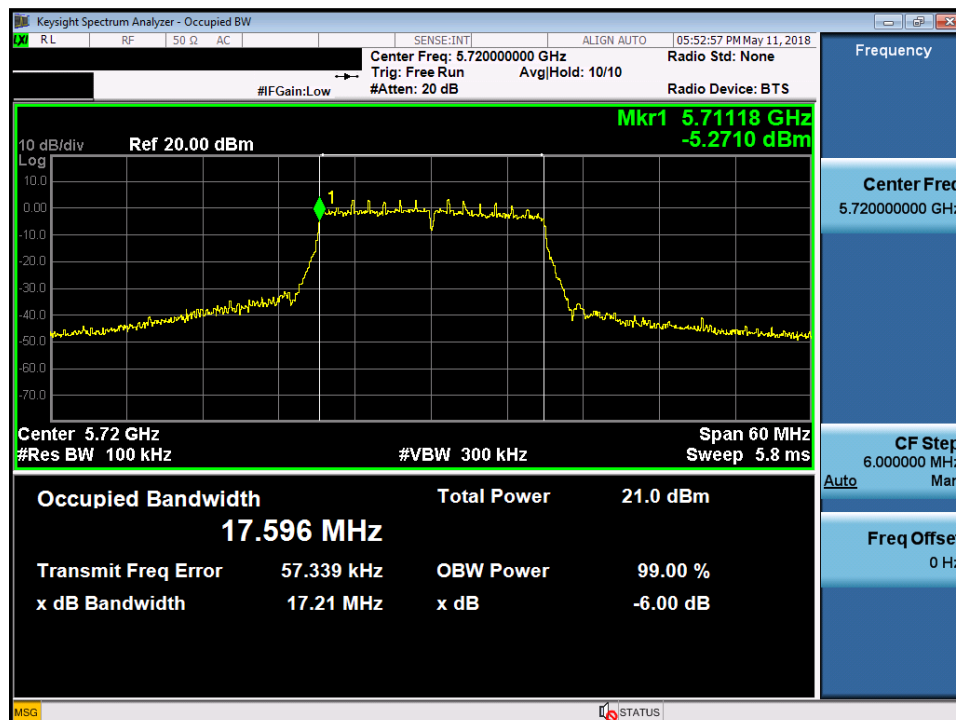
5825MHz



5720MHz (Straddle Channel), 26dB

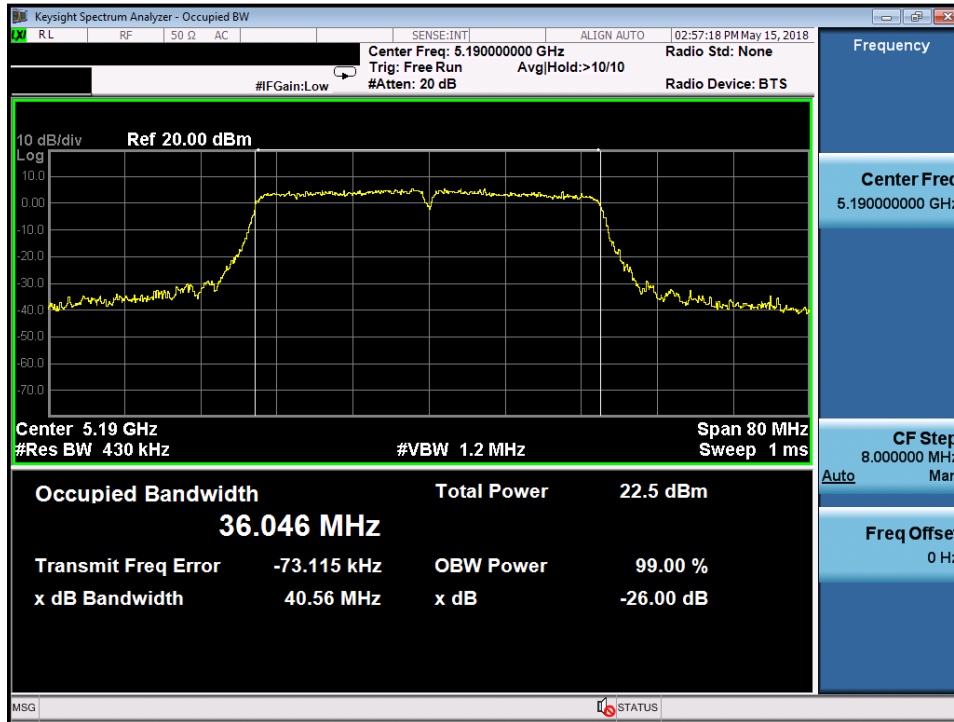
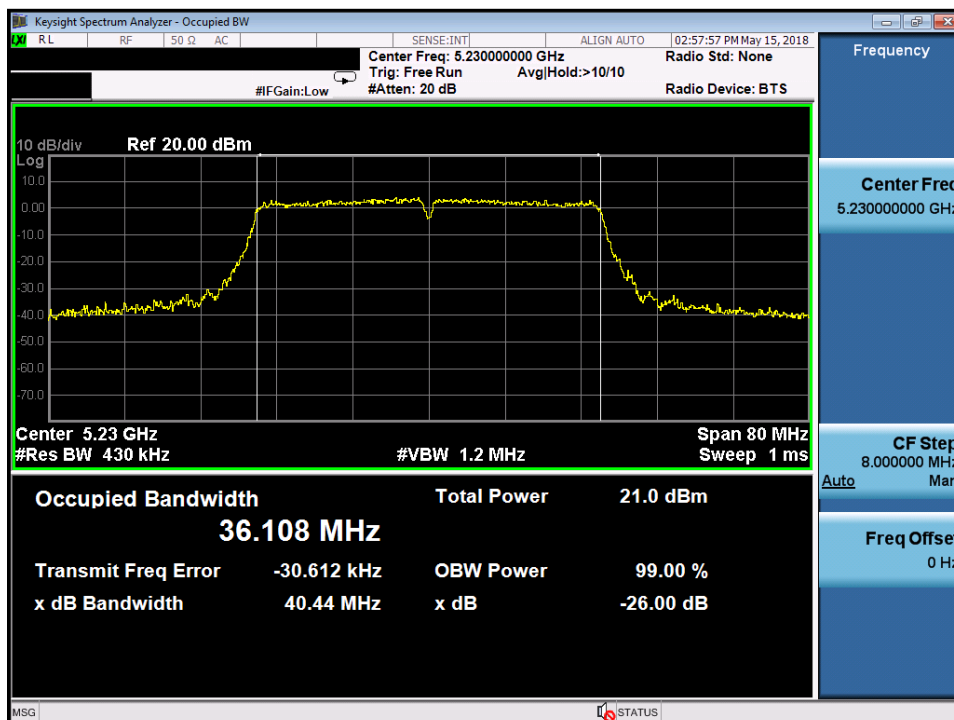


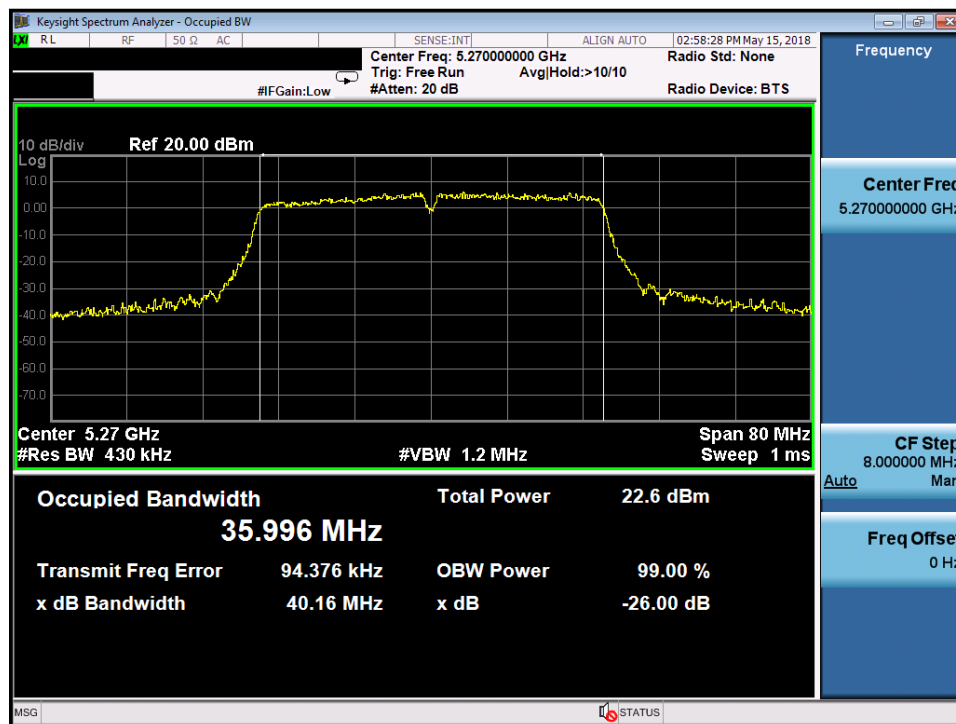
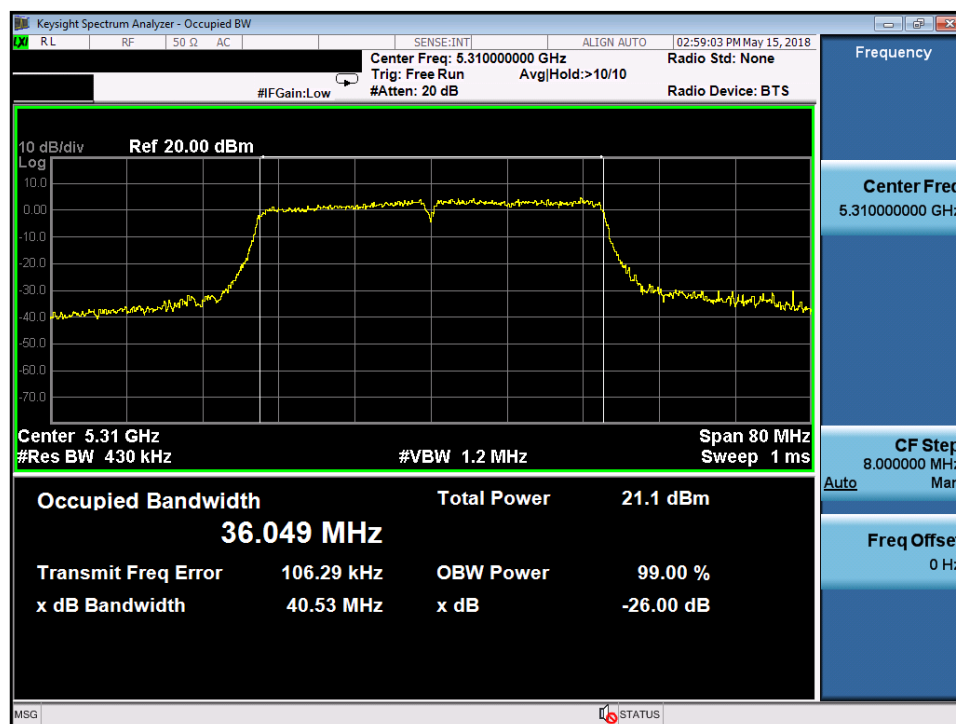
5720MHz (Straddle Channel), 99%



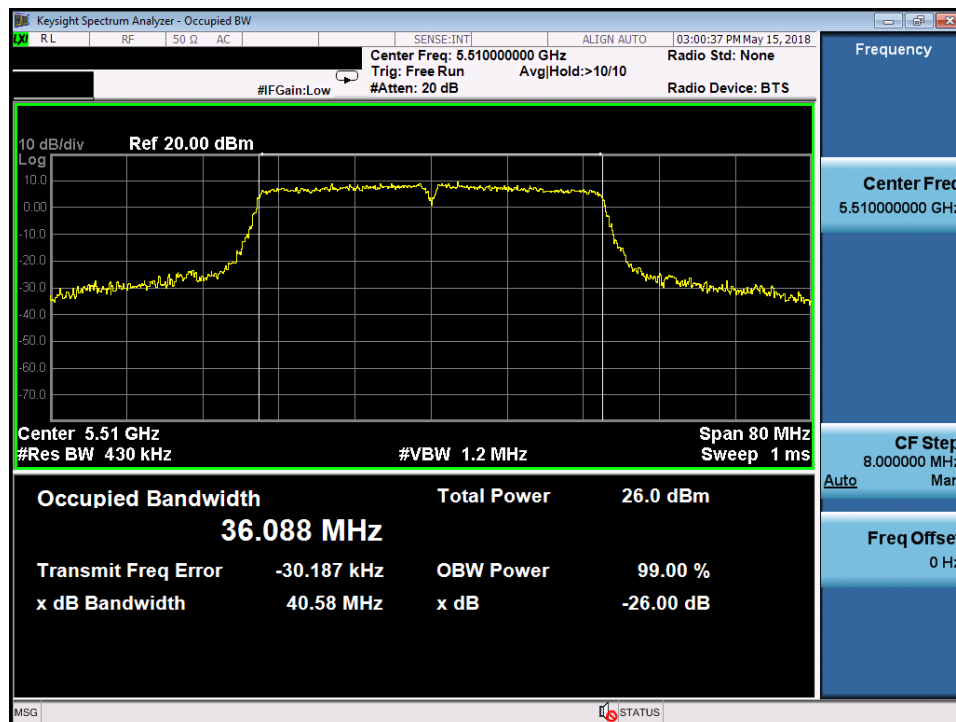
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Test Plot of 26dB Bandwidth (802.11ac VHT40)

Antenna 1 + Antenna 2
5190MHz

5230MHz


5270MHz

5310MHz


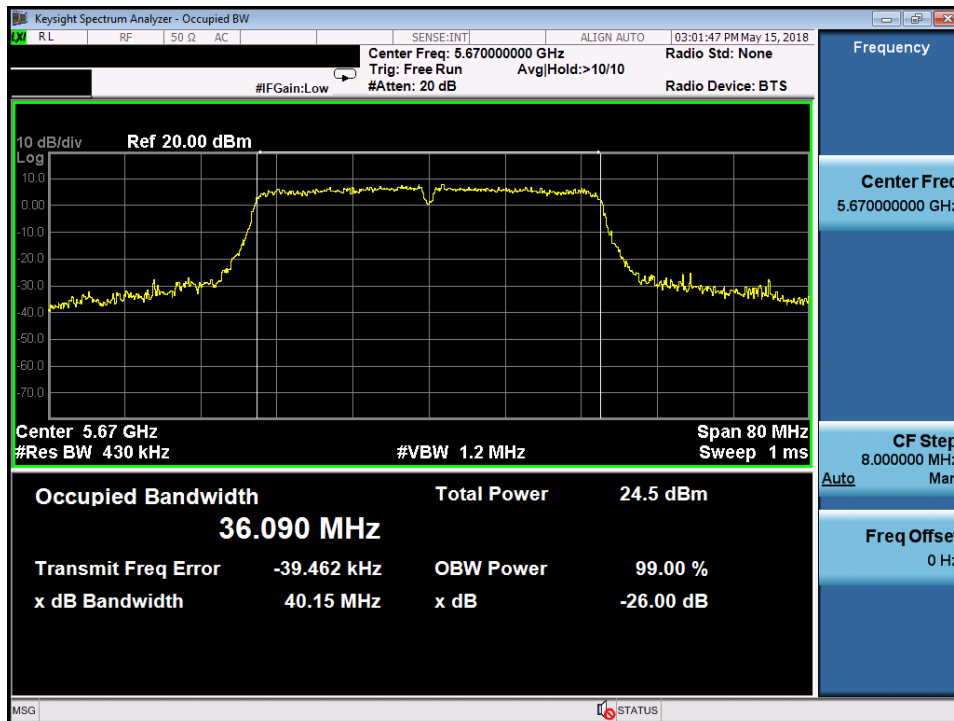
5510MHz



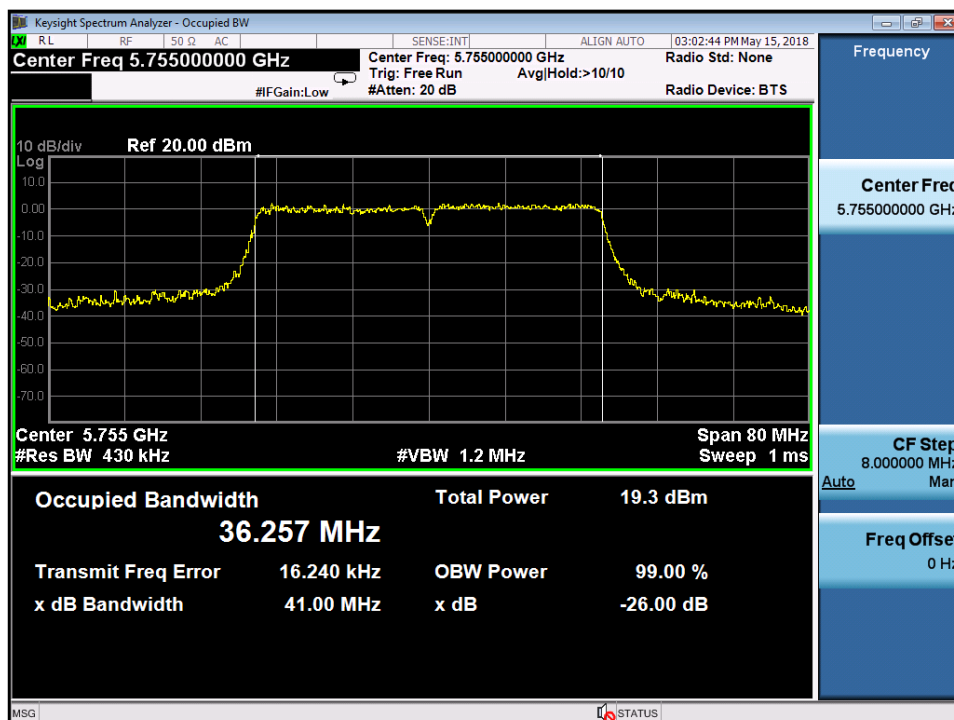
5590MHz



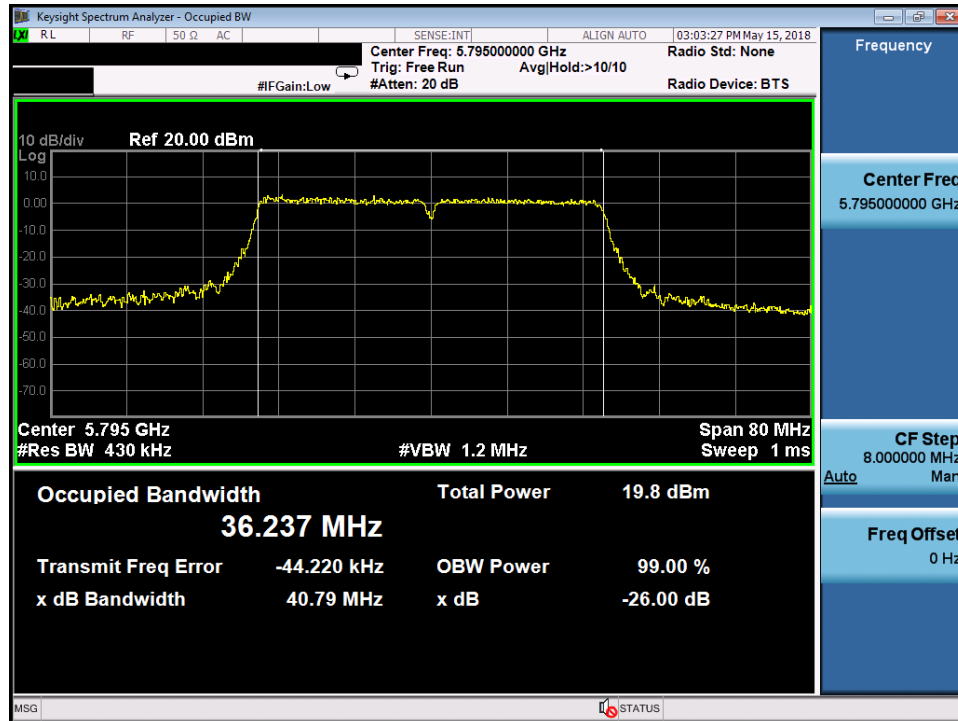
5670MHz



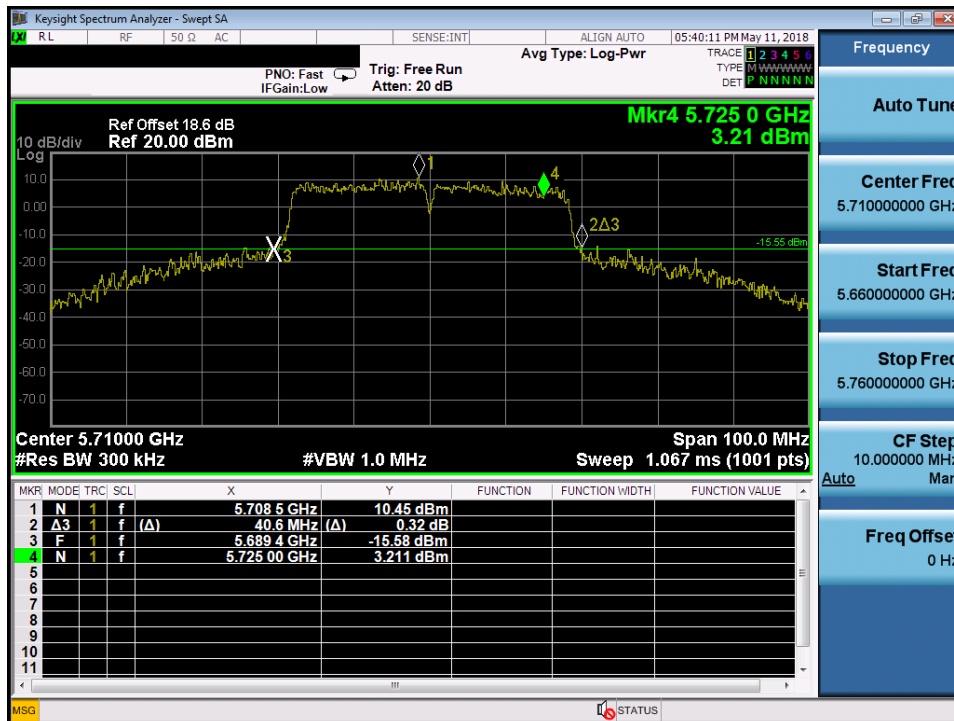
5755MHz



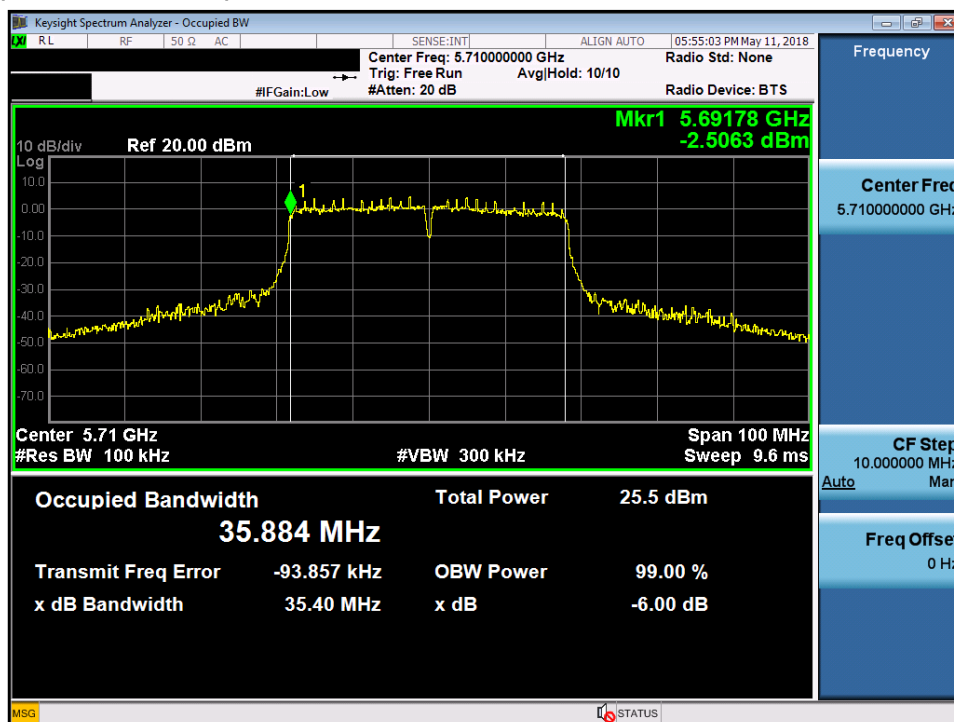
5795MHz



5710MHz (Straddle Channel), 26dB



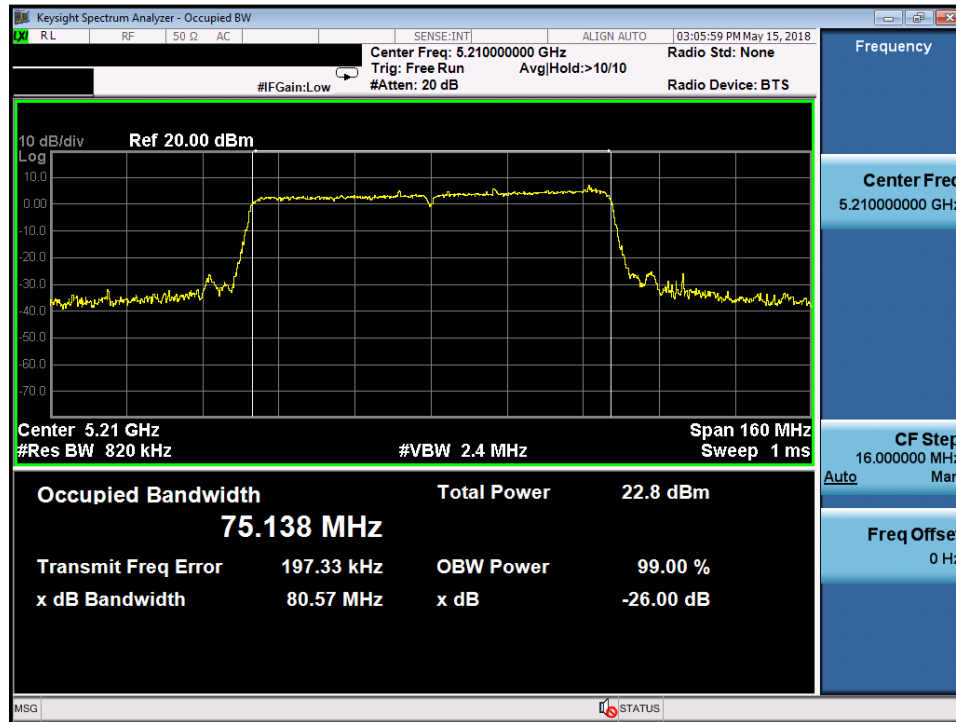
5710MHz (Straddle Channel), 99%



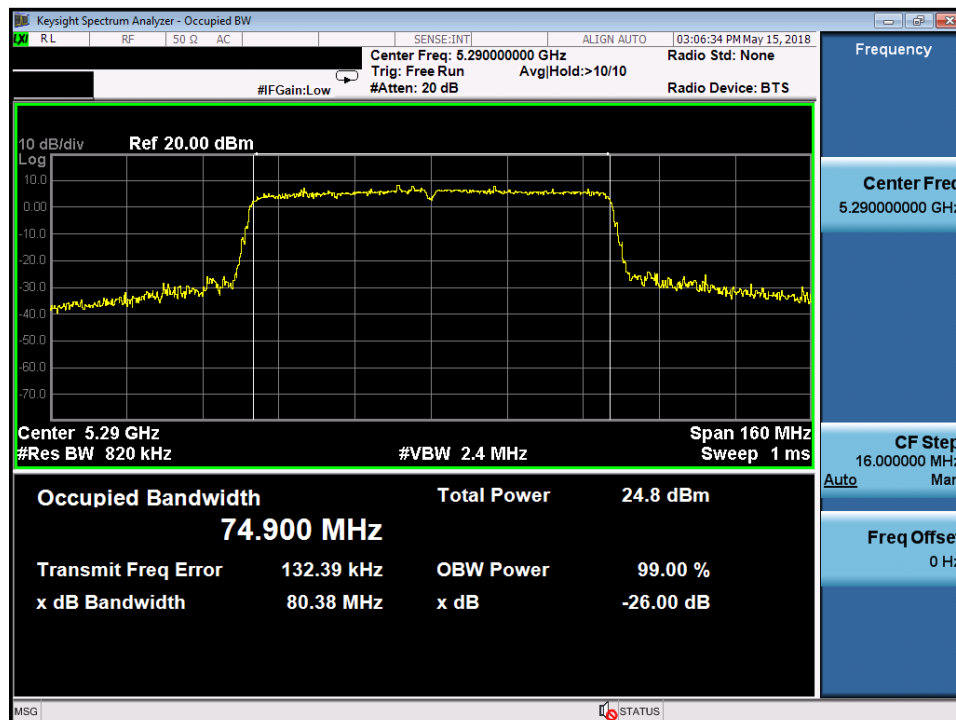
Test Plot of 26dB Bandwidth (802.11ac VHT80)

Antenna 1 + Antenna 2

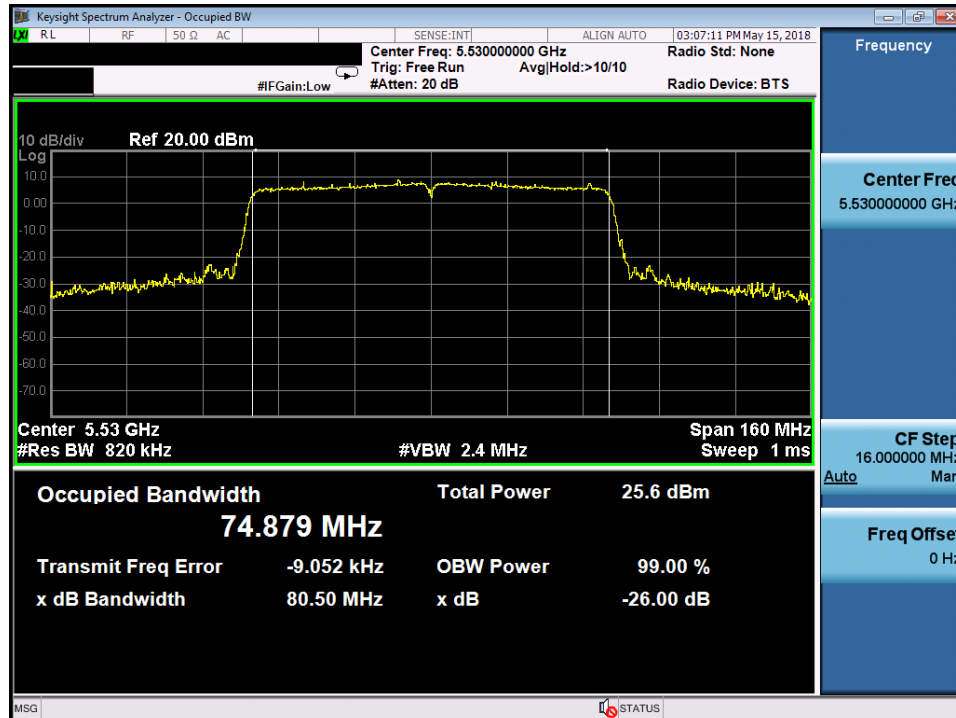
5210MHz



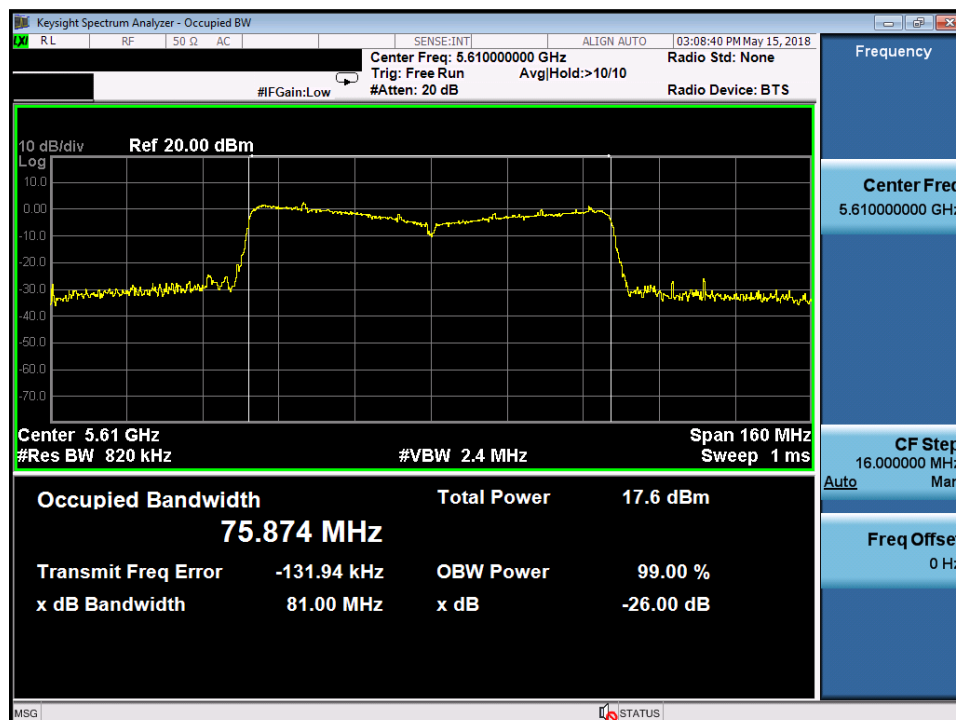
5290MHz

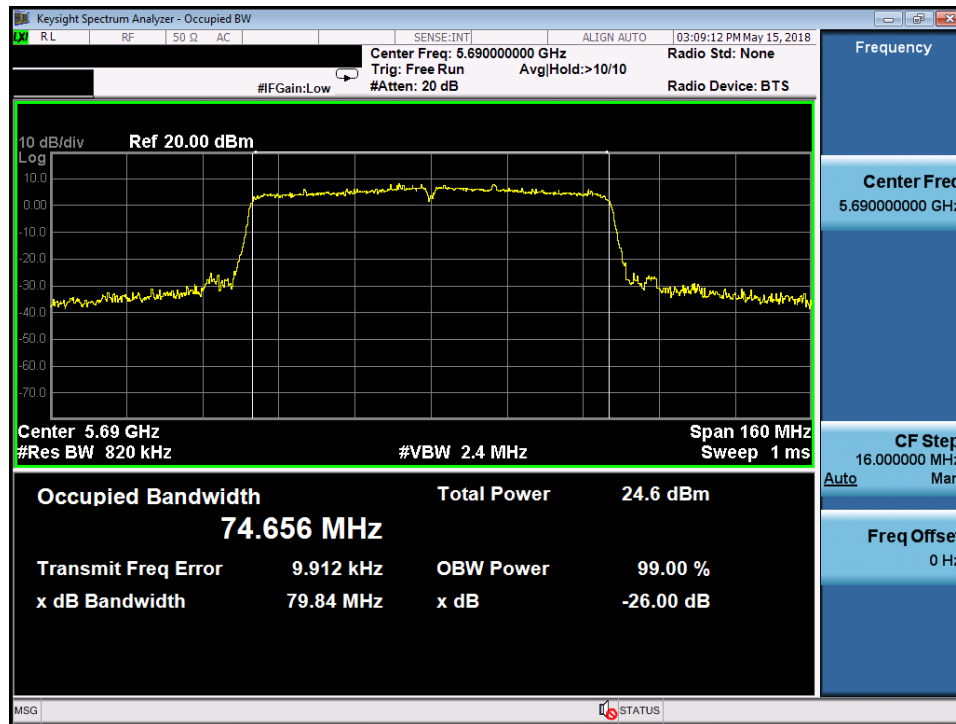


5530MHz

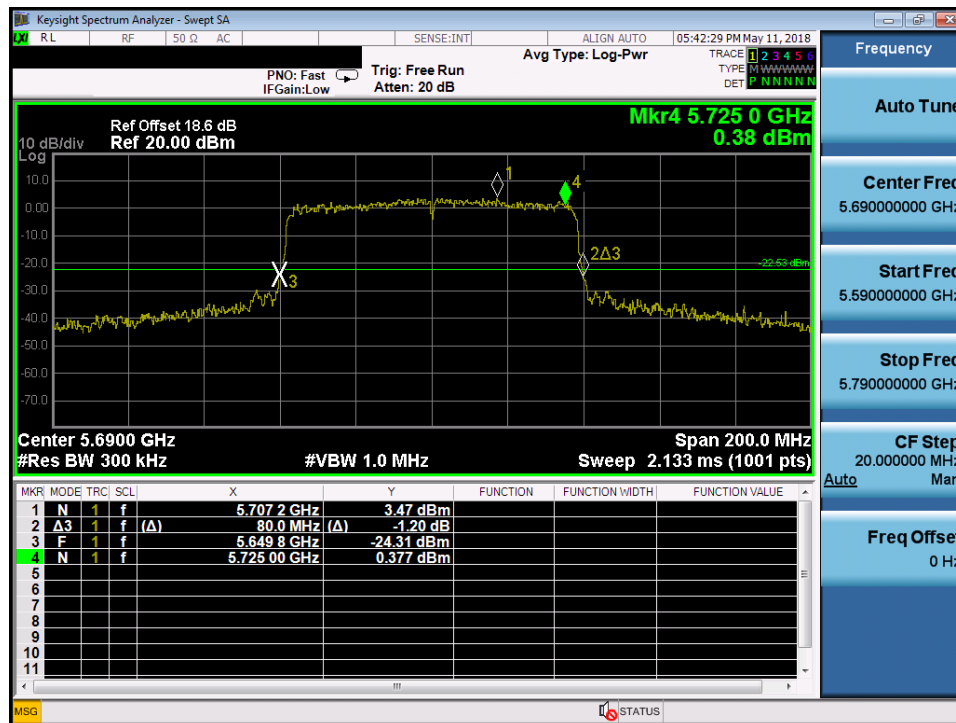


5610MHz

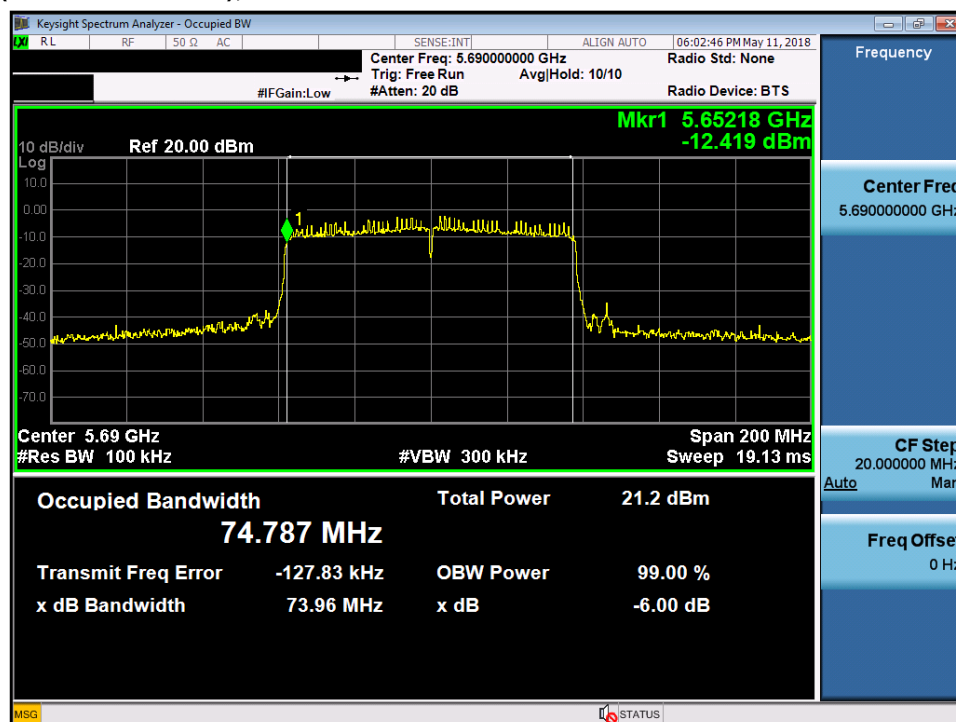


5755MHz


5690MHz (Straddle Channel), 26dB



5690MHz (Straddle Channel), 99%



5.1.5 6 dB Bandwidth

RESULT:
Passed

Test standard : FCC Part 15.407, RSS-247 6.2.4
 Limit : FCC Part 15.407, RSS-247 6.2.4
 Kind of test site : Shielded room/Conducted room

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : A

Table 17: Test result of 6dB Bandwidth (802.11a)

Channel	Channel Frequency (MHz)	6dB Bandwidth ANT1 (MHz)	Limit (MHz)
149	5745	16.09	> 0.5
157	5785	15.89	> 0.5
165	5825	16.34	> 0.5

Table 18: Test result of 6dB Bandwidth (802.11ac VHT20)

Channel	Channel Frequency (MHz)	6dB Bandwidth ANT1 (MHz)	Limit (MHz)
149	5745	16.72	> 0.5
157	5785	17.38	> 0.5
165	5825	17.33	> 0.5

Table 19: Test result of 6dB Bandwidth (802.11ac VHT40)

Channel	Channel Frequency (MHz)	6dB Bandwidth ANT1 (MHz)	Limit (MHz)
151	5755	36	> 0.5
159	5795	35.22	> 0.5

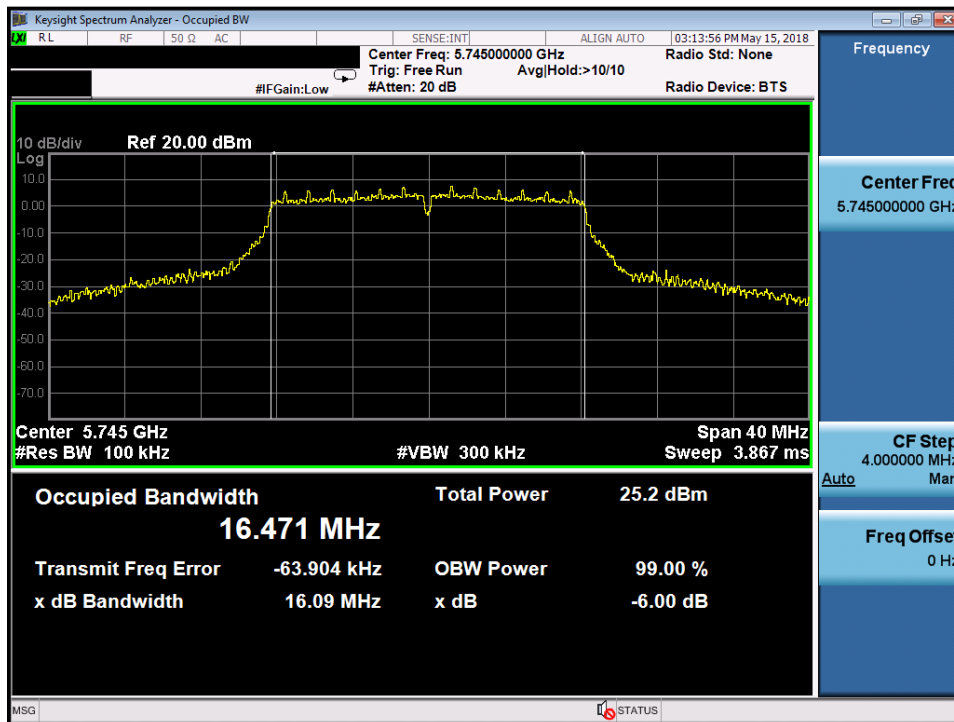
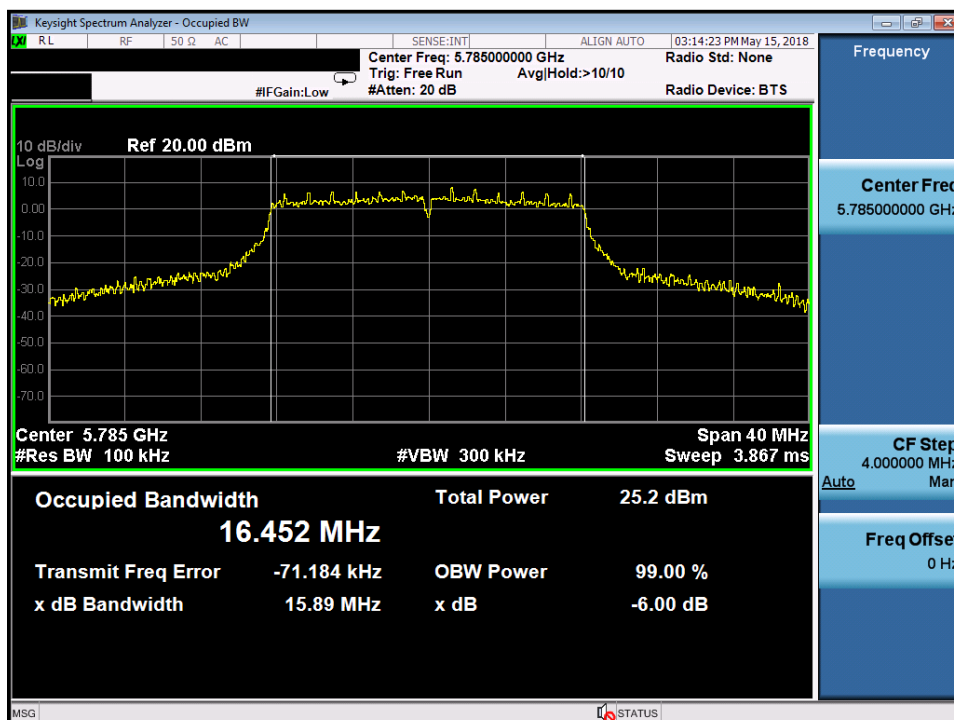
Table 20: Test result of 6dB Bandwidth (802.11ac VHT80)

Channel	Channel Frequency (MHz)	6dB Bandwidth TX1 (MHz)	Limit (MHz)
155	5775	75.14	> 0.5

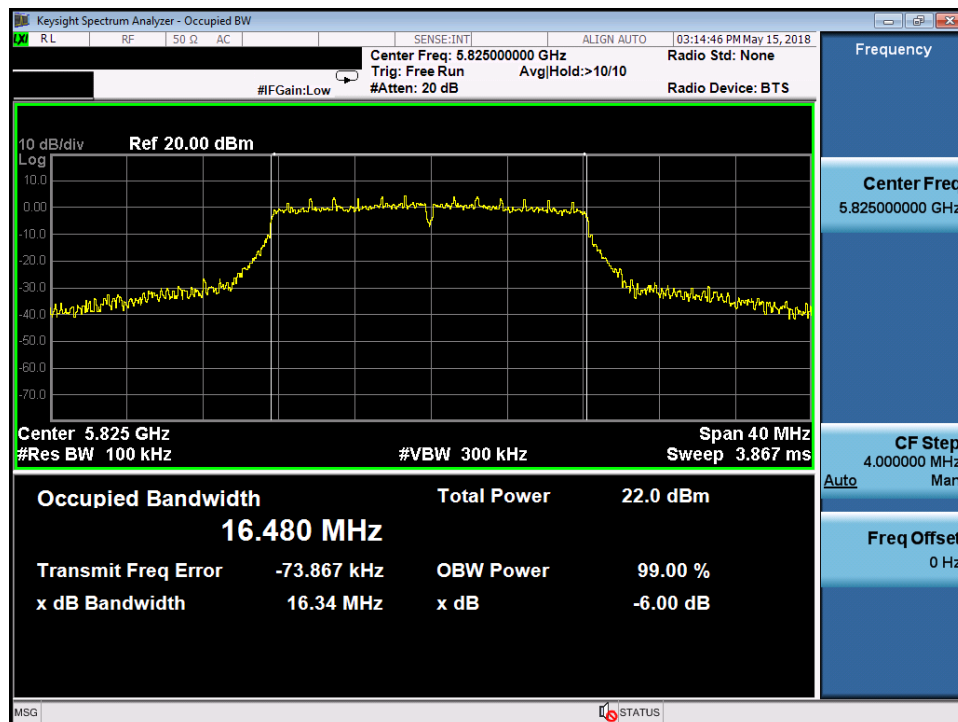
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Test Plot of 6dB Bandwidth (802.11a)

Antenna 1

5745MHz

5785MHz


5825MHz



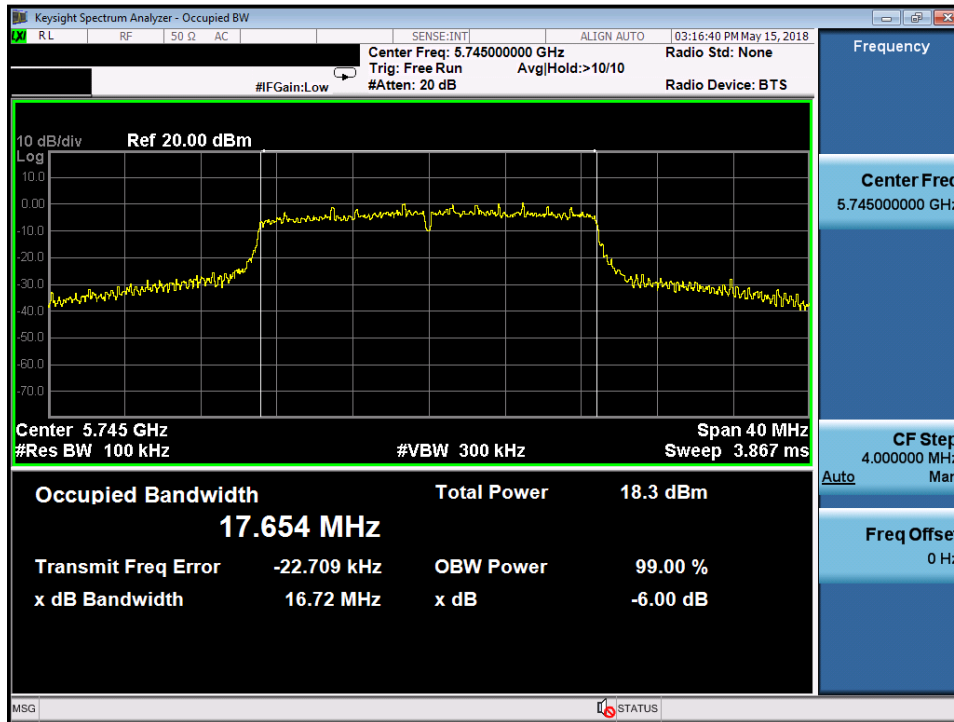
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Test Plot of 6dB Bandwidth (802.11ac VHT20)

Antenna 1+Antenna 2

5745MHz



5785MHz

