

---

# FCC Test Report

---

Report No.: AGC07248170701FE03

**FCC ID** : TV7WSAP5HAC2ND

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION** : RouterBOARD wsAP 5Hac2nD

**BRAND NAME** : RouterBOARD

**MODEL NAME** : wsAP ac lite

**CLIENT** : Mikrotikls SIA

**DATE OF ISSUE** : Jul, 02, 2017

**STANDARD(S)** : FCC Part 15.407

**TEST PROCEDURE(S)** : KDB 789033 D02

**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



**CAUTION:**

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



### Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul, 02, 2017	Valid	Original Report

## TABLE OF CONTENTS

<b>1. VERIFICATION OF CONFORMITY .....</b>	<b>5</b>
<b>2. GENERAL INFORMATION .....</b>	<b>6</b>
2.1. PRODUCT DESCRIPTION .....	6
2.2. TABLE OF CARRIER FREQUENCYS .....	6
2.3. RELATED SUBMITTAL(S) / GRANT (S) .....	7
2.4. TEST METHODOLOGY .....	7
2.5. SPECIAL ACCESSORIES .....	7
2.6. EQUIPMENT MODIFICATIONS .....	7
<b>3. MEASUREMENT UNCERTAINTY.....</b>	<b>7</b>
<b>4. DESCRIPTION OF TEST MODES.....</b>	<b>8</b>
<b>5. SYSTEM TEST CONFIGURATION .....</b>	<b>9</b>
5.1. CONFIGURATION OF EUT SYSTEM.....	9
5.2. EQUIPMENT USED IN EUT SYSTEM.....	9
5.3. SUMMARY OF TEST RESULTS.....	9
<b>6. TEST FACILITY .....</b>	<b>10</b>
<b>7. MAXIMUM CONDUCTED OUTPUT POWER.....</b>	<b>11</b>
7.1. MEASUREMENT PROCEDURE.....	11
7.2. TEST SET-UP .....	11
7.3. LIMITS AND MEASUREMENT RESULT .....	12
<b>8. 6dB BANDWIDTH .....</b>	<b>14</b>
8.1. MEASUREMENT PROCEDURE.....	14
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	14
8.3. LIMITS AND MEASUREMENT RESULTS.....	15
<b>8. EMISSION BANDWIDTH.....</b>	<b>24</b>
8.1. MEASUREMENT PROCEDURE.....	24
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	24
8.3. LIMITS AND MEASUREMENT RESULTS.....	25
<b>9. MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY .....</b>	<b>41</b>
9.1 MEASUREMENT PROCEDURE.....	41
9.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	41
9.3 MEASUREMENT EQUIPMENT USED .....	41
9.4 LIMITS AND MEASUREMENT RESULT .....	41
<b>10. CONDUCTED SPURIOUS EMISSION .....</b>	<b>57</b>
10.1. MEASUREMENT PROCEDURE.....	57

10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	57
10.3. MEASUREMENT EQUIPMENT USED.....	57
10.4. LIMITS AND MEASUREMENT RESULT .....	57
<b>11. RADIATED EMISSION .....</b>	<b>79</b>
11.1. MEASUREMENT PROCEDURE .....	79
11.2. TEST SETUP .....	80
11.3. LIMITS AND MEASUREMENT RESULT .....	81
11.4. TEST RESULT .....	81
<b>12. BAND EDGE EMISSION .....</b>	<b>96</b>
12.1. MEASUREMENT PROCEDURE.....	96
12.2. TEST SET-UP .....	96
12.3. TEST RESULT .....	97
<b>13. FREQUENCY STABILITY .....</b>	<b>112</b>
13.1. MEASUREMENT PROCEDURE.....	112
13.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	112
13.3. MEASUREMENT RESULTS .....	113
<b>14. FCC LINE CONDUCTED EMISSION TEST .....</b>	<b>119</b>
14.1. LIMITS OF LINE CONDUCTED EMISSION TEST .....	119
14.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST .....	119
14.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	120
14.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST .....	120
14.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST .....	121
<b>APPENDIX A: PHOTOGRAPHS OF TEST SETUP .....</b>	<b>123</b>

## 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	Mikrotikls SIA
<b>Address</b>	Pernavas 46 Riga Latvia LV-1009
<b>Manufacturer</b>	Mikrotikls SIA
<b>Address</b>	Pernavas 46 Riga Latvia LV-1009
<b>Product Designation</b>	RouterBOARD wsAP 5Hac2nD
<b>Brand Name</b>	RouterBOARD
<b>Test Model</b>	wsAP ac lite
<b>Date of test</b>	Jun, 28, 2017 to Jul, 02, 2017
<b>Deviation</b>	None
<b>Condition of Test Sample</b>	Normal
<b>Test Result</b>	Pass
<b>Report Template</b>	AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. 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 requirement of FCC Part 15 Rules requirement.

Tested by

*Snow. Feng*

Snow. Feng(Feng. Nianwei)

Jul, 02, 2017

Reviewed by

*Bart Xie*

Bart Xie(Xie Xiaobin))

Jul, 02, 2017

Approved by

*Solger Zhang*

Solger Zhang(Zhang Hongyi)

Authorized Officer

Jul, 02, 2017

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Master". It is designed by way of utilizing the OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

<b>Operation Frequency</b>	5.150 GHz~5.250GHz;5.725 GHz~5.825GHz
<b>Output Power</b>	5.150 GHz~5.250GHz: IEEE 802.11a20: <b>11.32</b> dBm, IEEE 802.11n20: <b>11.23</b> dBm, IEEE 802.11n(40): <b>10.36</b> dBm, IEEE 802.11ac20: <b>11.31</b> dBm, IEEE 802.11ac(40): <b>10.27</b> dBm, IEEE 802.11ac(80): <b>10.27</b> dBm 5.725 GHz~5.825GHz: IEEE 802.11a20: <b>8.45</b> dBm, IEEE 802.11n20: <b>9.36</b> dBm, IEEE 802.11n(40): <b>7.56</b> dBm, IEEE 802.11ac20: <b>10.66</b> dBm, IEEE 802.11ac(40): <b>9.35</b> dBm, IEEE 802.11ac(80): <b>10.11</b> dBm
<b>Modulation</b>	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM
<b>Number of channels</b>	13
<b>Hardware Version</b>	r2
<b>Software Version</b>	6.38.5
<b>Antenna Designation</b>	Internal Antenna
<b>Number of transmit chain</b>	1
<b>Antenna Gain</b>	3dBi
<b>Power Supply</b>	DC 24V

### 2.2. TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency	Frequency Band	Channel Number	Frequency
5.150 GHz~5.250GHz	36	5180 MHz	5.725 GHz~5.850GHz	149	5745 MHz
	38	5190 MHz		151	5755 MHz
	40	5200 MHz		153	5765 MHz
	44	5220 MHz		157	5785 MHz
	46	5230 MHz		159	5795 MHz
	48	5240 MHz		161	5805 MHz
	42	5210 MHz		165	5825MHz
				155	5775 MHz

Note: For 20MHZ bandwidth system use Channel 36,40,44,48,149,153,157,161,165; For 40MHZ bandwidth system use Channel 38,46,151,159; For 80MHZ bandwidth system use Channel 42,155;

### **2.3. RELATED SUBMITTAL(S) / GRANT (S)**

This submittal(s) (test report) is intended for **FCC ID: TV7WSAP5HAC2ND** filing to comply with the FCC Part 15 requirements.

### **2.4. TEST METHODOLOGY**

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).

Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.407 rules KDB 789033

### **2.5. SPECIAL ACCESSORIES**

Refer to section 5.2.

### **2.6. EQUIPMENT MODIFICATIONS**

Not available for this EUT intended for grant.

## **3. MEASUREMENT UNCERTAINTY**

Conducted measurement: +/- 3.18dB

Radiated measurement: +/- 3.91dB

#### 4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate(Mbps)
802.11a/n20/ac20	36,40,44,48,149,153,157,161,165	36, 40, 48, 149, 157, 165	OFDM	6/6.5
802.11n40/ac40	38,46,151,159	38,46, 151,159	OFDM	13.5
802.11ac80	42, 155	42, 155	OFDM	27

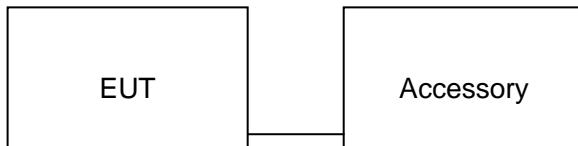
**Note:**

1. The EUT has been set to operate continuously on tested channel individually, and the EUT is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.

## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure:



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	RouterBOARD wsAP 5Hac2nD	wsAP ac lite	TV7WSAP5HAC2ND	EUT
2	PC	SONY	E1412AYCW	Support
3	PC adapter	SONY	A13-040A3A	Support

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.407	6dB Bandwidth	Compliant
§15.407	Emission Bandwidth	Compliant
§15.407	Maximum conducted output power	Compliant
§15.407	Conducted Spurious Emission	Compliant
§15.407	Maximum Conducted Output Power Density	Compliant
§15.209	Radiated Emission	Compliant
§15.407	Band Edges	Compliant
§15.407	Frequency Stability	Compliant
§15.207	Line Conduction Emission	Compliant

## 6. TEST FACILITY

<b>Site</b>	Dongguan Precise Testing Service Co., Ltd.
<b>Location</b>	Building D, Baoding Technology Park, Guangming Road 2, Dongcheng District, Dongguan, Guangdong, China.
<b>FCC Registration No.</b>	371540
<b>Description</b>	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2014.

### ALL TEST EQUIPMENT LIST

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 5, 2016	July 4, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 5, 2016	July 4, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 5, 2016	July 4, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 5, 2016	July 4, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	July 5, 2016	July 4, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 6, 2017	June 5, 2018
Spectrum analyzer	Agilent	E4407B	MY46185649	June 6, 2017	June 5, 2018
Power Sensor	Agilent	U2021XA	MY55050474	June 6, 2017	June 5, 2018
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 11, 2016	July 10, 2017
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 6, 2017	June 5, 2018

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 5, 2016	July 4, 2017
Artificial Mains Network	Narda	L2-16B	000WX31025	July 7, 2016	July 6, 2017
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 7, 2016	July 6, 2017
RF Cable	SCHWARZBECK	AK9515E	96222	July 5, 2016	July 4, 2017
Shielded Room	CHENGYU	843	PTS-002	June 6, 2017	June 5, 2018

## 7. MAXIMUM CONDUCTED OUTPUT POWER

### 7.1. MEASUREMENT PROCEDURE

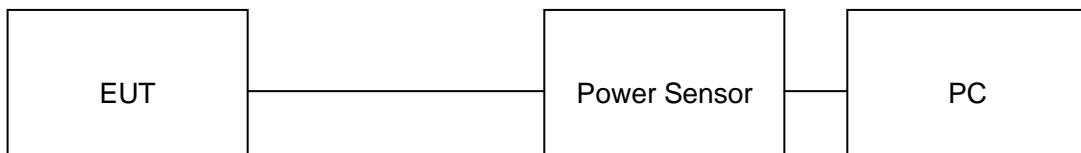
For average power test:

1. Connect EUT RF output port to power sensor through an RF attenuator.
2. Connect the power sensor to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.

**Note :** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 7.2. TEST SET-UP

#### AVERAGE POWER SETUP



### 7.3. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	11.19	30	Pass
	5200	11.32	30	Pass
	5240	11.29	30	Pass
	5745	8.38	30	Pass
	5785	8.45	30	Pass
	5825	8.33	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	11.21	30	Pass
	5200	11.23	30	Pass
	5240	11.18	30	Pass
	5745	9.28	30	Pass
	5785	9.36	30	Pass
	5825	9.24	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5190	10.28	30	Pass
	5230	10.36	30	Pass
	5755	7.56	30	Pass
	5795	7.36	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	11.27	30	Pass
	5200	11.31	30	Pass
	5240	11.25	30	Pass
	5745	10.60	30	Pass
	5785	10.66	30	Pass
	5825	10.52	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC40 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5190	10.27	30	Pass
	5230	10.11	30	Pass
	5755	9.27	30	Pass
	5795	9.35	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION				
Port	Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
Ant0	5210	10.27	30	Pass
	5775	10.11	30	Pass

## 8. 6dB BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator

2. Set the EUT Work on operation frequency individually.

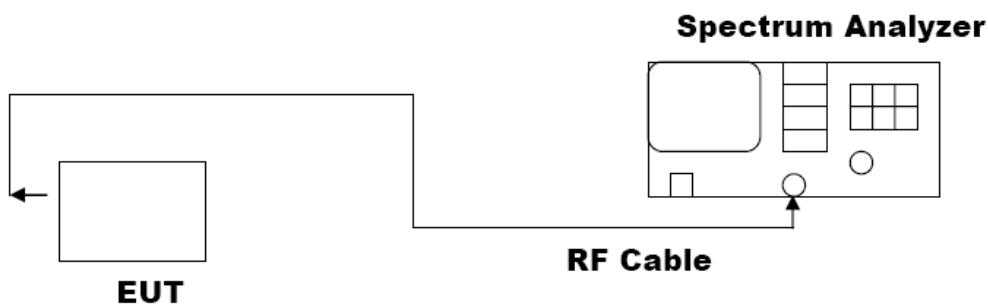
3. Set RBW = 100kHz.

4. Set the VBW  $\geq 3 \times$  RBW. Detector = Peak. Trace mode = max hold.

5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



### 8.3. LIMITS AND MEASUREMENT RESULTS

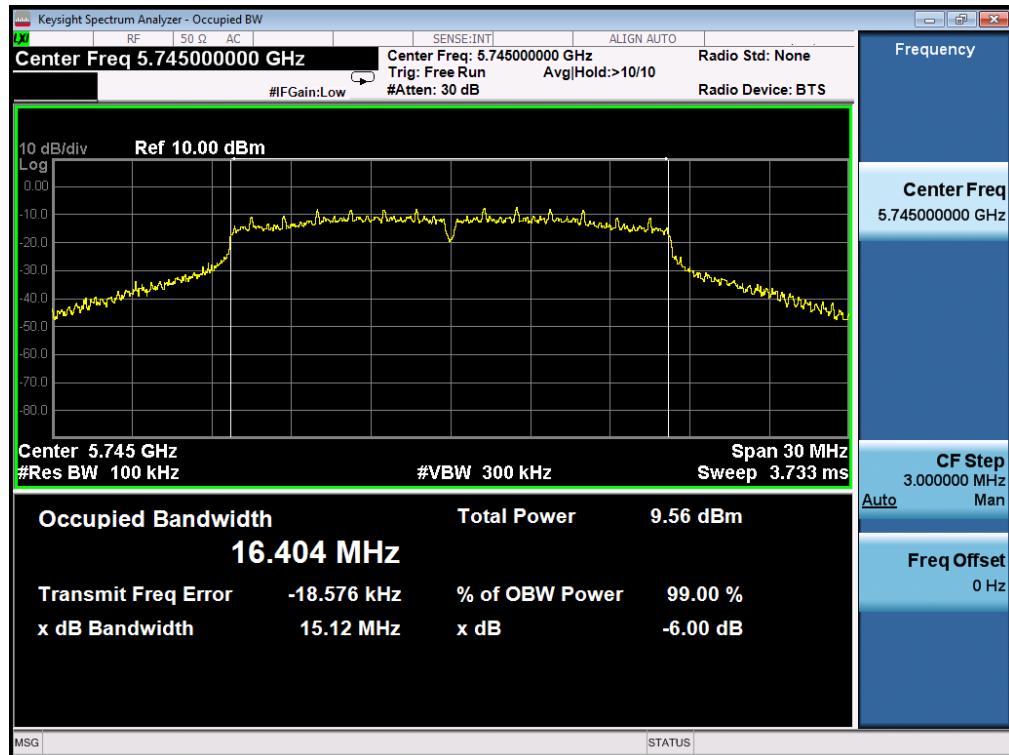
LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Port	Applicable Limits	Applicable Limits		
		Test Data (MHz)		Criteria
Ant0	>500KHZ	5745MHz	15.12	PASS
		5785 MHz	15.32	PASS
		5825MHz	12.92	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION				
Port	Applicable Limits	Applicable Limits		
		Test Data (MHz)		Criteria
Ant0	>500KHZ	5745MHz	15.10	PASS
		5785 MHz	15.09	PASS
		5825MHz	15.08	PASS
		5755MHz	35.12	PASS
		5795MHz	36.13	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20/40 MODULATION				
Port	Applicable Limits	Applicable Limits		
		Test Data (MHz)		Criteria
Ant0	>500KHZ	5745MHz	17.21	PASS
		5785 MHz	13.49	PASS
		5825MHz	16.93	PASS
		5755MHz	36.13	PASS
		5795MHz	35.98	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION				
Port	Applicable Limits	Applicable Limits		
		Test Data (MHz)		Criteria
Ant0	>500KHZ	5775MHz	74.42	PASS

**802.11a20 TEST RESULT-ant0:**  
**TEST PLOT OF BANDWIDTH FOR 5745MHz**



**TEST PLOT OF BANDWIDTH FOR 5785MHz**



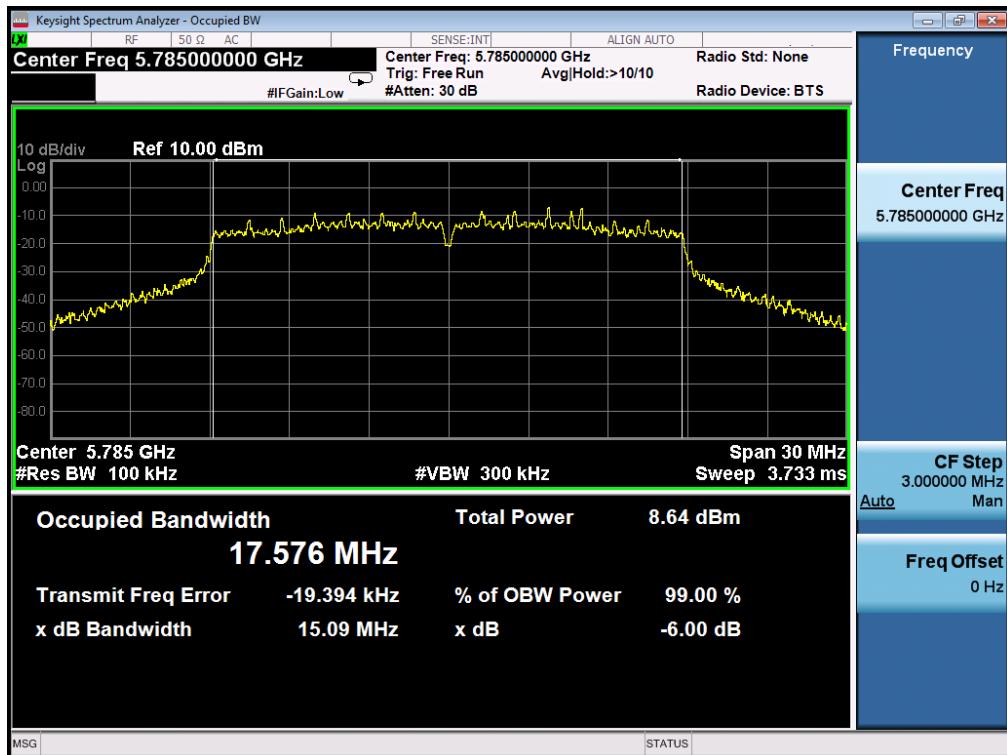
### TEST PLOT OF BANDWIDTH FOR 5825MHz



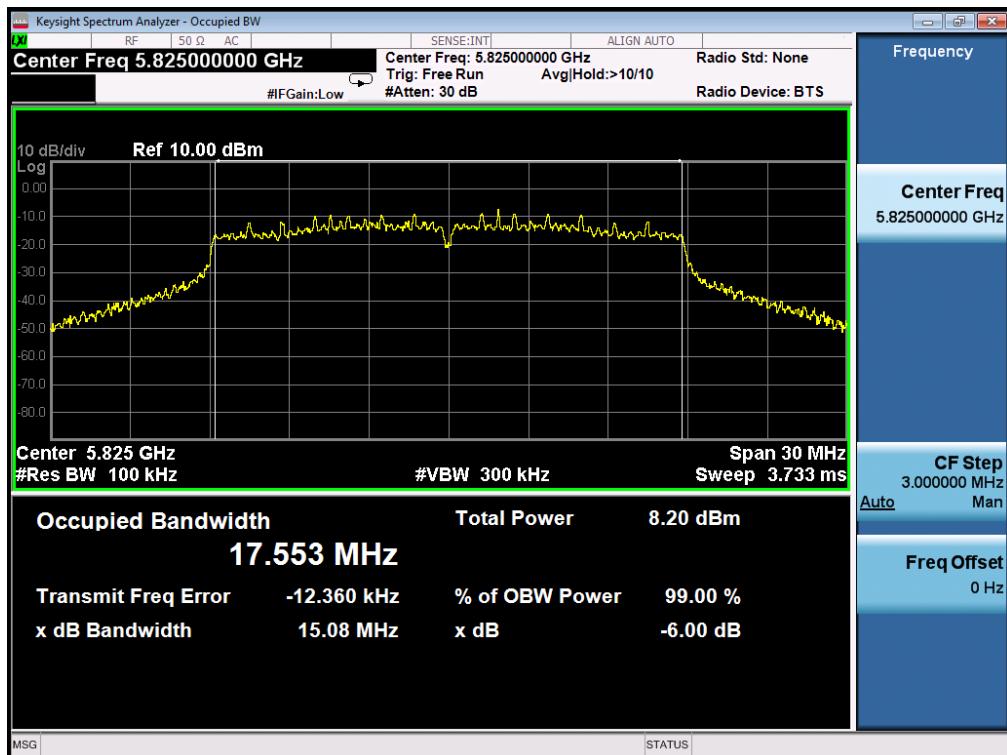
### 802.11n20 TEST RESULT-ant0: TEST PLOT OF BANDWIDTH FOR 5745MHz



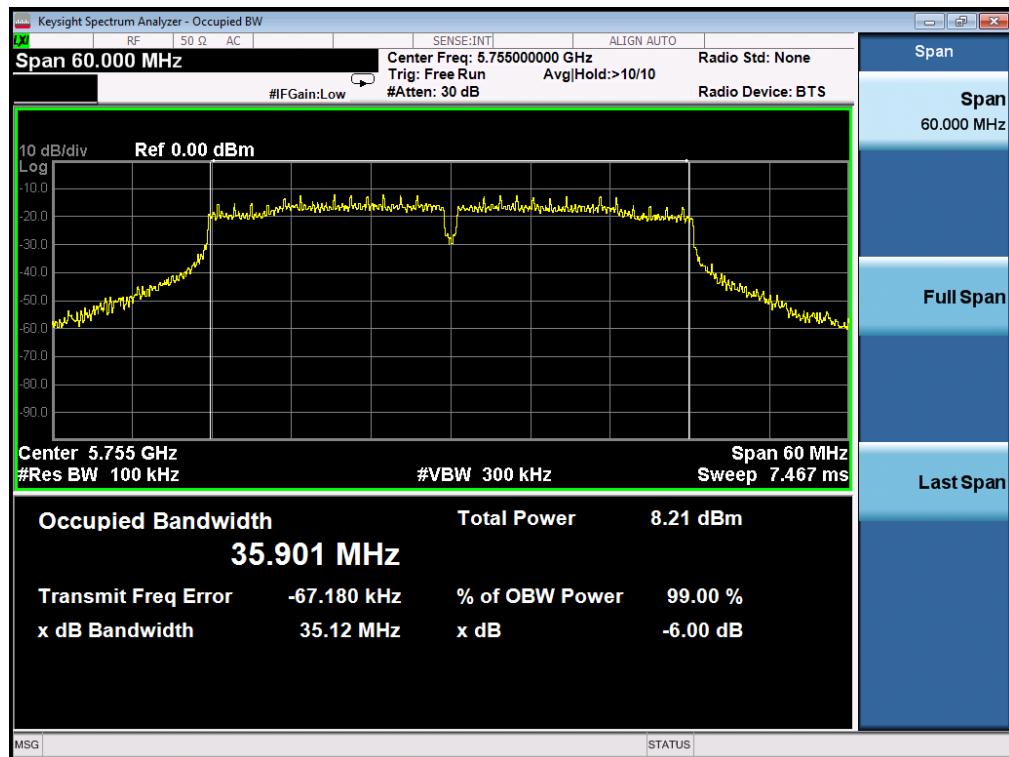
### TEST PLOT OF BANDWIDTH FOR 5785MHz



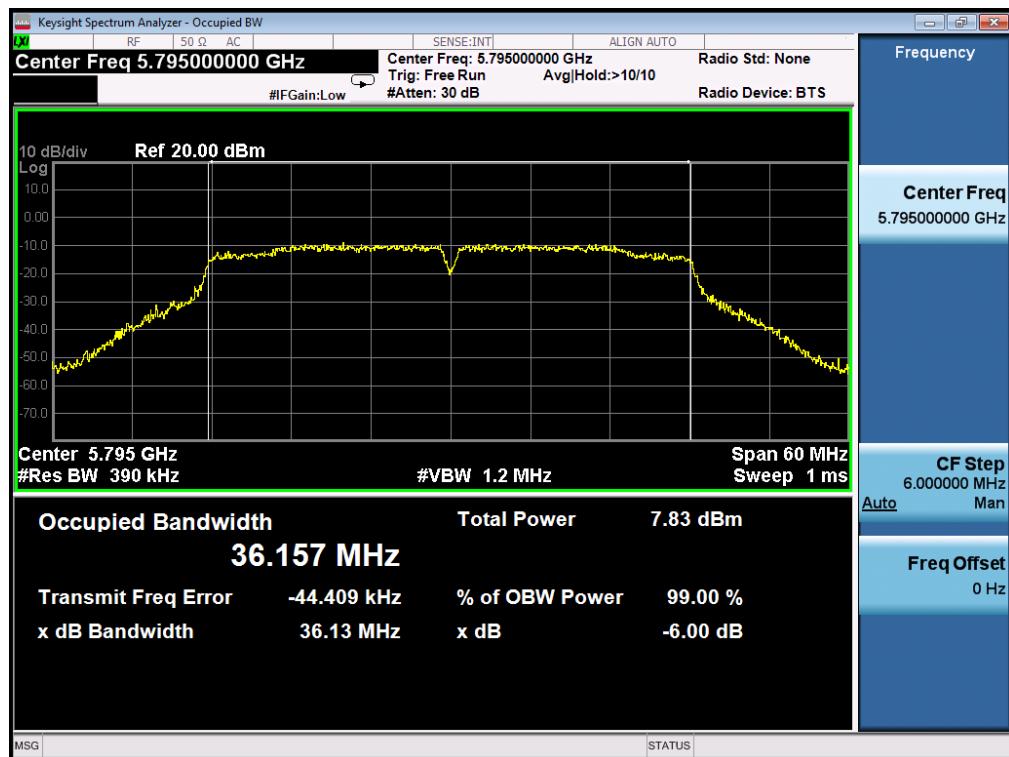
### TEST PLOT OF BANDWIDTH FOR 5825MHz



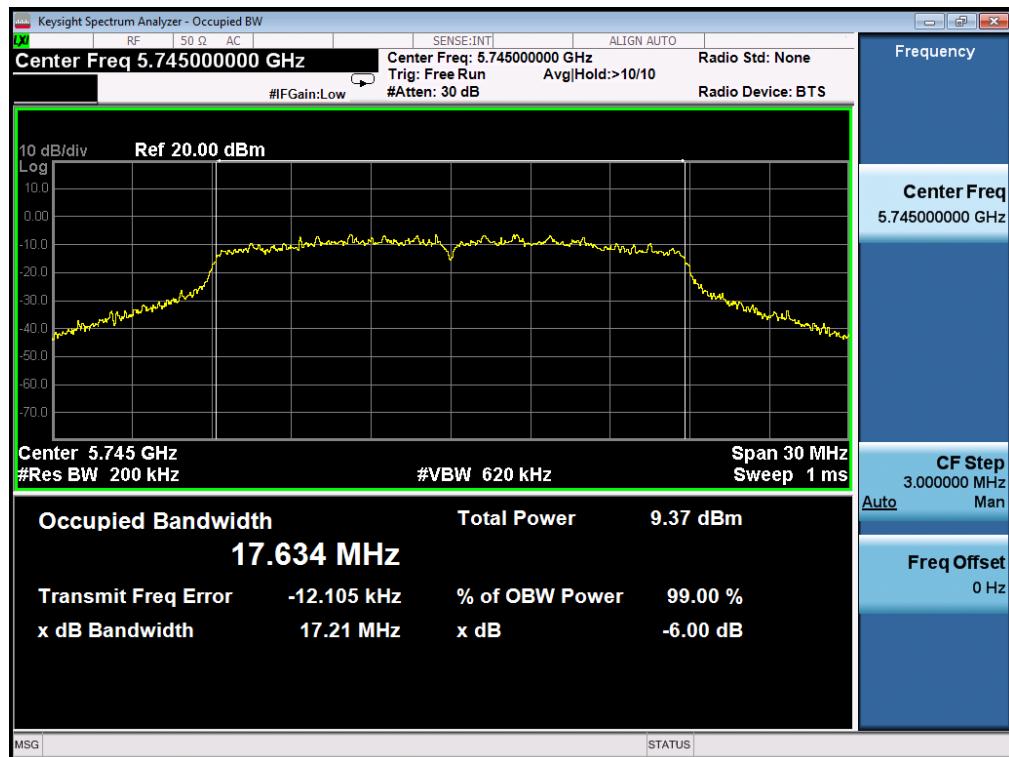
**802.11n40 TEST RESULT-ant0:**  
**TEST PLOT OF BANDWIDTH FOR 5755MHz**



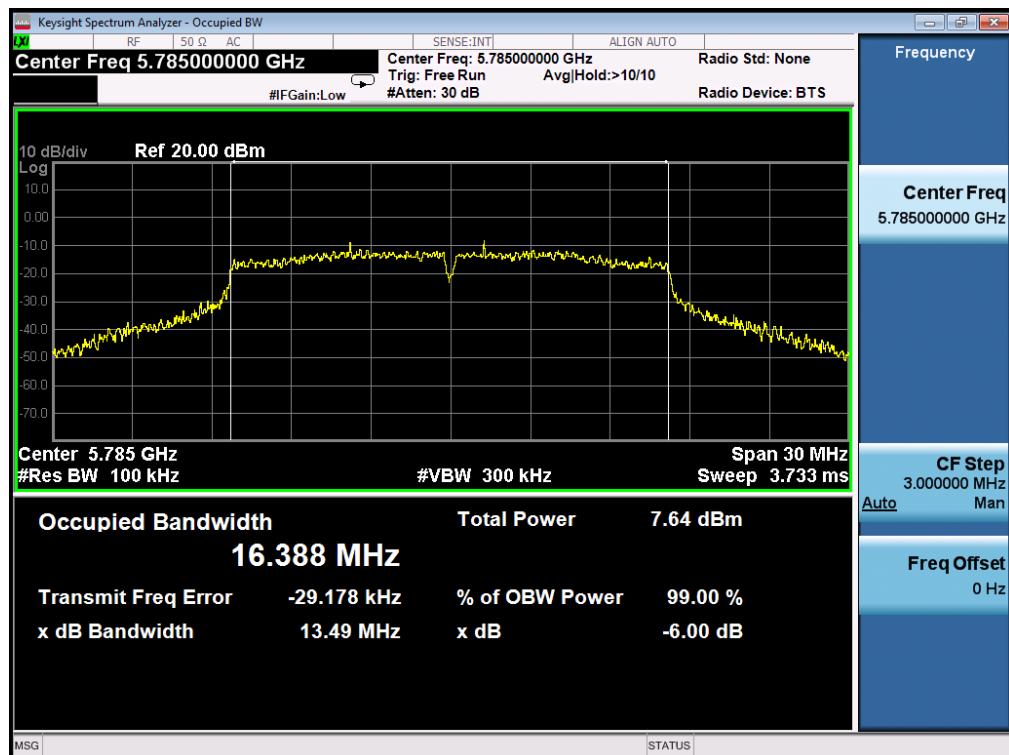
**TEST PLOT OF BANDWIDTH FOR 5795MHz**



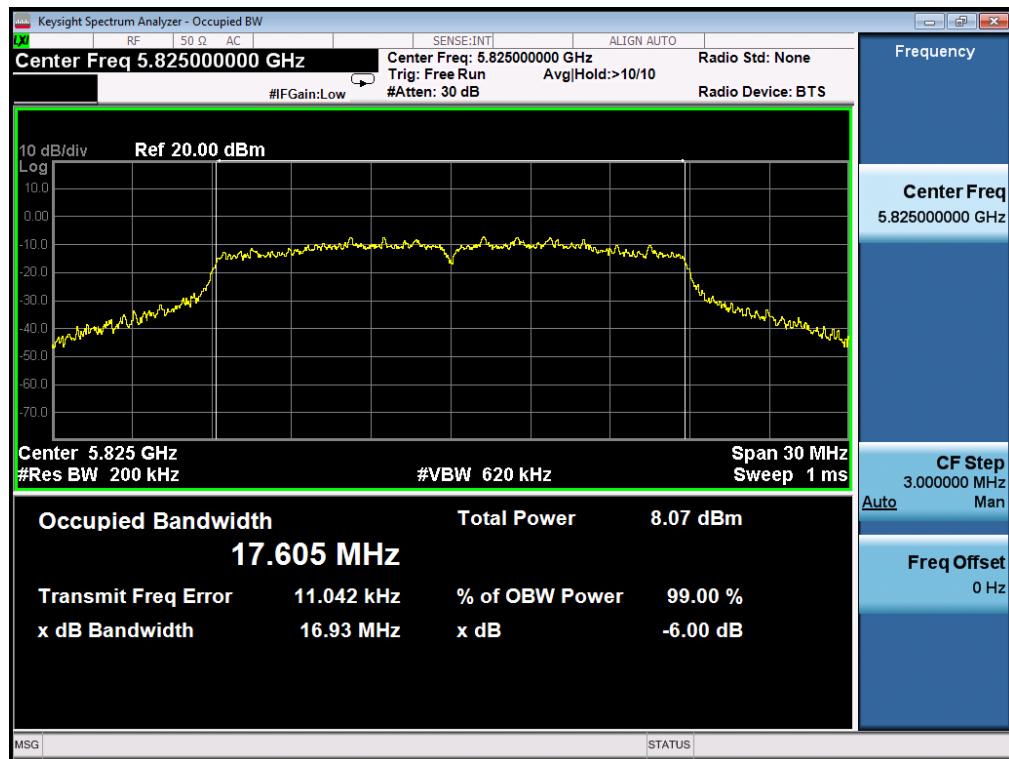
**802.11ac20 TEST RESULT-ant0:**  
**TEST PLOT OF BANDWIDTH FOR 5745MHz**



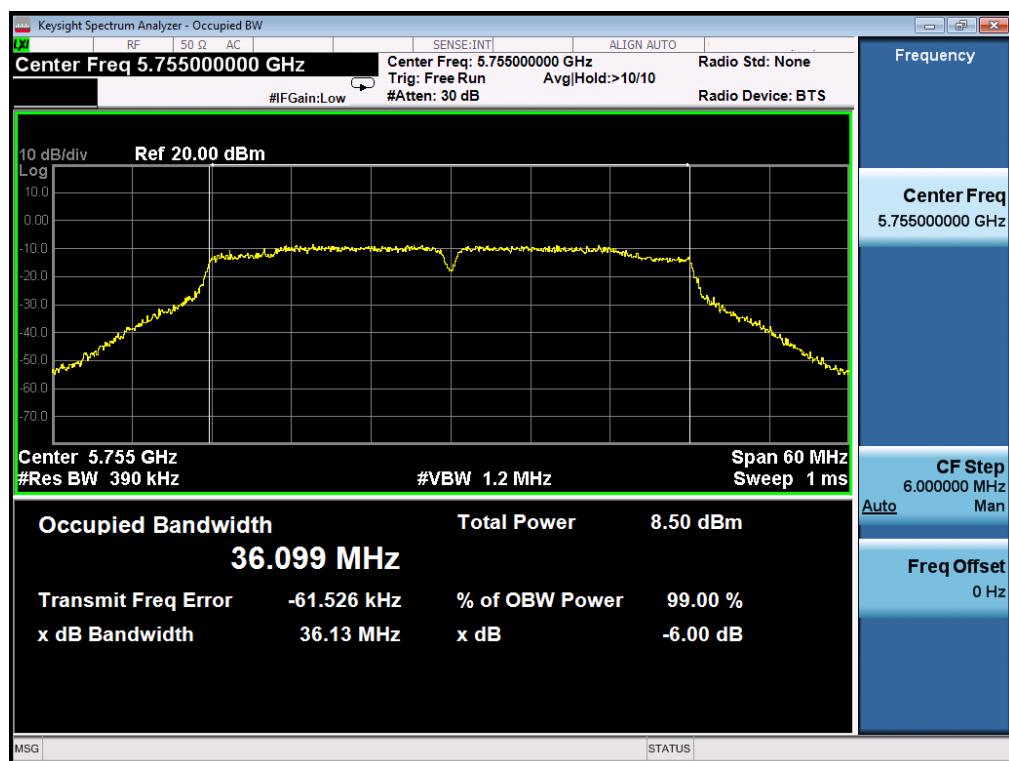
**TEST PLOT OF BANDWIDTH FOR 5785MHz**



**TEST PLOT OF BANDWIDTH FOR 5825MHz**



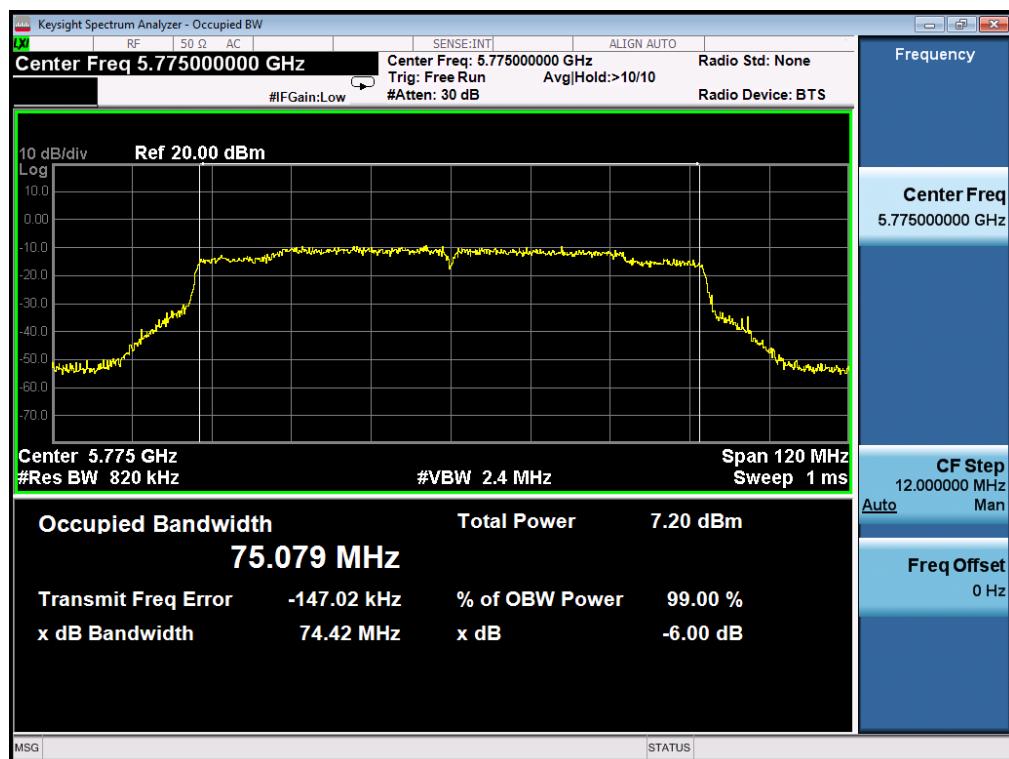
**802.11ac40 TEST RESULT-ant0:**  
TEST PLOT OF BANDWIDTH FOR 5755MHz



### TEST PLOT OF BANDWIDTH FOR 5795MHz



### 802.11ac80 TEST RESULT-ant0: TEST PLOT OF BANDWIDTH FOR 5775MHz



**802.11ac80 TEST RESULT-ant1:**  
**TEST PLOT OF BANDWIDTH FOR 5775MHz**



## 8. EMISSION BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.

e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.

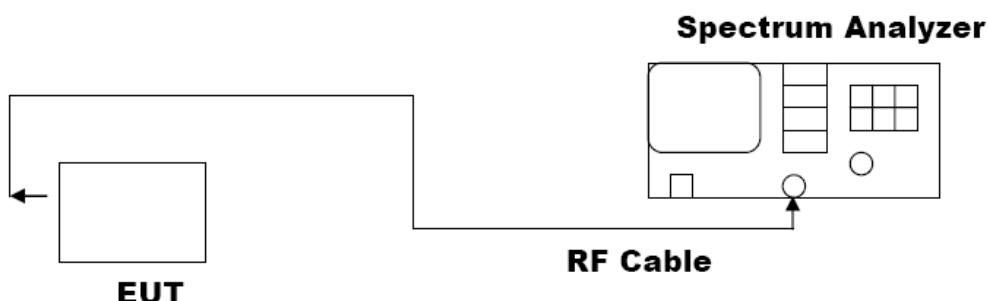
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



### 8.3. LIMITS AND MEASUREMENT RESULTS

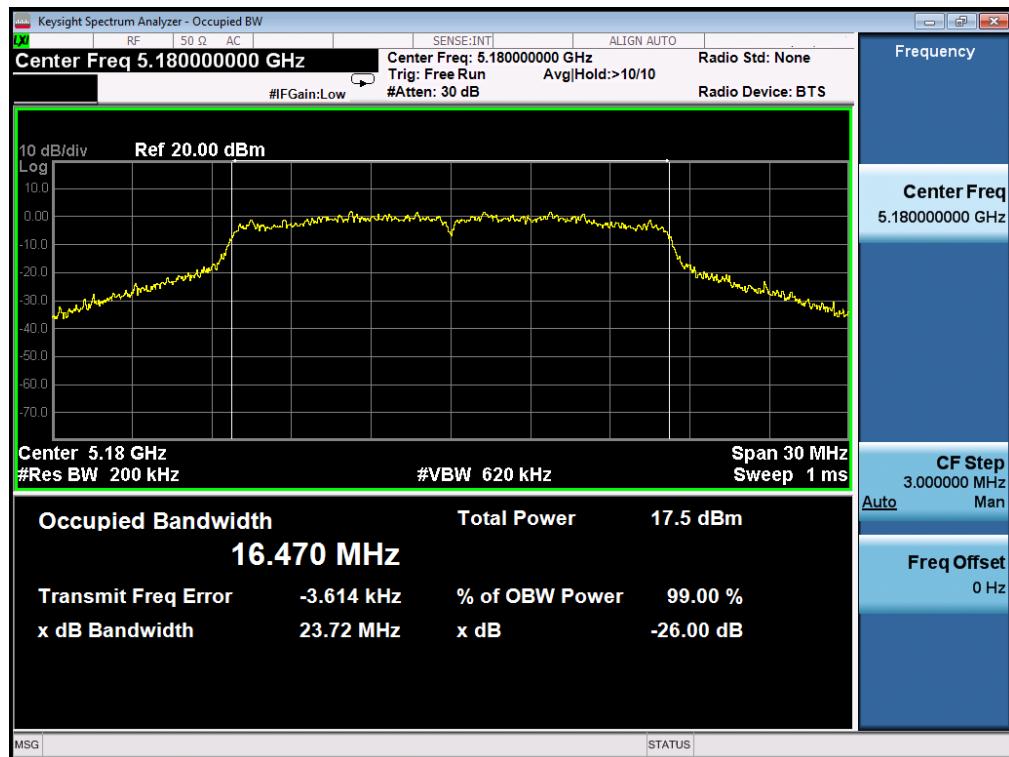
LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Port	Test Channel	-26dBc EBW (MHz)	99% OBW (MHz)	Criteria
Ant0	5180MHz	23.72	16.470	PASS
	5200 MHz	22.18	16.450	PASS
	5240MHz	22.27	16.495	PASS
	5745MHz	20.60	16.449	PASS
	5785 MHz	22.68	16.425	PASS
	5825MHz	22.79	16.466	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION				
Port	Test Channel	-26dBc EBW (MHz)	99% OBW (MHz)	Criteria
Ant0	5180MHz	21.77	17.604	PASS
	5200 MHz	21.51	17.589	PASS
	5240MHz	21.45	17.578	PASS
	5190MHz	40.55	35.933	PASS
	5230MHz	40.21	35.871	PASS
	5745MHz	21.32	17.583	PASS
	5785 MHz	21.31	17.578	PASS
	5825MHz	21.27	17.565	PASS
	5755MHz	39.97	36.003	PASS
	5795MHz	41.35	36.075	PASS

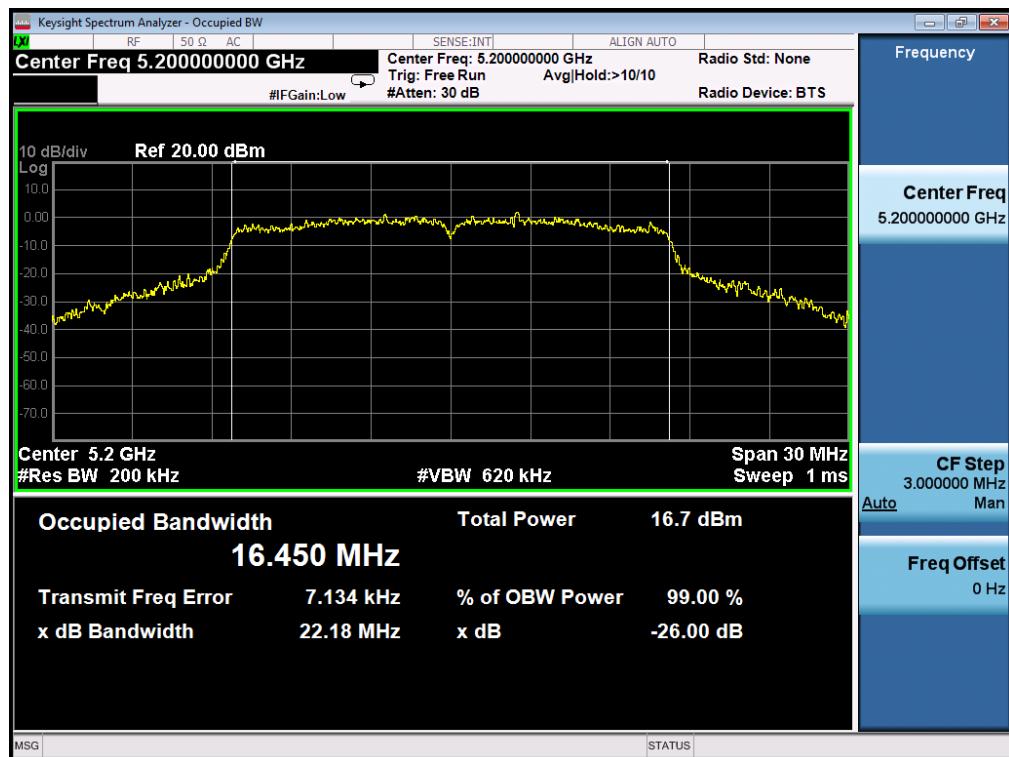
LIMITS AND MEASUREMENT RESULT FOR 802.11AC20/40 MODULATION				
Port	Test Channel	-26dBc EBW (MHz)	99% OBW (MHz)	Criteria
Ant0	5180MHz	22.71	17.629	PASS
	5200 MHz	22.69	16.459	PASS
	5240MHz	23.99	17.681	PASS
	5190MHz	44.94	36.118	PASS
	5230MHz	44.10	36.091	PASS
	5745MHz	22.59	17.617	PASS
	5785 MHz	22.33	17.656	PASS
	5825MHz	22.08	17.643	PASS
	5755MHz	44.75	36.062	PASS
	5795MHz	45.38	36.133	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION				
Port	Test Channel	-26dBc EBW (MHz)	99% OBW (MHz)	Criteria
Ant0	5210MHz	84.51	74.951	PASS
	5775MHz	87.01	75.170	PASS

**802.11a20 TEST RESULT - :**  
**TEST PLOT OF BANDWIDTH FOR 5180MHz**



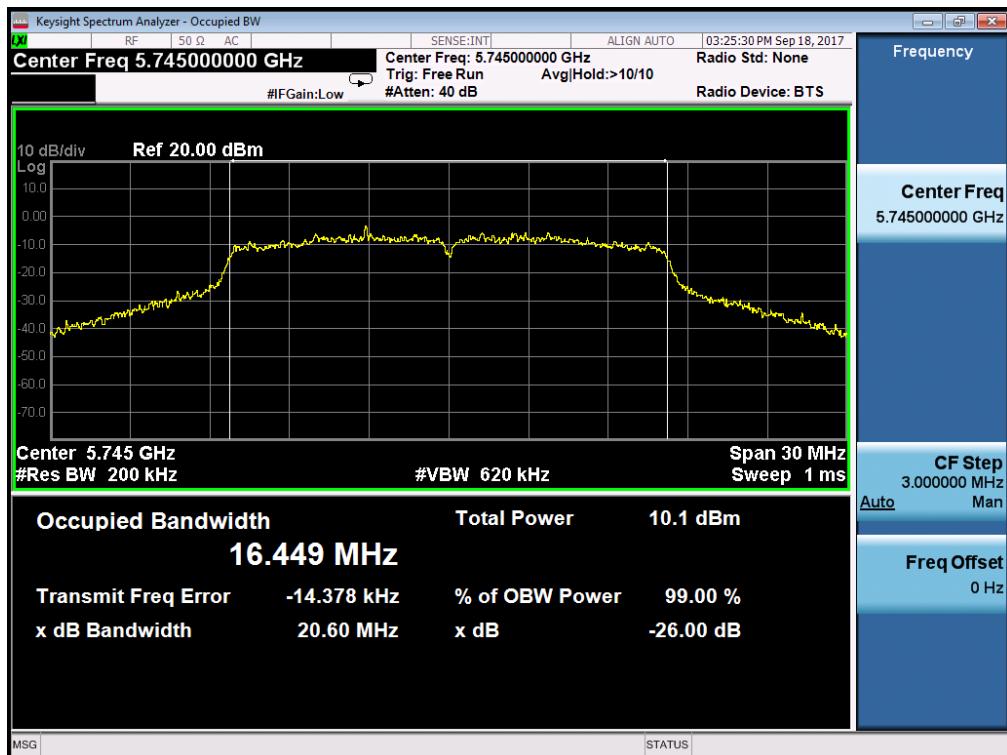
**TEST PLOT OF BANDWIDTH FOR 5200MHz**



### TEST PLOT OF BANDWIDTH FOR 5240MHz



### TEST PLOT OF BANDWIDTH FOR 5745MHz



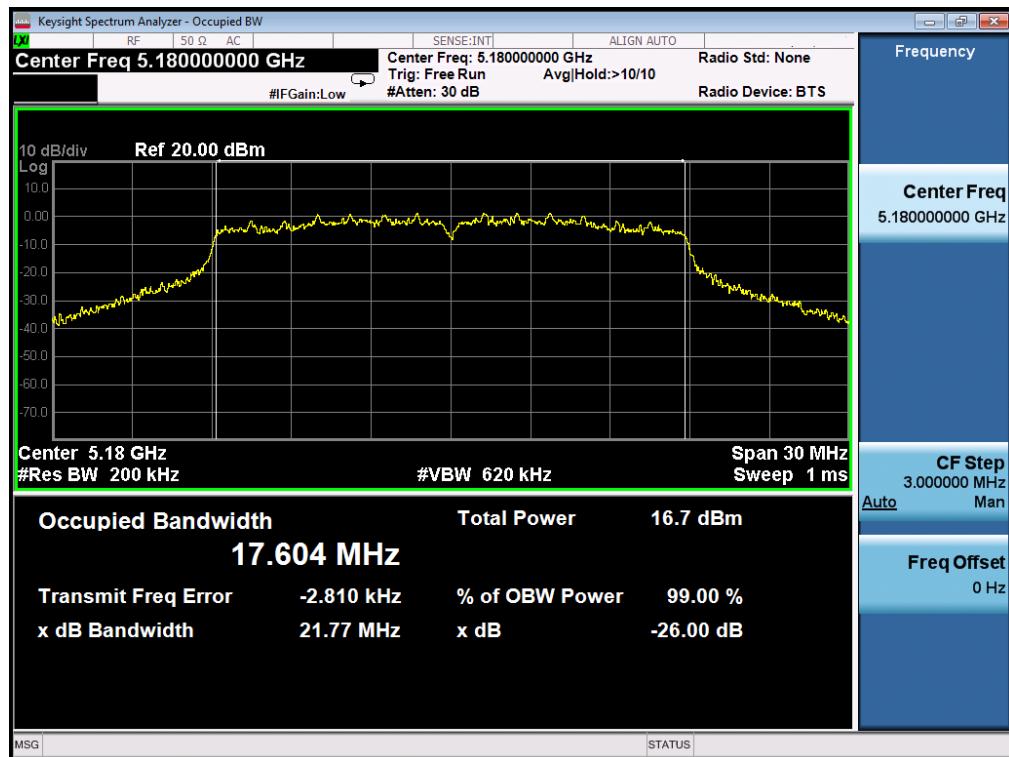
### TEST PLOT OF BANDWIDTH FOR 5785MHz



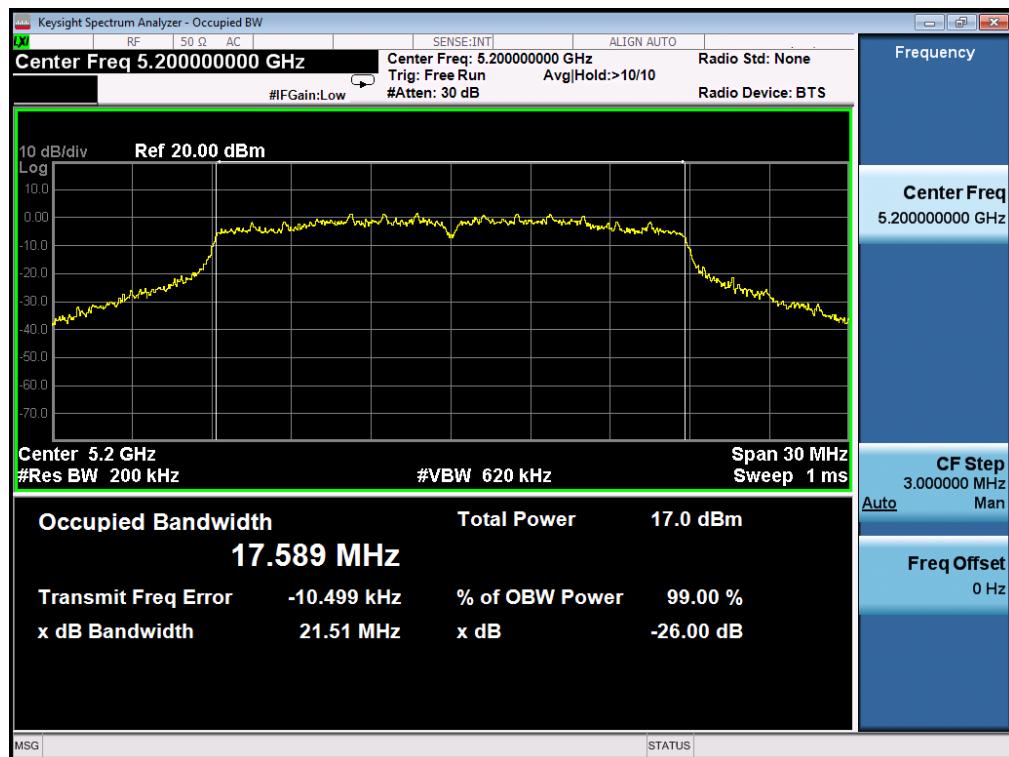
### TEST PLOT OF BANDWIDTH FOR 5825MHz



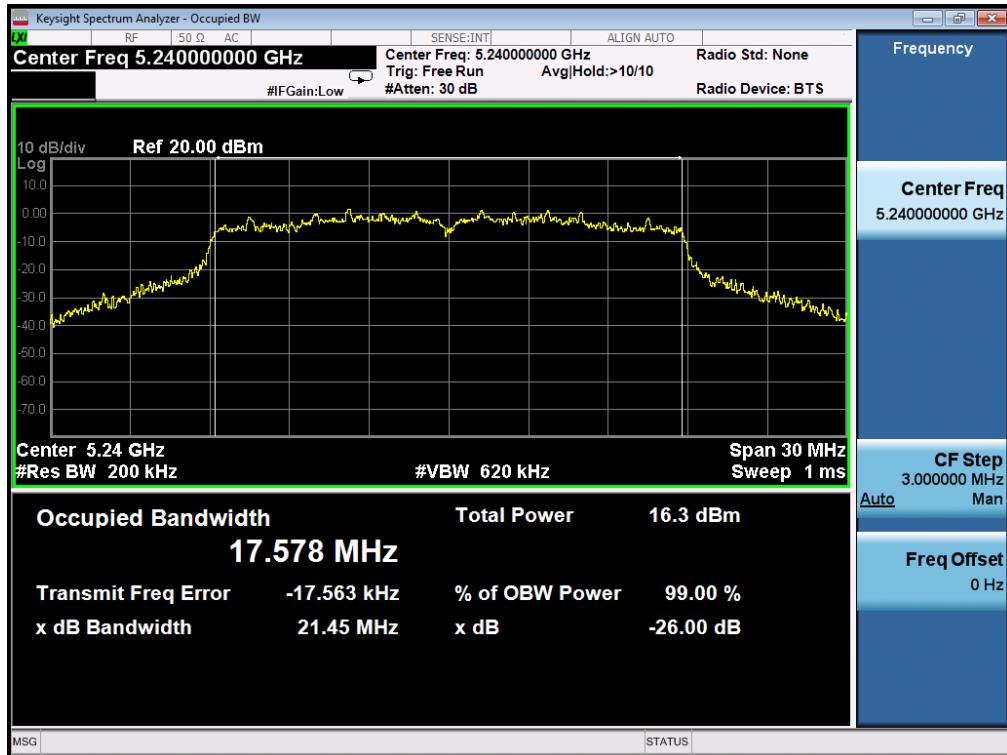
**802.11n20 TEST RESULT- :**  
**TEST PLOT OF BANDWIDTH FOR 5180MHz**



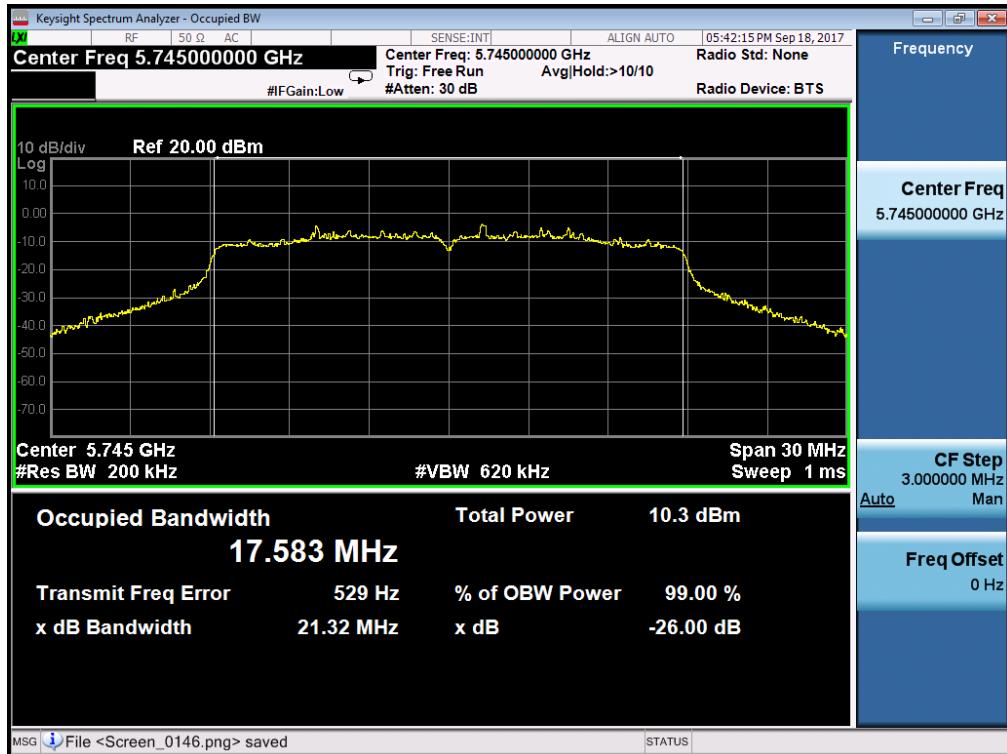
**TEST PLOT OF BANDWIDTH FOR 5200MHz**



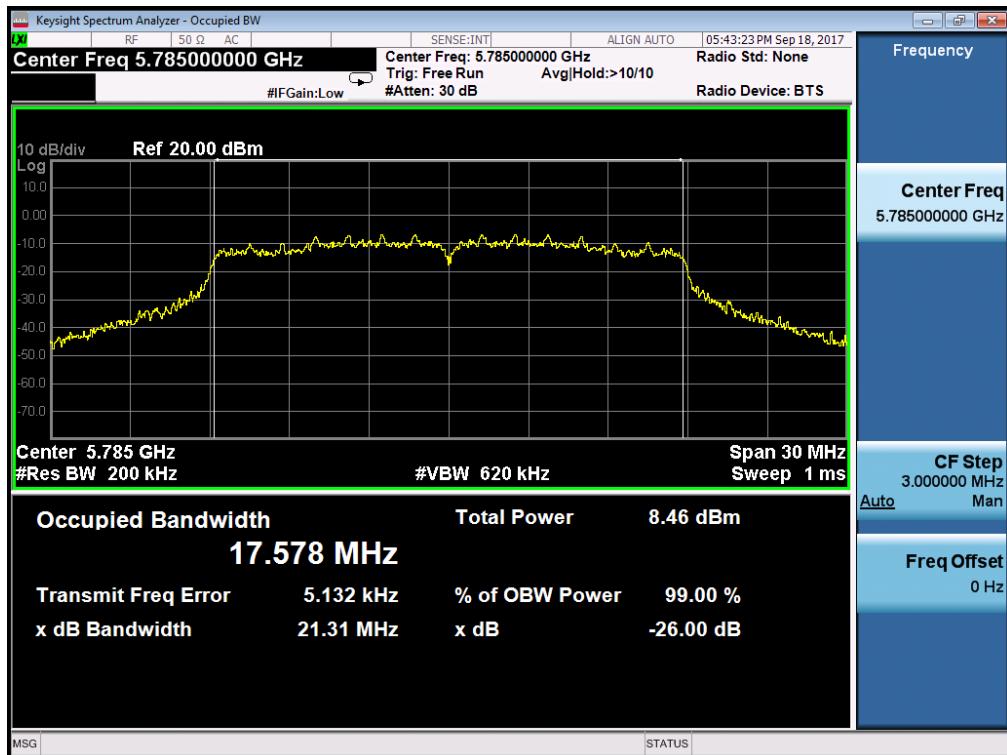
### TEST PLOT OF BANDWIDTH FOR 5240MHz



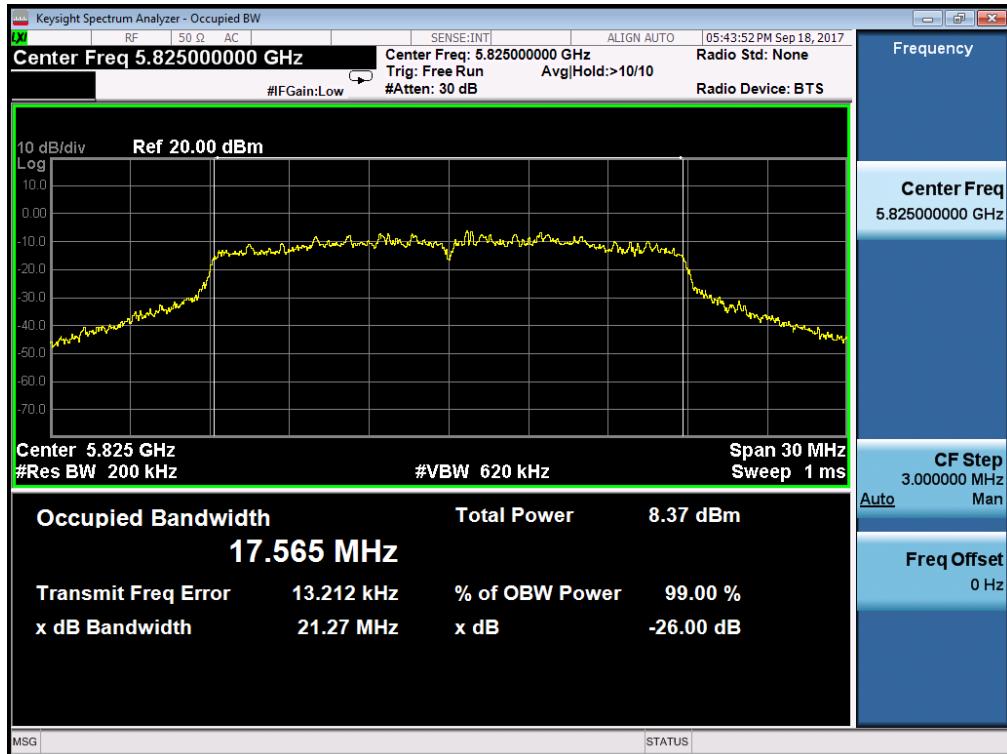
### TEST PLOT OF BANDWIDTH FOR 5745MHz



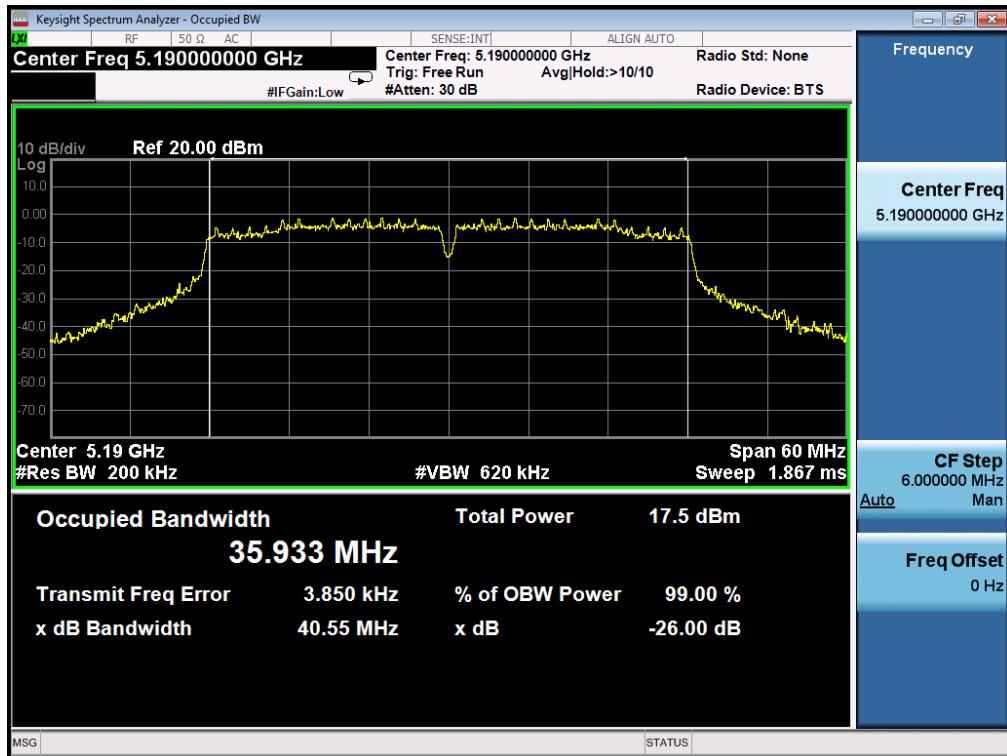
### TEST PLOT OF BANDWIDTH FOR 5785MHz



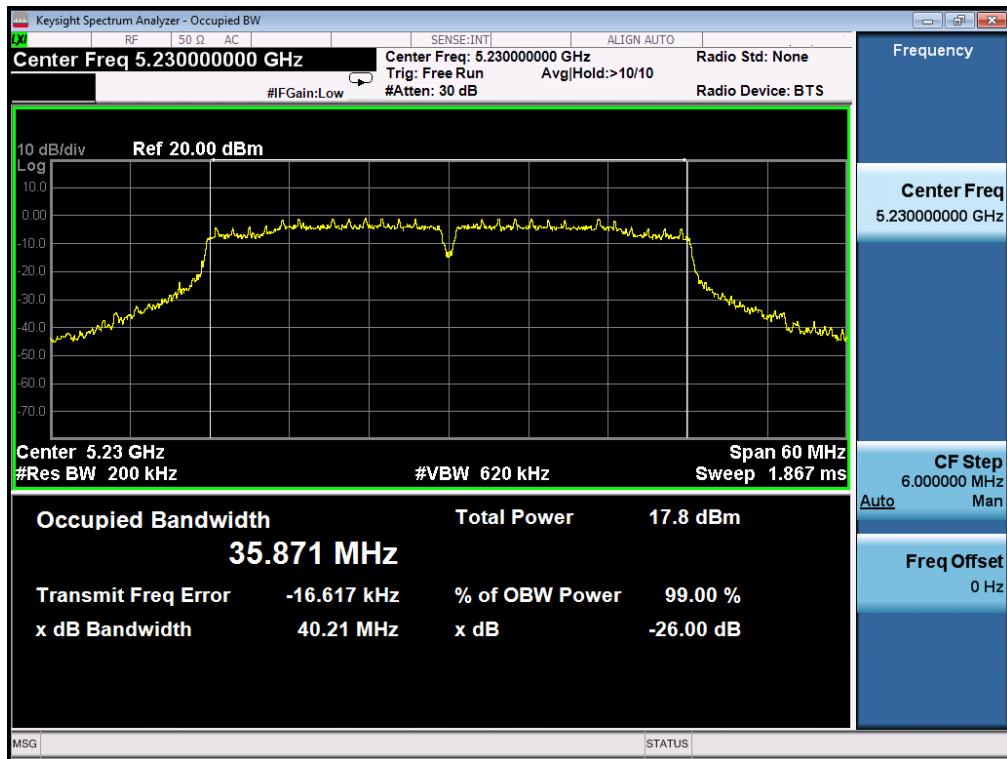
### TEST PLOT OF BANDWIDTH FOR 5825MHz



**802.11n40 TEST RESULT- :**  
**TEST PLOT OF BANDWIDTH FOR 5190MHz**



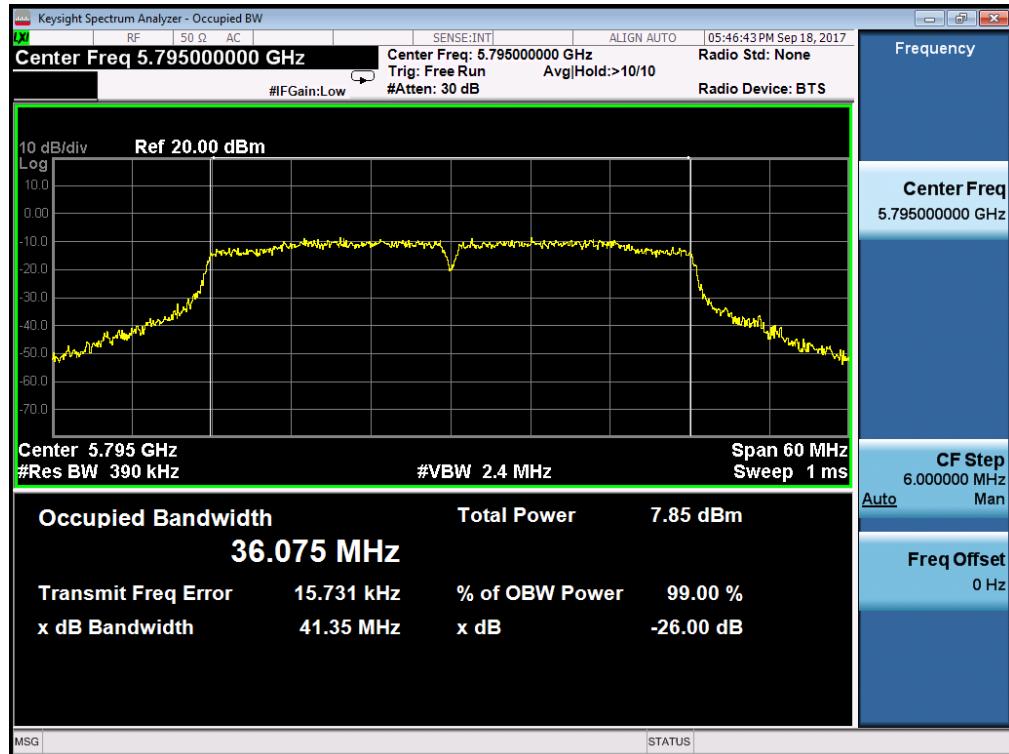
**TEST PLOT OF BANDWIDTH FOR 5230MHz**



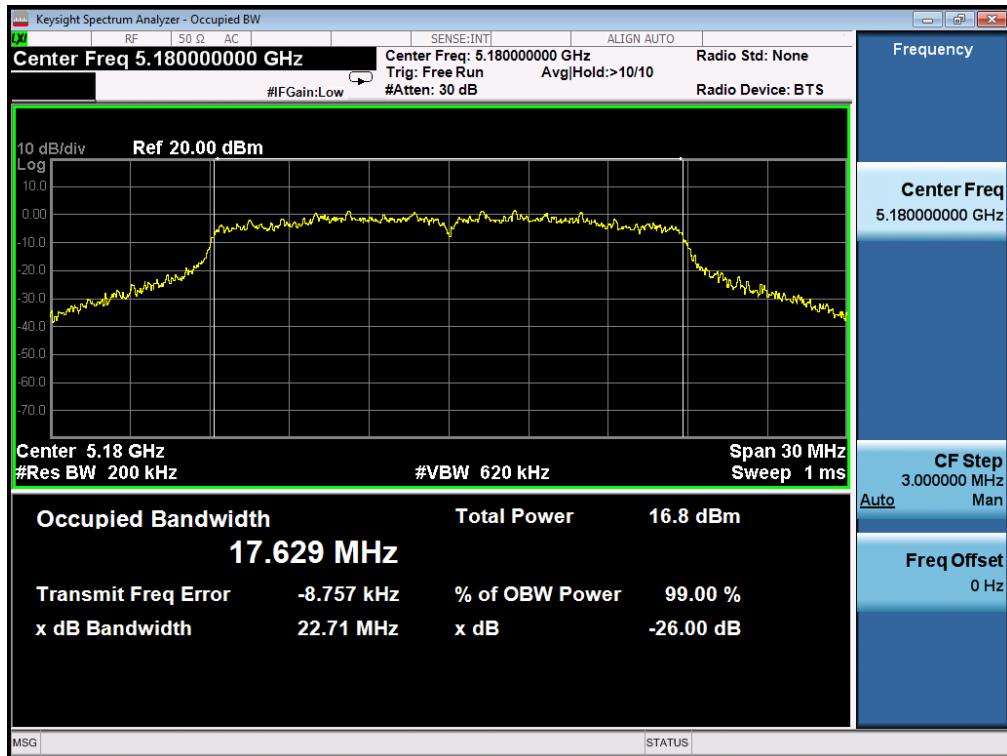
### TEST PLOT OF BANDWIDTH FOR 5755MHz



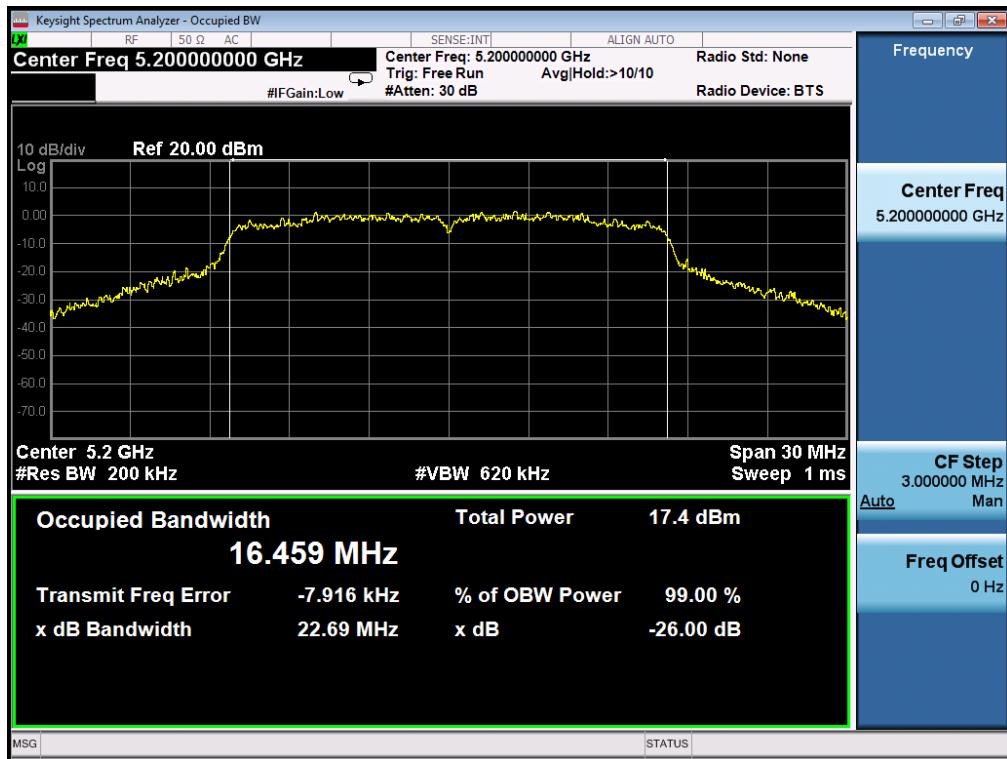
### TEST PLOT OF BANDWIDTH FOR 5795MHz



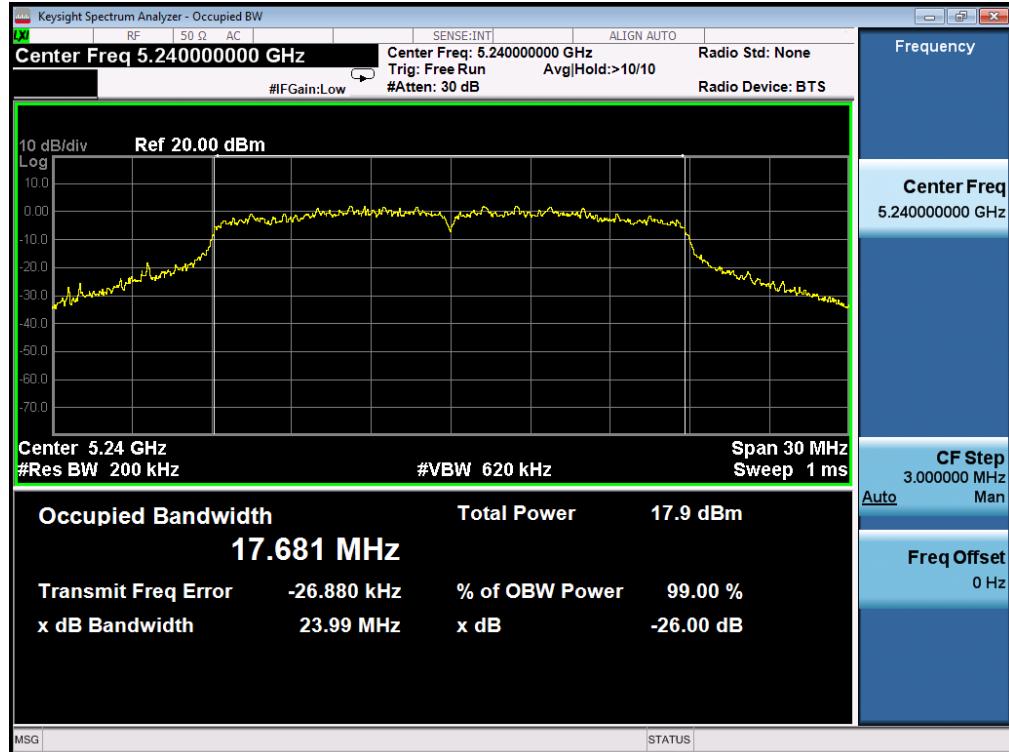
**802.11ac20 TEST RESULT- :**  
**TEST PLOT OF BANDWIDTH FOR 5180MHz**



**TEST PLOT OF BANDWIDTH FOR 5200MHz**



### TEST PLOT OF BANDWIDTH FOR 5240MHz



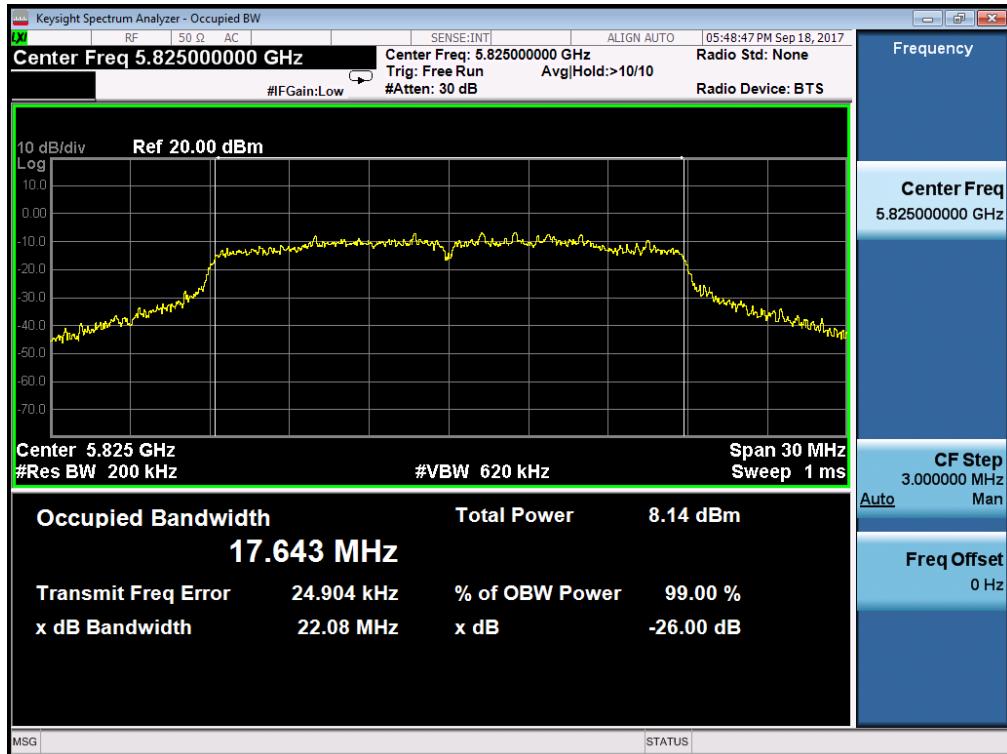
### TEST PLOT OF BANDWIDTH FOR 5745MHz



### TEST PLOT OF BANDWIDTH FOR 5785MHz



### TEST PLOT OF BANDWIDTH FOR 5825MHz



**802.11ac40 TEST RESULT- :**  
**TEST PLOT OF BANDWIDTH FOR 5190MHz**



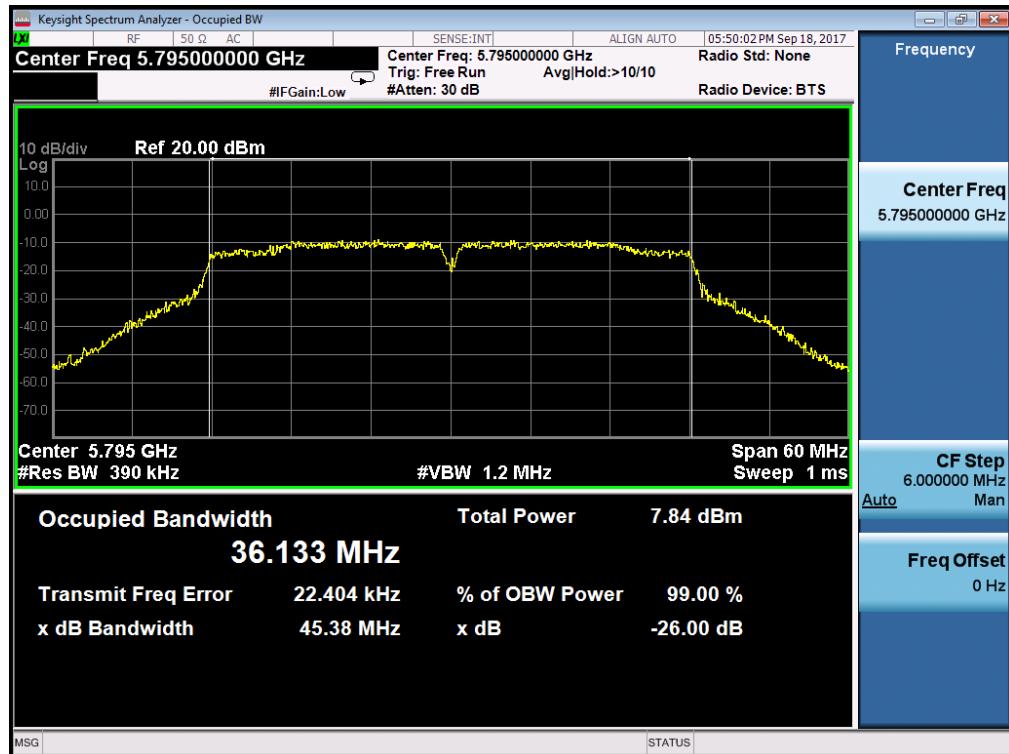
**TEST PLOT OF BANDWIDTH FOR 5230MHz**



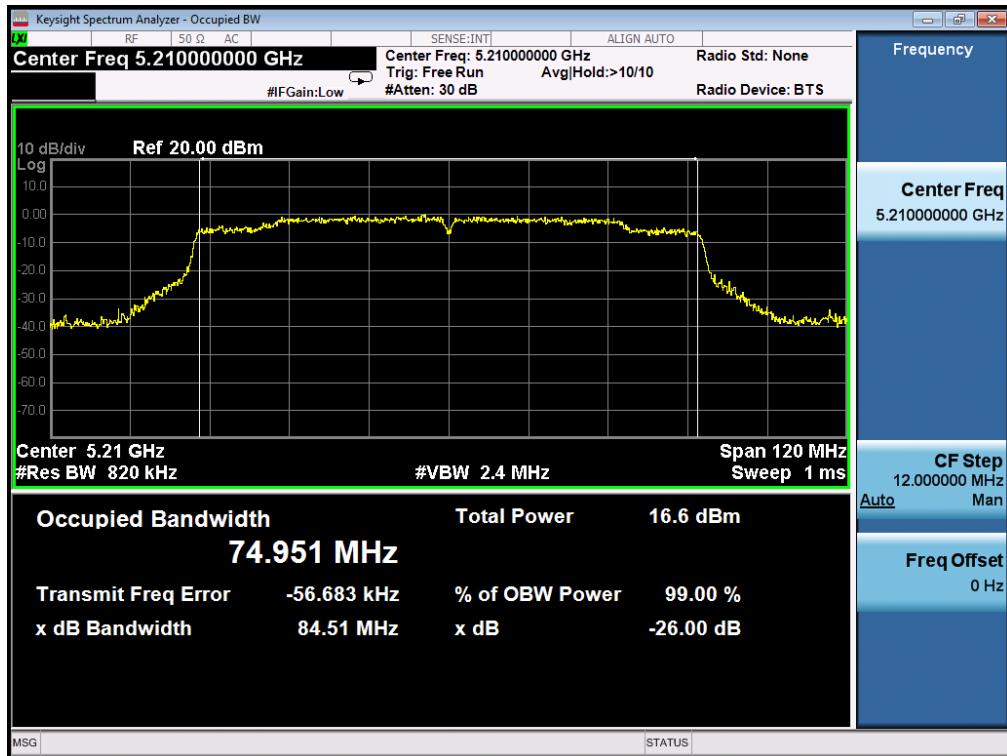
### TEST PLOT OF BANDWIDTH FOR 5755MHz



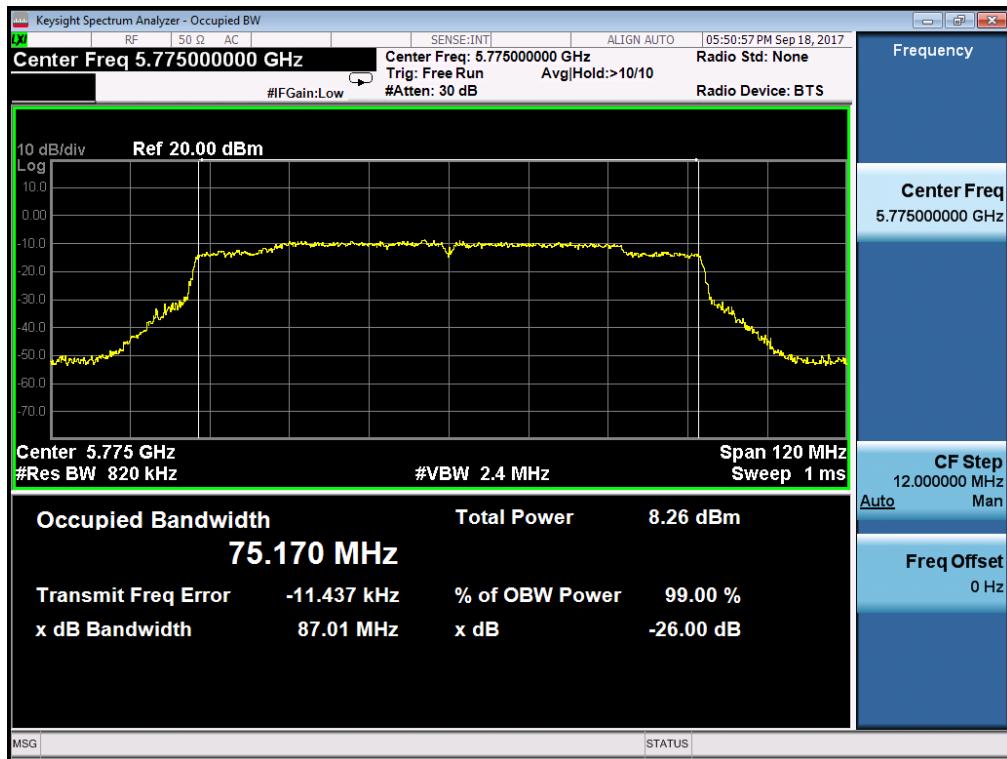
### TEST PLOT OF BANDWIDTH FOR 5795MHz



**802.11ac80 TEST RESULT- :**  
**TEST PLOT OF BANDWIDTH FOR 5210MHz**



**TEST PLOT OF BANDWIDTH FOR 5775MHz**



## 9. MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY

### 9.1 MEASUREMENT PROCEDURE

Refer to KDB 789033 section F

### 9.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

### 9.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

### 9.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Port	Frequency (MHz)	Average Power density (dBm/MHz)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	2.942	17	Pass
	5200	2.830	17	Pass
	5240	2.935	17	Pass
	5745	-4.640	30	Pass
	5785	-5.055	30	Pass
	5825	-7.034	30	Pass

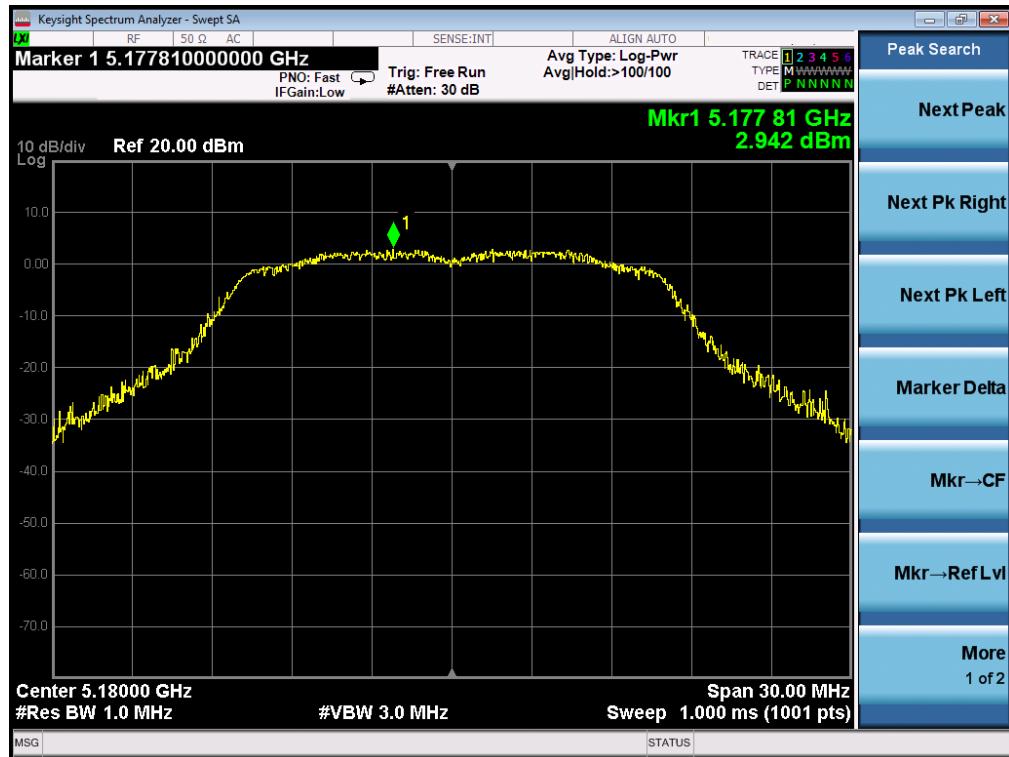
LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION				
Port	Frequency (MHz)	Average Power density (dBm/MHz)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	1.398	17	Pass
	5200	2.473	17	Pass
	5240	1.832	17	Pass
	5190	1.412	17	Pass
	5230	1.155	17	Pass
	5745	-5.187	30	Pass
	5785	-5.053	30	Pass
	5825	-6.333	30	Pass
	5755	-7.926	30	Pass

	5795	-8.344	30	Pass
--	------	--------	----	------

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20/40 MODULATION				
Port	Frequency (MHz)	Average Power density (dBm/MHz)	Applicable Limits (dBm)	Pass or Fail
Ant0	5180	1.613	17	Pass
	5200	1.497	17	Pass
	5240	1.672	17	Pass
	5190	1.459	17	Pass
	5230	1.510	17	Pass
	5745	-5.724	30	Pass
	5785	-5.406	30	Pass
	5825	-5.893	30	Pass
	5755	-8.739	30	Pass
	5795	-8.982	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION				
Port	Frequency (MHz)	Average Power density (dBm/MHz)	Applicable Limits (dBm)	Pass or Fail
Ant0	5210	-1.834	17	Pass
	5775	-11.459	30	Pass

**802.11a20 TEST RESULT - :**  
**TEST PLOT FOR 5180MHz**



**TEST PLOT FOR 5200MHz**



TEST PLOT FOR 5240MHz



TEST PLOT FOR 5745MHz



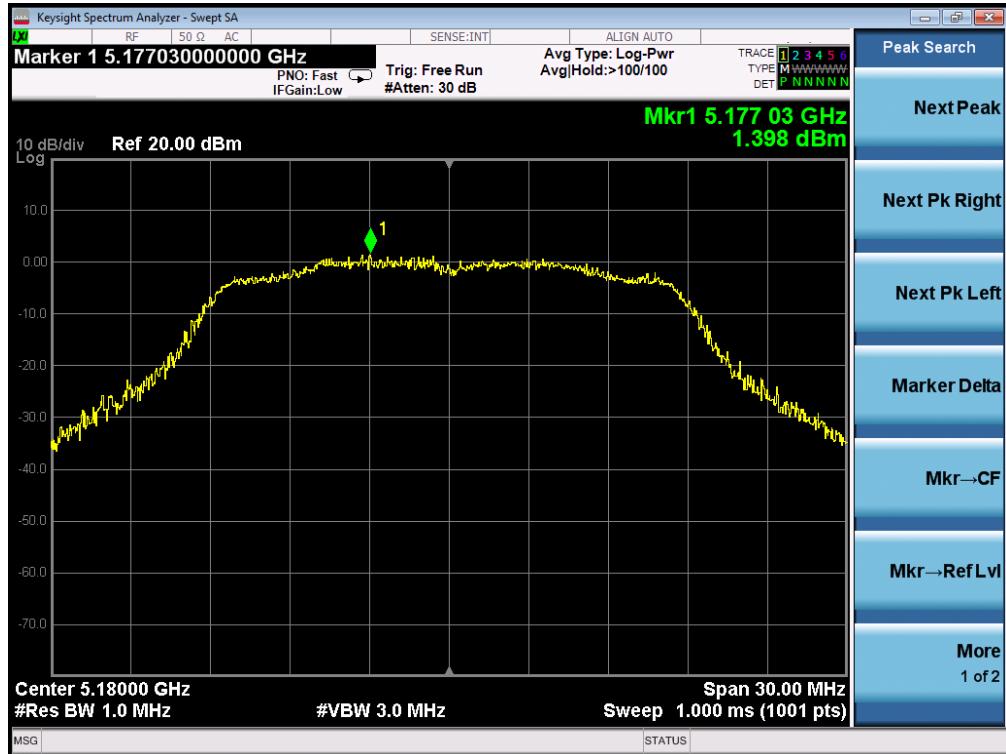
### TEST PLOT FOR 5785MHz



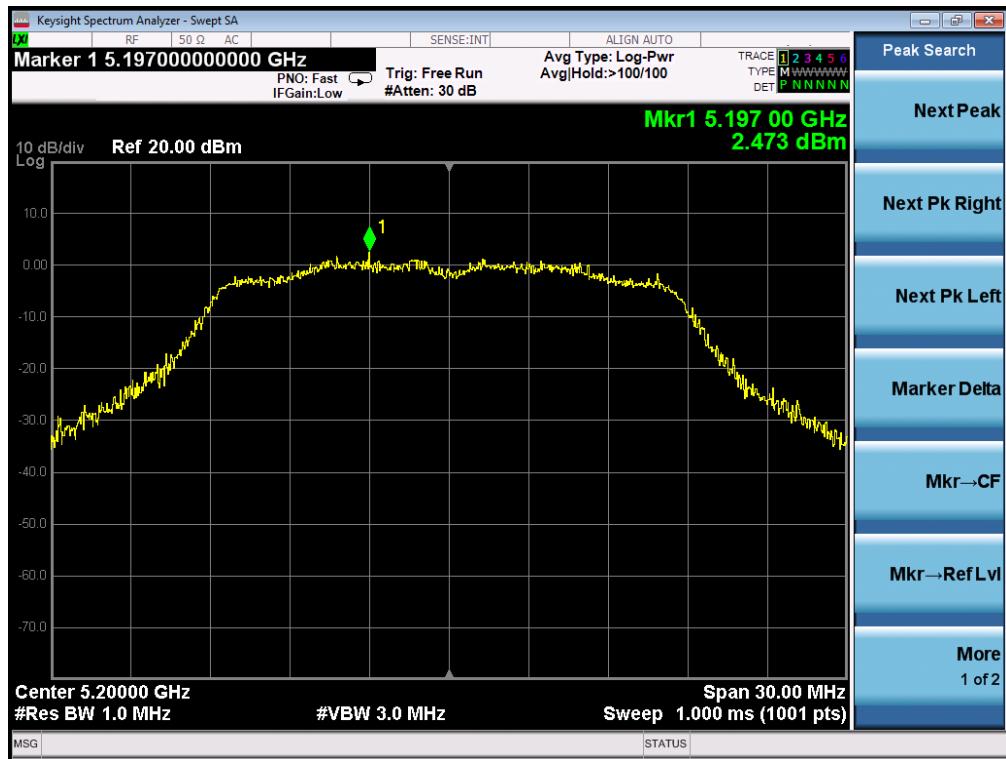
### TEST PLOT FOR 5825MHz



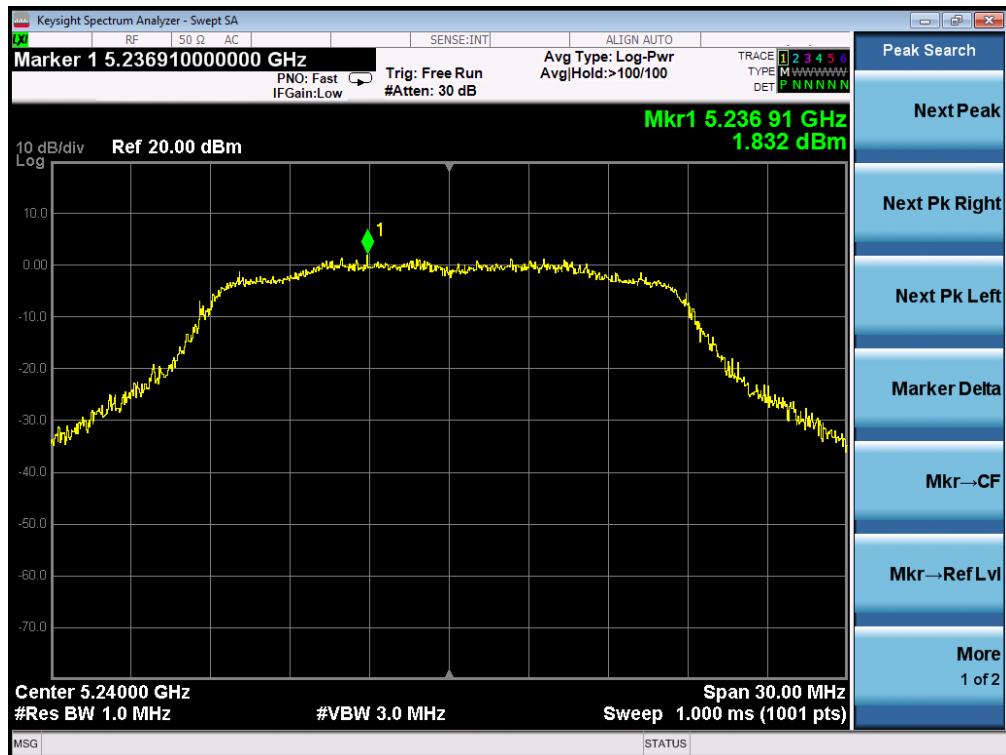
**802.11n20 TEST RESULT-**  
**TEST PLOT FOR 5180MHz**



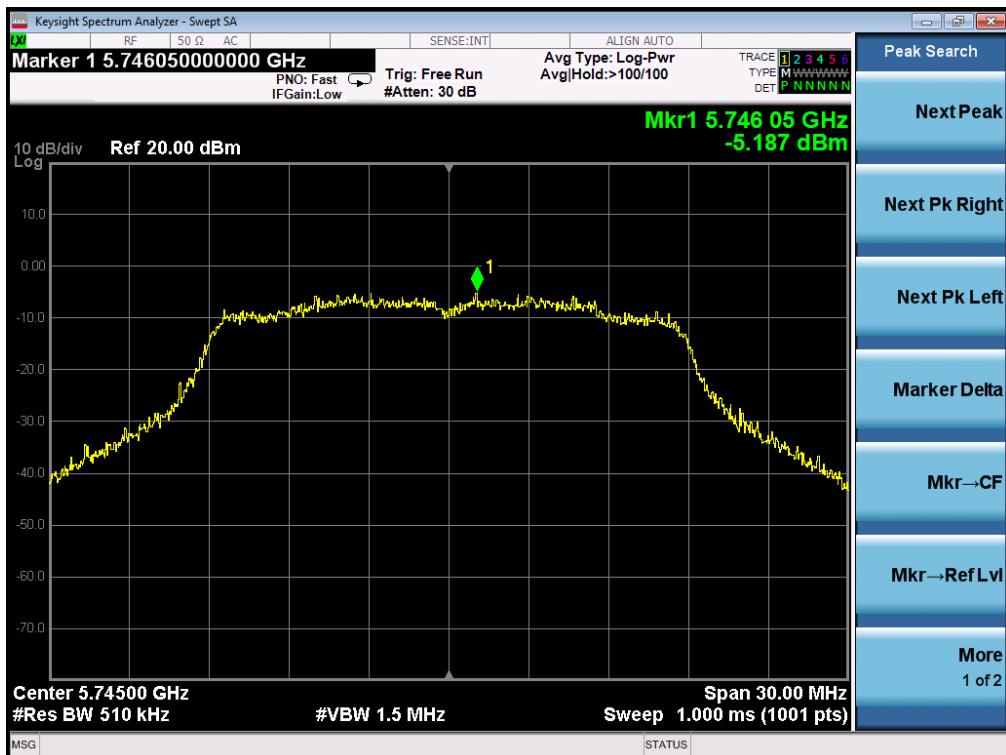
**TEST PLOT FOR 5200MHz**



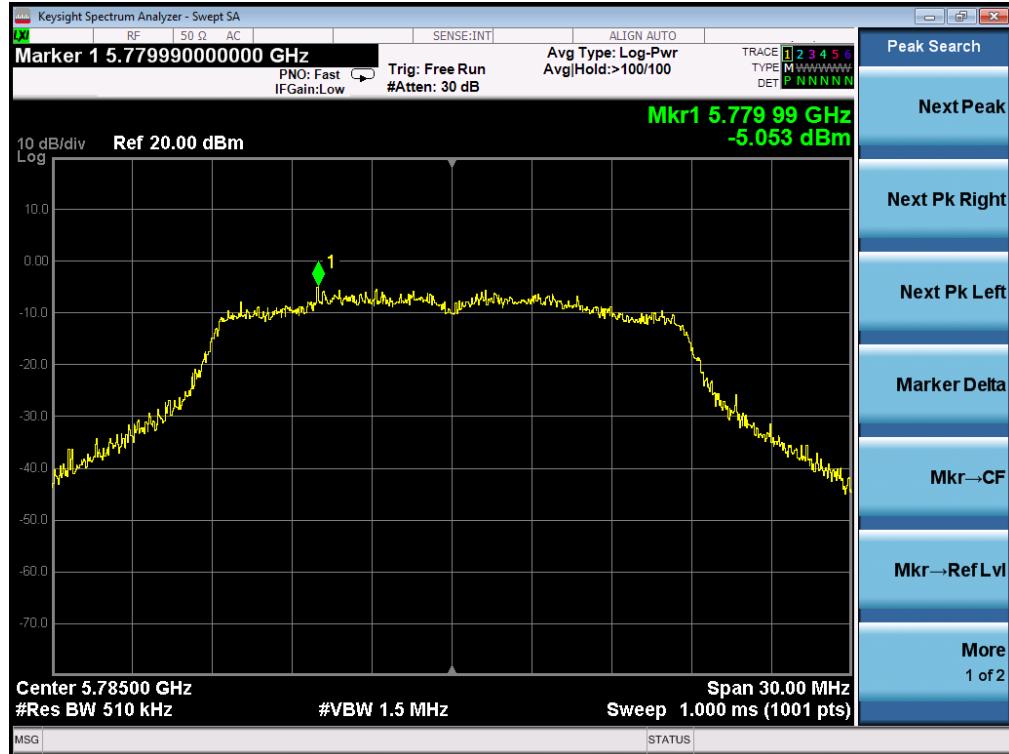
TEST PLOT FOR 5240MHz



TEST PLOT FOR 5745MHz



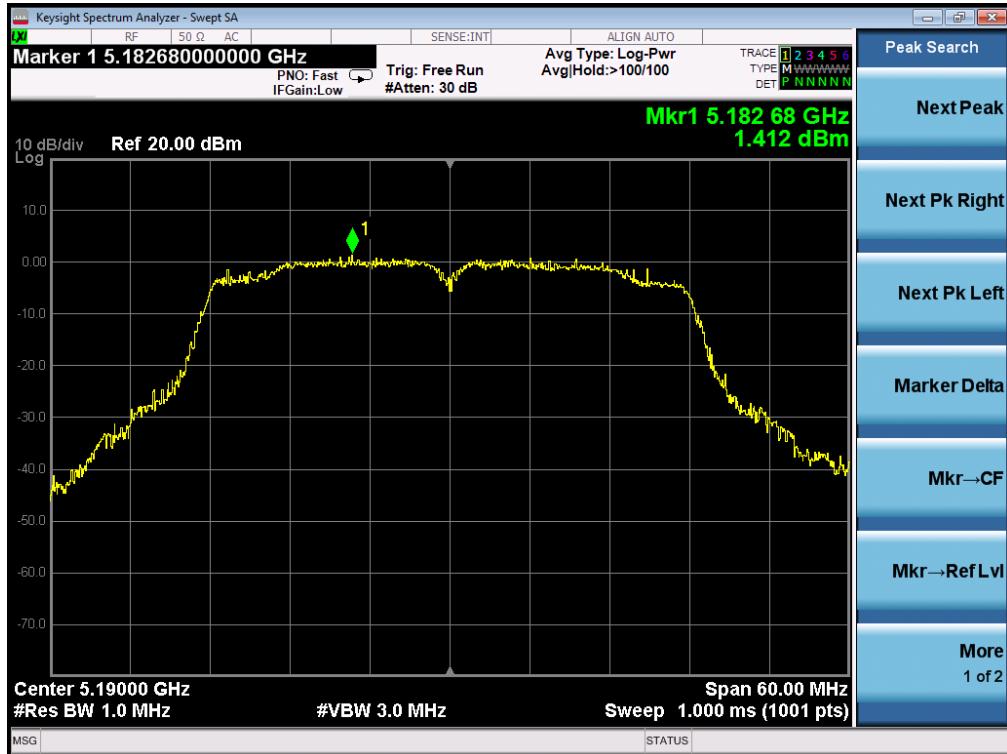
### TEST PLOT FOR 5785MHz



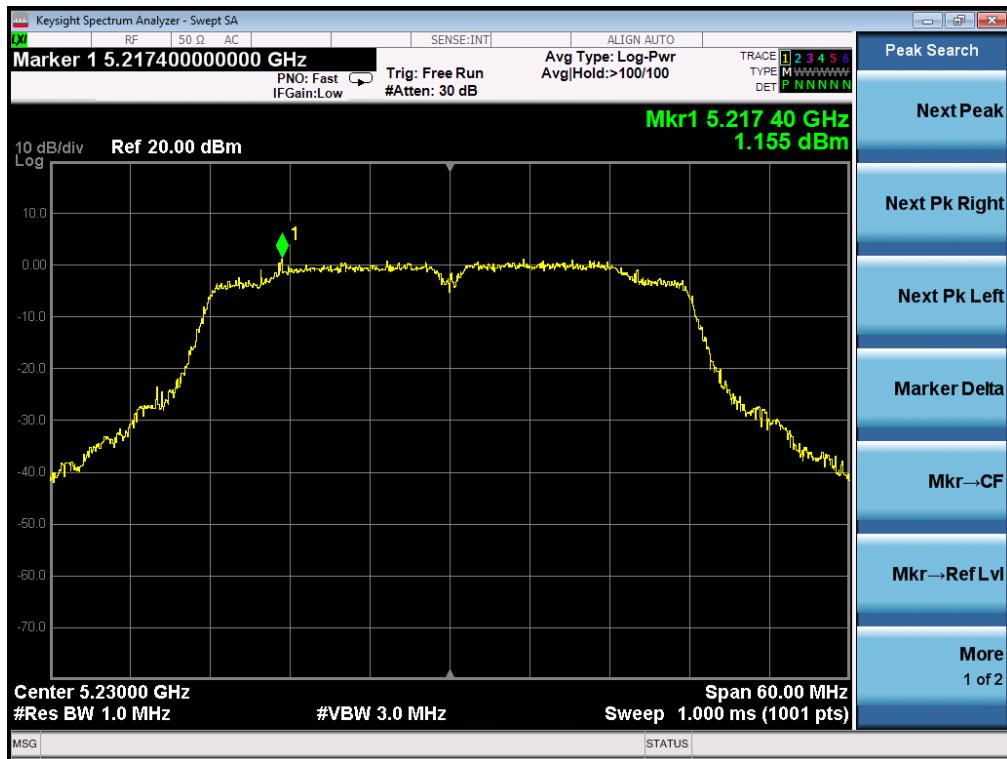
### TEST PLOT FOR 5825MHz



**802.11n40 TEST RESULT- :**  
**TEST PLOT FOR 5190MHz**



**TEST PLOT FOR 5230MHz**



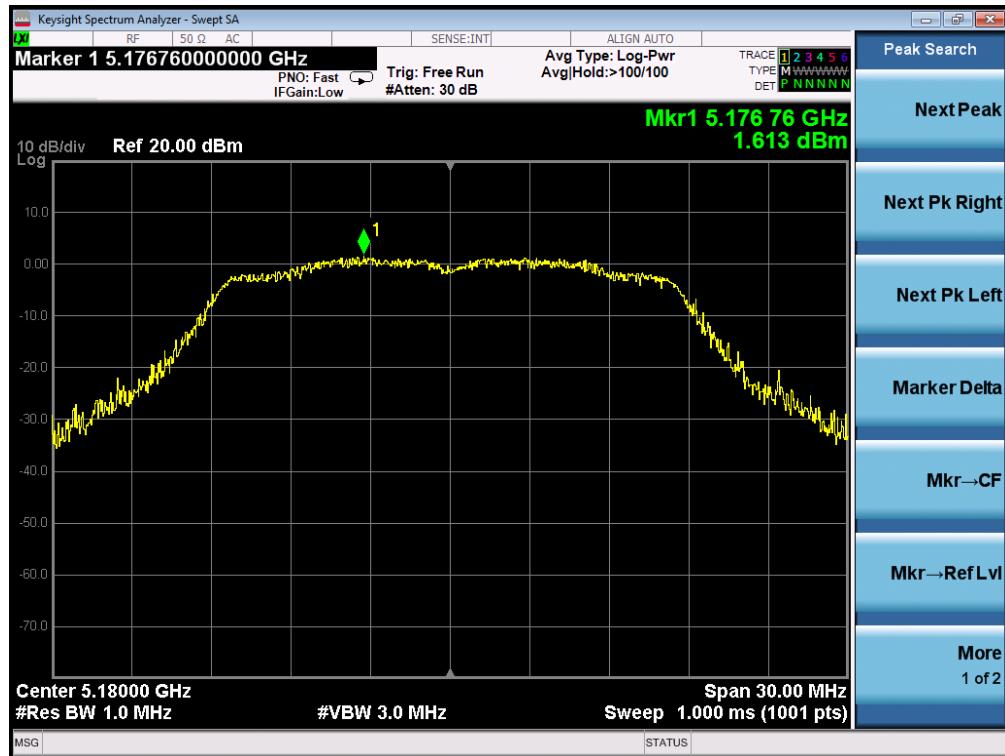
### TEST PLOT FOR 5755MHz



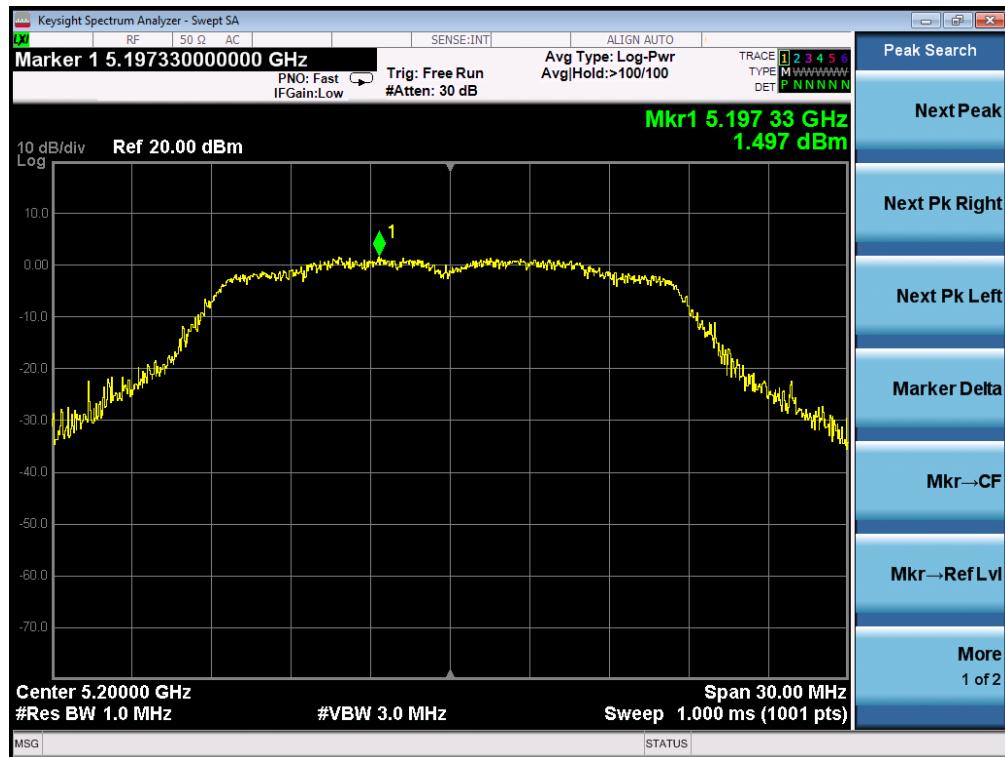
### TEST PLOT FOR 5795MHz



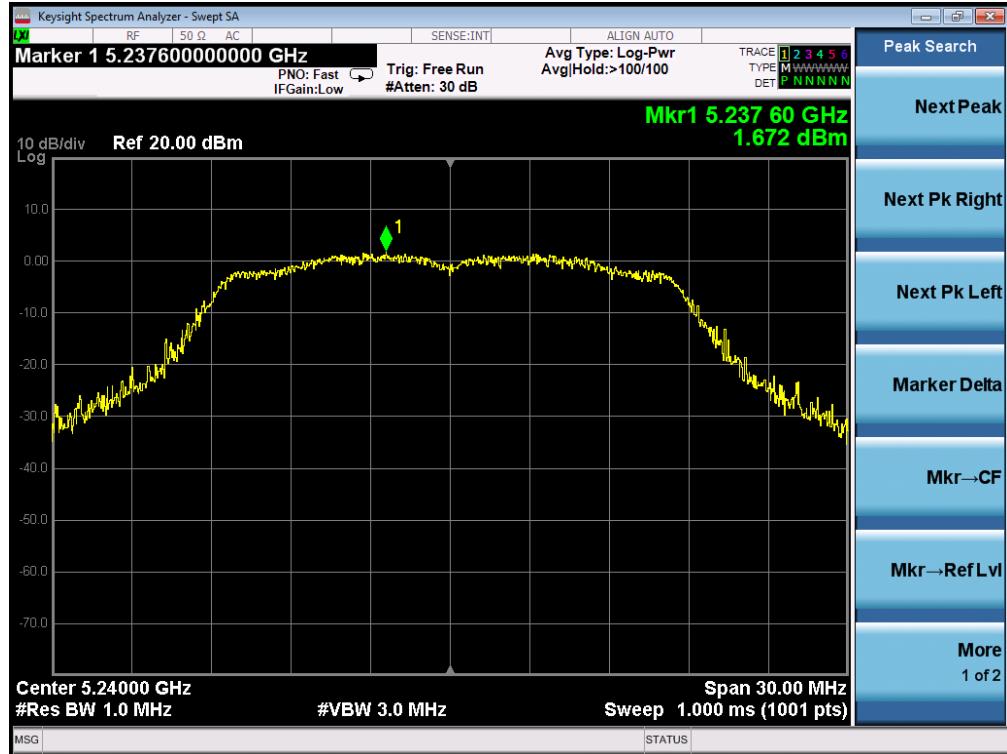
**802.11ac20 TEST RESULT-**  
**TEST PLOT FOR 5180MHz**



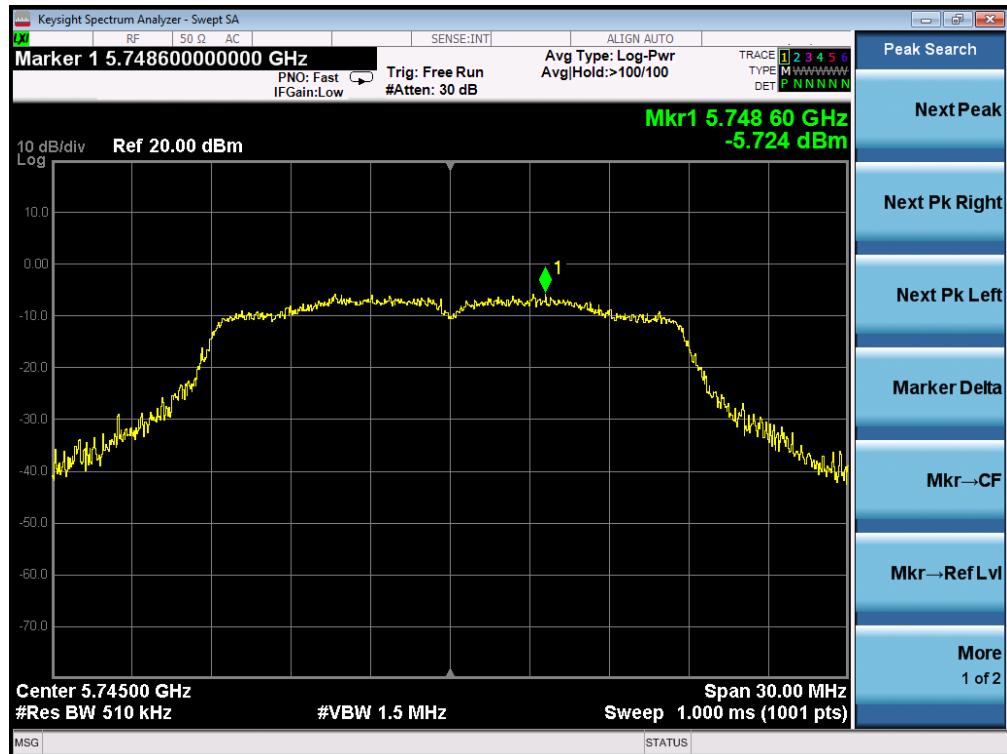
**TEST PLOT FOR 5200MHz**



### TEST PLOT FOR 5240MHz



### TEST PLOT FOR 5745MHz



### TEST PLOT FOR 5745MHz



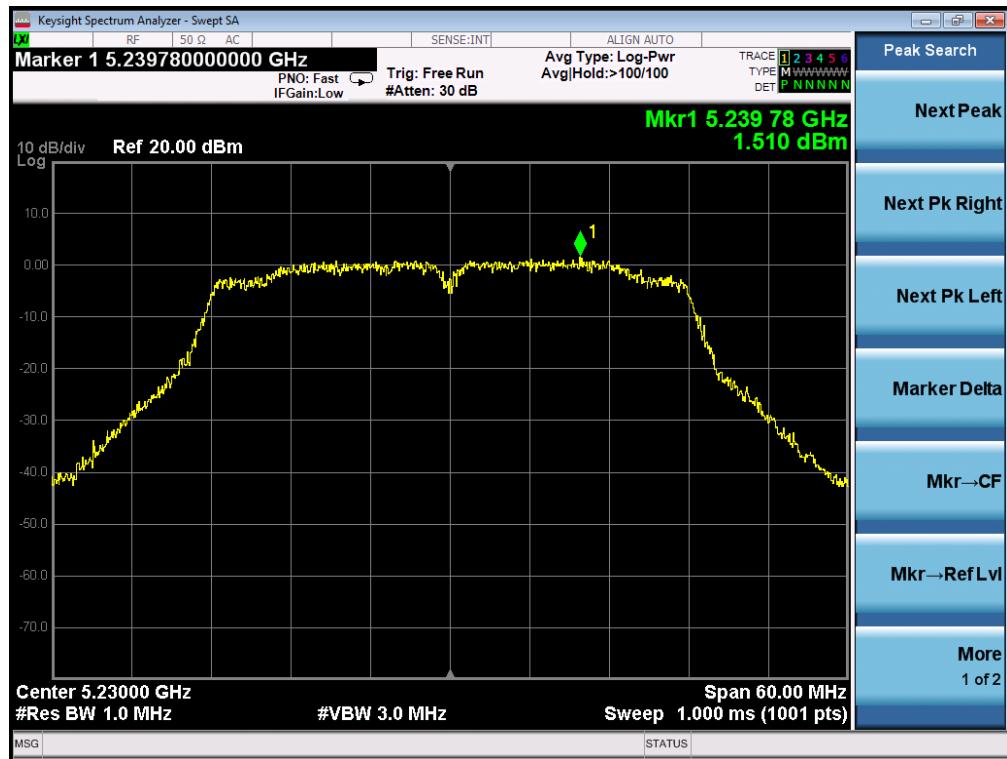
### TEST PLOT FOR 5825MHz



**802.11ac40 TEST RESULT- :**  
**TEST PLOT FOR 5190MHz**



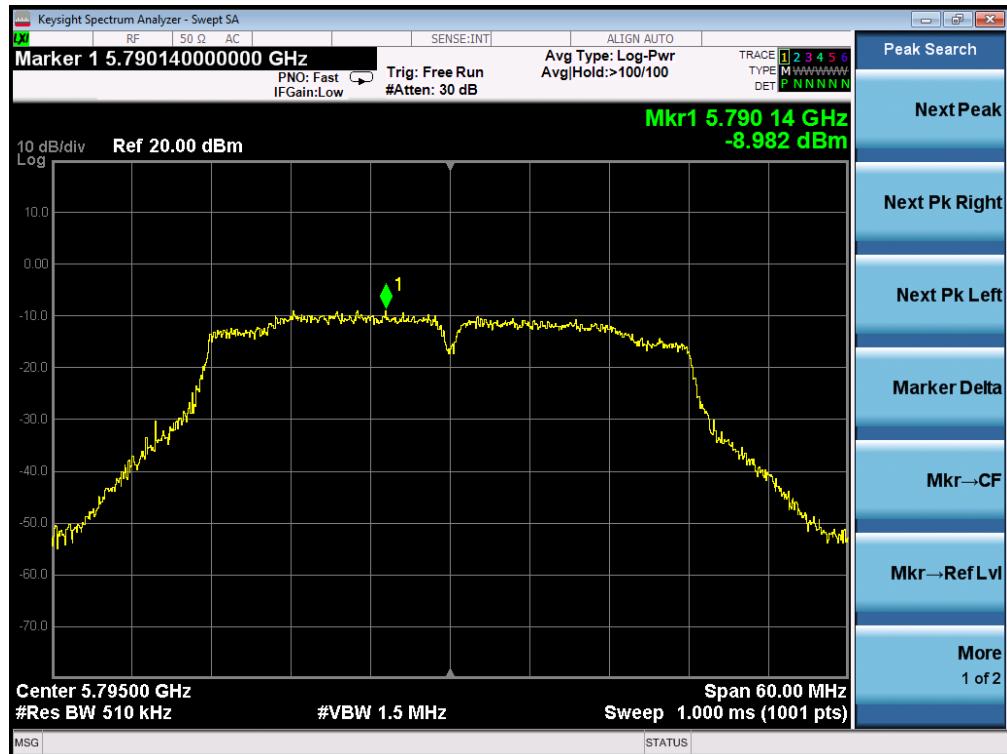
**TEST PLOT FOR 5230MHz**



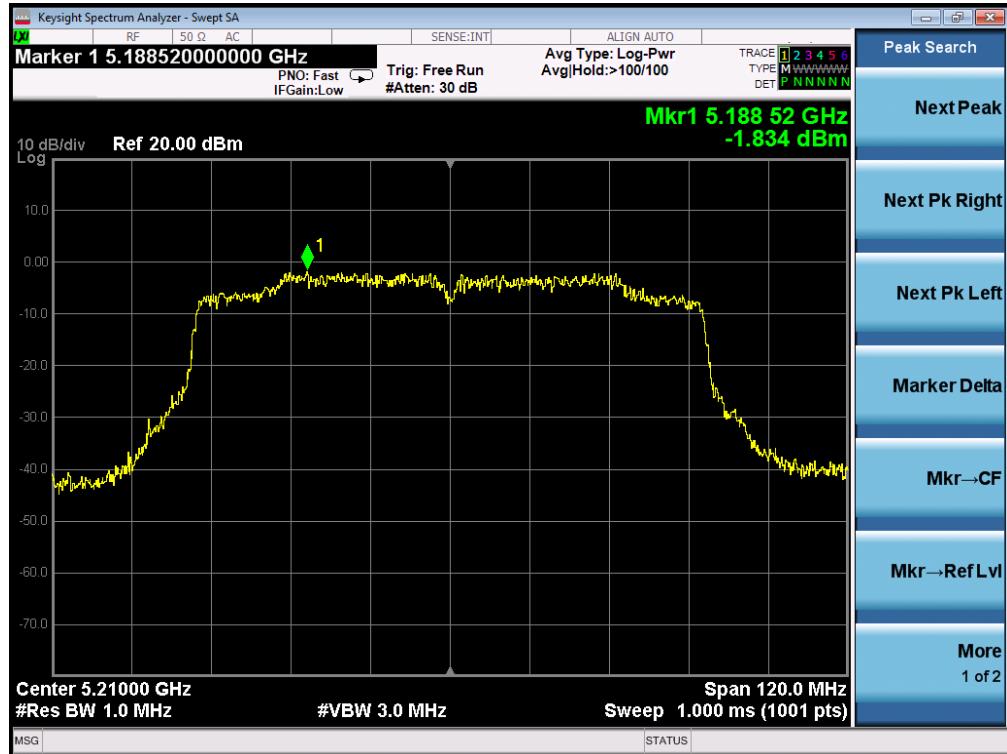
### TEST PLOT FOR 5755MHz



### TEST PLOT FOR 5795MHz



**802.11ac80 TEST RESULT- :**  
**TEST PLOT FOR 5210MHz**



**TEST PLOT FOR 5775MHz**

