TEST REPORT

Applicant	:	Shanghai Sunmi Technology Co.,Ltd.
Address of Applicant	:	Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Product Name	:	Smart POS System
Model No.	:	T6800
Sample No.	:	E19110042-01#01 E19110042-01#02
FCC ID	:	2AH25T6800
Standards	:	FCC CFR47 Part 15, Subpart E
Date of Receipt	:	2019-11-22
Date of Test	:	2019-11-22 ~ 2019-11-25
Date of Issue	:	2019-11-25

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

Prepared by: Jennifer Zhou (Jennifer Zhou) Reviewed by: Adrian Shi (Adrian Shi) Approved by: Guoyou Chi (Authorized signatory: Guoyou Chi)

TEST REPORT

Revision Record			
Version	**Date**	**Revisions**	**Revised By**
1.0	2019-11-25	Original	--

Contents

1 General Information

1.1 Testing Laboratory

Company Name	ICAS Testing Technology Services (Shanghai) Co., Ltd.
Address	155 Pingbei Rd, Minhang District, Shanghai, China
Telephone	0086 21-51682999
Fax	0086 21-54711112
Homepage	www.icasiso.com

1.2 Details of Application

Company Name	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Contact Person	Zhang Wentang
Telephone	18721763396
Email	zhangwentang@sunmi.com

1.3 Details of EUT

Product Name	Smart POS System
Brand Name	SUNMI
Model No.	T6800
FCC ID	2AH25T6800
Mode of Operation	WLAN 802.11a/n(HT20)
Frequency Range	Band I: 5150 MHz ~ 5250 MHz Band IV: 5725 MHz ~ 5850 MHz
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Channel Bandwidth	802.11a: 20MHz 802.11n: 20MHz
Antenna Type	Internal Antenna
Antenna Gain	Band I: 1.1 dBi Band IV: 2.5 dBi
Extreme Temperature Range	-10℃~ +45℃
Test Voltage	DC 3.8V
Extreme Voltage	Low Voltage: DC 3.0V High Voltage: DC 4.35V
Product Type	Mobile and protable

1.4 Test Methodology

47 CFR Part 15, Subpart E (11-21-19 Edition)	Unlicensed National Information Infrastructure Devices
KDB Publication 789033 D02 v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
KDB Publication 662911 D01 v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Note(s):

All test items were verified and recorded according to the standards and without any addition/deviation/exclusion during the test.

2 Test Condition

2.1 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 246204.

2.2 Environmental conditions

Temperature (°C)	18-25
Humidity (%RH)	40-65
Barometric Pressure (mbar)	960-1060

2.3 Equipment List

Name of Equipment	Manufacturer	Model	Serial No.	Cal. Due Date
Spectrum Analyzer	Keysight	N9020B	MY59260184	2020-07-28
Spectrum Analyzer	Rohde & Schwarz	FSV40N	101450	2020-06-24
EMI Test Receiver	Rohde & Schwarz	ESPI3	100173	2020-06-19
EMI Test Receiver	Rohde & Schwarz	ESR 7	101911	2020-06-19
V-network	SCHWARZBECK	NSLK 8127	8127-902	2020-02-20
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	100687	2020-08-22
DC Power Supply	ACPOWER	ADC-0800025-15	D215010003	2020-03-15
Temperature Chamber	Muni	M/THP400L	M/161227-01	2020-05-08
Broadband Antenna	SCHWARZBECK	VULB9163	9163-1037	2020-06-06
Horn Antenna-18G	SCHWARZBECK	BBHA9120D	9120D-1775	2020-06-06
Loop Antenna	SCHWARZBECK	FMZB 1513	N/A	2021-03-19
Horn Antenna-40G	YINGLIAN	LB-180400-KF	N/A	2020-07-26
EMC chamber 9*6*6（L*W*H)	CHANGNING	966	N/A	2020-06-26
Shielded Enclosure 8*5*4（L*W*H)	CHANGNING	854	N/A	2020-08-28
Test Software	BL	BL410_E	N/A	N/A
Test Software	BL	BL410_R	N/A	N/A

2.4 Measurement Uncertainty

Parameter	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	± 1.5 dB
	> 1GHz	± 1.5 dB
Radiated Emission	30 MHz – 1 GHz	± 3 dB
	> 1GHz	± 3 dB

3 Test Set-up and Operation Modes

3.1 Details of Test Mode

Using test software was control EUT work in continuous transmitter and receiver mode. Select test channel as below:
For 802.11a/n(HT20)

Band I (5150 – 5250 MHz)		**Band IV (5725 – 5850 MHz)**	
Channel	**Frequency**	**Channel**	**Frequency**
The lowest channel(CH36)	5180MHz	The lowest channel(CH149)	5745MHz
The middle channel(CH44)	5220MHz	The middle channel(CH157)	5785MHz
The highest channel(CH48)	5240MHz	The highest channel(CH165)	5825MHz

Through Pre-scan under all rate at lowest channel, the data rate as below table described is the worst case, so we choose these data rate for test.

Type	**Data rate**
802.11a	54Mbps
802.11n(HT20)	MCS7

The basic operation modes are:

A. On
   1. WLAN mode
      a. Transmitting
      b. Receiving

B. Standby

C. Off

3.2 Special Accessories and Auxiliary Equipment

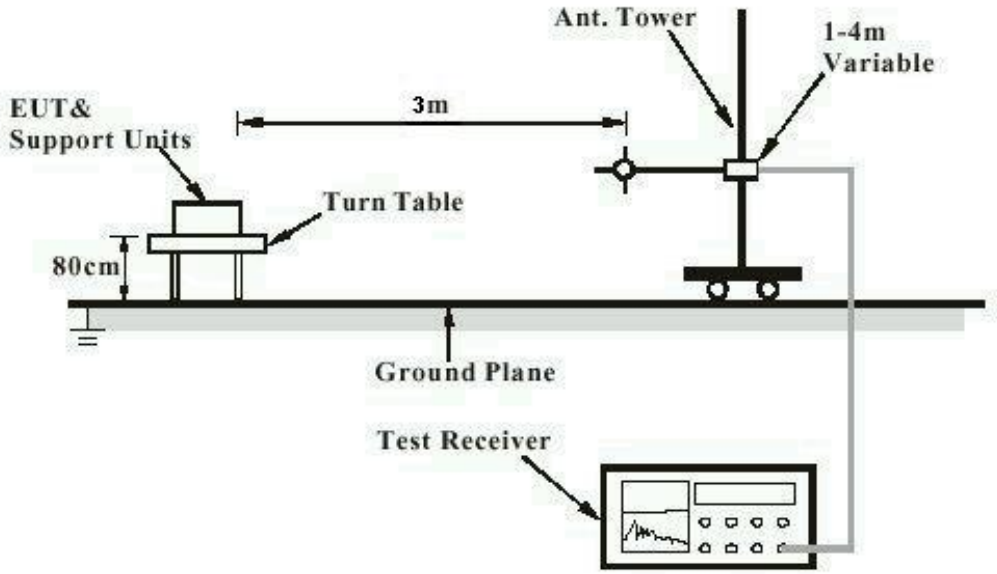
Description	**Manufacturer**	**Model No.**	**Serial No.**
Laptop	Lenovo	TP00083A	N/A

3.3 Support Software

Description	**Manufacturer**	**Software Name**
Software	Qualcomm	QRCT

3.4 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Conduction Measurement

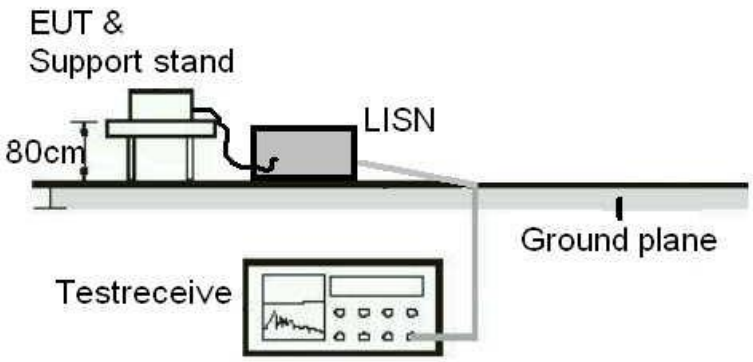
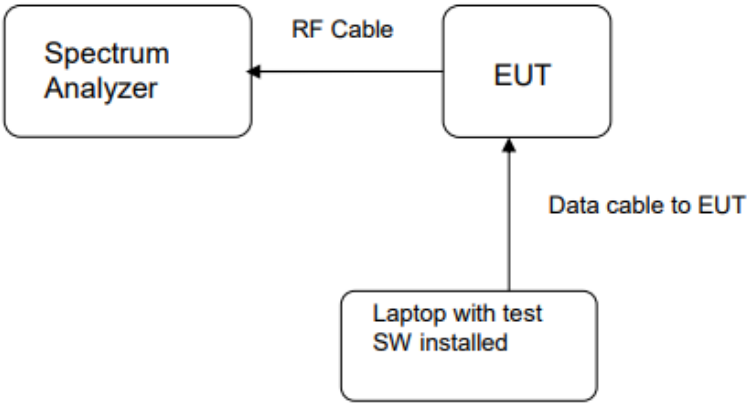


Diagram of Measurement Equipment Configuration for Transmitter Measurement



4 Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

RESULT: **PASS**

Test standard	:	FCC Part 15.407(a), 15.203
Requirement	:	The use of approved antennas only with directional gains that do not exceed 6 dBi

According to the manufacturer declaration, the EUT has an antenna with a directional gain of 2.5 dBi. The antenna is an internal antenna with no possibility of replacement with a non-approvrd antenna by the end-user.

Therefore, the EUT is considered to comply with this provision.

4.1.2 Peak Output Power and E.I.R.P

RESULT: **PASS**

Test standard	:	FCC Part 15.407(a)
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%

Table 1: Peak Output Power

Band I (5150 – 5250 MHz)

Test Mode	Test Channel (MHz)	Measured Peak Output Power		FCC Limit (mW)
		(dBm)	(mW)	
802.11a	5180	6.56	4.53	250
	5220	6.68	4.66	
	5240	6.28	4.25	
802.11n(HT20)	5180	6.58	4.55	
	5220	6.48	4.45	
	5240	6.07	4.05	

Band IV (5725 – 5850 MHz)

Test Mode	Test Channel (MHz)	Measured Peak Output Power		FCC Limit (W)
		(dBm)	(mW)	
802.11a	5745	6.94	4.94	1
	5785	5.84	3.84	
	5825	5.58	3.61	
802.11n(HT20)	5745	5.53	3.57	
	5785	5.17	3.29	
	5825	4.25	2.66	

4.1.3 26dB Bandwidth and 99% Bandwidth

RESULT: **PASS**

Test standard	:	FCC Part 15.407(a)
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%

Table 2: 26dB Bandwidth and 99% Bandwidth

Band I (5150 – 5250 MHz)

Test Mode	Test Channel (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	5180	20.610	16.532
	5220	20.790	16.519
	5240	20.640	16.511
802.11n(HT20)	5180	20.660	17.675
	5220	20.620	17.648
	5240	21.04	17.662

Band IV (5725 – 5850 MHz)

Test Mode	Test Channel (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	5745	20.510	16.468
	5785	19.220	16.457
	5825	20.380	16.465
802.11n(HT20)	5745	20.840	17.663
	5785	20.380	17.643
	5825	18.660	17.626

Figure 1: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5180MHz

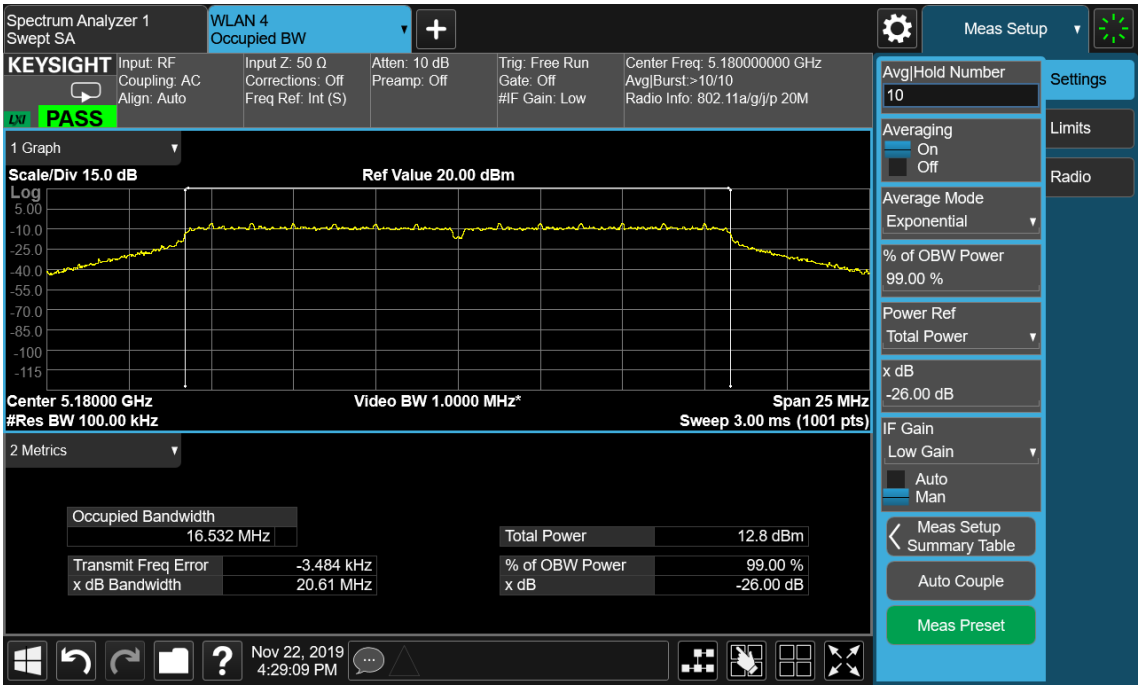


Figure 2: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5220MHz

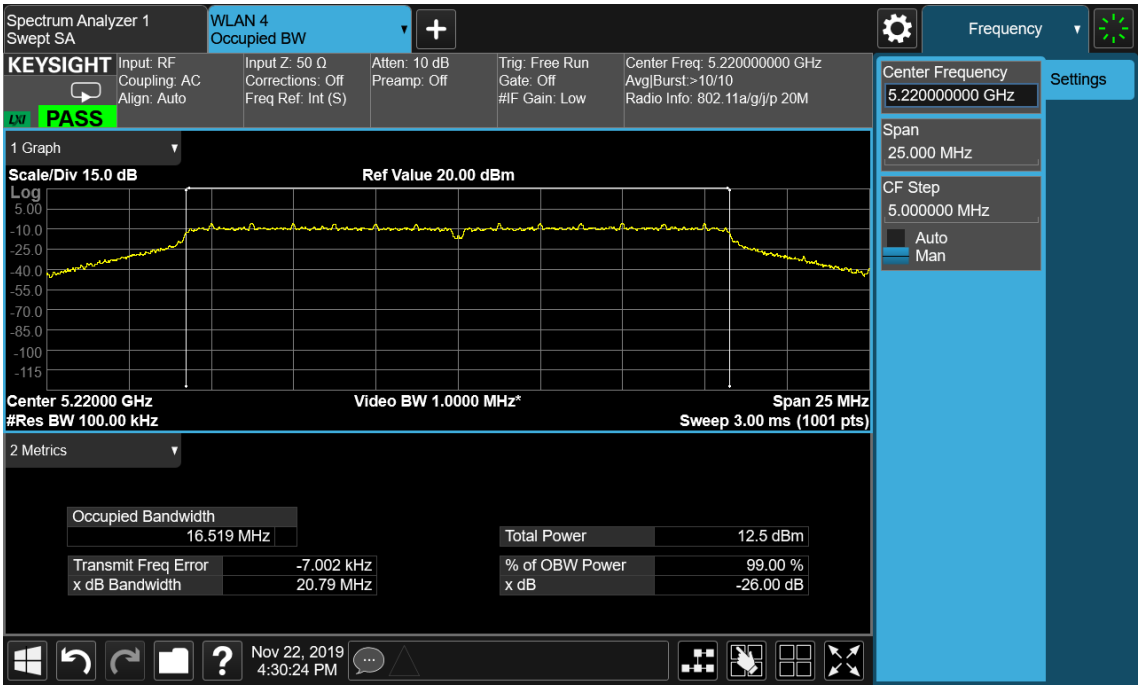


Figure 3: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5240MHz

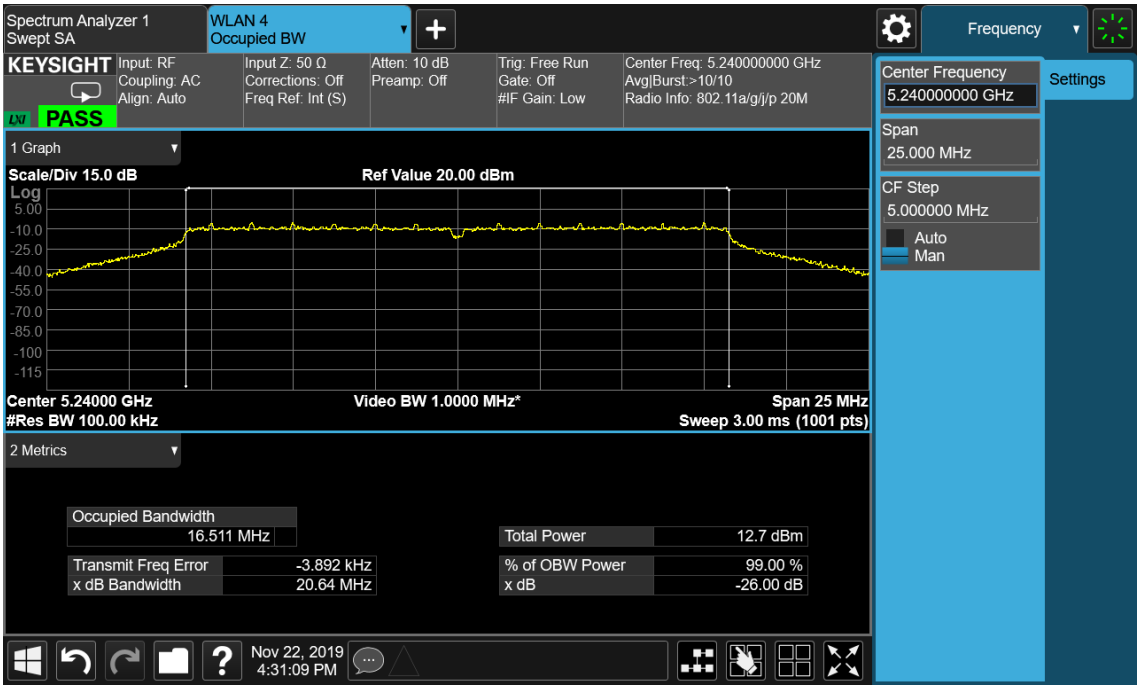


Figure 4: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5180MHz

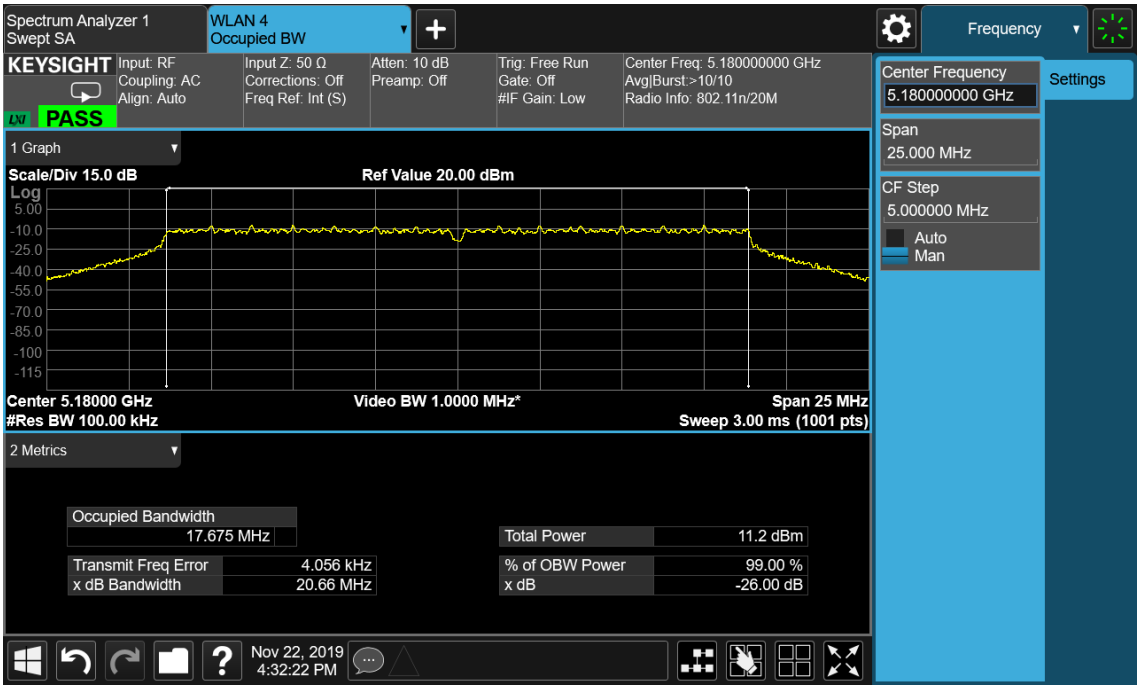


Figure 5: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5220MHz

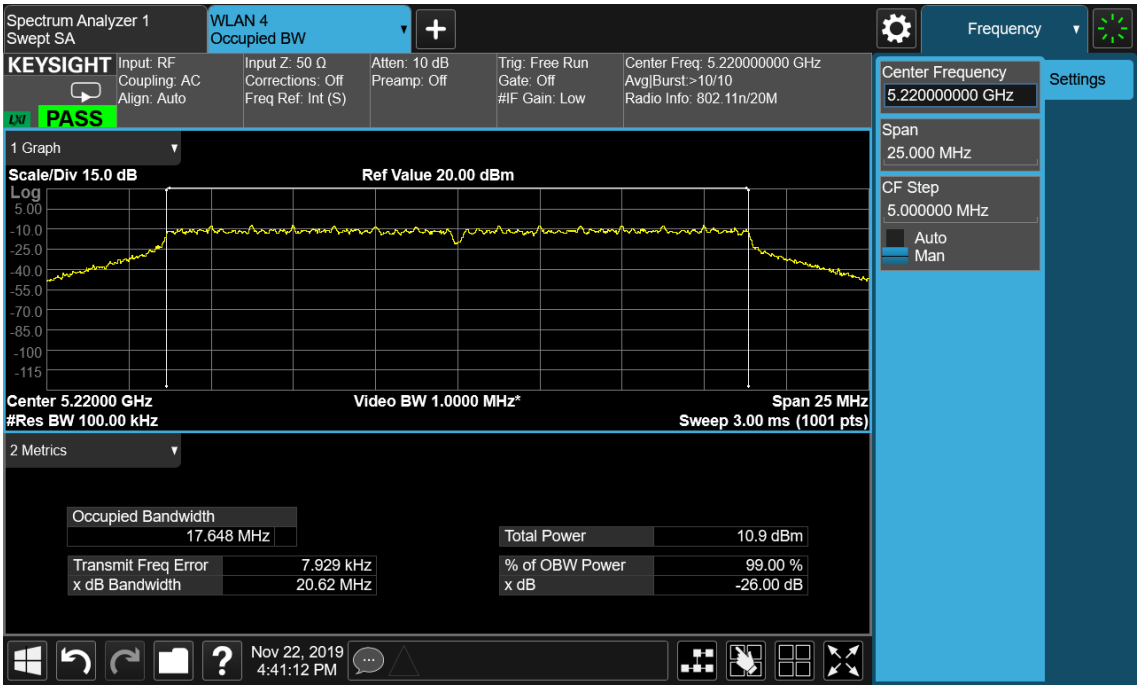


Figure 6: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5240MHz

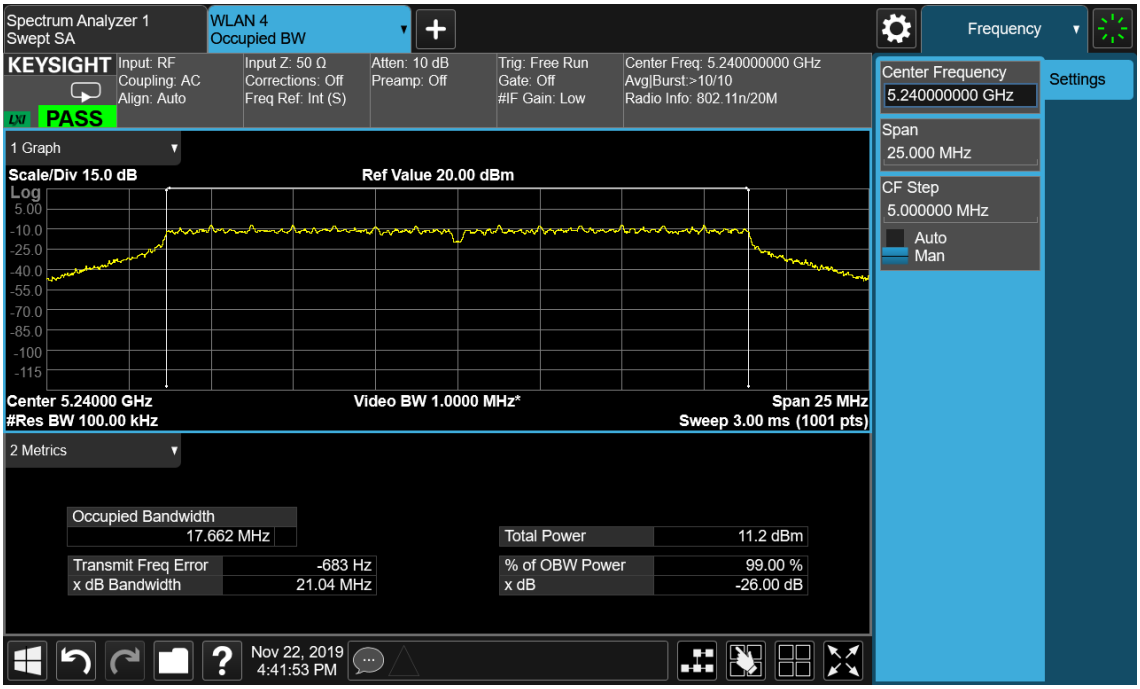


Figure 7: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5745MHz

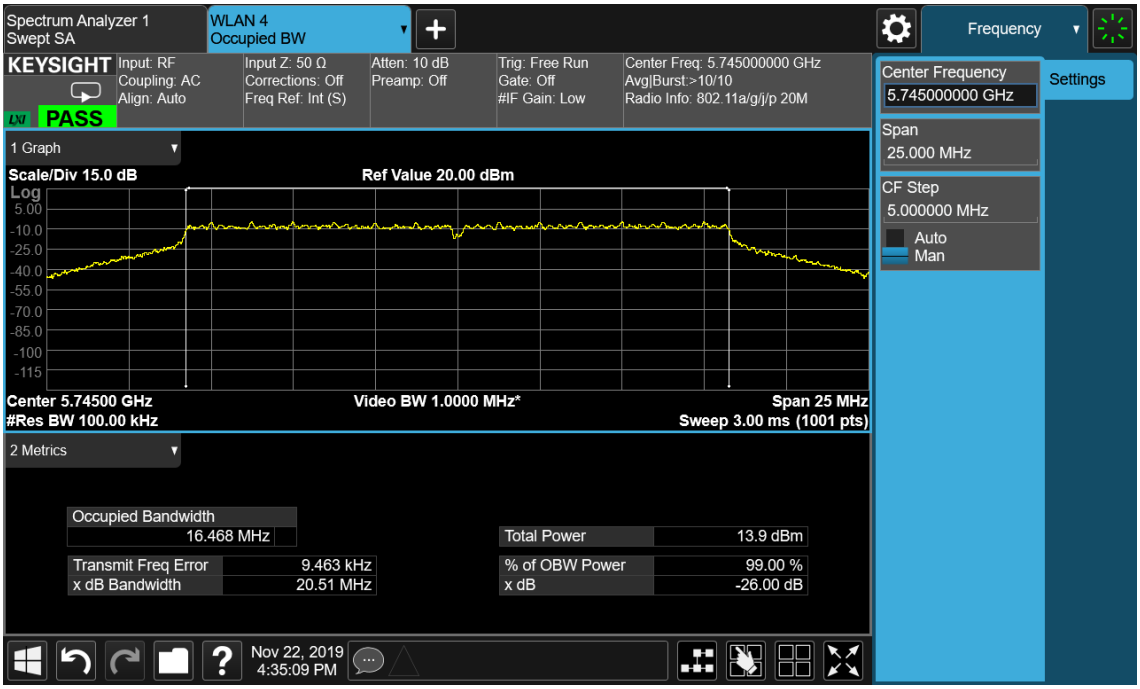


Figure 8: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5785MHz

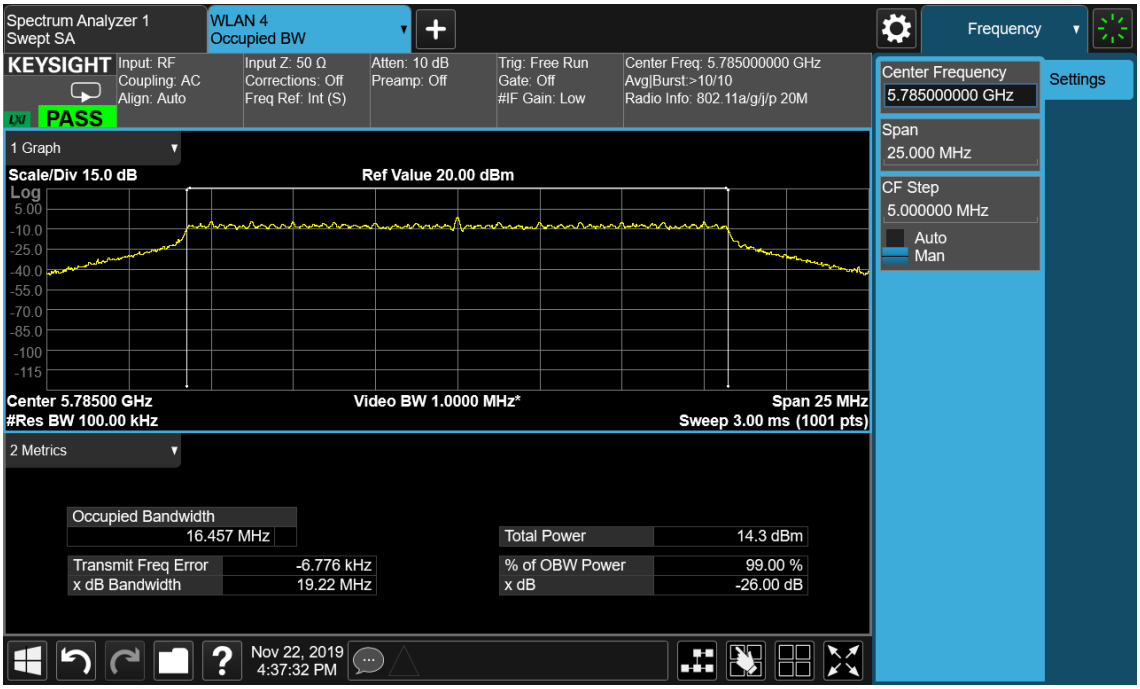


Figure 9: 26dB Bandwidth and 99% Bandwidth, 802.11a, 5825MHz

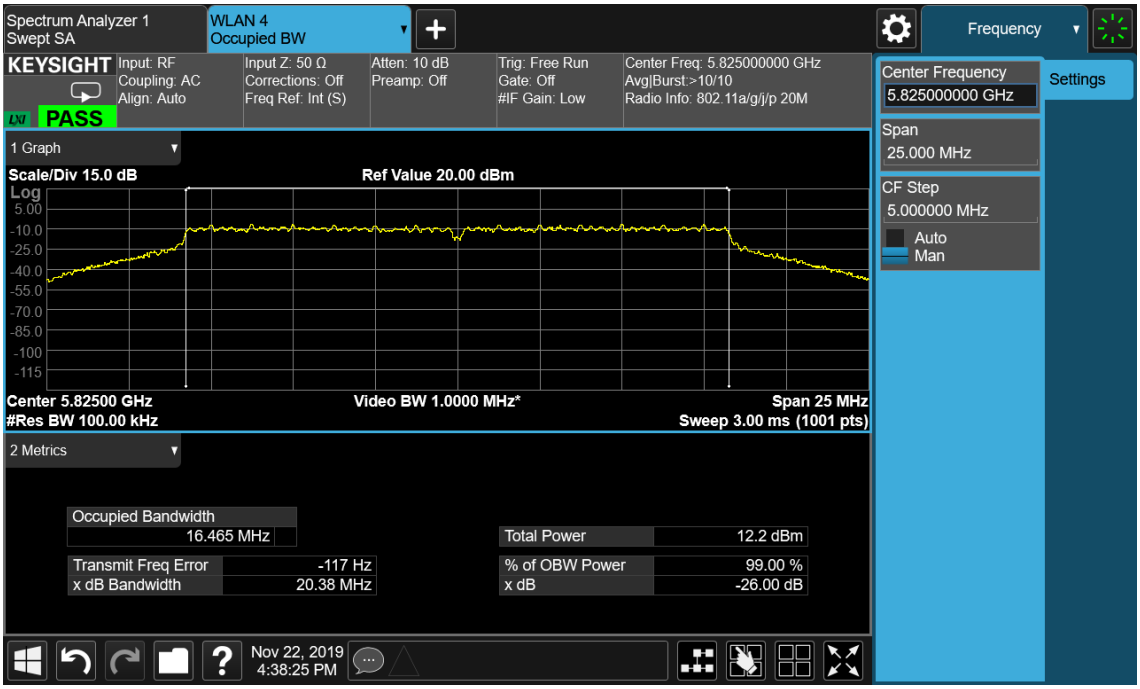


Figure 10: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5745MHz

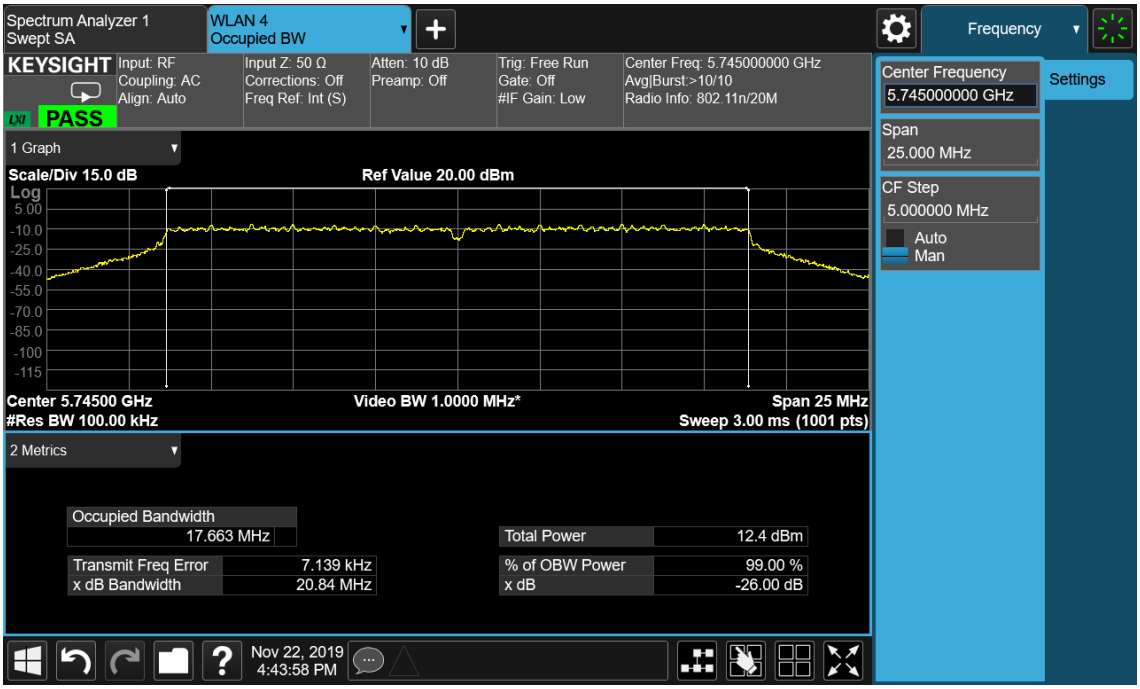


Figure 11: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5785MHz

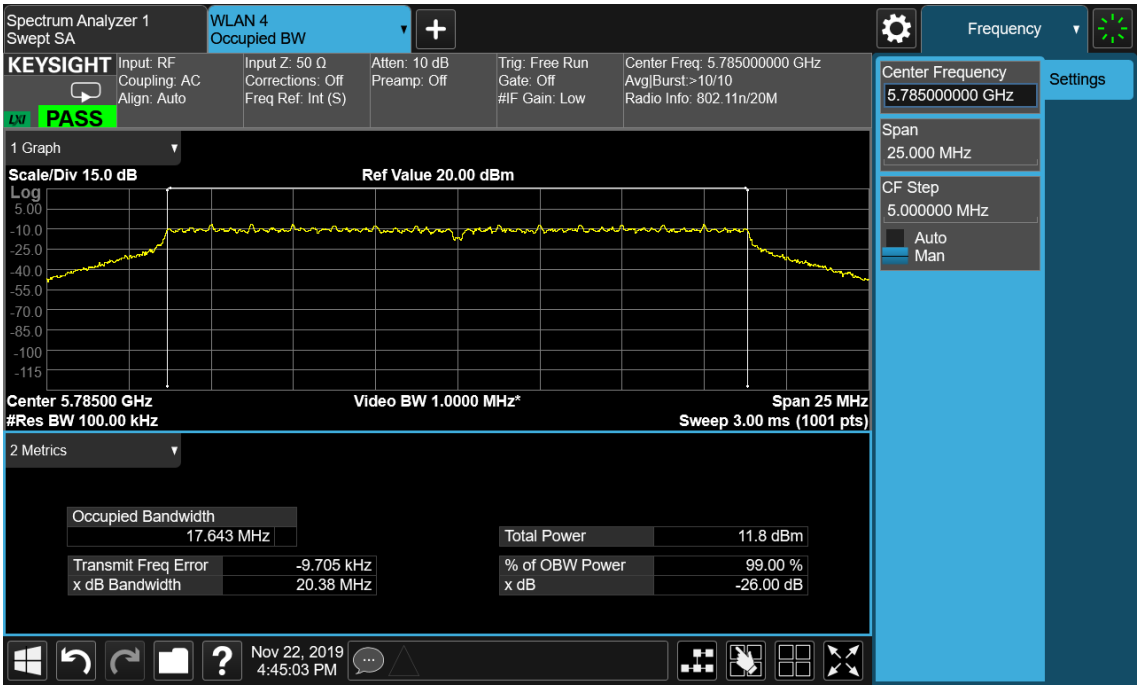
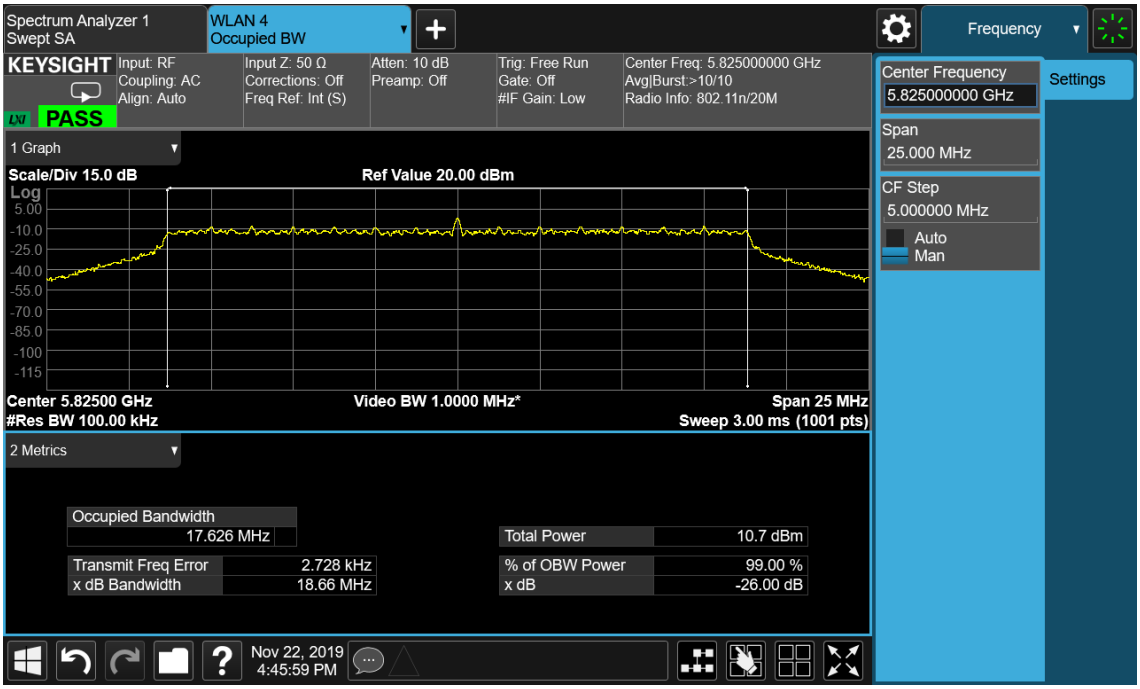


Figure 12: 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5825MHz



4.1.4 6dB Bandwidth

RESULT: **PASS**

Test standard	:	FCC Part 15.407(e)
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%

Table 3: 6dB Bandwidth

Band IV (5725 – 5850 MHz)

Test Mode	Test Channel (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
802.11a	5745	16.49	0.5
	5785	16.47	
	5825	16.44	
802.11n(HT20)	5745	17.73	
	5785	17.69	
	5825	17.70	

Figure 13: 6dB Bandwidth, 802.11a, 5745MHz

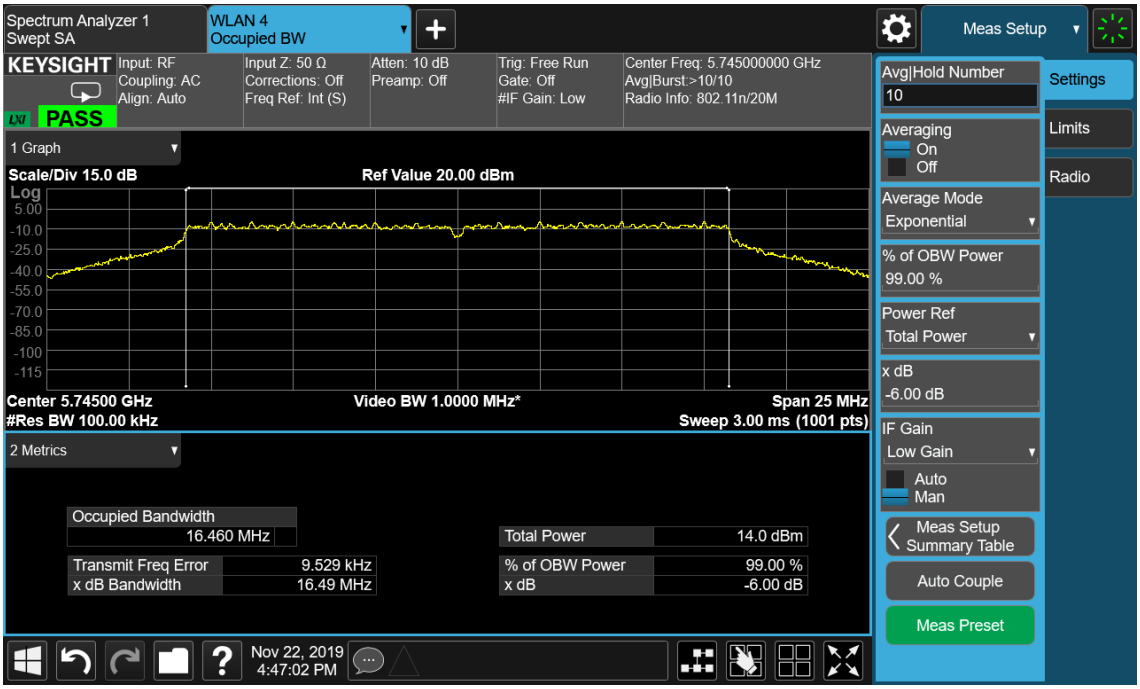


Figure 14: 6dB Bandwidth, 802.11a, 5785MHz

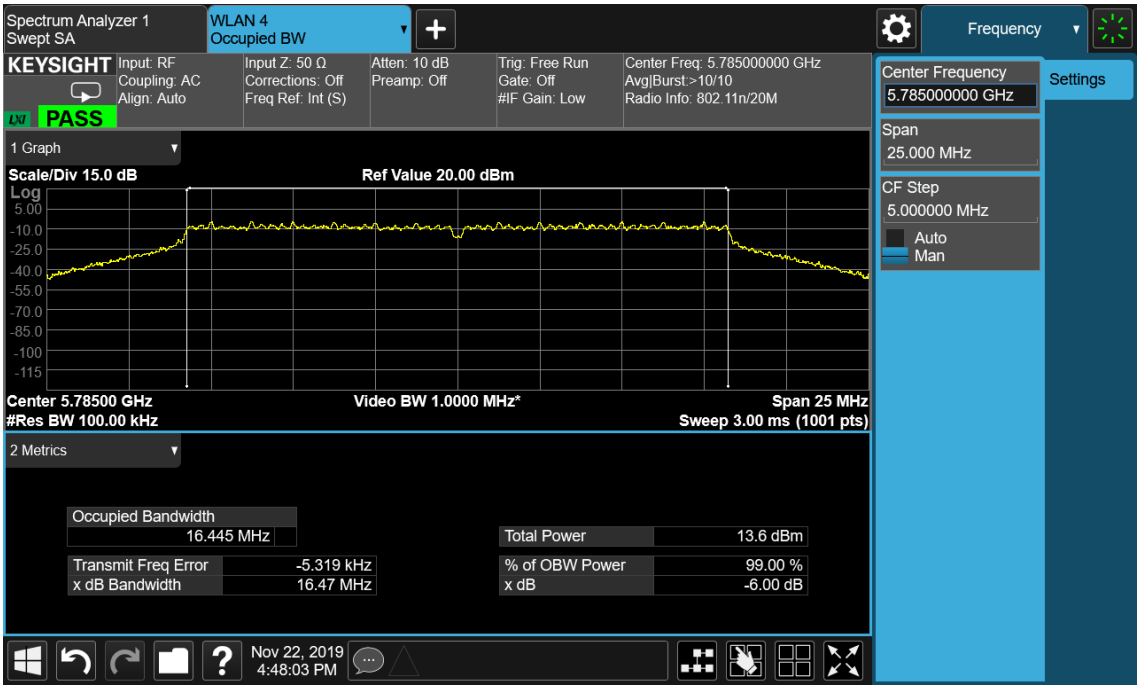


Figure 15: 6dB Bandwidth, 802.11a, 5825MHz

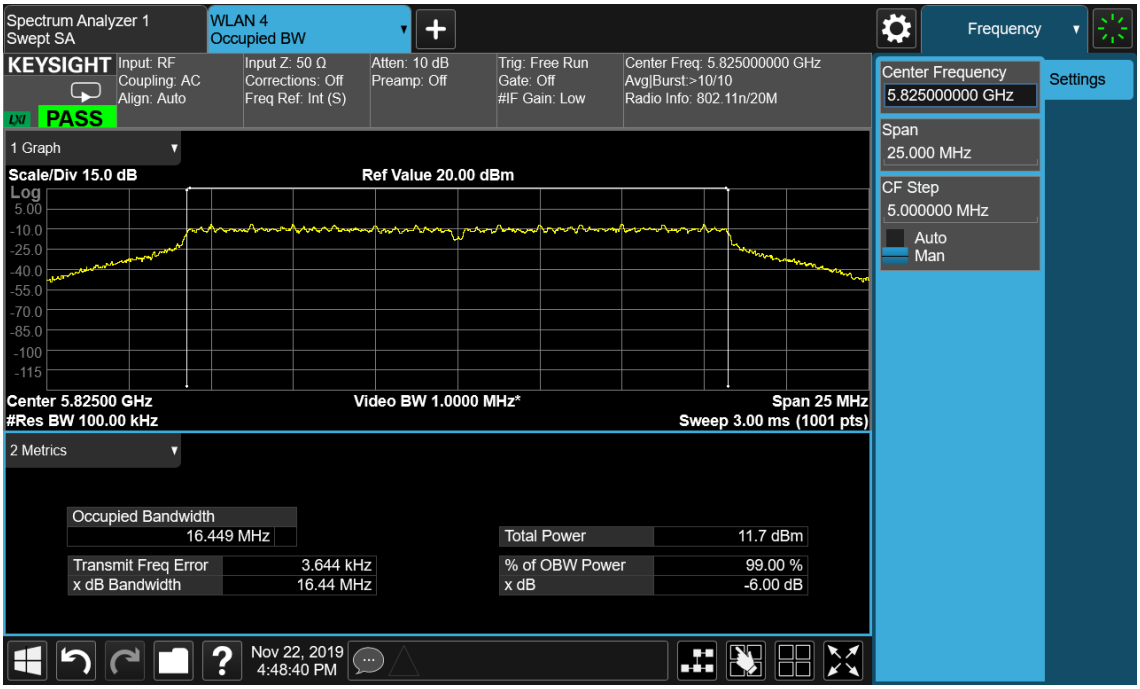


Figure 16: 6dB Bandwidth, 802.11n(HT20), 5745MHz

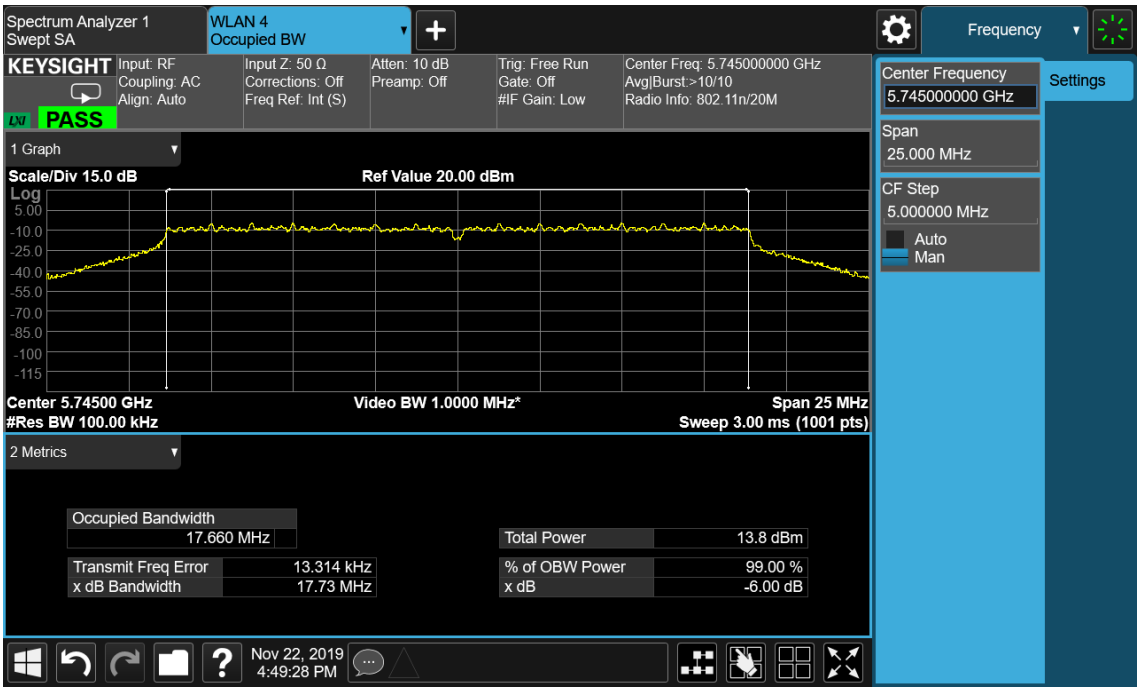


Figure 17: 6dB Bandwidth, 802.11n(HT20), 5785MHz

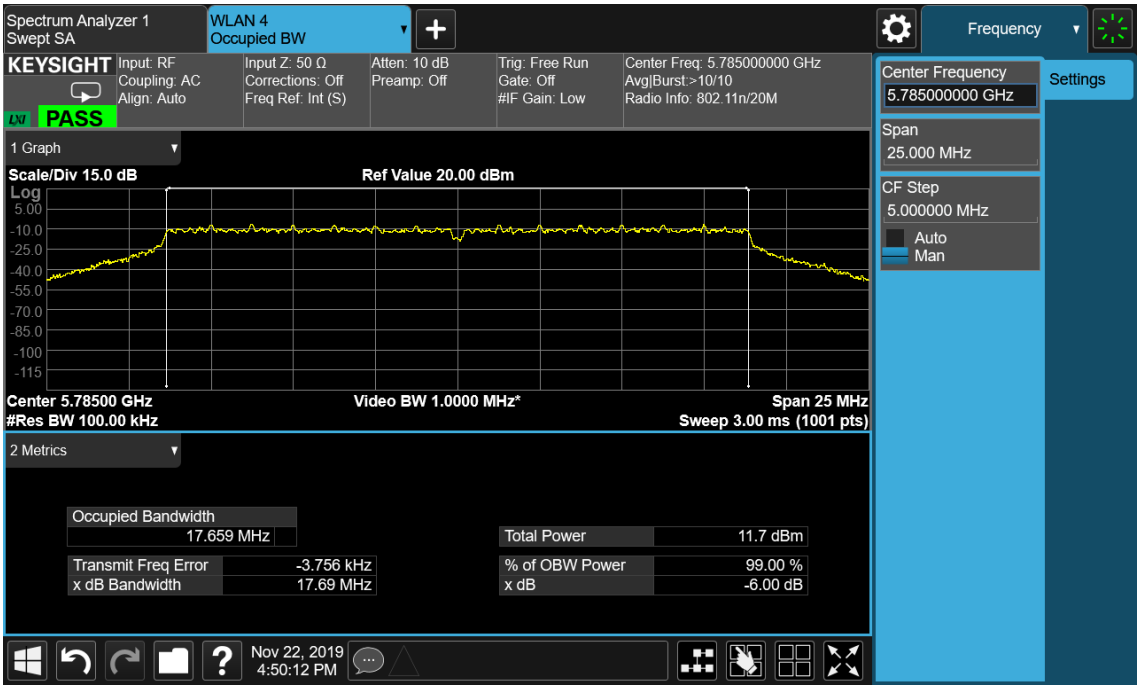
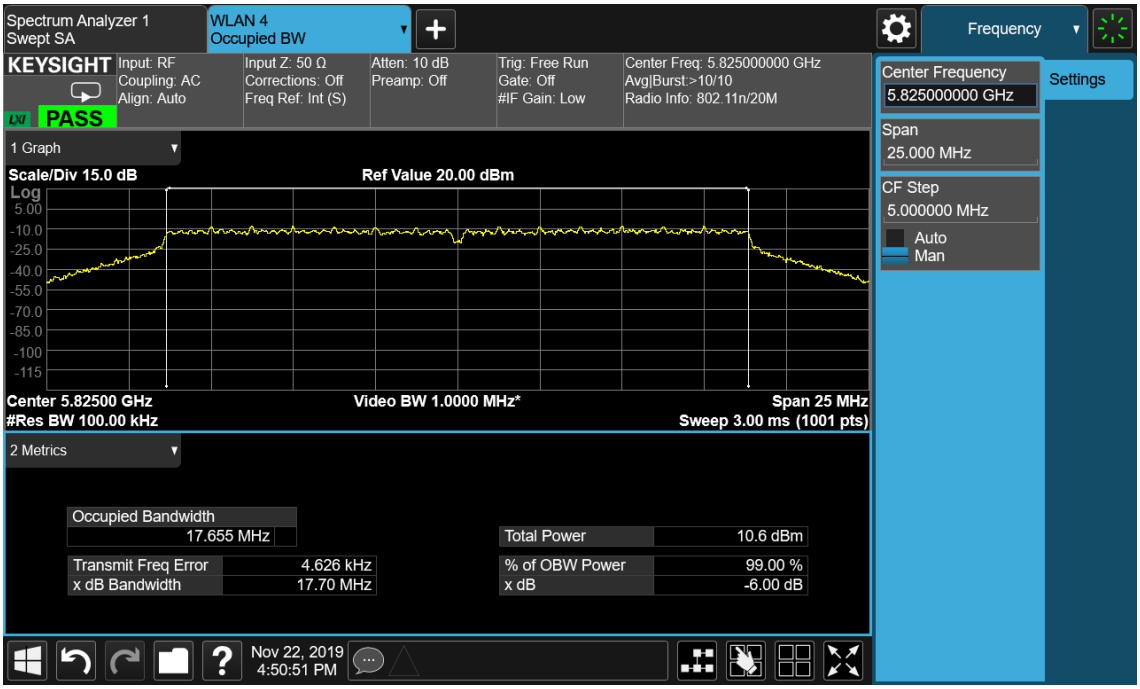


Figure 18: 6dB Bandwidth, 802.11n(HT20), 5825MHz



4.1.5 Power Spectral Density

RESULT: **PASS**

Test standard	:	FCC Part 15.407(a)
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%

Table 4: Power Spectral Density

Band I (5150 – 5250 MHz)

Test Mode	Test Channel (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)
802.11a	5180	5.54	11
	5220	5.84	
	5240	6.09	
802.11n(HT20)	5180	4.18	
	5220	3.90	
	5240	3.78	

Band IV (5725 – 5850 MHz)

Test Mode	Test Channel (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)
802.11a	5745	6.57	30
	5785	5.40	
	5825	5.03	
802.11n(HT20)	5745	4.28	
	5785	4.10	
	5825	3.34	

Figure 19: Power Spectral Density, 802.11a, 5180MHz

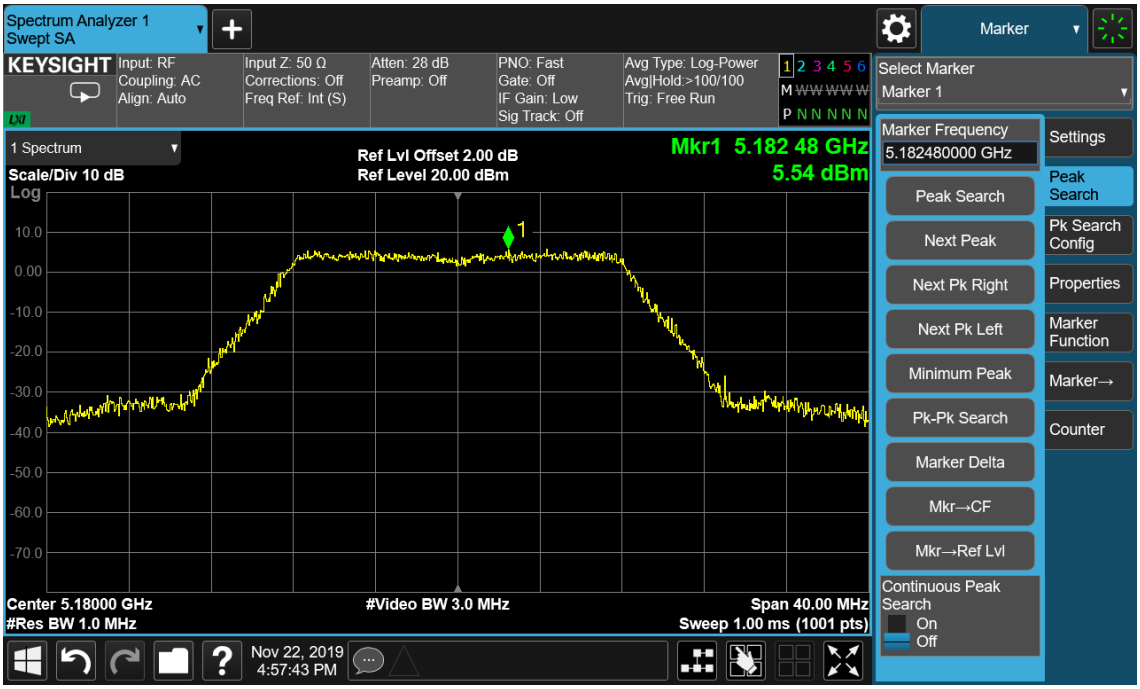


Figure 20: Power Spectral Density, 802.11a, 5220MHz

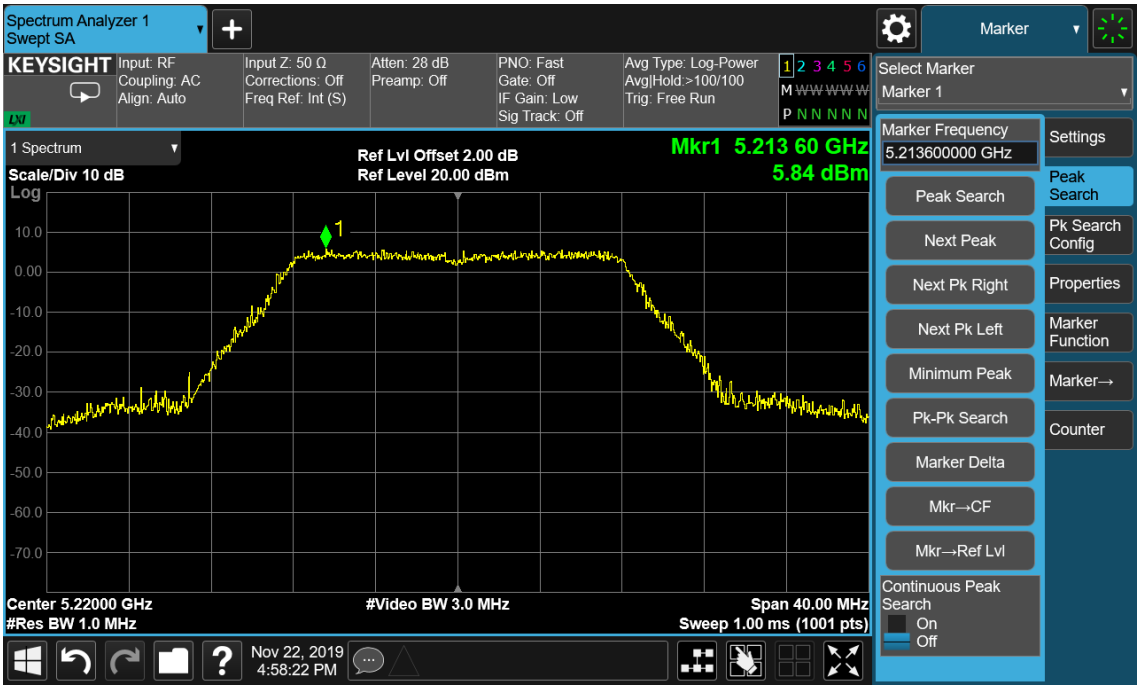


Figure 21: Power Spectral Density, 802.11a, 5240MHz

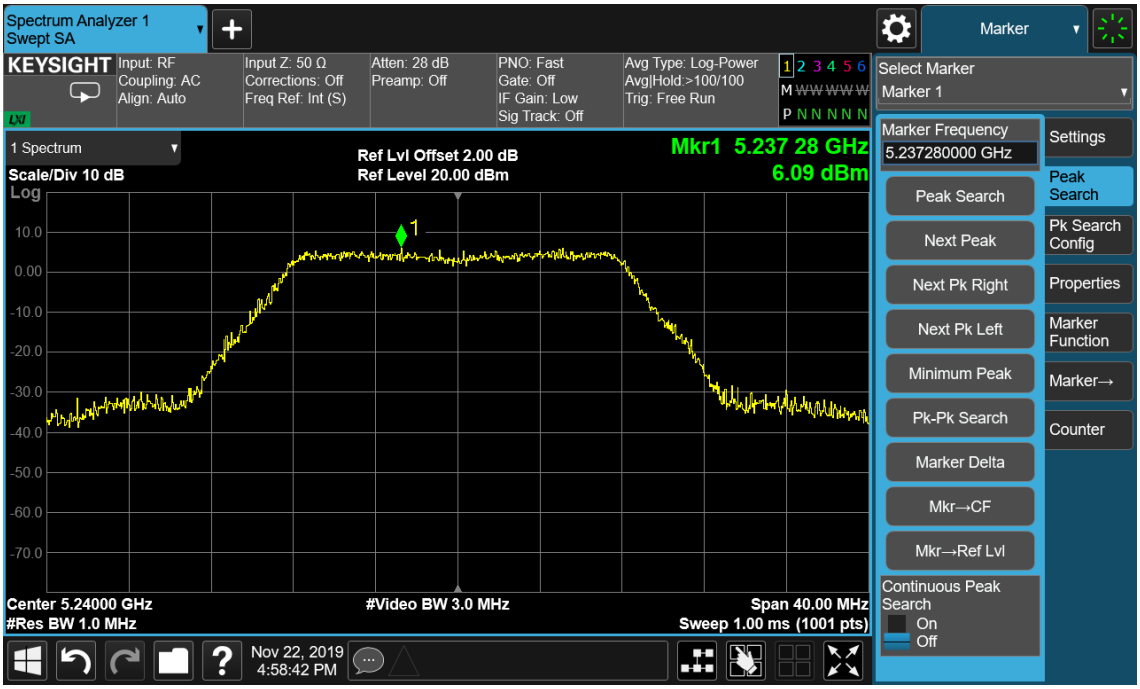


Figure 22: Power Spectral Density, 802.11n(HT20), 5180MHz

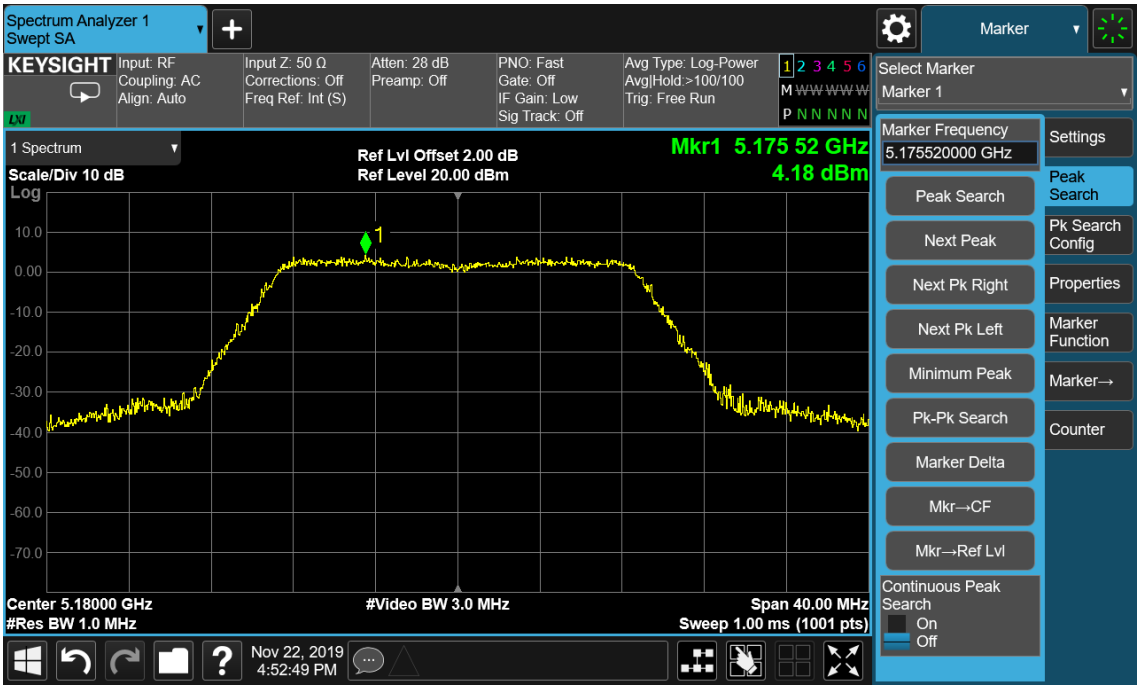


Figure 23: Power Spectral Density, 802.11n(HT20), 5220MHz

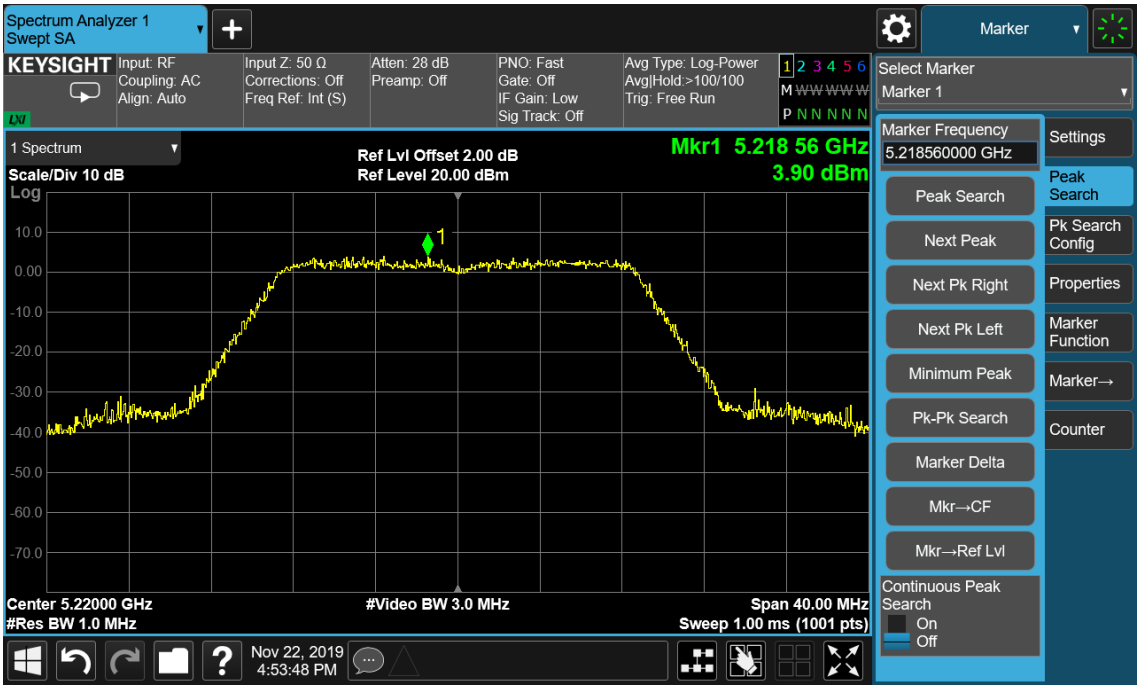


Figure 24: Power Spectral Density, 802.11n(HT20), 5240MHz

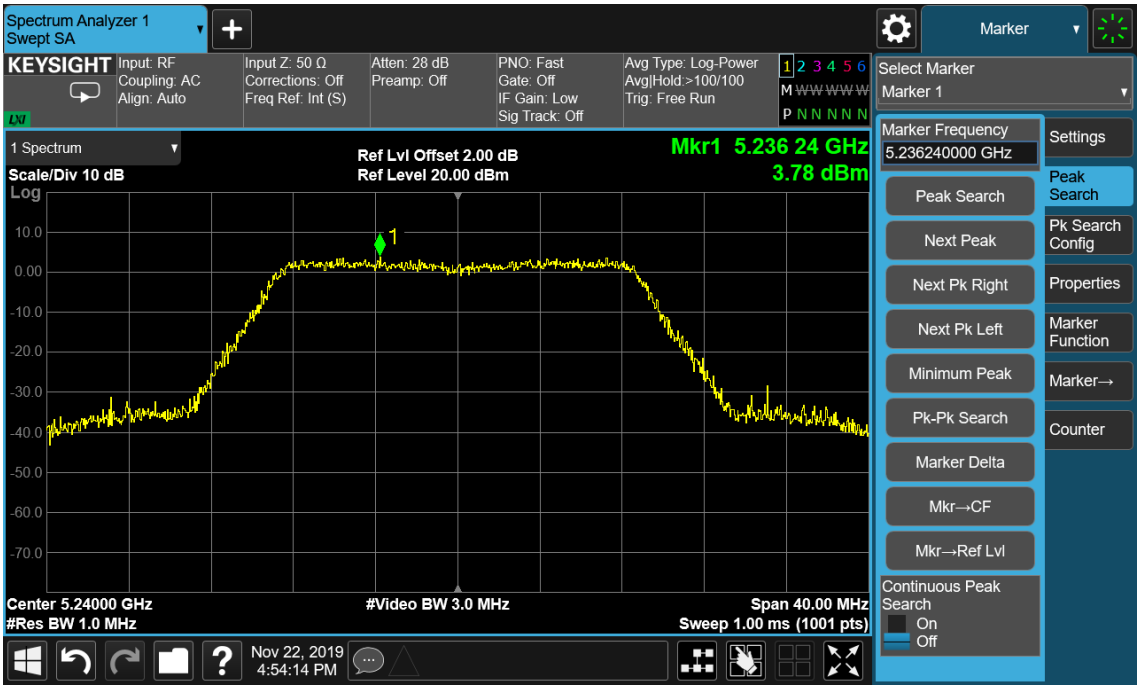


Figure 25: Power Spectral Density, 802.11a, 5745MHz

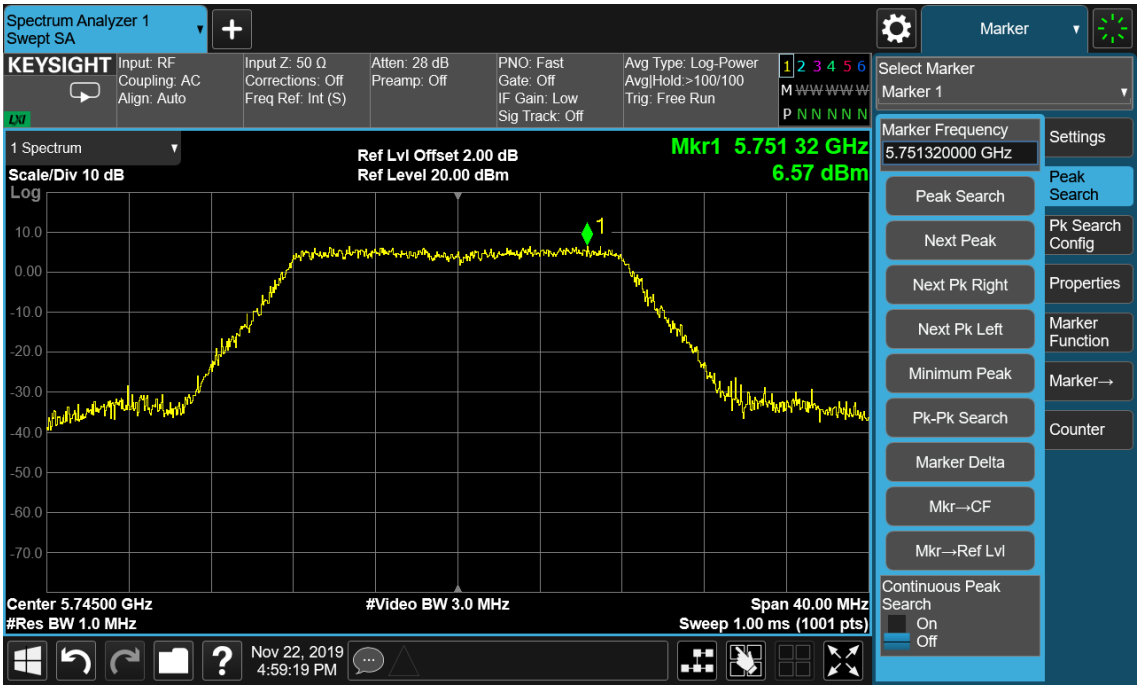


Figure 26: Power Spectral Density, 802.11a, 5785MHz

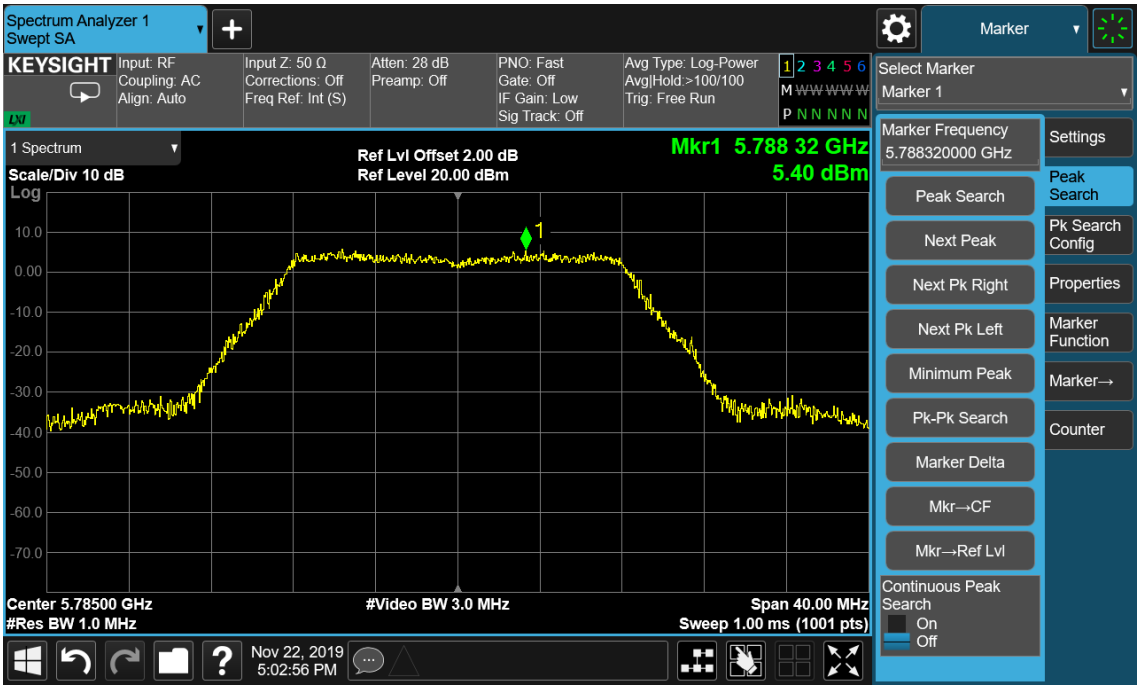


Figure 27: Power Spectral Density, 802.11a, 5825MHz

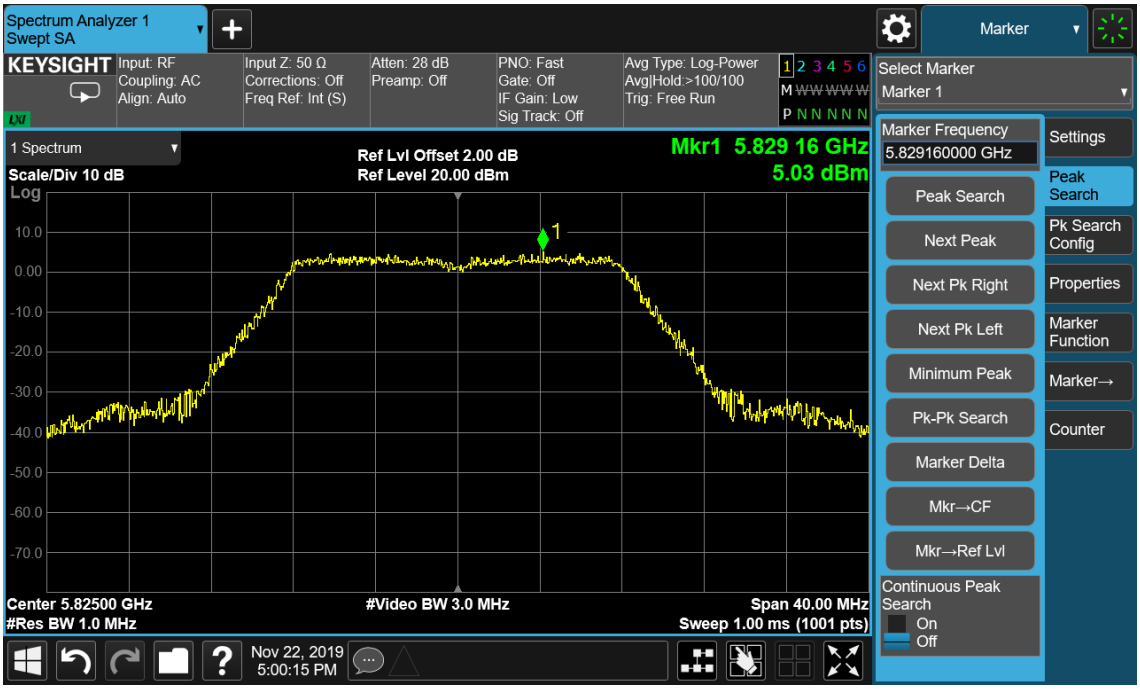


Figure 28: Power Spectral Density, 802.11n(HT20), 5745MHz

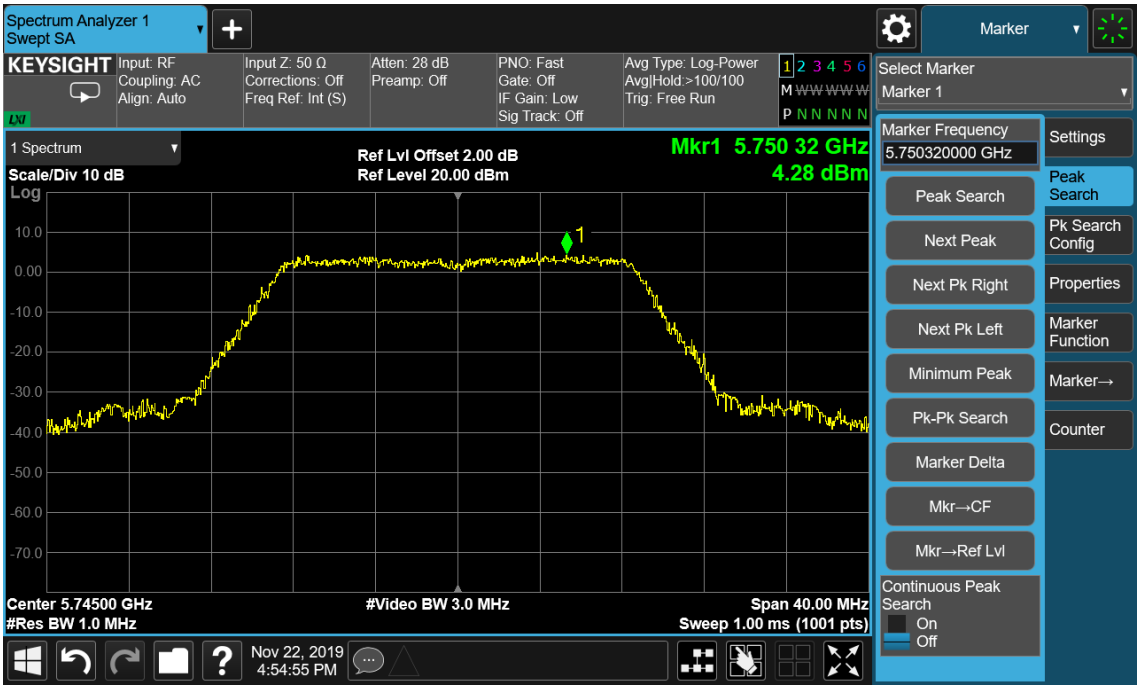


Figure 29: Power Spectral Density, 802.11n(HT20), 5785MHz

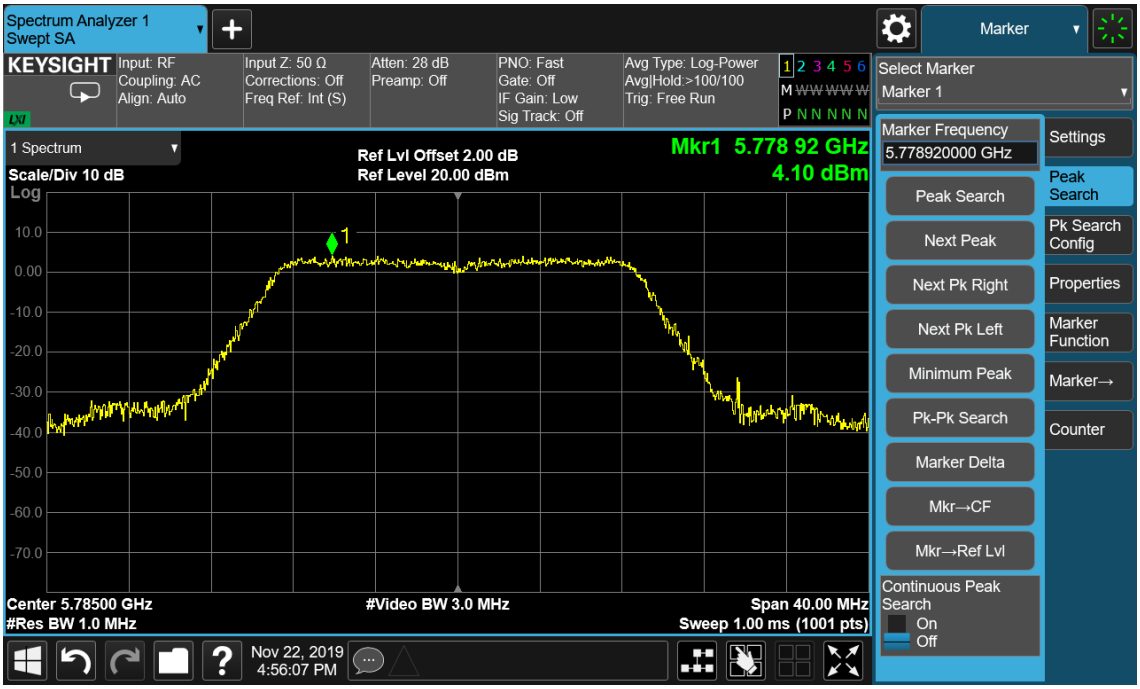
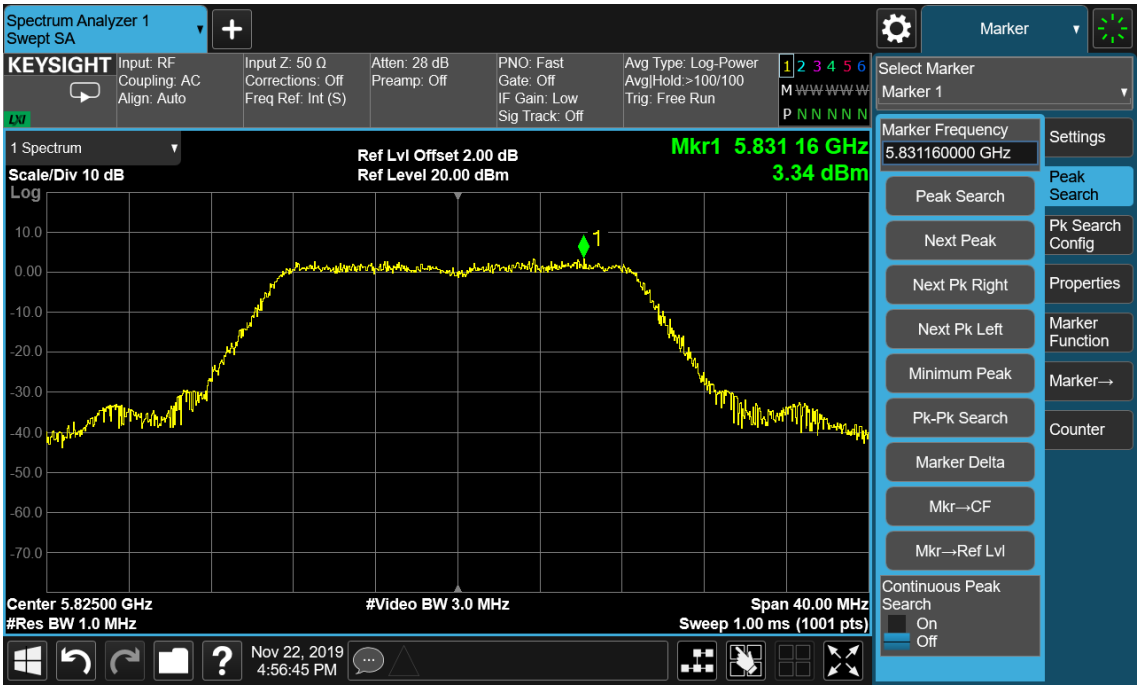


Figure 30: Power Spectral Density, 802.11n(HT20), 5825MHz



4.1.6 Undesirable Emission

RESULT: **PASS**

Test standard	:	FCC Part 15.407(b), 15.209
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1.a
Ambient temperature	:	25°C
Relative humidity	:	52%

For details refer to following test plot.

Figure 31: Undesirable Emission, 30MHz-25GHz, 802.11a, 5180MHz

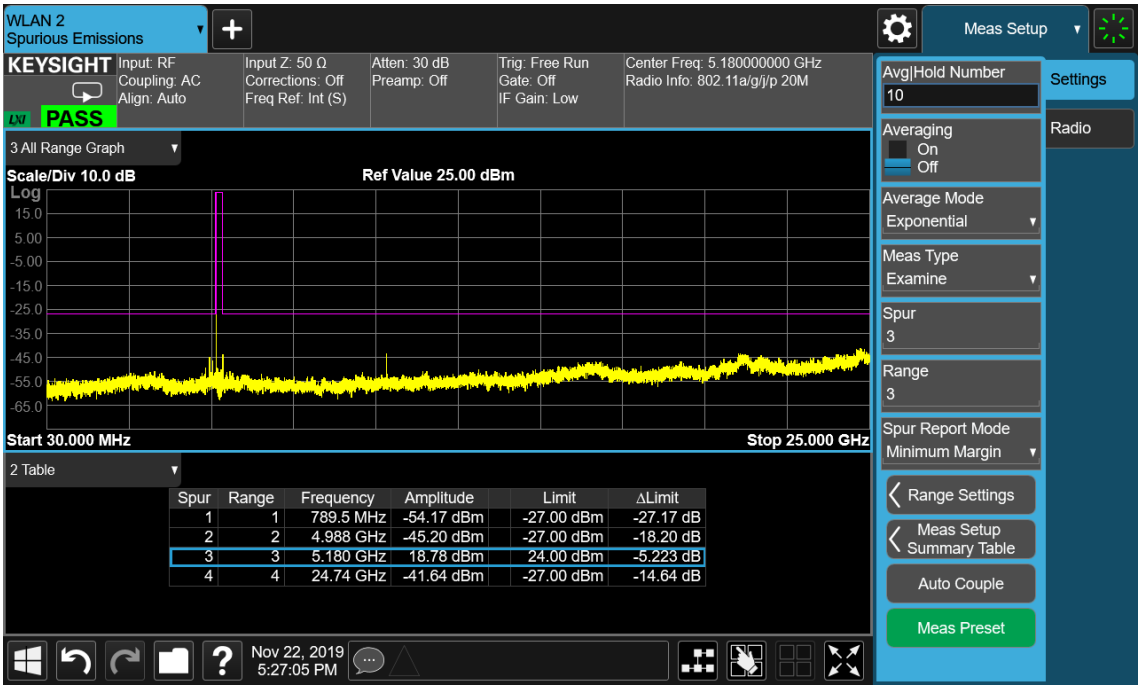


Figure 32: Undesirable Emission, 30MHz-25GHz, 802.11a, 5220MHz

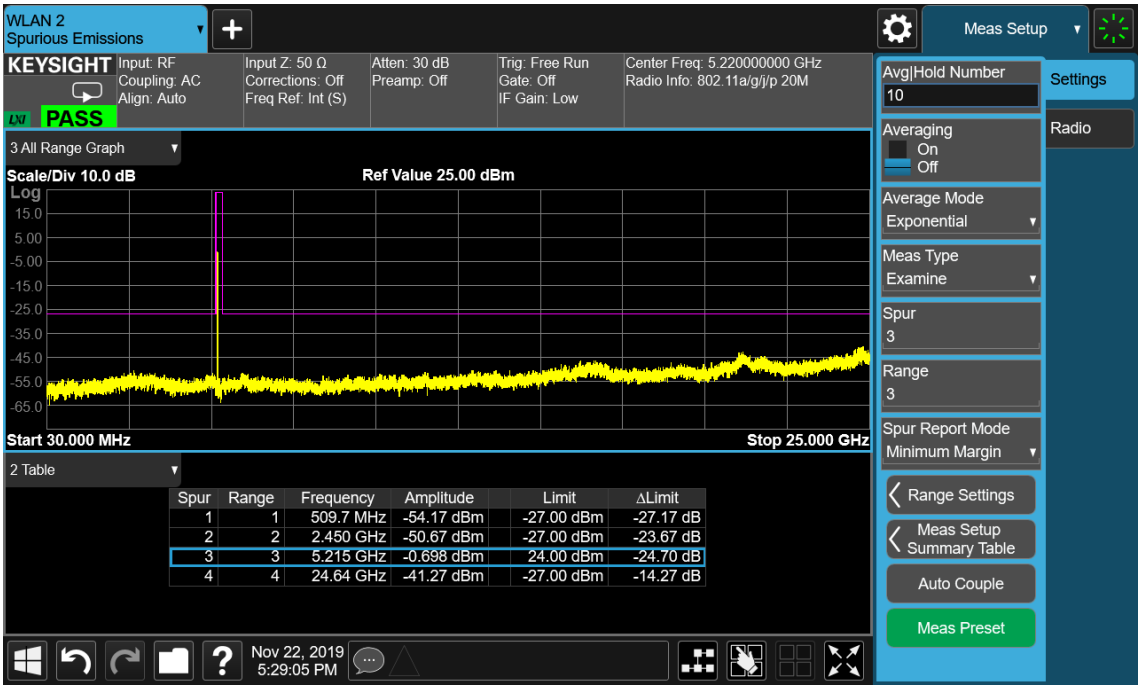


Figure 33: Undesirable Emission, 30MHz-25GHz, 802.11a, 5240MHz

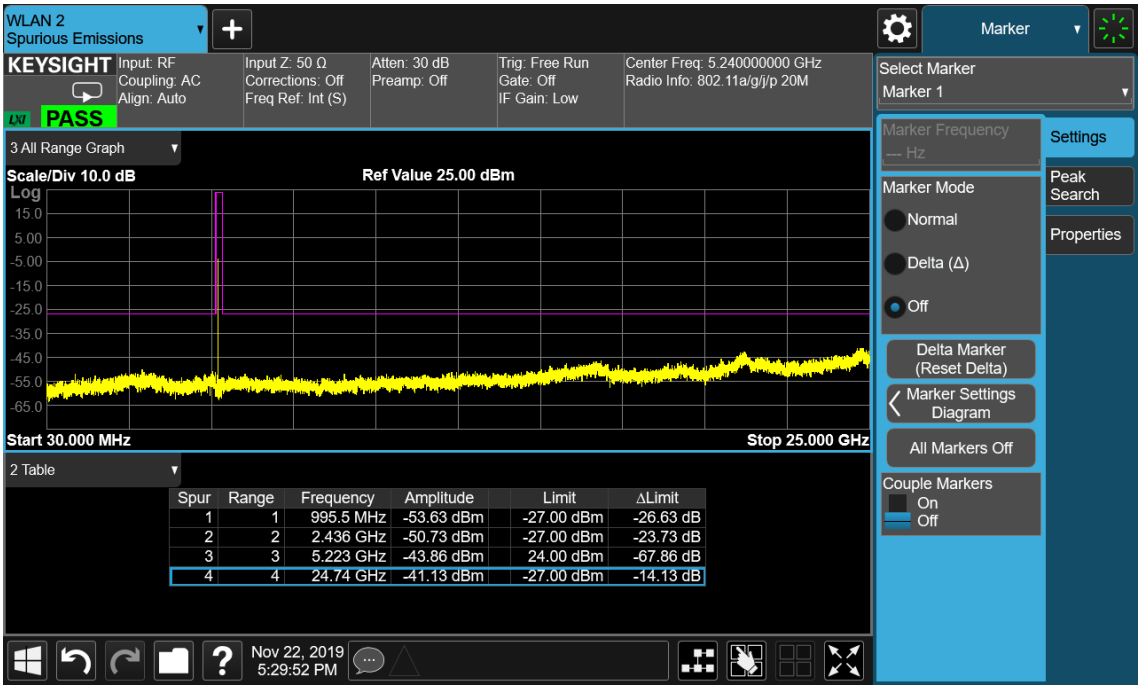


Figure 34: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5180MHz

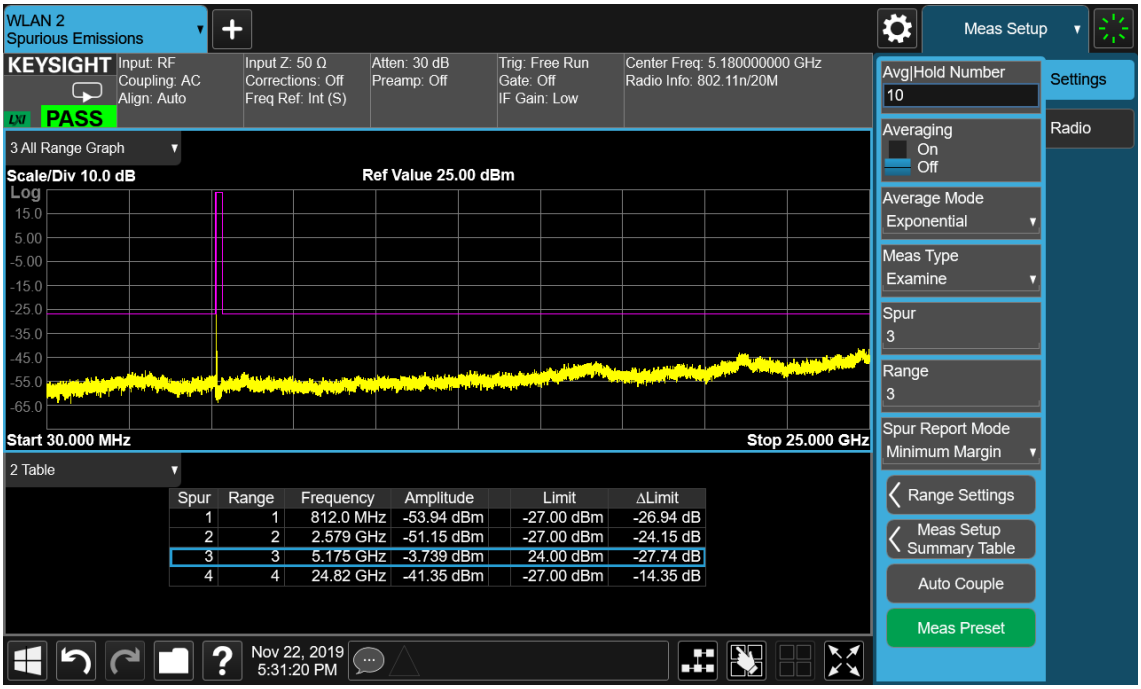


Figure 35: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5220MHz

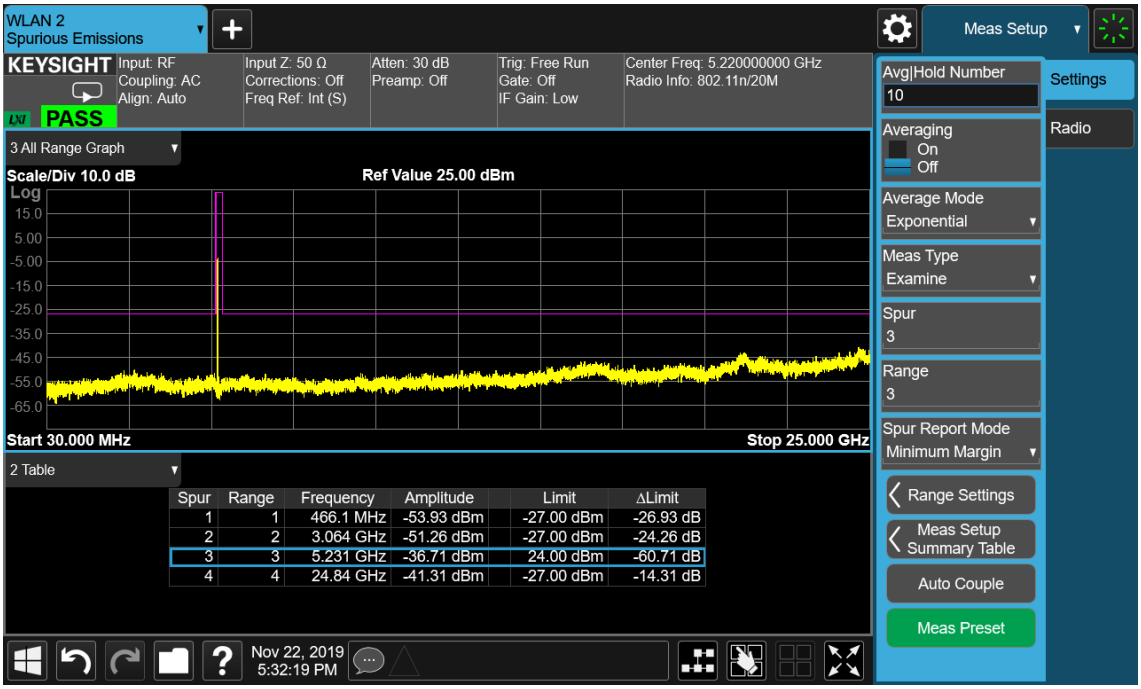


Figure 36: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5240MHz

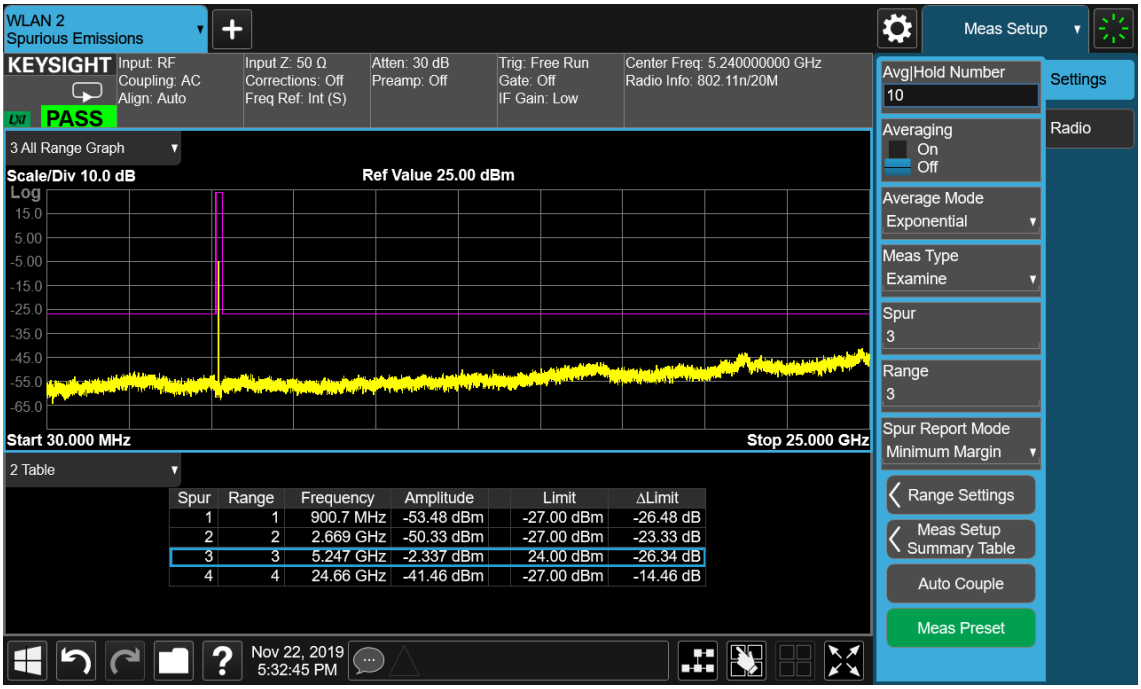
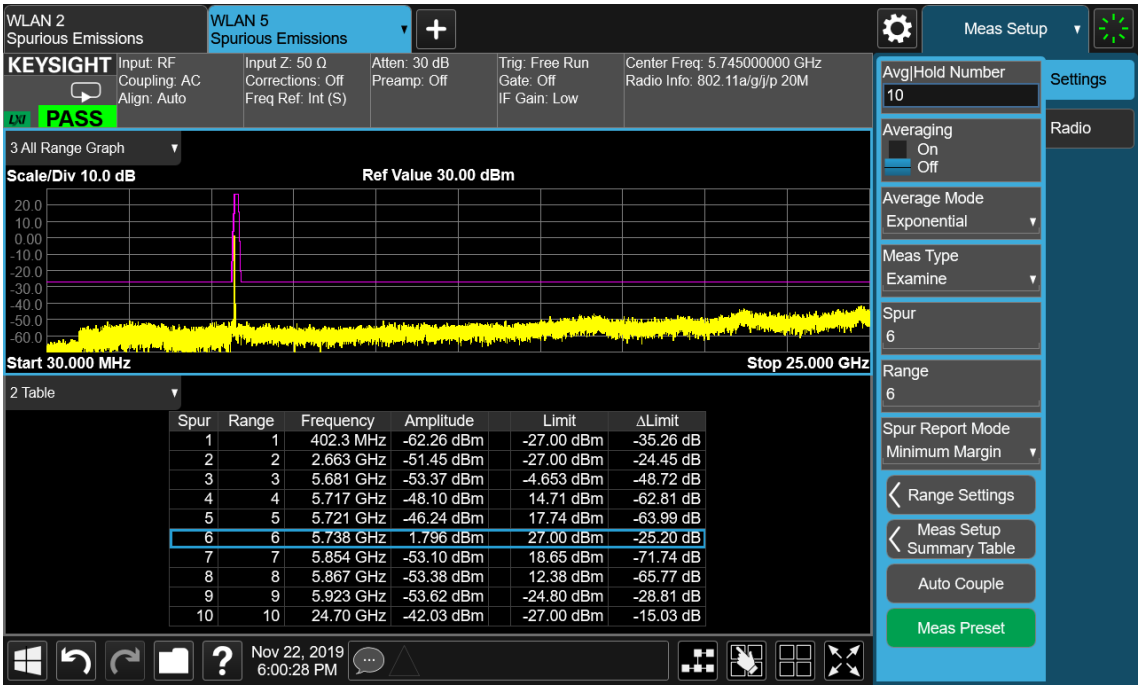
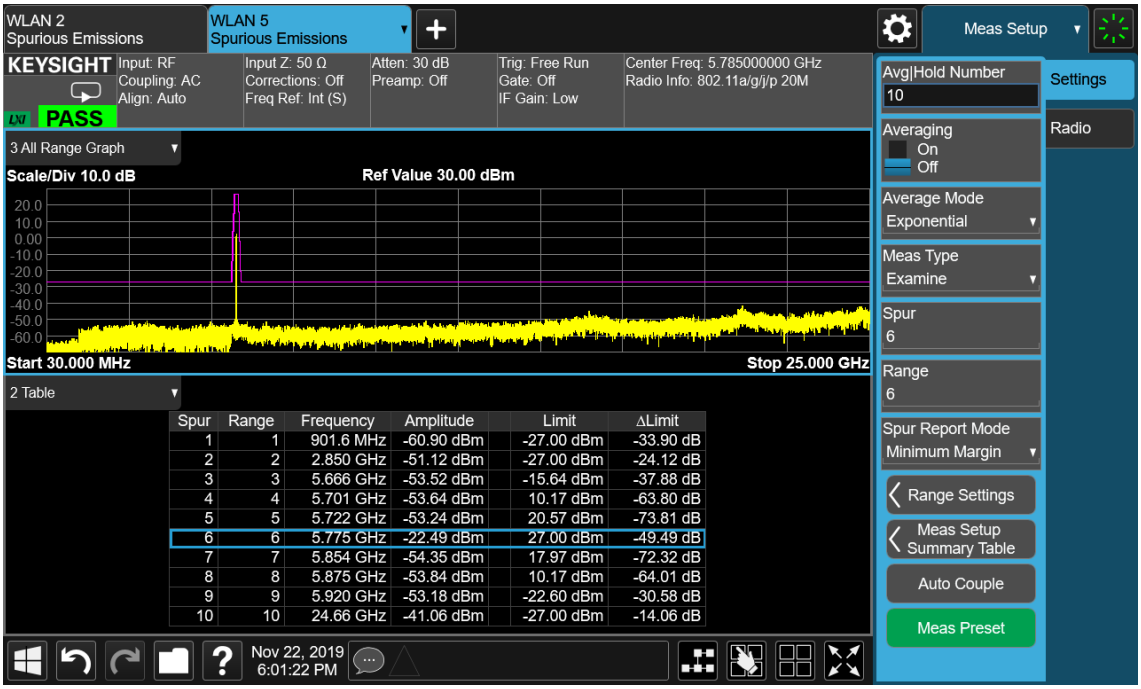


Figure 37: Undesirable Emission, 30MHz-25GHz, 802.11a, 5745MHz



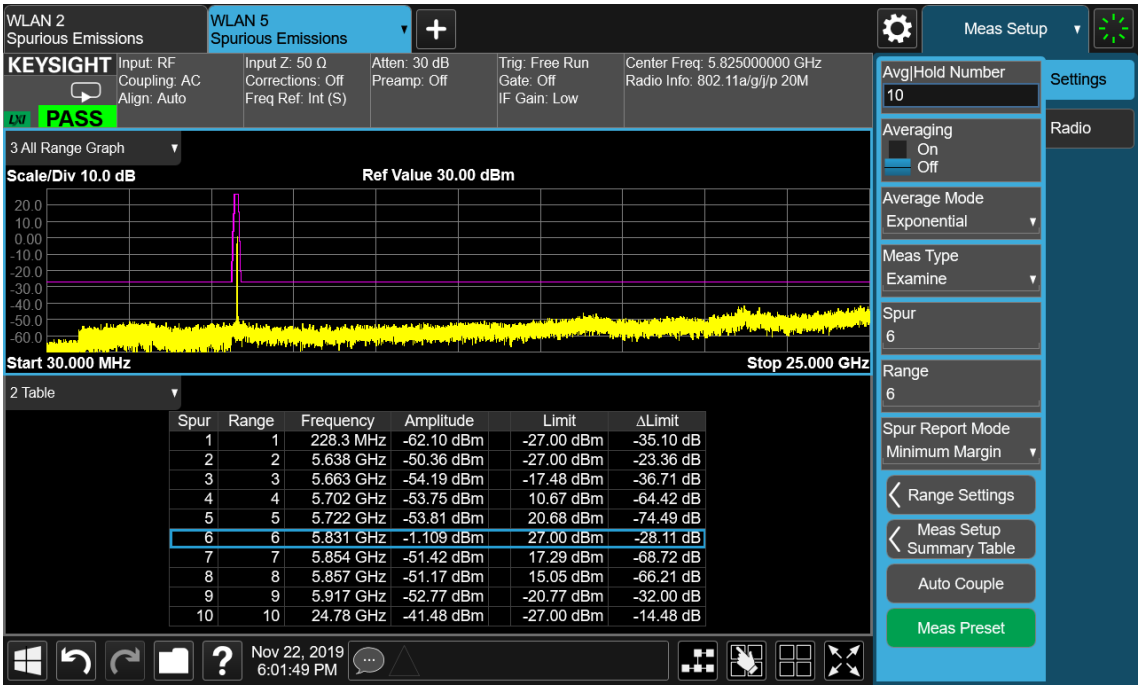
Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	402.3 MHz	-62.26 dBm	-27.00 dBm	-35.26 dB
2	2	2.663 GHz	-51.45 dBm	-27.00 dBm	-24.45 dB
3	3	5.681 GHz	-53.37 dBm	-4.653 dBm	-48.72 dB
4	4	5.717 GHz	-48.10 dBm	14.71 dBm	-62.81 dB
5	5	5.721 GHz	-46.24 dBm	17.74 dBm	-63.99 dB
6	6	5.738 GHz	1.796 dBm	27.00 dBm	-25.20 dB
7	7	5.854 GHz	-53.10 dBm	18.65 dBm	-71.74 dB
8	8	5.867 GHz	-53.38 dBm	12.38 dBm	-65.77 dB
9	9	5.923 GHz	-53.62 dBm	-24.80 dBm	-28.81 dB
10	10	24.70 GHz	-42.03 dBm	-27.00 dBm	-15.03 dB

Figure 38: Undesirable Emission, 30MHz-25GHz, 802.11a, 5785MHz



Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	901.6 MHz	-60.90 dBm	-27.00 dBm	-33.90 dB
2	2	2.850 GHz	-51.12 dBm	-27.00 dBm	-24.12 dB
3	3	5.666 GHz	-53.52 dBm	-15.64 dBm	-37.88 dB
4	4	5.701 GHz	-53.64 dBm	10.17 dBm	-63.80 dB
5	5	5.722 GHz	-53.24 dBm	20.57 dBm	-73.81 dB
6	6	5.775 GHz	-22.49 dBm	27.00 dBm	-49.49 dB
7	7	5.854 GHz	-54.35 dBm	17.97 dBm	-72.32 dB
8	8	5.875 GHz	-53.84 dBm	10.17 dBm	-64.01 dB
9	9	5.920 GHz	-53.18 dBm	-22.60 dBm	-30.58 dB
10	10	24.66 GHz	-41.06 dBm	-27.00 dBm	-14.06 dB

Figure 39: Undesirable Emission, 30MHz-25GHz, 802.11a, 5825MHz

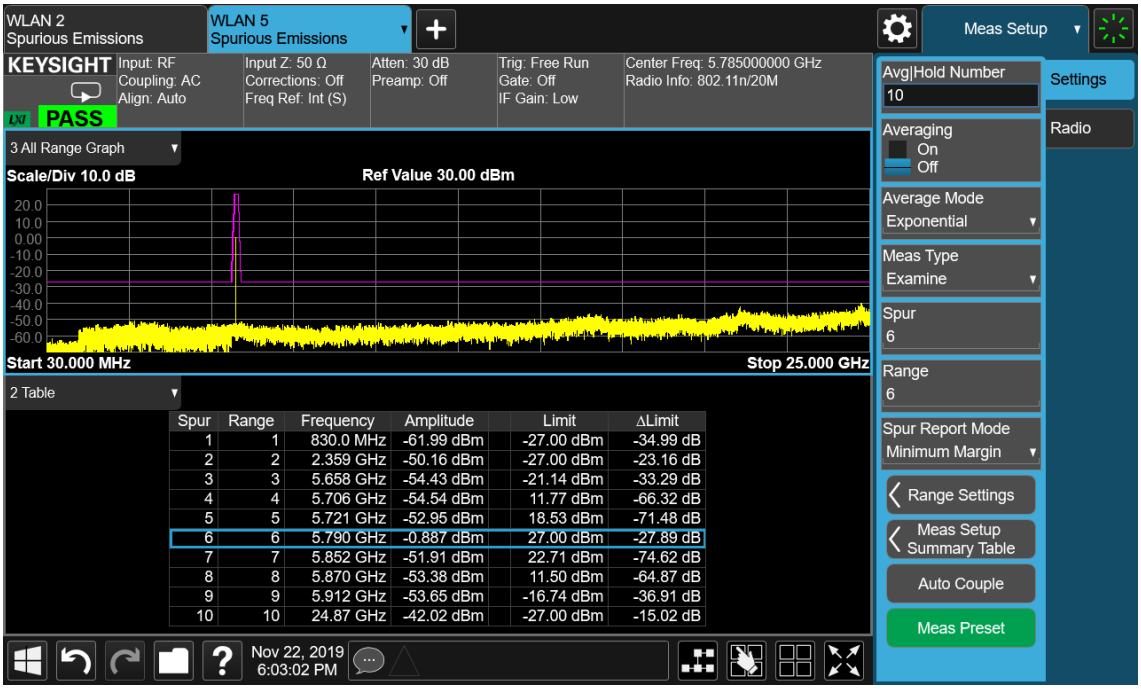


Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	228.3 MHz	-62.10 dBm	-27.00 dBm	-35.10 dB
2	2	5.638 GHz	-50.36 dBm	-27.00 dBm	-23.36 dB
3	3	5.663 GHz	-54.19 dBm	-17.48 dBm	-36.71 dB
4	4	5.702 GHz	-53.75 dBm	10.67 dBm	-64.42 dB
5	5	5.722 GHz	-53.81 dBm	20.68 dBm	-74.49 dB
6	6	5.831 GHz	-1.109 dBm	27.00 dBm	-28.11 dB
7	7	5.854 GHz	-51.42 dBm	17.29 dBm	-68.72 dB
8	8	5.857 GHz	-51.17 dBm	15.05 dBm	-66.21 dB
9	9	5.917 GHz	-52.77 dBm	-20.77 dBm	-32.00 dB
10	10	24.78 GHz	-41.48 dBm	-27.00 dBm	-14.48 dB

Figure 40: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5745MHz

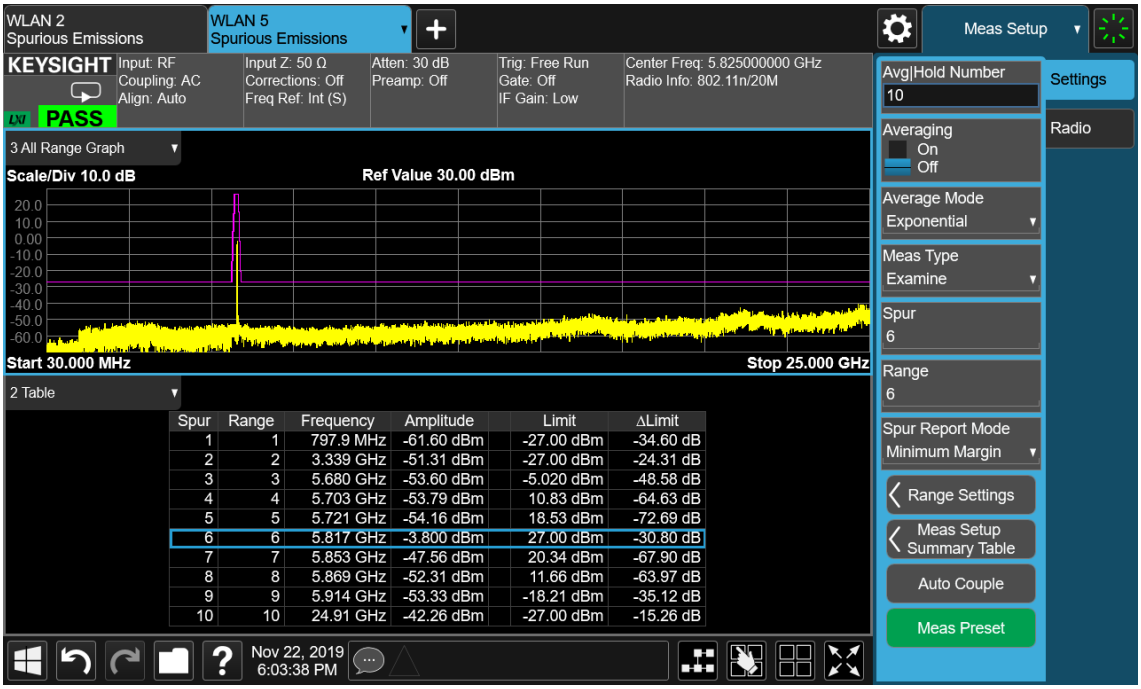
Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	916.0 MHz	-61.99 dBm	-27.00 dBm	-34.99 dB
2	2	2.785 GHz	-50.72 dBm	-27.00 dBm	-23.72 dB
3	3	5.658 GHz	-52.24 dBm	-21.50 dBm	-30.74 dB
4	4	5.717 GHz	-47.42 dBm	14.82 dBm	-62.24 dB
5	5	5.722 GHz	-46.06 dBm	19.10 dBm	-65.16 dB
6	6	5.753 GHz	-8.523 dBm	27.00 dBm	-35.52 dB
7	7	5.854 GHz	-54.47 dBm	17.18 dBm	-71.65 dB
8	8	5.863 GHz	-53.73 dBm	13.38 dBm	-67.11 dB
9	9	5.905 GHz	-53.95 dBm	-11.98 dBm	-41.96 dB
10	10	24.78 GHz	-41.41 dBm	-27.00 dBm	-14.41 dB

Figure 41: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5785MHz



Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	830.0 MHz	-61.99 dBm	-27.00 dBm	-34.99 dB
2	2	2.359 GHz	-50.16 dBm	-27.00 dBm	-23.16 dB
3	3	5.658 GHz	-54.43 dBm	-21.14 dBm	-33.29 dB
4	4	5.706 GHz	-54.54 dBm	11.77 dBm	-66.32 dB
5	5	5.721 GHz	-52.95 dBm	18.53 dBm	-71.48 dB
6	6	5.790 GHz	-0.887 dBm	27.00 dBm	-27.89 dB
7	7	5.852 GHz	-51.91 dBm	22.71 dBm	-74.62 dB
8	8	5.870 GHz	-53.38 dBm	11.50 dBm	-64.87 dB
9	9	5.912 GHz	-53.65 dBm	-16.74 dBm	-36.91 dB
10	10	24.87 GHz	-42.02 dBm	-27.00 dBm	-15.02 dB

Figure 42: Undesirable Emission, 30MHz-25GHz, 802.11n(HT20), 5825MHz



Spur	Range	Frequency	Amplitude	Limit	ΔLimit
1	1	797.9 MHz	-61.60 dBm	-27.00 dBm	-34.60 dB
2	2	3.339 GHz	-51.31 dBm	-27.00 dBm	-24.31 dB
3	3	5.680 GHz	-53.60 dBm	-5.020 dBm	-48.58 dB
4	4	5.703 GHz	-53.79 dBm	10.83 dBm	-64.63 dB
5	5	5.721 GHz	-54.16 dBm	18.53 dBm	-72.69 dB
6	6	5.817 GHz	-3.800 dBm	27.00 dBm	-30.80 dB
7	7	5.853 GHz	-47.56 dBm	20.34 dBm	-67.90 dB
8	8	5.869 GHz	-52.31 dBm	11.66 dBm	-63.97 dB
9	9	5.914 GHz	-53.33 dBm	-18.21 dBm	-35.12 dB
10	10	24.91 GHz	-42.26 dBm	-27.00 dBm	-15.26 dB

4.1.7 Spurious Emission

RESULT: **PASS**

Test standard	:	FCC Part 15.407(b)
Requirement	:	ANSI C63.10-2013
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A
Ambient temperature	:	25°C
Relative humidity	:	52%

Notes:

1. Test plots please refer to the annex document "EXHIBIT A of SHE19110042-01BE".

2. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.

3. The spurious above 18GHz is noise only and 20dB below the limit. The value has no need to be reported.

4. The EUT is working in the Normal link mode below 1 GHz.

4.1.8 Band Edge (Restricted-band band-edge)

RESULT: **PASS**

Test standard	:	FCC Part 15.407(b)
Requirement	:	ANSI C63.10-2013, KDB 789033
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1
Ambient temperature	:	25°C
Relative humidity	:	52%

Notes:

1. Test plots please refer to the annex document "EXHIBIT A of SHE19110042-01BE".

4.1.9 Frequency Stability

RESULT: **PASS**

Test standard	:	FCC Part 15.407(g)
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1
Ambient temperature	:	25°C
Relative humidity	:	52%

Table 5: Frequency Stability

Band I (5150 – 5250 MHz):

Voltage vs. Frequency Stability (5180MHz)

Test Conditions		Frequency (MHz)	Max. Deviation (ppm)	Limit (ppm)
Temp (°C)	Voltage (V)			
20	4.35 V	5179.964	6.950	±20
	3.80 V	5179.985	2.896	
	3.00 V	5179.987	2.510	

Temperature vs. Frequency Stability (5180MHz)

Test Conditions		Frequency (MHz)	Max. Deviation (ppm)	Limit (ppm)
Voltage (V)	Temp (°C)			
3.8 V	-30	--	--	±20
	-20	--	--	
	-10	5179.983	3.282	
	0	5179.962	7.336	
	10	5179.974	5.019	
	20	5179.954	8.880	
	30	5179.979	4.054	
	40	5179.963	7.143	
	50	--	--	

Note:

The all configurations were tested respectively, but only the worst channel shown here.

Band IV (5725 – 5850 MHz):

Voltage vs. Frequency Stability (5745MHz)

Test Conditions		Frequency (MHz)	Max. Deviation (ppm)	Limit (ppm)
Temp (°C)	Voltage (V)			
20	4.35 V	5744.949	8.877	±20
	3.80 V	5744.955	7.833	
	3.00 V	5744.975	4.352	

Temperature vs. Frequency Stability (5745MHz)

Test Conditions		Frequency (MHz)	Max. Deviation (ppm)	Limit (ppm)
Voltage (V)	Temp (°C)			
3.8 V	-30	--	--	±20
	-20	--	--	
	-10	5179.963	7.143	
	0	5179.975	4.826	
	10	5179.969	5.985	
	20	5179.959	7.915	
	30	5179.988	2.317	
	40	5179.968	6.178	
	50	--	--	

Note:

The all configurations were tested respectively, but only the worst channel shown here.

4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT: **PASS**

Test standard	:	FCC Part 15.207
Requirement	:	ANSI C63.10-2013
Kind of test site	:	Shielded room

Test setup

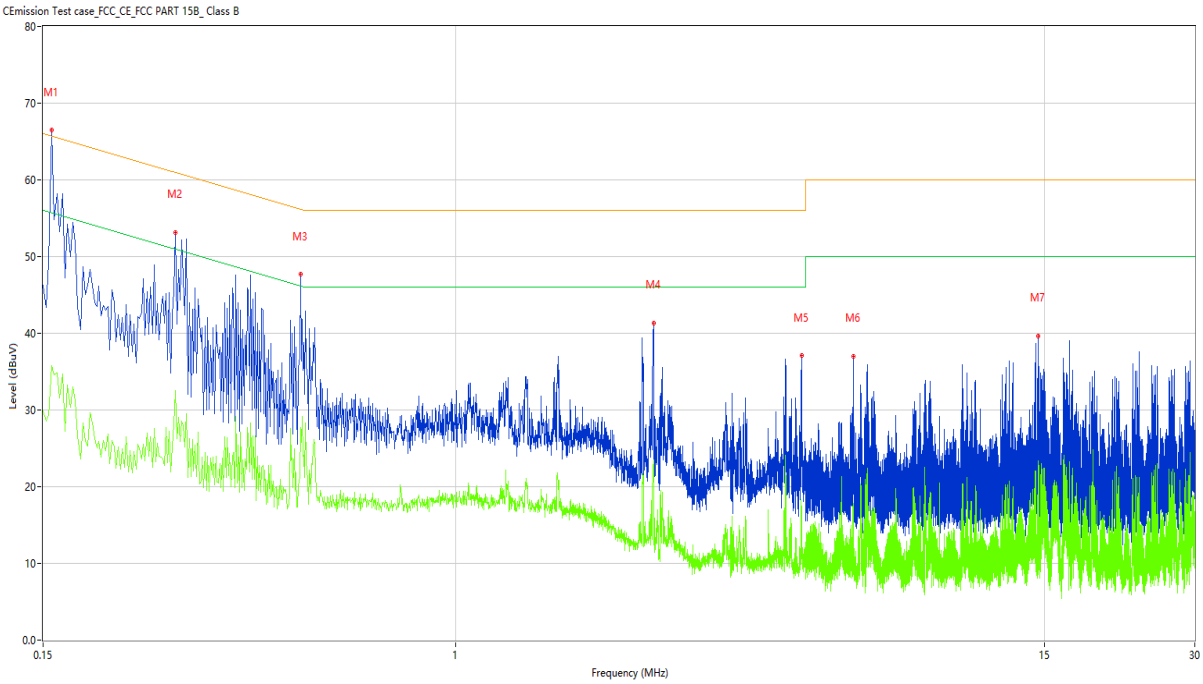
Input Voltage	:	AC 120V, 60Hz; AC 240V, 50Hz
Operation Mode	:	Normal Link
Earthing	:	Not Connected
Ambient temperature	:	25°C
Relative humidity	:	52%

For details refer to following test plot.

Note:

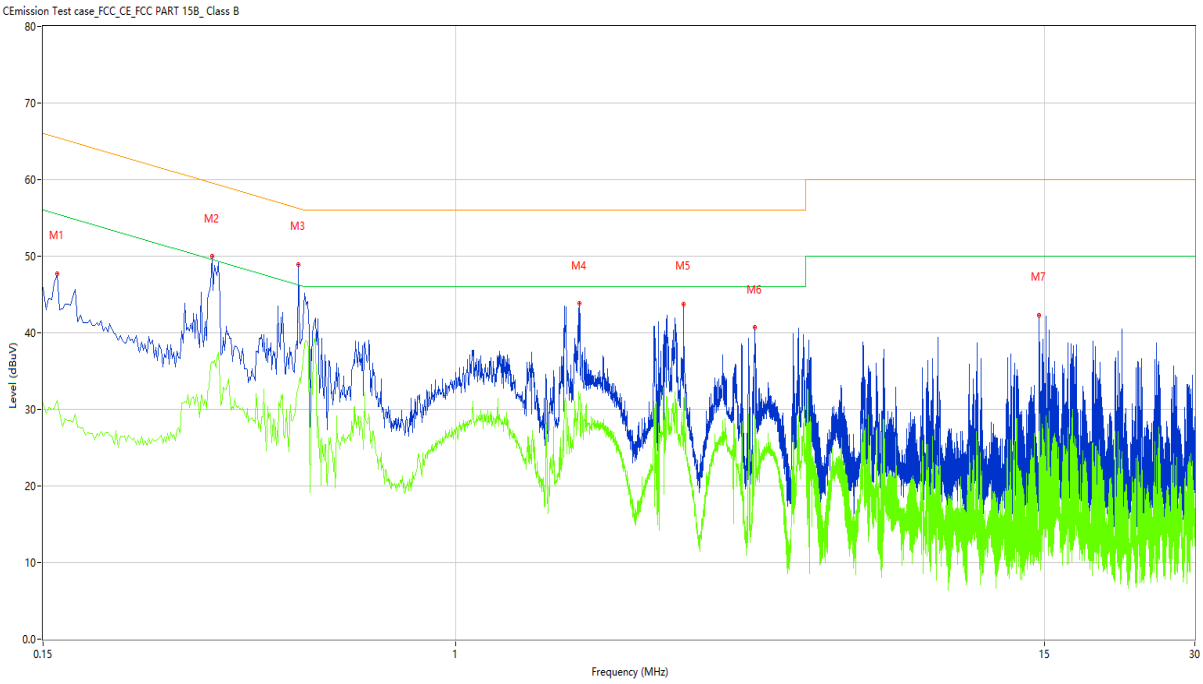
The all configurations were tested respectively, but only the worst configuration shown here.

Figure 43: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	63.81	10.15	65.67	-1.86	Peak	L	Pass
1*	0.156	49.46	10.15	65.67	-16.21	QP	L	Pass
1**	0.156	35.82	10.15	55.67	-19.85	AV	L	Pass
2	0.276	53.03	10.14	60.94	-7.91	Peak	L	Pass
2*	0.276	42.53	10.14	60.94	-18.41	QP	L	Pass
2**	0.276	32.53	10.14	50.94	-18.41	AV	L	Pass
3	0.490	50.33	10.15	56.17	-5.84	Peak	L	Pass
3*	0.490	38.88	10.15	56.17	-17.29	QP	L	Pass
3**	0.490	27.72	10.15	46.17	-18.45	AV	L	Pass
4	2.488	40.91	10.19	56.00	-15.09	Peak	L	Pass
4*	2.488	30.18	10.19	56.00	-25.82	QP	L	Pass
4**	2.488	23.54	10.19	46.00	-22.46	AV	L	Pass
5	4.910	39.19	10.25	56.00	-16.81	Peak	L	Pass
5*	4.910	23.25	10.25	56.00	-32.75	QP	L	Pass
5**	4.910	17.45	10.25	46.00	-28.55	AV	L	Pass
7	14.616	38.26	10.47	60.00	-21.74	Peak	L	Pass
7*	14.616	27.73	10.47	60.00	-32.27	QP	L	Pass
7**	14.616	23.39	10.47	50.00	-26.61	AV	L	Pass

Figure 44: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	61.48	10.15	65.89	-4.41	Peak	N	Pass
1*	0.152	48.85	10.15	65.89	-17.04	QP	N	Pass
1**	0.152	29.36	10.15	55.89	-26.53	AV	N	Pass
2	0.326	51.95	10.14	59.55	-7.60	Peak	N	Pass
2*	0.326	39.07	10.14	59.55	-20.48	QP	N	Pass
2**	0.326	36.30	10.14	49.55	-13.25	AV	N	Pass
3	0.486	49.66	10.15	56.24	-6.58	Peak	N	Pass
3*	0.486	41.42	10.15	56.24	-14.82	QP	N	Pass
3**	0.486	32.89	10.15	46.24	-13.35	AV	N	Pass
4	1.766	43.96	10.17	56.00	-12.04	Peak	N	Pass
4*	1.766	35.27	10.17	56.00	-20.73	QP	N	Pass
4**	1.766	31.40	10.17	46.00	-14.60	AV	N	Pass
5	2.854	43.63	10.21	56.00	-12.37	Peak	N	Pass
5*	2.854	32.32	10.21	56.00	-23.68	QP	N	Pass
5**	2.854	27.54	10.21	46.00	-18.46	AV	N	Pass
7	14.676	40.69	10.47	60.00	-19.31	Peak	N	Pass
7*	14.676	29.64	10.47	60.00	-30.36	QP	N	Pass
7**	14.676	24.07	10.47	50.00	-25.93	AV	N	Pass

5 Appendixes

5.1 Photographs of the Sample

Front of the sample

Rear of the sample

5.2 Set-up for Conducted Emissions

5.3 Set-up for Conducted RF test at Antenna Port

5.4 Set-up for Spurious Emissions below 1GHz

Below 1 GHz

5.5 Set-up for Spurious Emissions above 1GHz

Above 1GHz

End of the report