 <p>CERTIFICATE 2518.08</p> <p>MS ISO/IEC 17025 TESTING SAMM NO. 0825</p>
<p><b>MOTOROLA PENANG ADV. COMM. LABORATORY</b> Motorola Solutions Malaysia Sdn. Bhd. Plot 2A Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.</p>	<p><b>FCC / IC TEST REPORT</b> <b>Report Revision : Rev.C</b></p>
<p><b>Date/s Tested</b> : 28-Mar-2022 - 22-May-2022 <b>Manufacturer/Location</b> : Motorola Solutions Malaysia SDN BHD <b>Manufacturer Address</b> : Plot 2A Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia <b>Requestor</b> : SIEW KHENG TAN <b>Product Type</b> : Hand-held <b>Product Version (PMN)</b> : MSLB-MKZ920 <b>Model Number (HVIN)</b> : AAH90UCU9RH1AN <b>Frequency Band</b> : 5180-5825 MHz <b>Firmware Version (FVIN)</b> : D00.01.86_D02.22.01.0103 <b>Applicant Name</b> : Motorola Solutions Inc <b>Applicant Address</b> : 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322 <b>FCC Registrations</b> : 461337 <b>ISED Registrations</b> : MY0001</p> <p><b>The equipment was tested accordance to the requirement listed below:</b></p> <p><b>(5GHz Wi-Fi) FCC 47 CFR Part 15 Subpart E IC RSS 247 Issue 2 February 2017</b> <b>PASS</b></p>	
<p>This report shall not be reproduced without written approval from an officially designated representative of the Motorola Penang Adv. Comm. Laboratory. The results and statements contained in this report pertain only to the device(s) evaluated.</p>	
<p>Prepared By:</p> <p>_____</p> <p><b>GAN BOON TEONG</b> <b>Test Personnel</b></p>	<p>Approved Signatory:</p> <p>_____</p> <p><b>HO SZE KHIAN</b> <b>Responsible Engineer</b></p>

## Table of Contents

1.0. Summary of Test Results .....	4
2.0. Measurement Uncertainty .....	5
3.0. Equipment List .....	6
4.0. General Information .....	7
5.0. Test Mode Applicability and Test Channel Detail .....	10
6.0. Duty Cycle of Test Signal .....	13
6.0.1. Test Setup .....	13
6.0.2. Test Data .....	13
7.0. Transmitter Test Parameters .....	16
7.1. Bandwidth measurements .....	16
7.1.1. Test Setup .....	16
7.1.2. Test Limits .....	16
7.1.3. Test Data .....	16
7.2. Maximum Conducted Output Power .....	30
7.2.1. Test Setup .....	30
7.2.2. Test Limits .....	30
7.2.3. Additional Info .....	31
7.2.4. Test Data .....	32
7.3. Maximum Power Spectral Density .....	55
7.3.1. Test Setup .....	55
7.3.2. Test Limits .....	55
7.3.3. Additional Info .....	56
7.3.4. Test Data .....	56
7.4. 6dB Bandwidth .....	57
7.4.1. Test Setup .....	57
7.4.2. Test Limits .....	57
7.4.3. Test Data .....	57
7.5. Frequency Stability .....	58
7.5.1. Test Setup .....	58
7.5.2. Test Limits .....	58
7.5.3. Test Data .....	58
7.6. Band Edge Radiated Spurious Emission Measurement .....	59
7.6.1. Test Setup .....	59
7.6.2. Test Limits .....	60
7.6.3. Test Result .....	61
7.7. Radiated Spurious Emission Measurement .....	64
7.7.1. Test Setup .....	64
7.7.2. Test Limits .....	65
7.7.3. Test Data .....	66
7.8. AC Powerline Conducted Emission .....	71
7.8.1. Test Setup .....	71
7.8.2. Test Limits .....	71
7.8.3. Test Data .....	72

REVISION HISTORY

<b>Revision History</b>	<b>Description</b>	<b>Date</b>	<b>Originator</b>
Rev. A	Initial Report	<b>27-Apr-2022</b>	<b>Gan Boon Teong</b>
Rev. B	Remove Tanapa on cover page, Update RE and CE data	<b>21-Jun-2022</b>	<b>Gan Boon Teong</b>
Rev. C	Update General Information and Summary of Test Results	<b>20-Jul-2022</b>	<b>Gan Boon Teong</b>

1.0. Summary of Test Results

FCC Clause	IC Clause	Test Item	Result	Remarks	Serial Number tested	Tested by
15.407 (a)(1/2/3)	RSS 247 6.2	Maximum Conducted Output Power (Average)	Pass	Highest output power: 802.11a: 14.954 dBm (31.29 mW) 802.11n20/ac20: 14.747 dBm (29.83 mW) 802.11n40/ac40: 14.849 dBm (30.54 mW) 802.11ac80: 15.535 dBm (35.77 mW)	734TYF0020	Gan
15.407(a) (1/2/3)	RSS 247 6.2	Maximum Power Spectral Density	Pass	References data from FCC ID AZ489FT7133 / ISED 109U-89FT7133	NA	NA
15.407 (e)	RSS 247 6.2.4	6dB Bandwidth	Pass	References data from FCC ID AZ489FT7133 / ISED 109U-89FT7133	NA	NA
15.407 (g)	RSS Gen 6.11	Frequency Stability	Pass	References data from FCC ID AZ489FT7133 / ISED 109U-89FT7133	NA	NA
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Band Edge Radiated Spurious Emission Measurement	Pass	Worst case emission: 42.4139 dBuV/m. (Margin = 11.5861 dB)	734TYF0069, 734TYF0065, 734TYF0066	Nazrin& Qawiman
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Radiated Spurious Emission Measurement	Pass	Worst case emission: 24.8261 dBuV/m, (Margin: 15.1739 dB)	734TYF0069, 734TYF0065, 734TYF0066	Nazrin& Qawiman
15.207 15.407 (b)(6)	RSS Gen 8.8	AC Powerline Conducted Emission	Pass	NA	734TYF0069, 734TYF0065, 734TYF0066	Alif
15.203	-	Antenna requirement	Pass	Internal antenna is not accessible to the end-user	NA	NA

NA → Not Available

**\*NOTE: The BT chipset is identical to FCC ID AZ489FT7133 / ISED 109U-89FT7133. The rest of conducted measurements are by similarity. Only worst case configuration of radiated emission based on FCC ID AZ489FT7133 / ISED 109U-89FT7133 is tested. As per KDB 484596 D01v01, the applicant takes full responsibility that data referenced represents compliance to the relevant rules for this current FCC ID.**

## 2.0. Measurement Uncertainty

<b>Measurement</b>	<b>Frequency</b>	<b>Expanded Uncertainty (k=1.96) (<math>\pm</math>dB)</b>
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.48
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	5.88
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.84
	18GHz ~ 40GHz	6.02
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82

### 3.0. Equipment List

#### **Bluetooth ATE # 1 (SW Version: Ate Main\_3.1.11)**

Description	Model	Serial Number	Calibration Date	Calibration Due Date
ANALYZER SPECTRUM	E4440A	US45303111	14-Jul-21	14-Jul-22
CHAMBER	SH-641	92003820	14-Jul-21	14-Jul-22
POWER SUPPLY	6652A	MY40001436	22-Nov-21	22-Nov-22
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA

#### **Radiated Emission Station (SW Version: EMC FCC RE v1.6.4)**

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DRG HORN FREQ.	SAS-571	720	06-Apr-21	06-Apr-23
DRG HORN FREQ.	SAS-571	719	13-Sep-21	13-Sep-22
POWER SUPPLY	N7976A	MY53410110	24-May-21	24-May-22
SIGNAL GENERATOR	SMB 100A	182511	4-Jun-21	4-Jun-24
EMI TEST RECEIVER	ESW44	101731	5-Nov-21	5-Nov-22
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	NA	NA
BILOG ANTENNA	CBL6112D	55546	06-Jun-21	06-Jun-22
BILOG ANTENNA	CBL6112D	30991	05-Oct-21	05-Oct-22
HYGRO-THERMOMETER	SDL500	A.016800	18-May-21	18-May-22
SYSTEM CONTROLLER	SC104V	050806-1	NA	NA
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	NA	NA
ANTENNA POSITIONING TOWER	TLT2	NA	NA	NA
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	3-Aug-21	3-Aug-22
PREAMPLIFIER 18-40GHz	BBV9721	9721-007	NA	NA
PREAMPLIFIER	PAM-0118P	361	11-Sep-20	11-Sep-23
LOOP ANTENNA	6502	00208416	8-Oct-21	8-Oct-22

#### **AC Powerline Station(SW Version: EMC 32 V10.60.10)**

Description	Model	Serial Number	Calibration Date	Calibration Due Date
TEMPERATURE & HUMIDITY LOGGER	DSB	16344143	29-May-21	29-May-22
V-NETWORK 2-LINE	ENV216V	101268	19-Aug-21	19Aug-22
EMI TEST RECEIVER	ESCI	10025	5-Feb-21	5-Jun-22
PROGRAMMABLE AC SOURCE	61604	ABR000000926	14-Jul-21	14-Jul-22

4.0. General Information

**General Description of EUT:**

<b>Product</b>	Hand-held
<b>Brand</b>	Motorola Solutions
<b>Test Model</b>	MSLB-MKZ920
<b>Power Supply Rating</b>	7.5Vdc (Battery)
<b>Mode of operation</b>	WLAN 5GHz
<b>Modulation Type</b>	QPSK, BPSK, 16QAM, 64QAM, 256QAM
<b>Modulation Technology</b>	OFDM
<b>Transfer Rate</b>	802.11a: 6.0/9.0/12.0/18.0/24.0/36.0/48.0/54.0 Mbps 802.11n: up to MCS15 802.11ac: up to MCS9
<b>Operating Frequency</b>	5.180 ~ 5.240 GHz, 5.260 ~ 5.320 GHz, 5.50 ~ 5.720 GHz, 5.745 ~ 5.825 GHz
<b>Output Power (26 EBW or 99% OBW)</b>	25.12 mW for 5.180 ~ 5.240 GHz 25.12 mW for 5.260 ~ 5.320 GHz 39.81 mW for 5.50 ~ 5.720 GHz 39.81 mW for 5.745 ~ 5.825 GHz
<b>Antenna Type</b>	BT/WIFI ANTENNA with 2.46 to 5.04 dBi gain
<b>SW Version</b>	D00.01.86_D02.22.01.0103

Note:

The EUT contains following accessory devices and data cable:

<b>Item</b>	<b>Brand</b>	<b>Model or P/N</b>
BATTERY PACK,BATTERY PACK,IMPRES GEN2, LIION,IP68, 4400T, TIA4950	MOTOROLA	PMNN4805A
CABLE,PORT PROG,TEST AND ALIGN CABLE PSA	MOTOROLA	PMKN4231A
Charger: PMPN4498A=base (PMPN4497A (PMPN4497A-C9) + PSU(3087791G01)	MOTOROLA	PMPN4498A

**Description of Test Modes:**

**For 5180 to 5240 MHz:**

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
36	5180
40	5200
44	5220
48	5240

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
38	5190
46	5230

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
42	5210

**For 5260 to 5320 MHz:**

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
52	5260
56	5280
60	5300
64	5320

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
54	5270
62	5310

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
58	5290

**For 5500 to 5720 MHz:**

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700
144	5720

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
102	5510
110	5550
118	5590
126	5630
134	5670
142	5710



Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
106	5530
122	5610
138	5690

**For 5745 to 5825 MHz:**

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT40)

Channel	Frequency(MHz)
149	5745
153	5765
157	5785
161	5805
165	5825

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency(MHz)
151	5755
159	5795

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
155	5775

**General Description of Applied Standards**

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

**FCC Part15, Subpart E (15.407)**

**789033 D02 General UNII Test Procedures New Rules v01r04**

**644545 D03 Guidance for IEEE 802 11ac New Rules v01**

**ANSI C63.10-2013**

**RSS 247 Issue 2, RSS Gen**

All test have been performed and recorded as per above standards.

**Deviation from standard**

Not applicable as no deviation from standard test method

**Modifications to EUT**

No modifications were done to the UUT to facilitate the tests in this report.

5.0. Test Mode Applicability and Test Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	x	√	x	x	Power from carcharger (12Vdc)
C	x	√	x	x	Power from carcharger (24Vdc)

Where:

**RE≥1G:** Radiated Emission above 1GHz & Band edge Measurement

**RE<1G:** Radiated Emission below 1GHz

**PLC:** Power Line Conducted Emission

**APCM:** Antenna Port Conducted Measurement

**Note:** The EUT had been pre-scanned on the position of each 3 axis planes. The worst case was found when positioned on **Y-plane**.

**Radiated Emission Test (Above 1GHz)**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

**Radiated Emission Test (Below 1GHz)**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

**Power Line Conducted Emission Test**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

**Antenna Port Conducted Measurement:**

This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

**Test Condition:**

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	23.3°C, 69.5% RH	7.5V DC	Nazrin/Qawiman
RE<1G	23.3°C, 69.5% RH	7.5V DC	Nazrin/Qawiman
PLC	19.9°C, 62.7% RH	120V AC	Alif
APCM	25°C, 50% RH	7.5V DC	Gan

**Duty Cycle of Test Signal**

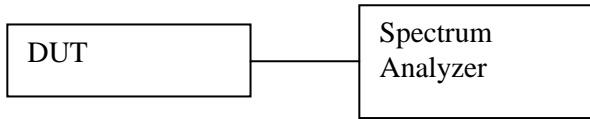
802.11a and 802.11n(HT20): Duty cycle of test signal is ≥98%.

802.11n (HT40) and 802.11ac(VHT80): Duty cycle of test signal is ≤98%.

If Duty cycle of test signal is <98%, duty cycle factor shall be considered. (Refer to section 6.0 for duty cycle measurement)

## 6.0. Duty Cycle of Test Signal

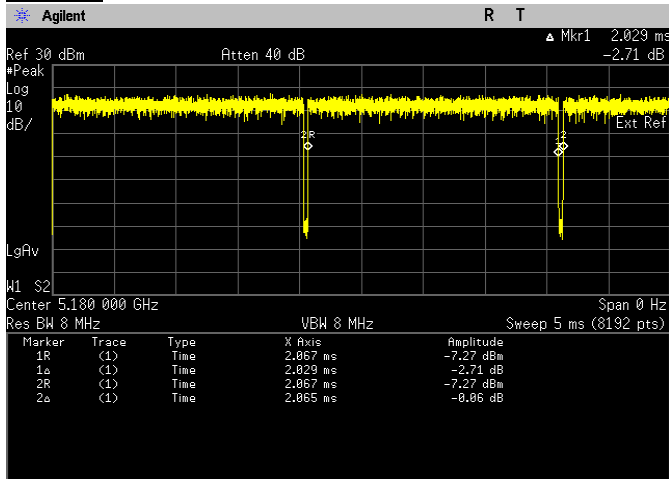
### 6.0.1. Test Setup



- 1) Set DUT to desire transmit frequency and transmit with maximum power.
- 2) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 3) Setting of Spectrum analyzer :
  - a. Set the RBW = 10 MHz or the highest RBW available on spectrum analyzer.
  - b. Set the VBW ≥ RBW.
  - c. Set to Zero Span.
  - d. Detector = Peak.
  - e. Sweep time = 10ms or others that allow to measure accurate duty cycle.
  - f. Trace mode = Max hold.
- 4) Record the duty cycle as X and save the plot.

### 6.0.2. Test Data

#### 802.11a

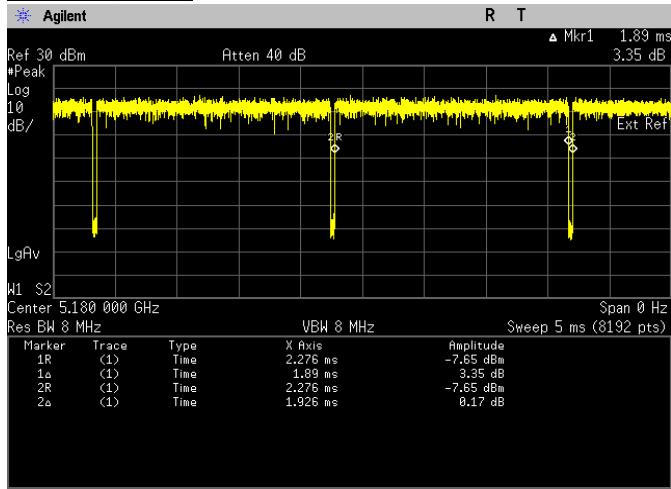


On time	2.029	ms
On + off time	2.065	ms
Duty Cycle	0.9826	
Duty Cycle Factor	0.076	

\*Duty cycle = On time/ On +off time

\*Duty Cycle factor = 10\*log (1/Duty Cycle)

**802.11n (HT20)**

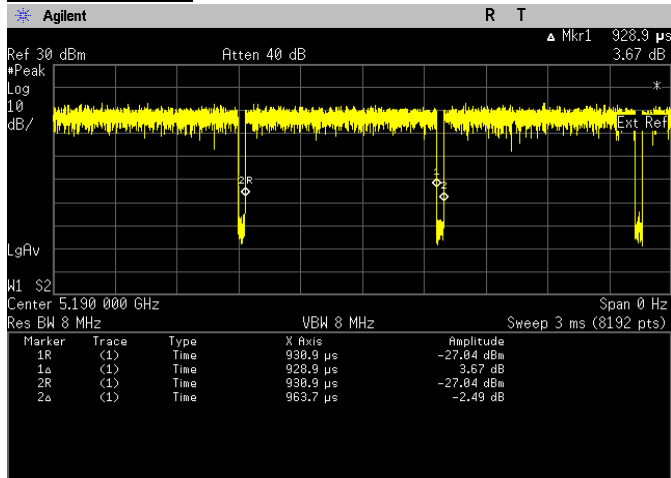


On time	1.89	ms
On + off time	1.926	ms
Duty Cycle	0.9813	
Duty Cycle Factor	0.082	

\*Duty cycle = On time/ On +off time

\*Duty Cycle factor = 10\*log (1/Duty Cycle)

**802.11n (HT40)**

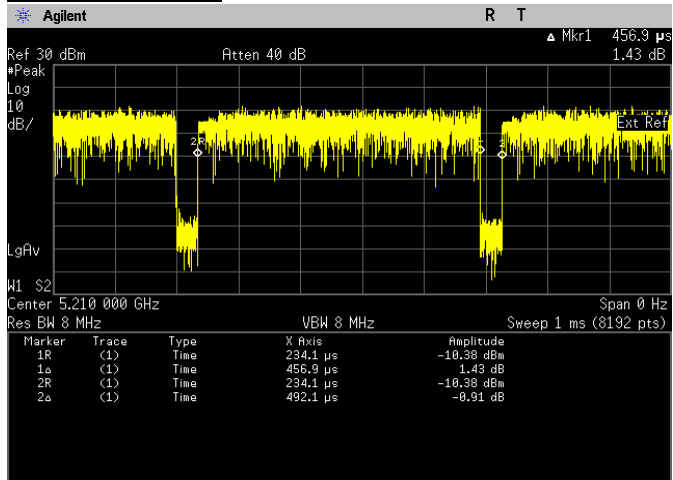


On time	0.9289	ms
On + off time	0.9637	ms
Duty cycle	0.9639	
Duty Cycle factor	0.161	

\*Duty cycle = On time/ On +off time

\*Duty Cycle factor = 10\*log (1/Duty Cycle)

**802.11ac (VHT80)**



On time	0.4569	ms
On + off time	0.4921	ms
Duty cycle	0.9285	
Duty Cycle factor	0.322	

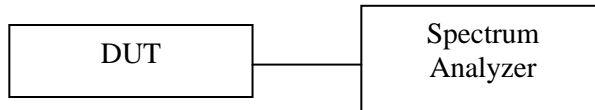
\*Duty cycle = On time/ On +off time

\*Duty Cycle factor = 10\*log (1/Duty Cycle)

## 7.0. Transmitter Test Parameters

### 7.1. Bandwidth measurements

#### 7.1.1. Test Setup



- a) Test Setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer for 26dB EBW:
  - RBW = approximate 1% of emission bandwidth
  - VBW > RBW
  - Detector = Peak
  - Trace =Max hold
  - 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%.
- e) Setting of Spectrum analyzer for 99% Occupied bandwidth:
  - Span = 1.5 times to 5.0 times the OBW
  - RBW = 1% to 5 % of the OBW
  - VBW  $\geq$  3·RBW
  - Detector = Peak
  - Trace = Max Hold
  - Use the 99% power bandwidth function of the instrument
- f) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.1) & D).

#### 7.1.2. Test Limits

Not applicable.

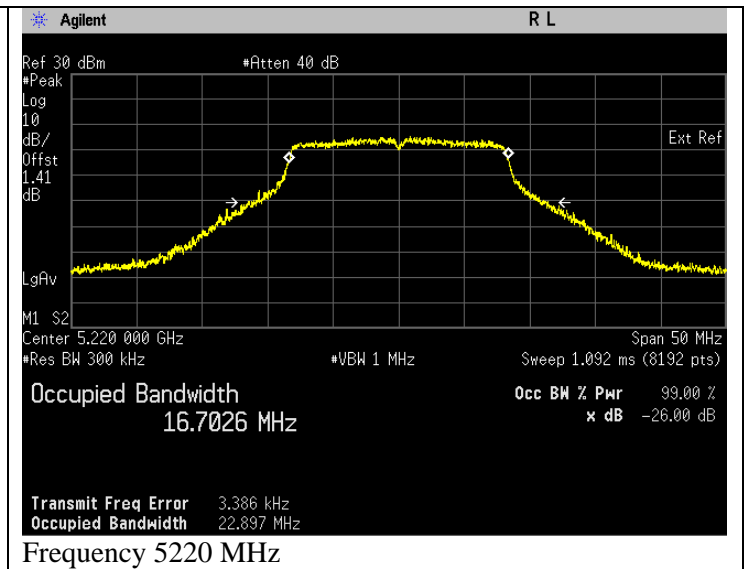
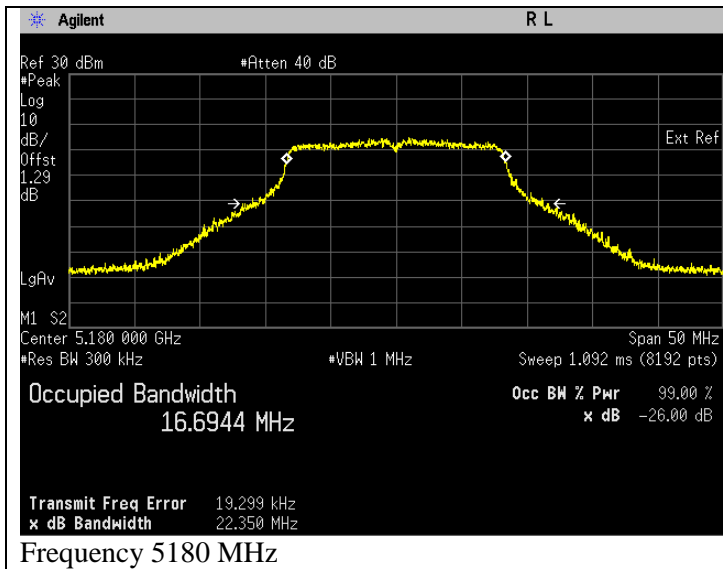
#### 7.1.3. Test Data

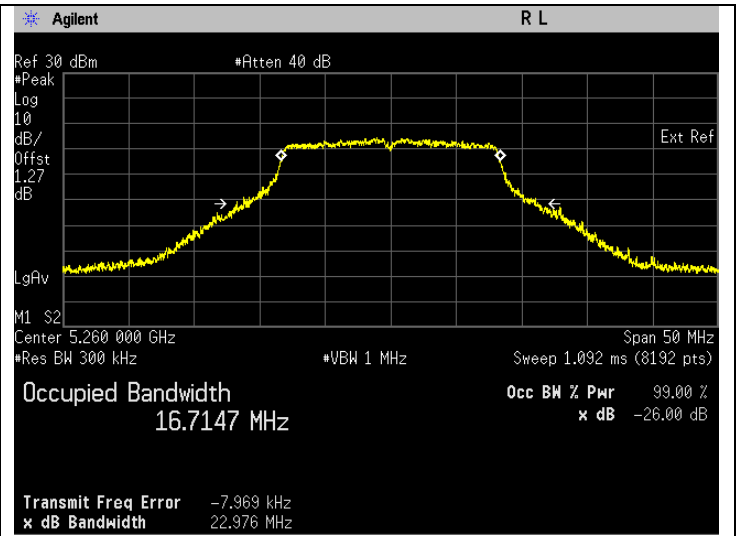
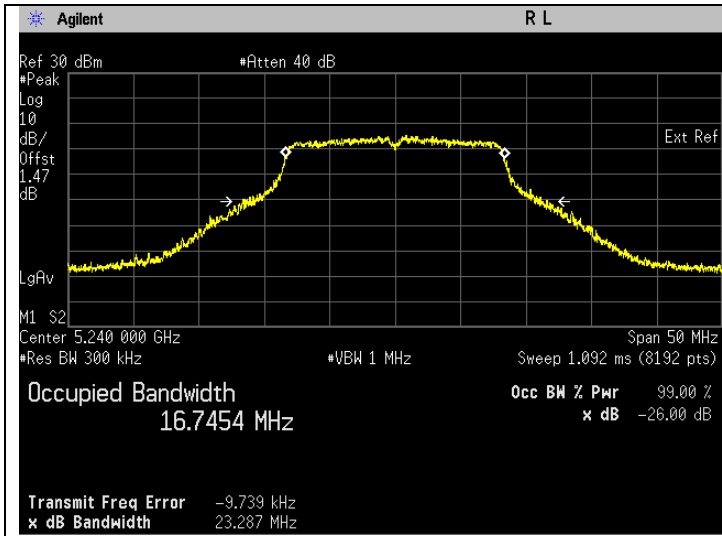


**802.11a**

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	22.350	Pass	16.695	Pass
5220	Mod Type: BPSK, Data Rate: 6	22.897	Pass	16.703	Pass
5240	Mod Type: BPSK, Data Rate: 6	23.287	Pass	16.746	Pass
5260	Mod Type: BPSK, Data Rate: 6	22.976	Pass	16.714	Pass
5300	Mod Type: BPSK, Data Rate: 6	23.376	Pass	16.700	Pass
5320	Mod Type: BPSK, Data Rate: 6	22.645	Pass	16.735	Pass
5500	Mod Type: BPSK, Data Rate: 6	22.755	Pass	16.717	Pass
5580	Mod Type: BPSK, Data Rate: 6	23.020	Pass	16.736	Pass
5700	Mod Type: BPSK, Data Rate: 6	22.723	Pass	16.676	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-2C	16.555	Pass	13.351	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-3	6.555	Pass	3.351	Pass
5745	Mod Type: BPSK, Data Rate: 6	23.234	Pass	16.759	Pass
5785	Mod Type: BPSK, Data Rate: 6	23.117	Pass	16.705	Pass
5825	Mod Type: BPSK, Data Rate: 6	23.053	Pass	16.731	Pass

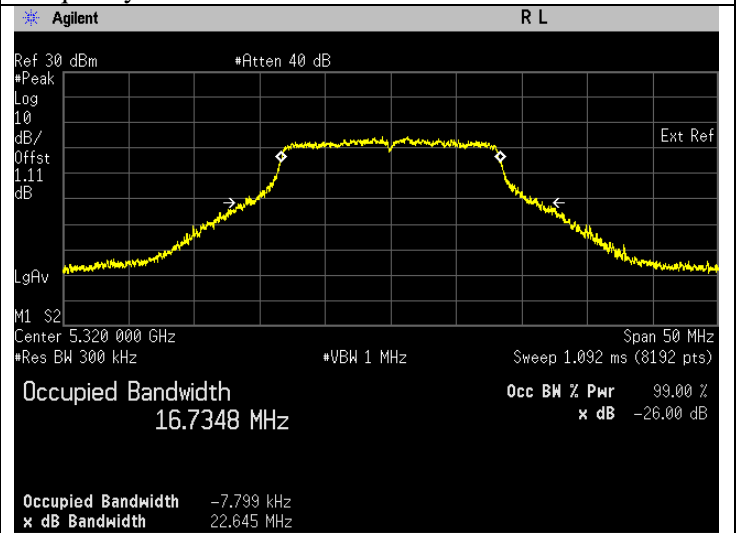
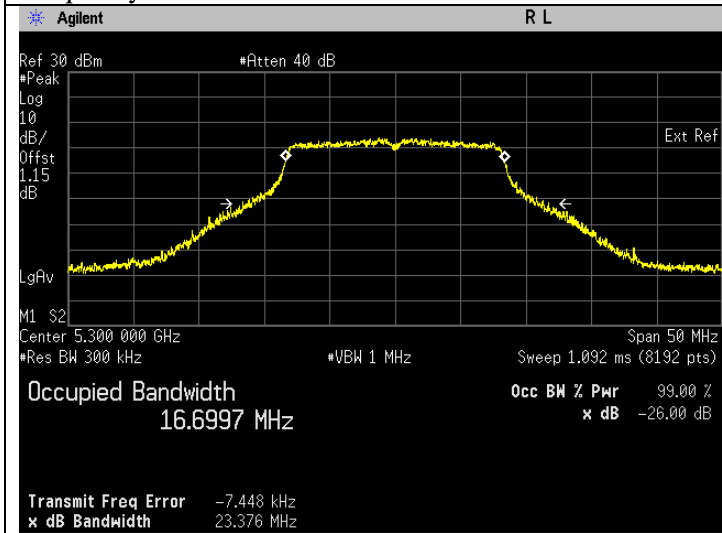
**26 dB Bandwidth/ 99% Bandwidth**





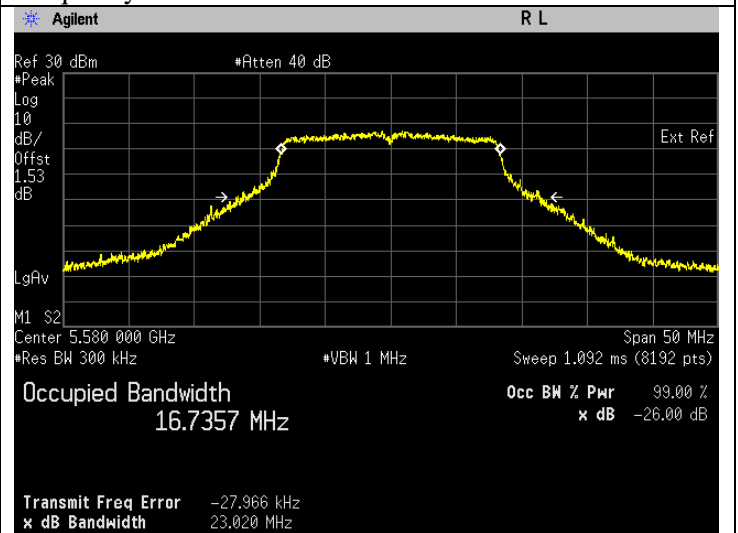
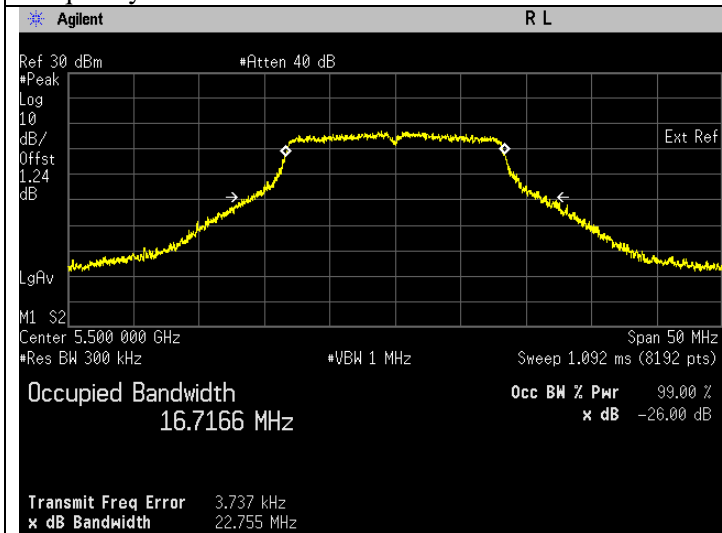
Frequency 5240 MHz

Frequency 5260 MHz



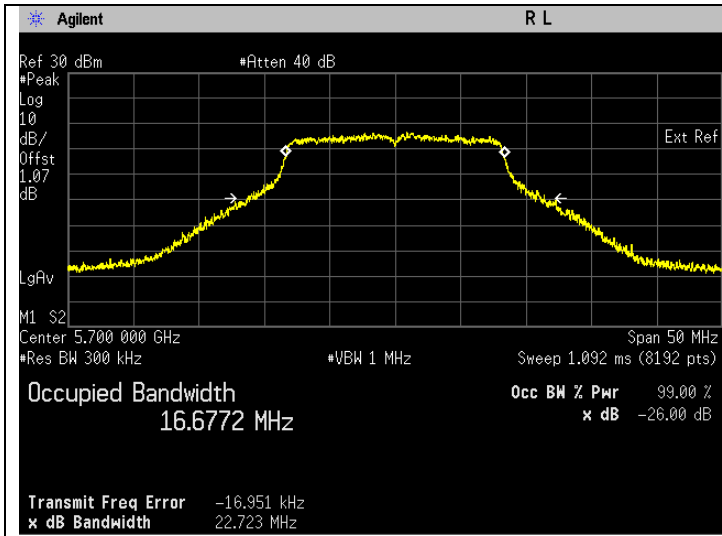
Frequency 5300 MHz

Frequency 5320 MHz

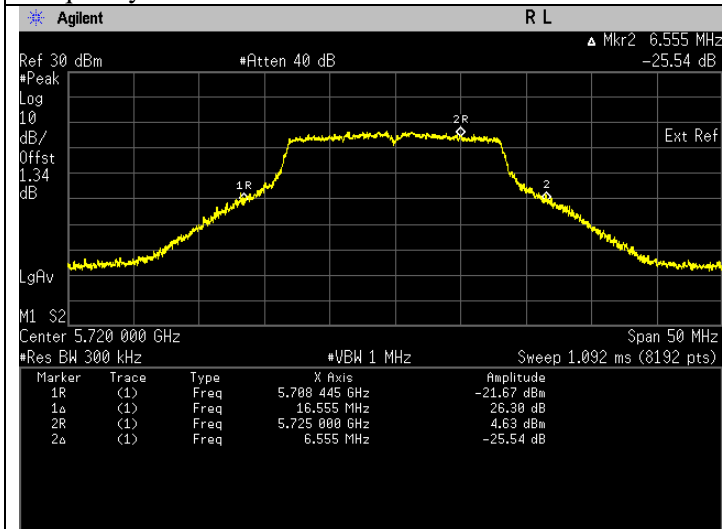


Frequency 5500 MHz

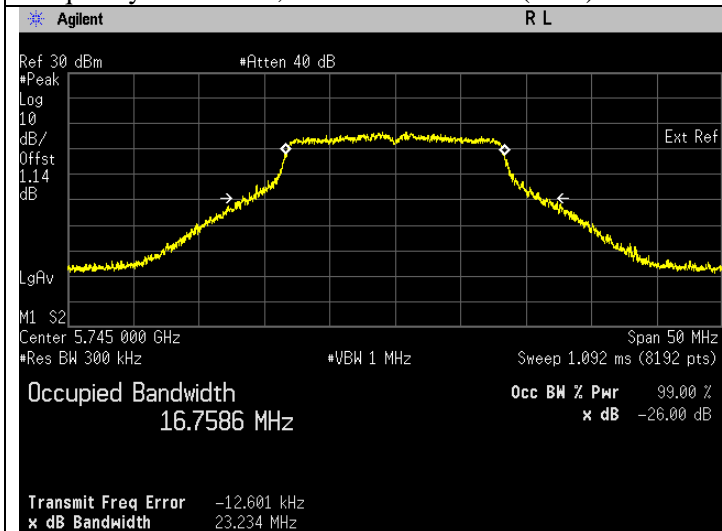
Frequency 5580 MHz



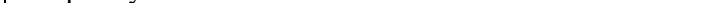
Frequency 5700 MHz



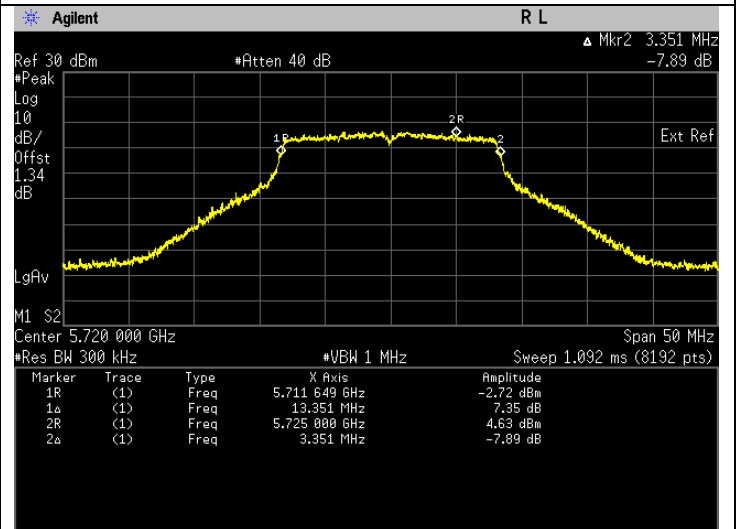
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)



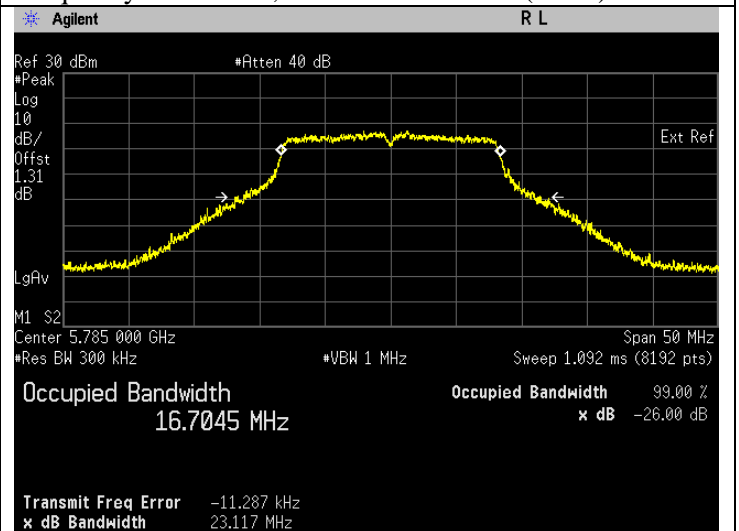
Frequency 5745 MHz



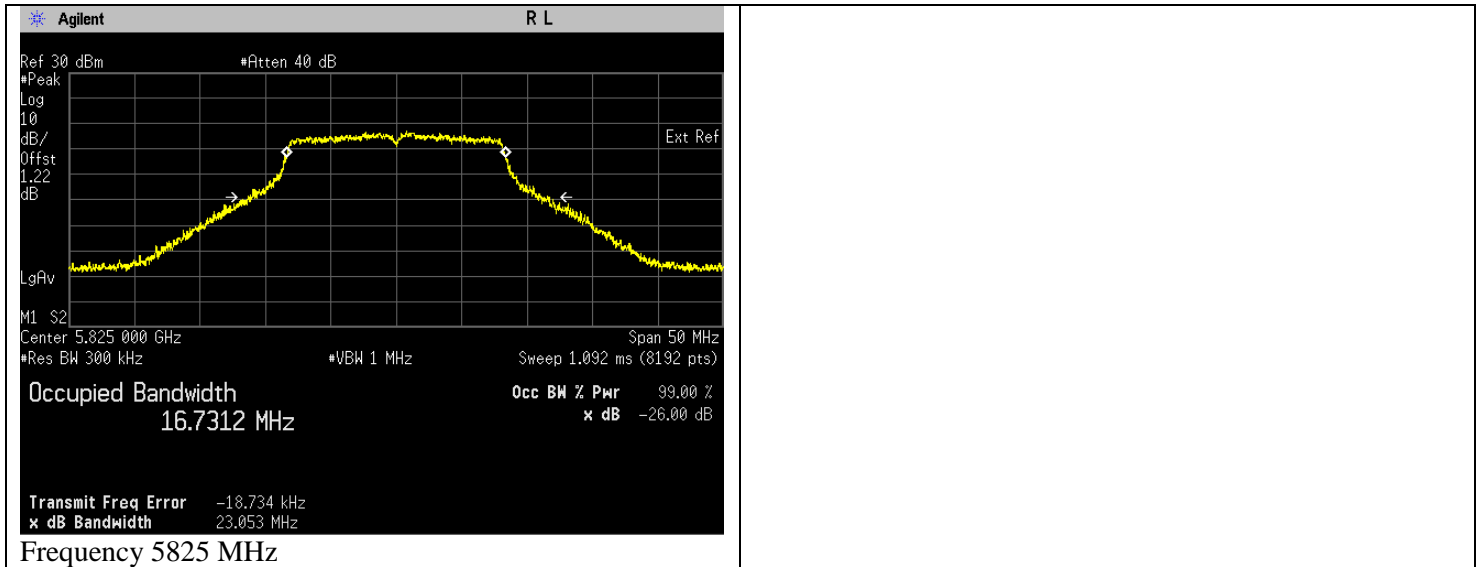
Frequency 5785 MHz



Frequency 5720 MHz, UNII-2C & UNII-3(ISED)



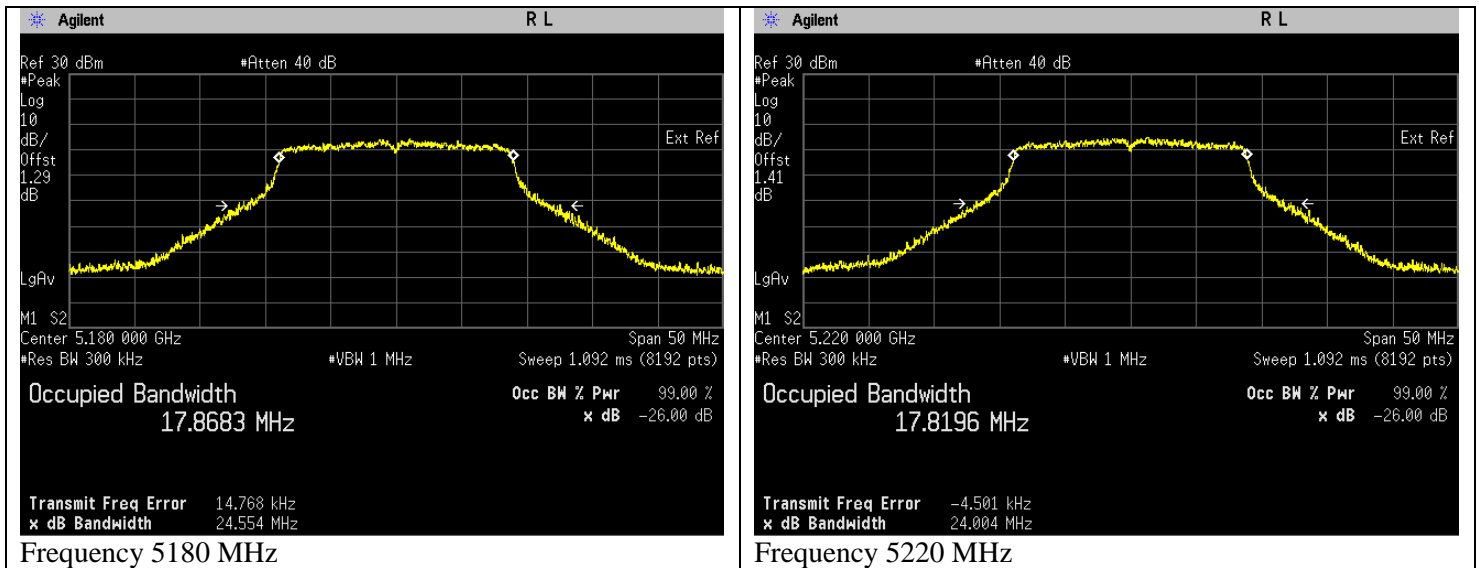
Frequency 5785 MHz

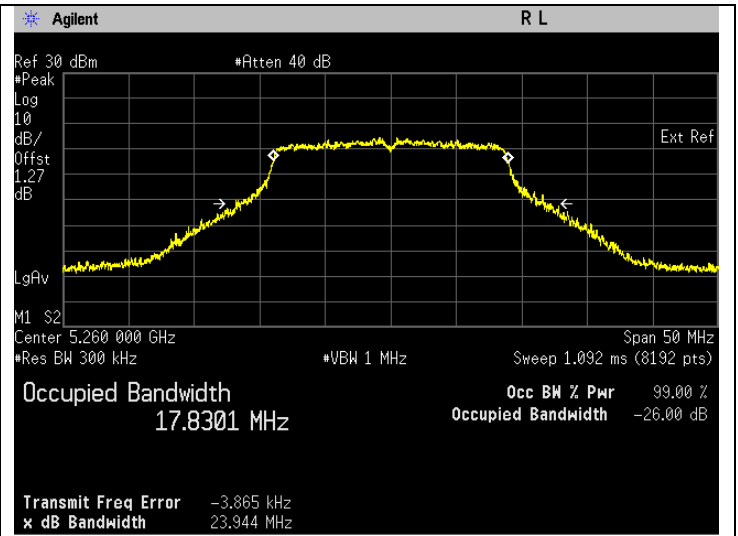
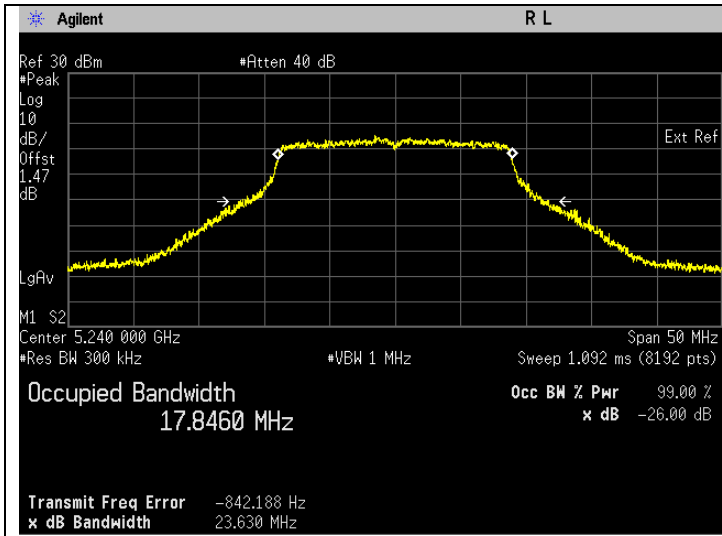


**802.11n (HT20)**

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.554	Pass	17.868	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.004	Pass	17.820	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.630	Pass	17.846	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.944	Pass	17.830	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.093	Pass	17.850	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.812	Pass	17.831	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.934	Pass	17.830	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.820	Pass	17.851	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.559	Pass	17.870	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-2C	17.151	Pass	13.931	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-3	7.151	Pass	3.931	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.992	Pass	17.891	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.792	Pass	17.874	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.197	Pass	17.882	Pass

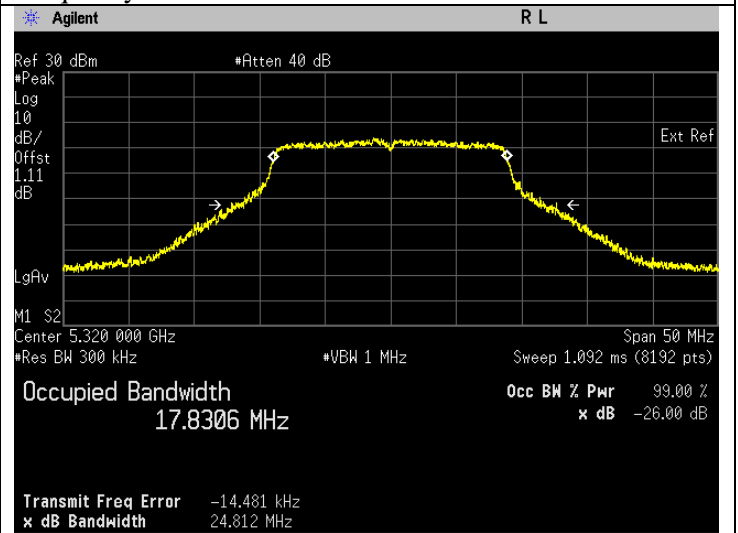
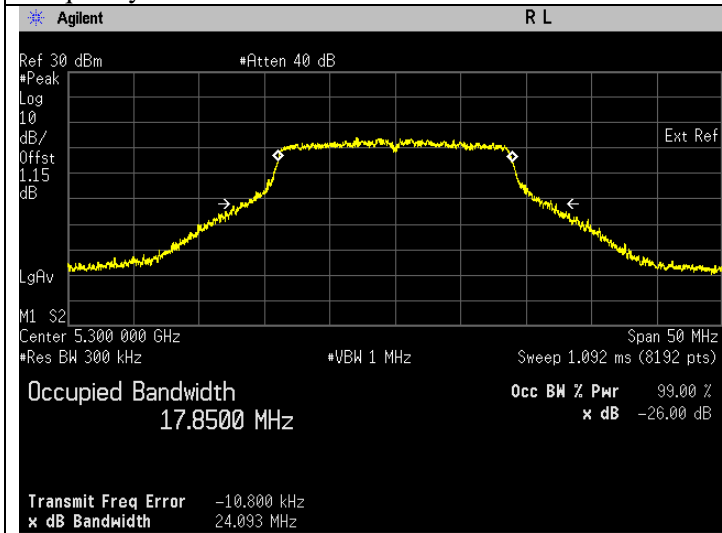
**26 dB Bandwidth/ 99% Bandwidth**





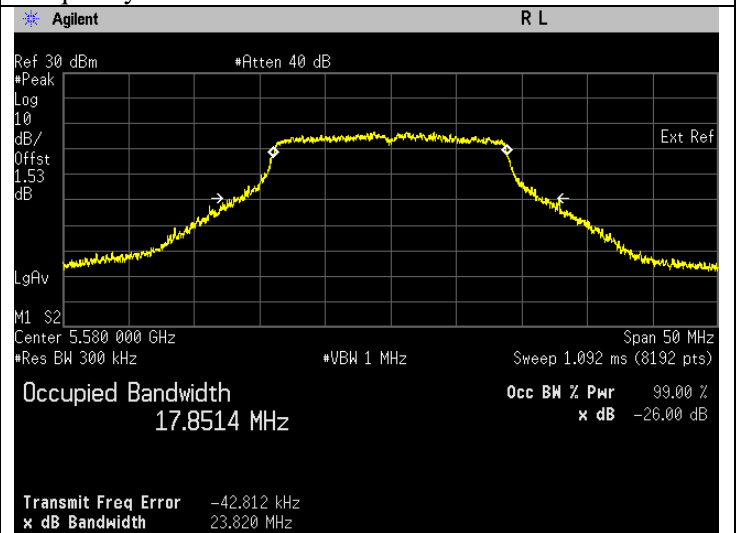
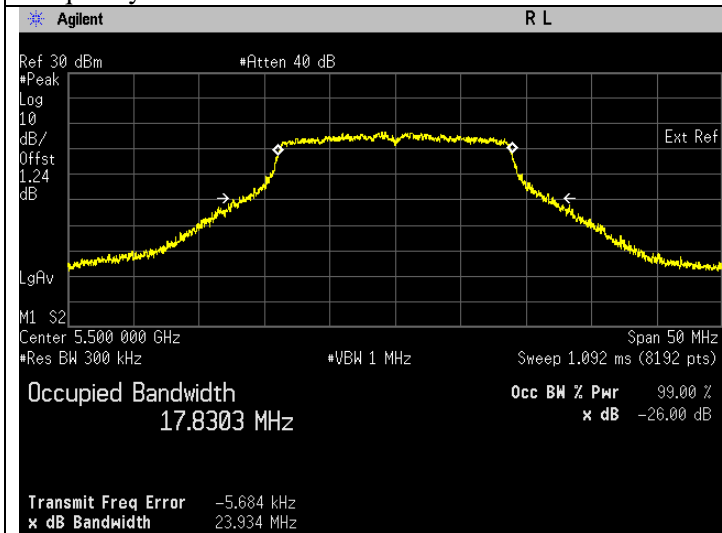
Frequency 5240 MHz

Frequency 5260 MHz



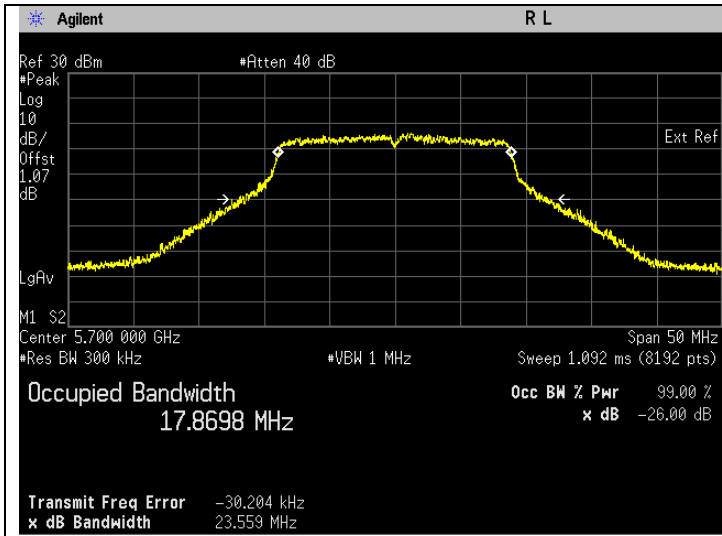
Frequency 5300 MHz

Frequency 5320 MHz

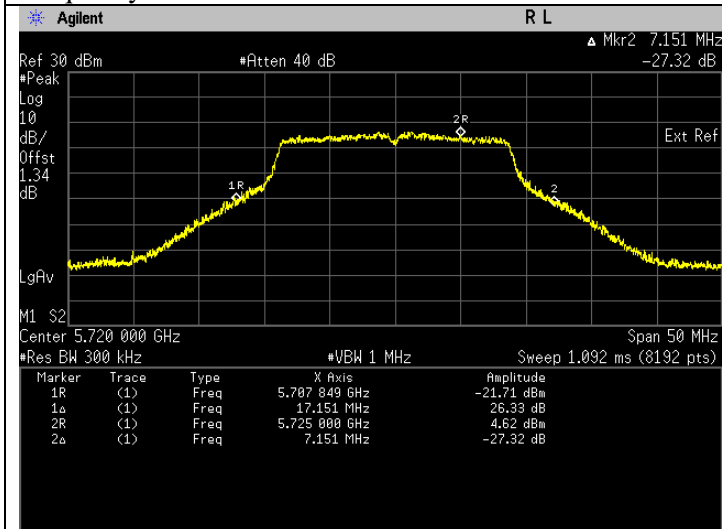


Frequency 5500 MHz

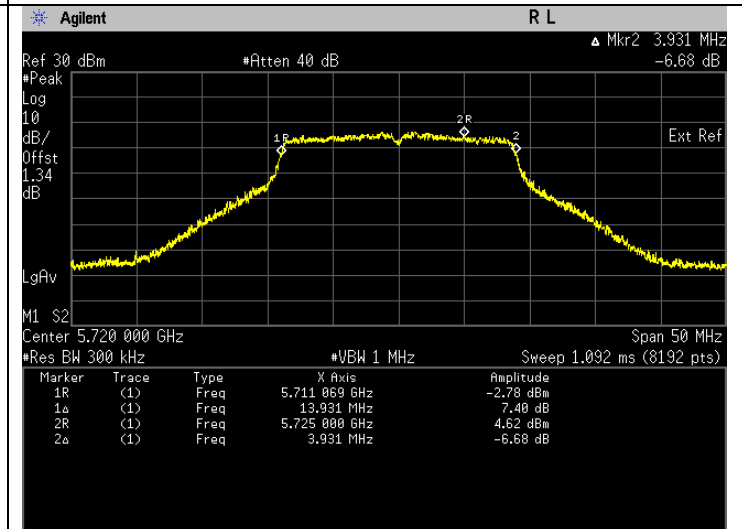
Frequency 5580 MHz



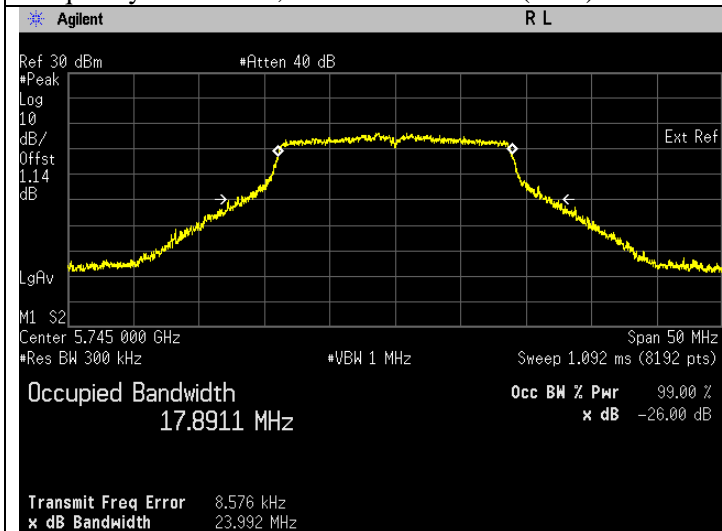
Frequency 5700 MHz



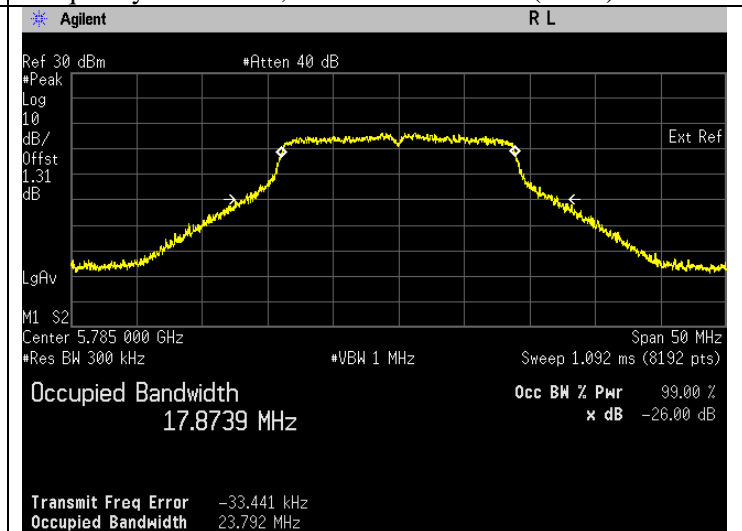
Frequency 5720 MHz, UNII-2C & UNII-3 (FCC)



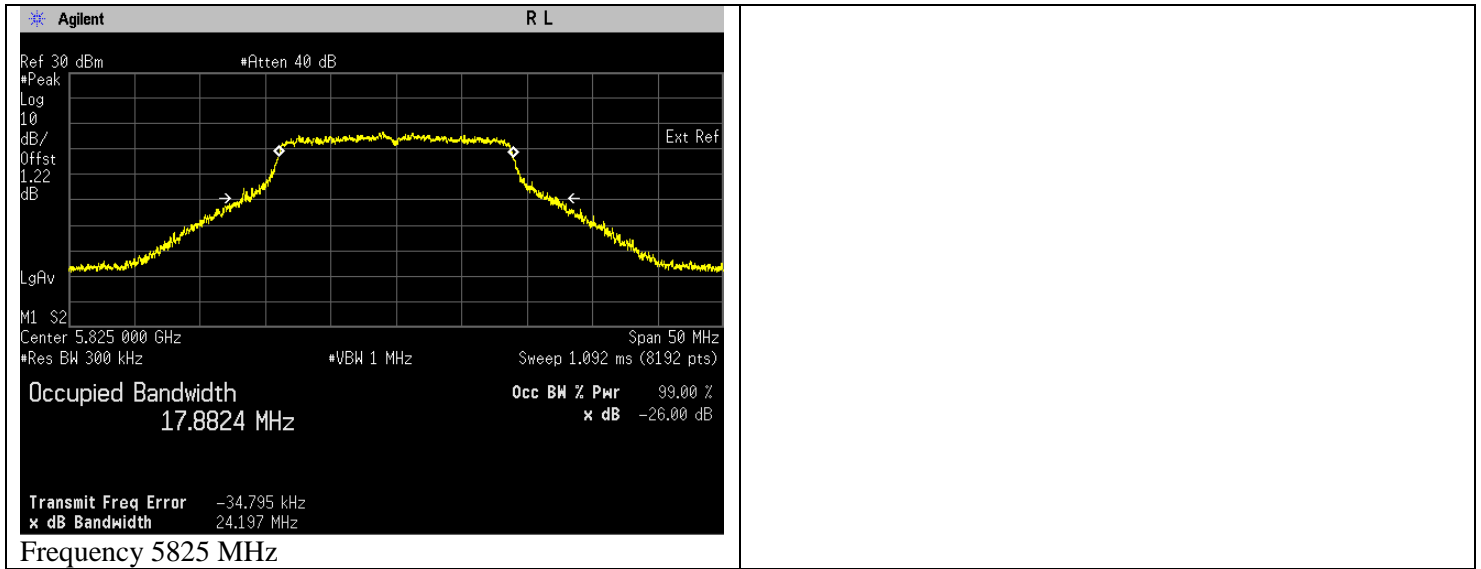
Frequency 5720 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5745 MHz



Frequency 5785 MHz

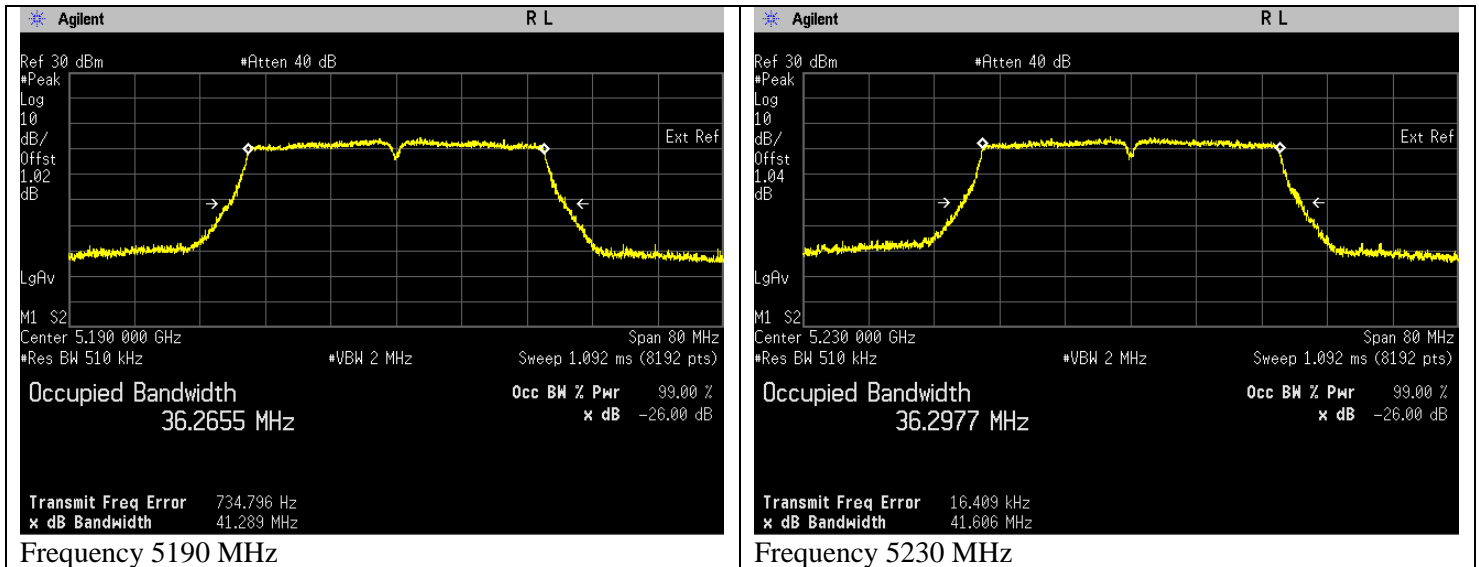


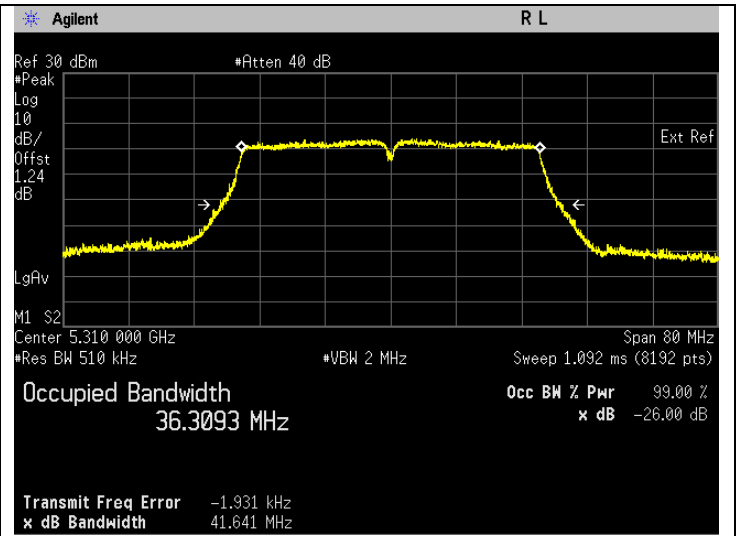
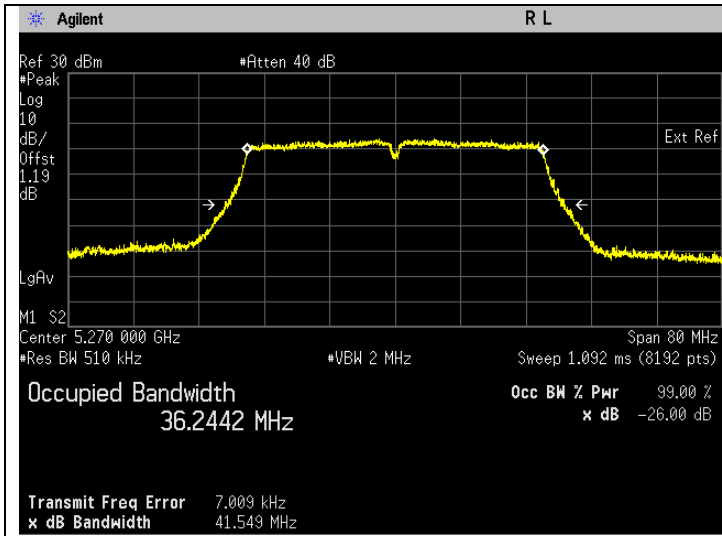


**802.11n (HT40)**

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5190	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.289	Pass	36.266	Pass
5230	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.606	Pass	36.298	Pass
5270	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.549	Pass	36.244	Pass
5310	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.641	Pass	36.310	Pass
5510	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.672	Pass	36.295	Pass
5590	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.447	Pass	36.295	Pass
5670	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.289	Pass	36.268	Pass
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5), UNII-2C	35.654	Pass	33.132	Pass
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5), UNII-3	5.654	Pass	3.132	Pass
5755	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.413	Pass	36.284	Pass
5795	Mod Type: BPSK, Data Rate: MCS0 (13.5)	41.592	Pass	36.318	Pass

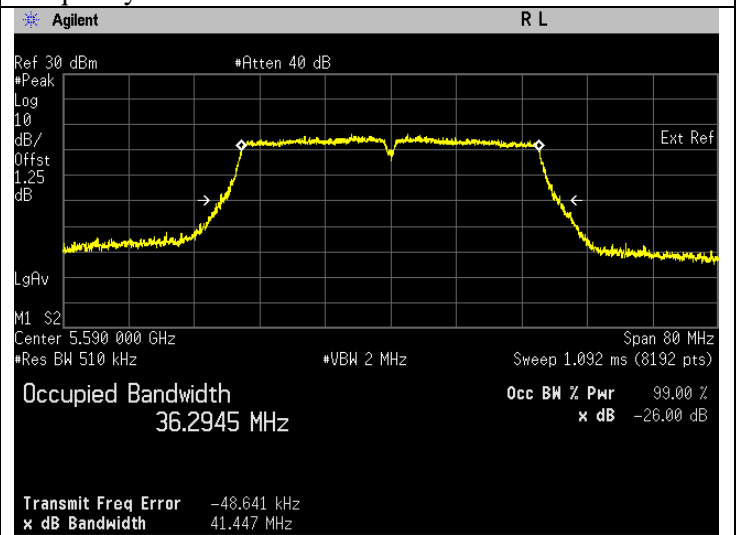
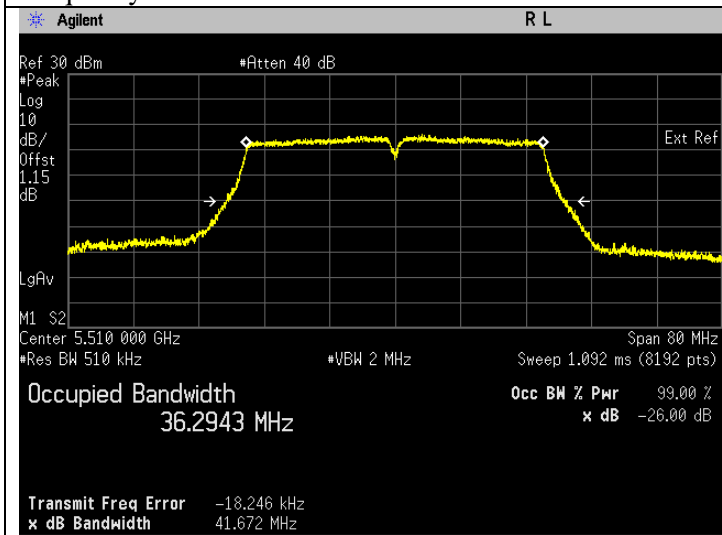
**26 dB Bandwidth/ 99% Bandwidth**





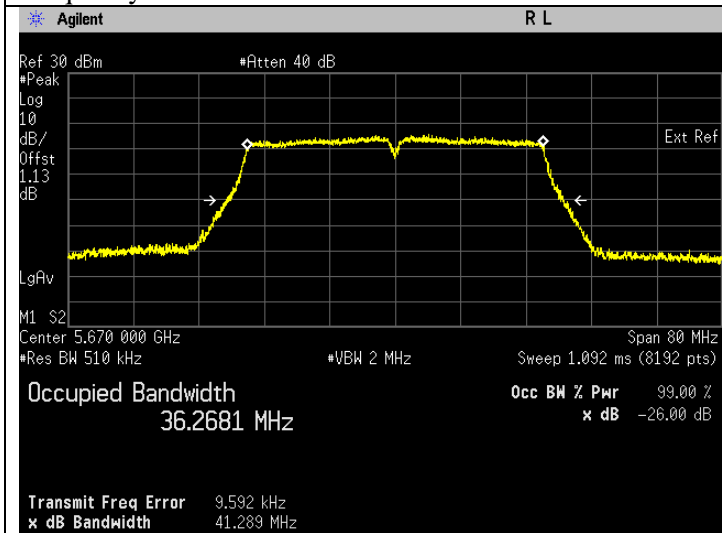
Frequency 5270 MHz

Frequency 5310 MHz

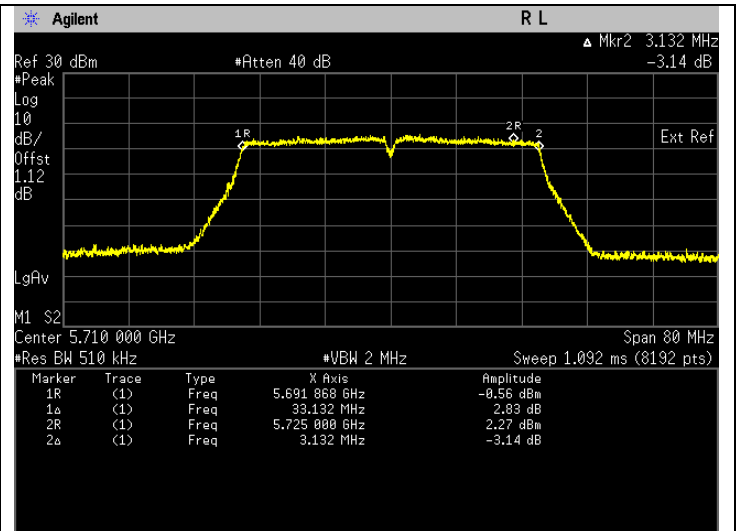
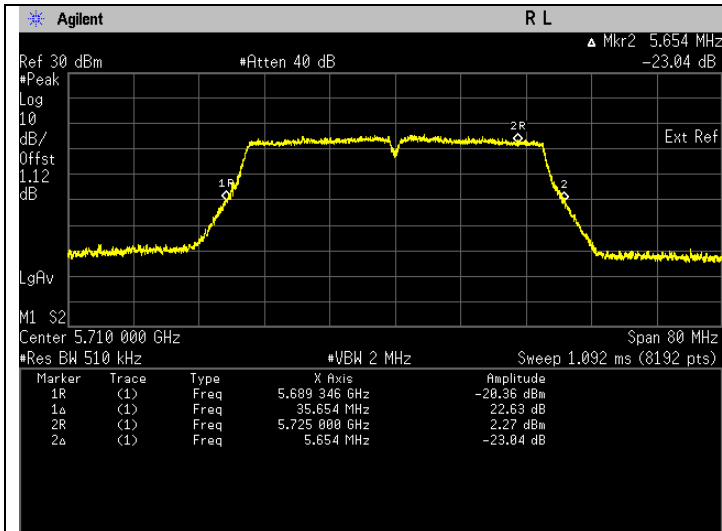


Frequency 5510 MHz

Frequency 5590 MHz

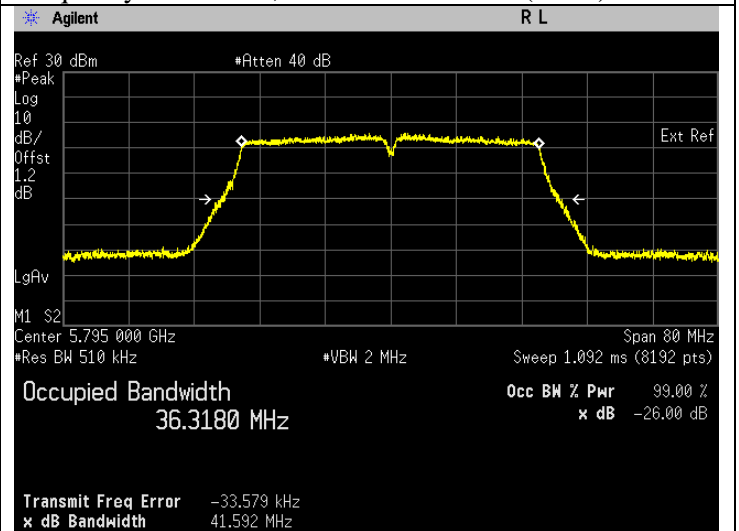
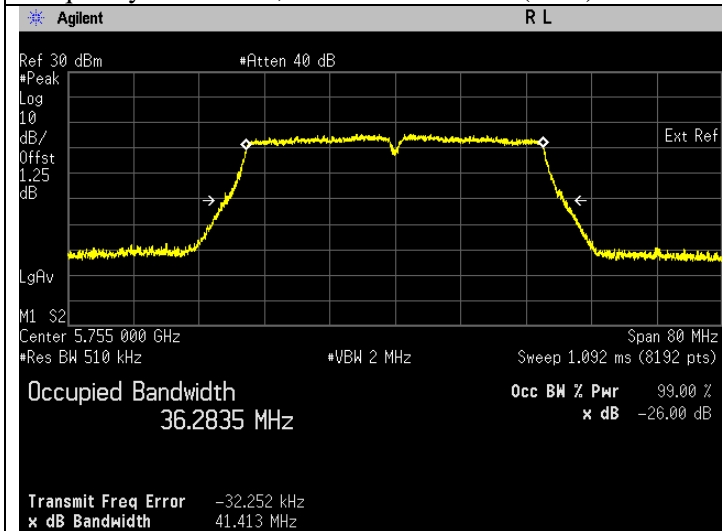


Frequency 5670 MHz



Frequency 5710 MHz, UNII-2C & UNII-3(FCC)

Frequency 5710 MHz, UNII-2C & UNII-3 (ISED)



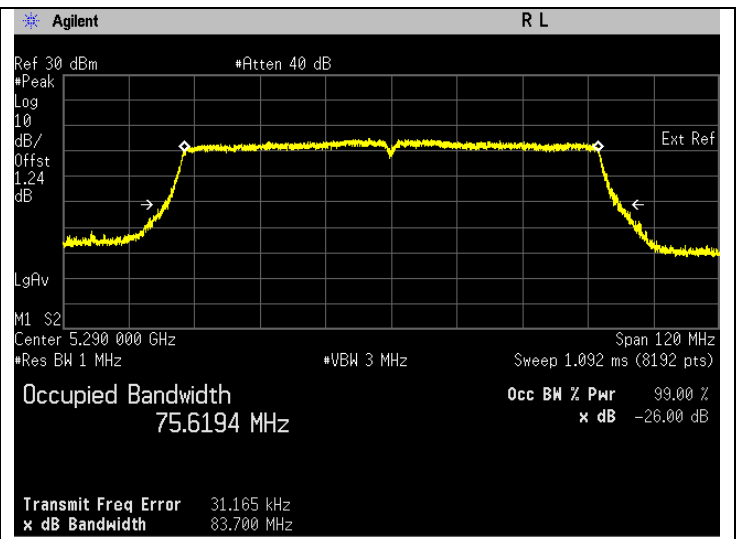
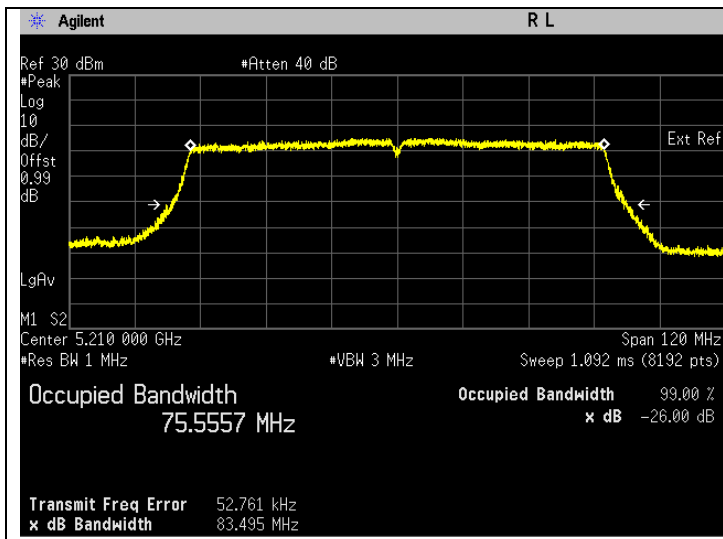
Frequency 5755 MHz

Frequency 5795 MHz

**802.11ac (HT80)**

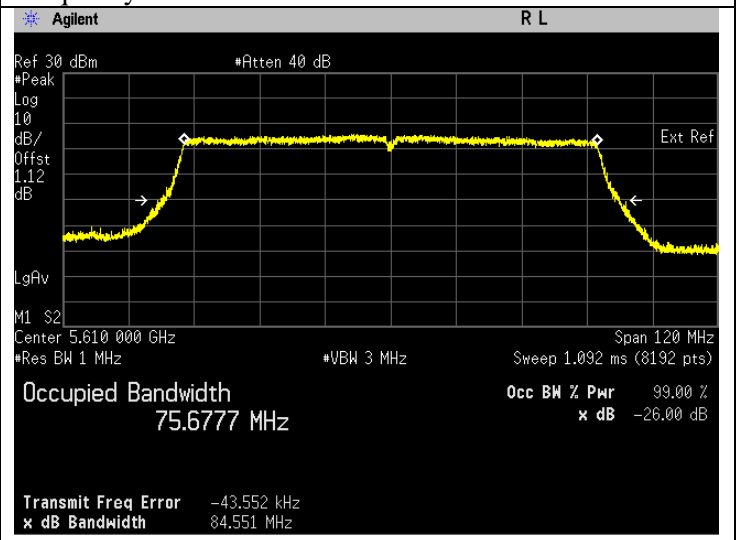
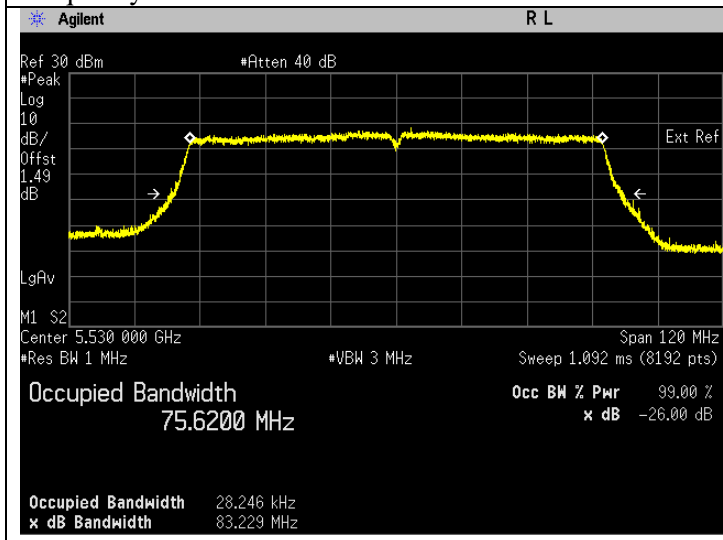
Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5210	Mod Type: BPSK, Data Rate: MCS0(29.3)	83.495	Pass	75.556	Pass
5290	Mod Type: BPSK, Data Rate: MCS0(29.3)	83.700	Pass	75.620	Pass
5530	Mod Type: BPSK, Data Rate: MCS0(29.3)	83.229	Pass	75.620	Pass
5610	Mod Type: BPSK, Data Rate: MCS0(29.3)	84.551	Pass	75.677	Pass
5690	Mod Type: BPSK, Data Rate: MCS0(29.3), UNII-2C	76.703	Pass	72.792	Pass
5690	Mod Type: BPSK, Data Rate: MCS0(29.3), UNII-3	6.703	Pass	2.792	Pass
5775	Mod Type: BPSK, Data Rate: MCS0(29.3)	83.545	Pass	75.575	Pass

**26 dB Bandwidth/ 99% Bandwidth**



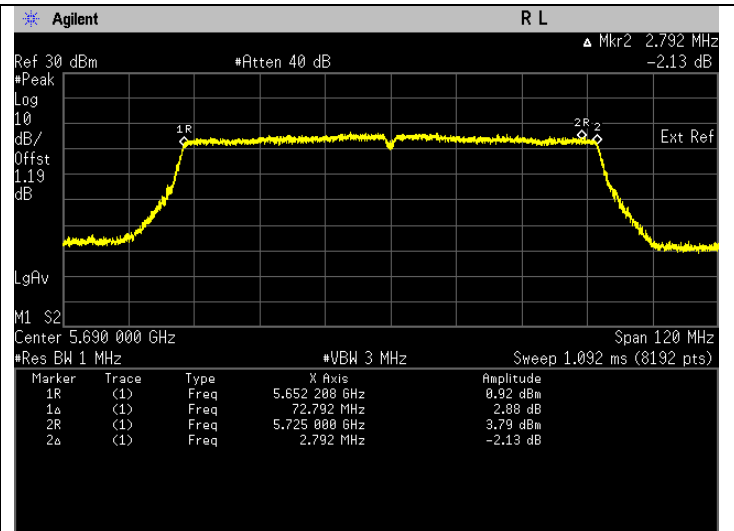
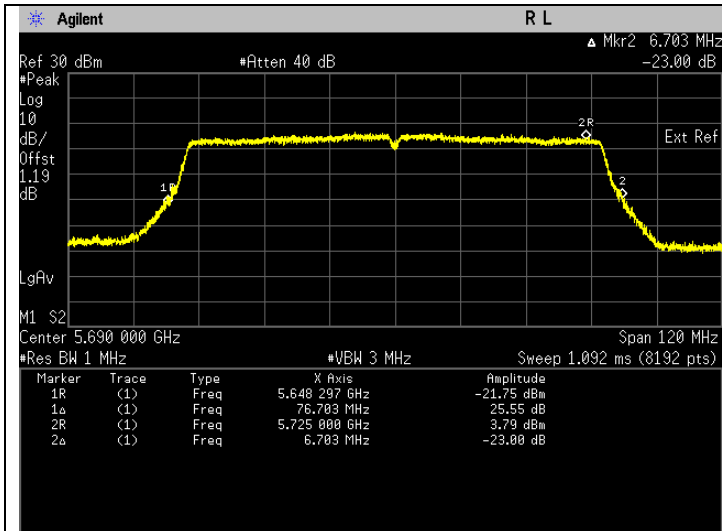
Frequency 5210 MHz

Frequency 5290 MHz



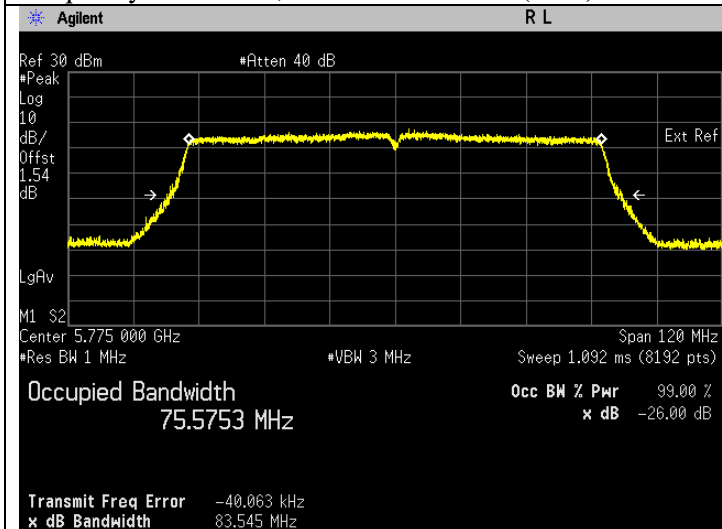
Frequency 5530 MHz

Frequency 5610 MHz



Frequency 5690 MHz, UNII-2C & UNII-3(FCC)

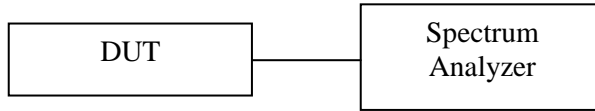
Frequency 5690 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5775 MHz

## 7.2. Maximum Conducted Output Power

### 7.2.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
  - Span to encompass the entire 26dB EBW or 99% Occupied Bandwidth.
  - RBW = 1 MHz
  - VBW ≥ 3 MHz
  - Detector = power averaging (RMS)
  - Trace = Max hold
  - Number of points in sweep ≥ 2 × span / RBW
  - Sweep time = auto
  - Trace average at least 100 traces in power averaging (rms) mode
  - Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges.
  - Add 10 log (1/x), where x is the duty cycle, to the measured power to compute the average power during the actual transmission times
- e) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause E.2.d) Method SA-2.
- f) The Maximum output power results are included duty cycle correction factor.

### 7.2.2. Test Limits

#### **FCC 15.407(a)**

Range(GHz)	Condition	Output Power Limit
5.15-5.25 (UNII-1)		Outdoor AP
		Indoor AP
		Fixed Point to Point AP
	√	Mobile and Portable client devices
5.25-5.35 (UNII-2A)	√	≤250mW or 11dBm+10log <sub>10</sub> B*
5.47-5.525 (UNII-2C)	√	*B is 26dB emission bandwidth in MHz
5.725-5.85 (UNII-3)	√	≤1W

**RSS-247 6.2**

Range(GHz)	Condition	Output Power Limit
5.15-5.25	indoor only (e.i.r.p.)	$\leq 200\text{mW}$ or $10+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.25-5.35	(Conducted & e.i.r.p.)	Conducted: $\leq 250\text{mW}$ or $11+10\log_{10}B^*$ EIRP: $< 1.0\text{W}$ or $17+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.47-5.6 5.65-5.725	(Conducted & e.i.r.p.)	Conducted: $\leq 250\text{mW}$ or $11+10\log_{10}B^*$ EIRP: $< 1.0\text{W}$ or $17+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.725-5.85	(Conducted)	$\leq 1\text{W}$

7.2.3. Additional Info

Antenna	Gain (dBi)
UNII1, UNII2a	5.04
UNII2c, UNII3	2.46
Duty Cycle Correction Factor	
802.11a	0.076
802.11n(HT20)	0.082
802.11n(HT40)	0.161
802.11ac(VHT80)	0.322

7.2.4. Test Data

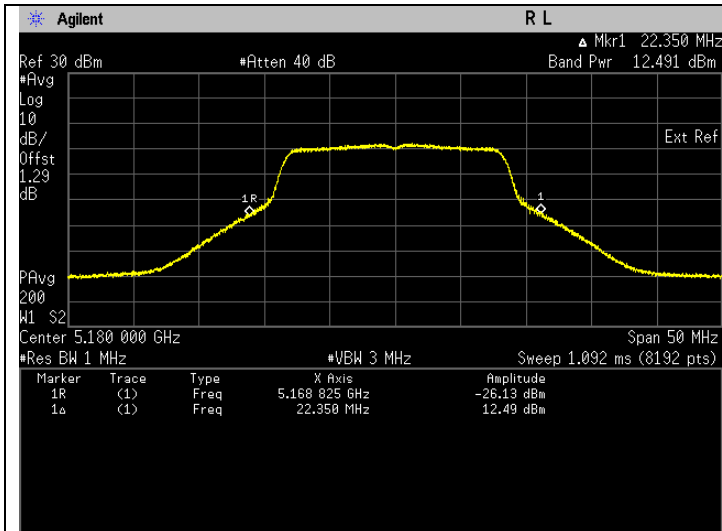
**Summary table**

WLAN	Frequency Range (MHz)	Bandwidth (MHz)	RF Power Output		EIRP		Max Emission designator
			Max measured (mW)	Max declared (mW)	Max measured (mW)	Max declared (mW)	
802.11a	5180-5240	20	20.91	25.12	66.73	80.17	16M8D1D
	5260-5320	20	17.75	25.12	56.65	80.17	16M7D1D
	5500-5720	20	31.29	39.81	55.13	70.15	16M7D1D
	5745-5825	20	29.44	39.81	51.87	70.15	16M8D1D
802.11n	5180-5240	20	20.42	25.12	65.18	80.17	17M9D1D
	5260-5320	20	16.94	25.12	54.05	80.17	17M9D1D
	5500-5720	20	29.83	39.81	52.57	70.15	17M9D1D
	5745-5825	20	28.15	39.81	49.6	70.15	17M9D1D
802.11n	5190-5230	40	22.91	25.12	73.11	80.17	36M3D1D
	5270-5310	40	20.67	25.12	65.98	80.17	36M3D1D
	5510-5710	40	30.54	39.81	53.81	70.15	36M3D1D
	5755-5795	40	28.51	39.81	50.23	70.15	36M3D1D
802.11ac	5210	80	23.24	25.12	74.17	80.17	75M6D1D
	5290	80	20.95	25.12	66.87	80.17	75M6D1D
	5530-5690	80	35.77	39.81	63.02	70.15	75M6D1D
	5775	80	31	39.81	54.63	70.15	75M6D1D

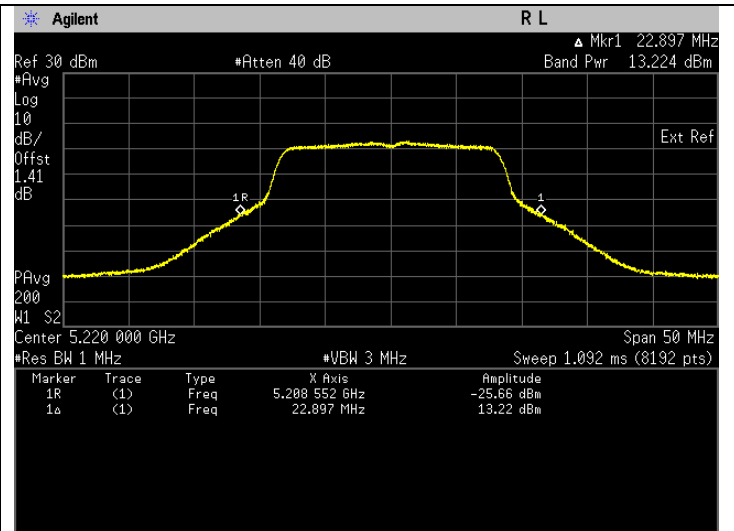
**802.11a (26dB EBW)**

Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	18.060	12.567	Pass
5220	Mod Type: BPSK, Data Rate: 6	21.381	13.300	Pass
5240	Mod Type: BPSK, Data Rate: 6	20.603	13.139	Pass
5260	Mod Type: BPSK, Data Rate: 6	18.039	12.562	Pass
5300	Mod Type: BPSK, Data Rate: 6	16.816	12.257	Pass
5320	Mod Type: BPSK, Data Rate: 6	17.019	12.309	Pass
5500	Mod Type: BPSK, Data Rate: 6	31.421	14.972	Pass
5580	Mod Type: BPSK, Data Rate: 6	31.807	15.025	Pass
5700	Mod Type: BPSK, Data Rate: 6	27.888	14.454	Pass
5745	Mod Type: BPSK, Data Rate: 6	27.959	14.465	Pass
5785	Mod Type: BPSK, Data Rate: 6	29.828	14.746	Pass
5825	Mod Type: BPSK, Data Rate: 6	29.780	14.739	Pass

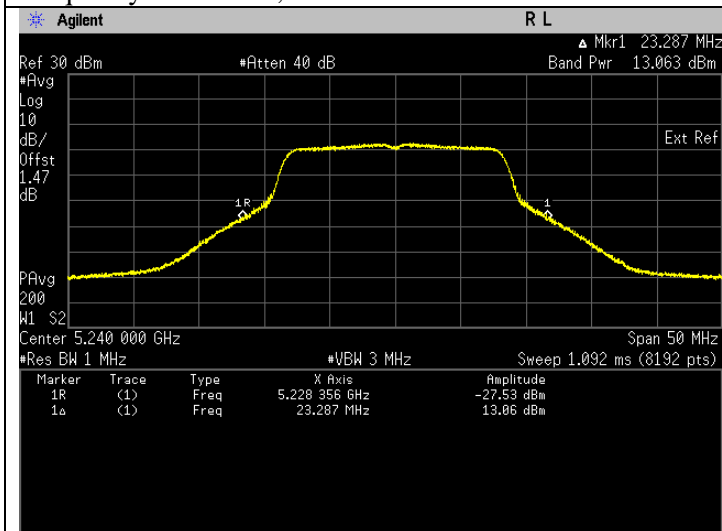




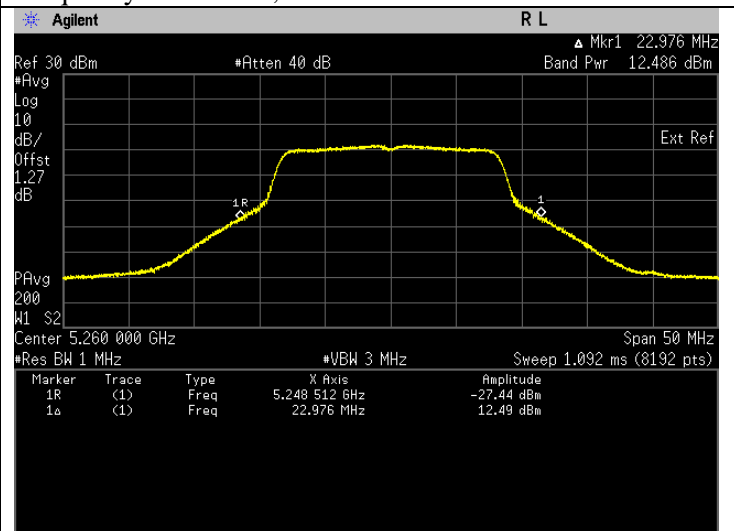
Frequency 5180 MHz, FCC.



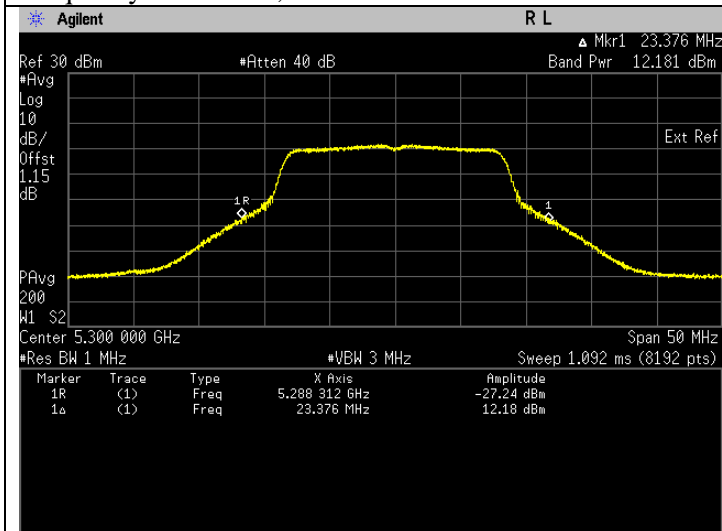
Frequency 5220 MHz, FCC.



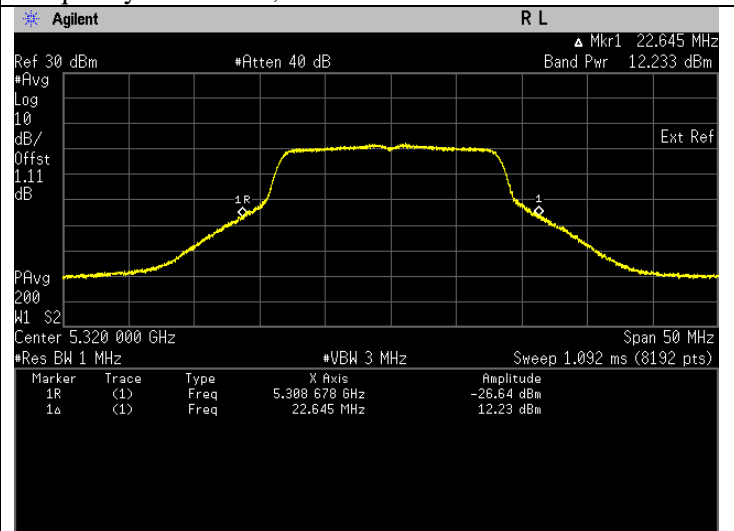
Frequency 5240 MHz, FCC.



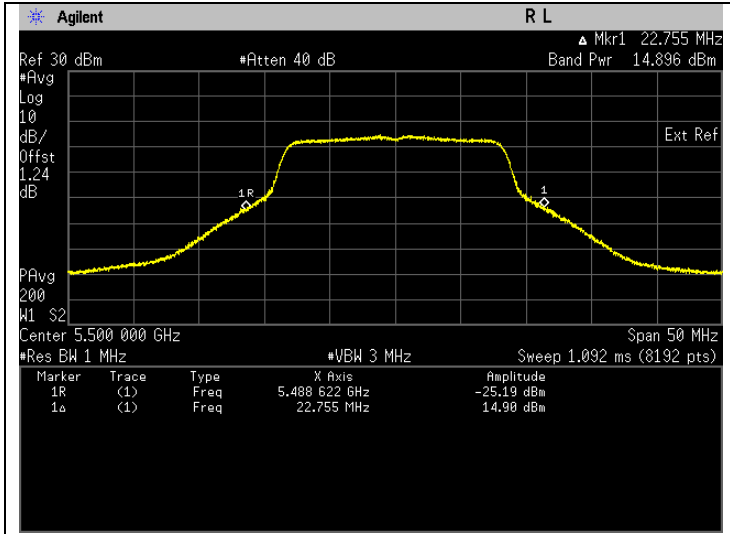
Frequency 5260 MHz, FCC.



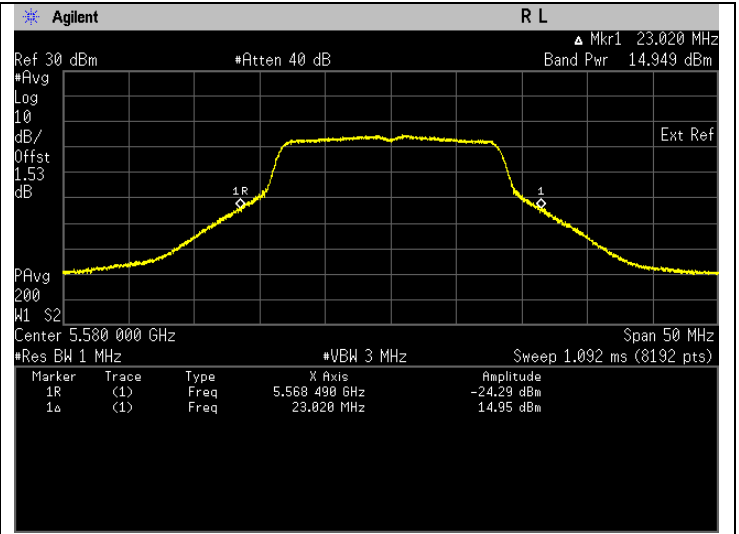
Frequency 5300 MHz, FCC.



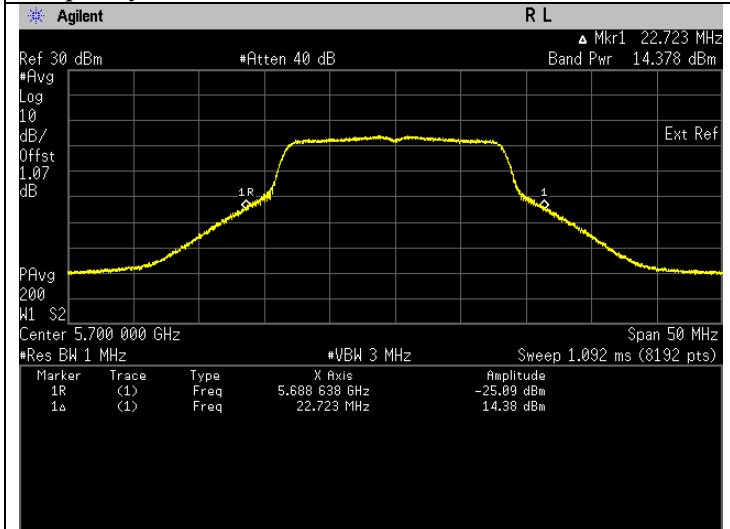
Frequency 5320 MHz, FCC.



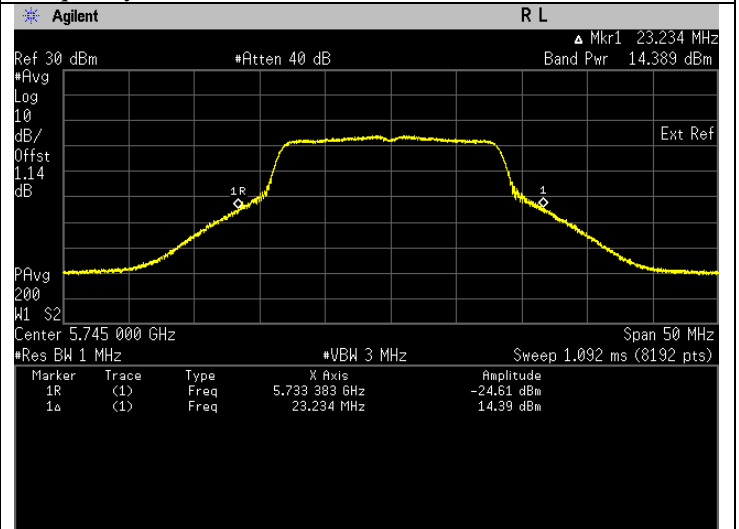
Frequency 5500 MHz, FCC.



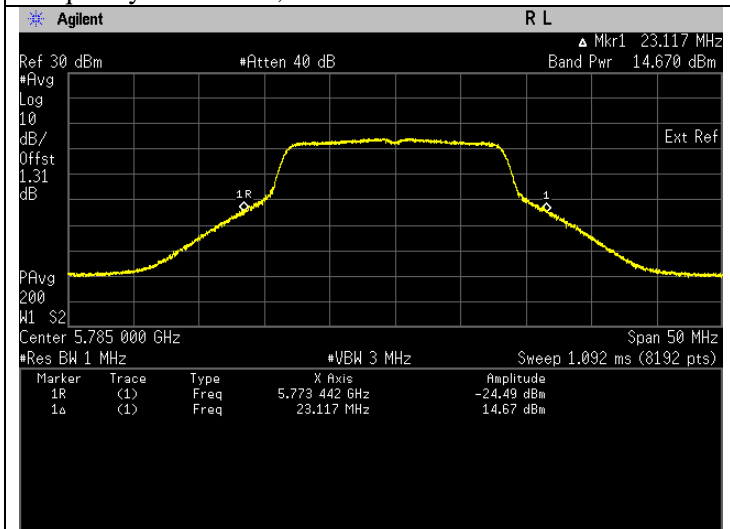
Frequency 5580 MHz, FCC.



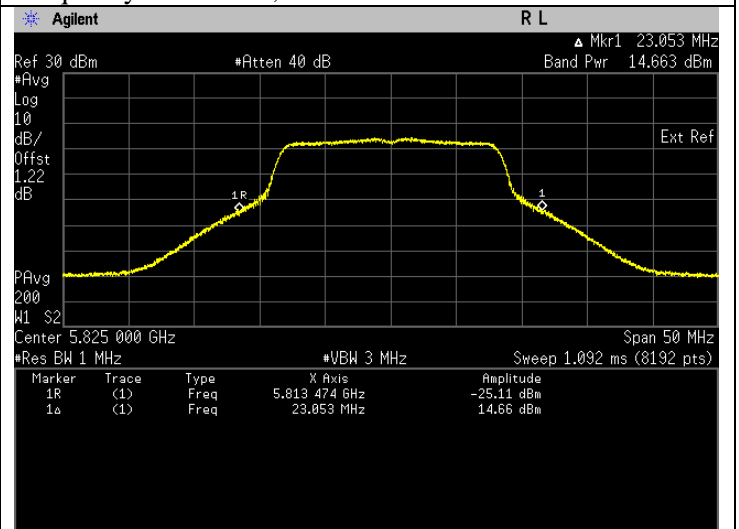
Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.



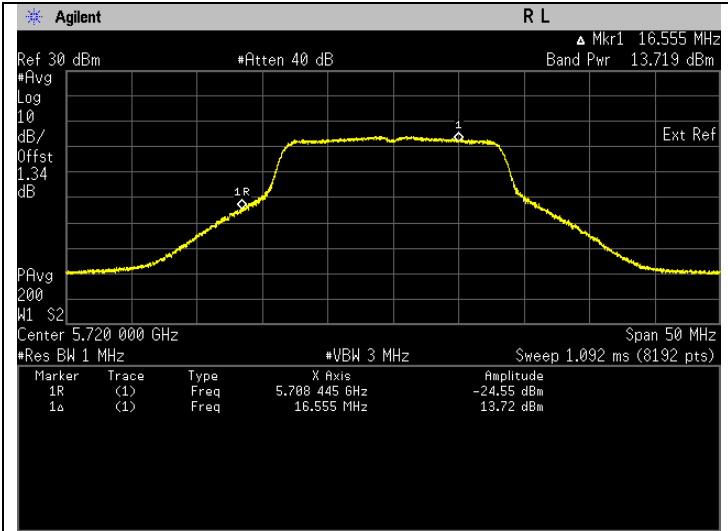
Frequency 5785 MHz, FCC.



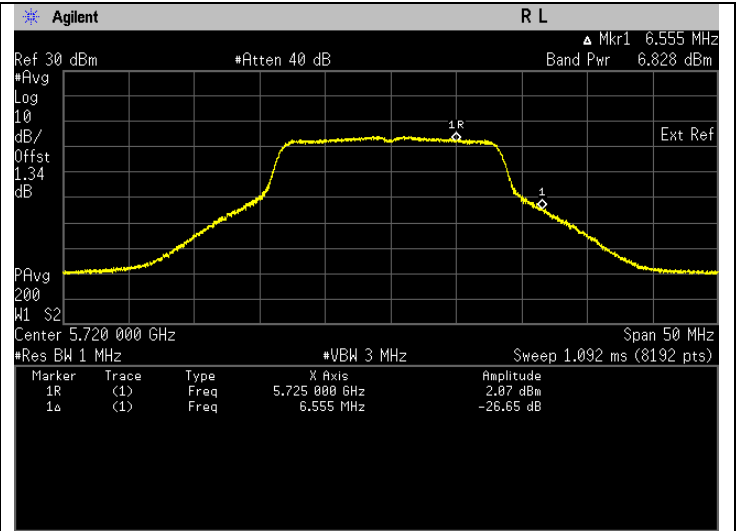
Frequency 5825 MHz, FCC.

**Straddle Frequency**

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	23.962	13.795	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: 6	4.903	6.904	Pass



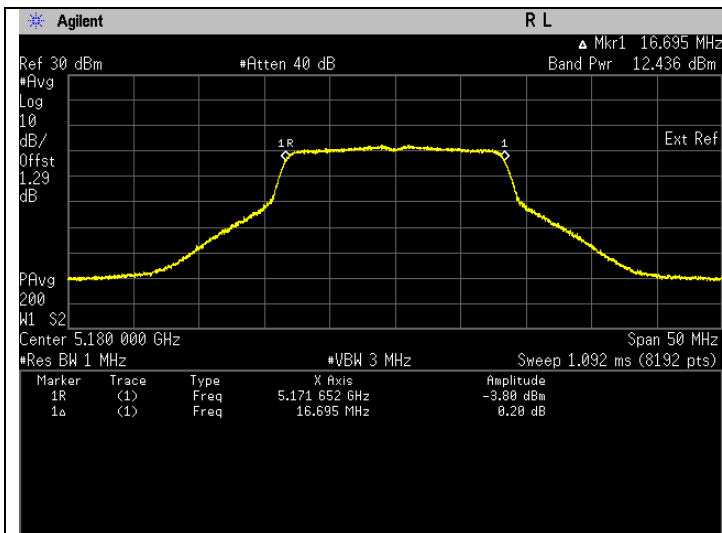
Frequency 5720 MHz, FCC, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.



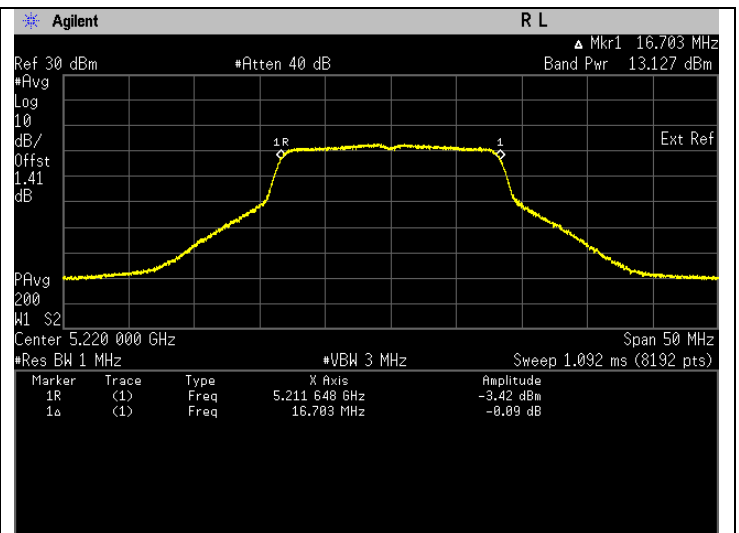
Frequency 5720 MHz, FCC, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11a (99% EBW)**

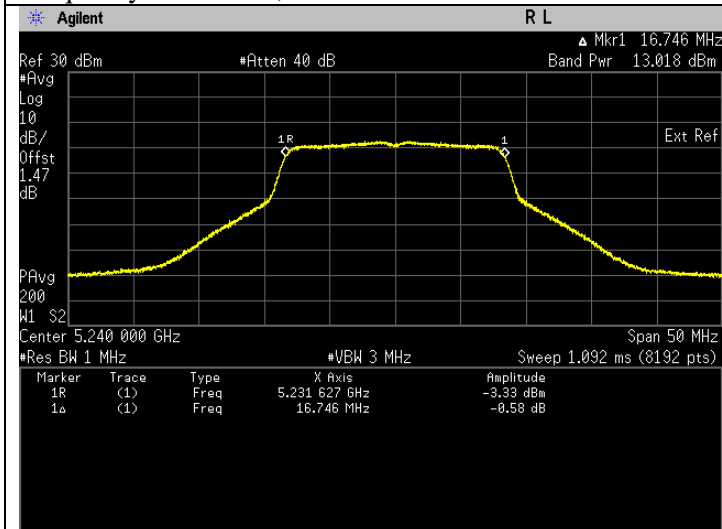
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	17.833	12.512	Pass	17.552	Pass
5220	Mod Type: BPSK, Data Rate: 6	20.909	13.203	Pass	18.243	Pass
5240	Mod Type: BPSK, Data Rate: 6	20.390	13.094	Pass	18.134	Pass
5260	Mod Type: BPSK, Data Rate: 6	17.751	12.492	Pass	17.532	Pass
5300	Mod Type: BPSK, Data Rate: 6	16.483	12.170	Pass	17.210	Pass
5320	Mod Type: BPSK, Data Rate: 6	16.777	12.247	Pass	17.287	Pass
5500	Mod Type: BPSK, Data Rate: 6	30.551	14.850	Pass	17.310	Pass
5580	Mod Type: BPSK, Data Rate: 6	31.291	14.954	Pass	17.414	Pass
5700	Mod Type: BPSK, Data Rate: 6	27.474	14.389	Pass	16.849	Pass
5745	Mod Type: BPSK, Data Rate: 6	27.537	14.399	Pass	16.859	Pass
5785	Mod Type: BPSK, Data Rate: 6	29.439	14.689	Pass	17.149	Pass
5825	Mod Type: BPSK, Data Rate: 6	29.263	14.663	Pass	17.123	Pass



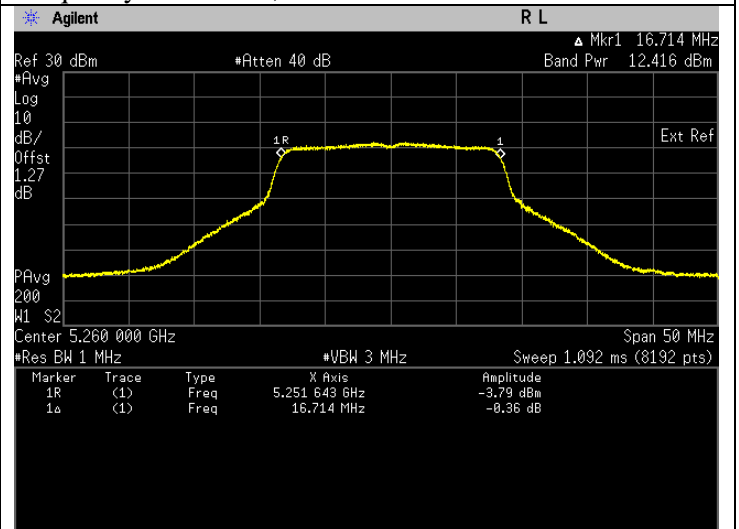
Frequency 5180 MHz, ISED



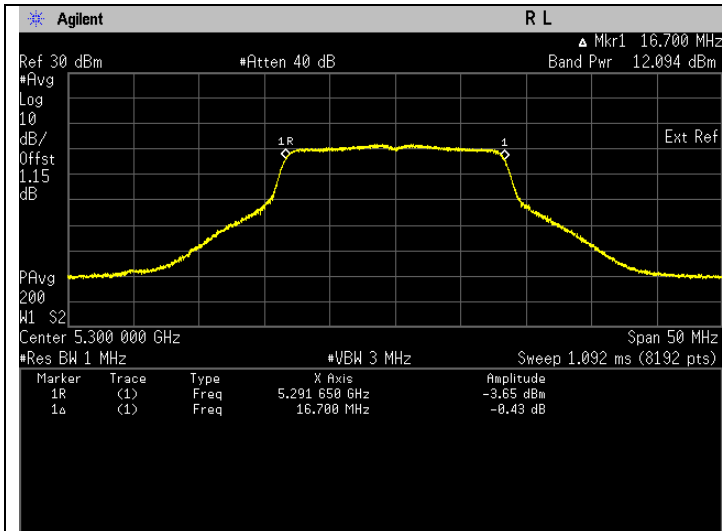
Frequency 5220 MHz, ISED



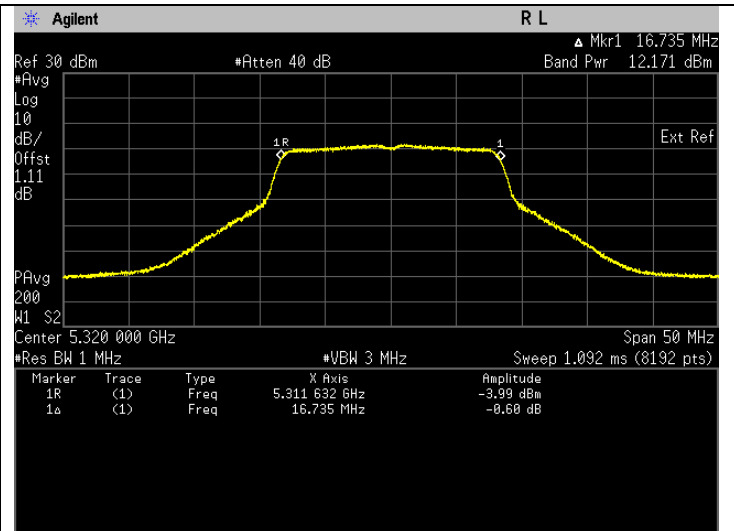
Frequency 5240 MHz, ISED



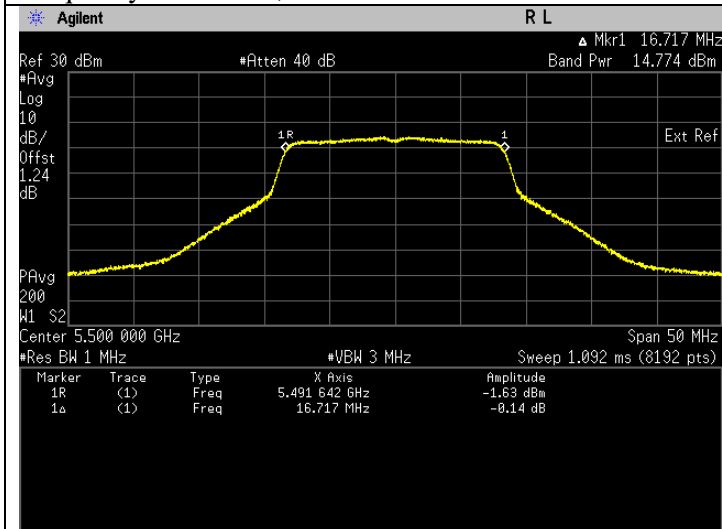
Frequency 5260 MHz, ISED



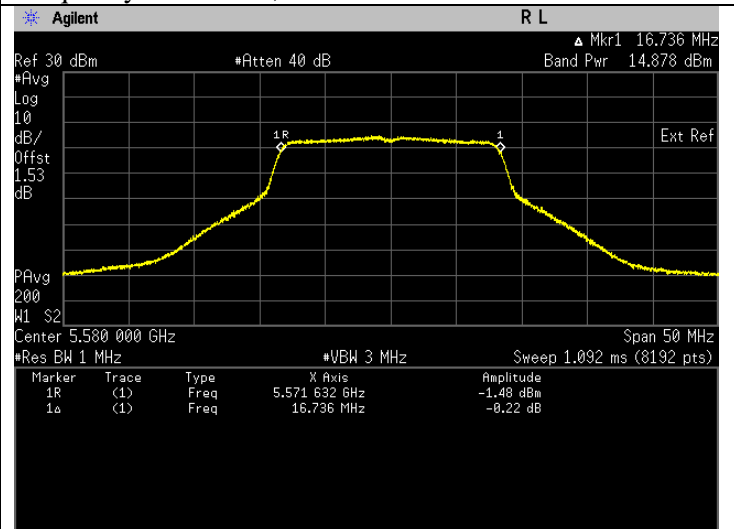
Frequency 5300 MHz, ISED



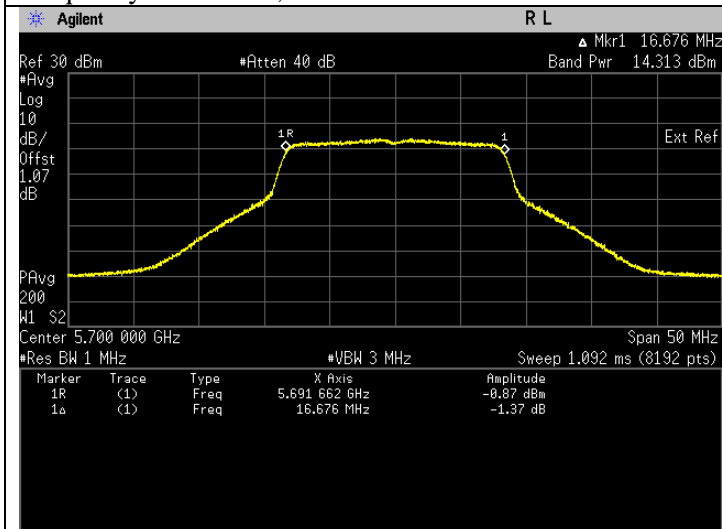
Frequency 5320 MHz, ISED



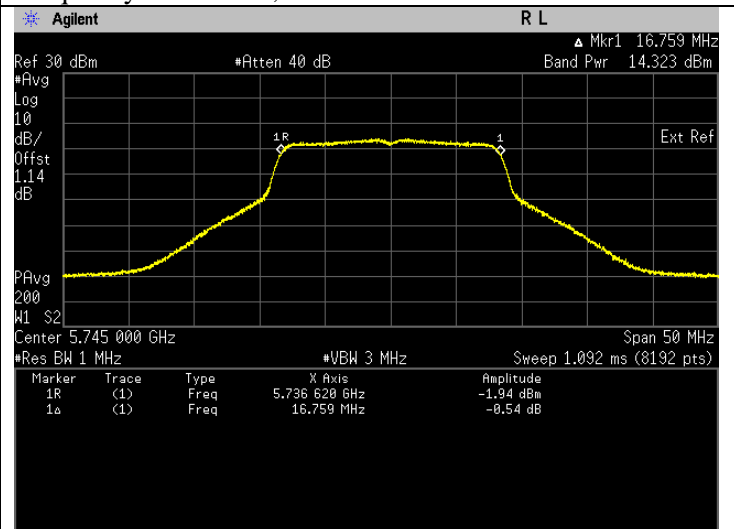
Frequency 5500 MHz, ISED



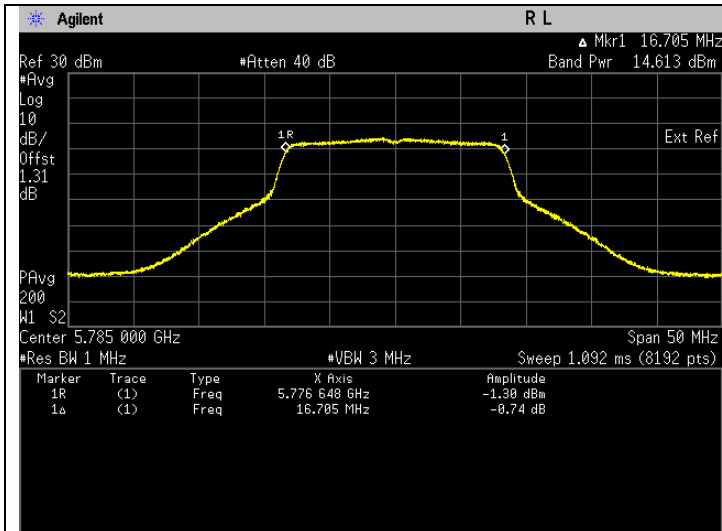
Frequency 5580 MHz, ISED



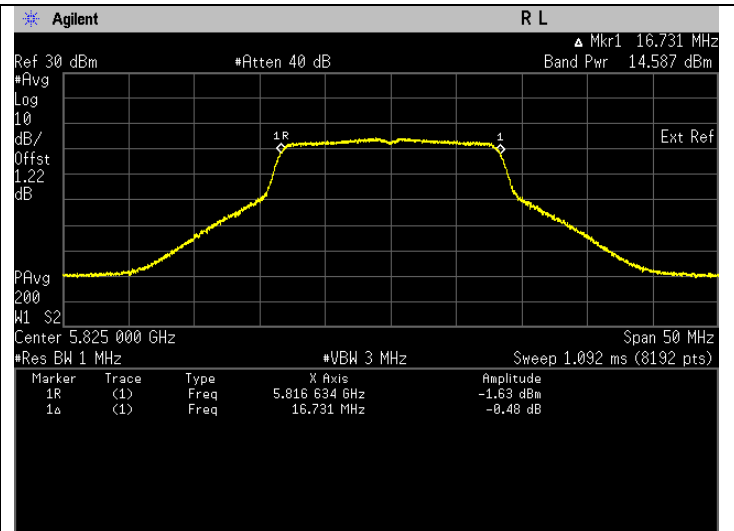
Frequency 5700 MHz, ISED



Frequency 5745 MHz, ISED



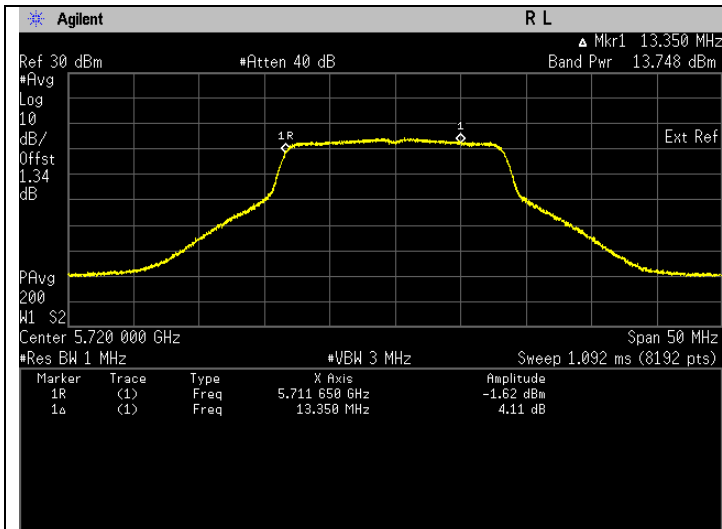
Frequency 5785 MHz, ISED



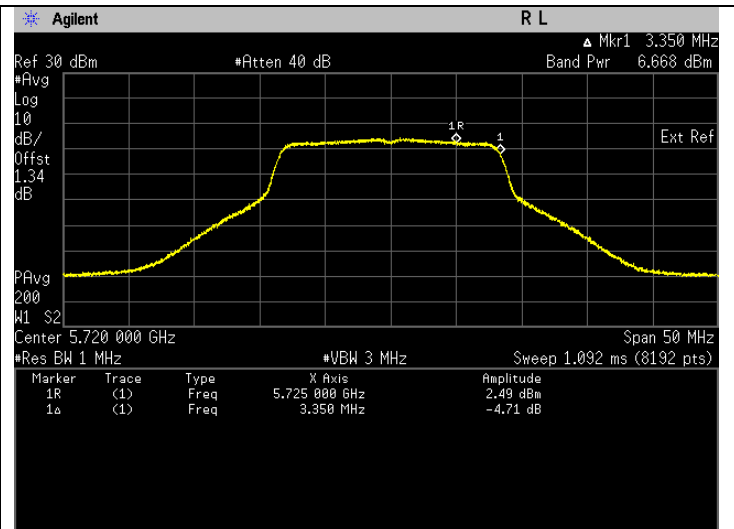
Frequency 5825 MHz, ISED

**Straddle Frequency**

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	24.123	13.824	Pass	16.284	Pass
U-NII-3						
5720	Mod Type: BPSK, Data Rate: 6	4.725	6.744	Pass	9.204	Pass



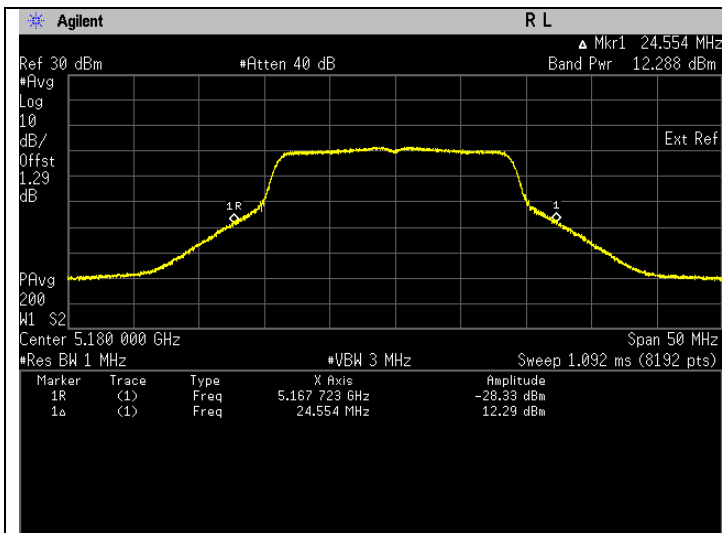
Frequency 5720 MHz, ISED, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.



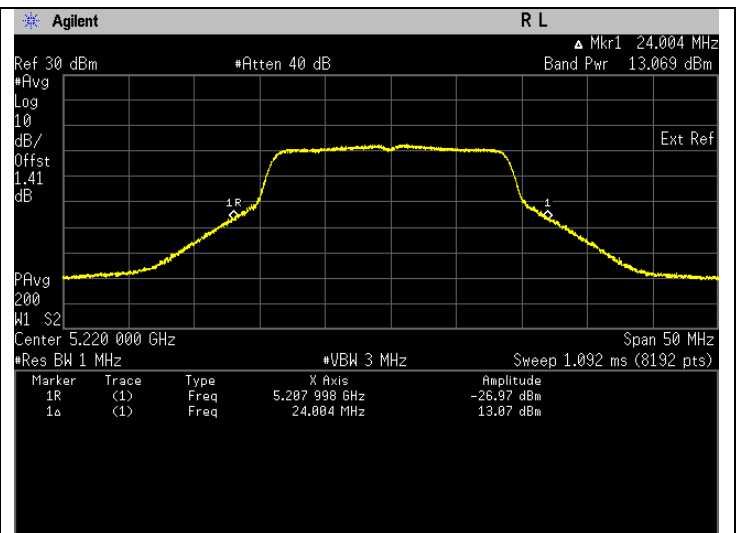
Frequency 5720 MHz, ISED, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11n (HT20)(26dB EBW)**

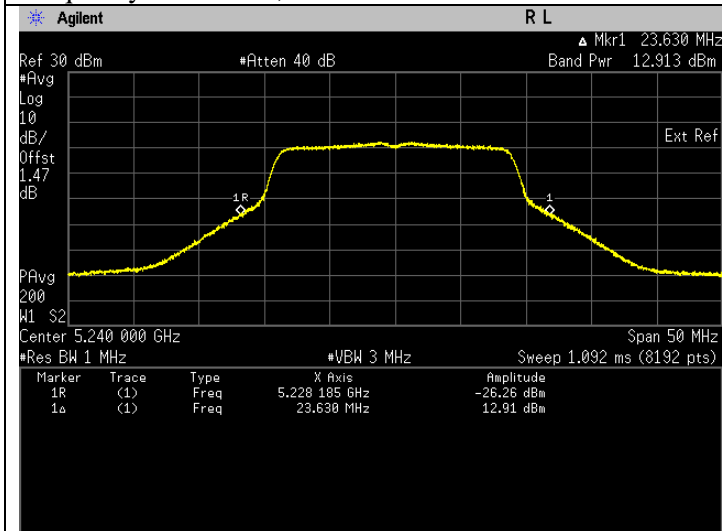
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.258	12.370	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.658	13.151	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	19.930	12.995	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.322	12.386	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	15.853	12.001	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.425	12.155	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.717	14.730	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	30.353	14.822	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	26.841	14.288	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	26.430	14.221	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.197	14.502	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.628	14.568	Pass



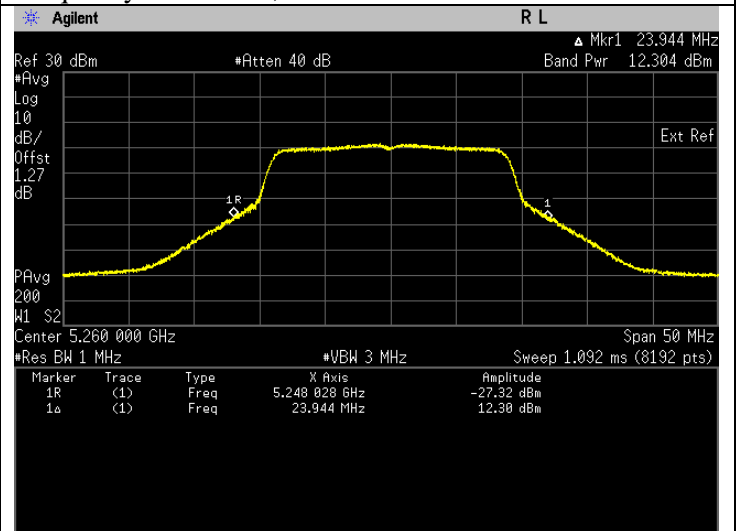
Frequency 5180 MHz, FCC.



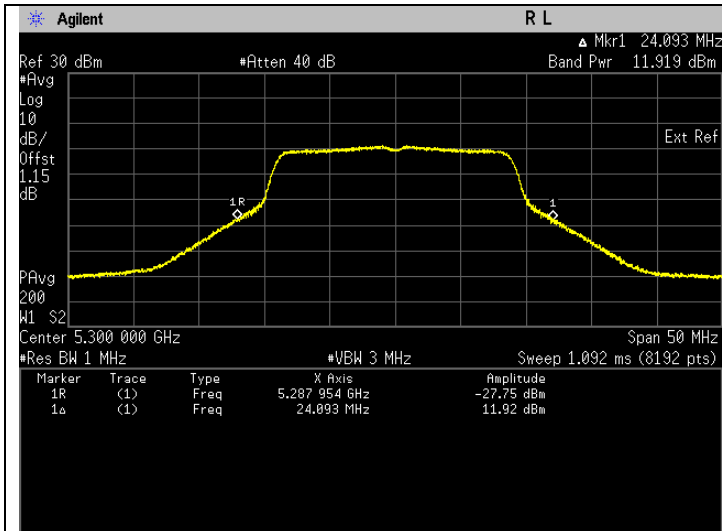
Frequency 5220 MHz, FCC.



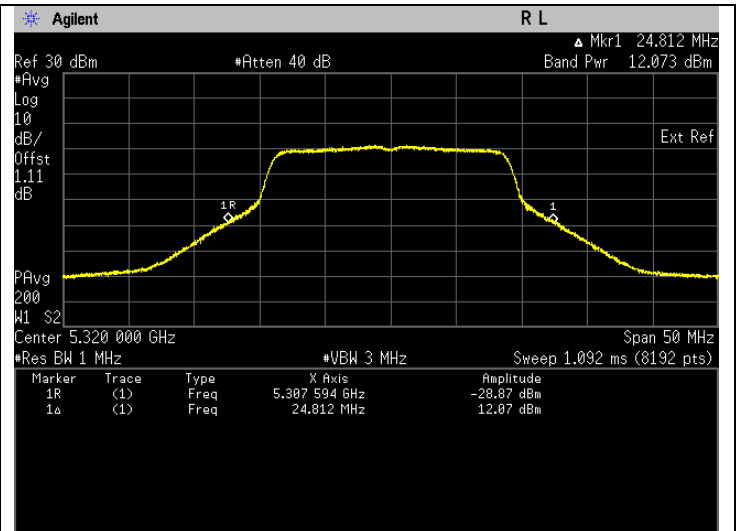
Frequency 5240 MHz, FCC.



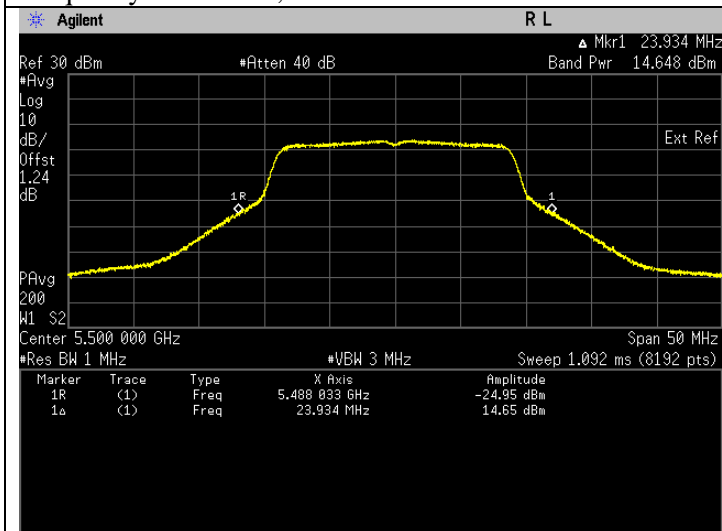
Frequency 5260 MHz, FCC.



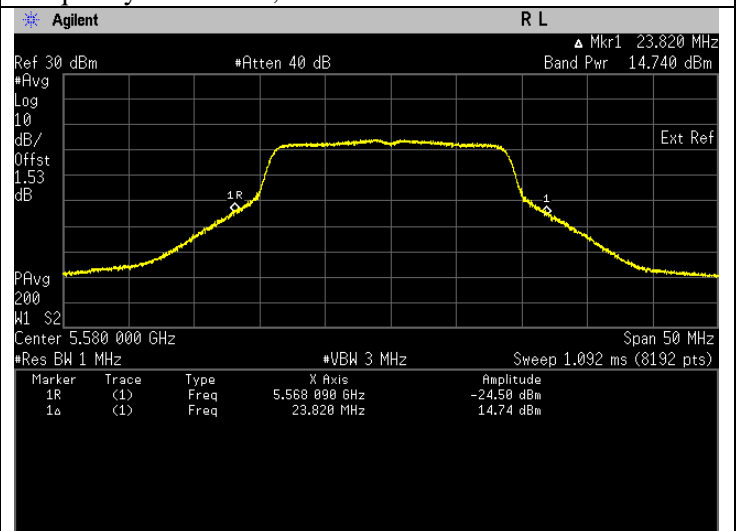
Frequency 5300 MHz, FCC.



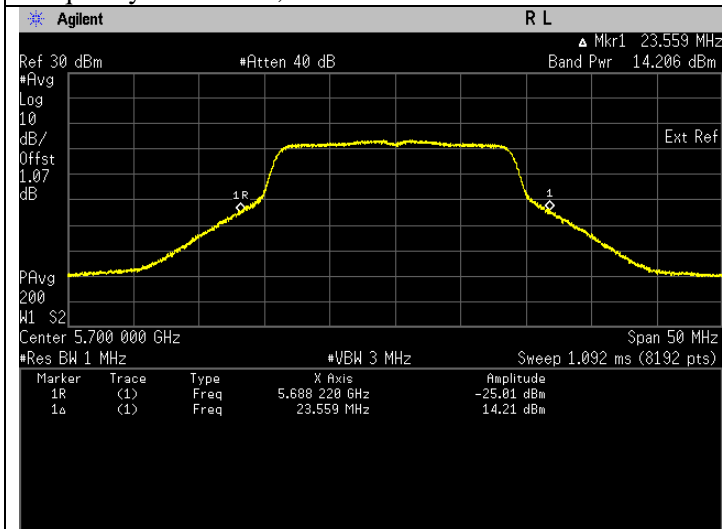
Frequency 5320 MHz, FCC.



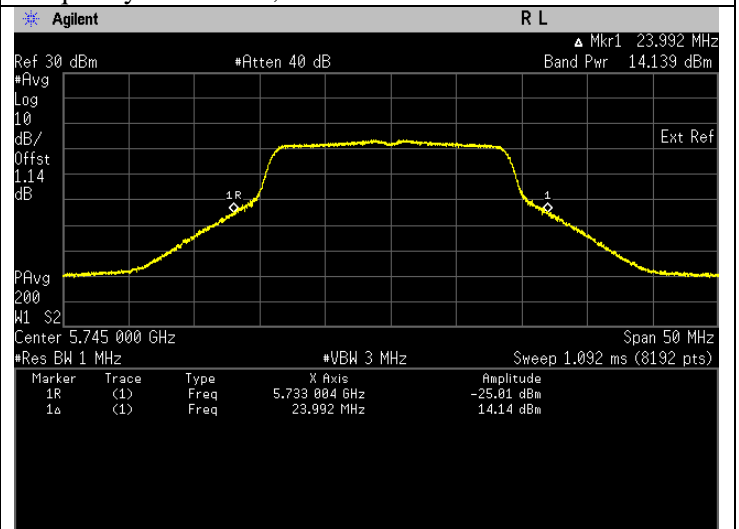
Frequency 5500 MHz, FCC.



Frequency 5580 MHz, FCC.

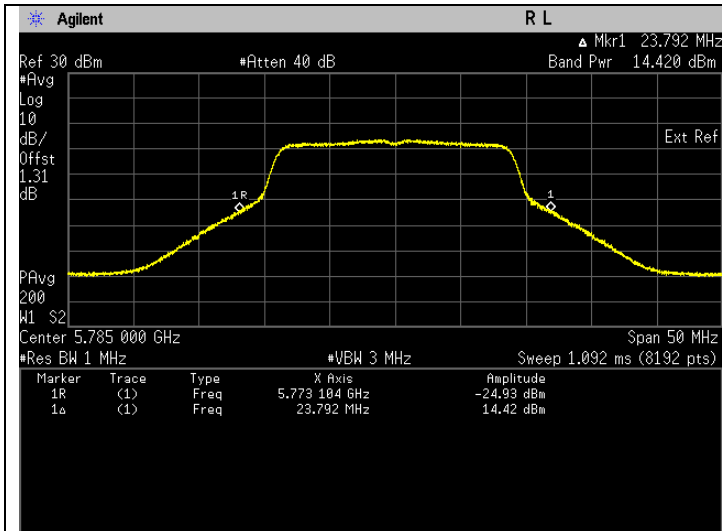


Frequency 5700 MHz, FCC.

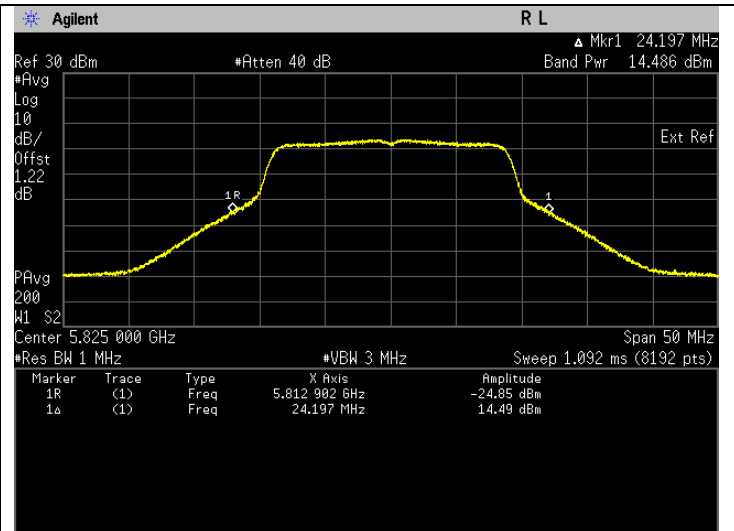


Frequency 5745 MHz, FCC.





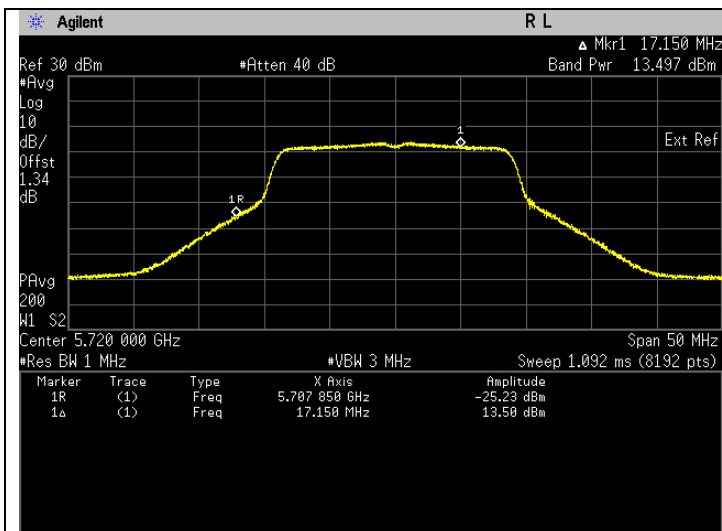
Frequency 5785 MHz, FCC.



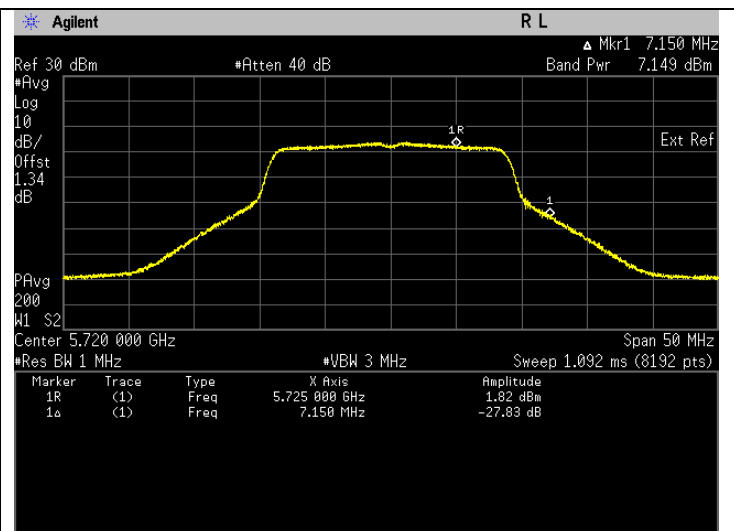
Frequency 5825 MHz, FCC.

### Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	22.798	13.579	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.286	7.231	Pass



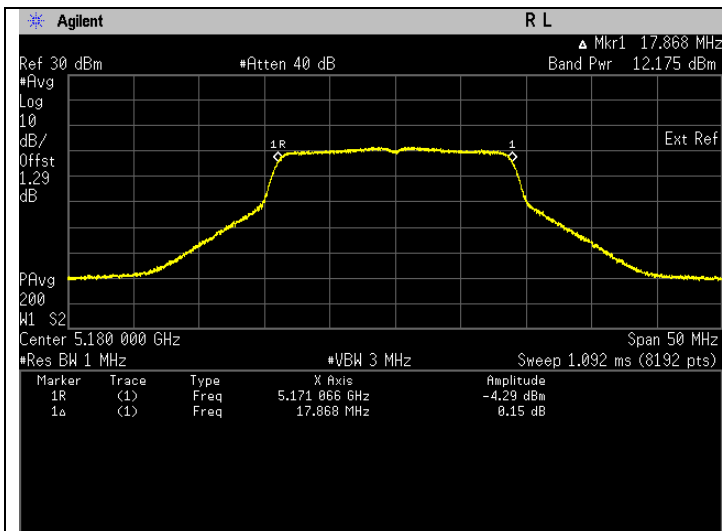
Frequency 5720 MHz, FCC, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.



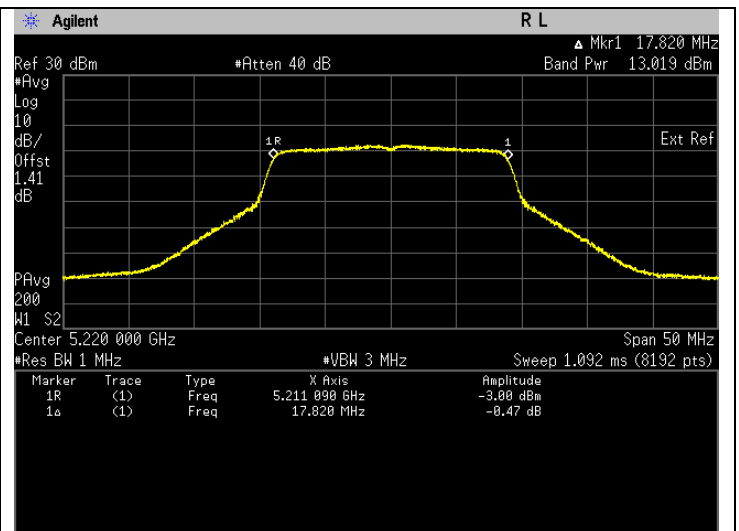
Frequency 5720 MHz, FCC, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11n (HT20)(99% EBW)**

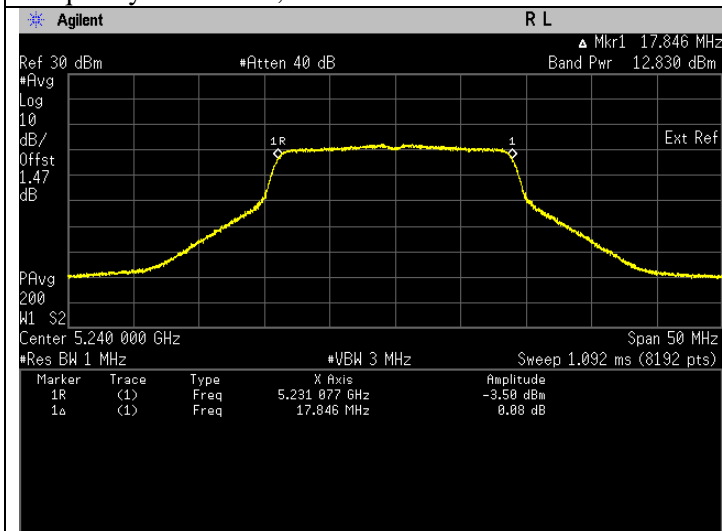
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.815	12.257	Pass	17.297	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.422	13.101	Pass	18.141	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	19.552	12.912	Pass	17.952	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.936	12.288	Pass	17.328	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	15.606	11.933	Pass	16.973	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.062	12.058	Pass	17.098	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.458	14.692	Pass	17.152	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.833	14.747	Pass	17.207	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	26.448	14.224	Pass	16.684	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	26.103	14.167	Pass	16.627	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	27.784	14.438	Pass	16.898	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.151	14.495	Pass	16.955	Pass



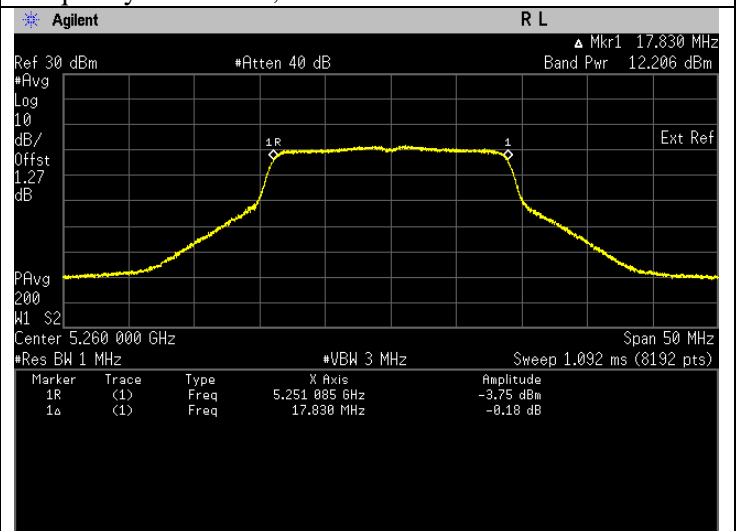
Frequency 5180 MHz, ISED



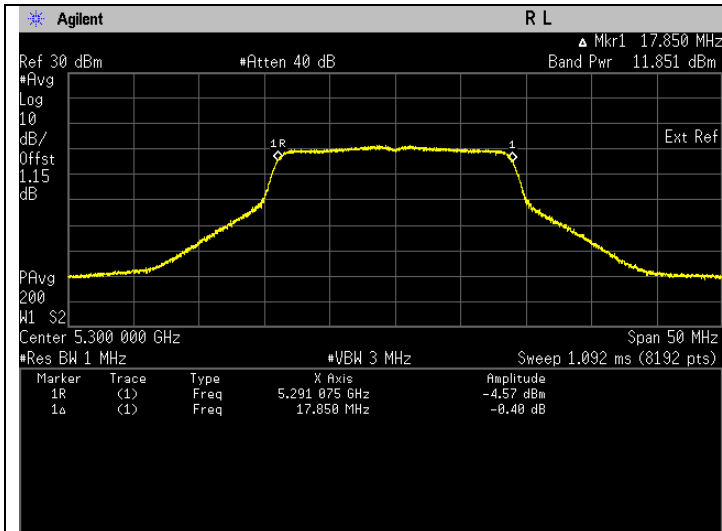
Frequency 5220 MHz, ISED



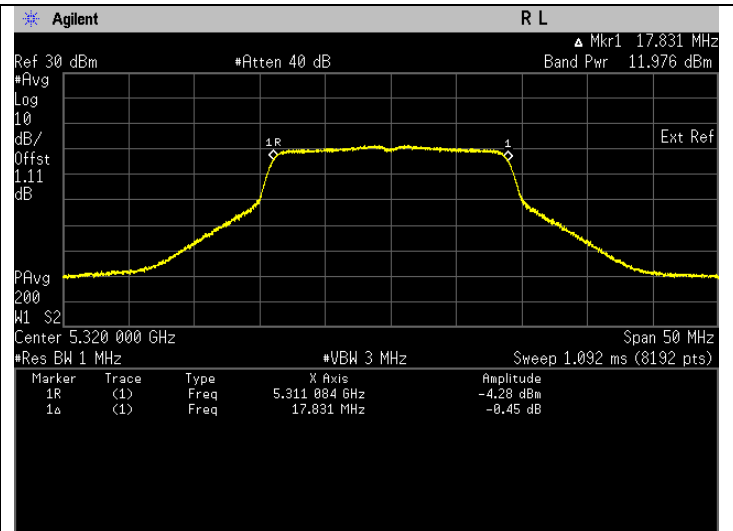
Frequency 5240 MHz, ISED



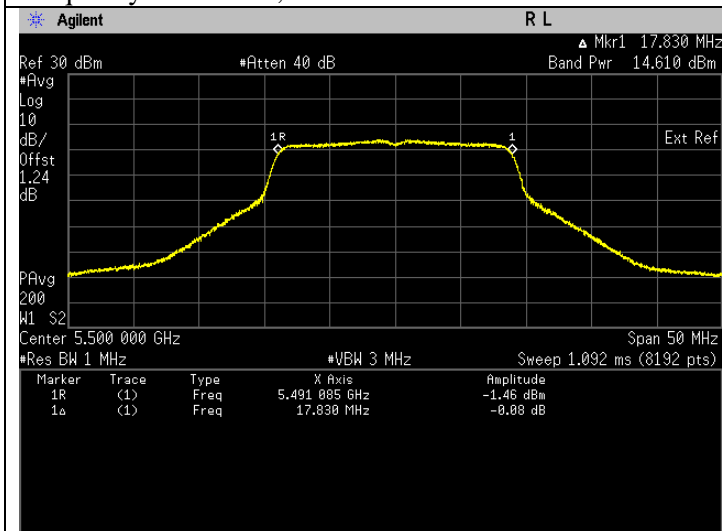
Frequency 5260 MHz, ISED



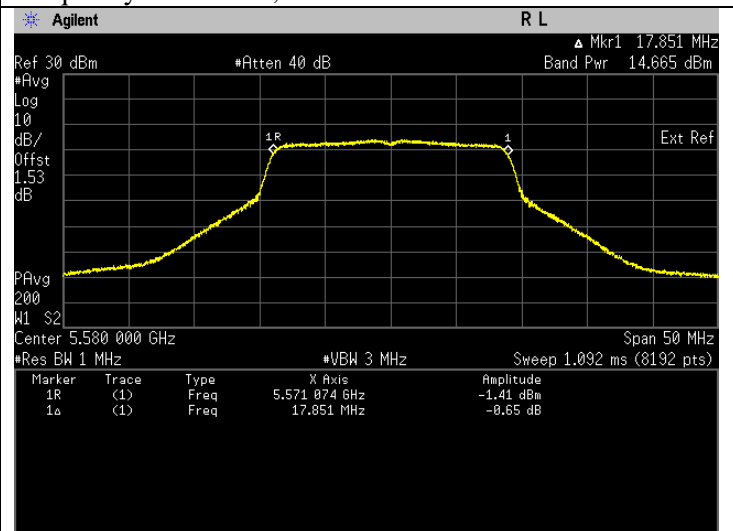
Frequency 5300 MHz, ISED



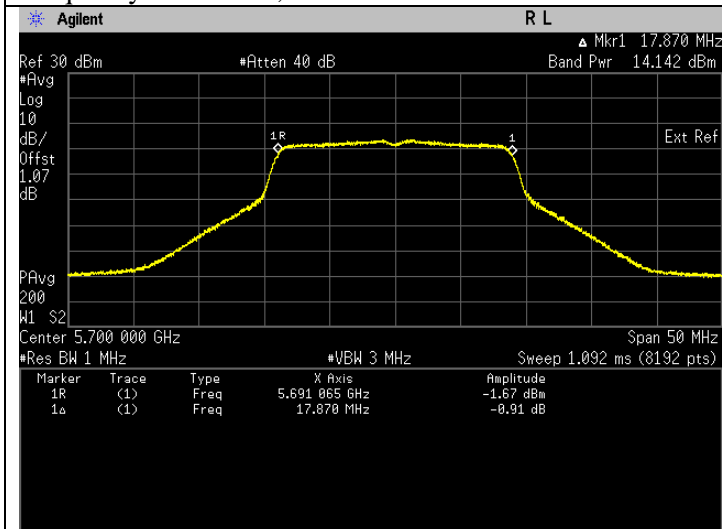
Frequency 5320 MHz, ISED



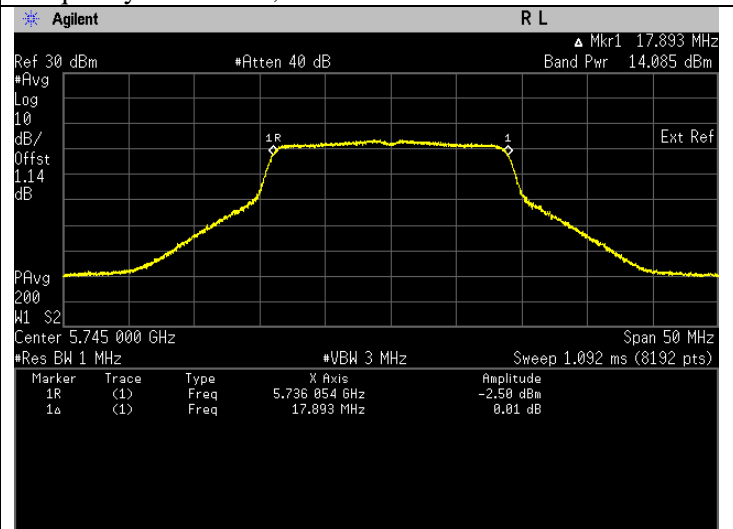
Frequency 5500 MHz, ISED



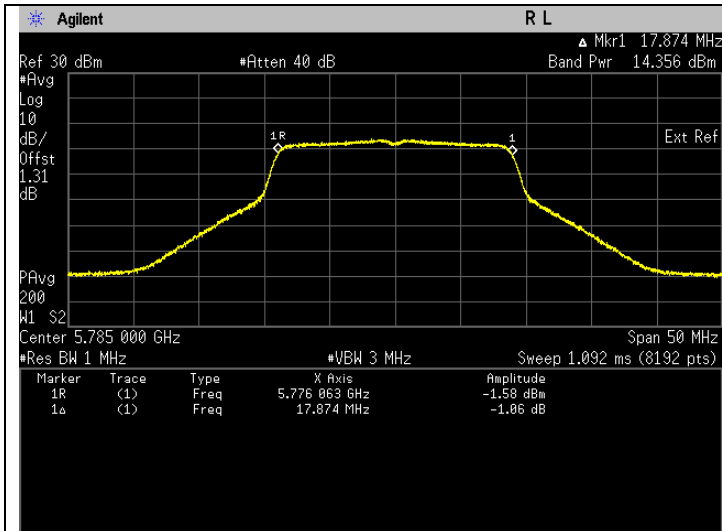
Frequency 5580 MHz, ISED



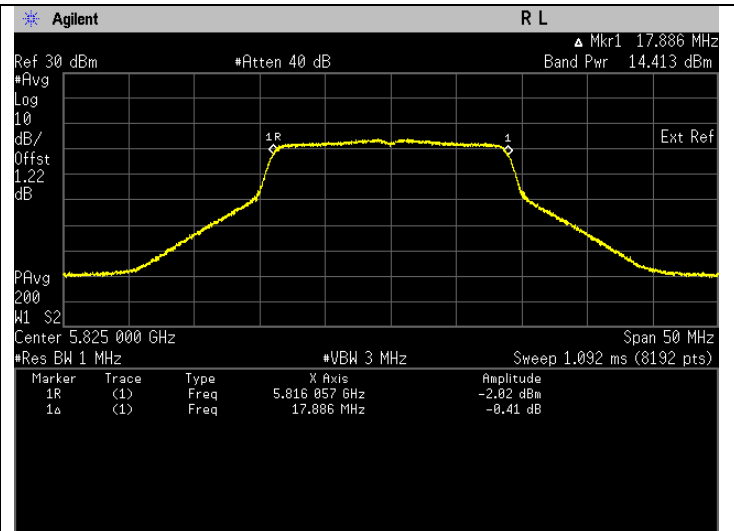
Frequency 5700 MHz, ISED



Frequency 5745 MHz, ISED



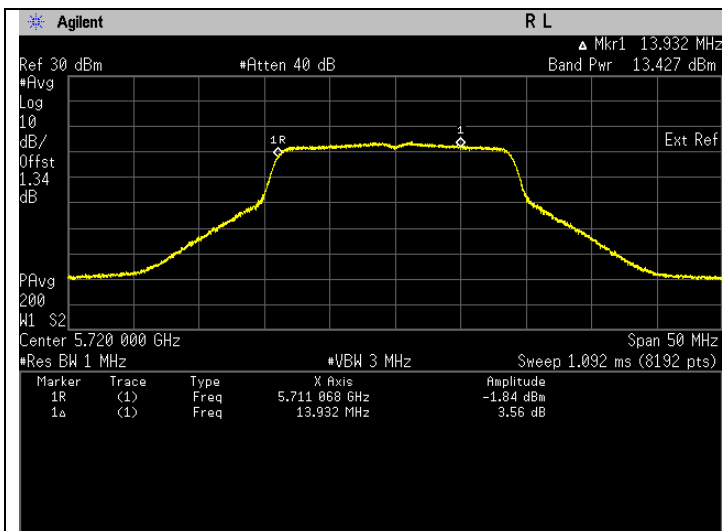
Frequency 5785 MHz, ISED



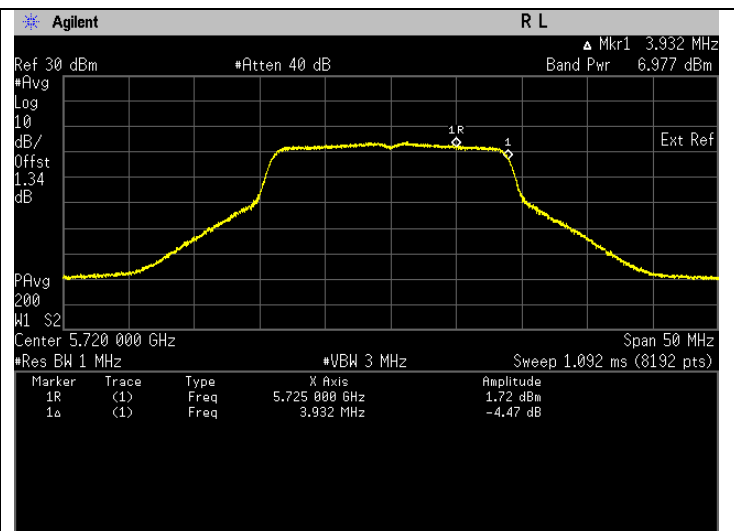
Frequency 5825 MHz, ISED

### Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	22.434	13.509	Pass	15.969	Pass
U-NII-3						
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.080	7.059	Pass	9.519	Pass



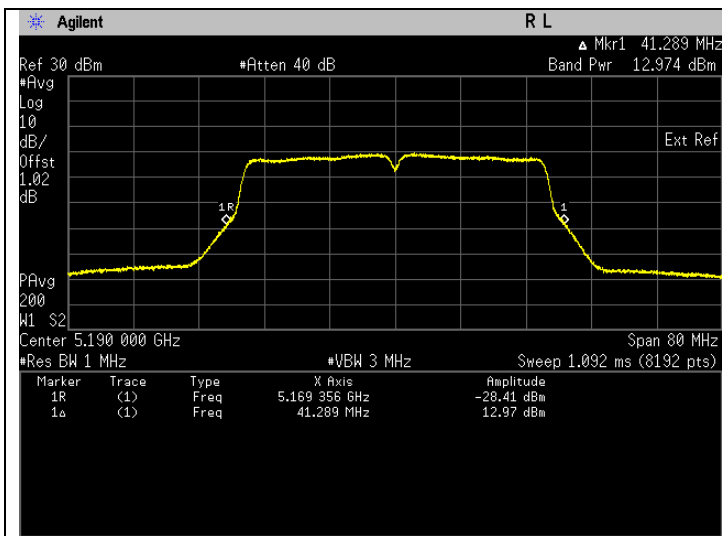
Frequency 5720 MHz, ISED, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.



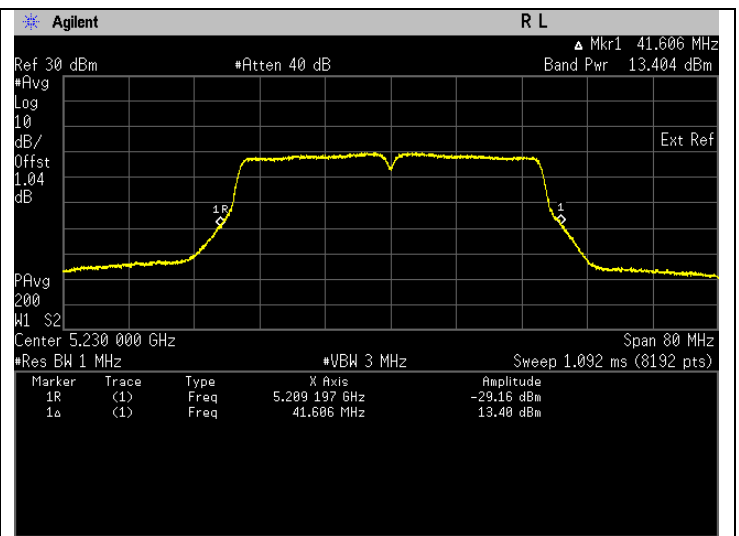
Frequency 5720 MHz, ISED, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11n (HT40)(26dB EBW)**

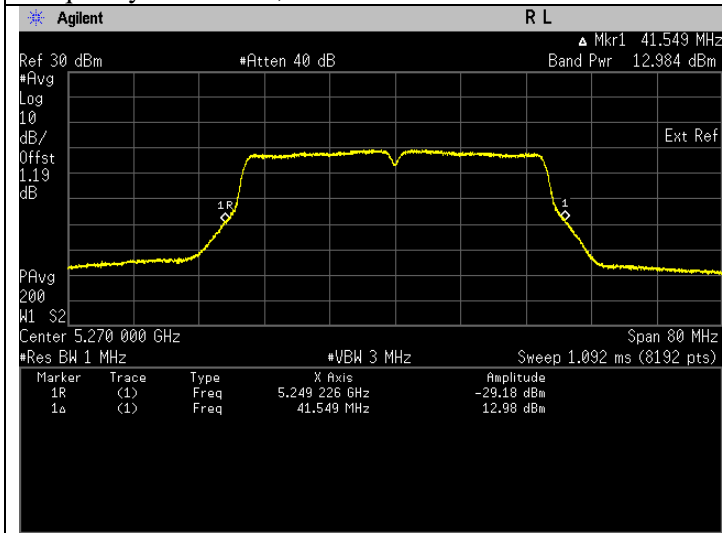
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5190	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.581	13.135	Pass
5230	Mod Type: BPSK, Data Rate: MCS0 (13.5)	22.723	13.565	Pass
5270	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.628	13.145	Pass
5310	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.728	13.166	Pass
5510	Mod Type: BPSK, Data Rate: MCS0 (13.5)	31.496	14.983	Pass
5590	Mod Type: BPSK, Data Rate: MCS0 (13.5)	29.700	14.728	Pass
5670	Mod Type: BPSK, Data Rate: MCS0 (13.5)	27.590	14.408	Pass
5755	Mod Type: BPSK, Data Rate: MCS0 (13.5)	28.904	14.610	Pass
5795	Mod Type: BPSK, Data Rate: MCS0 (13.5)	28.798	14.594	Pass



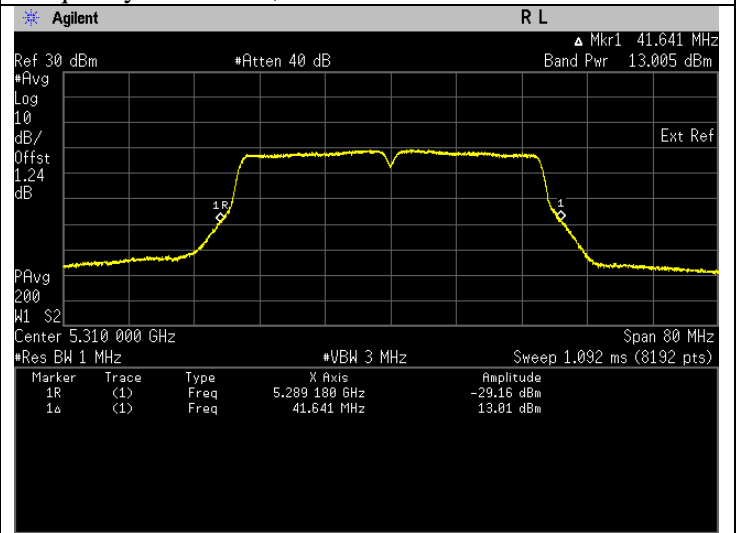
Frequency 5190 MHz, FCC.



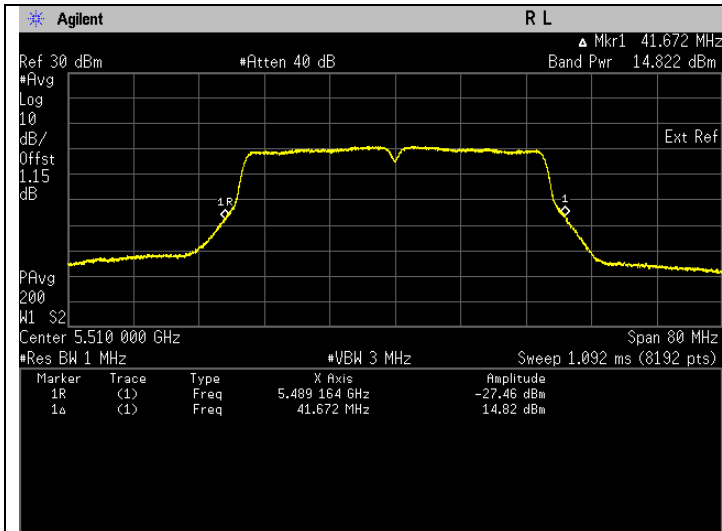
Frequency 5230 MHz, FCC.



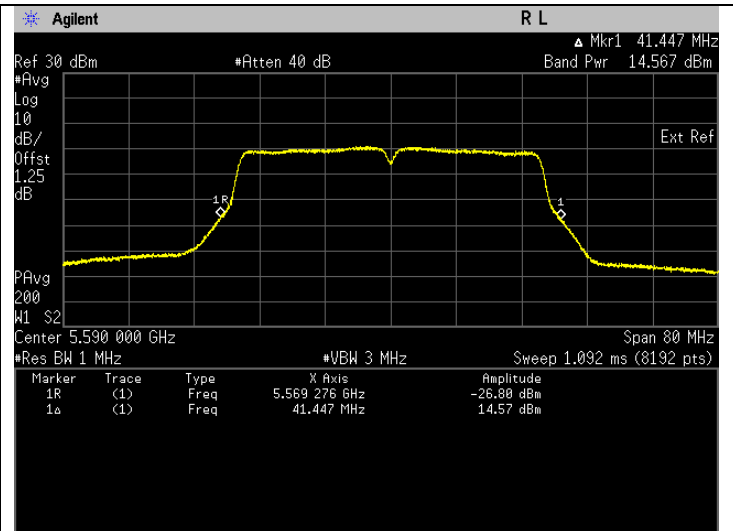
Frequency 5270 MHz, FCC.



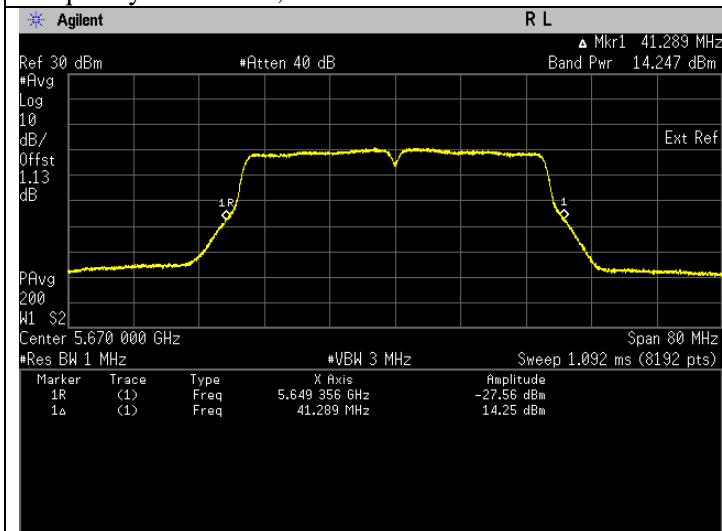
Frequency 5310 MHz, FCC.



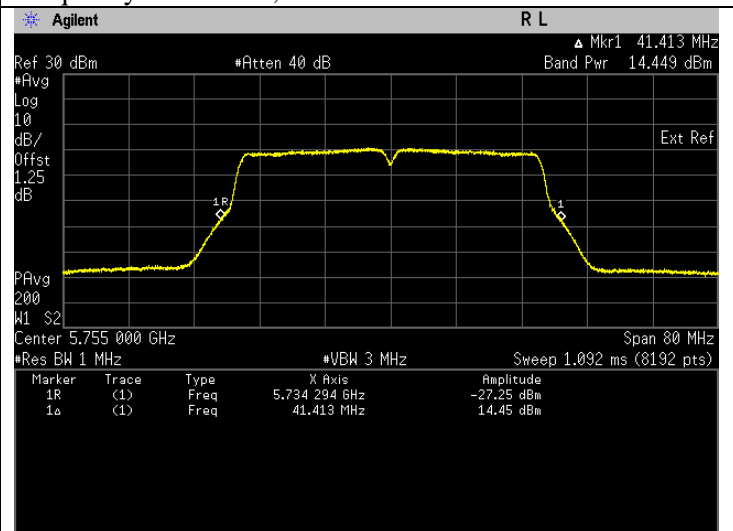
Frequency 5510 MHz, FCC.



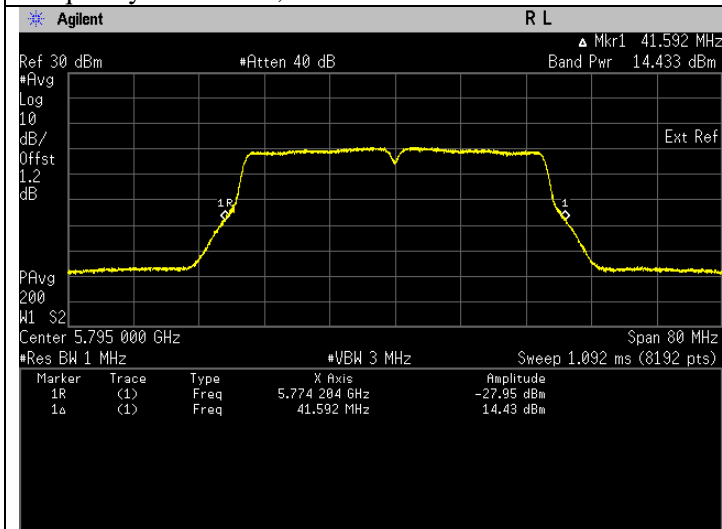
Frequency 5590 MHz, FCC.



Frequency 5670 MHz, FCC.



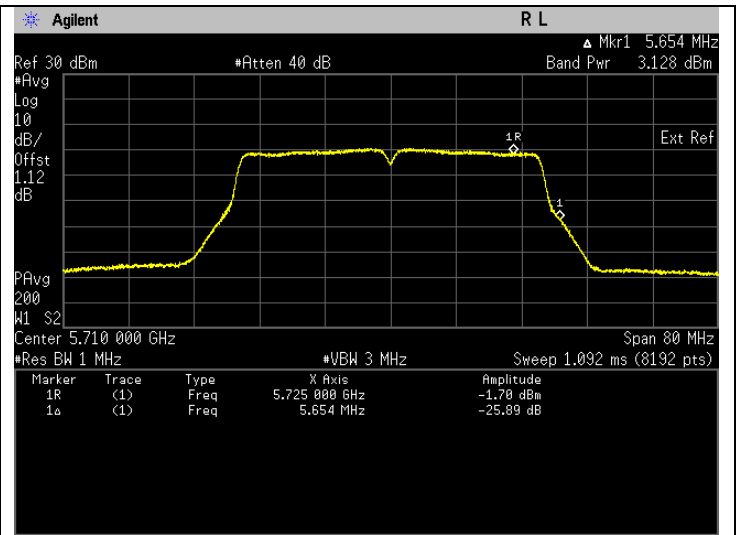
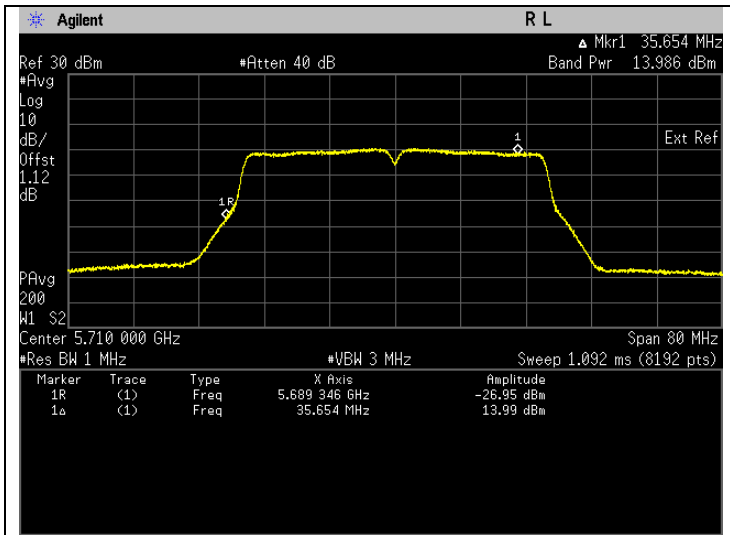
Frequency 5755 MHz, FCC.



Frequency 5795 MHz, FCC.

**Straddle Frequency**

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5)	25.981	14.147	Pass
		U-NII-3		
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5)	2.132	3.289	Pass

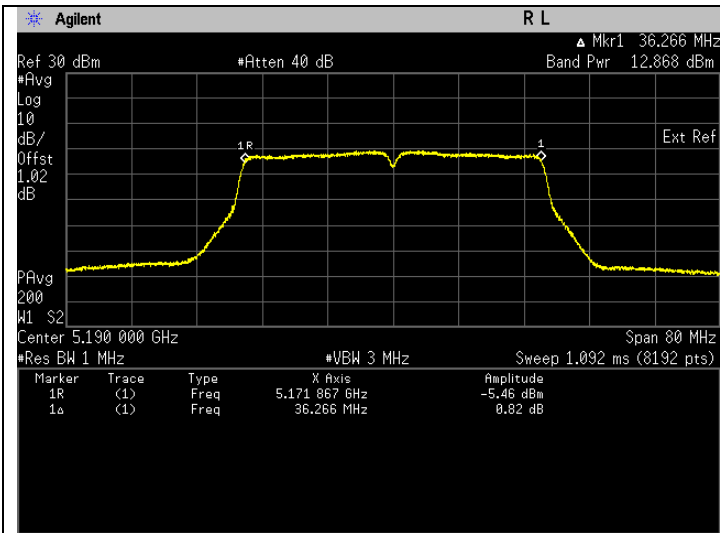


Frequency 5710 MHz, FCC, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.

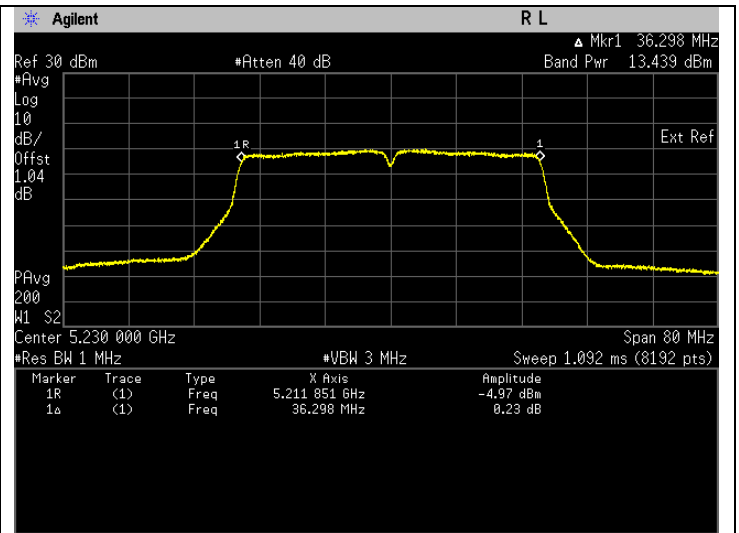
Frequency 5710 MHz, FCC, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11n (HT40)(99% EBW)**

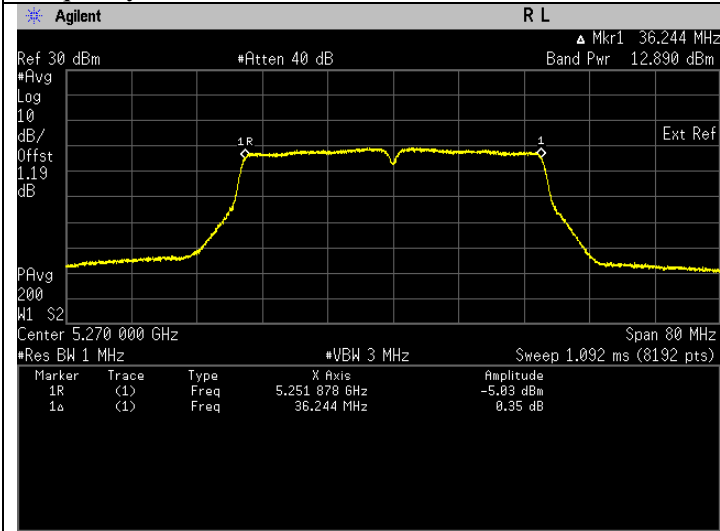
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5190	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.084	13.029	Pass	18.069	Pass
5230	Mod Type: BPSK, Data Rate: MCS0 (13.5)	22.906	13.600	Pass	18.640	Pass
5270	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.186	13.051	Pass	18.091	Pass
5310	Mod Type: BPSK, Data Rate: MCS0 (13.5)	20.671	13.154	Pass	18.194	Pass
5510	Mod Type: BPSK, Data Rate: MCS0 (13.5)	30.539	14.849	Pass	17.309	Pass
5590	Mod Type: BPSK, Data Rate: MCS0 (13.5)	29.577	14.710	Pass	17.170	Pass
5670	Mod Type: BPSK, Data Rate: MCS0 (13.5)	27.043	14.321	Pass	16.781	Pass
5755	Mod Type: BPSK, Data Rate: MCS0 (13.5)	28.507	14.550	Pass	17.010	Pass
5795	Mod Type: BPSK, Data Rate: MCS0 (13.5)	28.422	14.537	Pass	16.997	Pass



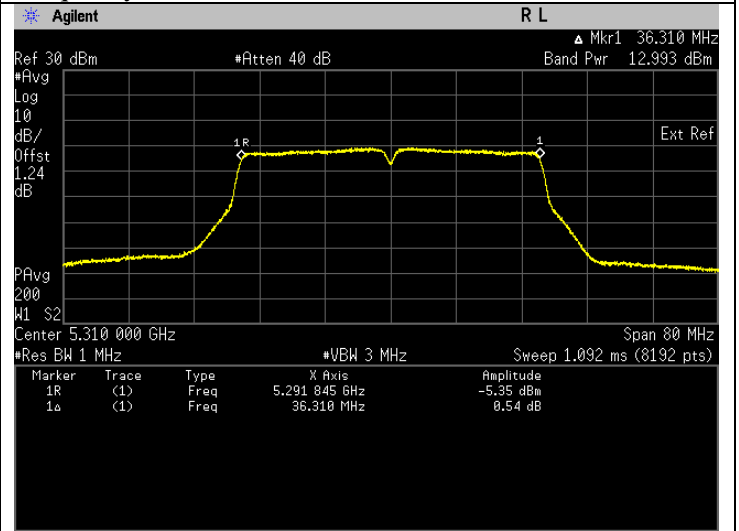
Frequency 5190 MHz, ISED



Frequency 5230 MHz, ISED

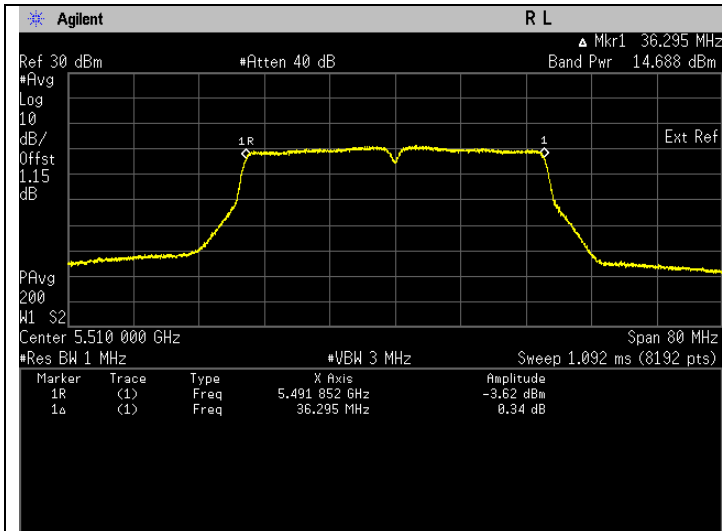


Frequency 5270 MHz, ISED

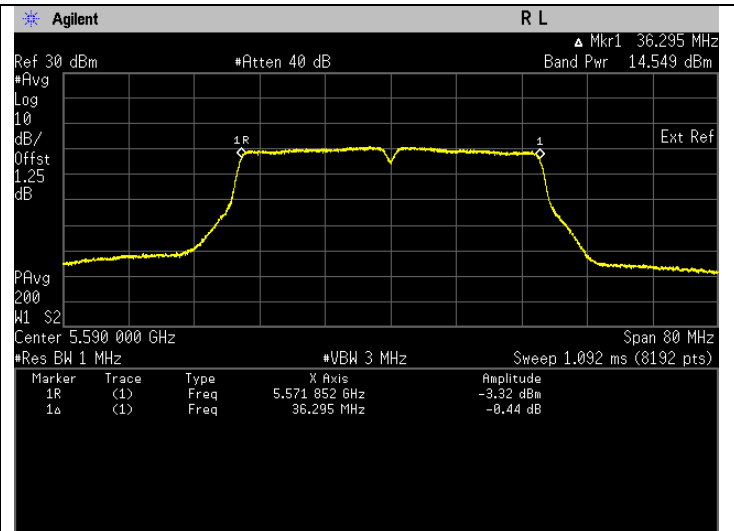


Frequency 5310 MHz, ISED

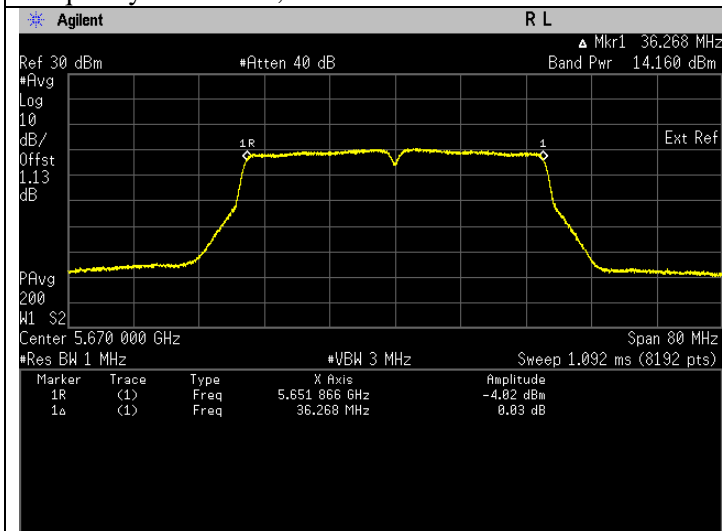




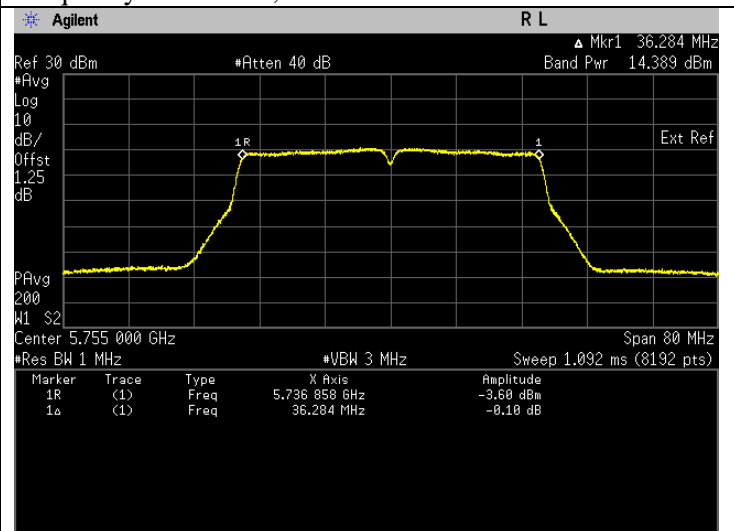
Frequency 5510 MHz, ISED



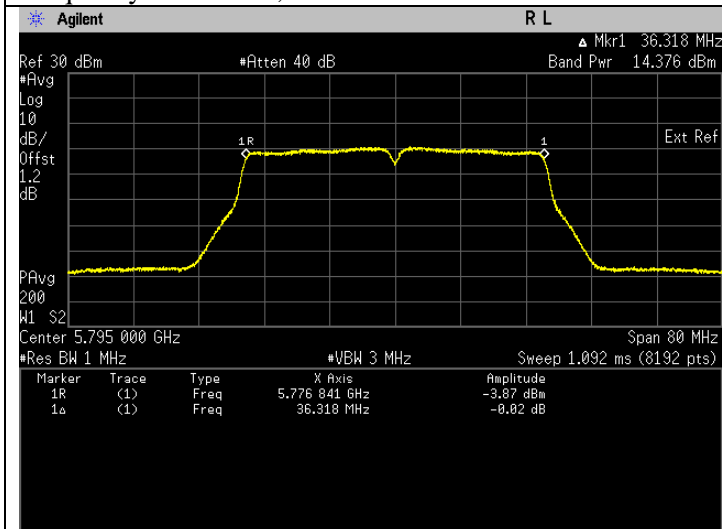
Frequency 5590 MHz, ISED



Frequency 5670 MHz, ISED



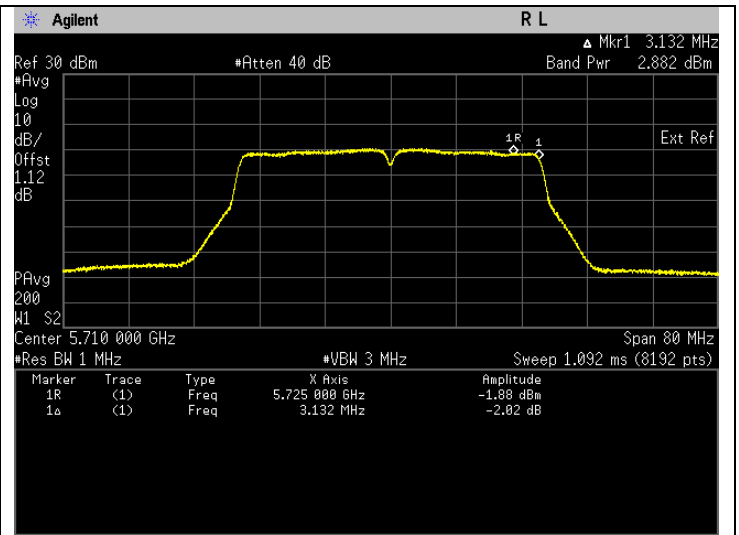
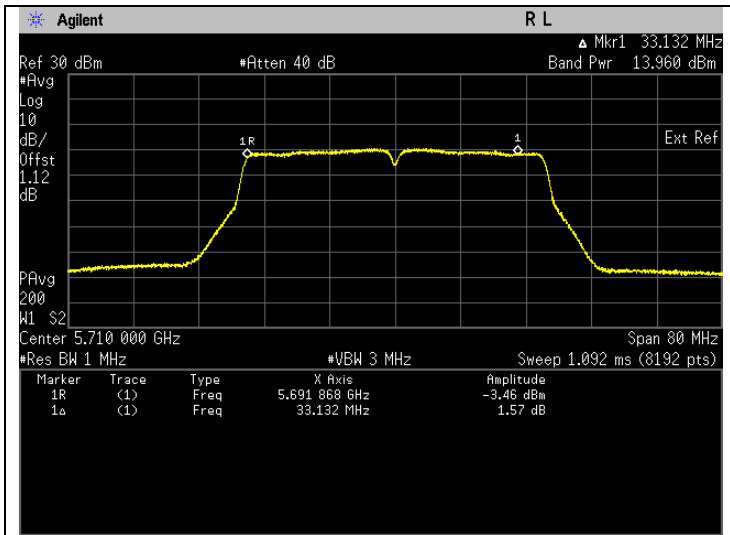
Frequency 5755 MHz, ISED



Frequency 5795 MHz, ISED

**Straddle Frequency**

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5)	25.826	14.121	Pass	16.581	Pass
		U-NII-3				
5710	Mod Type: BPSK, Data Rate: MCS0 (13.5)	2.015	3.043	Pass	5.503	Pass

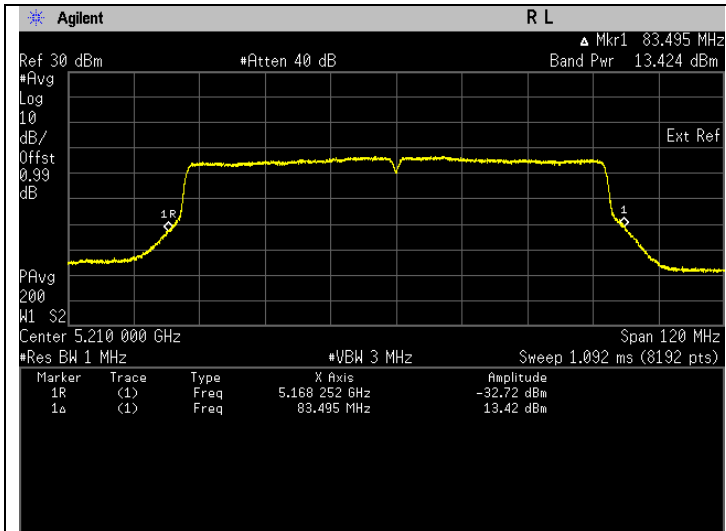


Frequency 5710 MHz, ISED, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.

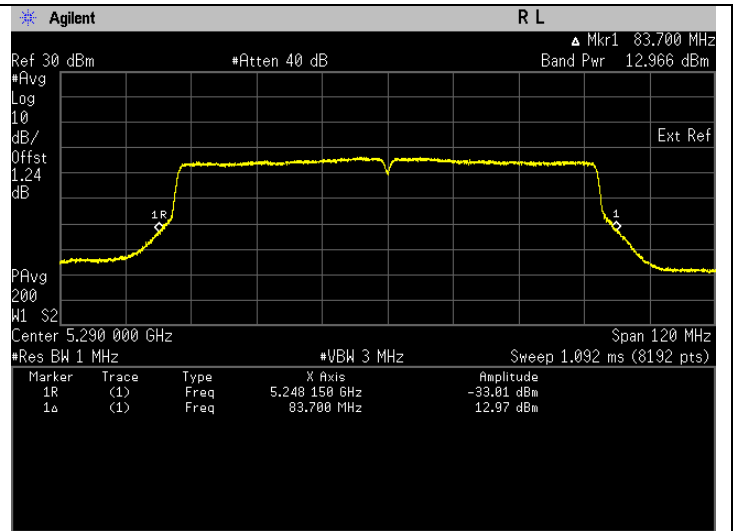
Frequency 5710 MHz, ISED, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11ac (HT80)(26dB EBW)**

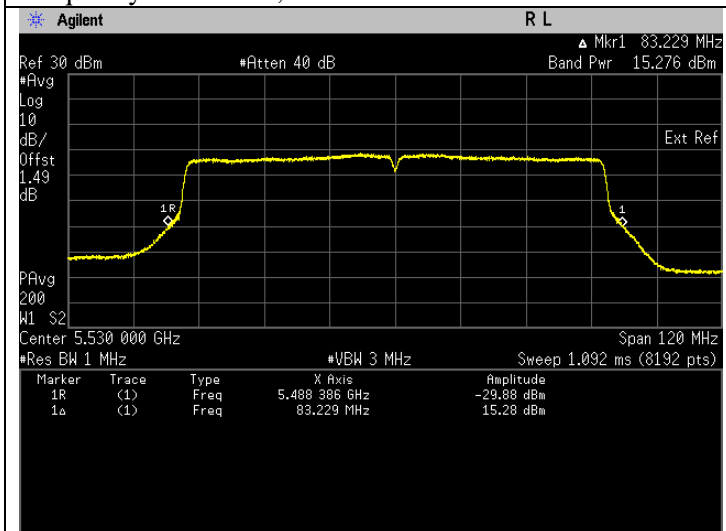
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5210	Mod Type: BPSK, Data Rate: MCS0(29.3)	23.693	13.746	Pass
5290	Mod Type: BPSK, Data Rate: MCS0(29.3)	21.322	13.288	Pass
5530	Mod Type: BPSK, Data Rate: MCS0(29.3)	36.293	15.598	Pass
5610	Mod Type: BPSK, Data Rate: MCS0(29.3)	28.322	14.521	Pass
5775	Mod Type: BPSK, Data Rate: MCS0(29.3)	31.370	14.965	Pass



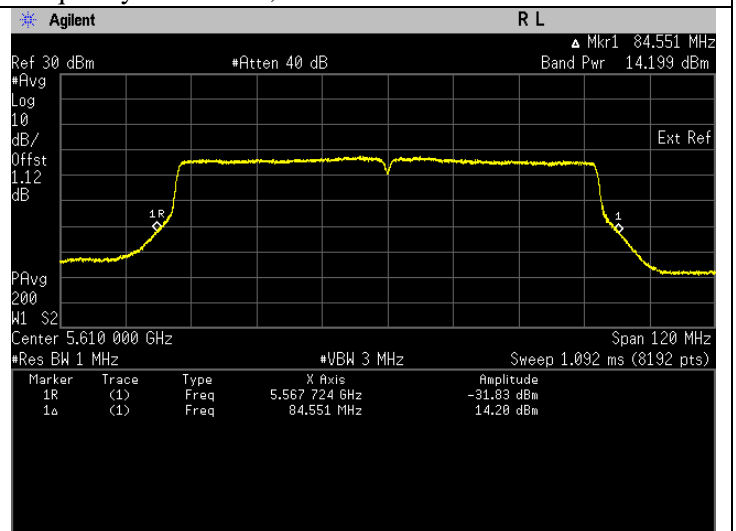
Frequency 5210 MHz, FCC.



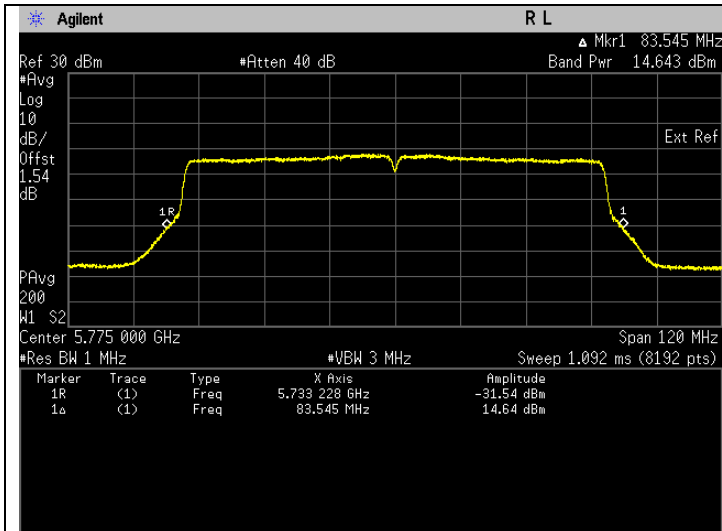
Frequency 5290 MHz, FCC.



Frequency 5530 MHz, FCC.



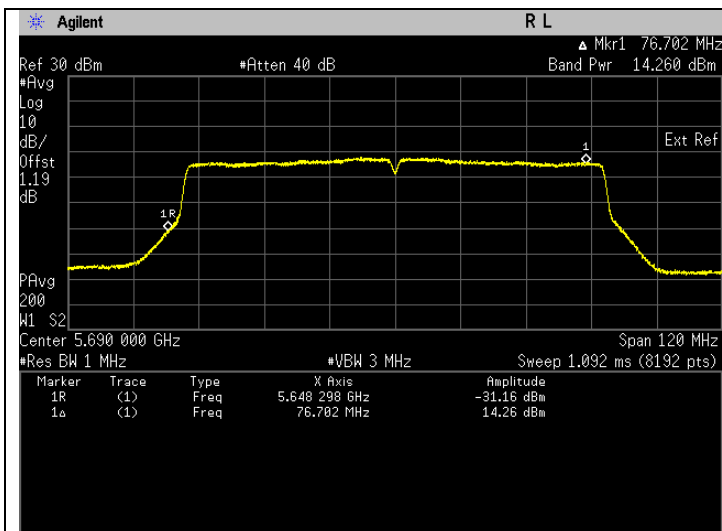
Frequency 5610 MHz, FCC.



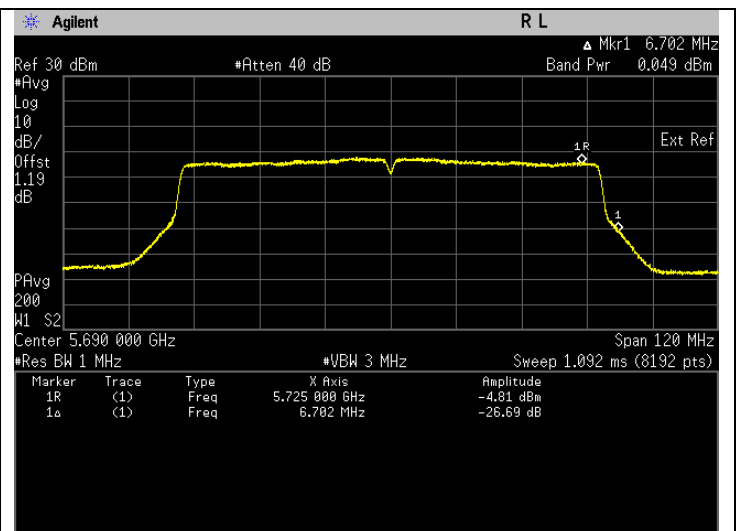
Frequency 5775 MHz, FCC.

### Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5690	Mod Type: BPSK, Data Rate: MCS0(29.3)	28.722	14.582	Pass
		U-NII-3		
5690	Mod Type: BPSK, Data Rate: MCS0(29.3)	1.089	0.371	Pass



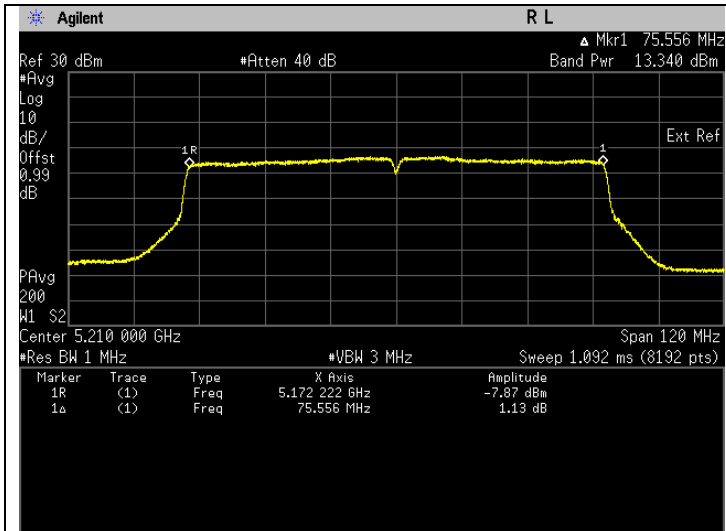
Frequency 5690 MHz, FCC, U-NII-2C. \*Note: The band power is captured before the 5725 MHz.



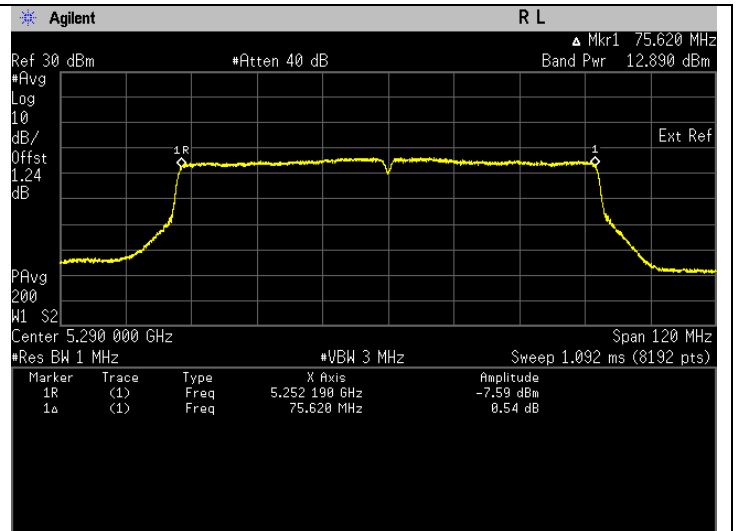
Frequency 5690 MHz, FCC, U-NII-3. \*Note: The band power is captured after the 5725 MHz.

**802.11ac (HT80)(99% EBW)**

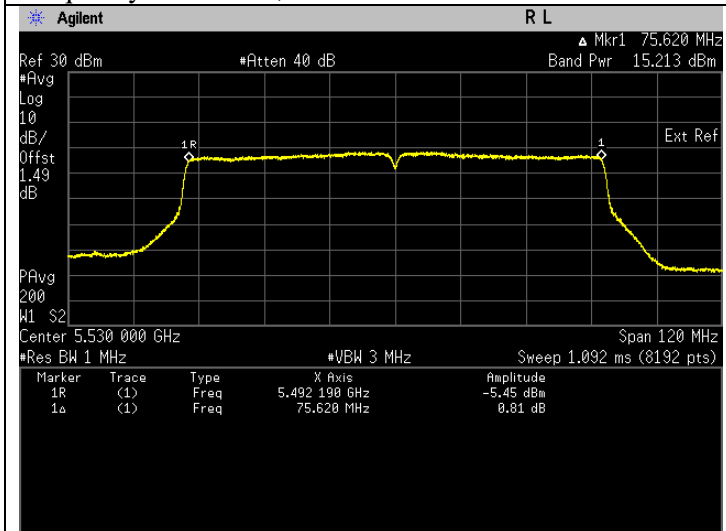
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5210	Mod Type: BPSK, Data Rate: MCS0(29.3)	23.239	13.662	Pass	18.702	Pass
5290	Mod Type: BPSK, Data Rate: MCS0(29.3)	20.952	13.212	Pass	18.252	Pass
5530	Mod Type: BPSK, Data Rate: MCS0(29.3)	35.770	15.535	Pass	17.995	Pass
5610	Mod Type: BPSK, Data Rate: MCS0(29.3)	28.017	14.474	Pass	16.934	Pass
5775	Mod Type: BPSK, Data Rate: MCS0(29.3)	31.004	14.914	Pass	17.374	Pass



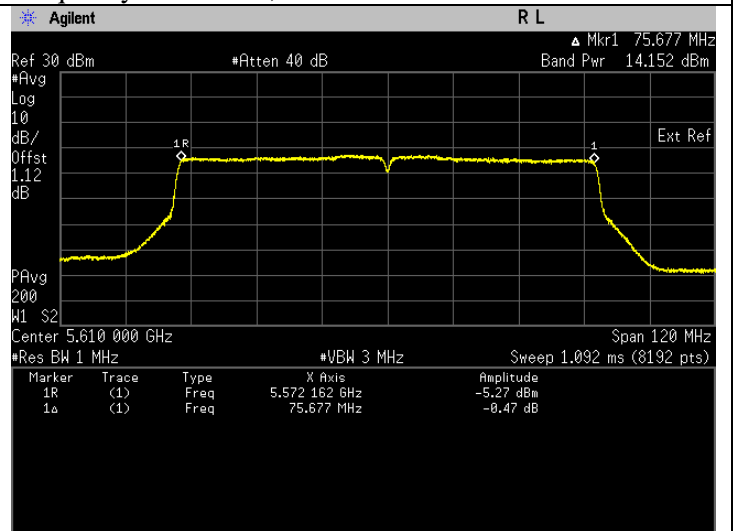
Frequency 5210 MHz, ISED



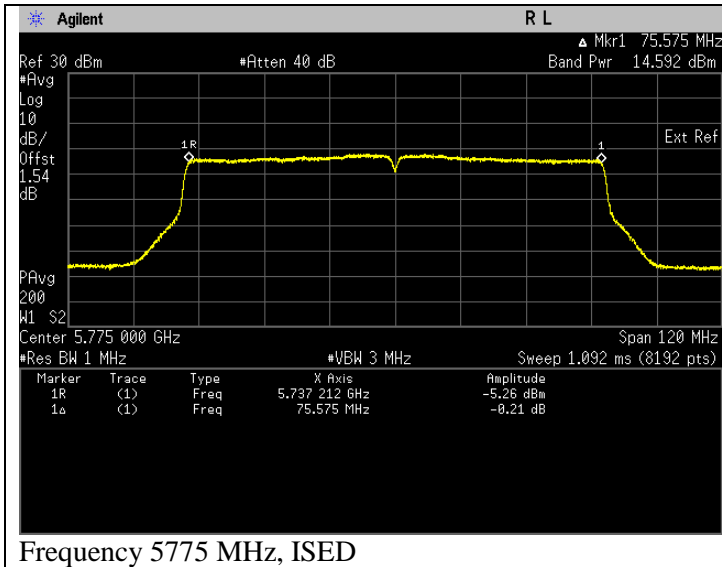
Frequency 5290 MHz, ISED



Frequency 5530 MHz, ISED

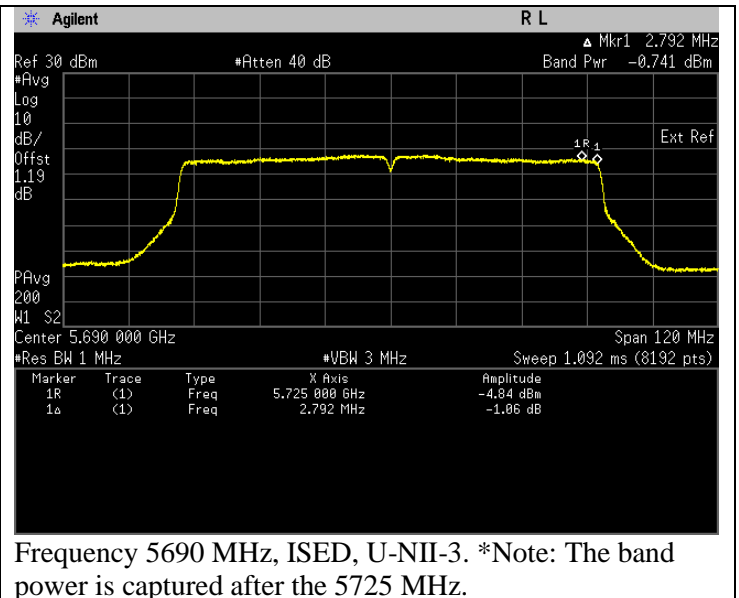
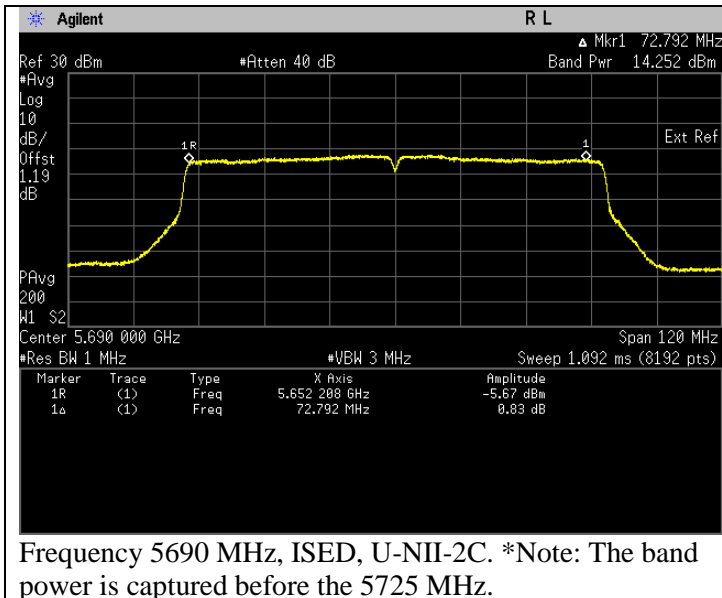


Frequency 5610 MHz, ISED



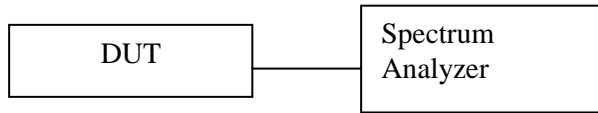
**Straddle Frequency**

Freq. (MHz)	Test Conditions	Results				
		U-NII-2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5690	Mod Type: BPSK, Data Rate: MCS0(29.3)	28.669	14.574	Pass	17.034	Pass
		U-NII-3				
5690	Mod Type: BPSK, Data Rate: MCS0(29.3)	0.908	-0.419	Pass	2.041	Pass



### 7.3. Maximum Power Spectral Density

#### 7.3.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
  - Span to encompass the entire 26dB EBW or 99% occupied bandwidth.
  - RBW = 1 MHz (5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz) / 500 kHz (5.725-5.85 GHz)
  - VBW ≥ 3·RBW
  - Detector = power averaging (RMS)
  - Trace = Max hold
  - Number of points in sweep ≥ 2 × span / RBW
  - Sweep time = auto
  - Trace average at least 100 traces in power averaging (rms) mode
- e) Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- f) Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum.
- g) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause F) Method SA-2.
- h) The Maximum power spectral density results are included duty cycle correction factor.

#### 7.3.2. Test Limits

##### **FCC 15.407(a)**

Range (GHz)	Condition	Limit
5.15-5.25	Outdoor AP	17dBm/ 1MHz
	Indoor AP	17dBm/ 1MHz
	Fixed Point to Point AP	17dBm/ 1MHz
	√ Mobile and Portable Client Devices	11dBm/ 1MHz
5.25-5.35	√	11dBm/ 1MHz
5.47-5.525	√	11dBm/ 1MHz
5.725-5.85	√	30dBm/ 500kHz

##### **RSS-247 6.2**

Range(GHz)	Condition	Limit
5.15-5.25	Indoor Operation Only	EIRP: 10dBm/ 1MHz
5.25-5.35		11dBm/ 1MHz
5.47-5.6 5.6-5.525		11dBm/ 1MHz
5.725-5.85		30dBm/ 500kHz

7.3.3. Additional Info

<b>Antenna Type</b>	<b>Gain (dBi)</b>
Antenna 1	
<b>Duty Cycle Correction Factor</b>	
Antenna 1	

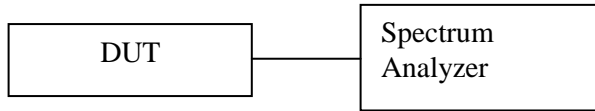
7.3.4. Test Data

**NA**



## 7.4. 6dB Bandwidth

### 7.4.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) 6dB bandwidth is applicable for the band 5.725-5.85GHz only.
- d) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- e) Setting of Spectrum analyzer :
  - RBW = 100 kHz
  - VBW  $\geq 3 \cdot$ RBW
  - Detector = Peak
  - Trace = Max Hold
  - Sweep = Auto couple
- f) Allow trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- h) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.2).

### 7.4.2. Test Limits

#### **FCC 15.407(e)**

Within the 5.725-5.85GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

#### **RSS 247 6.2.4**

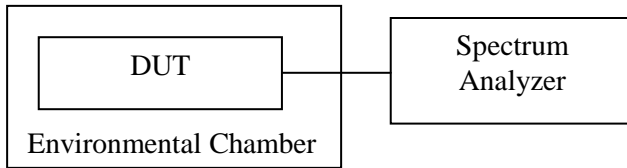
For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

### 7.4.3. Test Data

**NA**

## 7.5. Frequency Stability

### 7.5.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit un-modulated signal at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) The DUT was operated at the maximum output power, and spectrum which is set to maximum hold function and peak detector.
- e) The peak value of the power envelope was measured and noted.
- f) Test was conducted from temperature range from  $-30^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  with step size of  $10^{\circ}\text{C}$  on manufacturer's rated supply voltage.
- g) At temperature of  $20^{\circ}\text{C}$ ,  $\pm 15\%$  of manufacturer's rated voltage are to be applied.
- h) The frequency stability is measured and recorded of frequency deviation due to temperature and supply voltage variations as mentioned at condition f) & g) above.

### 7.5.2. Test Limits

#### FCC 15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

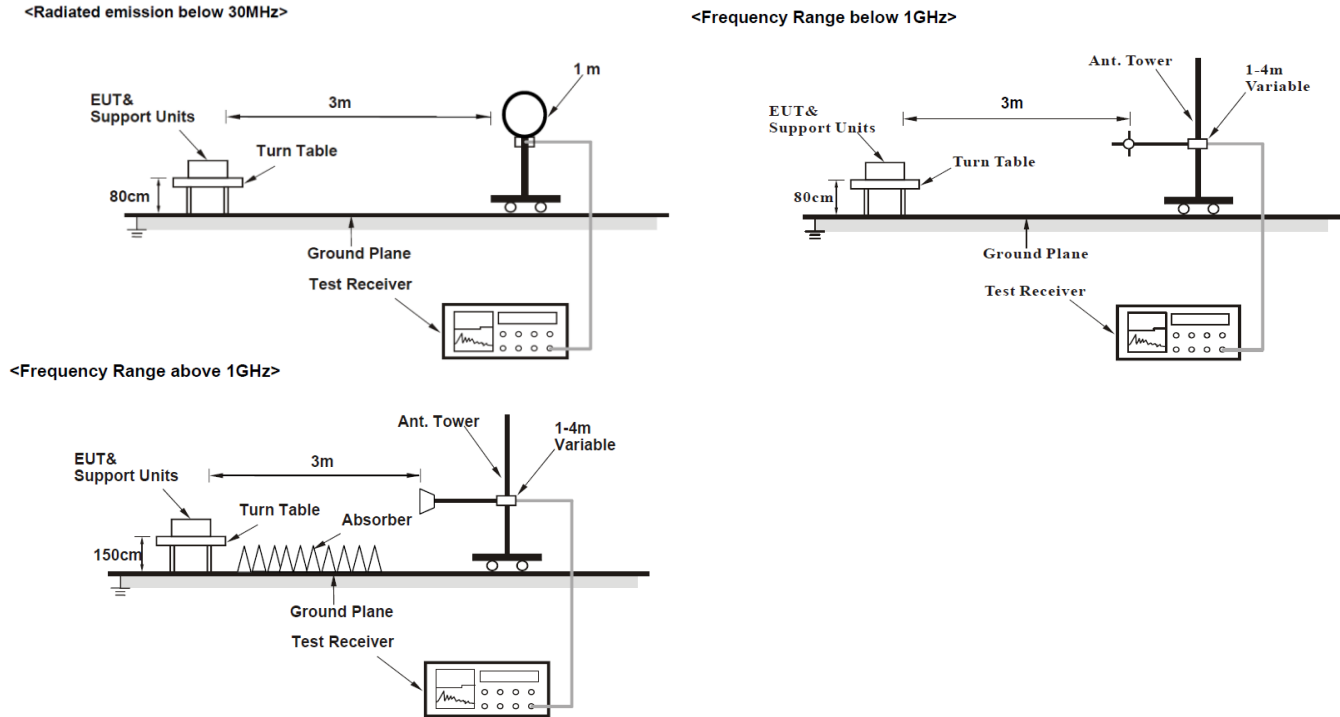
#### RSS-GEN 6.11

### 7.5.3. Test Data

**NA**

## 7.6. Band Edge Radiated Spurious Emission Measurement

### 7.6.1. Test Setup



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

**NOTE:**

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection using reduced video bandwidth (Duty cycle ≥98%) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $1/\tau$  Hz, where  $\tau$  is minimum transmitter on time (Duty cycle <98%) for Average detection using reduced video bandwidth at frequency above 1GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

7.6.2. Test Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency (MHz)	Field strength (microvolts/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:**

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

For Radiated emissions which fall out of the restricted bands must comply with the radiated emission limits specified as below table.

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) <sup>11</sup> PK:10 (dBm/MHz) <sup>12</sup> PK:15.6 (dBm/MHz) <sup>13</sup> PK:27 (dBm/MHz) <sup>14</sup>	PK: 68.2 (dBµV/m) <sup>11</sup> PK:105.2 (dBµV/m) <sup>12</sup> PK: 110.8 (dBµV/m) <sup>13</sup> PK:122.2 (dBµV/m) <sup>14</sup>
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
<sup>11</sup> beyond 75 MHz or more above of the band edge. <sup>12</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. <sup>13</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. <sup>14</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.			

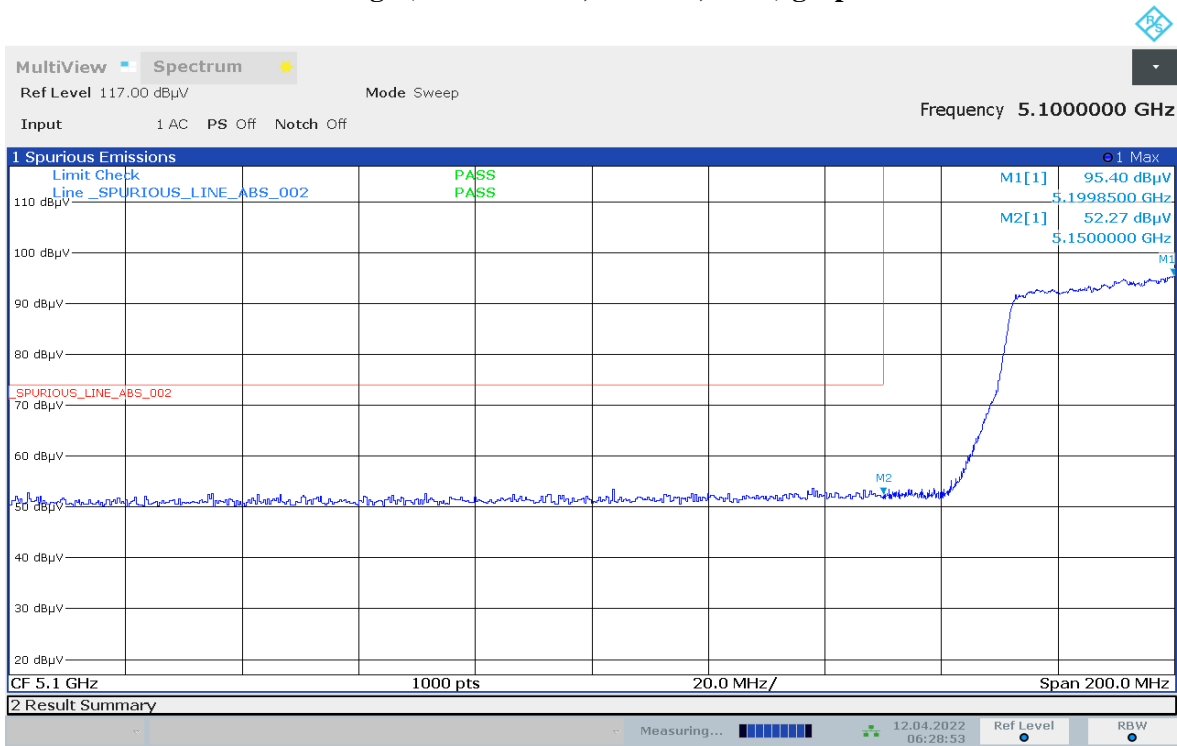
**NOTE:**

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = ( (1000000 \sqrt{(30P)}) / 3 ) \mu\text{V/m, where P is the eirp (Watts)}$$

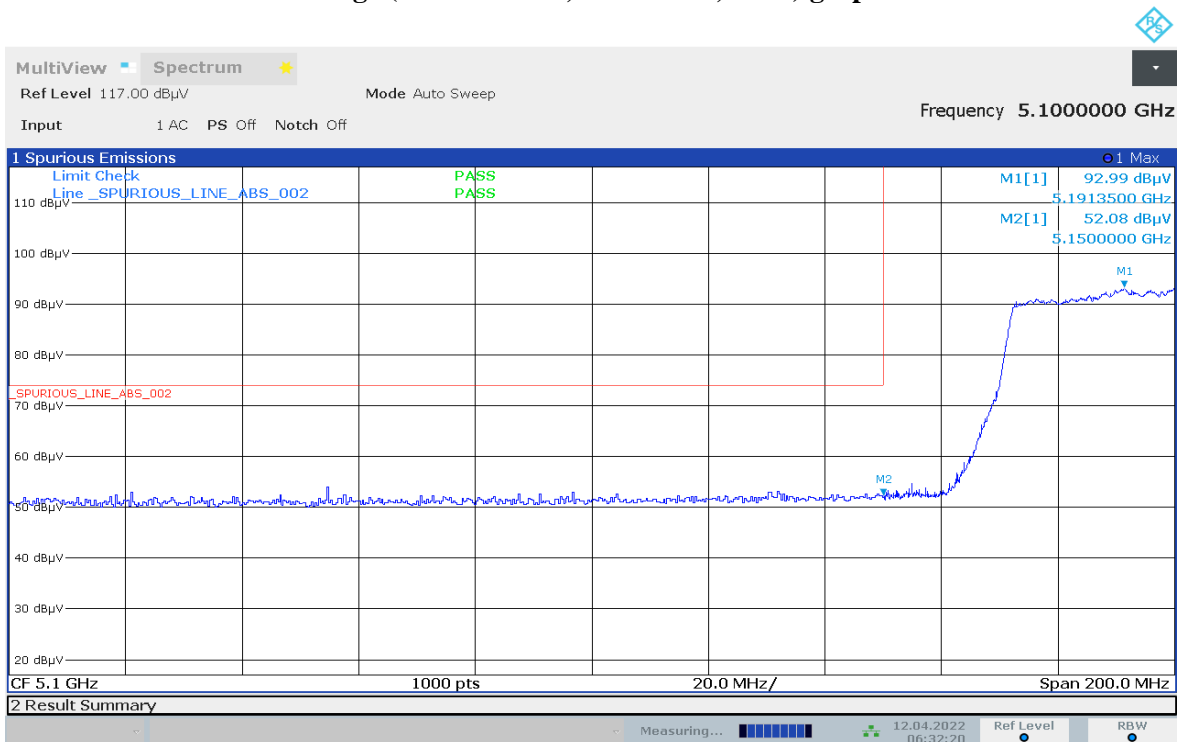


### Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



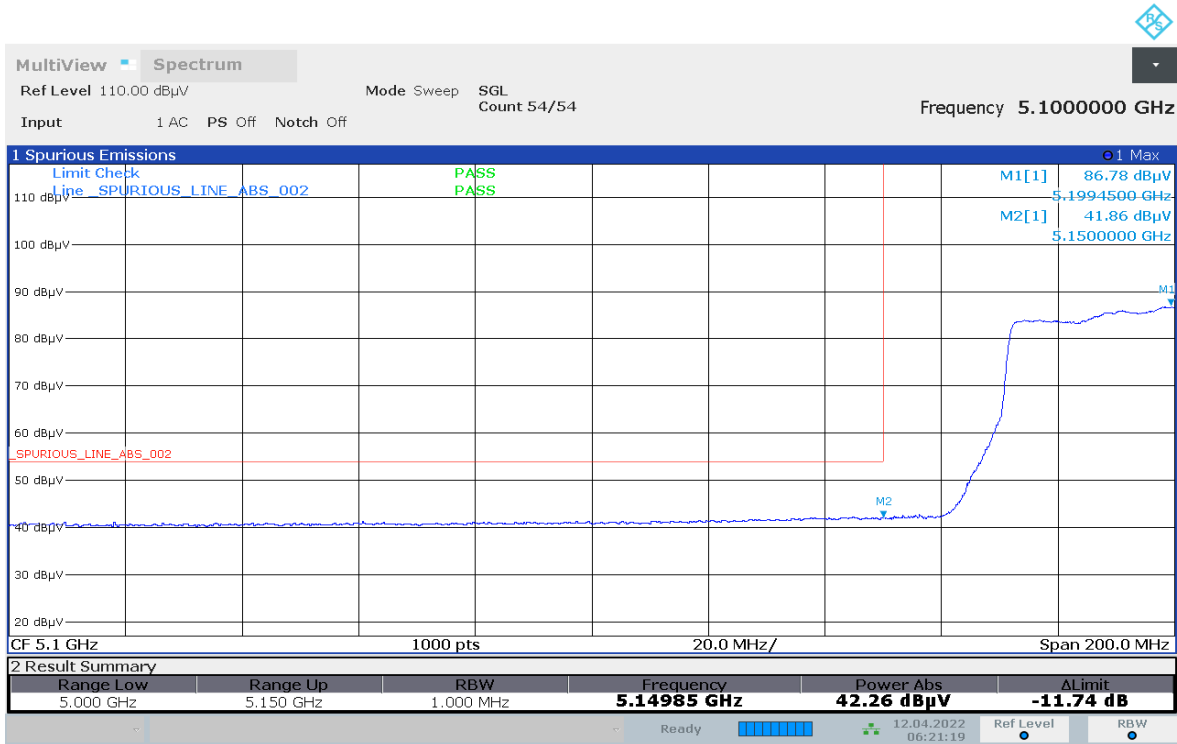
06:28:54 12.04.2022

### Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



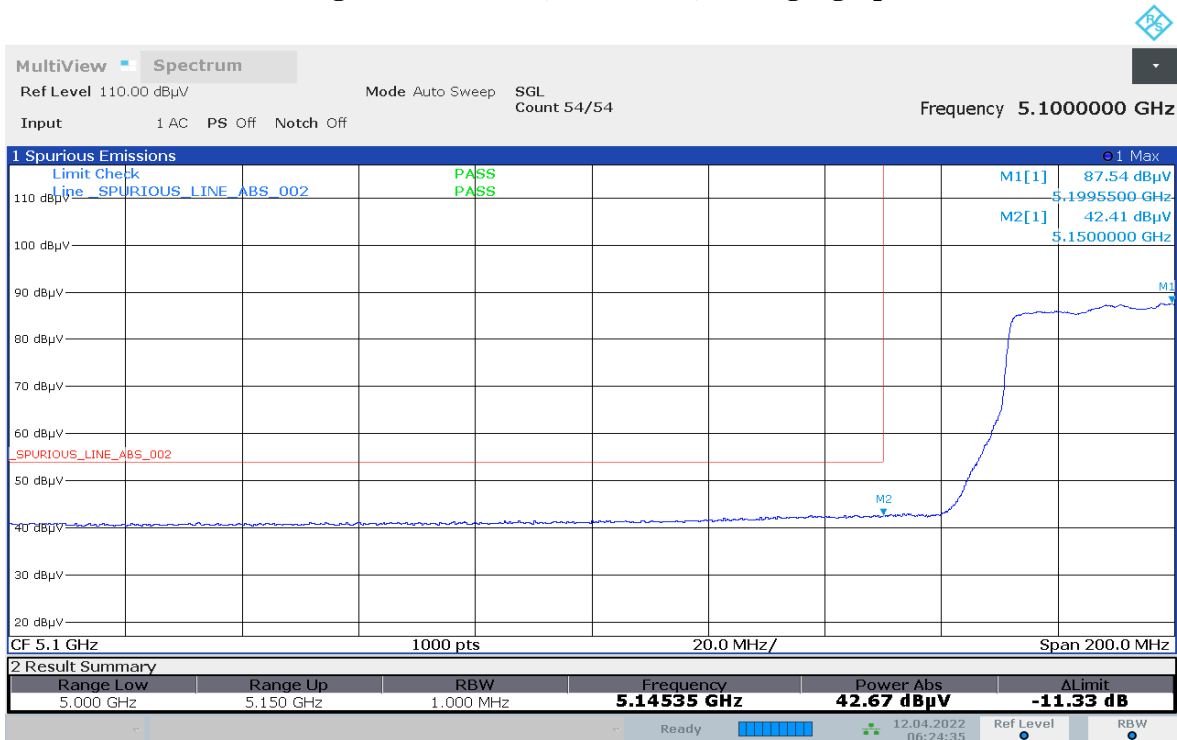
06:32:21 12.04.2022

**Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot**



06:21:20 12.04.2022

**Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot**

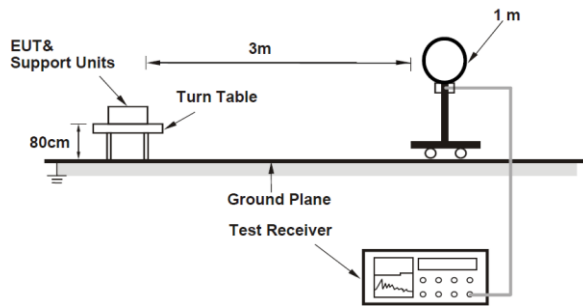


06:24:35 12.04.2022

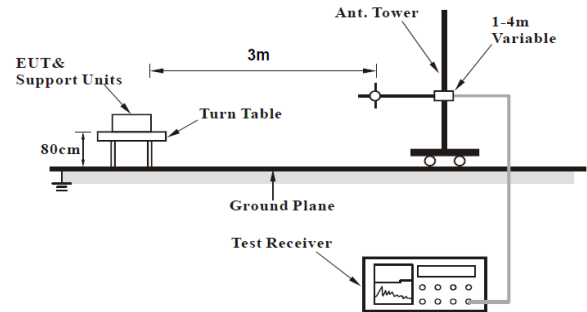
## 7.7. Radiated Spurious Emission Measurement

### 7.7.1. Test Setup

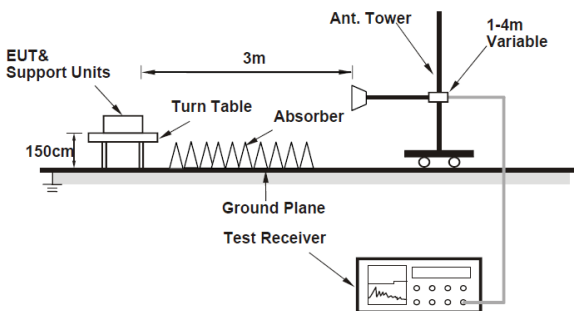
<Radiated emission below 30MHz>



<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.



**NOTE:**

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection using reduced video bandwidth (Duty cycle  $\geq 98\%$ ) at frequency above 1GHz.
- d. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $1/\tau$  Hz, where  $\tau$  is minimum transmitter on time (Duty cycle  $< 98\%$ ) for Average detection using reduced video bandwidth at frequency above 1GHz.
- e. All modes of operation were investigated and the worst-case emissions are reported.

7.7.2. Test Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency (MHz)	Field strength (microvolts/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:**

- d. The lower limit shall apply at the transition frequencies.
- e. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- f. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

For Radiated emissions which fall out of the restricted bands must comply with the radiated emission limits specified as below table.

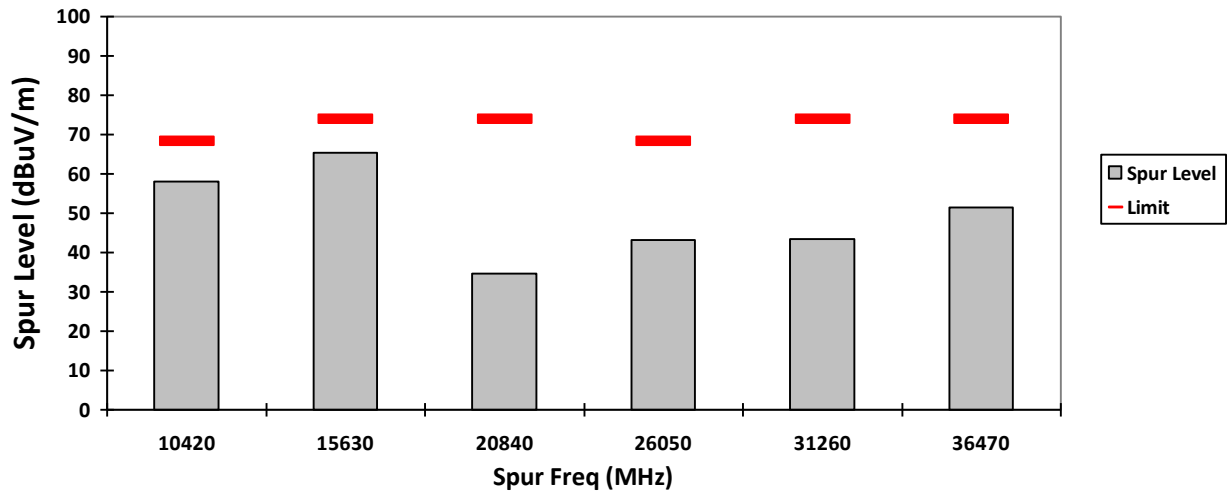
Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150-5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBuV/m)
5250-5350 MHz	15.407(b)(2)		
5470-5725 MHz	15.407(b)(3)		
5725-5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) <sup>11</sup> PK:10 (dBm/MHz) <sup>12</sup> PK:15.6 (dBm/MHz) <sup>13</sup> PK:27 (dBm/MHz) <sup>14</sup>	PK: 68.2 (dBuV/m) <sup>11</sup> PK:105.2 (dBuV/m) <sup>12</sup> PK: 110.8 (dBuV/m) <sup>13</sup> PK:122.2 (dBuV/m) <sup>14</sup>
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
<sup>11</sup> beyond 75 MHz or more above of the band edge. <sup>12</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. <sup>13</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. <sup>14</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.			

**NOTE:**

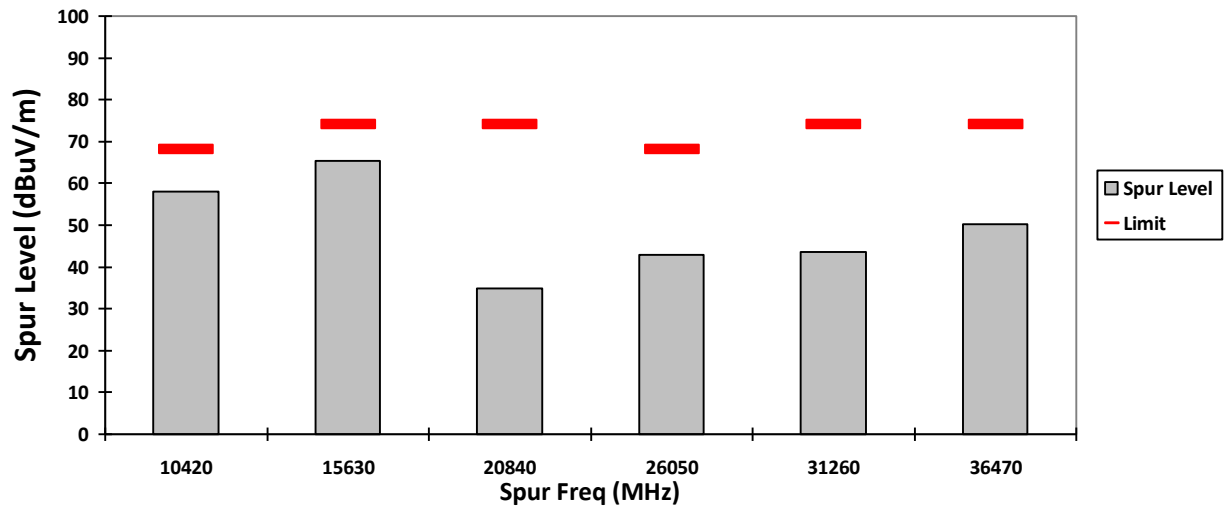
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:



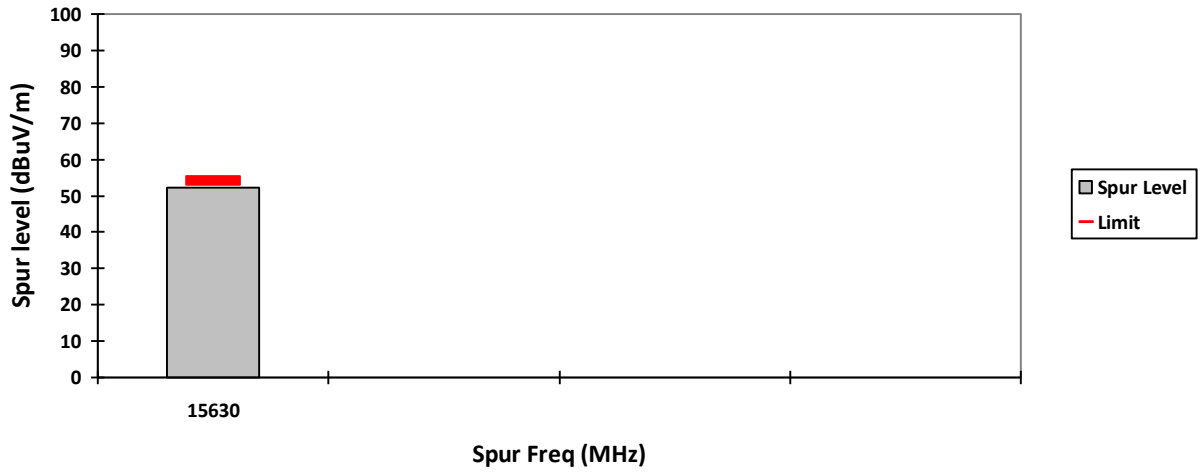
### VERTICAL, PK



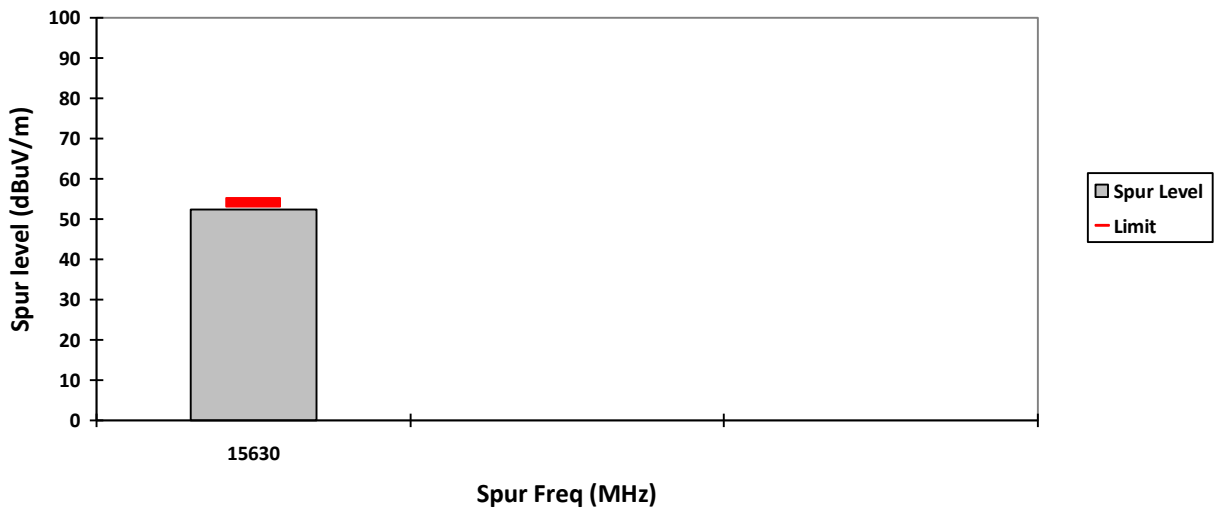
### HORIZONTAL, PK



### VERTICAL, AV

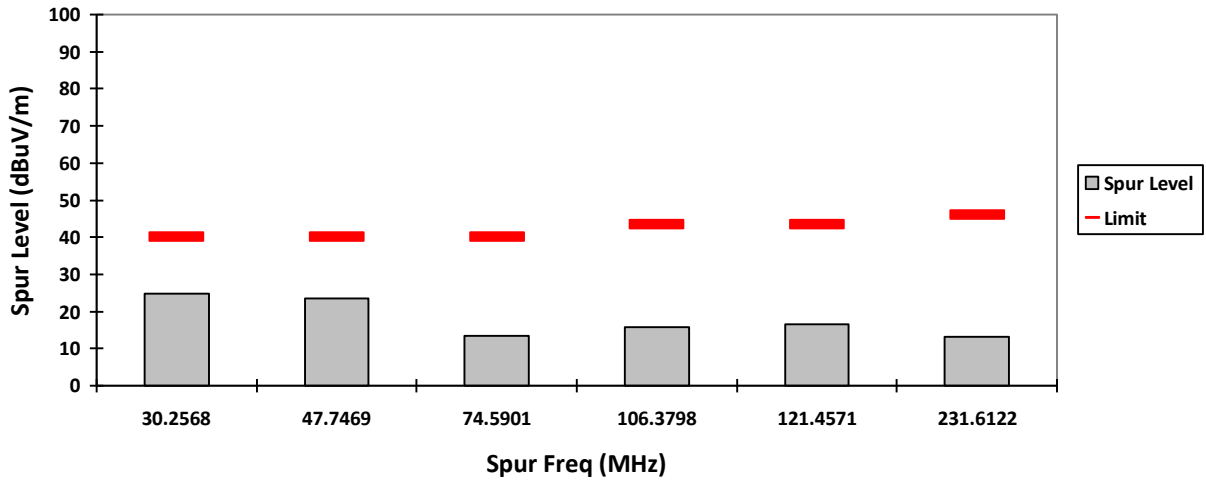


### HORIZONTAL, AV

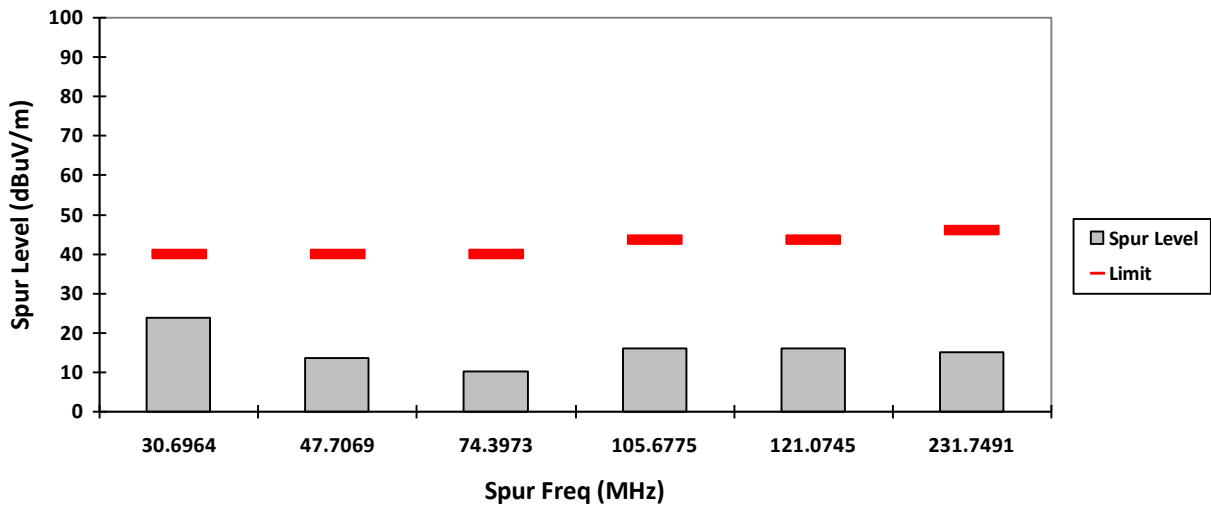




### VERTICAL, QPK

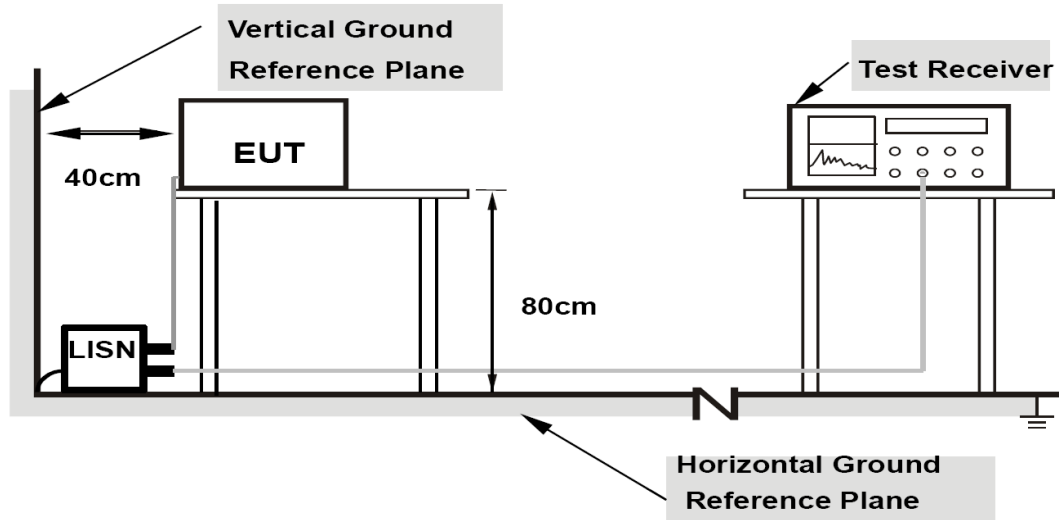


### HORIZONTAL, QPK



## 7.8. AC Powerline Conducted Emission

### 7.8.1. Test Setup



- 1) Tests were conducted for both Receive and Transmit Mode of the EUT.
- 2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- 3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 4) The frequency range from 150 kHz to 30MHz was measured.

### 7.8.2. Test Limits

**For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.**

**Limits for conducted disturbance at the mains ports  
of class A ITE**

Frequency range MHz	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60
NOTE The lower limit shall apply at the transition frequency.		

Table 1: Limits for Conducted Disturbance at the Mains Ports of Class A ITE.

**Limits for conducted disturbance at the mains ports  
of class B ITE**

Frequency range MHz	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

NOTE 1 The lower limit shall apply at the transition frequencies.  
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

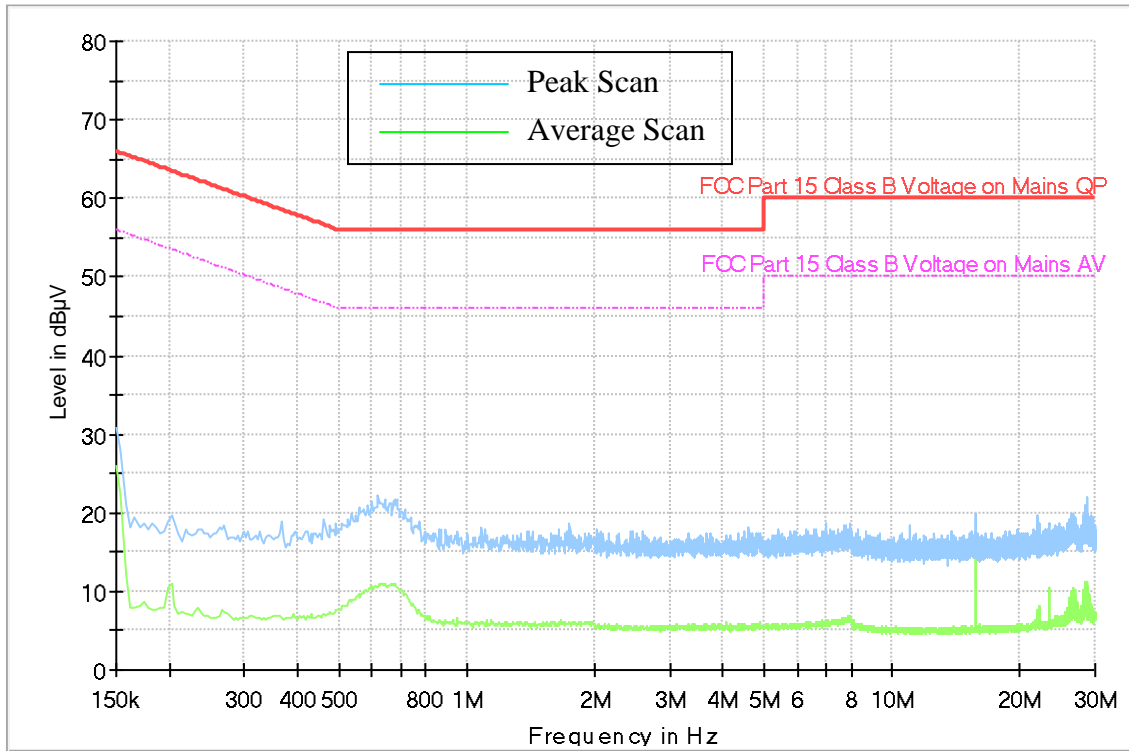
Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE

### 7.8.3. Test Data



1) Ambient

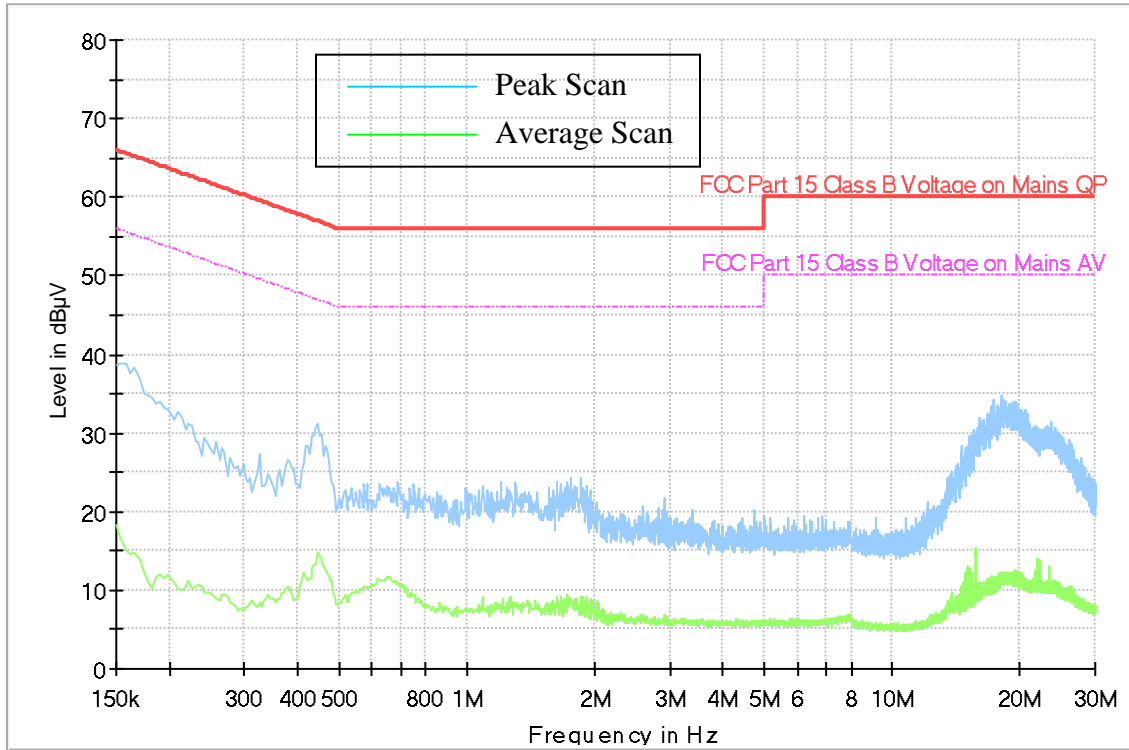
Full Spectrum



### 120VAC , 60Hz

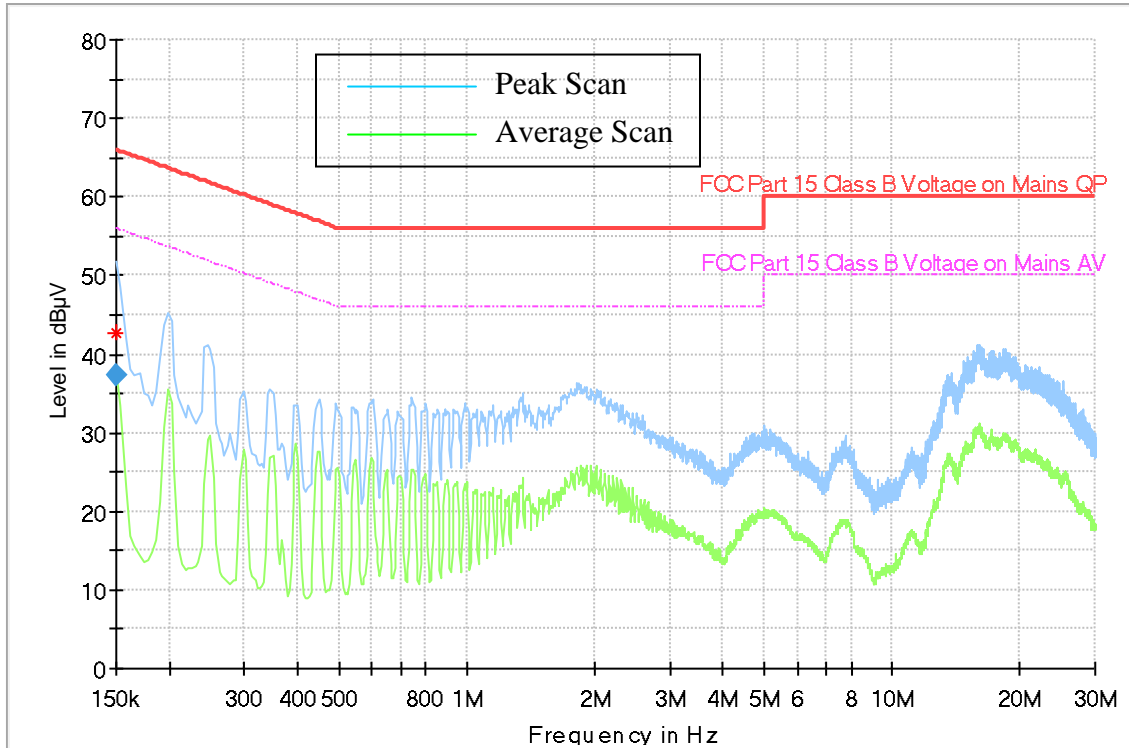
#### 1) Charger Alone

Full Spectrum



2) Charger + Radio Off

Full Spectrum



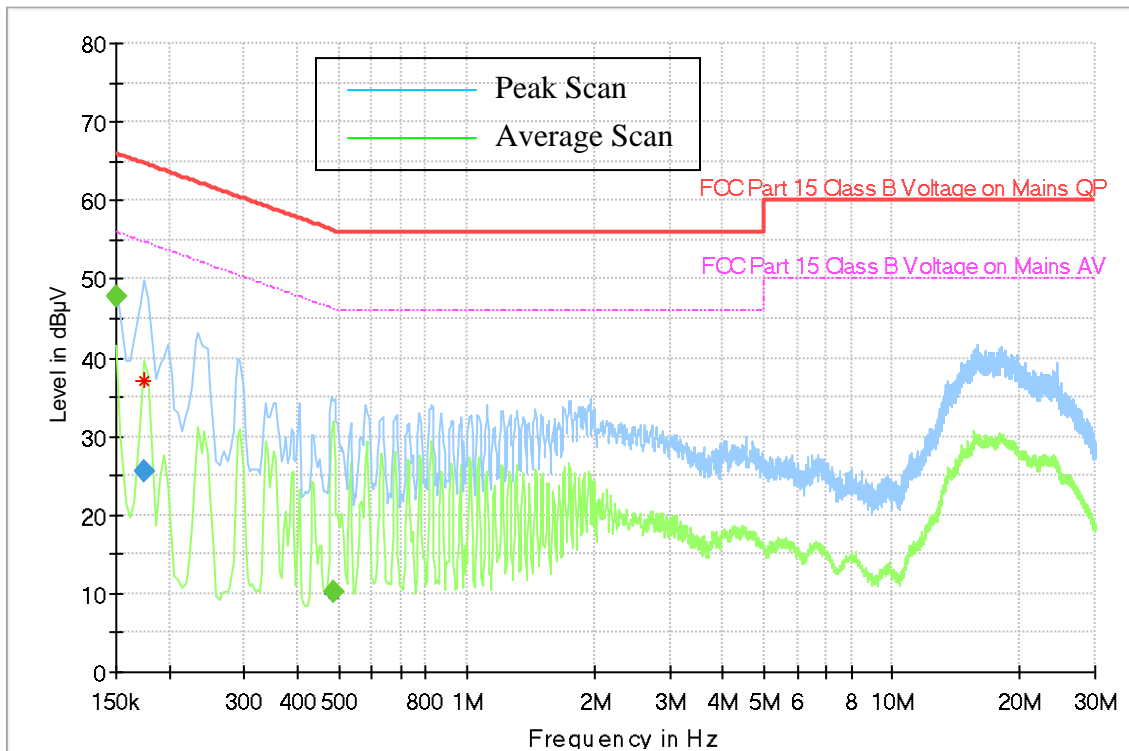
Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.150000	37.28	---	66.00	28.72	1000.0	9.000	N	ON	10.5	PASS

\* Expanded Uncertainty (U) = +/- 3.48dB

3) Charger + Radio Standby

Full Spectrum



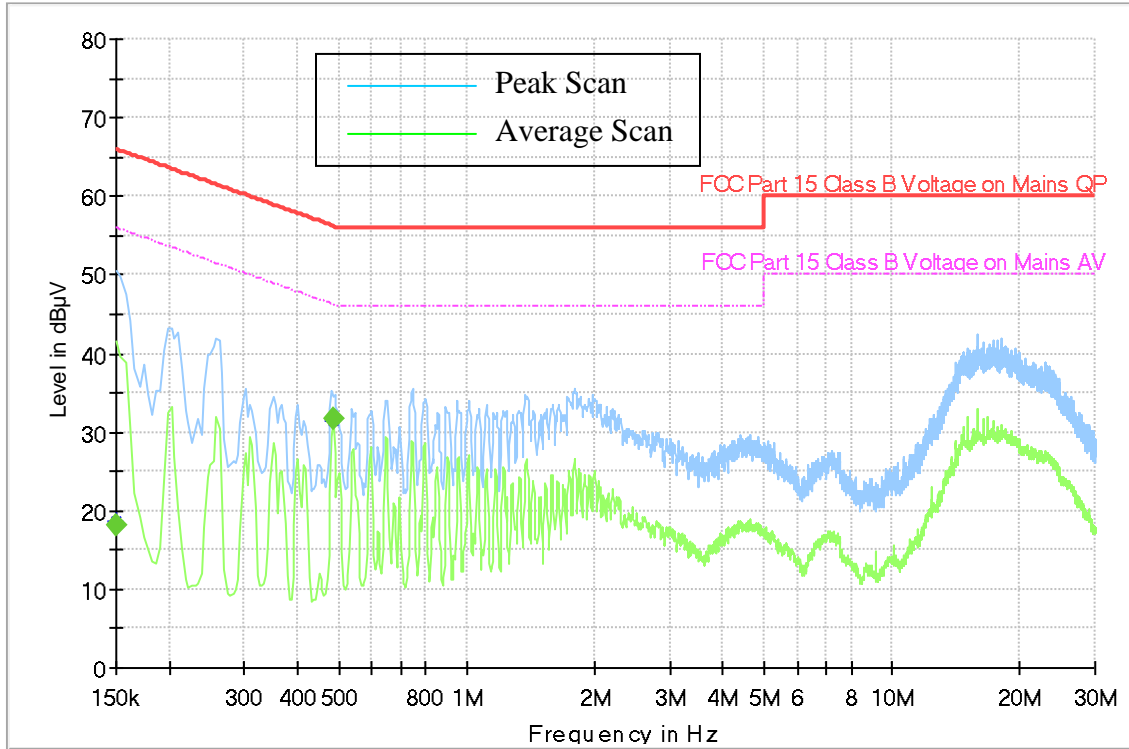
Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.150000	---	47.82	56.00	8.18	1000.0	9.000	N	ON	10.5	PASS
0.174000	25.52	---	64.77	39.25	1000.0	9.000	L1	ON	10.8	PASS
0.486000	---	10.22	46.24	36.02	1000.0	9.000	L1	ON	10.6	PASS

\* Expanded Uncertainty (U) = +/- 3.48dB

4) Charger + Radio in WIFI 5Ghz (Tx)

Full Spectrum



Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.150000	---	18.11	56.00	37.89	1000.0	9.000	N	ON	10.5	PASS
0.486000	---	31.74	46.24	14.49	1000.0	9.000	L1	ON	10.6	PASS

\* Expanded Uncertainty (U) = +/- 3.48dB

**END OF TEST REPORT**