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# FCC Test Report

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Report No.: AGC07716190301FE06

**FCC ID** : 2AFENXJ03W  
**APPLICATION PURPOSE** : Original Equipment  
**PRODUCT DESIGNATION** : LED Projector  
**BRAND NAME** : XGIMI  
**MODEL NAME** : XJ03W, XJ04W, XJ05W, XJ06W, XJ07W, XJ08W, XJ09W,  
XJ10W, XJ11W, XJ12W, XJ13W, XJ14W, XJ15W, XJ16W,  
XJ17W, XJ18W, XJ19W, XJ20W, XJ21W, XJ22W, XJ23W,  
XJ24W, XJ25W, XJ26W, XJ27W, XJ28W, XJ29W, XJ30W,  
XJ31W, XJ32W  
**APPLICANT** : Chengdu XGimi Technology Co., Ltd  
**DATE OF ISSUE** : Jun. 24, 2019  
**STANDARD(S)** : FCC Part 15.407  
**TEST PROCEDURE(S)** : KDB 789033 D02 v02r01  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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**REPORT REVISE RECORD**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jun. 24, 2019	Valid	Initial Release

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## 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	Chengdu XGimi Technology Co., Ltd.
<b>Address</b>	Building A4, Tianfu Software Park, High-tech zone, Chengdu, Sichuan, China 610041
<b>Manufacturer</b>	Chengdu XGimi Technology Co., Ltd.
<b>Address</b>	Building A4, Tianfu Software Park, High-tech zone, Chengdu, Sichuan, China 610041
<b>Factory 1</b>	Chengdu Guangqing Technology Co., Ltd.
<b>Address</b>	No.104, Putian Cable Park, No.18 Xinhang Road, West Hi-Tech district, Chengdu, Sichuan, China
<b>Factory 2</b>	TCL KING ELECTRICAL APPLIANCE(CHENG DU)CO., LTD.
<b>Address</b>	No.18 Kexin Road,Hi-Tech Development Zone (West Park), Chengdu, Sichuan
<b>Factory 3</b>	Yibin XGIMI Optoelectronics Co., Ltd.
<b>Address</b>	(1) A3, Intelligent Terminal Industrial Park, Cuiping District, Yibin. (2) Room 328, Enterprise Service Center, No.17, Section 3, West Section of Changjiang North Road, Lingang Economic and Technological Development Zone, Yibin
<b>Product Designation</b>	LED Projector
<b>Brand Name</b>	XGIMI
<b>Test Model</b>	XJ03W
<b>Series Model</b>	XJ04W, XJ05W, XJ06W, XJ07W, XJ08W, XJ09W, XJ10W, XJ11W, XJ12W, XJ13W, XJ14W, XJ15W, XJ16W, XJ17W, XJ18W, XJ19W, XJ20W, XJ21W, XJ22W, XJ23W, XJ24W, XJ25W, XJ26W, XJ27W, XJ28W, XJ29W, XJ30W, XJ31W, XJ32W
<b>Model Difference</b>	All the same except for the model name and different appearance color
<b>Date of test</b>	May 22, 2019 to Jun. 24, 2019
<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

Draven.li

Draven Li(Li Ming Liang)

Jun. 24, 2019

Reviewed By

Max Zhang

Max Zhang(Zhang Yi)

Jun. 24, 2019

Approved By

Forrest Lei

Forrest Lei(Lei Yonggang)  
Authorized Officer

Jun. 24, 2019

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as “LED Projector”. 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>	5150 MHz~5250MHz;5725 MHz~5850MHz
<b>Output Power</b>	IEEE 802.11a20:18.01dBm; IEEE 802.11n(20):17.97dBm IEEE802.11n(40):16.97dBm
<b>Modulation</b>	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM
<b>Number of channels</b>	13
<b>Hardware Version</b>	V04
<b>Software Version</b>	V1.0.62
<b>Antenna Designation</b>	FPC Antenna
<b>Number of transmit chain</b>	2(802.11a/n20/n40 all used two antennas,but 802.11a support SISO and 802.11n20/n40 support MIMO)
<b>Directional gain</b>	All transmit signals are completely uncorrelated with each other
<b>Antenna Gain</b>	6.99dBi
<b>Power Supply</b>	DC 14V by battery or DC 19V by adapter

### 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency	Frequency Band	Channel Number	Frequency
5150 GHz~ 5250GHz	36	5180 MHz	5725 GHz~ 5850GHz	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
				165	5825MHz

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.

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

This submittal(s) (test report) is intended for **FCC ID: 2AFENXJ03W** 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 D02

### **2.5. SPECIAL ACCESSORIES**

Refer to section 5.2.

### **2.6. EQUIPMENT MODIFICATIONS**

Not available for this EUT intended for grant.

### **3. MEASUREMENT UNCERTAINTY**

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.2 \text{ dB}$
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 3.9 \text{ dB}$
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8 \text{ dB}$

#### 4. DESCRIPTION OF TEST MODES

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

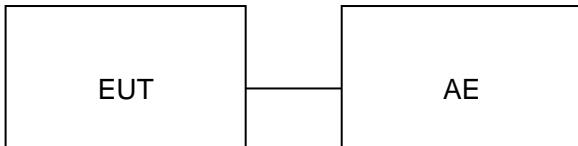
**Note:**

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.
3. The test software is the SecureCRTSecure\_V7.0.0.326 which can set the EUT into the individual test modes.

## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	LED Projector	XJ03W	2AFENXJ03W	EUT
3	Adapter	HKA06519034-6J	Input: AC 100-240V, 50/60Hz, 1.5A Output: DC 19V, 3.42A	Market with EUT
4	Loudspeaker	--	--	AE
5	PC	Xiaomi	Air 13.3	AE

### 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
§15.207	Line Conduction Emission	Compliant

## 6. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

## TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 10, 2019	Jun. 09, 2020
LISN	R&S	ESH2-Z5	100086	Aug. 28, 2018	Aug. 27, 2019

## TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 10, 2019	Jun. 09, 2020
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 20, 2018	Dec. 19, 2019
Power sensor	Aglient	U2021XA	MY54110007	Dec. 20, 2018	Dec. 19, 2019
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2017	Sep. 20, 2020
preamplifier	ChengYi	EMC184045SE	980508	Sep. 21, 2017	Sep. 20, 2020
Active loop antenna (9K-30MHz)	A.H.	SAS-562B	CC&C	May. 26, 2018	May. 25, 2020
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 26, 2018	May. 25, 2020
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Sep. 28, 2017	Sep. 27, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep. 28, 2017	Sep. 27, 2019

## 7. MAXIMUM CONDUCTED OUTPUT POWER

### 7.1. MEASUREMENT PROCEDURE

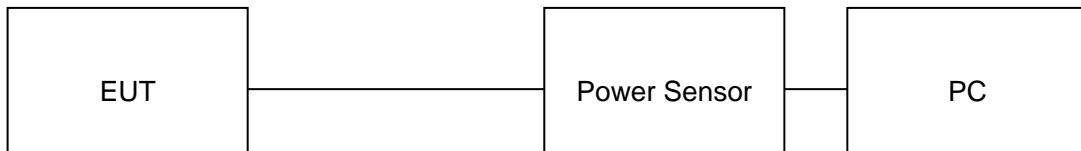
For average power test:

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					
Frequency (MHz)	Average Power Chain 1(dBm)	Average Power Chain 2(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5180	<b>18.01</b>	17.86	N/A	22.99	Pass
5200	17.95	17.81	N/A	22.99	Pass
5240	17.86	17.79	N/A	22.99	Pass
5745	17.74	17.58	N/A	29.01	Pass
5785	17.68	17.69	N/A	29.01	Pass
5825	17.61	17.74	N/A	29.01	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION					
Frequency (MHz)	Average Power Chain 1(dBm)	Average Power Chain 2(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5180	15.03	14.88	<b>17.97</b>	22.99	Pass
5200	14.95	14.76	17.87	22.99	Pass
5240	14.81	14.63	17.73	22.99	Pass
5745	14.75	14.71	17.74	29.01	Pass
5785	14.83	14.59	17.72	29.01	Pass
5825	14.62	14.68	17.66	29.01	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION					
Frequency (MHz)	Average Power Chain 1(dBm)	Average Power Chain 2(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5190	<b>14.03</b>	13.88	<b>16.97</b>	22.99	Pass
5230	13.98	13.80	16.90	22.99	Pass
5755	13.86	13.85	16.87	29.01	Pass
5795	13.81	13.78	16.81	29.01	Pass

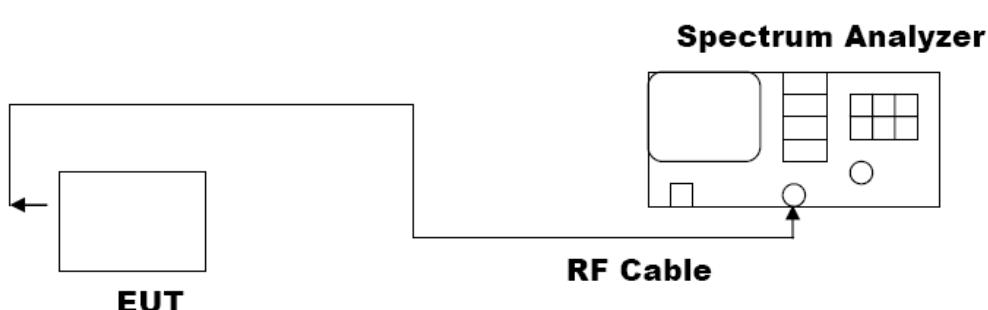
## 8. 6dB BANDWIDTH

### 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)



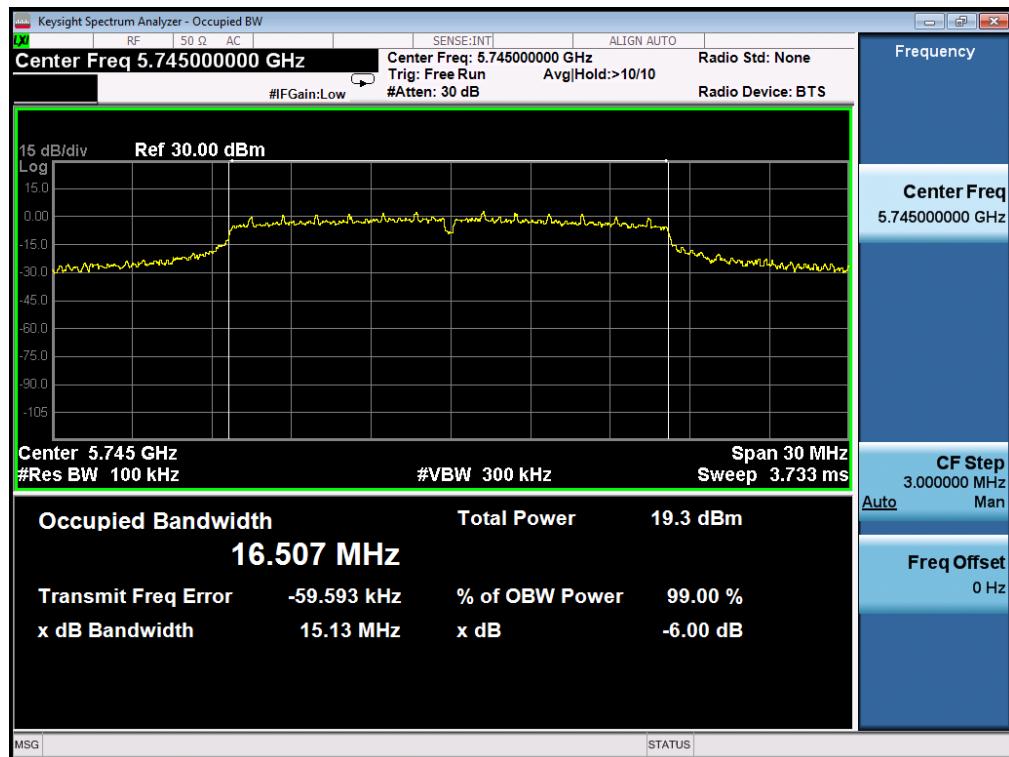
### 8.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION			
Applicable Limits	Applicable Limits		
	Test Data (MHz)		Criteria
>500KHZ	5745MHz	15.13	PASS
	5785MHz	15.09	PASS
	5825MHz	15.12	PASS

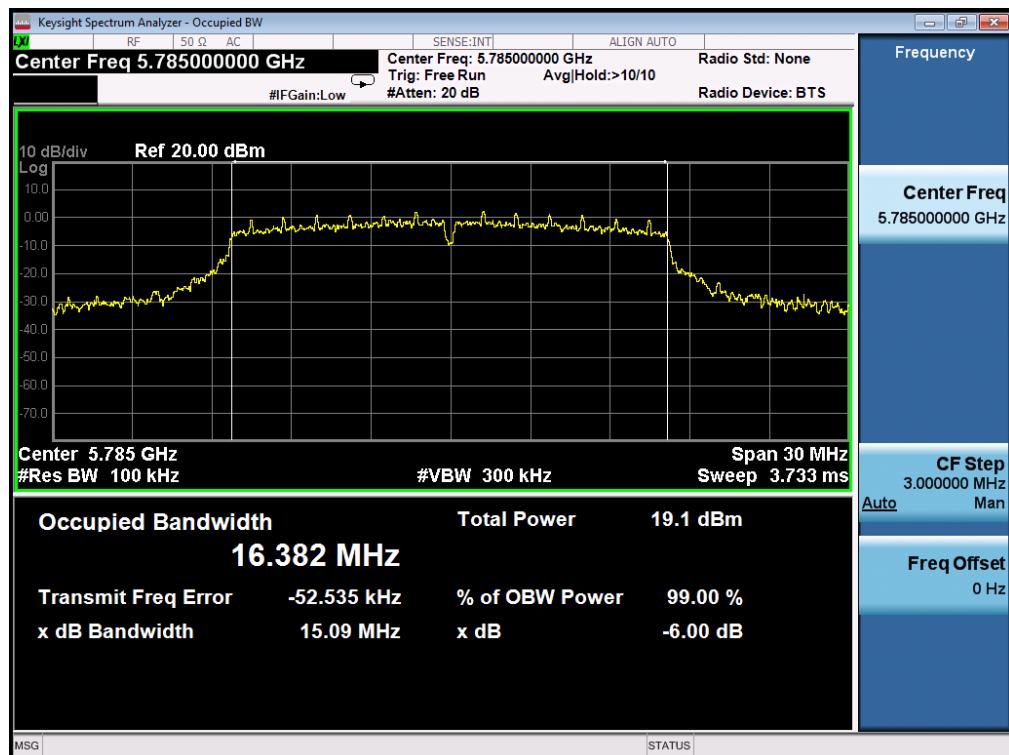
LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION			
Applicable Limits	Applicable Limits		
	Test Data (MHz)		Criteria
>500KHZ	5745MHz	15.07	PASS
	5785MHz	15.11	PASS
	5825MHz	15.06	PASS
	5755MHz	35.43	PASS
	5795MHz	35.02	PASS

## 802.11a20 TEST RESULT

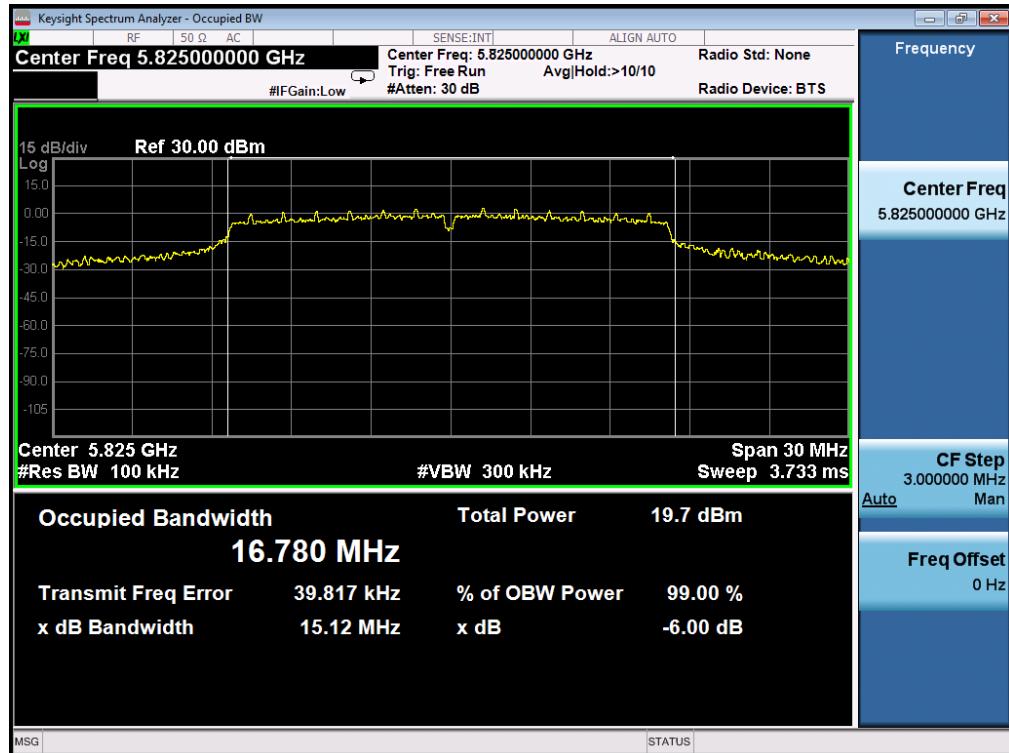
### TEST PLOT OF BANDWIDTH FOR 5745MHz



### TEST PLOT OF BANDWIDTH FOR 5785MHz

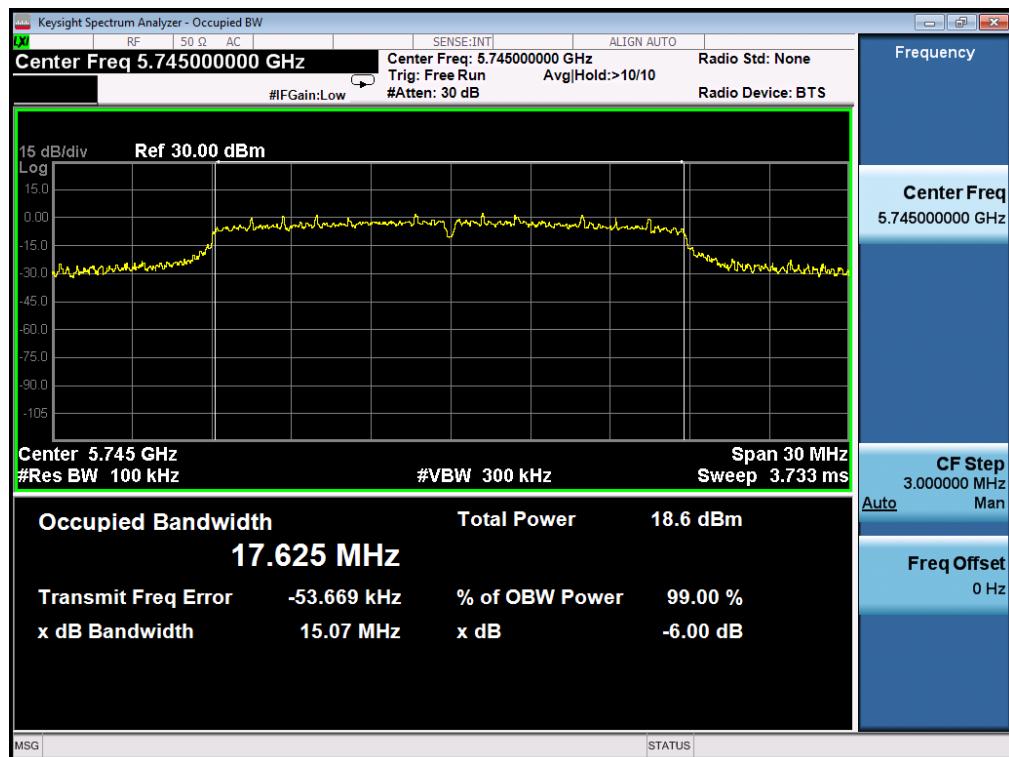


### TEST PLOT OF BANDWIDTH FOR 5825MHz

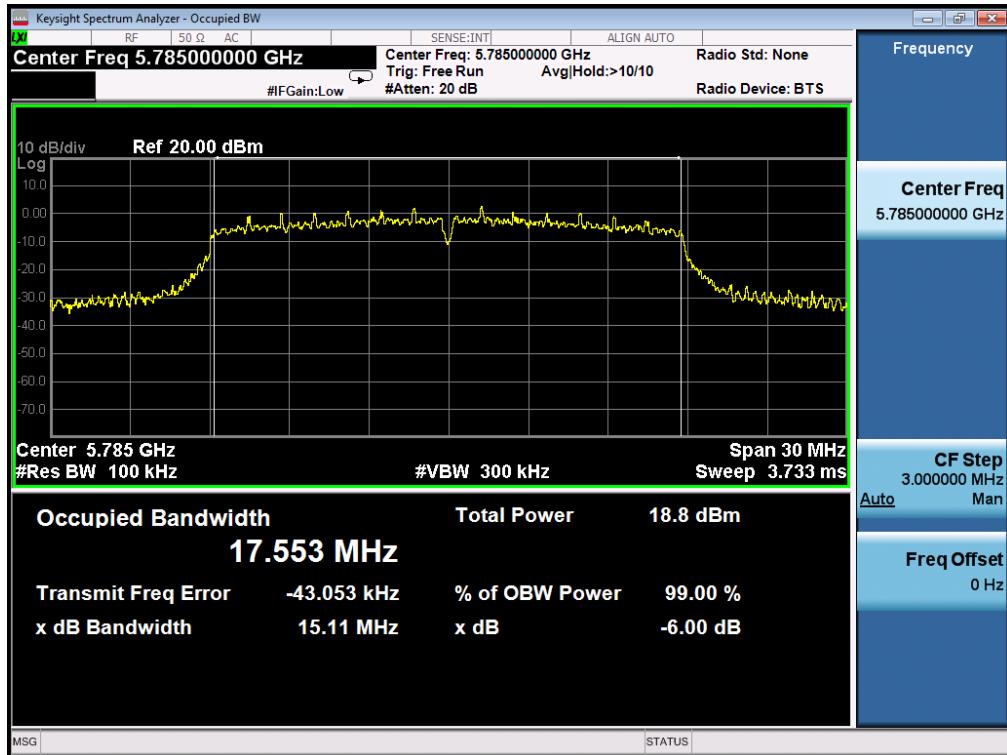


### 802.11n20 TEST RESULT

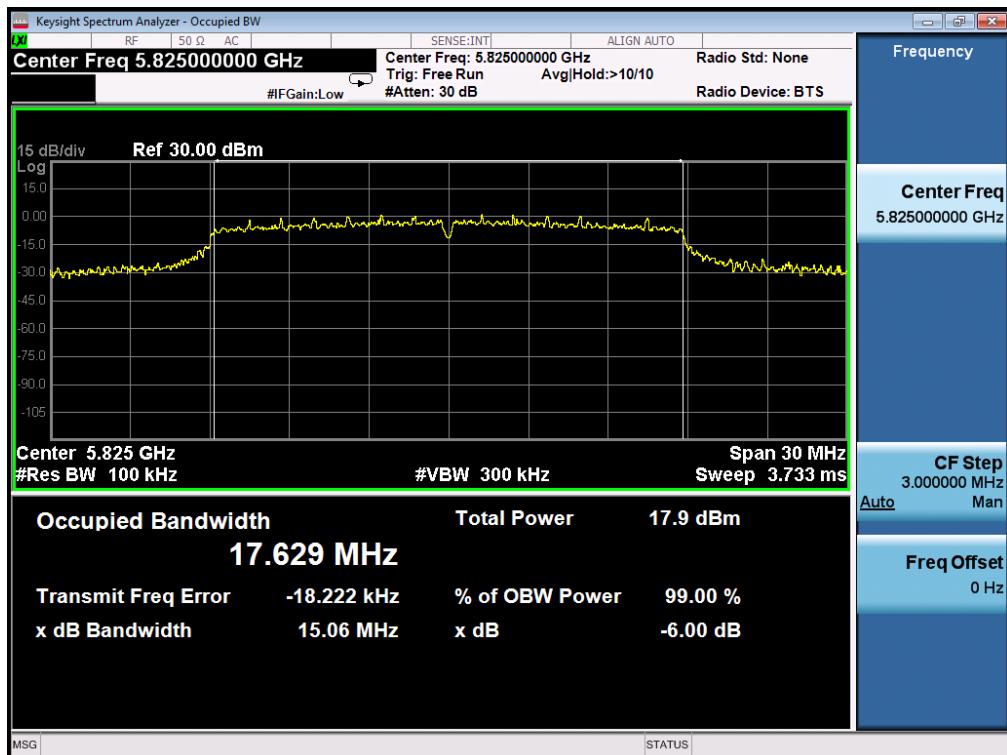
#### TEST PLOT OF BANDWIDTH FOR 5745MHz



### TEST PLOT OF BANDWIDTH FOR 5785MHz

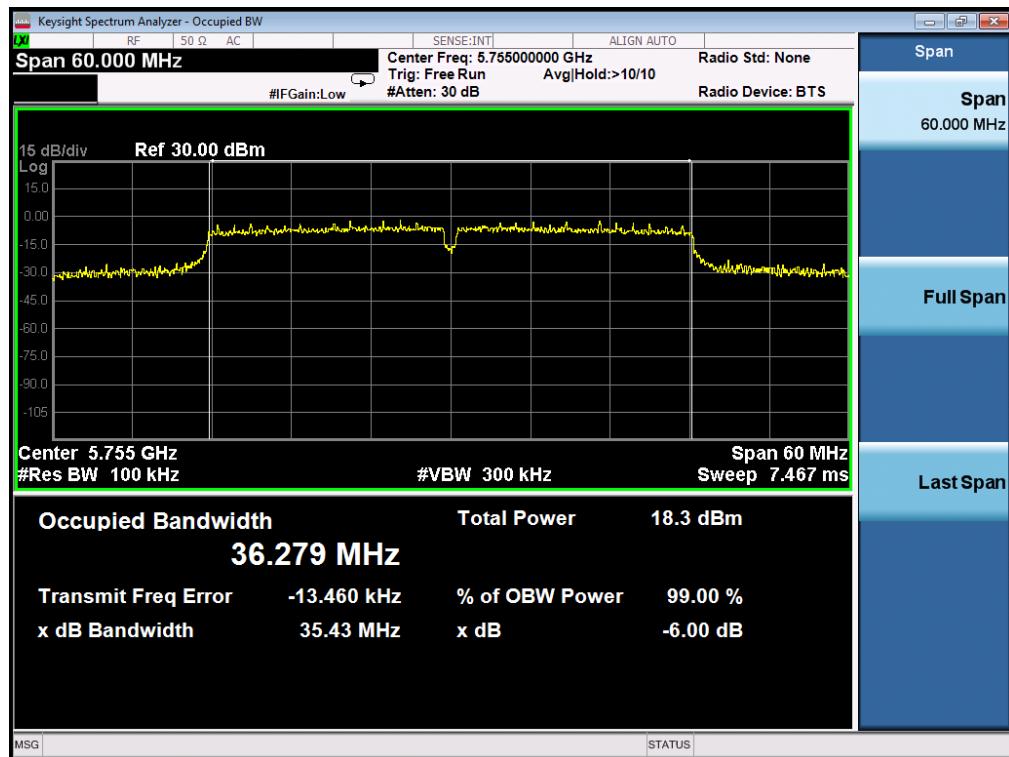


### TEST PLOT OF BANDWIDTH FOR 5825MHz

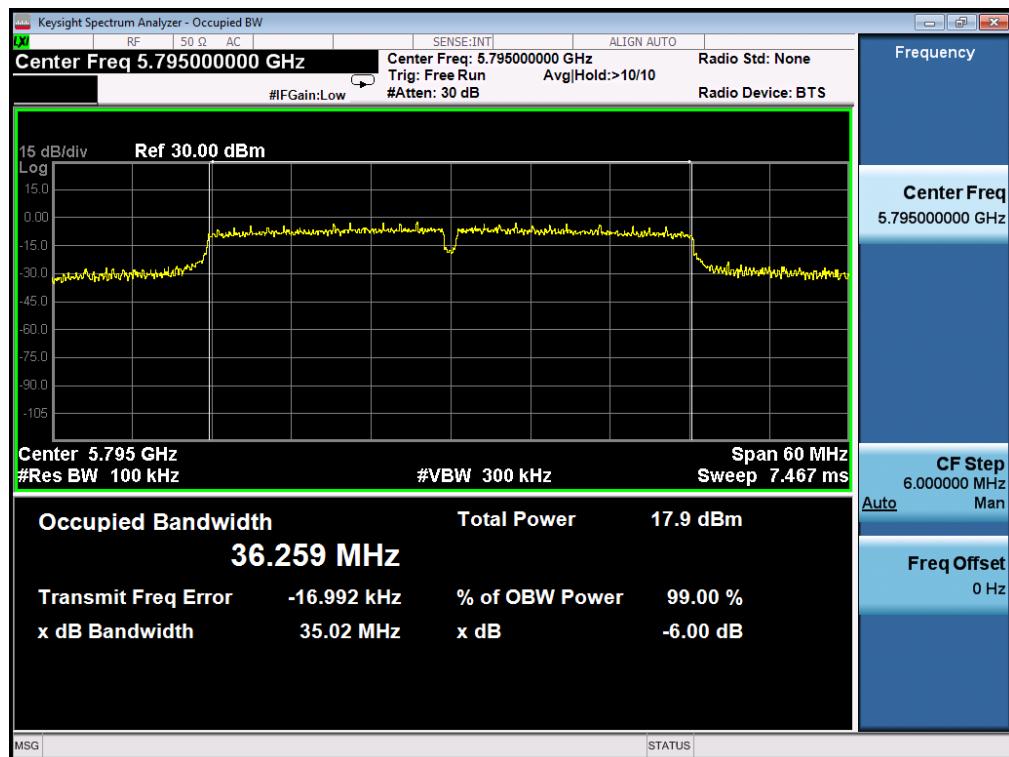


## 802.11n40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5755MHz



### TEST PLOT OF BANDWIDTH FOR 5795MHz



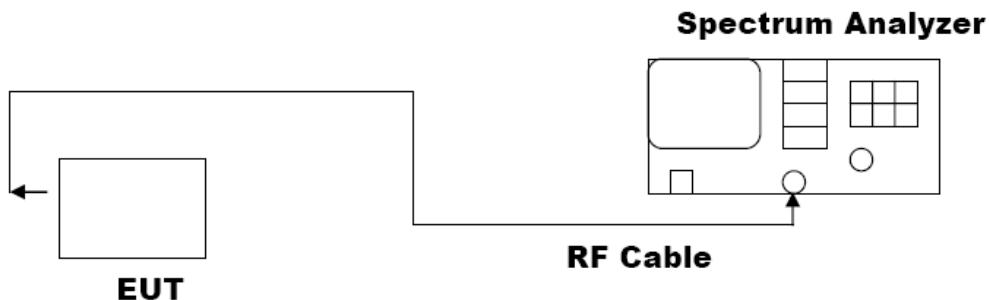
## 9. EMISSION BANDWIDTH

### 9.1. 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%.

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

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



### 9.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION			
Applicable Limits	Applicable Limits		
	Test Data (MHz)		Criteria
Within the Band	5180MHz	19.67	PASS
	5200MHz	19.70	PASS
	5240MHz	19.60	PASS

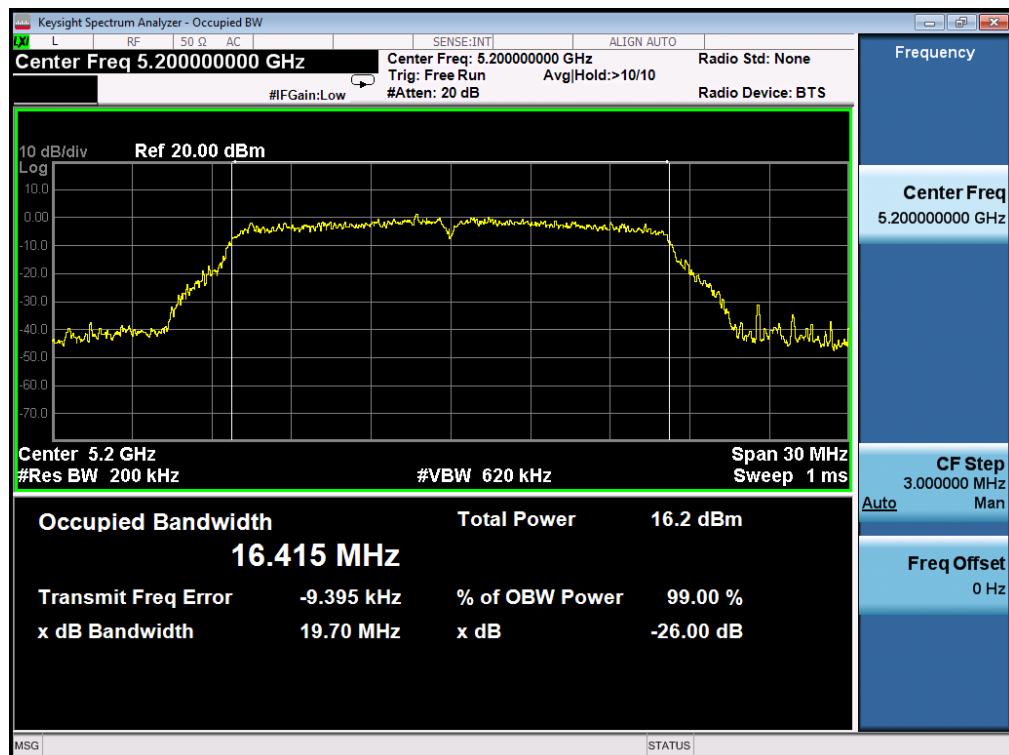
LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION			
Applicable Limits	Applicable Limits		
	Test Data (MHz)		Criteria
Within the Band	5180MHz	19.75	PASS
	5200MHz	20.00	PASS
	5240MHz	20.21	PASS
	5190MHz	39.54	PASS
	5230MHz	40.08	PASS

## 802.11a20 TEST RESULT

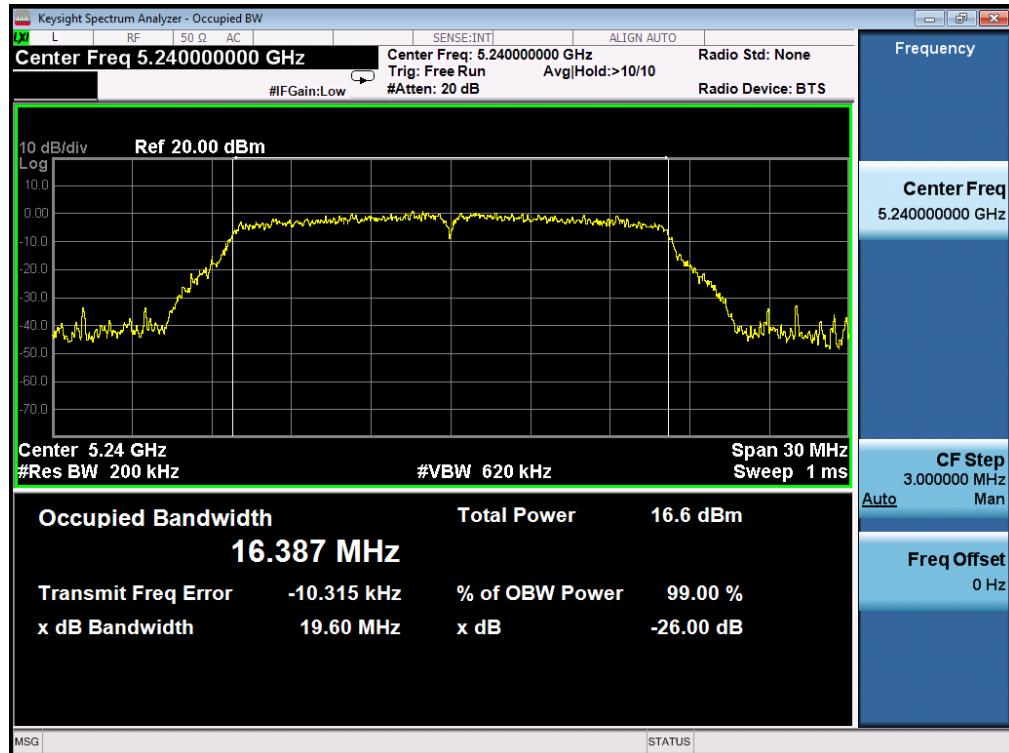
### TEST PLOT OF BANDWIDTH FOR 5180MHz



### TEST PLOT OF BANDWIDTH FOR 5200MHz

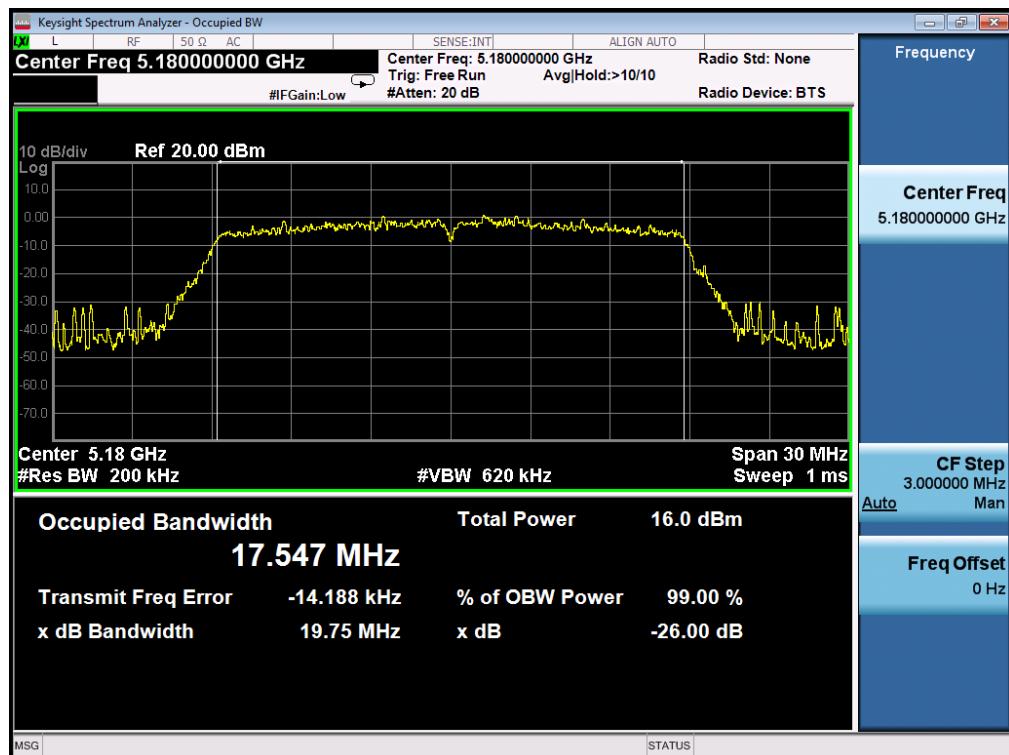


### TEST PLOT OF BANDWIDTH FOR 5240MHz

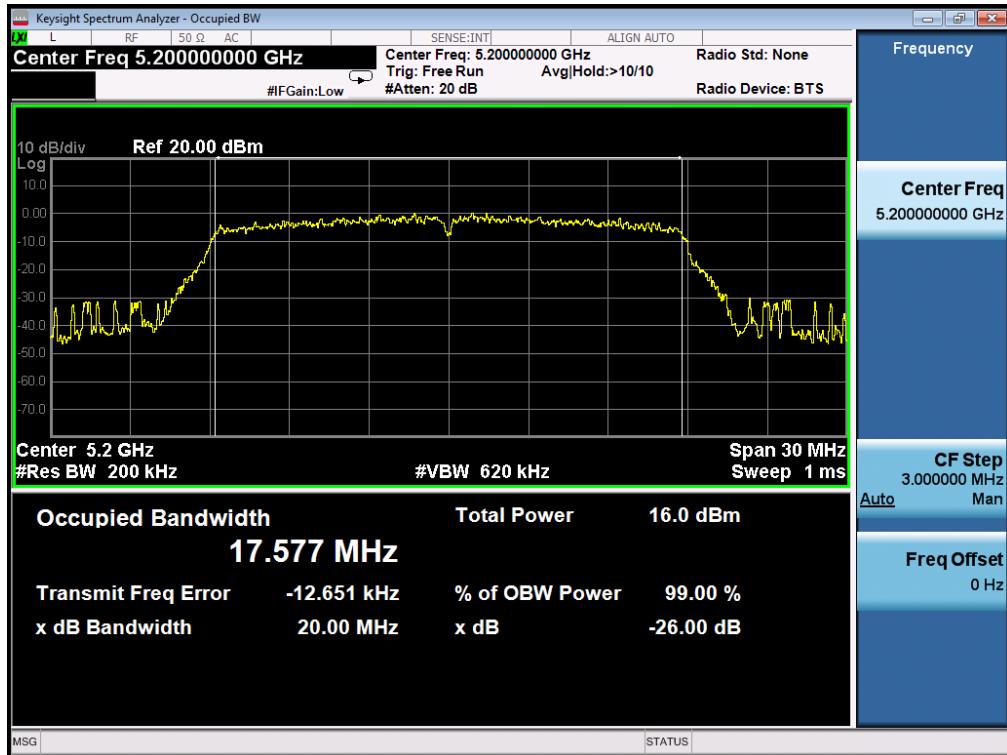


### 802.11n20 TEST RESULT

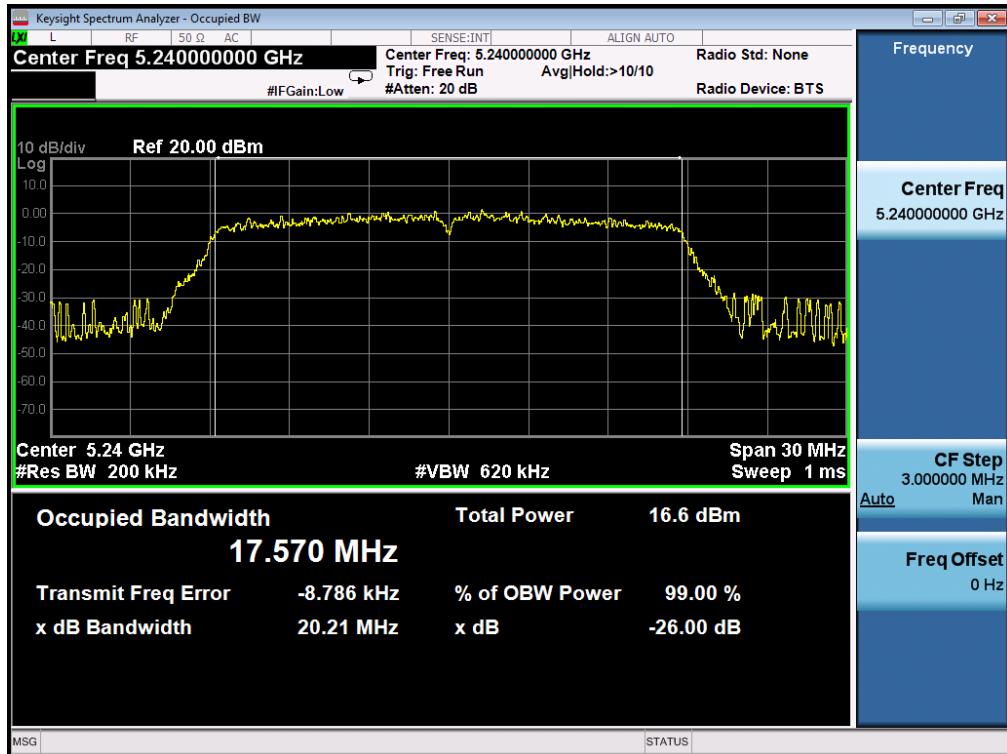
#### TEST PLOT OF BANDWIDTH FOR 5180MHz



TEST PLOT OF BANDWIDTH FOR 5200MHz

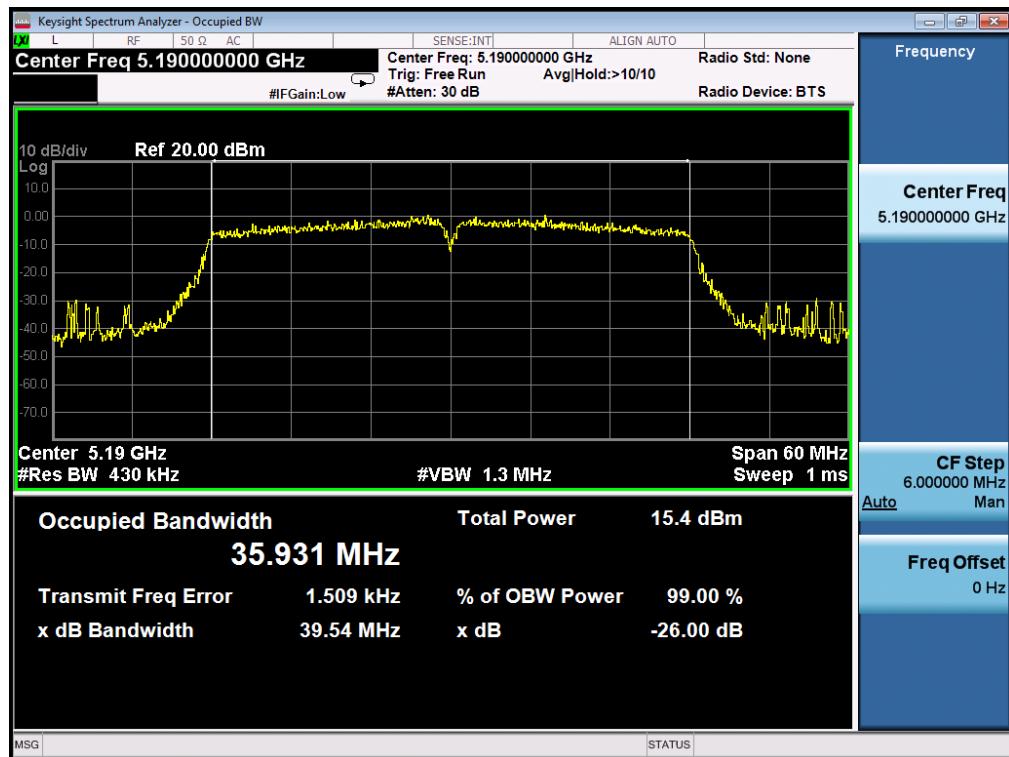


TEST PLOT OF BANDWIDTH FOR 5240MHz

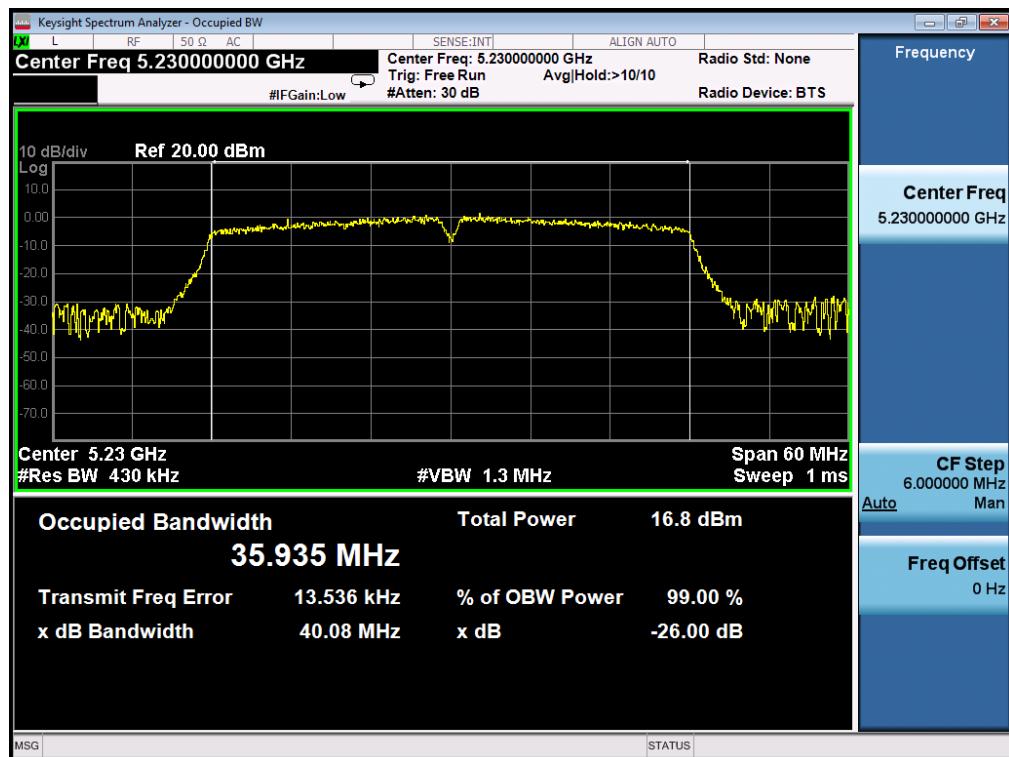


## 802.11n40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5190MHz



### TEST PLOT OF BANDWIDTH FOR 5230MHz



## 10. MAXIMUM CONDUCTED OUTPUT PEAK POWER SPECTRAL DENSITY

### 10.1 MEASUREMENT PROCEDURE

Refer to KDB 789033 section F

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

Refer To Section 8.2.

### 10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

### 10.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION					
Frequency (MHz)	Power density Chain 1 (dBm/MHz)	Power density Chain 2 (dBm/MHz)	Power density Total (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5180	4.663	4.388	N/A	10.01	Pass
5200	4.588	5.241	N/A	10.01	Pass
5240	4.841	4.158	N/A	10.01	Pass

Frequency (MHz)	Power density Chain 1 (dBm/500kHz)	Power density Chain 2 (dBm/500kHz)	Power density Total (dBm/500kHz)	Applicable Limits (dBm/500kHz)	Pass or Fail
5745	1.077	1.060	N/A	16.01	Pass
5785	1.809	1.524	N/A	16.01	Pass
5825	1.123	1.105	N/A	16.01	Pass

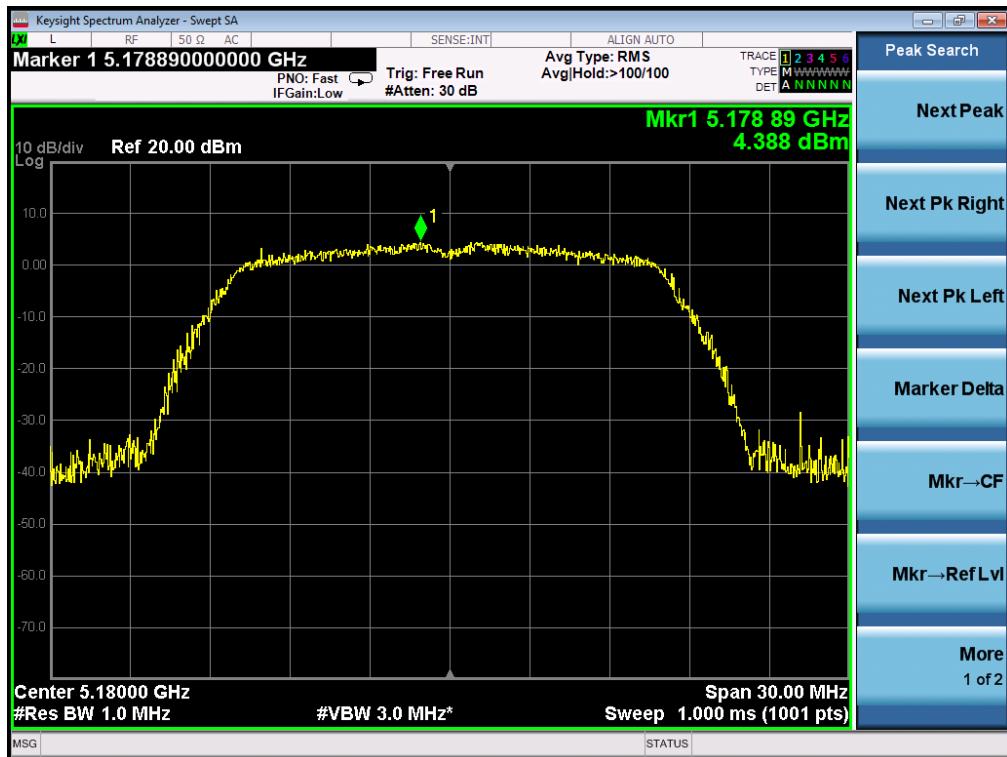
LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION					
Frequency (MHz)	Power density Chain 1 (dBm/MHz)	Power density Chain 2 (dBm/MHz)	Power density Total (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5180	3.557	3.522	6.55	10.01	Pass
5200	3.902	4.209	7.07	10.01	Pass
5240	3.945	4.627	7.31	10.01	Pass
5190	0.828	1.190	4.02	10.01	Pass
5230	1.481	1.776	4.64	10.01	Pass
Frequency (MHz)	Power density Chain 1 (dBm/500kHz)	Power density Chain 2 (dBm/500kHz)	Power density Total (dBm/500kHz)	Applicable Limits (dBm/500kHz)	Pass or Fail
5745	0.204	0.091	3.16	16.01	Pass
5785	0.211	0.993	3.63	16.01	Pass
5825	0.142	-0.091	3.04	16.01	Pass
5755	-2.553	-3.023	0.23	16.01	Pass
5795	-3.158	-3.143	-0.14	16.01	Pass

## 802.11a20 TEST RESULT

### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz AT CHAIN 1



### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz AT CHAIN 1



TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz AT CHAIN 1



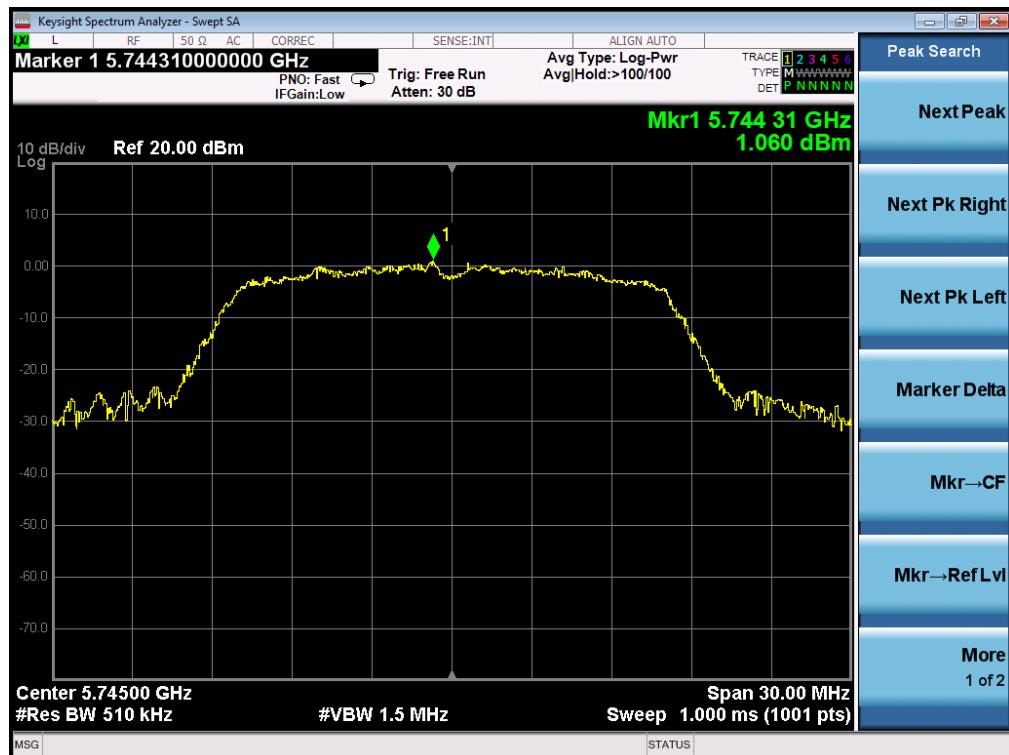
TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz AT CHAIN 1



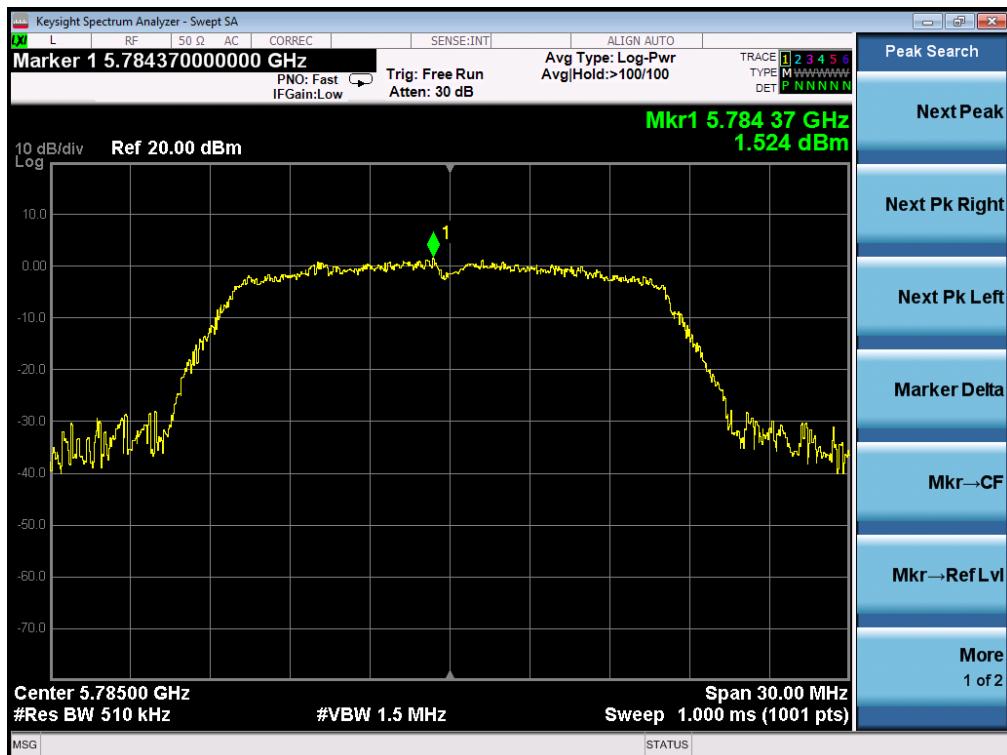
TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz AT CHAIN 2



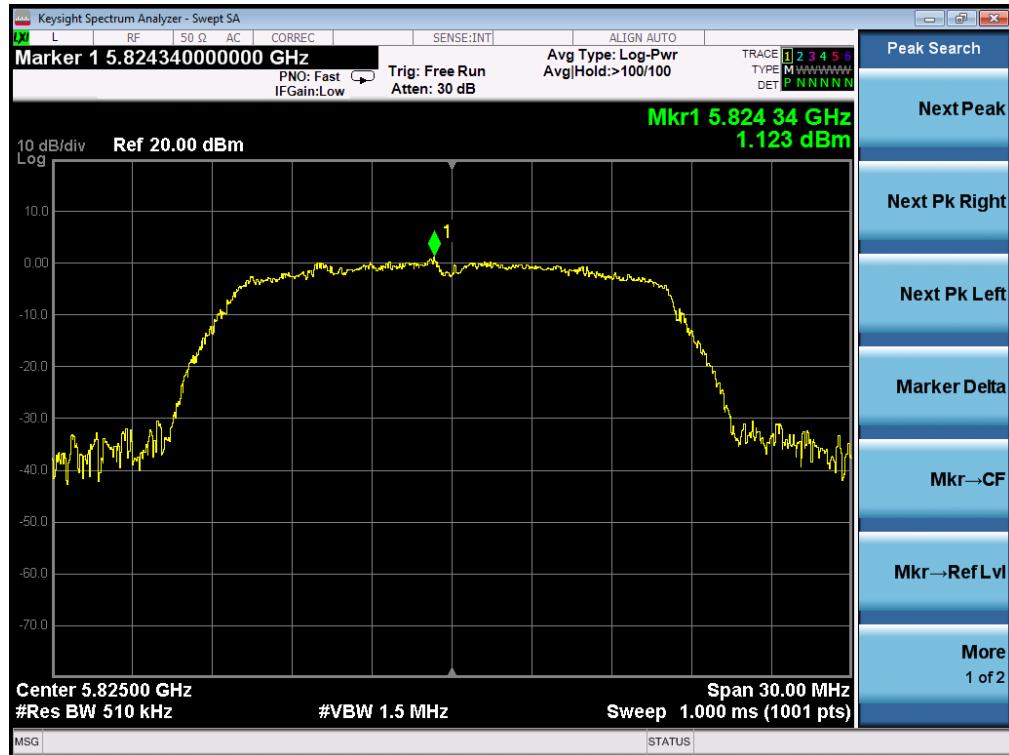
TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz AT CHAIN 1



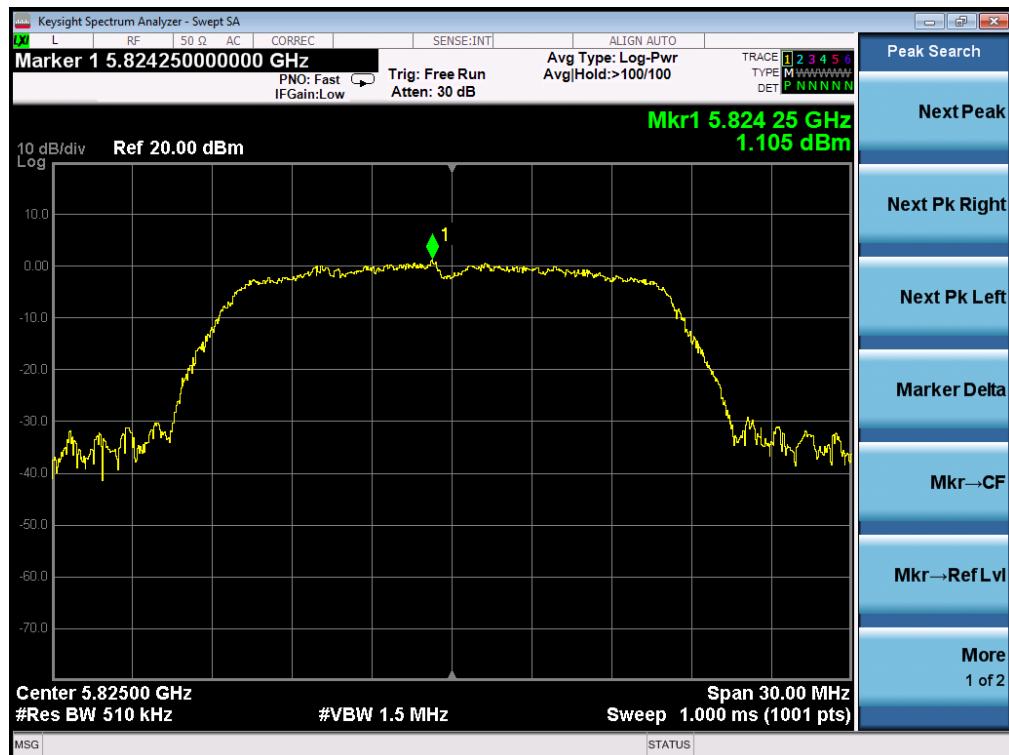
TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz AT CHAIN 1

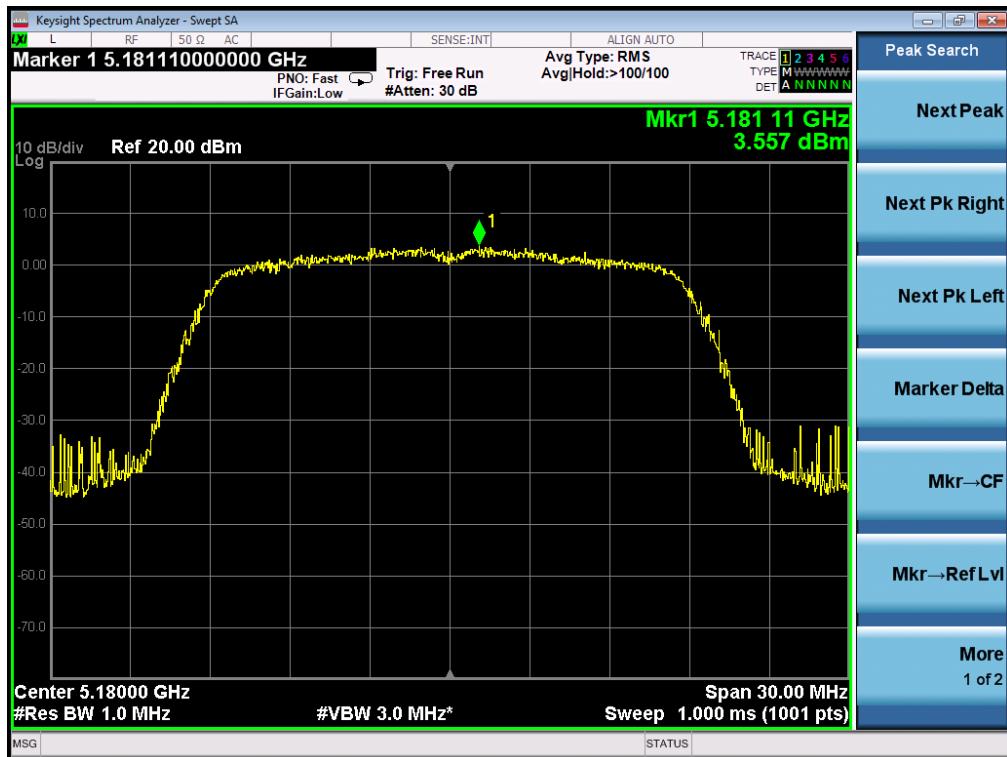


TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz AT CHAIN 2

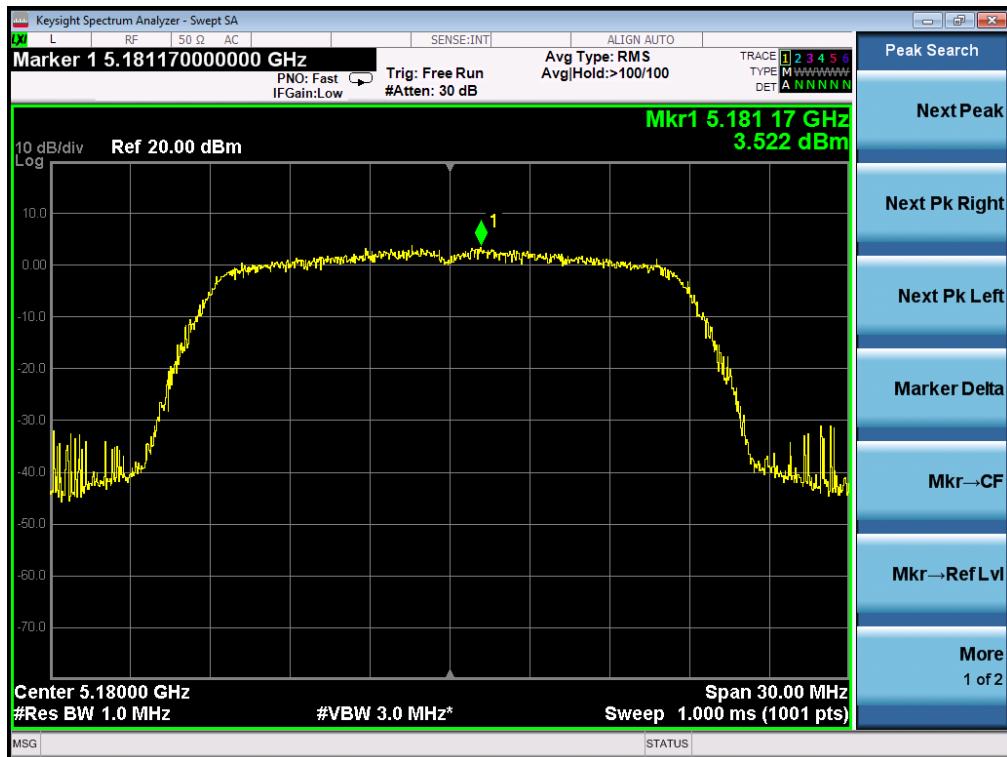


## 802.11n20 TEST RESULT

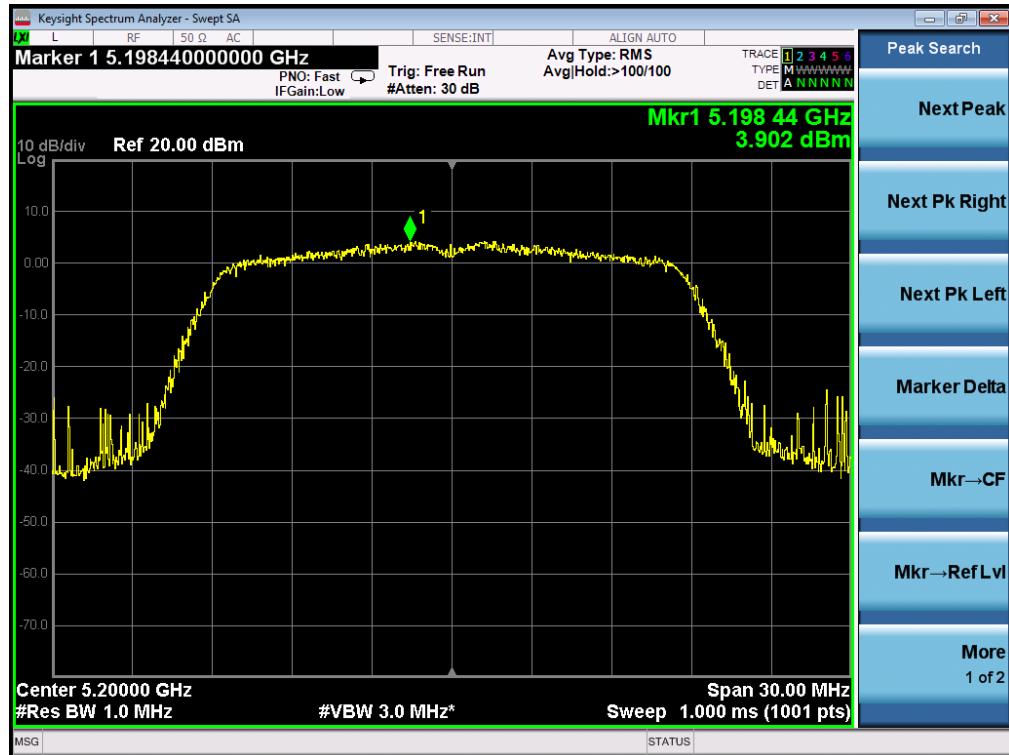
### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz AT CHAIN 1



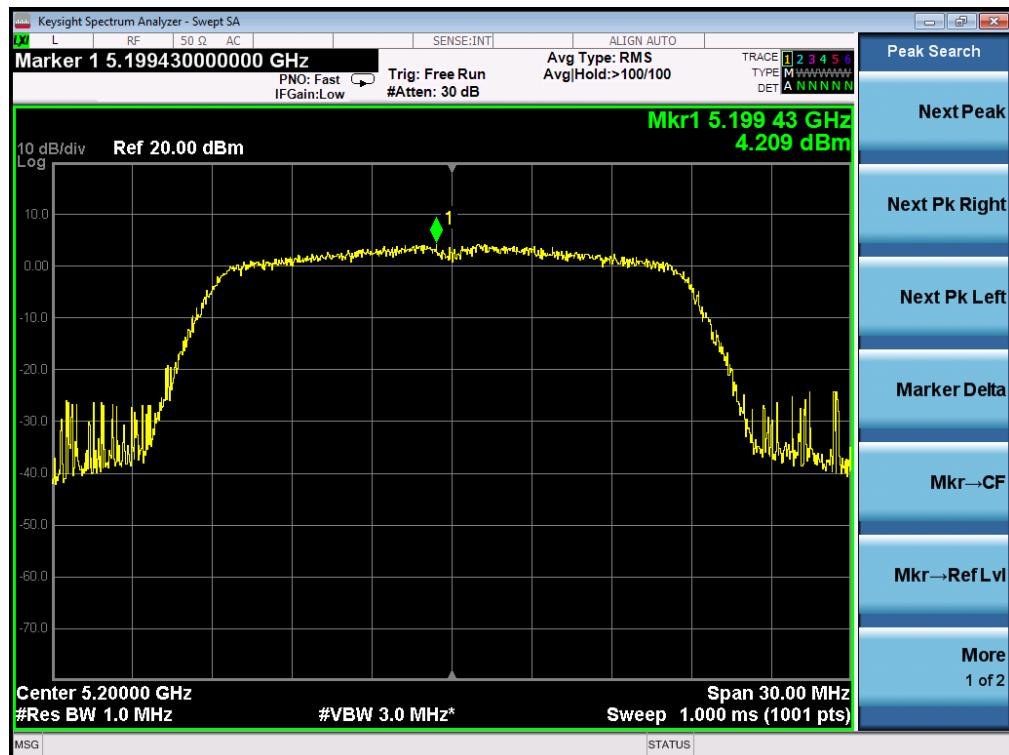
### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz AT CHAIN 1



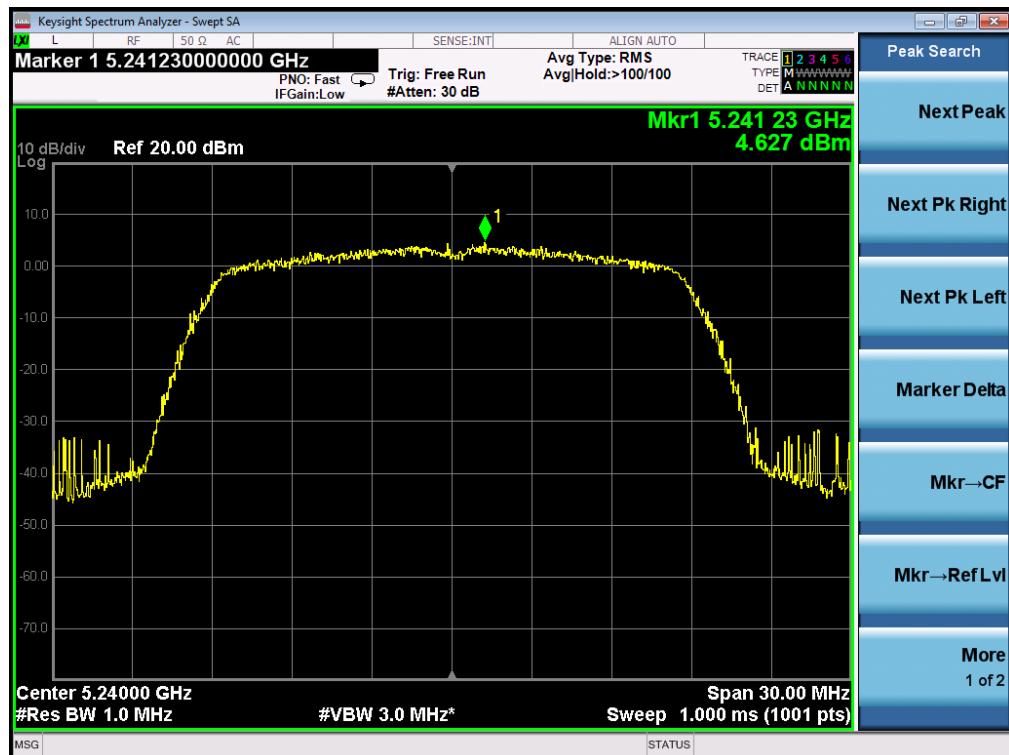
TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz AT CHAIN 2



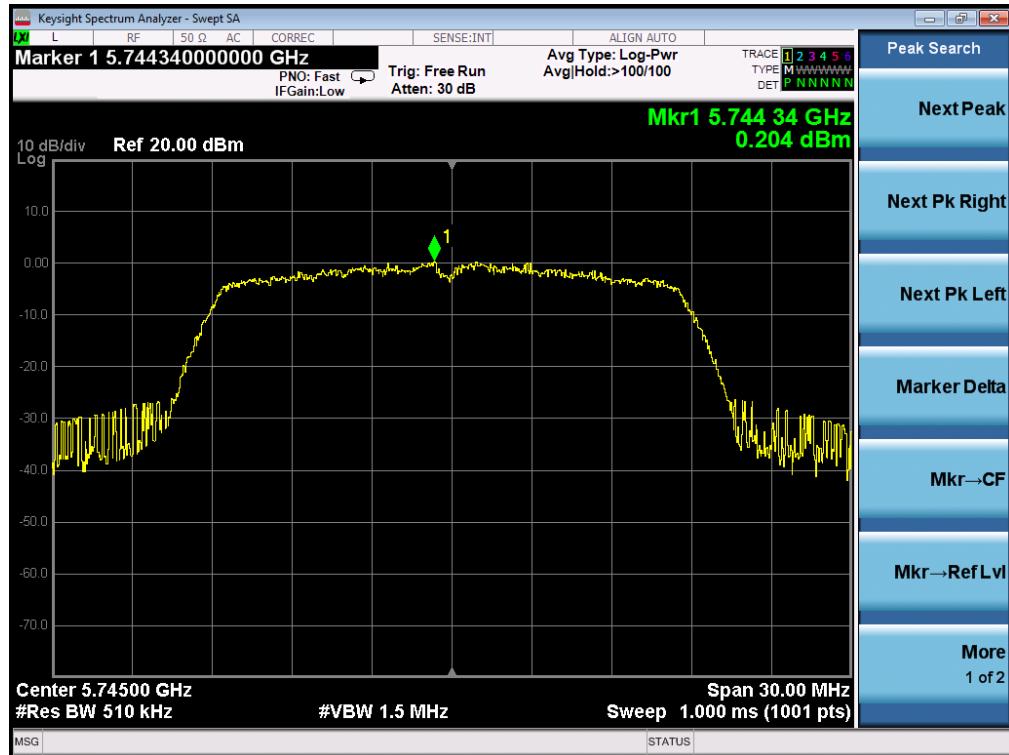
TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz AT CHAIN 1



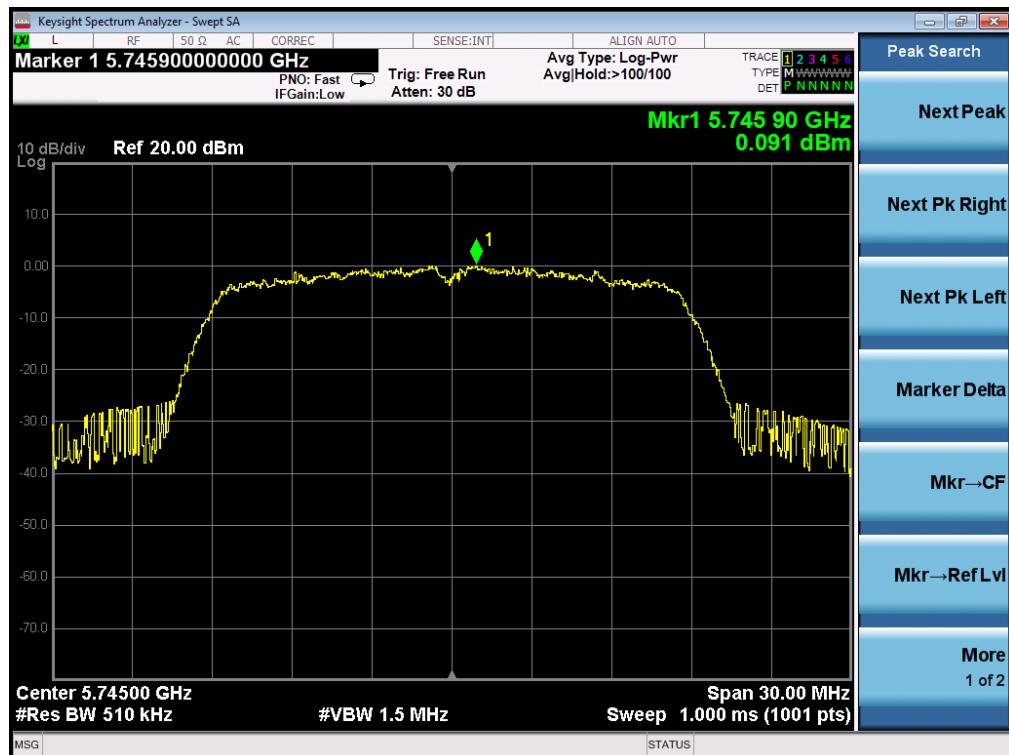
TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz AT CHAIN 2



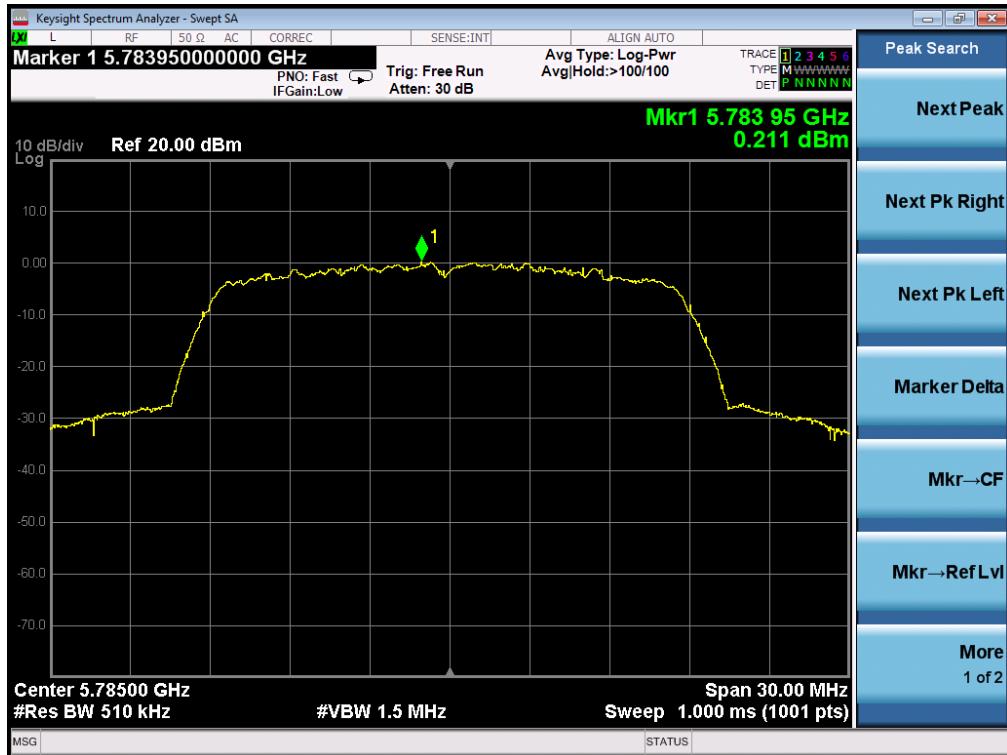
TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz AT CHAIN 1



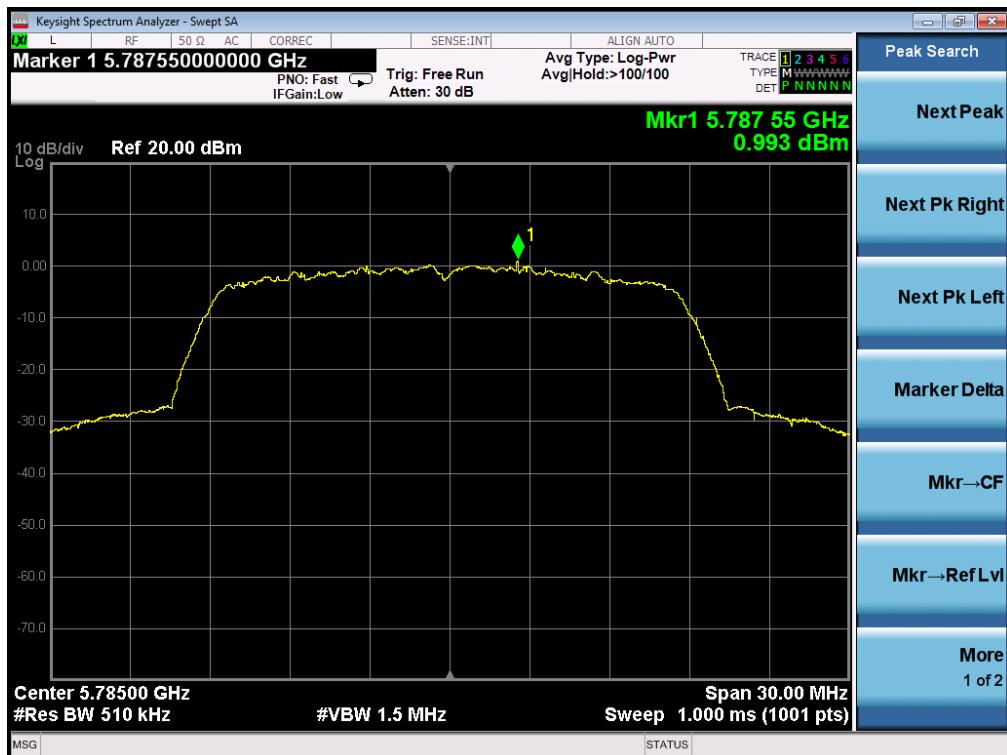
TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz AT CHAIN 2



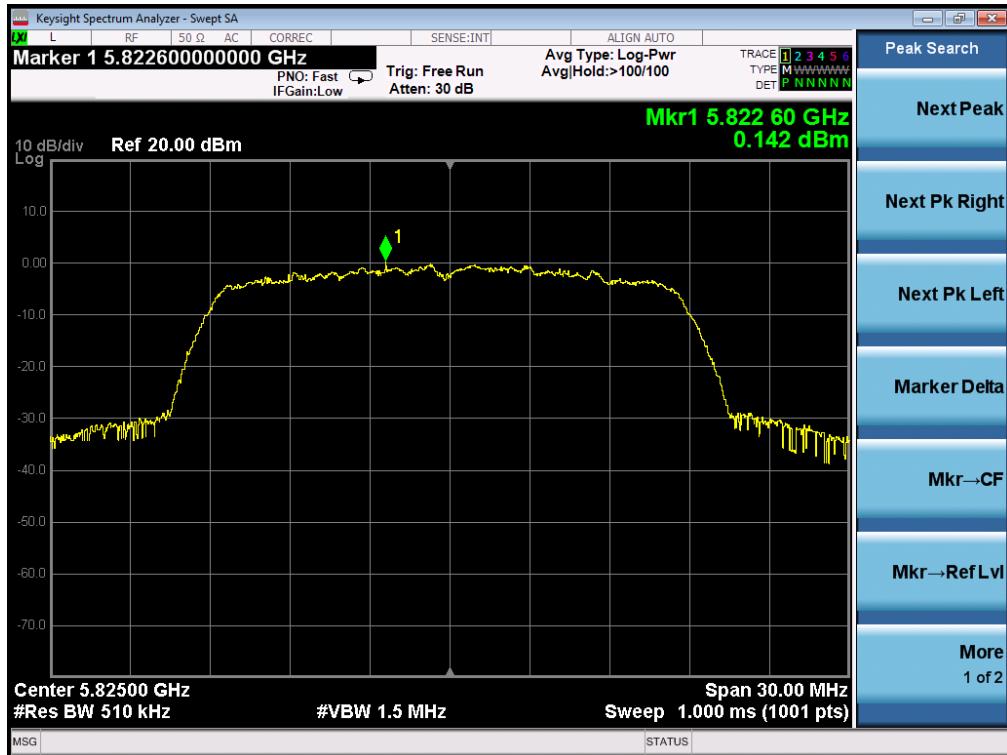
TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz AT CHAIN 1



TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz AT CHAIN 1



TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz AT CHAIN 2



## 802.11n40 TEST RESULT

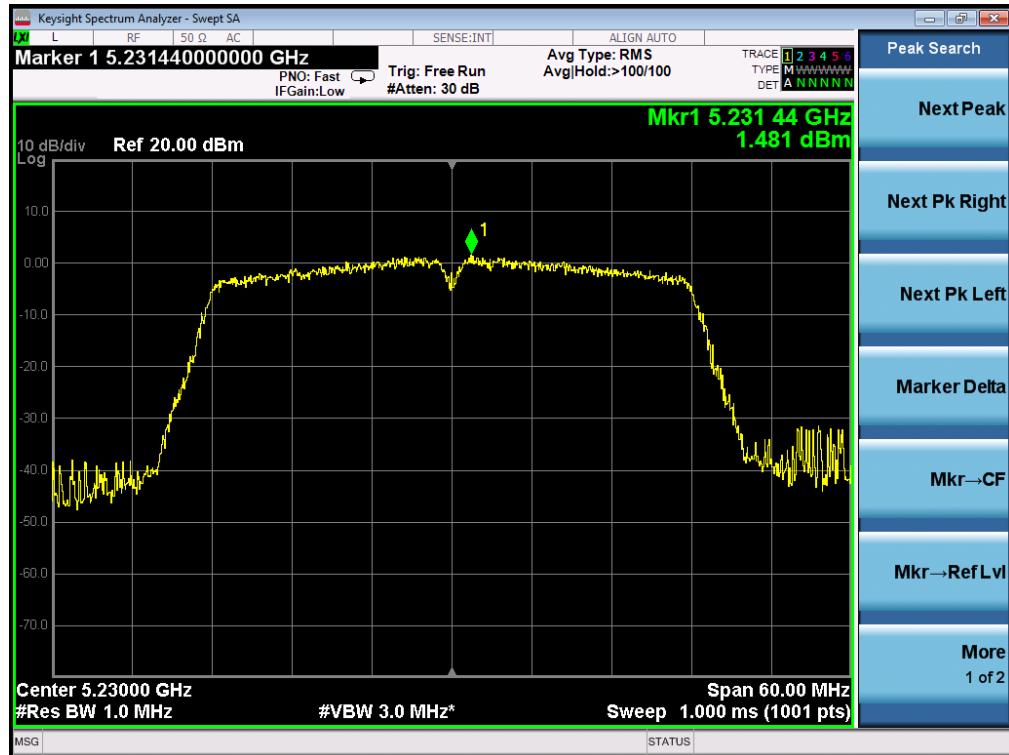
### TEST PLOT OF SPECTRAL DENSITY FOR 5190MHz AT CHAIN 1



### TEST PLOT OF SPECTRAL DENSITY FOR 5190MHz AT CHAIN 2



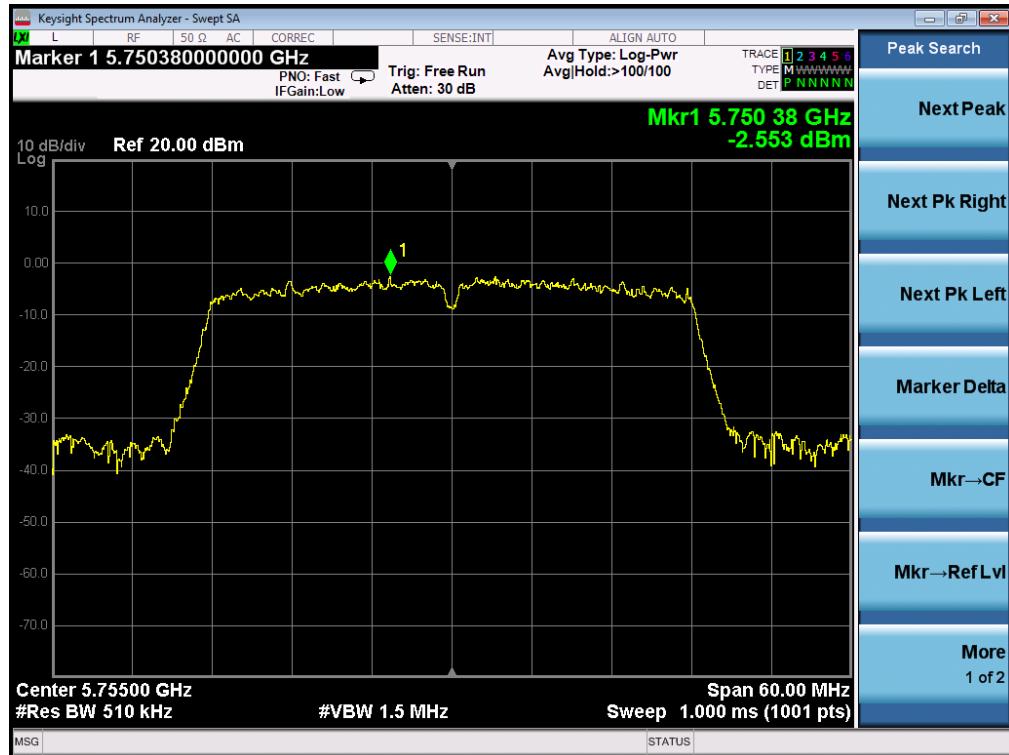
TEST PLOT OF SPECTRAL DENSITY FOR 5230MHz AT CHAIN 1



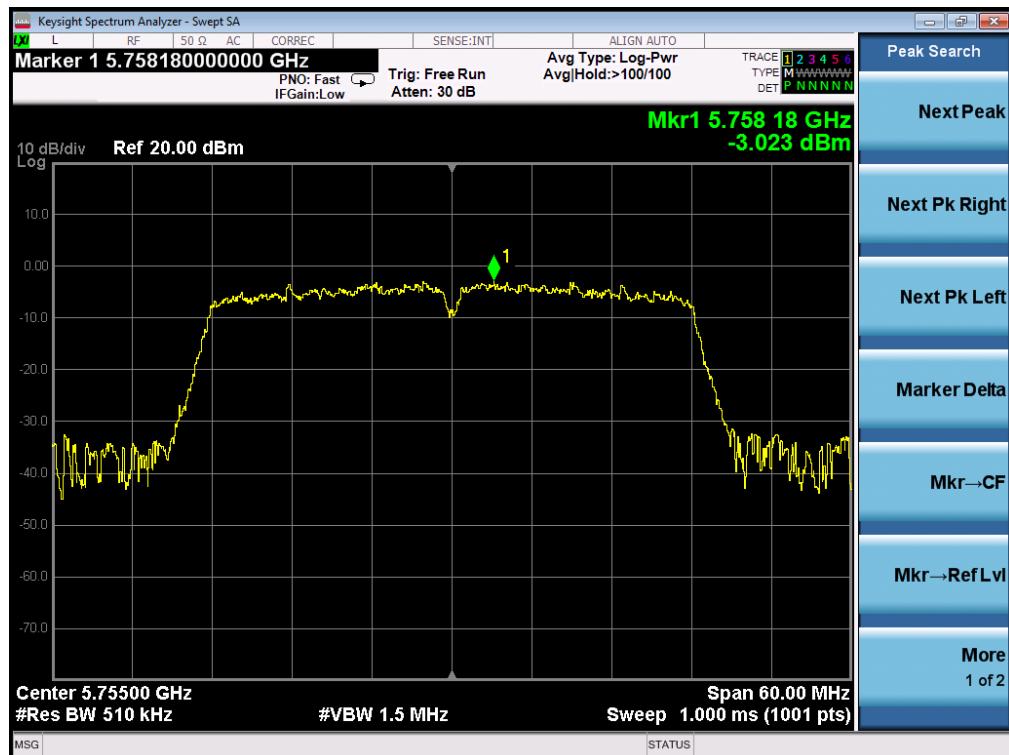
TEST PLOT OF SPECTRAL DENSITY FOR 5230MHz AT CHAIN 2



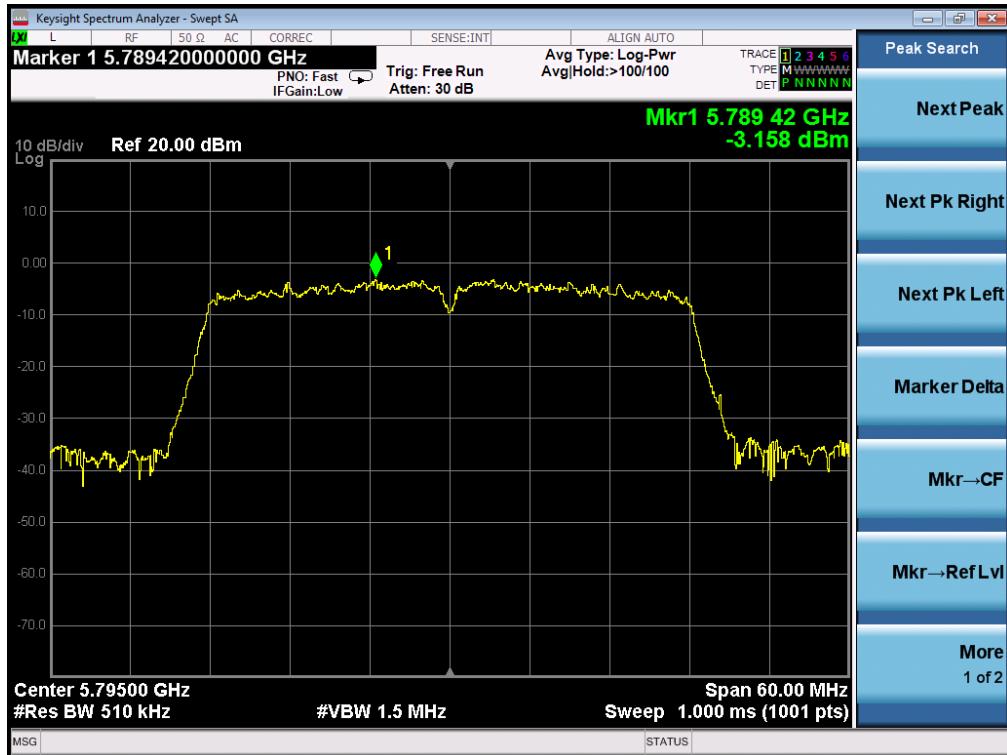
TEST PLOT OF SPECTRAL DENSITY FOR 5755MHz AT CHAIN 1



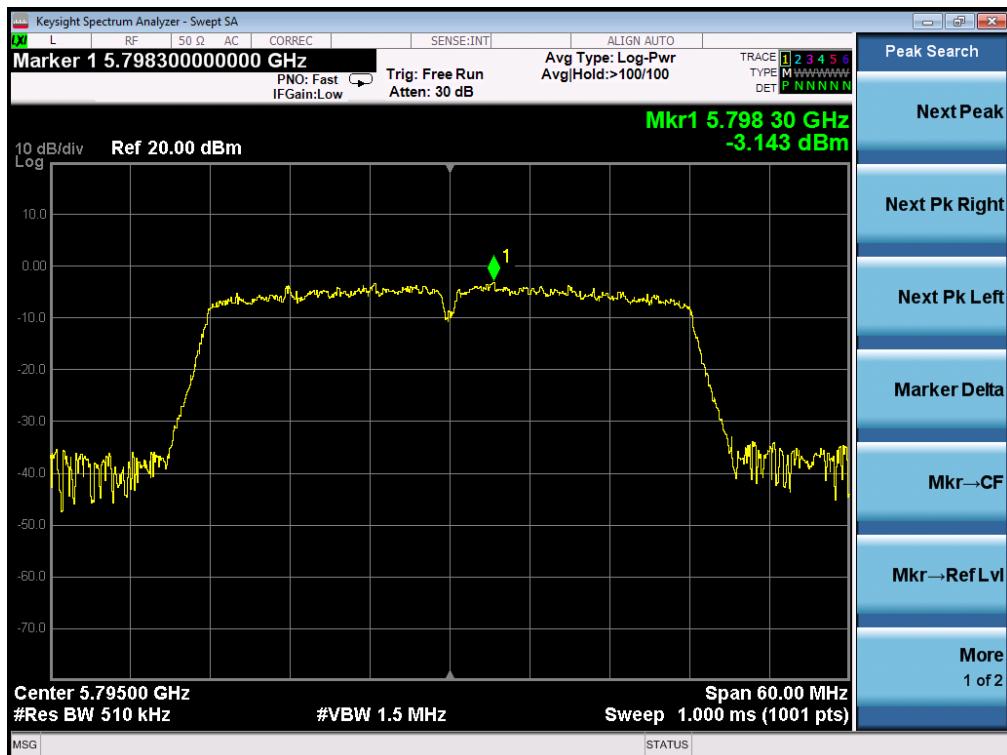
TEST PLOT OF SPECTRAL DENSITY FOR 5755MHz AT CHAIN 2



TEST PLOT OF SPECTRAL DENSITY FOR 5795MHz AT CHAIN 1



TEST PLOT OF SPECTRAL DENSITY FOR 5795MHz AT CHAIN 2



## 11. CONDUCTED SPURIOUS EMISSION

### 11.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

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

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

The same as described in section 8.2.

### 11.3. MEASUREMENT EQUIPMENT USED

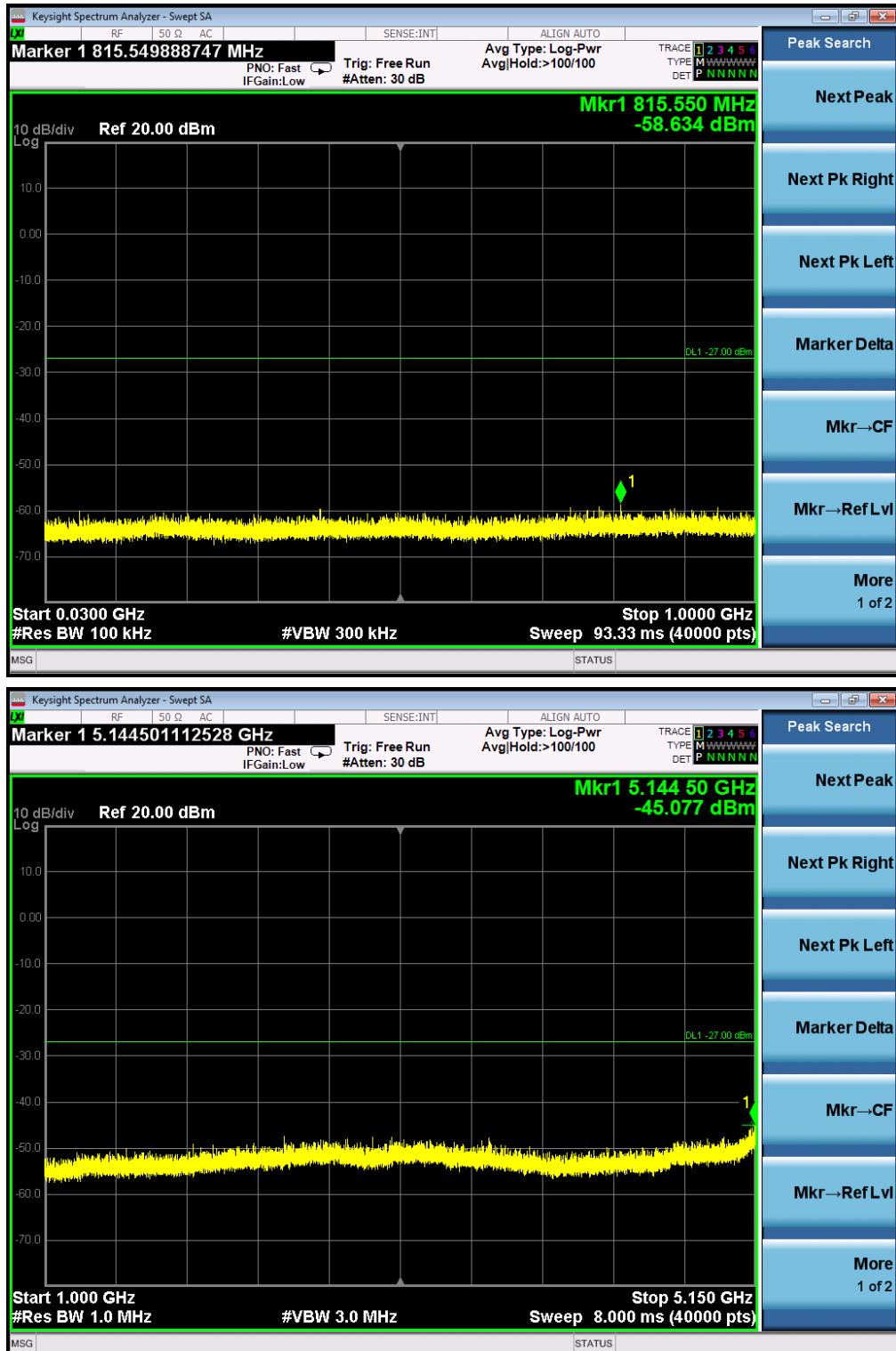
The same as described in section 6.

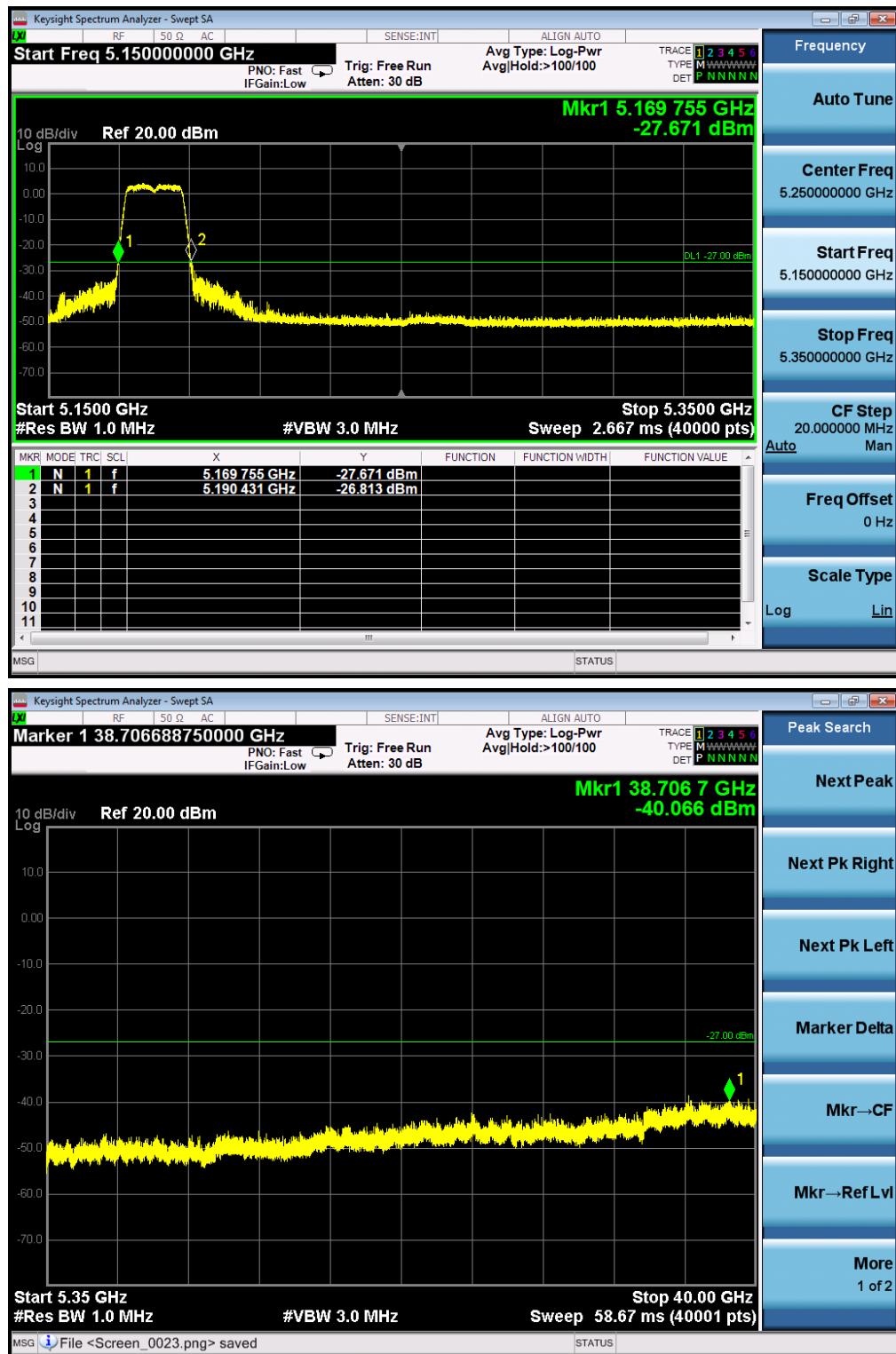
### 11.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test channel	Criteria
-27dBm/MHz	5150MHz-5250MHz	PASS
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	5725MHz-5850MHz	PASS

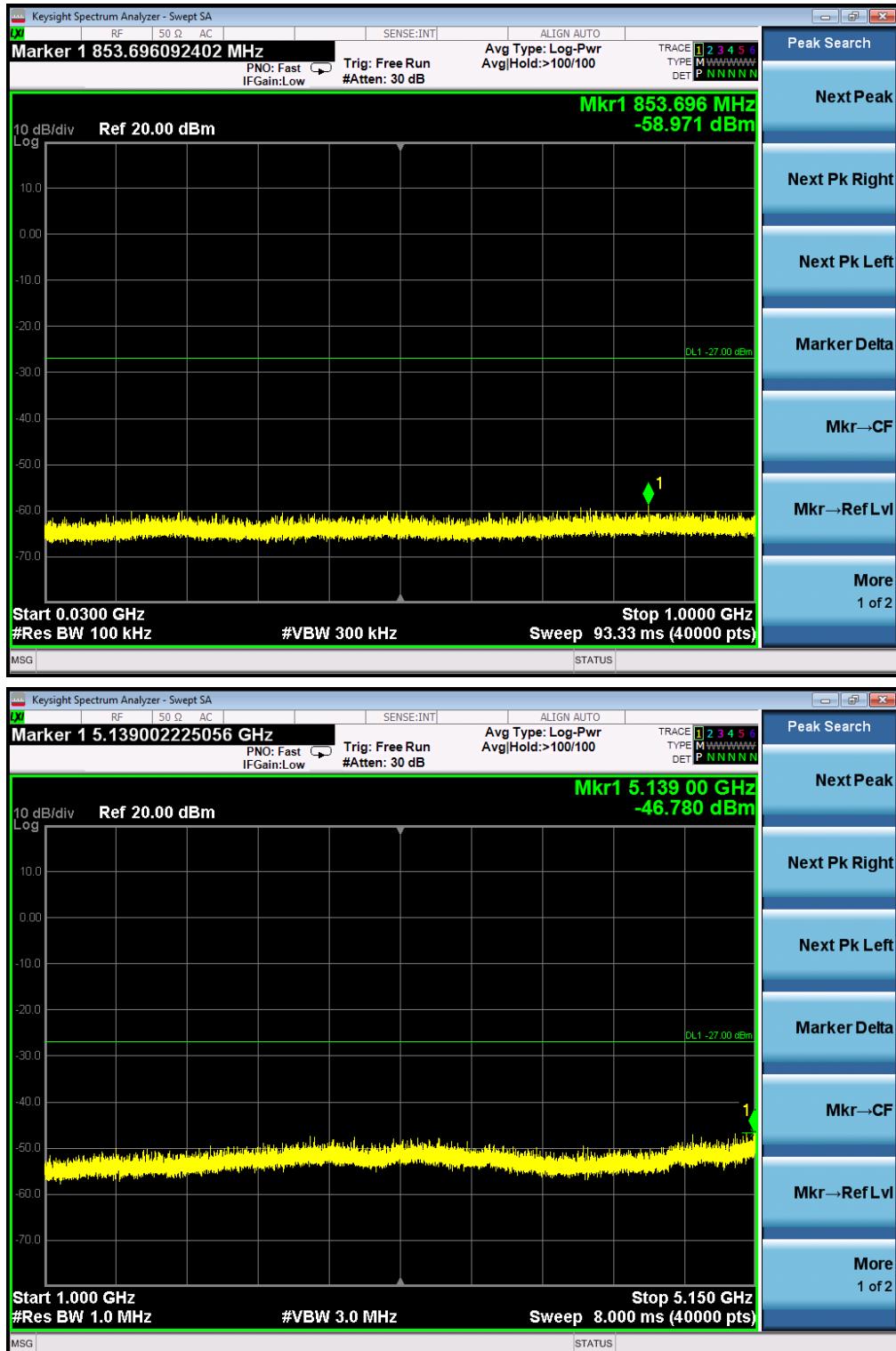
## FOR 802.11A20 MODULATION

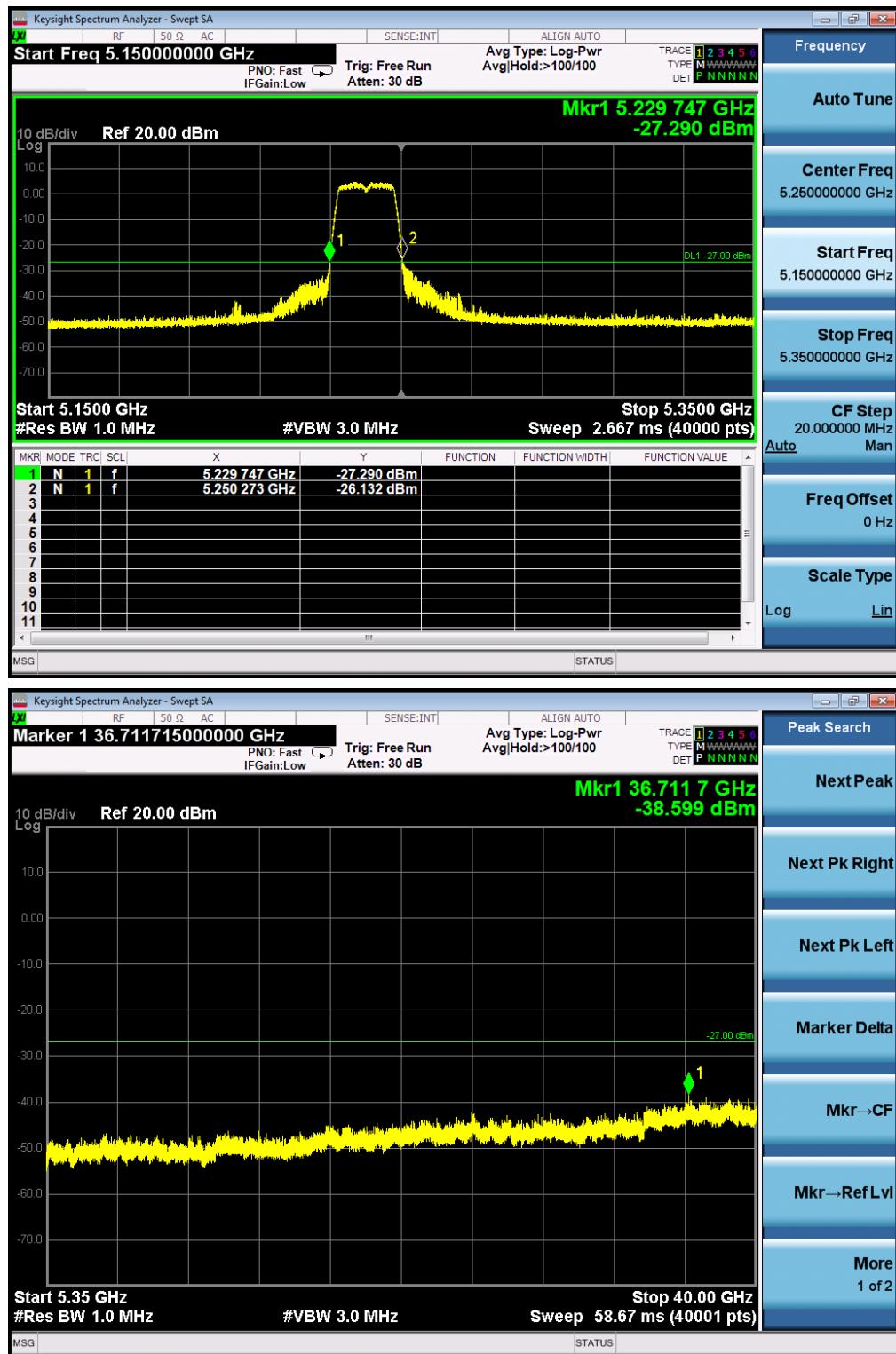
### TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5180MHz



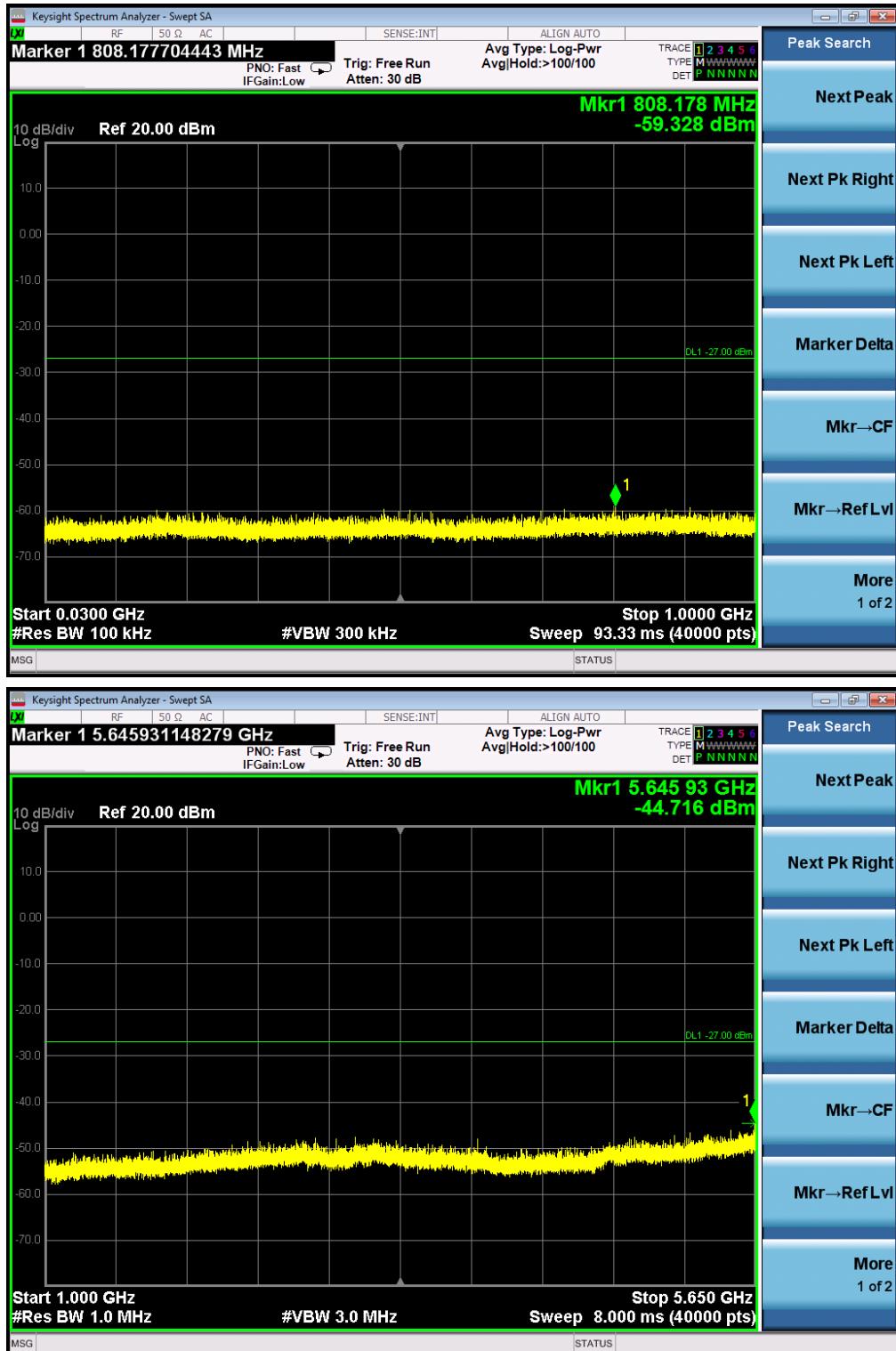


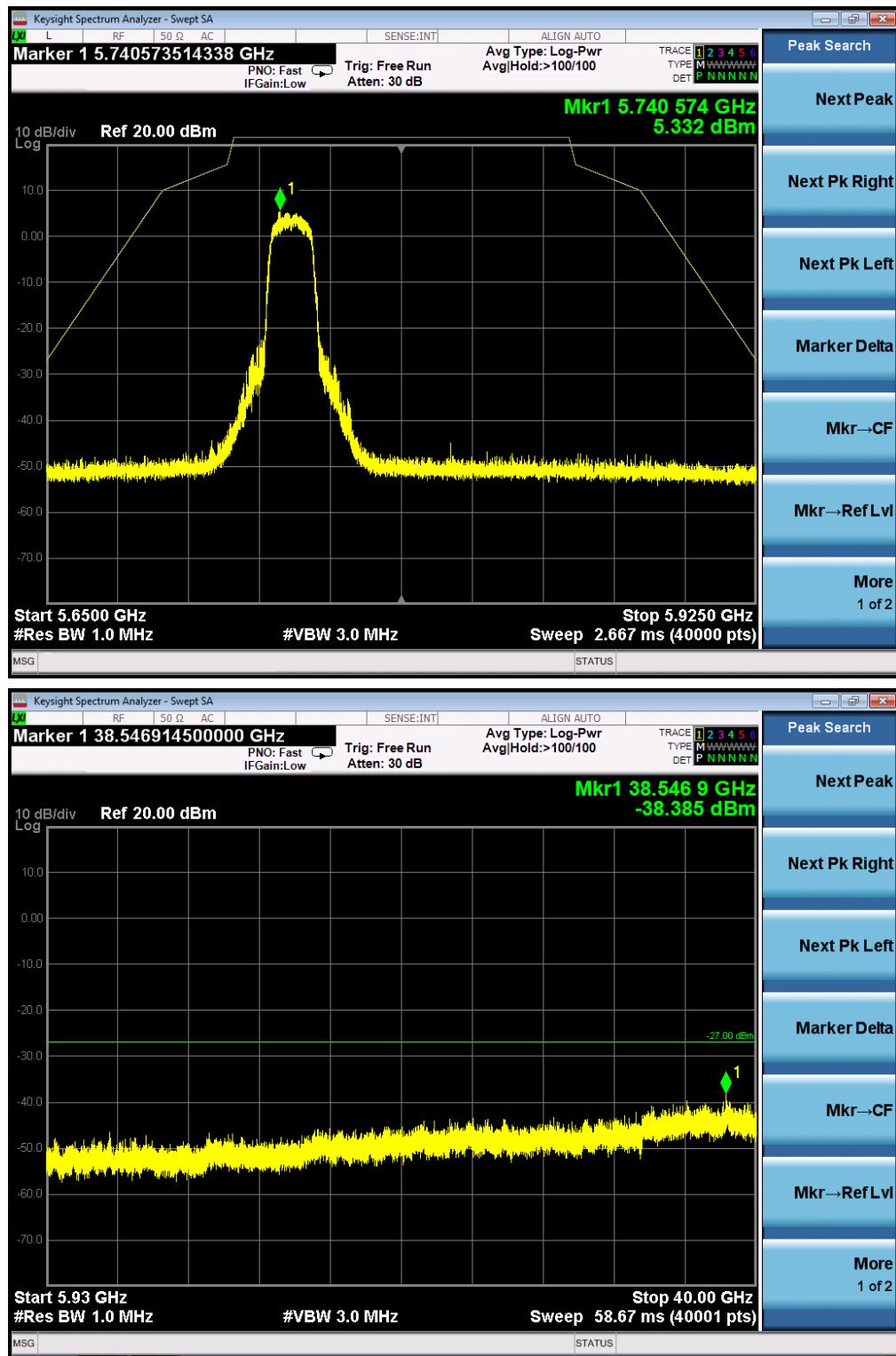
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5240MHz



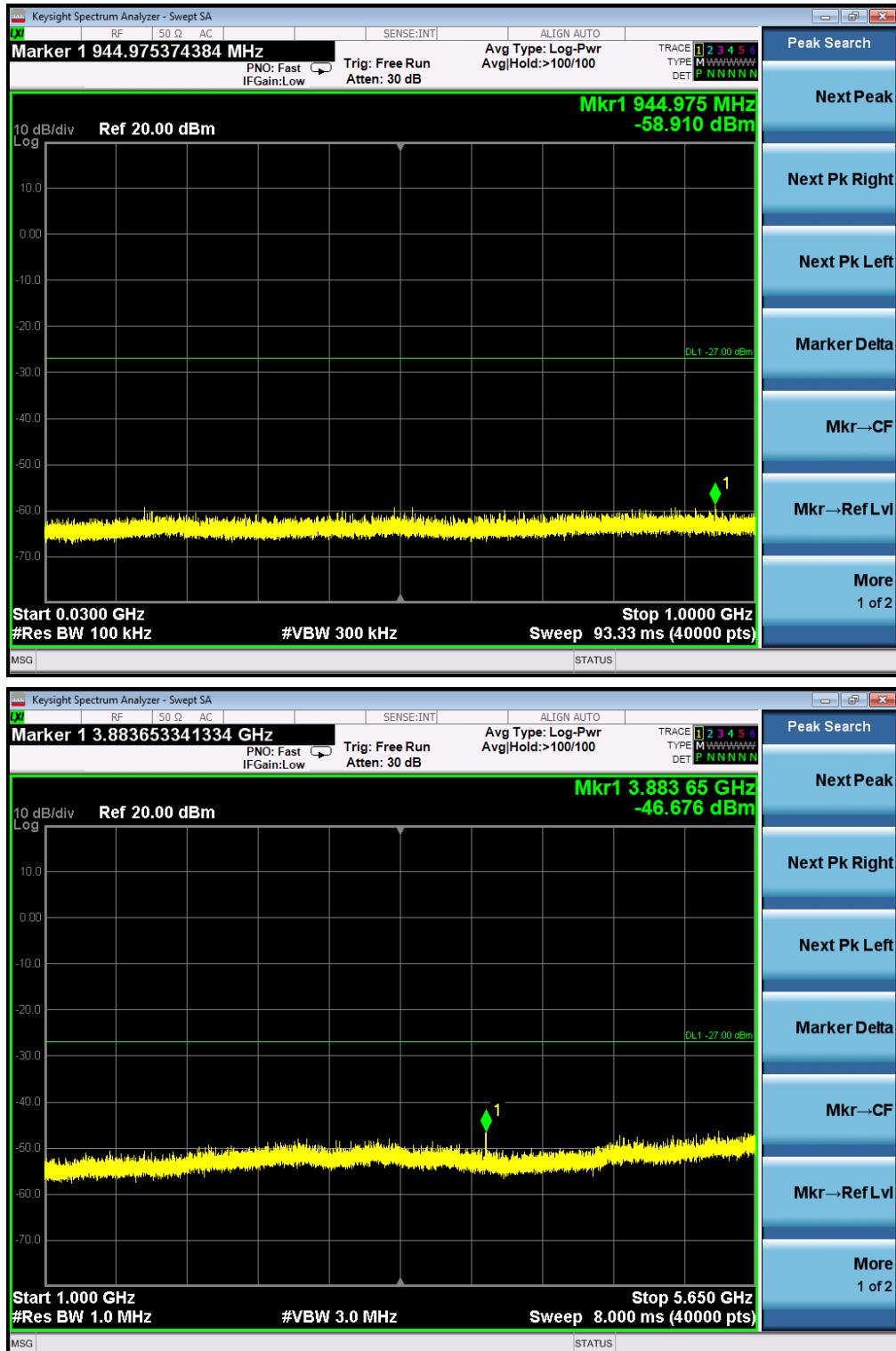


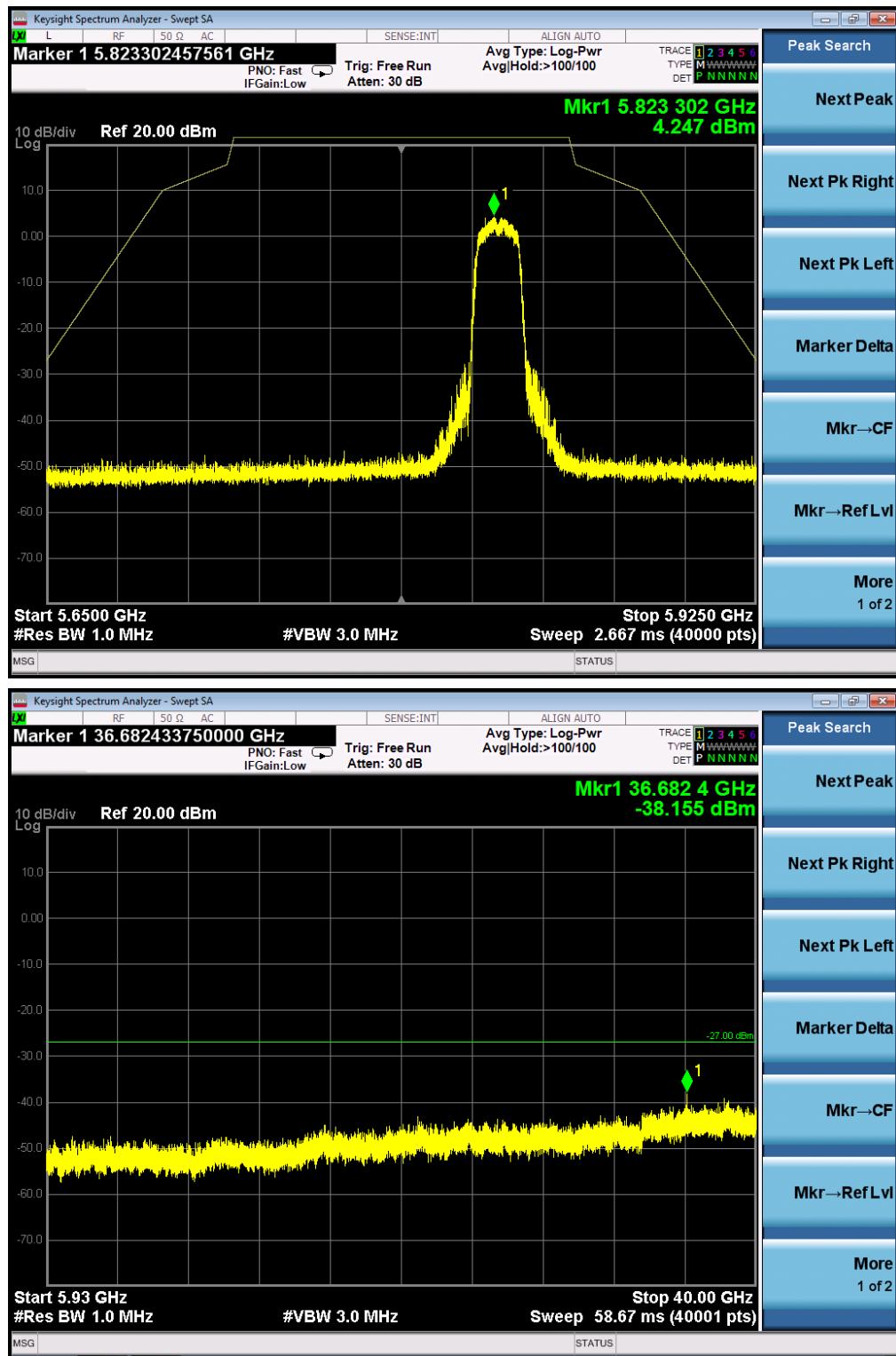
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5745MHz





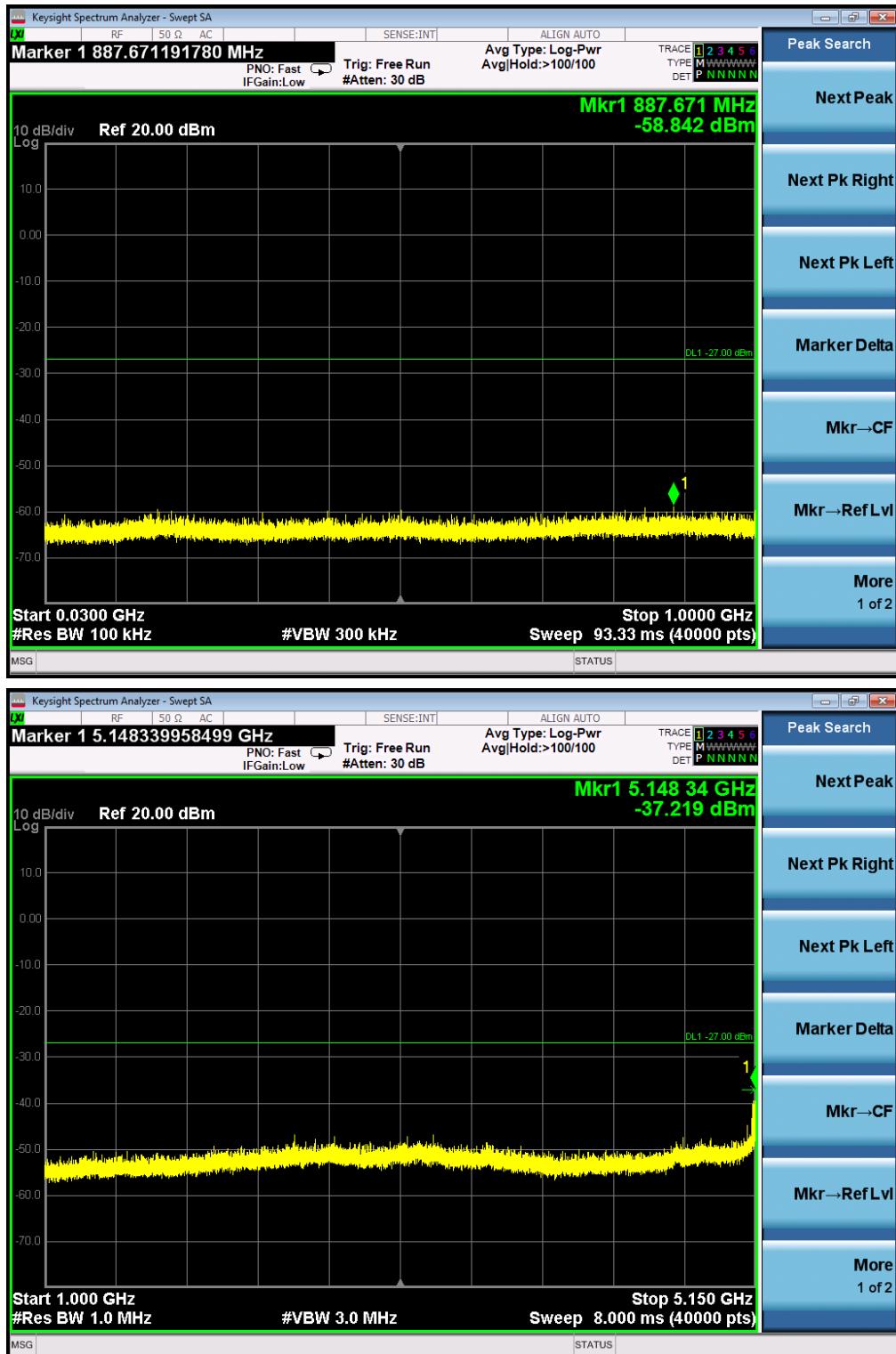
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5825MHz

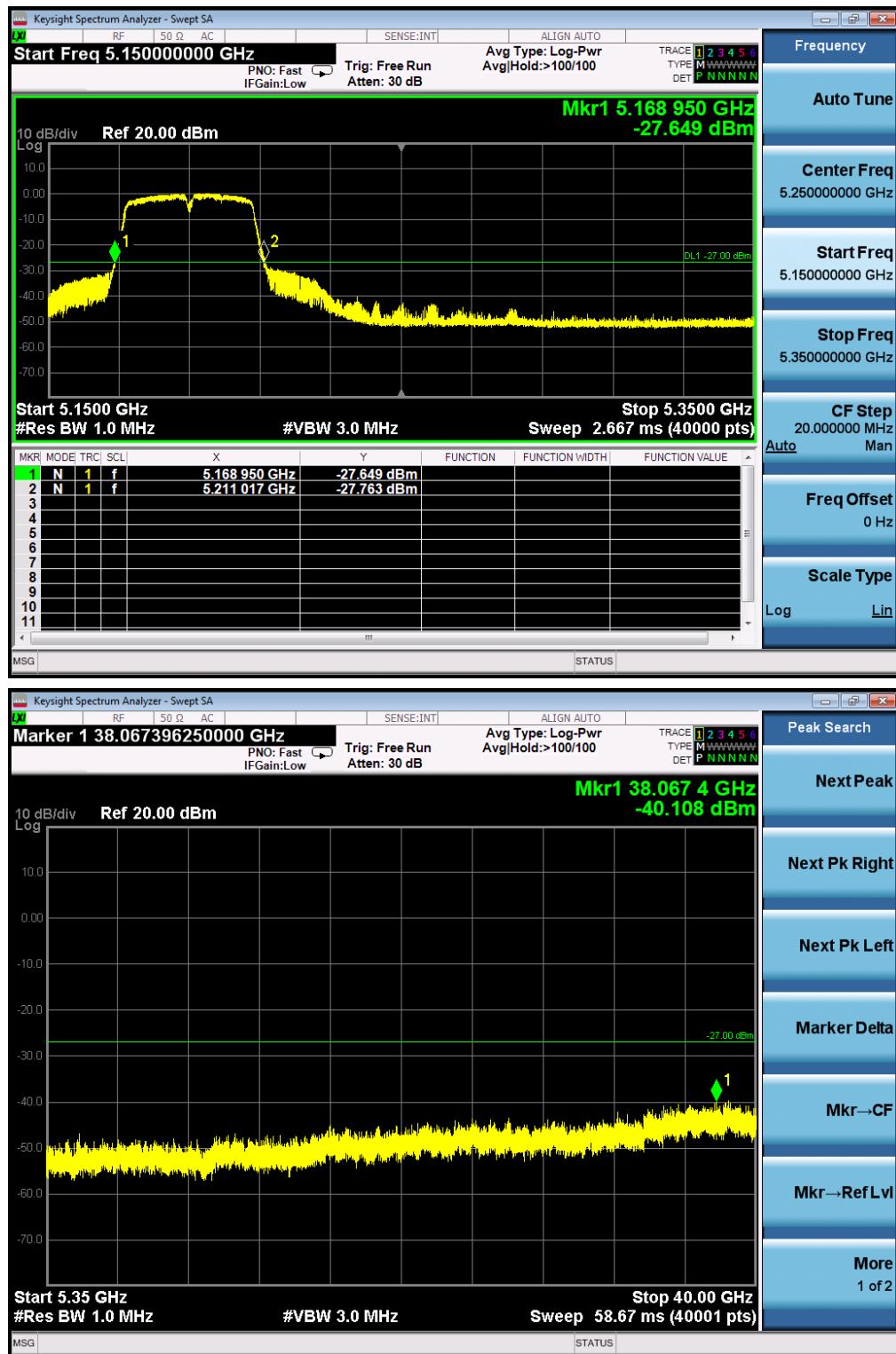




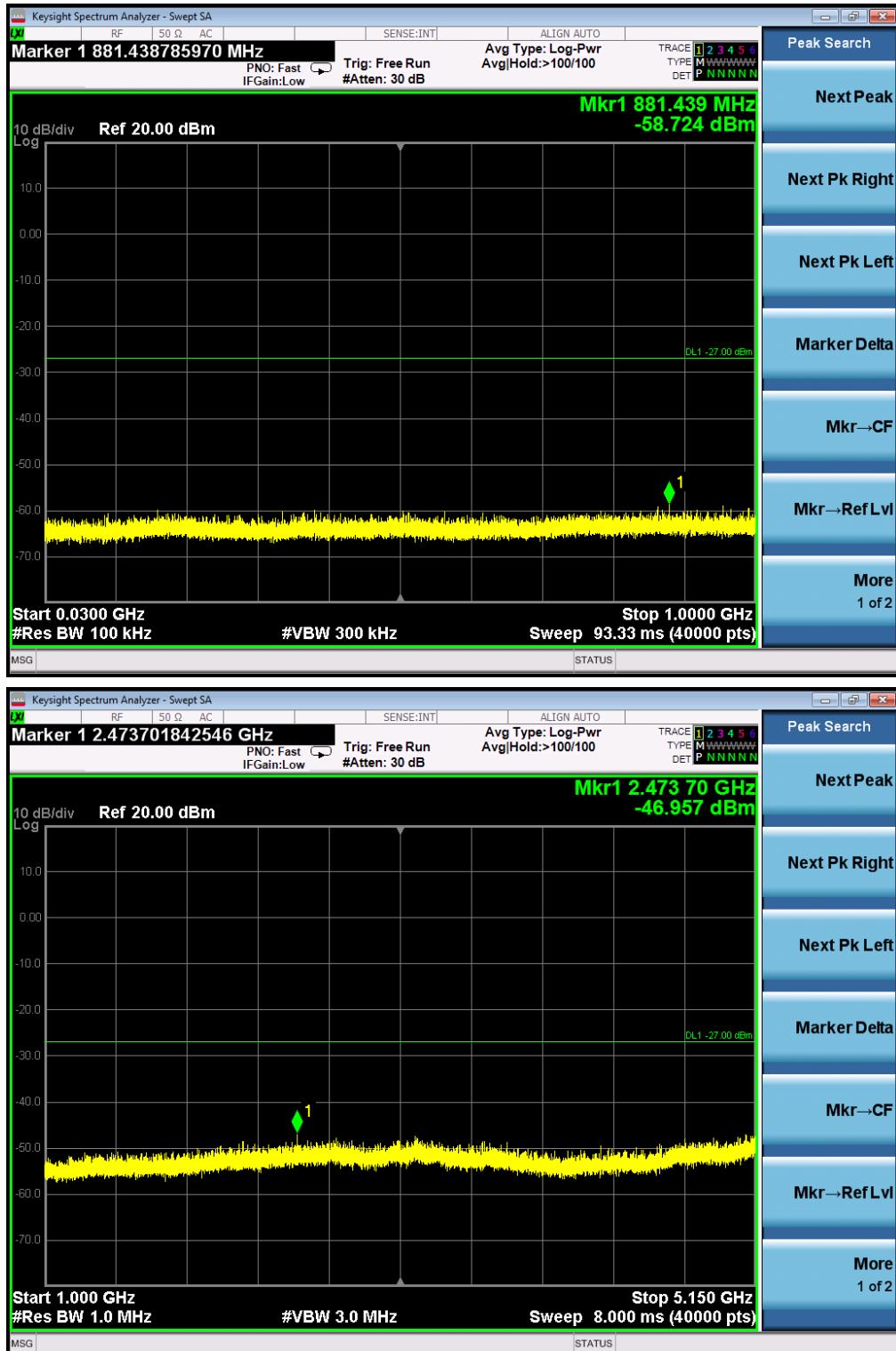
## FOR 802.11N40 MODULATION

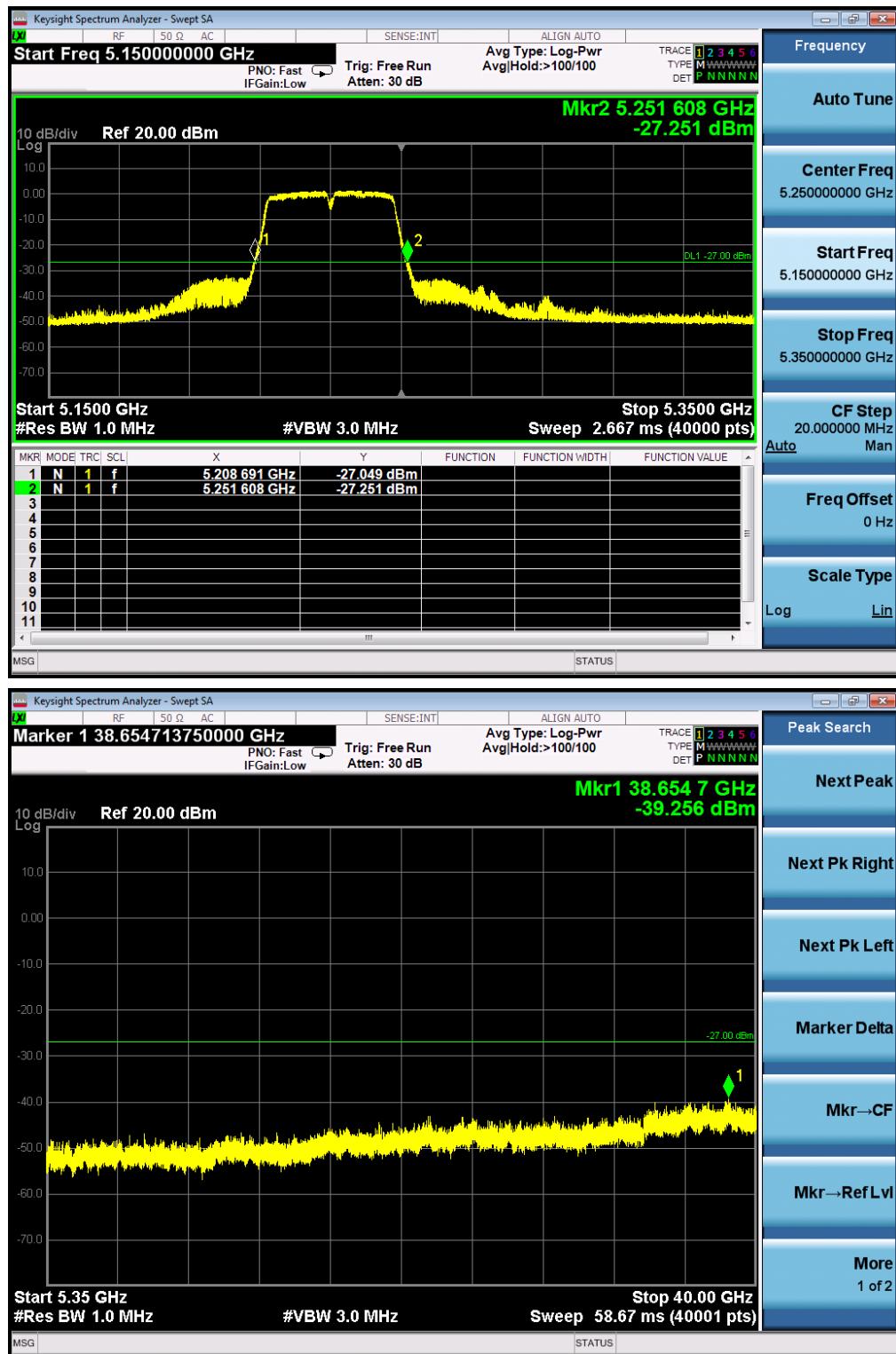
### TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5190MHz



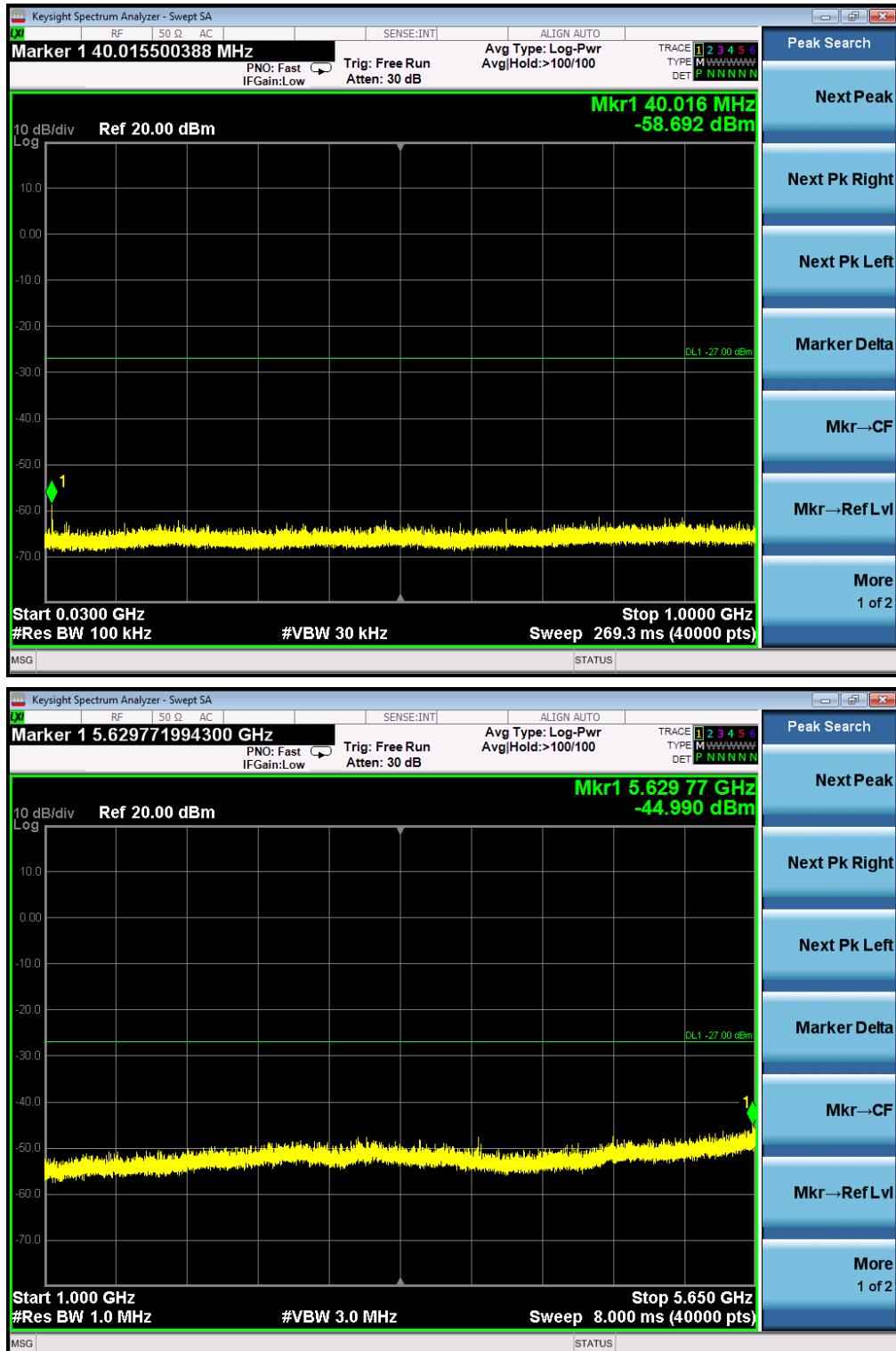


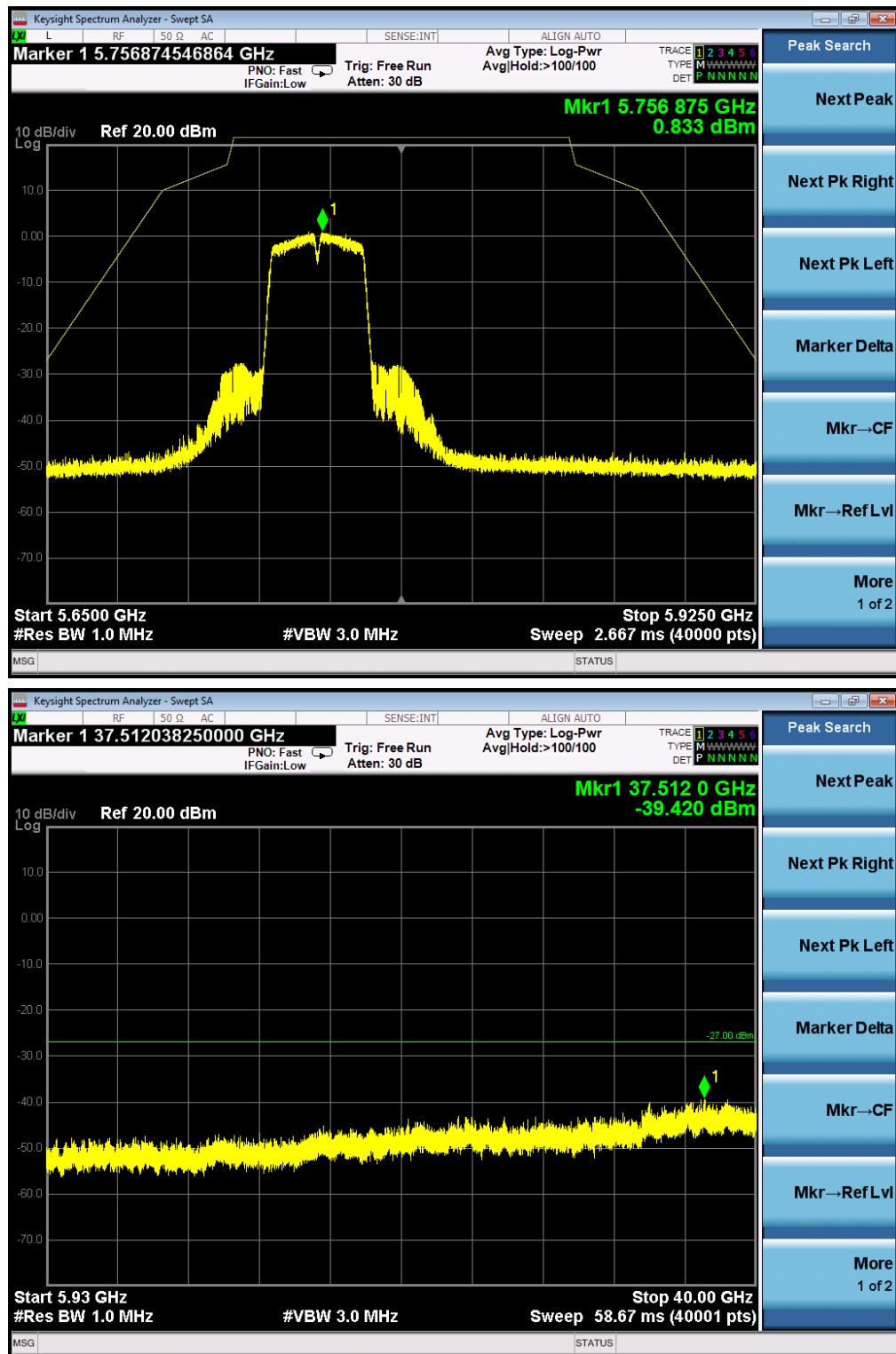
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5230MHz



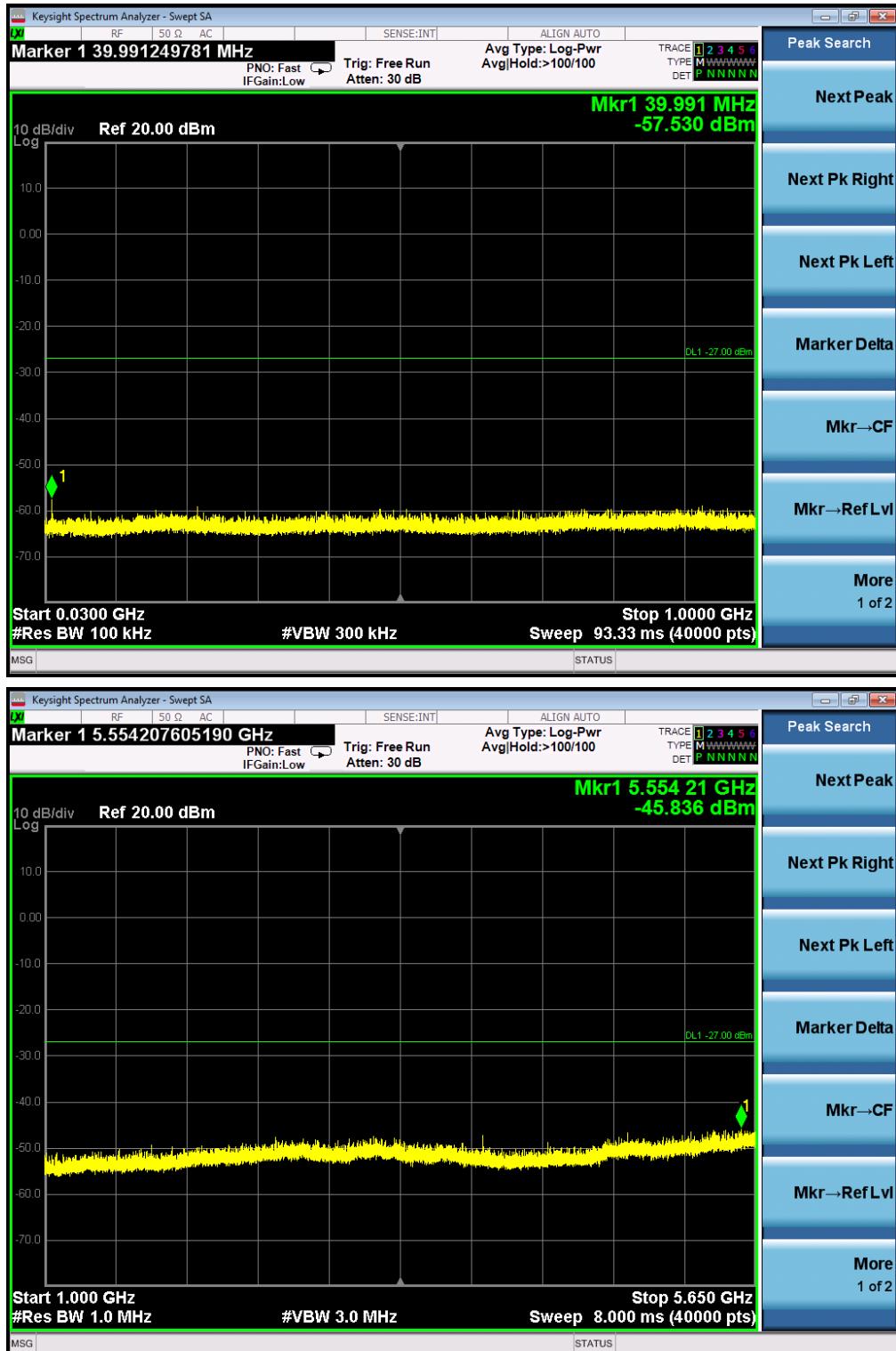


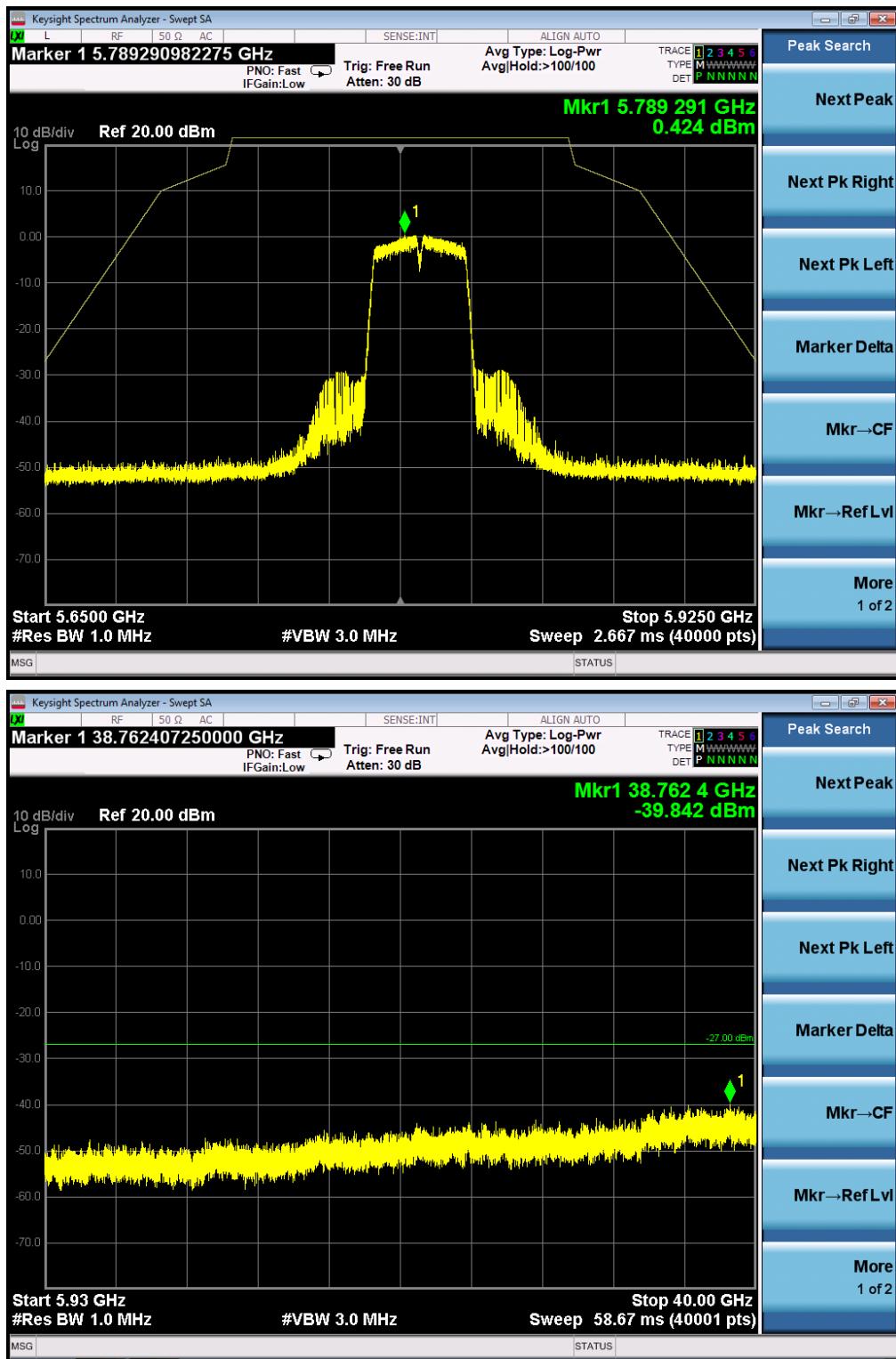
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5755MHz





TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5795M





Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report.

Two transmit chains had been tested, the chain 1 was the worst case and record in the test report.

The spurious emission at chain 1 is more than 3dB below the limits, so the MIMO results for the spurious emissions are comply with the requirement.

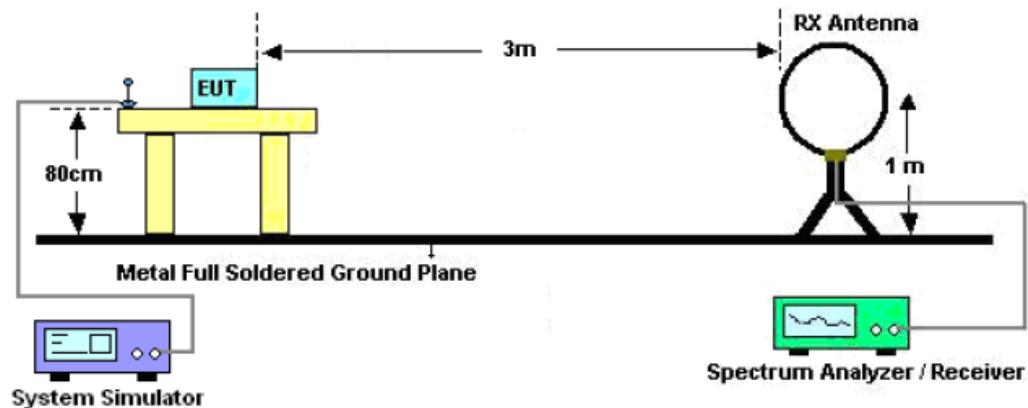
## 12. RADIATED EMISSION

### 12.1. MEASUREMENT PROCEDURE

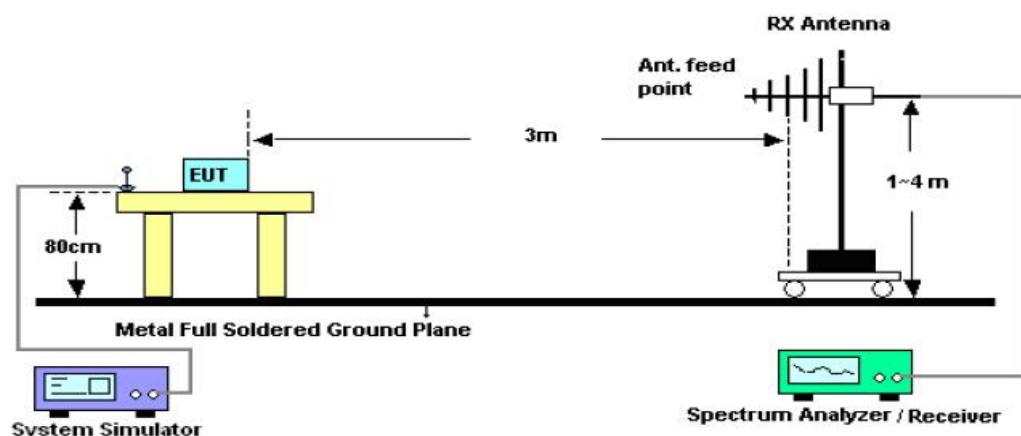
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3M VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

## 12.2. TEST SETUP

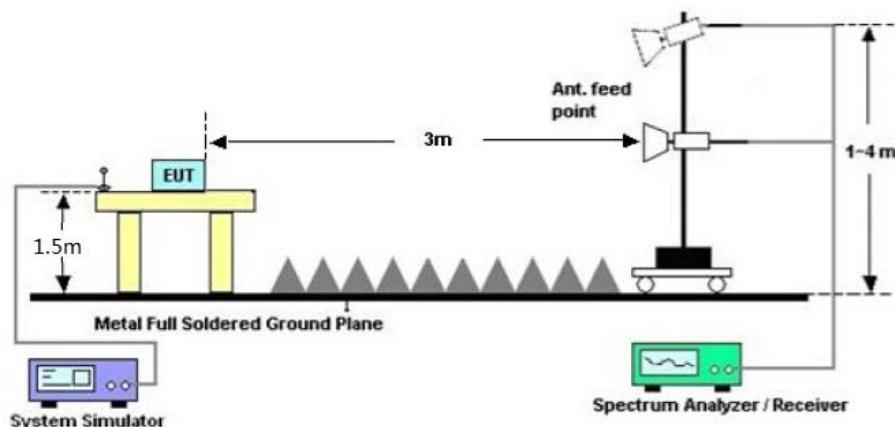
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



### 12.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,  
the test records reported below are the worst result compared to other modes.

### 12.4. TEST RESULT

#### RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

### RADIATED EMISSION BELOW 1GHZ

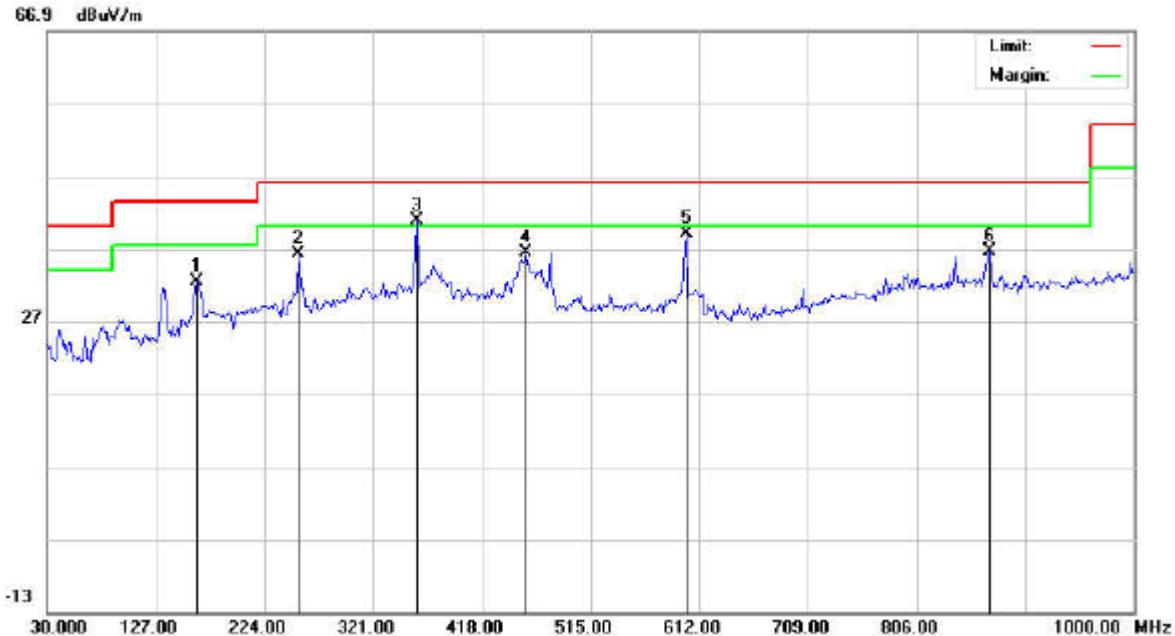
<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5180MHz	<b>Antenna</b>	Horizontal



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dB <sub>B</sub> uV	dB <sub>B</sub> uV/m	dB <sub>B</sub> uV/m	dB <sub>B</sub> uV/m	dB		cm	degree	
1		133.4667	13.29	18.82	32.11	43.50	-11.39	peak			
2		254.7167	16.39	18.40	34.79	46.00	-11.21	peak			
3	*	359.8000	19.75	21.57	41.32	46.00	-4.68	peak			
4		479.4333	10.78	24.58	35.36	46.00	-10.64	peak			
5	!	600.6833	13.05	26.96	40.01	46.00	-5.99	peak			
6		839.9500	6.44	30.93	37.37	46.00	-8.63	peak			

**RESULT: PASS**

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5180MHz	<b>Antenna</b>	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB				
1		164.1833	13.62	18.76	32.38	43.50	-11.12	peak			
2		254.7167	17.78	18.40	36.18	46.00	-9.82	peak			
3	*	359.8000	19.29	21.57	40.86	46.00	-5.14	peak			
4		456.8000	12.33	24.12	36.45	46.00	-9.55	peak			
5		600.6833	12.01	26.96	38.97	46.00	-7.03	peak			
6		870.6667	5.20	31.32	36.52	46.00	-9.48	peak			

## RESULT: PASS

**Note:** All test channels had been tested. The 802.11a20 at 5180MHz is the worst case and recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

The "Factor" value can be calculated automatically by software of measurement system.

### RADIATED EMISSION ABOVE 1GHZ

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5180MHz	<b>Antenna</b>	Horizontal/Vertical

#### RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
10360.120	40.74	9.14	49.88	74	-24.12	peak
10360.120	34.69	9.14	43.83	54	-10.17	AVG
15540.180	38.14	10.22	48.36	74	-25.64	peak
15540.180	32.06	10.22	42.28	54	-11.72	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

#### RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
10360.120	39.47	9.14	48.61	74	-25.39	peak
10360.120	33.26	9.14	42.4	54	-11.6	AVG
15540.180	37.11	10.22	47.33	74	-26.67	peak
15540.180	31.74	10.22	41.96	54	-12.04	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5240MHz	<b>Antenna</b>	Horizontal/Vertical

## RADIATED EMISSION ABOVE 1GHZ–Horizontal

## RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Value Type
10480.120	40.03	9.27	49.3	74	-24.7	
10480.120	35.98	9.27	45.25	54	-8.75	AVG
15720.180	38.12	10.38	48.5	74	-25.5	peak
15720.180	33.54	10.38	43.92	54	-10.08	AVG

**Remark:**

Factor = Antenna Factor + Cable Loss - Pre-amplifier

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5745MHz	<b>Antenna</b>	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
11490.120	39.47	9.42	48.89	74	-25.11	peak
11490.120	33.01	9.42	42.43	54	-11.57	AVG
17235.180	36.69	10.51	47.2	74	-26.8	peak
17235.180	31.47	10.51	41.98	54	-12.02	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
11490.120	39.68	9.42	49.1	74	-24.9	peak
11490.120	34.12	9.42	43.54	54	-10.46	AVG
17235.180	35.85	10.51	46.36	74	-27.64	peak
17235.180	31.21	10.51	41.72	54	-12.28	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5825MHz	<b>Antenna</b>	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
11650.120	40.14	9.62	49.76	74	-24.24	peak
11650.120	34.69	9.62	44.31	54	-9.69	Avg
17475.180	36.89	10.75	47.64	74	-26.36	peak
17475.180	32.27	10.75	43.02	54	-10.98	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Value Type
11650.120	39.36	9.62	48.98	74	-25.02	peak
11650.120	34.98	9.62	44.6	54	-9.4	Avg
17475.180	37.74	10.75	48.49	74	-25.51	peak
17475.180	32.15	10.75	42.9	54	-11.1	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

**Note:** All the case had been tested. The 802.11a modulation is the worst case and recorded in the test report.

Other frequencies radiation emission from 1GHz to 40GHz at least have 20dB margin and not recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

The “Factor” value can be calculated automatically by software of measurement system.

## 13. BAND EDGE EMISSION

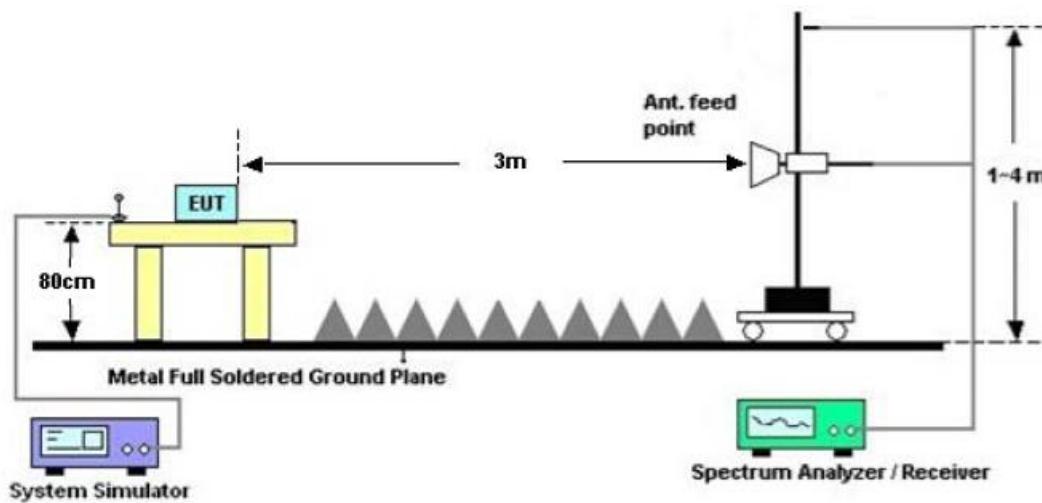
### 13.1. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO
3. Other procedures refer to clause 11.2.

#### Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So A=F.
3. Only the data of band edge emission at the restricted band 4.5GHz-5.15GHz record in the report. Other restricted band 5.35GHz-5.46GHz and 7.25GHz-7.77GHz were considered as ambient noise. No recording in the test report.

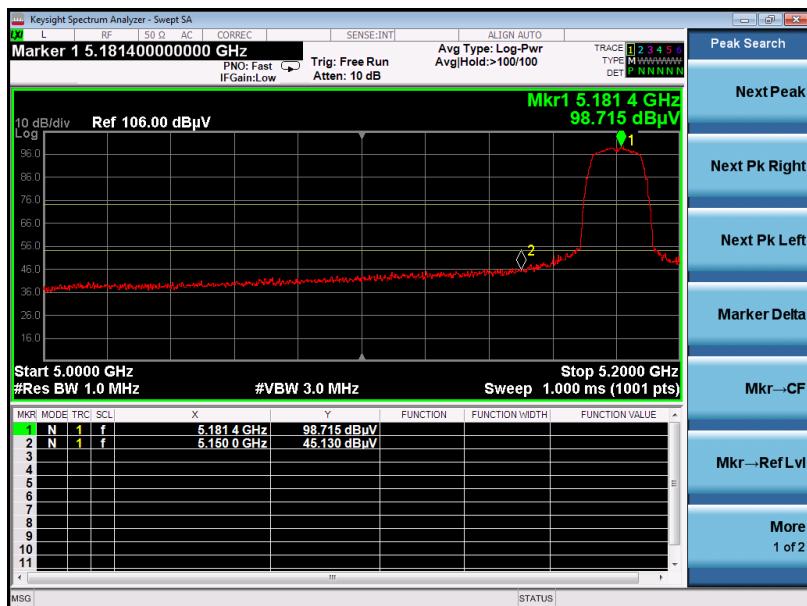
### 13.2. TEST SET-UP



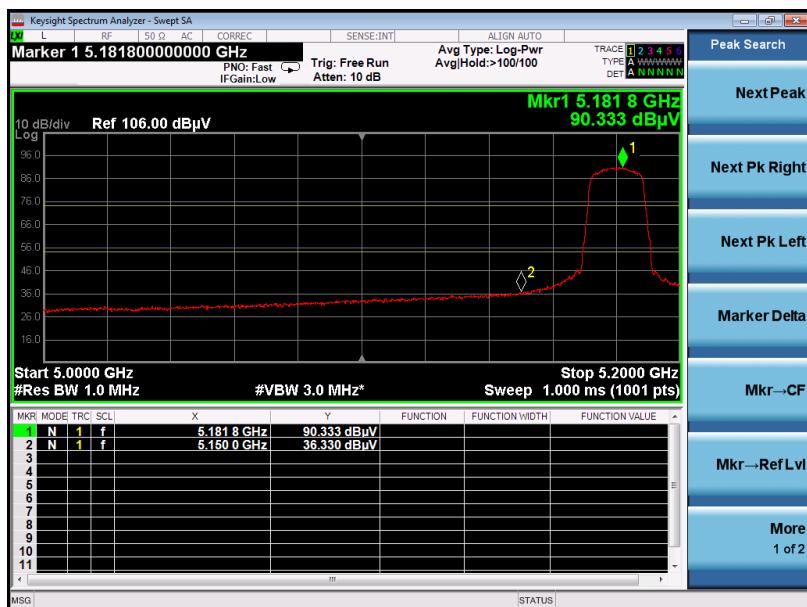
### **13.3. TEST RESULT**

<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5180MHz	<b>Antenna</b>	Horizontal

## PK Value

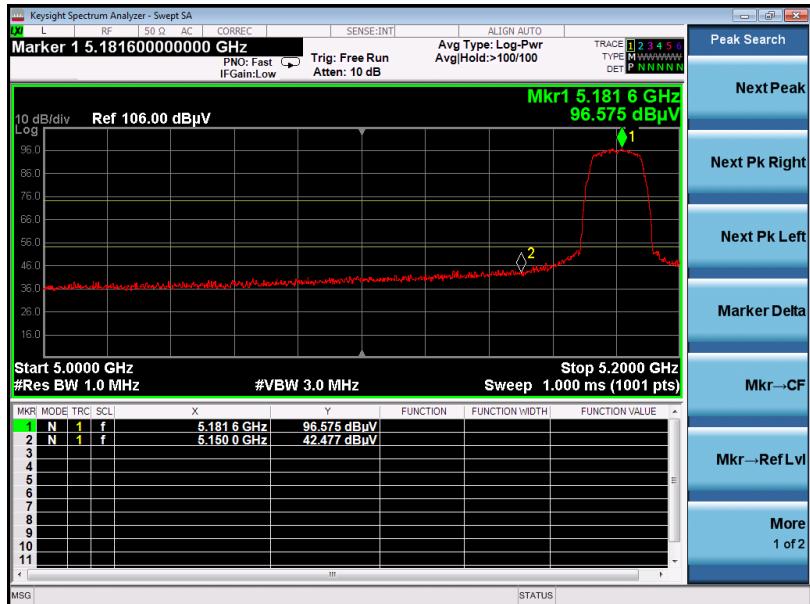


## AV Value

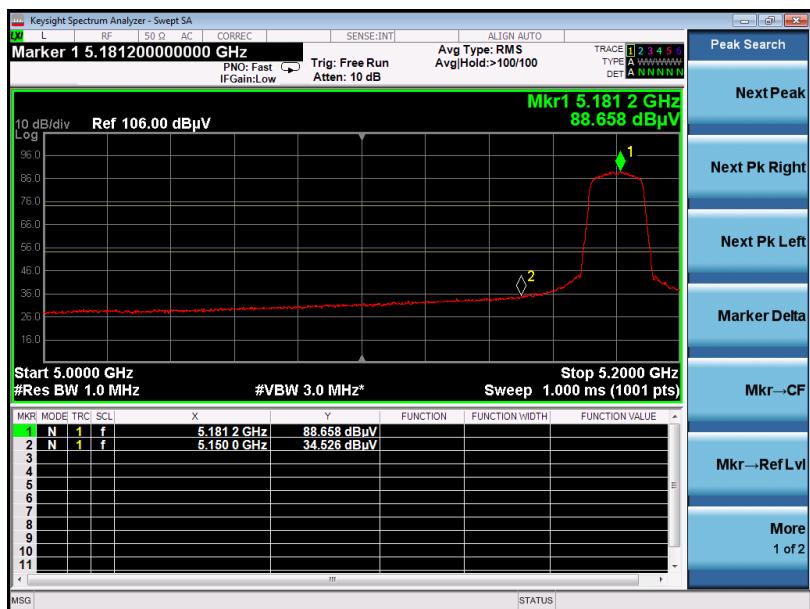


<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11a20 5180MHz	<b>Antenna</b>	Vertical

## PK Value

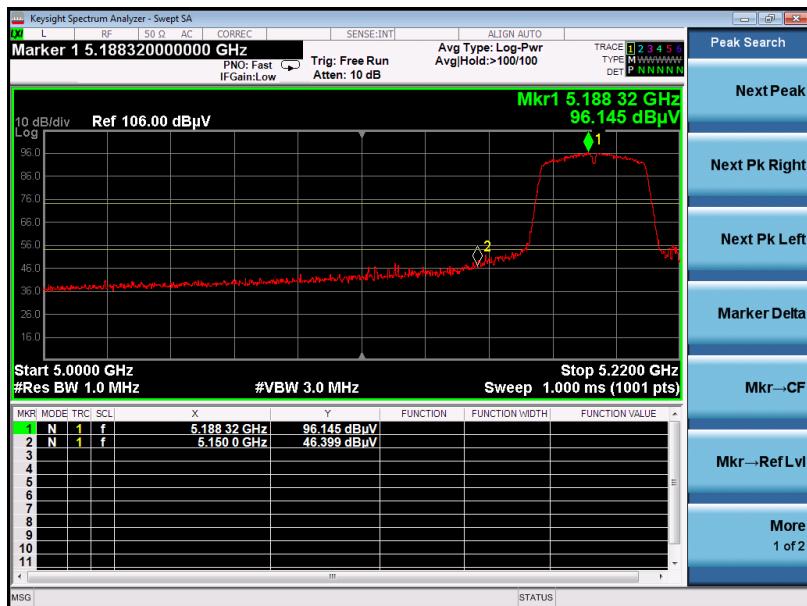


### AV Value

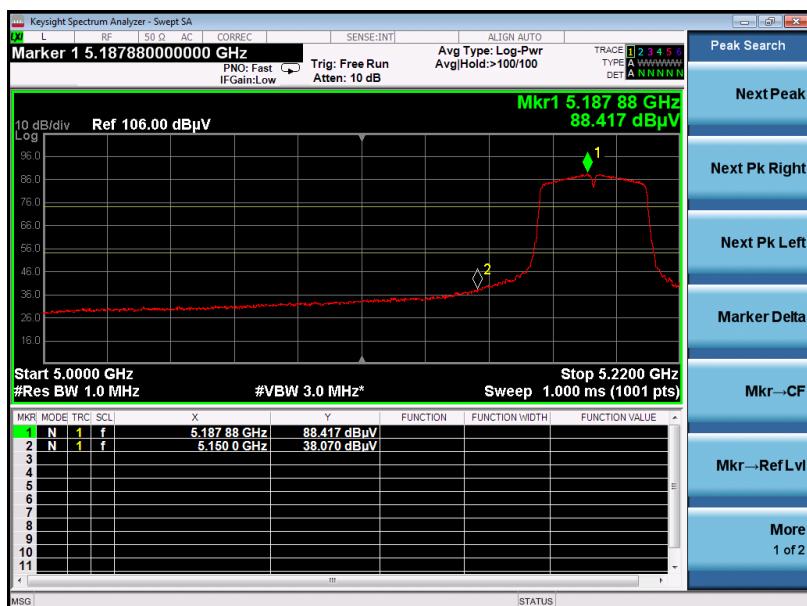


<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11n40 5190MHz	<b>Antenna</b>	Horizontal

## PK Value



### AV Value



<b>EUT</b>	LED Projector	<b>Model Name</b>	XJ03W
<b>Temperature</b>	25°C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	802.11n40 5190MHz	<b>Antenna</b>	Vertical

### PK Value



### AV Value



## RESULT: PASS

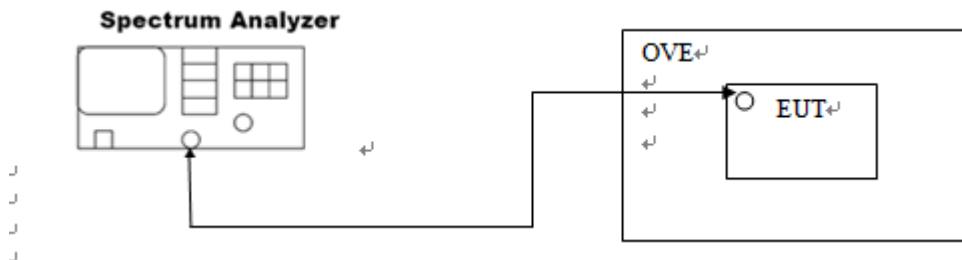
Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report.

## 14. FREQUENCY STABILITY

### 14.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the operation frequency.
3. Set SPA Centre Frequency = Operation Frequency. SPAN=enough to measure the emission is maintained within the band
4. Set SPA Trace 1 Max hold, then View.
5. Extreme temperature rule is -10°C~60°C.

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



#### 14.3. MEASUREMENT RESULTS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11a	- 10°C	5180	within the band	PASS
	0°C	5180	within the band	PASS
	10°C	5180	within the band	PASS
	20°C	5180	within the band	PASS
	30°C	5180	within the band	PASS
	40°C	5180	within the band	PASS
	50°C	5180	within the band	PASS
	60°C	5180	within the band	PASS
	- 10°C	5240	within the band	PASS
	0°C	5240	within the band	PASS
	10°C	5240	within the band	PASS
	20°C	5240	within the band	PASS
	30°C	5240	within the band	PASS
	40°C	5240	within the band	PASS
	50°C	5240	within the band	PASS
	60°C	5240	within the band	PASS
	- 10°C	5745	within the band	PASS
	0°C	5745	within the band	PASS
	10°C	5745	within the band	PASS
	20°C	5745	within the band	PASS
	30°C	5745	within the band	PASS
	40°C	5745	within the band	PASS
	50°C	5745	within the band	PASS
	60°C	5240	within the band	PASS
	- 10°C	5825	within the band	PASS
	0°C	5825	within the band	PASS
	10°C	5825	within the band	PASS
	20°C	5825	within the band	PASS
	30°C	5825	within the band	PASS
	40°C	5825	within the band	PASS
	50°C	5825	within the band	PASS
	60°C	5825	within the band	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11n20	- 10°C	5180	within the band	PASS
	0°C	5180	within the band	PASS
	10°C	5180	within the band	PASS
	20°C	5180	within the band	PASS
	30°C	5180	within the band	PASS
	40°C	5180	within the band	PASS
	50°C	5180	within the band	PASS
	60°C	5180	within the band	PASS
	- 10°C	5240	within the band	PASS
	0°C	5240	within the band	PASS
	10°C	5240	within the band	PASS
	20°C	5240	within the band	PASS
	30°C	5240	within the band	PASS
	40°C	5240	within the band	PASS
	50°C	5240	within the band	PASS
	60°C	5240	within the band	PASS
	- 10°C	5745	within the band	PASS
	0°C	5745	within the band	PASS
	10°C	5745	within the band	PASS
	20°C	5745	within the band	PASS
	30°C	5745	within the band	PASS
	40°C	5745	within the band	PASS
	50°C	5745	within the band	PASS
	60°C	5240	within the band	PASS
	- 10°C	5825	within the band	PASS
	0°C	5825	within the band	PASS
	10°C	5825	within the band	PASS
	20°C	5825	within the band	PASS
	30°C	5825	within the band	PASS
	40°C	5825	within the band	PASS
	50°C	5825	within the band	PASS
	60°C	5825	within the band	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11n40	- 10°C	5190	within the band	PASS
	0°C	5190	within the band	PASS
	10°C	5190	within the band	PASS
	20°C	5190	within the band	PASS
	30°C	5190	within the band	PASS
	40°C	5190	within the band	PASS
	50°C	5190	within the band	PASS
	60°C	5190	within the band	PASS
	- 10°C	5230	within the band	PASS
	0°C	5230	within the band	PASS
	10°C	5230	within the band	PASS
	20°C	5230	within the band	PASS
	30°C	5230	within the band	PASS
	40°C	5230	within the band	PASS
	50°C	5230	within the band	PASS
	60°C	5230	within the band	PASS
	- 10°C	5755	within the band	PASS
	0°C	5755	within the band	PASS
	10°C	5755	within the band	PASS
	20°C	5755	within the band	PASS
	30°C	5755	within the band	PASS
	40°C	5755	within the band	PASS
	50°C	5755	within the band	PASS
	60°C	5755	within the band	PASS
	- 10°C	5795	within the band	PASS
	0°C	5795	within the band	PASS
	10°C	5795	within the band	PASS
	20°C	5795	within the band	PASS
	30°C	5795	within the band	PASS
	40°C	5795	within the band	PASS
	50°C	5795	within the band	PASS
	60°C	5795	within the band	PASS

## 15. FCC LINE CONDUCTED EMISSION TEST

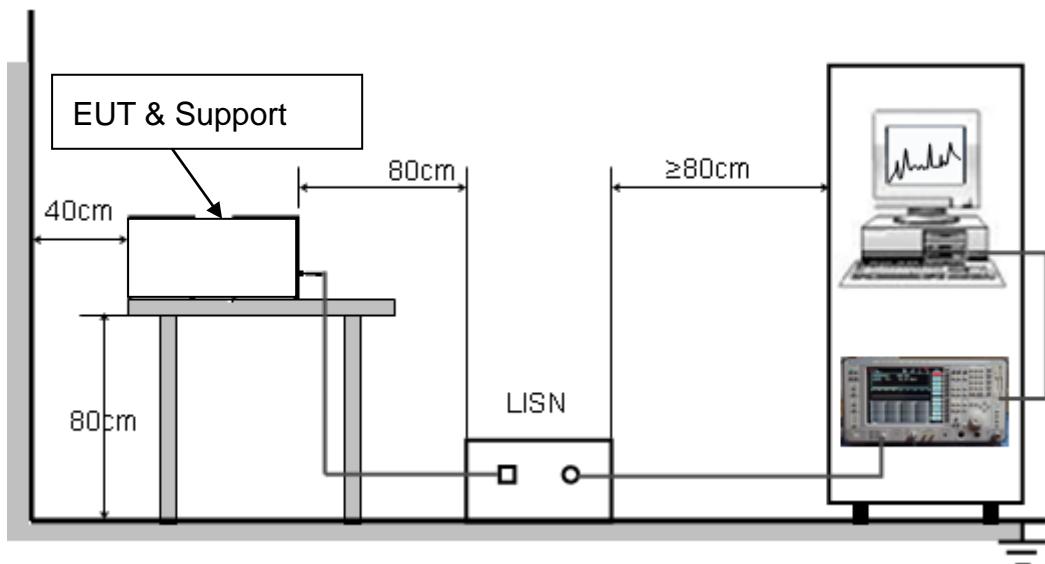
### 15.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.( dBuV)	Average( dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

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

### 15.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



### **15.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

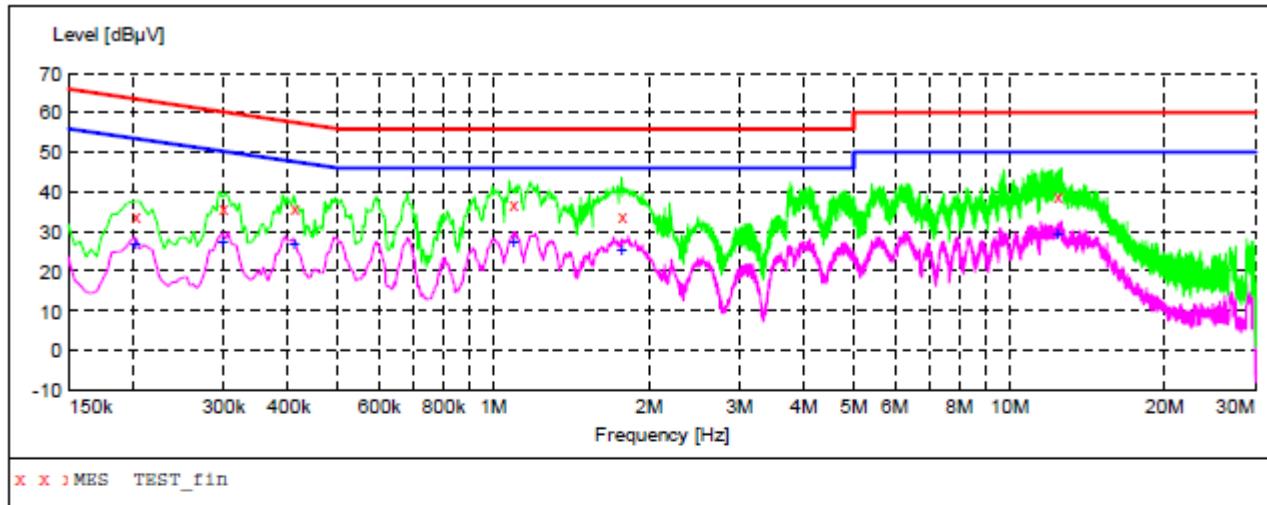
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### **15.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

## 15.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

### LINE CONDUCTED EMISSION TEST-L



#### MEASUREMENT RESULT: "TEST\_fin"

6/11/2019 7:09PM

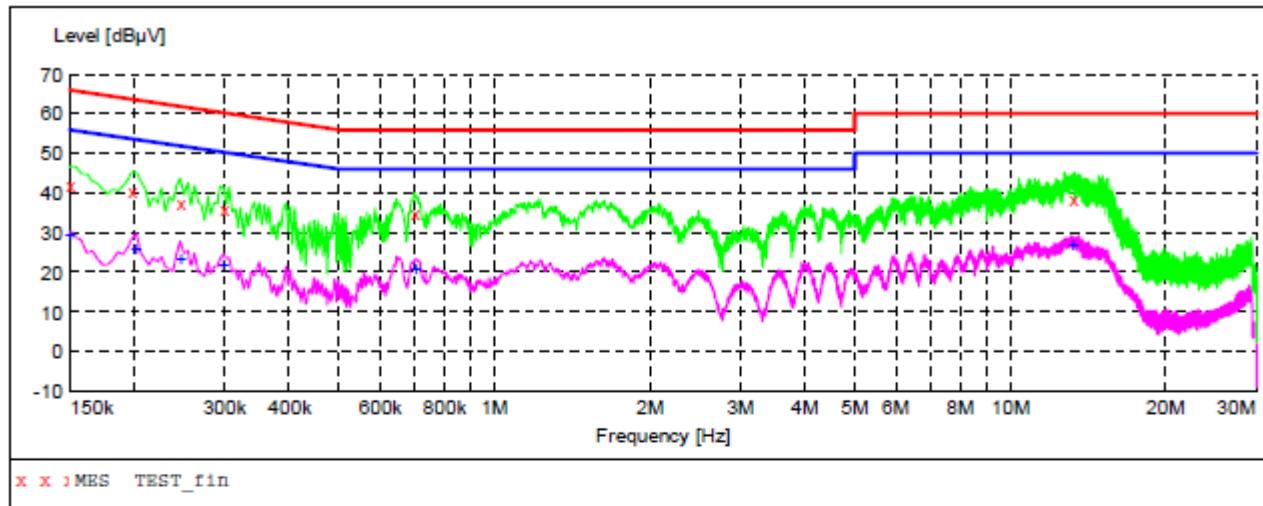
Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.202000	34.20	10.9	64	29.3	QP	L1	FLO
0.298000	35.90	10.9	60	24.4	QP	L1	FLO
0.410000	36.10	10.4	58	21.5	QP	L1	FLO
1.094000	37.00	11.5	56	19.0	QP	L1	FLO
1.770000	33.90	11.5	56	22.1	QP	L1	FLO
12.394000	39.30	12.0	60	20.7	QP	L1	FLO

#### MEASUREMENT RESULT: "TEST\_fin2"

6/11/2019 7:09PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.202000	27.00	10.9	54	26.5	AV	L1	FLO
0.298000	27.30	10.9	50	23.0	AV	L1	FLO
0.410000	26.80	10.4	48	20.8	AV	L1	FLO
1.094000	27.30	11.5	46	18.7	AV	L1	FLO
1.770000	25.60	11.5	46	20.4	AV	L1	FLO
12.358000	29.20	12.0	50	20.8	AV	L1	FLO

### LINE CONDUCTED EMISSION TEST-N



#### MEASUREMENT RESULT: "TEST\_fin"

6/12/2019 4:30PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	42.30	10.8	66	23.7	QP	N	FLO
0.198000	40.70	10.9	64	23.0	QP	N	FLO
0.246000	37.80	10.9	62	24.1	QP	N	FLO
0.298000	36.20	10.9	60	24.1	QP	N	FLO
0.698000	34.90	10.3	56	21.1	QP	N	FLO
13.230000	38.60	12.1	60	21.4	QP	N	FLO

#### MEASUREMENT RESULT: "TEST\_fin2"

6/12/2019 4:30PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.150000	29.40	10.8	56	26.6	AV	N	FLO
0.202000	26.00	10.9	54	27.5	AV	N	FLO
0.246000	23.30	10.9	52	28.6	AV	N	FLO
0.298000	21.90	10.9	50	28.4	AV	N	FLO
0.702000	21.00	10.3	46	25.0	AV	N	FLO
13.230000	26.80	12.1	50	23.2	AV	N	FLO

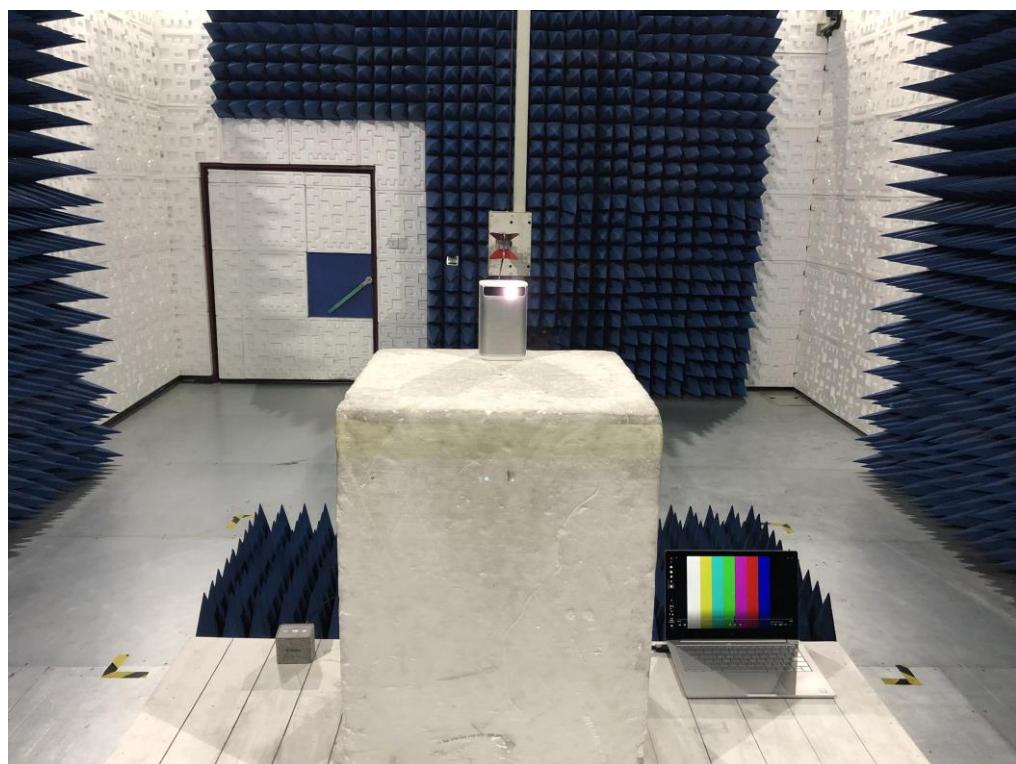
RESULT: PASS

## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

### FCC LINE CONDUCTED EMISSION TEST SETUP



### FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ



----END OF REPORT----