

# RF TEST REPORT



Report No.: 17071300-FCC-R2

Supersede Report No.: N/A

Applicant	BLU Products, Inc.	
Product Name	Mobile Phone	
Model No.	STUDIO J8M	
Serial No.	N/A	
Test Standard	FCC Part 15.247: 2016, ANSI C63.10: 2013	
Test Date	November 24 to December 19, 2017	
Issue Date	December 20, 2017	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
		
Aaron Liang Test Engineer	David Huang Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: [China@siemic.com.cn](mailto:China@siemic.com.cn)

## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
17071300-FCC-R2	NONE	Original	December 20, 2017

## 2. Customer information

Applicant Name	BLU Products, Inc.
Applicant Add	10814 NW 33rd St # 100 Doral, FL 33172
Manufacturer	BLU Products, Inc.
Manufacturer Add	10814 NW 33rd St # 100 Doral, FL 33172

## 3. Test site information

### Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

### Test Lab B:

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMG(ver.lcp-03A1)

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

## 4. Equipment under Test (EUT) Information

Description of EUT:	Mobile Phone
Main Model:	STUDIO J8M
Serial Model:	N/A
Date EUT received:	November 23, 2017
Test Date(s):	November 24 to December 19, 2017
Equipment Category :	DTS
Antenna Gain:	GSM850: -3.7dBi PCS1900: -3.5dBi UMTS-FDD Band V: -3dBi UMTS-FDD Band IV: -2.5dBi UMTS-FDD Band II: -4.5dBi LTE Band II: -4.5dBi LTE Band IV: -4dBi LTE Band VII: -5dBi LTE Band XII: -10.5dBi LTE Band XVII: -10.5dBi Bluetooth/BLE: -4.13dBi WIFI: -4.13dBi GPS: -3.2dBi
Antenna Type:	PIFA Antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, $\pi$ /4DQPSK, 8DPSK BLE: GFSK GPS: BPSK

	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
	PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
	UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
	UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz; RX : 2112.4 ~ 2152.6 MHz
	UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz
RF Operating Frequency (ies):	LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz
	LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz
	LTE Band VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz
	LTE Band XII TX:699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz
	LTE Band XVII TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz
	WIFI: 802.11b/g/n(20M): 2412-2462 MHz
	WIFI: 802.11n(40M): 2422-2452 MHz
	Bluetooth& BLE: 2402-2480 MHz
	GPS: 1575.42 MHz
Max. Output Power:	802.11b:13.93dBm
	802.11g:12.53dBm
	802.11n(20M):7.74dBm
	802.11n(40M):8.08dBm
Number of Channels:	GSM 850: 124CH
	PCS1900: 299CH
	UMTS-FDD Band V: 102CH
	UMTS-FDD Band IV: 202CH
	UMTS-FDD Band II: 277CH
	WIFI :802.11b/g/n(20M): 11CH
	WIFI :802.11n(40M): 7CH
	Bluetooth: 79CH
	BLE: 40CH
	GPS:1CH
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: US-BB-1000 Input: AC100-240V~50/60Hz,0.2A Output: DC 5V~1.0A Battery:

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Model: C705345200L

Spec: 3.8V, 2000mAh, 7.6Wh

Trade Name : BLU

GPRS/EGPRS Multi-slot class 8/10/11/12

FCC ID: YHLBLUSTUDIOJ8M



## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.247 (a)(2)	DTS (6 dB&20 dB) CHANNEL BANDWIDTH	Compliance
§15.247(b)(3)	Conducted Maximum Output Power	Compliance
§15.247(e)	Power Spectral Density	Compliance
§15.247(d)	Band-Edge & Unwanted Emissions into Restricted Frequency Bands	Compliance
§15.207 (a),	AC Power Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands	Compliance

### Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Band-Edge & Unwanted Emissions into Restricted Frequency Bands and Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

## 6. Measurements, Examination And Derived Results

### 6.1 Antenna Requirement

#### **Applicable Standard**

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Antenna Connector Construction**

The EUT has 2 antennas:

A permanently attached PIFA antenna for Bluetooth/BLE/WIF/GPS, the gain is -4.13dBi for Bluetooth/BLE/WIFI, the gain is -3.2dBi for GPS.

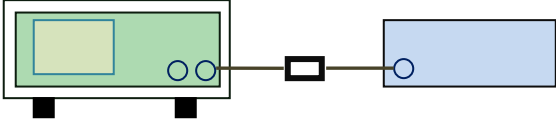
A permanently attached PIFA antenna for GSM/PCS/UMTS/ LTE Band II/IV/VII/XII/XVII, the gain is -3.7dBi for GSM850, -3.5dBi for PCS1900, -3dBi for UMTS-FDD Band V, -2.5dBi for UMTS-FDD Band IV, the gain is -4.5dBi for UMTS-FDD Band II, the gain is -4.5dBi LTE Band II, -4dBi for LTE Band IV, -5dBi for LTE Band VII, -10.5dBi for XII / XVII.

**The antenna meets up with the ANTENNA REQUIREMENT.**

**Result:** Compliance.

## 6.2 DTS (6 dB&20 dB) Channel Bandwidth

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	December 05, 2017
Tested By :	Aaron Liang

Spec	Item	Requirement	Applicable
§ 15.247(a)(2)	a)	6dB BW ≥ 500kHz;	<input checked="" type="checkbox"/>
RSS Gen(4.6.1)	b)	99% BW: For FCC reference only; required by IC.	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Spectrum Analyzer                      EUT</p>		
Test Procedure	<p>558074 D01 DTS MEAS Guidance v03r03, 8.1 DTS bandwidth</p> <p><u>6dB bandwidth</u></p> <ol style="list-style-type: none"> <li>Set RBW = 100 kHz.</li> <li>Set the video bandwidth (VBW) ≥ 3 × RBW.</li> <li>Detector = Peak.</li> <li>Trace mode = max hold.</li> <li>Sweep = auto couple.</li> <li>Allow the trace to stabilize.</li> <li>Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.</li> </ol> <p><u>20dB bandwidth</u></p> <p>C63.10 Occupied Bandwidth (OBW=20dB bandwidth)</p> <ol style="list-style-type: none"> <li>Set RBW = 1%-5% OBW.</li> <li>Set the video bandwidth (VBW) ≥ 3 x RBW.</li> <li>Set the span range between 2 times and 5 times of the OBW.</li> <li>Sweep time=Auto, Detector=PK, Trace=Max hold.</li> <li>Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst-</li> </ol>		

	case (i.e., the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the 20 dB levels with respect to the reference level.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

Test Plot  Yes (See below)  N/A

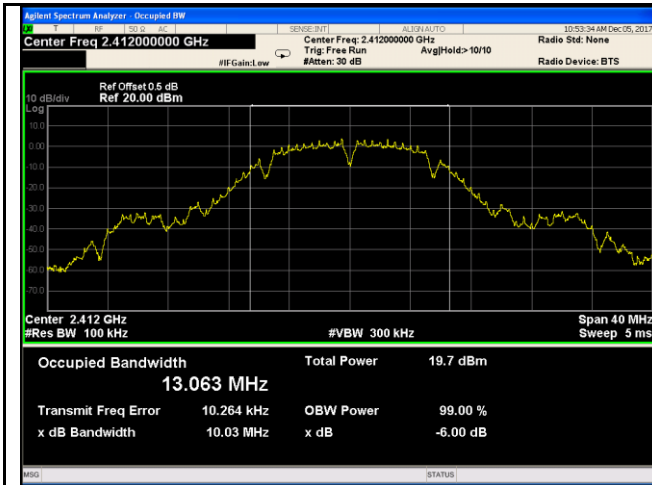
### Measurement result

Test mode	CH	Freq (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
802.11b	Low	2412	10.03	≥ 0.5
	Mid	2437	9.019	≥ 0.5
	High	2462	9.118	≥ 0.5
802.11g	Low	2412	16.33	≥ 0.5
	Mid	2437	15.65	≥ 0.5
	High	2462	15.73	≥ 0.5
802.11n (20M)	Low	2412	17.33	≥ 0.5
	Mid	2437	15.89	≥ 0.5
	High	2462	16.34	≥ 0.5
802.11n (40M)	Low	2422	25.07	≥ 0.5
	Mid	2437	31.27	≥ 0.5
	High	2452	36.34	≥ 0.5

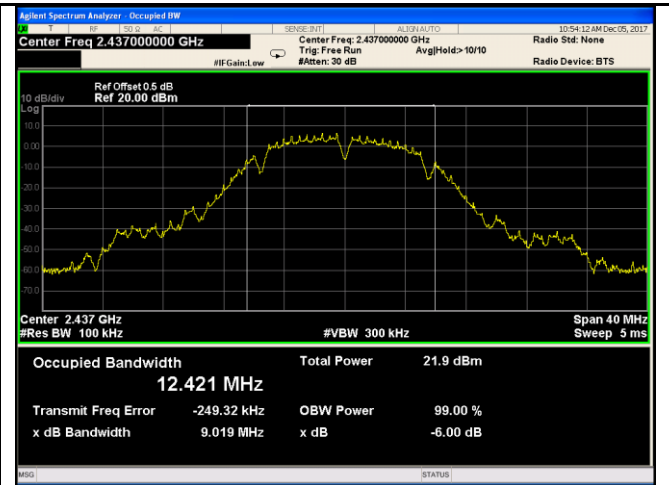
Test mode	CH	Freq (MHz)	20dB Bandwidth (MHz)
802.11b	Low	2412	15.22
	Mid	2437	13.87
	High	2462	14.68
802.11g	Low	2412	18.95
	Mid	2437	18.27
	High	2462	18.84
802.11n (20M)	Low	2412	19.37
	Mid	2437	18.89
	High	2462	19.19
802.11n (40M)	Low	2422	38.70
	Mid	2437	38.45
	High	2452	42.56

## Test Plots

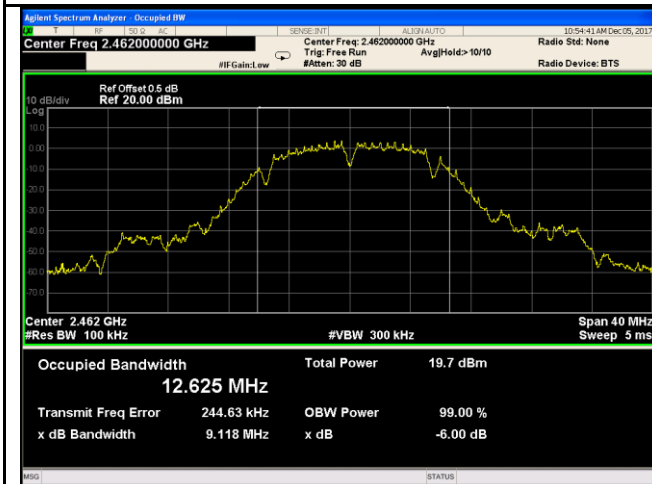
### 6dB Bandwidth measurement result



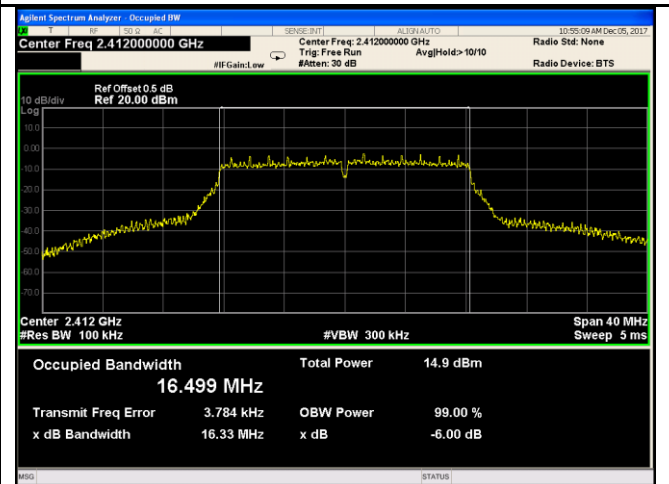
802.11b 6dB Bandwidth - Low CH 2412



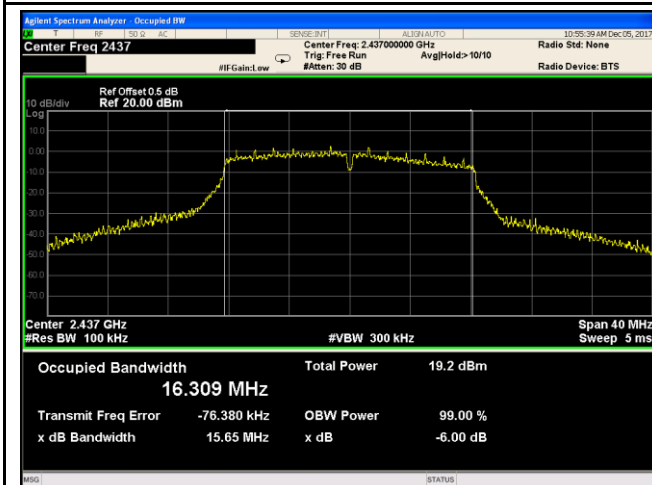
802.11b 6dB Bandwidth - Mid CH 2437



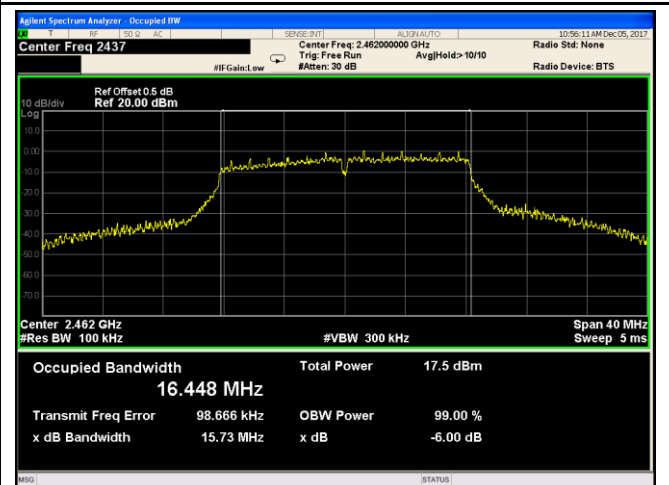
802.11b 6dB Bandwidth - High CH 2462



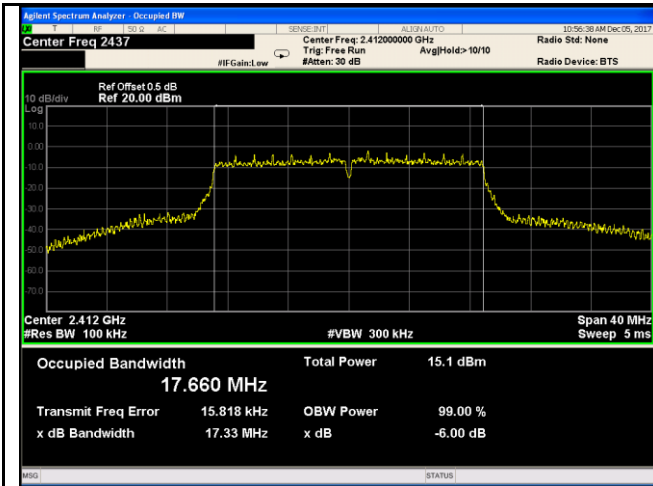
802.11g 6dB Bandwidth - Low CH 2412



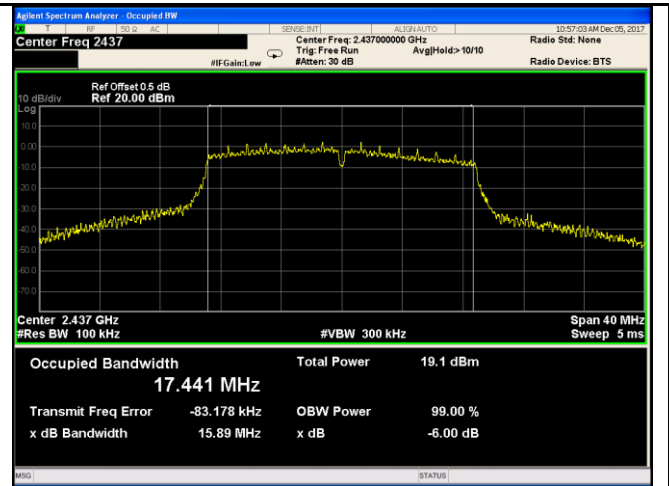
802.11g 6dB Bandwidth - Mid CH 2437



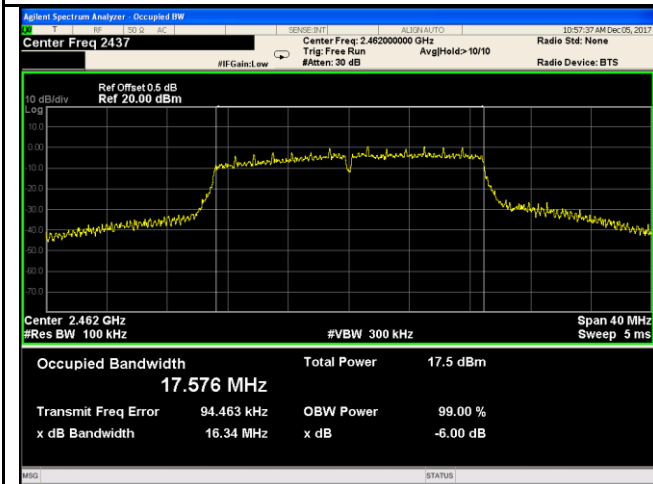
802.11g 6dB Bandwidth - High CH 2462



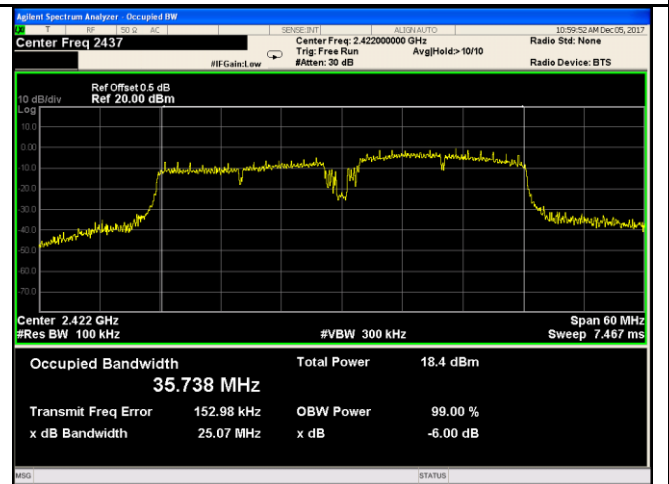
802.11n20 6dB Bandwidth - Low CH 2412



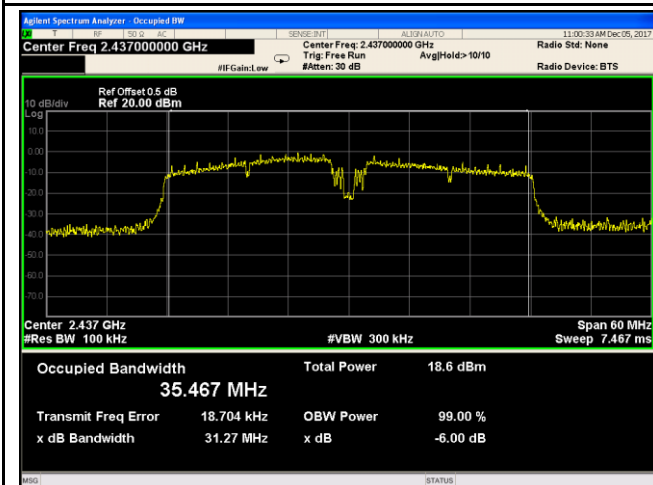
802.11n20 6dB Bandwidth - Mid CH 2437



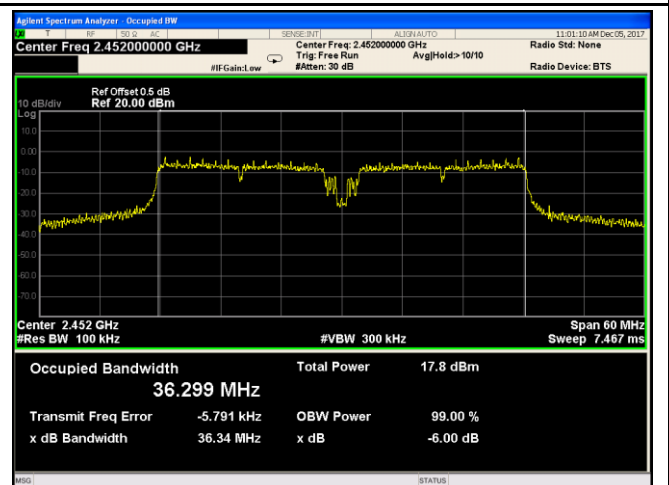
802.11n20 6dB Bandwidth - High CH 2462



802.11n40 6dB Bandwidth - Low CH 2422

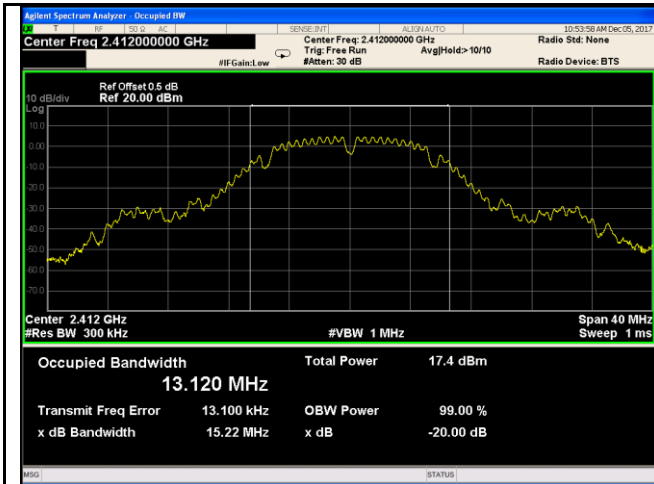


802.11n40 6dB Bandwidth - Mid CH 2437

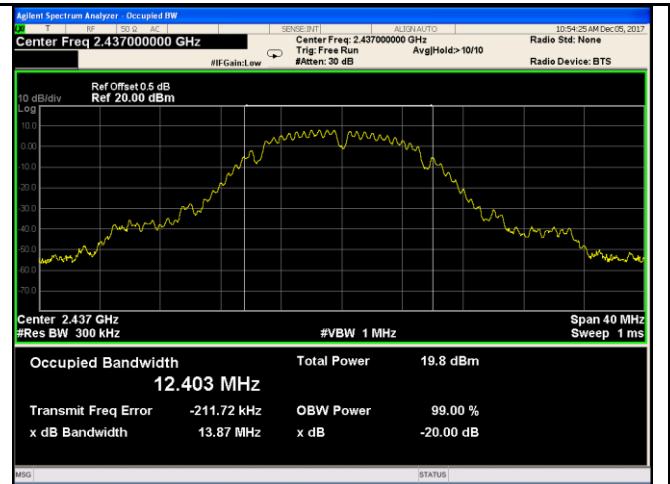


802.11n40 6dB Bandwidth - High CH 2452

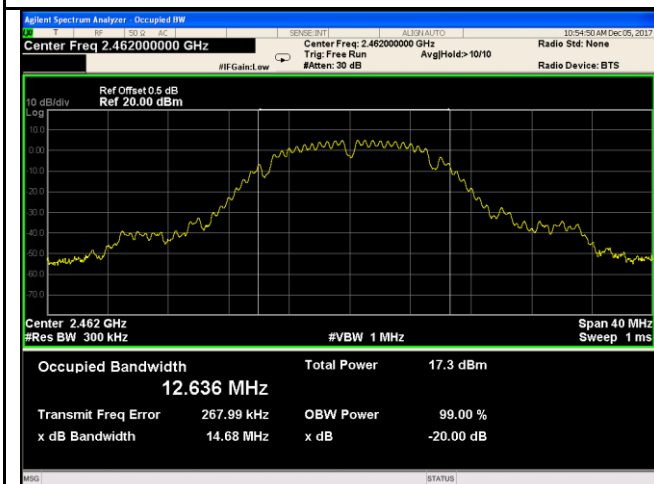
## 20 dB Bandwidth measurement result



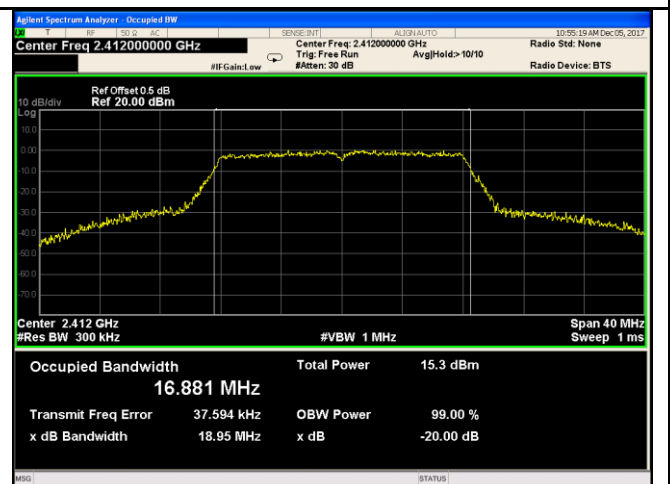
802.11b 20dB Bandwidth - Low CH 2412



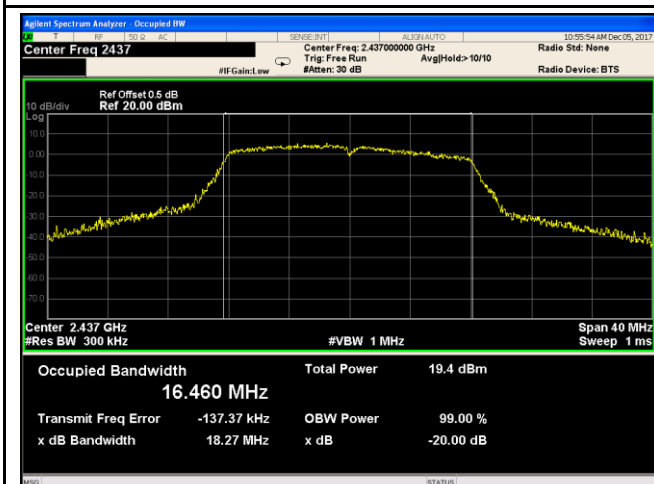
802.11b 20dB Bandwidth - Mid CH 2437



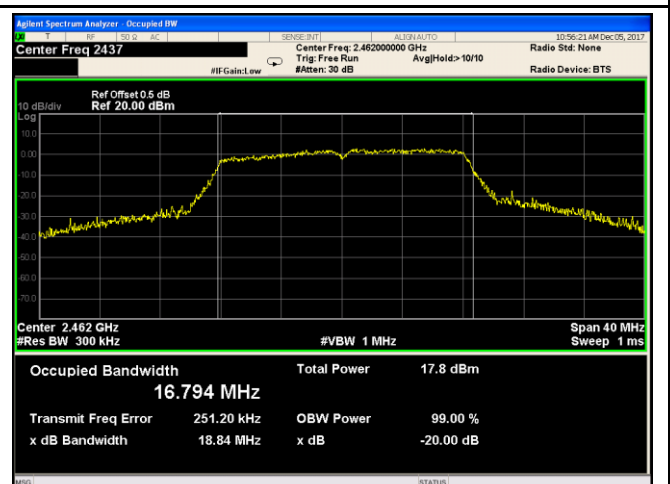
802.11b 20dB Bandwidth - High CH 2462



802.11g 20dB Bandwidth - Low CH 2412

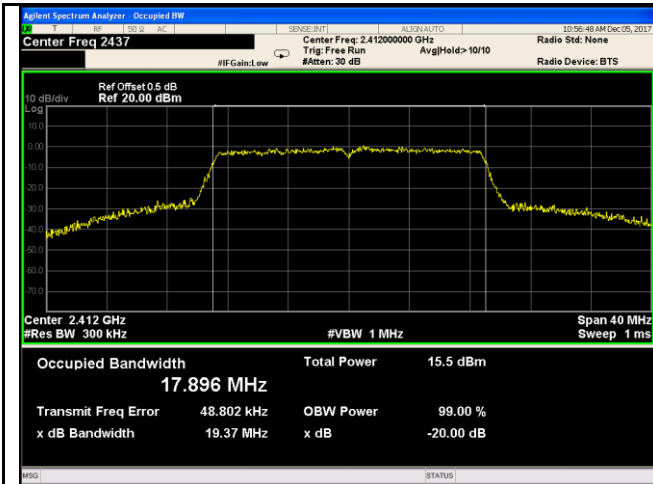


802.11g 20dB Bandwidth - Mid CH 2437

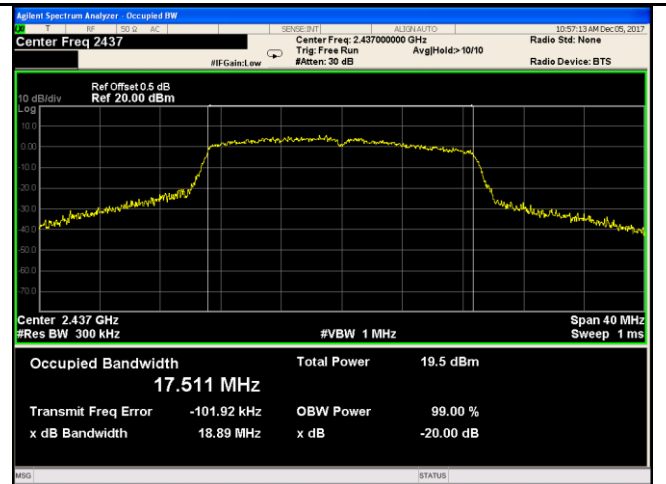


802.11g 20dB Bandwidth - High CH 2462

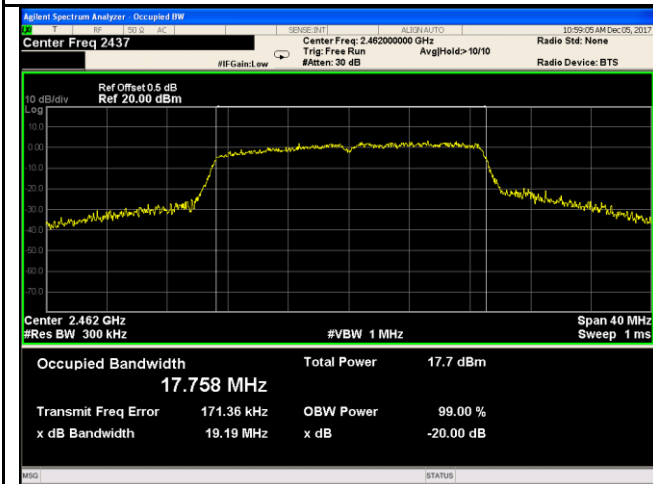




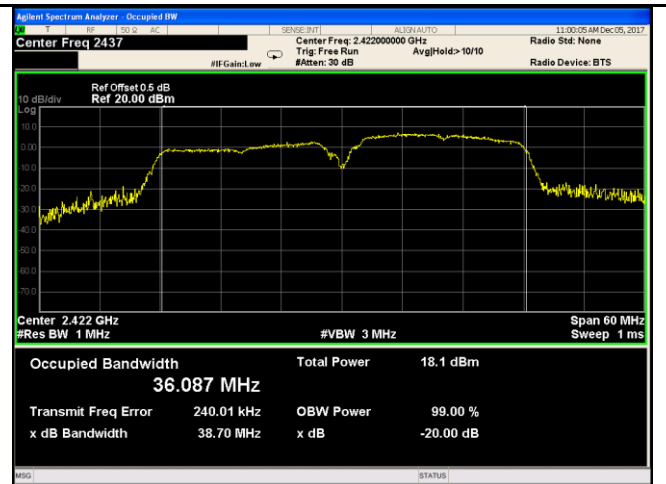
802.11n20 20dB Bandwidth - Low CH 2412



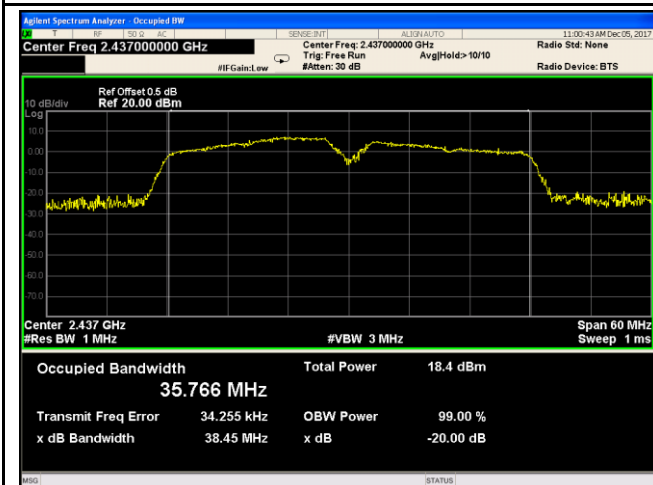
802.11n20 20dB Bandwidth - Mid CH 2437



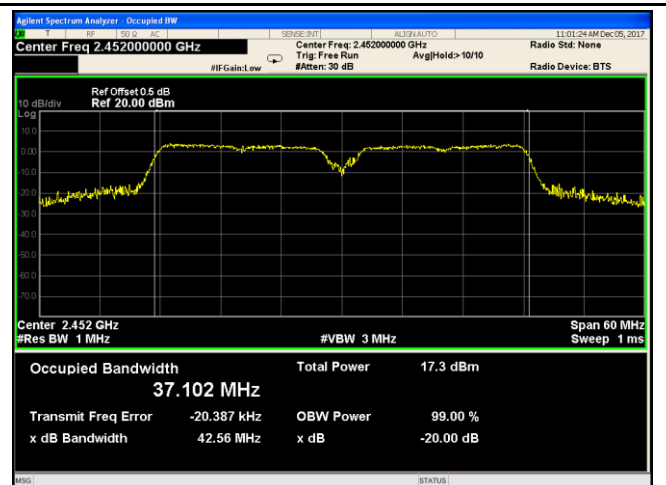
802.11n20 20dB Bandwidth - High CH 2462



802.11n40 20dB Bandwidth - Low CH 2422



802.11n40 20dB Bandwidth - Mid CH 2437



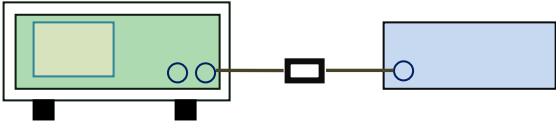
802.11n40 20dB Bandwidth - High CH 2452

### 6.3 Maximum Output Power

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	December 05, 2017
Tested By :	Aaron Liang

#### Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(b) (3),RSS210 (A8.4)	a)	FHSS in 2400-2483.5MHz with $\geq 75$ channels: $\leq 1$ Watt	<input type="checkbox"/>
	b)	FHSS in 5725-5850MHz: $\leq 1$ Watt	<input type="checkbox"/>
	c)	For all other FHSS in the 2400-2483.5MHz band: $\leq 0.125$ Watt.	<input type="checkbox"/>
	d)	FHSS in 902-928MHz with $\geq 50$ channels: $\leq 1$ Watt	<input type="checkbox"/>
	e)	FHSS in 902-928MHz with $\geq 25$ & $<50$ channels: $\leq 0.25$ Watt	<input type="checkbox"/>
	f)	DTS in 902-928MHz, 2400-2483.5MHz: $\leq 1$ Watt	<input checked="" type="checkbox"/>

Test Setup	 <p style="text-align: center;">Spectrum Analyzer                      EUT</p>
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Test Procedure	<p>558074 D01 DTS MEAS Guidance v03r03, 9.1.2 Integrated band power method Maximum output power measurement procedure</p> <ul style="list-style-type: none"> <li>- a) Set span to at least 1.5 times the OBW.</li> <li>- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.</li> <li>- c) Set VBW <math>\geq 3 \times</math> RBW.</li> <li>- d) Number of points in sweep <math>\geq 2 \times</math> span / RBW. (This gives bin-to-bin spacing <math>\leq</math> RBW/2, so that narrowband signals are not lost between frequency bins.)</li> <li>- e) Sweep time = auto.</li> <li>- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.</li> <li>- g) If transmit duty cycle <math>&lt; 98\%</math>, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum</li> </ul>
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	<p>power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle <math>\geq 98\%</math>, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “ free run” .</p> <ul style="list-style-type: none"> <li>- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.</li> <li>- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’ s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.</li> </ul>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data     Yes                       N/A

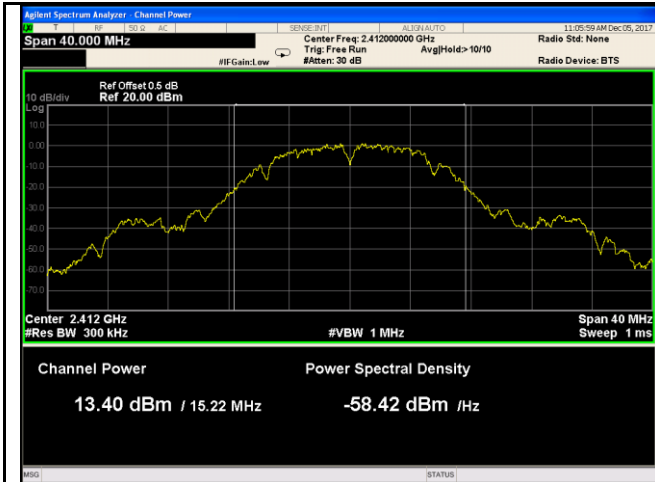
Test Plot     Yes (See below)             N/A

**Output Power measurement result**

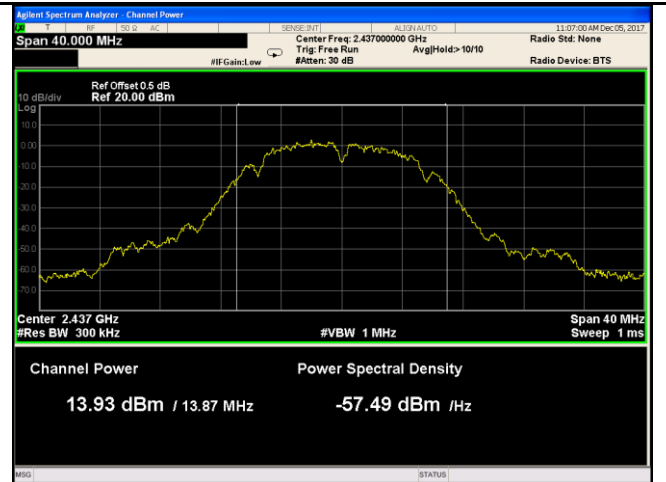
Type	Test mode	CH	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	802.11b	Low	2412	13.40	30	Pass
		Mid	2437	<b>13.93</b>	30	Pass
		High	2462	13.79	30	Pass
	802.11g	Low	2412	9.33	30	Pass
		Mid	2437	<b>12.53</b>	30	Pass
		High	2462	11.67	30	Pass
	802.11n (20M)	Low	2412	7.60	30	Pass
		Mid	2437	7.47	30	Pass
		High	2462	<b>7.74</b>	30	Pass
	802.11n (40M)	Low	2422	8.07	30	Pass
		Mid	2437	<b>8.08</b>	30	Pass
		High	2452	7.77	30	Pass

## Test Plots

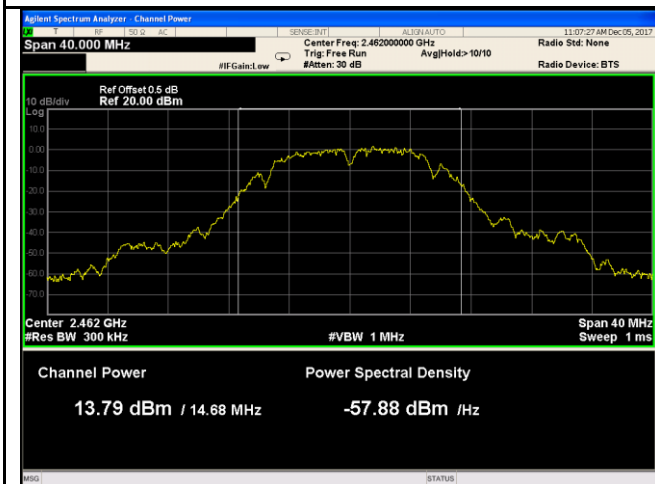
### The Average Power



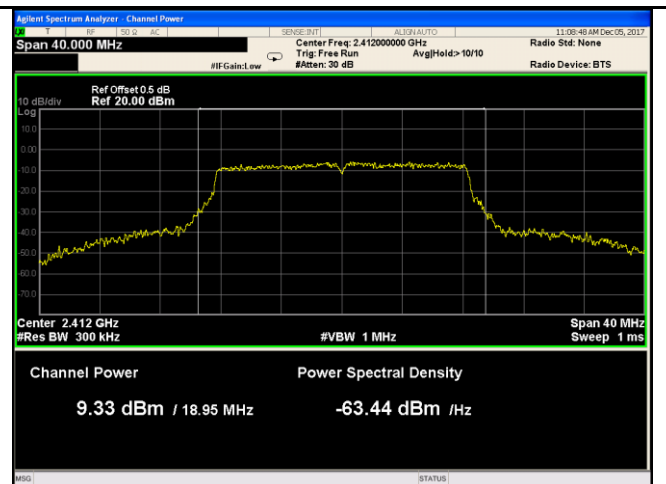
802.11b - AV Output power - Low CH 2412



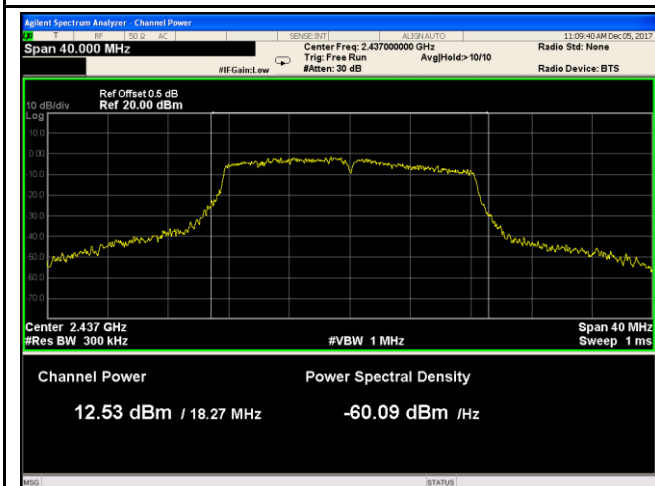
802.11b - AV Output power - Mid CH 2437



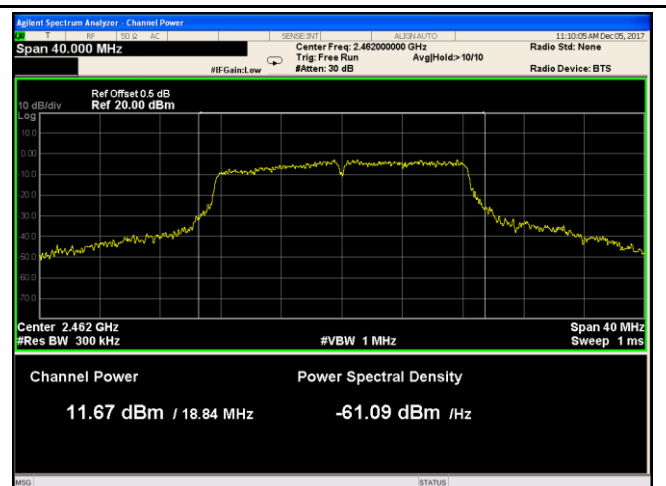
802.11b - AV Output power - High CH 2462



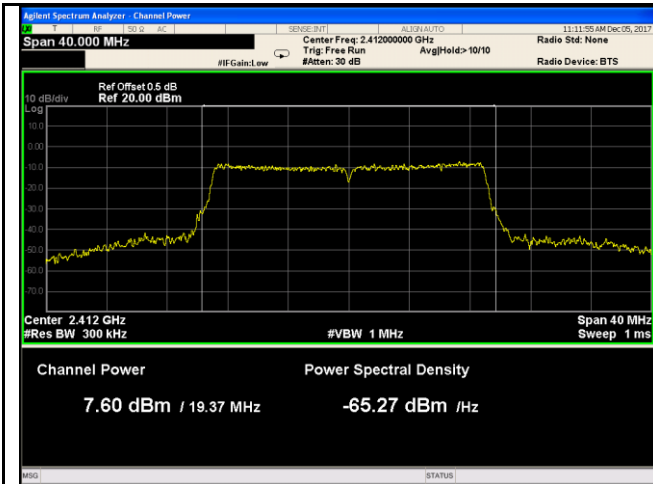
802.11g - AV Output power - Low CH 2412



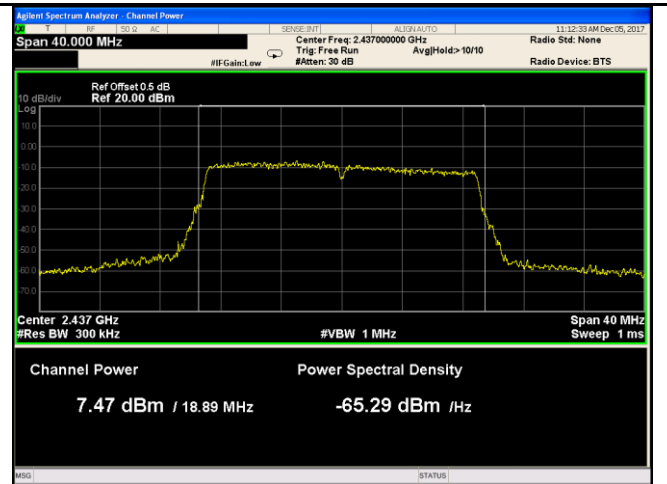
802.11g - AV Output power - Mid CH 2437



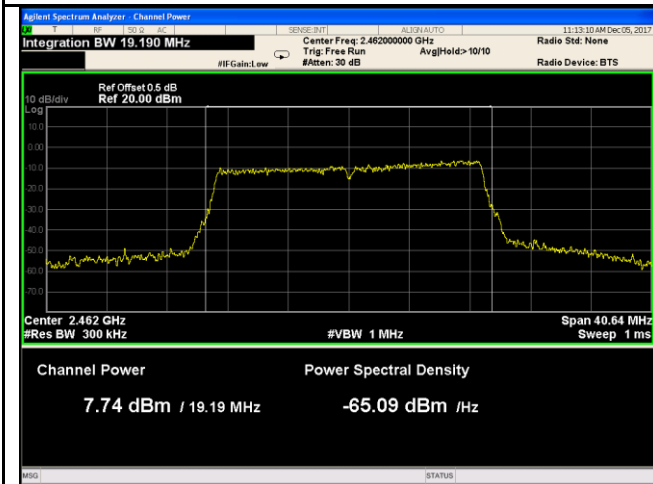
802.11g - AV Output power - High CH 2462



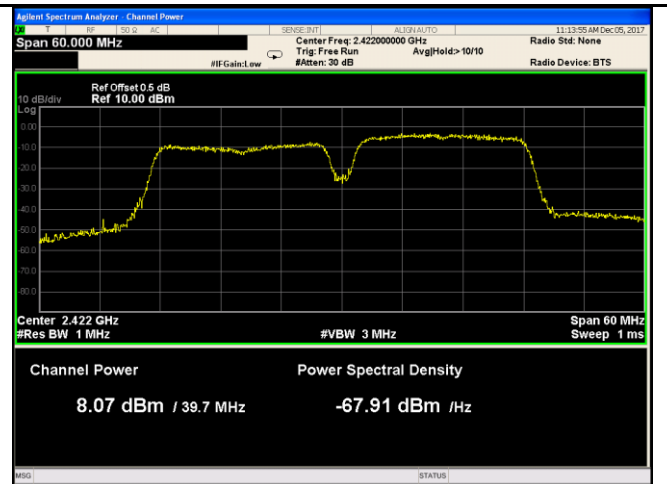
802.11n20 - AV Output power - Low CH 2412



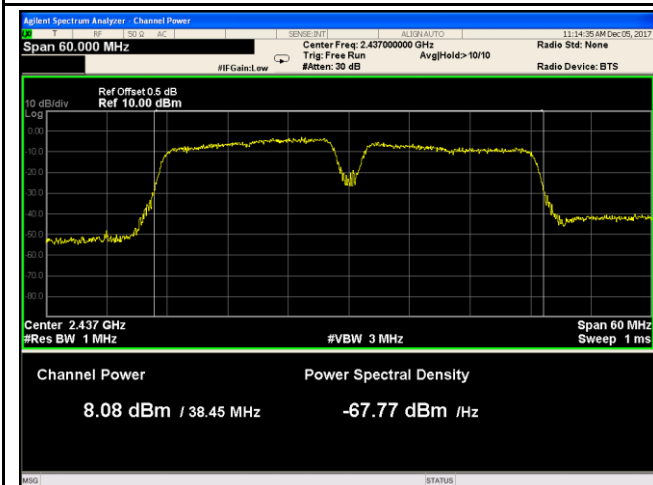
802.11n20 - AV Output power - Mid CH 2437



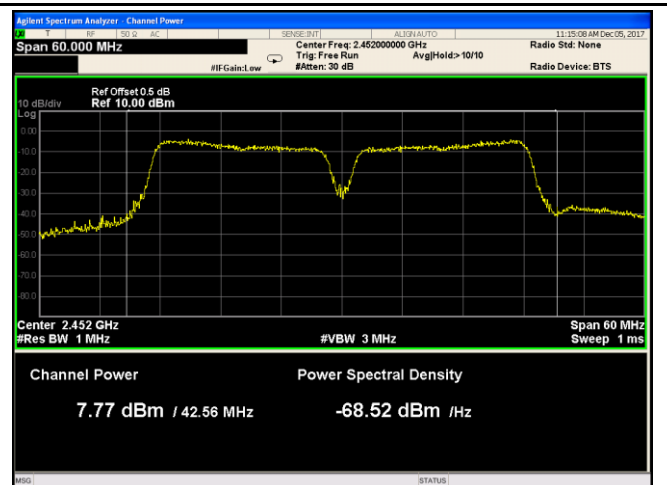
802.11n20 - AV Output power - High CH 2462



802.11n40 - AV Output power - Low CH 2422



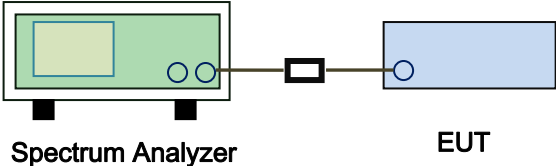
802.11n40 - AV Output power - Mid CH 2437



802.11n40 - AV Output power - High CH 2452

## 6.4 Power Spectral Density

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	December 05, 2017
Tested By :	Aaron Liang

Spec	Item	Requirement	Applicable
§15.247(e)	a)	The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Spectrum Analyzer                      EUT</p>		
Test Procedure	<p>558074 D01 DTS MEAS Guidance v03r03, 10.2 power spectral density method power spectral density measurement procedure</p> <ul style="list-style-type: none"> <li>- a) Set analyzer center frequency to DTS channel center frequency.</li> <li>- b) Set the span to 1.5 times the DTS bandwidth.</li> <li>- c) Set the RBW to: <math>3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}</math>.</li> <li>- d) Set the VBW <math>\geq 3 \times \text{RBW}</math>.</li> <li>- e) Detector = peak.</li> <li>- f) Sweep time = auto couple.</li> <li>- g) Trace mode = max hold.</li> <li>- h) Allow trace to fully stabilize.</li> <li>- i) Use the peak marker function to determine the maximum amplitude level within the RBW.</li> <li>- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.</li> </ul>		
Remark			
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

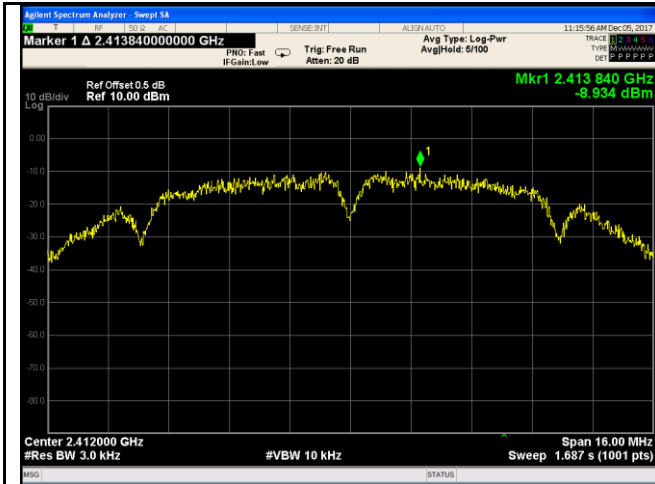
Test Data  Yes  N/A  
 Test Plot  Yes (See below)  N/A

**Power Spectral Density measurement result**

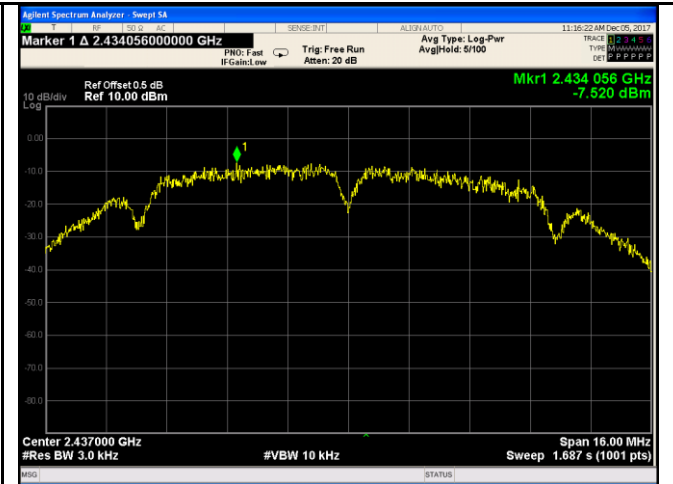
Type	Test mode	CH	Freq (MHz)	PSD	Limit (dBm)	Result
				(dBm)		
PSD	802.11b	Low	2412	-8.934	8	Pass
		Mid	2437	-7.520	8	Pass
		High	2462	-9.438	8	Pass
	802.11g	Low	2412	-15.857	8	Pass
		Mid	2437	-10.604	8	Pass
		High	2462	-13.118	8	Pass
	802.11n (20M)	Low	2412	-18.259	8	Pass
		Mid	2437	-15.480	8	Pass
		High	2462	-16.289	8	Pass
	802.11n (40M)	Low	2422	-17.706	8	Pass
		Mid	2437	-16.517	8	Pass
		High	2452	-18.885	8	Pass

## Test Plots

### Power Spectral Density measurement result



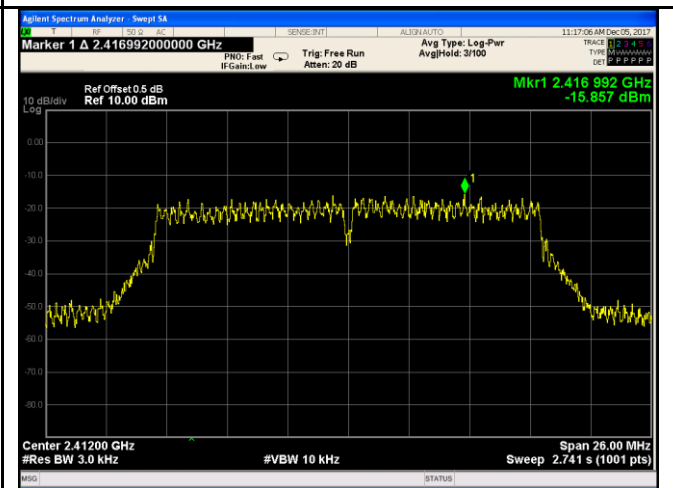
PSD - Low CH 2412 - 802.11b



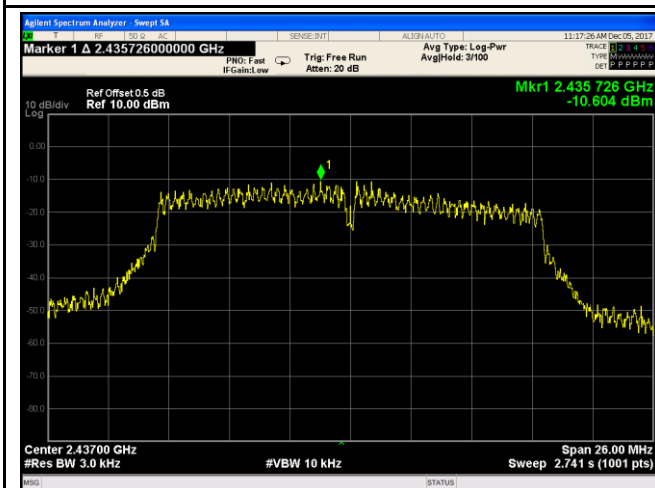
PSD - Mid CH 2437 - 802.11b



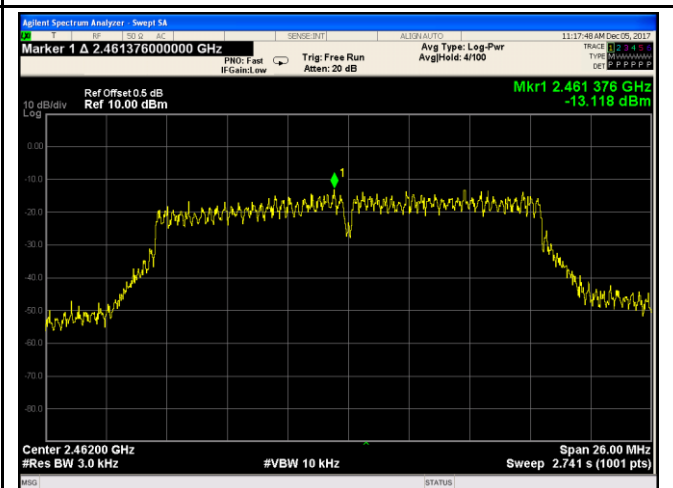
PSD - High CH 2462 - 802.11b



PSD - Low CH 2412 - 802.11g

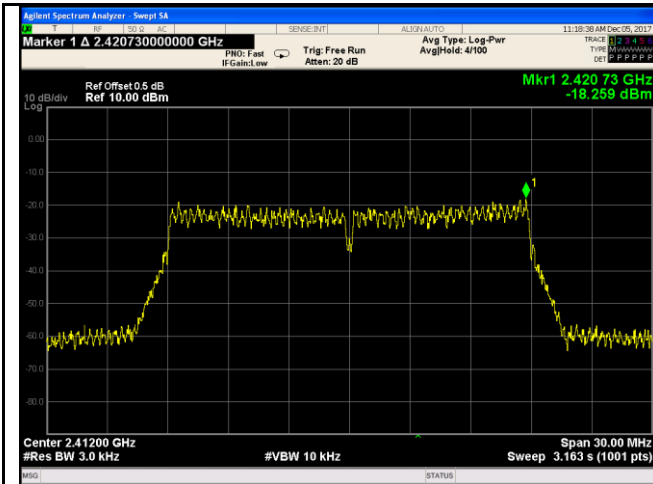


PSD - Mid CH 2437 - 802.11g

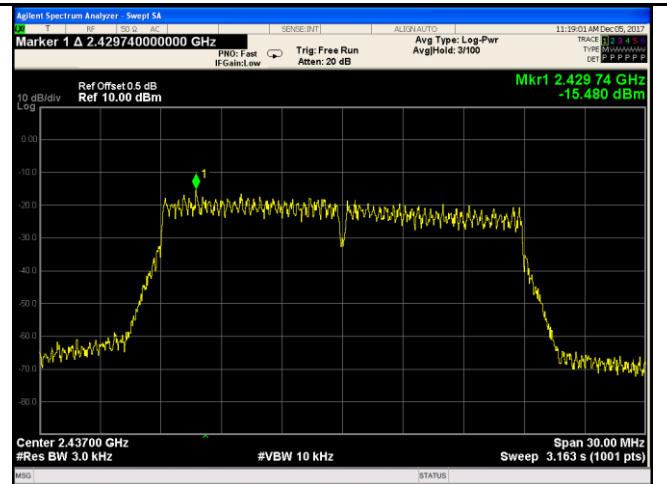


PSD - High CH 2462 - 802.11g

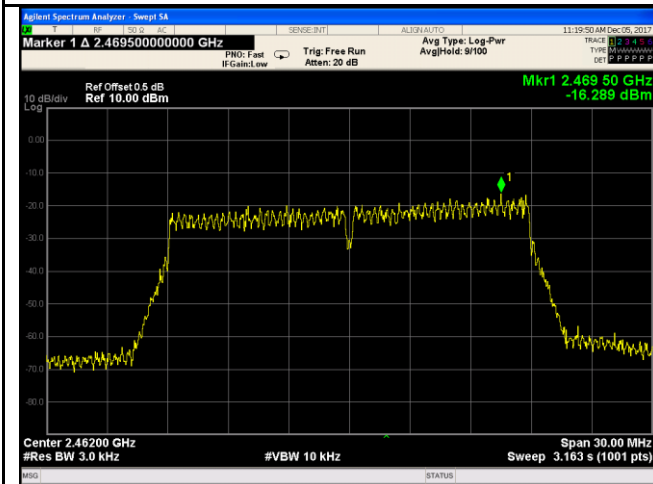




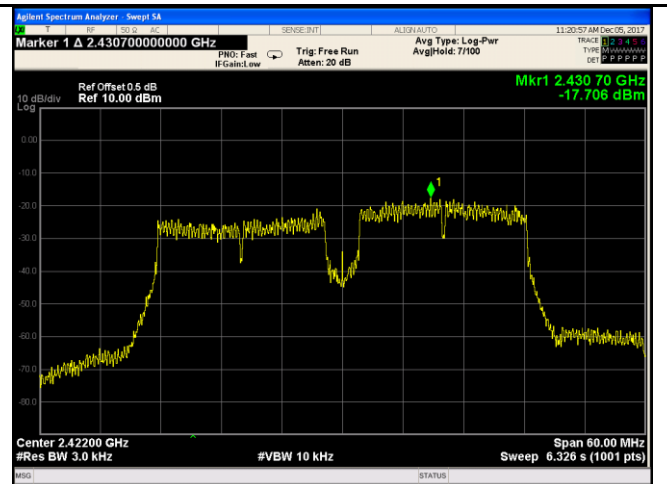
PSD - Low CH 2412 - 802.11n20



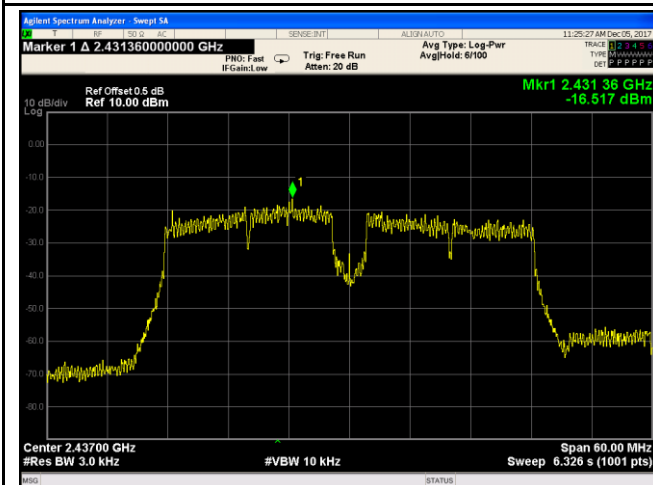
PSD - Mid CH 2437 - 802.11n20



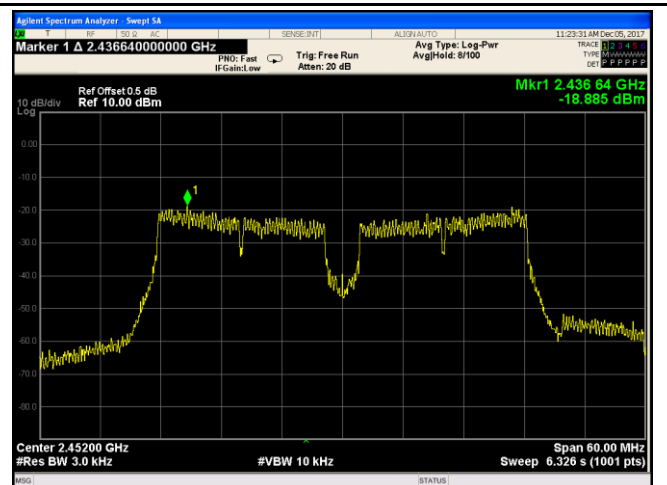
PSD - High CH 2472 - 802.11n20



PSD - Low CH 2422 - 802.11n40



PSD - Mid CH 2437 - 802.11n40



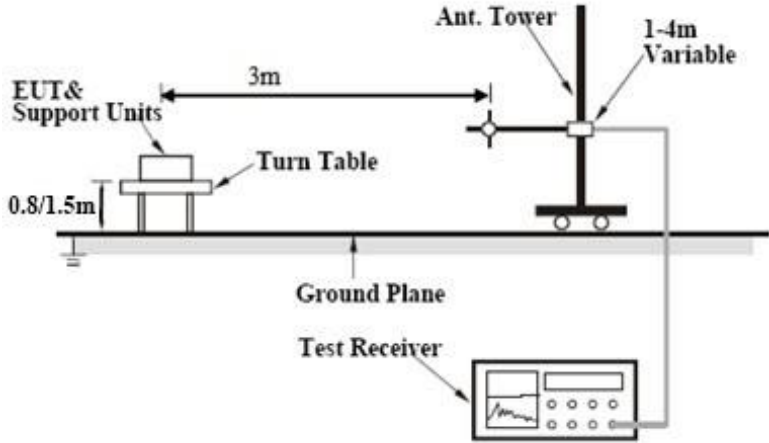
PSD - High CH 2452 - 802.11n40

## 6.5 Band-Edge & Unwanted Emissions into Restricted Frequency Bands

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1023mbar
Test date :	November 27, 2017
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(d)	a)	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.	<input checked="" type="checkbox"/>

Test Setup	
------------	--

Test Procedure	<p>Radiated Method Only</p> <ul style="list-style-type: none"> <li>- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.</li> <li>- 2. Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.</li> </ul>
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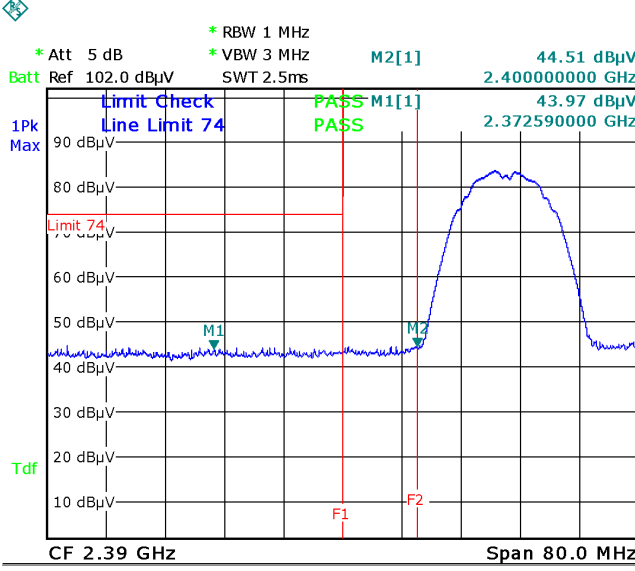
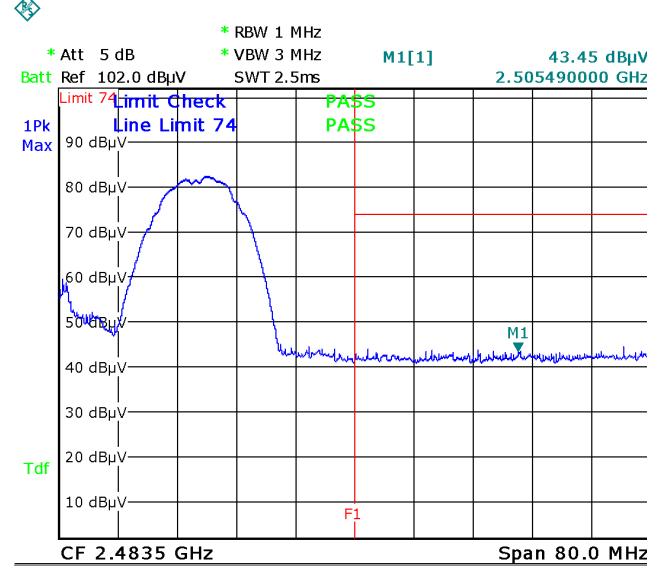
Test Report No.	17071300-FCC-R2
Page	27 of 64

	<ul style="list-style-type: none"> <li>- 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, check the emission of EUT, if pass then set Spectrum Analyzer as below:               <ul style="list-style-type: none"> <li>a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz.</li> <li>b. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</li> <li>c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.</li> </ul> </li> <li>- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.</li> <li>- 5. Repeat above procedures until all measured frequencies were complete.</li> </ul>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

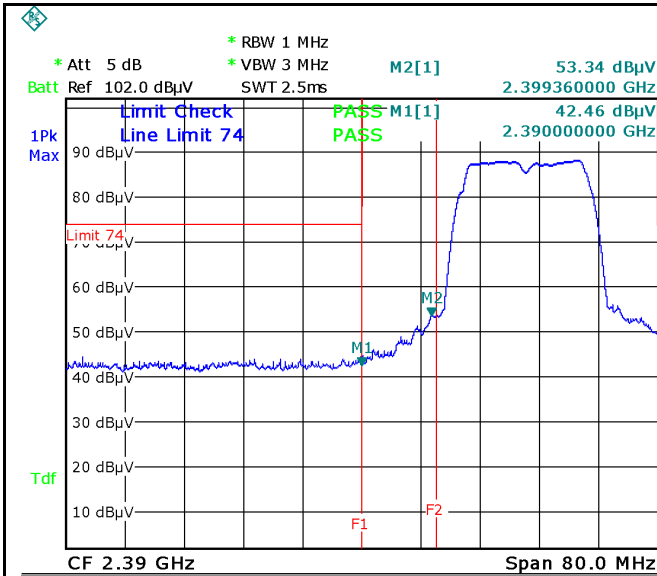
Test Data     Yes                       N/A  
 Test Plot     Yes (See below)             N/A

### Test Plots

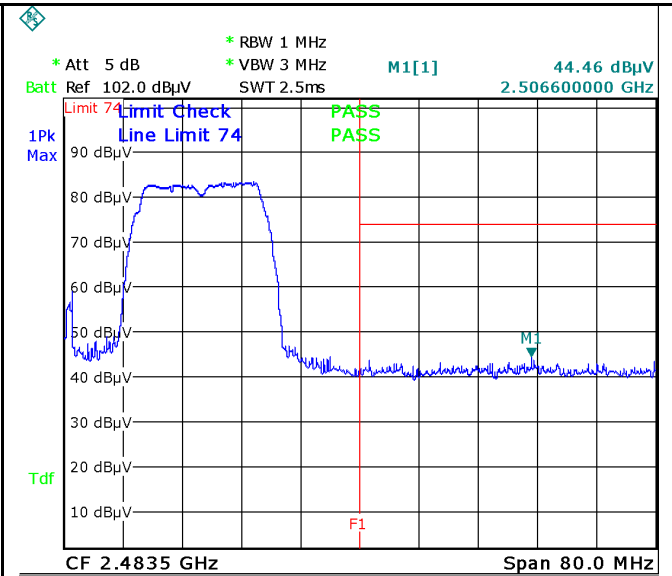
#### Band Edge measurement result

 <p> <b>M2[1]</b> 44.51 dBµV  <b>43.97 dBµV</b>  <b>2.372590000 GHz</b>  <b>Limit Check</b>  <b>Line Limit 74</b>  <b>PASS M1[1]</b>  <b>PASS</b>  <b>Limit 74</b>  <b>M1</b>  <b>M2</b>  <b>F1</b> <b>F2</b>  <b>CF 2.39 GHz</b> <b>Span 80.0 MHz</b>  <b>Date: 2.DEC.2017 09:46:18</b> </p>	 <p> <b>M1[1]</b> 43.45 dBµV  <b>43.45 dBµV</b>  <b>2.505490000 GHz</b>  <b>Limit Check</b>  <b>Line Limit 74</b>  <b>PASS</b>  <b>Limit 74</b>  <b>M1</b>  <b>F1</b>  <b>CF 2.4835 GHz</b> <b>Span 80.0 MHz</b>  <b>Date: 27.NOV.2017 15:46:04</b> </p>
<p>Band Edge, Left Side (Peak) - 802.11b</p> <p>Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz</p>	<p>Band Edge, Right Side (Peak) - 802.11b</p> <p>Note: F1 is frequency 2483.5MHz</p>
<p>Note: (no need if PK value less than the AV limit)</p>	<p>Note: (no need if PK value less than the AV limit)</p>
<p>Band Edge, Left Side (Average) - 802.11b</p>	<p>Band Edge, Right Side (Average) - 802.11b</p>

Note: Both Horizontal and vertical polarities were investigated



Date: 2.DEC.2017 09:47:34



Date: 27.NOV.2017 15:44:23

Band Edge, Left Side (Peak) - 802.11g

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

Band Edge, Right Side (Peak) - 802.11g

Note: F1 is frequency 2483.5MHz

Note: (no need if PK value less than the AV limit)

Note: (no need if PK value less than the AV limit)

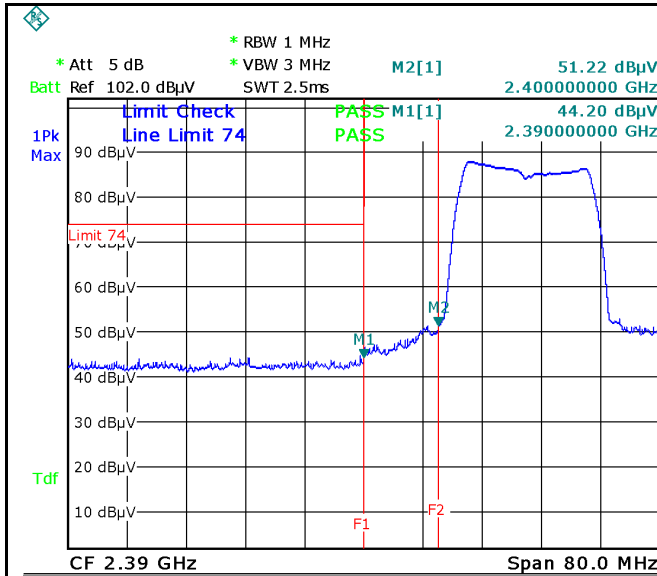
Band Edge, Left Side (Average) - 802.11g

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

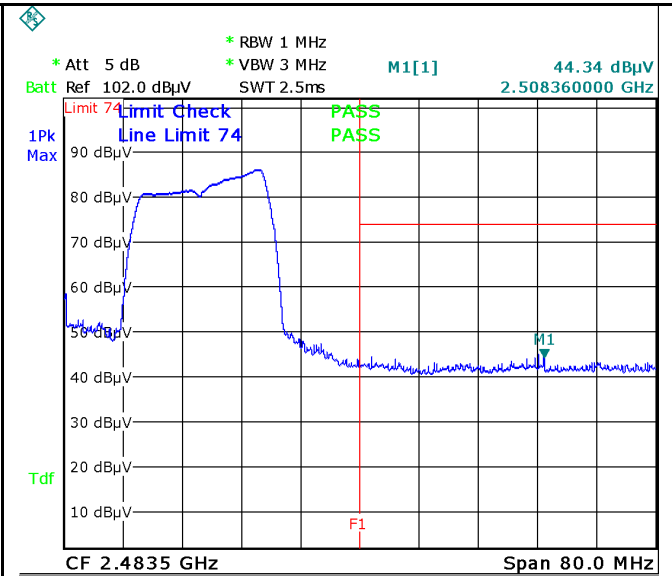
Band Edge, Right Side (Average) - 802.11g

Note: F1 is frequency 2483.5MHz

Note: Both Horizontal and vertical polarities were investigated



Date: 2.DEC.2017 09:49:02



Date: 27.NOV.2017 15:42:47

Band Edge, Left Side (Peak) - 802.11n20

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

Band Edge, Right Side (Peak) - 802.11n20

Note: F1 is frequency 2483.5MHz

Note: (no need if PK value less than the AV limit)

Note: (no need if PK value less than the AV limit)

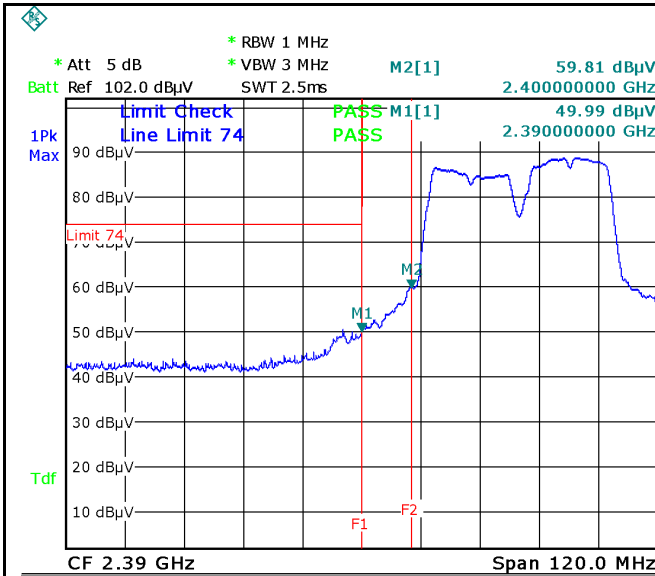
Band Edge, Left Side (Average) - 802.11n20

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

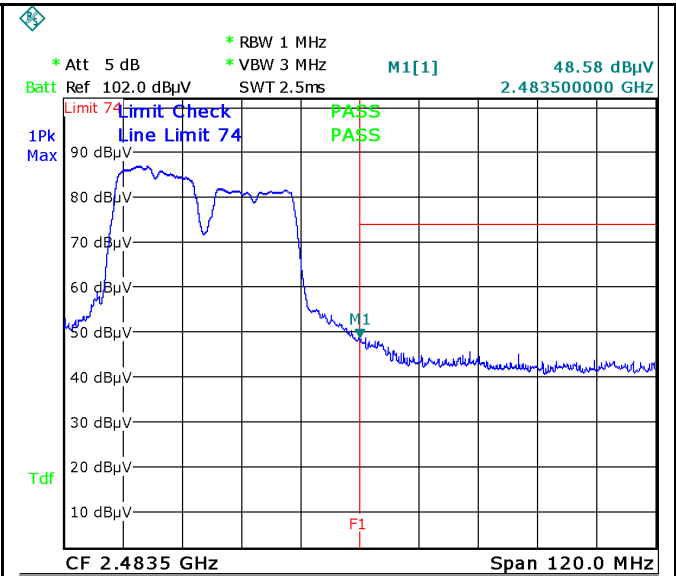
Band Edge, Right Side (Average) - 802.11n20

Note: F1 is frequency 2483.5MHz

Note: Both Horizontal and vertical polarities were investigated



Date: 2.DEC.2017 09:50:18



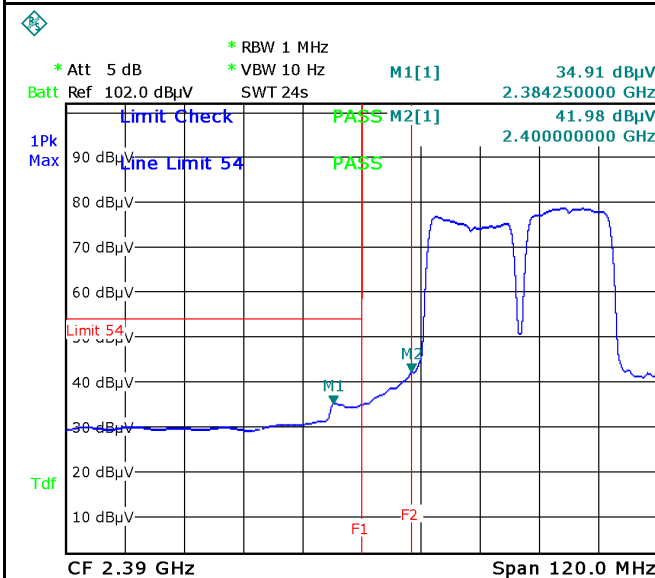
Date: 27.NOV.2017 15:39:50

Band Edge, Left Side (Peak) - 802.11n40

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

Band Edge, Right Side (Peak) - 802.11n40

Note: F1 is frequency 2483.5MHz



Date: 2.DEC.2017 09:52:14

Note: (no need if PK value less than the AV limit)

Band Edge, Left Side (Average) - 802.11n40

Note: F1 is frequency 2390MHz; F2 is frequency 2400MHz

Band Edge, Right Side (Average) - 802.11n40

Note: F1 is frequency 2483.5MHz

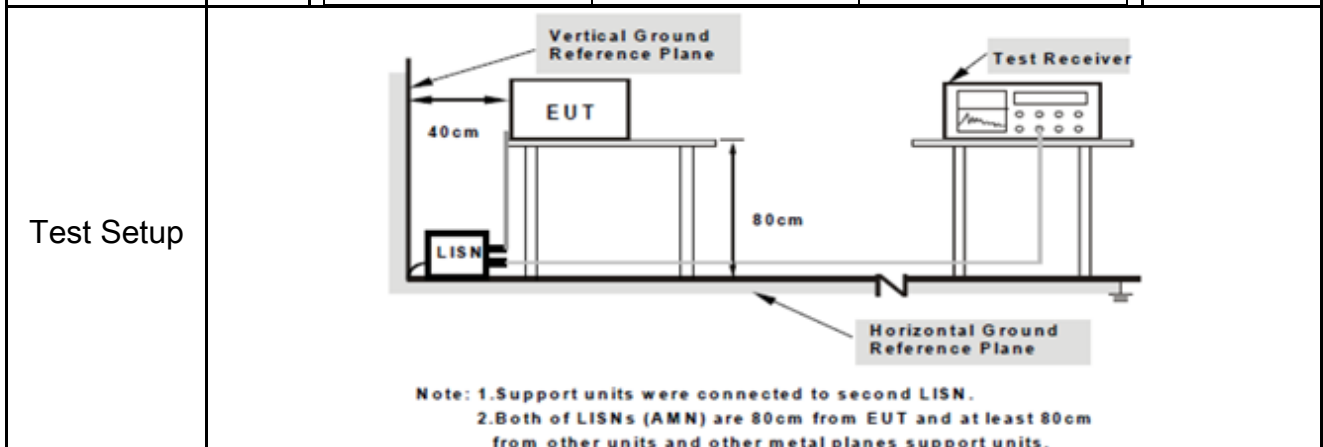
Note: Both Horizontal and vertical polarities were investigated

## 6.6 AC Power Line Conducted Emissions

Temperature	25 °C
Relative Humidity	50%
Atmospheric Pressure	1008mbar
Test date :	December 08, 2017
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.207, RSS210 (A8.1)	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.	<input checked="" type="checkbox"/>														
		<table border="1"> <thead> <tr> <th rowspan="2">Frequency ranges (MHz)</th> <th colspan="2">Limit (dBµV)</th> </tr> <tr> <th>QP</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15 ~ 0.5</td> <td>66 – 56</td> <td>56 – 46</td> </tr> <tr> <td>0.5 ~ 5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5 ~ 30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>		Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50
		Frequency ranges (MHz)			Limit (dBµV)												
				QP	Average												
0.15 ~ 0.5	66 – 56	56 – 46															
0.5 ~ 5	56	46															
5 ~ 30	60	50															



Procedure	<ol style="list-style-type: none"> <li>The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</li> <li>The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</li> <li>The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss</li> </ol>
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