

## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

OF

**Product Name:** Mobile Phone  
**Brand Name:** FUJITSU  
**Model No.:** F-01J  
**Model Difference:** N/A  
**FCC ID:** VQK-F01J  
**Report No.:** ER/2016/80158  
**Issue Date:** Sep. 27, 2016  
**FCC Rule Part:** §15.407  
**Prepared for:** Fujitsu Limited  
1-1, Kamikodanaka 4-chome, Nakahara-ku,  
Kawasaki 211-8588, Japan  
**Prepared by:** SGS Taiwan Ltd.  
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## VERIFICATION OF COMPLIANCE

**Applicant:** Fujitsu Limited  
1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki 211-8588, Japan

**Product Name:** Mobile Phone

**Brand Name:** FUJITSU

**Model No.:** F-01J

**Model Difference:** N/A

**FCC ID:** VQK-F01J

**File Number:** ER/2016/80158

**Date of Test:** Aug. 17, 2016 ~ Sep. 19, 2016

**Date of EUT Received:** Aug. 17, 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:**

Sep. 27, 2016

*Louis Chen / Engineer*

**Prepared By:**

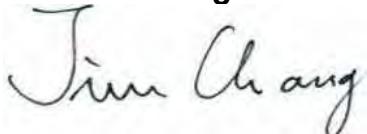


**Date:**

Sep. 27, 2016

*Violetta Tang / Clerk*

**Approved By:**



**Date:**

Sep. 27, 2016

*Jim Chang / Asst. Manager*

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## Revision History

Report Number	Revision	Description	Issue Date
ER/2016/80158	Rev.00	Initial creation of document	Sep. 27, 2016

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## 1. GENERAL INFORMATION

### 1.1 Product Description

General:

Product Name:	Mobile Phone	
Brand Name:	FUJITSU	
Model No.:	F-01J	
Model Difference:	N/A	
Hardware Version:	V2.1.0	
Software Version:	R015.1e	
Power Supply:	3.8Vdc from Rechargeable Li-polymer Battery or 5V from AC/DC Adapter	
	Battery:	Model No.: CA54310-0069-A1, Supplier: FUJITSU CONNECTED TECHNOLOGIES LIMITED
	Adapter:	Model No.: FMV-AC346, Supplier: FUJITSU LIMITED

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## WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology	
11a	5150~5250	4	10.86 dBm	OFDM	
	5250~5350	4	10.86 dBm		
	5470~5725	12	10.51 dBm		
11n / ac_20M	HT / VHT20 5150~5250	4	HT: 10.89 dBm (Worst Case)	OFDM	
	HT / VHT20 5250~5350	4	HT: 10.75 dBm (Worst Case)		
	HT / VHT20 5470~5725	11	HT: 10.52 dBm (Worst Case)		
11n / ac_40M	HT / VHT40 5150~5250	2	HT: 11.43 dBm (Worst Case)	OFDM	
	HT / VHT40 5250~5350	2	HT: 11.49 dBm (Worst Case)		
	HT / VHT40 5470~5725	5	HT: 11.46 dBm (Worst Case)		
11ac_80M	VHT80 5150~5250	1	10.67 dBm	OFDM	
	VHT80 5250~5350	1	10.57 dBm		
	VHT80 5470~5725	2	10.53 dBm		
Antenna Designation		λ/4 Monopole Antenna, 5GHz Gain: -5dBi (5150MHz-5250MHz) 5GHz Gain: -5dBi (5250MHz-5350MHz) 5GHz Gain: -5dBi (5470MHz-5725MHz)			
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_20 / ac VHT20MHz: 6.5 – 65Mbps 802.11 n_40 / ac VHT40MHz: 13.5 – 135Mbps 802.11 ac_80MHz: 29.3 – 292.5Mbps			

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## 1.2 Product Feature of Equipment Under Test

The equipment under Test (Hereafter Called: EUT) is Mobile Phone, supporting GSM / WCDMA / LTE, Wi-Fi 802.11a/b/g/n/ac, Bluetooth, NFC and ANT+ features, and below is details of information.

Product Feature	
Product Name:	Mobile Phone
Brand Name:	FUJITSU
Model No.:	F-01J
Model Difference:	N/A
FCC ID:	VQK-F01J
GSM Operating Band(s)	GSM 850/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 11
WCDMA Operating Band(s)	FDD Band V
WCDMA Rel. Version	Rel.9
LTE Operating Band(s)	FCC Band 5: Part 22
LTE Rel. Version	Rel.10
Bluetooth Version	V4.2 dual mode
Wi-Fi- Specification	802.11a/b/g/n/ac
NFC Specification	NFC
ANT+ Specification	ANT+

**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 v01

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.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803 (TAF code 0513)

FCC Registration Numbers are: 509634

Canada Registration Number: 4620A-5.

### 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 1.2dB, and 10dB attenuator.

#### Offset:

= RF cable loss (dB)+ attenuation factor(dB) dB =11.2dB

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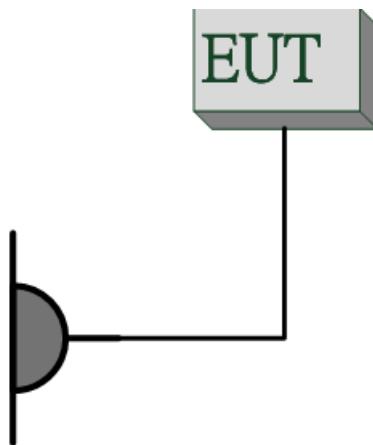
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## 2.5 Configuration of Tested System

**Fig. 2-1 Radiated Emission & Conducted (Antenna Port) Configuration**



**Fig. 2-2 AC Power Line Conducted Emission Configuration**



**Table 2-1 Equipment Used in Tested System**

Item	Equipment	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
2.	Notebook	Lenovo	R400	7440AV6	N/A	Un-shield

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### 3. SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB 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:

4 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac\_VHT80

CHANNEL	FREQUENCY
42	5210 MHz

Operated band in 5250 MHz ~5350 MHz:

4 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac\_VHT80

CHANNEL	FREQUENCY
58	5290 MHz

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Operated band in 5470 MHz ~5725 MHz:

11 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channels are provided for 802.11ac\_VHT80

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610 MHz

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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.
4. The given UE is pre-scanned among 802.11n and ac modes, and 802.11n yields the highest reading that generates the highest emission. Therefore, 802.11n as the mode of test configuration is chosen to carry out the relevantly mandatory test items.

### RADIATED EMISSION TEST:

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

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MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5500~5720	100 to 144	100,116,140	OFDM	6	MAIN
802.11n_HT20				OFDM	MCS0	MAIN
802.11n_HT40	5510~5710	102 to 142	102,110,134	OFDM	MCS0	MAIN
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS0	MAIN

**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 H position was reported.

**ANTENNA PORT CONDUCTED MEASUREMENT:**

CONDUCTED TEST						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	MAIN
802.11n_HT20				OFDM	MCS0	MAIN
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0	MAIN
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MAIN
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6	MAIN
802.11n_HT20				OFDM	MCS0	MAIN
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0	MAIN
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN
802.11a	5500~5700	100 to 140	100,116,140	OFDM	6	MAIN
802.11n_HT20				OFDM	MCS0	MAIN
802.11n_HT40	5510~5670	102 to 134	102,110,134	OFDM	MCS0	MAIN
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS0	MAIN

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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	ESCI7	100760	05/10/2016	05/09/2017
LISN	SCHWARZBECK	NSLK 8127	8127-649	05/16/2016	05/15/2017
LISN	MESS TEC	FCC-LISN-50/250 -25-2-01	4034	05/16/2016	05/15/2017
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2015	11/25/2016

### 6.3. EUT Setup

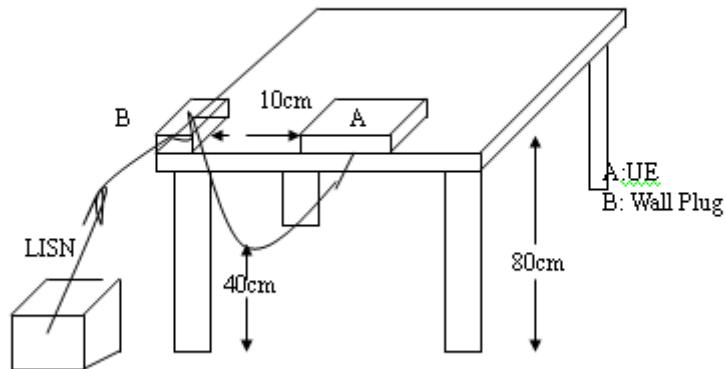
1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The LISN was connected with 120Vac/60Hz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

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## 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

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that closet to the limit

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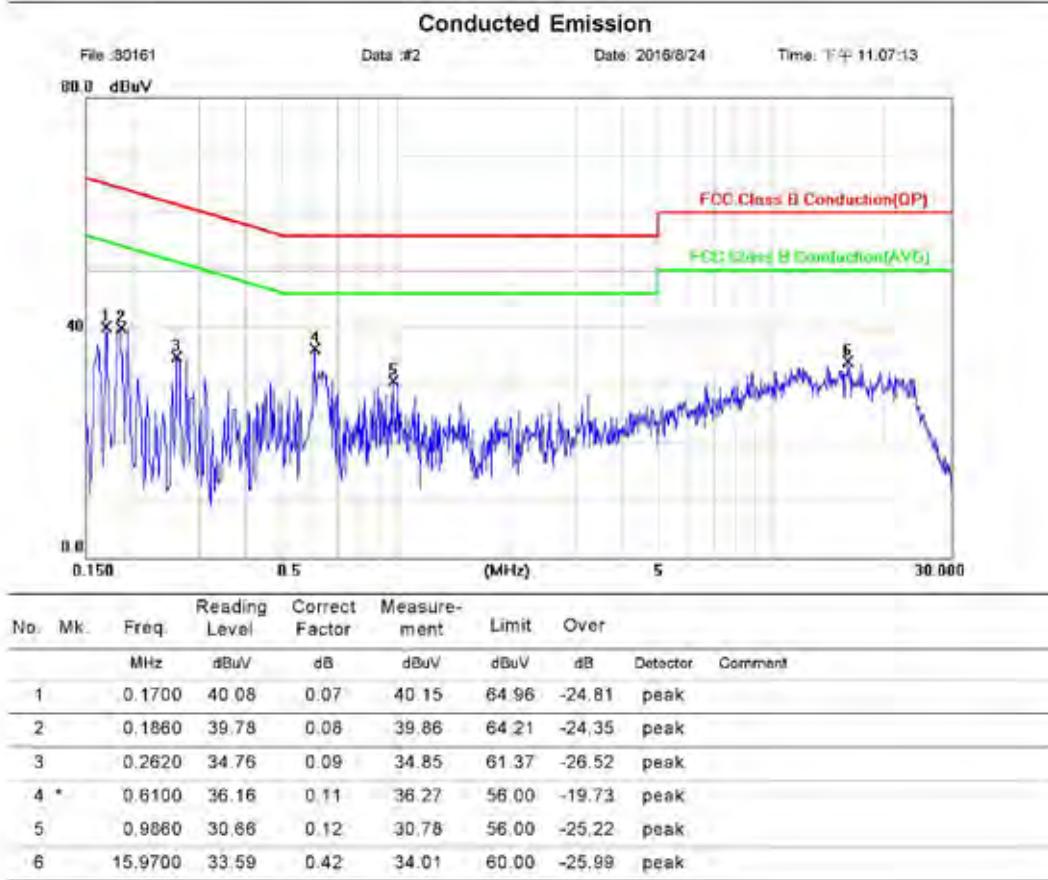
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**AC POWER LINE CONDUCTED EMISSION TEST DATA**

Operation Mode:	Operation mode			Test Date:	Aug. 24, 2016
Temperature:	20	Humidity:	58 %	Test By:	Aken
				Phase:	L1 / N

Site Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode: Operation  
Note: Adapter: AC-Adaptor-05

Phase: **L1** Temperature: 20 °C  
Power: AC 120V/60Hz Humidity: 58 %



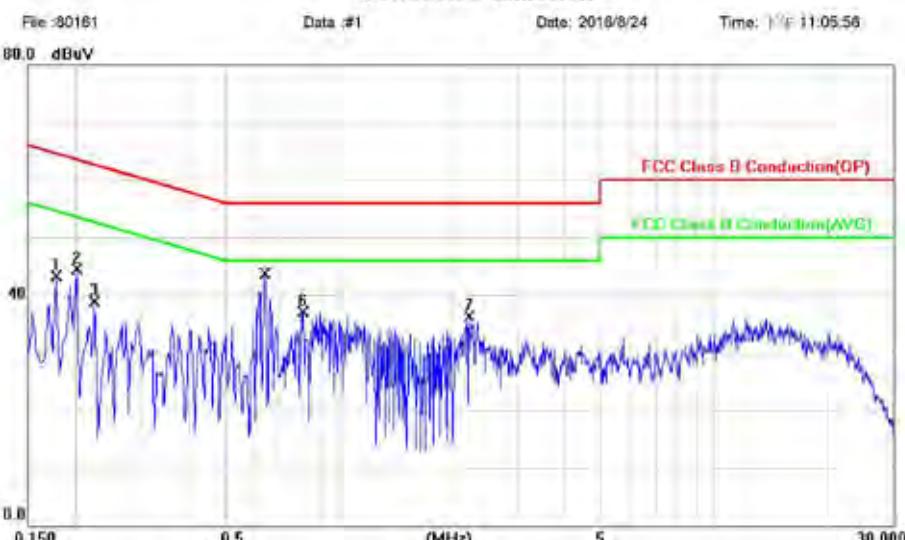
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Site Conduction Room  
Limit: FCC Class B Conduction(QP)  
Mode: Operation  
Note: Adapter: AC-Adaptor-05

Phase: **N**  
Power: AC 120V/60Hz  
Temperature: 20 °C  
Humidity: 56 %

**Conducted Emission**

No.	Mk	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1780	43.15	0.08	43.23	64.58	-21.35	peak	
2		0.2020	44.41	0.08	44.49	63.53	-19.04	peak	
3		0.2260	38.84	0.08	38.92	62.60	-23.68	peak	
4	"	0.6420	40.60	0.11	40.71	56.00	-15.29	QP	
5		0.6420	28.50	0.11	28.61	46.00	-17.39	AVG	
6		0.8100	36.93	0.11	37.04	56.00	-18.96	peak	
7		2.2460	36.10	0.16	36.26	56.00	-19.74	peak	

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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) $=10 \cdot \log (1/\text{Duty Cycle})$
802.11a	100.00	0.00
802.11n_20	100.00	0.00
802.11n_40	100.00	0.00
802.11ac_80	100.00	0.00

Duty Cycle Factor:  $10 \cdot \log(1/1) = 0$

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## DUTY CYCLE TEST SIGNAL Measurement Result

### 802.11a



### 802.11n HT20



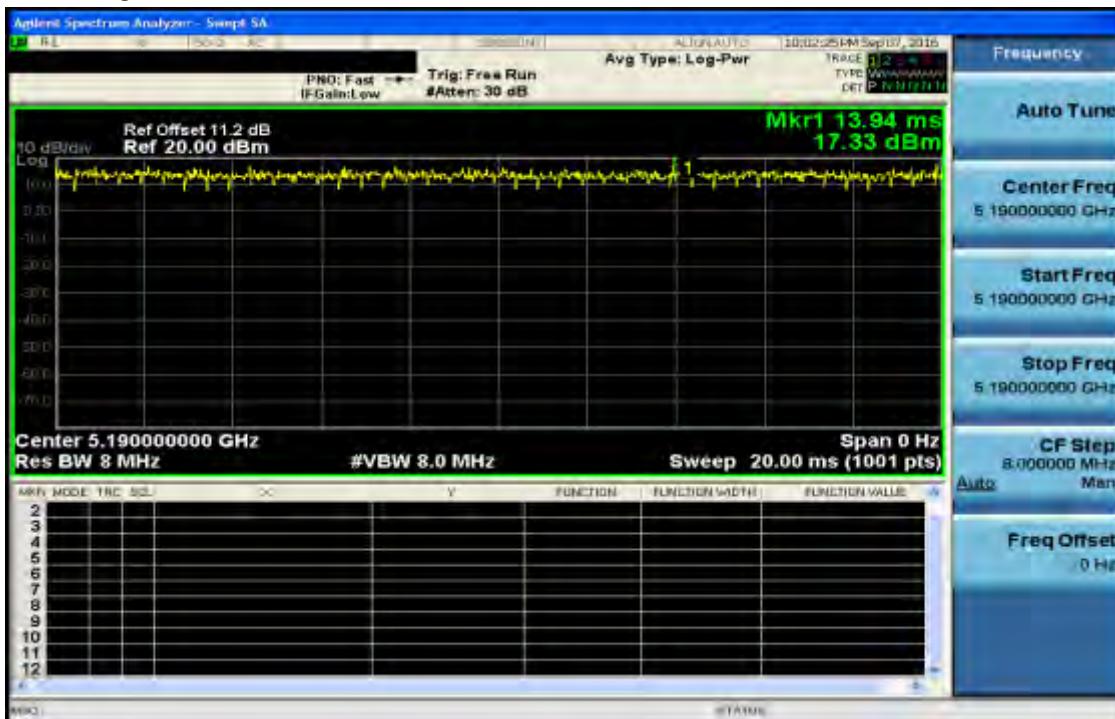
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## 802.11n HT 40



## 802.11 ac VHT 80



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## 8. 26dB 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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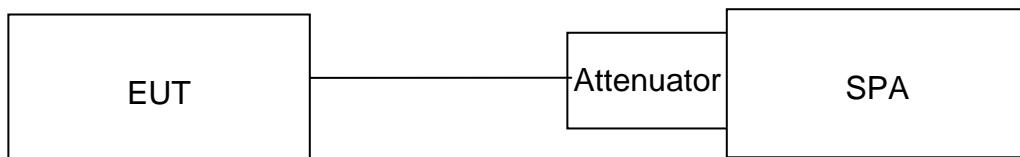
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### 8.3 Measurement Equipment Used

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
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017
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	05/17/2016	05/16/2017

### 8.4 Test Set-up



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## 8.5 Measurement Result

### 26dB Bandwidth

**802.11a\_Main**

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.07	13.437
5220	21.73	13.370
5240	21.78	13.380
5260	22.19	13.462
5300	21.99	13.421
5320	22.08	13.440
5500	21.88	13.401
5580	22.68	13.556
5700	22.25	13.472

**802.11n\_HT20\_Main**

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	22.30	13.484
5220	22.47	13.516
5240	21.91	13.407
5260	22.43	13.508
5300	22.31	13.485
5320	22.44	13.511
5500	22.64	13.549
5580	21.99	13.421
5700	22.72	13.564

**802.11n\_HT40\_Main**

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	42.77	16.312
5230	42.76	16.310
5270	43.07	16.342
5310	43.30	16.365
5510	43.46	16.380
5550	43.48	16.383
5670	44.05	16.439

**802.11ac\_VHT80\_Main**

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	83.65	19.225
5290	83.89	19.237
5530	83.73	19.229
5610	84.21	19.254

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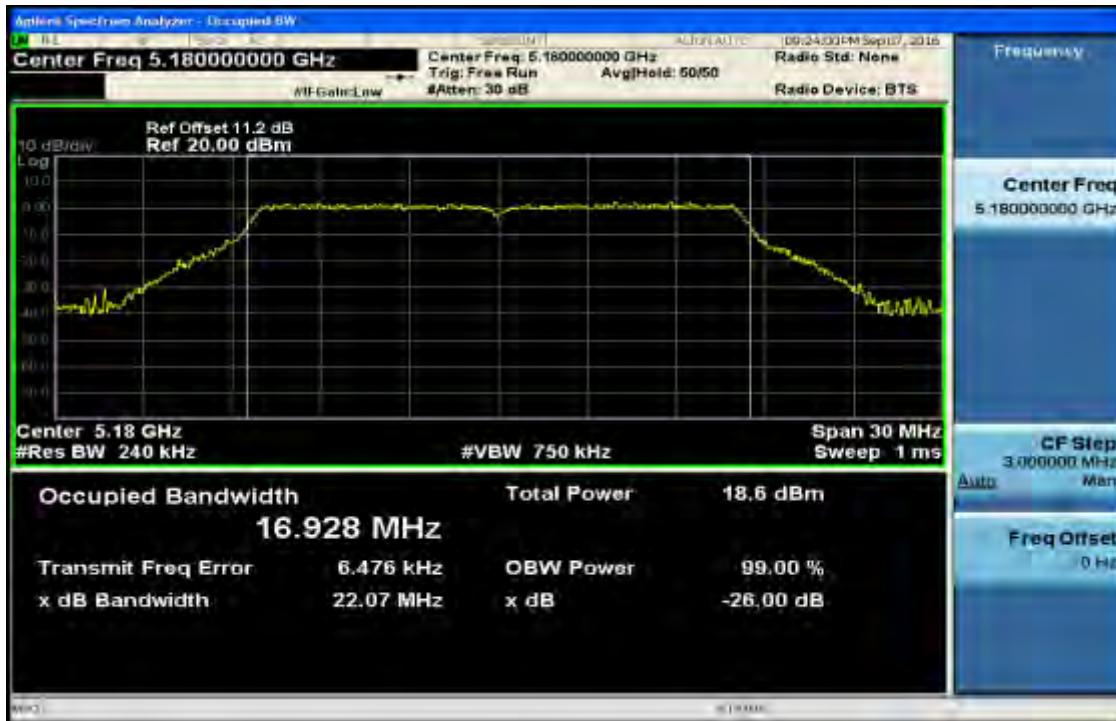
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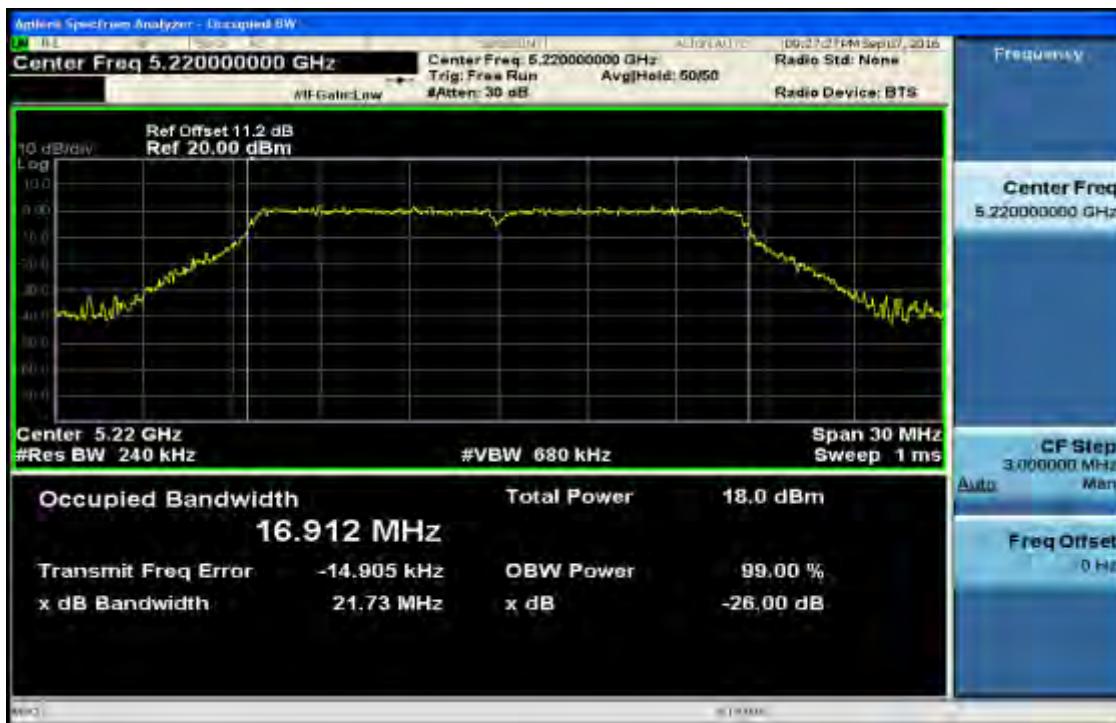
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## 802.11a, 5150~5250 MHz (Main)

### 26dB Band Width Test Data CH-Low (5180MHz)



### 26dB Band Width Test Data CH-Mid (5220MHz)



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**26dB Band Width Test Data CH-High (5240MHz)**

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## 802.11a, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5260MHz)



## 26dB Band Width Test Data CH-Mid (5300MHz)



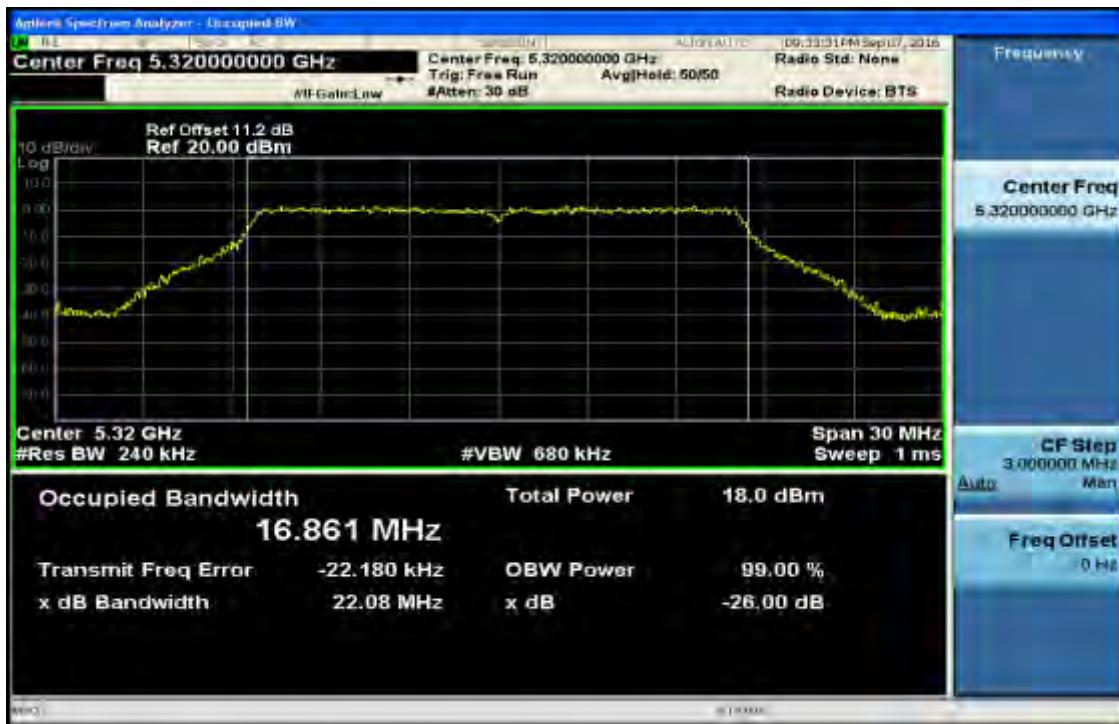
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## 26dB Band Width Test Data CH-High (5320MHz)



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## 802.11a, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5500MHz)



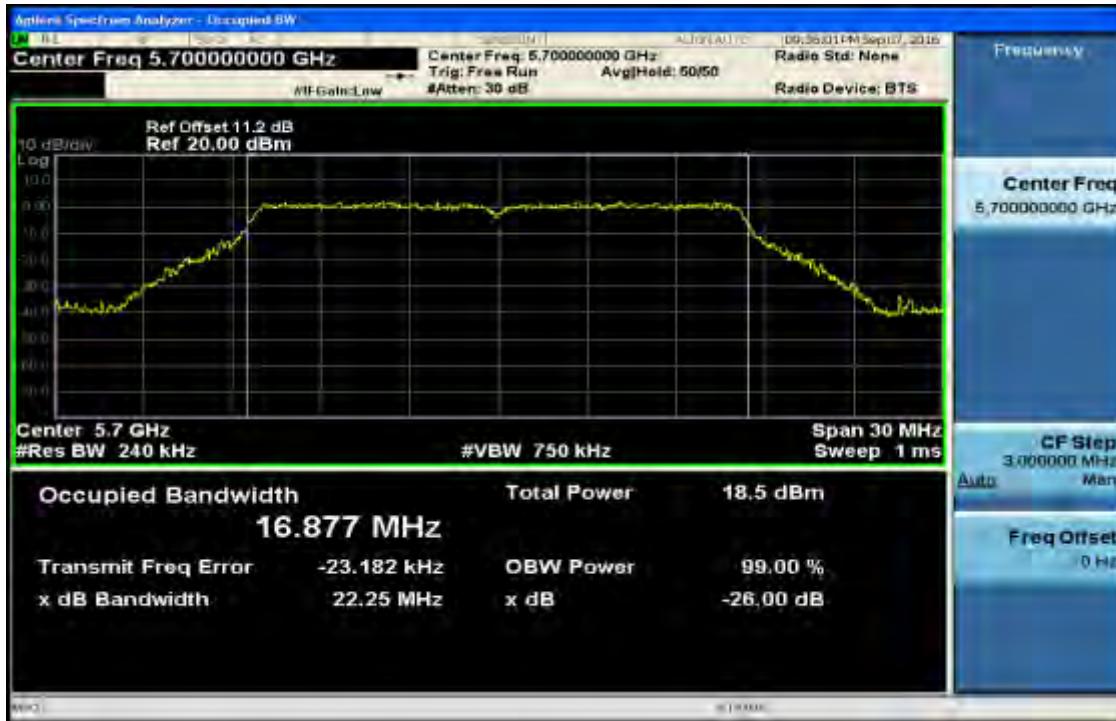
## 26dB Band Width Test Data CH-Mid (5580MHz)



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**26dB Band Width Test Data CH-High (5700MHz)**

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## 802.11n HT20, 5150~5250 MHz (Main) 26dB Band Width Test Data CH-Low (5180 MHz)



## 26dB Band Width Test Data CH-Mid (5220 MHz)

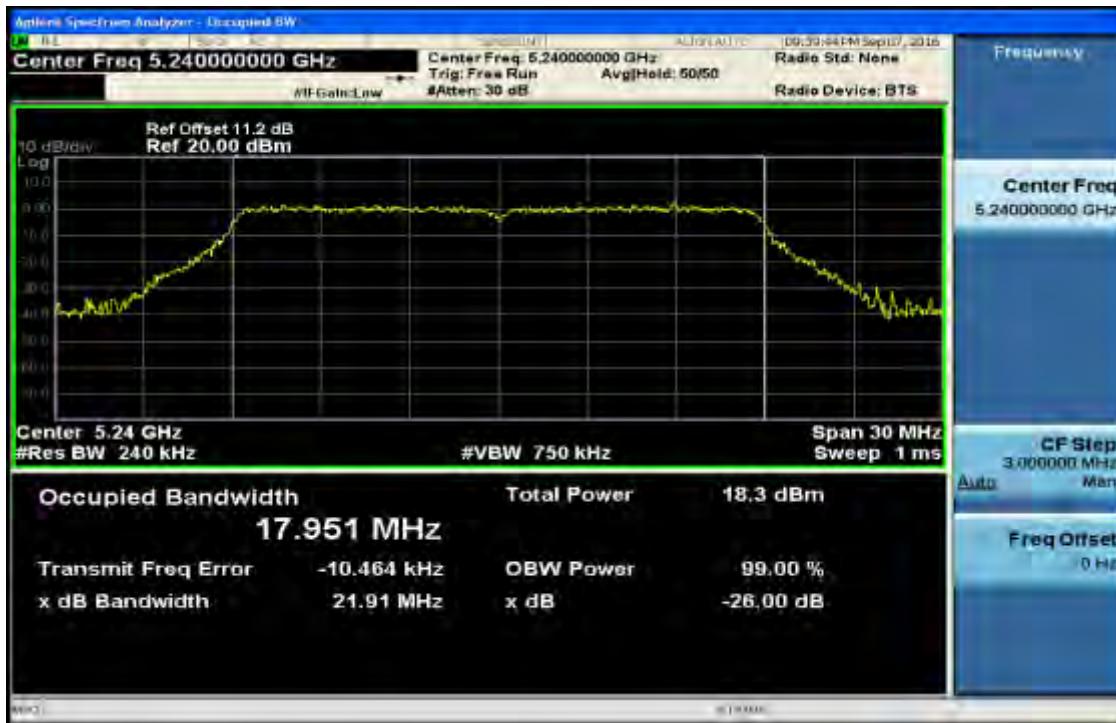


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**26dB Band Width Test Data CH-High (5240 MHz)**

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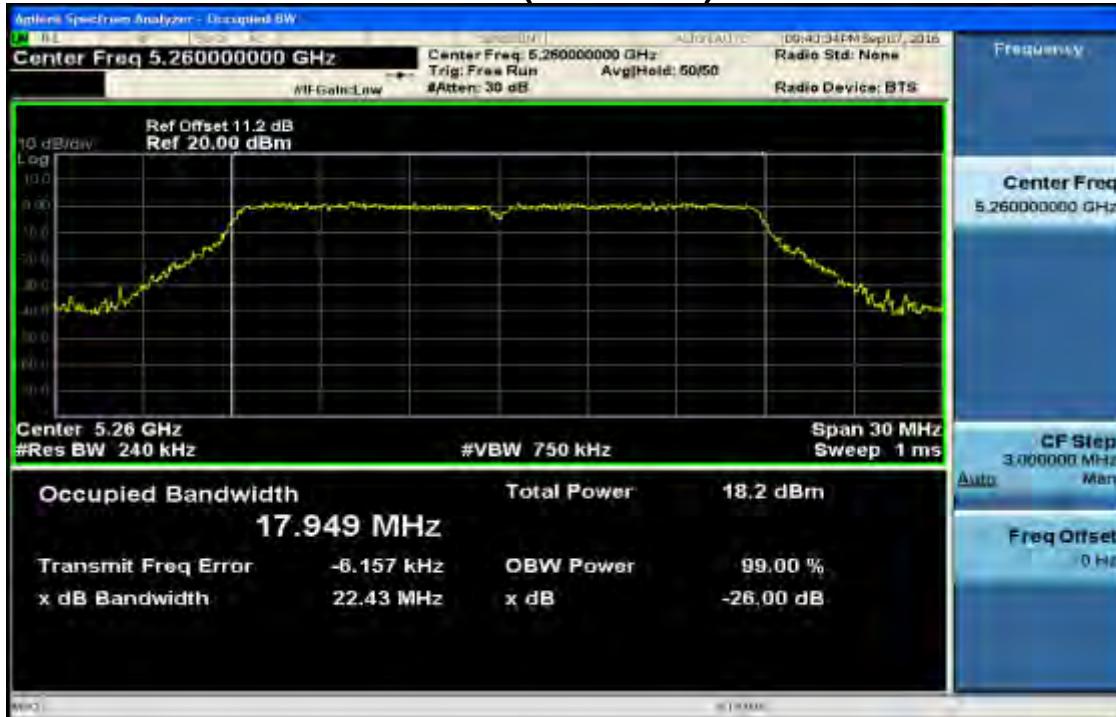
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## 802.11n HT20, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5260 MHz)



## 26dB Band Width Test Data CH-Mid (5300 MHz)



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**26dB Band Width Test Data CH-High (5320 MHz)**

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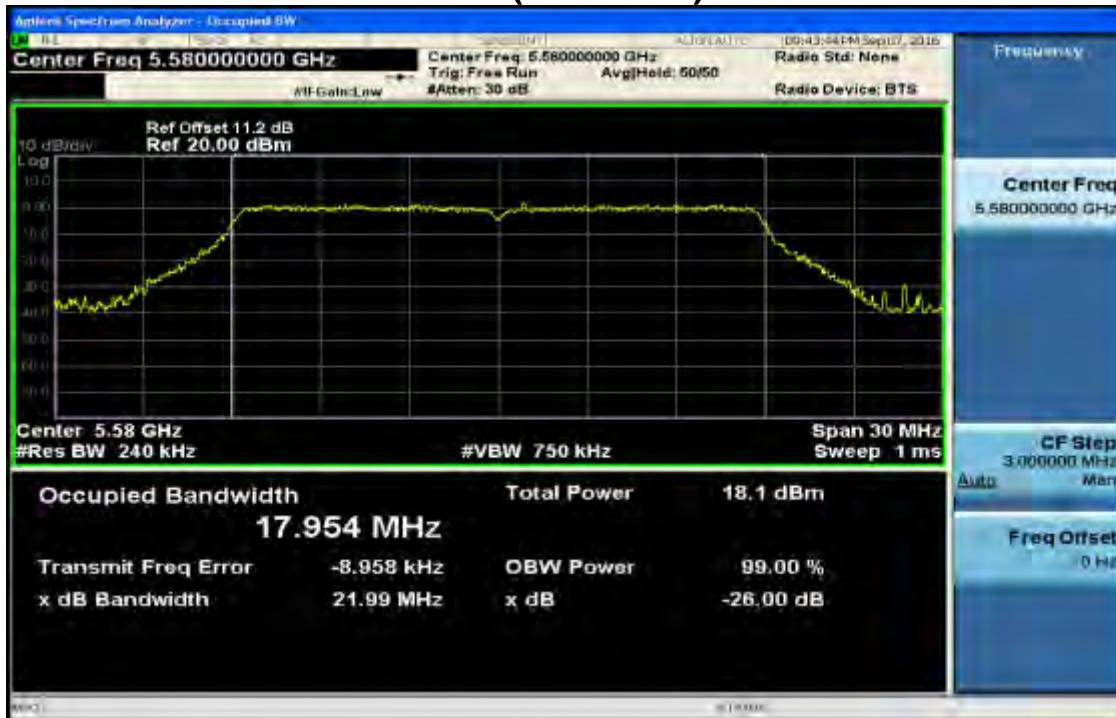
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## 802.11n HT20, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5500 MHz)



## 26dB Band Width Test Data CH-Mid (5580 MHz)



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**26dB Band Width Test Data CH-High (5700 MHz)**

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## 802.11n HT40, 5150~5250 MHz (Main)

### 26dB Band Width Test Data CH-Low (5190 MHz)



### 26dB Band Width Test Data CH-High (5230 MHz)

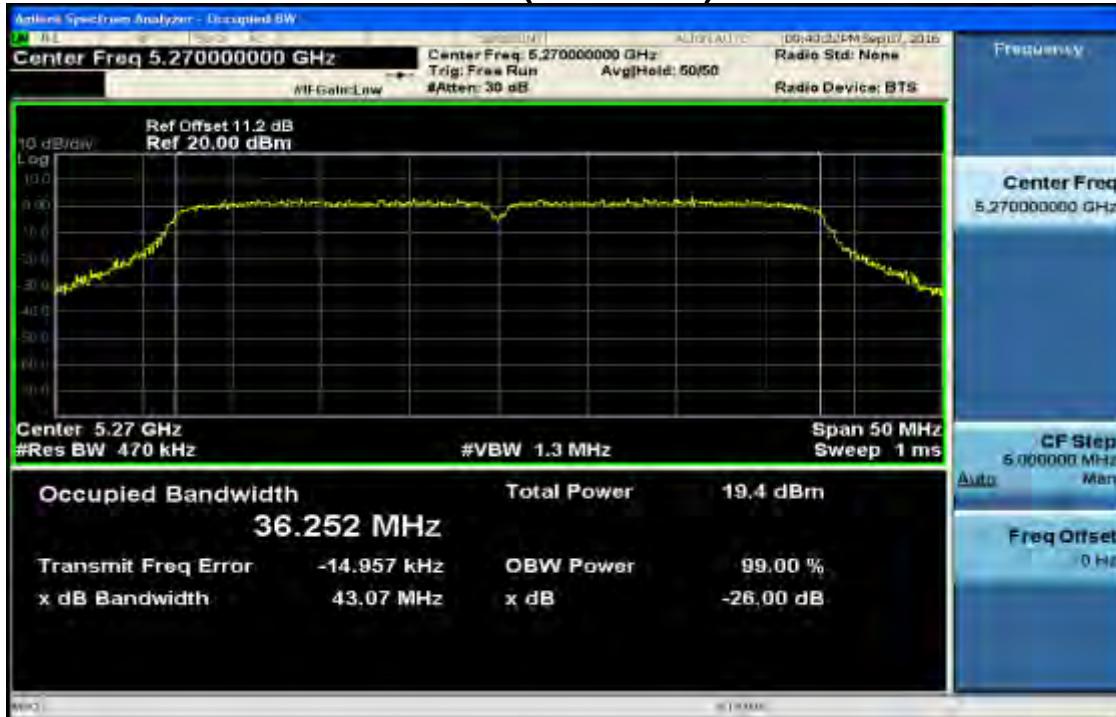


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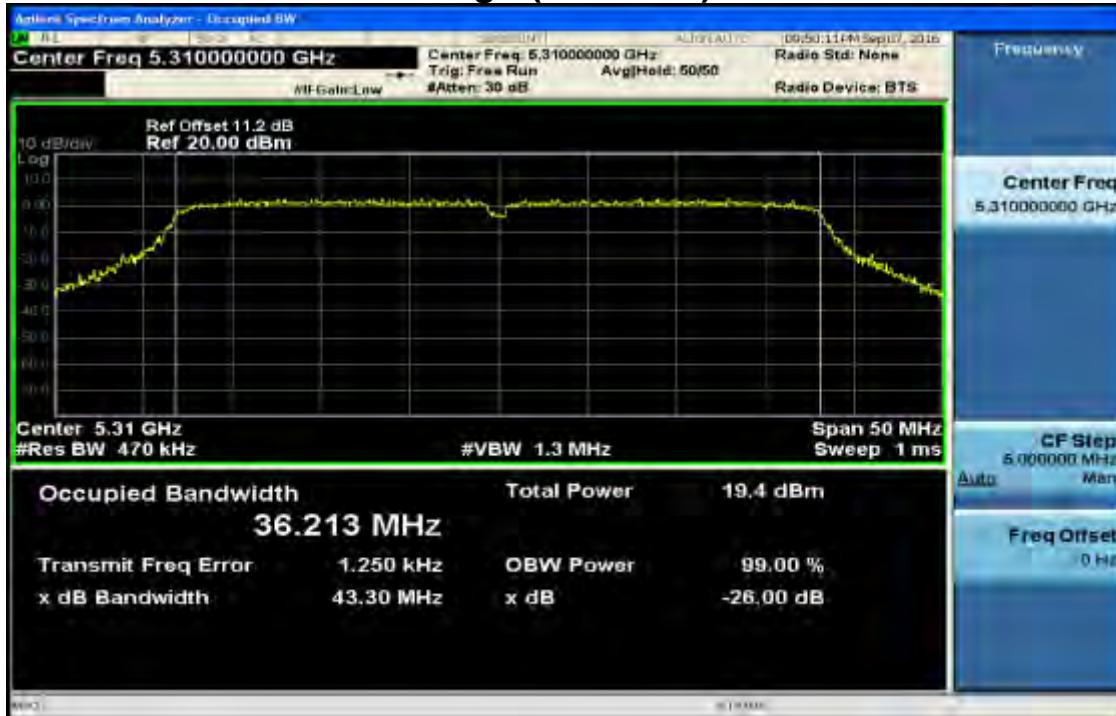
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## 802.11n HT40, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5270 MHz)



## 26dB Band Width Test Data CH-High (5310MHz)



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## 802.11n HT40, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5510 MHz)



## 26dB Band Width Test Data CH-Mid (5550 MHz)



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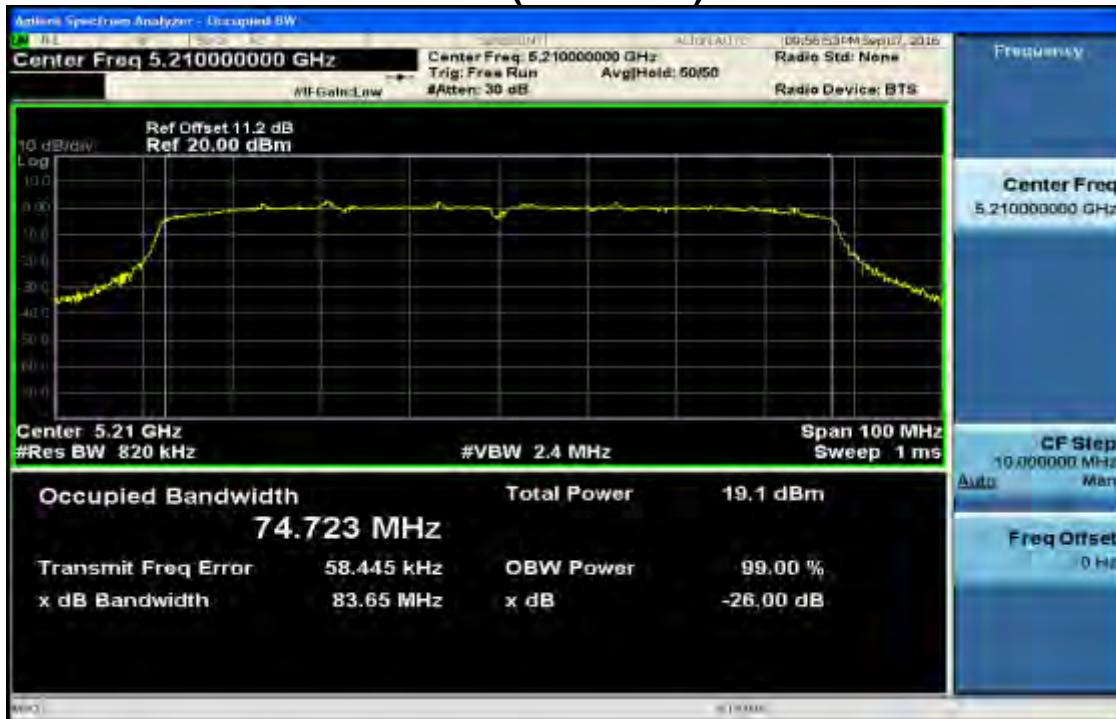
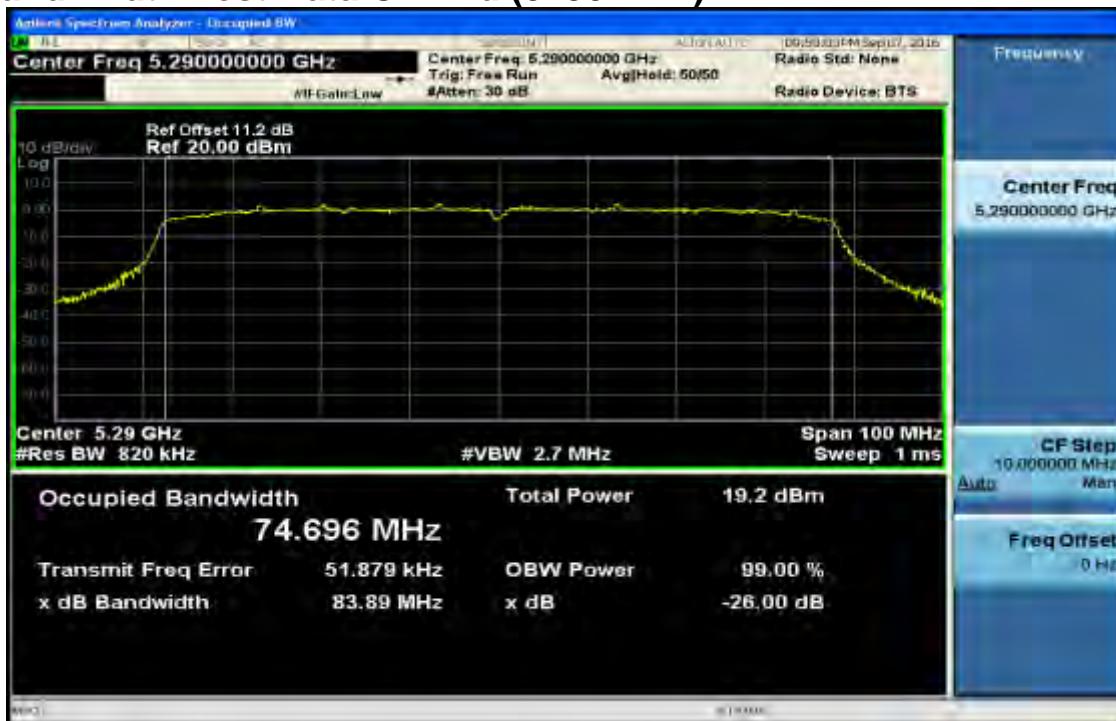
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**26dB Band Width Test Data CH-High (5670 MHz)**

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**802.11ac VHT80, 5150~5250 MHz (Main)  
26dB Band Width Test Data CH-Mid (5210 MHz)****802.11ac VHT80, 5250~5350 MHz  
26dB Band Width Test Data CH-Mid (5290 MHz)**

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## 802.11ac VHT80, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5530 MHz)



## 802.11ac VHT80, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-High (5610 MHz)



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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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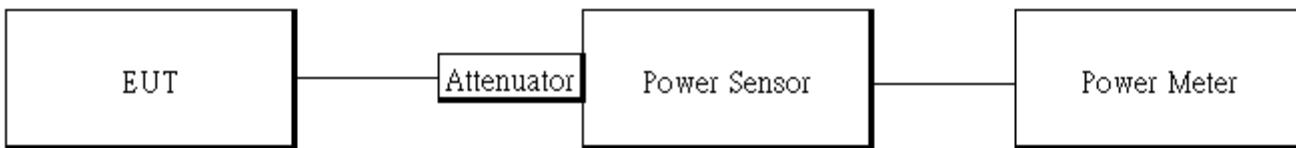
## 9.2 Measurement Procedure

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	ML2495A	1005007	12/09/2015	12/08/2016
Power Sensor	Anritsu	MA2411B	917032	12/09/2015	12/08/2016
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017
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	05/17/2016	05/16/2017

## 9.4 Test Set-up



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## 9.5 Measurement Result

### Conducted output power

#### 802.11a\_Main

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	10.71	11.776	23.98	PASS
44	5220	MCS0	10.43	11.041	23.98	PASS
48	5240	MCS0	<b>10.86</b>	<b>12.190</b>	23.98	PASS
52	5260	MCS0	<b>10.86</b>	<b>12.190</b>	23.98 or $11+10\log(B) = 24.46$	PASS
60	5300	MCS0	10.62	11.535	23.98 or $11+10\log(B) = 24.42$	PASS
64	5320	MCS0	10.47	11.143	23.98 or $11+10\log(B) = 24.44$	PASS
100	5500	MCS0	<b>10.51</b>	<b>11.246</b>	23.98 or $11+10\log(B) = 24.40$	PASS
116	5580	MCS0	10.41	10.990	23.98 or $11+10\log(B) = 24.56$	PASS
140	5700	MCS0	10.35	10.839	23.98 or $11+10\log(B) = 24.47$	PASS

#### 802.11n\_HT20\_Main

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	10.76	11.912	23.98	PASS
44	5220	MCS0	10.57	11.402	23.98	PASS
48	5240	MCS0	<b>10.89</b>	<b>12.274</b>	23.98	PASS
52	5260	MCS0	<b>10.75</b>	<b>11.885</b>	23.98 or $11+10\log(B) = 24.51$	PASS
60	5300	MCS0	10.58	11.429	23.98 or $11+10\log(B) = 24.48$	PASS
64	5320	MCS0	10.53	11.298	23.98 or $11+10\log(B) = 24.51$	PASS
100	5500	MCS0	<b>10.52</b>	<b>11.272</b>	23.98 or $11+10\log(B) = 24.55$	PASS
116	5580	MCS0	10.47	11.143	23.98 or $11+10\log(B) = 24.42$	PASS
140	5700	MCS0	10.38	10.914	23.98 or $11+10\log(B) = 24.56$	PASS

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## 802.11n\_HT40\_Main

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	<b>11.43</b>	<b>13.900</b>	23.98	PASS
46	5230	MCS0	11.38	13.740	23.98	PASS
54	5270	MCS0	<b>11.49</b>	<b>14.093</b>	23.98 or $11+10\log(B) = 27.34$	PASS
62	5310	MCS0	11.44	13.932	23.98 or $11+10\log(B) = 27.36$	PASS
102	5510	MCS0	<b>11.46</b>	<b>13.996</b>	23.98 or $11+10\log(B) = 27.38$	PASS
110	5550	MCS0	11.32	13.552	23.98 or $11+10\log(B) = 27.38$	PASS
134	5670	MCS0	<b>11.46</b>	<b>13.996</b>	23.98 or $11+10\log(B) = 27.44$	PASS

## 802.11ac\_VHT80\_Main

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	<b>10.67</b>	<b>11.668</b>	23.98	PASS
58	5290	MCS0	<b>10.57</b>	<b>11.402</b>	23.98 or $11+10\log(B) = 30.24$	PASS
106	5530	MCS0	<b>10.53</b>	<b>11.298</b>	23.98 or $11+10\log(B) = 30.23$	PASS
122	5610	MCS0	10.49	11.194	23.98 or $11+10\log(B) = 30.25$	PASS

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## 10. PEAK POWER SPECTRAL DENSITY

### 10.1 Standard Applicable

OPERATION Band	EUT CATEGORY		LIMIT
U-NII-1	Access Point (Master device)		17dBm/ MHz
	Fixed point-to-point Access Point		
	√	Mobile and portable client 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:**

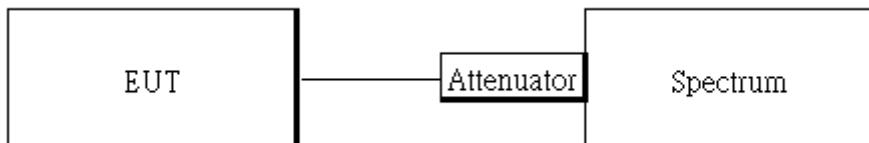
Set RBW=500 kHz, VBW $\geq$  3RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

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
Power Meter	Anritsu	ML2495A	1005007	12/09/2015	12/08/2016
Power Sensor	Anritsu	MA2411B	917032	12/09/2015	12/08/2016
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017
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	05/17/2016	05/16/2017

## 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	-1.66	11	-12.66
5220	-1.72	11	-12.72
5240	-1.40	11	-12.40
5260	-1.32	11	-12.32
5300	-1.50	11	-12.50
5320	-1.28	11	-12.28
5500	-1.63	11	-12.63
5580	-1.56	11	-12.56
5700	-0.79	11	-11.79

POWER DENSITY 802.11n HT20 MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5180	-1.62	11	-12.62
5220	-1.79	11	-12.79
5240	-1.76	11	-12.76
5260	-1.56	11	-12.56
5300	-1.57	11	-12.57
5320	-1.92	11	-12.92
5500	-1.85	11	-12.85
5580	-1.78	11	-12.78
5700	-1.41	11	-12.41

POWER DENSITY 802.11n HT40 MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5190	-3.75	11	-14.75
5230	-3.65	11	-14.65
5270	-3.62	11	-14.62
5310	-3.38	11	-14.38
5510	-3.42	11	-14.42
5550	-3.61	11	-14.61
5670	-3.51	11	-14.51

POWER DENSITY 802.11ac VHT80 MODE			
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5210	-7.63	11	-18.63
5290	-7.75	11	-18.75
5530	-7.84	11	-18.84
5610	-7.75	11	-18.75

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## 802.11a 5150~5250 MHz

### Peak Power Spectral Density Data Plot (CH Low 5180 MHz)



### Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5240 MHz)



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## 802.11a 5250~5350 MHz

### Peak Power Spectral Density Data Plot (CH Low 5260 MHz)



### Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5320 MHz)



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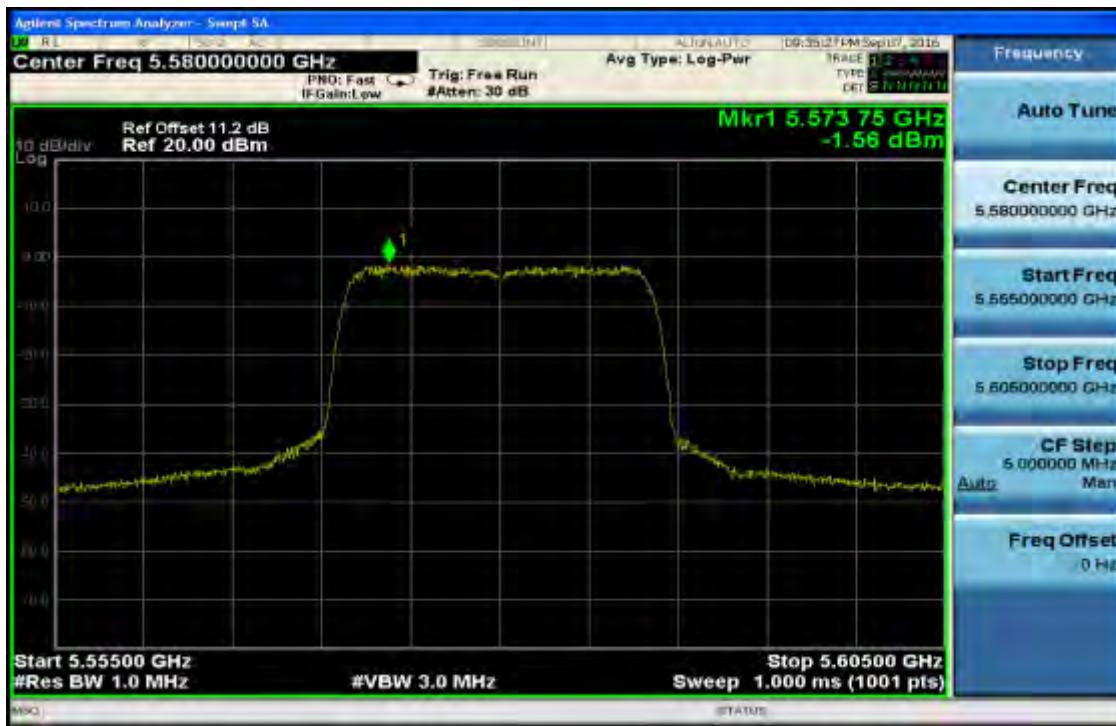
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## 802.11a 5470~5725 MHz

### Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



### Peak Power Spectral Density Data Plot (CH Mid 5580 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5700 MHz)



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## 802.11n HT20, 5150~5250 MHz

### Peak Power Spectral Density Data Plot (CH Low 5180 MHz)



### Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5240 MHz)



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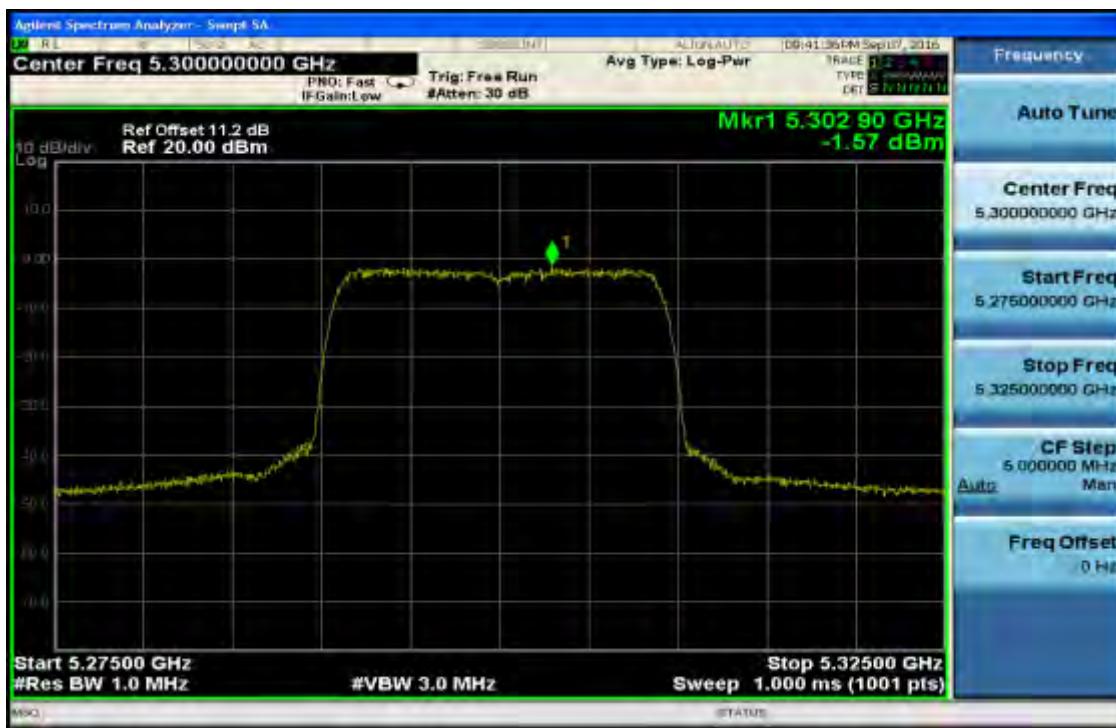
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## 802.11n HT20, 5250~5350 MHz

## Peak Power Spectral Density Data Plot (CH Low 5260MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5320 MHz)



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**802.11n HT20, 5470~5725 MHz****Peak Power Spectral Density Data Plot (CH Low 5500 MHz)****Peak Power Spectral Density Data Plot (CH Mid 5580MHz)**

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## Peak Power Spectral Density Data Plot (CH High 5700 MHz)



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## 802.11n HT40, 5150~5250 MHz

### Peak Power Spectral Density Data Plot (CH Low 5190 MHz)



### Peak Power Spectral Density Data Plot (CH High 5230 MHz)



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## 802.11n HT40, 5250~5350 MHz

### Peak Power Spectral Density Data Plot (CH Low 5270 MHz)



### Peak Power Spectral Density Data Plot (CH High 5310 MHz)



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## 802.11n HT40, 5470~5725 MHz

### Peak Power Spectral Density Data Plot (CH Low 5510 MHz)



### Peak Power Spectral Density Data Plot (CH Mid 5550 MHz)



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## Peak Power Spectral Density Data Plot (CH High 5670 MHz)



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## 802.11ac VHT80, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Mid 5210 MHz)



## 802.11ac VHT80, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Mid 5290 MHz)



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## 802.11ac VHT80, 5470~5725 MHz

### Peak Power Spectral Density Data Plot (CH Low 5530 MHz)



## 802.11ac VHT80, 5470~5725 MHz

### Peak Power Spectral Density Data Plot (CH High 5610 MHz)



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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 v01r01	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)	PK: -27 (dBm/MHz)	PK: 68.3 (dB $\mu$ V/m)
15.407(b)(2)		
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)
15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dB $\mu$ V/m) *1 PK:105.2 (dB $\mu$ V/m) *2 PK: 110.8(dB $\mu$ V/m) *3 PK:122.2 (dB $\mu$ V/m) *4

\*1 beyond 75 MHz or more above of the bandedge.  
\*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.  
\*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.  
\*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCI7	100760	05/10/2016	05/09/2017
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2016	01/28/2017
Loop Antenna	ETS-Lindgren	6502	00143303	12/23/2015	12/22/2016
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/14/2015	12/13/2016
Horn Antenna	Schwarzbeck	BBHA9120D	1441	08/01/2016	07/31/2017
Pre-Amplifier	Agilent	8447D	2944A07676	01/02/2016	01/01/2017
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/02/2016	01/01/2017
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	ChamPro	AM-BS-4500-B	060776-ABS	N.C.R	N.C.R
Controller	ChamPro	EM1000	60776	N.C.R	N.C.R
Low Loss Cable	Huber Suhner	966_RX	9	01/02/2016	01/01/2017
3m Site NSA	SGS	966 chamber	N/A	07/01/2016	06/30/2017
Low Loss Cable	Huber Suhner	966 TX	1	01/02/2016	01/01/2017
Horn Antenna	Schwarzbeck	BBHA9170	184	12/12/2015	12/11/2016
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/02/2016	01/01/2017

Note: N.C.R refers to Not Calibrated Required.

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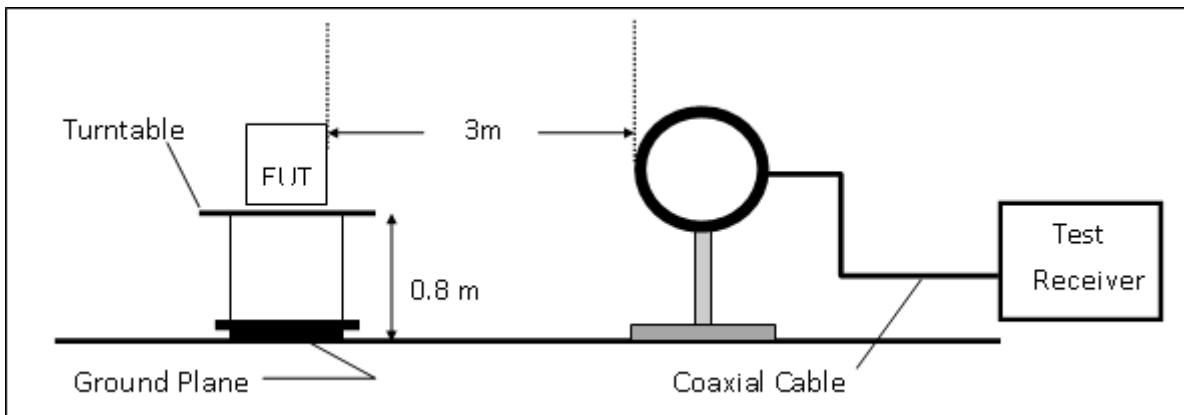
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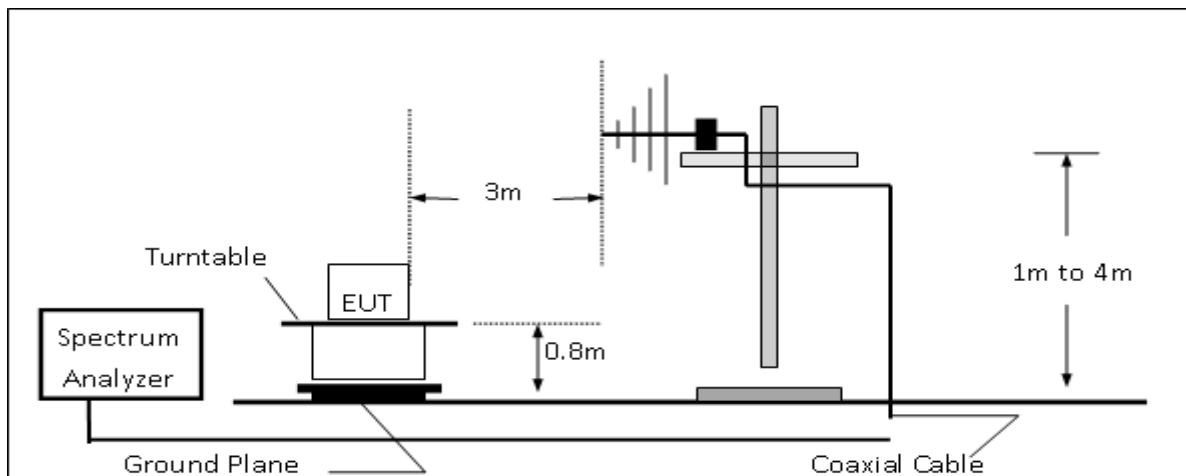
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### 11.3 Test SET-UP

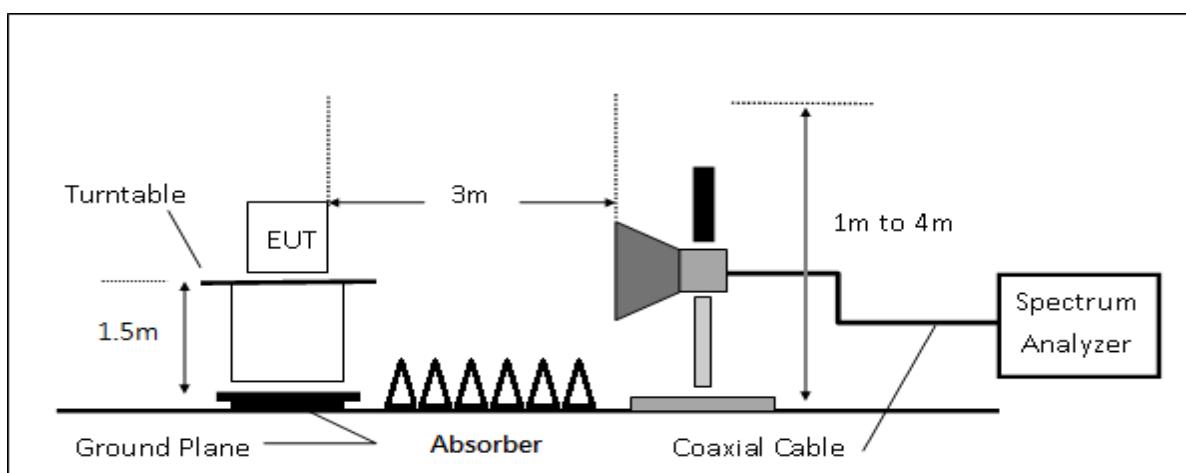
#### (A) Radiated Emission Test Set-UP Frequency Below 30MHz.



#### (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

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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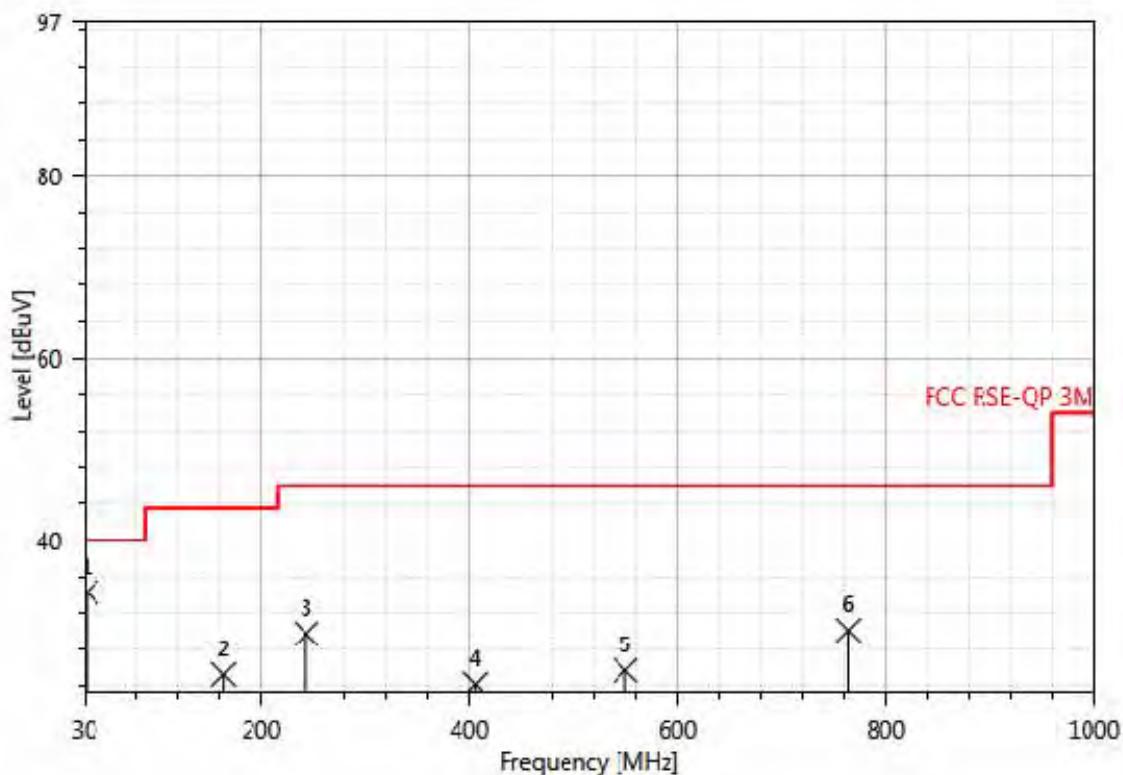
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**Radiated Spurious Emission Measurement Result****Below 1GHz Worst-Case Data:****802.11a 5150~5250 MHz**

Operation Mode :	802.11aB1	Test Date :	09/14/2016
Fundamental Frequency :	5220 MHz	Temp. / Humi. :	23 deg_C / 62 RH
Operation Band :	Tx CH MID	Test Engineer :	Tin
EUT Pol. :	H Plane	Measurement Antenna Pol. :	VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode	FS dB $\mu$ V/m			
31.94	S	Peak	34.29	43.40	-9.11	40.00	-5.71	
163.86	S	Peak	25.28	32.72	-7.44	43.50	-18.22	
243.40	S	Peak	29.72	37.75	-8.03	46.00	-16.28	
406.36	S	Peak	24.21	27.80	-3.59	46.00	-21.79	
549.92	S	Peak	25.71	27.56	-1.85	46.00	-20.29	
764.29	S	Peak	30.10	27.13	2.97	46.00	-15.90	

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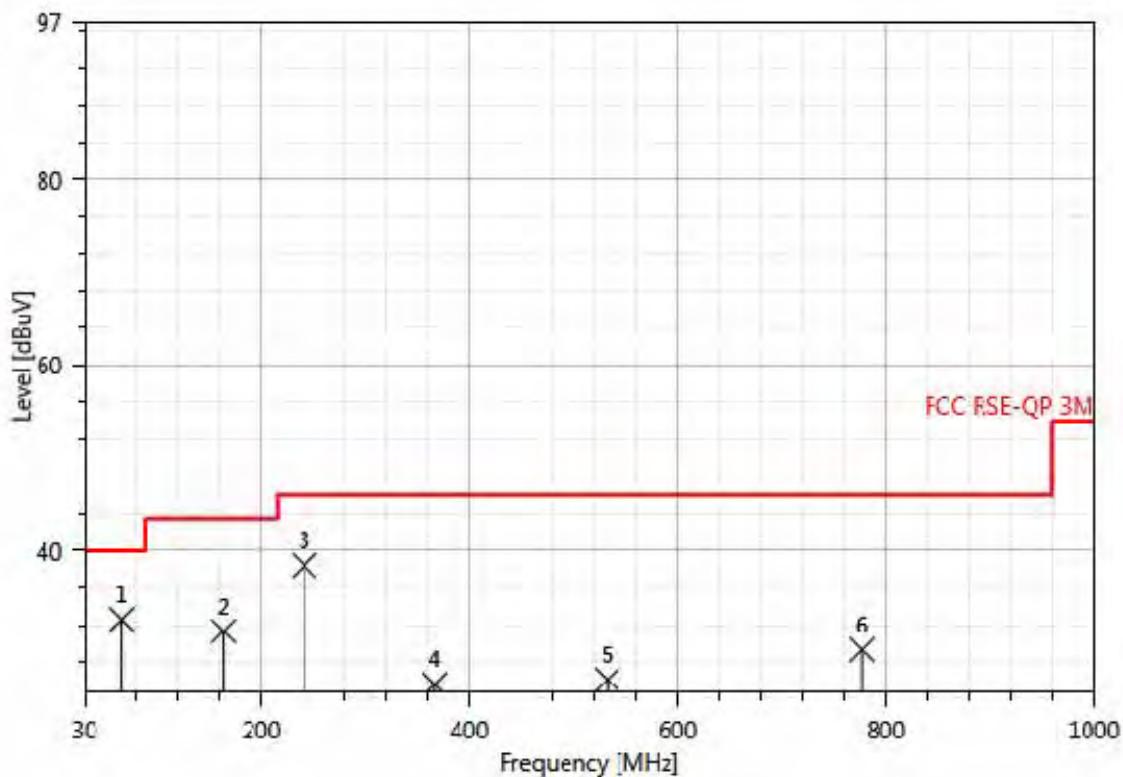
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Operation Mode : 802.11aB1  
Fundamental Frequency : 5220 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode	Actual	Spectrum	Factor	Limit @3m dBuV/m	Margin dB
			Reading	FS			
65.89	S	Peak	32.58	41.96	-9.38	40.00	-7.42
163.86	S	Peak	31.33	38.77	-7.44	43.50	-12.17
241.46	S	Peak	38.43	46.45	-8.02	46.00	-7.57
366.59	S	Peak	25.59	30.31	-4.72	46.00	-20.41
532.46	S	Peak	26.10	27.77	-1.68	46.00	-19.90
776.90	S	Peak	29.33	26.78	2.54	46.00	-16.67

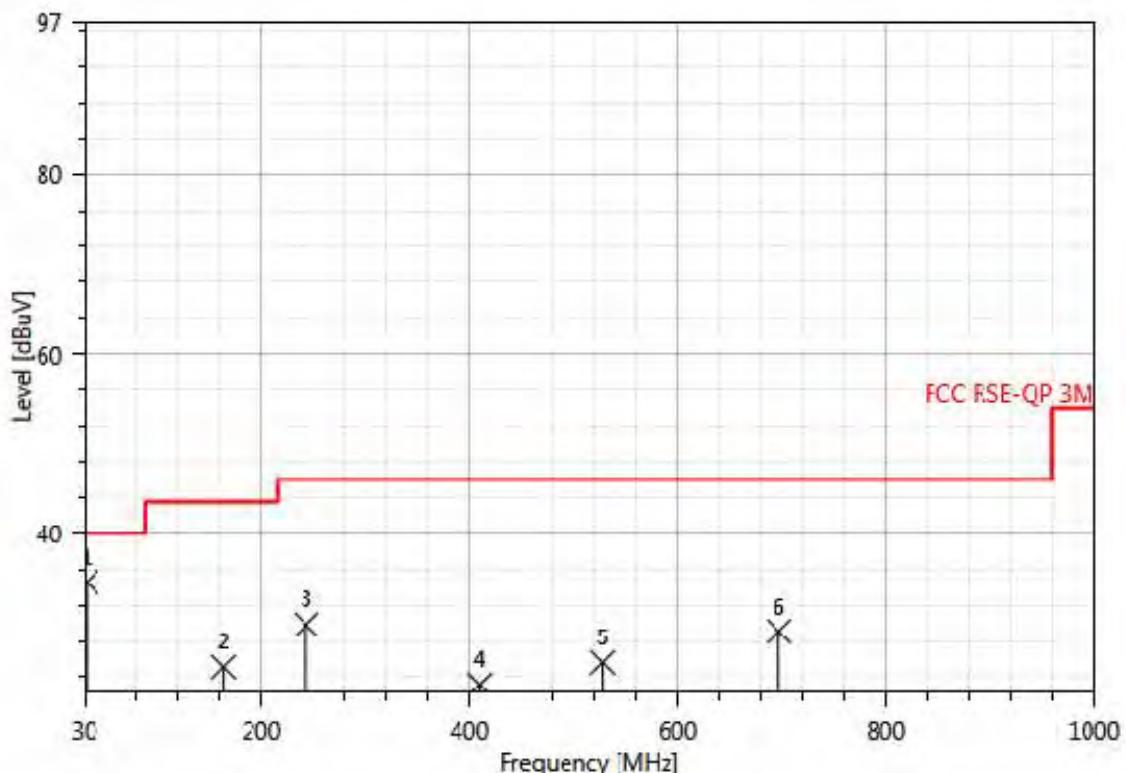
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**802.11a 5250~5350 MHz**

Operation Mode : 802.11aB2      Test Date : 09/14/2016  
Fundamental Frequency : 5300 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual	Spectrum	Factor	Limit @3m	Margin
			Reading	FS	dB	dBuV/m	dB
31.94	S	Peak	34.58	43.69	-9.11	40.00	-5.42
163.86	S	Peak	25.12	32.56	-7.44	43.50	-18.38
243.40	S	Peak	29.83	37.86	-8.03	46.00	-16.17
410.24	S	Peak	23.16	26.78	-3.62	46.00	-22.84
527.61	S	Peak	25.62	26.94	-1.32	46.00	-20.38
697.36	S	Peak	29.09	27.73	1.36	46.00	-16.91

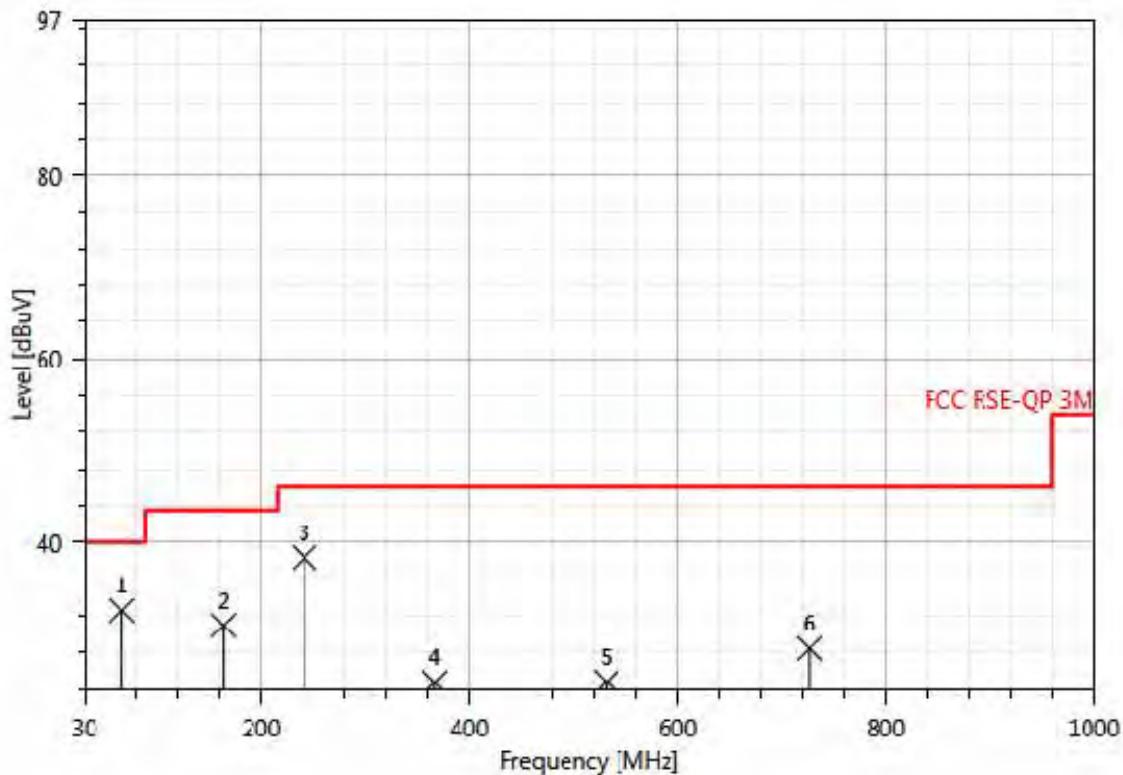
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Operation Mode : 802.11aB2  
Fundamental Frequency : 5300 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode	Actual	Spectrum	Factor	Limit @3m	Margin
			Reading	FS			
65.89	S	Peak	32.55	41.93	-9.38	40.00	-7.45
163.86	S	Peak	30.92	38.36	-7.44	43.50	-12.58
241.46	S	Peak	38.32	46.33	-8.02	46.00	-7.68
366.59	S	Peak	24.70	29.42	-4.72	46.00	-21.30
531.49	S	Peak	24.77	26.34	-1.57	46.00	-21.23
726.46	S	Peak	28.39	26.65	1.74	46.00	-17.61

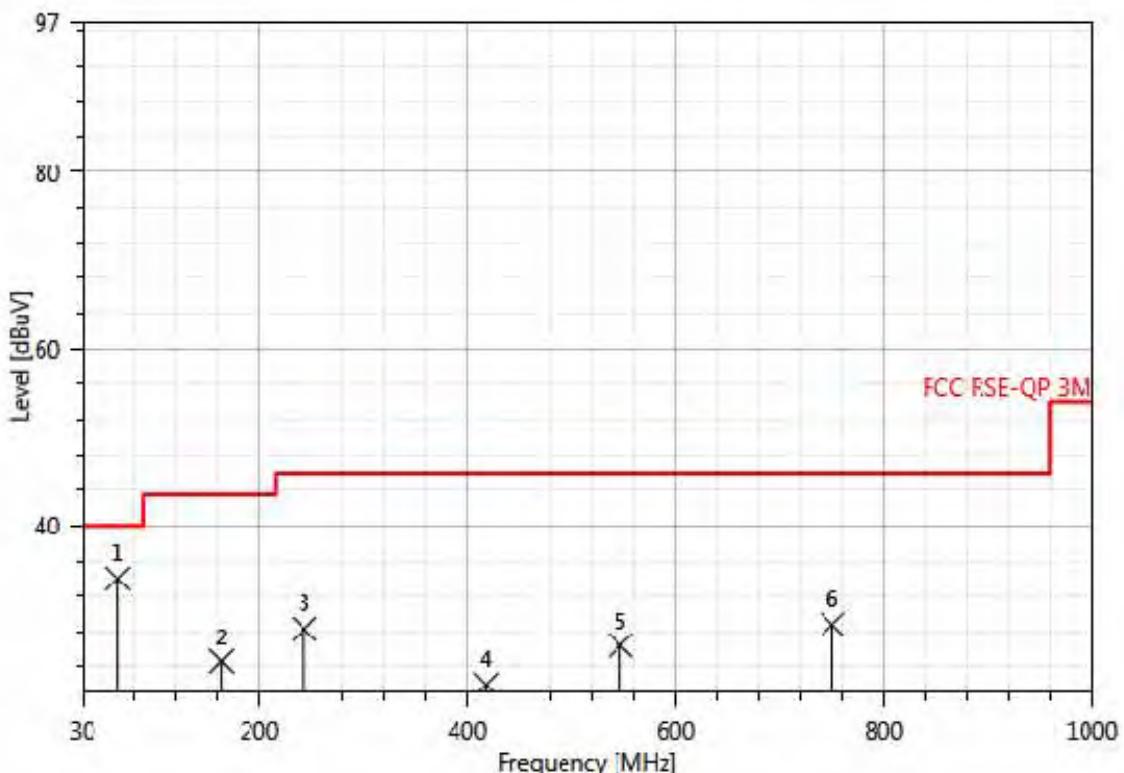
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**802.11a, 5470~5725 MHz**

Operation Mode : 802.11aB3      Test Date : 09/14/2016  
Fundamental Frequency : 5580 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual	Spectrum FS dBuV/m	Factor dB	Limit @3m dBuV/m	Margin dB
			Reading Level dB $\mu$ V/m				
63.95	S	Peak	34.02	42.95	-8.93	40.00	-5.98
163.86	S	Peak	24.66	32.10	-7.44	43.50	-18.84
243.40	S	Peak	28.31	36.34	-8.03	46.00	-17.69
418.00	S	Peak	22.02	25.40	-3.38	46.00	-23.98
547.01	S	Peak	26.44	28.12	-1.67	46.00	-19.56
750.71	S	Peak	28.82	26.07	2.76	46.00	-17.18

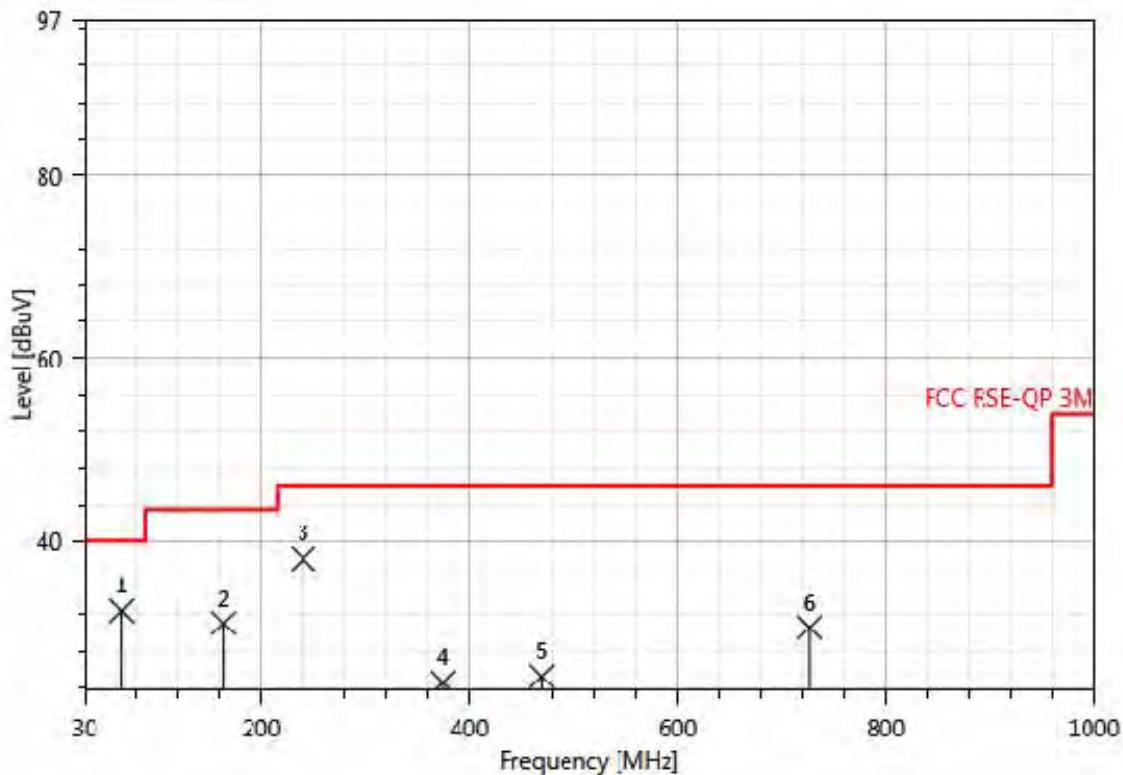
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Operation Mode : 802.11aB3  
Fundamental Frequency : 5580 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode	Actual	Spectrum	Factor	Limit @3m dBuV/m	Margin dB
			Reading	FS			
65.89	S	Peak	32.41	41.79	-9.38	40.00	-7.59
163.86	S	Peak	31.05	38.50	-7.44	43.50	-12.45
240.49	S	Peak	38.09	46.12	-8.03	46.00	-7.91
374.35	S	Peak	24.58	29.11	-4.53	46.00	-21.42
469.41	S	Peak	25.25	27.84	-2.59	46.00	-20.75
726.46	S	Peak	30.58	28.84	1.74	46.00	-15.42

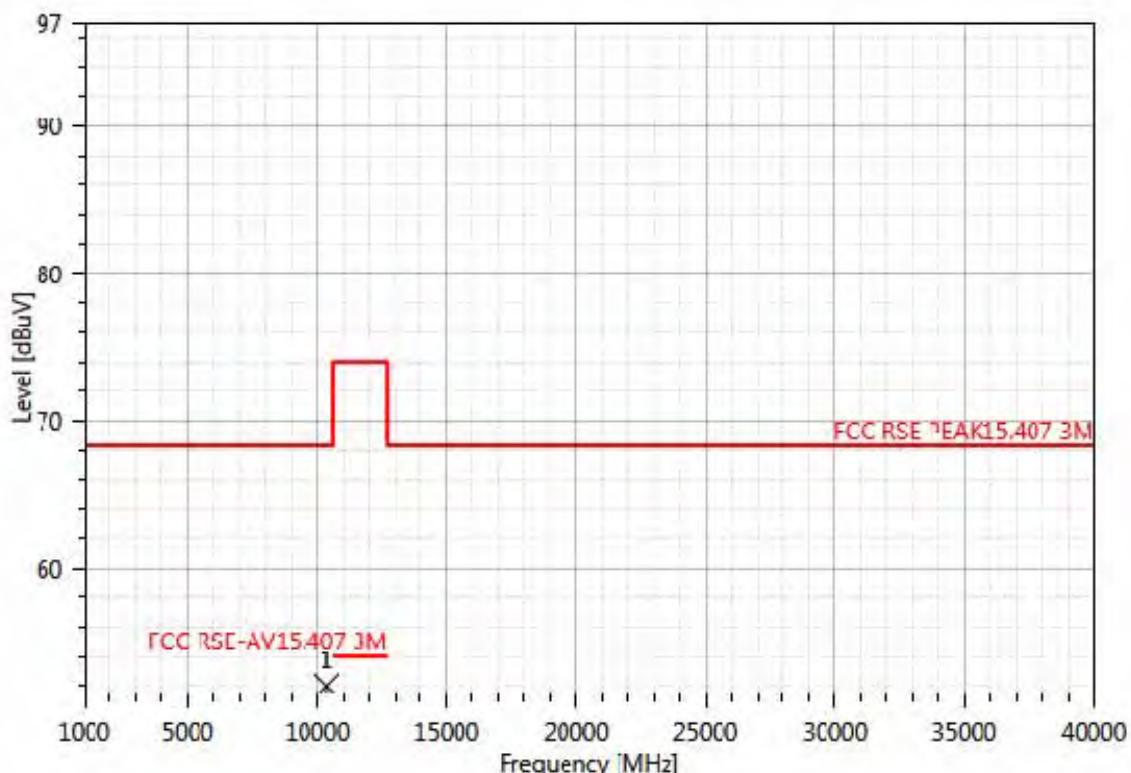
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**Above 1GHz Worst-Case Data:****Radiated Spurious Emission Measurement Result 802.11a, 5150~5250 MHz**

Operation Mode :	802.11aB1	Test Date :	09/14/2016
Fundamental Frequency :	5180 MHz	Temp. / Humi. :	23 deg_C / 62 RH
Operation Band :	Tx CH LOW	Test Engineer :	Tin
EUT Pol. :	H Plane	Measurement Antenna Pol. :	VERTICAL



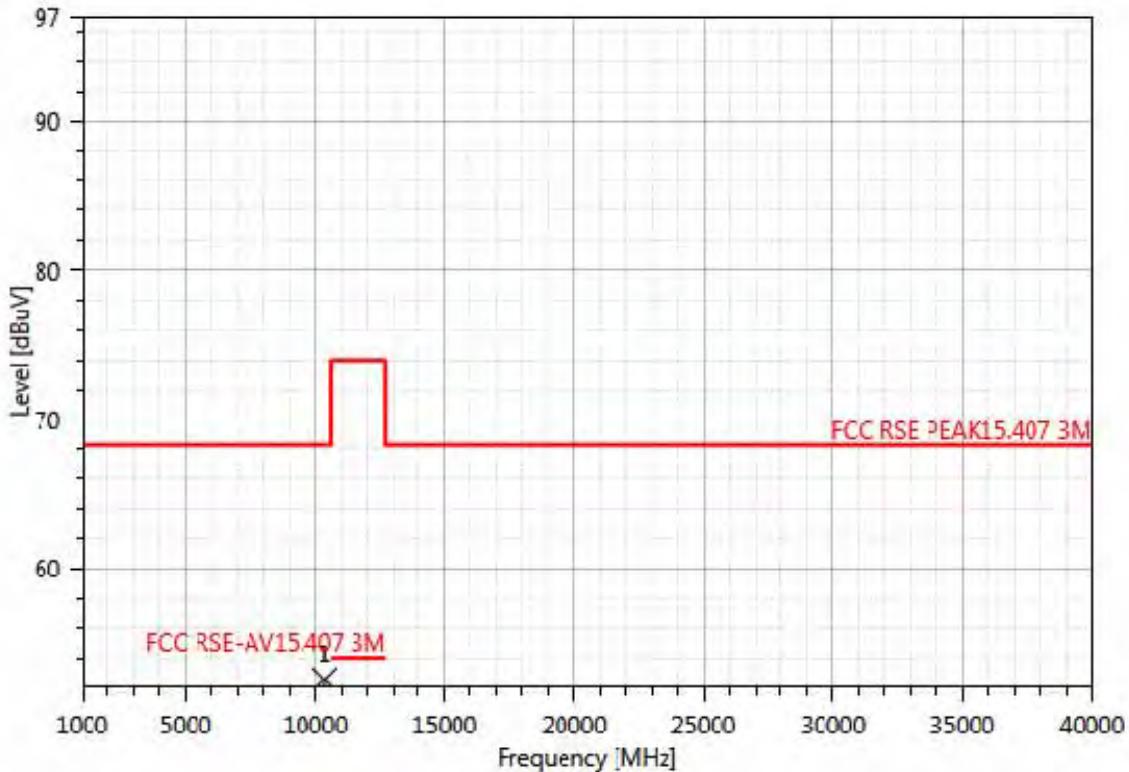
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10360.00	H	Peak	52.02	33.73	18.29	68.30	-16.28

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Operation Mode : 802.11aB1      Test Date : 09/14/2016  
Fundamental Frequency : 5180 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10360.00	H	Peak	52.58	34.28	18.29	68.30	-15.72

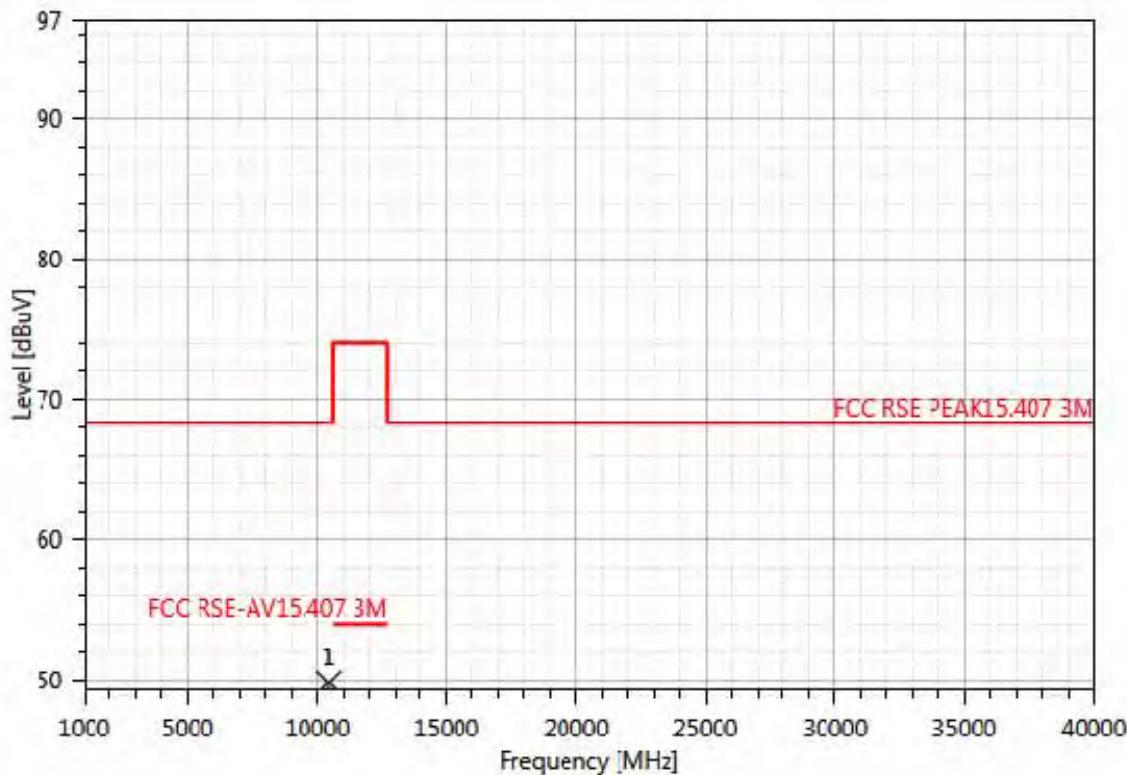
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Operation Mode : 802.11aB1  
Fundamental Frequency : 5220 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : VERTICAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10440.00	H	Peak	49.81	31.13	18.68	68.30	-18.49

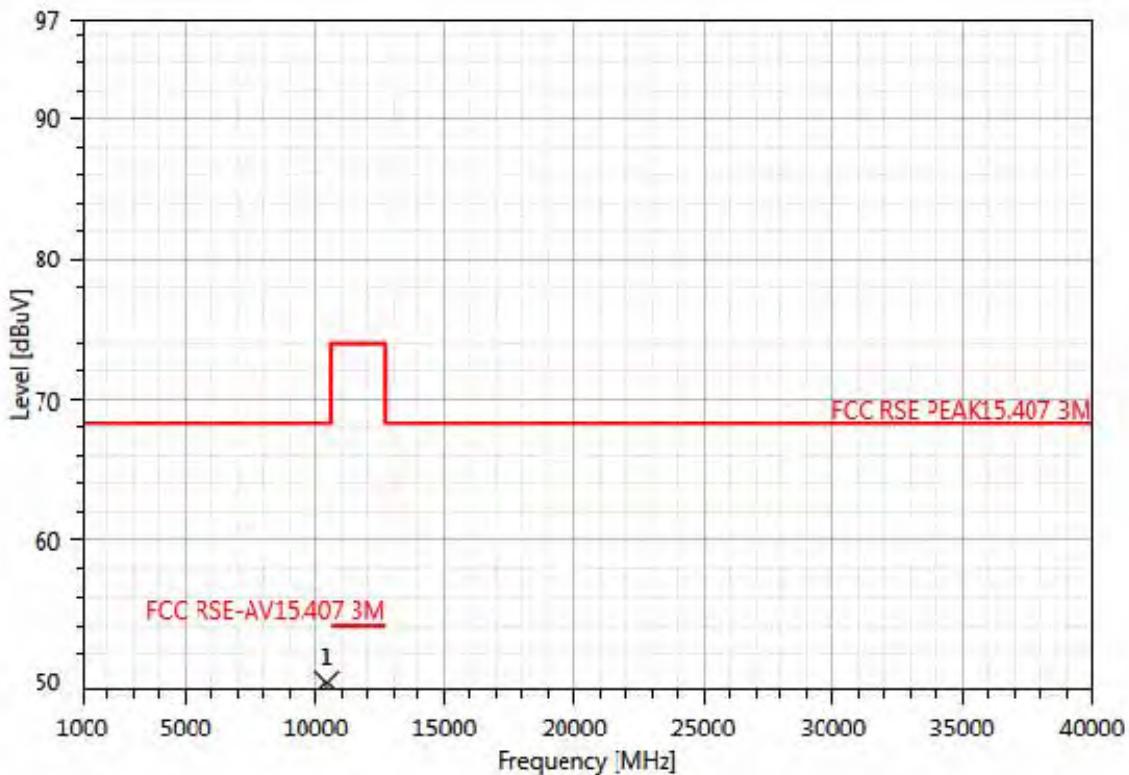
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Operation Mode : 802.11aB1  
Fundamental Frequency : 5220 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



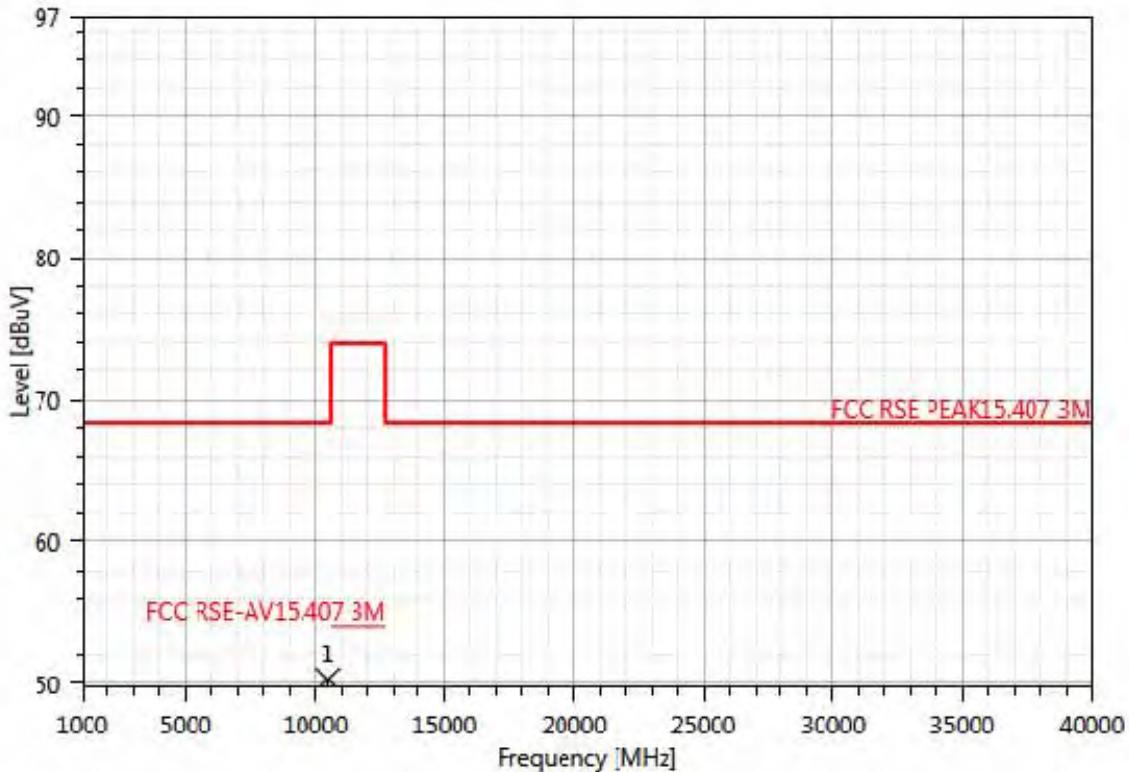
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10440.00	H	Peak	49.93	31.24	18.68	68.30	-18.37

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Operation Mode : 802.11aB1 Test Date : 09/14/2016  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



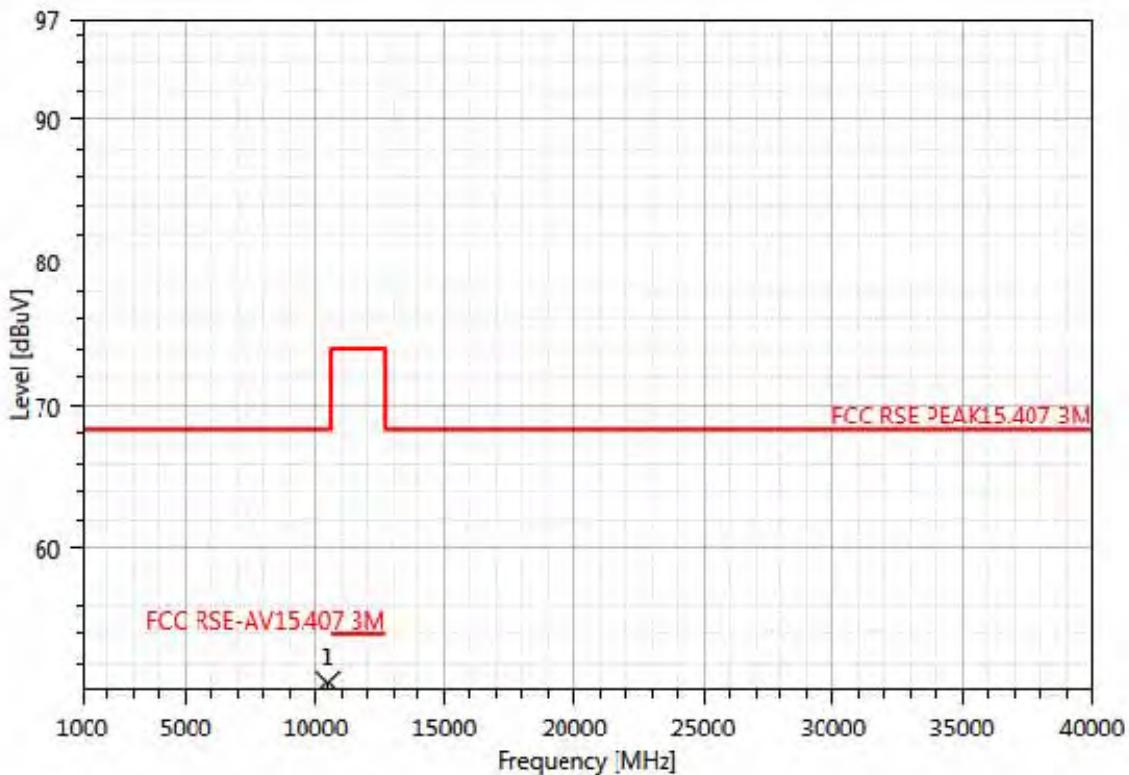
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10480.00	H	Peak	50.28	31.98	18.29	68.30	-18.02

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Operation Mode : 802.11aB1      Test Date : 09/14/2016  
Fundamental Frequency : 5240 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10480.00	H	Peak	50.65	32.36	18.29	68.30	-17.65

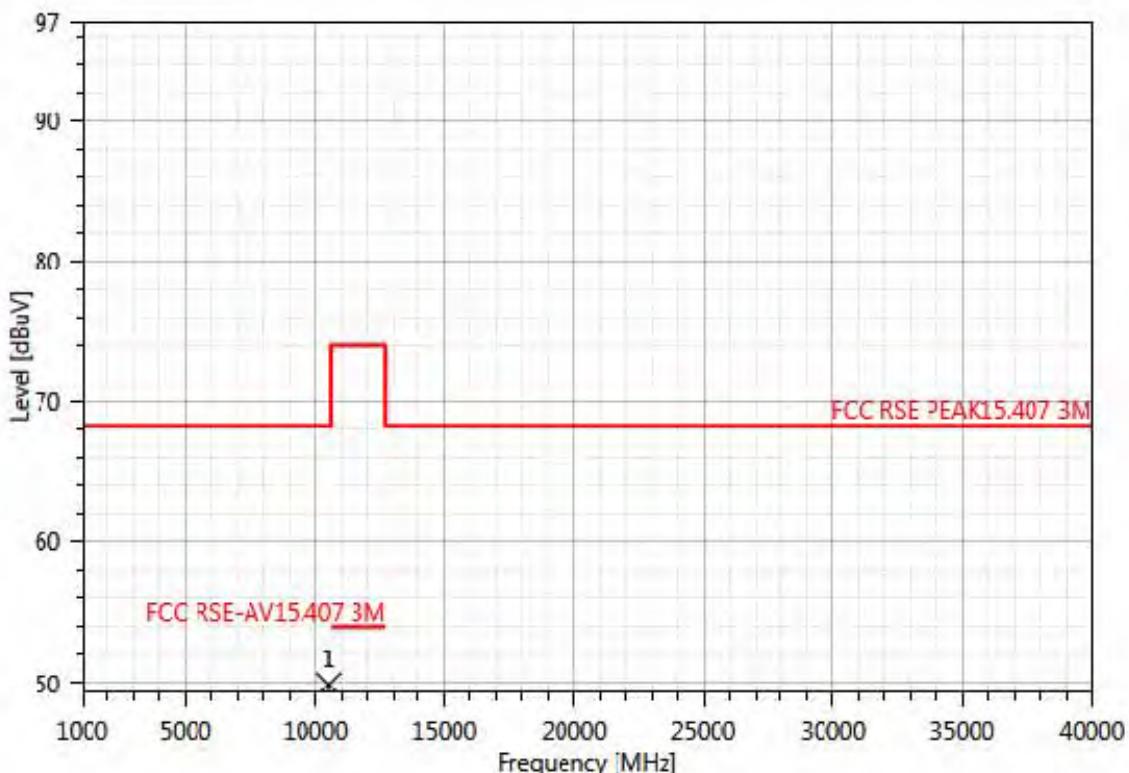
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**Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz**

Operation Mode : 802.11aB2 Test Date : 09/14/2016  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



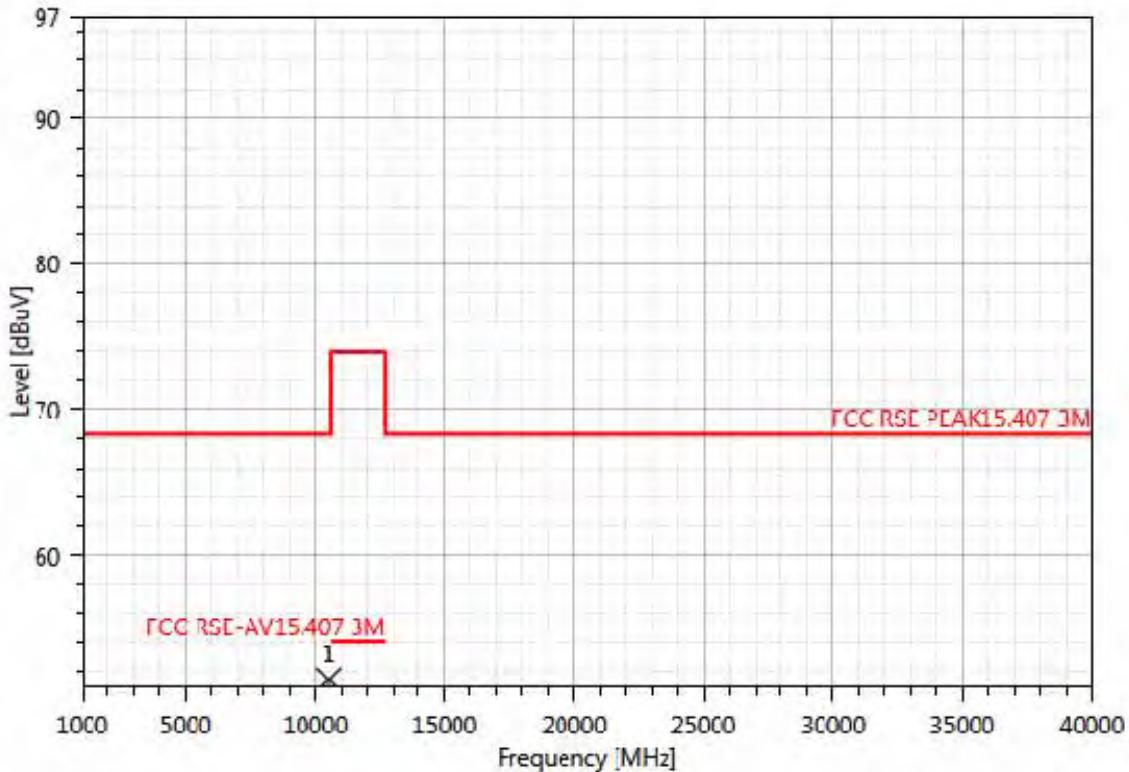
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10520.00	H	Peak	49.85	30.48	19.37	68.30	-18.45

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Operation Mode : 802.11aB2 Test Date : 09/14/2016  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10520.00	H	Peak	51.44	32.07	19.37	68.30	-16.86

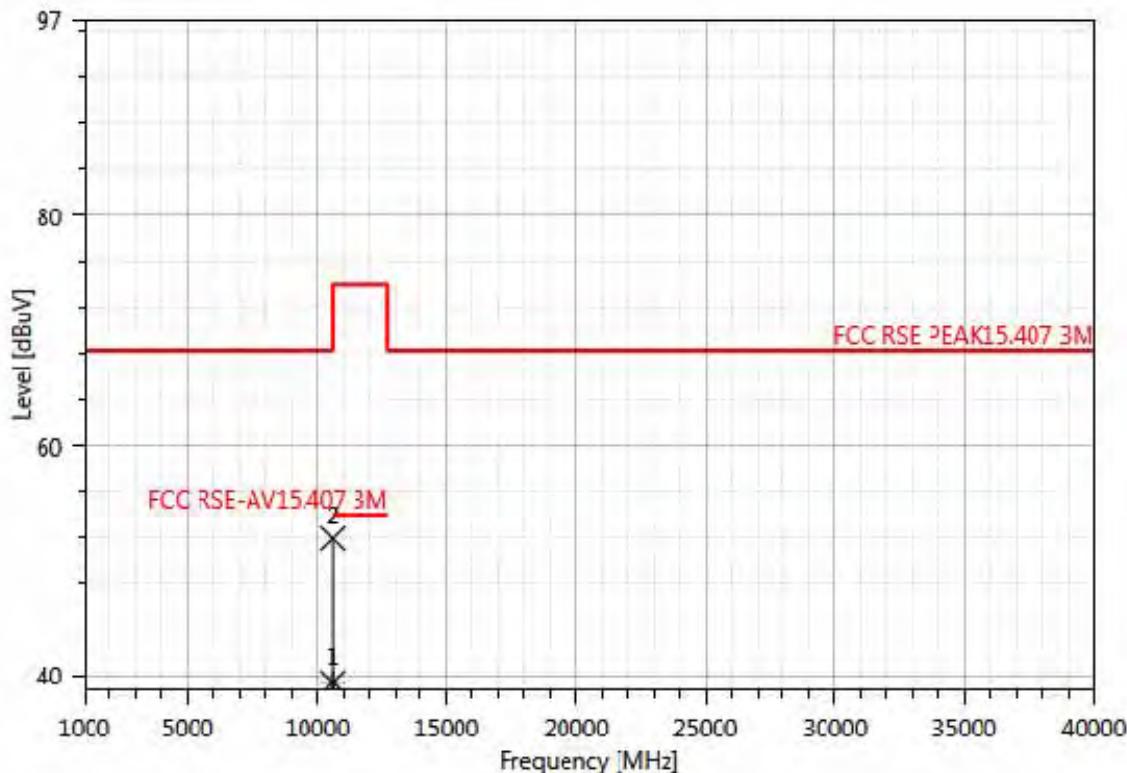
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Operation Mode : 802.11aB2  
Fundamental Frequency : 5300 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10600.00	H	Average	39.45	20.54	18.91	54.00	-14.55
10600.00	H	Peak	51.91	33.00	18.91	74.00	-22.09

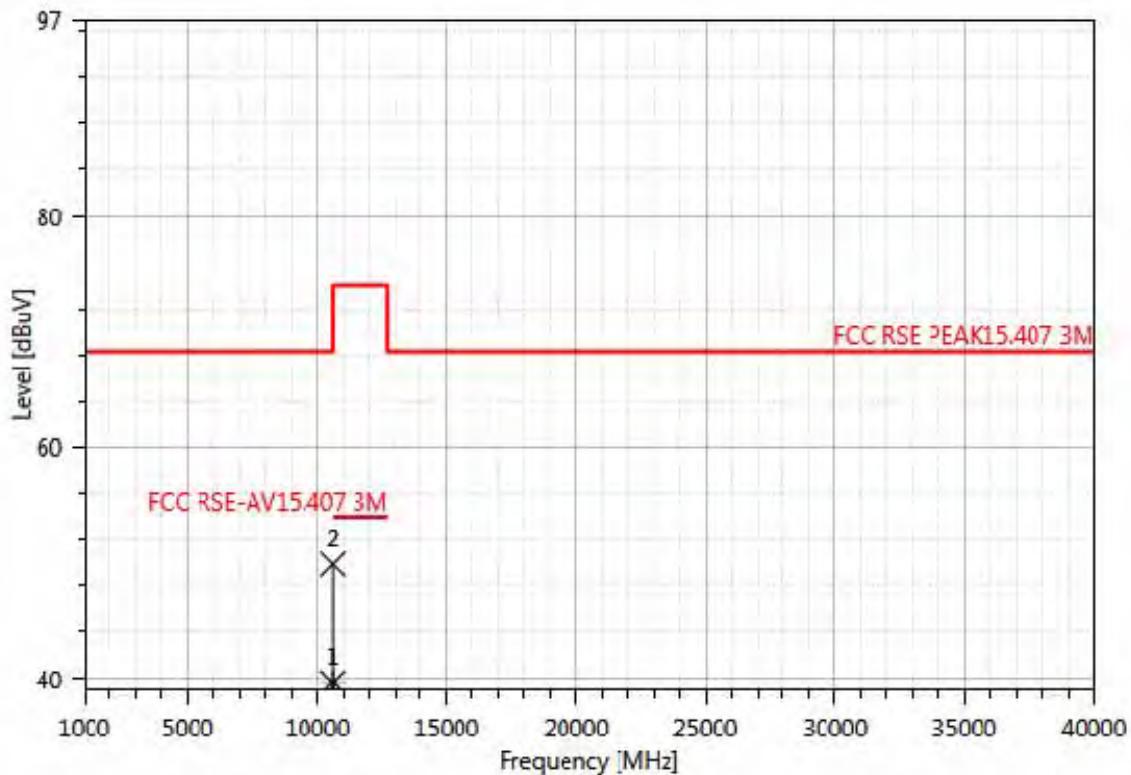
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Operation Mode : 802.11aB2  
Fundamental Frequency : 5300 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



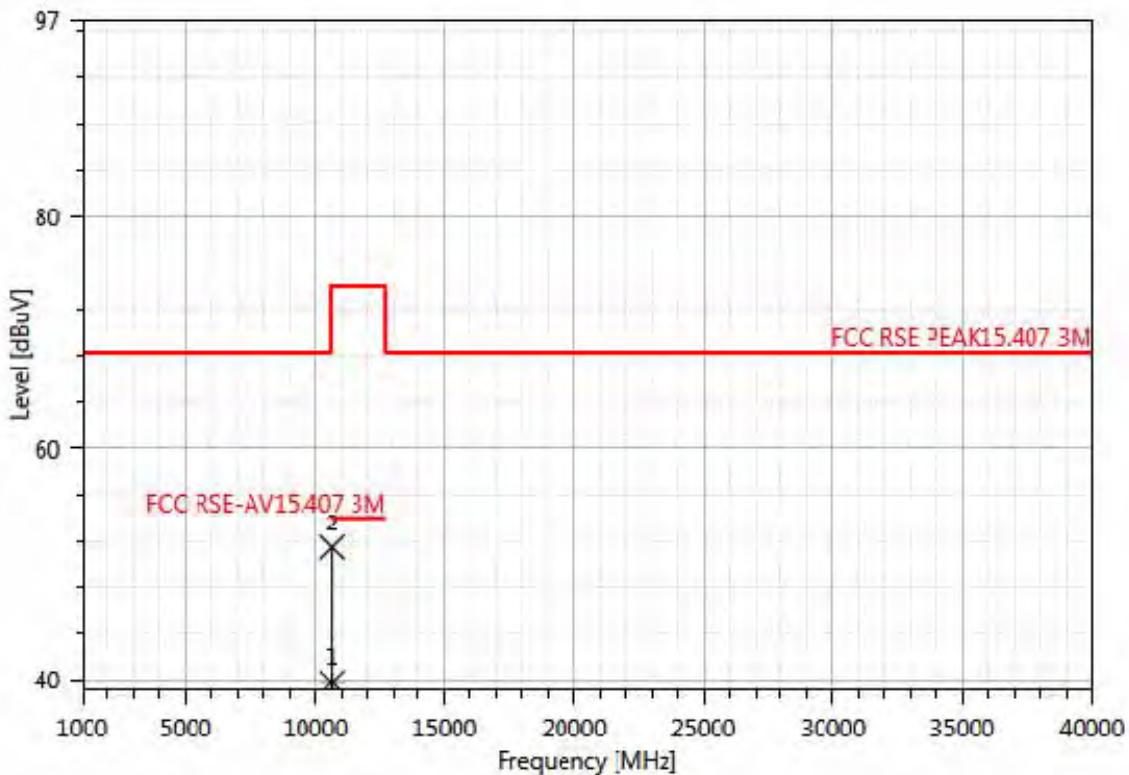
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode QP/AV/PK	FS dB $\mu$ V/m			
10600.00	H	Average	39.65		20.74	18.91	54.00	-14.35
10600.00	H	Peak	49.93		31.03	18.91	74.00	-24.07

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Operation Mode : 802.11aB2 Test Date : 09/14/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	dBuV/m	dB
		QP/AV/PK	Level	dBuV/m			
10640.00	H	Average	39.79	20.61	19.18	54.00	-14.21
10640.00	H	Peak	51.46	32.28	19.18	74.00	-22.54

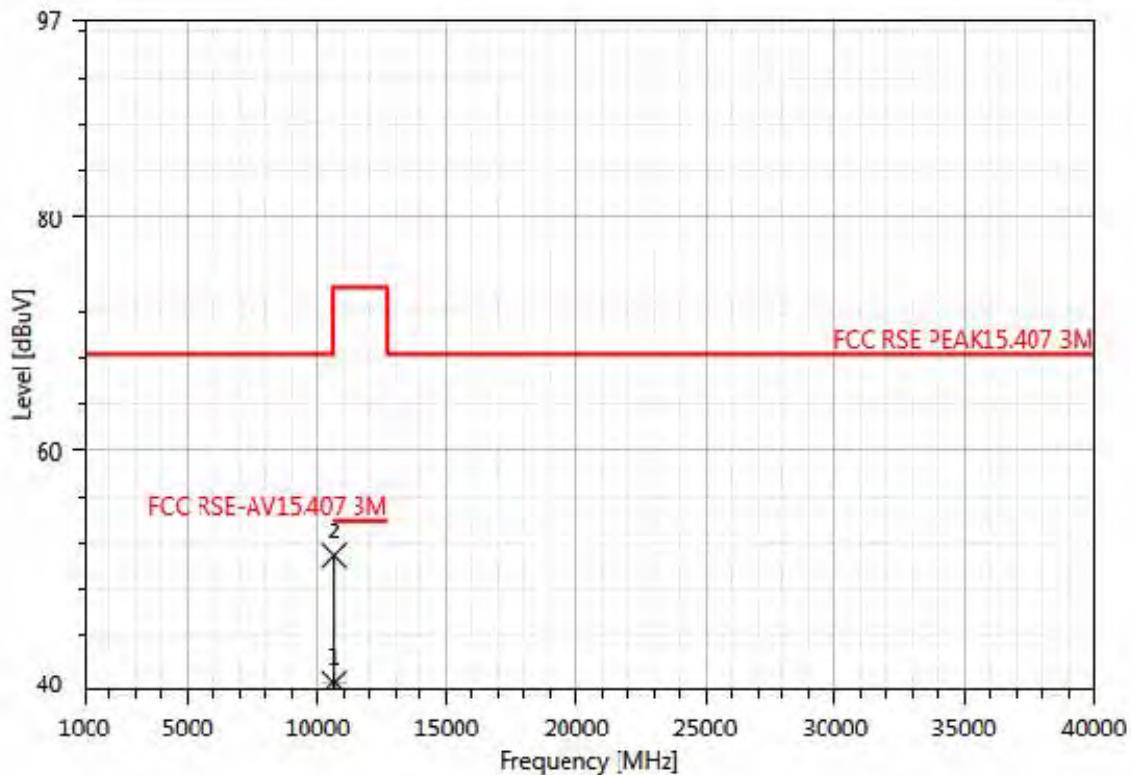
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Operation Mode : 802.11aB2  
Fundamental Frequency : 5320 MHz  
Operation Band : Tx CH HIGH  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode	FS dB $\mu$ V/m			
10640.00	H	Average	40.04		20.86	19.18	54.00	-13.96
10640.00	H	Peak	50.96		31.77	19.18	74.00	-23.04

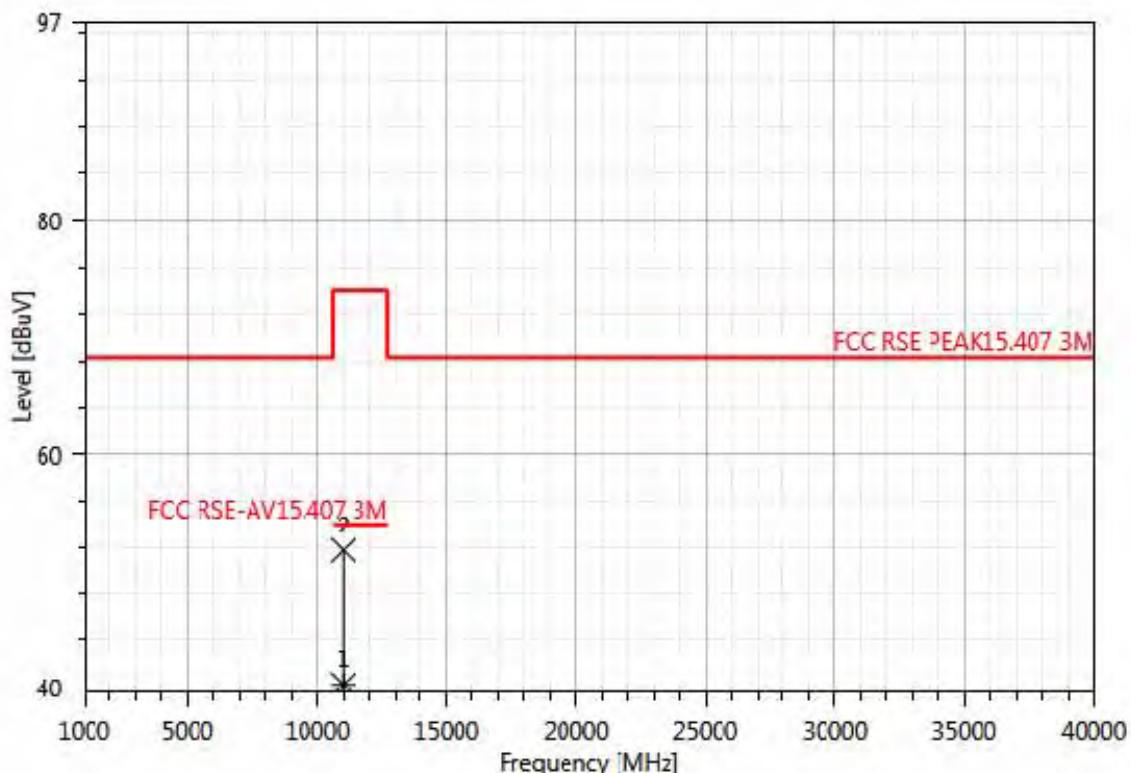
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## Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz

Operation Mode : 802.11aB3 Test Date : 09/14/2016  
 Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
 Operation Band : Tx CH LOW Test Engineer : Tin  
 EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



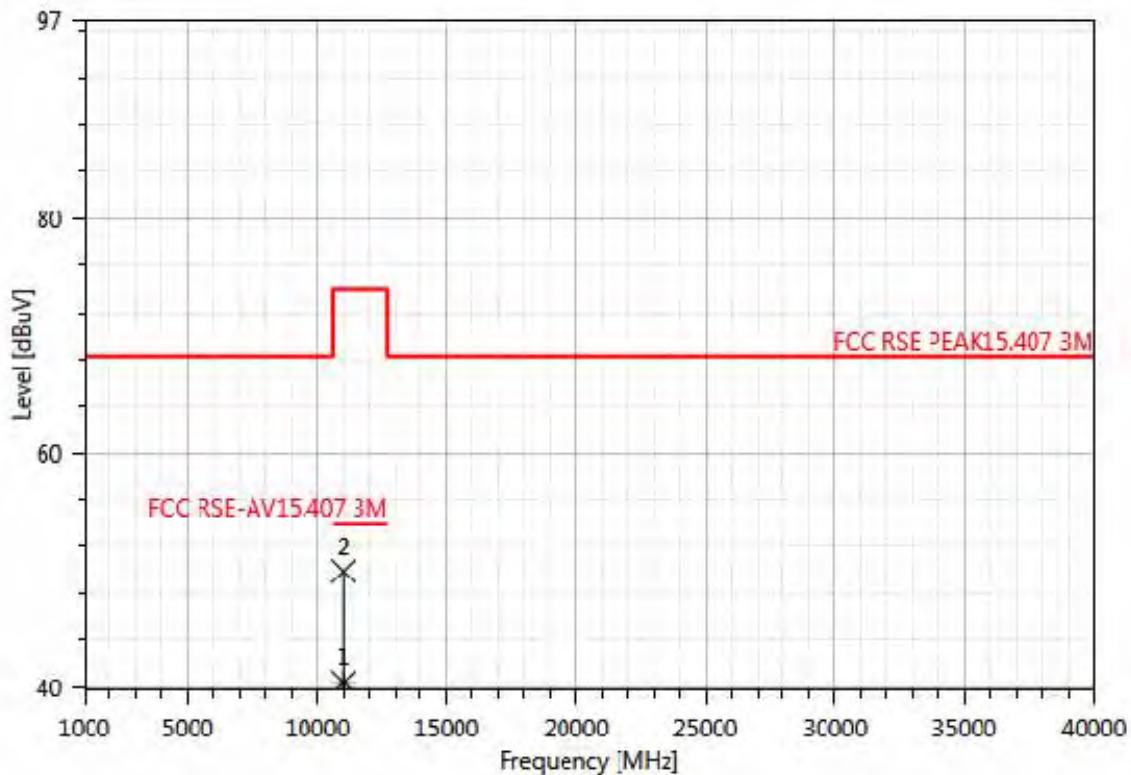
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
						dB	
11000.00	H	Average	40.28	20.11	20.17	54.00	-13.72
11000.00	H	Peak	51.77	31.60	20.17	74.00	-22.23

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Operation Mode : 802.11aB3 Test Date : 09/14/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level	FS	dB	@3m	dB
11000.00	H	Average	40.42	20.25	20.17	54.00	-13.58
11000.00	H	Peak	49.91	29.74	20.17	74.00	-24.09

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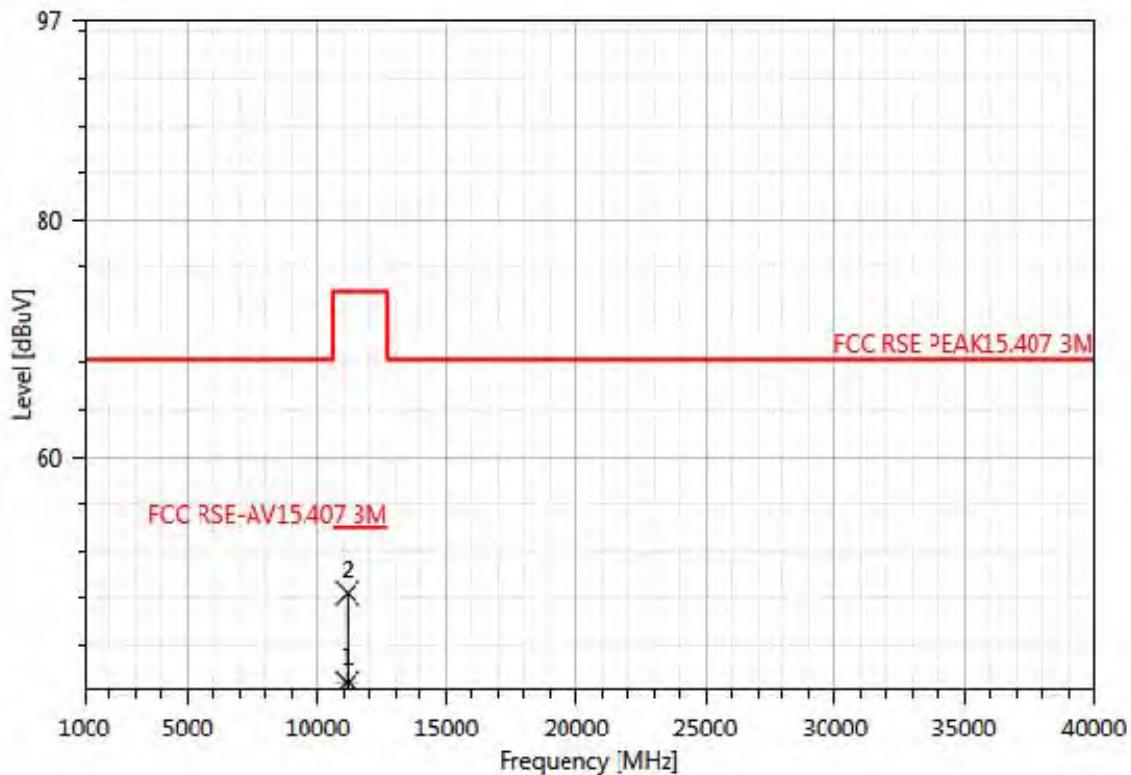
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Operation Mode : 802.11aB3  
Fundamental Frequency : 5580 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11160.00	H	Average	40.92	20.47	20.45	54.00	54.00	-13.08
11160.00	H	Peak	48.43	27.98	20.45	74.00	74.00	-25.57

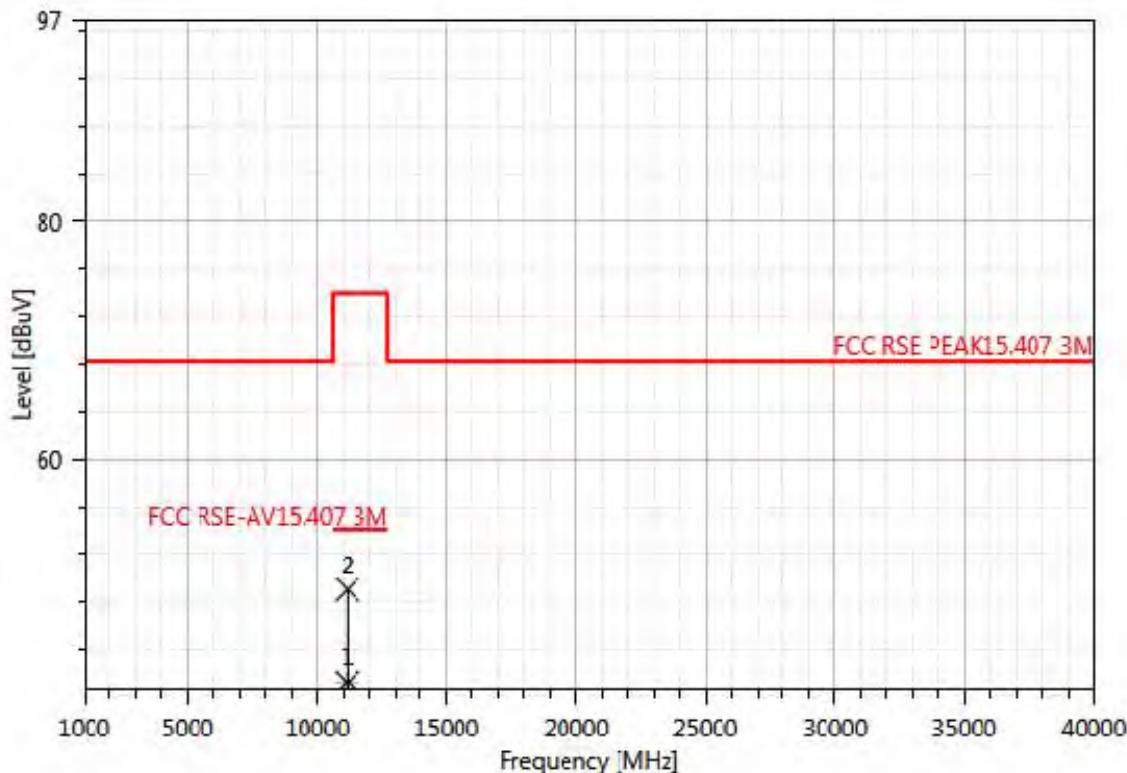
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Operation Mode : 802.11aB3  
Fundamental Frequency : 5580 MHz  
Operation Band : Tx CH MID  
EUT Pol. : H Plane

Test Date : 09/14/2016  
Temp. / Humi. : 23 deg\_C / 62 RH  
Test Engineer : Tin  
Measurement Antenna Pol. : HORIZONTAL



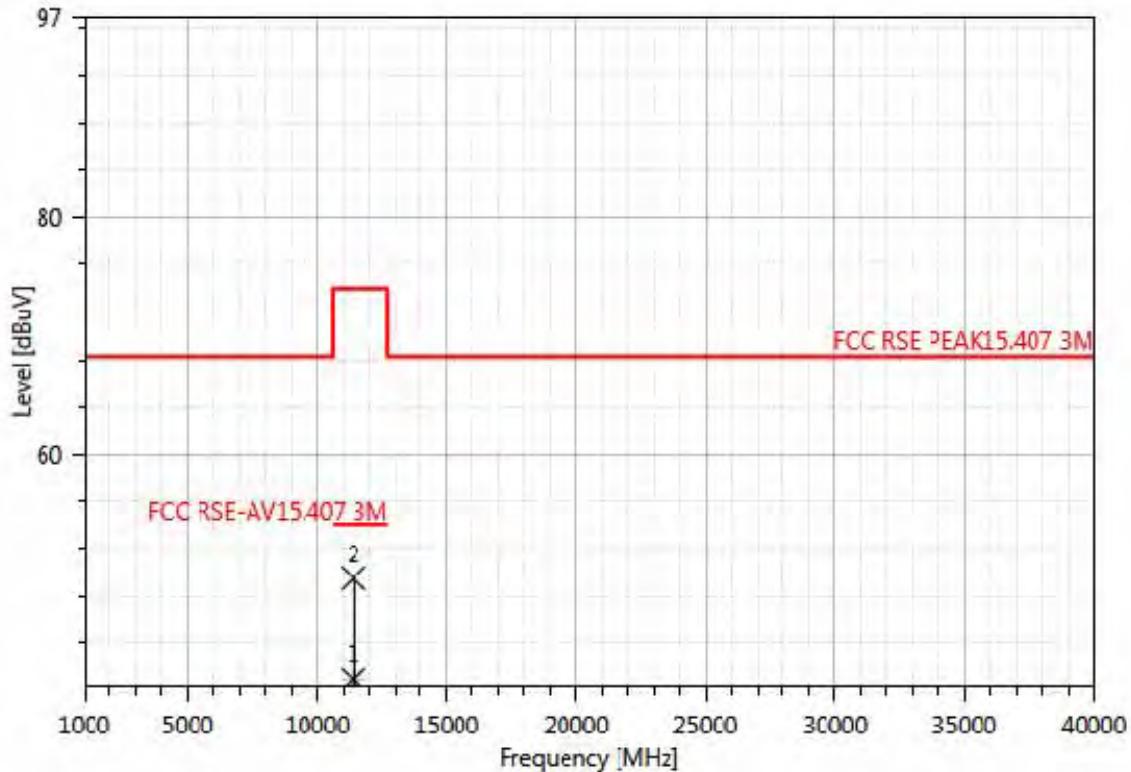
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode	FS dB $\mu$ V/m			
11160.00	H	Average	41.22		20.77	20.45	54.00	-12.78
11160.00	H	Peak	49.03		28.59	20.45	74.00	-24.97

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Operation Mode : 802.11aB3      Test Date : 09/14/2016  
Fundamental Frequency : 5700 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



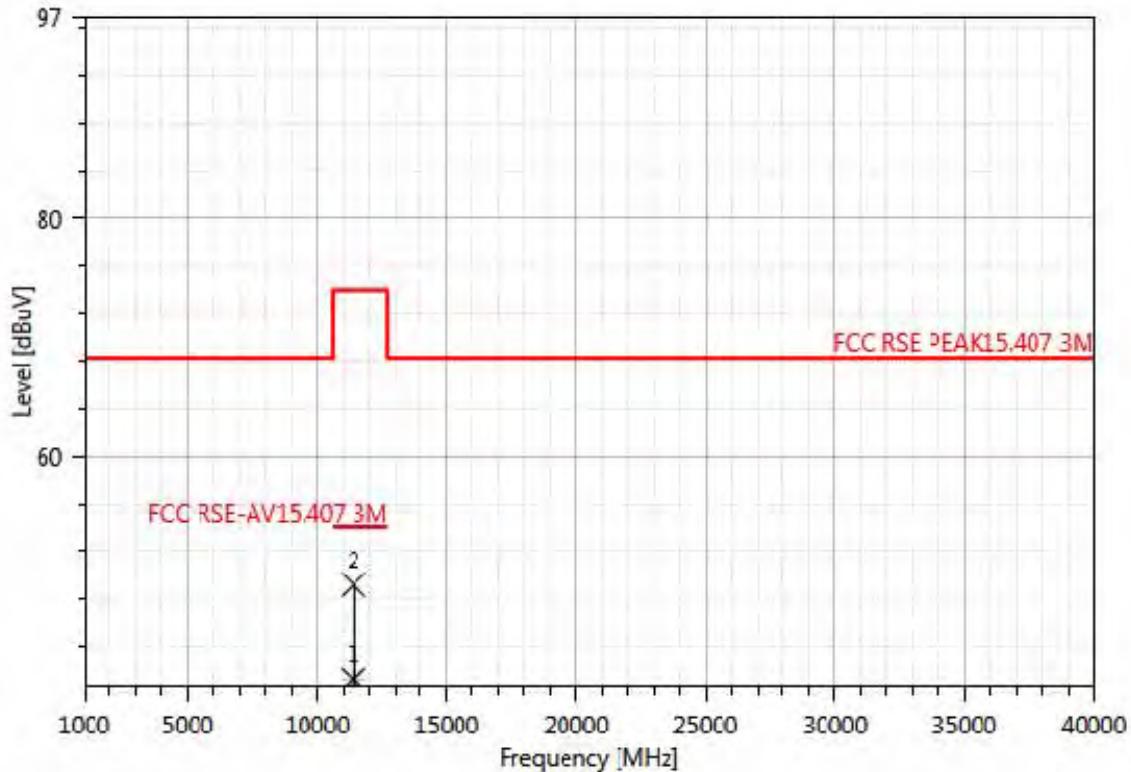
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
11400.00	H	Average	40.95	20.39	20.56	54.00	-13.05
11400.00	H	Peak	49.51	28.95	20.56	74.00	-24.49

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Operation Mode : 802.11aB3 Test Date : 09/14/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
11400.00	H	Average	41.22	20.66	20.56	54.00	-12.78
11400.00	H	Peak	49.19	28.63	20.56	74.00	-24.81

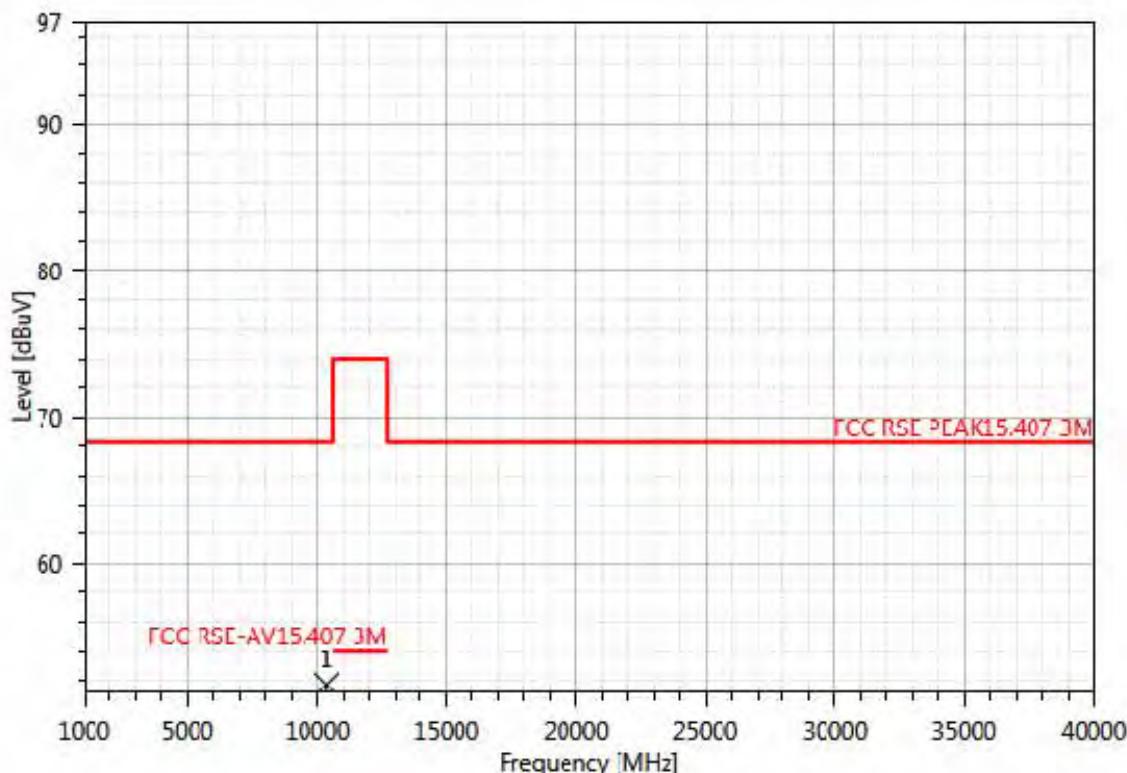
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz**

Operation Mode : 802.11n20B1      Test Date : 09/14/2016  
Fundamental Frequency : 5180 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



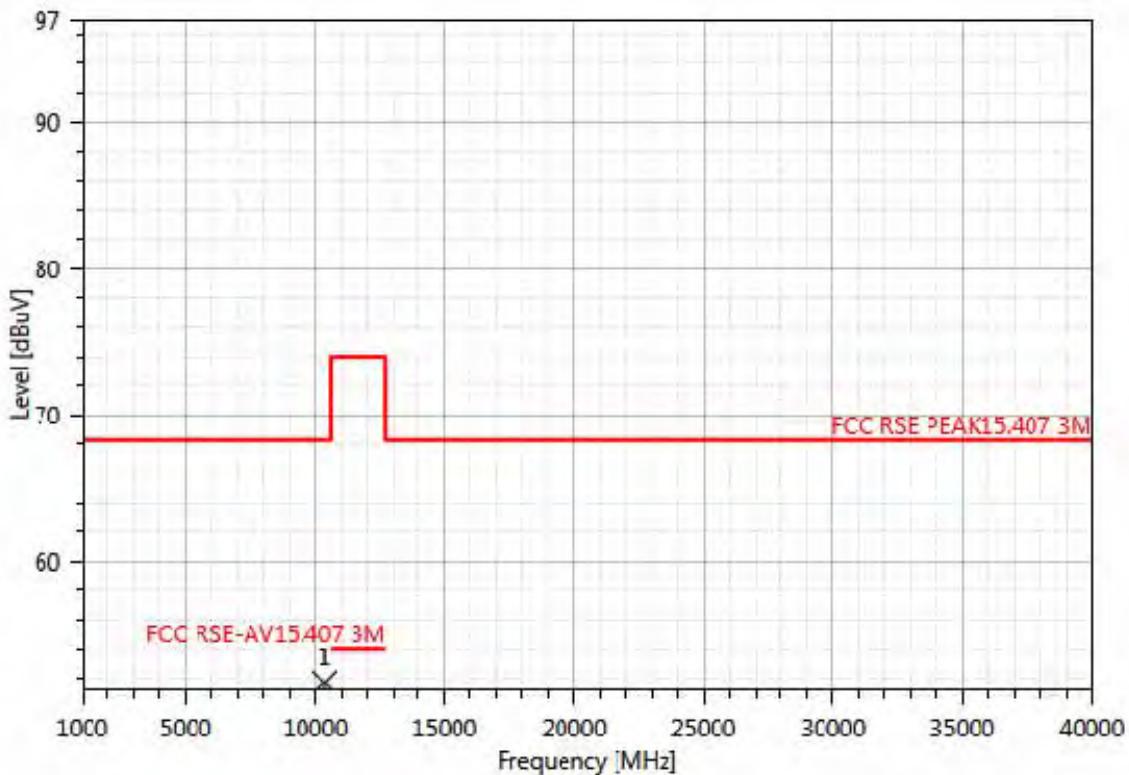
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10360.00	H	Peak	51.75	33.45	18.29	68.30	-16.55

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Operation Mode : 802.11n20B1 Test Date : 09/14/2016  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



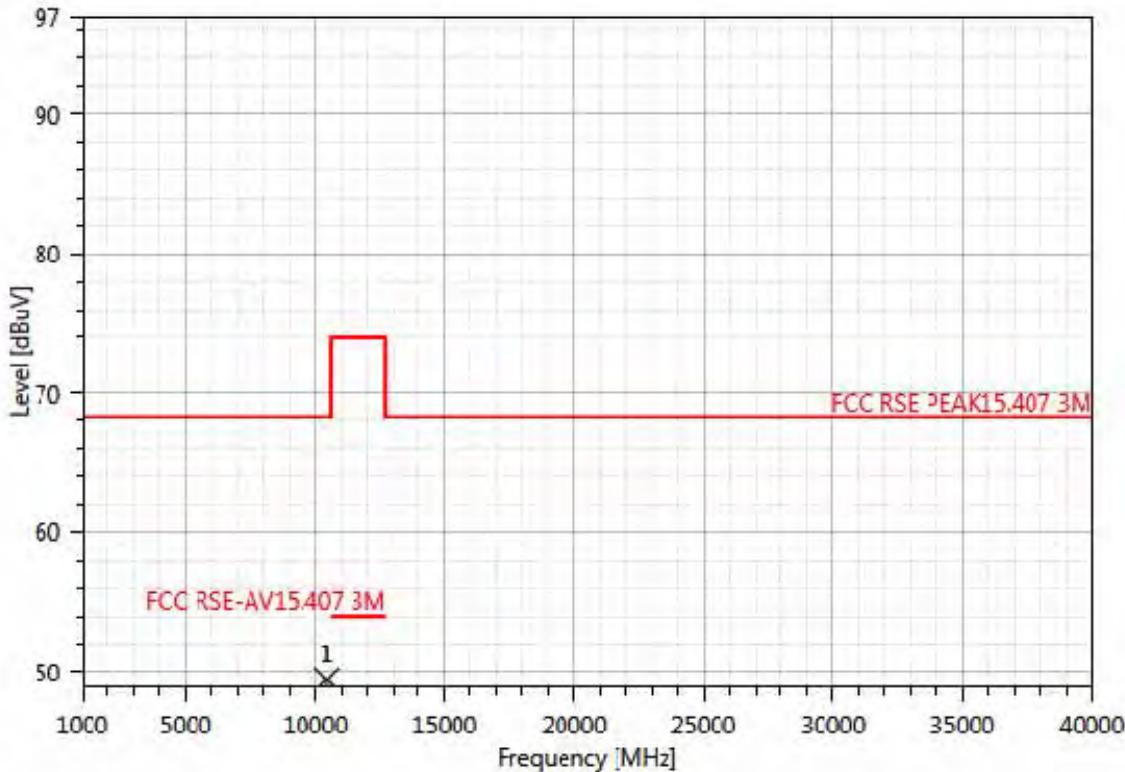
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10360.00	H	Peak	51.74	33.45	18.29	68.30	-16.56

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Operation Mode : 802.11n20B1 Test Date : 09/14/2016  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



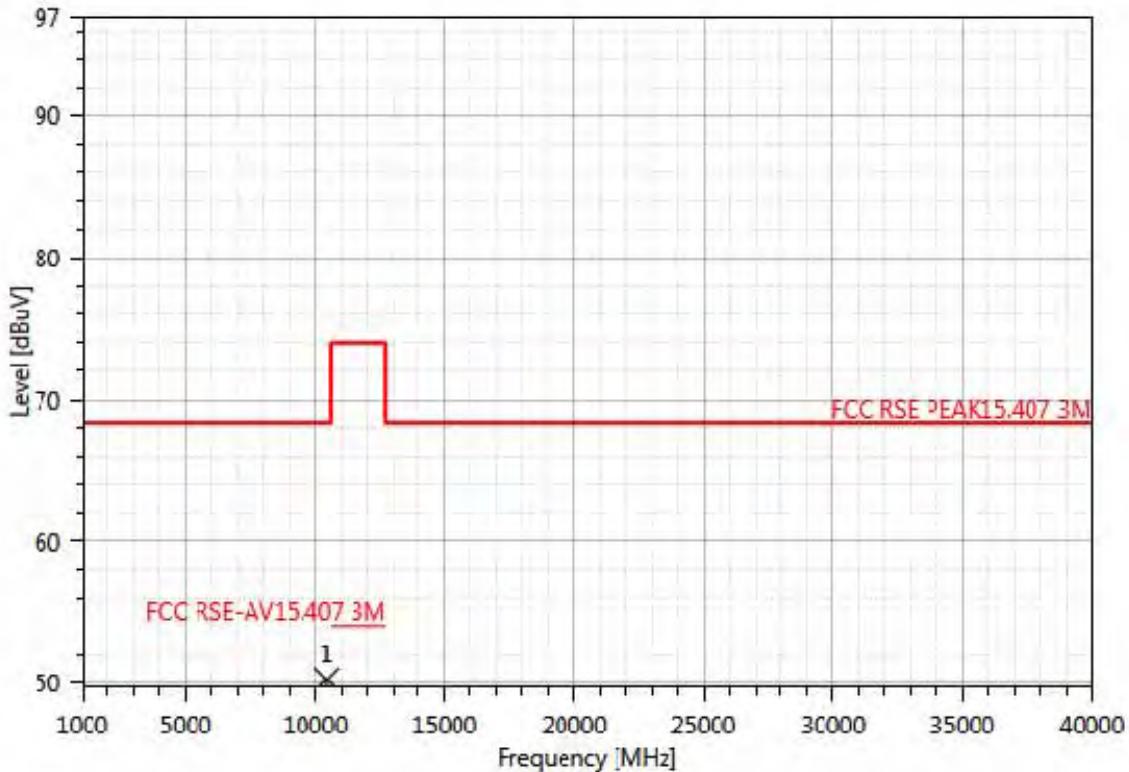
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10440.00	H	Peak	49.46	30.77	18.68	68.30	-18.84

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Operation Mode : 802.11n20B1 Test Date : 09/14/2016  
Fundamental Frequency : 5220 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



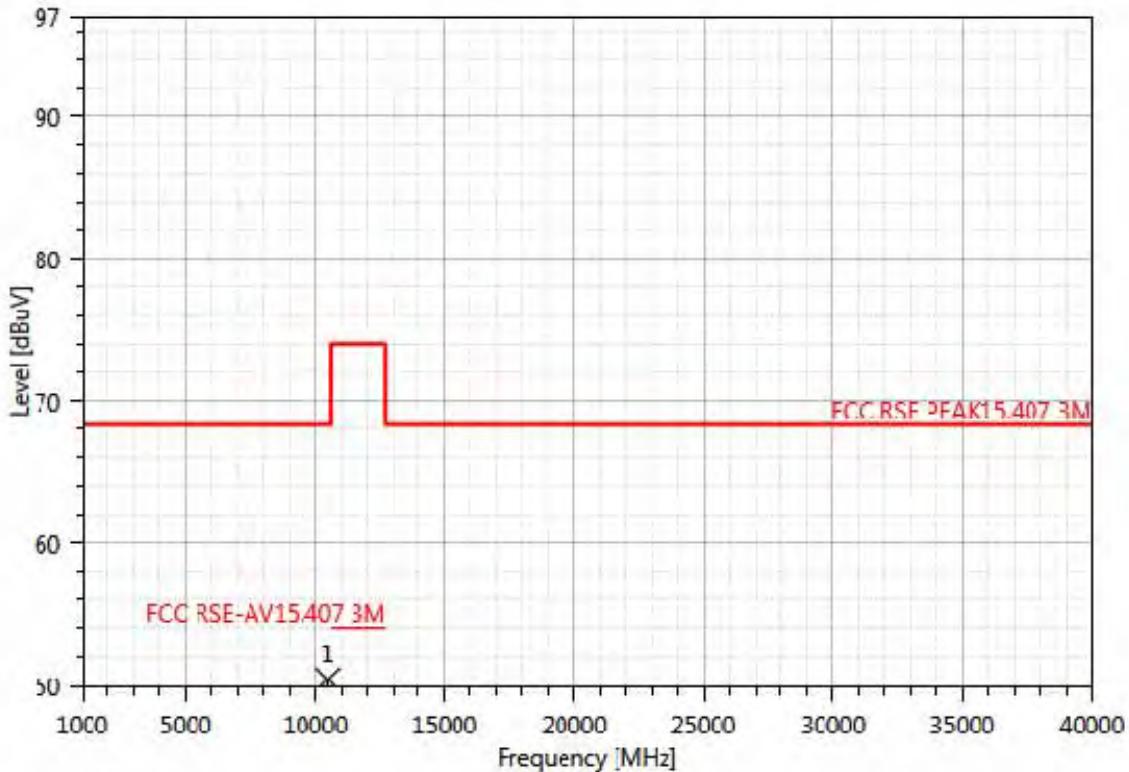
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10440.00	H	Peak	50.26	31.58	18.68	68.30	-18.04

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Operation Mode : 802.11n20B1 Test Date : 09/14/2016  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



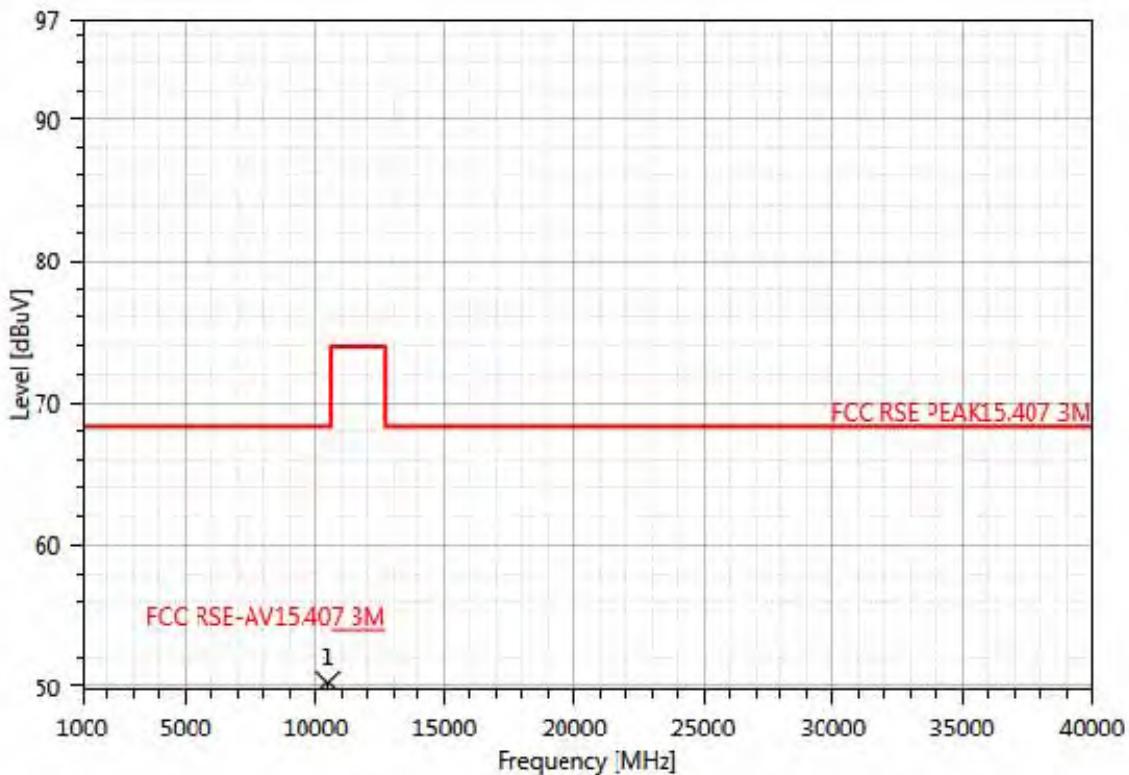
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10480.00	H	Peak	50.40	32.10	18.29	68.30	-17.90

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Operation Mode : 802.11n20B1 Test Date : 09/14/2016  
Fundamental Frequency : 5240 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10480.00	H	Peak	50.32	32.03	18.29	68.30	-17.98

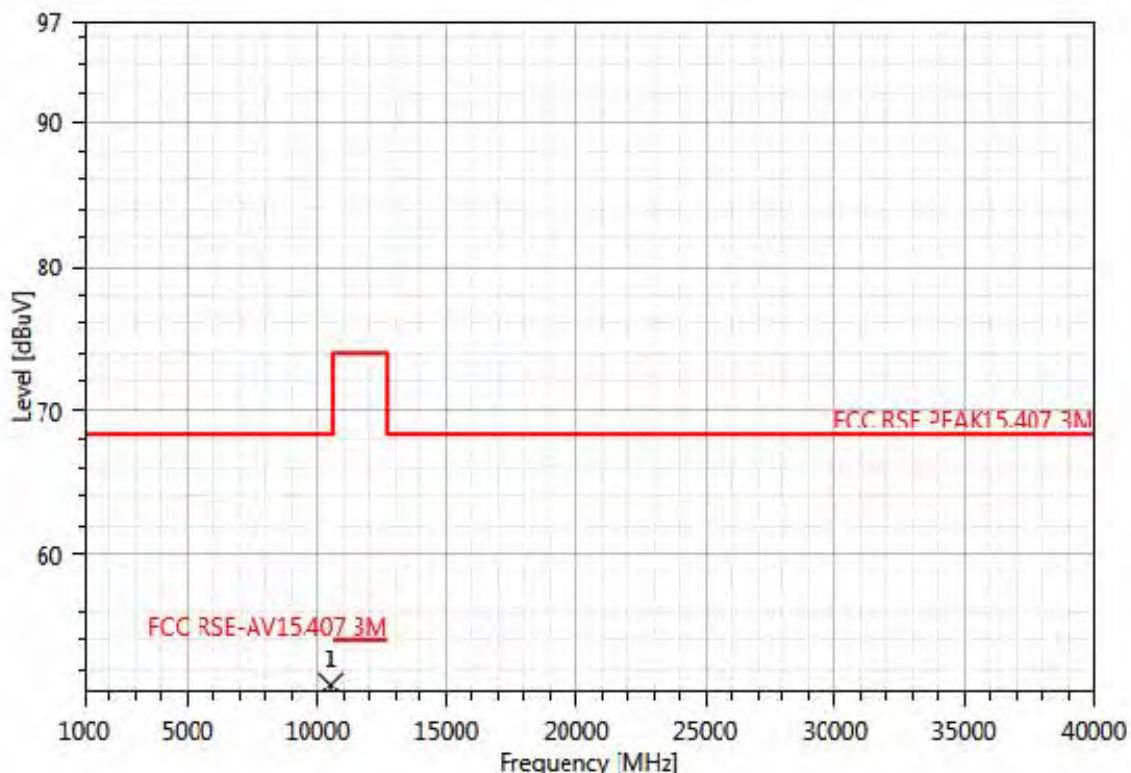
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5250~5350 MHz**

Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



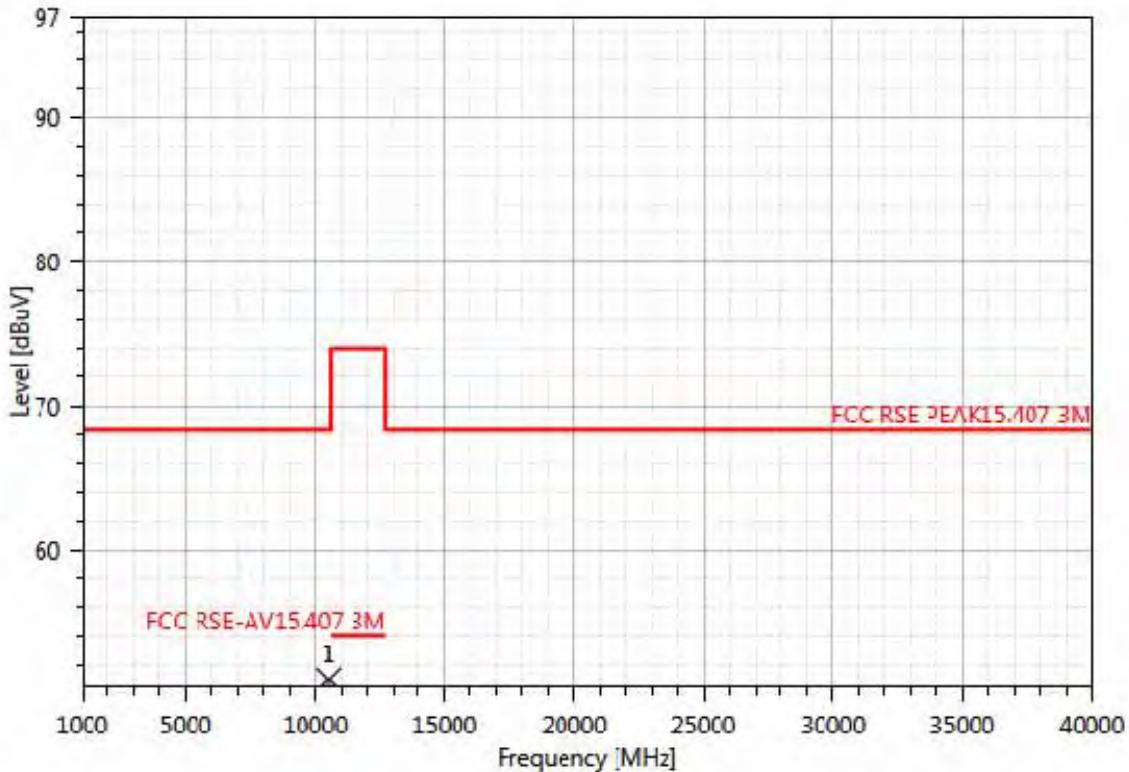
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dBuV/m	dB
10520.00	H	Peak	50.95	31.58	19.37	68.30	-17.35

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Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5260 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



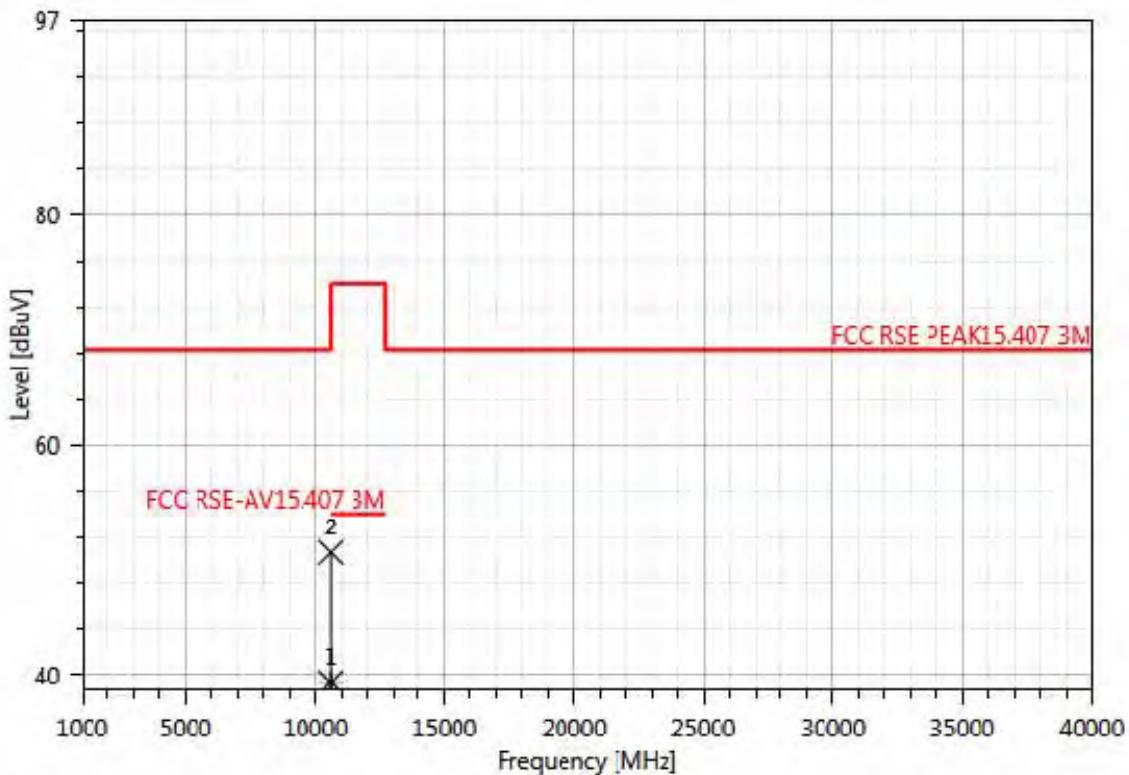
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10520.00	H	Peak	51.02	31.65	19.37	68.30	-17.28

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Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



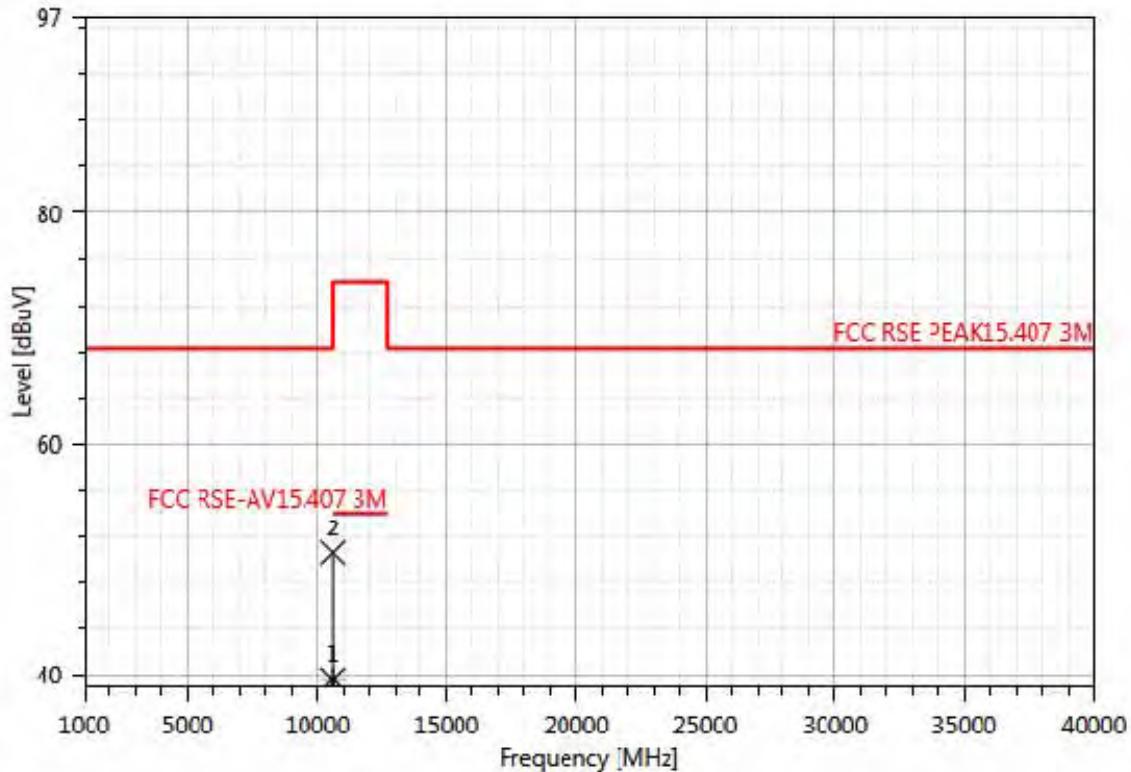
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10600.00	H	Average	39.34	20.43	18.91	54.00	-14.66
10600.00	H	Peak	50.67	31.76	18.91	74.00	-23.33

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Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5300 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
10600.00	H	Average	39.60	20.69	18.91	54.00	54.00	-14.40
10600.00	H	Peak	50.59	31.68	18.91	74.00	74.00	-23.41

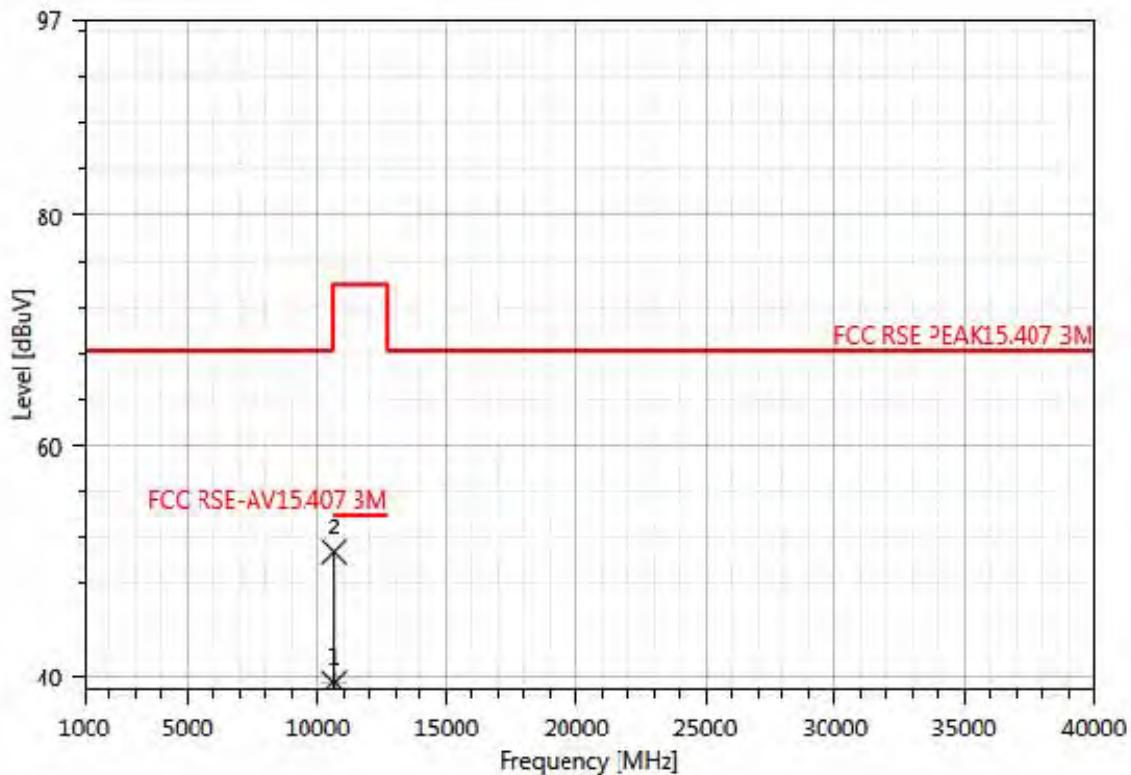
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Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
10640.00	H	Average	39.45	20.27	19.18	54.00	54.00	-14.55
10640.00	H	Peak	50.78	31.60	19.18	74.00	74.00	-23.22

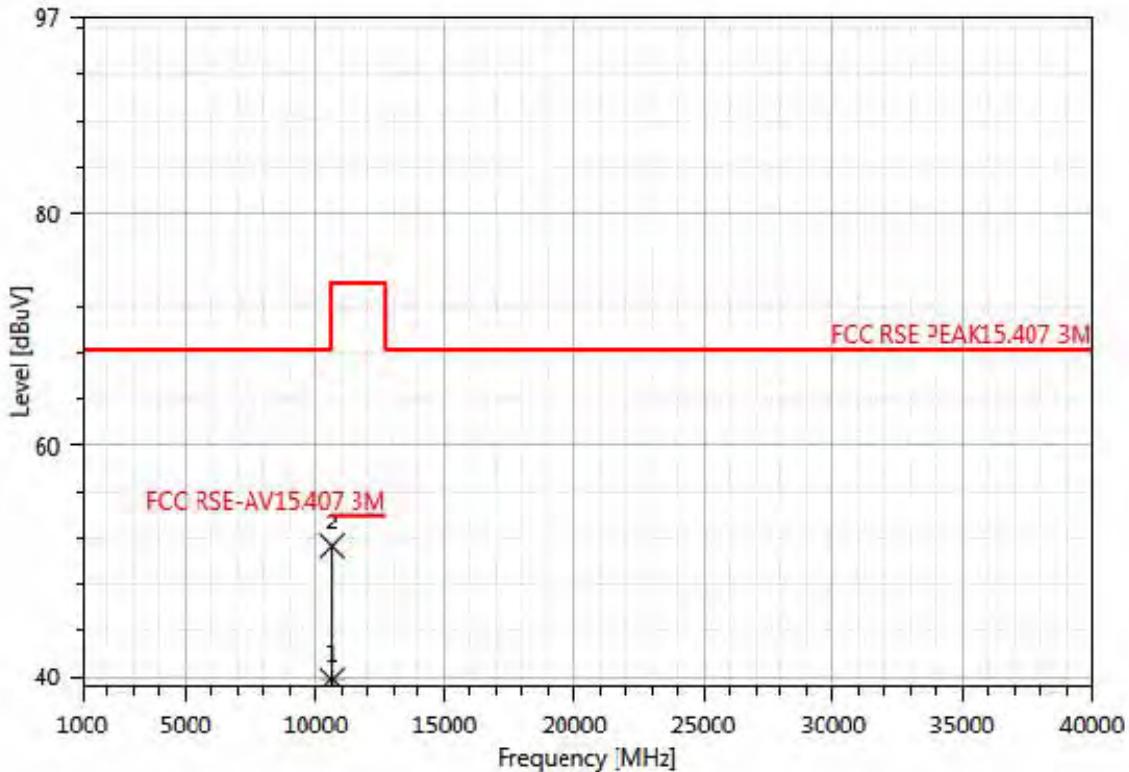
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Operation Mode : 802.11n20B2 Test Date : 09/14/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode	FS dB $\mu$ V/m			
10640.00	H	Average	39.79	20.61	19.18	54.00	54.00	-14.21
10640.00	H	Peak	51.31	32.12	19.18	74.00	74.00	-22.69

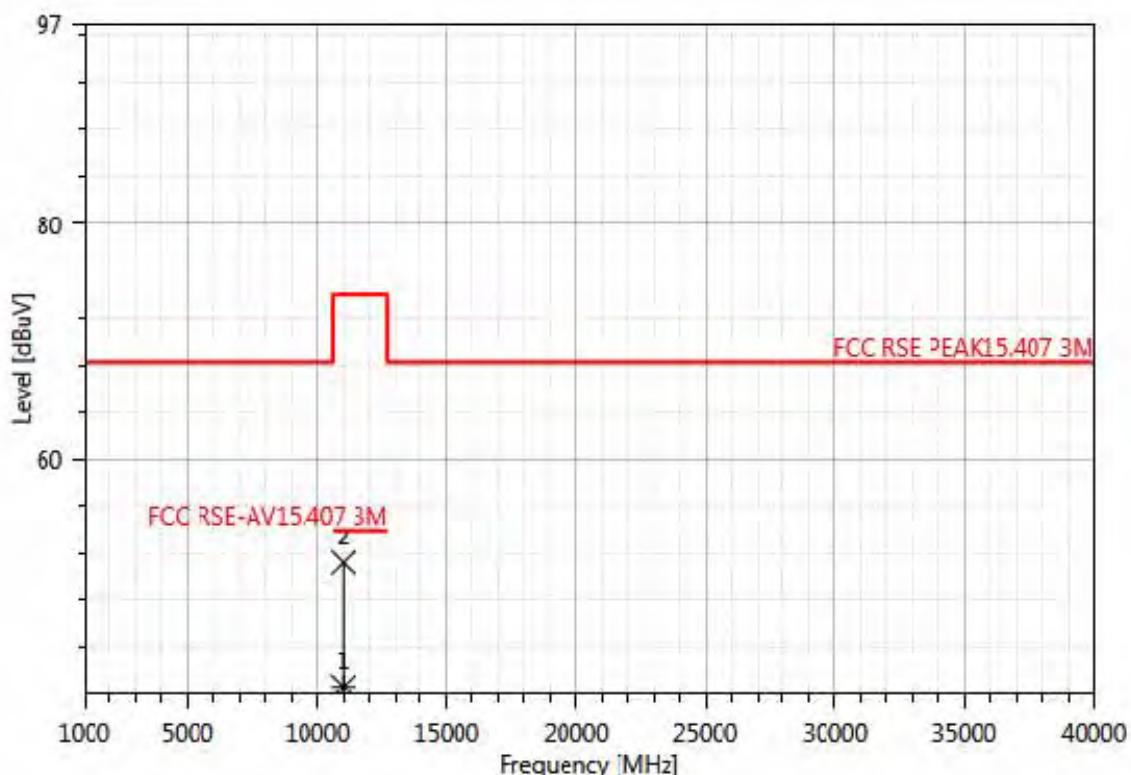
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**Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz**

Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



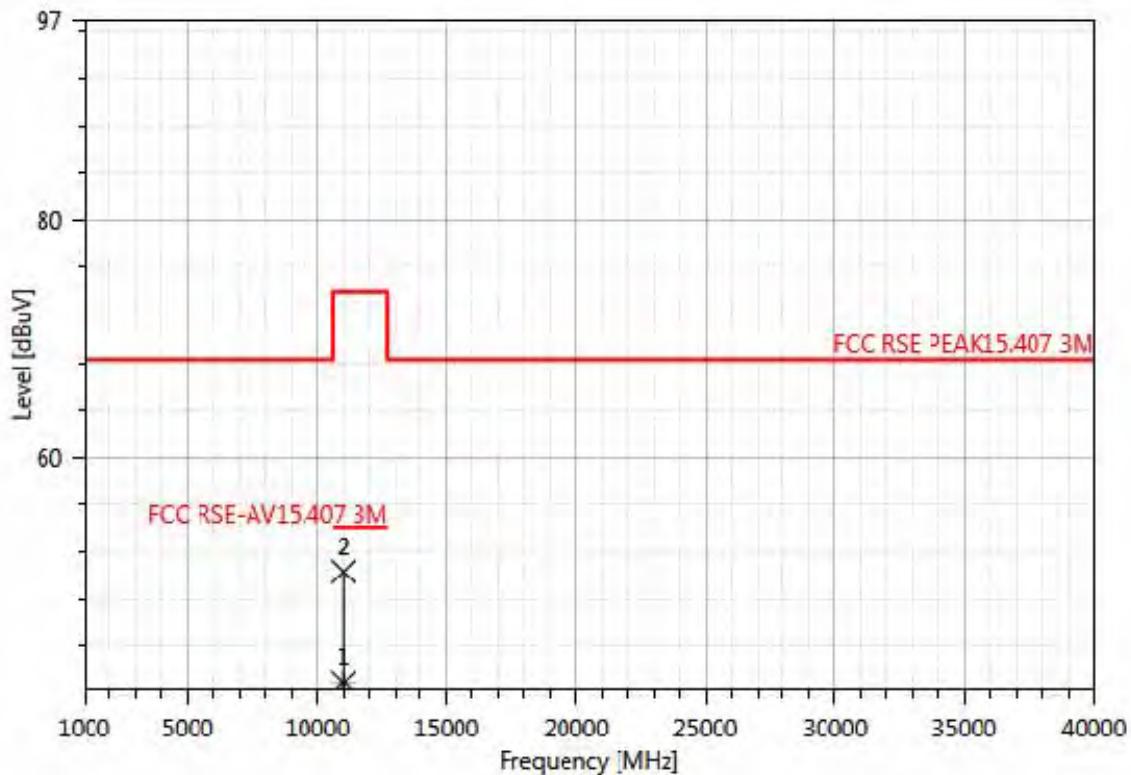
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
						Limit @3m dBuV/m	Margin dB
11000.00	H	Average	40.72	20.55	20.17	54.00	-13.28
11000.00	H	Peak	51.27	31.11	20.17	74.00	-22.73

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Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



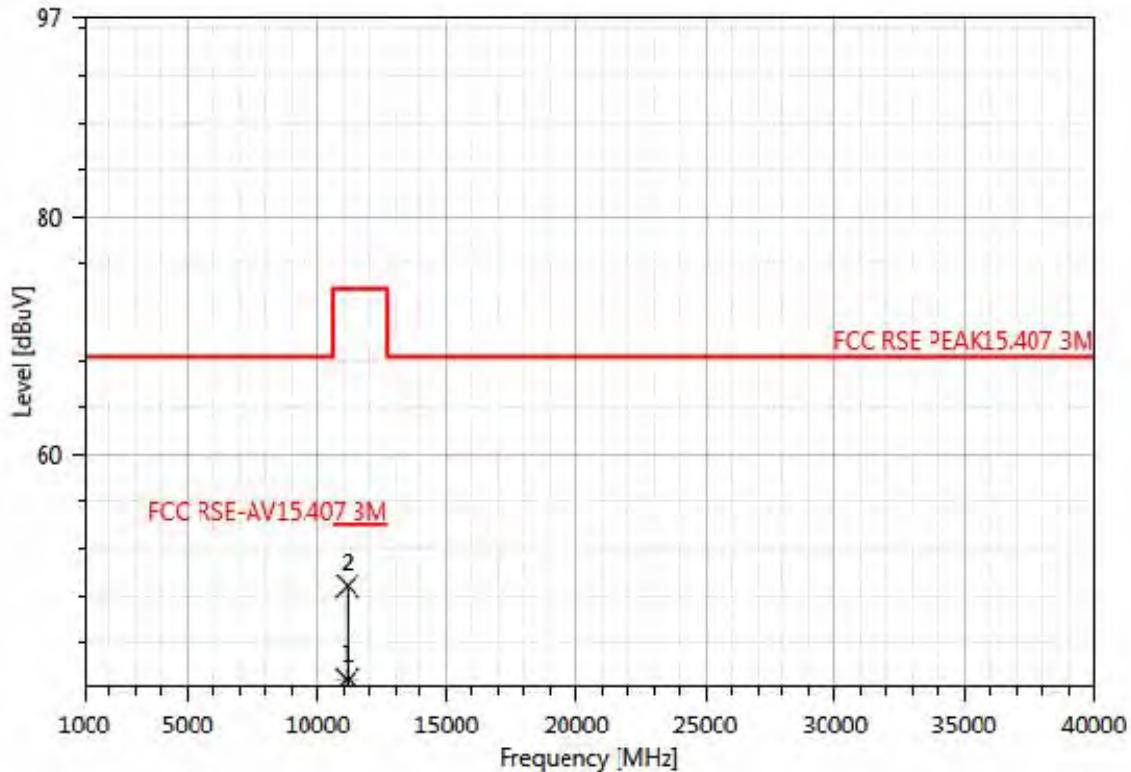
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11000.00	H	Average	40.96	20.79	20.17	54.00	54.00	-13.04
11000.00	H	Peak	50.33	30.16	20.17	74.00	74.00	-23.67

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Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



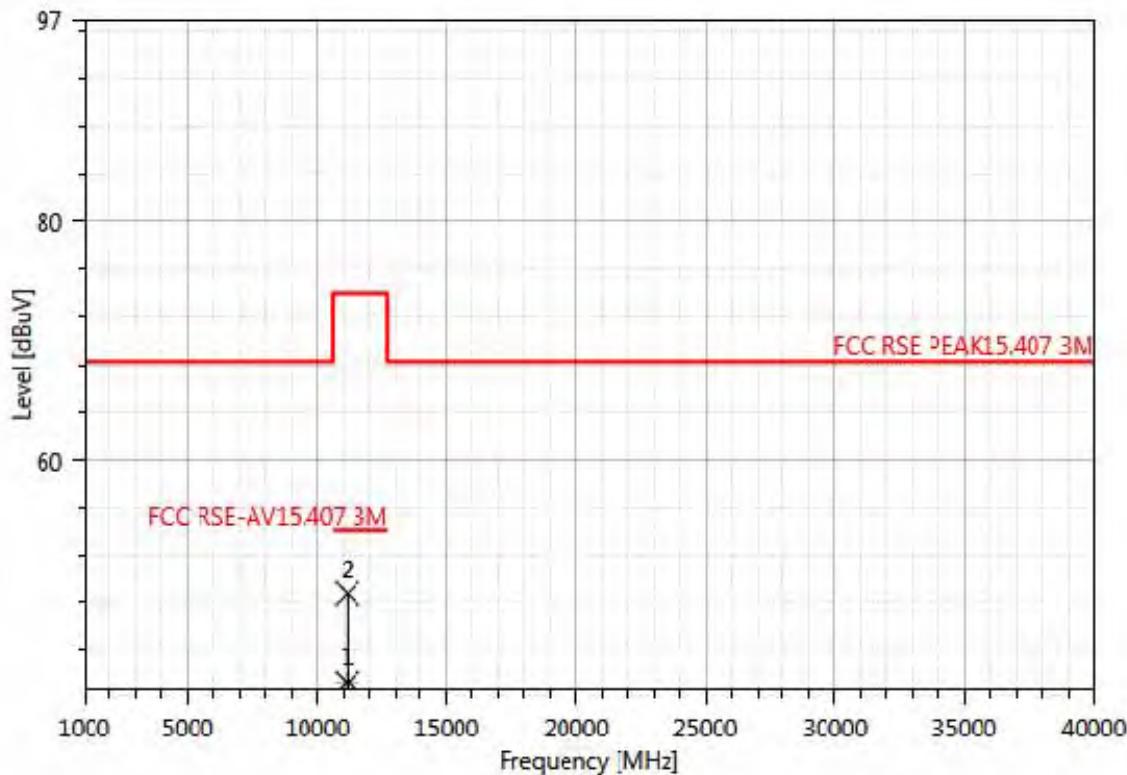
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11160.00	H	Average	40.94	20.49	20.45	54.00	54.00	-13.06
11160.00	H	Peak	48.81	28.36	20.45	74.00	74.00	-25.19

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Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5580 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



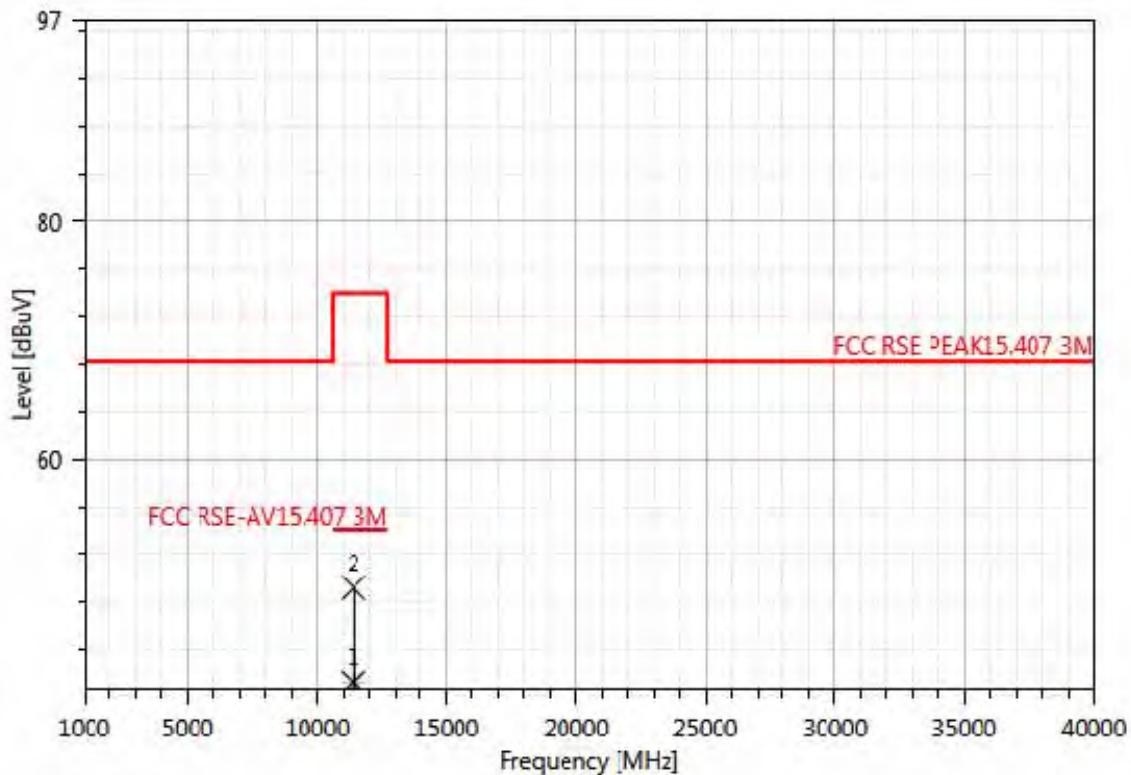
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
11160.00	H	Average	41.28	20.83	20.45	54.00	-12.72
11160.00	H	Peak	48.72	28.27	20.45	74.00	-25.28

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Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



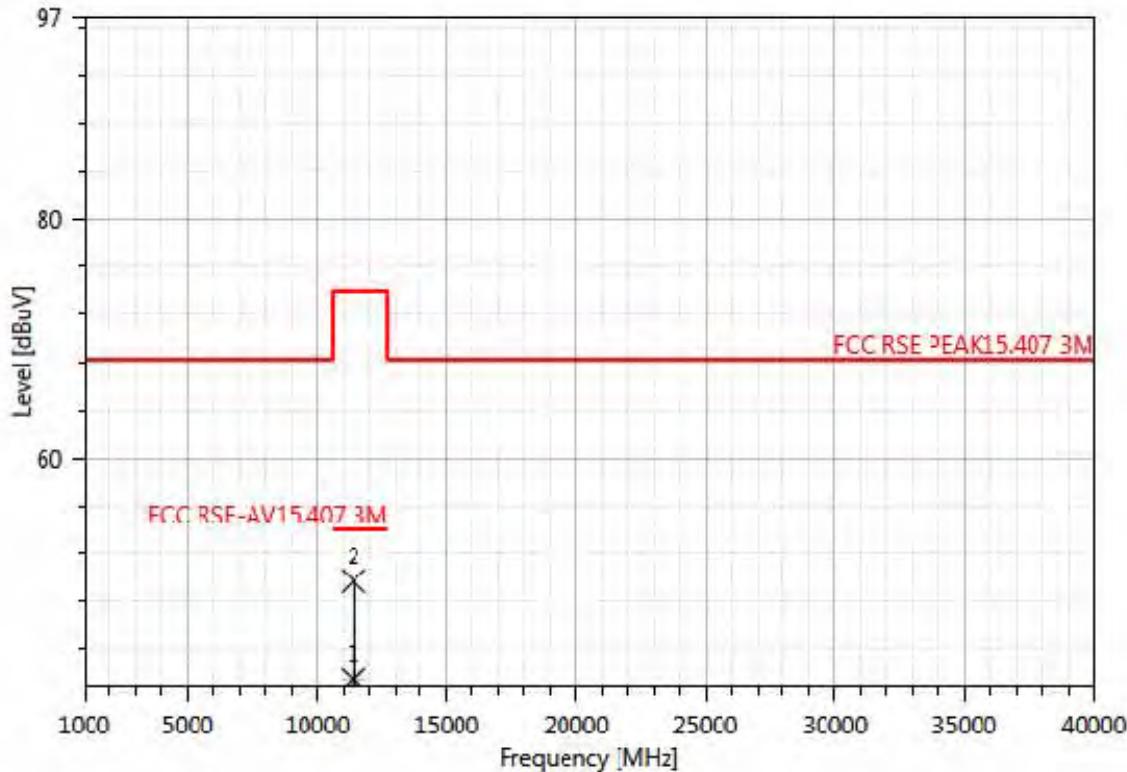
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11400.00	H	Average	41.22	20.66	20.56	54.00	54.00	-12.78
11400.00	H	Peak	49.19	28.63	20.56	74.00	74.00	-24.81

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Operation Mode : 802.11n20B3 Test Date : 09/14/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11400.00	H	Average	41.44	20.88	20.56	54.00	54.00	-12.56
11400.00	H	Peak	49.68	29.12	20.56	74.00	74.00	-24.32

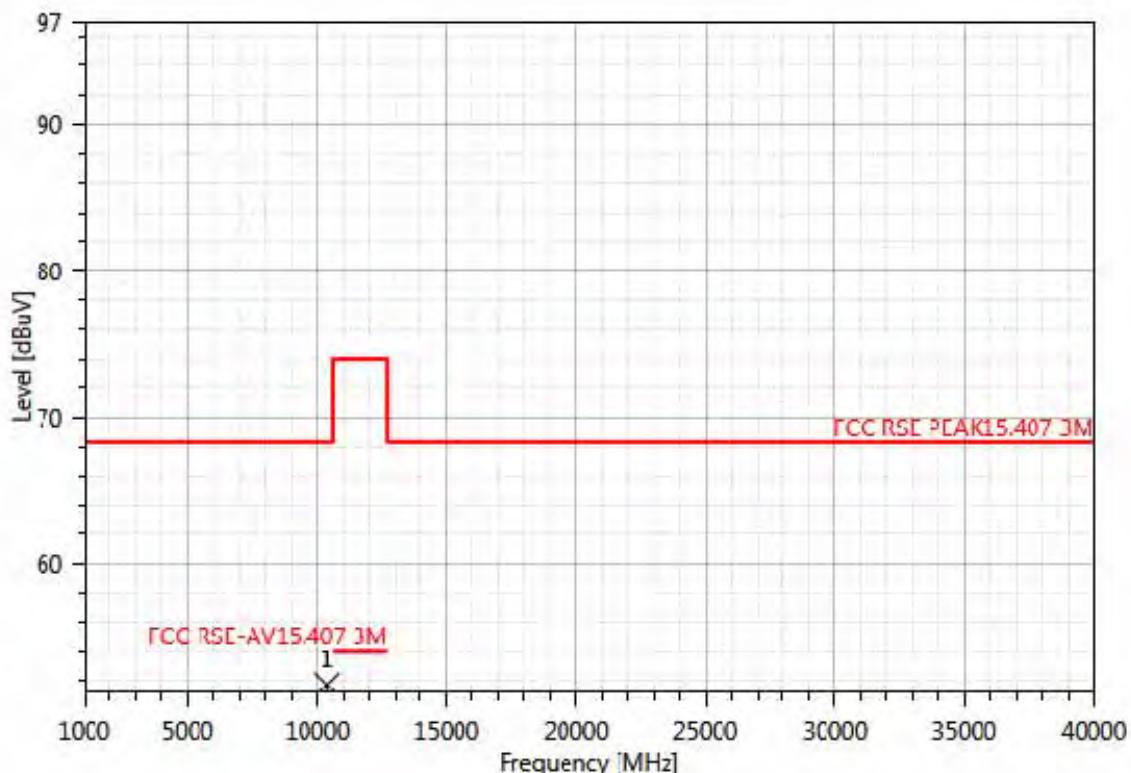
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**Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHz**

Operation Mode : 802.11n40B1      Test Date : 09/14/2016  
Fundamental Frequency : 5190 MHz      Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW      Test Engineer : Tin  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



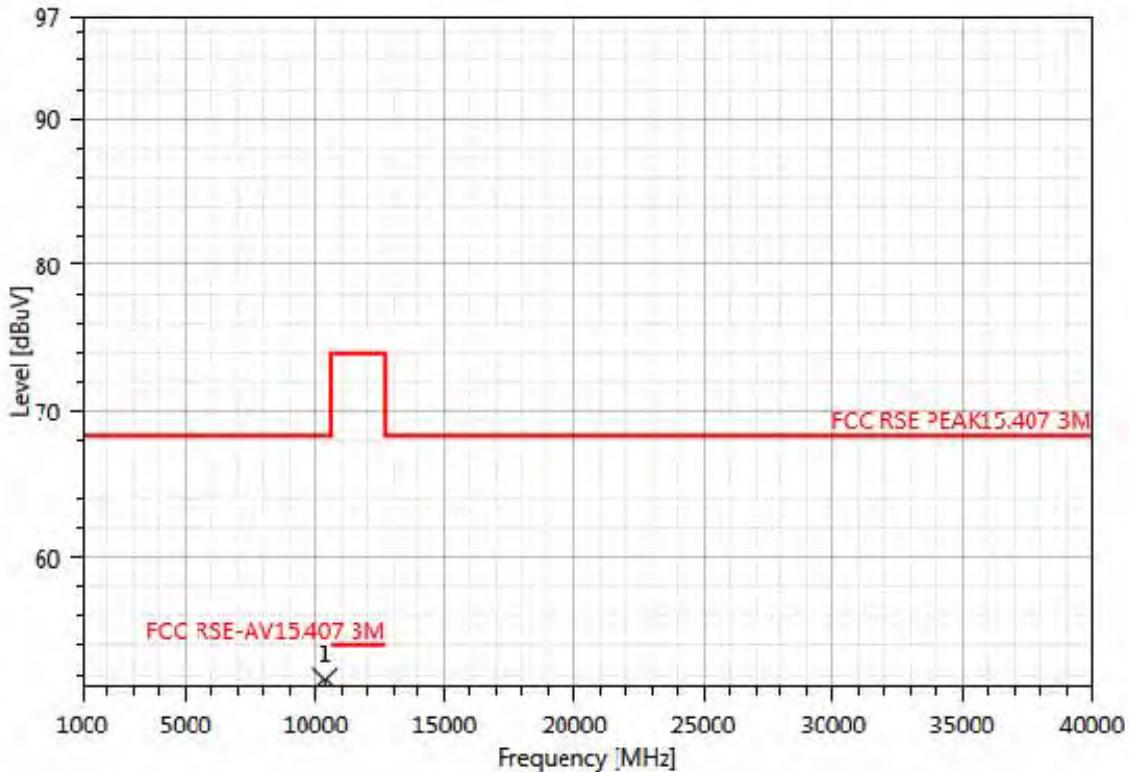
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10380.00	H	Peak	51.76	33.64	18.12	68.30	-16.54

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Operation Mode : 802.11n40B1 Test Date : 09/14/2016  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



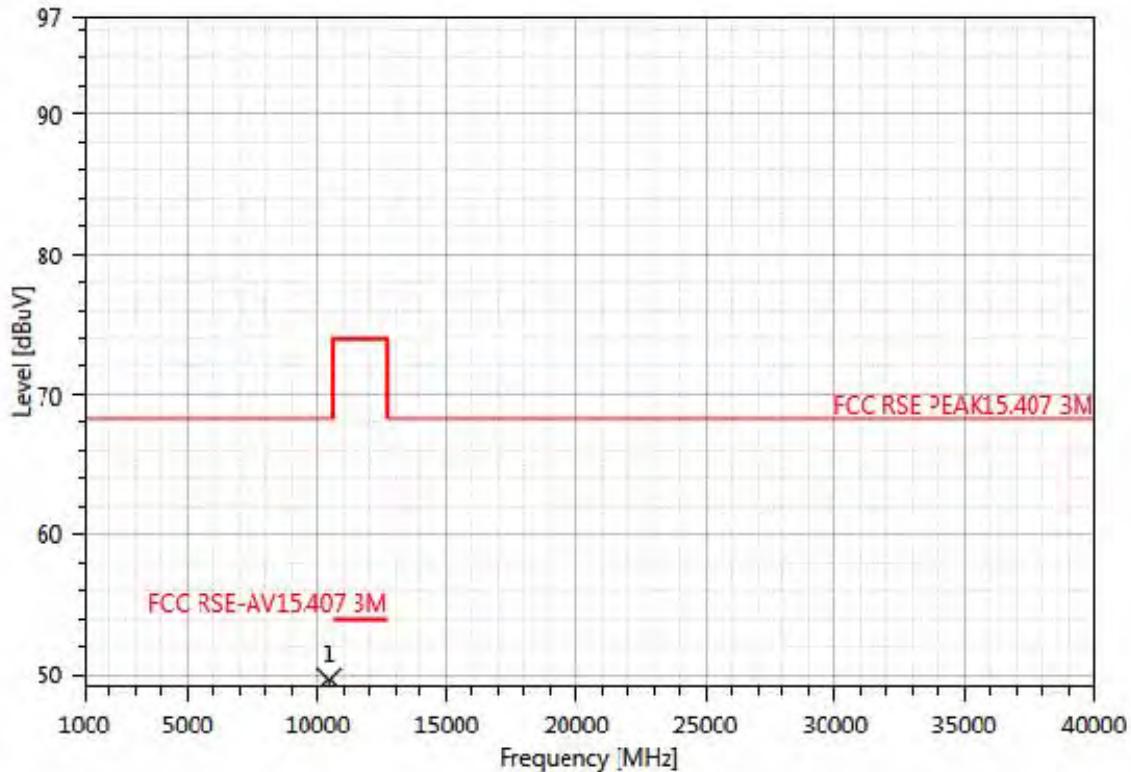
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10380.00	H	Peak	51.65	33.52	18.12	68.30	-16.65

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Operation Mode : 802.11n40B1 Test Date : 09/14/2016  
Fundamental Frequency : 5230 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



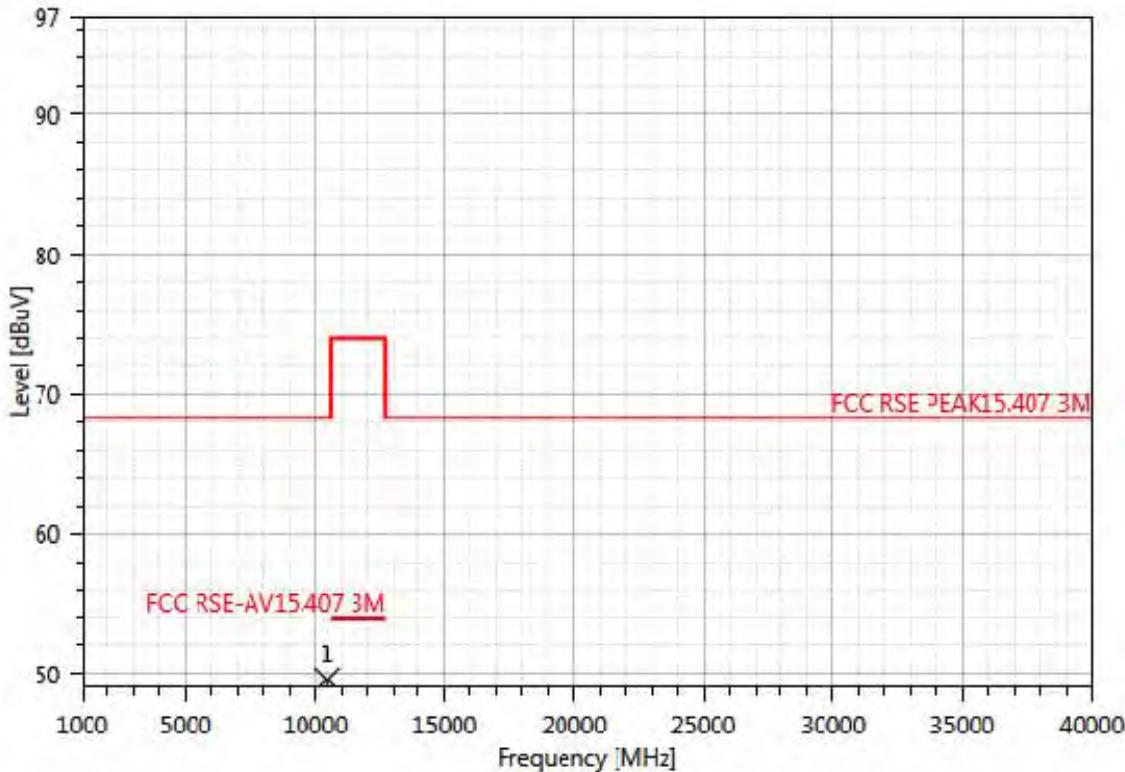
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10460.00	H	Peak	49.67	31.13	18.54	68.30	-18.63

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Operation Mode : 802.11n40B1 Test Date : 09/14/2016  
Fundamental Frequency : 5230 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10460.00	H	Peak	49.60	31.06	18.54	68.30	-18.70

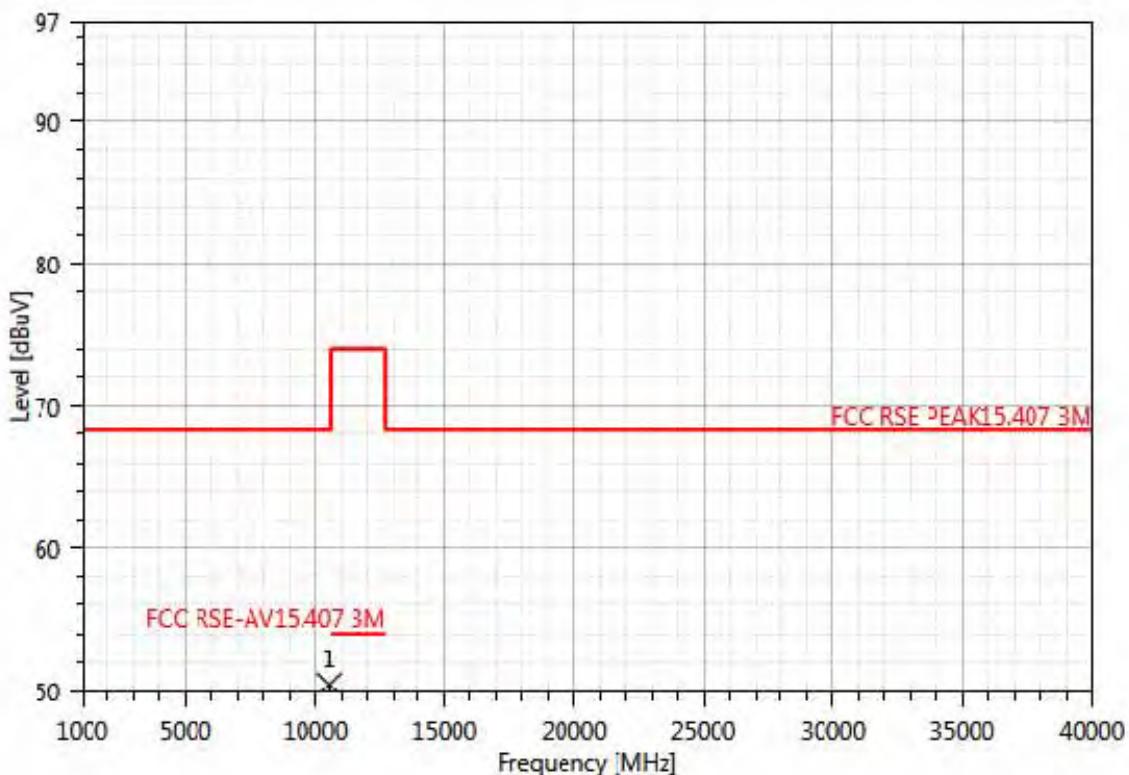
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## Radiated Spurious Emission Measurement Result 802.11n HT40, 5250~5350 MHz

Operation Mode : 802.11n40B2 Test Date : 09/14/2016  
Fundamental Frequency : 5270 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



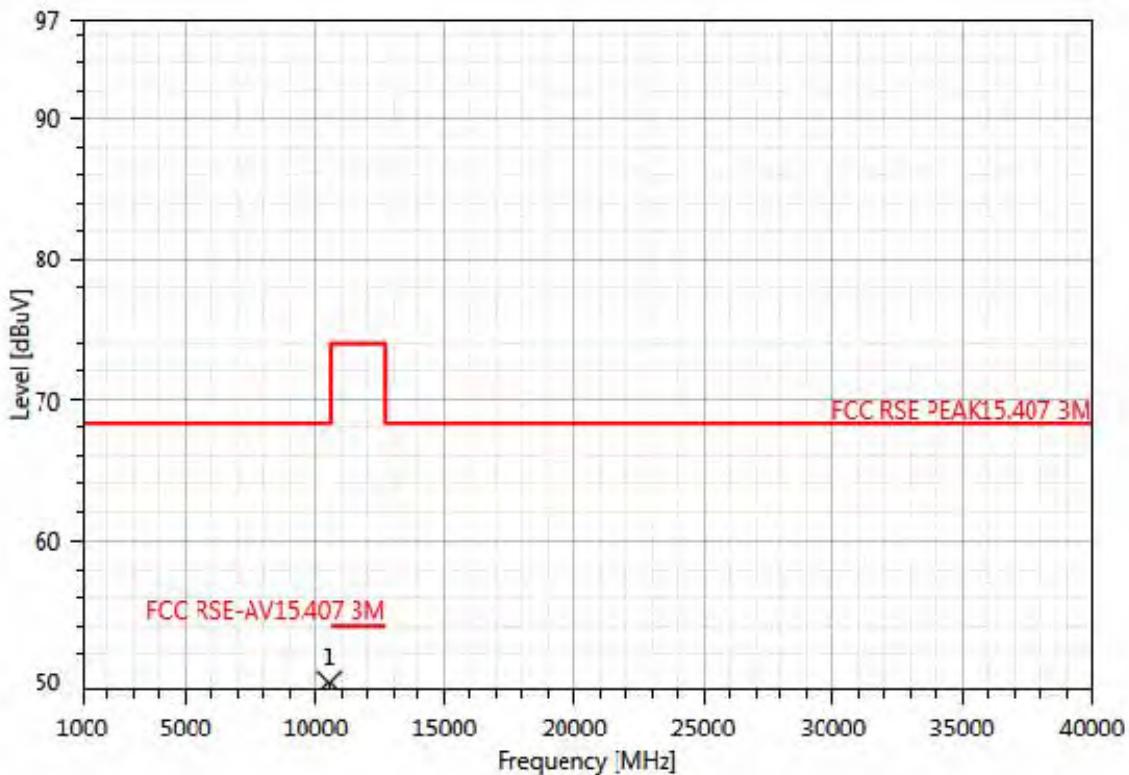
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10540.00	H	Peak	50.41	31.24	19.17	68.30	-17.89

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Operation Mode : 802.11n40B2 Test Date : 09/14/2016  
Fundamental Frequency : 5270 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



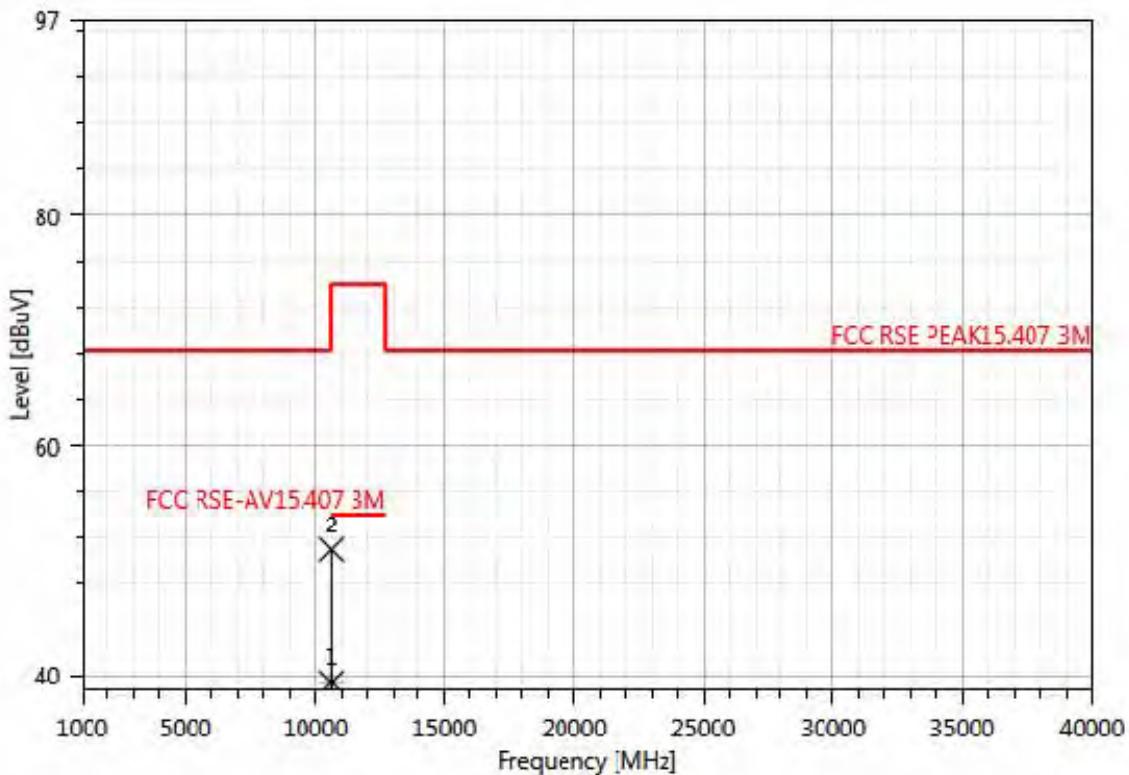
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10540.00	H	Peak	49.95	30.78	19.17	68.30	-18.35

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Operation Mode : 802.11n40B2 Test Date : 09/14/2016  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



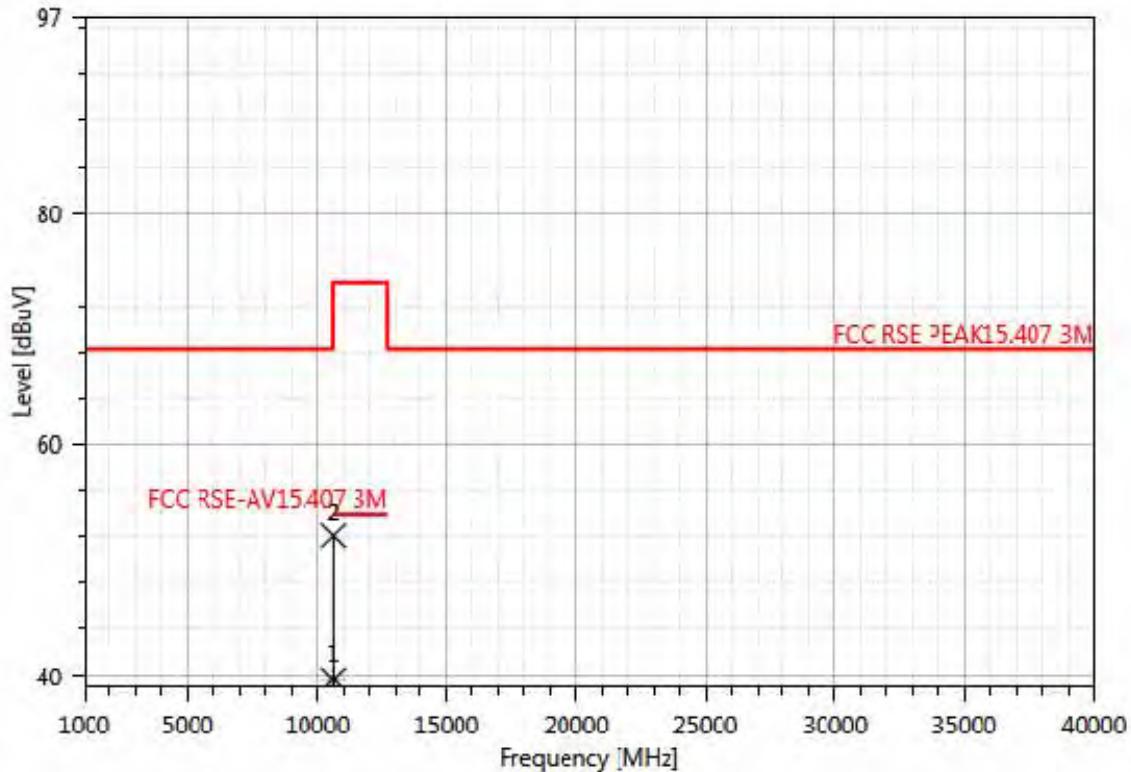
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10620.00	H	Average	39.44	20.33	19.11	54.00	-14.56
10620.00	H	Peak	50.98	31.87	19.11	74.00	-23.02

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Operation Mode : 802.11n40B2 Test Date : 09/14/2016  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10620.00	H	Average	39.69	20.58	19.11	54.00	-14.31
10620.00	H	Peak	52.07	32.97	19.11	74.00	-21.93

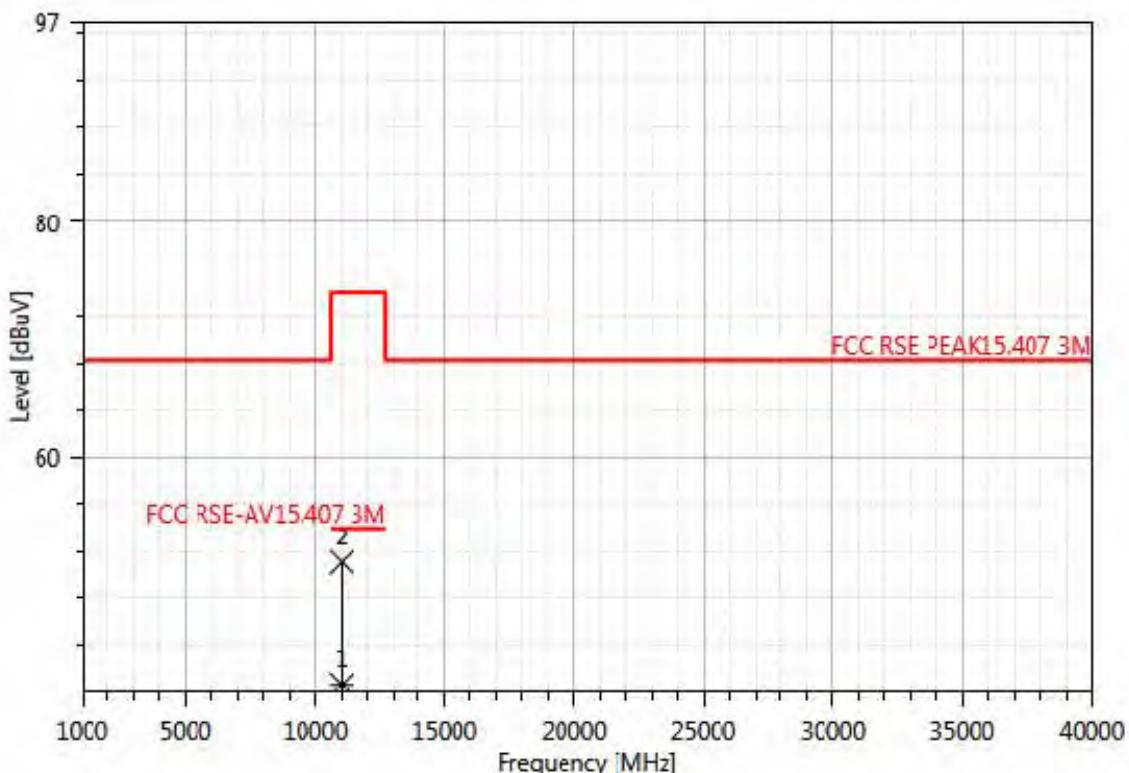
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## Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz

Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



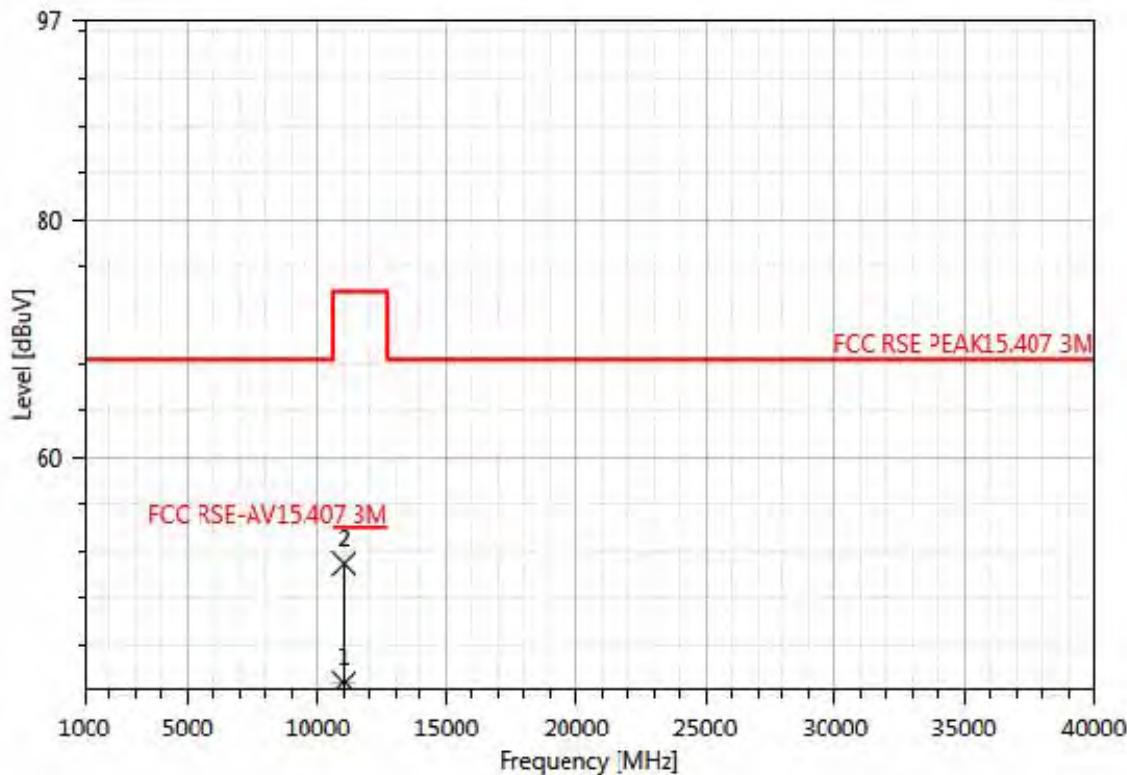
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
						dB	dB
11020.00	H	Average	40.71	20.55	20.16	54.00	-13.29
11020.00	H	Peak	51.15	30.99	20.16	74.00	-22.85

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Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



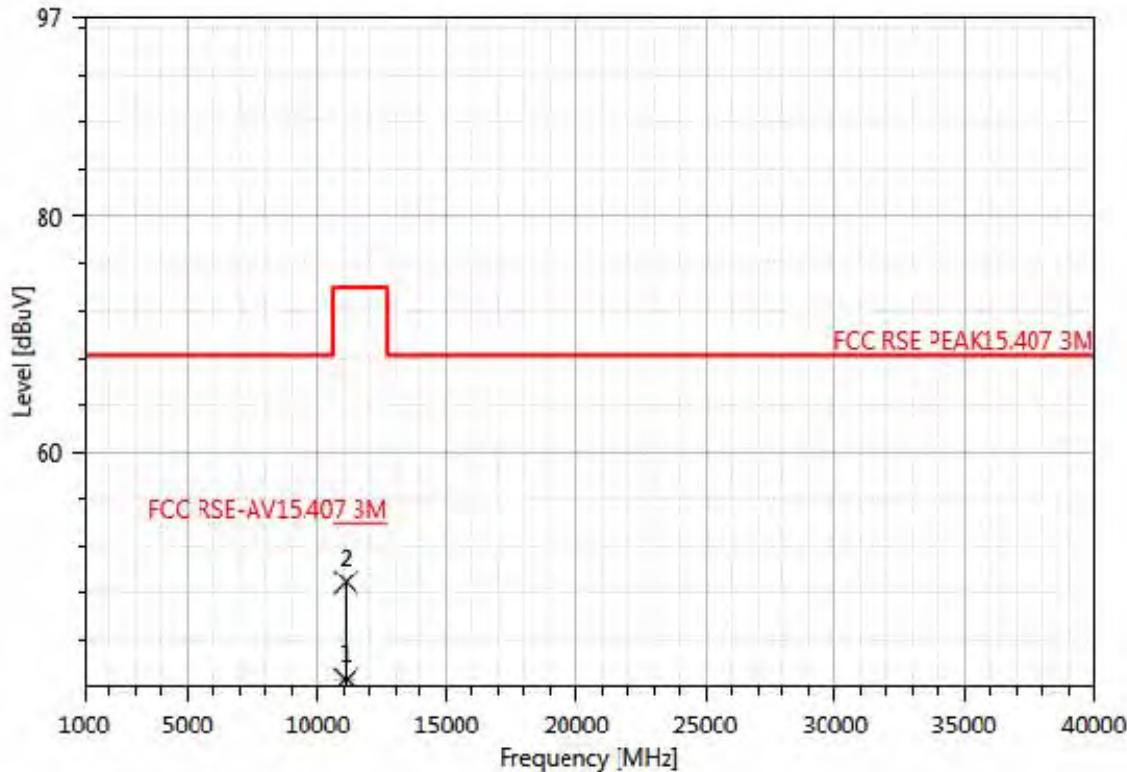
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11020.00	H	Average	40.92	20.76	20.16	54.00	54.00	-13.08
11020.00	H	Peak	51.01	30.85	20.16	74.00	74.00	-22.99

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Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5550 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



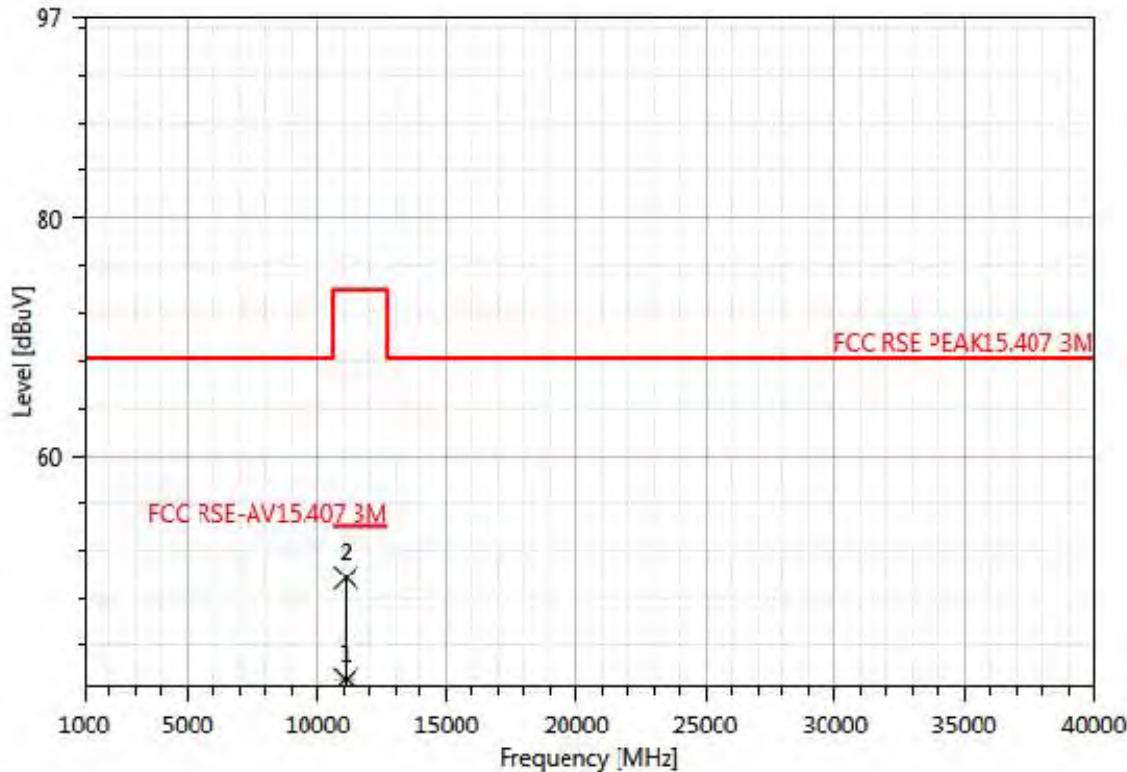
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11100.00	H	Average	40.72	20.40	20.32	54.00	54.00	-13.28
11100.00	H	Peak	48.97	28.65	20.32	74.00	74.00	-25.03

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Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5550 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH MID Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



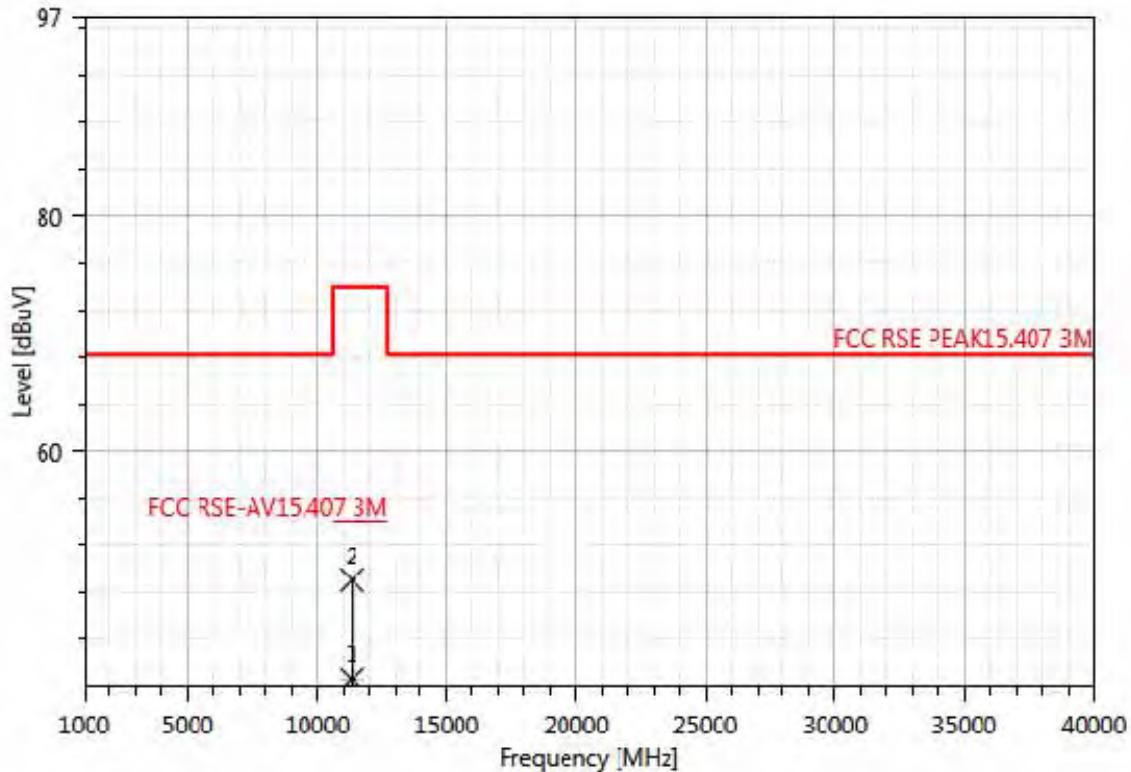
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
11100.00	H	Average	41.16	20.84	20.32	54.00	-12.84
11100.00	H	Peak	49.72	29.40	20.32	74.00	-24.28

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Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



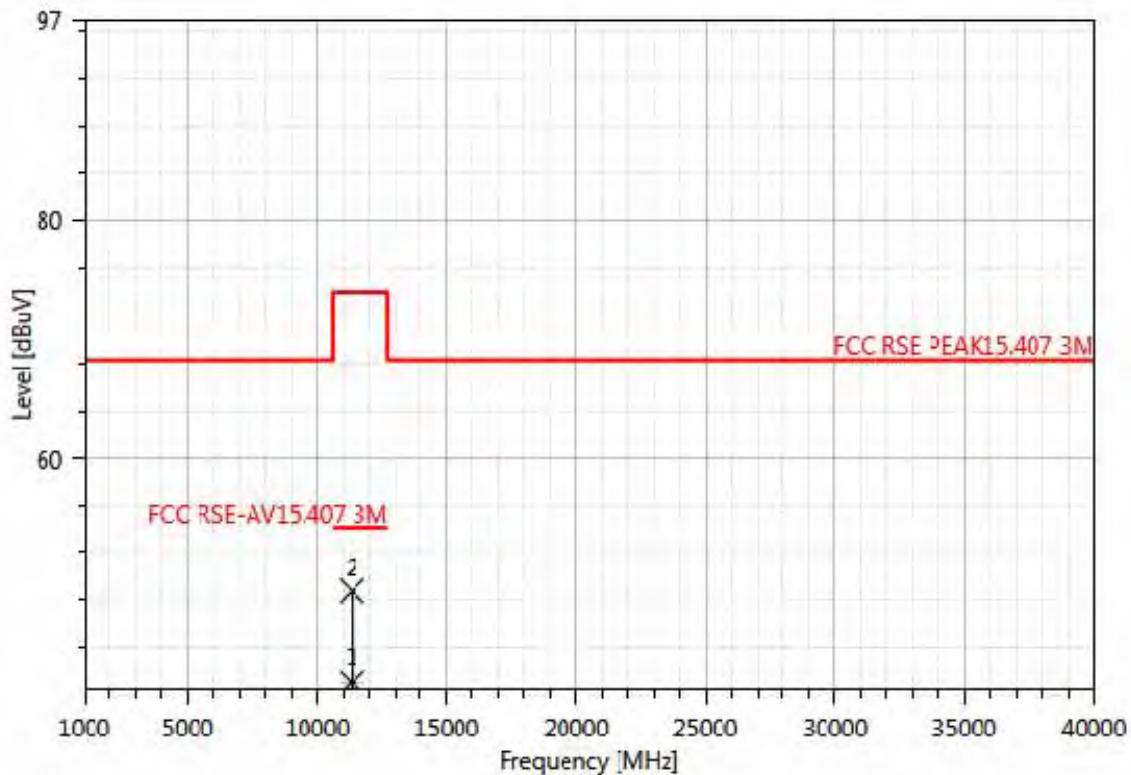
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11340.00	H	Average	40.57	20.19	20.38	54.00	54.00	-13.43
11340.00	H	Peak	49.04	28.65	20.38	74.00	74.00	-24.96

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Operation Mode : 802.11n40B3 Test Date : 09/14/2016  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11340.00	H	Average	41.04	20.66	20.38	54.00	54.00	-12.96
11340.00	H	Peak	48.73	28.35	20.38	74.00	74.00	-25.27

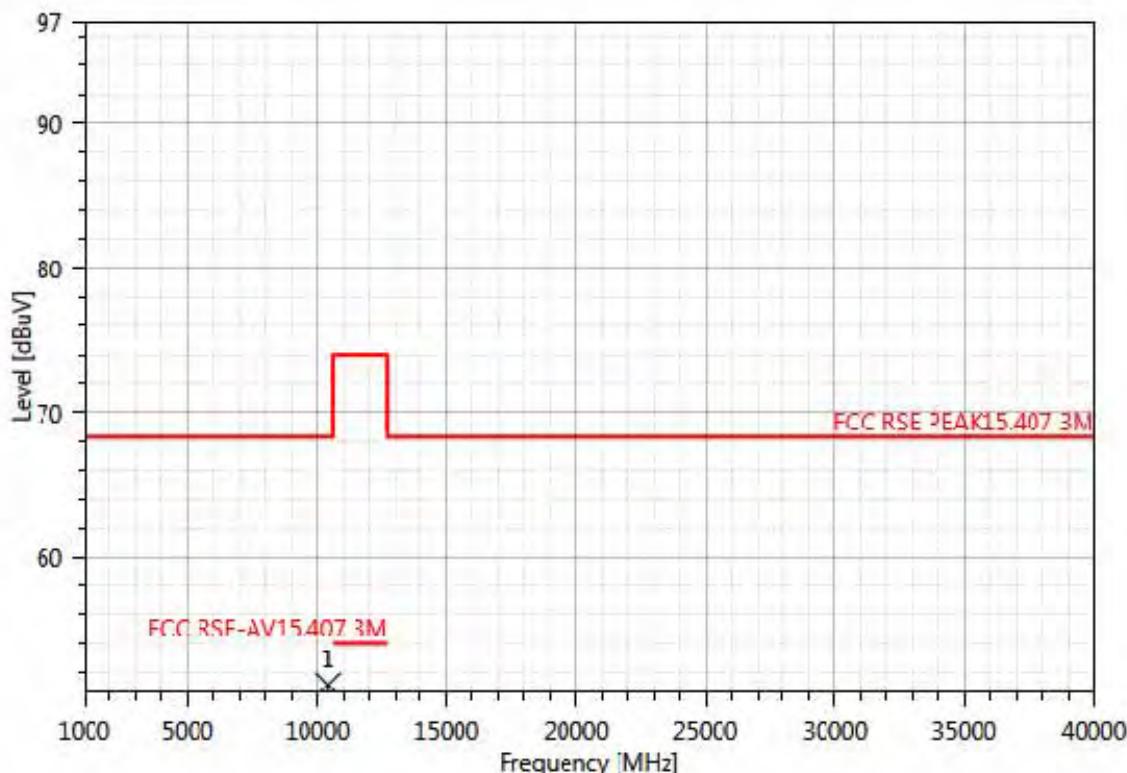
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5150~5250 MHz**

Operation Mode : 802.11ac80B1 Test Date : 09/14/2016  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



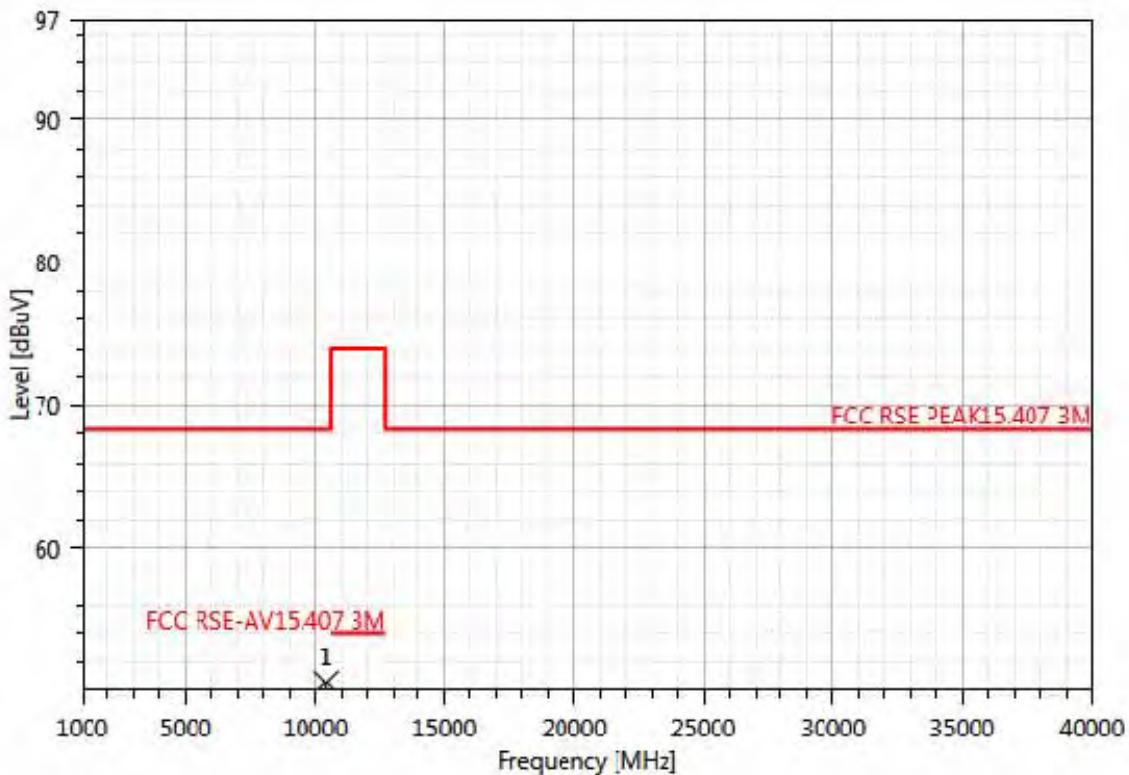
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dB $\mu$ V/m		dBuV/m	dB
10420.00	H	Peak	51.19	32.48	18.71	68.30	-17.11

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Operation Mode : 802.11ac80B1 Test Date : 09/14/2016  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS		@3m	
		QP/AV/PK	Level	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB
10420.00	H	Peak	50.62	31.91	18.71	68.30	-17.68

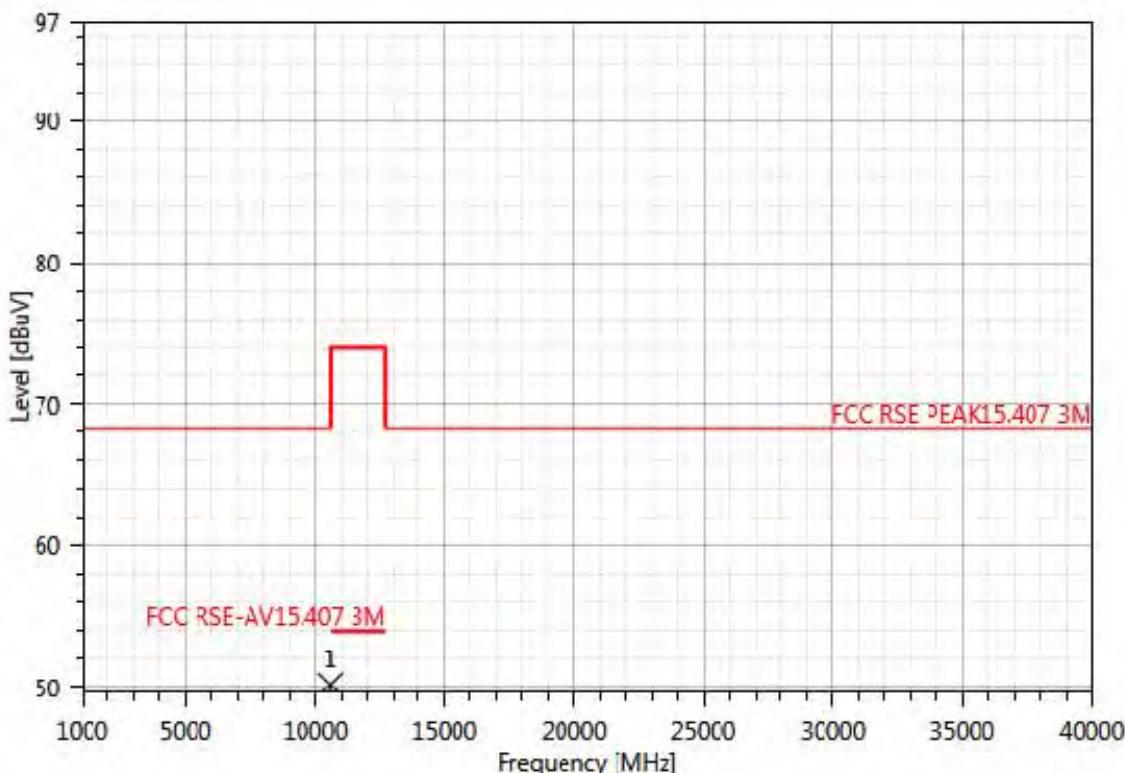
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5250~5350 MHz**

Operation Mode : 802.11ac80B2 Test Date : 09/14/2016  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH Low Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



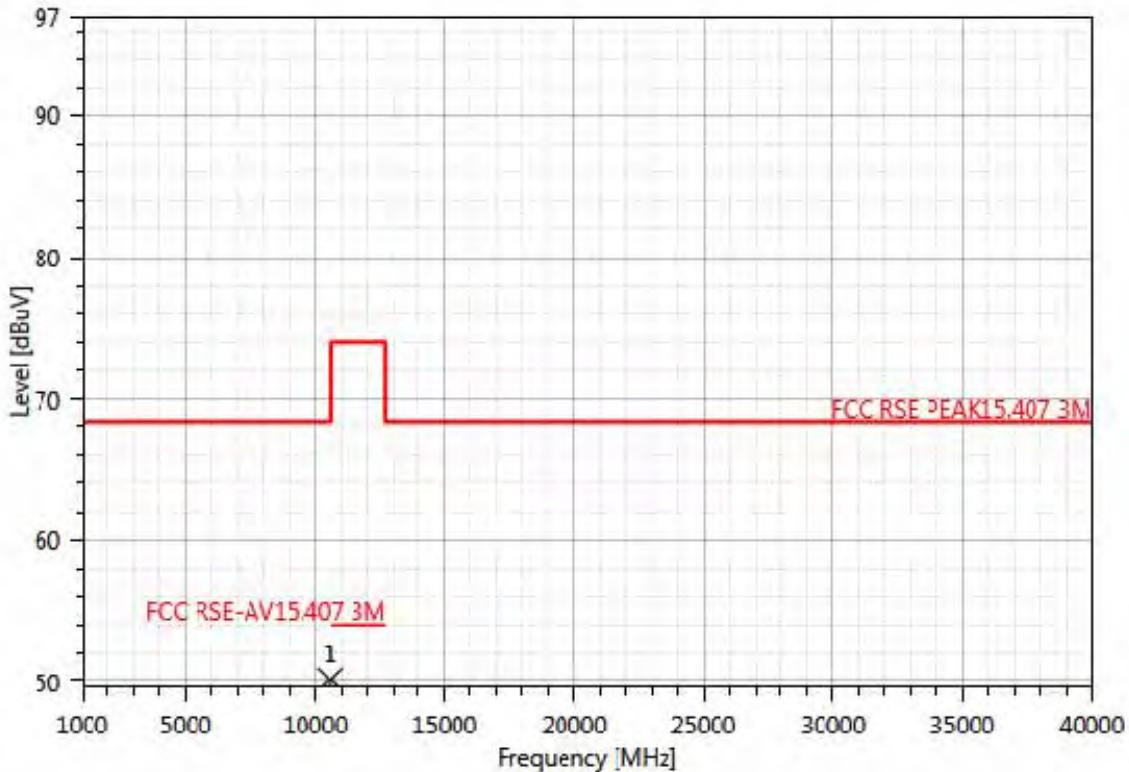
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading	FS	dB	@3m	
		QP/AV/PK	Level	dBuV/m		dBuV/m	dB
10580.00	H	Peak	50.18	31.30	18.88	68.30	-18.12

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Operation Mode : 802.11ac80B2 Test Date : 09/14/2016  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH Low Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dBuV/m	Margin dB
10580.00	H	Peak	50.16	31.29	18.88	68.30	-18.14

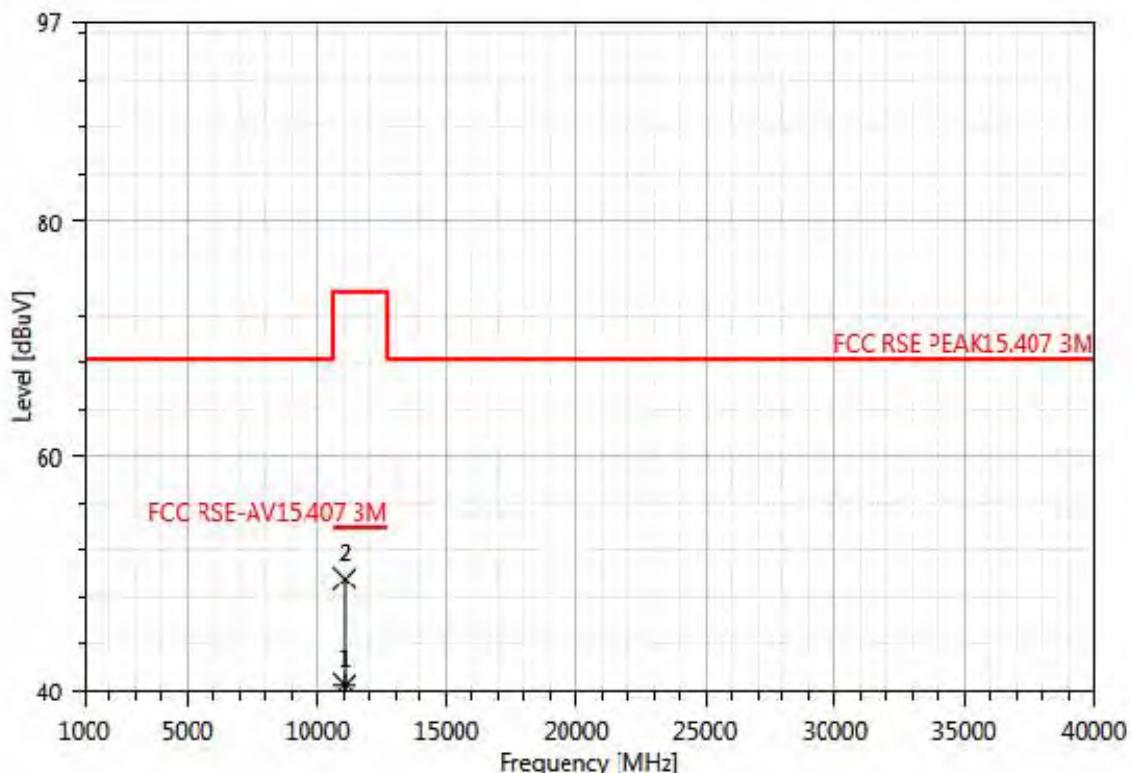
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**Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5470~5725 MHz**

Operation Mode : 802.11ac80B3 Test Date : 09/14/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



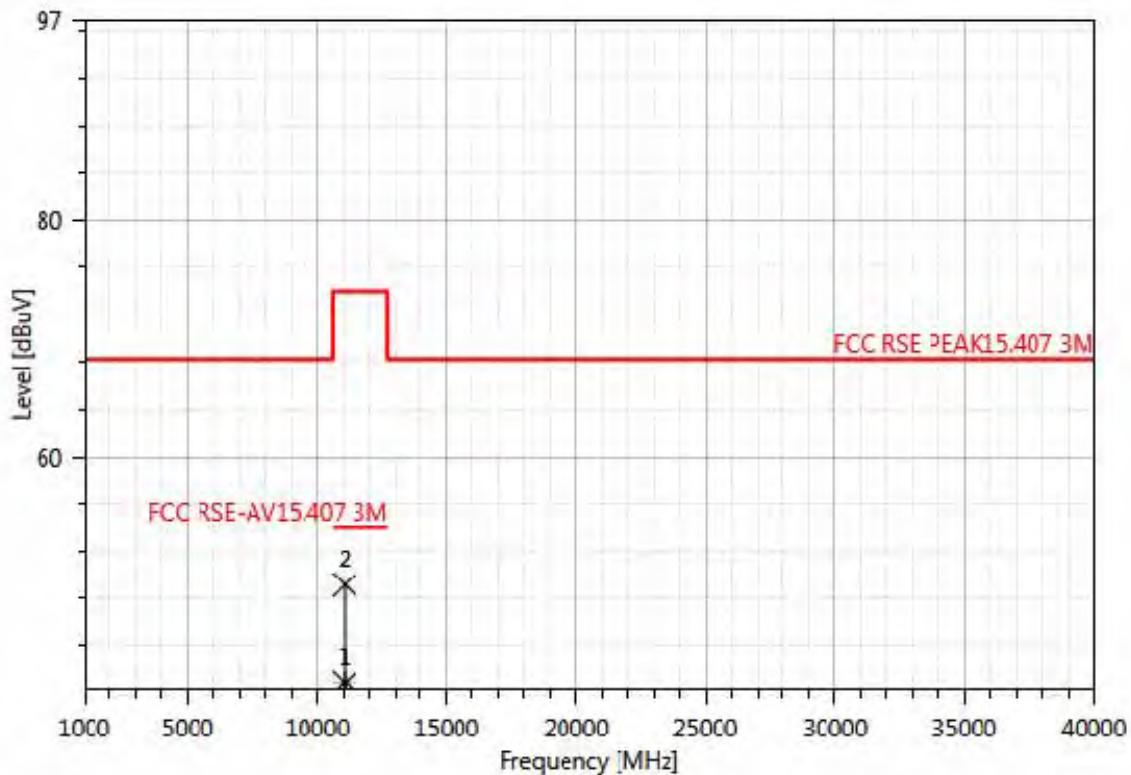
Freq. MHz	Note F/H/E/S	Decetor Mode	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Margin	
						Limit @3m dBuV/m	Margin dB
11060.00	H	Average	40.54	20.28	20.26	54.00	-13.46
11060.00	H	Peak	49.56	29.30	20.26	74.00	-24.44

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Operation Mode : 802.11ac80B3 Test Date : 09/14/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



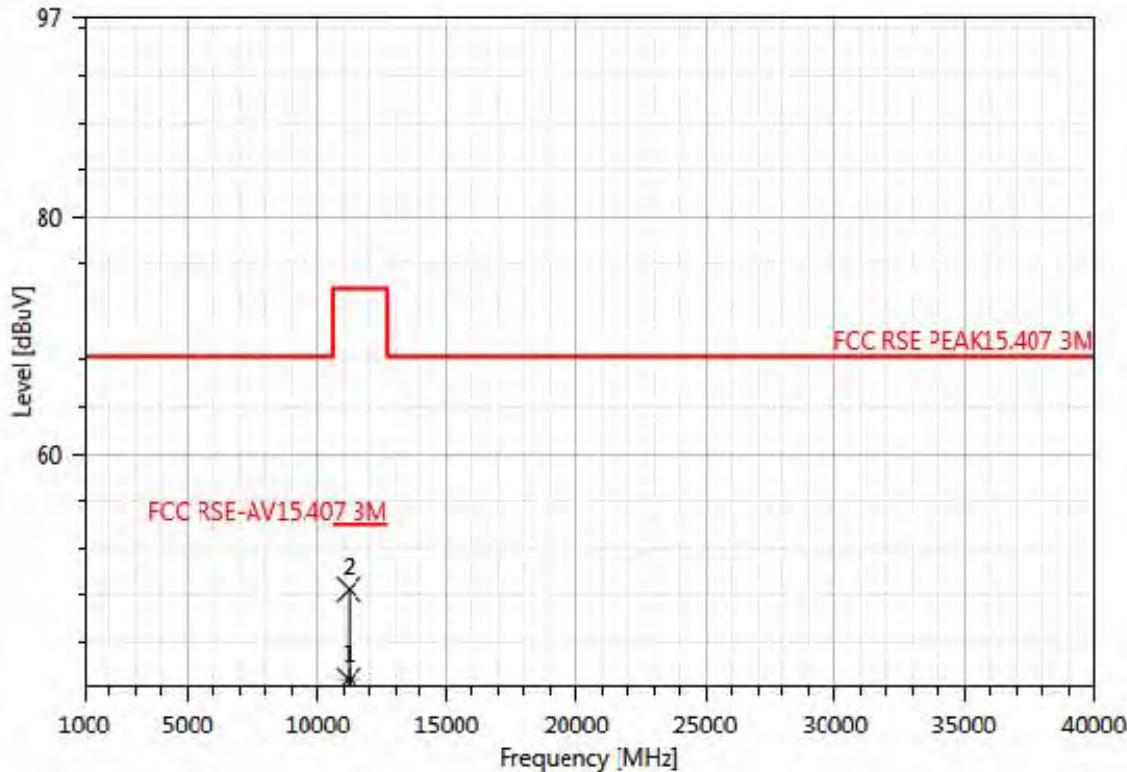
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11060.00	H	Average	40.89	20.63	20.26	54.00	-13.11	
11060.00	H	Peak	49.17	28.91	20.26	74.00	-24.83	

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Operation Mode : 802.11ac80B3 Test Date : 09/14/2016  
Fundamental Frequency : 5610 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL



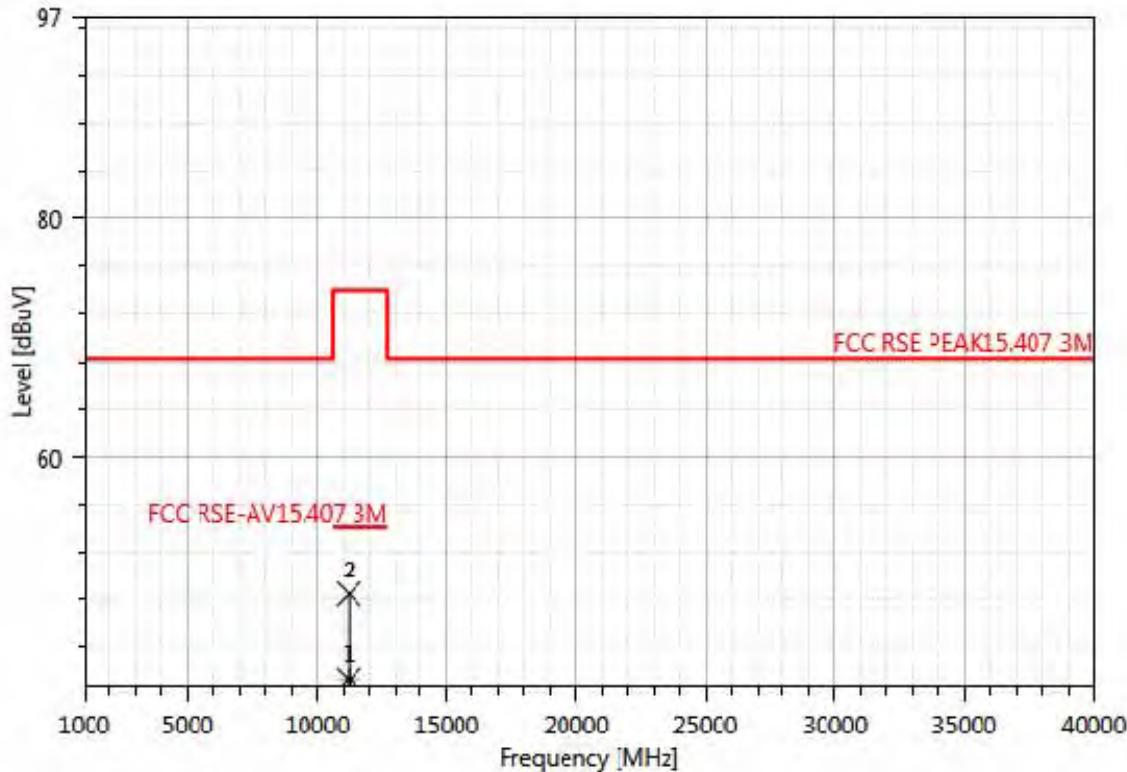
Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				Mode	FS dB $\mu$ V/m			
11220.00	H	Average	40.92		20.44	20.48	54.00	-13.08
11220.00	H	Peak	48.48		28.01	20.48	74.00	-25.52

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Operation Mode : 802.11ac80B3 Test Date : 09/14/2016  
Fundamental Frequency : 5610 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Tx CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum		Factor dB	Limit @3m dBuV/m	Margin dB
				FS dB $\mu$ V/m	Factor dB			
11220.00	H	Average	41.27	20.79	20.48	54.00	54.00	-12.73
11220.00	H	Peak	48.45	27.97	20.48	74.00	74.00	-25.55

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

Operation Mode : 802.11aB1 Test Date : 09/13/2016  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin
						dB $\mu$ V/m	dB
5150.00	E	Average	43.39	37.51	5.88	54.00	-10.61
5150.00	E	Peak	57.63	51.74	5.88	74.00	-16.37

Operation Mode : 802.11aB1 Test Date : 09/13/2016  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin
						dB $\mu$ V/m	dB
5150.00	E	Average	43.41	37.53	5.88	54.00	-10.59
5150.00	E	Peak	55.83	49.95	5.88	74.00	-18.17

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f (886-2) 2298-0488

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Operation Mode : 802.11aB2 Test Date : 09/13/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	43.29	37.14	6.15	54.00	-10.71
5350.00	E	Peak	56.48	50.33	6.15	74.00	-17.52

Operation Mode : 802.11aB2 Test Date : 09/13/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	43.43	37.28	6.15	54.00	-10.57
5350.00	E	Peak	56.64	50.49	6.15	74.00	-17.36

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Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	43.45	37.22	6.23	54.00	-10.55
5460.00	E	Peak	56.48	50.24	6.23	74.00	-17.52

Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	43.67	37.44	6.23	54.00	-10.33
5460.00	E	Peak	56.72	50.48	6.23	74.00	-17.28

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Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	55.97	49.71	6.26	68.30	-12.33

Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	56.55	50.29	6.26	68.30	-11.75

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Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5725.00	E	Peak	47.84	41.25	6.59	68.30	-20.46

Operation Mode : 802.11aB3 Test Date : 09/13/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5725.00	E	Peak	46.91	40.32	6.59	68.30	-21.39

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**802.11n20 HT mode**

Operation Mode : 802.11n20B1 Test Date : 09/13/2016  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	43.34	37.46	5.88	54.00	-10.66
5150.00	E	Peak	56.74	50.85	5.88	74.00	-17.26

Operation Mode : 802.11n20B1 Test Date : 09/13/2016  
Fundamental Frequency : 5180 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	43.41	37.53	5.88	54.00	-10.59
5150.00	E	Peak	56.72	50.83	5.88	74.00	-17.28

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Operation Mode : 802.11n20B2 Test Date : 09/13/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	33.48	27.33	6.15	54.00	-20.52
5350.00	E	Peak	45.57	39.42	6.15	74.00	-28.43

Operation Mode : 802.11n20B2 Test Date : 09/13/2016  
Fundamental Frequency : 5320 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	33.58	27.43	6.15	54.00	-20.42
5350.00	E	Peak	45.46	39.31	6.15	74.00	-28.54

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Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	33.52	27.29	6.23	54.00	-20.48
5460.00	E	Peak	46.14	39.91	6.23	74.00	-27.86

Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	33.56	27.33	6.23	54.00	-20.44
5460.00	E	Peak	46.67	40.44	6.23	74.00	-27.33

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Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	46.13	39.87	6.26	68.30	-22.17

Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	46.48	40.21	6.26	68.30	-21.82

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Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5725.00	E	Peak	47.79	41.20	6.59	68.30	-20.51

Operation Mode : 802.11n20B3 Test Date : 09/13/2016  
Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5725.00	E	Peak	46.88	40.29	6.59	68.30	-21.42

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**802.11n40 HT mode**

Operation Mode : 802.11n40B1 Test Date : 09/13/2016  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	34.76	28.88	5.88	54.00	-19.24
5150.00	E	Peak	49.31	43.43	5.88	74.00	-24.69

Operation Mode : 802.11n40B1 Test Date : 09/13/2016  
Fundamental Frequency : 5190 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	35.10	29.22	5.88	54.00	-18.90
5150.00	E	Peak	49.19	43.31	5.88	74.00	-24.81

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Operation Mode : 802.11n40B2 Test Date : 09/13/2016  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	33.78	27.63	6.15	54.00	-20.22
5350.00	E	Peak	47.26	41.11	6.15	74.00	-26.74

Operation Mode : 802.11n40B2 Test Date : 09/13/2016  
Fundamental Frequency : 5310 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	34.72	28.57	6.15	54.00	-19.28
5350.00	E	Peak	51.97	45.82	6.15	74.00	-22.03

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Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	33.61	27.38	6.23	54.00	-20.39
5460.00	E	Peak	45.48	39.24	6.23	74.00	-28.52

Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5460.00	E	Average	33.79	27.56	6.23	54.00	-20.21
5460.00	E	Peak	45.58	39.35	6.23	74.00	-28.42

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Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	47.81	41.55	6.26	68.30	-20.49

Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5510 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin
						dBuV/m	dB
5470.00	E	Peak	48.62	42.35	6.26	68.30	-19.68

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Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin dB
						dB $\mu$ V/m	
5725.00	E	Peak	45.21	38.62	6.59	68.30	-23.09

Operation Mode : 802.11n40B3 Test Date : 09/13/2016  
Fundamental Frequency : 5670 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB	Margin dB
						dB $\mu$ V/m	
5725.00	E	Peak	45.74	39.15	6.59	68.30	-22.56

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**802.11ac80 VHT mode**

Operation Mode : 802.11ac80B1 Test Date : 09/13/2016  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	34.80	28.91	5.88	54.00	-19.20
5150.00	E	Peak	47.07	41.19	5.88	74.00	-26.93

Operation Mode : 802.11ac80B1 Test Date : 09/13/2016  
Fundamental Frequency : 5210 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5150.00	E	Average	36.06	30.18	5.88	54.00	-17.94
5150.00	E	Peak	50.25	44.37	5.88	74.00	-23.75

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Operation Mode : 802.11ac80B2 Test Date : 09/13/2016  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	34.93	28.78	6.15	54.00	-19.07
5350.00	E	Peak	46.11	39.96	6.15	74.00	-27.89

Operation Mode : 802.11ac80B2 Test Date : 09/13/2016  
Fundamental Frequency : 5290 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH HIGH Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5350.00	E	Average	35.78	29.63	6.15	54.00	-18.22
5350.00	E	Peak	49.61	43.46	6.15	74.00	-24.39

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Operation Mode : 802.11ac80B3 Test Date : 09/13/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5460.00	E	Average	33.96	27.73	6.23	54.00	-20.04
5460.00	E	Peak	46.71	40.48	6.23	74.00	-27.29

Operation Mode : 802.11ac80B3 Test Date : 09/13/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB	dB
5460.00	E	Average	34.37	28.14	6.23	54.00	-19.63
5460.00	E	Peak	48.04	41.80	6.23	74.00	-25.96

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Operation Mode : 802.11ac80B3 Test Date : 09/13/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5470.00	E	Peak	46.61	40.34	6.26	68.30	-21.69

Operation Mode : 802.11ac80B3 Test Date : 09/13/2016  
Fundamental Frequency : 5530 MHz Temp. / Humi. : 23 deg\_C / 62 RH  
Operation Band : Bandedge CH LOW Test Engineer : Tin  
EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL

Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dB $\mu$ V/m	Spectrum FS dB $\mu$ V/m	Factor dB	Limit @3m dB $\mu$ V/m	Margin dB
						dB $\mu$ V/m	dB
5470.00	E	Peak	48.05	41.79	6.26	68.30	-20.25

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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

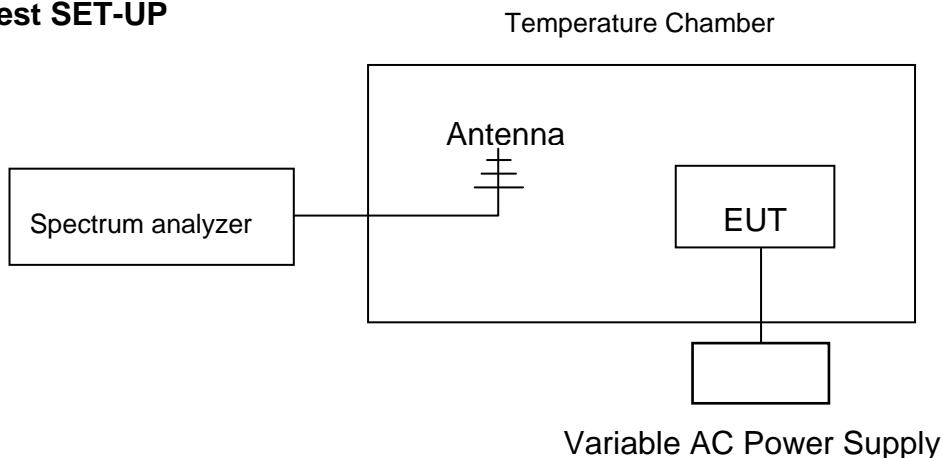
### 13.1 Standard Applicable

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
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017
DC Power Supply	Agilent	E3640A	MY52410006	11/05/2015	11/04/2016
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2016	05/16/2017

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### 13.5 Measurement Result

Operation Mode	802.11 a	Test Date	2016.08.27
Temperature	:25	Test By	Louis
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.42V	36	5180	5,179.98097	0.00000367
		44	5220	5,219.98060	0.00000372
		48	5240	5,239.98015	0.00000379
		52	5260	5,259.97990	0.00000382
		60	5300	5,299.97955	0.00000386
		64	5320	5,319.97940	0.00000387
		100	5500	5,499.97855	0.00000390
		116	5580	5,579.97825	0.00000390
		140	5700	5,699.97766	0.00000392
	4.29V	36	5180	5,179.98100	0.00000367
		44	5220	5,219.98062	0.00000371
		48	5240	5,239.98024	0.00000377
		52	5260	5,259.97994	0.00000381
		60	5300	5,299.97965	0.00000384
		64	5320	5,319.97942	0.00000387
		100	5500	5,499.97855	0.00000390
		116	5580	5,579.97825	0.00000390
		140	5700	5,699.97770	0.00000391

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25	3.8V	36	5180	5,179.98110	0.00000365
		44	5220	5,219.98067	0.00000370
		48	5240	5,239.98035	0.00000375
		52	5260	5,259.97998	0.00000381
		60	5300	5,299.97975	0.00000382
		64	5320	5,319.97947	0.00000386
		100	5500	5,499.97854	0.00000390
		116	5580	5,579.97826	0.00000390
		140	5700	5,699.97775	0.00000390
55	3.42V	36	5180	5,179.98093	0.00000368
		44	5220	5,219.98055	0.00000373
		48	5240	5,239.98006	0.00000381
		52	5260	5,259.97981	0.00000384
		60	5300	5,299.97950	0.00000387
		64	5320	5,319.97938	0.00000388
		100	5500	5,499.97860	0.00000389
		116	5580	5,579.97700	0.00000412
		140	5700	5,699.97759	0.00000393
	4.29V	36	5180	5,179.98095	0.00000368
		44	5220	5,219.98055	0.00000373
		48	5240	5,239.98015	0.00000379
		52	5260	5,259.97988	0.00000383
		60	5300	5,299.97955	0.00000386
		64	5320	5,319.97939	0.00000387
		100	5500	5,499.97854	0.00000390
		116	5580	5,579.97827	0.00000389
		140	5700	5,699.97760	0.00000393

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Operation Mode	802.11 n_HT40	Test Date	2016.08.27
Temperature	:17	Test By	Louis
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.42V	38	5190	5,189.98010	0.00000383
		46	5230	5,229.98010	0.00000380
		54	5270	5,269.97985	0.00000382
		62	5310	5,309.97960	0.00000384
		102	5510	5,509.97870	0.00000387
		110	5550	5,549.97855	0.00000386
		134	5670	5,669.97810	0.00000386
	4.29V	38	5190	5,189.98013	0.00000383
		46	5230	5,229.98013	0.00000380
		54	5270	5,269.97987	0.00000382
		62	5310	5,309.97960	0.00000384
		102	5510	5,509.96050	0.00000717
		110	5550	5,549.97855	0.00000386
		134	5670	5,669.97811	0.00000386

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25	3.8V	38	5190	5,189.98016	0.00000382
		46	5230	5,229.98025	0.00000378
		54	5270	5,269.97985	0.00000382
		62	5310	5,309.97970	0.00000382
		102	5510	5,509.97885	0.00000384
		110	5550	5,549.97855	0.00000386
		134	5670	5,669.97700	0.00000406
		38	5190	5,189.98010	0.00000383
55	3.42V	46	5230	5,229.98005	0.00000381
		54	5270	5,269.97982	0.00000383
		62	5310	5,309.97958	0.00000385
		102	5510	5,509.97869	0.00000387
		110	5550	5,549.97853	0.00000387
		134	5670	5,669.97809	0.00000386
		38	5190	5,189.98010	0.00000383
		46	5230	5,229.98006	0.00000381
	4.29V	54	5270	5,269.97984	0.00000383
		62	5310	5,309.97957	0.00000385
		102	5510	5,509.96703	0.00000598
		110	5550	5,549.97855	0.00000386
		134	5670	5,669.97810	0.00000386

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Operation Mode	802.11 ac_VHT80	Test Date	2016.08.27
Temperature	:17	Test By	Louis
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.42V	42	5210	5,209.97978	0.00000388
		58	5290	5,289.97988	0.00000380
		106	5530	5,529.97878	0.00000384
		122	5610	5,609.97850	0.00000383
	4.29V	42	5210	5,209.97978	0.00000388
		58	5290	5,289.97991	0.00000380
		106	5530	5,529.97880	0.00000383
		122	5610	5,609.97851	0.00000383
25	3.8V	42	5210	5,209.97980	0.00000388
		58	5290	5,289.97999	0.00000378
		106	5530	5,529.97889	0.00000382
		122	5610	5,609.97900	0.00000374
55	3.42V	42	5210	5,209.97975	0.00000389
		58	5290	5,289.97983	0.00000381
		106	5530	5,529.97875	0.00000384
		122	5610	5,609.97843	0.00000384
	4.29V	42	5210	5,209.97976	0.00000388
		58	5290	5,289.97985	0.00000381
		106	5530	5,529.97876	0.00000384
		122	5610	5,609.97846	0.00000384

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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

PIFA antenna designs are used.

The antenna is designed with permanent attached and no consideration of replacement. Please see EUT photo and antenna spec. for details.

The antenna gain is less than 6dBi. Therefore, it is not necessary to reduce maximum output power limit.

*~ End of Report ~*

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