

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT OF

**Product Name:** Frey  
**Brand Name:** Bitatek  
**Marketing Name:** Frey M1-0000  
**Model No.:** Frey M1-0000, Frey M1-0010  
**Model Difference:** Frey M1-0000 with GPS  
Frey M1-0010 without GPS  
**FCC ID:** SPYIM0002  
**Report No.:** E2/2016/50044  
**Issue Date:** Jun. 04, 2016  
**FCC Rule Part:** §15.407  
**Prepared for:** BitaTek Co., Ltd.  
6F., No.115, Wugong 3rd Rd., Wugu  
Dist., New Taipei City 248, Taiwan  
**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No.2, Keji 1st Rd., Guishan District,  
Taoyuan City, Taiwan 333



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## VERIFICATION OF COMPLIANCE

**Applicant:** BitaTek Co., Ltd.  
6F.,No.115,Wugong 3rd Rd.,Wugu Dist.,New Taipei City 248,  
Taiwan

**Product Name:** Frey

**Brand Name:** Bitatek

**Marketing Name:** Frey M1-0000

**Model No.:** Frey M1-0000, Frey M1-0010

**Model Difference:** Frey M1-0000 with GPS  
Frey M1-0010 without GPS

**FCC ID:** SPYIM0002

**File Number:** E2/2016/50044

**Date of Test:** May. 11, 2016 ~ May. 30, 2016

**Date of EUT Received:** May. 11, 2016

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

**Test By:**



**Date:**

Jun. 04, 2016

*Jerry Lu / Sr.Engineer*

**Prepared By:**

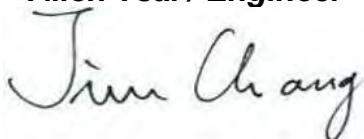


**Date:**

Jun. 04, 2016

*Allen Tsai / Engineer*

**Approved By:**



**Date:**

Jun. 04, 2016

*Jim Chang / Asst. Manager*

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## Revision History

Report Number	Revision	Description	Issue Date
E2/2016/50044	Rev.00	Initial creation of document	Jun. 04, 2016

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## 1. GENERAL INFORMATION

### 1.1 Product Description

General:

Product Name:	Frey
Brand Name:	Bitatek
Marketing Name:	Frey M1-0000
Model No.:	Frey M1-0000, Frey M1-0010
Model Difference:	Frey M1-0000 with GPS Frey M1-0010 without GPS
Software version:	N/A
Hardware version:	ES1.1
Power Supply:	3.8Vdc from Power supply

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## WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology
11a	5150~5250	4	14.91 dBm	OFDM
	5250~5350	4	14.99 dBm	
	5470~5725	12	14.97 dBm	
	5725-5850	5	14.97 dBm	
11n / ac_20M	HT20 / VHT20 5150~5250	4	HT: 11.96 dBm (Worst Case)	OFDM
	HT20 / VHT20 5250~5350	4	HT: 11.79 dBm (Worst Case)	
	HT20 / VHT20 5470~5725	11	HT: 11.98 dBm (Worst Case)	
	HT20 / VHT20 5725-5850	5	HT: 11.93 dBm (Worst Case)	
11n / ac_40M	HT40 / VHT40 5150~5250	2	HT: 11.83 dBm (Worst Case)	OFDM
	HT40 / VHT40 5250~5350	2	HT: 11.71 dBm (Worst Case)	
	HT40 / VHT40 5470~5725	5	HT: 11.85 dBm (Worst Case)	
	HT40 / VHT40 5725-5850	2	HT: 11.96 dBm (Worst Case)	
11ac_80M	VHT80 5150~5250	1	VHT: 11.89 dBm	OFDM
	VHT80 5250~5350	1	VHT: 11.96 dBm	
	VHT80 5470~5725	2	VHT: 11.79 dBm	
	VHT80 5725-5850	1	VHT: 11.98 dBm	

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Antenna Designation	PCB Antenna (Dipole Antenna) Partl No.: 98619PSAX001, Supplier: N/A 5GHz Gain: 3.95 dBi (5150MHz-5250MHz) 5GHz Gain: 3.95 dBi (5250MHz-5350MHz) 5GHz Gain: 4.50 dBi (5470MHz-5725MHz) 5GHz Gain: 4.99 dBi (5725MHz-5850MHz)
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 144.4Mbps 802.11 n_40MHz: 13.5 – 300Mbps 802.11 ac_20MHz: 6.5 – 144.4Mbps 802.11 ac_40MHz: 13.5 – 300Mbps 802.11 ac_80MHz: 29.3 – 650Mbps

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## 1.2 Product Feature of Equipment Under Test

The equipment under Test (Hereafter Called: EUT) is supporting, Bluetooth and 802.11 a/b/g/n/ac features, and below is details of information.

Product Feature	
Product Name:	Frey
Marketing Name:	Bitatek
Brand Name:	Frey M1-0000
Model No.:	Frey M1-0000, Frey M1-0010
Model Difference:	Frey M1-0000 with GPS Frey M1-0010 without GPS
FCC ID:	SPYIM0002
Bluetooth Version:	BT4.1 dual mode
Wi-Fi Specification	802.11 a/b/g/n/ac

**Note:** The above EUT information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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### 1.3 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules

FCC KDB 644545 D03 Guidance for IEEE 802.11ac

ANSI C63.10:2013

Note:

1. All test items have been performed and record as per the above standards.
2. The composite system is compliance with FCC Subpart B is authorized under the certification procedure.

### 1.4 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333 (TAF code 0513)

FCC Registration Numbers are: 735305

### 1.5 Special Accessories

There are no special accessories used while test was conducted.

### 1.6 Equipment Modifications

There was no modification incorporated into the EUT.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed according to §15.207. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

### 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

#### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Following shows an offset computation example with cable loss and attenuator.

Offset = RF cable loss (1.2dB)+ attenuation factor(10dB) =11.2(dB)

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## 2.5 Configuration of Tested System

Fig. 2-1 Radiated Emission

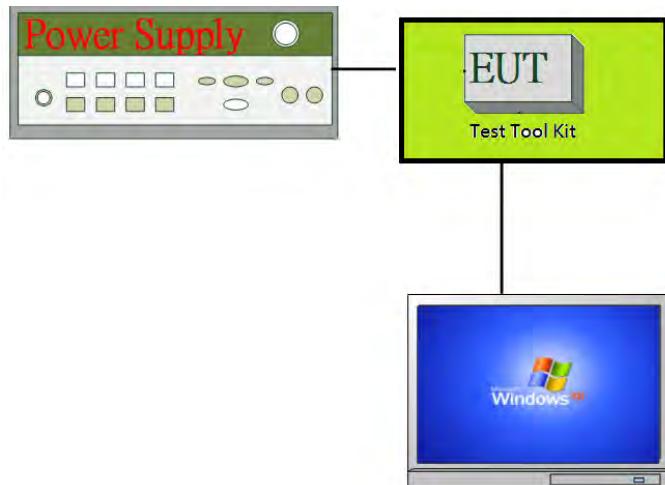


Table 2-1 Equipment Used in Tested System

Item	Equipment	Soft Ware Version	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A	N/A
2.	Notebook	N/A	Lenovo	L412	LR-027LM	Shielded	Unshielded
3.	DC Power Supply	N/A	Agilent	E3640A	MY53140006	Shielded	Unshielded
4.	Test Tool Kit	Android : 2016-05-07 _0.1.4.5 Windows 10 IoT Mo- bile Enter- prise : 14295.1429 5.20160318 -1628	N/A	N/A	N/A	Shielded	Unshielded

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### 3. SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	N/A
§15.403(i) §15.407(e)	26 dB & 6dB & 99% Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.203 §15.407(a)	Antenna Requirement	Compliant

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## 4. DESCRIPTION OF TEST MODES

### 4.1 Operated in U-NII Bands

#### Operated band in 5150 MHz ~5250 MHz:

802.11a / n HT20 Mode, 802.11ac VHT20 Mode	
Channel	Frequency
36	5180
40	5200
44	5220
48	5240

802.11 n HT40 Mode, 802.11ac VHT40 Mode	
channel	Frequency
38	5190
46	5230

802.11ac VHT80 Mode	
channel	Frequency
42	5210

#### Operated band in 5250 MHz ~5350 MHz:

802.11a / n HT20 Mode, 802.11ac VHT20 Mode	
channel	Frequency
52	5260
56	5280
60	5300
64	5320

802.11 n HT40 Mode, 802.11ac VHT40 Mode	
channel	Frequency
54	5270
62	5310

802.11ac VHT80 Mode	
Channel	Frequency
58	5290

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**Operated band in 5470 MHz ~5725 MHz:**

<b>802.11a / n HT20 Mode, 802.11ac VHT20 Mode</b>	
Channel	Frequency
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700

<b>802.11 n HT40 Mode, 802.11ac VHT40 Mode</b>	
channel	Frequency
102	5510
110	5550
118	5590
126	5630
134	5670

<b>802.11ac VHT80 Mode</b>	
channel	Frequency
106	5530
122	5610

**Operated band in 5470 MHz ~5725 MHz:**

<b>802.11a / n HT20 Mode, 802.11ac VHT20 Mode</b>	
Channel	Frequency
149	5745
153	5765
157	5785
161	5805
165	5825

<b>802.11 n HT40 Mode, 802.11ac VHT40 Mode</b>	
channel	Frequency
151	5755
159	5795

<b>802.11ac VHT80 Mode</b>	
channel	Frequency
155	5775

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## 4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.

### RADIATED EMISSION TEST:

RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6
802.11ac_VHT80	5210	42	42	OFDM	MCS0
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6
802.11ac_VHT80	5290	58	58	OFDM	MCS0
802.11a	5500~5720	100 to 140	100,116,140	OFDM	6
802.11ac_VHT80	5530~5690	106 to 138	106,122,138	OFDM	MCS0
802.11a	5745~5825	149 to 165	149,157,165	OFDM	6
802.11ac_VHT80	5775	155	155	OFDM	MCS0
RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6
802.11n_HT20				OFDM	MCS0
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0
802.11ac_VHT80	5210	42	42	OFDM	MCS0
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6
802.11n_HT20				OFDM	MCS0
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0
802.11ac_VHT80	5290	58	58	OFDM	MCS0

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MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5500~5720	100 to 144	100,116,140	OFDM	6
802.11n_HT20				OFDM	MCS0
802.11n_HT40	5510~5710	102 to 142	102,110,134	OFDM	MCS0
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS0
802.11a	5745~5825	149 to 165	149,157,165	OFDM	6
802.11n_HT20				OFDM	MCS0
802.11n_HT40	5755~5795	151 to 159	151,159	OFDM	MCS0
802.11ac_VHT80	5775	155	155	OFDM	MCS0

**Note:**

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n/ac WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was reported.

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**ANTENNA PORT CONDUCTED MEASUREMENT:**

MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6
802.11n_HT20 802.11ac_VHT20				OFDM	MCS0
802.11n_HT40 802.11ac_VHT40	5190~5230	38 to 46	38,46	OFDM	MCS0
802.11ac_VHT80	5210	42	42	OFDM	MCS0
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6
802.11n_HT20 802.11ac_VHT20				OFDM	MCS0
802.11n_HT40 802.11ac_VHT40	5270~5310	54 to 62	54,62	OFDM	MCS0
802.11ac_VHT80	5290	58	58	OFDM	MCS0
802.11a	5500~5700	100 to 140	100,116,140	OFDM	6
802.11n_HT20 802.11ac_VHT20				OFDM	MCS0
802.11n_HT40 802.11ac_VHT40	5510~5670	102 to 134	102,110,134	OFDM	MCS0
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS0
802.11a	5745~5825	149 to 165	149,157,165	OFDM	6
802.11n_HT20 802.11ac_VHT20				OFDM	MCS0
802.11n_HT40 802.11ac_VHT40	5755~5795	151 to 159	151,159	OFDM	MCS0
802.11ac_VHT80	5775	155	155	OFDM	MCS0

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## 5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Measurement	+/- 0.96 dB
Peak Power Spectral Density Measurement	+/- 1.67 dB
Frequency Stability	+/- 123.36 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission:

Measurement uncertainty (Polarization : <b>Vertical</b> )	9kHz-30MHz: +/- 2.87dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	9kHz-30MHz: +/- 2.87dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 6. CONDUCTED EMISSION TEST

### 6.1. Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	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
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 6.2. Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCI 3	101311	06/18/2015	06/17/2016
Coaxial Cables	N/A	N30N30-1042-1 50cm	N/A	02/07/2015	02/06/2016
LISN	Schwarzbeck	NSLK 8127	8127-648	06/09/2015	06/08/2016
Test Software	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

### 6.3. EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The LISN was connected with 120Vac/60Hz power source.

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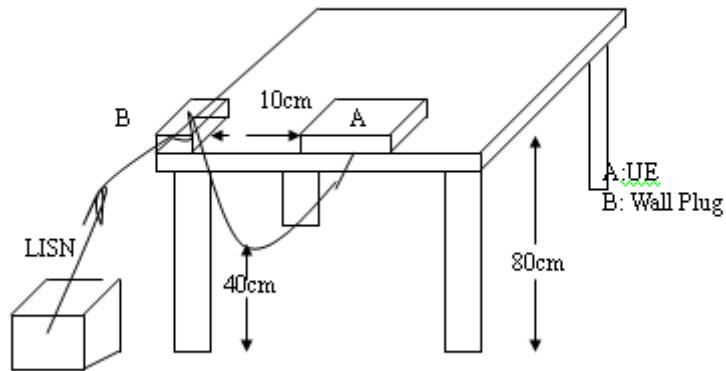
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## 6.4. Test SET-UP



## 6.5. Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed.

## 6.6. Measurement Result

N/A, the device is powered by Power Supply.

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## 7. DUTY CYCLE TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### Formula:

$$\text{Duty Cycle} = \text{Ton} / (\text{Ton} + \text{Toff})$$

### Measurement Procedure:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

### Duty Cycle:

Mode	Duty Cycle (%)	Duty Factor (dB) $=10 \log (1/\text{Duty Cycle})$
802.11a	87.21	0.59
802.11n_20	83.13	0.80
802.11n_40	71.03	1.49
802.11ac_80	55.36	2.57

Duty Cycle Factor:  $10 \log (1/0.8721) = 0.59$

Duty Cycle Factor:  $10 \log (1/0.8313) = 0.8$

Duty Cycle Factor:  $10 \log (1/0.7103) = 1.49$

Duty Cycle Factor:  $10 \log (1/0.5536) = 2.57$

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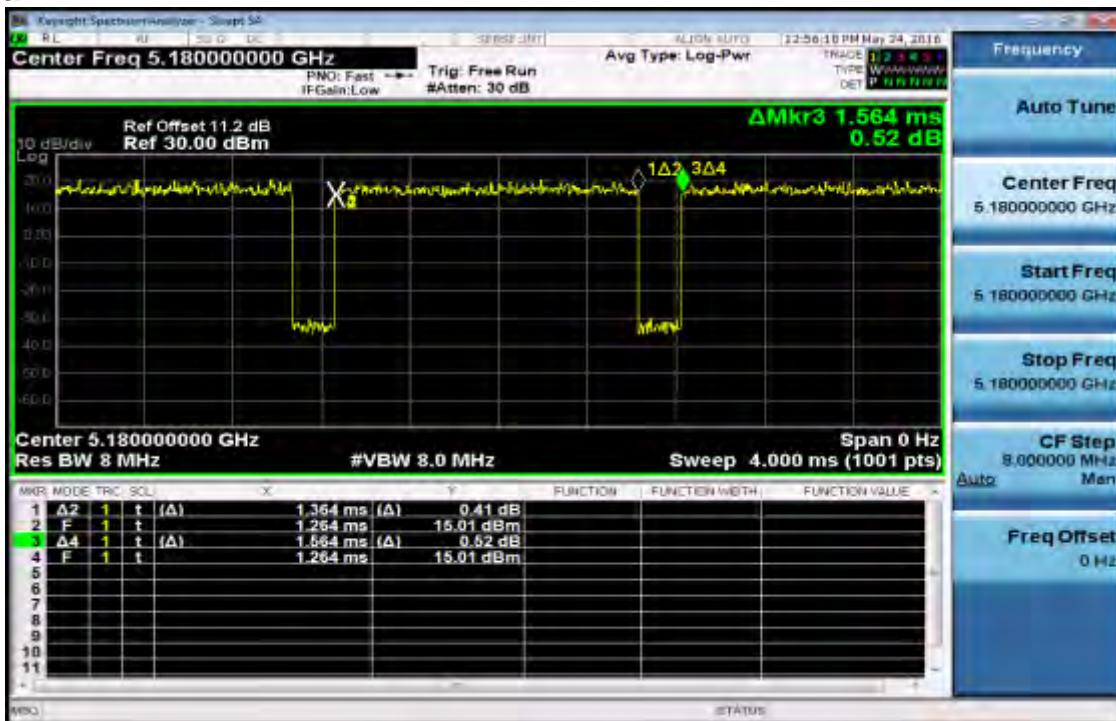
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## DUTY CYCLE TEST SIGNAL Measurement Result

### 802.11a



### 802.11n HT20



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## 802.11n HT 40



## 802.11 ac VHT 80



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## 8. 26dB & 6dB EMISSION BANDWIDTH MEASUREMENT

### 8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

### 8.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
  - a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto, Detector = Peak, Trace Mode = Max Hold, Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
  - b. Mark the peak frequency and -26dB (upper and lower) frequency.
4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.
  - a. Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Peak, Sweep=auto
  - b. Mark the peak frequency and -6dB (upper and lower) frequency.
6. Repeat above procedures until all test default channel measured were complete.

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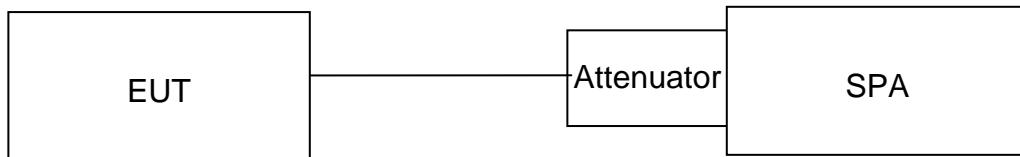
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### 8.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2495A	1005007	12/09/2015	12/08/2016
Power Sensor	Anritsu	MA2411B	917032	12/09/2015	12/08/2016
Spectrum Analyzer	Agilent	N9010A	MY50420195	12/21/2015	12/20/2016
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2016	01/01/2017
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/02/2016	01/01/2017
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2016	01/01/2017
Splitter	Agilent	11636B	N/A	01/02/2016	01/01/2017
DC Power Supply	Agilent	E3640A	MY52410006	11/05/2015	11/04/2016
Temperature Chamber	TERCHY	MHG-120LF	911009	05/06/2015	05/05/2016

### 8.4 Test Set-up



### 8.5 Measurement Result

#### 26dB Bandwidth

##### 802.11a\_Main

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5180	21.57	13.339
5220	21.51	13.327
5240	21.85	13.394
5260	21.13	13.249
5300	21.41	13.306
5320	21.92	13.409
5500	22.07	13.438
5580	21.75	13.375
5700	22.20	13.464

##### 802.11n\_HT20\_Main

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5180	22.04	13.432
5220	21.96	13.417
5240	22.07	13.438
5260	21.41	13.305
5300	22.14	13.452
5320	22.31	13.486
5500	21.89	13.401
5580	21.97	13.418
5700	22.09	13.443

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## 802.11n\_HT40\_Main

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5190	43.74	16.408
5230	42.58	16.292
5270	42.84	16.319
5310	41.99	16.231
5510	43.01	16.335
5550	43.17	16.352
5670	43.52	16.387

## 802.11ac\_VHT80\_Main

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5210	82.61	19.170
5290	82.69	19.175
5530	83.24	19.203
5610	83.32	19.208

6dB Bandwidth (5725 MHz~ 5850 MHz) measure with Peak detector for FCC

## 802.11a\_Main

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5745	16.40	12.149
5785	16.44	12.158
5825	16.37	12.142

## 802.11n\_HT20\_Main

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5745	17.66	12.471
5785	17.62	12.461
5825	17.61	12.457

## 802.11n\_HT40\_Main

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5755	35.17	15.461
5795	33.93	15.306

## 802.11ac\_VHT80\_Main

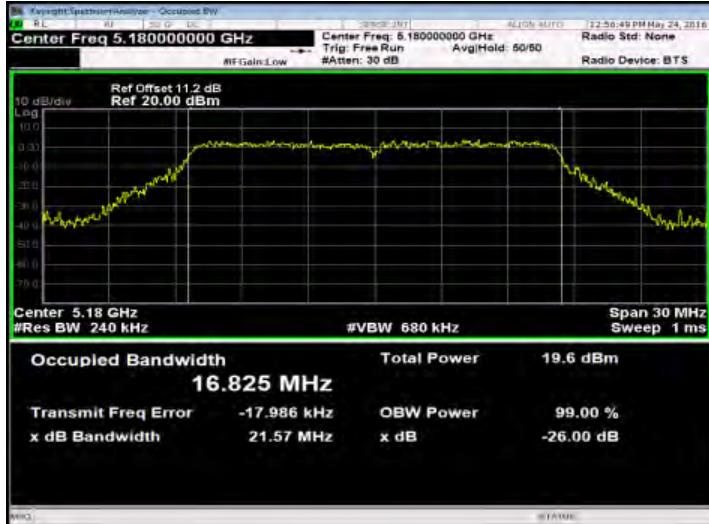
Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5775	72.60	18.609

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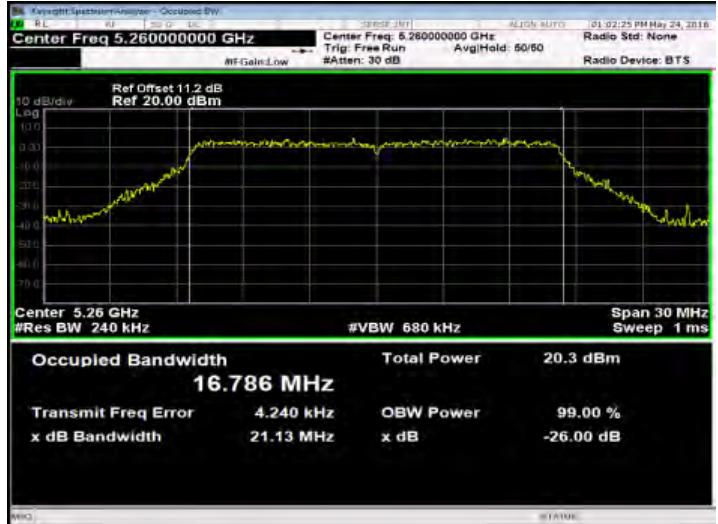
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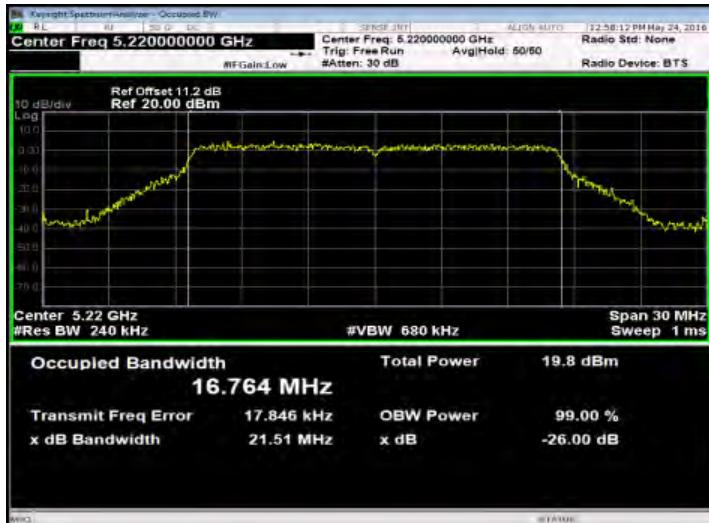
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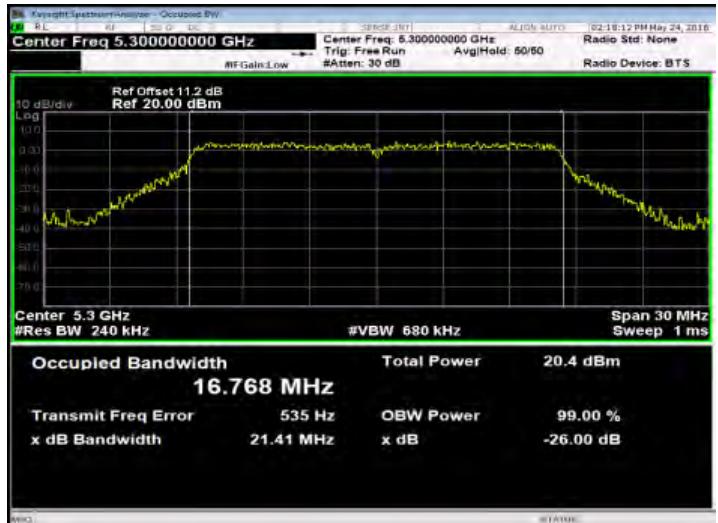
### 802.11a\_20MHz\_5260MHz-5260



### 802.11a\_20MHz\_5220MHz-5220



### 802.11a\_20MHz\_5300MHz-5300



### 802.11a\_20MHz\_5240MHz-5240



### 802.11a\_20MHz\_5320MHz-5320



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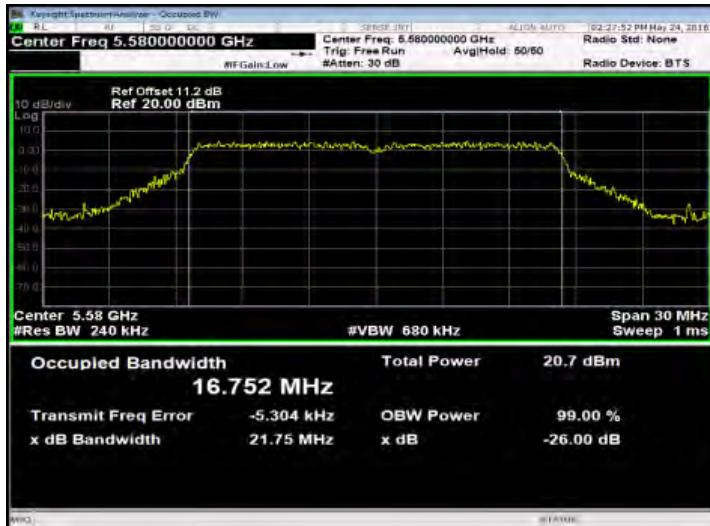
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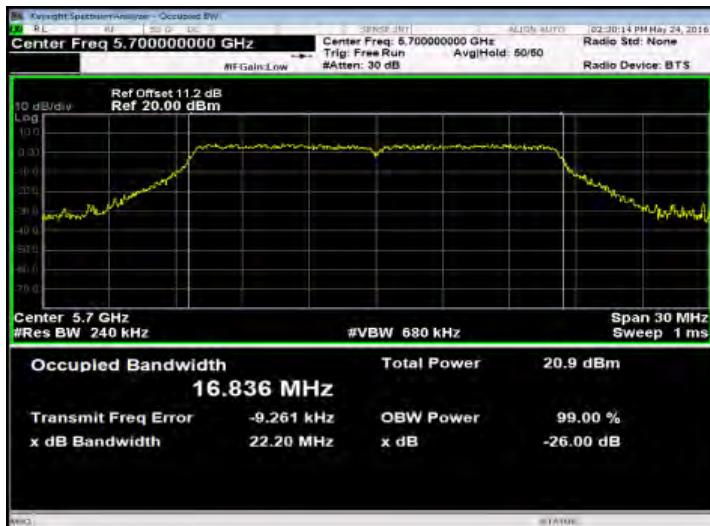
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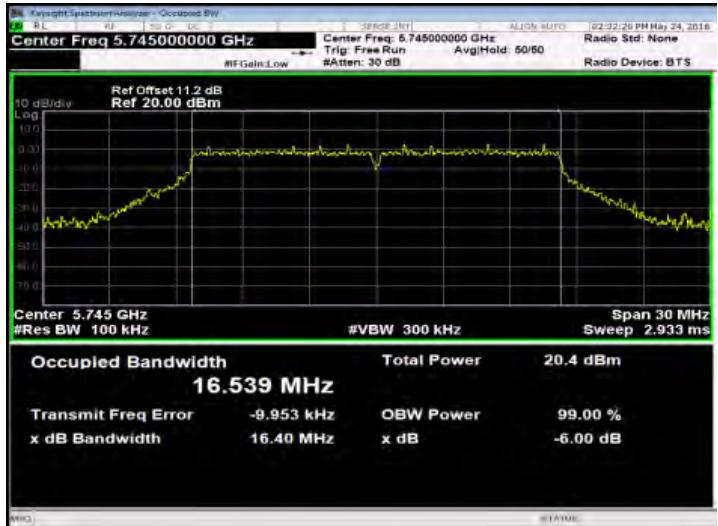
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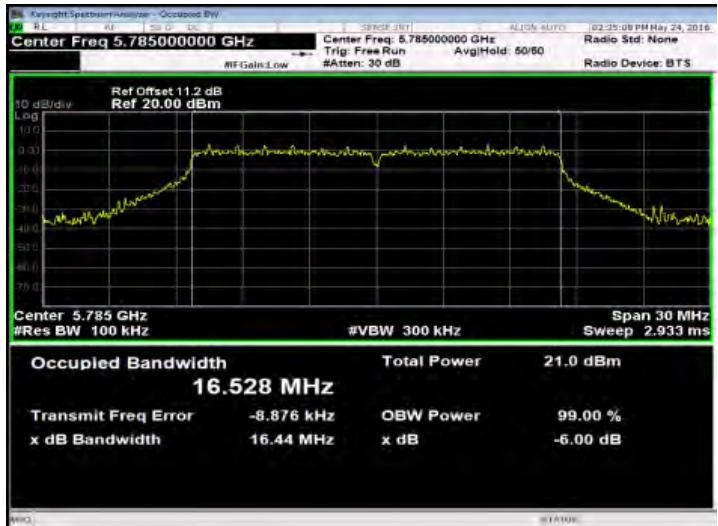
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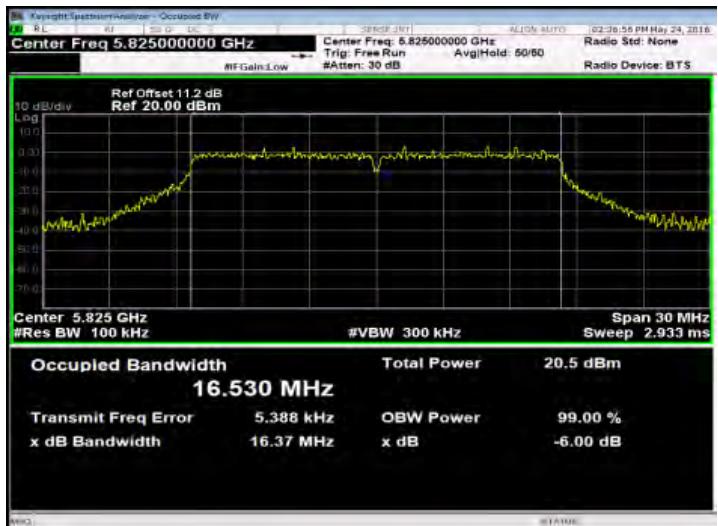
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## 802.11a\_20MHz\_5785MHz-5785



## 802.11a\_20MHz\_5825MHz-5825

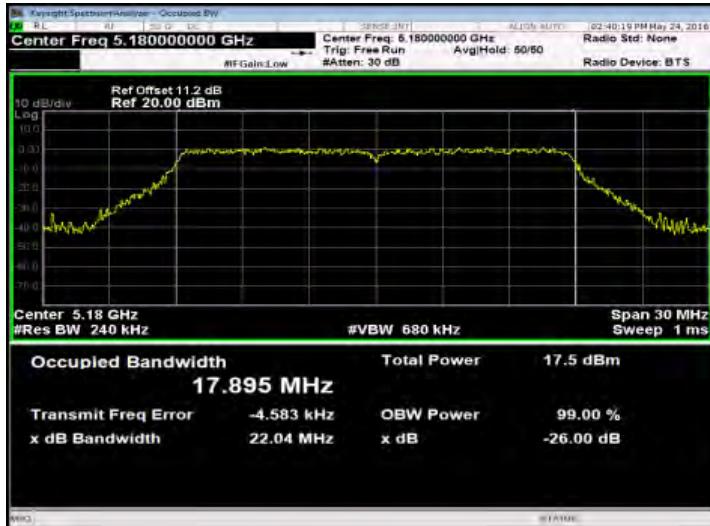


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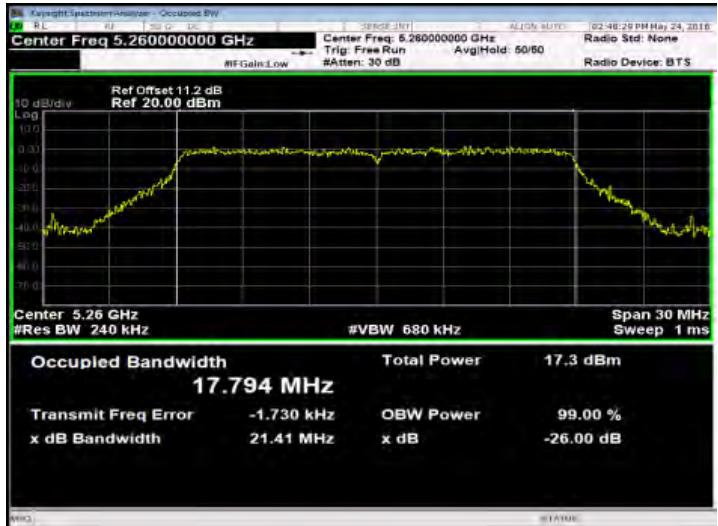
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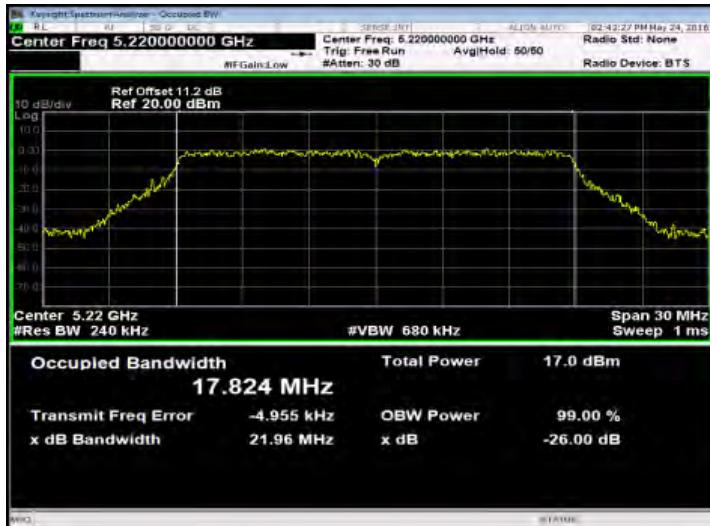
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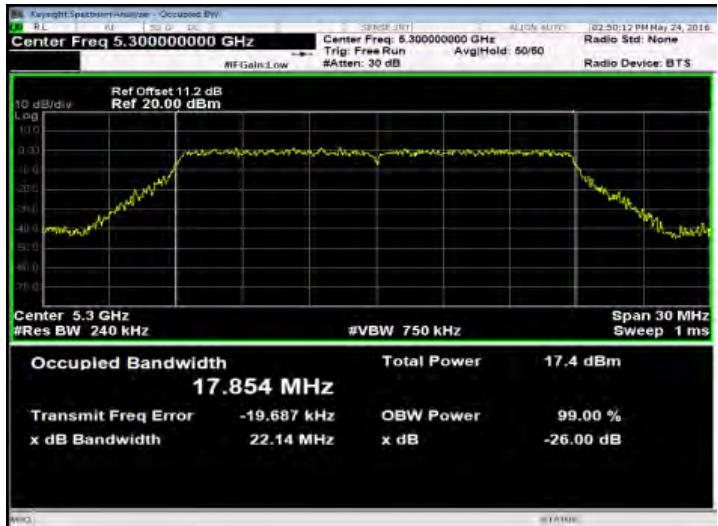
## 802.11n\_20MHz\_5260MHz-5260



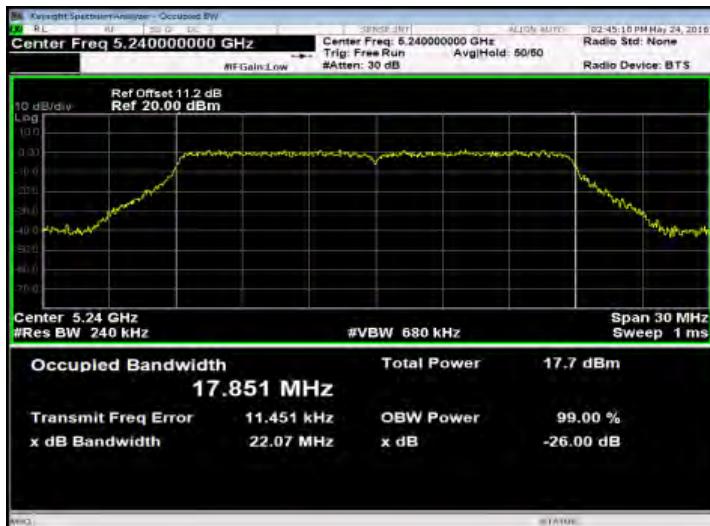
## 802.11n\_20MHz\_5220MHz-5220



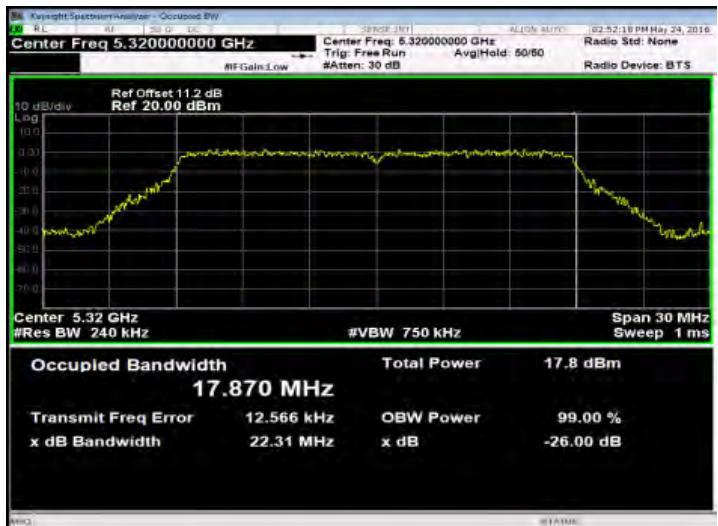
## 802.11n\_20MHz\_5300MHz-5300



## 802.11n\_20MHz\_5240MHz-5240



## 802.11n\_20MHz\_5320MHz-5320

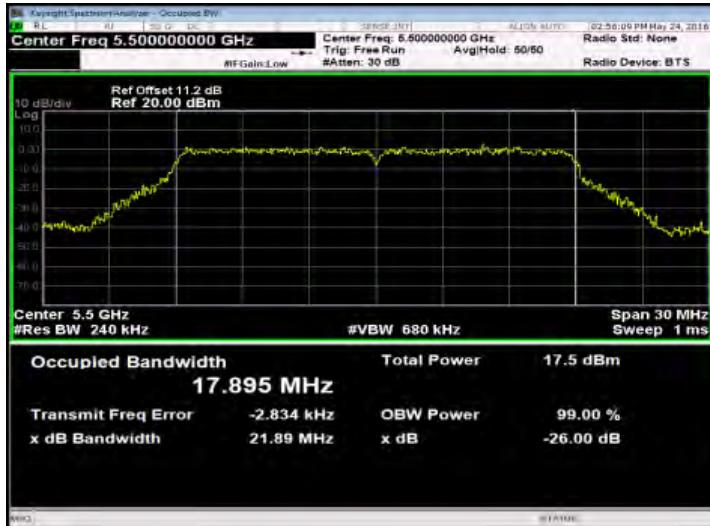


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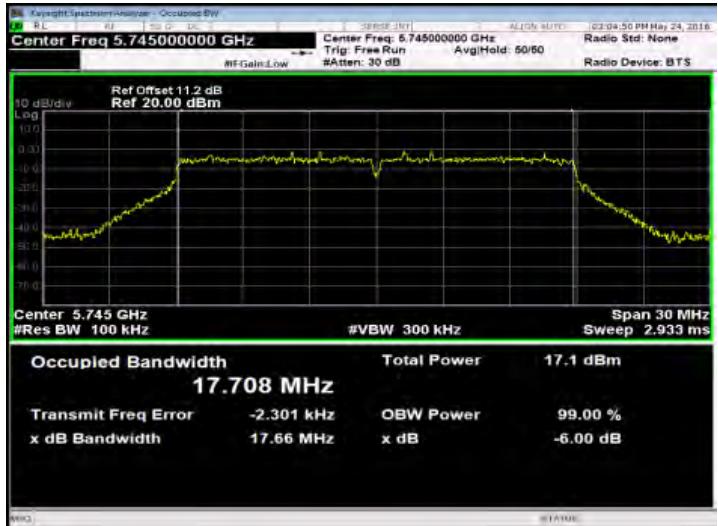
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## 802.11n\_20MHz\_5500MHz-5500



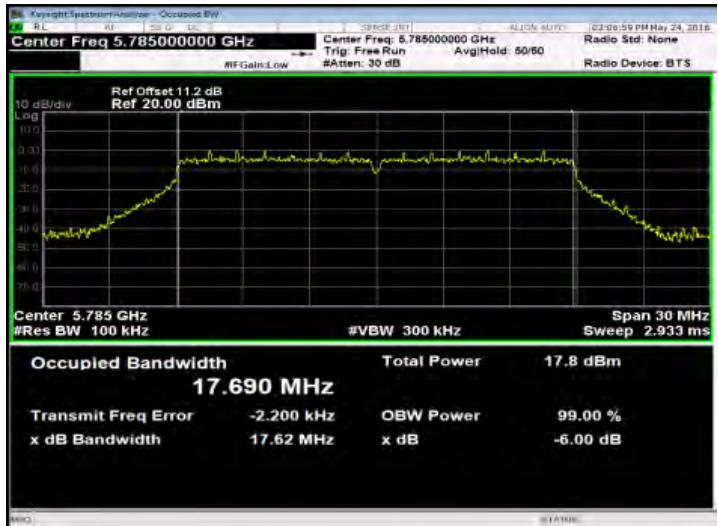
## 802.11n\_20MHz\_5745MHz-5745



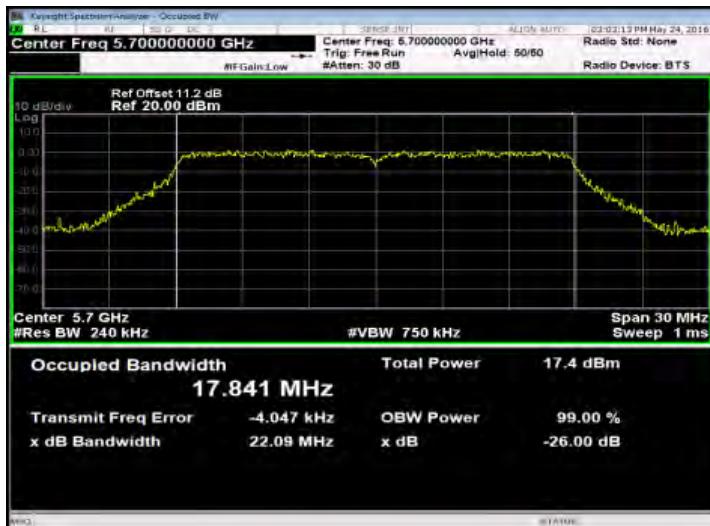
## 802.11n\_20MHz\_5580MHz-5580



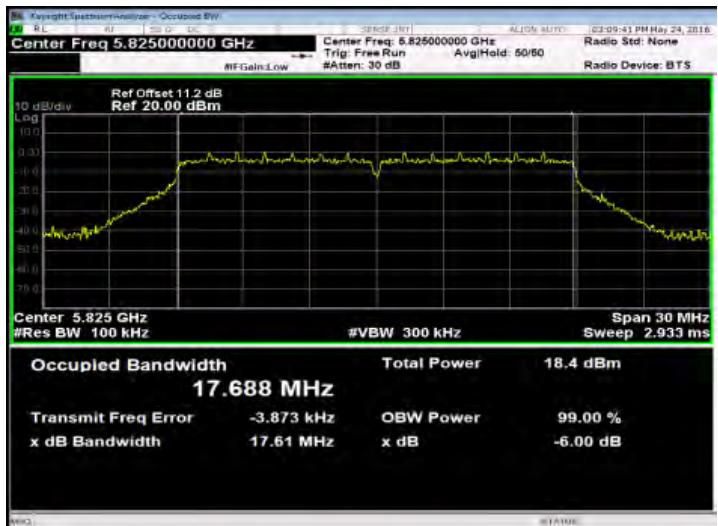
## 802.11n\_20MHz\_5785MHz-5785



## 802.11n\_20MHz\_5700MHz-5700



## 802.11n\_20MHz\_5825MHz-5825

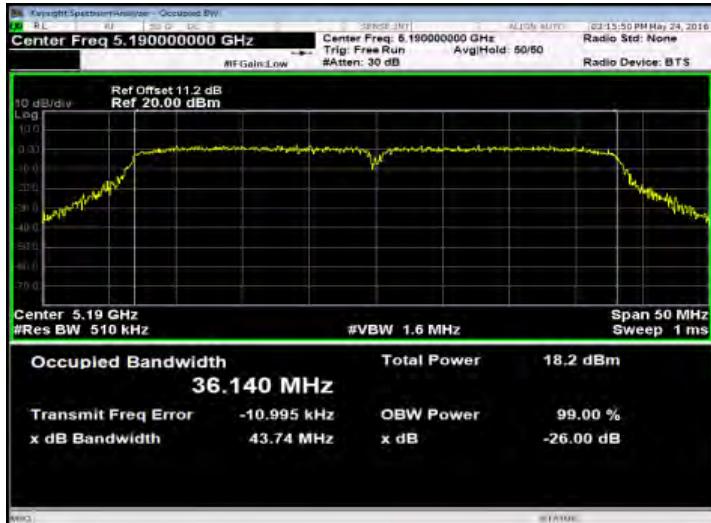


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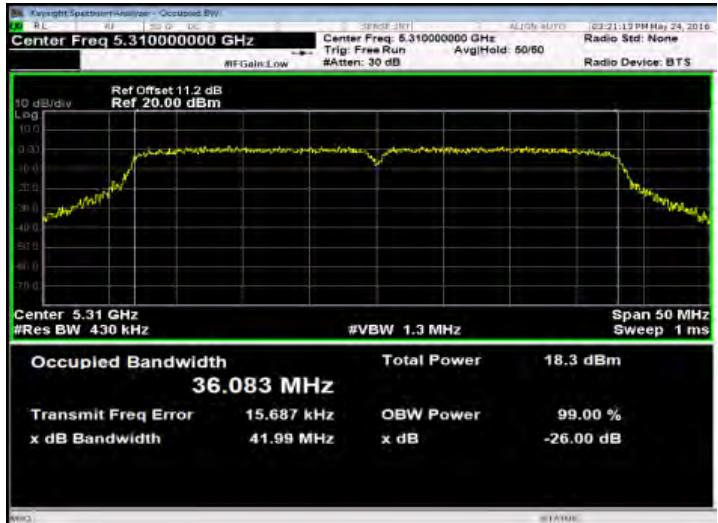
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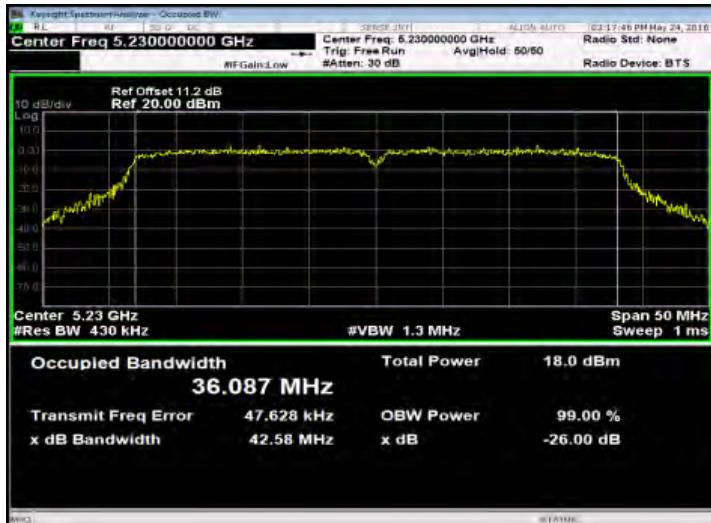
## 802.11n\_40MHz\_5190MHz-5190



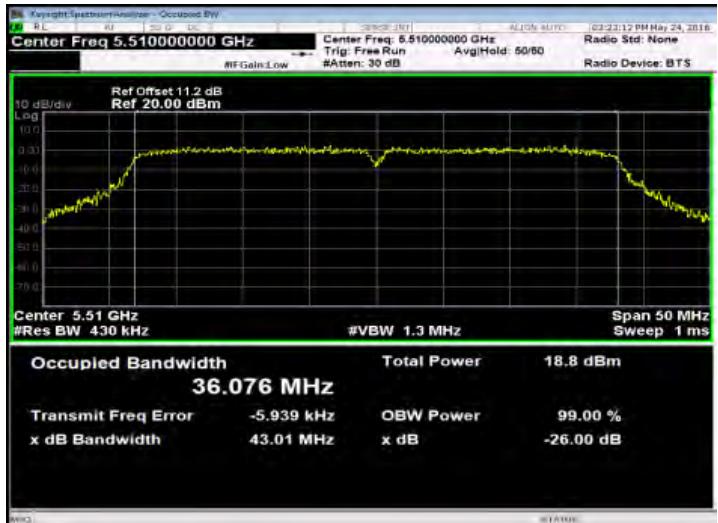
## 802.11n\_40MHz\_5310MHz-5310



## 802.11n\_40MHz\_5230MHz-5230



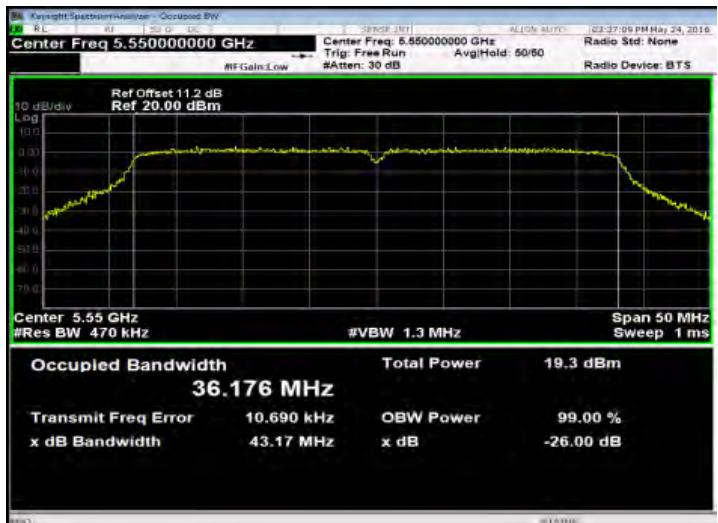
## 802.11n\_40MHz\_5510MHz-5510



## 802.11n\_40MHz\_5270MHz-5270



## 802.11n\_40MHz\_5550MHz-5550

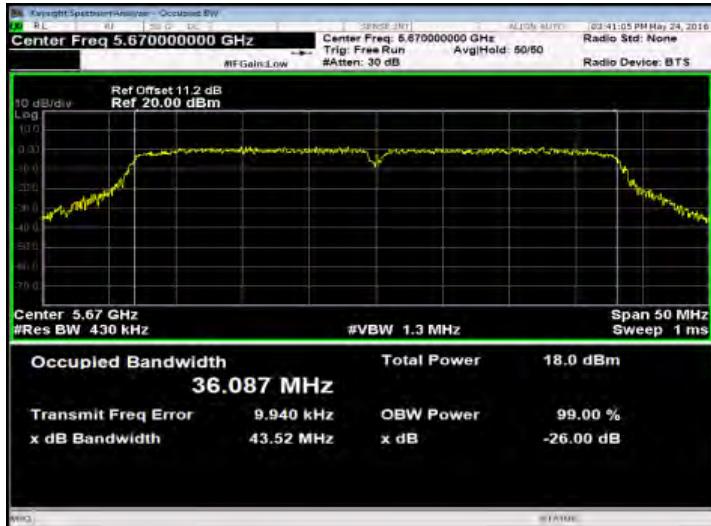


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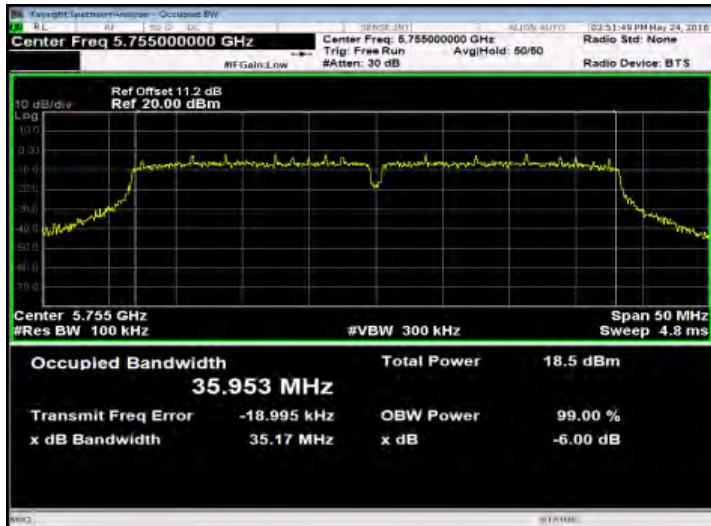
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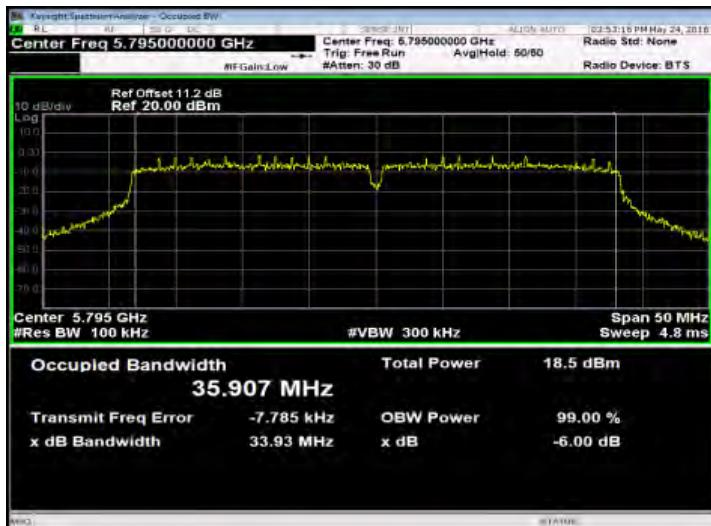
## 802.11n\_40MHz\_5670MHz-5670



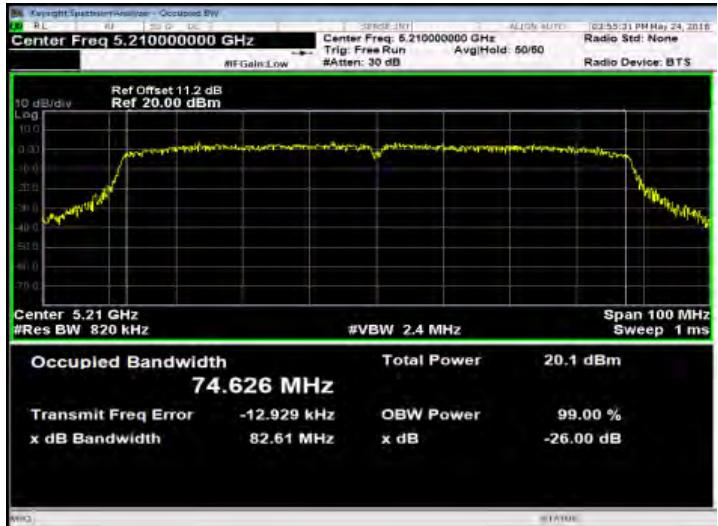
## 802.11n\_40MHz\_5755MHz-5755



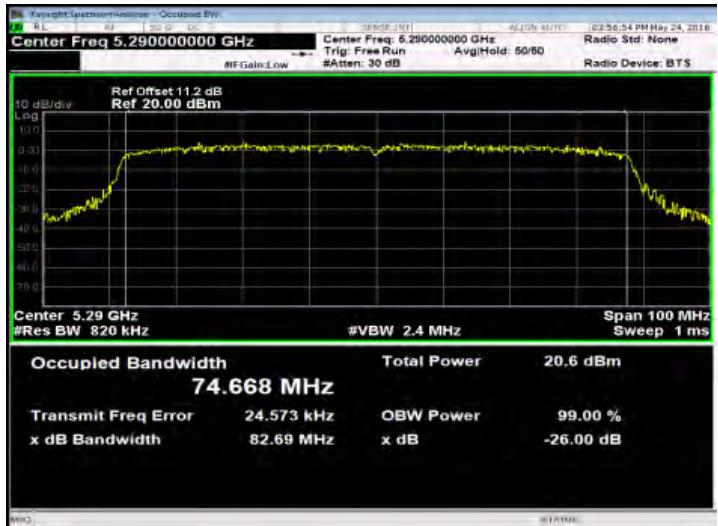
## 802.11n\_40MHz\_5795MHz-5795



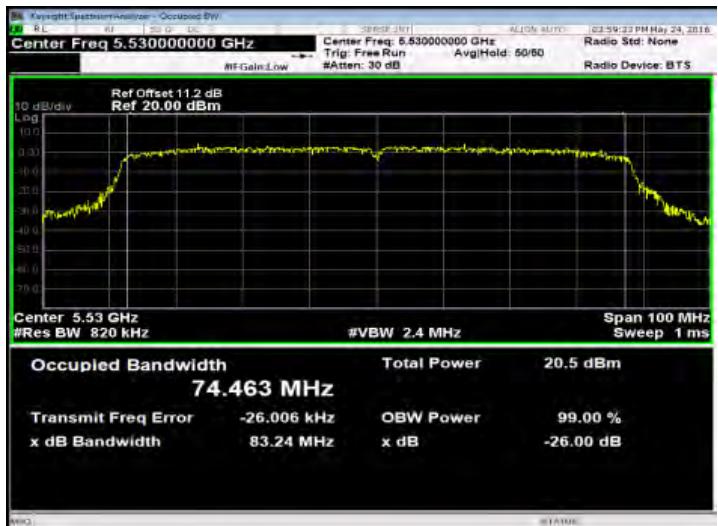
## 802.11ac\_80MHz\_5210MHz-5210



## 802.11ac\_80MHz\_5290MHz-5290



## 802.11ac\_80MHz\_5530MHz-5530

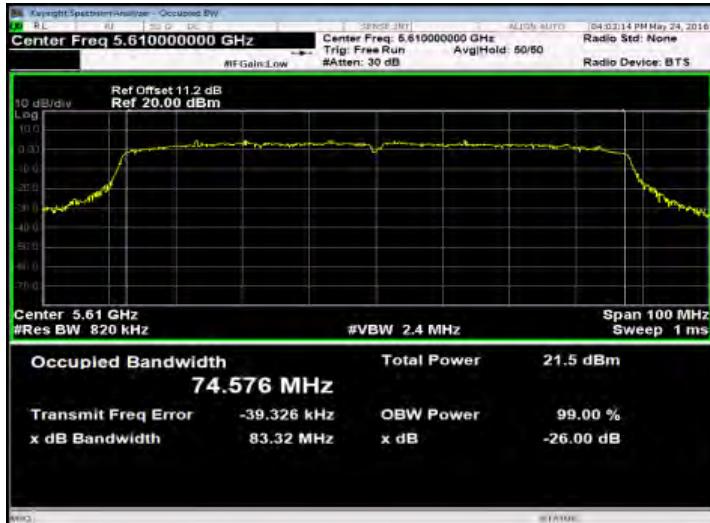


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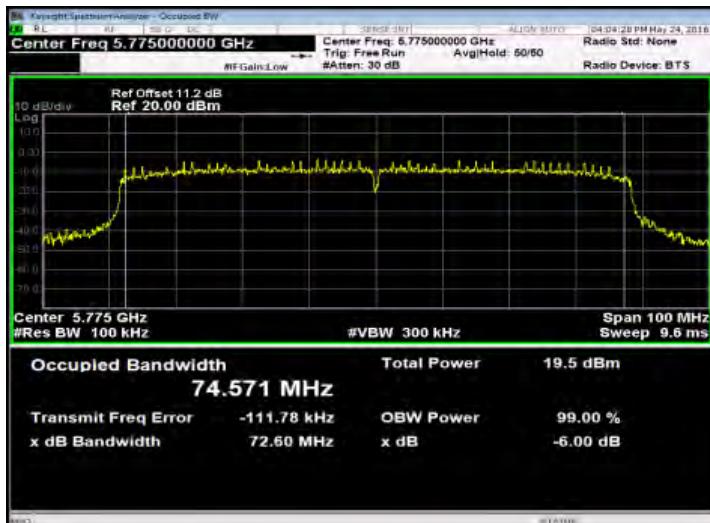
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## 802.11ac\_80MHz\_5610MHz-5610



## 802.11ac\_80MHz\_5775MHz-5775



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## 9. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

### 9.1 Standard Applicable

OPERZTION Band	EUT CATEGORY		LIMIT
U-NII-1		Access Point (Mater device )	1 Watt(30dBm)
		Fixed point-to-point Acess Ponit	1 Watt(30dBm)
	√	Mobile and portable clinet device	250mW(23.98dBm)
U-NII-2A	√		250mW(23.98dBm) or 11dBm+10 log B
U-NII-2C	√		250mW(23.98dBm) or 11dBm+10 log B
U-NII-3	√		1 Watt(30dBm)

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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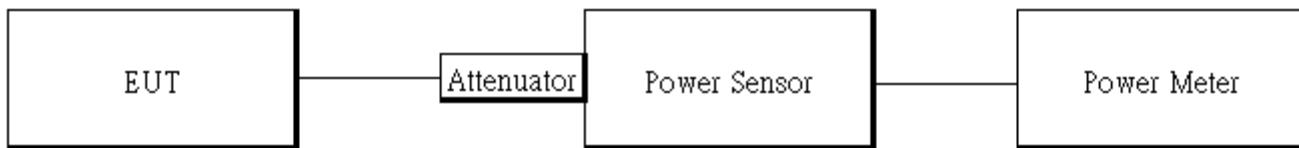
## 9.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
4. Power Meter is used as the auxiliary test equipment to conduct the output power measurement.
5. Record the max. reading and add  $10 \log(1/\text{duty cycle})$ .
6. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

## 9.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2496A	1326001	06/23/2015	06/22/2016
Power Sensor	Anritsu	MA2411B	1315048	06/23/2015	06/22/2016
Power Sensor	Anritsu	MA2411B	1315049	06/23/2015	06/22/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A195C	RF01	12/12/2015	12/11/2016
DC Block	PASTERNACK	PE8210	RF29	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017

## 9.4 Test Set-up



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## 9.5 Measurement Result

### Conducted output power (FCC)

#### 802.11a\_Main

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	14.78	30.061	23.98	PASS
44	5220	14.76	29.923	23.98	PASS
48	5240	<b>14.91</b>	<b>30.974</b>	23.98	PASS
52	5260	14.74	29.785	23.98 or $11+10\log(B) = 24.25$	PASS
60	5300	<b>14.99</b>	<b>31.550</b>	23.98 or $11+10\log(B) = 24.31$	PASS
64	5320	14.85	30.549	23.98 or $11+10\log(B) = 24.41$	PASS
100	5500	<b>14.97</b>	<b>31.405</b>	23.98 or $11+10\log(B) = 24.44$	PASS
116	5580	14.94	31.189	23.98 or $11+10\log(B) = 24.37$	PASS
140	5700	14.91	30.974	23.98 or $11+10\log(B) = 24.46$	PASS
149	5745	<b>14.97</b>	<b>31.405</b>	30	PASS
157	5785	14.78	30.061	30	PASS
165	5825	14.71	29.580	30	PASS

#### 802.11n\_HT20\_Main

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	11.84	15.276	23.98	PASS
44	5220	<b>11.96</b>	<b>15.704</b>	23.98	PASS
48	5240	11.67	14.689	23.98	PASS
52	5260	11.71	14.825	23.98 or $11+10\log(B) = 24.31$	PASS
60	5300	<b>11.79</b>	<b>15.101</b>	23.98 or $11+10\log(B) = 24.45$	PASS
64	5320	11.64	14.588	23.98 or $11+10\log(B) = 24.49$	PASS
100	5500	11.94	15.631	23.98 or $11+10\log(B) = 24.40$	PASS
116	5580	11.97	15.740	23.98 or $11+10\log(B) = 24.42$	PASS
140	5700	<b>11.98</b>	<b>15.776</b>	23.98 or $11+10\log(B) = 24.44$	PASS
149	5745	11.92	15.560	30	PASS
157	5785	<b>11.93</b>	<b>15.596</b>	30	PASS
165	5825	11.85	15.311	30	PASS

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## 802.11n\_HT40\_Main

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	<b>11.83</b>	<b>15.241</b>	23.98	PASS
46	5230	11.75	14.962	23.98	PASS
54	5270	11.63	14.555	23.98 or $11+10\log(B) = 27.32$	PASS
62	5310	<b>11.71</b>	<b>14.825</b>	23.98 or $11+10\log(B) = 27.23$	PASS
102	5510	<b>11.85</b>	<b>15.311</b>	23.98 or $11+10\log(B) = 27.34$	PASS
110	5550	11.63	14.555	23.98 or $11+10\log(B) = 27.35$	PASS
134	5670	<b>11.79</b>	<b>15.101</b>	23.98 or $11+10\log(B) = 27.39$	PASS
151	5755	11.83	15.241	30	PASS
159	5795	<b>11.96</b>	<b>15.704</b>	30	PASS

## 802.11ac\_VHT20\_Main

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	11.71	14.825	23.98	PASS
44	5220	<b>11.90</b>	<b>15.488</b>	23.98	PASS
48	5240	11.60	14.454	23.98	PASS
52	5260	11.68	14.723	23.98 or $11+10\log(B) = 24.31$	PASS
60	5300	<b>11.72</b>	<b>14.859</b>	23.98 or $11+10\log(B) = 24.45$	PASS
64	5320	11.62	14.521	23.98 or $11+10\log(B) = 24.49$	PASS
100	5500	11.82	15.205	23.98 or $11+10\log(B) = 24.40$	PASS
116	5580	11.84	15.276	23.98 or $11+10\log(B) = 24.42$	PASS
140	5700	<b>11.95</b>	<b>15.668</b>	23.98 or $11+10\log(B) = 24.44$	PASS
149	5745	11.81	15.171	30	PASS
157	5785	<b>11.82</b>	<b>15.205</b>	30	PASS
165	5825	<b>11.82</b>	<b>15.205</b>	30	PASS

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**802.11ac\_VHT40\_Main**

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	11.71	14.825	23.98	PASS
46	5230	<b>11.73</b>	<b>14.894</b>	23.98	PASS
54	5270	11.60	14.454	23.98 or $11+10\log(B) = 27.32$	PASS
62	5310	<b>11.65</b>	<b>14.622</b>	23.98 or $11+10\log(B) = 27.23$	PASS
102	5510	<b>11.84</b>	<b>15.276</b>	23.98 or $11+10\log(B) = 27.34$	PASS
110	5550	11.61	14.488	23.98 or $11+10\log(B) = 27.35$	PASS
134	5670	<b>11.74</b>	<b>14.928</b>	23.98 or $11+10\log(B) = 27.39$	PASS
151	5755	11.79	15.101	30	PASS
159	5795	<b>11.87</b>	<b>15.382</b>	30	PASS

**802.11ac\_VHT80\_Main**

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	11.89	15.453	23.98	PASS
58	5290	11.96	15.704	23.98 or $11+10\log(B) = 30.17$	PASS
106	5530	11.79	15.101	23.98 or $11+10\log(B) = 30.20$	PASS
122	5610	11.98	15.776	23.98 or $11+10\log(B) = 30.21$	PASS
155	5775	11.65	14.622	30	PASS

**Note:**

offset 11.20 dB

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## 10. PEAK POWER SPECTRAL DENSITY

### 10.1 Standard Applicable

OPERZTION Band	EUT CATEGORY		LIMIT
U-NII-1		Access Point (Mater device )	17dBm/ MHz
		Fixed point-to-point Acess Ponit	
	√	Mobile and portable clinet device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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## 10.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
4. **For U-NII1, U-NII-2A, U-NII-2C Band:**

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

**For U-NII-3 Band:**

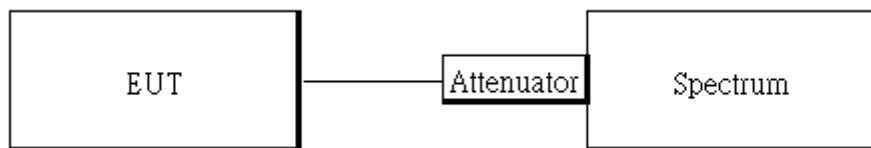
Set RBW=500 kHz, VBW $\geq$  3RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

5. User the cursor on spectrum to peak search the highest level of trace
6. Record the max. reading and add  $10 \log(1/\text{duty cycle})$ .
7. Repeat above procedures until all default test channel (low, middle, and high) was complete.

## 10.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017
DC Block	PASTERNACK	PE8210	RF29	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017

## 10.4 Test Set-up



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## 10.5 Measurement Result

POWER DENSITY 802.11a MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5180	-2.19	17	-19.19
5220	-3.18	17	-20.18
5240	-3.51	17	-20.51
5260	-2.01	11	-13.01
5300	-2.74	11	-13.74
5320	-5.44	11	-16.44
5500	3.07	11	-7.93
5580	0.58	11	-10.42
5700	-3.58	11	-14.58
5745	7.90	30	-22.10
5785	7.05	30	-22.95
5825	7.50	30	-22.50

POWER DENSITY 802.11n HT20 MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5180	-5.62	17	-22.62
5220	-7.94	17	-24.94
5240	-9.28	17	-26.28
5260	-0.96	11	-11.96
5300	-6.50	11	-17.50
5320	-7.67	11	-18.67
5500	-7.15	11	-18.15
5580	-6.36	11	-17.36
5700	-8.22	11	-19.22
5745	4.30	30	-25.70
5785	5.55	30	-24.45
5825	4.57	30	-25.43

POWER DENSITY 802.11n HT40 MODE			
Frequency	PPSD	Limit	Margin
5190	-3	17	-20.00
5230	-12.8	17	-29.80
5270	-4.43	11	-15.43
5310	-14.41	11	-25.41
5510	-11.81	11	-22.81
5550	-15.18	11	-26.18
5670	-14.40	11	-25.40
5755	2.35	30	-27.65
5795	2.35	30	-27.65

POWER DENSITY 802.11ac VHT80 MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5210	-17.99	17	-34.99
5290	-22.49	11	-33.49
5530	-22.44	11	-33.44
5610	-22.69	11	-33.69
5775	0.79	30	-29.21

**Note:**

offset 11.20 dB

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## 802.11a\_20MHz\_5180MHz-5180



## 802.11a\_20MHz\_5260MHz-5260



## 802.11a\_20MHz\_5220MHz-5220



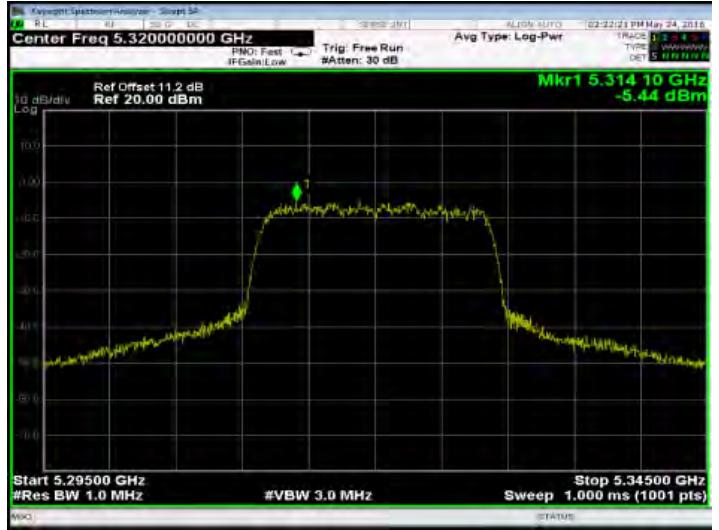
## 802.11a\_20MHz\_5300MHz-5300



## 802.11a\_20MHz\_5240MHz-5240



## 802.11a\_20MHz\_5320MHz-5320



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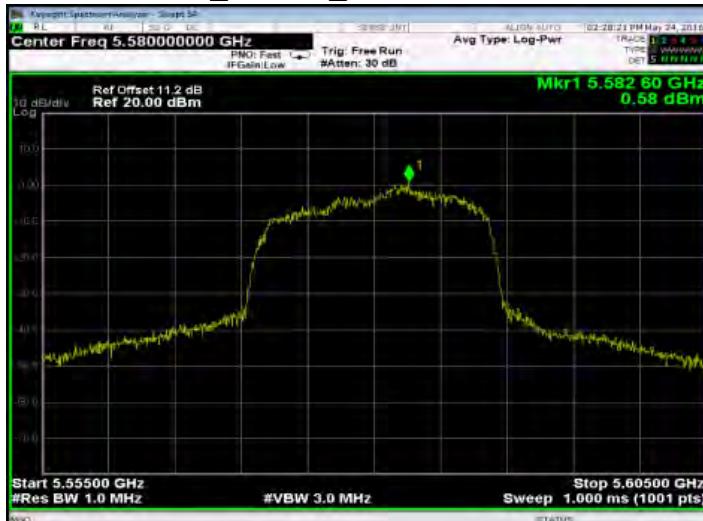
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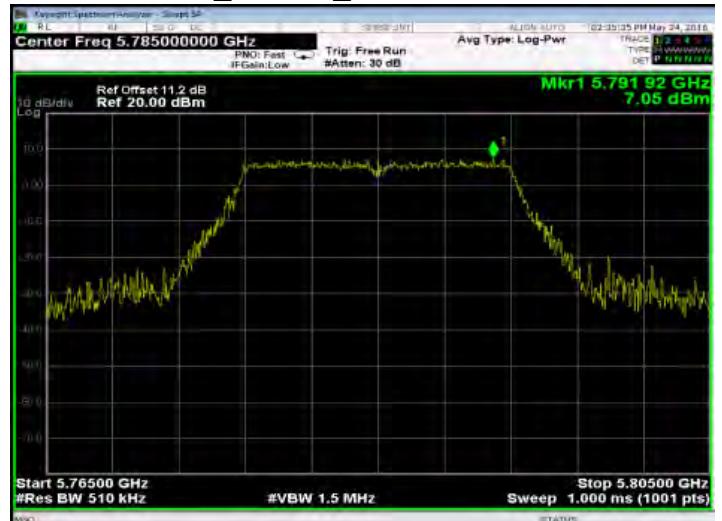
## 802.11a\_20MHz\_5745MHz-5745



## 802.11a\_20MHz\_5580MHz-5580



## 802.11a\_20MHz\_5785MHz-5785



## 802.11a\_20MHz\_5700MHz-5700



## 802.11a\_20MHz\_5825MHz-5825



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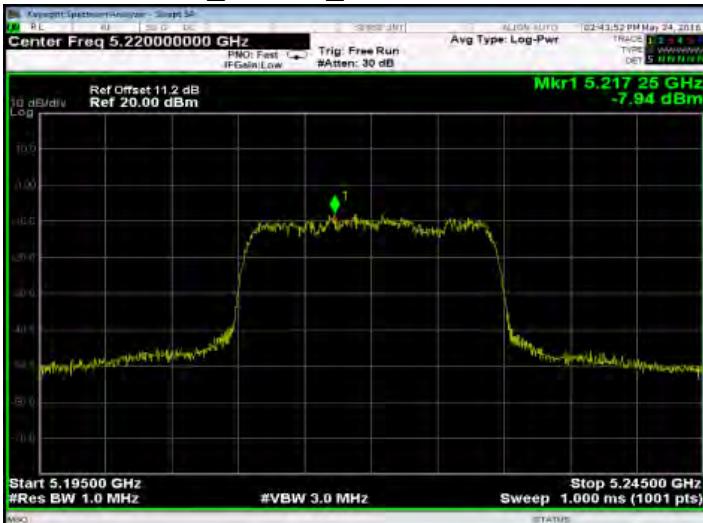
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802.11n\_20MHz\_5180MHz-5180



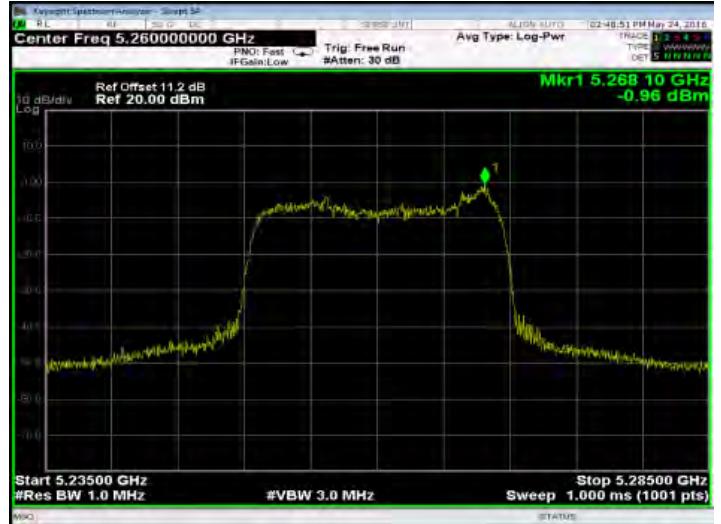
802.11n\_20MHz\_5220MHz-5220



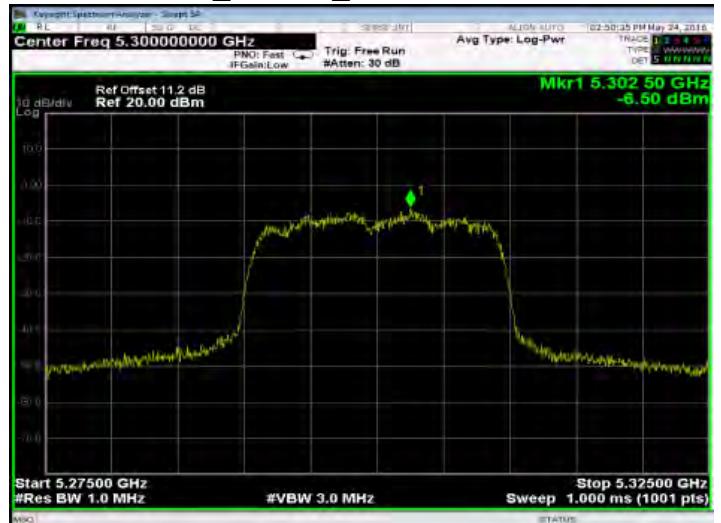
802.11n 20MHz 5240MHz-5240



802.11n\_20MHz\_5260MHz-5260



802.11n\_20MHz\_5300MHz-5300



802.11n 20MHz 5320MHz-5320



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## 802.11n\_20MHz\_5500MHz-5500



## 802.11n\_20MHz\_5745MHz-5745



## 802.11n\_20MHz\_5580MHz-5580



## 802.11n\_20MHz\_5785MHz-5785



## 802.11n\_20MHz\_5700MHz-5700



## 802.11n\_20MHz\_5825MHz-5825



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## 802.11n\_40MHz\_5190MHz-5190



## 802.11n\_40MHz\_5310MHz-5310



## 802.11n\_40MHz\_5230MHz-5230



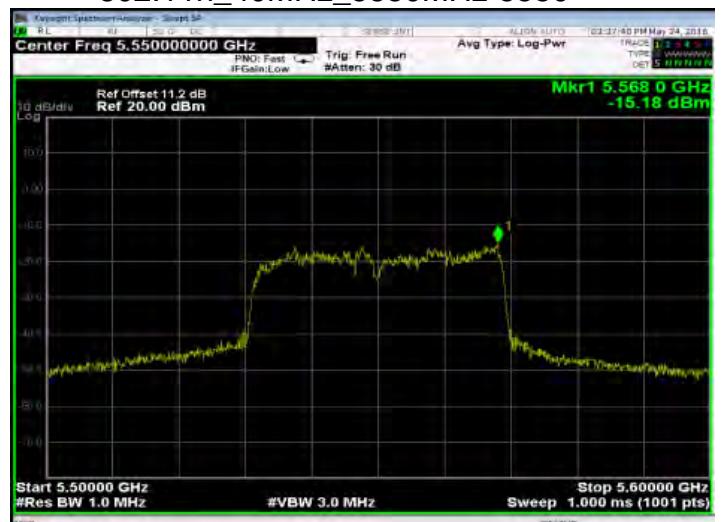
## 802.11n\_40MHz\_5510MHz-5510



## 802.11n\_40MHz\_5270MHz-5270



## 802.11n\_40MHz\_5550MHz-5550



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## 802.11n\_40MHz\_5670MHz-5670



## 802.11ac\_80MHz\_5210MHz-5210



## 802.11n\_40MHz\_5755MHz-5755



## 802.11ac\_80MHz\_5290MHz-5290



## 802.11n\_40MHz\_5795MHz-5795



## 802.11ac\_80MHz\_5530MHz-5530



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**802.11ac\_80MHz\_5610MHz-5610****802.11ac\_80MHz\_5775MHz-5775**

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## 11. UNDESIRABLE RADIATED EMISSION MEASUREMENT1

### 11.1 Standard Applicable

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

1. For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
2. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
3. For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
4. For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

APPLICABLE TO	LIMIT	
FCC KDB 789033 D02 General UNII Test Procedures New Rules	FIELD STRENGTH AT 3m	
	PK: 74 (dB $\mu$ V/m)	AV 54 (dB $\mu$ V/m)
APPLICABLE TO	EIRP LIMIT	FIELD STRENGTH AT 3m
15.407(b)(1)		
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.3 (dB $\mu$ V/m)
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) PK: -17 (dBm/MHz)	PK: 68.3 (dB $\mu$ V/m) PK: 78.2 (dB $\mu$ V/m)

EIRP =  $(E^*d)^2 / 30$ , where E is the field in V/m, d is the measurement distance (3m), EIRP is the equivalent isotropically radiated power in Watts.

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Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Note:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB $\mu$ V/m) = 20 log Emission level (dB $\mu$ V/m)

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## 11.2 Measurement Equipment Used

SGS SAC-III					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESU 40	100363	04/12/2016	04/11/2017
Loop Antenna	ETS-Lindgren	6502	00143303	12/23/2015	12/22/2016
Broadband Antenna	TESEQ	CBL 6112D	35240	10/28/2015	10/27/2016
Horn Antenna	ETS-Lindgren	3117	00143272	12/16/2015	12/15/2016
Horn Antenna	Schwarzbeck	BBHA9170	185	07/24/2015	07/23/2016
Pre Amplifier	EMC Instruments	EMC330	980096	12/12/2015	12/11/2016
Pre Amplifier	EMC Instruments	EMC0011830	980199	12/12/2015	12/11/2016
Pre Amplifier	R&S	SCU-18	10204	12/12/2015	12/11/2016
Pre Amplifier	EMC Instruments	EMC184045B	980135	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF27	12/12/2015	12/11/2016
Site NSA	SGS	966 Chamber C	SAC-C	03/04/2016	03/03/2017
Site VSWR	SGS	966 Chamber C	SAC-C	03/04/2016	03/03/2017
DC Power Supply	HOLA	DP-3003	D7070035	05/04/2016	05/03/2017
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.

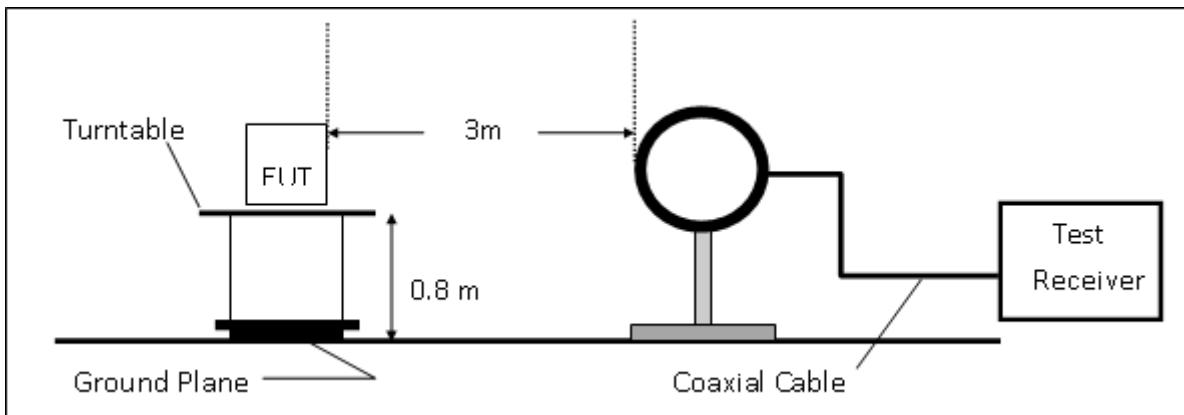
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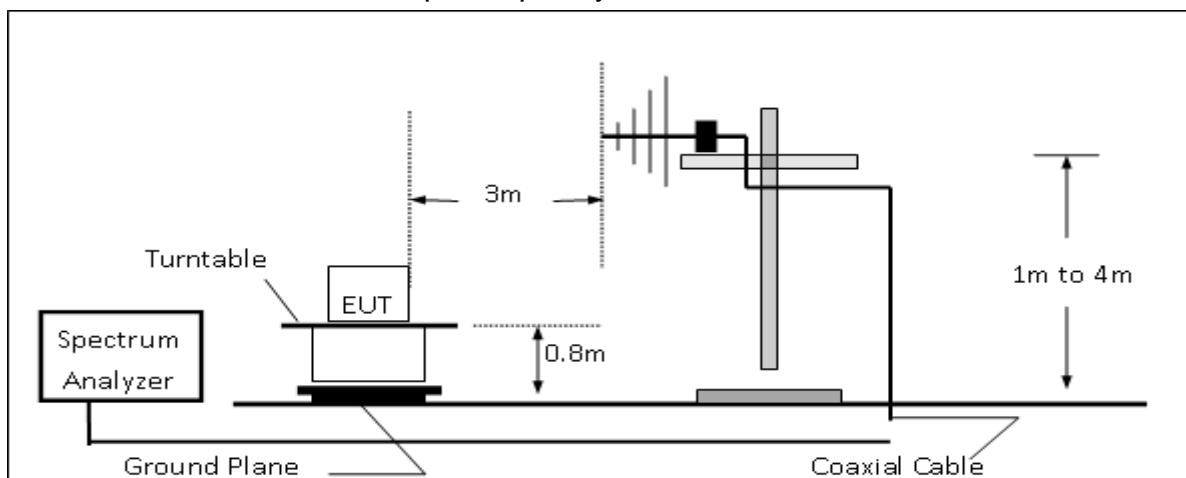
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### 11.3 Test SET-UP

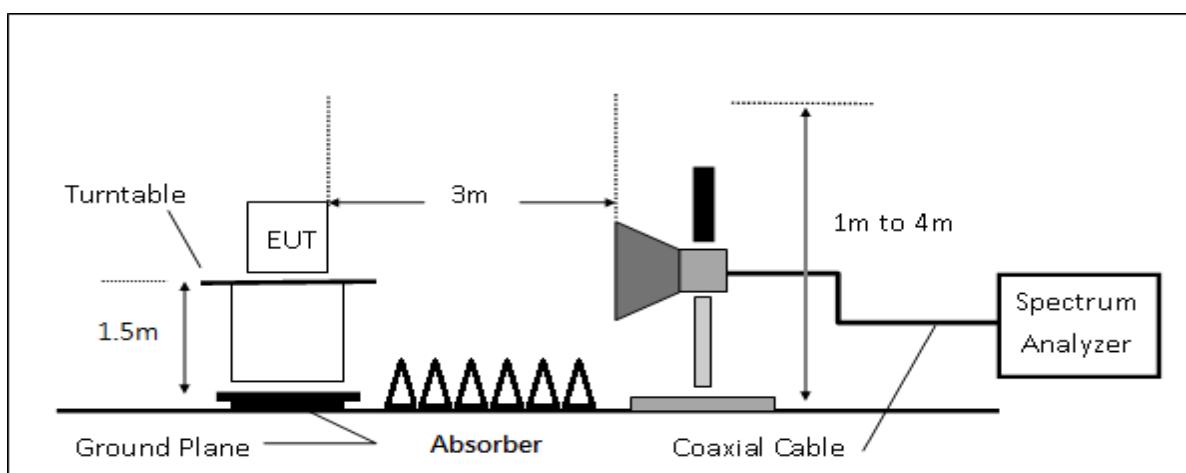
#### (A) Radiated Emission Test Set-UP Frequency Below 30MHz.



#### (B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



#### (C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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## 11.4 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules .
3. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
4. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
5. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
6. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW  $\geq$  1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
11. Repeat above procedures until all frequency measured were complete.

## 11.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

Actual FS(dB $\mu$ V/m) = SPA. Reading level(dB $\mu$ V) + Factor(dB)

Factor(dB) = Antenna Factor(dB $\mu$ V/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

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**Note :**

“F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

## 11.6 Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

## 11.7 Measurement Result

Refer to attach tabular data sheets.

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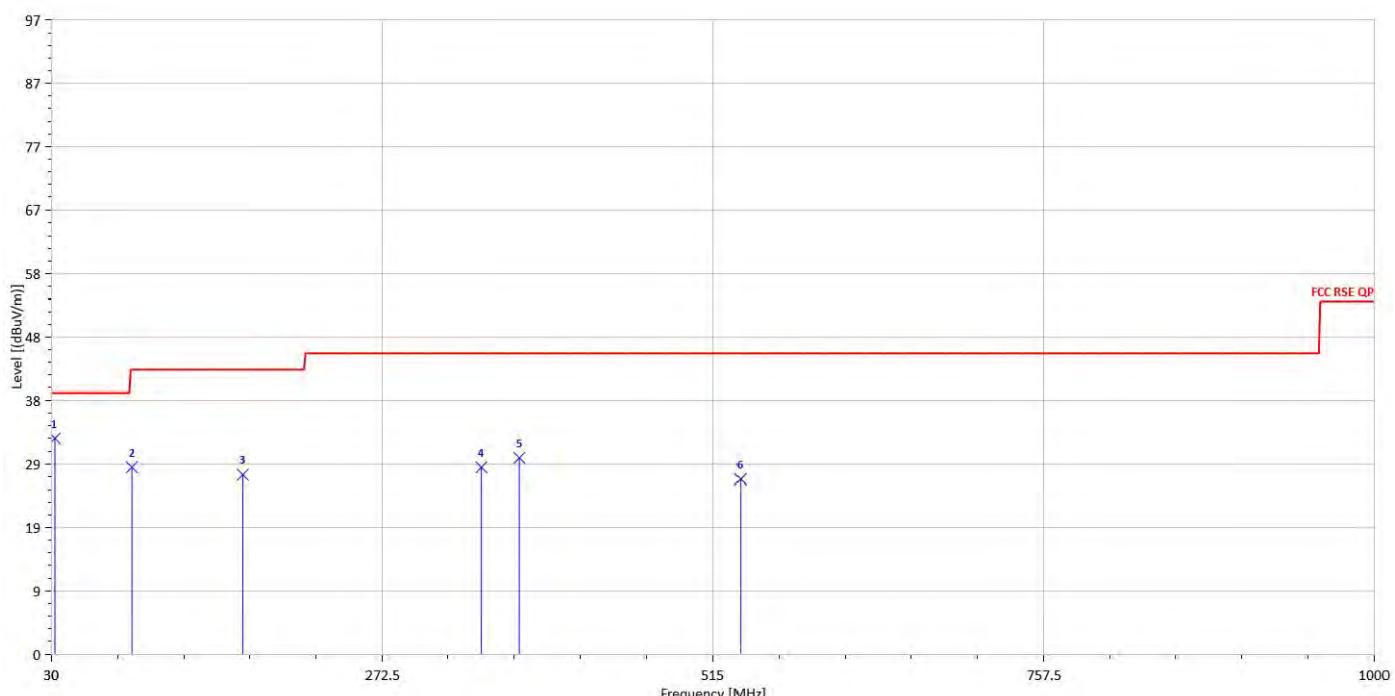
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## Radiated Spurious Emission Measurement Result

## Below 1GHz Worst-Case Data:

## 802.11a 5150~5250 MHz

Operation Mode :	802.11a	Test Date :	2016/5/27
Fundamental Frequency :	5220 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



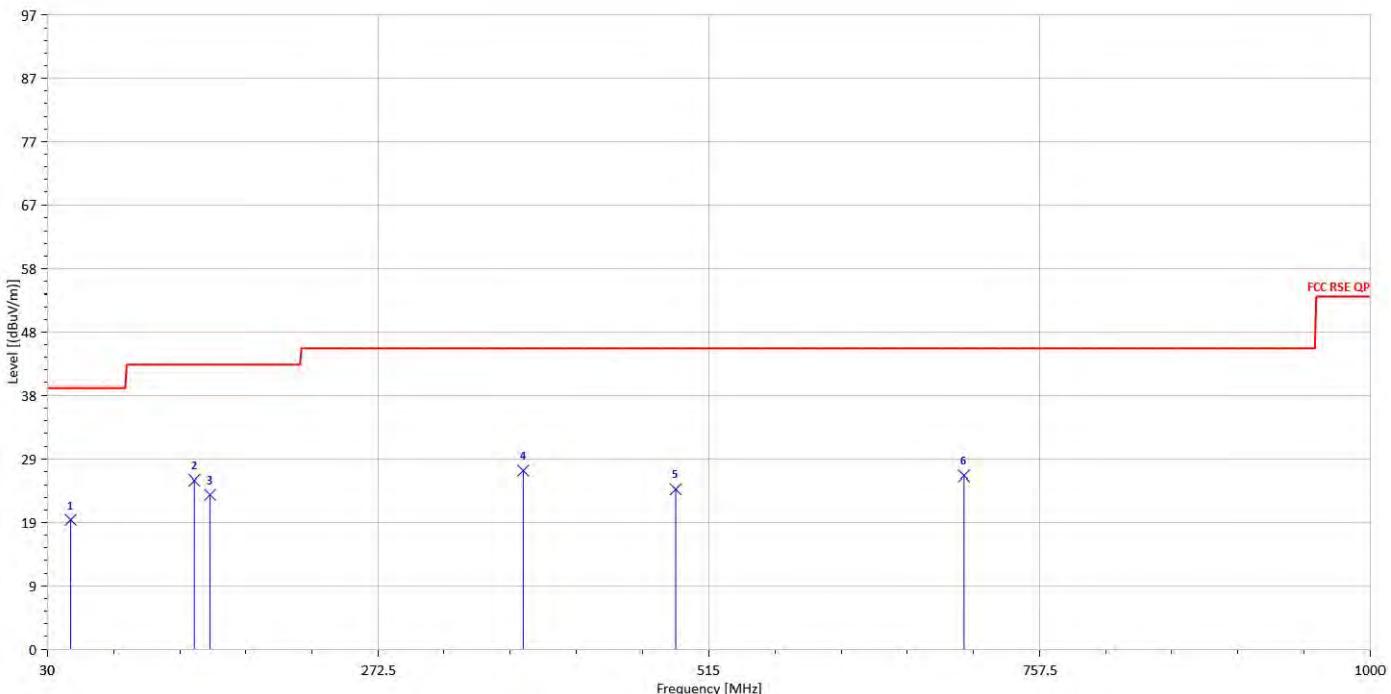
Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
32.81	S	Peak	41.72	-8.70	33.02	40	-6.98
89.17	S	Peak	48.19	-19.63	28.56	43.5	-14.94
170.65	S	Peak	45.73	-18.31	27.42	43.5	-16.08
345.25	S	Peak	39.99	-11.44	28.55	46	-17.45
373.38	S	Peak	40.56	-10.56	30.00	46	-16.00
535.37	S	Peak	34.19	-7.43	26.76	46	-19.24

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Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
			Reading	Level dBμV				
47.46	S	Peak	37.73	37.73	-17.91	19.82	40	-20.18
137.67	S	Peak	41.78	41.78	-15.94	25.84	43.5	-17.66
149.31	S	Peak	40.40	40.40	-16.73	23.67	43.5	-19.83
379.20	S	Peak	37.71	37.71	-10.45	27.27	46	-18.73
490.75	S	Peak	32.21	32.21	-7.68	24.53	46	-21.47
702.21	S	Peak	31.83	31.83	-5.30	26.53	46	-19.47

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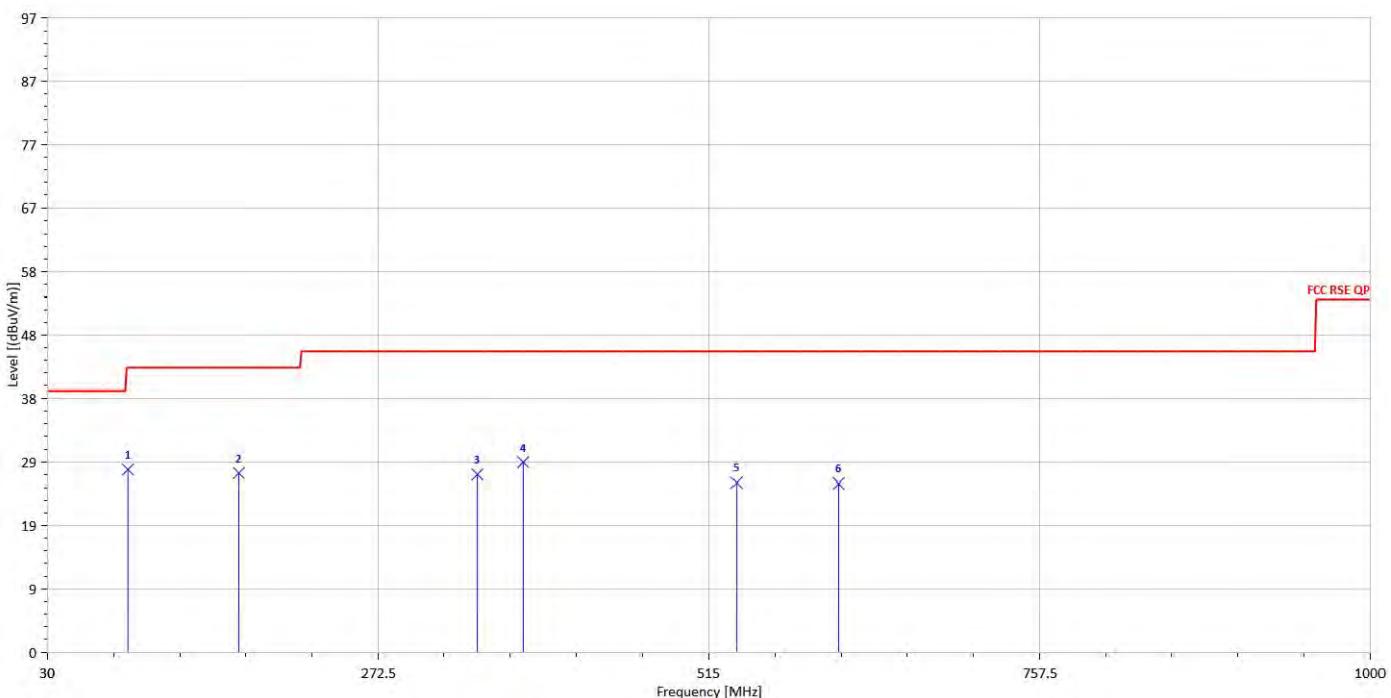
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**802.11a 5250~5350 MHz**

Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
89.17	S	Peak	47.52	-19.63	27.90	43.5	-15.60
170.65	S	Peak	45.67	-18.31	27.36	43.5	-16.14
345.25	S	Peak	38.60	-11.44	27.16	46	-18.84
379.20	S	Peak	39.48	-10.45	29.03	46	-16.97
535.37	S	Peak	33.36	-7.43	25.93	46	-20.07
610.06	S	Peak	32.57	-6.75	25.82	46	-20.18

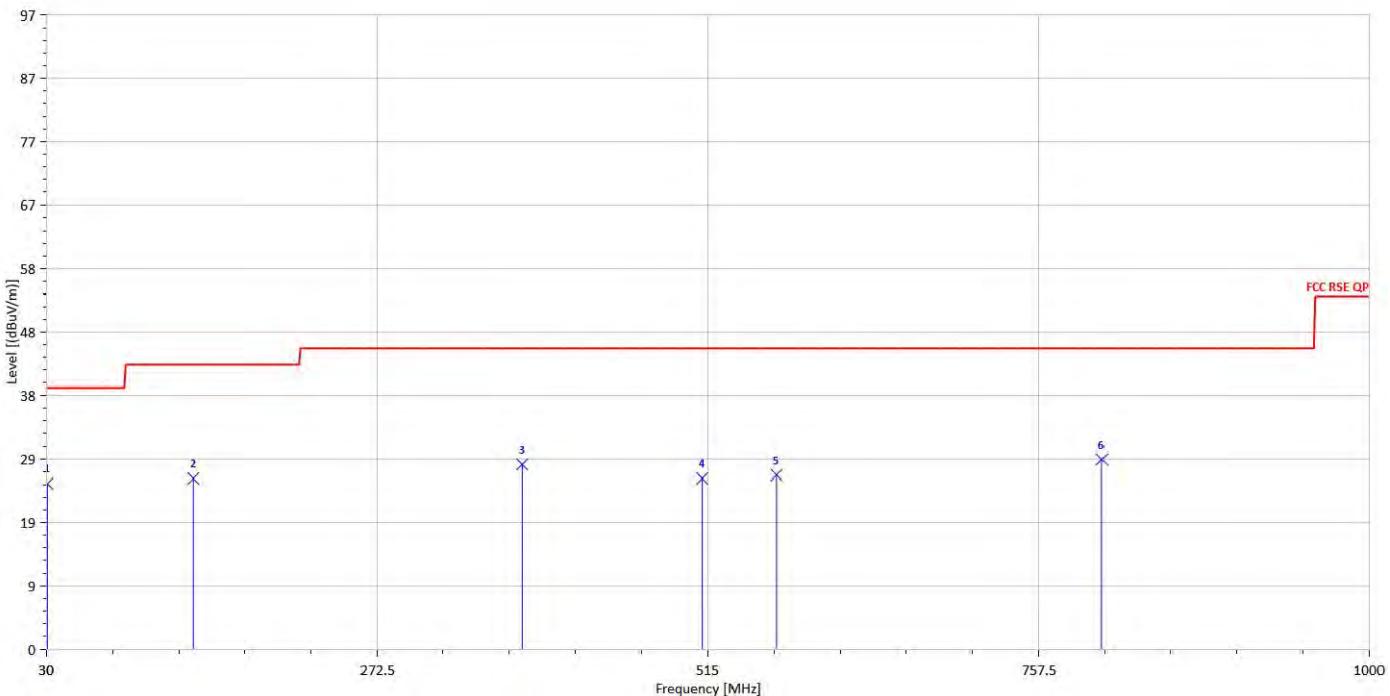
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Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
			Reading	Level dBµV				
30.97	S	Peak	33.05	33.05	-7.70	25.35	40	-14.65
137.67	S	Peak	42.07	42.07	-15.94	26.13	43.5	-17.37
379.20	S	Peak	38.68	38.68	-10.45	28.23	46	-17.77
511.12	S	Peak	33.62	33.62	-7.49	26.13	46	-19.87
565.44	S	Peak	33.12	33.12	-6.49	26.63	46	-19.37
804.06	S	Peak	32.35	32.35	-3.36	28.99	46	-17.01

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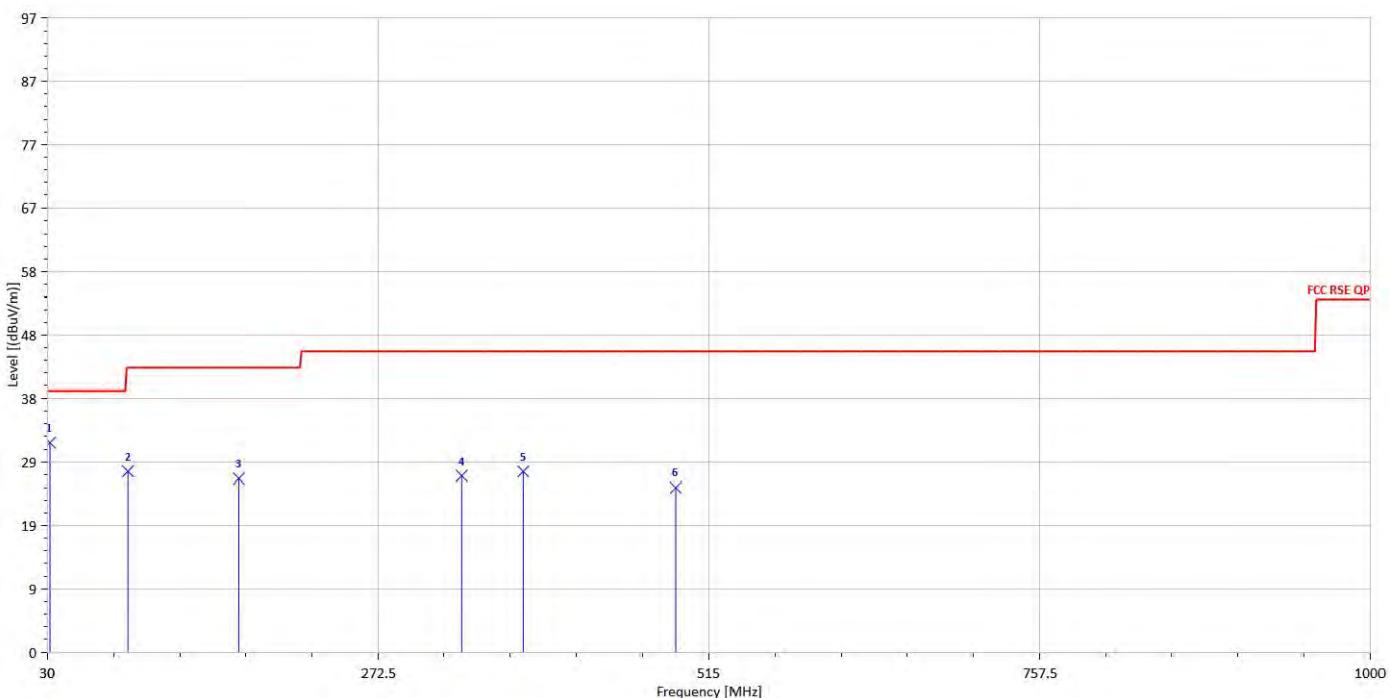
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**802.11a, 5470~5725 MHz**

Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
32.11	S	Peak	40.36	-8.31	32.04	40	-7.96
89.17	S	Peak	47.27	-19.63	27.65	43.5	-15.85
170.65	S	Peak	44.87	-18.31	26.56	43.5	-16.94
333.61	S	Peak	38.84	-11.88	26.96	46	-19.04
379.20	S	Peak	38.05	-10.45	27.61	46	-18.39
490.75	S	Peak	32.89	-7.68	25.21	46	-20.79

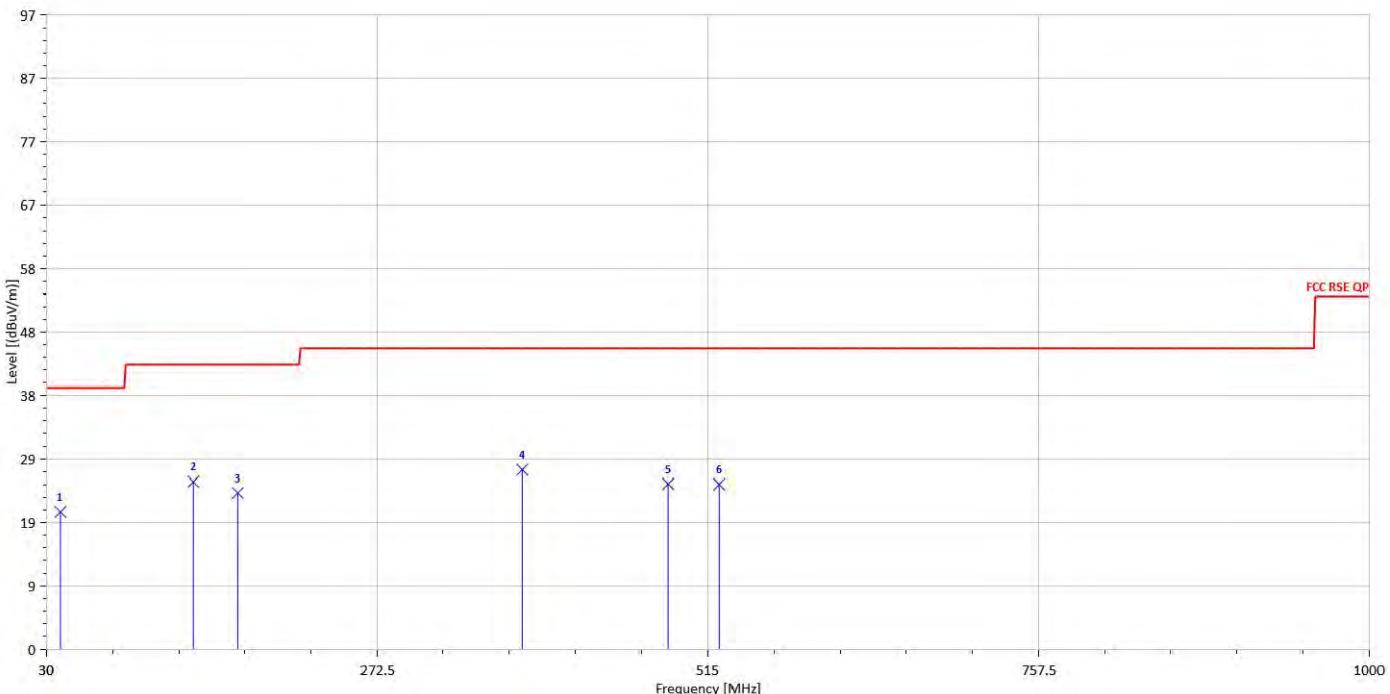
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Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
			Reading	Level dBµV				
40.67	S	Peak	34.32	34.32	-13.29	21.03	40	-18.97
137.67	S	Peak	41.58	41.58	-15.94	25.64	43.5	-17.86
170.65	S	Peak	42.25	42.25	-18.31	23.94	43.5	-19.56
379.20	S	Peak	37.88	37.88	-10.45	27.43	46	-18.57
485.90	S	Peak	33.36	33.36	-8.04	25.32	46	-20.68
523.73	S	Peak	32.67	32.67	-7.41	25.25	46	-20.75

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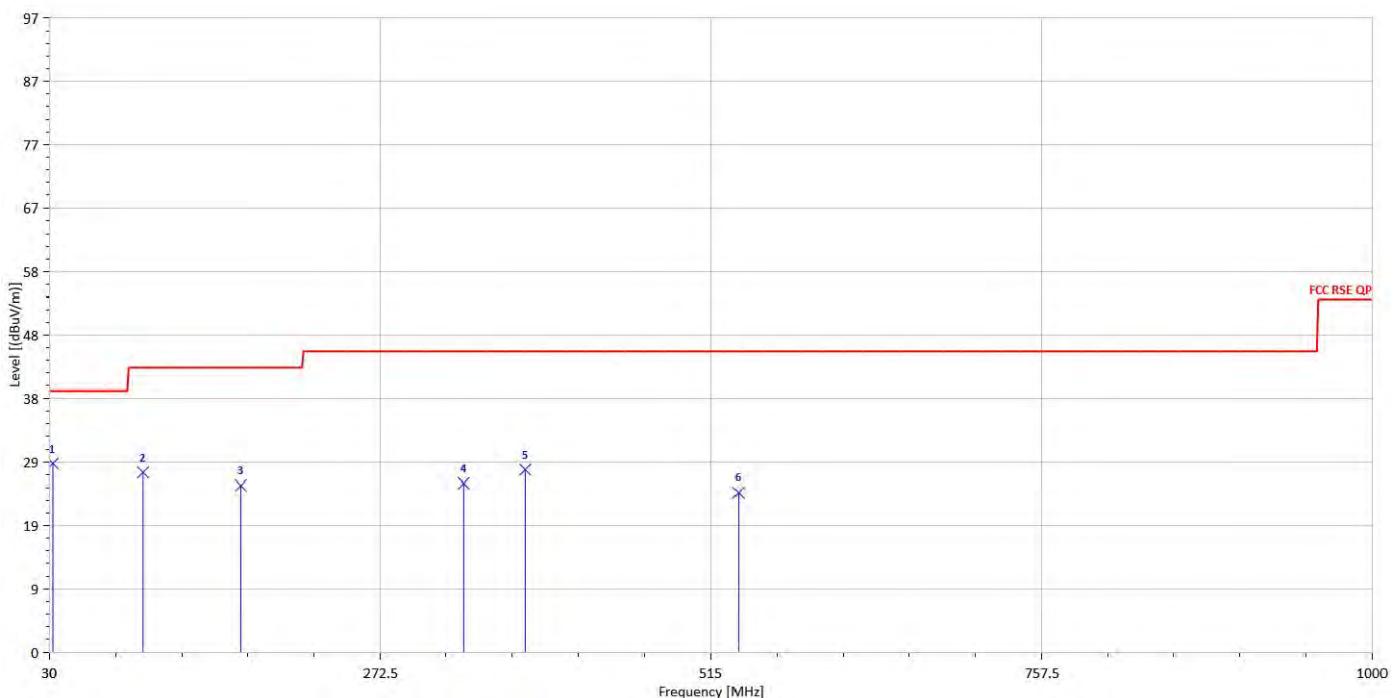
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**802.11a, 5725~5850 MHz**

Operation Mode : 802.11a Test Date : 2016/5/27  
Fundamental Frequency : 5785 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
32.81	S	Peak	37.54	-8.70	28.84	40	-11.16
98.87	S	Peak	45.41	-17.93	27.48	43.5	-16.02
170.65	S	Peak	43.84	-18.31	25.52	43.5	-17.98
333.61	S	Peak	37.73	-11.88	25.85	46	-20.15
379.20	S	Peak	38.33	-10.45	27.88	46	-18.12
535.37	S	Peak	31.88	-7.43	24.45	46	-21.55

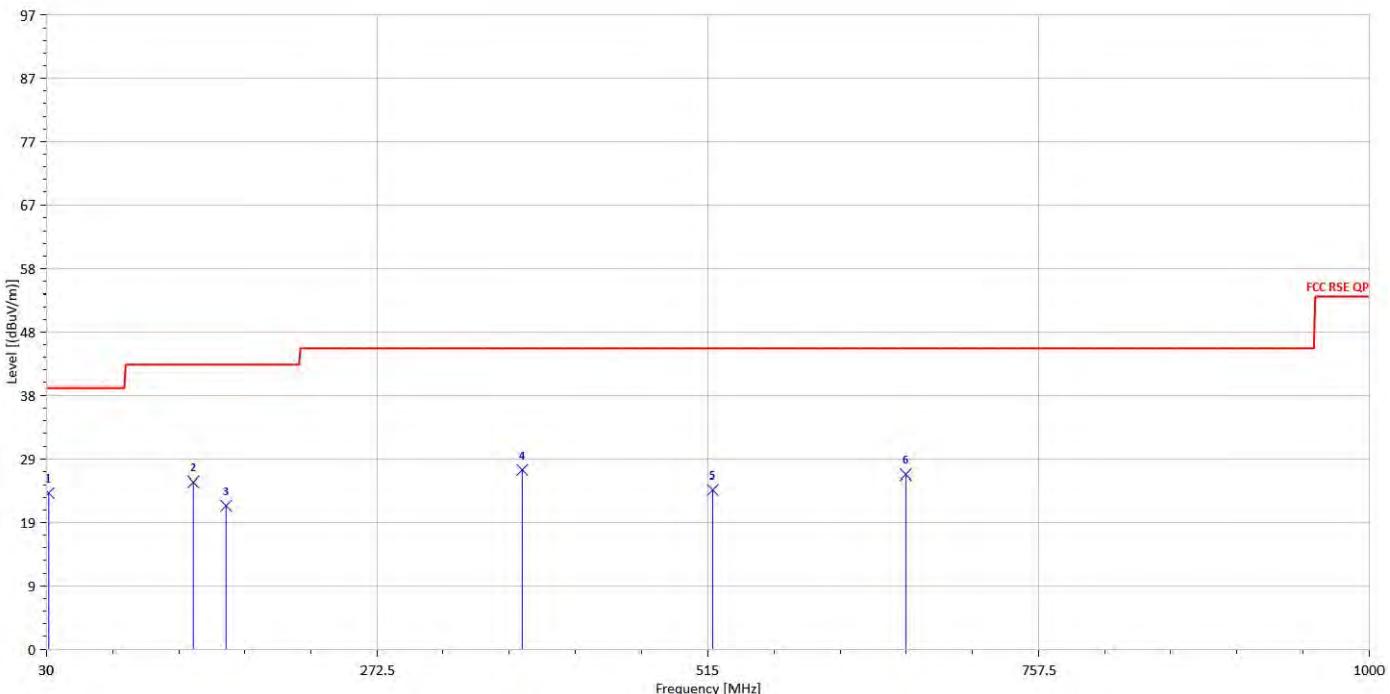
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Operation Mode : 802.11a Test Date : 2016/5/27  
 Fundamental Frequency : 5785 MHz Temp. / Humi. : 22.7deg\_C/57RH  
 Operation Band : Tx CH Mid Test Engineer : Pony  
 EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
			Reading	Level dBμV				
31.94	S	Peak	32.18	32.18	-8.22	23.96	40	-16.04
137.67	S	Peak	41.55	41.55	-15.94	25.61	43.5	-17.89
161.92	S	Peak	39.70	39.70	-17.71	21.99	43.5	-21.51
379.20	S	Peak	37.83	37.83	-10.45	27.38	46	-18.62
518.88	S	Peak	31.83	31.83	-7.40	24.43	46	-21.57
660.50	S	Peak	32.21	32.21	-5.50	26.71	46	-19.29

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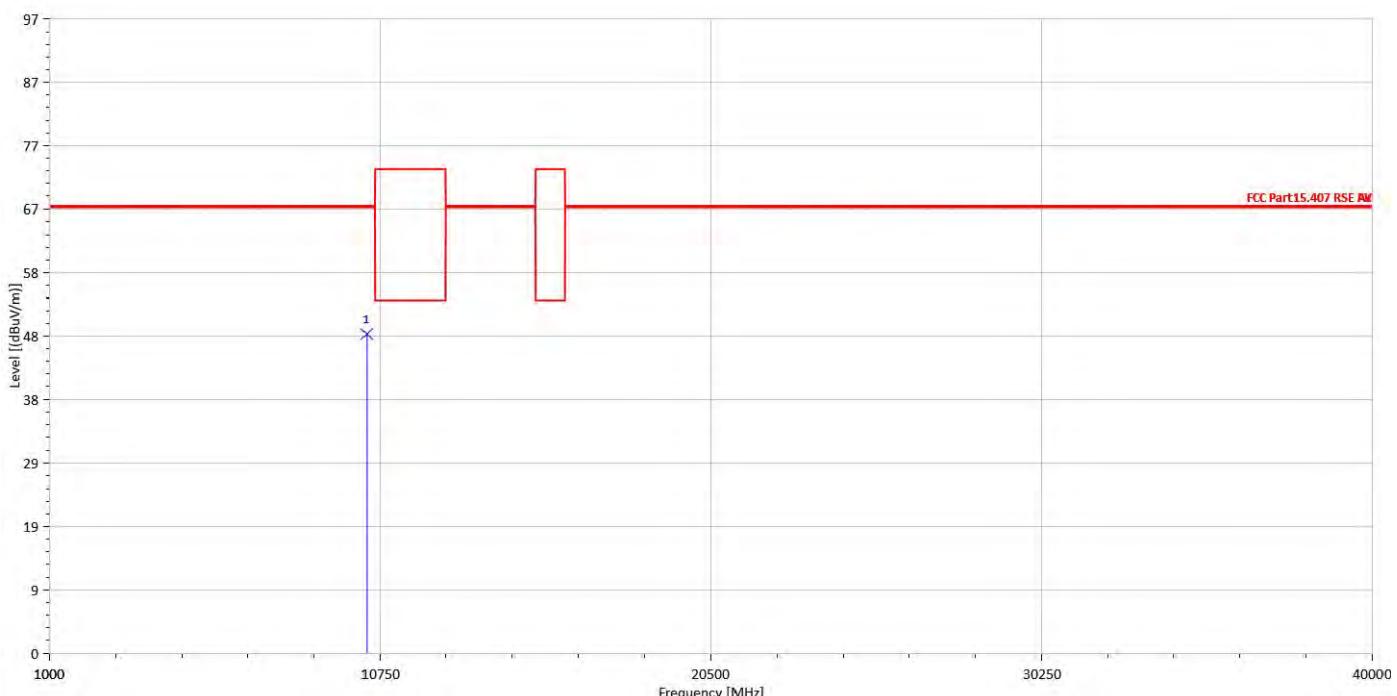
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**Above 1GHz Worst-Case Data:****Radiated Spurious Emission Measurement Result 802.11a, 5150~5250 MHz**

Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7 deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10360.00	H	Peak	31.21	17.62	48.83	68.3	-19.47

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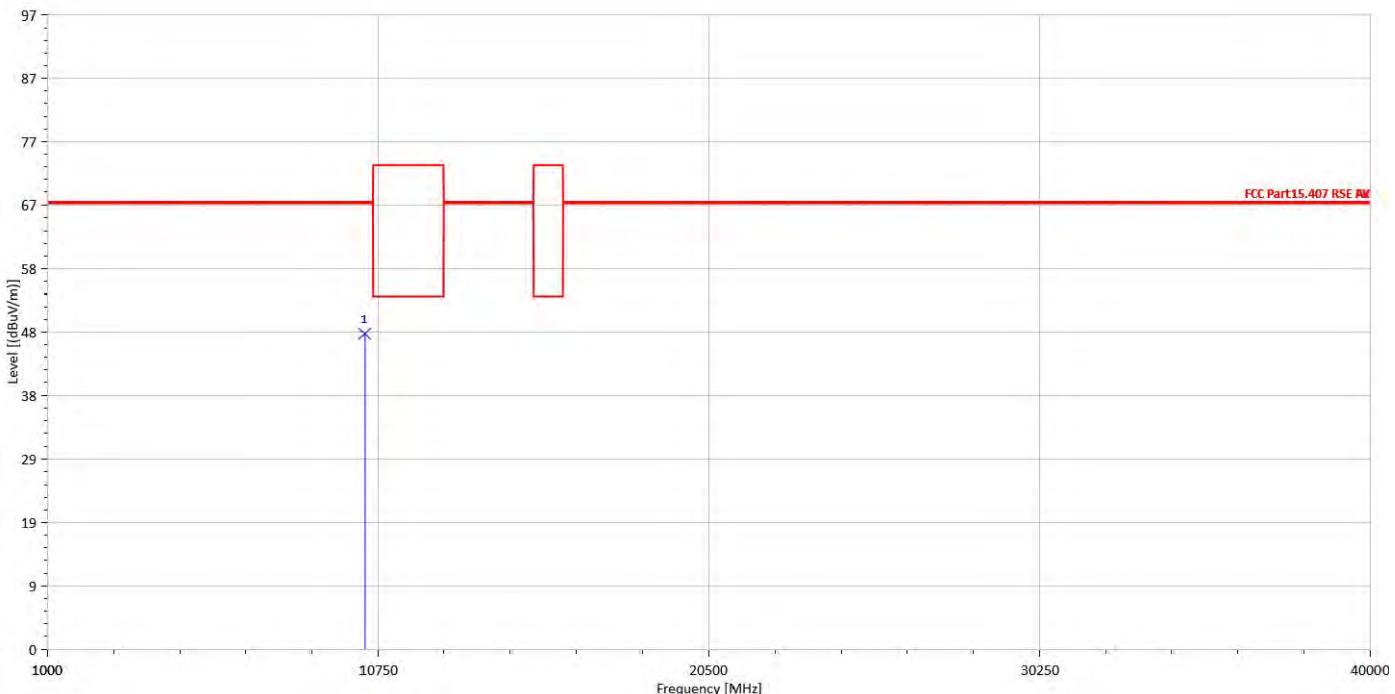
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10360.00	H	Peak	30.64	17.62	48.26	68.3	-20.04

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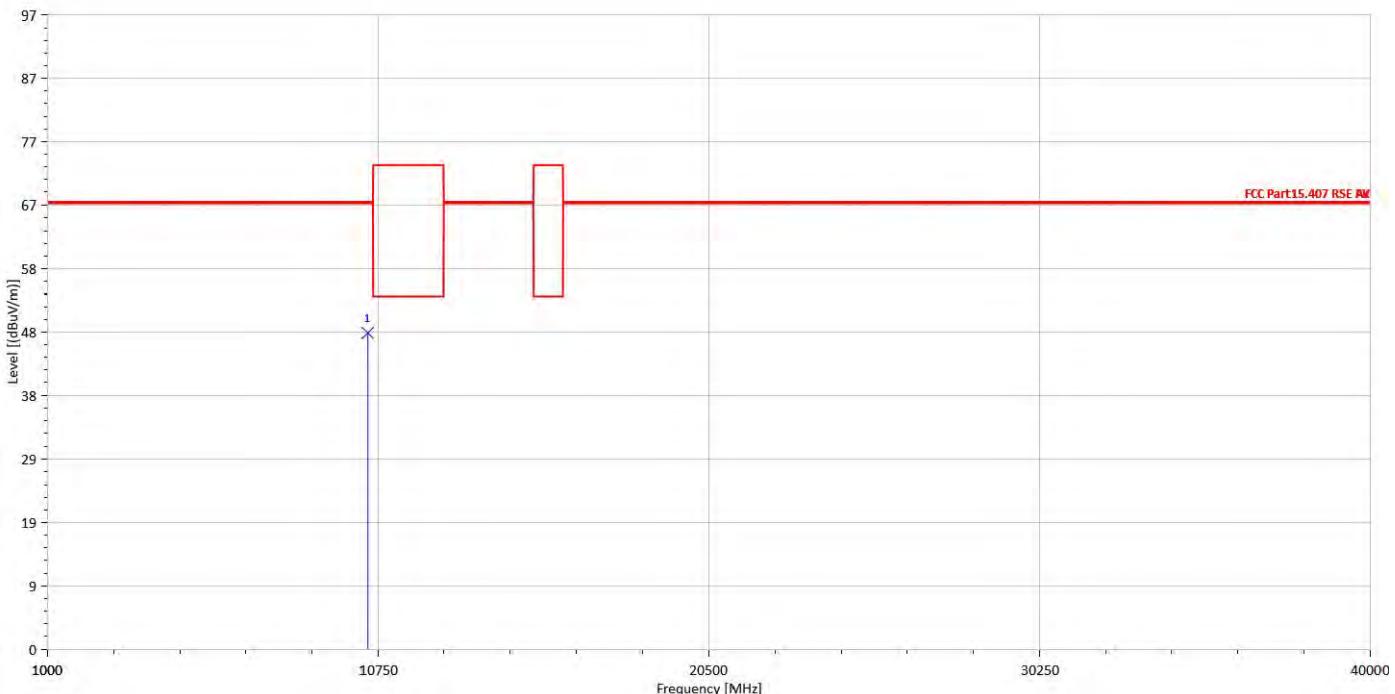
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	H	Peak	30.74	17.65	48.40	68.3	-19.90

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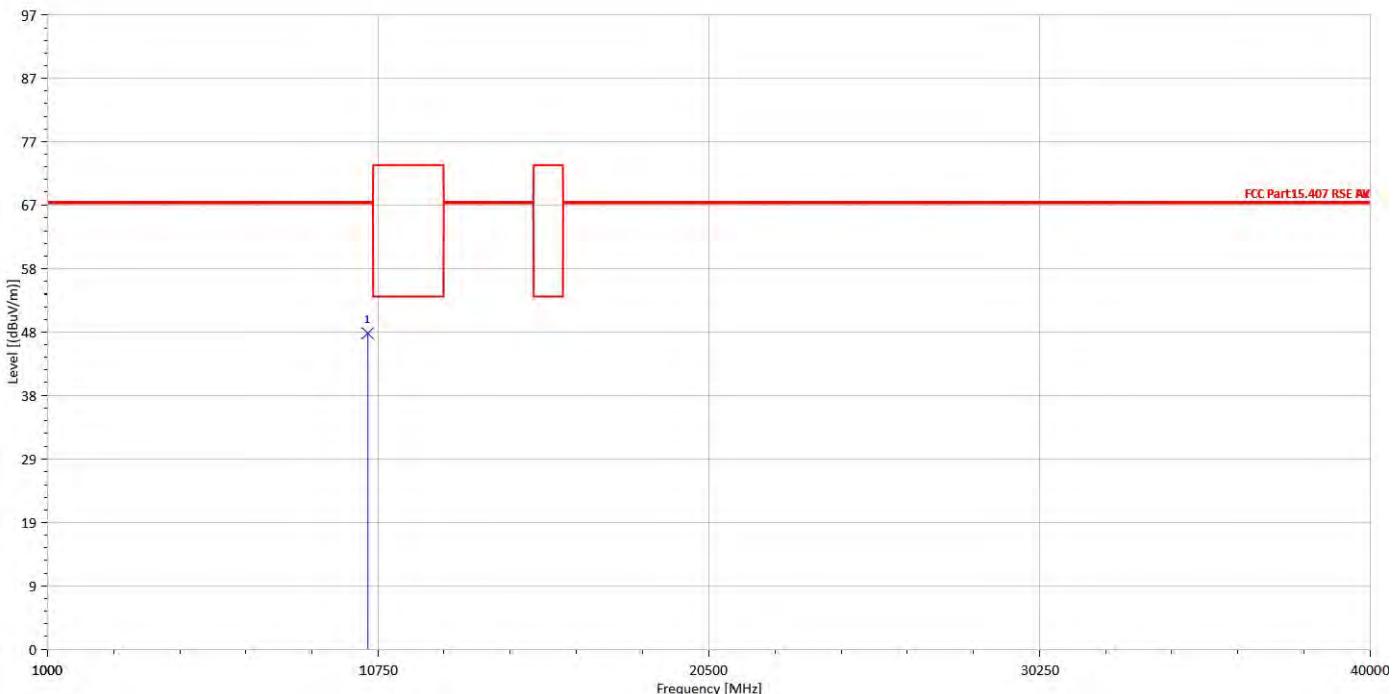
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10440.00	H	Peak	30.68	17.65	48.34	68.3	-19.96

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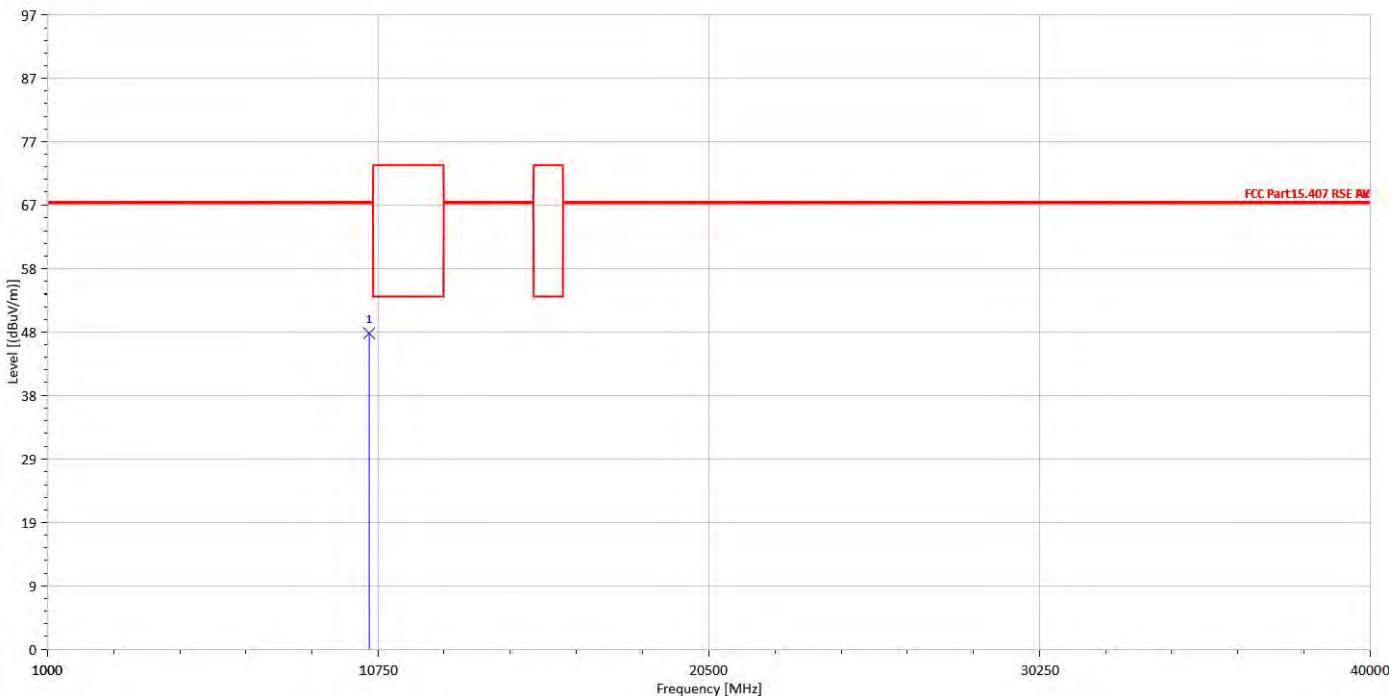
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10480.00	H	Peak	30.34	18.00	48.34	68.3	-19.96

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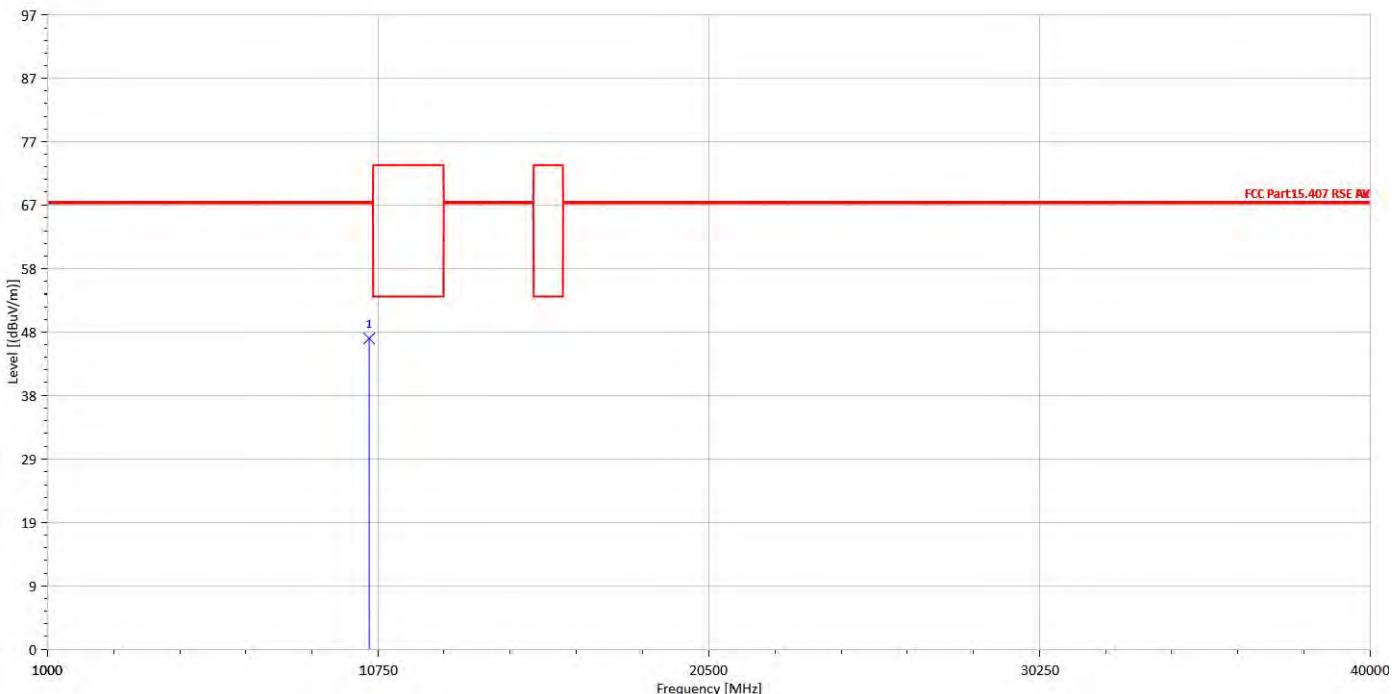
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	H	Peak	29.53	18.00	47.53	68.3	-20.77

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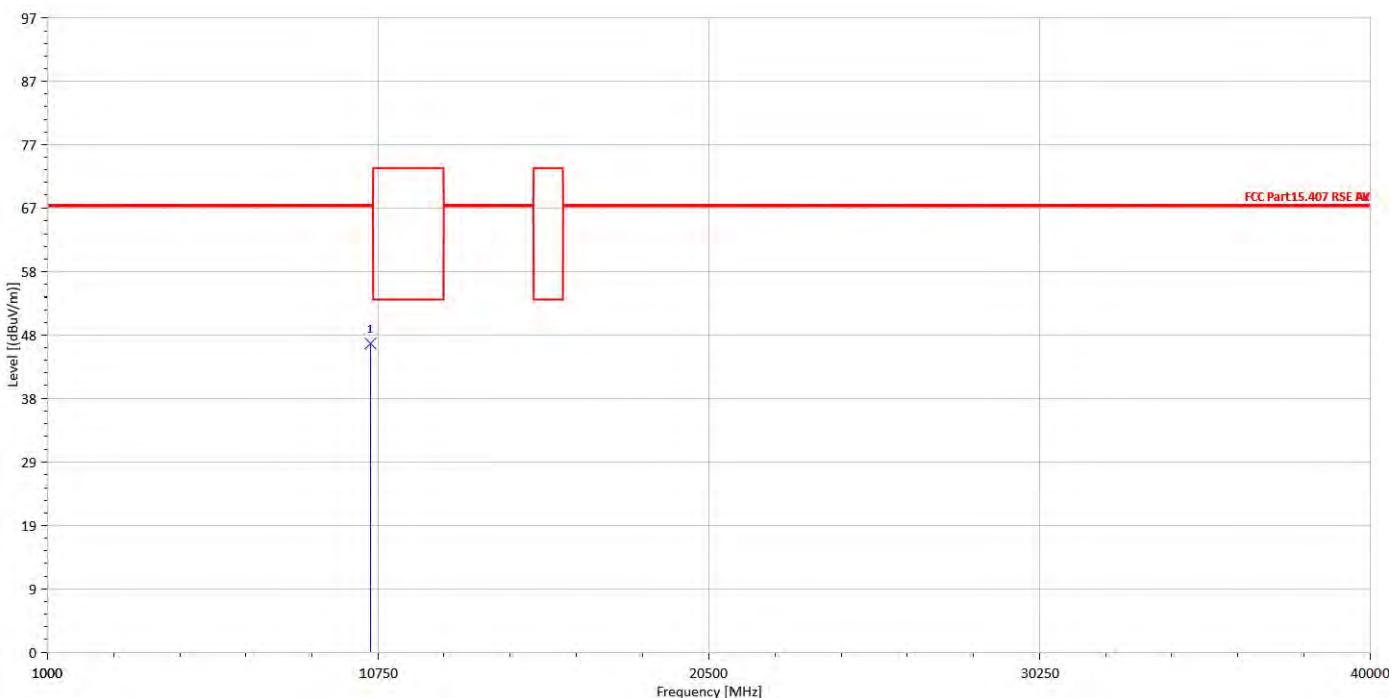
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**Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz**

Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10520.00	H	Peak	29.83	17.39	47.21	68.3	-21.09

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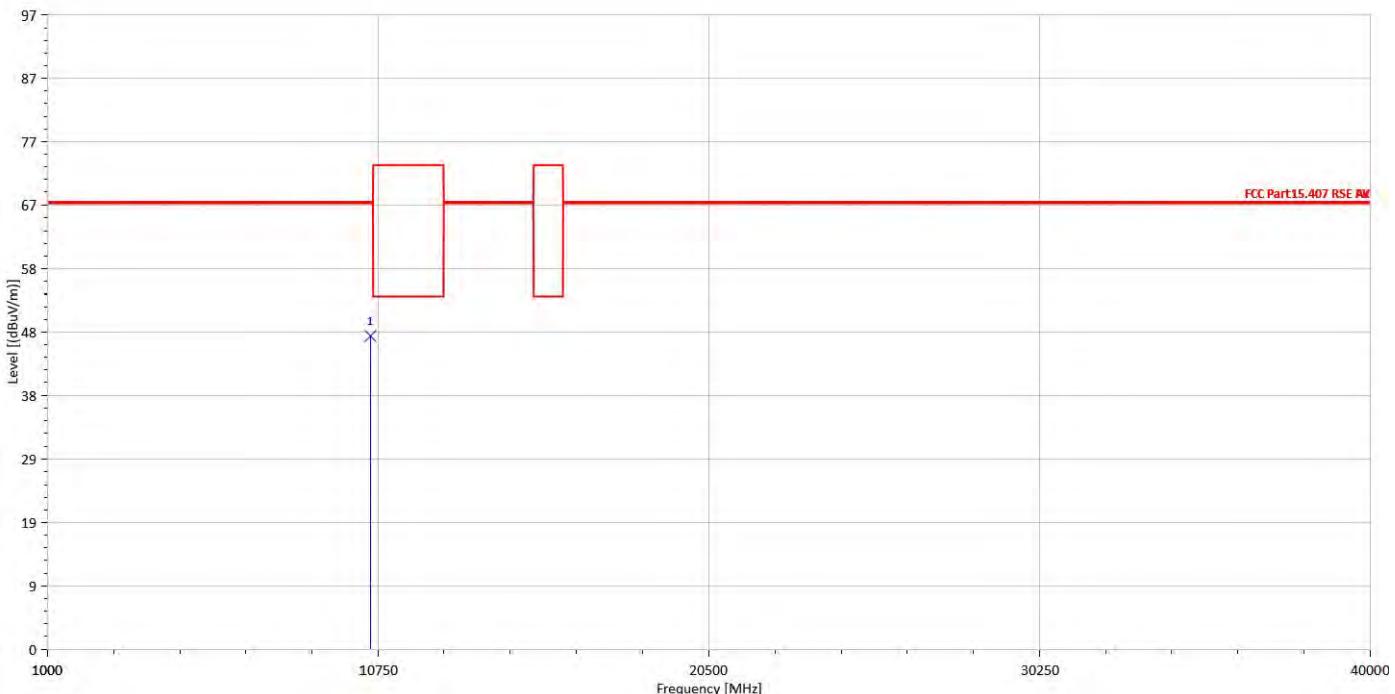
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10520.00	H	Peak	30.52	17.39	47.91	68.3	-20.39

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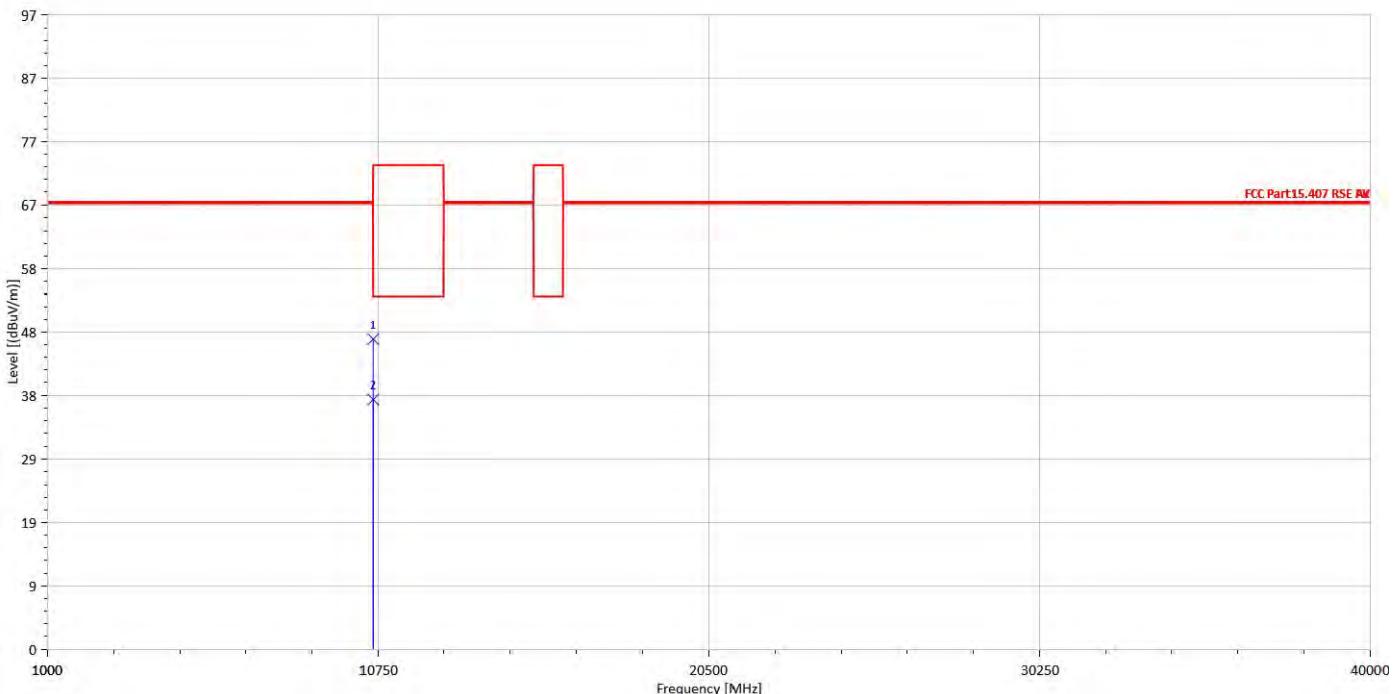
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
10600.00	H	Peak	30.02	17.41	47.42	74	-26.58
10600.00	H	Average	20.84	17.41	38.25	54	-15.75

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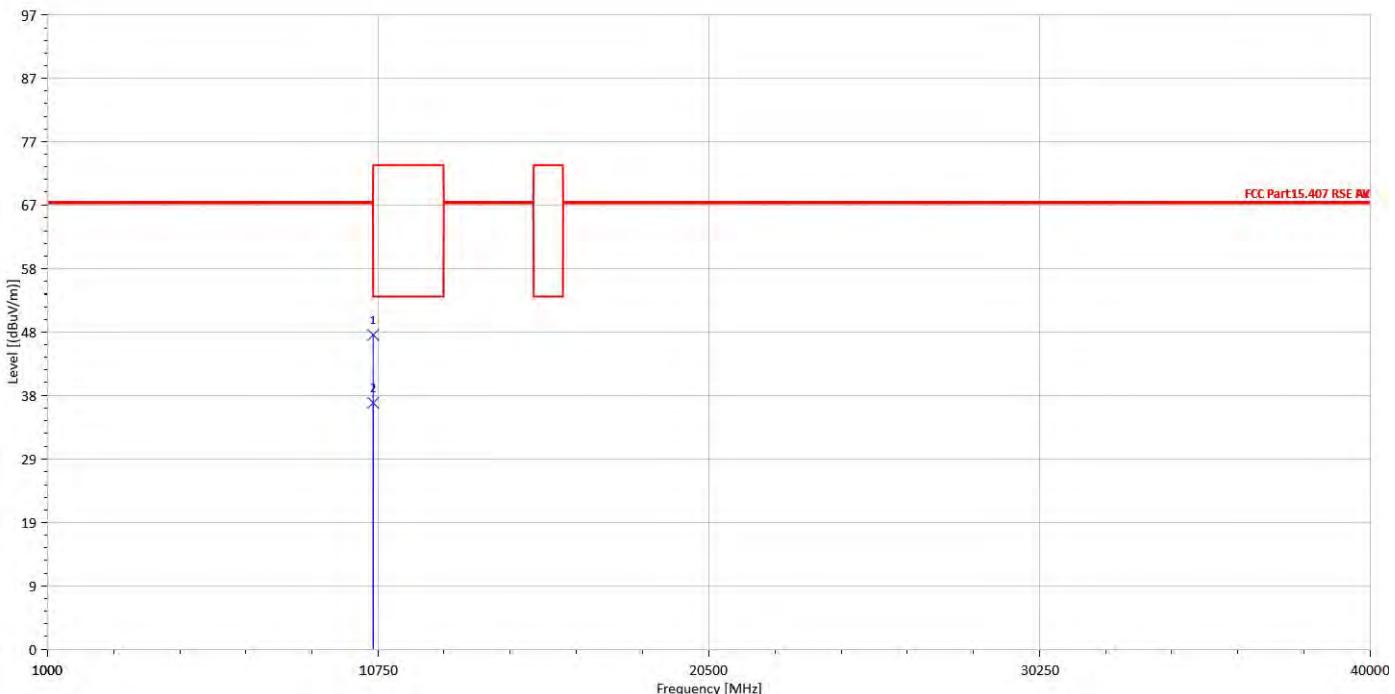
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10600.00	H	Peak	30.67	17.41	48.08	74	-25.92
10600.00	H	Average	20.32	17.41	37.73	54	-16.27

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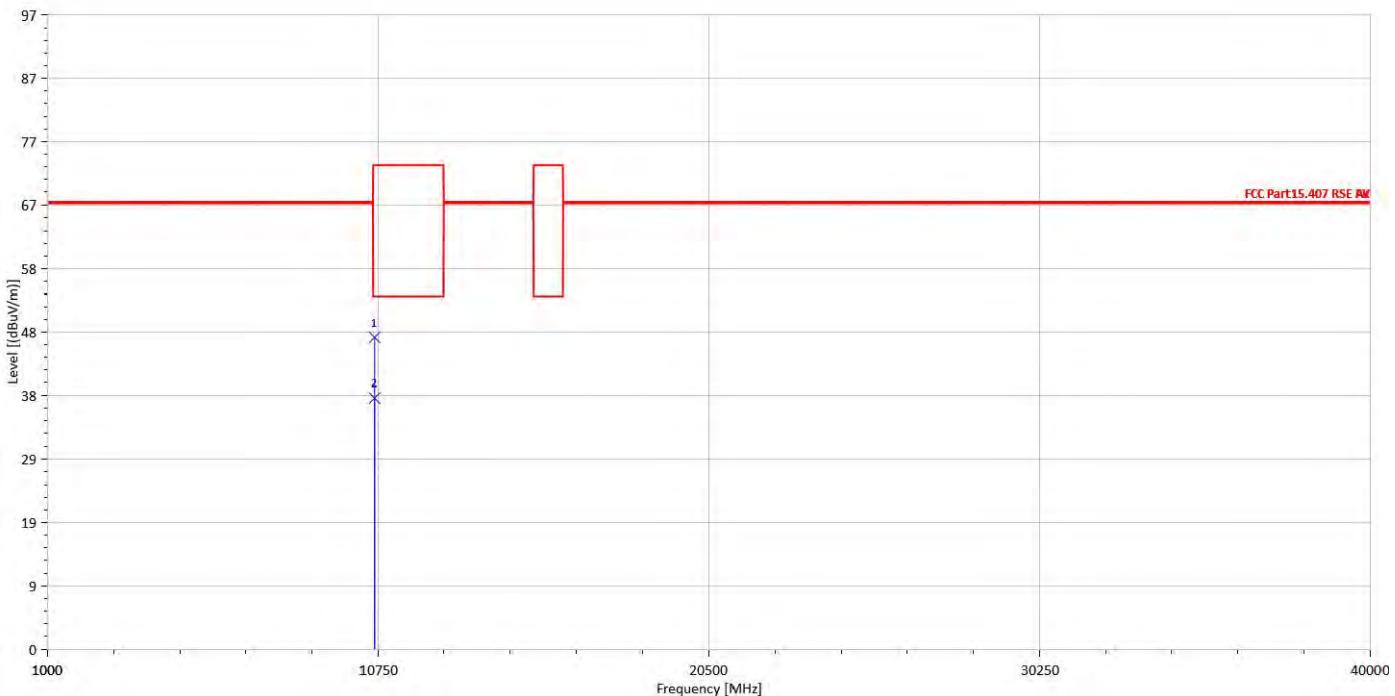
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
10640.00	H	Peak	30.13	17.56	47.70	74	-26.30
10640.00	H	Average	20.90	17.56	38.46	54	-15.54

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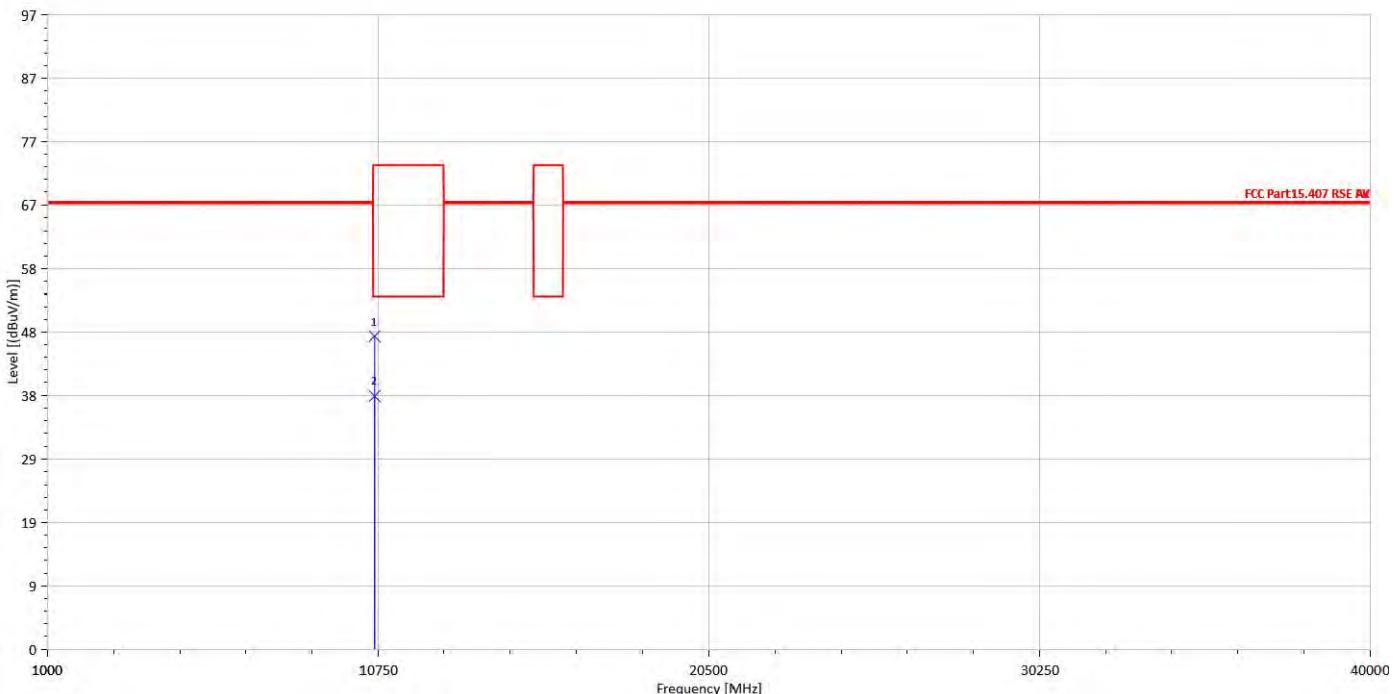
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
10640.00	H	Peak	30.31	17.56	47.87	74	-26.13
10640.00	H	Average	21.21	17.56	38.77	54	-15.23

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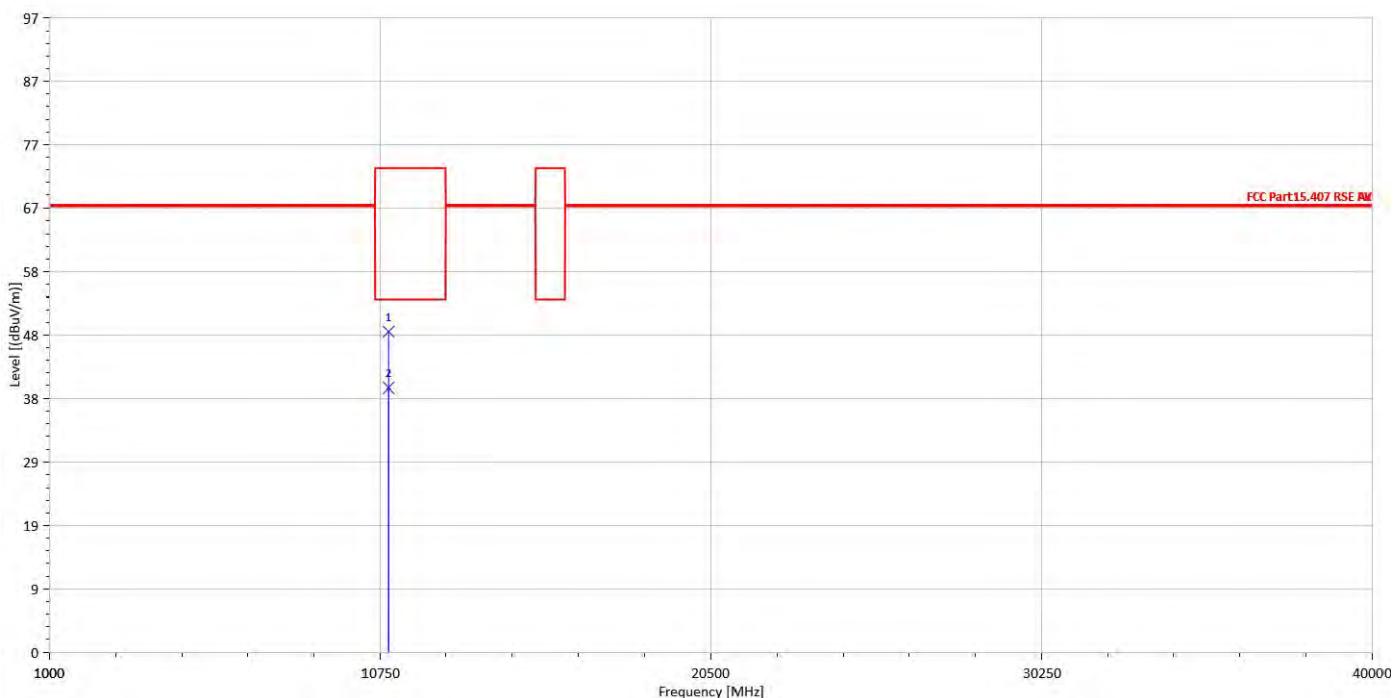
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**Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz**

Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11000.00	H	Peak	29.95	19.11	49.05	74	-24.95
11000.00	H	Average	21.32	19.11	40.43	54	-13.57

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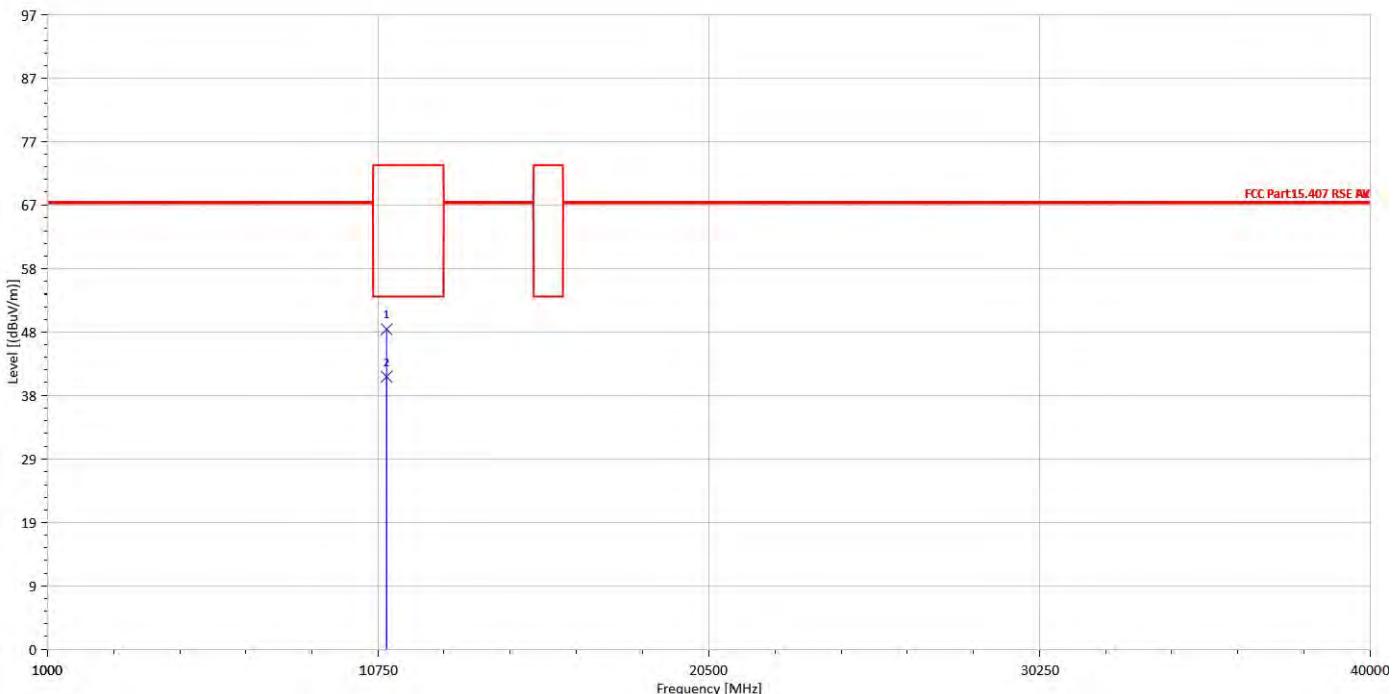
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11000.00	H	Peak	29.84	19.11	48.95	74	-25.05
11000.00	H	Average	22.52	19.11	41.63	54	-12.37

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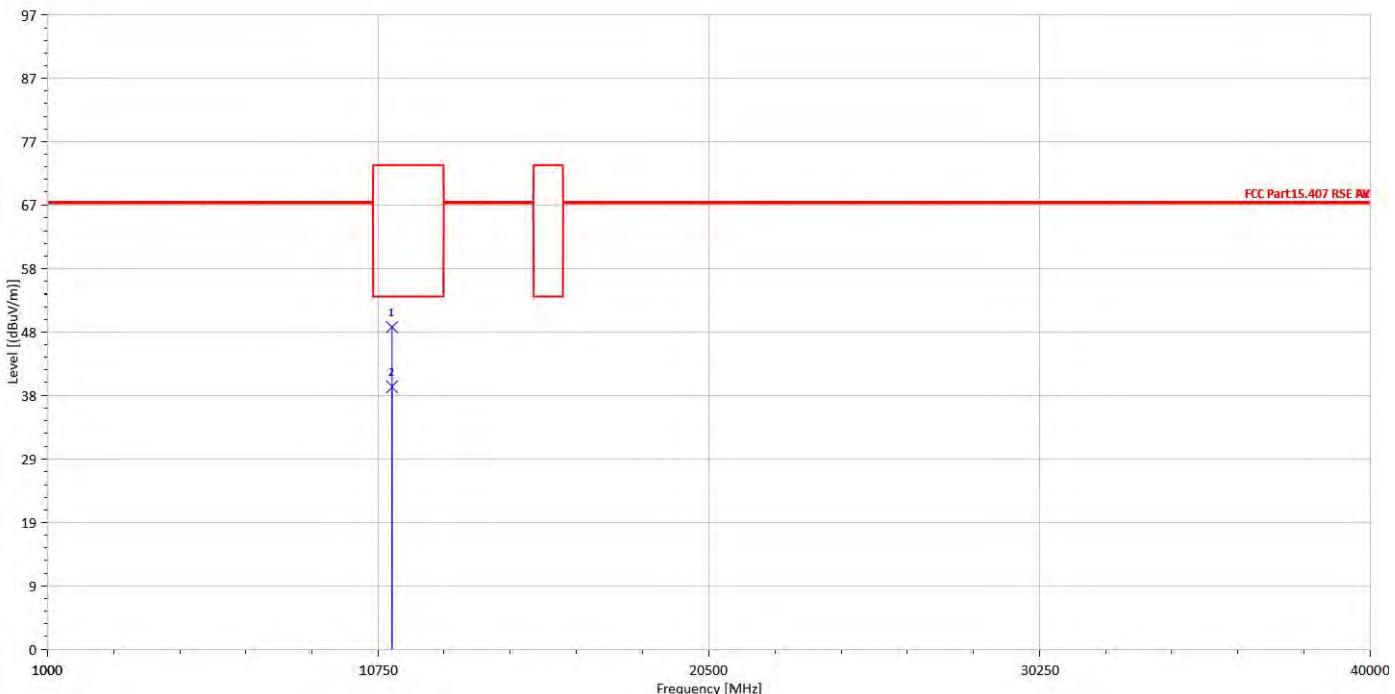
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11160.00	H	Peak	30.03	19.26	49.29	74	-24.71
11160.00	H	Average	20.88	19.26	40.14	54	-13.86

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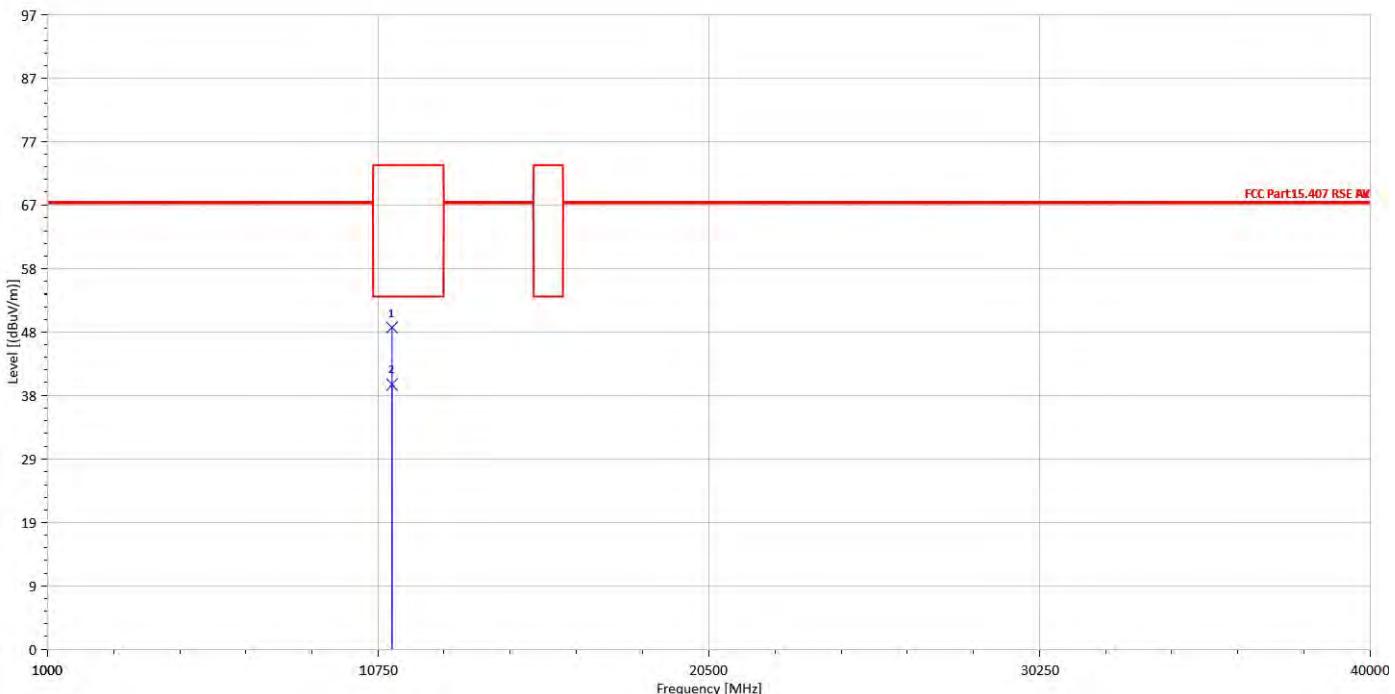
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11160.00	H	Peak	29.96	19.26	49.22	74	-24.78
11160.00	H	Average	21.22	19.26	40.48	54	-13.52

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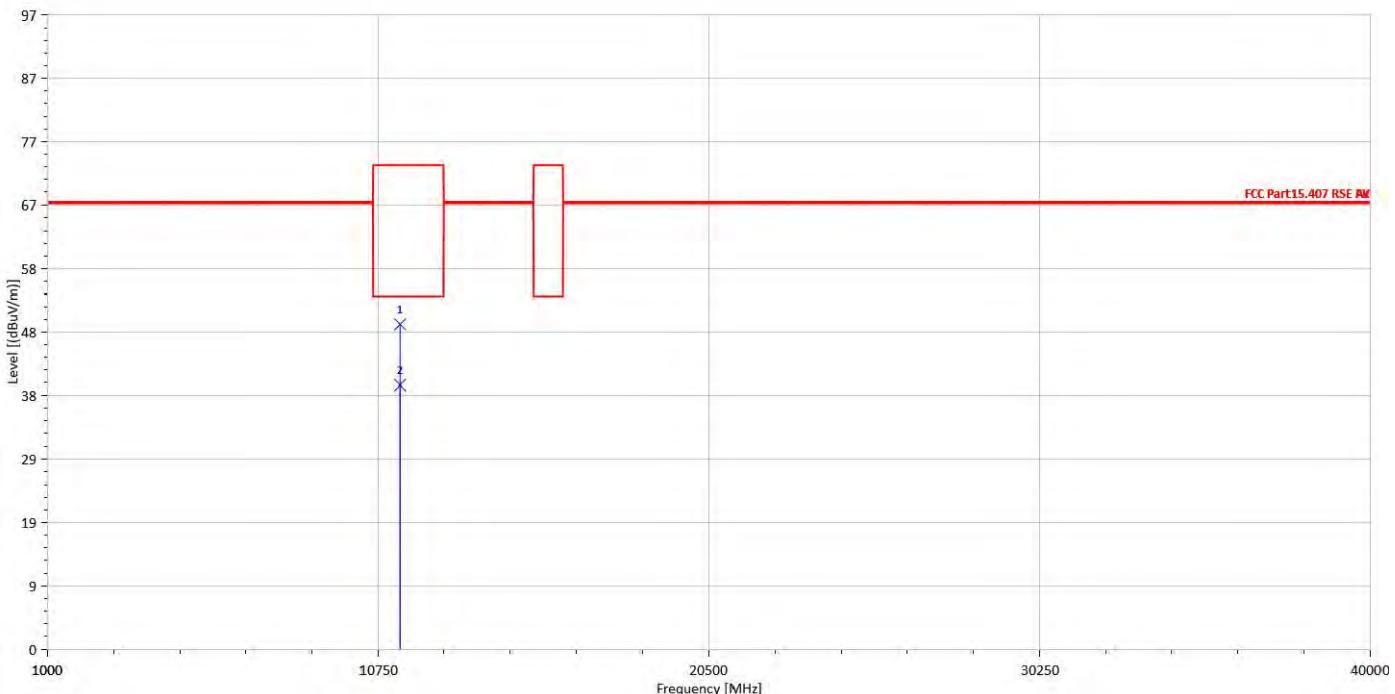
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11400.00	H	Peak	30.95	18.78	49.72	74	-24.28
11400.00	H	Average	21.62	18.78	40.40	54	-13.60

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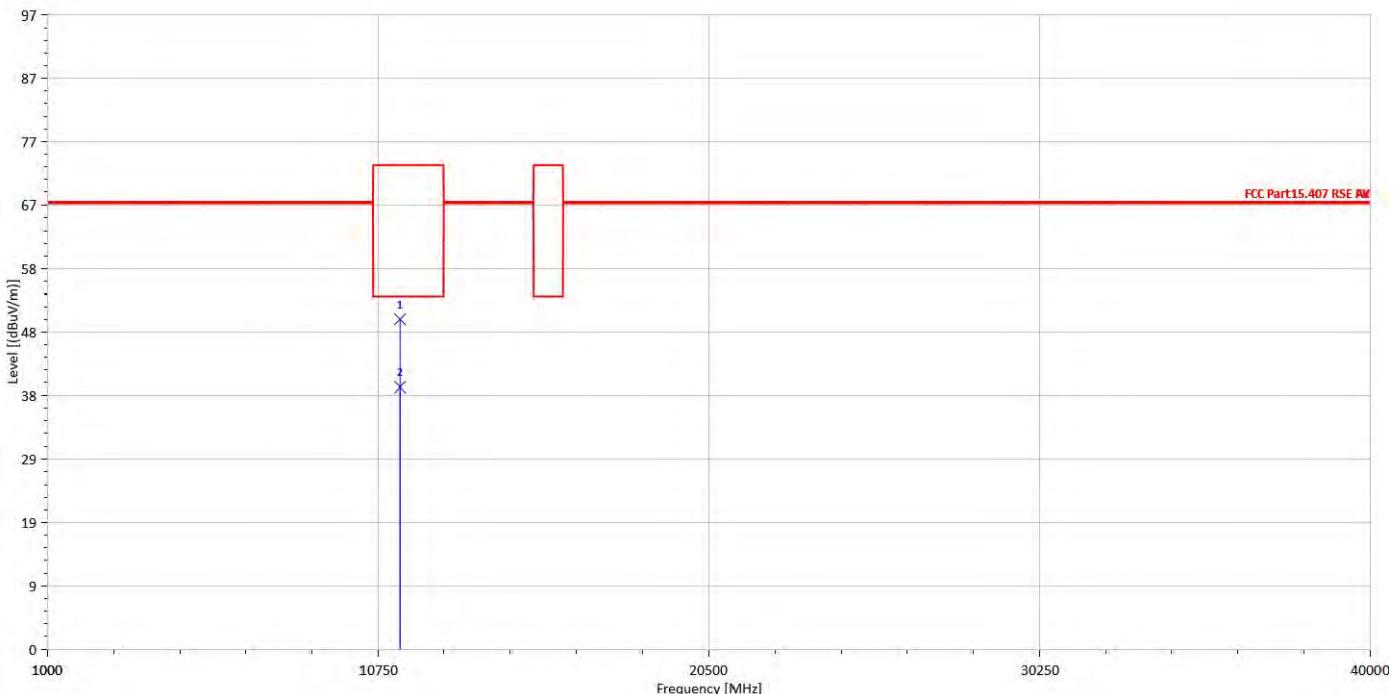
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11400.00	H	Peak	31.72	18.78	50.49	74	-23.51
11400.00	H	Average	21.31	18.78	40.09	54	-13.91

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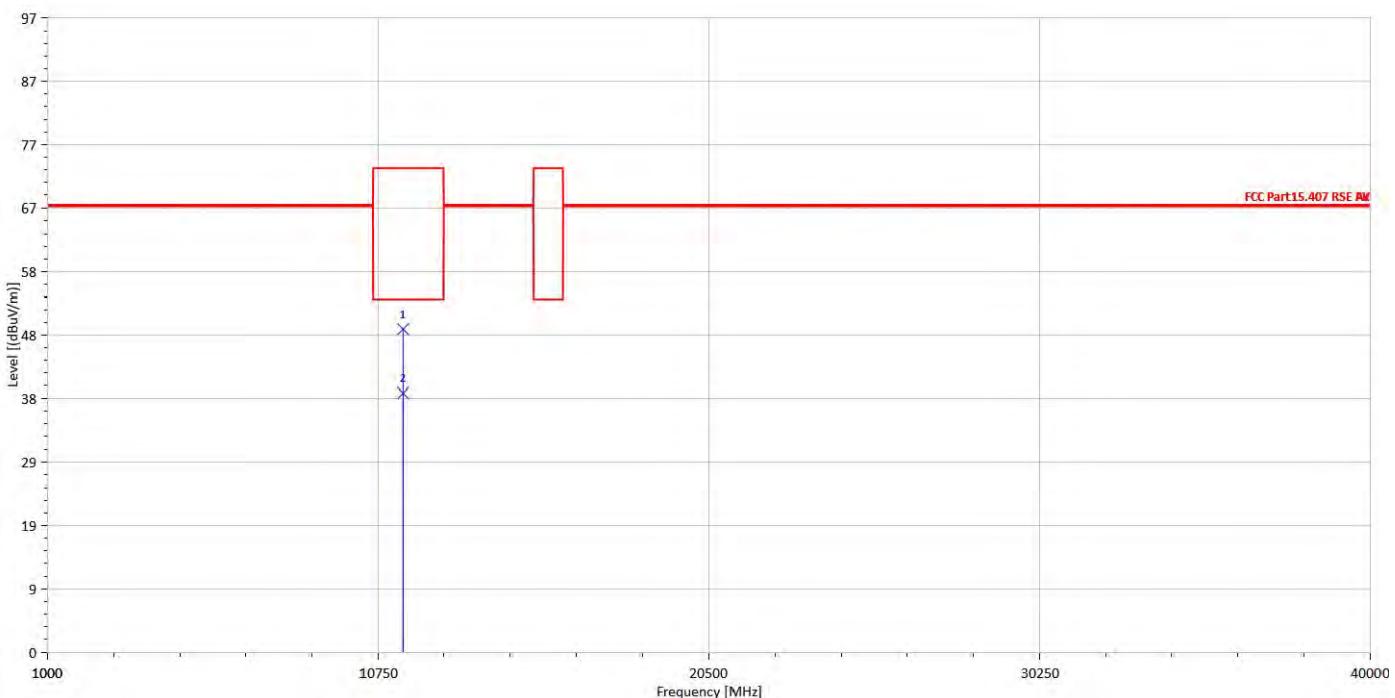
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**Radiated Spurious Emission Measurement Result 802.11a, 5725~5850 MHz**

Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11490.00	H	Peak	31.05	18.39	49.44	74	-24.56
11490.00	H	Average	21.27	18.39	39.66	54	-14.34

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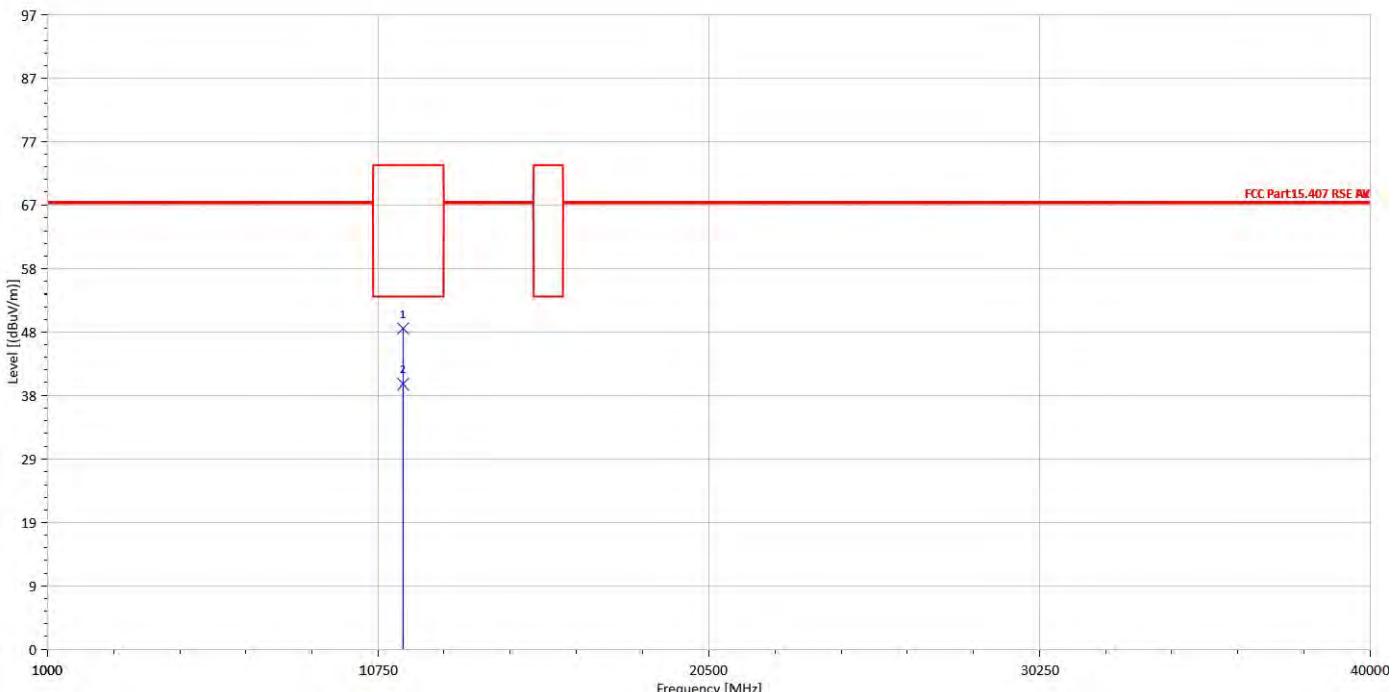
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11490.00	H	Peak	30.70	18.39	49.09	74	-24.91
11490.00	H	Average	22.16	18.39	40.55	54	-13.45

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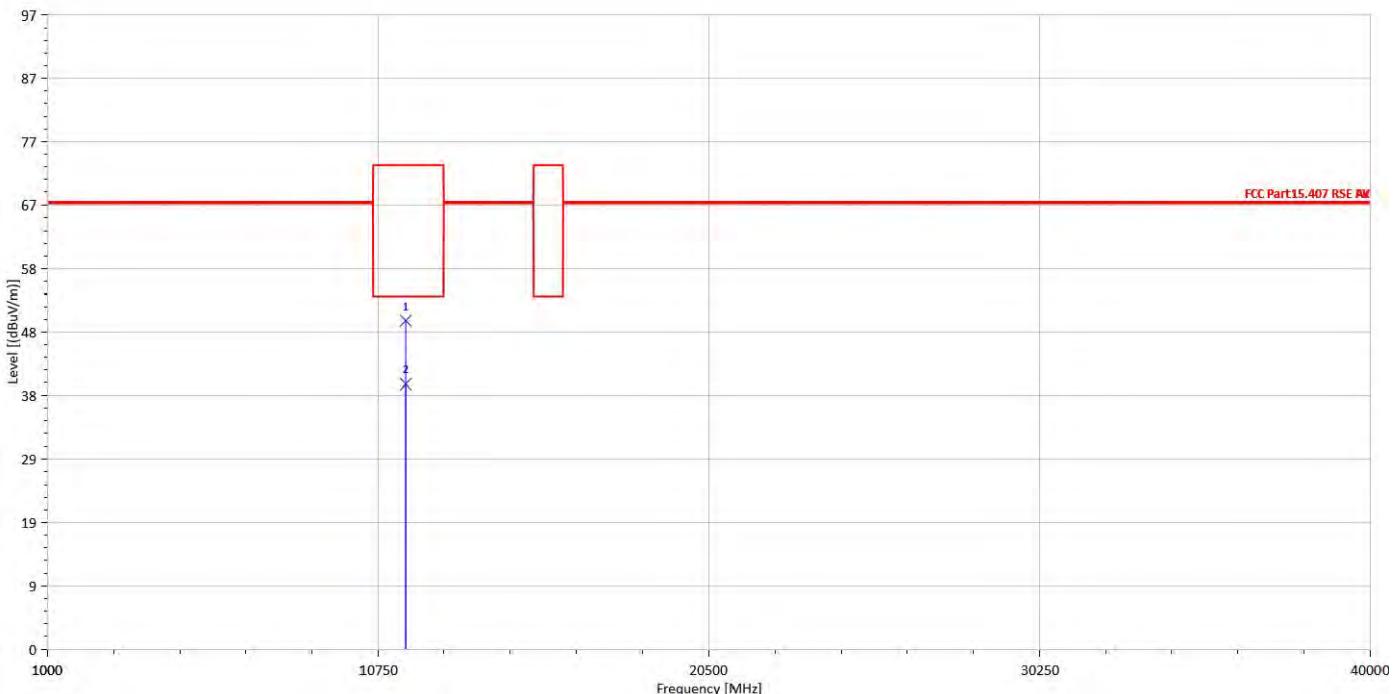
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5785 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11570.00	H	Peak	30.89	19.38	50.28	74	-23.72
11570.00	H	Average	21.15	19.38	40.53	54	-13.47

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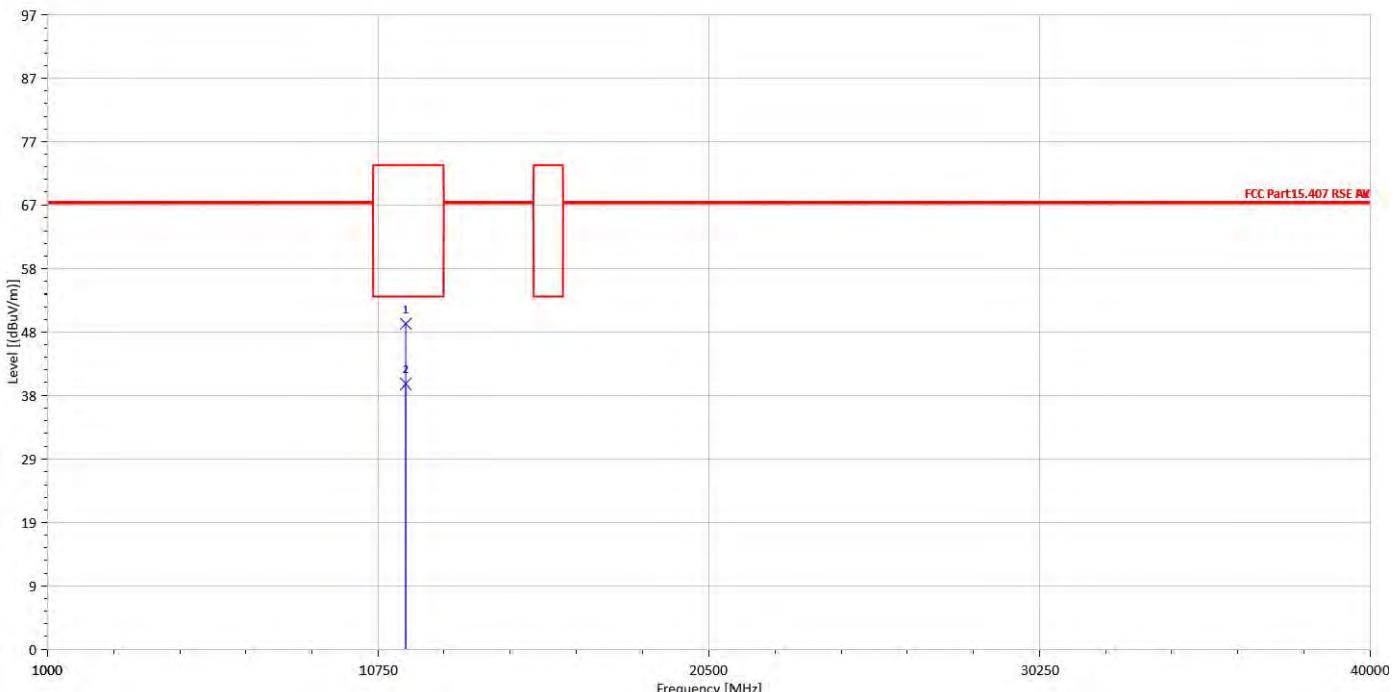
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5785 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11570.00	H	Peak	30.43	19.38	49.81	74	-24.19
11570.00	H	Average	21.19	19.38	40.57	54	-13.43

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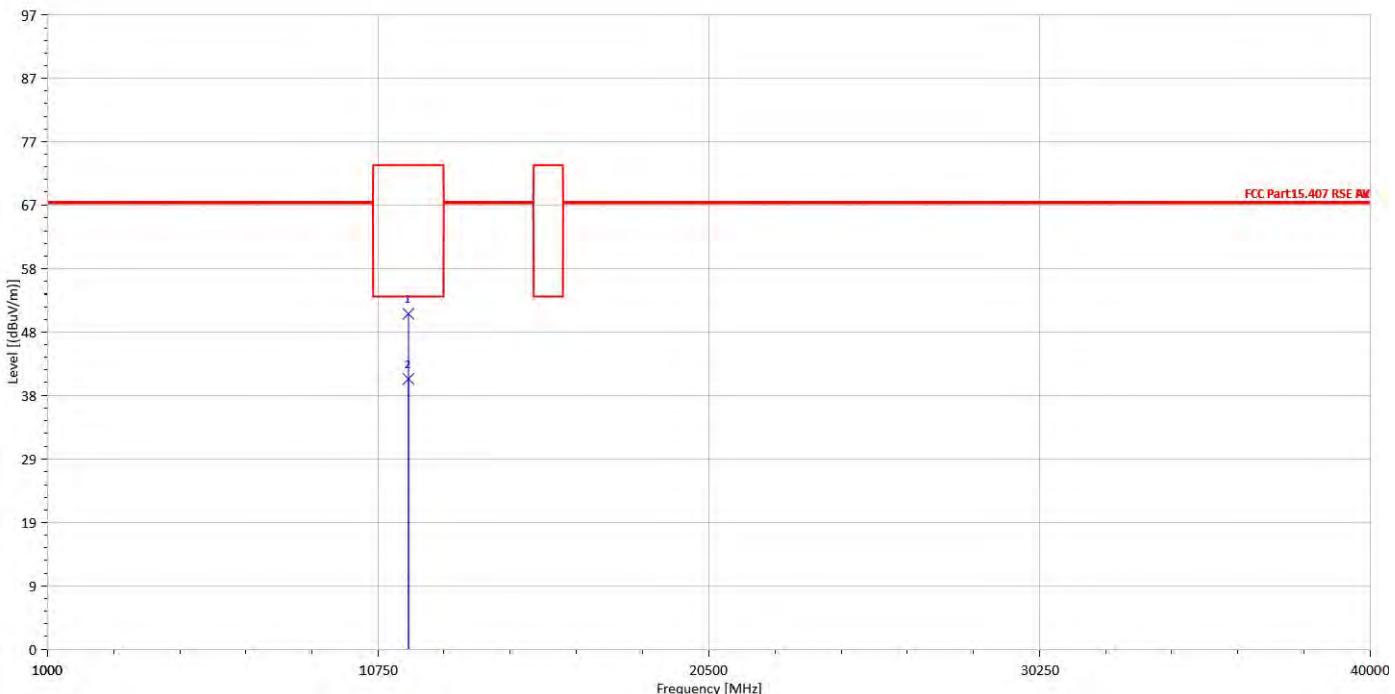
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11650.00	H	Peak	31.10	20.23	51.34	74	-22.66
11650.00	H	Average	21.06	20.23	41.29	54	-12.71

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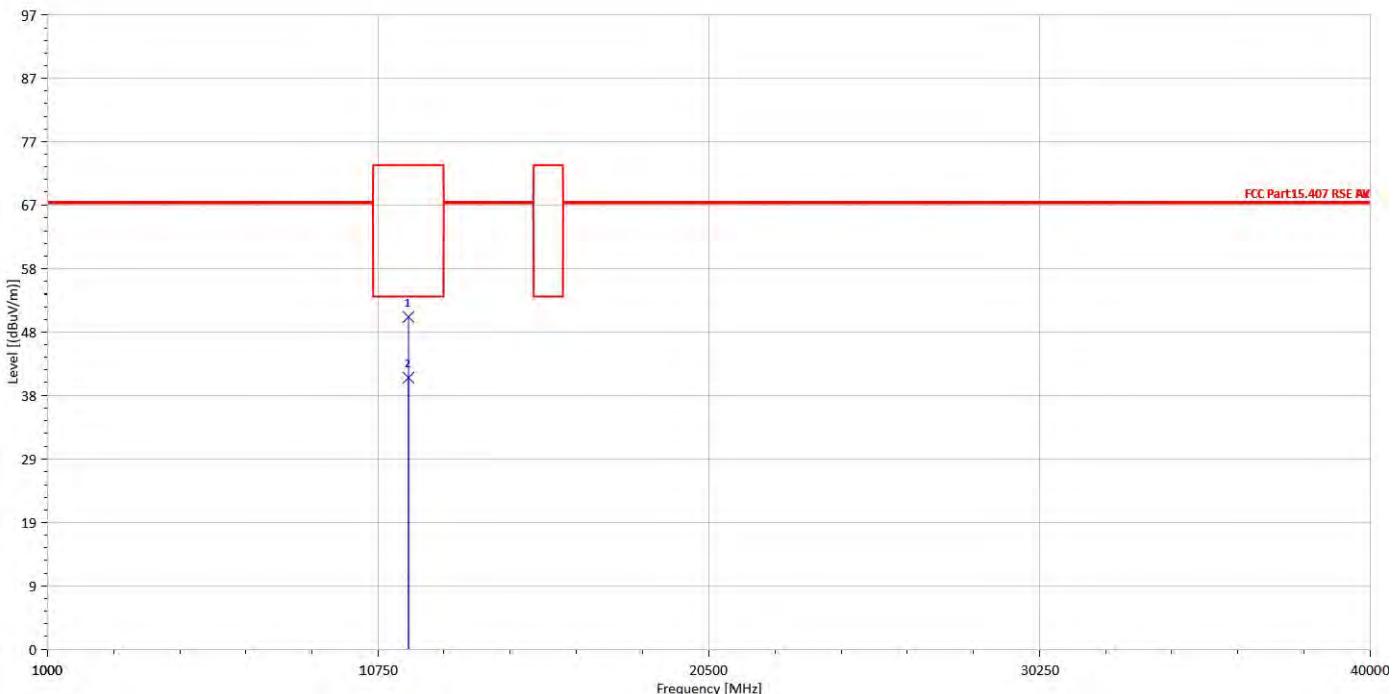
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Operation Mode : 802.11a Test Date : 2016/5/24  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Pony  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11650.00	H	Peak	30.62	20.23	50.85	74	-23.15
11650.00	H	Average	21.25	20.23	41.48	54	-12.52

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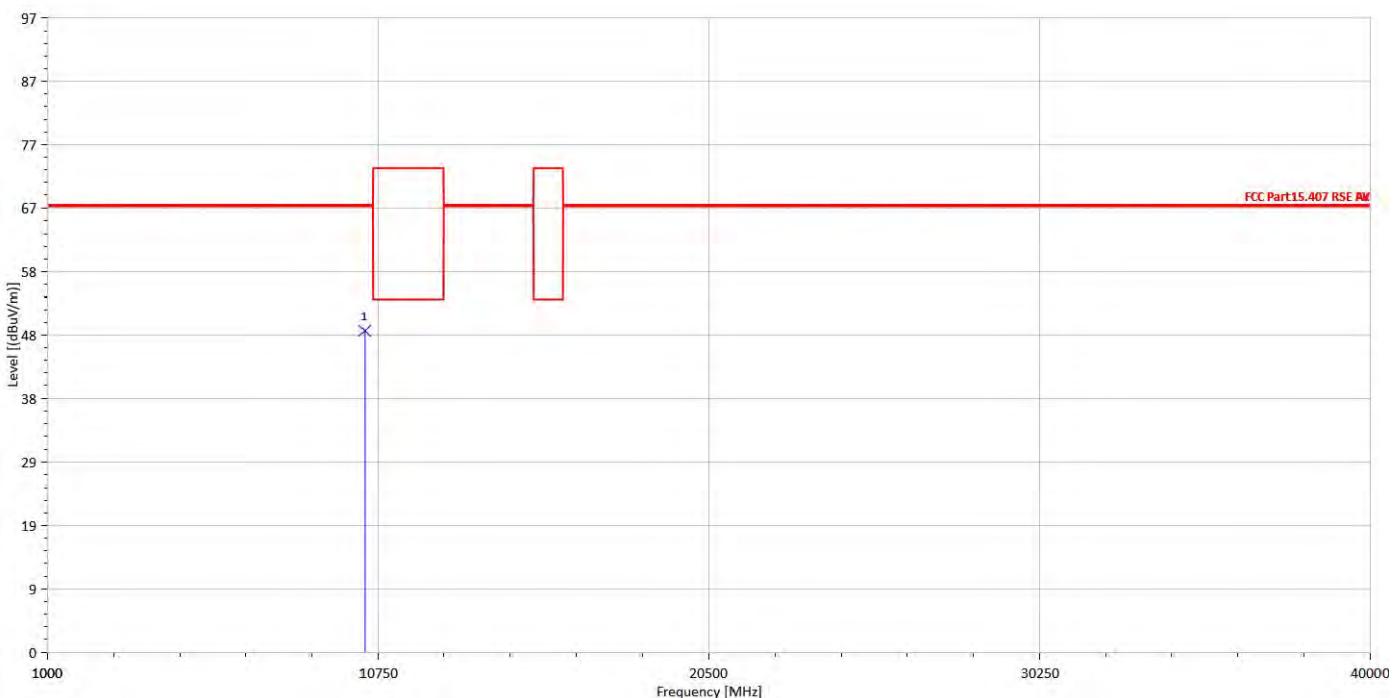
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz**

Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



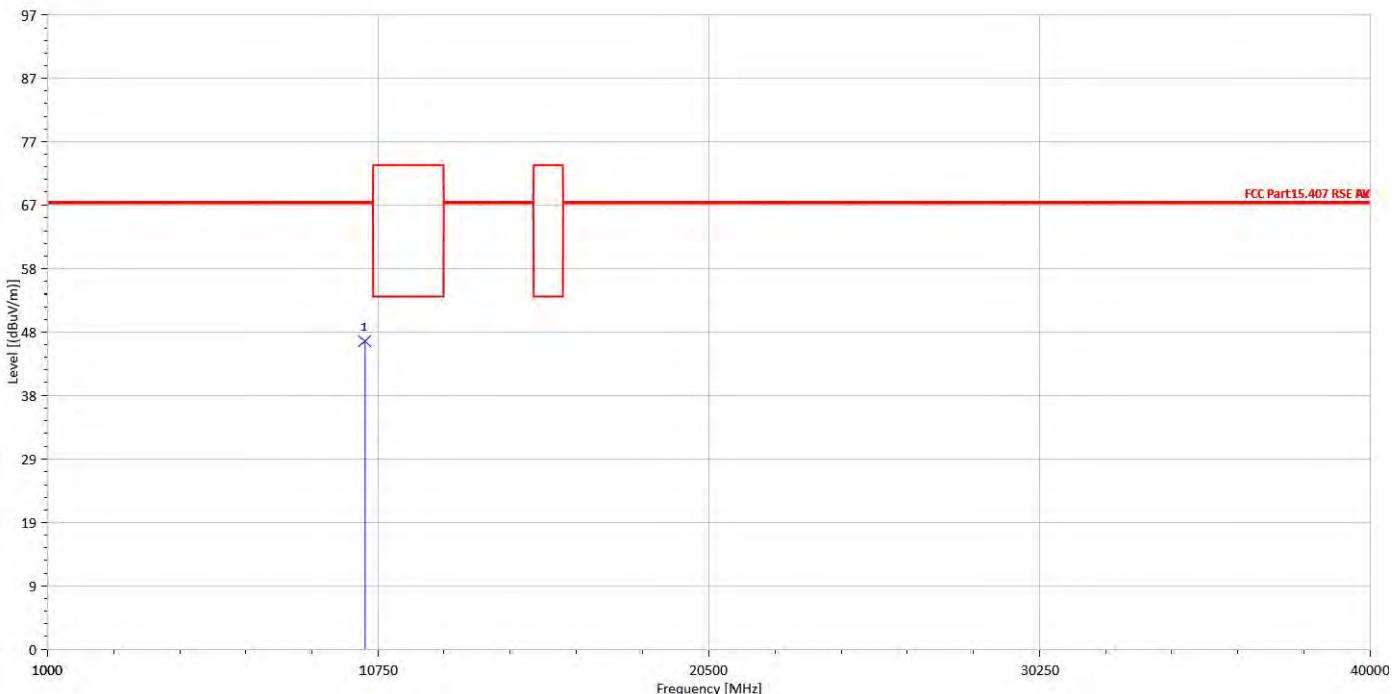
Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	H	Peak	31.57	17.62	49.19	68.3	-19.11

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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	H	Peak	29.49	17.62	47.11	68.3	-21.19

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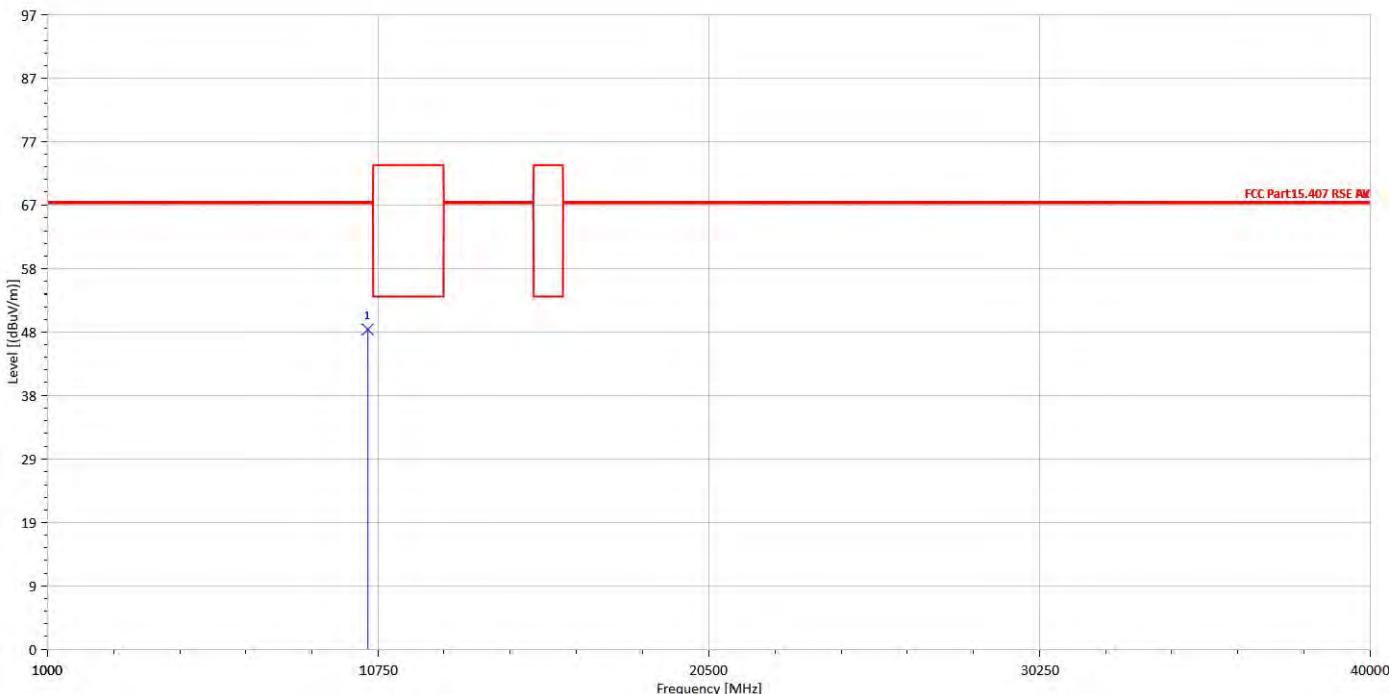
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10440.00	H	Peak	31.27	17.65	48.92	68.3	-19.38

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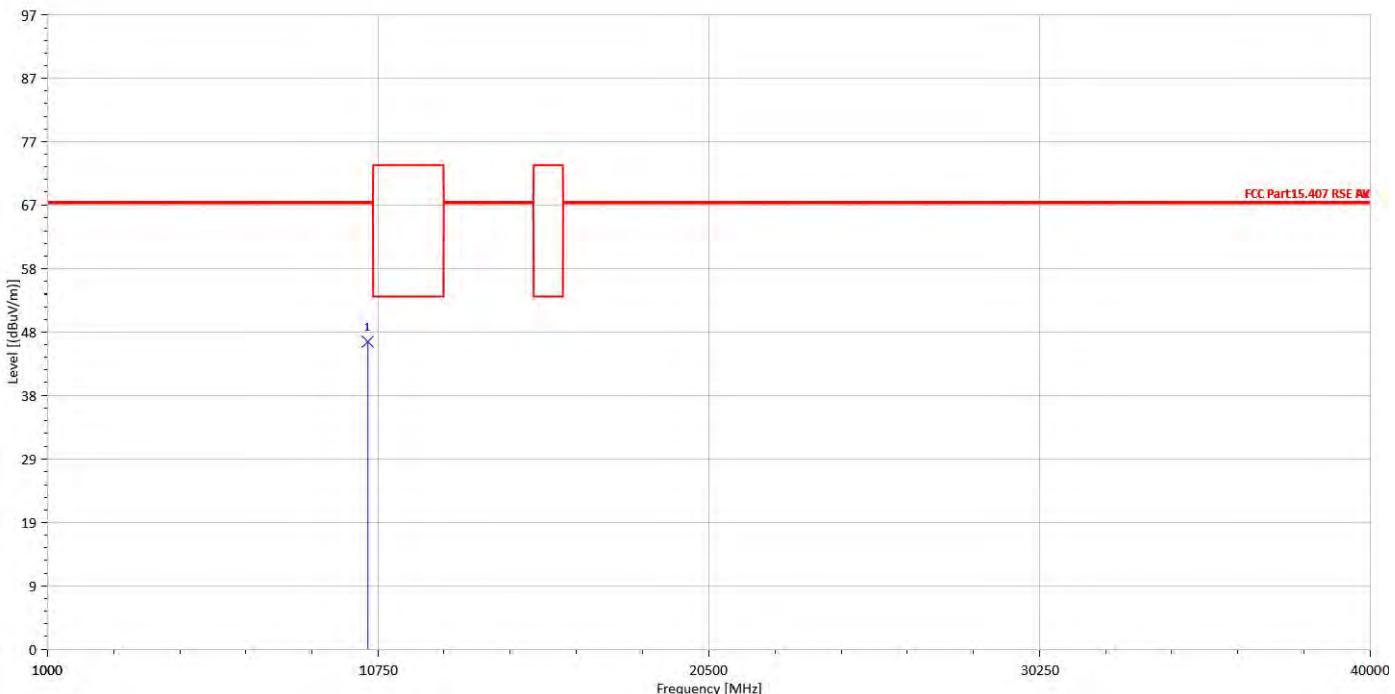
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	H	Peak	29.39	17.65	47.04	68.3	-21.26

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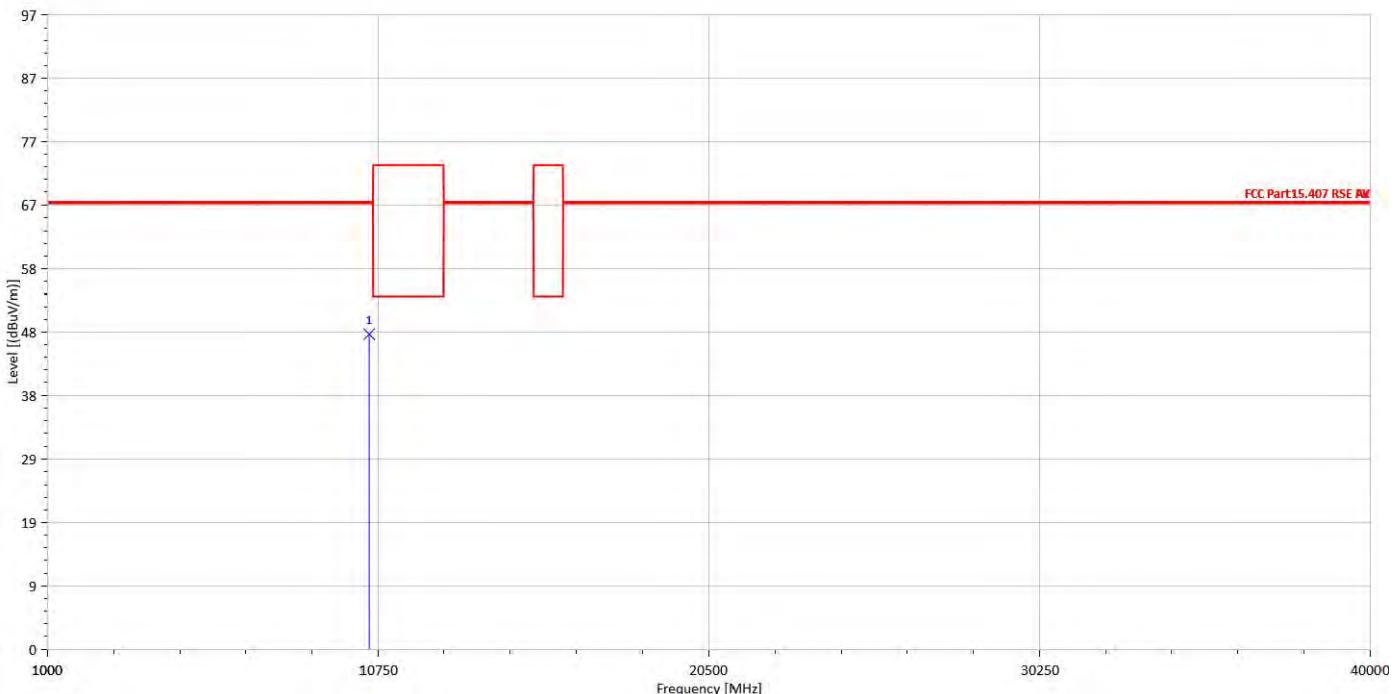
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	H	Peak	30.19	18.00	48.19	68.3	-20.11

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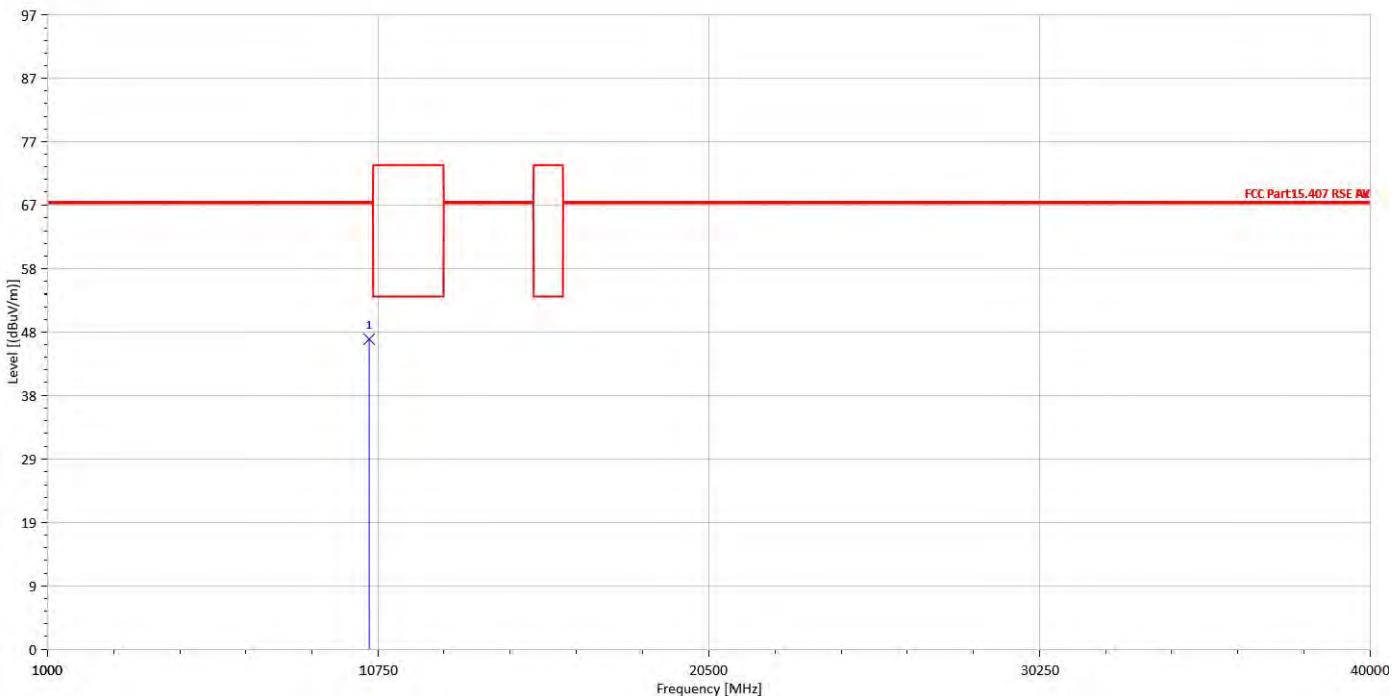
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10480.00	H	Peak	29.41	18.00	47.41	68.3	-20.89

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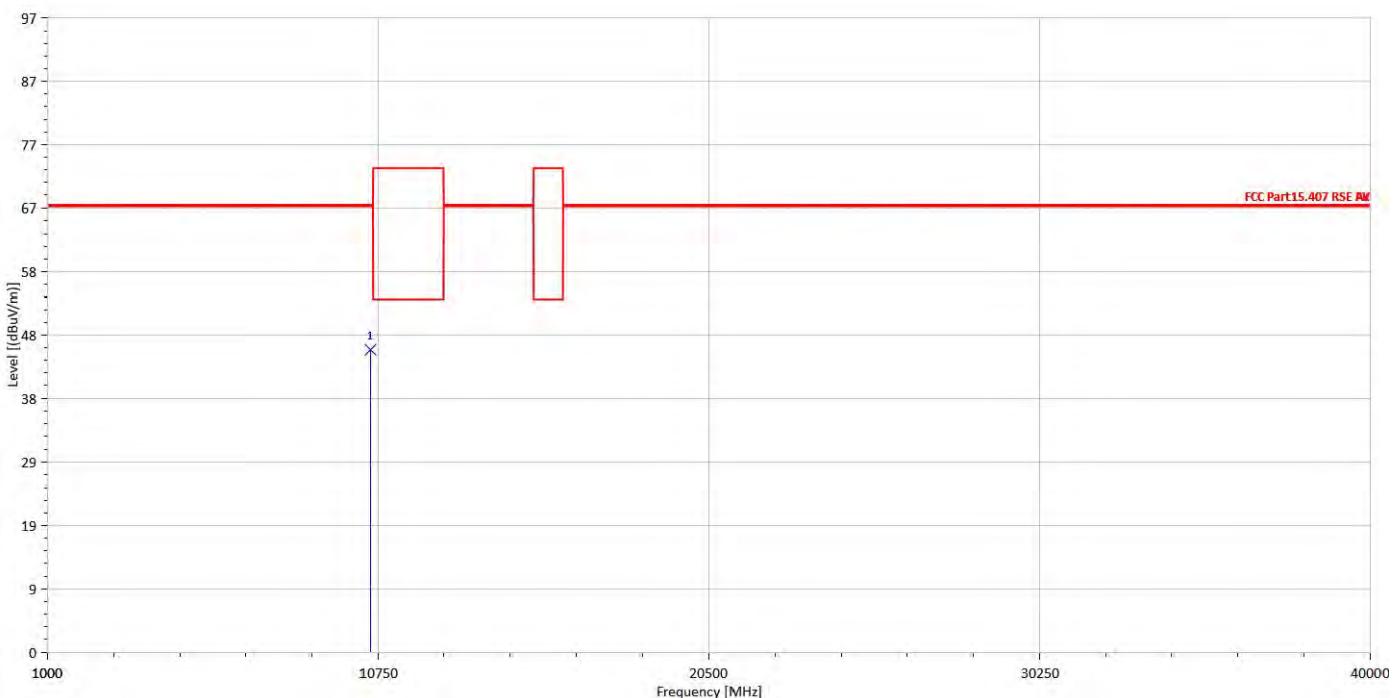
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5250~5350 MHz**

Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10520.00	H	Peak	28.86	17.39	46.25	68.3	-22.05

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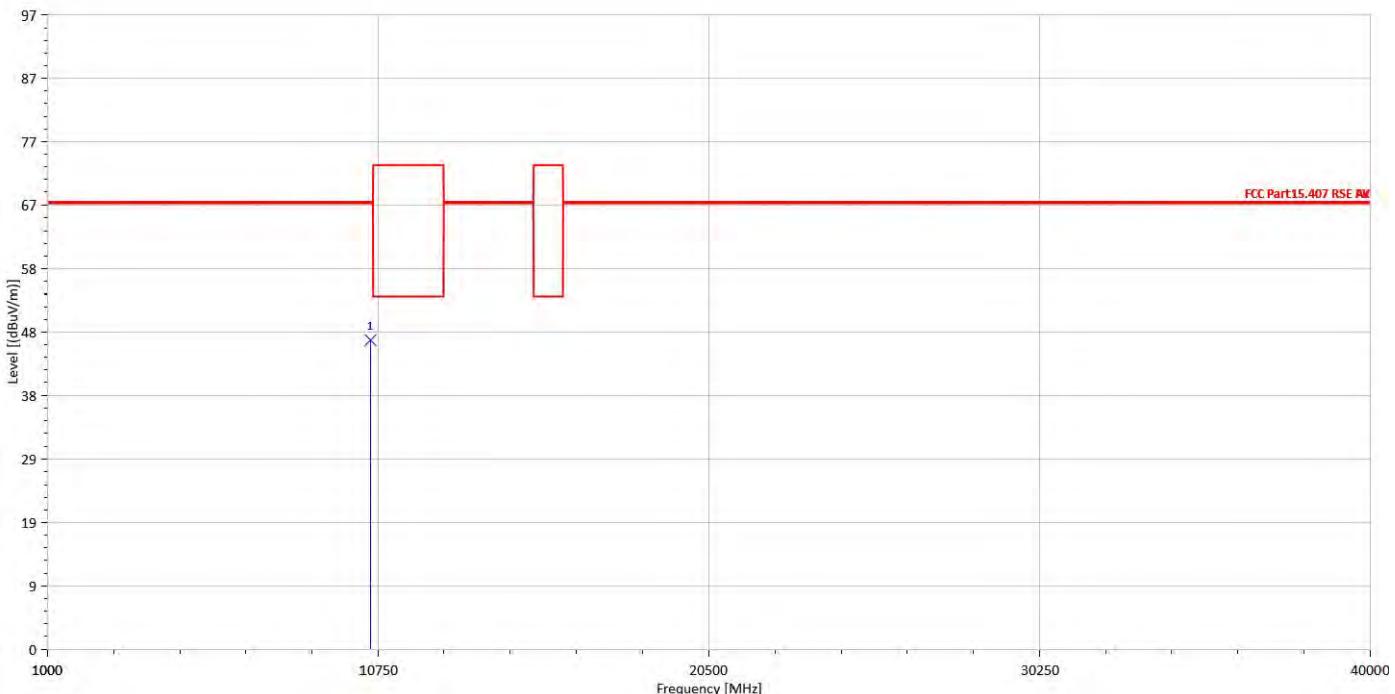
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10520.00	H	Peak	29.88	17.39	47.27	68.3	-21.03

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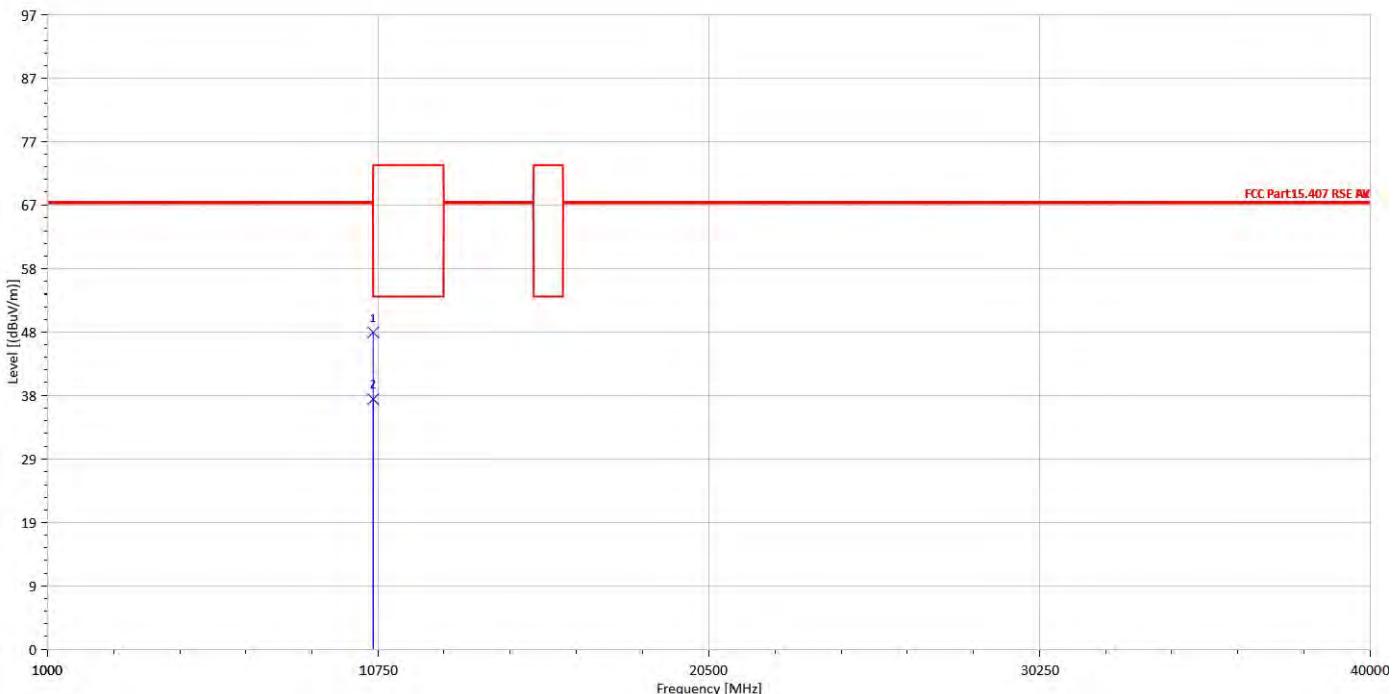
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10600.00	H	Peak	31.07	17.41	48.48	74	-25.52
10600.00	H	Average	20.89	17.41	38.30	54	-15.70

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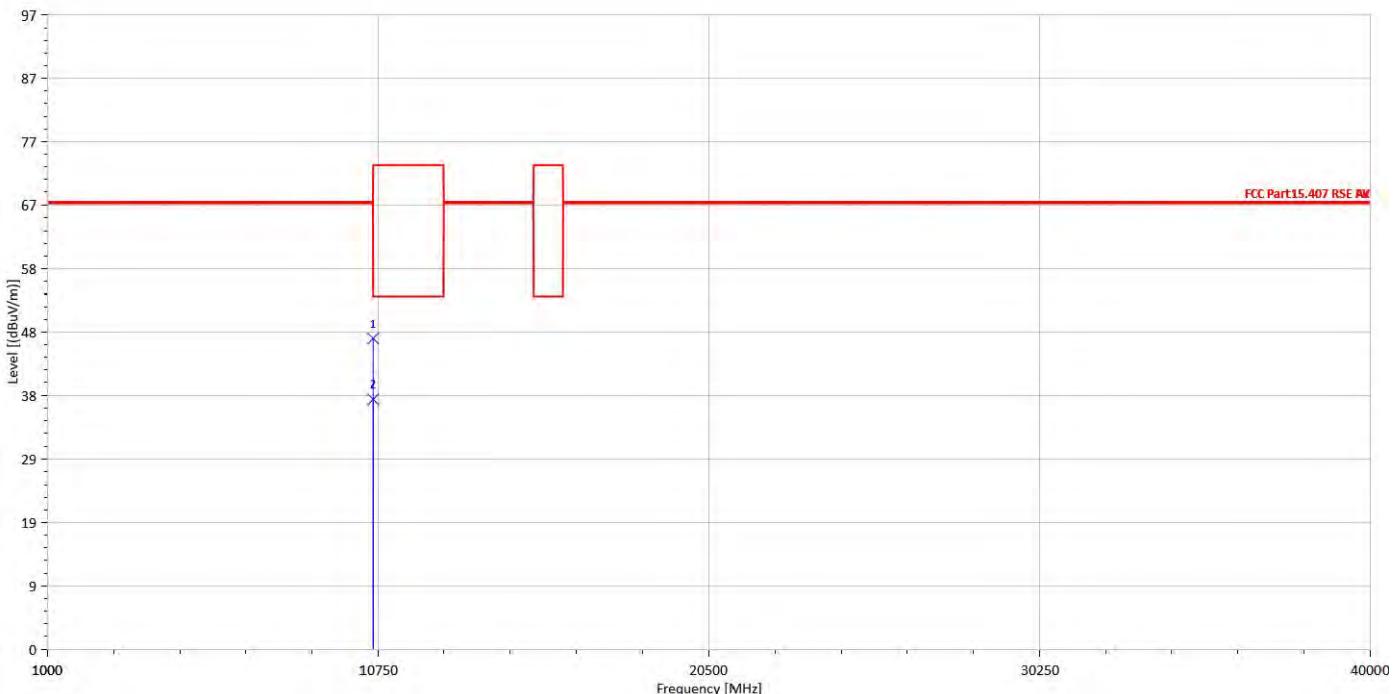
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10600.00	H	Peak	30.13	17.41	47.54	74	-26.46
10600.00	H	Average	20.86	17.41	38.27	54	-15.73

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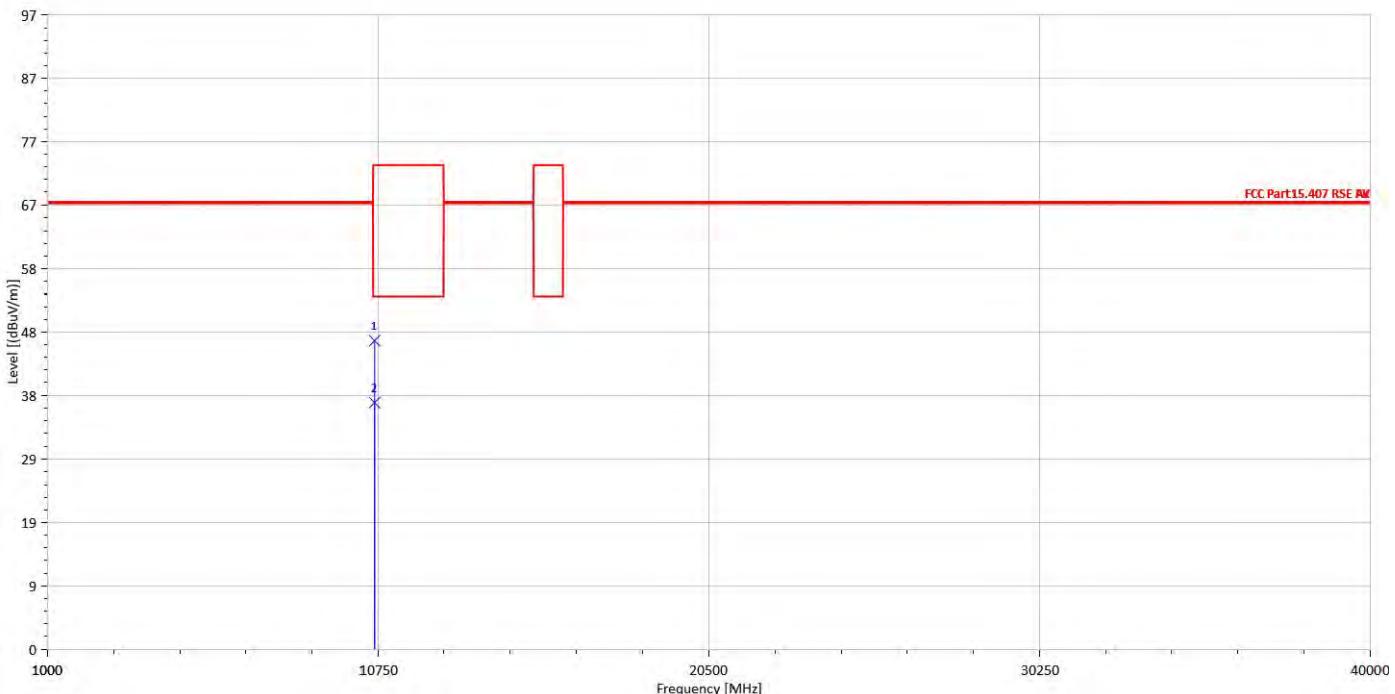
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10640.00	H	Peak	29.62	17.56	47.18	74	-26.82
10640.00	H	Average	20.21	17.56	37.77	54	-16.23

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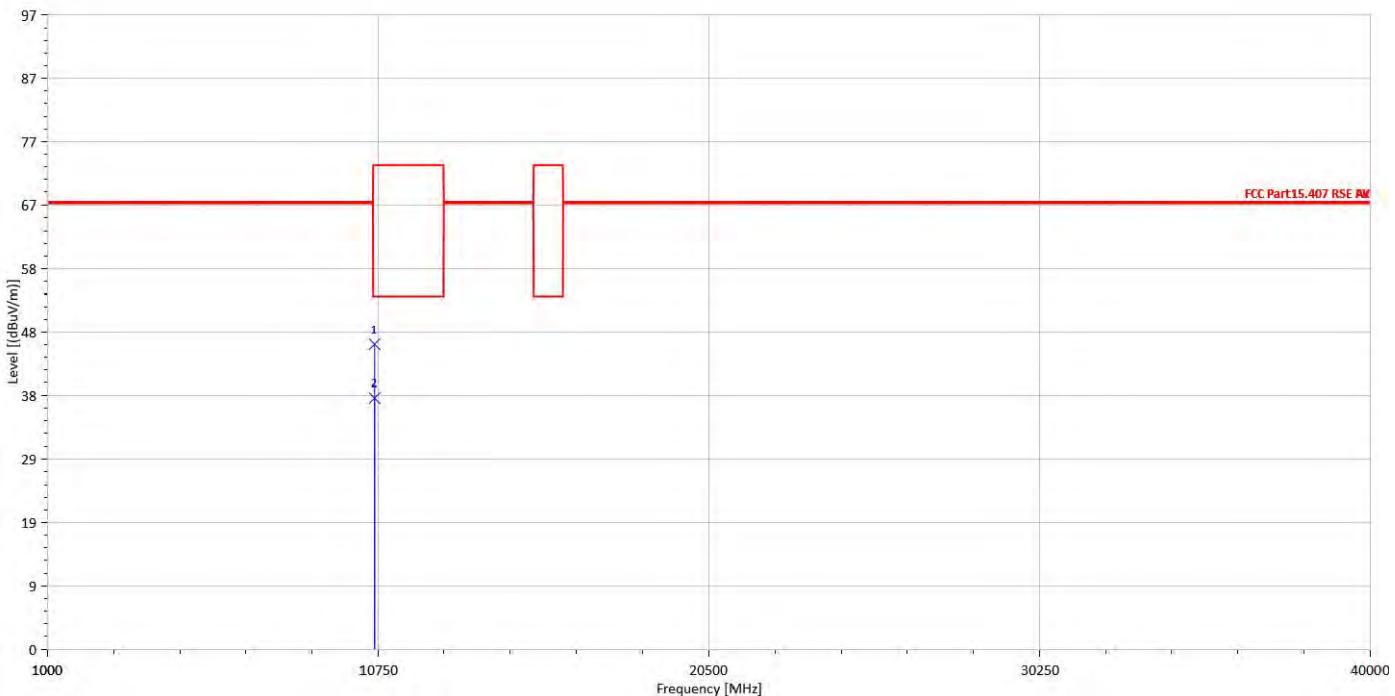
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10640.00	H	Peak	29.08	17.56	46.64	74	-27.36
10640.00	H	Average	20.90	17.56	38.46	54	-15.54

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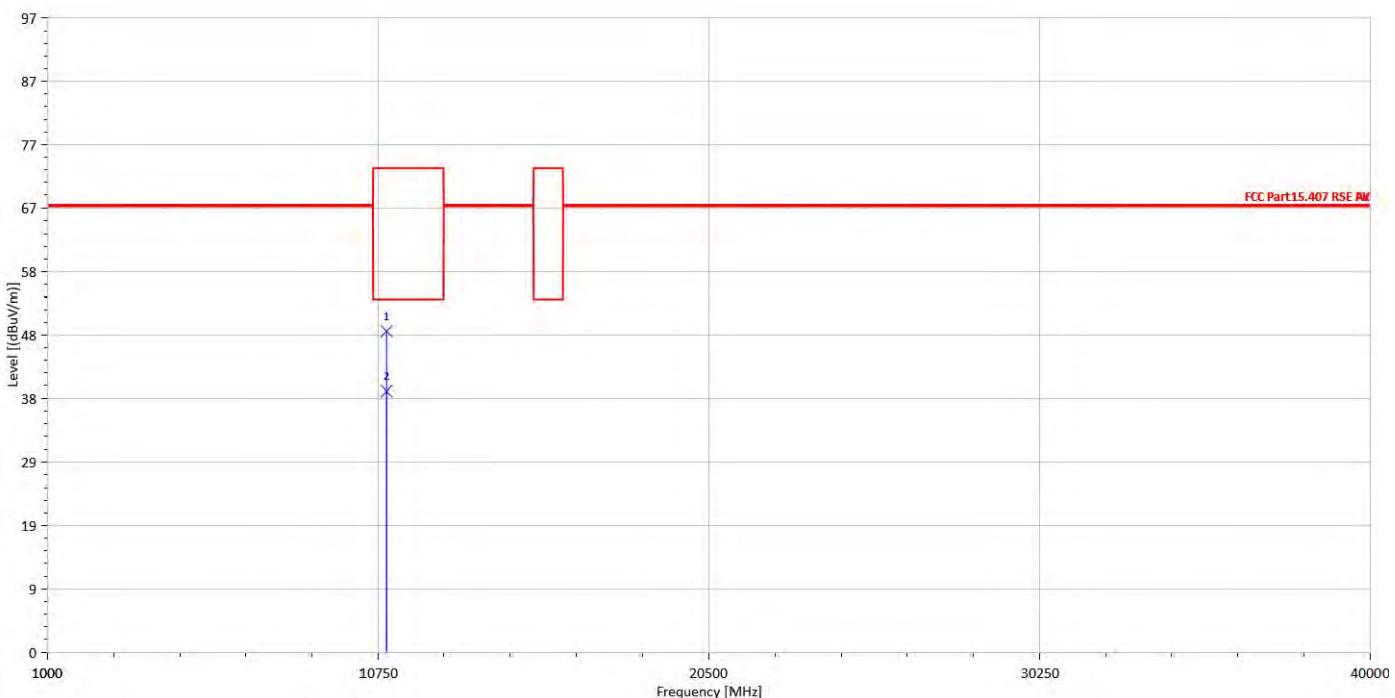
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz**

Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11000.00	H	Peak	30.00	19.11	49.10	74	-24.90
11000.00	H	Average	20.82	19.11	39.93	54	-14.07

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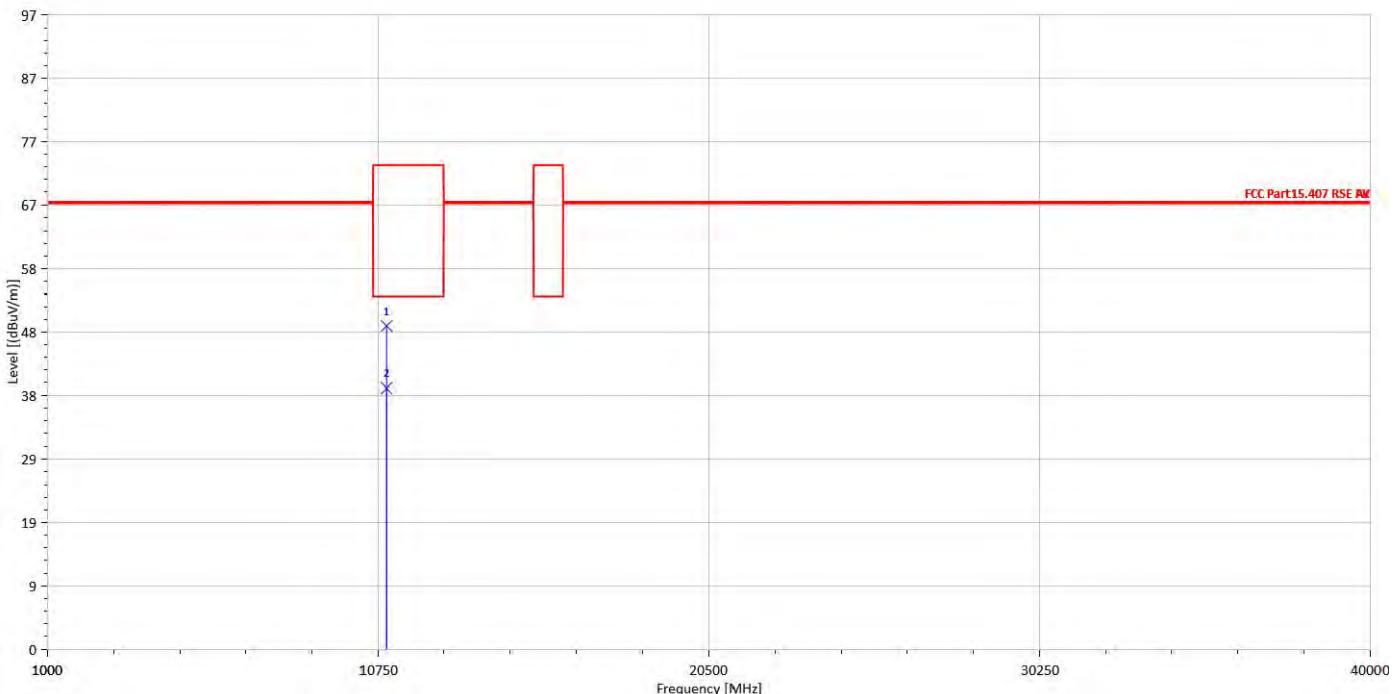
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11000.00	H	Peak	30.35	19.11	49.46	74	-24.54
11000.00	H	Average	20.83	19.11	39.94	54	-14.06

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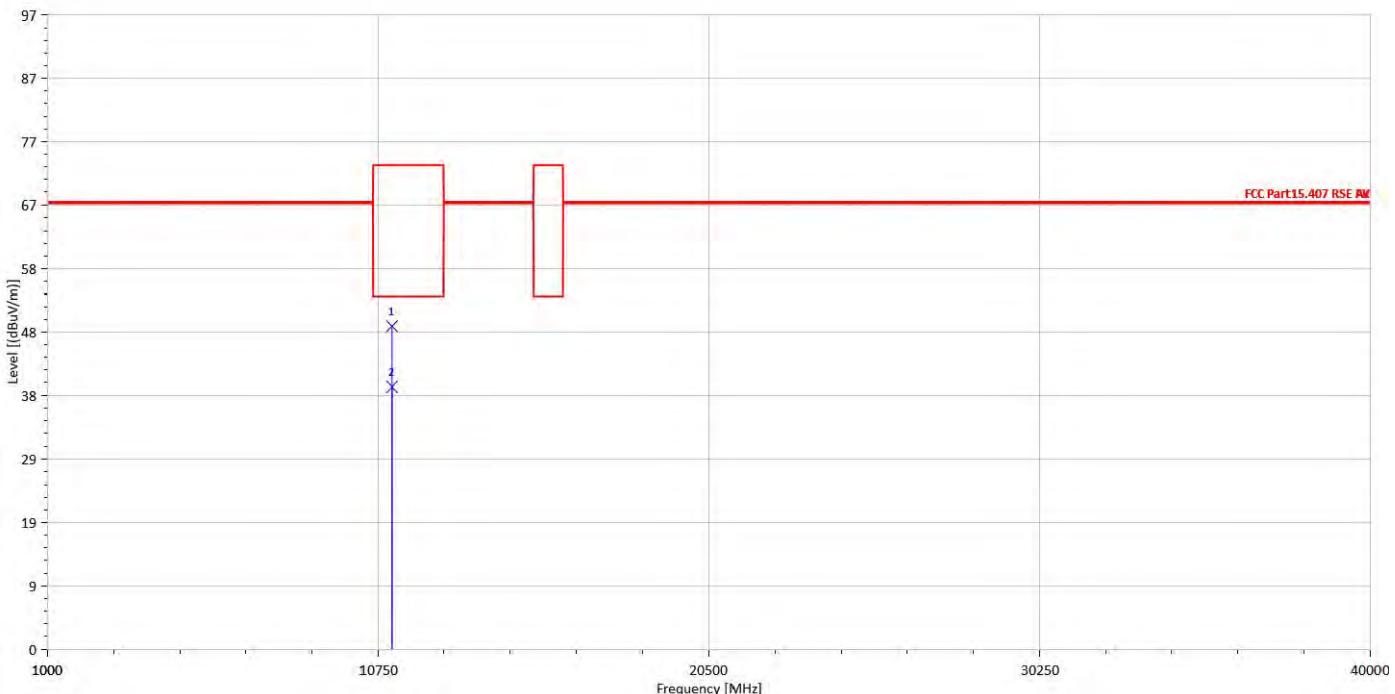
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11160.00	H	Peak	30.16	19.26	49.42	74	-24.58
11160.00	H	Average	20.87	19.26	40.13	54	-13.87

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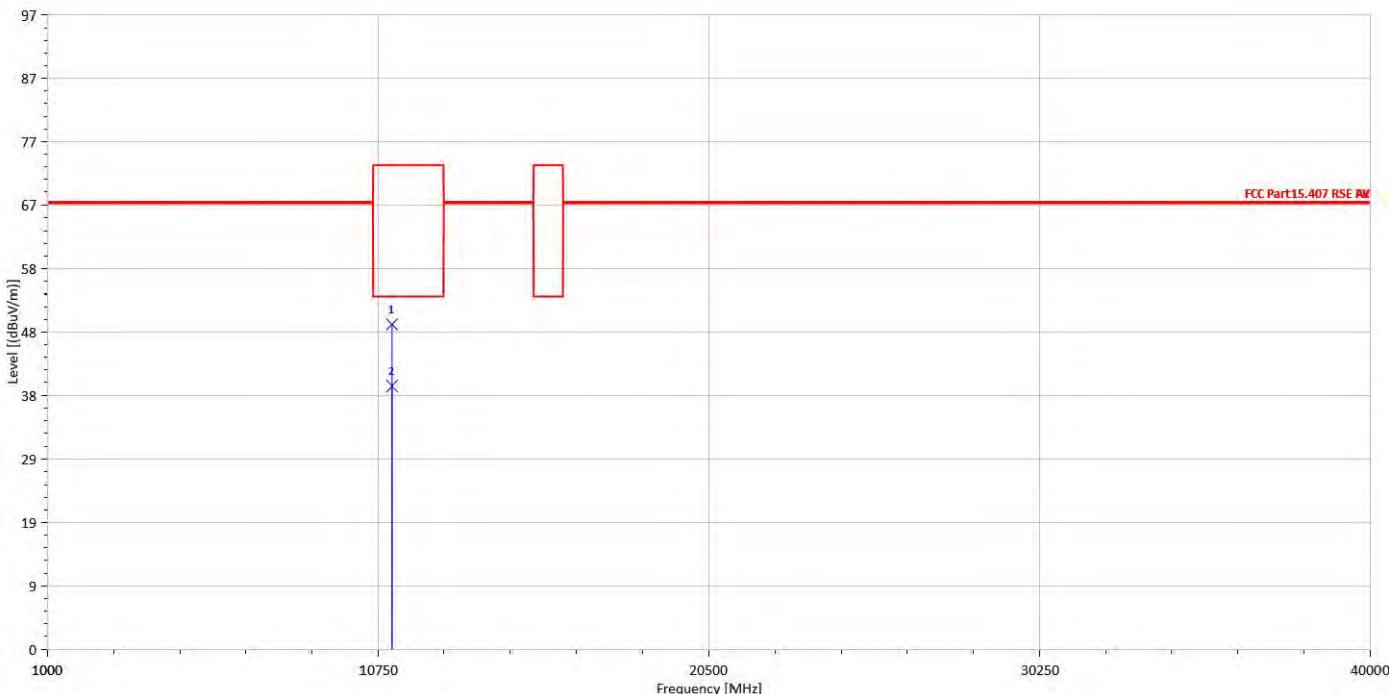
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11160.00	H	Peak	30.44	19.26	49.70	74	-24.30
11160.00	H	Average	20.99	19.26	40.25	54	-13.75

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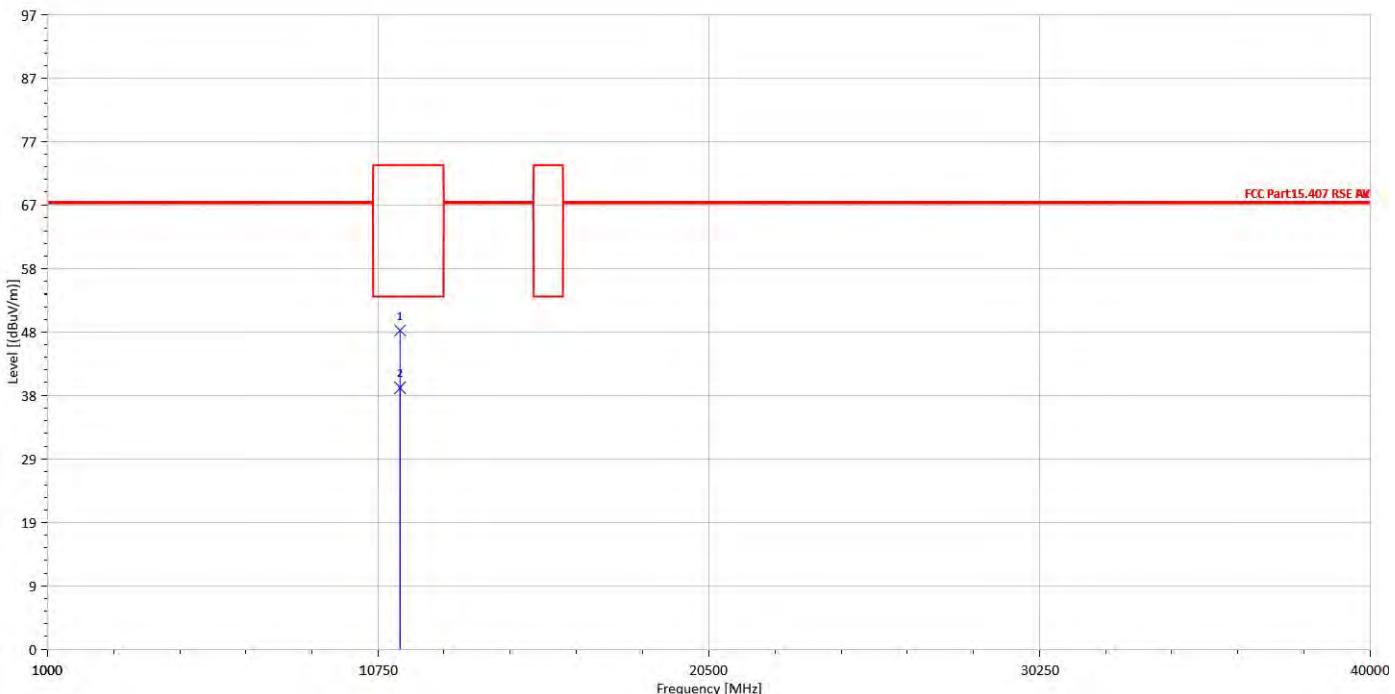
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11400.00	H	Peak	30.01	18.78	48.78	74	-25.22
11400.00	H	Average	21.22	18.78	40.00	54	-14.00

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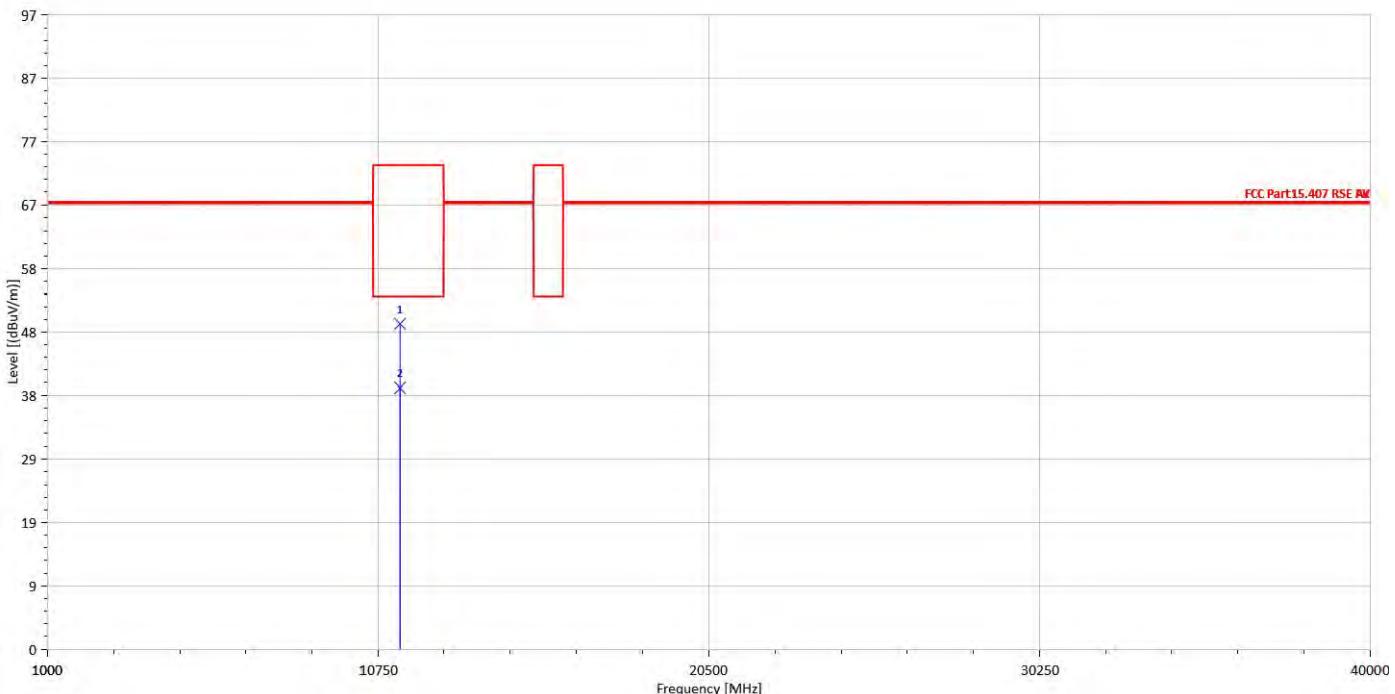
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11400.00	H	Peak	31.02	18.78	49.80	74	-24.20
11400.00	H	Average	21.19	18.78	39.97	54	-14.03

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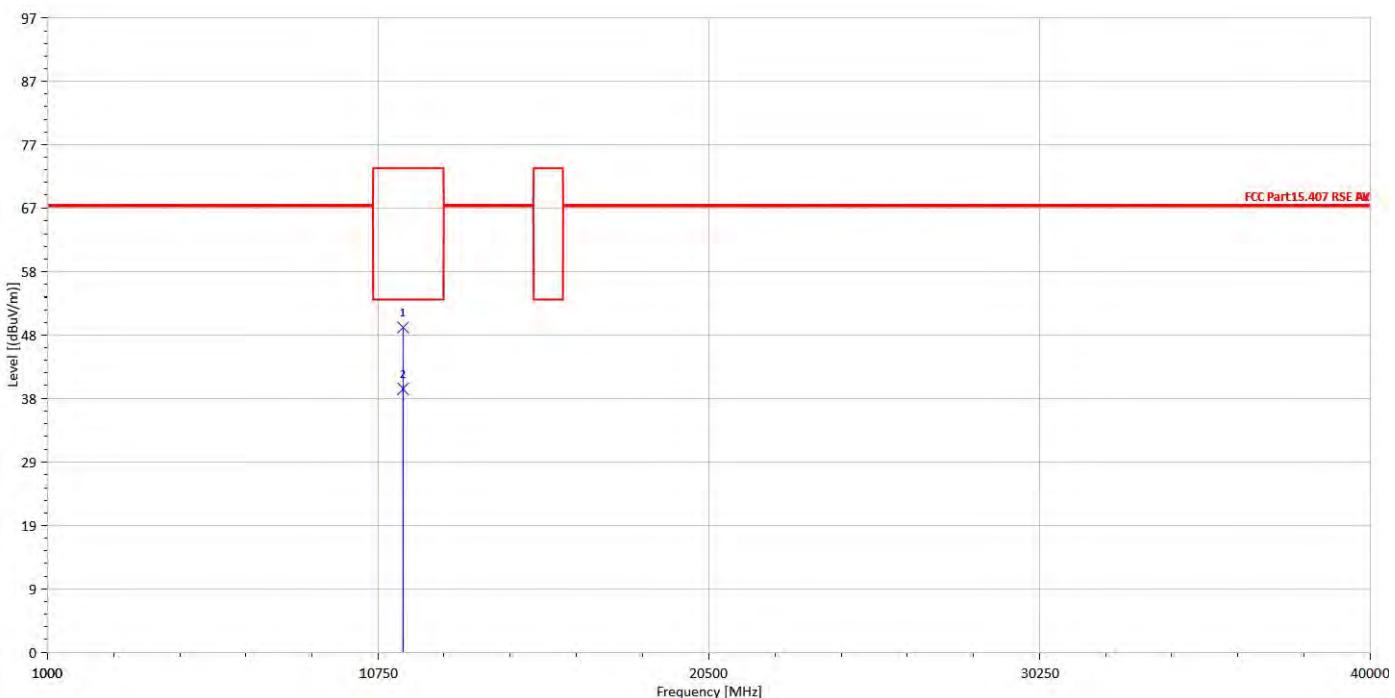
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5725~5850 MHz**

Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



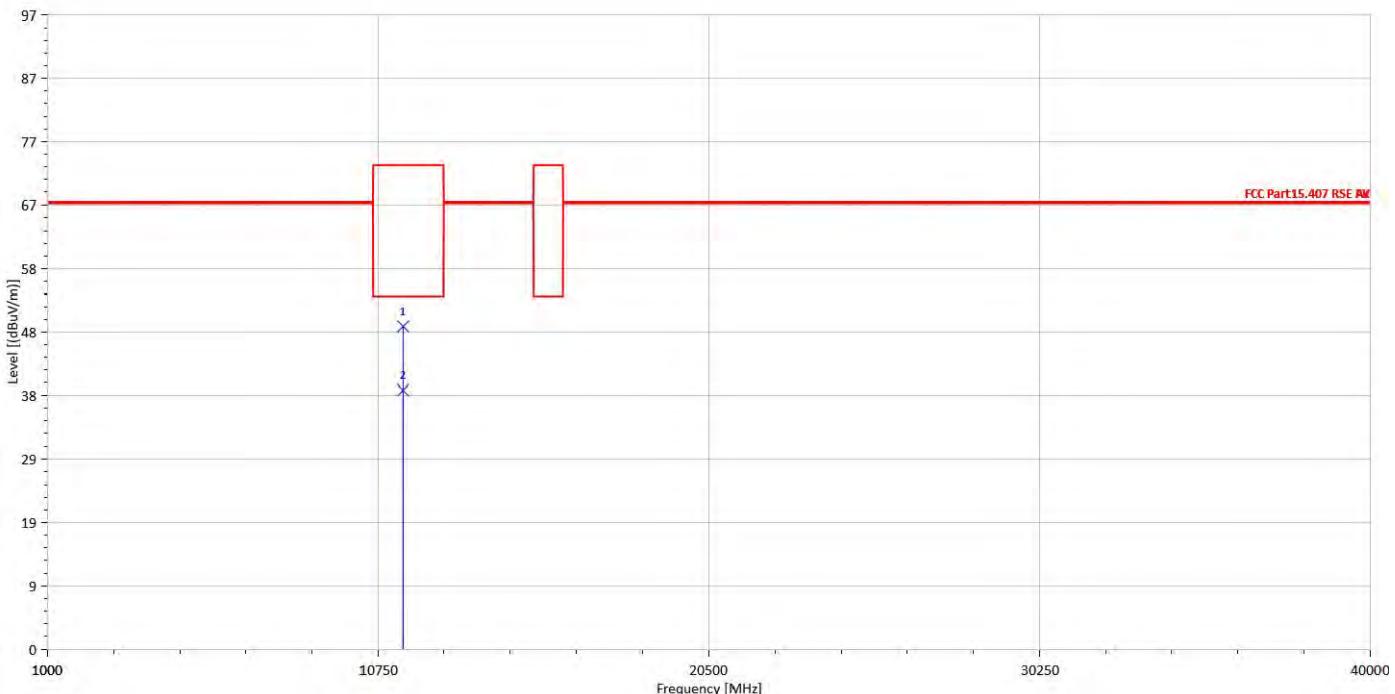
Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11490.00	H	Peak	31.31	18.39	49.70	74	-24.30
11490.00	H	Average	21.89	18.39	40.28	54	-13.72

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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @ 3m dBµV/m	Margin dB
11490.00	H	Peak	31.00	18.39	49.39	74	-24.61
11490.00	H	Average	21.25	18.39	39.64	54	-14.36

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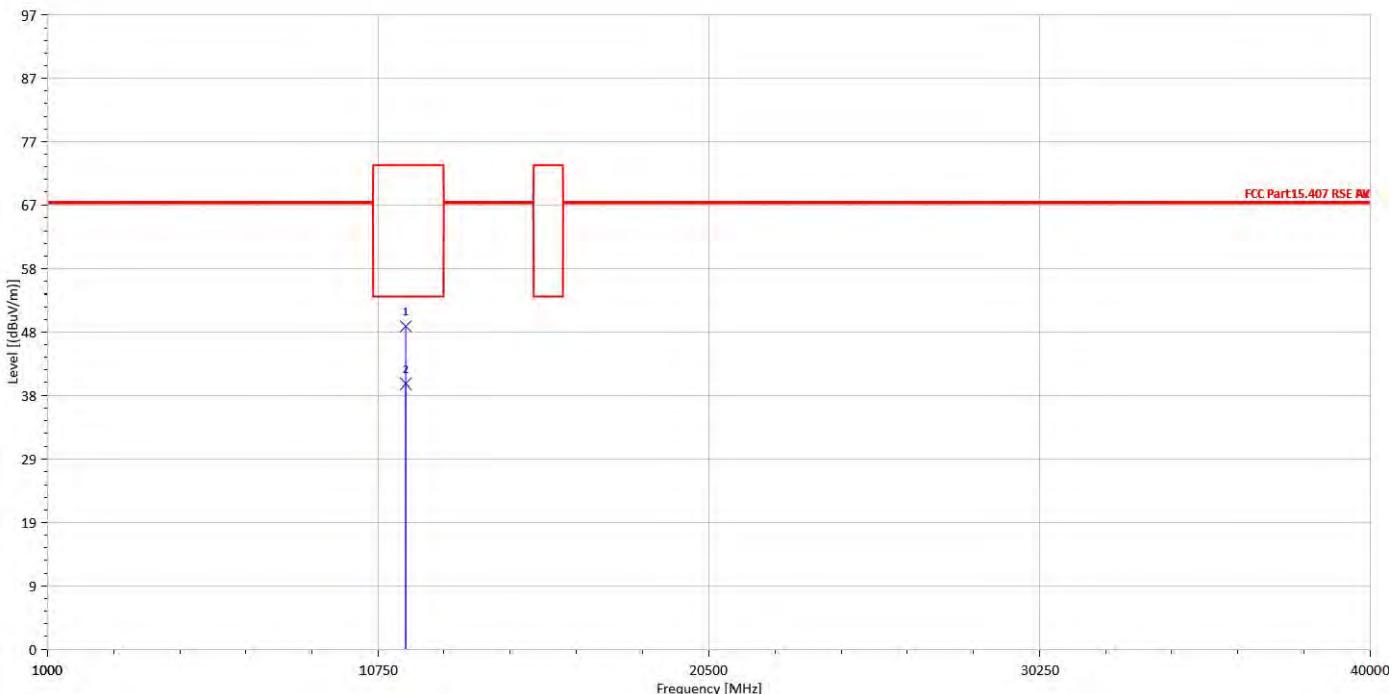
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Operation Mode : 802.11n20      Test Date : 2016/5/24  
Fundamental Frequency : 5785 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11570.00	H	Peak	30.03	19.38	49.41	74	-24.59
11570.00	H	Average	21.21	19.38	40.59	54	-13.41

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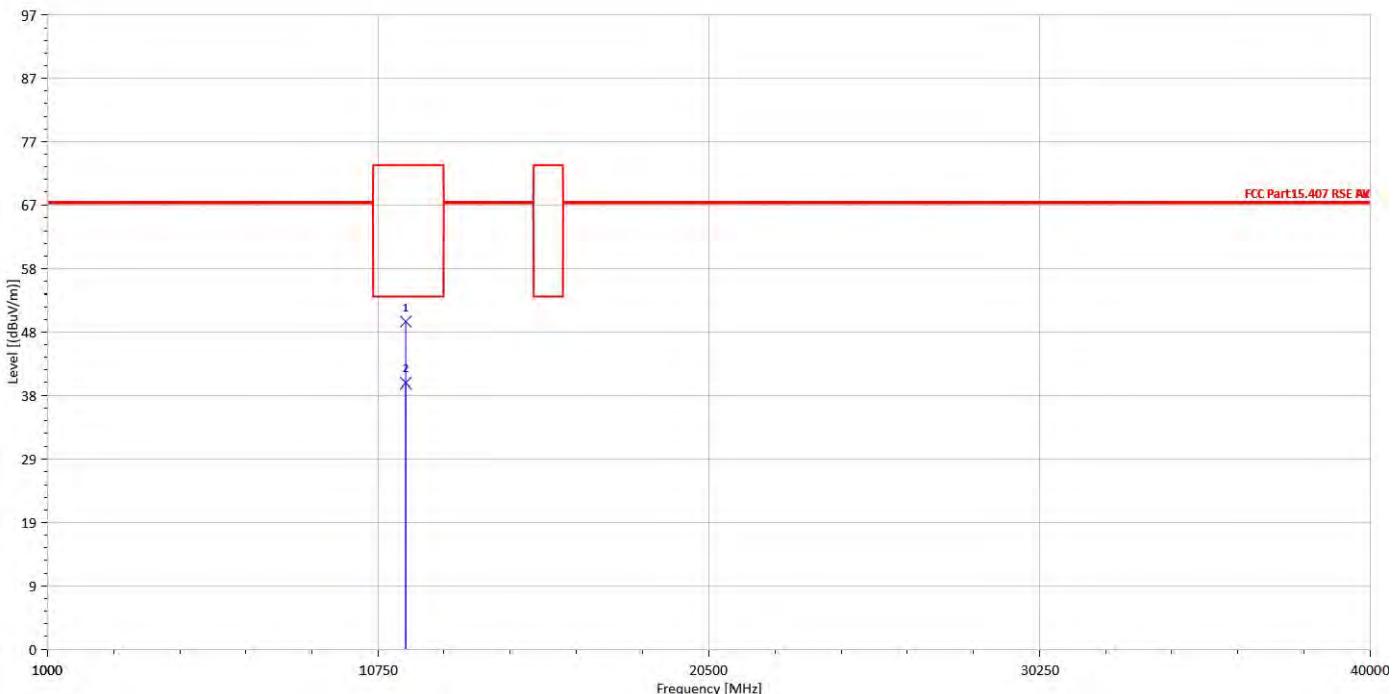
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Operation Mode : 802.11n20      Test Date : 2016/5/24  
Fundamental Frequency : 5785 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11570.00	H	Peak	30.74	19.38	50.13	74	-23.87
11570.00	H	Average	21.31	19.38	40.69	54	-13.31

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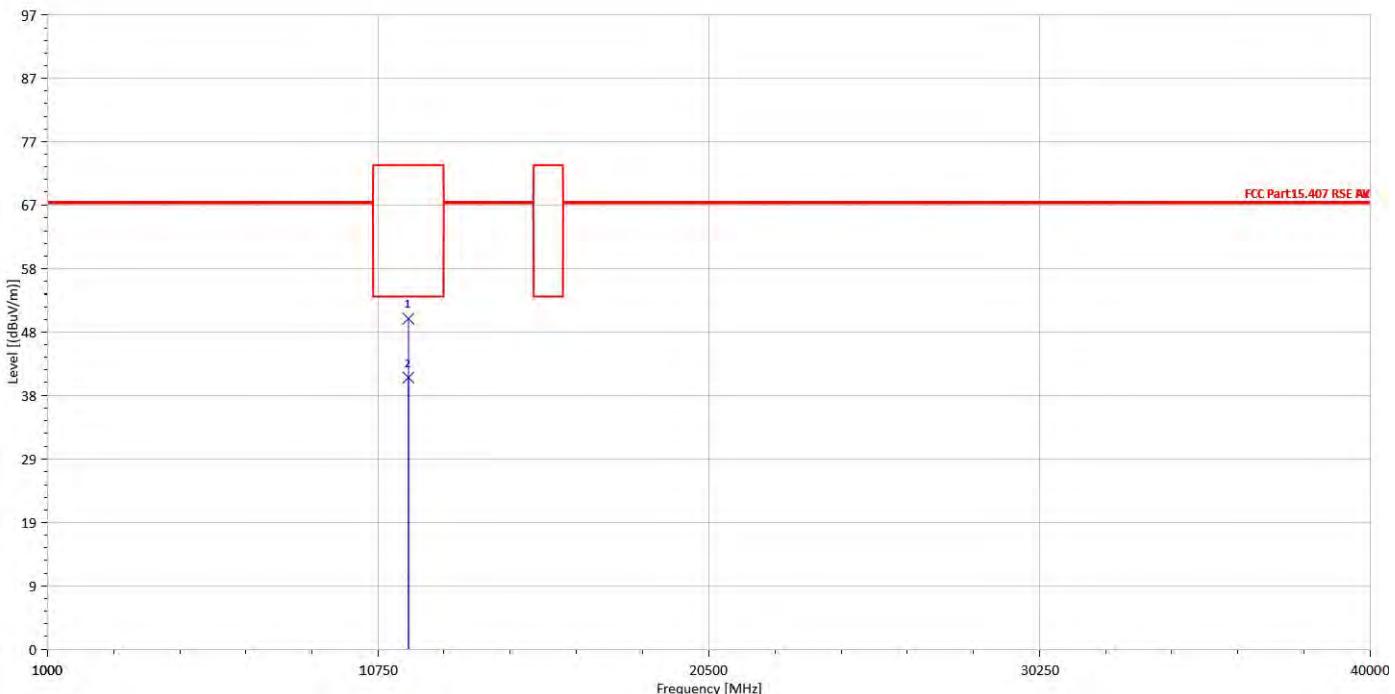
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11650.00	H	Peak	30.35	20.23	50.58	74	-23.42
11650.00	H	Average	21.26	20.23	41.49	54	-12.51

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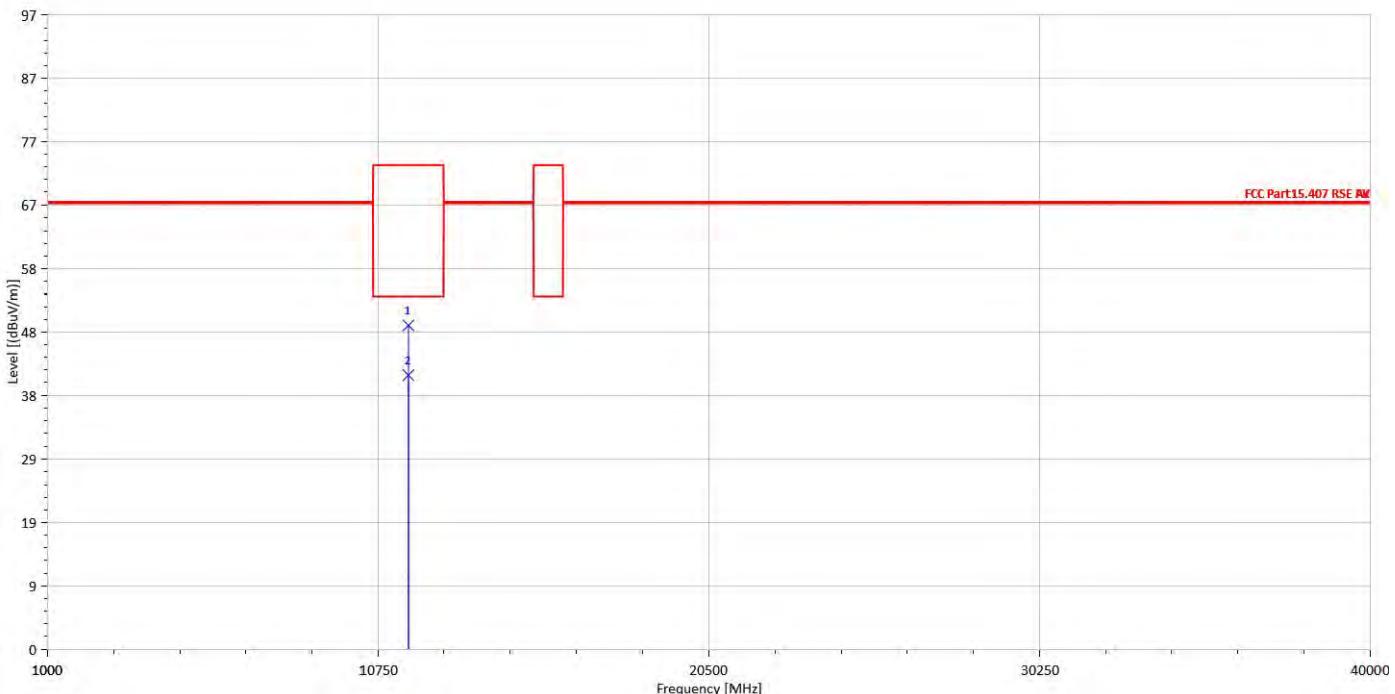
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Operation Mode : 802.11n20 Test Date : 2016/5/24  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11650.00	H	Peak	29.31	20.23	49.54	74	-24.46
11650.00	H	Average	21.63	20.23	41.86	54	-12.14

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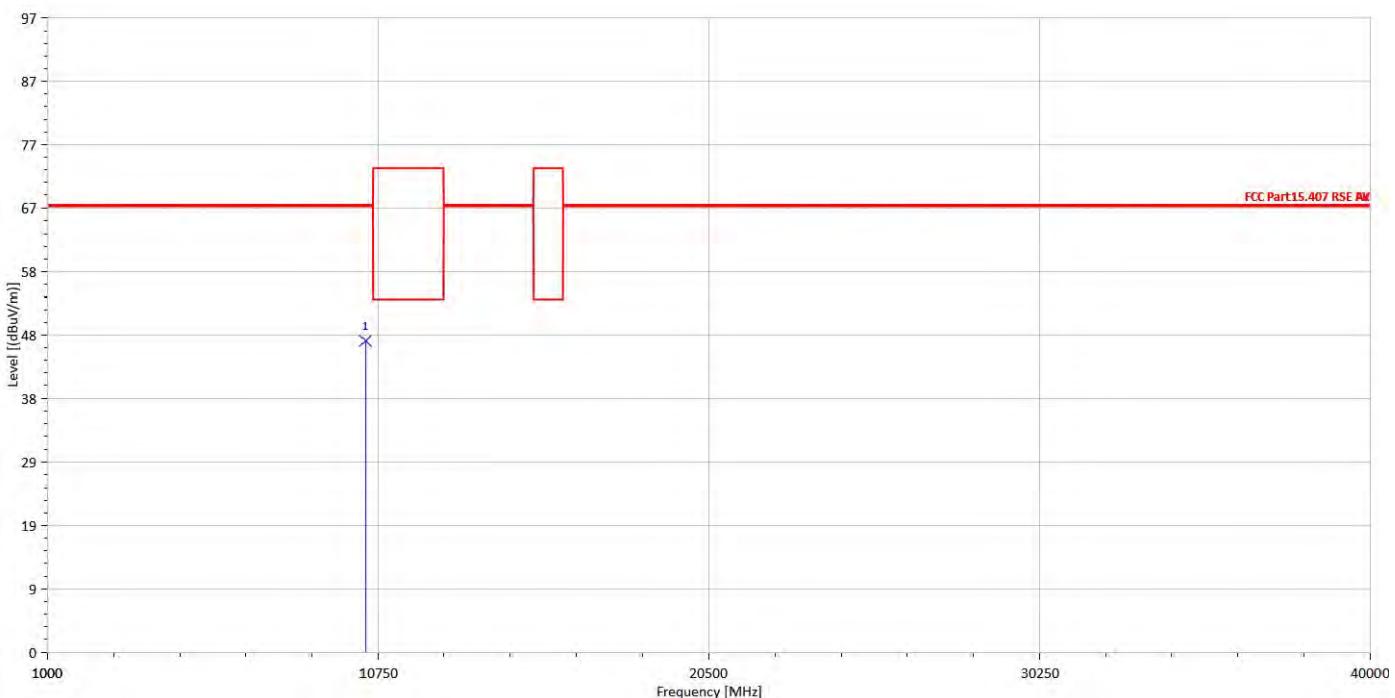
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**Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHz**

Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10380.00	H	Peak	29.25	18.37	47.63	68.3	-20.67

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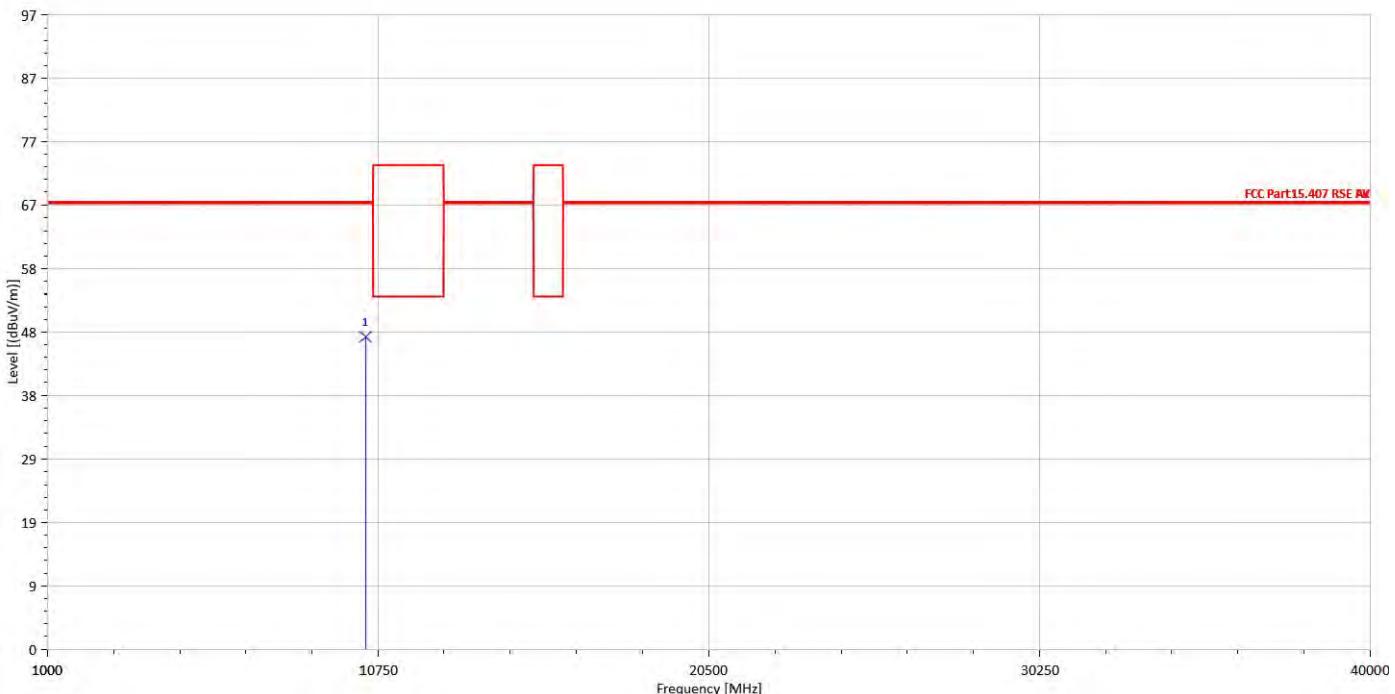
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Operation Mode : 802.11n40      Test Date : 2016/5/24  
Fundamental Frequency : 5190 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10380.00	H	Peak	29.41	18.37	47.79	68.3	-20.51

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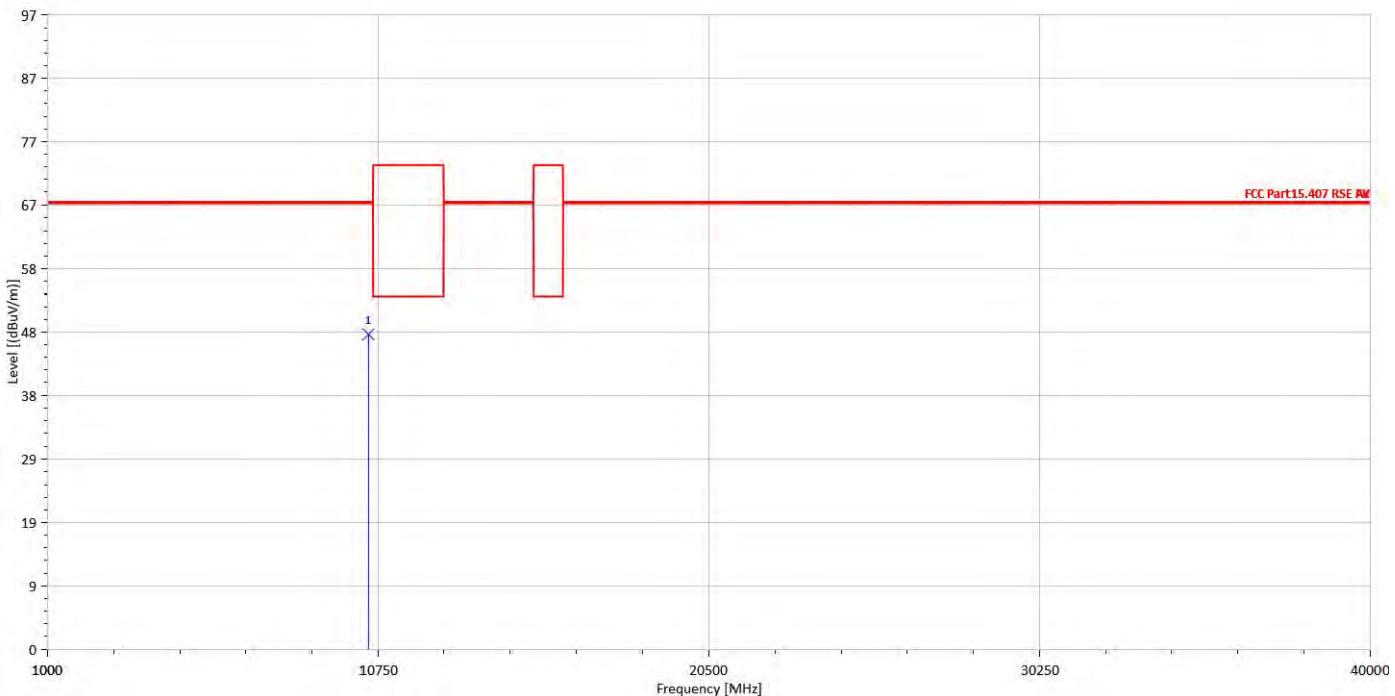
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5230 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10460.00	H	Peak	29.87	18.29	48.16	68.3	-20.14

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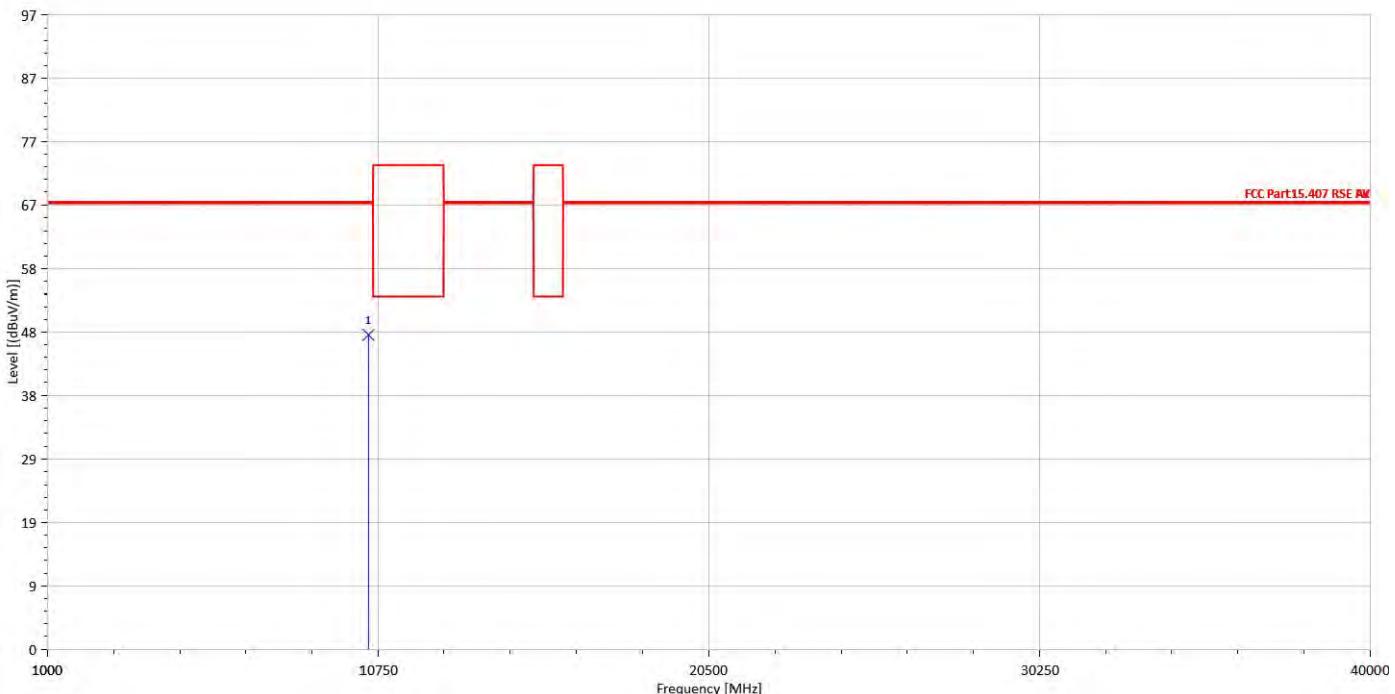
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5230 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10460.00	H	Peak	29.80	18.29	48.09	68.3	-20.21

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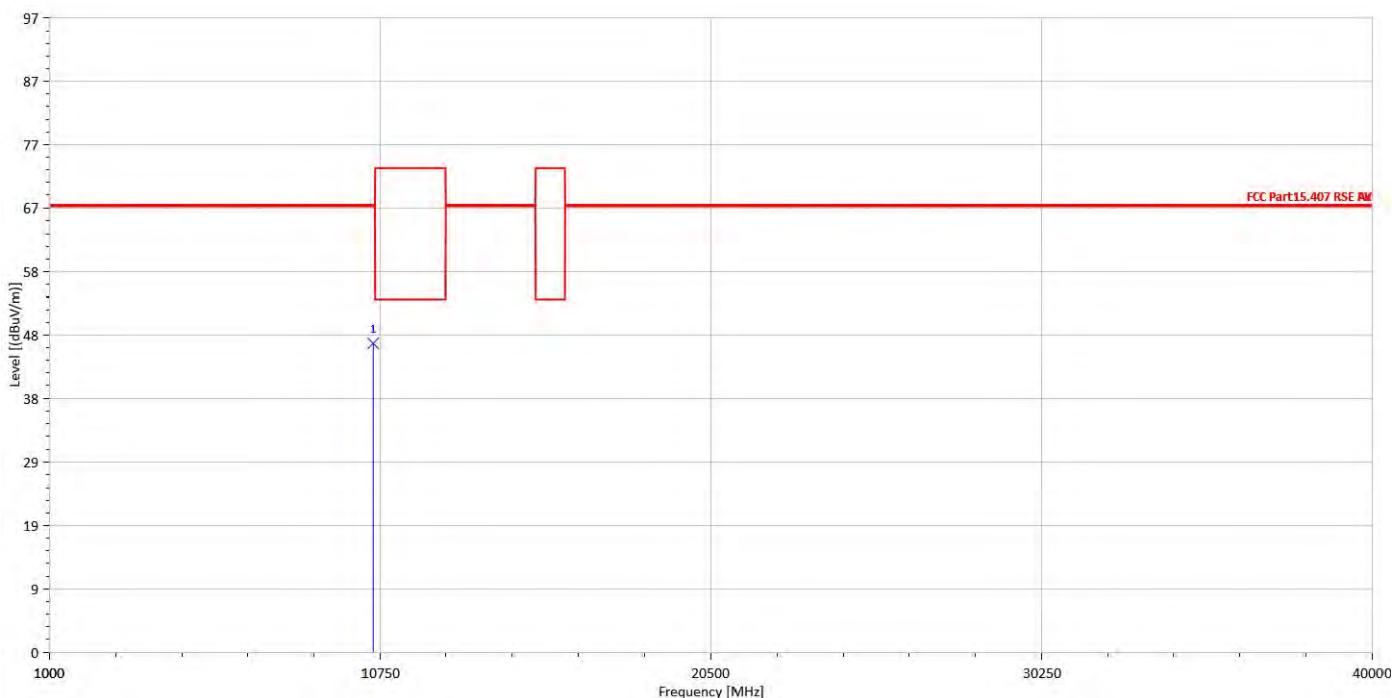
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**Radiated Spurious Emission Measurement Result 802.11n HT40, 5250~5350 MHz**

Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5270 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



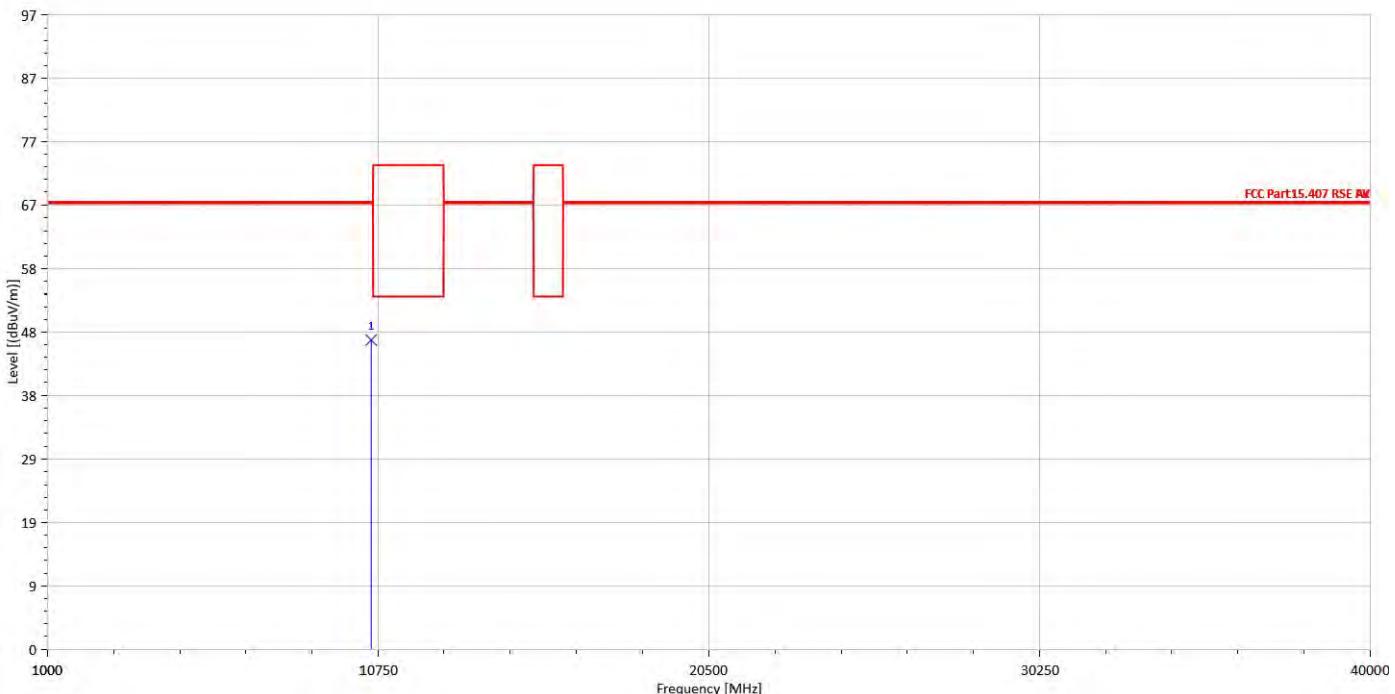
Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10540.00	H	Peak	29.91	17.34	47.24	68.3	-21.06

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Operation Mode : 802.11n40      Test Date : 2016/5/24  
Fundamental Frequency : 5270 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
10540.00	H	Peak	29.95	17.34	47.29	68.3	-21.01

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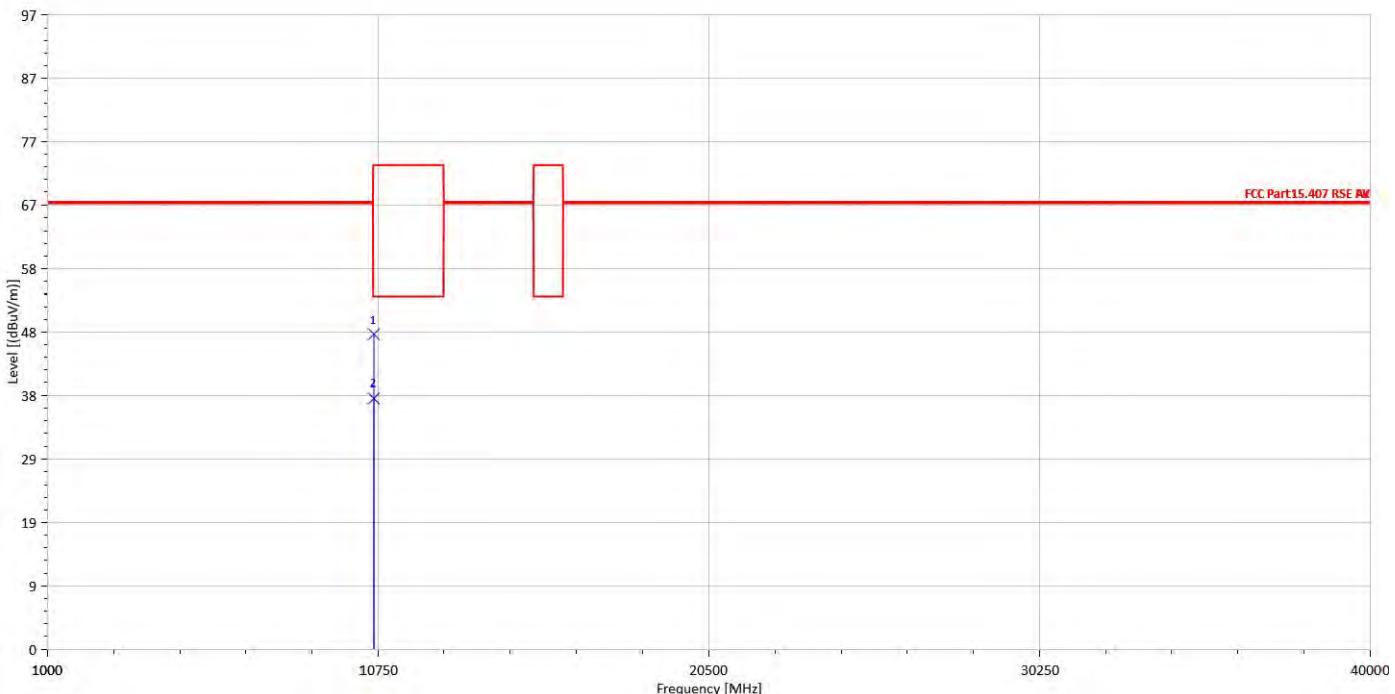
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
10620.00	H	Peak	30.68	17.52	48.20	74	-25.80
10620.00	H	Average	20.90	17.52	38.42	54	-15.58

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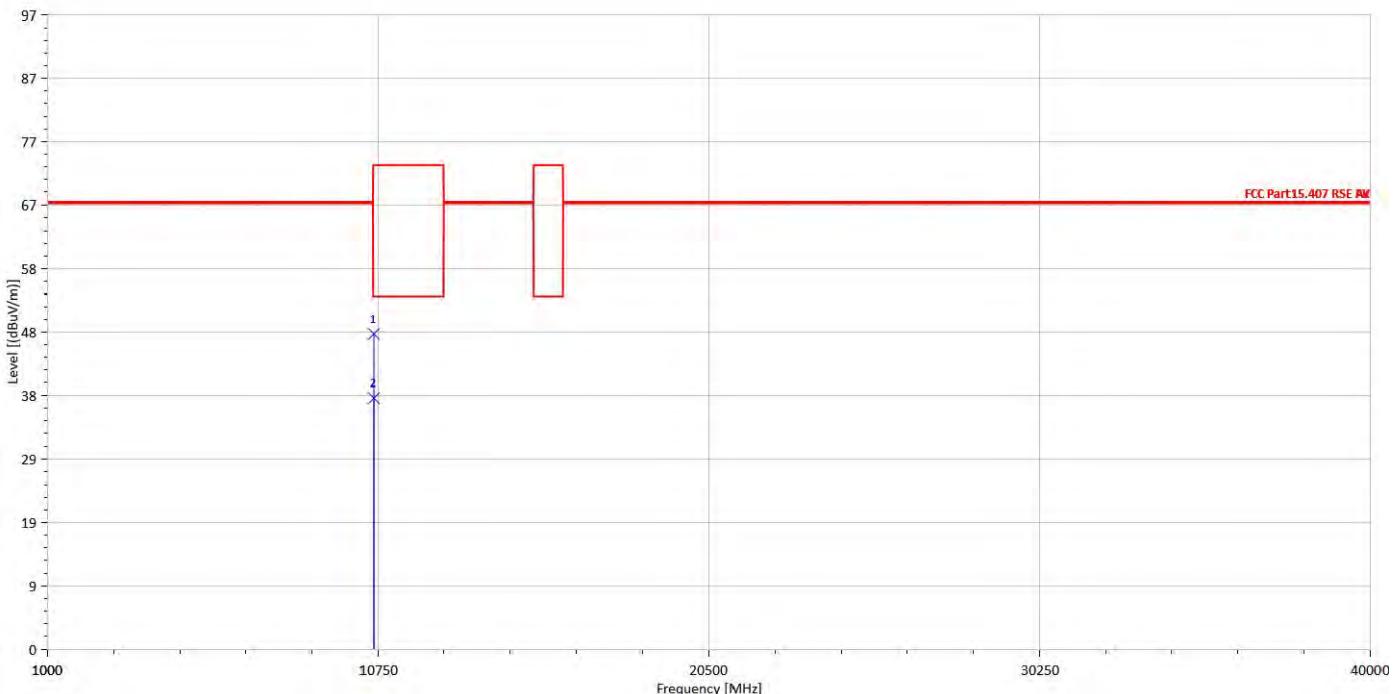
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
10620.00	H	Peak	30.71	17.52	48.23	74	-25.77
10620.00	H	Average	20.93	17.52	38.45	54	-15.55

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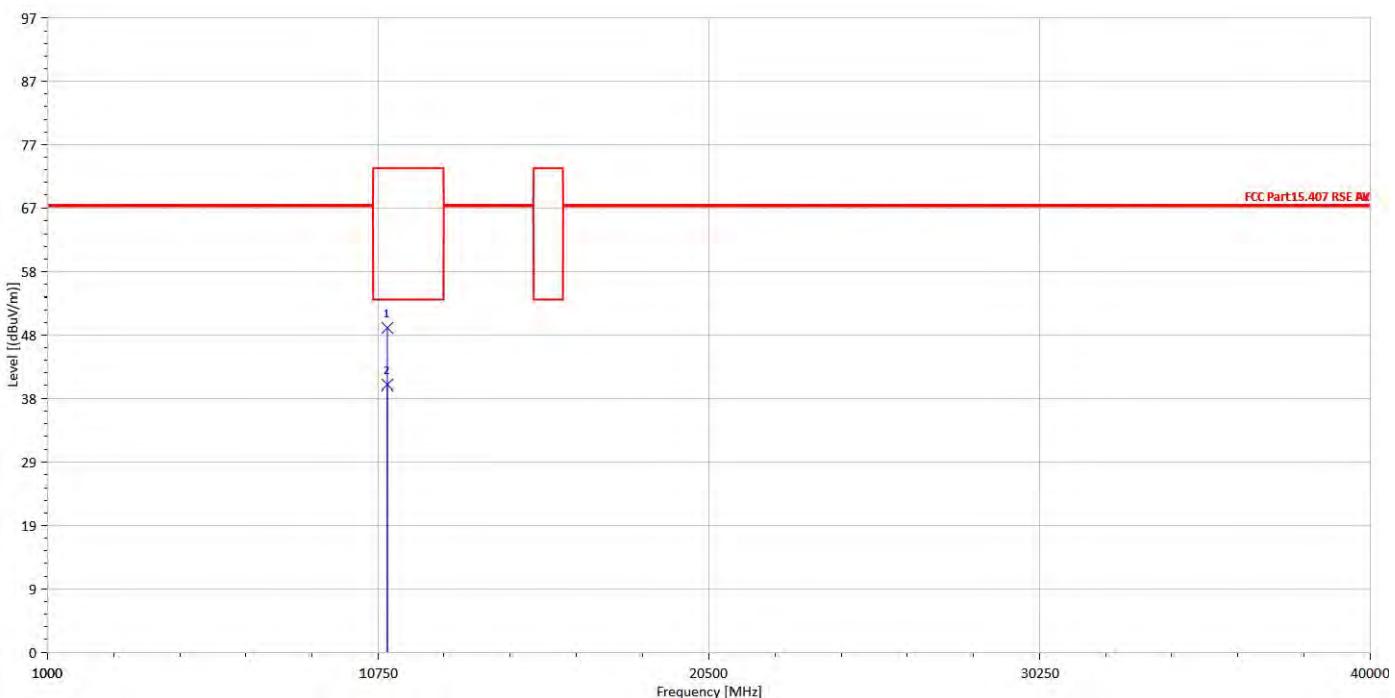
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**Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz**

Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11020.00	H	Peak	29.70	19.93	49.63	74	-24.37
11020.00	H	Average	20.95	19.93	40.88	54	-13.12

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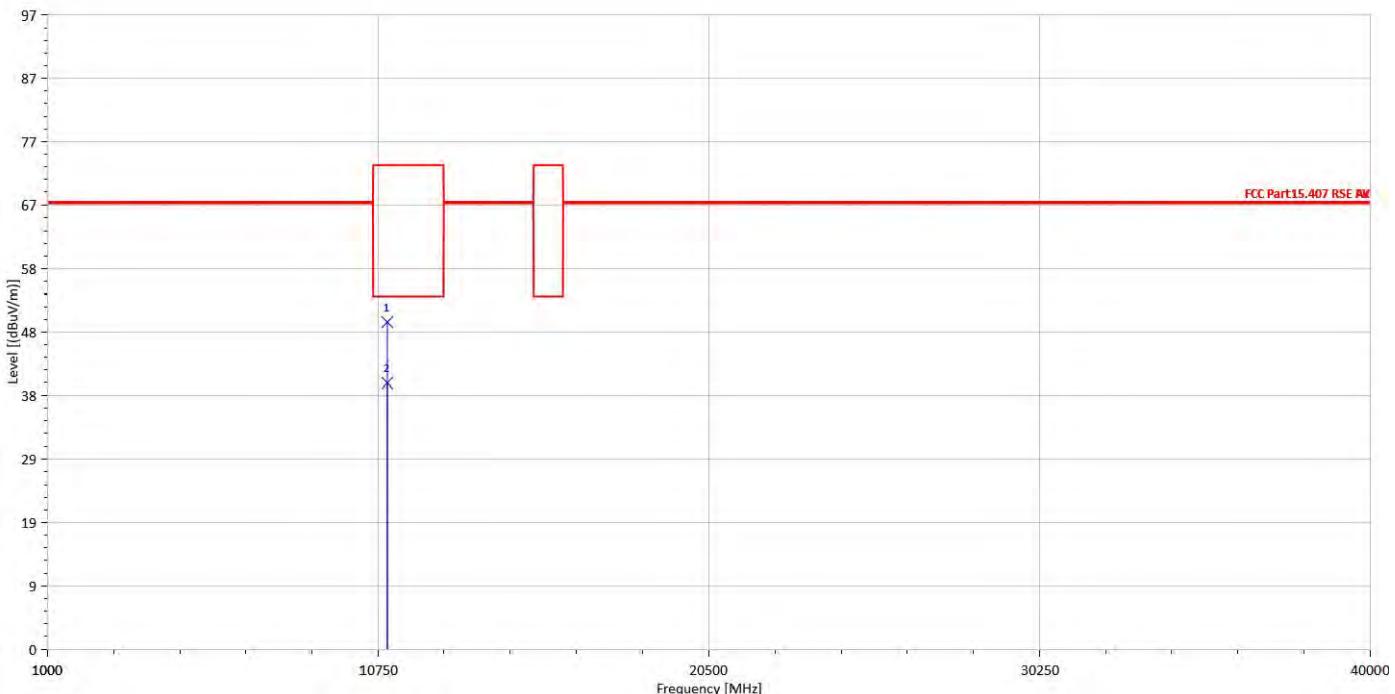
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @ 3m dBμV/m	Margin dB
11020.00	H	Peak	30.12	19.93	50.05	74	-23.95
11020.00	H	Average	20.78	19.93	40.71	54	-13.29

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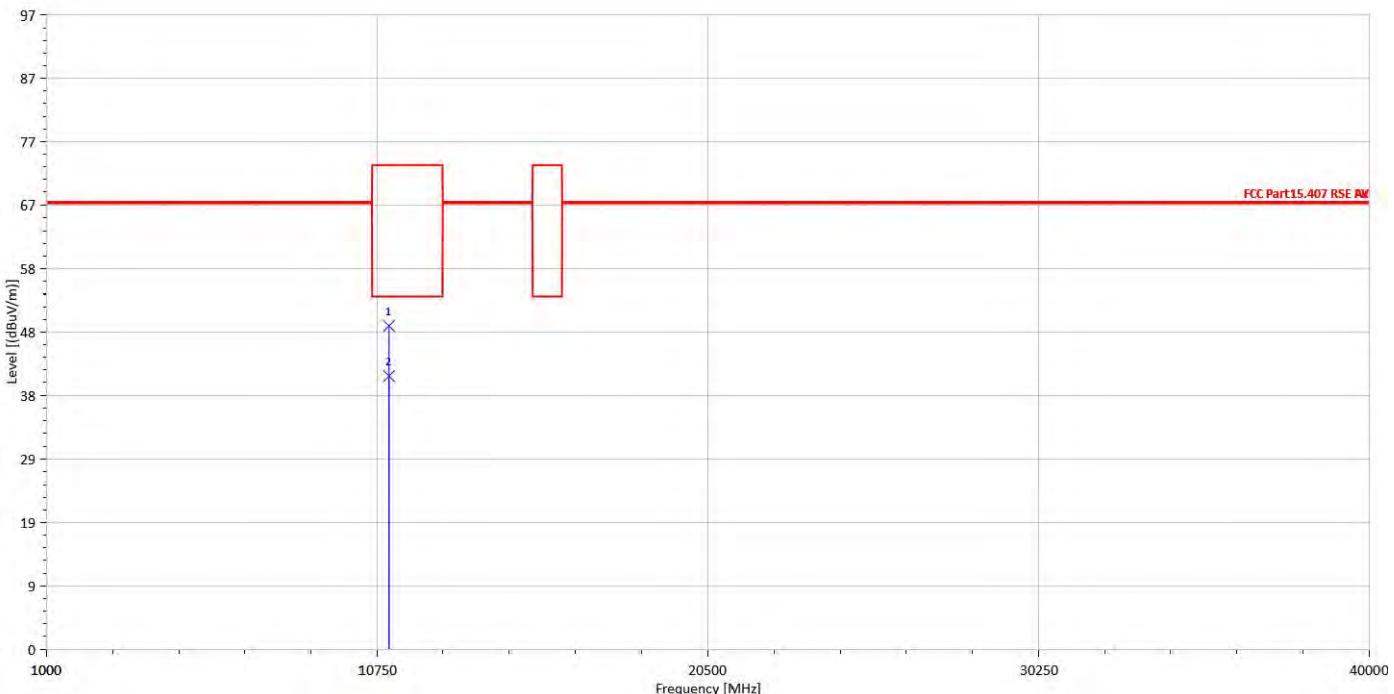
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Operation Mode : 802.11n40      Test Date : 2016/5/24  
Fundamental Frequency : 5550 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
11100.00	H	Peak	29.16	20.30	49.47	74	-24.53
11100.00	H	Average	21.42	20.30	41.72	54	-12.28

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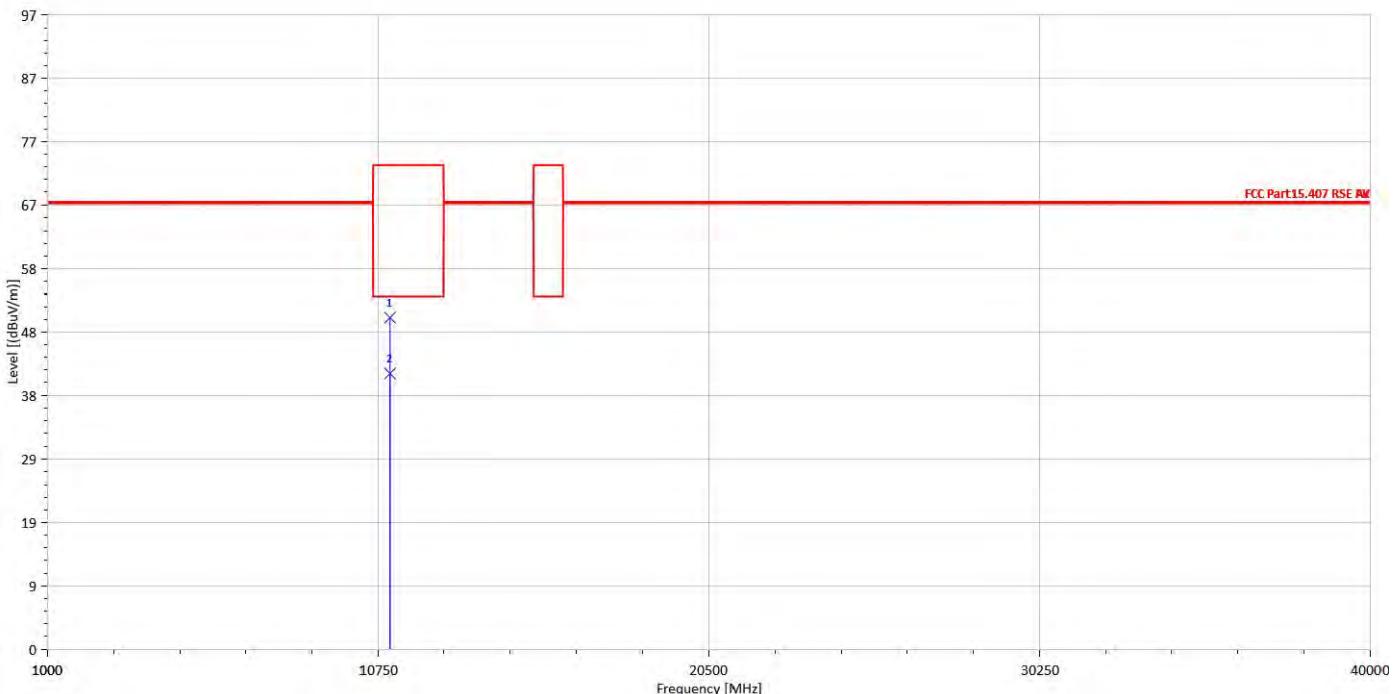
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5550 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11100.00	H	Peak	30.44	20.30	50.74	74	-23.26
11100.00	H	Average	21.82	20.30	42.12	54	-11.88

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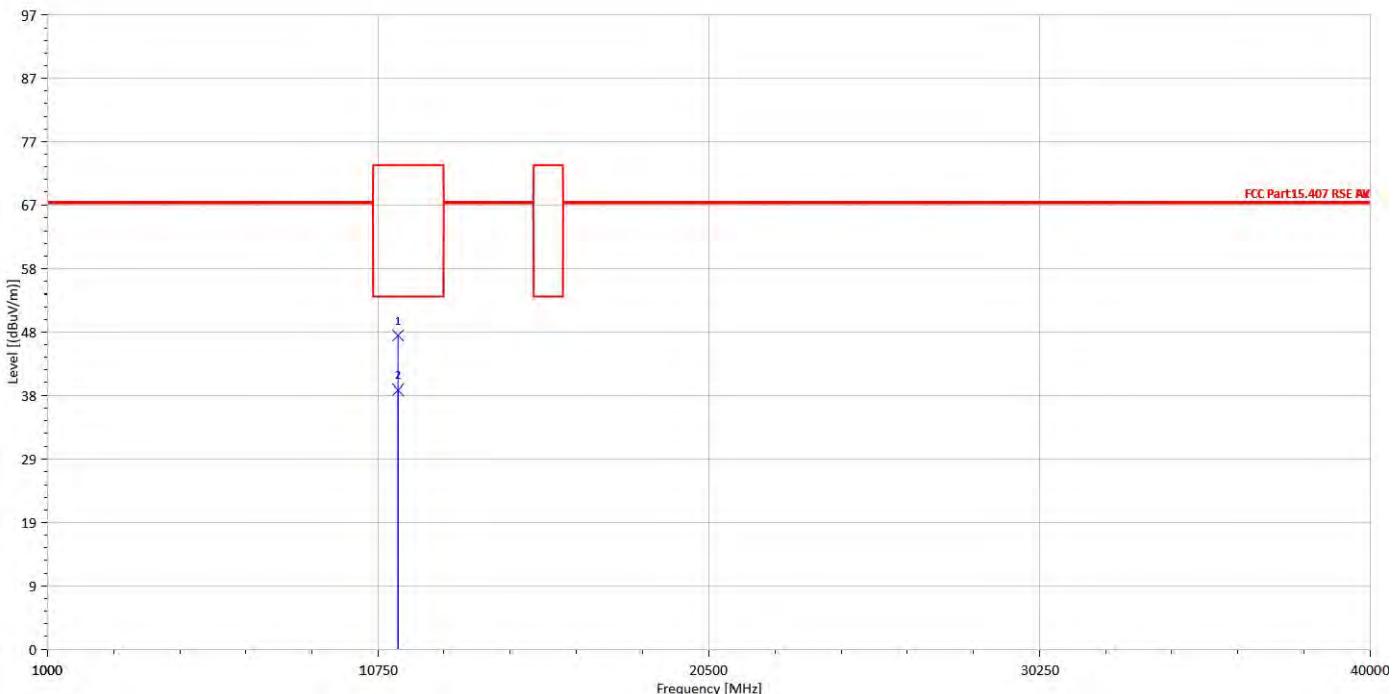
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11340.00	H	Peak	29.55	18.44	47.99	74	-26.01
11340.00	H	Average	21.25	18.44	39.69	54	-14.31

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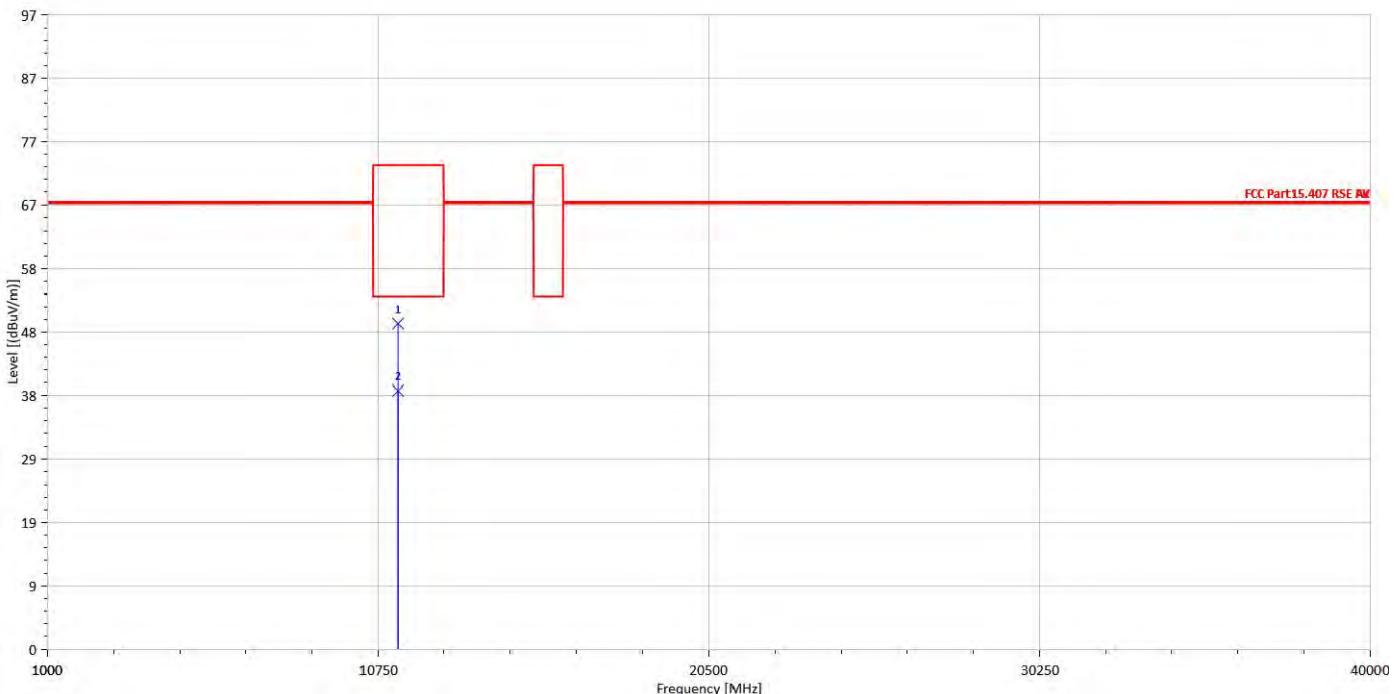
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11340.00	H	Peak	31.39	18.44	49.83	74	-24.17
11340.00	H	Average	21.12	18.44	39.56	54	-14.44

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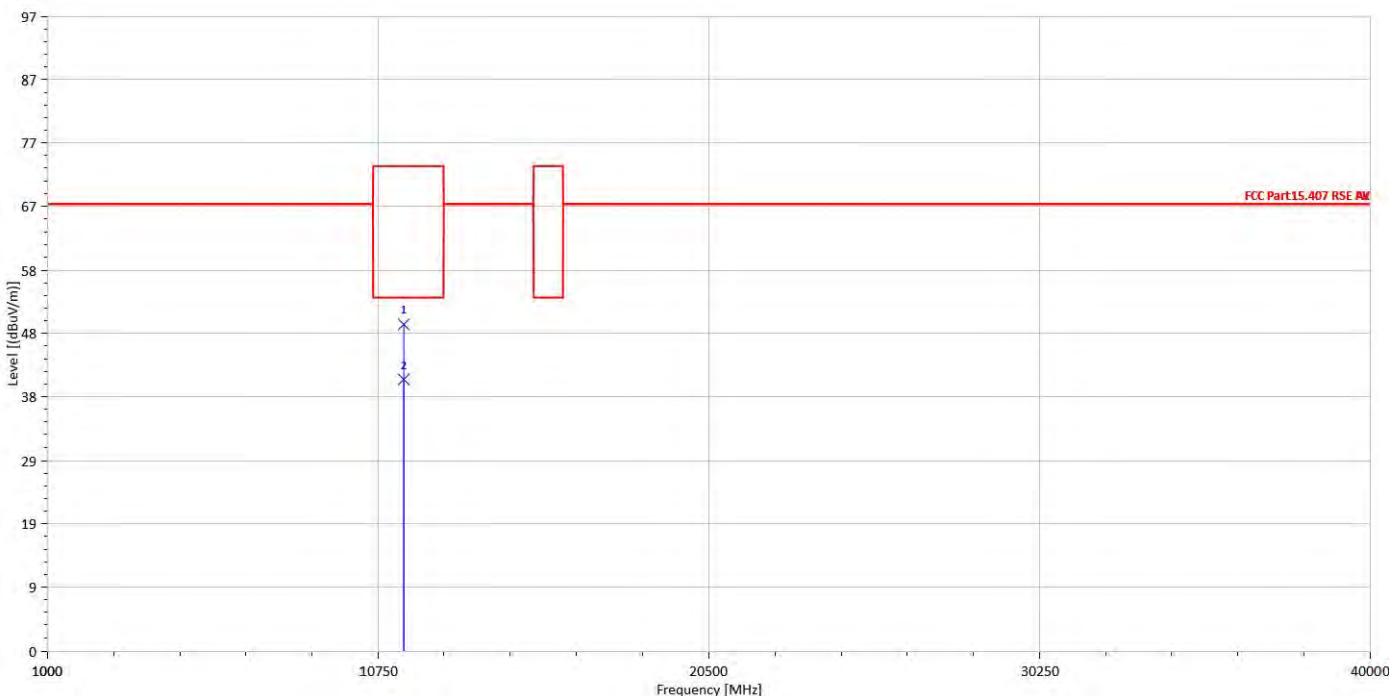
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## Radiated Spurious Emission Measurement Result 802.11n HT40, 5725~5850 MHz

Operation Mode : 802.11n40 Test Date : 2016/5/24  
 Fundamental Frequency : 5755 MHz Temp. / Humi. : 22.7deg\_C/57RH  
 Operation Band : Tx CH Low Test Engineer : Ashton  
 EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11510.00	H	Peak	29.95	19.90	49.85	74	-24.15
11510.00	H	Average	21.61	19.90	41.51	54	-12.49

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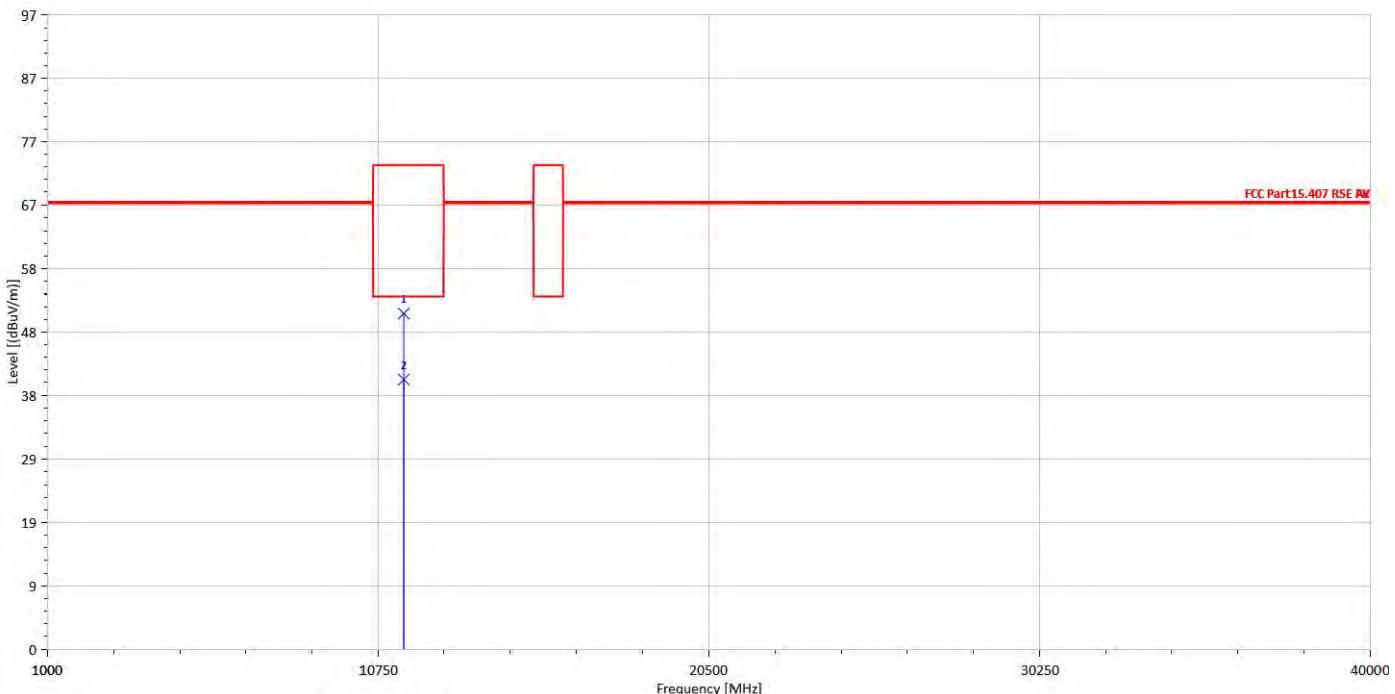
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Operation Mode : 802.11n40      Test Date : 2016/5/24  
Fundamental Frequency : 5755 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor dB	Actual FS dBµV/m	Limit @ 3m dBµV/m	Margin dB
			Reading	Level dBµV				
11510.00	H	Peak	31.49	31.49	19.90	51.39	74	-22.61
11510.00	H	Average	21.28	21.28	19.90	41.18	54	-12.82

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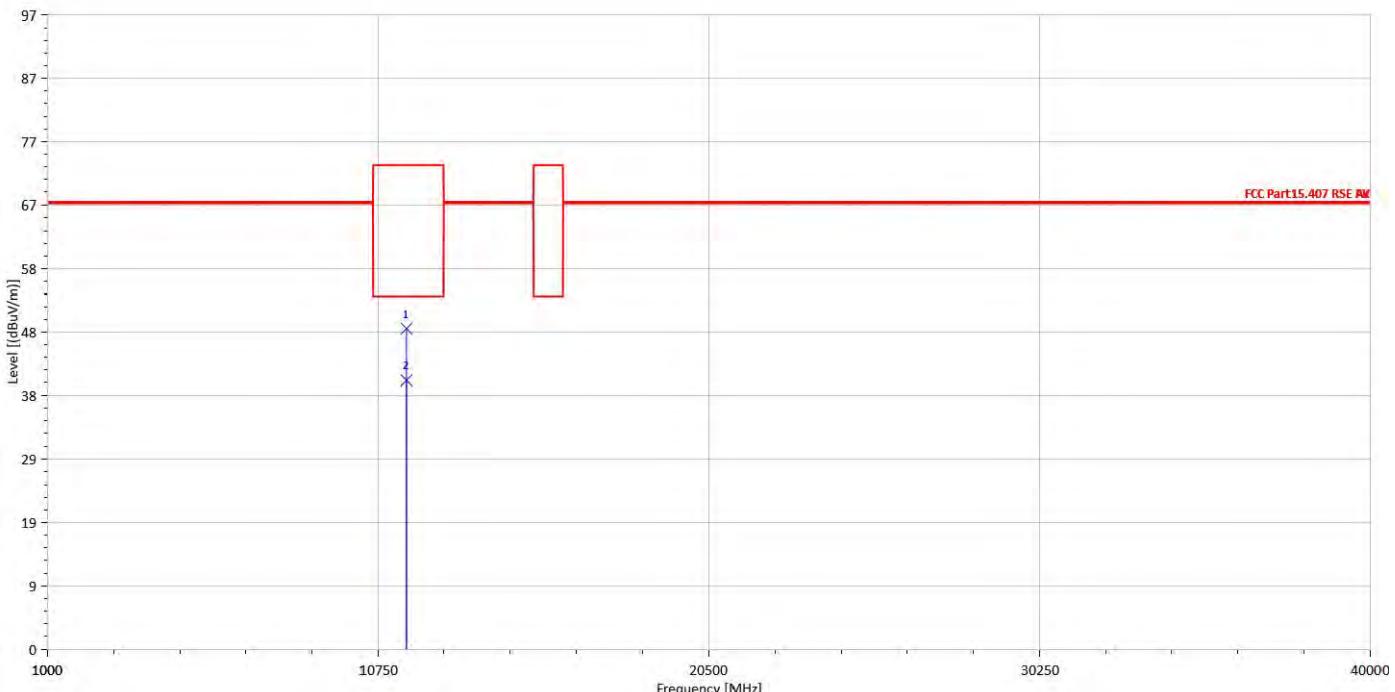
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5795 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11590.00	H	Peak	29.22	19.85	49.07	74	-24.93
11590.00	H	Average	21.23	19.85	41.08	54	-12.92

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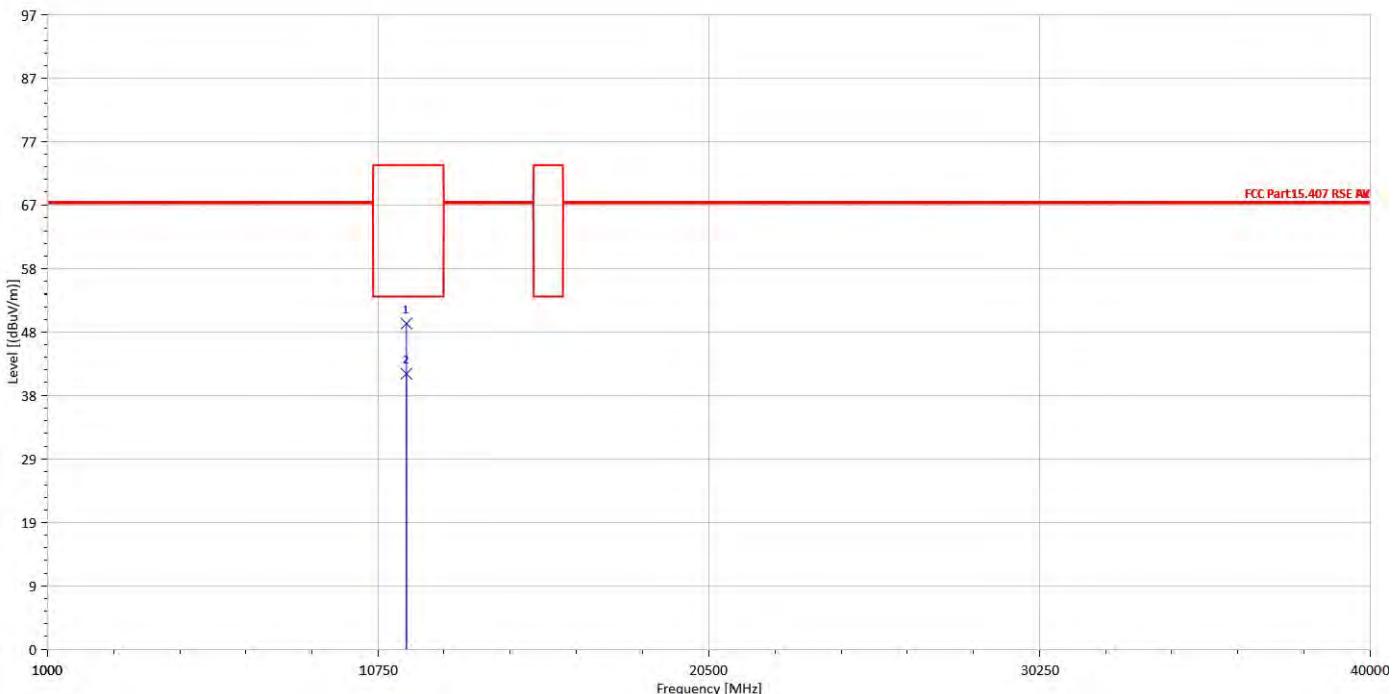
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Operation Mode : 802.11n40 Test Date : 2016/5/24  
Fundamental Frequency : 5795 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11590.00	H	Peak	29.97	19.85	49.82	74	-24.18
11590.00	H	Average	22.23	19.85	42.08	54	-11.92

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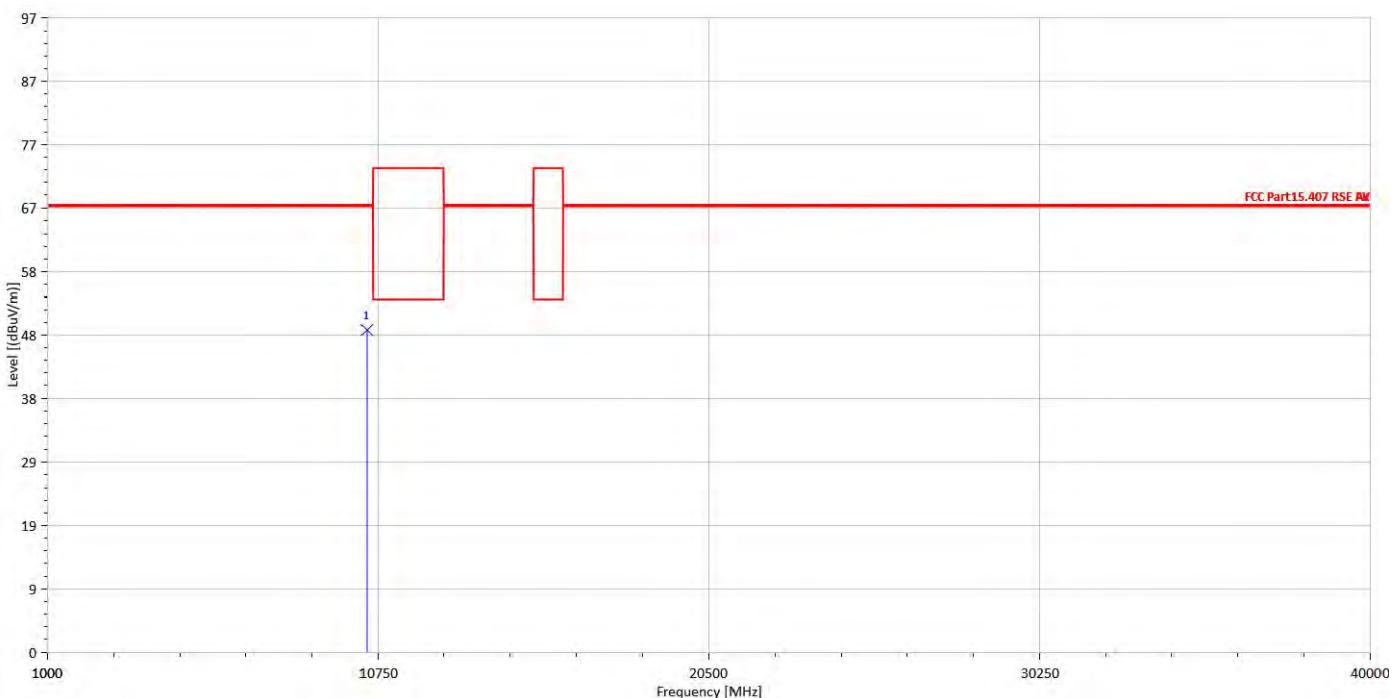
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5150~5250 MHz**

Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



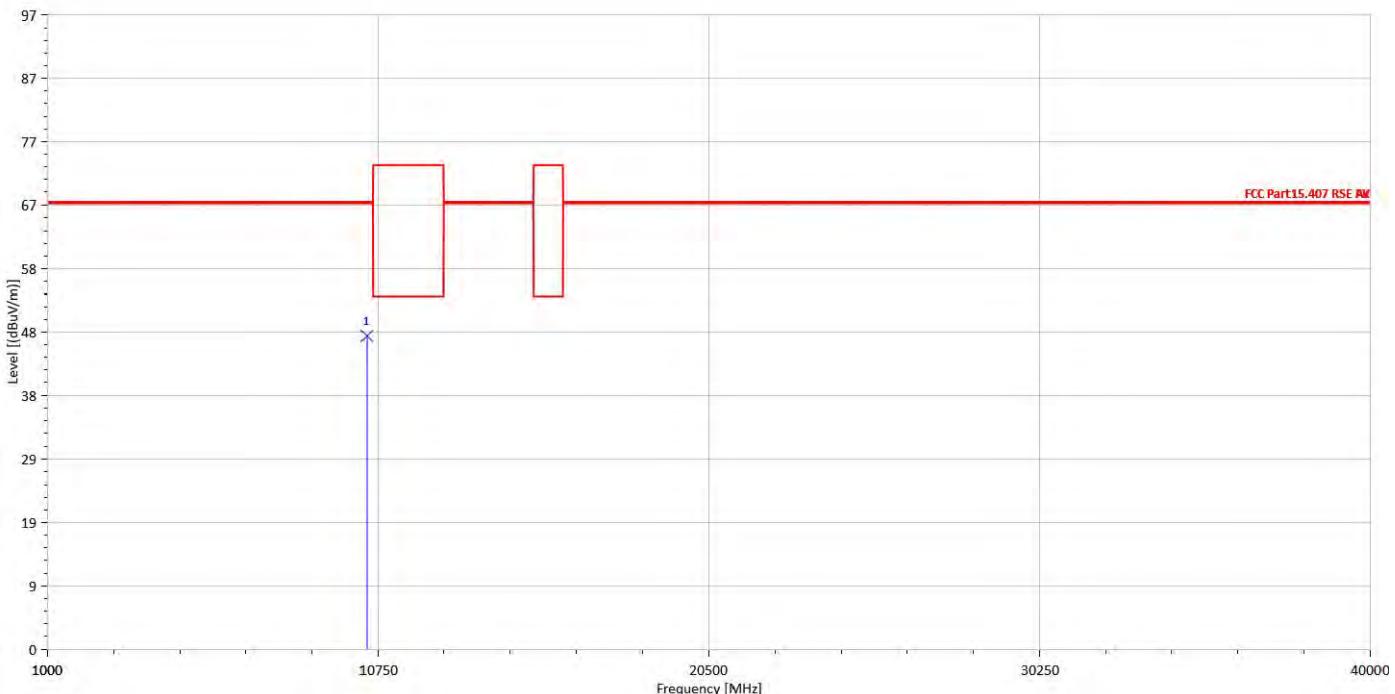
Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10420.00	H	Peak	31.25	18.05	49.29	68.3	-19.01

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Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10420.00	H	Peak	29.87	18.05	47.92	68.3	-20.38

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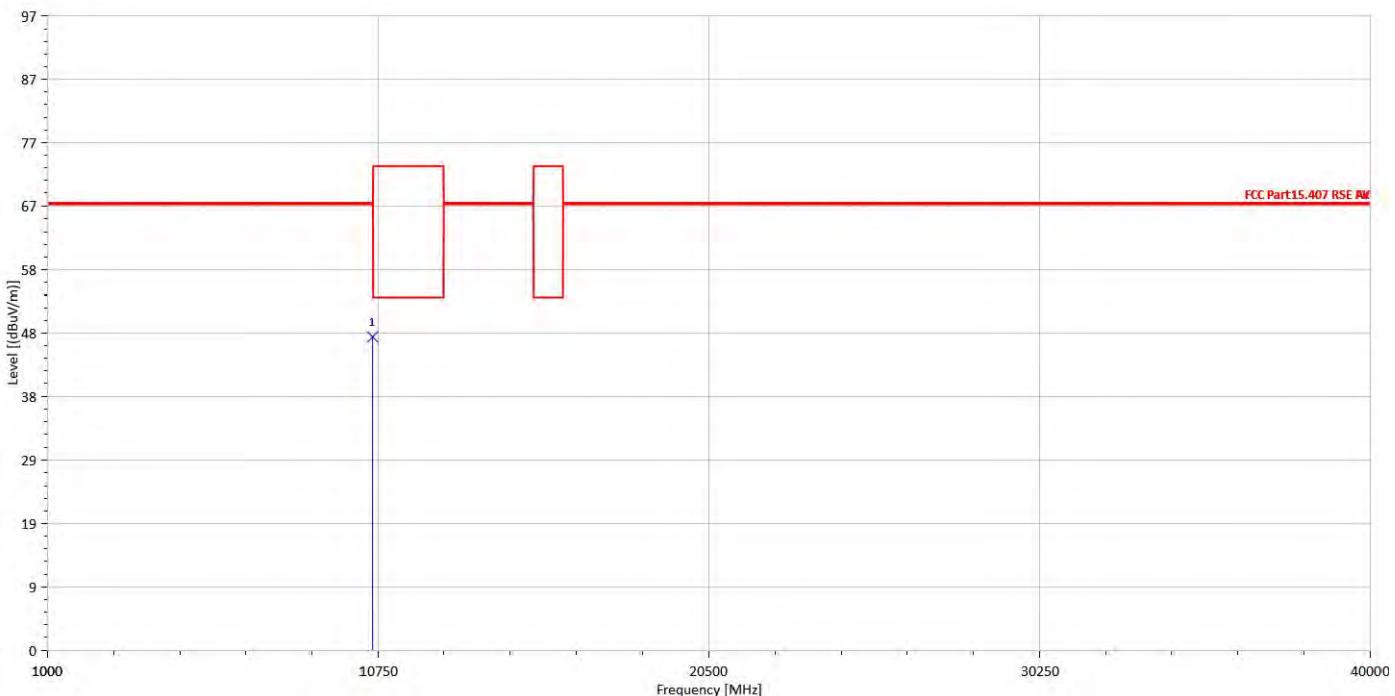
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5250~5350 MHz**

Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10580.00	H	Peak	30.55	17.37	47.92	68.3	-20.38

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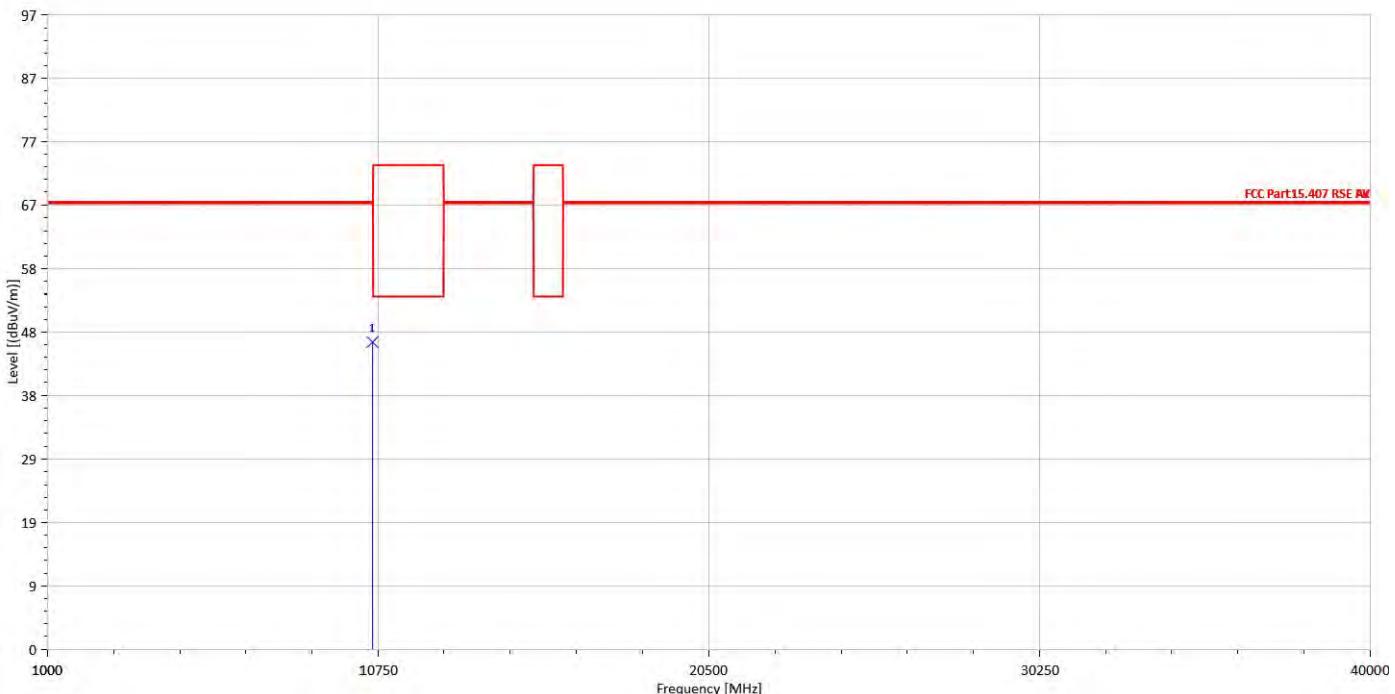
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Operation Mode : 802.11ac80      Test Date : 2016/5/24  
Fundamental Frequency : 5290 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH High      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10580.00	H	Peak	29.58	17.37	46.95	68.3	-21.35

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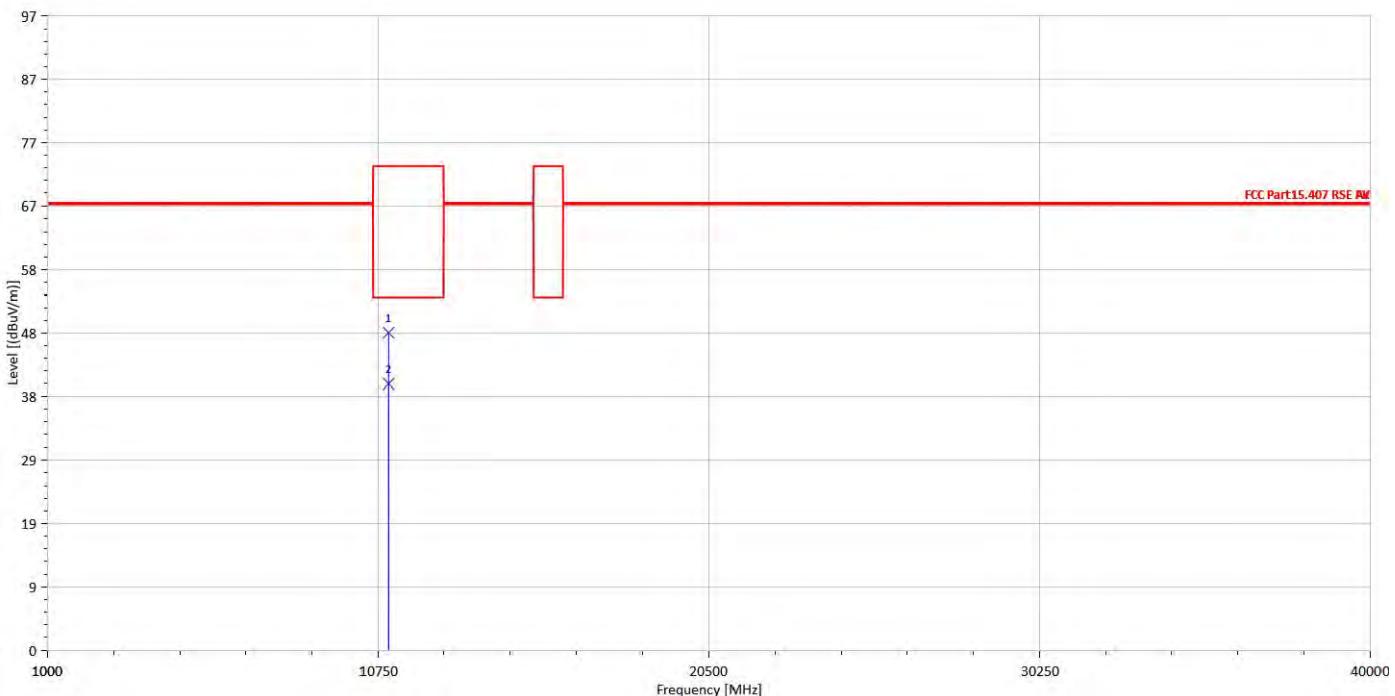
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5470~5725 MHz**

Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



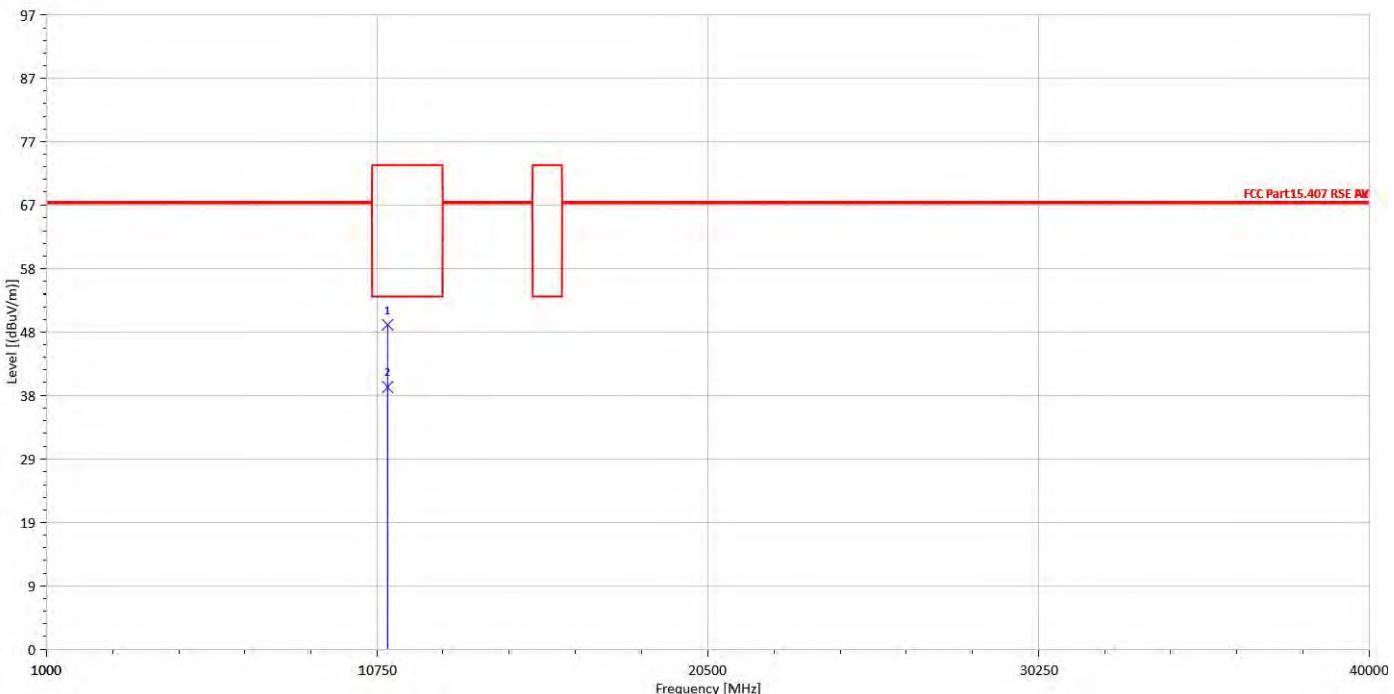
Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	Level dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11060.00	H	Peak	29.64	18.91	48.56	74	-25.44
11060.00	H	Average	21.81	18.91	40.72	54	-13.28

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Operation Mode : 802.11ac80      Test Date : 2016/5/24  
Fundamental Frequency : 5530 MHz      Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low      Test Engineer : Ashton  
EUT Pol. : E2      Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Margin dB
11060.00	H	Peak	30.72	18.91	49.64	74	-24.36
11060.00	H	Average	21.18	18.91	40.09	54	-13.91

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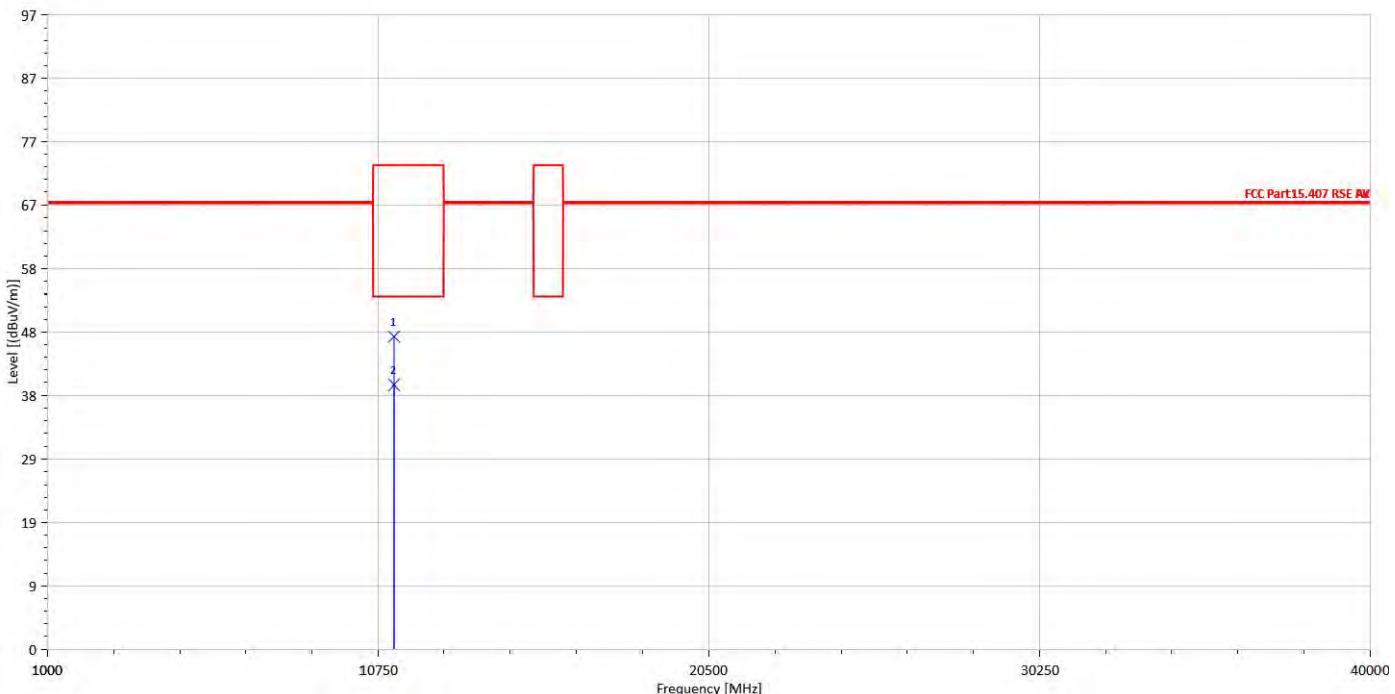
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Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5610 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11220.00	H	Peak	29.19	18.63	47.81	74	-26.19
11220.00	H	Average	21.82	18.63	40.45	54	-13.55

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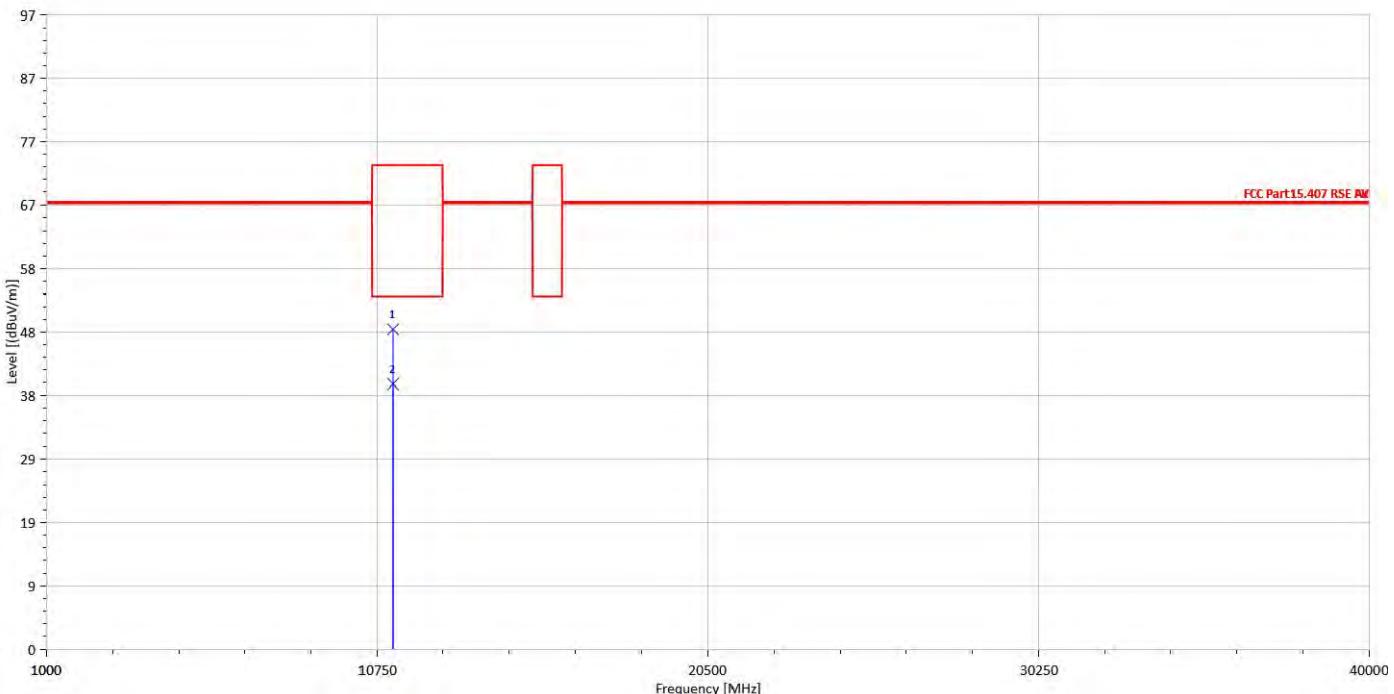
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Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5610 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Mid Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @ 3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11220.00	H	Peak	30.33	18.63	48.95	74	-25.05
11220.00	H	Average	21.92	18.63	40.55	54	-13.45

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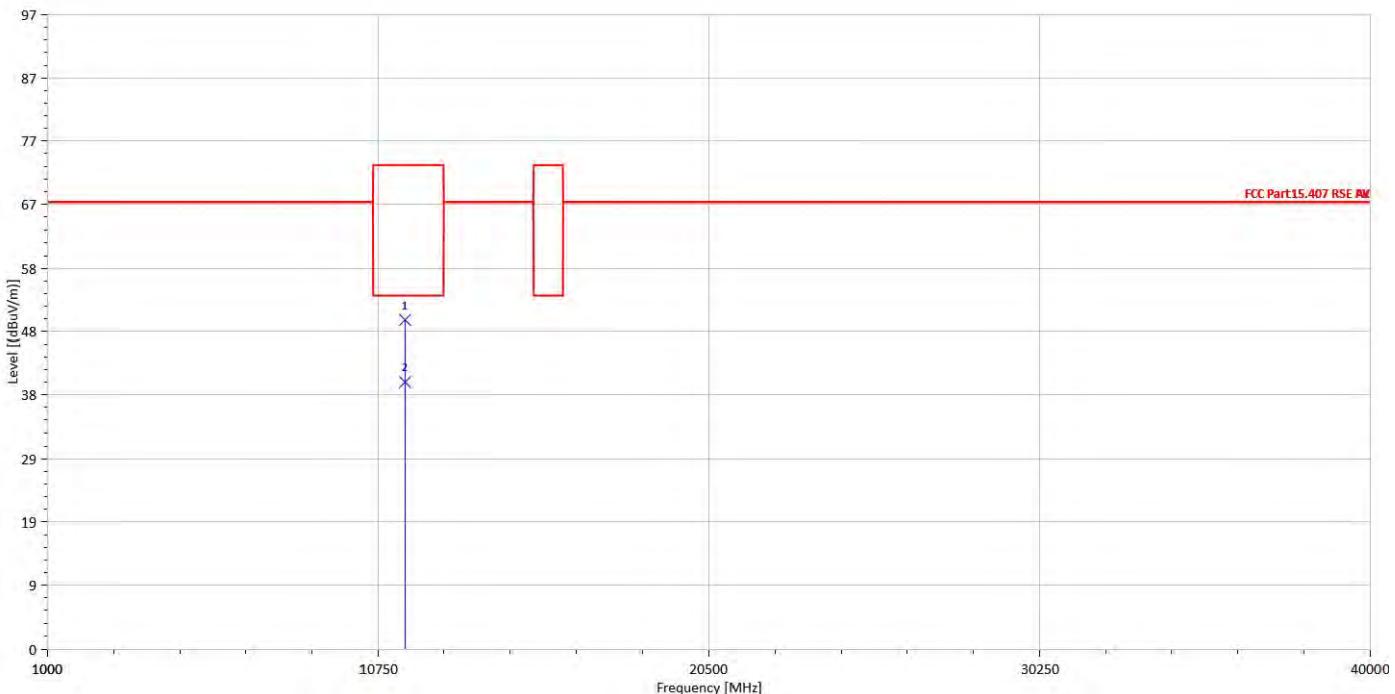
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5725~5850 MHz**

Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11550.00	H	Peak	30.96	19.28	50.25	74	-23.75
11550.00	H	Average	21.50	19.28	40.78	54	-13.22

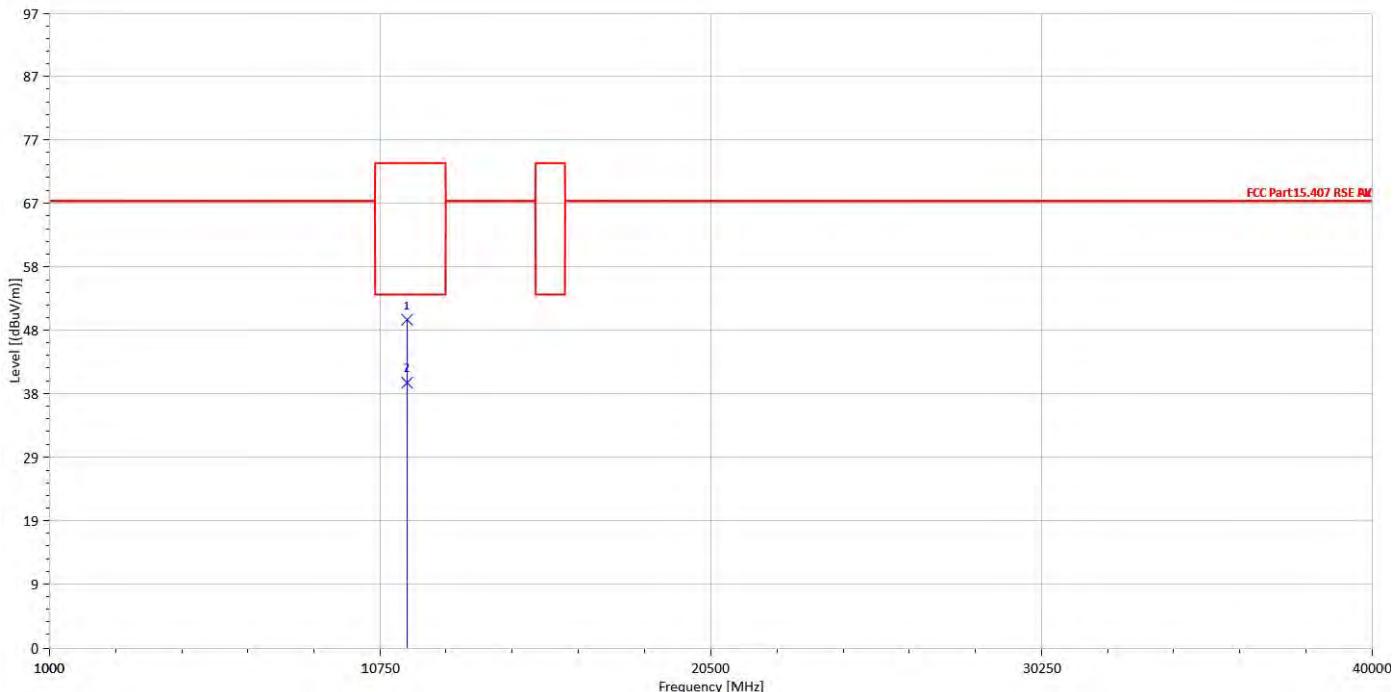
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Operation Mode : 802.11ac80 Test Date : 2016/5/24  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : Tx CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal



Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11550.00	H	Peak	30.84	19.28	50.12	74	-23.88
11550.00	H	Average	21.25	19.28	40.53	54	-13.47

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**Band edge falling to restricted band****802.11a mode**

Operation Mode :	802.11a	Test Date :	2016/5/21
Fundamental Frequency :	5180 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5149.72	S	Peak	49.20	10.78	59.98	74	-14.02
5149.72	S	Average	31.53	10.78	42.31	54	-11.69
5150.00	E	Peak	47.40	10.78	58.18	74	-15.82
5150.00	E	Average	31.54	10.78	42.32	54	-11.68

Operation Mode :	802.11a	Test Date :	2016/5/21
Fundamental Frequency :	5180 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5150.00	E	Peak	43.20	10.78	53.99	74	-20.01
5150.00	E	Average	31.38	10.78	42.16	54	-11.84

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	47.99	11.67	59.67	74	-14.33	
5350.00	E	Average	31.84	11.67	43.51	54	-10.49	
5350.92	S	Peak	50.07	11.69	61.76	74	-12.24	
5350.92	S	Average	31.79	11.69	43.48	54	-10.52	

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	42.78	11.67	54.46	74	-19.54	
5350.00	E	Average	31.57	11.67	43.24	54	-10.76	

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5459.72	S	Peak	45.85	11.66	57.51	74	-16.49	
5459.72	S	Average	31.96	11.66	43.62	54	-10.38	
5460.00	E	Peak	43.85	11.66	55.51	74	-18.49	
5460.00	E	Average	31.94	11.66	43.60	54	-10.40	

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5460.00	E	Peak	42.52	11.66	54.18	74	-19.82	
5460.00	E	Average	31.64	11.66	43.30	54	-10.70	

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5467.16	S	Peak	55.47	11.60	67.07	68.3	-1.23	
5470.00	E	Peak	53.17	11.57	64.74	68.3	-3.56	

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5467.16	S	Peak	44.47	11.60	56.07	68.3	-12.23	
5470.00	E	Peak	43.72	11.57	55.29	68.3	-13.01	

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5725.00	E	Peak	53.29	12.01	65.30	68.3	-3.00
5725.40	S	Peak	55.08	12.01	67.09	68.3	-1.21

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5725.00	E	Peak	42.80	12.01	54.81	68.3	-13.49
5726.96	S	Peak	43.63	12.01	55.64	68.3	-12.66

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5714.20	S	Peak	53.02	11.97	64.99	68.3	-3.31	
5724.80	S	Peak	64.34	12.01	76.35	78.2	-1.85	
5725.00	E	Peak	62.30	12.01	74.31	78.2	-3.89	

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5724.30	S	Peak	50.16	12.01	62.17	78.2	-16.03	
5725.00	E	Peak	49.01	12.01	61.02	78.2	-17.18	

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Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	53.07	12.15	65.21	78.2	-12.99	
5850.40	S	Peak	54.91	12.16	67.06	78.2	-11.14	

Operation Mode : 802.11a Test Date : 2016/5/21  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	44.58	12.15	56.73	78.2	-21.47	

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**802.11n20 HT mode**

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5150.00	E	Peak	42.09	10.78	52.87	74	-21.13
5150.00	E	Average	31.32	10.78	42.10	54	-11.90

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5150.00	E	Peak	41.92	10.78	52.71	74	-21.29
5150.00	E	Average	31.30	10.78	42.08	54	-11.92

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5350.00	E	Peak	44.22	11.67	55.90	74	-18.10
5350.00	E	Average	31.54	11.67	43.21	54	-10.79

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq.	Note	Detector Mode	Spectrum Reading	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5350.00	E	Peak	43.41	11.67	55.08	74	-18.92
5350.00	E	Average	31.49	11.67	43.16	54	-10.84

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5460.00	E	Peak	42.67	11.66	54.33	74	-19.67
5460.00	E	Average	31.85	11.66	43.51	54	-10.49

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5460.00	E	Peak	42.95	11.66	54.60	74	-19.40
5460.00	E	Average	31.65	11.66	43.31	54	-10.69

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5463.56	S	Peak	44.05	11.63	55.68	68.3	-12.62	
5470.00	E	Peak	43.66	11.57	55.23	68.3	-13.07	

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5470.00	E	Peak	43.82	11.57	55.39	68.3	-12.91	

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5725.00	E	Peak	47.23	12.01	59.24	68.3	-9.06
5725.76	S	Peak	49.34	12.01	61.36	68.3	-6.94

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5725.00	E	Peak	41.99	12.01	54.00	68.3	-14.30

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level		FS	@3m	
		PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5724.10	S	Peak	54.12	12.01	66.13	78.2	-12.07
5725.00	E	Peak	51.32	12.01	63.33	78.2	-14.87

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5745 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level		FS	@3m	
		PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5725.00	E	Peak	42.88	12.01	54.89	78.2	-23.31

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Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	49.01	12.15	61.16	78.2	-17.04	
5850.60	S	Peak	50.99	12.16	63.15	78.2	-15.05	

Operation Mode : 802.11n20 Test Date : 2016/5/21  
Fundamental Frequency : 5825 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	41.65	12.15	53.80	78.2	-24.40	
5854.10	S	Peak	43.06	12.22	55.29	78.2	-22.91	

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**802.11n40 HT mode**

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5149.48	S	Peak	45.14	10.78	55.92	74	-18.08	
5149.48	S	Average	31.59	10.78	42.37	54	-11.63	
5150.00	E	Peak	42.85	10.78	53.63	74	-20.37	
5150.00	E	Average	31.61	10.78	42.39	54	-11.61	

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/Avg	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5150.00	E	Peak	42.40	10.78	53.19	74	-20.81	
5150.00	E	Average	31.20	10.78	41.98	54	-12.02	

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	46.91	11.67	58.58	74	-15.42	
5350.00	E	Average	32.16	11.67	43.83	54	-10.17	
5352.08	S	Peak	49.01	11.71	60.72	74	-13.28	
5352.08	S	Average	32.08	11.71	43.79	54	-10.21	

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	43.61	11.67	55.29	74	-18.71	
5350.00	E	Average	31.56	11.67	43.23	54	-10.77	

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5455.80	S	Peak	48.95	11.70	60.64	74	-13.36	
5455.80	S	Average	31.97	11.70	43.67	54	-10.33	
5460.00	E	Peak	47.75	11.66	59.41	74	-14.59	
5460.00	E	Average	32.24	11.66	43.90	54	-10.10	

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5460.00	E	Peak	44.42	11.66	56.08	74	-17.92	
5460.00	E	Average	31.47	11.66	43.13	54	-10.87	

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5468.64	S	Peak	55.03	11.58	66.61	68.3	-1.69
5470.00	E	Peak	51.81	11.57	63.38	68.3	-4.92

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5466.24	S	Peak	43.97	11.60	55.57	68.3	-12.73
5470.00	E	Peak	43.04	11.57	54.61	68.3	-13.69

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level		FS	@3m	
		PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5725.00	E	Peak	44.10	12.01	56.11	68.3	-12.19

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level		FS	@3m	
		PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5725.00	E	Peak	42.60	12.01	54.61	68.3	-13.69

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5755 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5724.00	S	Peak	48.52	12.01	60.53	78.2	-17.67
5725.00	E	Peak	44.92	12.01	56.93	78.2	-21.27

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5755 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5719.30	S	Peak	42.72	11.99	54.71	78.2	-23.49
5725.00	E	Peak	41.47	12.01	53.48	78.2	-24.72

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Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5795 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	44.30	12.15	56.45	78.2	-21.75	
5850.10	S	Peak	46.32	12.15	58.47	78.2	-19.73	

Operation Mode : 802.11n40 Test Date : 2016/5/21  
Fundamental Frequency : 5795 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5850.00	E	Peak	42.02	12.15	54.17	78.2	-24.03	
5850.20	S	Peak	43.06	12.15	55.21	78.2	-22.99	

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**802.11ac80 VHT mode**

Operation Mode :	802.11ac80	Test Date :	2016/5/21
Fundamental Frequency :	5210 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5147.70	S	Peak	44.59	10.77	55.36	74	-18.64
5147.70	S	Average	31.82	10.77	42.59	54	-11.41
5150.00	E	Peak	43.56	10.78	54.34	74	-19.66
5150.00	E	Average	31.78	10.78	42.56	54	-11.44

Operation Mode :	802.11ac80	Test Date :	2016/5/21
Fundamental Frequency :	5210 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
5150.00	E	Peak	42.32	10.78	53.10	74	-20.90
5150.00	E	Average	31.37	10.78	42.15	54	-11.85

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Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	44.67	11.67	56.34	74	-17.66	
5350.00	E	Average	32.07	11.67	43.74	54	-10.26	
5373.30	S	Peak	47.86	11.53	59.39	74	-14.61	
5373.30	S	Average	31.79	11.53	43.32	54	-10.68	

Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5350.00	E	Peak	42.26	11.67	53.93	74	-20.07	
5350.00	E	Average	31.58	11.67	43.25	54	-10.75	

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Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5458.20	S	Peak	52.72	11.68	64.40	74	-9.60	
5458.20	S	Average	35.61	11.68	47.29	54	-6.71	
5460.00	E	Peak	51.73	11.66	63.39	74	-10.61	
5460.00	E	Average	35.58	11.66	47.24	54	-6.76	

Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level		Factor	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V	dB				
5458.30	S	Peak	45.33	11.67	57.00	74	-17.00	
5458.30	S	Average	31.92	11.67	43.59	54	-10.41	
5460.00	E	Peak	43.12	11.66	54.78	74	-19.22	
5460.00	E	Average	31.89	11.66	43.55	54	-10.45	

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Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5464.50	S	Peak	53.68	11.62	65.30	68.3	-3.00
5470.00	E	Peak	53.34	11.57	64.91	68.3	-3.39

Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low RSE Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5458.30	S	Peak	45.33	11.67	57.00	68.3	-11.30
5470.00	E	Peak	43.93	11.57	55.50	68.3	-12.80

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Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5722.70	S	Peak	54.93	12.00	66.93	78.2	-11.27
5725.00	E	Peak	54.69	12.01	66.70	78.2	-11.50

Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH Low Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5722.80	S	Peak	44.10	12.00	56.10	78.2	-22.10
5725.00	E	Peak	42.78	12.01	54.79	78.2	-23.41

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Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Vertical

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5850.00	E	Peak	51.63	12.15	63.77	78.2	-14.43
5858.64	S	Peak	52.99	12.30	65.29	78.2	-12.91

Operation Mode : 802.11ac80 Test Date : 2016/5/21  
Fundamental Frequency : 5775 MHz Temp. / Humi. : 22.7deg\_C/57RH  
Operation Band : BE CH High Test Engineer : Ashton  
EUT Pol. : E2 Measurement Antenna Pol. : Horizontal

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
			dB $\mu$ V				
5850.00	E	Peak	40.27	12.15	52.41	78.2	-25.79
5858.76	S	Peak	41.97	12.31	54.27	78.2	-23.93

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## 12. TRANSMISSION IN THE ABSENCE OF DATA

### 12.1 Standard Applicable

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

### 12.2 Result

No non-compliance noted:

Refer to the theory of operation.

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## 13. FREQUENCY STABILITY

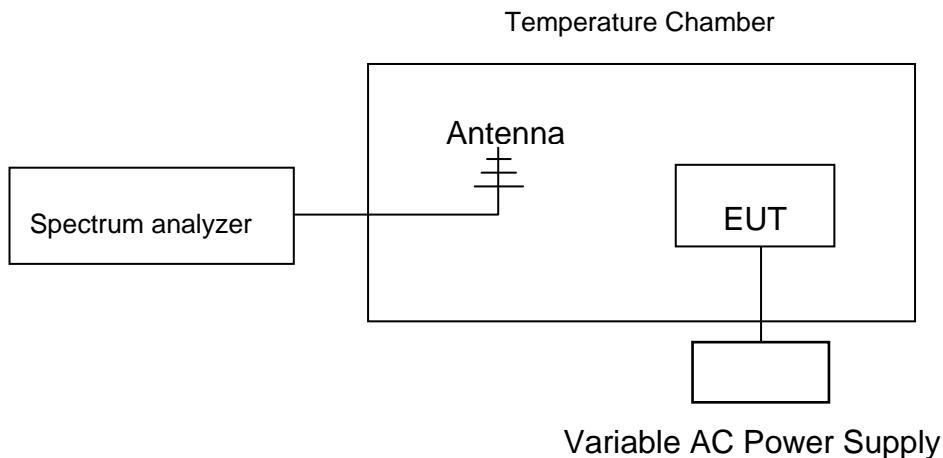
### 13.1 Standard Applicable

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 user's manual.

### 13.2 Measurement Procedure

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.

### 13.3 Test SET-UP



### 13.4 Measurement Equipment Used:

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017
DC Block	PASTERNAK	PE8210	RF29	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017

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### 13.5 Measurement Result

Operation Mode	802.11 a	Test Date	2016.05.24
Temperature	:24	Test By	Enzo
Humidity	:55 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.63V	36	5180	5,179.90798	0.00001776
		44	5220	5,219.97077	0.00000560
		48	5240	5,239.97227	0.00000529
		52	5260	5,259.97103	0.00000551
		60	5300	5,299.97144	0.00000539
		64	5320	5,319.97049	0.00000555
		100	5500	5,499.96935	0.00000557
		116	5580	5,580.00711	-0.00000127
		140	5700	5,699.96838	0.00000555
		149	5745	5,744.96808	0.00000556
-10	2.97V	157	5785	5,785.00861	-0.00000149
		165	5825	5,825.00751	-0.00000129
		36	5180	5,179.90814	0.00001773
		44	5220	5,219.97063	0.00000563
		48	5240	5,239.97160	0.00000542
		52	5260	5,259.97084	0.00000554
		60	5300	5,299.97003	0.00000565
		64	5320	5,319.97098	0.00000545
		100	5500	5,499.97026	0.00000541
		116	5580	5,580.00672	-0.00000120

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25	3.3V	36	5180	5,179.90621	0.00001811
		44	5220	5,219.96898	0.00000594
		48	5240	5,239.97061	0.00000561
		52	5260	5,259.96997	0.00000571
		60	5300	5,299.96984	0.00000569
		64	5320	5,319.96975	0.00000569
		100	5500	5,499.96875	0.00000568
		116	5580	5,580.00630	-0.00000113
		140	5700	5,699.96758	0.00000569
		149	5745	5,744.96767	0.00000563
		157	5785	5,785.00709	-0.00000123
		165	5825	5,825.00721	-0.00000124
55	3.63V	36	5180	5,179.90480	0.00001838
		44	5220	5,219.96816	0.00000610
		48	5240	5,239.97048	0.00000563
		52	5260	5,259.96848	0.00000599
		60	5300	5,299.96923	0.00000581
		64	5320	5,319.96944	0.00000574
		100	5500	5,499.96779	0.00000586
		116	5580	5,580.00575	-0.00000103
		140	5700	5,699.96656	0.00000587
		149	5745	5,744.96636	0.00000586
		157	5785	5,785.00652	-0.00000113
		165	5825	5,825.00592	-0.00000102
	2.97V	36	5180	5,179.90512	0.00001832
		44	5220	5,219.96867	0.00000600
		48	5240	5,239.96901	0.00000591
		52	5260	5,259.96930	0.00000584
		60	5300	5,299.96800	0.00000604
		64	5320	5,319.96933	0.00000577
		100	5500	5,499.96836	0.00000575
		116	5580	5,580.00499	-0.00000089
		140	5700	5,699.96693	0.00000580
		149	5745	5,744.96688	0.00000577
		157	5785	5,785.00699	-0.00000121
		165	5825	5,825.00658	-0.00000113

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Operation Mode	802.11 n_HT40	Test Date	2016.05.24
Temperature	:24	Test By	Enzo
Humidity	:55 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.63V	38	5190	5,189.96307	0.00000712
		46	5230	5,230.00722	-0.00000138
		54	5270	5,269.97201	0.00000531
		62	5310	5,309.96154	0.00000724
		102	5510	5,509.95969	0.00000732
		110	5550	5,550.00876	-0.00000158
		134	5670	5,669.95761	0.00000748
		151	5755	5,754.96880	0.00000542
	2.97V	159	5795	5,795.00851	-0.00000147
		38	5190	5,189.96196	0.00000733
		46	5230	5,230.00704	-0.00000135
		54	5270	5,269.97249	0.00000522
		62	5310	5,309.96097	0.00000735
		102	5510	5,509.96073	0.00000713
		110	5550	5,550.00847	-0.00000153
		134	5670	5,669.95750	0.00000750
		151	5755	5,754.96877	0.00000543
		159	5795	5,795.00824	-0.00000142

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25	3.3V	38	5190	5,189.96126	0.00000746
		46	5230	5,230.00673	-0.00000129
		54	5270	5,269.97053	0.00000559
		62	5310	5,309.96016	0.00000750
		102	5510	5,509.95909	0.00000742
		110	5550	5,550.00683	-0.00000123
		134	5670	5,669.95683	0.00000761
		151	5755	5,754.96748	0.00000565
		159	5795	5,795.00684	-0.00000118
55	3.63V	38	5190	5,189.95946	0.00000781
		46	5230	5,230.00492	-0.00000094
		54	5270	5,269.97002	0.00000569
		62	5310	5,309.95909	0.00000770
		102	5510	5,509.95791	0.00000764
		110	5550	5,550.00559	-0.00000101
		134	5670	5,669.95559	0.00000783
		151	5755	5,754.96669	0.00000579
		159	5795	5,795.00615	-0.00000106
	2.97V	38	5190	5,189.96004	0.00000770
		46	5230	5,230.00534	-0.00000102
		54	5270	5,269.96899	0.00000588
		62	5310	5,309.95969	0.00000759
		102	5510	5,509.95840	0.00000755
		110	5550	5,550.00576	-0.00000104
		134	5670	5,669.95679	0.00000762
		151	5755	5,754.96684	0.00000576
		159	5795	5,795.00681	-0.00000118

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Operation Mode	802.11 ac_VHT80	Test Date	2016.05.24
Temperature	:24	Test By	Enzo
Humidity	:55 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.63V	42	5210	5,209.95909	0.00000785
		58	5290	5,289.95976	0.00000761
		106	5530	5,529.95735	0.00000771
		122	5610	5,609.95673	0.00000771
		155	5775	5,774.98670	0.00000230
	2.97V	42	5210	5,209.96041	0.00000760
		58	5290	5,289.95900	0.00000775
		106	5530	5,529.95801	0.00000759
		122	5610	5,609.95561	0.00000791
		155	5775	5,774.98657	0.00000233
25	3.3V	42	5210	5,209.96065	0.00000755
		58	5290	5,289.95998	0.00000757
		106	5530	5,529.95882	0.00000745
		122	5610	5,609.95751	0.00000757
		155	5775	5,774.98720	0.00000222
55	3.63V	42	5210	5,209.96140	0.00000741
		58	5290	5,289.96064	0.00000744
		106	5530	5,529.96068	0.00000711
		122	5610	5,609.95949	0.00000722
		155	5775	5,774.98757	0.00000215
	2.97V	42	5210	5,209.96075	0.00000753
		58	5290	5,289.96067	0.00000743
		106	5530	5,529.95999	0.00000724
		122	5610	5,609.95754	0.00000757
		155	5775	5,774.98782	0.00000211

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## 14. ANTENNA REQUIREMENT

### 14.1 Standard Applicable

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

According to §15.407, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 14.2 Antenna Connected Construction

PCB antenna designs are used.

The antenna is designed as permanently attached and has no consideration of replacement.

Please see EUT photo and antenna spec. for details.

*~ End of Report ~*

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