

# FCC Test Report

Product Name	TABLET PC
Model No	PM-311B
FCC ID	2ABTU-PM311B

Applicant	RuggON Corporation
Address	3F., No.10, Ln. 181, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Date of Receipt	Mar. 25, 2016
Issued Date	May 10, 2016
Report No.	1630475R-RFUSP06V00
Report Version	V1.0



The test results relate only to the samples tested.

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

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# Test Report

Issued Date: May 10, 2016

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Product Name	TABLET PC
Applicant	RuggON Corporation
Address	3F., No.10, Ln. 181, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)
Model No.	PM-311B
FCC ID.	2ABTU-PM311B
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	RuggON
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2015 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01r02
Test Result	Complied

Documented By : Jinn Chen  
( Senior Adm. Specialist / Jinn Chen )

Tested By : Nick Chen  
( Engineer / Nick Chen )

Approved By : [Signature]  
( Director / Vincent Lin )

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	TABLET PC
Trade Name	RuggON
FCC ID.	2ABTU-PM311B
Model No.	PM-311B
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz, 5755-5795MHz 802.11ac-20MHz: 5720, 802.11ac-40MHz: 5710 802.11ac-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz
Number of Channels	802.11a/n-20MHz: 24; 802.11n-40MHz: 11 802.11ac-20MHz: 1, 802.11ac-40MHz: 1, 802.11ac-80MHz: 6
Data Rate	802.11a: 6 - 54Mbps 802.11n: up to 300Mbps 802.11ac-80MHz: up to 866.7MHz
Channel Control	Auto
Type of Modulation	802.11a/n/ac:OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type	PIFA Antenna
Antenna Gain	Refer to the table "Antenna List"
Power Adapter	MFR: FSP, M/N: FSP065-REB Input: 100-240V~1.5A, 50-60Hz Output: 19V $\overline{\text{---}}$ 3.42A Cable Out: Shielded, 1.2m, with one ferrite core bonded.
Contain Module	Intel / 7265NGW

#### Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Taiwan Anjie Electronics Co., Ltd	AJDP1J-B0006(Main) AJDP1J-W0006(Aux)	PIFA Antenna	2.54dBi For 5.15~5.25GHz 4.64dBi For 5.25~5.35GHz 4.58dBi For 5.47~5.725GHz 4.90dBi For 5.725~5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 149:	5745 MHz
Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz	Channel 165:	5825 MHz

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz	Channel 54:	5270 MHz	Channel 62:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz		

802.11ac-20MHz Center Working Frequency of Each Channel:

Channel	Frequency
Channel 144:	5720 MHz

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

Channel	Frequency
Channel 142:	5710 MHz

802.11ac-80MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 42:	5210 MHz	Channel 58:	5290 MHz	Channel 106:	5530 MHz	Channel 122:	5610 MHz
Channel 138:	5690 MHz	Channel 155:	5775 MHz				

Note:

1. This device is a TABLET PC with a built-in WLAN 、 Bluetooth and NFC transceiver, this report for WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11a is chain B)
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps 、 802.11n-20BW is 14.4Mbps 、 802.11n-40BW is 30Mbps and 802.11ac(80M-BW) is 65 Mbps)
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 14.4Mbps) Mode 3: Transmit (802.11n-40BW 30Mbps) Mode 4: Transmit (802.11ac-20BW-14.4Mbps) Mode 5: Transmit (802.11ac-40BW-30Mbps) Mode 6: Transmit (802.11ac-80BW-65Mbps)
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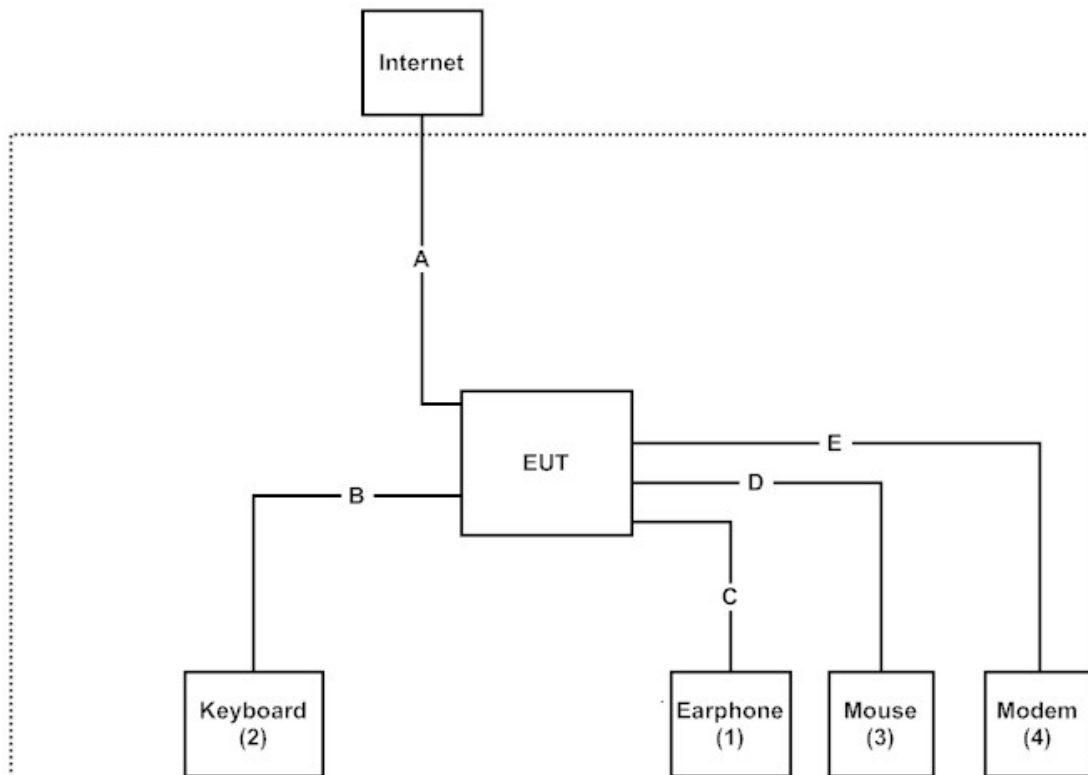
### 1.3. Tested System Details

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

	Product	Manufacturer	Model No.	Serial No.	Power Cord
(1)	Microphone & Earphone	Ergotech	E201	N/A	N/A
(2)	Keyboard	Logitech	Y-UR83	SY848UK	N/A
(3)	USB Mouse	Logitech	M-BZ96C	LZ128HR	N/A
(4)	Modem	ACEEX	DM-1414	0102027550	Non-Shielded, 1.8m

Signal Cable Type	Signal cable Description
A LAN Cable	Shielded, 1.5m
B USB Cable	Shielded, 1.7m
C Earphone Cable	Non-Shielded, 2.0m
D USB Cable	Shielded, 2.0m
E Modem Cable	Shielded, 2.0m

### 1.4. Configuration of tested System





## **1.5. EUT Exercise Software**

- (1) Setup the EUT as shown on 1.4
- (2) Execute “DRTU v1.7.4-1041” program on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.

**1.6. Test Facility**

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://www.quietek.com/chinese/about/certificates.aspx?bval=5>

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

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FCC Accreditation Number: TW1014

## 2. Conducted Emission

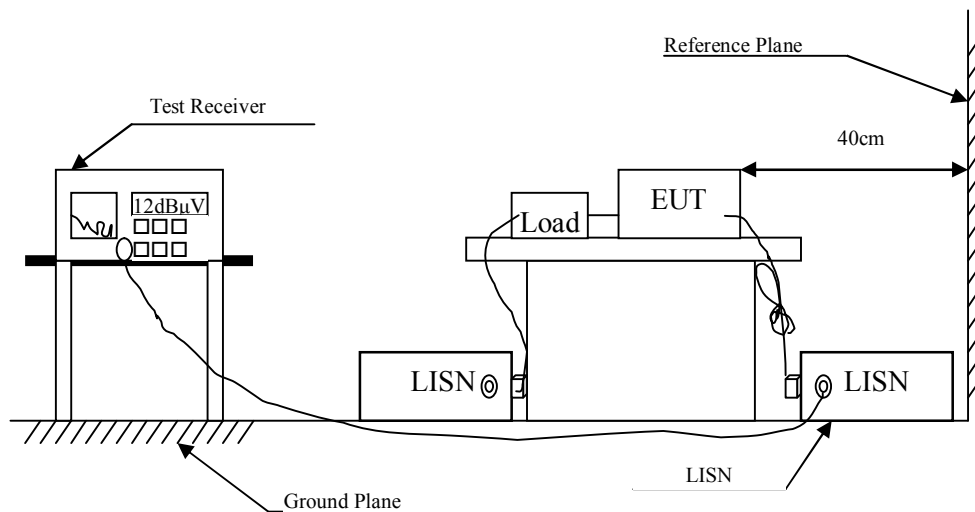
### 2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2015	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2016	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2016	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2016	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2016	
	No.1 Shielded Room				

Note:

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

### 2.2. Test Setup



**2.3. Limits**

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

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

**2.4. Test Procedure**

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.

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

The EUT was setup to ANSI C63.4, 2014; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

**2.5. Uncertainty**

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dB $\mu$ V	Measurement Level dB $\mu$ V	Margin dB	Limit dB $\mu$ V
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.193	9.774	26.200	35.974	-28.797	64.771
0.439	9.783	26.890	36.673	-21.070	57.743
1.205	9.852	25.760	35.612	-20.388	56.000
3.459	9.973	30.880	40.853	-15.147	56.000
9.486	10.086	32.910	42.996	-17.004	60.000
16.158	10.167	24.650	34.817	-25.183	60.000
<b>Average</b>					
0.193	9.774	0.560	10.334	-44.437	54.771
0.439	9.783	21.130	30.913	-16.830	47.743
1.205	9.852	17.970	27.822	-18.178	46.000
3.459	9.973	25.450	35.423	-10.577	46.000
9.486	10.086	27.720	37.806	-12.194	50.000
16.158	10.167	20.710	30.877	-19.123	50.000

Note:

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

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.154	9.831	30.080	39.911	-25.975	65.886
0.595	9.865	28.200	38.065	-17.935	56.000
1.162	9.909	24.640	34.549	-21.451	56.000
2.853	10.022	27.330	37.352	-18.648	56.000
2.853	10.022	27.410	37.432	-18.568	56.000
9.599	10.177	28.130	38.307	-21.693	60.000
17.931	10.341	24.590	34.931	-25.069	60.000
<b>Average</b>					
0.154	9.831	5.170	15.001	-40.885	55.886
0.595	9.865	21.000	30.865	-15.135	46.000
1.162	9.909	16.350	26.259	-19.741	46.000
2.853	10.022	21.900	31.922	-14.078	46.000
9.599	10.177	21.420	31.597	-18.403	50.000
17.931	10.341	18.610	28.951	-21.049	50.000

Note:

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

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.173	9.778	34.020	43.798	-21.545	65.343
0.275	9.781	22.120	31.901	-30.528	62.429
0.525	9.790	27.250	37.040	-18.960	56.000
1.232	9.855	22.970	32.825	-23.175	56.000
3.252	9.969	29.080	39.049	-16.951	56.000
9.545	10.087	32.620	42.707	-17.293	60.000
<b>Average</b>					
0.173	9.778	27.820	37.598	-17.745	55.343
0.275	9.781	15.070	24.851	-27.578	52.429
0.525	9.790	24.930	34.720	-11.280	46.000
1.232	9.855	13.540	23.395	-22.605	46.000
3.252	9.969	23.270	33.239	-12.761	46.000
9.545	10.087	28.150	38.237	-11.763	50.000

Note:

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

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.166	9.832	34.280	44.112	-21.431	65.543
0.576	9.864	25.760	35.624	-20.376	56.000
1.334	9.922	21.540	31.462	-24.538	56.000
2.752	10.020	26.720	36.740	-19.260	56.000
9.509	10.174	28.060	38.234	-21.766	60.000
18.931	10.356	21.020	31.376	-28.624	60.000
<b>Average</b>					
0.166	9.832	19.590	29.422	-26.121	55.543
0.576	9.864	19.700	29.564	-16.436	46.000
1.334	9.922	15.050	24.972	-21.028	46.000
2.752	10.020	21.240	31.260	-14.740	46.000
9.509	10.174	22.800	32.974	-17.026	50.000
18.931	10.356	16.290	26.646	-23.354	50.000

Note:

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



Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.173	9.778	27.000	36.778	-28.565	65.343
0.216	9.776	25.760	35.536	-28.578	64.114
0.427	9.782	18.700	28.482	-29.604	58.086
0.755	9.818	20.000	29.818	-26.182	56.000
3.111	9.966	28.270	38.236	-17.764	56.000
9.482	10.086	30.860	40.946	-19.054	60.000
<b>Average</b>					
0.173	9.778	8.260	18.038	-37.305	55.343
0.216	9.776	17.740	27.516	-26.598	54.114
0.427	9.782	6.760	16.542	-31.544	48.086
0.755	9.818	12.960	22.778	-23.222	46.000
3.111	9.966	23.410	33.376	-12.624	46.000
9.482	10.086	25.580	35.666	-14.334	50.000

Note:

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

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.150	9.831	34.670	44.501	-21.499	66.000
0.298	9.842	19.600	29.442	-32.329	61.771
0.494	9.857	22.080	31.937	-24.234	56.171
2.716	10.019	26.330	36.349	-19.651	56.000
9.322	10.165	26.360	36.525	-23.475	60.000
19.002	10.356	22.390	32.746	-27.254	60.000
<b>Average</b>					
0.150	9.831	21.490	31.321	-24.679	56.000
0.298	9.842	12.110	21.952	-29.819	51.771
0.494	9.857	18.460	28.317	-17.854	46.171
2.716	10.019	21.350	31.369	-14.631	46.000
9.322	10.165	18.330	28.495	-21.505	50.000
19.002	10.356	17.050	27.406	-22.594	50.000

Note:

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

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.193	9.774	26.940	36.714	-28.057	64.771
0.275	9.781	20.900	30.681	-31.748	62.429
0.517	9.789	23.900	33.689	-22.311	56.000
3.009	9.965	27.990	37.955	-18.045	56.000
9.513	10.086	30.160	40.246	-19.754	60.000
15.755	10.163	23.610	33.773	-26.227	60.000
<b>Average</b>					
0.193	9.774	10.550	20.324	-34.447	54.771
0.275	9.781	13.690	23.471	-28.958	52.429
0.517	9.789	13.430	23.219	-22.781	46.000
3.009	9.965	23.190	33.155	-12.845	46.000
9.513	10.086	24.840	34.926	-15.074	50.000
15.755	10.163	18.370	28.533	-21.467	50.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. "■" means the worst emission level.
6. Measurement Level = Reading Level + Correct Factor

Product : TABLET PC  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.173	9.833	30.370	40.203	-25.140	65.343
0.224	9.837	17.680	27.517	-36.369	63.886
0.470	9.856	26.900	36.756	-20.101	56.857
2.857	10.022	25.370	35.392	-20.608	56.000
9.345	10.165	24.830	34.995	-25.005	60.000
18.013	10.342	20.540	30.882	-29.118	60.000
<b>Average</b>					
0.173	9.833	20.290	30.123	-25.220	55.343
0.224	9.837	4.000	13.837	-40.049	53.886
0.470	9.856	20.090	29.946	-16.911	46.857
2.857	10.022	20.620	30.642	-15.358	46.000
9.345	10.165	16.690	26.855	-23.145	50.000
18.013	10.342	14.880	25.222	-24.778	50.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. "■" means the worst emission level.
6. Measurement Level = Reading Level + Correct Factor

### 3. Maximun conducted output power

#### 3.1. Test Equipment

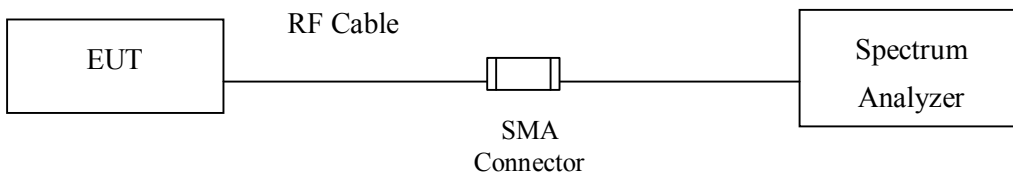
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2016
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2016

Note:

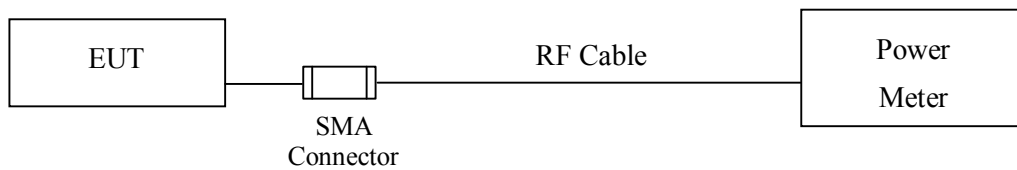
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

#### 3.2. Test Setup

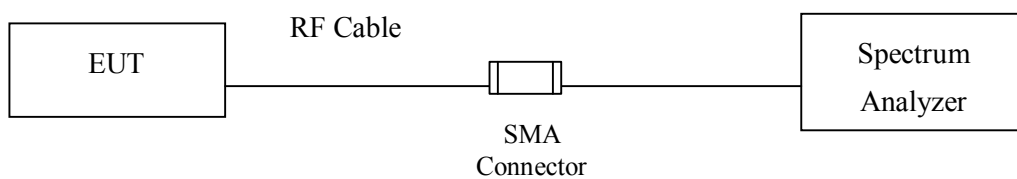
##### 26dBc Occupied Bandwidth



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



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



### 3.3. Limits

#### 3.3.1. For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W, provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any

corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

### 3.4. Test Procedure

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

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

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

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

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

### 3.5. Uncertainty

$\pm 1.27$  dB

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

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

**CHAIN A**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	12.33	--	--	--	--	--	--	--	<24dBm
44	5220	13.31	13.27	13.24	13.22	13.19	13.17	13.14	13.1	<24dBm
48	5240	13.09	--	--	--	--	--	--	--	<24dBm
52	5260	14.51	--	--	--	--	--	--	--	<24dBm
60	5300	14.87	14.84	14.8	14.77	14.73	14.69	14.66	14.62	<24dBm
64	5320	11.86	--	--	--	--	--	--	--	<24dBm
100	5500	11.73	--	--	--	--	--	--	--	<24dBm
116	5580	14.76	14.73	14.71	14.67	14.63	14.6	14.57	14.53	<24dBm
140	5700	11.36	--	--	--	--	--	--	--	<24dBm
149	5745	13.55	--	--	--	--	--	--	--	<30dBm
157	5785	13.71	13.68	13.65	13.61	13.58	13.55	13.52	13.49	<30dBm
165	5825	13.62	--	--	--	--	--	--	--	<30dBm

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



**CHAIN B**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	12.36	--	--	--	--	--	--	--	<24dBm
44	5220	13.52	13.49	13.47	13.44	13.41	13.39	13.37	13.35	<24dBm
48	5240	13.23	--	--	--	--	--	--	--	<24dBm
52	5260	14.69	--	--	--	--	--	--	--	<24dBm
60	5300	15.04	15.01	14.98	14.95	14.91	14.88	14.85	14.82	<24dBm
64	5320	12.07	--	--	--	--	--	--	--	<24dBm
100	5500	11.97	--	--	--	--	--	--	--	<24dBm
116	5580	14.89	14.87	14.83	14.80	14.77	14.75	14.72	14.69	<24dBm
140	5700	11.54	--	--	--	--	--	--	--	<24dBm
149	5745	13.77	--	--	--	--	--	--	--	<30dBm
157	5785	13.96	13.93	13.89	13.86	13.83	13.81	13.77	13.73	<30dBm
165	5825	13.85	--	--	--	--	--	--	--	<30dBm

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

**Maximum conducted output power Measurement:**

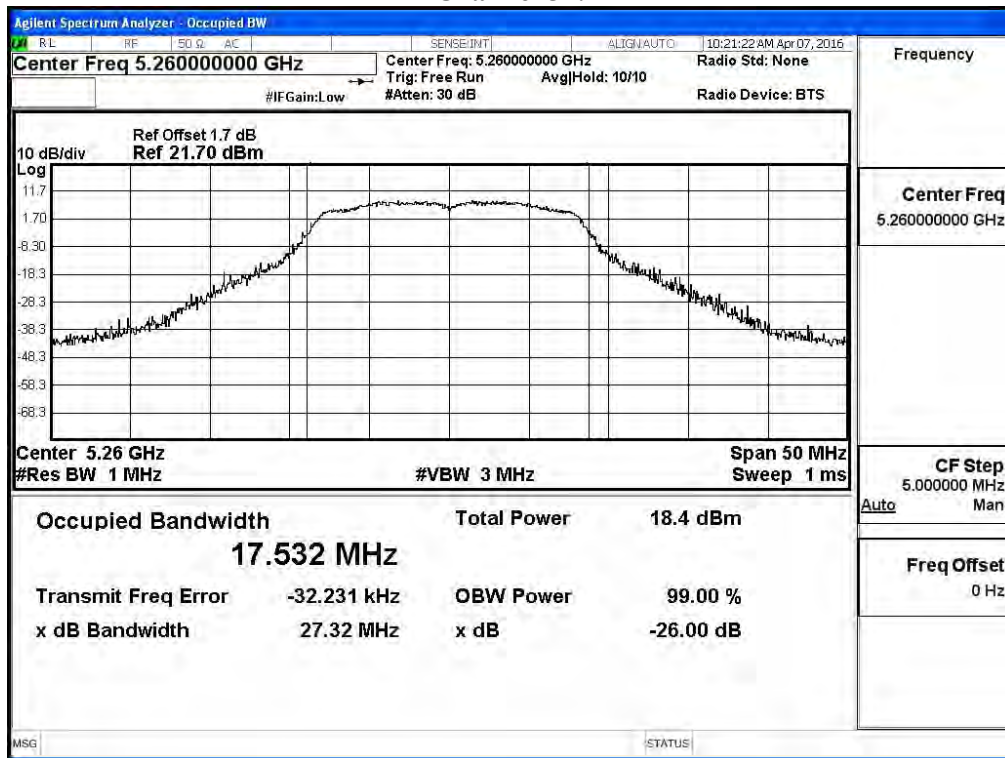
**CHAIN B**

Channel No	Frequency Range (MHz)	IC99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	12.36	24	--
44	5220	--	13.52	24	--
48	5240	--	13.23	24	--
52	5260	17.532	14.69	24	23.44
60	5300	17.446	15.04	24	23.42
64	5320	17.383	12.07	24	23.40
100	5500	17.391	11.97	24	23.40
116	5580	17.472	14.89	24	23.42
140	5700	17.458	11.54	24	23.42
149	5745	--	13.77	30	--
157	5785	--	13.96	30	--
165	5825	--	13.85	30	--

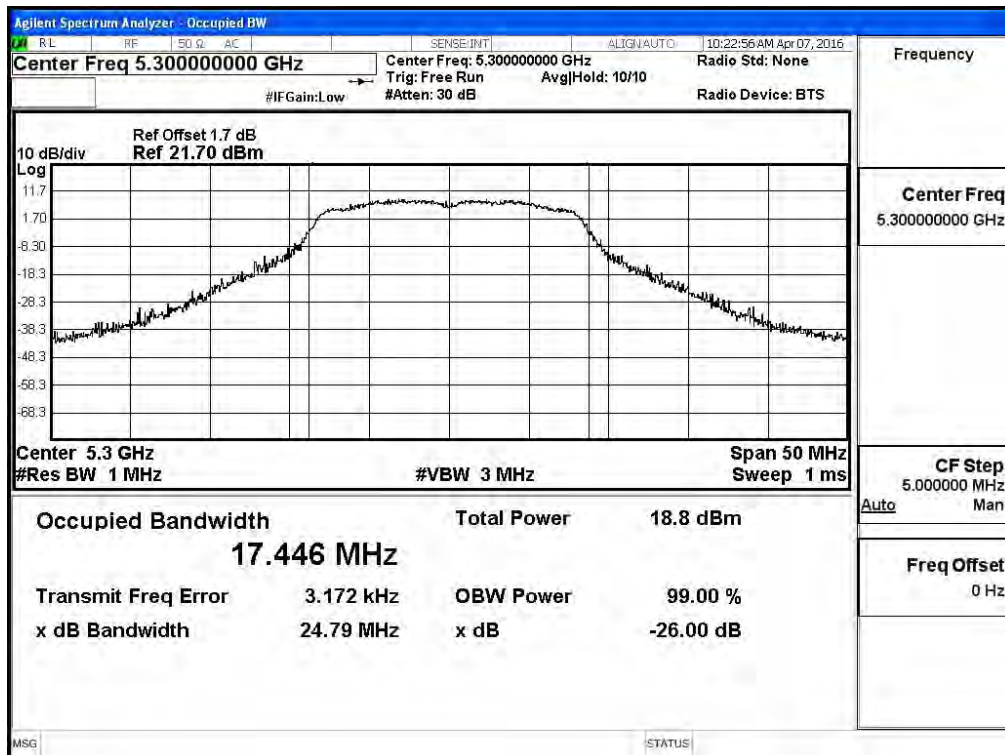
Note:

1. Power Output Value = Reading value on average power meter + cable loss
2. IC99% Bandwidth is the bandwidth of chain B whichever is less bandwidth, output power limitation is more stringent.

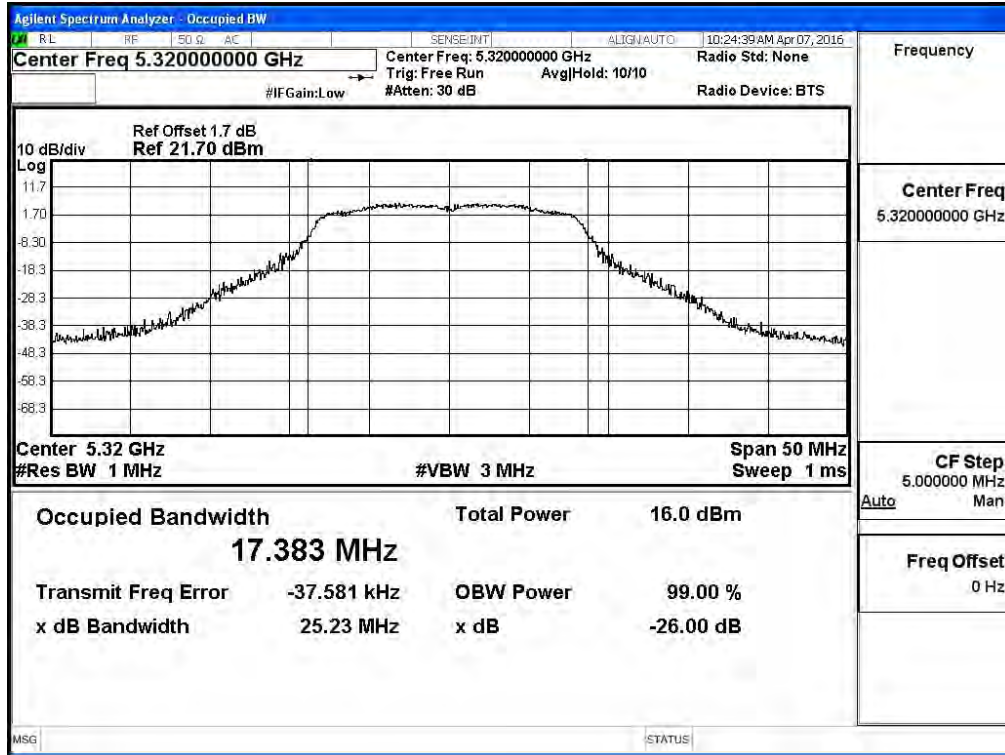
**IC99% Bandwidth:  
Channel 52:**



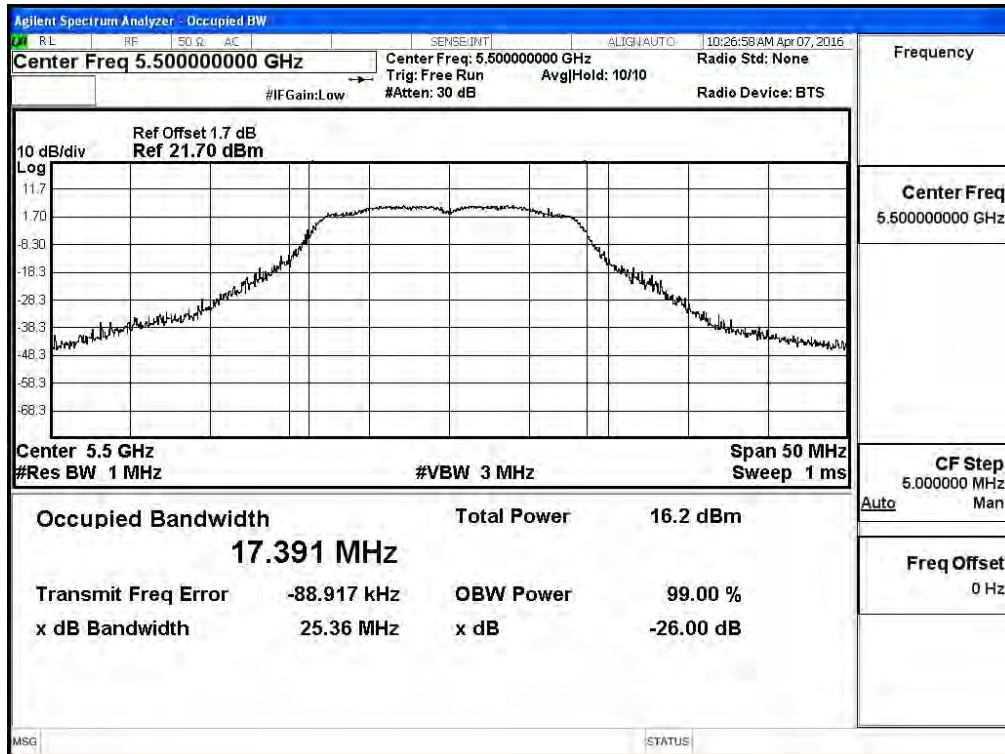
**Channel 60:**



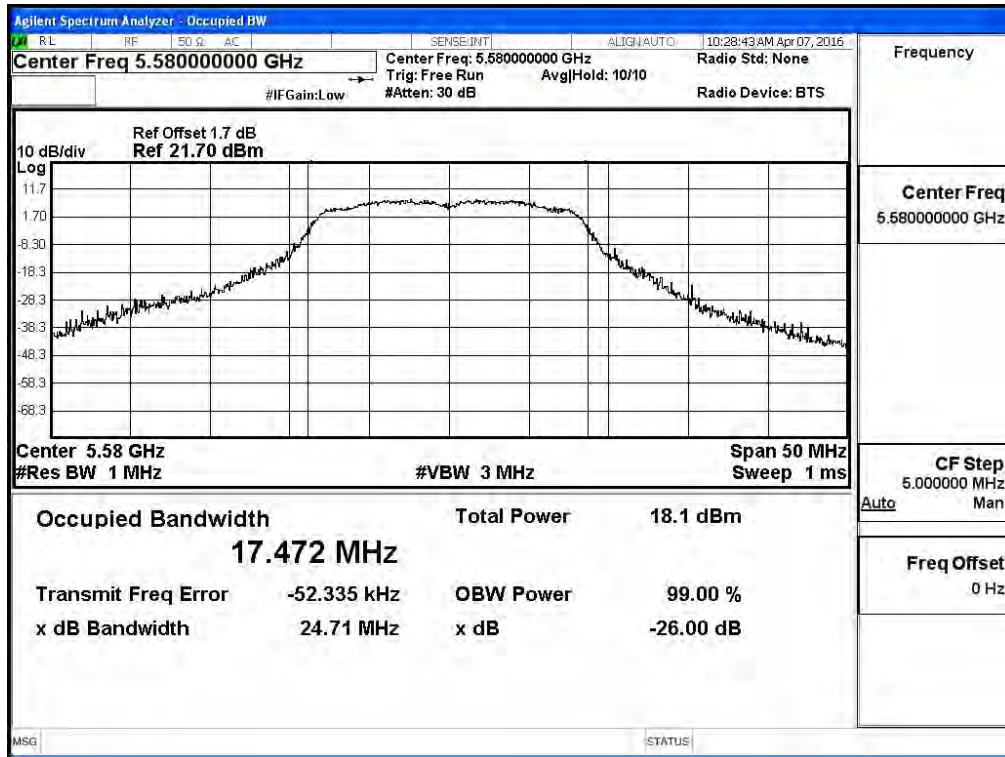
**Channel 64:**



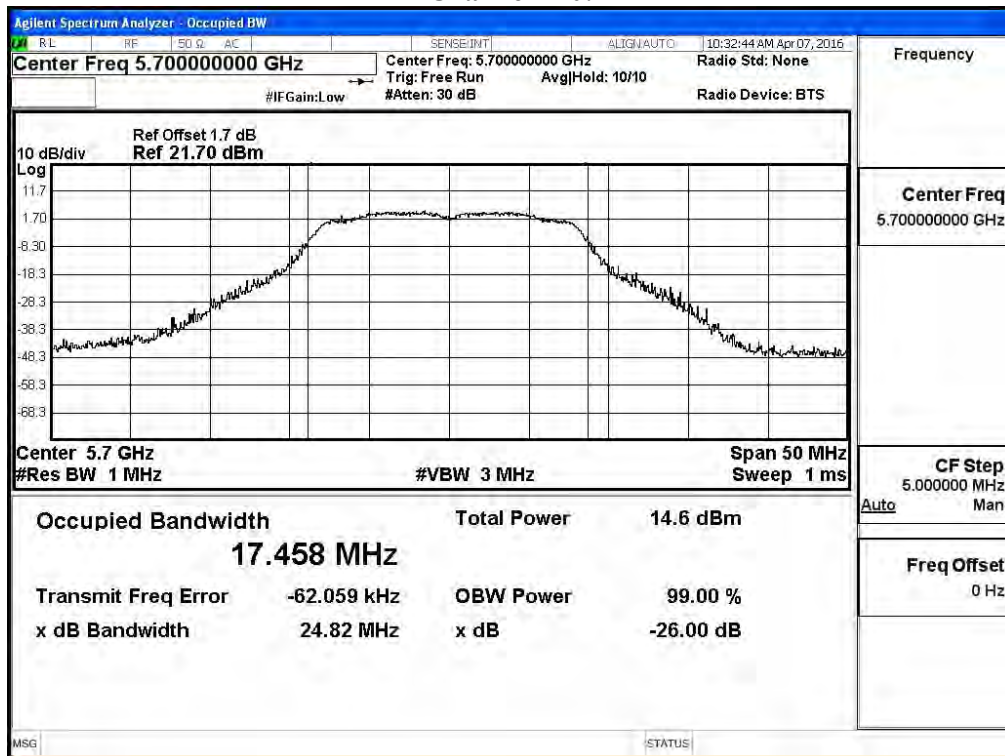
**Channel 100:**



**Channel 116:**



**Channel 140:**



Product : TABLET PC  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps)

**CHAIN A**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		HT8	HT9	HT10	HT11	HT12	HT13	HT14	HT15	
		Measurement Level (dBm)								
36	5180	9.52	--	--	--	--	--	--	--	<24dBm
44	5220	9.76	9.73	9.71	9.69	9.66	9.64	9.62	6.59	<24dBm
48	5240	9.82	--	--	--	--	--	--	--	<24dBm
52	5260	11.76	--	--	--	--	--	--	--	<24dBm
60	5300	11.78	11.75	11.73	11.70	11.68	11.65	11.62	11.59	<24dBm
64	5320	9.52	--	--	--	--	--	--	--	<24dBm
100	5500	9.01	--	--	--	--	--	--	--	<24dBm
116	5580	12.58	12.55	12.51	12.48	12.44	12.42	12.39	12.37	<24dBm
140	5700	8.42	--	--	--	--	--	--	--	<24dBm
149	5745	17.78	--	--	--	--	--	--	--	<30dBm
157	5785	11.33	11.31	11.29	11.26	11.23	11.19	11.16	11.11	<30dBm
165	5825	17.86	--	--	--	--	--	--	--	<30dBm

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



**CHAIN B**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		HT8	HT9	HT10	HT11	HT12	HT13	HT14	HT15	
		Measurement Level (dBm)								
36	5180	10.01	--	--	--	--	--	--	--	<24dBm
44	5220	10.16	10.13	10.1	10.07	10.04	10.01	9.97	9.94	<24dBm
48	5240	10.22	--	--	--	--	--	--	--	<24dBm
52	5260	12.72	--	--	--	--	--	--	--	<24dBm
60	5300	11.74	11.71	11.69	11.66	11.63	11.60	11.57	11.52	<24dBm
64	5320	10.15	--	--	--	--	--	--	--	<24dBm
100	5500	8.85	--	--	--	--	--	--	--	<24dBm
116	5580	13.22	13.19	13.15	13.11	13.08	13.05	13.01	12.97	<24dBm
140	5700	9.97	--	--	--	--	--	--	--	<24dBm
149	5745	13.25	--	--	--	--	--	--	--	<30dBm
157	5785	13.12	13.09	13.06	13.02	12.98	12.94	12.91	12.88	<30dBm
165	5825	13.05	--	--	--	--	--	--	--	<30dBm

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

**Maximum conducted output power Measurement:**

**(CHAIN A+ B)**

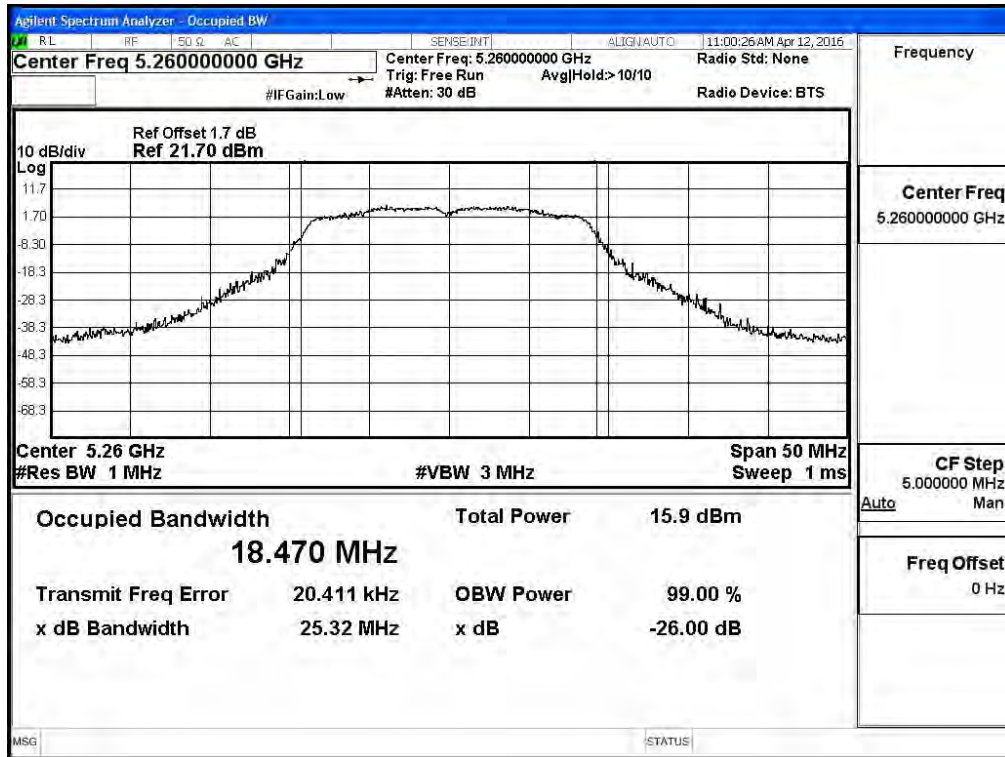
Channel Number	Frequency (MHz)	IC99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	--	9.52	10.01	12.78	24	--
44	5220	--	9.76	10.16	12.97	24	--
48	5240	--	9.82	10.22	13.03	24	--
52	5260	18.353	11.76	12.72	15.28	24	23.64
60	5300	18.314	11.78	11.74	14.77	24	23.63
64	5320	18.360	9.52	10.15	12.86	24	23.64
100	5500	18.314	9.01	8.85	11.94	24	23.63
116	5580	18.349	12.58	13.22	15.92	24	23.64
140	5700	18.344	8.42	9.97	12.27	24	23.63
149	5745	--	17.78	13.25	19.09	30	--
157	5785	--	11.33	13.12	15.33	30	--
165	5825	--	17.86	13.05	19.10	30	--

Note:

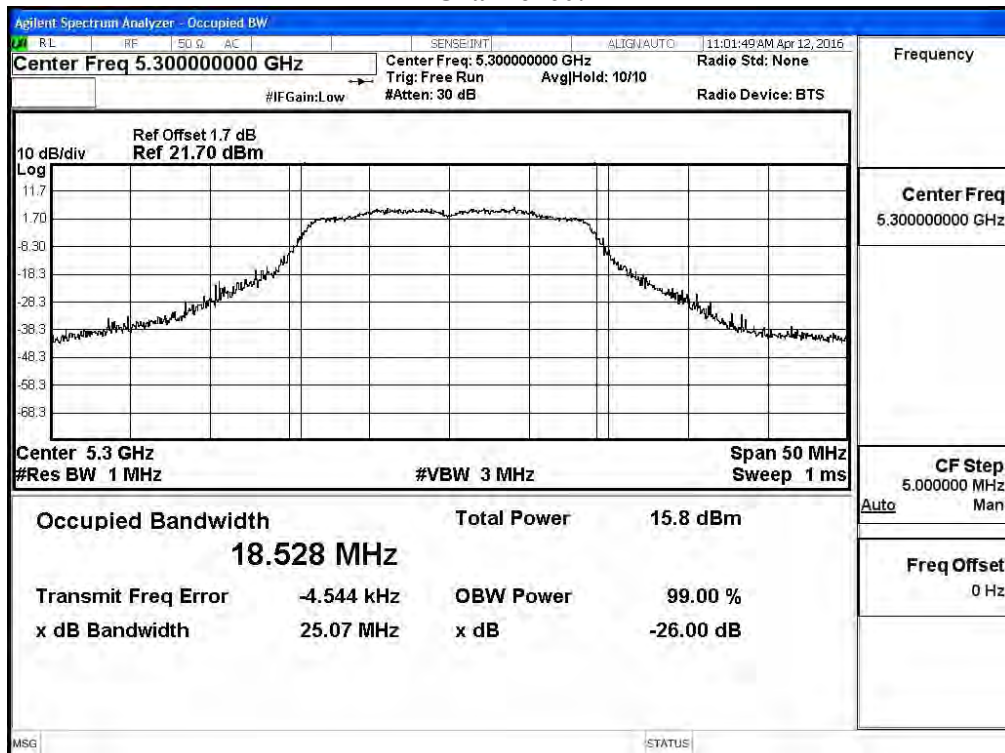
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3. IC99% Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.



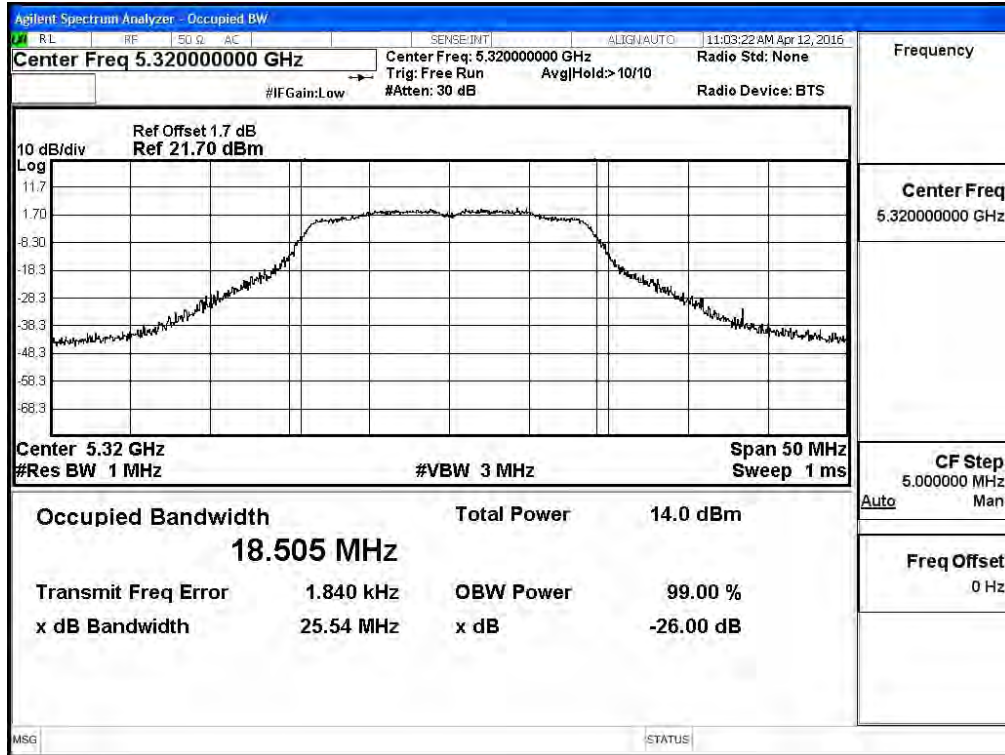
**IC99% Bandwidth Chain A:**  
**Channel 52:**



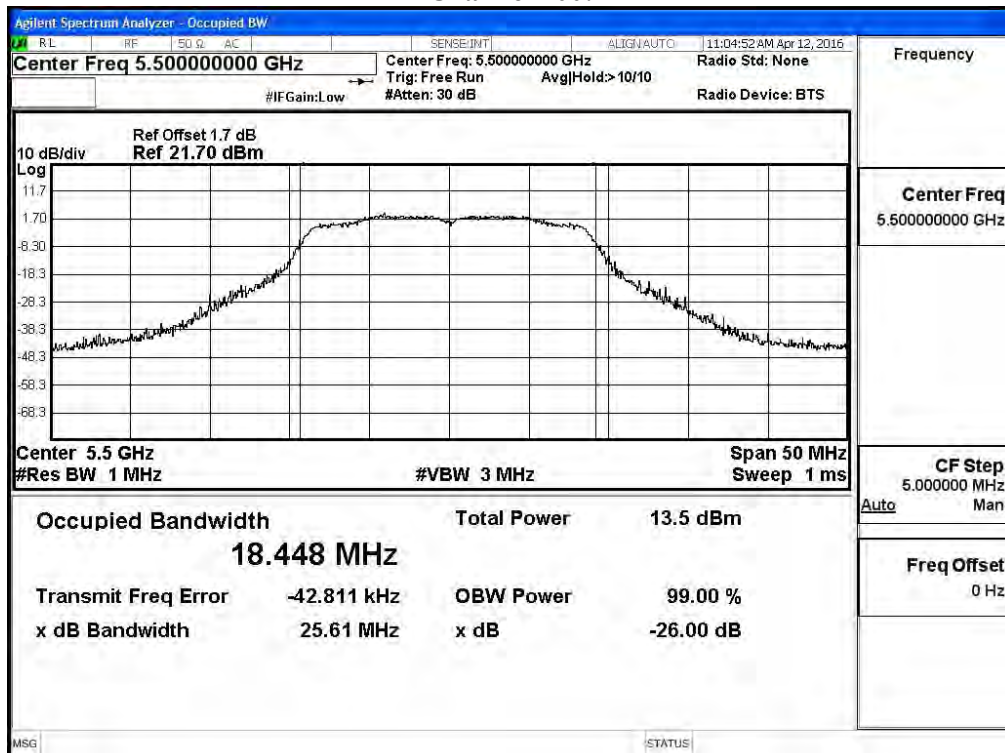
**Channel 60:**



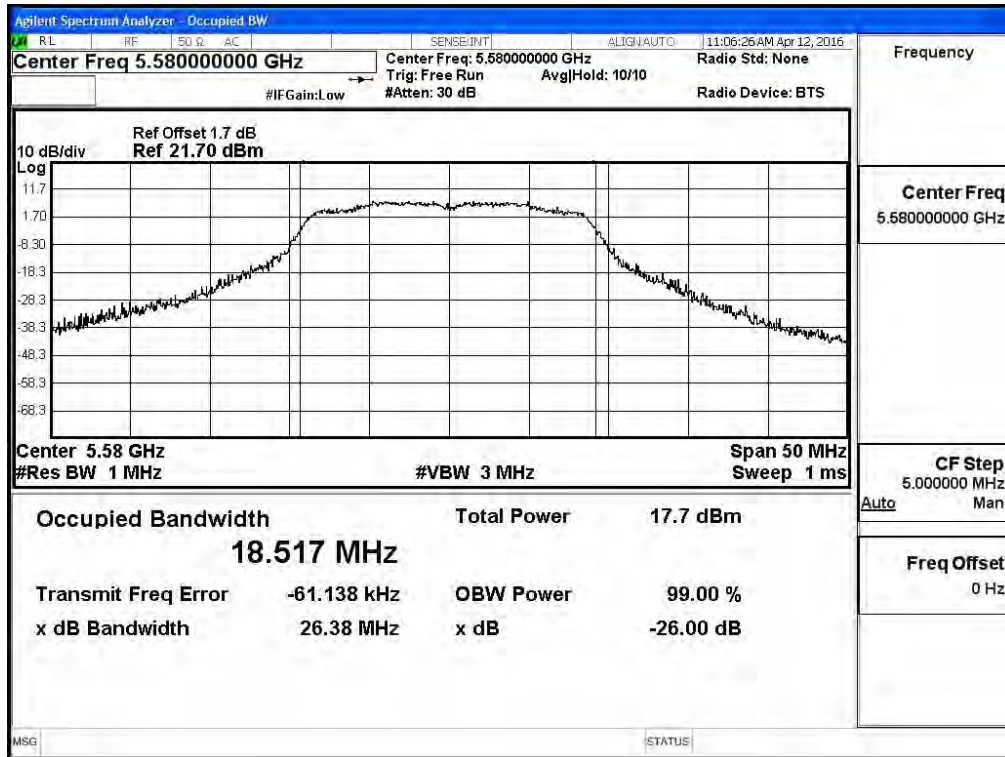
**Channel 64:**



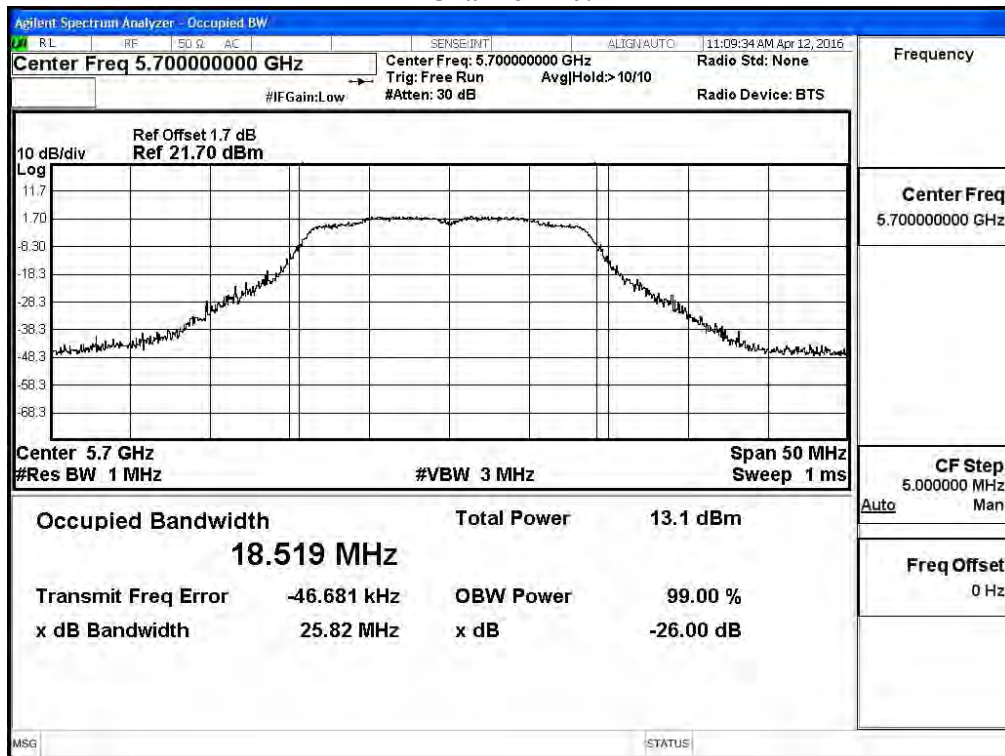
**Channel 100:**



**Channel 116:**

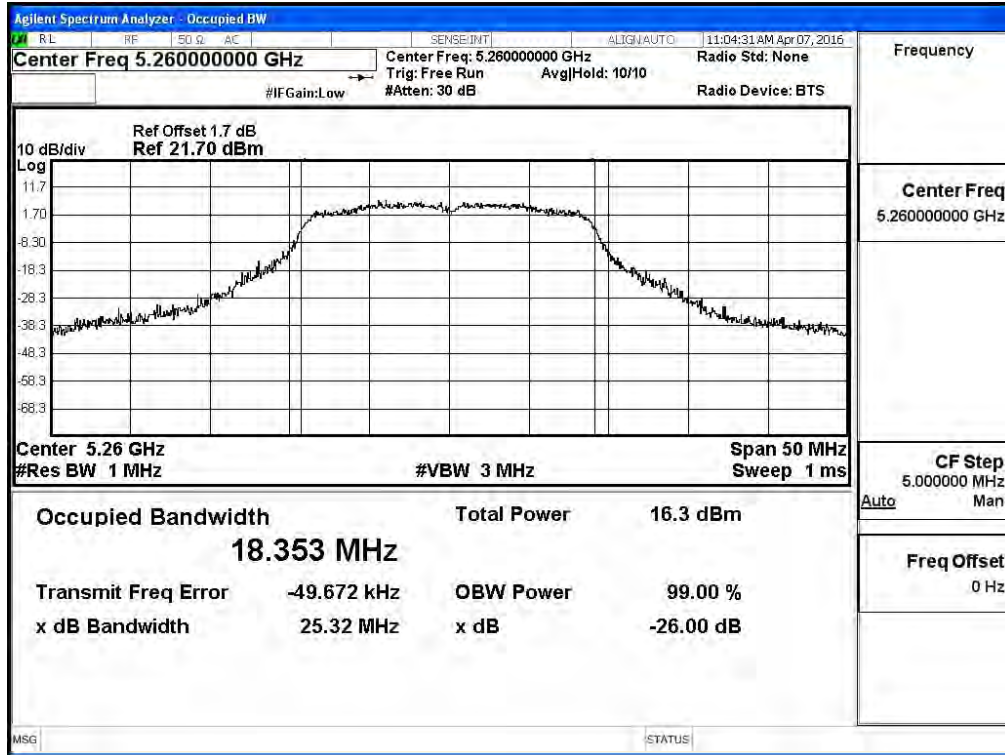


**Channel 140:**

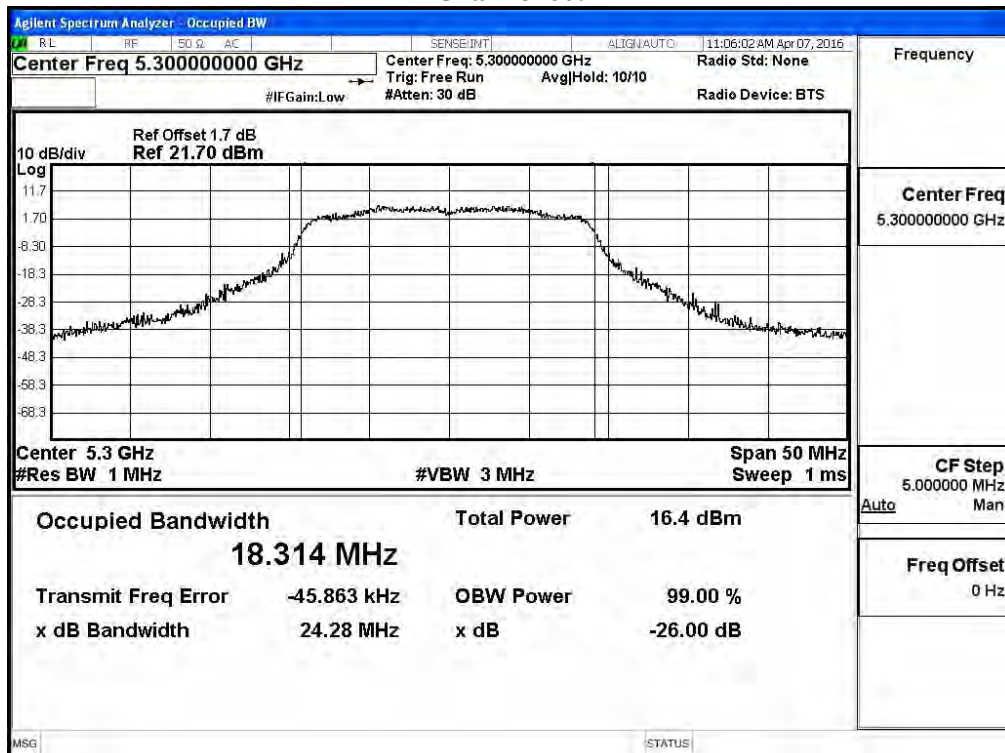




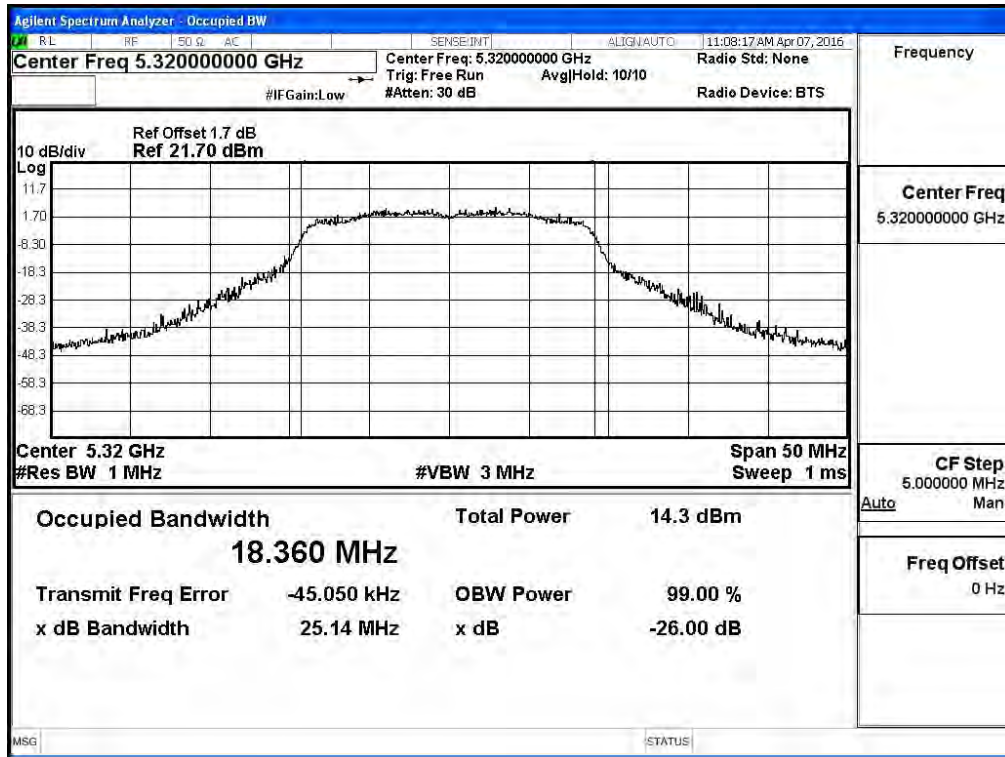
**IC99% Bandwidth Chain B:  
Channel 52:**



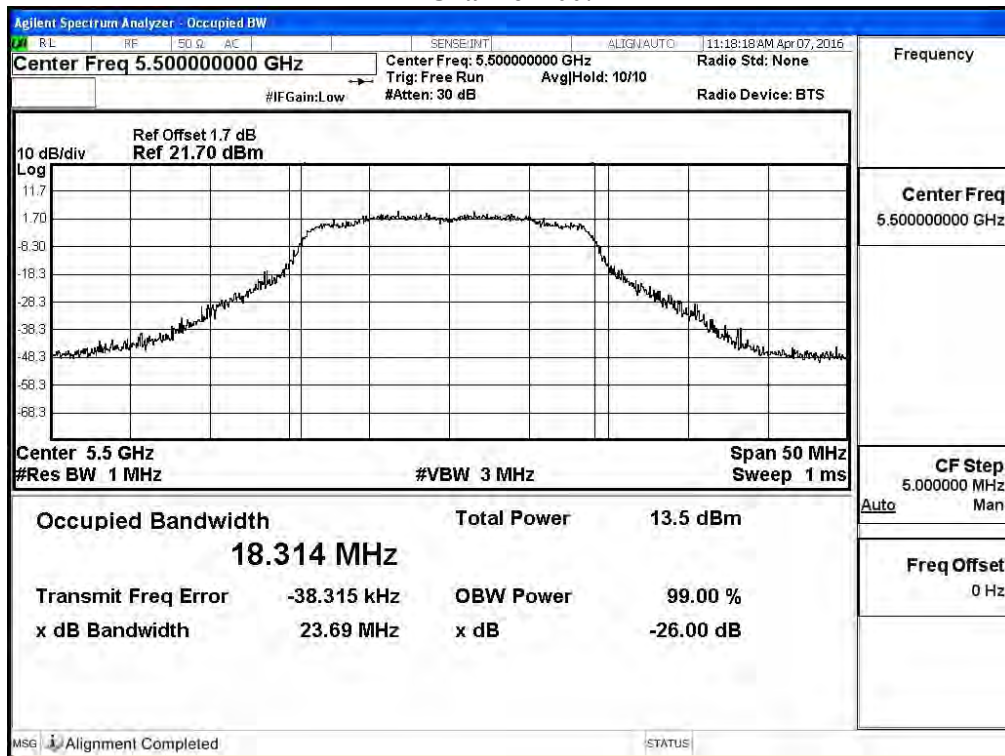
**Channel 60:**



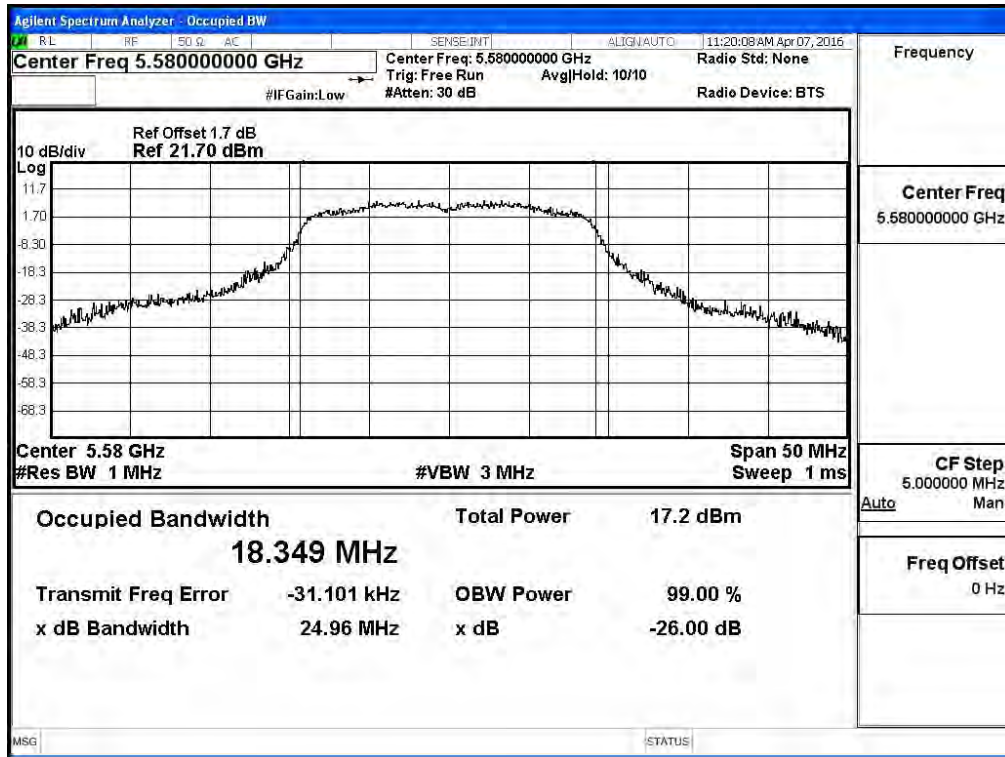
**Channel 64:**



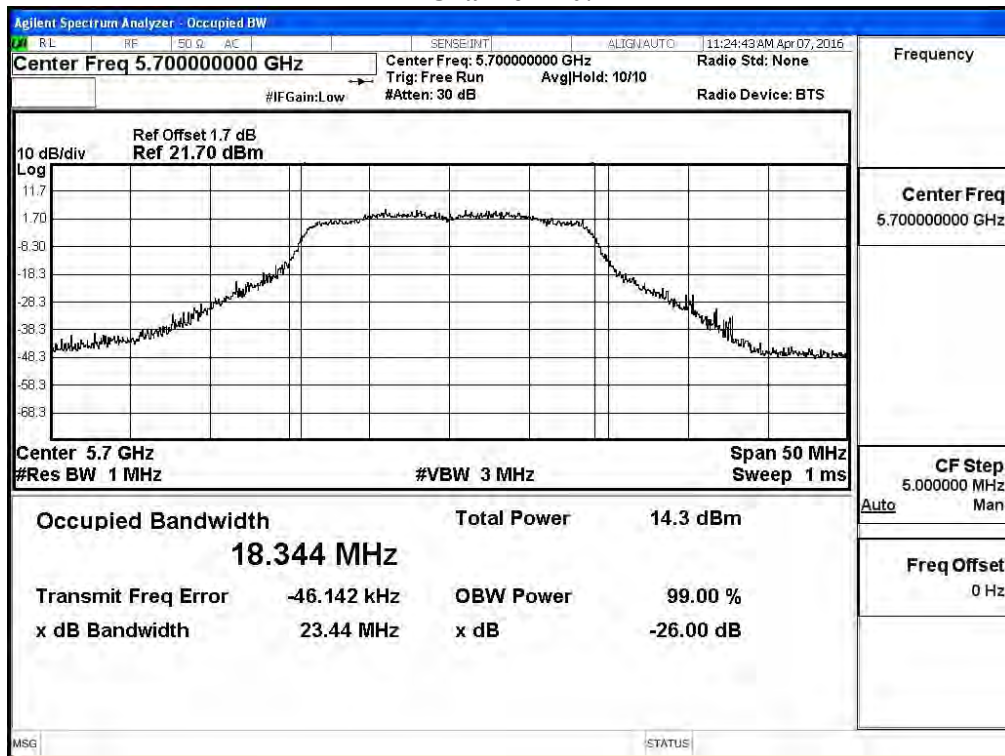
**Channel 100:**



**Channel 116:**



**Channel 140:**



Product : TABLET PC  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)

**CHAIN A**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		HT8	HT9	HT10	HT11	HT12	HT13	HT14	HT15	
		Measurement Level (dBm)								
38	5190	7.9	--	--	--	--	--	--	--	<24dBm
46	5230	12.43	12.39	12.36	12.33	12.29	12.25	12.21	12.18	<24dBm
54	5270	14.76	--	--	--	--	--	--	--	<24dBm
62	5310	9.42	9.39	9.35	9.31	9.27	9.23	9.19	9.17	<24dBm
102	5510	9.73	--	--	--	--	--	--	--	<24dBm
110	5550	14.72	14.69	14.66	14.62	14.59	14.55	14.52	14.49	<24dBm
134	5670	14.25	--	--	--	--	--	--	--	<24dBm
151	5755	14.02	--	--	--	--	--	--	--	<30dBm
159	5795	14.43	14.35	14.22	14.15	14.08	13.91	13.82	13.77	<30dBm

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

**CHAIN B**

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		HT8	HT9	HT10	HT11	HT12	HT13	HT14	HT15	
		Measurement Level (dBm)								
38	5190	8.7	--	--	--	--	--	--	--	<24dBm
46	5230	13.76	13.73	13.71	13.68	13.65	13.63	13.60	13.57	<24dBm
54	5270	14.91	--	--	--	--	--	--	--	<24dBm
62	5310	10.49	10.46	10.42	10.38	10.36	10.33	10.30	10.25	<24dBm
102	5510	9.62	--	--	--	--	--	--	--	<24dBm
110	5550	14.52	14.49	14.46	14.42	14.39	14.37	14.34	14.31	<24dBm
134	5670	15.49	--	--	--	--	--	--	--	<24dBm
151	5755	15.52	--	--	--	--	--	--	--	<30dBm
159	5795	15.78	15.76	15.74	15.71	15.68	15.65	15.61	15.58	<30dBm

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

**Maximum conducted output power Measurement:**

**(CHAIN A+ B)**

Channel Number	Frequency (MHz)	IC99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	--	7.90	8.70	11.33	24	--
46	5230	--	12.43	13.76	16.16	24	--
54	5270	36.358	14.76	14.91	17.85	24	26.61
62	5310	36.273	9.42	10.49	13.00	24	26.60
102	5510	36.260	9.73	9.62	12.69	24	26.59
110	5550	36.430	14.72	14.52	17.63	24	26.61
134	5670	36.626	14.25	15.49	17.92	24	26.64
151	5755	--	14.02	15.52	17.84	30	--
159	5795	--	14.43	15.78	18.17	30	--

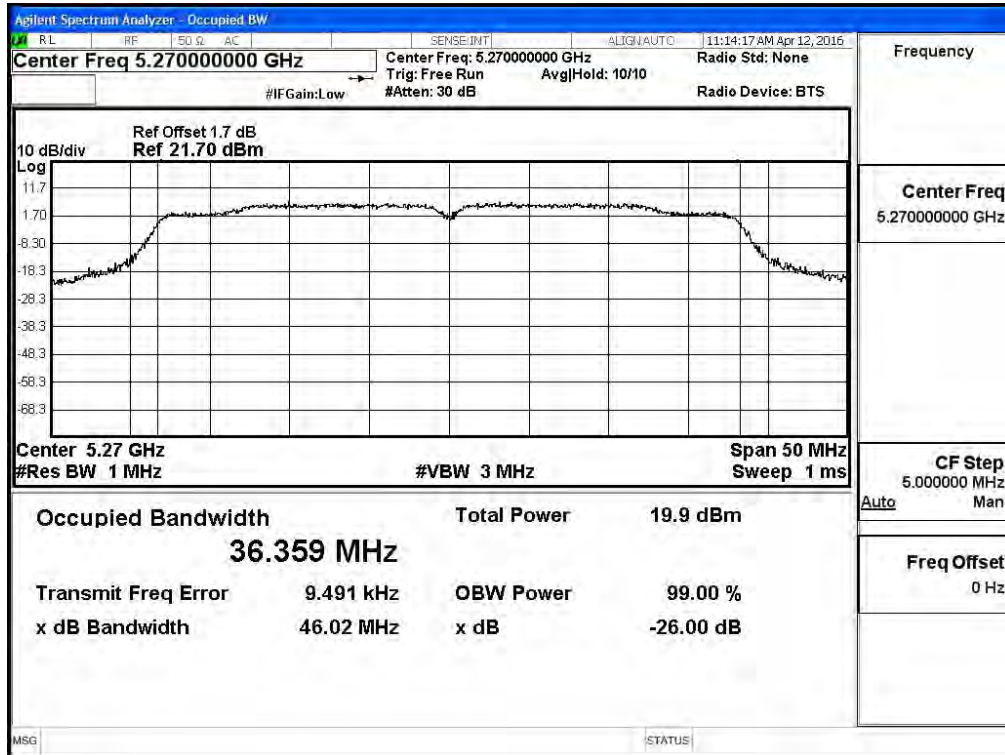
Note:

1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3. IC99% Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

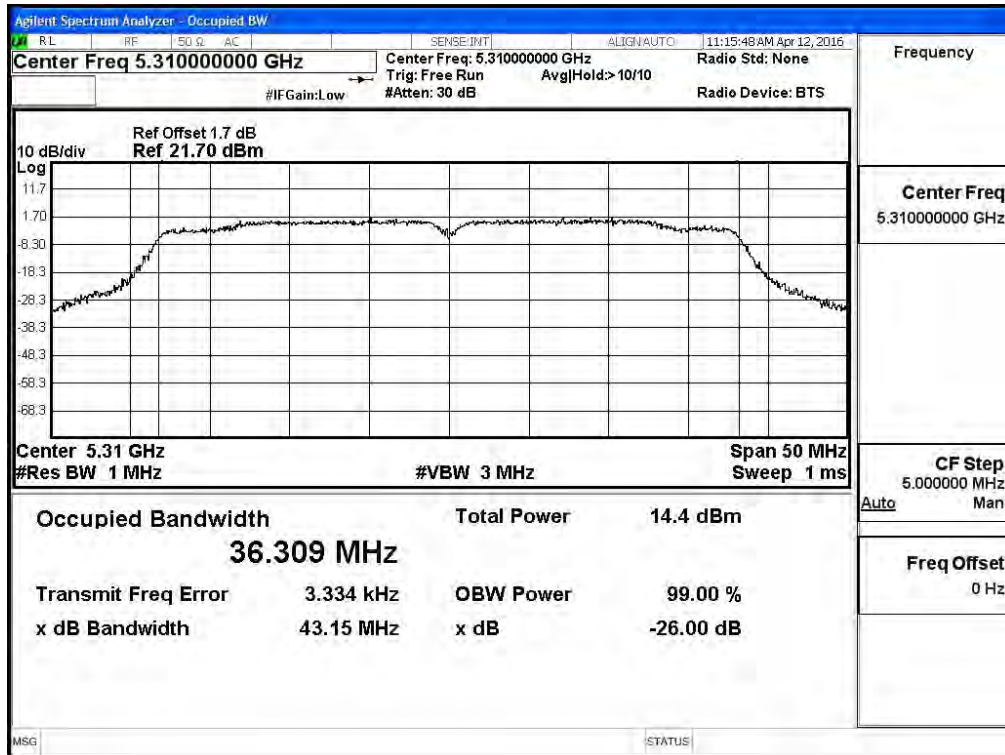


**IC99% Bandwidth:**

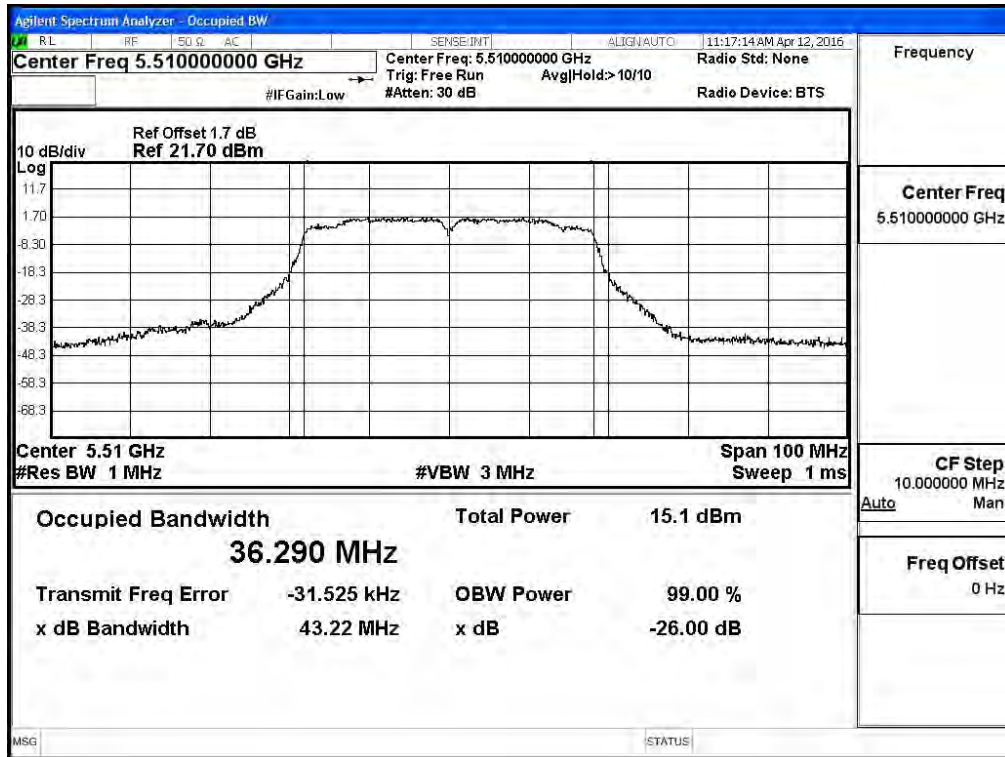
**Channel 54 – Chain A**



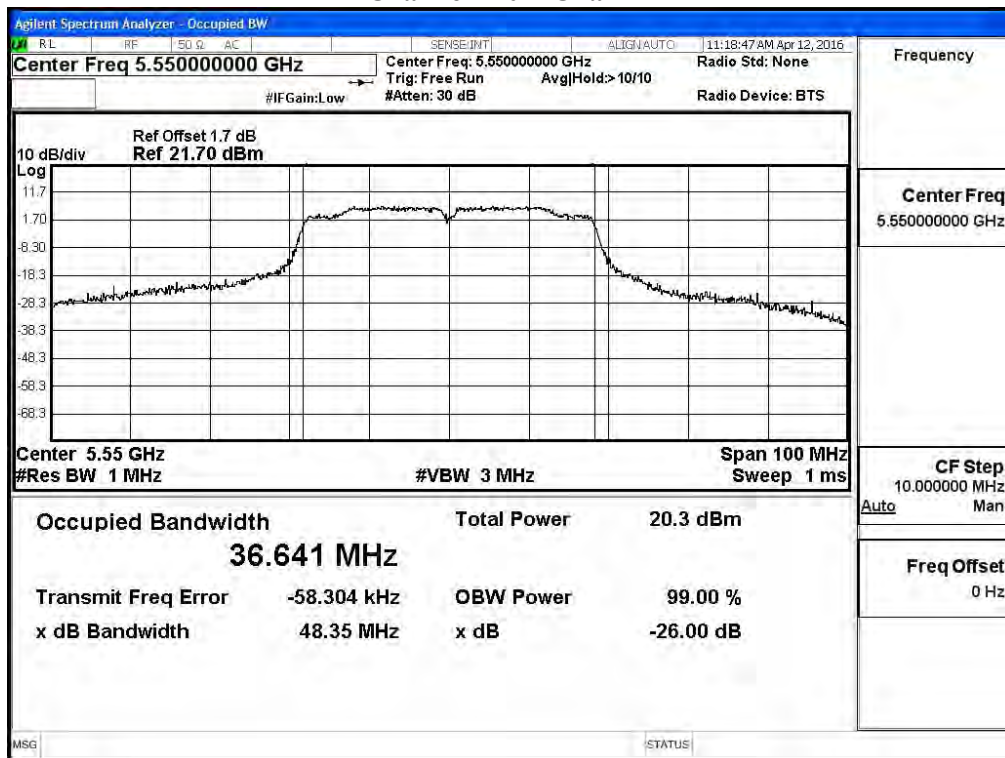
**Channel 62 – Chain A**



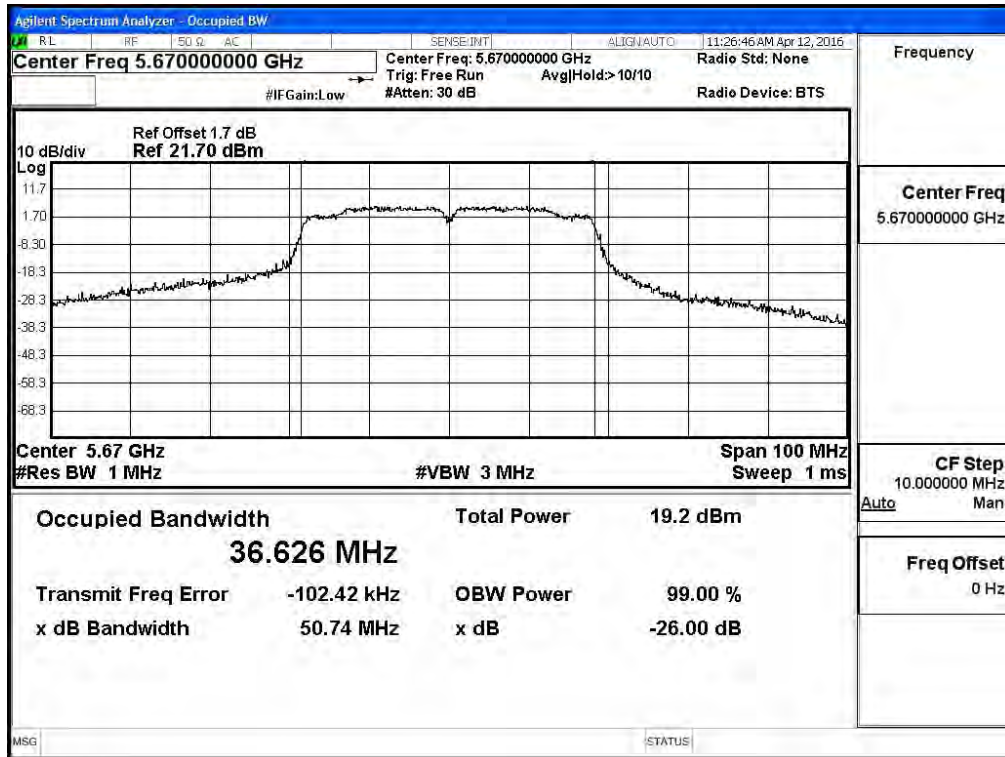
### Channel 102 – Chain A



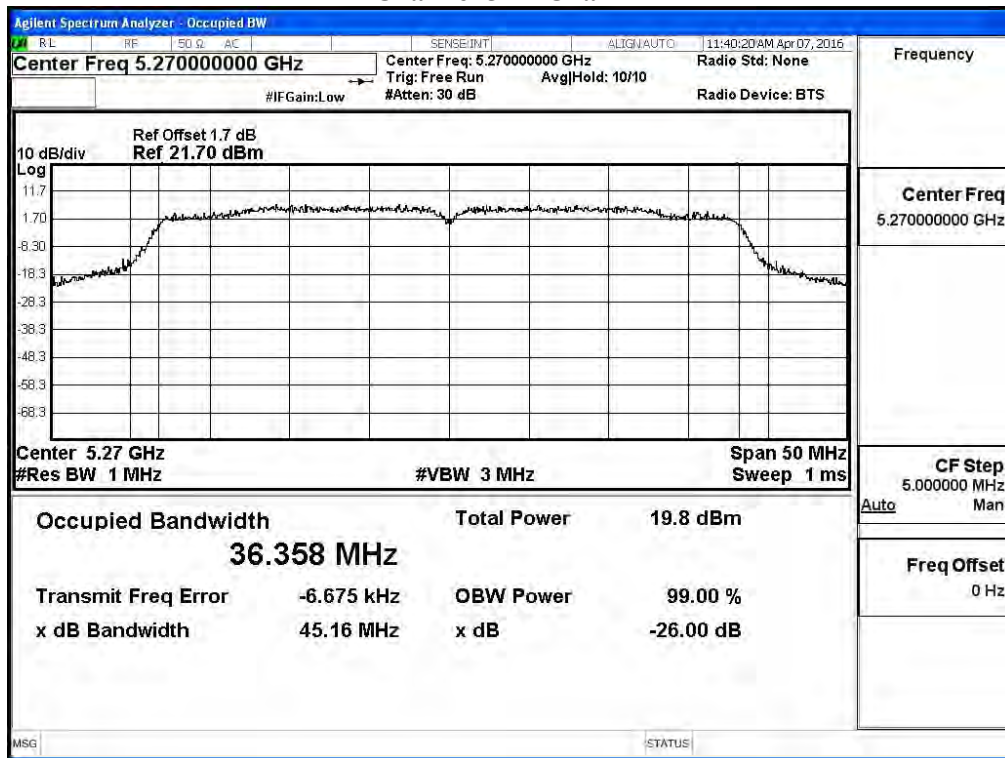
### Channel 110 – Chain A



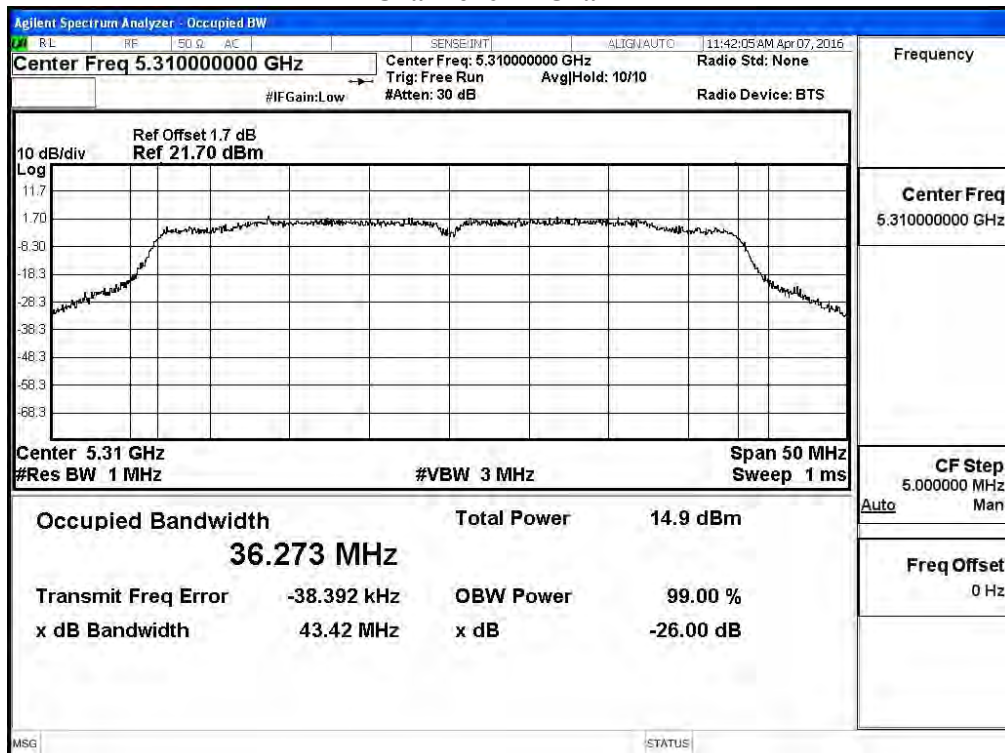
**Channel 134 – Chain A**



**IC99% Bandwidth:  
Channel 54 – Chain B**

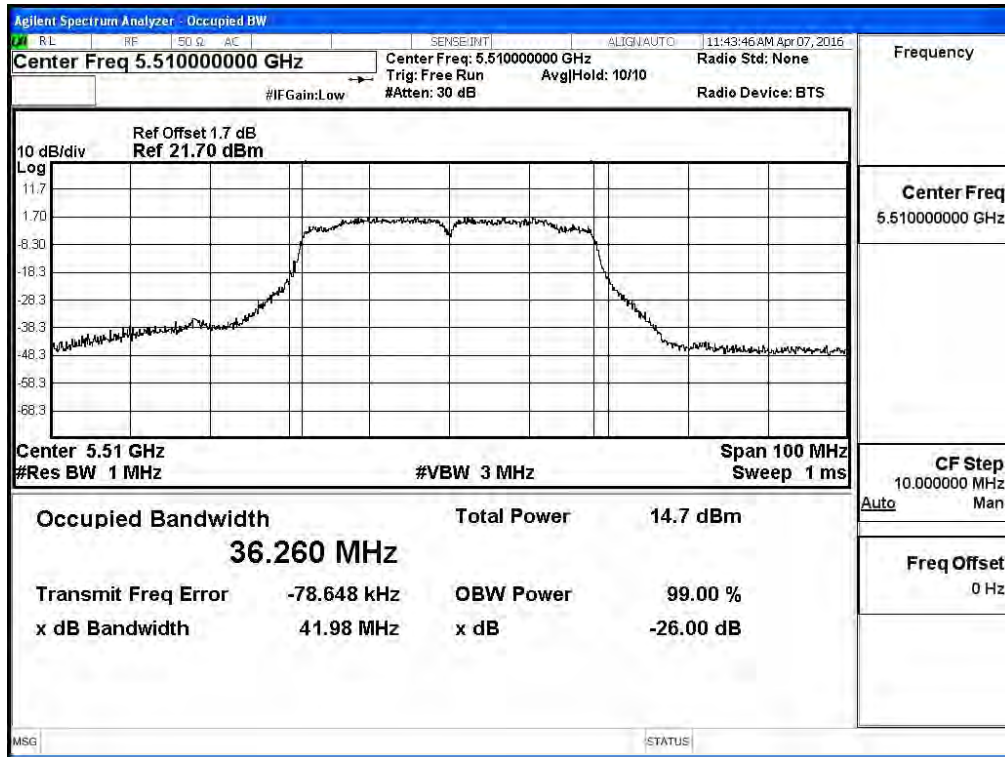


**Channel 62 – Chain B**

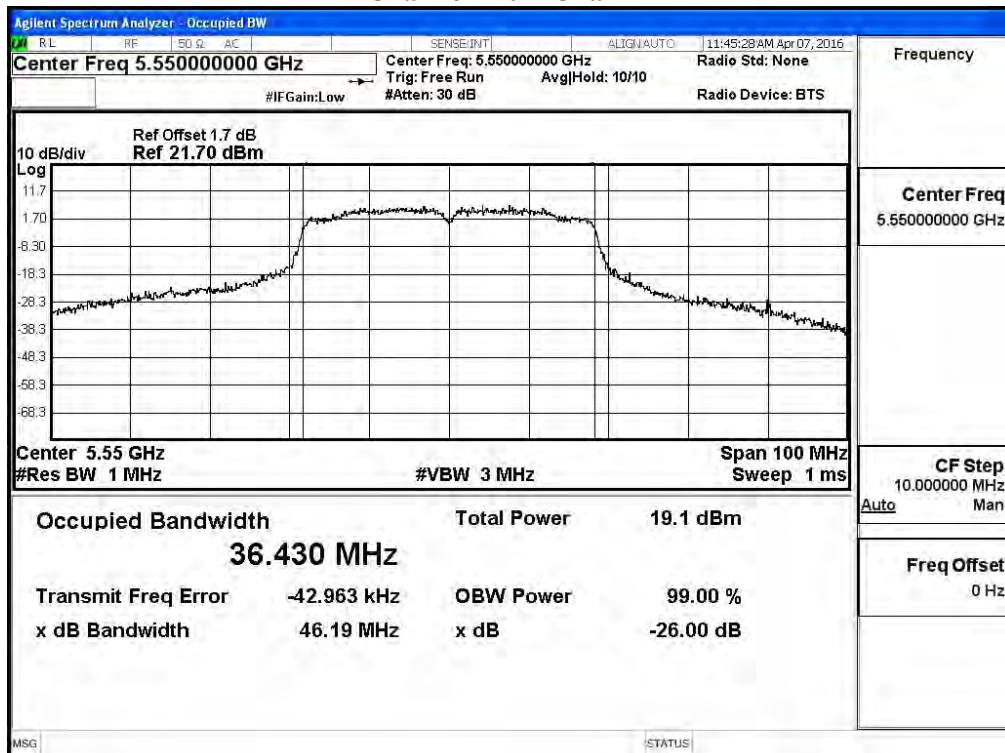




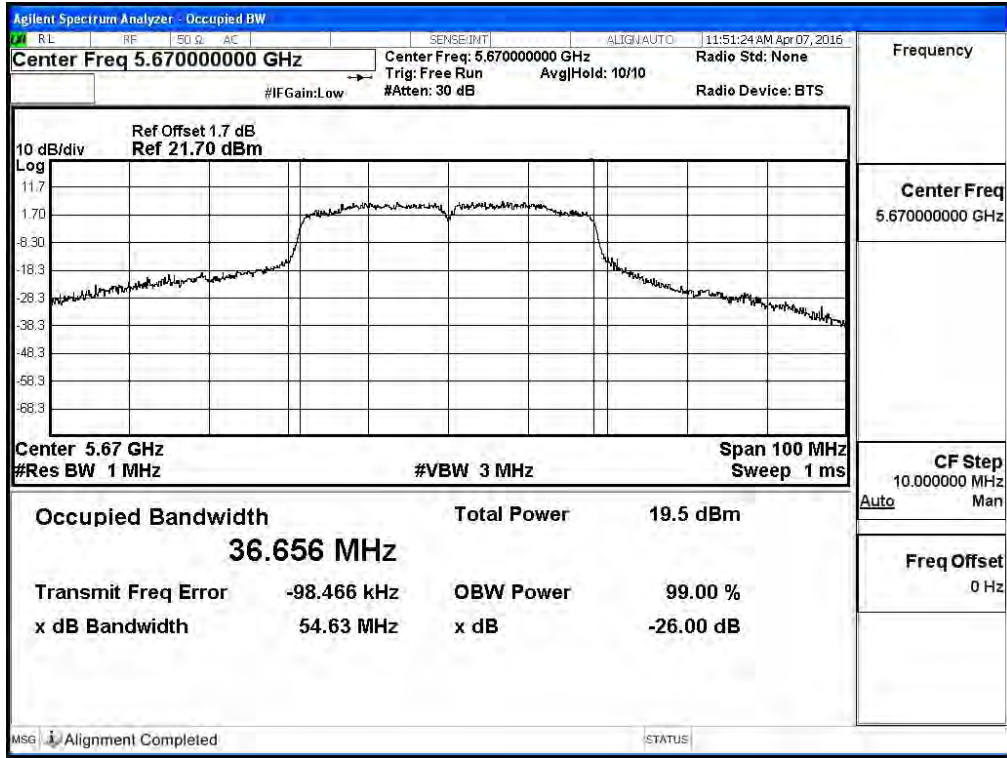
### Channel 102 – Chain B



### Channel 110 – Chain B



**Channel 134 – Chain B**



Product : TABLET PC  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit (802.11ac-20BW-14.4Mbps)

**Chain A**

Cable loss=1dB		Maximum conducted output power									
Channel No.	Frequency (MHz)	Data Rate (Mbps)									Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	
		Measurement Level (dBm)									
144 (Band3)	5720	10.52	10.49	10.47	10.43	10.40	10.37	10.35	10.33	10.30	<24dBm
144 (Band4)	5720	-0.31	-0.34	-0.36	-0.38	-0.41	-0.45	-0.48	-0.51	-0.55	<30dBm

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

**Chain B**

Cable loss=1dB		Maximum conducted output power									
Channel No.	Frequency (MHz)	Data Rate (Mbps)									Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	
		Measurement Level (dBm)									
144 (Band3)	5720	13.01	12.97	12.93	12.91	12.88	12.86	12.84	12.81	12.78	<24dBm
144 (Band4)	5720	0.69	0.67	0.63	0.60	0.56	0.53	0.51	0.49	0.46	<30dBm

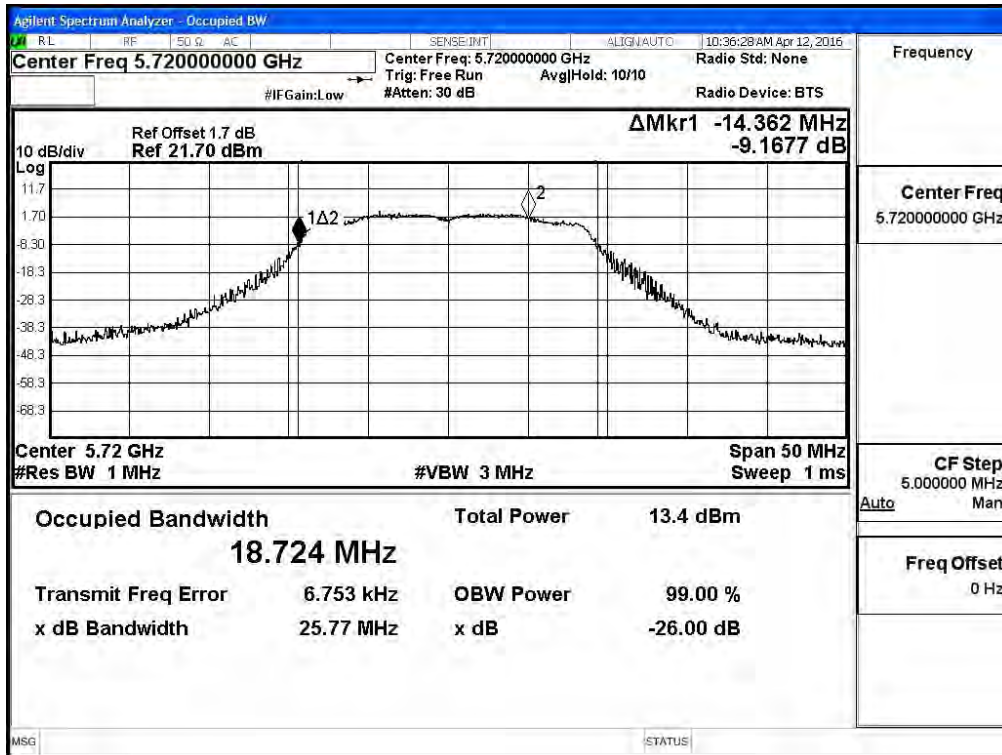
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

**Maximum conducted output power Measurement:**

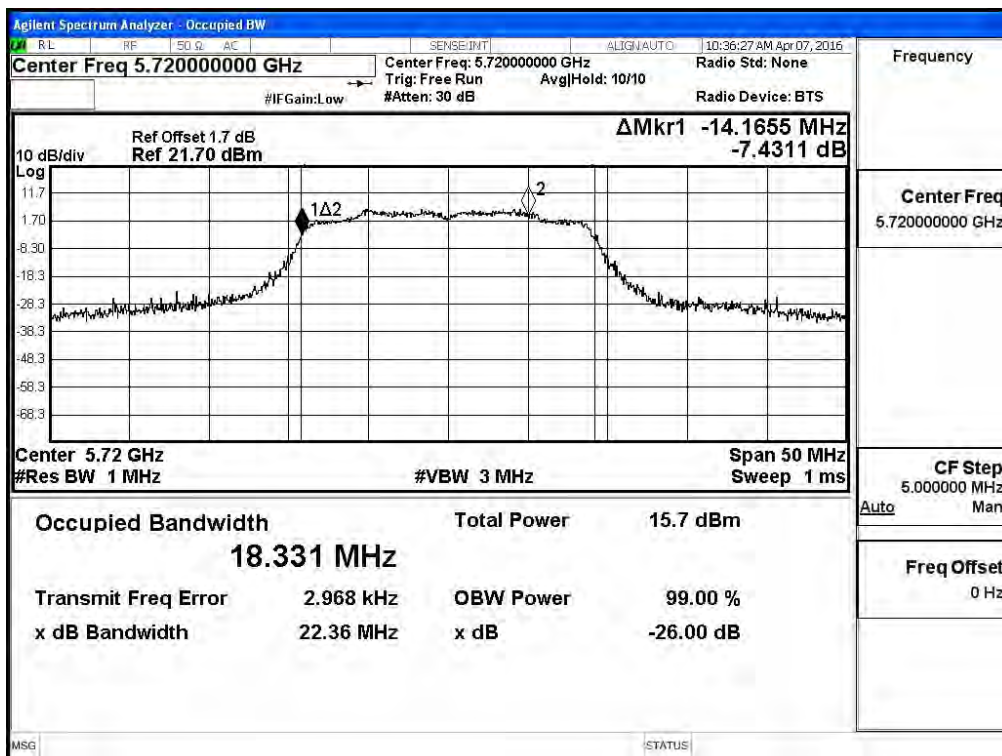
Channel No	Frequency Range (MHz)	IC99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
144(Band3)	5720	14.166	10.520	13.010	14.95	24	22.51	Pass
144(Band4)	5720	--	-0.310	0.690	3.23	30	--	Pass

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

**IC99% Bandwidth:  
Channel 144 – Chain A**

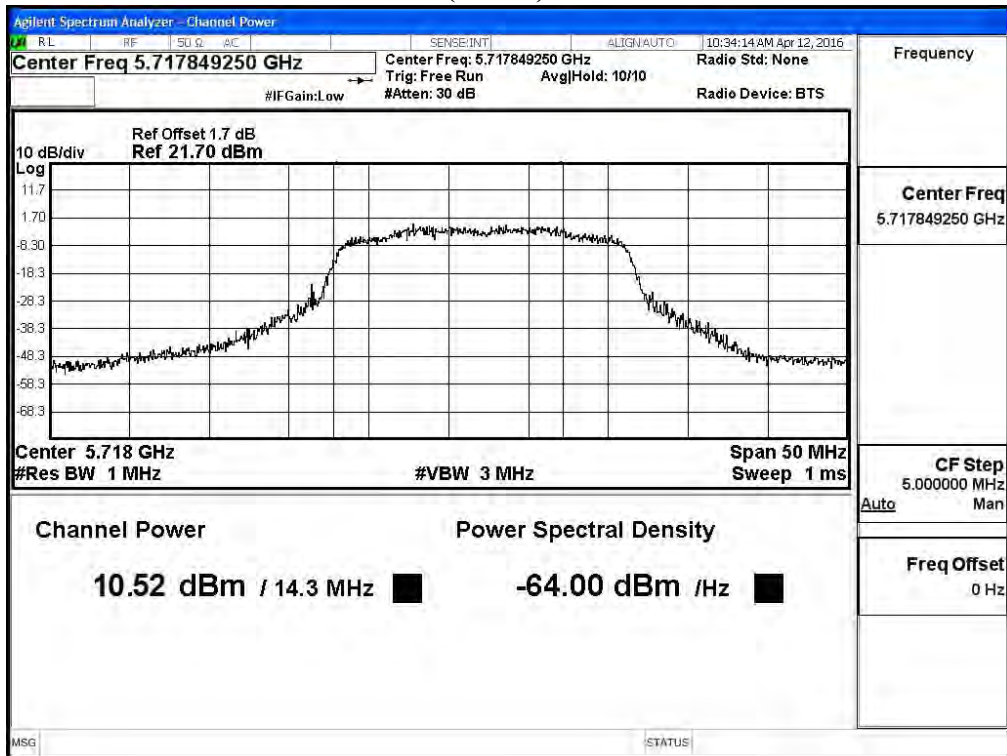


**IC99% Bandwidth:  
Channel 144 – Chain B**

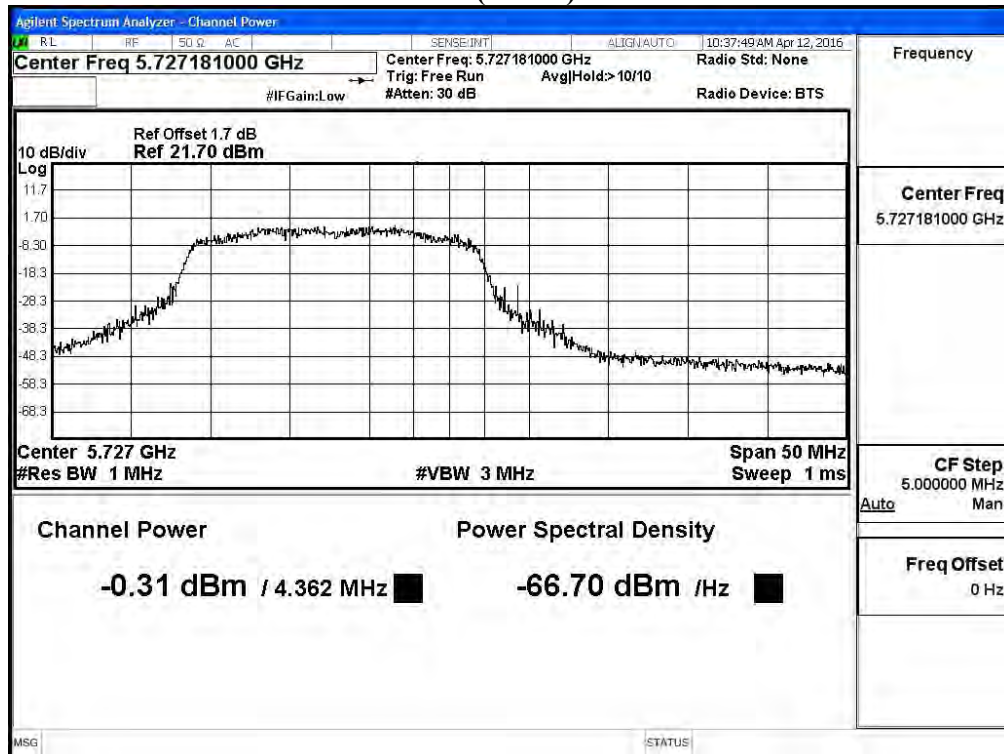




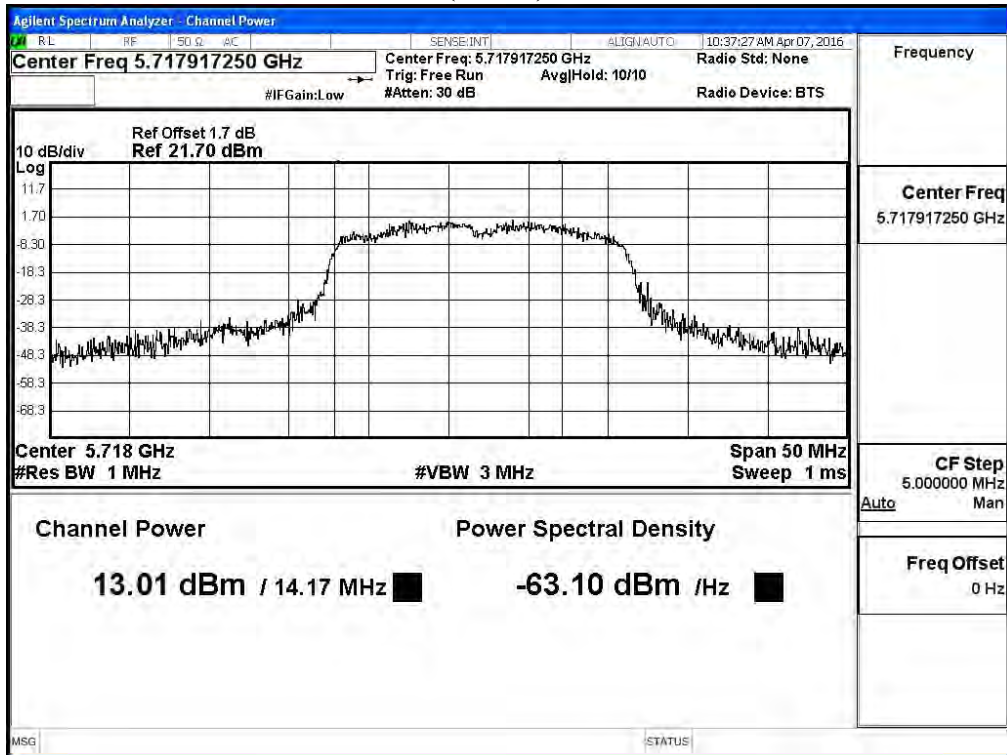
**Maximum conducted output power:  
Channel 144 (Band3) – Chain A**



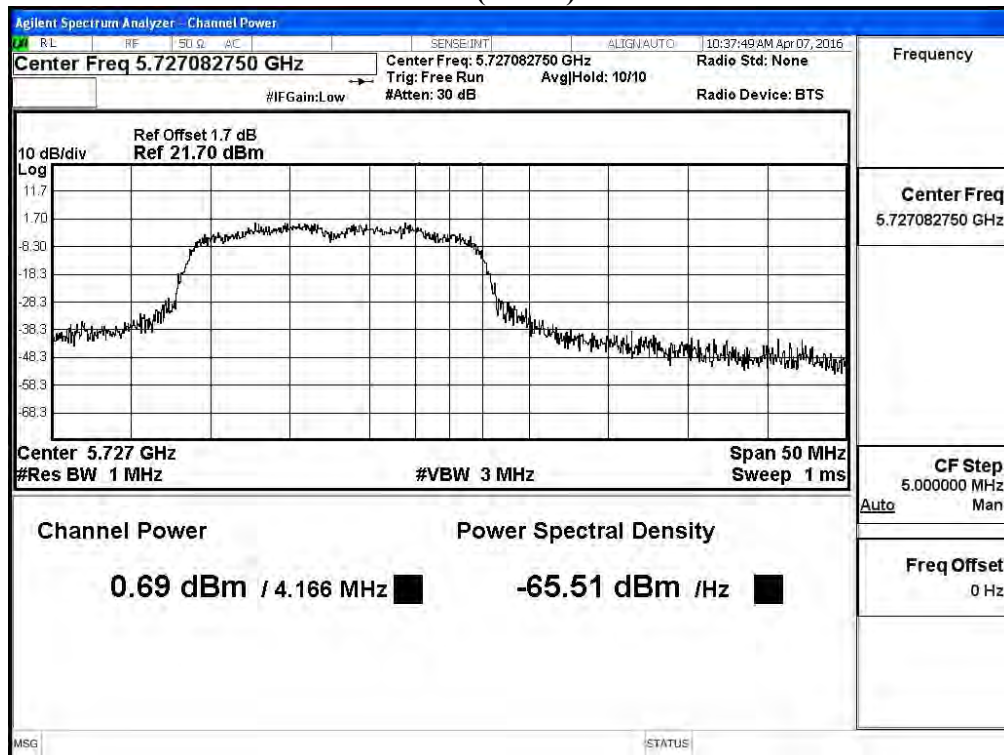
**Channel 144 (Band4) – Chain A**



**Maximum conducted output power:  
Channel 144 (Band3) – Chain B**



**Channel 144 (Band4) – Chain B**



Product : TABLET PC  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit (802.11ac-40BW-30Mbps)

**Chain A**

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
142F(Band3)	5710	14.62	14.59	14.56	14.54	14.51	14.49	14.47	14.44	14.41	14.38	<24dBm
142F(Band4)	5710	-1.02	-1.05	-1.07	-1.1	-1.12	-1.15	-1.18	-1.21	-1.24	-1.27	<30dBm

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

**Chain B**

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
142F(Band3)	5710	15.68	15.65	15.63	15.6	15.57	15.54	15.52	15.5	15.47	15.44	<24dBm
142F(Band4)	5710	-1.82	-1.85	-1.88	-1.90	-1.92	-1.95	-1.99	-2.03	-2.06	-2.09	<30dBm

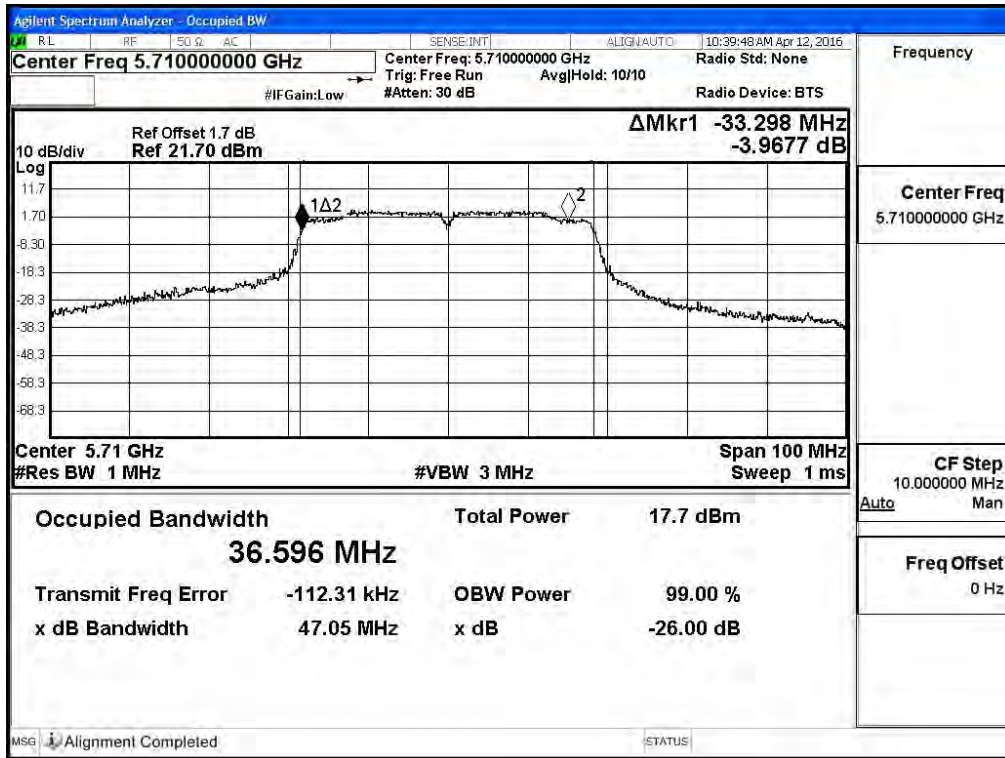
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

**Maximum conducted output power Measurement:**

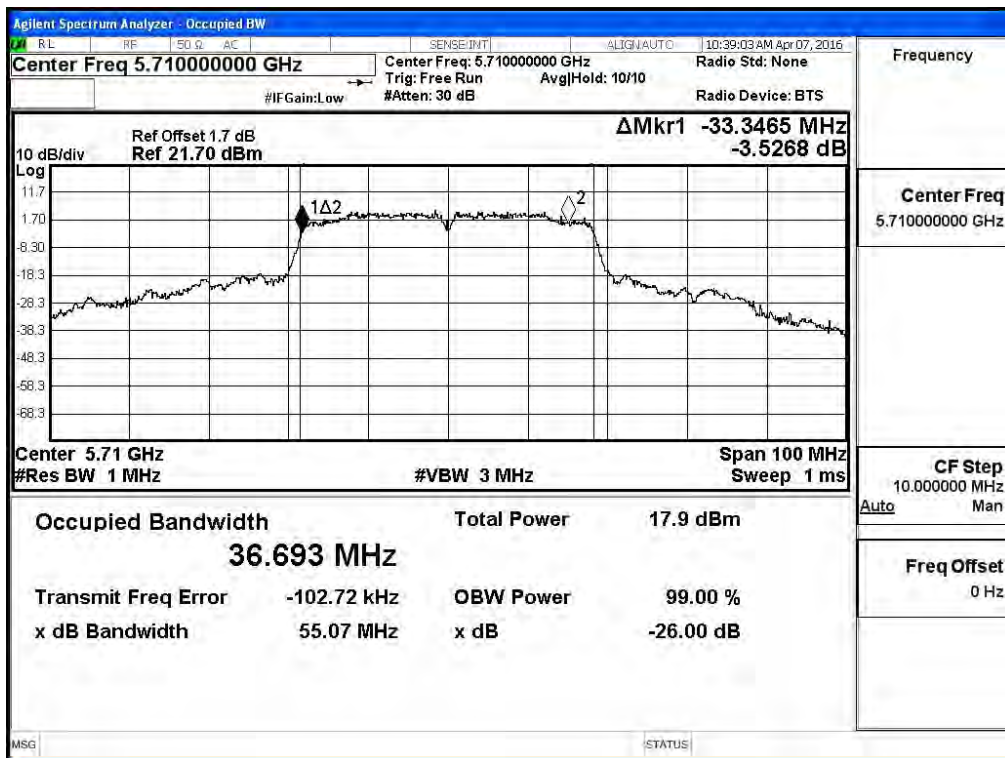
Channel No	Frequency Range (MHz)	IC99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
142F(Band3)	5710	33.298	14.620	15.680	18.19	24	26.22	Pass
142F(Band4)	5710	--	-1.020	-1.820	1.61	30	--	Pass

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

**IC99% Bandwidth:  
Channel 142 – Chain A**

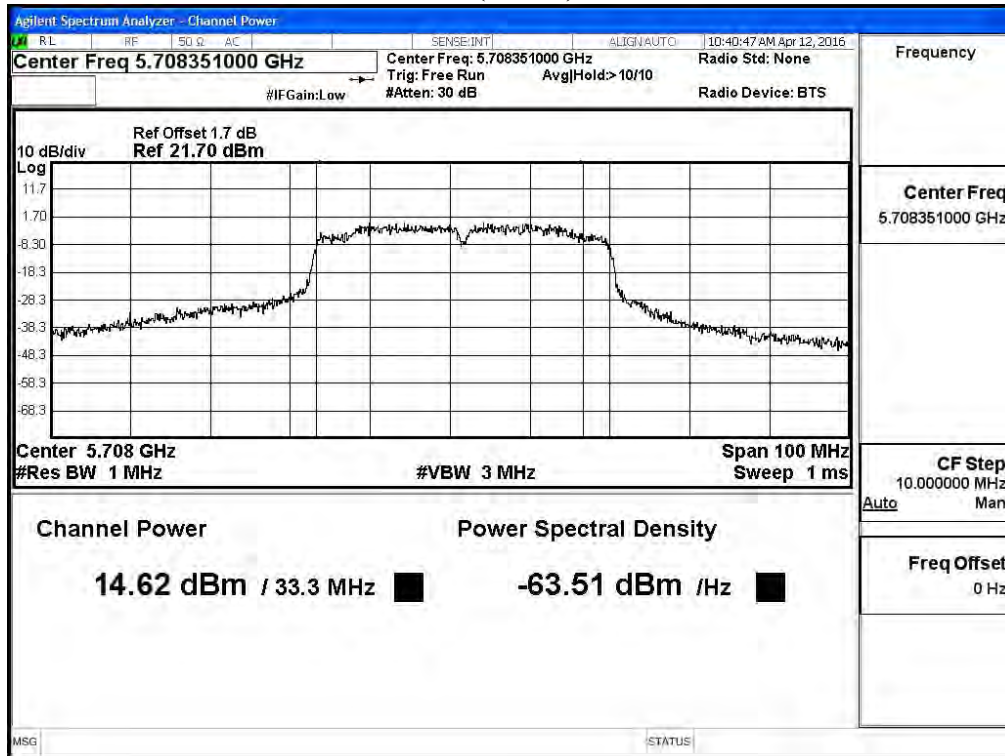


**IC99% Bandwidth:  
Channel 142 – Chain B**

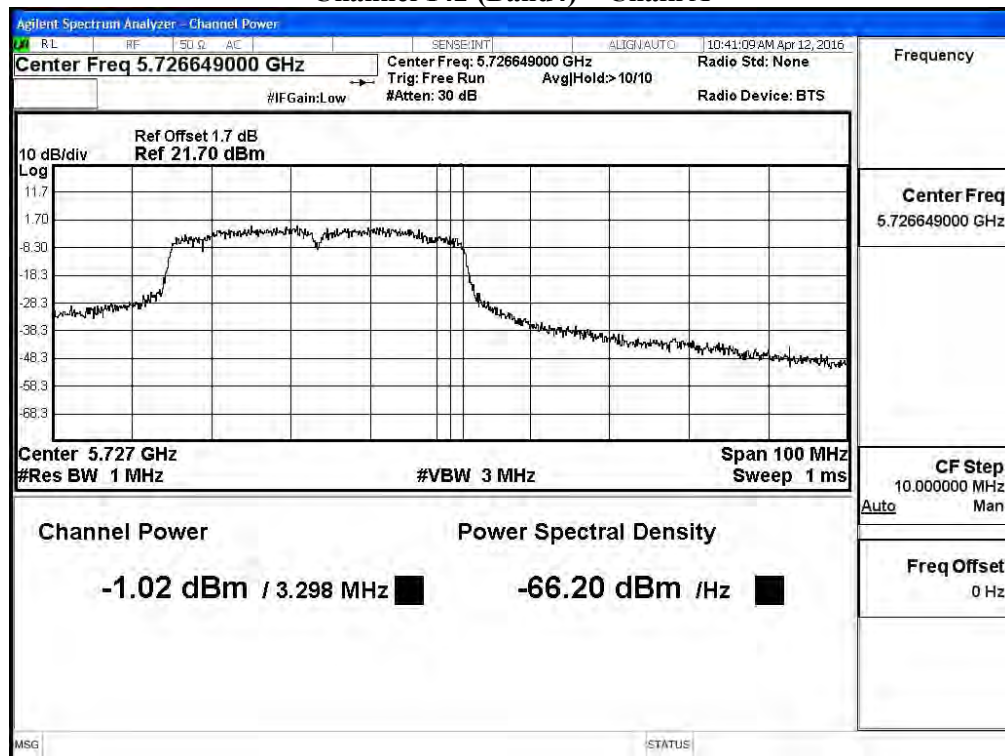




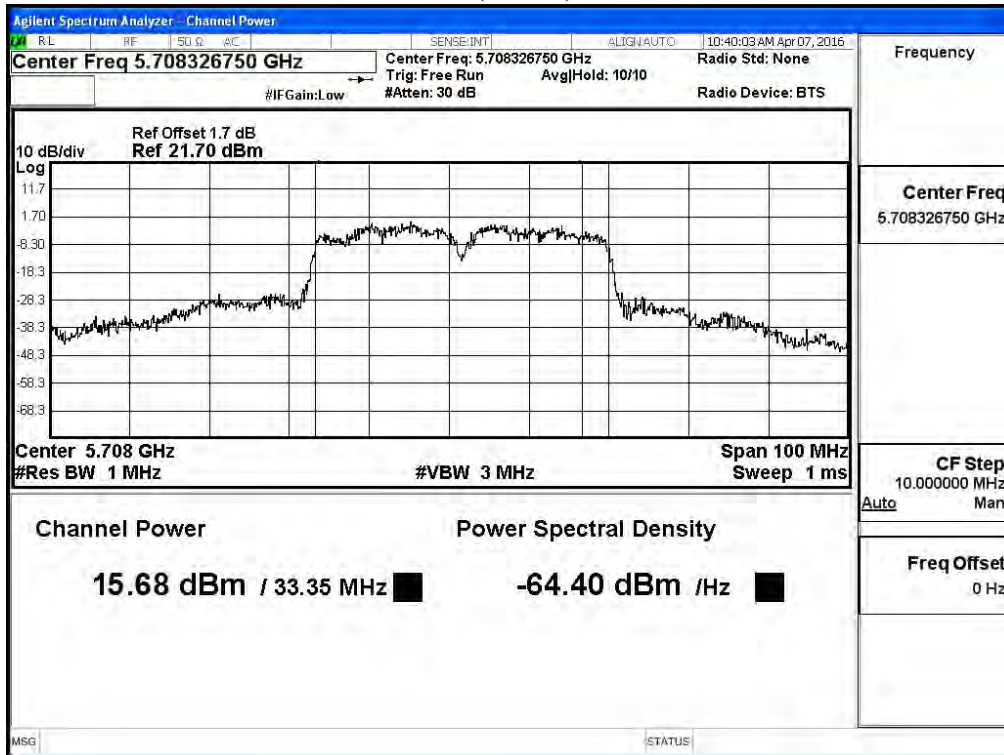
**Maximum conducted output power:  
Channel 142 (Band3) – Chain A**



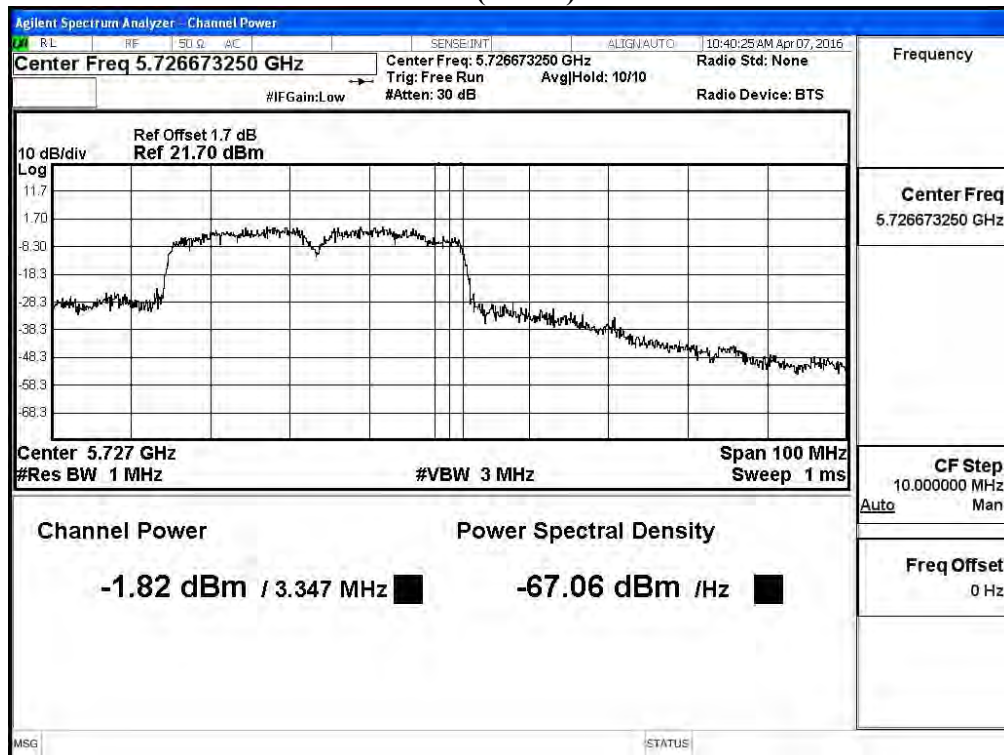
**Channel 142 (Band4) – Chain A**



**Maximum conducted output power:  
Channel 142 (Band3) – Chain B**



**Channel 142 (Band4) – Chain B**



Product : TABLET PC  
 Test Item : Maximum conducted output power  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps)

**Chain A**

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
42	5210	9.9	9.87	9.84	9.81	9.77	9.73	9.70	9.67	9.63	9.6	<24dBm
58	5290	9.78	9.75	9.71	9.69	9.66	9.62	9.58	9.55	9.53	9.50	<24dBm
106	5530	10.66	--	--	--	--	--	--	--	--	--	<24dBm
122	5610	12.14	12.11	12.08	12.05	12.03	12.01	11.97	11.94	11.92	11.88	<24dBm
138(Band3)	5690	13.29	--	--	--	--	--	--	--	--	--	<24dBm
138(Band4)	5690	-3.86	--	--	--	--	--	--	--	--	--	<30dBm
155	5775	13.69	13.66	13.64	13.60	13.57	13.55	13.51	13.48	13.45	13.41	<30dBm

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

**Chain B**

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
42	5210	10.54	10.51	10.48	10.45	10.43	10.41	10.39	10.36	10.34	10.31	<24dBm
58	5290	10.18	10.15	10.11	10.08	10.05	10.01	9.97	9.94	9.91	9.87	<24dBm
106	5530	10.23	--	--	--	--	--	--	--	--	--	<24dBm
122	5610	11.96	11.94	11.91	11.88	11.85	11.81	11.78	11.75	11.72	11.69	<24dBm
138(Band3)	5690	14.63	--	--	--	--	--	--	--	--	--	<24dBm
138(Band4)	5690	-3.88	--	--	--	--	--	--	--	--	--	<30dBm
155	5775	15.01	14.97	14.93	14.91	14.88	14.85	14.81	14.78	14.74	14.71	<30dBm

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

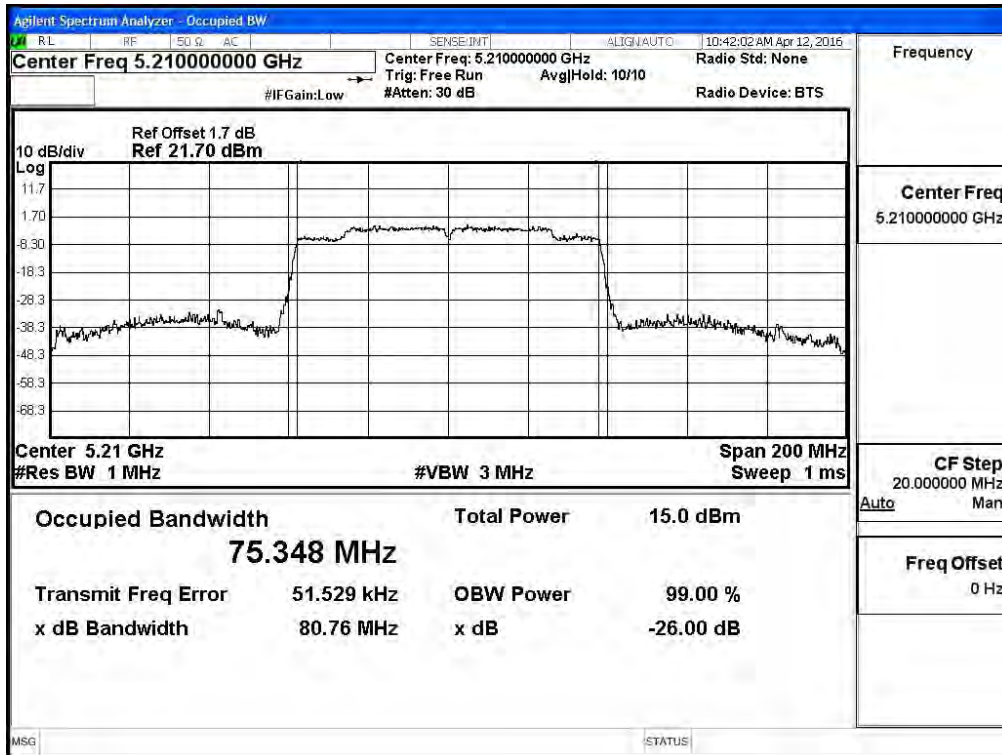
**Maximum conducted output power Measurement**

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit		Result
						(dBm)	dBm+10log(BW)	
42	5210	--	9.900	10.540	13.24	24	--	Pass
58	5290	75.484	9.780	10.180	12.99	24	29.78	Pass
106	5530	75.524	10.660	10.230	13.46	24	29.78	Pass
122	5610	75.934	12.140	11.960	15.06	24	29.80	Pass
138(Band3)	5690	72.970	13.290	14.630	17.02	24	29.63	Pass
138(Band4)	5690	2.970	-3.860	-3.880	-0.86	30	15.73	Pass
155	5775	--	13.690	15.010	17.41	30	--	Pass

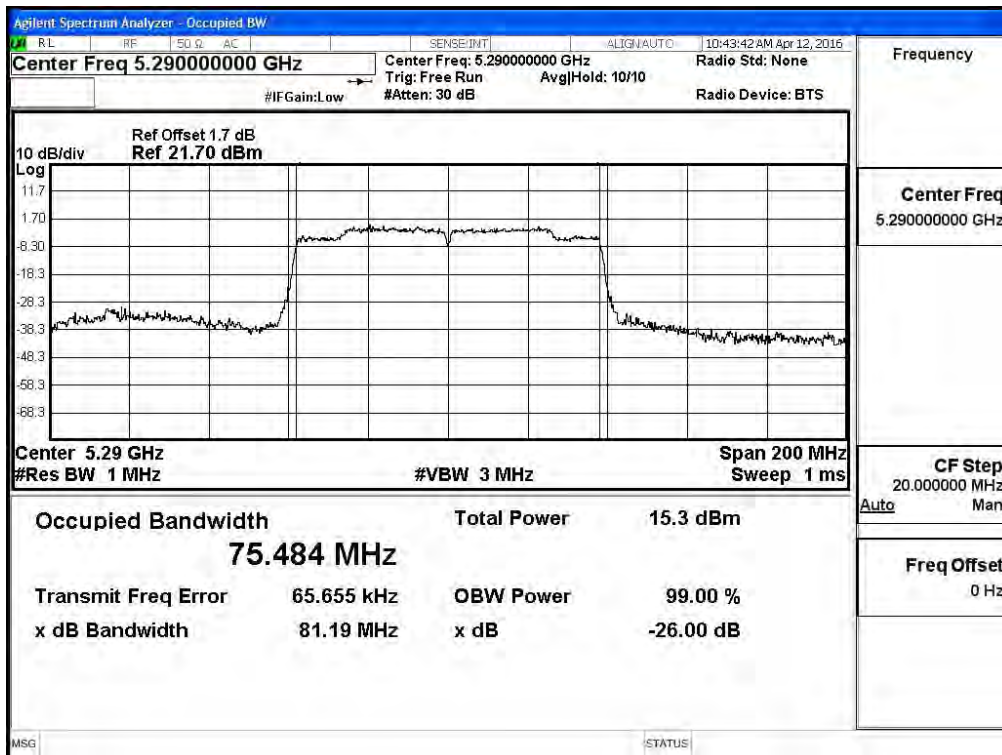
Note: Power Output Value =Reading value on average power meter + cable loss



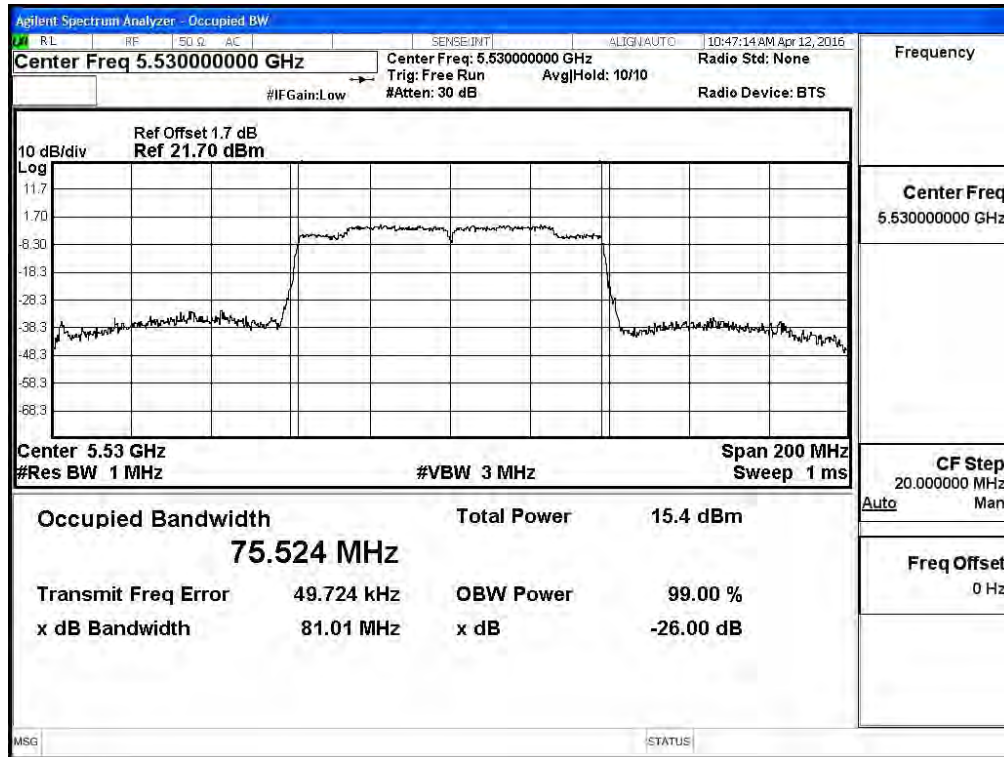
**IC99% Bandwidth:  
Channel 42 – Chain A**



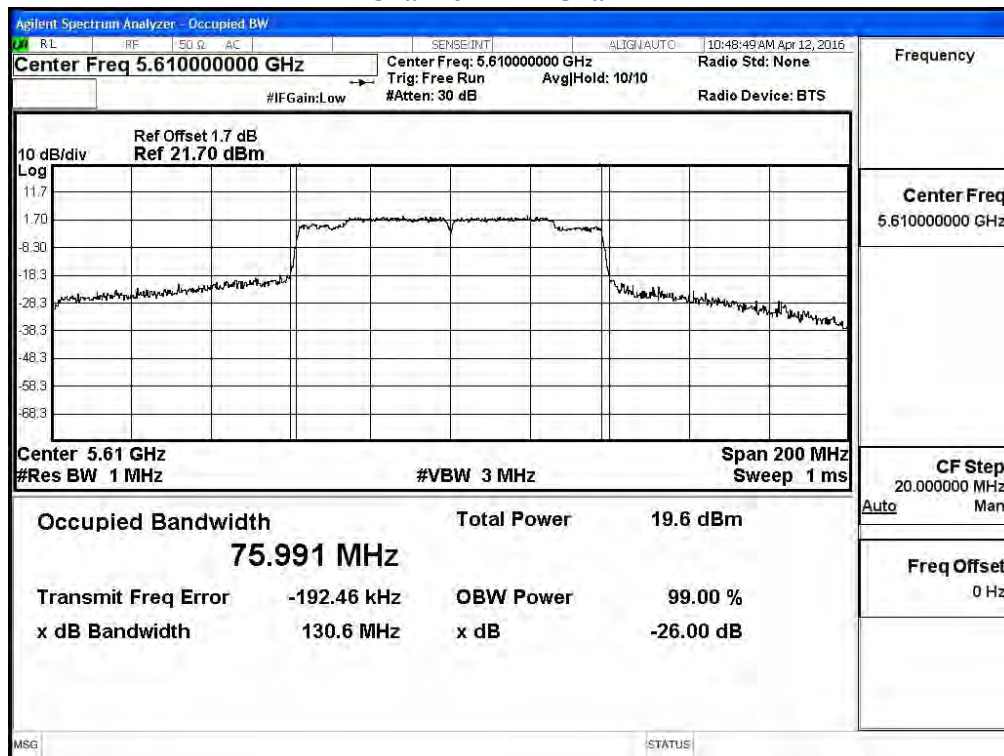
**Channel 58 – Chain A**



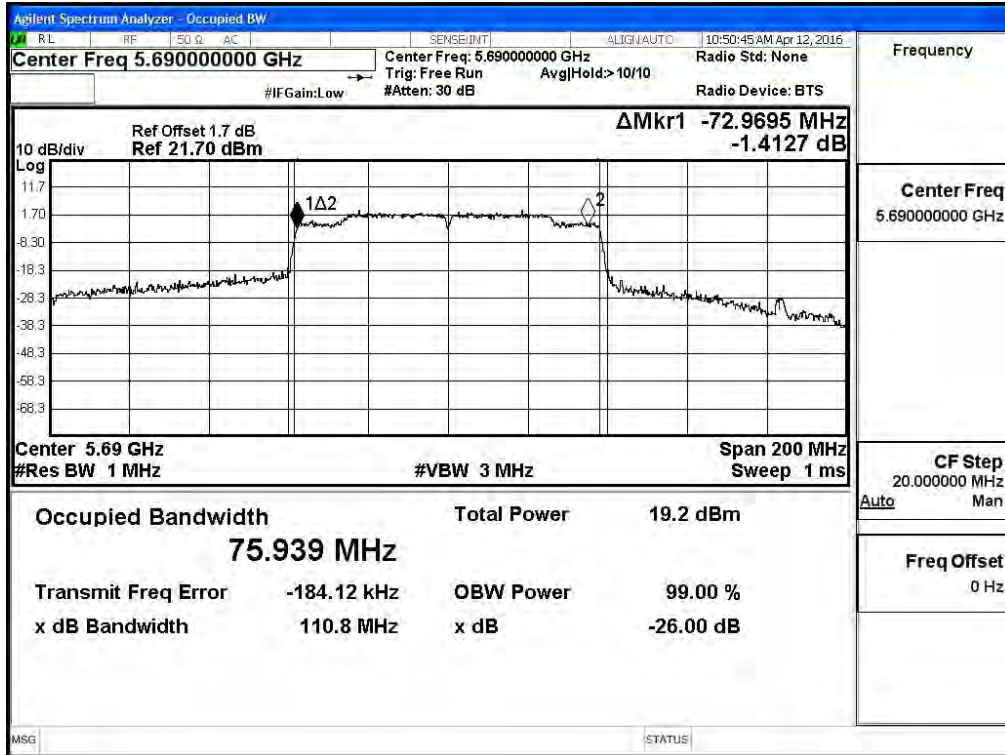
### Channel 106 – Chain A



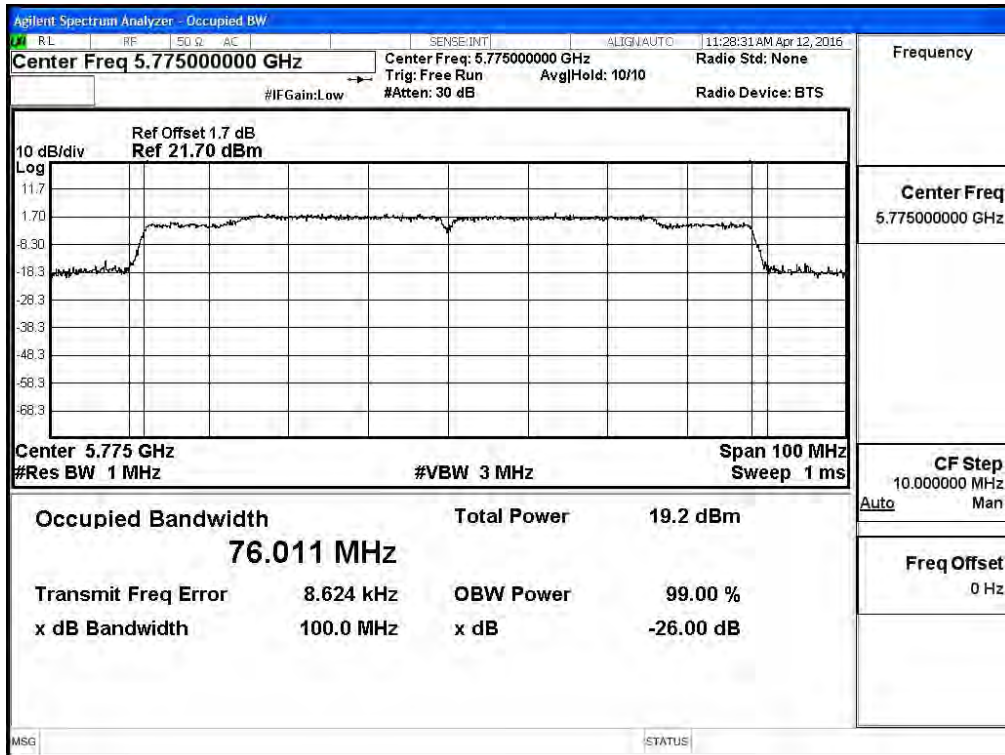
### Channel 122 – Chain A



### Channel 138 – Chain A

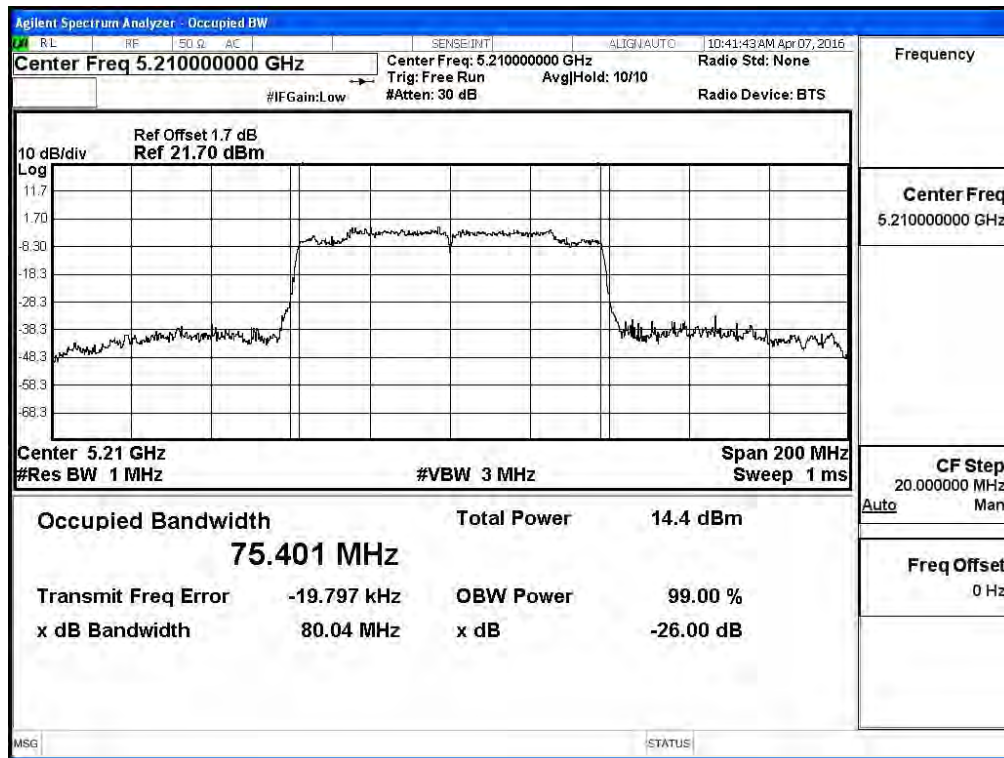


### Channel 155 – Chain A

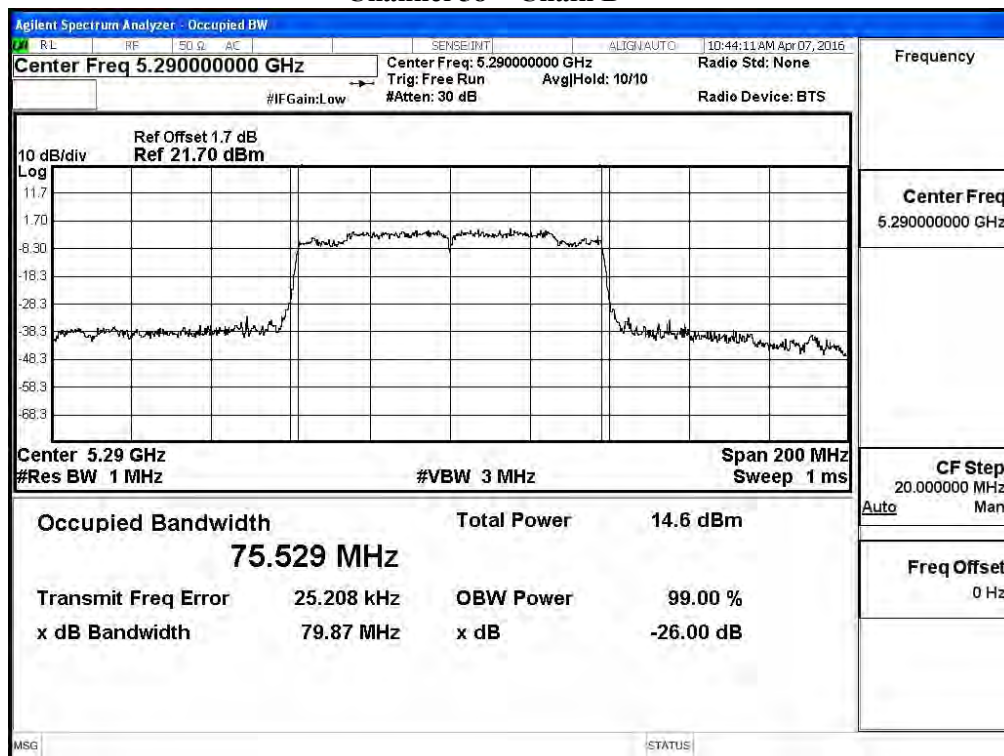




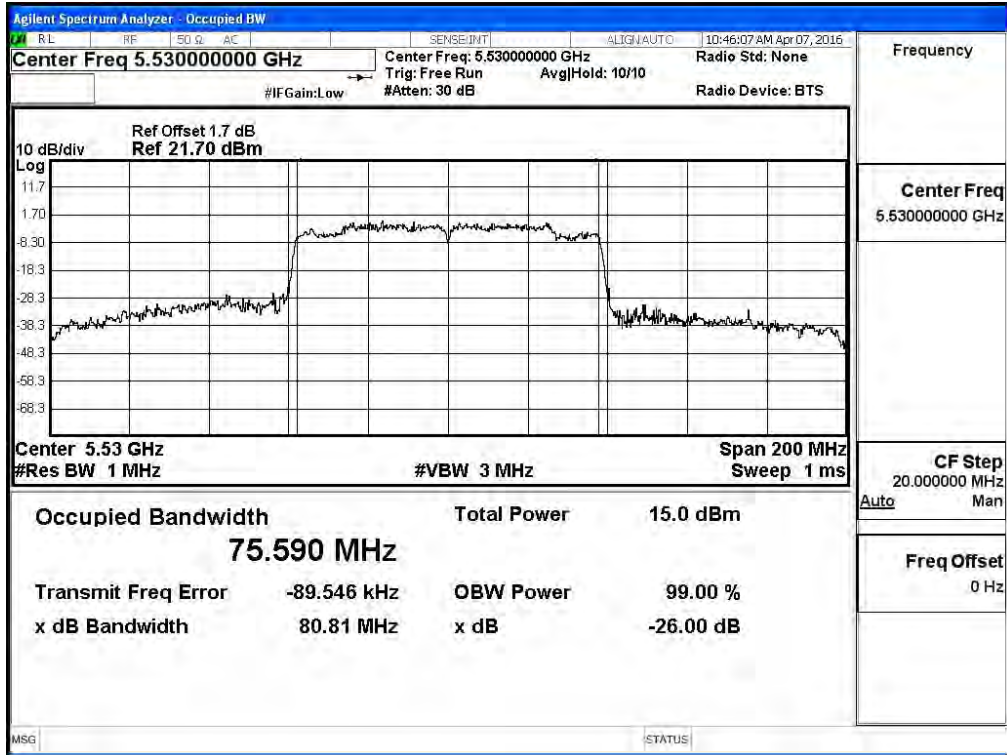
**IC99% Bandwidth:  
Channel 42 – Chain B**



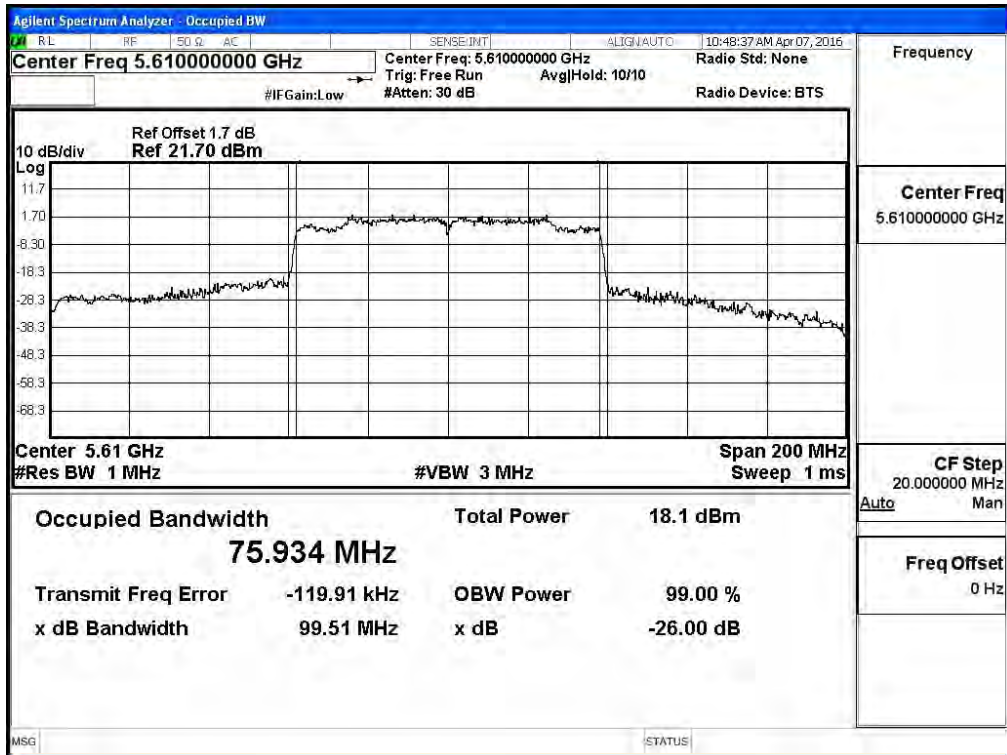
**Channel 58 – Chain B**



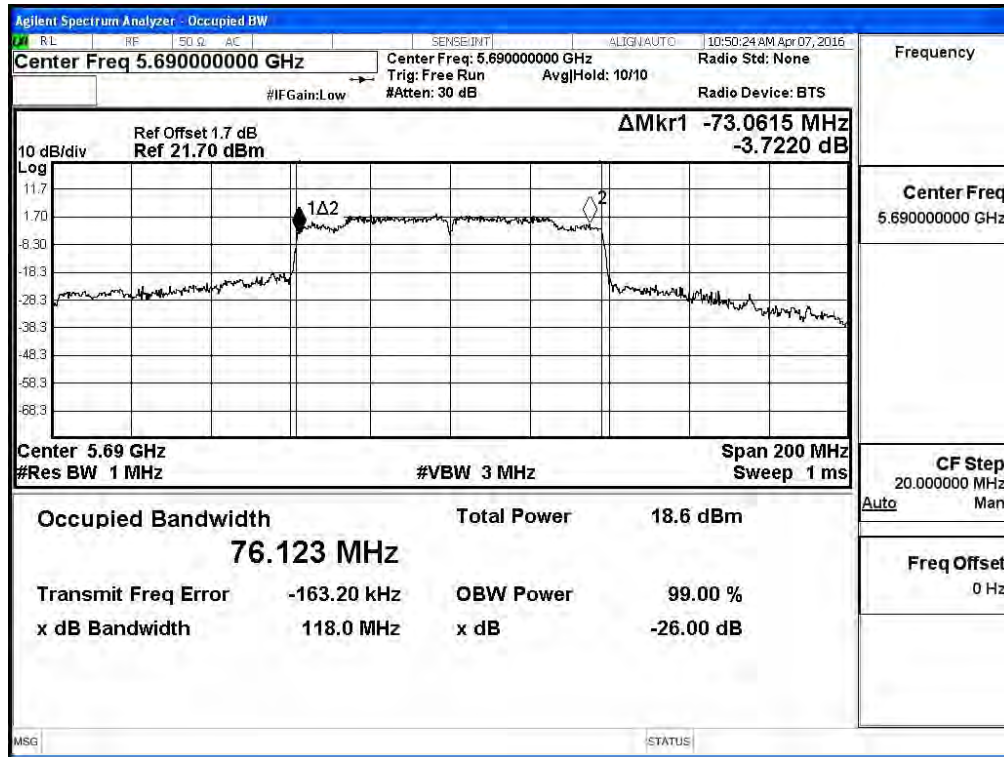
### Channel 106 – Chain B



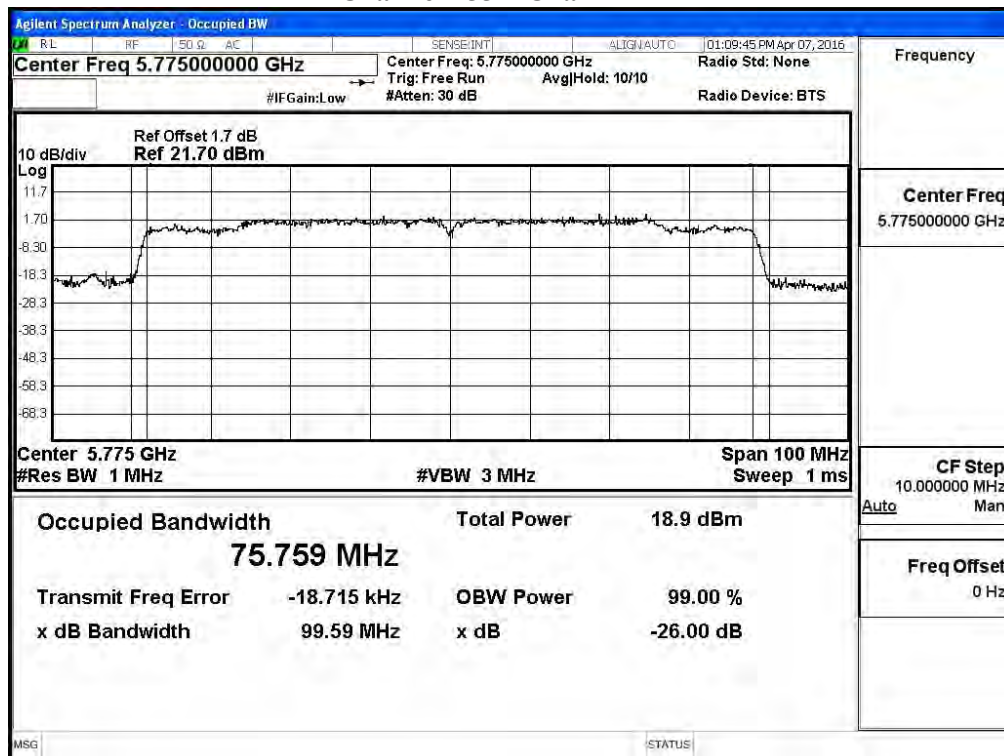
### Channel 122 – Chain B



### Channel 138 – Chain B



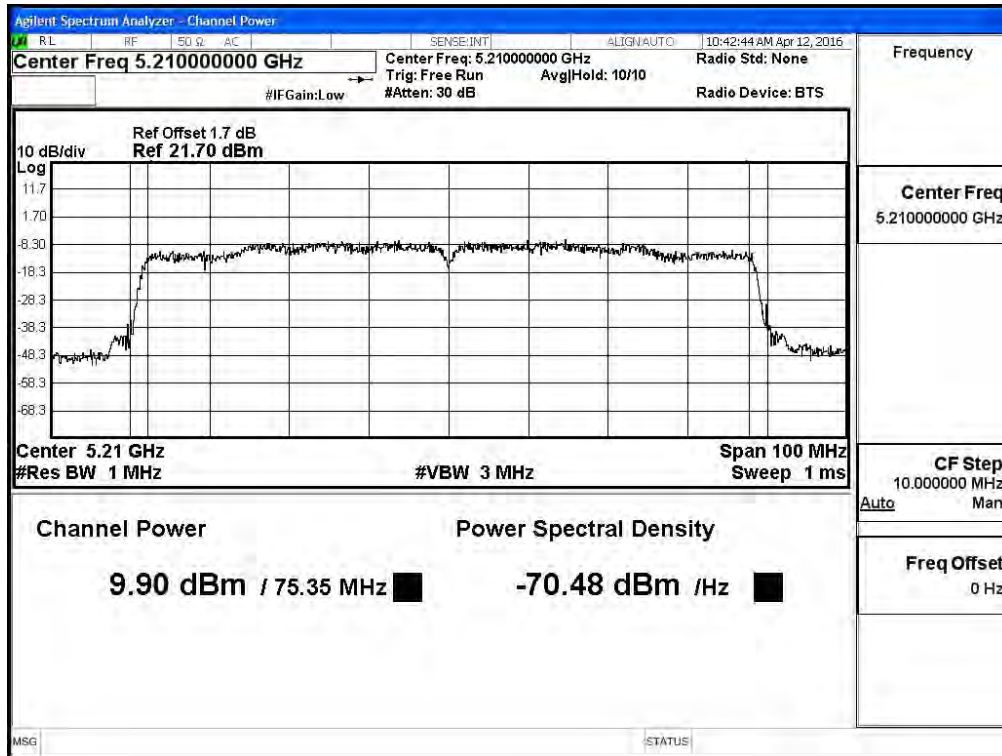
### Channel 155 – Chain B





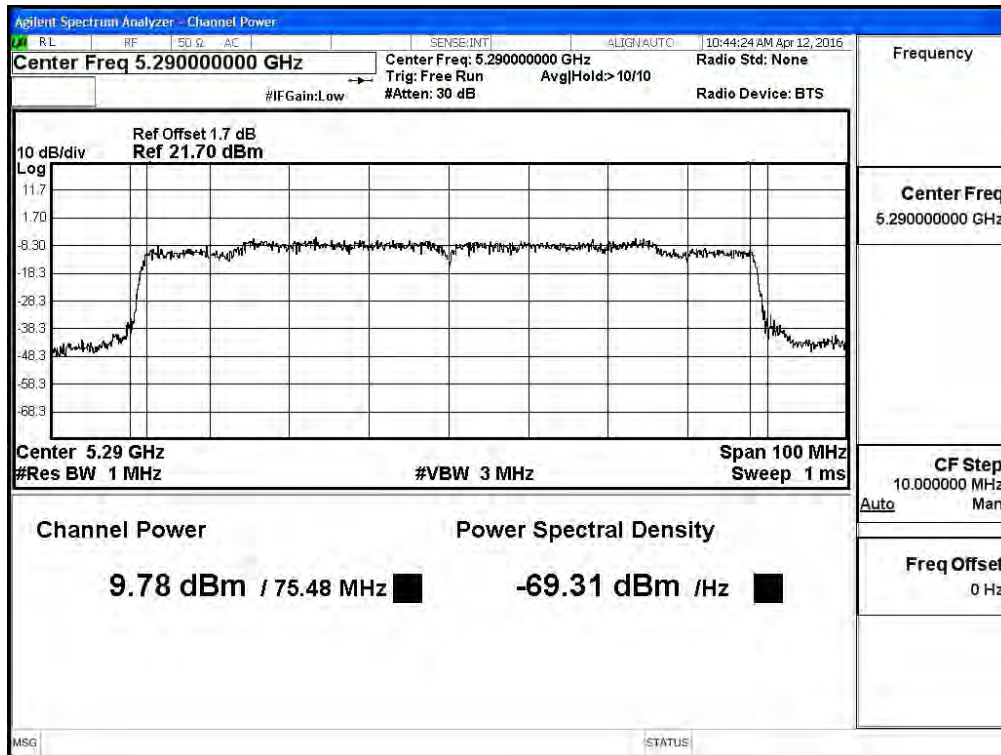
**Maximum conducted output power:**

**Channel 42 – Chain A**



**Maximum conducted output power:**

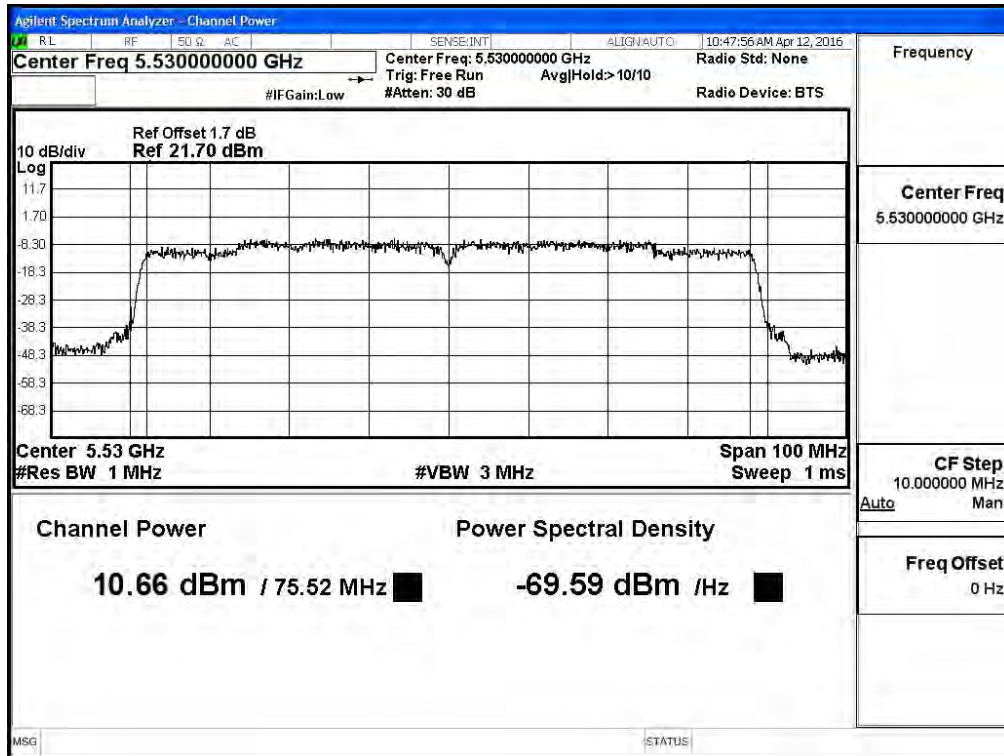
**Channel 58 – Chain A**





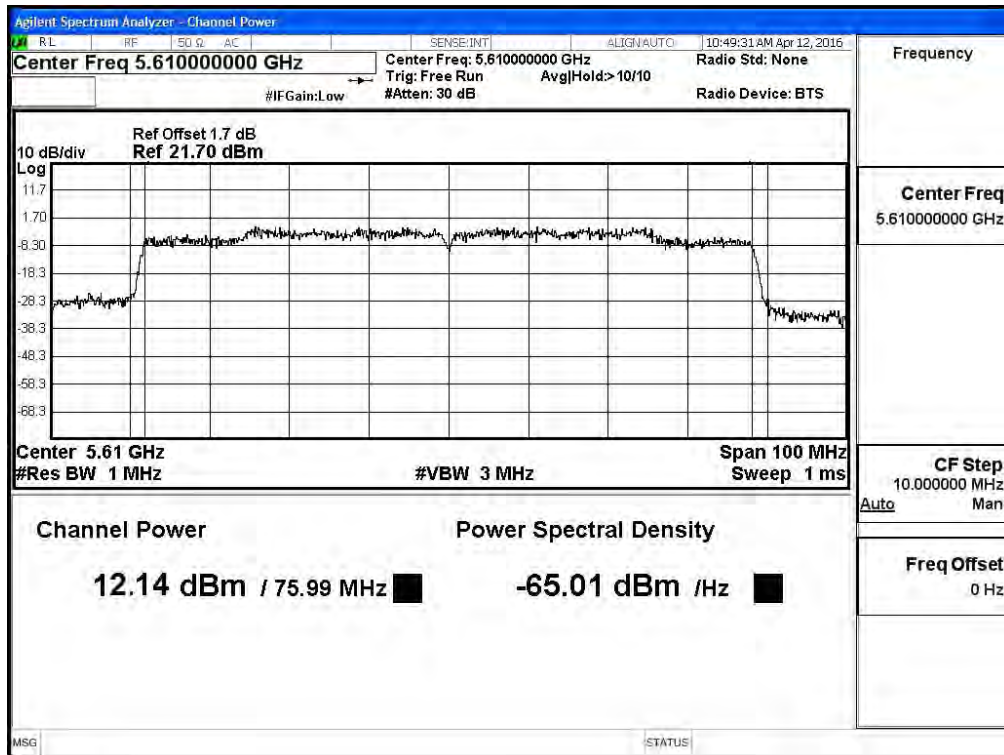
**Maximum conducted output power:**

**Channel 106 – Chain A**

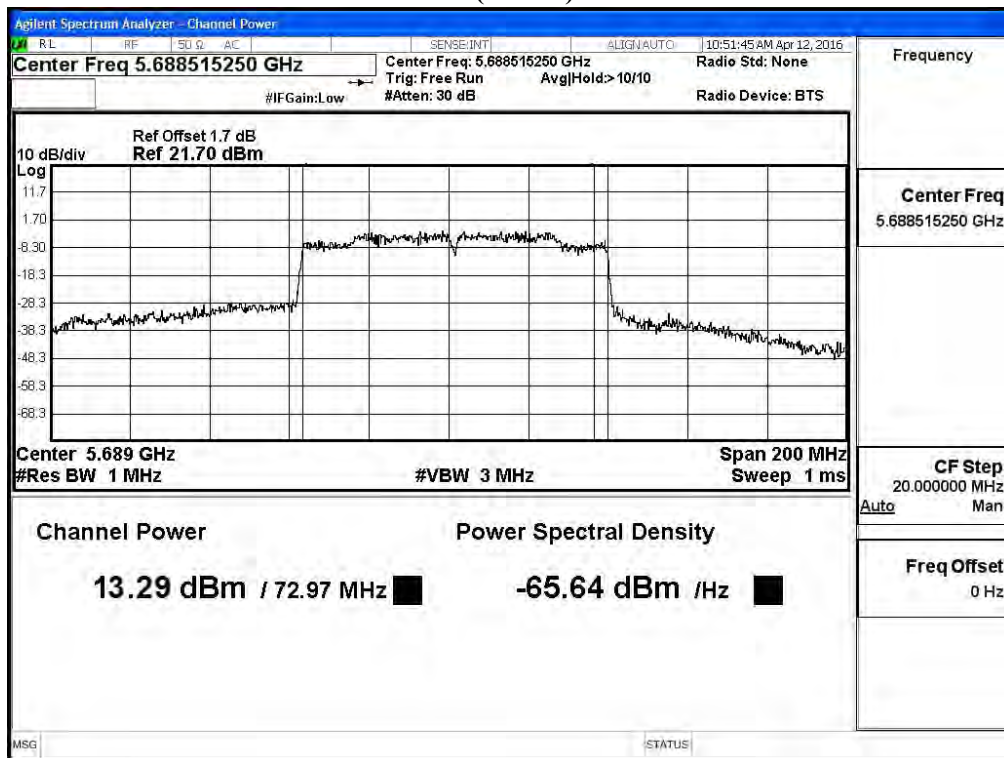


**Maximum conducted output power:**

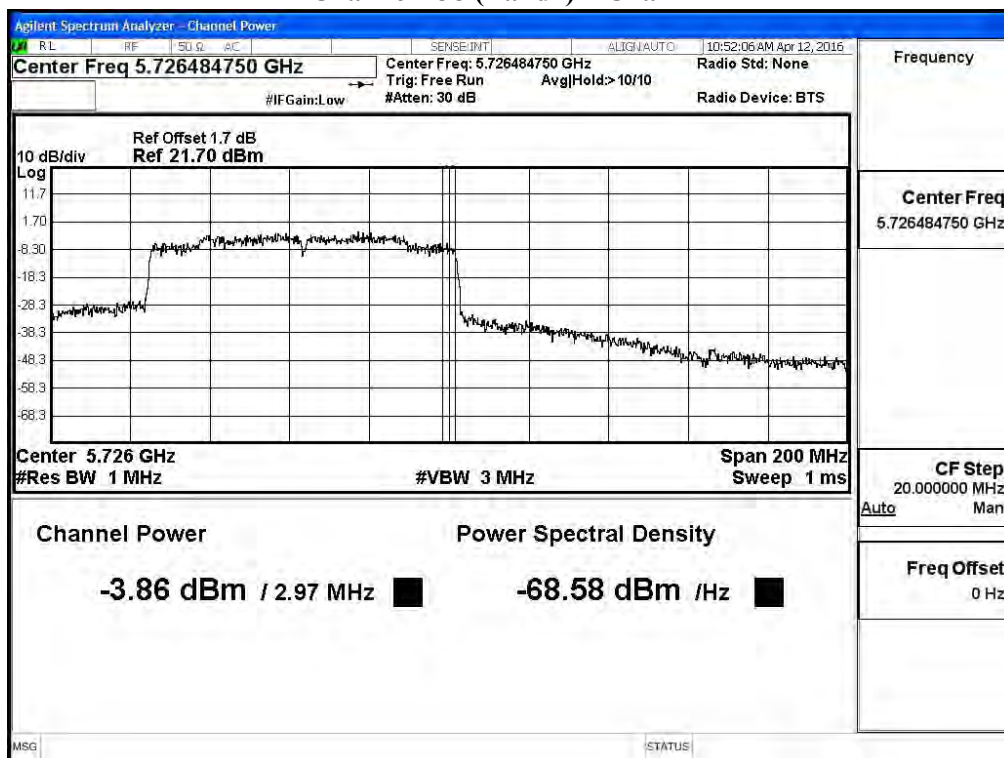
**Channel 122 – Chain A**



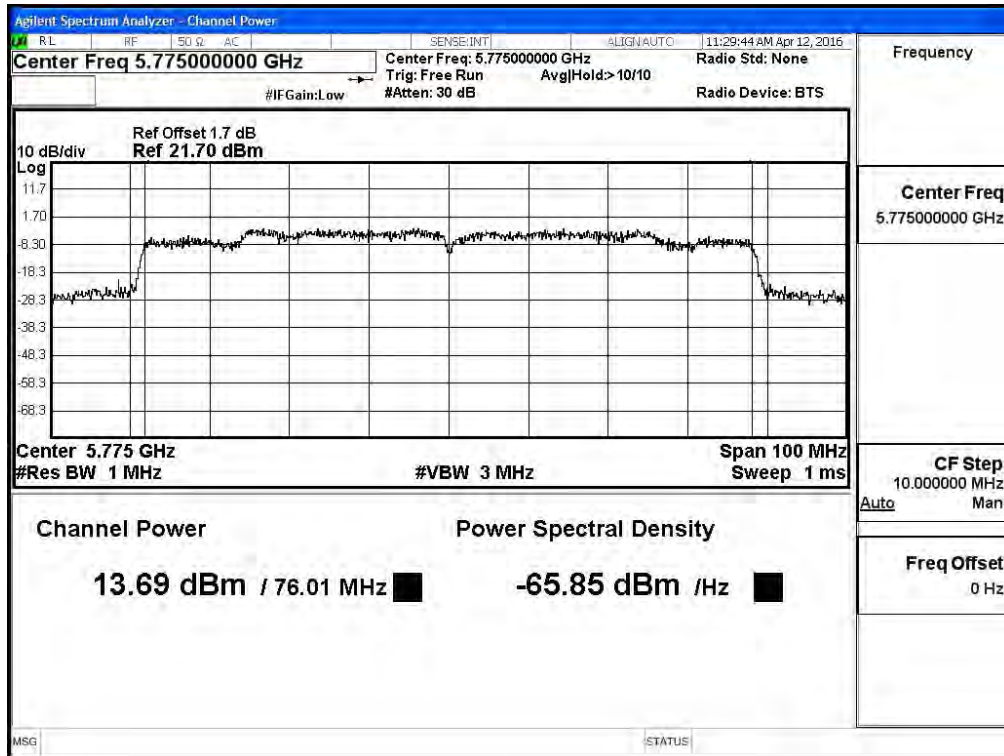
**Maximum conducted output power:  
Channel 138 (Band3) – Chain A**



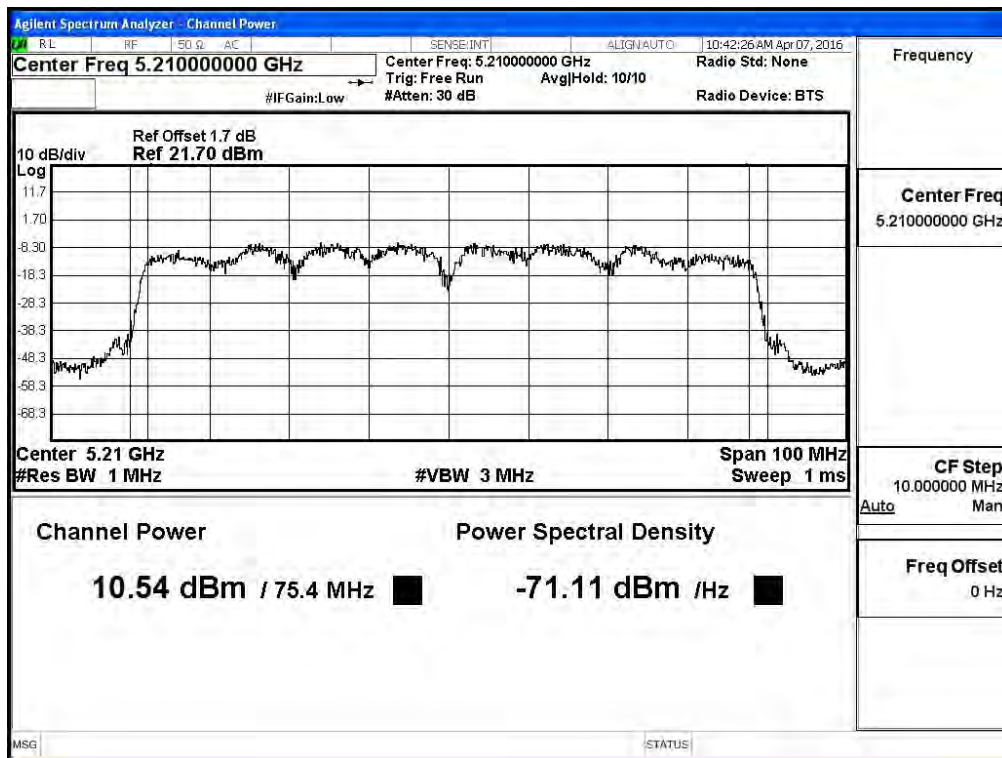
**Maximum conducted output power:  
Channel 138 (Band4) – Chain A**



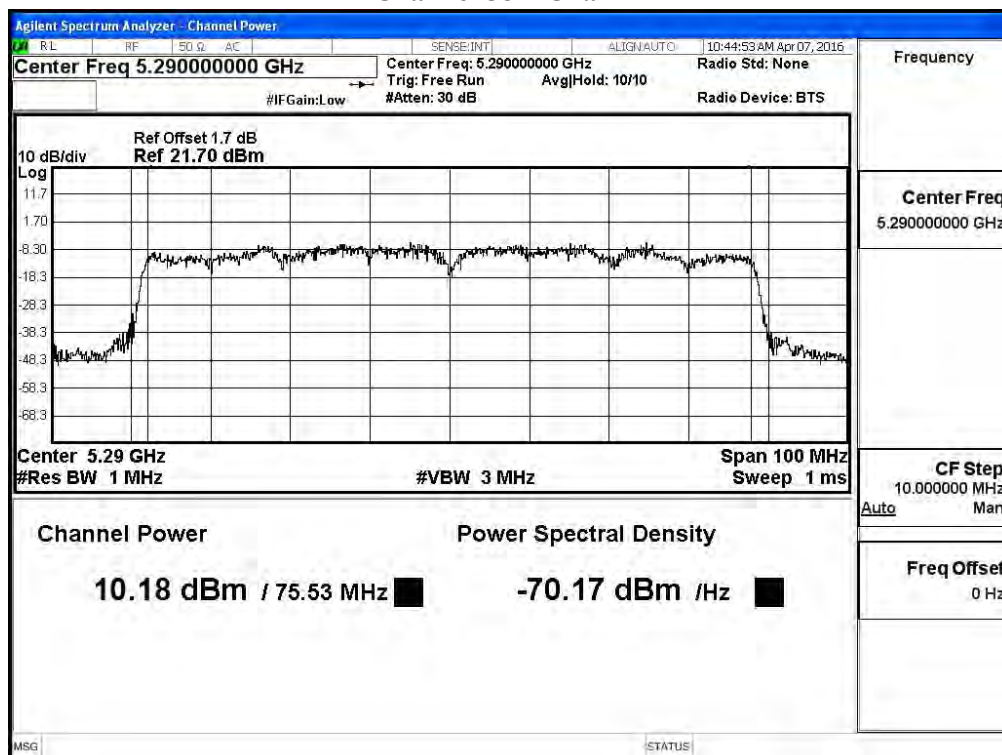
**Maximum conducted output power:  
Channel 155 – Chain A**



**Maximum conducted output power:**  
**Channel 42 – Chain B**

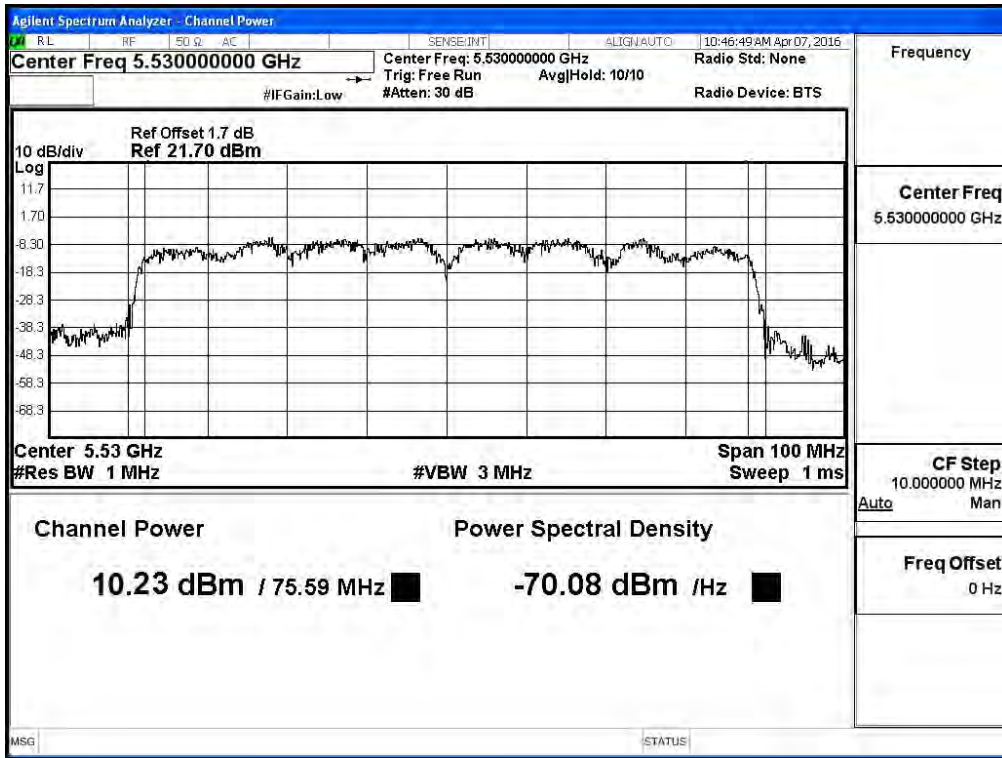


**Maximum conducted output power:**  
**Channel 58 – Chain B**

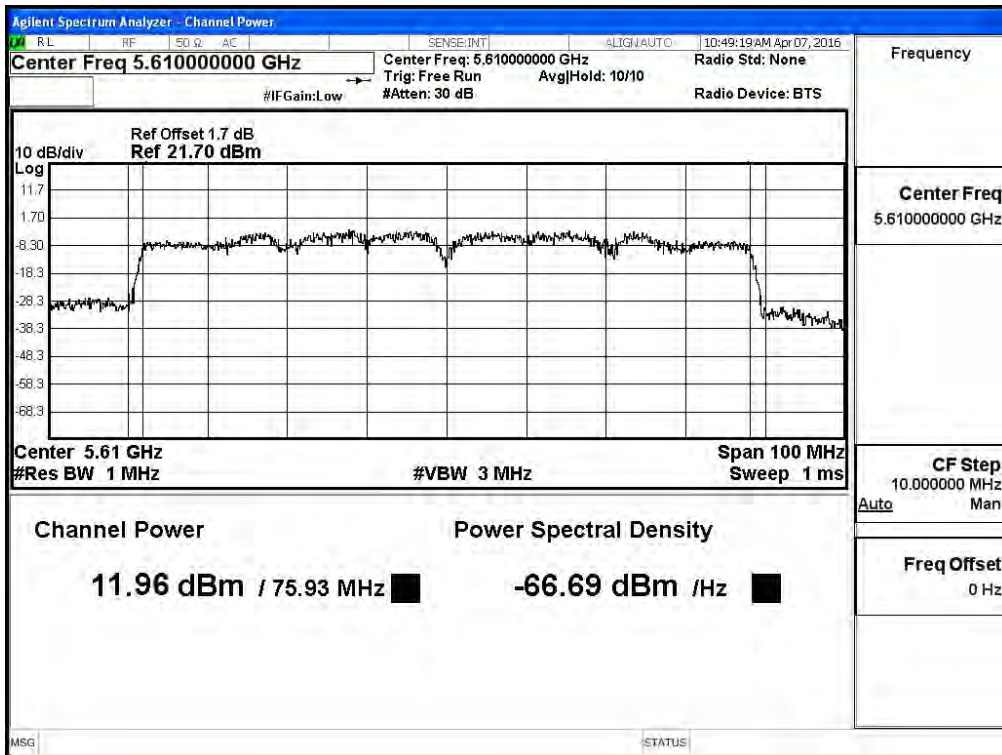




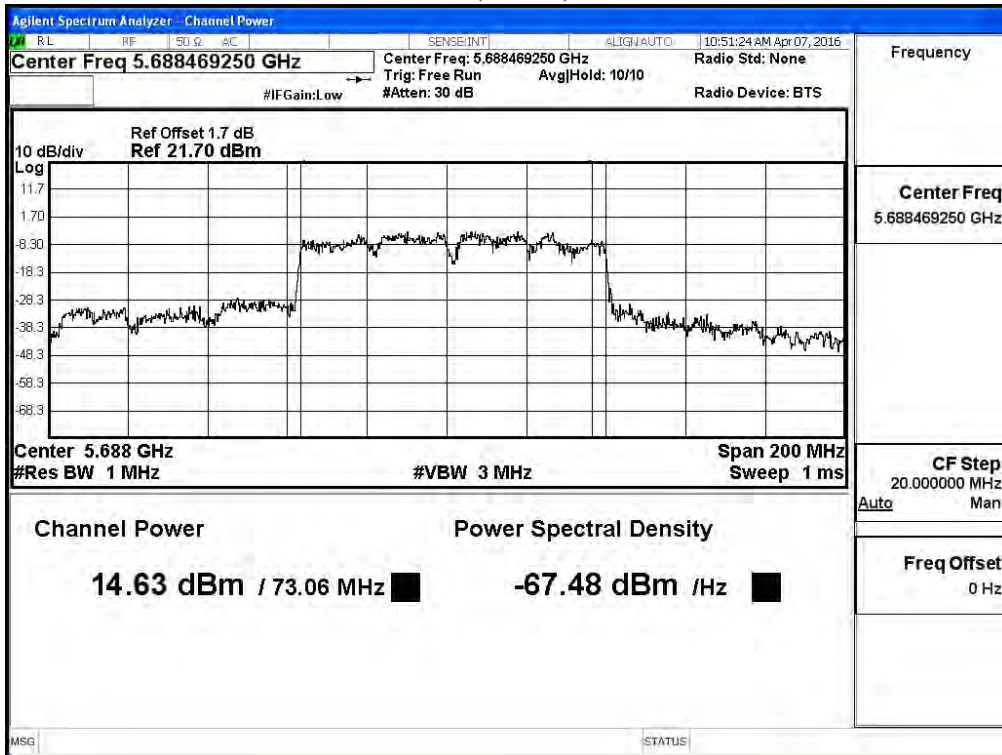
**Maximum conducted output power:  
Channel 106 – Chain B**



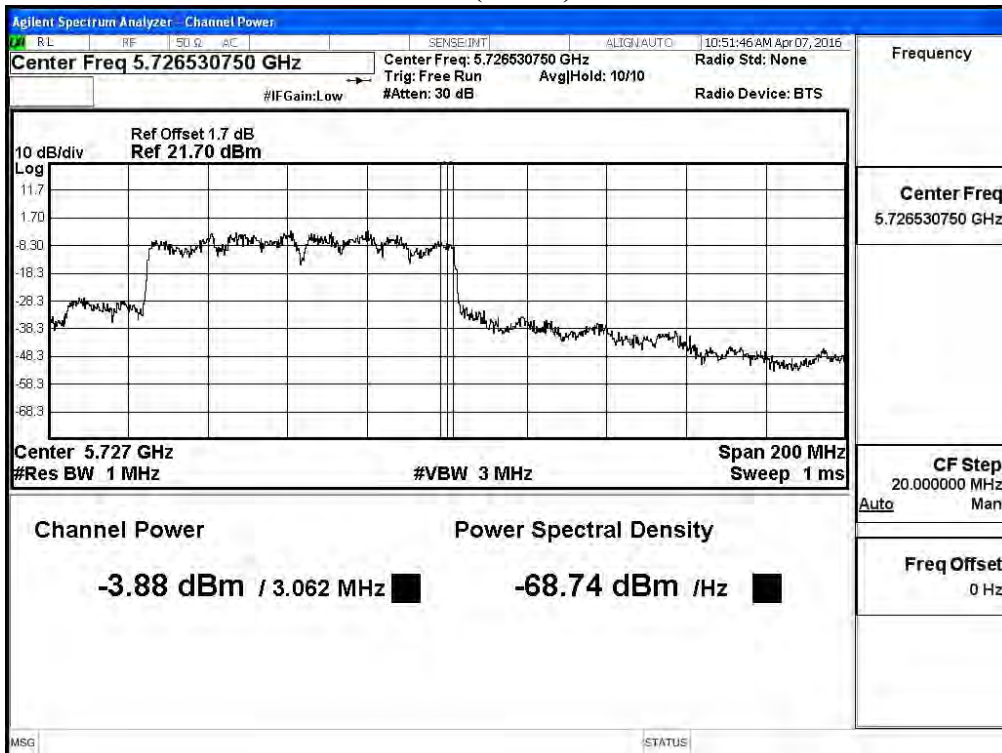
**Maximum conducted output power:  
Channel 122 – Chain B**



**Maximum conducted output power:  
Channel 138 (Band3) – Chain B**

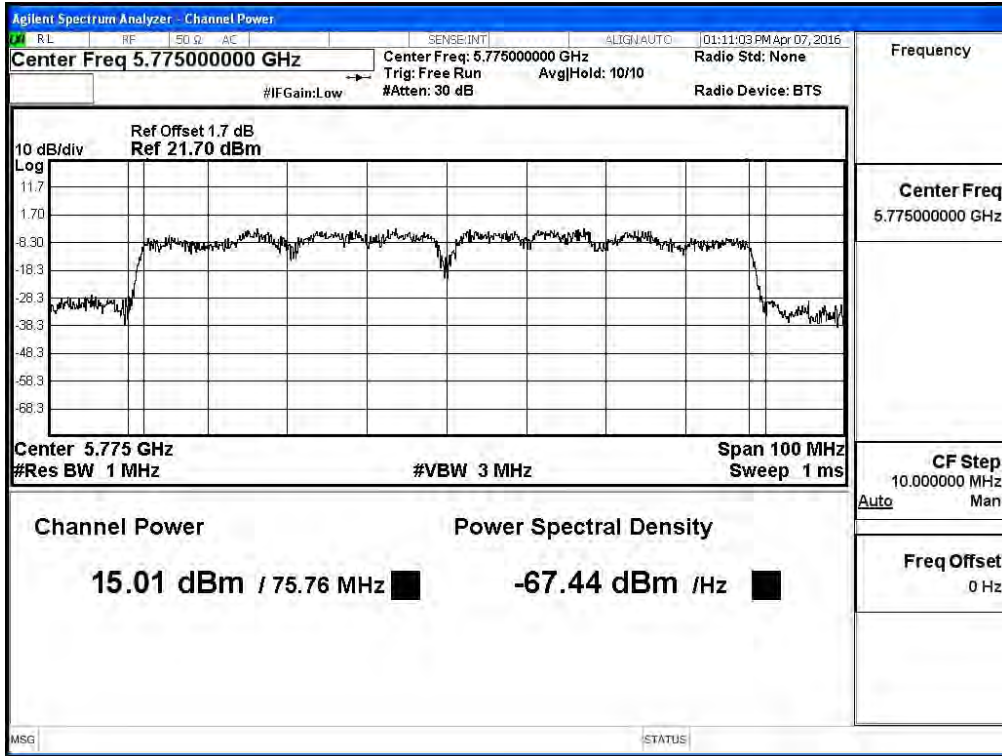


**Maximum conducted output power:  
Channel 138 (Band4) – Chain B**





**Maximum conducted output power:  
Channel 155 – Chain B**



#### 4. Peak Power Spectral Density

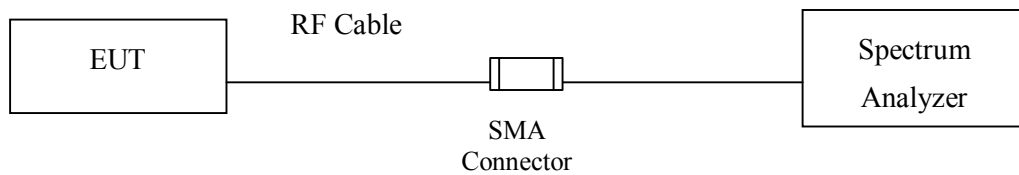
##### 4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2016

Note:

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

##### 4.2. Test Setup



##### 4.3. Limits

- (1) For the band 5.15-5.25 GHz,
  - (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
  - (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
  - (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the

equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.+

- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

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

SA-1 method is selected to run the test.

For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(500\text{ kHz}/100\text{ kHz}) = 6.98\text{ dB}$ .

#### **4.5. Uncertainty**

± 1.27 dB

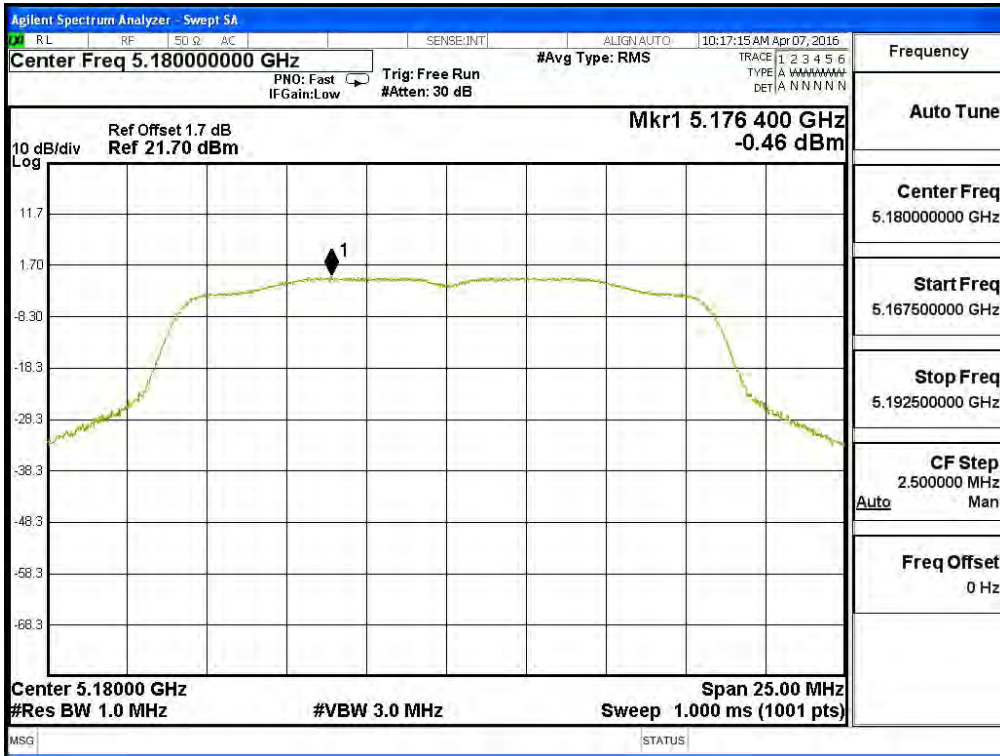
**4.6. Test Result of Peak Power Spectral Density**

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

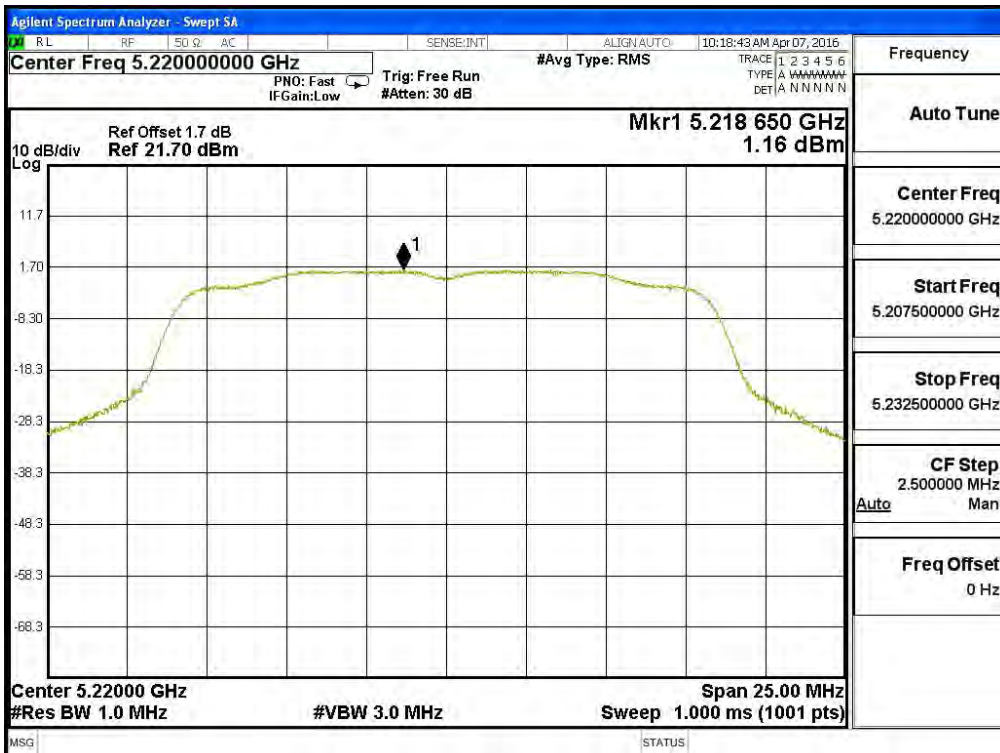
Channel Number	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	-0.460	11	Pass
44	5220	6	1.160	11	Pass
48	5240	6	1.050	11	Pass
52	5260	6	2.640	11	Pass
60	5300	6	3.080	11	Pass
64	5320	6	0.340	11	Pass
100	5500	6	0.430	11	Pass
116	5580	6	2.310	11	Pass
140	5700	6	-1.120	11	Pass

Channel Number	Frequency (MHz)	Data Rate (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-7.900	6.980	-0.920	<30	Pass
157	5785	6	-7.700	6.980	-0.720	<30	Pass
165	5825	6	-7.390	6.980	-0.410	<30	Pass

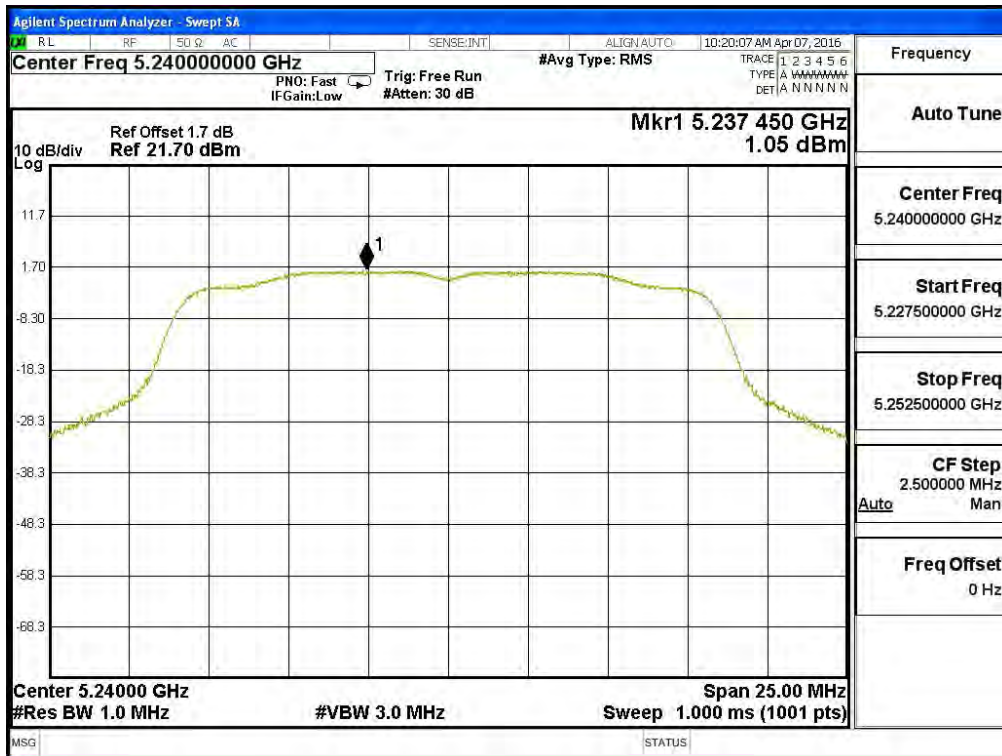
**Channel 36:**



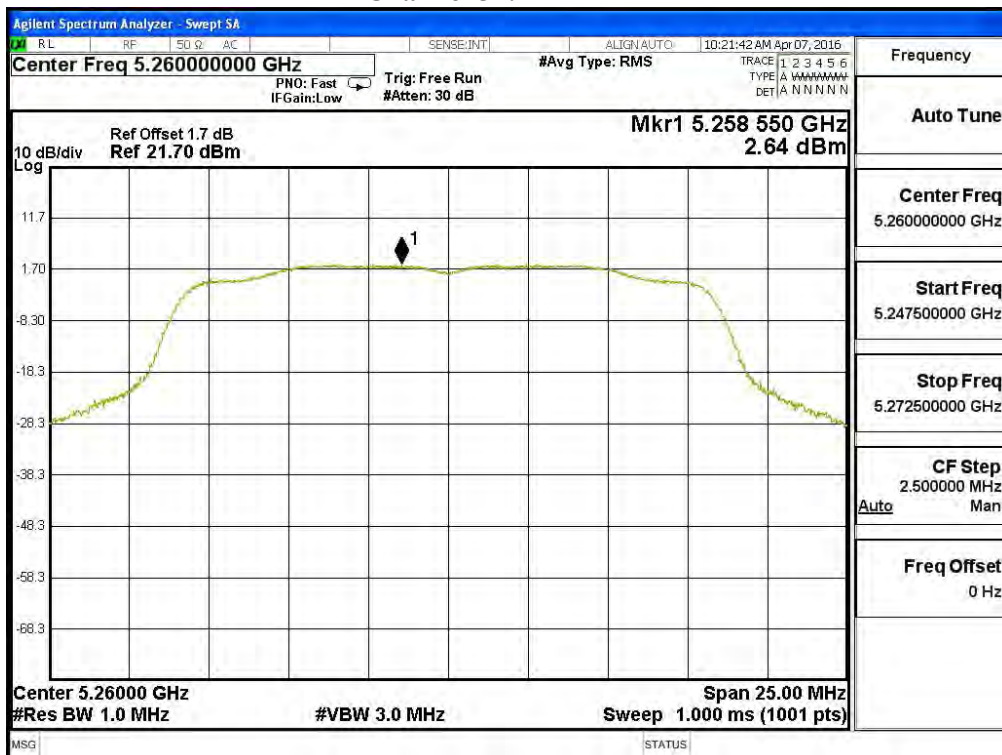
**Channel 44:**



### Channel 48:

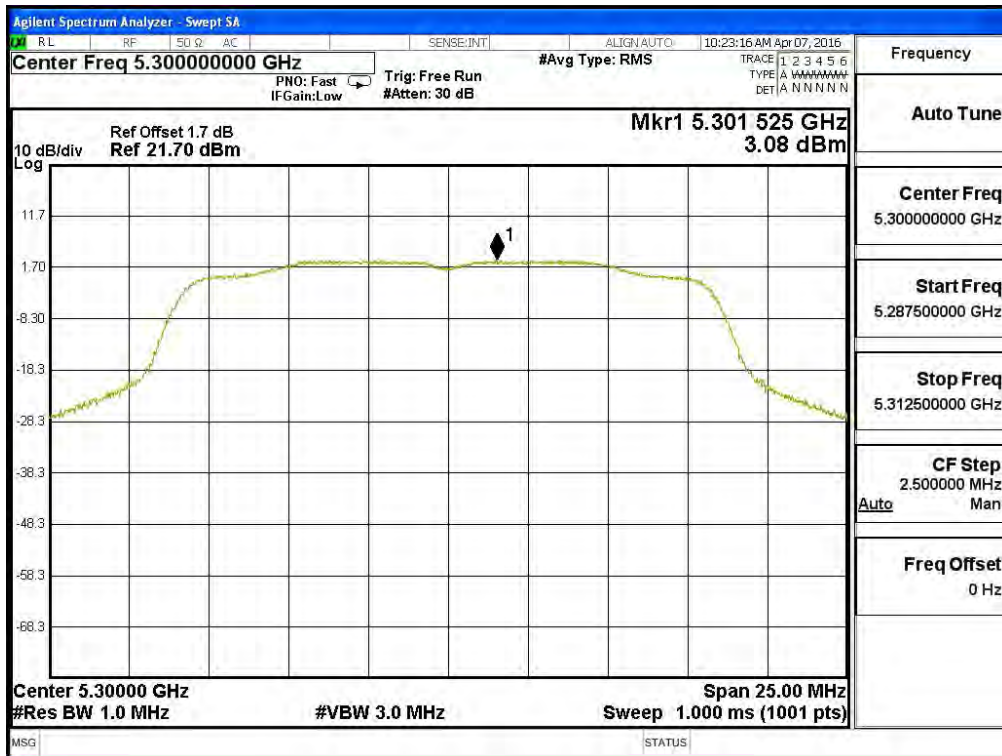


### Channel 52:

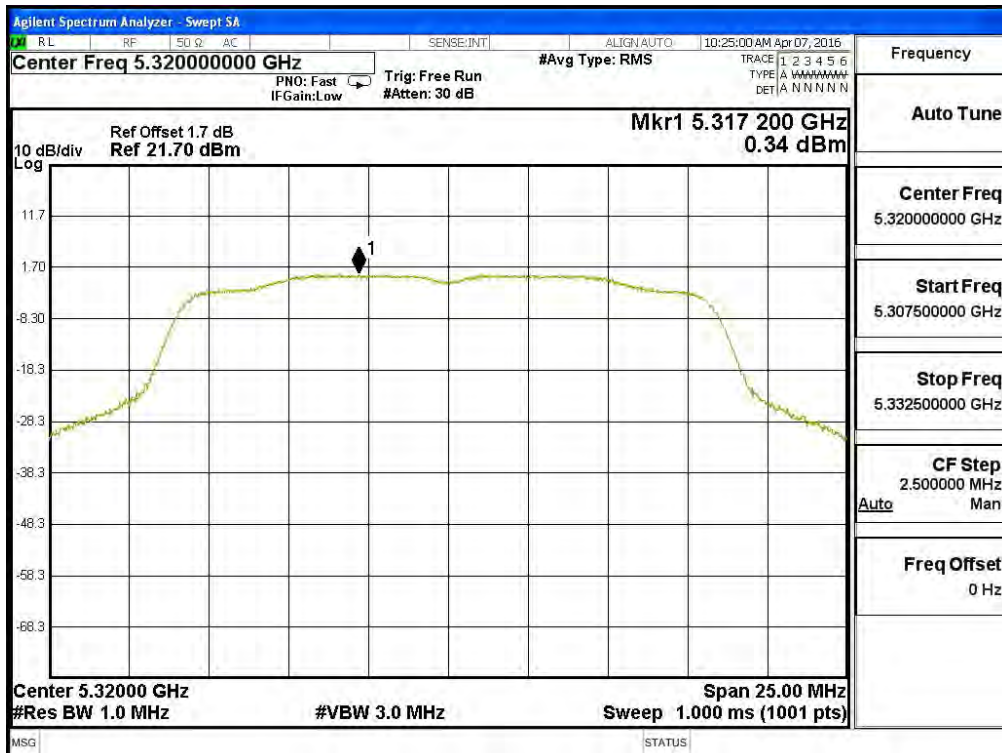




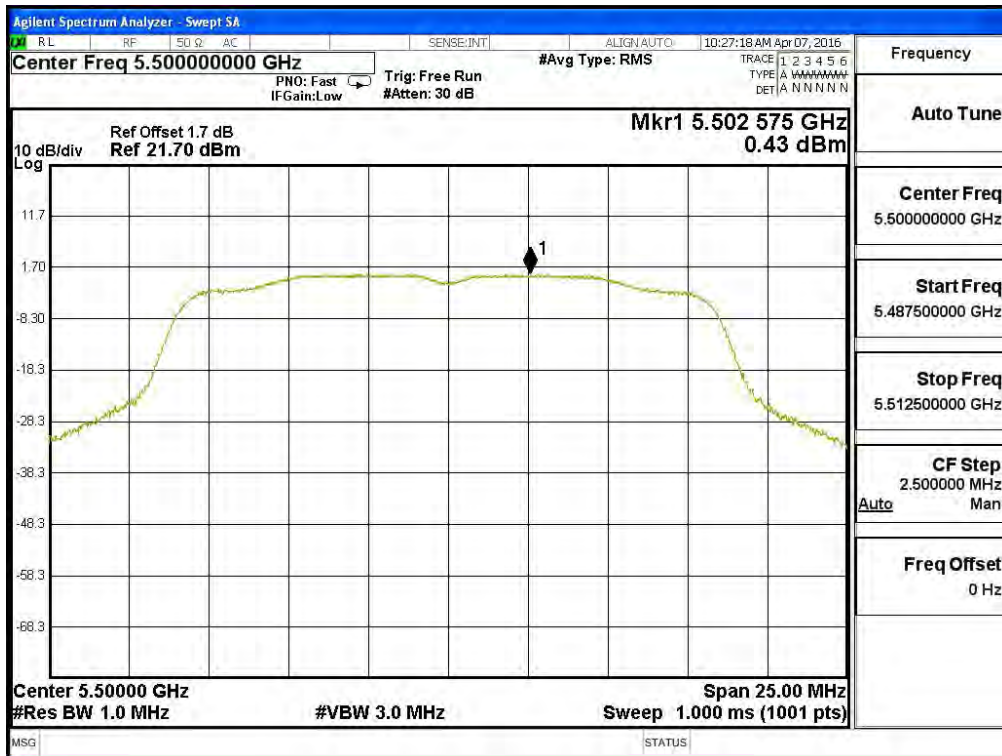
**Channel 60:**



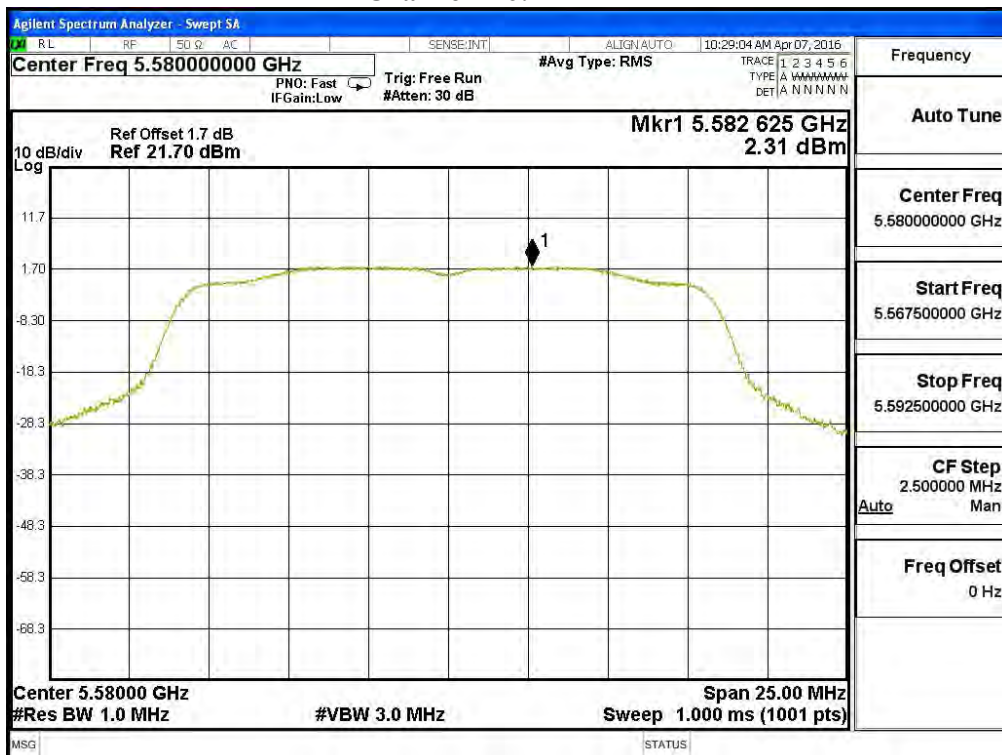
**Channel 64:**



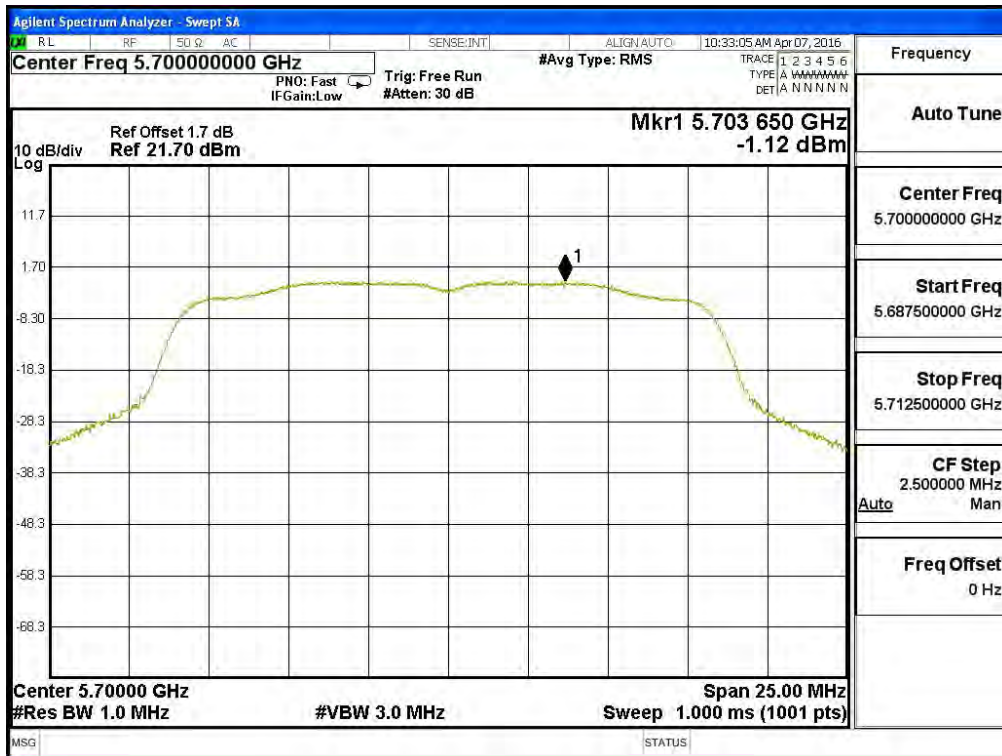
**Channel 100:**



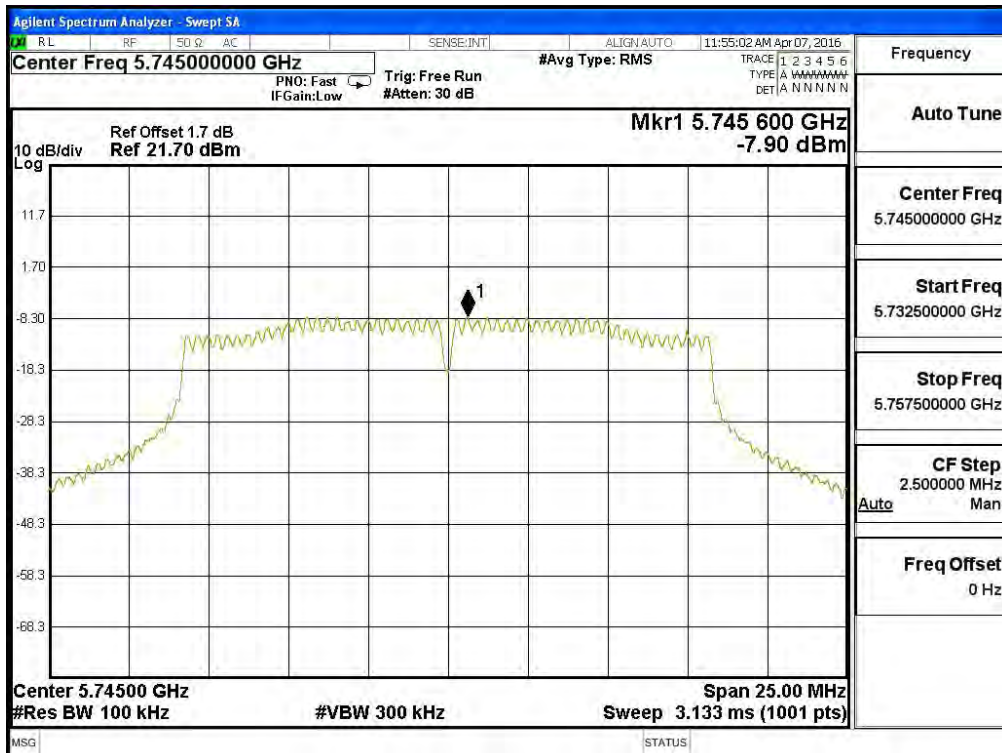
**Channel 116:**



### Channel 140:

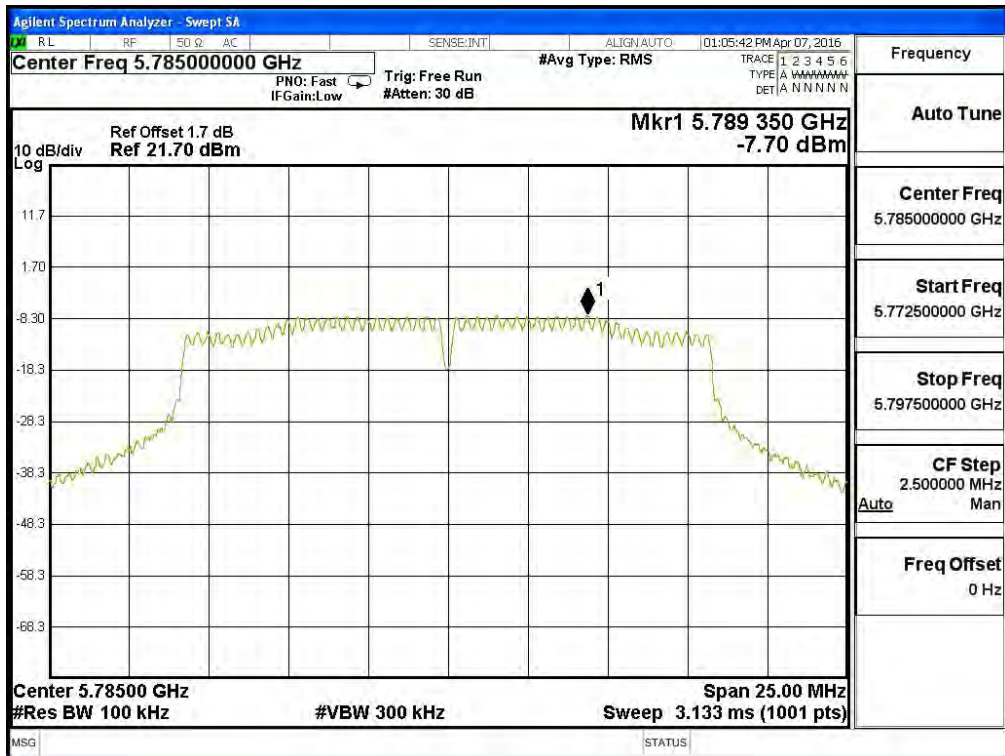


### Channel 149

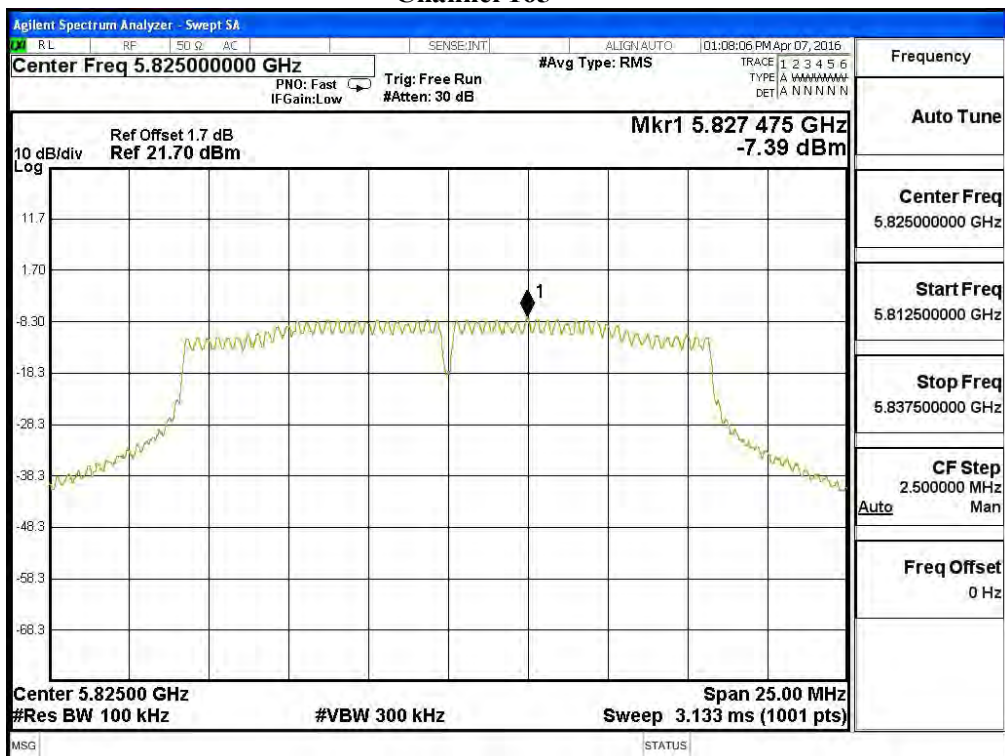




### Channel 157



### Channel 165



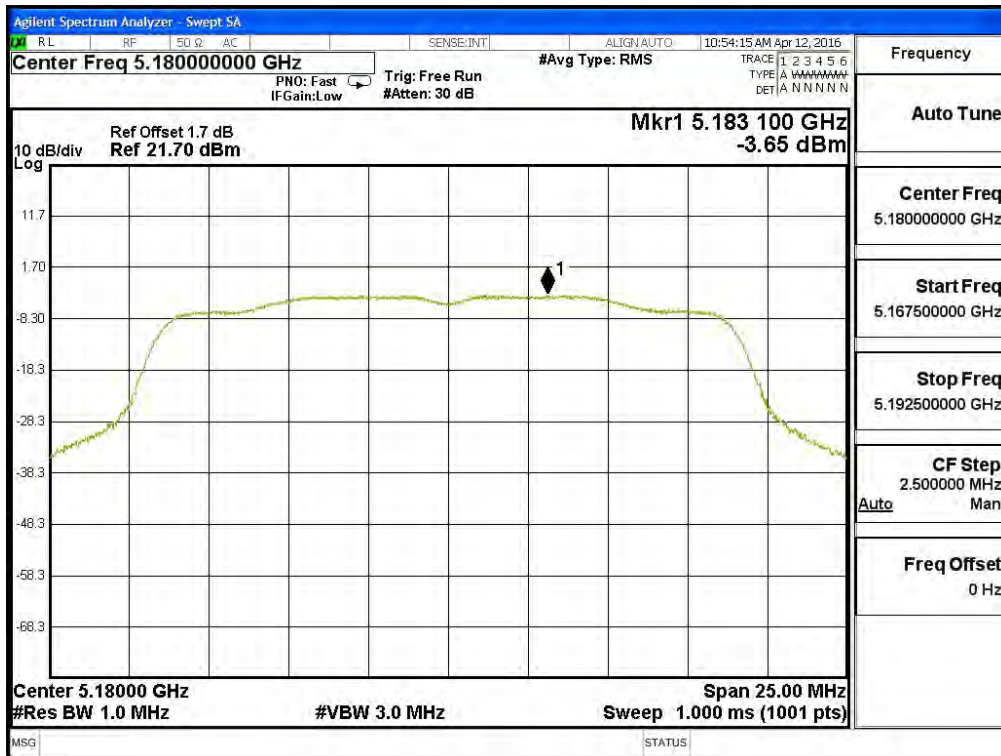
Product : TABLET PC  
 Test Item : Peak Power Spectral Density  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm) <sup>1</sup>	Required Limit (dBm)	Result
36	5180	A	-3.650	-0.640	11	Pass
		B	-2.430	0.580	11	Pass
44	5220	A	-2.830	0.180	11	Pass
		B	-2.510	0.500	11	Pass
48	5240	A	-2.650	0.360	11	Pass
		B	-3.220	-0.210	11	Pass
52	5260	A	-0.220	2.790	11	Pass
		B	-0.430	2.580	11	Pass
60	5300	A	-0.400	2.610	11	Pass
		B	-0.210	2.800	11	Pass
64	5320	A	-2.140	0.870	11	Pass
		B	-2.460	0.550	11	Pass
100	5500	A	-2.480	0.530	11	Pass
		B	-2.760	0.250	11	Pass
116	5580	A	1.520	4.530	11	Pass
		B	0.510	3.520	11	Pass
140	5700	A	-3.020	-0.010	11	Pass
		B	-2.240	0.770	11	Pass

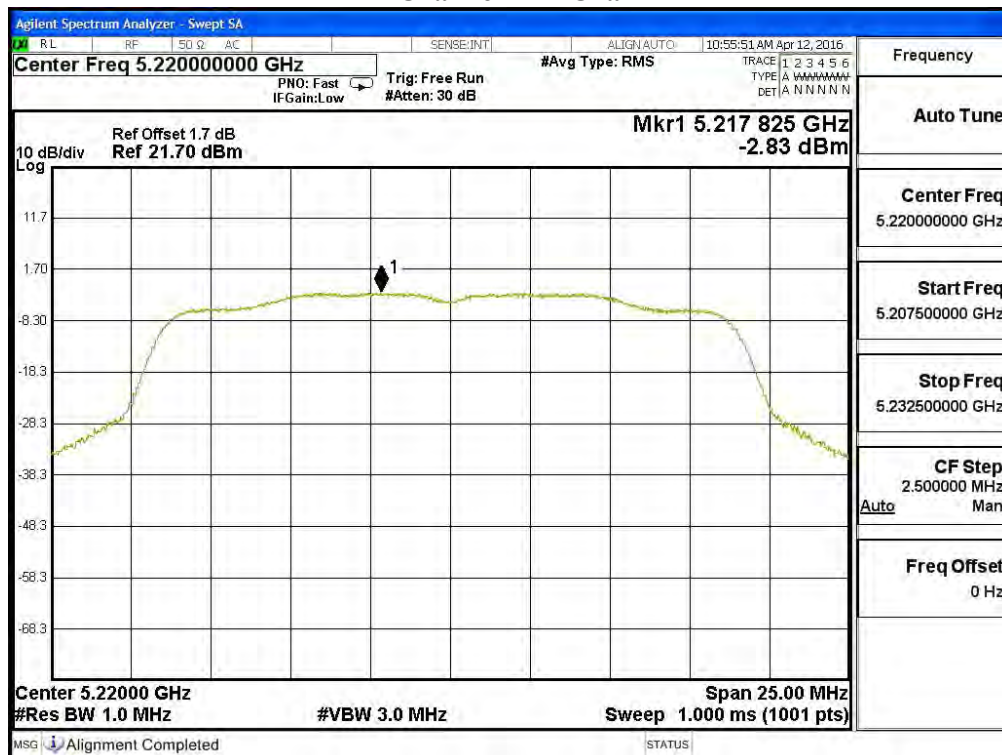
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm) <sup>1</sup>	Required Limit (dBm)	Result
149	5745	A	-9.970	6.980	0.020	<30	Pass
		B	-9.520	6.980	0.470	<30	Pass
157	5785	A	-10.260	6.980	-0.270	<30	Pass
		B	-9.140	6.980	0.850	<30	Pass
165	5825	A	-9.470	6.980	0.520	<30	Pass
		B	-9.410	6.980	0.580	<30	Pass

Note 1: The quantity  $10 \cdot \log 2$  (two antennas) is added to the spectrum peak value according to document 662911 D01.

### Channel 36 – Chain A

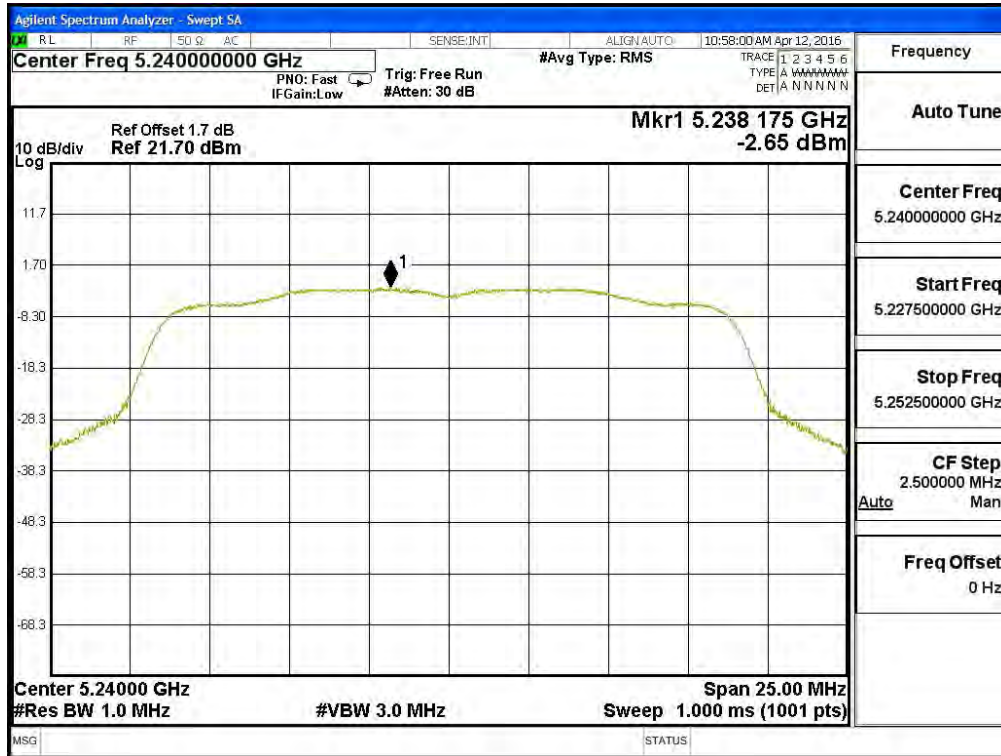


### Channel 44 – Chain A

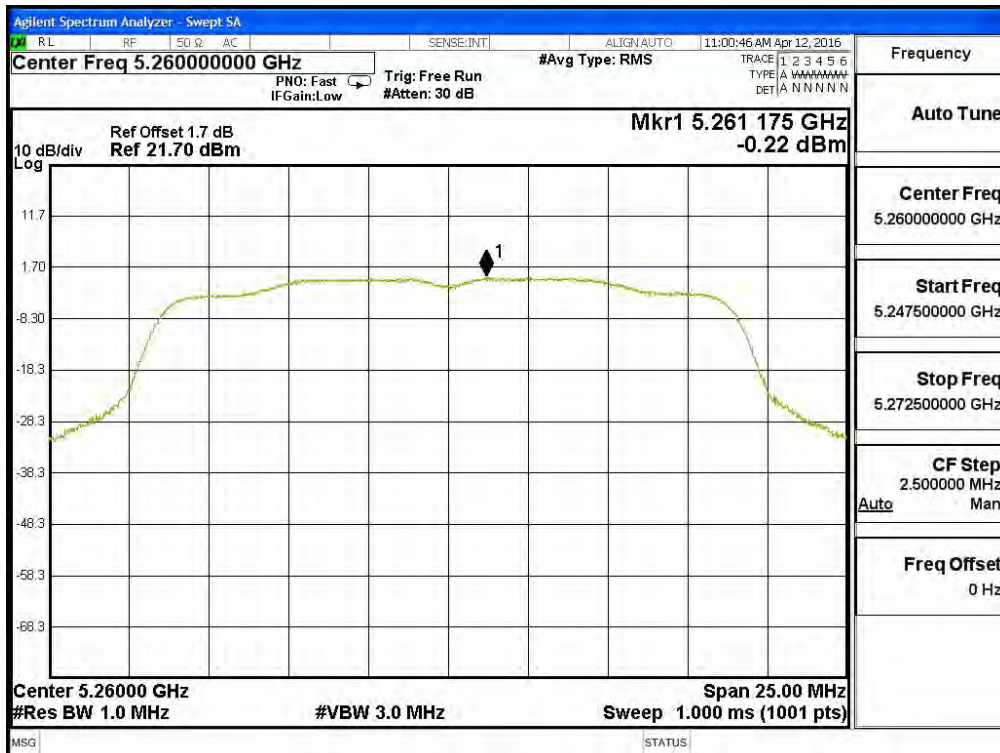




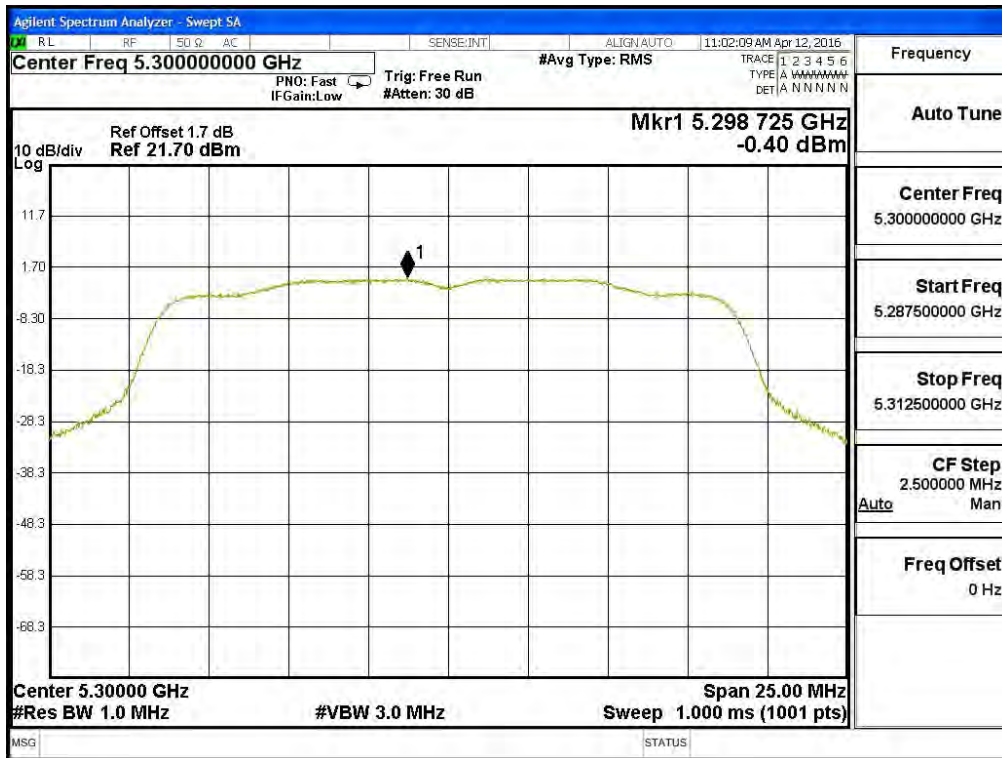
### Channel 48 – Chain A



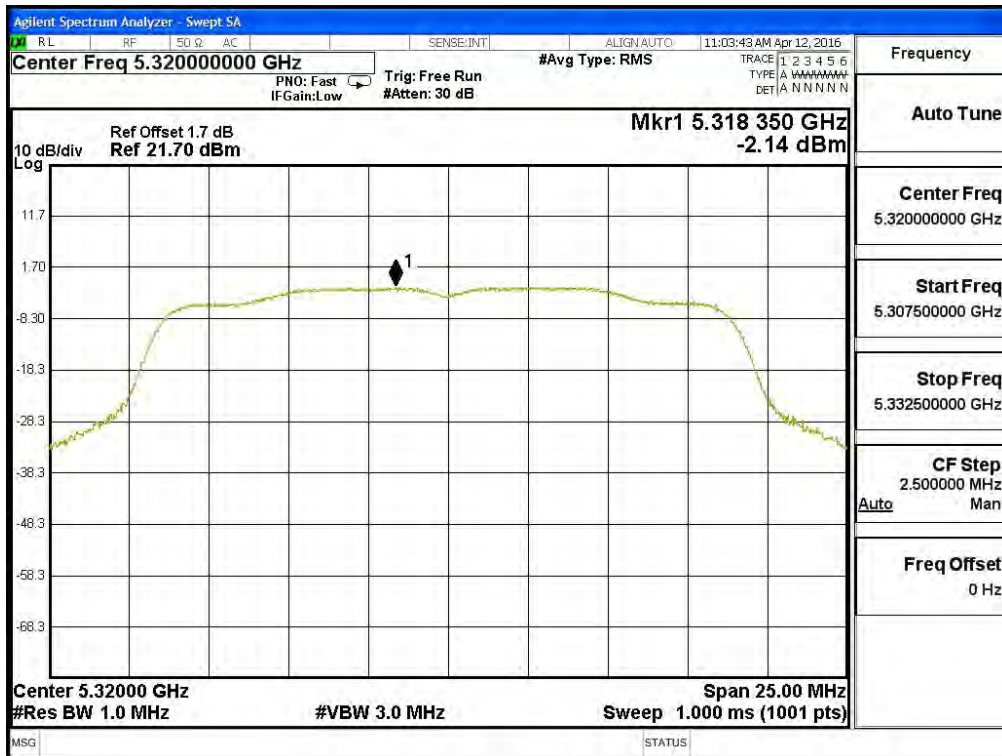
### Channel 52 – Chain A



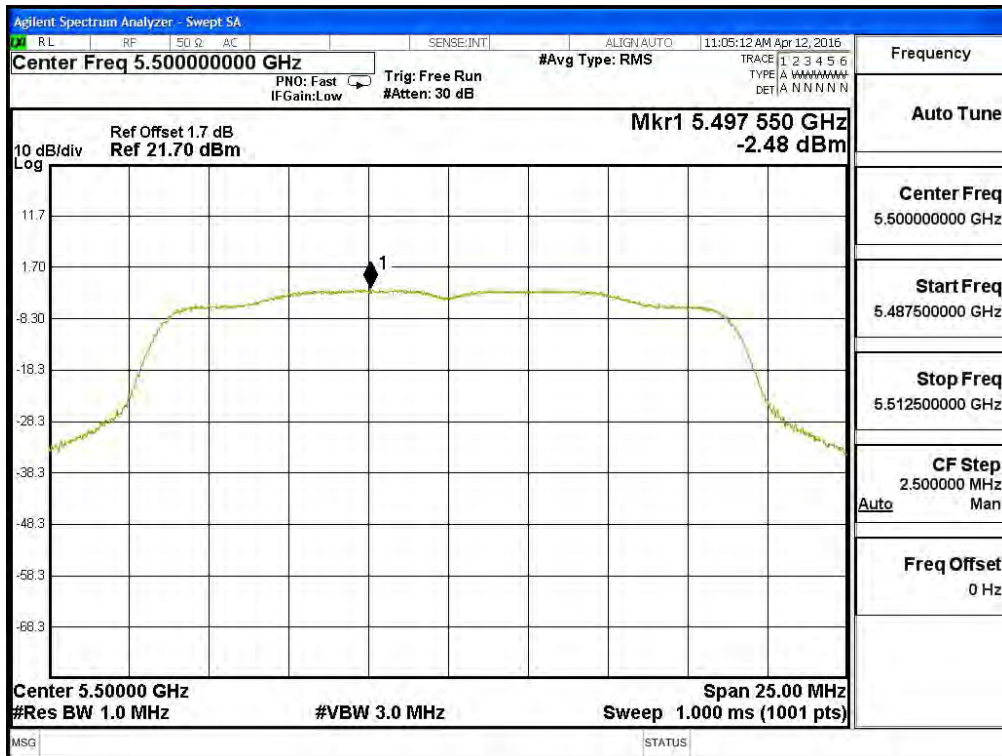
**Channel 60 – Chain A**



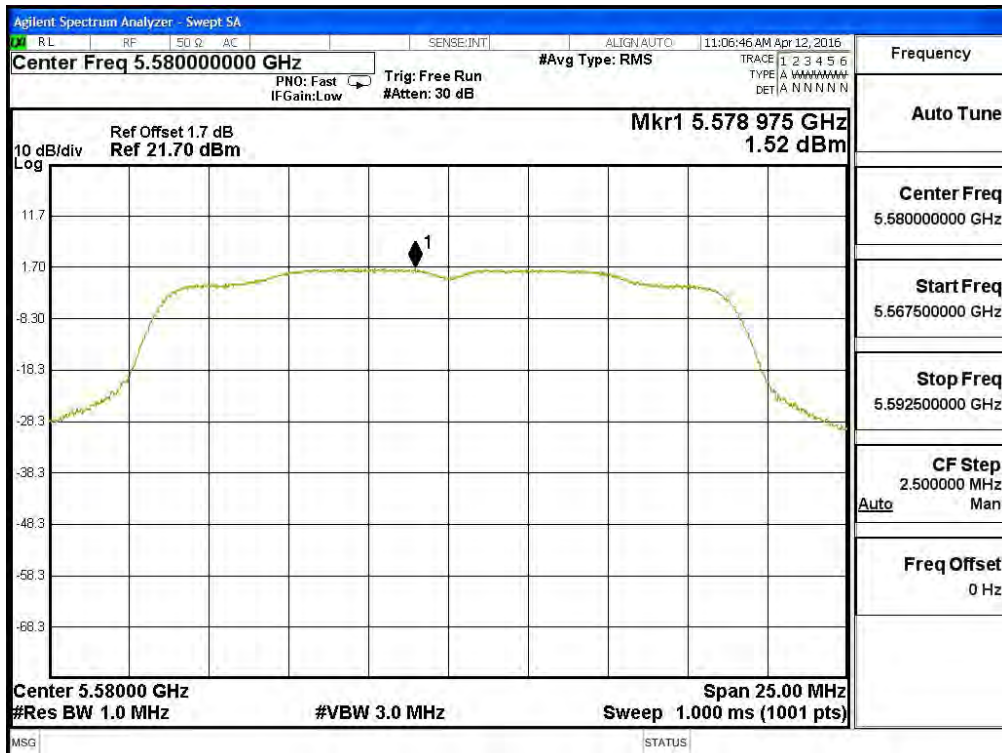
**Channel 64 – Chain A**



### Channel 100 – Chain A

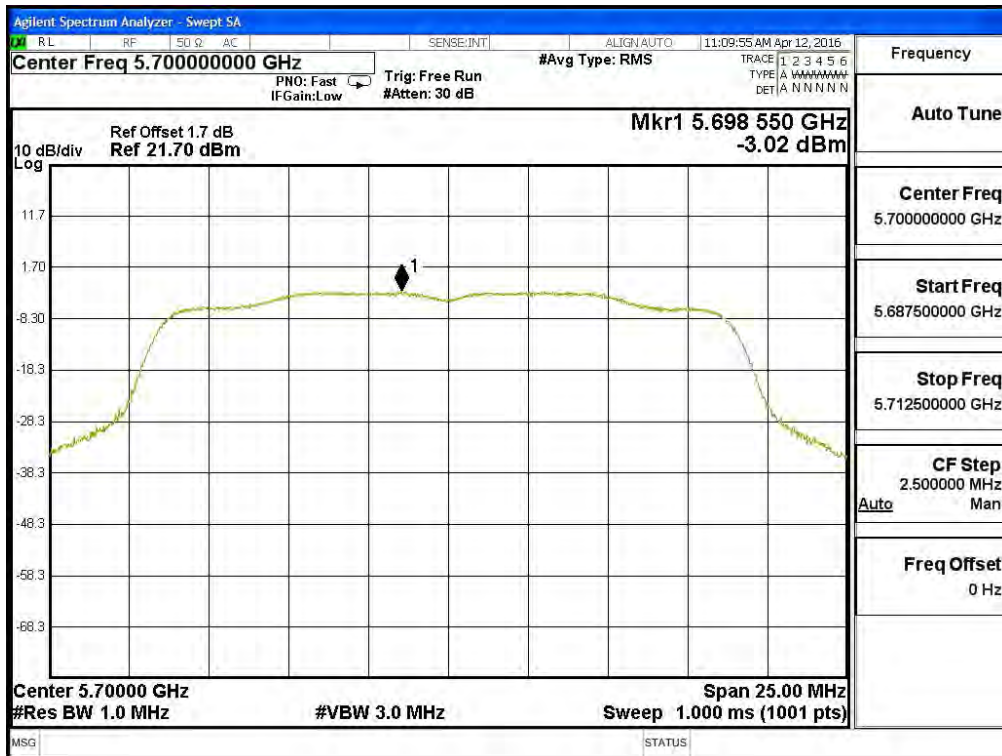


### Channel 116 – Chain A

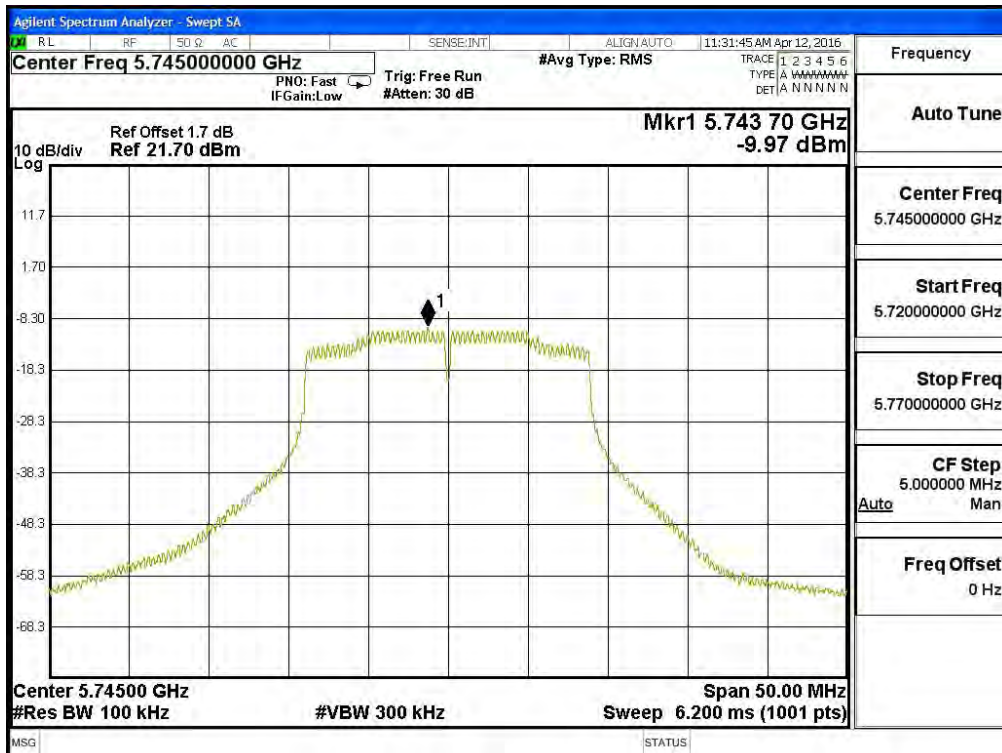




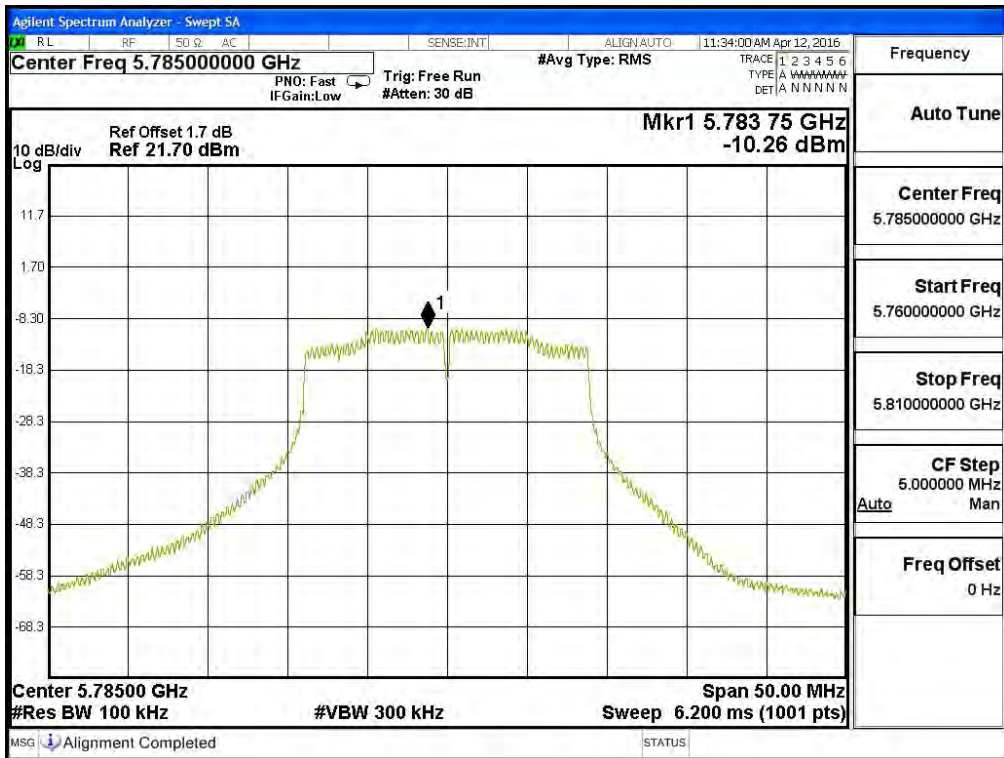
**Channel 140 – Chain A**



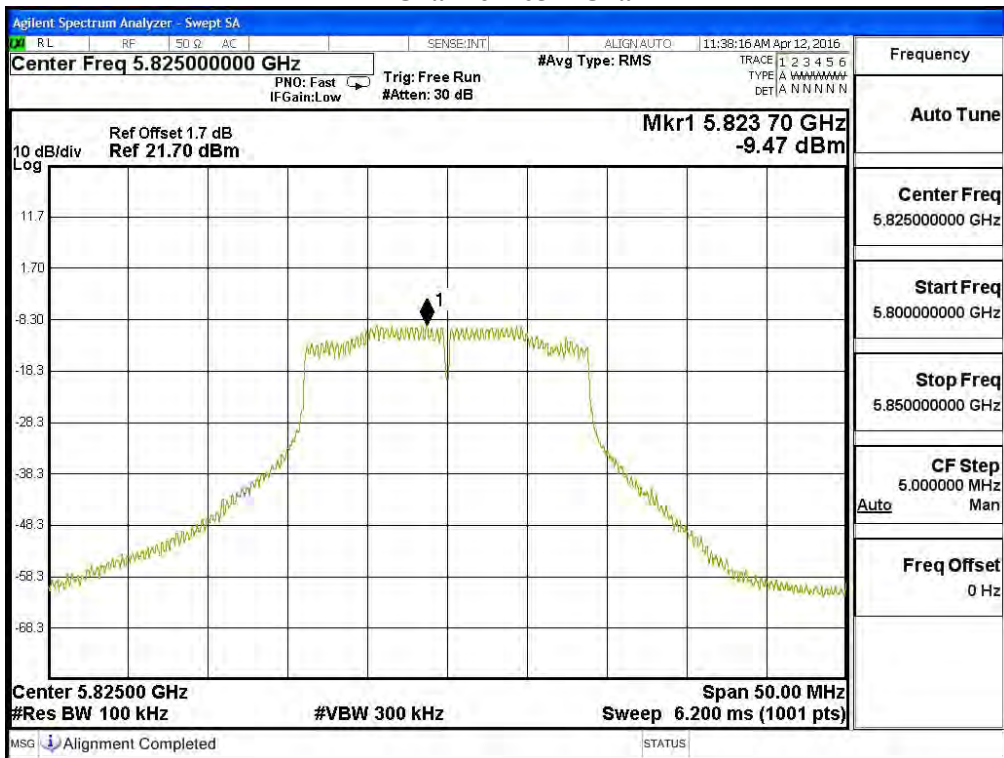
**.Channel 149 – Chain A**



### Channel 157 – Chain A

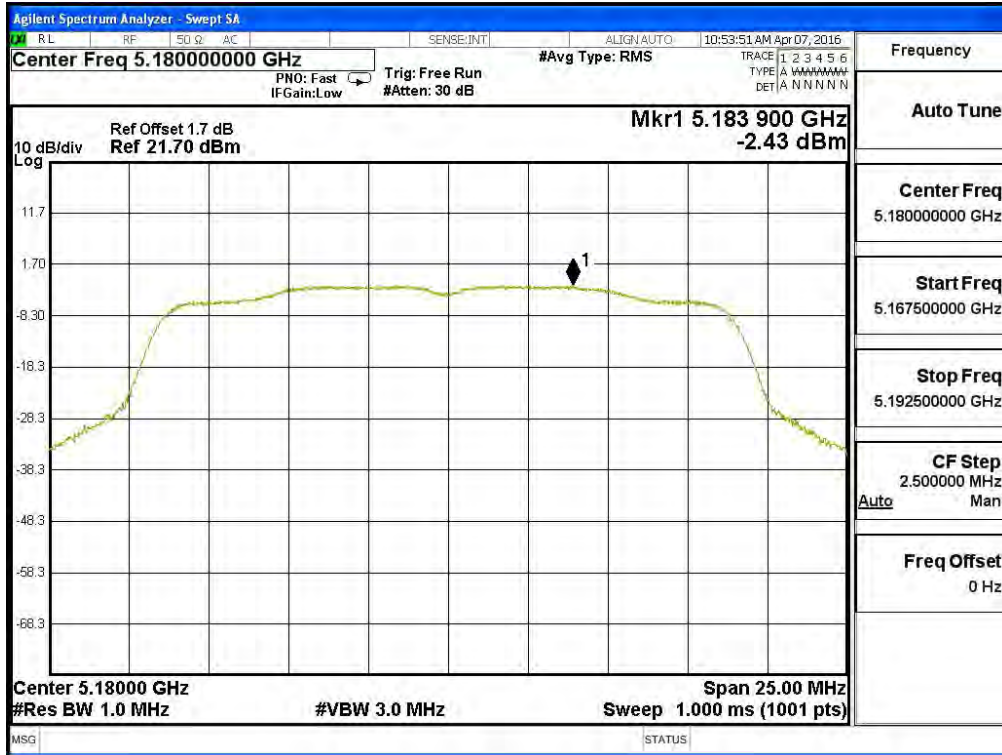


### Channel 165 – Chain A

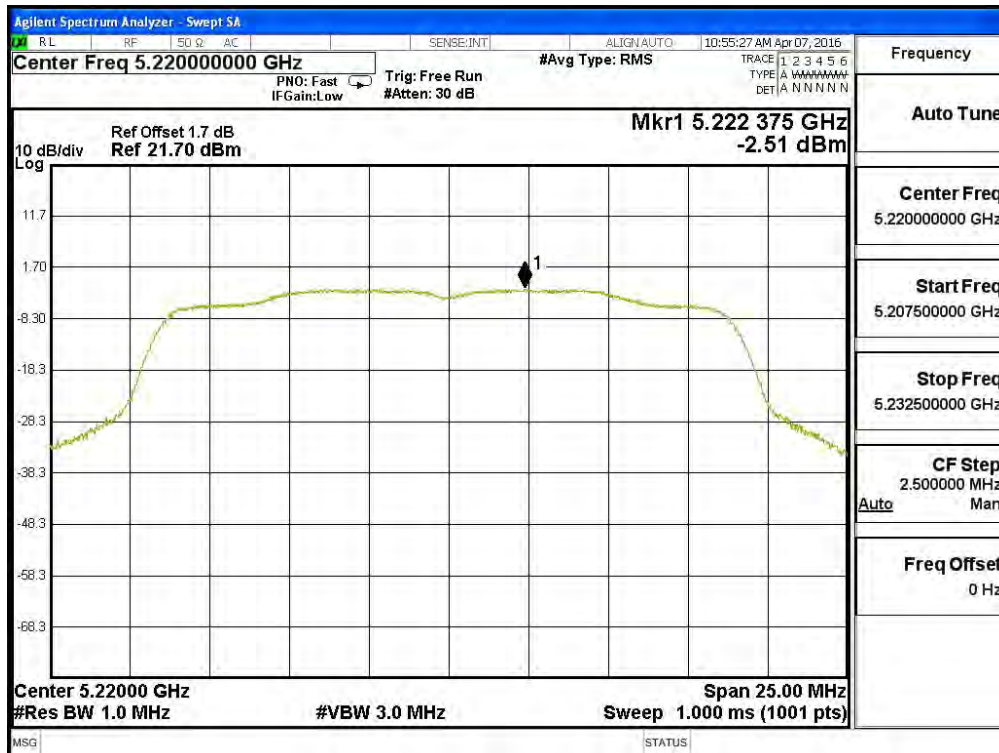




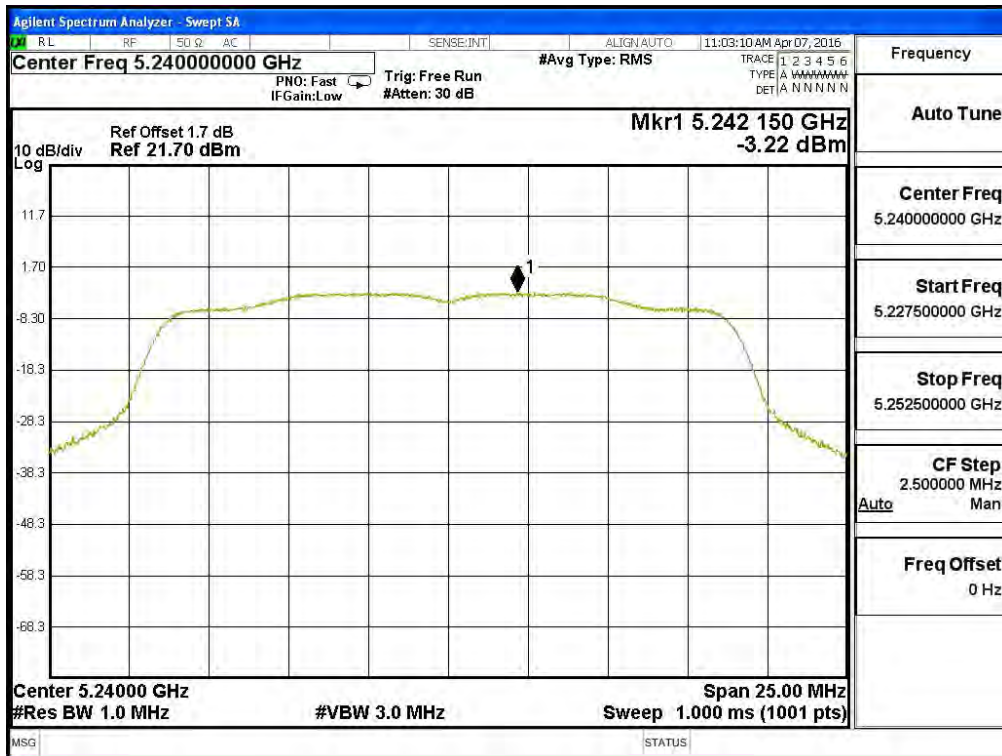
### Channel 36 – Chain B



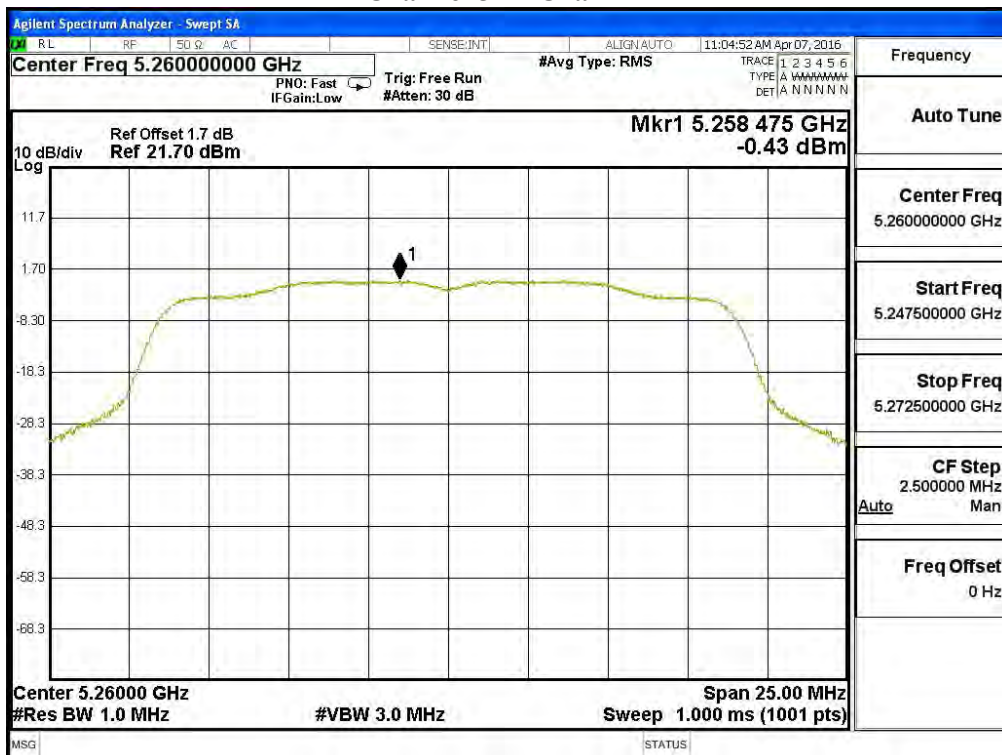
### Channel 44 – Chain B



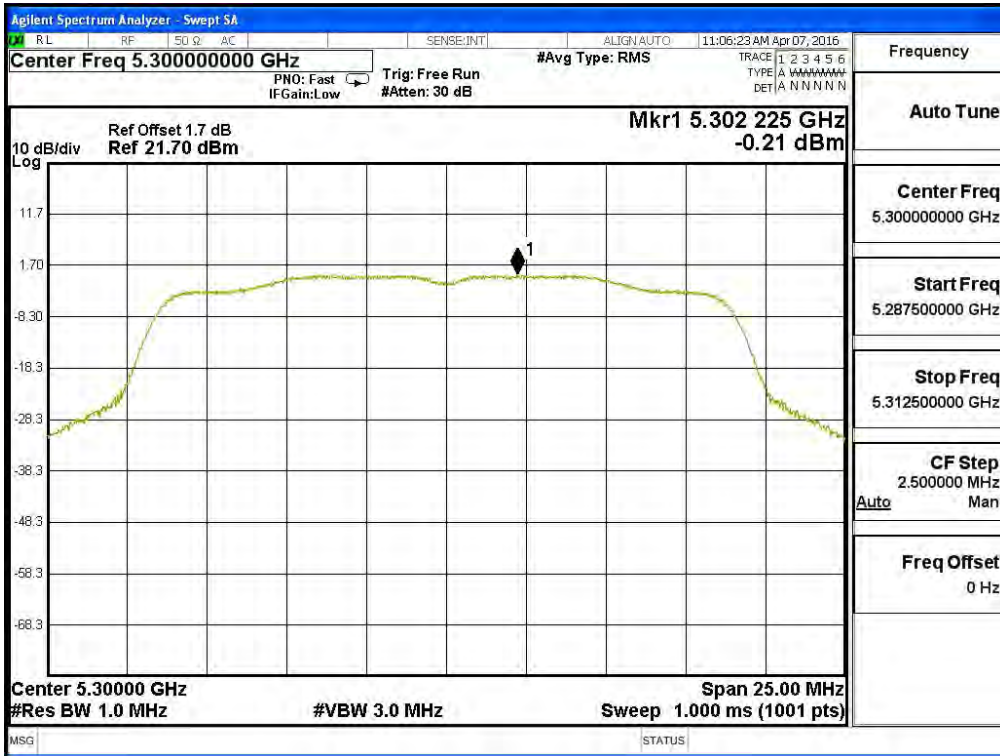
### Channel 48 – Chain B



### Channel 52 – Chain B



**Channel 60 – Chain B**



**Channel 64 – Chain B**

