FCC Test Report

Product Name ： Dual Band 3x3 802.11ac PCI-E Adapter

Trade Name ： ASUS

Model No. ： PCE-AC68

FCC ID. ： MSQ-PCEAC68

Applicant ： ASUSTeK COMPUTER INC.

Address ： 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt ： Jan. 30, 2016

Issued Date ： May 11, 2016

Report No. ： 1620097R-RFUSP56V00

Report Version ： V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : May 11, 2016
Report No. : 1620097R-RFUSP56V00

Product Name	:	Dual Band 3x3 802.11ac PCI-E Adapter
Applicant	:	ASUSTeK COMPUTER INC.
Address	:	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	:	Arcadyan Technology Corporation
Model No.	:	PCE-AC68
FCC ID.	:	MSQ-PCEAC68
EUT Voltage	:	DC 3.3V (Power by PC)
Testing Voltage	:	DC 3.3V (Power by PC)
Trade Name	:	ASUS
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2015 ANSI C63.10: 2009
Test Lab	:	QuieTek Hsin Chu Laboratory
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : 

(Carol Tsai / Senior Engineering Adm. Specialist)

Tested By : 

(Bruno Tsai / Senior Engineer)

Approved By : 

(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
137132R-RFUSP46V01	V4.0	Initial issue of report	Aug. 29, 2013
1620097R-RFUSP56V00	V1.0	Update WLAN 5G band 1 standard to FCC 15.407. For market purpose, customer adjust reduced the peak power, so verified the 99% & 26dB BW, peak transmit output power, power density, radiation(above 1GHz), bandedge and frequency stability by customer requirements.	May 11, 2016

Laboratory Information

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 365520**
Canada	**:**	**IC, Submission No: 181665 / IC Registration Number: 4075C-4**

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/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory:
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

LinKou Testing Laboratory:
No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

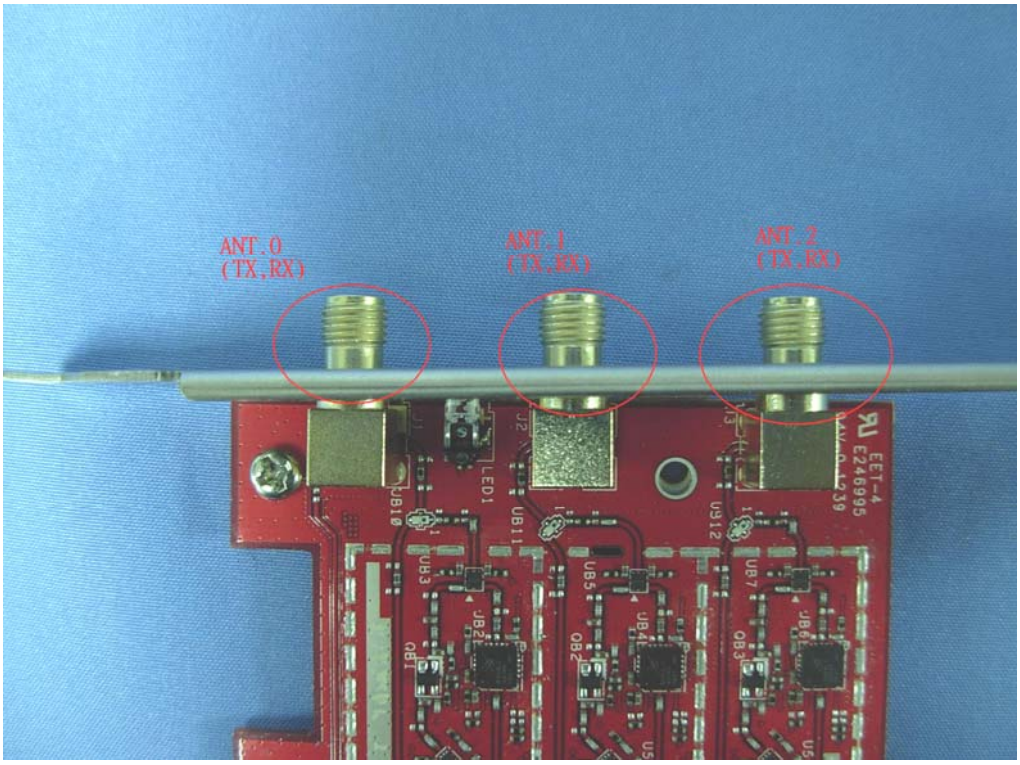
Product Name	Dual Band 3x3 802.11ac PCI-E Adapter	
Trade Name	ASUS	
Model No.	PCE-AC68	
Product Type	WLAN(3TX,3RX)	
Frequency Range/ Channel Number	IEEE 802.11a/ IEEE 802.11n	5180~5240MHz / 4 Channels
	IEEE 802.11n (40MHz)	5190~5230MHz / 2 Channels
	IEEE 802.11ac (80MHz)	5210~5210MHz / 1 Channel
Type of Modulation	IEEE 802.11a/n/ac	Orthogonal Frequency Division Multiplexing
Data Speed	IEEE 802.11a	6Mbps,9Mbps,12Mbps,18Mbps,24Mbps,36Mbps,48Mbps,54Mbps
	IEEE 802.11n	Support a subset of the combination of GI, MCS 0~MCS 7 and bandwidth defined in 802.11n
	IEEE 802.11ac	Support a subset of the combination of GI, MCS 0~MCS 9 and bandwidth defined in 802.11ac

Antenna Information	
Antenna Type	Dipole Antenna
Antenna Gain	Ant0: 3dBi, Ant1: 3dBi, Ant2: 3dBi

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX			RX		
Mode/ Channel Bandwidth	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz
IEEE802.11a	✓			✓		
IEEE802.11n	✓	✓		✓	✓	
IEEE802.11ac	✓	✓	✓	✓	✓	✓

3TX / 3RX



IEEE 802.11n

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
0	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.2	15.0
1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.4	30.0
2	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.7	45.0
3	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.9	60.0
4	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.3	90.0
5	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.8	120.0
6	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.0	135.0
7	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.2	150.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 1 – MCS parameters for TX Antenna number = 1

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
8	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.4	30.0
9	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.9	60.0
10	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.3	90.0
11	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.8	120.0
12	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.7	180.0
13	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.6	240.0
14	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.0	270.0
15	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.4	300.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 2 – MCS parameters for TX Antenna number = 2

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
16	BPSK	1/2	1	156	324	78	162	19.5	40.5	21.7	45.0
17	QPSK	1/2	2	312	648	156	324	39.0	81.0	43.3	90.0
18	QPSK	3/4	2	312	648	234	486	58.5	121.5	65.0	135.0
19	16-QAM	1/2	4	624	1296	312	648	78.0	162.0	86.7	180.0
20	16-QAM	3/4	4	624	1296	468	972	117.0	243.0	130.0	270.0
21	64-QAM	2/3	6	936	1944	624	1296	156.0	324.0	173.3	360.0
22	64-QAM	3/4	6	936	1944	702	1458	175.5	364.5	195.0	405.0
23	64-QAM	5/6	6	936	1944	780	1620	195.0	405.0	216.7	450.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 3 – MCS parameters for TX Antenna number = 3

Symbol	Explanation
R	Code rate
N_{BPSC}	Number of coded bits per single carrier
N_{CBPS}	Number of coded bits per symbol
N_{DBPS}	Number of data bits per symbol
GI	guard interval

IEEE 802.11ac Data Rate

Spatial Streams (Note1)	MCS Index	Modulation type	Coding rate	Data Rate(Mb/s)							
				20 MHz		40 MHz		80 MHz		160 MHz	
				Guard Interval		Guard Interval		Guard Interval		Guard Interval	
				800ns	400ns	800ns	400ns	800ns	400ns	800ns	400ns
1	0	BPSK	1/2	6.5	7.2	13.5	15	29.3	32.5	58.5	65
	1	QPSK	1/2	13	14.4	27	30	58.5	65	117	130
	2	QPSK	3/4	19.5	21.7	40.5	45	87.8	97.5	175.5	195
	3	16-QAM	1/2	26	28.9	54	60	117	130	234	260
	4	16-QAM	3/4	39	43.3	81	90	175.5	195	351	390
	5	64-QAM	2/3	52	57.8	108	120	234	260	468	520
	6	64-QAM	3/4	58.5	65	121.5	135	263.3	292.5	526.5	585
	7	64-QAM	5/6	65	72.2	135	150	292.5	325	585	650
	8	256-QAM	3/4	78	86.7	162	180	351	390	702	780
	9	256-QAM	5/6	N/A	N/A	180	200	390	433.3	780	866.7
2	0	BPSK	1/2	13	14.4	27	30	58.6	65	117	130
	1	QPSK	1/2	26	28.8	54	60	117	130	234	260
	2	QPSK	3/4	39	43.4	81	90	175.6	195	351	390
	3	16-QAM	1/2	52	57.8	108	120	234	260	468	520
	4	16-QAM	3/4	78	86.6	162	180	351	390	702	780
	5	64-QAM	2/3	104	115.6	216	240	468	520	936	1040
	6	64-QAM	3/4	117	130	243	270	526.6	585	1053	1170
	7	64-QAM	5/6	130	144.4	270	300	585	650	1170	1300
	8	256-QAM	3/4	156	173.4	324	360	702	780	1404	1560
	9	256-QAM	5/6	N/A	N/A	360	400	780	866.6	1560	1733.4
3	0	BPSK	1/2	13	14.4	27	30	58.6	65	117	130
	1	QPSK	1/2	26	28.8	54	60	117	130	234	260
	2	QPSK	3/4	39	43.4	81	90	175.6	195	351	390
	3	16-QAM	1/2	52	57.8	108	120	234	260	468	520
	4	16-QAM	3/4	78	86.6	162	180	351	390	702	780
	5	64-QAM	2/3	104	115.6	216	240	468	520	936	1040
	6	64-QAM	3/4	117	130	243	270	526.6	585	1053	1170
	7	64-QAM	5/6	130	144.4	270	300	585	650	1170	1300
	8	256-QAM	3/4	156	173.4	324	360	702	780	1404	1560
	9	256-QAM	5/6	N/A	N/A	360	400	780	866.6	1560	1733.4

IEEE 802.11a & IEEE 802.11n (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz

IEEE 802.11n (40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz				

IEEE 802.11ac (80MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz						

Note:

1. This device is an Dual Band 3x3 802.11ac PCI-E Adapter including 2.4GHz b/g/n (3x3) and 5GHz a/n/ac (3x3) transmitting and receiving function.
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart E Paragraph 15.407.
3. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. The function of the 2.4GHz & 5.8GHz transmitting is measured and makes a test report of the report number: 137132R-RFUSP42V01 & 1620097R-RFUSP56V00-A.
5. This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 137132R-RFUSP37V02.

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit_CDD Mode

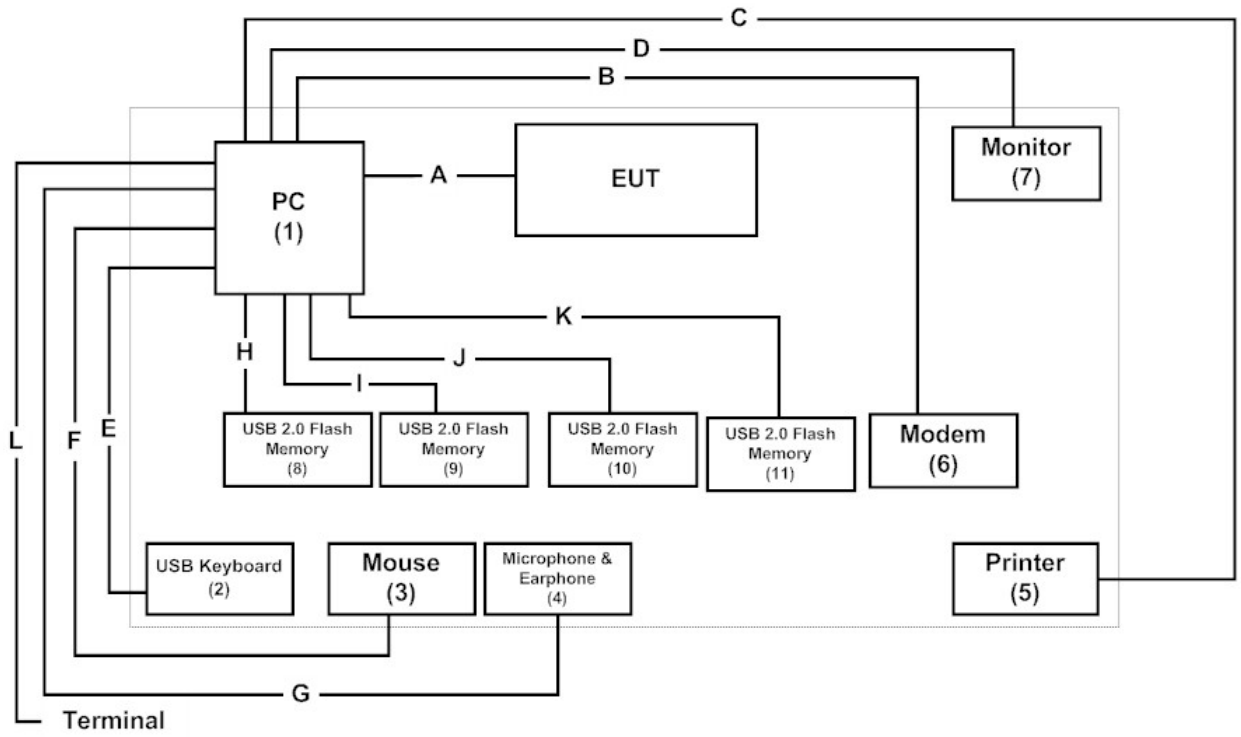
Test Items	Modulation	Channel	Antenna	Result
Conducted Emission	11ac (80MHz)	42	0+1+2	N/A
99 % & 26dB Bandwidth	11a	36/44/48	0/1/2	Complies
	11n (20MHz)	36/44/48	0/1/2	Complies
	11n (40MHz)	38/46	0/1/2	Complies
	11ac (80MHz)	42	0/1/2	Complies
Peak Transmit Output	11a	36/44/48	0+1+2	Complies
	11n (20MHz)	36/44/48	0+1+2	Complies
	11n (40MHz)	38/46	0+1+2	Complies
	11ac (80MHz)	42	0+1+2	Complies
Peak Power Spectrum Density	11a	36/44/48	0+1+2	Complies
	11n (20MHz)	36/44/48	0+1+2	Complies
	11n (40MHz)	38/46	0+1+2	Complies
	11ac (80MHz)	42	0+1+2	Complies
Radiated Emission	11a	36/44/48	0+1+2	Complies
	11n (20MHz)	36/44/48	0+1+2	Complies
	11n (40MHz)	38/46	0+1+2	Complies
	11ac (80MHz)	42	0+1+2	Complies
Band Edge	11a	36/44/48	0+1+2	Complies
	11n (20MHz)	36/44/48	0+1+2	Complies
	11n (40MHz)	38/46	0+1+2	Complies
	11ac (80MHz)	42	0+1+2	Complies
Frequency Stability	11a	36/48	0/1/2	Complies
	11n (20MHz)	36/48	0/1/2	Complies
	11n (40MHz)	38/46	0/1/2	Complies
	11ac (80MHz)	42	0/1/2	Complies

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	PC	DELL	DCSM	00144-531-356-513	DoC	Non-Shielded, 1.8m
2	USB Keyboard	DELL	SK-8115	1437	DoC	--
3	Mouse	Logitech	M-SBF83	HCA52200315	DoC	--
4	Microphone & Earphone	Fujiei	SBZ-38	N/A	DoC	--
5	Printer	HP	C2642A	MY75N1D2Y1	DoC	Non-Shielded, 0.7m
6	Modem	ACEEX	DM-1414	980033034	DoC	Non-Shielded, 1.6m
7	Monitor	DELL	U2410f	082WXD-72872-16R-0W2L	DoC	Non-Shielded, 1.8m
8	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
9	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
10	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
11	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--

1.4. Configuration of tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	RF Cable	Non-Shielded, 0.8m
B	Modem Cable	Shielded, 1.5m
C	Printer Cable	Shielded, 1.2m
D	VGA Cable	Shielded, 1.8m, two ferrite cores bonded.
E	USB Keyboard Cable	Shielded, 1.5m
F	USB Mouse Cable	Shielded, 1.5m
G	Microphone & Earphone Cable	Non-Shielded, 1.2m
H	USB 2.0 Flash Memory Cable	Non-Shielded, 0.5m
I	USB 2.0 Flash Memory Cable	Non-Shielded, 0.5m
J	USB 2.0 Flash Memory Cable	Non-Shielded, 0.5m
K	USB 2.0 Flash Memory Cable	Non-Shielded, 0.5m
L	LAN Cable	Non-Shielded, 10m

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5.
2	Execute the control program “Mtool Ver 1.0.0.9” on the EUT.
3	Configure the test mode, the test channel, and the data rate.
4	Press “Start TX” to start the continuous transmitting.
5	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 E 15.407 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 99 % & 26dB Bandwidth	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Peak Transmit Power	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Peak Power Spectrum Density	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Radiated Emission	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Band Edge	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Frequency Stability	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000

2. 99% & 26dB Bandwidth

2.1. Test Equipment

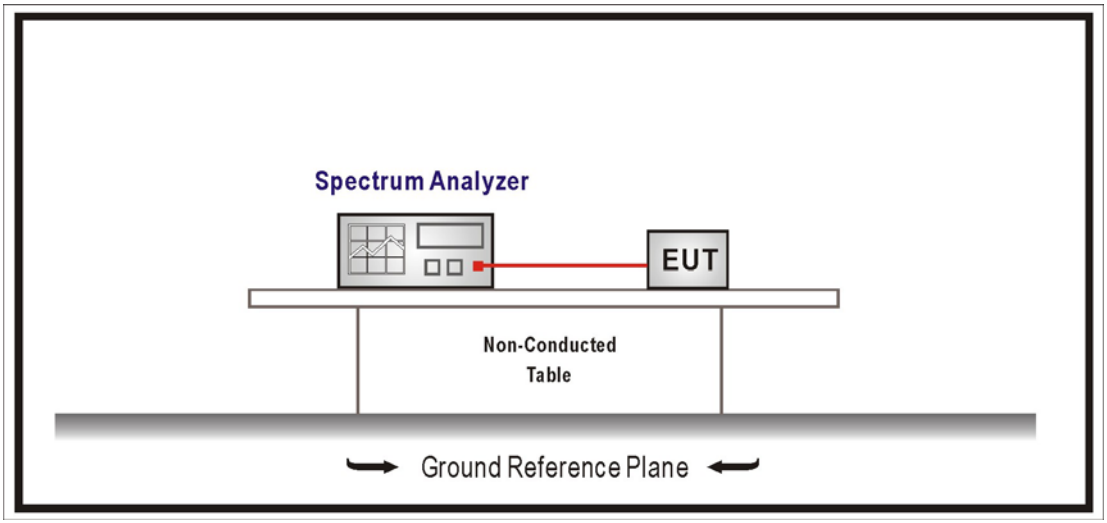
The following test equipments are used during the radiated emission tests:

99% & 26dB Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/07/13

Note: All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

99% & 26dB Bandwidth : No Required

2.4. Test Procedure

99% & 26dB Bandwidth :
The EUT was tested according to U-NII test procedure of 789033 D02 General UNII Test Procedures New Rules v01r01 .
Set RBW 1% of the emission bandwidth, VBW equal to 3 times the RBW.

2.5. Uncertainty

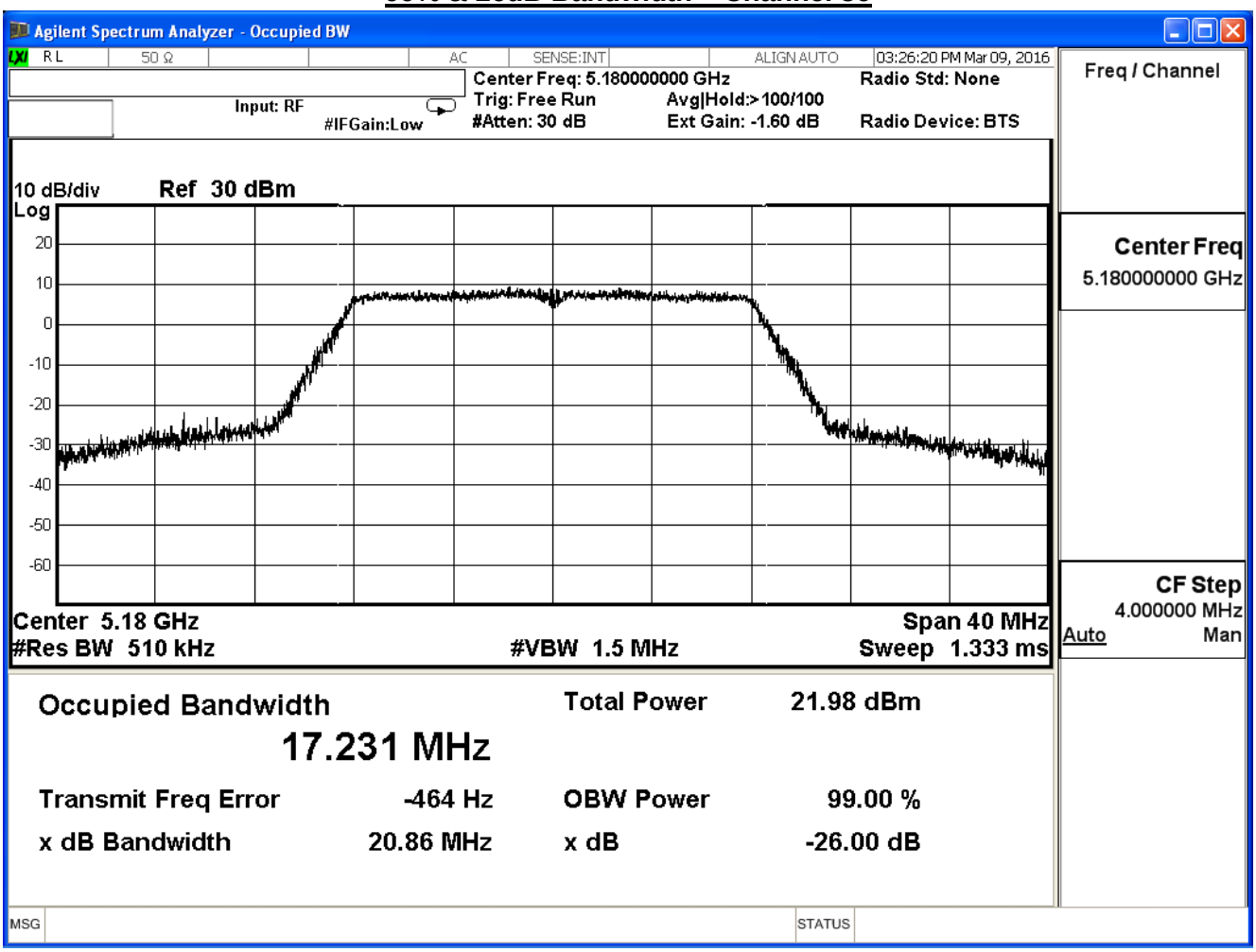
The measurement uncertainty is defined as ±150Hz

2.6. Test Result

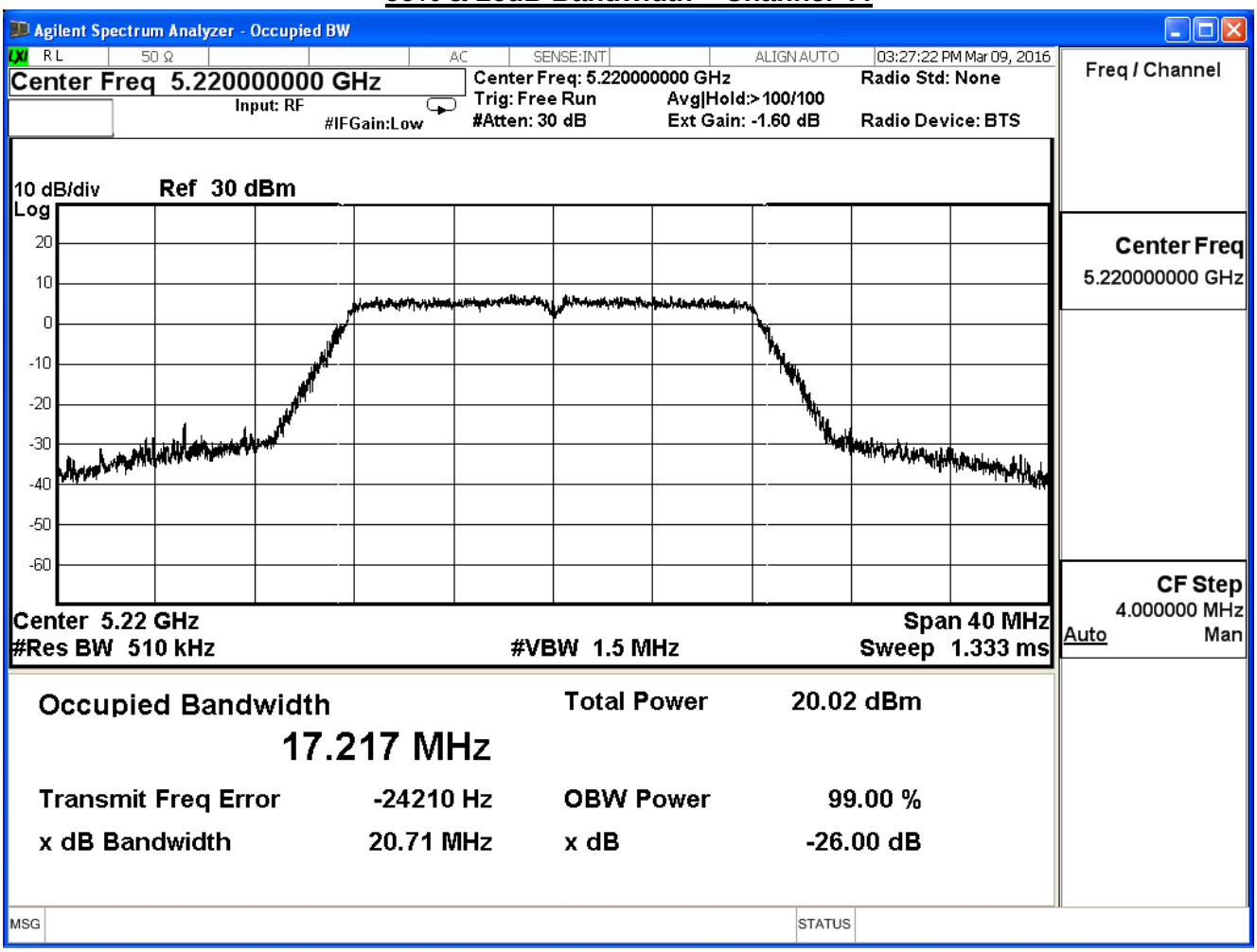
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11a (ANT 0)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	20.86	17.23	--	Pass
44	5220	20.71	17.22	--	Pass
48	5240	20.83	17.16	--	Pass

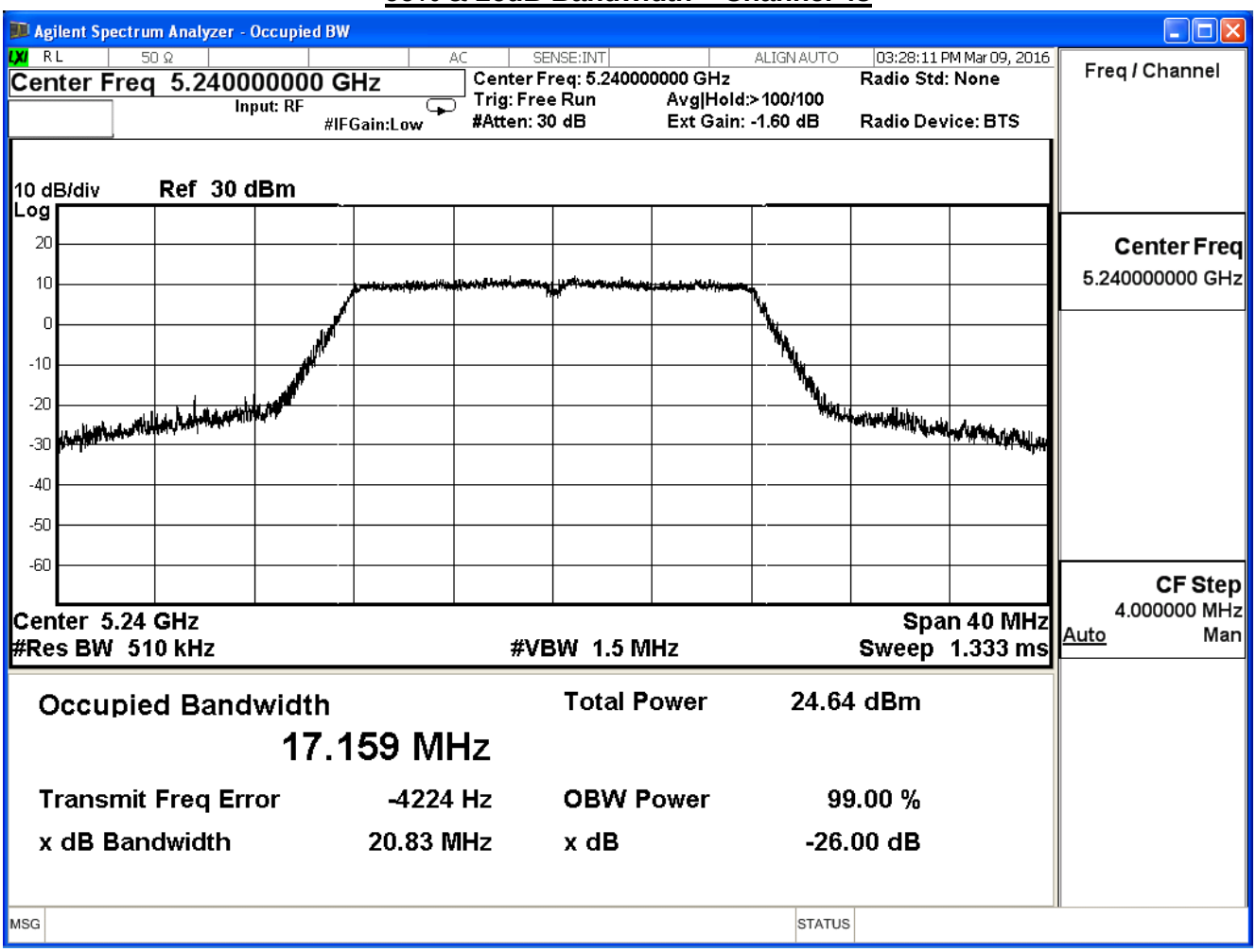
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

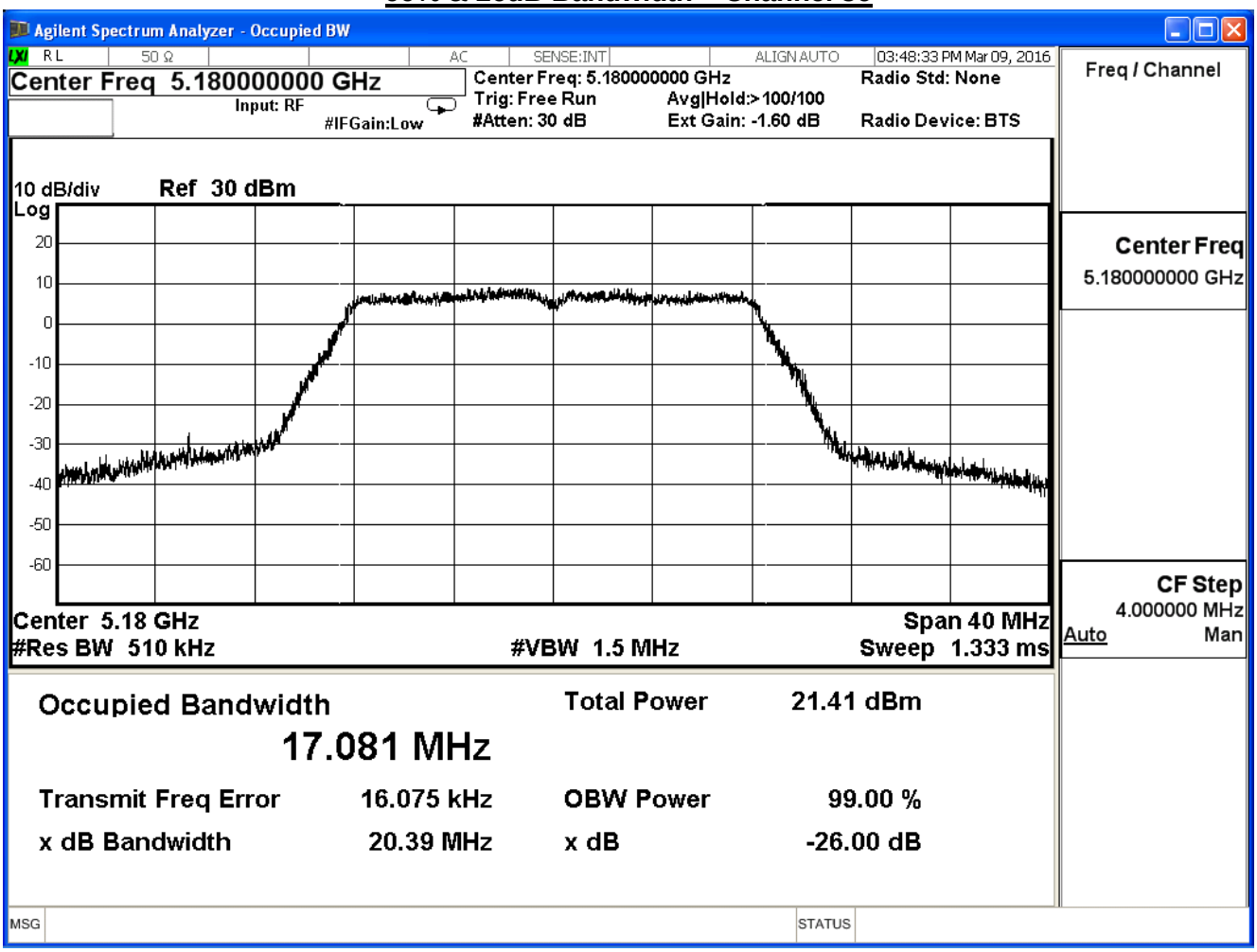


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

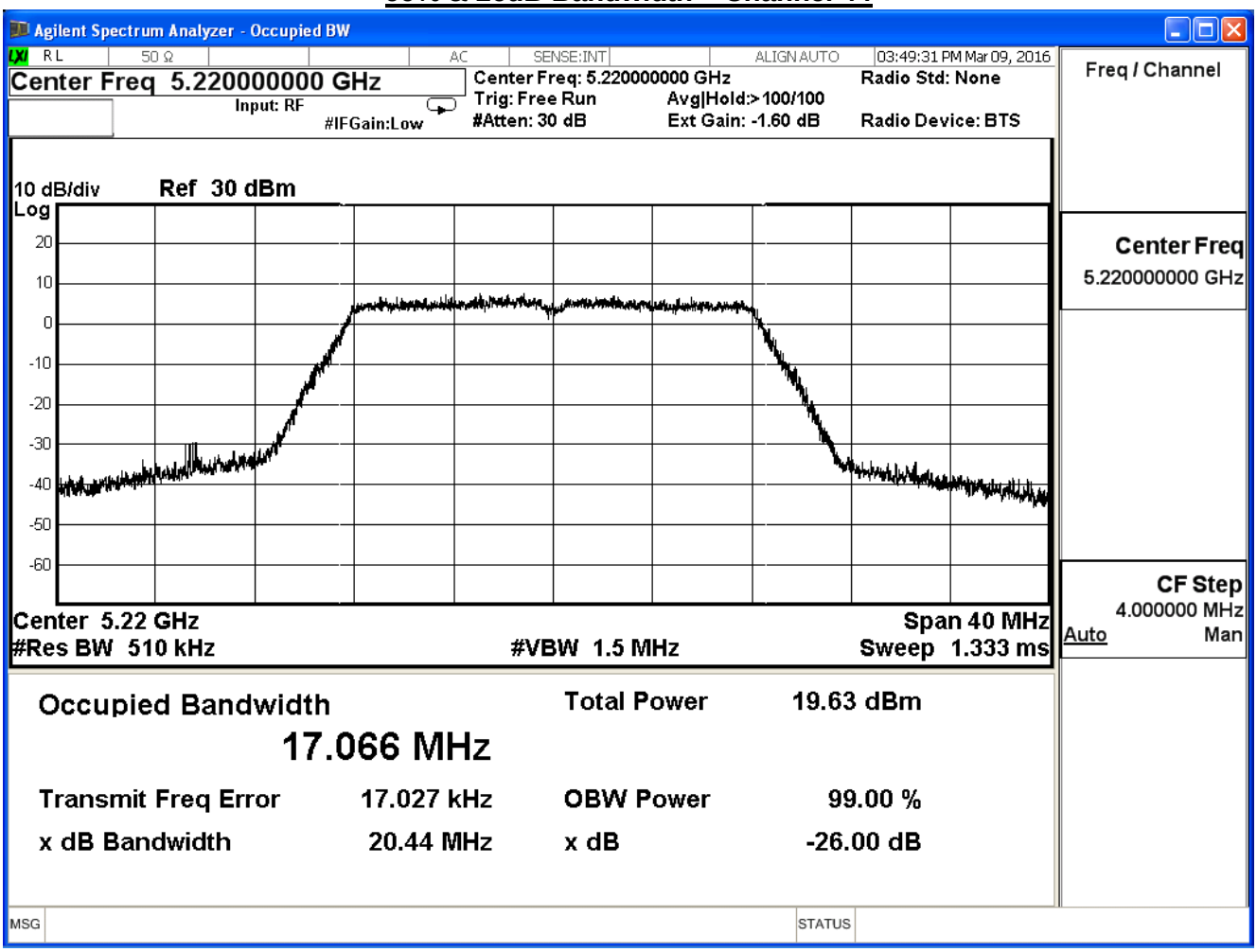
802.11a (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	20.39	17.08	--	Pass
44	5220	20.44	17.07	--	Pass
48	5240	20.65	17.09	--	Pass

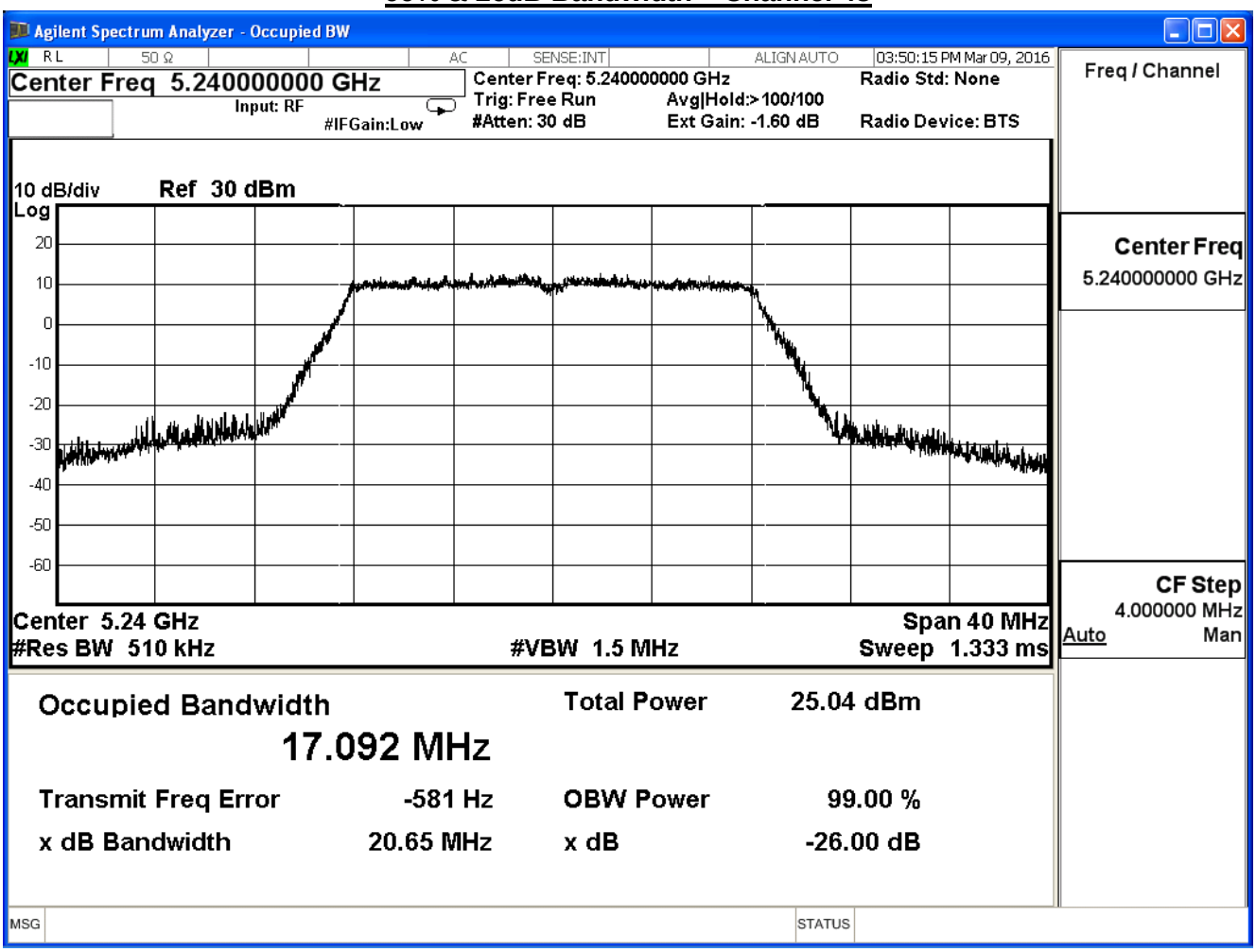
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



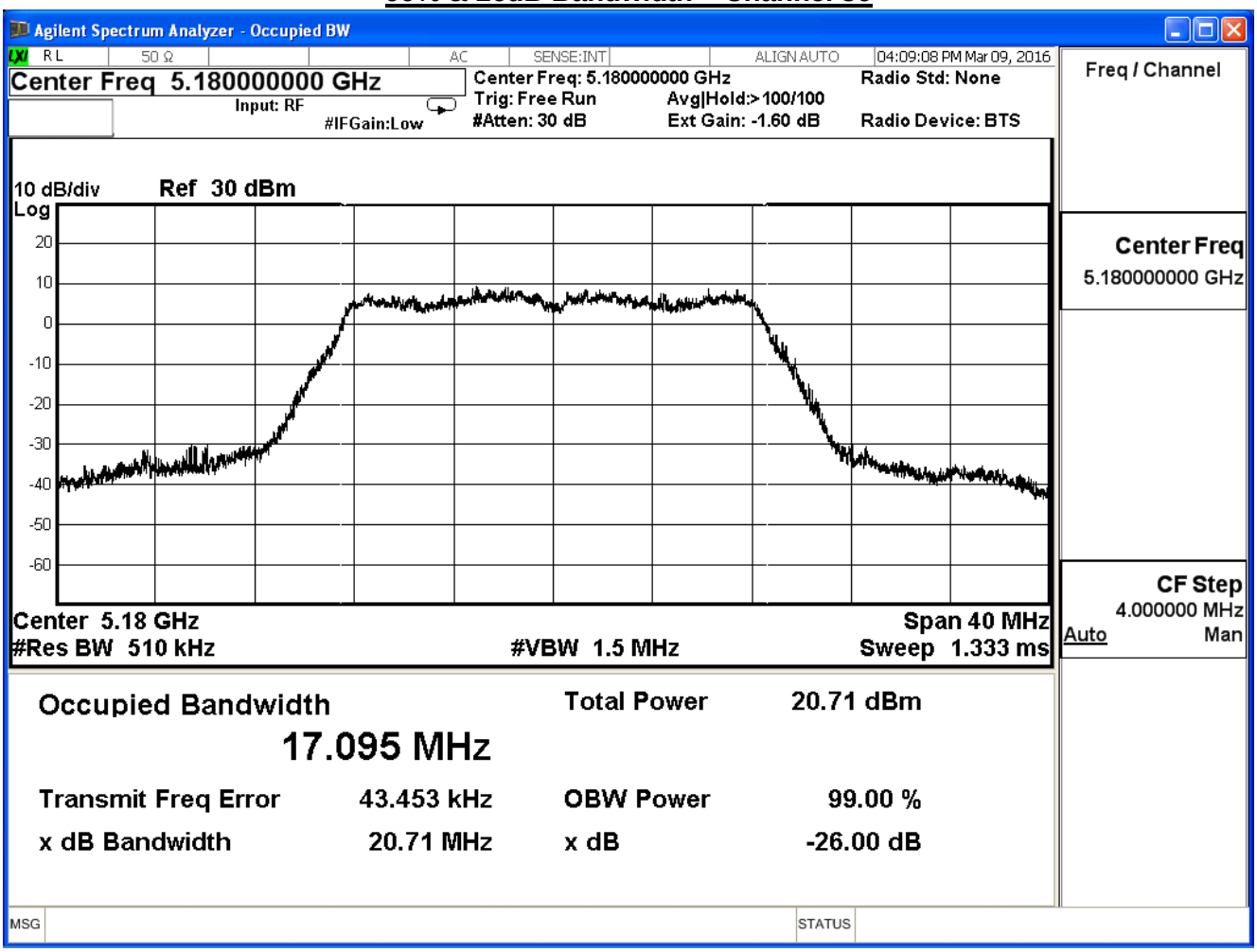
99% & 26dB Bandwidth – Channel 48



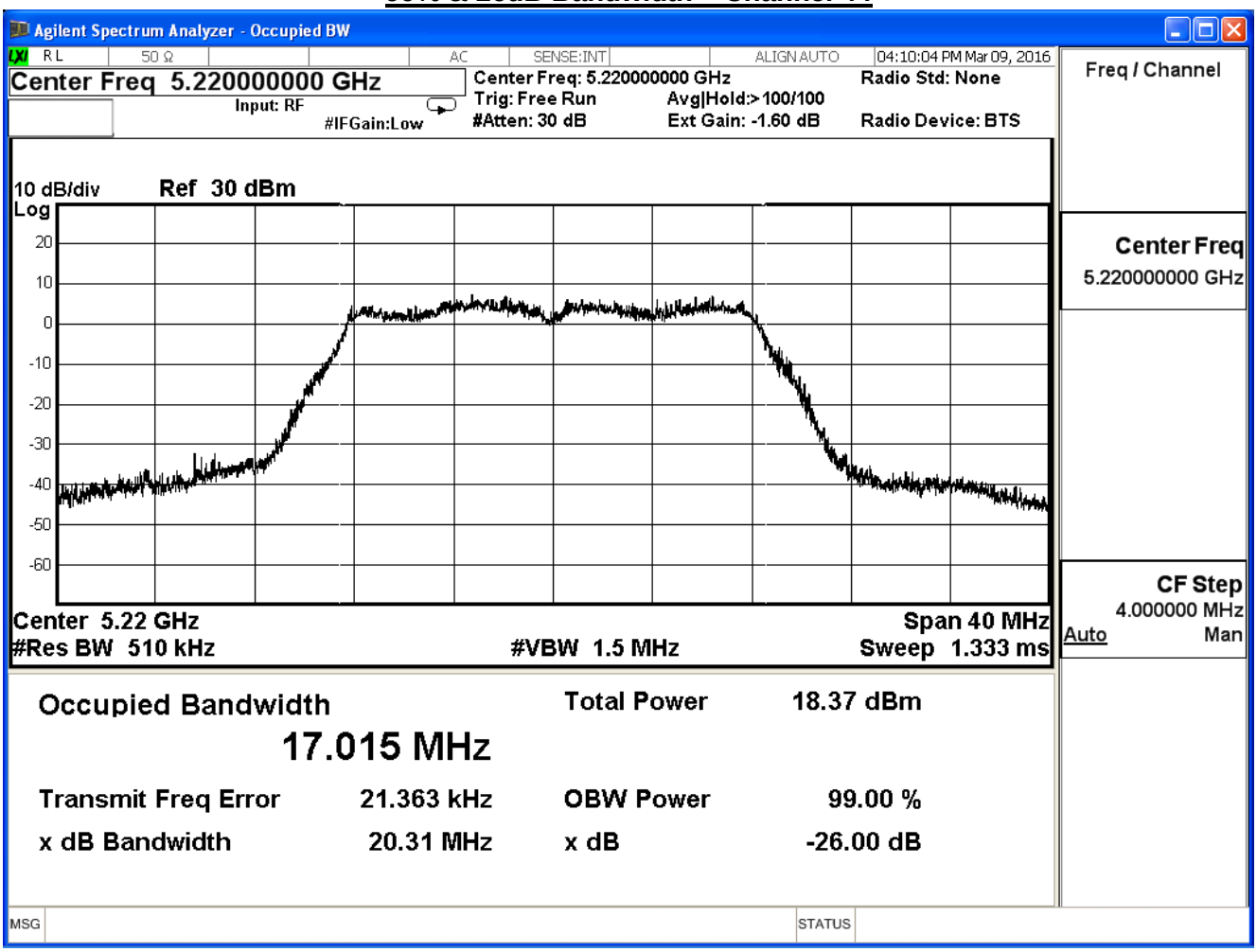
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11a (ANT 2)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	20.71	17.10	--	Pass
44	5220	20.31	17.02	--	Pass
48	5240	20.27	17.02	--	Pass

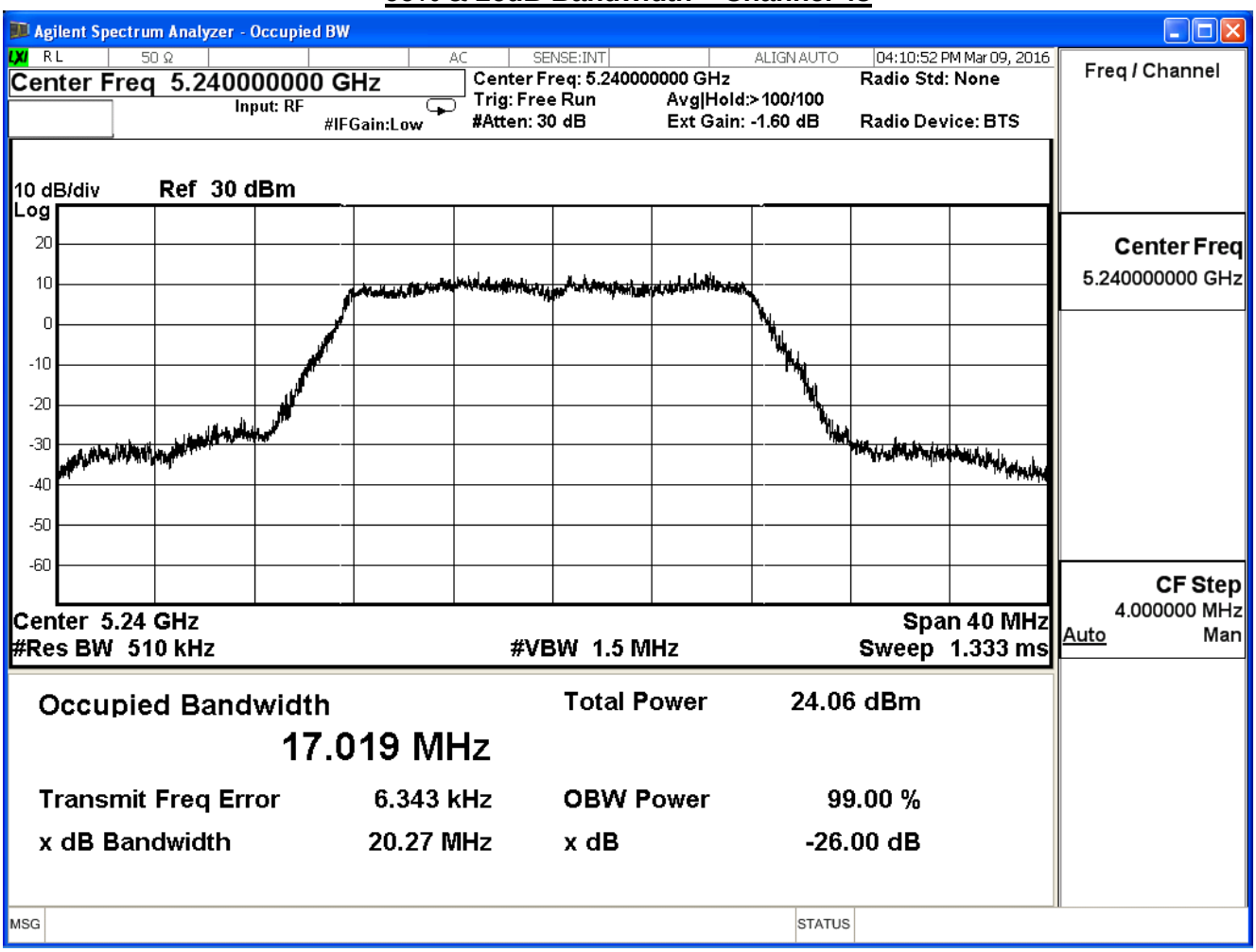
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



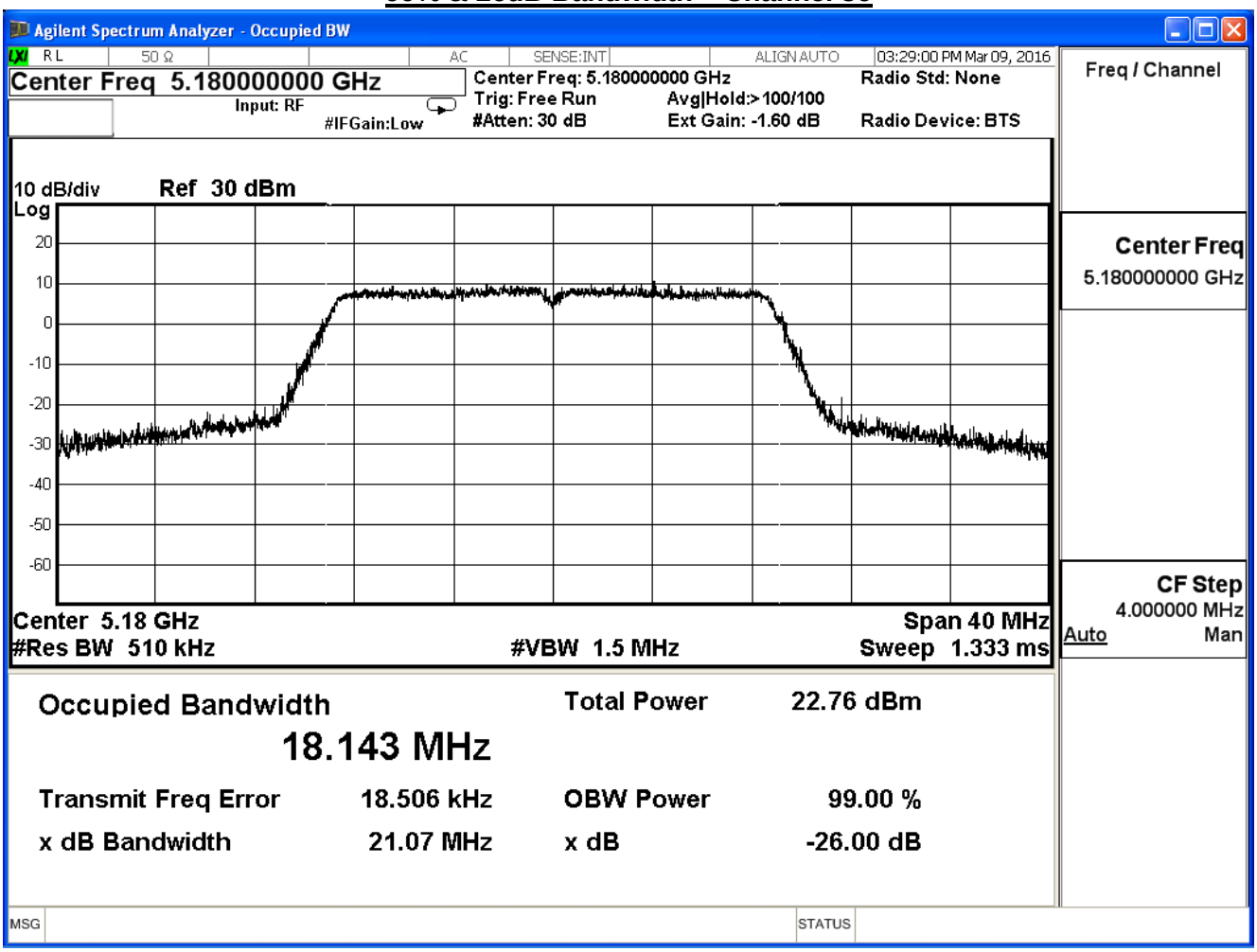
99% & 26dB Bandwidth – Channel 48



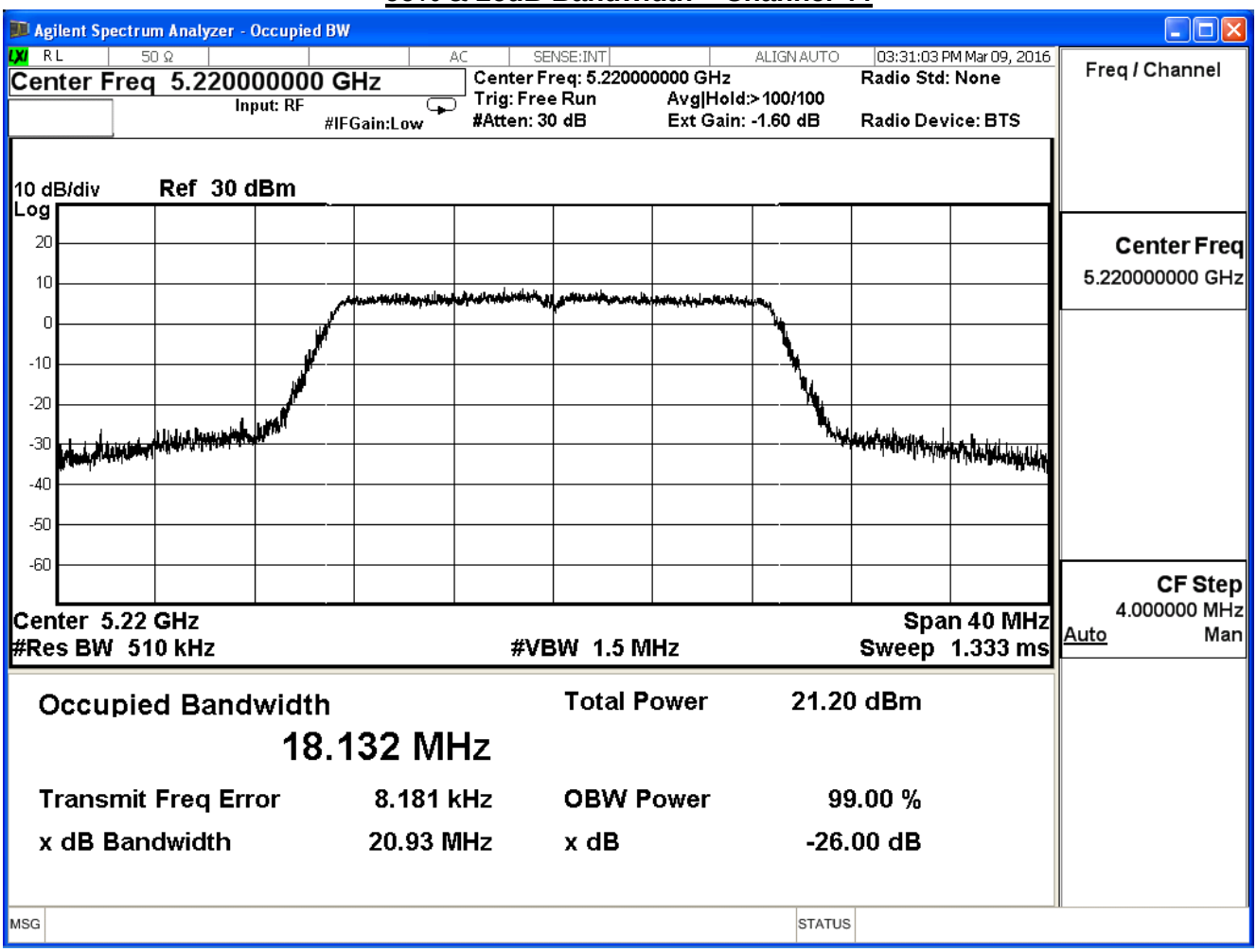
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

IEEE 802.11n_20M (ANT 0)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	21.07	18.14	--	Pass
44	5220	20.93	18.13	--	Pass
48	5240	21.94	18.19	--	Pass

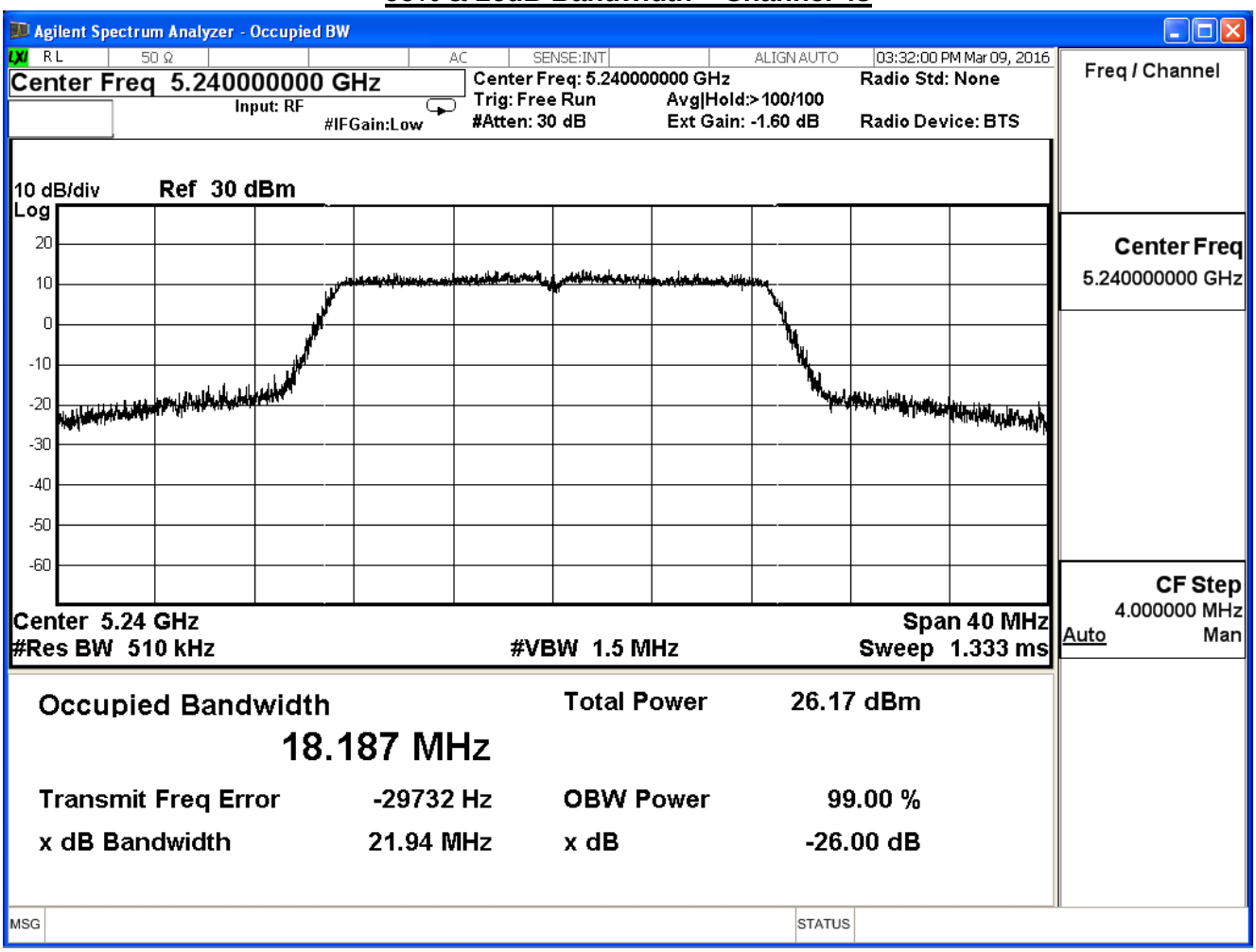
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



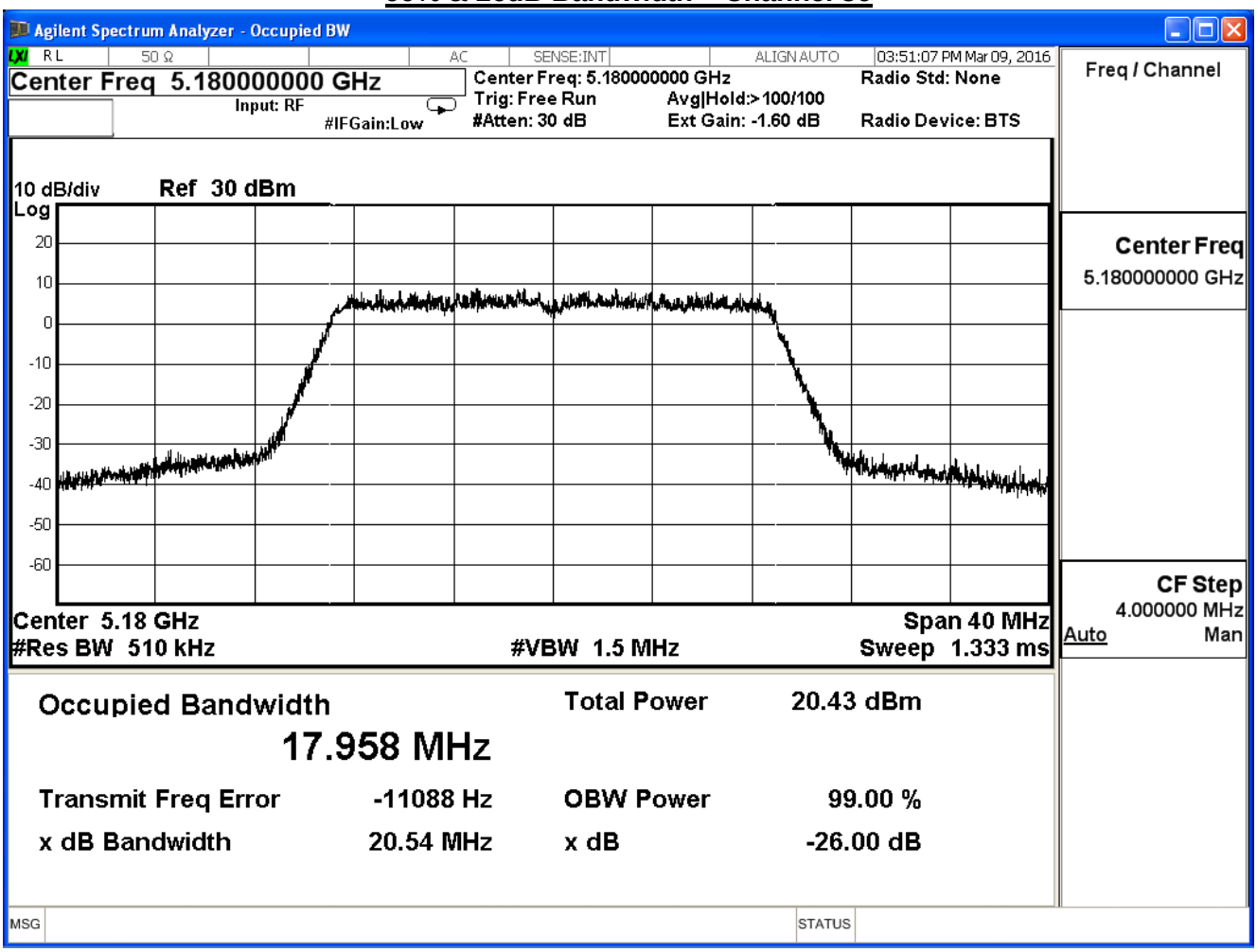
99% & 26dB Bandwidth – Channel 48



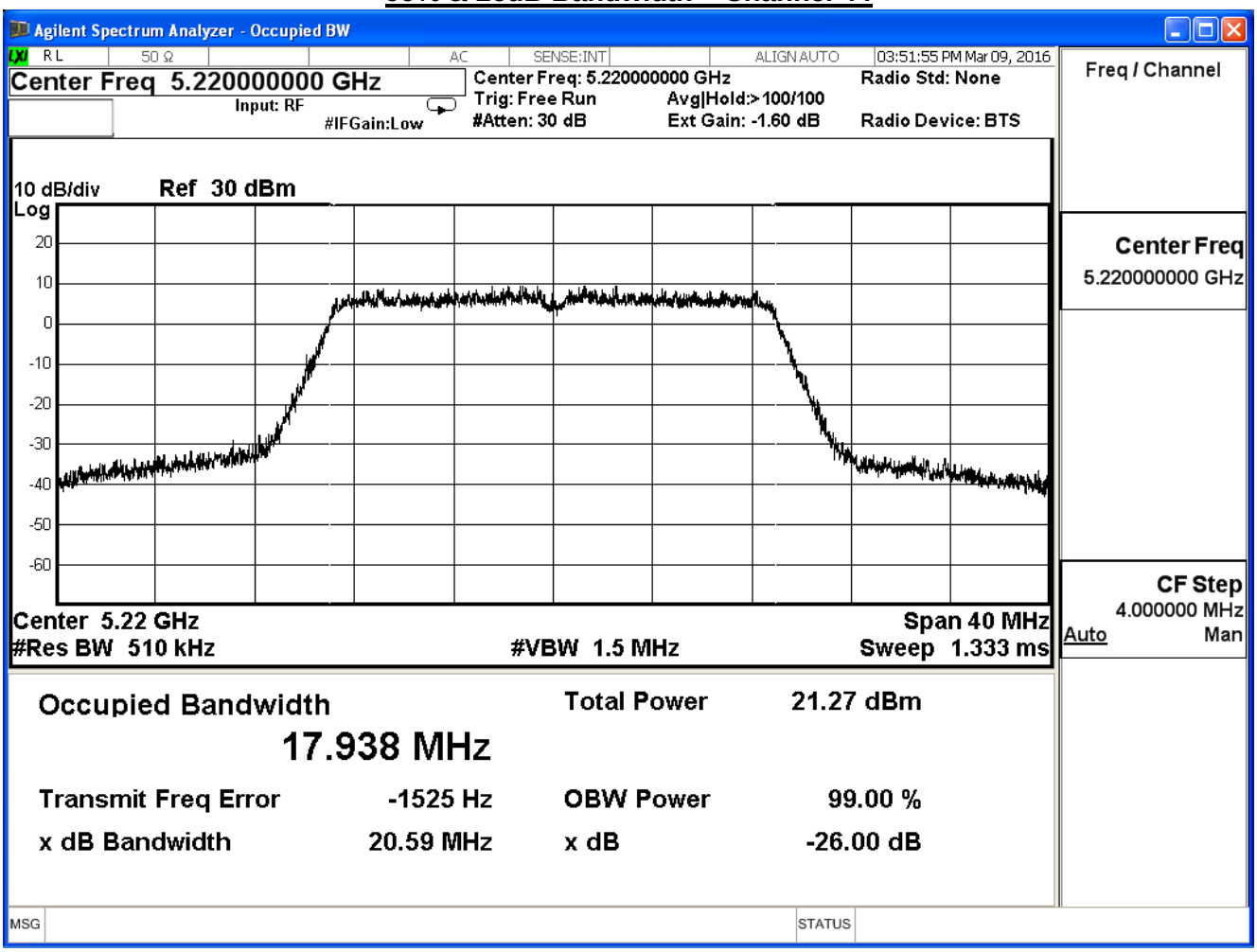
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

IEEE 802.11n_20M (ANT 1)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	20.54	17.96	--	Pass
44	5220	20.59	17.94	--	Pass
48	5240	20.61	17.97	--	Pass

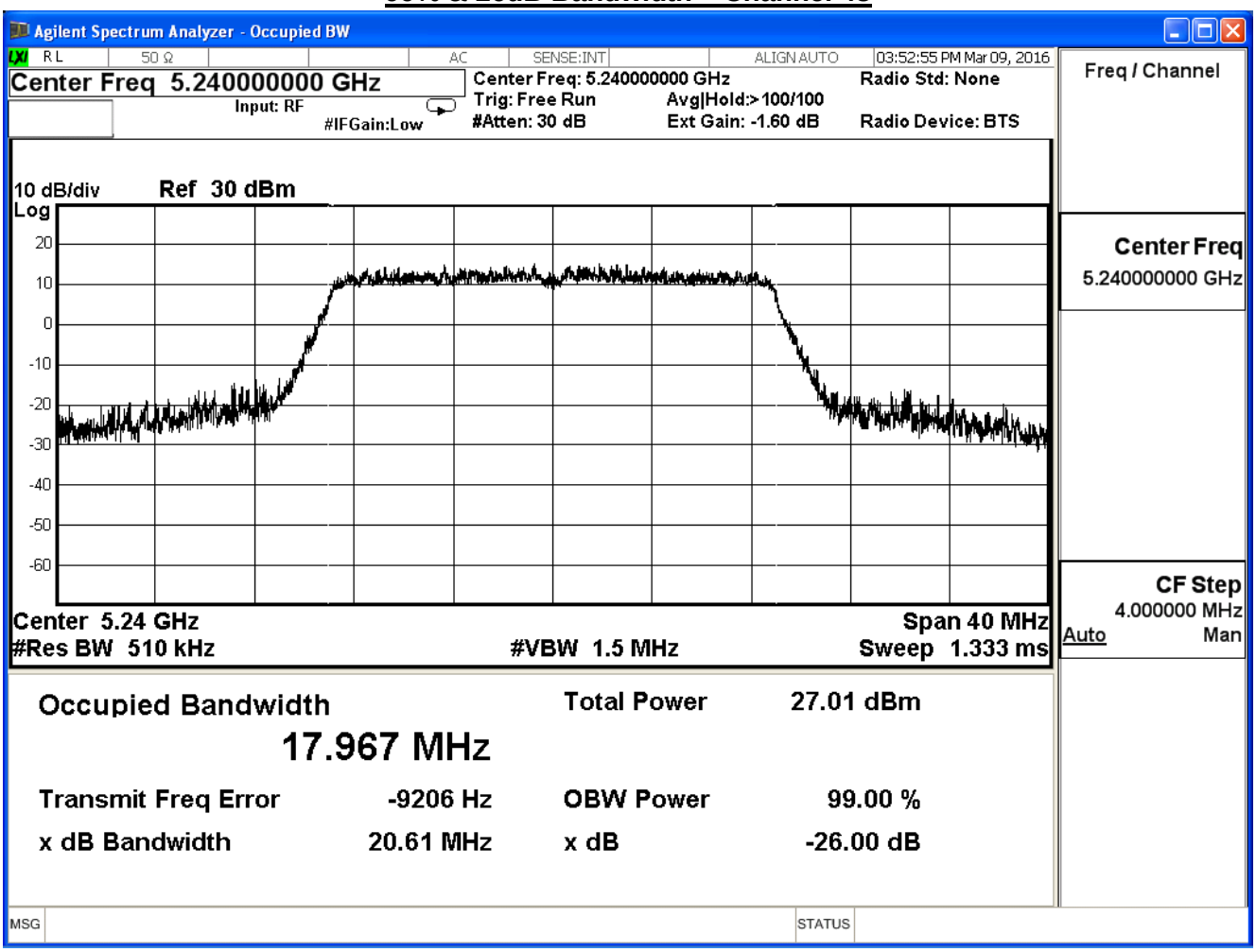
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



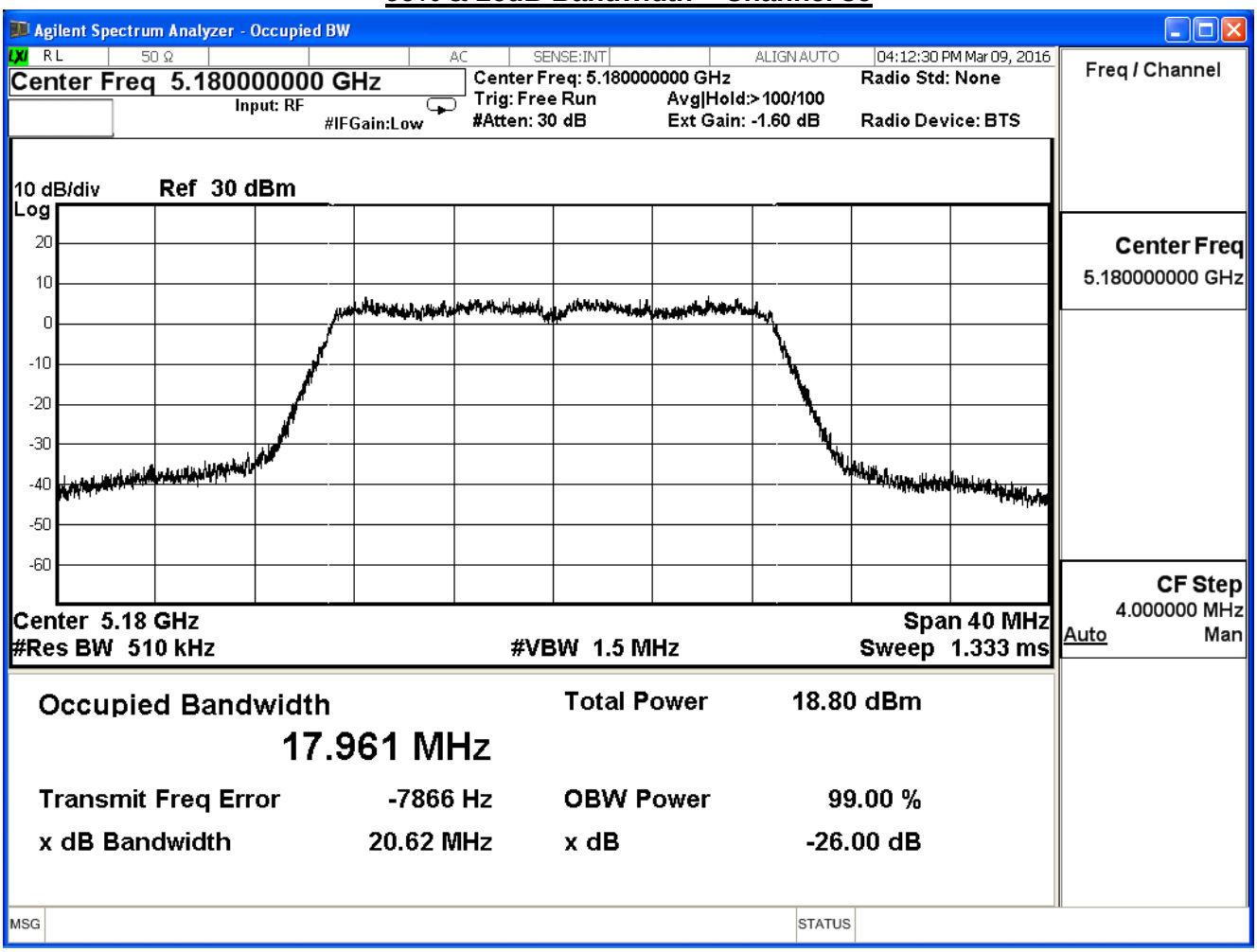
99% & 26dB Bandwidth – Channel 48



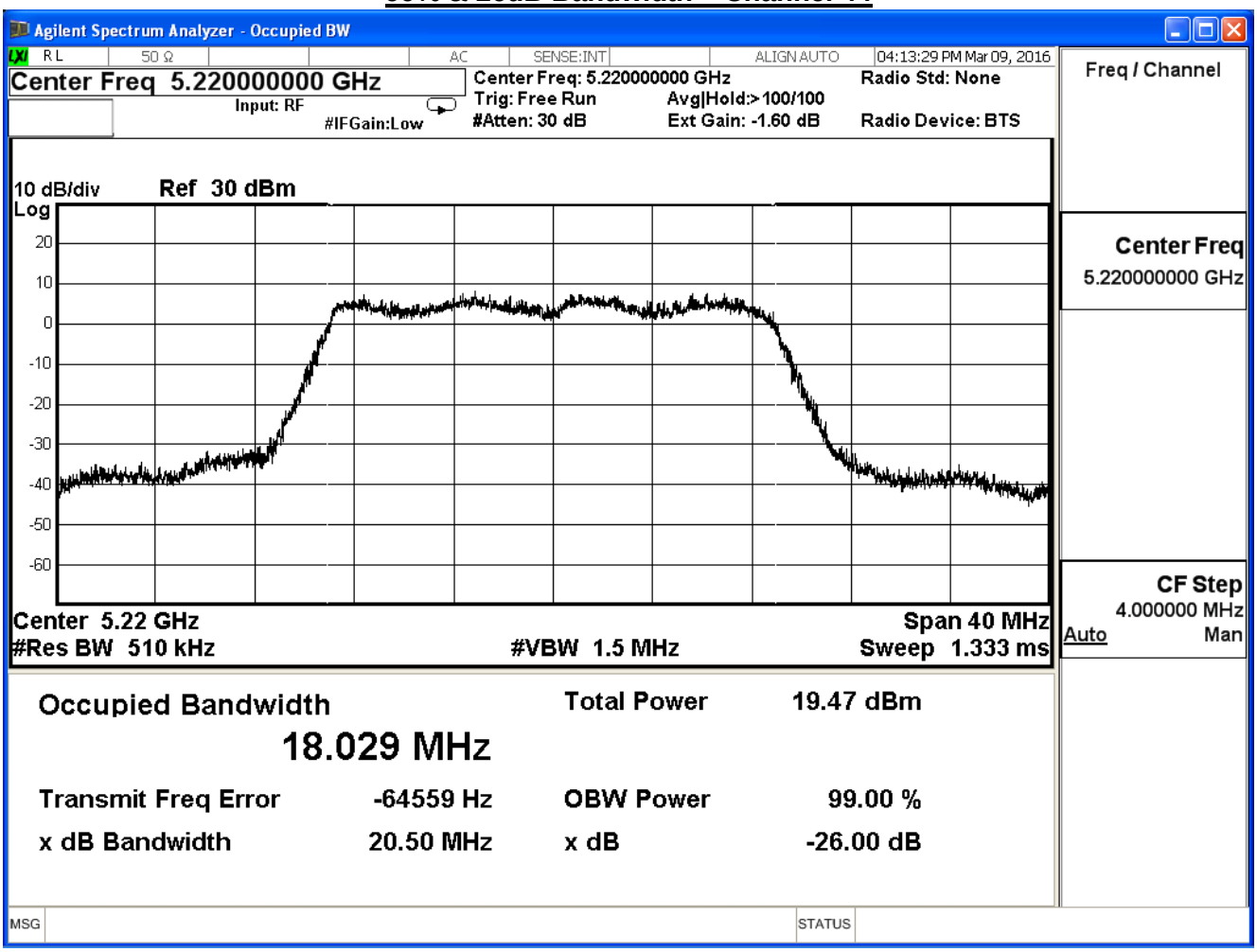
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

IEEE 802.11n_20M (ANT 2)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
36	5180	20.62	17.96	--	Pass
44	5220	20.50	18.03	--	Pass
48	5240	20.54	18.01	--	Pass

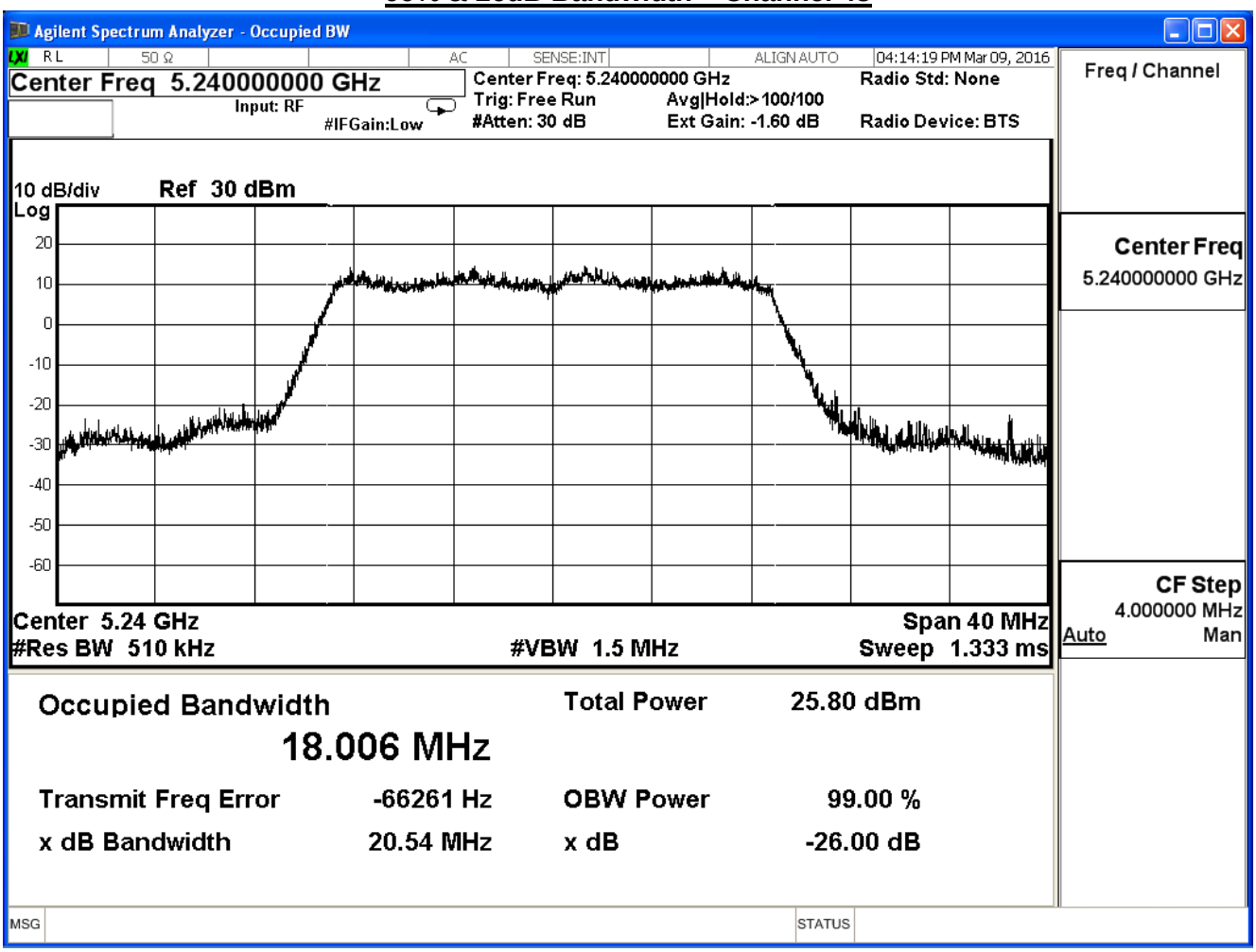
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



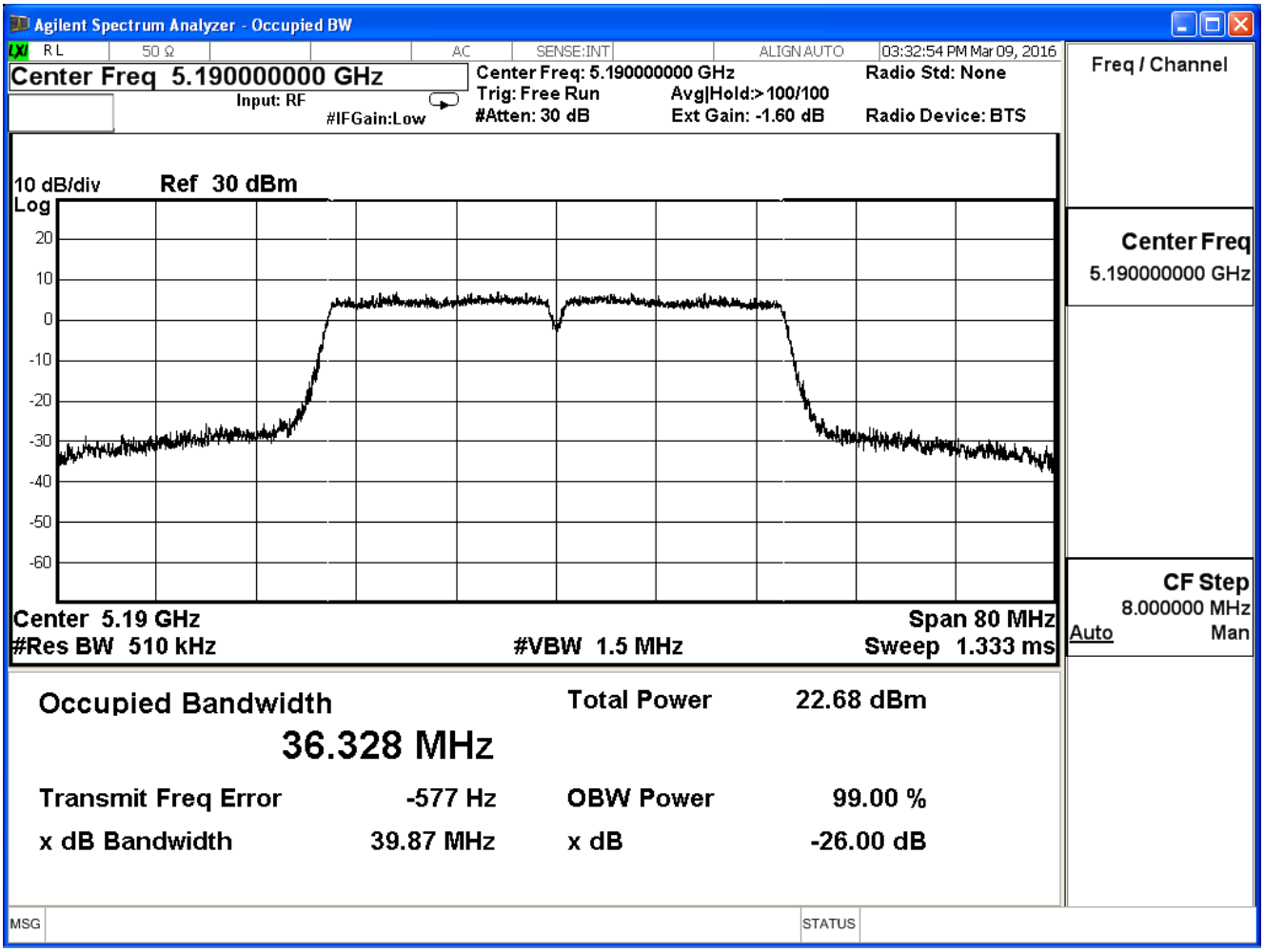
99% & 26dB Bandwidth – Channel 48



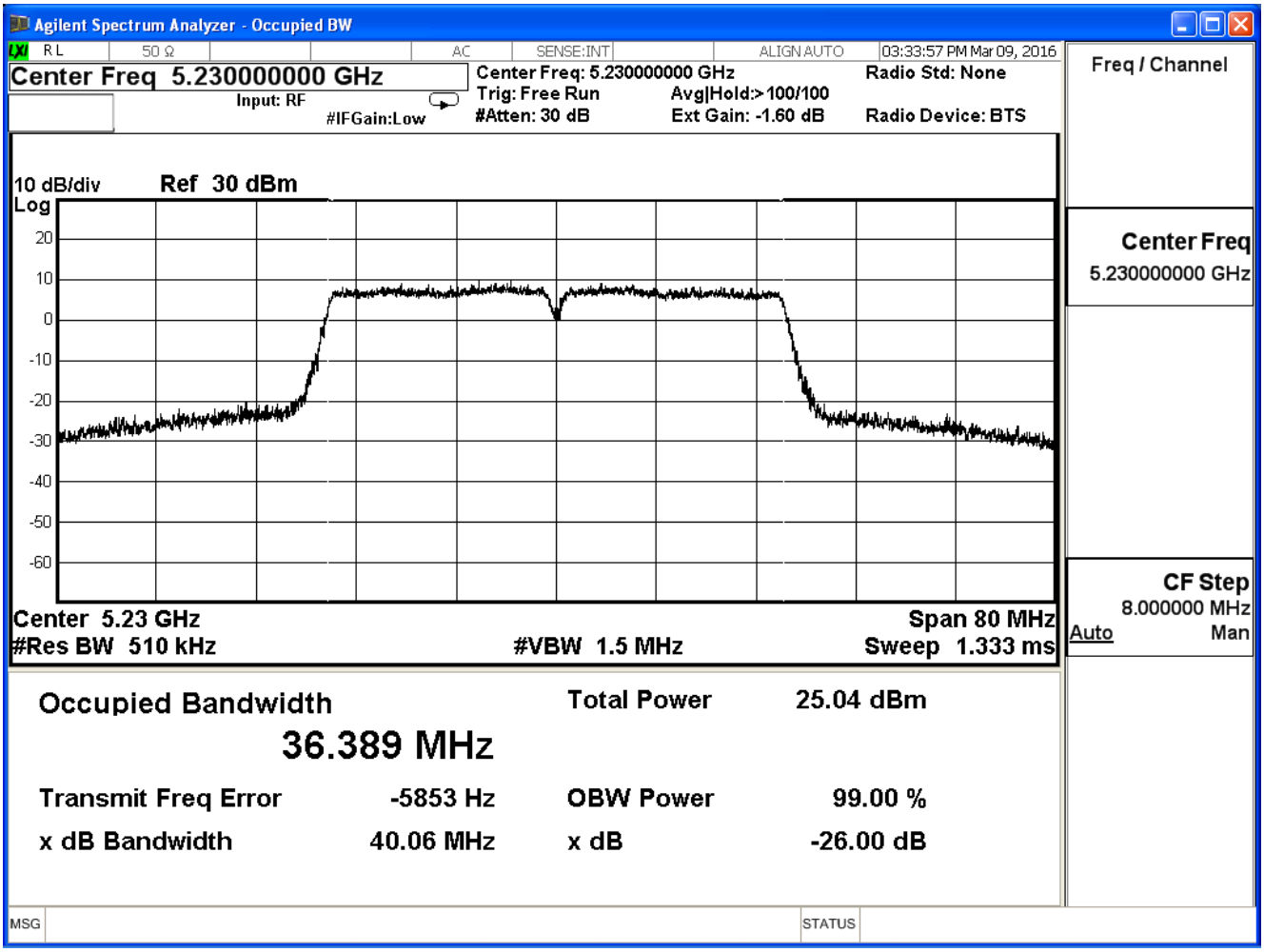
Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11n_40M(ANT 0)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
38	5190	39.87	36.33	--	Pass
46	5230	40.06	36.39	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

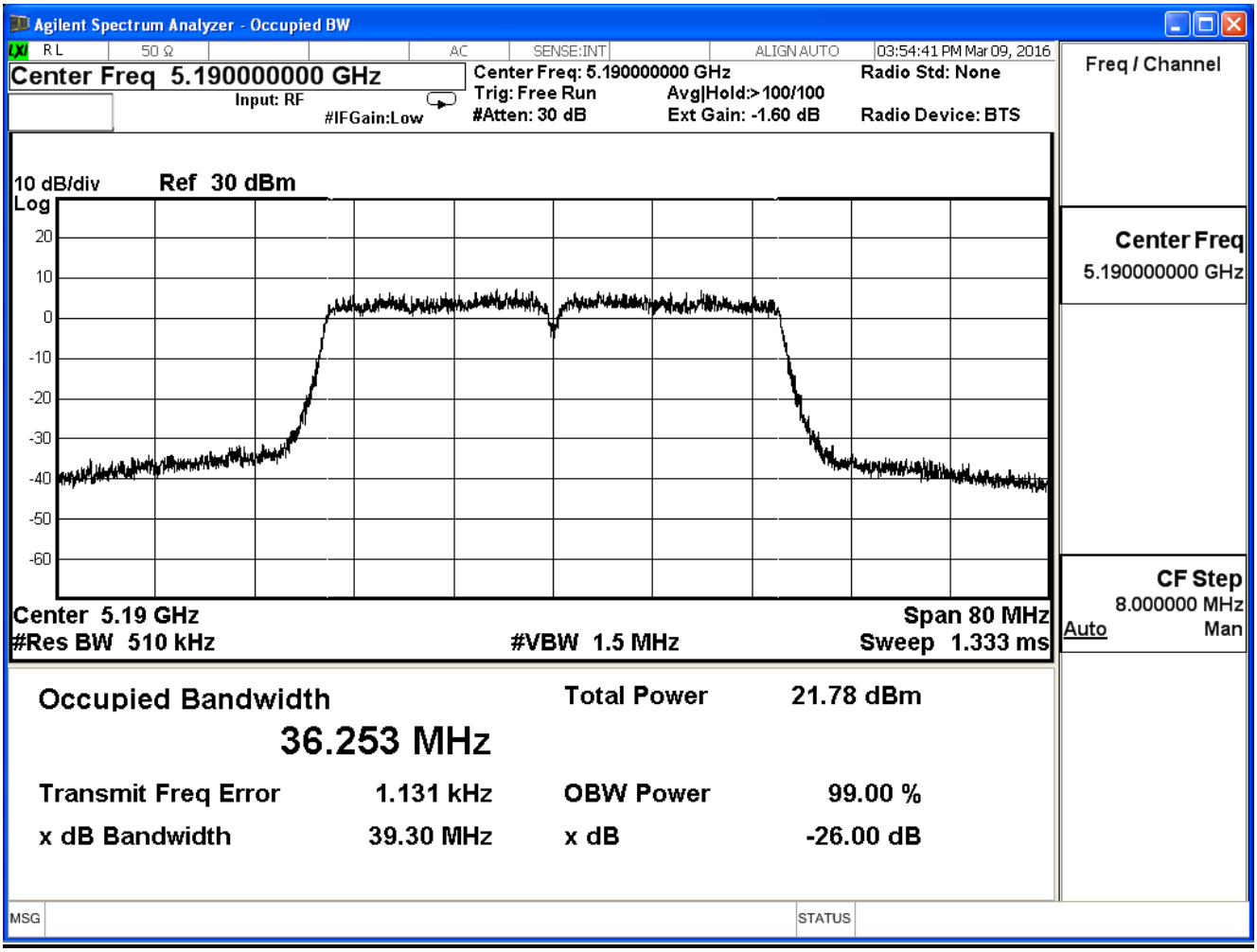


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

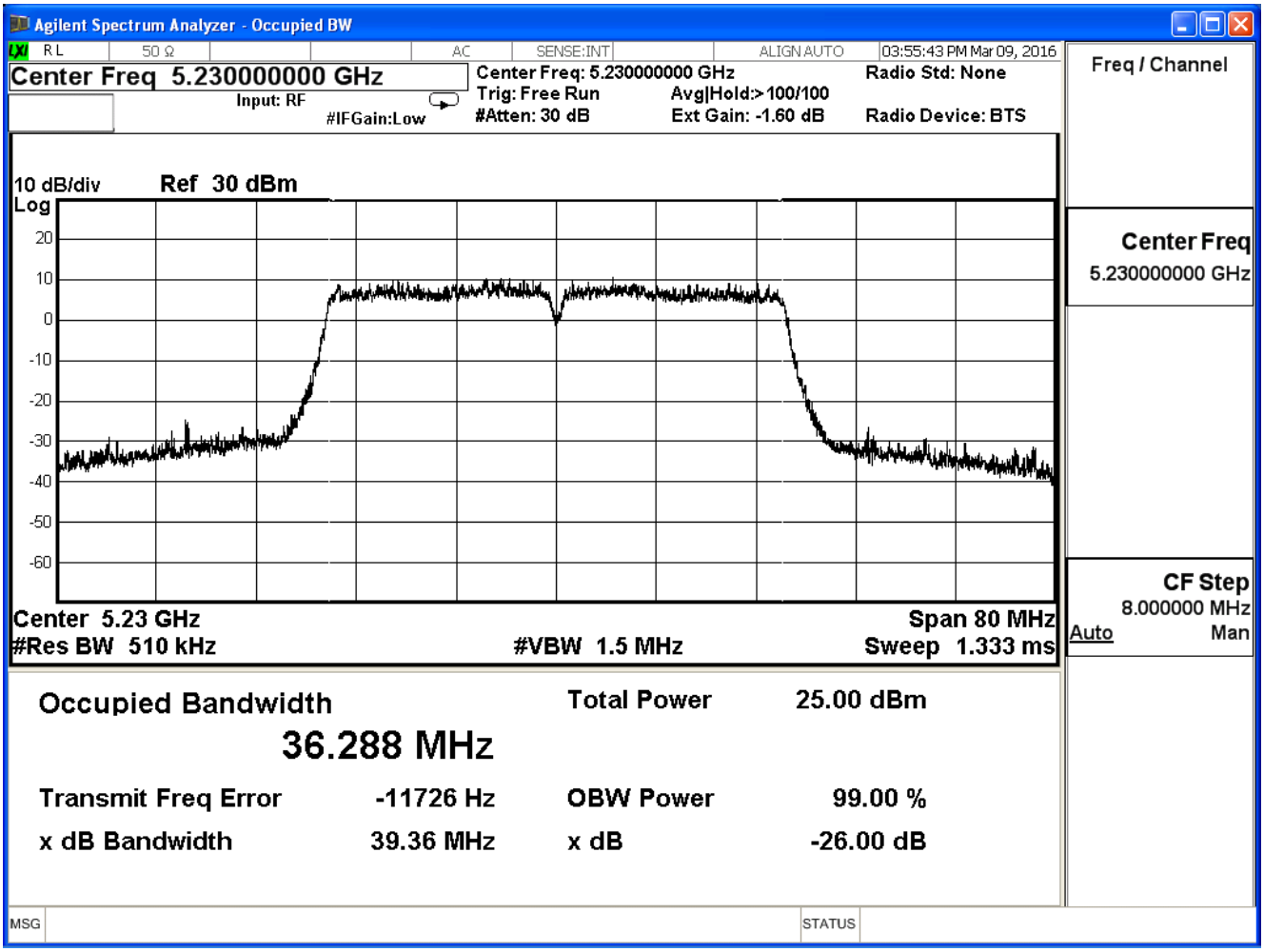
802.11n_40M(ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
38	5190	39.30	36.25	--	Pass
46	5230	39.36	36.29	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

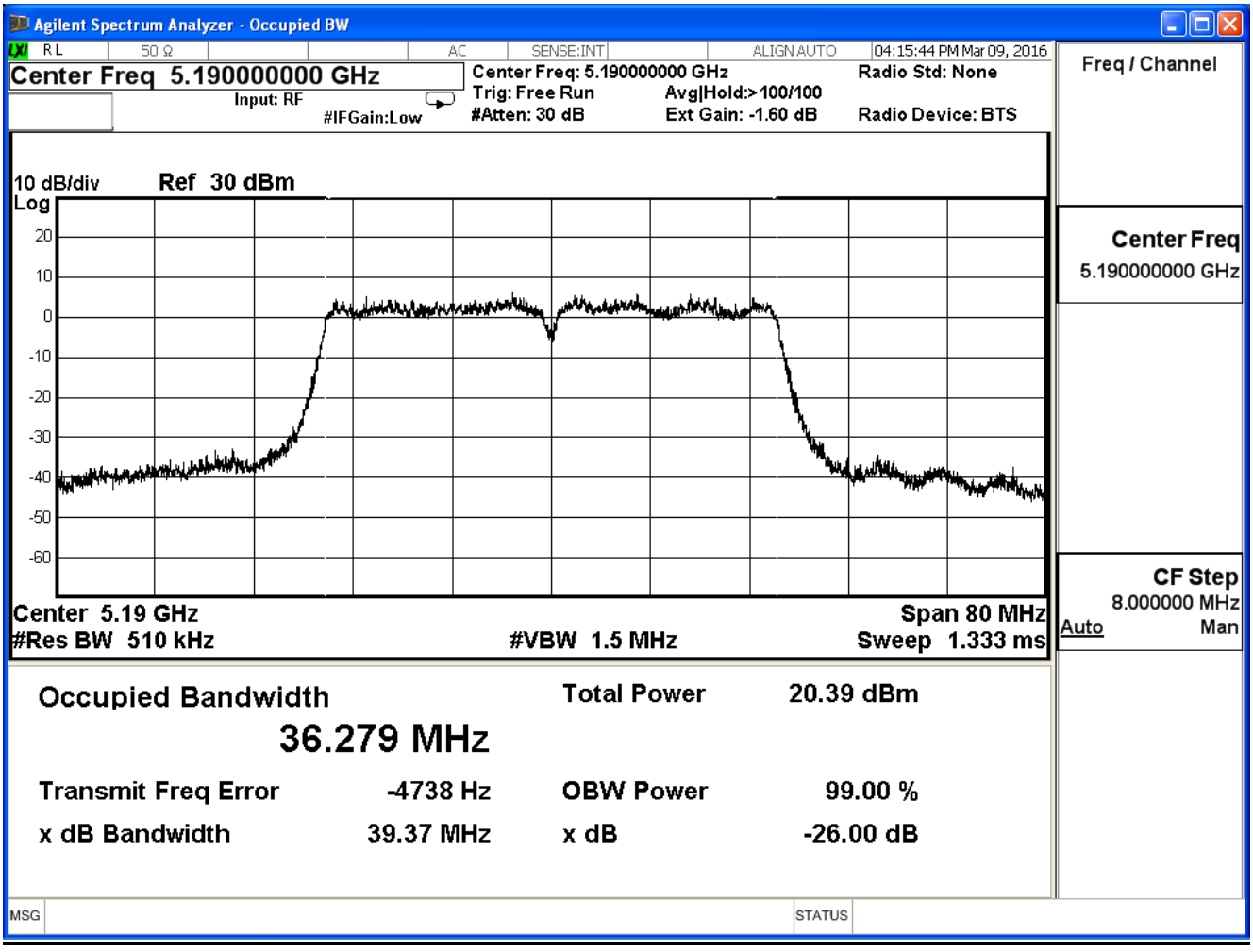


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

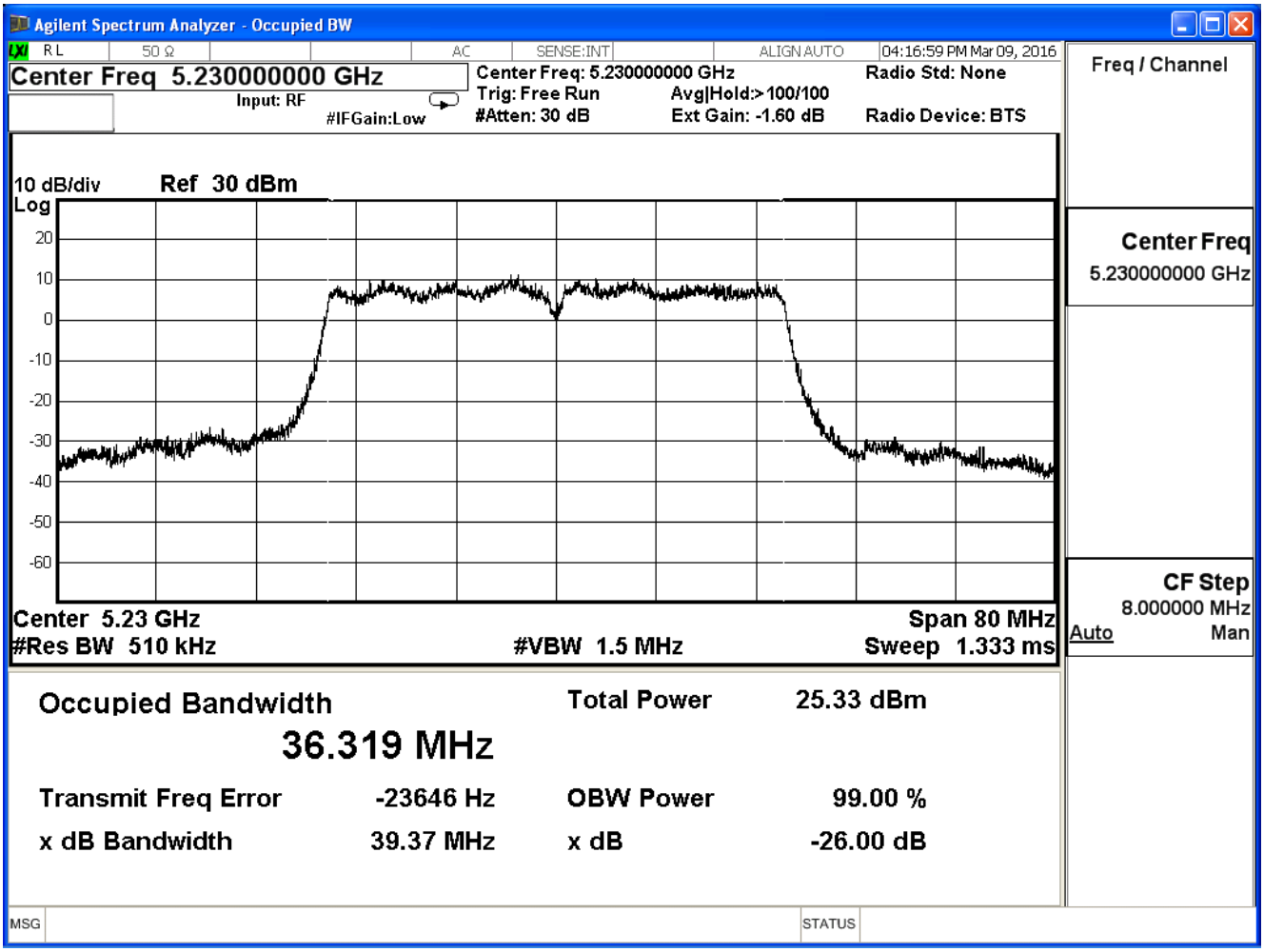
802.11n_40M(ANT 2)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
38	5190	39.37	36.28	--	Pass
46	5230	39.37	36.32	--	Pass

99% & 26dB Bandwidth – Channel 38



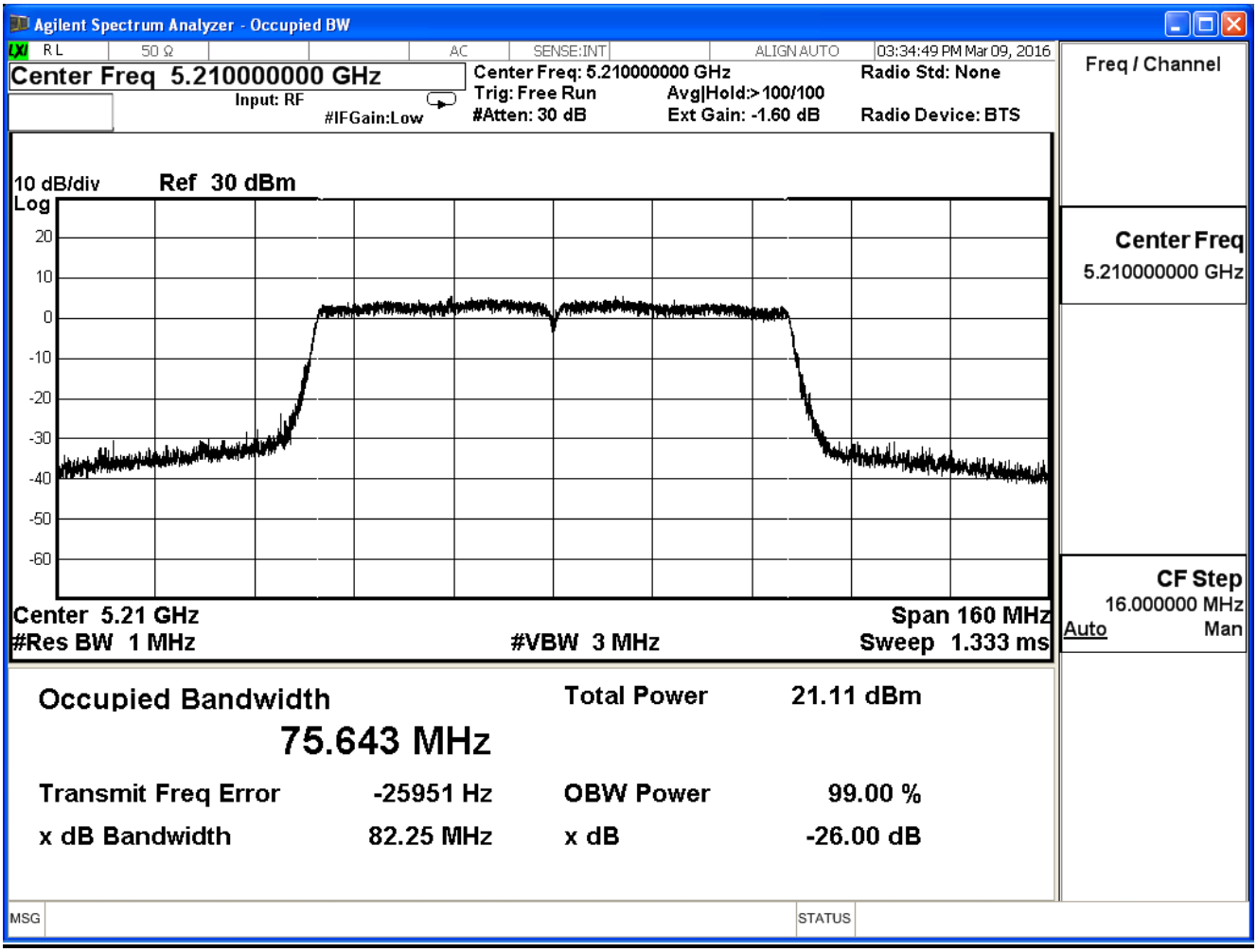
99% & 26dB Bandwidth – Channel 46



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11 ac_80M(ANT 0)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
42	5210	82.25	75.64	--	Pass

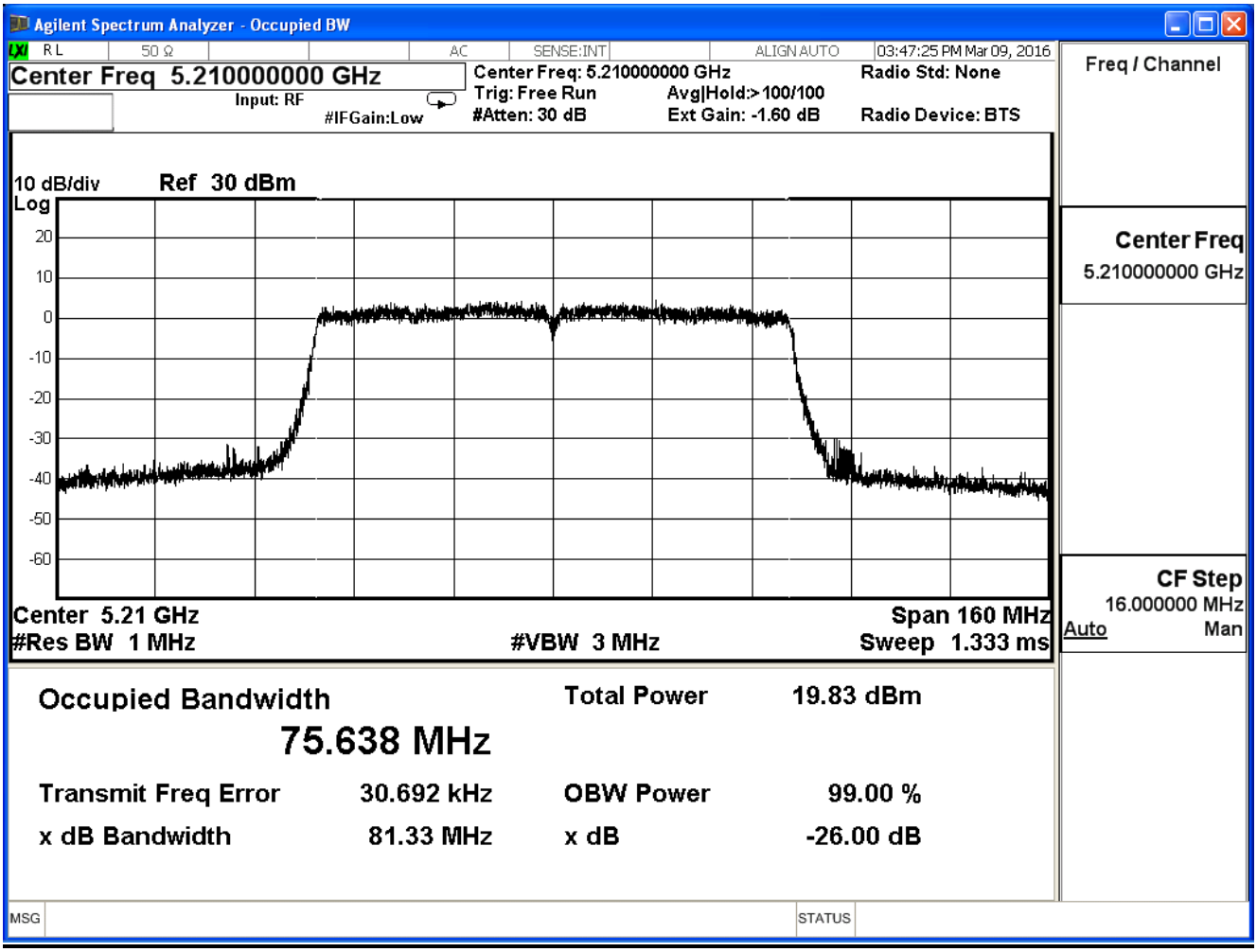
99% & 26dB Bandwidth – Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11 ac_80M(ANT 1)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
42	5210	81.33	75.64	--	Pass

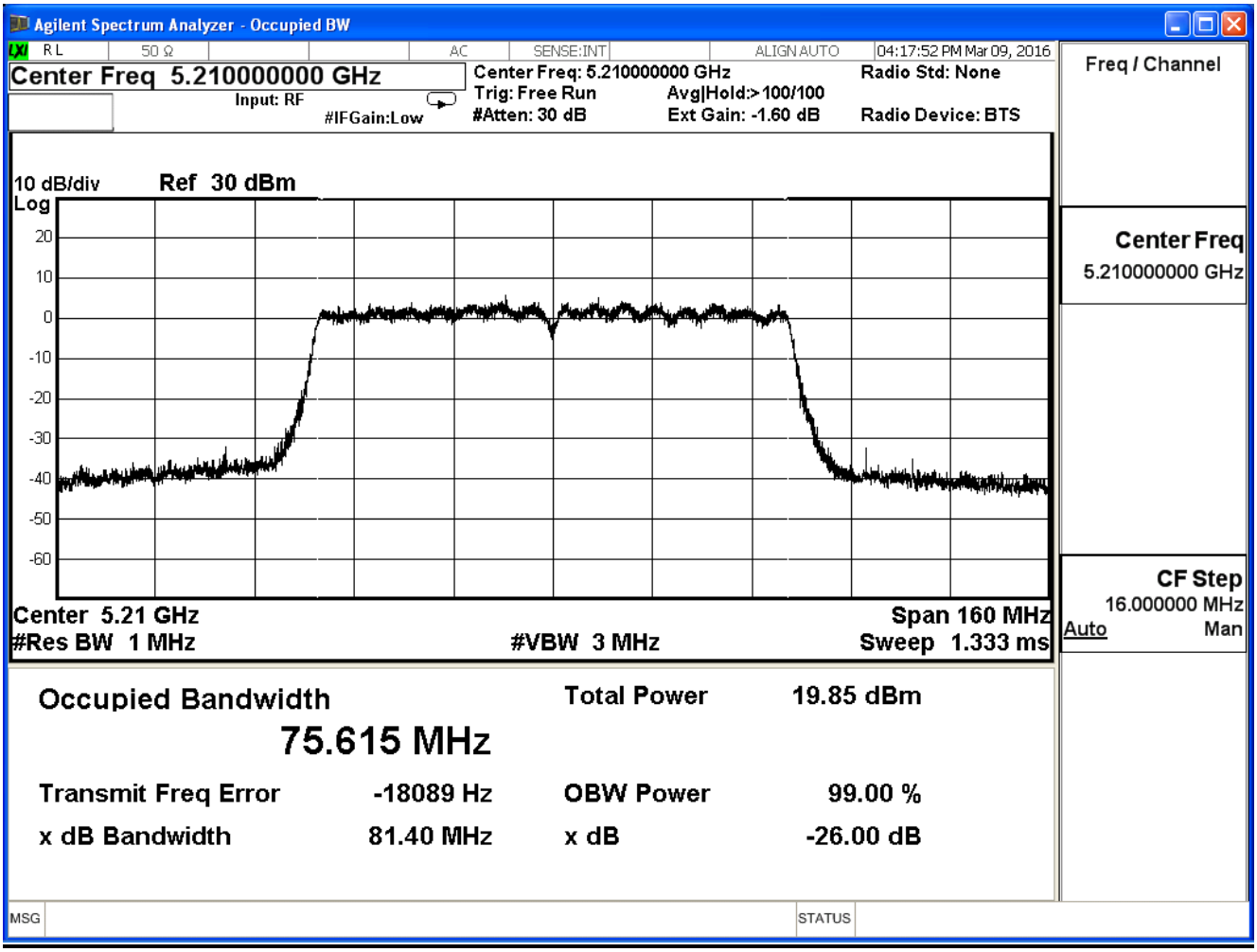
99% & 26dB Bandwidth – Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/09	Test Site	SR7

802.11 ac_80M(ANT 2)					
Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)	Result
		26dB Bandwidth	99% Bandwidth		
42	5210	81.40	75.62	--	Pass

99% & 26dB Bandwidth – Channel 42



3. Peak Transmit Output

3.1. Test Equipment

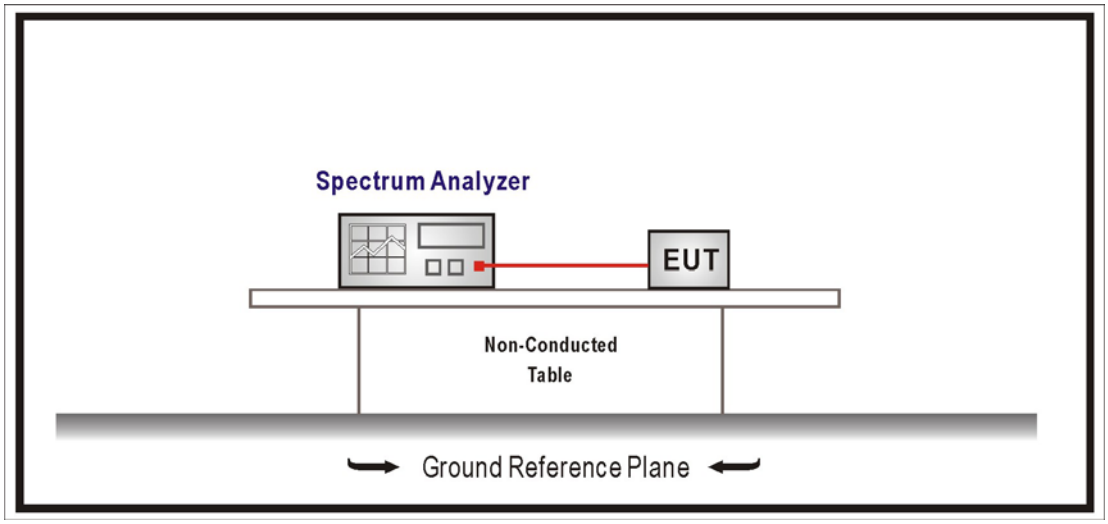
The following test equipments are used during the radiated emission tests:

Peak Transmit Output / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/07/13

Note: All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Limits

1. For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W. 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 client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. The maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW. 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.
4. For the band 5.725-5.850 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W. 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

The EUT was setup to ANSI C63.10: 2009; tested to U-NII test procedure of KDB 789033 D02 General UNII Test Procedures New Rules v01 for compliance to FCC 47CFR Subpart E requirements.

3.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

3.6. Test Result

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

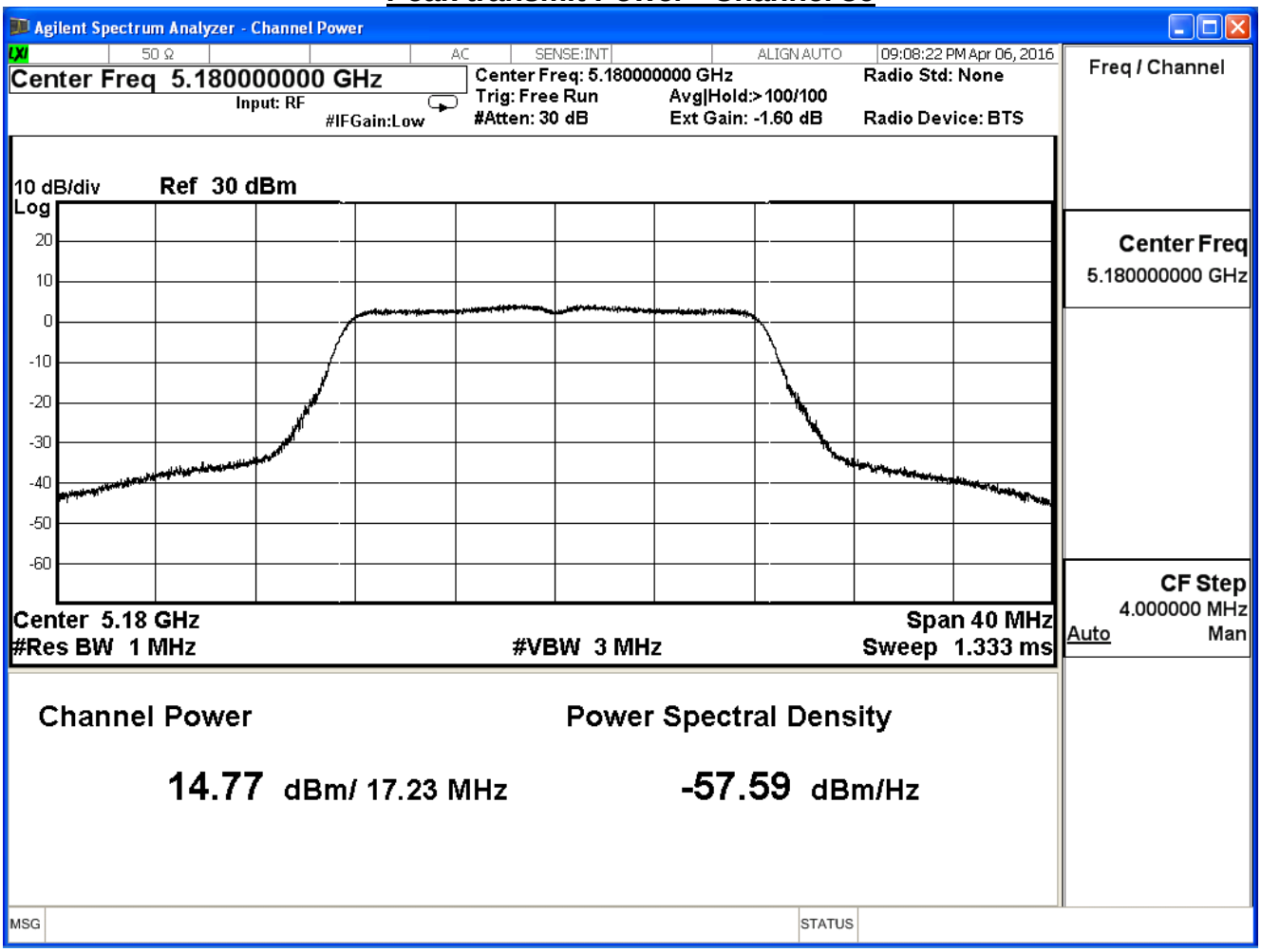
802.11a (ANT 0)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	14.77	≤24
44	5220	13.28	≤24
48	5240	14.81	≤24

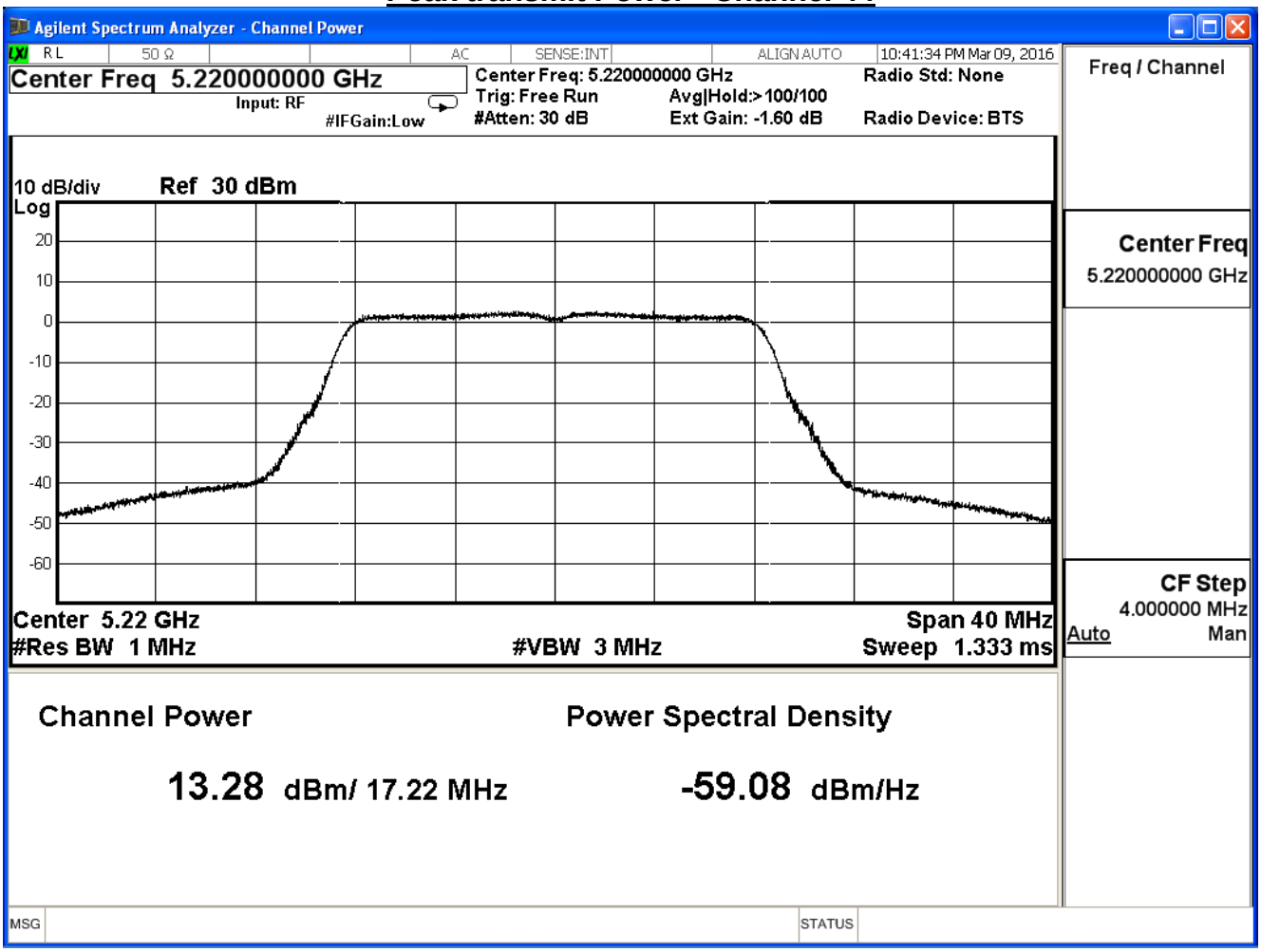
The worst emission of data rate is 6Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	14.77	--	--	--	--	--	--	≤24dBm
44	5220	13.28	13.17	12.97	12.87	12.63	12.51	12.36	
48	5240	14.81	--	--	--	--	--	--	

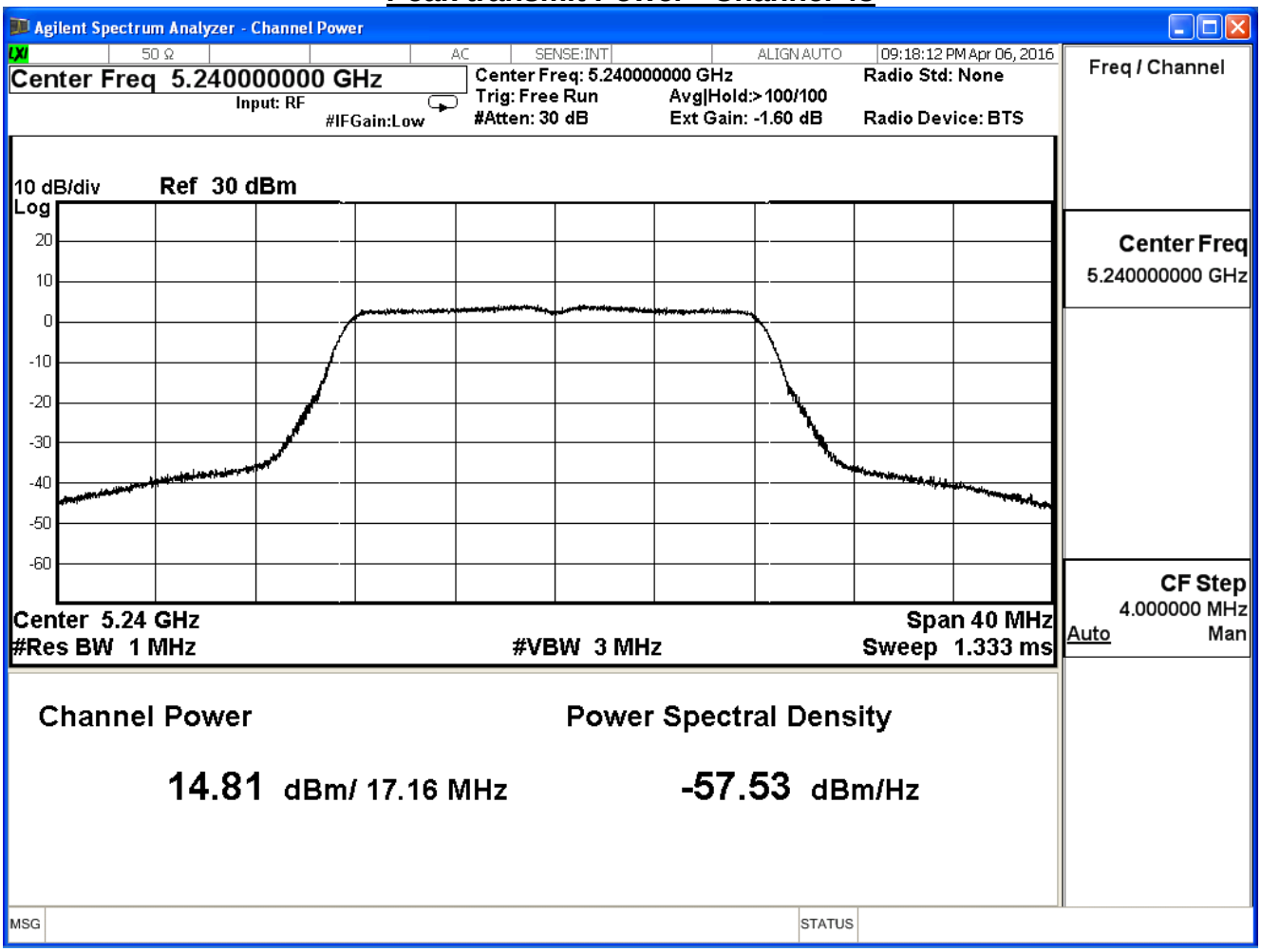
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

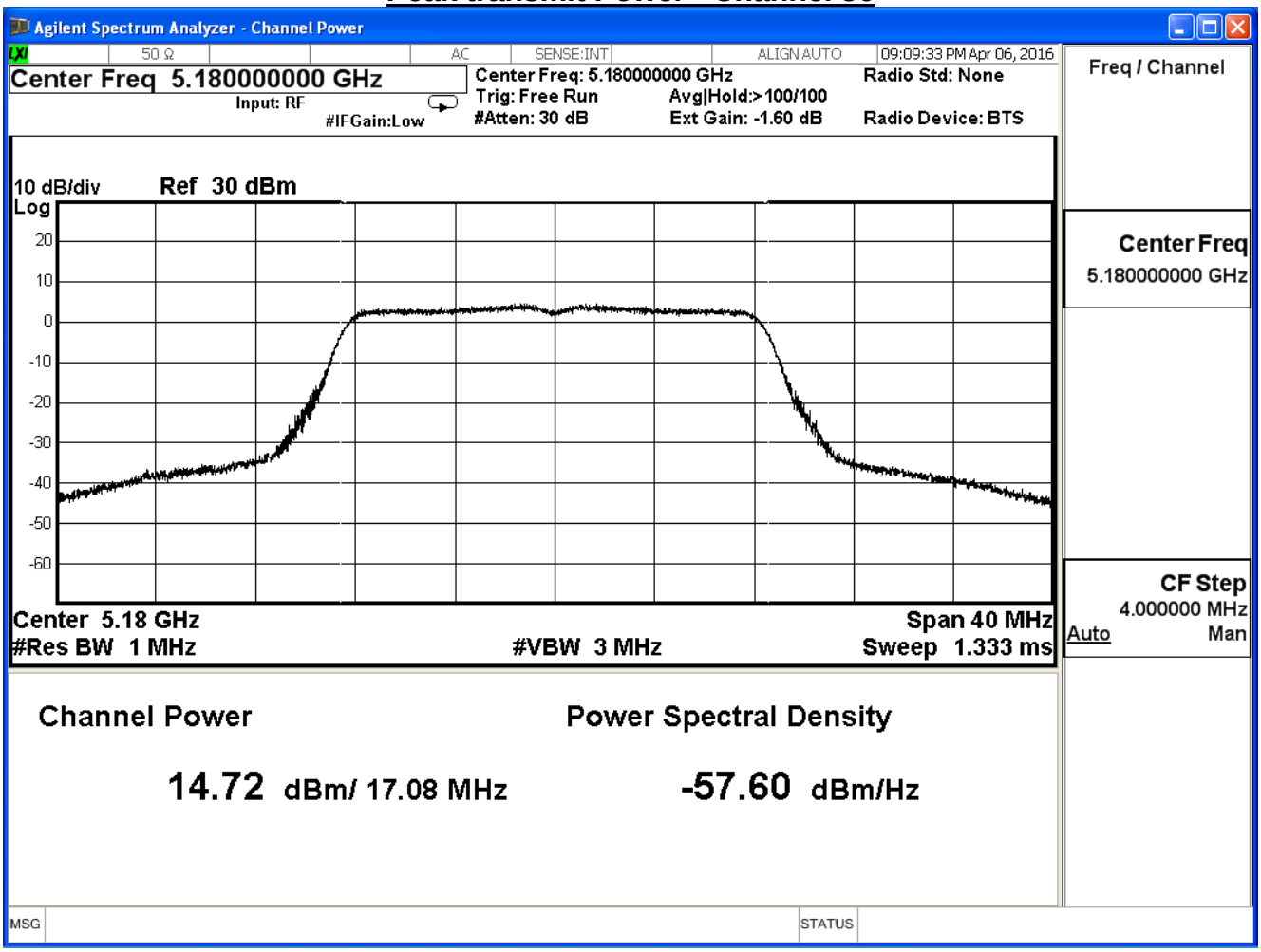
802.11a (ANT 1)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	14.72	≤24
44	5220	13.22	≤24
48	5240	14.74	≤24

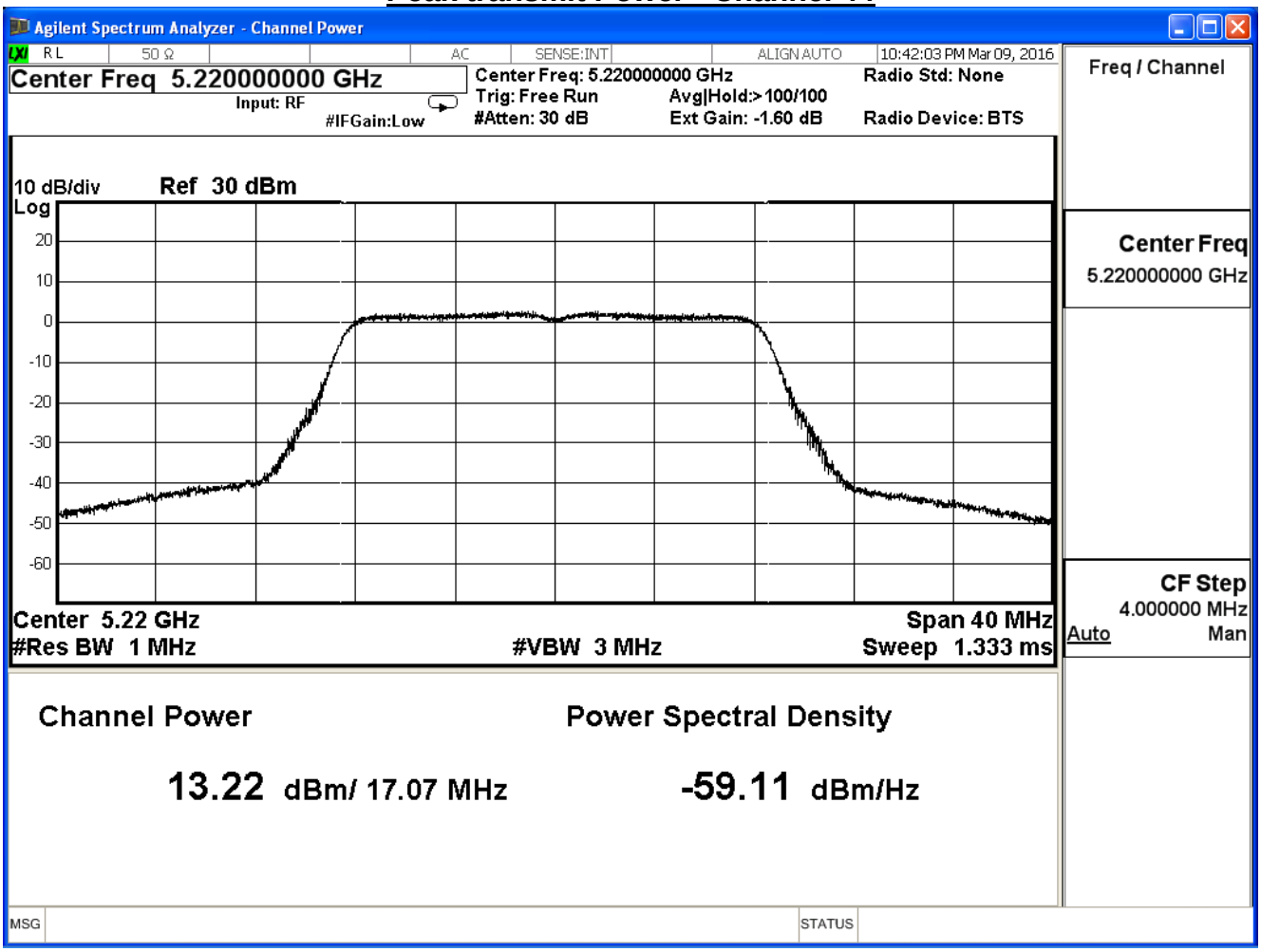
The worst emission of data rate is 6Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	14.72	--	--	--	--	--	--	≤24dBm
44	5220	13.22	13.02	12.90	12.70	12.50	12.37	12.25	
48	5240	14.74	--	--	--	--	--	--	

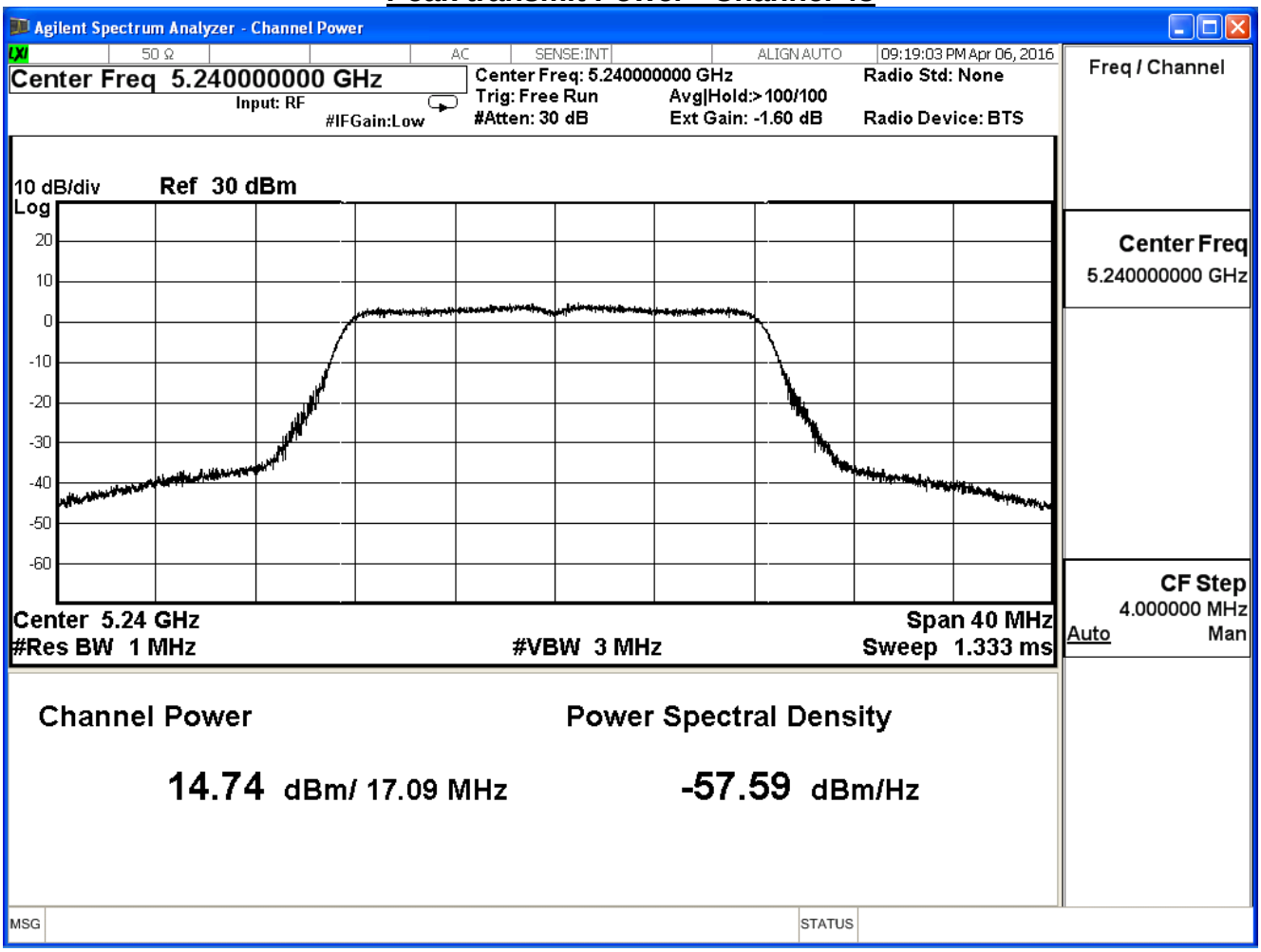
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

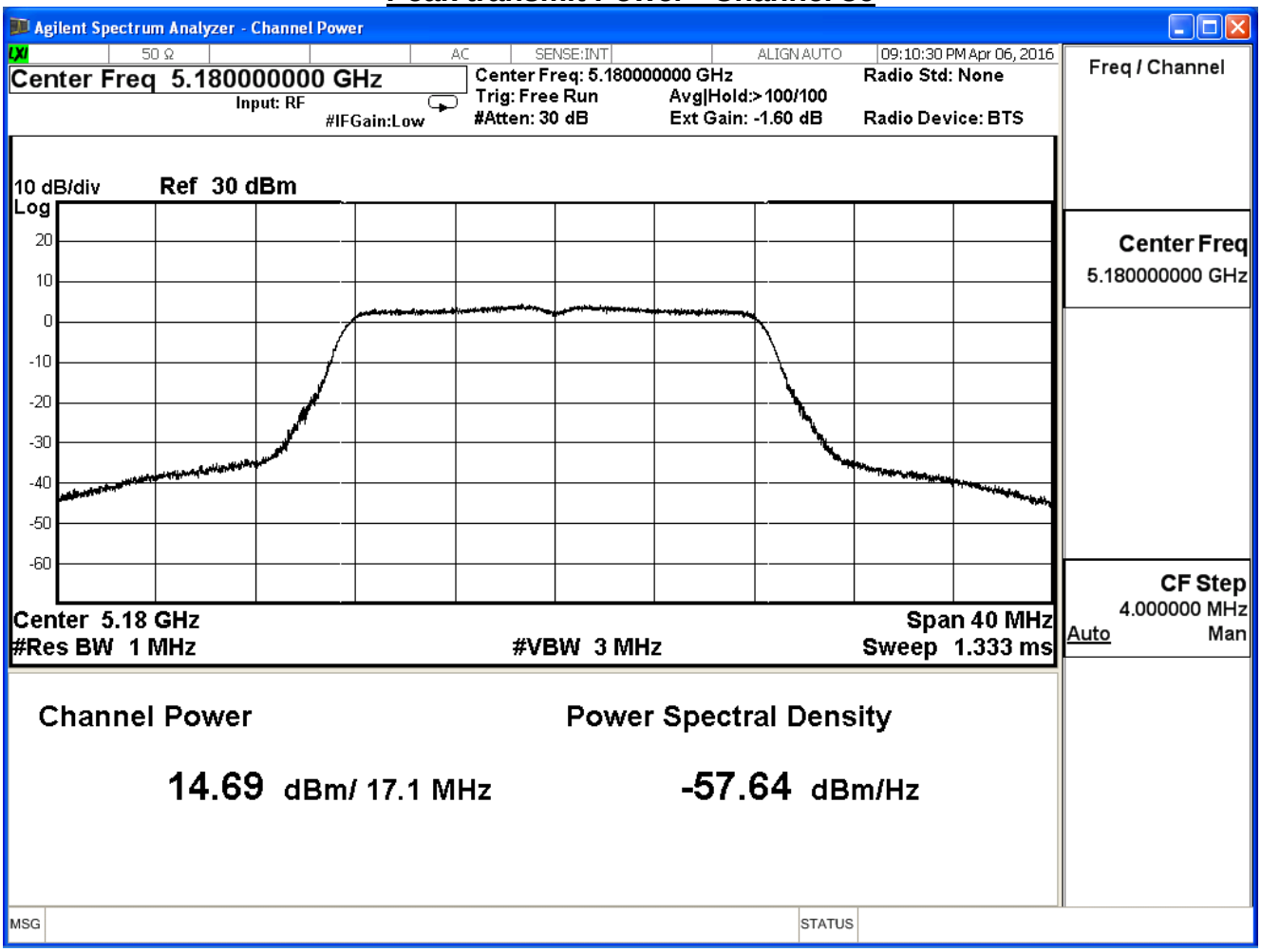
802.11a (ANT 2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	14.69	≤24
44	5220	13.07	≤24
48	5240	14.72	≤24

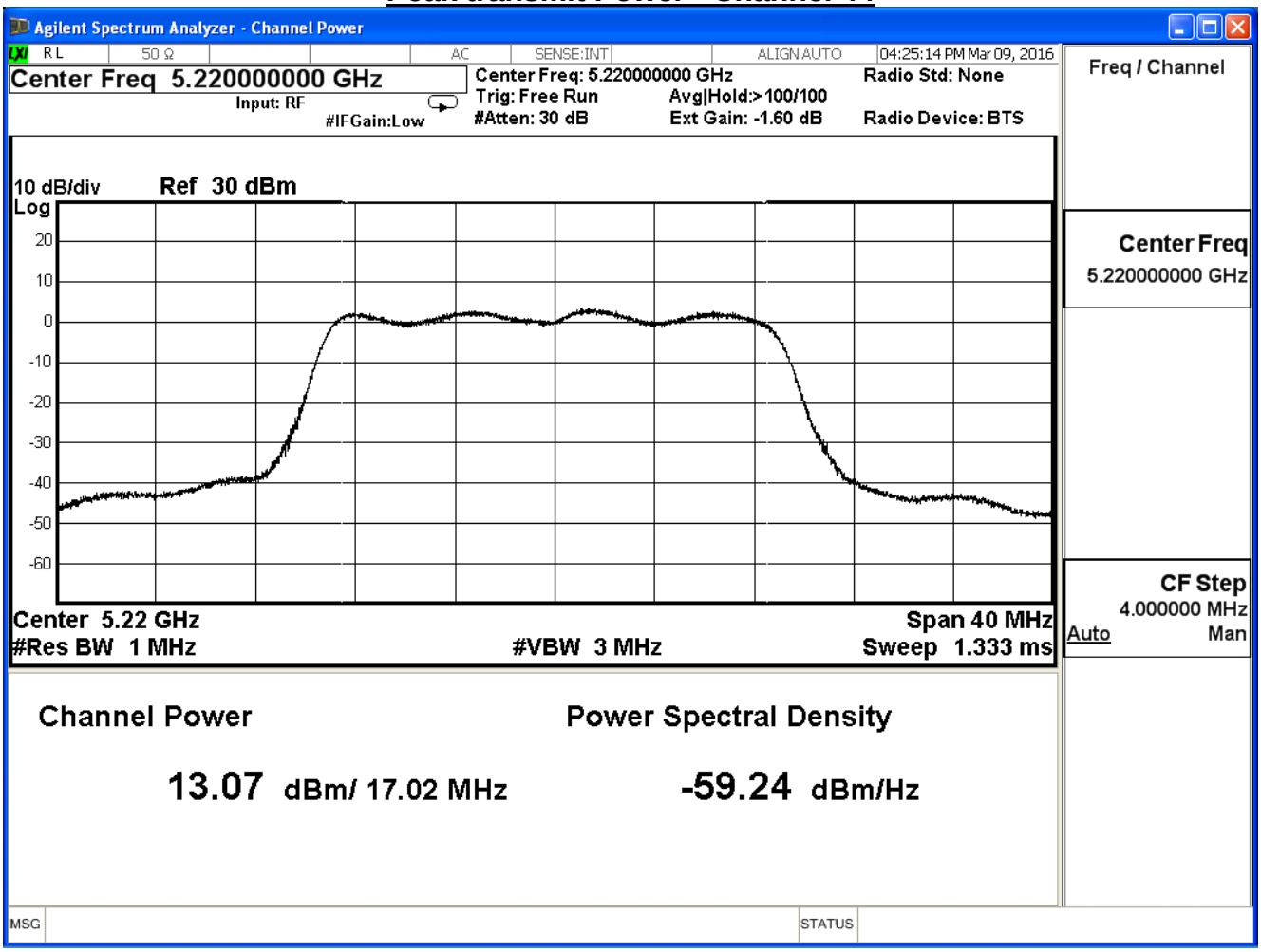
The worst emission of data rate is 6Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	14.69	--	--	--	--	--	--	≤24dBm
44	5220	13.07	12.97	12.77	12.53	12.33	12.09	11.97	
48	5240	14.72	--	--	--	--	--	--	

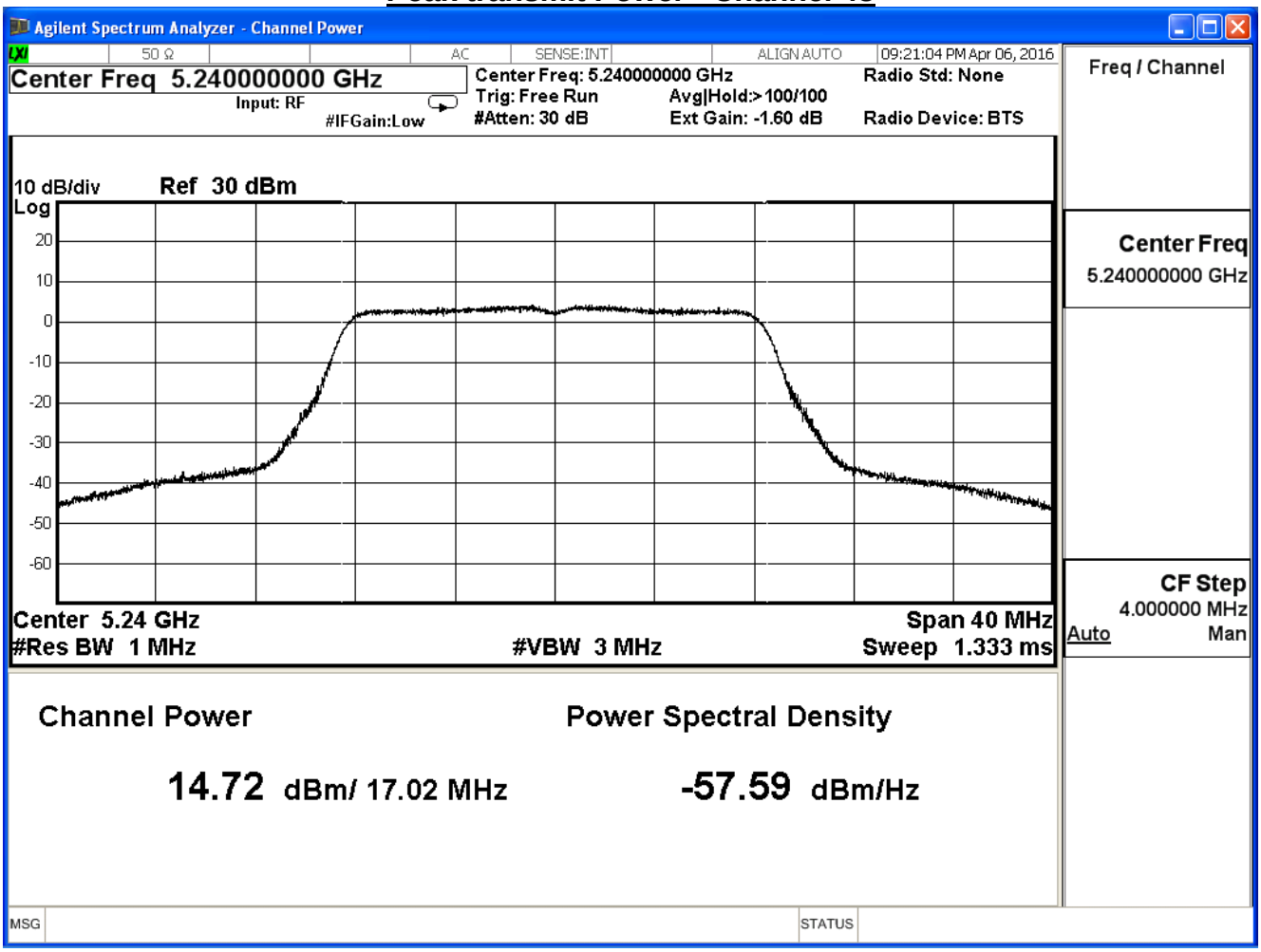
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

802.11a (ANT 0+1+2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	19.50	≤24
44	5220	17.96	≤24
48	5240	19.53	≤24

The worst emission of data rate is 6Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
149	5745	19.50	--	--	--	--	--	--	≤24dBm
157	5785	17.96	17.83	17.65	17.47	17.26	17.10	16.97	
165	5825	19.53	--	--	--	--	--	--	

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

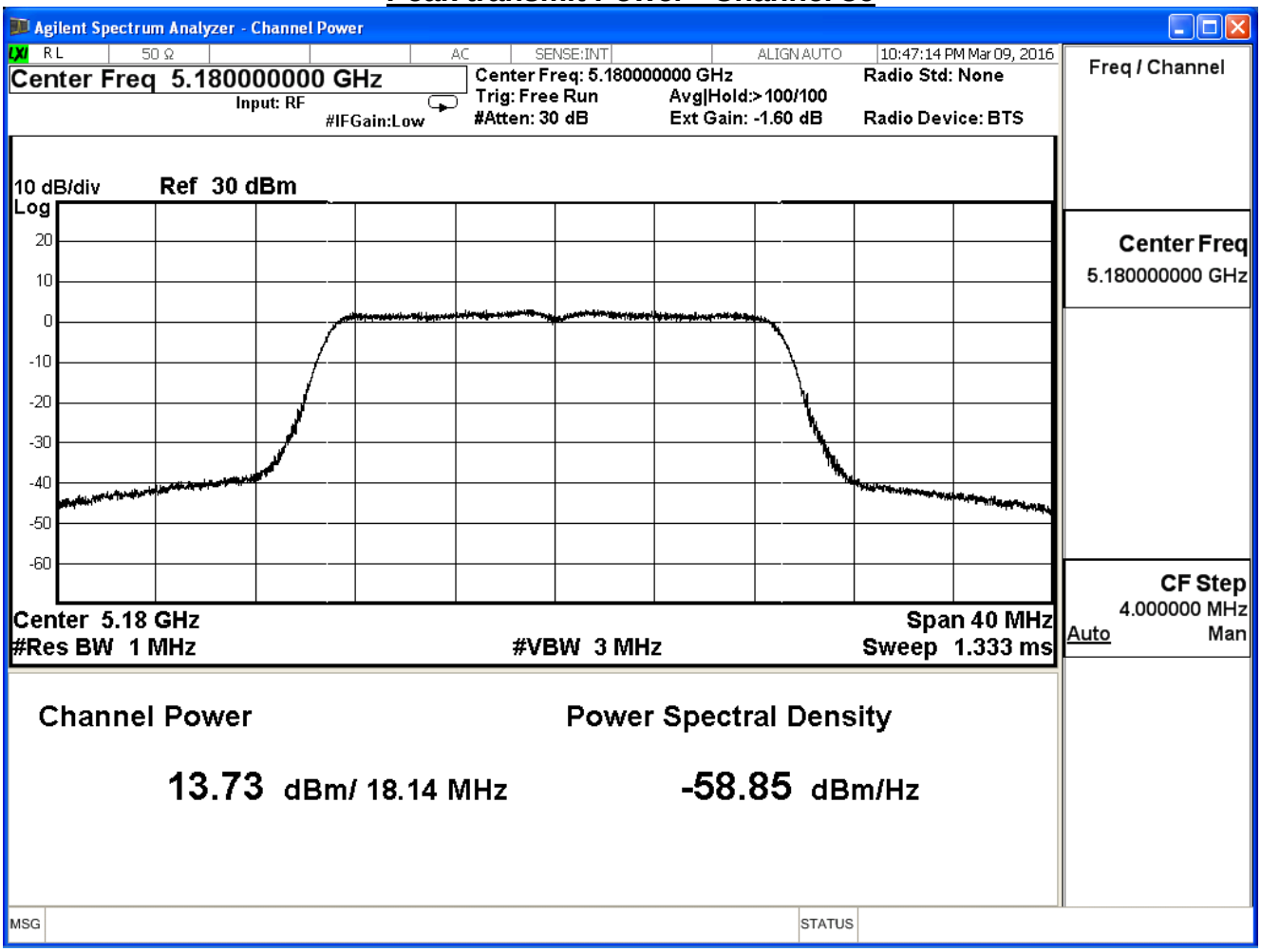
IEEE 802.11n_20M (ANT 0)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	13.73	≤24
44	5220	14.17	≤24
48	5240	15.04	≤24

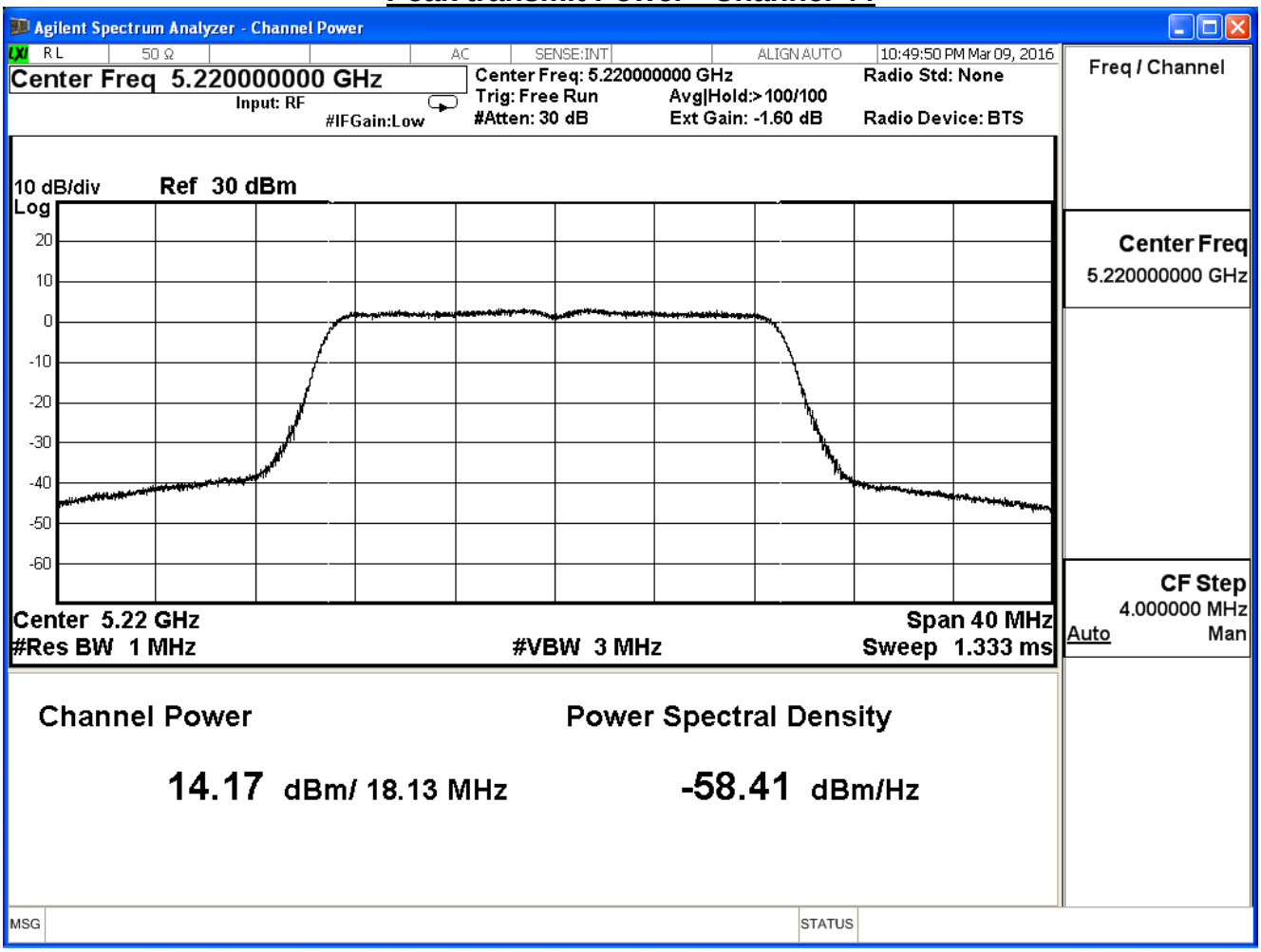
The worst emission of data rate is 6.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		6.5	13	19.5	26	39	52	58.5	65	
36	5180	13.73	--	--	--	--	--	--	--	≤24dBm
44	5220	14.17	13.95	13.75	13.65	13.41	13.17	13.02	12.78	
48	5240	15.04	--	--	--	--	--	--	--	

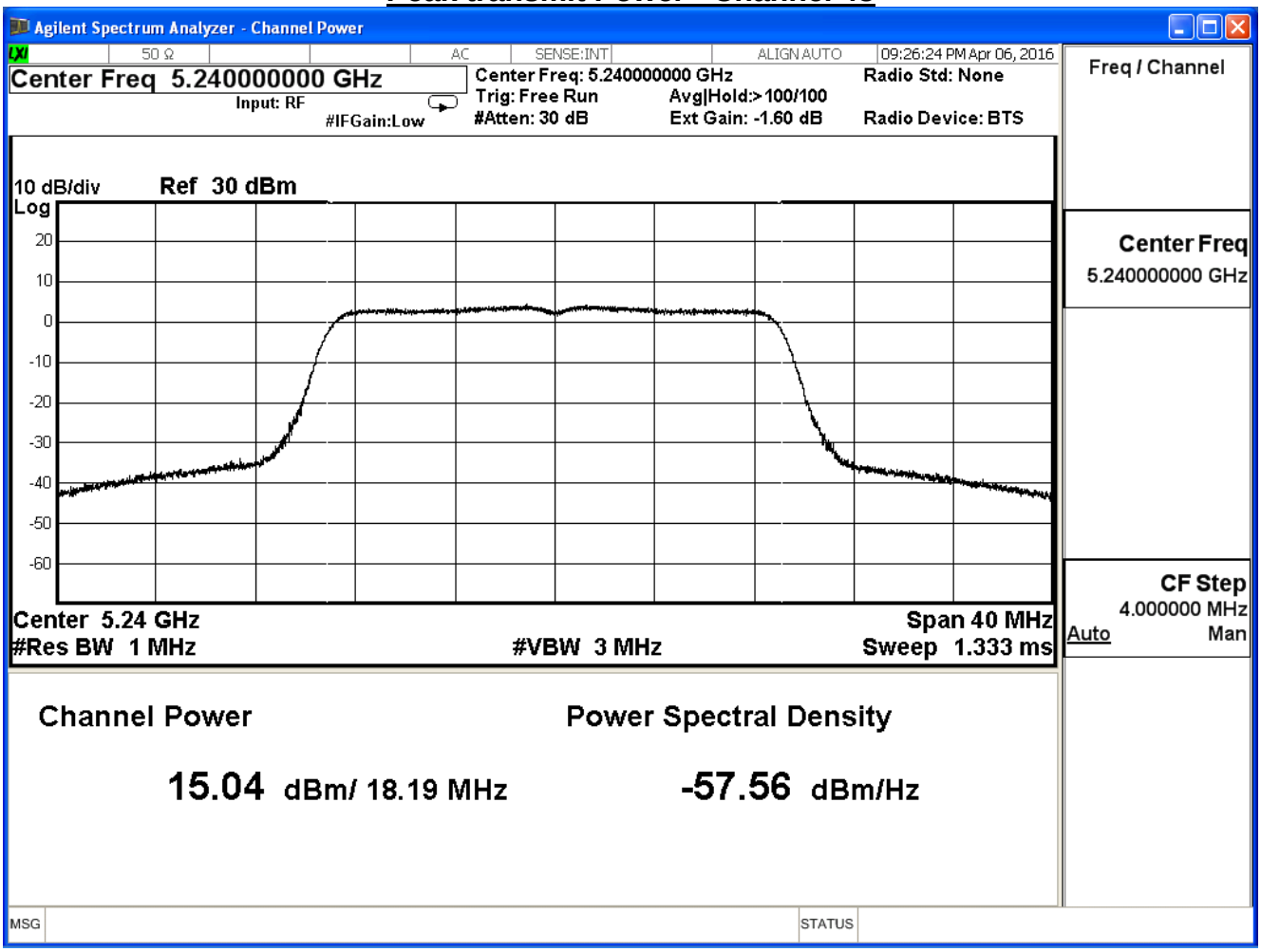
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

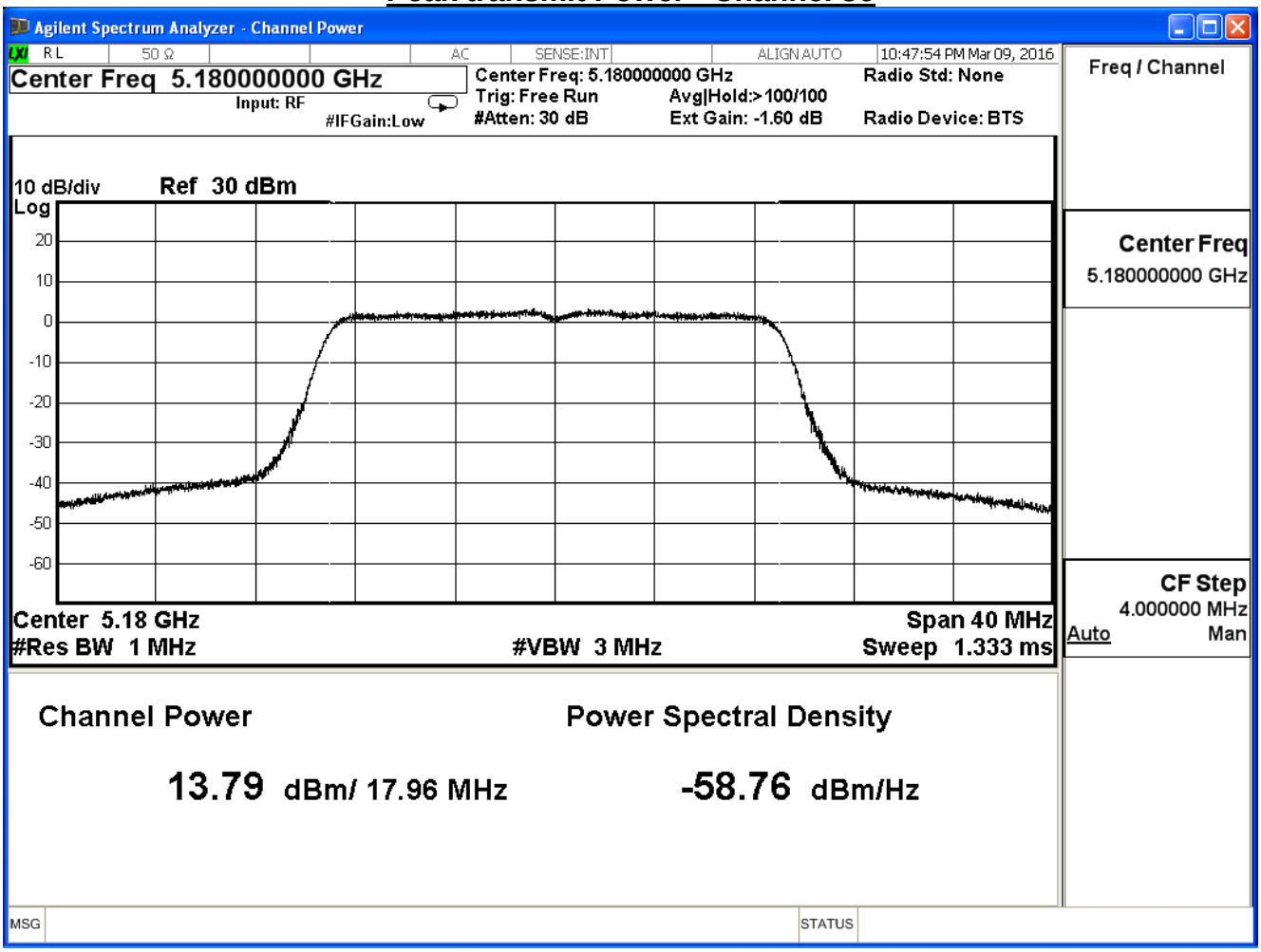
IEEE 802.11n_20M (ANT 1)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	13.79	≤24
44	5220	14.24	≤24
48	5240	14.88	≤24

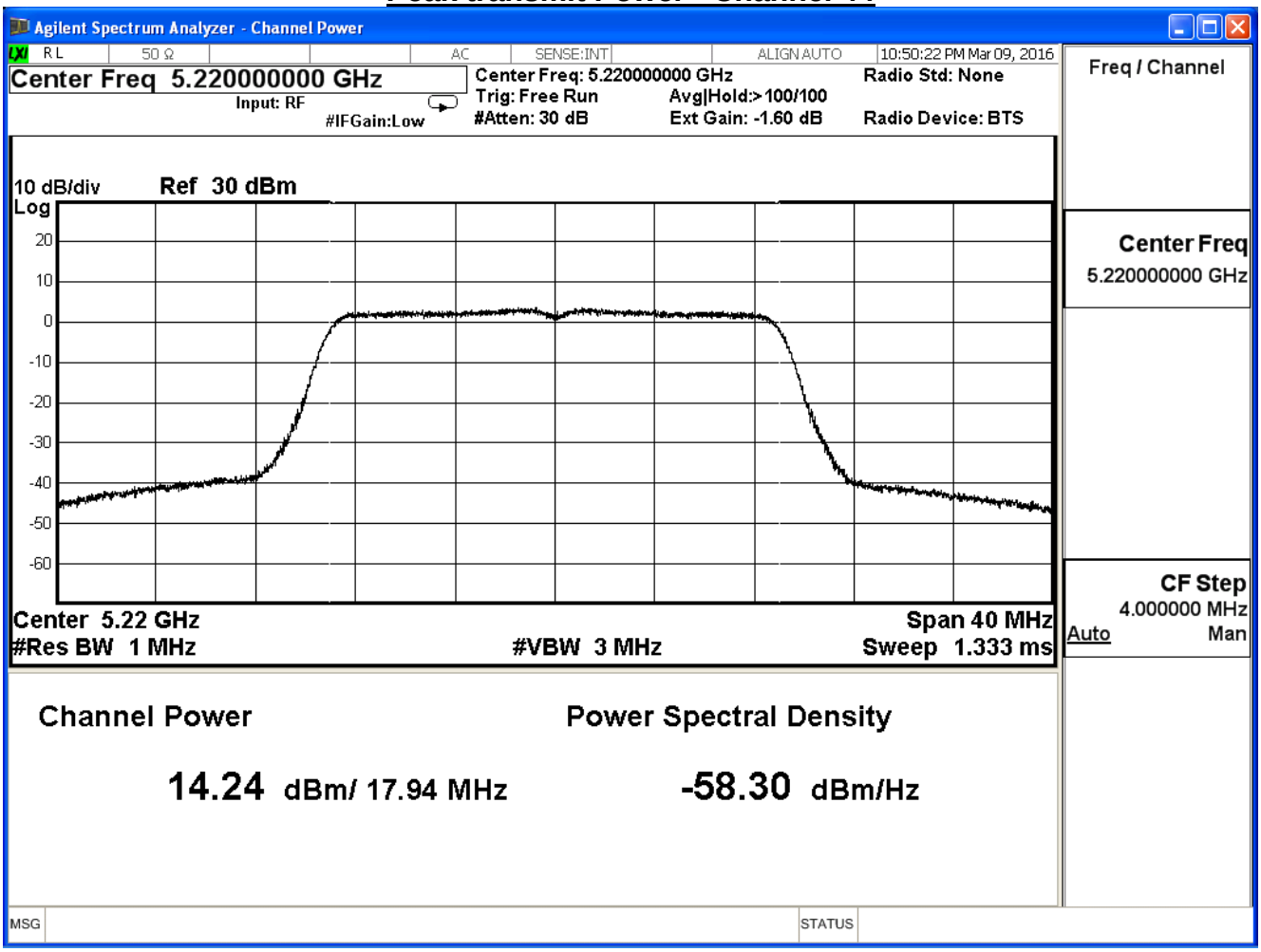
The worst emission of data rate is 6.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		6.5	13	19.5	26	39	52	58.5	65	
36	5180	13.79	--	--	--	--	--	--	--	≤24dBm
44	5220	14.24	14.04	13.92	13.82	13.62	13.36	13.24	13.12	
48	5240	14.88	--	--	--	--	--	--	--	

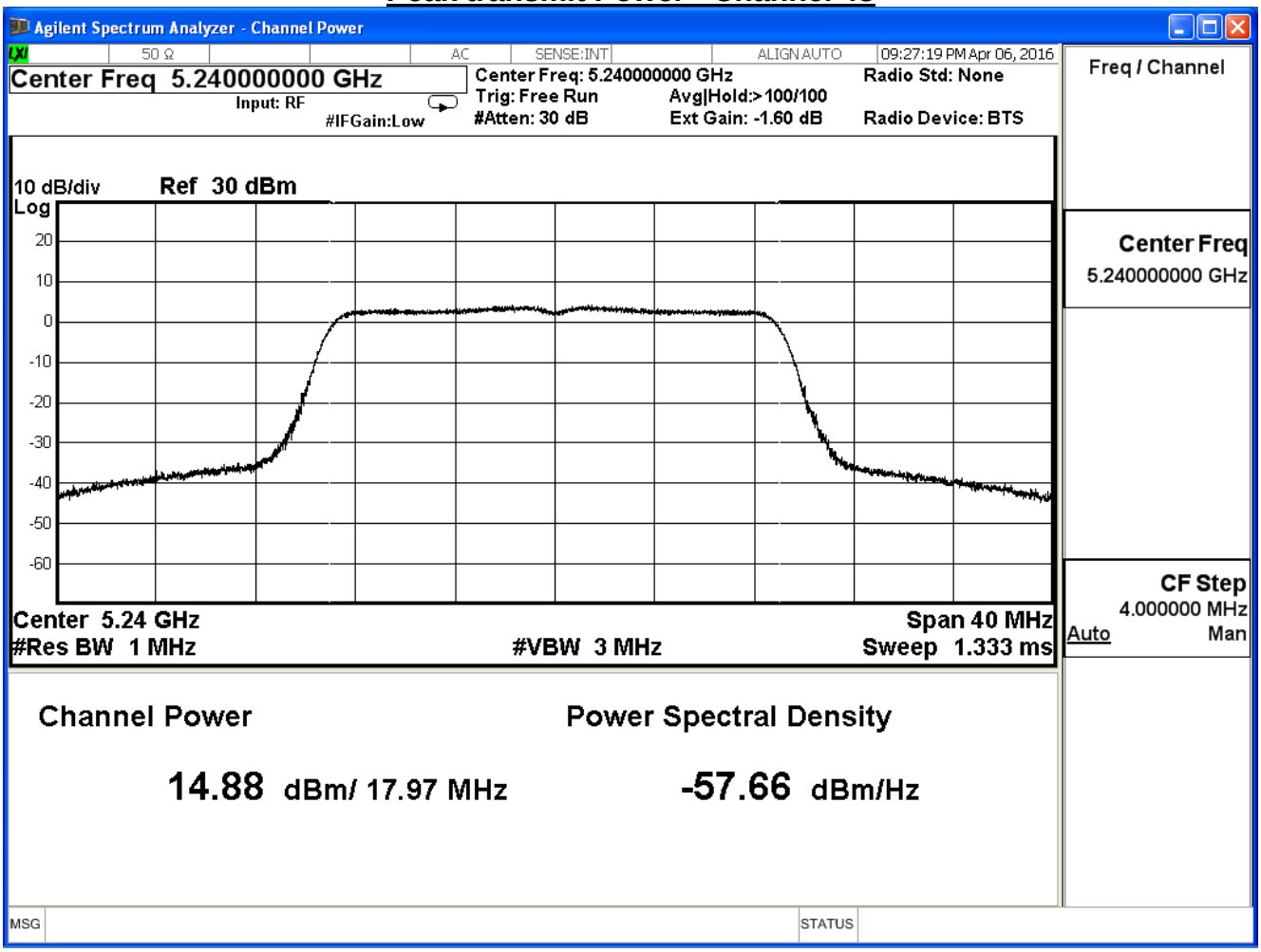
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

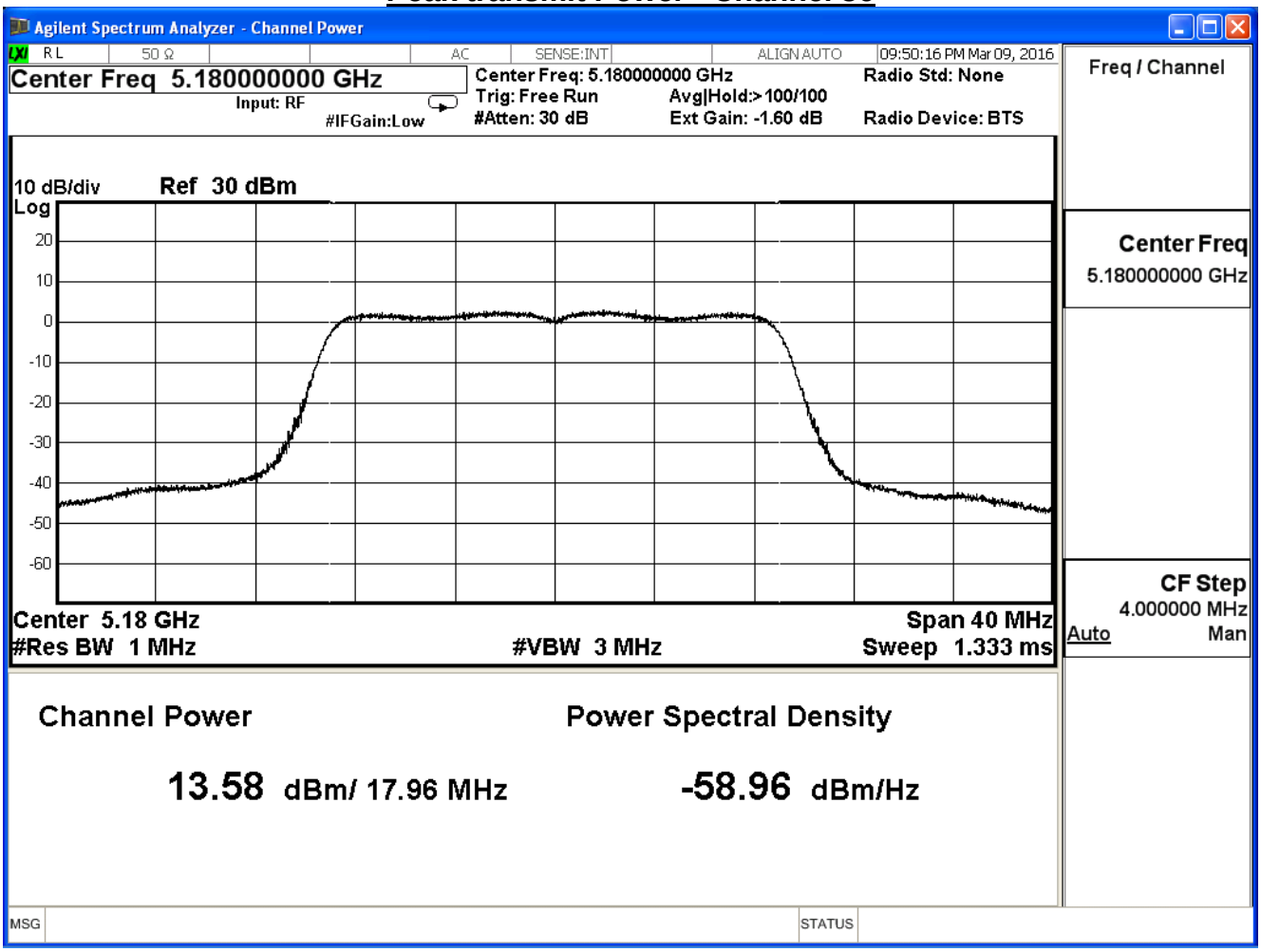
IEEE 802.11n_20M (ANT 2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	13.58	≤24
44	5220	13.98	≤24
48	5240	14.87	≤24

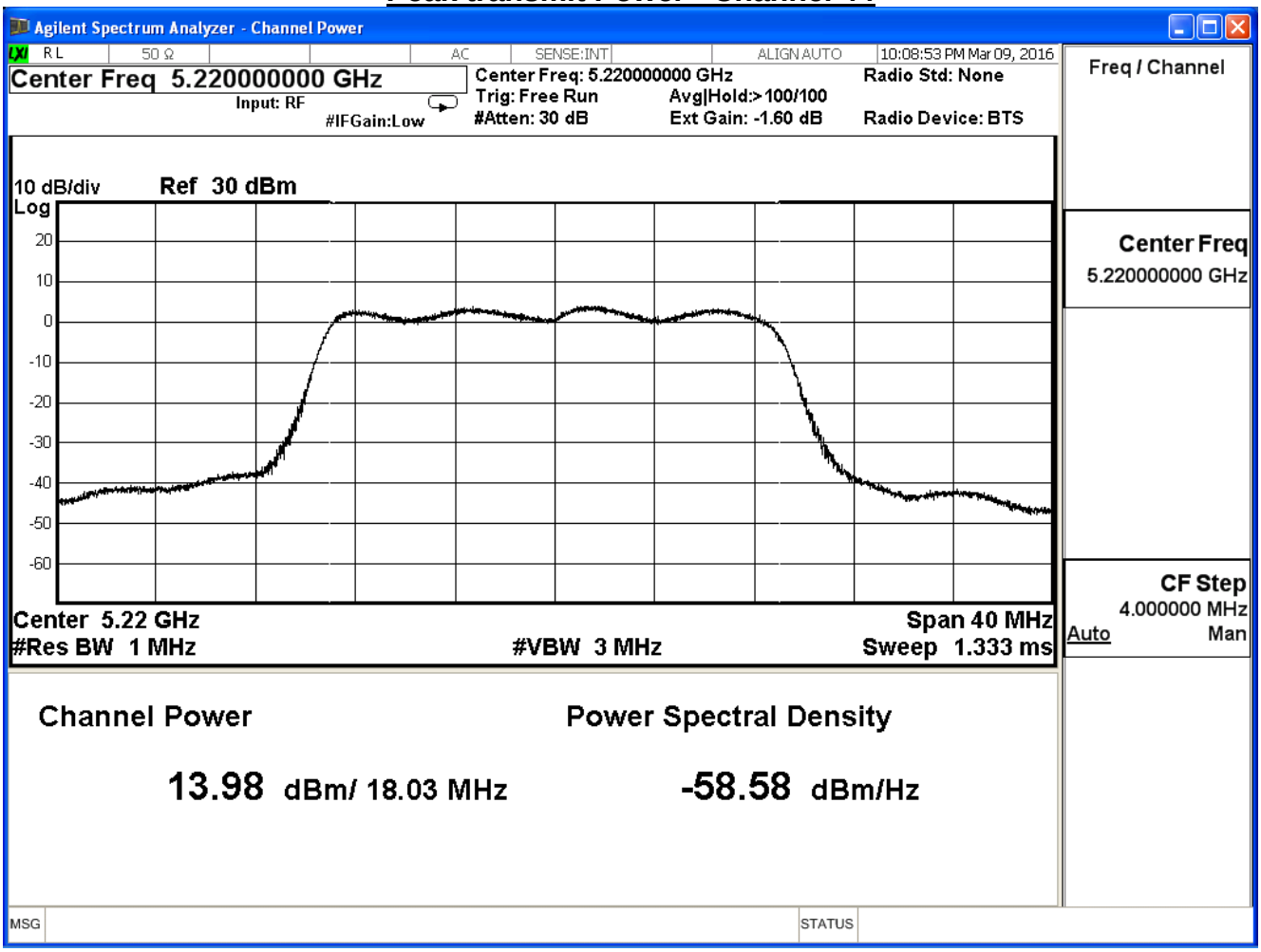
The worst emission of data rate is 6.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		6.5	13	19.5	26	39	52	58.5	65	
36	5180	13.58	--	--	--	--	--	--	--	≤24dBm
44	5220	13.98	13.88	13.68	13.44	13.34	13.22	12.98	12.86	
48	5240	14.87	--	--	--	--	--	--	--	

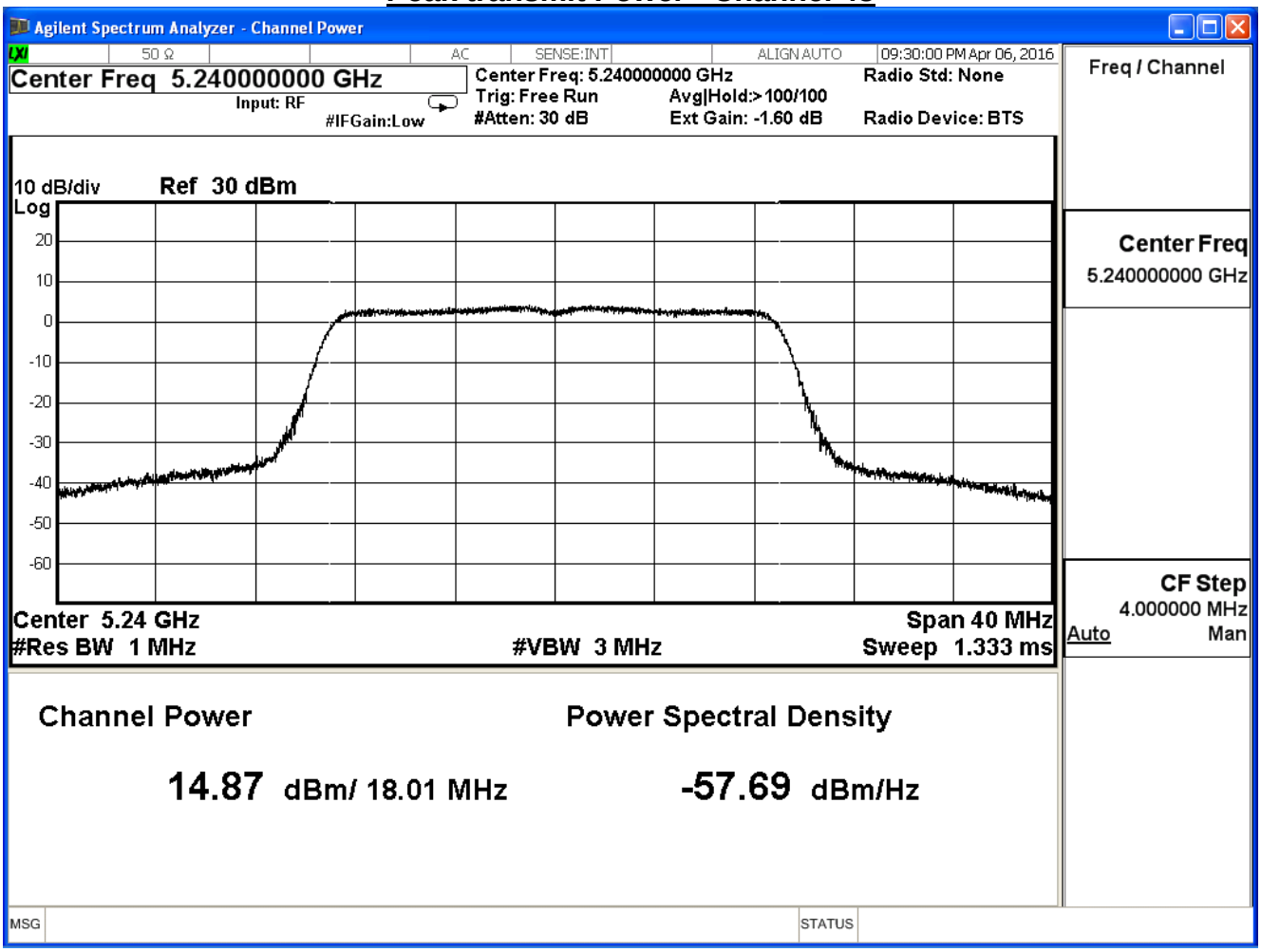
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11n_20M (ANT 0+1+2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
36	5180	18.47	≤24
44	5220	18.90	≤24
48	5240	19.70	≤24

The worst emission of data rate is 6.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		6.5	13	19.5	26	39	52	58.5	65	
36	5180	18.47	--	--	--	--	--	--	--	≤24dBm
44	5220	18.90	18.73	18.56	18.41	18.23	18.02	17.85	17.69	
48	5240	19.70	--	--	--	--	--	--	--	

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

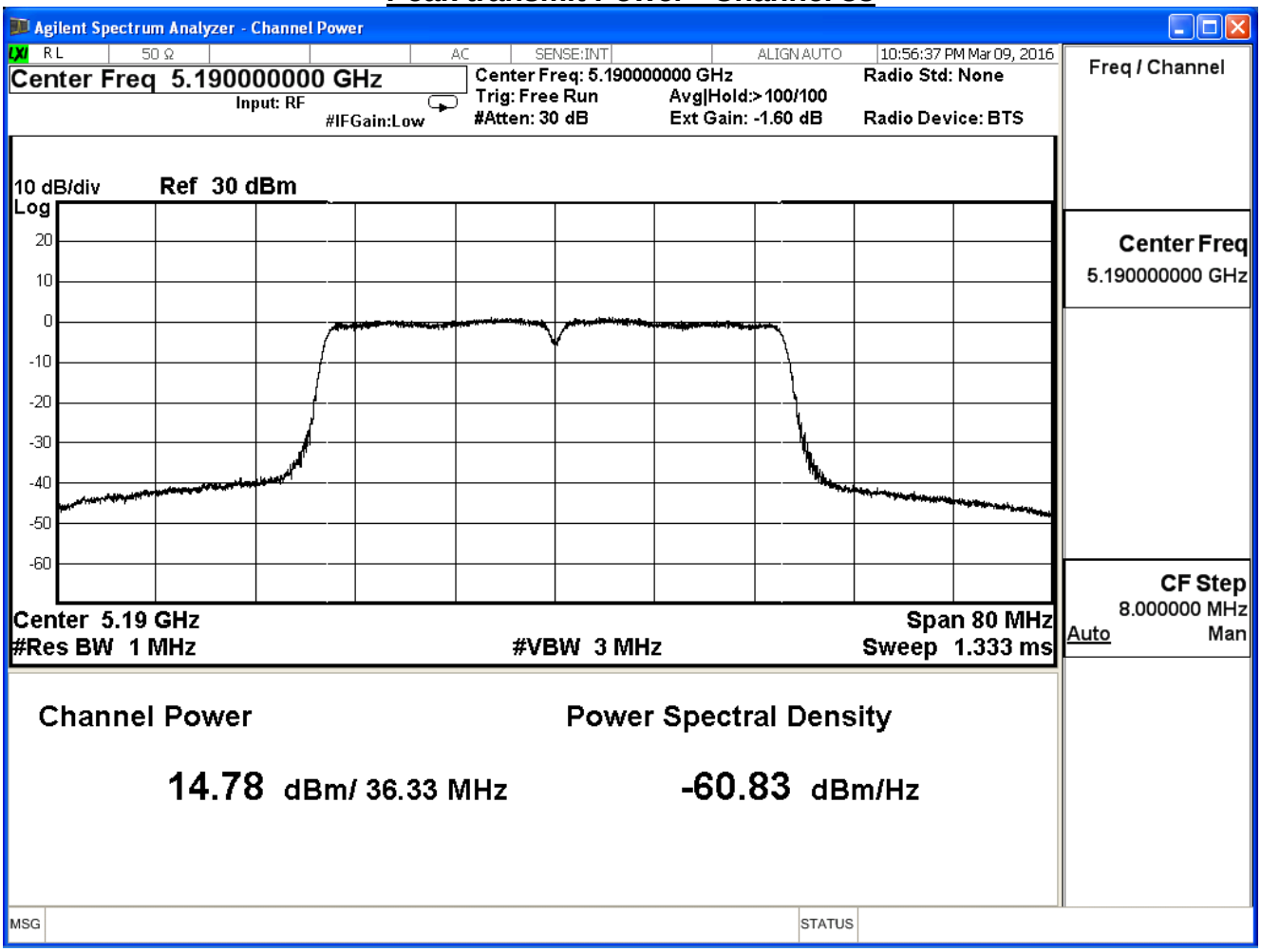
IEEE 802.11n(40MHz)(ANT 0)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
38	5190	14.78	≤24
46	5230	17.94	≤24

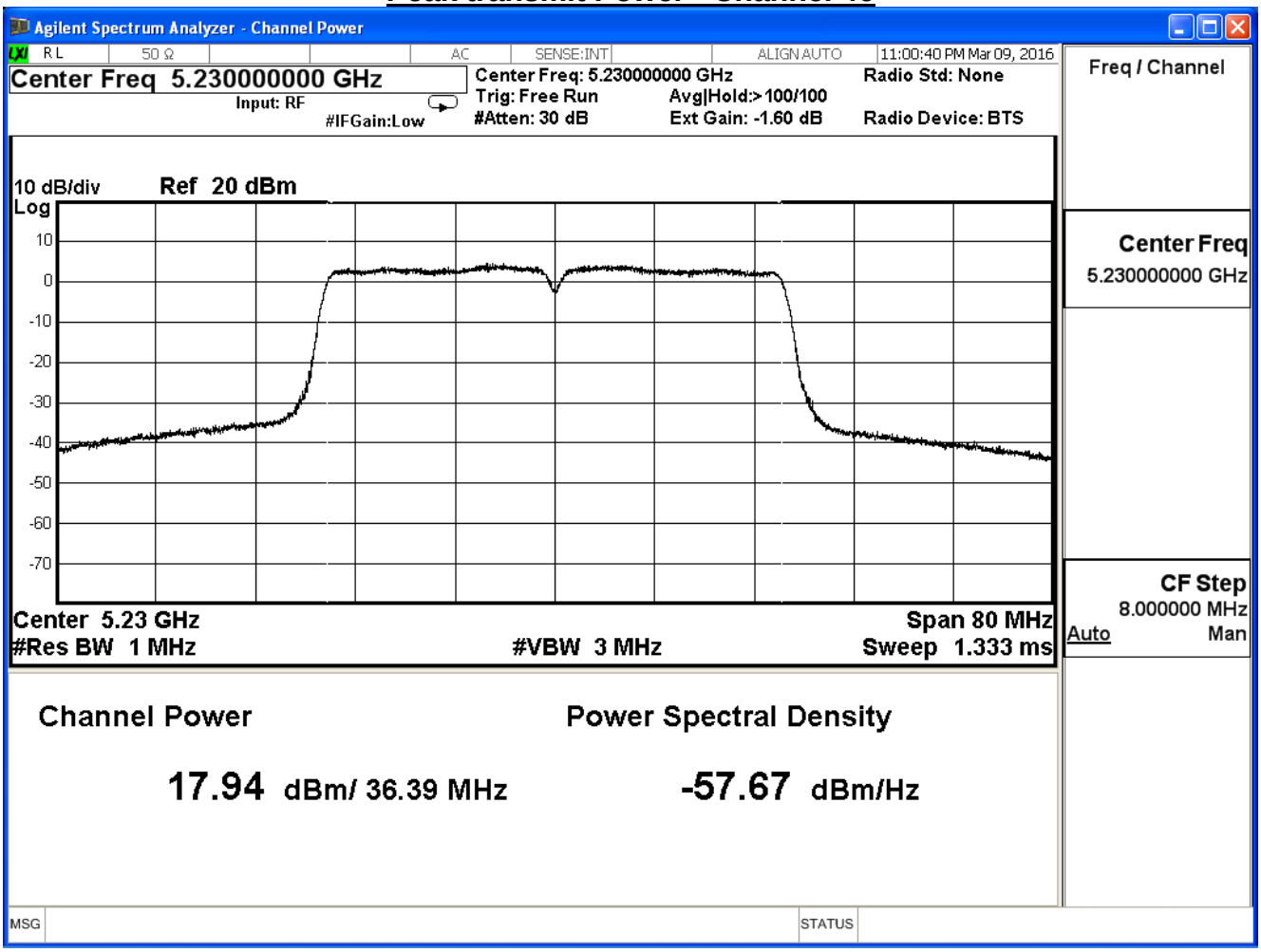
The worst emission of data rate is 13.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13.5	27	40.5	54	81	108	121.5	135	
38	5190	14.78	--	--	--	--	--	--	--	≤24dBm
46	5230	17.94	17.84	17.64	17.54	17.44	17.20	17.08	16.96	

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

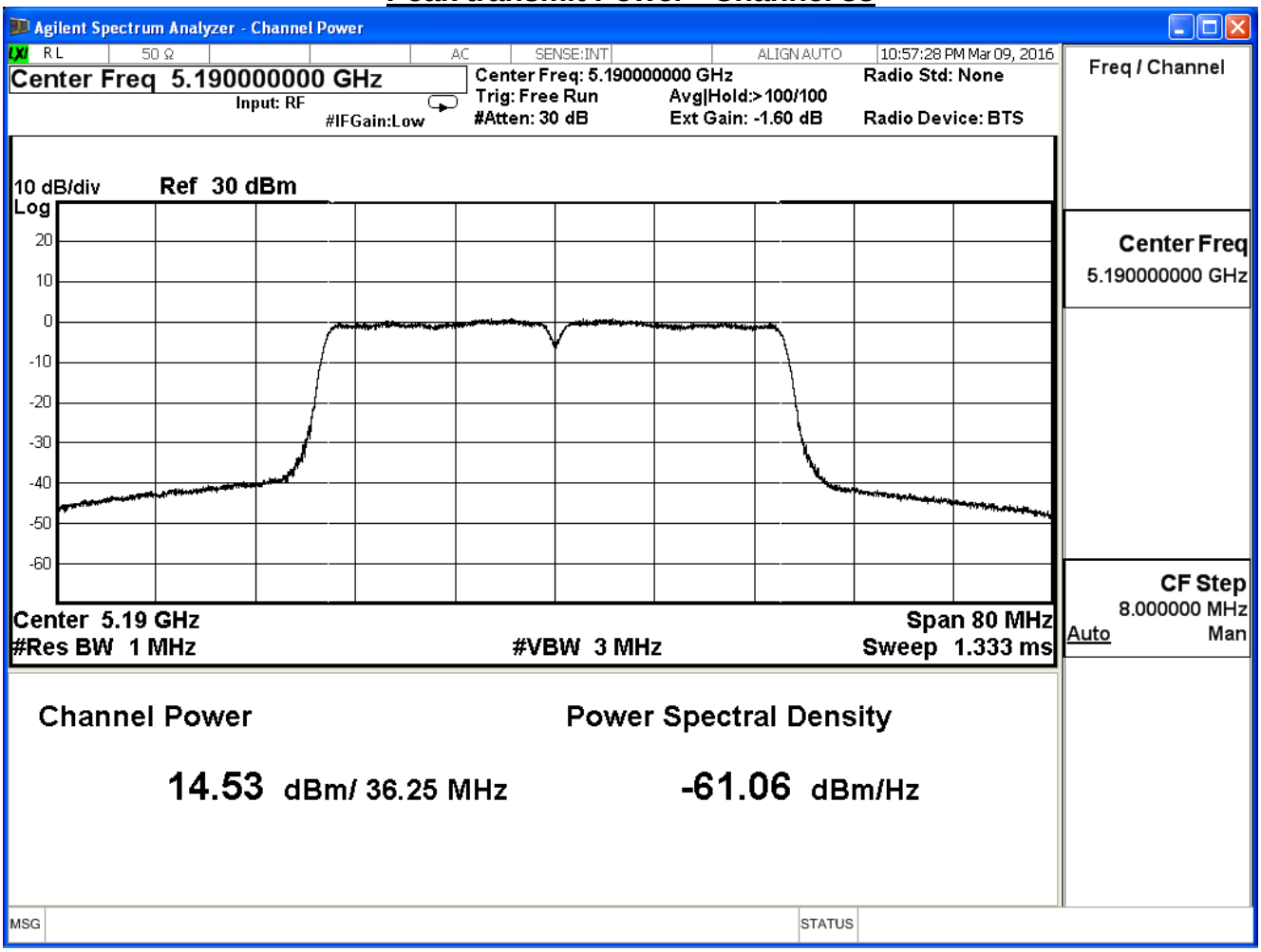
IEEE 802.11n(40MHz)(ANT 1)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
38	5190	14.53	≤24
46	5230	17.88	≤24

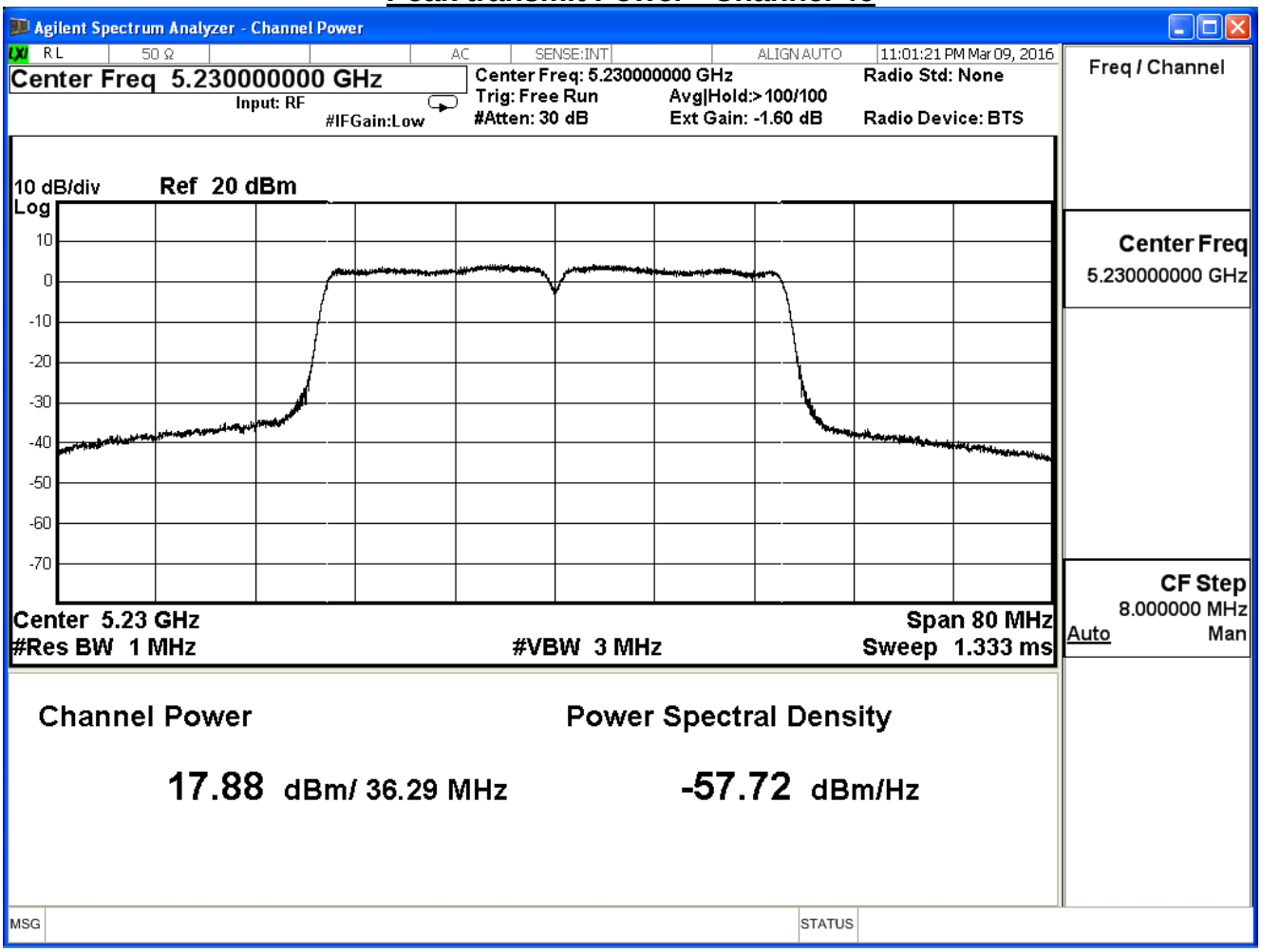
The worst emission of data rate is 13.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13.5	27	40.5	54	81	108	121.5	135	
38	5190	14.53	--	--	--	--	--	--	--	≤24dBm
46	5230	17.88	17.68	17.58	17.38	17.18	17.06	16.94	16.82	

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

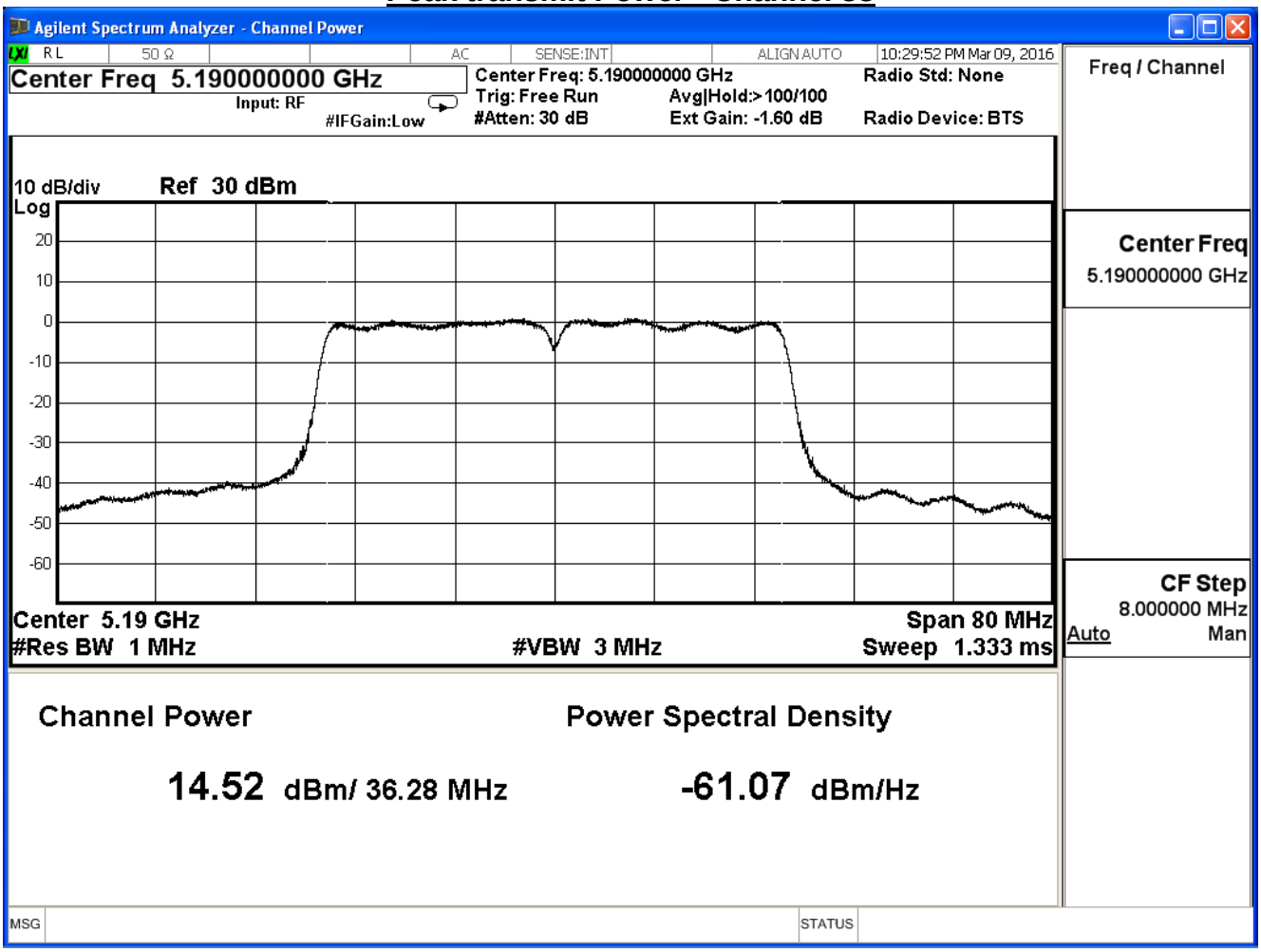
IEEE 802.11n(40MHz)(ANT 2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
38	5190	14.52	≤24
46	5230	17.63	≤24

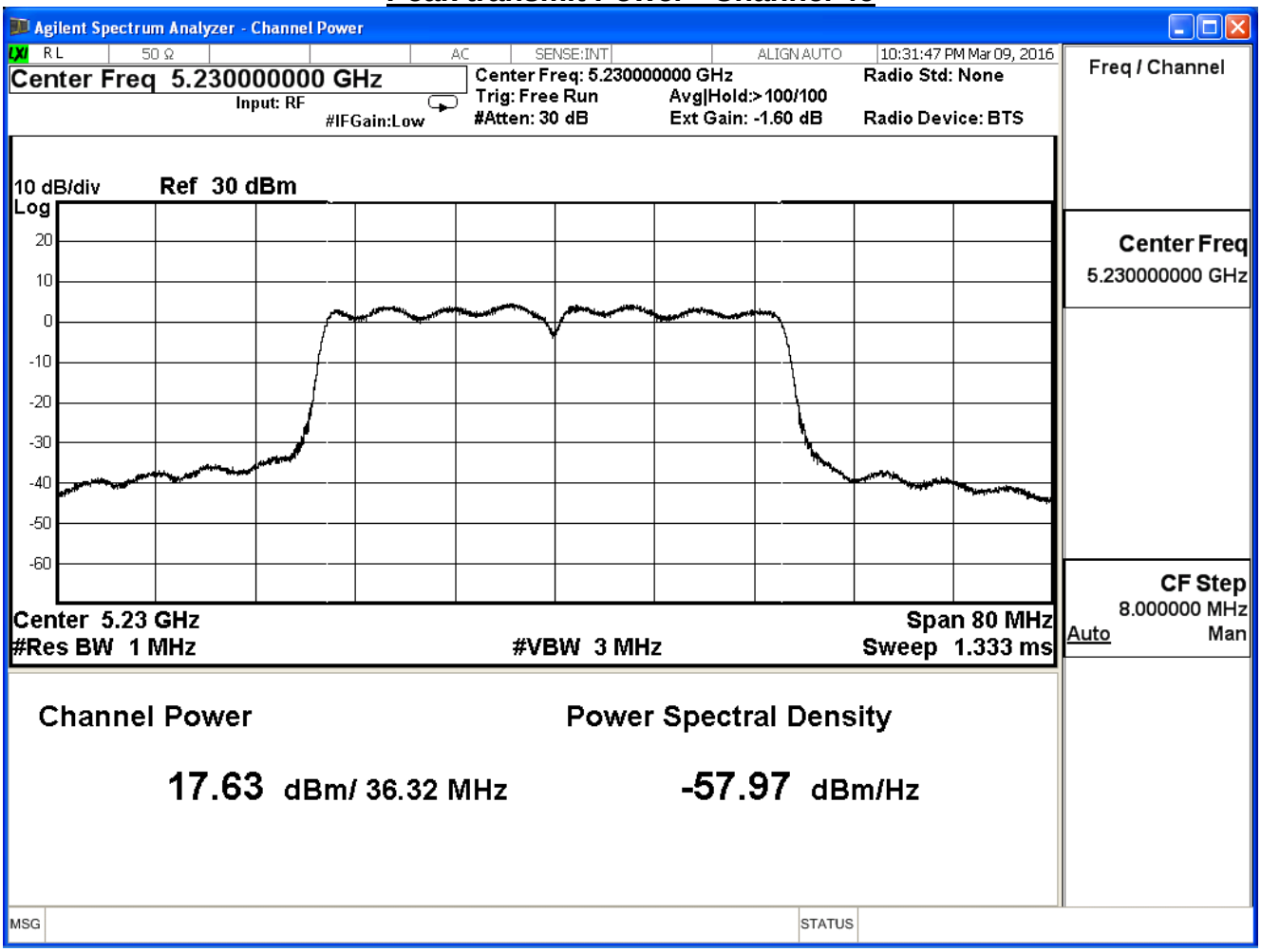
The worst emission of data rate is 13.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13.5	27	40.5	54	81	108	121.5	135	
38	5190	14.52	--	--	--	--	--	--	--	≤24dBm
46	5230	17.63	17.43	17.33	17.23	17.03	16.79	16.67	16.55	

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11n(40MHz)(ANT 0+1+2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
38	5190	19.38	≤24
46	5230	22.59	≤24

The worst emission of data rate is 13.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13.5	27	40.5	54	81	108	121.5	135	
38	5190	19.38	--	--	--	--	--	--	--	≤24dBm
46	5230	22.59	22.42	22.29	22.16	21.99	21.79	21.67	21.55	

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

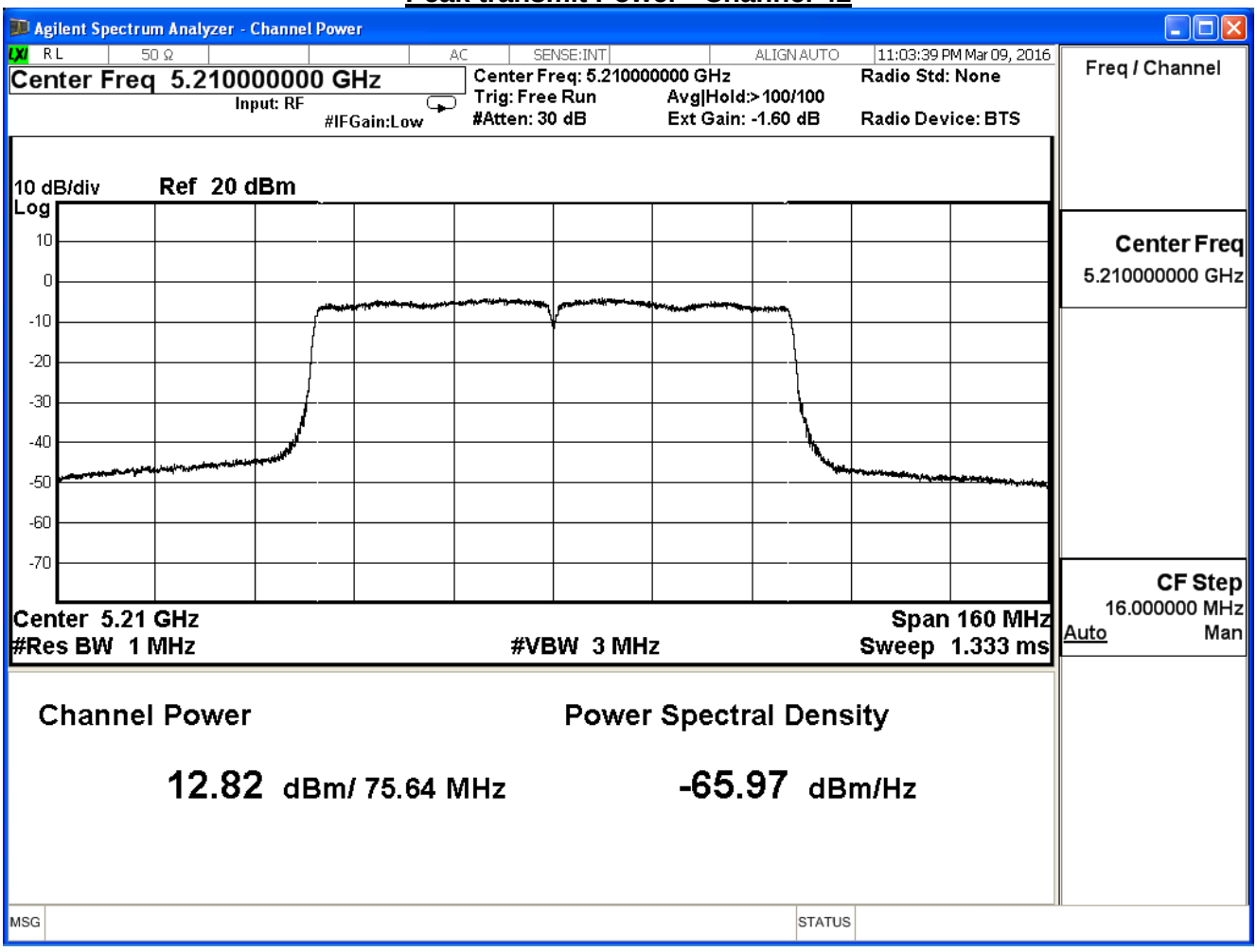
IEEE 802.11ac (80MHz) (ANT 0)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
42	5210	12.82	≤24

The worst emission of data rate is 29.3 Mbps

Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		29.3	58.5	87.8	117	175.5	234	263.3	292.5	351	390	
42	5210	12.82	12.72	12.62	12.52	12.42	12.22	12.10	11.98	11.74	11.62	≤24dBm

Peak transmit Power - Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

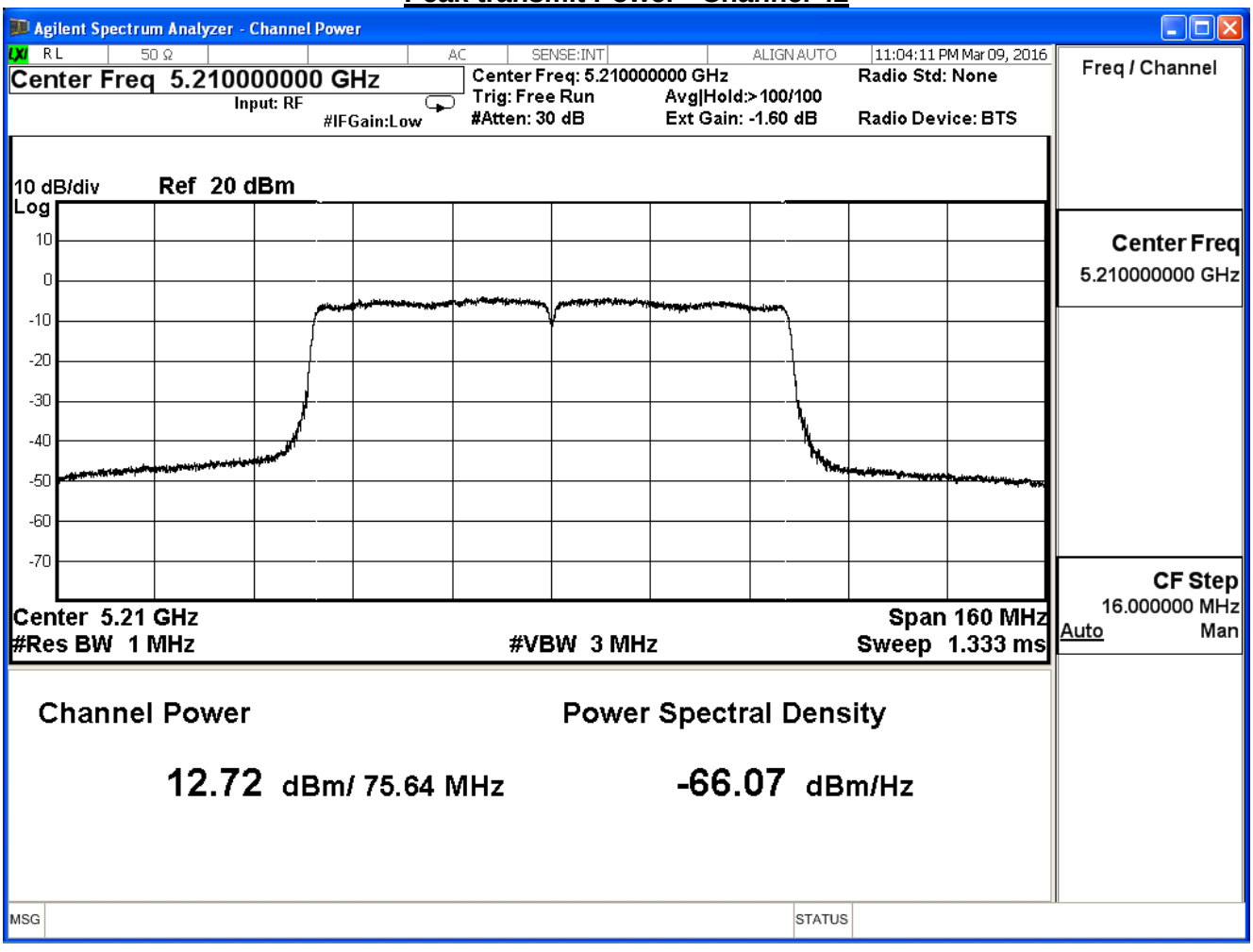
IEEE 802.11ac (80MHz) (ANT 1)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
42	5210	12.72	≤24

The worst emission of data rate is 29.3 Mbps

Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		29.3	58.5	87.8	117	175.5	234	263.3	292.5	351	390	
42	5210	12.72	12.52	12.42	12.22	12.02	11.82	11.58	11.34	11.10	10.86	≤24dBm

Peak transmit Power - Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

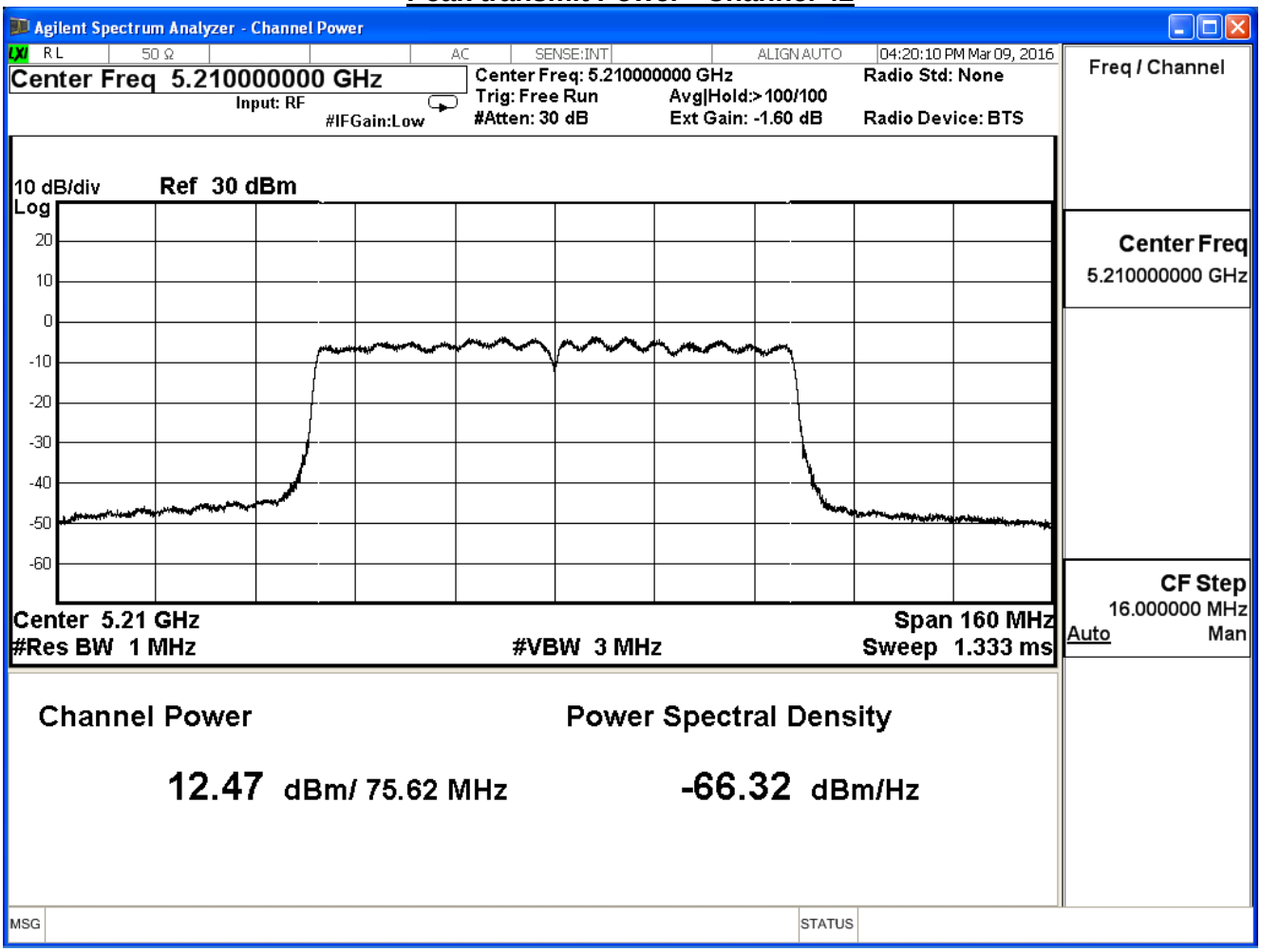
IEEE 802.11ac (80MHz) (ANT 2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
42	5210	12.47	≤24

The worst emission of data rate is 29.3 Mbps

Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		29.3	58.5	87.8	117	175.5	234	263.3	292.5	351	390	
42	5210	12.47	12.27	12.17	12.07	11.97	11.77	11.53	11.41	11.29	11.05	≤24dBm

Peak transmit Power - Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11ac (80MHz) (ANT 0+1+2)

Channel No.	Frequency (MHz)	Output Power (dBm)	Required Limit (dBm)
42	5210	17.44	≤24

The worst emission of data rate is 29.3 Mbps

Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		29.3	58.5	87.8	117	175.5	234	263.3	292.5	351	390	≤24dBm
42	5210	17.44	17.28	17.18	17.05	16.91	16.71	16.52	16.36	16.16	15.96	

4. Peak Power Spectrum Density

4.1. Test Equipment

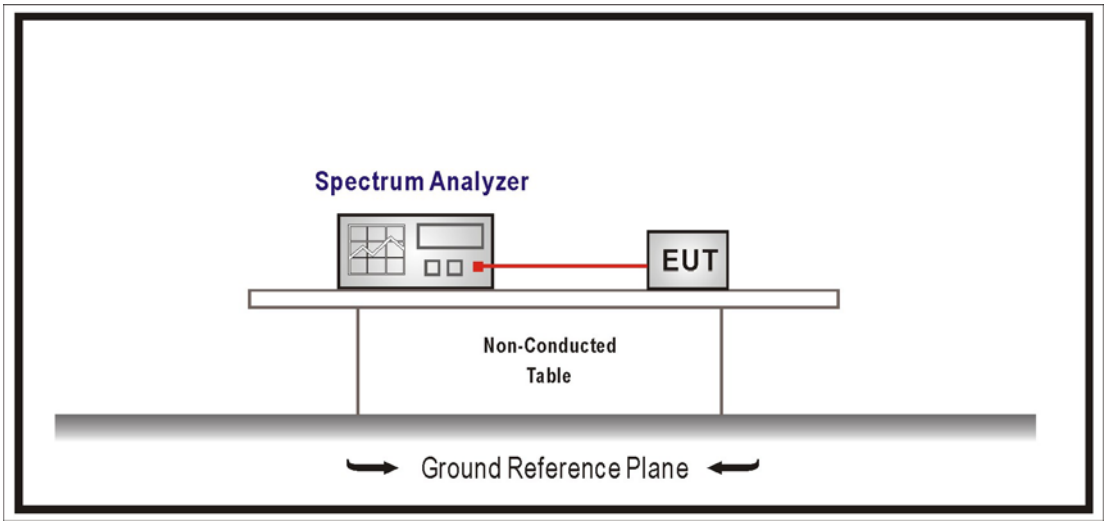
The following test equipments are used during the radiated emission tests:

Peak Power Spectrum Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/07/13

Note: All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup



4.3. Limits

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 17 dBm in any 1MHz 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.
2. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
3. 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.
4. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz 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 U-NII test procedure of KDB 789033 for compliance to FCC 47CFR Subpart E requirements.

For Band1 : Set RBW=1MHz, VBW=3MHz with RMS detector. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging.

For Band4 : Set RBW=500KHz, VBW=1.5MHz with RMS detector. The PPSD is the highest level found across the emission in any 500KHz band after 100 sweeps of averaging.

4.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

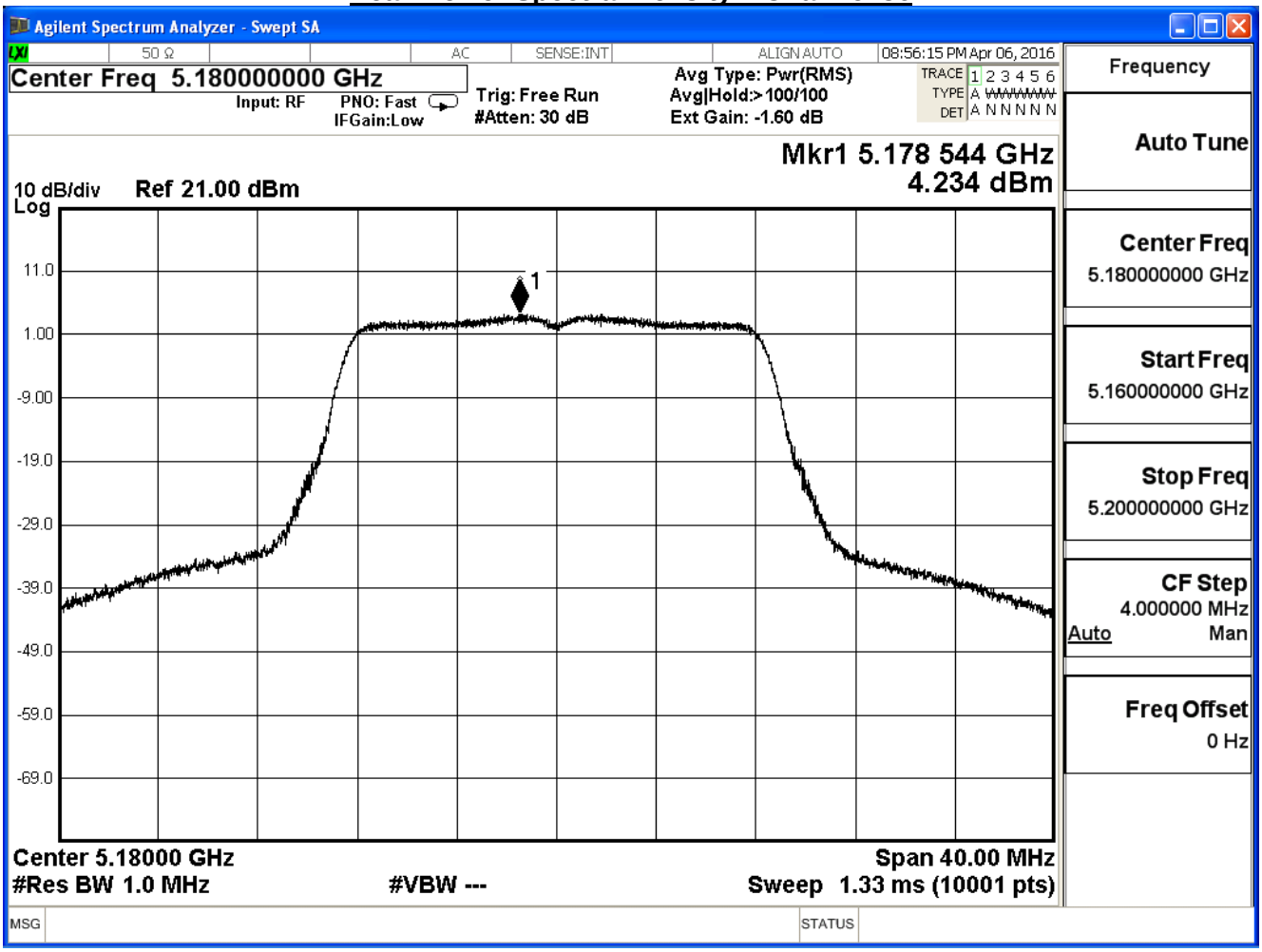
4.6. Test Result

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

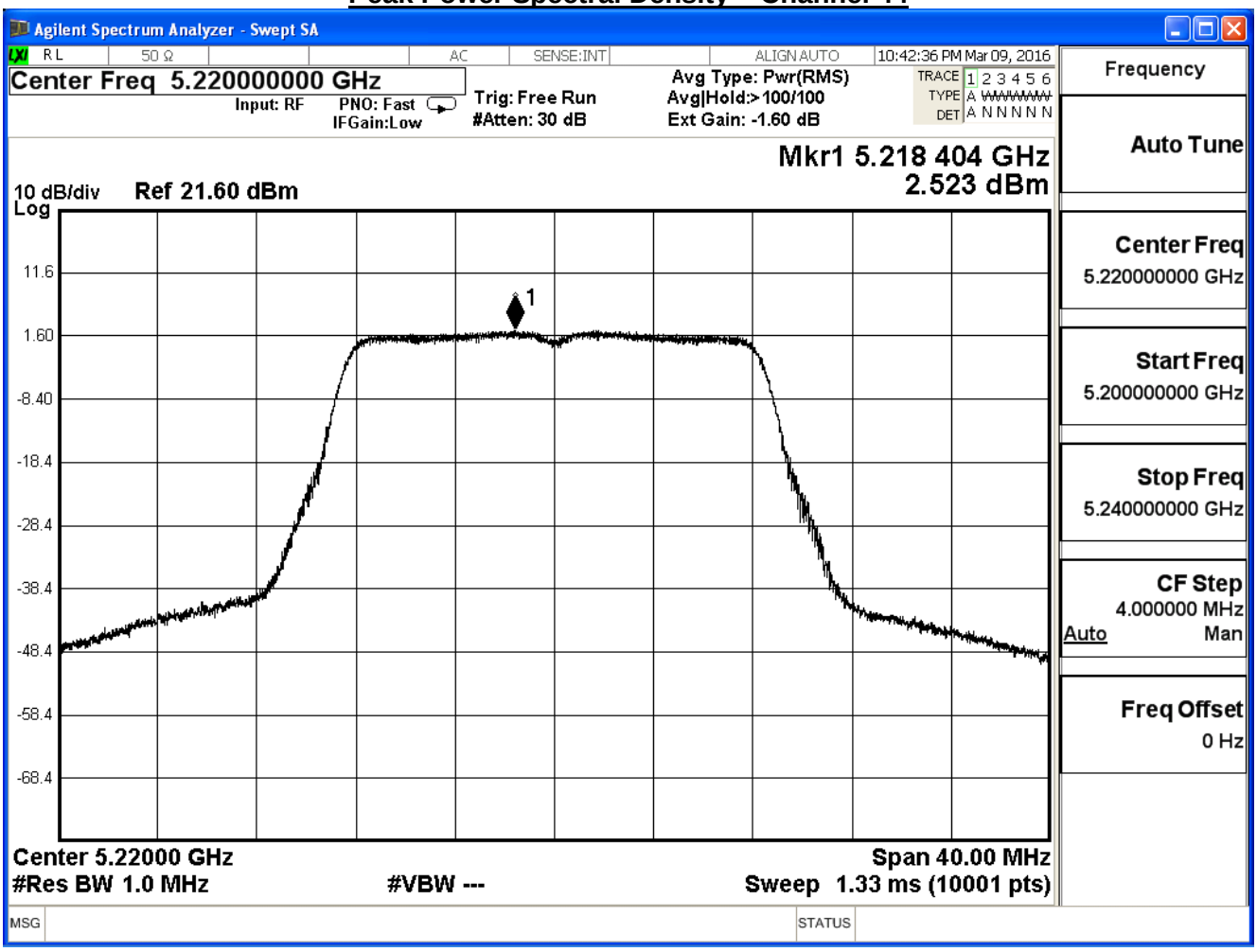
IEEE 802.11a (ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
36	5180	4.23	≦9.23	Pass
44	5220	2.52	≦9.23	Pass
48	5240	4.35	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

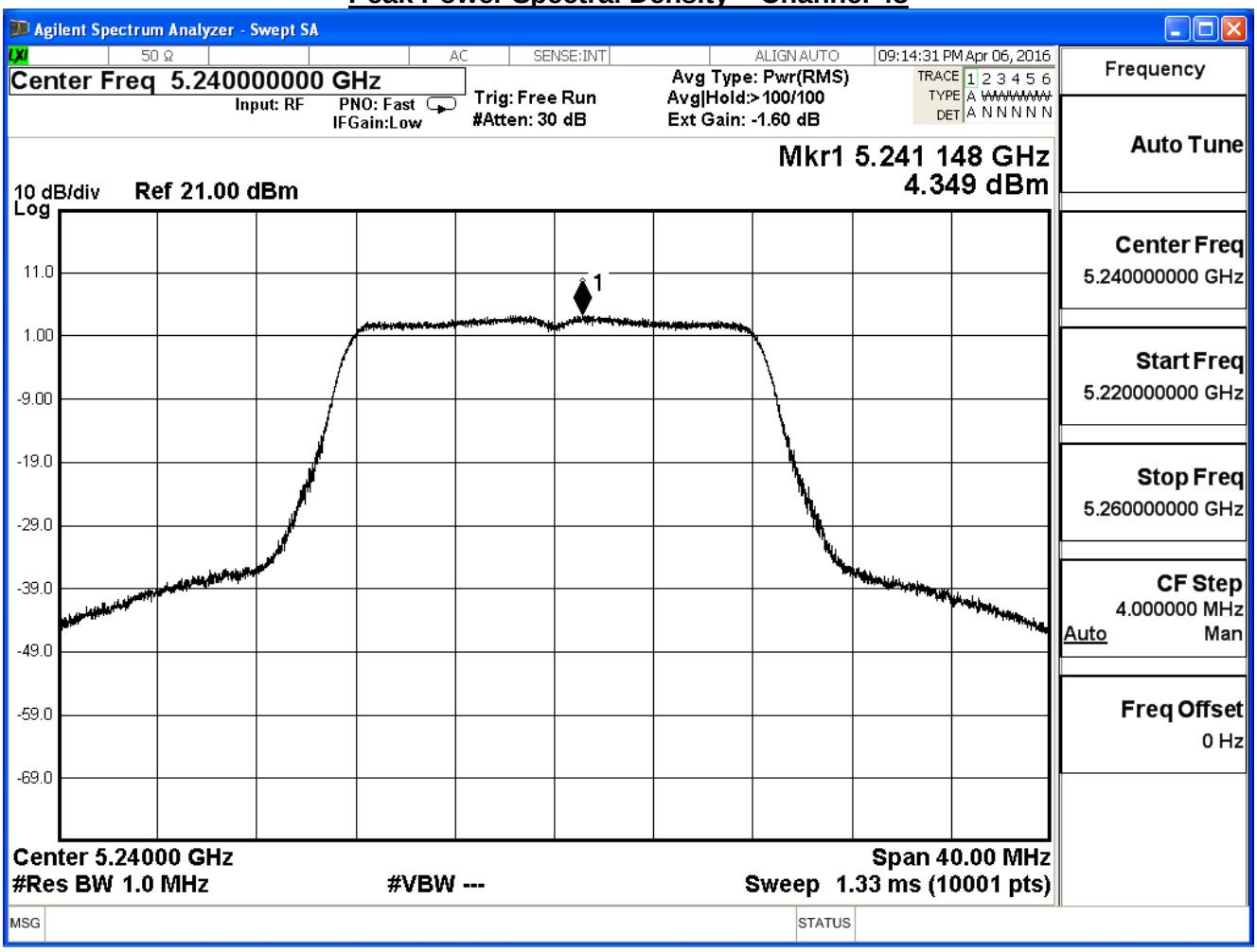
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

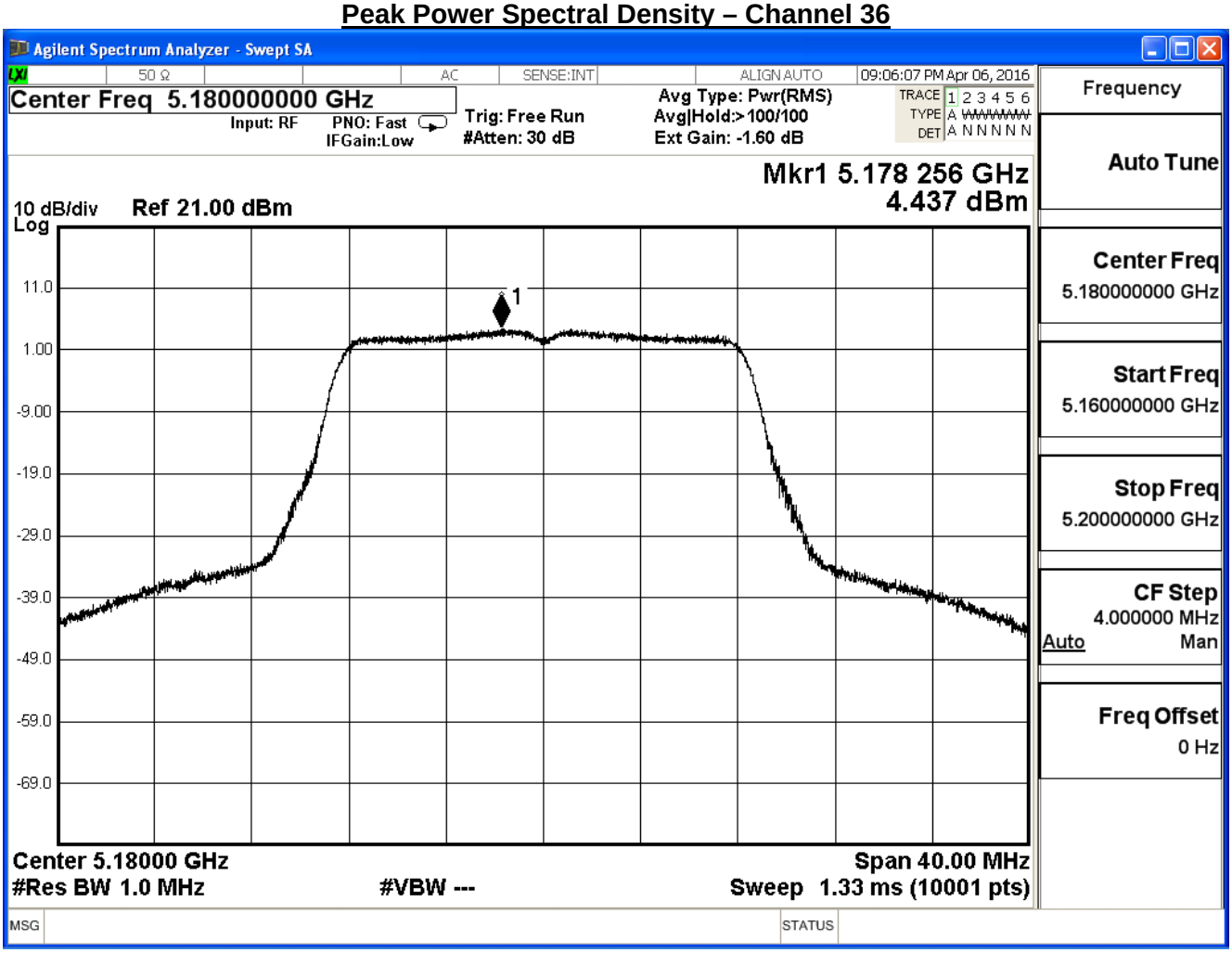


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

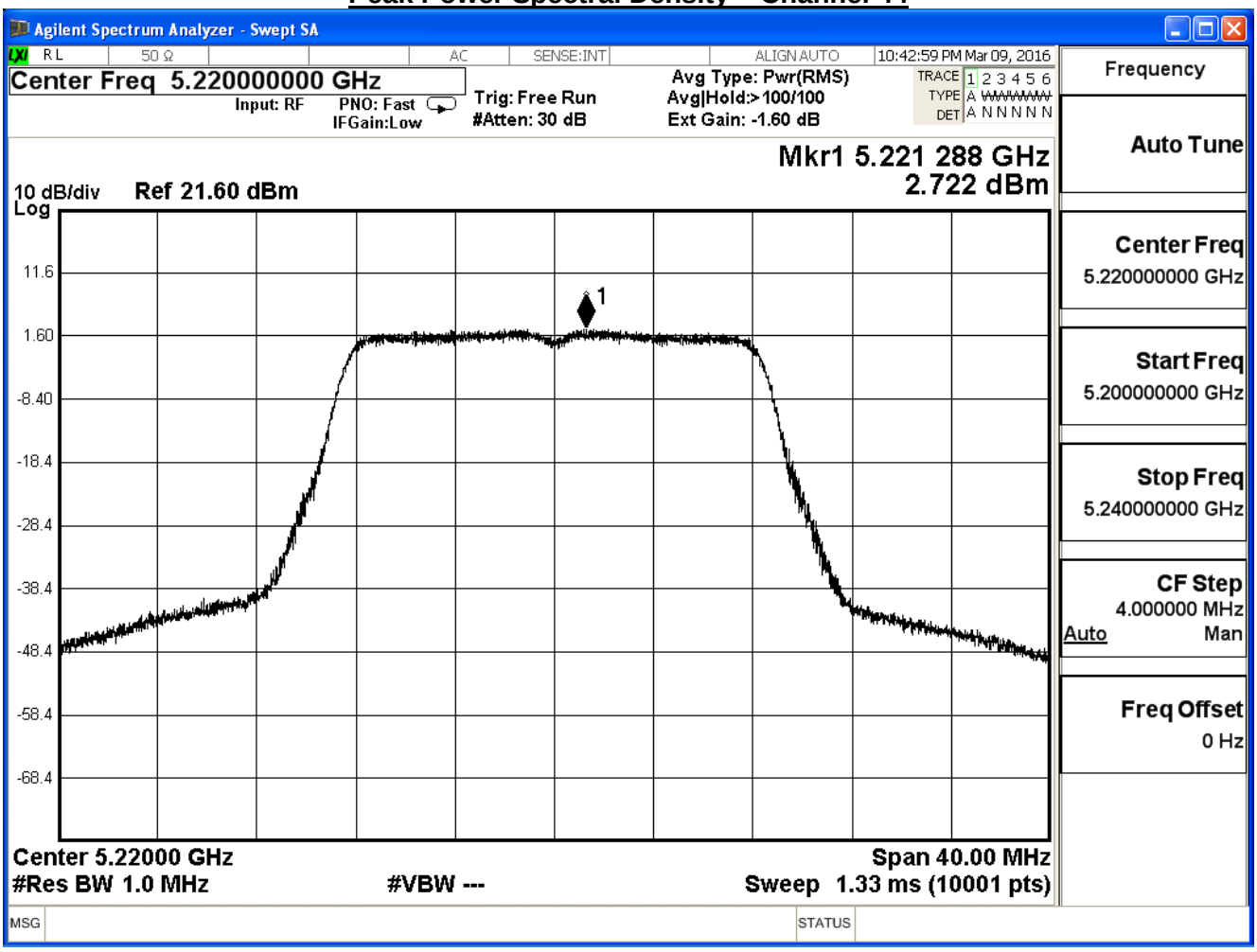
IEEE 802.11a (ANT 1)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
36	5180	4.44	≦9.23	Pass
44	5220	2.72	≦9.23	Pass
48	5240	4.21	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

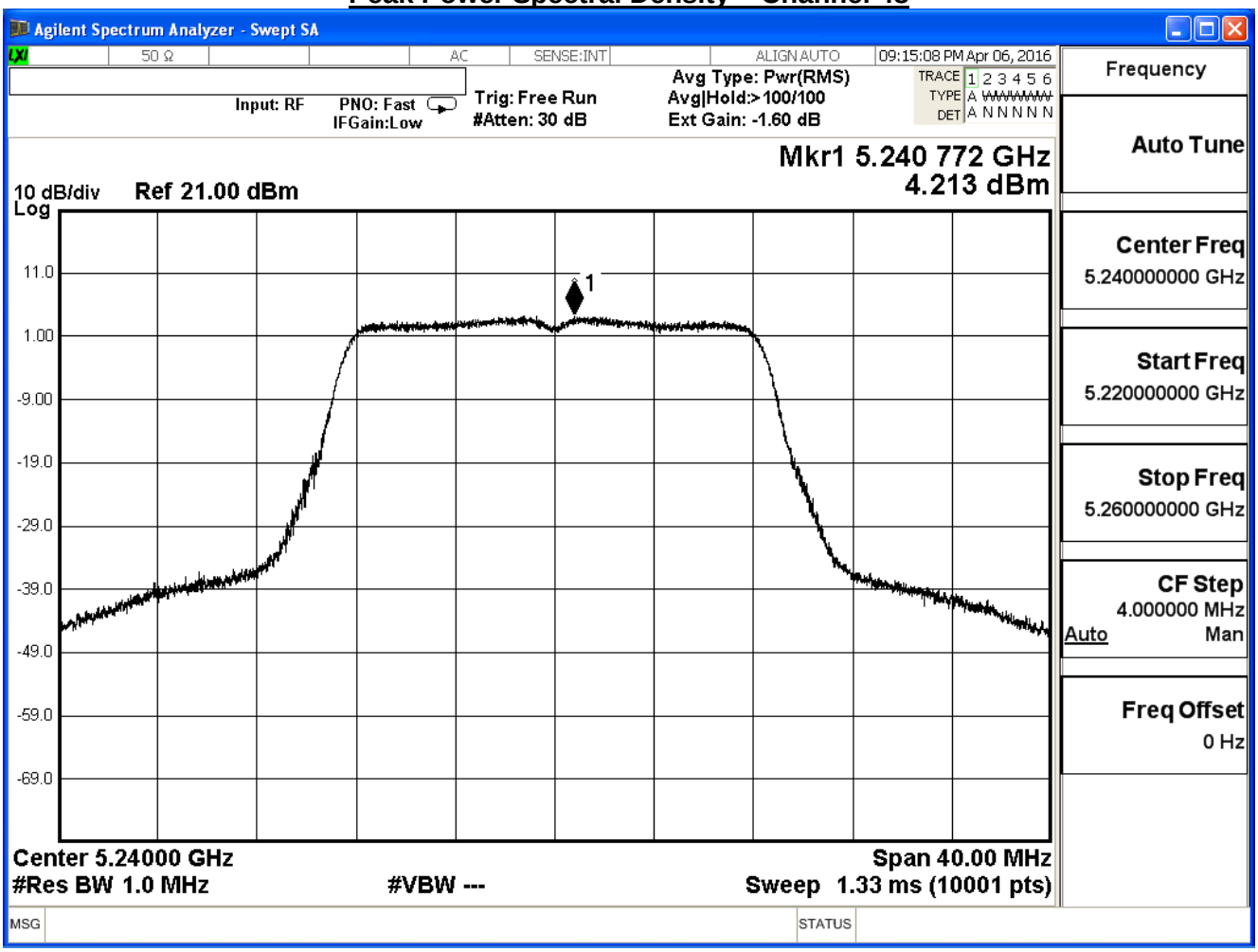
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

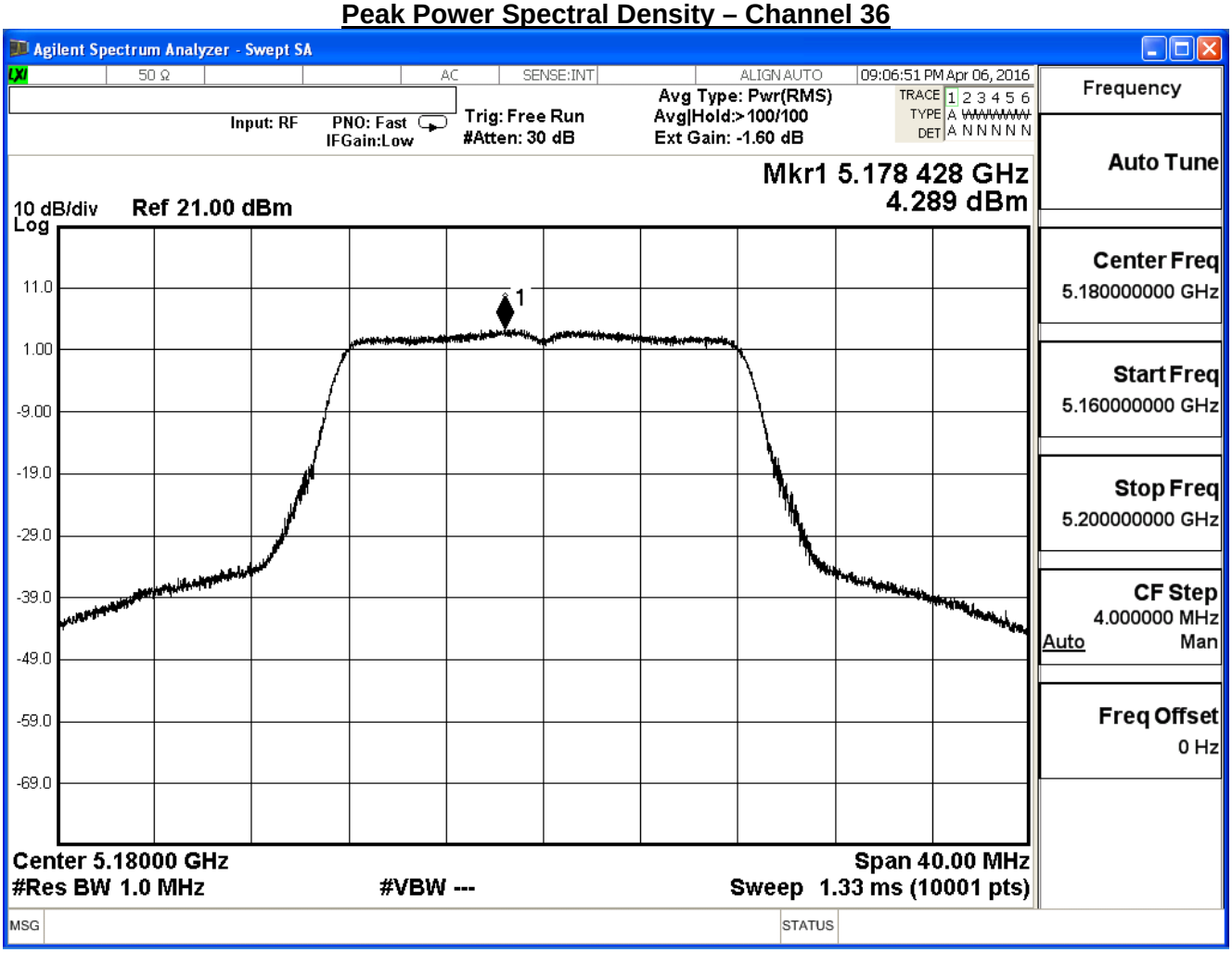


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

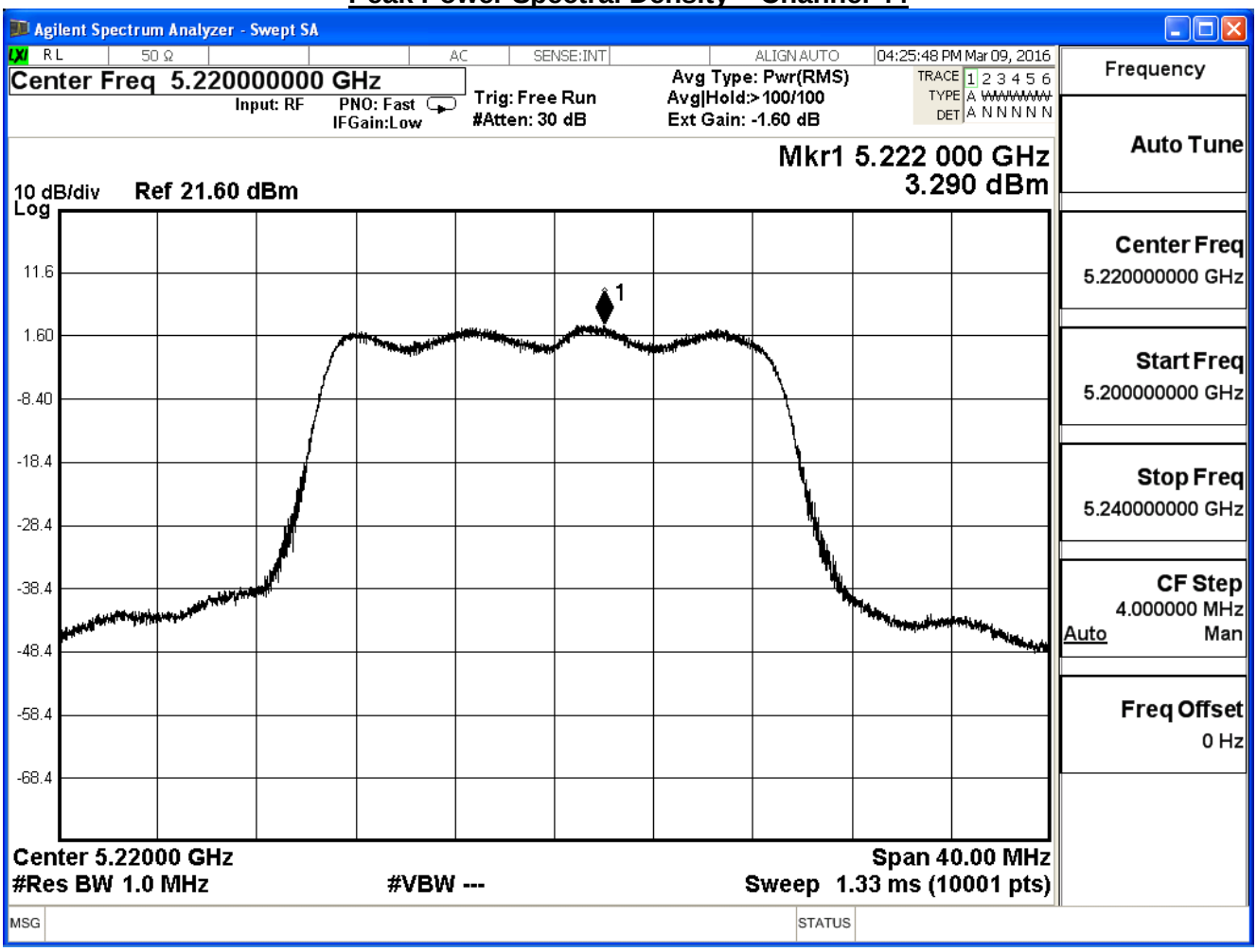
IEEE 802.11a (ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
36	5180	4.29	≦9.23	Pass
44	5220	3.29	≦9.23	Pass
48	5240	4.44	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

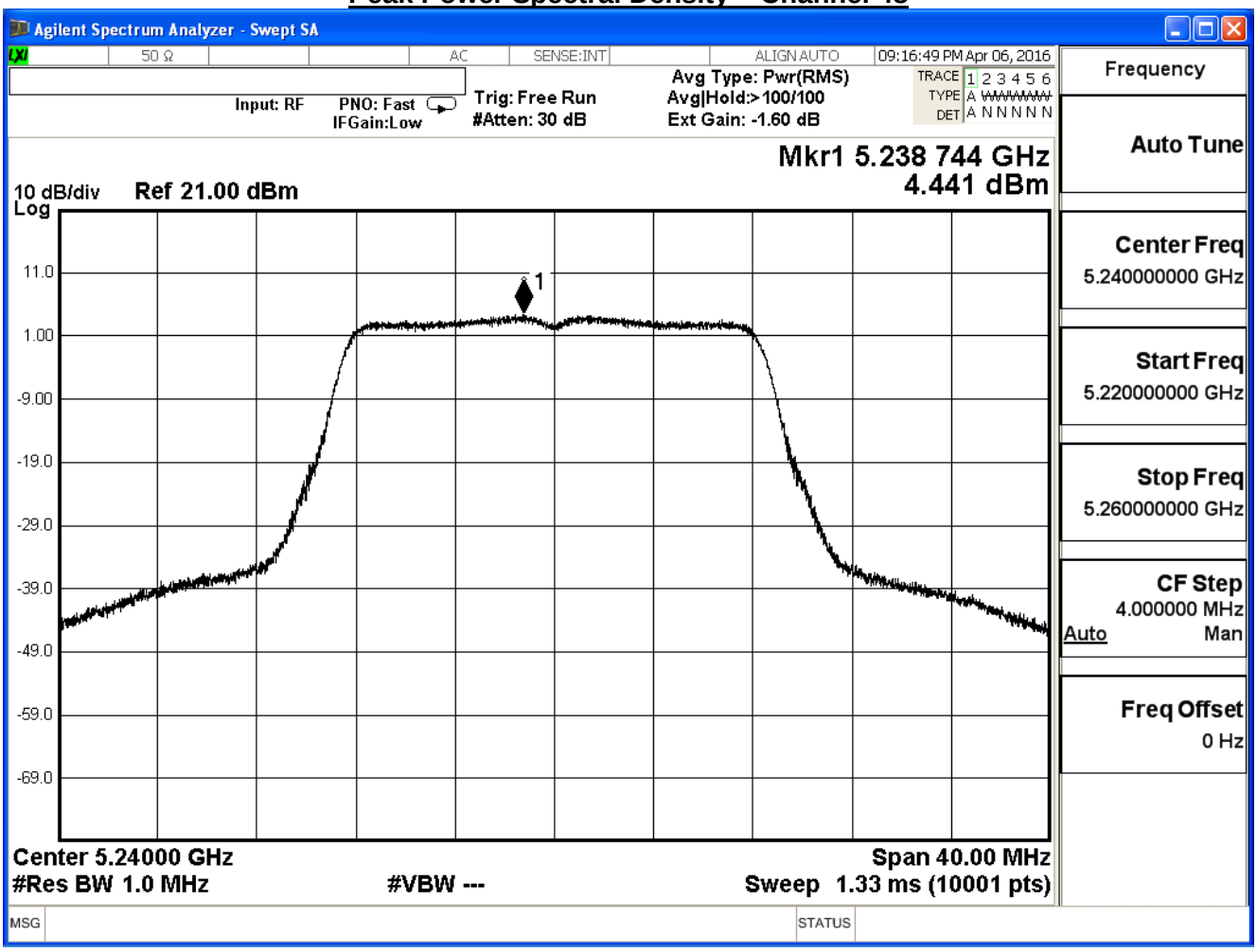
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11a (ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
36	5180	9.09	≦9.23	Pass
44	5220	7.63	≦9.23	Pass
48	5240	9.11	≦9.23	Pass

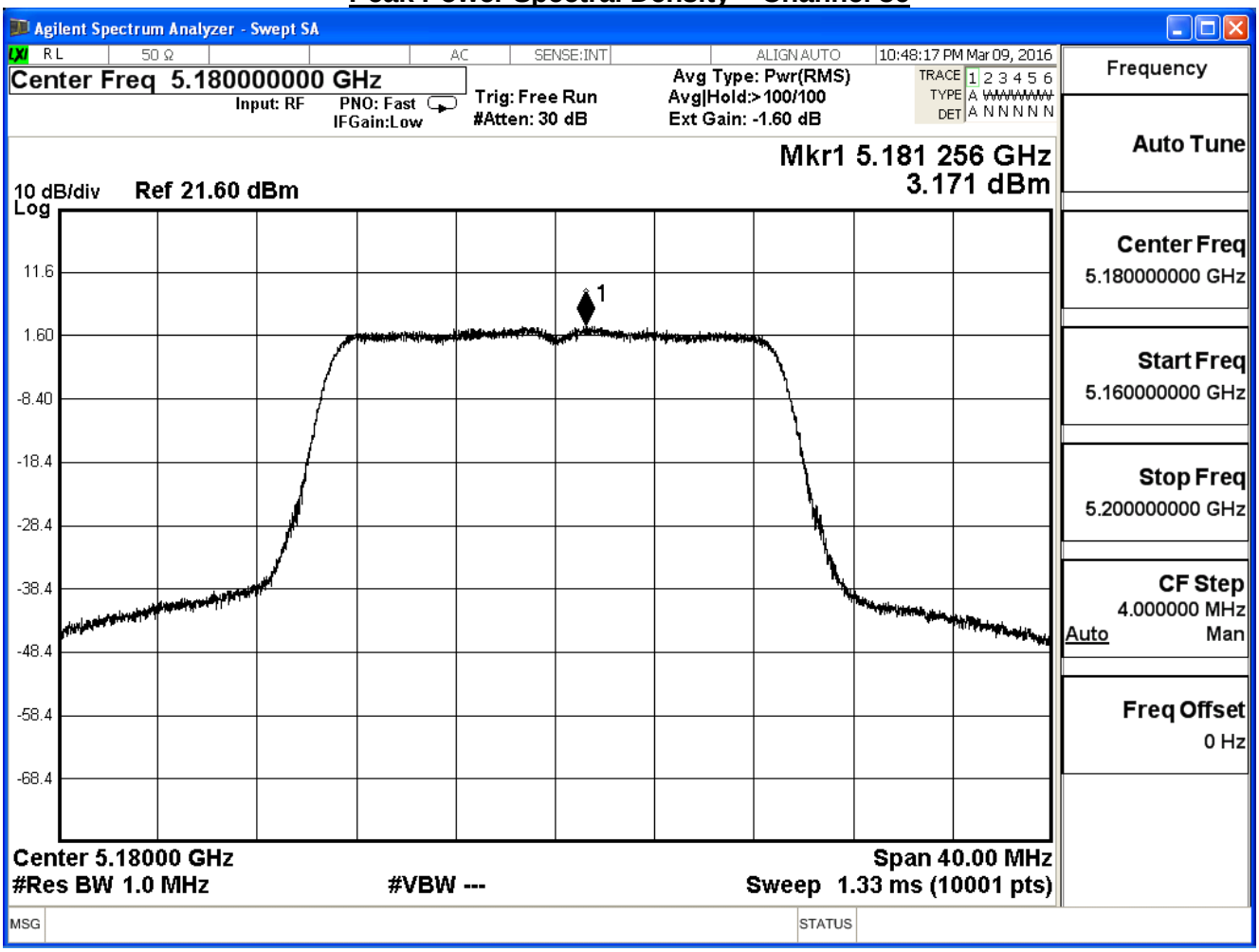
Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

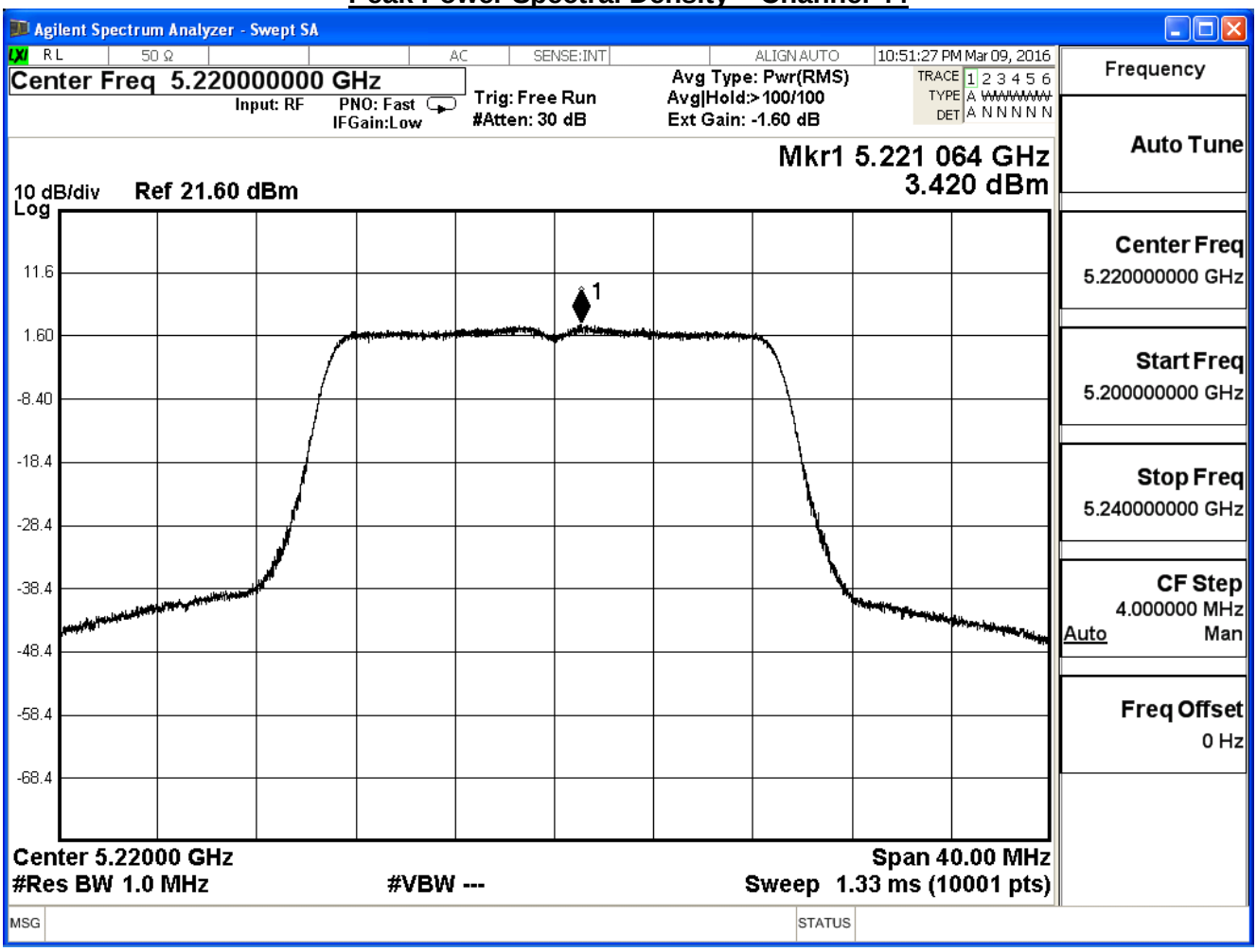
IEEE 802.11n_20M (ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
36	5180	3.17	≦9.23	Pass
44	5220	3.42	≦9.23	Pass
48	5240	4.50	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

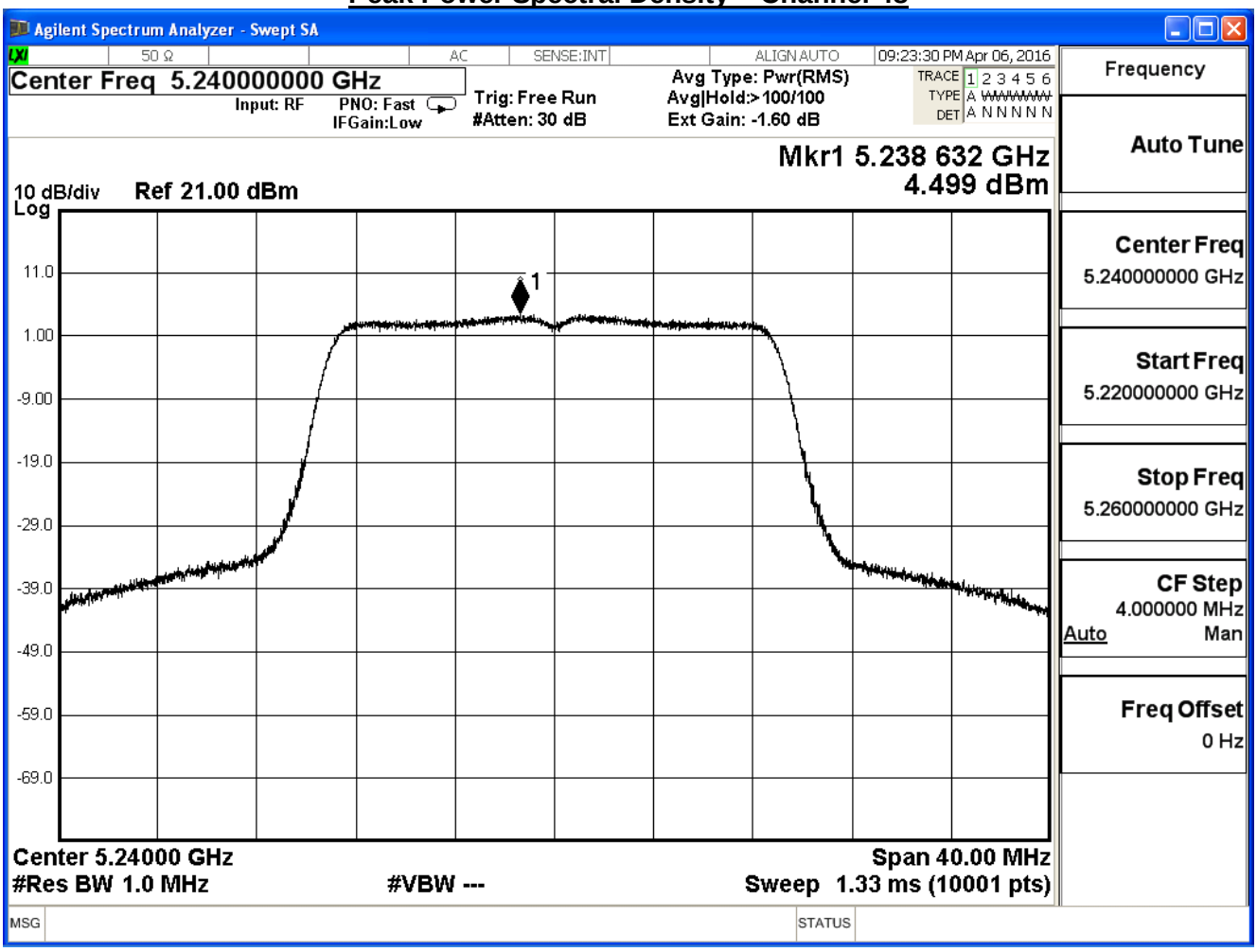
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

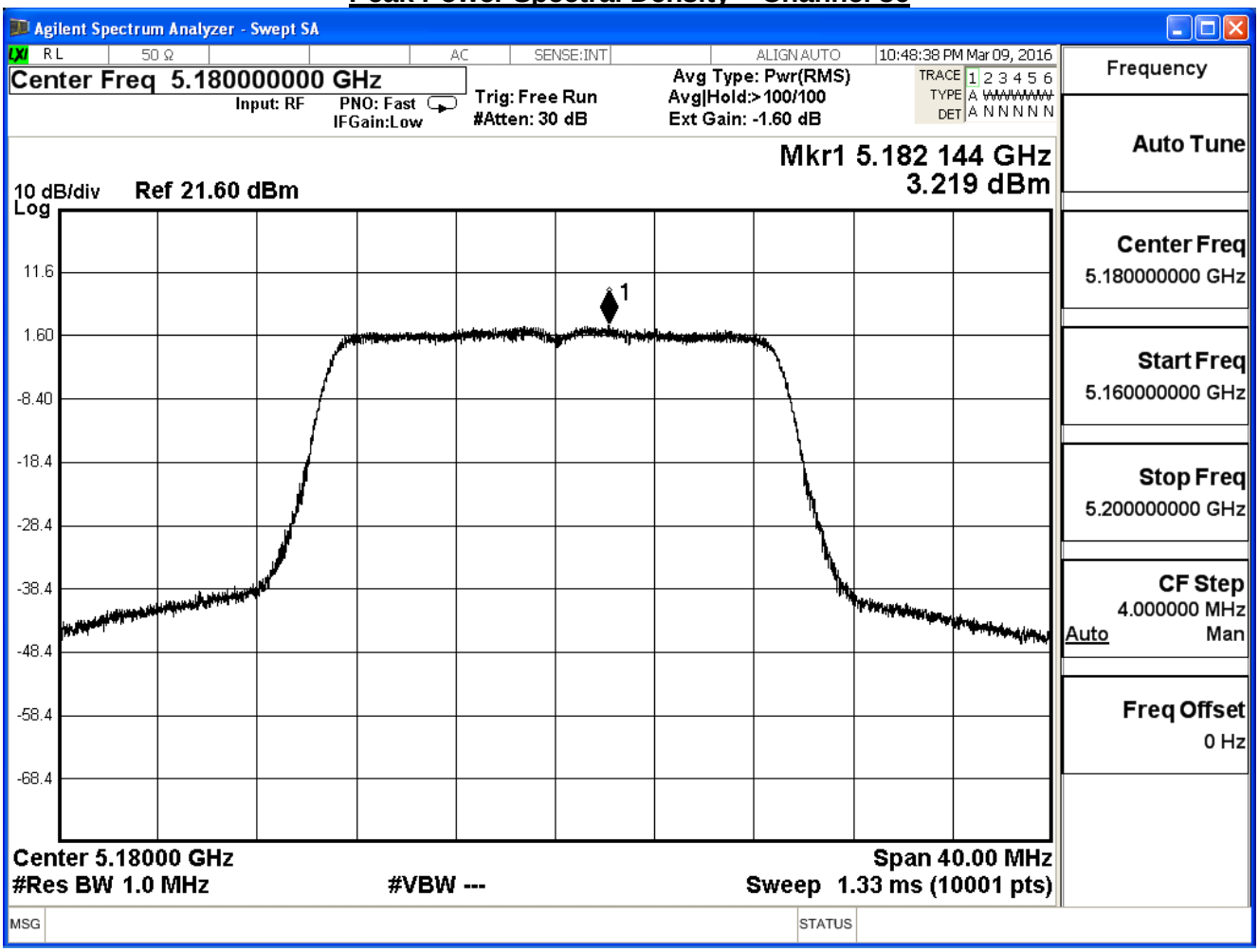


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

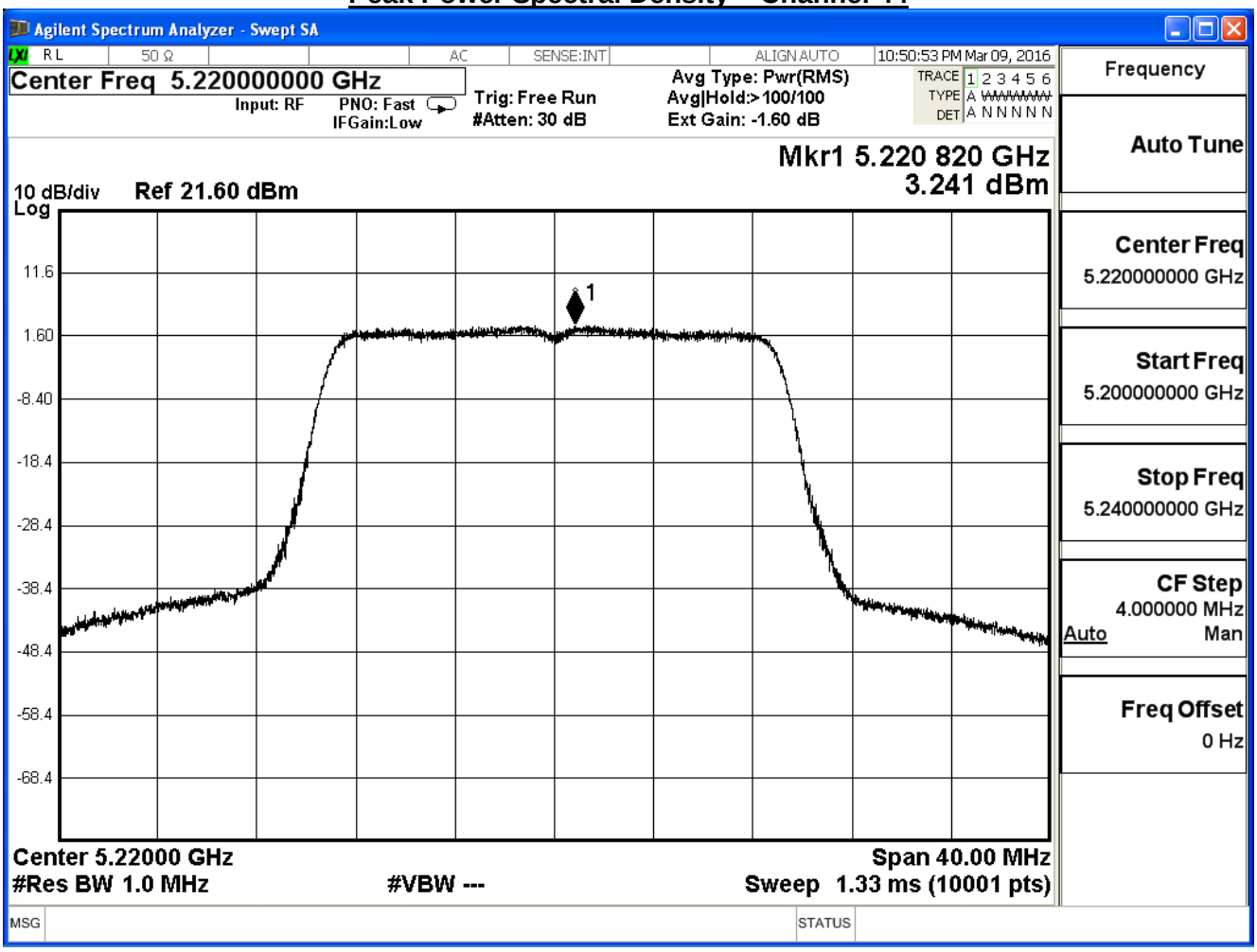
IEEE 802.11n_20M (ANT 1)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
36	5180	3.22	≦9.23	Pass
44	5220	3.24	≦9.23	Pass
48	5240	4.39	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

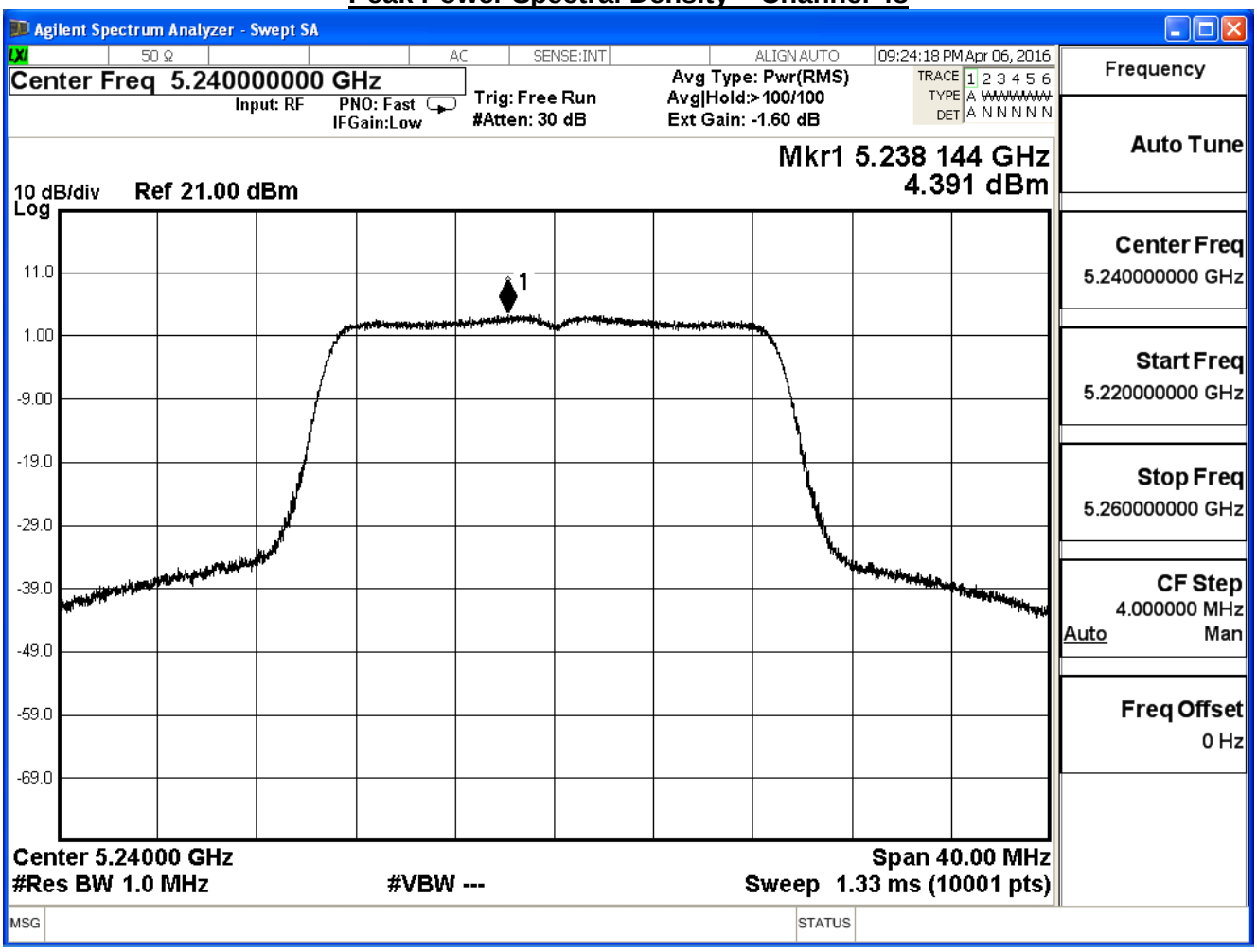
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

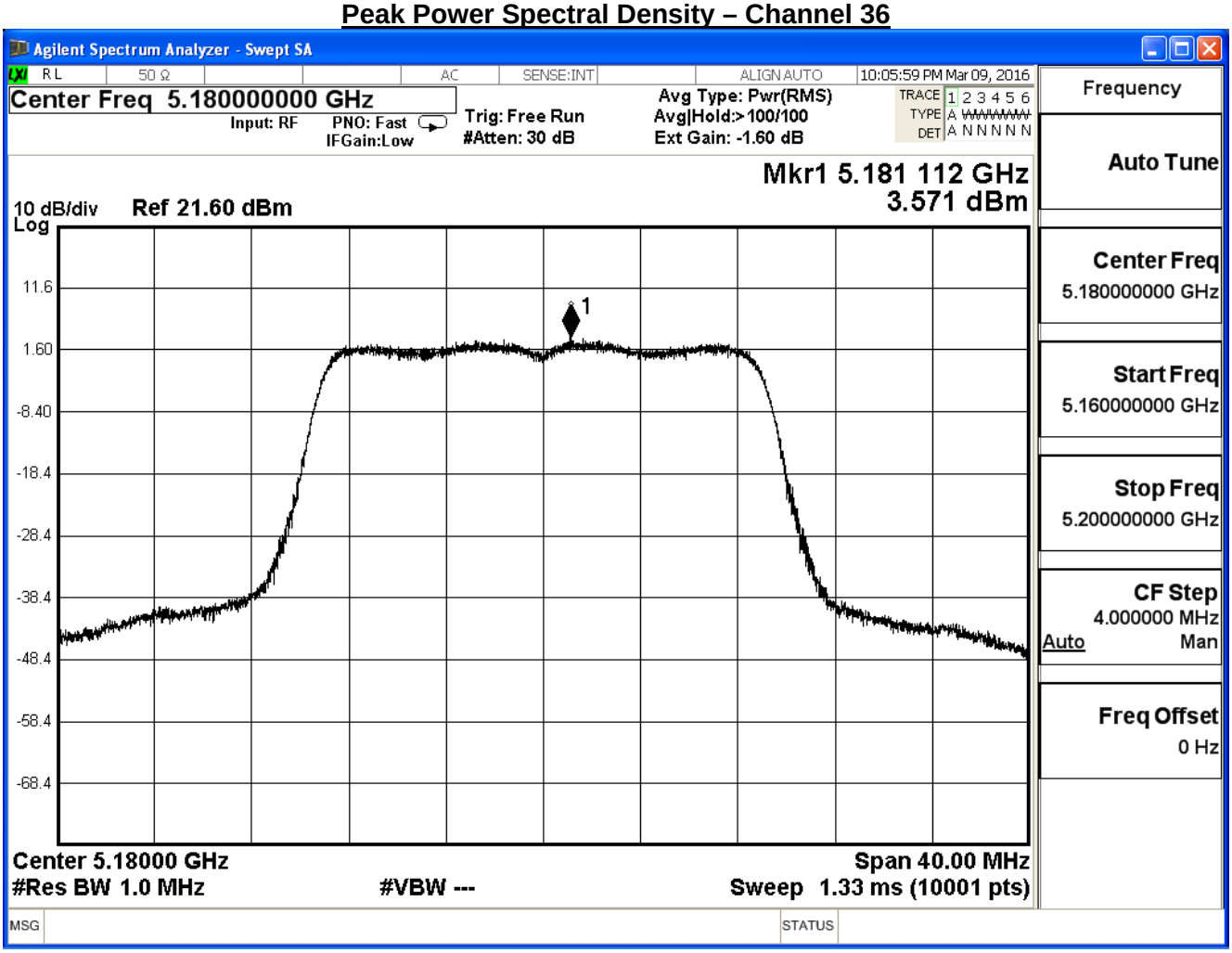


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

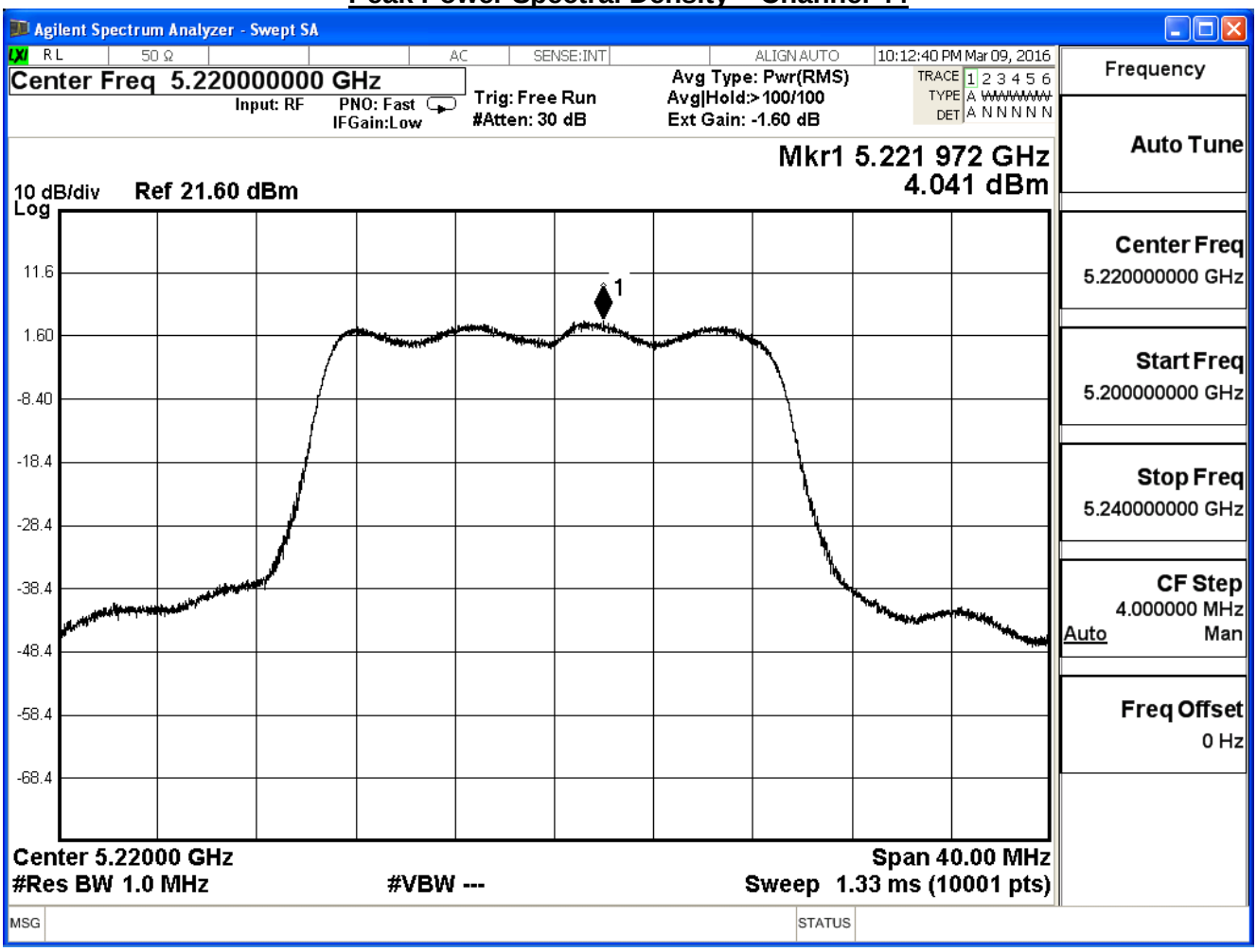
IEEE 802.11n_20M (ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
36	5180	3.57	≦9.23	Pass
44	5220	4.04	≦9.23	Pass
48	5240	4.35	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

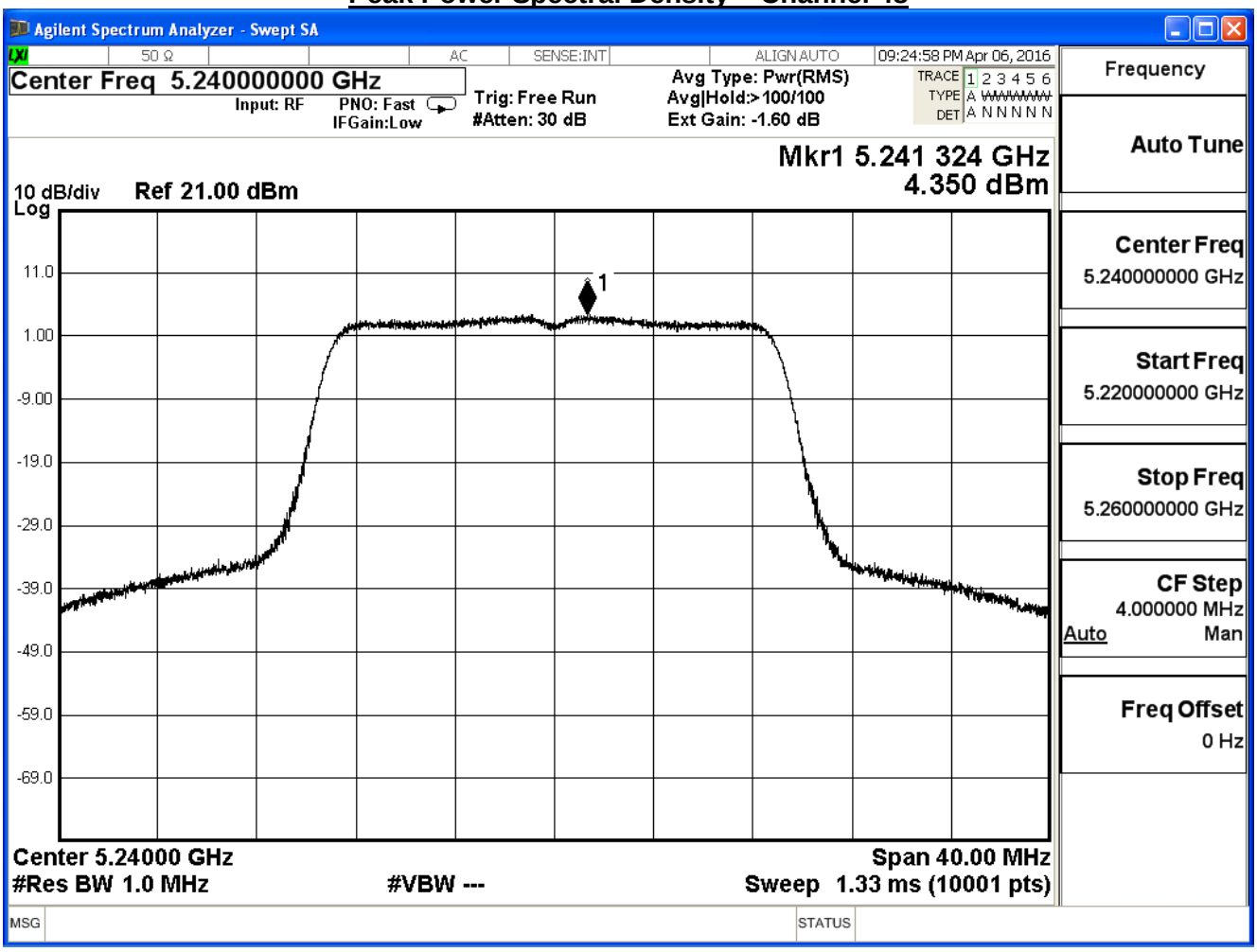
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11n_20M (ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
36	5180	8.10	≦9.23	Pass
44	5220	8.35	≦9.23	Pass
48	5240	9.19	≦9.23	Pass

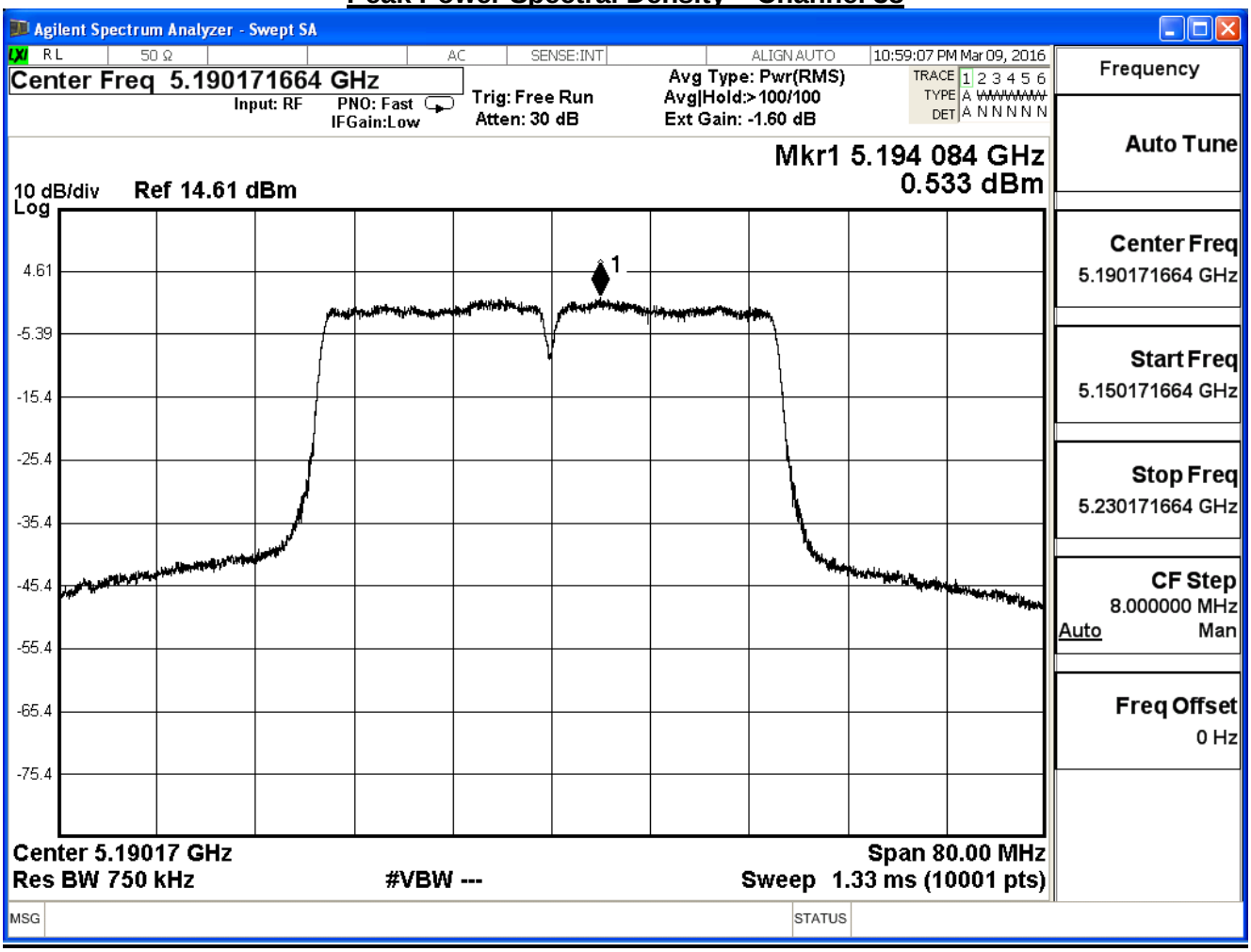
Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

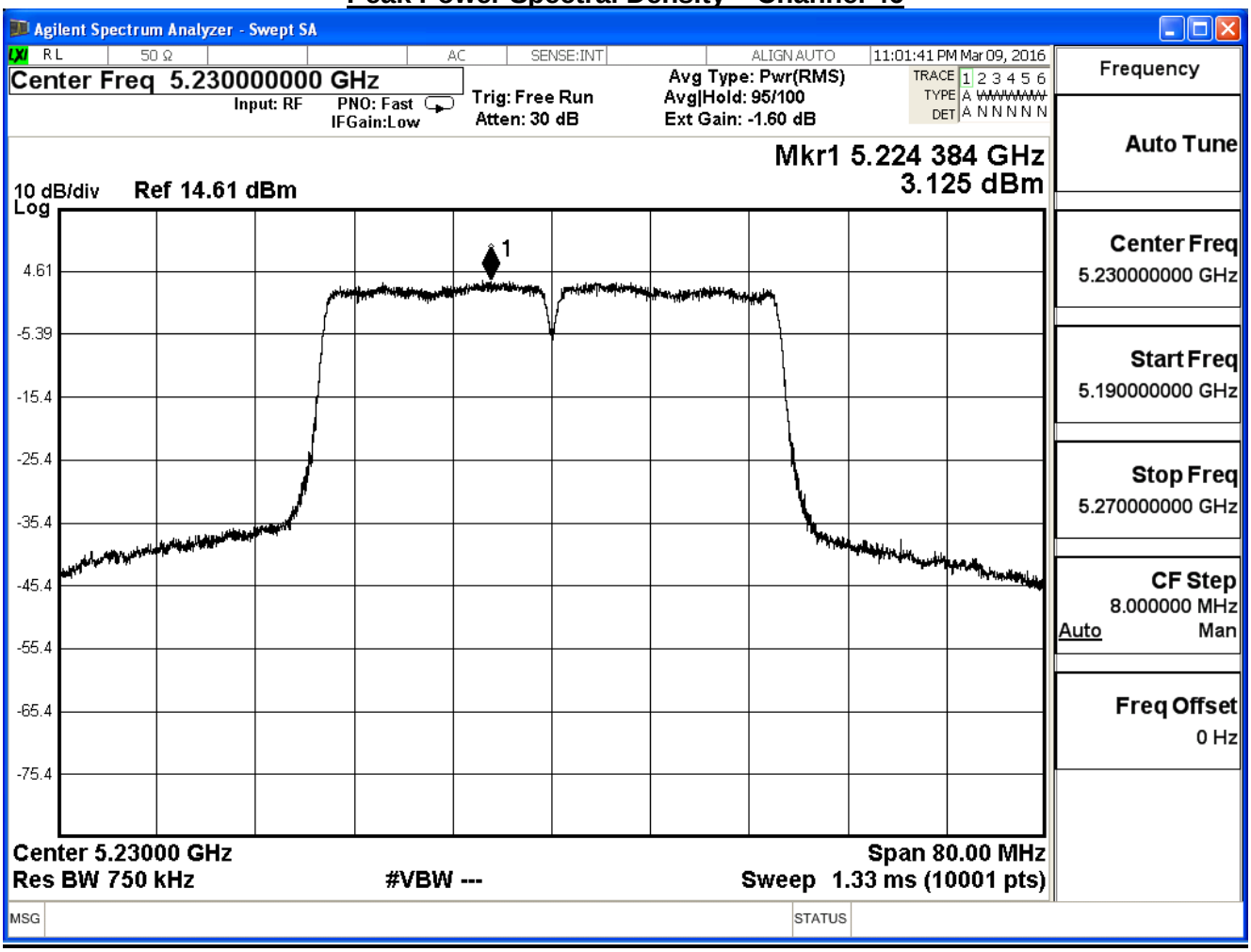
IEEE 802.11n_40M(ANT 0)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
38	5190	0.53	≦9.23	Pass
46	5230	3.13	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46

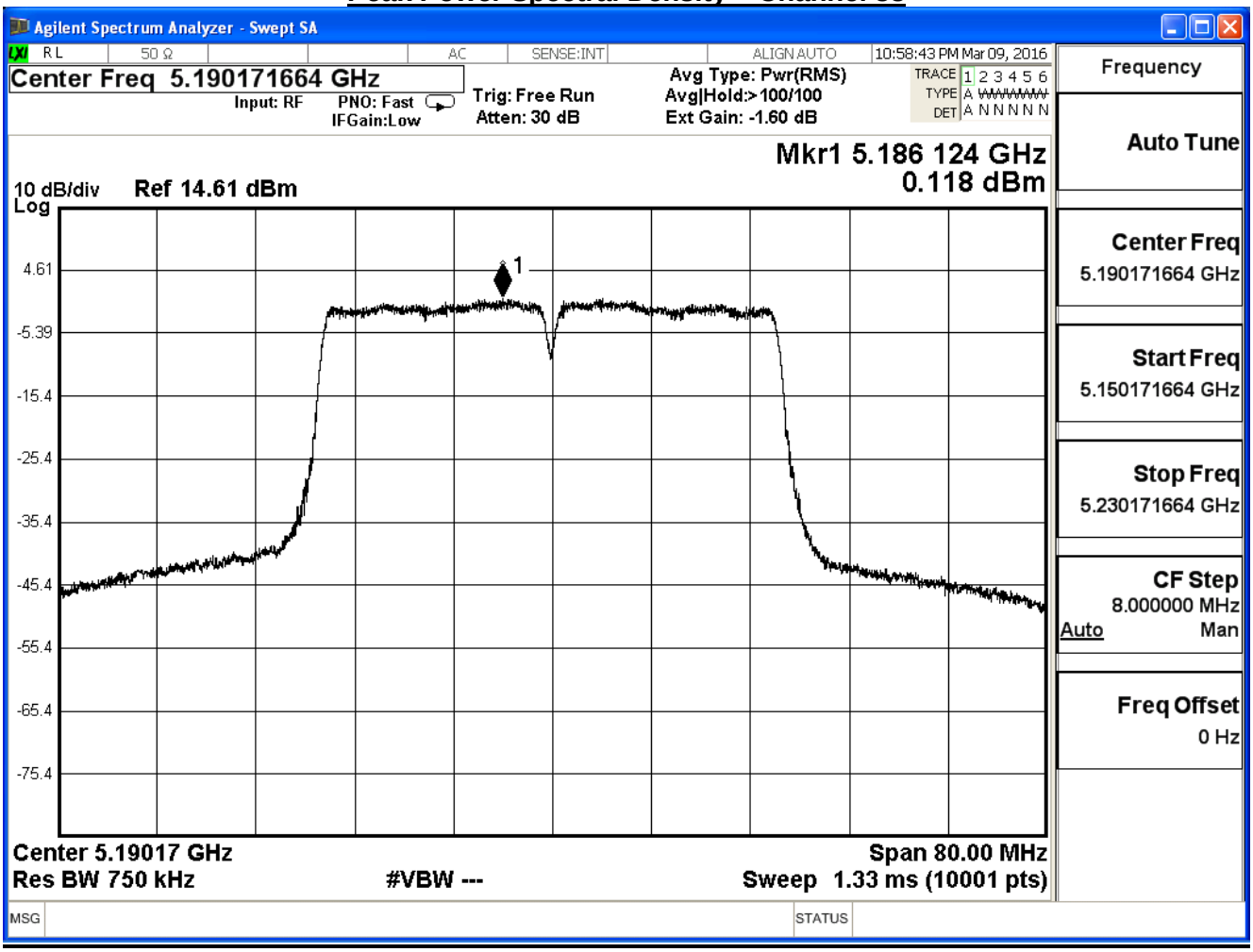


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

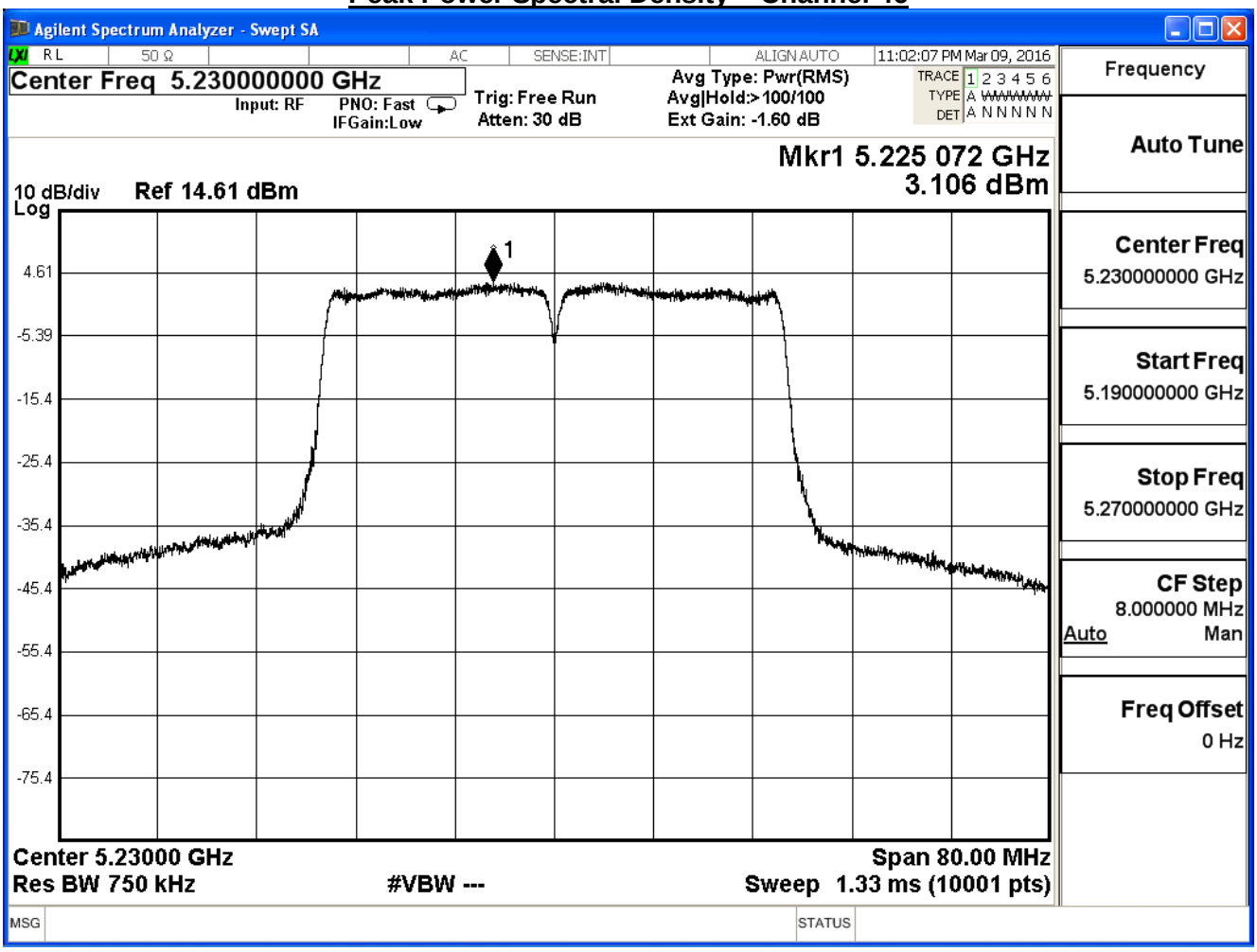
IEEE 802.11n_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
38	5190	0.12	≦9.23	Pass
46	5230	3.11	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46

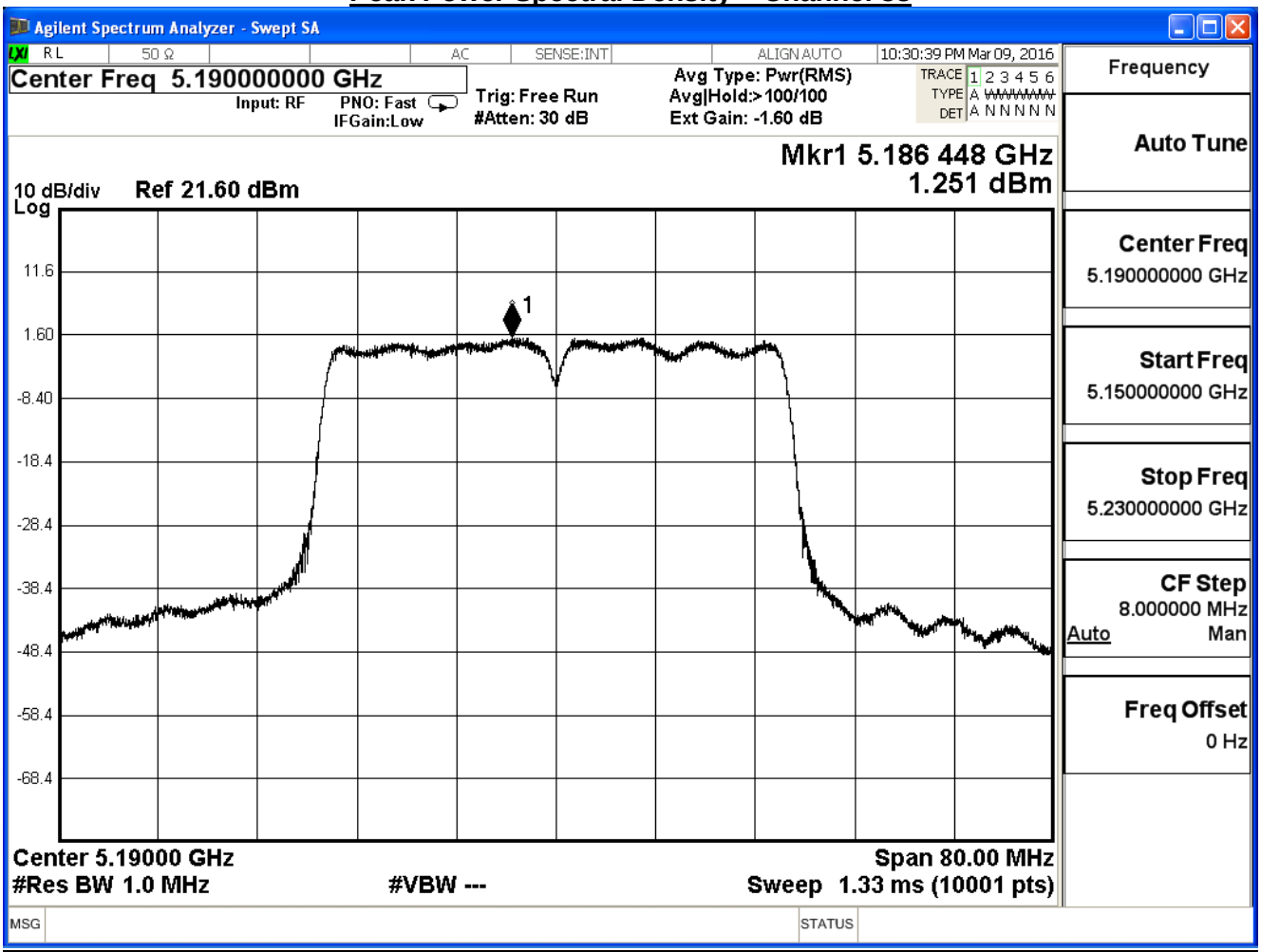


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

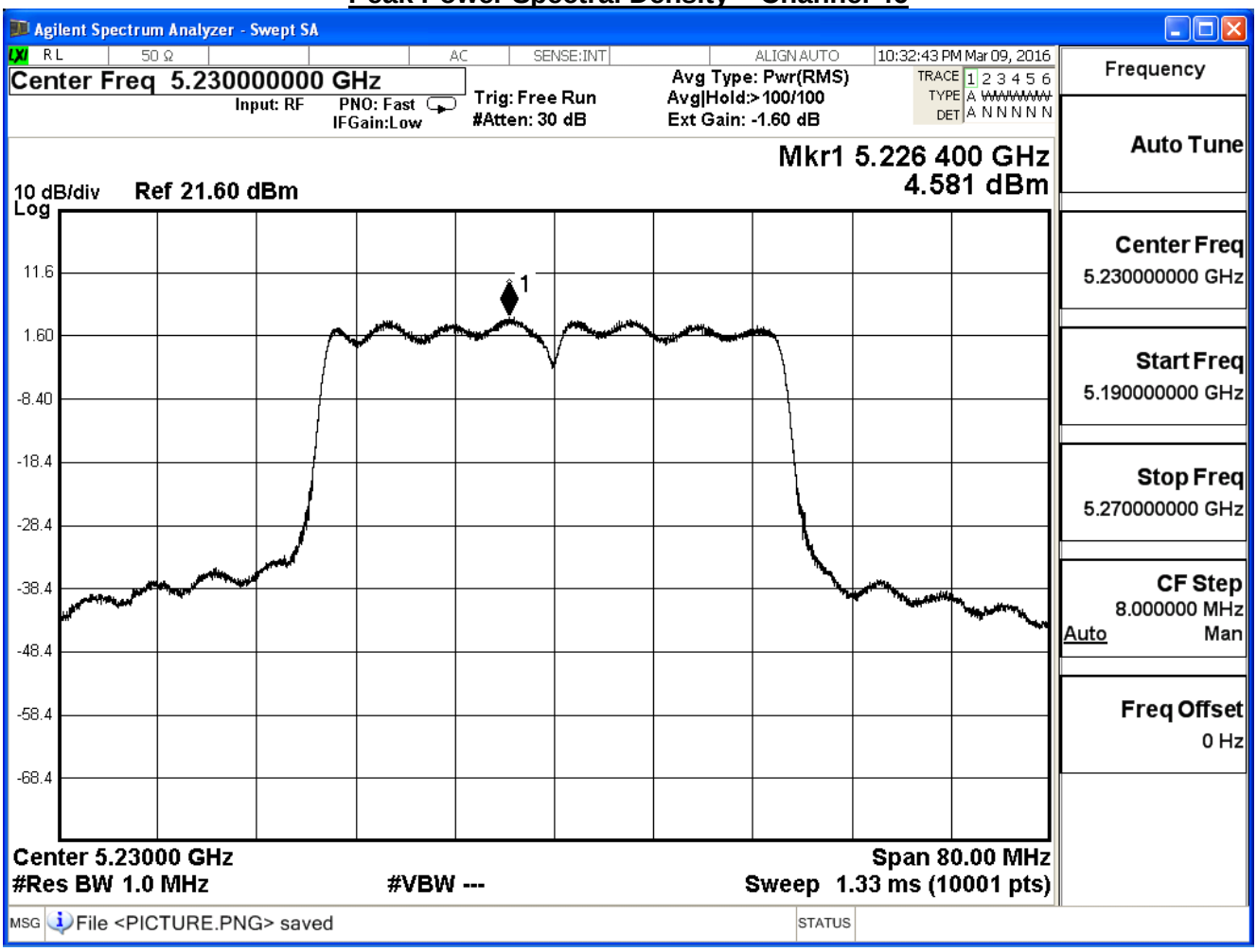
IEEE 802.11n_40M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
38	5190	1.25	≦9.23	Pass
46	5230	4.58	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11n_40M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
38	5190	5.43	≦9.23	Pass
46	5230	8.43	≦9.23	Pass

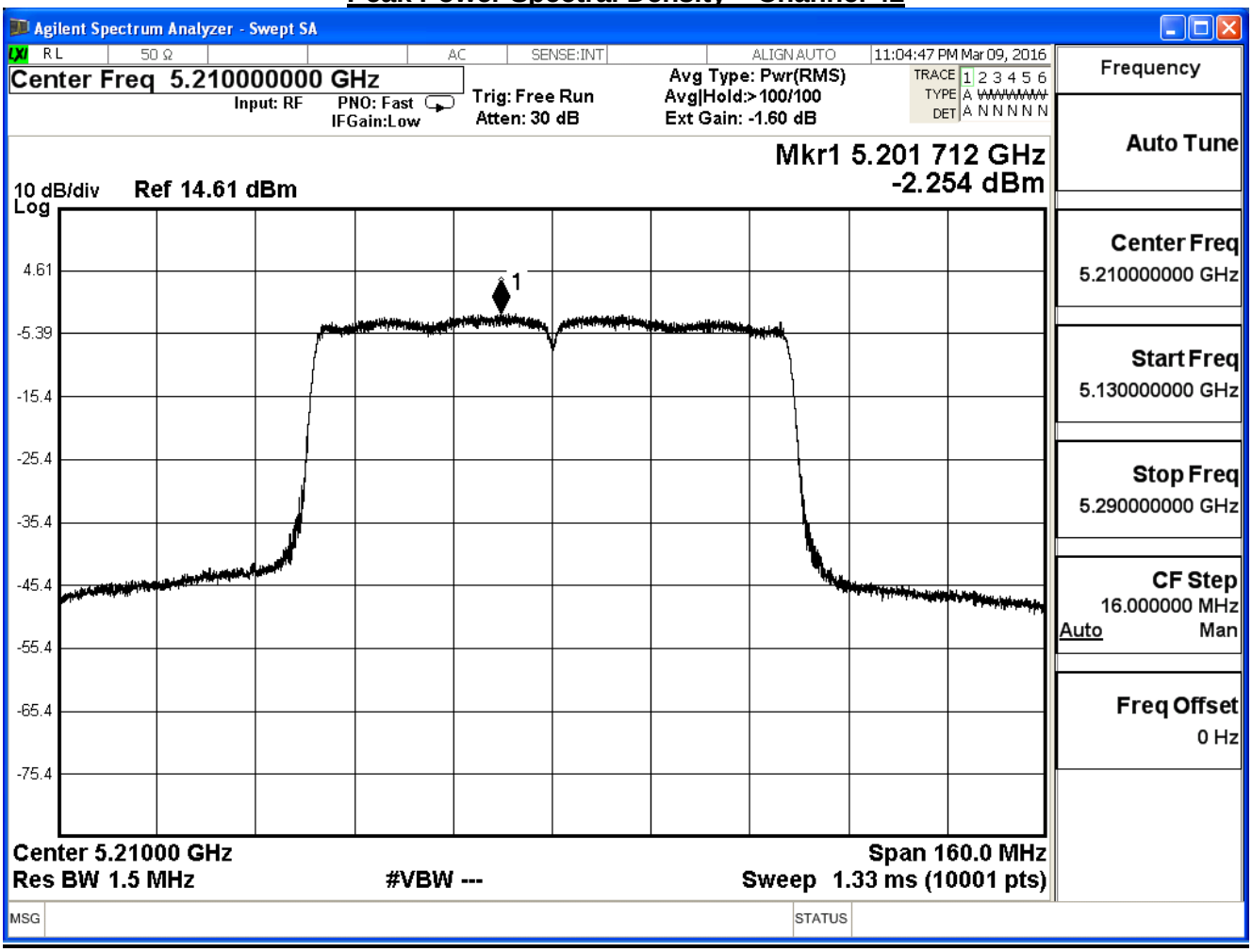
Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11ac_80M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
42	5210	-2.25	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 42

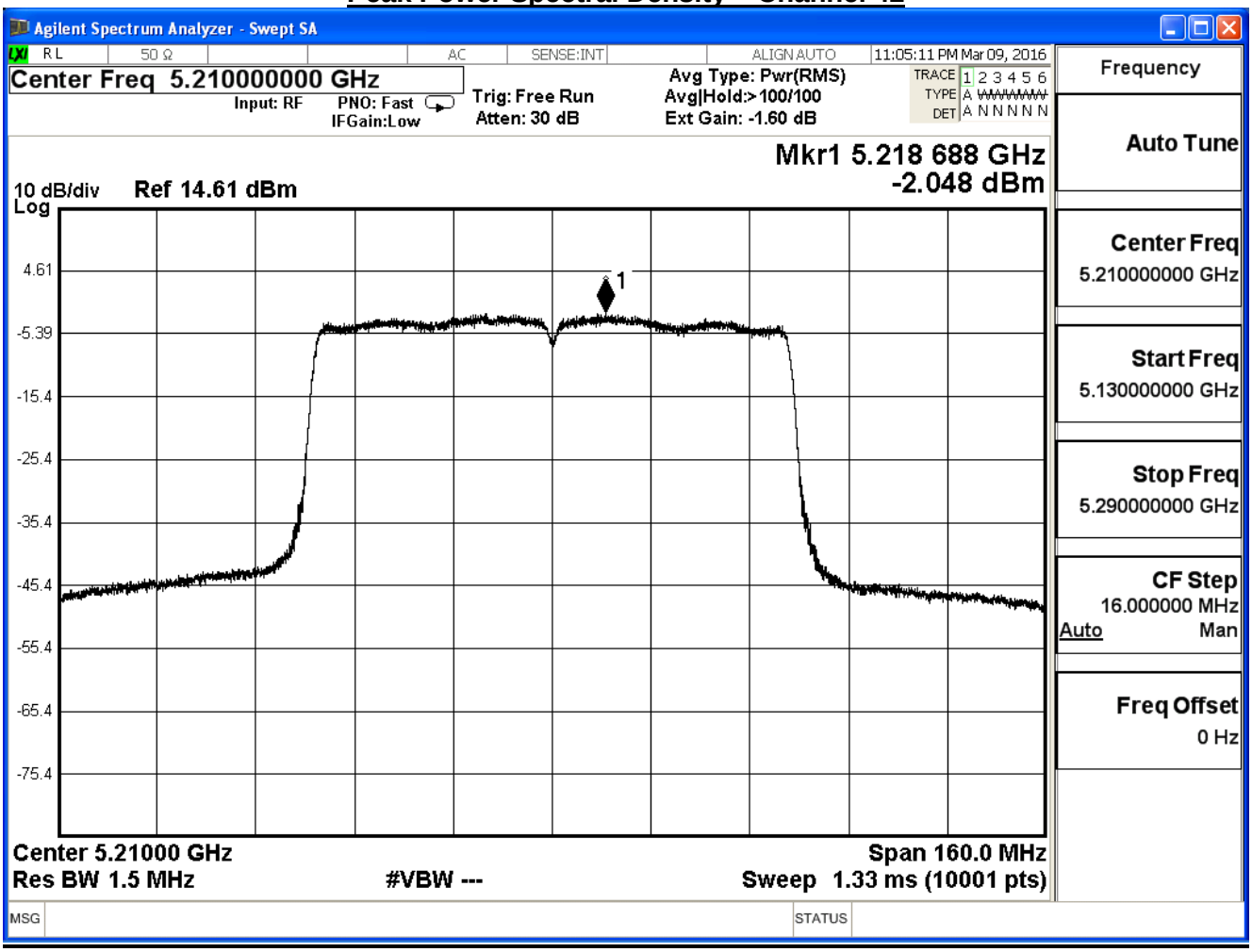


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11ac_80M(ANT 1)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
42	5210	-2.05	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 42

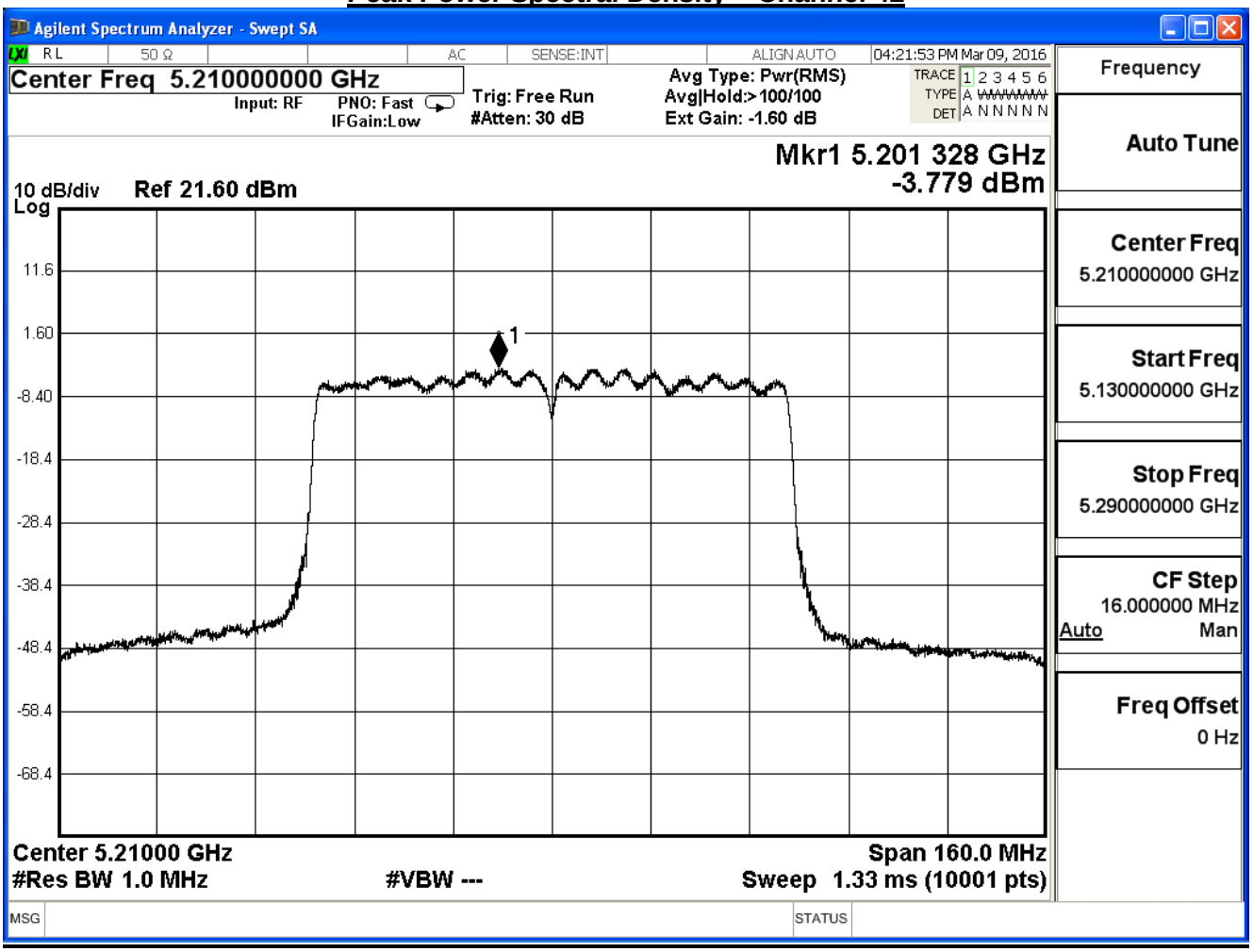


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11ac_80M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
42	5210	-3.78	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

Peak Power Spectral Density – Channel 42



Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/04/09	Test Site	SR7

IEEE 802.11ac_80M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
42	5210	2.14	≦9.23	Pass

Total Gain: 10log(ANT N)+max Gain = 7.77dBi
Limit=11-(7.77dBi-6dBi)=9.23dBi

5. Radiated Emission

5.1. Test Equipment

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

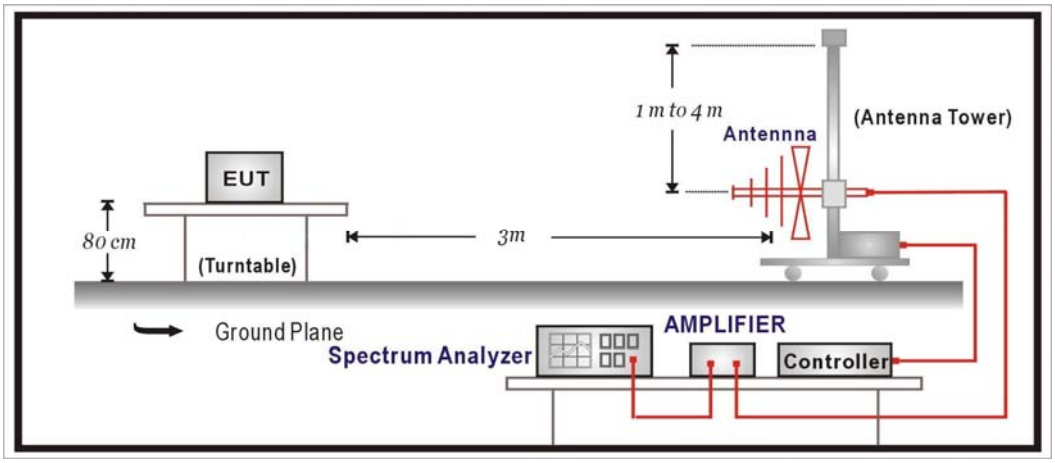
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2895	2016/08/14
Double Ridged Guide Horn Antenna	Schwarzbeck	BBHA 9120	D743	2017/01/14
Pre-Amplifier	EMCI	EMC0031835	980233	2017/01/26
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2017/01/03
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/12/24
k Type Cable	Huber+Suhner	SF 102	25623/2	2017/01/11
Horn Antenna	Schwarzbeck	BBHA 9170	203	2016/09/07
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05

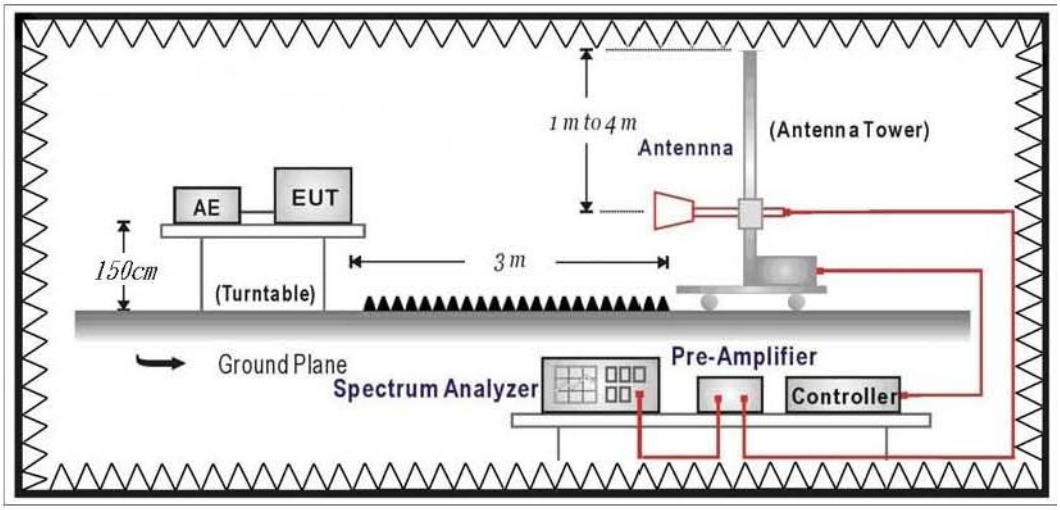
Note: All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



5.3. Limits

➢ General Radiated Emission 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	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remark:

1. RF Voltage (dBuV) = 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.

➢ Unwanted Emission out of the restricted bands Limits

FCC Part 15 Subpart E Paragraph 15.407(b) Limits		
Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (dBuV/m@3m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5850	-27 (Note1)	68.3
	-17 (Note2)	78.3

Remark:

1. For frequencies more than 10 MHz above or below the band edges.
2. For frequency range from the band edges to 10 MHz above or below the band edges.
3. uV/m = $\frac{1000000\sqrt{30 \times EIRP}}{3}$, RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 and 1.5 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 C63.10:2013 on radiated measurement.
The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field dtrength of harmonics measurement.
The bandwidth below 1GHz setting on the field strength meter is 120 KHz, above 1GHz are 1 MHz.
The frequency range from 30MHz to 10th harminics is checked.

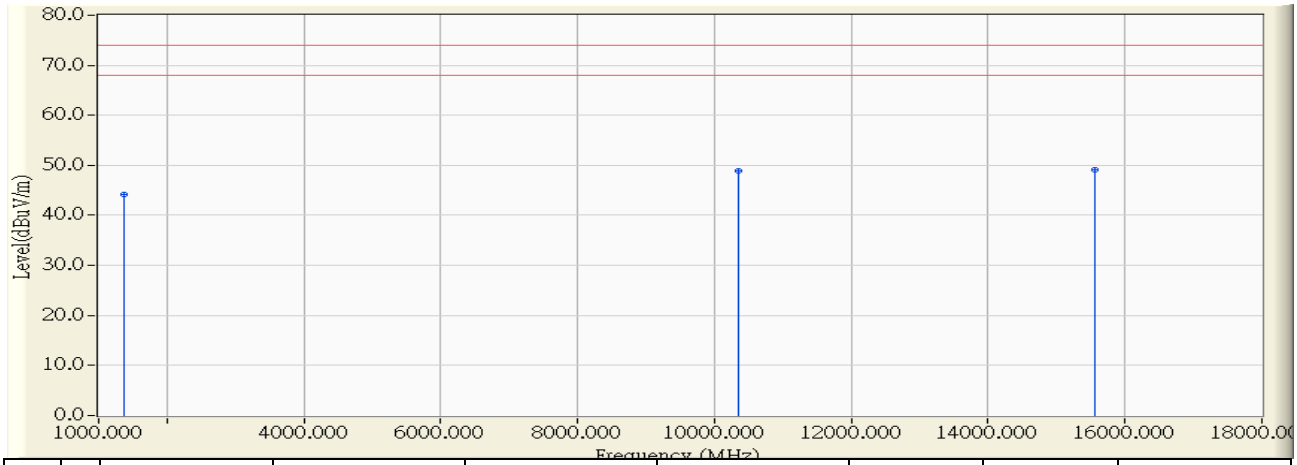
5.5. Uncertainty

The measurement uncertainty
30MHz～1GHz as ±3.43dB
1GHz～26.5Ghz as ±3.65dB

5.6. Test Result

Harmonic & Spurious:

Site : CB1	**Time : 2016/03/08 - 16:32**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

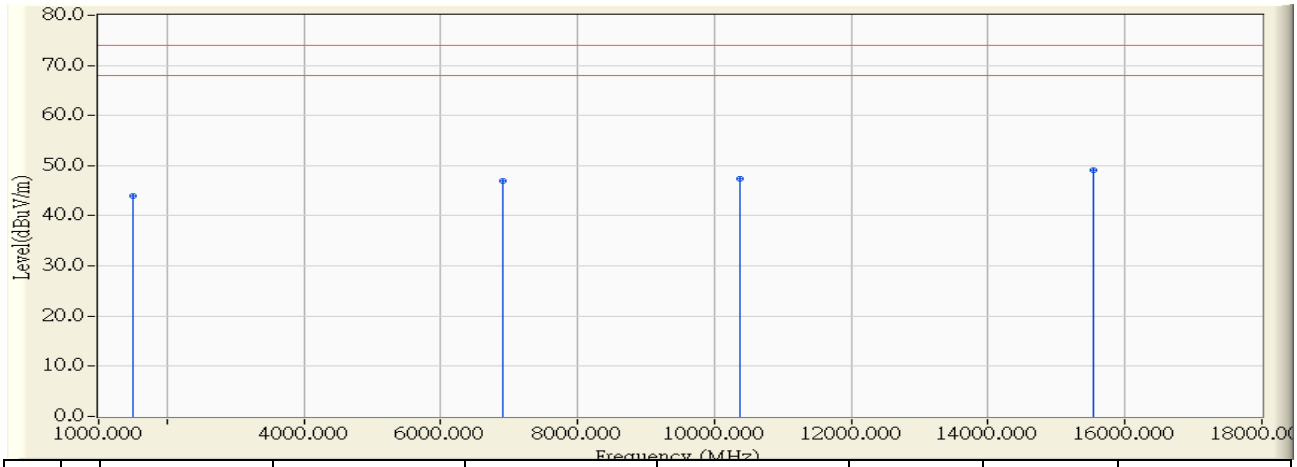


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	1378.560	-9.981	54.090	44.109	-29.891	74.000	PEAK
2		10355.560	9.164	39.840	49.004	-24.996	74.000	PEAK
3		15553.760	9.727	39.370	49.098	-24.902	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 16:43**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

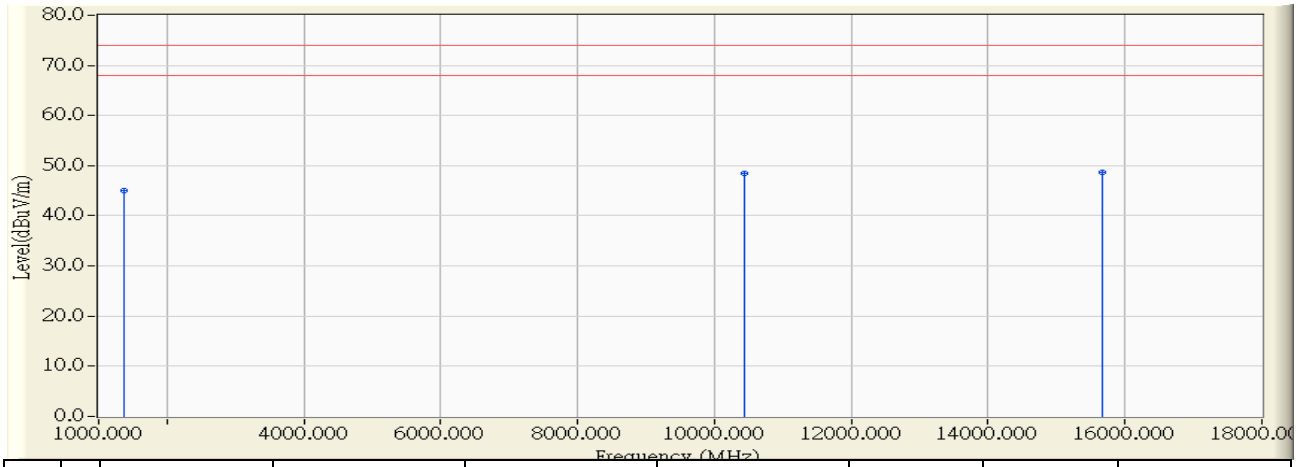


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1502.320	-9.195	53.070	43.875	-30.125	74.000	PEAK
2		6904.080	4.624	42.300	46.924	-27.076	74.000	PEAK
3		10362.580	8.538	38.820	47.358	-26.642	74.000	PEAK
4	*	15547.060	9.733	39.480	49.213	-24.787	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 16:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

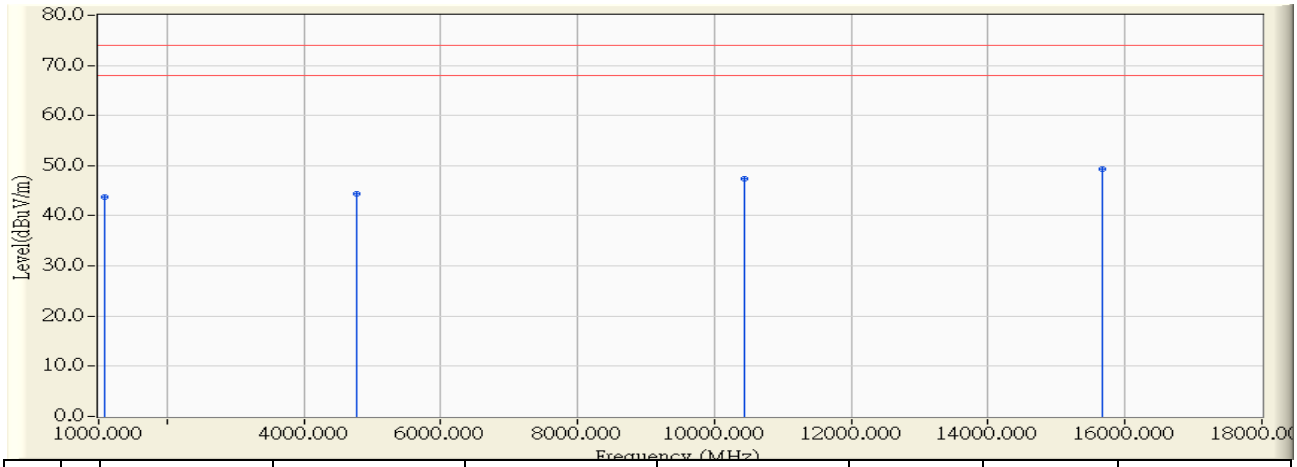


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1374.950	-9.990	54.990	44.999	-29.001	74.000	PEAK
2		10446.160	9.089	39.410	48.499	-25.501	74.000	PEAK
3	*	15665.580	9.629	39.080	48.709	-25.291	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 16:55**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

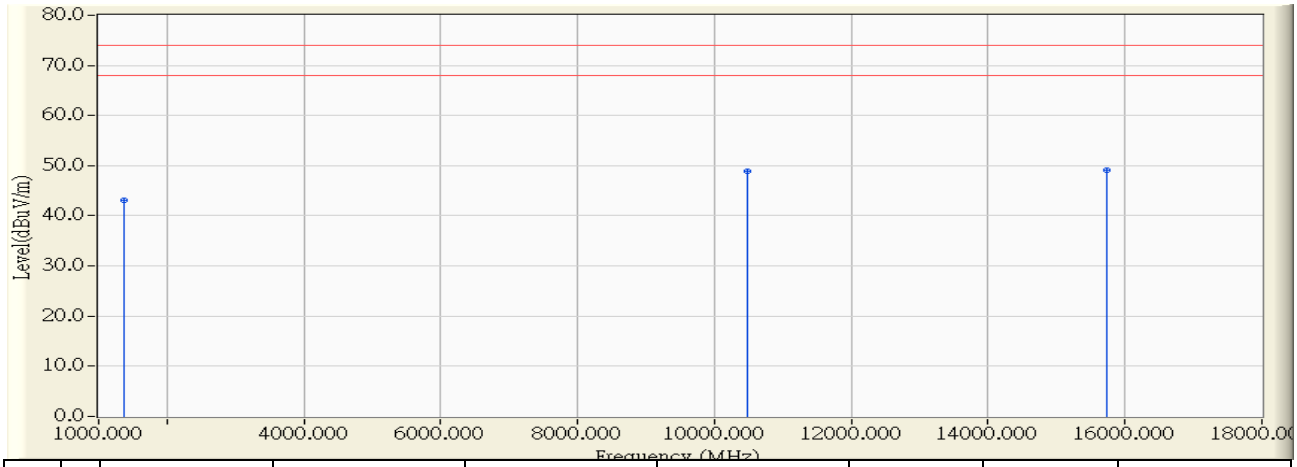


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1095.660	-9.906	53.650	43.744	-30.256	74.000	PEAK
2		4780.000	-1.670	46.150	44.480	-29.520	74.000	PEAK
3		10432.540	8.549	38.770	47.319	-26.681	74.000	PEAK
4	*	15670.820	9.624	39.750	49.374	-24.626	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:03**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**

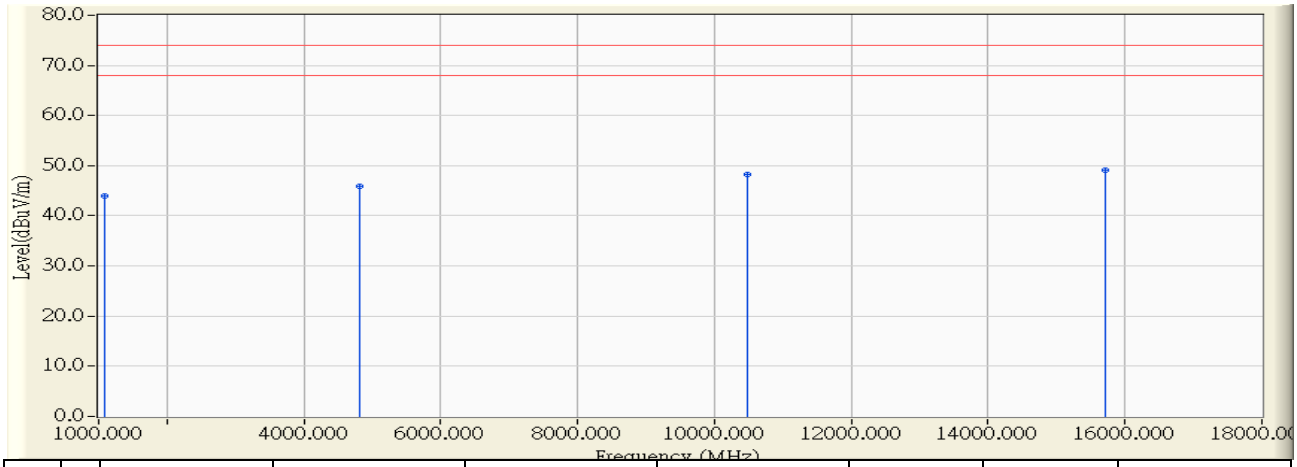


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1375.870	-9.989	53.160	43.171	-30.829	74.000	PEAK
2		10473.800	9.070	39.730	48.800	-25.200	74.000	PEAK
3	*	15734.260	9.569	39.440	49.008	-24.992	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:11**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**

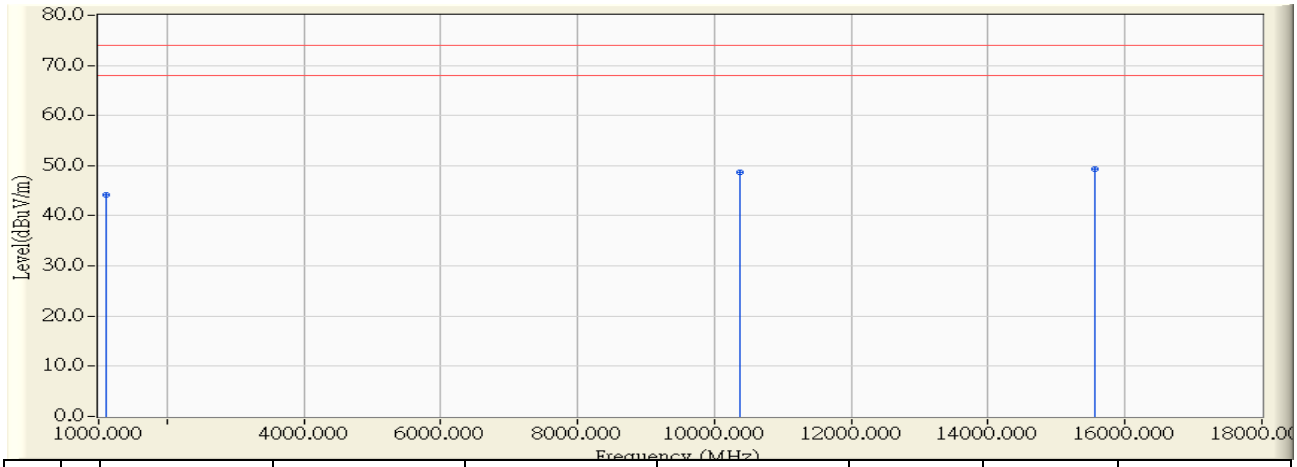


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1095.800	-9.906	53.870	43.964	-30.036	74.000	PEAK
2		4810.290	-1.665	47.520	45.856	-28.144	74.000	PEAK
3		10487.820	8.585	39.630	48.215	-25.785	74.000	PEAK
4	*	15706.140	9.593	39.600	49.193	-24.807	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:23**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

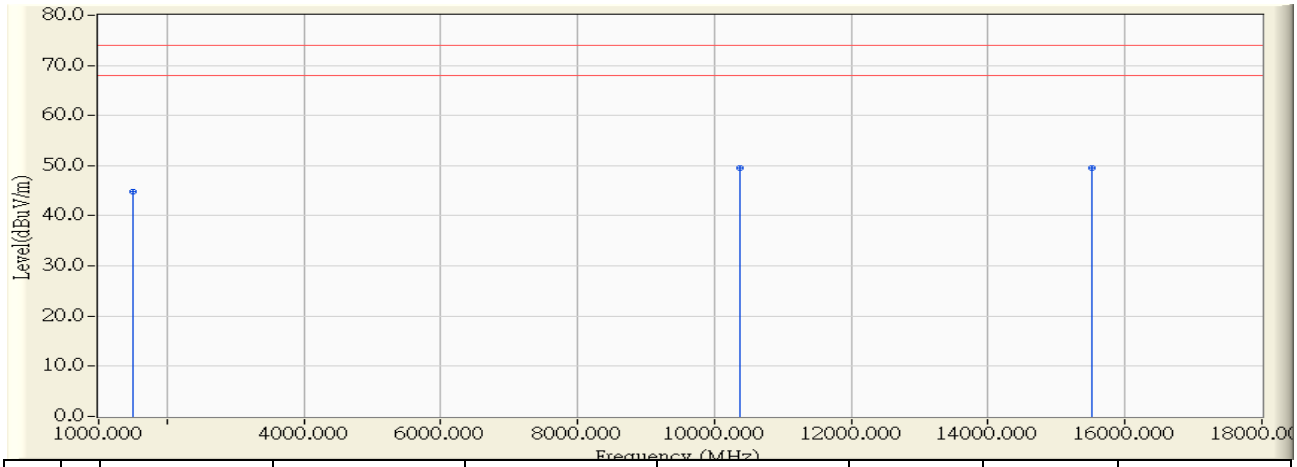


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1101.920	-10.775	54.940	44.165	-29.835	74.000	PEAK
2		10368.420	9.153	39.510	48.663	-25.337	74.000	PEAK
3	*	15548.580	9.733	39.550	49.282	-24.718	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:32**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

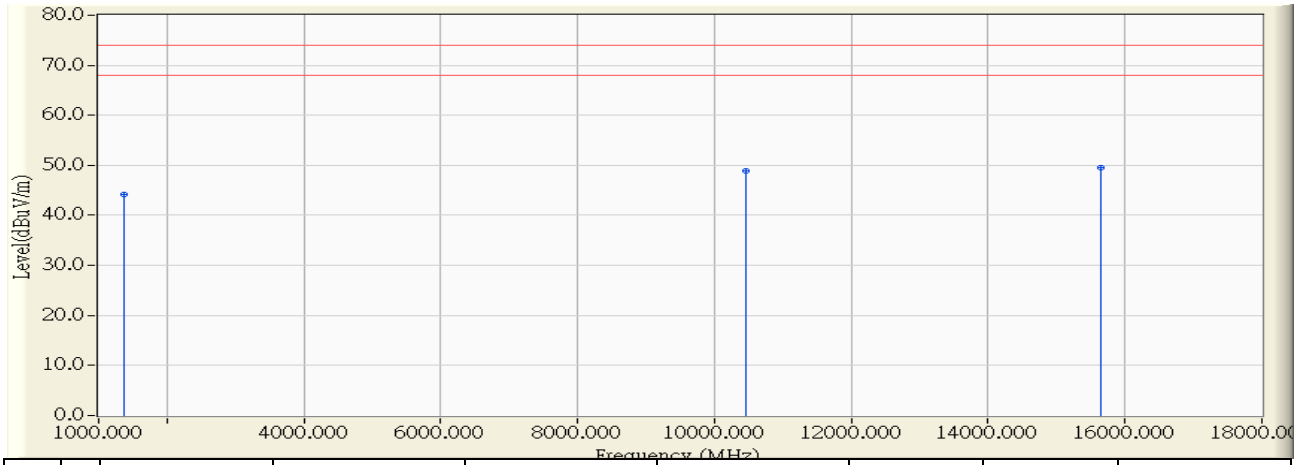


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1502.320	-9.195	54.110	44.915	-29.085	74.000	PEAK
2		10361.440	8.537	40.910	49.447	-24.553	74.000	PEAK
3	*	15524.740	9.753	39.750	49.503	-24.497	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:42**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**

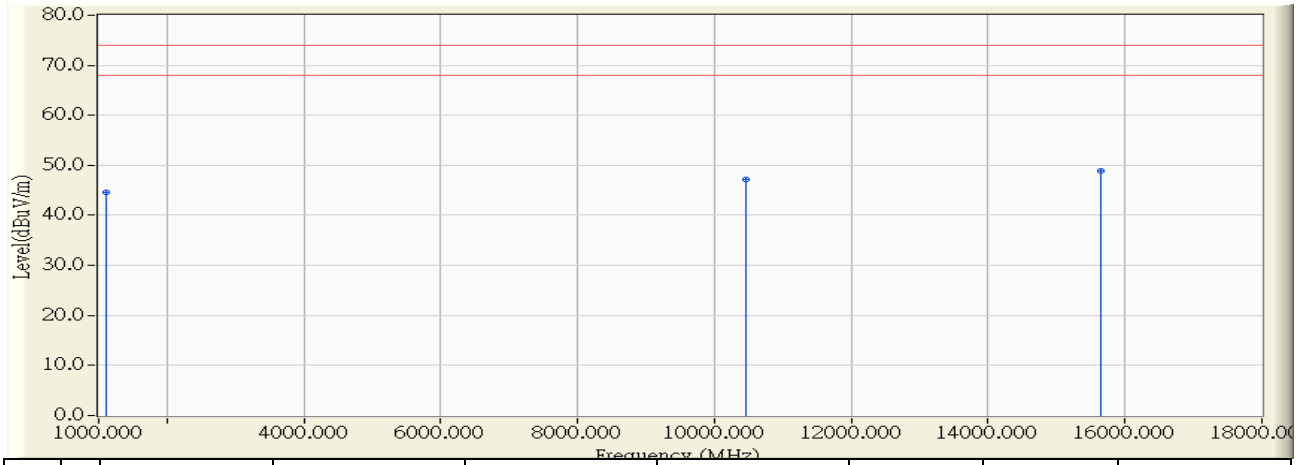


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1374.960	-9.990	54.220	44.229	-29.771	74.000	PEAK
2		10450.940	9.085	39.800	48.885	-25.115	74.000	PEAK
3	*	15651.240	9.642	39.850	49.492	-24.508	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:48**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**

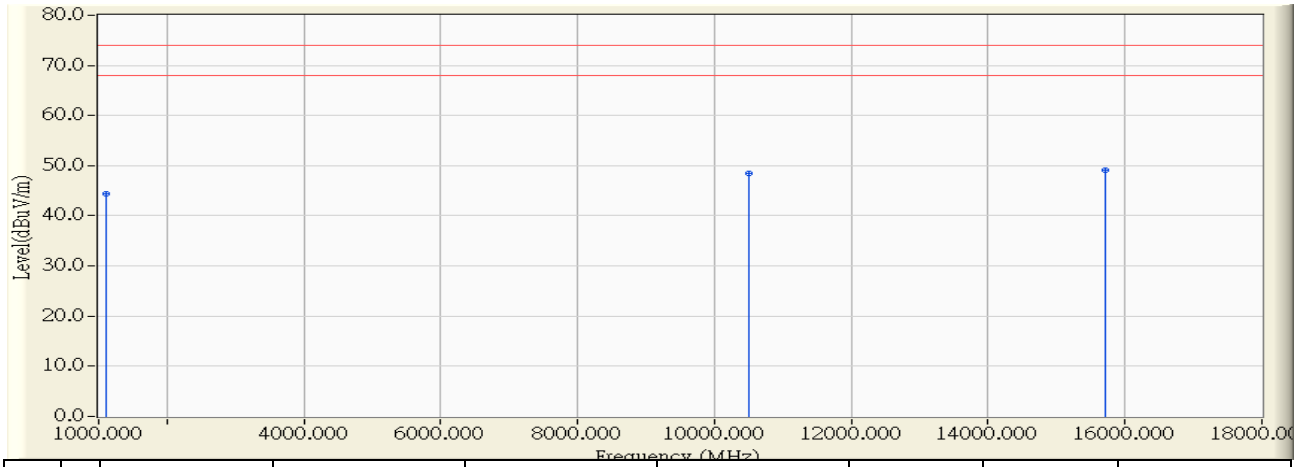


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1099.510	-9.899	54.570	44.671	-29.329	74.000	PEAK
2		10449.340	8.552	38.530	47.082	-26.918	74.000	PEAK
3	*	15656.040	9.638	39.280	48.917	-25.083	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 17:55**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**

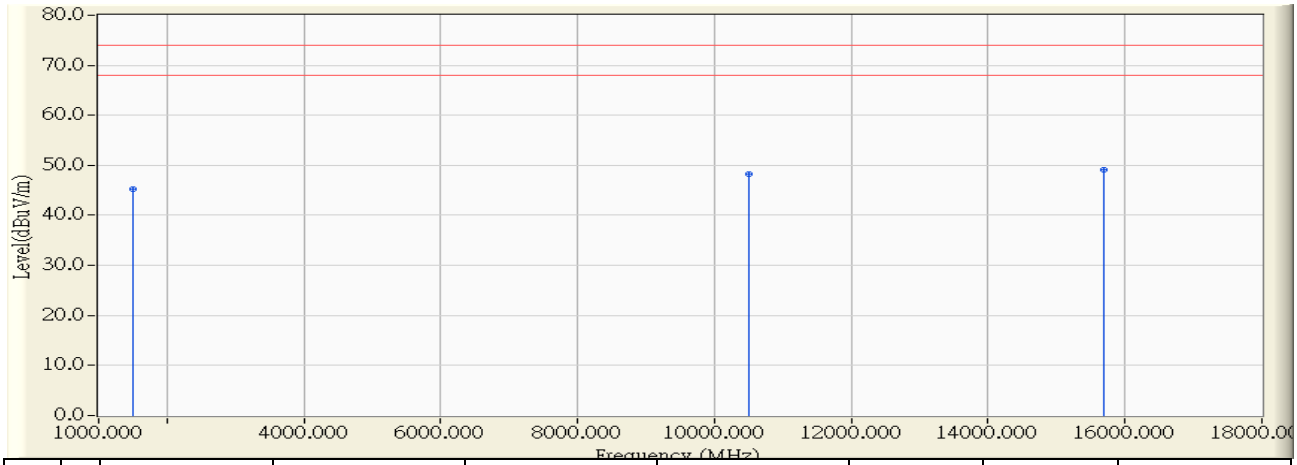


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1100.750	-10.778	55.230	44.451	-29.549	74.000	PEAK
2		10498.175	9.129	39.310	48.439	-25.561	74.000	PEAK
3	*	15704.650	9.594	39.550	49.145	-24.855	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 18:00**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**

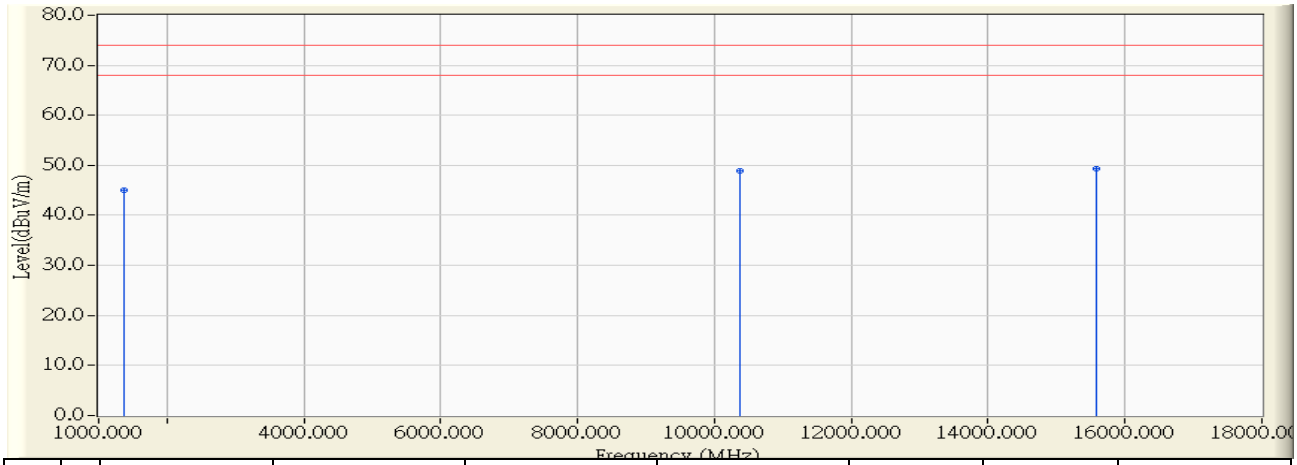


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1500.000	-9.194	54.550	45.356	-28.644	74.000	PEAK
2		10500.775	8.658	39.600	48.259	-25.741	74.000	PEAK
3	*	15697.200	9.601	39.560	49.161	-24.839	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:49**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

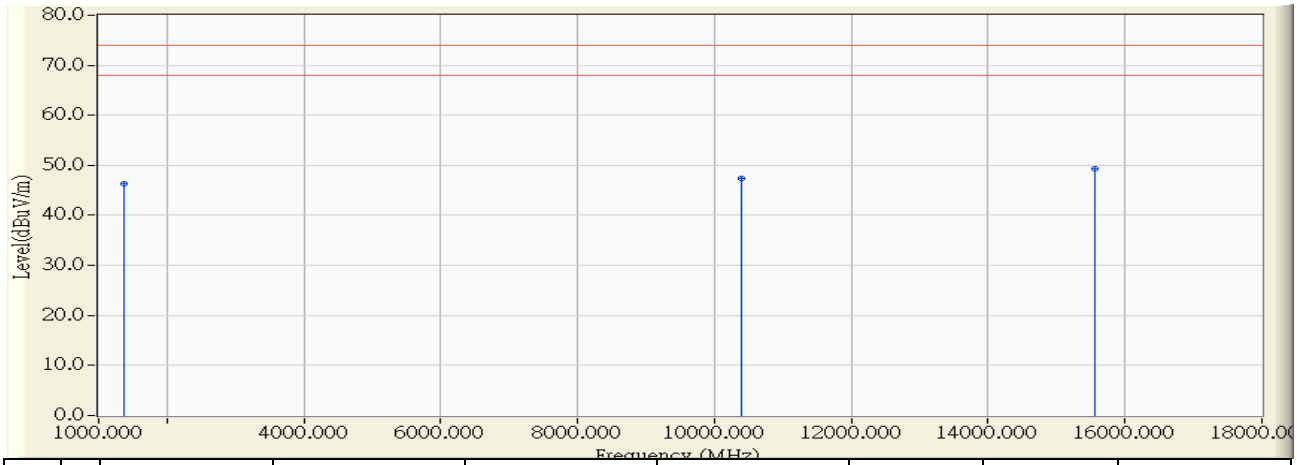


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1375.000	-9.990	55.000	45.009	-28.991	74.000	PEAK
2		10379.175	9.144	39.800	48.944	-25.056	74.000	PEAK
3	*	15583.675	9.701	39.730	49.431	-24.569	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:51**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

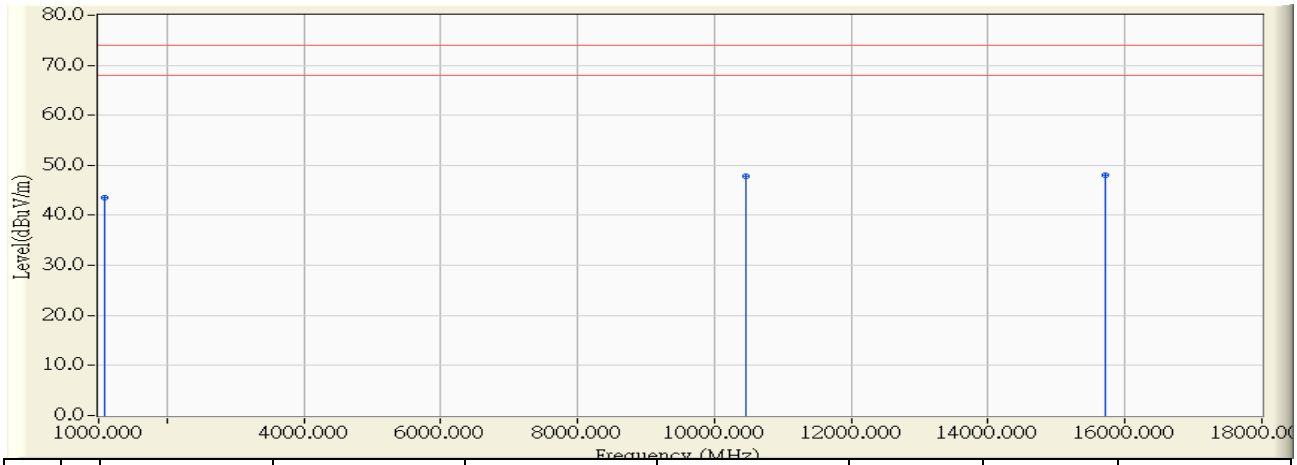


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1374.925	-9.383	55.770	46.387	-27.613	74.000	PEAK
2		10384.875	8.541	38.910	47.451	-26.549	74.000	PEAK
3	*	15554.375	9.728	39.680	49.407	-24.593	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**

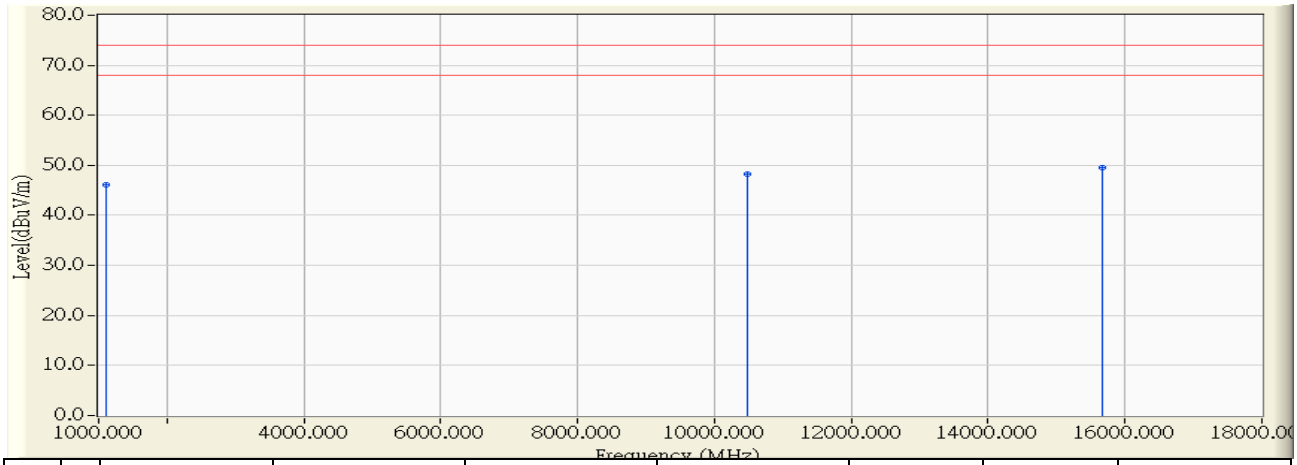


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1098.000	-10.787	54.410	43.623	-30.377	74.000	PEAK
2		10465.350	9.072	38.840	47.913	-26.087	74.000	PEAK
3	*	15701.325	9.597	38.490	48.087	-25.913	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**

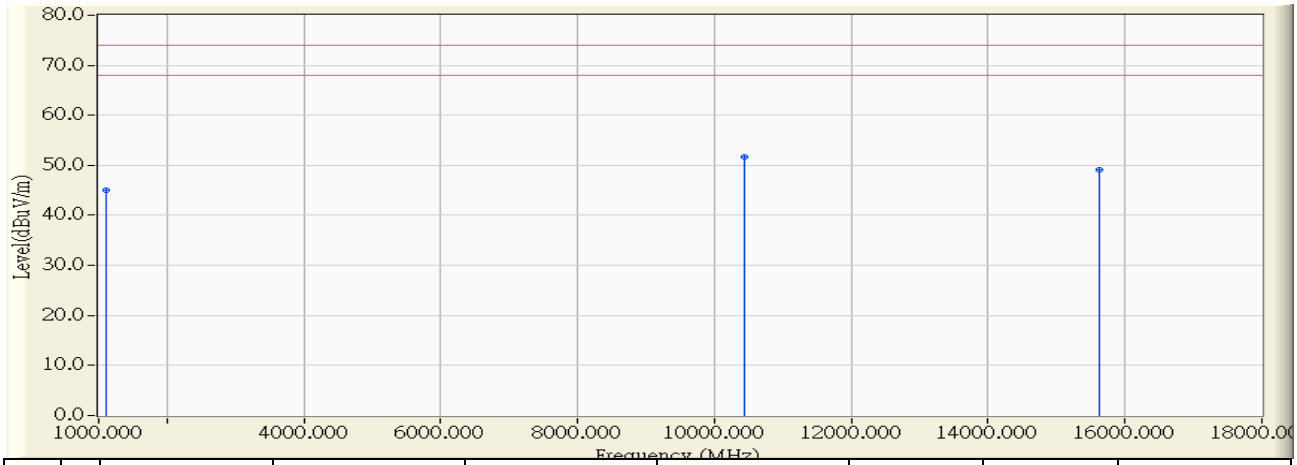


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1099.000	-9.899	55.950	46.050	-27.950	74.000	PEAK
2		10471.040	8.558	39.600	48.158	-25.842	74.000	PEAK
3	*	15672.760	9.623	39.830	49.453	-24.547	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:53**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**

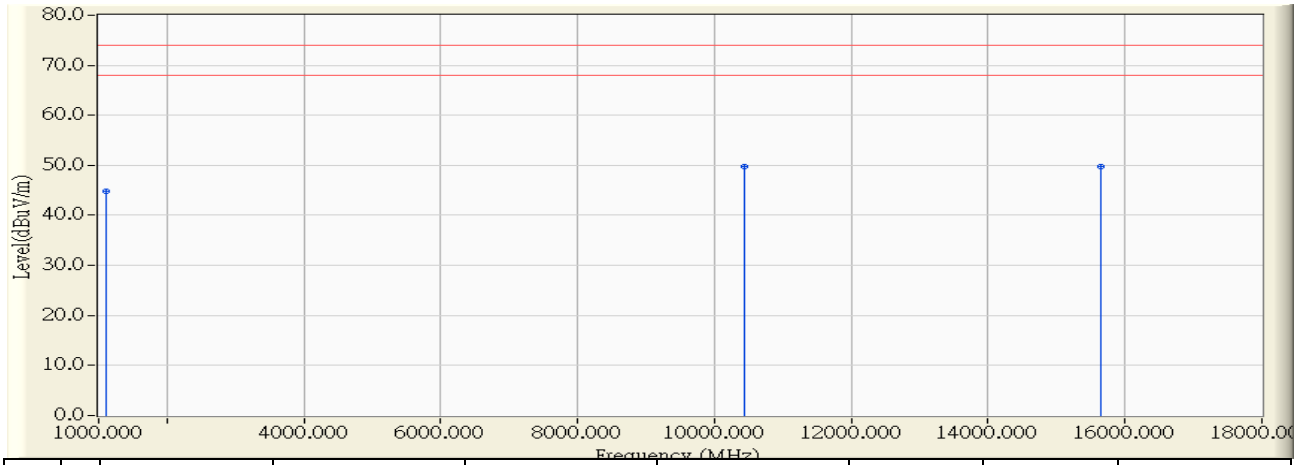


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1099.500	-10.783	55.840	45.058	-28.942	74.000	PEAK
2	*	10427.200	9.105	42.510	51.614	-22.386	74.000	PEAK
3		15626.200	9.664	39.400	49.064	-24.936	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 20:54**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1100.250	-9.897	54.820	44.923	-29.077	74.000	PEAK
2	*	10432.180	8.549	41.280	49.829	-24.171	74.000	PEAK
3		15637.160	9.654	40.070	49.724	-24.276	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

6. Band Edge

6.1. Test Equipment

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

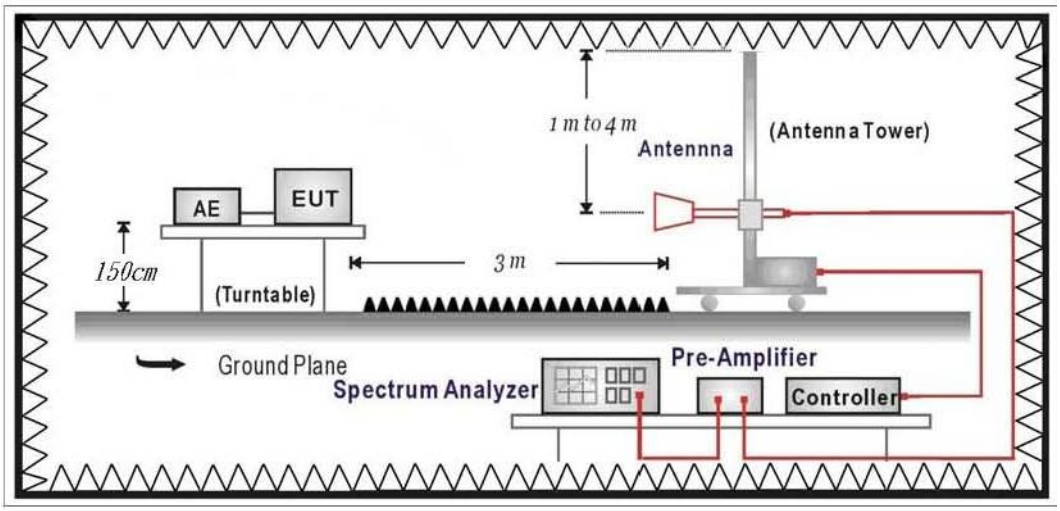
Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzbeck	BBHA 9120	D743	2017/01/14
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/12/24
k Type Cable	Huber+Suhner	SF 102	25623/2	2017/01/11
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2017/01/03
Pre-Amplifier	EMCI	EMC0031835	980233	2017/01/26

Note: All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

➢ **General Radiated Emission 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	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remark:

1. RF Voltage (dBuV) = 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.

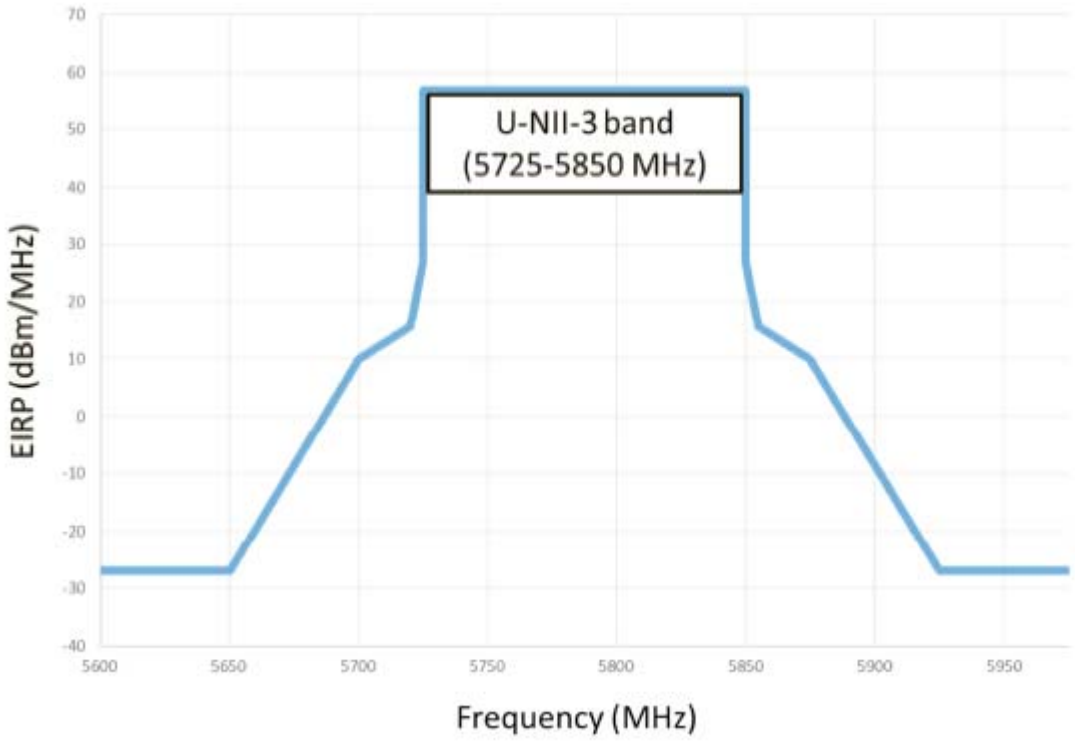
➢ **Unwanted Emission out of the restricted bands Limits**

FCC Part 15 Subpart E Paragraph 15.407(b) Limits		
Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (dBuV/m@3m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5850	-27 (Note1)	68.3
	-17 (Note2)	78.3

4. For transmitters operating in the 5.725-5.85 GHz band

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in Section 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in Section 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.



Remark:

1. For frequencies more than 10 MHz above or below the band edges.
2. For frequency range from the band edges to 10 MHz above or below the band edges.
3. uV/m = $\frac{1000000\sqrt{30 \times EIRP}}{3}$, RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 1.5 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 C63.10:2013 on radiated measurement.

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

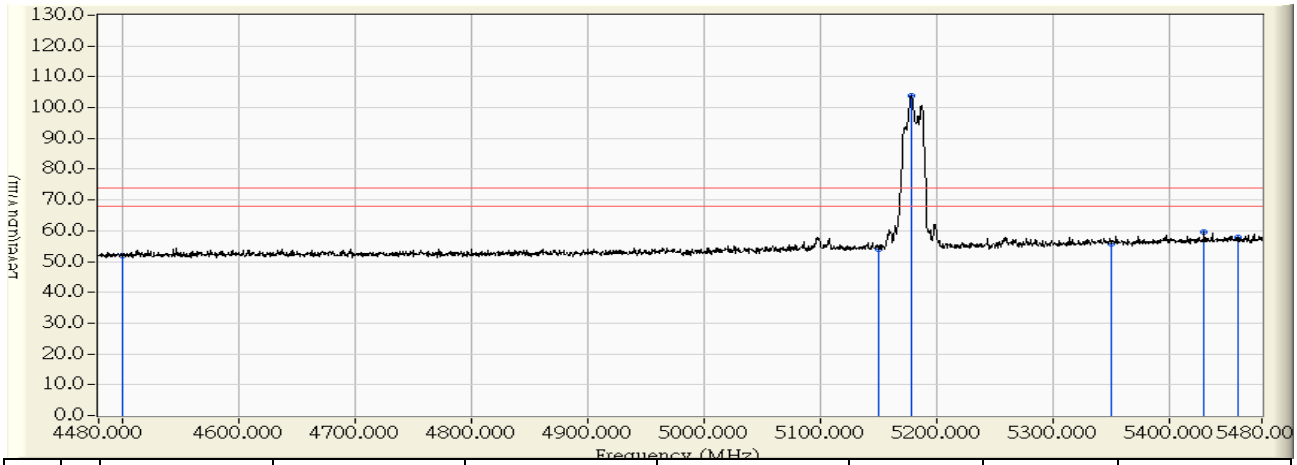
6.5. Uncertainty

The measurement uncertainty is defined as ± 3.65dB

6.6. Test Result

Radiated is defined as

Site : CB1	**Time : 2016/03/07 - 11:48**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

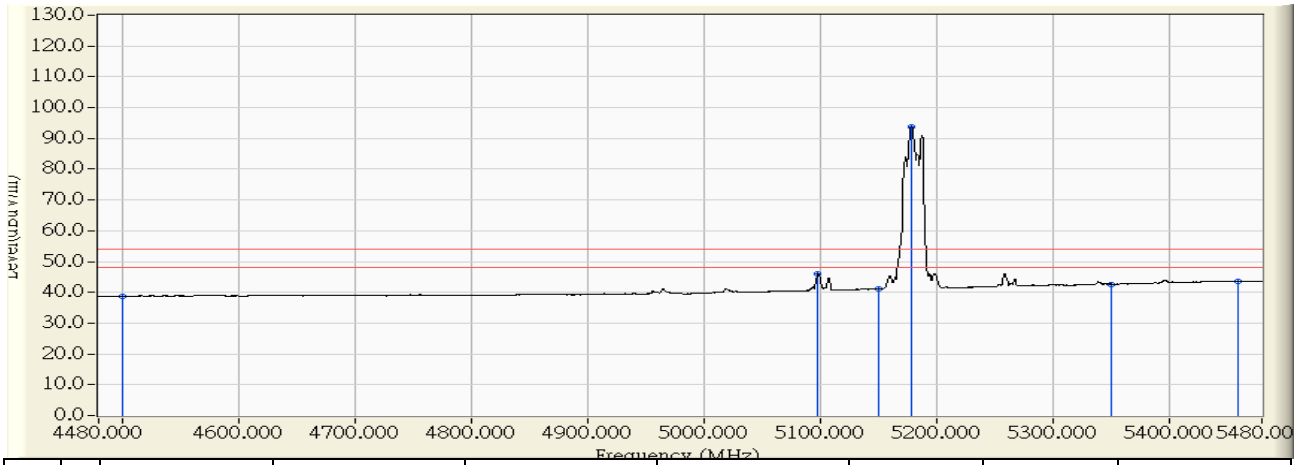


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	55.261	51.833	-22.167	74.000	PEAK
2		5150.000	-0.737	54.895	54.157	-19.843	74.000	PEAK
3	*	5178.500	-0.500	104.481	103.982	29.982	74.000	PEAK
4		5350.000	0.934	54.893	55.827	-18.173	74.000	PEAK
5		5430.000	1.603	57.824	59.426	-14.574	74.000	PEAK
6		5460.000	1.853	56.055	57.908	-16.092	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 11:50**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

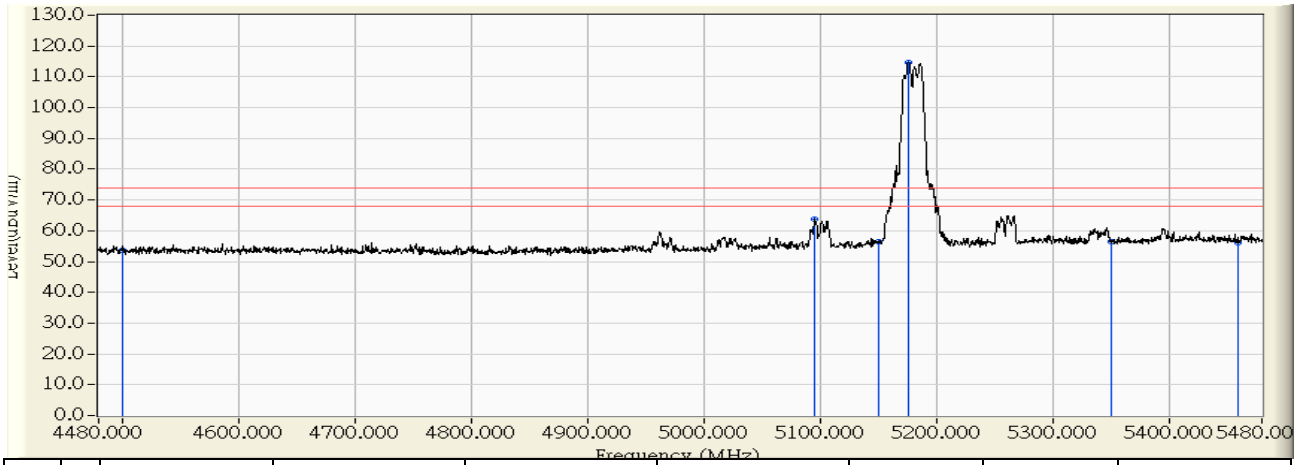


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	42.212	38.784	-15.216	54.000	AVERAGE
2		5098.500	-1.168	47.177	46.009	-7.991	54.000	AVERAGE
3		5150.000	-0.737	41.949	41.211	-12.789	54.000	AVERAGE
4	*	5179.000	-0.495	94.317	93.822	39.822	54.000	AVERAGE
5		5350.000	0.934	41.724	42.658	-11.342	54.000	AVERAGE
6		5460.000	1.853	41.632	43.485	-10.515	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 11:42**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

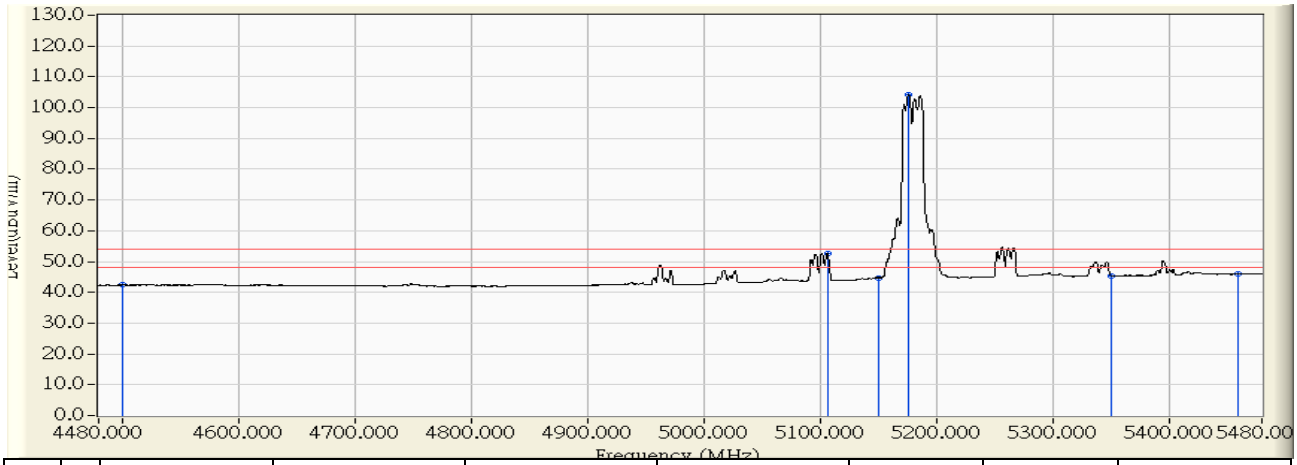


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	55.314	53.593	-20.407	74.000	PEAK
2		5096.000	-0.745	64.454	63.709	-10.291	74.000	PEAK
3		5150.000	-0.321	56.661	56.340	-17.660	74.000	PEAK
4	*	5176.000	-0.117	114.862	114.745	40.745	74.000	PEAK
5		5350.000	1.250	55.161	56.411	-17.589	74.000	PEAK
6		5460.000	2.114	54.155	56.269	-17.731	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 11:42**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5180MHz**

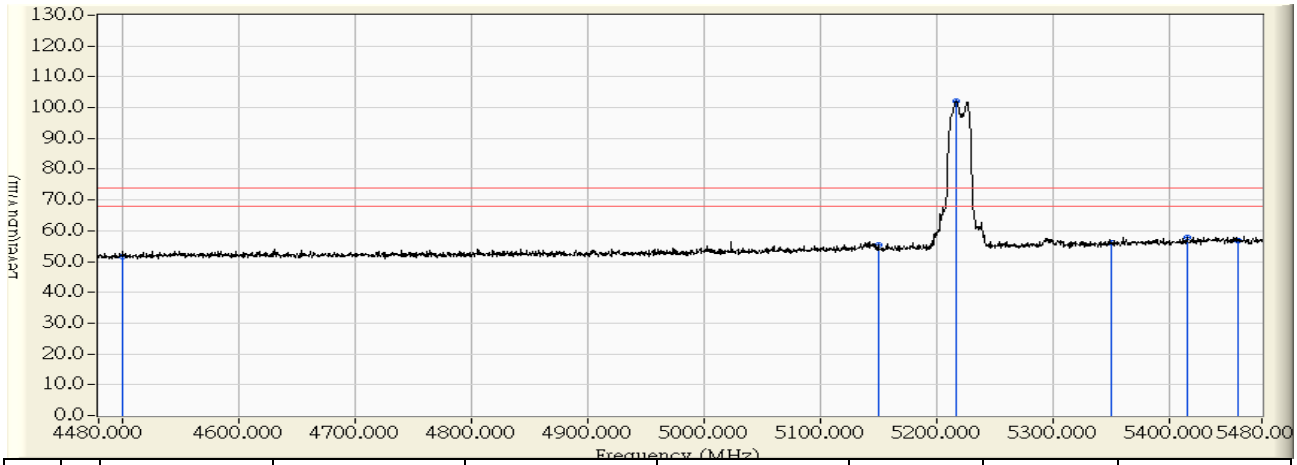


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	44.073	42.352	-11.648	54.000	AVERAGE
2		5106.500	-0.663	53.382	52.719	-1.281	54.000	AVERAGE
3		5150.000	-0.321	45.097	44.776	-9.224	54.000	AVERAGE
4	*	5176.500	-0.113	104.202	104.089	50.089	54.000	AVERAGE
5		5350.000	1.250	44.122	45.372	-8.628	54.000	AVERAGE
6		5460.000	2.114	43.736	45.850	-8.150	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:15**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

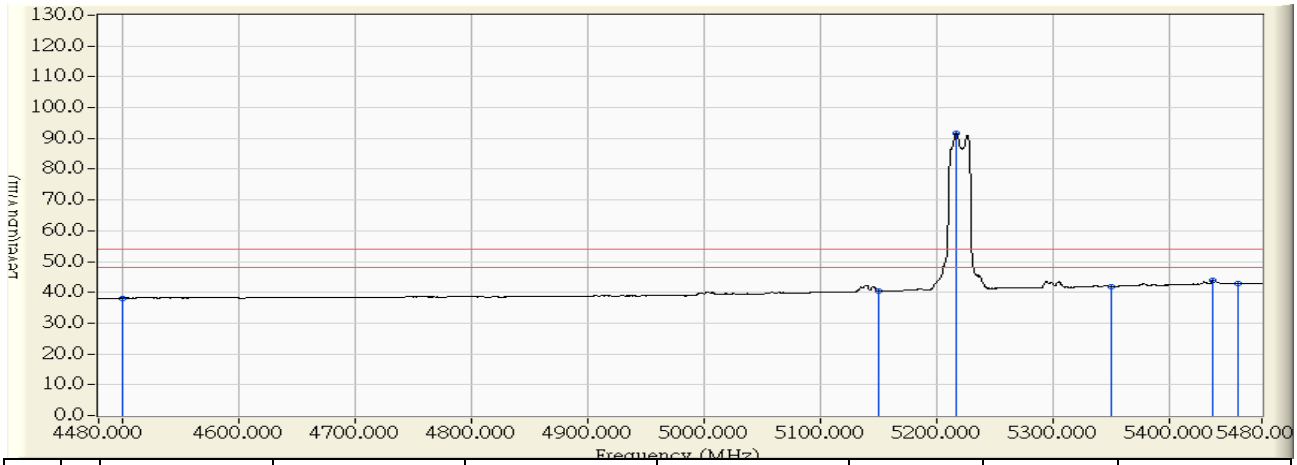


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	54.956	51.528	-22.472	74.000	PEAK
2		5150.000	-0.737	55.980	55.242	-18.758	74.000	PEAK
3	*	5217.500	-0.173	102.150	101.976	27.976	74.000	PEAK
4		5350.000	0.934	55.182	56.116	-17.884	74.000	PEAK
5		5415.500	1.481	56.231	57.712	-16.288	74.000	PEAK
6		5460.000	1.853	55.118	56.971	-17.029	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:16**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

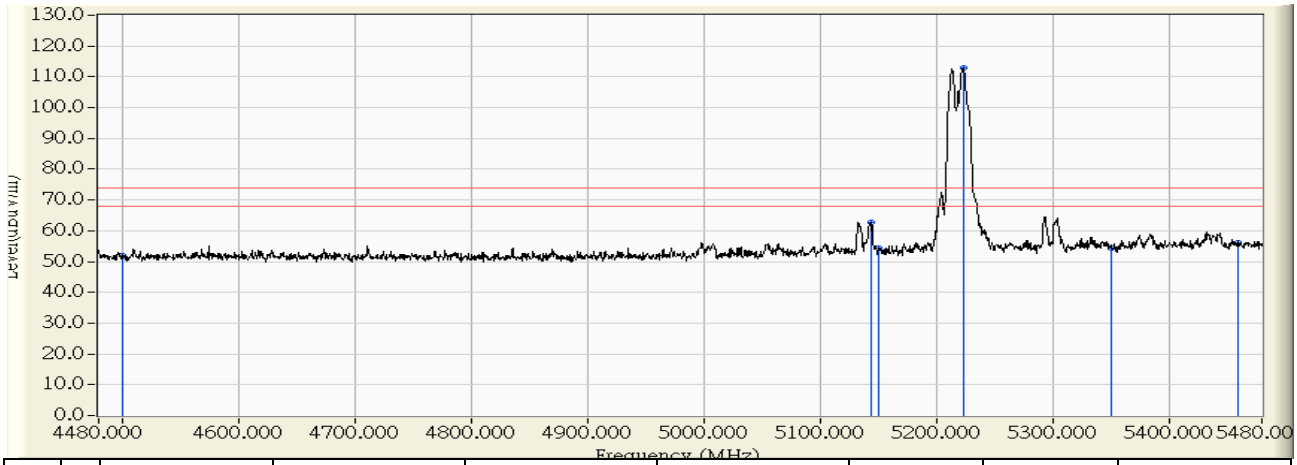


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	41.522	38.094	-15.906	54.000	AVERAGE
2		5150.000	-0.737	41.053	40.315	-13.685	54.000	AVERAGE
3	*	5217.000	-0.178	91.680	91.502	37.502	54.000	AVERAGE
4		5350.000	0.934	41.001	41.935	-12.065	54.000	AVERAGE
5		5437.500	1.665	42.077	43.742	-10.258	54.000	AVERAGE
6		5460.000	1.853	41.032	42.885	-11.115	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:11**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

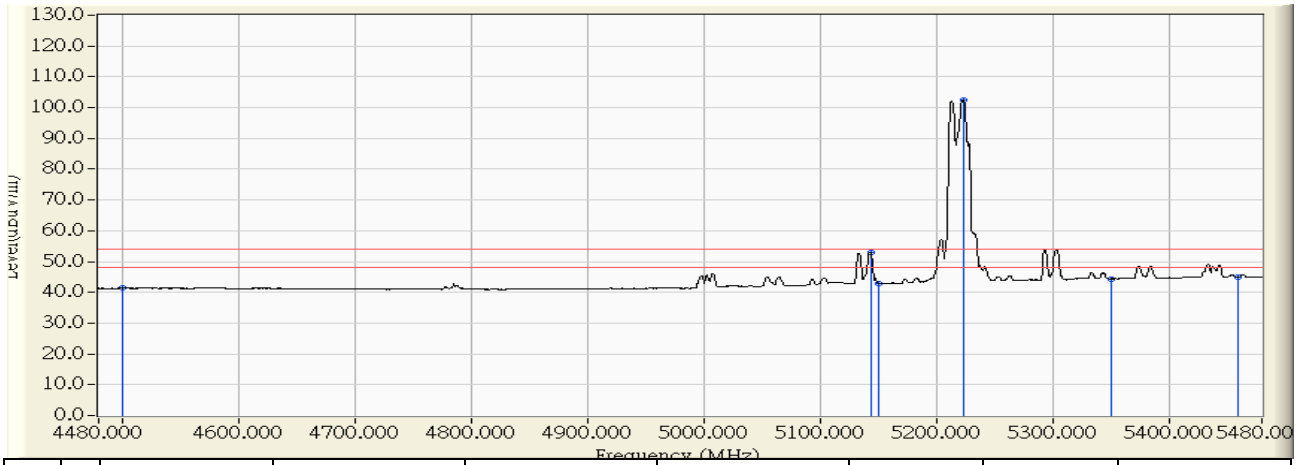


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	53.729	52.008	-21.992	74.000	PEAK
2		5143.500	-0.372	63.128	62.756	-11.244	74.000	PEAK
3		5150.000	-0.321	54.679	54.358	-19.642	74.000	PEAK
4	*	5223.500	0.256	112.769	113.025	39.025	74.000	PEAK
5		5350.000	1.250	53.163	54.413	-19.587	74.000	PEAK
6		5460.000	2.114	53.972	56.086	-17.914	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:09**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5220MHz**

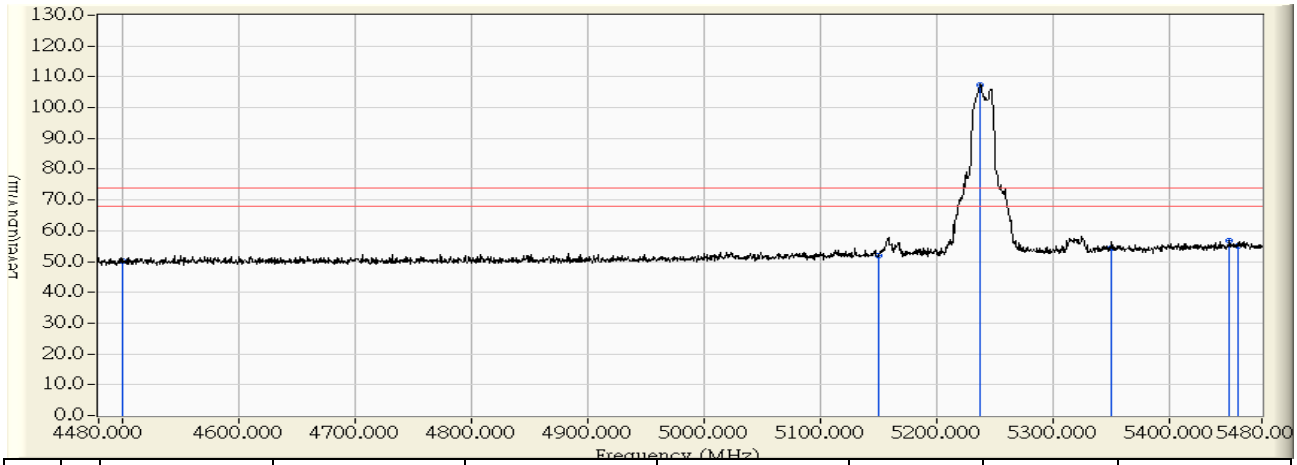


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	43.147	41.426	-12.574	54.000	AVERAGE
2		5143.500	-0.372	53.361	52.989	-1.011	54.000	AVERAGE
3		5150.000	-0.321	43.251	42.930	-11.070	54.000	AVERAGE
4	*	5223.000	0.252	102.344	102.596	48.596	54.000	AVERAGE
5		5350.000	1.250	43.119	44.369	-9.631	54.000	AVERAGE
6		5460.000	2.114	42.920	45.034	-8.966	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:50**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**

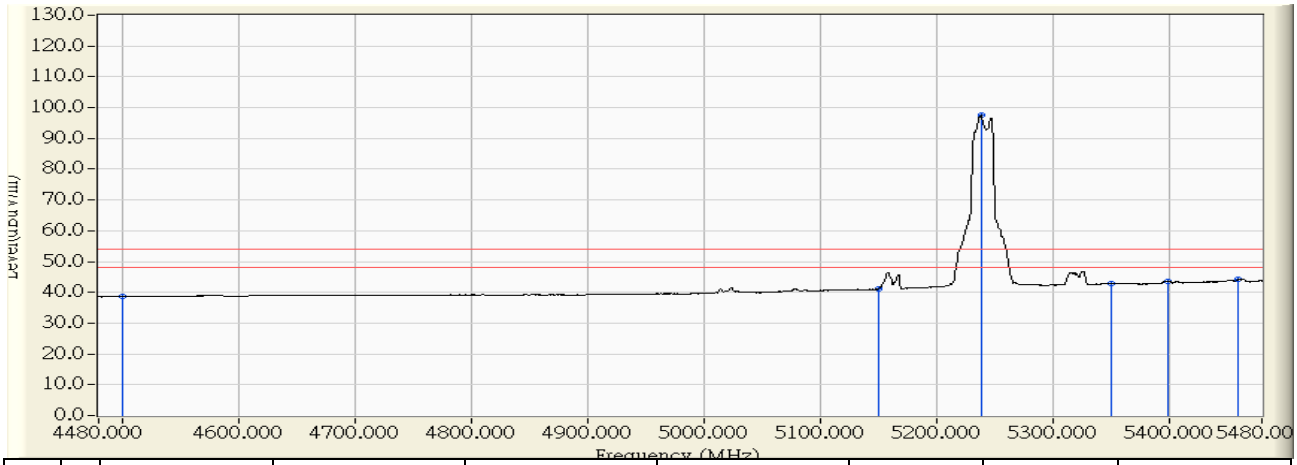


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	53.779	50.351	-23.649	74.000	PEAK
2		5150.000	-0.737	52.555	51.817	-22.183	74.000	PEAK
3	*	5238.000	-0.002	107.522	107.520	33.520	74.000	PEAK
4		5350.000	0.934	53.596	54.530	-19.470	74.000	PEAK
5		5452.000	1.786	55.050	56.836	-17.164	74.000	PEAK
6		5460.000	1.853	53.074	54.927	-19.073	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:51**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**

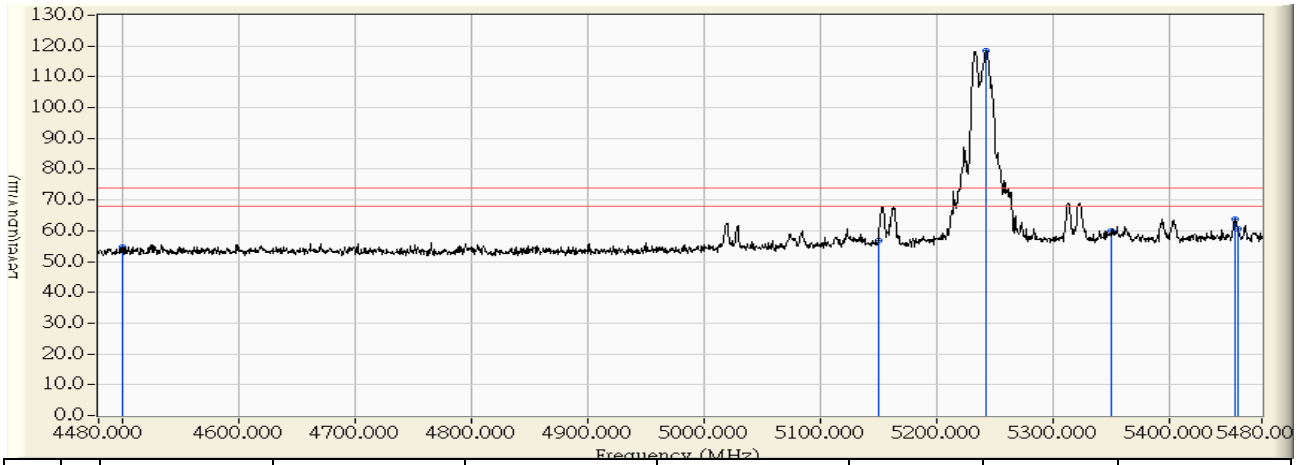


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	42.192	38.764	-15.236	54.000	AVERAGE
2		5150.000	-0.737	41.698	40.960	-13.040	54.000	AVERAGE
3	*	5239.000	0.006	97.433	97.439	43.439	54.000	AVERAGE
4		5350.000	0.934	41.847	42.781	-11.219	54.000	AVERAGE
5		5399.000	1.343	42.377	43.720	-10.280	54.000	AVERAGE
6		5460.000	1.853	42.289	44.142	-9.858	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:33**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**

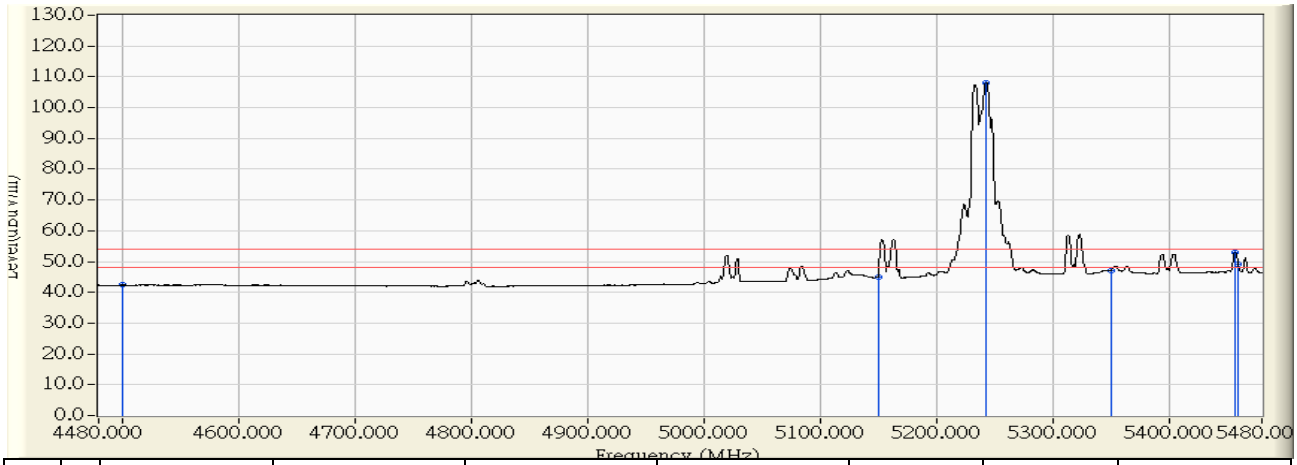


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	56.332	54.611	-19.389	74.000	PEAK
2		5150.000	-0.321	57.167	56.846	-17.154	74.000	PEAK
3	*	5243.000	0.410	118.073	118.483	44.483	74.000	PEAK
4		5350.000	1.250	58.570	59.820	-14.180	74.000	PEAK
5		5456.500	2.087	61.785	63.872	-10.128	74.000	PEAK
6		5460.000	2.114	58.467	60.581	-13.419	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/07 - 13:32**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11a_5240MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	44.079	42.358	-11.642	54.000	AVERAGE
2		5150.000	-0.321	45.332	45.011	-8.989	54.000	AVERAGE
3	*	5243.000	0.410	107.573	107.983	53.983	54.000	AVERAGE
4		5350.000	1.250	45.949	47.199	-6.801	54.000	AVERAGE
5		5456.500	2.087	50.821	52.908	-1.092	54.000	AVERAGE
6		5460.000	2.114	46.921	49.035	-4.965	54.000	AVERAGE

Note:

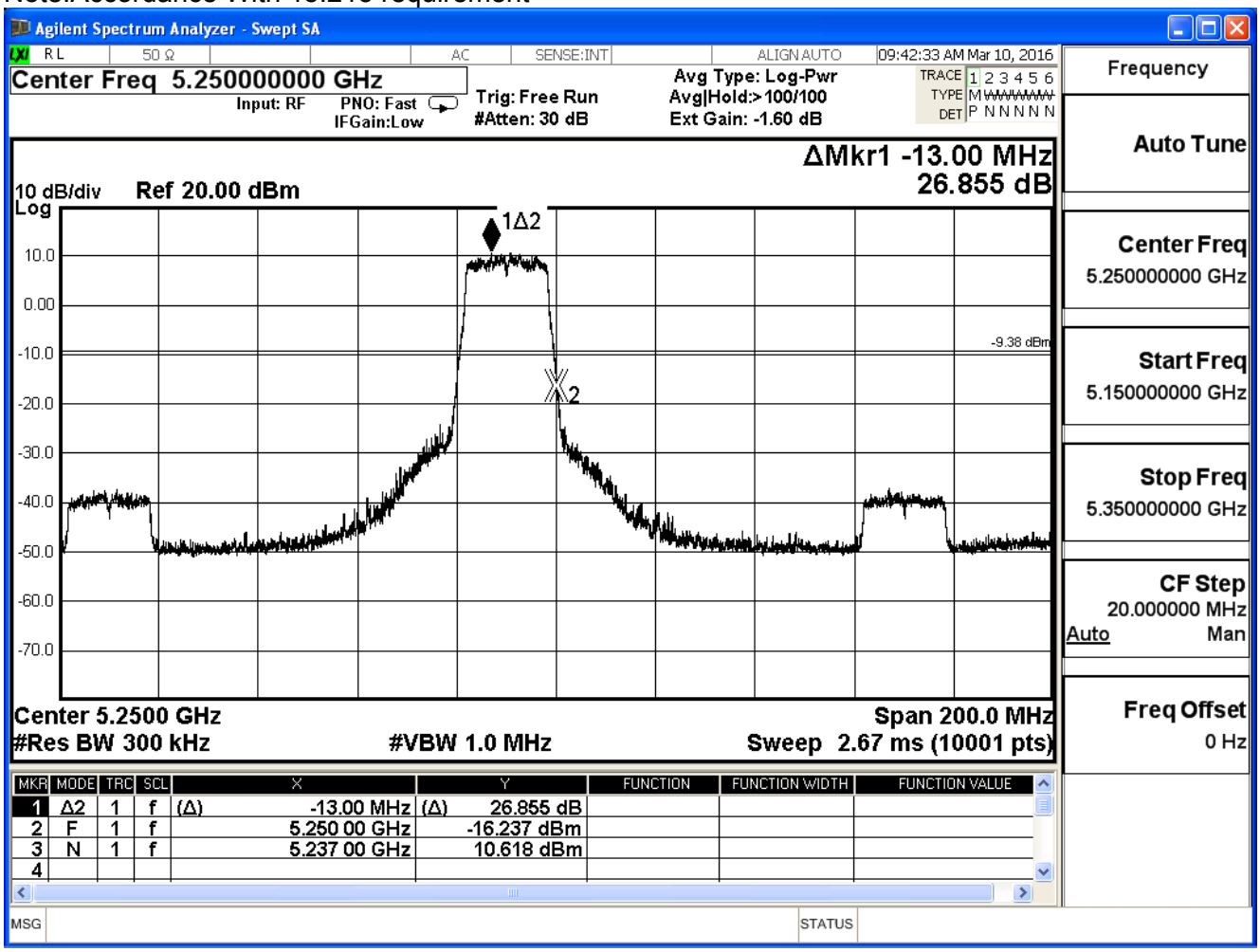
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

802.11a (ANT 0)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	26.855	≧20

Note:Accordance With 15.215 requirement

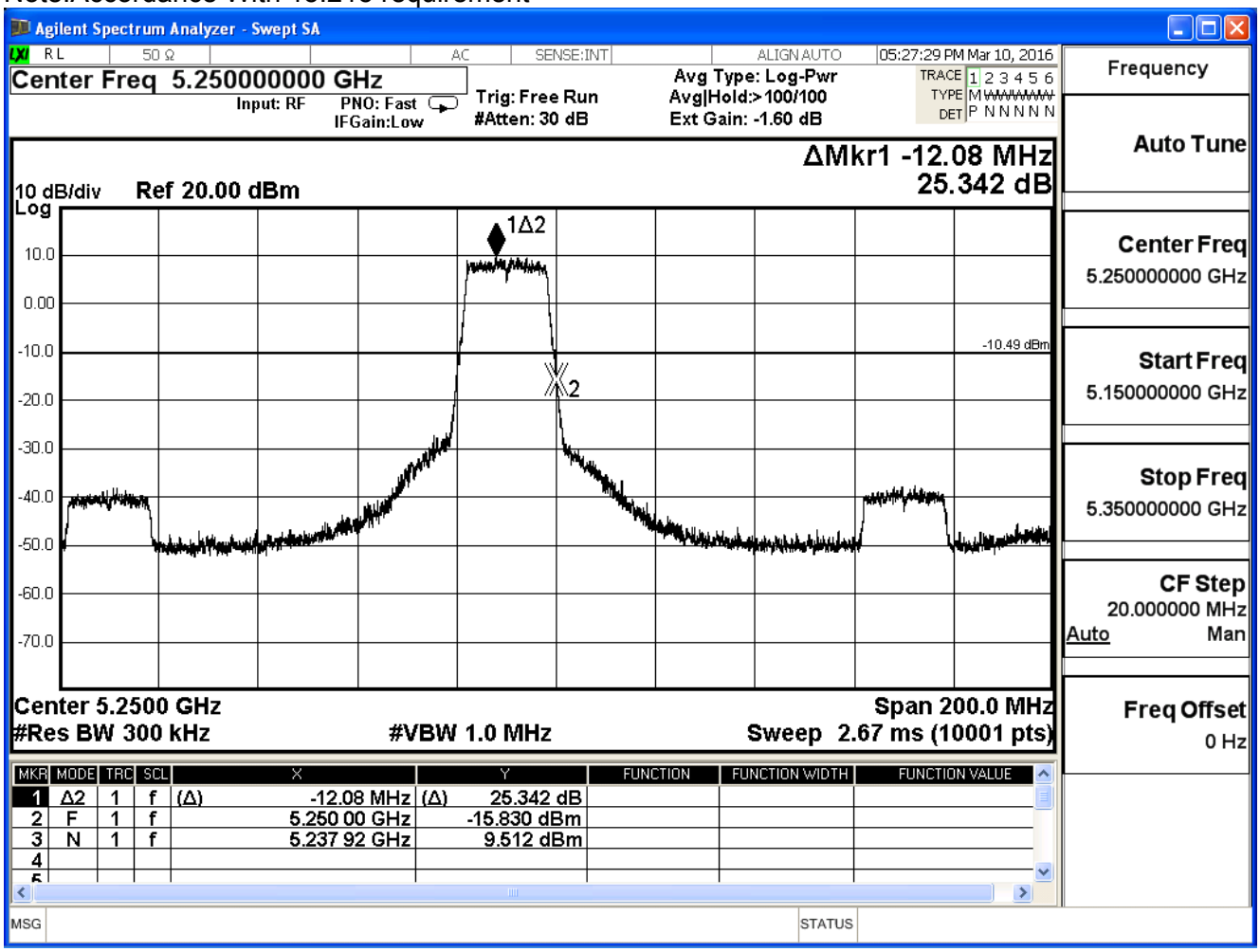


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

802.11a (ANT 1)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	25.342	≧20

Note:Accordance With 15.215 requirement

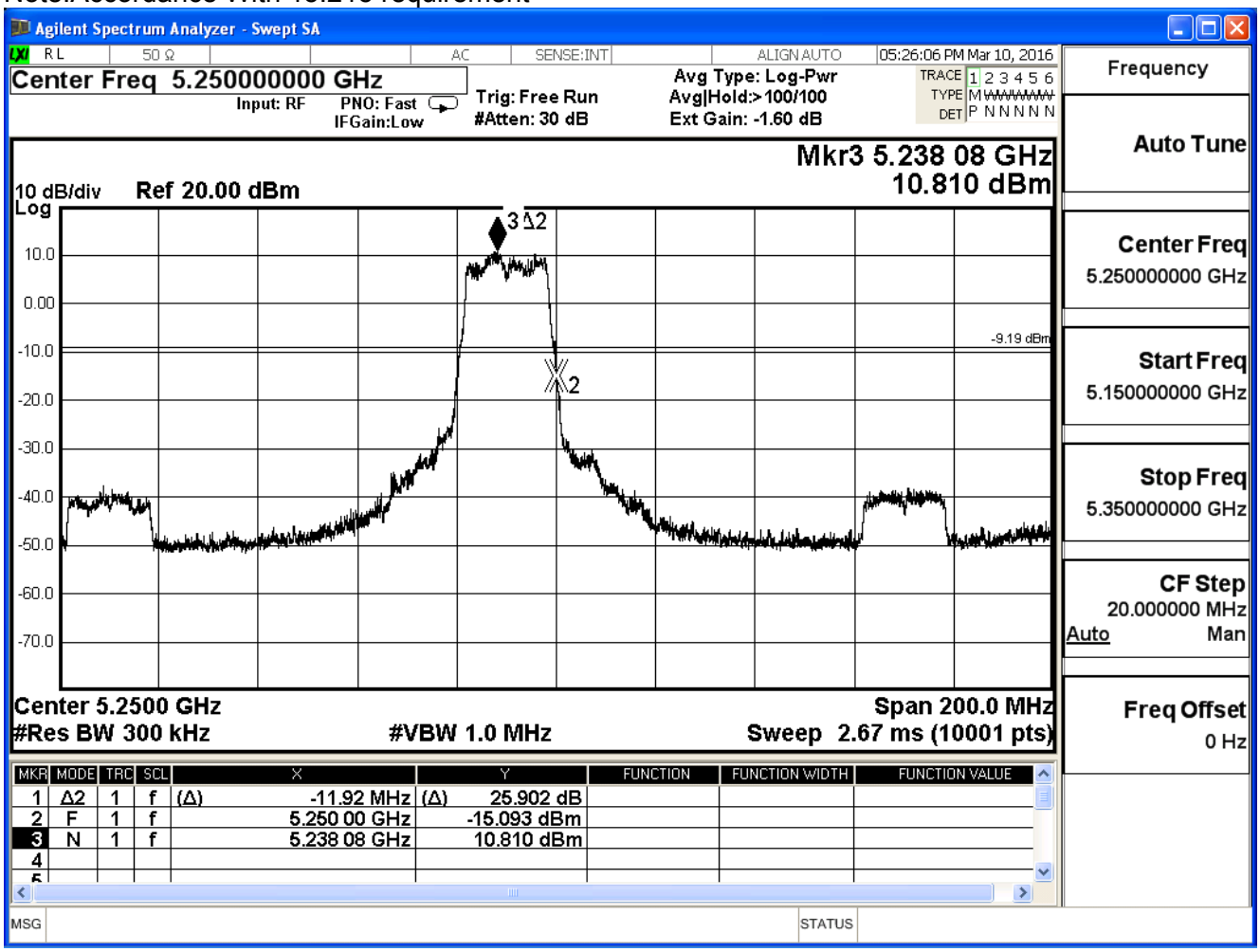


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

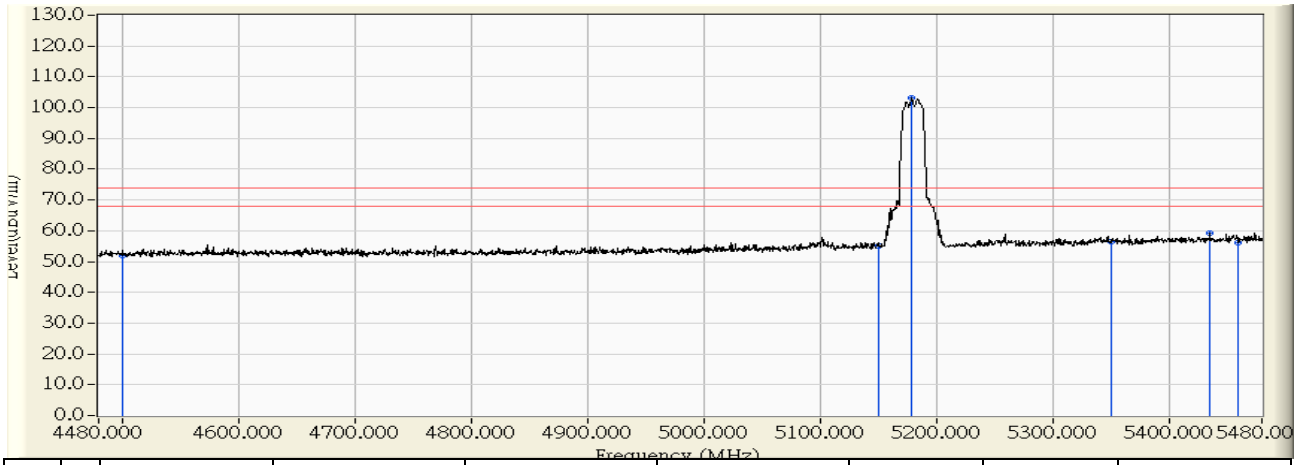
802.11a (ANT 2)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	25.902	≧20

Note:Accordance With 15.215 requirement



Site : CB1	**Time : 2016/03/08 - 10:00**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

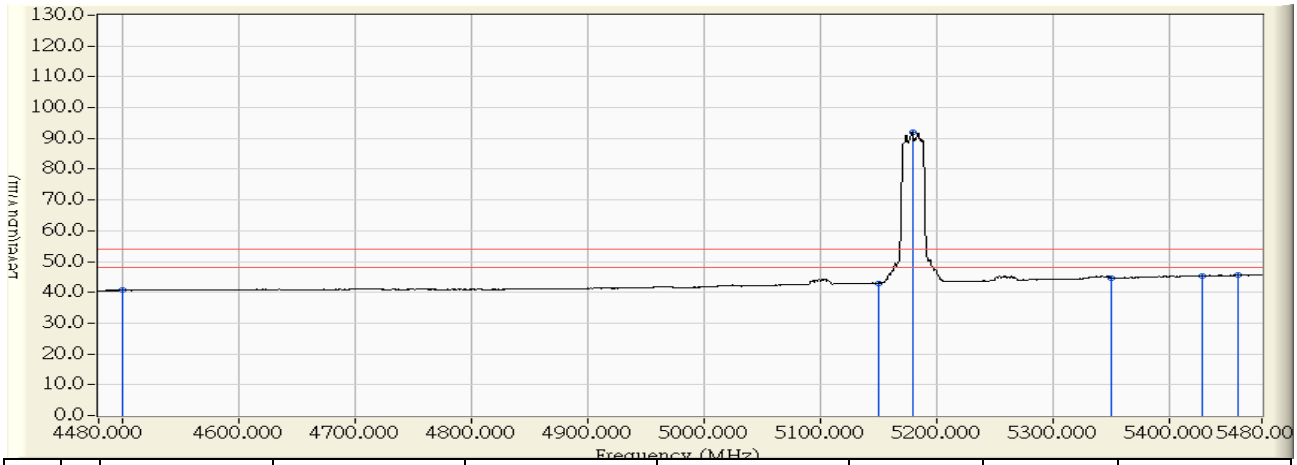


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	55.498	52.070	-21.930	74.000	PEAK
2		5150.000	-0.737	55.784	55.046	-18.954	74.000	PEAK
3	*	5179.000	-0.495	103.519	103.024	29.024	74.000	PEAK
4		5350.000	0.934	55.611	56.545	-17.455	74.000	PEAK
5		5435.000	1.644	57.631	59.275	-14.725	74.000	PEAK
6		5460.000	1.853	54.387	56.240	-17.760	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:02**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

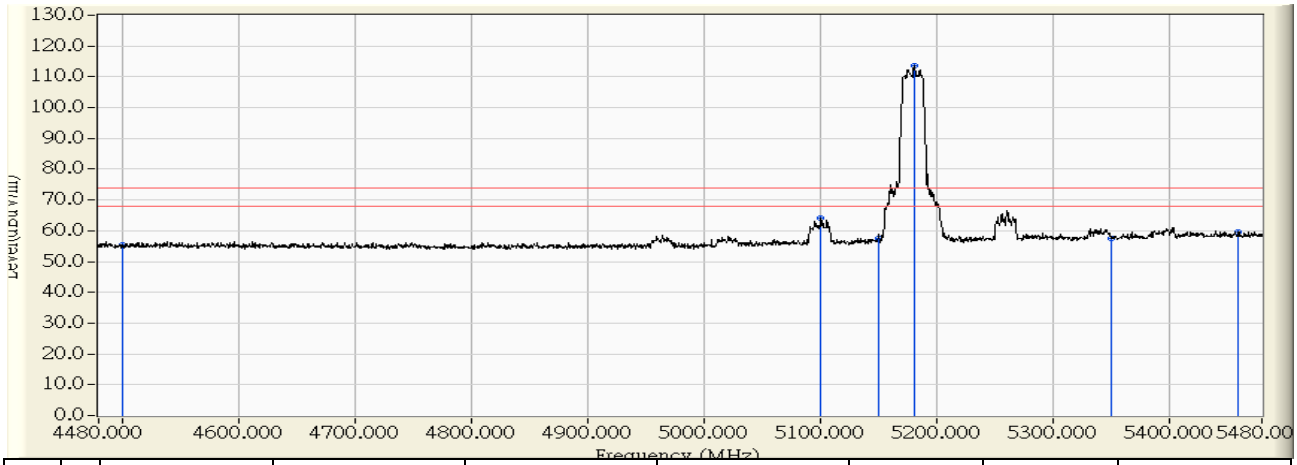


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	44.169	40.741	-13.259	54.000	AVERAGE
2		5150.000	-0.737	43.707	42.969	-11.031	54.000	AVERAGE
3	*	5179.500	-0.490	92.557	92.066	38.066	54.000	AVERAGE
4		5350.000	0.934	43.775	44.709	-9.291	54.000	AVERAGE
5		5428.500	1.590	43.764	45.354	-8.646	54.000	AVERAGE
6		5460.000	1.853	43.639	45.492	-8.508	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 09:54**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

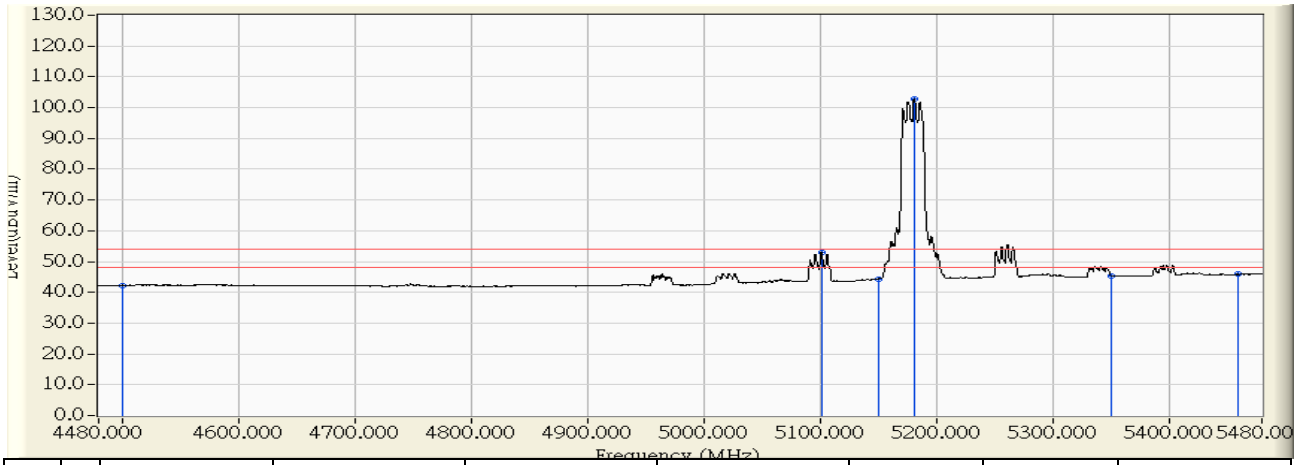


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	57.060	55.339	-18.661	74.000	PEAK
2		5101.000	-0.707	64.886	64.180	-9.820	74.000	PEAK
3		5150.000	-0.321	57.670	57.349	-16.651	74.000	PEAK
4	*	5181.000	-0.078	113.732	113.654	39.654	74.000	PEAK
5		5350.000	1.250	56.224	57.474	-16.526	74.000	PEAK
6		5460.000	2.114	57.419	59.533	-14.467	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 09:51**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5180MHz**

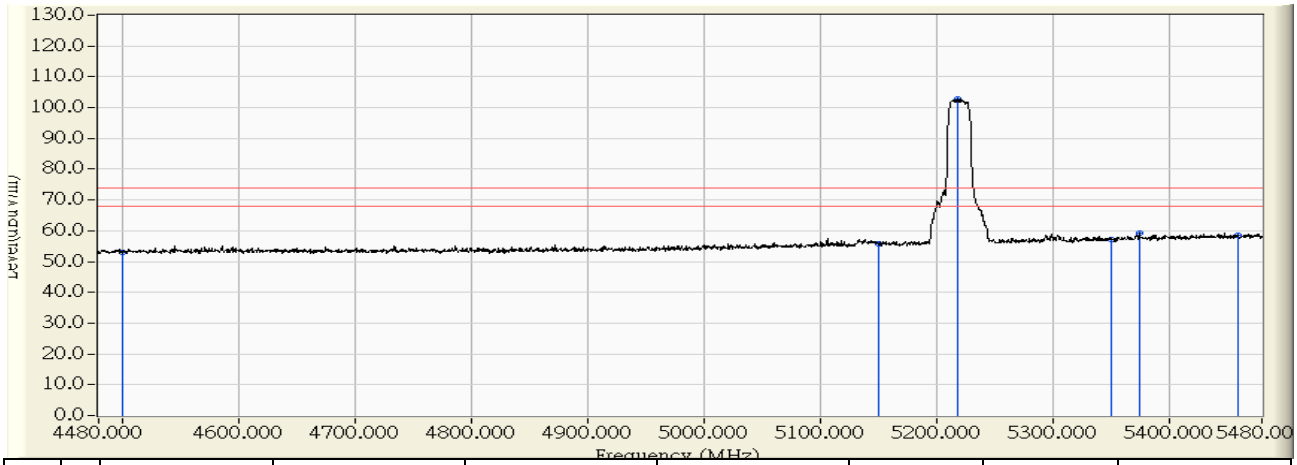


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	44.054	42.333	-11.667	54.000	AVERAGE
2		5101.500	-0.703	53.699	52.997	-1.003	54.000	AVERAGE
3		5150.000	-0.321	44.680	44.359	-9.641	54.000	AVERAGE
4	*	5181.000	-0.078	102.735	102.657	48.657	54.000	AVERAGE
5		5350.000	1.250	44.104	45.354	-8.646	54.000	AVERAGE
6		5460.000	2.114	43.730	45.844	-8.156	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:42**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**

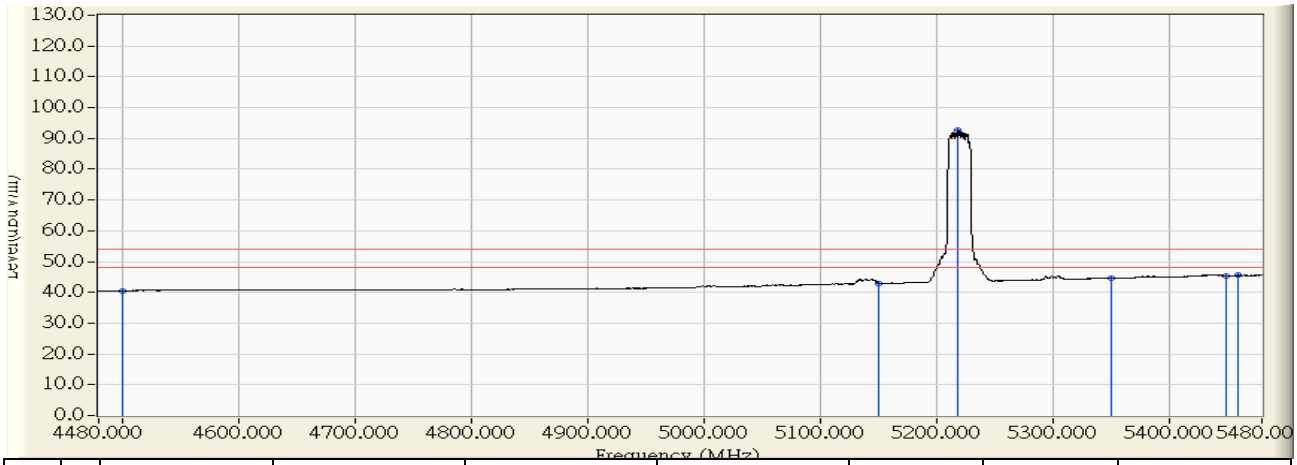


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	56.307	52.879	-21.121	74.000	PEAK
2		5150.000	-0.737	56.406	55.668	-18.332	74.000	PEAK
3	*	5219.000	-0.161	102.941	102.780	28.780	74.000	PEAK
4		5350.000	0.934	56.346	57.280	-16.720	74.000	PEAK
5		5374.500	1.139	58.178	59.316	-14.684	74.000	PEAK
6		5460.000	1.853	56.648	58.501	-15.499	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:44**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**

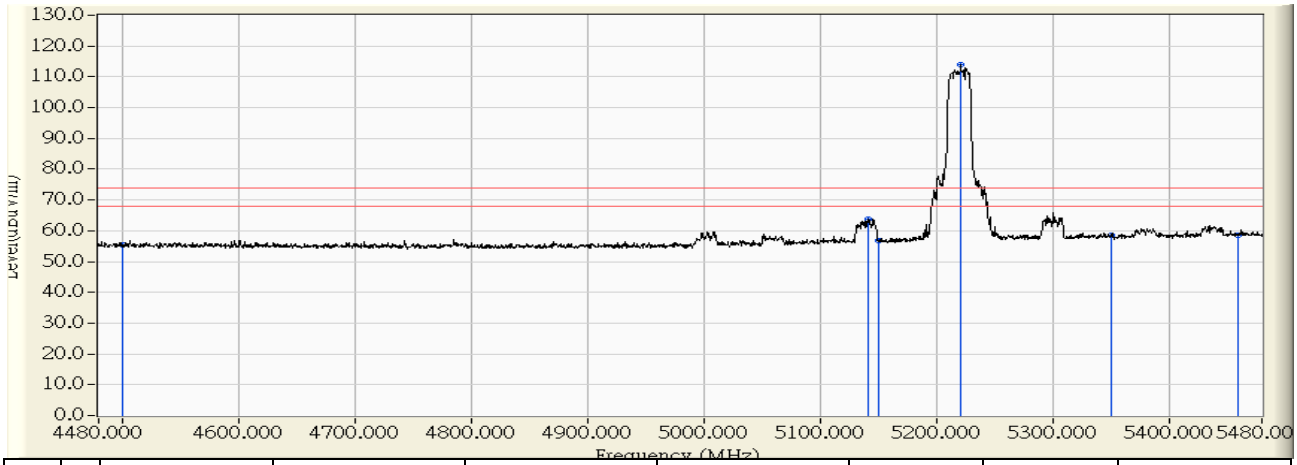


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	44.004	40.576	-13.424	54.000	AVERAGE
2		5150.000	-0.737	43.673	42.935	-11.065	54.000	AVERAGE
3	*	5219.000	-0.161	92.737	92.576	38.576	54.000	AVERAGE
4		5350.000	0.934	43.633	44.567	-9.433	54.000	AVERAGE
5		5449.000	1.761	43.630	45.391	-8.609	54.000	AVERAGE
6		5460.000	1.853	43.650	45.503	-8.497	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:21**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	57.237	55.516	-18.484	74.000	PEAK
2		5141.000	-0.392	64.064	63.672	-10.328	74.000	PEAK
3		5150.000	-0.321	57.204	56.883	-17.117	74.000	PEAK
4	*	5221.000	0.236	113.599	113.836	39.836	74.000	PEAK
5		5350.000	1.250	57.298	58.548	-15.452	74.000	PEAK
6		5460.000	2.114	56.501	58.615	-15.385	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

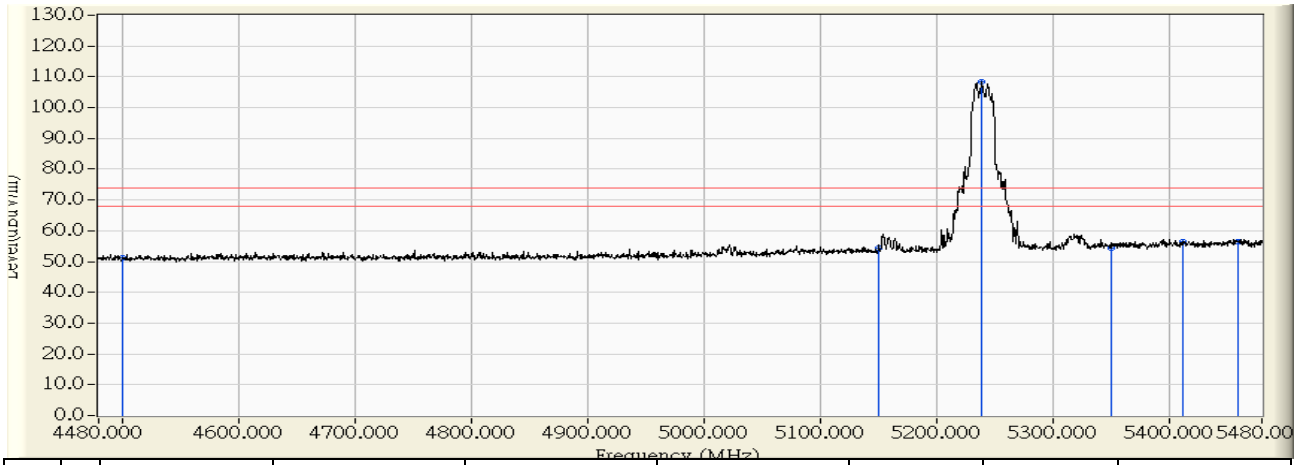
Site : CB1	**Time : 2016/03/08 - 10:17**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5220MHz**

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	44.046	42.325	-11.675	54.000	AVERAGE
2		5141.000	-0.392	53.326	52.934	-1.066	54.000	AVERAGE
3		5150.000	-0.321	44.691	44.370	-9.630	54.000	AVERAGE
4	*	5221.000	0.236	102.748	102.985	48.985	54.000	AVERAGE
5		5350.000	1.250	44.155	45.405	-8.595	54.000	AVERAGE
6		5460.000	2.114	43.934	46.048	-7.952	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:09**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**

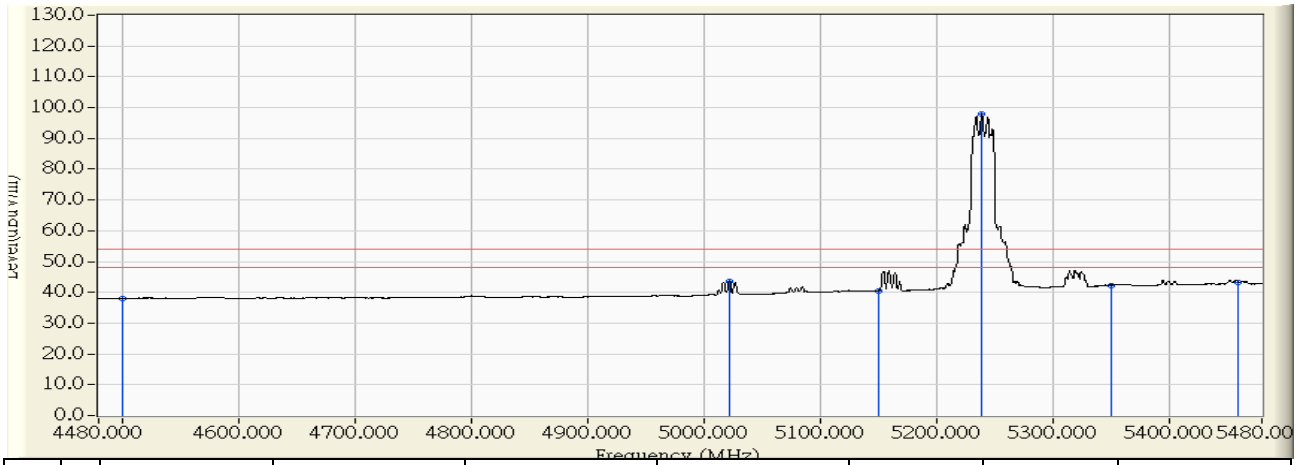


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	54.810	51.382	-22.618	74.000	PEAK
2		5150.000	-0.737	54.940	54.202	-19.798	74.000	PEAK
3	*	5239.500	0.011	108.303	108.313	34.313	74.000	PEAK
4		5350.000	0.934	53.392	54.326	-19.674	74.000	PEAK
5		5412.000	1.452	55.171	56.623	-17.377	74.000	PEAK
6		5460.000	1.853	54.764	56.617	-17.383	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:10**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**

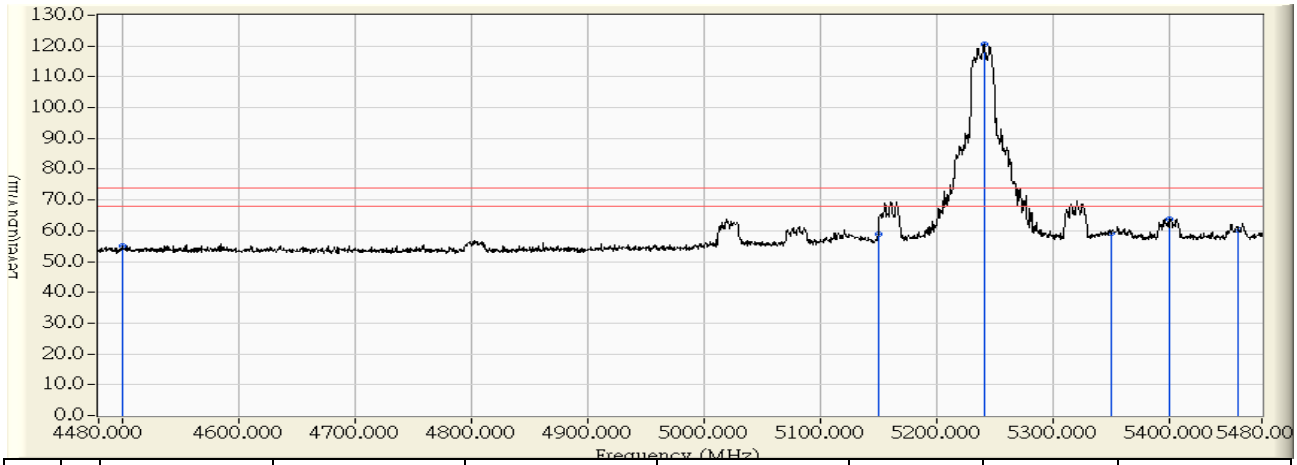


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	41.452	38.024	-15.976	54.000	AVERAGE
2		5022.500	-1.803	45.446	43.643	-10.357	54.000	AVERAGE
3		5150.000	-0.737	41.138	40.400	-13.600	54.000	AVERAGE
4	*	5239.500	0.011	97.993	98.003	44.003	54.000	AVERAGE
5		5350.000	0.934	41.402	42.336	-11.664	54.000	AVERAGE
6		5460.000	1.853	41.467	43.320	-10.680	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:59**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**

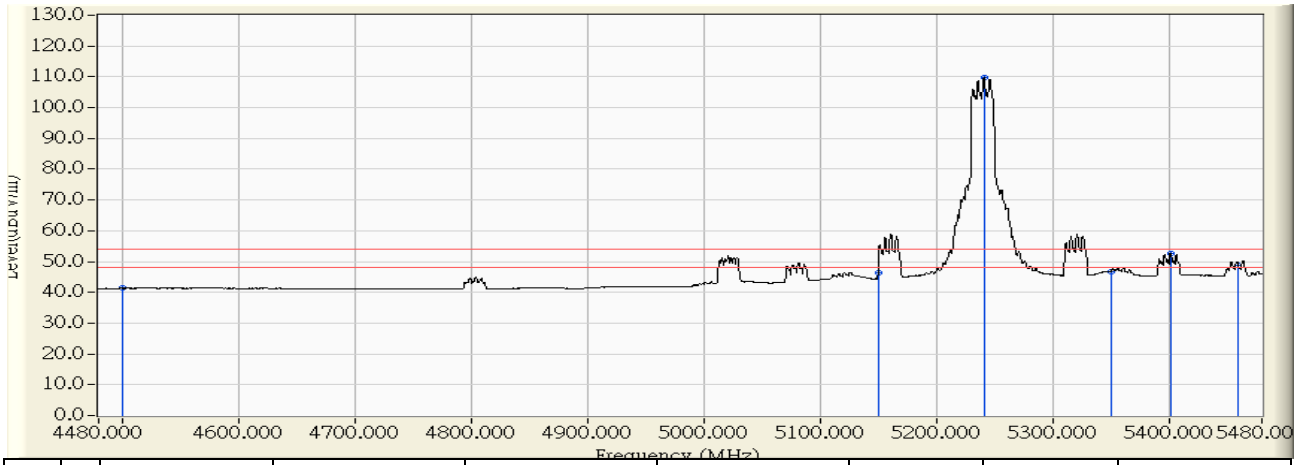


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	56.819	55.098	-18.902	74.000	PEAK
2		5150.000	-0.321	59.082	58.761	-15.239	74.000	PEAK
3	*	5241.000	0.393	120.254	120.648	46.648	74.000	PEAK
4		5350.000	1.250	58.035	59.285	-14.715	74.000	PEAK
5		5401.000	1.650	62.126	63.777	-10.223	74.000	PEAK
6		5460.000	2.114	58.248	60.362	-13.638	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 10:58**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(20M)_5240MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	43.025	41.304	-12.696	54.000	AVERAGE
2		5150.000	-0.321	46.551	46.230	-7.770	54.000	AVERAGE
3	*	5241.000	0.393	109.434	109.828	55.828	54.000	AVERAGE
4		5350.000	1.250	45.568	46.818	-7.182	54.000	AVERAGE
5		5401.500	1.654	51.037	52.692	-1.308	54.000	AVERAGE
6		5460.000	2.114	46.536	48.650	-5.350	54.000	AVERAGE

Note:

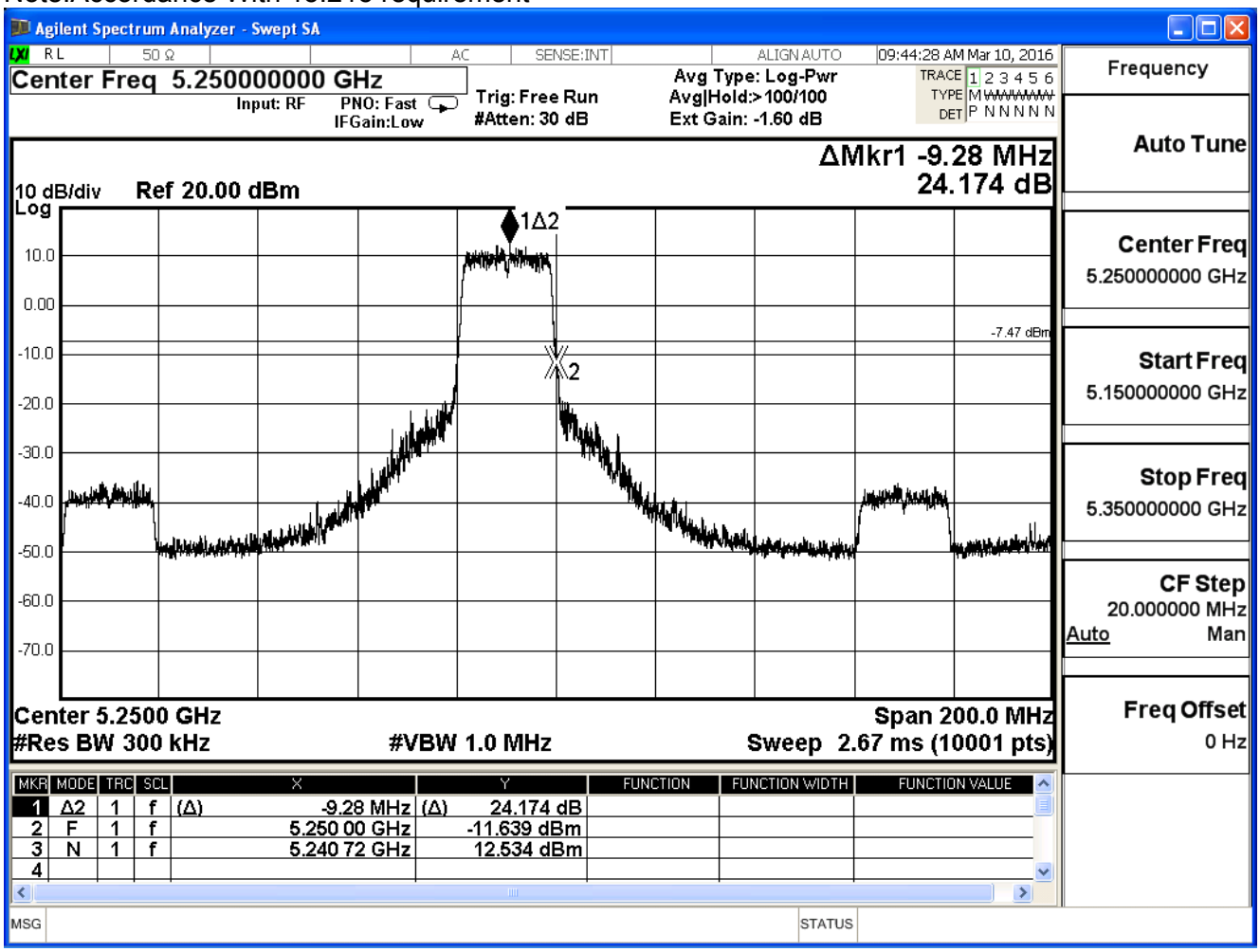
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11n_20M (ANT 0)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	24.174	≧20

Note:Accordance With 15.215 requirement

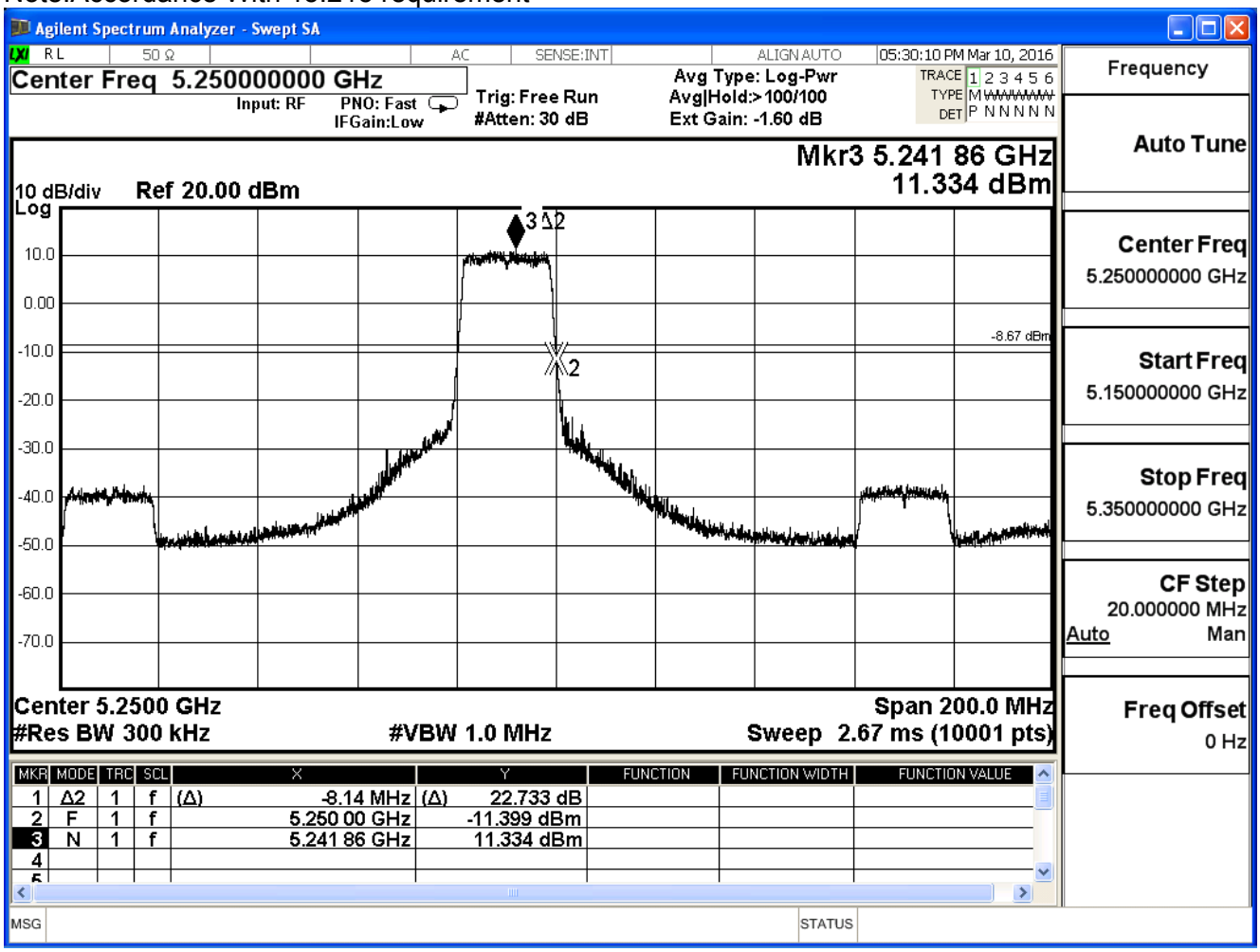


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11n_20M (ANT 1)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	22.733	≧20

Note:Accordance With 15.215 requirement

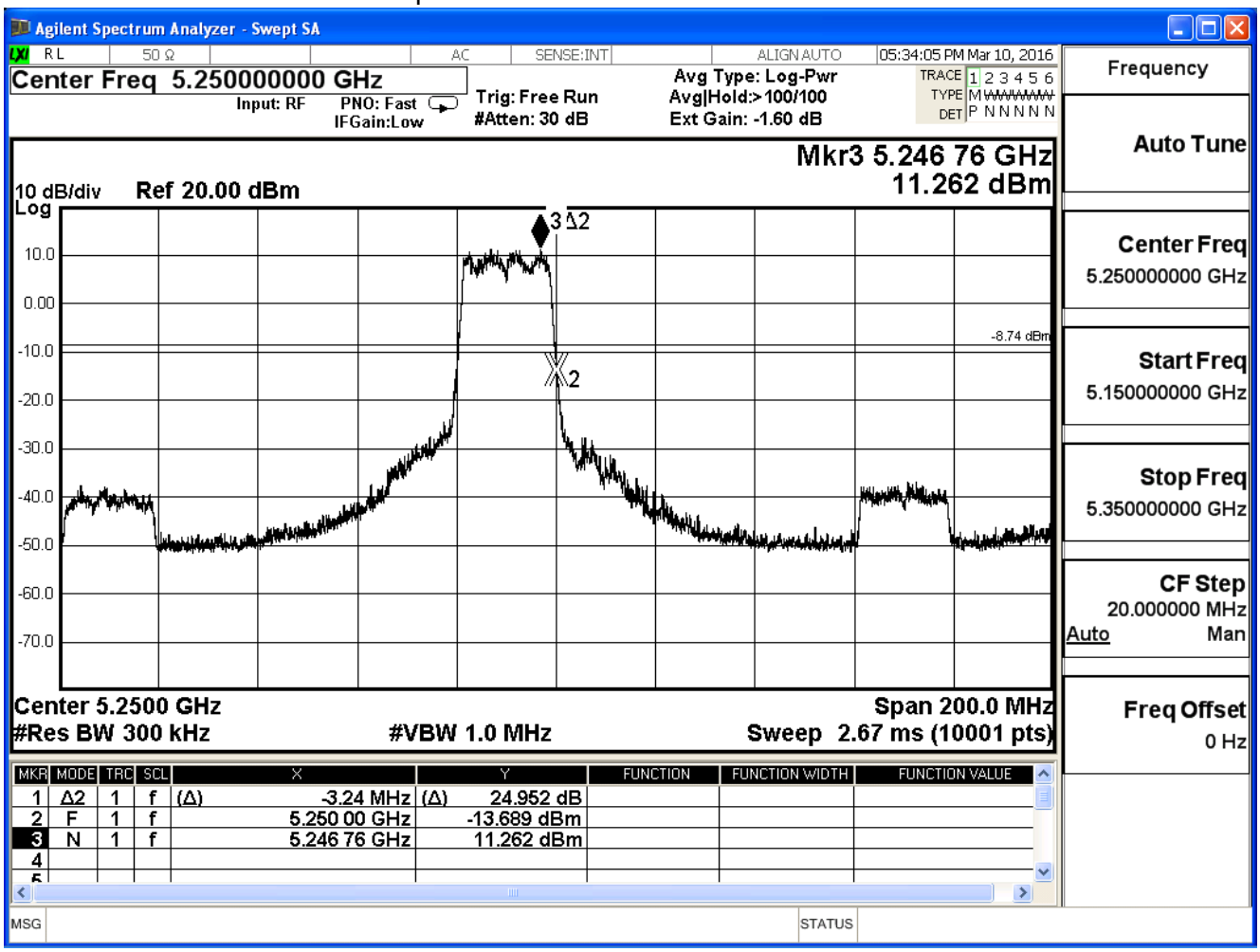


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

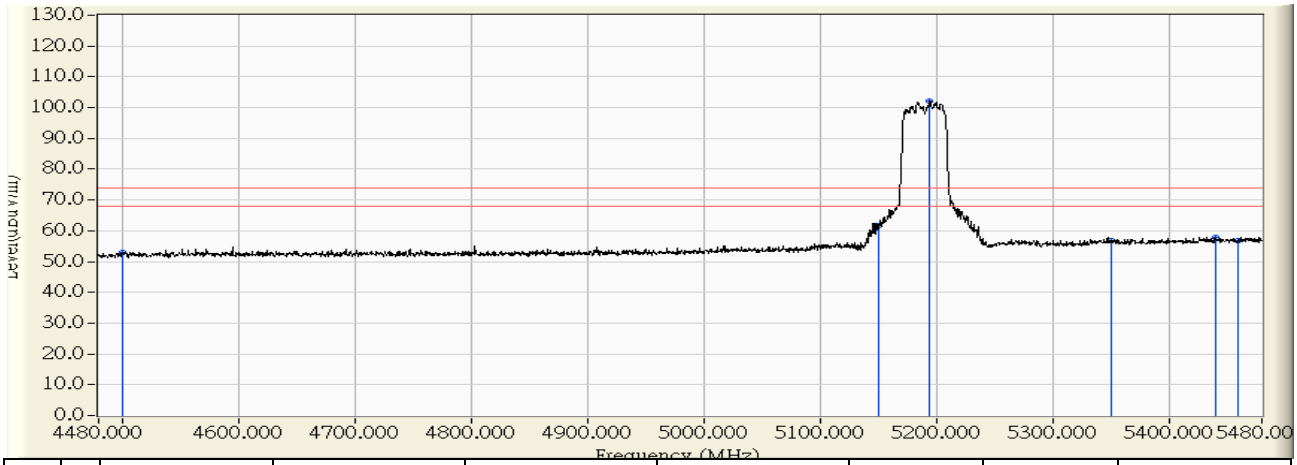
IEEE 802.11n_20M (ANT 2)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
48	5240	24.952	≧20

Note:Accordance With 15.215 requirement



Site : CB1	**Time : 2016/03/08 - 11:23**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

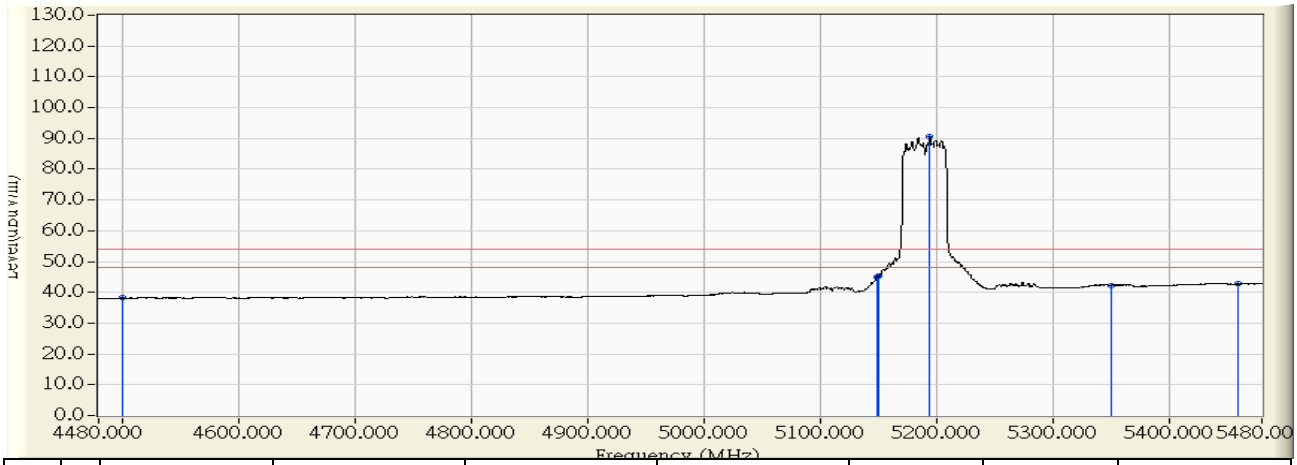


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	56.487	53.059	-20.941	74.000	PEAK
2		5150.000	-0.737	62.314	61.576	-12.424	74.000	PEAK
3	*	5194.500	-0.365	102.589	102.223	28.223	74.000	PEAK
4		5350.000	0.934	55.833	56.767	-17.233	74.000	PEAK
5		5440.000	1.686	56.258	57.944	-16.056	74.000	PEAK
6		5460.000	1.853	55.125	56.978	-17.022	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:24**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

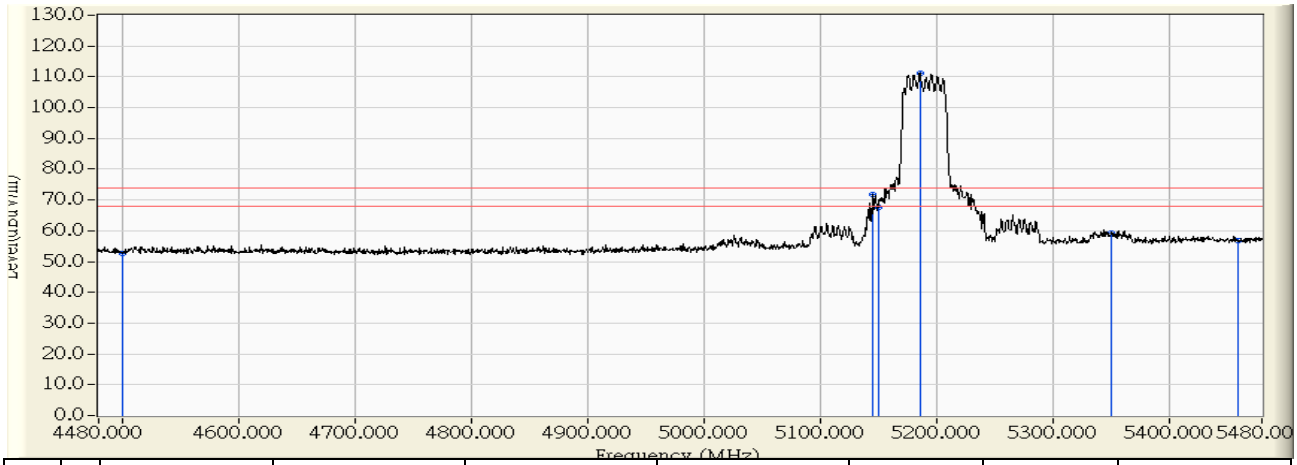


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	41.639	38.211	-15.789	54.000	AVERAGE
2		5149.000	-0.746	45.686	44.940	-9.060	54.000	AVERAGE
3		5150.000	-0.737	45.958	45.220	-8.780	54.000	AVERAGE
4	*	5194.500	-0.365	90.906	90.540	36.540	54.000	AVERAGE
5		5350.000	0.934	41.136	42.070	-11.930	54.000	AVERAGE
6		5460.000	1.853	40.853	42.706	-11.294	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:18**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

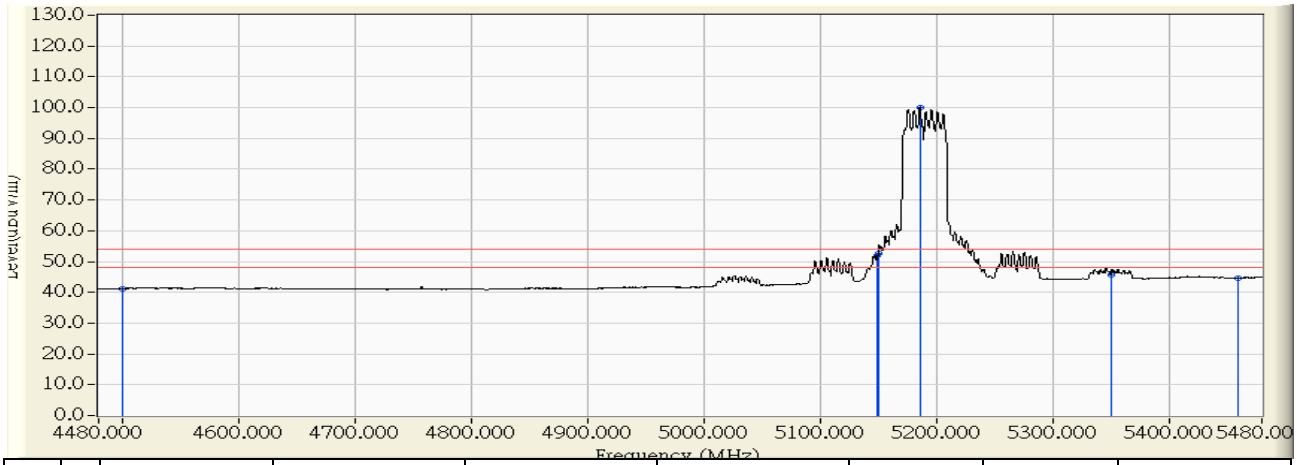


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	54.182	52.461	-21.539	74.000	PEAK
2		5146.000	-0.353	71.997	71.644	-2.356	74.000	PEAK
3		5150.000	-0.321	67.853	67.532	-6.468	74.000	PEAK
4	*	5186.000	-0.038	111.359	111.321	37.321	74.000	PEAK
5		5350.000	1.250	57.942	59.192	-14.808	74.000	PEAK
6		5460.000	2.114	54.865	56.979	-17.021	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:17**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5190MHz**

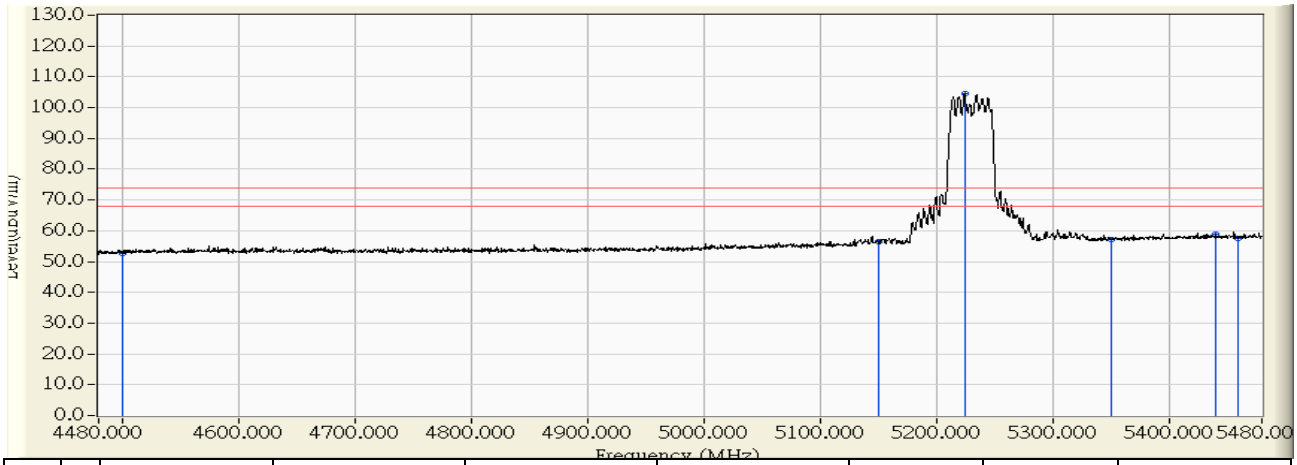


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	42.990	41.269	-12.731	54.000	AVERAGE
2		5149.000	-0.329	52.414	52.085	-1.915	54.000	AVERAGE
3		5150.000	-0.321	53.107	52.786	-1.214	54.000	AVERAGE
4	*	5186.000	-0.038	100.126	100.088	46.088	54.000	AVERAGE
5		5350.000	1.250	44.430	45.680	-8.320	54.000	AVERAGE
6		5460.000	2.114	42.621	44.735	-9.265	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:56**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**

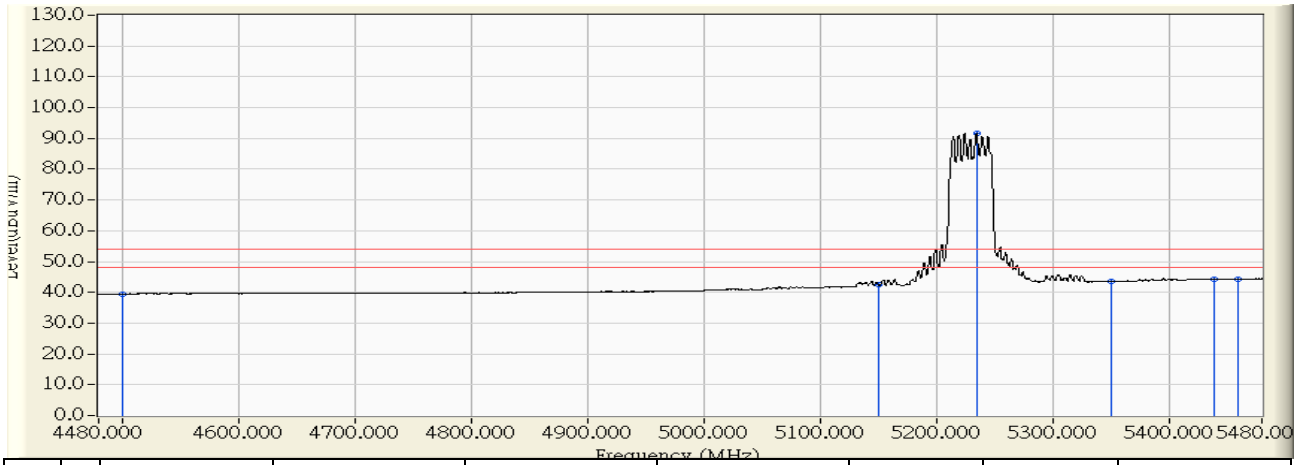


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	56.217	52.789	-21.211	74.000	PEAK
2		5150.000	-0.737	57.040	56.302	-17.698	74.000	PEAK
3	*	5224.500	-0.114	104.711	104.596	30.596	74.000	PEAK
4		5350.000	0.934	56.122	57.056	-16.944	74.000	PEAK
5		5440.500	1.689	57.216	58.906	-15.094	74.000	PEAK
6		5460.000	1.853	55.784	57.637	-16.363	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:57**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**

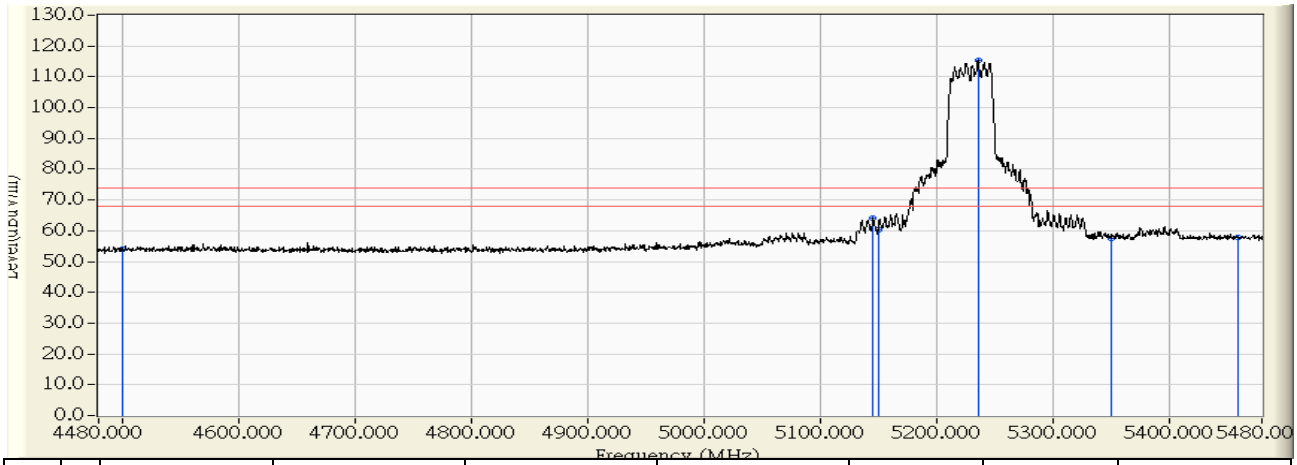


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	42.885	39.457	-14.543	54.000	AVERAGE
2		5150.000	-0.737	43.324	42.586	-11.414	54.000	AVERAGE
3	*	5234.500	-0.031	91.791	91.760	37.760	54.000	AVERAGE
4		5350.000	0.934	42.585	43.519	-10.481	54.000	AVERAGE
5		5438.500	1.673	42.582	44.255	-9.745	54.000	AVERAGE
6		5460.000	1.853	42.472	44.325	-9.675	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:32**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**

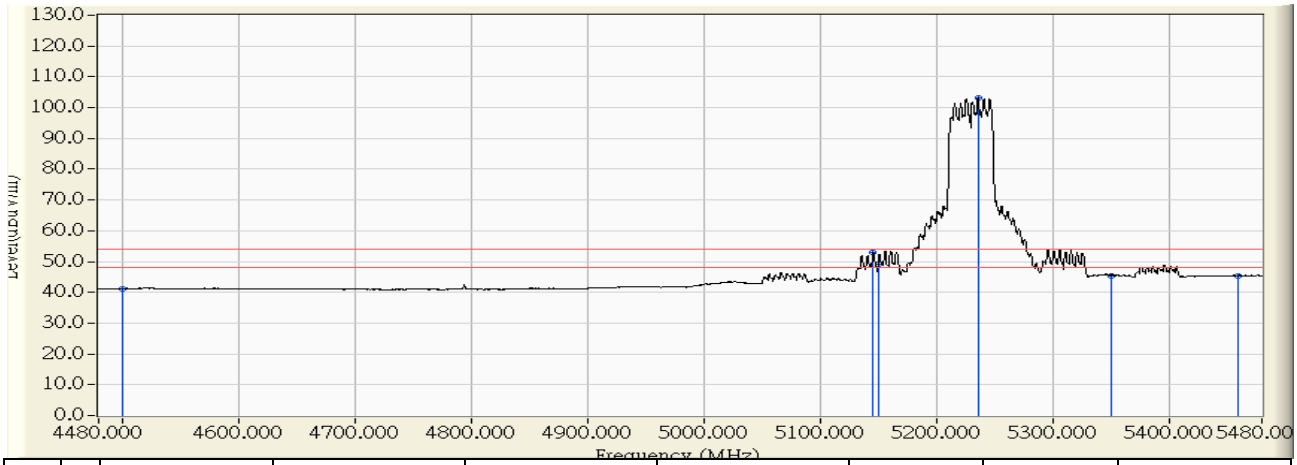


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	55.668	53.947	-20.053	74.000	PEAK
2		5146.000	-0.353	64.542	64.189	-9.811	74.000	PEAK
3		5150.000	-0.321	60.656	60.335	-13.665	74.000	PEAK
4	*	5236.000	0.354	114.836	115.191	41.191	74.000	PEAK
5		5350.000	1.250	56.403	57.653	-16.347	74.000	PEAK
6		5460.000	2.114	55.786	57.900	-16.100	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 11:30**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11n(40M)_5230MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	42.953	41.232	-12.768	54.000	AVERAGE
2		5146.000	-0.353	53.203	52.850	-1.150	54.000	AVERAGE
3		5150.000	-0.321	49.313	48.992	-5.008	54.000	AVERAGE
4	*	5236.000	0.354	102.880	103.235	49.235	54.000	AVERAGE
5		5350.000	1.250	44.164	45.414	-8.586	54.000	AVERAGE
6		5460.000	2.114	43.127	45.241	-8.759	54.000	AVERAGE

Note:

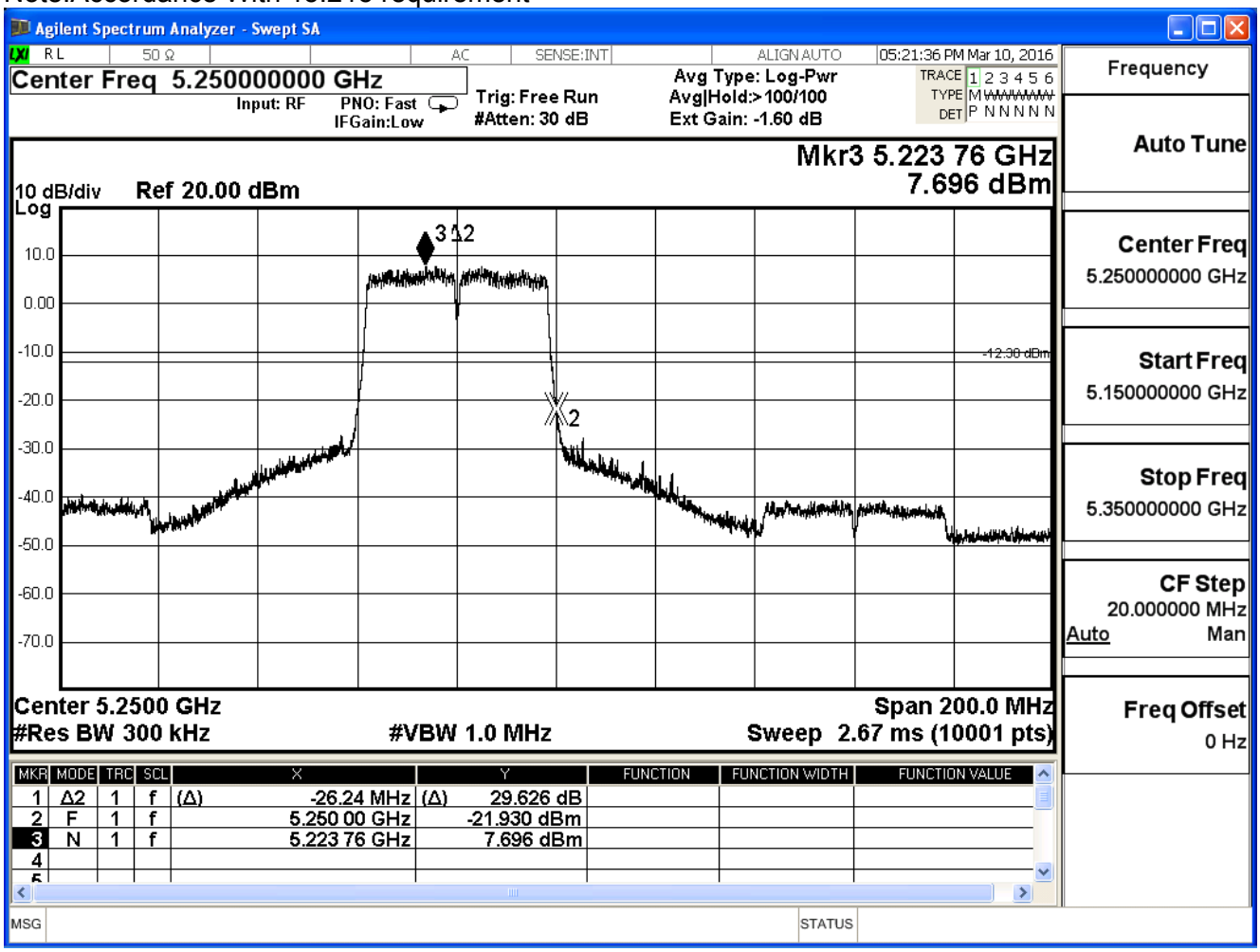
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11n_40M (ANT 0)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
46	5230	29.626	≧20

Note:Accordance With 15.215 requirement

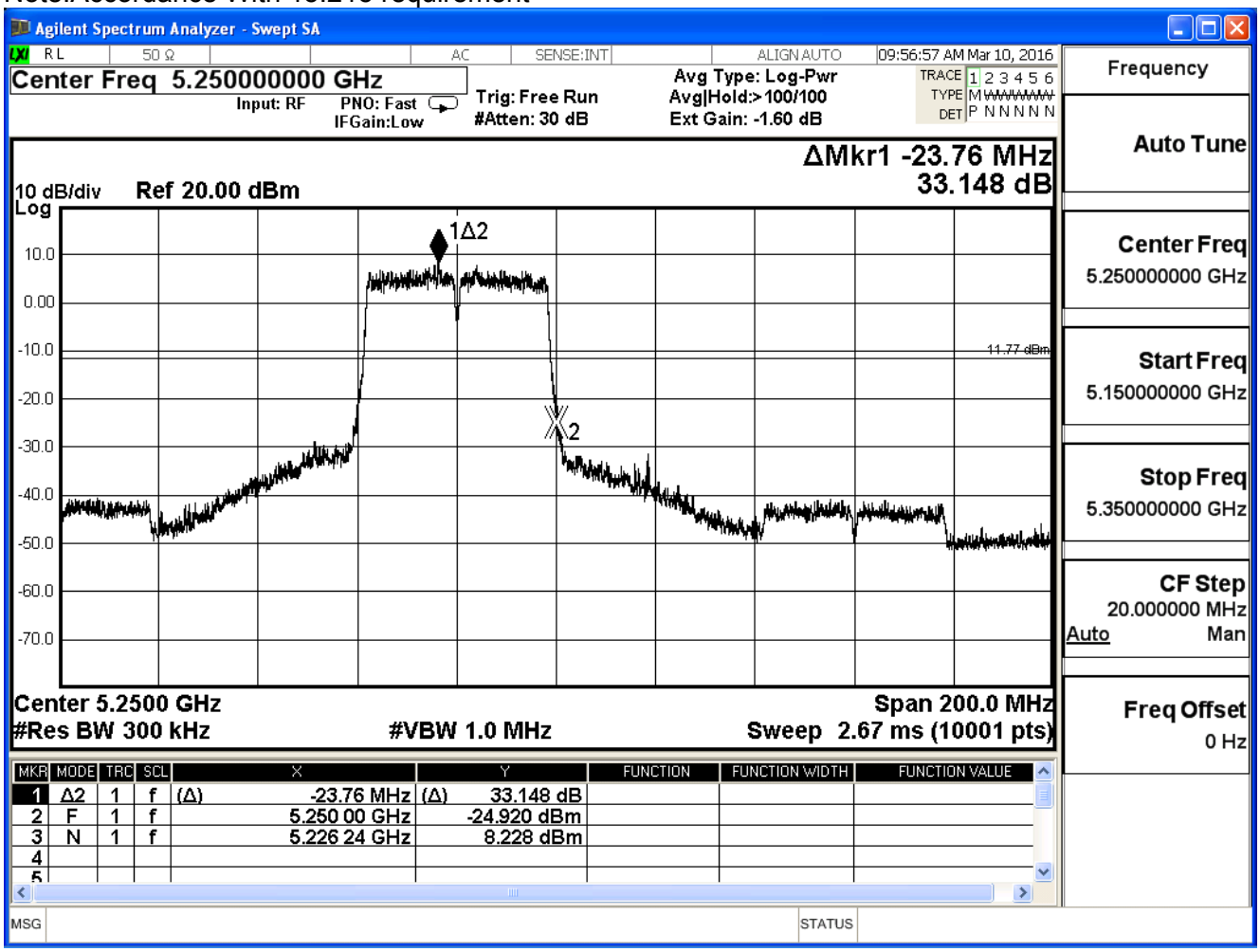


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11n_40M (ANT 1)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
46	5230	33.148	≧20

Note:Accordance With 15.215 requirement

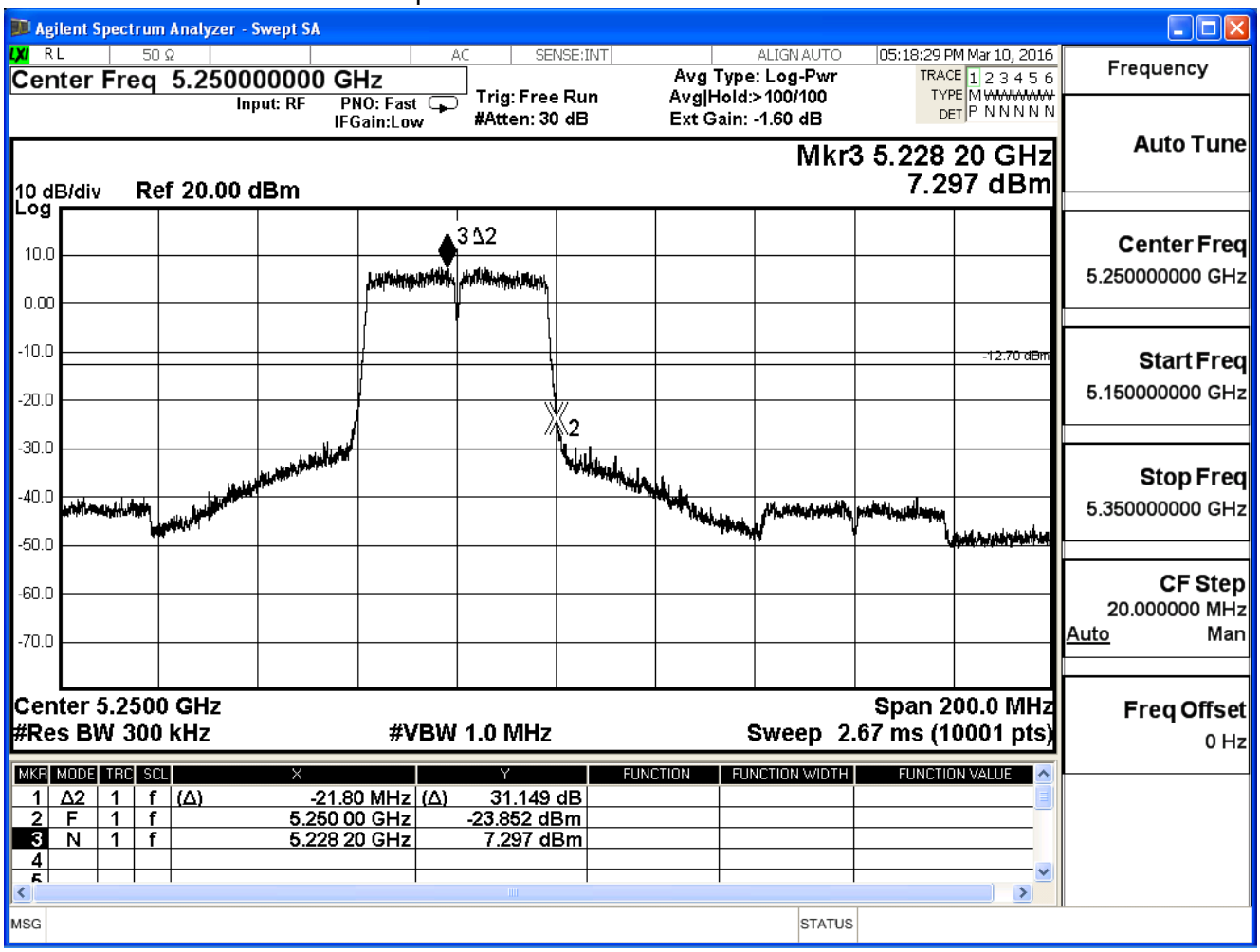


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

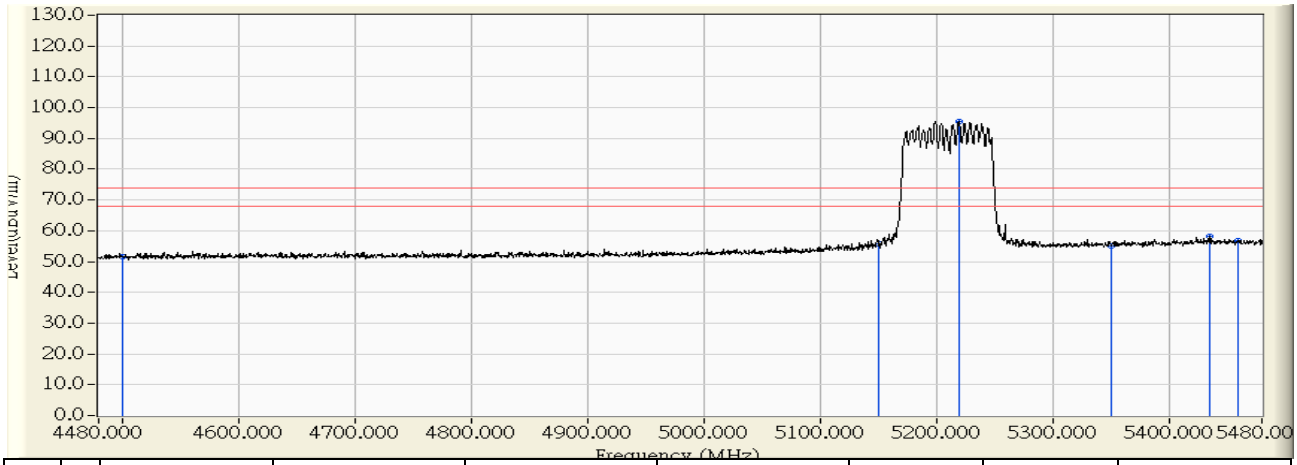
IEEE 802.11n_40M (ANT 2)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
46	5230	34.149	≧20

Note:Accordance With 15.215 requirement



Site : CB1	**Time : 2016/03/08 - 14:04**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**

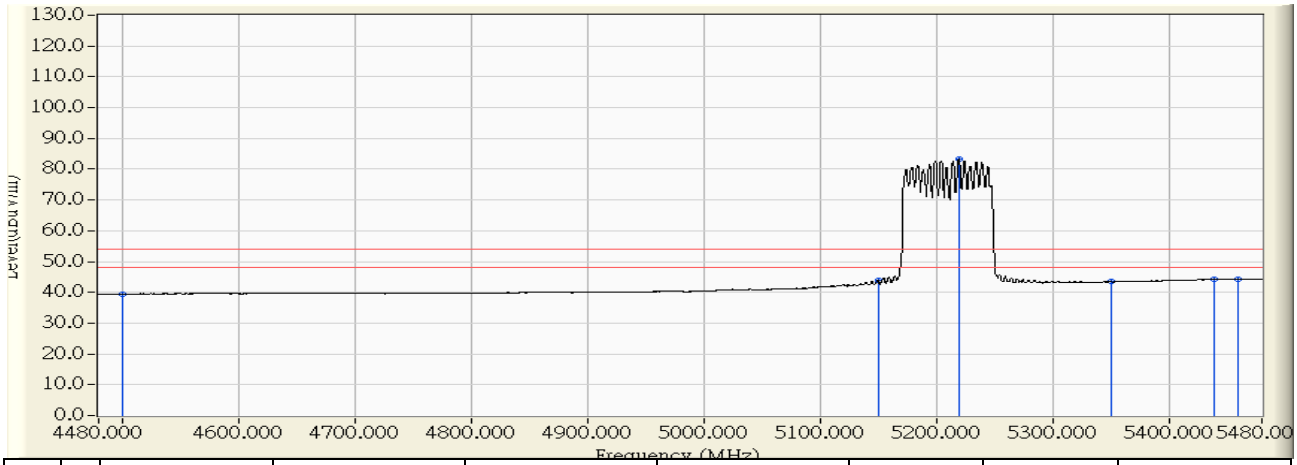


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	54.904	51.476	-22.524	74.000	PEAK
2		5150.000	-0.737	56.578	55.840	-18.160	74.000	PEAK
3	*	5219.500	-0.156	95.743	95.586	21.586	74.000	PEAK
4		5350.000	0.934	54.287	55.221	-18.779	74.000	PEAK
5		5435.500	1.648	56.546	58.194	-15.806	74.000	PEAK
6		5460.000	1.853	54.823	56.676	-17.324	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 14:05**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**

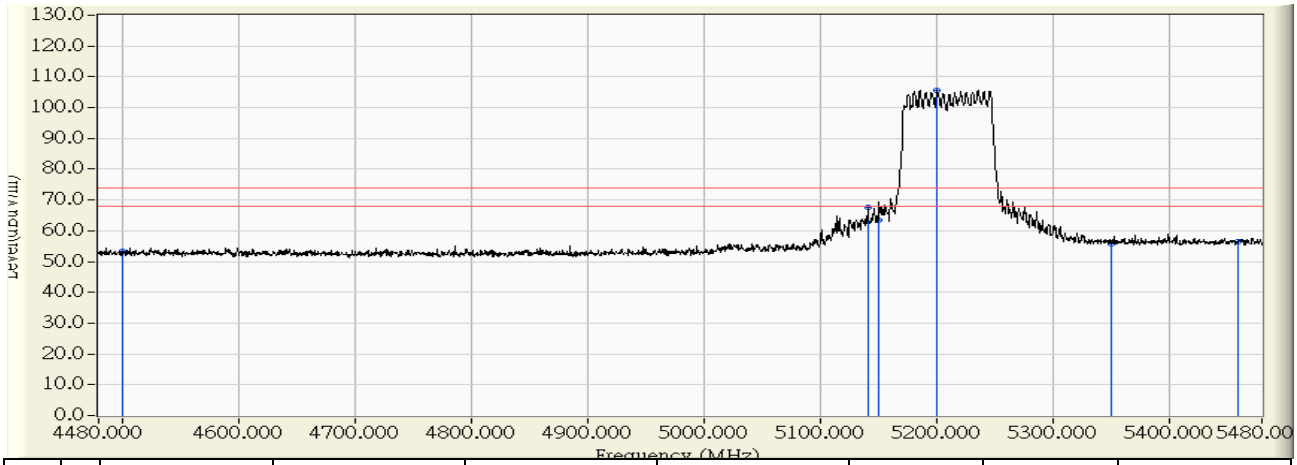


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-3.428	42.862	39.434	-14.566	54.000	AVERAGE
2		5150.000	-0.737	44.648	43.910	-10.090	54.000	AVERAGE
3	*	5219.500	-0.156	83.370	83.213	29.213	54.000	AVERAGE
4		5350.000	0.934	42.653	43.587	-10.413	54.000	AVERAGE
5		5438.500	1.673	42.551	44.224	-9.776	54.000	AVERAGE
6		5460.000	1.853	42.430	44.283	-9.717	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 13:17**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**

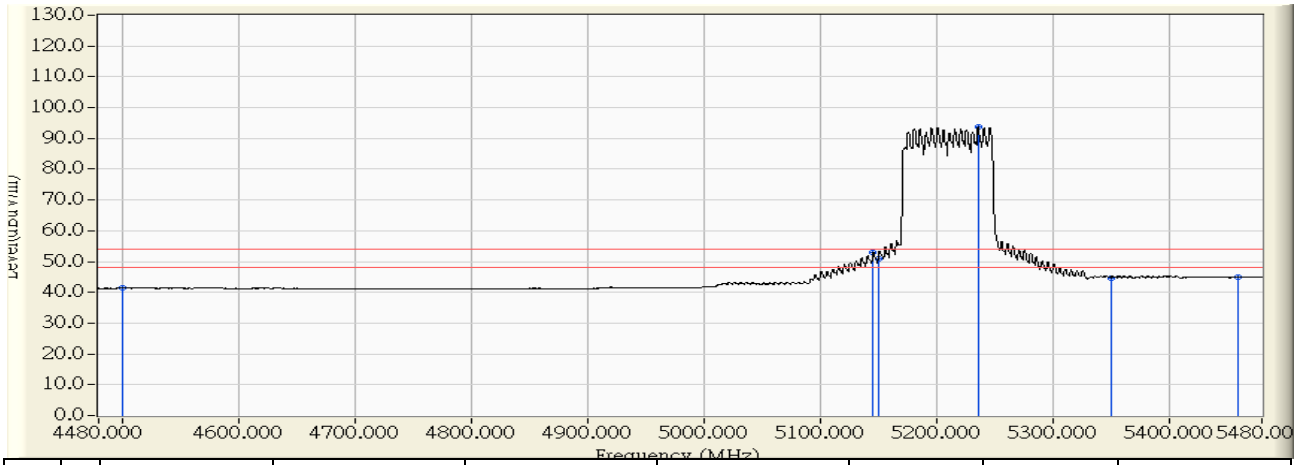


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	54.984	53.263	-20.737	74.000	PEAK
2		5141.500	-0.388	68.045	67.657	-6.343	74.000	PEAK
3		5150.000	-0.321	63.874	63.553	-10.447	74.000	PEAK
4	*	5201.000	0.079	105.633	105.713	31.713	74.000	PEAK
5		5350.000	1.250	54.629	55.879	-18.121	74.000	PEAK
6		5460.000	2.114	54.444	56.558	-17.442	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2016/03/08 - 13:16**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V (Power by PC)**
EUT : Dual Band 3x3 802.11ac PCI-E Adapter	**Note : 802.11ac(80M)_5210MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.721	43.032	41.311	-12.689	54.000	AVERAGE
2		5146.000	-0.353	53.338	52.985	-1.015	54.000	AVERAGE
3		5150.000	-0.321	51.281	50.960	-3.040	54.000	AVERAGE
4	*	5236.000	0.354	93.369	93.724	39.724	54.000	AVERAGE
5		5350.000	1.250	43.468	44.718	-9.282	54.000	AVERAGE
6		5460.000	2.114	42.734	44.848	-9.152	54.000	AVERAGE

Note:

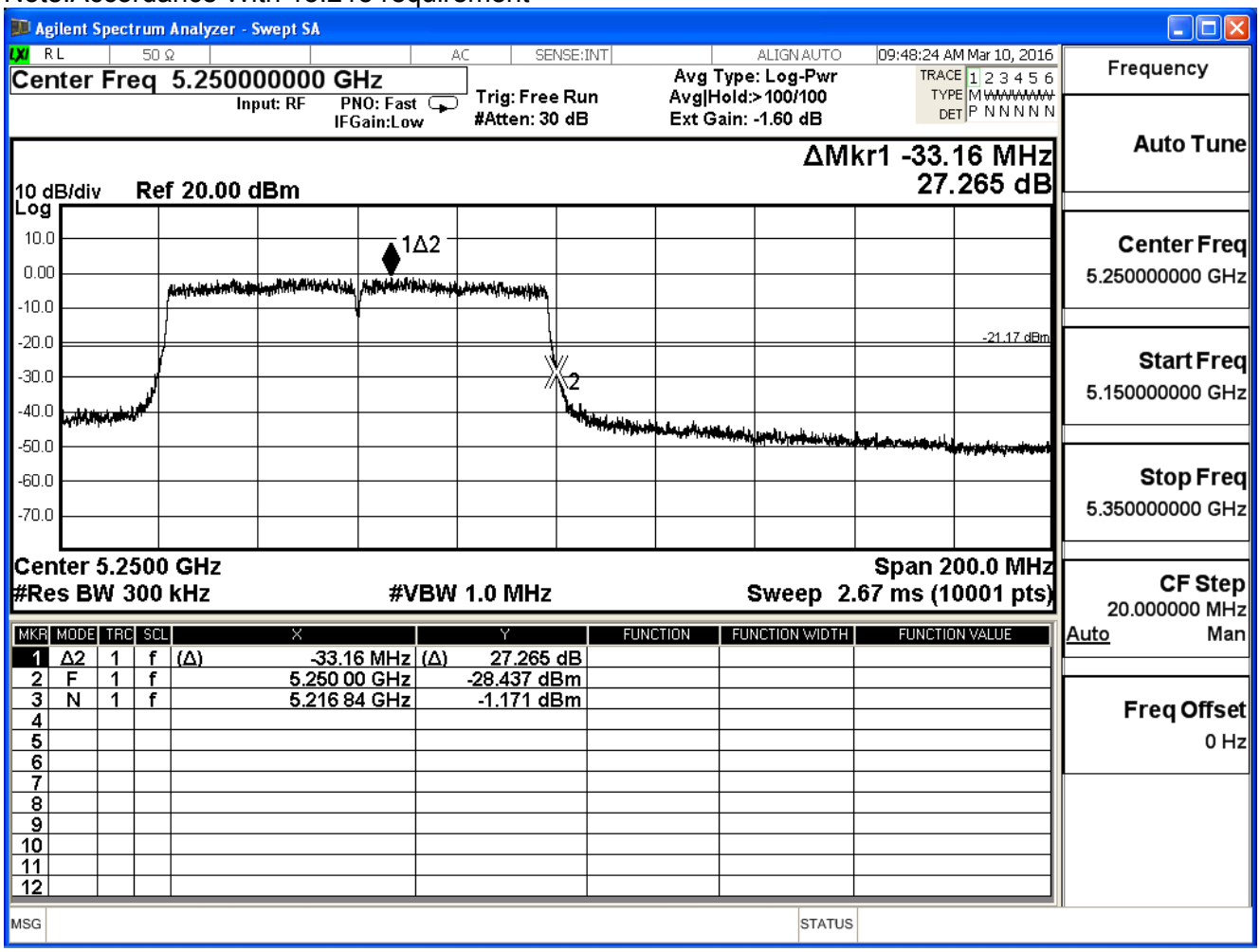
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11ac(80MHz) (ANT 0)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
42	5210	27.265	≧20

Note:Accordance With 15.215 requirement

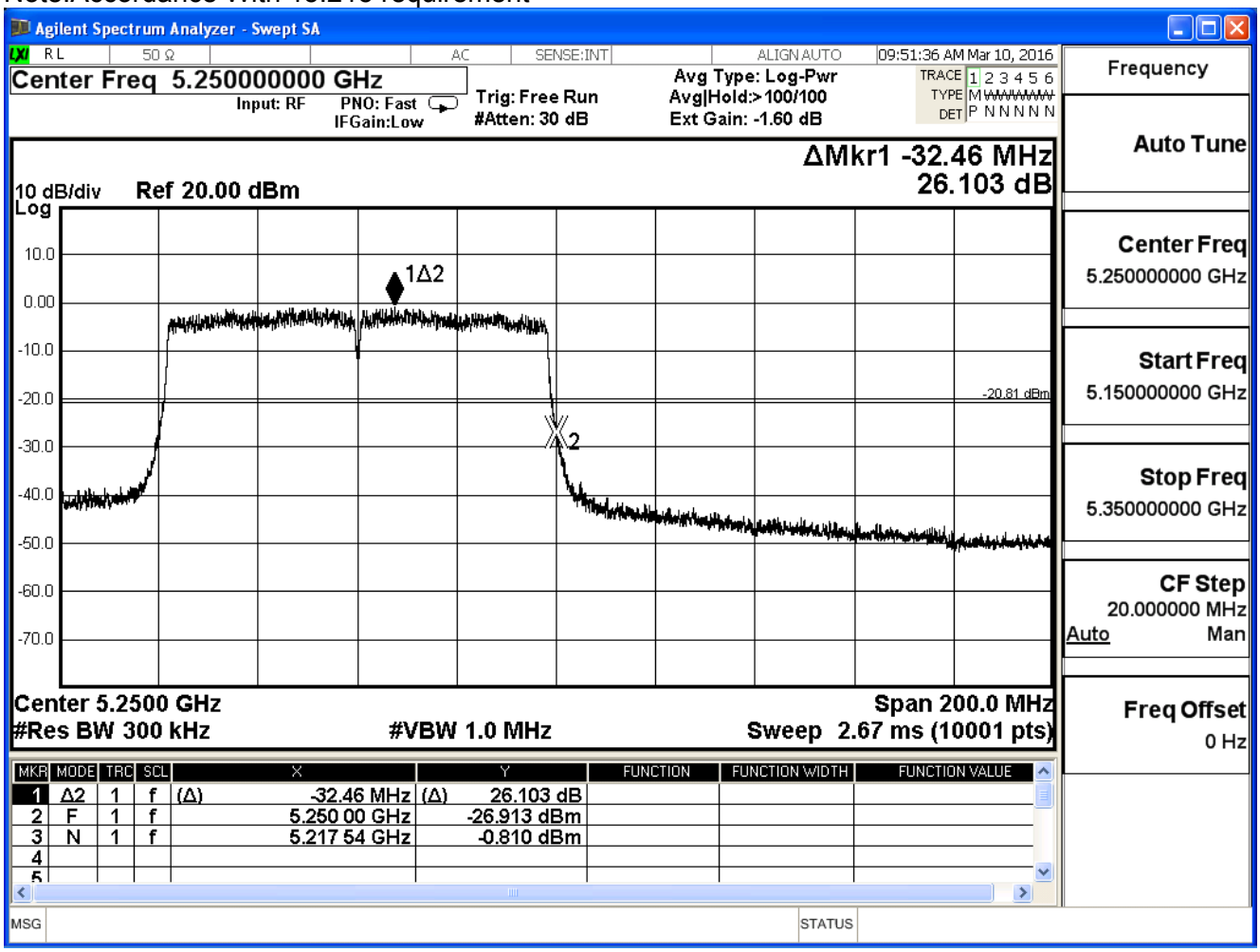


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11ac(80MHz) (ANT 1)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
42	5210	26.103	≧20

Note:Accordance With 15.215 requirement

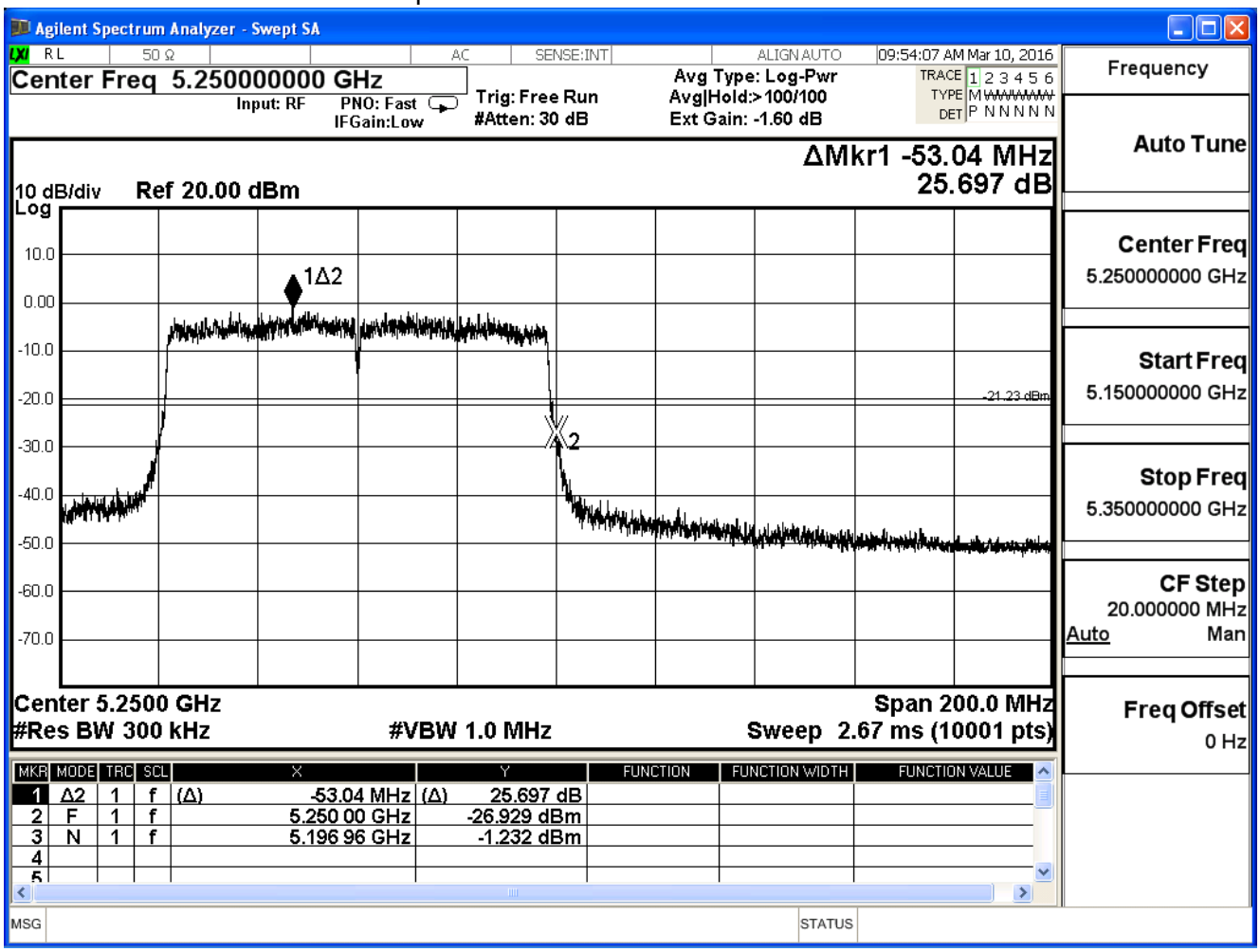


Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Band edge Data		
Test Mode	Mode 1: Transmit_CDD Mode		
Date of Test	2016/03/10	Test Site	SR7

IEEE 802.11ac(80MHz) (ANT 2)

Test Frequency (MHz)	Measurement Level (dBc)	Limit (dBc)	Result
42	5210	25.697	≧20

Note:Accordance With 15.215 requirement



7. Frequency Stability

7.1. Test Equipment

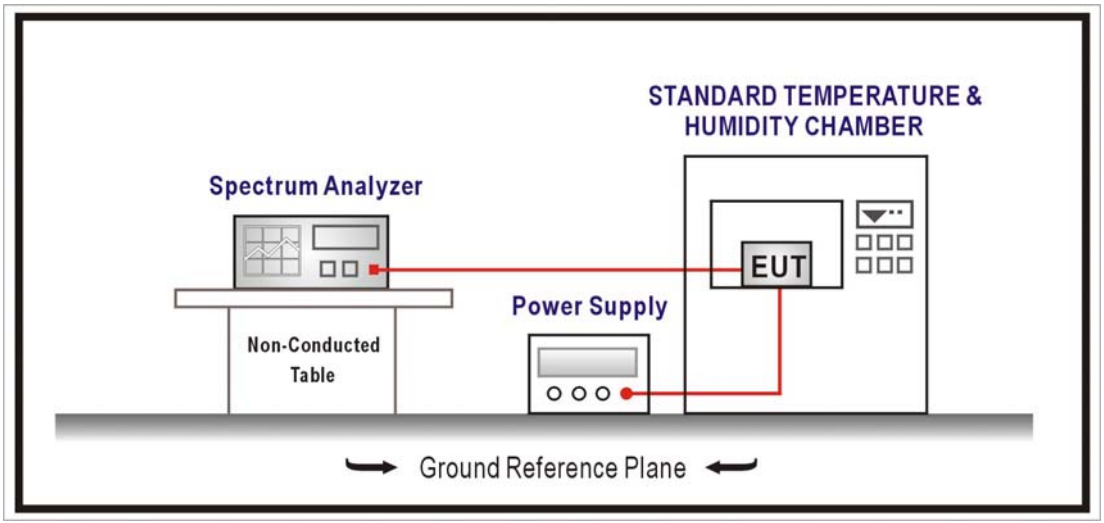
The following test equipments are used during the radiated emission tests:

Frequency Stability / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2017/01/18

Note: All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

Manufactures of all 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

7.4. Test Procedure

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

7.5. Uncertainty

The measurement uncertainty is defined as ± 150 Hz

7.6. Test Result

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5180MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.04491	8.6751	符合
-10		5180.00873	1.6854	符合
0		5180.02189	4.2254	符合
10		5179.99969	-0.0605	符合
20		5179.98272	-3.3360	符合
30		5179.99868	-0.2548	符合
40		5179.95852	-8.0077	符合
50		5179.96752	-6.2711	符合

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	結果判定
25	102	5179.99730	-0.5217	符合
	120	5179.98897	-2.1290	符合
	138	5179.99793	-0.3989	符合

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5240MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.01283	2.4546	PASS
-10		5240.03209	6.1242	PASS
0		5240.00298	0.5694	PASS
10		5239.99520	-0.9167	PASS
20		5239.98593	-2.6848	PASS
30		5239.97214	-5.3159	PASS
40		5239.95992	-7.6497	PASS
50		5239.99872	-0.2439	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99949	-0.0969	PASS
	120	5239.95893	-7.8383	PASS
	138	5239.99938	-0.1183	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5180MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.02475	4.7843	PASS
-10		5180.00973	1.8786	PASS
0		5180.00336	0.6495	PASS
10		5179.99633	-0.7078	PASS
20		5179.98123	-3.6233	PASS
30		5179.98698	-2.5144	PASS
40		5179.95834	-8.0421	PASS
50		5179.95749	-8.2067	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5179.99827	-0.3331	PASS
	120	5179.97112	-5.5759	PASS
	138	5179.99985	-0.0296	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5240MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.02471	4.7209	PASS
-10		5240.01274	2.4319	PASS
0		5240.01035	1.9758	PASS
10		5239.98721	-2.4399	PASS
20		5239.98286	-3.2715	PASS
30		5239.99659	-0.6506	PASS
40		5239.97738	-4.3168	PASS
50		5239.97747	-4.2999	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99940	-0.1146	PASS
	120	5239.95962	-7.7065	PASS
	138	5239.97439	-4.8883	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5180MHz(ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.01980	3.8281	PASS
-10		5180.00944	1.8225	PASS
0		5180.00288	0.5557	PASS
10		5179.99194	-1.5567	PASS
20		5179.99136	-1.6679	PASS
30		5179.99799	-0.3885	PASS
40		5179.97588	-4.6573	PASS
50		5179.99696	-0.5862	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5179.99862	-0.2655	PASS
	120	5179.98718	-2.4739	PASS
	138	5179.95255	-9.1609	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11a - 5240MHz(ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.02790	5.3303	PASS
-10		5240.02989	5.7051	PASS
0		5240.02053	3.9184	PASS
10		5239.99292	-1.3507	PASS
20		5239.98171	-3.4909	PASS
30		5239.98597	-2.6782	PASS
40		5239.96417	-6.8375	PASS
50		5239.95605	-8.3881	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99806	-0.3695	PASS
	120	5239.98790	-2.3085	PASS
	138	5239.96321	-7.0218	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5180MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.04679	9.0389	PASS
-10		5180.00975	1.8830	PASS
0		5180.02594	5.0086	PASS
10		5179.98431	-3.0287	PASS
20		5179.99307	-1.3385	PASS
30		5179.99341	-1.2725	PASS
40		5179.99642	-0.6909	PASS
50		5179.96932	-5.9236	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5179.99767	-0.4492	PASS
	120	5179.95700	-8.3015	PASS
	138	5179.96303	-7.1363	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5240MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.01543	2.9506	PASS
-10		5240.02628	5.0157	PASS
0		5240.01288	2.4589	PASS
10		5239.98806	-2.2793	PASS
20		5239.99573	-0.8147	PASS
30		5239.97954	-3.9045	PASS
40		5239.98807	-2.2766	PASS
50		5239.99521	-0.9144	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99709	-0.5548	PASS
	120	5239.97630	-4.5232	PASS
	138	5239.96357	-6.9516	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5180MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.00684	1.3263	PASS
-10		5180.03101	5.9857	PASS
0		5180.02450	4.7292	PASS
10		5179.99895	-0.2031	PASS
20		5179.99157	-1.6268	PASS
30		5179.98010	-3.8426	PASS
40		5179.97120	-5.5594	PASS
50		5179.96803	-6.1725	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5179.99906	-0.1817	PASS
	120	5179.97013	-5.7672	PASS
	138	5179.97626	-4.5832	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5240MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.02079	3.9728	PASS
-10		5240.01172	2.2359	PASS
0		5240.01210	2.3100	PASS
10		5239.98470	-2.9205	PASS
20		5239.99791	-0.3994	PASS
30		5239.99450	-1.0500	PASS
40		5239.94955	-9.6285	PASS
50		5239.99220	-1.4882	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99835	-0.3143	PASS
	120	5239.99289	-1.3572	PASS
	138	5239.98524	-2.8175	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5180MHz (ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.00517	1.0047	PASS
-10		5180.03628	7.0038	PASS
0		5180.00513	0.9909	PASS
10		5179.98544	-2.8115	PASS
20		5179.98353	-3.1798	PASS
30		5179.99332	-1.2890	PASS
40		5179.94019	-11.5462	PASS
50		5179.97185	-5.4344	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5179.99852	-0.2860	PASS
	120	5179.97357	-5.1020	PASS
	138	5179.96099	-7.5318	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_20M - 5240MHz (ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.01111	2.1270	PASS
-10		5240.02316	4.4200	PASS
0		5240.01931	3.6852	PASS
10		5239.99230	-1.4703	PASS
20		5239.98213	-3.4109	PASS
30		5239.99268	-1.3976	PASS
40		5239.94487	-10.5202	PASS
50		5239.97333	-5.0890	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5239.99737	-0.5022	PASS
	120	5239.96122	-7.4000	PASS
	138	5239.95596	-8.4054	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M - 5190MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5190.04219	8.1359	PASS
-10		5190.00294	0.5662	PASS
0		5190.01842	3.5493	PASS
10		5189.99801	-0.3835	PASS
20		5189.98843	-2.2285	PASS
30		5189.97558	-4.7056	PASS
40		5189.95516	-8.6396	PASS
50		5189.99166	-1.6074	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5189.99762	-0.4583	PASS
	120	5189.99637	-0.6988	PASS
	138	5189.98082	-3.6963	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M - 5230MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5230.04273	8.1763	PASS
-10		5230.00994	1.8998	PASS
0		5230.00991	1.8950	PASS
10		5229.99464	-1.0251	PASS
20		5229.99898	-0.1947	PASS
30		5229.97228	-5.3009	PASS
40		5229.99408	-1.1321	PASS
50		5229.98461	-2.9431	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5229.99737	-0.5022	PASS
	120	5229.96639	-6.4263	PASS
	138	5229.96339	-7.0008	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M - 5190MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5190.04200	8.0992	PASS
-10		5190.01585	3.0537	PASS
0		5190.01351	2.6037	PASS
10		5189.99311	-1.3270	PASS
20		5189.98738	-2.4314	PASS
30		5189.97509	-4.8002	PASS
40		5189.95376	-8.9090	PASS
50		5189.98745	-2.4175	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5189.99868	-0.2552	PASS
	120	5189.99448	-1.0642	PASS
	138	5189.97142	-5.5070	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M - 5230MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5230.03093	5.9200	PASS
-10		5230.03854	7.3688	PASS
0		5230.00972	1.8588	PASS
10		5229.98388	-3.0830	PASS
20		5229.98305	-3.2418	PASS
30		5229.98246	-3.3541	PASS
40		5229.94444	-10.6229	PASS
50		5229.99132	-1.6592	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5229.99860	-0.2674	PASS
	120	5229.96084	-7.4884	PASS
	138	5229.99616	-0.7349	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M - 5190MHz(ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5190.04634	8.9356	PASS
-10		5190.03832	7.3840	PASS
0		5190.01321	2.5460	PASS
10		5189.98329	-3.2193	PASS
20		5189.98126	-3.6114	PASS
30		5189.99506	-0.9510	PASS
40		5189.97718	-4.3966	PASS
50		5189.98266	-3.3412	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5189.99725	-0.5300	PASS
	120	5189.96619	-6.5147	PASS
	138	5189.95283	-9.0893	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11n_40M -5230MHz(ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5230.04999	9.5643	PASS
-10		5230.01729	3.3069	PASS
0		5230.02408	4.6043	PASS
10		5229.99520	-0.9174	PASS
20		5229.98906	-2.0912	PASS
30		5229.99015	-1.8838	PASS
40		5229.98289	-3.2712	PASS
50		5229.97452	-4.8720	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5229.99713	-0.5493	PASS
	120	5229.99356	-1.2314	PASS
	138	5229.99383	-1.1791	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11ac_80M -5210MHz(ANT 0)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5210.00937	1.8038	PASS
-10		5210.01205	2.3121	PASS
0		5210.02303	4.4197	PASS
10		5209.99766	-0.4483	PASS
20		5209.99500	-0.9591	PASS
30		5209.99738	-0.5026	PASS
40		5209.96805	-6.1333	PASS
50		5209.95922	-7.8277	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5210.00000	-0.0001	PASS
	120	5209.95658	-8.3339	PASS
	138	5209.96509	-6.7014	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11ac_80M -5210MHz(ANT 1)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5210.04837	9.2892	PASS
-10		5210.02936	5.6354	PASS
0		5210.01232	2.3645	PASS
10		5209.99703	-0.5707	PASS
20		5209.98731	-2.4364	PASS
30		5209.97100	-5.5669	PASS
40		5209.96427	-6.8575	PASS
50		5209.97578	-4.6480	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5209.99785	-0.4125	PASS
	120	5209.97172	-5.4271	PASS
	138	5209.95188	-9.2356	PASS

Product	Dual Band 3x3 802.11ac PCI-E Adapter		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit_CDD Mode - 802.11ac_80M -5210MHz(ANT 2)		
Date of Test	2016/04/09	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5210.02009	3.8617	PASS
-10		5210.02802	5.3772	PASS
0		5210.02932	5.6282	PASS
10		5209.99672	-0.6304	PASS
20		5209.99996	-0.0071	PASS
30		5209.99379	-1.1919	PASS
40		5209.98320	-3.2250	PASS
50		5209.95527	-8.5858	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5209.99829	-0.3279	PASS
	120	5209.97453	-4.8888	PASS
	138	5209.95060	-9.4817	PASS

Attachment 2

- **Original Report**