

# FCC Test Report

Product Name	Network Media Module
Model No	CY920-C,CY920-A
FCC ID	ZQO-CY920C

Applicant	MICROCHIP TECHNOLOGY INC.
Address	2355 West Chandler Blvd.Chandler, Arizona, USA 85224-6199

Date of Receipt	June. 04, 2014
Issued Date	Oct. 27, 2014
Report No.	1460175R-RFUSP30V00
Report Version	V1.0



Testing Laboratory

3023

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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# Test Report

Issued Date: Oct. 27, 2014

Report No.: 1460175R-RFUSP30V00



Product Name	Network Media Module
Applicant	MICROCHIP TECHNOLOGY INC.
Address	2355 West Chandler Blvd.Chandler, Arizona, USA 85224-6199
Manufacturer	(1) Lite-On Technology (Changzhou) Co., Ltd. (2) Lite-On Network Communication (Dongguan) Limited
Model No.	CY920-C,CY920-A
FCC ID.	ZQO-CY920C
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC 120V/60Hz
Trade Name	Network Media Module
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2013 ANSI C63.10: 2009,KDB 789033 D01 General UNII Test Procedures v01r04
Test Result	Complied

Documented By :

A handwritten signature in blue ink that appears to read "Leven Huang".

(Senior Adm. Specialist / Leven Huang )

Tested By :

A handwritten signature in blue ink that appears to read "Jack Hsu".

( Engineer / Jack Hsu )

Approved By :

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( Director / Vincent Lin )

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

Attachment 3: Pretest Data

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Network Media Module
Trade Name	Network Media Module
Model No.	CY920-C,CY920-A
FCC ID.	ZQO-CY920C
Frequency Range	802.11a/n-20MHz: 5180-5240MHz 802.11n-40MHz: 5190-5230MHz
Number of Channels	802.11a/n-20MHz: 4, n-40MHz: 2
Data Rate	802.11a: 6-54Mbps, 802.11n: up to 150Mbps
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole Antenna
Antenna Gain	Refer to the table “Antenna List”

### Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WALSIN	PI_RFDPA870920IMLB301_V01	Dipole Antenna	3.26dBi for 5150-5250GHz
2	WALSIN	PI_RFDPA870930IMLB301_V01	Dipole Antenna	1.88dBi for 5150-5250GHz
3	WALSIN	RFDPA870933IMLB301	Dipole Antenna	1.53dBi for 5150-5250GHz
4	WALSIN	RFDPA870930IMAB301	Dipole Antenna	--
5	WALSIN	RFDPA870945IMAB301	Dipole Antenna	--
6	WALSIN	RFDPA870900SBAB801 + RFCBA100630SA6B301	Dipole Antenna	--
7	WALSIN	RFDPA870900SBAB801 + RFCBA100645SA6B301	Dipole Antenna	--

Note: 1. The antennas of EUT is conform to FCC 15.203.

2. Only the higher gain antenna was tested and recorded in this report.

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz

802.11n-40MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz

Note:

1. The EUT is a Network Media Module, with a built-in WLAN transceiver.
2. Module contains a diversity function, only worst case is shown in the report.
3. Antenna no.1, no.2 and no.3 has divided into with core / without core, only worst case is shown in the report.
4. Module includes 2nd Source, the test item conducted emission and 30MHz – 1GHz radiated emission are tested at two modules (see report attachment 3) , brand differences are as follows:

Model Name	CY920-C		CY920-A (Remove Extended connector & Ethernet IC)	
	main source	2nd source	main source	2nd source
Flash U21	Macronix	WINBOND	Macronix	WINBOND
DDR U22	ESMT	ETRON	ESMT	ETRON
64pin connector J300,J301	Xinya	Xisheng	Xinya	Xisheng
u.fl CON1,CON2	IPEX	ELECTRIC CONNECTOR	IPEX	ELECTRIC CONNECTOR
Bead for Supply Noise Filter FB602	BLM15EG121SN1D (MURATA)	BLM15PX121SN1D (MURATA)	BLM15EG121SN1D (MURATA)	BLM15PX121SN1D (MURATA)
Regulator IC U801	EMP8130-12VN05NRR (ESMT)	XC6228D122VR-G (TOREX)	EMP8130-12VN05NRR (ESMT)	XC6228D122VR-G (TOREX)
INDUCTOR RF L917	MLG0603Q0N2CT000 SMD(TDK)	MLG0603W0N2CT000 SMD(TDK)	MLG0603Q0N2CT000 SMD(TDK)	MLG0603W0N2CT000 SMD(TDK)

5. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
6. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.  
(802.11a is 6Mbps, 802.11n-20BW is 7.2Mbps and 802.11n-40BW are 15Mbps)
7. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Transmit (802.11n-40BW 15Mbps)
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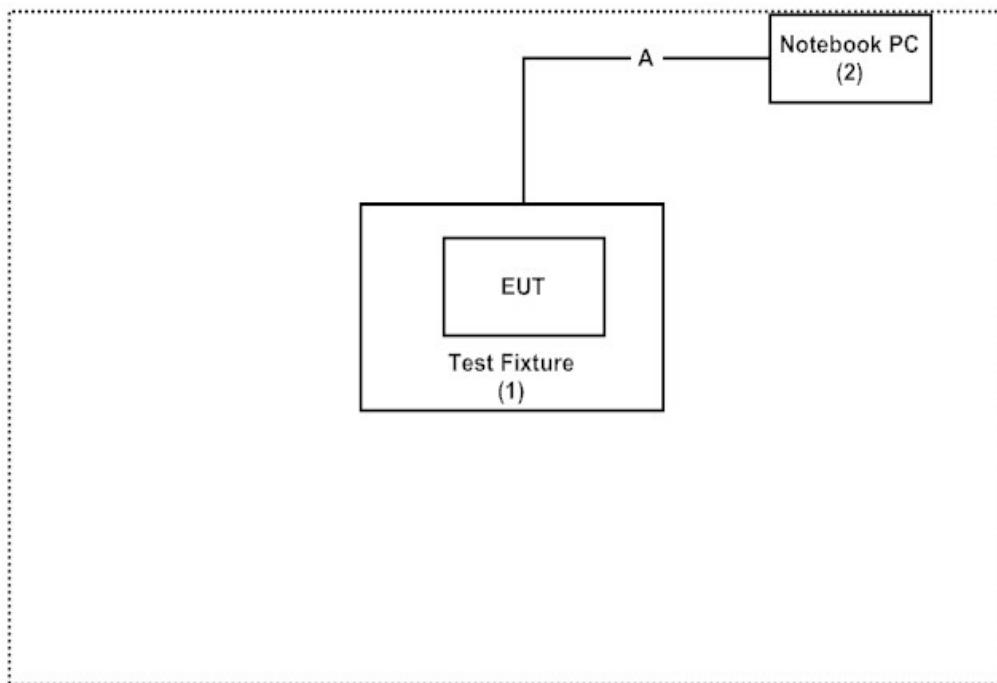
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Test Fixture	Liteon	N/A	N/A	N/A
2 Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
A USB to RS-232 Cable	Shielded, 1.5m

### 1.4. Configuration of tested System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute “Hyper Terminal v5.1” program on the Notebook PC.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (5) Verify that the EUT works properly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from

QuieTek Corporation's Web Site: <http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site:

<http://www.quietek.com/>

Site Description: File on  
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Registration Number: 92195

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Linkou Dist. New Taipei City 24451,  
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E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014

## 2. Conducted Emission

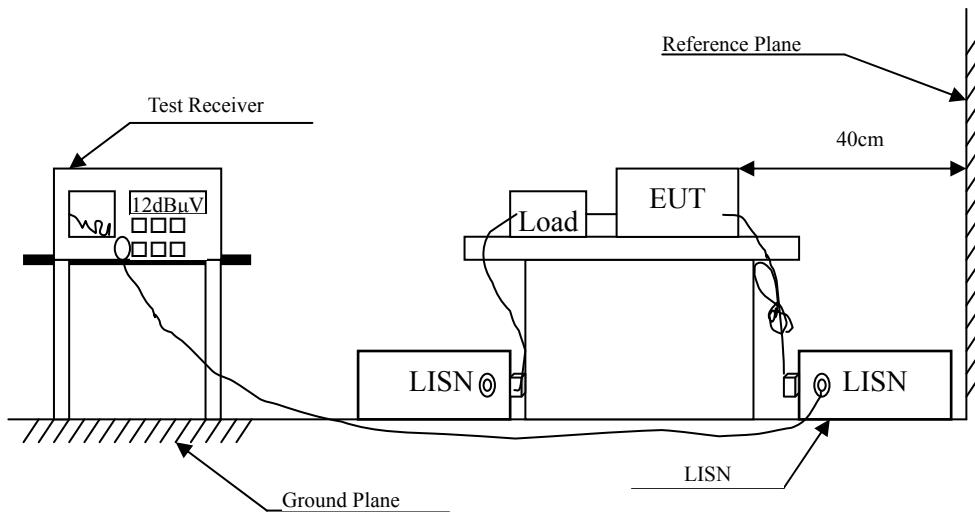
### 2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

### 2.2. Test Setup



## 2.3. Limits

<b>FCC Part 15 Subpart C Paragraph 15.207 (dB<math>\mu</math>V) Limit</b>		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

## 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.10, 2009; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

## 2.5. Uncertainty

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.158	9.747	40.700	50.447	-15.324	65.771
0.173	9.742	37.330	47.073	-18.270	65.343
0.205	9.739	32.380	42.119	-22.310	64.429
0.470	9.751	23.660	33.411	-23.446	56.857
2.771	9.850	21.910	31.760	-24.240	56.000
16.572	10.000	24.230	34.230	-25.770	60.000
<b>Average</b>					
0.158	9.747	30.880	40.627	-15.144	55.771
0.173	9.742	30.200	39.943	-15.400	55.343
0.205	9.739	23.850	33.589	-20.840	54.429
0.470	9.751	15.210	24.961	-21.896	46.857
2.771	9.850	14.910	24.760	-21.240	46.000
16.572	10.000	18.630	28.630	-21.370	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. ““ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.162	9.747	41.100	50.847	-14.810	65.657
0.201	9.749	32.940	42.689	-21.854	64.543
0.255	9.751	26.270	36.021	-26.979	63.000
0.451	9.750	22.980	32.730	-24.670	57.400
2.787	9.850	21.420	31.270	-24.730	56.000
16.736	10.030	23.780	33.810	-26.190	60.000
<b>Average</b>					
0.162	9.747	31.590	41.337	-14.320	55.657
0.201	9.749	22.590	32.339	-22.204	54.543
0.255	9.751	17.320	27.071	-25.929	53.000
0.451	9.750	17.350	27.100	-20.300	47.400
2.787	9.850	13.090	22.940	-23.060	46.000
16.736	10.030	18.390	28.420	-21.580	50.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Maximum conducted output power

#### 3.1. Test Equipment

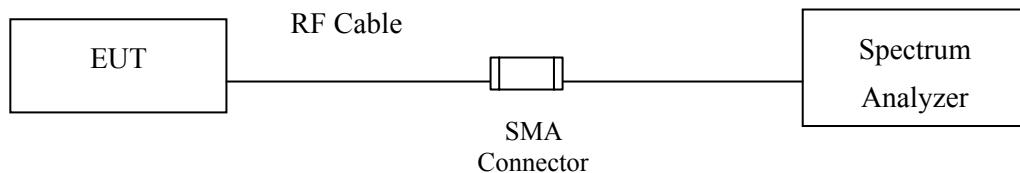
Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

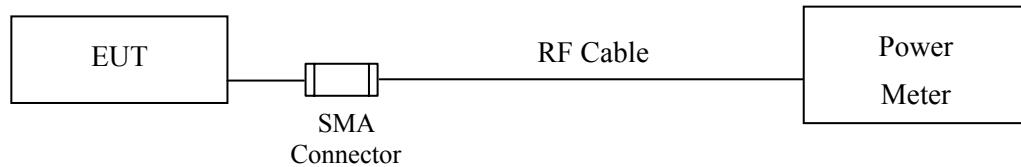
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

#### 3.2. Test Setup

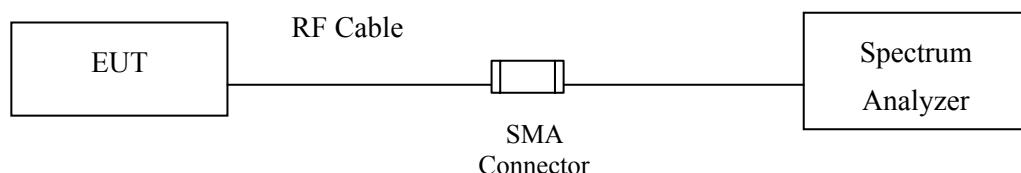
##### 26dBc Occupied Bandwidth



##### Conduction Power Measurement (for 802.11an)



##### Conduction Power Measurement (for 802.11ac)



### 3.3. Limits

- (1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or  $4 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (2) For the band 5.25-5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1W or  $17 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

### 3.4. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW $\leq$ 40MHz) Maximum conducted output power using KDB 789033 section E)3)b)  
Method PM-G (Measurement using a gated RF average power meter)

Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b)  
Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

### 3.5. Uncertainty

$\pm 1.27 \text{ dB}$

### 3.6. Test Result of Maximum conducted output power

Product : Network Media Module  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	12.71	--	--	--	--	--	--	--	<17dBm
44	5220	16.03	15.88	15.69	15.53	15.36	15.19	15.02	14.85	<17dBm
48	5240	15.92	--	--	--	--	--	--	--	<17dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

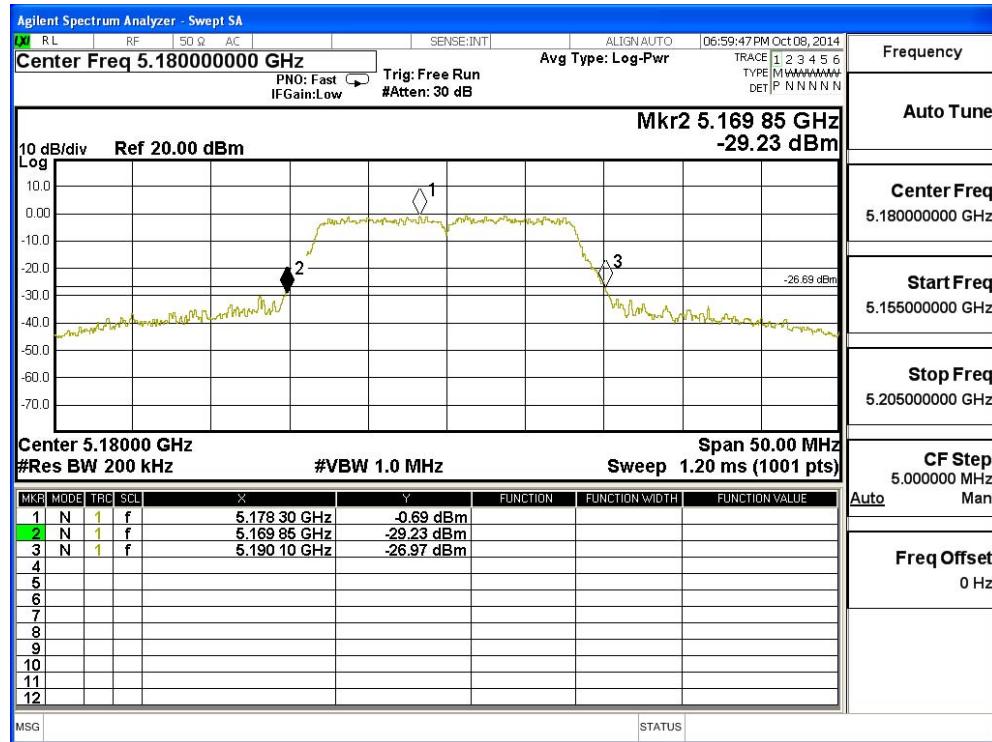
### Maximum conducted output power Measurement:

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	(dBm+10log(BW))
36	5180	20.25	12.71	17	17.06
44	5220	27.65	16.03	17	18.42
48	5240	30.55	15.92	17	18.85

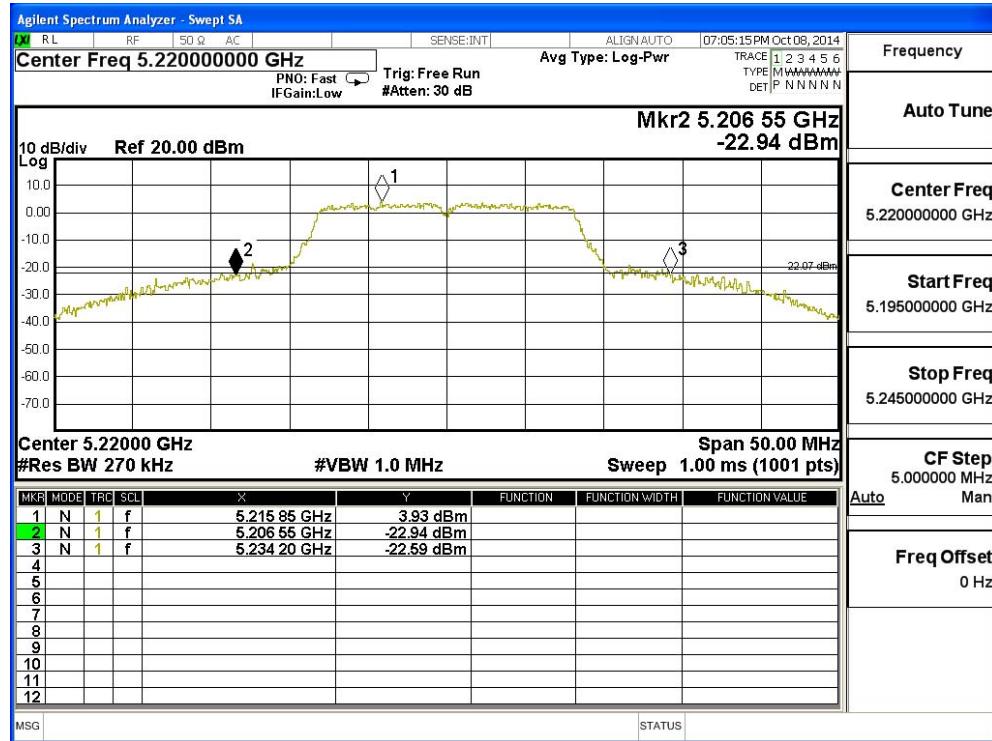
Note: Power Output Value =Reading value on average power meter + cable loss

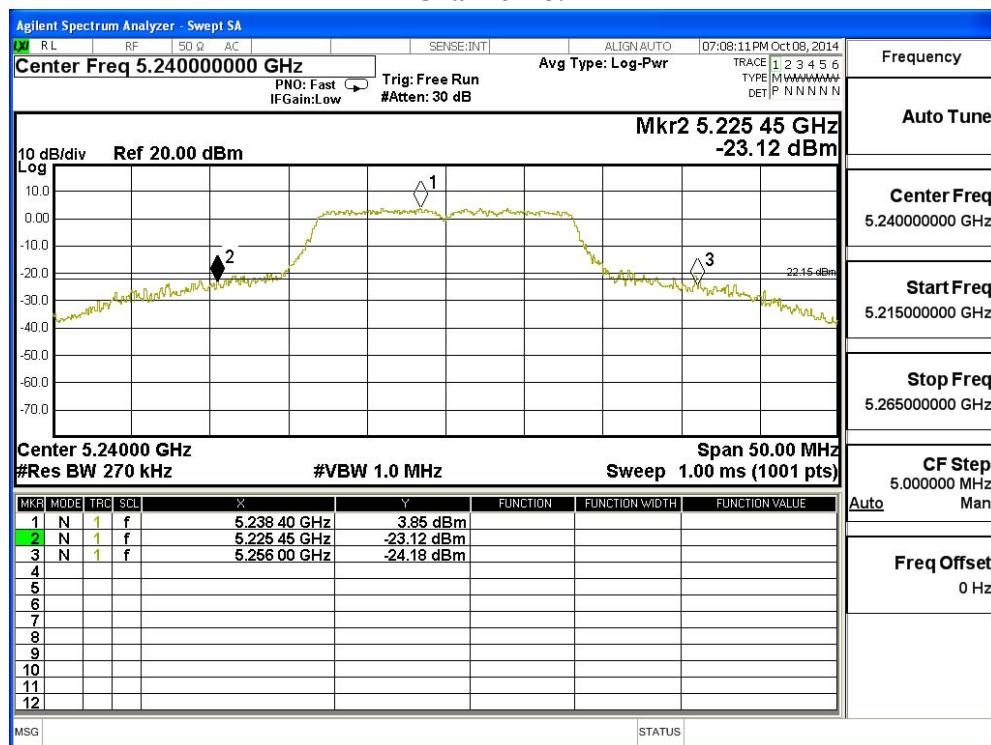
### 26dBc Occupied Bandwidth:

#### Channel 36:



#### Channel 44:



**Channel 48:**

Product : Network Media Module  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	
		Measurement Level (dBm)								
36	5180	12.48	--	--	--	--	--	--	--	<17dBm
44	5220	15.71	15.60	15.44	15.31	15.18	15.04	14.91	14.77	<17dBm
48	5240	15.81	--	--	--	--	--	--	--	<17dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

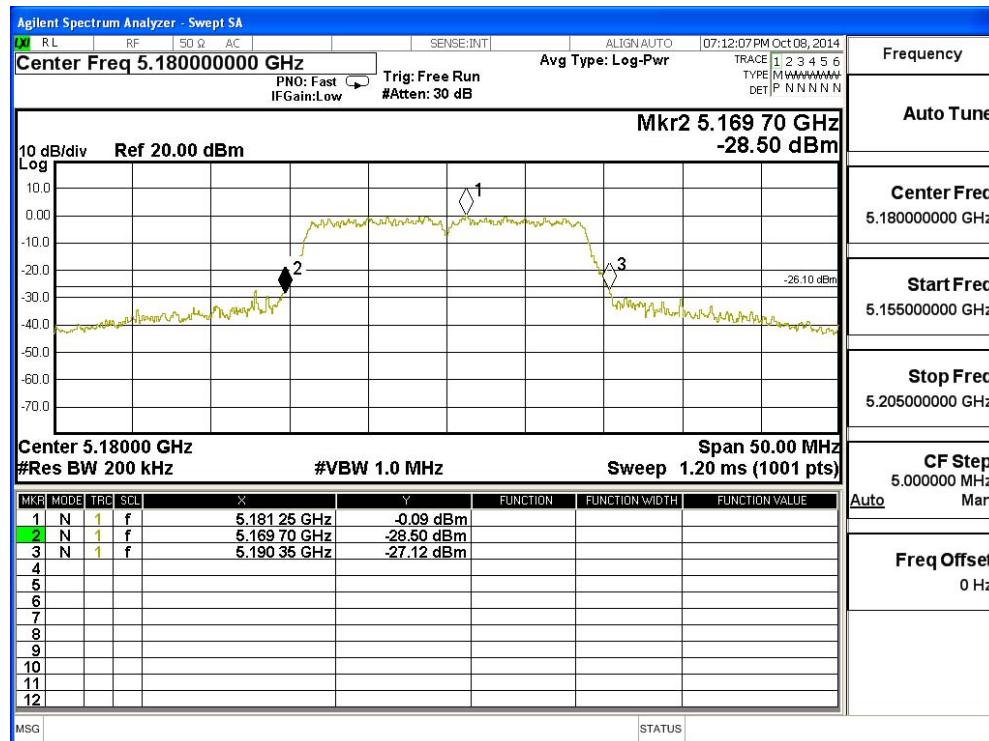
### Maximum conducted output power Measurement:

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	(dBm+10log(BW))
36	5180	20.65	12.48	17	17.15
44	5220	34.30	15.71	17	19.35
48	5240	31.95	15.81	17	19.04

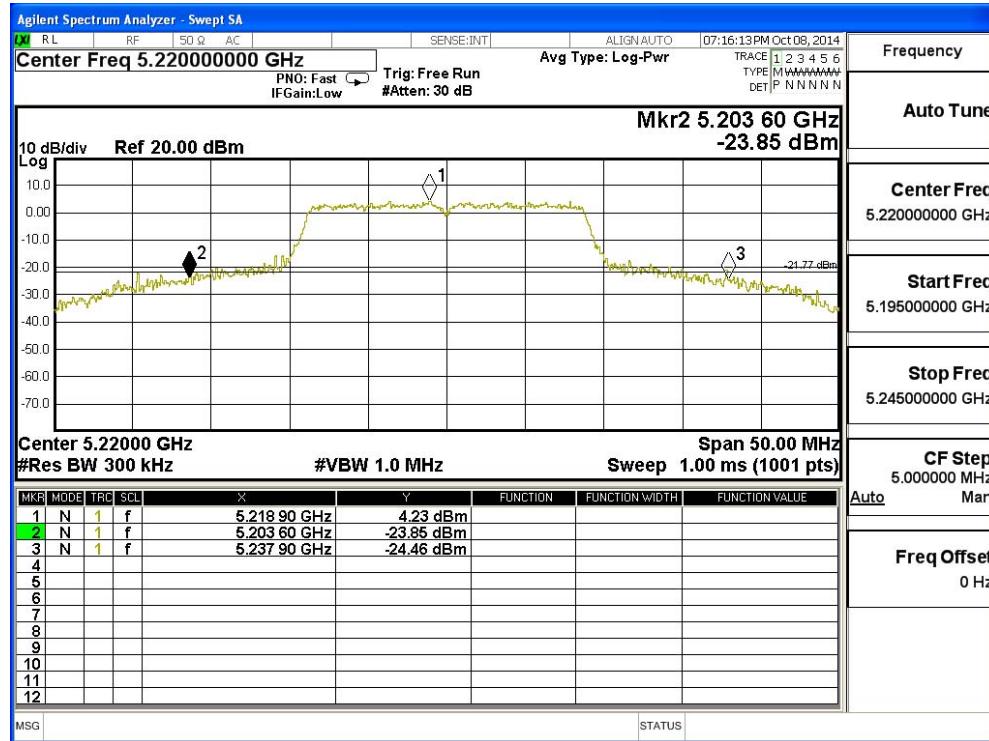
Note: Power Output Value =Reading value on average power meter + cable loss

### 26dBc Occupied Bandwidth:

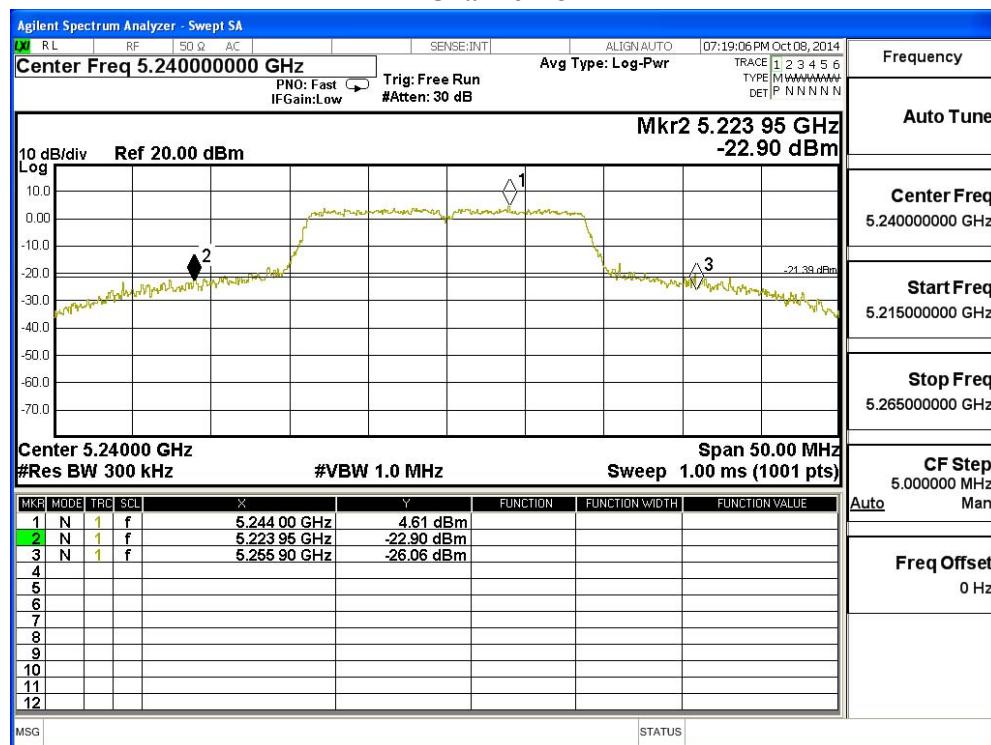
#### Channel 36



#### Channel 44



### Channel 48



Product : Network Media Module  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		15	30	45	60	90	120	135	150	
		Measurement Level (dBm)								
38	5190	11.86	11.78	11.48	11.33	11.14	10.95	10.76	10.57	<17dBm
46	5230	16.25	--	--	--	--	--	--	--	<17dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

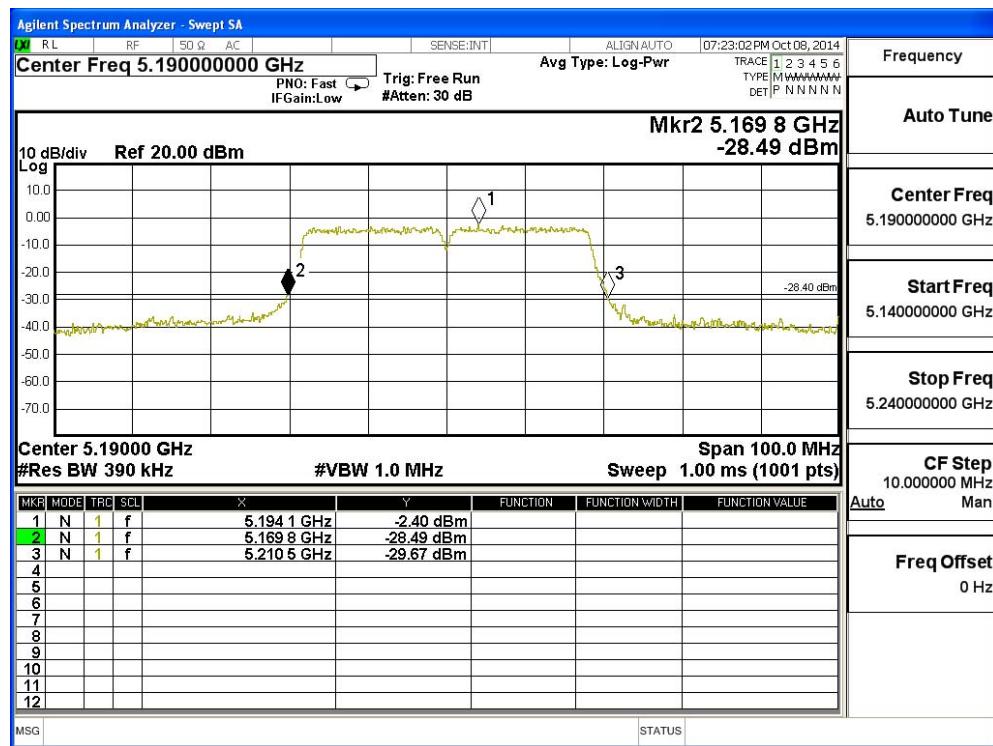
### Maximum conducted output power Measurement:

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	(dBm)+10log(BW)
38	5190	40.70	11.86	17	20.10
46	5230	69.70	16.25	17	22.43

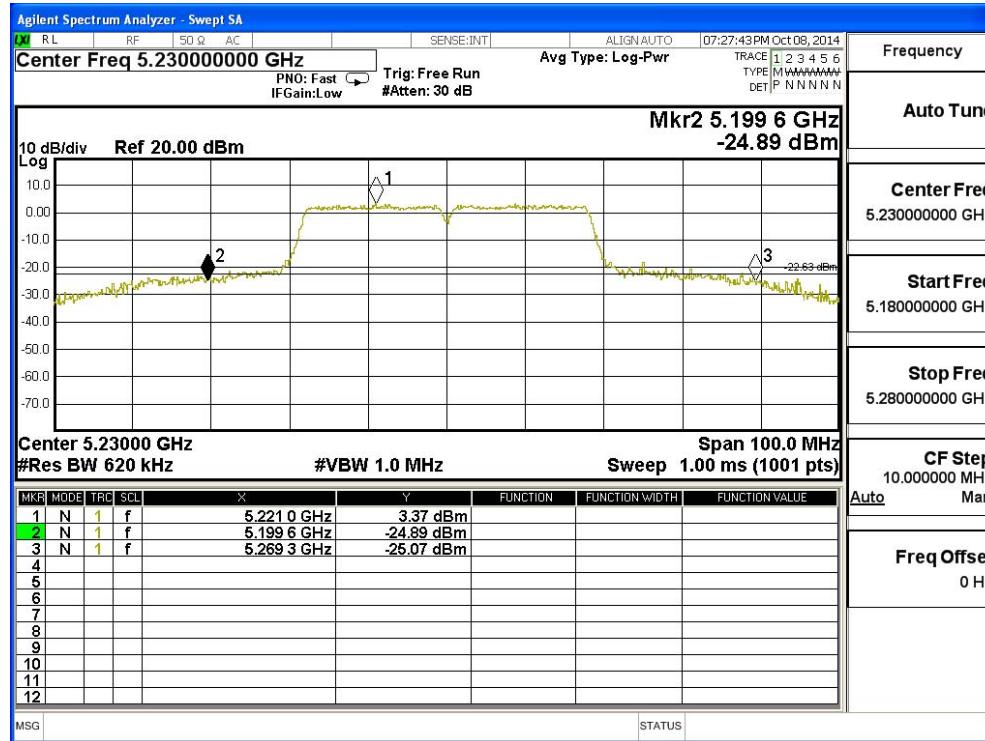
Note: Power Output Value =Reading value on average power meter + cable loss

## 26dBc Occupied Bandwidth:

### Channel 38



### Channel 46



## 4. Peak Power Spectral Density

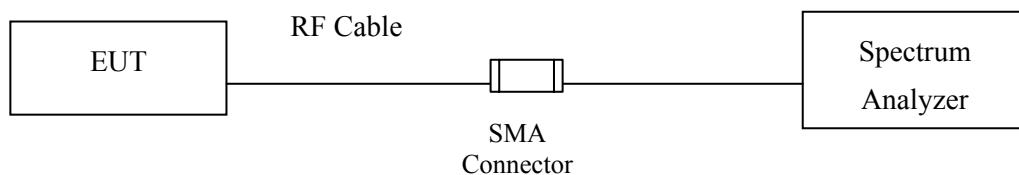
### 4.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 4.2. Test Setup



### 4.3. Limits

- (4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

#### **4.4. Test Procedure**

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.

SA-1 method is selected to run the test.

#### **4.5. Uncertainty**

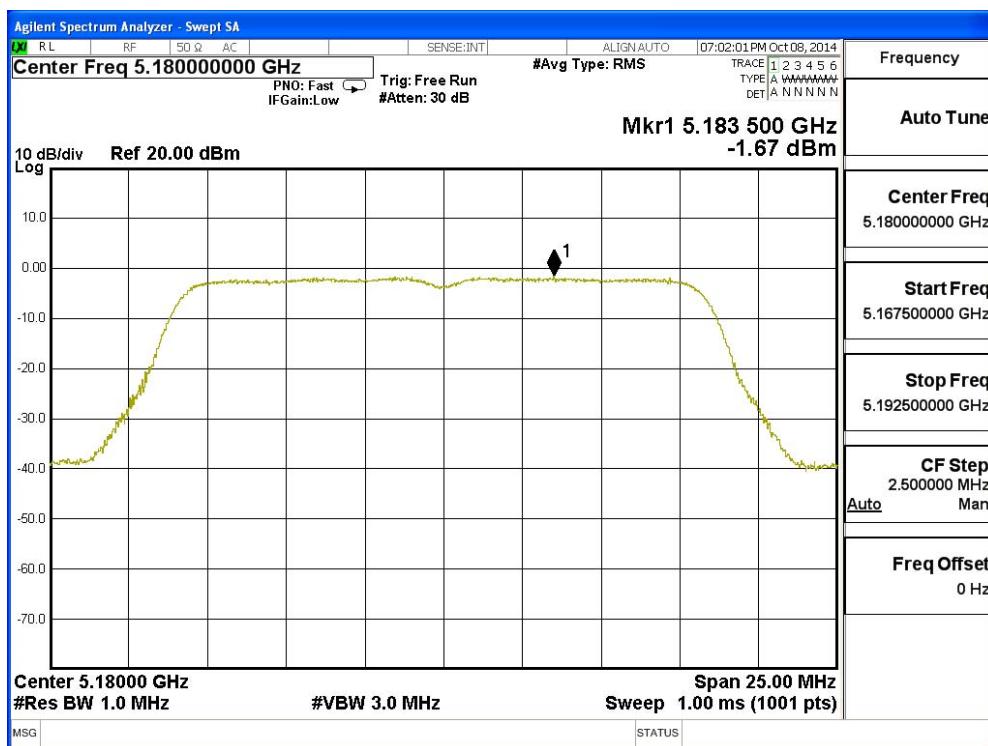
± 1.27 dB

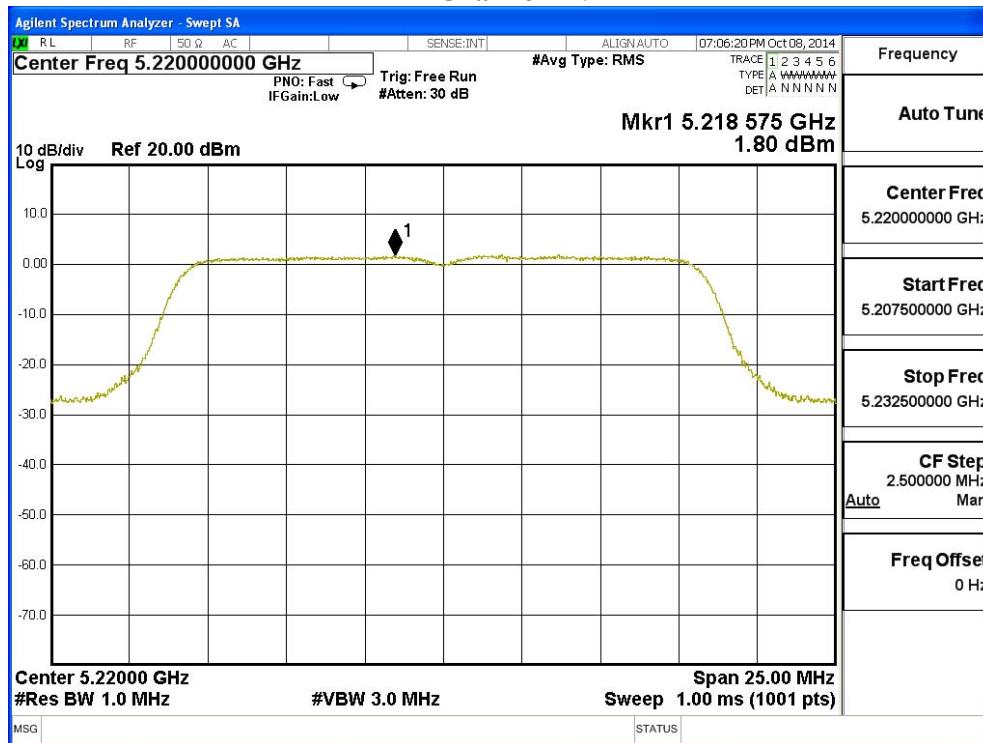
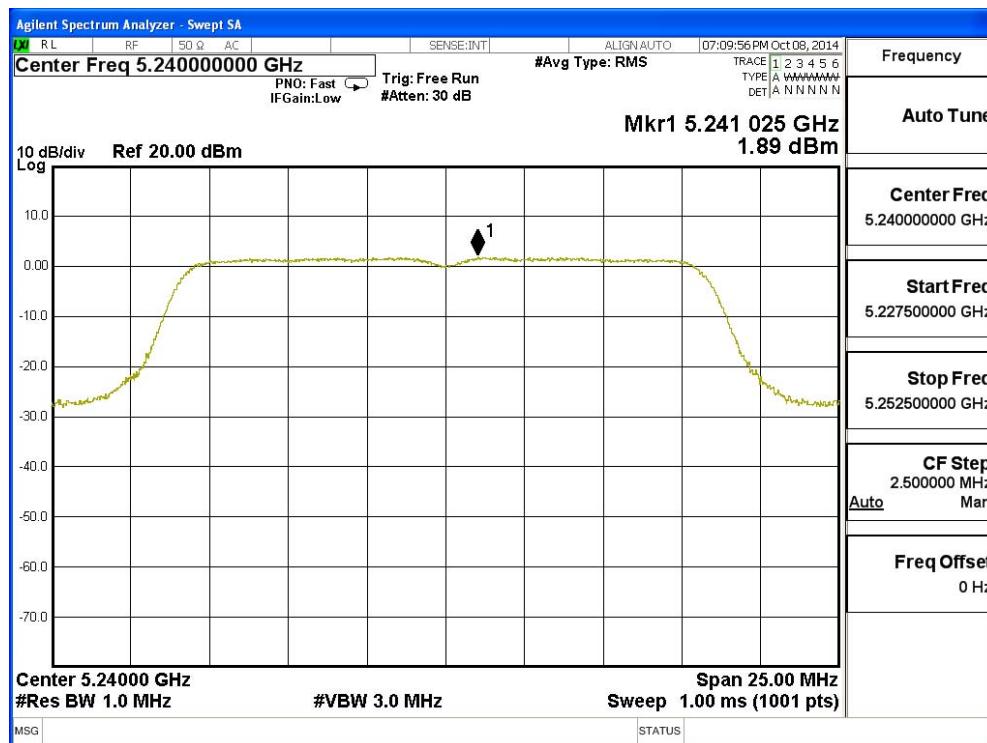
## 4.6. Test Result of Peak Power Spectral Density

Product : Network Media Module  
 Test Item : Peak Power Spectral Density  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	-1.670	<4	Pass
44	5220	1.800	<4	Pass
48	5240	1.890	<4	Pass

### Channel 36:

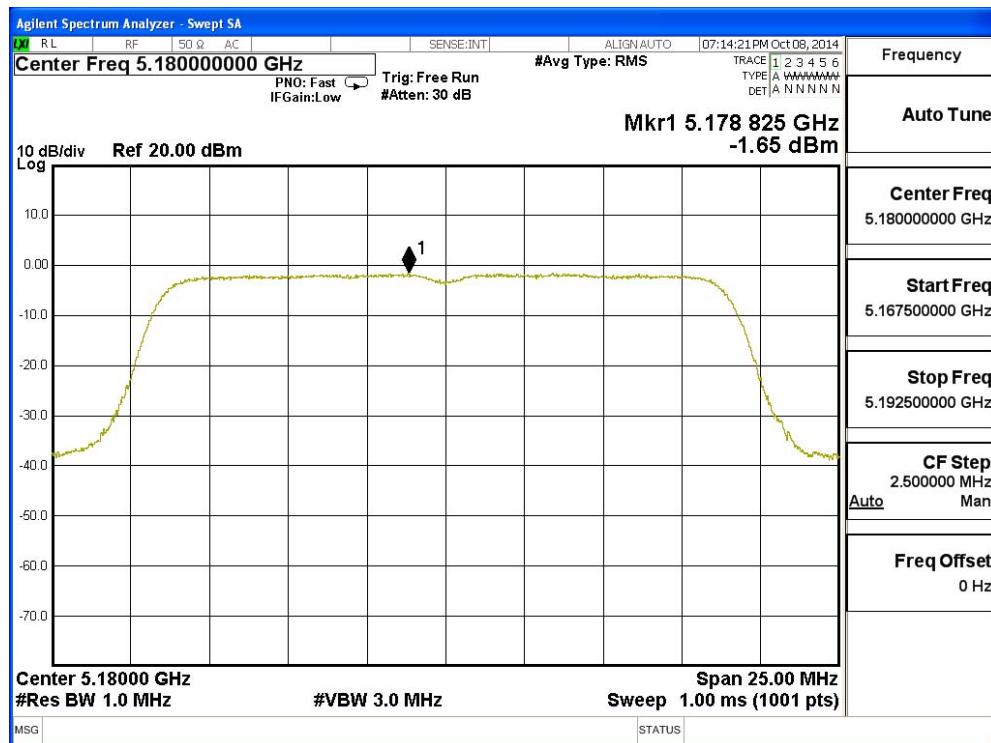


**Channel 44:**

**Channel 48:**


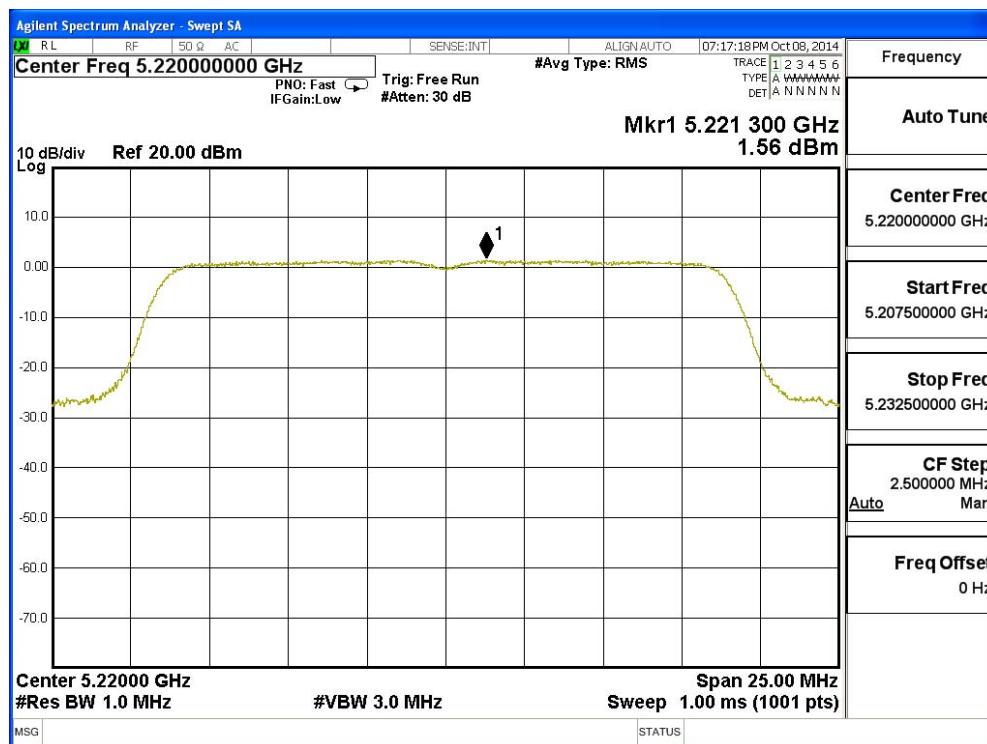
Product : Network Media Module  
 Test Item : Peak Power Spectral Density  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	-1.650	<4	Pass
44	5220	1.560	<4	Pass
48	5240	1.660	<4	Pass

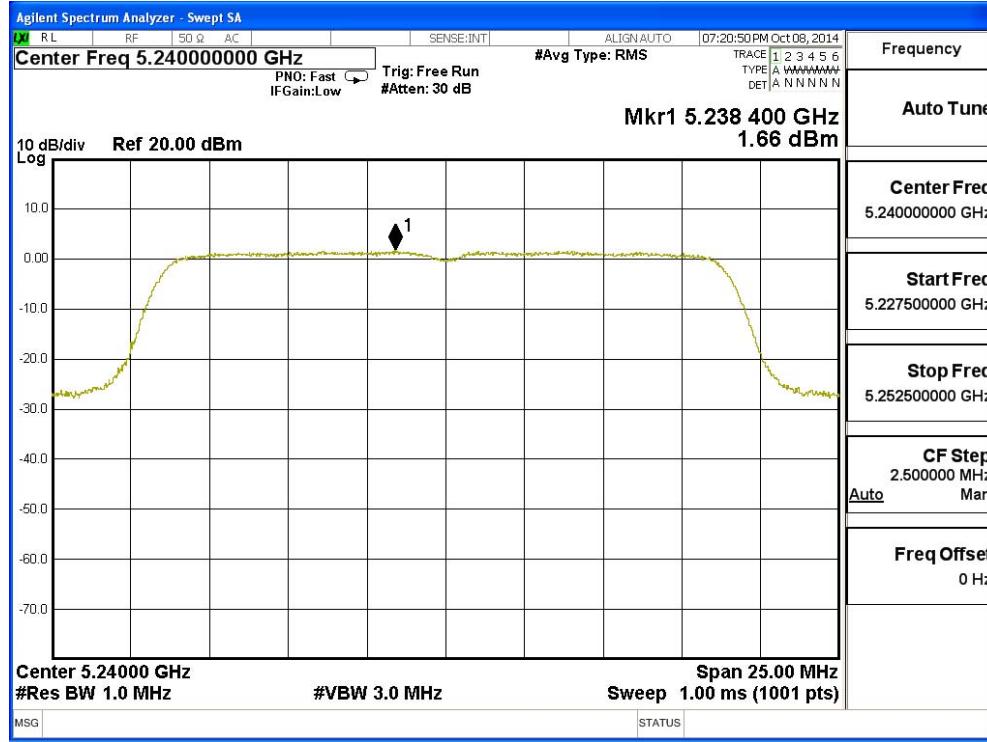
### Channel 36



### Channel 44



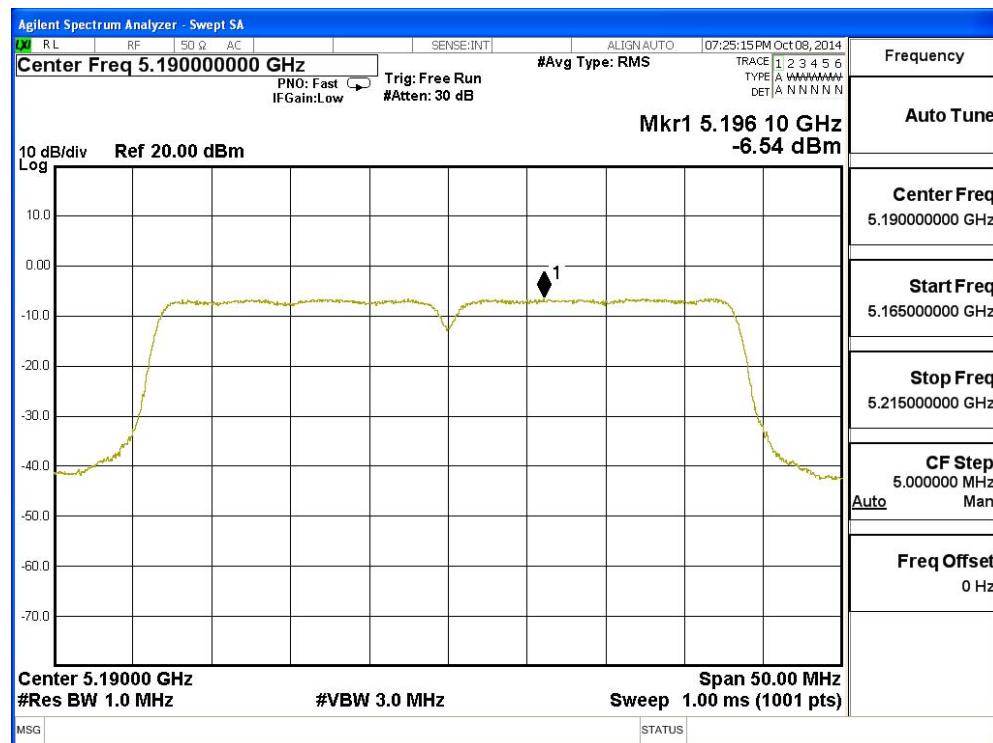
### Channel 48



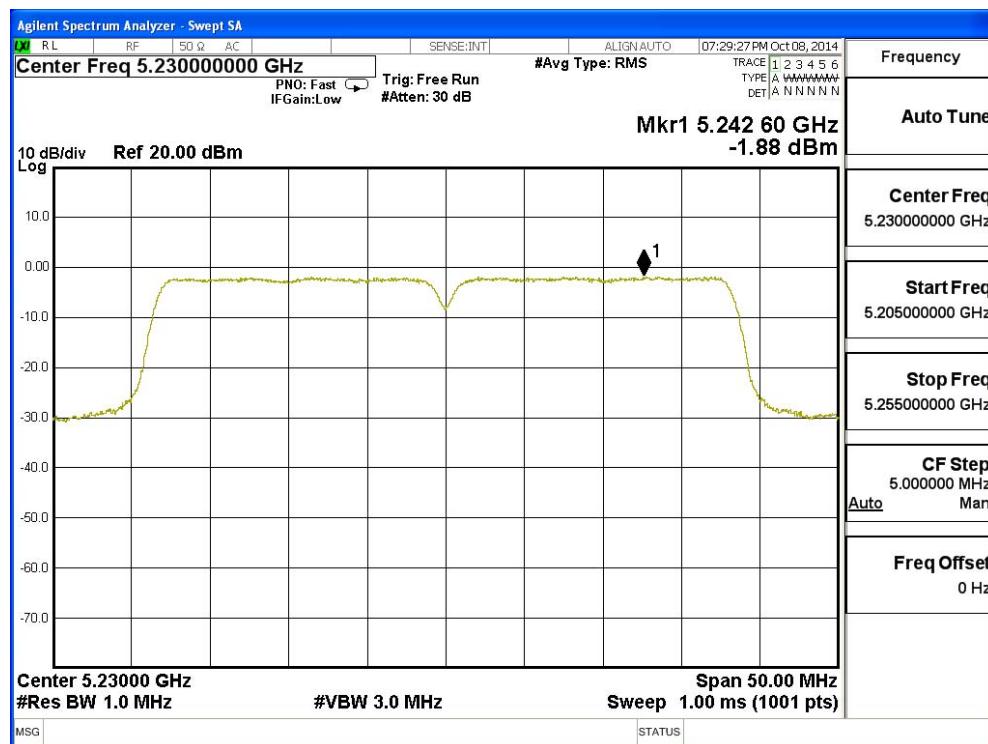
Product : Network Media Module  
 Test Item : Peak Power Spectral Density  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	-6.540	<4	Pass
46	5230	-1.880	<4	Pass

### Channel 38



### Channel 46



## 5. Peak Excursion

### 5.1. Test Equipment

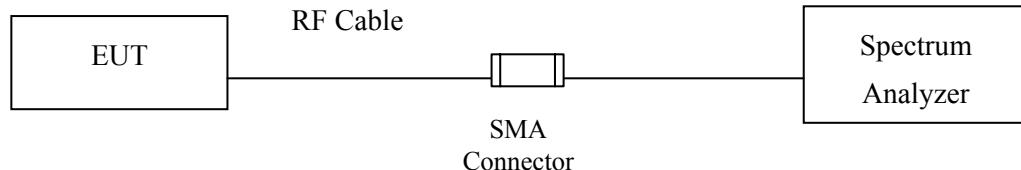
Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 5.2. Test Setup

#### Conduction Power Measurement



### 5.3. Limits

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

## 5.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

Step 1: Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

Step 2: Find the maximum of the peak-max-hold spectrum.

(Set RBW = 1 MHz, VBW  $\geq$  3 MHz, Detector = peak, Trace mode = max-hold,

Allow the sweeps to continue until the trace stabilizes, Use the peak search function to find the peak of the spectrum.)

Step 3: Use the procedure found under KDB-789033 F) to measure the PPSD.

Step 4: Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

## 5.5. Uncertainty

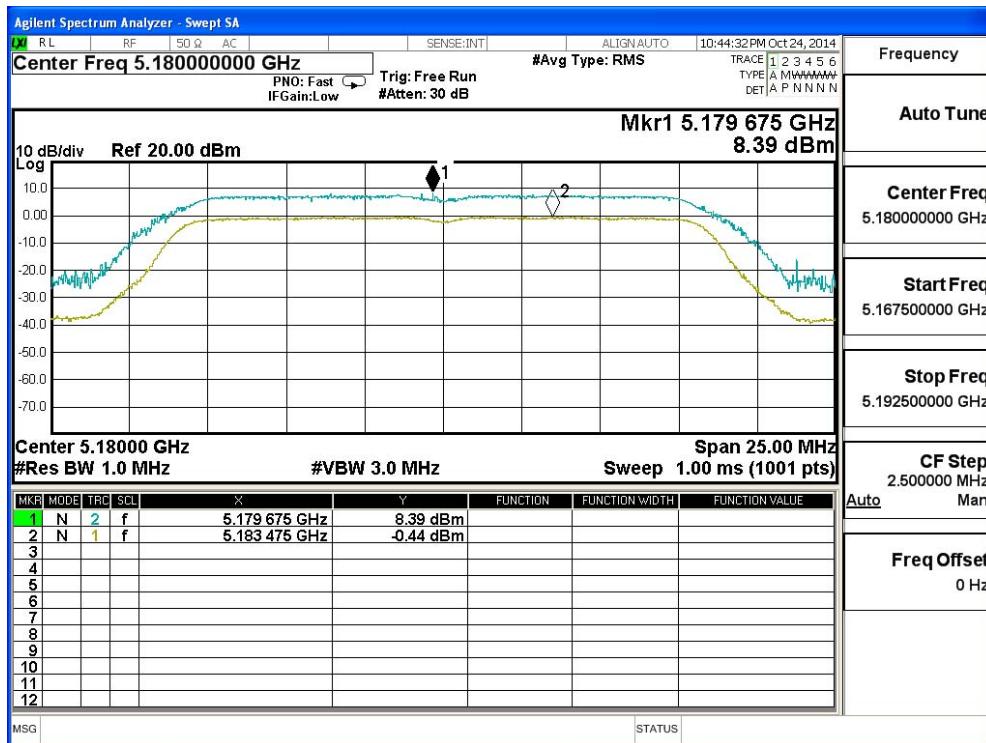
$\pm$  1.27 dB

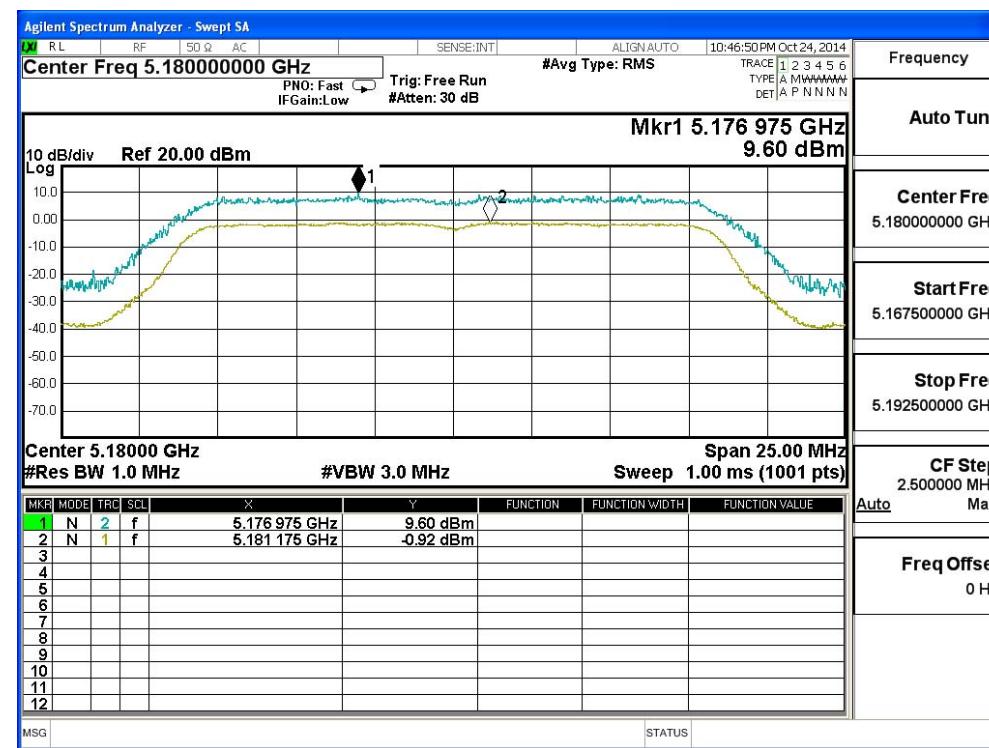
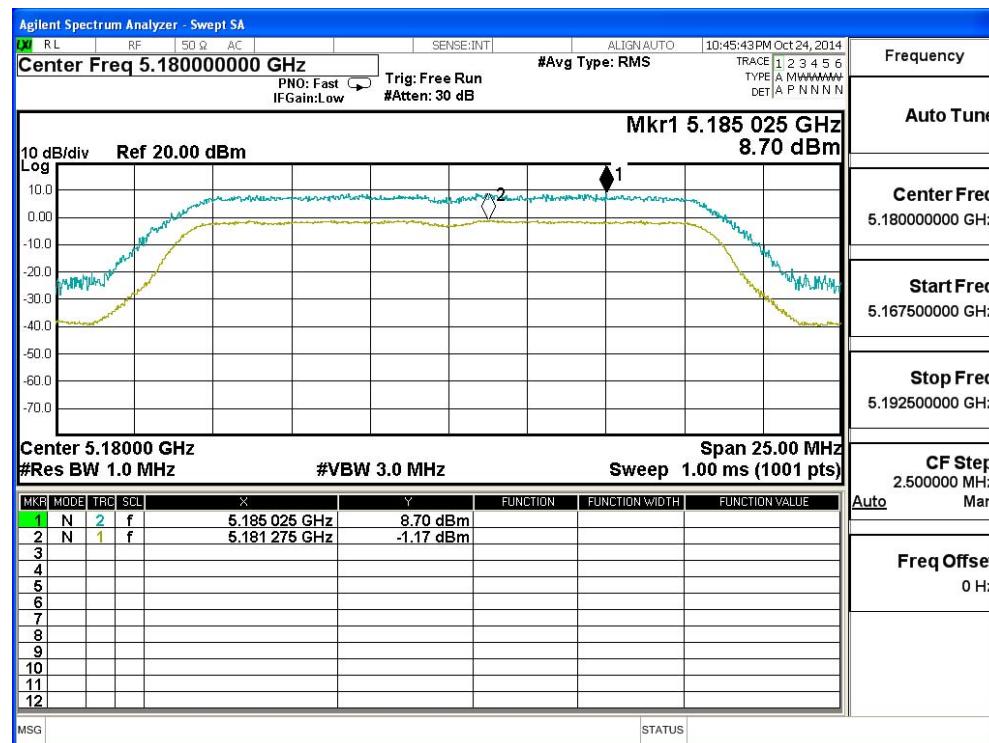
## 5.6. Test Result of Peak Excursion

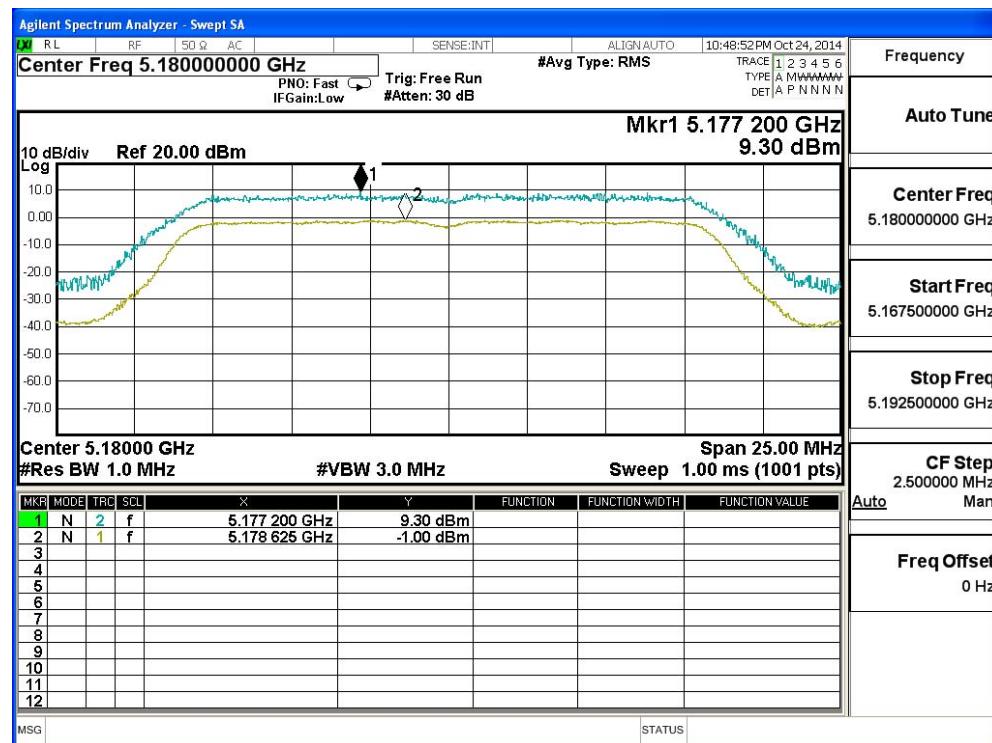
Product : Network Media Module  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	8.830	<13	Pass
		MCS (2)	9.870	<13	Pass
		MCS (4)	10.520	<13	Pass
		MCS (7)	10.300	<13	Pass

### Channel 36:



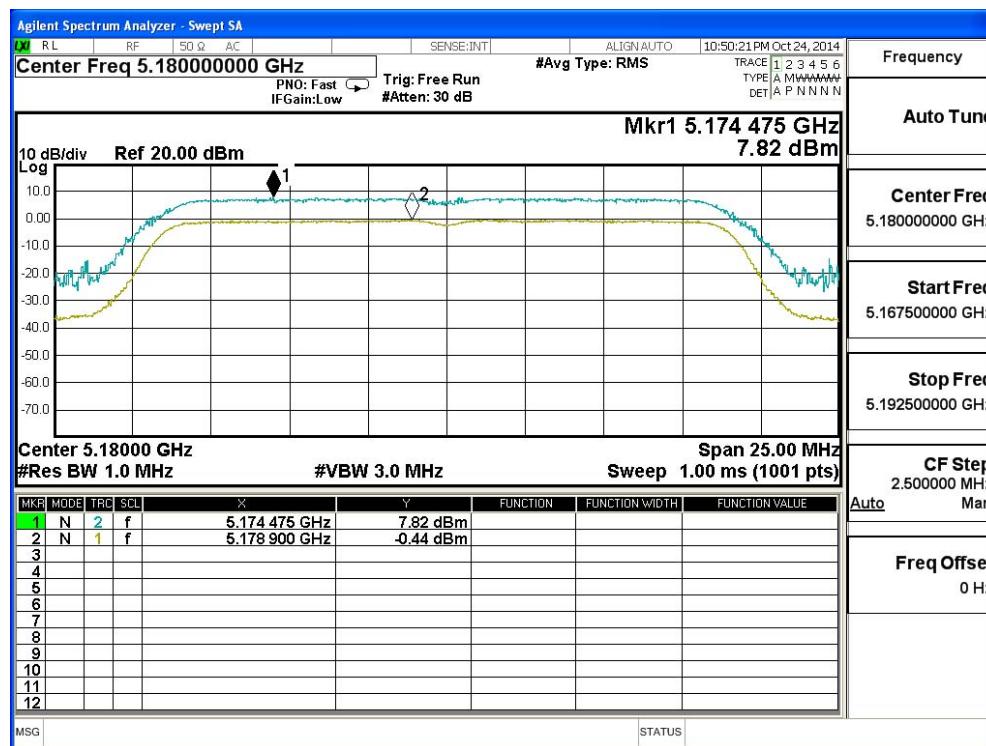


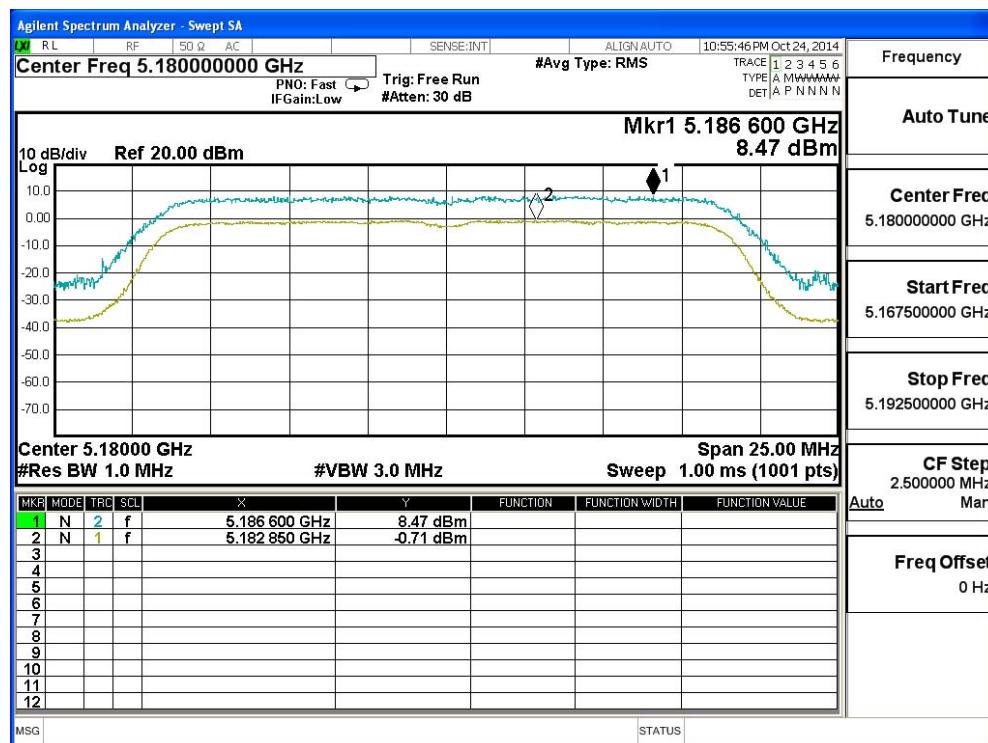
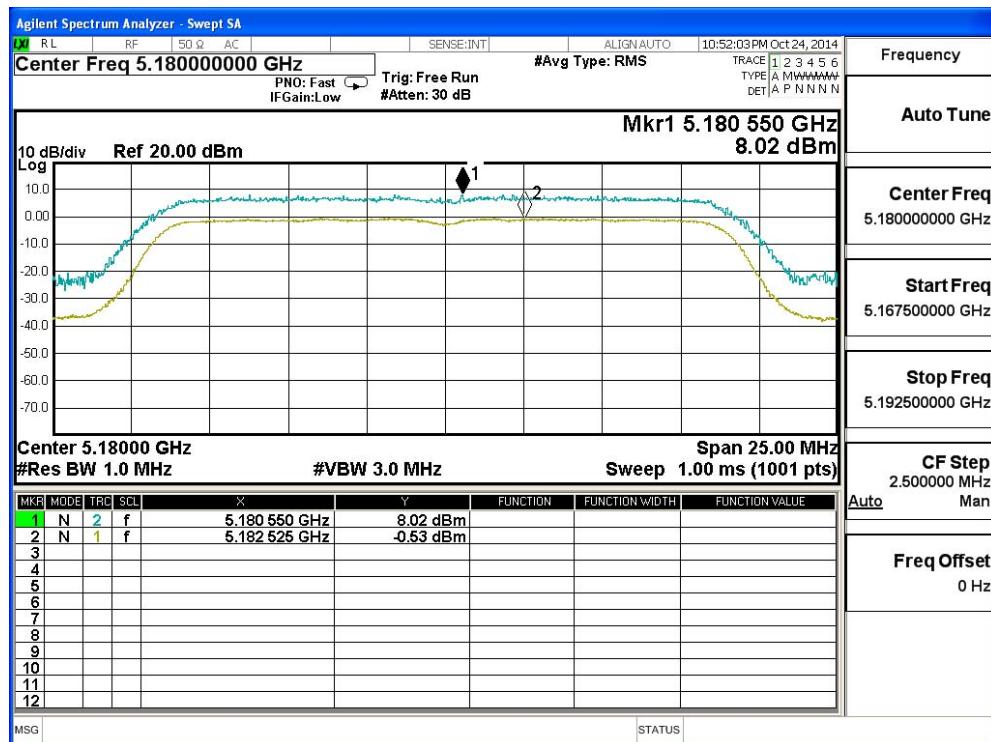


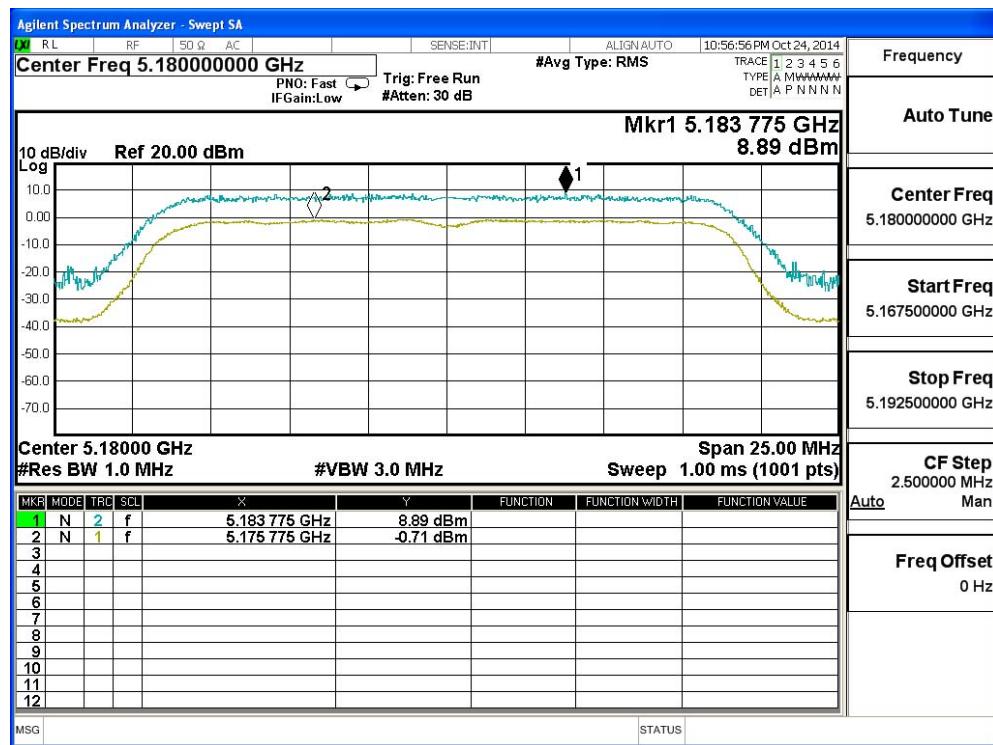
Product : Network Media Module  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	8.240	<13	Pass
		MCS (2)	8.550	<13	Pass
		MCS (4)	9.180	<13	Pass
		MCS (7)	9.600	<13	Pass

### Channel 36:



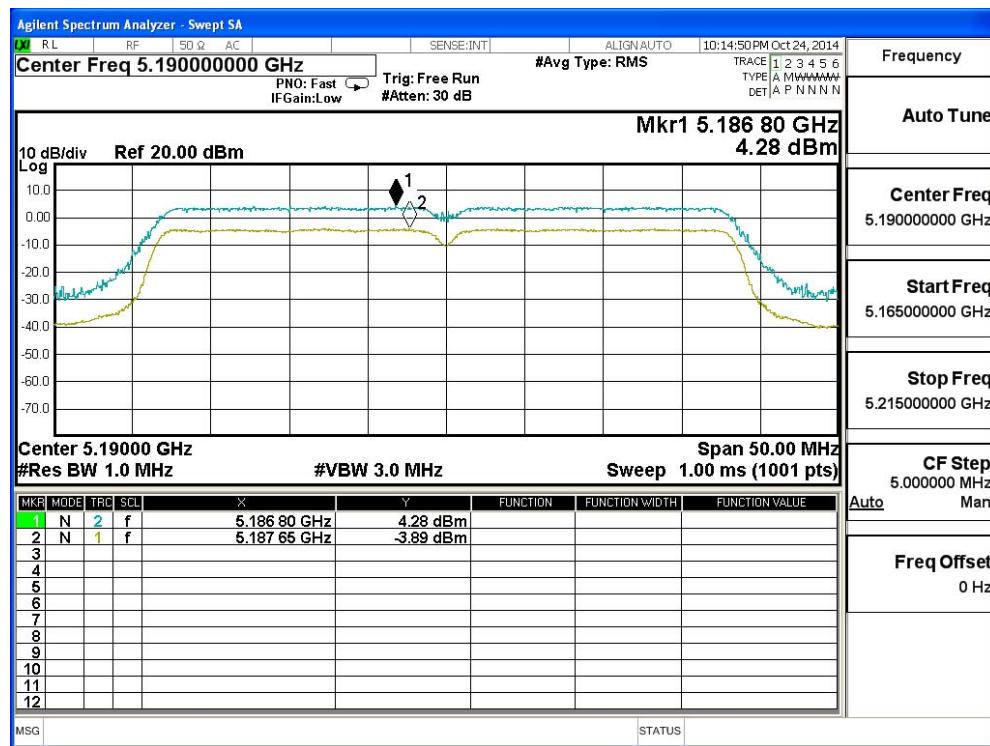


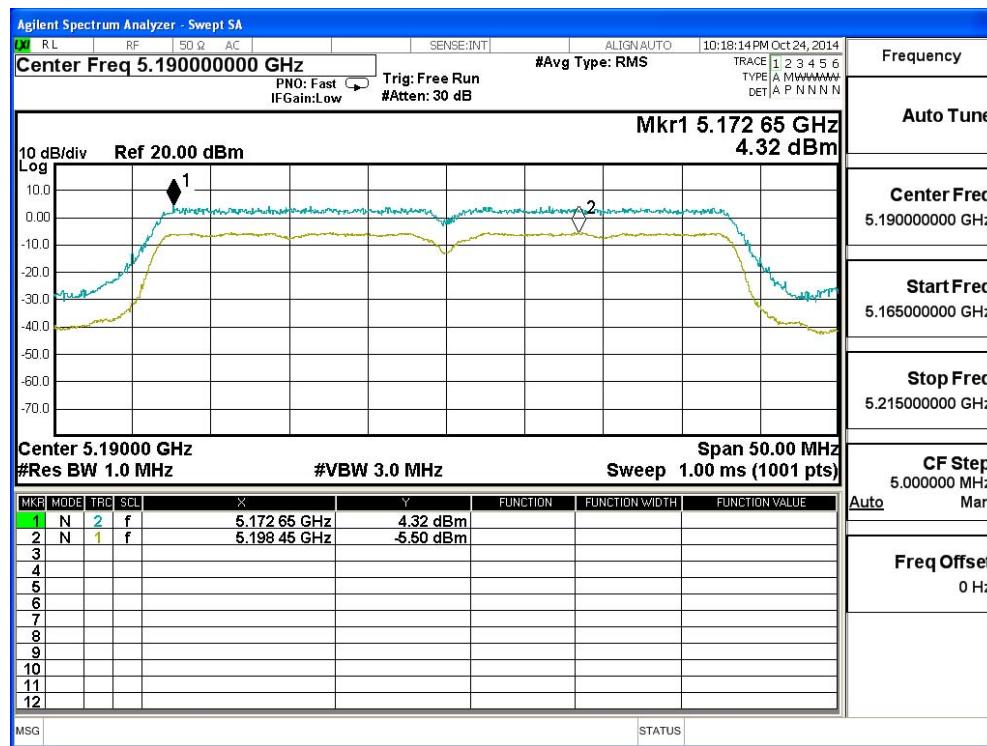
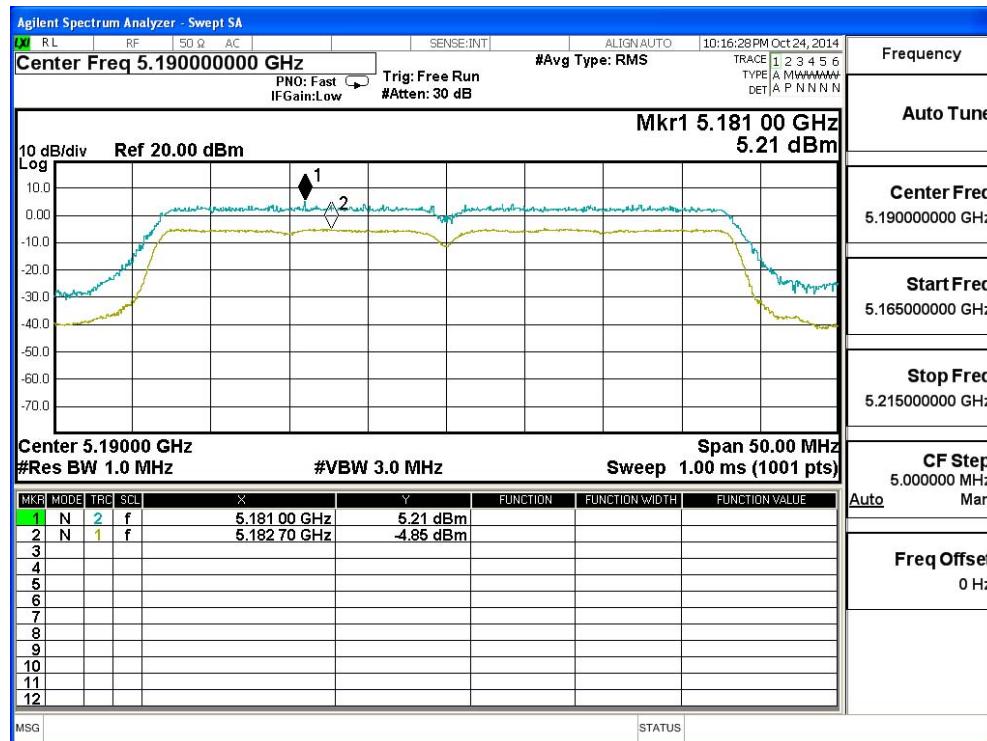


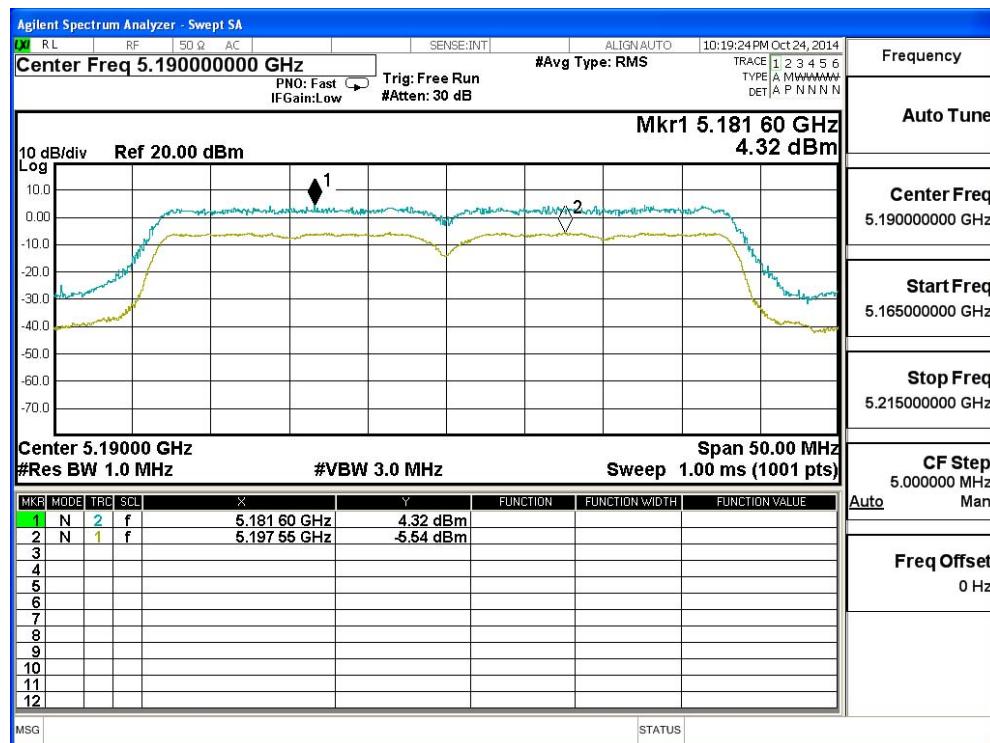
Product : Network Media Module  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	8.170	<13	Pass
		MCS (2)	10.060	<13	Pass
		MCS (4)	9.820	<13	Pass
		MCS (7)	9.860	<13	Pass

### Channel 38:







## 6. Radiated Emission

### 6.1. Test Equipment

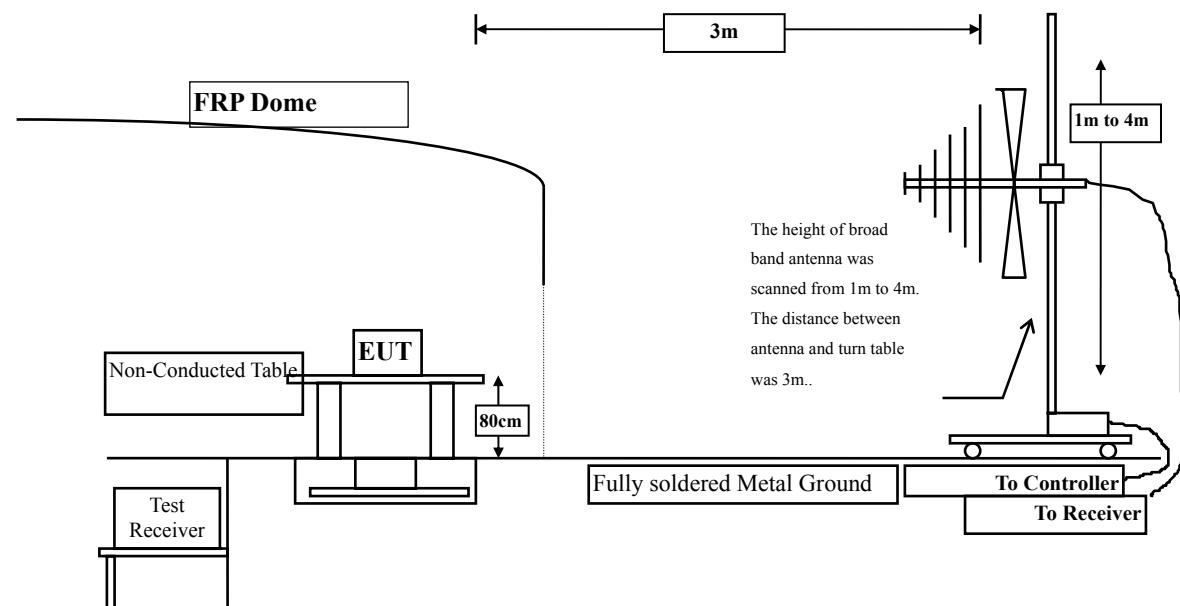
The following test equipments are used during the radiated emission test:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuiTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuiTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

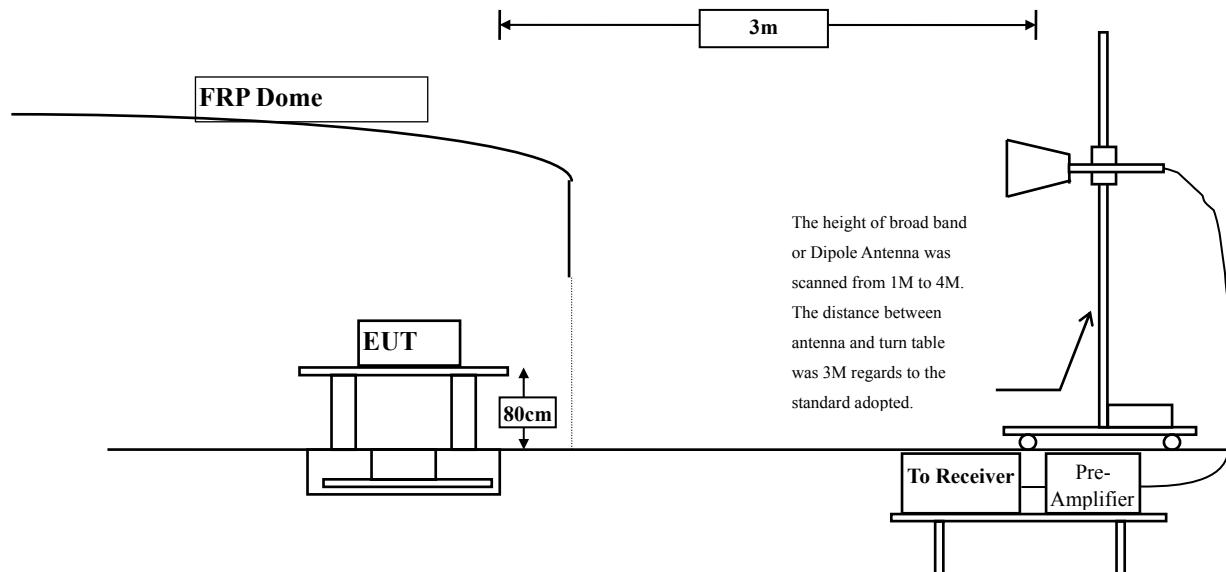
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.  
 2. The test instruments marked with "X" are used to measure the final test results.

### 6.2. Test Setup

#### Radiated Emission Below 1GHz



### Radiated Emission Above 1GHz



### 6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
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

Remarks: E field strength (dB $\mu$ V/m) = 20 log E field strength (uV/m)

## 6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10, 2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 9KHz - 10th Harmonic of fundamental was investigated.

## 6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

## 6.6. Test Result of Radiated Emission

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

Frequency MHz	Correct Factor	Reading Level dB $\mu$ V	Measurement Level dB $\mu$ V/m	Margin dB	Limit dB $\mu$ V/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4740.000	2.720	43.590	46.310	-27.690	74.000
10360.000	13.054	37.340	50.394	-23.606	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4740.000	6.407	51.910	58.317	-15.683	74.000
10360.000	13.848	37.020	50.868	-23.132	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
<b>Average Detector:</b>					
4740.000	6.407	41.080	47.487	-6.513	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m

**Horizontal****Peak Detector:**

4780.000	3.025	43.660	46.685	-27.315	74.000
10440.000	13.462	37.130	50.591	-23.409	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000

**Average****Detector:**

--

**Vertical****Peak Detector:**

4780.000	6.485	54.620	61.105	-12.895	74.000
10440.000	14.385	37.690	52.075	-21.925	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000

**Average****Detector:**

4780.000	6.485	42.690	49.175	-4.825	54.000
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**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m

**Horizontal****Peak Detector:**

4800.000	3.130	45.580	48.710	-25.290	74.000
10480.000	13.813	37.250	51.064	-22.936	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

**Average****Detector:**

--

**Vertical****Peak Detector:**

4800.000	6.467	54.720	61.187	-12.813	74.000
10480.000	14.740	36.920	51.660	-22.340	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

**Average****Detector:**

4800.000	6.467	43.070	49.537	-4.463	54.000
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## Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m

**Horizontal****Peak Detector:**

4740.000	2.720	42.300	45.020	-28.980	74.000
10360.000	13.054	36.870	49.924	-24.076	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000

**Average****Detector:**

--

**Vertical****Peak Detector:**

4740.000	6.407	52.780	59.187	-14.813	74.000
10360.000	13.848	36.880	50.728	-23.272	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000

**Average****Detector:**

4740.000	6.407	41.100	47.507	-6.493	54.000
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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dB $\mu$ V	Measurement Level dB $\mu$ V/m	Margin dB	Limit dB $\mu$ V/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4780.000	3.025	42.550	45.575	-28.425	74.000
10440.000	13.462	38.200	51.661	-22.339	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4780.000	6.485	53.130	59.615	-14.385	74.000
10440.000	14.385	37.250	51.635	-22.365	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
<b>Average Detector:</b>					
4780.000	6.485	42.170	48.655	-5.345	54.000

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m

**Horizontal****Peak Detector:**

4800.000	3.130	44.100	47.230	-26.770	74.000
10480.000	13.813	37.130	50.944	-23.056	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

**Average****Detector:**

--

**Vertical****Peak Detector:**

4800.000	6.467	52.890	59.357	-14.643	74.000
10480.000	14.740	38.090	52.830	-21.170	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

**Average****Detector:**

4800.000	6.467	42.140	48.607	-5.393	54.000
----------	-------	--------	--------	--------	--------

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency MHz	Correct Factor	Reading Level dB	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4750.000	2.796	41.190	43.986	-30.014	74.000
10380.000	13.081	36.380	49.461	-24.539	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4750.000	6.426	49.730	56.156	-17.844	74.000
10380.000	13.938	35.740	49.678	-24.322	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
<b>Average Detector:</b>					
4750.000	6.426	38.360	44.786	-9.214	54.000

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

Frequency MHz	Correct Factor	Reading Level dB	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4790.000	3.101	42.010	45.111	-28.889	74.000
10460.000	13.638	37.400	51.038	-22.962	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4790.000	6.504	50.290	56.794	-17.206	74.000
10460.000	14.563	37.320	51.883	-22.117	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
<b>Average Detector:</b>					
4790.000	6.504	38.440	44.944	-9.056	54.000

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Network Media Module  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m

**Horizontal****Peak Detector**

105.660	-6.673	35.428	28.755	-14.745	43.500
247.280	-6.192	38.901	32.708	-13.292	46.000
400.540	-2.276	35.637	33.361	-12.639	46.000
565.440	1.611	30.684	32.295	-13.705	46.000
701.240	2.668	35.078	37.746	-8.254	46.000
837.040	5.103	28.092	33.194	-12.806	46.000

**Vertical****Peak Detector**

109.540	-0.418	35.623	35.205	-8.295	43.500
247.280	-8.042	38.901	30.858	-15.142	46.000
400.540	-5.156	35.636	30.481	-15.519	46.000
549.920	-2.877	40.075	37.198	-8.802	46.000
701.240	0.198	35.078	35.276	-10.724	46.000
837.040	2.223	28.092	30.314	-15.686	46.000

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
<b>Peak Detector</b>					
107.600	-7.058	35.813	28.755	-14.745	43.500
293.840	-3.868	34.401	30.534	-15.466	46.000
449.040	-2.238	35.769	33.531	-12.469	46.000
610.060	4.101	33.582	37.683	-8.317	46.000
749.740	3.320	35.075	38.395	-7.605	46.000
881.660	6.307	27.493	33.800	-12.200	46.000
<b>Vertical</b>					
<b>Peak Detector</b>					
105.660	-0.253	35.428	35.175	-8.325	43.500
247.280	-8.042	38.901	30.858	-15.142	46.000
400.540	-5.156	35.636	30.481	-15.519	46.000
549.920	-2.877	40.075	37.198	-8.802	46.000
650.800	-4.705	41.220	36.515	-9.485	46.000
749.740	2.510	35.075	37.585	-8.415	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
<b>Peak Detector</b>					
107.600	-7.058	35.813	28.755	-14.745	43.500
247.280	-6.192	38.901	32.708	-13.292	46.000
449.040	-2.238	35.769	33.531	-12.469	46.000
610.060	4.101	33.582	37.683	-8.317	46.000
749.740	3.320	35.075	38.395	-7.605	46.000
881.660	6.307	27.493	33.800	-12.200	46.000
<b>Vertical</b>					
<b>Peak Detector</b>					
105.660	-0.253	35.428	35.175	-8.325	43.500
247.280	-8.042	38.901	30.858	-15.142	46.000
400.540	-5.156	35.636	30.481	-15.519	46.000
549.920	-2.877	40.075	37.198	-8.802	46.000
701.240	0.198	35.078	35.276	-10.724	46.000
881.660	2.557	27.493	30.050	-15.950	46.000

## Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

## 7. Band Edge

### 7.1. Test Equipment

#### RF Conducted Measurement

The following test equipments are used during the band edge tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

#### RF Radiated Measurement:

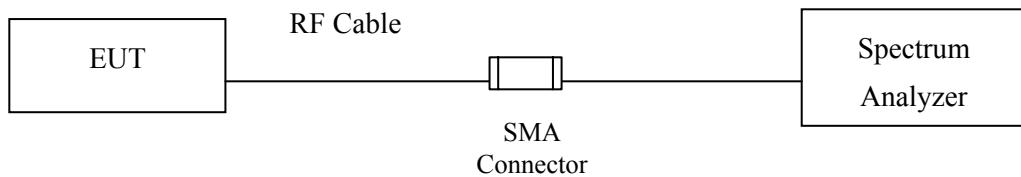
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Site # 3	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/925975	Mar, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

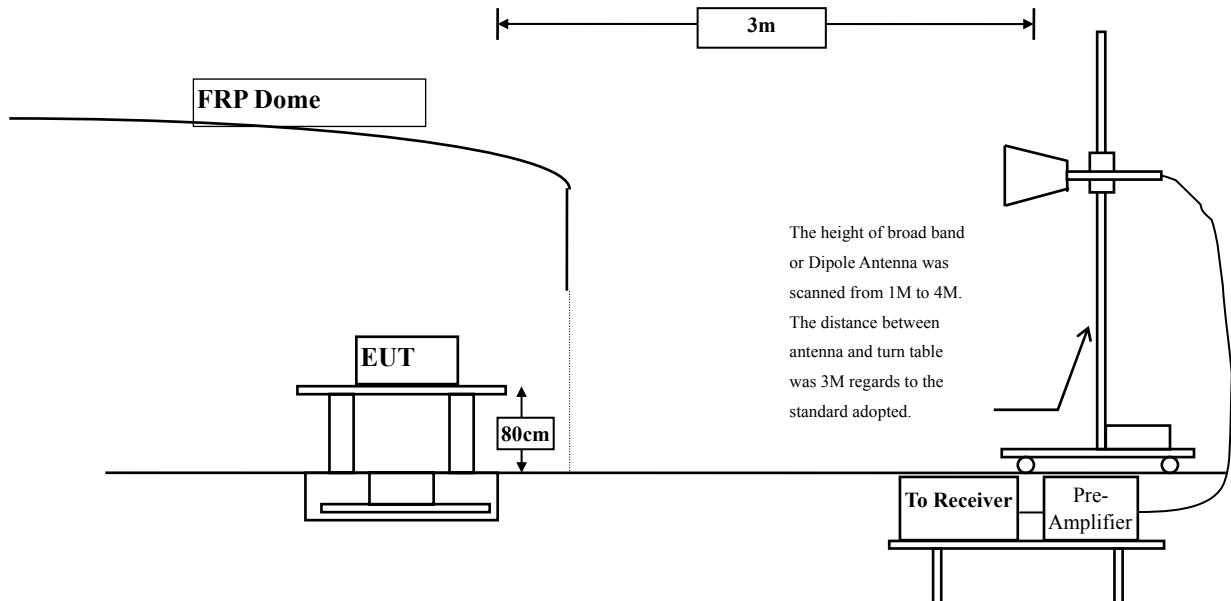
- Note:
1. All instruments are calibrated every one year.
  2. The test instruments marked by "X" are used to measure the final test results.

## 7.2. Test Setup

### RF Conducted Measurement:



### RF Radiated Measurement:



### 7.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dB $\mu$ V/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dB $\mu$ V) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### 7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

### 7.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

## 7.6. Test Result of Band Edge

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36

### RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
36 (Peak)	5106.400	3.476	50.387	53.864	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	45.834	49.174	74.00	54.00	Pass
36 (Average)	5106.200	3.477	39.408	42.885	74.00	54.00	Pass
36 (Average)	5150.000	3.340	32.282	35.622	74.00	54.00	Pass
36 (Average)	5178.800	3.238	79.869	83.107	--	--	Pass

Figure Channel 36:

Horizontal (Peak)

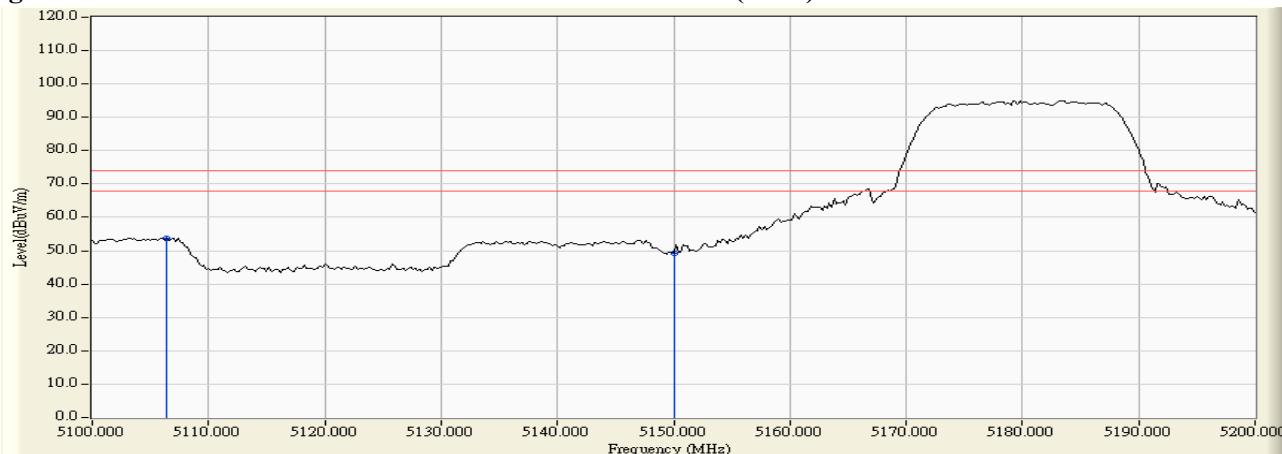
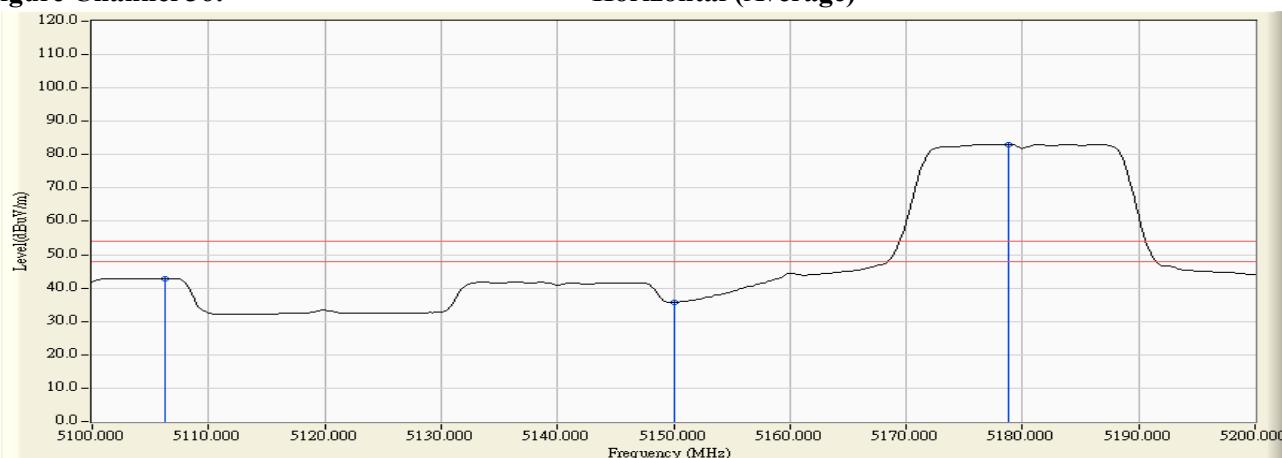


Figure Channel 36:

Horizontal (Average)



- Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
  2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
  3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
  4. “\*”, means this data is the worst emission level.
  5. Measurement Level = Reading Level + Correct Factor.
  6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36

#### RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
36 (Peak)	5145.600	5.248	59.696	64.944	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	57.900	63.160	74.00	54.00	Pass
36 (Peak)	5183.400	5.351	101.069	106.420	--	--	Pass
36 (Average)	5146.800	5.251	47.802	53.053	74.00	54.00	Pass
36 (Average)	5150.000	5.260	41.412	46.672	74.00	54.00	Pass
36 (Average)	5186.000	5.359	88.899	94.257	--	--	Pass

Figure Channel 36:

Vertical (Peak)

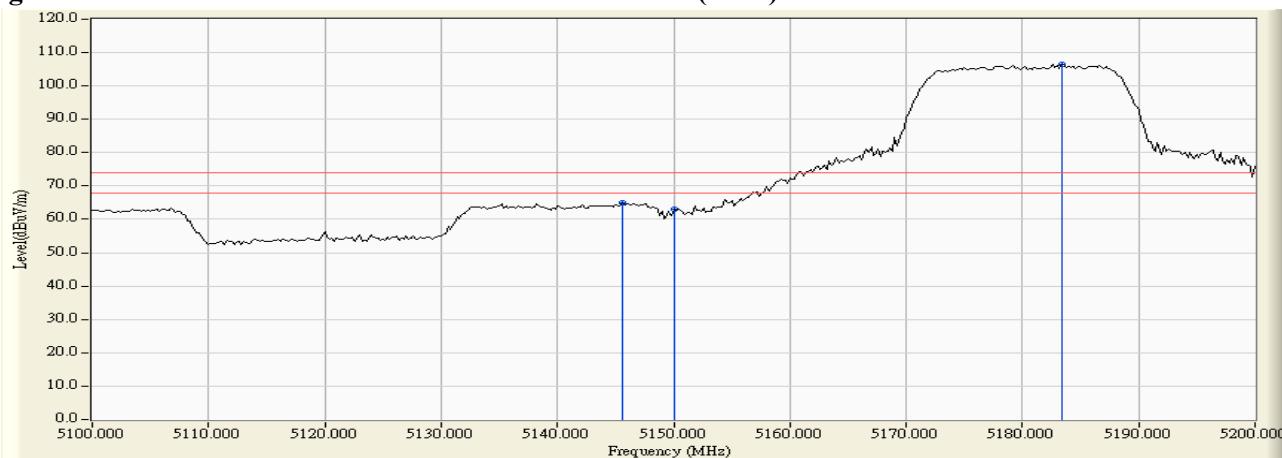
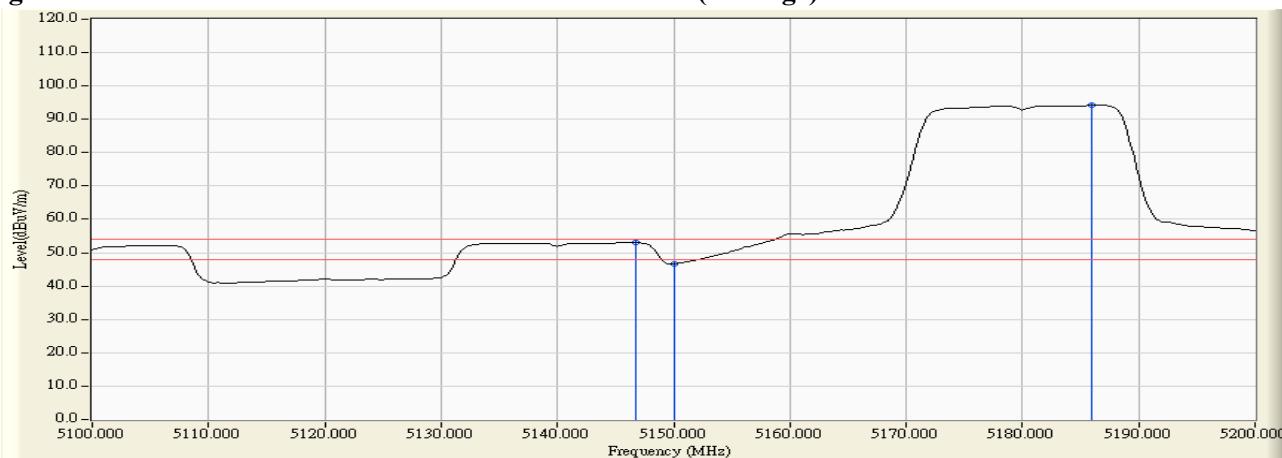


Figure Channel 36:

Vertical (Average)



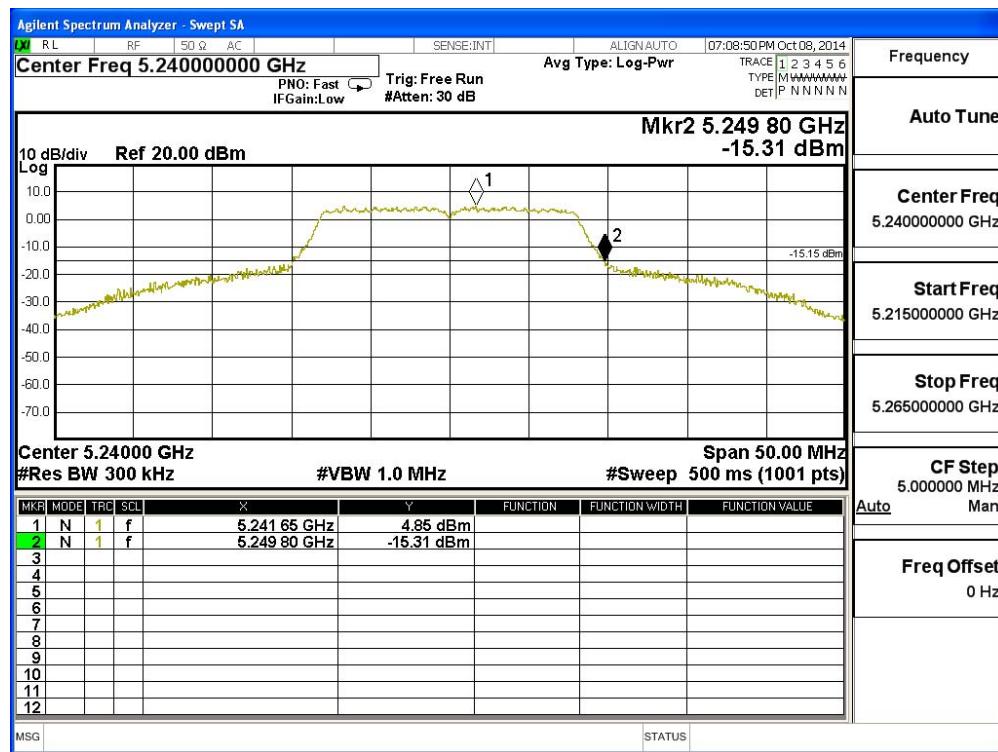
#### Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “\*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 48

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.80	<5250	PASS

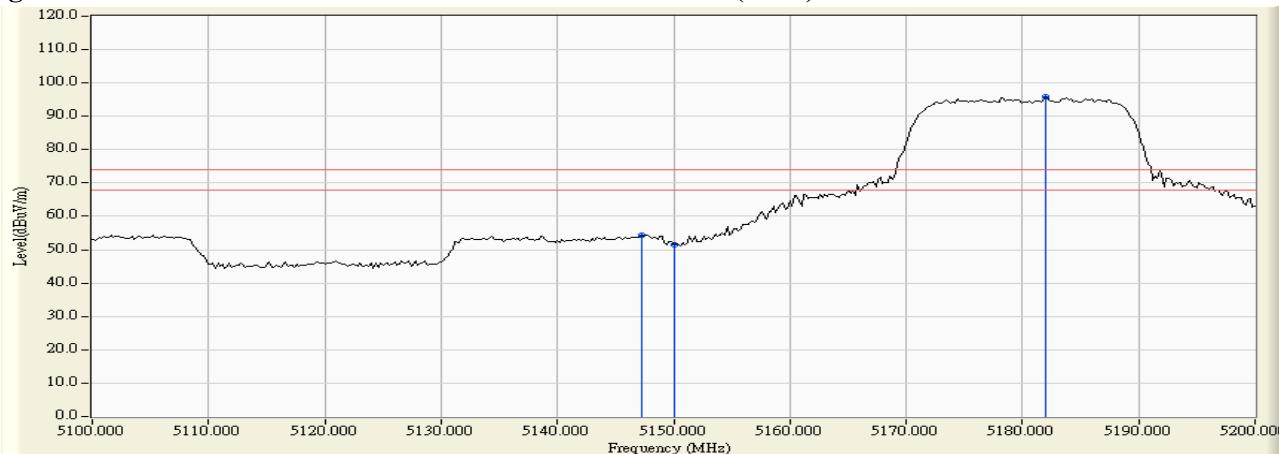
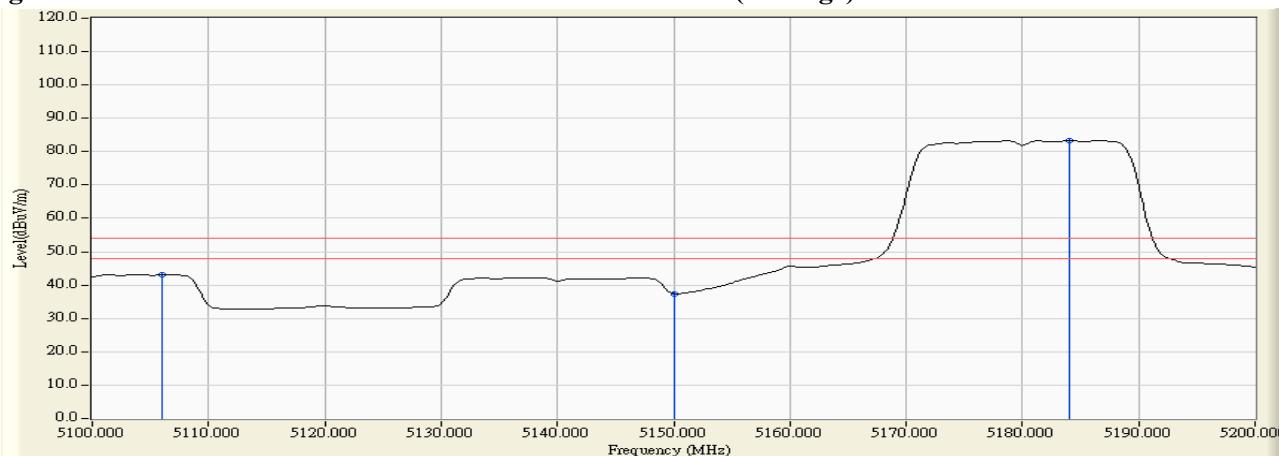
NOTE: Accordance with 15.215 requirement.



Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 36

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
36 (Peak)	5147.200	3.350	51.113	54.463	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	48.147	51.487	74.00	54.00	Pass
36 (Peak)	5182.000	3.227	92.684	95.911	--	--	Pass
36 (Average)	5106.000	3.476	39.568	43.045	74.00	54.00	Pass
36 (Average)	5150.000	3.340	34.119	37.459	74.00	54.00	Pass
36 (Average)	5184.000	3.220	80.081	83.301	--	--	Pass

**Figure Channel 36:****Horizontal (Peak)****Figure Channel 36:****Horizontal (Average)**

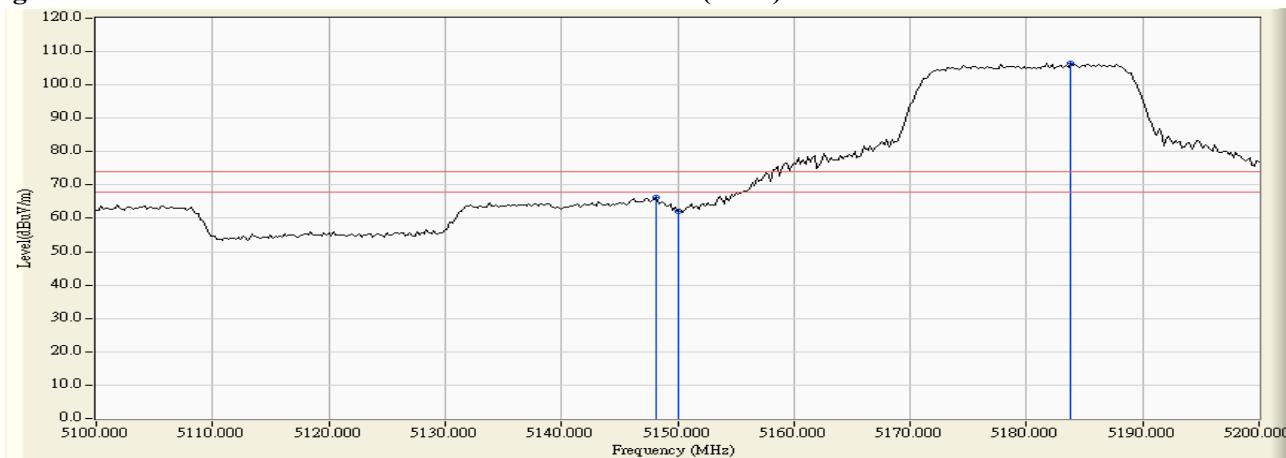
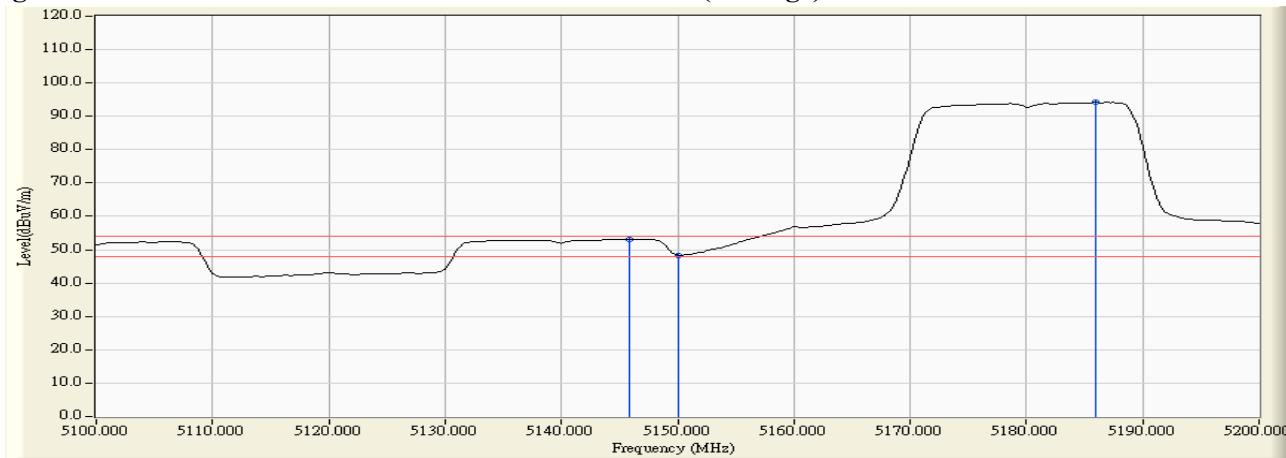
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “\*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 36

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
36 (Peak)	5148.200	5.255	60.947	66.202	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	56.707	61.967	74.00	54.00	Pass
36 (Peak)	5183.800	5.352	101.093	106.445	--	--	Pass
36 (Average)	5145.800	5.248	47.884	53.132	74.00	54.00	Pass
36 (Average)	5150.000	5.260	43.089	48.349	74.00	54.00	Pass
36 (Average)	5186.000	5.359	88.794	94.152	--	--	Pass

**Figure Channel 36:****Vertical (Peak)****Figure Channel 36:****Vertical (Average)**

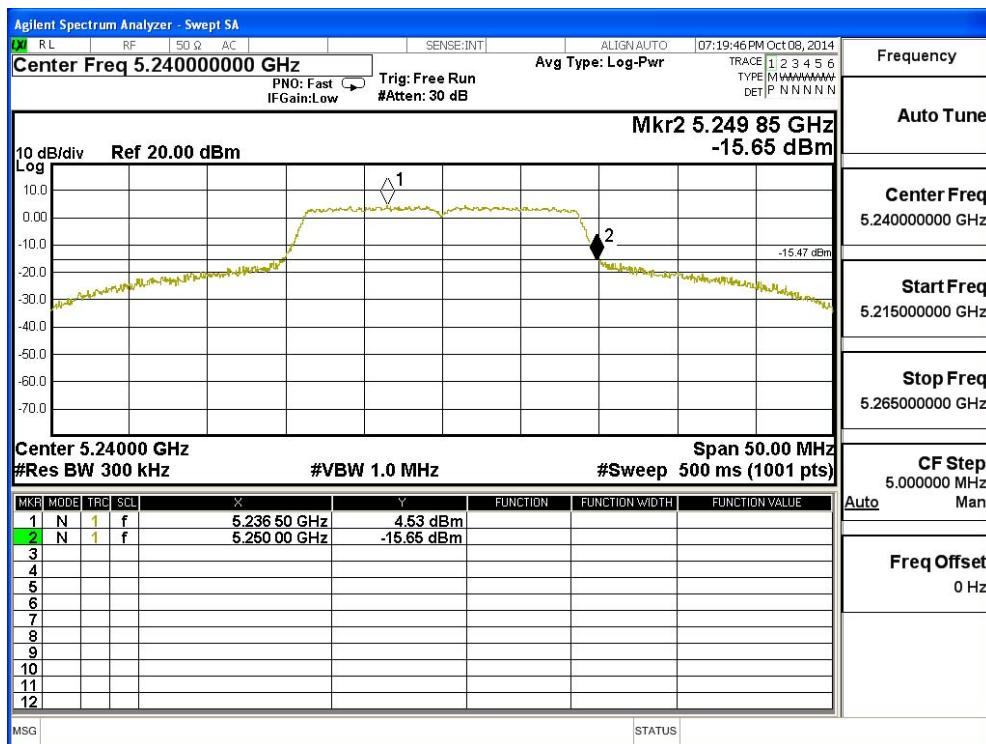
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 48

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.85	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 38

#### RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
38 (Peak)	5149.000	3.344	54.757	58.101	74.00	54.00	Pass
38 (Peak)	5150.000	3.340	52.359	55.699	74.00	54.00	Pass
38 (Peak)	5187.800	3.207	88.068	91.274	--	--	Pass
38 (Average)	5147.600	3.348	37.454	40.803	74.00	54.00	Pass
38 (Average)	5150.000	3.340	36.832	40.172	74.00	54.00	Pass
38 (Average)	5187.400	3.208	74.287	77.495	--	--	Pass

Figure Channel 38:

Horizontal (Peak)

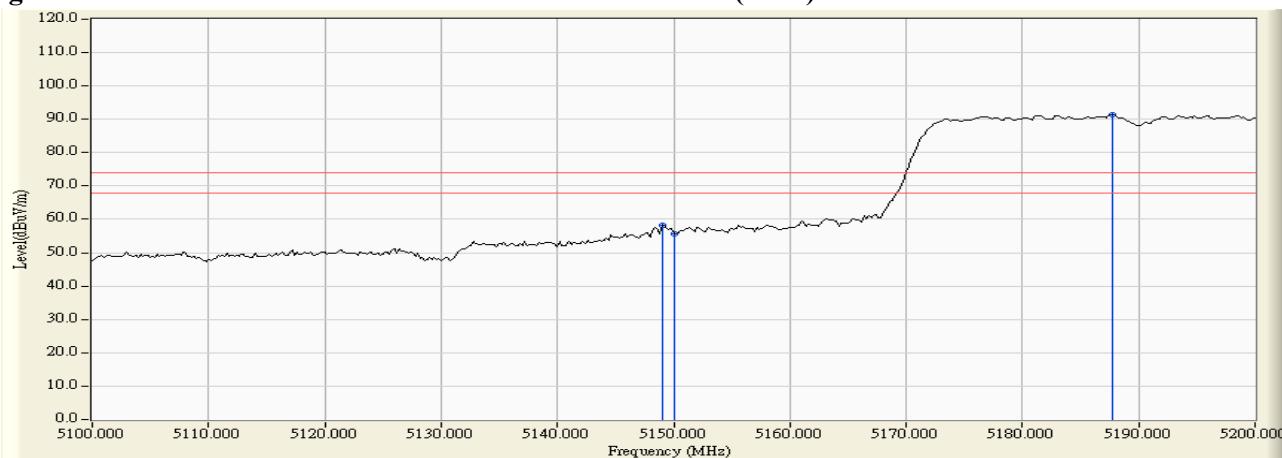
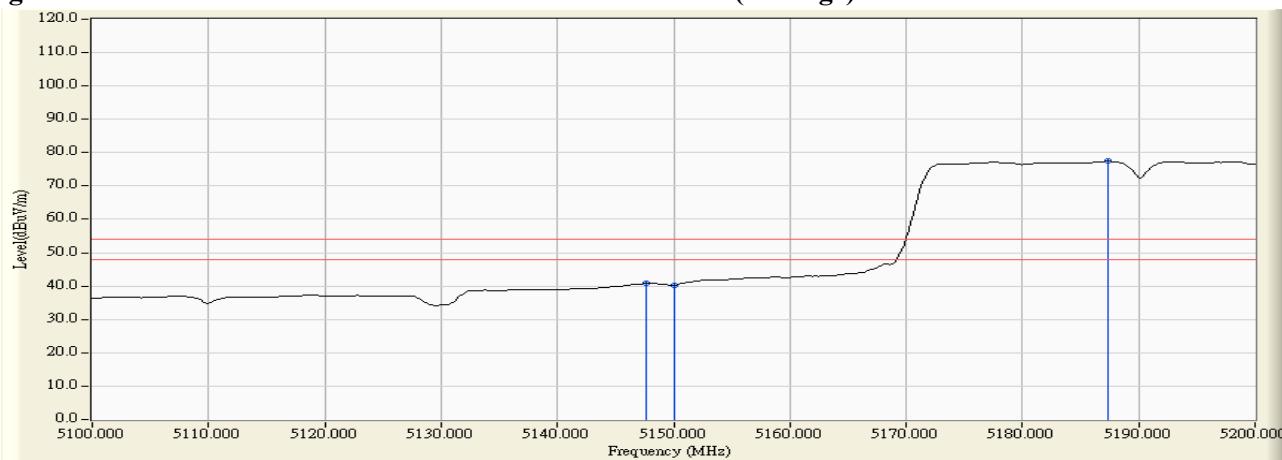


Figure Channel 38:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 38

#### RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Result
38 (Peak)	5147.800	5.254	68.279	73.533	74.00	54.00	Pass
38 (Peak)	5150.000	5.260	65.650	70.910	74.00	54.00	Pass
38 (Peak)	5198.800	5.383	98.083	103.466	--	--	Pass
38 (Average)	5150.000	5.260	47.456	52.716	74.00	54.00	Pass
38 (Average)	5199.000	5.383	84.169	89.552	--	--	Pass

Figure Channel 38:

Vertical (Peak)

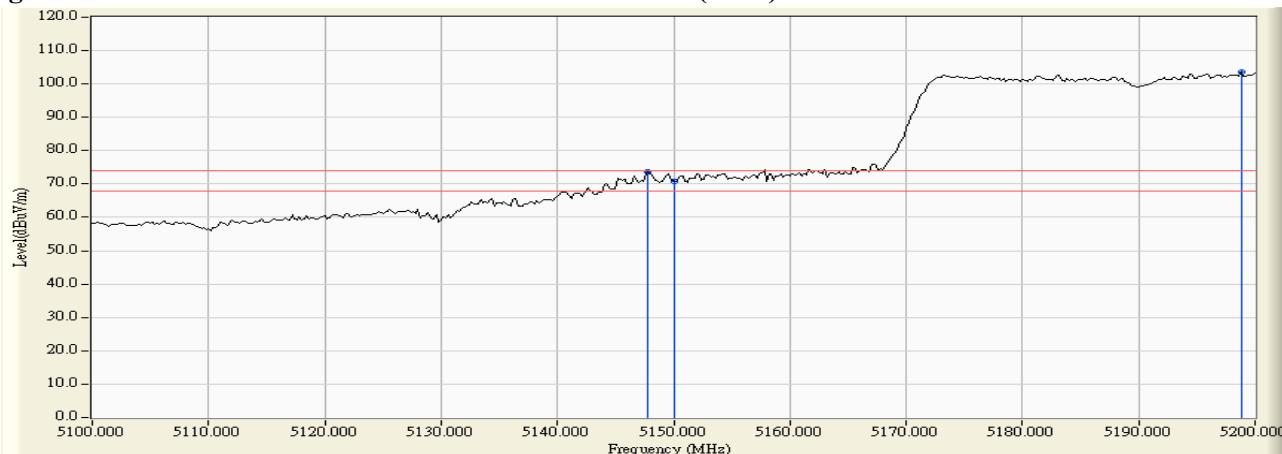
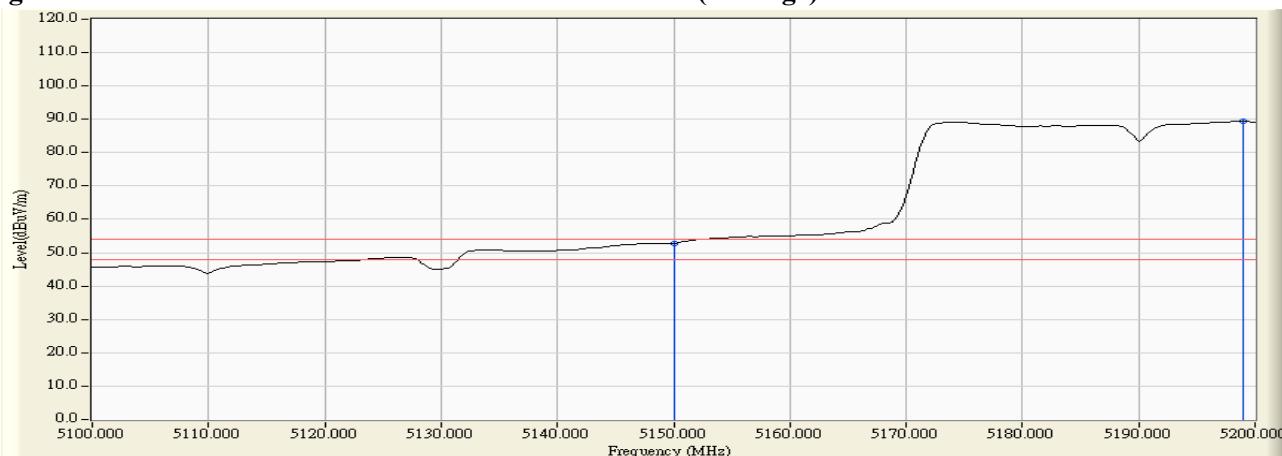


Figure Channel 38:

Vertical (Average)



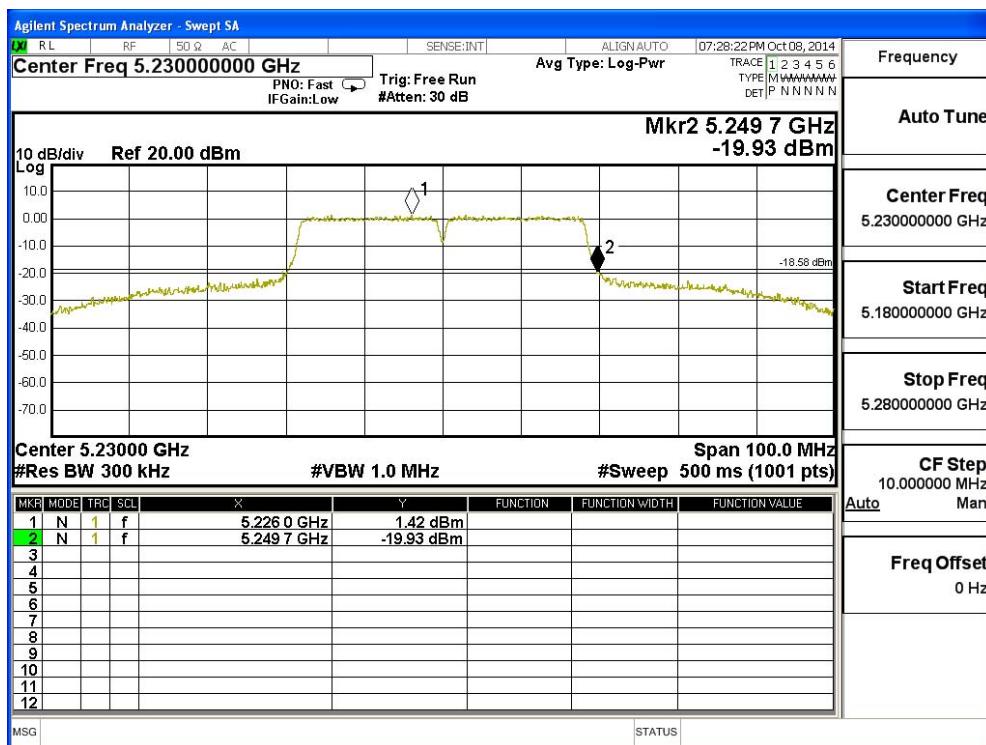
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “\*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Network Media Module  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)-Channel 46

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.70	<5250	PASS

NOTE: Accordance with 15.215 requirement.



## 8. Frequency Stability

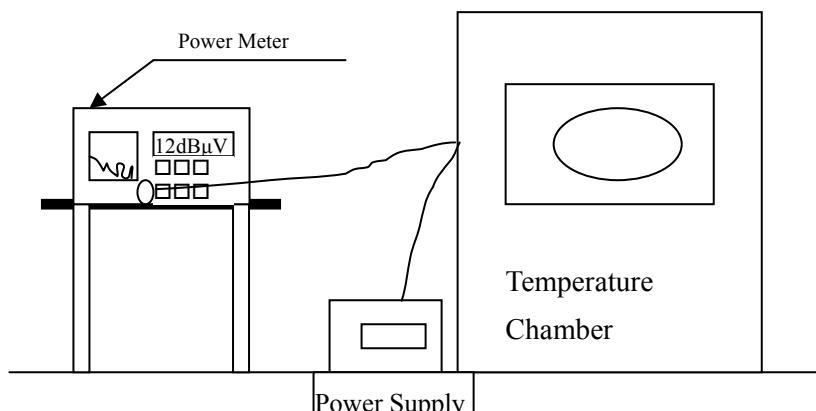
### 8.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 8.2. Test Setup



### 8.3. Limits

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

### 8.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

### 8.5. Uncertainty

± 150 Hz

## 8.6. Test Result of Frequency Stability

Product : Network Media Module  
 Test Item : Frequency Stability  
 Test Site : Temperature Chamber  
 Test Mode : Carrier Wave

Test Conditions		Channel	Frequency (MHz)	Spectrum Frequency (MHz)	$\Delta F$ (MHz)
T <sub>nom</sub> (20) °C	V <sub>nom</sub> (120)V	36	5180.0000	5180.0023	-0.0023
		38	5190.0000	5190.0026	-0.0026
		44	5220.0000	5220.0015	-0.0015
		46	5230.0000	5230.0054	-0.0054
		48	5240.0000	5240.0048	-0.0048
T <sub>max</sub> (70) °C	V <sub>max</sub> (132)V	36	5180.0000	5180.0027	-0.0027
		38	5190.0000	5190.0026	-0.0026
		44	5220.0000	5220.0018	-0.0018
		46	5230.0000	5230.0057	-0.0057
		48	5240.0000	5240.0045	-0.0045
T <sub>max</sub> (70) °C	V <sub>min</sub> (108)V	36	5180.0000	5180.0065	-0.0065
		38	5190.0000	5190.0028	-0.0028
		44	5220.0000	5220.0014	-0.0014
		46	5230.0000	5230.0054	-0.0054
		48	5240.0000	5240.0058	-0.0058
T <sub>min</sub> (0) °C	V <sub>max</sub> (132)V	36	5180.0000	5180.0057	-0.0057
		38	5190.0000	5190.0024	-0.0024
		44	5220.0000	5220.0018	-0.0018
		46	5230.0000	5230.0058	-0.0058
		48	5240.0000	5240.0047	-0.0047
T <sub>min</sub> (0) °C	V <sub>min</sub> (108)V	36	5180.0000	5180.0023	-0.0023
		38	5190.0000	5190.0026	-0.0026
		44	5220.0000	5220.0015	-0.0015
		46	5230.0000	5230.0054	-0.0054
		48	5240.0000	5240.0036	-0.0036

**9. EMI Reduction Method During Compliance Testing**

No modification was made during testing.

## Attachment 1: EUT Test Photographs

## Attachment 2: EUT Detailed Photographs

### Attachment 3: Pretest Data

### Attachment 3 : Pretest Data

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (Main Source)

Frequency MHz	Correct Factor dB	Reading Level dB $\mu$ V	Measurement Level dB $\mu$ V	Margin dB	Limit dB $\mu$ V
<b>Line 1</b>					
<b>Quasi-Peak</b>					
0.193	9.650	38.130	47.780	-16.991	64.771
0.279	9.655	24.690	34.345	-27.969	62.314
0.388	9.661	19.690	29.351	-29.849	59.200
0.654	9.675	33.740	43.415	-12.585	56.000
0.931	9.690	27.090	36.780	-19.220	56.000
1.755	9.747	24.960	34.708	-21.292	56.000
<b>Average</b>					
0.193	9.650	28.210	37.860	-16.911	54.771
0.279	9.655	9.910	19.565	-32.749	52.314
0.388	9.661	10.480	20.141	-29.059	49.200
0.654	9.675	25.630	35.305	-10.695	46.000
0.931	9.690	16.560	26.250	-19.750	46.000
1.755	9.747	14.430	24.178	-21.822	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. ““ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (Main Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 2</b>					
<b>Quasi-Peak</b>					
0.189	9.660	36.310	45.970	-18.916	64.886
0.306	9.657	25.240	34.897	-26.646	61.543
0.400	9.661	23.630	33.291	-25.566	58.857
0.611	9.673	33.820	43.493	-12.507	56.000
0.806	9.693	29.950	39.643	-16.357	56.000
1.349	9.723	27.860	37.583	-18.417	56.000
<b>Average</b>					
0.189	9.660	27.470	37.130	-17.756	54.886
0.306	9.657	17.960	27.617	-23.926	51.543
0.400	9.661	15.770	25.431	-23.426	48.857
0.611	9.673	24.770	34.443	-11.557	46.000
0.806	9.693	19.780	29.473	-16.527	46.000
1.349	9.723	16.550	26.273	-19.727	46.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 1</b>					
<b>Quasi-Peak</b>					
0.193	9.650	37.680	47.330	-17.441	64.771
0.295	9.656	25.030	34.686	-27.171	61.857
0.404	9.662	19.500	29.162	-29.581	58.743
0.623	9.673	32.820	42.493	-13.507	56.000
0.802	9.683	26.660	36.343	-19.657	56.000
1.334	9.722	26.120	35.842	-20.158	56.000
<b>Average</b>					
0.193	9.650	27.860	37.510	-17.261	54.771
0.295	9.656	13.210	22.866	-28.991	51.857
0.404	9.662	11.100	20.762	-27.981	48.743
0.623	9.673	23.210	32.883	-13.117	46.000
0.802	9.683	17.320	27.003	-18.997	46.000
1.334	9.722	15.970	25.692	-20.308	46.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 2</b>					
<b>Quasi-Peak</b>					
0.201	9.660	35.100	44.760	-19.783	64.543
0.302	9.658	24.760	34.418	-27.239	61.657
0.408	9.662	23.670	33.332	-25.297	58.629
0.658	9.675	33.880	43.555	-12.445	56.000
0.826	9.695	29.630	39.325	-16.675	56.000
1.337	9.722	27.740	37.462	-18.538	56.000
<b>Average</b>					
0.201	9.660	28.040	37.700	-16.843	54.543
0.302	9.658	17.910	27.568	-24.089	51.657
0.408	9.662	16.170	25.832	-22.797	48.629
0.658	9.675	26.530	36.205	-9.795	46.000
0.826	9.695	19.470	29.165	-16.835	46.000
1.337	9.722	17.930	27.652	-18.348	46.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (Main Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 1</b>					
<b>Quasi-Peak</b>					
0.201	9.650	37.990	47.640	-16.903	64.543
0.650	9.675	32.410	42.085	-13.915	56.000
1.025	9.695	26.620	36.315	-19.685	56.000
1.345	9.723	27.420	37.143	-18.857	56.000
1.873	9.762	22.760	32.522	-23.478	56.000
2.994	9.803	20.580	30.383	-25.617	56.000
<b>Average</b>					
0.201	9.650	28.260	37.910	-16.633	54.543
0.650	9.675	24.180	33.855	-12.145	46.000
1.025	9.695	16.440	26.135	-19.865	46.000
1.345	9.723	15.860	25.583	-20.417	46.000
1.873	9.762	12.440	22.202	-23.798	46.000
2.994	9.803	11.650	21.453	-24.547	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (Main Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 2</b>					
<b>Quasi-Peak</b>					
0.201	9.660	35.390	45.050	-19.493	64.543
0.279	9.665	24.350	34.015	-28.299	62.314
0.408	9.662	24.350	34.012	-24.617	58.629
0.611	9.673	33.820	43.493	-12.507	56.000
0.931	9.700	29.250	38.950	-17.050	56.000
1.962	9.767	25.580	35.347	-20.653	56.000
<b>Average</b>					
0.201	9.660	28.300	37.960	-16.583	54.543
0.279	9.665	13.910	23.575	-28.739	52.314
0.408	9.662	16.680	26.342	-22.287	48.629
0.611	9.673	24.680	34.353	-11.647	46.000
0.931	9.700	19.100	28.800	-17.200	46.000
1.962	9.767	16.470	26.237	-19.763	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 1</b>					
<b>Quasi-Peak</b>					
0.185	9.651	37.140	46.791	-18.209	65.000
0.298	9.656	24.730	34.386	-27.385	61.771
0.505	9.667	25.210	34.877	-21.123	56.000
0.650	9.675	32.330	42.005	-13.995	56.000
0.935	9.691	25.150	34.841	-21.159	56.000
1.787	9.757	23.660	33.417	-22.583	56.000
<b>Average</b>					
0.185	9.651	25.620	35.271	-19.729	55.000
0.298	9.656	13.680	23.336	-28.435	51.771
0.505	9.667	16.450	26.117	-19.883	46.000
0.650	9.675	24.130	33.805	-12.195	46.000
0.935	9.691	14.710	24.401	-21.599	46.000
1.787	9.757	11.730	21.487	-24.513	46.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V	dB	dB $\mu$ V
<b>Line 2</b>					
<b>Quasi-Peak</b>					
0.209	9.661	32.320	41.981	-22.333	64.314
0.408	9.662	23.770	33.432	-25.197	58.629
0.654	9.675	34.210	43.885	-12.115	56.000
1.017	9.705	27.500	37.205	-18.795	56.000
1.962	9.767	24.680	34.447	-21.553	56.000
17.201	10.156	16.540	26.696	-33.304	60.000
<b>Average</b>					
0.209	9.661	23.720	33.381	-20.933	54.314
0.408	9.662	16.170	25.832	-22.797	48.629
0.654	9.675	26.050	35.725	-10.275	46.000
1.017	9.705	16.200	25.905	-20.095	46.000
1.962	9.767	15.950	25.717	-20.283	46.000
17.201	10.156	9.540	19.696	-30.304	50.000

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Network Media Module  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (Main Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
107.600	-7.597	34.490	26.893	-16.607	43.500
225.940	-9.647	44.883	35.236	-10.764	46.000
365.620	0.382	33.763	34.145	-11.855	46.000
600.360	3.472	26.384	29.856	-16.144	46.000
800.180	6.417	24.940	31.357	-14.643	46.000
951.500	6.993	24.981	31.974	-14.026	46.000
<b>Vertical</b>					
43.580	-10.919	41.976	31.057	-8.943	40.000
262.800	-4.944	33.778	28.834	-17.166	46.000
511.120	0.783	23.826	24.609	-21.391	46.000
689.600	2.302	22.662	24.964	-21.036	46.000
817.640	2.966	23.702	26.668	-19.332	46.000
920.460	3.272	23.924	27.196	-18.804	46.000

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz

Product : Network Media Module  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Transmit (5GHz) for M/N: CY920-C (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
159.980	-10.030	39.087	29.056	-14.444	43.500
264.740	-5.501	34.376	28.876	-17.124	46.000
433.520	0.841	26.825	27.666	-18.334	46.000
633.340	1.530	28.323	29.853	-16.147	46.000
800.180	6.417	26.726	33.143	-12.857	46.000
930.160	7.530	23.045	30.575	-15.425	46.000
<b>Vertical</b>					
43.580	-10.919	42.493	31.574	-8.426	40.000
192.960	-5.655	31.358	25.703	-17.797	43.500
379.200	0.881	24.831	25.712	-20.288	46.000
596.480	0.907	23.416	24.323	-21.677	46.000
757.500	2.487	23.961	26.448	-19.552	46.000
901.060	1.858	22.760	24.618	-21.382	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz

Product : Network Media Module  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (Main Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
107.600	-7.597	33.823	26.226	-17.274	43.500
225.940	-9.647	42.540	32.893	-13.107	46.000
373.380	0.873	30.741	31.614	-14.386	46.000
575.140	3.025	25.616	28.641	-17.359	46.000
701.240	2.759	28.049	30.808	-15.192	46.000
897.180	5.487	23.367	28.854	-17.146	46.000
<b>Vertical</b>					
43.580	-10.919	41.447	30.528	-9.472	40.000
175.500	-1.842	28.100	26.258	-17.242	43.500
363.680	0.079	24.772	24.851	-21.149	46.000
536.340	1.609	25.519	27.128	-18.872	46.000
771.080	2.766	24.031	26.798	-19.202	46.000
930.160	3.830	23.422	27.252	-18.748	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz

Product : Network Media Module  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Transmit (5GHz) for M/N: CY920-A (2nd Source)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB $\mu$ V	dB $\mu$ V/m	dB	dB $\mu$ V/m
<b>Horizontal</b>					
119.240	-7.291	35.094	27.804	-15.696	43.500
225.940	-9.647	42.339	32.692	-13.308	46.000
365.620	0.382	34.781	35.163	-10.837	46.000
526.640	3.112	26.350	29.462	-16.538	46.000
701.240	2.759	27.530	30.289	-15.711	46.000
879.720	6.618	23.824	30.442	-15.558	46.000
<b>Vertical</b>					
43.580	-10.919	42.949	32.030	-7.970	40.000
177.440	-1.248	28.006	26.758	-16.742	43.500
373.380	0.043	25.261	25.304	-20.696	46.000
538.280	1.996	24.180	26.176	-19.824	46.000
782.720	2.757	26.346	29.103	-16.897	46.000
930.160	3.830	23.777	27.607	-18.393	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz