

FCC Test Report

Product Name : Wireless-AC1900 Dual Band Gigabit Router
Model No. : RT-AC68U, RT-AC68R, RT-AC68RW, TM-AC1900
FCC ID. : MSQ-RTAC68U

Applicant : ASUSTeK COMPUTER INC.

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

Date of Receipt : 2014/03/05

Issued Date : 2014/04/14

Report No. : 1430116R-RFUSP46V01

Report Version : V1.0



The test results relate only to the samples tested.

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Test Report Certification

Issued Date : 2014/04/14

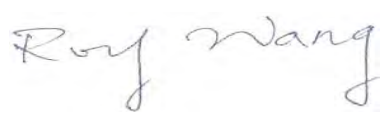
Report No. : 1430116R-RFUSP46V01



Product Name : Wireless-AC1900 Dual Band Gigabit Router
 Applicant : ASUSTeK COMPUTER INC.
 Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
 Manufacturer : Askey Technology (Jiangsu) Ltd.
 Model No. : RT-AC68U, RT-AC68R, RT-AC68RW, TM-AC1900
 FCC ID. : MSQ-RTAC68U
 EUT Voltage : AC 100-240V, 50-60Hz
 Trade Name : ASUS
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2012
 ANSI C63.4: 2009
 Test Result : Complied

The test results relate only to the samples tested.

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Documented By : 
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 (Roy Wang / Director)

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: 1313
USA	:	FCC, Registration Number: 365520
Canada	:	IC, Submission No: 150981

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site:<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :
<http://www.quietek.com/>

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1. General Information

1.1. EUT Description

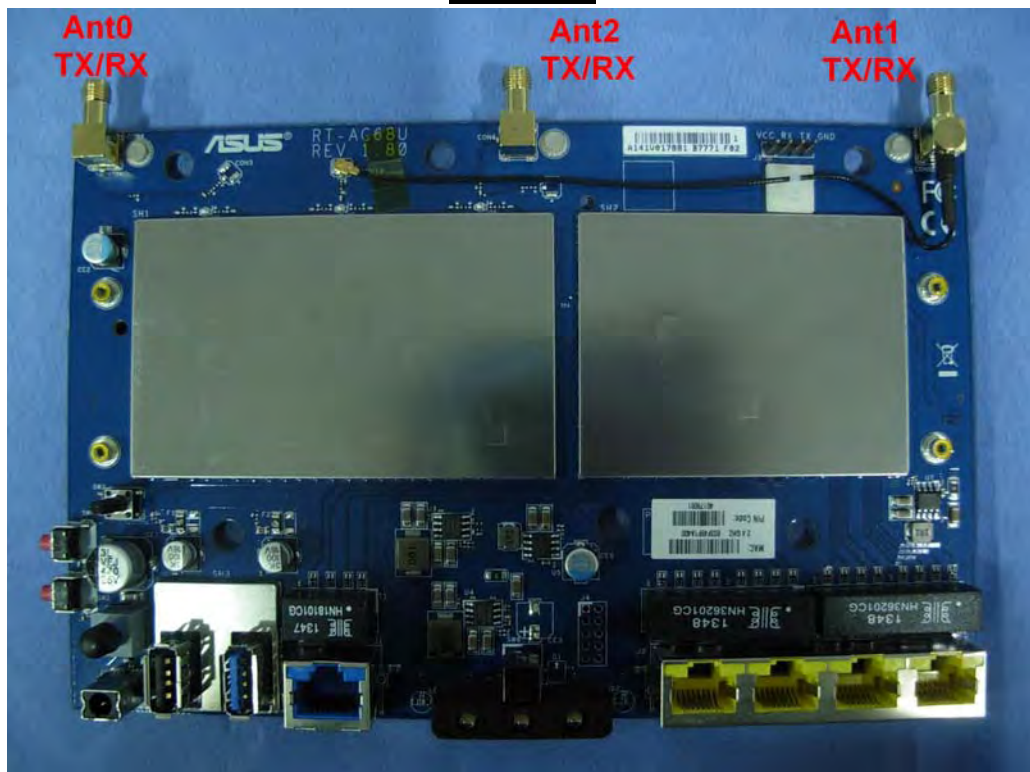
Product Name	Wireless-AC1900 Dual Band Gigabit Router
Product Type	WLAN (3TX, 3RX)
Trade Name	ASUS
Model No.	RT-AC68U, RT-AC68R, RT-AC68RW, TM-AC1900
Frequency Range/ Channel Number -IEEE 802.11a & IEEE 802.11n (20MHz)	5180~5240MHz / 4 Channels
Frequency Range/Channel Number -IEEE 802.11n/ac (40MHz)	5190~5230MHz / 2 Channels
Frequency Range/ Channel Number -IEEE 802.11ac (80MHz)	5210~5210MHz / 1 Channel
Type of Modulation (IEEE 802.11a/n)	Orthogonal Frequency Division Multiplexing (OFDM)
Data Speed (IEEE 802.11a)	6Mbps,9Mbps,12Mbps,18Mbps,24Mbps,36Mbps,48Mbps,54Mbps
Data Speed (IEEE 802.11n)	Support a subset of the combination of GI, MCS 0~MCS 23 and bandwidth defined in 802.11n
Data Speed (IEEE 802.11ac)	Support a subset of the combination of GI, MCS 0~MCS 9 and bandwidth defined in 802.11ac
Antenna Gain	WAISIN, RFDPA141000SBLB802 / MAG., EDA-1410-25GR2-A1 Antenna: Ant0: 4.44dBi, Ant1: 4.44dBi, Ant2: 4.44dBi Master Wave, 98611PRSX003 Antenna: Ant0: 3.89dBi, Ant1: 3.89dBi, Ant2: 3.89dBi
Beamforming Gain	4.77dB
Antenna Type	Dipole Antenna

Component	
LAN Cable	Non-Shielded, 1.5m
Dipole Antenna	WAISIN, RFDPA141000SBLB802, 3pcs
Dipole Antenna	MAG., EDA-1410-25GR2-A1, 3pcs
Dipole Antenna	Master Wave, 98611PRSX003, 3pcs
Power Adapter	Enertronix, EXA1206UH I/P: 100-240V~50/60Hz, 1.0A O/P: 19V $\overline{=}$ 1.75A Cable In: Non-Shielded, 2.4m
Power Adapter	PIE, AD8900326 I/P: 100-240V~50/60Hz, 0.8A O/P: 19V $\overline{=}$ 1.75A Cable In: Non-Shielded, 2.4m

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 _{BPSCS}	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

Draft 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	19.5	21.6	40.5	45	87.9	97.5	175.5	195
	1	QPSK	1/2	39	43.2	81	90	175.5	195	351	390
	2	QPSK	3/4	58.5	65.1	121.5	135	263.4	292.5	526.5	585
	3	16-QAM	1/2	78	86.7	162	180	351	390	702	780
	4	16-QAM	3/4	117	129.9	243	270	526.5	585	1053	1170
	5	64-QAM	2/3	156	173.4	324	360	702	780	1404	1560
	6	64-QAM	3/4	175.5	195	364.5	405	789.9	877.5	1579.5	1755
	7	64-QAM	5/6	195	216.6	405	450	877.5	975	1755	1950
	8	256-QAM	3/4	234	260.1	486	540	1053	1170	2106	2340
	9	256-QAM	5/6	N/A	N/A	540	600	1170	1299.9	2340	2600.1

IEEE 802.11a & IEEE 802.11n (20MHz) & IEEE 802.11ac (20MHz)

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

IEEE 802.11n (40MHz) & IEEE 802.11ac (40MHz)

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

IEEE 802.11ac (80MHz)

Working Frequency of Each Channel	
Channel	Frequency
42	5210MHz

Note:

1. This device is a Wireless-AC1900 Dual Band Gigabit Router including 2.4GHz b/g/n 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 and 5.8GHz transmitting is measured and makes a test report of the report number: 1430116R-RFUSP42V01.
5. This device has USB and Ethernet ports, which can be connected to computer. The receiving function receiving was tested and its test report number is 1430116R-RFUSP37V02 under Declaration of Conformity.
6. This power index value is only suitable for testing samples, it is not suitable for products of the market sells.
7. The variation of model number is for different strategy of marketing.
8. This report is class II Change from 134199R.

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)_Adapter: EXA1206UH Mode 2: Transmit (Beamforming Mode)_Adapter: EXA1206UH Mode 3: Transmit (CDD Mode)_Adapter: AD890326
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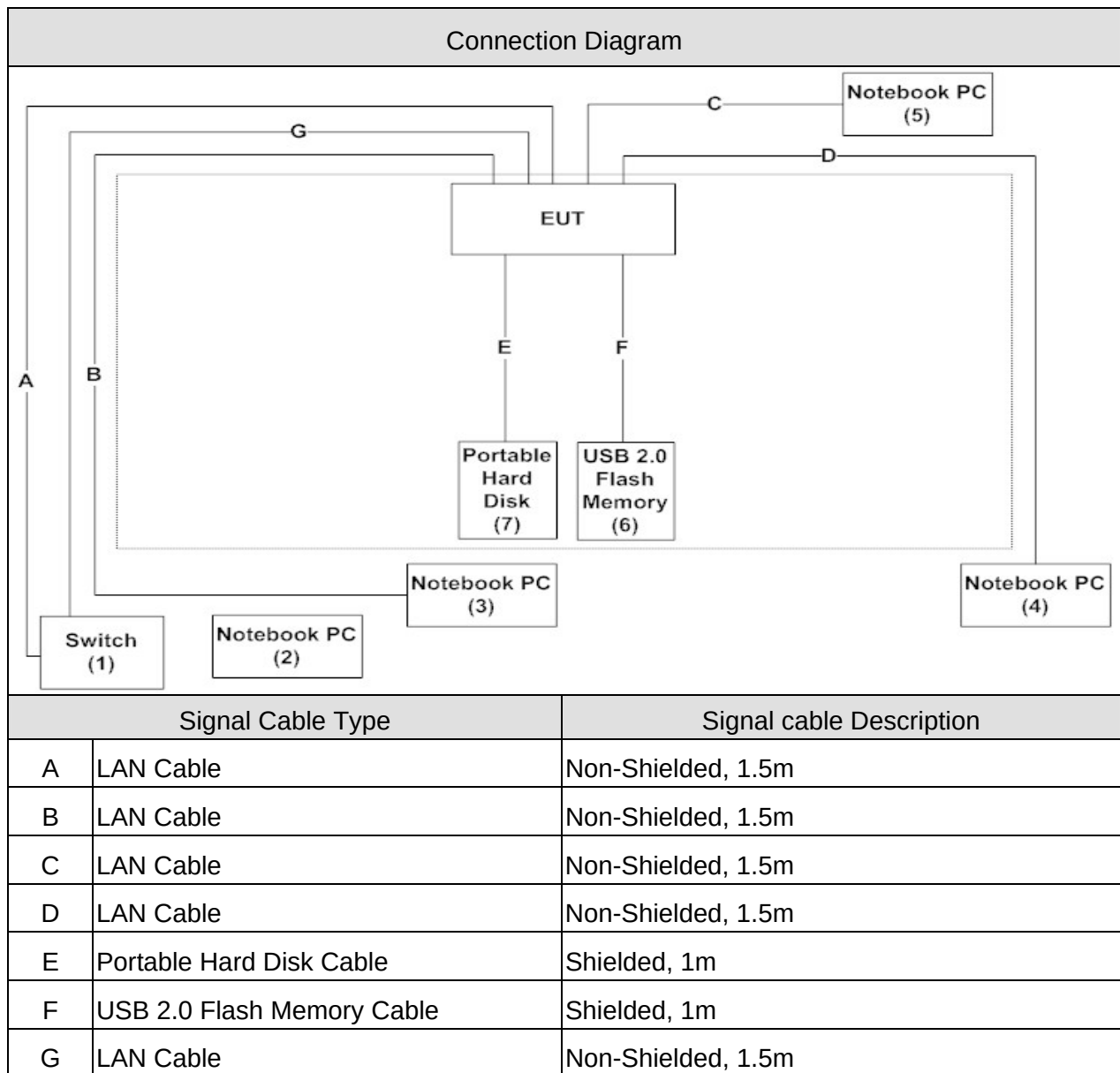
Test Items	Mode	Modulation	Channel	Antenna	Result
Conducted Emission	1	11ac (80MHz)	42	0+1+2	Complies
99 % & 26dB Bandwidth	1	a	36/44/48	0/1/2	Complies
	1	11n/ac (20MHz)	36/44/48	0/1/2	Complies
	1	11n/ac (40MHz)	38/46	0/1/2	Complies
	1/2	11ac (80MHz)	42	0/1/2	Complies
Peak Transmit Output	1/2	a	36/44/48	0+1+2	Complies
	1/2	11n/ac (20MHz)	36/44/48	0+1+2	Complies
	1/2	11n/ac (40MHz)	38/46	0+1+2	Complies
	1/2	11ac (80MHz)	42	0+1+2	Complies
Peak Power Spectrum Density	1/2	a	36/44/48	0+1+2	Complies
	1/2	11n/ac (20MHz)	36/44/48	0+1+2	Complies
	1/2	11n/ac (40MHz)	38/46	0+1+2	Complies
	1/2	11ac (80MHz)	42	0+1+2	Complies
Power Excursion	1	a	36/44/48	0/1/2	Complies
	1	11n/ac (20MHz)	36/44/48	0/1/2	Complies
	1	11n/ac (40MHz)	38/46	0/1/2	Complies
	1	11ac (80MHz)	42	0/1/2	Complies
Radiated Emission	1/3	a	36/44/48	0+1+2	Complies
	1/3	11n/ac (20MHz)	36/44/48	0+1+2	Complies
	1/3	11n/ac (40MHz)	38/46	0+1+2	Complies
	1/3	11ac (80MHz)	42	0+1+2	Complies
Band Edge	1	a	36	0+1+2	Complies
	1	11n/ac (20MHz)	36	0+1+2	Complies
	1	11n/ac (40MHz)	38	0+1+2	Complies
	1	11ac (80MHz)	42	0+1+2	Complies
Frequency Stability	1	a	36/48	0/1/2	Complies
	1	11n/ac (20MHz)	36/48	0/1/2	Complies
	1	11n/ac (40MHz)	38/46	0/1/2	Complies
	1	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 Switch	D-Link	DGS1216T	F360298000042	DoC	Non-Shielded, 1.8m
2 Notebook PC	DELL	Vostro3400	7F808N1	DoC	Non-Shielded, 1.8m
3 Notebook PC	HP Compaq	NX6320FF	CNU7020BXT	DoC	Non-Shielded, 1.8m
4 Notebook PC	DELL	Precision M65	28G9NIS	DoC	Non-Shielded, 1.8m
5 Notebook PC	DELL	PP37L	CD8BNG1	DoC	Non-Shielded, 1.8m
6 USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
7 Portable Hard Disk	WD	My Passport	WXE1AB0M5632	DoC	--

1.4. Configuration of tested System



1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5.
2	Execute the test program "MTool V2.0.0.7" on the Notebook.
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 C 15.407 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 99 % & 26dB Bandwidth	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Peal Transmit Power	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Peak Power Spectrum Density	15 - 35	24
Humidity (%RH)		25 - 75	49
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Power Excursion	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Radiated Emission	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Band Edge	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.407 Frequency Stability	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

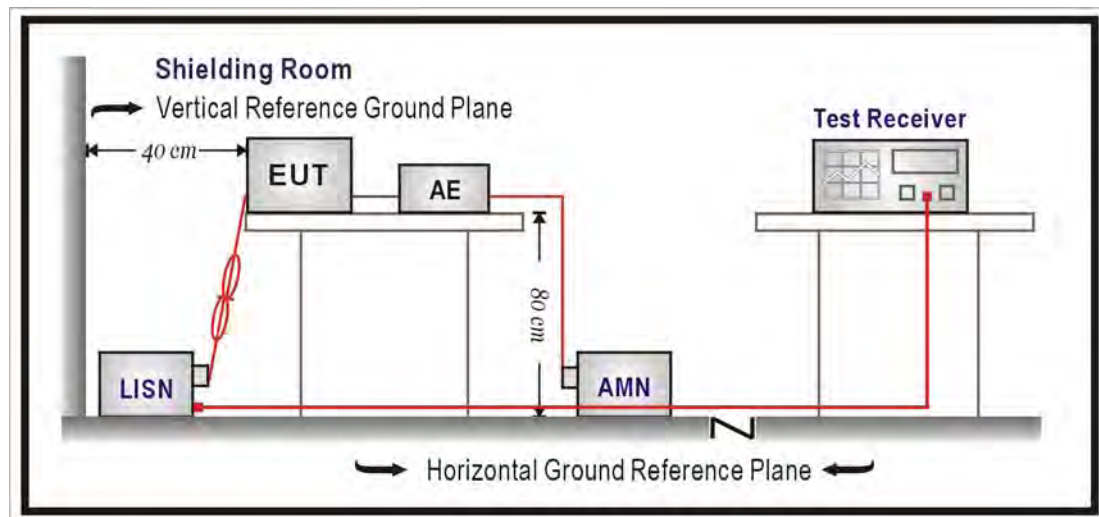
The following test equipments are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2013/08/12
LISN	R&S	ESH3-Z5	836679/022	2014/01/20
Test Receiver	R&S	ESCS 30	825442/017	2014/01/01

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

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

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

2.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

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

2.5. Test Specification

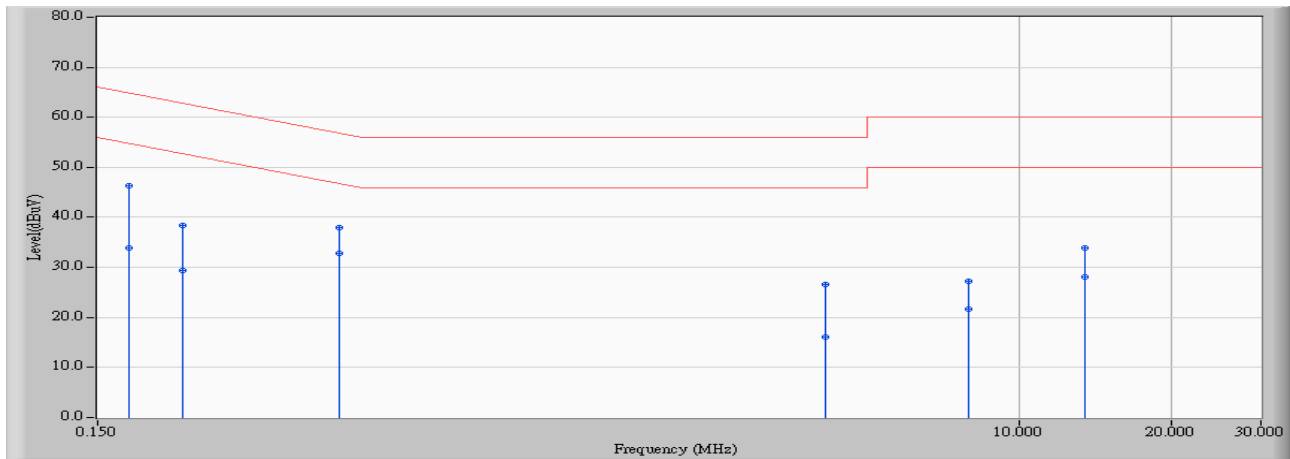
According to FCC Part 15 Subpart C Paragraph 15.207: 2012

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR3	Time : 2013/05/01 - 10:15
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V/60Hz
EUT : Wireless-AC1900 Dual Band Gigabit Router	Note : Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH -5210MHz_802.11ac(80M)

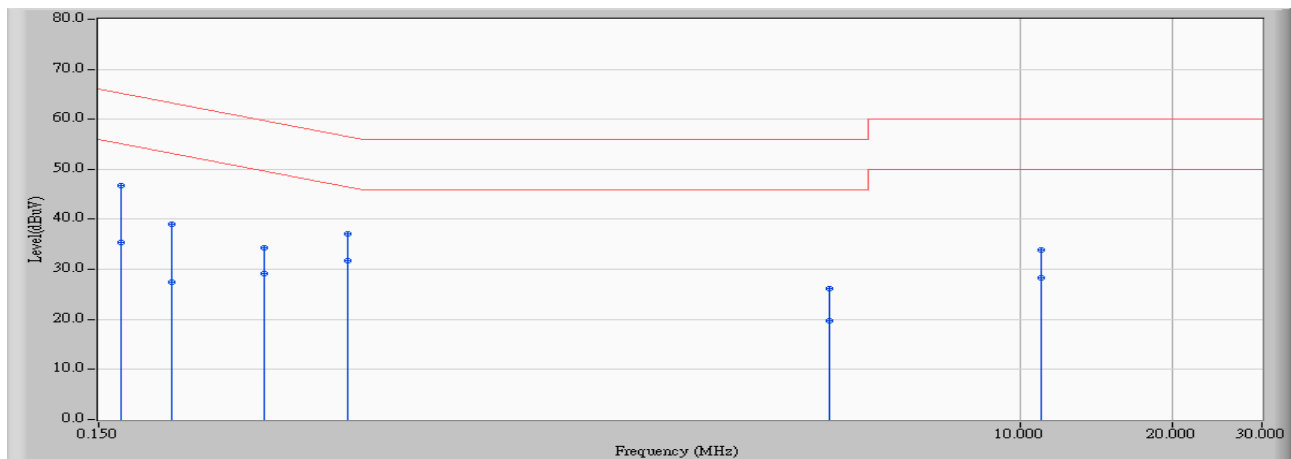


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.173	9.748	36.660	46.408	-18.387	64.794	QUASIPeAK
2		0.173	9.748	24.140	33.888	-20.907	54.794	AVERAGE
3		0.220	9.670	28.810	38.480	-24.328	62.807	QUASIPeAK
4		0.220	9.670	19.640	29.310	-23.498	52.807	AVERAGE
5		0.451	9.802	28.130	37.932	-18.929	56.861	QUASIPeAK
6	*	0.451	9.802	23.070	32.872	-13.989	46.861	AVERAGE
7		4.123	10.081	16.490	26.571	-29.429	56.000	QUASIPeAK
8		4.123	10.081	6.060	16.141	-29.859	46.000	AVERAGE
9		7.923	10.110	17.210	27.320	-32.680	60.000	QUASIPeAK
10		7.923	10.110	11.580	21.690	-28.310	50.000	AVERAGE
11		13.478	10.124	23.690	33.814	-26.186	60.000	QUASIPeAK
12		13.478	10.124	18.050	28.174	-21.826	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	Time : 2013/05/01 - 10:17
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V/60Hz
EUT : Wireless-AC1900 Dual Band Gigabit Router	Note : Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH -5210MHz_802.11ac(80M)

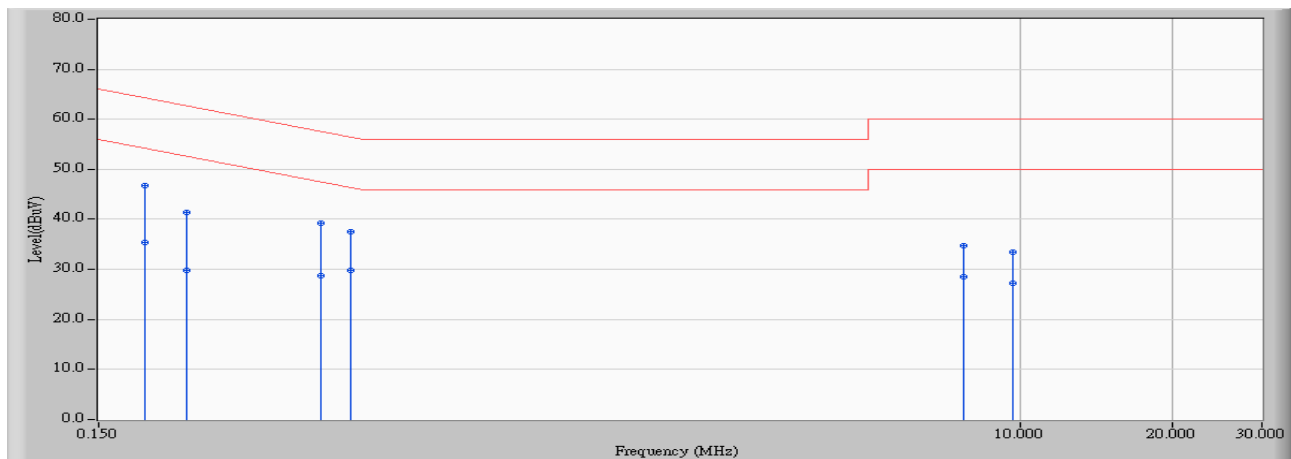


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	9.642	37.210	46.852	-18.325	65.177	QUASIPeAK
2		0.166	9.642	25.680	35.322	-19.855	55.177	AVERAGE
3		0.209	9.663	29.380	39.043	-24.218	63.261	QUASIPeAK
4		0.209	9.663	17.740	27.403	-25.858	53.261	AVERAGE
5		0.318	9.719	24.540	34.260	-25.500	59.760	QUASIPeAK
6		0.318	9.719	19.520	29.240	-20.520	49.760	AVERAGE
7		0.466	9.801	27.280	37.081	-19.496	56.578	QUASIPeAK
8	*	0.466	9.801	22.020	31.821	-14.756	46.578	AVERAGE
9		4.197	10.036	16.190	26.226	-29.774	56.000	QUASIPeAK
10		4.197	10.036	9.660	19.696	-26.304	46.000	AVERAGE
11		10.966	10.162	23.620	33.782	-26.218	60.000	QUASIPeAK
12		10.966	10.162	18.060	28.222	-21.778	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	Time : 2013/05/01 - 10:51
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V/60Hz
EUT : Wireless-AC1900 Dual Band Gigabit Router	Note : Mode 3: Transmit (CDD Mode)_Adapter: AD890326-5210MHz_802.11ac(80M)

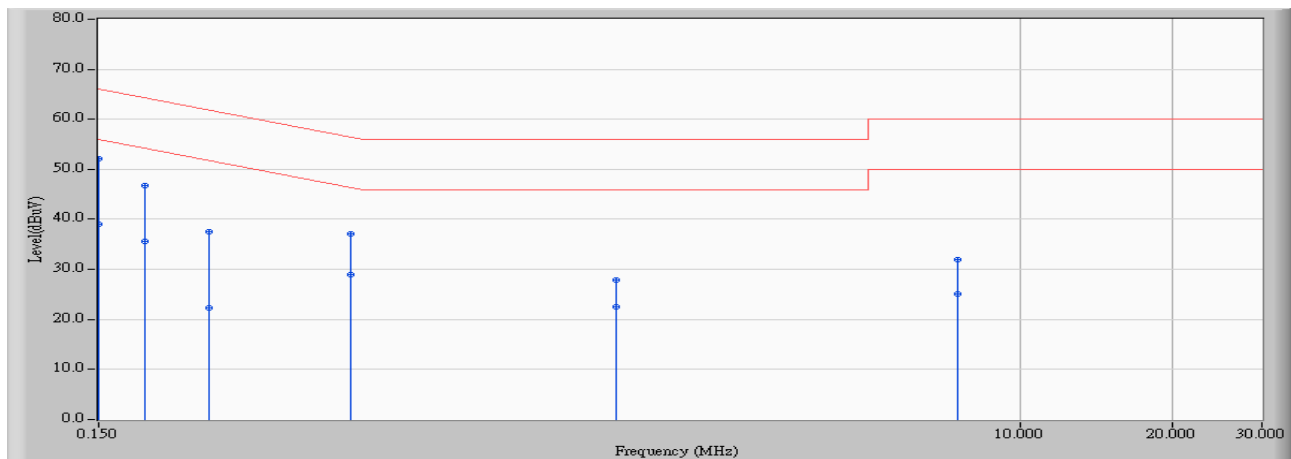


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.185	9.710	36.960	46.670	-17.581	64.251	QUASIPeAK
2		0.185	9.710	25.600	35.310	-18.941	54.251	AVERAGE
3		0.224	9.672	31.740	41.412	-21.249	62.661	QUASIPeAK
4		0.224	9.672	20.170	29.842	-22.819	52.661	AVERAGE
5		0.412	9.779	29.410	39.189	-18.424	57.614	QUASIPeAK
6		0.412	9.779	18.950	28.729	-18.884	47.614	AVERAGE
7		0.474	9.816	27.660	37.476	-18.964	56.440	QUASIPeAK
8	*	0.474	9.816	20.020	29.836	-16.604	46.440	AVERAGE
9		7.732	10.110	24.720	34.830	-25.170	60.000	QUASIPeAK
10		7.732	10.110	18.340	28.450	-21.550	50.000	AVERAGE
11		9.638	10.110	23.300	33.410	-26.590	60.000	QUASIPeAK
12		9.638	10.110	17.060	27.170	-22.830	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	Time : 2013/05/01 - 10:53
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V/60Hz
EUT : Wireless-AC1900 Dual Band Gigabit Router	Note : Mode 3: Transmit (CDD Mode)_Adapter: AD890326-5210MHz_802.11ac(80M)



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	9.638	42.450	52.089	-13.911	66.000	QUASIPeAK
2		0.150	9.638	29.420	39.059	-16.941	56.000	AVERAGE
3		0.185	9.652	37.200	46.851	-17.400	64.251	QUASIPeAK
4		0.185	9.652	26.030	35.681	-18.570	54.251	AVERAGE
5		0.248	9.683	27.750	37.433	-24.402	61.835	QUASIPeAK
6		0.248	9.683	12.580	22.263	-29.572	51.835	AVERAGE
7		0.474	9.806	27.200	37.006	-19.434	56.440	QUASIPeAK
8		0.474	9.806	19.250	29.056	-17.384	46.440	AVERAGE
9		1.584	9.936	17.960	27.896	-28.104	56.000	QUASIPeAK
10		1.584	9.936	12.520	22.456	-23.544	46.000	AVERAGE
11		7.513	10.113	21.760	31.873	-28.127	60.000	QUASIPeAK
12		7.513	10.113	15.050	25.163	-24.837	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. 99% & 26dB Bandwidth

3.1. Test Equipment

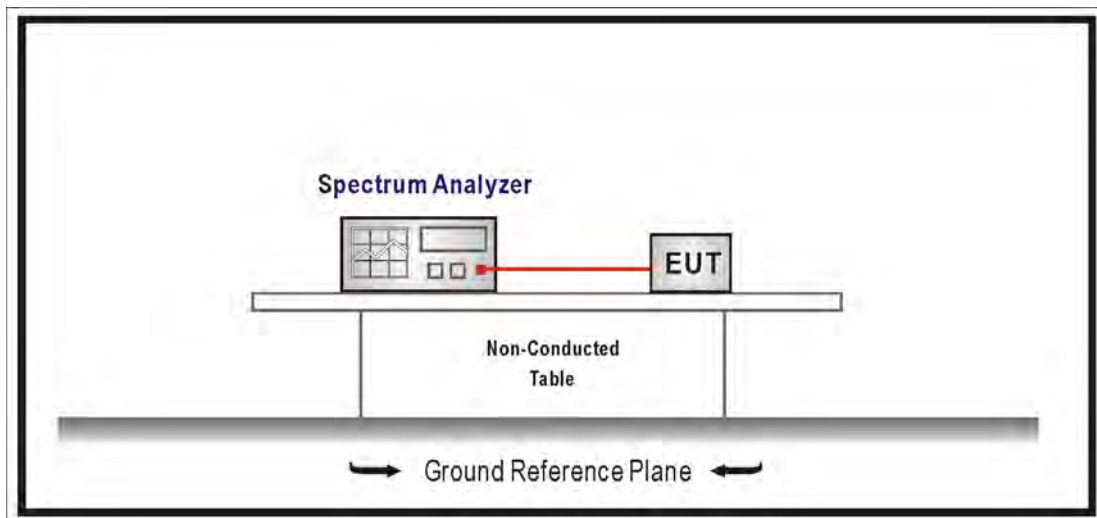
The following test equipments are used during the radiated emission tests:

99% & 26dB Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

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

3.2. Test Setup



3.3. Limits

No Required

3.4. Test Procedure

The EUT was tested according to U-NII test procedure of KDB 789033.
Set RBW 1% of the emission bandwidth, VBW equal to 3 times the RBW.

3.5. Uncertainty

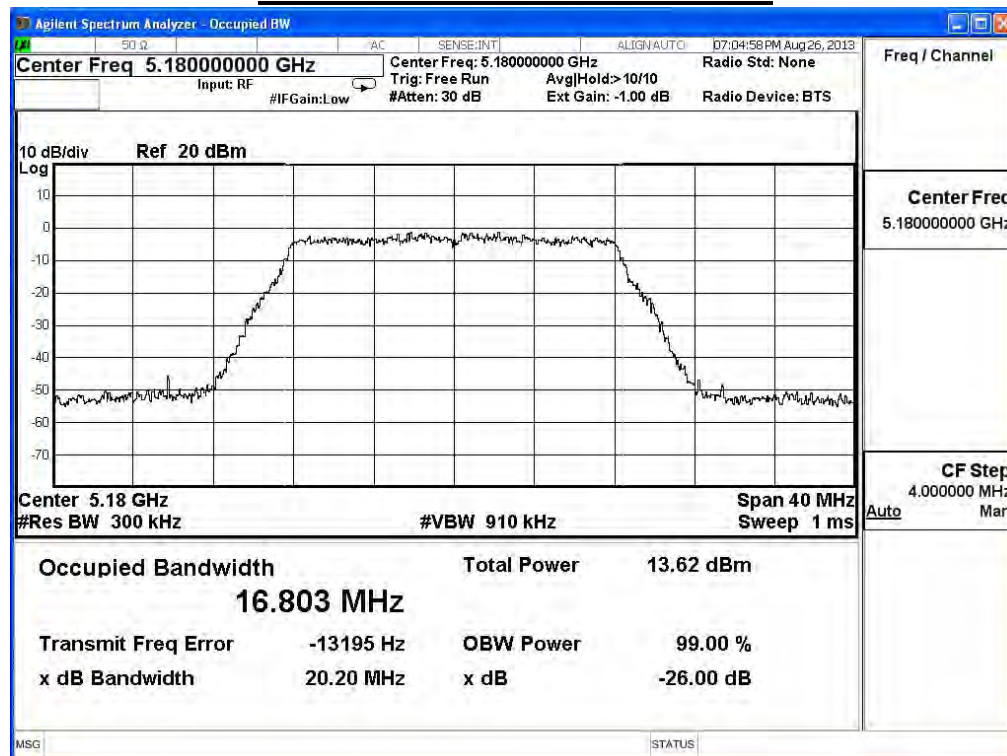
The measurement uncertainty is defined as $\pm 150\text{Hz}$

3.6. Test Result

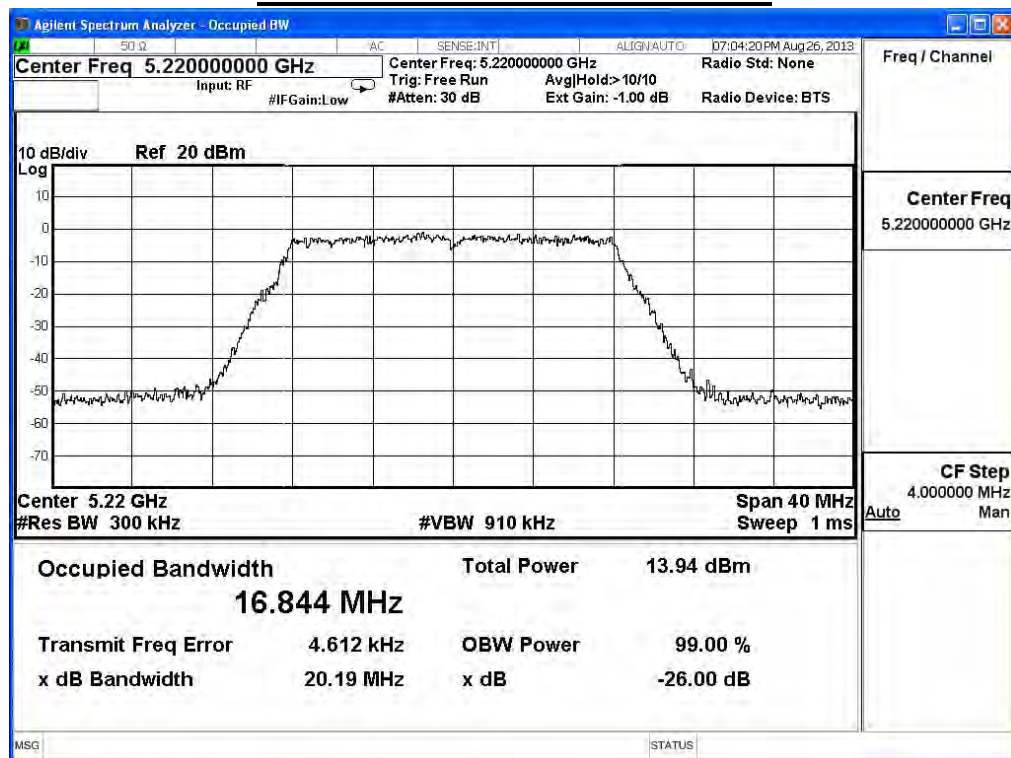
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

802.11a (ANT0)					
Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.20	16.80	--	Pass
44	5220	20.19	16.84	--	Pass
48	5240	20.15	16.82	--	Pass

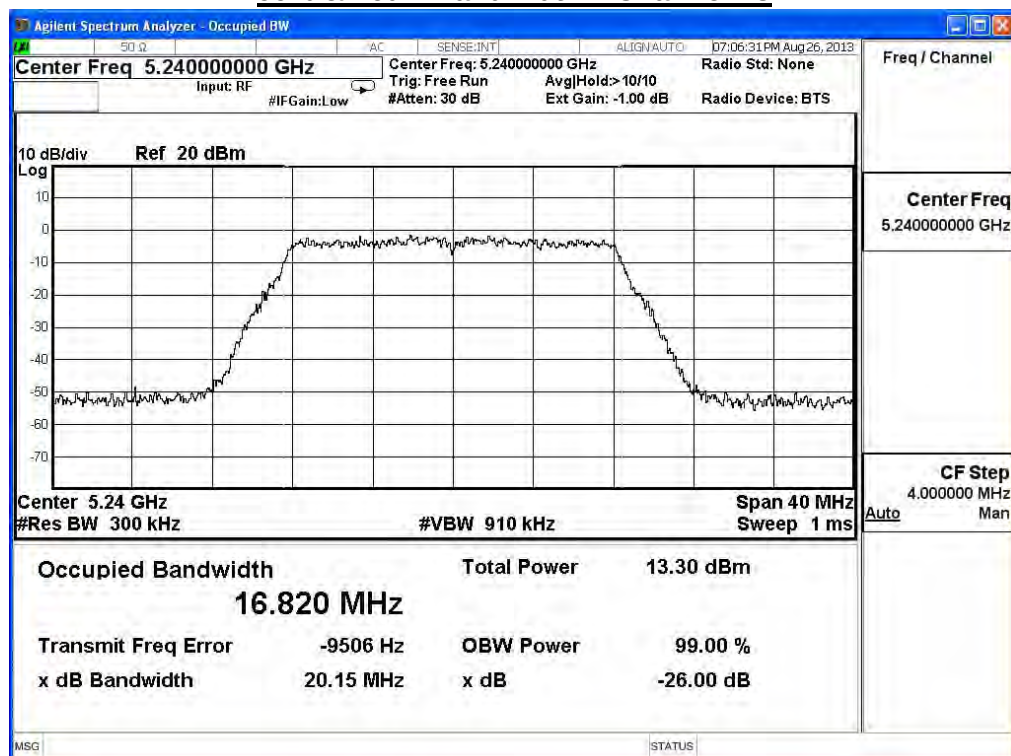
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

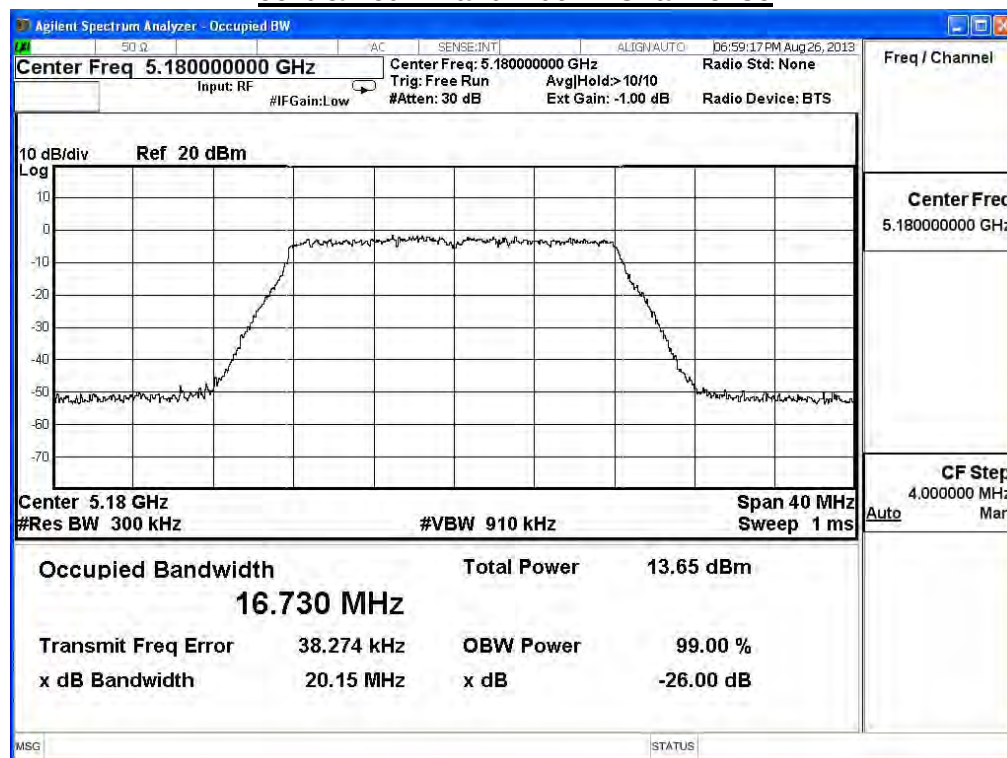


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

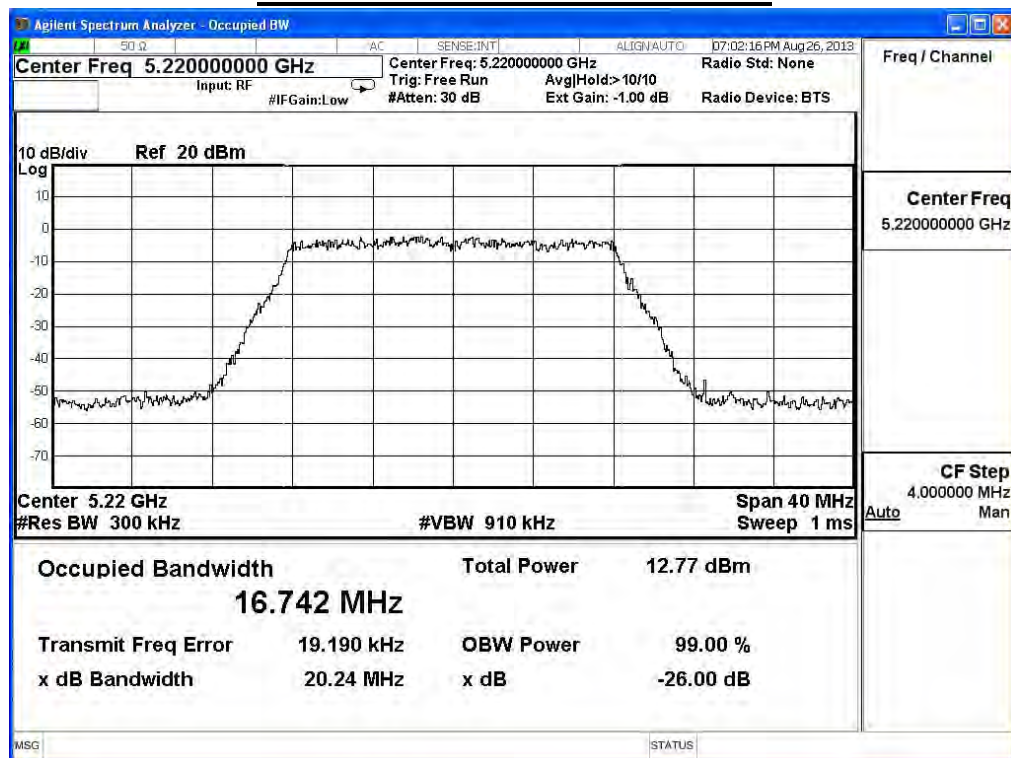
802.11a (ANT1)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.15	16.73	--	Pass
44	5220	20.24	16.74	--	Pass
48	5240	19.87	16.78	--	Pass

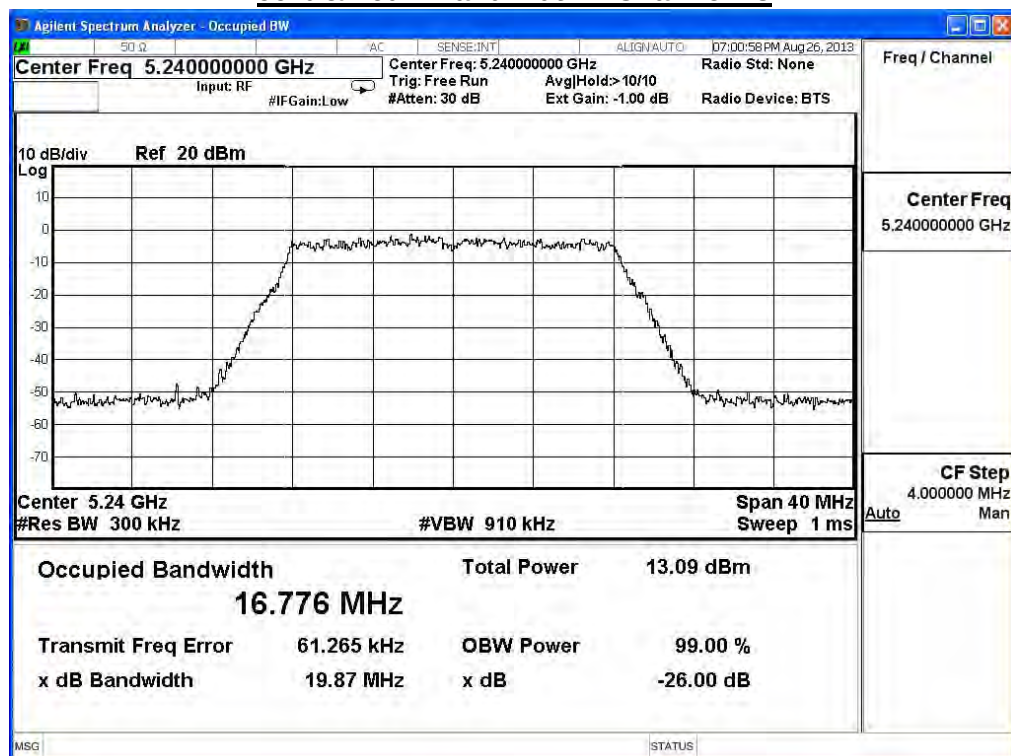
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

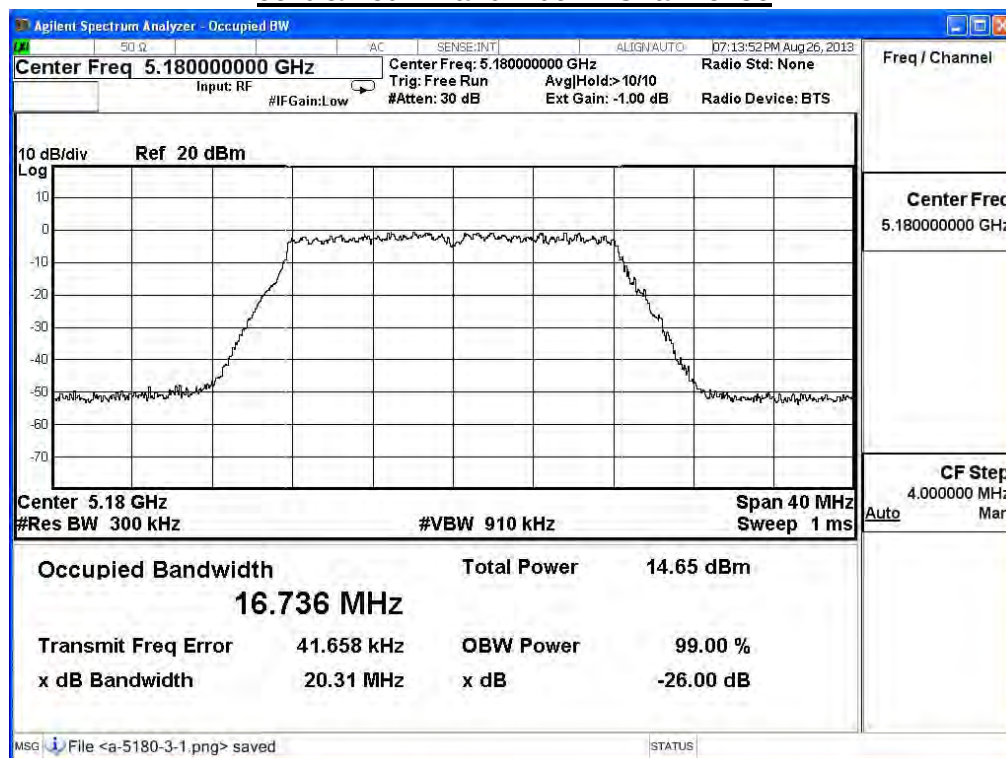


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

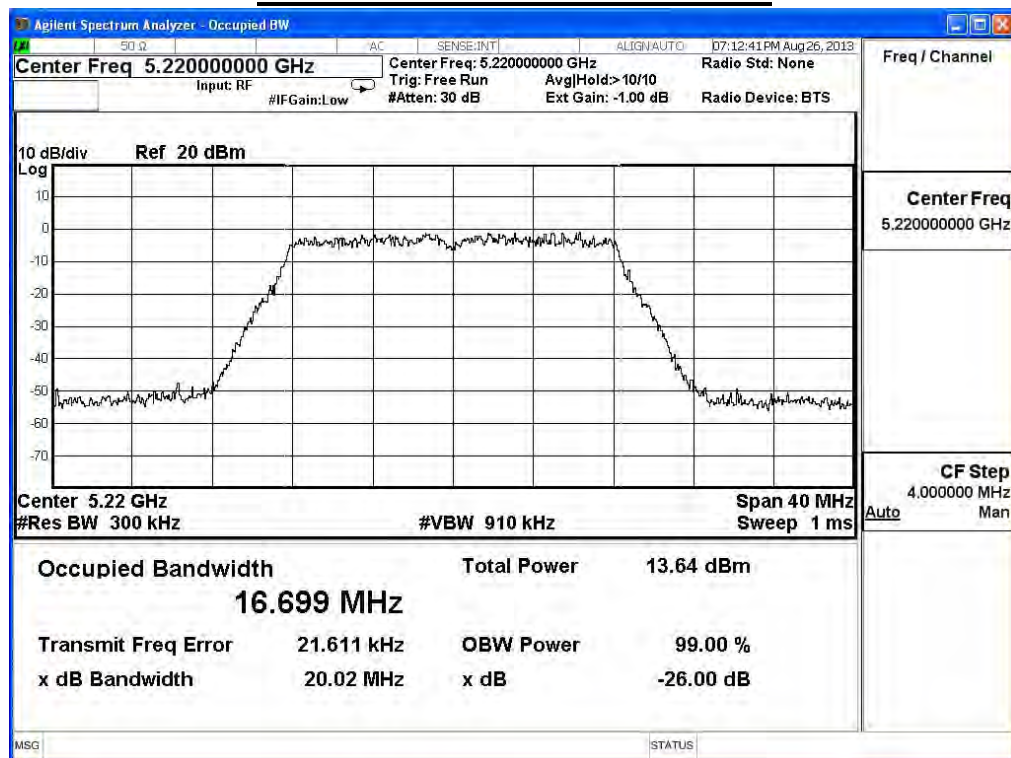
802.11a (ANT2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.31	16.74	--	Pass
44	5220	20.02	16.70	--	Pass
48	5240	20.15	16.84	--	Pass

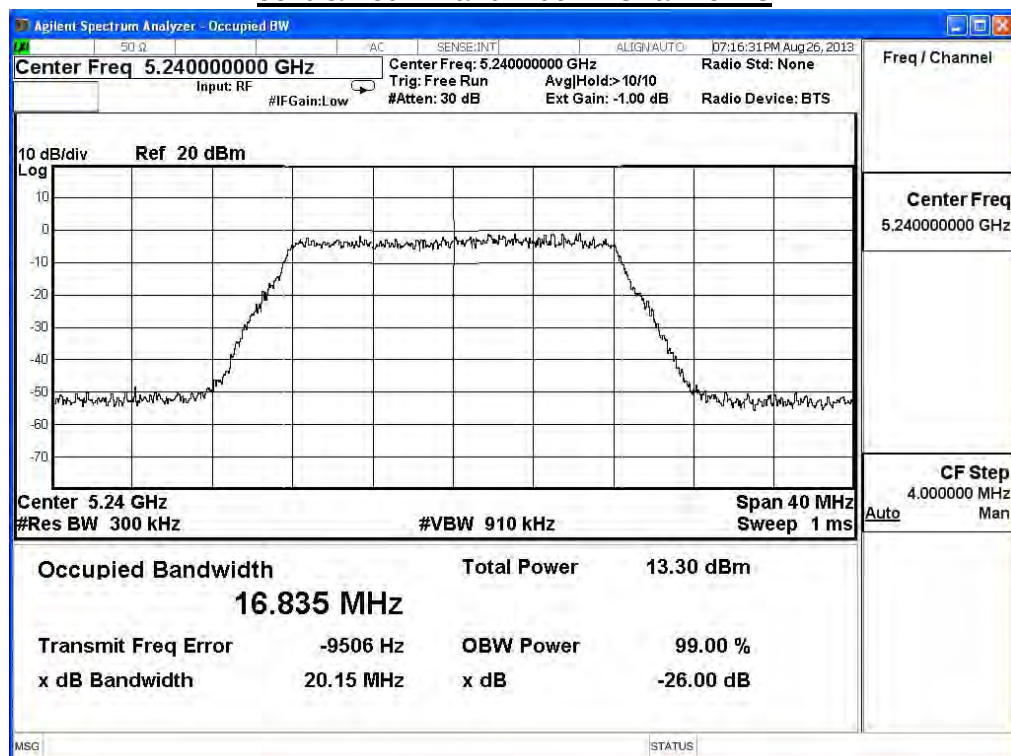
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

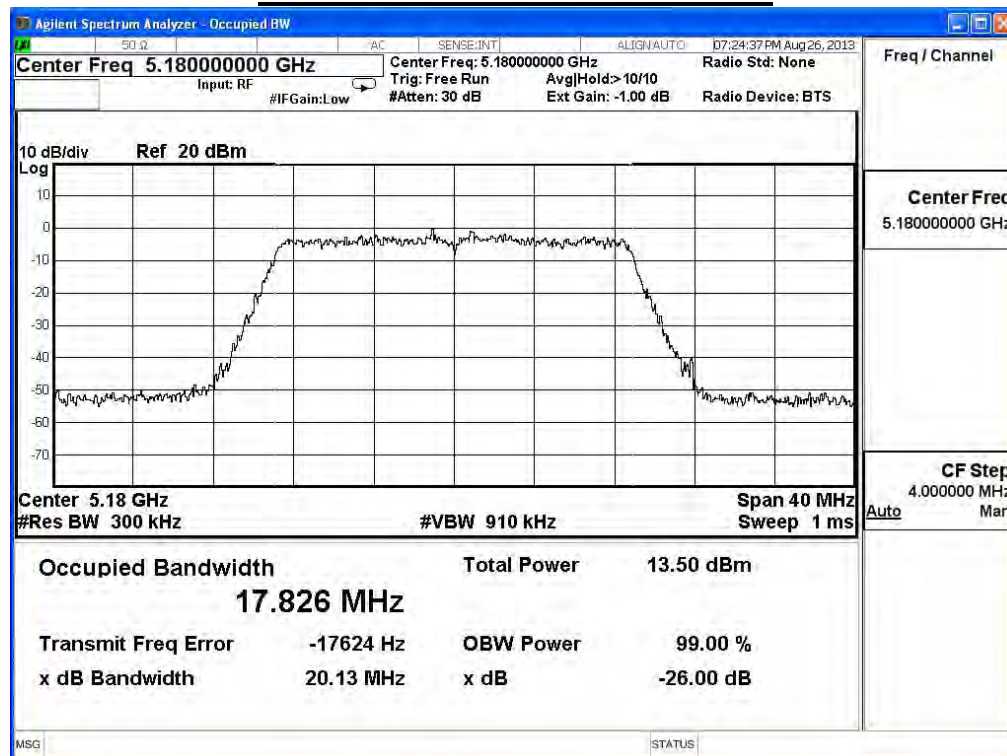


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

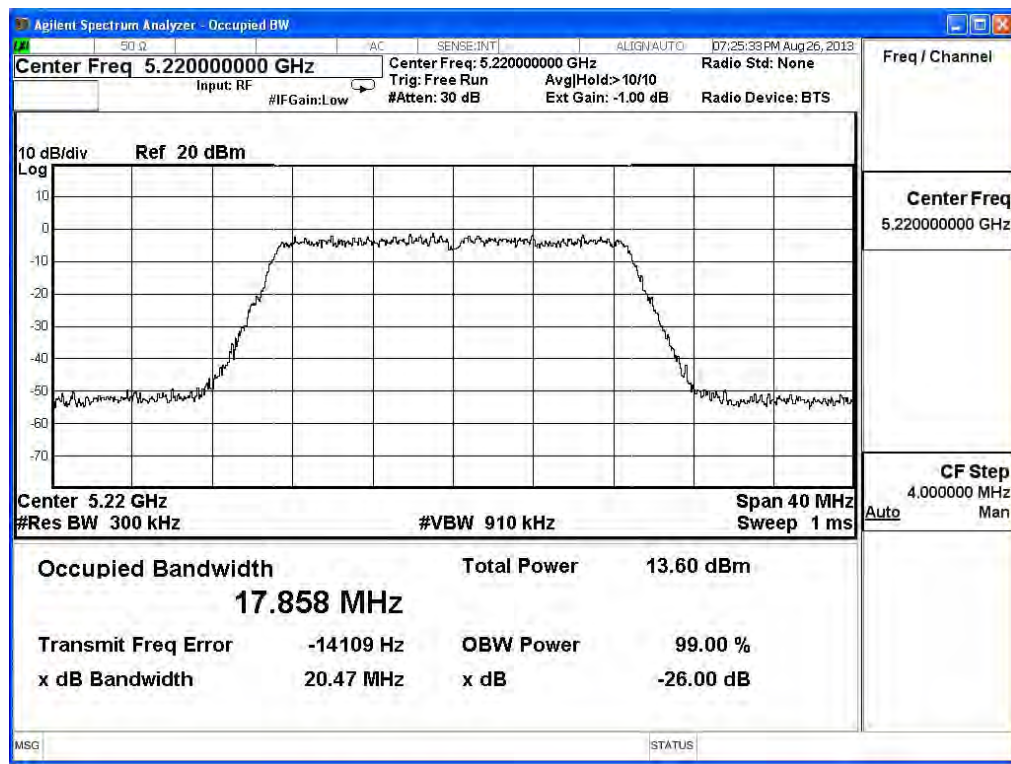
802.11n_20M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.13	17.83	--	Pass
44	5220	20.47	17.86	--	Pass
48	5240	20.65	17.83	--	Pass

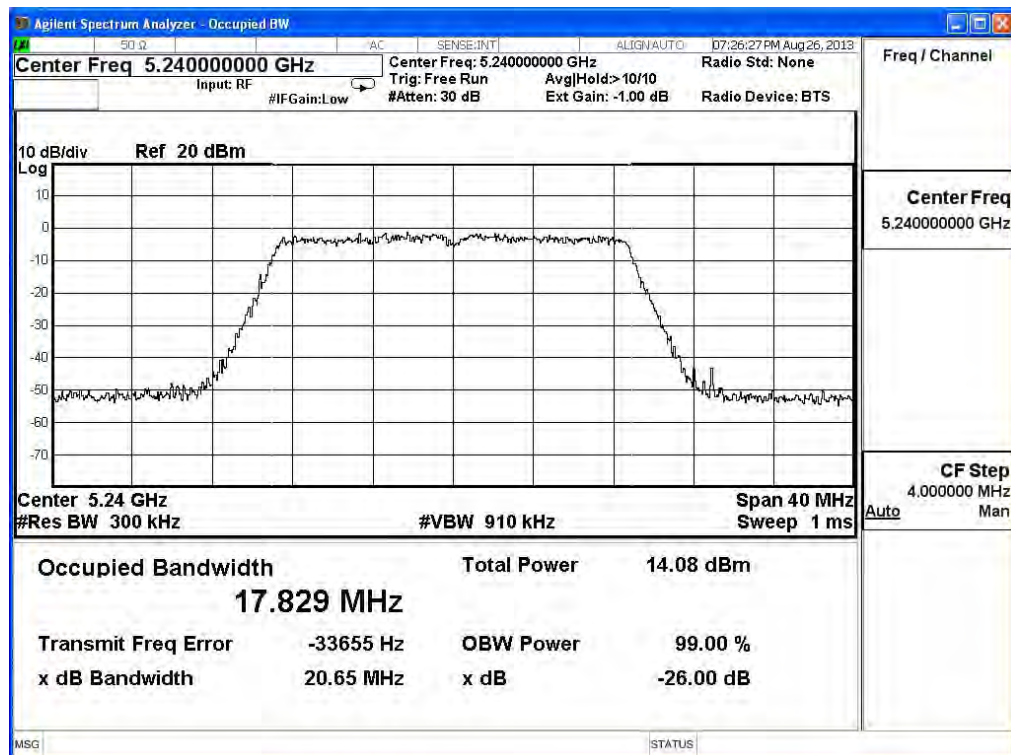
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



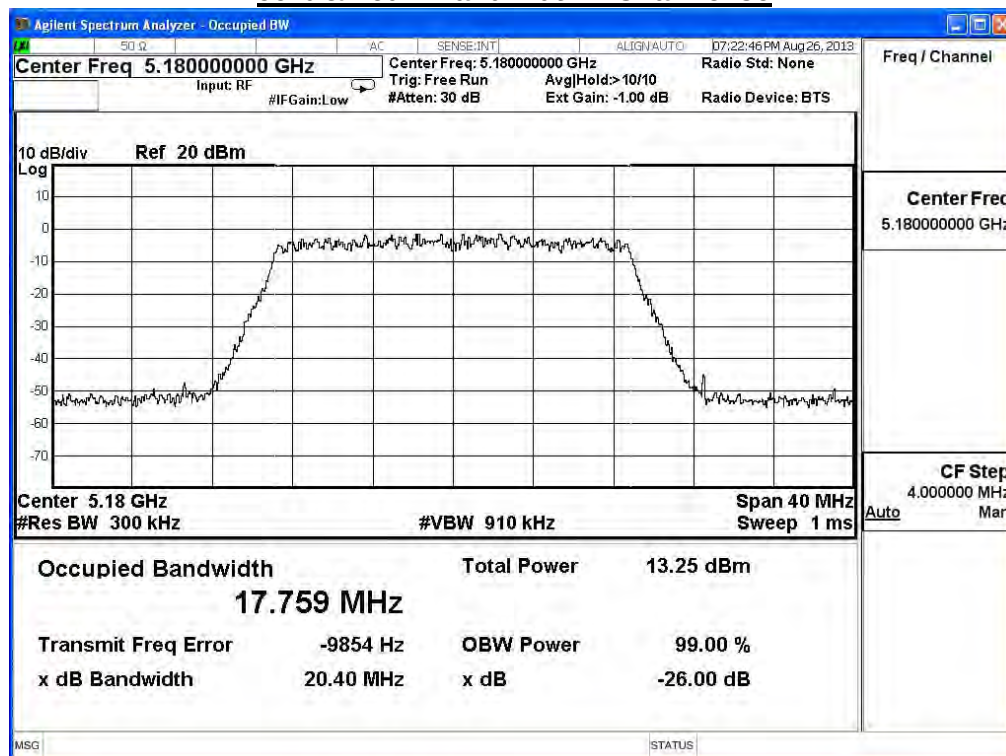
99% & 26dB Bandwidth – Channel 48



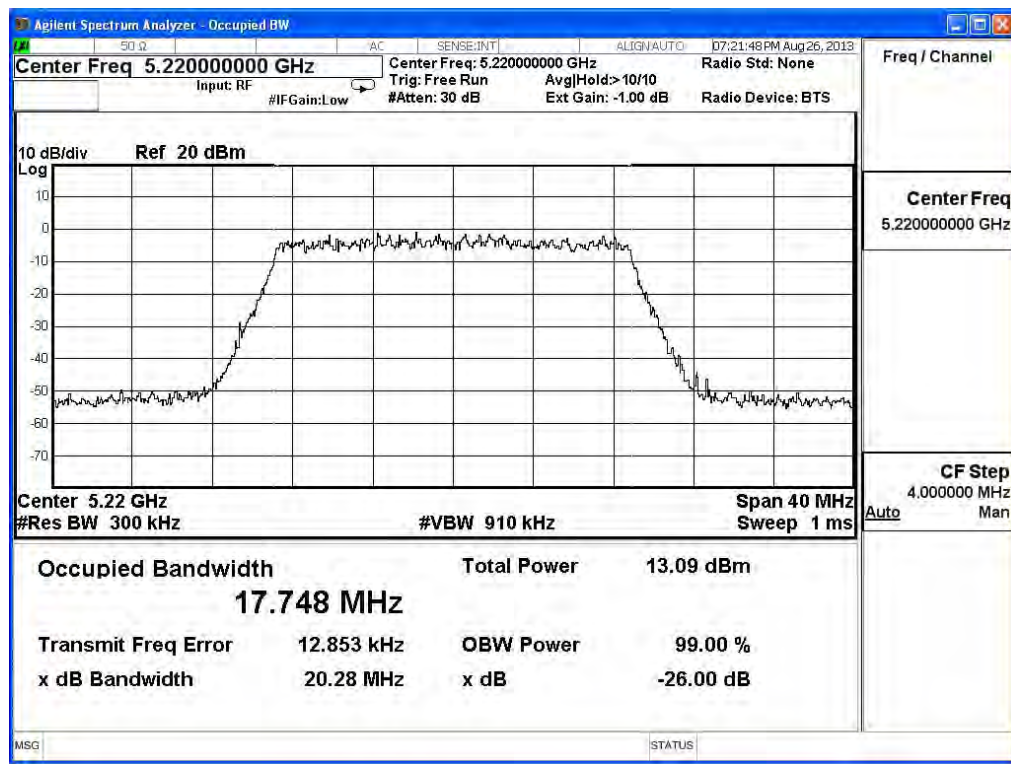
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

802.11n_20M(ANT 1)					
Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.40	17.76	--	Pass
44	5220	20.28	17.75	--	Pass
48	5240	20.43	17.79	--	Pass

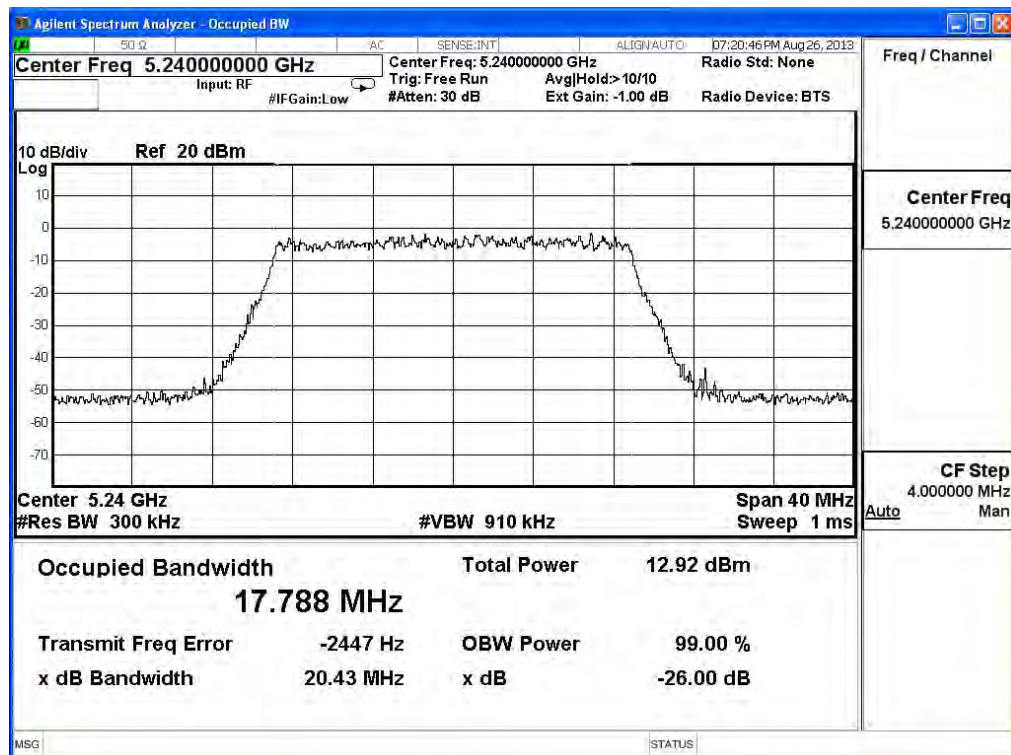
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

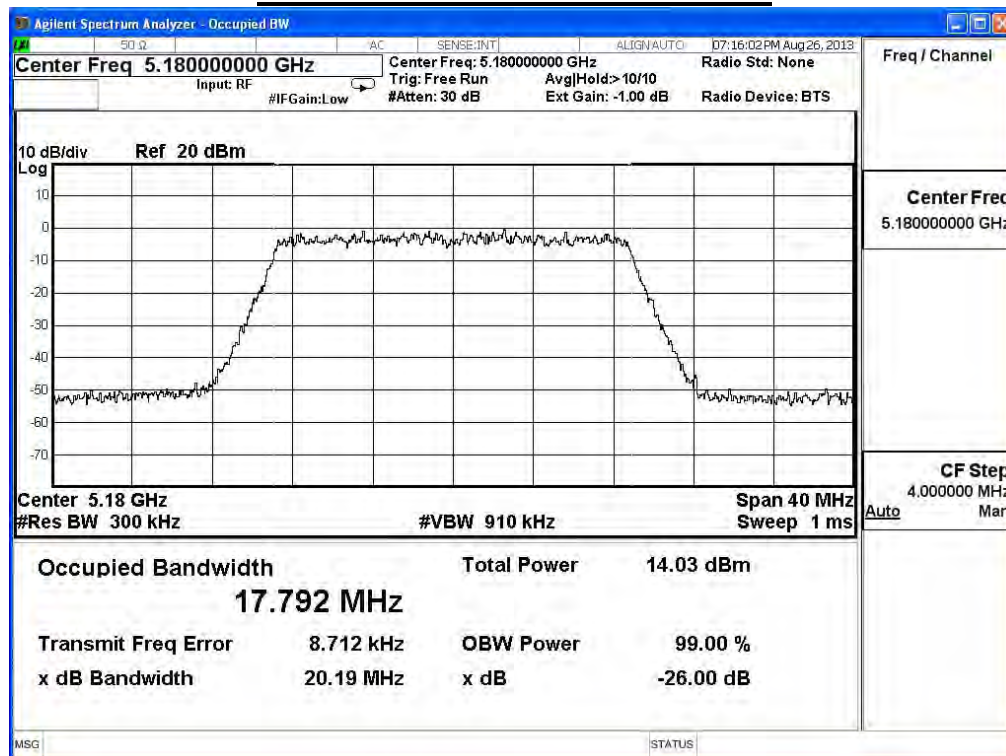


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

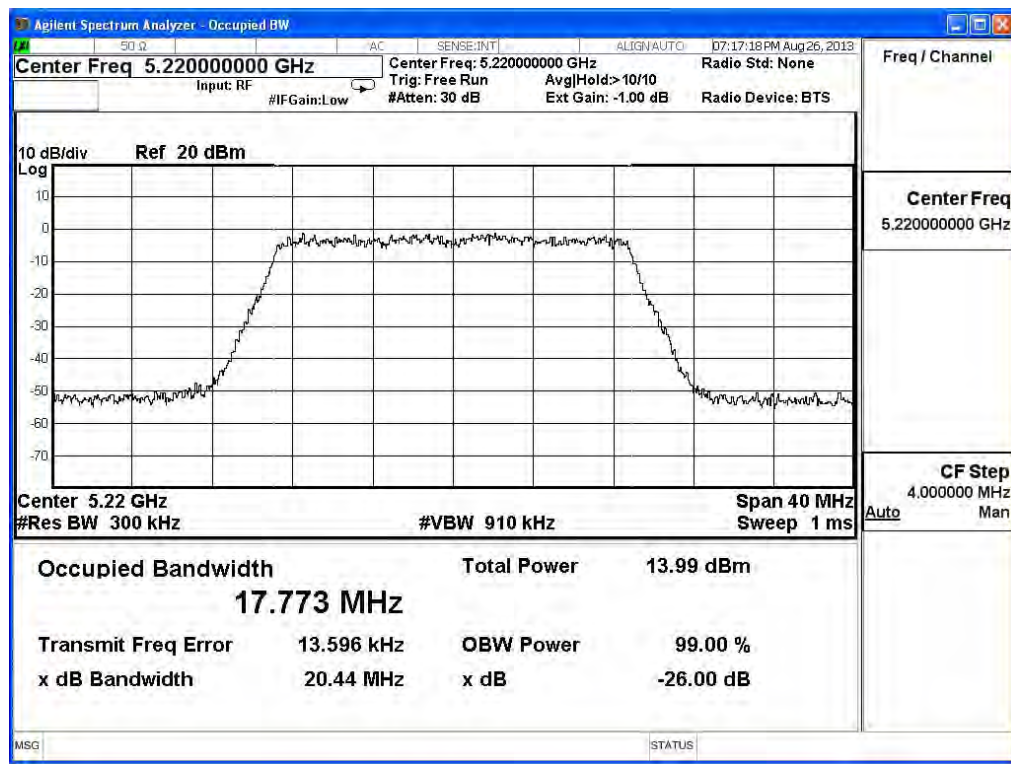
802.11n_20M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.19	17.79	--	Pass
44	5220	20.44	17.77	--	Pass
48	5240	20.28	17.81	--	Pass

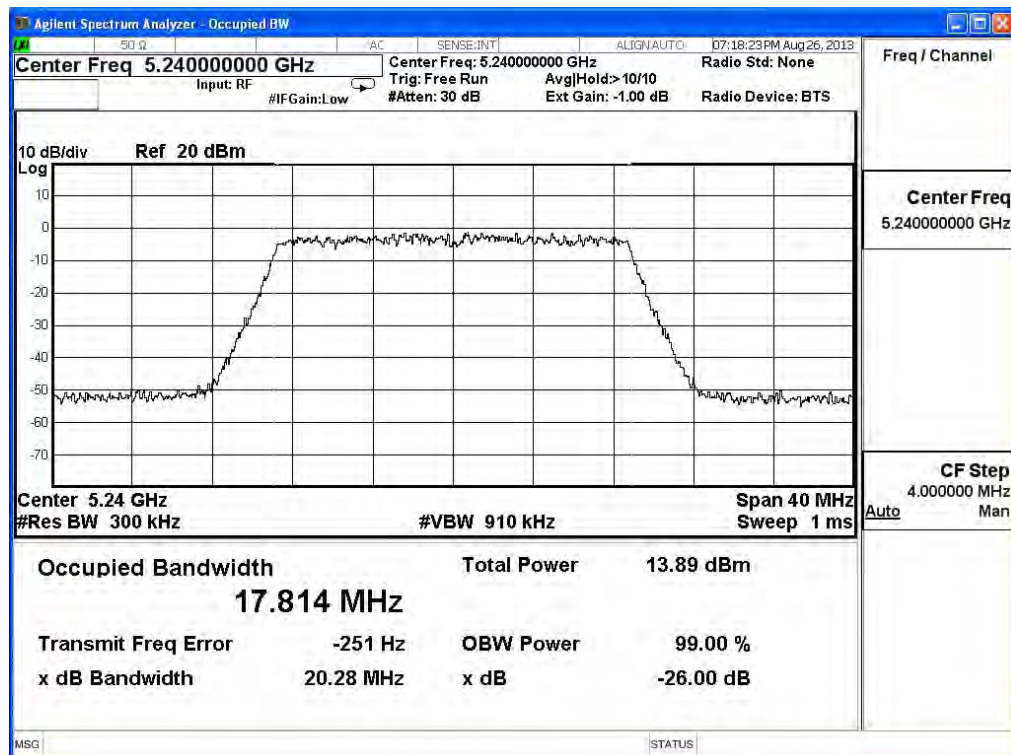
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

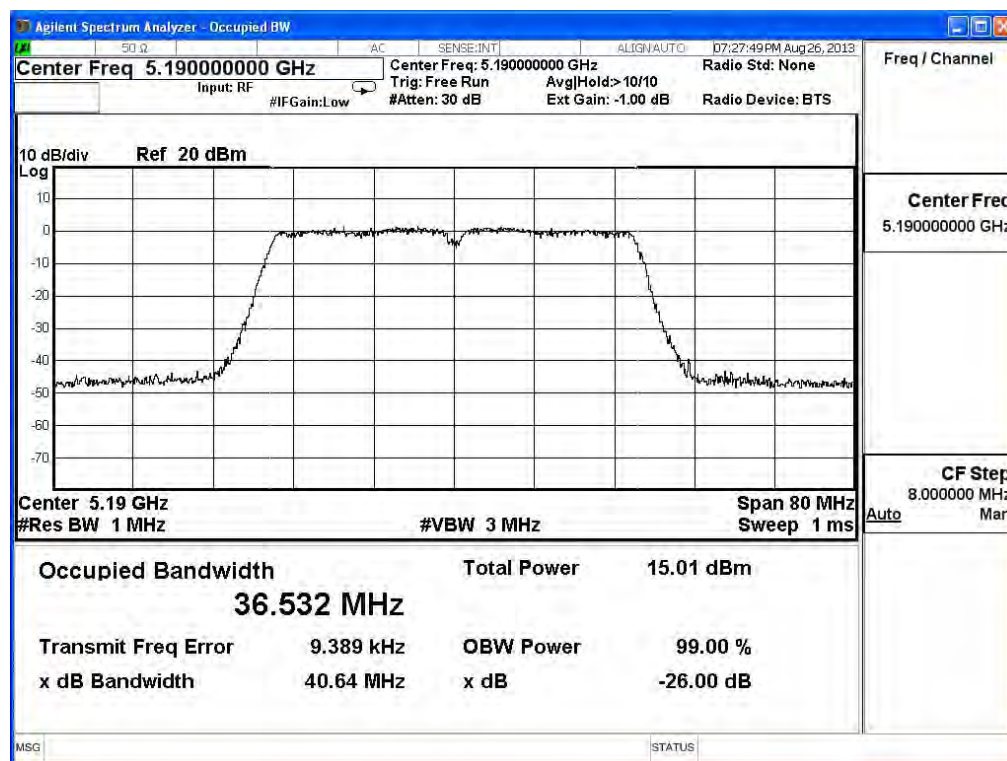


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

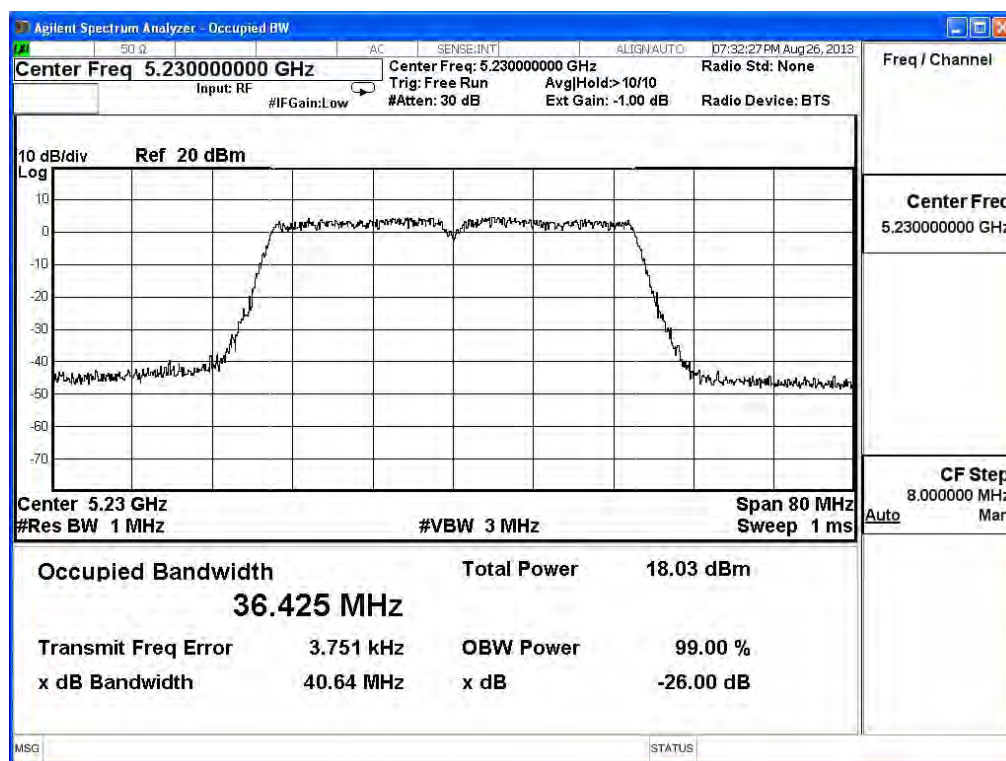
802.11n_40M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.64	36.53	--	Pass
46	5230	40.64	36.43	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

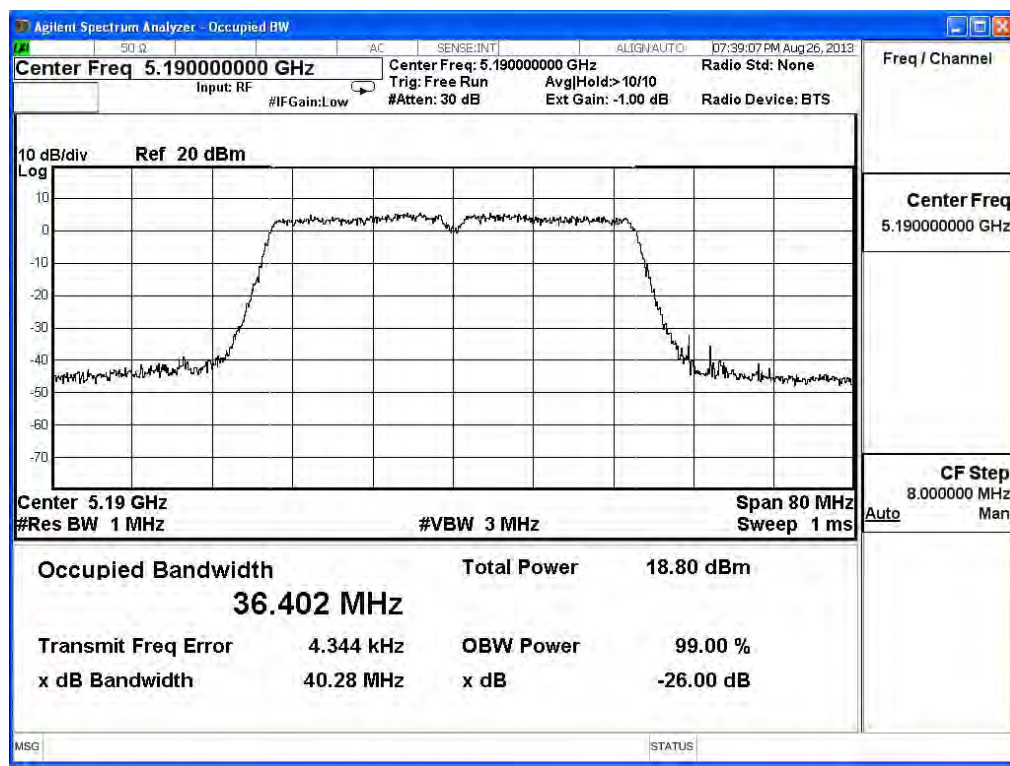


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

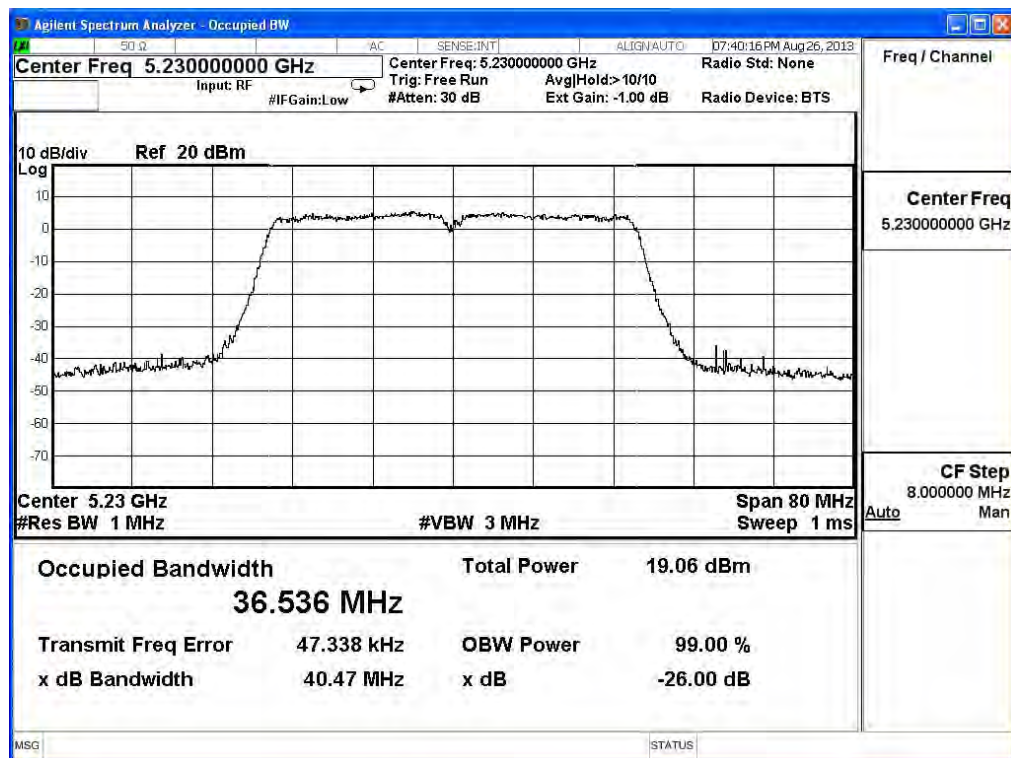
802.11n_40M(ANT 1)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.28	36.40	--	Pass
46	5230	40.47	36.54	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

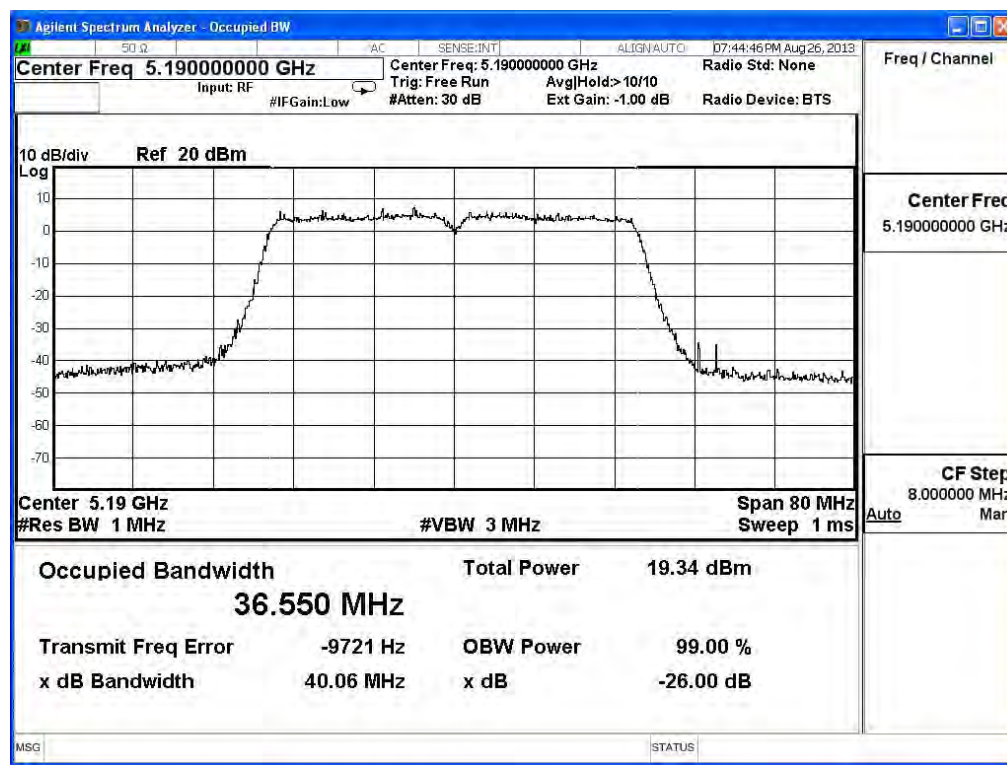


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

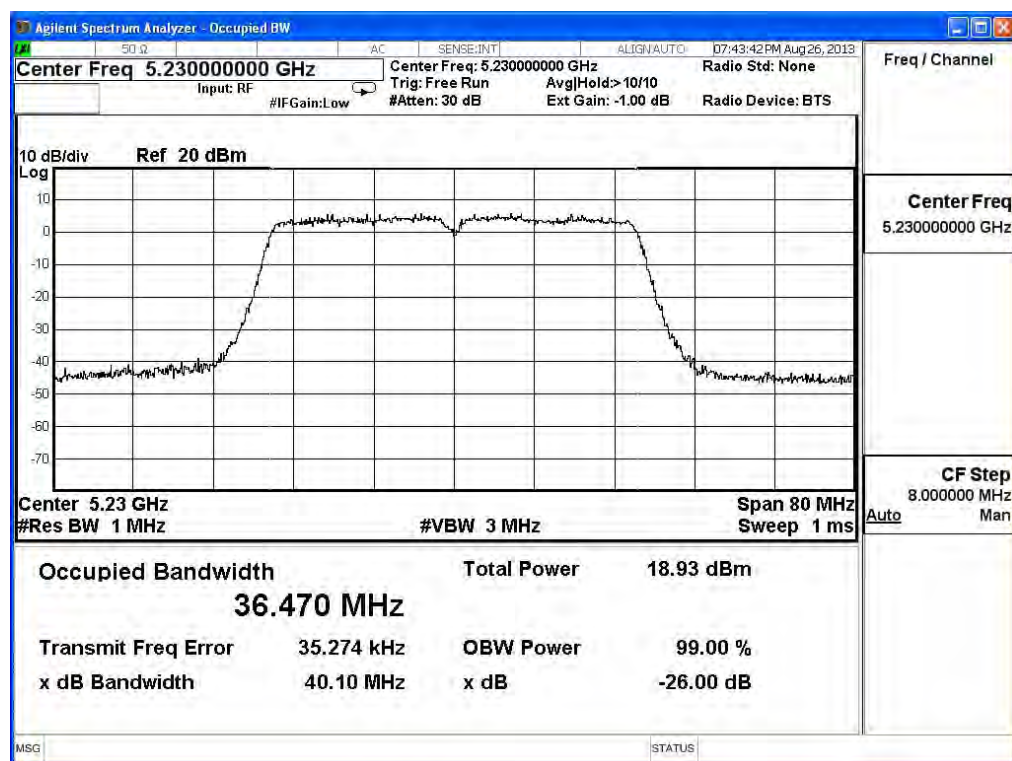
802.11n_40M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.06	36.55	--	Pass
46	5230	40.10	36.47	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

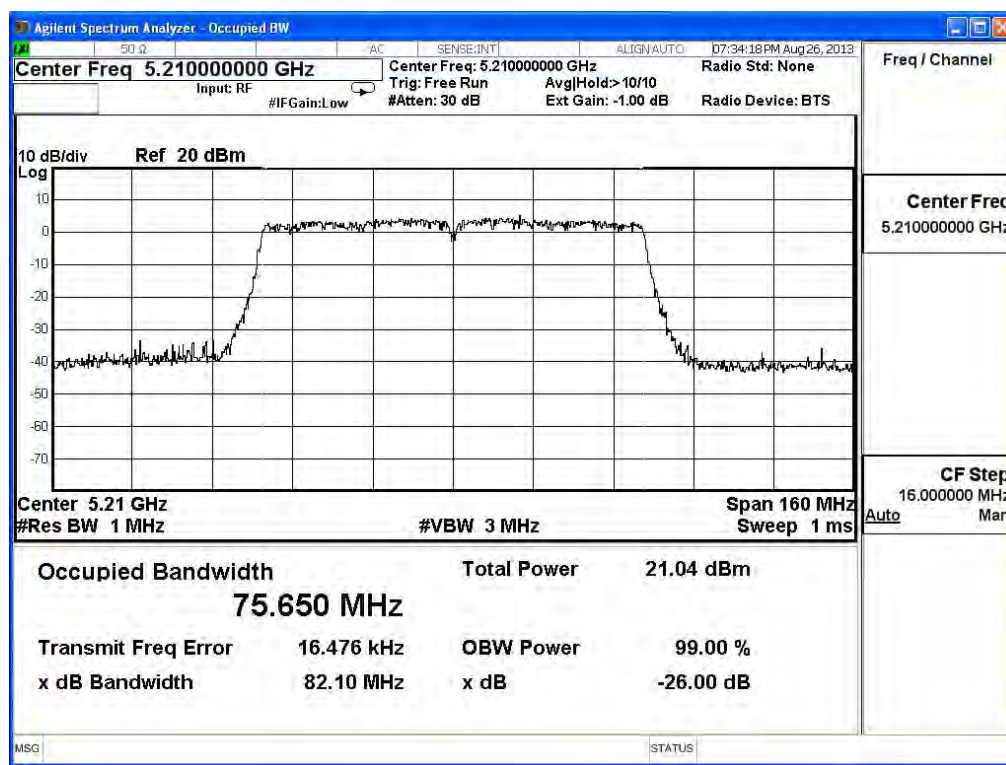


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

802.11ac_80M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	82.10	75.65	--	Pass

99% & 26dB Bandwidth – Channel 42

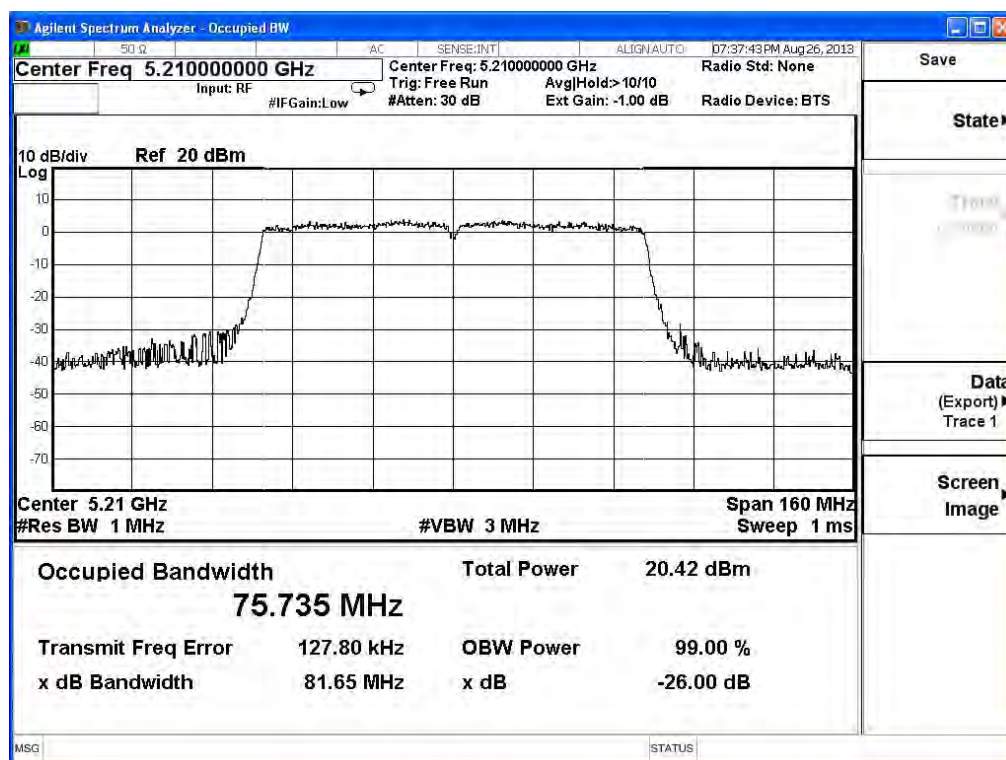


Product	Wireless-AC1900 Dual Band Gigabit Router				
Test Item	99% & 26dB Bandwidth				
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH				
Date of Test	2013/08/28		Test Site	SR7	

802.11ac_80M(ANT 1)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	81.65	75.74	--	Pass

99% & 26dB Bandwidth – Channel 42

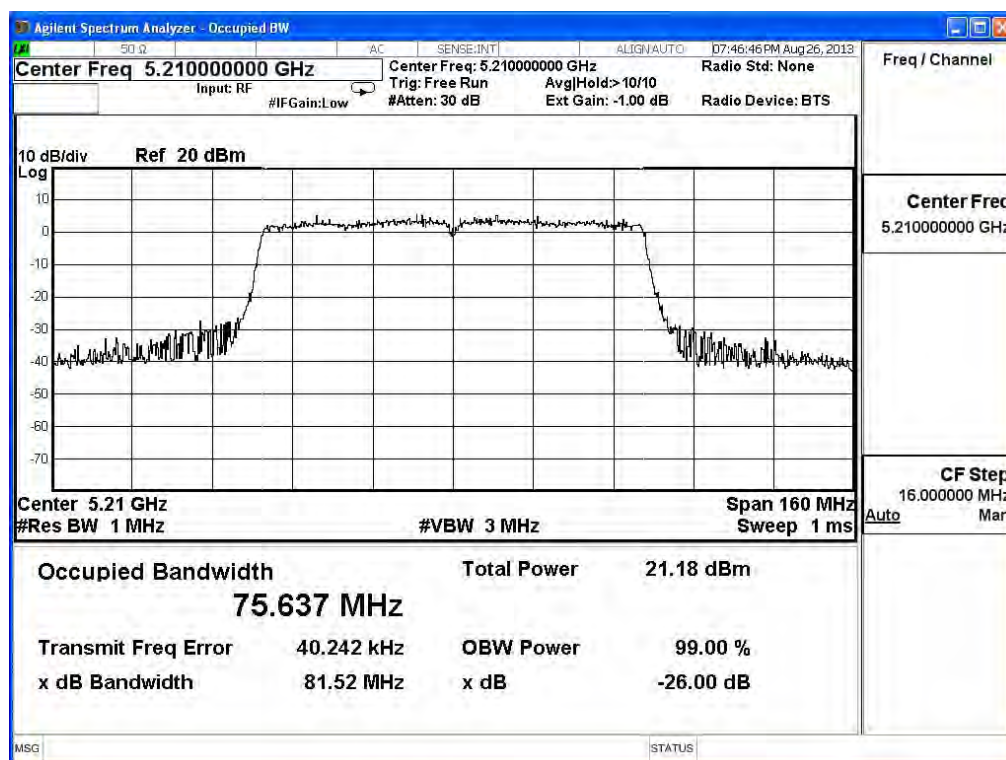


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/28	Test Site	SR7

802.11ac_80M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	81.52	75.64	--	Pass

99% & 26dB Bandwidth – Channel 42

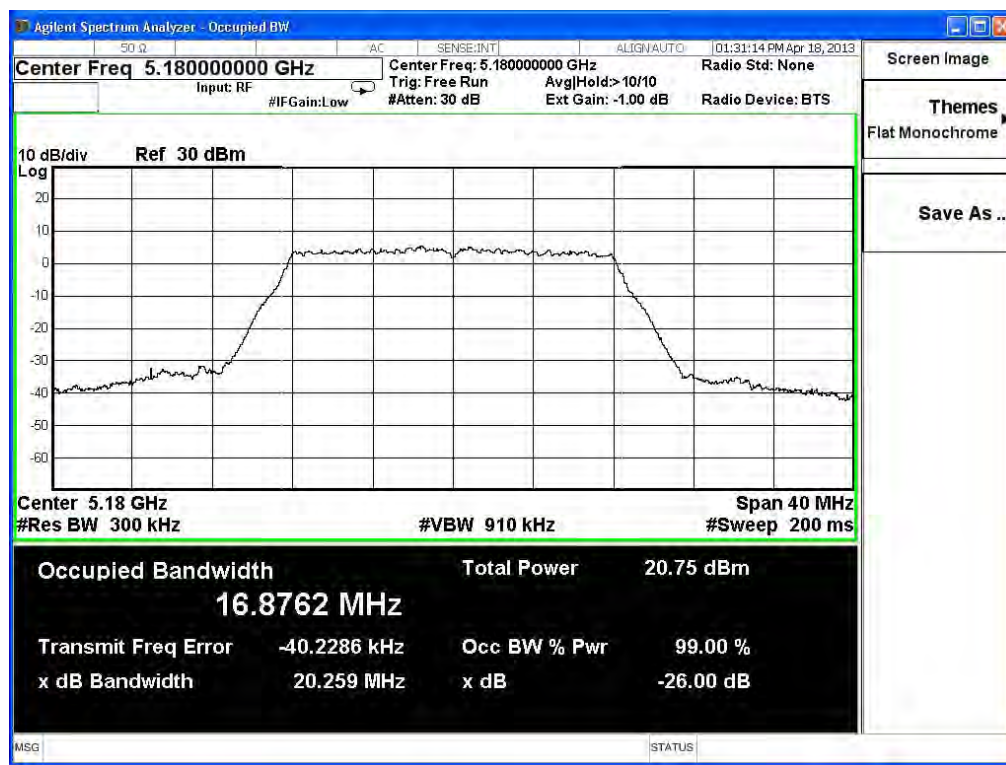


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

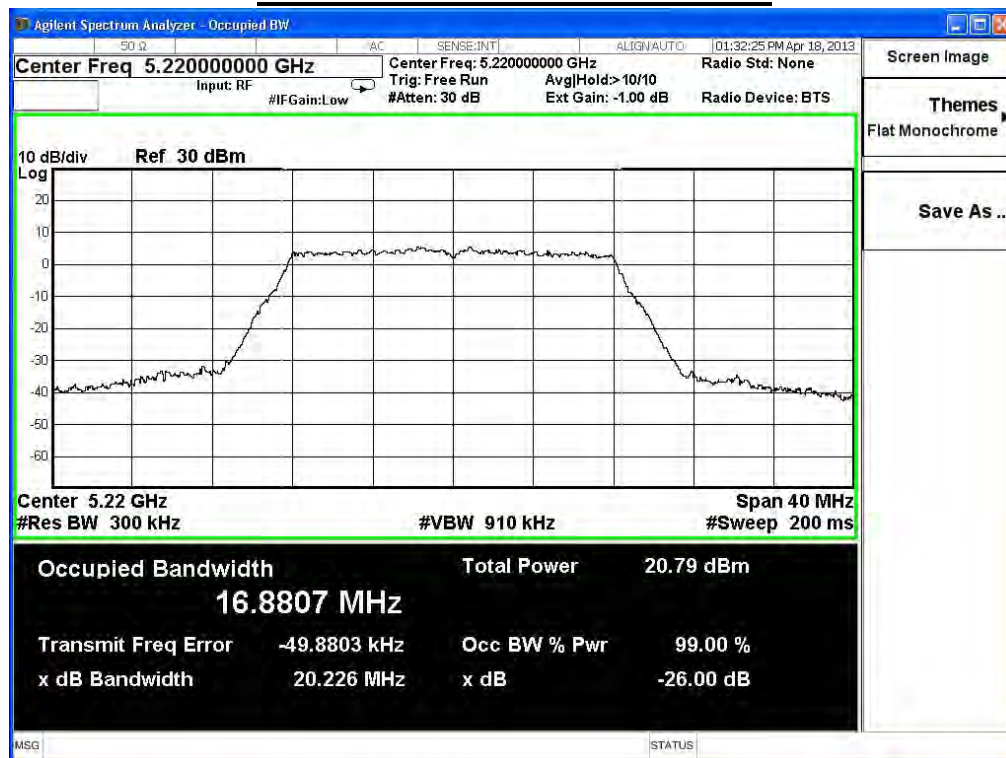
802.11a, 1TX SISO

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.259	16.876	--	Pass
44	5220	20.226	16.880	--	Pass
48	5240	20.243	16.875	--	Pass

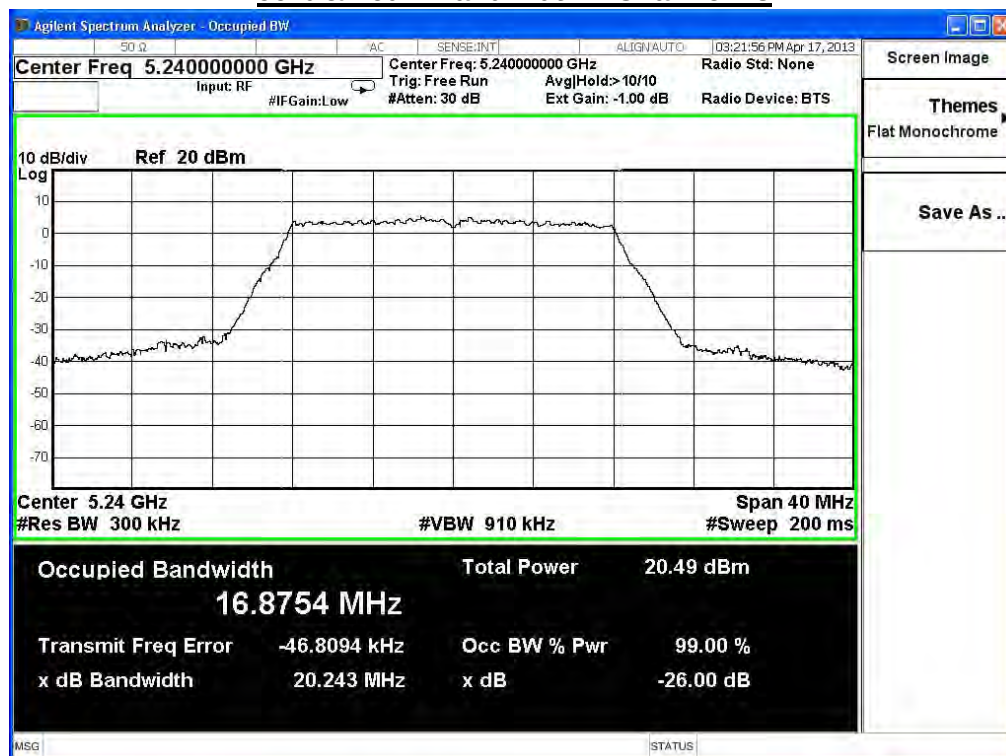
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

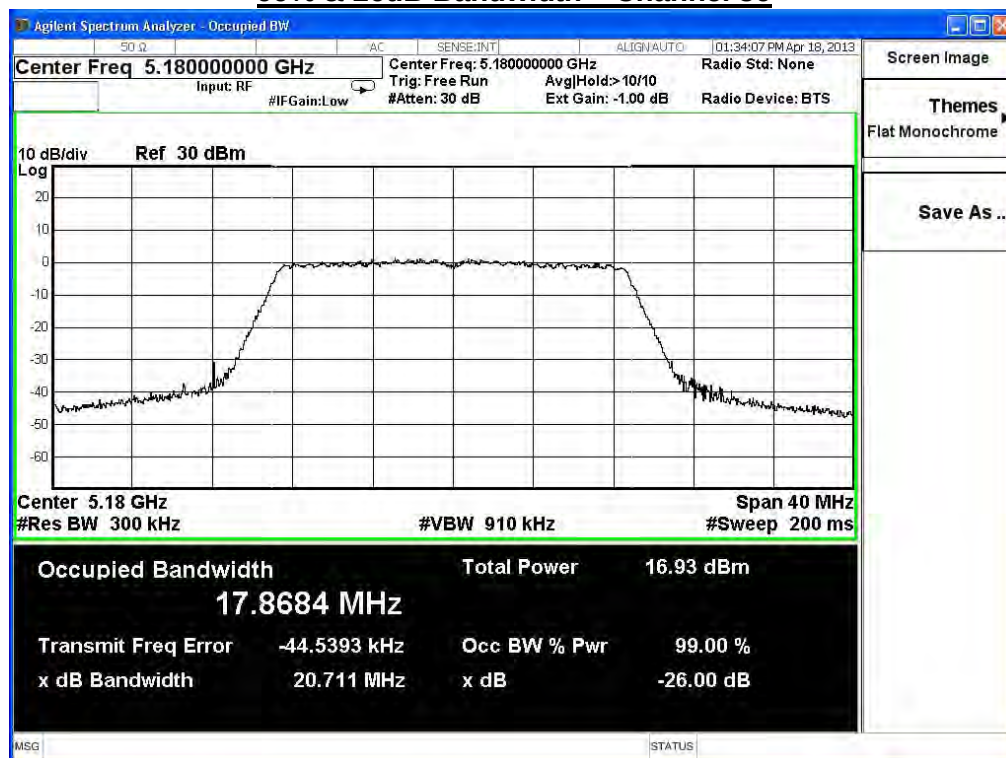


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

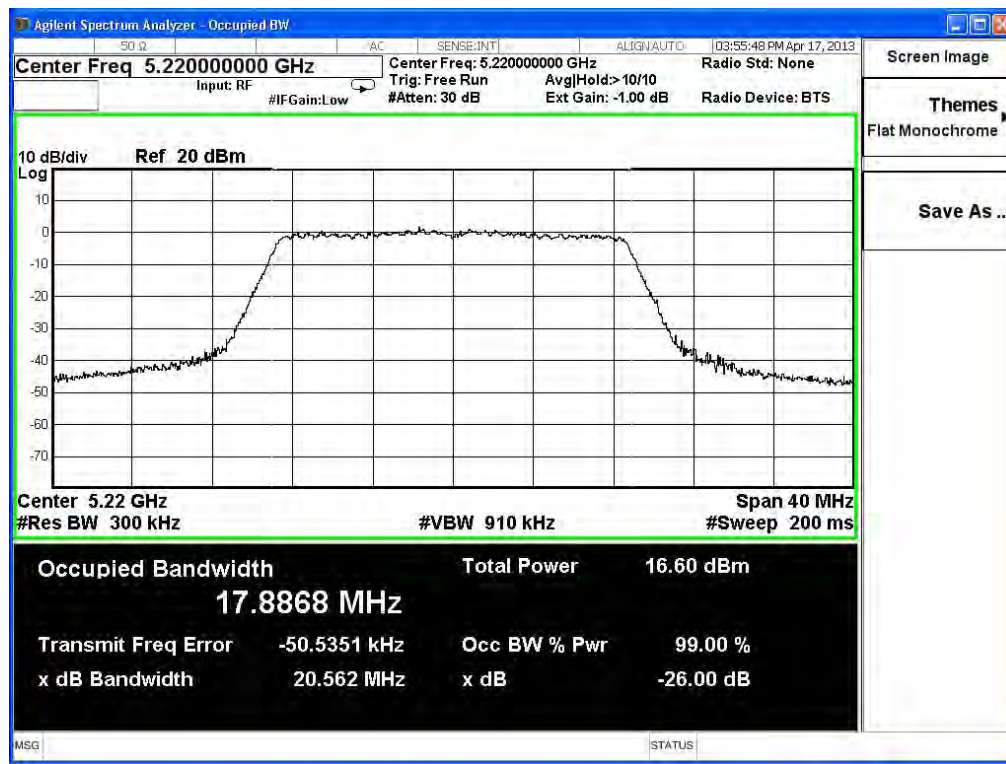
802.11n_20M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.711	17.868	--	Pass
44	5220	20.562	17.886	--	Pass
48	5240	20.654	17.901	--	Pass

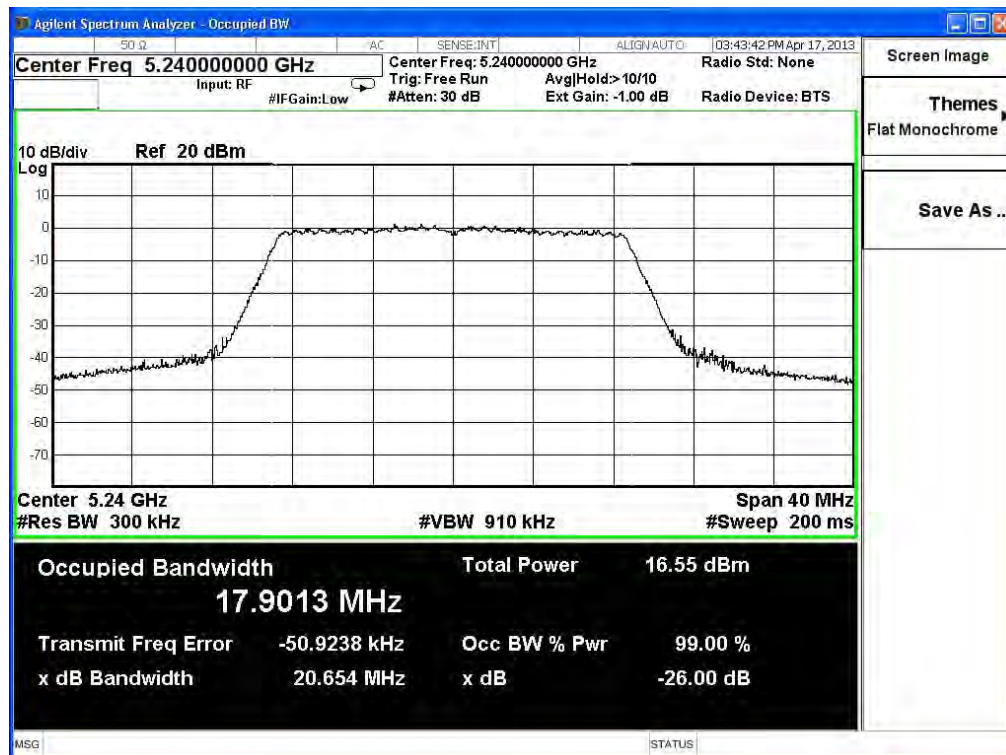
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



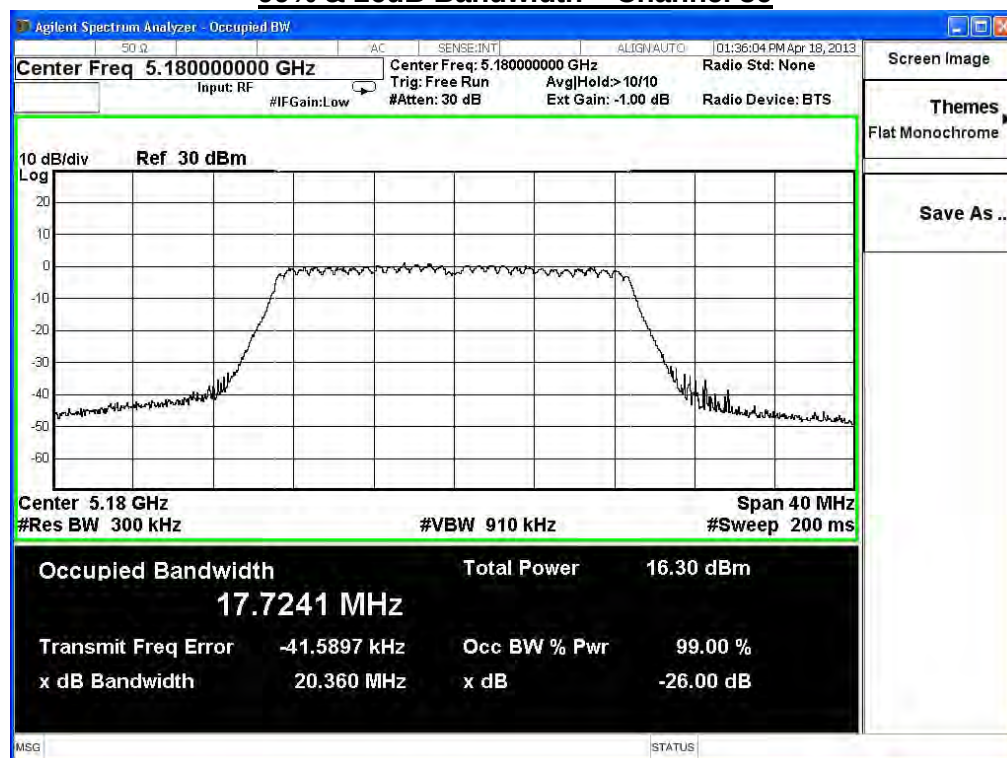
99% & 26dB Bandwidth – Channel 48



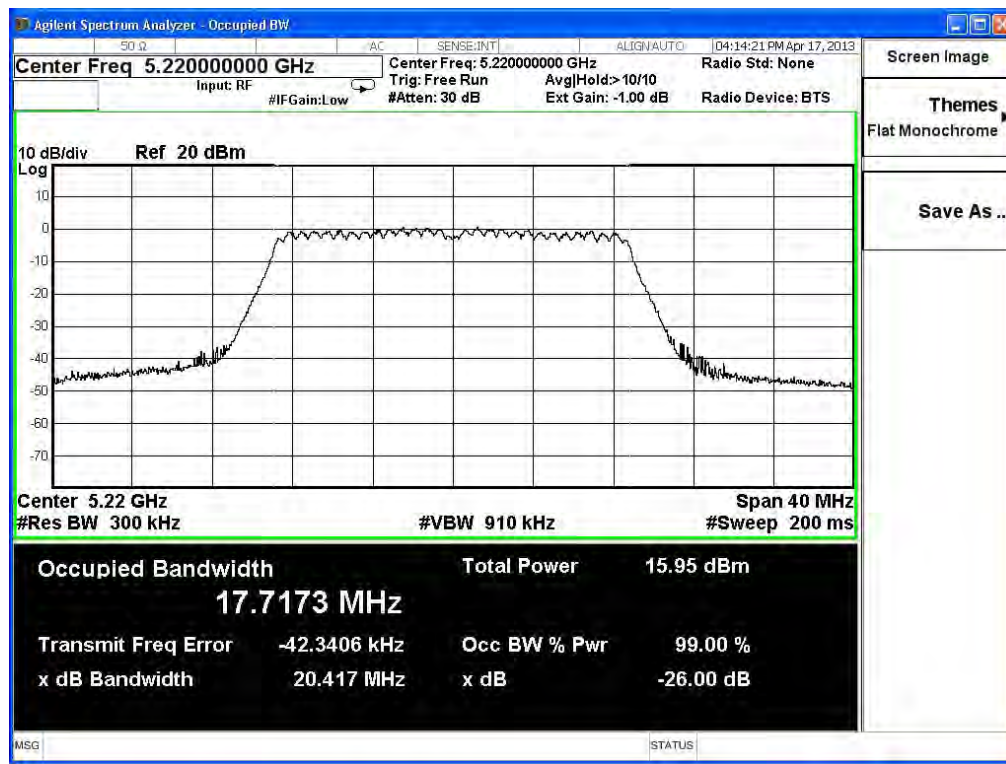
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

802.11n_20M(ANT 1)					
Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.360	17.724	--	Pass
44	5220	20.417	17.717	--	Pass
48	5240	20.370	17.698	--	Pass

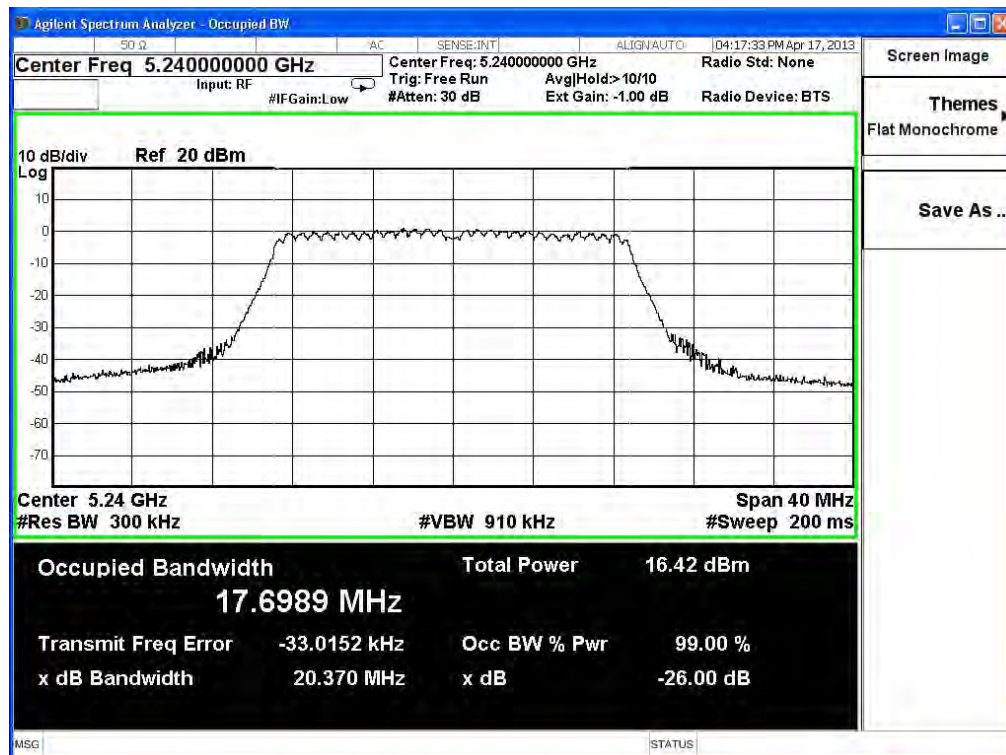
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

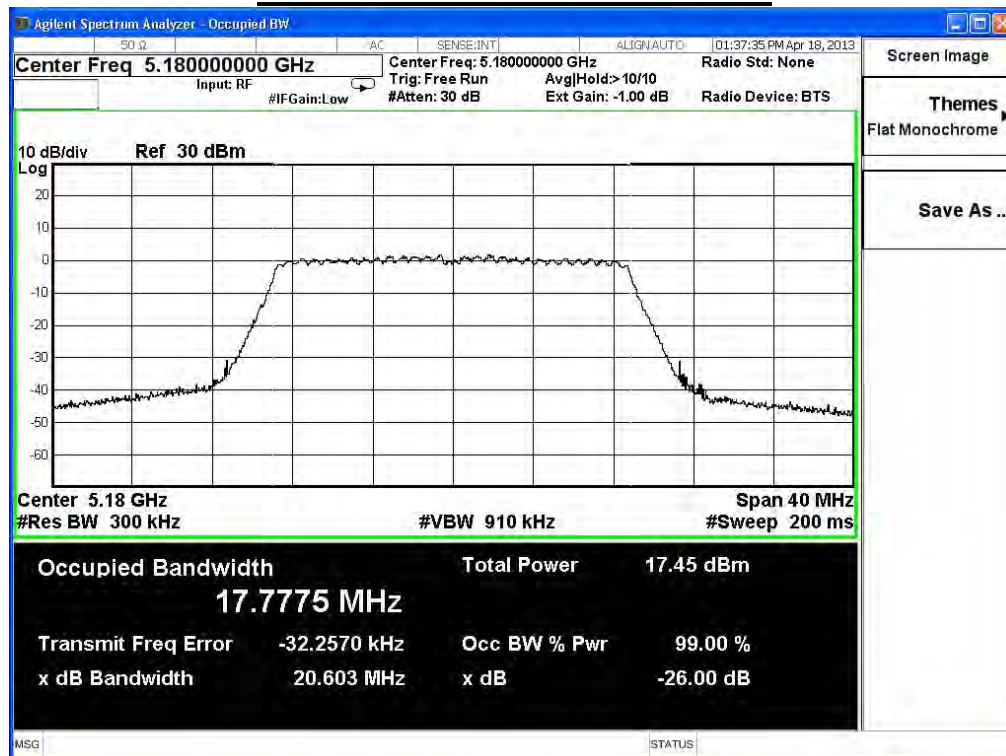


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

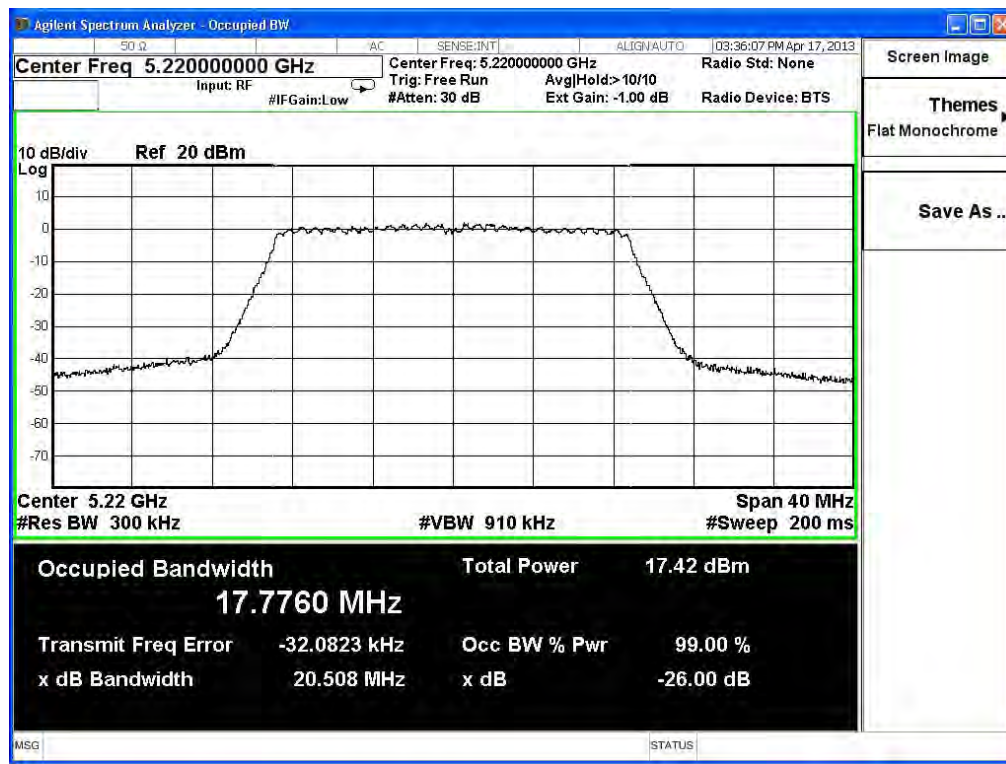
802.11n_20M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
36	5180	20.603	17.777	--	Pass
44	5220	20.508	17.776	--	Pass
48	5240	20.507	17.778	--	Pass

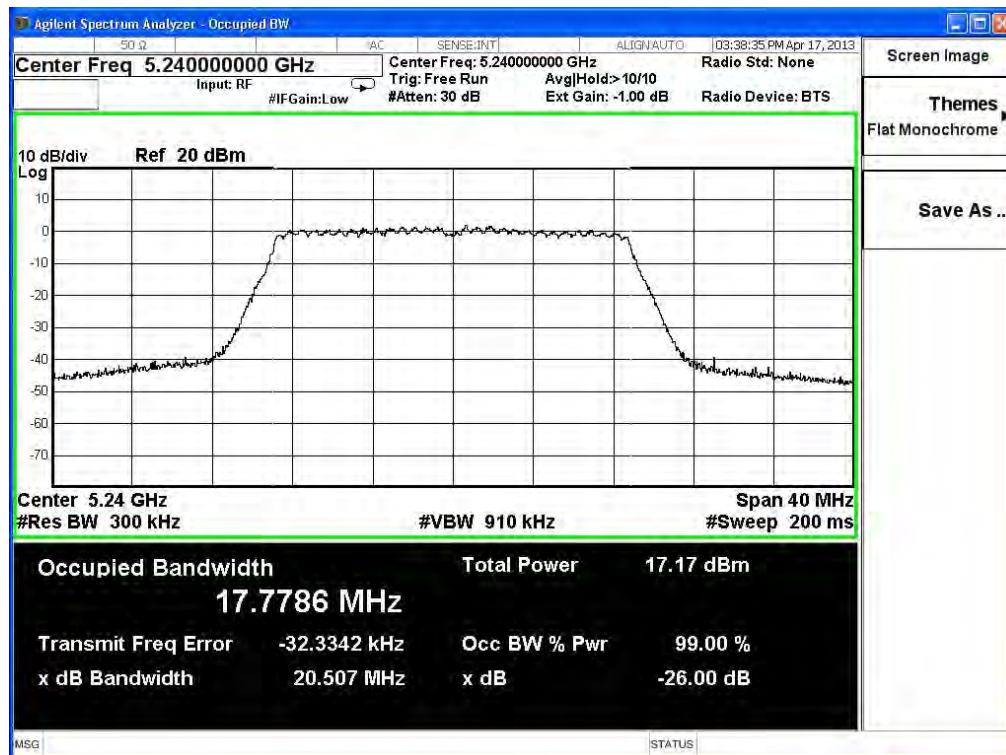
99% & 26dB Bandwidth – Channel 36



99% & 26dB Bandwidth – Channel 44



99% & 26dB Bandwidth – Channel 48

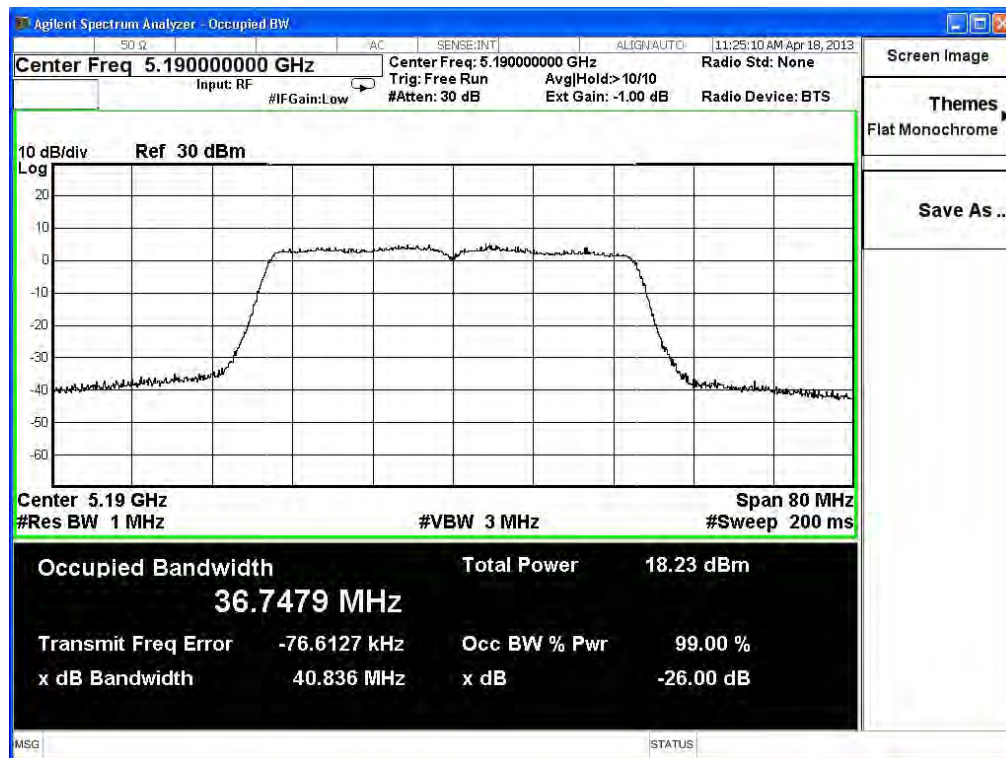


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

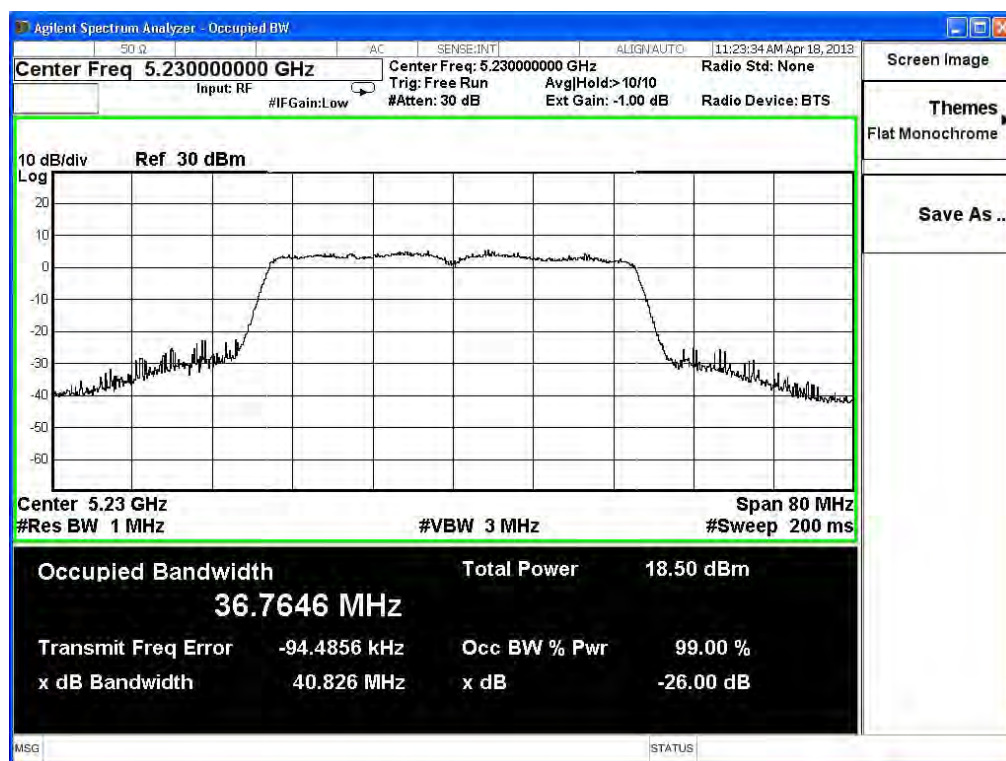
802.11n_40M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.836	36.747	--	Pass
46	5230	40.826	36.764	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

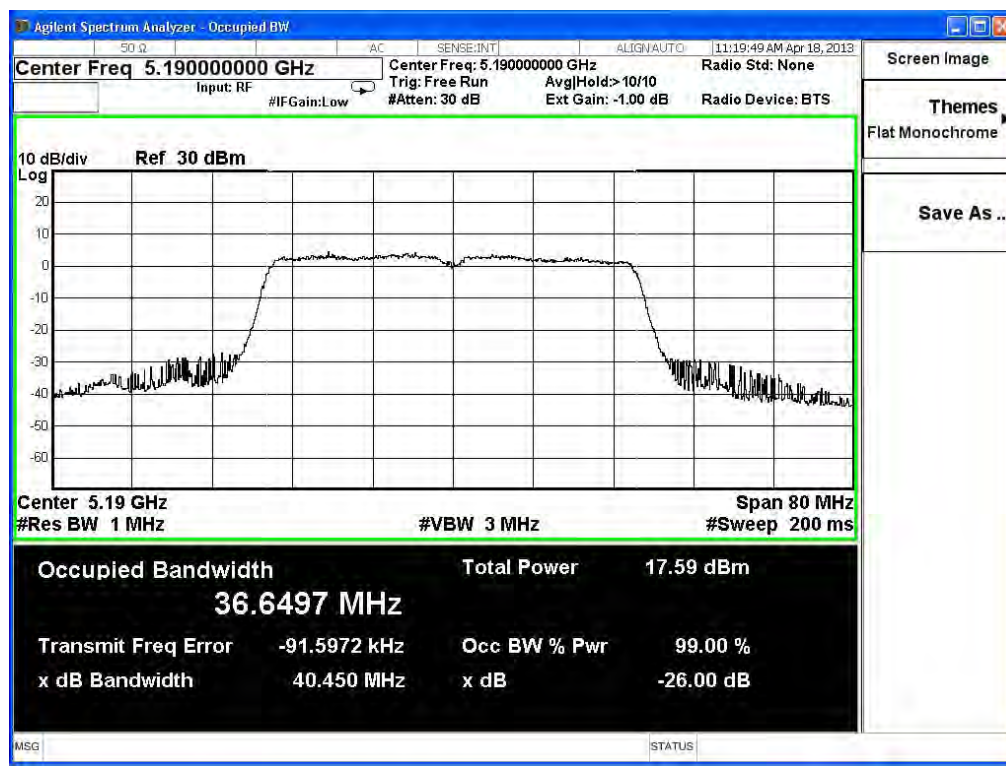


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

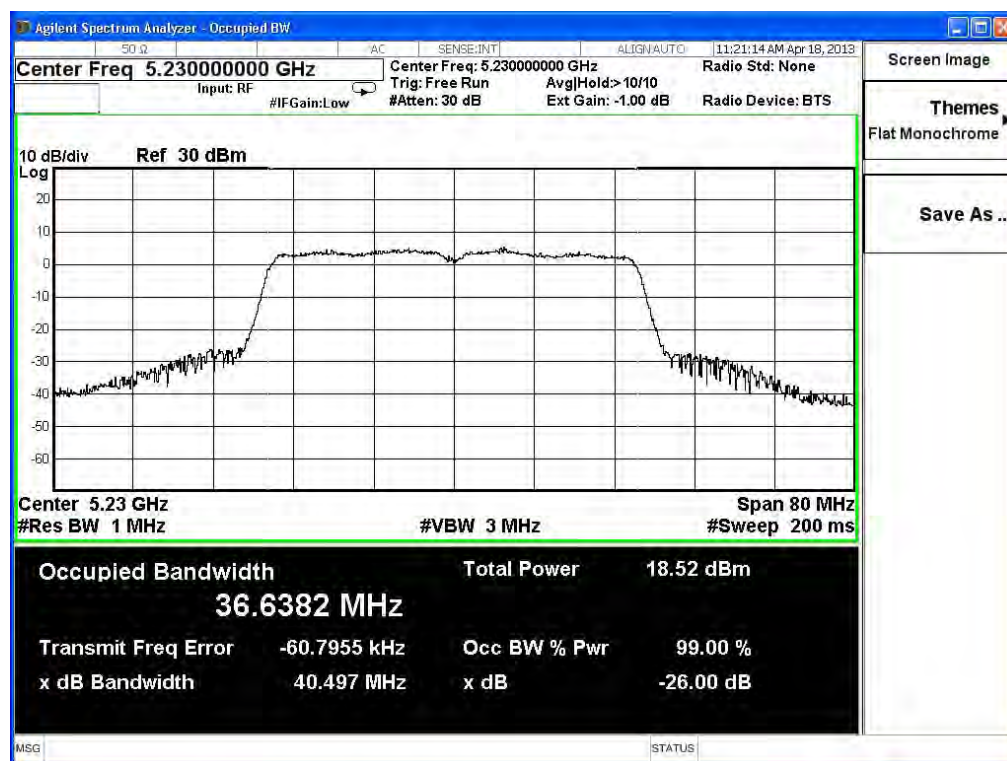
802.11n_40M(ANT 1)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.450	36.649	--	Pass
46	5230	40.497	36.638	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

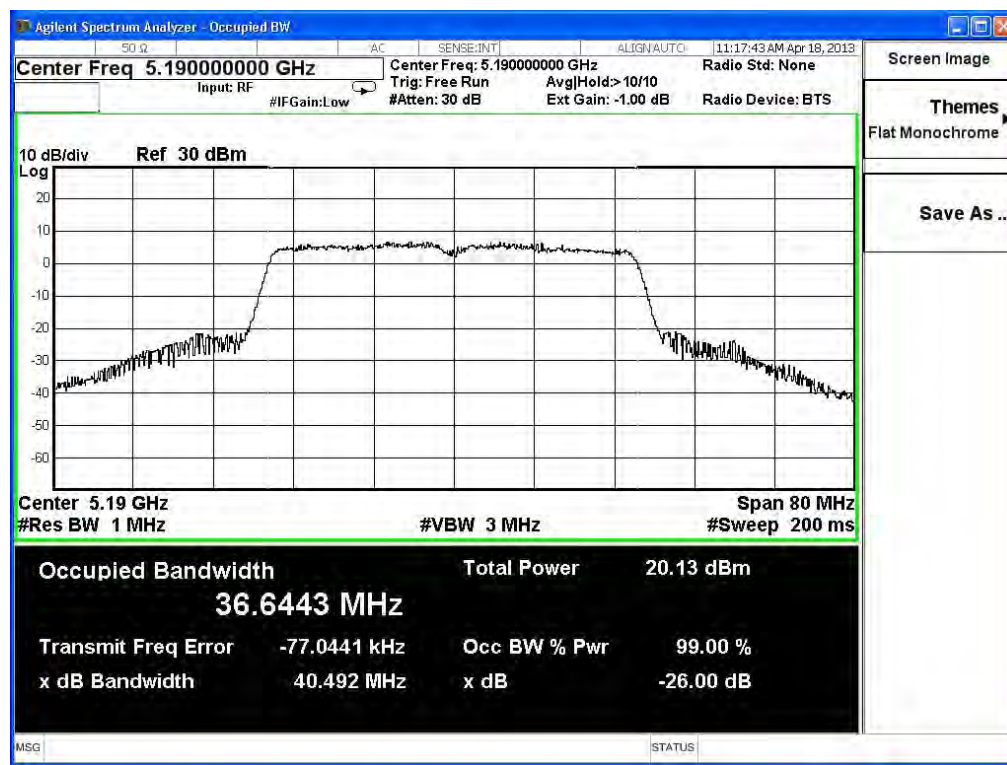


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

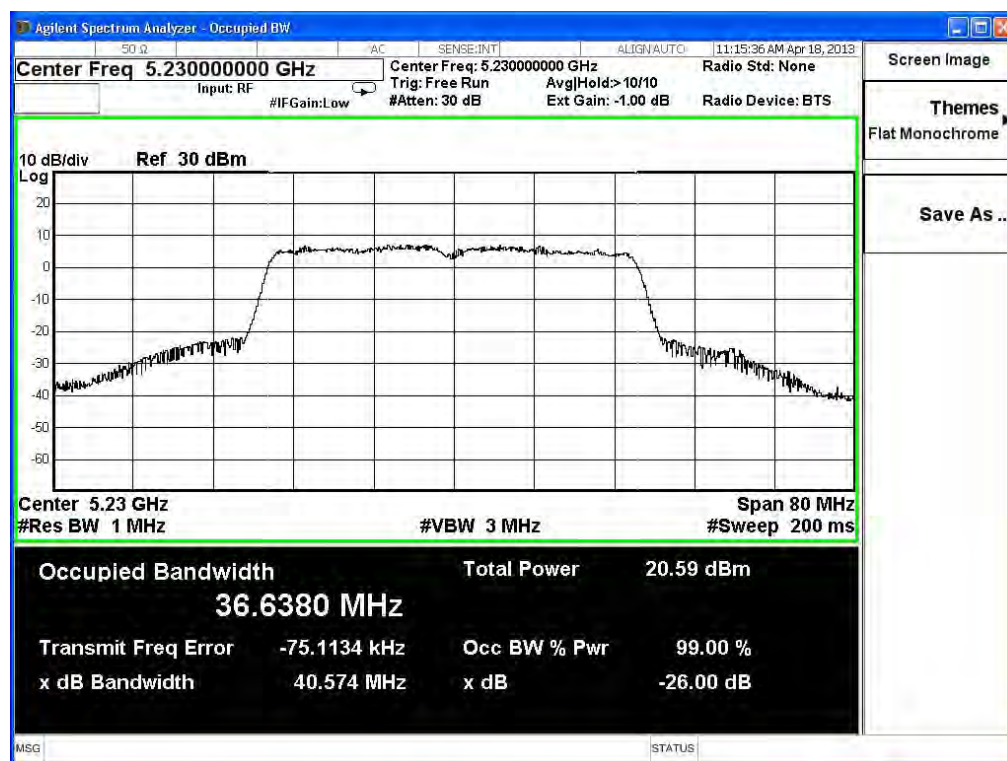
802.11n_40M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
38	5190	40.492	36.644	--	Pass
46	5230	40.574	36.638	--	Pass

99% & 26dB Bandwidth – Channel 38



99% & 26dB Bandwidth – Channel 46

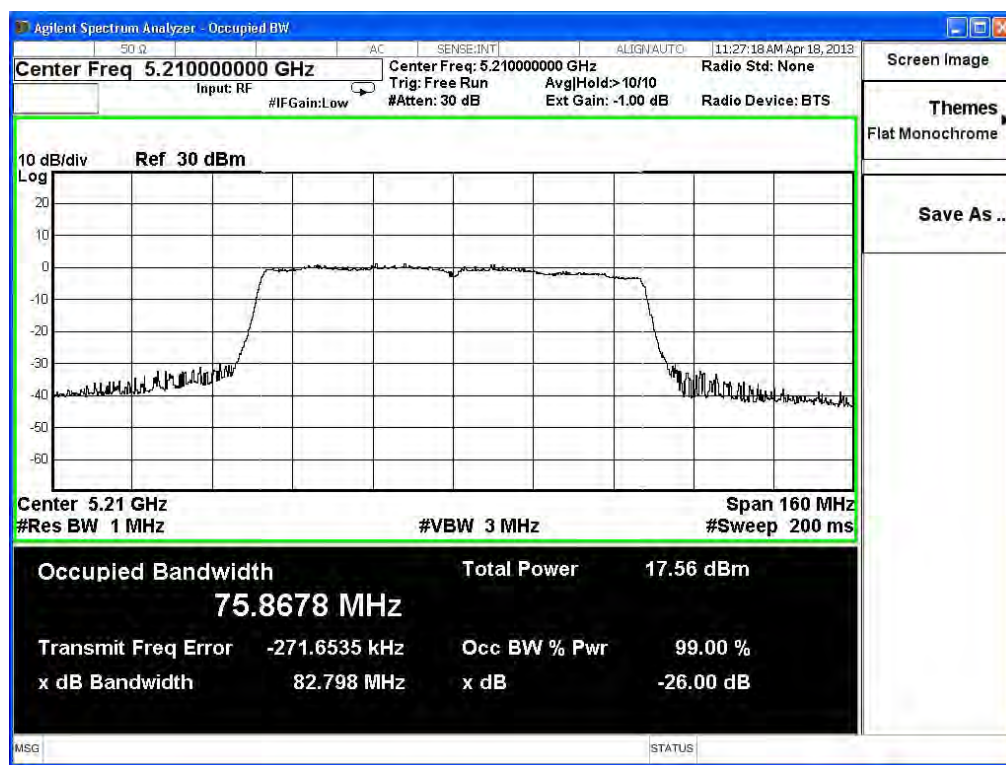


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

802.11ac_80M(ANT 0)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	82.798	75.867	--	Pass

99% & 26dB Bandwidth – Channel 42

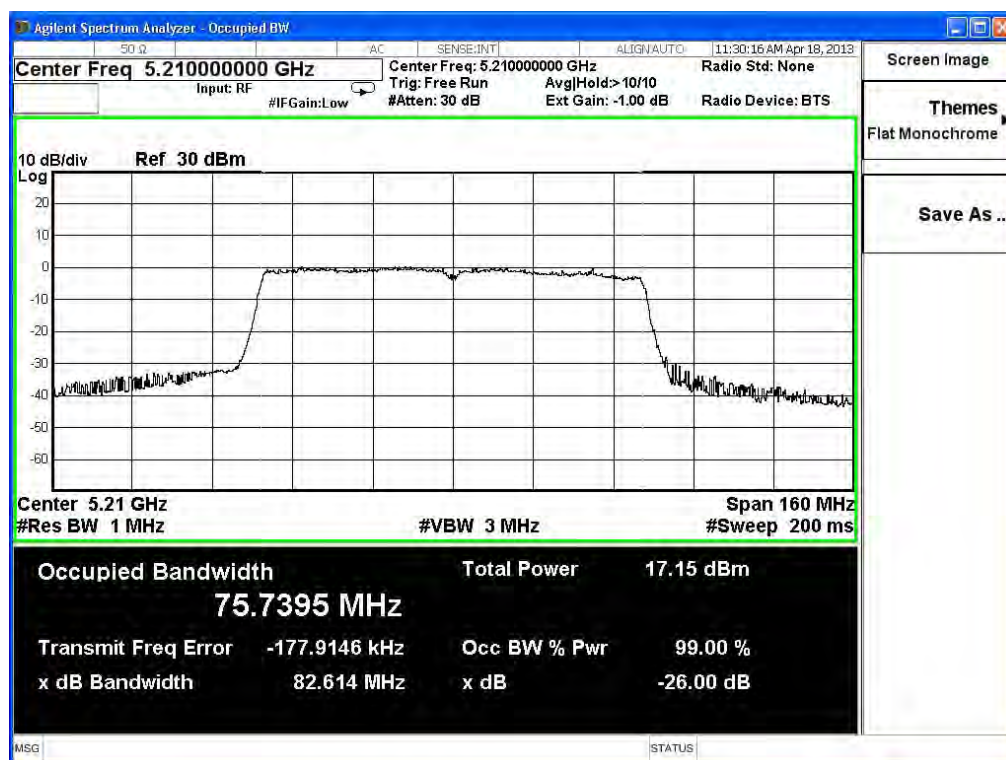


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

802.11ac_80M(ANT 1)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	82.614	75.739	--	Pass

99% & 26dB Bandwidth – Channel 42

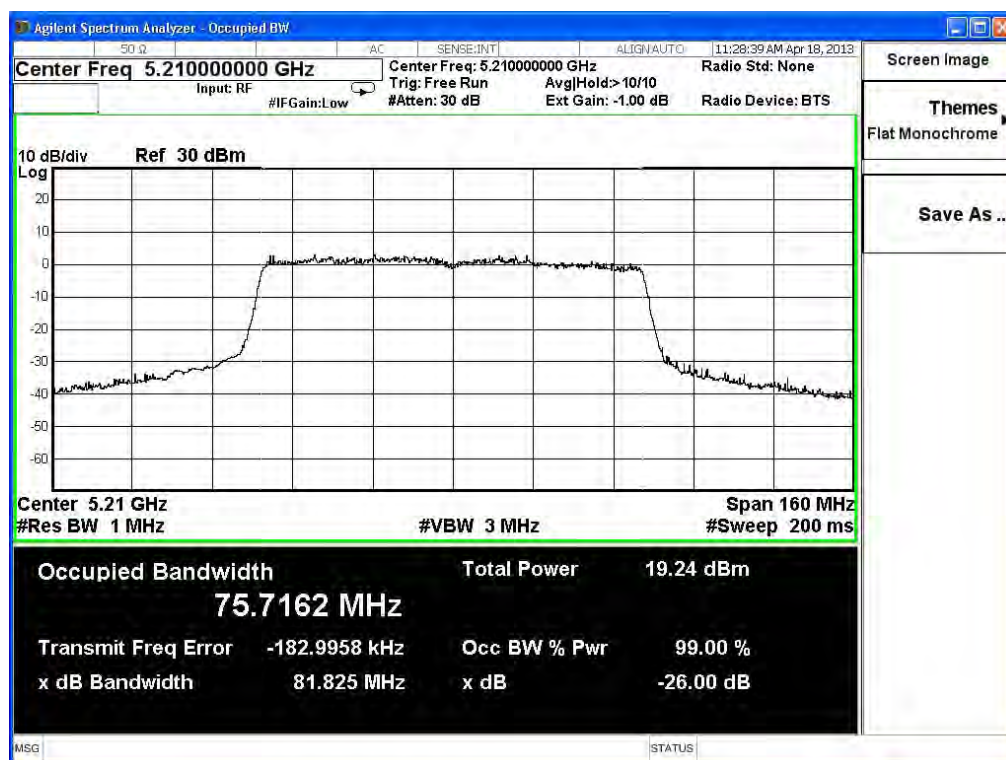


Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	99% & 26dB Bandwidth		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

802.11ac_80M(ANT 2)

Channel No.	Frequency (MHz)	26dB BW (MHz)	99 % OBW (MHz)	Required Limit (MHz)	Result
42	5210	81.825	75.716	--	Pass

99% & 26dB Bandwidth – Channel 42



4. Peak Transmit Output

4.1. Test Equipment

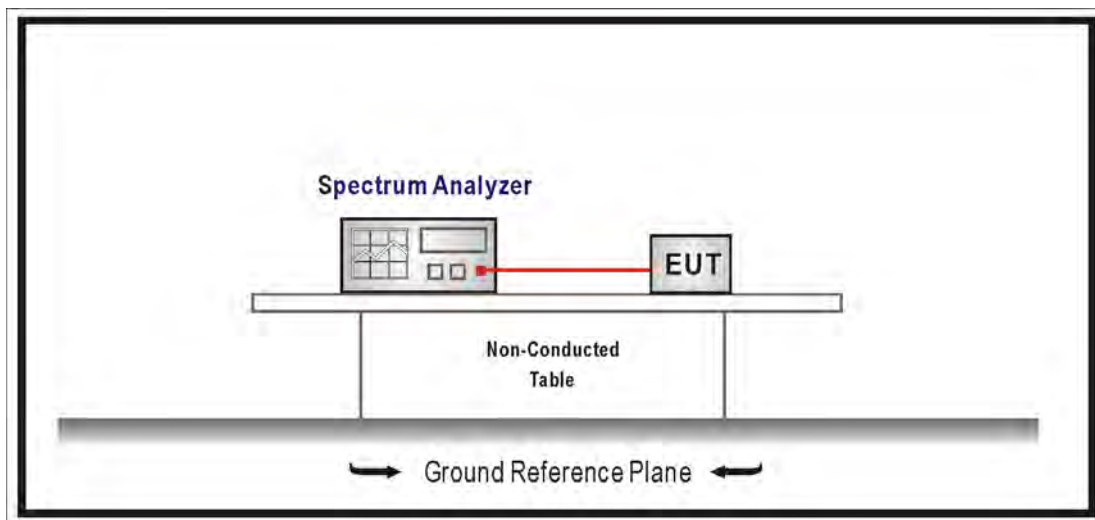
The following test equipments are used during the conducted tests:

Peak Transmit Output / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

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

4.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to U-NII test procedure of KDB 789033 for compliance to FCC 47CFR Subpart E requirements. The Method SA-1 of the Maximum conducted output power was used.

Set RBW=1MHz, VBW=3MHz with RMS detector and trace average 100 traces in power averaging mode. Set span to encompass the entire emission bandwidth (EBW) of the signal. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

4.5. Uncertainty

The measurement uncertainty is defined as $\pm 1.27 \text{ dB}$

4.6. Test Result

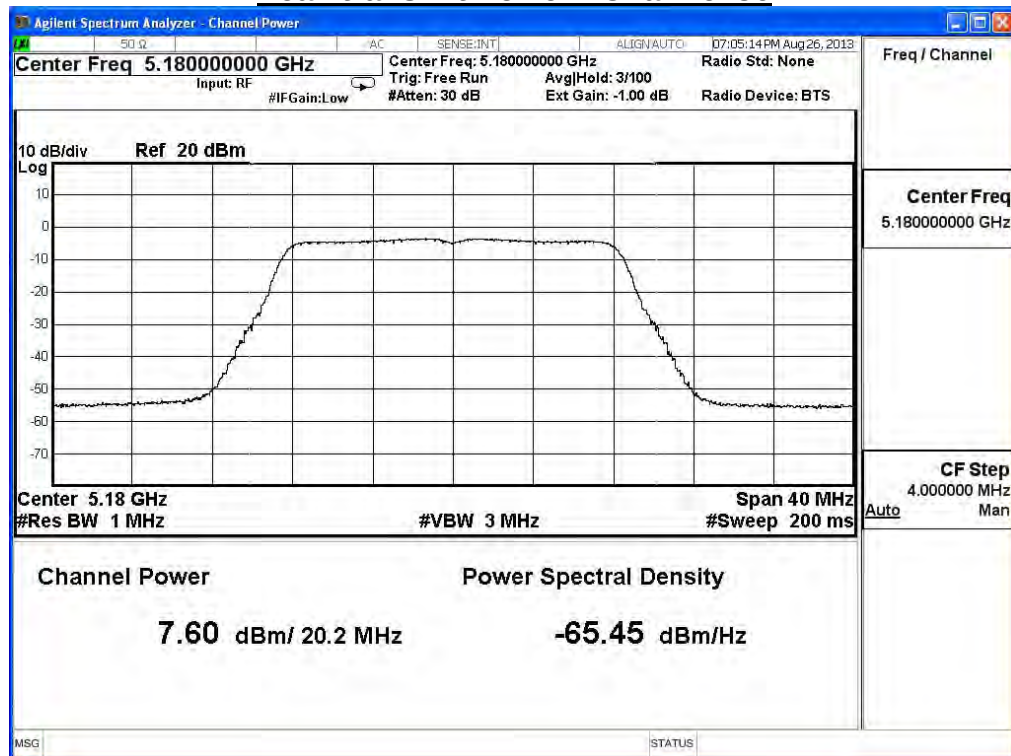
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

802.11a (ANT0) , Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.20	7.60	≤17	17.05	Pass
44	5220	20.19	7.78	≤17	17.05	Pass
48	5240	20.15	7.38	≤17	17.04	Pass

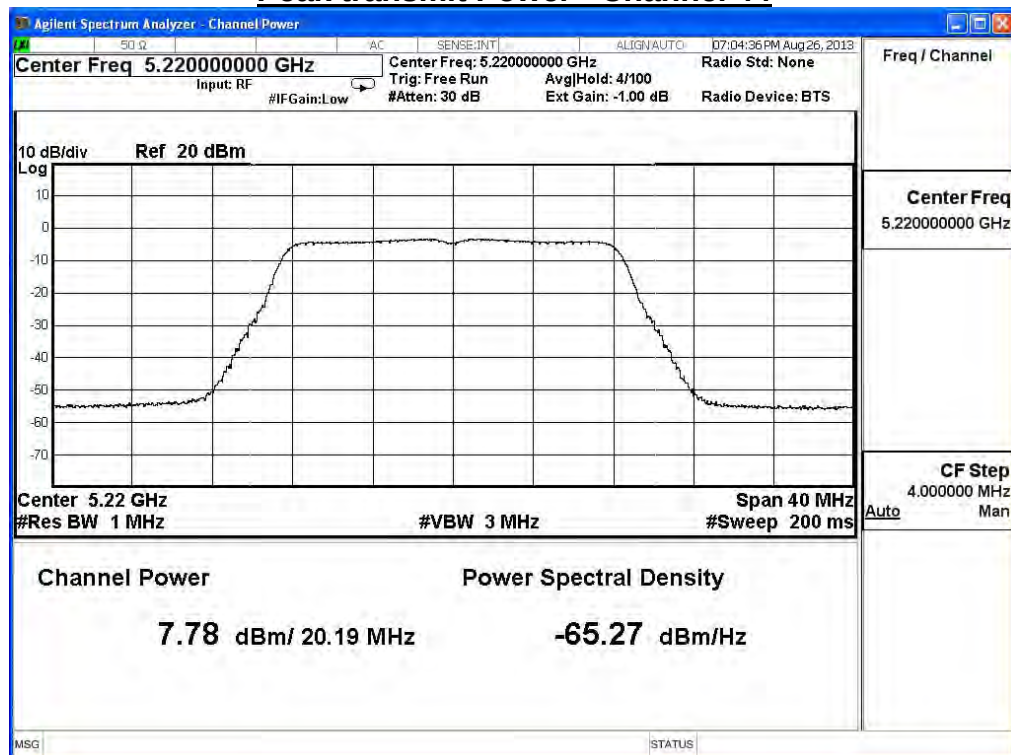
The worst emission of data rate is 6 Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	7.60	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	7.78	7.68	7.58	7.38	7.14	6.90	6.66	
48	5240	7.38	--	--	--	--	--	--	

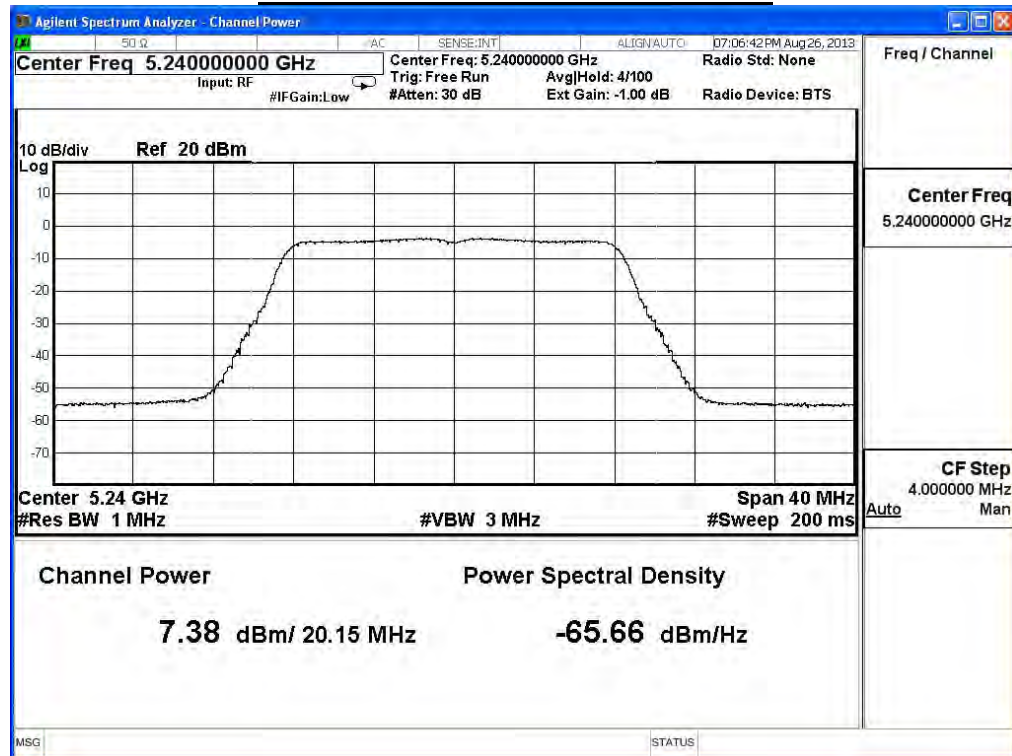
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



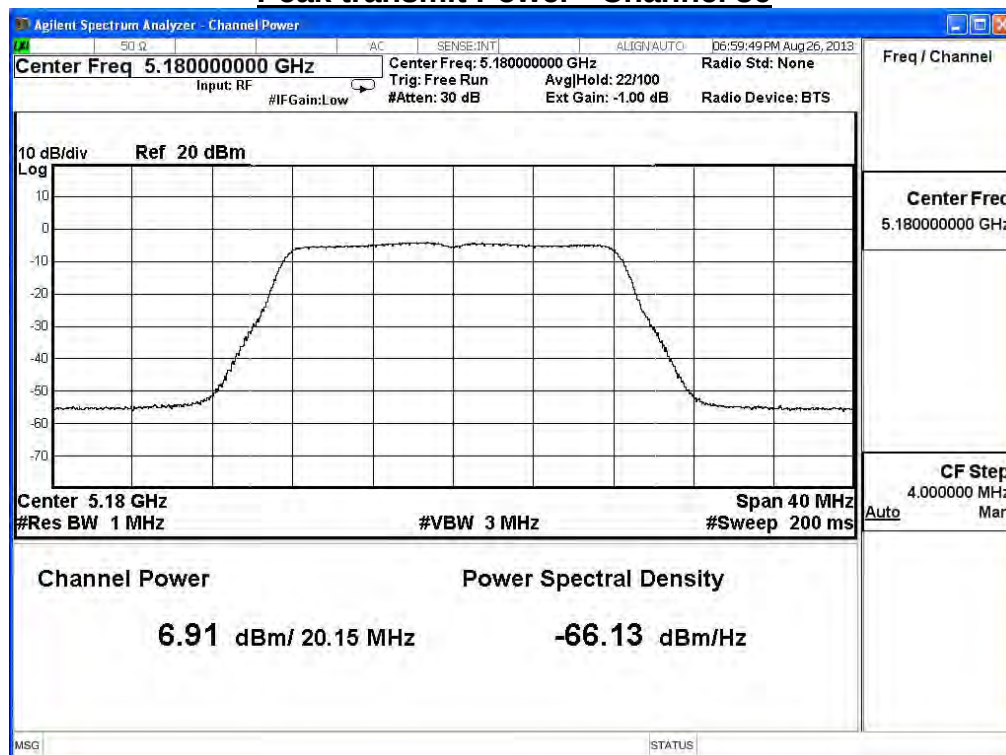
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

802.11a (ANT1) , Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.15	6.91	≤17	17.04	Pass
44	5220	20.24	7.00	≤17	17.06	Pass
48	5240	19.87	7.12	≤17	16.98	Pass

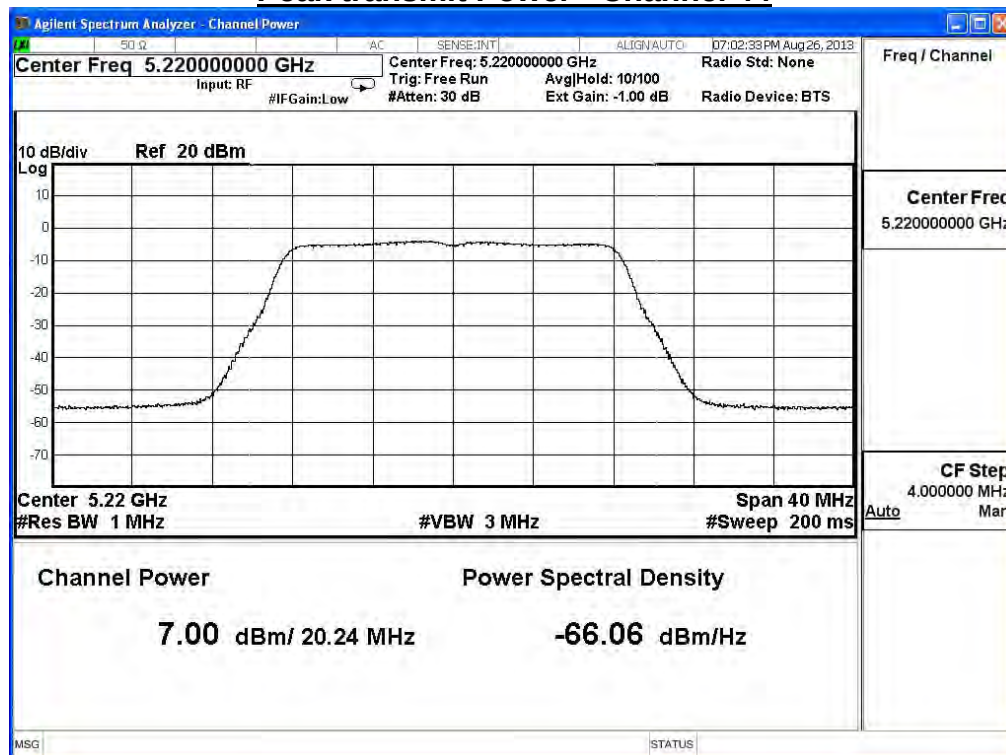
The worst emission of data rate is 6 Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	6.91	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	7.00	6.90	6.70	6.50	6.26	6.14	6.02	
48	5240	7.12	--	--	--	--	--	--	

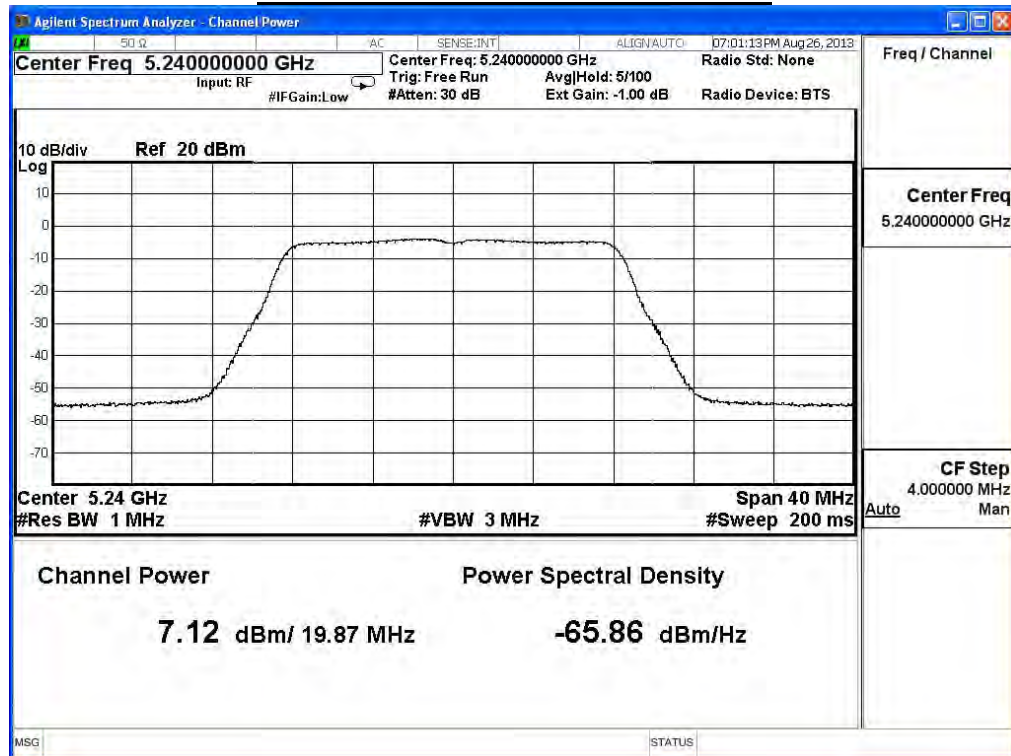
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



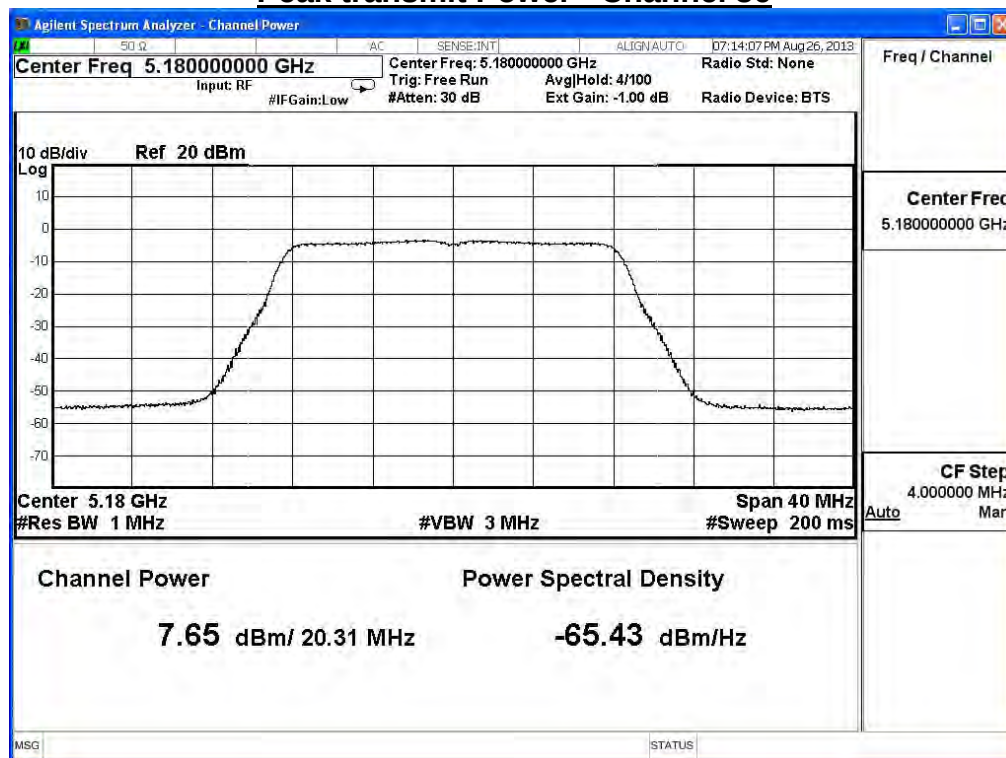
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

802.11a (ANT2) , Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.31	7.65	≤17	17.08	Pass
44	5220	20.02	7.81	≤17	17.01	Pass
48	5240	20.15	7.72	≤17	17.04	Pass

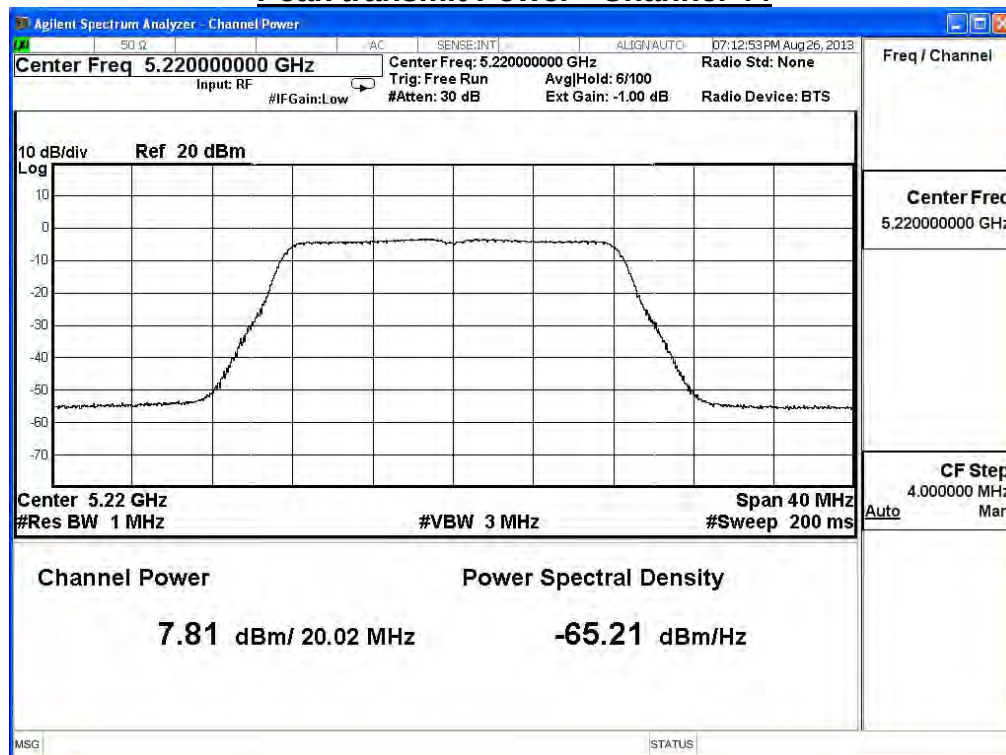
The worst emission of data rate is 6 Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	7.65	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	7.81	7.61	7.41	7.31	7.19	6.95	6.71	
48	5240	7.72	--	--	--	--	--	--	

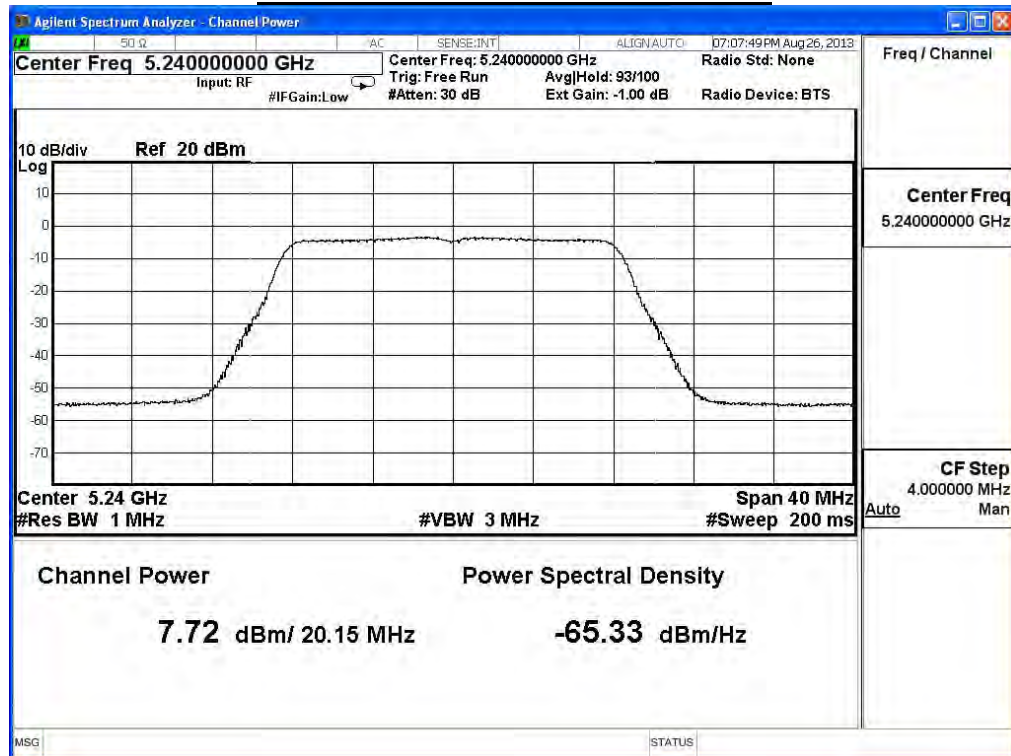
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

802.11a (ANT0+1+2)

Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
36	5180	16.48	12.17	≤17	Pass
44	5220	17.05	12.32	≤17	Pass
48	5240	16.54	12.18	≤17	Pass

802.11a, ANT 0+1+2

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	12.17	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	12.32	12.21	12.08	11.91	11.66	11.45	11.25	
48	5240	12.18	--	--	--	--	--	--	

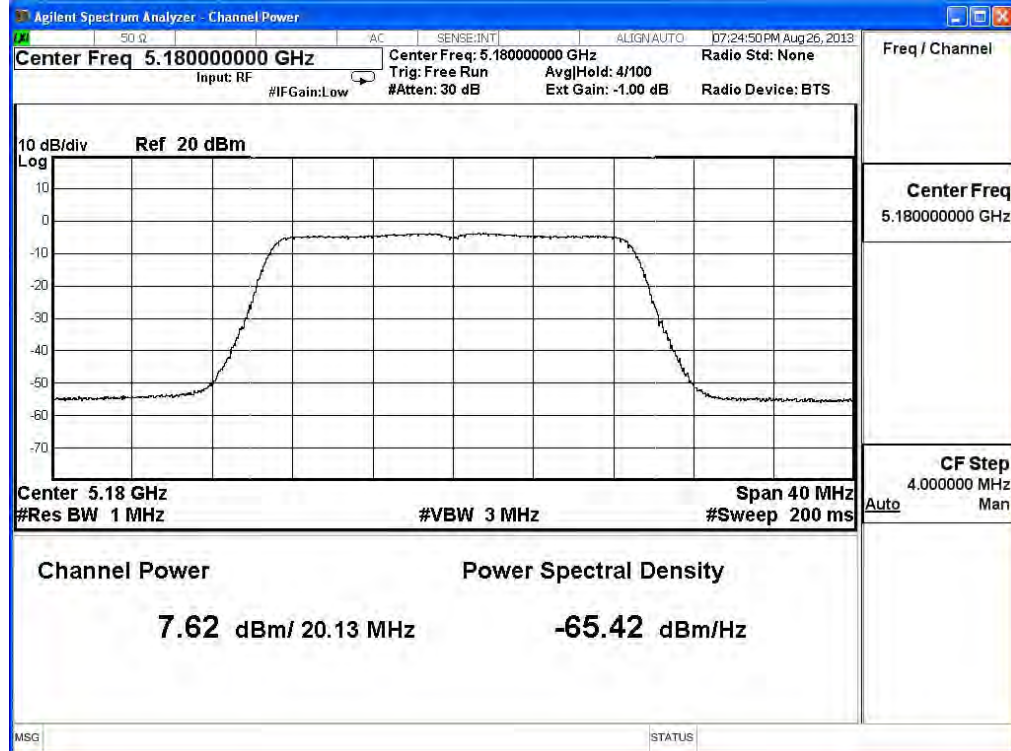
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 0, Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.13	7.62	≤17	17.04	Pass
44	5220	20.47	7.51	≤17	17.11	Pass
48	5240	20.65	7.92	≤17	17.15	Pass

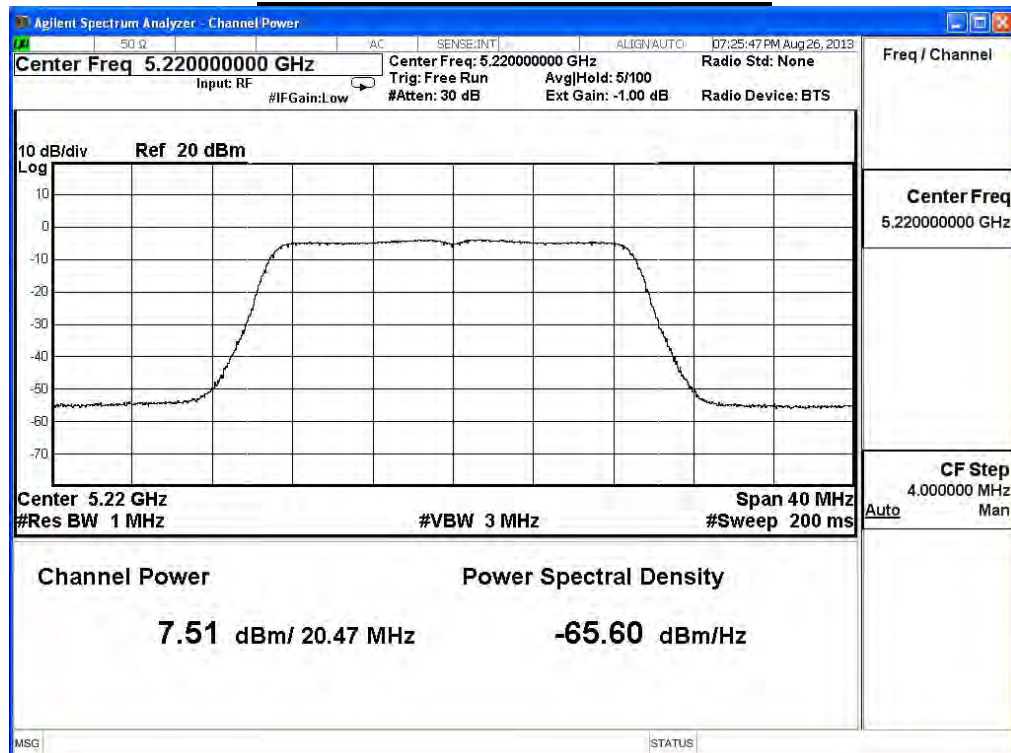
The worst emission of data rate is 19.5Mbps.

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	7.62	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	7.51	7.41	7.31	7.11	6.91	6.79	6.55	6.31	
48	5240	7.92	--	--	--	--	--	--	--	

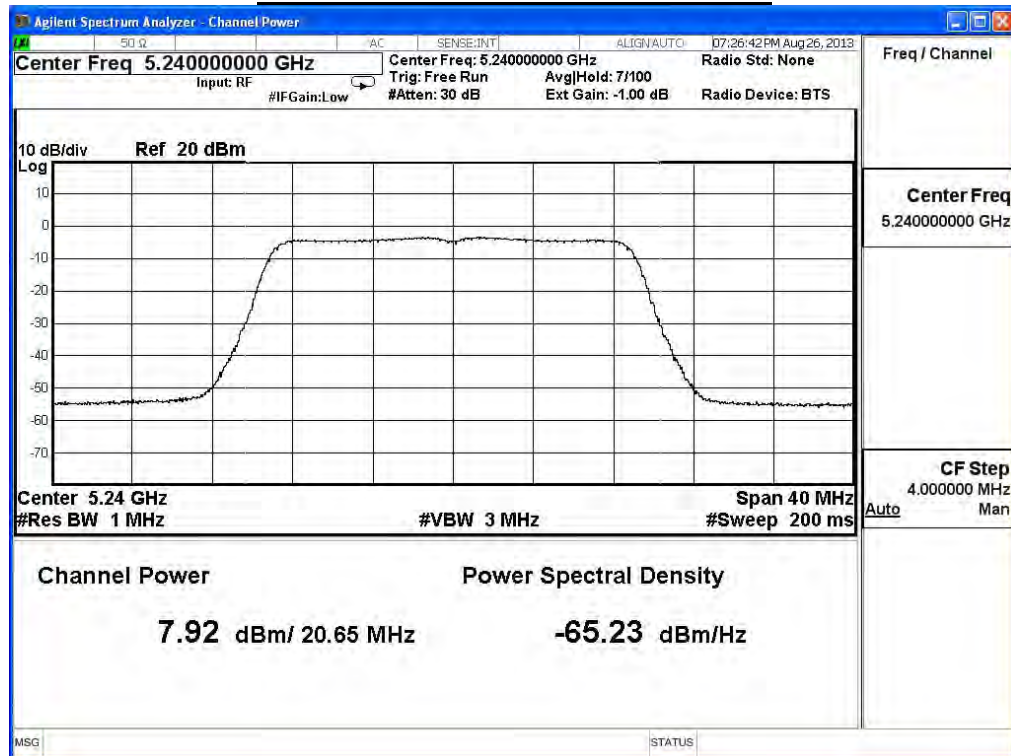
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



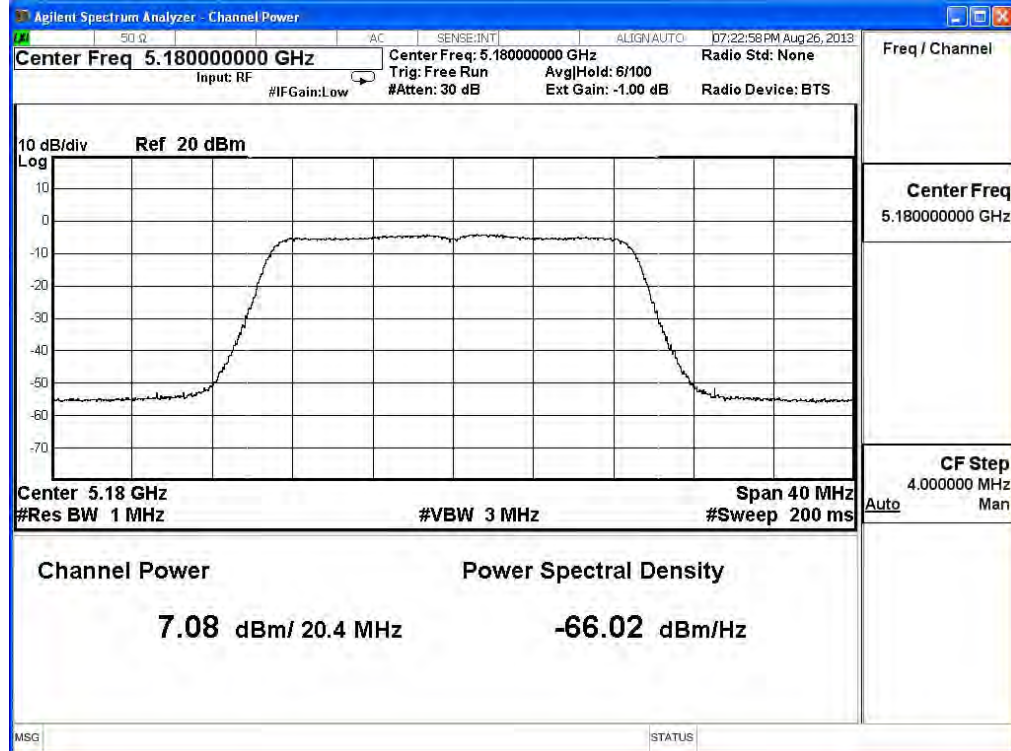
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 1, Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.40	7.08	≤17	17.10	Pass
44	5220	20.28	6.80	≤17	17.07	Pass
48	5240	20.43	6.71	≤17	17.10	Pass

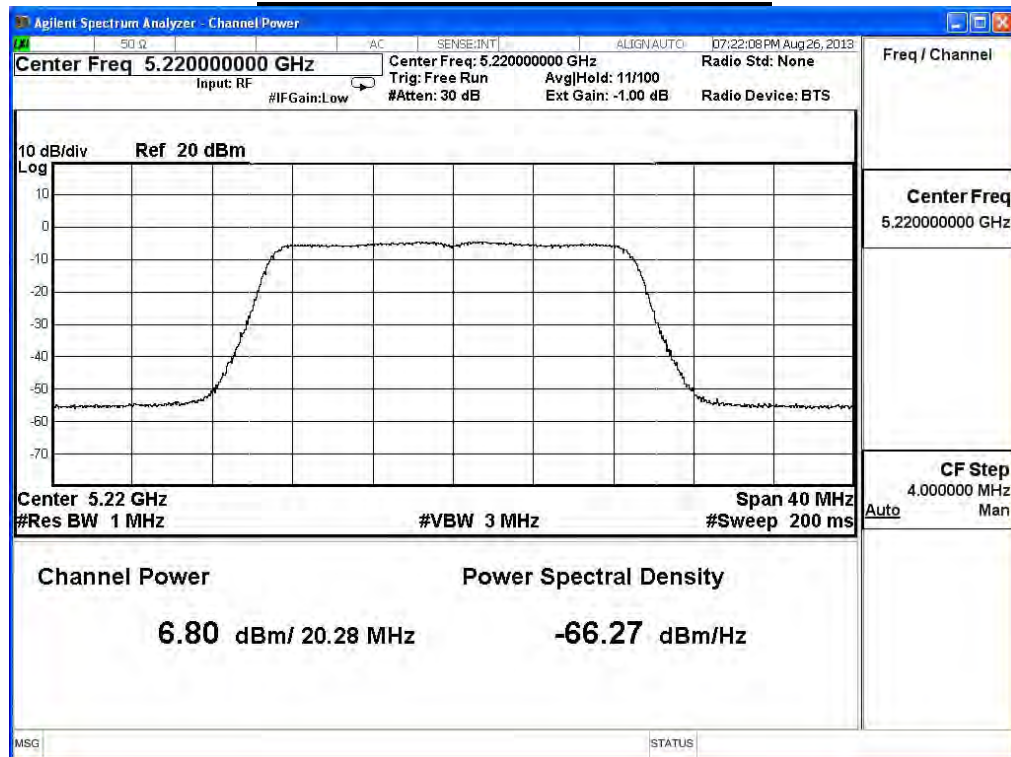
The worst emission of data rate is 19.5Mbps.

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	7.08	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	6.80	6.60	6.40	6.20	6.00	5.88	5.64	5.52	
48	5240	6.71	--	--	--	--	--	--	--	

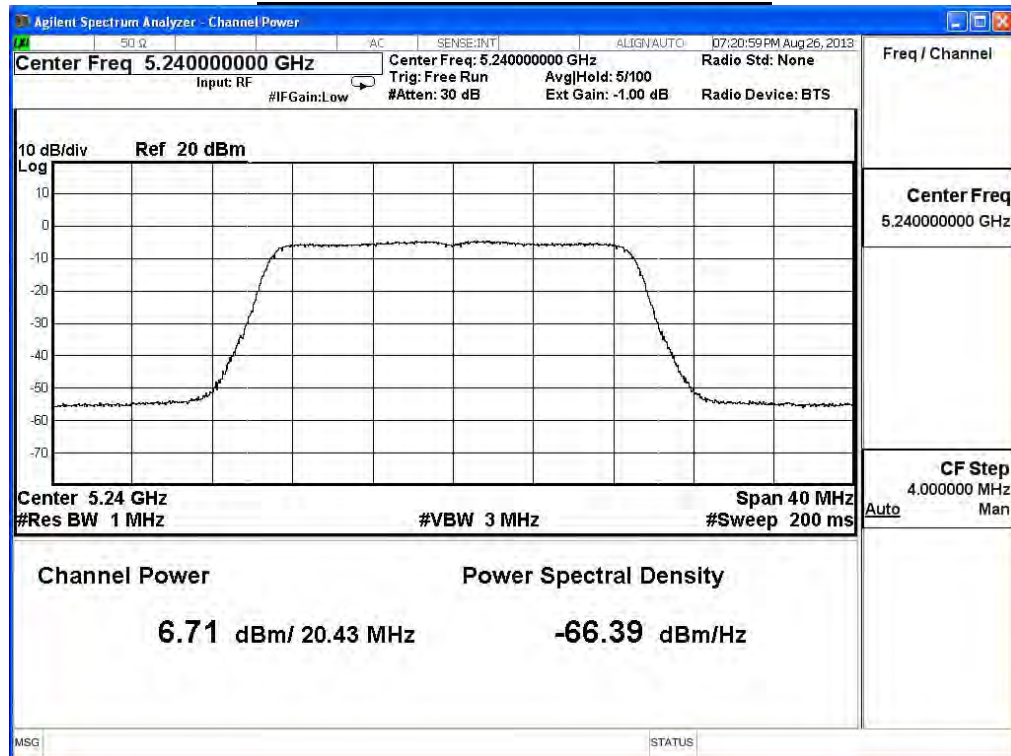
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



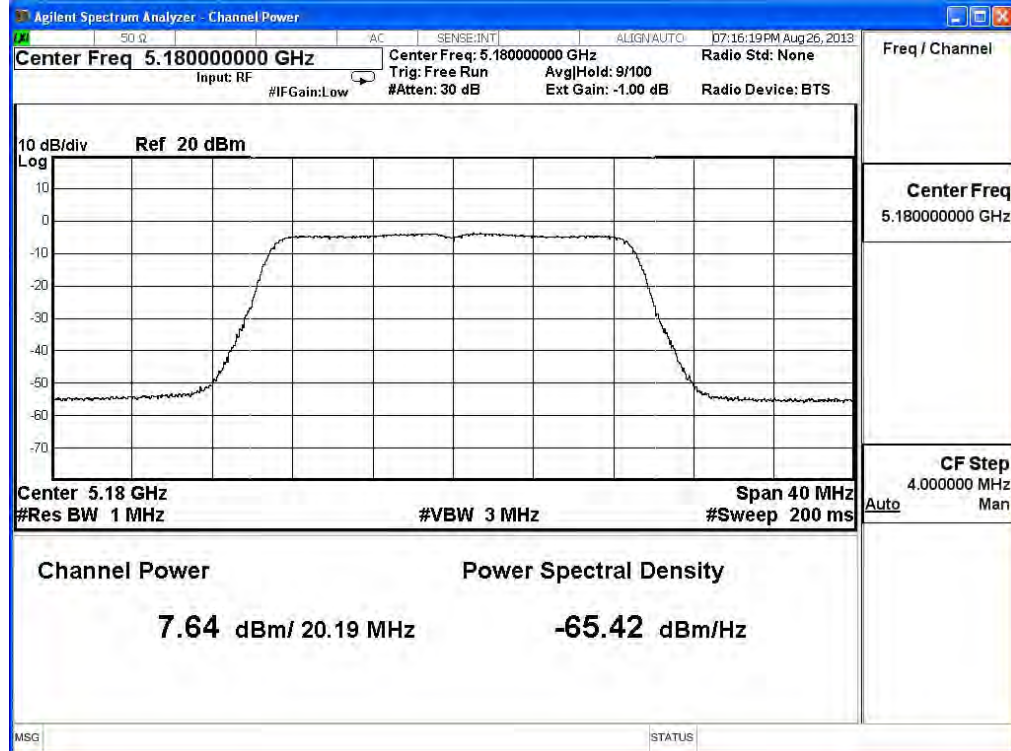
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 2, Power Index : ch36:36 ch44:36 ch48:36						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.19	7.64	≤17	17.05	Pass
44	5220	20.44	7.71	≤17	17.10	Pass
48	5240	20.28	7.73	≤17	17.07	Pass

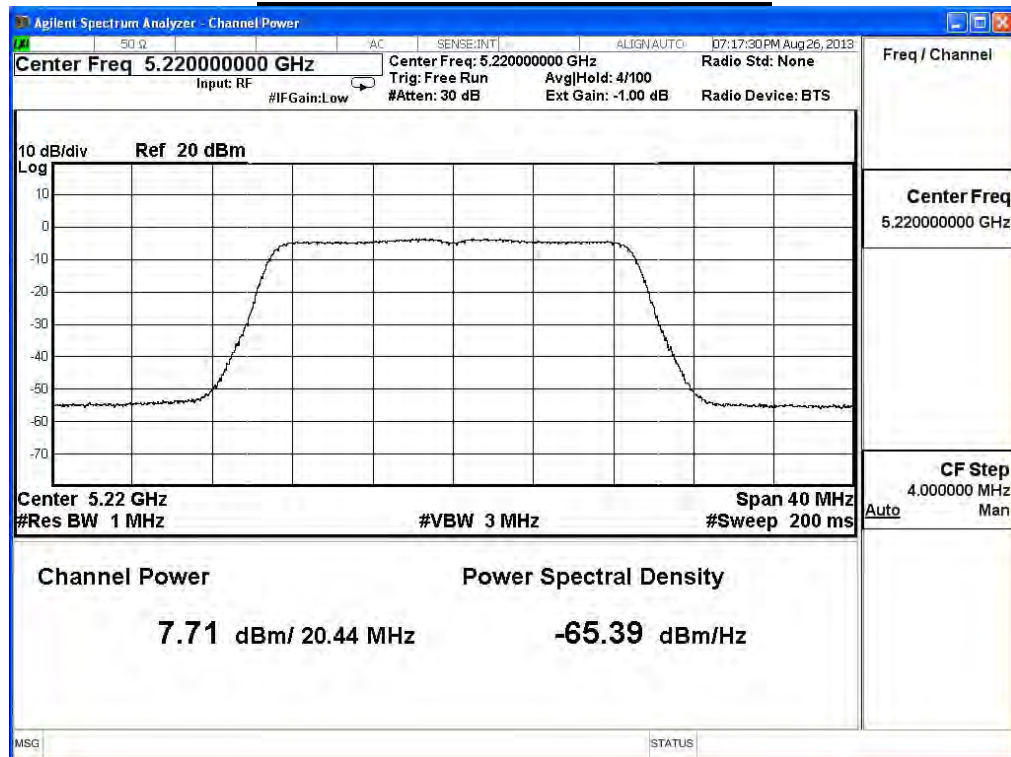
The worst emission of data rate is 19.5Mbps.

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	7.64	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	7.71	7.61	7.51	7.31	7.21	7.09	6.85	6.61	
48	5240	7.73	--	--	--	--	--	--	--	

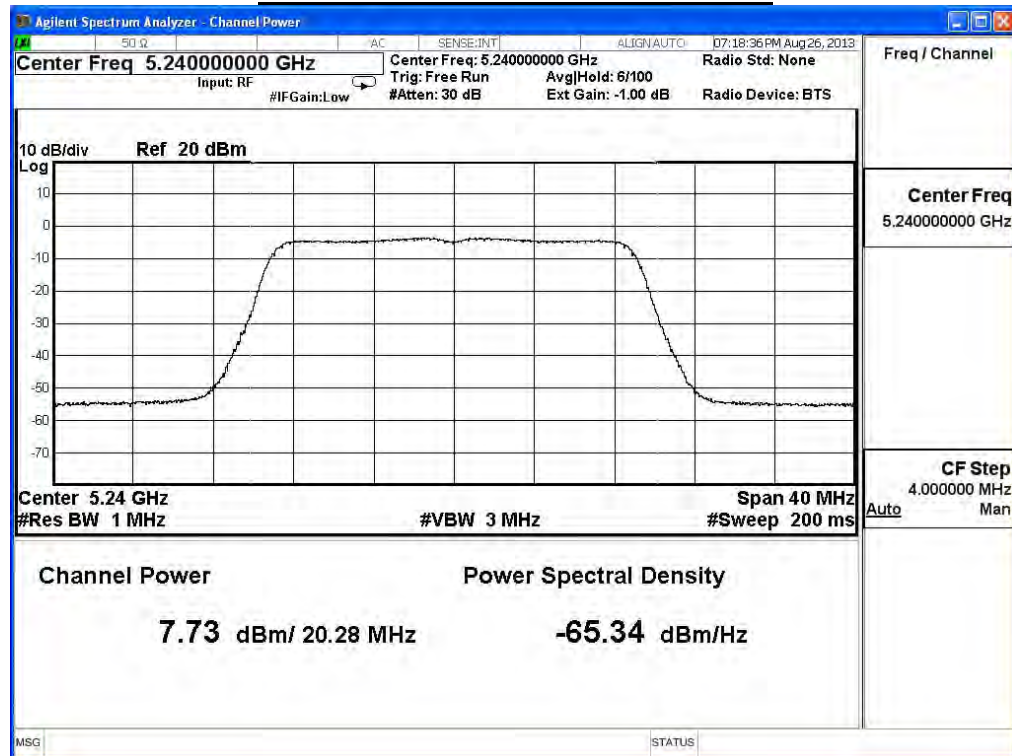
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 0+1+2					
Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
36	5180	16.69	12.23	≤17	Pass
44	5220	16.32	12.13	≤17	Pass
48	5240	16.81	12.26	≤17	Pass

802.11 n(20M), Antenna 0+1+2

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	12.23	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
44	5220	12.13	12.00	11.87	11.67	11.51	11.39	11.15	10.94	
48	5240	12.26	--	--	--	--	--	--	--	

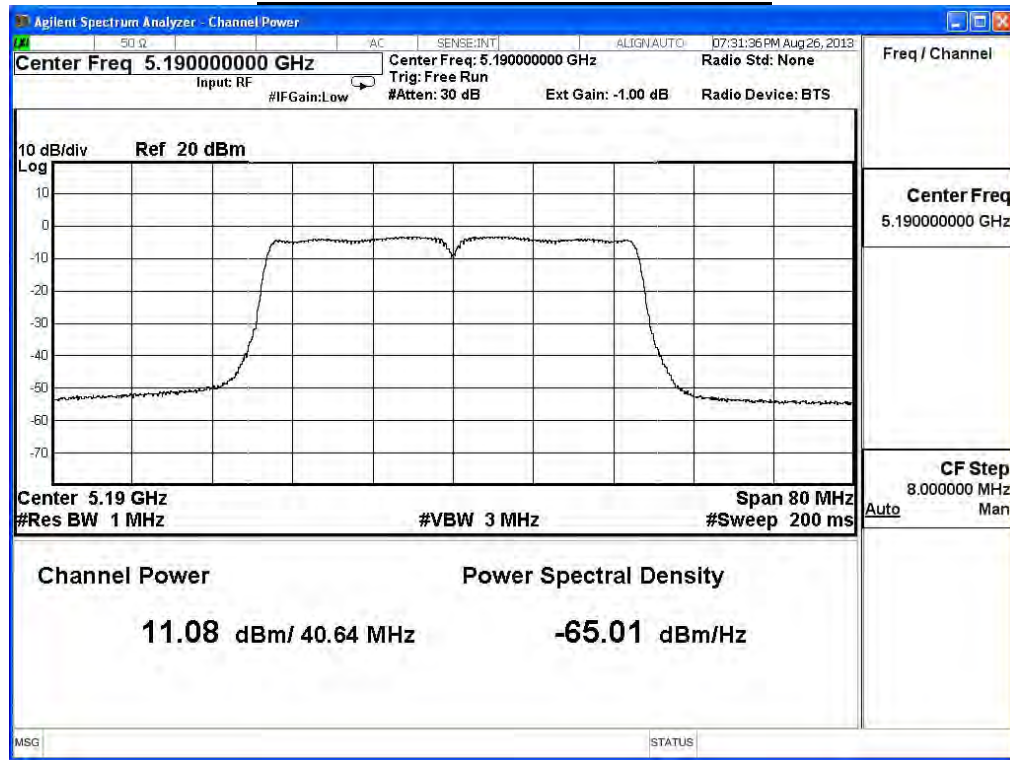
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 0, Power Index : ch38:47 ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.64	11.08	≤17	20.09	Pass
46	5230	40.64	10.98	≤17	20.09	Pass

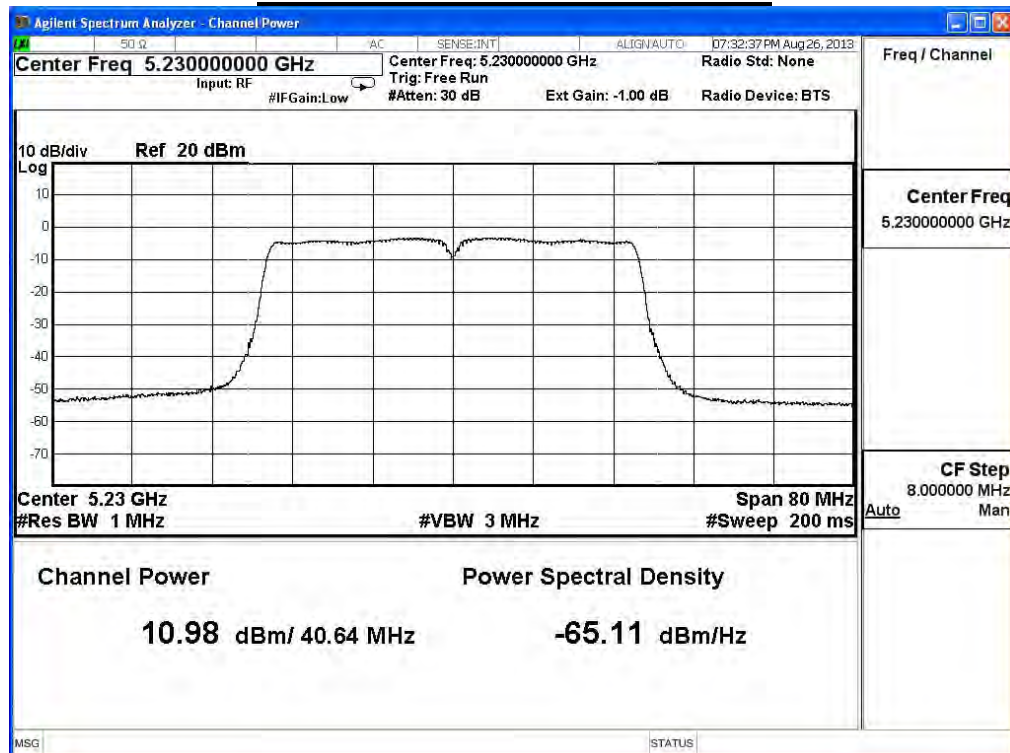
The worst emission of data rate is 40.5 Mbps

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	11.08	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
46	5230	10.98	10.88	10.78	10.68	10.58	10.34	10.22	10.10	

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



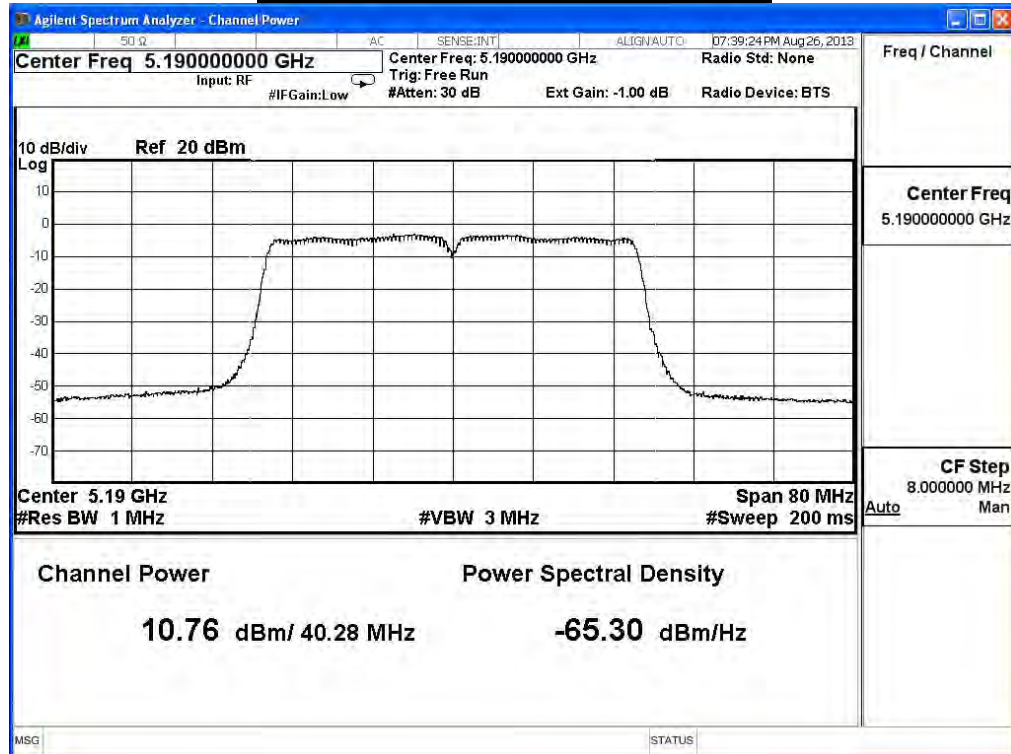
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 1, Power Index : ch38:47 ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.28	10.76	≤17	20.05	Pass
46	5230	40.47	10.49	≤17	20.07	Pass

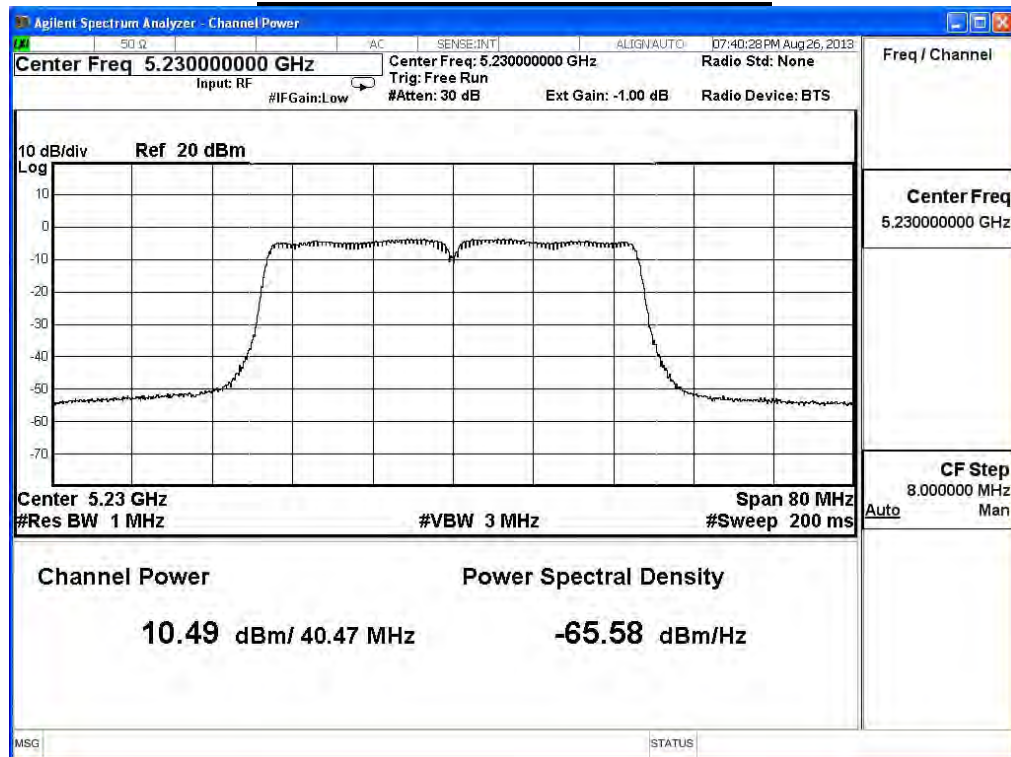
The worst emission of data rate is 40.5 Mbps

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	10.76	--	--	--	--	--	--	--	17dBm or
46	5230	10.49	10.39	10.29	10.19	9.99	9.87	9.63	9.51	4dBm+10logB

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



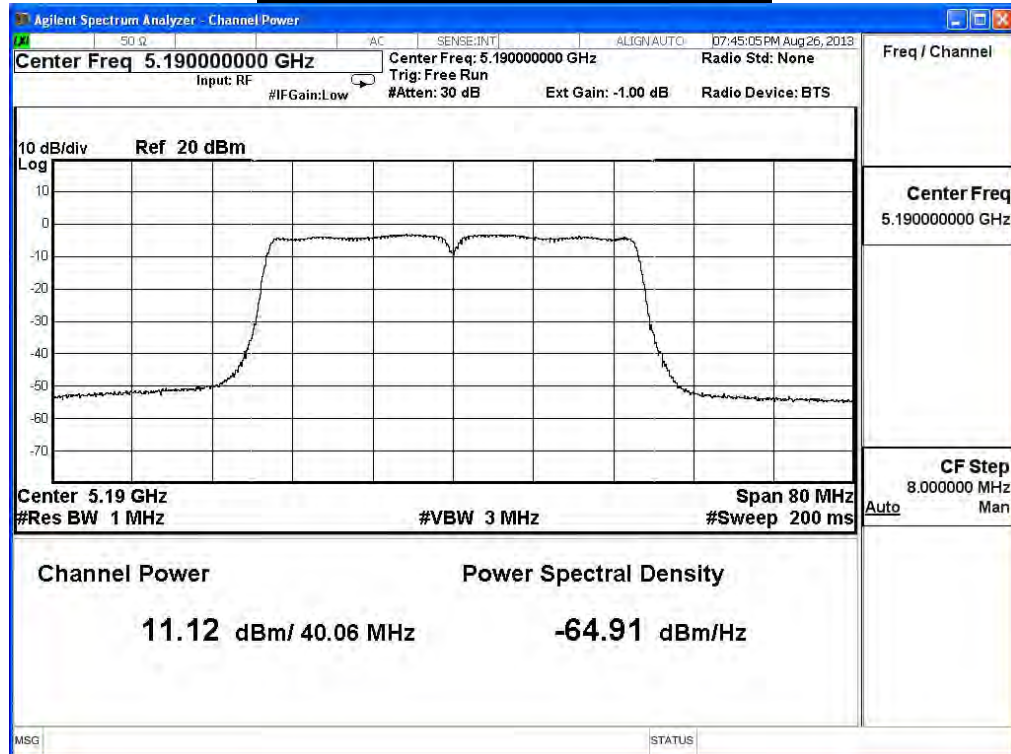
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 2, Power Index : ch38:47 ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.06	11.12	≤17	20.03	Pass
46	5230	40.10	10.89	≤17	20.03	Pass

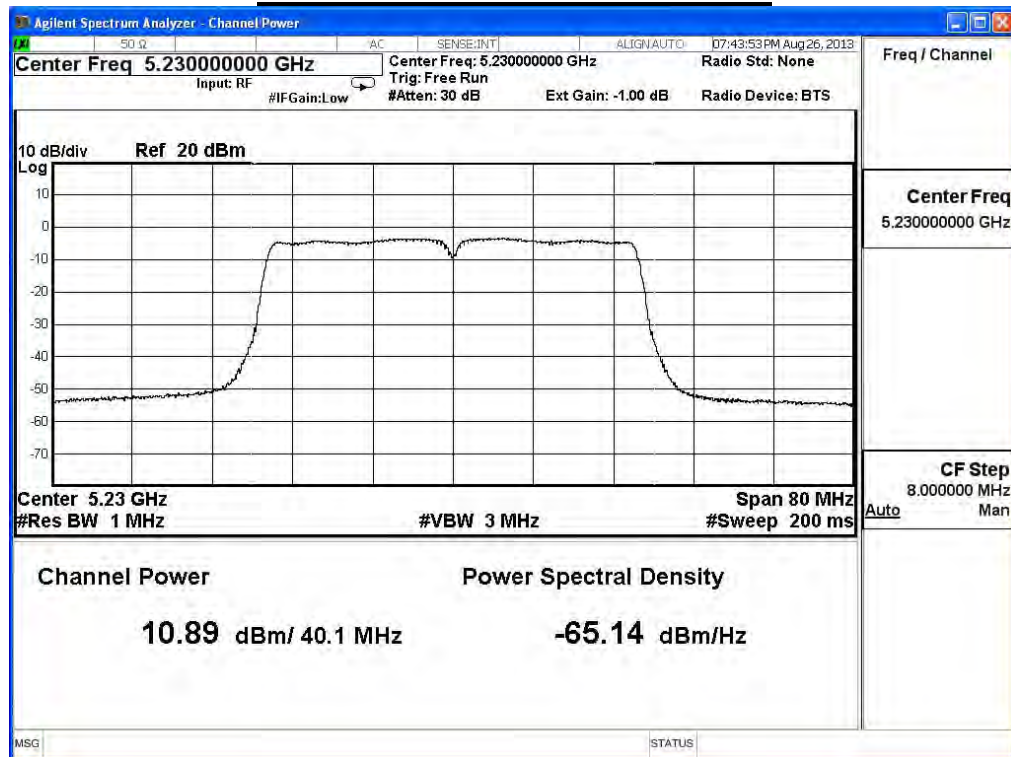
The worst emission of data rate is 40.5 Mbps

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	11.12	--	--	--	--	--	--	--	17dBm or
46	5230	10.89	10.69	10.49	10.39	10.29	10.17	9.93	9.69	4dBm+10logB

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

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

Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
38	5190	37.68	15.76	≤17	Pass
46	5230	36.00	15.56	≤17	Pass

802.11 n(40M), Antenna 0+1+2

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	15.76	--	--	--	--	--	--	--	17dBm or 4dBm+10logB
46	5230	15.56	15.36	15.23	15.09	14.96	14.76	14.52	14.32	

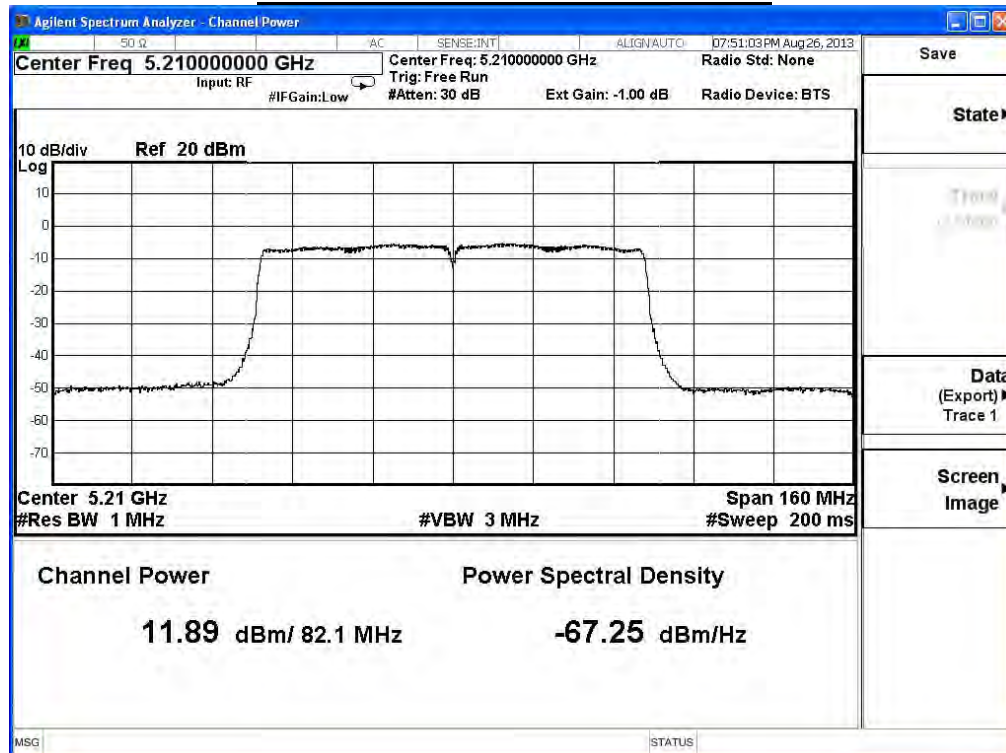
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11ac(80MHz)_ANT 0, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	82.10	11.89	≤17	23.14	Pass

The worst emission of data rate is 87.9 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										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	11.89	11.69	11.49	11.29	11.19	11.09	10.85	10.61	10.49	10.37	17dBm or 4dBm+10logB

Peak transmit Power - Channel 42



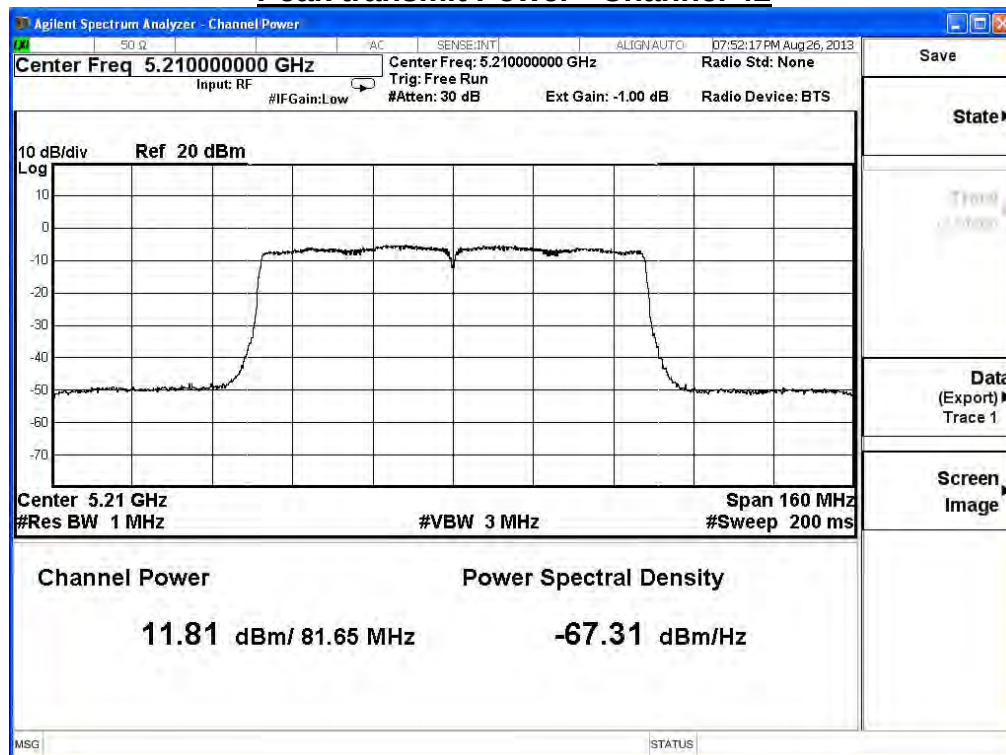
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11ac(40MHz)_ANT 1, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	81.65	11.81	≤17	23.12	Pass

The worst emission of data rate is 87.9 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										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	11.81	11.61	11.41	11.31	11.11	11.01	10.89	10.65	10.41	10.17	17dBm or 4dBm+10logB

Peak transmit Power - Channel 42



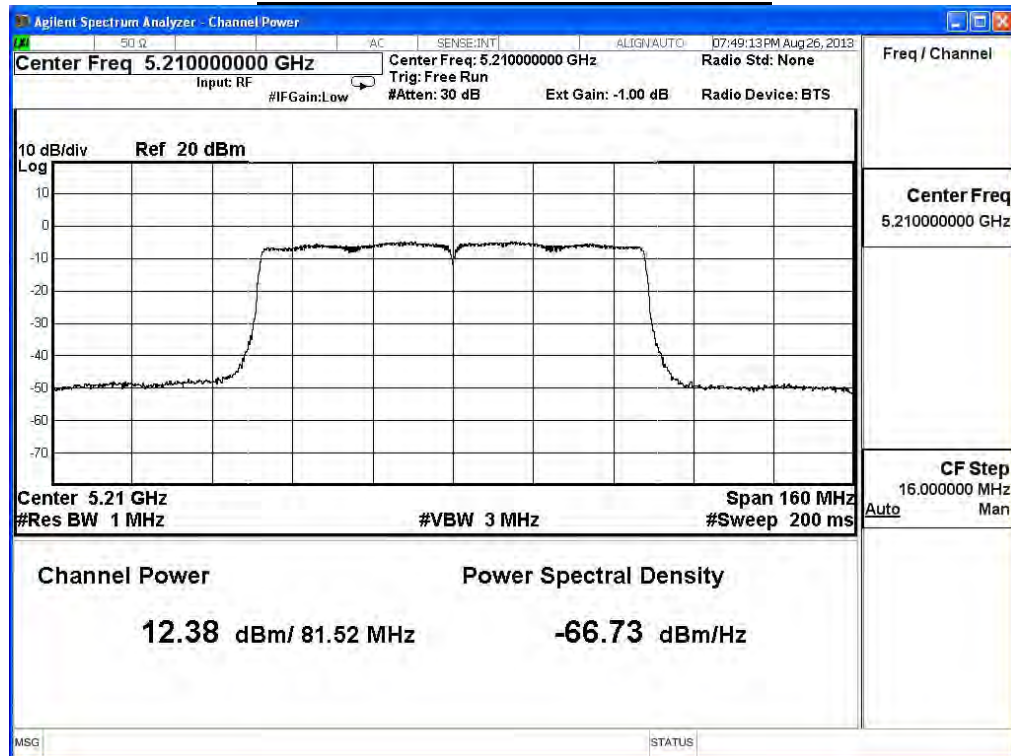
Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11ac(40MHz)_ANT 2, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	81.52	12.38	≤17	23.11	Pass

The worst emission of data rate is 87.9 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										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	12.38	12.18	11.98	11.78	11.68	11.48	11.24	11.12	11.00	10.76	17dBm or 4dBm+10log B

Peak transmit Power - Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11ac(80MHz)_ANT 0+1+2					
Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
42	5210	47.92	16.81	≤17	Pass

802.11 AC(80M), Antenna 0+1+2

Peak Power Output (dBm)												Required Limit
MCS Index		0	1	2	3	4	5	6	7	8	9	
Channel No	Frequency (MHz)	Data Rate										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	16.81	16.61	16.41	16.24	16.11	15.97	15.77	15.57	15.41	15.21	17dBm or 4dBm+10log B

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

802.11a, 1TX SISO, Power Index : ch36:66, ch44:66, ch48:66						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.259	13.32	≤ 13.79	≤17.06	Pass
44	5220	20.226	13.20	≤ 13.79	≤17.06	Pass
48	5240	20.243	13.24	≤ 13.79	≤17.06	Pass

The worst emission of data rate is 6 Mbps.

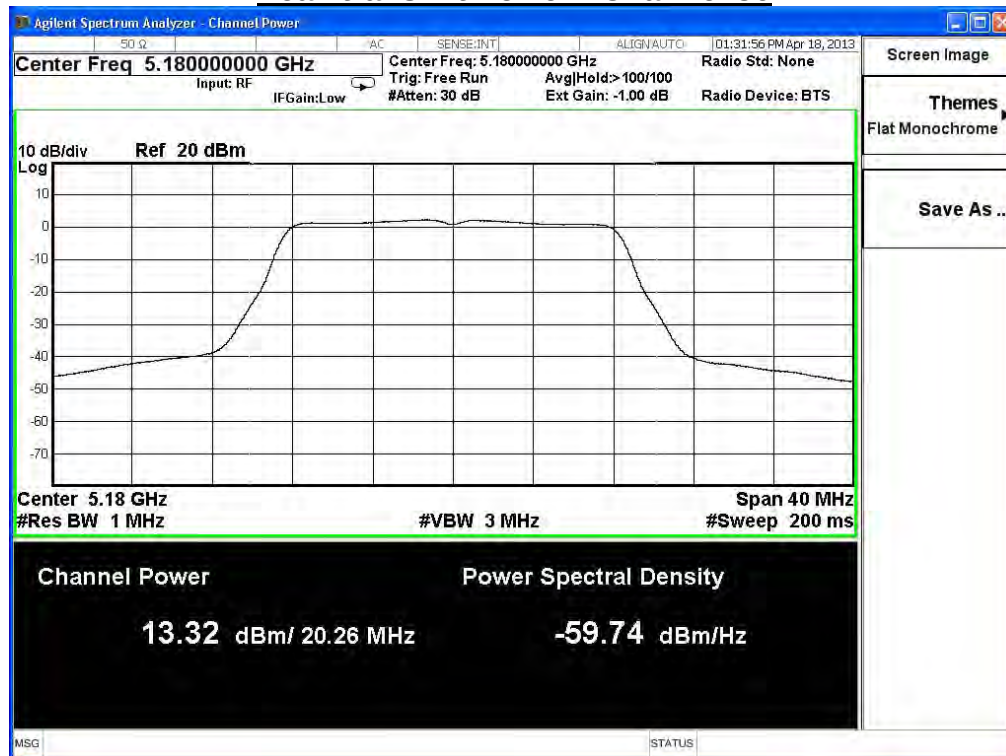
Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
36	5180	13.32	--	--	--	--	--	--	13.79dBm or 4dBm+10logB
44	5220	13.20	13.18	13.10	13.02	12.95	12.90	12.84	
48	5240	13.24	--	--	--	--	--	--	

Note:

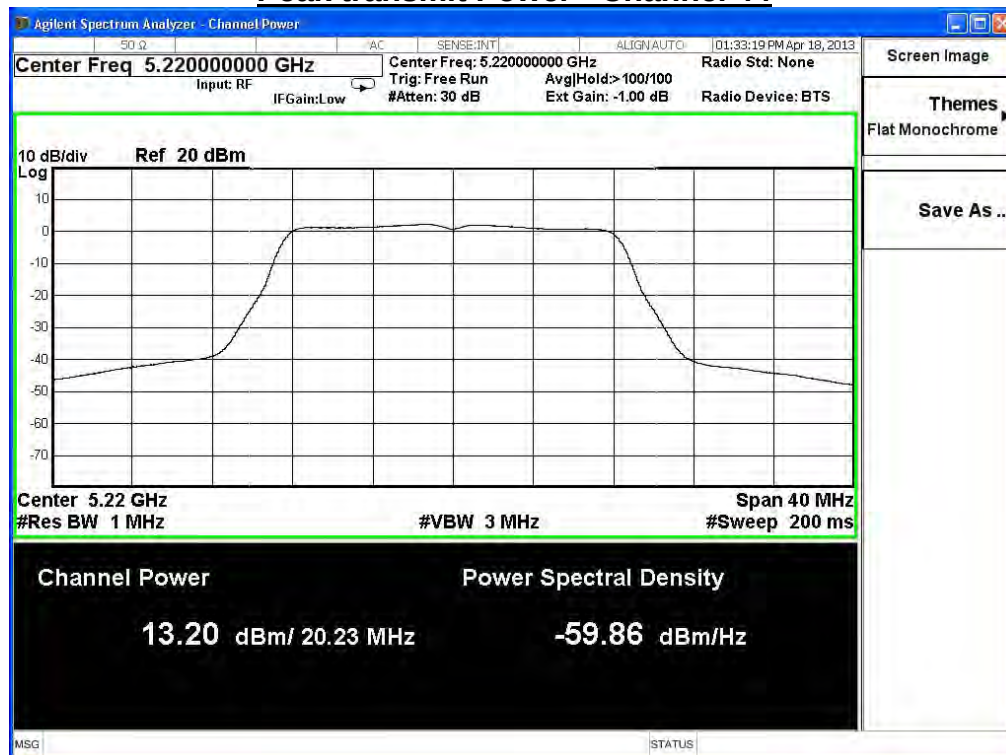
Directional Gain : Beamforming Gain + Max Gain = 9.21dBi

Required Limit = 17dBm - (9.21dBi – 6dB) = 13.79 dBm

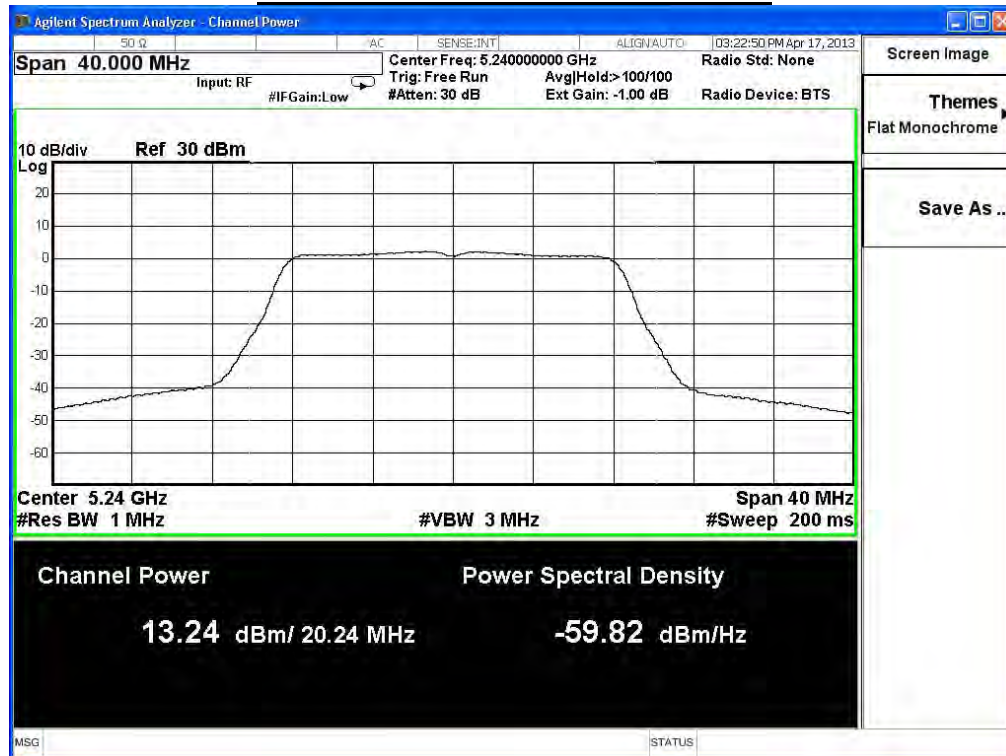
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2012/11/19	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 0, Power Index : ch36:47, ch44:48, ch48:48						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.711	8.65	≤ 13.79	≤17.16	Pass
44	5220	20.562	8.57	≤ 13.79	≤17.13	Pass
48	5240	20.654	8.66	≤ 13.79	≤17.15	Pass

The worst emission of data rate is 19.5Mbps.

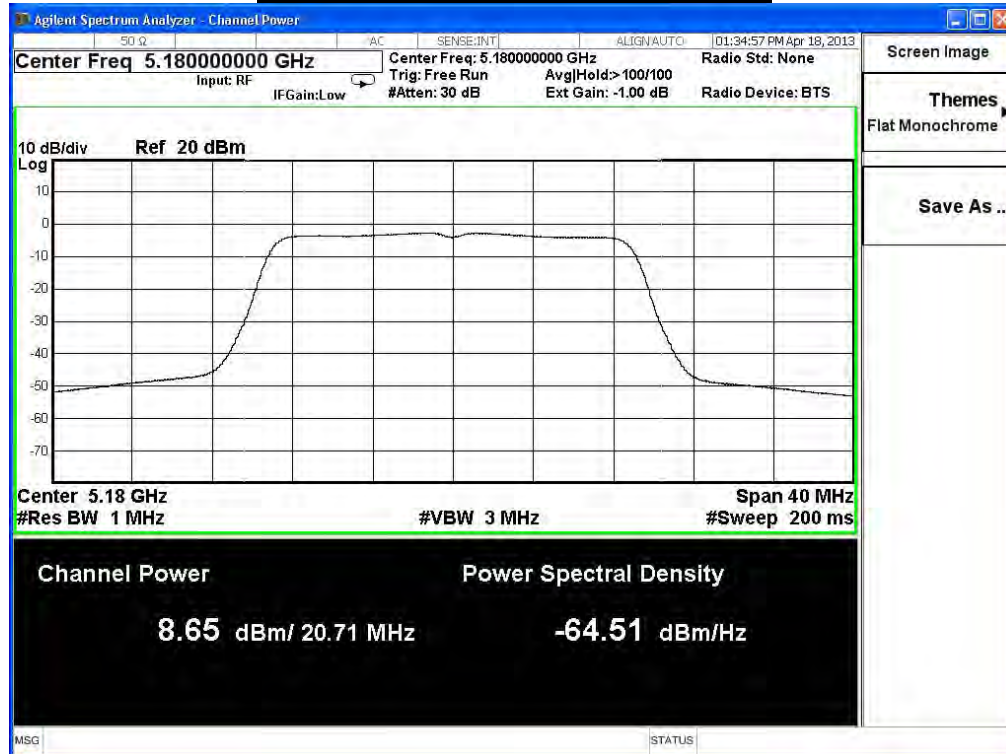
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	8.65	--	--	--	--	--	--	--	13.79dBm or 4dBm+10logB
44	5220	8.57	8.55	8.48	8.44	8.34	8.30	8.27	8.22	
48	5240	8.66	--	--	--	--	--	--	--	

Note:

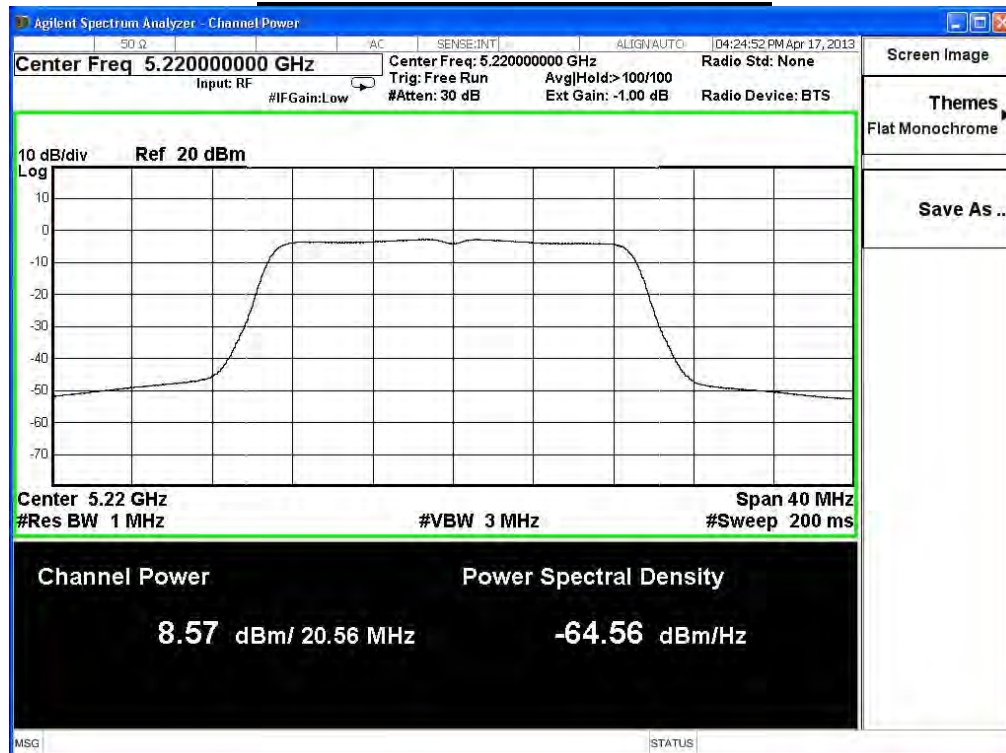
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

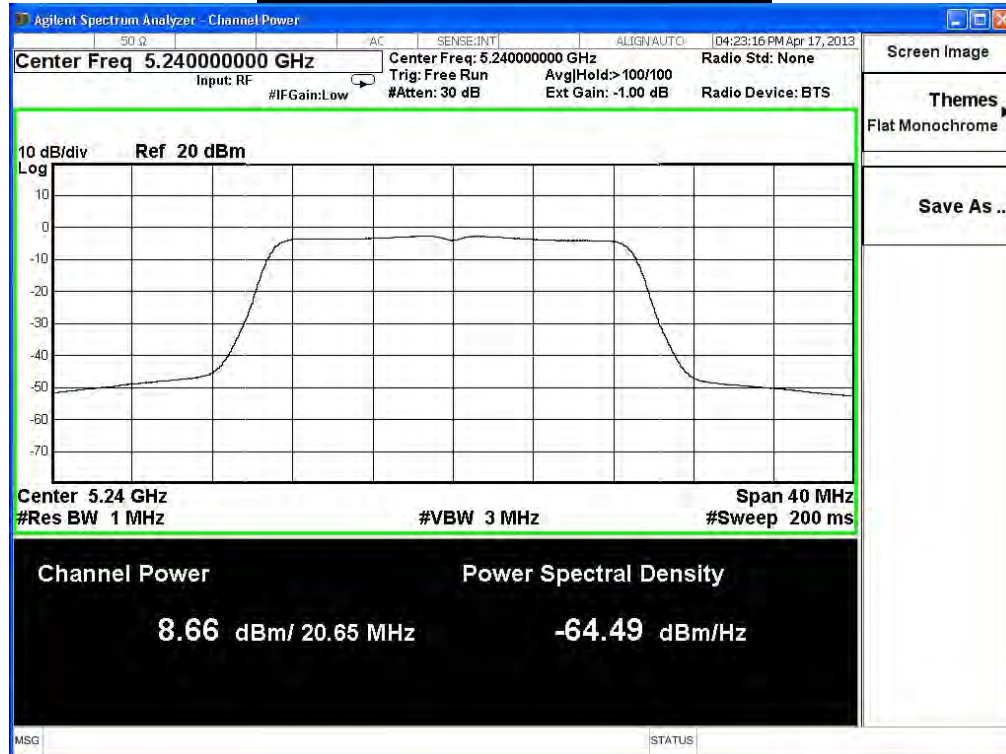
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 1, Power Index : ch36:47, ch44:48, ch48:48						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.360	7.88	≤ 13.79	≤17.08	Pass
44	5220	20.417	7.71	≤ 13.79	≤17.10	Pass
48	5240	20.370	7.51	≤ 13.79	≤17.09	Pass

The worst emission of data rate is 19.5Mbps.

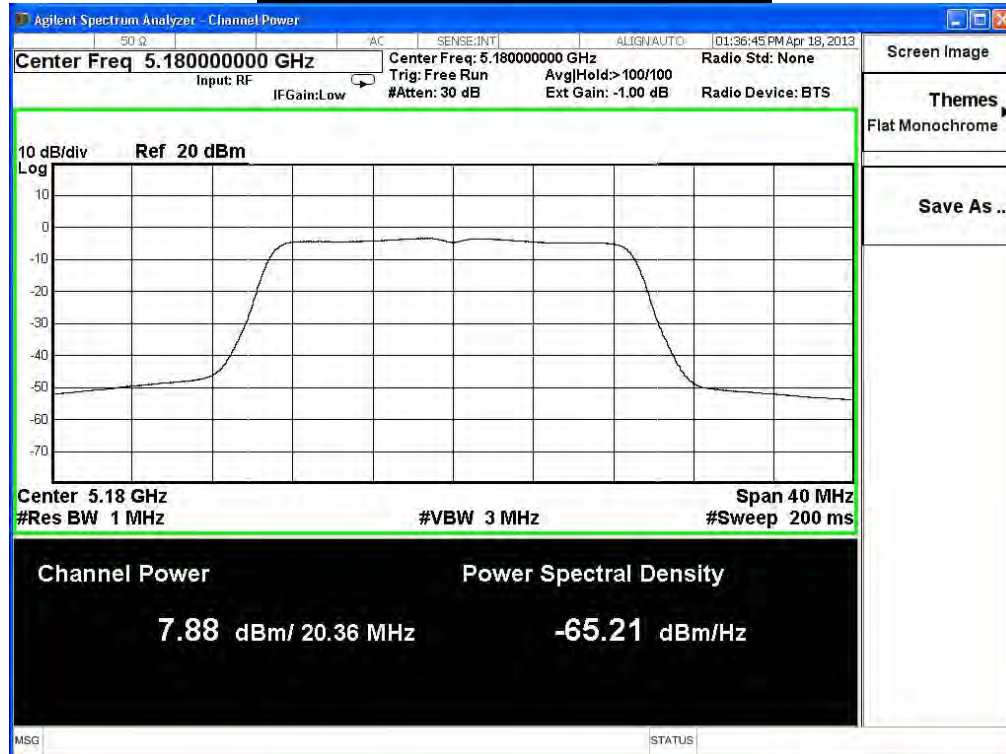
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	7.88	--	--	--	--	--	--	--	13.79dBm or 4dBm+10logB
44	5220	7.71	7.68	7.66	7.61	7.57	7.50	7.48	7.41	
48	5240	7.51	--	--	--	--	--	--	--	

Note:

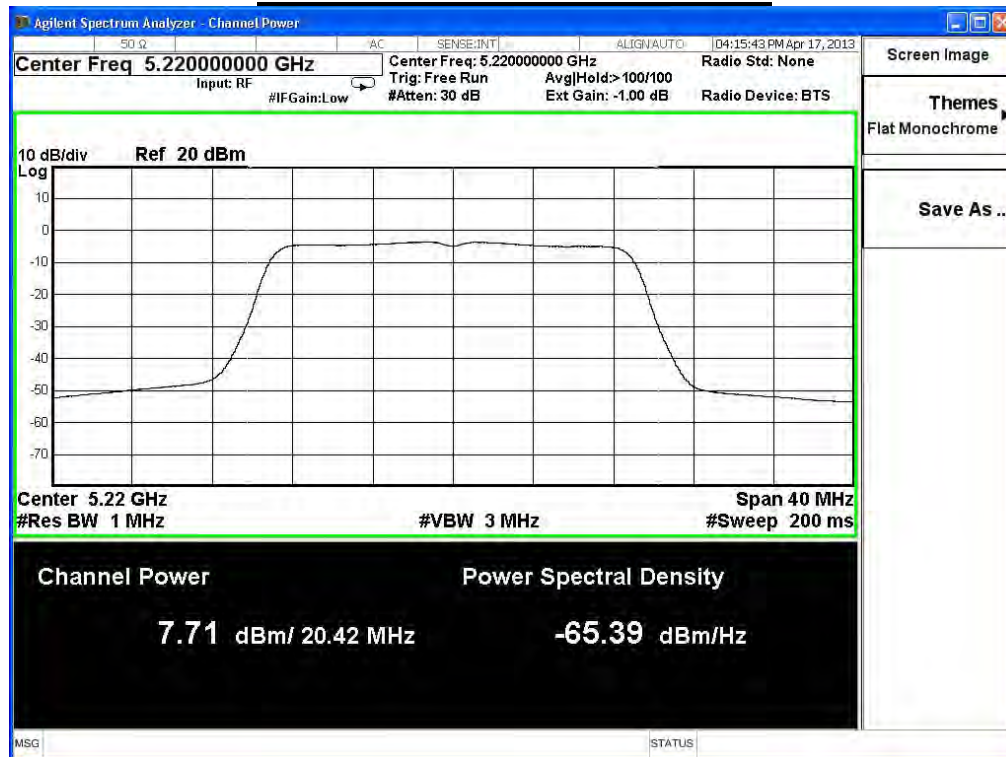
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

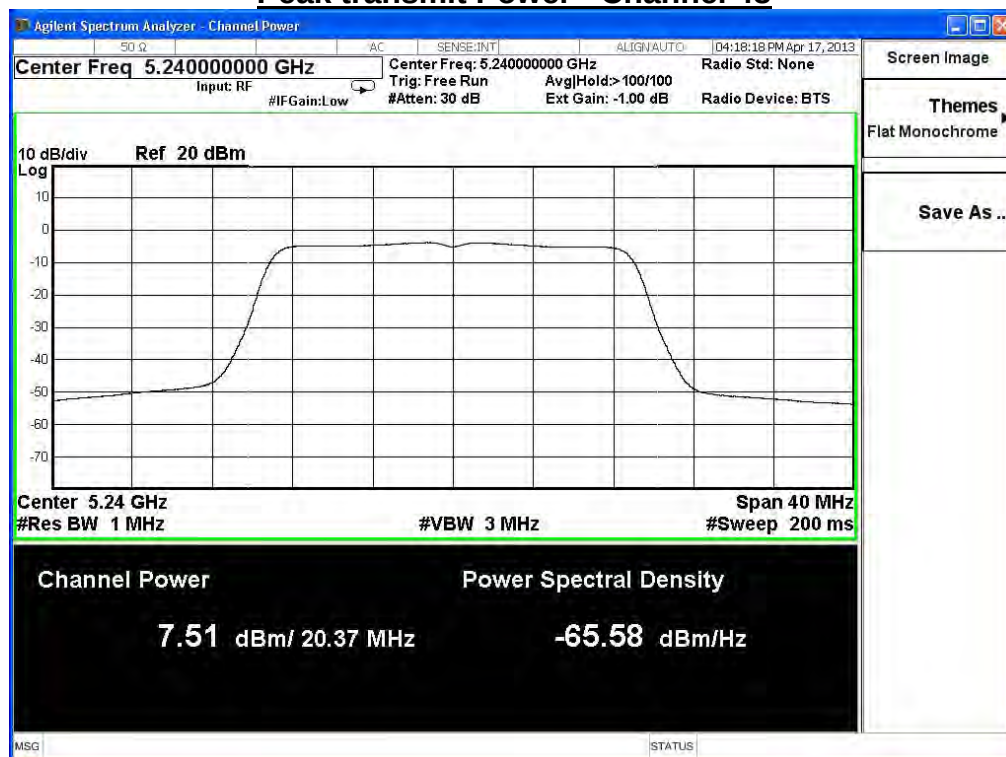
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 2, Power Index : ch36:47, ch44:48, ch48:48						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
36	5180	20.603	9.13	≤ 13.79	≤17.14	Pass
44	5220	20.508	9.36	≤ 13.79	≤17.11	Pass
48	5240	20.507	9.45	≤ 13.79	≤17.12	Pass

The worst emission of data rate is 19.5Mbps.

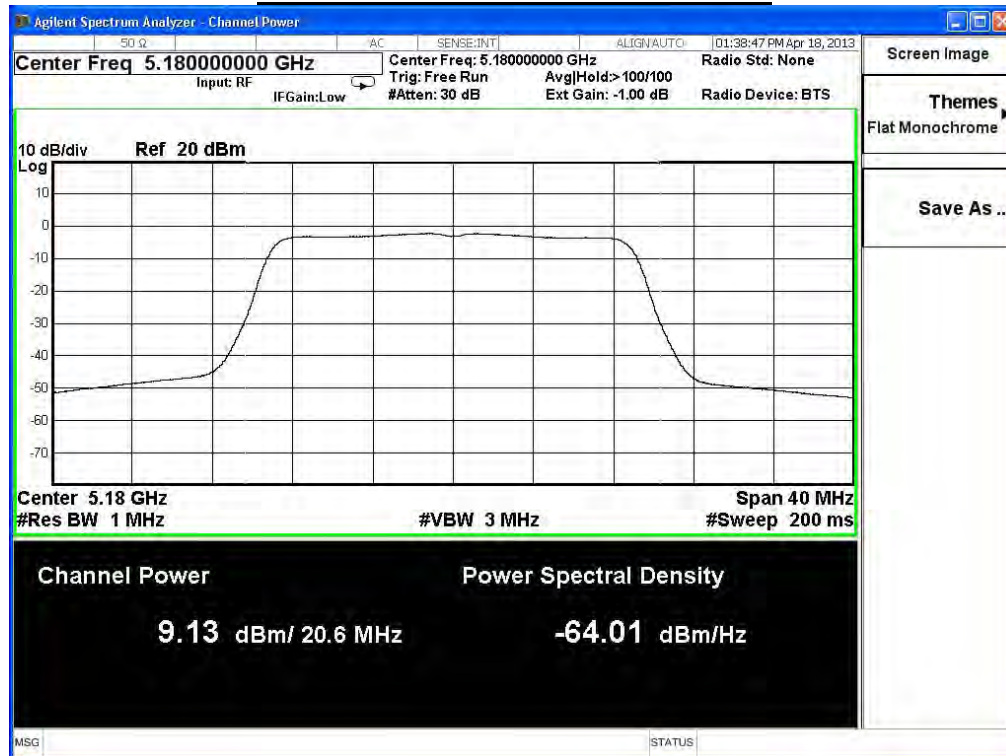
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	9.13	--	--	--	--	--	--	--	13.79dBm or 4dBm+10logB
44	5220	9.36	9.33	9.30	9.28	9.24	9.20	9.18	9.11	
48	5240	9.45	--	--	--	--	--	--	--	

Note:

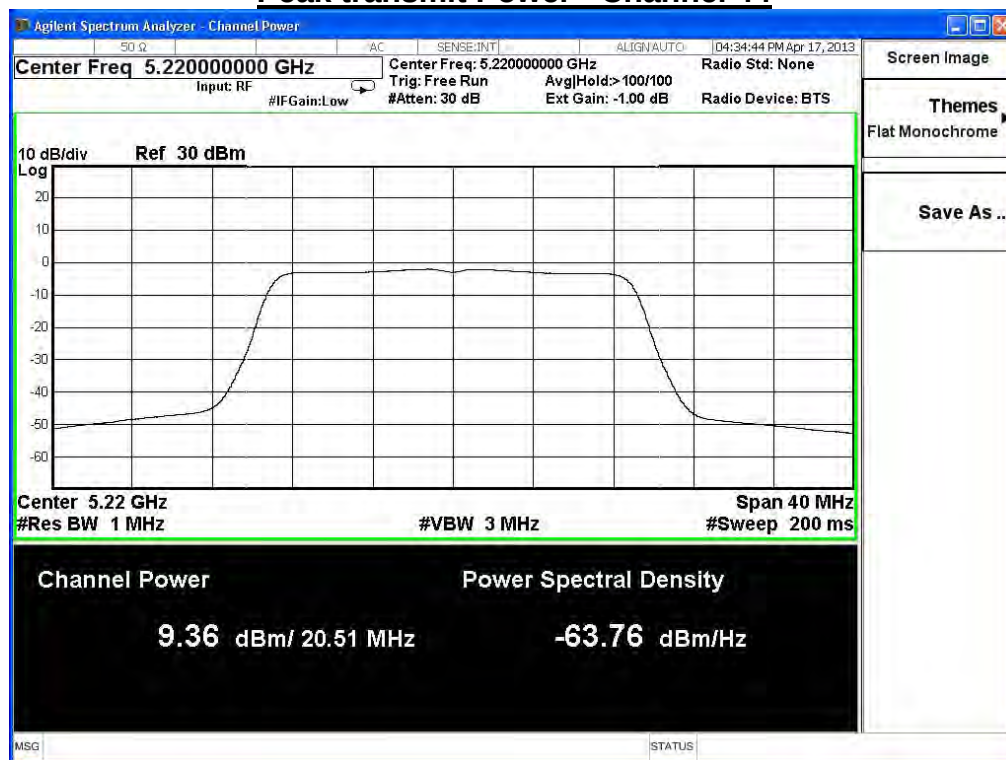
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

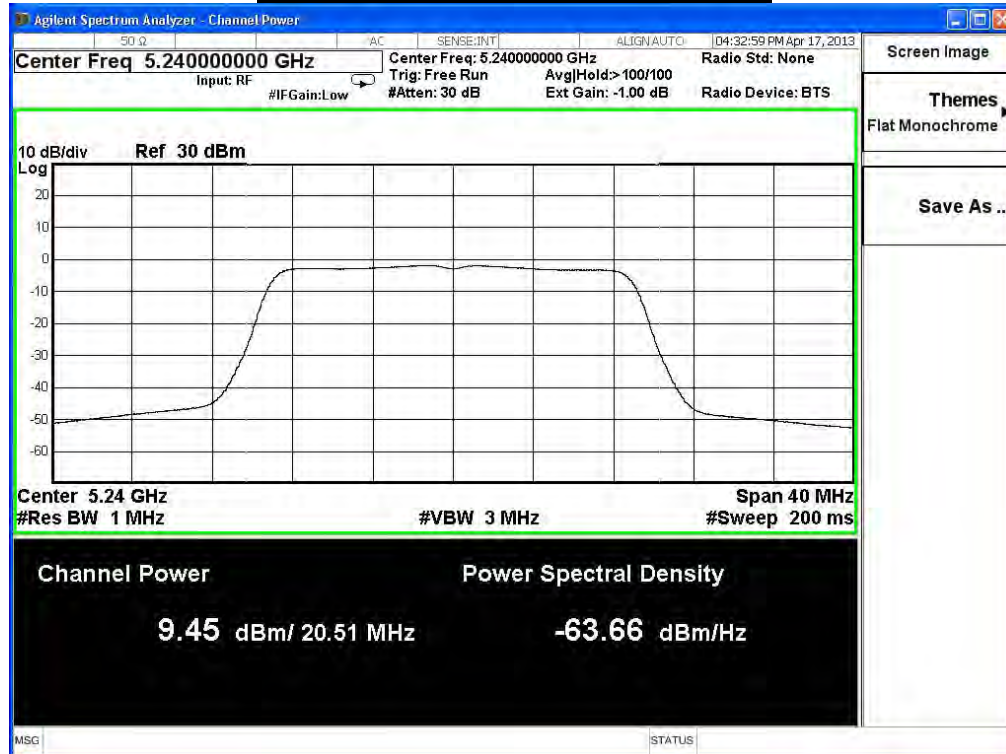
Peak transmit Power - Channel 36



Peak transmit Power - Channel 44



Peak transmit Power - Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2012/11/19	Test Site	SR7

IEEE 802.11n(20MHz)_ANT 0+1+2					
Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
36	5180	21.65	13.35	≤ 13.79	Pass
44	5220	21.73	13.37	≤ 13.79	Pass
48	5240	21.79	13.38	≤ 13.79	Pass

802.11 n(20M), Antenna 0+1+2

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
36	5180	13.35	--	--	--	--	--	--	--	13.79dBm or 4dBm+10logB
44	5220	13.37	13.34	13.30	13.27	13.21	13.16	13.14	13.07	
48	5240	13.38	--	--	--	--	--	--	--	

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 0, Power Index : ch38:47, ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.836	8.64	≤ 13.79	≤20.11	Pass
46	5230	40.826	9.10	≤ 13.79	≤20.10	Pass

The worst emission of data rate is 40.5 Mbps

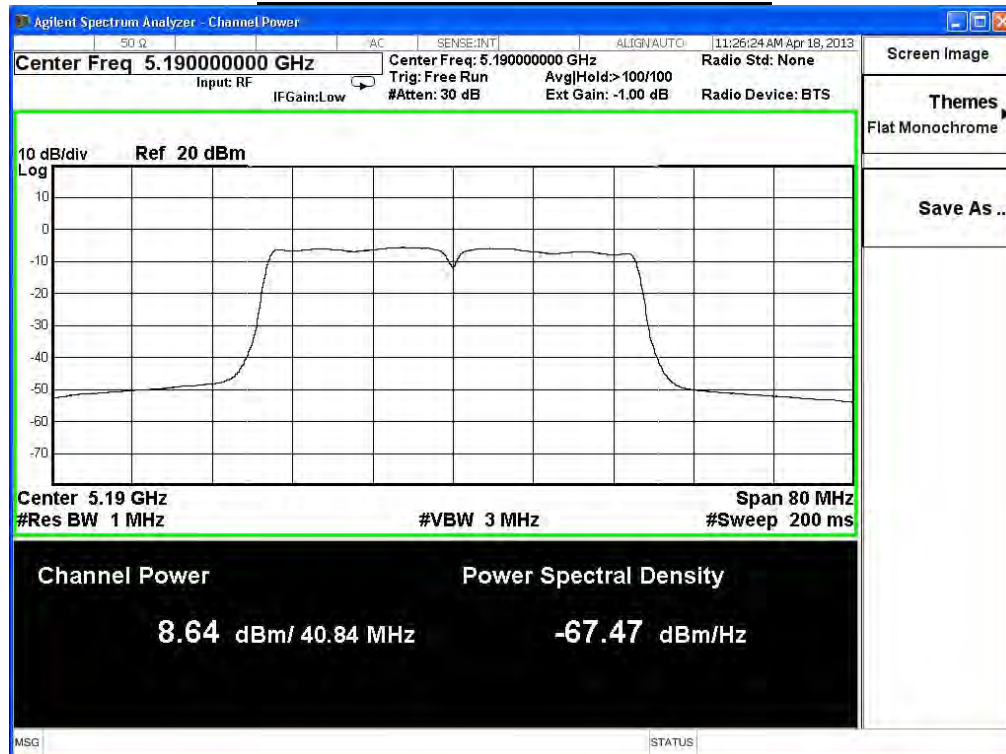
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	8.64	8.60	8.55	8.51	8.49	8.41	8.35	8.30	13.79dBm or 4dBm+10logB
46	5230	9.10	--	--	--	--	--	--	--	

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 1, Power Index : ch38:47, ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.450	7.62	≤ 13.79	≤20.07	Pass
46	5230	40.497	8.18	≤ 13.79	≤20.07	Pass

The worst emission of data rate is 40.5 Mbps

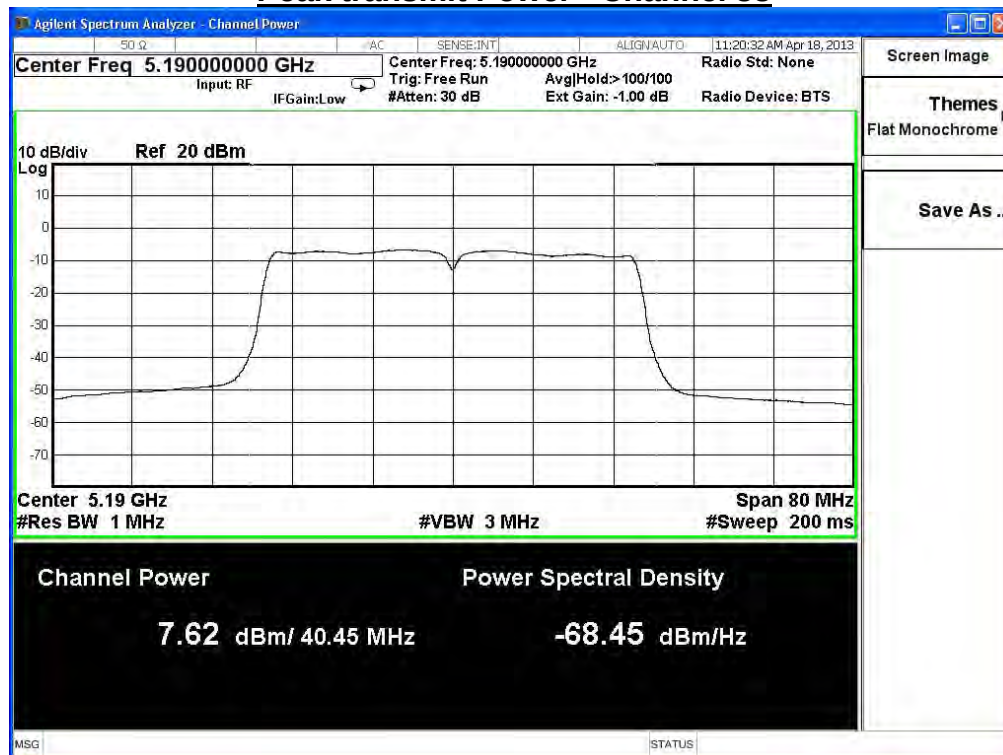
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	7.62	7.58	7.55	7.50	7.45	7.40	7.38	7.33	13.79dBm or 4dBm+10logB
46	5230	8.18	--	--	--	--	--	--	--	

Note:

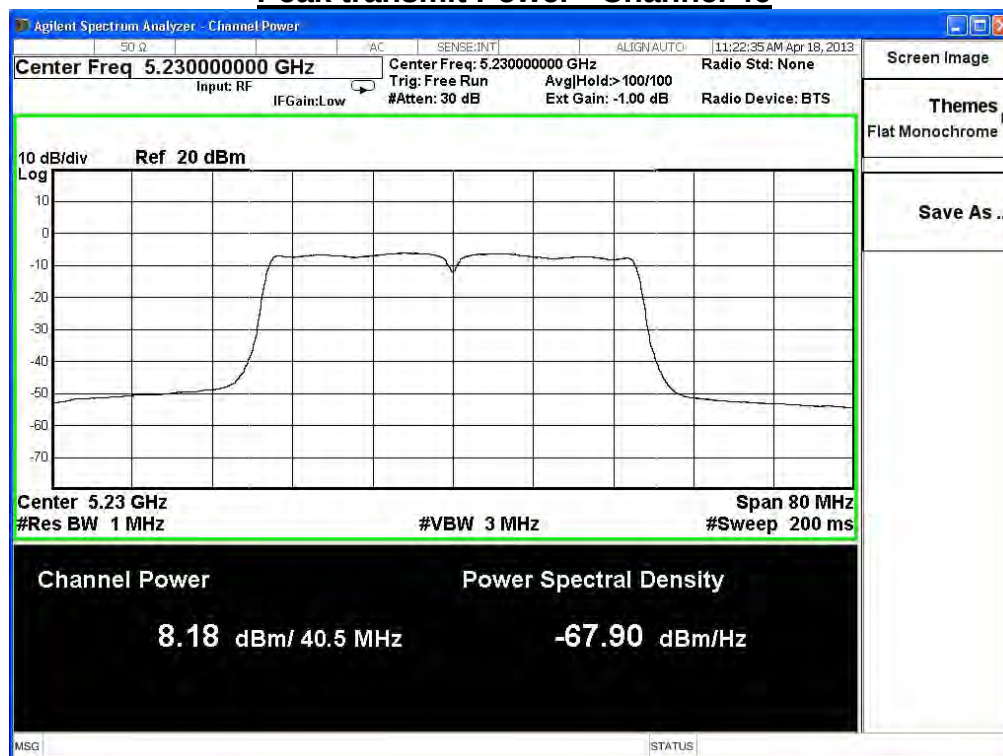
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11n(40MHz)_ANT 2, Power Index : ch38:47, ch46:49						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
38	5190	40.492	9.04	≤ 13.79	≤20.07	Pass
46	5230	40.574	9.39	≤ 13.79	≤20.08	Pass

The worst emission of data rate is 40.5 Mbps

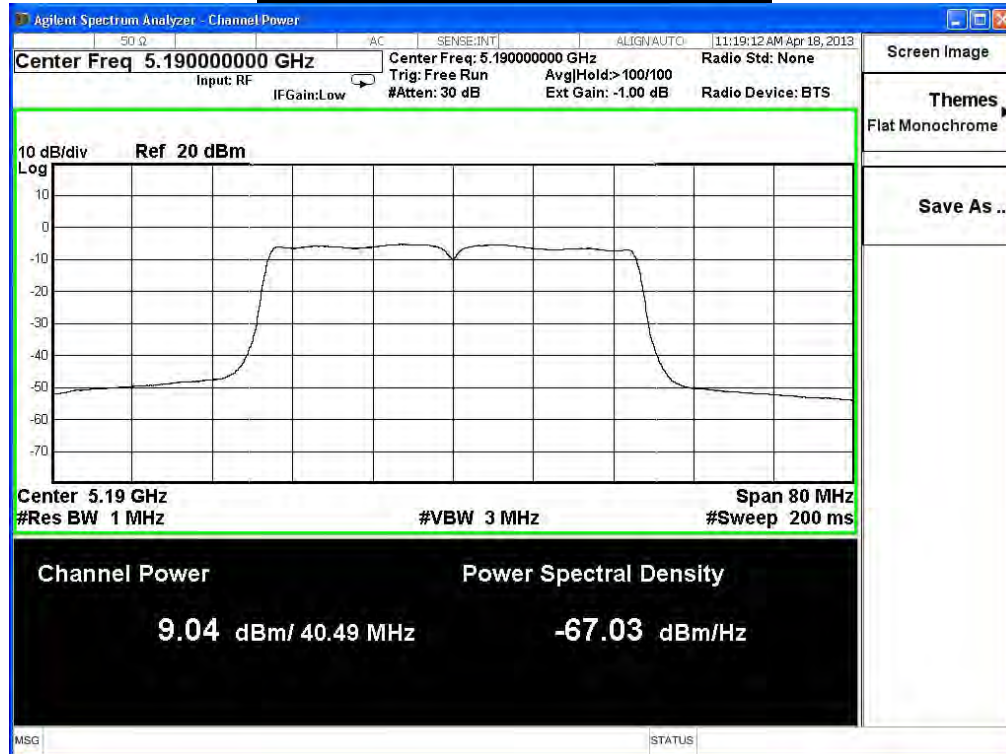
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	9.04	9.00	8.95	8.92	8.88	8.81	8.75	8.70	13.79dBm or
46	5230	9.39	--	--	--	--	--	--	--	4dBm+10logB

Note:

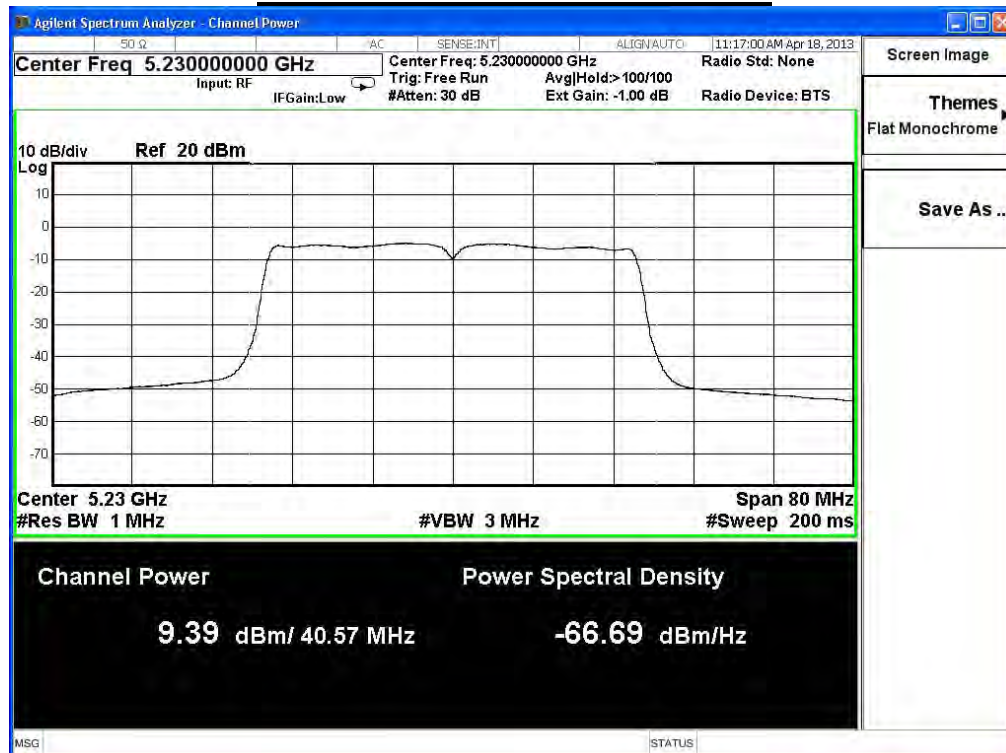
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Peak transmit Power - Channel 38



Peak transmit Power - Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

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

Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
38	5190	21.11	13.24	≤ 13.79	Pass
46	5230	23.39	13.69	≤ 13.79	Pass

802.11 n(40M), Antenna 0+1+2

Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81	121.5	162	243	324	364.5	405	
38	5190	13.24	13.20	13.16	13.12	13.09	13.02	12.97	12.92	13.79dBm or 4dBm+10logB
46	5230	13.69	--	--	--	--	--	--	--	

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11ac(80MHz)_ANT 0, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	82.798	8.58	≤ 13.79	≤23.18	Pass

The worst emission of data rate is 87.9 Mbps

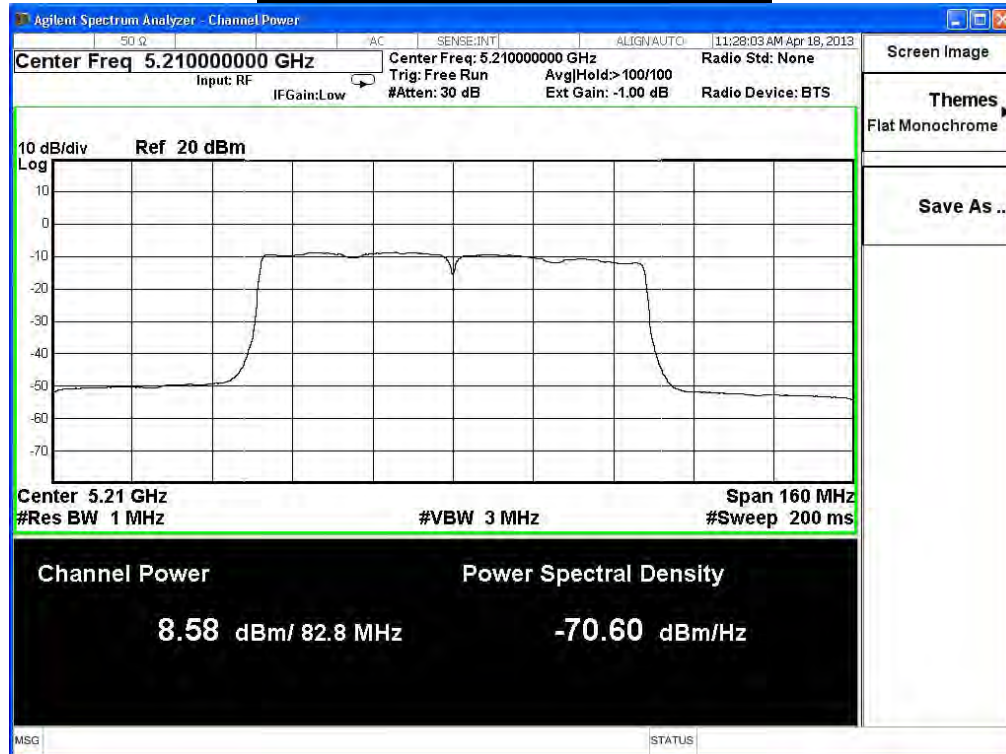
Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	8.58	8.50	8.45	8.41	8.38	8.32	8.24	8.21	8.18	8.11	13.79 or 4dBm+10logB

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Peak transmit Power - Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11ac(40MHz)_ANT 1, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	82.614	7.58	≤ 13.79	≤23.17	Pass

The worst emission of data rate is 87.9 Mbps

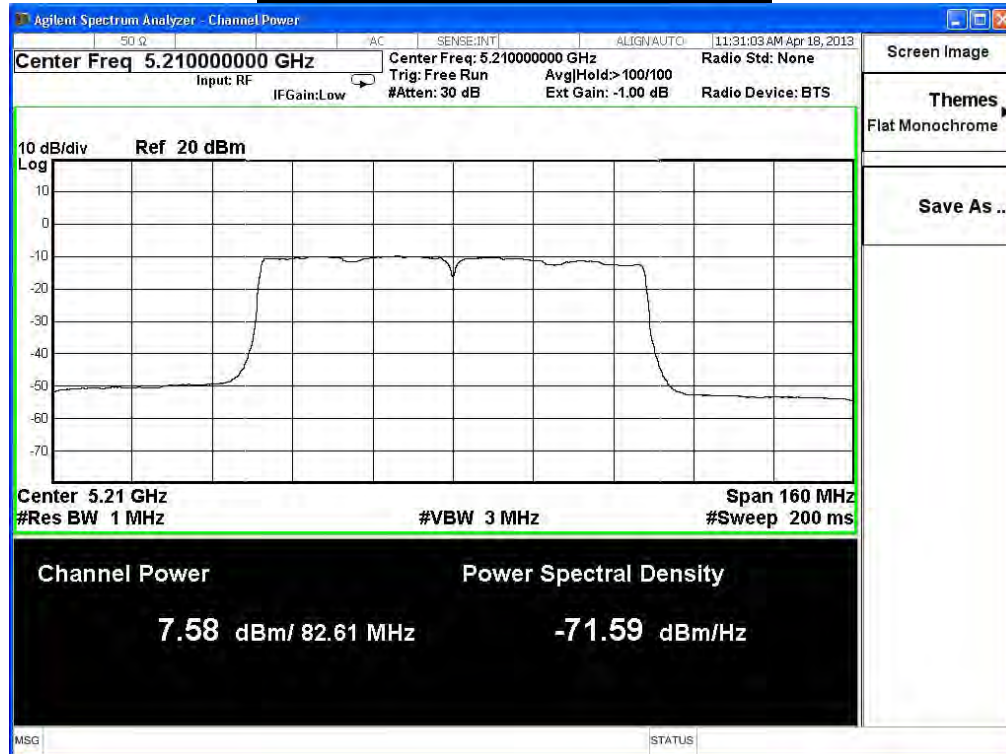
Peak Power Output (dBm)												Required Limit
MCS Index		0	1	2	3	4	5	6	7	8	9	
Channel No	Frequency (MHz)	Data Rate										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	7.58	7.55	7.48	7.42	7.37	7.33	7.24	7.20	7.15	7.11	13.79 or 4dBm+10logB

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm m}$

Peak transmit Power - Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11ac(40MHz)_ANT 2, Power Index : ch42:47						
Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Required Limit		Result
				Fixed Limit (dBm)	4+10logB Limit (dBm)	
42	5210	81.825	9.34	≤ 13.79	≤23.13	Pass

The worst emission of data rate is 87.9 Mbps

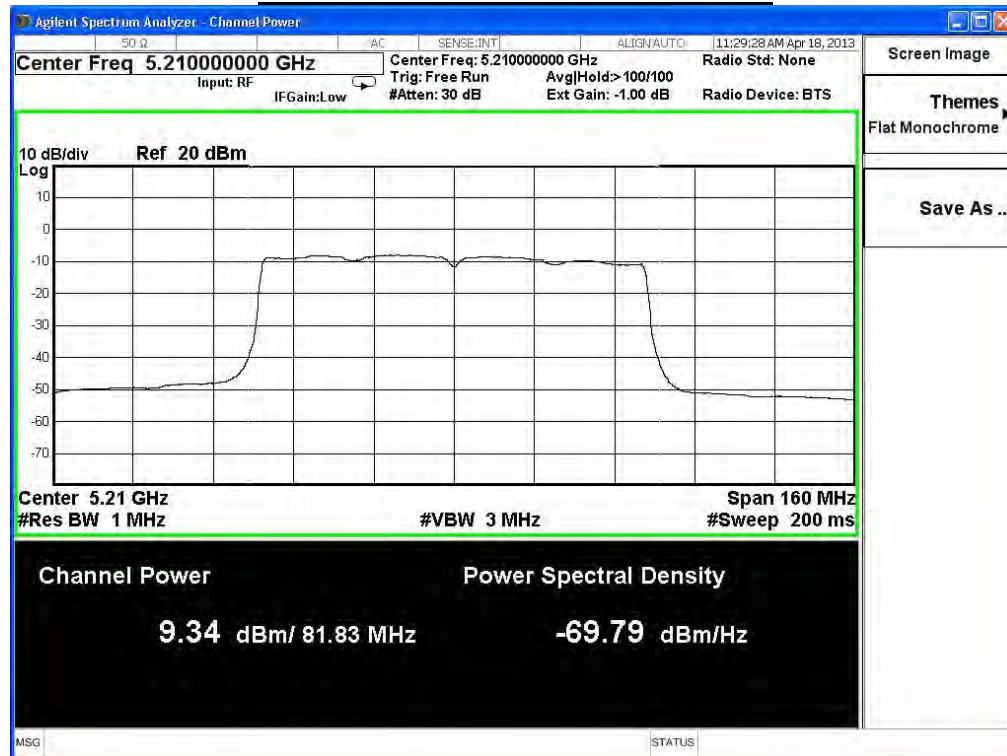
Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	9.34	9.30	9.24	9.21	9.14	9.10	9.07	9.02	8.89	8.81	13.79 or 4dBm+10log B

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

Peak transmit Power - Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Transmit Output		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/04/18	Test Site	SR7

IEEE 802.11ac(80MHz)_ANT 0+1+2					
Channel No.	Frequency (MHz)	Total Output Power		Required Limit (dBm)	Result
		(mW)	(dBm)		
42	5210	21.53	13.33	≤ 13.79	Pass

802.11 AC(80M), Antenna 0+1+2

Peak Power Output (dBm)												
MCS Index		0	1	2	3	4	5	6	7	8	9	Required Limit
Channel No	Frequency (MHz)	Data Rate										
		87.9	175.5	263.4	351	526.5	702	789.9	877.5	1053	1170	
42	5210	13.33	13.28	13.22	13.18	13.13	13.08	13.02	12.98	12.90	12.84	13.79 or 4dBm+10log B

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $17\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 13.79\text{ dBm}$

5. Peak Power Spectrum Density

5.1. Test Equipment

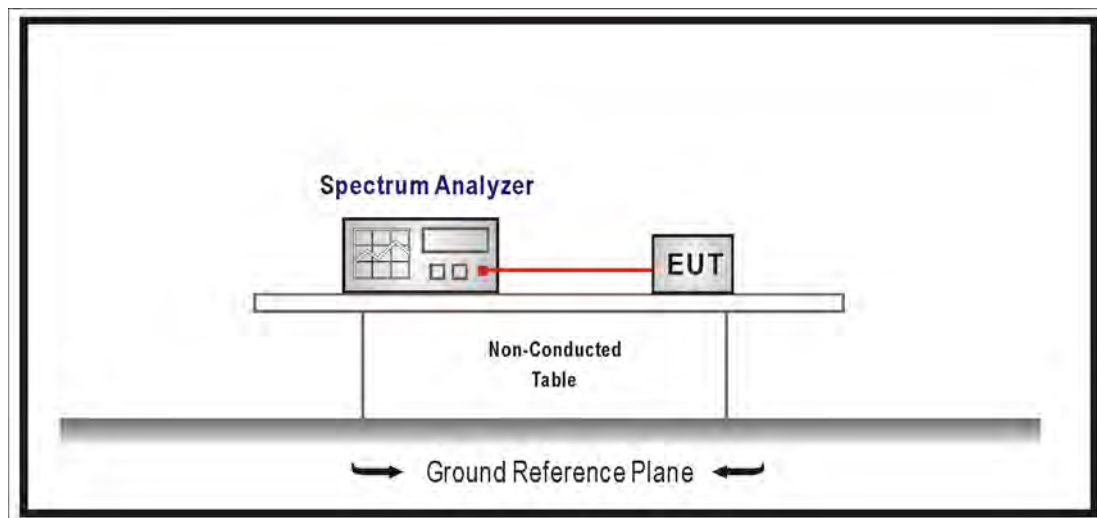
The following test equipments are used during the conducted tests:

Peak Power Spectrum Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

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

5.2. Test Setup



5.3. Limits

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
2. 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.
3. For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

5.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to U-NII test procedure of KDB 789033 for compliance to FCC 47CFR Subpart E requirements.

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.

5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

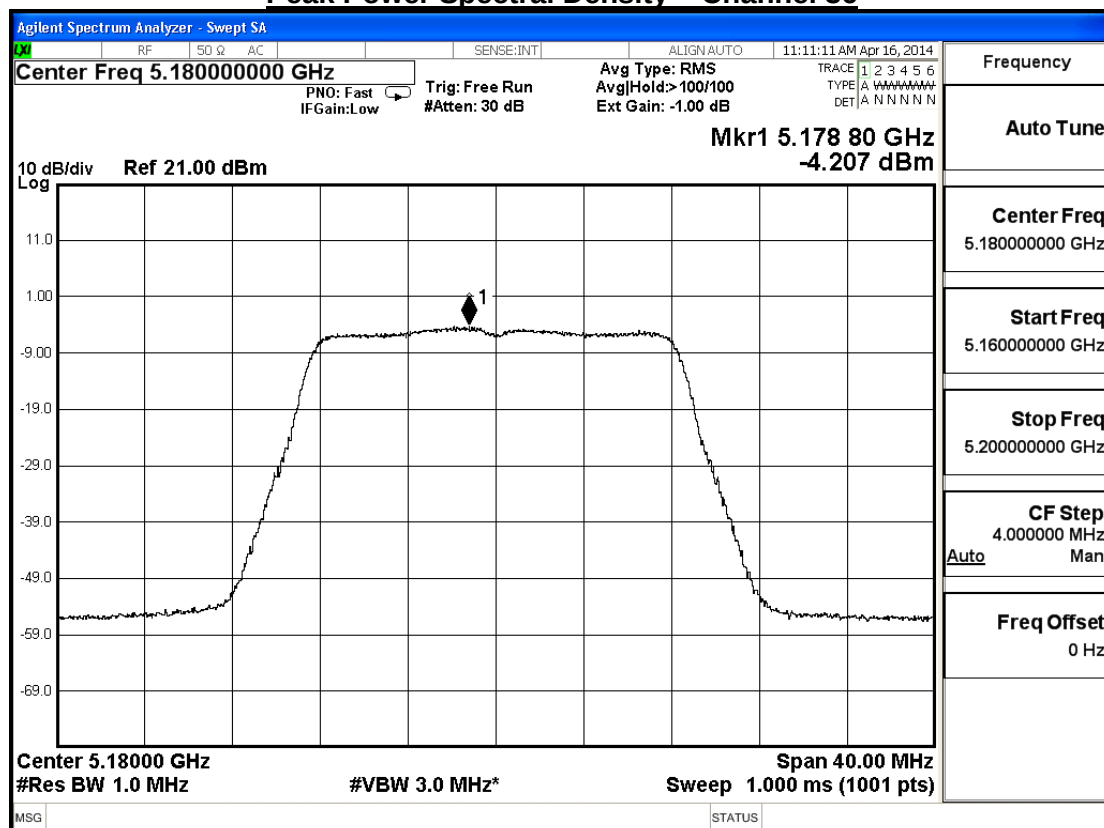
IEEE 802.11a (ANT0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.207	≤ 0.79	Pass
44	5220	-4.196	≤ 0.79	Pass
48	5240	-3.985	≤ 0.79	Pass

Note:

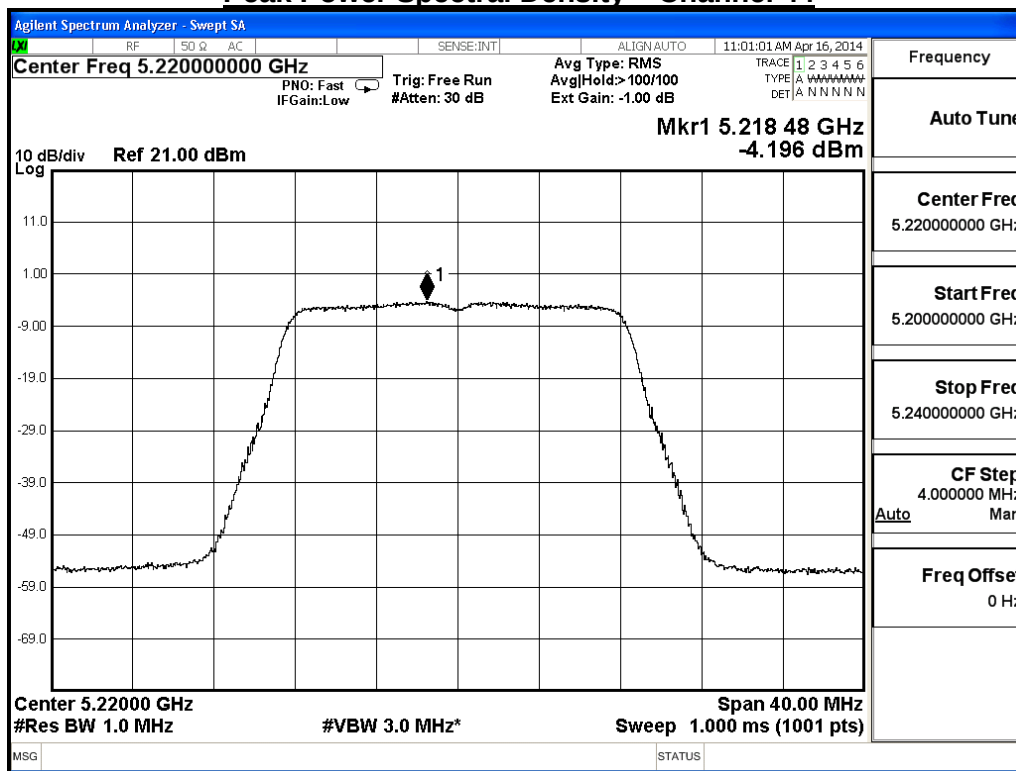
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

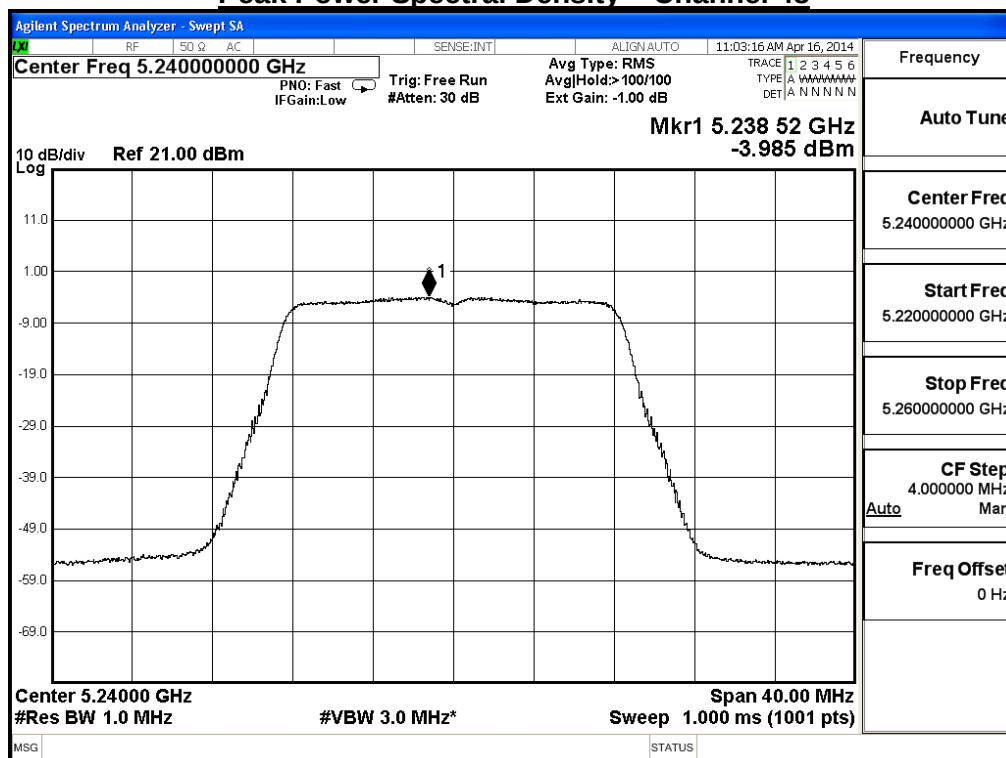
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

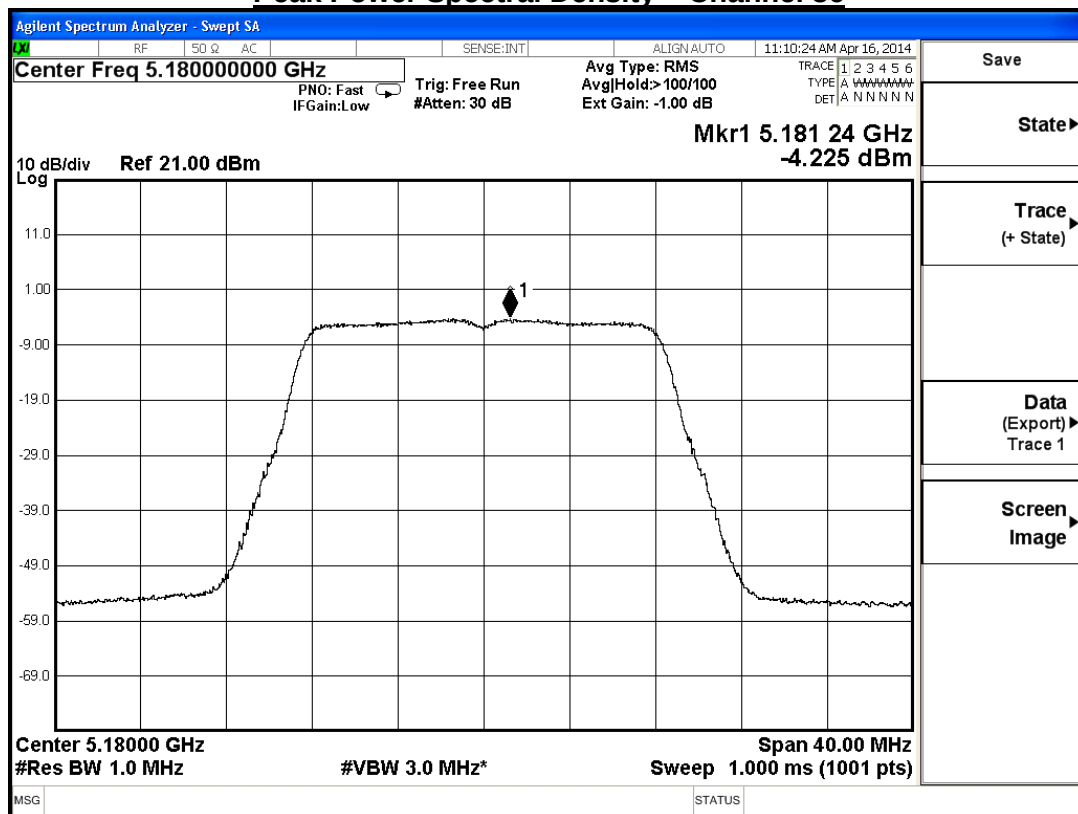
IEEE 802.11a (ANT1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.225	≤ 0.79	Pass
44	5220	-4.410	≤ 0.79	Pass
48	5240	-4.046	≤ 0.79	Pass

Note:

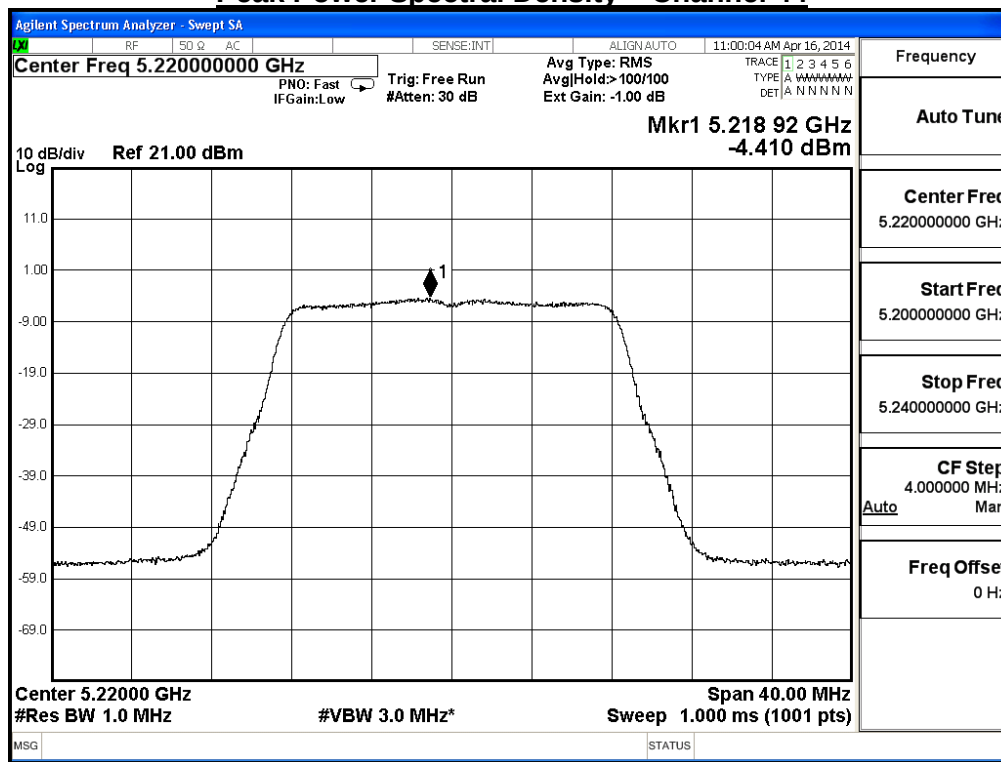
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

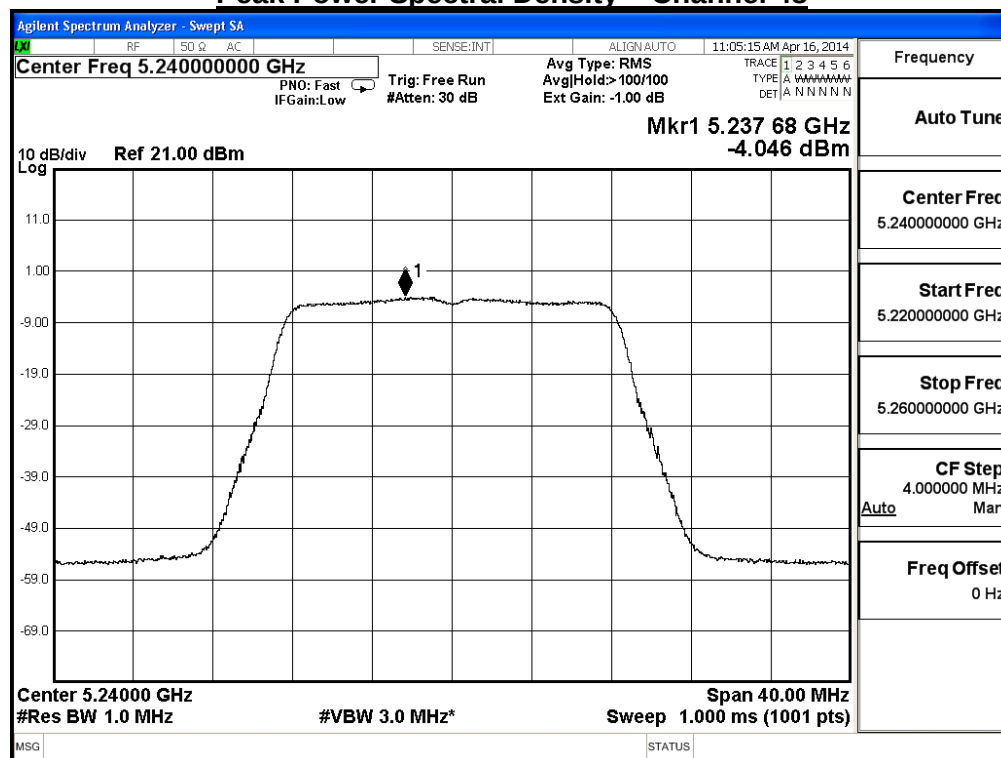
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

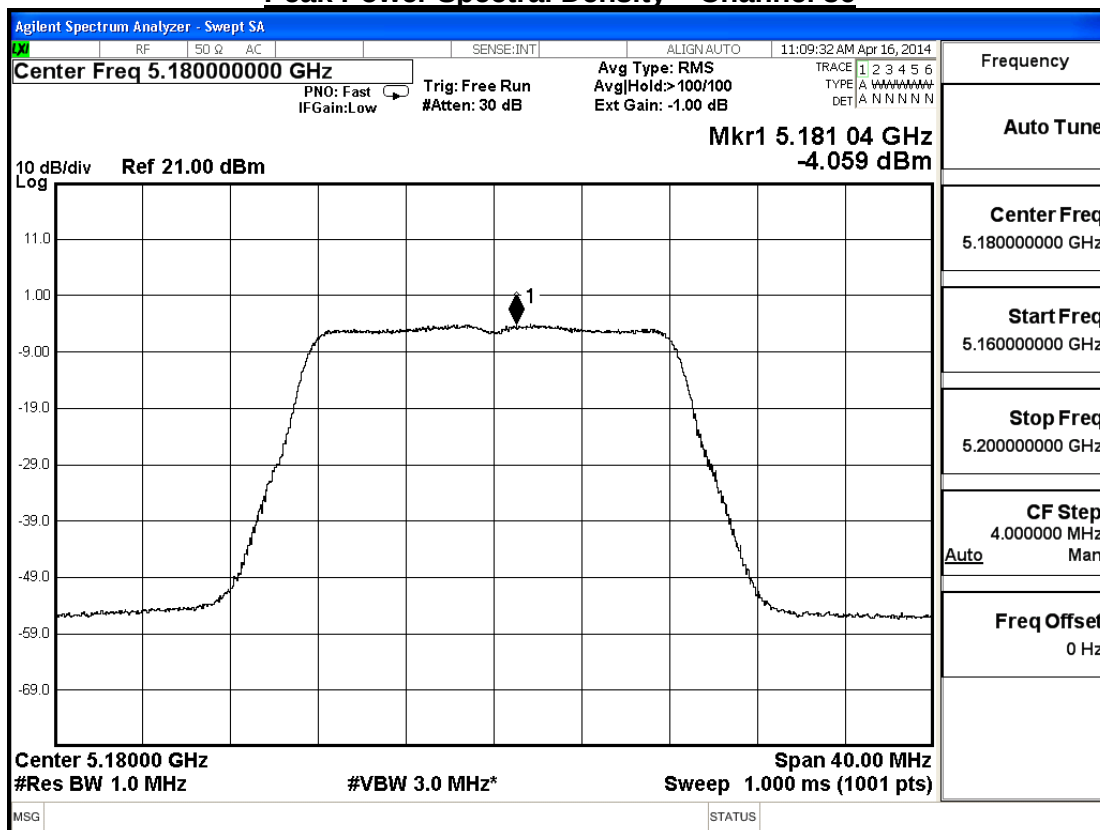
IEEE 802.11a (ANT2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.059	≤ 0.79	Pass
44	5220	-4.300	≤ 0.79	Pass
48	5240	-4.074	≤ 0.79	Pass

Note:

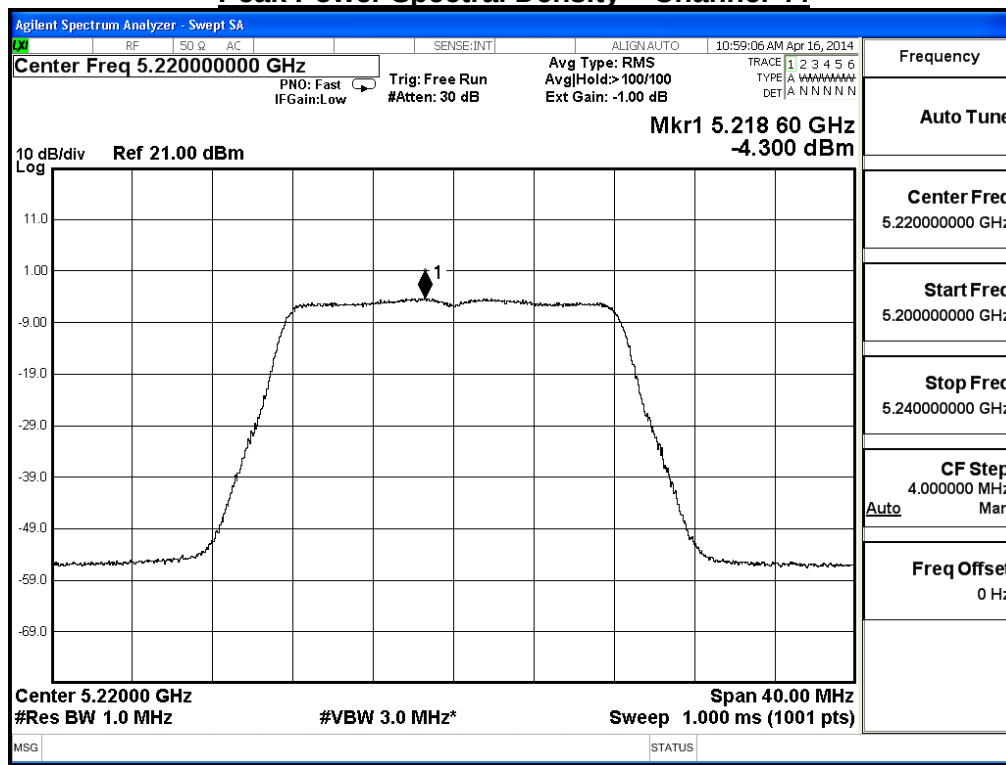
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

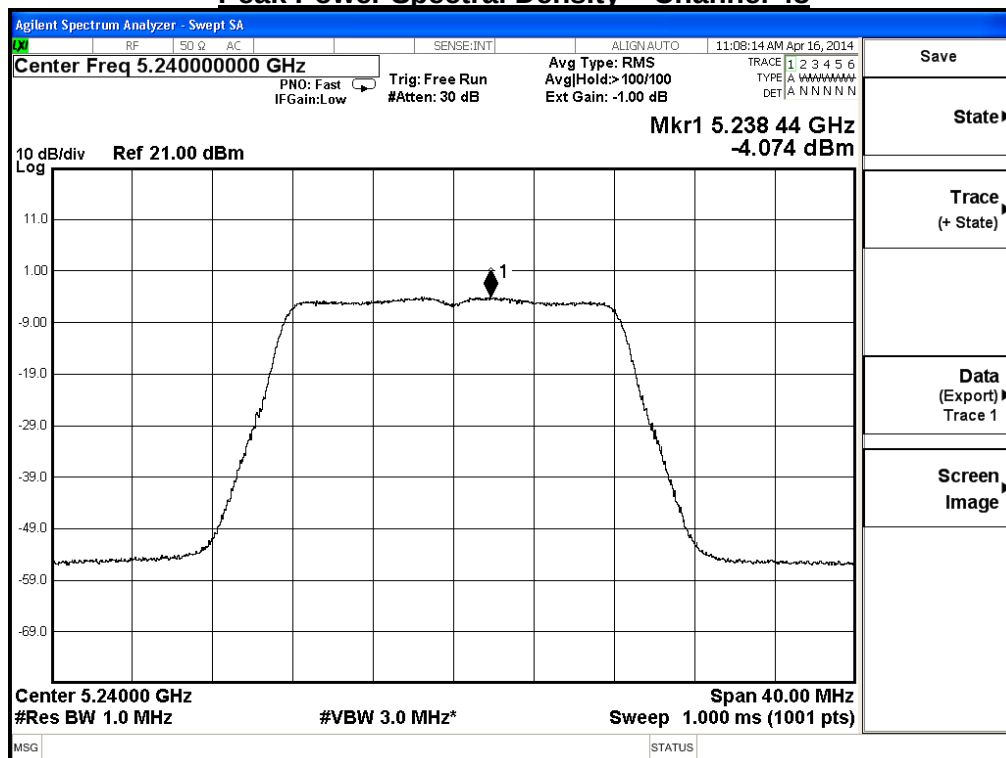
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

IEEE 802.11a (ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	0.610	≤ 0.79	Pass
44	5220	0.470	≤ 0.79	Pass
48	5240	0.740	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3)$ + Max Gain = 9.21dBi

Required Limit = 4dBm – (9.21dBi - 6dB) = 0.79dBm

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

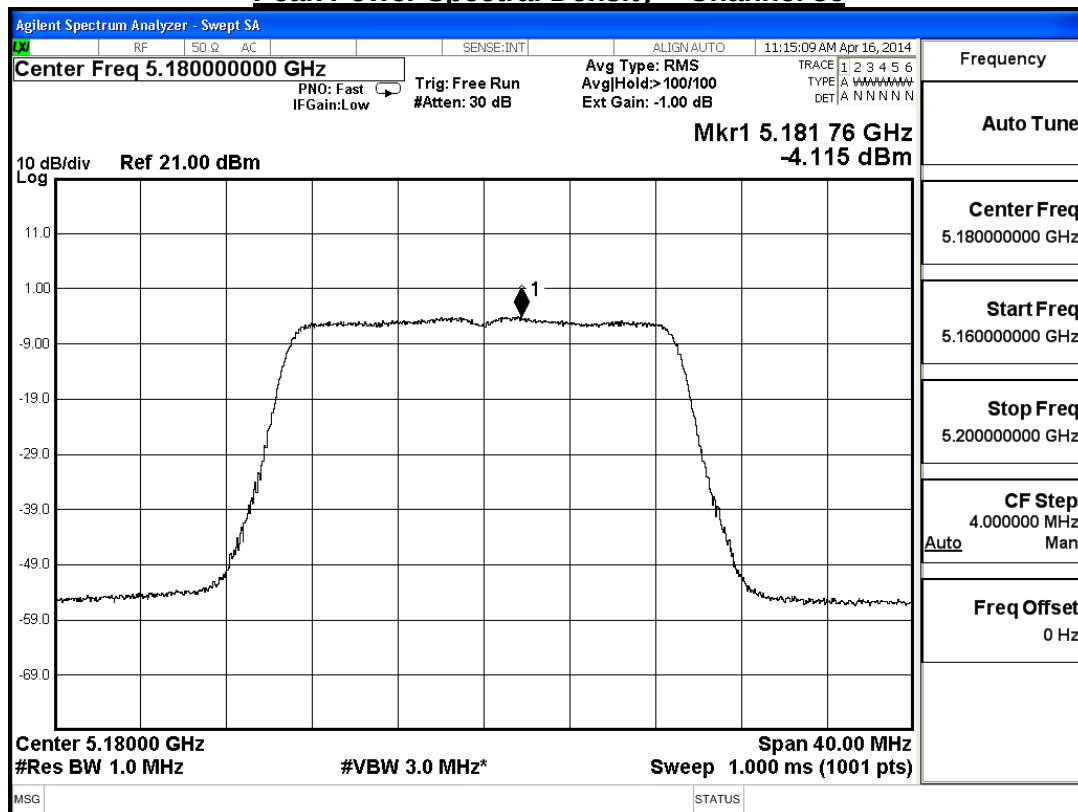
IEEE 802.11n_20M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.115	≤ 0.79	Pass
44	5220	-4.010	≤ 0.79	Pass
48	5240	-3.790	≤ 0.79	Pass

Note:

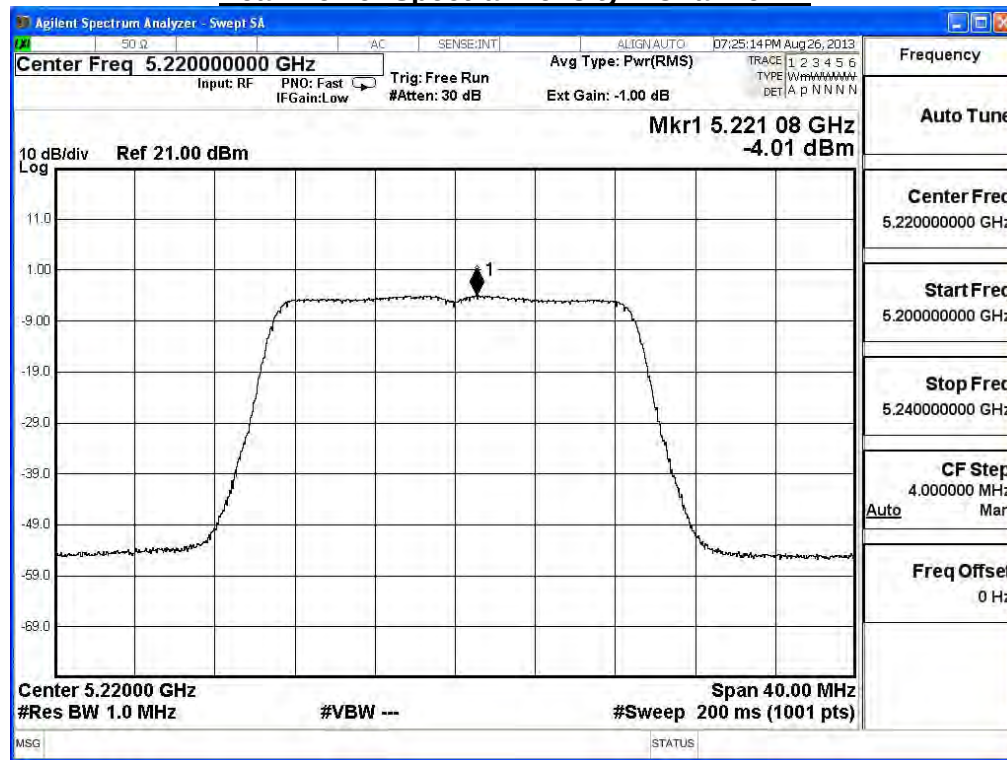
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

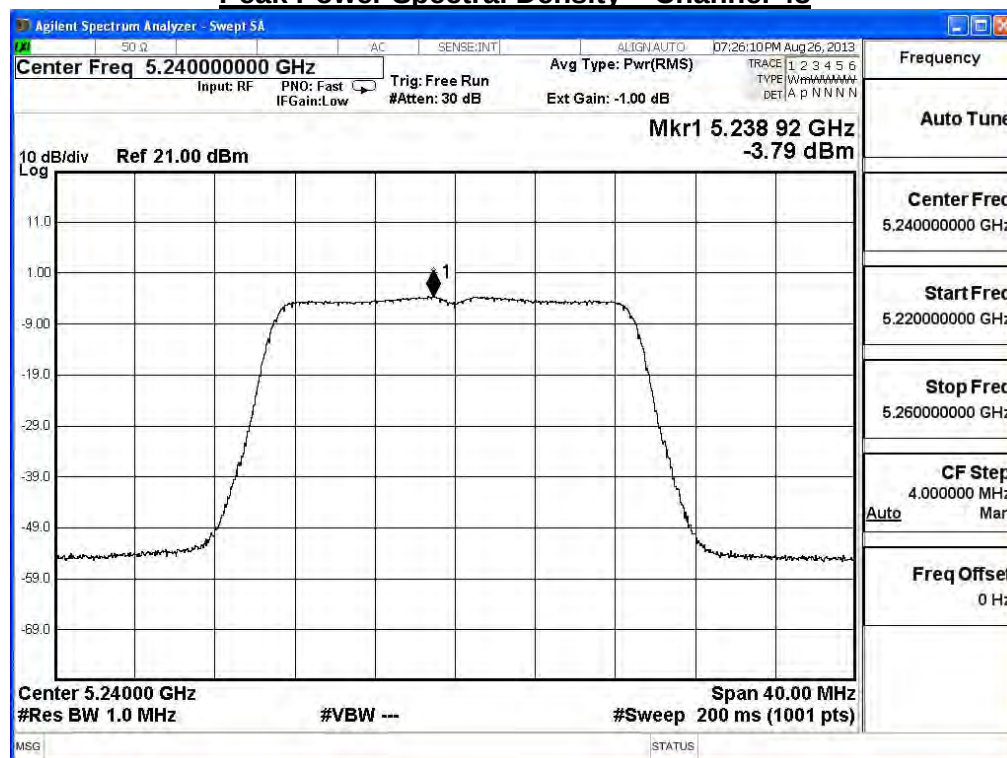
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

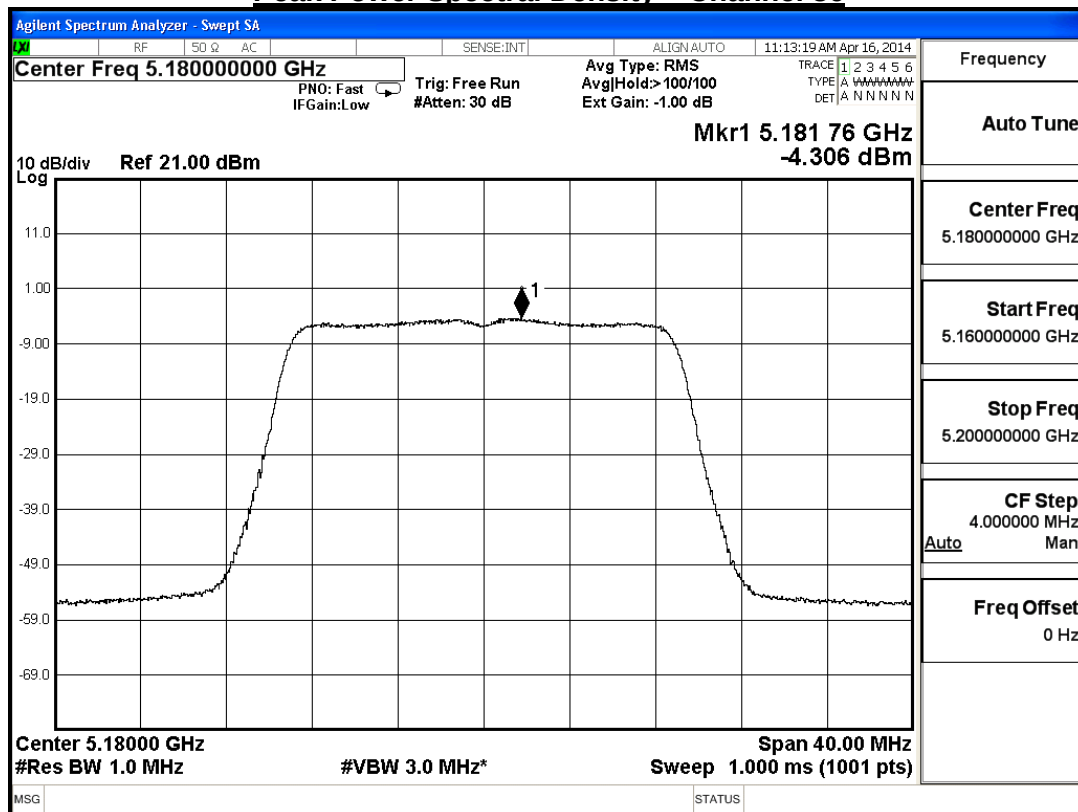
IEEE 802.11n_20M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.306	≤ 0.79	Pass
44	5220	-4.170	≤ 0.79	Pass
48	5240	-4.430	≤ 0.79	Pass

Note:

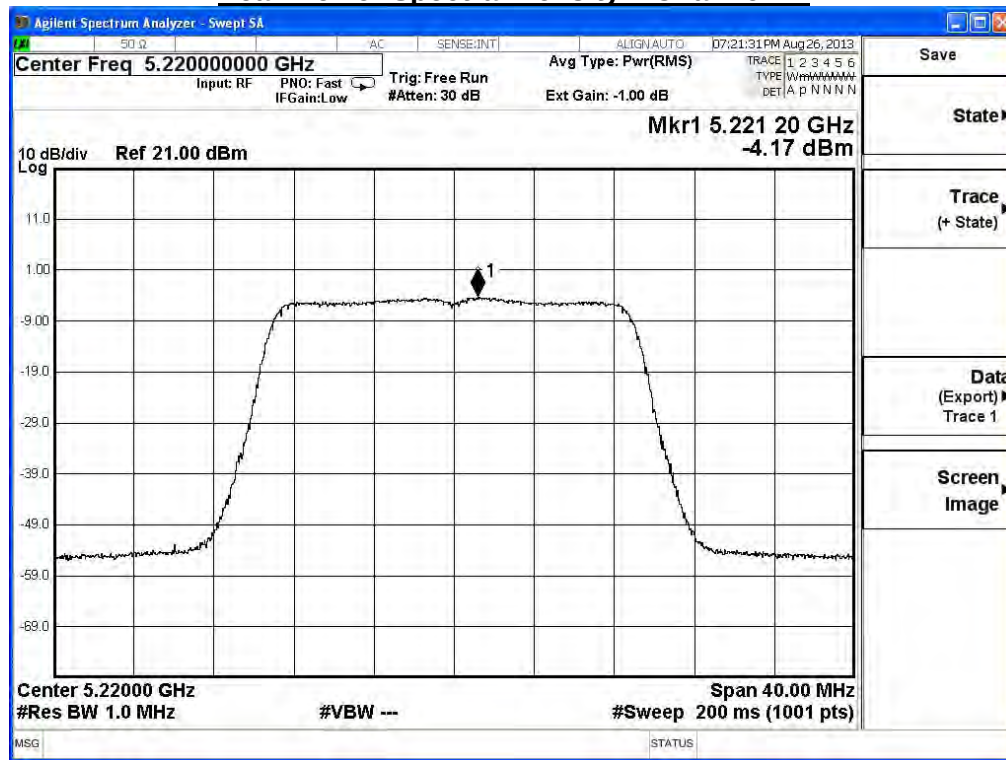
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

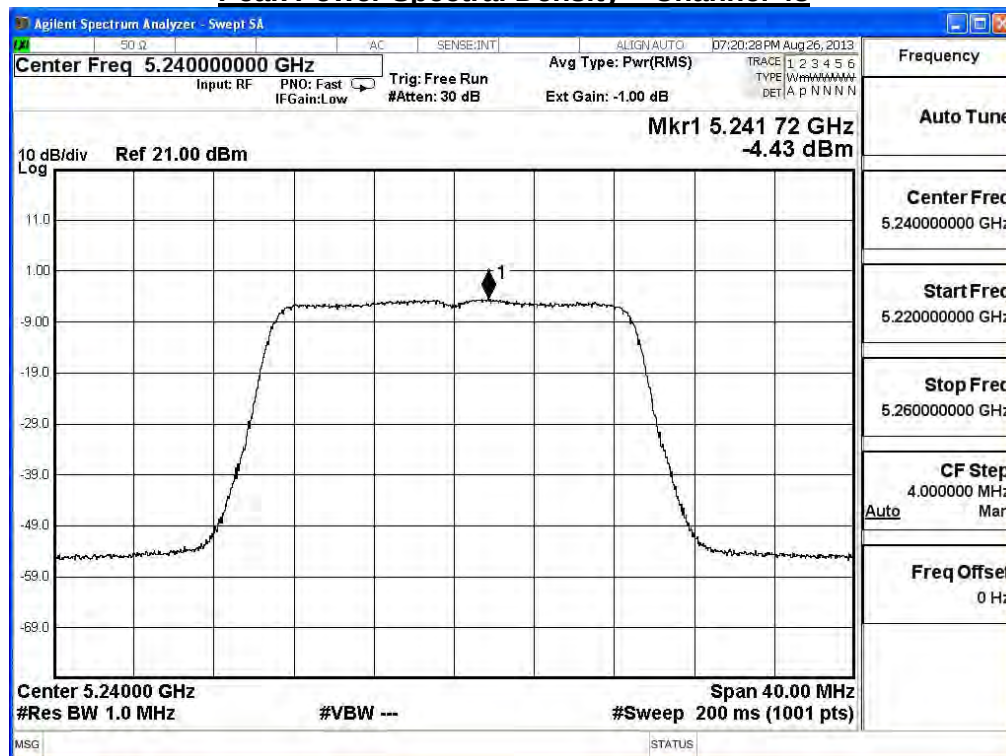
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

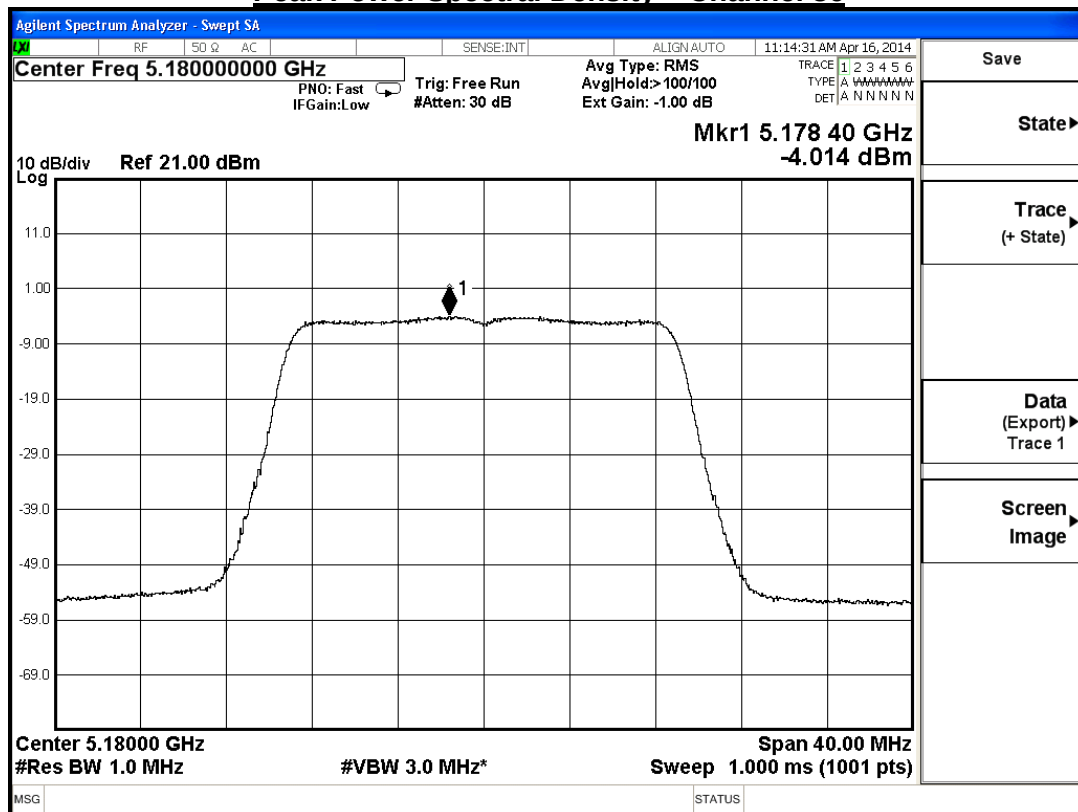
IEEE 802.11n_20M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.014	≤ 0.79	Pass
44	5220	-3.850	≤ 0.79	Pass
48	5240	-4.000	≤ 0.79	Pass

Note:

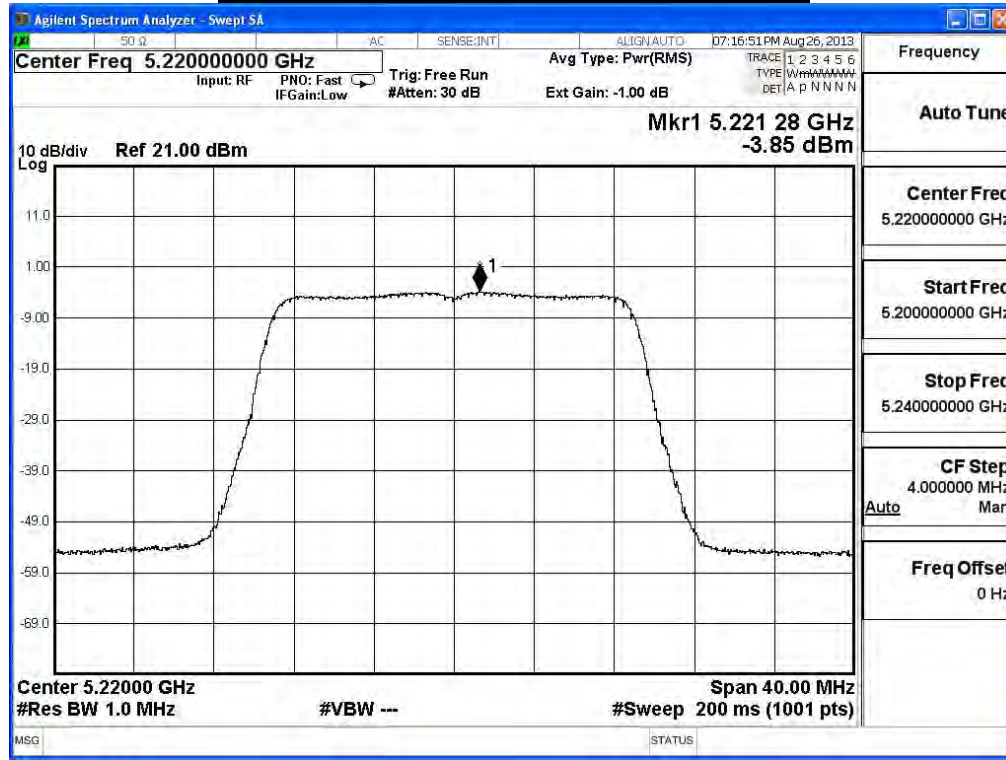
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

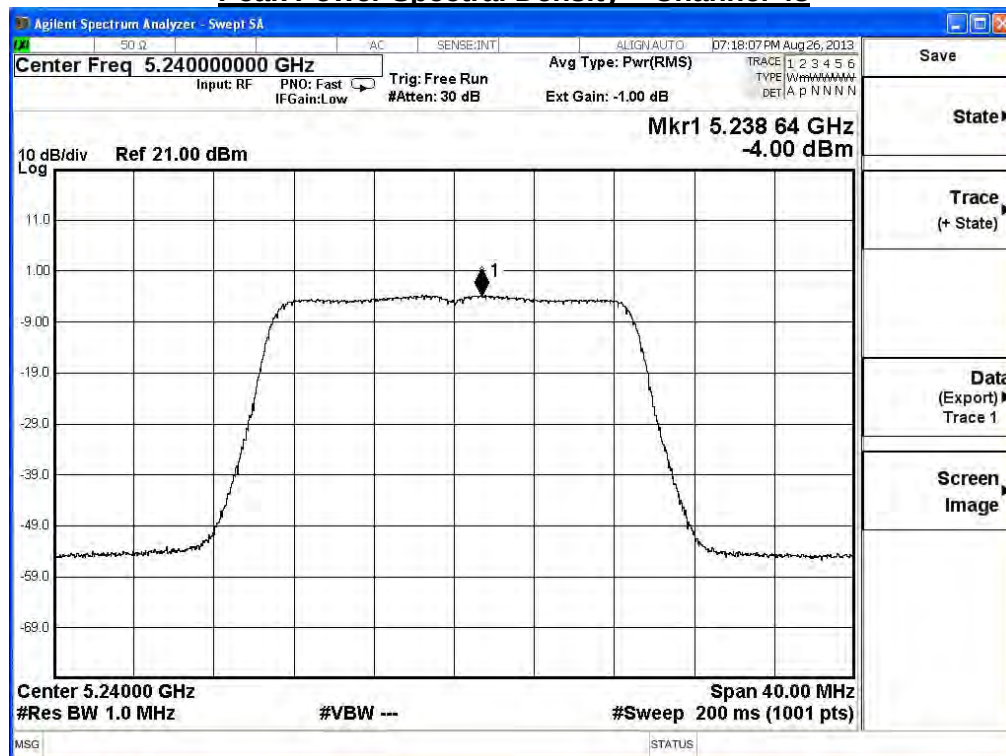
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

IEEE 802.11n_20M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	0.630	≤ 0.79	Pass
44	5220	0.760	≤ 0.79	Pass
48	5240	0.710	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3)$ + Max Gain = 9.21dBi

Required Limit = 4dBm – (9.21dBi - 6dB) = 0.79dBm

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

IEEE 802.11n_40M(ANT 0)

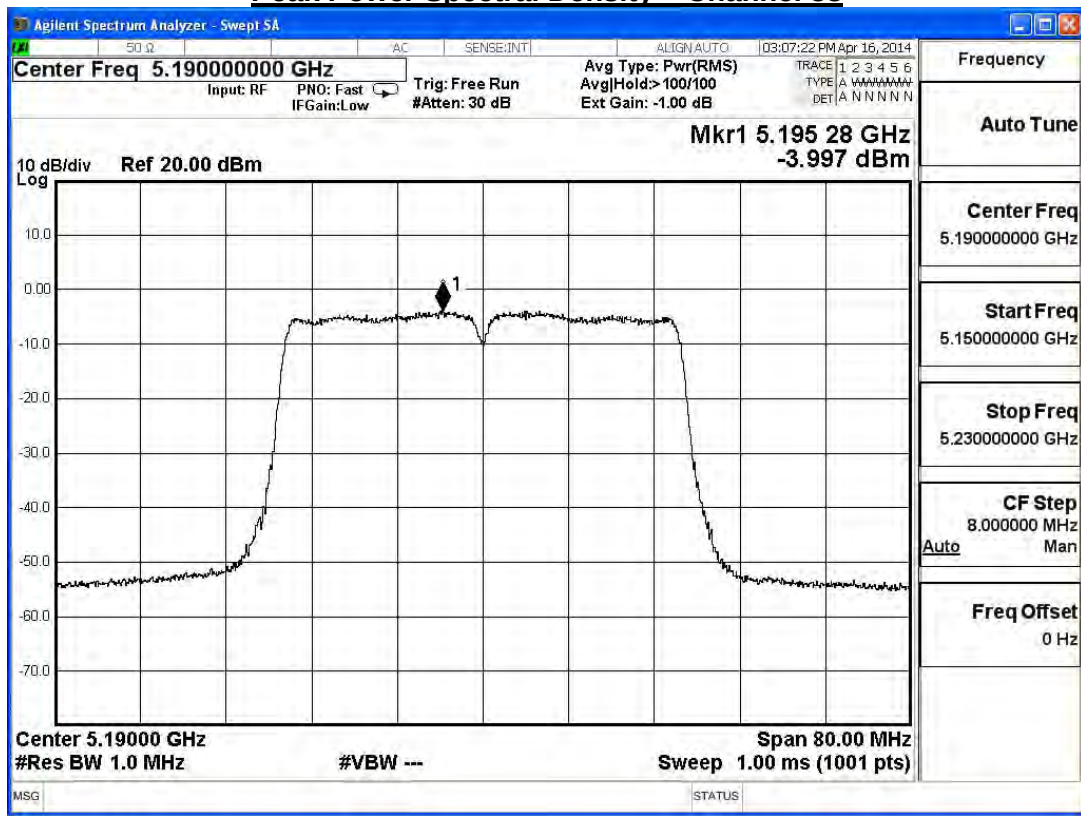
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-3.997	≤ 0.79	Pass
46	5230	-4.107	≤ 0.79	Pass

Note:

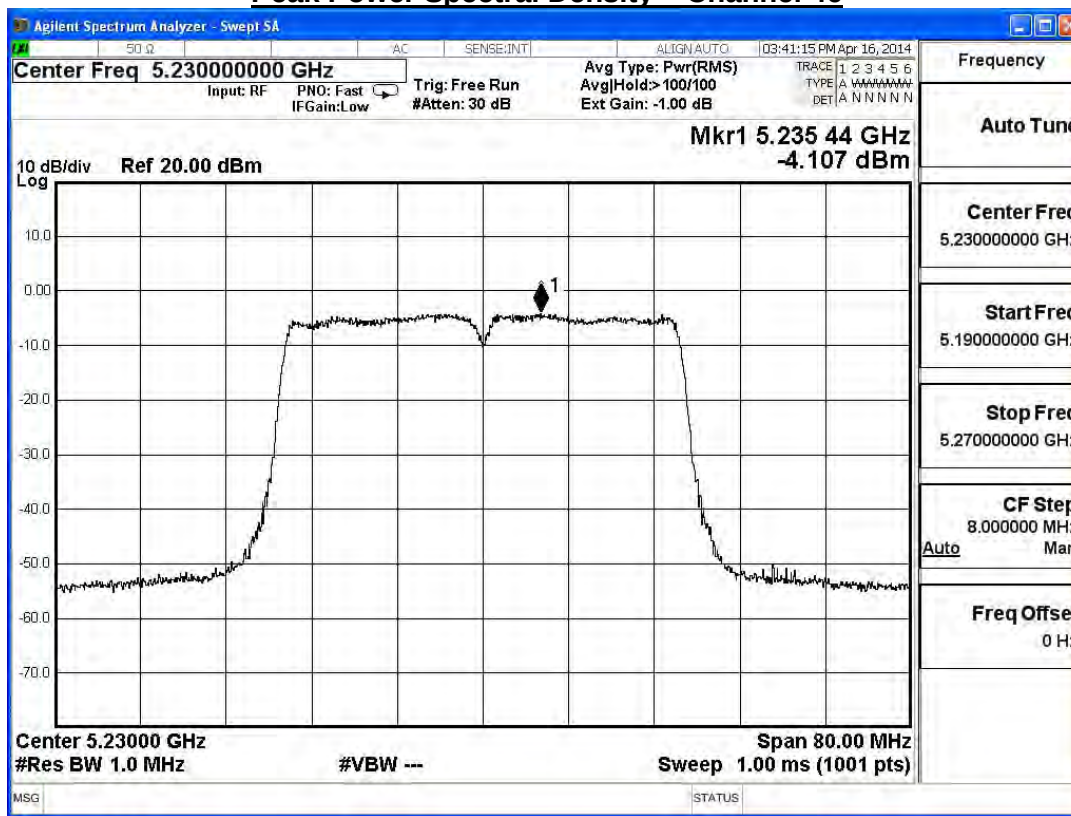
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

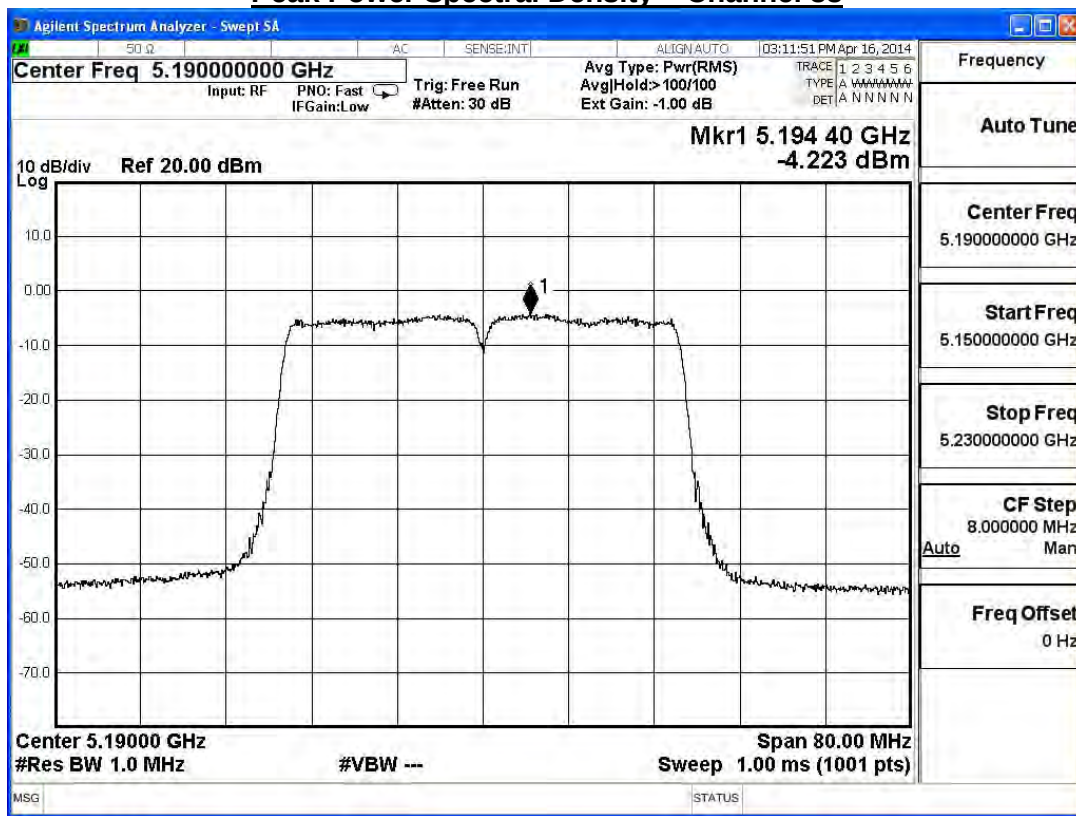
IEEE 802.11n_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-4.223	≤ 0.79	Pass
46	5230	-4.152	≤ 0.79	Pass

Note:

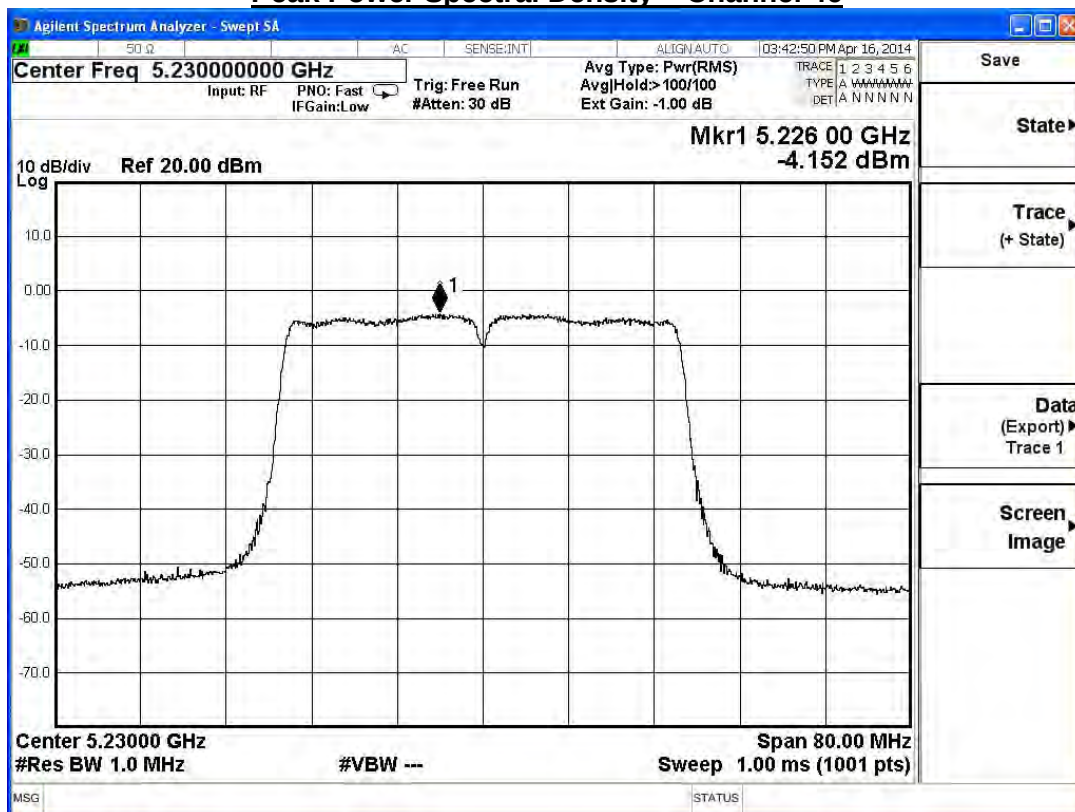
Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

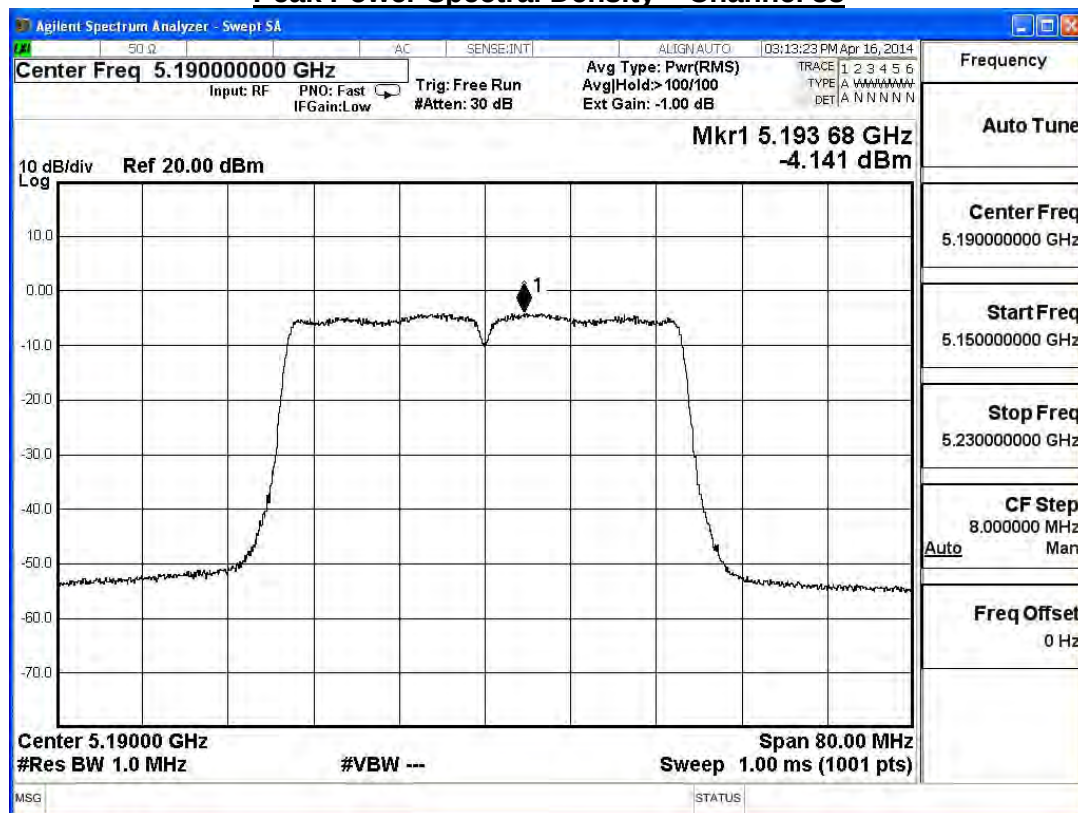
IEEE 802.11n_40M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-4.141	≤ 0.79	Pass
46	5230	-3.969	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 38



Agilent Spectrum Analyzer - Swept SA

50 Ω AC SENSE:INT ALIGN:AUTO 03:44:00 PM Apr 16, 2014

Center Freq 5.230000000 GHz

Input: RF PNO: Fast IF Gain: Low Trig: Free Run Avg Type: Pwr(RMS) Avg/Hold: >100/100 Ext Gain: -1.00 dB

TRACE 1 2 3 4 5 6 TYPE A W W W W W W W W DET A N N N N N N

Mkr1 5.233 84 GHz -3.969 dBm

10 dB/div Ref 20.00 dBm Log

Center Freq 5.230000000 GHz

Start Freq 5.190000000 GHz

Stop Freq 5.270000000 GHz

CF Step 8.000000 MHz Man

Auto

Freq Offset 0 Hz

Center 5.23000 GHz Span 80.00 MHz

#Res BW 1.0 MHz Sweep 1.00 ms (1001 pts)

#VBW ---

MSG STATUS

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode) Adapter: EXA1206UH		
Date of Test	2014/04/16	Test Site	SR7

IEEE 802.11n_40M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	0.650	≤ 0.79	Pass
46	5230	0.700	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3)$ + Max Gain = 9.21dBi

Required Limit = 4dBm – (9.21dBi - 6dB) = 0.79dBm

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

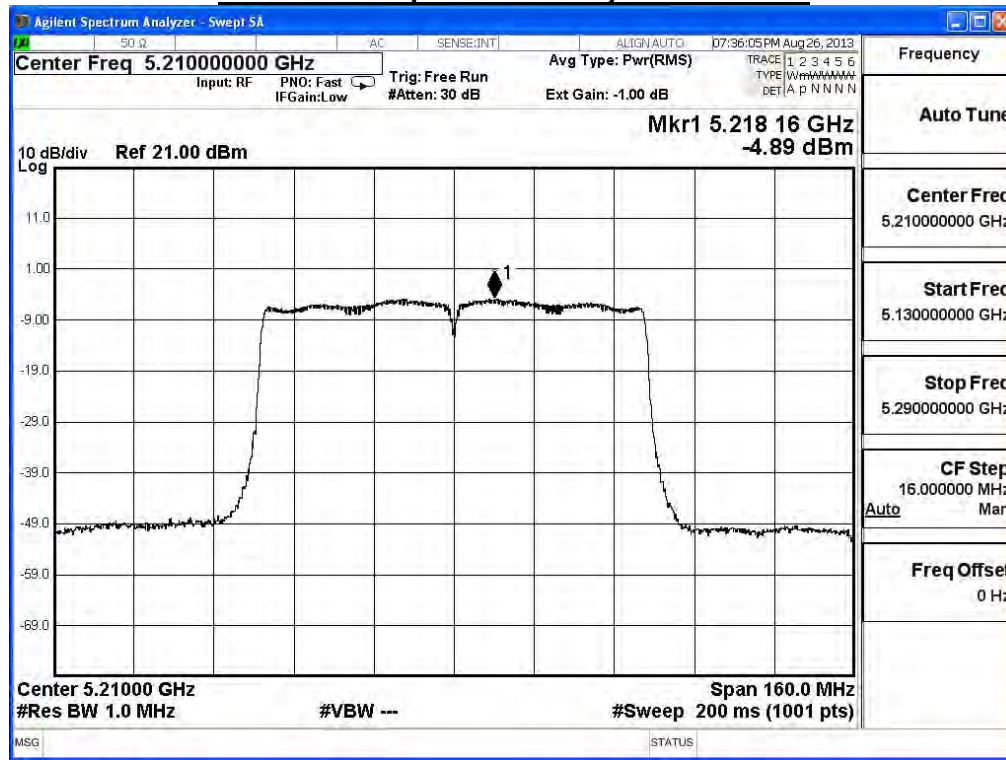
IEEE 802.11ac_80M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-4.890	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

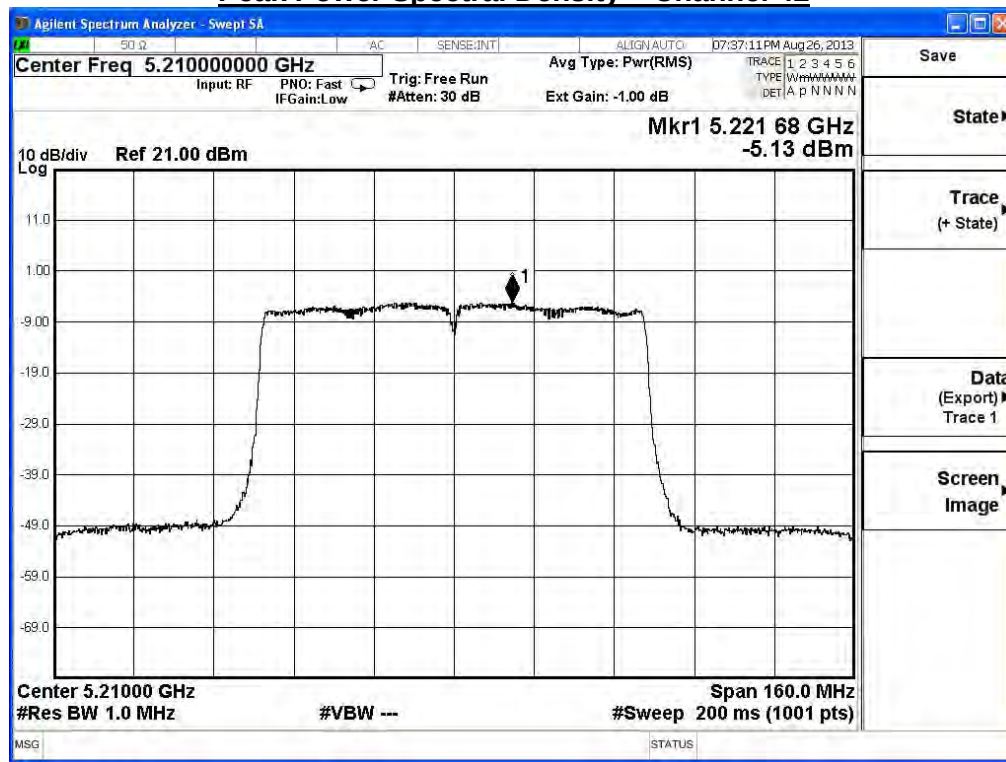
IEEE 802.11ac_80M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-5.130	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

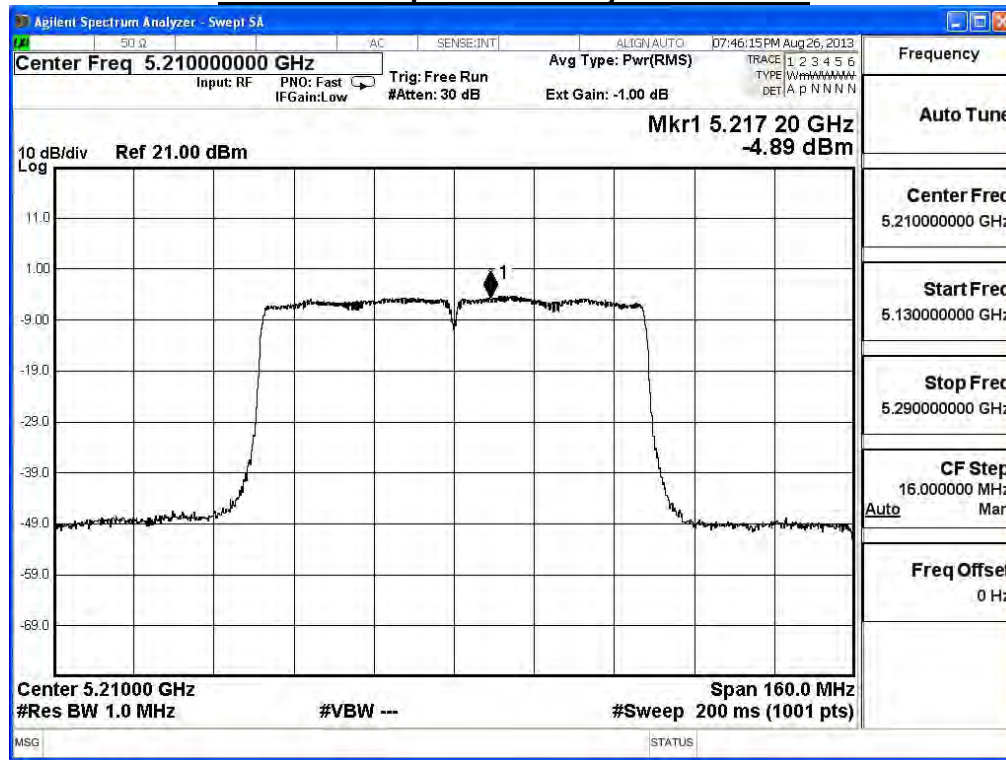
IEEE 802.11ac_80M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-4.890	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit (CDD Mode)_Adapter: EXA1206UH		
Date of Test	2013/08/26	Test Site	SR7

IEEE 802.11ac_80M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-0.20	≤ 0.79	Pass

Note:

Directional Gain = $10\log(3)$ + Max Gain = 9.21dBi

Required Limit = 4dBm – (9.21dBi - 6dB) = 0.79dBm

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

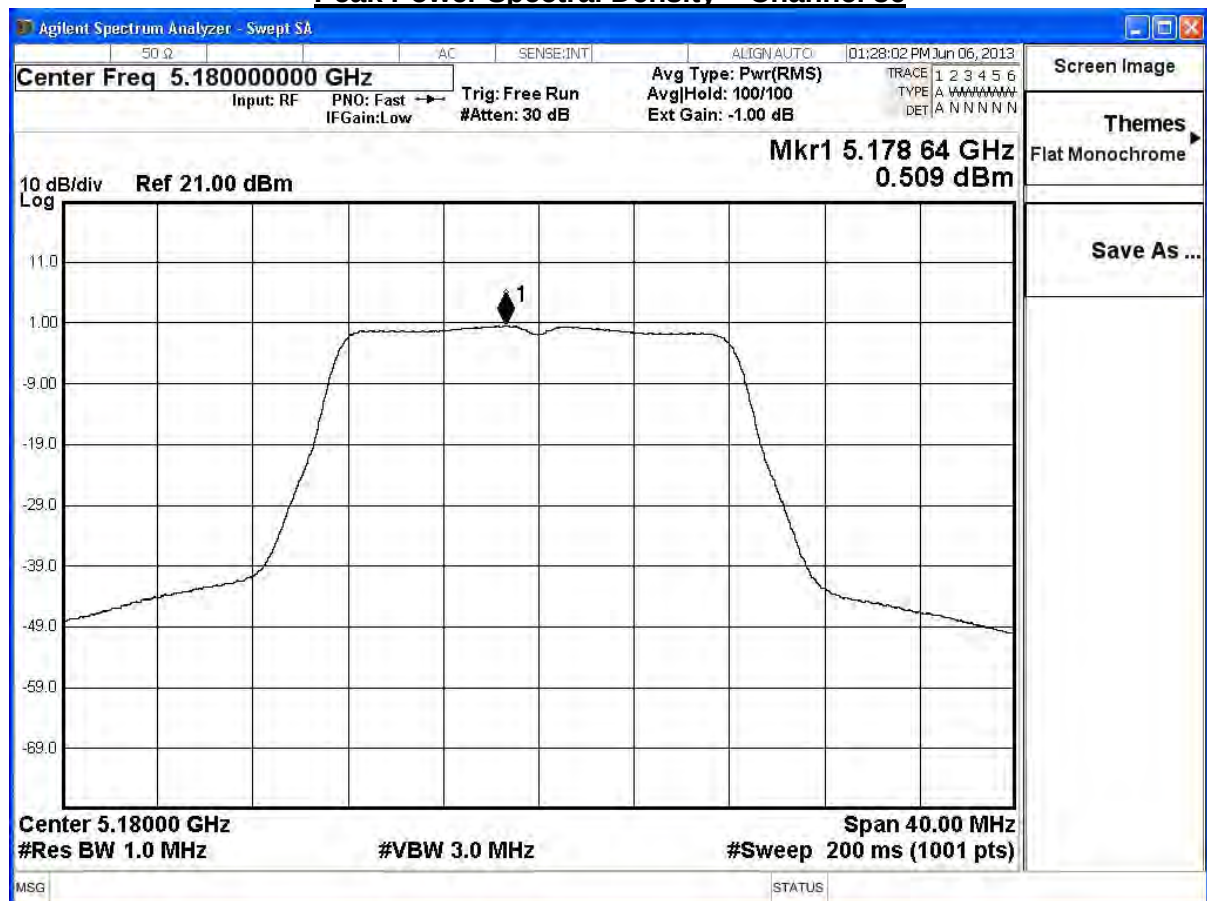
IEEE 802.11a				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	0.509	≤ 0.79	Pass
44	5220	0.538	≤ 0.79	Pass
48	5240	0.605	≤ 0.79	Pass

Note:

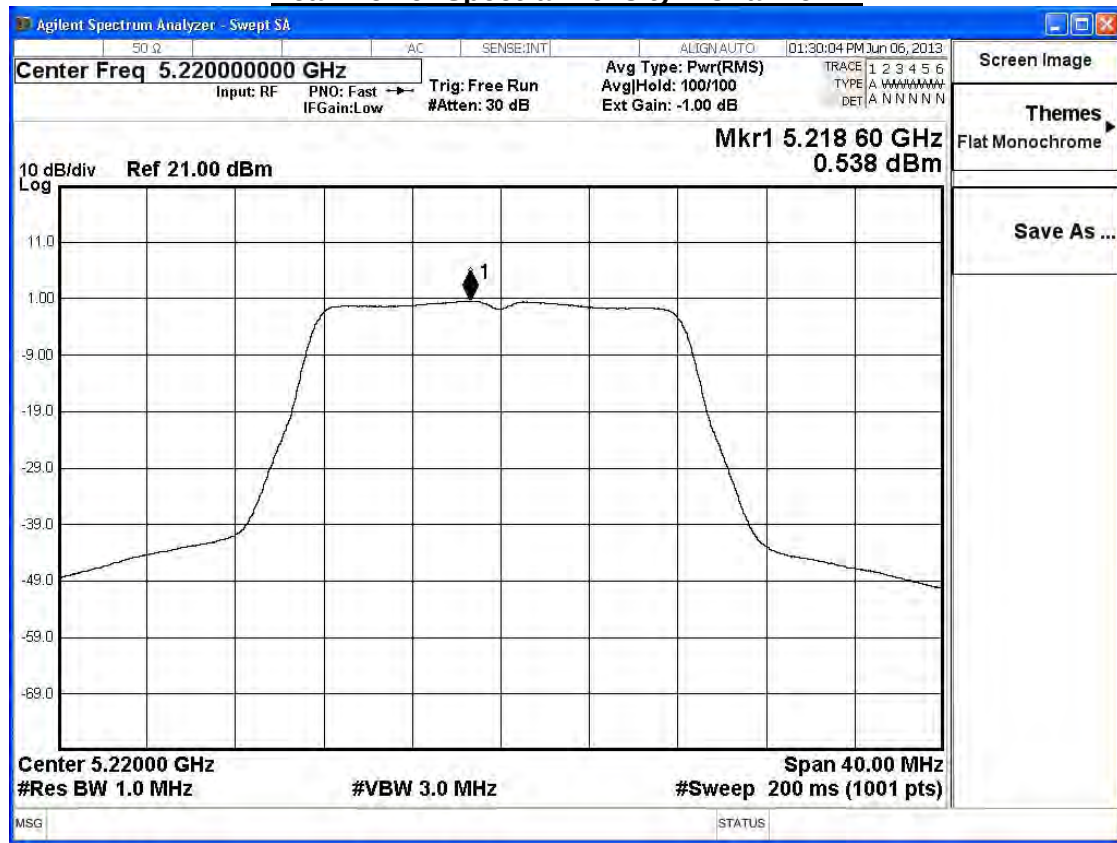
Directional Gain : max Gain + Beamforming Gain = 9.21dBi

Required Limit = 4dBm - (9.21dBi – 6dB) = 0.79 dBm

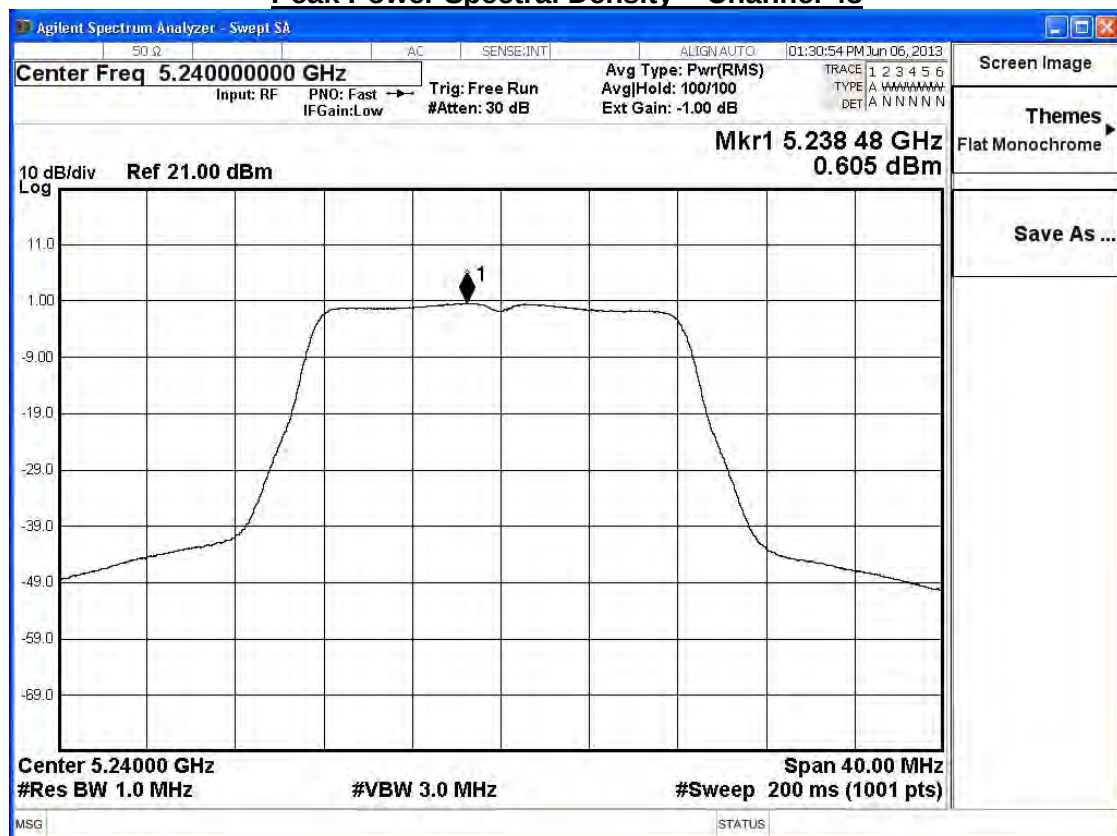
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

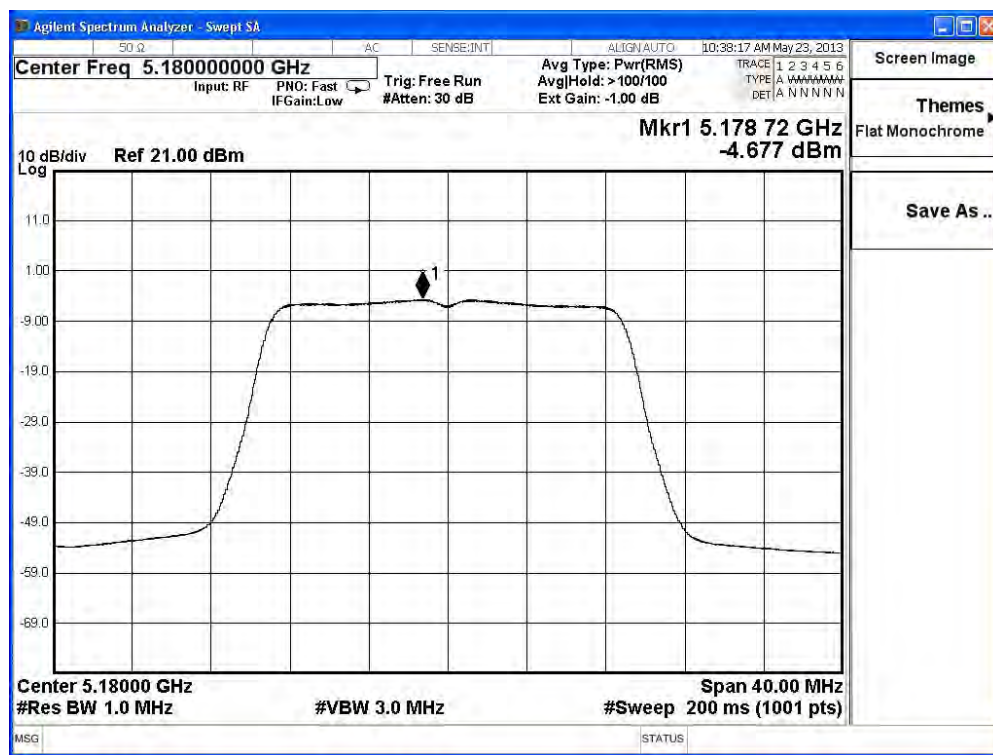
IEEE 802.11n_20M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-4.677	≤ 0.79	Pass
44	5220	-4.446	≤ 0.79	Pass
48	5240	-4.046	≤ 0.79	Pass

Note:

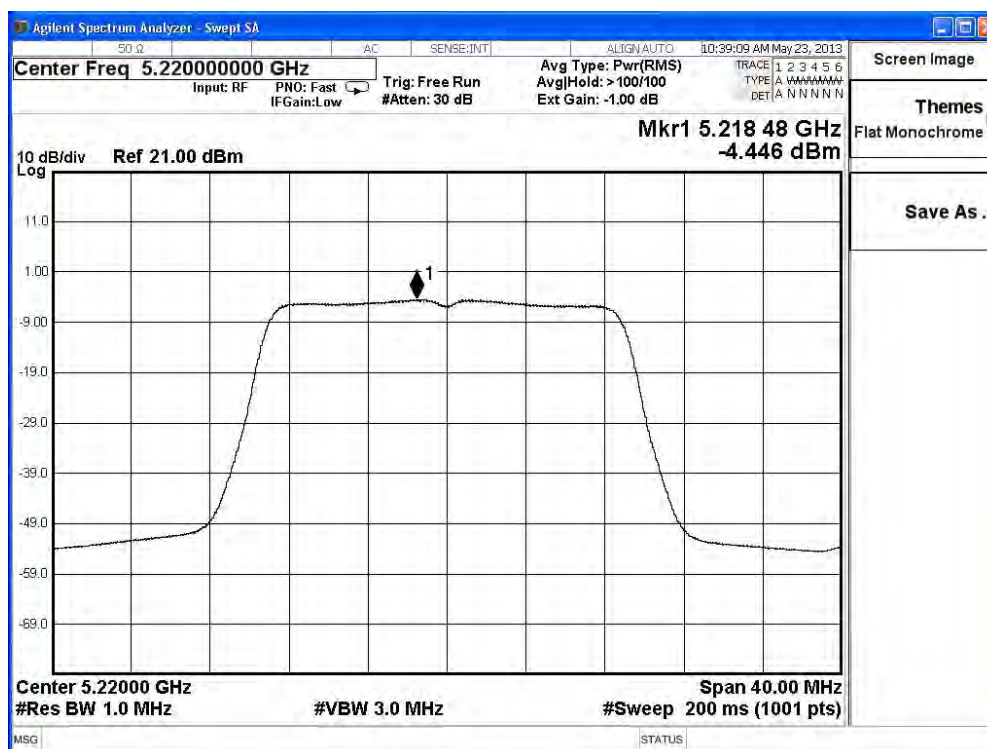
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

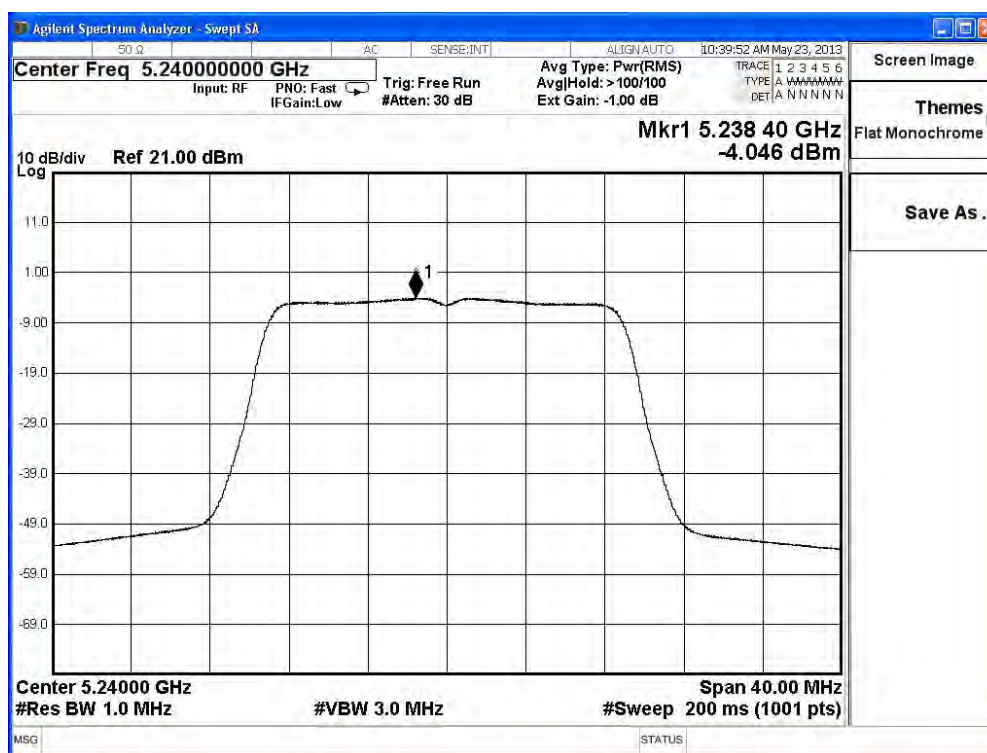
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

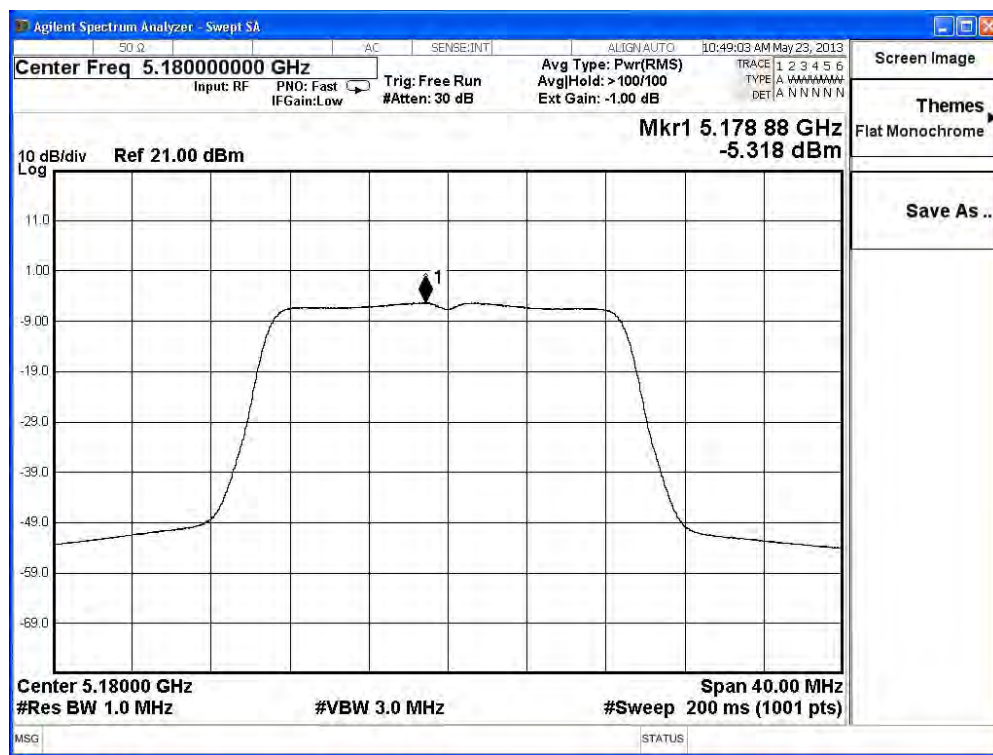
IEEE 802.11n_20M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-5.318	≤ 0.79	Pass
44	5220	-5.151	≤ 0.79	Pass
48	5240	-5.568	≤ 0.79	Pass

Note:

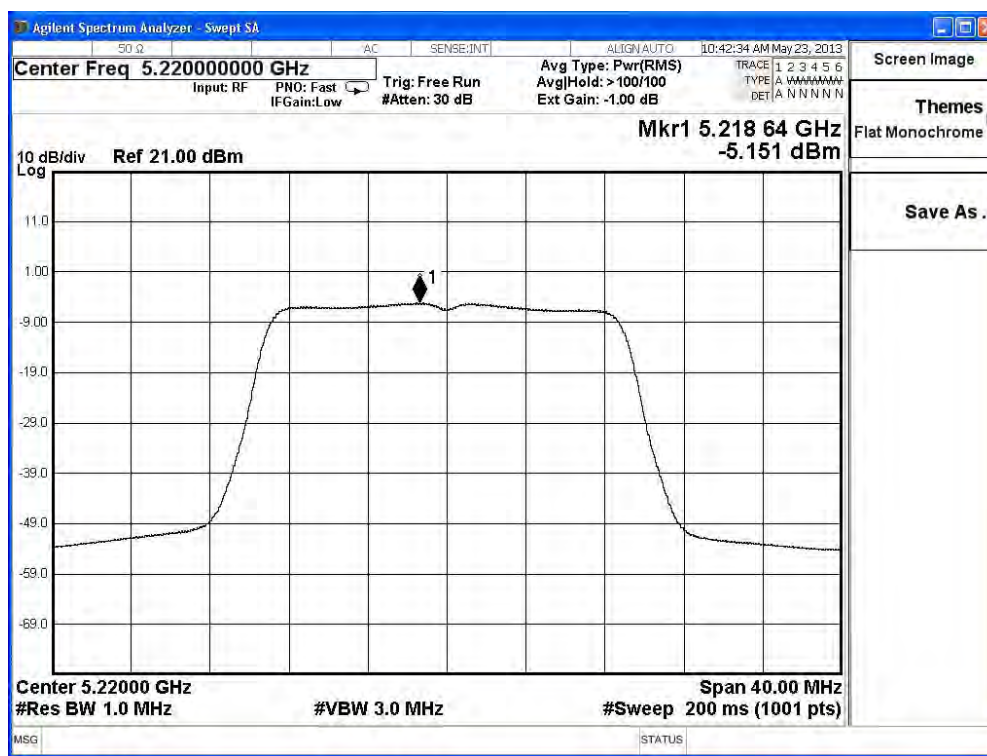
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

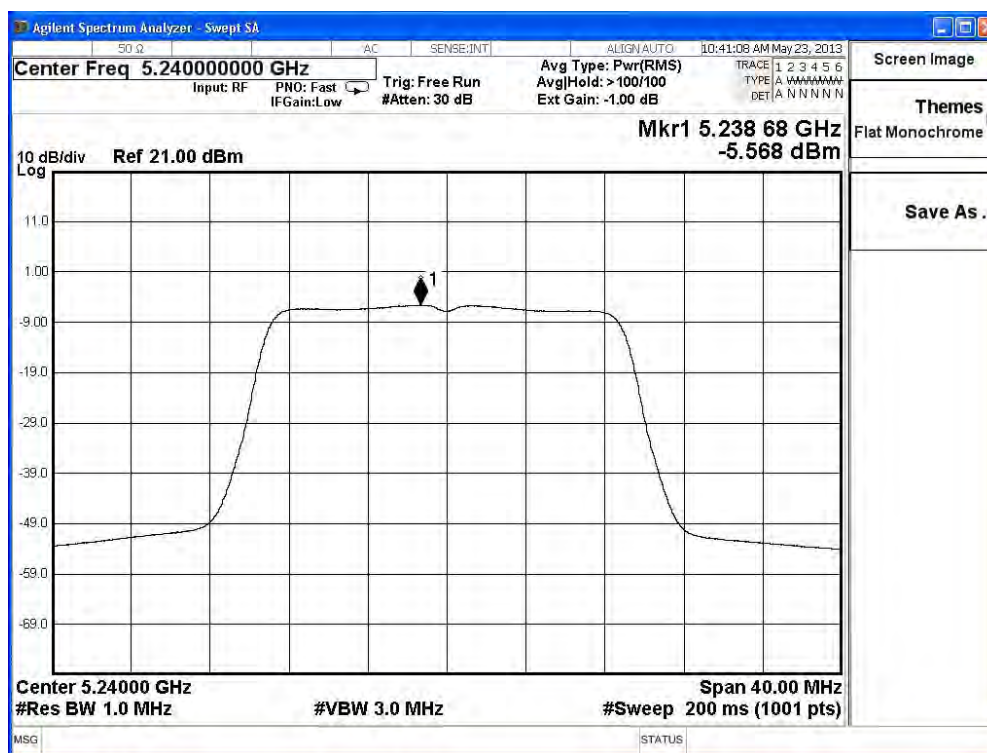
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

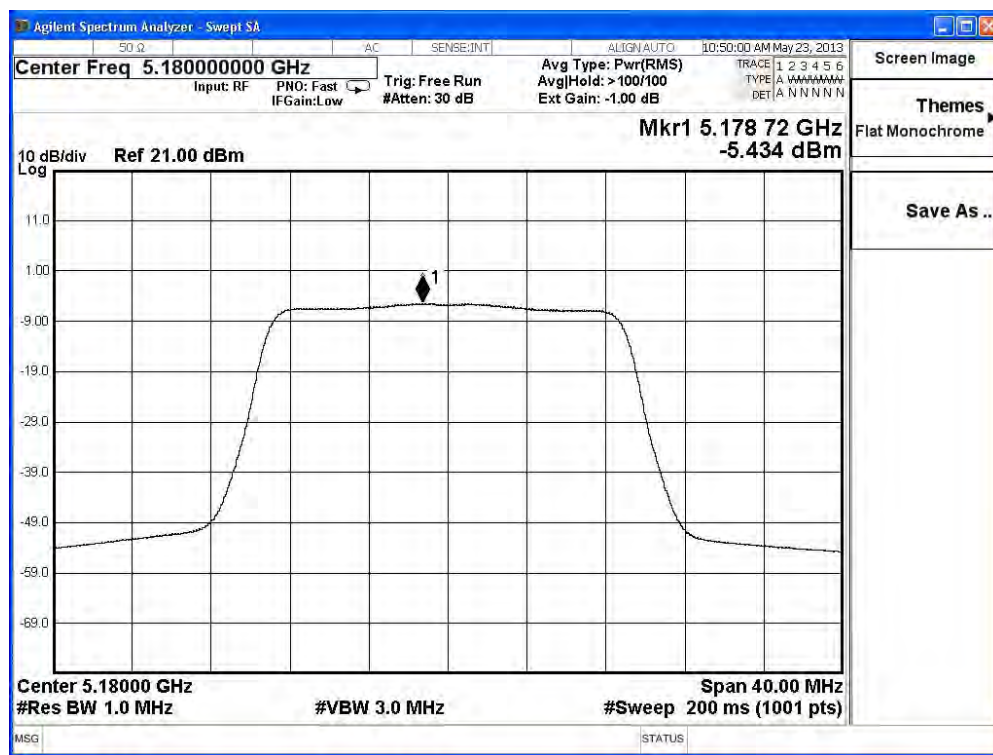
IEEE 802.11n_20M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-5.434	≤ 0.79	Pass
44	5220	-5.473	≤ 0.79	Pass
48	5240	-4.817	≤ 0.79	Pass

Note:

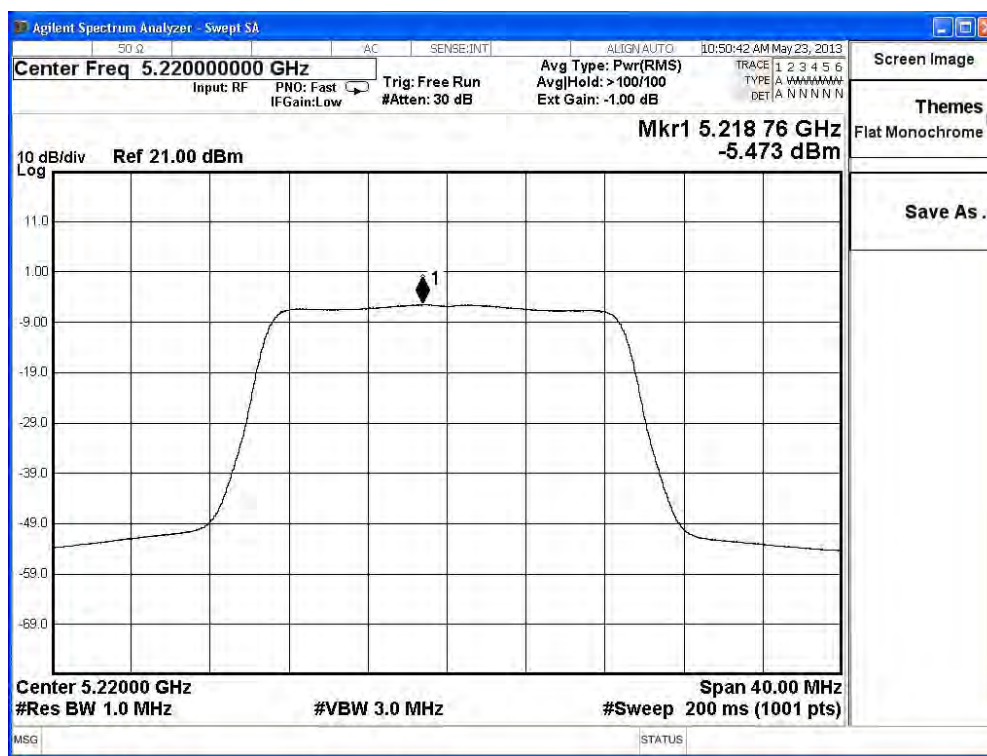
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

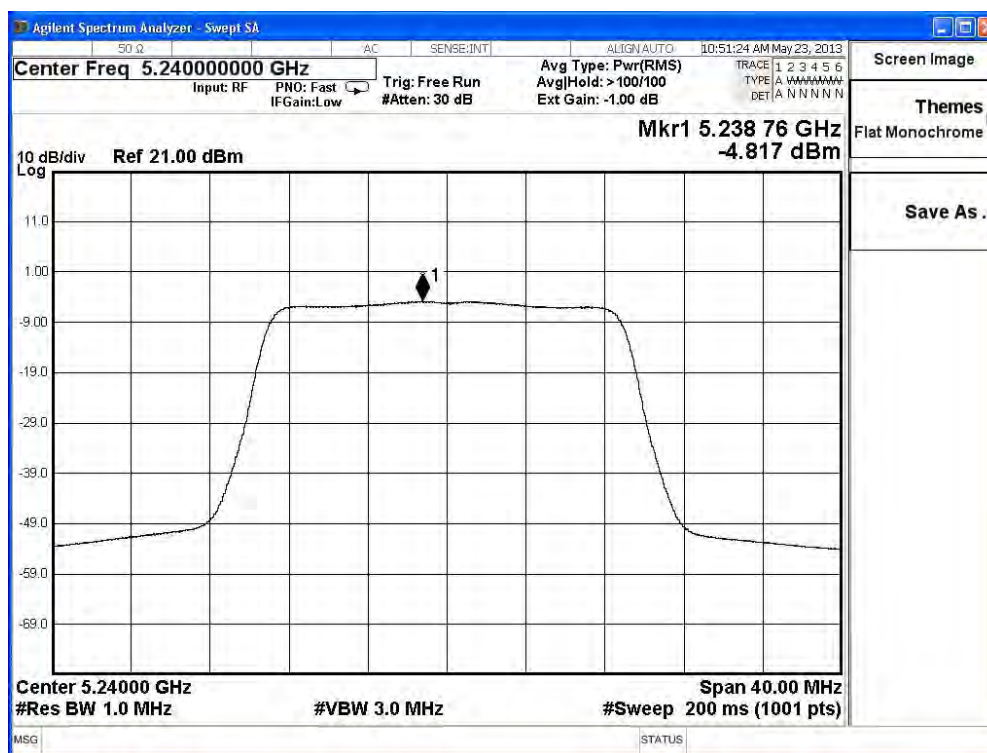
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

IEEE 802.11n_20M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	-0.359	≤ 0.79	Pass
44	5220	-0.231	≤ 0.79	Pass
48	5240	0.005	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

IEEE 802.11n_40M(ANT 0)

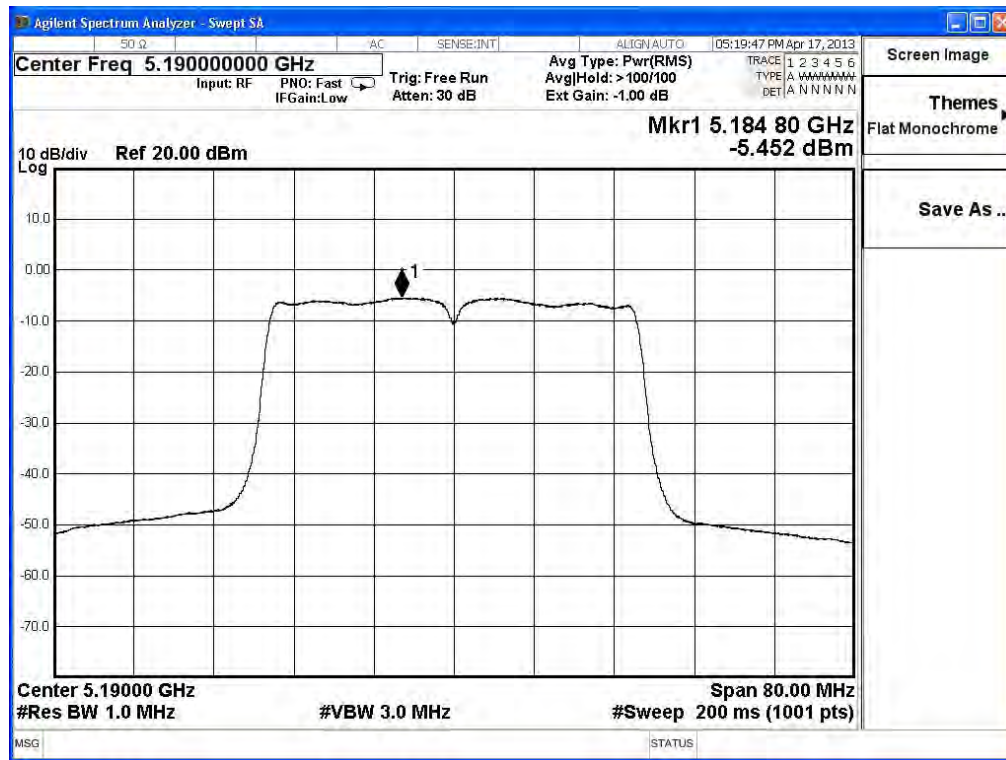
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-5.452	≤ 0.79	Pass
46	5230	-5.200	≤ 0.79	Pass

Note:

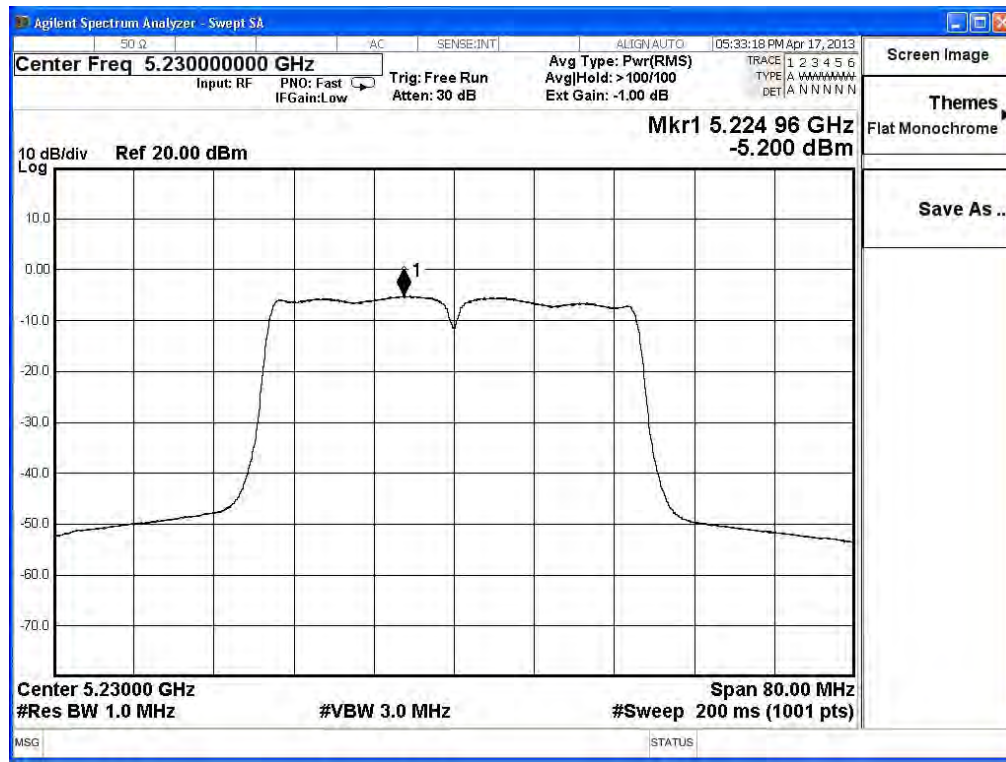
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

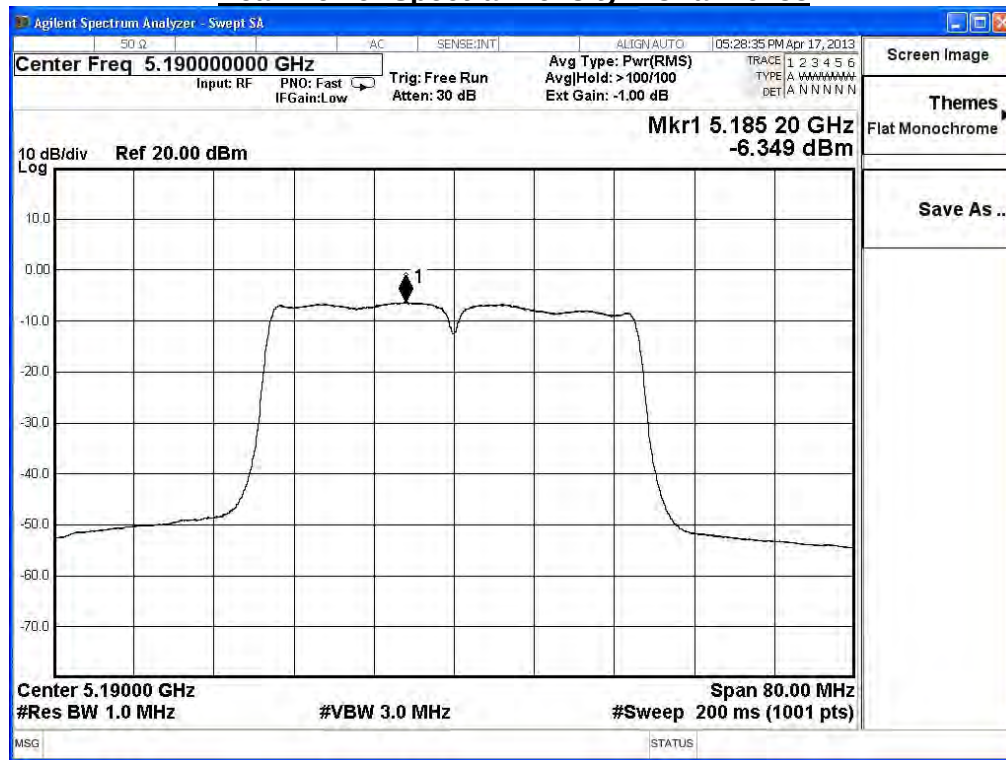
IEEE 802.11n_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-6.349	≤ 0.79	Pass
46	5230	-6.267	≤ 0.79	Pass

Note:

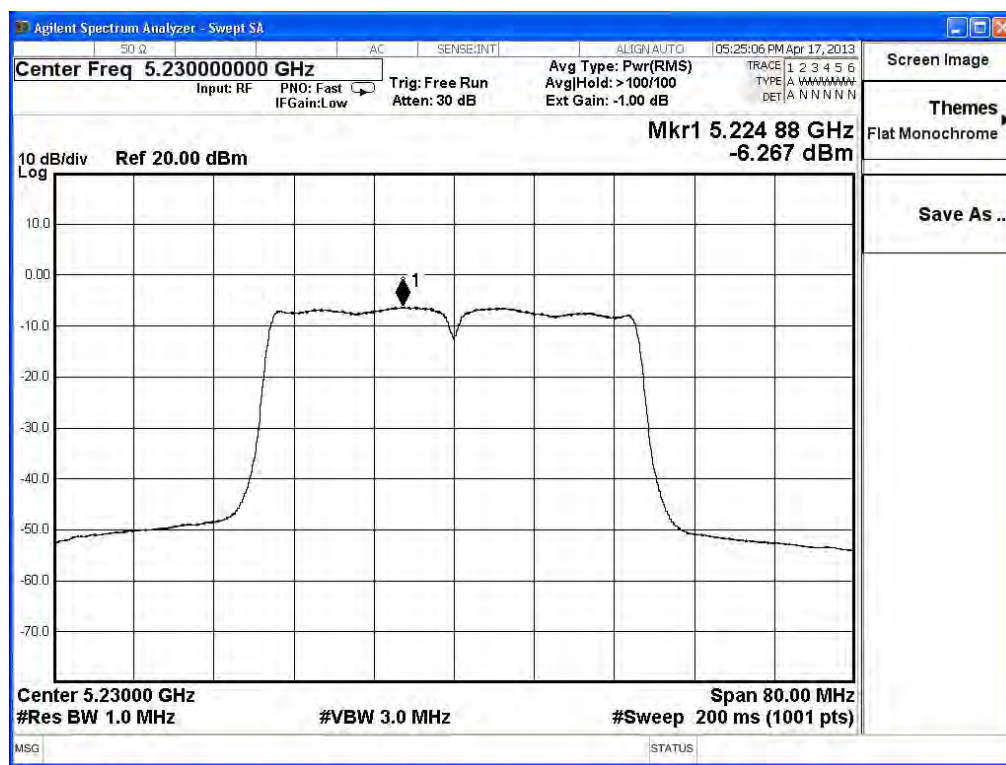
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

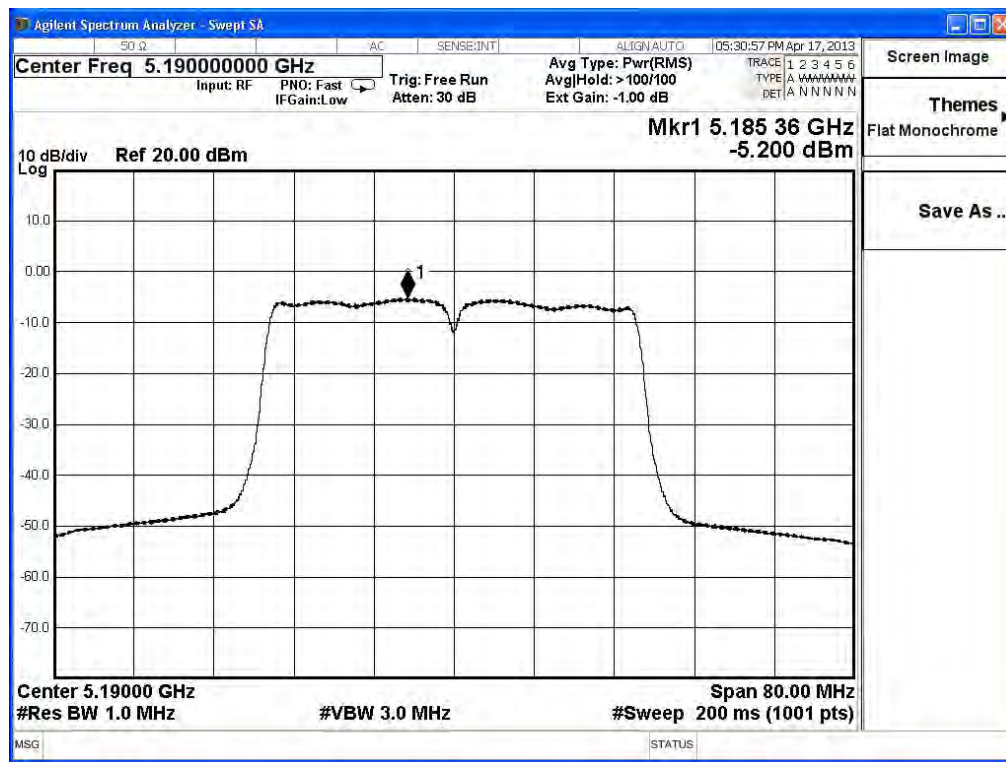
IEEE 802.11n_40M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-5.200	≤ 0.79	Pass
46	5230	-5.019	≤ 0.79	Pass

Note:

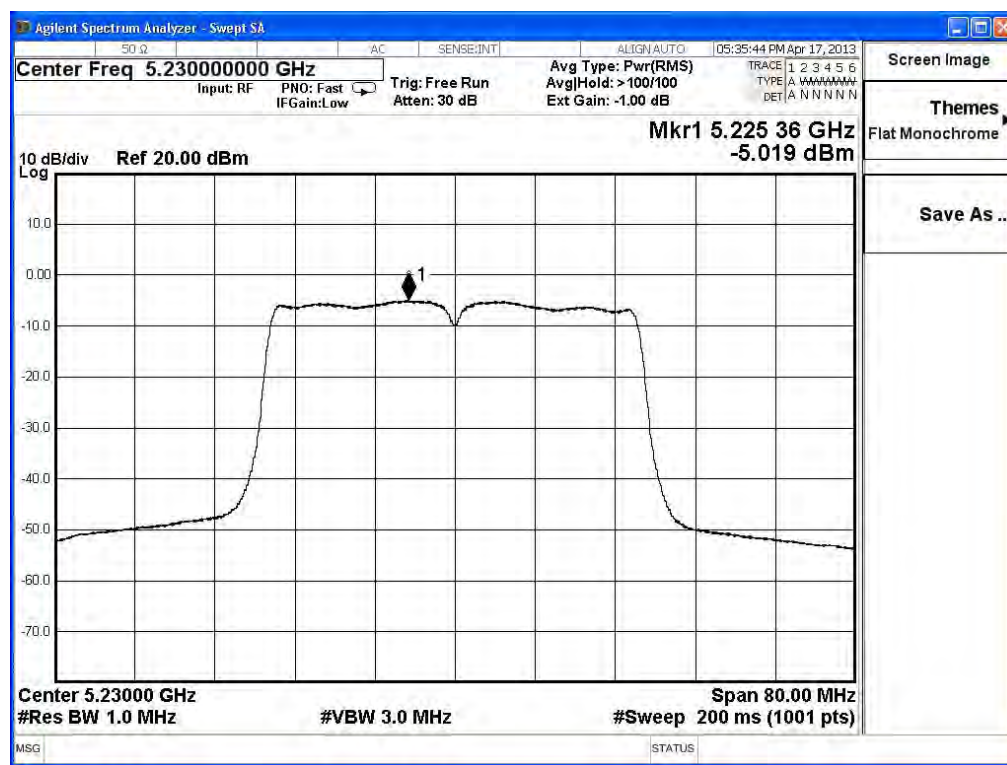
Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

IEEE 802.11n_40M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-0.870	≤ 0.79	Pass
46	5230	-0.690	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

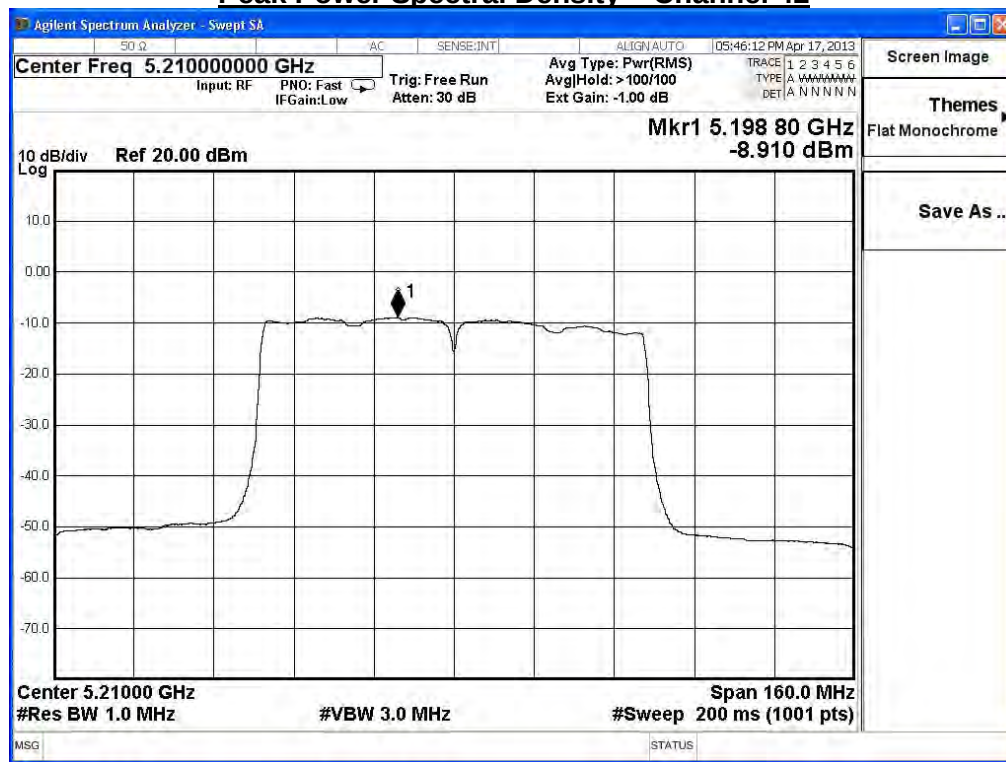
IEEE 802.11ac_80M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-8.910	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

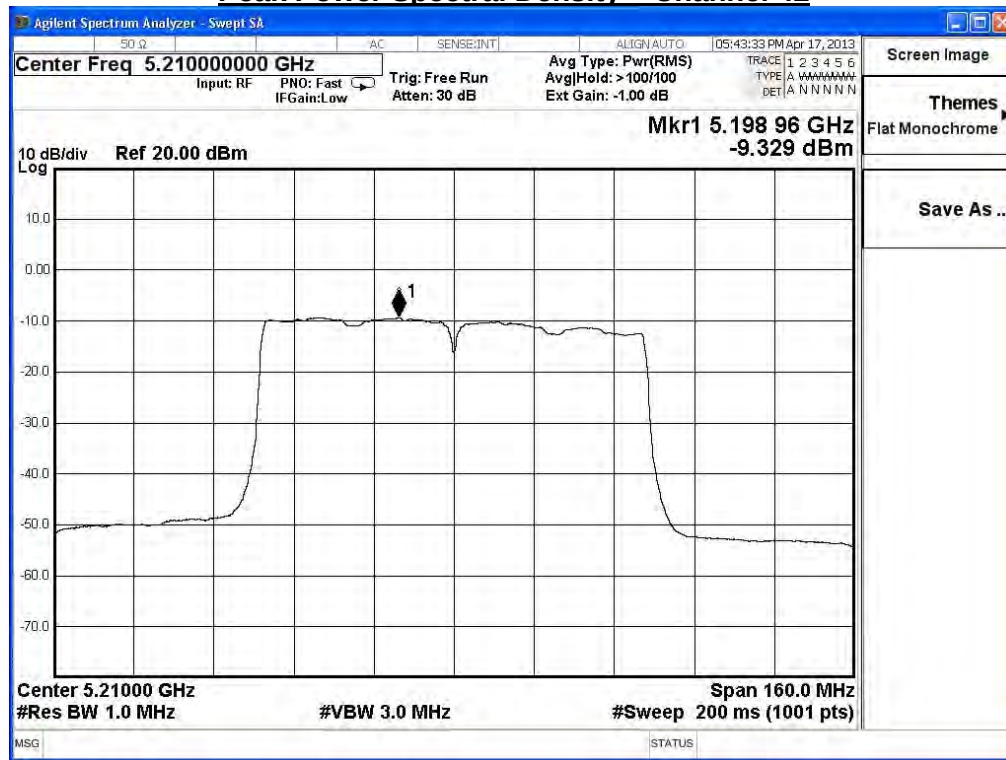
IEEE 802.11ac_80M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-9.329	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

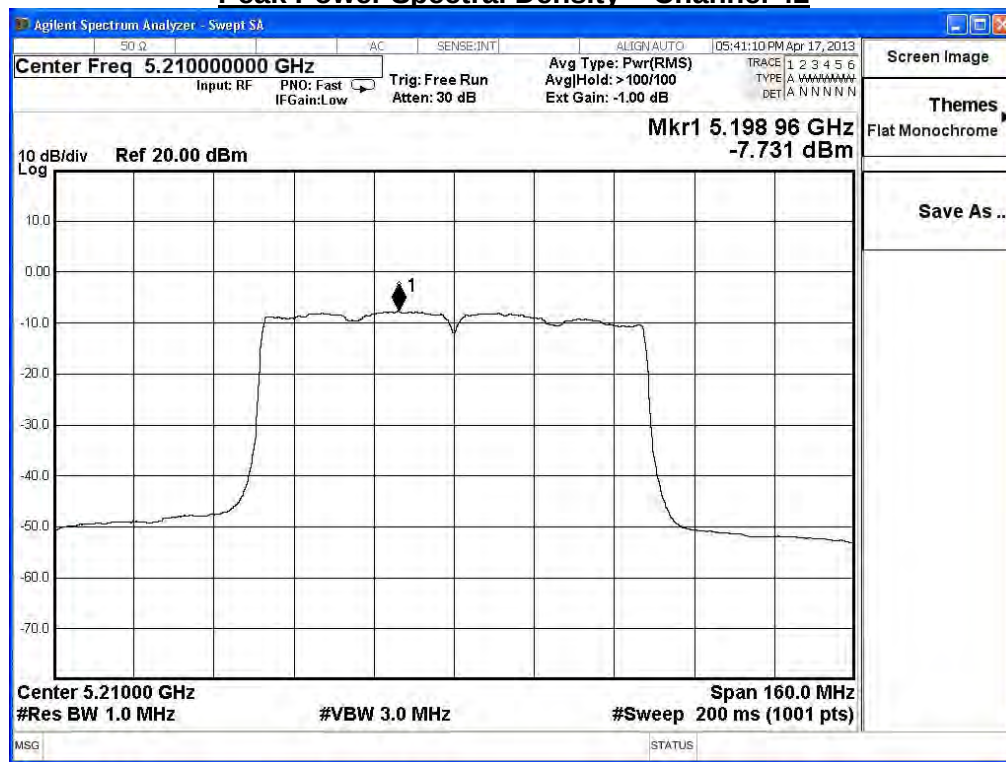
IEEE 802.11ac_80M(ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-7.731	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$

Peak Power Spectral Density – Channel 42



Product	Wireless-AC1900 Dual Band Gigabit Router		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 2: Transmit (Beamforming Mode) Adapter: EXA1206UH		
Date of Test	2013/05/02	Test Site	SR7

IEEE 802.11ac_80M(ANT 0+1+2)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
42	5210	-3.830	≤ 0.79	Pass

Note:

Directional Gain : $10\log(\text{Ant N}) + \text{Max Gain} = 9.21\text{dBi}$

Required Limit = $4\text{dBm} - (9.21\text{dBi} - 6\text{dB}) = 0.79\text{ dBm}$